LANDLORD NOTES

GENERAL:
1. GENERAL CONTRACTOR TO FOLLOW ALL RULES AND REGULATIONS WITHIN THE LANDLORD'S CONTRACTOR MANUAL.
2. ALL LOUD WORK TO BE DONE AFTER HOURS. STOREFRONT WORK IS NORMALLY DISRUPTIVE TO ADJACENT TENANTS AND CUSTOMERS DURING BUSINESS HOURS. PLAN FOR MAJORITY OF STOREFRONT WORK TO BE PERFORMED AFTER HOURS.
3. STOREFRONT FINISHES TO BE EXTENDED TO 3/4" BLACK METAL REVEAL AT LEASE LINES. NO NEUTRAL PIERS TO BE INSTALLED.
4. ANY LANDLORD ITEMS CURRENTLY ON THE STOREFRONT SUCH AS HVAC SENSORS, FIRE STROBES, FIRE SPEAKERS, ETC. TO BE RE-INSTALLED IN SIMILAR LOCATION ON THE NEW STOREFRONT.
5. ANY UTILITIES OR DATA CROSSING TENANT SPACE TO NOT BE CUT BUT REMAIN ACTIVE. IF THEY NEED TO BE MODIFIED, VERIFY WITH LANDLORD PRIOR TO ANY WORK DONE TO UTILITIES OR DATA.
6. BARRICADE GRAPHICS AND SIGNAGE MUST BE SUBMITTED FOR LANDLORD'S REVIEW AND APPROVAL.
7. WORK CANNOT COMMENCE UNTIL PRE-CON FORMS HAVE BEEN SUBMITTED AND A PRE-CONSTRUCTION MEETING HAS BEEN CONDUCTED WITH LANDLORD'S CONSTRUCTION MANAGER.

STOREFRONT:
1. SUBMIT GRAPHIC PACKAGES FOR APPROVAL INCLUDING TYPICAL VIDEO BOARD MEDIA. VIDEO BOARDS MUST BE SET BACK AT LEAST 1' FROM STOREFRONT.

ELECTRICAL:
1. COORDINATE CONDUIT RUN LOCATION AT POWER RISER. KEEP HIGH AND TIGHT TO ROOF STRUCTURE. FOLLOW EXISTING CONDUIT PATHS WHERE POSSIBLE.
2. COORDINATE METER AND DISCONNECT INSTALLATION LOCATION IN METER ROOM WITH MALL TEAM.
3. LABEL ALL METER AND SWITCHES WITH TENANT SUITE # AND NAME.

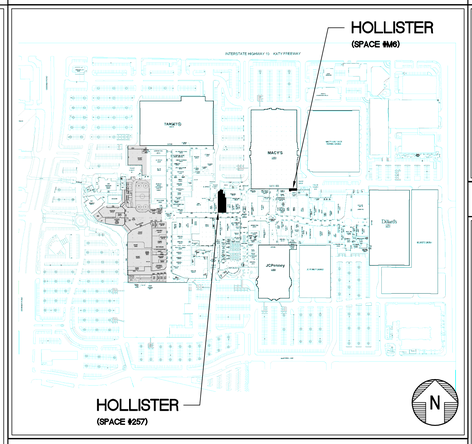
PLUMBING:
1. HEAT GENERATING EQUIPMENT CANNOT BE ABOVE CEILINGS.
2. CONDENSATE LINES MUST DRAIN INTO TENANT SPACE AND NOT ON THE ROOF.

⚠1

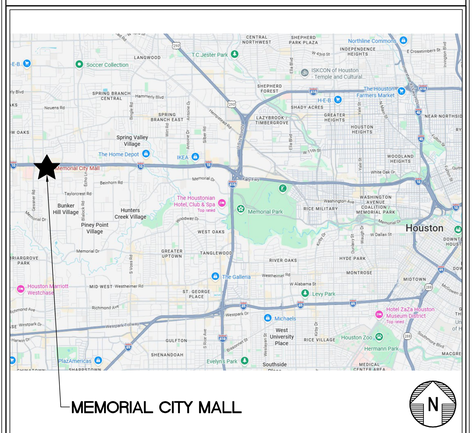
GENERAL INFORMATION

T.B.D.

MALL KEY PLAN



LOCATION MAP



LANDLORD REQUIRED/PREFERRED VENDORS

PROJECT SCOPE

THE PROJECT SCOPE OF WORK CONSISTS OF ALTERATION WORK TO AN EXISTING +/- 6308 SF GROUND FLOOR HOLLISTER STORE (SPACE #257) AND TENANT IMPROVEMENT WORK TO A NEW +/- 620 SF GROUND FLOOR REMOTE STORAGE ROOM (SPACE #M6), BOTH LOCATED AT MEMORIAL CITY MALL IN HOUSTON, TX.

THE WORK INSIDE THE STORE CONSISTS OF REMOVING EXISTING BACK OF HOUSE, FITTING ROOMS, AND SOME SALES AREA WALLS TO EXPAND THE SALES AREA AND CREATE A LARGER FITTING ROOM AREA. EXISTING SALES AREA CABINET FIXTURES TO REMAIN OR BE RELOCATED. ALL TO BE REFINISHED. EXISTING SALES AREA LIGHTING TO BE RELAMPED AND RELOCATED AND NEW LIGHTING TO BE INSTALLED THROUGHOUT TO COORDINATE WITH NEW STORE LAYOUT. NEW FINISHES AND NEW FIXTURING THROUGHOUT. NEW RESTROOMS AND ALL NEW PLUMBING FIXTURES. EXISTING MECHANICAL UNITS TO REMAIN AND NEW MECHANICAL UNIT AT BACK OF HOUSE. MODIFYING EXISTING DUCTWORK AND INSTALLING NEW AS REQUIRED FOR NEW LAYOUT. EXISTING ELECTRICAL SYSTEMS TO REMAIN AND MODIFIED FOR NEW LAYOUT. STORE TO BE CLOSED THROUGHOUT CONSTRUCTION.

THE WORK INSIDE THE REMOTE STORAGE AREA CONSISTS OF NEW FINISHES AND FIXTURING, NEW LIGHTING, MECHANICAL UNIT AND NEW ELECTRICAL SYSTEM.

CODE SYNOPSIS/ PROJECT DATA

OCCUPANCY USE GROUP: M - MERCANTILE
TYPE OF CONSTRUCTION: IIB - FULLY SPRINKLED
LEVEL: 1 OF 1

APPLICABLE CODES

BUILDING:	2021 INTERNATIONAL BUILDING CODE W/ HOUSTON AMENDMENTS 2021 INTERNATIONAL EXISTING BUILDING CODE W/ HOUSTON AMENDMENTS
MECHANICAL:	2021 UNIFORM MECHANICAL CODE W/ HOUSTON AMENDMENTS
PLUMBING:	2021 UNIFORM PLUMBING CODE W/ HOUSTON AMENDMENTS
ELECTRICAL:	2023 NATIONAL ELECTRICAL CODE W/ HOUSTON AMENDMENTS
FIRE:	2021 INTERNATIONAL FIRE CODE W/ HOUSTON AMENDMENTS
ENERGY:	2021 INTERNATIONAL ENERGY CONSERVATION CODE W/ HOUSTON AMENDMENTS
ACCESSIBILITY:	TEXAS ACCESSIBILITY STANDARDS

OCCUPANT LOAD:

4,980/60	=	83	SALES
1,008/300	=	4	NON-SALES
		89	TOTAL (SPACE #257)
620/300	=	3	TOTAL (SPACE #M6)

MINIMUM PLUMBING FIXTURES:

WATER CLOSETS:	(2) PROVIDED
LAVATORIES:	(2) PROVIDED
URINALS:	N/A
DRINKING FOUNTAINS:	(1) HI-LO DRINKING FOUNTAIN PROVIDED
MOP/SERVICE SINK:	(1) PROVIDED

FIRE PROTECTION:

DEMISING WALL:	1 HOUR
SALES /NON-SALES WALL:	NON-RATED
SALES /NON-SALES DOOR:	NON-RATED
CEILING:	NON-RATED
COLUMNS:	NON-RATED
SERVICE CORRIDOR WALL:	1 HOUR
SERVICE CORRIDOR DOOR:	45 MIN.

SPRINKLERED: AN APPROVED AUTOMATIC SPRINKLER SYSTEM SHALL BE PROVIDED

SMOKE EVACUATION SYSTEM: N/A

FLAME SPREAD REQUIREMENTS FOR GROUP 'M' SPRINKLERED EXIT ENCLOSURES AND EXIT PASSAGEWAYS: MIN. CLASS B CORRIDORS: MIN. CLASS C ROOMS AND ENCLOSED SPACES: MIN. CLASS C

EGRESS REQUIREMENTS:

(2) EXITS REQUIRED:	(2) EXITS PROVIDED
TRAVEL DISTANCE:	250' MAX.
EGRESS PATHWAY:	36" CLEAR

NOTES:
A. ENTIRE SALES & NON-SALES AREA OF THE STORE IS TO RECEIVE AUTOMATIC FIRE SPRINKLER PROTECTION AS PER APPROVED FIRE PROTECTION PLANS. MALL DESIGNATED CONTRACTOR TO BE USED WHEN REQUIRED.
B. "HOLLISTER" RETAIL SALES IS TO BE USED EXCLUSIVELY FOR MENS AND WOMENS APPAREL RETAIL SALES

DEFERRED / SEPARATE SUBMITTALS

- FIRE SPRINKLER SYSTEM DESIGN CALCULATIONS & PLANS
- SIGNAGE

DRAWING WEBSITE ACCESS

UPDATED ELECTRONIC FILES FOR THIS PROJECT CAN BE VIEWED AND/OR DOWNLOADED FROM THE "LUCERNEX" PROJECT MANAGEMENT SOFTWARE AT: WWW.LUCERNEX.COM

VENDORS & CONTRACTORS MUST CONTACT THE ABERCROMBIE & FITCH "PURCHASING" CONTACT LISTED BELOW FOR ACCESS.

CONTACTS

TENANT

ABERCROMBIE & FITCH
6301 FITCH PATH
NEW ALBANY, OHIO 43054
(614) 283-6500

DESIGNER
DANIEL HARRIS
E-MAIL: Daniel_Harris@anfcorp.com

PROJECT MANAGER
WILL THAW
E-MAIL: Will_Thaw@anfcorp.com ⚠1

PURCHASING
AMY MARINS
PROGUREMENT SPECIALIST
(614) 283-6060
AMY_MARINS@ANFCORP.COM

DEVELOPER / SHOPPING CENTER

METRO NATIONAL
CONTACT: HENRY WALLER
TITLE: TENANT COORDINATOR
PHONE: (713) 536-6213
EMAIL: HENRY.WALLER@METRONATIONAL.COM

MEMORIAL CITY MALL
CONTACT: MIKE CUMMINGS
TITLE: OPERATIONS MANAGER
PHONE: (713) 935-7118
EMAIL: MIKE.CUMMINGS@METRONATIONAL.COM

CONSULTANTS

ARCHITECT OF RECORD
FREDERICK J. GOGLIA
1950 CRAIG RD. - SUITE 300
ST. LOUIS, MO 63146
PHONE: (800) 415-2400
PROJECT MANAGER: LAUREN PFEFFER
EMAIL: LPFEFFER@ARCV.COM

ENGINEER OF RECORD
DIALECTIC ENGINEERING
310 N. 20TH ST. - SUITE 100
KANSAS CITY, MO 64108
PHONE: (816) 997-1601
PROJECT MANAGER: BO OSBORN
EMAIL: BO.OSBORN@DIALECTICENG.COM

SPACE #257 AREA CALCULATIONS

GROSS AREA -	6,308 SQ.FT.
GROSS SALES AREA -	4,980 SQ.FT.
GROSS NON-SALES AREA -	1,328 SQ.FT.
LINEAR FEET OF STOREFRONT -	50'-0" L.F.

SPACE #M6 AREA CALCULATIONS

GROSS AREA -	620 SQ.FT.
GROSS NON-SALES AREA -	620 SQ.FT.

REVISIONS ⚠ INDICATES REVISION TO SHEET ON DRAWING INDEX

REV. NO.	DATE	COMMENTS
⚠1	09-25-26	PER T.D. + L.D.

REVISION DIRECTIVE KEY
B.D. - BUILDING DEPT. DIRECTIVE
T.D. - TENANT DIRECTIVE
G.C. - GENERAL CONTRACTOR DIRECTIVE
L.D. - LANDLORD DIRECTIVE

MASTER SET DATE: Q3 2025

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HOLLISTER
CALIFORNIA

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6301 FITCH PATH
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ARCHITECTURE • ENGINEERING
1950 CRAIG ROAD, SUITE 300
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(314) 415-2400
WWW.ARCV.COM

MEMORIAL CITY MALL

303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No:	260348
Drawn By:	CJS

Date	Issue
09.04.2026	CHECKSET
09.25.2026	⚠1 BID SET

COVER SHEET

A0.00

SECTION 01 1000 - SUMMARY

PART 1 GENERAL
1.01 SUMMARY
A. Section Includes:
1. Project information.
2. Work covered by Contract Documents.
3. Work under contracts.
4. Access to site.
5. Coordination with occupants.
6. Work restrictions.
7. Specification and drawing conventions.
8. Miscellaneous provisions.
B. Related Requirements:
1. See "Owner's Standard General Conditions for Construction" for additional information.
2. See Owners "General Contractor Guidebook" for additional information.
1.02 PROJECT INFORMATION
A. Owner: Abercrombie & Fitch
1. Owner's Representative: Project Manager. Refer to contact information on drawings cover sheet.
B. Architect: Refer to contact information on drawings cover sheet.
C. Designer: Refer to contact information on drawings cover sheet.
D. Project Web Site: www.expesite.com/website/ ; A project Web site administered by the Owner will be used for purposes of managing communication and documents during the construction stage.
1.03 WORK COVERED BY CONTRACT DOCUMENTS
A. The Work of Project is defined by the Contract Documents and consists of the following:
1. The project consists of construction of a new or modifications to an existing Abercrombie & Fitch, A&F Kids, Hollister, or Gilly Hicks retail store, including all construction, mechanical, plumbing, electrical, structural work, and all work shown and implied in the construction documents.
B. Type of Contract.
1. Project will be constructed under a single prime contract.
1.04 ACCESS TO SITE
A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Landlord or Owner's right to perform work. Refer to Section 4.13 of the "Owner's Standard General Conditions for Construction" for additional information.
B. The contractor shall visit the site prior to submittal of bid to determine conditions affecting the work. Any items which are not covered in the bid documents shall be listed separately and qualified in the contractor's bid. Submittal of bid shall serve as evidence of knowledge of existing conditions and any modifications which are required to meet the intent of the drawings and specifications. Failure to visit the site does not relieve the contractor of responsibility in performance of work
C. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
1. Driveways, Walkways and Entrances: Keep driveways loading areas and entrances serving premises clear and available to Landlord, Landlords employees, patrons, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
D. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weather tight condition throughout construction period. Repair damage caused by construction operations.
1.05 COORDINATION WITH OCCUPANTS
A. Full Landlord Occupancy: Landlord will occupy existing adjacent tenant spaces/building(s) and units during entire construction period. Cooperate with Landlord during construction operations to minimize conflicts and facilitate Landlord usage. Perform the Work so as not to interfere with Landlords day-to-day operations. Maintain existing exits unless otherwise indicated.
1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Landlord and approval of authorities having jurisdiction.
2. Notify Landlord not less than time required by tenant criteria/ construction manual in advance of activities that will affect Landlords operations.
1.06 WORK RESTRICTIONS
A. Work Restrictions, General: Comply with restrictions on construction operations.
1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Landlord or other tenants unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
1. Notify Tenant and landlord not less than time required by tenant criteria/ construction manual in advance of proposed utility interruptions.
2. Obtain Landlords written permission before proceeding with utility interruptions.
C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Landlord or adjacent tenant.
1. Comply with the limitations indicated in the tenant criteria / construction manual.
D. Controlled Substances: Use of tobacco products and other controlled substances within the existing space is not permitted.
1.07 SPECIFICATION AND DRAWING CONVENTIONS
A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.
1.08 CONFILICTING INFORMATION
A. If conflicting information is found between specifications and drawings, contact the owner and Project Manager immediately before proceeding with any work.
1. No work completed without owner's approval will be subject to compensation of any kind.
1.09 OWNER SUPPLIED MATERIALS (OSM) DELIVERY
A. Contractor shall inventory all OSM Deliveries & confirm quantity and condition of all items. Refer to Section 011200 for process and expectations for receiving OSM.

SECTION 01 1200 - CONTRACT SUMMARY & OWNER SUPPLIED MATERIALS

PART 1 GENERAL
1.01 SUMMARY
A. Section includes a summary of each contract, including responsibilities for coordination and temporary facilities and controls.
B. Specific requirements for work of each contract are also indicated in individual Specification Sections and on Drawings.
C. Related Requirements:
1. Section 011000 "Summary" for the Work covered by the Contract Documents, restrictions on use of Project site, coordination with occupants, and work restrictions.
2. See "Owner's Standard General Conditions for Construction" for additional information.
3. Owner's "General Contractor Guide Book"
4. Owner's "SCR Process" document
1.02 GENERAL REQUIREMENTS OF CONTRACTS
A. Extent of Contract: Unless the Agreement contains a more specific description of the Work of each Contract, requirements indicated on Drawings and in Specification Sections determine which contract includes a specific element of Project.
1. Unless otherwise indicated, the work described in this Section for each contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents.
2. Trenches and other excavation for the work of each contract shall be the work of the General Construction Contract.
3. Blocking, backing panels, sleeves, and metal fabrication supports for the work of each contract shall be the work of the General Construction Contract.
4. Furnishing of access panels for the work of each contract shall be the work of the General Construction Contract.
5. Roof-mounted equipment curbs for the work of each contract shall be the work of the General Construction Contract.
6. Painting for the work of each contract shall be the work of the General Construction Contract.
7. Cutting and Patching: Provided by the General Construction Contract.
8. Through-penetration fire stopping for the work of each contract shall be provided by the General Construction Contract.
9. Contractors' Startup Construction Schedule: Refer to "Section 7.4" of the "Owner's Standard General Conditions for Construction" for more information.
B. Substitutions: Each contractor shall cooperate with other contractors involved to coordinate approved substitutions with remainder of the work.
1. Refer to Section 012500 Substitution Procedures for additional information
C. Temporary Heating, Cooling, and Ventilation: The General Construction Contract is responsible for temporary heating, cooling, and ventilation, including utility-use charges, temporary meters, and temporary connections.
D. Use Charges: Confirm the following services with the landlord tenant criteria / construction manual:
1. Sewer Service: Include the cost for sewer service use by all parties engaged in construction activities at Project site in the General Construction Contract.
2. Water Service: Include the cost for water service, whether metered or otherwise, for water used by all entities engaged in construction activities at Project site in the General Construction Contract.
3. Electric Power Service: Include the cost for electric power service, whether metered or otherwise, for electricity used by all entities engaged in construction activities at Project site in the General Construction Contract.
4. Waste Services: Include the cost for all dumpsters, haul-away, recycling and waste removal services used by all parties engaged in construction activities at Project site in the General Construction Contract.
1.03 GENERAL CONSTRUCTION CONTRACT
A. Work in the General Construction Contract includes, but is not limited to, the following:
1. Remaining work not identified as work under other contracts.
2. Refer to responsibilities schedule on drawings.
3. Coordination with all work included in separate contracts between Owner and Owner Vendors.
1.04 OWNER VENDOR CONTRACTS
A. The following contracts will be issued between Owner and Owner Vendors which are separate from the contract between Owner and General Contractor.
1. Audio / Video System
2. Security System
3. Phone and Data
4. CCTV
5. Rolling Grille / Sliding Gate Entry Closure (Domestic stores only)
6. Scent machine
7. Signage (Domestic stores only)
B. The Owner-Vendor contracts will include furnishing and installation of all systems and equipment, excluding electric power, conduit, pull wire & J-box's provided and installed by the G.C. as shown on the construction drawings.
C. Refer to responsibilities schedule on the construction drawings for any additional work.

PART 2 OWNER SUPPLIED ITEMS
2.01 OWNER SUPPLIED MATERIALS (OSM)
A. Owner will furnish products as indicated in the responsibility schedules, on the drawings and as indicated in the bid package. The work includes providing support systems to receive Owner's products. Refer to Section 4.19 of the "Owner's Standard General Conditions for Construction" for additional information.
B. Owner will arrange and pay for delivery of OSM'S according to schedule contained in the bid package
C. Contractor is responsible for receiving, unloading, handling, and installing OSM's at project site.
D. After delivery, contractor will inspect delivered items for damage and missing items. Report any issues to the Owner's Project Manager as outlined in the Owner's "SCR Process" document.
E. Contractor is responsible for protecting OSM's from damage during storage and handling, including damage from exposure to the elements.
F. If OSM's are damaged as a result of the contractors operations, contractor shall repair or replace them.
G. Contractor shall be responsible for cost of any off site storage and or freight and shipping charges if he is unable to accept deliveries of OSM's

SECTION 01 2500 - SUBSTITUTION PROCEDURES

PART 1 GENERAL
1.01 SUMMARY
A. Section includes administrative and procedural requirements for substitutions.
B. Substitutions are not permitted in the Bid Process. Substitutions are only permitted to be submitted for consideration in the event that what was specified is not available or will significantly impact the construction time line. Substitutions will be submitted to the Owners Project Manager at their discretion.
C. Related Requirements:
1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
2. See Owners "4.12 Shop Drawing, Product Data, Samples and Other Submittals." as provided by Owner.
3. See Owners "11.1 Standards of Quality." as provided by Owner.
4. See Owner's "Submittal Process" document.
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 ACTION SUBMITTALS
A. Substitution Requests: Submit, via Expesite, each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Substitution Request Form: Utilize Expesite submittal task for all submittals.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
a. Statement indicating why specified product or fabrication or installation cannot be provided.
b. Coordination information, including a list of changes or revisions needed to other parts of the Work and construction to be performed by Owner and or 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. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and Owners.
h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
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 date of receipt of purchase order, 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 except as indicated in substitution request, is compatible with related materials, 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.
3. Owner Action: If necessary, Owner will request additional information or documentation for evaluation of a request for substitution. Owner will notify Contractor through Expesite submittal task of acceptance or rejection of proposed substitution.
a. Forms of Acceptance: Approval of Expesite submittal task by Owner.
b. Use product specified if Owner does not issue a decision on use of a proposed substitution within time allocated.
1.04 QUALITY ASSURANCE
A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.
PART 2 PRODUCTS
2.01 SUBSTITUTIONS
A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
1. Conditions: Owner will consider Contractor's request for substitution when the following conditions are satisfied:
a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Requested substitution will not adversely affect Contractor's construction schedule.
c. Requested substitution has received necessary approvals of authorities having jurisdiction.
d. Requested substitution is compatible with other portions of the Work.
e. Requested substitution has been coordinated with other portions of the Work.
f. Requested substitution provides specified warranty.
g. 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.
B. Substitutions for Convenience: Not allowed.

SECTION 01 2600 - CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL
1.01 SUMMARY
A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
B. Related Requirements:
1. Conform to procedures as indicated in the "Owner's Standard General Conditions for Construction" provided by the Owner.
2. Refer to Owner's "RCO and Change Order Process" document for additional information.
3. Refer to Owner's "RFI Process" document for additional information.
1.02 MINOR CHANGES IN THE WORK
A. Project Manager will issue through supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, via Expesite RFI task.
1.03 PROPOSAL REQUESTS
A. Owner-Initiated Proposal Requests: Project Manager will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time via Expesite RFI task. If necessary, the description will include supplemental or revised Drawings and Specifications.
1. Work Change Orders issued by Project Manager are not instructions either to stop work in progress or to execute the proposed change.
2. Within time specified in Owner's process document, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
a. Include 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. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
c. Include costs of labor and supervision directly attributable to the change.
d. Include 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. Submit RCO via Expesite Change Order section.
B. Contractor-Initiated Work Change orders: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Project Manager.
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.
2. Include 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.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include 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.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Submit RCO via Expesite Change Order section.
1.04 CHANGE ORDER PROCEDURES
A. Refer to Section 10 of "Owners Standard General Conditions for Construction" in the contract documents during construction.

SECTION 01 2900 - PAYMENT PROCEDURES

PART 1 GENERAL
1.01 SUMMARY
A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
B. Related Requirements:
1. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
2. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.
3. Section 8 "Progress & Final Payments" in "Owners Standard General Conditions for Construction"
4. Owner's "GC Payment Process" document.
1.02 SCHEDULE OF VALUES
A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule. Use owners approved form.
1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
a. Application for Payment forms with continuation sheets.
b. Submittal schedule.
c. Items required to be indicated as separate activities in Contractor's construction schedule.
2. Submit the schedule of values to Project Manager at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
B. Format and Content: Use owners provided schedule of values.
1.03 APPLICATIONS FOR PAYMENT
A. Refer to section 8 "Progress & Final Payments" in "Owners Standard General Conditions for Construction

SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL
1.01 SUMMARY
A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
1. Coordination drawings.
2. Requests for Clarification (RFC)
3. Requests for Information (RFI)
4. Site Visits
5. Site Communication Report (SCR)
6. Action Items
7. Submittals
B. Related Requirements:
1. Section 011200 "Contract Summary" for a description of the division of work among separate contracts and responsibility for coordination activities not in this Section.
2. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Refer to procedures indicated in the "Owners Standard General Conditions for Construction" provided by the owner.
4. Owner's "RFI-RFC Process Document"
5. Owner's "SCR Process Document"
6. Owner's "Expesite File Structure" document
7. Owner's "GC Sub-Contractor List" template
1.02 DEFINITIONS
A. RFC: Request from Owner, Project Manager, or Contractor seeking information required by or clarifications of the Contract Documents prior to bid award. Also includes Owner directed changes to the construction documents.
B. RFI: Request from Owner, Project Manager, or contractor seeking information required by or clarifications of the Contract Documents after bid award. Also includes Owner directed changes to the construction documents.
C. SCR: Notification from Owner or contractor communicating issues with delivery, quality and quantity of Owner Supplied Materials.
1.03 INFORMATIONAL SUBMITTALS
A. Subcontractor List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Refer to Section 5 of the "Owners Standard General Conditions for Construction" document for full details.
1.04 GENERAL COORDINATION PROCEDURES
A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.
B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other sub-contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Delivery and processing of submittals.
4. Progress meetings.
5. Project closeout activities.
6. Startup and adjustment of systems.
1.05 REQUESTS FOR CLARIFICATION (RFCS)
A. General: Immediately upon discovery of the need for additional information or interpretation of the Contract Documents prior to bid completion, Contractor shall prepare and submit an RFC to the Owner's Procurement Manager.
1. Owner will only accept RFCs submitted by bidding General Contractors and Owner Suppliers. Owner will return RFCs submitted by other entities controlled by Contractor with no response.
2. Coordinate and submit RFCs in a prompt manner to avoid delays in Contractor's bid submittal.
3. RFCs are only used during the open bid process. Once bid is complete and contract is awarded, clarifications are managed through the RFI process.
B. Bidding General Contractors and Owner Suppliers are to submit RFCs per the Owner's process.
C. The deadline to submit an RFC is outlined in the bid invitation and Owner's process documents.
D. All RFCs must reference an index of applicable drawings and any relevant detail(s). The RFC email subject line should be labeled by Store # > mall/center name> RFC title/description. The RFC document should be titled the same as the subject. The email should have the RFC question copied and pasted into the body of the email.
E. The Procurement Manager will review each RFC to ensure completeness and number the RFC. The Procurement Manager will assign a number to each new RFC and will also maintain an RFC log for each project which will track RFC submissions and responses.
F. The Procurement Manager will determine who is responsible for answering each RFC within 12 hours of receipt. An email from the Procurement Manager will be sent confirming receipt of the RFC.
G. All RFCs must be responded to within 24 hours. If an RFC cannot be answered within 24 hours the distribution list must be notified via email.
H. Upon receipt of each RFC answer, the Procurement Manager will update the RFC Log and post the response to Expesite Bid Portal.
I. All RFCs that require drawing changes will be included in the construction revision.
J. Bidding GCs and Suppliers are to refer to the final RFC number incorporated in their bid on the quote
1.06 REQUESTS FOR INFORMATION (RFIS)
A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents after bid award, Contractor shall prepare and submit an RFI in the form specified on the website (www.expesite.com/website/) to the Project Manager.
1. Owner will only accept RFIs submitted by General Contractors and Owner Suppliers. Owner will return RFIs submitted by other entities controlled by Contractor with no response.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
3. RFIs are used from project award through construction competition.
B. Suppliers and the awarded General Contractor (GC) will submit Requests for Information (RFIs) using (www.expesite.com/website/) to the Project Manager using the project tasks module. Expesite will automatically assign the RFI numbers and distribute to the appropriate parties.
C. All RFIs must reference an index of applicable drawings and any relevant detail(s). The RFI should be labeled by Date > Store # > mall/center name> RFI title/description. The RFI subject line should be labeled as RFI Title/ Description. The RFI category should be selected from the pull down menu.
D. All RFIs must be responded to within 24 hours. If an RFI cannot be answered within 24 hours the distribution list must be notified.
E. The GC will maintain copies of all RFIs on site as part of the building documentation and will track them on the weekly report.
F. The Project Manager will maintain the official RFI Log and keep copies of all RFIs and responses.
G. RFIs that cause changes to the drawings should be reflected in the record drawings or a Field Directive.
1.07 FIELD DIRECTIVE (ISSUED FROM OWNER IN THE FORM OF AN RFI)
A. The Project Manager and / or Store Designer will issue an RFI field directive if there is a change to the design. This change could be a correction, a hidden field condition, a change to the standards, etc.
B. All Field Directives must be coordinated with Design Engineer, Project Manager, and Store Designer.
C. Field Directive cover sheets will be issued to describe the changes being made to the design and also note the attachments.
D. The format for a Field Directive will be the same as an RFI.
E. All Field Directive Changes will be included in the Contractors Record Drawing set.
F. The Project Manager and / or Store Designer will submit the Field Directive to the team through www.expesite.com/website/ attaching all relevant files.
G. The General Contractor is to keep printed copies of all Field Directives and log on site.
H. Change Orders due to the Field Directive should be noted with the Field Directive Number and Subject Heading.
1.08 PROJECT MEETINGS
A. See Section 4 "Contractor" from "Owners Standard General Conditions for Construction" for project meeting procedures.

SECTION 01 3200 - 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. Weekly construction reports.
3. Weekly construction photos.
B. Related Requirements:
1. Section 011200 "Contract Summary" for preparing a combined Contractor's construction schedule.
2. Section 7 "Schedule" in the "Owners Standard General Conditions for Construction"
3. Owner's project specific construction schedule
4. Owner's "Weekly Report Template"
1.02 INFORMATIONAL SUBMITTALS
A. Conform with Section 013300 - Submittal Procedures
B. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
C. Contractor's Weekly Construction Report: Summary and photos of construction progress from each week of the construction duration.
1.03 COORDINATION
A. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.
PART 2 PRODUCTS
2.01 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL
A. See Section 7 "Schedule" in the "Owners Standard General Conditions for Construction" for Scheduling requirements, use below as a guideline.
B. Time Frame: Extend schedule from date established for commencement of the Work 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.
C. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
1. 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.
2. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Construction Manager's administrative procedures necessary for certification of Substantial Completion.
3. Punch List and Final Completion: As identified in Owner's GC Guide Book.
D. 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. Use of premises restrictions.
E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.
F. Coordinate with Owner's Construction Schedule, including all OSM delivery and Owner Vendor install milestones.

SECTION 01 3300 - SUBMITTAL PROCEDURES

PART 1 GENERAL
1.01 SUMMARY
A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
B. Related Requirements:
1. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
2. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
3. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
4. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.
5. See Section 4.11 and 4.12 and all related subsections in the "Owners Standard General Conditions for Construction"
1.02 DEFINITIONS
A. Action Submittals: Written and graphic information and physical samples that require Project Manager's responsive action.
B. Informational Submittals: Written and graphic information and physical samples that do not require Project Manager's responsive action. Submittals may be rejected for not complying with requirements.
1.03 ACTION SUBMITTALS
A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Project Manager and additional time for handling and reviewing submittals required by those corrections.
1.04 SUBMITTAL ADMINISTRATIVE REQUIREMENTS
A. Architect's Digital Data Files: Electronic copies of digital data files of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
1. Digital data drawing files will be available for download from the Expesite projects folder, or by specific request to the Architect of Record of the Contract Drawings for use in preparing Shop Drawings and Project Record drawings.
a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
B. Coordination: See Section 4.11 and 4.12 and all related subsections in the "Owners Standard General Conditions for Construction" for submittal process.
C. Electronic Submittals: See Section 4.11 and 4.12 and all related subsections in the "Owners Standard General Conditions for Construction" for submittal process.
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Construction Manager.
3. Transmittal Form for Electronic Submittals: Use electronic forms provided on the Owners website at www.expesite.com/website/
D. Options: Identify options requiring selection by Owner.
E. Deviations: Identify deviations from the Contract Documents on submittals.
F. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Construction Manager's action stamp.
G. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
H. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Construction Manager's action stamp.
PART 2 PRODUCTS
2.01 SUBMITTAL PROCEDURES
A. General Submittal Procedure Requirements:
1. Post electronic submittals as PDF electronic files as directed by owner specifically established for Project.
a. Project Manager will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
2. Submit electronic submittals via www.expesite.com/website/ as PDF electronic files.
a. Project Manager will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
B. Product Data: See Section 4.11 and 4.12 and all related subsections in the "Owners Standard General Conditions for Construction" for submittal process.
C. Shop Drawings: See Section 4.11 and 4.12 and all related subsections in the "Owners Standard General Conditions for Construction" for submittal process.
D. Samples: See Section 4.11 and 4.12 and all related subsections in the "Owners Standard General Conditions for Construction" for submittal process.
E. Coordination Drawings Submittals: Comply with requirements specified in Section 013100 "Project Management and Coordination."
F. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."
G. Application for Payment and Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures.
H. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."
I. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
J. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."
K. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Architects and Owners, and other information specified.
L. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
M. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
N. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
O. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
P. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
Q. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
R. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
S. Schedule of Tests and Inspections: Comply with requirements specified in Section 014000 "Quality Requirements."
T. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
U. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
V. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
W. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
2.02 DELEGATED-DESIGN SERVICES
A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Project Manager.
B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.
2.03 SUBMITTAL REVIEW PROCESS
A. The contractor is required to submit all applicable submittals one week prior to construction start. If the material/ work has a longer lead time, it is the contractor's responsibility to start the process earlier.
B. All submittals are required to be submitted via Expesite. The contractor will need to create a "New Submittal" within the "Tasks" area of the specific project, assign the submittal to the Project Manager, and notify the RFI group.
C. A&F will review the submittal within one week and provide approval and/ or comments as necessary.
2.04 SUBMITTAL LIST
A. The following list is not all inclusive and other submittals may need to be submitted. The list that follows is a base list and not all may apply.
B. Submittal List:
1. Any substitutions to materials as specified in the drawings
2. Structural work
3. Drawings and specifications on required fire alarm and sprinkler work
4. Mock up any special conditions that are not brand standard
5. Stair drawings (structural review)
6. Stair and associated railings including details for stair pans for glass treads (aesthetic review)
7. Storefront glazing/ system and associated framing
8. Slab moisture survey
9. Slab leveling survey
PART 3 EXECUTION
3.01 CONTRACTOR'S REVIEW
A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Construction Manager.
B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."
C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.02 CONSTRUCTION MANAGER'S ACTION
A. General: Project Manager will not review submittals that do not bear Contractor's approval stamp and will return them without action.
B. Action Submittals: Project Manager will review each submittal, make marks to indicate corrections or revisions required, and return it. Construction Manager will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
C. Informational Submittals: Project Manager will review each submittal and will not return it, or will return it if it does not comply with requirements. Construction Manager will forward each submittal to appropriate party.
D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

SECTION 01 4000 - QUALITY REQUIREMENTS

PART 1 GENERAL
1.01 SUMMARY
A. Section includes administrative and procedural requirements for quality assurance and quality control.
B. 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. 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.
2. Requirements for Contractor to provide quality-assurance and -control services required by Owner, Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.
3. Specific test and inspection requirements are not specified in this Section.
4. See Section 11 "Quality Control" in the "Owner's Standard General Conditions for Construction".
1.02 DEFINITIONS
A. 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.
B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Construction Manager.
C. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
D. 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, to establish product performance and compliance with specified requirements.
E. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
H. 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. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
I. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
1.03 CONFLICTING REQUIREMENTS
A. Referenced Standards: 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. Refer conflicting requirements that are different, but apparently equal, to Construction Manager for a 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 Construction Manager for a decision before proceeding.
1.04 INFORMATIONAL SUBMITTALS
A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
1. Seismic-force-resisting system or designated seismic system.
2. Main wind-force-resisting system or a wind-resisting component.
B. Testing Agency Qualifications: 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.
1.05 REPORTS AND DOCUMENTS
A. Test and Inspection Reports: See Section 11 "Quality Control" subsection 11.3 "Tests" in the "Owners Standard General Conditions for Construction".
B. 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.
1.06 QUALITY ASSURANCE
A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
B. 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.
C. 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.
D. 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.
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 products that are similar in material, design, and extent to those indicated for this Project.
F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
G. 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 329; 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.
H. Manufacturer's Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
1. Contractor responsibilities include the following:
a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. When testing is complete, remove test specimens, assemblies, do not reuse products on Project.
2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Construction Manager, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
1.07 QUALITY CONTROL
A. Refer to Section 11 "Standards of Quality" in the Owners Standard General Conditions for Construction.
B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. 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 manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.
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: Refer to requirements in section 11.3 "Tests" in the Owners Standard General Conditions for Construction
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.
1.08 GUARANTEES
A. Guarantees:
1. The contractor shall Guarantee all materials and work provided under this contract and shall make good, repair or replace at contractor's expense, any defective work, material, or equipment which may be discovered within a period of 12 months from the date of final completion (in writing) of the installation by Owners construction manager/ engineering manager. Extended warranties are specified with individual equipment.
2. Owner shall provide a complete 12-month warranty for all parts on equipment provided by Owner and Owner's vendors. The contractor shall not bear additional warranties beyond a complete working system and as such no additional monies should be included in the bid.
PART 3 EXECUTION
2.01 REPAIR AND PROTECTION
A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
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.

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MEMORIAL CITY MALL
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No.:	260348
Drawn By:	CJS
Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

SPECIFICATIONS
01 1000 - 01 4000

A0.01

SECTION 01 4200 - REFERENCES

PART 1 GENERAL

1.01 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.
B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
H. "Provide": Furnish and install, complete and ready for the intended use.
I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.02 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
   1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.03 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."
B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities referenced within each specification.

SECTION 01 6000 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
B. Conform to the requirements indicated in "Owners Standard General Conditions for Construction".

1.02 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
   1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
   2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
   3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

1.03 ACTION SUBMITTALS

A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
   1. Owners Action: If necessary, Owner will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Owner will notify Contractor through Construction Manager of approval or rejection of proposed comparable product request.
      a. Form of Approval: As specified in Section 013300 "Submittal Procedures."

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
B. Delivery and Handling:
   1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
   2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
   3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
   4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
C. Storage:
   1. Store products to allow for inspection and measurement of quantity or counting of units.
   2. Store materials in a manner that will not endanger Project structure.
   3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
   4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
   5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
   6. Protect stored products from damage and liquids from freezing.

1.05 PRODUCT WARRANTIES AND GUARANTEES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
   1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
   2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
   1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
   2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
   3. Refer to other Sections for specific content requirements and particular requirements for submitting special warranties.
C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."
D. Guarantees:
   1. The Contractor shall Guarantee all materials and work provided under this contract and shall make good, repair or replace at contractor's expense, any defective work, material, or equipment which may be discovered within a period of 12 months from the date of substantial completion (in writing) of the installation by Owners Construction Manager/ Engineering Manager. Extended warranties are specified with individual equipment.
   2. Owner shall provide a complete 12-month warranty for all parts on equipment provided by Owner and Owner's vendors. The contractor shall not bear additional warranties beyond a complete working system and as such no additional monies should be included in the bid.

PART 2 PRODUCTS

2.01 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
   1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
   2. 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.
   3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
   4. Where products are accompanied by the term "as selected," Owner will make selection.
   5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
B. Product Selection Procedures:
   1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
   2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
   3. Products:
      a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
      b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
   4. Manufacturers:
      a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
      b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
C. Visual Selection Specification: Where Specifications include the phrase "as selected by Owner from manufacturer's full range" or similar phrase, select a product that complies with requirements. Owner will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.02 COMPARABLE PRODUCTS

A. Conditions for Consideration: Owner will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Owner may return requests without action, except to record noncompliance with these requirements:
   1. Evidence that the proposed product does not require revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
   2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
   3. Evidence that proposed product provides specified warranty.
   4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and Owners, if requested.
   5. Samples, if requested.

SECTION 01 7300 - EXECUTION

PART 1 GENERAL

1.01 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
   1. Construction layout.
   2. Field engineering and surveying.
   3. Installation of the Work.
   4. Cutting and patching.
   5. Coordination of Owner-installed products.
   6. Progress cleaning.
   7. Starting and adjusting.
   8. Protection of installed construction.
B. Related Requirements:
   1. Section 011000 "Summary" for limits on use of Project site.
   2. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
   3. See "Owners Standard General Conditions for Construction".

1.02 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements. Conform to the requirements indicated in Section 4.14 "Cutting and Patching " in "Owners Standard General Conditions for Construction".
   1. Structural Elements: When cutting and patching structural elements, notify Owner/Architect of locations and details of cutting and await directions from Owner/ Architect before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
   2. 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.
   3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
   4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Owner's/ Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 PRODUCTS

2.01 MATERIALS

A. General: Comply with requirements specified in other Sections.
B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
   1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Owner/ Architect for the visual and functional performance of in-place materials.

PART 3 EXECUTION

3.01 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
   1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
   2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
   1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
   2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
   3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.02 PREPARATION

A. Existing Utility Information: Furnish information to local utility and Construction Manager that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Owner according to requirements in Section 013100 "Project Management and Coordination."
E. Hot work (on site welding): Verify with Construction Manager and Landlord that a hot work permit is required. If required, obtain a hot work permit from the governing entity of the facility before any onsite hot work is performed.

3.03 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey, Lease Outline Drawing (LOD) and existing benchmarks. If discrepancies are discovered, notify Construction Manager promptly.

3.04 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
   1. Make vertical work plumb and make horizontal work level.
   2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
   3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
   1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Owner/ Architect.
   2. Allow for building movement, including thermal expansion and contraction.
   3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.05 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
   1. Cut in-place 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.
B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
C. Temporary Support: Provide temporary support of work to be cut.
D. Protection: Protect in-place 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. Adjacent Occupied Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
G. Cutting: Cut in-place 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 neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
   2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
   3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
   4. 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.
   5. Proceed with patching after construction operations requiring cutting are complete.
H. 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 practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
   1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical 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 minimize 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 in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
   4. Ceilings: Patch, repair, or rehang in-place 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 weather tight condition and ensures thermal and moisture integrity of building enclosure.
I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.06 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
   1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
   2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
   3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
B. Site: Maintain Project site free of waste materials and debris.
C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
   1. Remove liquid spills promptly.
   2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.
H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.07 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements"

3.08 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
B. Comply with manufacturer's written instructions for temperature and relative humidity.

SECTION 01 7419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for the following:
   1. Salvaging nonhazardous demolition and construction waste.
   2. Disposing of nonhazardous demolition and construction waste.
B. Related Requirements:
   1. Section 024119 "Selective Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements.

1.02 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
D. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
E. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work:
   1. Clean salvaged items.
   2. Pack or crate items after cleaning. Identify contents of containers.
   3. Store items in a secure area until installation.
   4. Protect items from damage during transport and storage.
   5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.
B. Salvaged Items for Sale: Not permitted on Project site.
C. Salvaged Items for Owner's Use:
   1. Clean salvaged items.
   2. Pack or crate items after cleaning. Identify contents of containers.
   3. Store items in a secure area until delivery to Owner.
   4. Transport items to Owner's storage area designated by Construction Manager.
   5. Protect items from damage during transport and storage.

3.02 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, refer to mall/landlord criteria manual for disposal requirements. Remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
   1. Except as otherwise specified, do not allow waste materials to accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
B. Burning: Do not burn waste materials.

SECTION 01 7700 - CLOSEOUT PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Substantial Completion procedures.
   2. Final completion procedures.
   3. Warranties.
   4. Final cleaning.
   5. Repair of the Work.
B. Related Requirements:
   1. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
   2. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
   3. Section 017900 "Demonstration and Training" for requirements for instructing Owner's personnel.
   4. See Section 8 "Progress and Final Payments" in the Owners General Conditions for Construction document
   5. Owner's "Construction Project Close-Out Guide" document

1.02 ACTION SUBMITTALS

A. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
B. Certified List of Incomplete Items: Final submittal at Final Completion.

1.03 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.
B. Certificate of Insurance: For continuing coverage.
C. Field Report: For pest control inspection.

1.04 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.05 SUBSTANTIAL COMPLETION PROCEDURES

A. See Section 8.7 "Substantial Completion" in the "Owners General Conditions for Construction" document.

1.06 FINAL COMPLETION PROCEDURES

A. Procedures: Complete the following:
   1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
   2. Certified List of Incomplete Items: Submit certified copy of Owner's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Owner. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
   3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
   4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
   5. Provide documentation as prescribed in the Owner's construction agreement section 6 for final payment.
B. Final Inspection: Coordinate with Project Manager and adhere to all requirements in the construction contract and "Owners Standard General conditions for construction" document.
C. Refer to Owner's Construction Project Closeout document for timing and schedule of all required closeout requirements.

1.07 ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
   1. Organize list of spaces in sequential order.
   2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
   3. Submit list of incomplete items in the following format:
      a. PDF electronic file. Project Manager will return annotated copy.

1.08 SUBMITTAL OF PROJECT WARRANTIES AND GUARANTEES

A. Time of Submittal: Submit written warranties for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
   1. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
C. Guarantees: Guarantees shall become valid and operative upon issuance and acceptance of work as accepted by A&F and/ or Hollister. Guarantees shall not apply to work where damage is a result of abuse or neglect by A&F or Hollister.
D. All clauses in Section 11.2 "Warranties" of the "Owners Standard General Conditions for Construction" apply.

PART 2 PRODUCTS

2.01 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 EXECUTION

3.01 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to dust free, dirt free, "Sparkling Clean" condition. Comply with manufacturer's written instructions for all cleaning.
   1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
      a. Remove tools, construction equipment, machinery, and surplus material from Project site.
      b. Remove snow and ice to provide safe access to building.
      c. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
      d. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
      e. Sweep concrete floors broom clean in unoccupied spaces.
      f. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
      g. Clean transparent materials, including mirrors and glass in doors and windows. Inside and outside of space. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
      h. Remove labels that are not permanent.
      i. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
      j. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
      k. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
      l. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
      m. Clean presentation items, props and trade fixtures.
      n. Clean all signs.
      o. Clean all flooring per manufacturer's instructions.
      p. Leave Project clean and ready for occupancy.

3.02 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
B. See Section 11.5 "Correcting Defective Work" and all sub-sections in the Owners Standard General Conditions for Construction document.
C. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
   1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
   2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.
      a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
   3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
   4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

SECTION 01 7839 - PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:
   1. Record Drawings (includes specifications Record Specifications.
B. Related Requirements:
   1. Owner's "Expesite File Structure" document
   2. Owner's "Construction Project Closeout"

1.02 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:
   1. Number of Copies: Submit copies of Record Drawings as follows:
      a. Submit PDF electronic files of scanned record prints and one set of file prints.
      b. Construction Manager will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

PART 2 PRODUCTS

2.01 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised Drawings as modifications are issued.
   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 provide information for preparation of corresponding 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. Record data as soon as possible after obtaining it.
      c. Record and check the markup before enclosing concealed installations.
      d. See Record Drawings in Electrical, Mechanical, and plumbing sections for more requirements.
   2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
   3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
   4. Note Construction Field Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
B. Record Digital Data Files: Review marked-up record prints with Project Manager. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
   1. Format: PDF.
   2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
   3. Refer instances of uncertainty to Construction Manager for resolution.
C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
   1. Record Prints: Organize record prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
   2. Format: Annotated PDF electronic file.
   3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
   4. Identification: As follows:
      a. Project name.
      b. Date.
      c. Designation "PROJECT RECORD DRAWINGS."
      d. Name of Architect and Construction Manager.
      e. Name of Contractor.
D. Once all documentation is completed and organized, upload to www.expisite.com/website/

2.02 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
B. Format: Submit miscellaneous record submittals as PDF electronic file and one paper copy.

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 revisions to project record documents as they occur; do not wait until end of 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 Construction Manager's reference during normal working hours.

3.02 FINAL SUBMISSION

A. 45 Days after store opening provide a final submission of record documents to www.expiste.com/website including the following:
   1. PDF files of the scanned Record Drawings from the contractor.

SECTION 02 4100 - DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.

1.02 REFERENCE STANDARDS

A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.03 SUBMITTALS

A. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.04 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Company specializing in the type of work required.
   1. Minimum of 5 years of experience.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Comply with applicable requirements of NFPA 241.
   3. Use of explosives is not permitted.
   4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   5. Provide, erect, and maintain temporary barriers and security devices.
   6. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
   7. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   8. Do not close or obstruct roadways or sidewalks without permit.
   9. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
   10. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
B. Do not begin removal until receipt of notification to proceed from Owner.
C. Do not begin removal until built elements to be salvaged or relocated have been removed.
D. Protect existing structures and other elements that are not to be removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.
E. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
F. Hazardous Materials: Comply with 29 CFR 1926 and state and local regulations.

3.02 EXISTING UTILITIES

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
B. Protect existing utilities to remain from damage.
C. Do not disrupt public utilities without permit from authority having jurisdiction.
D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.03 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
B. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.
C. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
   3. Verify that abandoned services serve only abandoned facilities before removal.
   4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
D. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch as specified for patching new work.

3.04 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.
B. Leave site in clean condition, ready for subsequent work.
C. Clean up spillage and wind-blown debris from public and private lands.

SECTION 03 3511 - CONCRETE FLOOR FINISHES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface treatments for concrete floors and slabs.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with concrete floor placement and concrete floor curing.

1.03 SUBMITTALS

A. Product Data: Manufacturer's published data on each finishing product, including information on compatibility of different products and limitations.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's sealed packaging, including application instructions.

1.05FIELD CONDITIONS

A. Maintain light level equivalent to a minimum 200 W light source at 8 feet above the floor surface over each 20 foot square area of floor being finished.
B. Do not finish floors until interior heating and cooling system is operational.
C. Maintain ambient temperature of 50 degrees F minimum.

PART 2 PRODUCTS

2.01 CONCRETE FLOOR FINISH APPLICATIONS

A. Curing and sealing compound: Medium gloss finish.

2.02 SURFACE TREATMENTS

A. Troweling Aid, Densifier and Curing Agent: Liquid reactive colloidal silica-based topical treatment, spray-applied to wet concrete and floated or troweled into the surface.

2.03 COATINGS

A. Penetrating Sealer: Transparent, non-yellowing, water- or solvent-based coating.
   1. Composition: Siliconate.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that floor surfaces are acceptable to receive the work of this section.
B. Verify that flaws in concrete have been patched and joints filled with methods and materials suitable for further finishes.

3.02 GENERAL

A. Apply materials in accordance with manufacturer's instructions.

3.03 COATING APPLICATION

A. Verify that surface is free of previous coatings, sealers, curing compounds, water repellents, laitance, efflorescence, fats, oils, grease, wax, soluble salts, residues from cleaning agents, and other impediments to adhesion.
B. Verify that water vapor emission from concrete and relative humidity in concrete are within limits established by coating manufacturer.
C. Protect adjacent non-coated areas from drips, overflow, and overspray; immediately remove excess material.
D. Apply coatings in accordance with manufacturer's instructions, matching approved mock-ups for color, special effects, sealing and workmanship.

SECTION 03 3543 - POLISHED CONCRETE FINISHING

PART 1 GENERAL

1.01 SUMMARY

A. Section includes polished concrete finishing, including staining and scoring.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with concrete floor placement and concrete floor curing.

1.03 SUBMITTALS

A. Product Data: Manufacturer's published data on each finishing product, including information on compatibility of different products and limitations.
B. Samples: For each type of product requiring color selection.

1.04 QUALITY ASSURANCE

A. Field Sample Panels: After approval of samples, produce field sample panels to demonstrate the approved range of selections made under Sample submittals. Produce a minimum of three sets of full-scale panels, approximately 48 by 48 inches minimum, to demonstrate the expected range of finish, color, and appearance variations.
   1. Locate panels as indicated or, if not indicated, as directed by Construction Manager.
   2. Maintain field sample panels during construction in an undisturbed condition as a standard for judging the completed Work.
   3. Demolish and remove field sample panels when directed.
   4. Field sample panels may become part of the work.
B. Project Conditions:
   1. Maintain work area temperature, humidity, and ventilation within limits recommended by manufacturer of any products used for application.
   2. Job site lighting shall be operational and sufficient light shall be provided for the process.
   3. Contractor shall provide and coordinate all dumpster and waste removal throughout the project.
   4. Existing HVAC return grilles in work area shall be filtered.
   5. Contractors hall not begin grinding or polishing until all dust control measures indicated are installed.
   6. Contractors shall provide power source for all electrical equipment required to complete the project. Contractor shall coordinate with General Contractor regarding generator location, operating times, noise considerations, fuel storage, etc. Generator shall run quietly and exhaust shall be managed to prevent exhaust fumes from entering the parking area or the building through air intakes, grilles, open doors, etc.

PART 2 PRODUCTS

2.01 LIQUID FLOOR TREATMENTS

A. Joint Filler: The Euclid Chemical Company QWIK joint polyurea joint filler.
B. Crack Repair Material: The Euclid Chemical Company Euco 700 epoxy joint filler.
C. Patching Material:
   1. Multiple minor surface defects & irregularities: Hi-Tech TX-3
   2. Featheredge Patches: Ardex SD-P by Ardex Engineered Cements. Self-drying, fast setting concrete underlayment for patches 0"-1" deep with addition of appropriate aggregate to match existing.
   3. Floor Trenches or Patches deeper than 1 ½": Rapid Set Concrete Mix by CTS Cement Manufacturing Corp. Rapid hardening concrete for patches 2"-24".
D. Densifier: Convergent Concrete Technologies, LLC Pentra-Sil (IH) water based, lithium based solution.
E. Stain Inhibiting Sealant: Convergent Concrete Technologies, LLC Pentra-Finish (HG) surface hardener and protective clear coat.
F. Sales Floor Concrete Floor System: National Polishing Systems Inc. Proshine 800 Grit Resin finish with Pro-Shine finish guard or Owner approved equivalent.
G. Back of House Concrete Floor System: L&M Construction Chemicals, Inc. Lumiseal FX.
H. Restroom Concrete Floor System: Eposyshield low VOC premium clear coating with anti-skid additive. Color: clear.
   1. Not applicable with sheet vinyl application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine floor to receive polished concrete floor system.
B. Notify owner of conditions that would adversely affect installation or subsequent use.
C. Do not begin installation until unacceptable conditions are corrected.

3.02 GENERAL

A. Install concrete floor system in accordance with installers instructions at locations indicated on drawings.
B. Aggregate exposure: Small to medium aggregate exposure, @ salt and pepper look.

3.03 SURFACE PREPARATION

A. Protection: protect surrounding areas from the following:
   1. Minimal accumulation of dust from grinding & polishing
   2. Contract with overspray from concrete densifier
   3. Contact with overspray from concrete sealer
B. Surface Preparation: Prepare surfaces in accordance with installer's instructions.
C. Clean Surfaces: Remove dirt, Dust, Debris, Oil Grease, Curing agents, Paint, Coatings, Bond breakers, and other surface contaminants which could adversely affect installation of polished concrete floor system.

3.04 INSTALLATION

A. Sales Floor:
   1. Installation Of Joint Filler:
      a. Clean joint of dirt, debris, coatings, etc.
      b. Install joint filler per manufacturer's instructions.
      c. Shave joint filler flush with floor surface using razor scraper.
   2. Preparation Steps:
      a. Remove any curing agents/ paint/ coatings by grinding with 40 grit metal bonded diamonds.
      b. Remove scratches left by 40 grid metal bonded diamonds by grinding with 80 grit metal bonded diamonds.
      c. Prepare floor for honing by grinding with 50 grid semi-metal bonded diamonds.
   3. Honing Steps:
      a. Start honing the Floor with 100 grid resin bonded diamonds.
      b. Continue honing the floor with 200 grit resin bonded diamonds.
   4. Densifying:
      a. Apply one coat of concrete densifier at a rate of approximately 400-500 SF per gallon making sure to keep wet for 30 minutes.
   5. Polishing (This step applies to Chain stores only, and shall be omitted from the scope for Outlet stores) :
      a. Start polishing with 400 grit resin boned diamonds.
      b. Continue polishing with 800 grid resin bonded diamonds
   6. Stain Inhibiting Sealant:
      a. Apply finish coat of Convergent Pentra Finish (HG) finish guard at a rate of 1500-3000 SF per gallon.
      b. High speed burnish with 3000 grit diamond impregnated poly pad to set the finish guard.
B. Back of House:
   1. Prepare concrete slab by performing a minimum of one step prep grind to remove existing coatings, glue drywall mud, etc.
   2. Scrub floor with auto scrubber to clean slab prior to sealer application.
   3. Apply sealer per Manufacturer's instructions.
   4. Transitions between sales floor and back of house flooring shall be clearly defined under the door.
C. Restrooms:
   1. Not applicable with sheet vinyl application.
   2. Prepare floor slabs by performing a minimum of one step prep grind to remove existing coatings, glue, drywall mud, etc.
   3. Apply coating per manufacturer's instructions.
   4. Transitions between restrooms and back of house shall be clearly defined under door.

3.05 PROTECTION OF CONCRETE FLOOR SURFACE:

A. All trades shall be aware of the need to protect the concrete floor slab throughout the entire construction process - from slab pour to project completion.
B. All equipment shall be diapered to prevent floor surface abrasion and to prevent oils, hydraulic fluids, grease, etc., from contacting the floor surface.
C. Acids and acidic detergents shall not contact the floor surface.
D. Protect the floor surface from cutting oils, primers, solvents, dyes, impact, abrasion, chips, gouges, etc.
E. Pipe cutting machinery shall not be permitted on the concrete floor surface.
F. Steel shall not be placed on the concrete floor to avoid rust stains.
G. All painters shall protect the concrete floor with drop cloths. All paint on the concrete floor shall be immediately removed.
H. All trades shall be informed that the concrete floor shall be protected at all times.

Slab protection materials (ramboard) will be provided and installed by polishing contractor.

HOLLISTER
CALIFORNIA

ABERCROMBIE & FITCH CO.
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ARCHITECTURE • ENGINEERING
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MEMORIAL CITY MALL
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No.:	260348
Drawn By:	CJS
Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

SPECIFICATIONS
01 4200 - 03 3543

A0.02

SECTION 03 5400 - SELF-LEVELING UNDERLAYMENT

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Liquid-applied self-leveling floor underlayment.
1. Use cementitious type at locations requiring leveling.
1.02 REFERENCE STANDARDS
A. ASTM C348 - Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars; 2014.
1.03 SUBMITTALS
A. Product Data: Provide manufacturer's data sheets documenting physical characteristics and product limitations of underlayment materials. Include information on surface preparation and environmental limitations.
1.04 QUALITY ASSURANCE
A. Applicator Qualifications: Company specializing in performing the work of this section, and approved by manufacturer.
1.05 DELIVERY, STORAGE, AND HANDLING
A. Store products in manufacturer's unopened packaging until ready for installation.
B. Keep dry and protect from direct sun exposure, freezing, and ambient temperature greater than 105 degrees F.
1.06 FIELD CONDITIONS
A. Do not install underlayment until floor penetrations and peripheral work are complete.
B. During the curing process, ventilate spaces to remove excess moisture.
PART 2 PRODUCTS
2.01 MATERIALS
A. Cementitious Underlayment: Blended cement mix, that when mixed with water in accordance with manufacturer's directions will produce self-leveling underlayment with the following properties:
1. Compressive Strength: Minimum 4000 pounds per square inch after 28 days, tested per ASTM C109/C109M.
2. Flexural Strength: Minimum 1000 psi after 28 days, tested per ASTM C348.
3. Density: 125 pounds per cubic foot, nominal.
B. Aggregate: Dry, well graded, washed silica aggregate, approximately 1/8 inch in size and acceptable to underlayment manufacturer.
C. Water: Potable and not detrimental to underlayment mix materials.
D. Primer: Manufacturer's recommended type.
E. Joint and Crack Filler: As recommended by manufacturer.
2.02 MIXING
A. Site mix materials in accordance with manufacturer's instructions.
B. Add aggregate for areas where thickness will exceed 1/2 inch. Mix underlayment and water for at least two minutes before adding aggregate, and continue mixing to assure that aggregate has been thoroughly coated.
C. Mix to self-leveling consistency without over-watering.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that substrate surfaces are clean, dry, unfrozen, do not contain petroleum byproducts, or other compounds detrimental to underlayment material bond to substrate.
3.02 PREPARATION
A. Concrete: Mechanically prepare steel troweled concrete to create a textured surface necessary to achieve the best bond; acceptable methods include bead blasting and scarifying. Do not use acid etching.
B. Remove substrate surface irregularities. Fill voids and deck joints with filler. Finish smooth.
C. Vacuum clean surfaces.
D. Prime substrate in accordance with manufacturer's instructions. Allow to dry.
E. Close floor openings.
3.03 APPLICATION
A. Install underlayment in accordance with manufacturer's instructions.
B. Place to indicated thickness, with top surface level to 1/8 inch in 10 ft.
C. For final thickness over 1-1/2 inches, place underlayment in layers. Allow initial layer to harden to the point where the material has lost its evaporative moisture. Immediately prime and begin application of the subsequent layer within 24 hours.
D. Place before partition installation.
E. Where additional aggregate has been used in the mix, add a top layer of neat mix (without aggregate), if needed to level and smooth the surface.
F. If a fine, feathered edge is desired, steel trowel the edge after initial set, but before it is completely hard.
3.04 CURING
A. Once underlayment starts to set, prohibit foot traffic until final set has been reached.
B. Air cure in accordance with manufacturer's instructions.
3.05 PROTECTION
A. Protect against direct sunlight, heat, and wind; prevent rapid drying to avoid shrinkage and cracking.
B. Do not permit traffic over unprotected floor underlayment surfaces.

SECTION 03 5450 - LVT UNDERLAYMENT

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Liquid-applied luxury vinyl tile (LVT) underlayment.
1. ALL areas to receive LVT are to receive LVT underlayment.
1.02 SUBMITTALS
A. Do not install underlayment until floor penetrations and peripheral work are complete.
B. During the curing process, ventilate spaces to remove excess moisture.
C. G.C. Shall submit product information to the AnF Proejct Manager for approval.
PART 2 PRODUCTS
3.01
1. After all concrete floor finishes and self-leveling underlayment has been applied G.C. shall retain independent test lab for moisture content meets and has documentation from the independent lab that the floor meets requirements stated above prior to instillation of LVT flooring.
1.04 QUALITY ASSURANCE
A. Applicator Qualifications: Company specializing in performing the work of this section, and approved by manufacturer..
1.05 DELIVERY, STORAGE, AND HANDLING
A. Store products in manufacturer's unopened packaging until ready for installation.
B. Keep dry and protect from direct sun exposure, freezing, and ambient temperature greater than 105 degrees F.
PART 2 PRODUCTS
2.02 MIXING
A. Site mix materials in accordance with manufacturer's instruction.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that substrate surfaces are clean, dry, unfrozen, do not contain petroleum byproducts, or other compounds detrimental to underlayment material bond to substrate.
3.02 PREPARATION
A. Concrete: Mechanically prepare concrete to create a textured surface necessary to achieve the best bond; acceptable methods include bead blasting and scarifying. Do not use acid etching.
B. Remove substrate surface irregularities. Fill voids and deck joints with filler. Finish smooth..
C. Vacuum clean surfaces.
D. Prime substrate in accordance with manufacturer's instructions. Allow to dry.
E. Close floor openings.
3.03 COATING APPLICATION
A. Install underlayment in accordance with manufacturer's instructions.
B. Place as manufacturer recommended indicated thickness.
C. Place before partition installation.
D. After all concrete floor finishes and self-leveling underlayment has been applied G.C. shall retain independent test lab for moisture content meets and has documentation from the independent lab that the floor meets requirements stated above prior to installation of LVT flooring.
3.04 CURING
B. Once underlayment starts to set, prohibit foot traffic until final set has been reached.
C. Air cure in accordance with manufacturer's instructions.
3.05 PROTECTION
A. Protect against direct sunlight, heat, and wind; prevent rapid drying to avoid shrinkage and cracking.
Do not permit traffic over unprotected floor underlayment surfaces.

SECTION 05 5000 - METAL FABRICATIONS

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Shop fabricated steel and aluminum items.
1.02 REFERENCE STANDARDS
A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2014 (2015 Errata).
B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.
C. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.
D. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
E. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2013.
F. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2014 (Editorial 2017).
G. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2014.
H. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.
I. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric); 2014.
J. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.
K. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2012.
L. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015, with Errata (2016).
M. AWS D1.2/D1.2M - Structural Welding Code - Aluminum; 2014, with Errata.
N. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel; 2017.
O. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 1999 (Ed. 2004).
P. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 2002 (Ed. 2004).
Q. SSPC-SP 2 - Hand Tool Cleaning; 1982 (Ed. 2004).
1.03 SUBMITTALS
A. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
1.04 QUALITY ASSURANCE
A. Fabricator Qualifications: A qualified steel fabricator that is accredited by IAS AC172.
PART 2 PRODUCTS
2.01 MATERIALS - STEEL
A. Steel Sections: ASTM A36/A36M.
B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.
C. Plates: ASTM A283/A283M.
D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.
E. Bolts, Nuts, and Washers: ASTM A307, Grade A, plain.
F. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
G. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.
H. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.
2.02 MATERIALS - ALUMINUM
A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.
B. Sheet Aluminum: ASTM B209 (ASTM B209M), 5052 alloy, H32 or H22 temper.
C. Bolts, Nuts, and Washers: Stainless steel.
D. Welding Materials: AWS D1.2/D1.2M; type required for materials being welded.
2.03 FABRICATION
A. Fit and shop assemble items in largest practical sections, for delivery to site.
B. Fabricate items with joints tightly fitted and secured.
C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
D. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.
2.04 FABRICATED ITEMS
A. Ledge Angles, Shelf Angles, Channels, and Plates Not Attached to Structural Framing: For support of metal decking; prime paint finish.
B. Lintels: As detailed; prime paint finish.
2.05 FINISHES - STEEL
A. Prime paint steel items.
1. Exceptions: Galvanize items to be embedded in concrete and items to be embedded in masonry.
2. Exceptions: Do not prime surfaces in direct contact with concrete, where field welding is required, and items to be covered with sprayed fireproofing.
B. Prepare surfaces to be primed in accordance with SSPC-SP2.
C. Prime Painting: One coat.
D. Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements.
2.06 FINISHES - ALUMINUM
A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils thick. Unless otherwise noted on drawings.
B. Apply one coat of bituminous paint to concealed aluminum surfaces in contact with cementitious or dissimilar materials.
2.07 FABRICATION TOLERANCES
A. Squareness: 1/8 inch maximum difference in diagonal measurements.
B. Maximum Offset Between Faces: 1/16 inch.
C. Maximum Misalignment of Adjacent Members: 1/16 inch.
D. Maximum Bow: 1/8 inch in 48 inches.
E. Maximum Deviation From Plane: 1/16 inch in 48 inches.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that field conditions are acceptable and are ready to receive work.
3.02 PREPARATION
A. Clean and strip primed steel items to bare metal and aluminum where site welding is required.
3.03 INSTALLATION
A. Install items plumb and level, accurately fitted, free from distortion or defects.
B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
C. Perform field welding in accordance with AWS D1.1/D1.1M.
D. Obtain approval prior to site cutting or making adjustments not scheduled.
3.04 TOLERANCES
A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
B. Maximum Offset From True Alignment: 1/4 inch.
C. Maximum Out-of-Position: 1/4 inch.

SECTION 06 1000 - ROUGH CARPENTRY

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Sheathing.
B. Roof-mounted curbs.
C. Roofing nailers.
D. Preservative treated wood materials.
E. Fire retardant treated wood materials.
F. Miscellaneous framing and sheathing.
G. Communications and electrical room mounting boards.
H. Concealed wood blocking, nailers, and supports.
I. Miscellaneous wood nailers, furring, and grounds.
1.02 REFERENCE STANDARDS
A. AWC (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings; 2015.
B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.
C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.
D. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2013.
E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2017.
F. AWPA U1 - Use Category System: User Specification for Treated Wood; 2012.
G. PS 2 - Performance Standard for Wood-Based Structural-Use Panels; 2010.
H. PS 20 - American Softwood Lumber Standard; 2010.
1.03 SUBMITTALS
A. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.
1.04 DELIVERY, STORAGE, AND HANDLING
A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, or installation.
PART 2 PRODUCTS
2.01 GENERAL REQUIREMENTS
A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
B. Lumber fabricated from old growth timber is not permitted.
2.02 DIMENSION LUMBER
A. Sizes: Nominal sizes as indicated on drawings, S4S.
B. Moisture Content: S-dry or MC19.
C. Miscellaneous Blocking, Nailers, and Furring:
1. Lumber: S4S, No. 2 or Standard Grade.
2. Boards: Standard or No. 3.
2.03 CONSTRUCTION PANELS
A. Wall Sheathing: Any PS 2 type.
1. Bond Classification: Exterior.
2. Grade: Structural I Sheathing.
3. Span Rating: 24.
4. Performance Category: 5/8 PERF CAT.
B. Wall Sheathing: Glass mat faced gypsum, ASTM C1177/C1177M, 5/8 inch Type X fire resistant.
1. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly.
C. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.
2.04 ACCESSORIES
A. Fasteners and Anchors:
1. Metal and Finish: Hot-dipped galvanized steel per ASTM A 153/A 153M for exterior, roof related and preservative-treated wood locations, unfinished steel elsewhere.
B. Die-Stamped Connectors: Hot dipped galvanized steel, sized to suit framing conditions.
1. For contact with preservative treated wood in exposed locations, provide minimum G185 galvanizing complying with ASTM A653/A653M.
2.05 FACTORY WOOD TREATMENT
A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.
B. Fire Retardant Treatment:
1. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
2. Interior Type A: AWPA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
b. Treat rough carpentry items as indicated .
c. Do not use treated wood in applications exposed to weather or where the wood may become wet.
C. Preservative Treatment:
1. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
b. Treat lumber in contact with roofing, flashing, or waterproofing.
c. Treat lumber in contact with masonry or concrete.
d. Treat lumber less than 18 inches above grade.
1) Treat lumber in other locations as indicated.
2. Preservative Pressure Treatment of Plywood Above Grade: AWPA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative.
a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
b. Treat plywood in contact with roofing, flashing, or waterproofing.
c. Treat plywood in contact with masonry or concrete.
d. Treat plywood less than 18 inches above grade.
e. Treat plywood in other locations as indicated.
PART 3 EXECUTION
3.01 INSTALLATION - GENERAL
A. Select material sizes to minimize waste.
B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.
3.02 FRAMING INSTALLATION
A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.
C. Install structural members full length without splices unless otherwise specifically detailed.
D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AWC (WFCM) Wood Frame Construction Manual.
E. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed.
F. Frame wall openings with two or more studs at each jamb; support headers on cripple studs.
3.03 BLOCKING, NAILERS, AND SUPPORTS
A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.
C. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
D. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
E. Provide the following specific non-structural framing and blocking:
1. Handrails.
2. Grab bars.
3. Toilet room accessories.
3.04 ROOF-RELATED CARPENTRY
A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.
B. Provide wood curb at all roof openings except where prefabricated curbs are specified and where specifically indicated otherwise. Form corners by alternating lapping side members.
3.05 INSTALLATION OF CONSTRUCTION PANELS
A. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails, screws, or staples.
B. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.
1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
3. Install adjacent boards without gaps.
3.06 SITE APPLIED WOOD TREATMENT
A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions.
B. Allow preservative to dry prior to erecting members.
3.07 TOLERANCES
A. Variation from Plane (Other than Floors): 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.
3.08 CLEANING
A. Waste Disposal: Comply with the requirements of Section 01 7419 - Construction Waste Management and Disposal.
1. Comply with applicable regulations.
2. Do not burn scrap on project site.
3. Do not burn scraps that have been pressure treated.
4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or @waste-to-energy"facilities.
B. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.
C. Prevent sawdust and wood shavings from entering the storm drainage system.

SECTION 06 2000 - FINISH CARPENTRY

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Finish carpentry items.
B. Wood door frames, glazed frames.
C. Wood standing and running trim.
1.02 REFERENCE STANDARDS
A. ANSI A135.4 - American National Standard for Basic Hardboard; 2004.
B. ANSI A208.1 - American National Standard for Particleboard; 2009.
C. ANSI A208.2 - American National Standard for Medium Density Fiberboard for Interior Use; 2002.
D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2017.
E. AWI (QCP) - Quality Certification Program; current edition at www.awiqcp.org.
F. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.
G. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.0; 2016.
H. AWPA U1 - Use Category System: User Specification for Treated Wood; 2012.
I. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2009.
J. PS 1 - Structural Plywood; 2009.
1.03 ADMINISTRATIVE REQUIREMENTS
A. Coordinate the work with plumbing rough-in, electrical rough-in, and installation of associated and adjacent components.
B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.
1.04 SUBMITTALS
A. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
1. Provide the information required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).
2. Include certification program label.
1.05 QUALITY ASSURANCE
A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of experience.
1. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.
B. Quality Certification:
1. Comply with AWI (QCP) woodwork association quality certification service/program in accordance with requirements for work specified in this section: www.awiqcp.org/#sle.
1.06 DELIVERY, STORAGE, AND HANDLING
A. Protect work from moisture damage.
PART 2 PRODUCTS
2.01 FINISH CARPENTRY ITEMS
A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
B. Surface Burning Characteristics: Provide materials having fire and smoke properties as required by applicable code.
2.02 SHEET MATERIALS
A. Softwood Plywood, Not Exposed to View: Any face species, medium density fiberboard core; PS 1 Grade A-B, glue type as recommended for application.
B. Softwood Plywood, Exposed to View: Face species as indicated, plain sawn, medium density fiberboard core; PS 1 Grade A-B, glue type as recommended for application.
C. Particleboard: ANSI A208.1; Composed of wood chips, sawdust, or flakes of medium density, made with waterproof resin binders; of grade to suit application; sanded faces.
D. Medium-Density Fiberboard (MDF): ANSI A208.2, Grade 130.
E. Medium-Density Overlay (MDO): Pressed resin-impregnated paper overlays applied to suitable core.
2.03 FASTENINGS
A. Adhesive for Purposes Other Than Laminate Installation: Suitable for the purpose; not containing formaldehyde or other volatile organic compounds.
B. Fasteners: Of size and type to suit application; use corrosion resistant fasteners for exterior locations.
2.04 ACCESSORIES
A. Lumber for Shimming and Blocking: Softwood lumber of any appropriate species.
B. Primer: Alkyd primer sealer.
C. Wood Filler: Solvent base, tinted to match surface finish color.
2.05 WOOD TREATMENT
A. Factory-Treated Lumber: Comply with requirements of AWPA U1 - Use Category System for pressure impregnated wood treatments determined by use categories, expected service conditions, and specific applications.
B. Fire Retardant Treatment (FR-S Type): Chemically treated and pressure impregnated; capable of providing flame spread index of 25, maximum, and smoke developed index of 450, maximum, when tested in accordance with ASTM E84.
C. Provide identification on fire retardant treated material.
D. Redry wood after pressure treatment to maximum 15 percent moisture content.
2.06 FABRICATION
A. Shop assemble work for delivery to site, permitting passage through building openings.
B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.
2.07 SHOP FINISHING
A. Sand work smooth and set exposed nails and screws.
B. Apply wood filler in exposed nail and screw indentations.
C. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and is of type recommended for the applicable finish.
D. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
1. Transparent:
a. System - 12, Polyurethane, Water-based.
b. Stain: As indicated on drawings.
c. Sheen: As indicated on drawings.
2. Opaque:
a. System - 4, Latex Acrylic, Water-based.
b. Color: As indicated on drawings.
c. Sheen: As indicated on drawings.
E. Back prime woodwork items to be field finished, prior to installation.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify adequacy of backing and support framing.
B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.
3.02 INSTALLATION
A. Install work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
B. Set and secure materials and components in place, plumb and level.
C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.
D. Install trim with appropriate mechanical fasteners.
E. Install panels with concealed fasteners.
3.03 PREPARATION FOR SITE FINISHING
A. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.
B. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.
3.04 TOLERANCES
A. Maximum Variation from True Position: 1/16 inch.
B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

SECTION 06 8316 - FIBERGLASS REINFORCED PANELING

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Fiberglass reinforced plastic panels.
B. Trim.
1.02 REFERENCE STANDARDS
A. ASTM D5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels; 2017.
B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2017.
1.03 SUBMITTALS
A. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
B. Samples: Submit two samples 6 by 6 inch in size illustrating material and surface design of panels.
1.04 DELIVERY, STORAGE, AND HANDLING
A. Store panels flat, indoors, on a clean, dry surface. Remove packaging and allow panels to acclimate to room temperature for 48 hours prior to installation.
PART 2 PRODUCTS
2.01 PANEL SYSTEMS
A. Wall Panels:
1. Panel Size: 4 by 8 feet.
2. Panel Thickness: 0.09 inch.
3. Surface Design: Embossed.
4. Color: As indicated on drawings.
5. Attachment Method: Adhesive only, with trim and sealant in joints.
2.02 MATERIALS
A. Panels: Fiberglass reinforced plastic (FRP), complying with ASTM D5319.
1. Surface Burning Characteristics: Maximum flame spread index of 25 and smoke developed index of 450; when system tested in accordance with ASTM E84.
B. Trim: Vinyl; color coordinating with panel.
C. Adhesive: Type recommended by panel manufacturer.
D. Sealant: Type recommended by panel manufacturer; white.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify existing conditions and substrate flatness before starting work.
B. Verify that substrate conditions are ready to receive the work of this section.
3.02 INSTALLATION - WALLS
A. Install panels in accordance with manufacturer's instructions.
B. Cut and drill panels with carbide tipped saw blades, drill bits, or snips.
C. Apply adhesive to the back side of the panel using trowel as recommended by adhesive manufacturer.
D. Apply panels to wall with seams plumb and pattern aligned with adjoining panels.
E. Install panels with manufacturer's recommended gap for panel field and corner joints.
F. Place trim on panel before fastening edges, as required.
G. Fill channels in trim with sealant before attaching to panel.
H. Install trim with adhesive and screws or nails, as required.
I. Seal gaps at floor, ceiling, and between panels with applicable sealant to prevent moisture intrusion.
Remove excess sealant after paneling is installed and prior to curing.

SECTION 07 2423 - CEMENT BOARD MD FINISH SYSTEM SF-41 (INTERIOR APPLICATION ONLY -#104ST DRYVIT SYSTEMS, INC. - DS191)

1.01 SUBMITTALS
A. Submittal requirements by the contractor are to be indicated, including:
1. FINISH SAMPLE 12" X 12" INDICATING COLOR AND TEXTURE FOR APPROVAL BY ANF PROJECT MANAGER.
1.02 DESCRIPTION
A. Dryvit base coat with reinforcing mesh, and finish applied over an exterior cement board.
2.01 MATERIALS
A. Exterior Cement Board (by others) and cement board fasteners (by others) are not components of the Dryvit finish system.
B. Dryvit Base Coat
1. Cementitious: A liquid polymer-based material, which is field mixed in a 1:1 ratio by weight with Portland Cement.
a. Shall be Genesis®.
2. Ready mixed: A dry blend cementitious, polymer-based product, field mixed with water.
a. Shall be Genesis® DM.
C. Reinforcing Mesh(es): Shall be a balanced open weave, glass fiber fabric treated for compatibility with other system materials.
1. Dryvit Detail Mesh: 4.3 oz/yd^2(146 g/m^2), 9 1/2 in (241 mm) wide. Required at all exterior cement board joints and inside and outside corners..
2. Dryvit Standard Mesh: 4.3 oz/yd^2(146 g/m^2). Shall be installed over the entire exterior cement board face.
D. Dryvit Finish: Shall be the type, color and texture as selected by the owner/architect and shall be one or more of the following:
1. Standard DPR (Dirt Pickup Resistance): Water based, acrylic coatings with integral color and texture and formulated with DPR chemistry:
a. Quarzputz® DPR: Open-texture pattern, color #104ST Dover Sky

SECTION 07 8400 - FIRESTOPPING

1.01 SUBMITTALS
A. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.
B. Product Data: Provide data on product characteristics, performance ratings, and limitations.
1.02 QUALITY ASSURANCE
A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
1. Listing in UL (FRD), FM (AG), or ITS (DIR) will be considered as constituting an acceptable test report.
2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) at www.icc-es.org will be considered as constituting an acceptable test report.
B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years experience.
C. Installer Qualifications: Company specializing in performing the work of this section and:
1. Verification of minimum three years experience installing work of this type.
1.03 FIELD CONDITIONS
A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days after installation of materials.
B. Provide ventilation in areas where solvent-cured materials are being installed.

2.01 MATERIALS
A. Firestopping Materials: Any materials meeting requirements.
B. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.
C. Fire Ratings: See Drawings for required ratings.
2.02 FIRESTOPPING ASSEMBLY REQUIREMENTS
A. Perimeter Fire Containment Firestopping: Use system that has been tested according to ASTM E2307 to have fire resistance F Rating equal to required fire rating of floor assembly.
B. Head-of-Wall Joint System Firestopping at Joints Between Fire-Rated Wall Assemblies and Non-Rated Horizontal Assemblies: Use system that has been tested according to ASTM E2837 to have fire resistance F Rating equal to required fire rating of floor or wall, whichever is greater.
C. Floor-to-Floor, Wall-to-Wall, and Wall-to-Floor Joints, Except Perimeter, Where Both Are Fire-Rated: Use system that has been tested according to ASTM E1966 or UL 2079 to have fire resistance F Rating equal to required fire rating of the assembly in which the joint occurs.
D. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
2.03 FIRESTOPPING SYSTEMS
A. Firestopping: Any material meeting requirements.
1. Fire Ratings: Use any system listed by UL, FM, or ITS (Warnock Hersey) or tested in accordance with ASTM E 814 or ASTM E 119 that has F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating, unless otherwise required by code, and that meets all other specified requirements. Refer to drawings for required ratings.

3.01 EXAMINATION
A. Verify openings are ready to receive the work of this section.
3.02 PREPARATION
A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.
B. Remove incompatible materials that could adversely affect bond.
C. Install backing materials to prevent liquid material from leakage.
3.03 INSTALLATION
A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.
B. Do not cover installed firestopping until inspected by authorities having jurisdiction.
C. Install labeling required by code.
3.04 CLEANING
A. Clean adjacent surfaces of firestopping materials.

SECTION 07 9200 - JOINT SEALANTS

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Nonsag gunnable joint sealants.
B. Joint backings and accessories.
1.02 REFERENCE STANDARDS
A. ASTM C834 - Standard Specification for Latex Sealants; 2017.
B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
C. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.
D. SCAQMD 1168 - Adhesive and Sealant Applications; 1989 (Amended 2017).
1.03 SUBMITTALS
A. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
2. List of backing materials approved for use with the specific product.
3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
4. Substrates the product should not be used on.
B. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
C. Installation Plan: Submit at least four weeks prior to start of installation.
1.04 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
B. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.
C. Installation Plan: Include schedule of sealed joints, including the following.
1. Joint sealant manufacturer and product name.
2. Joint selant color.
3. Method to be used to protect adjacent surfaces from sealant droppings and smears, with acknowledgement that some surfaces cannot be cleaned to like-new condition and therefore prevention is imperative.
1.05 WARRANTY
A. Correct defective work within a five year period after Date of Substantial Completion.
B. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal , exhibit loss of adhesion or cohesion, or do not cure.
PART 2 PRODUCTS
2.01 JOINT SEALANT APPLICATIONS
A. Scope:
1. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
a. Joints between door, window, and other frames and adjacent construction.
b. Other joints indicated below.
2. Do not seal the following types of joints.
a. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
b. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
c. Joints where installation of sealant is specified in another section.
d. Joints between suspended panel ceilings/grid and walls.
B. Interior Joints: Use non-sag polyurethane sealant, unless otherwise indicated.
1. Wall and Ceiling Joints in Non-Wet Areas: Acrylic emulsion latex sealant.
2.02 JOINT SEALANTS - GENERAL
A. Sealants and Primers: Provide products having lower volatile organic compound (VOC) content than indicated in SCAQMD 1168.
B. Colors: As selected by owner from manufacturer's full range.
2.03 NONSAG JOINT SEALANTS
A. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
1. Color: To be selected by Architect from manufacturer's standard range.
2. Movement Capability: Plus and minus 25 percent, minimum.
3. Manufacturers:
a. Tremco Incorporated; Tremsil 200: www.tremcosealants.com/#sle.
B. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 25 percent, minimum.
2. Color: To be selected by Architect from manufacturer's standard range.
3. Manufacturers:
a. Tremco Commercial Sealants & Waterproofing; Dymonic 100: www.tremcosealants.com/#sle.
C. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
1. Color: To be selected by Architect from manufacturer's standard range.
2. Manufacturers:
a. Tremco Commercial Sealants & Waterproofing; Tremflex 834: www.tremcosealants.com/#sle.
2.04 ACCESSORIES
A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.
E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that joints are ready to receive work.
B. Verify that backing materials are compatible with sealants.
C. Verify that backer rods are of the correct size.
3.02 PREPARATION
A. Remove loose materials and foreign matter that could impair adhesion of sealant.
B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.
3.03 INSTALLATION
A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
B. Perform installation in accordance with ASTM C1193.
C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
D. Install bond breaker backing tape where backer rod cannot be used.
E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

HOLLISTER
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MEMORIAL CITY MALL
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HOUSTON, TX 77024
STORE #31909

Project No.:	260348
Drawn By:	CJS
Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

SPECIFICATIONS
03 5400 - 07 9200

A0.03

SECTION 08 1113 - HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Non-fire-rated hollow metal doors and frames.
B. Hollow metal frames for wood doors.
C. Fire-rated hollow metal doors and frames.
D. Thermally insulated hollow metal doors with frames.
E. Accessories, including glazing and louvers.
1.02 REFERENCE STANDARDS
A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2011.
C. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames; 2003 (R2009).
D. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.
E. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.
F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.
G. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2016.
H. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2017.
I. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.
J. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2009.
K. ITS (DIR) - Directory of Listed Products; current edition.
L. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
M. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
N. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; 2007.
O. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2006.
P. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2016.
Q. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives; 2016.
R. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; 2012.
S. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames; 2013.
T. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.
U. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
V. UL 1784 - Standard for Air Leakage Tests of Door Assemblies; Current Edition, Including All Revisions.
1.03 SUBMITTALS
A. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.
B. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.
C. Samples: Submit two samples of metal, 2 inch by 2 inch in size showing factory finishes, colors, and surface texture.
1.04 QUALITY ASSURANCE
A. Manufacturer Qualifications: Provide hollow metal doors and frames from SDI Certified manufacturer: www.steeldoor.org/sdicertified.php.
1.05 DELIVERY, STORAGE, AND HANDLING
A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.
PART 2 PRODUCTS
2.01 MANUFACTURERS
A. Hollow Metal Doors and Frames:
1. Ceco Door, an Assa Abloy Group company; : www.assaabloydss.com.
2. Republic Doors, an Allegion brand; : www.republicdoor.com/#sle.
3. Pioneer Industries Inc.; : www.pioneerindustries.com.
2.02 DESIGN CRITERIA
A. Requirements for Hollow Metal Doors and Frames:
1. Steel used for fabrication of doors and frames shall comply with one or more of the following requirements; Galvannealed steel conforming to ASTM A653/A653M, cold-rolled steel conforming to ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel conforming to ASTM A1011/A1011M, Commercial Steel (CS) Type B for each.
2. Accessibility: Comply with ICC A117.1 and ADA Standards.
3. Door Edge Profile: Manufacturers standard for application indicated.
4. Typical Door Face Sheets: Flush.
5. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturers standard.
6. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.
2.03 HOLLOW METAL DOORS
A. Exterior Doors: Thermally insulated.
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
a. Level 3 - Extra Heavy-duty.
b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
c. Model 1 - Full Flush.
d. Door Face Metal Thickness: 16 gage, 0.053 inch, minimum.
e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
2. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
3. Door Thermal Resistance: R-Value of 2.5.
4. Door Thickness: 1-3/4 inch, nominal.
5. Top Closures for Outswinging Doors: Flush with top of faces and edges.
6. Weatherstripping: Refer to drawings.
7. Door Finish: Factory primed and field finished.
B. Interior Doors, Non-Fire Rated:
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
a. Level 3 - Extra Heavy-duty.
b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
c. Model 2 - Seamless.
d. Door Face Metal Thickness: 16 gage, 0.053 inch, minimum.
2. Door Thickness: 1-3/4 inch, nominal.
3. Door Finish: Factory primed and field finished.
C. Fire-Rated Doors:
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
a. Level 3 - Extra Heavy-duty.
b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
c. Model 2 - Seamless.
d. Door Face Metal Thickness: 16 gage, 0.053 inch, minimum.
2. Fire Rating: As indicated on drawings, tested in accordance with UL 10C and NFPA 252 ("positive pressure fire tests").
a. Provide units listed and labeled by UL (DIR) or ITS (DIR).
b. Attach fire rating label to each fire rated unit.
c. Smoke and Draft Control Doors (as indicated on drawings): Self-closing or automatic closing doors in accordance with NFPA 80 and NFPA 105, with fire-resistance-rated wall construction rated the same or greater than the fire-rated doors, and the following;
1) Maximum Air Leakage: 3.0 cfm/sq ft of door opening at 0.10 inch w.g. pressure, when tested in accordance with UL 1784 at both ambient and elevated temperatures.
2) Gasketing: Provide gasketing or edge sealing as necessary to achieve leakage limit.
3) Label: Include the "S" label on fire-rating label of door.
3. Door Thickness: 1-3/4 inch, nominal.
4. Door Finish: Factory primed and field finished.
2.04 HOLLOW METAL FRAMES
A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
B. Frame Finish: Factory primed and field finished.
C. Exterior Door Frames: Face welded type.
1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
2. Frame Metal Thickness: 16 gage, 0.053 inch, minimum.
D. Interior Door Frames, Non-Fire Rated: Face welded type.
1. Frame Metal Thickness: 16 gage, 0.053 inch, minimum.
E. Door Frames, Fire-Rated: Face welded type, unless noted otherwise.
1. Fire Rating: Same as door, labeled.
2. Frame Metal Thickness: 16 gage, 0.053 inch, minimum.
F. Frames for Wood Doors: Comply with frame requirements in accordance with corresponding door.
G. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
H. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inch high to fill opening without cutting masonry units.
I. Frames Wider than 48 inches: Reinforce with steel channel fitted tightly into frame head, flush with top.
2.05 FINISHES
A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
B. Bituminous Coating: Asphalt emulsion or other high-build, water-resistant, resilient coating.
2.06 ACCESSORIES
A. Louvers: Roll formed steel with overlapping frame; finish same as door components; factory-installed.
1. In Fire-Rated Doors: UL (DIR) or ITS (DIR) listed fusible link louver, same rating as door.
2. Style: Standard straight slat blade.
3. Louver Free Area: 50 percent.
4. Fasteners: Concealed fasteners.
B. Glazing: As specified in Section 08 8000, factory installed.
C. Removable Stops: Formed sheet steel, mitered corners; prepared for countersink style tamper proof screws.
D. Astragals for Double Doors: Refer to drawings.
1. Exterior Doors: 14GA Galvanized Steel, Flat.
2. Fire-Rated Doors: Steel, shape as required for fire rating.
E. Grout for Frames: Portland cement grout with maximum 4 inch slump for hand troweling; thinner pumpable grout is prohibited.
F. Silencers: Resilient rubber or vinyl, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.
G. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify existing conditions before starting work.
B. Verify that opening sizes and tolerances are acceptable.
C. Verify that finished walls are in plane to ensure proper door alignment.
3.02 PREPARATION
A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.
3.03 INSTALLATION
A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
B. Install fire rated units in accordance with NFPA 80.
C. Coordinate frame anchor placement with wall construction.
D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
E. Comply with recommended practice for hardware placement of doors and frames in accordance with ANSI/SDI A250.6 or NAAMM HMMA 861.
F. Coordinate installation of electrical connections to electrical hardware items.
3.04 TOLERANCES
A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.
B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.
3.05 ADJUSTING
A. Adjust for smooth and balanced door movement.

SECTION 08 1416 - FLUSH WOOD DOORS

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Flush wood doors; flush configuration; non-rated and special function.
1.02 RELATED REQUIREMENTS
A. Section 09 9123 - Interior Painting: Field finishing of doors.
1.03 REFERENCE STANDARDS
A. AWI (QCP) - Quality Certification Program; current edition at www.awiqcp.org.
B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.
C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.0; 2016.
1.04 SUBMITTALS
A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
1. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).
D. Warranty, executed in Owner's name.
1.05 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than three years of experience.
1. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.
B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of experience.
C. Quality Certification:
1. Comply with AWI (QCP) woodwork association quality certification service/program in accordance with requirements for work specified in this section: www.awiqcp.org/#sle.
1.06 DELIVERY, STORAGE, AND HANDLING
A. Package, deliver and store doors in accordance with specified quality standard.
B. Accept doors on site in manufacturer's packaging. Inspect for damage.
C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.
1.07 WARRANTY
A. Interior Doors: Provide manufacturer's warranty for the life of the installation.
B. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.
PART 2 PRODUCTS
2.01 DOORS AND PANELS
A. Doors: Refer to drawings for locations and additional requirements.
1. Quality Standard: Custom Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
1. Wood veneer facing for field opaque finish as indicated on drawings.
2.02 DOOR AND PANEL CORES
A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.
2.03 DOOR FACINGS
A. Veneer Facing for Opaque Finish: Medium density overlay (MDO), in compliance with indicated quality standard.
2.04 DOOR CONSTRUCTION
A. Fabricate doors in accordance with door quality standard specified.
B. Cores Constructed with stiles and rails:
C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
1. Exception: Doors to be field finished.
E. Provide edge clearances in accordance with the quality standard specified.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify existing conditions before starting work.
B. Verify that opening sizes and tolerances are acceptable.
C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.
3.02 INSTALLATION
A. Install doors in accordance with manufacturer's instructions and specified quality standard.
B. Field-Finished Doors: Trimming to fit is acceptable.
1. Adjust width of non-rated doors by cutting equally on both jamb edges.
2. Trim maximum of 3/4 inch off bottom edges.
C. Use machine tools to cut or drill for hardware.
D. Coordinate installation of doors with installation of frames and hardware.
3.03 TOLERANCES
A. Conform to specified quality standard for fit and clearance tolerances.
B. Conform to specified quality standard for telegraphing, warp, and squareness.
3.04 ADJUSTING
A. Adjust doors for smooth and balanced door movement.
B. Adjust closers for full closure.

SECTION 08 3100 - ACCESS DOORS AND PANELS

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Wall and ceiling access door and frame units.
1.02 REFERENCE STANDARDS
A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.
B. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2016.
C. FM (AG) - FM Approval Guide; current edition.
D. ITS (DIR) - Directory of Listed Products; current edition.
E. UL (FRD) - Fire Resistance Directory; current edition.
1.03 SUBMITTALS
A. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.
B. Shop Drawings: Indicate exact position of each access door and/or panel unit.
PART 2 PRODUCTS
2.01 ACCESS DOORS AND PANELS ASSEMBLIES
A. Wall-Mounted Units:
1. Material: Steel.
2. Size: As indicated on the drawings or as necessary to allow access to concealed items.
3. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.
4. Gypsum Board Mounting Criteria: Provide drywall bead frame with door surface flush with wall surface.
B. Walls in Wet Areas and Exterior:
1. Material: Steel, hot-dipped zinc, or zinc-aluminum-alloy coated.
2. Size: As indicated on the drawings or as necessary to allow access to concealed items.
3. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.
4. Gypsum Board Mounting Criteria: Provide drywall bead frame with door surface flush with wall surface.
5. In Masonry, Tile, Concrete, EIFS or other surfaces: Surface mounted frame with door surface flush with frame surface.
C. Fire-Rated Wall-Mounted Units:
1. Wall Fire-Rating: As indicated on drawings.
2. Size: As indicated on the drawings or as necessary to allow access to concealed items.
3. Door/Panel: Insulated double-surface panel, with tool-operated spring or cam lock and no handle.
D. Ceiling-Mounted Units:
1. Material: Steel.
2. Material: Steel, hot-dipped zinc or zinc-aluminum-alloy coated, for use in wet locations and exterior.
3. Size: As indicated on the drawings or as necessary to allow access to concealed items.
4. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.
E. Fire-Rated Ceiling-Mounted Units:
1. Ceiling Fire-Rating: As indicated on drawings.
2. Size: As indicated on the drawings or as necessary to allow access to concealed items.
3. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that rough openings are correctly sized and located.
B. Begin installation only after substrates have been properly prepared, and if the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
3.02 PREPARATION
A. Clean surfaces thoroughly prior to proceeding with this work.
B. Prepare surfaces using methods recommended by manufacturer for applicable substrates in accordance with project conditions.
3.03 INSTALLATION
A. Install units in accordance with manufacturer's instructions.
B. Install frames plumb and level in openings, and secure units rigidly in place.
Position units to provide convenient access to concealed equipment when necessary.

SECTION 08 7100 - DOOR HARDWARE

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Hardware for wood and hollow metal doors.
B. Hardware for fire-rated doors.
C. Thresholds.
D. Weatherstripping and gasketing.
1.02 REFERENCE STANDARDS
A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
B. BHMA (CPD) - Certified Products Directory; 2017.
C. BHMA A156.1 - American National Standard for Butts and Hinges; 2013.
D. BHMA A156.3 - American National Standard for Exit Devices; 2014.
E. BHMA A156.4 - American National Standard for Door Controls - Closers; 2013.
F. BHMA A156.5 - American National Standard for Cylinders and Input Devices for Locks; 2014.
G. BHMA A156.6 - American National Standard for Architectural Door Trim; 2010.
H. BHMA A156.7 - American National Standard for Template Hinge Dimensions; 2014.
I. BHMA A156.16 - American National Standard for Auxiliary Hardware; 2013.
J. BHMA A156.21 - American National Standard for Thresholds; 2014.
K. BHMA A156.22 - American National Standard for Door Gasketing and Edge Seal Systems, Builders Hardware Manufacturers Association; 2012.
L. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.
M. DHI (H&S) - Sequence and Format for the Hardware Schedule; 1996.
N. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2009.
O. ITS (DIR) - Directory of Listed Products; current edition.
P. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2016.
Q. NFPA 101 - Life Safety Code; 2015.
R. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives; 2016.
S. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; 2012.
T. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.
U. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
V. UL 1784 - Standard for Air Leakage Tests of Door Assemblies; Current Edition, Including All Revisions.
1.03 SUBMITTALS
A. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.
B. Shop Drawings - Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
1. Prepared by or under supervision of Architectural Hardware Consultant (AHC).
2. Conform to DHI (H&S) using door numbers and hardware set numbers as indicated in construction documents.
3. List groups and suffixes in proper sequence.
4. Provide complete description for each door listed.
5. Provide manufacturer's and product names, and catalog numbers; include functions, types, styles, sizes and finishes of each item.
6. Include account of abbreviations and symbols used in schedule.
C. Keying Schedule:
1. Submit one (1) copies of Keying Schedule in compliance with requirements established during Keying Requirements Meeting unless otherwise indicated.
1.04 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.
B. Installer Qualifications: Company specializing in performing work of the type specified for commercial door hardware with at least three years of documented experience.
C. Supplier Qualifications: Company with certified Architectural Hardware Consultant (AHC) and Electrified Hardware Consultant (EHC) to assist in work of this section.
1.05 DELIVERY, STORAGE, AND HANDLING
A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.
1.06 WARRANTY
A. Warranty against defects in material and workmanship for period indicated, from Date of Substantial Completion.
1. Closers: Ten years, minimum.
2. Exit Devices: Two years, minimum.
3. Locksets and Cylinders: Three years, minimum.
4. Other Hardware: Two years, minimum.
PART 2 PRODUCTS
2.01 DESIGN AND PERFORMANCE CRITERIA
A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.
B. Provide individual items of single type, of same model, and by same manufacturer.
C. Provide door hardware products that comply with the following requirements:
1. Applicable provisions of federal, state, and local codes.
2. Accessibility: ADA Standards and ICC A117.1.
3. Applicable provisions of NFPA 101.
4. Fire-Rated Doors: NFPA 80, listed and labeled by qualified testing agency for fire protection ratings indicated, based on testing at positive pressure in accordance with NFPA 252 or UL 10C.
5. Hardware on Fire-Rated Doors: Listed and classified by UL (DIR), ITS (DIR), or testing firm acceptable to authorities having jurisdiction as suitable for application indicated.
6. Hardware for Smoke and Draft Control Doors: Provide door hardware that complies with local codes, and requirements of assemblies tested in accordance with UL 1784.
a. Air Leakage Rate: Tested in accordance with UL 1784, with air leakage rate not to exceed 3.0 cfm/sf of door opening at 0.10 inch of water for both ambient and elevated temperature tests.
7. Listed and certified compliant with specified standards by BHMA (CPD).
8. Hardware Preparation for Steel Doors and Steel Frames: BHMA A156.115.
9. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified.
D. Lock Function: Provide lock and latch function numbers and descriptions of manufacturer's series. Refer to Door Hardware Schedule.
E. Fasteners:
1. Provide fasteners of proper type, size, quantity, and finish that comply with commercially recognized standards for proposed applications.
a. Aluminum fasteners are not permitted.
b. Provide phillips flat-head screws with heads finished to match door surface hardware unless otherwise indicated.
2. Provide machine screws for attachment to reinforced hollow metal and aluminum frames.
a. Self-drilling (Tek) type screws are not permitted.
3. Provide stainless steel machine screws and lead expansion shields for concrete and masonry substrates.
4. Provide wall grip inserts for hollow wall construction.
5. Provide spacers or sex bolts with sleeves for through bolting of hollow metal doors and frames.
6. Fire-Rated Applications: Comply with NFPA 80.
a. Provide wood or machine screws for hinges mortised to doors or frames, strike plates to frames, and closers to doors and frames.
b. Provide steel through bolts for attachment of surface mounted closers, hinges, or exit devices to door panels unless proper door blocking is provided.
7. Concealed Fasteners: Do not use through or sex bolt type fasteners on door panel sides indicated as concealed fastener locations, unless otherwise indicated.
2.02 HINGES
A. Hinges: Complying with BHMA A156.1, Grade 1.
1. Butt Hinges: Complying with BHMA A156.1 and BHMA A156.7 for templated hinges.
a. Provide hinge width required to clear surrounding trim.
2. Provide hinges on every swinging door as indicated on door schedule
3. Provide following quantity of butt hinges for each door, unless noted otherwise:
a. Doors up to 60 inches High: Two hinges.
b. Doors From 60 inches High up to 90 inches High: Three hinges.
c. Doors 90 inches High up to 120 inches High: Four hinges.
d. Doors over 120 inches High: One additional hinge per each additional 30 inches in height.
2.03 FLUSH BOLTS
A. Flush Bolts: Complying with BHMA A156.16, Grade 1.
1. Flush Bolt Throw: 3/4 inch, minimum.
2. Provides extension bolts in leading edge of door, one bolt into floor, one bolt into top of frame.
a. Pairs of Swing Doors: At inactive leaves, provide flush bolts of type as required to comply with code.
3. Provide dustproof floor strike for bolt into floor, except at metal thresholds.
4. Manual Flush Bolts: Provide lever extensions for top bolt at over-sized doors.
2.04 EXIT DEVICES
A. Exit Devices: Complying with BHMA A156.3, Grade 1.
1. Lever design to match lockset trim.
2. Provide cylinder with cylinder dogging or locking trim.
3. Provide exit devices properly sized for door width and height.
4. Provide strike as recommended by manufacturer for application indicated.
5. Provide UL (DIR) listed exit device assemblies for fire-rated doors and panic device assemblies for non-fire-rated doors.
6. For electrical options, provide quick connect plug-in pre-wired connectors.
2.05 LOCK CYLINDERS
A. Lock Cylinders: Provide key access on outside of each lock, unless otherwise indicated.
1. Provide standard type cylinders, Grade 1, with six-pin core in compliance with BHMA A156.5 at locations indicated.
2. Provide cylinders from same manufacturer as locking device, unless otherwise indicated.
3. Provide cams and/or tailpieces as required for locking devices.
2.06 DOOR PULLS AND PUSH PLATES
A. Door Pulls and Push Plates: Complying with BHMA A156.6.
1. Pull Type: Straight, unless otherwise indicated.
2. Push Plate Type: Flat, with square corners, unless otherwise indicated.
a. Edges: Beveled, unless otherwise indicated.
3. Material: Stainless steel, unless otherwise indicated.
2.07 CLOSERS
A. Closers: Complying with BHMA A156.4, Grade 1.
1. Type: Surface mounted to door.
2. At outswinging exterior doors, mount closer on interior side of door.
2.08 KICK PLATES
A. Protection Plates: Complying with BHMA A156.6.
B. Metal Properties: Galvanized Steel.
1. Metal, Heavy Duty: Thickness 0.062 inch, minimum.
C. Edges: Beveled, on four sides unless otherwise indicated.
D. Fasteners: Fully adhered with spray adhesive.
2.09 FLOOR STOPS
A. Floor Stops: Complying with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
2.10 WALL STOPS
A. Wall Stops: Complying with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
2.11 THRESHOLDS
A. Thresholds: Complying with BHMA A156.21.
1. Provide threshold at each exterior door, unless otherwise indicated.
2. Type: Flat surface.
3. Material: Aluminum.
4. Threshold Surface: Fluted horizontal grooves across full width.
5. Field cut threshold to profile of frame and width of door sill for tight fit.
6. Provide non-corroding fasteners at exterior locations.
2.12 WEATHERSTRIPPING AND GASKETING
A. Weatherstripping and Gasketing: Complying with BHMA A156.22.
1. Head and Jamb Type: Adjustable.
2. Door Sweep Type: Encased in retainer.
3. Material: Aluminum, with brush weatherstripping.
2.13 VIEWER
A. Viewer: Provide at inside of door at eye level to see who is on outside of door.
1. Material: Brass.
2.14 FINISHES
A. Finishes: Provide door hardware of same finish, unless otherwise indicated. Refer to drawings.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings and drawings.
3.02 INSTALLATION
A. Install hardware in accordance with manufacturer's instructions and applicable codes.
B. Install hardware on fire-rated doors and frames in accordance with applicable codes and NFPA 80.
C. Install hardware for smoke and draft control doors in accordance with NFPA 105.
D. Use templates provided by hardware item manufacturer.
E. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. As indicated in following list, unless noted otherwise on drawings.
1. Mounting heights in compliance with ADA Standards:
F. Set exterior door thresholds with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.
3.03 ADJUSTING
A. Adjust hardware for smooth operation.
B. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.
3.04 CLEANING
A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.
B. Clean adjacent surfaces soiled by hardware installation.
C. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.
3.05 PROTECTION
A. Do not permit adjacent work to damage hardware or finish.

SECTION 08 8000 - GLAZING

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Insulating glass units.
B. Glazing units.
1.02 REFERENCE STANDARDS
A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; current edition.
B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings, Safety Performance Specifications and Methods of Test; 2010.
C. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2010, with 2013 Supplements and Errata.
D. ASTM C1036 - Standard Specification for Flat Glass; 2011.
E. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass; 2014.
F. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.
G. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2015.
H. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2016.
I. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2010.
J. GANA (GM) - GANA Glazing Manual; 2008.
K. GANA (SM) - GANA Sealant Manual; 2008.
L. GANA (LGRM) - Laminated Glazing Reference Manual; 2009.
M. IGMA TM-3000 - North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial & Residential Use; 1990 (2016).
N. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2017.
O. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2014, with Errata (2017).
P. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2017.
1.03 SUBMITTALS
A. Product Data on Insulating Glass Unit and Glazing Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.
B. Certificate: Certify that products of this section meet or exceed specified requirements.
1.04 QUALITY ASSURANCE
A. Perform Work in accordance with GANA (GM), GANA (SM), GANA (LGRM), and IGMA TM-3000 for fabrication and installation.
B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years of experience.
C. Installer Qualifications: Company specializing in performing work of the type specified and with at least five years experience.
1.05 WARRANTY
A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
B. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including replacement of failed units.
C. Laminated Glass: Provide a five (5) year manufacturer warranty to include coverage for delamination, including providing products to replace failed units.
PART 2 PRODUCTS
2.01 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES
A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
1. Design Pressure: Calculated in accordance with ASCE 7.
2. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
3. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
4. Glass thicknesses listed are minimum.
B. Vapor Retarder and Air Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure vapor retarder and air barrier.
1. In conjunction with vapor retarder and joint sealer materials described in other sections.
C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.
2.02 GLASS MATERIALS
A. Float Glass: Provide float glass based glazing unless noted otherwise.
1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality-Q3.
2. Fully Tempered Safety Glass: Complies with ANSI Z97.1 and 16 CFR 1201 criteria.
3. Impact Resistant Safety Glass: Complies with ANSI Z97.1 and 16 CFR 1201 criteria; Class A/Category II.
B. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
1. Laminated Safety Glass: Complies with ANSI Z97.1 and 16 CFR 1201 test requirements for Category II.
2.03 INSULATING GLASS UNITS
A. Insulating Glass Units: Types as indicated.
1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
3. Spacer Color: Black.
4. Edge Seal:
a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
5. Color: Black.
6. Purge interpane space with dry air, hermetically sealed.
B. Insulating Glass Units: Vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
2. Space between lites filled with air.
3. Outboard Lite: Annealed float glass, 1/4 inch thick, minimum.
a. Tint: Clear.
b. Coating: Low-E, on #2 surface.
4. Inboard Lite: Annealed float glass, 1/4 inch thick, minimum.
a. Tint: Clear.
5. Total Thickness: 1 inch.
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.29, maximum.
7. Solar Heat Gain Coefficient (SHGC): 0.38 percent, maximum.
C. Insulating Glass Units: Safety glazing.
1. Applications:
a. Glazed lites in exterior doors.
b. Glazed sidelights and panels next to doors.
c. Other locations required by applicable federal, state, and local codes and regulations.
d. Other locations indicated on drawings.
2. Space between lites filled with air.
3. Glass Type: Same as other vision glazing except use fully tempered or laminated float glass for both outboard and inboard lites.
4. Total Thickness: 1 inch.
2.04 GLAZING UNITS
A. Monolithic Interior Vision Glazing:
1. Applications: Interior glazing unless otherwise indicated.
2. Glass Type: Annealed float glass.
3. Tint: Clear.
4. Thickness: 1/4 inch, nominal. Unless otherwise noted.
B. Monolithic Interior Safety Glazing:
1. Applications:
a. Glazed lites in doors.
b. Glazed sidelights to doors.
c. Other locations required by applicable federal, state, and local codes and regulations.
d. Other locations indicated on drawings.
2. Glass Type: fully tempered or laminated safety glass as specified.
3. Tint: Clear.
4. Thickness: 1/4 inch, nominal. Unless noted otherwise.
PART 3 EXECUTION
3.01 VERIFICATION OF CONDITIONS
A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.
B. Verify that the minimum required face and edge clearances are being provided.
C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.
D. Verify that sealing between joints of glass framing members has been completed effectively.
E. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.
3.02 PREPARATION
A. Clean contact surfaces with appropriate solvent and wipe dry immediately before glazing. Remove coatings that are not tightly bonded to substrates.
B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.
3.03 INSTALLATION, GENERAL
A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.
B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.
C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.
D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.
E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.
F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, etc.
3.04 FIELD QUALITY CONTROL
A. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.
B. Monitor and report installation procedures and unacceptable conditions.
3.05 CLEANING
A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
B. Remove non-permanent labels immediately after glazing installation is complete.
C. Clean glass and adjacent surfaces after sealants are fully cured.
D. Clean glass on both exposed surfaces just prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.
3.06 PROTECTION
A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.
B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

SECTION 08 8300 - MIRRORS

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Glass mirrors.
1. Annealed float glass.
2. Tempered safety glass.
1.02 REFERENCE STANDARDS
A. ASTM C1036 - Standard Specification for Flat Glass; 2011.
B. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror; 2008 (Reapproved 2013).
C. GANA (GM) - GANA Glazing Manual; 2008.
D. GANA (SM) - GANA Sealant Manual; 2008.
E. GANA (TIPS) - Mirrors: Handle with Extreme Care (Tips for the Professional on the Care and Handling of Mirrors); 2011.
1.03 SUBMITTALS
A. Product Data on Mirror Types: Submit structural, physical and environmental characteristics, size limitations, special handling and installation requirements.
1.04 QUALITY ASSURANCE
A. Perform Work in accordance with GANA (GM) and GANA (SM) for glazing installation methods.
1.05 FIELD CONDITIONS
A. Do not install mirrors when ambient temperature is less than 50 degrees F.
B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.
1.06 WARRANTY
A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
B. Provide five year manufacturer warranty for reflective coating on mirrors and replacement of same.
PART 2 PRODUCTS
2.01 MATERIALS
A. Mirror Design Criteria: Select materials and/or provide supports as required to limit mirror material deflection to 1/200, or to the flexure limit of glass, with full recovery of glazing materials, whichever is less.
B. Mirror Glass: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q1 (high-quality mirrors); silvering, protective coating, and quality requirements in compliance with ASTM C1503.
1. Thickness: 1/4 inch.
2. Size: As noted on drawings.
2.02 ACCESSORIES
A. Mirror Attachment Accessories: Concealed stainless steel clips.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that openings for mirrored glazing are correctly sized and within tolerance.
B. Verify that surfaces of mirror frames or recesses are clean, free of obstructions, and ready for installation of mirrors.
3.02 PREPARATION
A. Clean contact surfaces with solvent and wipe dry.
3.03 INSTALLATION
A. Install mirrors in accordance with GANA (TIPS) and manufacturers recommendations.
B. Set mirrors plumb and level, and free of optical distortion.
C. Set mirrors with edge clearance free of surrounding construction including countertops or backsplashes.
D. Frameless Mirrors: Set mirrors with clips, and anchor rigidly to wall construction.
3.04 CLEANING
A. Remove labels after work is complete.
B. Clean mirrors and adjacent surfaces.

SECTION 09 0561 - COMMON WORK RESULTS FOR FLOORING PREPARATION

PART 1 GENERAL
1.01 SECTION INCLUDES
A. This section applies to floors identified in Contract Documents that are to receive floor covering.
B. Testing of concrete floor slabs for moisture and alkalinity (pH).
C. Testing of existing concrete floor slabs for moisture and alkalinity (pH) has already been conducted; test report is attached.
D. Remediation of concrete floor slabs due to unsatisfactory moisture or alkalinity (pH) conditions.
1. Contractor shall perform all specified remediation of concrete floor slabs. If such remediation is indicated by testing agency's report and is due to a condition not under Contractor's control or could not have been predicted by examination prior to entering into the contract, a contract modification will be issued.
G. Patching compound.
H. Remedial floor coatings.
1.02 SUBMITTALS
A. Visual Observation Report: For existing floor coverings to be removed.
B. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
1. Moisture and alkalinity (pH) limits and test methods.
2. Manufacturer's required bond/compatibility test procedure.
C. Remedial Materials Product Data: Manufacturer's published data on each product to be used for remediation.
D. Testing Agency's Report:
1. Description of areas tested; include floor plans and photographs if helpful.
2. Summary of conditions encountered.
3. Moisture and alkalinity (pH) test reports.
4. Copies of specified test methods.
5. Recommendations for remediation of unsatisfactory surfaces.
6. Product data for recommended remedial coating.
7. Submit report to Architect.
8. Submit report not more than two business days after conclusion of testing.
E. Adhesive Bond and Compatibility Test Report.
F. Floor Moisture Testing Technician Certificate: International Concrete Repair Institute (ICRI) Concrete Slab Moisture Testing Technician- Grade 1 certificate.
1.03 QUALITY ASSURANCE
A. Moisture and alkalinity (pH) testing shall be performed by an independent testing agency employed and paid by Contractor.
B. Contractor may perform adhesive and bond test with Contractor's own personnel or hire a testing agency.
C. Testing Agency Qualifications: Independent testing agency experienced in the types of testing specified.
1. Submit evidence of experience consisting of at least 3 test reports of the type required, with project Owner's project contact information.
D. Contractor's Responsibility Relating to Independent Agency Testing:
1. Provide access for and cooperate with testing agency.
2. Confirm date of start of testing at least 10 days prior to actual start.
3. Allow at least 4 business days on site for testing agency activities.
4. Achieve and maintain specified ambient conditions.
E. Floor Moisture Testing Technician Qualifications: International Concrete Repair Institute (ICRI) Concrete Slab Moisture Testing Technician Certification-Grade 1.
F. Remedial Coating Installer Qualifications: Company specializing in performing work of the type specified in this section, trained by or employed by coating manufacturer, and able to provide at least 3 project references showing at least 3 years' experience installing moisture emission coatings.
PART 2 PRODUCTS
2.01 MATERIALS
A. Patching Compound: Floor covering manufacturer's recommended product, suitable for conditions, and compatible with adhesive and floor covering. In the absence of any recommendation from flooring manufacturer, provide a product with the following characteristics:
1. Cementitious moisture-, mildew-, and alkali-resistant compound, compatible with floor, floor covering, and floor covering adhesive, and capable of being feathered to nothing at edges.
2. Compressive Strength: 3000 psi, minimum, after 28 days, when tested in accordance with ASTM C109/C109M or ASTM C472, whichever is appropriate.
B. Alternate Flooring Adhesive: Floor covering manufacturer's recommended product, suitable for the moisture and pH conditions present; low-VOC. In the absence of any recommendation from flooring manufacturer, provide a product recommended by adhesive manufacturer as suitable for substrate and floor covering and for conditions present.
C. Remedial Floor Coating: Single- or multi-layer coating or coating/overlay combination intended by its manufacturer to resist water vapor transmission to degree sufficient to meet flooring manufacturer's emission limits, resistant to the level of alkalinity (pH) found, and suitable for adhesion of flooring without further treatment.
1. Thickness: As required for application and in accordance with manufacturer's installation instructions.
PART 3 EXECUTION
3.01 CONCRETE SLAB PREPARATION
A. Perform following operations in the order indicated:
1. Existing concrete slabs (on-grade and elevated) with existing floor coverings:
a. Visual observation of existing floor covering, for adhesion, water damage, alkaline deposits, and other defects.
b. Removal of existing floor covering.
2. Existing concrete slabs with coatings or penetrating sealers/hardeners/dustproofers:
a. Do not attempt to remove coating or penetrating material.
b. Do not abrade surface.
3. Preliminary cleaning.
4. Moisture vapor emission tests; 3 tests in the first 1000 square feet and one test in each additional 1000 square feet, unless otherwise indicated or required by flooring manufacturer.
5. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
6. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
7. Specified remediation, if required.
8. Patching, smoothing, and leveling, as required.
9. Other preparation specified.
10. Adhesive bond and compatibility test.
11. Protection.
B. Remediations:
1. Active Water Leaks or Continuing Moisture Migration to Surface of Slab: Correct this condition before doing any other remediation; re-test after correction.
2. Excessive Moisture Emission or Relative Humidity: If an adhesive that is resistant to the level of moisture present is available and acceptable to flooring manufacturer, use that adhesive for installation of the flooring; if not, apply remedial floor coating or remedial sheet membrane over entire suspect floor area.
3. Excessive Alkalinity (pH): If remedial floor coating is necessary to address excessive moisture, no additional remediation is required; if not, if an adhesive that is resistant to the level present is available and acceptable to the flooring manufacturer, use that adhesive for installation of the flooring; otherwise, apply a skim coat of specified patching compound over entire suspect floor area.
3.02 PRELIMINARY CLEANING
A. Clean floors of dust, solvents, paint, wax, oil, grease, asphalt, residual adhesive, adhesive removers, film-forming curing compounds, sealing compounds, alkaline salts, excessive laitance, mold, mildew, and other materials that might prevent adhesive bond.
B. Do not use solvents or other chemicals for cleaning.
3.03 MOISTURE VAPOR EMISSION TESTING
A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
C. Test in accordance with ASTM F1869 and as follows.
D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.
E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet per 24 hours.
F. Report: Report the information required by the test method.
3.04 INTERNAL RELATIVE HUMIDITY TESTING
A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
C. Test in accordance with ASTM F2170 Procedure A and as follows.
D. Testing with electrical impedance or resistance apparatus may not be substituted for the specified ASTM test method, as the values determined are not comparable to the ASTM test values and do not quantify the moisture content sufficiently.
E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if any test value exceeds 75 percent relative humidity.
F. Report: Report the information required by the test method.
3.05 ALKALINITY TESTING
A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
B. The following procedure is the equivalent of that described in ASTM F710, repeated here for the Contractor's convenience.
1. Use a wide range alkalinity (pH) test paper, its associated chart, and distilled or deionized water.
2. Place several drops of water on a clean surface of concrete, forming a puddle approximately 1 inch in diameter. Allow the puddle to set for approximately 60 seconds, then dip the alkalinity (pH) test paper into the water, remove it, and compare immediately to chart to determine alkalinity (pH) reading.
3. Use of a digital pH meter with probe is acceptable; follow meter manufacturer's instructions.
C. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if alkalinity (pH) test value is over 10.
3.06 PREPARATION
A. See individual floor covering section(s) for additional requirements.
B. Comply with requirements and recommendations of floor covering manufacturer.
C. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities with patching compound.
Do not fill expansion joints, isolation joints, or other moving joints.

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STORE #31909

Project No.:	260348
Drawn By:	CJS
Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

SPECIFICATIONS
08 1113 - 09 0561

A0.04

SECTION 09 2116 - GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Performance criteria for gypsum board assemblies.
B. Metal stud wall framing.
C. Metal channel ceiling framing.
D. Acoustic insulation.
E. Gypsum sheathing.
F. Backing board.
G. Gypsum wallboard.
H. Joint treatment and accessories.
1.02 REFERENCE STANDARDS
A. AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2012.
B. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2010 (Reaffirmed 2016).
C. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 1999 (Reaffirmed 2016).
D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.
E. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2015.
F. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2014, with Editorial Revision (2015).
G. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2017.
H. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2017.
I. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2017a.
J. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2015.
K. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2016.
L. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base; 2014a.
M. ASTM C1178/C1178M - Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel; 2013.
N. ASTM C1280 - Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing; 2013a.
O. ASTM C1325 - Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units; 2017a.
P. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.
Q. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2012.
R. GA-216 - Application and Finishing of Gypsum Panel Products; 2016.
S. GA-226 - Application of Gypsum Board to Form Curved Surfaces; Gypsum Association; 2016.
T. UL (FRD) - Fire Resistance Directory; current edition.
1.03 SUBMITTALS
A. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.
B. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.
1.04 QUALITY ASSURANCE
A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum five years of experience.
PART 2 PRODUCTS
2.01 GYPSUM BOARD ASSEMBLIES
A. Provide completed assemblies complying with ASTM C840 and GA-216.
B. Fire Rated Assemblies: Provide completed assemblies with the following characteristics:
1. UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL (FRD).
2.02 METAL FRAMING MATERIALS
A. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf. The use of equivalent gauge stud sizing criteria is prohibited.
1. Studs: "C" shaped with flat or formed webs with knurled faces.
2. Runners: U shaped, sized to match studs.
3. Ceiling Channels: C-shaped.
4. Furring: Hat-shaped sections, minimum depth of 7/8 inch.
5. Resilient Furring Channels: 1/2 inch depth, for attachment to substrate through one leg only.
B. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
C. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.
1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI S100-12.
2. Material: ASTM A653/A653M steel sheet, SS Grade 50/340, with G60/Z180 hot dipped galvanized coating.
3. Provide components UL-listed for use in UL-listed fire-rated head of partition joint systems of fire rating and movement required.
D. Sheet Metal Backing: 0.043 inch thick, galvanized, 6" wide.
2.03 BOARD MATERIALS
A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Use for vertical surfaces, unless otherwise indicated.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
a. Mold-resistant board is required whenever board is being installed before the building is enclosed and conditioned.
b. Mold resistant board is required in toilet room and janitor closet walls and where indicated in drawings.
3. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
4. Thickness:
a. Vertical Surfaces: 5/8 inch unless otherwise indicated or required by tested assembly.
B. Backing Board For Wet Areas:
1. Application: Surfaces behind tile in wet areas including tub and shower surrounds and shower ceilings.
2. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
a. Thickness: 1/2 inch.
3. Glass Mat Faced Board: Coated glass mat water-resistant gypsum backing panel as defined in ASTM C1178/C1178M.
a. Fire Resistant Type: Type X core, thickness 5/8 inch.
C. Backing Board For Non-Wet Areas: Water-resistant gypsum backing board as defined in ASTM C1396/C1396M; sizes to minimum joints in place; ends square cut.
1. Application: Vertical surfaces behind thinset tile, except in wet areas.
2. Type X Thickness: 5/8 inch.
3. Edges: Tapered.
D. Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Ceilings, unless otherwise indicated.
2. Thickness: 5/8 inch, unless otherwise indicated.
3. Edges: Tapered.
2.04 ACCESSORIES
A. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness: 3 inch or as indicated on drawings.
B. Finishing Accessories: ASTM C1047, galvanized steel or rolled zinc, unless noted otherwise.
1. Types: As detailed or required for finished appearance.
2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.
C. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
1. Tape: 2 inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
2. Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
3. Ready-mixed vinyl-based joint compound.
4. Powder-type vinyl-based joint compound.
5. Chemical hardening type compound.
D. High Build Drywall Surfacer: Vinyl acrylic latex-based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish.
E. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inch in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion resistant.
F. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion resistant.
G. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that project conditions are appropriate for work of this section to commence.
3.02 FRAMING INSTALLATION
A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.
B. Suspended Ceilings and Soffits: Space framing and furring members as permitted by standard.
1. Laterally brace entire suspension system.
2. Install bracing as required at exterior locations to resist wind uplift.
C. Studs: Space studs at 16 inches on center.
1. Extend partition framing to height indicated on drawings.
2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
3. Partitions Penetrating Ceiling, not Terminating at Structure: Brace top track securely to structure at 48 inches on center, unless otherwise indicated.
4. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.
D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
E. Standard Wall Furring: Install at concrete and masonry walls scheduled to receive gypsum board, not more than 4 inches from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 24 inches on center.
1. Orientation: Vertical.
2. Spacing: As indicated.
F. Blocking: Use sheet metal backing secured to studs. Provide blocking for support of wall cabinets, toilet accessories, hardware, opening frames, and other wall mounted items requiring secure attachment.
1. Use wood blocking secured to studs for plumbing fixtures, toilet partitions, grab bars, handrails and other items indicated on the drawings to be supported with wood blocking.
3.03 ACOUSTIC ACCESSORIES INSTALLATION
A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
3.04 BOARD INSTALLATION
A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
B. Single-Layer Non-Rated: Install gypsum board perpendicular to framing, with ends and edges occurring over firm bearing.
1. Exception: Tapered edges to receive joint treatment at right angles to framing.
C. Double-Layer Non-Rated: Use gypsum board for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Use glass mat faced gypsum board at exterior walls and at other locations as indicated. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.
D. Fire-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
E. Exterior Sheathing: Comply with ASTM C1280. Install sheathing vertically, with edges butted tight and ends occurring over firm bearing.
F. Cementitious Backing Board: Install over steel framing members and wood framing members where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.
G. Installation on Metal Framing: Use screws for attachment of gypsum board except face layer of non-rated double-layer assemblies, which may be installed by means of adhesive lamination.
H. Installation on Wood Framing: For rated assemblies, comply with requirements of listing authority. For non-rated assemblies, install as follows:
1. Single-Layer Applications: Screw attachment.
I. Curved Surfaces: Apply gypsum board to curved substrates in accordance with GA-226.
J. Moisture Protection: Treat cut edges and holes in moisture resistant gypsum board and exterior gypsum soffit board with sealant.
3.05INSTALLATION OF TRIM AND ACCESSORIES
A. Control Joints: Place control joints consistent with lines of building spaces and as follows:
1. Space in accordance with ASTM C840 and as indicated.
2. Not more than 30 feet apart on walls and ceilings over 50 feet long.
3. At exterior soffits, not more than 30 feet apart in both directions.
4. Where partition, wall or ceiling traverses a construction joint (expansion, seismic, or building control element) in the base building structure.
5. Where floor supported partition adjoins ceiling supported structures.
B. Corner Beads: Install at external corners, using longest practical lengths.
C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.
3.06 JOINT TREATMENT
A. Glass Mat Faced Gypsum Board and Exterior Glass Mat Faced Sheathing: Use fiberglass joint tape, bedded and finished with chemical hardening type joint compound.
B. Paper Faced Gypsum Board: Use paper joint tape, bedded with ready-mixed vinyl or powder-type vinyl for interior applications, and chemical hardening type for exterior or wet locations, and finished with matching joint compound.
C. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas specifically indicated.
2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
3. Level 3: Walls to receive textured wall finish.
4. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
5. Level 1: Wall areas above finished ceilings, whether or not accessible in the completed construction.
D. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
1. Feather coats of joint compound so that camber is maximum 1/32 inch.
E. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.
F. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.
3.07 TOLERANCES
A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

SECTION 09 3000 - TILING

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Tile for floor applications.
B. Non-ceramic trim.
1.02 REFERENCE STANDARDS
A. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2014.
B. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).
C. ANSI A108.1c - Specifications for Contractors Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Bed with Dry-Set or Latex-Portland Cement; 1999 (Reaffirmed 2010).
D. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive; 2009 (Revised).
E. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).
F. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy; 1999 (Reaffirmed 2010).
G. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (Reaffirmed 2010).
H. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 1999 (Reaffirmed 2010).
I. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 1999 (Reaffirmed 2010).
J. ANSI A108.12 - American National Standard for Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).
K. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2005 (Reaffirmed 2010).
L. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar; 2012 (Revised).
M. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation; 2010 (Reaffirmed 2016).
N. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes For Thin-Set Ceramic Tile And Dimension Stone Installation; 2014.
O. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation; 2014.
P. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2012.
Q. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2016.
1.03 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum five years of documented experience.
B. Installer Qualifications: Company specializing in performing tile installation, with minimum of five years of documented experience.
1.04 DELIVERY, STORAGE, AND HANDLING
A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.
1.05 FIELD CONDITIONS
A. Do not install solvent-based products in an unventilated environment.
B. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.
PART 2 PRODUCTS
2.01 TILE
A. Ceramic Tile: ANSI A137.1, standard grade.
1. Color, size and pattern: As indicated on drawings.
2. Owner furnished.
3. Contractor installed.
B. Natural Stone Tile:
1. Color, size and pattern: As indicated on drawings.
2. Owner furnished.
3. Contractor installed.
2.02 TRIM AND ACCESSORIES
A. Non-Ceramic Trim: Satin natural anodized extruded aluminum, style and dimensions to suit application, for setting using tile mortar or adhesive.
2.03 SETTING MATERIALS
A. Latex-Portland Cement Mortar Bond Coat: ANSI A118.4.
1. Applications: Use this type of bond coat where indicated and where no other type of bond coat is indicated.
2.04 GROUTS
A. Standard Grout: ANSI A118.6 standard cement grout.
1. Applications: Use this type of grout where indicated and where no other type of grout is indicated.
2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.
3. Color(s): As indicated on drawings.
2.05MAINTENANCE MATERIALS
A. Grout Sealer: Liquid-applied, moisture and stain protection for existing or new Portland cement grout.
1. Composition: Water-based colorless silicone.
B. Tile Sealer: Stain protection for natural stone.
2.06 ACCESSORY MATERIALS
A. Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.12; not intended as waterproofing.
1. Thickness: 20 mils, maximum.
2. Crack Resistance: No failure at 1/8 inch gap, minimum.
B. Waterproofing Membrane at Floors: Specifically designed for bonding to cementitious substrate under thick mortar bed or thin-set tile; complying with ANSI A118.10.
1. Crack Resistance: No failure at 1/8 inch gap, minimum; comply with ANSI A118.12.
2. Fluid or Trowel Applied Type:
a. Material: Synthetic rubber or Acrylic.
b. Thickness: 25 mils, minimum, dry film thickness.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.
B. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of setting materials to sub-floor surfaces.
C. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.
D. Verify that required floor-mounted utilities are in correct location.
3.02 PREPARATION
A. Protect surrounding work from damage.
B. Vacuum clean surfaces and damp clean.
C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.
3.03 INSTALLATION - GENERAL
A. Install tile and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.13, manufacturer's instructions, and TCNA (HB) recommendations.
B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.
E. Form internal angles square and external angles bullnosed.
F. Install non-ceramic trim in accordance with manufacturer's instructions.
G. Sound tile after setting. Replace hollow sounding units.
H. Keep control and expansion joints free of mortar, grout, and adhesive.
I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.
J. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.
K. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.
3.04 INSTALLATION - FLOORS - THIN-SET METHODS
A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat, with standard grout, unless otherwise indicated.
1. Use uncoupling membrane under all tile unless other underlayment is indicated.
2. Where waterproofing membrane is indicated, install in accordance with TCNA (HB) Method F122, with latex-Portland cement grout.
B. Install tile-to-tile floor movement joints in accordance with TCNA (HB) Method EJ171F.
3.05CLEANING
A. Clean tile and grout surfaces.
3.06 PROTECTION
A. Do not permit traffic over finished floor surface for 4 days after installation.

SECTION 09 6500 - RESILIENT FLOORING

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Resilient sheet flooring.
B. Resilient tile flooring.
C. Installation accessories.
1.02 REFERENCE STANDARDS
A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2017.
B. ASTM E 662 - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2017.
D. ASTM F970 - Standard Test Method for Measuring Recovery Properties of Floor Coverings after Static Loading; 2017.
E. ASTM F1700 - Standard Specification for Solid Vinyl Floor Tile; 2013a.
F. ASTM F1913 - Standard Specification for Vinyl Sheet Floor Covering Without Backing; 2004 (Reapproved 2014).
G. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2015.
1.03 QUALITY ASSURANCE
A. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.
1.04 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 and 90 degrees F.
D. Protect roll materials from damage by storing on end.
E. Do not double stack pallets.
1.05 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 to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.
PART 2 PRODUCTS
2.01 SHEET FLOORING
A. Vinyl Sheet Flooring: Homogeneous without backing, with color and pattern throughout full thickness.
1. Minimum Requirements: Comply with ASTM F1913.
2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
3. Smoke Generation: Maximum specific optical density of 450 or less, when tested in accordance with ASTM E 662.
4. Thickness: 0.080 inch nominal.
5. Sheet Width: 72 inch minimum.
6. Static Load Resistance: 250 psi minimum, when tested as specified in ASTM F970.
7. Seams: Heat welded.
8. Color: As indicated on drawings.
B. Welding Rod: Solid bead in material compatible with flooring, produced by flooring manufacturer for heat welding seams, and in color matching field color.
2.02 TILE FLOORING
A. Vinyl Tile: Printed film type, with transparent or translucent wear layer; acoustic interlayer or backing.
1. Manufacturers:
a. Wicanders; Wood Hydrocork: www.wicanders.com.
2. Minimum Requirements: Comply with ASTM F1700, Class III.
3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648.
4. Plank Tile Size: 6 by 48 inch.
5. Wear Layer Thickness: 0.020 inch.
6. Total Thickness: 0.24 inch.
7. Tile Edge: Straight.
8. Pattern: As indicated on drawings.
9. Color: As indicated on drawings.
2.03 ACCESSORIES
A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.
C. Sealer and Wax: Types recommended by flooring manufacturer.
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.
C. Cementitious Sub-floor Surfaces: Verify that substrates are dry enough and ready for resilient flooring installation by testing for moisture and pH.
1. Test in accordance with ASTM F710.
2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
D. Verify that required floor-mounted utilities are in correct location.
3.02 PREPARATION
A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
B. Remove sub-floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.
C. Prohibit traffic until filler is fully cured.
D. Clean substrate.
3.03 INSTALLATION - GENERAL
A. Starting installation constitutes acceptance of sub-floor conditions.
B. Install in accordance with manufacturer's written instructions.
C. Spread only enough adhesive to permit installation of materials before initial set.
D. Fit joints and butt seams tightly.
E. Set flooring in place, press with heavy roller to attain full adhesion.
F. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
3.04 INSTALLATION - SHEET FLOORING
A. Comply with manufacturer's written instructions for installing resilient sheet flooring.
B. Unroll resilient sheet flooring and allow it to stabilize before cutting and fitting.
C. Lay out resilient sheet flooring as follows:
1. Maintain uniformity of flooring direction.
2. Minimize number of seams; place seams in inconspicuous and low-traffic areas, at least 6 inches away from parallel joints in flooring substrates.
3. Match edges of flooring for color shading at seams.
4. Avoid cross seams.
D. Scribe and cut resilient sheet flooring to butt neatly and tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, and door frames.
E. Extend resilient sheet flooring into toe spaces, door reveals, closets, and similar openings.
F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on resilient sheet flooring as marked on substrates. Use chalk or other nonpermanent marking device.
G. Adhere resilient sheet flooring to substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.
H. Seamless Installation:
1. Heat-Welded Seams: Comply with ASTM F 1516. Rout joints and heat weld with welding bead to permanently fuse sections into a seamless flooring. Prepare, weld, and finish seams to produce surfaces flush with adjoining flooring surfaces.
3.05 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.
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.

SECTION 09 7200 - WALL COVERINGS

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Surface preparation and prime painting.
B. Wall covering.
1.02 REFERENCE STANDARDS
A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2017.
B. ASTM F793/F793M - Standard Classification of Wall Coverings by Use Characteristics; 2015.
1.03 SUBMITTALS
A. Product Data: Provide data on wallcovering adhesive and primer.
1.04 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.
B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.
1.05 DELIVERY, STORAGE, AND HANDLING
A. Inspect roll materials at arrival on site, to verify acceptability.
B. Protect packaged adhesive from temperature cycling and cold temperatures.
C. Do not store roll goods on end.
1.06 FIELD CONDITIONS
A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the adhesive or wall covering product manufacturer.
B. Maintain these conditions 24 hours before, during, and after installation of adhesive and wall covering.
C. Provide lighting level of 80 ft candles measured mid-height at substrate surfaces.
PART 2 PRODUCTS
2.01 WALL COVERINGS
A. General Requirements:
1. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84.
B. Wall Covering - Type WC-9: DreamScape, custom printed fabric-backed vinyl roll stock.
1. Owner furnished.
2. Contractor installed.
3. Conform to ASTM F793/F793M, Category V, Type II.
4. Manufacturers:
a. Roysons Corporation: www.roysons.com.
C. Wall Covering - Type WC-10: Korographics, custom printed fabric-backed vinyl roll stock.
1. Owner furnished.
2. Contractor installed.
3. Conform to ASTM F793/F793M, Category V, Type II.
4. Manufacturers:
a. Korographics / Koroseal Interior Products: www.korographics.com.
D. Adhesive: Type recommended by wall covering manufacturer to suit application to substrate.
E. Substrate Filler: As recommended by adhesive and wall covering manufacturers; compatible with substrate.
F. Substrate Primer and Sealer: As recommended by adhesive and wall covering manufacturers; compatible with substrate.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that substrate surfaces are prime painted and ready to receive work, and conform to requirements of the wall covering manufacturer.
B. Measure moisture content of surfaces using an electronic moisture meter. Do not apply wall coverings if moisture content of substrate exceeds level recommended by wall covering manufacturer.
3.02 PREPARATION
A. Fill cracks in substrate and smooth irregularities with filler; sand smooth.
B. Wash impervious surfaces with tetra-sodium phosphate, rinse and neutralize; wipe dry.
C. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
D. Surfaces: Correct defects and clean surfaces that affect work of this section. Remove existing coatings that exhibit loose surface defects.
E. Gypsum board surfaces shall receive a level 5 finish in areas indicated on drawings.
F. Apply two coats of primer sealer to substrate surfaces. Allow to dry. Lightly sand smooth.
G. Vacuum clean surfaces free of loose particles.
3.03 INSTALLATION
A. Apply adhesive and wall covering in accordance with manufacturer's instructions.
B. Apply adhesive to wall surface immediately prior to application of wall covering.
C. Apply wall covering smooth, without wrinkles, gaps or overlaps. Eliminate air pockets and ensure full bond to substrate surface.
D. Butt edges tightly.
E. Horizontal seams are not acceptable.
F. Do not seam within 2 inches of internal corners or within 6 inches of external corners.
G. Install wall covering before installation of bases and items attached to or spaced slightly from wall surface.
H. Do not install wall covering more than 1/4 inch below top of base.
I. Where wall covering tucks into reveals, or metal wallboard or plaster stops, apply with contact adhesive within 6 inches of wall covering termination. Ensure full contact bond.
J. Remove excess adhesive while wet from seam before proceeding to next wall covering sheet. Wipe clean with dry cloth.
3.04 CLEANING
A. Clean wall coverings of excess adhesive, dust, dirt, and other contaminants.
B. Reinstall wall plates and accessories removed prior to work of this section.
3.05PROTECTION
A. Do not permit construction activities at or near finished wall covering areas.

SECTION 09 9123 - INTERIOR PAINTING

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Surface preparation.
B. Field application of paints.
C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
1. Prime surfaces to receive wall coverings.
2. Mechanical and Electrical:
a. In finished areas, paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
b. In finished areas, paint shop-primed items.
D. Do Not Paint or Finish the Following Items:
1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
2. Items indicated to receive other finishes.
3. Items indicated to remain unfinished.
4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
5. Floors, unless specifically indicated.
6. Glass.
7. Concealed pipes, ducts, and conduits.
1.02 REFERENCE STANDARDS
A. ASTM D4258 - Standard Practice for Surface Cleaning Concrete for Coating; 2005 (Reapproved 2017).
B. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials; 2016.
C. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; Current Edition.
D. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.
E. SSPC-SP 1 - Solvent Cleaning; 2015.
F. SSPC-SP 2 - Hand Tool Cleaning; 1982 (Ed. 2004).
G. SSPC-SP 6 - Commercial Blast Cleaning; 2007.
H. SSPC-SP 13 - Surface Preparation of Concrete; (Reaffirmed 2015); 2003.
1.03 QUALITY ASSURANCE
A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience.
1.04 DELIVERY, STORAGE, AND HANDLING
A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.
1.05 FIELD CONDITIONS
A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
C. Provide lighting level of 80 ft candles measured mid-height at substrate surface.
PART 2 PRODUCTS
2.01 MANUFACTURERS
A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
1. Substitution of other products by the same manufacturer is preferred over substitution of products by a different manufacturer.
2. Substitution of a different paint system using MPI-approved products by the same manufacturer will be considered.
2.02 PAINTS AND FINISHES - GENERAL
A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
3. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
4. Supply each paint material in quantity required to complete entire project's work from a single production run.
5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
B. Flammability: Comply with applicable code for surface burning characteristics.
C. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
D. Colors: As indicated on drawings.
1. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling they are mounted on/under.
2.03 PAINT SYSTEMS - INTERIOR
A. Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry units, brick, wood, plaster, uncoated steel, shop primed steel, galvanized steel, and aluminum.
1. Two top coats and one coat primer.
2. Top Coat(s): Interior Latex; MPI #43, 44, 52, 53, 54, or 114.
3. Top Coat Sheen, unless noted otherwise on drawings:
a. Flat: MPI gloss level 1; use this sheen for ceilings and other overhead surfaces.
b. Eggshell: MPI gloss level 3; use this sheen at all locations.
4. Primer: As recommended by top coat manufacturer for specific substrate.
B. Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals and wood:
1. Medium duty applications include doors, door frames, railings, handrails, guardrails, and balustrades.
2. Two top coats and one coat primer.
3. Top Coat(s): High Performance Architectural Interior Latex; MPI #139, 140, or 141.
4. Top Coat Sheen:
a. Semi-Gloss: MPI gloss level 5; use this sheen unless noted otherwise.
5. Primer: As recommended by top coat manufacturer for specific substrate.
C. Dry Fall: Metals; exposed structure and overhead-mounted services or as indicated on drawings, including shop primed steel deck, structural steel, metal fabrications, galvanized ducts, galvanized conduit, and galvanized piping.
1. Shop primer by others.
2. One top coat .
3. Top Coat: Latex Dry Fall; MPI #118, 155, or 226.
4. Top Coat Sheen:
a. Flat: MPI gloss level 1; use this sheen unless noted otherwise.
D. Wood, Opaque, Latex, 3 Coat:
1. One coat of latex primer sealer.
2. Semi-gloss: Two coats of latex enamel; MPI #54unless noted otherwise.
E. Concrete/Masonry, Opaque, Latex, 3 Coat:
1. One coat of block filler.
2. Flat: Two coats of latex enamel; MPI #53, unless noted otherwise.
F. Ferrous Metals, Unprimed, Latex, 3 Coat:
1. One coat of latex primer.
2. Semi-gloss: Two coats of latex enamel; MPI #153, unless noted otherwise.
G. Ferrous Metals, Primed, Latex, 2 Coat:
1. Touch-up with latex primer.
2. Semi-gloss: Two coats of latex enamel; MPI #153, unless noted otherwise.
H. Galvanized Metals, Latex, 3 Coat:
1. One coat galvanize primer.
2. Semi-gloss: Two coats of latex enamel; MPI #153, unless noted otherwise.
I. Fabrics/Insulation Jackets, Alkyd, 3 Coat:
1. One coat of alkyd primer sealer.
2. Flat: Two coats of alkyd enamel; MPI #49, unless noted otherwise.
2.04 PRIMERS
A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
1. Interior/Exterior Latex Block Filler; MPI #4.
2. Interior Latex Primer Sealer; MPI #50.
3. Interior Water Based Primer for Galvanized Metal; MPI #134.
4. Latex Primer for Interior Wood; MPI #39.
2.05ACCESSORY MATERIALS
A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
B. Patching Material: Latex filler.
C. Fastener Head Cover Material: Latex filler.
PART 3 EXECUTION
3.01 EXAMINATION
A. Do not begin application of paints and finishes until substrates have been properly prepared.
B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
D. Test shop-applied primer for compatibility with subsequent cover materials.
E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
1. Gypsum Wallboard: 12 percent.
2. Plaster and Stucco: 12 percent.
3. Masonry, Concrete, and Concrete Masonry Units : 12 percent.
4. Interior Wood: 15 percent, measured in accordance with ASTM D4442.
3.02 PREPARATION
A. Clean surfaces thoroughly and correct defects prior to application.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
C. Remove or repair existing paints or finishes that exhibit surface defects.
D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
E. Seal surfaces that might cause bleed through or staining of topcoat.
F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
G. Concrete:
1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
2. Clean concrete according to ASTM D4258. Allow to dry.
3. Prepare surface as recommended by top coat manufacturer and according to SSPC-SP 13.
H. Masonry:
1. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
2. Prepare surface as recommended by top coat manufacturer.
I. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
J. Plaster: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
K. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.
L. Aluminum: Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
M. Copper: Remove contamination by steam, high pressure water, or solvent washing.
N. Galvanized Surfaces:
1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
2. Prepare surface according to SSPC-SP 2.
O. Ferrous Metal:
1. Solvent clean according to SSPC-SP 1.
2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
3. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.
P. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.
Q. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.
R. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.
3.03 APPLICATION
A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
C. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
E. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
F. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.
G. Sand wood and metal surfaces lightly between coats to achieve required finish.
H. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
I. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.
J. As items are installed or refinishes, they should also be prepped for painting. Per drawings and specifications below:
a. Scuff everywhere people can touch with hands with scotch pad and clean with denature alcohol.
b. Use primer (Sherwin Williams for NA projects) allowing overnight drying and make sure not to put 1st coat too heavy. It will adhere better with lighter coats.
c. Make sure no wax cleaners are used or oily cleaners. Most leave film.
d. Only denatured alcohol for final clean.
K. All egress lights and signage to be fully masked.
L. All hardware at cashwrap, fitting rooms, or marketing sites to be masked or temporarily removed. GC to reinstall if removed temporarily. If CW/BW pulls are missing, GC to supply and install to match existing.
M. All sales floor mirrors to be protected during construction. do not dispose, all to be reinstalled if removed during construction.
N. If applicable, clean entre sales floor using adhesive remover on areas with residue from rugs.
O. See scope of work details for additional notes.
P. Before painting begins, send documentation of the paint purchased to the A&F Project Manager for confirmation.
Q. Replace all sales floor wall switches, outlets, and covers with new white cover plates.
R. All gapping between trim noticed after paint to be caulked to closest matching finish.
S. GC to have painters on-site the night before open to complete any final touch-ups per spec.
3.04 PROTECTION
A. Protect finishes until completion of project.
B. Touch-up damaged finishes after Substantial Completion.

SECTION 10 2800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Commercial toilet accessories.
B. Under-lavatory pipe supply covers.
C. Electric hand/hair dryers.
D. Utility room accessories.
1.02 REFERENCE STANDARDS
A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
B. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service; 2015a.
C. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.
D. ASTM C1036 - Standard Specification for Flat Glass; 2011.
E. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror; 2008 (Reapproved 2013).
1.03 ADMINISTRATIVE REQUIREMENTS
A. Coordinate the work with the placement of internal wall reinforcement, concealed ceiling supports, and reinforcement of toilet partitions to receive anchor attachments.
1.04 SUBMITTALS
A. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.
PART 2 PRODUCTS
2.01 MATERIALS
A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
B. Keys: Provide six keys for each accessory to Owner.
C. Stainless Steel Sheet: ASTM A666, Type 304.
D. Stainless Steel Tubing: ASTM A269/A269M, Grade TP304 or TP316.
E. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class I, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.
2.02 COMMERCIAL TOILET ACCESSORIES
A. Toilet Paper Dispenser: As indicated on drawings.
B. Soap Dispenser: As indicated on drawings.
C. Coat Hook: As indicated on drawings.
D. Mirrors: Stainless steel framed, 1/4 inch thick annealed float glass; ASTM C1036.
1. Annealed Float Glass: Silvering, protective and physical characteristics in compliance with ASTM C1503.
2. Size: As indicated on drawings.
E. Grab Bars: Stainless steel, nonslip grasping surface finish.
1. Standard Duty Grab Bars:
a. Push/Pull Point Load: 250 pound-force, minimum.
b. Dimensions: 1-1/4 inch outside diameter, minimum 0.05 inch wall thickness, exposed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
c. Length and Configuration: As indicated on drawings.
2.03 UNDER-LAVATORY PIPE AND SUPPLY COVERS
A. Under-Lavatory Pipe and Supply Covers:
1. Insulate exposed drainage piping including hot, cold, and tempered water supplies under lavatories or sinks to comply with ADA Standards.
2. Exterior Surfaces: Smooth non-absorbent, non-abrasive surfaces.
3. Color: White.
2.04 ELECTRIC HAND/HAIR DRYERS
A. As indicated on drawings.
2.05UTILITY ROOM ACCESSORIES
A. Mop Rack: As indicagted on drawings.
B. Mop Sink Hose Holder: As indicated on drawings.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify existing conditions before starting work.
B. Verify exact location of accessories for installation.
C. For electrically-operated accessories, verify that electrical power connections are ready and in the correct locations.
3.02 PREPARATION
A. Deliver inserts and rough-in frames to site for timely installation.
B. Provide templates and rough-in measurements as required.
3.03 INSTALLATION
A. Install accessories in accordance with manufacturers' instructions in locations indicated on the drawings.
B. Install plumb and level, securely and rigidly anchored to substrate.
C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.
3.04 PROTECTION
A. Protect installed accessories from damage due to subsequent construction operations.

SECTION 10 5617 - WALL MOUNTED STANDARDS AND SHELVING

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Shelf standards, brackets, and accessories.
B. Closet rods for mounting on brackets.
C. See drawings for locations and configurations.
1.02 SUBMITTALS
A. Product Data: Manufacturer's data sheets on each product to be used.
1.03 DELIVERY, STORAGE, AND HANDLING
A. Store products under cover and elevated above grade.
B. Store products in manufacturer's unopened packaging until ready for installation.
PART 2 PRODUCTS
2.01 MATERIALS
A. Rods, shelves, cleats and brackets provided by Owner.
B. Fasteners: Screws as recommended by manufacturer for intended application or as otherwise required by project conditions.
PART 3 EXECUTION
3.01 EXAMINATION
A. Do not begin installation until substrates have been properly prepared.
B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
3.02 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.
3.03 SHELVING AND CLOTHES ROD INSTALLATION
A. Cut shelf cleats at ends of shelves about 1/2 inch less than width of shelves and sand exposed ends smooth.
B. Install shelf cleats by fastening to framing or backing with finish nails or trim screws, set below face and filled. Space fasteners not more than 16 inches o.c.
C. Install shelf brackets according to manufacturer's written instructions, spaced not more than 32 inches o.c. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors.
D. Cut shelves to neatly fit openings with only enough gap to allow shelves to be removed and reinstalled. Install shelves, fully seated on cleats, brackets, and supports.
3.04 PROTECTION
A. Protect installed products until completion of project.
B. Touch-up, repair or replace damaged products before Substantial Completion.

HOLLISTER
CALIFORNIA

ABERCROMBIE & FITCH CO.
6301 FITCH PATH
NEW ALBANY, OHIO 43054
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ARCHITECTURE • ENGINEERING
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MEMORIAL CITY MALL
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No.:	260348
Drawn By:	CJS
Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

SPECIFICATIONS
09 2116 - 10 5617

A0.05

RESPONSIBILITY SCHEDULE

RESPONSIBILITY SCHEDULE

RESPONSIBILITY SCHEDULE

LL approved Window Vinyls in lieu of a barricade

HOLLISTER DOMESTIC 31909 OWNER / LANDLORD RESPONSIBILITY SCHEDULE		OWNER FURNISHED	OWNER INSTALLED	LANDLORD FURNISHED	LANDLORD INSTALLED	N/A	COMMENTS
PLEASE NOTE: IF ITEM IS NOT LISTED, IT IS GC RESPONSIBILITY FOR PROCUREMENT AND INSTALL PER THE CONSTRUCTION DOCUMENTS							
DIVISION 01 - GENERAL REQUIREMENTS							
01.01	CONSTRUCTION BARRICADE GRAPHICS	X	X				
01.02	CONSTRUCTION BARRICADE	X	X				G.C. TO SECURE SITE PRIOR TO STORE GRAND OPENING
01.03	HOUSEKEEPING	X					G.C. TO PERFORM DAILY CLEANING
DIVISION 02 - EXISTING CONDITIONS							
02.01	SELECTIVE DEMOLITION						G.C. TO PERFORM IN AREA OF WORK, REFER TO A1.00 and A1.01
DIVISION 05 - METALS							
05.01	METAL TRIM FOR ROLLING GRILLE SLOT					X	
05.02	STOREFRONT ACM PANELS					X	
DIVISION 06 - WOOD, PLASTICS AND COMPOSITES							
06.01	CASHWRAP(S), BACKWRAP(S) AND COUNTERTOPS	X					G.C. TO INSTALL, TOUCH-UP AS NECESSARY
06.02	FITTING ROOM MILLWORK - PRE-FINISHED DOORS AND JAMBS (T-7, T-8, T-9, T-13)	X					G.C. TO INSTALL
06.03	SALES AREA WING WALLS	X					G.C. TO INSTALL, EXISTING TO REMAIN, G.C. TO REFINISH
06.04	PRE-FINISHED STOREFRONT CHAIR RAIL TRIM (T-4)					X	
06.05	WALL BASE AND CROWN	X					G.C. TO SUPPLY AND INSTALL. EXISTING TO REMAIN, G.C. TO REFINISH
06.06	STAINED SHIPLAP (T-10)	X					G.C. TO INSTALL
06.07	PRE-FINISHED FITTING ROOM CHAIR RAIL TRIM (T-11)	X					G.C. TO INSTALL
06.08	PRE-FINISHED SHIPLAP FRAME TRIM (T-12)					X	
06.09	MIRROR TRIM (T-14)	X					G.C. TO INSTALL & SUPPLY MIRROR GLASS
DIVISION 08 - OPENINGS							
08.01	STOREFRONT ENTRY DOORS AND HARDWARE	REFER TO DOOR SCHEDULE					
08.02	STOREFRONT OVERHEAD ROLLING GRILLE					X	
08.03	STOREFRONT SIDE FOLDING ENCLOSURE					X	
08.04	INTERIOR DOORS, FRAMES AND HARDWARE	REFER TO DOOR SCHEDULE					
08.05	STOREFRONT GLAZING SYSTEM						EXISTING TO REMAIN
08.06	STOREFRONT GLAZING CLIPS						EXISTING TO REMAIN
DIVISION 09 - FINISHES							
09.01	FLOORING - FAHRENHEIT TILE	X					G.C. TO PROVIDE SETTING MATERIAL AND GROUT AND INSTALL
09.02	FLOORING - WALK-OFF ENTRY MAT					X	EXTERIOR LOCATIONS ONLY
09.03	FLOORING - WOOD PLANK	X					WHERE APPLICABLE. G.C. TO SUPPLY AND INSTALL - FEATHER IN
09.04	WALL COVERING	X					G.C. TO PROVIDE PRIMER AND INSTALL
09.05	DRYVIT (SF-59)					X	
DIVISION 10 - SPECIALTIES							
10.01	STOREFRONT SIGNAGE, DECALS, BLADE SIGN	X	X				EXISTING MOUNT TO REMAIN
10.02	NON-SALES ROLLING & FIXED SHELVING, HANGBARS, ROLLING RACK BUMPERS AND PROTECTIVE COVERS	X					
10.03	NON-SALES FIXED WALL SHELVING, STANDARDS AND BRACKETS	X					
10.04	NON-SALES HARDWARE BIN AND BAR BIN	X					
10.05	NON-SALES MANAGER'S WORKSTATION AND CHAIR, PROCESSING AND PREP DESKS	X					
10.06	NON-SALES FLOOR MOUNTED SAFE					X	EXISTING TO REMAIN, RELOCATE IF NECESSARY
10.07	NON-SALES EMPLOYEE LOCKERS	X					DELIVERED WITH STORE SUPPLIES
10.08	NON-SALES BULLETIN BOARDS	X					DELIVERED WITH STORE SUPPLIES
10.09	NON-SALES DELIVERY DOOR VINYL IDENTITY SIGNAGE	X					ONE SIGN PER RECEIVING DOOR
10.10	NON-SALES MICROWAVE AND REFRIGERATOR	X					
10.11	NON-SALES BREAK ROOM TABLE AND CHAIRS					X	ONLY WHERE REQUIRED BY AHJ
10.12	NON-SALES HEALTH AND SAFETY SIGNAGE	X					G.C. TO INSTALL SIGNAGE WITH OWNER FURNISHED PLASTIC ZIP TIES
10.13	NON-SALES EVACUATION PLAN AND FRAMES					X	ONLY WHERE REQUIRED BY AHJ
10.14	NON-SALES TOILET ROOM ACCESSORIES	REFER TO SHEET A11.00 FOR LAVATORY EQUIPMENT SCHEDULE					
10.15	NON-SALES EMPLOYEE LOCKER ROOM BENCH					X	ONLY WHERE REQUIRED BY AHJ
10.16	NON-SALES JANITORIAL ACCESSORIES	X					
10.17	MARKETING GRID AND HARDWARE	X					
10.18	MARKETING BRACKETS, IMAGES, AND BARS						G.C. TO CUT METAL POLE TO CORRECT LENGTH IN FIELD
10.21	ILLUMINATED "SKYLIGHT" CEILING FEATURE AND GRAPHICS					X	G.C. TO SUPPLY AND INSTALL HARDWARE, REFER TO A3.00. G.C. TO INSTALL GRAPHICS, REFER TO INSTALLATION GUIDE.
10.22	SALES AREA WALL STANDARDS	X					G.C. TO INSTALL
10.23	PC SHELVES AND HARDWARE	X					
10.24	DSP CART	X					G.C. TO PAINT BASE OF DSP CART P-63C.
DIVISION 11 - EQUIPMENT							
11.01	DOOR BELL/BUZZER						EXISTING AT STOREFRONT TO REMAIN, G.C. TO SUPPLY AND INSTALL NEW AT REAR DOOR
11.02	HAND DRYER						G.C. TO SUPPLY AND INSTALL
DIVISION 12 - FURNISHINGS							
12.01	FURNITURE, FLOOR FIXTURES, PLANTS, PROPS AND SEATING	X	X				
12.02	FITTING ROOM ACCESSORIES	X					HANGBARS, HOOKS, GRIDS, SHELF, ETC. G.C. TO PROVIDE BLOCKING AS REQUIRED
DIVISION 14 - CONVEYING SYSTEMS							
14.01	ELEVATOR/LIFT					X	G.C. TO PROVIDE & TERMINATE POWER AND LIFE SAFETY SYSTEMS
DIVISION 21 - FIRE SUPRESSION							
21.01	SYSTEM TAP			X			EXISTING TO REMAIN
DIVISION 23 - HVAC							
23.01	HVAC EQUIPMENT	REFER TO SHEET M1.00 FOR SCHEDULES					
23.02	ENERGY MANAGEMENT SYSTEM (EMS) PANEL	X					OWNER VENDOR TO INSTALL AND TERMINATE PER APPROVED SHOP DRAWINGS
23.03	EMS SENSORS	X	X				
23.04	EMS CABLES						G.C. TO PROVIDE & TERMINATE HIGH & LOW VOLTAGE CABLES & PROVIDE/INSTALL CONDUIT RUNS PER SHOP DRAWINGS AND PLANS
23.05	EMS COMMISSIONING	X	X				
DIVISION 26 - ELECTRICAL							
26.01	LANDLORD SWITCHGEAR	REFER TO SHEET E1.00 FOR ELECTRICAL POWER RISER SCHEMATIC					
26.02	LANDLORD DISCONNECT						
26.03	LANDLORD UTILITY METER						
26.04	SERVICE FEEDERS						
26.05	PANELBOARDS						EXISTING TO REMAIN
26.06	ENERGY METER	X					MAIN SALES WILL BE EXISTING TO REMAIN. REMOTE STOCK WILL BE NEW
26.07	CURRENT LIMITING (CL) PANEL	X					G.C. TO INSTALL
26.08	LIGHT FIXTURES AND ACCESSORIES	REFER TO SHEET E1.10 FOR SCHEDULES					
DIVISION 27 - COMMUNICATIONS							
27.01	TELECOMMUNICATIONS TECHNOLOGY RACK	X	X				EXISTING TO REMAIN AT STORE, NEW AT REMOTE STORAGE
27.02	TELECOMMUNICATIONS AV AND DATA OUTLETS						
27.03	TELECOMMUNICATIONS WIRING						G.C. TO PROVIDE AND INSTALL
27.04	POINT OF SALE (POS) EQUIPMENT	X	X				G.C. TO REUSE EXISTING CONDUITS AND INSTALL NEW WIRING
27.05	WIRELESS ACCESS POINTS (WAP)	X	X				G.C. TO PROVIDE AND INSTALL CONDUIT RUNS
27.06	WAP WIRING						G.C. TO PROVIDE AND INSTALL
27.07	PEOPLE COUNTER	X	X				G.C. TO PROVIDE AND INSTALL CONDUIT RUNS
27.08	PEOPLE COUNTER WIRING						G.C. TO PROVIDE AND INSTALL
27.09	AUDIO SYSTEM EQUIPMENT	X	X				EXISTING TO REMAIN
27.10	AUDIO SYSTEM SPEAKERS	X					EXISTING TO REMAIN
27.11	AUDIO SYSTEM WIRING						EXISTING TO REMAIN
27.12	VIDEO WALL	X	X				
27.13	VIDEO WALL FRAME	X	X				G.C. TO PROVIDE BLOCKING, REFER TO A8.00
27.14	DIGITAL WAYFINDING SIGNS					X	
27.15	COMMISSIONING AND PROGRAMMING	X	X				
DIVISION 28 - ELECTRONIC SAFETY AND SECURITY							
28.01	ELECTRONIC ARTICLE SURVEILLANCE (EAS) EQUIPMENT	X	X				
28.02	EAS WIRING	X	X				G.C. TO PROVIDE POWER, CONDUIT AND ANY REQUIRED FLOOR CUTTING/PATCHING.
28.03	CCTV EQUIPMENT	X	X				
28.04	CCTV CAMERAS	X	X				
28.05	CCTV WIRING						G.C. TO SUPPLY AND INSTALL CONDUIT RUNS
28.06	BURGLAR ALARM SYSTEM (BAS) EQUIPMENT					X	EXISTING TO REMAIN. MODIFY FOR NEW LAYOUT
28.07	BAS MOTION DETECTOR					X	EXISTING TO REMAIN. MODIFY FOR NEW LAYOUT
28.08	BAS WIRING					X	EXISTING TO REMAIN. MODIFY FOR NEW LAYOUT

RESPONSIBILITY SCHEDULE NOTES

1. 'NON-SALES' INCLUDES: RESTROOMS, STOCKROOM, ELECTRICAL AND CLOSETS, U.N.O.
2. 'SALES' INCLUDES: MEN'S, WOMEN'S, PORTAL, FITTING ROOMS, FITTING ROOM HALLWAY, U.N.O.
3. G.C. IS TO RECEIVE AND INSTALL OWNER SUPPLIED MATERIALS (OSM) AS SHOWN IN DRAWINGS, DESCRIBED IN SPECIFICATIONS AND/OR AS DIRECTED BY OWNER'S PROJECT MANAGER.
4. OWNER SUPPLIED MATERIALS (OSM) ARE BACK OF TRACK DELIVERY ONLY. OSM WILL BE DELIVERED TO THE CLOSEST AVAILABLE TRUCK DOCK OR OTHER LOCATION AS COORDINATED WITH AND DIRECTED BY THE LANDLORD. GC IS RESPONSIBLE TO UNLOAD, COUNT, INSPECT FOR DAMAGE AND SHALL REPORT DISCREPANCIES, DAMAGES OR MISSING ITEMS TO OWNER'S PROJECT MANAGER WITHIN 48 HOURS OF RECEIPT. GC SHALL TRANSPORT OSM FROM THE POINT OF OFF-LOAD TO THE JOBSITE. MATERIAL OF QUESTIONABLE QUALITY SHALL NOT BE ACCEPTED AND/OR INSTALLED, OTHERWISE IT WILL BE REPLACED AT CONTRACTOR'S EXPENSE. G.C. TO CROSS CHECK LOAD PLAN VS PACKING LIST VS DRAWINGS.
5. G.C. IS RESPONSIBLE FOR DAMAGE, LOSS, THEFT OR DESTRUCTION OF OWNER SUPPLIED MATERIALS. G.C. WILL BE BACK-CHARGED THE FULL COST OF REPLACEMENT MATERIALS INCLUDING FREIGHT CHARGES. REVIEW SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. G.C. TO COORDINATE INSTALLATION OF OWNER SUPPLIED MATERIALS DIRECTLY W/ OWNER'S VENDORS AND PERTAINS TO DELIVERY, SCHEDULE AND INSTALLATION.
7. G.C. TO PROVIDE SITE COORDINATED MECHANICAL AND ELECTRICAL DRAWINGS. G.C. IS TO UNDERTAKE DETAILED COORDINATION OF MEP SERVICES INSTALLATION. THIS PROCESS IS TO BE LED BY THE MECHANICAL CONTRACTOR AND MUST INCLUDE ELECTRICAL, LIGHTING, SPRINKLER AND STRUCTURAL INSTALLATION.

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HOUSTON, TX 77024
STORE #31909

Project No:	260348
Drawn By:	CJS

Date	Issue
09.04.2026	CHECKSET
09.25.2026	1 BID SET

RESPONSIBILITY SCHEDULE

A0.10

CLEAR FLOOR SPACE NOTES:
1. DOORS SHALL BE PERMITTED TO SWING INTO TURNING SPACES (304.4)
2. ONE FULL UNOBSTRUCTED SIDE OF THE CLEAR FLOOR SPACE MUST ADJOIN AN ACCESSIBLE ROUTE OR ANOTHER CLEAR FLOOR SPACE (305.6)
3. A CLEAR FLOOR SPACE IS REQUIRED AT ANY DEVICE WITH AN OPERABLE PART (309.2)

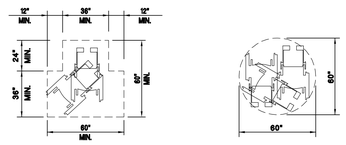


Fig. 304.3.2
T-SHAPED SPACE

Ref. 304.3.1
CIRCULAR SPACE

TURNING SPACE
Ref. Section 304

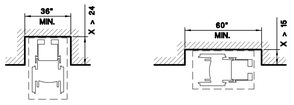
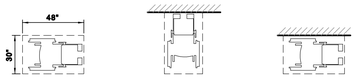


Fig. 305.7 (a)

Fig. 305.7 (b)

CLEAR FLOOR SPACE IN ALCOVES



CLEAR FLOOR SPACE
Fig. 305.3

FORWARD APPROACH
Fig. 305.5 (a)

PARALLEL APPROACH
Fig. 305.5 (b)

MINIMUM CLEAR FLOOR SPACE
Ref. Sections 304 & 305

NOTE:
CHANGES IN LEVEL GREATER THAN 1/2" SHALL BE RAMPED, AND SHALL COMPLY w/ SECTIONS 405 OR 406. (303.4)

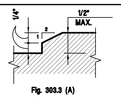


Fig. 303.3 (A)

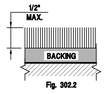


Fig. 302.2
CARPET PILE THICKNESS

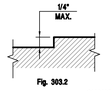


Fig. 303.2

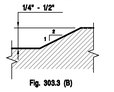
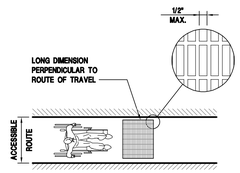
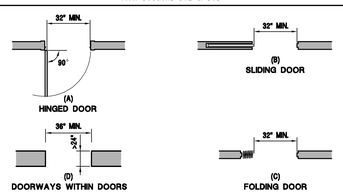


Fig. 303.3 (B)
CHANGES IN LEVEL

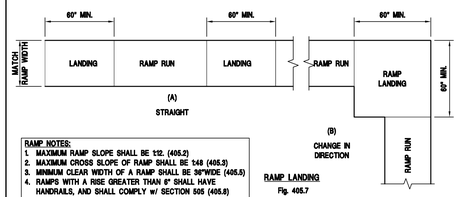


OPENINGS IN FLOOR OR GROUND SURFACE
Ref. Section 302.3

FLOOR & GROUND SURFACES
Ref. Sections 302 & 303



CLEAR WIDTH OF DOORWAYS
Fig. 404.2.2



(A)
STRAIGHT

(B)
CHANGE IN DIRECTION

RAMP NOTES:
1. MAXIMUM RAMP SLOPE SHALL BE 1:12. (405.2)
2. MAXIMUM CROSS SLOPE OF RAMP SHALL BE 1:48 (405.3)
3. MINIMUM CLEAR WIDTH OF A RAMP SHALL BE 36"WIDE (405.5)
4. RAMPS WITH A RISE GREATER THAN 6" SHALL HAVE HANDRAILS, AND SHALL COMPLY w/ SECTION 505 (405.8)

RAMP LANDING
Fig. 405.7



Ref. Section 405.9.2
BARRIER

CURB

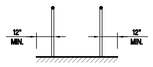
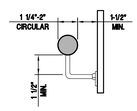


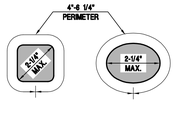
Fig. 405.9.1
EXTENDED FLOOR OR GROUND SURFACE

EDGE PROTECTION
Ref. Section 405.9

RAMPS
Ref. Section 405



HANDRAIL CLEARANCES
Fig. 505.5 & 505.8



NON-CIRCULAR HANDRAIL CROSS SECTIONS
Fig. 505.7 (B) & (C)

HANDRAIL SIZES & CLEARANCES



STAIRS
Fig. 505.4 (A)



RAMPS
Fig. 505.4 (B)

HANDRAIL HEIGHTS
Ref. Section 505

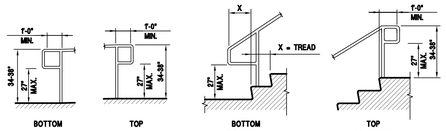
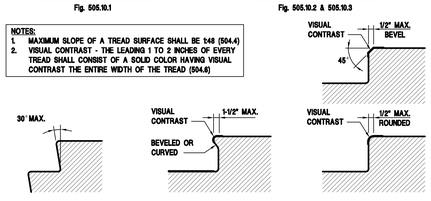


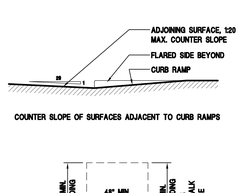
Fig. 505.10.1
HANDRAIL EXTENSIONS @ RAMP

Fig. 505.10.2 & 505.10.3
HANDRAIL EXTENSIONS @ STAIR

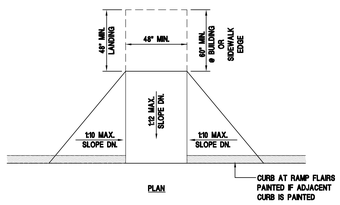
NOTES:
1. MAXIMUM SLOPE OF A TREAD SURFACE SHALL BE 1:48 (504.4)
2. VISUAL CONTRAST - THE LEADING 1 TO 2 INCHES OF EVERY TREAD SHALL CONSIST OF A SOLID COLOR HAVING VISUAL CONTRAST THE ENTIRE WIDTH OF THE TREAD (504.6)



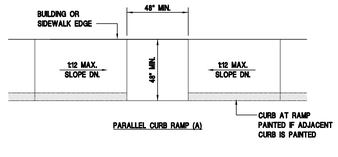
STAIRWAYS & HANDRAILS
Ref. Sections 504 & 505



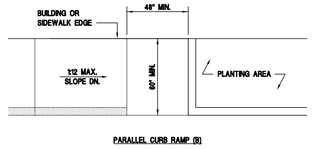
COUNTER SLOPE OF SURFACES ADJACENT TO CURB RAMPS



PLAN
CURB AT RAMP FLARS PAINTED IF ADJACENT CURB IS PAINTED



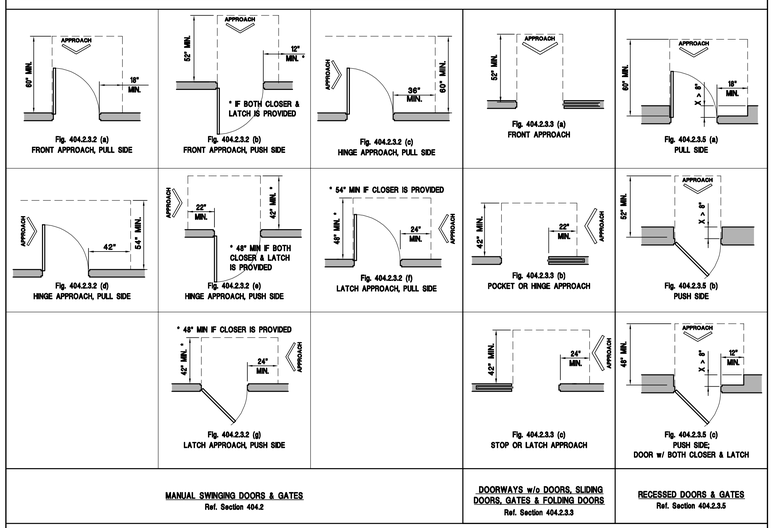
PARALLEL CURB RAMP (A)



PARALLEL CURB RAMP (B)

CURB RAMPS
Ref. Section 406

MANEUVERING CLEARANCE NOTES:
1. DOORS, DOORWAYS AND GATES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH SECTION 404
2. ADJUST DOOR CLOSERS SO THAT THE DOOR TAKES AT LEAST 5 SECONDS TO MOVE FROM 90 DEGREE OPEN POSITION TO 12 DEGREES FROM LATCH (404.2.7)
3. FIRE DOORS SHALL HAVE MINIMUM OPENING FORCE ALLOWABLE BY THE BUILDING AND FIRE CODES. OTHER INTERIOR DOORS, 5 POUNDS MAXIMUM. (404.2.8)
4. MANEUVERING CLEARANCES ARE REQUIRED AT AUTOMATIC DOORS UNLESS DOOR OPERATION HAS STANDBY POWER AND/OR INCLUDE BREAK-AWAY FEATURE (404.3.4)

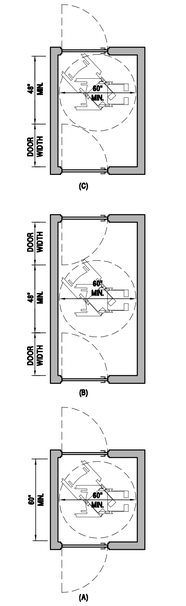


MANUAL SWINGING DOORS & GATES
Ref. Section 404.2

DOORWAYS w/o DOORS, SLIDING DOORS, GATES & FOLDING DOORS
Ref. Section 404.2.3.3

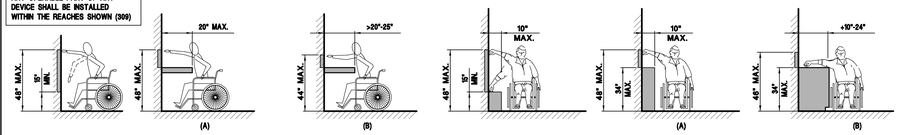
RECESSED DOORS & GATES
Ref. Section 404.2.3.5

MANEUVERING CLEARANCES
Ref. Section 404.2.3

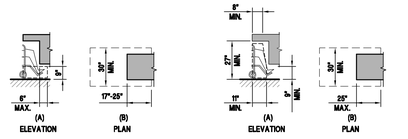


DOORS & GATES IN SERIES
Fig. 404.2.5

NOTE:
ANY OPERABLE PART OF ANY DEVICE SHALL BE INSTALLED WITHIN THE REACHES SHOWN (309)



REACH RANGES
Ref. Section 308

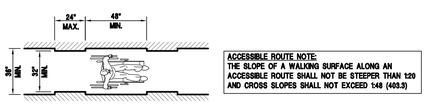


KNEE & TOE CLEARANCES
Ref. Section 306

Fig. 403.5.1 (a)

Fig. 403.5.1 (b)

CLEAR WIDTHS AT 180 DEGREE TURNS



CLEAR WIDTHS
Fig. 403.5

ACCESSIBLE ROUTE NOTE:
THE SLOPE OF A WALKING SURFACE ALONG AN ACCESSIBLE ROUTE SHALL NOT BE STEEPER THAN 1:20 AND CROSS SLOPES SHALL NOT EXCEED 1:48 (403.3)

ACCESSIBLE ROUTE
Ref. Section 402

NOTES:
1. PROTRUDING OBJECTS SHALL NOT REDUCE THE REQUIRED WIDTH OF AN ACCESSIBLE ROUTE (307.5)
2. PROTRUDING OBJECTS ON A CIRCULATION PATH SHALL COMPLY w/ SECTION 307

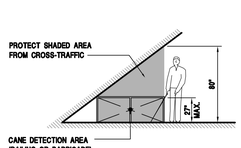


Fig. 307.4
VERTICAL CLEARANCES

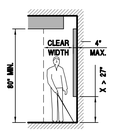
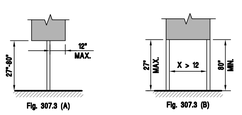
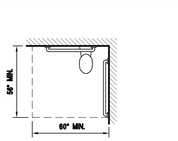


Fig. 307.2
LIMITS OF PROTRUDING OBJECTS

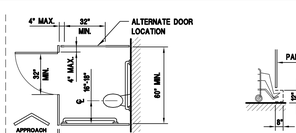


POST-MOUNTED PROTRUDING OBJECTS

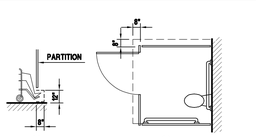
PROTRUDING OBJECTS
Ref. Section 307



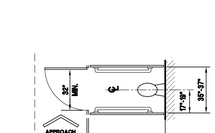
CLEARANCE AT WATER CLOSETS
Fig. 604.3



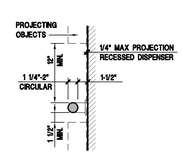
WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT
Ref. Section 604



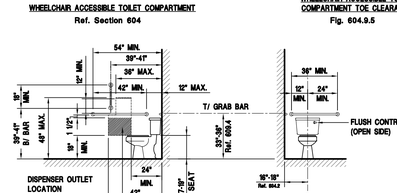
WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT TOE CLEARANCE
Fig. 604.9.5

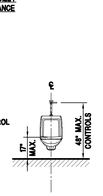


AMBULATORY ACCESSIBLE TOILET COMPARTMENT
Fig. 604.10

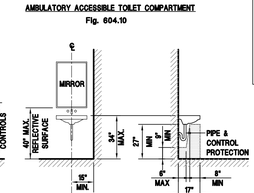


SPACING OF GRAB BARS
Fig. 609.3





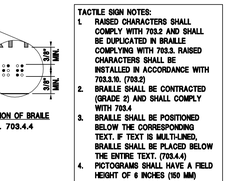
URINAL
Ref. Section 605



LAVATORY
Ref. Sections 606 & 603.3

TOILET ROOM CLEARANCES & MOUNTING HEIGHTS
Ref. Chapter 6

TOILET ROOM NOTES:
1. A TURNING SPACE PER SECTION 304 IS REQUIRED WITHIN A TOILET ROOM (603.2.1)
2. ONLY THE FOLLOWING OBJECTS ARE PERMITTED TO OVERLAP THE REQUIRED CLEARANCE: GRAB BARS, DISPENSERS, SANITARY NAPKIN DISPOSAL UNIT, COAT HOOKS AND SHELVES (604.3.3)
3. FLUSH CONTROLS SHALL BE LOCATED ON THE OPEN SIDE OF THE WATER CLOSET (604.6)
4. URINALS SHALL HAVE A CLEAR FLOOR SPACE COMPLYING WITH 305 POSITIONED FOR FORWARD APPROACH AND CENTERED ON UNIT (605.3)
5. LAVATORIES SHALL HAVE A CLEAR FLOOR SPACE COMPLYING WITH 305 POSITIONED FOR FORWARD APPROACH AND CENTERED ON UNIT (606.2)
6. EXPOSED WATER SUPPLY AND DRAIN PIPES SHALL BE INSULATED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES (606.6)
7. INSTALL GRAB BARS TO WITHSTAND NOT LESS THAN A 250 POUND FORCE APPLIED AT ANY POINT ON THE BAR (609.8)



TACTILE SIGN NOTES:
1. RAISED CHARACTERS SHALL COMPLY WITH 703.2 AND SHALL BE DUPLICATED IN BRAILLE COMPLYING WITH 703.3. RAISED CHARACTERS SHALL BE INSTALLED IN ACCORDANCE WITH 703.3.10. (703.2)
2. BRAILLE SHALL BE CONTRACTED (GRADE 2) AND SHALL COMPLY WITH 703.4
3. BRAILLE SHALL BE POSITIONED BELOW THE CORRESPONDING TEXT. IF TEXT IS MULTI-LINED, BRAILLE SHALL BE PLACED BELOW THE ENTIRE TEXT. (703.4.4)
4. PICTOGRAMS SHALL HAVE A FIELD HEIGHT OF 6 INCHES (150 MM) MINIMUM. CHARACTERS AND BRAILLE SHALL NOT BE LOCATED IN THE PICTOGRAM FIELD. (703.5.2)
5. PICTOGRAMS AND THEIR FIELD SHALL HAVE A NON-GLARE FINISH. PICTOGRAMS SHALL CONTRAST WITH THEIR FIELD WITH EITHER A LIGHT PICTOGRAM ON A DARK FIELD OR A DARK PICTOGRAM ON A LIGHT FIELD. (703.5.3.1)

TACTILE SIGNS
Ref. Section 703

DRINKING FOUNTAIN NOTES:
1. KNEE & TOE CLEARANCE COMPLYING WITH 306 SHALL BE PROVIDED (602.2)
2. WHERE A DRINKING FOUNTAIN IS REQUIRED, TWO SHALL BE PROVIDED; ONE HIGH & ONE LOW (211.2)
3. UNITS SHALL HAVE A CLEAR FLOOR SPACE COMPLYING WITH 305 POSITIONED FOR FORWARD APPROACH AND CENTERED ON UNIT (602.2)

DRINKING FOUNTAIN
Ref. Section 602

PASSENGER LOADING ZONE ACCESS AISLE
Fig. 503.3

GENERAL SITE NOTES:
1. ACCESSIBLE PARKING SPACES AND ACCESS AISLE SHALL BE LEVEL, MAXIMUM PERMITTED SLOPE IS 1:48 (502.6)
2. ACCESSIBLE PARKING SPACES MUST BE IDENTIFIED WITH A SIGN. SIGNS IDENTIFYING VAN ACCESSIBLE SPACES SHALL CONTAIN THE DESIGNATION 'VAN ACCESSIBLE'. SIGNS SHALL BE MINIMUM 60" FROM THE PARKING SURFACE TO THE BOTTOM OF THE SIGN. (502.7)
3.

VEHICAL PARKING SPACES & ACCESS AISLE
Ref. Section 502

IDENTIFICATION
Ref. Section 502.7

PARKING & PASSENGER LOADING ZONES
Ref. Sections 502 & 503

ICC/ANSI A117.1-2009

ACCESSIBLE GUIDELINES

THIS DRAWING IS A REPRESENTATIVE SUMMARY OF THE REQUIREMENTS OF THE ICC/ANSI A117.1 STANDARDS THAT MAY BE APPLICABLE TO THE PROJECT. WHERE SPECIFIC DIMENSIONAL INFORMATION AND CLEARANCES ARE NOT NOTED ON THE DRAWINGS, CONSTRUCT TO THE CLEARANCES AND TOLERANCES DEPICTED ON ACCESSIBLE GUIDELINES SHEET(S). WHERE DRAWINGS SPECIFICALLY INDICATE DIFFERENT OR CONFLICTING INFORMATION WITH THE STANDARDS, CONSTRUCT USING THE MORE STRINGENT REQUIREMENT OR CONTACT THE ARCHITECT FOR RESOLUTION.

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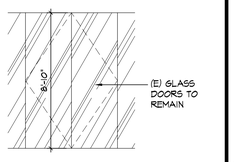
Project No:	260348
Drawn By:	CJS
Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

ACCESSIBILITY GUIDELINES

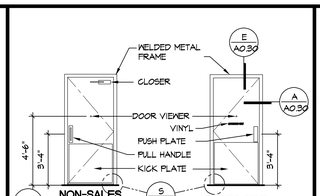
A0.20

DOOR TYPES

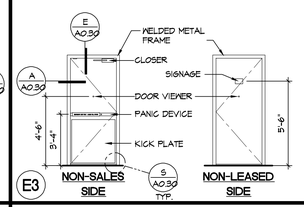
NOTE: REFER TO DOOR SCHEDULE FOR ACTUAL DIMENSIONS AND FIRE RATINGS. REFER TO CONSTRUCTION PLAN FOR DOOR HINGE ORIENTATION.



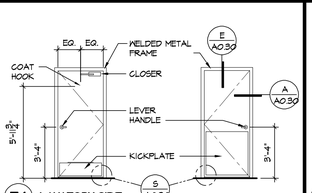
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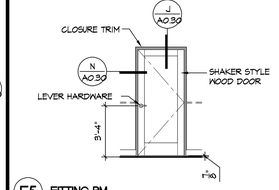
E2



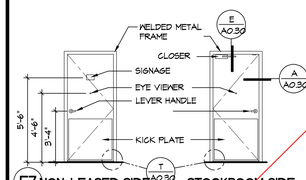
E3



E4 LAVATORY SIDE



E5 FITTING RM.



E7

DOOR AND FRAME SCHEDULE

MARK	LOCATION	DOOR SUPPLIED BY	DOOR TYPE	HARDWARE SET	FIRE RATING	WIDTH	HEIGHT	THICKNESS	DOOR MATERIAL	FRAME MATERIAL	DOOR + FRAME FINISH	HEAD	JAMB	SILL	NOTES
100	PORTAL	EXISTING	E1	HW1D	-	PR 3'-0"	8'-10"	EXISTING	EXISTING	-	EXISTING	-	-	EXISTING	COORDINATE EXTENT OF EXISTING HARDWARE TO REMAIN W/ P.M.
110A	ADA FITTING	G.C.	E5	HW1	-	2'-11 3/4"	6'-11"	1 3/4"	WOOD	WOOD	PRE-FINISHED	J/A0.30	N/A0.30	-	
110B	FITTING	G.C.	E5	HW1	-	2'-11 3/4"	6'-11"	1 3/4"	WOOD	WOOD	PRE-FINISHED	J/A0.30	N/A0.30	-	
110C	FITTING	G.C.	E5	HW1	-	2'-11 3/4"	6'-11"	1 3/4"	WOOD	WOOD	PRE-FINISHED	J/A0.30	N/A0.30	-	
110D	FITTING	G.C.	E5	HW1	-	2'-11 3/4"	6'-11"	1 3/4"	WOOD	WOOD	PRE-FINISHED	J/A0.30	N/A0.30	-	
110E	FITTING	G.C.	E5	HW1	-	2'-11 3/4"	6'-11"	1 3/4"	WOOD	WOOD	PRE-FINISHED	J/A0.30	N/A0.30	-	
110F	FITTING	G.C.	E5	HW1	-	2'-11 3/4"	6'-11"	1 3/4"	WOOD	WOOD	PRE-FINISHED	J/A0.30	N/A0.30	-	
110G	FITTING	G.C.	E5	HW1	-	2'-11 3/4"	6'-11"	1 3/4"	WOOD	WOOD	PRE-FINISHED	J/A0.30	N/A0.30	-	
110H	FITTING	G.C.	E5	HW1	-	2'-11 3/4"	6'-11"	1 3/4"	WOOD	WOOD	PRE-FINISHED	J/A0.30	N/A0.30	-	
110I	FITTING	G.C.	E5	HW1	-	2'-11 3/4"	6'-11"	1 3/4"	WOOD	WOOD	PRE-FINISHED	J/A0.30	N/A0.30	-	
110J	FITTING	G.C.	E5	HW1	-	2'-11 3/4"	6'-11"	1 3/4"	WOOD	WOOD	PRE-FINISHED	J/A0.30	N/A0.30	-	
110K	FITTING	G.C.	E5	HW1	-	2'-11 3/4"	6'-11"	1 3/4"	WOOD	WOOD	PRE-FINISHED	J/A0.30	N/A0.30	-	
110L	FITTING	G.C.	E5	HW1	-	2'-11 3/4"	6'-11"	1 3/4"	WOOD	WOOD	PRE-FINISHED	J/A0.30	N/A0.30	-	
111A	EXIT HALL	G.C.	E2	HW2	-	3'-0"	7'-0"	1 3/4"	HOLLOW METAL	H.M. (WELDED)	P-1D (SALES P-59C)	E/A0.30	A/A0.30	-	
111B	EXIT HALL	G.C.	E3	HW4	45 MIN.	3'-6"	7'-0"	1 3/4"	HOLLOW METAL	H.M. (WELDED)	P-1D	E/A0.30	A/A0.30	-	
112	STOCKROOM	G.C.	E7	HW10	45 MIN.	3'-0"	7'-0"	1 3/4"	HOLLOW METAL	H.M. (WELDED)	P-1D	E/A0.30	A/A0.30	-	
115A	UNISEX RESTROOM	G.C.	E4	HW3	-	3'-0"	7'-0"	1 3/4"	HOLLOW METAL	H.M. (WELDED)	P-1D	E/A0.30	A/A0.30	-	
115B	UNISEX RESTROOM	G.C.	E4	HW3	-	3'-0"	7'-0"	1 3/4"	HOLLOW METAL	H.M. (WELDED)	P-1D	E/A0.30	A/A0.30	-	
116	REMOTE STOCKROOM	EXISTING	E7	HW10	-	3'-0"	7'-0"	EXISTING	EXISTING	EXISTING	P-1D	E/A0.30	A/A0.30	-	

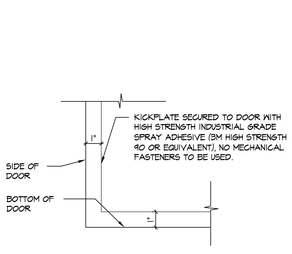
change to owner

DOOR HARDWARE

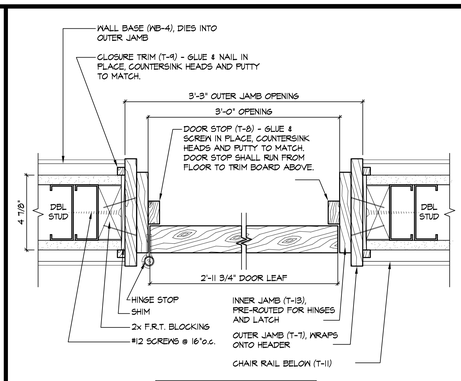
HARDWARE QUANTITIES ARE PER DOOR OPENING, UNLESS NOTED OTHERWISE

HARDWARE SET	HARDWARE COMPONENT	QTY	SUPPLIED BY	DESCRIPTION
HW1D EXISTING S.F. ENTRANCE DOUBLE DOORS	GYLINDER LOCK	1	OWNER	INSTAKEY, FINISH: US26D SATIN CHROME
	NOTES: A. G.C. TO VERIFY EXISTING DOORS ARE TRUE, PLUMB, AND OPERATING PROPERLY B. ALL EXISTING HARDWARE AND HANDLES TO REMAIN REKEY AS NOTED ABOVE. C. ENTRANCE DOORS TO HAVE 1" HIGH CONTRASTING LETTERS STATING "THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED"			
HW2 PASSAGE (SINGLE)	HINGES	3	G.C.	STANLEY #FBB-179, 4 1/2" X 4 1/2" FINISH : US26D SATIN CHROME
	PUSH PLATE	1	G.C.	SALES SIDE - 4"W X 16"H STAINLESS STEEL PUSH PLATE
	PULL HANDLE/ PLATE	1	G.C.	NON-SALES SIDE OF DOOR - 4"W X 16"H STAINLESS STEEL W/ 7/8"W X 11 3/4"H PUSH PULL D-HANDLE. FINISH: STAINLESS STEEL.
	CLOSER	1	G.C.	CORBIN RUSSWIN (PARALLEL ARM) DOOR CLOSER #DC8210, MOUNTED ON PULL SIDE
	DOOR STOP	1	OWNER	IVES #FS446 HEAVY DUTY HOLDER W/ BUTTON. FINISH: SATIN CHROME (US26D) SET INCLUDES STOP, HOOK, MOUNTING PLATE AND SCREWS
	KICK PLATE	2	G.C.	(1) 40"W X 32"H X 1/16"T STAINLESS STEEL FINISH - SALES SIDE (42" DOOR) (1) 40"W X 32"H X 1/16"T STAINLESS STEEL FINISH - NON-SALES SIDE (42" DOOR)
	DOOR VIEWER	1	G.C.	TO BE INSTALLED SO VIEW IS OUT, FROM NON-SALES TO SALES
	NIGHTLOCK	1	OWNER	NIGHTLOCK DOWN 5/8" LOW PROFILE FLOOR PLATE BY NIGHTLOCK DOOR SECURITY DEVICES PHONE: (855) 644-4656
HW3 RESTROOM (SINGLE)	HINGES	3	G.C.	STANLEY #FBB-179, 4 1/2" X 4 1/2" FINISH : US26D SATIN CHROME
	LATCHSET	1	G.C.	PRIVACY SET CORBIN RUSSWIN #CL3520 NZD BHMA 626 WITH LEVER HANDLE
	CLOSER	1	G.C.	CORBIN RUSSWIN (PARALLEL ARM) DOOR CLOSER #DC8210, MOUNTED ON RESTROOM SIDE OF DOOR.
	KICK PLATE	2	G.C.	(1) 34"W X 32"H X 1/16"T STAINLESS STEEL KICK PLATE (OUTSIDE) (1) 34"W X 12"H X 1/16"T STAINLESS STEEL KICK PLATE (INSIDE)
	COAT HOOK	1	G.C.	MCMASTER CARR #1760A3, ALUMINUM FINISH. MOUNTED ON INSIDE OF DOOR @ 72" A.F.F. OR 48" A.F.F. ON ADJACENT WALL BASED ON LOCAL CODE REQUIREMENTS, MOUNT INTO WALL STUD.
	DOOR STOP	1	OWNER	IVES FS444, FINISH US26D, SATIN CHROME
HW4 REAR EXIT (SINGLE)	DOOR ALARM	1	G.C.	DETEX EAX-500
	HINGES	3	G.C.	STANLEY HINGE #FBB-179 NRP, 4 1/2" X 4 1/2" FINISH : US26D SATIN CHROME
	CLOSER	1	G.C.	CORBIN RUSSWIN (PARALLEL ARM) DOOR CLOSER #DC8210, MOUNTED ON PUSH SIDE OF DOOR.
	KICKPLATE	1	G.C.	(1) 40"W X 32"H X 1/16"T STAINLESS STEEL FINISH
	DOOR VIEWER	1	G.C.	MCMASTER-CARR CAT. 104, PART #8406A26, DULL CHROME; MOUNTED @ 54" A.F.F.
	DOOR STOP	1	OWNER	IVES FS444, FINISH: US26D, SATIN CHROME; FLOOR MOUNTED
	SMOKE SEAL	1	G.C.	PEMKO #588C, COLOR: CLEAR
	DOOR GUARD	1	G.C.	INSTALLED BY OWNER; HONEYWELL SECURITY 'DOORGUARD' WITH BAS TIE IN, NON-SALES SIDE (WHERE REQUIRED). SEE LOSS PREVENTION DRAWINGS.
	CYLINDER LOCK	1	OWNER	CYLINDER INSTAKEY LOCKSET W/ CYLINDER AND TRIM INSTALLED IN PUSH BAR, FINISH: US26D SATIN CHROME
	NOTES: A. EXISTING DOORS 1. INSPECT EXISTING HARDWARE AND REPORT CONDITION TO THE OWNER'S PROJECT MANAGER. 2. REPLACE HINGES AS SPECIFIED IF EXISTING HINGES ARE NOT NRP TYPE. 3. REMOVE EXISTING LOCKSET AND INSTALL PANIC HARDWARE AS SPECIFIED. 4. INSTALL APPLICABLE HARDWARE AS REQUIRED/DIRECTED BY OWNER'S PROJECT MANAGER. 5. PROVIDE CLOSURE PLATES AND SEAL ALL OPENINGS AS REQUIRED. B. INSTALL STORE IDENTITY SIGNAGE ON THE EXTERIOR OF THE DOOR. MOUNT PER ELEVATION (OR PER LANDLORD REQUIREMENTS) WITH NO VISIBLE MOUNTING HOLES. COORDINATE WITH OWNER'S PROJECT MANAGER AND LANDLORD ON-SITE REPRESENTATIVE. C. IF THE INSTALLATION OF A DOOR VIEWER IS NOT PERMITTED, REFER TO ELECTRICAL DRAWINGS FOR INTERCOM SYSTEM SPECIFICATIONS.			

HARDWARE SET	HARDWARE COMPONENT	QTY	SUPPLIED BY	DESCRIPTION
HW1 FITTING ROOM (SINGLE)	HINGES	3	OWNER	HINGE, HAGER BB1279, 4.5" X 4.5", SQUARE CORNERS, US26D SATIN CHROME PLATED FINISH
	LOCKSET	1	OWNER	HAGER 3580 X MTN 5GG 26D, 6-PIN, SCHLAGE CLASSIC 'C' KEYWAY KEYED TO 4983T3, 2 3/4" BACKSET DOOR BOLT, 4 7/8" STRIKE (STOREROOM, SATIN CHROME)
	HINGE STOP	1	OWNER	HINGE PIN STOP, DON-JO #1512, 619 SATIN NICKEL FINISH
	NOTES: A. HANDLES TO POINT TOWARD HINGE SIDE OF DOOR B. ALL LOCKSETS ARE KEYED ALIKE C. G.C. TO PROVIDE CLEAR SILENCER RUBBER BUMPERS D. SHIPPED LOOSE FOR G.C. TO INSTALL ONSITE			
HW10 REMOTE STOCK ROOM	HINGES	3	G.C.	STANLEY HINGE #FBB-179 NRP, 4 1/2" X 4 1/2" FINISH : US26D SATIN CHROME
	LOCKSET	-	G.C.	CORBIN RUSSWIN GL3551 SET, STOREROOM FUNCTION WITH LEVER HANDLE, M08 SMALL FORMAT IC CORE
	CYLINDER	1	OWNER	INSTAKEY W/ CYLINDER AND TRIM
	CLOSER	1	G.C.	CORBIN RUSSWIN (TOP JAMB MOUNTED) DOOR CLOSER #DC8220, MOUNTED ON PULL SIDE OF DOOR.
	KICK PLATE	2	G.C.	HAGER #2205 W/O MOUNTING HOLES; FINISH: STAINLESS STEEL W/O HOLES; 0.062"THK X 32"H X (DOOR WIDTH -2") EACH SIDE SECURE W/ MANUFACTURER'S SELF-ADHESIVE TAPE
	DOOR VIEWER	1	G.C.	MCMASTER-CARR CAT. 104, PART #8406A26, DULL CHROME; MOUNTED @ 54" A.F.F.
	SMOKE SEAL	1	G.C.	PEMKO #588C, COLOR: CLEAR
	NOTES: A. EXISTING DOORS 1. INSPECT EXISTING HARDWARE AND REPORT CONDITION TO THE OWNER'S PROJECT MANAGER. 2. REPLACE HINGES AS SPECIFIED IF EXISTING HINGES ARE NOT NRP TYPE. 3. REMOVE EXISTING LOCKSET AND INSTALL NEW AS SPECIFIED. 4. INSTALL APPLICABLE HARDWARE AS REQUIRED/DIRECTED BY OWNER'S PROJECT MANAGER. 5. PROVIDE CLOSURE PLATES AND SEAL ALL OPENINGS AS REQUIRED. B. INSTALL STORE IDENTITY SIGNAGE ON THE EXTERIOR OF THE DOOR. MOUNT PER ELEVATION (OR PER LANDLORD REQUIREMENTS) WITH NO VISIBLE MOUNTING HOLES. COORDINATE WITH OWNER'S PROJECT MANAGER AND LANDLORD ON-SITE REPRESENTATIVE.			

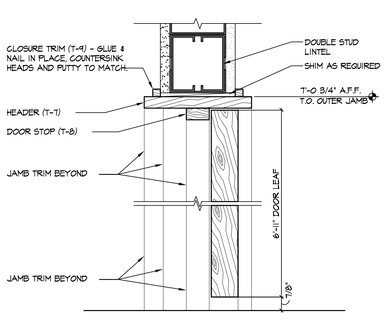


S A0.30 KICKPLATE
SCALE: 3" = 1'-0"



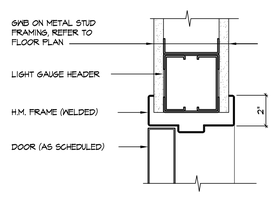
REFER TO PLAN FOR DOOR SWING

N A0.30 FITTING ROOM/OMNI DOOR JAMB
SCALE: 3" = 1'-0"

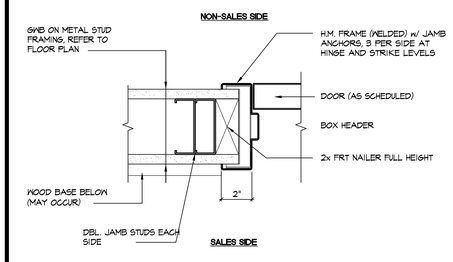


REFER TO PLAN FOR DOOR SWING

J A0.30 FITTING ROOM/OMNI DOOR HEAD
SCALE: 3" = 1'-0"



E A0.30 SALES/NON-SALES DOOR - HEAD
SCALE: 3" = 1'-0"



NOTE:
FRAME SHALL BE SET TIGHT TO FINISHED FLOOR. NO GAPS PERMITTED.

A A0.30 SALES/NON-SALES DOOR - JAMB
SCALE: 3" = 1'-0"

HOLLISTER
CALIFORNIA

ABERCROMBIE & FITCH CO.
6301 FITCH PATH
NEW ALBANY, OHIO 43054
614-283-6500

ARCVISION
ARCHITECTURE + ENGINEERING
1950 CRAIG ROAD, SUITE 300
ST. LOUIS, MO 63146
(314) 415-2400
WWW.ARCV.COM

MEMORIAL CITY MALL
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No:	250348
Drawn By:	AMH
Date	Issue
09.04.2026	CHECKSET
09.25.2026	1 BID SET

DOOR + HARDWARE SCHEDULE

A0.30

FINISH SCHEDULE

FINISH SCHEDULE

MASTER FINISH SCHEDULE — April 4, 2025

SHEEN LEGEND: A = FLAT, B = EGGSHELL/LOW LUSTRE, C/L = SEMI-GLOSS/MEDIUM LUSTRE, D = GLOSS, F = DRYFALL, G = HIGH GLOSS, HT = HIGH TRAFFIC, K= KEM AQUA, X = EXTERIOR, FR = FIRE RATED, T = TEXTURED, EGGSHELL/LOW LUSTRE, M = FLOORING

TAG ID	COLOR SPEC	BASE	BASE SPEC	SW FORMULA #	GALLON				MFG	BRAND	STORE TYPE	WHERE USED
P-1A	EXTRA WHITE SW 7006	EXTRA WHITE	PROMA200 ZERO VOC, LATEX	STOCK PACKAGE COLOR SW7006	-	-	-	-	SHERWIN WILLIAMS	ALL BRANDS		NON-SALES HARD CEILINGS (ROLLED FINISH) 1892 GYP. BD. CEILINGS
P-1B	EXTRA WHITE SW 7006	EXTRA WHITE	PROMA200 ZERO VOC, LATEX	STOCK PACKAGE COLOR SW7006	-	-	-	-	SHERWIN WILLIAMS	ALL BRANDS		CANOE & 1892 SALES WALLS, OUTLET SALES WALL & DISPLAY WINDOW WALLS & SOFFIT, KIDS FITTING ROOM WALLS, GILLY SALES WALLS, BARRICADES
P-1C	EXTRA WHITE SW 7006	EXTRA WHITE	PROMA200 ZERO VOC, LATEX	STOCK PACKAGE COLOR SW7006	-	-	-	-	SHERWIN WILLIAMS	ALL BRANDS		NON-SALES WALLS (ROLLED FINISH), CUT EDGE OF SHELVING (BRUSHED FINISH)
P-1D	EXTRA WHITE SW 7006	EXTRA WHITE	PRO CLASSIC, LATEX ENAMEL	STOCK PACKAGE COLOR SW7006	-	-	-	-	SHERWIN WILLIAMS	ALL BRANDS		NON- SALES DOORS (ROLLED FINISH) AND TRIM (BRUSHED FINISH)
P-1F	EXTRA WHITE SW 7006	EXTRA WHITE	WATERBORNE ACRYLIC DRYFALL	STOCK PACKAGE COLOR SW7006	-	-	-	-	SHERWIN WILLIAMS	ALL BRANDS		NON-SALES OPEN CEILING WHERE SPECIFIED(SPRAY APPLIED DRYFALL); 1892 SALES CEILING
P-2A	TRICORN BLACK SW 6258	ULTRADEEP	PRO INDUSTRIAL ACRYLIC	STOCK PACKAGE COLOR SW6258	-	-	-	-	SHERWIN WILLIAMS	ALL BRANDS		VESTIBULE CEILING, STOREFRONT WINDOW SOFFITS WHERE APPLICABLE (ROLLED FINISH), GH & KIDS WALLS ABOVE TRIM LINE
P-2B	TRICORN BLACK SW 6258	ULTRADEEP	PRO INDUSTRIAL PRE CATALYZED EPOXY	STOCK PACKAGE COLOR SW6258	-	-	-	-	SHERWIN WILLIAMS	A&F, HOLLISTER		VESTIBULE & SURFBOARD WALLS (ROLLED FINISH), A&F HYBRID WALLS ABOVE MONOPOINT, A&F 1892 CEMENT BOARD & FITTING ROOM AREA WHERE SPECIFIED
P-2C	TRICORN BLACK SW 6258	ULTRADEEP	PRO-INDUSTRIAL ACRYLIC B66-650	STOCK PACKAGE COLOR SW6258	-	-	-	-	SHERWIN WILLIAMS	ALL BRANDS		STOREFRONT WOOD & METAL, A&F STOREFRONT MULLIONS, KIDS COLUMNS. HCO LA VESTIBULE & SURFBOARD TRIM (BRUSHED FINISH), HCO LA CASHWRAP & BACKWRAP, STOREFRONT EASEL FRAME (HCRs ONLY) ACCESSORY FIXTURES, GH SALES AREA WHERE SPECIFIED
P-2F	FLAT BLACK SW B42BW3	ULTRADEEP	WATERBORNE ACRYLIC DRYFALL	STOCK PACKAGE COLOR SWB42BW3	-	-	-	-	SHERWIN WILLIAMS	ALL BRANDS		SALES OPEN CEILING (SPRAYED FINISH), EXPOSED BOX COLUMNS ABOVE DATUM LINE
P-2L	TRICORN BLACK SW 6258	ULTRADEEP	PROMA200 ZERO VOC, LATEX	STOCK PACKAGE COLOR SW6258	-	-	-	-	SHERWIN WILLIAMS	ALL BRANDS		HOLLISTER REMODEL SALES CEILING (SPRAY FINISH) GILLY HICKS CARVEOUT SALES CEILING (SPRAY FINISH)
P-2X	TRICORN BLACK SW 6258			STOCK PACKAGE COLOR SW6258	-	-	-	-	SHERWIN WILLIAMS	ALL BRANDS		HOLLISTER, GH EXTERIOR STOREFRONT WOOD & METAL
P-3C	RED	REAL RED	PROMA200 ZERO VOC, LATEX	R2 RED 101 R0 RED 0X Y1 YELLOW 100	6 0 4	17 15 32	0 0 0	0 0 0	SHERWIN WILLIAMS	ALL BRANDS		NON-SALES NO STORAGE LINE / ELECTRICAL PANELS
P-4	WHITE LATEX SEMI-GLOSS		PROMA200 LATEX S/G B31W251	B31W2251					SHEWLIN WILLIAMS			NON-SALES WALLS AND BARRICADE
P-5	WHITE SEMI-GLOSS ALYD		PRO CLASSIC WATER BORNE	B31W51					SHERLIN WILLIAMS			NON-SALES DOORS AND TRIM
P-5C	PLATINUM GRAY	EXTRA WHITE	PRO-INDUSTRIAL DTM ACRYLIC	B1 BLACK R2 MAROON Y3 DEEP GOLD	2 0 0	10 8 17	0 1 1	1 1 0	SHERWIN WILLIAMS	ALL BRANDS		NON-SALES STAIR STRUCTURE AND BALUSTERS
P-44A	SNOWBOUND SW7004		PRO INDUSTRIAL ACRYLIC	SW7004					SHERWIN WILLIAMS	A&F, KIDS, HOLLISTER	GETAWAY, HOUSE, REMODEL	SALES AREA CEILINGS WHERE SPECIFIED
P-44B	SNOWBOUND SW7004		PRO INDUSTRIAL PRE CATALYZED EPOXY	SW7004					SHERWIN WILLIAMS	A&F, KIDS, HOLLISTER	GETAWAY, HOUSE, REMODEL	SALES AREA WALLS, TRIM WHERE SPECIFIED
P-44C	SNOWBOUND SW7004		PRO INDUSTRIAL PRE CATALYZED EPOXY	SW7004					SHERWIN WILLIAMS	A&F, KIDS, HOLLISTER	GETAWAY, HOUSE, REMODEL	SALES AREA BASE
P-44B HT	SNOWBOUND SW7004	ULTRADEEP, PART A	PRO INDUSTRIAL WATER BASED CATALYZED EPOXY, EG-SHEL	SW7004	-	-	-	-	SHERWIN WILLIAMS	A&F, KIDS, HOLLISTER	GETAWAY, HOUSE, REMODEL	FITTING ROOM & SALES FLOOR WALLS AS SPECIFIED, HIGH TRAFFIC
P-44L	SNOWBOUND SW7004		PRO INDUSTRIAL PRE CATALYZED EPOXY	SW7004					SHERWIN WILLIAMS	HOLLISTER	REMODEL	SALES CEILING WHERE SPECIFIED (SPRAY FINISH)
P-44T	SNOWBOUND SW7004 + HOMAX SAND TEXTURE PAINT ADDITIVE		PRO INDUSTRIAL PRE CATALYZED EPOXY	(1) 10 OZ PACK ADDITIVE TO 1 GALLON SW7004					SHERWIN WILLIAMS	HOLLISTER	HOUSE, REMODEL	SALES FLOOR WALLS WHERE SPECIFIED
P-59A	SMOKY BLUE SW7604		PRO INDUSTRIAL ACRYLIC	SW7604					SHERWIN WILLIAMS	HOLLISTER	HOUSE	SELECT WALLS WHERE SPECIFIED
P-59B	SMOKY BLUE SW7604		PRO INDUSTRIAL PRE CATALYZED EPOXY	SW7604					SHERWIN WILLIAMS	HOLLISTER	HOUSE	SELECT WALLS & CEILING WHERE SPECIFIED
P-59C	SMOKY BLUE SW7604		PRO-INDUSTRIAL ACRYLIC	SW7604					SHERWIN WILLIAMS	HOLLISTER	HOUSE, REMODEL	FITTING ROOM DOORS & TRIM WHERE SPECIFIED
P-59F	SMOKY BLUE SW7604		WATERBORNE ACRYLIC DRYFALL	SW7604					SHERWIN WILLIAMS	HOLLISTER	HOUSE	SALES AREA OPEN CEILING "NEW"
P-59B HT	SMOKY BLUE SW7604	ULTRADEEP, PART A	PRO INDUSTRIAL WATER BASED CATALYZED EPOXY, EG-SHEL	SW7604					SHERWIN WILLIAMS	HOLLISTER	HOUSE	FITTING ROOM & SALES FLOOR WALLS AS SPECIFIED, HIGH TRAFFIC
P-59L	SMOKY BLUE SW7604		PRO INDUSTRIAL PRE CATALYZED EPOXY	SW7604					SHERWIN WILLIAMS	HOLLISTER	REMODEL	SALES CEILING WHERE SPECIFIED (SPRAY FINISH)
P-59T	SMOKY BLUE SW7604 + HOMAX STONE TEXTURE PAINT ADDITIVE		PRO INDUSTRIAL PRE CATALYZED EPOXY	(1) 10 OZ PACK ADDITIVE TO 1 GALLON SW7604					SHERWIN WILLIAMS + HOMAX	HOLLISTER	HOUSE	WALLS WHERE SPECIFIED
P-59M	SMOKY BLUE SW7604	MILL WHITE	MOHAWK WB FLOOR FINISH WITH CATALYST	SW7604					SUPPLIED BY FLOORING VENDOR	HOLLISTER	REMODEL	SALES WOOD FLOOR
P-60	BRICK SEALER		KEIM FIXATIV	CLEAR	-	-	-	-	KEIM	ALL BRANDS		ANY SALES / NON-SALES EXISTING BRICK WALLS
P-61T	LAZY GRAY SW6254 + HOMAX STONE TEXTURE PAINT ADDITIVE		PRO INDUSTRIAL PRE CATALYZED EPOXY	(1) 10 OZ PACK ADDITIVE TO 1 GALLON SW6254					SHERWIN WILLIAMS + HOMAX	HOLLISTER	HOUSE, REMODEL	WALLS WHERE SPECIFIED
P-62C	ACCESSIBLE BEIGE SW7036		PRO-INDUSTRIAL ACRYLIC	SW7036					SHERWIN WILLIAMS	HOLLISTER	REMODEL	SALES AREA SHUTTERS & WALL BEHIND SHUTTER (SPRAY FINISH)
P-63B	NAVAL SW6244		PRO INDUSTRIAL PRE CATALYZED EPOXY	SW6244					SHERWIN WILLIAMS	HOLLISTER	HOUSE, REMODEL	SELECT WALLS WHERE SPECIFIED
P-63C	NAVAL SW6244		PRO-INDUSTRIAL ACRYLIC	SW6244					SHERWIN WILLIAMS	HOLLISTER	HOUSE, REMODEL	CASHWRAP & BACKWRAP, TRIM WHERE SPECIFIED (BRUSHED FINISHED)
P-63B HT	NAVAL SW6244	ULTRADEEP, PART A	PRO INDUSTRIAL WATER BASED CATALYZED EPOXY, EG-SHEL	SW6244					SHERWIN WILLIAMS	HOLLISTER	HOUSE, REMODEL	CASHWRAP & BACKWRAP, TRIM WHERE SPECIFIED (BRUSHED FINISHED), HIGH TRAFIC
P-63X	NAVAL SW6244		EMERALD URETHANE TRIM ENAMEL	SW6244					SHERWIN WILLIAMS	HOLLISTER	HOUSE	EXTERIOR STOREFRONT SHIPLAP

FINISH SCHEDULE NOTES

1. PAINT ALL WALLS AS INDICATED PRIOR TO CABINET/WALL STANDARD INSTALLATION.

FINISH SCHEDULE

FLOOR FINISHES

TAG ID	DESCRIPTION	BRAND	STORE TYPE	WHERE USED
FC-1	ONE STEP PREP GRIND AND TWO (2) COATS OF L&M CHEMICALS "LUMISEAL FX" CURING AND SEALING COMPOUND	ALL BRANDS		NON-SALES & VIDEO ROOM FLOOR, SALES AREAS WHERE SPECIFIED
FC-2	3/4" X 3" (19MM X 76MM) WIDE X RANDOM LENGTH PRE-FINISHED PINE, NAILED TO SUBFLOOR EVERY 6" TO 9" (152 TO 229MM) INSTALLED WITH WIRE FOR SPACING, REFER TO SPEC SECTION 096400-1 FOR PROPER SPACING	HOLLISTER	REMODEL	SALES ROOM FLOOR (REMODEL ONLY)
FC-2A	COMPOSITE PLANK FLOORING FINISHED P-12 WITH SHARK GRIP ADDITIVE FOR SLIP RESISTANCE	HOLLISTER	REMODEL	EXTERIOR STORE VESTIBULE (REMODEL ONLY)
FC-4	VINYL COMPOSITE TILE - 12" X 12" X 1/8", ARMSTRONG EXCELLON #5189 CHERRY RED IMPERIAL TEXTURE, SUPPLIED AND INSTALLED BY G.C.	HOLLISTER	REMODEL	EGRESS EXIT AISLE WAYS
FC-5	24" X 24" X 3/4" (610MM X 610MM X 19MM) FLAMED 1.25CM ABSOLUTE BLACK; GROUT JOINTS TO BE 1/8" (3mm), GROUT COLOR TO MATCH LATICRETE #22 MIDNIGHT BLACK	A&F, HOLLISTER		SALES FLOOR ENTRY PORTAL (EXTERIOR)
FC-6	CERAMIC TILE - 8" x 8" "FLORIDA TILE NATURA LIBERTY SERIES # 8601 (FROST WHITE) WITH GREY GROUT, PROVIDED AND INSTALLED BY GENERAL CONTRACTOR (SUPPLIER, INFORMATION CALL (800-789-8453)	A&F, HOLLISTER		TOILET ROOMS WHERE NOTED
FC-7	24" X 24" X 3/8" (610MM X 610MM X 10MM) STRATOS ATLAS BLACK PORCELAIN TILE; GROUT JOINTS TO BE 1/8" (3mm), GROUT COLOR TO MATCH LATICRETE #22 MIDNIGHT BLACK	HOLLISTER		ENTRY PORTAL
FC-8	POLISHED CONCRETE FLOOR TO MATCH CONTROL SAMPLE BY A&F; REFER TO POLISHED CONCRETE FINISHING SECTION IN SPECIFICATIONS	HOLLISTER		SALES FLOOR (WHERE REQUIRED BY CODE)
FC-12	CERAMIC TILE 2" (50MM) BLACK & WHITE HEXAGONAL IN 12" X 18" SHEETS; GROUT - BOSTIK SANDED DRY MIX #HL42 'FRENCH GRAY'	HOLLISTER	HOUSE, REMODEL	FITTING ROOMS AND PARTIAL SALES AREA FLOOR, PORTAL, VESTIBULE (REMODEL ONLY)
FC-13	MALL MATCH FLOORING, CONSULT WITH LANDLORD REPRESENTATIVE TO SOURCE	ALL BRANDS		FOR INFILL BETWEEN STOREFRONT AND LEASELINE, STOREFRONT ENTRY PORTALS WHERE REQUIRED
FC-17	SANDBLASTED PLANK GLASS PAVER FLOORING SYSTEM TO MATCH OWNERS SAMPLE; LAMINATED LOW-IRON GLASS PLANK 38.7MM THICK (12.5+0.6+12.5+0.6+12.5MM) SOLID GLASS PAVER SANDBLASTED ON ALL VISIBLE SIDES	A&F, HOLLISTER		SALES STAIR TREADS AND LANDINGS (WHERE APPLICABLE)
FC-36	ADORE FLOORING, SOVEREIGN SHERWOOD FARMHOUSE, 7" X 48" X 6MM THICK LVT	HOLLISTER	HOUSE	SALES AREA FLOORS
FC-37	PORCELAIN TILE ALTERNATE FOR LVT, SPECS TBD	HOLLISTER	HOUSE	SALES AREA FLOORS, WHERE REQUIRED
FC-46	24" X 24" X 5/16" (610MM X 610MM X 8MM) PORCELAIN TILE; TRANSCERAMICA FAHRENHEIT - FIANDRE, COLOR: 350F FROST, HONED, GROUT: BOSTIK, LUNAR #H196	HOLLISTER	HOUSE	ENTRY PORTAL
FC-47	VINYL COMPOSITION TILE: ARMSTRONG 'STANDARD EXCELON IMPERIAL TEXTURE, COLOR: 51915 CHARCOAL, 12" X 12" X 1/8" THICK (305mm X 305mm X 3.2mm)	ALL BRANDS		RESTROOM & MOP SINK CLOSET FLOOR
FC-53	TILEBAR MOXY XL TIMBER BIDGE RIGID CORE CLICK LUXURY VINYL PLANK, 9" X 72" X 1/4"	HOLLISTER	HOUSE	SALES AREA FLOORS
FC-57	COCOMAT - CHAMPTION SUPER NOP 54oz BERBER NONWOVEN SHEET/ROLL CARPET, COLOR: STEEL BLUE 5157	HOLLISTER	HOUSE, REMODEL	ENTRY WALK OFF MAT (EXTERIOR ONLY)
FC-62	ICG ITALIA, LEGNI HIGH TECH, COLOR: ROVERE CORTECCIA, SIZE: 8" X 48" X 5/16" (203mm X 1219mm X 8mm), GROUT: LATICRETE, COLOR: #66 CHESNUT BROWN	HOLLISTER	HOUSE, REMODEL	SALES AREA FLOORS
FC-64	PATCRAFT, 565V HOLLISTER SABLE, COLOR 07310 SOOTHING SABLE, WOOD PLANK LVT, GLUE DOWN, SIZE: 6" X 48"	HOLLISTER	HOUSE	SALES AREA FLOORS

WALL BASES

TAG ID	DESCRIPTION	BRAND	STORE TYPE	WHERE USED
WB-1	5-1/2" (140MM) HIGH GALVANIZED METAL CLAD WOOD BASE	OUTLET		SALES ROOMS
WB-2	1" X 4" (25 x 100MM) WOOD BASE PAINTED TO MATCH HOARDING	ALL BRANDS		HOARDING
WB-3	6" COVE BASE - JOHNSONITE #CB-50 WHITE, SUPPLIED & INSTALLED BY G.C.	ALL BRANDS		RESTROOMS
WB-4	3/4" x 5-1/2" (19 x 140MM) THICK WOOD BASE - GRADE 1 HARDWOOD WITH TOE STRIP	HOLLISTER, GILLY HICKS		SALES AREA
WB-9	1" X 6" GRADE 1 WOOD BASE (SUPPLIED BY G.C.)	ALL BRANDS		SALES AREA
WB-16	3/4" X 5 1/2" (19 x 140MM) POPLAR STAINED TO MATCH OWNER'S SAMPLE, WITH TOE STRIP	HOLLISTER	HOUSE	SALES AREA WHERE SPECIFIED
VB-1	4" COVE BASE - JOHNSONITE #CB-40 WHITE, SUPPLIED AND INSTALLED BY GC.	HOLLISTER	REMODEL	NON-SALES

TRIMS

TAG ID	DESCRIPTION	BRAND	STORE TYPE	WHERE USED
T-1	1/2" x 4" x 144" (12 x 100 x 3657MM) POPLAR CROWN, PRE-FINISHED	HOLLISTER	HOUSE	SALES AREA
T-3	3 1/16" x 1/2"x 120" (78 x 12 x 3050MM) POPLAR TRIM, PRE-FINISHED	HOLLISTER	HOUSE	GLASS BLOCK FRAME
T-4	1 1/2" x 1 1/2" x 144" (38 x 38 x 3657MM) POPLAR CHAIR RAIL, PRE-FINISHED	HOLLISTER	HOUSE	STOREFRONT
T-5	3" x 1/2" x 96" (76 x 12 x 2440MM) POPLAR DOOR CASING, PRE-FINISHED	HOLLISTER	HOUSE	FITTING ROOM AND OMNI DOOR
T-6	4 1/2" x 3/4" (178 x 19MM) POPLAR DOOR INNER JAMB, PRE-FINISHED. PRE ROUTED FOR DOOR HARDWARE	HOLLISTER	HOUSE	FITTING ROOM AND OMNI DOOR
T-7	7" x 3/4" x 96" POPLAR DOOR OUTER JAMB, PRE-FINISHED	HOLLISTER	HOUSE	FITTING ROOM AND OMNI DOOR
T-8	1 1/2" x 3/4" (38 x 19MM) POPLAR DOOR STOP, PRE-FINISHED	HOLLISTER	HOUSE	FITTING ROOM AND OMNI DOOR
T-9	1/2" x 1/2" x 96" (12 x 12 x 2440MM) POPLAR DOOR CASING, PRE-FINISHED	HOLLISTER	HOUSE	FITTING ROOM AND OMNI DOOR
T-10	3/4" x 5 1/2" x 144" (19 x 140 x 3657MM) SHIPLAP TRIM, PRE-FINISHED	HOLLISTER	HOUSE	SALES AREA FEATURE WALLS
T-11	3/4" x 3/4" x 96" (19 x 19 x 2440MM) POPLAR CHAIR RAIL, PRE-FINISHED	HOLLISTER	HOUSE	FITTING ROOM HALLWAY
T-12	1 1/2" X 5 1/2" (38 x 140MM) SHIPLAP FRAME TRIM, PRE-FINISHED	HOLLISTER	HOUSE	SALES AREA FEATURE WALLS
T-13	3/4" x 5 1/4" (19 x 133MM) DOOR INNER JAMB, PRE-FINISHED	HOLLISTER	HOUSE	FITTING ROOM AND OMNI DOOR
T-14	3/4" x 1 1/2" (19 x 38MM) MIRROR TRIM, PRIMED	HOLLISTER	HOUSE	SALES AREA, FITTING ROOMS AND FITTING ROOM HALLWAY
T-15	1/2" x 4" x 144" (12 x 100 x 3657MM) POPLAR CROWN, PAINTED (SUPPLIED BY G.C.)	HOLLISTER	HOUSE	FITTING ROOMS
T-16	3/4" x 3/4" x 96" (19 x 19 x 2440MM) POPLAR CHAIR RAIL, PAINTED (SUPPLIED BY G.C.)	HOLLISTER	HOUSE	FITTING ROOM HALLWAY

CEILING FINISHES

TAG ID	DESCRIPTION	BRAND	STORE TYPE	WHERE USED
C-1	24" x 48" (600 x 1200MM) ACOUSTIC PANELS (WHITE) #1729 FINE FISSURED w / 15/16" SUSPENSION GRID SYSTEM (WHITE) BY ARMSTRONG	ALL BRANDS		NON-SALES (WHERE APPLICABLE)
C-2	24" X 24" (610 x 610MM) ACOUSTIC CEILING TILE, PATTERNED, PRE-FINISHED GREY	HOLLISTER	BIG SUR	HOLLISTER SALES (WHERE APPLICABLE)
C-2B	24" X 24" (610 x 610MM) ACOUSTIC CEILING TILE, PATTERNED, PRE-FINISHED BLACK	HOLLISTER	REMODEL	HOLLISTER SALES (WHERE APPLICABLE)
C-3	PAINTED GYP.BD.; REFER TO REFLECTED CEILING PLAN	ALL BRANDS		SEE REFLECTED CEILING PLAN
C-4	PAINTED MDF PANEL REFER TO REFLECTED CEILING	ALL BRANDS		SEE REFLECTED CEILING PLAN
C-5	PREPRIMED WOOD SLAT	HOLLISTER	REMODEL	HOLLISTER VESTIBULE CEILING (REMODEL ONLY)
C-6	PREFINISHED ACM PANEL	HOLLISTER		HOLLISTER PORTAL CEILING

SPECIAL FINISHES

TAG ID	DESCRIPTION	BRAND	STORE TYPE	WHERE USED
SF-2	FIBERGLASS REINFORCED PANELS (F.R.P.) - CRANE COMPOSITES, INC. GLASBORD FX. PEBBLE EMBOSSED TEXTURE, WHITE #85 W/ COORDINATING FACTORY J-MOLD AND CORNER MOLDINGS	ALL BRANDS		ALL NON-SALES WALLS EXCEPT AT ELECTRIC PANELS OR WHERE SF-5 OCCURS
SF-3	5/8" TAPERED EDGE GOLD BOND IM-IMPACT GYPSUM BOARD, TYPE X CORE	ALL BRANDS		NON-SALES WALLS AS SPECIFIED
SF-5	3/4" (19MM) THICK FIRE RETARDANT TREATED PLYWOOD- DO NOT PAINT, USED FOR WAINSCOT	ALL BRANDS		NON-SALES WALLS AS SPECIFIED
SF-6	FROSTED FILM - 3M DUSTED CRYSTAL 7725SE-314	ALL BRANDS		STOREFRONT WINDOWS AS SPECIFIED
SF-7	BLACK FILM - 3M SCOTCHCAL BLACK 7725-12 OR A PPROVED EQUAL	ALL BRANDS		STOREFRONT WINDOWS (IF SPECIFIED)
SF-8	3M DAY/ NIGHT FILM - DARK GRAY 3635-0171	ALL BRANDS		STOREFRONT WINDOWS (IF SPECIFIED)
SF-9	1/4" (6MM) CLEAR GLASS MIRROR WITH POLISHED EDGES	ALL BRANDS		SALES WALLS AS SPECIFIED
SF-11	1/16" (1.5MM) SEAMED SHEET METAL CLADDING BACKED WITH 1/2" (12MM) TILE BACKER BOARD. SPRAY APPLIED COLOR.	ALL BRANDS		STOREFRONT AS INDICATED ON DRAWINGS
SF-13	PEEL OFF PAINT (TEMPORARY - DURING CONSTRUCTION ONLY)	ALL BRANDS		STOREFRONT GLAZING
SF-14	BLACK VISQUEEN (TEMPORARY - DURING CONSTRUCTION ONLY)	ALL BRANDS		VESTIBULE PASS-THROUGH, STOREFRONT WINDOWS WHERE SPECIFIED
SF-15	3M FULLY OPAQUE MEDIUM-GRAY 180C-31/ PANTONE 421C	HOLLISTER		STOREFRONT WINDOWS WHERE SPECIFIED
SF-30	ACM, 4MM PE, LARSON, CLASSIC BLACK, FIRE RATING: FLAME SPREAD INDEX: 0, ASTM E84; SMOKE DEVELOPMENT INDEX: 0, ASTM E84	ALL BRANDS		STOREFRONT, WHERE ALLOWED BY CODE
SF-31	ACM, 4MM FR, LARSON, DARK SIGNAL BLACK, FIRE RATING: A2-S1, D0 EN 13501-1, (BS 8414-1 FULL-SCALE TEST)	ALL BRANDS		STOREFRONT, WHERE REQUIRED BY CODE
SF-44	6 X 6 X 1/4" BLUE ROCA TILE, GROUT: LATICRETE #78 STERLING SILVER, 6MM GROUT JOINTS	HOLLISTER	HOUSE	STOREFRONT WAINSCOT
SF-45	ACM, 4MM PE, LARSON, CUSTOM BLUE, FIRE RATING: FLAME SPREAD INDEX: 0, ASTM E84; SMOKE DEVELOPMENT INDEX: 0, ASTM E84	HOLLISTER	HOUSE	STOREFRONT
SF-48	8" x 8" x 3" GLASS BLOCK WITH BLACK SILICONE	HOLLISTER	HOUSE	SALES AREA FEATURE WALLS
SF-59	DRYVIT ARCHITECTURAL COATING, SANDPEBBLE FINE TEXTURE, COLOR #104 DOVER SKY	HOLLISTER	HOUSE	STOREFRONT & SALES WALLS WHERE SPECIFIED
SF-60	ACM, 4MM PE, LARSON, CUSTOM MATCH RAL 5011 STEEL BLUE, FIRE RATING: FLAME SPREAD INDEX: 0, ASTM E84, SMOKE DEVELOPMENT INDEX: 0, ASTM E84	HOLLISTER	HOUSE	STOREFRONT
SF-63	ANTI-FRACTURE WINDOW FILM, 3M BRAND (OR APPROVED EQUAL), S40, 7mil / .178mm, APPLIED TO INTERIOR OF STOREFRONT GLAZING	ALL BRANDS		STOREFRONT WINDOWS, WHERE SPECIFIED
SF-64	ANTI-GRAFFITI WINDOW FILM, 3M BRAND (OR APPROVED EQUAL), TYPE: A G-4, .0004MM THICK, APPLIED TO EXTERIOR OF STOREFRONT GLAZING	ALL BRANDS		STOREFRONT WINDOWS, WHERE SPECIFIED

WALLCOVERING

TAG ID	DESCRIPTION	BRAND	STORE TYPE	WHERE USED
WC-33	KOROSEAL, OTIS - BLUE YONDER T521-08	HOLLISTER	HOUSE, REMODEL	FITTING ROOMS WHERE SPECIFIED
WC-34	KOROSEAL, LINSEY - SKY SE21-11	HOLLISTER	HOUSE, REMODEL	FITTING ROOMS WHERE SPECIFIED
WC-35	KOROSEAL, ARD - SKYWRITING DA21-05	HOLLISTER	HOUSE, REMODEL	FITTING ROOMS WHERE SPECIFIED
WC-36	KOROSEAL, CITY SCAPE - BLUE KYANITE SG05-08	HOLLISTER	HOUSE, REMODEL	FITTING ROOMS WHERE SPECIFIED
WC-37	KOROSEAL, GRANDE - GRANITE GREY 5021-96	HOLLISTER	HOUSE, REMODEL	FITTING ROOMS WHERE SPECIFIED
WC-38	ARTE, RITORTO - STEEL 33058	HOLLISTER	HOUSE, REMODEL	FITTING ROOMS WHERE SPECIFIED
WC-39	KOROSEAL REATEC TC-4210 MAPLE STRAIGHT GRAIN 2	HOLLISTER	HOUSE, REMODEL	SALES AREA WHERE SPECIFIED

HOLLISTER CALIFORNIA

ABERCROMBIE & FITCH CO.
6301 FITCH PATH
NEW ALBANY, OHIO 43054
614-283-6500

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1950 CRAIG ROAD, SUITE 300
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(314) 415-2400
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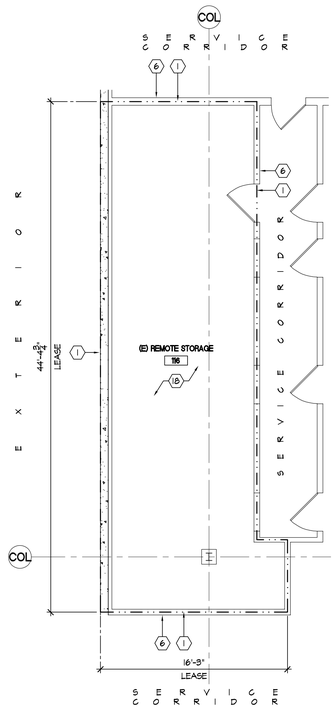
MEMORIAL CITY MALL
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

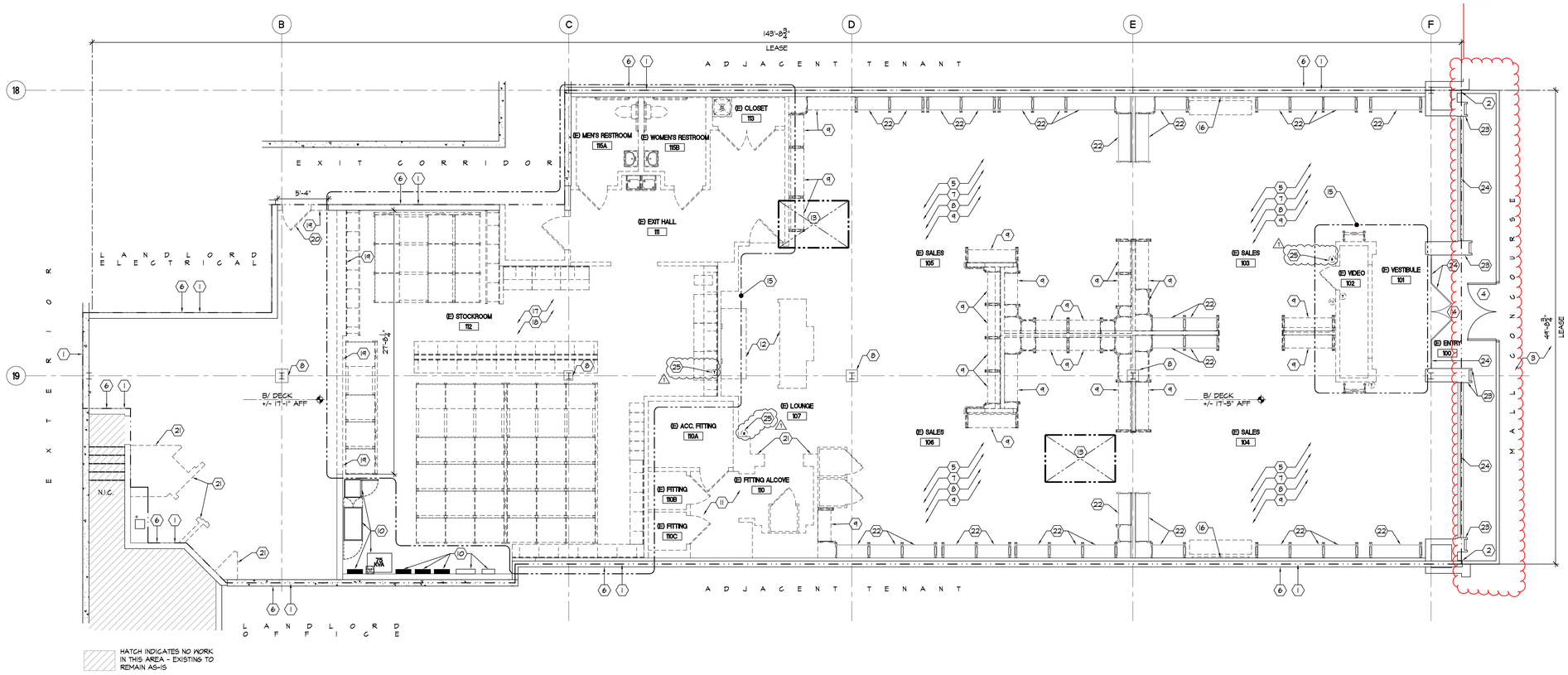
Project No:	260348
Drawn By:	CJS

Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

FINISH SCHEDULE

A0.40





HATCH INDICATES NO WORK IN THIS AREA - EXISTING TO REMAIN AS-IS

REMOTE STORAGE DEMOLITION & EXISTING CONDITIONS PLAN

SCALE: 3/16"=1'-0"

DEMOLITION & EXISTING CONDITIONS PLAN

SCALE: 3/16"=1'-0"

NOTE:
EXISTING HVAC EQUIPMENT, MAIN DUCTS AND UTILITIES SERVING SAID EQUIPMENT SHALL REMAIN IN PLACE AND OPERATIONAL FOR THE DURATION OF THE CONSTRUCTION UNTIL SPECIFIED UNITS ARE PRESENT ON SITE. COORDINATE EXTENT OF DUCTWORK REMOVAL w/ NEW AND PROVIDE RECOMMENDATIONS FOR RE-WORK/REMOVAL OF EXISTING EQUIPMENT/DUCTWORK FOR TEMPORARY CONDITIONING OF THE SPACES TO THE P.M.. (SAVE EXISTING HVAC T-STATS/SENSORS/CABLING AND CONTROLS. ⚠

CONSTRUCTION BARRICADE NOTES

A. IF CONSTRUCTION BARRICADE IS EXISTING OR INSTALLED BY LANDLORD, PREPARE FACE OF CONSTRUCTION BARRICADE PER OWNER'S STANDARDS FOR GRAPHIC INSTALLATION.

B. CONSULT WITH MALL REPRESENTATIVE FOR HOURS IN WHICH WORK ON CONSTRUCTION BARRICADE CAN OCCUR.

C. TEMPORARY PRE-MANUFACTURED CONSTRUCTION BARRICADE SUPPLIED AND INSTALLED BY OWNER'S VENDOR. COORDINATE INSTALLATION WITH VENDOR AND LANDLORD PRIOR TO START OF CONSTRUCTION. ALIGN DOOR IN BARRICADE w/ ENTRY PORTAL FOR FIXTURE DELIVERY AFTER MALL HOURS.

D. MAINTAIN REQUIRED MINIMUM CLEARANCES FROM CONSTRUCTION BARRICADE TO NEAREST PERMANENT FIXTURE IN MALL CONCOURSE TO MAINTAIN THIS BUILDING'S EGRESS REQUIREMENTS. IF MINIMUM EGRESS CLEARANCE CANNOT BE OBTAINED THEN COORDINATE WITH MALL OPERATIONS TO TEMPORARILY RELOCATE KIOSK OR FIXTURES. IF KIOSK OR FIXTURES CANNOT BE RELOCATED, THEN NOTIFY P.M. IMMEDIATELY.

E. CONSTRUCTION BARRICADE TO BE 100% COMPLETE AND READY FOR OWNER'S GRAPHICS TO BE INSTALLED NOT MORE THAN FOUR DAYS AFTER CONSTRUCTION START. CONTACT P.M. UPON COMPLETION TO COORDINATE GRAPHIC INSTALL WITH GRAPHIC VENDOR.

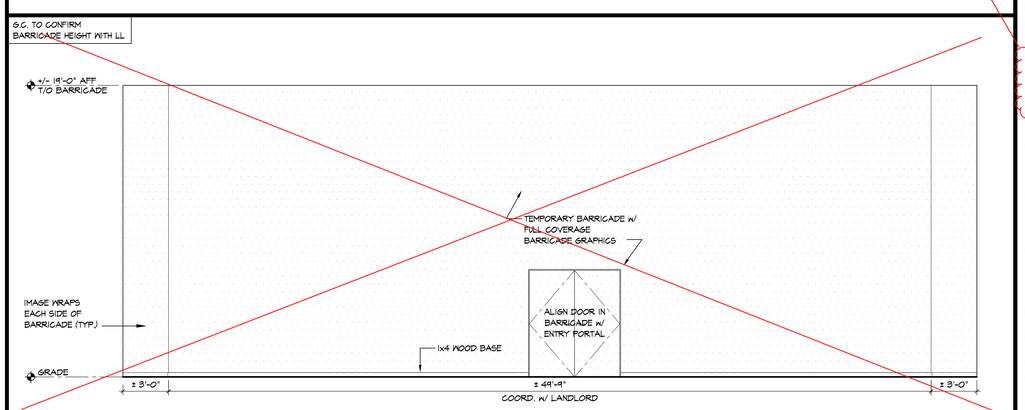
F. MAINTAIN CONSTRUCTION BARRICADE DURING CONSTRUCTION. REPORT ANY DAMAGES TO P.M. IF BARRICADE SUPPLIED BY A&F OR MALL OPERATIONS IF SUPPLIED BY LANDLORD.

G. ALL DELIVERIES TO SPACE DURING MALL HOURS SHALL BE MADE THROUGH SECONDARY EXIT. CONSTRUCTION BARRICADE DOORS FOR FIXTURE & OVERSIZED MATERIAL DELIVERY AFTER MALL HOURS.

H. COORDINATE REMOVAL OF CONSTRUCTION BARRICADE, WITH LANDLORD, WHEN 100% OF STOREFRONT IS COMPLETE OR A MINIMUM OF TWO NIGHTS PRIOR TO OPENING. CARE IS TO BE TAKEN WHEN DISASSEMBLING AND REMOVING CONSTRUCTION BARRICADE.

I. RESTORE MALL FLOORING AND BULKHEAD/CEILING TO A "LIKE NEW" CONDITION AND FINISH AFTER REMOVAL OF CONSTRUCTION BARRICADE.

Window vinyls



S A1.00 BARRICADE ELEVATION (SHOWN FOR DESIGN INTENT ONLY)

SCALE: N.T.S.

CODED NOTES

1. LEASE LINE
2. EXISTING LANDLORD NEUTRAL PIER. PROTECT DURING CONSTRUCTION
3. EXISTING MALL CONCOURSE FLOOR FINISHES. PROTECT DURING CONSTRUCTION.
4. TEMPORARY CONSTRUCTION BARRICADE SUPPLIED AND INSTALLED BY LANDLORD'S VENDOR AT TENANT G.C.'S EXPENSE. COORDINATE INSTALLATION WITH VENDOR AND LANDLORD PRIOR TO START OF CONSTRUCTION. ALIGN DOORS IN BARRICADE w/ ENTRY PORTALS FOR FIXTURE DELIVERY AFTER MALL HOURS.
5. REMOVE ALL FIXTURES, TABLES, RUGS, SEATING, HANGERS, CABINET SHELVES, MIRRORS, ETC.
6. EXISTING DEMISING/CORRIDOR WALL TO REMAIN.
7. EXISTING FLOORING TO REMAIN U.N.O. PREP WOOD FLOORING TO RECEIVE NEW FINISH. NOTIFY PM IF CONDITION REQUIRES REMEDIATION TO RECEIVE NEW FINISHES. SAND ALL FLOORING PRIOR TO PAINTING.
8. EXISTING COLUMN ENCLOSURES TO REMAIN. PROTECT STRUCTURAL COLUMNS, BEAMS, JOISTS, DECK AND APPLIED FIRE PROTECTION (WHERE APPLICABLE) DURING WORK. REPAIR DAMAGED OR MISSING FIRE PROTECTION TO MAINTAIN ORIGINAL DESIGN RATING PRIOR TO COMMENCING WITH NEW CONSTRUCTION.
9. DISASSEMBLE SELECTED EXISTING CABINETS (SHOWN DASHED) AND ASSOCIATED SHUTTERS. ALL CABINETS TO BE SAVED FOR FUTURE REUSE. COORDINATE WITH PM PRIOR TO THROWING AWAY ANY CABINETS. SELECTED CABINETS TO BE REUSED IN DIFFERENT LOCATIONS. DESTROY AND DISPOSE OF ALL OTHER CABINETS SELECTED TO BE REMOVED. COORDINATE WITH A2.00.
10. EXISTING ELECTRICAL EQUIPMENT. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL DIRECTIVES.
11. G.C. TO REMOVE EXISTING FITTING ROOM PARTITIONS, CURTAINS, HARDWARE, MIRRORS AND FIXTURES.
12. EXISTING CASHWRAP/BACKWRAP CABINETS TO BE REMOVED.
13. APPROXIMATE SIZE AND LOCATION OF EXISTING MECHANICAL EQUIPMENT, REFER TO MECHANICAL DRAWINGS.
14. EXISTING TILE FINISH TO REMAIN, PROTECT DURING CONSTRUCTION.
15. REMOVE ALL NON STRUCTURAL ELEMENTS INCLUDING, BUT NOT LIMITED TO: INTERIOR WALLS, CABINETS, DOOR & FRAMES, TRIM, FLOOR FINISHES, PLUMBING FIXTURES, FITTING ROOM PARTITIONS AND FIXTURES, CEILINGS, ELECTRICAL & MECHANICAL APPURTENANCES IN ENTIRE AREA OF WORK - U.N.O. REFER TO MEP DRAWINGS FOR ADDITIONAL DIRECTIVES.
16. REMOVE EXISTING MARKETING CLAMPS & BARS AND SAVE FOR REINSTALLATION AFTER NEW FINISHES ARE INSTALLED.
17. G.C. TO COORDINATE WITH ON-SITE STORE TEAM TO IDENTIFY DSP CART(S) AND SALVAGE FOR RELOCATION. PREP TO RECEIVE NEW FINISHES
18. REMOVE NON-SALES SHELVING AS INDICATED. PATCH & REPAIR WALL / FLOOR AS REQUIRED.
19. G.C. TO REMOVE PORTION OF EXISTING WALL, SHOWN DASHED.
20. G.C. TO REMOVE EXISTING DOOR AND ALL ITS COMPONENTS.
21. G.C. TO REMOVE EXISTING WALL.
22. EXISTING CABINET TO REMAIN, PROTECT DURING CONSTRUCTION AND PREP TO RECEIVE NEW FINISHES.
23. EXISTING STOREFRONT CONSTRUCTION TO REMAIN, PREP TO RECEIVE NEW FINISHES.
24. EXISTING STOREFRONT GLAZING AND GLASS ENTRY DOORS TO REMAIN, CLEAN TO LIKE NEW CONDITION. REMOVE EXISTING VINYL WINDOW DECALS.
25. REMOVE EXISTING T-STAT SENSOR. SAVE FOR RELOCATION. ⚠

GENERAL NOTES

A. PLAN SHOWN MAY NOT DEPICT THE ENTIRE EXTENT OF THE EXISTING CONDITIONS, INTERIOR LAYOUT AND EXTENT OF REQUIRED DEMOLITION.

B. WITHIN (2) DAYS OF COMMENCEMENT OF CONSTRUCTION, OR WITHIN (2) DAYS FOLLOWING COMPLETION OF DEMOLITION, CAREFULLY EXAMINE THE AREA OF WORK AND REPORT ANY DISCREPANCIES TO THE PROJECT MANAGER (P.M.) WITHIN THE LEASEHOLD DIMENSIONS OR CONFLICTS BETWEEN THE PHYSICAL SPACE AND THE INTENT OF THE WORKING DRAWINGS. (PAY SPECIAL ATTENTION TO CEILING HEIGHTS AND STOREFRONT DESIGN INTENT.)

C. REMOVE ALL EXISTING LEASEHOLD IMPROVEMENTS NOT REQUIRED TO REMAIN AS SHOWN ON PLAN. DEMOLITION INCLUDES BUT IS NOT LIMITED TO THE REMOVAL OF SPECIFIED INTERIOR WALL PARTITIONS, CEILINGS, FLOOR COVERINGS, PLATFORMS, DISPLAY SHOW WINDOWS, CABINETS, ETC. DEMOLITION ALSO INCLUDES THE REMOVAL OF EXISTING ELECTRICAL, MECHANICAL AND PLUMBING FIXTURES AND EQUIPMENT AS SPECIFIED ON MECHANICAL & ELECTRICAL DRAWINGS BOTH WITHIN THE LEASE SPACE AND ON THE ROOF (WHERE APPLICABLE). CONTACT THE P.M. IF THERE ARE ANY QUESTIONS CONCERNING THE EXTENT OF DEMOLITION.

D. REMOVE ALL EXISTING MECHANICAL EQUIPMENT AND DUCTWORK NOT BEING USED OR NOT SERVING OTHER TENANT SPACES. DO NOT ABANDON ANY EXISTING DUCTWORK OR EQUIPMENT IN PLACE AND SHALL BE REMOVED BACK TO SOURCE.

E. CHECK AND REPAIR ALL EXISTING OVERHEAD SANITARY AND STORM DRAIN LINES FOR LEAKS DURING DEMOLITION. IF UTILITIES SERVE A TENANT ABOVE OR BELOW (WHERE APPLICABLE), REPORT LEAKS TO LANDLORD'S SITE REPRESENTATIVES & OWNER'S REPRESENTATIVES FOR DIRECTION. DO NOT MAKE CORRECTIONS WITHOUT AUTHORIZATION.

F. COORDINATE THE REMOVAL, DISCONNECTION AND/OR CAPPING OF ANY UTILITIES w/ THE P.M.

G. FOLLOW THE LANDLORD'S DEMOLITION REQUIREMENTS/LIMITATIONS AND COORDINATE A CONVENIENT TIME TO PERFORM THE WORK w/ THE LANDLORD . INSTALL TEMPORARY PROTECTED MEANS OF EGRESS, LIGHTING AND SAFETY DEVICES IN ACCORDANCE WITH ALL w/ AUTHORITIES HAVING JURISDICTION, BUILDING REGULATIONS AND LANDLORD REQUIREMENTS.

H. PATCH OR REPAIR EXISTING FLOOR SLAB, DEMISING WALLS AND ROOFING AFTER COMPLETION OF ALL DEMOLITION AND PRIOR TO THE COMMENCEMENT OF NEW CONSTRUCTION. COORDINATE WITH LANDLORD PRIOR TO PERFORMING ANY ROOF WORK. PATCH, REPAIR AND LEVEL EXISTING FLOOR SLAB AND INFORM THE P.M. OF ANY SEVERE IRREGULARITIES IN EXISTING SLAB IMMEDIATELY.

I. COVER ANY RETURN AIR OPENINGS PRIOR TO DEMOLITION.

J. ALL REUSED EQUIPMENT AND UTILITIES ARE TO BE REFURBISHED TO "LIKE NEW" CONDITION.

K. EXERCISE EXTREME CARE DURING DEMOLITION SO AS NOT TO DAMAGE OR DISRUPT UTILITIES OR SPRINKLER LINES WHICH ARE NOT TO BE RELOCATED AND PASS THROUGH THE SPACE TO SERVE ADJACENT SPACES OR OTHER TENANTS. G.C. WILL BEAR SOLE RESPONSIBILITY OF ANY SUCH DISRUPTION OR DAMAGE.

L. REMOVE EXISTING PLUMBING FIXTURES INCLUDING TOILETS, LAVATORIES AND DRINKING FOUNTAINS. REUSE WATER AND SANITARY LINES ASSOCIATED WITH EXISTING FIXTURE FOR CONNECTION OF NEW TOILET, LAVATORY AND DRINKING FOUNTAIN, WHERE APPLICABLE.

M. COORDINATE THE REMOVAL, DISPOSAL AND/OR RETURN OF EXISTING SECURITY SYSTEMS (WHERE APPLICABLE) WITH P.M. PRIOR TO ITS REMOVAL. FAILURE TO DO SUCH COORDINATION WILL RESULT IN G.C. MONETARY FINE IN THE EQUIVALENT OF THE COST OF REPLACEMENT VALUE OF THE EXISTING SECURITY SYSTEM.

N. NOTIFY P.M. IMMEDIATELY OF ANY SEVERE DISCREPANCIES OR IRREGULARITIES DISCOVERED DURING DEMOLITION WHICH MAY AFFECT THE CURRENT STORE DESIGN. PAY SPECIAL ATTENTION TO AVAILABLE HEIGHT FOR INTENDED CEILING ELEVATION, MECHANICAL DUCTWORK, RECESSED LIGHTING AND ACCESS TO SIGNAGE.

O. ALL DEMOLITION WORK SHOWN ON PLAN IS SUBJECT TO REVIEW AND APPROVAL BY LANDLORD'S REPRESENTATIVES. VERIFY ANY DEMOLITION WORK REQUIRED BY LANDLORD THAT IS NOT SHOWN ON PLANS OR THAT MAY REQUIRE THE USE OF LANDLORD APPROVED CONTRACTORS.

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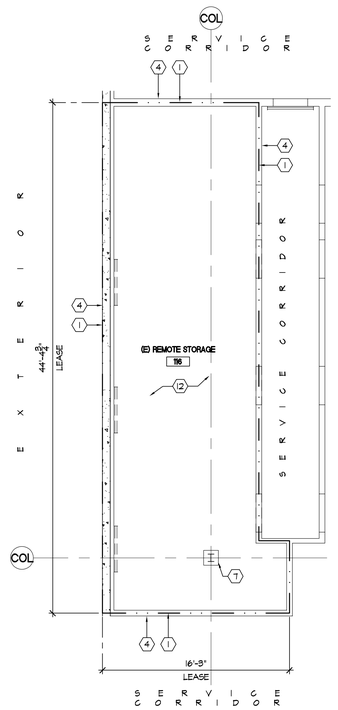
ARE "REUSED" EQUIPMENT CALLED OUT ON EACH DRAWING?

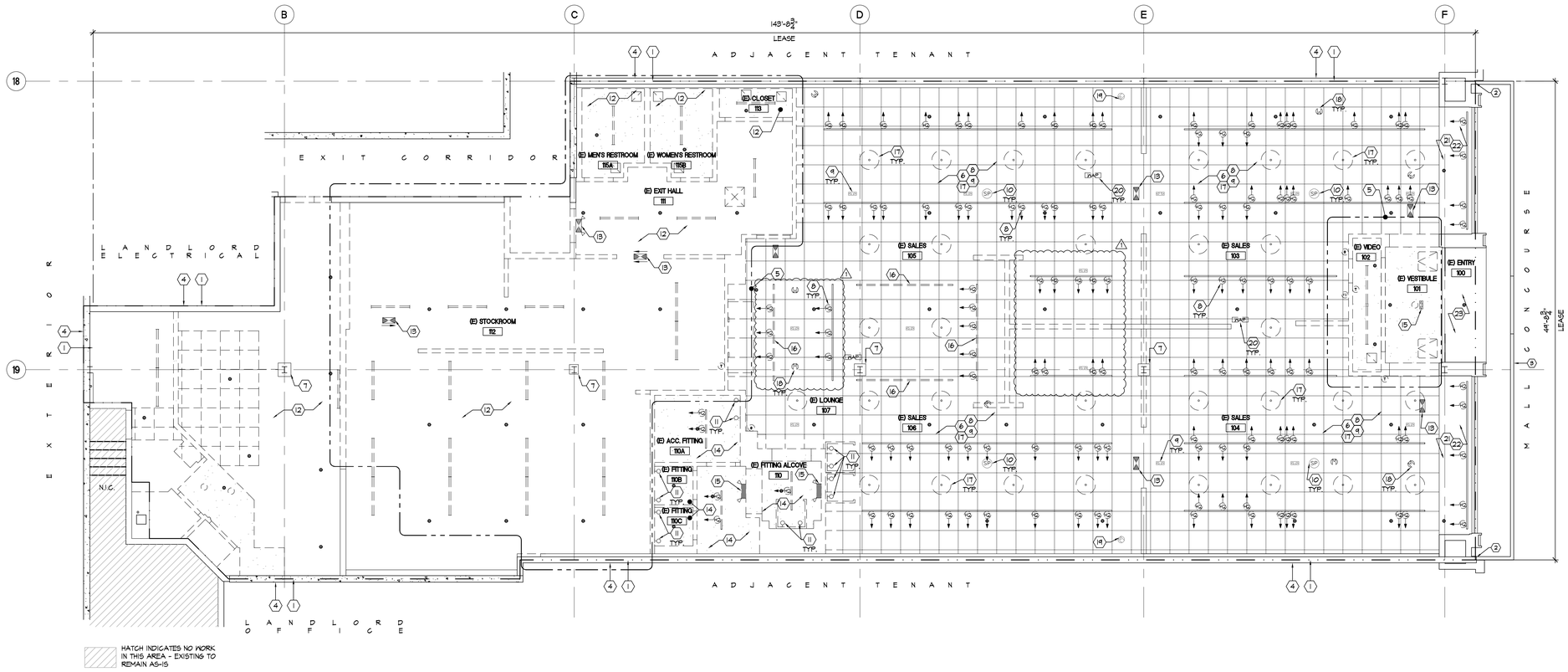
Project No:	260348
Drawn By:	CJS

Date	Issue
09.04.2026	CHECKSET
09.25.2026 ⚠1	BID SET

DEMOLITION + EXISTING CONDITIONS PLAN

A1.00





HATCH INDICATES NO WORK IN THIS AREA - EXISTING TO REMAIN AS-IS

REMOTE STORAGE CEILING DEMOLITION & EXISTING CONDITIONS PLAN

SCALE: 3/16"=1'-0"

CEILING DEMOLITION & EXISTING CONDITIONS PLAN

SCALE: 3/16"=1'-0"

NOTE:
EXISTING HVAC EQUIPMENT, MAIN DUCTS AND UTILITIES SERVING SAID EQUIPMENT SHALL REMAIN IN PLACE AND OPERATIONAL FOR THE DURATION OF THE CONSTRUCTION UNTIL SPECIFIED UNITS ARE PRESENT ON SITE. COORDINATE EXTENT OF DUCTWORK REMOVAL w/ NEW AND PROVIDE RECOMMENDATIONS FOR RE-WORK/REMOVAL OF EXISTING EQUIPMENT/DUCTWORK FOR TEMPORARY CONDITIONING OF THE SPACES TO THE P.M.

CONSTRUCTION BARRICADE NOTES

A. IF CONSTRUCTION BARRICADE IS EXISTING OR INSTALLED BY LANDLORD, PREPARE FACE OF CONSTRUCTION BARRICADE PER OWNER'S STANDARDS FOR GRAPHIC INSTALLATION.

B. CONSULT WITH MALL REPRESENTATIVE FOR HOURS IN WHICH WORK ON CONSTRUCTION BARRICADE CAN OCCUR.

C. TEMPORARY PRE-MANUFACTURED CONSTRUCTION BARRICADE SUPPLIED AND INSTALLED BY OWNER'S VENDOR. COORDINATE INSTALLATION WITH VENDOR AND LANDLORD PRIOR TO START OF CONSTRUCTION. ALIGN DOOR IN BARRICADE w/ ENTRY PORTAL FOR FIXTURE DELIVERY AFTER MALL HOURS

D. MAINTAIN REQUIRED MINIMUM CLEARANCES FROM CONSTRUCTION BARRICADE TO NEAREST PERMANENT FIXTURE IN MALL CONCOURSE TO MAINTAIN THIS BUILDING'S EGRESS REQUIREMENTS. IF MINIMUM EGRESS CLEARANCE CANNOT BE OBTAINED THEN COORDINATE WITH MALL OPERATIONS TO TEMPORARILY RELOCATE KIOSK OR FIXTURES. IF KIOSK OR FIXTURES CANNOT BE RELOCATED, THEN NOTIFY P.M. IMMEDIATELY.

E. CONSTRUCTION BARRICADE TO BE 100% COMPLETE AND READY FOR OWNER'S GRAPHICS TO BE INSTALLED NOT MORE THAN FOUR DAYS AFTER CONSTRUCTION START. CONTACT P.M. UPON COMPLETION TO COORDINATE GRAPHIC INSTALL WITH GRAPHIC VENDOR.

F. MAINTAIN CONSTRUCTION BARRICADE DURING CONSTRUCTION. REPORT ANY DAMAGES TO P.M. IF BARRICADE SUPPLIED BY A&F OR MALL OPERATIONS IF SUPPLIED BY LANDLORD.

G. ALL DELIVERIES TO SPACE DURING MALL HOURS SHALL BE MADE THROUGH SECONDARY EXIT. CONSTRUCTION BARRICADE DOORS FOR FIXTURE & OVERSIZED MATERIAL DELIVERY AFTER MALL HOURS.

H. COORDINATE REMOVAL OF CONSTRUCTION BARRICADE, WITH LANDLORD, WHEN 100% OF STOREFRONT IS COMPLETE OR A MINIMUM OF TWO NIGHTS PRIOR TO OPENING. CARE IS TO BE TAKEN WHEN DISASSEMBLING AND REMOVING CONSTRUCTION BARRICADE.

I. RESTORE MALL FLOORING AND BULKHEAD/CEILING TO A "LIKE NEW" CONDITION AND FINISH AFTER REMOVAL OF CONSTRUCTION BARRICADE.

CODED NOTES

1. LEASE LINE
2. EXISTING LANDLORD NEUTRAL PIER. PROTECT DURING CONSTRUCTION
3. TEMPORARY PRE-MANUFACTURED CONSTRUCTION BARRICADE SUPPLIED AND INSTALLED BY OWNER'S VENDOR. COORDINATE INSTALLATION WITH VENDOR AND LANDLORD PRIOR TO START OF CONSTRUCTION.
4. EXISTING DEMISING WALL TO REMAIN.
5. REMOVE ALL NON STRUCTURAL ELEMENTS INCLUDING, BUT NOT LIMITED TO: INTERIOR WALLS, CABINETS, DOOR & FRAMES, TRIM, FLOOR FINISHES, CEILINGS, ELECTRICAL & MECHANICAL APPURTENANCES IN ENTIRE AREA OF WORK - U.N.O. REFER TO MEP DRAWINGS FOR ADDITIONAL DIRECTIVES.
6. EXISTING CEILING GRID TO REMAIN U.N.O. PREP GRID TO RECEIVE NEW FINISH. REMOVE EXISTING CEILING TILES.
7. EXISTING COLUMN ENCLOSURES TO REMAIN. PROTECT STRUCTURAL COLUMNS, BEAMS, JOISTS, DECK AND APPLIED FIRE PROTECTION (WHERE APPLICABLE) DURING WORK. REPAIR DAMAGED OR MISSING FIRE PROTECTION TO MAINTAIN ORIGINAL DESIGN RATING PRIOR TO COMMENCING WITH NEW CONSTRUCTION.
8. EXISTING TRACK HEADS (SHOWN DASHED) TO BE RELOCATED AND RELAMPED. COORDINATE WITH A9.00.
9. EXISTING EMERGENCY LIGHTING TO REMAIN THROUGHOUT U.O.N.
10. EXISTING SPEAKERS TO REMAIN.
11. EXISTING SCONCES TO BE REMOVED.
12. EXISTING BOH CEILING AND LIGHTING TO BE REMOVED.
13. EXISTING EXIT SIGNS TO BE REMOVED THROUGHOUT U.O.N.
14. EXISTING FITTING ROOM CEILING AND LIGHTING TO BE REMOVED.
15. EXISTING EMERGENCY LIGHT TO BE REMOVED AND SALVAGED FOR RELOCATION. SEE A9.00 AND ELECTRICAL DRAWINGS FOR MORE INFORMATION.
16. EXISTING LIGHT TRACK TO BE REMOVED AND SALVAGED FOR RELOCATION. SEE A9.00 AND ELECTRICAL DRAWINGS FOR MORE INFORMATION.
17. EXISTING PENDANTS TO BE REMOVED THROUGHOUT.
18. EXISTING CAMERAS TO BE REMOVED THROUGHOUT U.O.N.
19. EXISTING CAMERA TO REMAIN.
20. EXISTING WAPS TO BE REMOVED THROUGHOUT.
21. EXISTING CLERESTORY LIGHTING ABOVE TO REMAIN AND BE RELAMPED, REFER TO ELECTRICAL DRAWINGS.
22. EXISTING STOREFRONT DISPLAY SOFFIT TO REMAIN, PREP TO RECEIVE NEW FINISHES.
23. EXISTING STOREFRONT ENTRY SOFFIT TO REMAIN, PREP TO RECEIVE NEW FINISHES.

GENERAL NOTES

A. PLAN SHOWN MAY NOT DEPICT THE ENTIRE EXTENT OF THE EXISTING CONDITIONS, INTERIOR LAYOUT AND EXTENT OF REQUIRED DEMOLITION.

B. WITHIN (2) DAYS OF COMMENCEMENT OF CONSTRUCTION, OR WITHIN (2) DAYS FOLLOWING COMPLETION OF DEMOLITION, CAREFULLY EXAMINE THE AREA OF WORK AND REPORT ANY DISCREPANCIES TO THE PROJECT MANAGER (P.M.) WITHIN THE LEASEHOLD DIMENSIONS OR CONFLICTS BETWEEN THE PHYSICAL SPACE AND THE INTENT OF THE WORKING DRAWINGS. (PAY SPECIAL ATTENTION TO CEILING HEIGHTS AND STOREFRONT DESIGN INTENT.)

C. REMOVE ALL EXISTING LEASEHOLD IMPROVEMENTS NOT REQUIRED TO REMAIN AS SHOWN ON PLAN. DEMOLITION INCLUDES BUT IS NOT LIMITED TO THE REMOVAL OF SPECIFIED INTERIOR WALL PARTITIONS, CEILINGS, FLOOR COVERINGS, PLATFORMS, DISPLAY SHOW WINDOWS, CABINETS, ETC. DEMOLITION ALSO INCLUDES THE REMOVAL OF EXISTING ELECTRICAL, MECHANICAL AND PLUMBING FIXTURES AND EQUIPMENT AS SPECIFIED ON MECHANICAL & ELECTRICAL DRAWINGS BOTH WITHIN THE LEASE SPACE AND ON THE ROOF (WHERE APPLICABLE). CONTACT THE P.M. IF THERE ARE ANY QUESTIONS CONCERNING THE EXTENT OF DEMOLITION.

D. REMOVE ALL EXISTING MECHANICAL EQUIPMENT AND DUCTWORK NOT BEING USED OR NOT SERVING OTHER TENANT SPACES. DO NOT ABANDON ANY EXISTING DUCTWORK OR EQUIPMENT IN PLACE AND SHALL BE REMOVED BACK TO SOURCE.

E. CHECK AND REPAIR ALL EXISTING OVERHEAD SANITARY AND STORM DRAIN LINES FOR LEAKS DURING DEMOLITION. IF UTILITIES SERVE A TENANT ABOVE OR BELOW (WHERE APPLICABLE), REPORT LEAKS TO LANDLORD'S SITE REPRESENTATIVES & OWNER'S REPRESENTATIVES FOR DIRECTION. DO NOT MAKE CORRECTIONS WITHOUT AUTHORIZATION.

F. COORDINATE THE REMOVAL, DISCONNECTION AND/OR CAPPING OF ANY UTILITIES w/ THE P.M.

G. FOLLOW THE LANDLORD'S DEMOLITION REQUIREMENTS/LIMITATIONS AND COORDINATE A CONVENIENT TIME TO PERFORM THE WORK w/ THE LANDLORD . INSTALL TEMPORARY PROTECTED MEANS OF EGRESS, LIGHTING AND SAFETY DEVICES IN ACCORDANCE WITH ALL w/ AUTHORITIES HAVING JURISDICTION, BUILDING REGULATIONS AND LANDLORD REQUIREMENTS.

H. PATCH OR REPAIR EXISTING FLOOR SLAB, DEMISING WALLS AND ROOFING AFTER COMPLETION OF ALL DEMOLITION AND PRIOR TO THE COMMENCEMENT OF NEW CONSTRUCTION. COORDINATE WITH LANDLORD PRIOR TO PERFORMING ANY ROOF WORK. PATCH, REPAIR AND LEVEL EXISTING FLOOR SLAB AND INFORM THE P.M. OF ANY SEVERE IRREGULARITIES IN EXISTING SLAB IMMEDIATELY.

I. COVER ANY RETURN AIR OPENINGS PRIOR TO DEMOLITION.

J. ALL REUSED EQUIPMENT AND UTILITIES ARE TO BE REFURBISHED TO "LIKE NEW" CONDITION.

K. EXERCISE EXTREME CARE DURING DEMOLITION SO AS NOT TO DAMAGE OR DISRUPT UTILITIES OR SPRINKLER LINES WHICH ARE NOT TO BE RELOCATED AND PASS THROUGH THE SPACE TO SERVE ADJACENT SPACES OR OTHER TENANTS. G.C. WILL BEAR SOLE RESPONSIBILITY OF ANY SUCH DISRUPTION OR DAMAGE.

L. REMOVE EXISTING PLUMBING FIXTURES INCLUDING TOILETS, LAVATORIES AND DRINKING FOUNTAINS. REUSE WATER AND SANITARY LINES ASSOCIATED WITH EXISTING FIXTURE FOR CONNECTION OF NEW TOILET, LAVATORY AND DRINKING FOUNTAIN, WHERE APPLICABLE.

M. COORDINATE THE REMOVAL, DISPOSAL AND/OR RETURN OF EXISTING SECURITY SYSTEMS (WHERE APPLICABLE) WITH P.M. PRIOR TO ITS REMOVAL. FAILURE TO DO SUCH COORDINATION WILL RESULT IN G.C. MONETARY FINE IN THE EQUIVALENT OF THE COST OF REPLACEMENT VALUE OF THE EXISTING SECURITY SYSTEM.

N. NOTIFY P.M. IMMEDIATELY OF ANY SEVERE DISCREPANCIES OR IRREGULARITIES DISCOVERED DURING DEMOLITION WHICH MAY AFFECT THE CURRENT STORE DESIGN. PAY SPECIAL ATTENTION TO AVAILABLE HEIGHT FOR INTENDED CEILING ELEVATION, MECHANICAL DUCTWORK, RECESSED LIGHTING AND ACCESS TO SIGNAGE.

O. ALL DEMOLITION WORK SHOWN ON PLAN IS SUBJECT TO REVIEW AND APPROVAL BY LANDLORD'S REPRESENTATIVES. VERIFY ANY DEMOLITION WORK REQUIRED BY LANDLORD THAT IS NOT SHOWN ON PLANS OR THAT MAY REQUIRE THE USE OF LANDLORD APPROVED CONTRACTORS.

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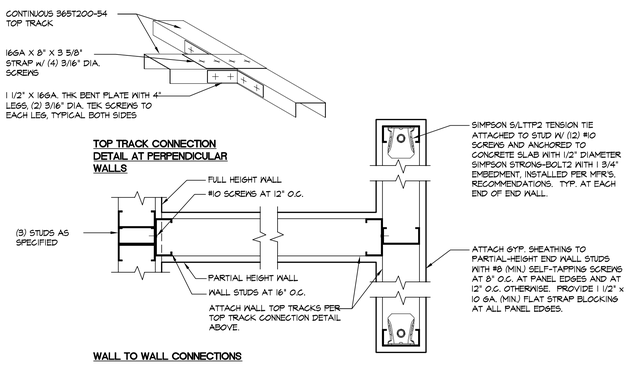
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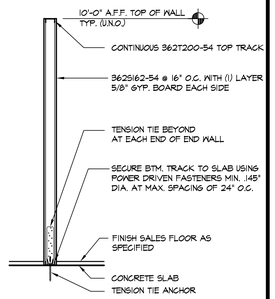
Project No:	260348
Drawn By:	CJS

Date	Issue
09.04.2026	CHECKSET
09.25.2026	⚠1 BID SET

CEILING DEMOLITION + EXISTING CONDITIONS PLAN

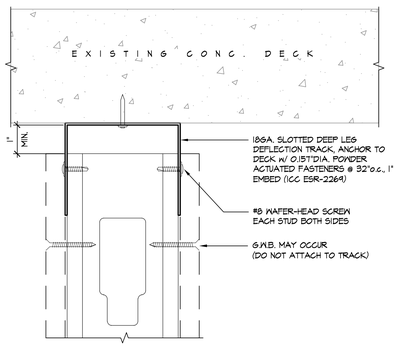
A1.01





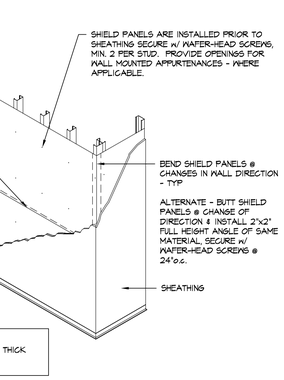
WALL SECTION
NOTE - SEE SECTION N/A9.01 FOR CABINET ATTACHMENT AND CONSTRUCTION PLAN A2.00 FOR COLUMN LOCATIONS.

V SALES PARTIAL HEIGHT WALL DETAIL
A2.00 SCALE: 1/2" = 1'-0"



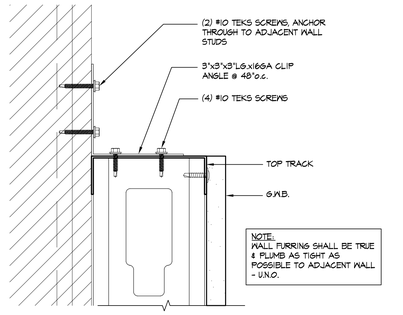
U TYPICAL DEFLECTION TRACK DETAIL
- SCALE: N.T.S.

T TYP. BLOCKING DETAIL
- SCALE: N.T.S.

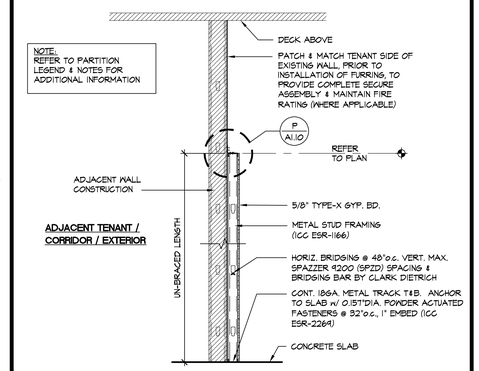


EAS SHIELD SPECIFICATION:
ALUMINUM 5052-H32 - 48"x96"x0.8MM THICK
(NO SUBSTITUTIONS PERMITTED)

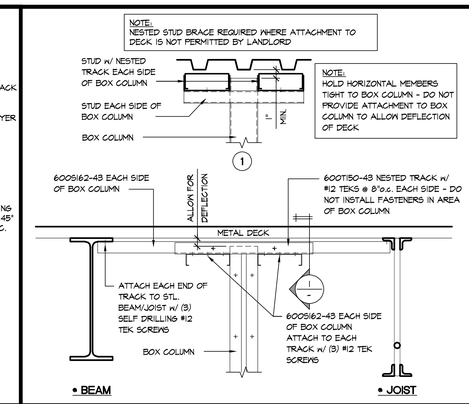
S E.A.S. WALL SHEILDING
A2.00 SCALE: N.T.S.



P TYP. T/ FURRING CONNECTION DETAIL
- SCALE: N.T.S.



N WALL FURRING DETAIL
- SCALE: N.T.S.



M TYP. BOX COLUMN DETAILS
- SCALE: N.T.S.

LIMITING HEIGHTS FOR INTERIOR METAL STUD PARTITIONS
SALES PARTITIONS WITHOUT SHELVING ATTACHED
NON-SALES PARTITIONS WITHOUT SHELVING ATTACHED
ALL SEISMIC DESIGN CATEGORIES

STUD DESIGNATION	STUD DEPTH	FLANGE WIDTH	STUD GAUGE	STUD SPACING	MAX. WALL HEIGHT OR MAX. HEIGHT TO DIAGONAL BRACE
362S162-33	3-5/8"	1-5/8"	20	16"	17'-6"
362S162-43	3-5/8"	1-5/8"	18	16"	19'-0"
362S162-54	3-5/8"	1-5/8"	16	16"	20'-6"
600S162-33	6"	1-5/8"	20	16"	26'-6"
600S162-43	6"	1-5/8"	18	16"	28'-6"
600S162-54	6"	1-5/8"	16	16"	30'-0"

LIMITING HEIGHTS FOR INTERIOR METAL STUD PARTITIONS
NON-SALES PARTITIONS WITH SHELVING ATTACHED
SEISMIC DESIGN CATEGORIES A & B

STUD DESIGNATION	STUD DEPTH	FLANGE WIDTH	STUD GAUGE	STUD SPACING	MAX. WALL HEIGHT OR MAX. HEIGHT TO DIAGONAL BRACE
362S162-33	3-5/8"	1-5/8"	20	16"	15'-0"
362S162-43	3-5/8"	1-5/8"	18	16"	16'-0"
362S162-54	3-5/8"	1-5/8"	16	16"	17'-0"

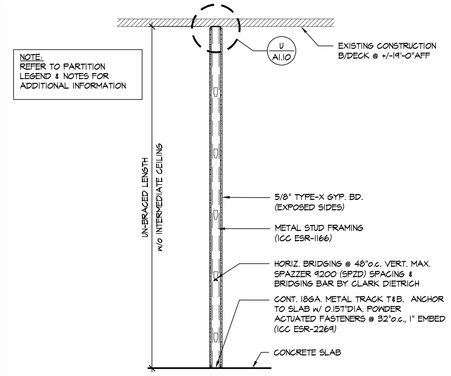
NOTE: AT LOCATIONS WHERE A STUD WALL SUPPORTS SHELVING ON BOTH SIDES, THE STUDS SHOWN IN THE TABLE BELOW SHALL BE "DOUBLED UP" AS FOLLOWS:



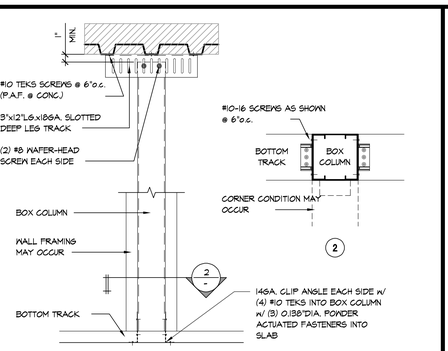
IN ADDITION, THE SPACINGS OF THE TOP AND BOTTOM WALL TRACK CONNECTIONS TO THE EXISTING STRUCTURE SHALL BE REDUCED TO 6" O.C. MAX., AND DIAGONAL SPACING SHALL BE REDUCED TO 32" O.C.

NOTES:
1. DESIGN BASED ON ALLOWABLE DEFLECTION OF L/360/
2. DESIGN BASED ON FY = 33 KSI FOR 3-5/8" & 6" STUDS LESS THAN 16 GAUGE. FY = 50 KSI FOR 3-5/8", 16 GAUGE & 6", 16 GAUGE STUDS.
3. PROVIDE HORIZONTAL BRIDGING @ 4'-0" O.C. MAX PER MANUFACTURER'S RECOMMENDATIONS.
4. DESIGN BASED ON MINIMUM 5 PSF LATERAL LOAD OR LATERAL SEISMIC LOAD, WHICHEVER CONTROLS.
5. TABLE IS VALID FOR (1) LAYER OF GYPSUM BOARD EACH FACE.
6. FOR STUD DESIGNATIONS REFER TO A2.00.

K STUD SIZE MATRIX
A2.00 SCALE: N.T.S.

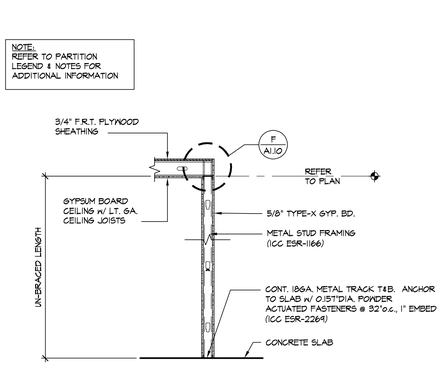


J FULL HEIGHT PARTITION DETAIL
- SCALE: N.T.S.



FLOOR CONNECTION / ELEVATION

F TYP. CEILING JOIST TO WALL DETAIL
- SCALE: N.T.S.

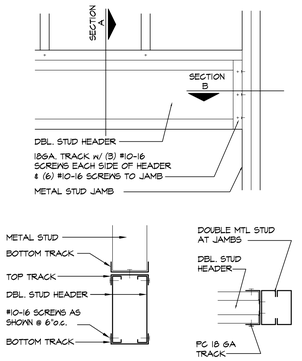


E PARTIAL HEIGHT PARTITION DETAIL
- SCALE: N.T.S.

LIGHT GAUGE HEADER SCHEDULE

HEADER LENGTH	HEADER MEMBERS	MINIMUM UN-BRACED PROPERTIES PER STUD
2' TO 6'	(2) 6" x 18 GA	Ix = 2.042 Sx = 0.670
6' TO 8'	(2) 8" x 16 GA	Ix = 2.818 Sx = 0.884
8' TO 10'	(2) 8" x 14 GA	Ix = 3.094 Sx = 1.031
10' TO 12'	(2) 8" x 18 GA	Ix = 4.184 Sx = 1.033
12' TO 14'	(2) 8" x 16 GA	Ix = 5.110 Sx = 1.271
14' TO 16'	(2) 8" x 14 GA	Ix = 6.308 Sx = 1.576
16' TO 18'	(2) 10" x 14 GA	Ix = 12.325 Sx = 2.456
18' TO 26'	(2) 12" x 16 GA	Ix = 15.130 Sx = 2.334

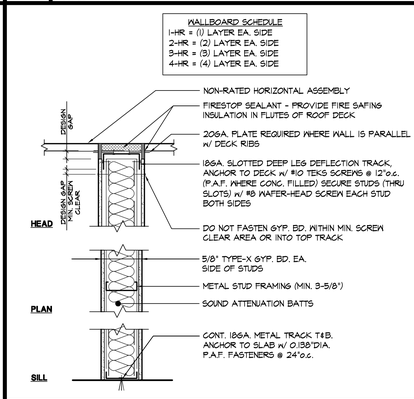
INTERIOR NON-LOAD BEARING PARTITIONS



SECTION A SECTION B

C LIGHT GAUGE HEADER/BOX BEAM DETAILS
- SCALE: N.T.S.

WALLBOARD SCHEDULE
1-HR = (1) LAYER EA. SIDE
2-HR = (2) LAYER EA. SIDE
3-HR = (3) LAYER EA. SIDE
4-HR = (4) LAYER EA. SIDE



B RATED PARTITION (UL #U419)
- SCALE: N.T.S.

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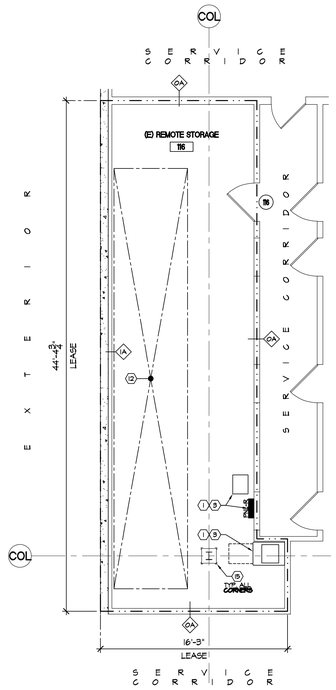
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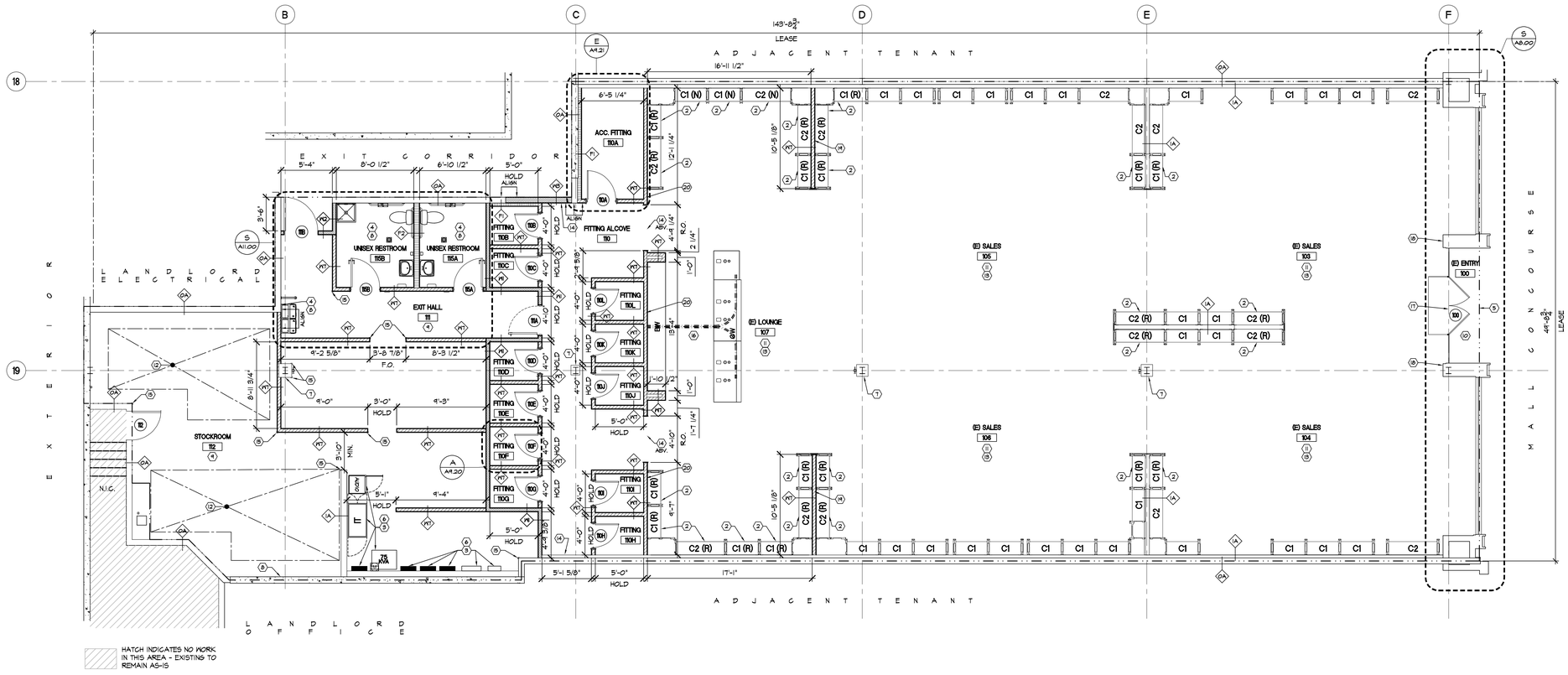
PARTITION FRAMING DETAILS

A1.10



REMOTE STORAGE CONSTRUCTION PLAN

SCALE: 3/16"=1'-0"



HATCH INDICATES NO WORK IN THIS AREA - EXISTING TO REMAIN A5-15

CONSTRUCTION PLAN

SCALE: 3/16"=1'-0"

SYMBOL LEGEND

- DOOR TYPE, REFER TO DOOR SCHEDULE ON A0.30
- XX — WALL TYPE, REFER TO WALL LEGEND THIS SHEET

PARTITION NOTES

A. PATCH & REPAIR EXISTING PARTITIONS (WHERE APPLICABLE) TO LIKE NEW CONDITIONS TO RECEIVE NEW FINISHES

B. MAXIMUM UN-BRACED LENGTH VALUES BASED ON SSMA ESR#3064P

C. ALL STUDS TO BE CONVENTIONAL STRUCTURAL METAL FRAMING STUDS, GAUGE EQUIVALENT DRYWALL FRAMING WILL NOT BE ACCEPTED.

D. REFER TO K/A1.10 FOR STUD SIZE MATRIX.

STEEL THICKNESS TABLE

18mil = 25GA	33mil = 20GA (STRUCT)	68mil = 14GA
27mil = 22GA	43mil = 18GA	97mil = 12GA
30mil = 20GA (INT.)	54mil = 16GA	118mil = 10GA

PARTITION LEGEND

- OA — DEMISING/CORRIDOR WALL: PATCH + REPAIR (TENANT SIDE ONLY) TO PROVIDE COMPLETE SEISMIC ASSEMBLY FROM FLOOR TO DECK + MAINTAIN FIRE RATING (WHERE APPLICABLE).
- 1A — EXISTING TENANT WALL TO REMAIN: PATCH + REPAIR AS REQUIRED FOR NEW FINISH.
- P1 — 362S125-30 STL. STUDS @ 16"O.C. FROM FLOOR TO UNDERSIDE OF DECK w/ 1-LAYER 5/8" TYPE 'X' G.W.B. EACH EXPOSED SIDE TO DECK OR TO ADJACENT CEILING. REFER TO DETAIL J/A1.10 (MAX. UNBRACED LENGTH = 24'-7")
- P2 — NEW 1-HR RATED DEMISING WALL: 362S125-30 STL. STUDS @ 16"O.C. FROM FLOOR TO UNDERSIDE OF DECK w/ 1-LAYER 5/8" TYPE 'X' G.W.B. EACH EXPOSED SIDE TO DECK. PROVIDE DEFLECTION TRACK ASSEMBLY @ DECK/STRUCTURE. REFER TO DETAIL B/A1.10 (MAX. UNBRACED LENGTH = 24'-7")
- P3 — NEW 1-HR RATED DEMISING WALL: 600S162-43 STL. STUDS @ 16"O.C. FROM FLOOR TO UNDERSIDE OF DECK w/ 1-LAYER 5/8" TYPE 'X' G.W.B. EACH EXPOSED SIDE TO DECK. PROVIDE DEFLECTION TRACK ASSEMBLY @ DECK/STRUCTURE. REFER TO DETAIL B/A1.10 (MAX. UNBRACED LENGTH = 24'-7")
- NT — 362S125-30 @ 16"O.C. FROM FLOOR TO 10'-0" w/ 1-LAYER 5/8" TYPE 'X' G.W.B. EACH EXPOSED SIDE. REFER TO DETAIL A/A1.10. (MAX. UNBRACED LENGTH = 16'-7")
- F1 — 362S125-30 STL. STUD FURRING @ 16"O.C. FROM FLOOR TO 10'-0" w/ 1-LAYER 5/8" TYPE 'X' G.W.B. (MAX. UNBRACED LENGTH = 15'-6") REFER TO DETAIL N/A1.10.
- F2 — 600S125-30 STL. STUD FURRING @ 16"O.C. (ICC ESR-1166) FROM FLOOR TO BOTTOM OF CEILING w/ 1-LAYER 5/8" TYPE 'X' G.W.B. REFER TO DETAIL N/A1.10. (MAX. UNBRACED LENGTH = 22'-11")

CODED NOTES

1. NEW 3/4" FRT PLYWOOD BEHIND ELECTRICAL EQUIPMENT.
2. (R) INDICATES RELOCATED CABINETS. (N) INDICATES NEW CABINETS, PROVIDED BY OWNER & INSTALLED BY G.C.. ALL OTHER CABINETS ARE EXISTING TO REMAIN. ALL CABINETS TO RECEIVE NEW SHELVES, PROVIDED BY OWNER, INSTALLED BY STORE TEAM. G.C. TO PROVIDE, CUT TO FIT AND INSTALL MDO ON TOP OF SALES AREA CABINETS. SEE DETAIL A/A~~9.00~~ on A9.01
3. REFER TO ELECTRICAL DRAWINGS FOR ALL ELECTRICAL PANELS AND EQUIPMENT.
4. PLUMBING FIXTURES & ACCESSORIES - REFER TO DETAIL T/A1.10 FOR IN-WALL BLOCKING.
5. LEASE LINE - COORDINATE ADJACENT FLOOR FINISH REQUIREMENTS w/ LANDLORD (WHERE APPLICABLE).
6. EXISTING FRT PLYWOOD BEHIND ELECTRICAL EQUIPMENT.
7. EXISTING COLUMN ENCLOSURE TO REMAIN.
8. [SF-2] WAINSCOTING -TYPICAL AT LAVATORY, MOP SINK, DRINKING FOUNTAIN, HARDWARE BIN AND BAR BIN. (REFER TO DETAIL L/A11.00 AND FINISH SCHEDULE)
9. [SF-5] WAINSCOTING -TYPICAL AT ALL NON-SALES WALLS EXCEPT AT [SF-2] AND ELECTRIC PANEL LOCATIONS. (REFER TO DETAIL M/A11.00 AND FINISH SCHEDULE).
10. EXISTING TILE FLOORING TO REMAIN, PROTECT DURING CONSTRUCTION. G.C. TO DEEP CLEAN.
11. PROTECT EXISTING WOOD FLOOR DURING CONSTRUCTION. REFINISH PER SHEET A4.00.
12. STORAGE SHELVING FIXTURES - MOVABLE & FIXED SECTIONS (REFER TO SHEET A11.10) SHOWN FOR REFERENCE ONLY - UNDER SEPARATE PERMIT. ENSURE FLOOR UNDER FIXTURE AREA HAS MAXIMUM TOLERANCE OF 1/8" IN 10'-0" (REFER TO SPECIFICATIONS).
13. GC TO INSTALL BACK-LOADED STANDARDS. REFER TO OWNER'S INSTALL PAGE AND DETAILS A & I/A~~9.00~~. on 9.01
14. IN-WALL BLOCKING. COORDINATE w/ FF&E PLAN. REFER TO A1.00.
15. CORNER GUARD (TYP. ALL HIGH TRAFFIC NON-SALES CORNERS) - REFER TO DETAIL 6/A11.00
16. CORE DRILL FLOOR SLAB FOR CONDUIT - COORDINATE W/ MALL MANAGER AND TENANT COORDINATOR - REFER TO SHEET A9.00 FOR CASHWRAP PLAN.
17. INSTALL NEW GYP. BD. WHERE SOFFIT WAS REMOVED. ARE WE CORE DRILLING OR ARE WE TRENCHING? IS THERE A PARKING GARAGE BELOW?
18. INSTALL NEW MDO BOARD WHERE SOFFIT WAS REMOVED
19. INSTALL SIMPSON S/LTTP2 TENSION TIE AT MIDDLE OF WALL LENGTH AND AT ENDS. REFER TO DETAIL V/A1.10.
20. INSTALL SIMPSON S/LTTP2 TENSION TIE AT END OF WALL AND THEN AT 48" O.C. INSTALL (1) AT EACH END OF OPENING IN WALL. REFER TO DETAIL V/A1.10 AND J/A9.00

CABINET PREP NOTES

1. AS ITEMS ARE INSTALLED OR REFINISHED, THEY SHOULD ALSO BE PREPPED FOR PAINTING. PER DRAWINGS AND SPECIFICATIONS BELOW.
   - SCUFF EVERYWHERE PEOPLE CAN TOUCH WITH HANDS WITH SCOTCH PAD AND CLEAN WITH DENATURE ALCOHOL.
   - USE PRIMER (SHERWIN WILLIAMS FOR NA PROJECTS) ALLOWING OVERNIGHT DRYING AND MAKE SURE NOT TO PUT 1ST COAT TOO HEAVY. IT WILL ADHERE BETTER WITH LIGHTER COATS.
   - MAKE SURE NO WAX CLEANERS ARE USED OR OILY CLEANERS. MOST LEAVE FILM.
   - ONLY DENATURED ALCOHOL FOR FINAL CLEAN.
2. ALL EGRESS LIGHTS AND SIGNAGE TO BE FULLY MASKED.ALL HARDWARE AT CASHWRAP, FITTING ROOMS, OR MARKETING SITES TO BE MASKED OR TEMPORARILY REMOVED. GC TO REINSTALL IF REMOVED TEMPORARILY. IF CAN'BA PULLS ARE MISSING, GC TO SUPPLY AND INSTALL TO MATCH EXISTING.
3. ALL SALES FLOOR MIRRORS TO BE PROTECTED DURING CONSTRUCTION. DO NOT DISPOSE, ALL TO BE REINSTALLED IF REMOVED DURING CONSTRUCTION.
4. IF APPLICABLE, CLEAN ENTIRE SALES FLOOR USING ADHESIVE REMOVER ON AREAS WITH RESIDUE FROM RUGS.
5. SEE SCOPE OF WORK DETAILS FOR ADDITIONAL NOTES.
6. BEFORE PAINTING BEGINS, SEND DOCUMENTATION OF THE PAINT PURCHASED TO THE A&F PROJECT MANAGER FOR CONFIRMATION.
7. REPLACE ALL SALES FLOOR WALL SWITCHES, OUTLETS, AND COVERS WITH NEW WHITE COVER PLATES.
8. ALL GAPPING BETWEEN TRIM NOTICED AFTER PAINT TO BE CAULKED TO CLOSEST MATCHING FINISH.
9. GC TO HAVE PAINTERS ON-SITE THE NIGHT BEFORE OPEN TO COMPLETE ANY FINAL TOUCH-UPS PER SPEC.

FLOOR PAINT PROCESS

1. UPRIGHT BELT SANDER, 80 GRIT. SAND SEVERAL COATS DOWN.
2. REPLACE DAMAGED BOARDS (GET COUNT ON DAY ONE).
3. TWO COATS PER OSM PAINT
4. ½ NAP ROLLER

TRIM + CABINETS PAINT PROCESS

1. SAND CABINETS, 80 GRIT.
2. SPRAY 1 LIGHT COAT OF STIX PRIMER - LET DRY 8 HOURS
3. SPRAY 2ND HEAVIER COAT OF STIX PRIMER - LET DRY 24 HOURS.
4. SPRAY 1ST LIGHT COAT OF PAINT - LET DRY 8 HOURS.
5. SPRAY 2ND NORMAL COAT OF PAINT

GENERAL NOTES

A. ALL DIMENSIONS ARE FROM FACE OF GYPSUM BOARD TO FACE OF GYPSUM BOARD, UNLESS SPECIFICALLY NOTED OTHERWISE (U. N. O).

B. FOR CABINETS, PRE-MANUFACTURED TRIM ASSEMBLIES, AND SALES DOOR OPENING/TRANSOM ASSEMBLIES. A FITTING ROOM DOOR OPENING ASSEMBLIES, MILLWORK MANUFACTURER IS TO SUPPLY ALL SHOP DRAWINGS, MATERIAL SAMPLES, STRUCTURAL DETAILS AND FIRE RATING/FLAME SPREAD REPORTS AS REQUIRED TO LANDLORD, BUILDING CONTROL AND CONTRACTORS.

C. NO INTERIOR OR STOREFRONT CONSTRUCTION MAY BE SUSPENDED FROM METAL DECK, JOIST BRIDGING, JOIST CROSS-BRACING, PIPING, CONDUIT, DUCTWORK OR ANY OTHER NON-STRUCTURAL ITEM. DO NOT WELD, DRILL, SHOOT OR SCREW INTO STRUCTURAL STEEL OR JOISTS. USE CLAMPS, TIE-WIRE, THRU-BOLTS WITH WASHERS. REFER TO LANDLORD'S CONSTRUCTION MANUAL FOR METHODS OF ATTACHMENT TO STRUCTURE.

D. DO NOT USE COMBUSTIBLE MATERIALS SUCH AS WOOD BLOCKING, PVC, PLASTIC, ETC. IN CEILING PLENUM OR DEMISING WALL.

E. ADJUST SETTING BED UNDER EACH FLOOR MATERIAL TO ACHIEVE FLUSH TRANSITION.

F. ALL TEMPERATURE SENSORS & MOTION DETECTORS IN SALES AREA TO BE PAINTED TO MATCH ADJACENT SURFACE COLOR (EXCEPT DEVICE SENSORS).

G. ALL WET AREAS TO USE WATER RESISTANT "GREEN BOARD". AREAS TO INCLUDE RESTROOM, MOP SINK AND DRINKING FOUNTAIN AREAS.

H. ALL "IN-WALL" WOOD BLOCKING TO BE FIRE RETARDANT TREATED (FRT) AND BEAR THE MANUFACTURER'S STAMP OF VERIFICATION. WHERE AHJ DOES NOT ALLOW FRT WOOD BLOCKING IN WALL CAVITIES, USE 16 GA. SHEET METAL OR CODE APPROVED ALTERNATE BLOCKING MATERIALS U.N.O.

I. REFER TO SHEET A5.00 & A7.00 FOR MIRROR LOCATIONS REQUIRING IN-WALL BLOCKING.

J. REFER TO SHEET A1.10 TYPICAL PARTITION FRAMING DETAILS.

K. EXISTING WALLS TO REMAIN - PATCH & MATCH GYP. BD. TO PROVIDE SMOOTH FLUSH FINISH w/ ADJACENT SURFACES. EXTEND WALL/FURRING & GYP. BD. TO DECK (WHERE APPLICABLE)

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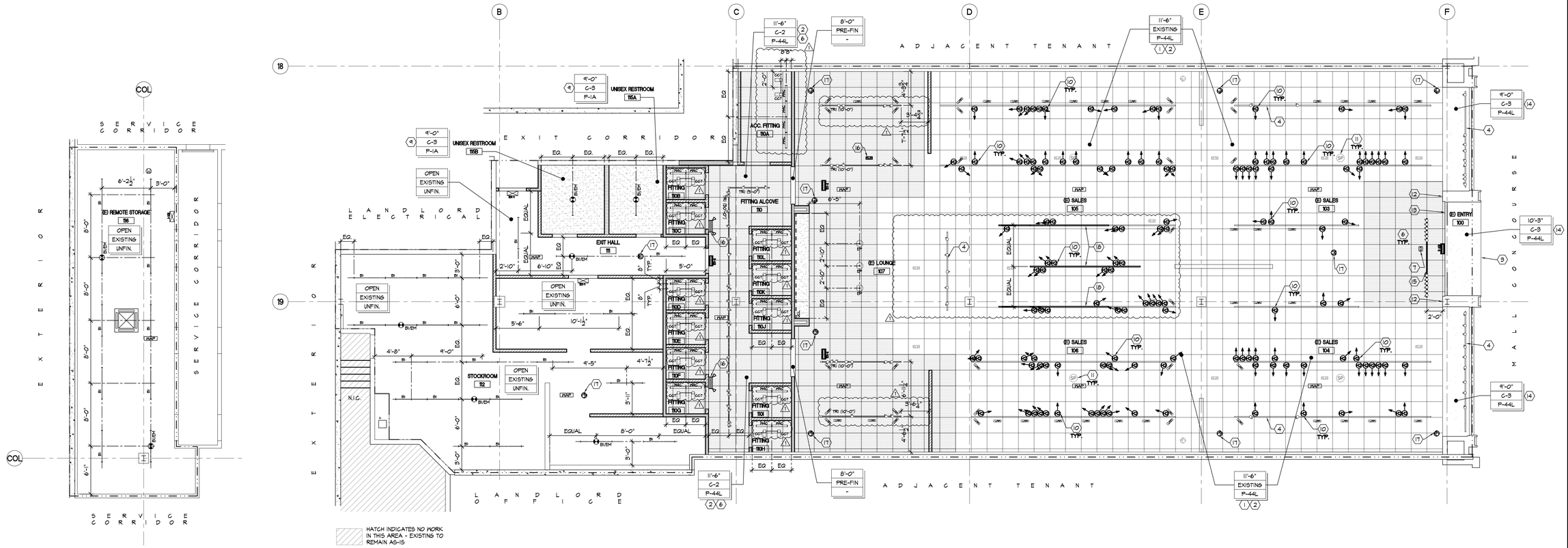
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CONSTRUCTION PLAN

A2.00



REMOTE STORAGE REFLECTED CEILING PLAN

SCALE: 3/16"=1'-0"

REFLECTED CEILING PLAN

SCALE: 3/16"=1'-0"

CODED NOTES

1. CLEAN, PREP AND PAINT EXISTING CEILING GRID. REPLACE TILES WITH NEW TINCRAFT TILES.
2. PAINT DIFFUSER UNIT TO MATCH ADJACENT CEILING.
3. ILLUMINATED STOREFRONT SIGNAGE, COORDINATE INSTALLATION WITH SHOP DRAWINGS. REUSE EXISTING F.R.T. BLOCKING AND POWER. REFER TO ELECTRICAL DRAWINGS.
4. EXISTING TRACK TO RECEIVE NEW TRACK HEADS.
5. ~~CLEAN, PREP AND PAINT EXISTING SOFFIT P-63C.~~
6. SHADED AREA IS CEILING GRID AS REQUIRED TO INFILL WHERE EXISTING WALL/CEILING WAS REMOVED. MATCH EXISTING GRID AND INSTALL NEW TINCRAFT TILES. INSTALL NEW WALL ANGLES AS REQUIRED.
7. NEW PEOPLE COUNTER. REFER TO ELECTRICAL DRAWINGS.
8. ~~EXISTING TRACK HEADS TO BE REDIRECTED AND RELAMPED.~~
9. SUSPENDED GYPSUM BOARD CEILINGS REFER TO DETAIL V/A1.10 & SPECIFICATIONS FOR ADDITIONAL INFORMATION. GYPSUM BOARD CEILING - 600S162-43 MTL. CEILING JOISTS @ 16"o.c. (SHORT SPAN) w/ 5/8" GYPSUM BOARD CEILING w/ 3/4" F.R.T. PLYWOOD DECK, REFER TO DETAIL F/A1.10. (ALLOWABLE SPAN = 15'-6" @ 10PSF D.L. & 20PSF LIVE) DOUBLE JOISTS EACH SIDE OF TRANSFORMERS, WHERE OCCUR. NOTE, AREA NOT INTENDED FOR STORAGE.
10. NEW LOCATION OF RELOCATED AND RELAMPED TRACK HEADS.
11. EXISTING SPEAKERS TO REMAIN.
12. INSTALL NEW GYP. BD. WHERE SOFFIT WAS REMOVED.
13. INSTALL NEW MDO BOARD WHERE SOFFIT WAS REMOVED.
14. CLEAN, PREP AND PAINT EXISTING GYP. BD. CEILING.
15. NEW LOCATION OF RELOCATED TRACK, TO RECEIVE NEW TRACK HEADS.
16. NEW LOCATION OF RELOCATED EMERGENCY LIGHT.
17. NEW LOCATION OF RELOCATED CAMERA.
18. NEW LOCATION OF RELOCATED TRACK, TO RECEIVE RELOCATED TRACK HEADS. ⚠1

Relocated track heads

GENERAL NOTES

A. ALL DIMENSIONS ARE TO FACE OF GYPSUM WALL BOARD, UNLESS NOTED OTHERWISE. ALL CEILING HEIGHTS ARE ABOVE FINISH FLOOR (A.F.F.)

B. REFER TO SPECIFICATIONS AND FINISH SCHEDULE FOR PRODUCT AND INSTALLATION REQUIREMENTS.

C. REFER TO ELECTRICAL DRAWINGS FOR FIXTURE & LAMP SPECIFICATIONS.

D. ALL TEMPERATURE SENSORS & MOTION DETECTORS IN SALES AREA TO BE PAINTED TO MATCH ADJACENT SURFACE COLOR (EXCEPT SENSOR SURFACES)

E. ALL CEILINGS ARE GYPSUM BOARD UNLESS NOTED OTHERWISE. PATCH & REPAIR EXISTING SURFACES (WHERE APPLICABLE) TO PROVIDE SMOOTH FLUSH FINISH w/ ADJACENT SURFACES.

F. VERIFY ALL CLEAR HEIGHTS AT DEMOLITION.

G. PROVIDE ACCESS TO ANY LANDLORD AND TENANT EQUIPMENT, VALVES, DAMPERS, CONTROLS, CLEANOUTS, J-BOXES, ETC. LOCATED ABOVE GYPSUM BOARD CEILINGS AND ANY INACCESSIBLE AREAS AS REQUIRED. VERIFY/COORDINATE REQUIRED ACCESS PANEL LOCATIONS WITH THE TENANT'S ARCHITECT AND MALL OPERATIONS PRIOR TO START OF WORK.

H. CONFIRM WITH BUILDING OWNER FOR ACCEPTABLE METHODS OF ATTACHING TO BUILDING STRUCTURE.

I. REFER TO FF&E PLAN FOR TABLE AND MILLWORK MOUNTED LIGHTING FIXTURES, WHERE APPLICABLE.

J. CONTRACTOR SHALL AIM AND POSITION ADJUSTABLE LUMINAIRES TO ACHIEVE DESIRED ILLUMINATION, IN THE PRESENCE OF, AND AS DIRECTED BY, THE A&F PROJECT MANAGER. SECURE LOCKING FITTINGS IN PLACE.

K. CENTER LIGHT FIXTURES IN ROOM - U.N.O.

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MEMORIAL CITY MALL

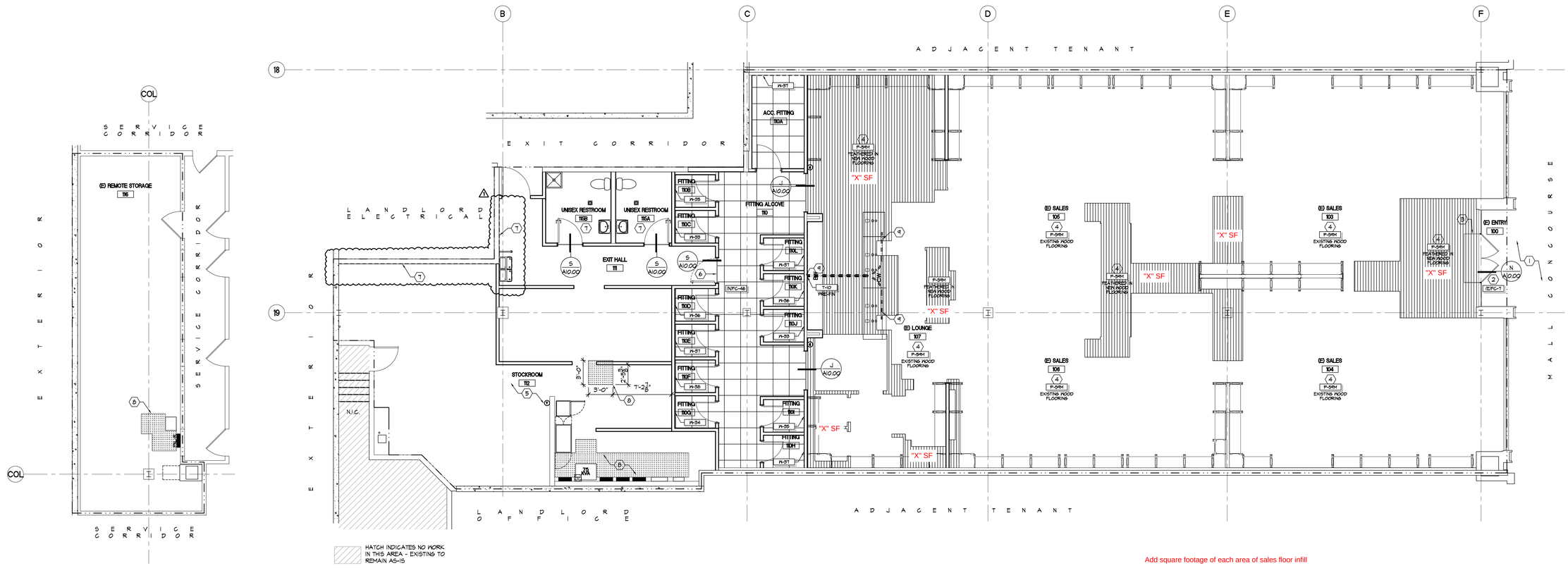
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No:	250348
Drawn By:	CJS

Date	Issue
09.04.2026	CHECKSET
09.25.2026	⚠1 BID SET

REFLECTED CEILING PLAN

A3.00



HATCH INDICATES NO WORK IN THIS AREA - EXISTING TO REMAIN AS-IS

Add square footage of each area of sales floor infill

REMOTE STORAGE FLOOR FINISH PLAN

SCALE: 3/16"=1'-0"

FLOOR FINISH PLAN

SCALE: 3/16"=1'-0"

FINISH SCHEDULE

REFER TO ELEVATIONS FOR ADDITIONAL INFORMATION

ROOM #	ROOM NAME	WALL FINISH	BASE FINISH	TRIM FINISH	FLOOR FINISH	AREA (SF)	NOTES
STOREFRONT							
	MALL SIDE STOREFRONT	P-63B HT	-	-	FC-15	N/A	SEE ELEV'S: AREA IS B/T STRFNT &LL
100	PORTAL	P-63B HT	P-63B HT	P-63B HT	(E) FC-7	41 SF	
SALES AREA							
103	(E) SALES	P-44B HT (U.N.O.)	EXIST/P-44C	P-44C	EXIST/P-59M	851 SF	
104	(E) SALES	P-44B HT (U.N.O.)	EXIST/P-44C	P-44C	EXIST/P-59M	828 SF	
105	(E) SALES	P-44B HT (U.N.O.)	EXIST/P-44C	P-44C	EXIST/P-59M	883 SF	
106	(E) SALES	P-44B HT (U.N.O.)	EXIST/P-44C	P-44C	EXIST/P-59M	894 SF	
107	(E) LOUNGE	P-44B HT (U.N.O.)	EXIST/P-44C	P-44C	EXIST/P-59M	864 SF	
110	FITTING ROOM ALCOVE	P-44B/P-59B HT	WB-4/P-59C	PRE-FIN WOOD	FC-46	294 SF	
110A	ACC. FITTING ROOM	P-44B HT	WB-4/P-44C	PRE-FIN WOOD	FC-46	93 SF	INSTALL WALLGOVERING WHERE INDICATED
110B	FITTING ROOM	P-44B HT	WB-4/P-44C	PRE-FIN WOOD	FC-46	28 SF	INSTALL WALLGOVERING WHERE INDICATED
110C	FITTING ROOM	P-44B HT	WB-4/P-44C	PRE-FIN WOOD	FC-46	24 SF	INSTALL WALLGOVERING WHERE INDICATED
110D	FITTING ROOM	P-44B HT	WB-4/P-44C	PRE-FIN WOOD	FC-46	24 SF	INSTALL WALLGOVERING WHERE INDICATED
110E	FITTING ROOM	P-44B HT	WB-4/P-44C	PRE-FIN WOOD	FC-46	24 SF	INSTALL WALLGOVERING WHERE INDICATED
110F	FITTING ROOM	P-44B HT	WB-4/P-44C	PRE-FIN WOOD	FC-46	24 SF	INSTALL WALLGOVERING WHERE INDICATED
110G	FITTING ROOM	P-44B HT	WB-4/P-44C	PRE-FIN WOOD	FC-46	24 SF	INSTALL WALLGOVERING WHERE INDICATED
110H	FITTING ROOM	P-44B HT	WB-4/P-44C	PRE-FIN WOOD	FC-46	26 SF	INSTALL WALLGOVERING WHERE INDICATED
110I	FITTING ROOM	P-44B HT	WB-4/P-44C	PRE-FIN WOOD	FC-46	24 SF	INSTALL WALLGOVERING WHERE INDICATED
110J	FITTING ROOM	P-44B HT	WB-4/P-44C	PRE-FIN WOOD	FC-46	24 SF	INSTALL WALLGOVERING WHERE INDICATED
110K	FITTING ROOM	P-44B HT	WB-4/P-44C	PRE-FIN WOOD	FC-46	24 SF	INSTALL WALLGOVERING WHERE INDICATED
110L	FITTING ROOM	P-44B HT	WB-4/P-44C	PRE-FIN WOOD	FC-46	24 SF	INSTALL WALLGOVERING WHERE INDICATED
NON-SALES AREA							
111	EXIT HALL	P-1G/SF-5	-	-	FC-1	204 SF	
112	STOCKROOM	P-1G/SF-5			FC-1/P-3G	1003 SF	
115A	UNISEX RESTROOM	P-1G/SF-2	-	-	FC-47	61 SF	
115B	UNISEX RESTROOM	P-1G/SF-2	-	-	FC-47	92 SF	
116	REMOTE STORAGE	P-1G/SF-5	-	-	FC-1/P-3G	620 SF	

FINISH NOTES

A. REFER TO SPECIFICATIONS & A0.40 FINISH SCHEDULE FOR PRODUCT AND INSTALLATION REQUIREMENTS.

B. REFER TO INTERIOR ELEVATIONS FOR WALL FINISHES.

C. REFER TO REFLECTED CEILING PLAN FOR CEILING FINISHES.

D. REFER TO SHEET A1O.00 FOR FLOOR TRANSITION & TRIM DETAILS.

E. 'ROOM AREA' DATA COLUMN IN THE FINISH SCHEDULE IS TOTAL EXPOSED FLOOR SURFACE AREA OF THE LABELED ROOM.

F. FINISH FLOOR ELEVATION TO ALIGN WITH PUBLIC AREA FINISH FLOOR ELEVATION AT ALL DOORS BETWEEN LEASED PREMISES AND MALL COMMON AREAS.

G. PROVIDE FLOOR LEVELING COMPOUND AT DIFFERING FLOOR FINISH MATERIALS TO PROVIDE SMOOTH FLUSH TRANSITION (MAX. ⅛" PER FT.)

H. PROVIDE MOISTURE MEMBRANE OVER CONCRETE IN AREAS TO RECEIVE VINYL FLOOR TILE.

GENERAL NOTES

A. PERFORM WORK AS OUTLINED IN SPECIFICATIONS SECTION 09 0561 "COMMON WORK FOR FLOORING PREPARATION" AND PROVIDE REPORT AS DIRECTED.

CODED NOTES ⬡

1. EXISTING MALL CONCOURSE, TILE TO REMAIN - PROTECT DURING CONSTRUCTION. SAW-CUT AND/OR REPLACE MALL FINISHES IN AREA OF NEW STOREFRONT. COORDINATE W/ MALL OPERATIONS.
2. EXISTING FLOORING TO REMAIN, PROTECT DURING CONSTRUCTION.
3. ELECTRONIC ARTICLE SURVEILLANCE (EAS) SYSTEM. REFER TO S/A8.00 & 6/E6.00.
4. PATCH AND REPAIR FLOORING TO MATCH EXISTING AS REQUIRED AFTER INSTALLATION OF EAS SYSTEM.
4. PROTECT EXISTING FLOOR DURING CONSTRUCTION. FEATHER IN FLOOR WITH NEW WOOD FLOORING WHERE EXISTING CABINETS WERE REMOVED, TOOTH INTO AND ALIGN WITH EXISTING, PAINT P-59M. NO STRAIGHT LINE CUTS ALLOWED. REFER TO DEMOLITION PLAN. WOOD FLOOR TO BE REFINISHED AND PAINTED P-59M. TYP. IN SALES AREA.
5. PAINT DSP CART(S) P-63C. TOP SURFACE TO REMAIN AS IS.
6. ALIGN FLOOR TRANSITION ON BOH SIDE OF DOOR FRAME.
7. INSTALL LANDLORD APPROVED WATERPROOF MEMBRANE PRIOR TO FLOOR FINISH INSTALLATION. WATERPROOF MEMBRANE SHALL BE EITHER LATICRETE 9235 OR MAPEI MAPELASTIC INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND ANSI A108. MEMBRANE MUST BE EXTENDED UP THE WALL A MINIMUM OF 12". 24HR STANDING WATER TEST IS REQUIRED.
8. PAINT FLOOR [P-3C] BELOW SAFE 36" X 36" AND IN AREA OF ELECTRICAL PANELS TO IDENTIFY REQUIREMENT TO PROVIDE 3'-0" CLEAR AT ALL TIMES. COORD. W/ PM.
9. CONDUIT STUB-UP OR FLOOR RECEPTACLE. REFER TO J/A9.00 & E2.00

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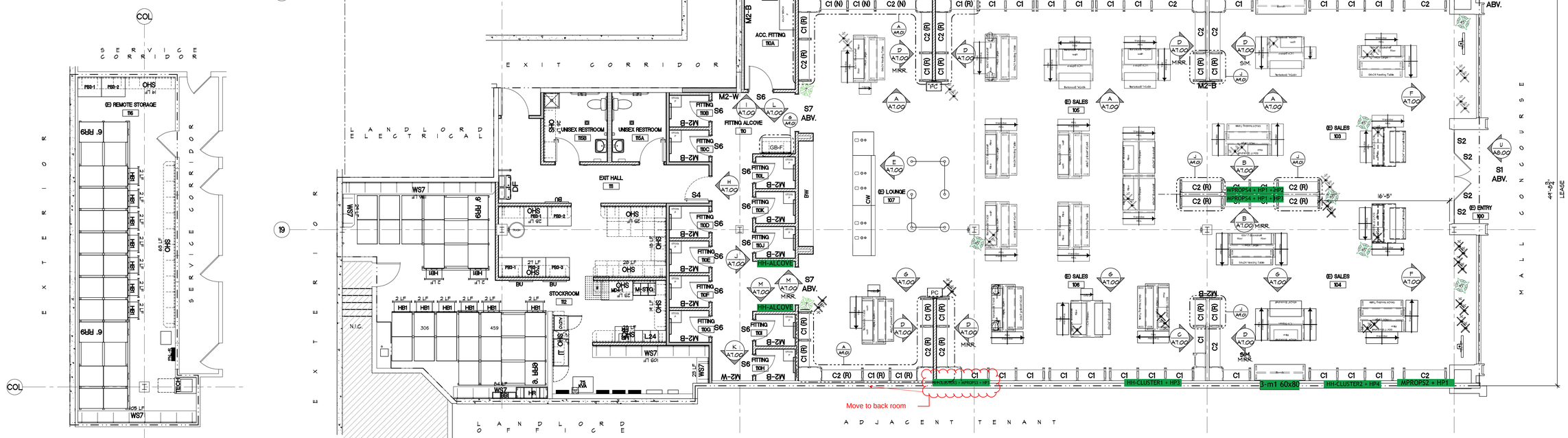
MEMORIAL CITY MALL

303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No:	260348
Drawn By:	CJS
Date	Issue
09.04.2026	CHECKSET
09.25.2026	⚠1 BID SET

FLOOR FINISH PLAN

A4.00



REMOTE STORAGE F.F&E PLAN
SCALE: 3/16"=1'-0"

F.F&E PLAN
SCALE: 3/16"=1'-0"

MILLWORK + EQUIPMENT SCHEDULE

SALES

MARK	DESCRIPTION	DETAIL
C1 (R)	NEW LOCATION OF EXISTING 42" W. CABINET	A & J/A9.01
C2 (R)	NEW LOCATION OF EXISTING 63" W. CABINET	A & J/A9.01
C1 (N)	NEW 42" W. CABINET	A & J/A9.01
C2 (N)	NEW 63" W. CABINET	A & J/A9.01
S1	ILLUMINATED STOREFRONT SIGN	U/A8.00
S3	ILLUMINATED BLADE SIGN	U/A8.00
S2	GLAZING VINYL	U/A8.00
S4	ASSOCIATES ONLY VINYL	SHOP DWG.
S6	FITTING ROOM NUMBER SIGN	-
S7	NON-ILLUMINATED FR WAYFINDING	SHOP DWG.
M2-B	FITTING ROOM/SALES FLOOR MIRROR (BLUE)	S/A9.20
M2-W	FITTING ROOM/SALES FLOOR MIRROR (WHITE)	S/A9.20
GB-F	GO-BACK CABINET	G/A9.01
MC	MARKETING CLAMPS	-

NON-SALES

MARK	DESCRIPTION	DETAIL
HB#	HANG BAR (# = NUMBER OF BARS) - UNDER SEPARATE PERMIT	S4/A11.10
OHS#	OVERHEAD SHELVING (# = NUMBER OF SHELVES)	S10/A11.10
WS#	WALL SHELVING (# = NUMBER OF SHELVES)	S23,9 & 14/A11.10
M-STG	MARKETING STORAGE	-
BB	BAR BIN	V#S11/A11.10
BU	BULLETIN BOARD	S25/A11.10
DT	DRAWING TUBE	H/A11.00
DF	DRINKING FOUNTAIN	C/A11.00
HR	HARDWARE BIN	R#S11/A11.10
HS	~~HEALTH AND SAFETY SHELF~~	-
L#	EMPLOYEE LOCKERS - 6 HIGH (# = NUMBER OF LOCKERS) ANCHOR TO WALL	-
MD	MANAGERS DESK	U/A11.10-S9.1/A11.10
PB	PROCESSING BENCH	U3/A11.10-S9/A11.10
#RR#	ROLLING RACK (LENGTH + RR + NUMBER OF SHELVES)	S20-S22/A11.10
S	SAFE (ANCHOR TO FLOOR)	-
TECH	TECHNOLOGY RACK	E2.00

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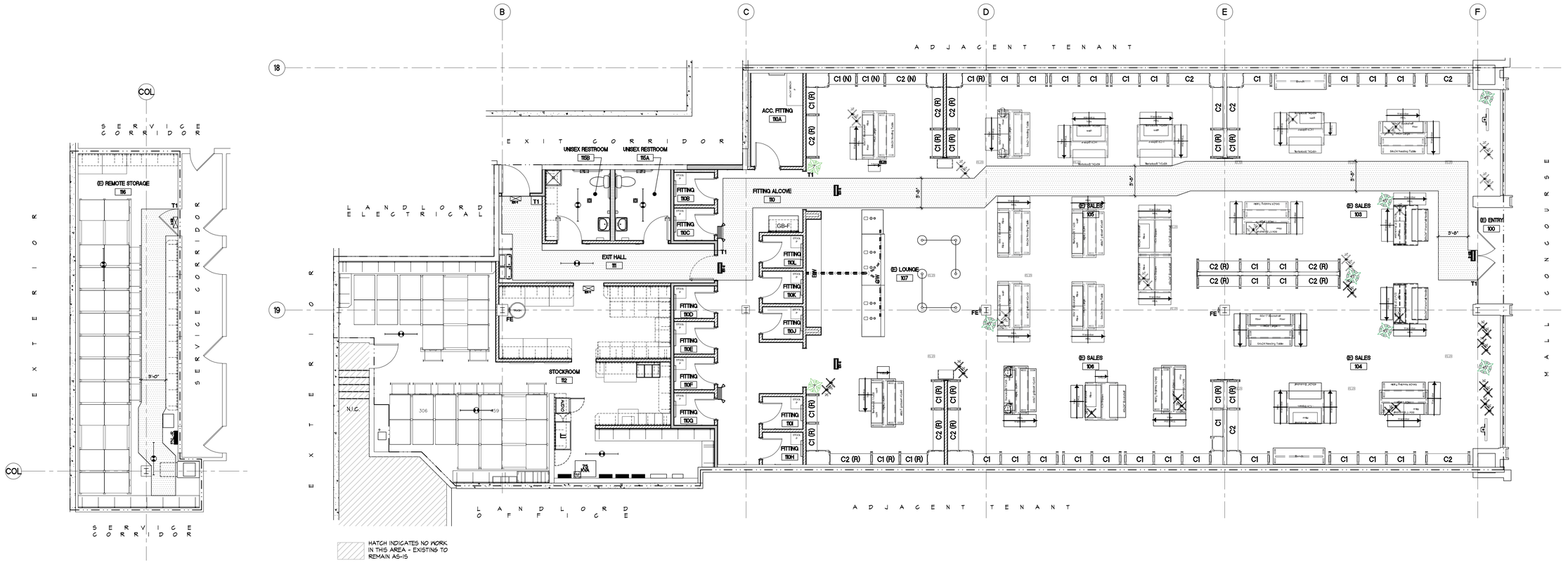
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No:	260348
Drawn By:	AMH

Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

FIXTURE, FURNITURE + EQUIPMENT PLAN

A5.00



REMOTE STORAGE LIFE SAFETY PLAN

SCALE: 3/16"=1'-0"

LIFE SAFETY PLAN

SCALE: 3/16"=1'-0"

OCCUPANCY LOADS

ROOM	OCCUPANCY LOAD
REMOTE STORAGE (300 GROSS)	3 PERSONS

OCCUPANCY LOADS

ROOM	OCCUPANCY LOAD
SALES (MERCANTILE 60 GROSS) (INCLUDING LOUNGE & FITTING ROOMS)	83 PERSONS
RESTROOMS	2 PERSONS (1 EA)
HALLWAY	NO OCCUPANCY
STOCKROOM (300 GROSS)	4 PERSONS

LIFE SAFETY SYMBOL LEGEND

SYMBOL	DESCRIPTION
FE	WALL MOUNTED FIRE EXTINGUISHER.
	SURFACE MOUNTED 4'-0" LIGHT W/ EMER. BATTERY
	EXIT SIGN, ARROW DESIGNATES DIRECTION
	DOUBLE HEAD EMERGENCY LIGHT BLACK (SALES)
	EXIT SIGN BLACK, SALES
	EXIT SIGN WHITE, NON-SALES
	ARROW DESIGNATES DIRECTION
	EXISTING CEILING MOUNT EMERGENCY LIGHT (SALES)

NOTE: REFER TO ELECTRICAL DRAWINGS FOR EMERGENCY FIXTURE SPECIFICATIONS

GENERAL NOTES

A. A CLEAR EGRESS AISLE SHALL BE PROVIDED AND MAINTAINED THROUGH ALL SALES AREA TO EXIT DOORS.

B. PROVIDE & INSTALL FIRE EXTINGUISHERS THAT COMPLY WITH THE PRODUCT REQUIREMENTS OF NFPA 10 AND AS REQUIRED BY JHA. FIRE EXTINGUISHERS SHALL BE MULTIPURPOSE DRY CHEMICAL TYPE, 5 POUND MINIMUM, A:B:C. INSTALL ONE (1) EXTINGUISHER FOR EVERY 3,000 S.F. FLOOR AREA AND NOT MORE THAN 75' TRAVEL DISTANCE FROM ANY POINT TO AN EXTINGUISHER.

C. COORDINATE EXACT LOCATION OF FIRE EXTINGUISHERS WITH P.M. & AHJ.

TACTILE SIGNAGE LEGEND

T1 PROVIDE TACTILE EXIT SIGNAGE PER "ACCESSIBILITY SIGNAGE REQUIREMENTS". TEXT TO READ "EXIT ROUTE".

ALL TACTILE SIGNAGE MUST MEET THE FOLLOWING REQUIREMENTS.
- TO HAVE SIGNAGE MOUNTED @ 60" A.F.F. TO BOTTOM OF CHARACTERS
- SIGNAGE TO BE 4"W X 6"H USING GRADE 2 BRAILLE
- CHARACTER HEIGHT TO BE MINIMUM OF 5/8"

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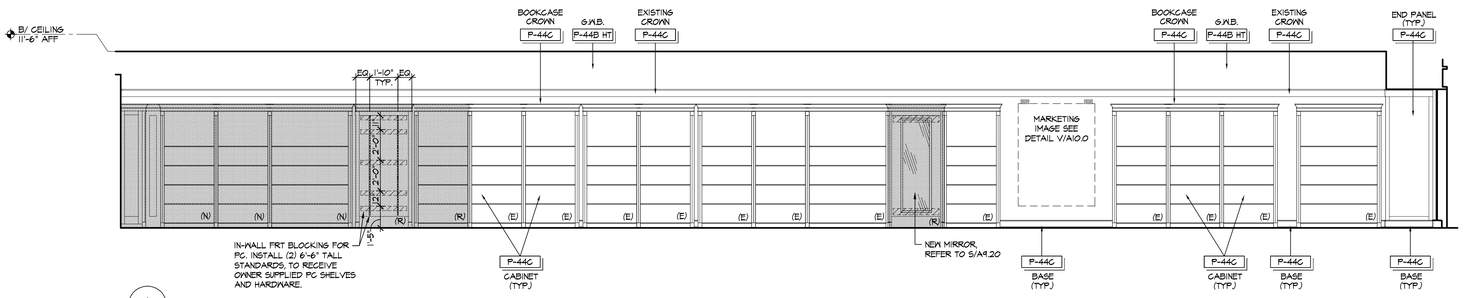
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
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Project No:	260348
Drawn By:	AMH

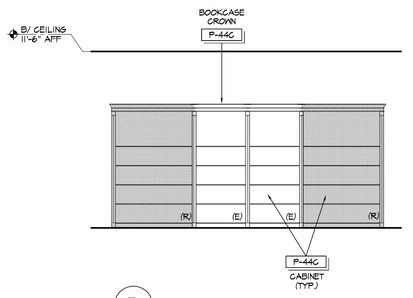
Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

LIFE SAFETY PLAN

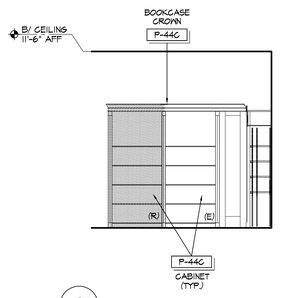
A6.00



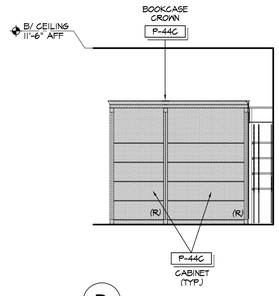
A **SALES**



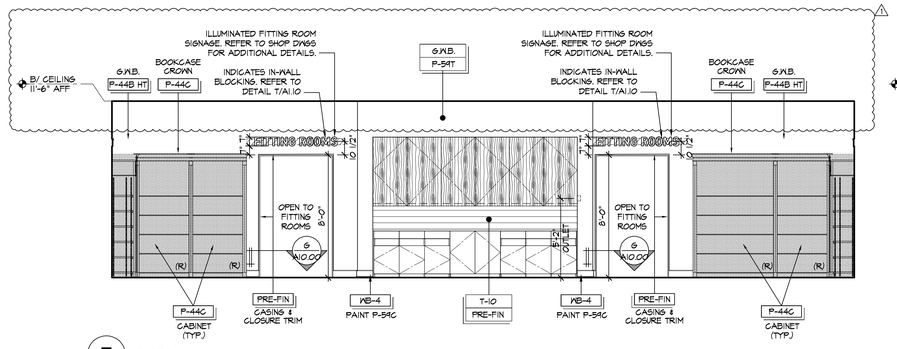
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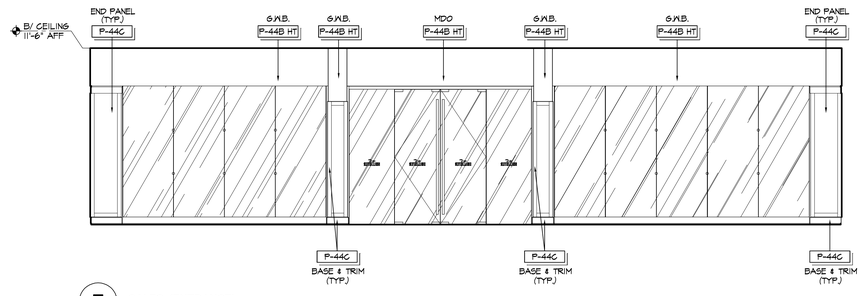
C **SALES**



D **SALES**



E **SALES**



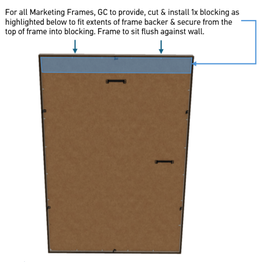
F **SALES (ENTRANCE)**

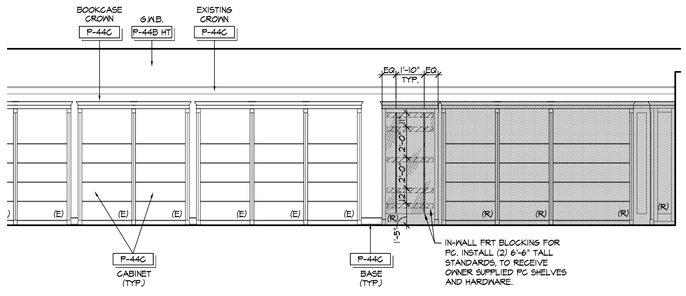
Marketing Frame Blocking Detail

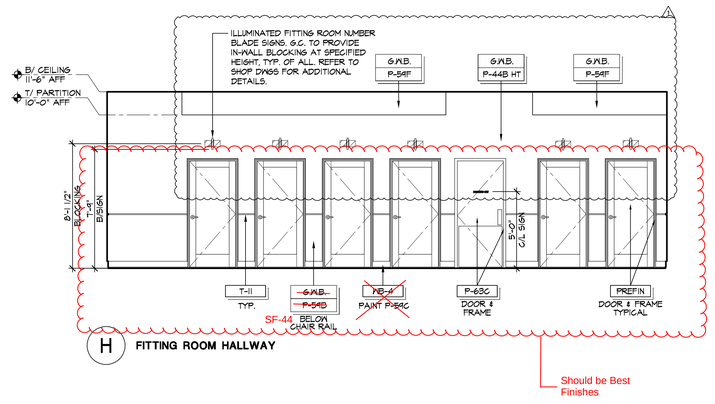
Hollister House Refresh

HOLLISTER



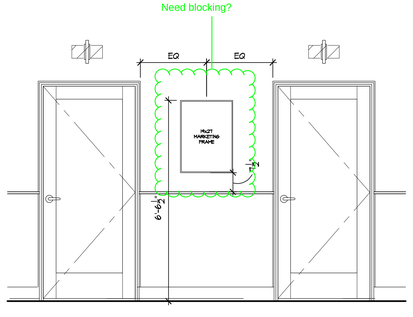






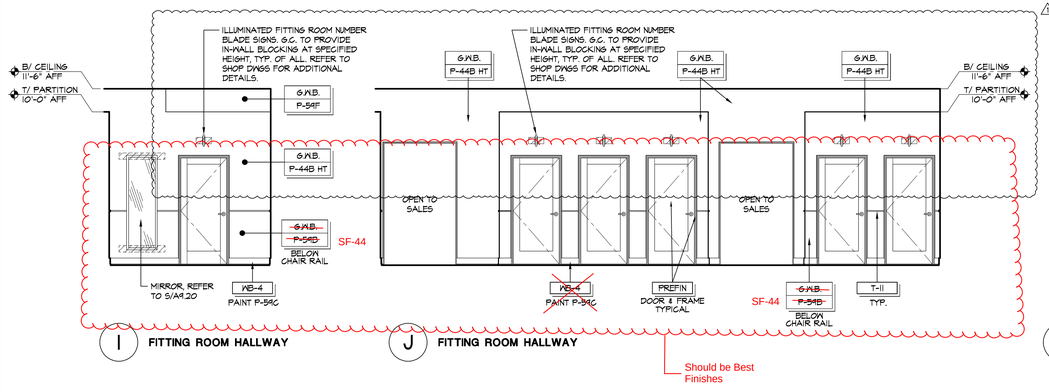
H **FITTING ROOM HALLWAY**

HH-ALCOVE



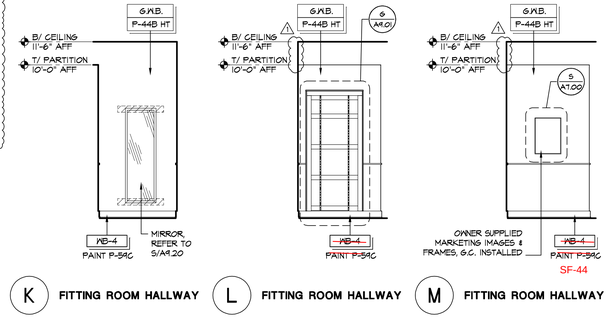
S **MARKETING FRAME DETAILS**

A7.00 SCALE: 1/2" = 1'-0"



I **FITTING ROOM HALLWAY** J **FITTING ROOM HALLWAY**

Should be Best Finishes



K **FITTING ROOM HALLWAY** L **FITTING ROOM HALLWAY** M **FITTING ROOM HALLWAY**

GENERAL NOTES

A. REFER TO SPECIFICATIONS AND A0.40 FINISH SCHEDULE FOR PRODUCT AND INSTALLATION REQUIREMENTS.

B. REFER TO A2.00 CONSTRUCTION AND FINISH PLAN FOR ADDITIONAL INFORMATION.

C. SCRIBE WALL BASE TO TOP OF FINISHED FLOORING.

D. AFTER INSTALLATION OF ALL SALES TRIM, CASING, BASE, AND CROWN, FILL NAIL HOLES AND APPLY FINAL COAT.

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MEMORIAL CITY MALL

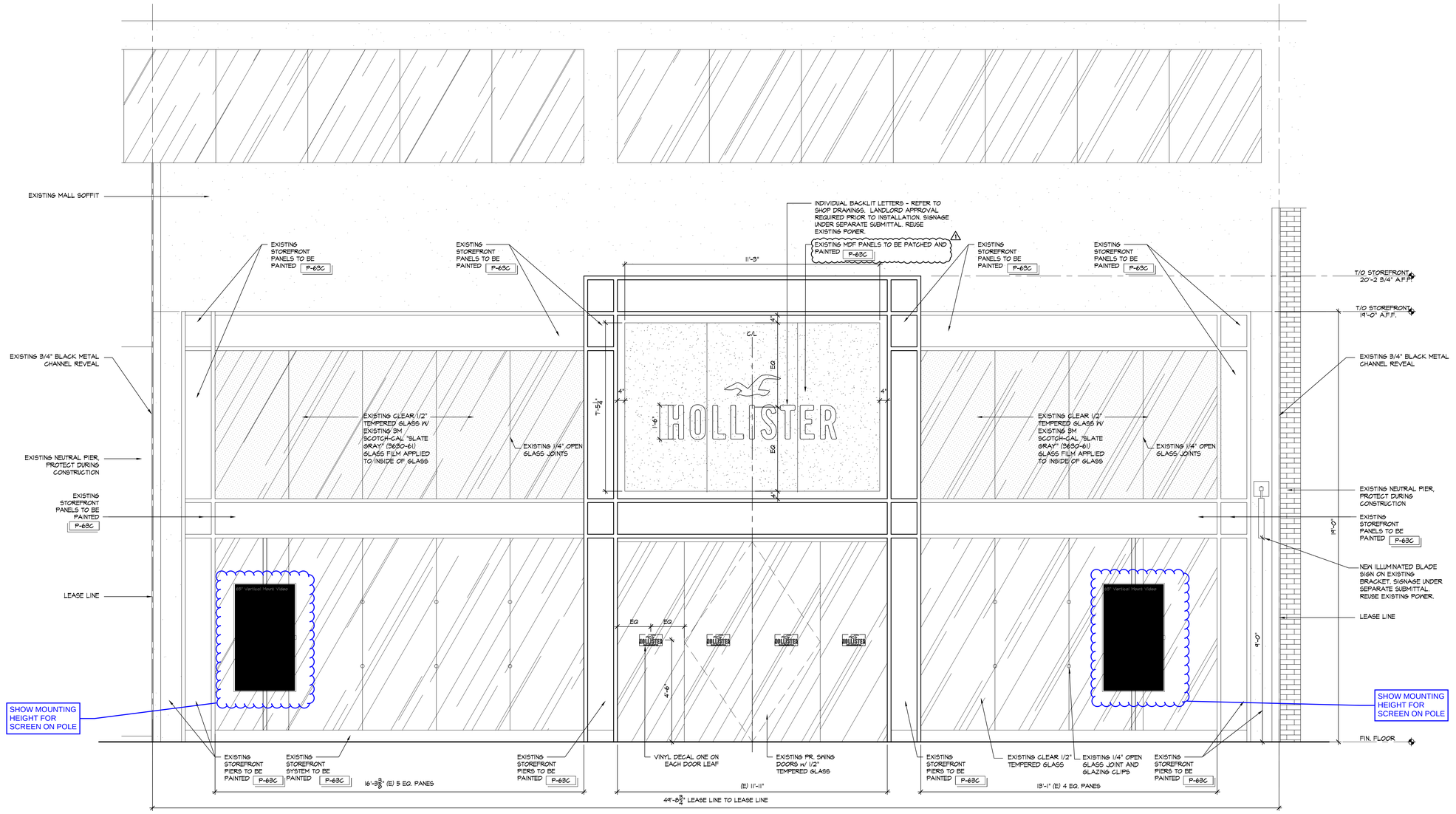
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No:	260348
Drawn By:	CJS

Date	Issue
09.04.2026	CHECKSET
09.25.2026	⚠ BID SET

INTERIOR ELEVATIONS (HOLLISTER)

A7.00



U STOREFRONT ELEVATION

A8.00 SCALE: 1/2" = 1'-0"

GENERAL NOTES:

A. ALL MDF PANELS (MEDIUM DENSITY FIBERBOARD) TO MEET A CLASS 'C' FLAME SPREAD CLASSIFICATION.

B. LANDLORD'S BULKHEAD AND NEUTRAL PIER SHALL APPEAR TO BE "LIKE NEW" CONDITION AT CONSTRUCTION HAND OVER.

C. ALL BLOCKING AT STOREFRONT SHALL BE NON COMBUSTIBLE MATERIAL.

D. PRESERVE AND PROTECT EXISTING LANDLORD FLOOR FINISHES, NEUTRAL PIERS AND BULKHEAD DURING CONSTRUCTION. ANY DAMAGE TO BE PATCHED AND REPAIRED TO THE LANDLORD'S SPECIFICATION.

E. ALL DIMENSIONS ARE FROM FINISH FACE UNLESS NOTED OTHERWISE.

F. DOORS TO BE IN OPEN POSITION DURING BUSINESS HOURS AT 105 DEGREES.

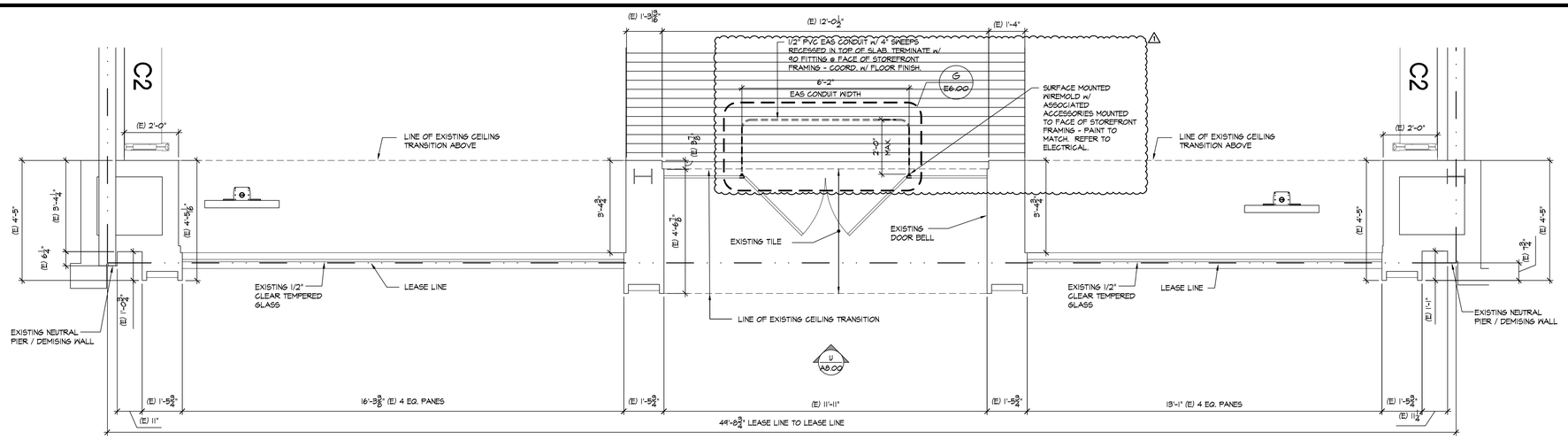
G. ALL STOREFRONT GLAZING SHALL BE TEMPERED. GLAZING MANUFACTURER'S TEMPERING LABEL SHALL BE VISIBLE ON ALL GLASS PANES FOR INSPECTION LOCATED IN LOWER RIGHT CORNER.

H. STOREFRONT SHOP DRAWINGS TO BE PROVIDED BY SUPPLIER WHICH CLEARLY ADDRESS GLAZING SIZES, ACM PANEL SIZES, SEAM LOCATIONS AND ADHESIVE. SHOP DRAWINGS WILL CLEARLY ADDRESS GLAZING TOP AND BOTTOM SUPPORTS, GASKETS AND FASTENERS MEET ALL LOCAL AUTHORITY REQUIREMENTS FOR LOADING AND HEALTH AND SAFETY.

I. INSTALL ACM PER APPROVED SHOP DRAWINGS. NO VISIBLE FASTENERS PERMITTED.

J. REPLACE ANY MISSING OR DAMAGED FIREPROOFING ON MALL STRUCTURE AS REQUIRED TO MAINTAIN APPLICABLE FIRE RATING. VERIFY IN FIELD DURING DEMOLITION.

K. G.C. TO VERIFY "HOLD" DIMENSIONS CAN BE ACHIEVED PRIOR TO SETTING FRAMING. REPORT ANY DIMENSION DISCREPANCIES TO A&F PROJECT MANAGER.



S STOREFRONT PLAN

A2.00 SCALE: 1/2" = 1'-0"

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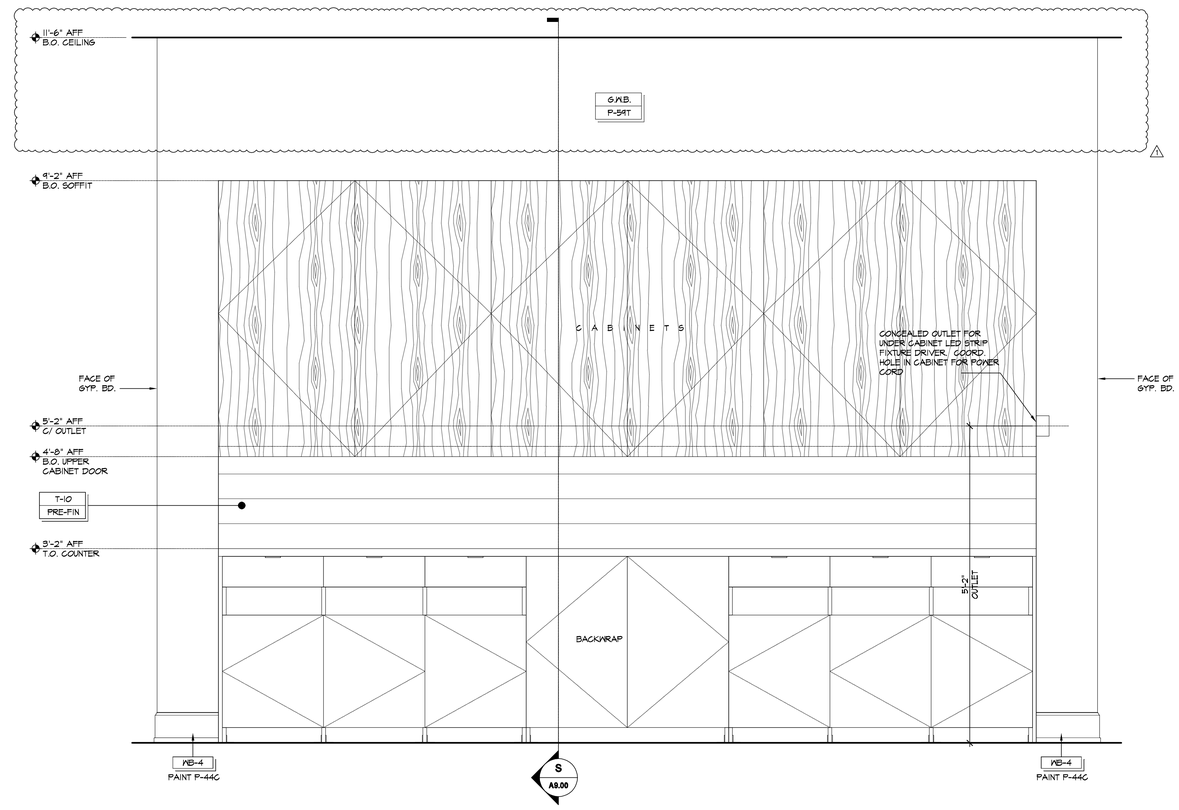
MEMORIAL CITY MALL

303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No:	260348
Drawn By:	CJS
Date	Issue
09.04.2026	CHECKSET
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ENLARGED STOREFRONT PLAN + ELEVATION

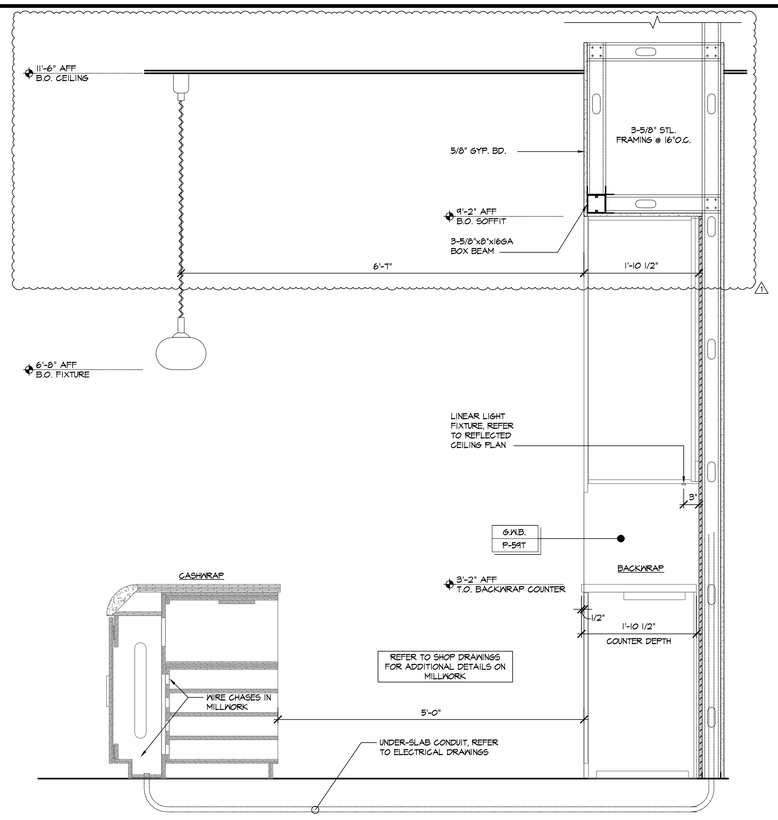
A8.00



L
A9.00

BACKWRAP ELEVATION

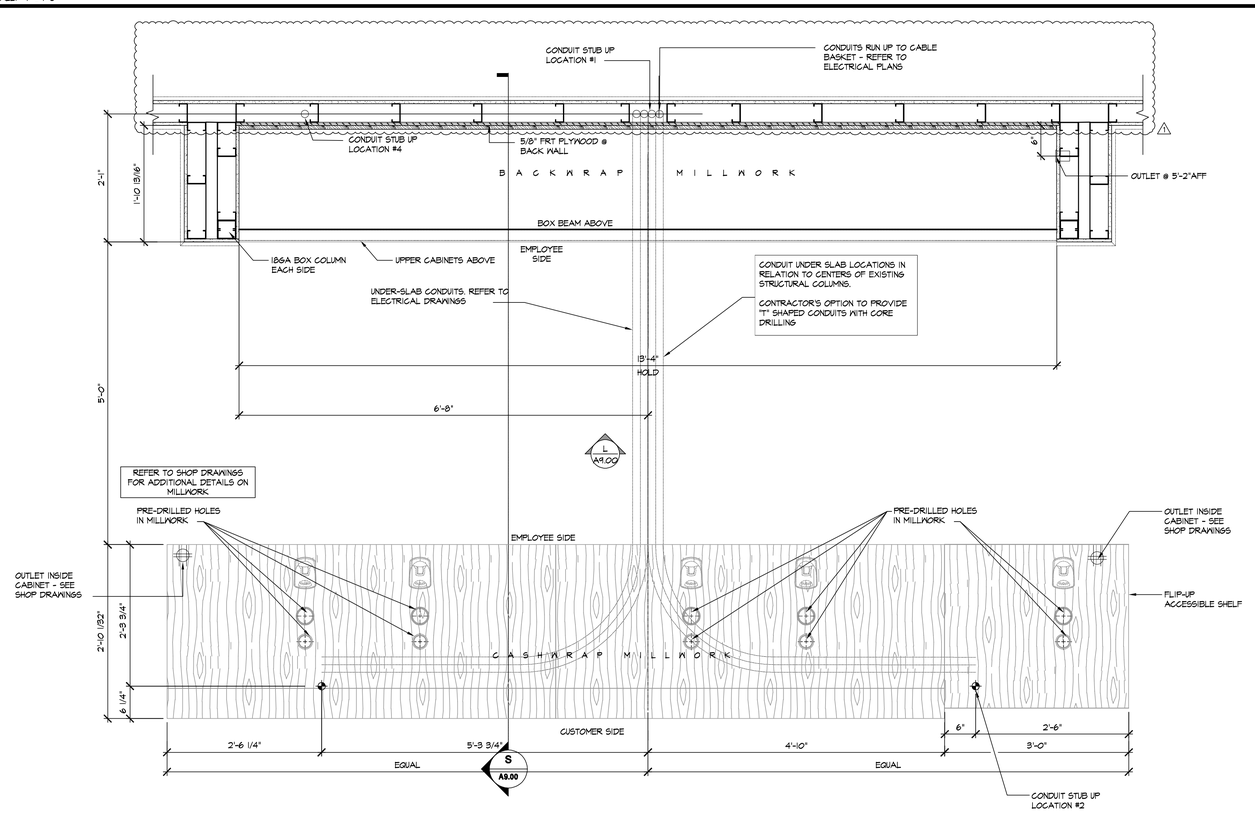
SCALE: 1" = 1'-0"



S
A9.00

CASHWRAP / BACKWRAP CROSS SECTION

SCALE: 1" = 1'-0"



J
A9.00

CASHWRAP / BACKWRAP PLAN (CW / BW)

SCALE: 1" = 1'-0"

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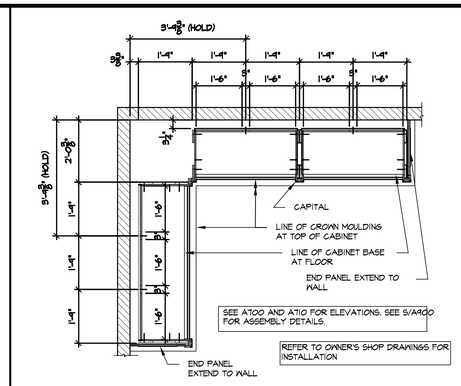
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No:	250348
Drawn By:	AMH

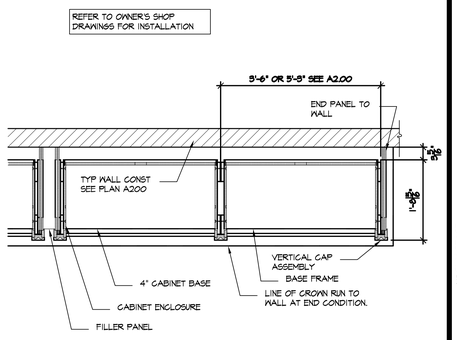
Date	Issue
09.04.2026	CHECKSET
09.25.2026	1 BID SET

CASHWRAP + BACKWRAP DETAILS

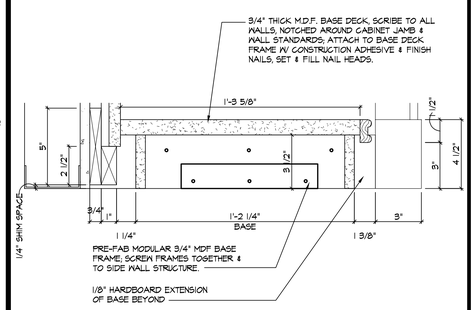
A9.00



R A9.01 — CABINET PLAN DETAIL-(WALL TO WALL)
SCALE: 1/2" = 1'-0"

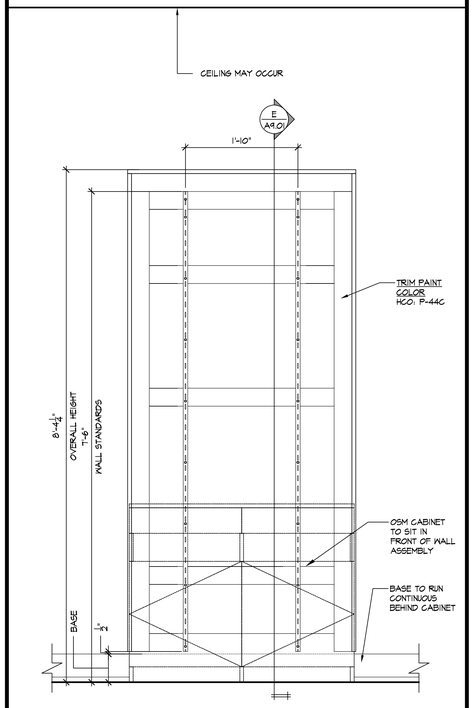


U A9.01 — PLAN AT CABINETS
SCALE: 3/4" = 1'-0"

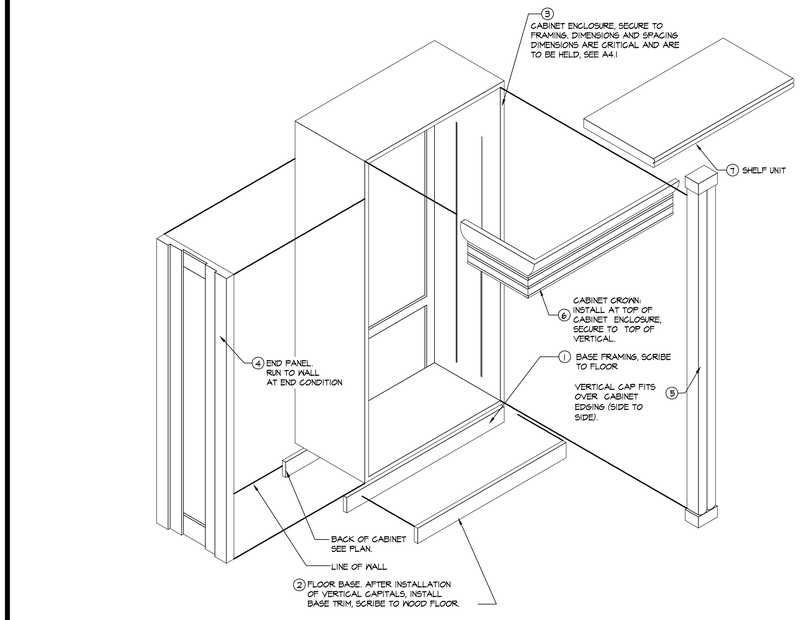


Q A9.01 — BASE DETAILS
SCALE: 3" = 1'-0"

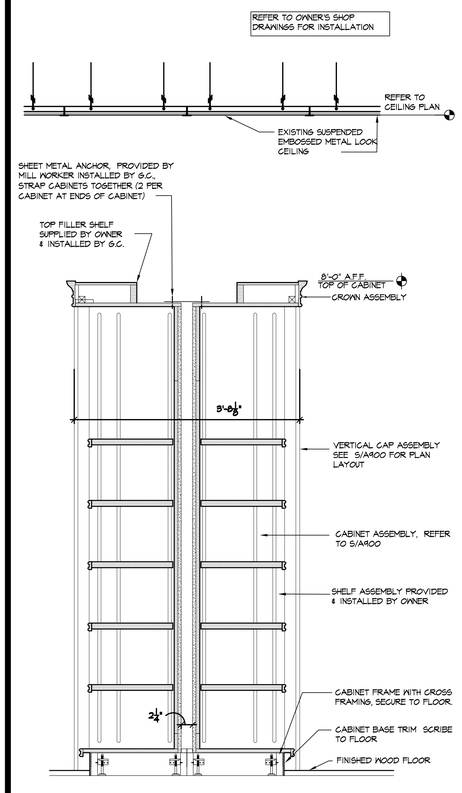
NOTE:
A. LOCATION MAY VARY. REFER TO A2.00 FOR ADDITIONAL INFORMATION.



G A7.00 — ELEV. - FIT RM GO-BACK CABINET
SCALE: 1" = 1'-0"



S A9.01 — TYPICAL CABINET ASSEMBLY
SCALE: 1 1/2" = 1'-0"

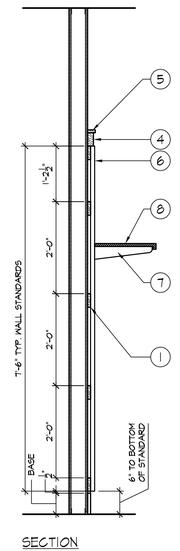


J A5.00 — BACK TO BACK CABINET SECTION
SCALE: 1" = 1'-0"

(#) SALES SHELVING CODED NOTES

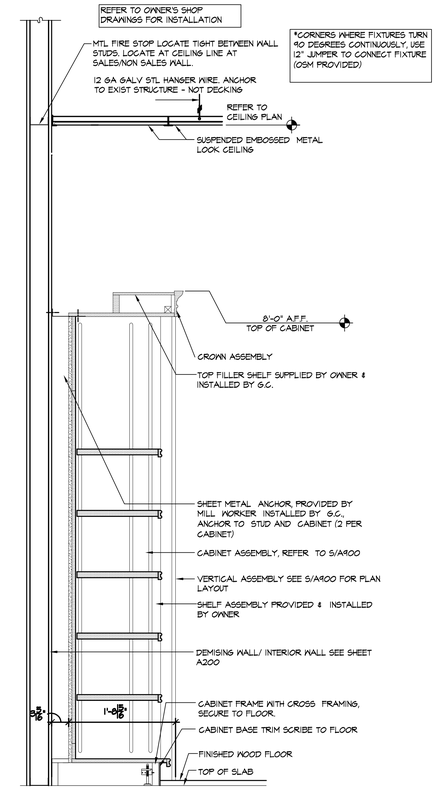
1. 1x4 HORIZONTAL TRIM, CONTINUOUS FULL LENGTH OF SHELVING RUN.
2. 1x4 VERTICAL TRIM (w/ 1x4 FILLERS), CONTINUOUS FULL LENGTH OF STANDARDS
3. 3/4"x2" VERTICAL CAP TRIM, CONTINUOUS FULL HEIGHT
4. 2x4 CROWN TRIM, CONTINUOUS FULL LENGTH OF SHELVING RUN
5. 3/4"x2" HORIZONTAL CAP TRIM, CONTINUOUS FULL LENGTH
6. WALL STANDARD: 7'-6" LONG HEAVY DUTY WALL STANDARD WITH 1" SLOTS, 2'o.c. ANCHOR TO ITEM #1
7. SHELF BRACKET: 14" HEAVY DUTY SHELF BRACKET
8. WALL SHELF: PRE-FINISHED, BRAND SPECIFIC

NOTE:
A. ALL WALL ASSEMBLY WOOD TRIM SHALL BE GRADE "A" WOOD. SUPPLIED & INSTALLED BY G.C.



SECTION

E A9.01 — GO-BACK SECTION
SCALE: 3/4" = 1'-0"



A A5.00 — WALL CABINET SECTION
SCALE: 1" = 1'-0"

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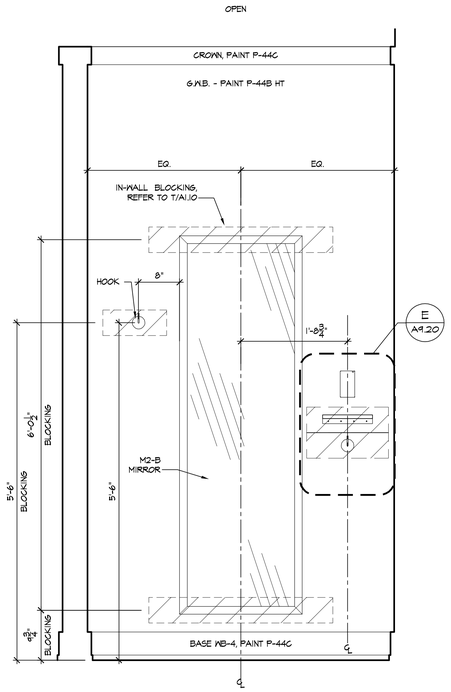
MEMORIAL CITY MALL

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STORE #31909

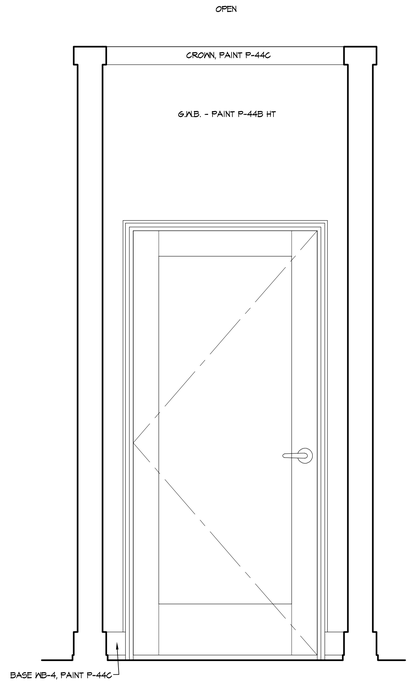
Project No:	250348
Drawn By:	AMH
Date	Issue
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CABINETS DETAILS

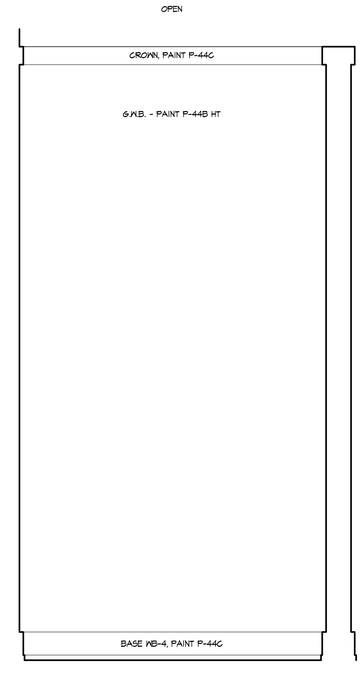
A9.01



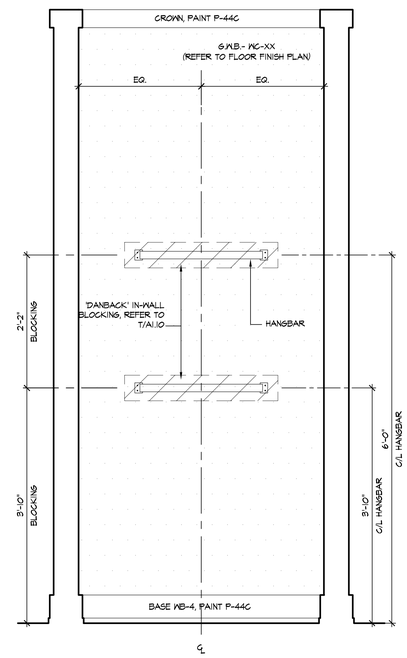
U | ELEVATION - MIRROR
A9.20 SCALE: 1" = 1'-0"



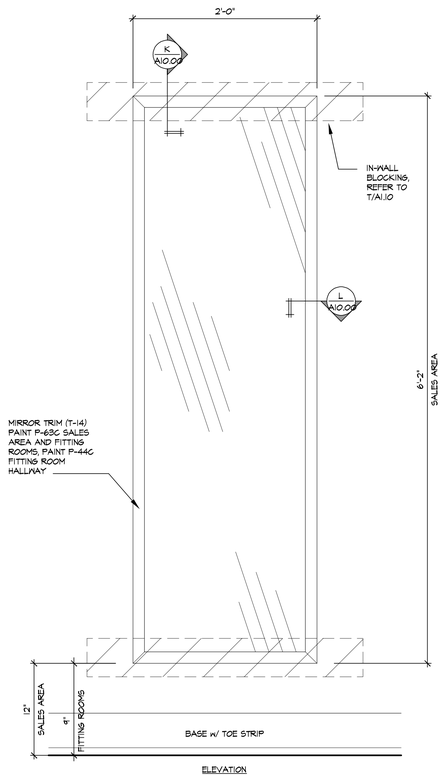
Q | ELEVATION - DOOR
A9.20 SCALE: 1" = 1'-0"



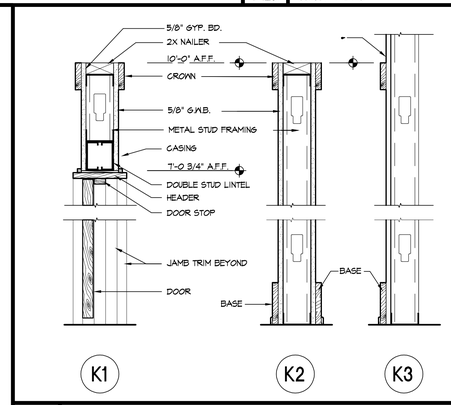
G | ELEVATION - WALL
A9.20 SCALE: 1" = 1'-0"



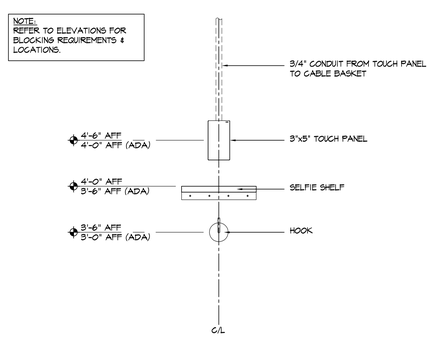
C | ELEVATION - WALLCOVERING
A9.20 SCALE: 1" = 1'-0"



S | SALES AREA MIRROR (M2)
A5.00 SCALE: 1 1/2" = 1'-0"



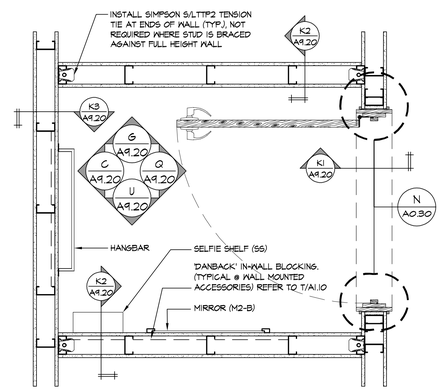
K | FITTING ROOM PARTITION DETAILS
A9.20 SCALE: 1 1/2" = 1'-0"



E | FITTING ROOM DEVICE LOCATIONS
A9.20 SCALE: 1 1/2" = 1'-0"

GENERAL NOTES

A. FITTING ROOM ELEVATION MAY VARY, REFER TO PLAN.
B. MITER TRIM AT CORNERS - TYPICAL.
C. TRIM SHALL BE FASTENED W/ FINISHING NAILS, HOLES FILLED & SANDED PRIOR TO PAINT.



A | TYPICAL FITTING ROOM PLAN
A2.00 SCALE: 1" = 1'-0"

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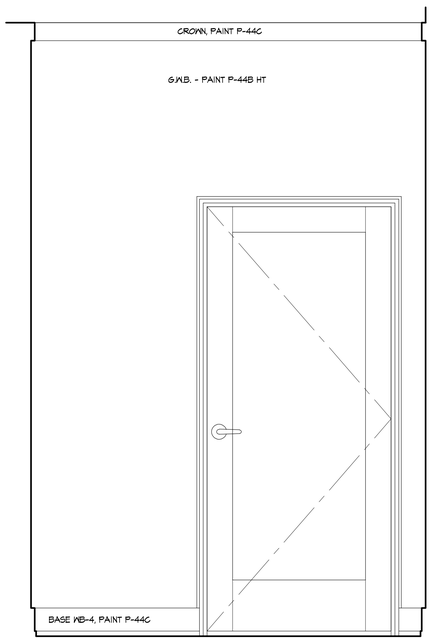
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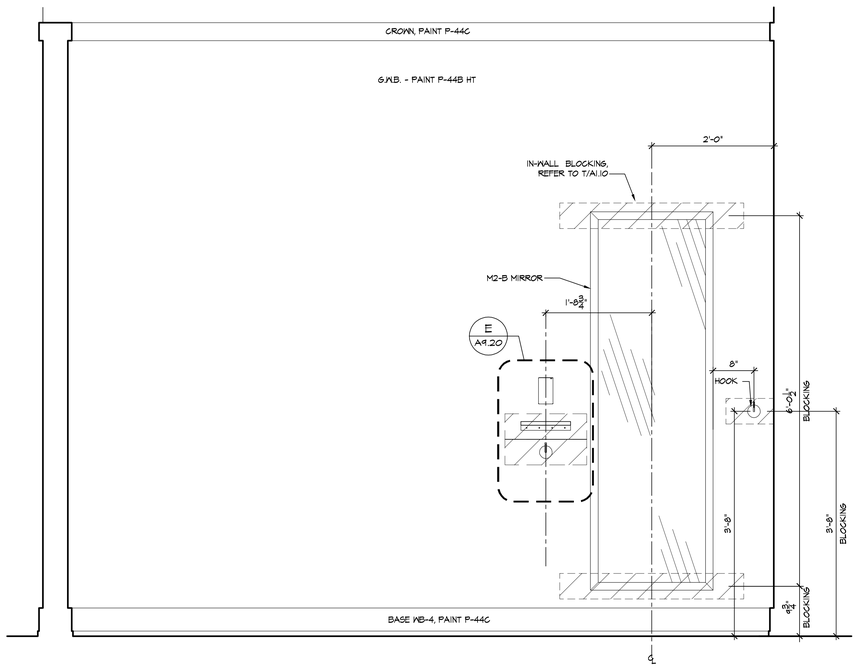
Project No:	260348
Drawn By:	CJS
Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

TYPICAL FITTING ROOM PLAN, ELEVATIONS + DETAILS

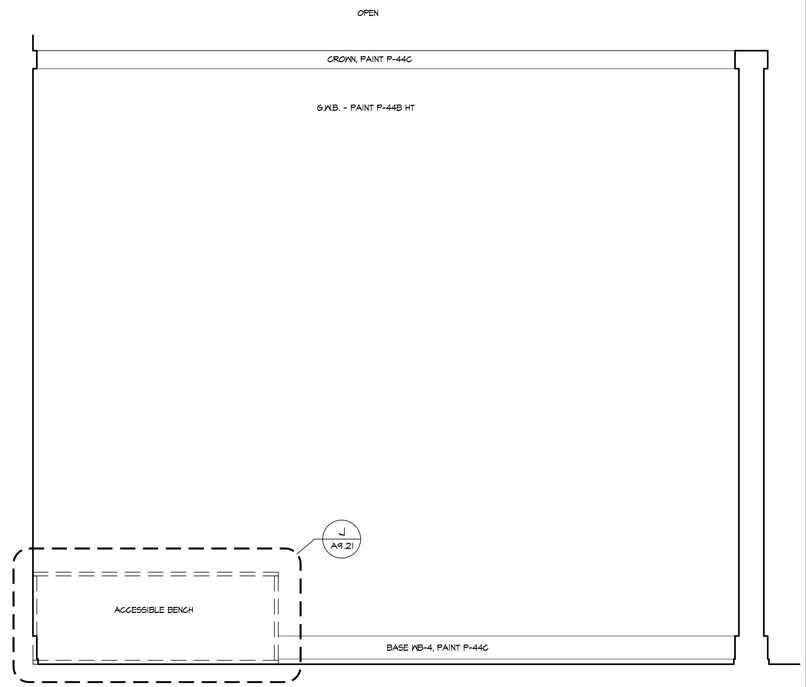
A9.20



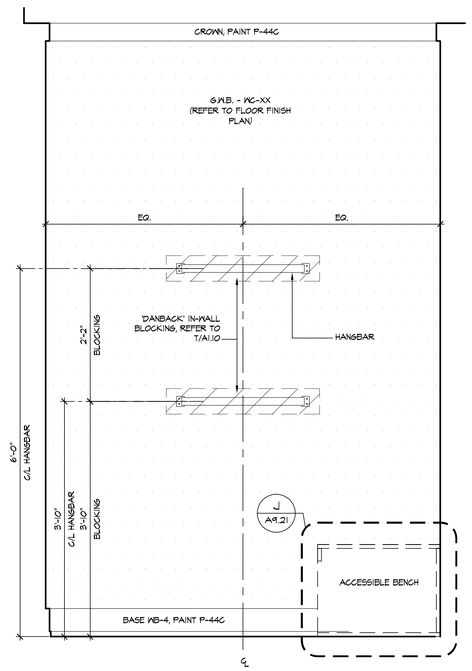
U ELEVATION - DOOR
A9.21 SCALE: 1" = 1'-0"



L ELEVATION - MIRROR
A9.21 SCALE: 1" = 1'-0"



G ELEVATION - WALL
A9.21 SCALE: 1" = 1'-0"

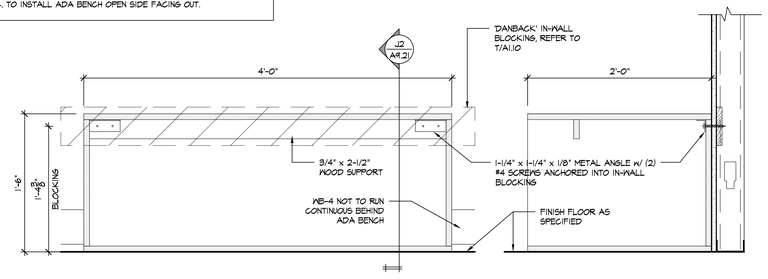


S ELEVATION - WALLCOVERING
A9.21 SCALE: 1" = 1'-0"

GENERAL NOTES

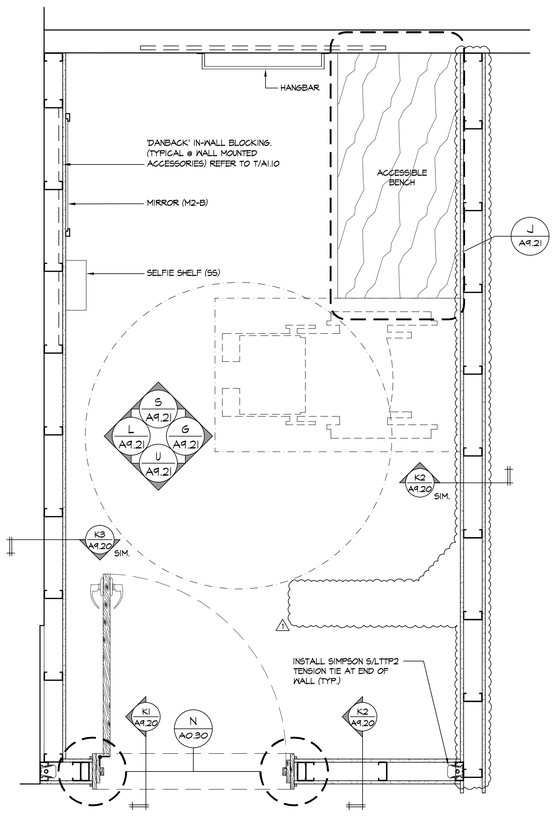
A. FITTING ROOM ELEVATION MAY VARY, REFER TO PLAN.
B. MITER TRIM AT CORNERS - TYPICAL.
C. BASE SHALL BE FASTENED w/ FINISHING NAILS, HOLES FILLED & SANDED PRIOR TO PAINT.

NOTE:
A. ADA BENCH SENT PRE-FINISHED & ASSEMBLED.
B. MOUNTING HARDWARE TO BE SUPPLIED & INSTALLED BY G.C.
C. G.C. TO INSTALL ADA BENCH OPEN SIDE FACING OUT.



J1 ELEVATION — J2 SECTION

J ADA FITTING ROOM BENCH DETAILS
A9.21 SCALE: 1 1/2" = 1'-0"



E TYPICAL ADA FITTING ROOM PLAN
A2.00 SCALE: 1" = 1'-0"

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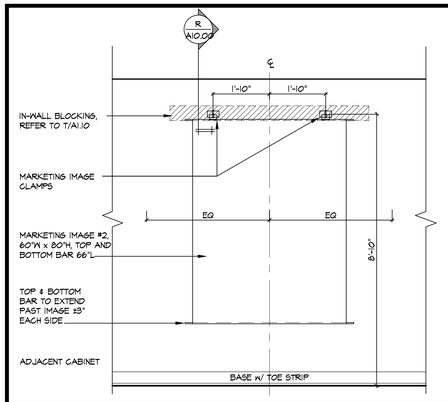
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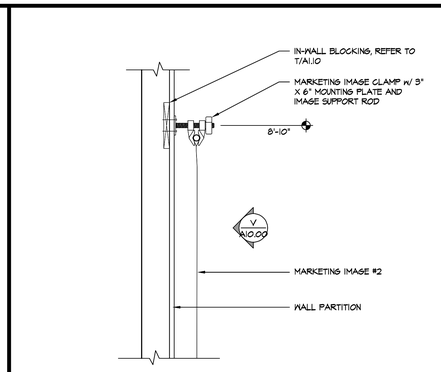
TYPICAL ADA FITTING ROOM PLAN, ELEVATIONS + DETAILS

A9.21



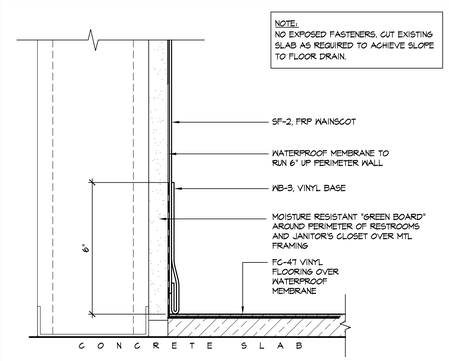
V A10.00 MARKETING IMAGE ELEVATION

SCALE: 1/2" = 1'-0"



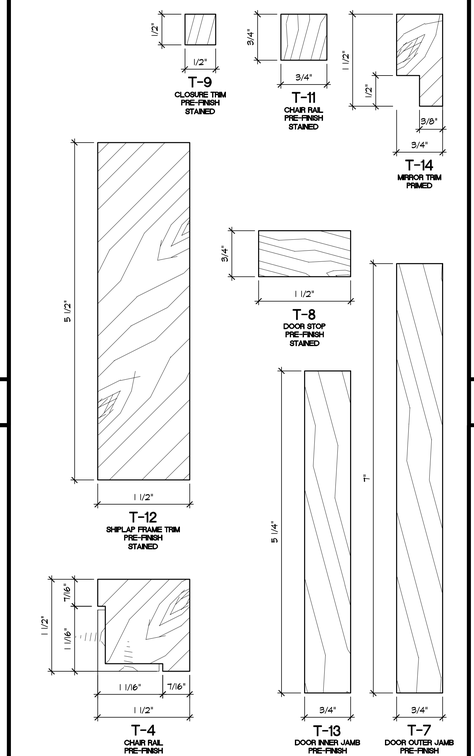
R A10.00 MARKETING IMAGE CLAMP DETAIL

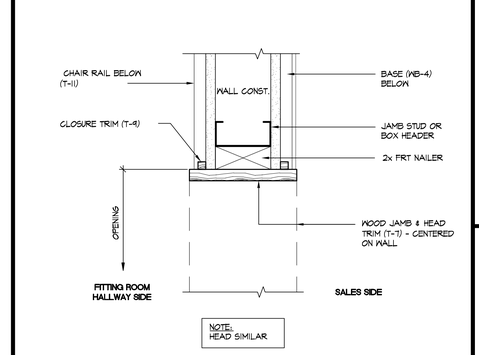
SCALE: 1 1/2" = 1'-0"



F A10.00 WATERPROOF MEMBRANE

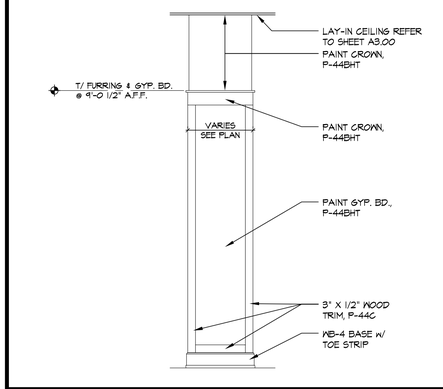
SCALE: 6" = 1'-0"





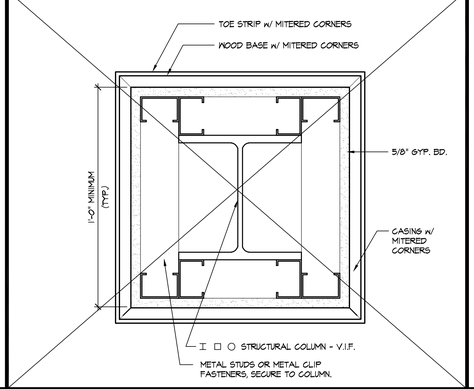
D A10.00 CASED OPENING DETAIL @ PASS-THRU

SCALE: 3" = 1'-0"



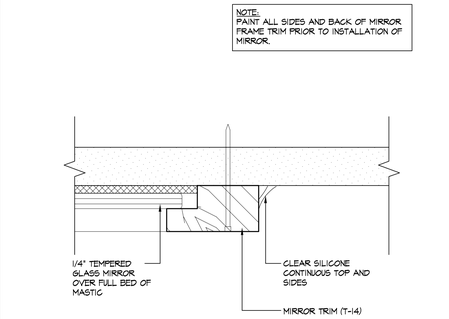
U A10.00 HCO COLUMN ELEVATION

SCALE: 1/2" = 1'-0"



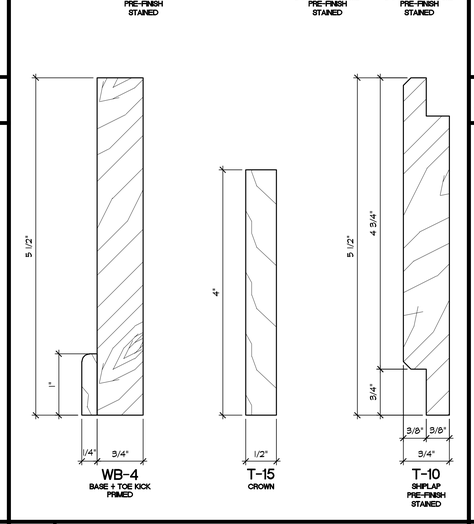
Q A10.00 COLUMN DETAIL

SCALE: 3" = 1'-0"



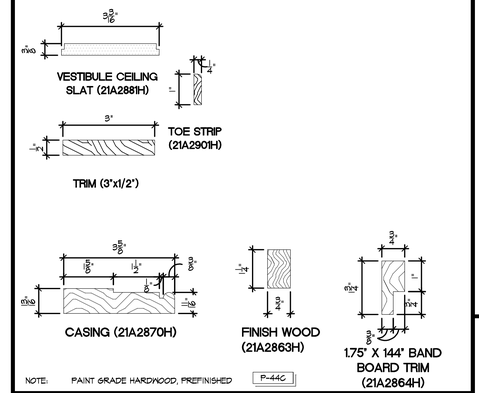
L A10.00 MIRROR DETAIL (M2) - VERT.

SCALE: FULL SIZE



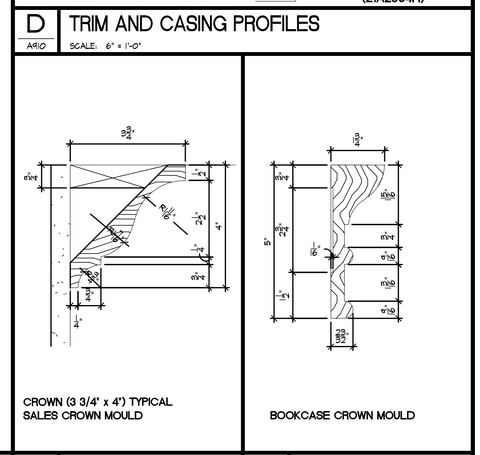
F A10.00 TRIM PROFILES

SCALE: 1'-0" = 1'-0"



D A9.10 TRIM AND CASING PROFILES

SCALE: 6" = 1'-0"

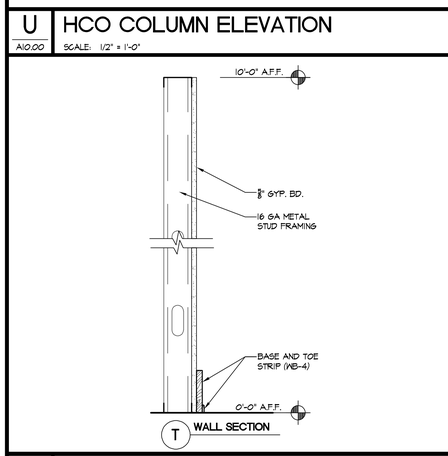


C1 A9.10 CROWN DETAIL

SCALE: 6" = 1'-0"

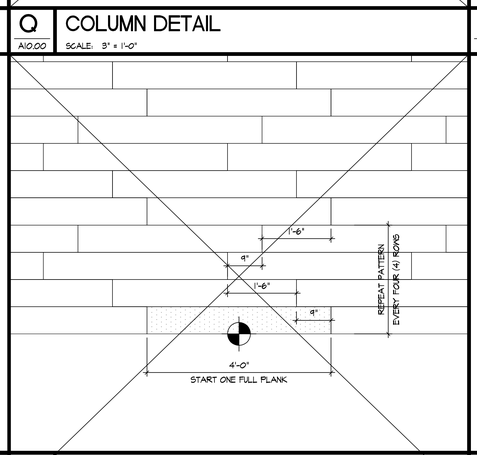
C2 A9.10 CROWN DETAIL

SCALE: 6" = 1'-0"



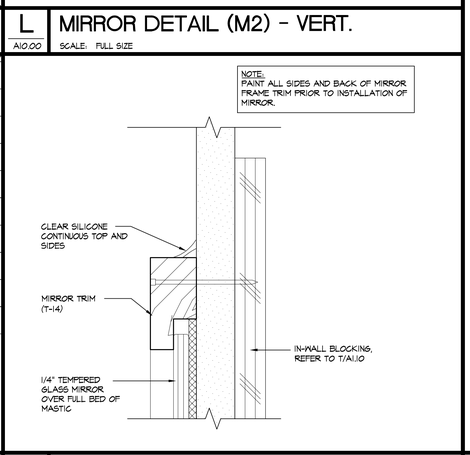
T A10.00 STANDARD WALL SECTION

SCALE: 1 1/2" = 1'-0"



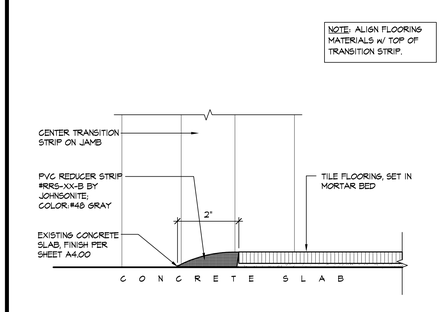
P A4.00 LVT PATTERN LAYOUT

SCALE: 3/4" = 1'-0"



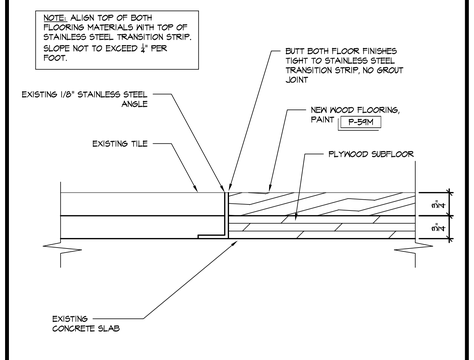
K A10.00 MIRROR DETAIL (M2) - HORIZ.

SCALE: FULL SIZE



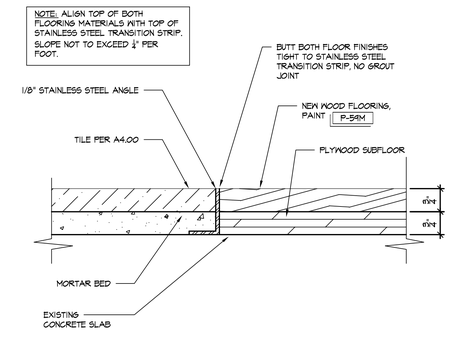
S A10.00 FLOORING - CONCRETE TO TILE

SCALE: 6" = 1'-0"



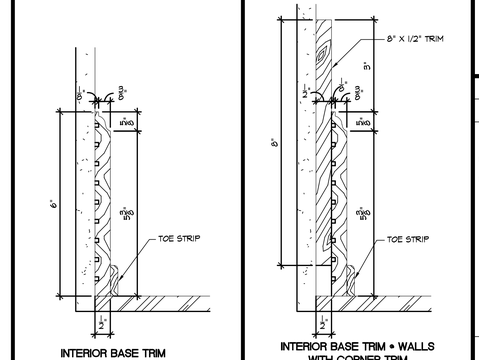
N A4.00 FLOORING - WOOD TO EXISTING TILE

SCALE: 6" = 1'-0"



J A4.00 FLOORING - WOOD TO TILE

SCALE: 6" = 1'-0"



B1 A9.10 SALES BASE

SCALE: 6" = 1'-0"

B2 A9.10 SALES BASE

SCALE: 6" = 1'-0"

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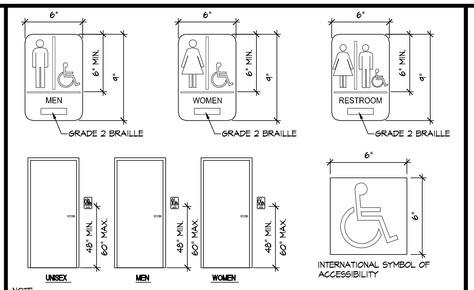
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STORE #31909

Project No:	260348
Drawn By:	AMH

Date	Issue
09.04.2026	CHECKSET
09.25.2026	1 BID SET

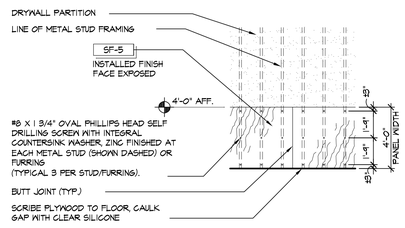
MISCELLANEOUS SALES AREA DETAILS

A10.00



NOTE:
1. TOILET ROOM DOOR SYMBOLS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. SYMBOLS OF ACCESSIBILITY SHALL CONTRAST WITH THEIR BACKGROUND WITH EITHER A LIGHT SYMBOL IN A DARK BACKGROUND OR A DARK SYMBOL IN A LIGHT BACKGROUND
2. ALL SIGNAGE TO BE 1/4" THICK
3. SIGNAGE TO BE MOUNTED AT 48" MIN. MEASURED TO THE BASELINE OF THE LOWEST RAISED CHARACTER AND TO 60" MAX MEASURED TO THE BASELINE OF THE HIGHEST RAISED CHARACTER.
4. WHERE A SIGN CONTAINING RAISED CHARACTERS AND BRAILLE IS LOCATED AT A DOOR, THE SIGN SHALL BE ALONG THE DOOR AT THE LATCH SIDE OR ON THE NEAREST ADJACENT WALL. SIGNS SHALL BE LOCATED SO THAT A CLEAR FLOOR AREA 18" X 18" MIN, CENTERED ON THE RAISED CHARACTERS IS PROVIDED BEYOND THE ARC OF THE DOOR SWING.

R A11.00 — RESTROOM SIGN/SYMBOL DETAILS
SCALE: 1/4" = 1'-0"



1. ALL PLYWOOD SHOULD BE FREE OF WARPING, DAMAGE OR DEFECTS. ALLOW MATERIAL TO ACCLIMATE TO THE ENVIRONMENT PRIOR TO INSTALLATION
2. PLYWOOD IS TO BE MECHANICALLY FASTENED WITH NO ADHESIVE
3. LAP 90° CORNERS SO THAT THE 'SHORT' SIDE EXPOSED EDGE IS COVERED BY THE 'LONG' SIDE
4. MITER CORNERS WHERE WALLS ARE ANGLED

M A2.00 — WAINSCOT DETAIL (SF-5)
SCALE: 1/4" = 1'-0"

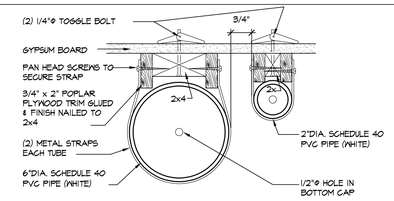
NOTES:
A. PROVIDE LABELS (w/ CLEAR TAPE) STATING:

6" DIA. TUBE: "THIS TUBE CONTAINS STORE DRAWINGS AND IS NOT TO BE REMOVED WITHOUT THE CONSENT OF THE STORE MANAGER."

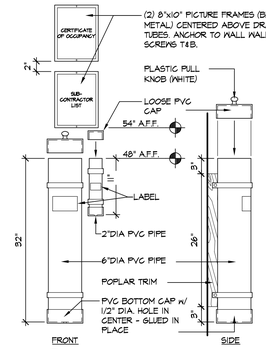
2" DIA. TUBE: "THIS TUBE CONTAINS PUNCH LIST AND IS NOT TO BE REMOVED WITHOUT THE CONSENT OF THE STORE MANAGER"

B. PAINT WOOD TRIM & METAL STRAPPING HARDWARE P-1C, CLEAN OFF MANUFACTURER LABELING ON PVC PIPE.

C. AT TURNOVER OF PROJECT,PLACE A NEW COPY OF THE "AS-BUILT" CONSTRUCTION DRAWINGS FOR THE STORE INTO THE 6"DIA. PVC PIPE AND A COPY OF THE FINAL PUNCHLIST IN THE 2"DIA. PVC PIPE.

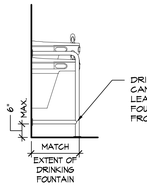


H1 TUBE SECTION DETAIL
SCALE: NOT TO SCALE



H2 TUBE ELEVATION DETAILS
SCALE: 1" = 1'-0"

H A5.00 — DRAWING TUBE DETAIL (DT)
SCALE: 1" = 1'-0"

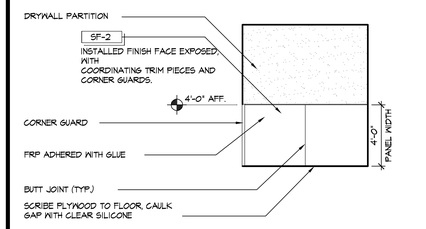


DRINKING FOUNTAIN GRAB BAR / CANE RAIL SHALL PROJECT AT LEAST AS FAR AS DRINKING FOUNTAIN AND SHALL BE WITHIN 6" FROM FINISHED FLOOR

U A11.00 — DRINKING FOUNTAIN ELEVATION
SCALE: 1/2" = 1'-0"

ITEM DESCRIPTION	CATALOG NUMBER
42" x 1 1/2" DIA. GRAB BAR, EXPOSED MOUNTING	BOBRICK, B-6806 x 42 - BY G.C.
36" x 1 1/2" DIA. GRAB BAR, SNAP FLANGE	BOBRICK, B-6806 x 36 - BY G.C.
18" x 1 1/2" DIA. GRAB BAR, SNAP FLANGE	BOBRICK, B-6806 x 18 - BY G.C.
TOILET ROLL HOLDER	SUPPLIED BY OWNER, INSTALLED BY G.C.
18" x 36" FRAMED TILT-MIRROR	BOBRICK, B-293 18 x 36 - BY OWNER
20" x 58" CHANNEL FRAMED MIRROR/DOOR MTD.	BOBRICK, B-165 20 x 58 - BY G.C.
SOAP DISPENSER	SUPPLIED BY OWNER, INSTALLED BY G.C.
COAT HOOK	McMASTER CARR #1160A3, ALUMINUM - BY G.C.
24" MOP RACK	SUPPLIED BY OWNER, INSTALLED BY G.C.
MOP SINK HOSE HOLDER	SUPPLIED BY OWNER, INSTALLED BY G.C.
RESTROOM SIGN/SYMBOL DETAILS	SUPPLIED BY OWNER, INSTALLED BY G.C.
HAND DRYER	REFER TO MEP, INSTALLED BY G.C.

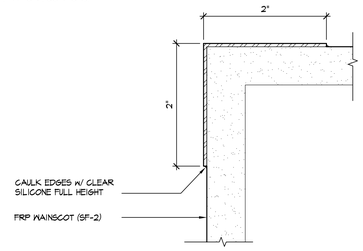
Q A11.00 — LAVATORY EQUIPMENT SCHEDULE
SCALE: 1/2" = 1'-0"



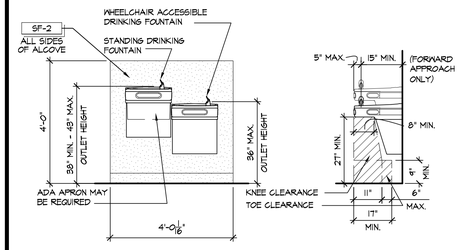
1. ALL FRP SHOULD BE FREE OF WARPING, DAMAGE OR DEFECTS. ALLOW MATERIAL TO ACCLIMATE TO THE ENVIRONMENT PRIOR TO INSTALLATION
2. FRP IS TO BE ADHERED TO DRYWALL WITH GLUE
3. LAP 90° CORNERS SO THAT THE 'SHORT' SIDE EXPOSED EDGE IS COVERED BY THE 'LONG' SIDE
4. MITER CORNERS WHERE WALLS ARE ANGLED

L A11.00 — WAINSCOT DETAIL (SF-2, FRP)
SCALE: 1/4" = 1'-0"

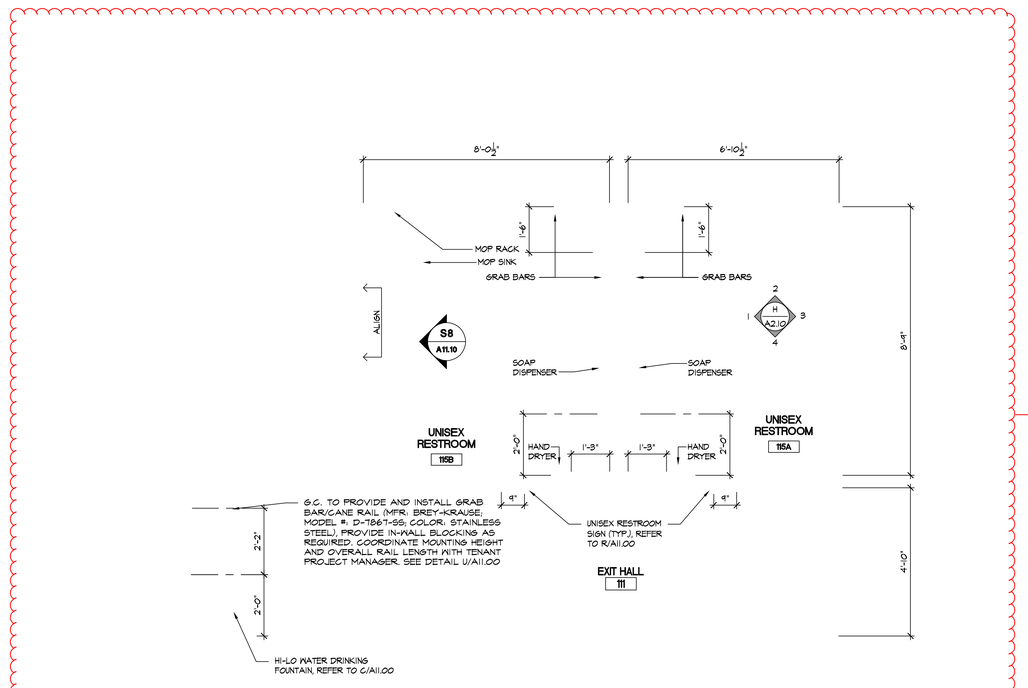
NON-SALES CORNER GUARD
2"x 2"x 48"x 16 GA. GALVANIZED STEEL CORNER GUARD ANGLE. MOUNT BOTTOM OF GUARD AT FINISH FLOOR AND CONTINUE TO TOP OF WAINSCOT, TIGHT TO SURFACE OF WAINSCOTING. ADHERE w/ CLEAR SILICONE. REFER TO DETAIL L/A11.00 & PLAN FOR LOCATIONS.



G A2.00 — CORNER GUARD DETAIL
SCALE: FULL SIZE



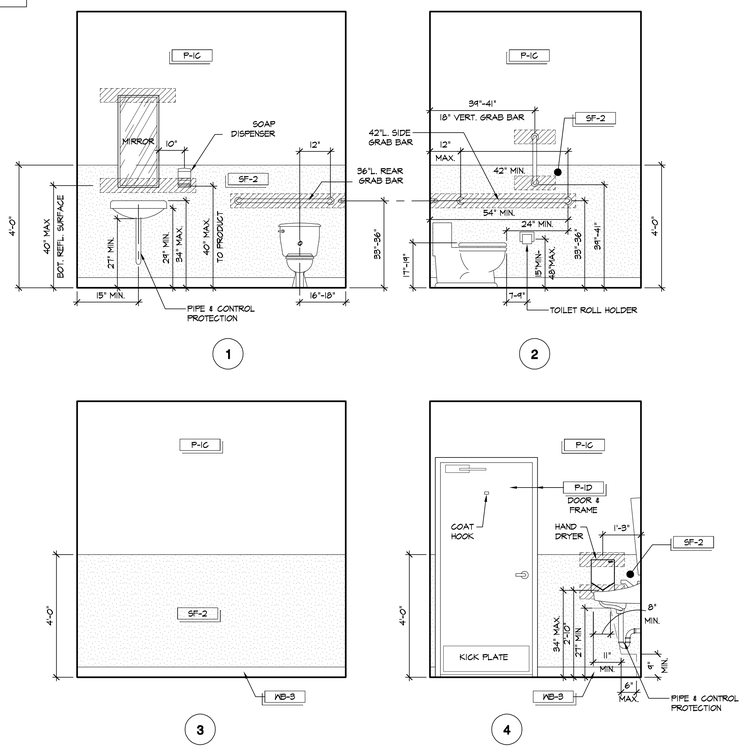
C A2.00 — DRINKING FOUNTAIN ELEVATION
SCALE: 1/2" = 1'-0"



Missing plan

S A2.00 — ENLARGED RESTROOM PLAN
SCALE: 1/2" = 1'-0"

NOTE:
HATCHING INDICATES IN-WALL F.R.T. BLOCKING



E A11.00 — LAVATORY ELEVATIONS
SCALE: 1/2" = 1'-0"

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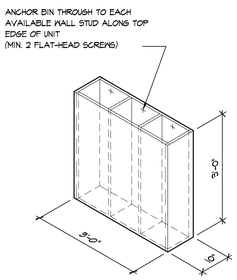
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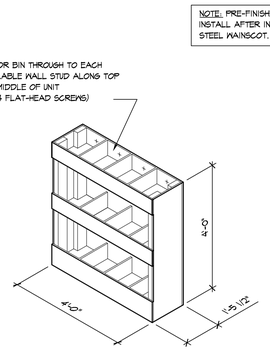
Project No:	250348
Drawn By:	AMH
Date	Issue
09.04.2026	CHECKSET
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DETAILS - NON-SALES

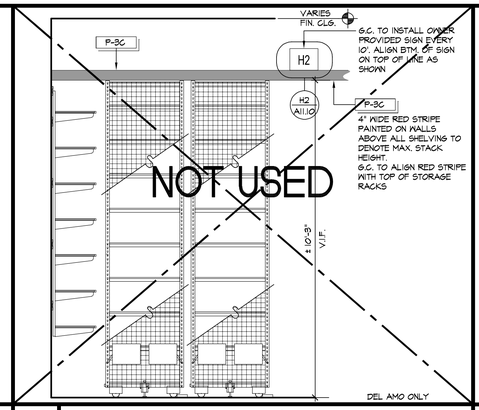
A11.00



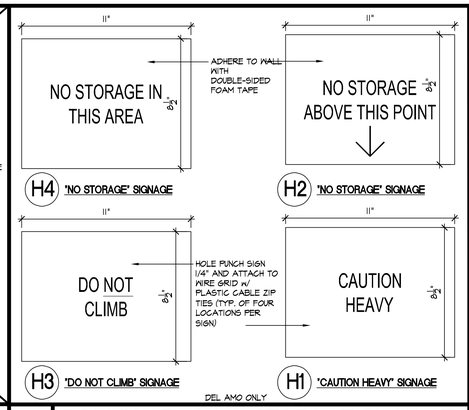
V A11.10 — **BAR BIN DETAIL (BB)**
SCALE: 1/2" = 1'-0"



R A11.10 — **HARDWARE BIN DETAIL (HR)**
SCALE: 1/2" = 1'-0"



M A11.10 — **NO STORAGE LINE (REQ'D BY LANDLORD) ABOVE ALL SHELVING IN NON-SALES AREA + BATHROOM**
SCALE: 1/2" = 1'-0"



H A11.10 — **ROLLING RACK + STORAGE SIGNAGE**
SCALE: 3" = 1'-0"

GENERAL NOTES

A. REFER TO FIXTURE, FURNITURE & EQUIPMENT (FF&E) PLAN FOR FIXTURE LAYOUT. REFER TO DEMOLITION & EXISTING CONDITIONS PLAN AND REFLECTED CEILING PLAN FOR HEIGHT OF STOCK ROOM CEILING (WHERE APPLICABLE) OR CLEARANCE TO BOTTOM OF STRUCTURE.

B. ALL EXPOSED EDGES OF WHITE PRE-FINISHED SHELF EDGES ARE TO BE SANDED SMOOTH, SPACKLED, PRIMED AND PAINTED P-1C OR EDGE BANDED WITH WHITE VINYL.

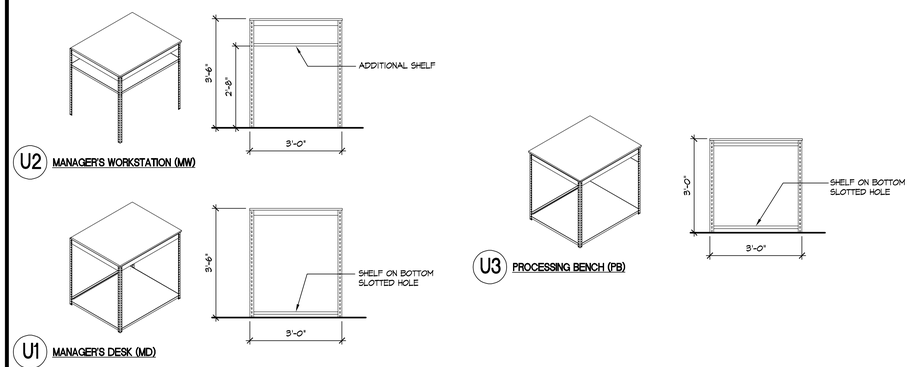
C. ALL FIELD CUT WALL STANDARDS AND HANGBARS ARE TO HAVE CUT ENDS DEBURRED AND FILED SMOOTH. CUT HANGBARS ARE TO HAVE HOLE DRILLED AT CUT END TO ALLOW FOR THE INSTALLATION OF THE END-CAP LOCK-IN SNAP BUTTON.

D. ROLLING & FIXED RACK SHELVING SHALL BE PERFORATED METAL WITH 50% OF SURFACE OPEN.

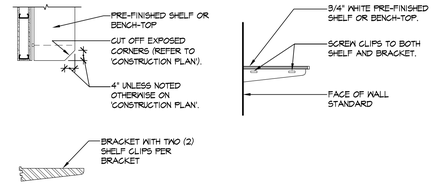
E. ROLLING & FIXED RACK FOR CEILING OR CLEAR SPACE BELOW 9'-10" WILL REQUIRE CUSTOM LENGTH UPRIGHTS.

NON-SALES SHELVING AND HANGBAR CODED NOTES

1. WALL FURRING: 1x4 GRADE "A" WOOD FURRING INSTALLED CONTINUOUSLY BEHIND ALL WALL STANDARDS, REFER TO SHELVING SECTION DETAILS. PAINT TO MATCH ADJACENT SURFACE.
2. STANDARDS: 8' LONG HEAVY DUTY WALL STANDARD WITH 1" SLOTS, 2" O.C., CUT TO LENGTH AS NOTED.
3. SHELVING: 16" DEEP x 96" LONG WHITE PRE-FINISHED SHELF.
4. SHELF BRACKET: 14" HEAVY DUTY SHELF BRACKET WITH TWO (2) SHELF CLIPS AND TWO (2) SHELF CLIP SCREWS PER CLIP.
5. HANGBAR: 14" HEAVY DUTY BRACKET WITH SADDLE BRACKET END, HANGBAR 1"Ø (25MM) WITH END CAPS.
6. PROCESSING JET BAR AND HOOKS - 48" JETBAR WITH 6" HOOK(S).
7. PROCESSING BENCH, PREP STATION, MANAGER'S WORKSTATION, ASSEMBLED FROM RACK PARTS WITH COUNTERTOP (REFER TO DETAIL 'U' THIS SHEET)
8. RACK BASE FRAME - PRE-FABRICATED TO REQUIRED LENGTH OF ASSEMBLED SECTIONS (REFER TO MANUFACTURER'S ASSEMBLY & INSTALLATION INSTRUCTIONS)
9. RACK UPRIGHT - TYPICAL X 4 PER RACK SECTION (REFER TO MANUFACTURER'S ASSEMBLY & INSTALLATION INSTRUCTIONS)
10. RACK SHELF - 2 PIECE ASSEMBLY, FRAME & SHELF (REFER TO MANUFACTURER'S ASSEMBLY & INSTALLATION INSTRUCTIONS)
11. END PANEL - WIRE GRID BOLTED TO UPRIGHTS INSTALLED AT EACH END OF RACK ASSEMBLY (REFER TO MANUFACTURER'S ASSEMBLY & INSTALLATION INSTRUCTIONS)
12. PROVIDE SOLID WALL BLOCKING DANBACK FRT.



U A11.10 — **MANAGER'S WORKSTATION (MW), MANAGER'S DESK (MD) + PROCESSING BENCH (PB)**
SCALE: 1/2" = 1'-0"



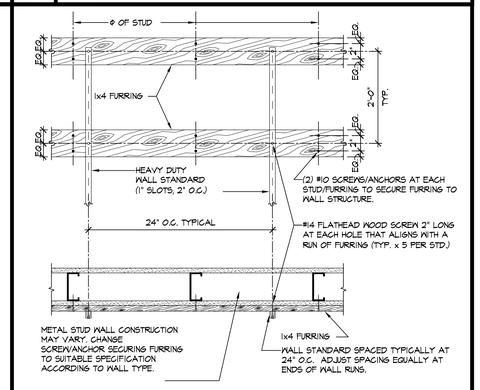
NOTES:

A. SHELVES TO RUN CONTINUOUS ALONG WALLS AND AT CORNERS.

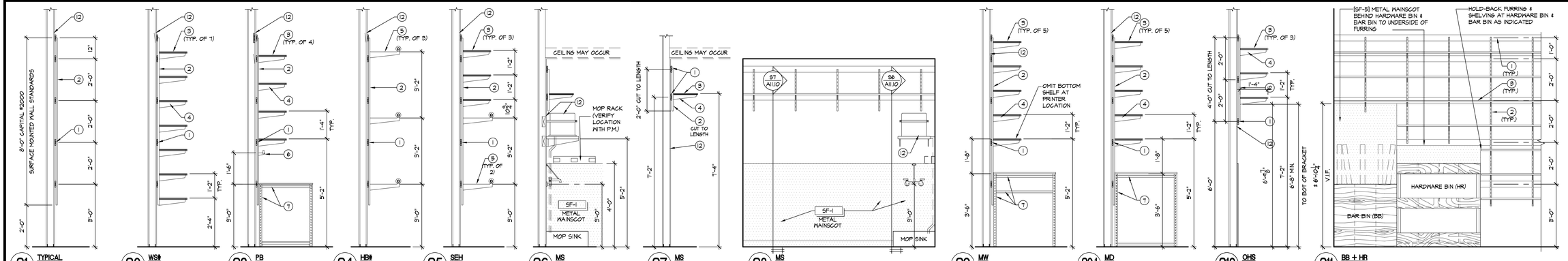
B. JOIN STRAIGHT RUN SHELF SEAMS AT BRACKETS.

C. INSTALL WOOD SCAB, SCREWED TO UNDER SIDE OF SHELVES AT ALL CORNER JOINTS AND UNSUPPORTED SEAMS USING 1 1/4" #8 COUNTERSINK WOOD SCREWS.

L A11.10 — **NON-SALES SHELVING DETAILS**
SCALE: N.T.S.



G A11.10 — **FURRING + WALL STANDARD DETAIL**
SCALE: N.T.S.



S A2.00 — **STOCKROOM SHELVING DETAILS**
SCALE: 1/2" = 1'-0"

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DETAILS - NON-SALES

A11.10

SECTION 26 0505 - SELECTIVE DEMOLITION FOR ELECTRICAL

PART 1 GENERAL

1.01 EXAMINATION

A. Verify that wiring and equipment to be removed serve only areas of demolition, or make provisions to maintain portions of systems serving areas outside of scope of demolition.

B. Demolition drawings are based on casual field observation and existing record documents.

C. Beginning of demolition means installer accepts existing conditions.

1.02 PREPARATION

A. Disconnect electrical systems in walls, floors, and ceilings to be removed.

B. Coordinate utility service outages with utility company or Landlord.

C. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.

D. Existing Electrical Service: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Minimize outage duration.

E. Existing Fire Alarm System: Maintain existing system in service until new system is accepted. Disable system only to make switchovers and connections. Minimize outage duration.

1. Notify Owner before partially or completely disabling system.
2. Notify local fire service.
3. Make notifications at least 24 hours in advance.
4. Make temporary connections to maintain service in areas adjacent to work area.

1.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. Remove, relocate, and extend existing installations to accommodate new construction.

B. Remove abandoned wiring to source of supply.

C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.

D. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.

E. Disconnect and remove abandoned panelboards and distribution equipment.

F. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.

G. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, and other accessories.

H. Repair adjacent construction and finishes damaged during demolition and extension work.

I. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.

SECTION 26 0519 - ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.

PART 2 PRODUCTS

2.01 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

A. Provide products that comply with requirements of NFPA 70.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.

D. Conductor Material:

1. Provide copper conductors.
   a. Substitution of aluminum conductors for copper is permitted, only when approved by Owner and authority having jurisdiction.
2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.

E. Minimum Conductor Size:

1. Branch Circuits: 12 AWG.
   a. Exceptions:
      1) 20 A, 120 V circuits longer than 75 feet: 10 AWG, for voltage drop.
      2) 20 A, 120 V circuits longer than 150 feet: 8 AWG, for voltage drop.
      3) 20 A, 277 V circuits longer than 150 feet: 10 AWG, for voltage drop.
2. Control Circuits: 14 AWG.

F. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

G. Conductor Color Coding:

1. Color code conductors as called for within the NEC or otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.

3.02 INSTALLATION

A. Circuiting Requirements:

1. Unless dimensioned, circuit routing indicated is diagrammatic.
2. When circuit destination is indicated without specific routing, determine exact routing required.
3. Arrange circuiting to minimize splices.
4. Maintain separation of Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuits in accordance with NFPA 70.
5. Maintain separation of wiring for emergency systems in accordance with NFPA 70.
6. Common Neutrals: Unless otherwise indicated, sharing of neutral/grounded conductors among up to three single phase branch circuits of different phases installed in the same raceway is not permitted. Provide dedicated neutral/grounded conductor for each individual branch circuit.

B. Installation in Raceway:

1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
2. Pull all conductors and cables together into raceway at same time.
3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.

C. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.

1. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conductors and cables to lay on ceiling tiles.
2. Installation in Vertical Raceways: Provide supports where vertical rise exceeds permissible limits.

D. Install conductors with a minimum of 12 inches of slack at each outlet.

E. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.

F. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

SECTION 26 0526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 GROUNDING AND BONDING REQUIREMENTS

A. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.

B. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

C. Separately Derived System Grounding:

1. Separately derived systems include, but are not limited to:
   a. Transformers (except autotransformers such as buck-boost transformers).
   b. Uninterruptible power supplies (UPS), when configured as separately derived systems.
   c. Generators, when neutral is switched in the transfer switch.
2. Provide grounding electrode conductor to connect derived system grounded conductor to nearest effectively grounded metal building frame. Unless otherwise indicated, make connection at neutral (grounded) bus in source enclosure.
3. Provide bonding jumper to connect derived system grounded conductor to nearest metal building frame and nearest metal water piping in the area served by the derived system, where not already used as a grounding electrode for the derived system. Make connection at same location as grounding electrode conductor connection.
4. Provide system bonding jumper to connect system grounded conductor to equipment ground bus. Make connection at same location as grounding electrode conductor connection. Do not make any other connections between neutral (grounded) conductors and ground on load side of separately derived system disconnect.
5. Where the source and first disconnecting means are in separate enclosures, provide supply-side bonding jumper between source and first disconnecting means.

D. Bonding and Equipment Grounding:

1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70

E. Communications Systems Grounding and Bonding:

1. Provide intersystem bonding termination at service equipment or metering equipment enclosure and at disconnecting means for any additional buildings or structures in accordance with NFPA 70.

1.02 GROUNDING AND BONDING COMPONENTS

A. General Requirements:

1. Provide products listed, classified, and labeled as suitable for the purpose intended.
2. Provide products listed and labeled as complying with UL 467 where applicable.

B. Connectors for Grounding and Bonding:

1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.

SECTION 26 0529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SUPPORT AND ATTACHMENT COMPONENTS

A. General Requirements:

1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
2. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.

B. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.

C. Outlet Box Supports: Hangers, brackets, etc. suitable for the boxes to be supported.

D. Metal Channel (Strut) Framing Systems: Factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.

E. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.

F. Anchors and Fasteners:

1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.

PART 2 EXECUTION

2.01 INSTALLATION

A. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

B. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.

C. Unless specifically indicated or approved by Architect, do not provide support from roof deck.

D. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.

SECTION 26 0533.13 - CONDUIT FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 CONDUIT APPLICATIONS

A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.

B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, comply with the most restrictive requirements. Where conduit type for a particular application is not specified, use galvanized steel rigid metal conduit.

C. Underground:

1. Use galvanized steel rigid metal conduit, PVC-coated galvanized steel rigid metal conduit, or rigid PVC conduit.

D. Concealed: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), or electrical metallic tubing (EMT).

E. Exposed, Interior, Not Subject to Physical Damage: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), or electrical metallic tubing (EMT).

F. Exposed, Exterior: Use galvanized steel rigid metal conduit or intermediate metal conduit (IMC).

G. Connections to Luminaires Above Accessible Ceilings: Use flexible metal conduit.

1. Maximum Length: 6 feet.

H. Connections to Vibrating Equipment:

1. Dry Locations: Use flexible metal conduit.
2. Damp, Wet, or Corrosive Locations: Use liquidtight flexible metal conduit.
3. Maximum Length: 6 feet unless otherwise indicated.

1.02 CONDUIT REQUIREMENTS

A. Existing Work: Where existing conduits are indicated to be reused, they may be reused only where they comply with specified requirements, are free from corrosion, and integrity is verified by pulling a mandrel through them.

B. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.

C. Provide products listed, classified, and labeled as suitable for the purpose intended.

D. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

PART 2 EXECUTION

2.01 INSTALLATION

A. Conduit Routing:

1. Conceal all conduits unless specifically indicated to be exposed.
2. Conduits in the following areas may be exposed, unless otherwise indicated:
   a. Electrical rooms.
   b. Mechanical equipment rooms.
   c. Within joists in areas with no ceiling.
3. Conduits installed underground or embedded in concrete may be routed in the shortest possible manner unless otherwise indicated. Route all other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.

B. Conduit Support:

1. Secure and support conduits in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

C. Connections and Terminations:

1. Use suitable adapters where required to transition from one type of conduit to another.
2. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
3. Secure joints and connections to provide maximum mechanical strength and electrical continuity.

D. Penetrations:

1. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
2. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
3. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty. Include proposed locations of penetrations and methods for sealing with submittals.
4. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.

E. Condensation Prevention: Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation.

F. Provide grounding and bonding in accordance with Section 26 0526.

SECTION 26 0533.16 - BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 BOXES

A. General Requirements:

1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
3. Provide products listed, classified, and labeled as suitable for the purpose intended.
4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
5. Provide grounding terminals within boxes where equipment grounding conductors terminate.

B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:

1. Use raised covers suitable for the type of wall construction and device configuration where required.
2. Use shallow boxes where required by the type of wall construction.
3. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
4. Boxes for Garage Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
5. Minimum Box Size, Unless Otherwise Indicated:
   a. Wiring Devices (Other Than Communications Systems Outlets): 4 inch square by 1-1/2 inch deep (100 by 38 mm) trade size.

C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:

1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
2. NEMA 250 Environment Type, Unless Otherwise Indicated:
3. Junction and Pull Boxes Larger Than 100 cubic inches:
   a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.

D. Floor Boxes:

1. Description: Floor boxes compatible with floor box service fittings provided in accordance with Section 26 2726; with partitions to separate multiple services; furnished with all components, adapters, and trims required for complete installation.

PART 2 EXECUTION

2.01 INSTALLATION

A. Box Locations:

1. Locate boxes to be accessible. Provide access panels in accordance with Section 08 3100 as required where approved by the Architect.
2. Do not install flush-mounted boxes on opposite sides of walls back-to-back. Provide minimum 6 inches horizontal separation unless otherwise indicated.
3. Fire Resistance Rated Walls: Install flush-mounted boxes such that the required fire resistance will not be reduced.

B. Install boxes plumb and level.

C. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.

D. Close unused box openings.

E. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.

SECTION 26 0553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 IDENTIFICATION REQUIREMENTS

A. Identification for Equipment:

1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
2. Available Fault Current Documentation: Use identification label to identify the available fault current and date calculations were performed at locations requiring documentation by NFPA 70 including but not limited to the following.
   a. Electrical Panels.

B. Identification for Conductors and Cables:

1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 0519.

1.02 IDENTIFICATION NAMEPLATES AND LABELS

A. Identification Labels:

1. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
2. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.

SECTION 26 0583 - WIRING CONNECTIONS

PART 1 GENERAL

1.01 MATERIALS

A. Cords and Caps: NEMA WD 6; match receptacle configuration at outlet provided for equipment.

1. Colors: Comply with NEMA WD 1.
2. Cord Construction: NFPA 70, Type SJO, multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
3. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.

1.02 EQUIPMENT CONNECTIONS

A. As indicated in equipment schedules on drawings or as indicated on plans.:

PART 2 EXECUTION

2.01 ELECTRICAL CONNECTIONS

A. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.

B. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.

C. Provide receptacle outlet to accommodate connection with attachment plug.

D. Provide cord and cap where field-supplied attachment plug is required.

E. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.

F. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.

G. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

SECTION 26 0923 - LIGHTING CONTROL DEVICES

PART 1 PRODUCTS

1.01 Lighting is controlled by an Energy Management System panel and contactors. Panel shall be pre-programmed and complete when shipped to job site. No variations to the circuiting are allowed without prior approval by Owner's Construction Manager.

SECTION 26 2200 - TRANSFORMERS

PART 1 PRODUCTS

1.01 MANUFACTURERS

A. ABB/GE:

B. Eaton Corporation:

C. Schneider Electric; Square D Products:

D. Siemens Industry, Inc:

1.02 TRANSFORMERS - GENERAL REQUIREMENTS

A. Description: Factory-assembled, dry type transformers for 60 Hz operation designed and manufactured in accordance with NEMA ST 20 and listed, classified, and labeled as suitable for the purpose intended.

B. Core: High grade, non-aging silicon steel with high magnetic permeability and low hysteresis and eddy current losses. Keep magnetic flux densities substantially below saturation point, even at 10 percent primary overvoltage. Tightly clamp core laminations to prevent plate movement and maintain consistent pressure throughout core length.

1.03 GENERAL PURPOSE TRANSFORMERS

A. Description: Self-cooled, two winding transformers listed and labeled as complying with UL 506 or UL 1561; ratings as indicated on the drawings.

B. Insulation System and Allowable Average Winding Temperature Rise:

1. Less than 15 kVA: Class 180 degrees C insulation system with 115 degrees C average winding temperature rise.
2. 15 kVA and Larger: Class 220 degrees C insulation system with 150 degrees C average winding temperature rise.

C. Coil Conductors: Continuous aluminum windings with terminations brazed or welded.

D. Winding Taps:

1. 3 kVA through 15 kVA: Two 5 percent full capacity primary taps below rated voltage.
2. 15 kVA through 500 kVA: Two 2.5 percent full capacity primary taps above and four 2.5 percent full capacity primary taps below rated voltage.
3. 500 kVA and Larger: Two 2.5 percent full capacity primary taps above and two 2.5 percent full capacity primary taps below rated voltage.

E. Energy Efficiency: Comply with 10 CFR 431, Subpart K.

F. Mounting Provisions:

1. Less than 15 kVA: Suitable for wall mounting.
2. 15 kVA through 75 kVA: Suitable for wall, floor, or trapeze mounting.
3. Larger than 75 kVA: Suitable for floor mounting.

SECTION 26 2416 - PANELBOARDS

PART 1 GENERAL

1.01 MANUFACTURERS

A. ABB/GE:

B. Eaton Corporation:

C. Schneider Electric; Square D Products:

D. Siemens Industry, Inc:

1.02 PANELBOARDS - GENERAL REQUIREMENTS

A. Short Circuit Current Rating:

1. Provide panelboards with listed short circuit current rating as indicated on the drawings.
2. Listed series ratings are acceptable, except where not permitted by motor contribution according to NFPA 70.
3. Label equipment utilizing series ratings as required by NFPA 70.

B. Mains: Configure for top or bottom incoming feed as indicated or as required for the installation.

C. Bussing: Sized in accordance with UL 67 temperature rise requirements.

1. Provide solidly bonded equipment ground bus in each panelboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
2. Provide separate isolated/insulated ground bus where indicated or where isolated grounding conductors are provided.

D. Conductor Terminations: Suitable for use with the conductors to be installed.

E. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.

1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
2. Boxes: Galvanized steel unless otherwise indicated.
   a. Provide wiring gutters sized to accommodate the conductors to be installed.
3. Lockable Doors: All locks keyed alike unless otherwise indicated.

F. Future Provisions: Prepare all unused spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.

G. Load centers are not acceptable.

H. Provide the following features and accessories where indicated or where required to complete installation:

1. Feed-through lugs.
2. Sub-feed lugs.

1.03 OVERCURRENT PROTECTIVE DEVICES

A. Molded Case Circuit Breakers:

1. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489, and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
2. Interrupting Capacity:
   a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated.
   b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
3. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.
4. Provide the following circuit breaker types where indicated:
   a. Ground Fault Circuit Interrupter (GFCI) Circuit Breakers: Listed as complying with UL 943, class A for protection of personnel.
   b. Current Limiting Circuit Breakers: Without using fusible elements, designed to limit the let-through energy to a value less than the energy of a one-half cycle wave of the symmetrical prospective current when operating within its current limiting range.
5. Do not use tandem circuit breakers.
6. Do not use handle ties in lieu of multi-pole circuit breakers.
7. Provide multi-pole circuit breakers for multi-wire branch circuits as required by NFPA 70.

B. Provide the following features and accessories where indicated or where required to complete installation:

a. Handle Pad-Lock Provision: For locking circuit breaker handle in OFF position.

PART 2 EXECUTION

2.01 INSTALLATION

A. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

B. Mount panelboards such that the highest position of any operating handle for circuit breakers or switches does not exceed 79 inches above the floor or working platform.

C. Install all field-installed branch devices, components, and accessories.

D. Provide filler plates to cover unused spaces in panelboards.

E. Provide circuit breaker lock-on devices to prevent unauthorized personnel from de-energizing essential loads where indicated. Also provide for the following:

1. Emergency and night lighting circuits.
2. Fire detection and alarm circuits.
3. Communications equipment circuits.
4. Intrusion detection and access control system circuits.
5. Video surveillance system circuits.

SECTION 26 2726 - WIRING DEVICES

PART 1 GENERAL

1.01 WIRING DEVICE APPLICATIONS

A. Provide wiring devices suitable for intended use and with ratings adequate for load served.

B. For single receptacles installed on an individual branch circuit, provide receptacle with ampere rating not less than that of the branch circuit.

C. Provide weather resistant GFCI receptacles with specified weatherproof covers for receptacles installed outdoors or in damp or wet locations.

D. Provide GFCI protection for receptacles installed within 6 feet of sinks.

E. Provide GFCI protection for receptacles serving electric drinking fountains.

1.02 WALL SWITCHES

A. Wall Switches - General Requirements: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20 and where applicable, FS W-S-896; types as indicated on the drawings.

1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.

1.03 RECEPTACLES

A. Receptacles - General Requirements: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.

1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.

B. Convenience Receptacles:

1. Standard Convenience Receptacles: Commercial specification grade, 20A, 125V, NEMA 5-20R; single or duplex as indicated on the drawings.
2. Isolated Ground Convenience Receptacles: Commercial specification grade, 20A, 125V, NEMA 5-20R, with ground contacts isolated from mounting strap; isolated ground triangle mark on device face; single or duplex as indicated on the drawings.
3. Weather Resistant Convenience Receptacles: Commercial specification grade, 20A, 125V, NEMA 5-20R, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations; single or duplex as indicated on the drawings.

C. GFCI Receptacles:

1. GFCI Receptacles - General Requirements: Self-testing, with feed-through protection and light to indicate ground fault tripped condition and loss of protection; listed as complying with UL 943, class A.

1.04 WALL PLATES

A. Wall Plates: Comply with UL 514D.

1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.

B. Weatherproof Covers for Wet Locations: Gasketed, cast aluminum, with hinged lockable cover and corrosion-resistant screws; listed as suitable for use in wet locations while in use with attachment plugs connected and identified as extra-duty type.

1.05 FLOOR BOX SERVICE FITTINGS

A. Description: Service fittings compatible with floor boxes provided under Section 26 0533.16 with components, adapters, and trims required for complete installation.

1.06 POKE-THROUGH ASSEMBLIES

A. Description: Assembly comprising floor service fitting, poke-through component, fire stops and smoke barriers, and junction box for conduit termination; fire rating listed to match fire rating of floor and suitable for floor thickness where installed.

PART 2 EXECUTION

2.01 EXAMINATION

A. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.

2.02 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

2.03 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of wiring devices provided under this section.

1. Where multiple receptacles, wall switches, or wall dimmers are installed at the same location and at the same mounting height, gang devices together under a common wall plate.
2. Locate wall switches on strike side of door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.

B. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.

C. Provide GFCI receptacles with integral GFCI protection at each location indicated. Do not use feed-through wiring to protect downstream devices.

D. Do not share neutral conductor on branch circuits utilizing wall dimmers.

E. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.

F. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

SECTION 26 2813 - FUSES

PART 1 GENERAL

1.01 APPLICATIONS

A. Feeders:

1. Fusible Switches up to 600 Amperes: Class RK1, time-delay.
2. Fusible Switches Larger Than 600 Amperes: Class L, time-delay.

B. General Purpose Branch Circuits: Class RK1, time-delay.

SECTION 26 2816.16 - ENCLOSED SWITCHES

PART 1 GENERAL

1.01 ENCLOSED SAFETY SWITCHES

A. Description: Quick-make, quick-break enclosed safety switches listed and labeled as complying with UL 98; heavy duty; ratings, configurations, and features as indicated on the drawings.

B. Enclosed Safety Switches Used for Service Entrance: Listed and labeled as suitable for use as service equipment according to UL 869A.

C. Provide safety interlock to prevent opening the cover with the switch in the ON position with capability of overriding interlock for testing purposes.

SECTION 26 5100 - INTERIOR LIGHTING

PART 1 GENERAL

1.01 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate the installation of luminaires with mounting surfaces installed under other sections or by others. Coordinate the work with placement of supports, anchors, etc. required for mounting. Coordinate compatibility of luminaires and associated trims with mounting surfaces at installed locations.
2. Coordinate the placement of luminaires with structural members, ductwork, piping, equipment, diffusers, fire suppression system components, and other potential conflicts installed under other sections or by others.
3. Coordinate the placement of exit signs with furniture, equipment, signage or other potential obstructions to visibility installed under other sections or by others.
4. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

PART 3 EXECUTION

3.01 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of luminaires provided under this section.

B. Install products in accordance with manufacturer's instructions.

C. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting) and NECA 502 (industrial lighting).

D. Provide required support and attachment in accordance with Section 26 0529.

E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.

F. Suspended Ceiling Mounted Luminaires:

1. Do not use ceiling tiles to bear weight of luminaires.
2. Do not use ceiling support system to bear weight of luminaires unless ceiling support system is certified as suitable to do so.
3. Secure by-in luminaires to ceiling support channels using listed safety clips at four corners.
4. See appropriate Division 9 section where suspended grid ceiling is specified for additional requirements.

G. Recessed Luminaires:

1. Install trims tight to mounting surface with no visible light leakage.
2. Non-IC Rated Luminaires: Maintain required separation from insulation and combustible materials according to listing.
3. Luminaires Recessed in Fire-Rated Ceilings: Install using accessories and firestopping materials to meet regulatory requirements for fire rating.

H. Suspended Luminaires:

1. Unless otherwise indicated, specified mounting heights are to bottom of luminaire.
2. Install using the suspension method indicated, with support lengths and accessories as required for specified mounting height.
3. Provide minimum of two supports for each luminaire equal to or exceeding 4 feet nominal length, with no more than 4 feet between supports.
4. Install canopies tight to mounting surface.
5. Unless otherwise indicated, support pendants from swivel hangers.

I. Wall-Mounted Luminaires: Unless otherwise indicated, specified mounting heights are to center of luminaire.

J. Install accessories furnished with each luminaire.

K. Bond products and metal accessories to branch circuit equipment grounding conductor.

L. Emergency Lighting Units:

1. Unless otherwise indicated, connect unit to unswitched power from same circuit feeding normal lighting in same room or area. Bypass local switches, contactors, or other lighting controls.
2. Install lock-on device on branch circuit breaker serving units.

M. Exit Signs:

1. Unless otherwise indicated, connect unit to unswitched power from same circuit feeding normal lighting in same room or area. Bypass local switches, contactors, or other lighting controls.
2. Install lock-on device on branch circuit breaker serving units.

N. Remote Ballasts: Install in accessible location as indicated or as required to complete installation, using conductors per manufacturer's recommendations not exceeding manufacturer's recommended maximum conductor length to luminaire.

O. Identify luminaires connected to emergency power system in accordance with Section 26 0553.

P. Install lamps in each luminaire.

3.02 ADJUSTING

A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Owner. Secure locking fittings in place.

B. Aim and position adjustable emergency lighting unit lamps to achieve optimum illumination of egress path as required or as directed by Owner or authority having jurisdiction.

C. Exit Signs with Field-Selectable Directional Arrows: Set as indicated or as required to properly designate egress path as directed by Architect or authority having jurisdiction.

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Project # 1712000124

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MEMORIAL CITY MALL
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No.:	260348
Drawn By:	LJW

Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

ELECTRICAL SPECIFICATIONS

E0.01

WIRING DEVICE SYMBOL LEGEND

SYMBOL	DESCRIPTION
	CABLE TRAY
	CONDUIT - EXPOSED
	CONDUIT - IN SLAB
	CONDUIT - UNDER SLAB
J	DISCONNECT - FUSED
J	DISCONNECT - NON-FUSED
	DOOR BELL/BUZZER SYSTEM
	DUPLEX RECEPTACLE
GFCI	DUPLEX RECEPTACLE - GROUND FAULT CIRCUIT INTERRUPTER
IG	DUPLEX RECEPTACLE - ISOLATED GROUND
USB	DUPLEX RECEPTACLE - UNIVERSAL SERIAL BUS
	DUPLEX RECEPTACLE - CONTROLLED
	QUADRAPLEX RECEPTACLE
	ENERGY METER
HD	HAND DRYER
J	JUNCTION BOX
	PANELBOARD - 208Y/120V
	PANELBOARD - 480Y/277V
B	PUSHBUTTON - DOOR BELL
BZ	PUSHBUTTON - DOOR BUZZER
	SURFACE RACEWAY
T	THERMOSTAT/TEMPERATURE SENSOR
TH	TEMPERATURE/HUMIDITY SENSOR
THC	TEMPERATURE/HUMIDITY/CARBON DIOXIDE SENSOR
CO	CARBON MONOXIDE SENSOR
T	TRANSFORMER - 24V
	TRANSFORMER - 208Y/120V
U	USB CHARGING PORT

LIGHTING & CONTROL SYMBOL LEGEND

SYMBOL	DESCRIPTION
CL	CURRENT LIMITING PANEL
DIM	DIMMING PANEL
EMS	ENERGY MANAGEMENT SYSTEM PANEL
	LIGHTING CONTROL OCCUPANCY SENSOR - CEILING MOUNTED
EMS	LIGHTING CONTROL OCCUPANCY SENSOR - PENDANT MOUNTED
	LIGHTING CONTROL OCCUPANCY SENSOR - WALL MOUNTED
	SERVICE LIGHT
$	SWITCH
$M	SWITCH - MOMENTARY
LCP	LIGHTING CONTROL PANEL

AV/AP/IT SYMBOL LEGEND

SYMBOL	DESCRIPTION
	AV ROUGH-IN OUTLET BOX
	DATA ROUGH-IN OUTLET BOX
	EAS CONTROLLER
	EAS DOOR FIN
	EAS PEDESTAL
	PEOPLE COUNTER
	SECURITY CAMERA
360°	SECURITY CAMERA - 360°
SF	SPEAKER - FLUSH MOUNT
SP	SPEAKER - PENDENT MOUNT
	SPEAKER - SURFACE MOUNT
WF	SUBWOOFER - FLUSH MOUNT
WP W	SUBWOOFER - PENDANT MOUNT
TR	TECHNOLOGY RACK - FLOOR SUPPORTED ON CASTORS
WAP	WIRELESS ACCESS POINT

ABBREVIATION SCHEDULE

ABBREV	DESCRIPTION
A	AMPERE
A/C	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AIC	AVAILABLE INTERRUPTING CURRENT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AP	ASSET PROTECTION
AUTO	AUTOMATIC
AUX	AUXILIARY
AV	AUDIO/VIDEO
AWG	AMERICAN WIRE GAUGE
C	CEILING
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CL	CURRENT LIMITING
DC	DIRECT CURRENT
DIA	DIAMETER
DIM	DIMMING
DS	DISCONNECT SWITCH
EAS	ELECTRONIC ARTICLE SURVEILLANCE
EM	EMERGENCY
EMS	ENERGY MANAGEMENT SYSTEM
EX	EXIT
FDR	FEEDER
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
HD	HAND DRYER
IG	ISOLATED GROUND
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
KVA	KILOVOLT AMPS
KW	KILOWATT
LO	LOCK OUT
LTS	LIGHTS
LV	LOW VOLTAGE
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MIN	MINIMUM
MW	MICROWAVE
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT	NEUTRAL
NF	NON-FUSED
NL	NIGHT LIGHT
NO	NORMALLY OPEN
OSM	OWNER SUPPLIED MATERIALS
P	POLE
PC	PHOTOCELL
PH	PHASE
PR	PRINTER
REC	RECEPTACLE
REF	REFRIGERATOR

ABBREVIATION SCHEDULE (CONTINUED)

ABBREV	DESCRIPTION
SF	STOREFRONT
SPEC	SPECIFICATION
ST	SHUNT TRIP
SW	SWITCH
TEMP	TEMPORARY
TR	TECHNOLOGY RACK
TV	TELEVISION
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT
VA	VOLT-AMPERES
VFD	VARIABLE FREQUENCY DRIVE
W	WATT
WAP	WIRELESS ACCESS POINT
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER

ONE CHARACTER STATUS ABBREVIATIONS:

- E EXISTING TO REMAIN
- M ITEM TO BE MOVED
- R RELOCATED ITEM

\# REFER ALSO TO MECHANICAL AND PLUMBING ABBREVIATIONS

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148427
09/25/2026
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Project # 31720001.24

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ELECTRICAL SYMBOLS & ABBREVIATIONS

E0.10

PANELBOARD	R			NOTES	V2.2
V-PH-W	120/208V-3PH	4W			
MAINS	MCB	50A			
BUS AMPS	MATCH MAINS RATING				
MOUNTING	SURFACE				
NEMA	1 (DRY LOCATION)				
AIC RATING	10,000	FULLY RATED			

LOAD	kVA	AMPS
PHASE A	3.5	29
PHASE B	3.5	29
PHASE C	0.5	4
CONNECTED	7.5	21
DEMAND	9.0	25

NOTES	
1	NEW

CKT.	LOAD DESCRIPTION	OPT	AMP	POLE	VA	PH	VA	POLE	AMP	OPT	LOAD DESCRIPTION	CKT.
1	CU-2 OUTDOOR		40	2	2912	A	210	1	20		GENERAL LIGHTING	2
3	AHU-2 POWERED BY CU-2				2912	B	360	1	20		IT RACK 1	4
5	ROOF SERVICE RECPT.		20		180	C	360	1	20		IT RACK 2	6
7	GEN. RECPT.		20	1	360	A		1	20		SPARE	8
9	MOTORIZED DAMPER		20	1	180	B		1	20		SPARE	10
11	SPACE			1		C		1			SPACE	12
13	SPACE			1		A		1			SPACE	14
15	SPACE			1		B		1			SPACE	16
17	SPACE			1		C		1			SPACE	18

LOAD SUMMARY: CONNECTED kVA / DEMAND kVA

SHOW WINDOW	0.0	0.0	COOLING	0.0	0.0	SUP ELEC HEAT	0.0
TRACK	0.0	0.0	HEATING	0.0	0.0	KITCHEN EQUIP.	0.0
OTHER LIGHTING	0.2	0.3	MOTOR	5.8	5.8	MISCELLANEOUS	0.9
RECEPTACLE	0.5	0.5	LARGEST MTR	5.8	1.5	WATER HEATER	0.0

CONTINUOUS	0.0	0.0
USER DEF 1	0.0	0.0
USER DEF 2	0.0	0.0
TOTAL	13.3	9.0

NEC DEMAND LOAD:

LOAD TYPE	CONNECTED LOAD VA	DEMAND FACTOR	DEMAND LOAD VA
OTHER LIGHTING	210	1.25	263
NEC MIN DEMAND	0	1.00	0
LIGHTING			263
RECEPTACLE	540	10kVA+.5R	540
MOTORS (INCLUDES LARGEST)	5824	1.00	5824
LARGEST MOTOR	5824	0.25	1456
MISCELLANEOUS	900	1.00	900
TOTAL LOAD (kVA)	13.3 kVA		9.0 kVA
DEMAND (AMPS) AT 277/480V-3PH			10.8 A

UNIT	VOLTAGE	KW	MCA	MOCP A/POLE	WIRE SIZES	CONDUIT	DISCONNECT AT UNIT	CIRCUIT	CONNECTION NOTES
CU-2	208V, 1 PHASE	-	34.0 A	40/2	(2) #8 & (1) #10 GND	3/4"	40A/2P , NON-FUSED	R-1,3	
AHU-2	208V, 1 PHASE	-	2.0 A	15/2	(2) #12 & (1) #12 GND	1/2"	20A/2P NON-FUSED	NA	POWERED BY CU-2

NOTE:

VERIFY EXACT OVER CURRENT PROTECTION/DISCONNECT REQUIREMENTS (PER N.E.C. #440) WITH EQUIPMENT MANUFACTURER NAMEPLATE DATA UPON RECEIPT AT JOB SITE. CONTACT ENGINEER WITH ANY DISCREPANCIES. ELECTRICAL CONTRACTOR TO MAKE ALL FINAL ELECTRICAL POWER CONNECTIONS.

U ELECTRICAL PANEL SCHED.(REMOTE STOR. M6)

E1.00 SCALE: NONE

PANEL NOTES AND OPTIONS

BREAKER OPTIONS

LO	HANDLE LOCK-ON DEVICE
G	GROUND FAULT CIRCUIT INTERRUPTER
EX	EXISTING BREAKER AND LOAD TO REMAIN
R	RE-USE EXISTING BREAKER FOR NEW LOAD
N	PROVIDE NEW BREAKER TO MATCH MANUFACTURE AND AIC RATING OF PANEL

GENERAL NOTES:

1	ALL BREAKERS TO BE 20A / 1 POLE UNLESS NOTED OTHERWISE
2	CONTRACTOR TO FURNISH TWO "HANDLE PADLOCK ATTACHMENTS" FOR CIRCUIT BREAKERS. ATTACHMENT PIECES TO BE PROVIDED TO THE OWNER OR TO BE INSTALLED IN THE PANELBOARD FOR EASY ACCESS BY AN ELECTRICAL CONTRACTOR PERFORMING MAINTENANCE ON ELECTRICAL EQUIPMENT REQUIRING A DISCONNECTING MEANS. CAPABLE OF BEING PADLOCKED.

PANELBOARD	MDP			NOTES	V2.2
V-PH-W	277/480V-3PH	4W			
MAINS	MCB	175A			
BUS AMPS	MATCH MAINS RATING				
MOUNTING	SURFACE				
NEMA	1 (DRY LOCATION)				
AIC RATING	65,000	FULLY RATED			

LOAD	kVA	AMPS
PHASE A	29.6	107
PHASE B	31.5	114
PHASE C	34.2	124
CONNECTED	95.3	115
DEMAND	131.9	159

NOTES	
1	EXISTING PANEL

CKT.	LOAD DESCRIPTION	OPT	AMP	POLE	VA	PH	VA	POLE	AMP	OPT	LOAD DESCRIPTION	CKT.
1	T1	EX	125	3	12276	A						
3					14196	B						
5					16921	C						
7	RTU-X1	EX	35	3	7205	A	7205	3	35	EX	RTU-X2	8
9					7205	B	7205					10
11					7205	C	7205					12
13	CU-X1	EX	15	3	2906	A		1			SPACE	14
15					2906	B		1			SPACE	16
17					2906	C		1			SPACE	18
19	ENERGY CHECK METER	EX	20	3		A		1			SPACE	20
21						B		1			SPACE	22
23						C		1			SPACE	24

LOAD SUMMARY: CONNECTED kVA / DEMAND kVA

SHOW WINDOW	0.2	6.0	COOLING	0.0	0.0	SUP ELEC HEAT	0.0
TRACK	2.6	24.0	HEATING	0.0	0.0	KITCHEN EQUIP.	0.0
OTHER LIGHTING	7.9	11.8	MOTOR	62.9	62.9	MISCELLANEOUS	10.5
RECEPTACLE	9.2	9.2	LARGEST MTR	21.6	5.4	WATER HEATER	2.0

CONTINUOUS	0.0	0.0
USER DEF 1	0.0	0.0
USER DEF 2	0.0	0.0
TOTAL	117.0	131.9

NEC DEMAND LOAD:

LOAD TYPE	CONNECTED LOAD VA	DEMAND FACTOR	DEMAND LOAD VA
SHOW WINDOW LIGHTING			
SHOW WINDOW FIXTURE VA	162	1.25	203
LENGTH @200V/4FT 24 FT	4800	1.25	6000
SHOW WINDOW DEMAND LOAD			6000
TRACK LIGHTING			
TRACK FIXTURE W	2620	1.25	3275
LENGTH @150V/2FT 377 FT	28275	1.25	35344
TRACK BREAKER W	24000	1.00	24000
TRACK DEMAND LOAD			24000
OTHER LIGHTING	7889	1.25	9861
NEC MIN DEMAND	11780	1.00	11780
LIGHTING			11780
RECEPTACLE	9240	10kVA+.5R	9240
MOTORS (INCLUDES LARGEST)	62930	1.00	62930
LARGEST MOTOR	21615	0.25	5404
MISCELLANEOUS	10500	1.00	10500
WATER HEATERS	2000	1.00	2000
TOTAL LOAD (kVA)	117.0 kVA		131.9 kVA
DEMAND (AMPS) AT 277/480V-3PH			158.6 A

NEC DEMAND LOAD: TRANSFORMER T-1

LOAD TYPE	CONNECTED LOAD VA	DEMAND FACTOR	DEMAND LOAD VA
SHOW WINDOW LIGHTING			
SHOW WINDOW FIXTURE VA	162	1.25	203
LENGTH @200V/4FT 24 FT	4800	1.25	6000
SHOW WINDOW DEMAND LOAD			6000
TRACK LIGHTING			
TRACK FIXTURE W	2620	1.25	3275
LENGTH @150V/2FT 377 FT	28275	1.25	35344
TRACK BREAKER W	24000	1.00	24000
TRACK DEMAND LOAD			24000
OTHER LIGHTING	7889	1.25	9861
NEC MIN DEMAND	0	1.00	0
LIGHTING			9861
RECEPTACLE	9240	10kVA+.5R	9240
MOTORS (INCLUDES LARGEST)	10982	1.00	10982
LARGEST MOTOR	10982	0.25	2746
MISCELLANEOUS	10500	1.00	10500
WATER HEATERS	2000	1.00	2000
TOTAL LOAD (kVA)	54.4 kVA		75.3 kVA
DEMAND (AMPS) AT 480V-3PH			90.6 A

PANELBOARD	A			NOTES	V2.2
V-PH-W	120/208V-3PH	4W			
MAINS	MCB	125A			
BUS AMPS	MATCH MAINS RATING				
MOUNTING	SURFACE				
NEMA	1 (DRY LOCATION)				
AIC RATING	10,000	FULLY RATED			

LOAD	kVA	AMPS
PHASE A	4.5	38
PHASE B	2.9	24
PHASE C	4.1	34
CONNECTED	11.5	32
DEMAND	40.7	113

NOTES	
1	EXISTING PANEL

NOTE	CKT.	LOAD DESCRIPTION	OPT	AMP	POLE	VA	PH	VA	POLE	AMP	OPT	LOAD DESCRIPTION	CKT.	NOTE
B1	1	SALES DISPLAY FRONT TK 1	R	20	1	246	A	127	1	20	R	SALES GENERAL FRONT TK 1	2	B2
B1	3	SALES DISPLAY FRONT TK 2	R	20	1	227	B	121	1	20	R	SALES GENERAL FRONT TK 2	4	B2
B1	5	SALES DISPLAY REAR TK 1	R	20	1	399	C	313	1	20	R	SALES GENERAL REAR TK 1	6	B2
B1	7	SALES DISPLAY REAR TK 3	R	20	1	416	A	255	1	20	R	SALES GENERAL REAR TK 2	8	B2
B2	9	FITTING RM HALL TK	R	20	1	338	B	720	1	20	EX	SHOW WINDOW REC	10	A
	11	SPACE			1		C	667	1	20	R	BOH LTS	12	C
A	13	STORE FRONT SIGN	R	20	1	1200	A	32	1	20	EX	UTILITY LTS	14	
B1	15	SALES DISPLAY REAR TK 2	R	20	1	178	B		1		EX	SPACE	16	
	17	SPARE	R	20	1		C	100	1	20	R,LO	SALES EM/EX	18	
B2	19	FIT RM LTS	R	20	1	728	A	162	1	20	R	STOREFRONT TKLTS	20	A
	21	SPACE	EX		1		B	720	1	20	EX	CLEARSTORY LTS	22	A
B1	23	UNDERCOUNTER BACKWRAP LT	R	20	1	180	C	1200	1	20	N	STOREFRONT BLADE SIGN	24	A
B2	25	CASHWRAP LIGHTS	R	20	1	180	A		1		EX	SPACE	26	
B2	27	FITTING ROOM SIGNS	N	20	1	600	B		1		EX	SPACE	28	
B1	29	FITTING HALL WAYFIND SIGN 1	N	20	1	1200	C		1		EX	SPACE	30	
B1	31	FITTING HALL WAYFIND SIGN 2	N	20	1	1200	A		1		EX	SPACE	32	
	33	SPACE	EX		1		B		1		EX	SPACE	34	
	35	SPARE	R	20	1		C		1		EX	SPACE	36	
	37	SPACE	EX		1		A		1		EX	SPACE	38	
	39	SPACE	EX		1		B		1		EX	SPACE	40	
	41	SPACE	EX		1		C		1		EX	SPACE	42	

LOAD SUMMARY: CONNECTED kVA / DEMAND kVA

SHOW WINDOW	0.2	6.0	COOLING	0.0	0.0	SUP ELEC HEAT	0.0
TRACK	2.6	24.0	HEATING	0.0	0.0	KITCHEN EQUIP.	0.0
OTHER LIGHTING	7.9	9.9	MOTOR	0.0	0.0	MISCELLANEOUS	0.1
RECEPTACLE	0.7	0.7	LARGEST MTR	0.0	0.0	WATER HEATER	0.0

CONTINUOUS	0.0	0.0
USER DEF 1	0.0	0.0
USER DEF 2	0.0	0.0
TOTAL	11.5	40.7

PANELBOARD	B			NOTES	V2.2
V-PH-W	120/208V-3PH	4W			
MAINS	MCB	125A			
BUS AMPS	MATCH MAINS RATING				
MOUNTING	SURFACE				
NEMA	1 (DRY LOCATION)				
AIC RATING	10,000	FULLY RATED			

LOAD	kVA	AMPS
PHASE A	7.7	64
PHASE B	11.3	94
PHASE C	12.9	107
CONNECTED	31.9	89
DEMAND	34.6	96

NOTES	
1	EXISTING PANEL

CKT.	LOAD DESCRIPTION	OPT	AMP	POLE	VA	PH	VA	POLE	AMP	OPT	LOAD DESCRIPTION	CKT.
1	BOTTOM GEN. CONV. REC.	R	20	1	720	A	360	1	20	R	MGR DESK REC	2
3	SPARE					B		1	20	R	SPARE	4
5	TOP GEN. CONV. REC.	R	20	1	720	C	150	1	20	EX	EMS PNL	6
7	MICROWAVE	N,G	20	1	1200	A	1400	1	20	R,LO	HAND DRYER	8
9	WATER COOLER	N,G	20	1	600	B	360	1	20	EX	STORE FRONT CONV. REC.	10
11	REFRIGERATOR	N,G	20	1	1000	C	540	1	20	EX	HVAC REC.	12
13	NON-SALES REC.	R	20	1	360	A	180	1	20	EX	PEOPLE COUNTER	14
15	PROCESSING DESK 2	R	20	1	720	B	720	1	20	R	MANAGER DESK REC.	16
17	PROCESSING DESK 1	R	20	1	1080	C	1400	1	20	R,LO	HAND DRYER	18
19	WH	N	15	2	1000	A	360	1	20	R	CASH REGISTERS 1	20
21					1000	B	360	1	20	R	CASH REGISTERS 2	22
23	TELEPHONE SYSTEM	EX	20	1	720	C	360	1	20	R	EAS SYSTEM	24
25	SPARE	R	20	1		A	180	1	20	EX	MOTORIZED DAMPER	26
27	TEF-1	EX,30mA	20	1	96	B	5491	2	60	EX	ACU-1	28
29	SPACE			1		C	5491					30
31	FITTING RM HALL REC.	N	20	1	360	A	360	1	20	N	CONTROLLED REC.	32
33	SPACE			1		B		1			SPACE	34
35	SPACE			1		C		1			SPACE	36
37	SPACE			1		A	1250	3	35	EX	D	38
39	SPACE			1		B	1963					40
41	SPACE			1		C	1401					42

LOAD SUMMARY: CONNECTED kVA / DEMAND kVA

SHOW WINDOW	0.0	0.0	COOLING	0.0	0.0	SUP ELEC HEAT	0.0
TRACK	0.0	0.0	HEATING	0.0	0.0	KITCHEN EQUIP.	0.0
OTHER LIGHTING	0.0	0.0	MOTOR	11.0	11.0	MISCELLANEOUS	10.4
RECEPTACLE	8.5	8.5	LARGEST MTR	11.0	2.7	WATER HEATER	2.0

CONTINUOUS	0.0	0.0
USER DEF 1	0.0	0.0
USER DEF 2	0.0	0.0
TOTAL	42.9	34.6

PANELBOARD	D			NOTES	V2.2
V-PH-W	120/208V-3PH	4W			
MAINS	MLO	125A			
BUS AMPS	MATCH MAINS RATING				
MOUNTING	SURFACE				
NEMA	1 (DRY LOCATION)				
AIC RATING	65,000	FULLY RATED			

LOAD	kVA	AMPS
PHASE A	1.3	10
PHASE B	2.0	16
PHASE C	1.4	12
CONNECTED	4.6	13
DEMAND	4.6	13

NOTES	
1	EXISTING PANEL

CKT.	LOAD DESCRIPTION	OPT	AMP	POLE	VA	PH	VA	POLE	AMP	OPT	LOAD DESCRIPTION	CKT.
1	SPARE	R	20	1		A	1250	1	20	EX	VIDEO RACK	2
3	STORE FRONT VIDEO 1	R	20	1	1000	B	963	1	20	EX	AUDIO RACK	4
5	STORE FRONT VIDEO 2	R	20	1	1000	C	401	1	20	EX	LP RACK	6
7	SPACE	EX		1		A		1			SPACE	8
9	SPACE	EX		1		B		1			SPACE	10
11	SPACE	EX		1		C		1			SPACE	12
13	SPACE	EX		1		A		1			SPACE	14
15	SPACE	EX		1		B		1			SPACE	16
17	SPACE	EX		1		C		1			SPACE	18

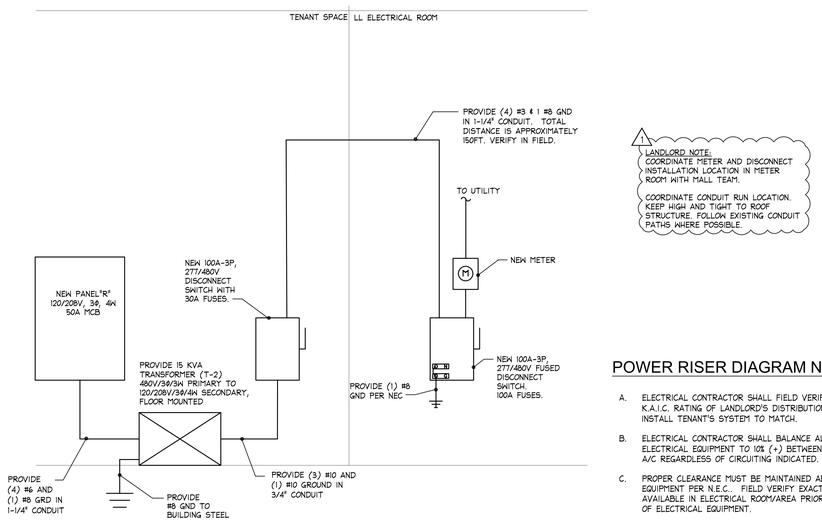
LOAD SUMMARY: CONNECTED kVA / DEMAND kVA

SHOW WINDOW	0.0	0.0	COOLING	0.0	0.0	SUP ELEC HEAT	0.0
TRACK	0.0	0.0	HEATING	0.0	0.0	KITCHEN EQUIP.	0.0
OTHER LIGHTING	0.0	0.0	MOTOR	0.0	0.0	MISCELLANEOUS	4.6
RECEPTACLE	0.0	0.0	LARGEST MTR	0.0	0.0	WATER HEATER	0.0

CONTINUOUS	0.0	0.0
USER DEF 1	0.0	0.0
USER DEF 2	0.0	0.0
TOTAL	4.6	4.6

Q ELECTRICAL PANEL SCHEDULES

E1.00 SCALE: NONE



POWER RISER DIAGRAM NOTES

A. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXACT K.A.I.C. RATING OF LANDLORD'S DISTRIBUTION EQUIPMENT, INSTALL TENANT'S SYSTEM TO MATCH.

B. ELECTRICAL CONTRACTOR SHALL BALANCE ALL PANELS AND ELECTRICAL EQUIPMENT TO 10% (+) BETWEEN PHASES:A/B B/C, A/C REGARDLESS OF CIRCUITING INDICATED.

C. PROPER CLEARANCE MUST BE MAINTAINED ABOUT ELECTRICAL EQUIPMENT PER N.E.C.. FIELD VERIFY EXACT MOUNTING SPACE AVAILABLE IN ELECTRICAL ROOM/AREA PRIOR TO INSTALLATION OF ELECTRICAL EQUIPMENT.

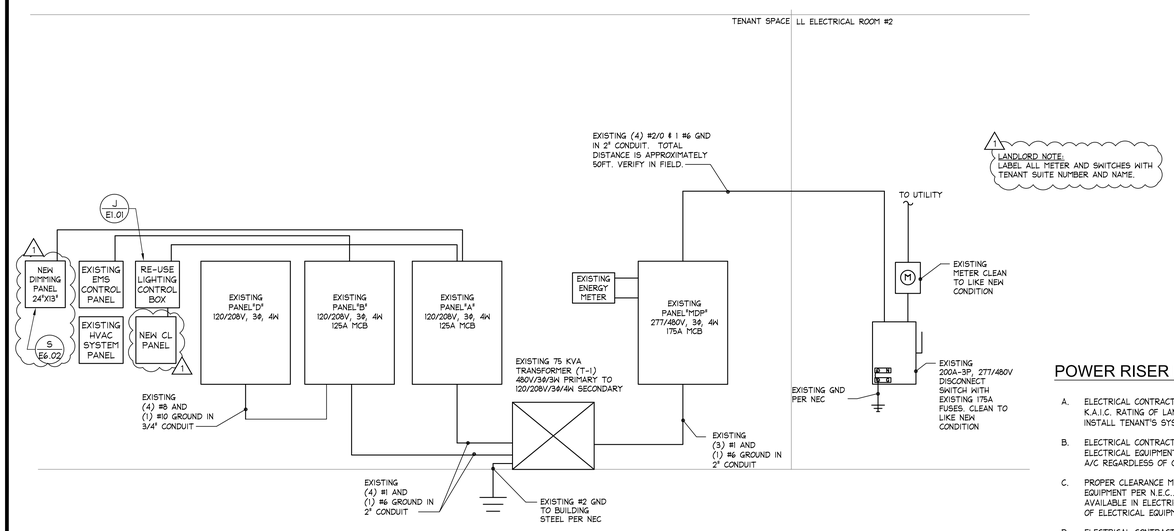
D. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL ELECTRICAL CONNECTIONS.

E. CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE.

F. EXISTING CONDITIONS SHOWN ARE BASED ON DRAWINGS AND INFORMATION PROVIDED BY LANDLORD. VERIFY ALL EXISTING CONDITIONS PRIOR TO BIDDING. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THOSE SHOWN HERE SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER.

S ELECTRIC POWER RISER SCHEMATIC (REMOTE STORAGE M6)

E1.00 SCALE: NONE



POWER RISER DIAGRAM NOTES

A. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXACT K.A.I.C. RATING OF LANDLORD'S DISTRIBUTION EQUIPMENT, INSTALL TENANT'S SYSTEM TO MATCH.

B. ELECTRICAL CONTRACTOR SHALL BALANCE ALL PANELS AND ELECTRICAL EQUIPMENT TO 10% (+) BETWEEN PHASES:A/B B/C, A/C REGARDLESS OF CIRCUITING INDICATED.

C. PROPER CLEARANCE MUST BE MAINTAINED ABOUT ELECTRICAL EQUIPMENT PER N.E.C.. FIELD VERIFY EXACT MOUNTING SPACE AVAILABLE IN ELECTRICAL ROOM/AREA PRIOR TO INSTALLATION OF ELECTRICAL EQUIPMENT.

D. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL ELECTRICAL CONNECTIONS.

E. CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE.

F. EXISTING CONDITIONS SHOWN ARE BASED ON DRAWINGS AND INFORMATION PROVIDED BY LANDLORD. VERIFY ALL EXISTING CONDITIONS PRIOR TO BIDDING. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THOSE SHOWN HERE SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER.

J ELECTRICAL POWER RISER SCHEMATIC

E1.00 SCALE: NONE

HOLLISTER
CALIFORNIA

ABERCROMBIE & FITCH CO.
6301 FITCH PATH
NEW ALBANY, OHIO 43054
614-283-6500



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MEMORIAL CITY MALL

303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No.:	260348
Drawn By:	LJW

Date	Issue
09.04.2026	CHECKSET
09.25.2026	1 BID SET

ELECTRICAL SCHEDULES & LOAD CALCULATIONS

E1.00

CURRENT LIMITING PANEL 'CL'

CIRCUIT NO.	20 AMP PANEL CIRCUIT NUMBER	CURRENT LIMITING BREAKER SIZE	MAXIMUM ALLOWED LIGHTING LOAD(W)
CL-1	A-1	4	384
CL-2	A-2	4	384
CL-3	A-3	4	384
CL-4	A-4	4	384
CL-5	A-5	4	384
CL-6	A-6	4	384
CL-7	A-7	5	480
CL-8	A-8	4	384
CL-9	A-9	4	384
CL-10	A-15	4	384
CL-11	A-20	5	480
CL-12	-	-	-
	TOTAL	46	4,416

NOTES:
1. OWNER SHALL PROVIDE AND GC SHALL INSTALL SILVER BULLET CURRENT LIMITING PANEL, BREAKERS, AND ALL NECESSARY COMPONENTS FOR A COMPLETE INSTALLATION. INSTALL ADJACENT TO LIGHTING PANEL BOARDS.

2. LC4D SILVER BULLET #T24M-1077UL. COORDINATE CURRENT LIMITER BREAKER SIZES WITH SIZES LISTED ABOVE.

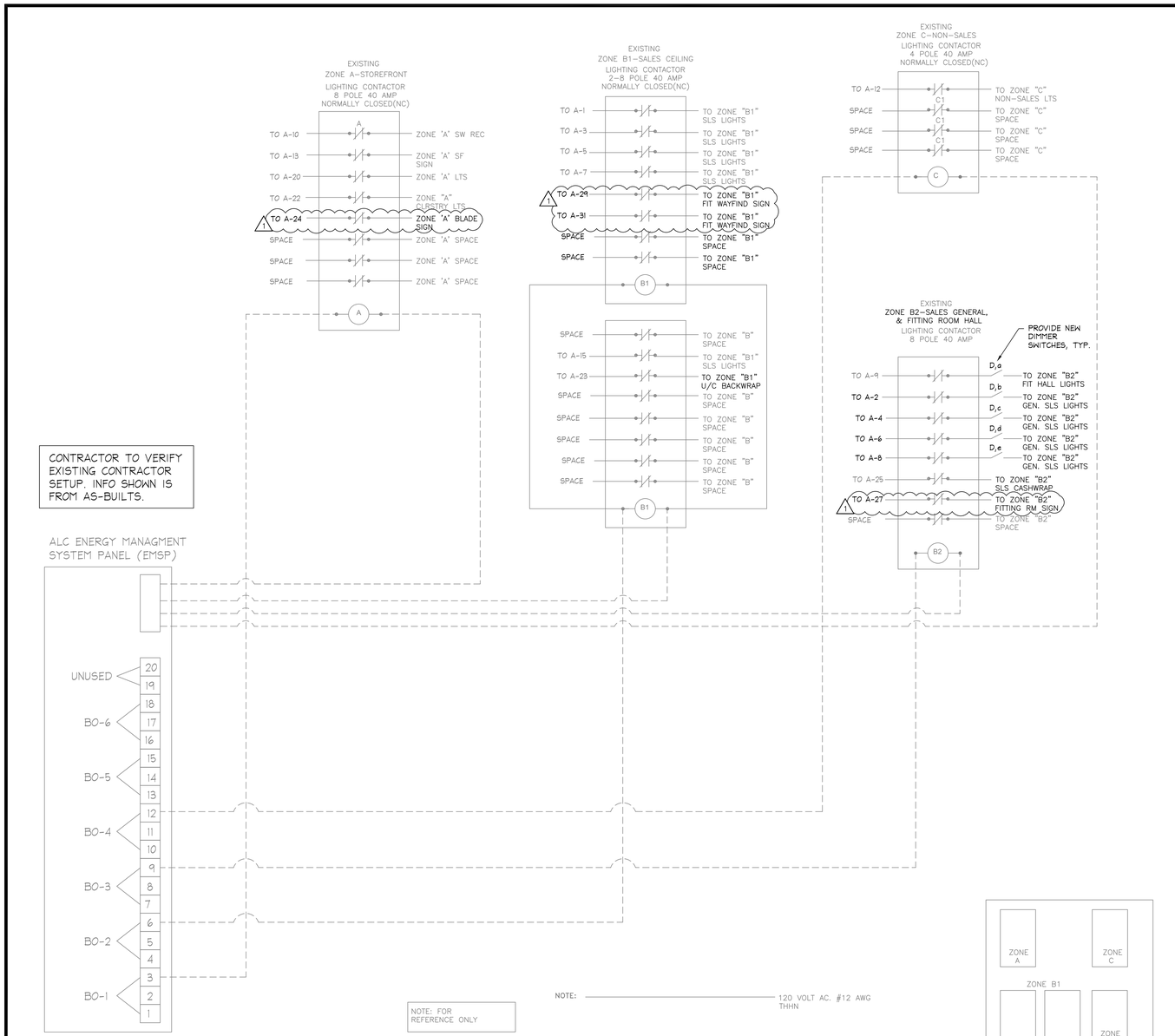
3. ROUTE CIRCUITS THROUGH LIGHTING CONTACTORS PRIOR TO LANDING ON CURRENT LIMITING BREAKERS AND THEN CONTINUING TO LIGHTING LOADS.

4. PROVIDE CLASS D BREAKERS.

U
E1.00

SILVER BULLET PANEL SCHEDULE

SCALE: NONE



EXISTING LIGHTING CONTROL BOX DIAGRAM

N.T.S.

J
E1.00

EXISTING LIGHTING CONTACTOR SCHEMATIC

SCALE: NONE

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CALIFORNIA

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614-283-6500



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Project # 1712000124

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MEMORIAL CITY MALL

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HOUSTON, TX 77024
STORE #31909

Project No.:	260348
Drawn By:	LJW

Date	Issue
09.04.2026	CHECKSET
09.25.2026	1 BID SET

EMS PANEL WIRING SCHEMATIC

E1.01

LIGHT FIXTURE SCHEDULE

TYPE	FIXTURE DESCRIPTION	FINISH	LAMP TYPE	DDS PART # (A&F ITEM ID)	LAMP WATTS/ TOTAL LAMP POWER	LAMPS / UNIT	MAX. FIX. WATT.	VOLTAGE	MANUFACTURER: CATALOGUE # (INTEGRAL / REMOTE DRIVER)	A&F ITEM ID	NOTES / MODIFICATIONS
B1	SURFACE MOUNTED NOMINAL 4'-0" LONG STRIP LIGHT WITH INTEGRATED 3500K LED. STEEL HOUSING AND LENS AT NON-SALES AREAS.	WHITE	LED	N/A	N/A	N/A	20.3 W	120 V	LITHONIA: CLX L48 3000LM SEF RDL MVOLT GZ10 35K 90CRI WH (INTEGRAL DRIVER)	74544	U.L. APPROVED.
B1/EM	SURFACE MOUNTED NOMINAL 4'-0" LONG STRIP LIGHT WITH INTEGRATED 3500K LED, STEEL HOUSING, LENS AND EMERGENCY BATTERY PACK AT NON-SALES AREAS.	WHITE	LED	N/A	N/A	N/A	20.3 W	120 V	LITHONIA: CLX L48 3000LM SEF RDL MVOLT GZ10 35K 90CRI E10WLCP SPD WH (INTEGRAL DRIVER & BATTERY)	74740	U.L. APPROVED.
TR1	SURFACE MOUNTED TO UNISTRUT SINGLE CIRCUIT EXTRUDED ALUMINUM LIGHTING TRACK WITH ALL NECESSARY MOUNTING HARDWARE, FEEDS AND CONNECTORS	WHITE	N/A	N/A	N/A	N/A	N/A	120 V	LIGHTOLIER: 6008NWH (8FT TRACK+DEAD END) LIGHTOLIER: 6048NWH (LIVE END FEED) LIGHTOLIER: 6049NWH (COUPLER)	76151 (8FT TRACK) 76152 (FEED) 76153 (COUPLER)	U.L. APPROVED. REFER TO ARCHITECTURAL DRAWINGS FOR LENGTHS.
T4	TRACK MOUNTED SINGLE CIRCUIT INTEGRATED 3000K LED ADJUSTABLE ACCENT LIGHT WITH 35° BEAMSPREAD, ADJUSTABLE TILT, AND 360 DEGREE ROTATION.	BLACK	LED	N/A	N/A	N/A	13.5 W	120 V	GE: LTC-ID-A-1-10-WF-9-30-P-Q-L1-BLCK (LIGHTOLIER ADAPTER)	75729	U.L. APPROVED.
T3	TRACK MOUNTED SINGLE CIRCUIT INTEGRATED 3000K LED ADJUSTABLE ACCENT LIGHT WITH 35° BEAMSPREAD, ADJUSTABLE TILT, AND 360 DEGREE ROTATION	WHITE	LED	N/A	N/A	N/A	13.5 W	120 V	GE: LTC-ID-A-1-10-WF-9-30-P-Q-L2-WHITE (LIGHTOLIER ADAPTER)	76149	U.L. APPROVED
W4C	WALL/CEILING MOUNTED NOMINAL 24" 3000K LINEAR LED, ALUMINUM HOUSING FLAT ACRYLIC LENS.	WHITE	LED	N/A	N/A	N/A	16W	120 V	Ecosense - H1-2-35k-SO-UNV-ND-SC-BF	76396	U.L. APPROVED
CCT	Blizzard HotBox Infiniwhite Yoke Mounted - LED wash light with 7x5w Amber/Cool/Warm white 3 in 1 LEDs. DMX 512 Controlable, 32 bit dimming curve, with diffusion frame	BLACK	N/A	N/A	8 W	7	35 W	120-277	HotBox™ Infiniwhite SKU: 123533	78279 / 78280(Frame)	U.L. APPROVED
EX-1	SELF CONTAINED COMBINATION EXIT SIGN (SINGLE/DOUBLE FACE AND ARROW DIRECTION TO BE VERIFIED IN FIELD) AND DOUBLE HEAD LED EMERGENCY FIXTURE WITH RECHARGEABLE BATTERY AND RED LETTERS.	WHITE	N/A	N/A	N/A	N/A	TBD	120 V	BEST: LEDCXTEU-2-R-W (OR APPROVED EQUIVALENT)	73741	U.L. APPROVED.
EX-2	SELF CONTAINED COMBINATION EXIT SIGN (SINGLE/DOUBLE FACE AND ARROW DIRECTION TO BE VERIFIED IN FIELD) AND DOUBLE HEAD LED EMERGENCY FIXTURE WITH RECHARGEABLE BATTERY AND RED LETTERS.	WHITE	N/A	N/A	N/A	N/A	TBD	120 V	BEST: LEDCXTEU-2-R-W (OR APPROVED EQUIVALENT)	73740	U.L. APPROVED.
EP	SUSPENSION CABLE PENDANT	GLASS GLOBE/BLUE	E27 LED 15w-3000K	N/A	N/A	N/A	60W	120V	LA QUINCAILLERIA MODERNE		
UCL	under cabinet led tape	n/a	led tape =	N/A	15	1	48w / 16'	120v	Apollo = SA-LS-ULTRA-WW-2835-600-24V	TBD	U.L. APPROVED.
LWW	12" LED WALL WASH FIXTURE	WHITE	LED	N/A	N/A	N/A	19W	120 V	SOLAIS: LWW/1Y/1/Q/930/1800/PW/H	N/A	U.L. APPROVED.
H2	DIRECT TRACK MOUNTED ADJUSTABLE ACCENT LIGHT WITH ALUMINUM HOUSING AND BARN DOOR ASSEMBLY. FIXTURE TO HAVE LOCKABLE TILT/ROTATION	STEEL(FAUX RUST FINISH)	RELAMP TO 6W LED	N/A	6W	6W	75W	120 V	PRG: RHA-HOLL.H2 (NORDIC GET SERIES EXCEL POWER 931 SERIES ADAPTER)	N/A	U.L. APPROVED.
EXISTING TRACK	PENDANT MOUNTED SINGLE CIRCUIT EXTRUDED ALUMINUM LIGHTING TRACK WITH ALL NECESSARY HARDWARE, LINEAR COUPLERS AND END FEEDS(BLACK FINISH)	NATL ALUMINUM	N/A	N/A	N/A	N/A	N/A	120 V	NORDIC ALUMINUM GLOBAL TRAC BASE (1 CIRCUIT) SURFACE TRACK GB SERIES-1(NATL ALUM) + GB67-2 (BLACK) ADAPTER	N/A	U.L. APPROVED.
EM-1	DOUBLE HEAD SELF CONTAINED INCANDESCENT EMERGENCY LIGHT FIXTURE WITH MAINTENANCE FREE LED CALCIUM BATTERY.	BLACK	WEDGE BASE 6V/.9A T5(ANSI #939)	N/A	5.4W	2	1W	120V	COOPER SURE LIGHTS CC2-6-12-BK	N/A	U.L. APPROVED. FIXTURE TO BE UL LISTED. PROVIDE WITH 90 MIN. BATTERY POWER.

S E1.10 OSM LIGHT FIXTURE SCHEDULE
SCALE: NONE



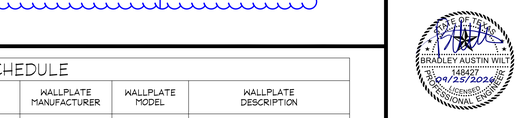
ELECTRICAL DEVICE SCHEDULE

MARK	MANUFACTURER	MODEL	DESCRIPTION	WALLPLATE MANUFACTURER	WALLPLATE MODEL	WALLPLATE DESCRIPTION
⏚	LEVITON	TDR20-W	DECORA PLUS DUPLEX RECEPTACLE OUTLET, HEAVY-DUTY INDUSTRIAL SPECIFICATION GRADE, TAMPER-RESISTANT, SMOOTH FACE, 20 AMP, 125 VOLT, BACK OR SIDE WIRE, NEMA 5-20R, 2-POLE, 3-WIRE, SELF-GROUNDING - WHITE	LEVITON	P.J26-W	1-GANG DECORA/GFCI DEVICE DECORA WALLPLATE, MIDWAY SIZE, THERMOPLASTIC NYLON, DEVICE MOUNT - WHITE
⏚ GFCI	LEVITON	7899-R	20 AMP, 125 VOLT RECEPTACLE, 20 AMP FEED-THROUGH, MONOCHROMATIC, SMARTLOCKPRO GFCI, BACK AND SIDE WIRED, NYLON WALLPLATE AND SCREWS INCLUDED - WHITE	LEVITON	P.J26-W	1-GANG DECORA/GFCI DEVICE DECORA WALLPLATE, MIDWAY SIZE, THERMOPLASTIC NYLON, DEVICE MOUNT - WHITE
⏚ IG	HUBBELL	IG5362W	STRAIGHT BLADE DEVICES, RECEPTACLES, DUPLEX, INDUSTRIAL GRADE, 2-POLE 3-WIRE GROUNDING, 20A 125V, 5-20R, BACK WIRED, ONE-PIECE BRASS INTEGRAL GROUND STRAP - WHITE	LEVITON	80703-W	1-GANG DUPLEX DEVICE RECEPTACLE WALLPLATE, STANDARD SIZE, THERMOPLASTIC NYLON, DEVICE MOUNT - WHITE
⏚ USB	LEVITON	T5833-W	COMBINATION DUPLEX RECEPTACLE/OUTLET, (1) TYPE "A" USB & (1) TYPE "C" USB CHARGING PORTS. 20 AMP, 125 VOLT, DECORA TAMPER-RESISTANT RECEPTACLE/OUTLET, NEMA 5-20R. GROUNDING, SIDE WIRED & BACK WIRED - WHITE	LEVITON	80301-SW	1-GANG DECORA/GFCI DEVICE DECORA WALLPLATE, MIDWAY SIZE, THERMOPLASTIC NYLON, DEVICE MOUNT - WHITE
⏚	LEVITON	16352-2PW 16352-2PE	DECORA PLUS DUPLEX RECEPTACLE OUTLET, HEAVY-DUTY INDUSTRIAL SPECIFICATION GRADE, TWO OUTLETS MARKED "CONTROLLED", SMOOTH FACE, 20 AMP, 125 VOLT, BACK OR SIDE WIRE, NEMA 5-20R, 2-POLE, 3-WIRE, SELF-GROUNDING - WHITE ON CEILINGS, BLACK ON WALLS	LEVITON	P.J26-W P.J26-E	1-GANG DECORA/GFCI DEVICE DECORA WALLPLATE, MIDWAY SIZE, THERMOPLASTIC NYLON, DEVICE MOUNT - WHITE ON CEILINGS, BLACK ON WALLS
⏚⏚	LEVITON	TDR20-W	DECORA PLUS DUPLEX RECEPTACLE OUTLET, HEAVY-DUTY INDUSTRIAL SPECIFICATION GRADE, TAMPER-RESISTANT, SMOOTH FACE, 20 AMP, 125 VOLT, BACK OR SIDE WIRE, NEMA 5-20R, 2-POLE, 3-WIRE, SELF-GROUNDING - WHITE	LEVITON	P.J262-W	2-GANG DECORA/GFCI DEVICE DECORA WALLPLATE, MIDWAY SIZE, THERMOPLASTIC NYLON, DEVICE MOUNT - WHITE
⏚ USB	LEVITON	T5832-W	COMBINATION DUPLEX RECEPTACLE/OUTLET AND USB CHARGER. 20 AMP, 125 VOLT, DECORA TAMPER-RESISTANT RECEPTACLE/OUTLET, NEMA 5-20R. 3.6 AMPS, 5VDC, 2.0 TYPE A USB CHARGERS. GROUNDING, SIDE WIRED & BACK WIRED - WHITE	LEVITON	P.J262-W	2-GANG DECORA/GFCI DEVICE DECORA WALLPLATE, MIDWAY SIZE, THERMOPLASTIC NYLON, DEVICE MOUNT - WHITE
$	HUBBELL	1221W	SWITCHES AND LIGHTING CONTROLS, HUBBELL-PRO SERIES, TOGGLE SWITCHES, GENERAL PURPOSE AC, SINGLE POLE, 20A 120/277V AC, BACK AND SIDE WIRED - WHITE	HUBBELL	NPIW	1-GANG WALLPLATE, STANDARD SIZE, TOGGLE, NYLON - WHITE
$3	HUBBELL	1223W	SWITCHES AND LIGHTING CONTROLS, HUBBELL- PRO SERIES, TOGGLE SWITCHES, GENERAL PURPOSE AC, THREE WAY, 20A 120/277V AC, BACK AND SIDE WIRED - WHITE	HUBBELL	NPIW	1-GANG WALLPLATE, STANDARD SIZE, TOGGLE, NYLON - WHITE
O	KLIK	OS2/AP	PASSIVE INFRARED (PIR) OCCUPANCY SENSOR, CEILING MOUNTED - WHITE	LUTRON	CW-1-WH	1-GANG WALLPLATE WITH BLANK INSERT, STANDARD SIZE - WHITE
O +	LUTRON	MS-A202-WH	MAESTRO DUAL-CIRCUIT DUAL-TECH OCCUPANCY/MOTION SENSOR SWITCH, NO NEUTRAL, SINGLE-POLE, WALL MOUNTED - WHITE	LUTRON	CW-1-WH	1-GANG DECORA WALLPLATE, STANDARD SIZE - WHITE
O FR	HUBBELL	WS1000NW	PASSIVE INFRARED (PIR) OCCUPANCY SENSOR, CEILING MOUNTED - WHITE	HUBBELL	RCWIW	1-GANG SNAP-ON WALLPLATE - WHITE
	COOPER	B-LINE	CABLE TRAY - 6" NEMA LOADING DEPTH, PRE-GALVANIZED STEEL, TROUGH NON-VENTILATED BOTTOM, 6' WIDTH, 10' OR 12' LENGTHS	-	-	-
	-	-	INDUSTRIAL STRENGTH IP67 RATED LED LIGHT WITH METAL GUARD	-	-	-
B	EDWARDS	694-B	LOW VOLTAGE, PROTRUDING CENTER PUSH BUTTON, SNAP FIT MOUNT - BLACK	-	-	-
W	EDWARDS	692-W	LOW VOLTAGE, RECESSED CENTER PUSH BUTTON, SNAP FIT MOUNT - WHITE	-	-	-
	EDWARDS	730	LOW VOLTAGE, NON ADJUSTABLE COMBINATION BELL AND BUZZER WITH GROUNDED FRAME - SATIN ALUMINUM	-	-	-
T	EDWARDS	598	LOW VOLTAGE TRANSFORMER, HIGH POWER FOR LONG WIRE RUNS OR FOR APPLICATIONS REQUIRING GREATER POWER	EDWARDS	593	TRANSFORMER MOUNTING PLATE, ALLOWS FOR MOUNTING COMPLETELY ENCLOSED IN TWO GANG ELECTRICAL BOX
$ M	WATTSTOPPER	WS-301	PIR WALL SWITCH OCCUPANCY SENSOR 120/277V WHITE	LEVITON	PJ26-W	1-GANG DECORA/GFCI DEVICE DECORA WALLPLATE, MIDWAY SIZE, THERMOPLASTIC NYLON, DEVICE MOUNT - WHITE
~~$ M~~	~~LEVITON~~	~~5657-2W~~	~~15 AMP, 120/277 VOLT, DECORA PLUS ROCKER DOUBLE-THROW CTR-OFF MOMENTARY CONTACT SINGLE-POLE AC QUIET SWITCH, COMMERCIAL SPEC GRADE, SELF-GROUNDING, BACK & SIDE WIRED - WHITE (PROVIDED BY EMS VENDOR)~~	~~LEVITON~~	~~PJ26-W~~	~~1-GANG DECORA/GFCI DEVICE DECORA WALLPLATE, MIDWAY SIZE, THERMOPLASTIC NYLON, DEVICE MOUNT - WHITE~~
O EMS	KELE	LX-24	PASSIVE INFRARED (PIR) OCCUPANCY SENSOR SPECIFICALLY DESIGNED TO INTERFACE WITH BUILDING AUTOMATION SYSTEMS, PENDENT MOUNTED - WHITE (PROVIDED BY EMS VENDOR)	-	-	-
HD	DYSON	AIRBLADE V	HAND DRYER ENGINEERED FOR HYGENIC PERFORMANCE, 120V, 1000W, 79DB, HEPA FILTER - SPRAYED NICKEL	-	-	-
LCP	-	-	SEE E1.00- GC SUPPLIED LIGHTING CONTROL DIAGRAM FOR MORE INFORMATION ON SPECIFICATION OF LIGHTING CONTROL PANEL	-	-	DO WE HAVE A SPEC FOR THIS?

E E1.10 GC PROVIDED ELECTRICAL DEVICE SCHEDULE
SCALE: NONE

HOLLISTER CALIFORNIA

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6301 FITCH PATH
NEW ALBANY, OHIO 43054
614-283-6500



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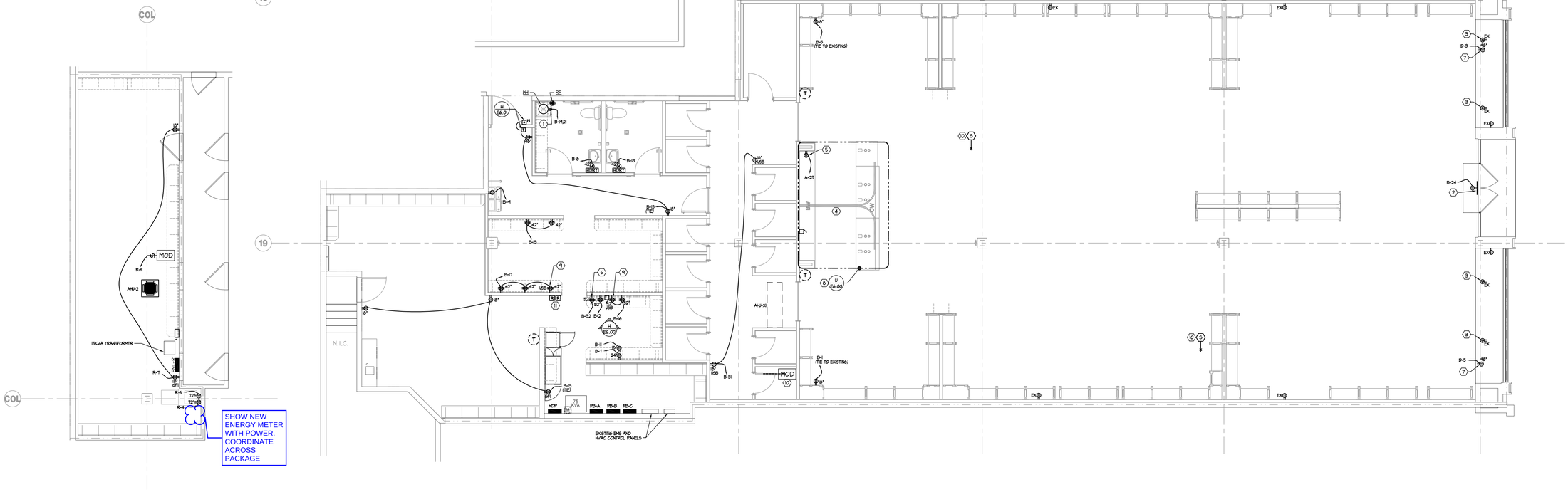
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303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No.:	260348
Drawn By:	LJW

Date	Issue
09.04.2026	CHECKSET
09.25.2026	1 BID SET

ELECTRICAL / LIGHTING SCHEDULES

E1.10



REMOTE STORAGE
POWER PLAN
SCALE: 3/16"=1'-0"

POWER PLAN
SCALE: 3/16"=1'-0"

GENERAL NOTES

A. REFER TO SHEET E0.01 FOR ELECTRICAL SPECIFICATIONS.

B. REFER TO SHEET E0.10 FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS.

C. REFER TO SHEET E1.00 FOR ADDITIONAL INFORMATION ON ELECTRICAL PANELS AND SCHEMATICS.

D. REFER TO SHEET E1.10 FOR ADDITIONAL INFORMATION ON ELECTRICAL DEVICES AND FIXTURES.

E. REFER TO SHEETS E6.00 FOR 6.01 FOR ELECTRICAL DETAILS AND ELEVATIONS (IF NOT NOTED ON PLAN).

F. ALL NON-SALES OUTLETS SHALL BE LABELED ON THE WALLPLATE WITH THE CIRCUIT NUMBER (PRINTED, NOT HAND WRITTEN).

G. ALL ELECTRICAL PANELS SHALL BE LABELED ON THE FRONT OF THE PANEL PER N.E.C.

REMOVE NOTE. NOT APLICABLE IN THIS DESIGN. NOT PICKED UP FROM CHECK SET

CODED NOTES

1. TOGGLE SWITCH TO BE MOUNTED ON WALL PER N.E.C. SWITCH REQUIREMENTS FOR WATER HEATER.
2. 3/4" FIRE RATED PLYWOOD BACKBOARD TO BE MOUNTED BEHIND ACCESS PANEL FOR EAS COMPONENTS AND RECEPTACLE. REFER TO ARCHITECTURAL ELEVATIONS FOR ACCESS PANEL LOCATION.
3. EXISTING RECEPTACLE TO BE MOUNTED ON CEILING OR ON WALL WITHIN 18" OF THE TOP OF THE SHOW WINDOW PER N.E.C. 210.62 AND BE ALL BLACK IN COLOR. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION REGARDING LOCATIONS.
4. THREE 1" CONDUITS FOR DATA CABLING AND ONE 3/4" CONDUIT FOR CASH WRAP RECEPTACLE CIRCUIT. ONE COMMON TRENCH FOR CONDUITS BELOW FLOOR. TRENCHING AND CONDUIT TO BE EXTENDED FROM ACCESS PANEL AT BOTTOM OF CASH WRAP, TO INSIDE NEAREST WALL UP TO CEILING SPACE AND EXTEND TO PANEL AND/ CABLE TRAY. TRENCH AND PATCH AS REQUIRED. GENERAL CONTRACTOR TO VERIFY WITH LANDLORD FLOOR SLAB SAW CUTTING/TRENCHING REQUIREMENTS PRIOR TO BID. FIELD VERIFY EXACT LOCATION AND REQUIREMENTS PRIOR TO ROUGH-IN.
5. RECEPTACLE TO UNDER CABINET LED STRIP FIXTURE, REFER TO DETAIL 1/A9.00.
6. CONTROLLED RECEPTACLES SHALL BE CONTROLLED BY OCCUPANCY SENSOR IN ROOM AND SHALL BE MARKED "CONTROLLED" FROM FACTORY. PROVIDE ADDITIONAL CONTROL DEVICES AS NECESSARY.
7. COORDINATE MOUNTING HEIGHT FOR THE STOREFRONT VIDEO WALL RECEPTACLE WITH SHEET A8.00.
8. REFER TO DETAIL 'U' ON SHEET E6.00 FOR CASHWRAP AND BACKWRAP RECEPTACLE AND DATA LOCATIONS, CIRCUIT DESIGNATION, AND MORE INFORMATION.
9. TWO DUPLEX USB OUTLETS WITH 2-GANG DECORA PLATE, REFER TO E1.10.
10. REPLACE EXISTING EQUIPMENT WITH NEW. CONNECT TO EXISTING CIRCUIT.
11. REMOTE TEST SWITCH FOR DUCT MOUNTED SMOKE DETECTOR. VERIFY EXACT LOCATION AND TYPE REQUIRED WITH LOCAL BUILDING AUTHORITY.

HOLLISTER
CALIFORNIA

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STATE OF TEXAS
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Project # 1712000124

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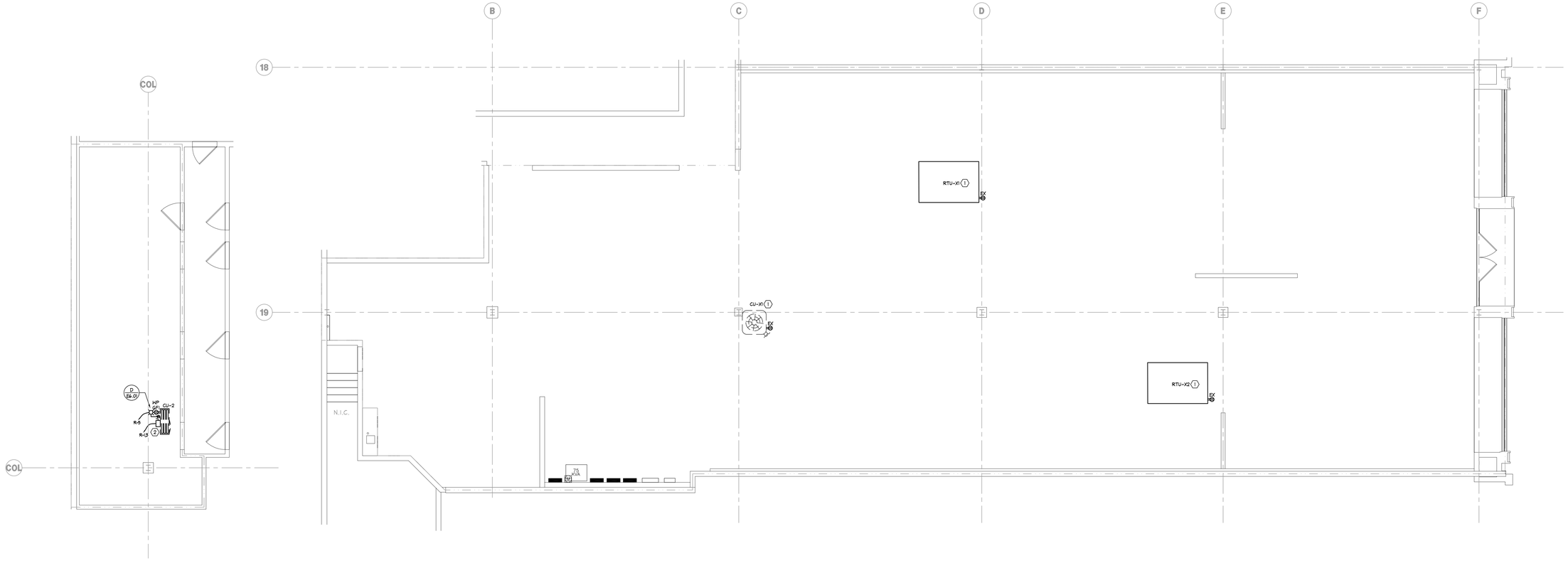
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STORE #31909

Project No.:	260348
Drawn By:	LJW

Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

POWER PLAN

E2.00



REMOTE STORAGE MECHANICAL EQUIPMENT
ELECTRICAL PLAN
SCALE: 3/16"=1'-0"

MECHANICAL EQUIPMENT ELECTRICAL PLAN
SCALE: 3/16"=1'-0"

GENERAL NOTES

A. REFER TO SHEET E0.01 FOR ELECTRICAL SPECIFICATIONS.
B. REFER TO SHEET E0.10 FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS.
C. REFER TO SHEET E1.00 FOR ADDITIONAL INFORMATION ON ELECTRICAL PANELS AND SCHEMATICS.
D. REFER TO SHEET E1.10 FOR ADDITIONAL INFORMATION ON ELECTRICAL DEVICES AND FIXTURES.
E. REFER TO SHEETS E6.00 FOR 6.01 FOR ELECTRICAL DETAILS AND ELEVATIONS (IF NOT NOTED ON PLAN).
F. ALL NON-SALES OUTLETS SHALL BE LABELED ON THE WALLPLATE WITH THE CIRCUIT NUMBER (PRINTED, NOT HAND WRITTEN).
G. ALL ELECTRICAL PANELS SHALL BE LABELED ON THE FRONT OF THE PANEL PER N.E.C.

CODED NOTES

1. EXISTING MECHANICAL EQUIPMENT TO REMAIN.
2. CONTRACTOR PROVIDED AND INSTALLED 40 AMP DISCONNECT SWITCH.

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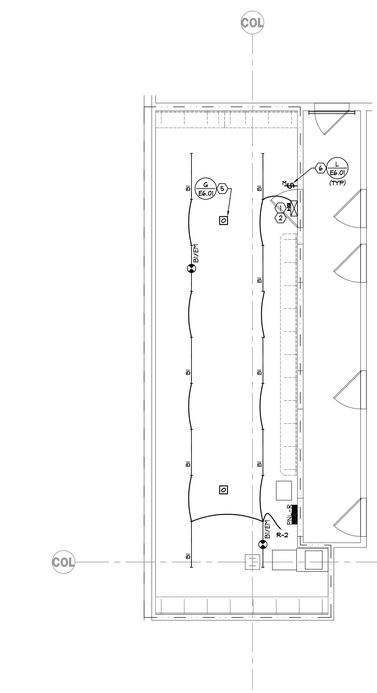
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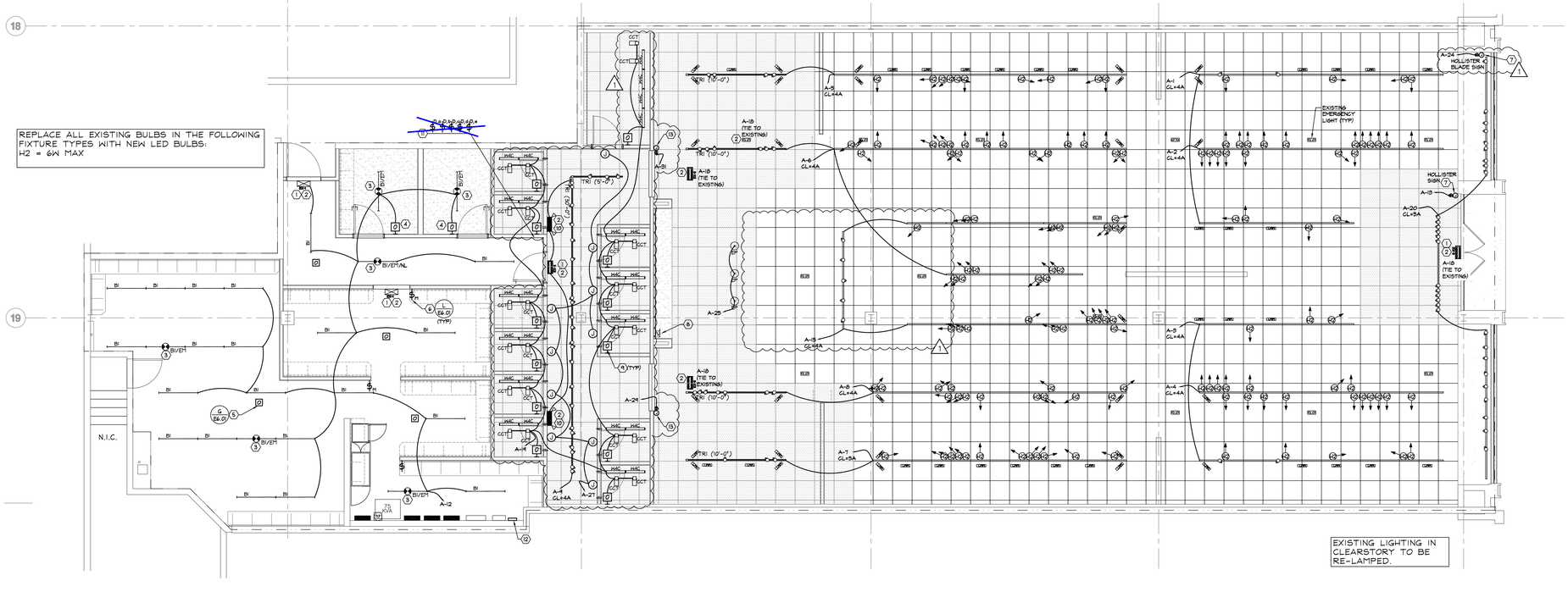
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09.25.2026	BID SET

MECHANICAL EQUIPMENT ELECTRICAL PLAN

E2.01



REMOTE STORAGE
LIGHTING PLAN
SCALE: 3/16"=1'-0"



LIGHTING PLAN
SCALE: 3/16"=1'-0"

GENERAL NOTES

A. REFER TO SHEET E0.01 FOR ELECTRICAL SPECIFICATIONS.
B. REFER TO SHEET E0.10 FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS.
C. REFER TO SHEET E1.00 FOR ADDITIONAL INFORMAION ON ELECTRICAL PANELS AND SCHEMATICS.
D. REFER TO SHEET E1.10 FOR ADDITIONAL INFORMATION ON ELECTRICAL DEVICES AND FIXTURES.
E. REFER TO SHEETS E6.00 FOR 6.01 AND ELECTRICAL DETAILS AND ELEVATIONS (IF NOT NOTED ON PLAN).
F. WIRE ALL EXIT SIGNS AHEAD OF ALL LOCAL SWITCHING, CONTROLS, AND CONTACTORS.
G. MOUNT LIGHTING TRACK END FEEDS ARE TOWARDS BACK OF STORE.

CODED NOTES

1. EXIT SIGN TO BE MOUNTED DIRECTLY ABOVE DOOR TRIM.
2. EXIT SIGN, OR EMERGENCY LIGHT, TO BE WIRED AHEAD OF LIGHTING CONTROLS.
3. EM LIGHT BATTERY TO BE WIRED AHEAD OF LIGHTING CONTROLS AND LOCAL SWITCHING. DRIVER TO BE WIRED THROUGH LOCAL SWITCHING FOR MANUAL ON/OFF CONTROL OF LIGHTS.
4. LIGHT FIXTURE AND EXHAUST FAN TO BE WIRED THROUGH OCCUPANCY SENSOR. OCCUPANCY SENSOR TO BE MOUNTED AT 45" A.F.F TO CENTER OF BOX (COORDINATE TO CUT WAINSCOTING).
5. OCCUPANCY SENSOR FOR AUTOMATIC ON OF LIGHTS.
6. MOMENTARY TOGGLE SWITCH FOR MANUAL OFF CONTROL OF LIGHTS.
7. EXISTING JUNCTION BOX WITH DISCONNECTING MEANS FOR NEW SIGN. REFER TO ARCHITECTURAL DRAWINGS FOR ACCESS PANEL LOCATION.
8. LIGHT FIXTURE TYPE UCL POWERED BY RECEPTACLE. REFER TO POWER PLAN.
9. OCCUPANCY SENSOR TO BE LOCAL CONTROL FOR FITTING ROOMS. OCCUPANCY SENSOR TO BE MOUNTED AT 45" A.F.F TO CENTER OF BOX AND HAVE AUTOMATIC OFF AFTER 30 SECONDS.
10. RELOCATED EMERGENCY LIGHTS CIRCUIT AS SHOWN AHEAD OF LOCAL SWITCHING.
11. PROVIDE DIMMING SWITCHES COMPATIBLE WITH EXISTING AND NEW LIGHT FIXTURES. COORDINATE EXACT LOCATION OF SWITCHBANK WITH HOLLISTER CONSTRUCTION MANAGER PRIOR TO ROUGH-IN.
12. PROVIDE NEW SILVER BULLET CURRENT LIMITING PANEL. INTERCEPT EXISTING/NEW CIRCUIT SHOWN IN THE CURRENT LIMITING PANEL SCHEDULE ON SHEET E1.10 AND ROUTE THROUGH CURRENT LIMITING PANEL. COORDINATE EXACT LOCATION OF CURRENT LIMITING PANEL WITH HOLLISTER CONSTRUCTION MANAGER PRIOR TO ROUGH-IN.
13. JUNCTION BOX WITH DISCONNECTING MEANS FOR NEW SIGN. REFER TO ARCHITECTURAL DRAWINGS FOR ACCESS PANEL LOCATION. 1
8. REFER TO DETAIL 'A' ON SHEET E6.02 FOR DIMMING SCHEMATIC. WIRING FROM CRESTRON DIMMING PANEL. SEE DETAIL 'E' ON SHEET A9.20 FOR ADDITIONAL FITTING ROOM DEVICE LOCATIONS.

REMOVE NOTE

ADD AND SHOW ON FIT ROOMS IN PLAN

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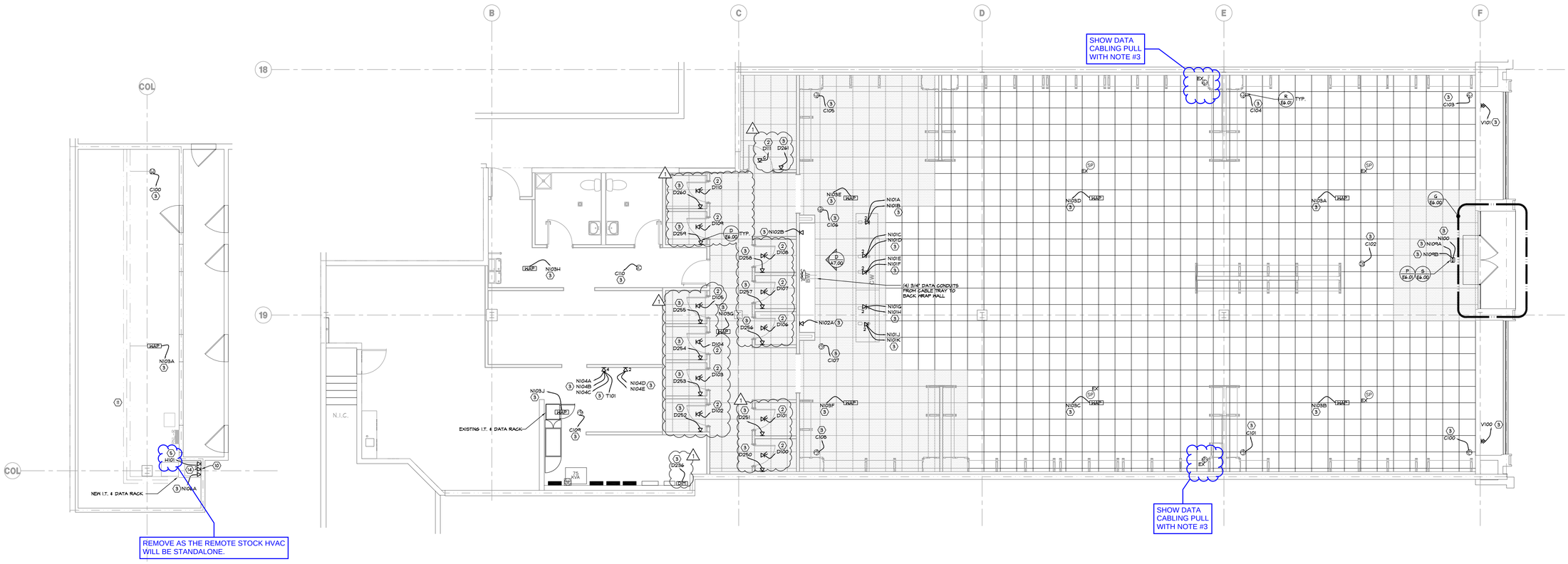
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Project No.:	260348
Drawn By:	LJW

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LIGHTING PLAN

E3.00



REMOTE STORAGE AV/AP/IT
AND CABLE TRAY PLAN
SCALE: 3/16"=1'-0"

AV/AP/IT AND CABLE TRAY PLAN
SCALE: 3/16"=1'-0"

GENERAL NOTES

A. REFER TO SHEET E0.01 FOR ELECTRICAL SPECIFICATIONS.

B. REFER TO SHEET E0.10 FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS.

C. REFER TO SHEET E1.10 FOR ADDITIONAL INFORMATION ON ELECTRICAL DEVICES AND FIXTURES.

D. REFER TO SHEETS E6.00 AND 6.01 FOR ELECTRICAL DETAILS AND ELEVATIONS (IF NOT NOTED ON PLAN).

E. LOW VOLTAGE CABLE LEGEND:

N = IT NETWORK RUN
- 100X = PEOPLE COUNTER
- 101X = CASHWRAP
- 102X = BACKWRAP
- 103X = WAP
- 104X = MANAGER DESK A
- 105X = OUTSIDE DATA CONNECTION
- 106X = ENERGY METER
- 107X = EMS PANEL
- 108X = PHONE
- 109X = MISCELLANEOUS

ADD DIM PANEL IN LEGEND

D = AV DATA RUN
- 10X = FIELD
- 25X = IP UNITS

T = AP WIRING
- 100x = EAS
- 101X = KVM EXTENDER

S = SPEAKER
C = CAMERA
V = VIDEO WALL
H = HVAC WIRING

F. ALL CABLES AT TECH RACK LOCATION TO BE BROUGHT TO THE FLOOR AND LEFT WITH 15-FEET OF SERVICE LOOP

G. ALL CABLES AT LON VOLTAGE FIELD DEVICES TO BE LEFT WITH A SERVICE LOOP THAT REACHES 6' AFF, OR 4' OF SERVICE LOOP AT WALL BOXES/DEVICES

H. ALL CABLES AT THE CASHWRAP TO HAVE 5' SERVICE LOOP OUT OF THE FINAL TERMINATION BOX

I. ALL CABLING TO BE SECURELY LABELED WITH LABEL MAKER WITH FULL CABLE NAME/NUMBER AT BOTH ENDS WHERE IT LEAVES THE WALL/BOX AND AT THE END OF THE CABLE. TOTAL 4 LABELS PER WIRE

(F) CODED NOTES

1. ~~(1) 18-2 - BLACK - BELDEN 6300UE 0101000 - NO SUBSTITUTIONS - TO TECHNOLOGY RACK~~
2. (1) CAT-6 - BLACK - COMMSCOPE - 2071E - 700210230 |2071E BLK C6 4/23 U/UTP W1000 - NO SUBSTITUTIONS - TO DIMMING PANEL RACK
3. (1) CAT-6 - BLACK - COMMSCOPE - 2071E - 700210230 |2071E BLK C6 4/23 U/UTP W1000 - NO SUBSTITUTIONS - TO TECHNOLOGY RACK
4. ~~(1) 18-8 - BLACK - BELDEN 5306FE - FROM HVAC UNIT TO THERMOSTAT~~
5. ~~(1) 24-2 - BLACK BELDEN 9841LW - RS485 CABLE - DAISY CHAINED WIRE PULL FROM OWNER VENDOR PROVIDED/INSTALLED HVAC PANEL BY TECH RACK TO EACH THERMOSTAT.~~
6. ~~(1) 24-2 - BLACK BELDEN 9841LW - RS485 CABLE - FROM EMS PANEL TO HVAC UNIT~~
7. ~~(1) CAT-6 - BLACK - COMMSCOPE - 2071E - 700210222 |2071E BLK C6 4/23 U/UTP W1000 - NO SUBSTITUTIONS - FROM EMS PANEL TO HVAC UNIT~~
8. ~~(1) 18-8 - BLACK - BELDEN 5306FE - FROM EMS PANEL TO THERMOSTAT~~
9. ~~G.C. TO RUN WIRE TO MOMENTARY SWITCHES AND OCCUPANCY SENSORS~~
10. TELEPHONE SERVICE CONDUIT TO BE EXTENDED FROM EXISTING LOCATION AT DEMISING WALL TO TECH RACK. IF THE TELEPHONE SERVICE CONDUIT DOES NOT EXIST, PROVIDE 3/4" CONDUIT FROM LANDLORD DATA SERVICE ROOM TO TECH RACK. VERIFY SYSTEM GROUNDING AND ALL OTHER REQUIREMENTS WITH LOCAL TELEPHONE COMPANY
11. LOW VOLTAGE CABLES TO BE RUN IN CABLE TRAY. CONDUIT TO ATTACH TO CABLE TRAY WITH THREADED EMT CONNECTOR
12. ~~G.C. TO RUN CONDUIT FROM RTU TO CABLE TRAY.~~
13. ~~OWNER PROVIDED CARRIER WI-FI AND BACNET CAPABLE THERMOSTAT. THERMOSTAT TO BE WIRED BACK TO AUTOMATED LOGIC CONTROLS (ALC) CONROLLER (MSRE). PROGRAMMING AND REMOTE SUPPORT PROVIDED BY ALC, COMMISSIONING PROVIDED BY ATLANTA INTEGRATED SERVICES (AIS); WITH WIRE PULLS AND TERMINATION BY THE GENERAL CONTRACTOR. CONTRACTOR TO TERMINATE 18/8 WIRE FROM HVAC UNITS TO TEMPORARY THERMOSTATS AT LOCATION INDICATED ON PLANS IF NOT ALREADY DONE. UNITS MUST BE STARTED UP WITH TEMPORARY THERMOSTATS PRIOR TO OWNER COMMISSIONING VENDOR ARRIVAL. OWNER VENDOR TO REPLACE TEMPORARY THERMOSTATS WITH CARRIER BACNET THERMOSTATS, TERMINATE RS485 CABLE FROM HVAC PANEL TO CARRIER THERMOSTATS, AND AND RETERMINATE 18/8 WIRE ON NEW CARRIER BACNET THERMOSTATS. FIELD VERIFY AND COORDINATE ALL REQUIREMENT'S WITH THE TENANT REPRESENTATIVE AND LANDLORD PRIOR TO BID AND THE START OF WORK.~~
14. DUAL DATA JACK FOR LANDLORD DATA CLOSET / ISP CONNECTION.

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Project No.: 260348
Drawn By: LJW

Date	Issue
09.04.2026	CHECKSET
09.25.2026	1 BID SET

AV/AP/IT AND CABLE TRAY PLAN

E4.00

CASHWRAP AND BACKWRAP CODED NOTES

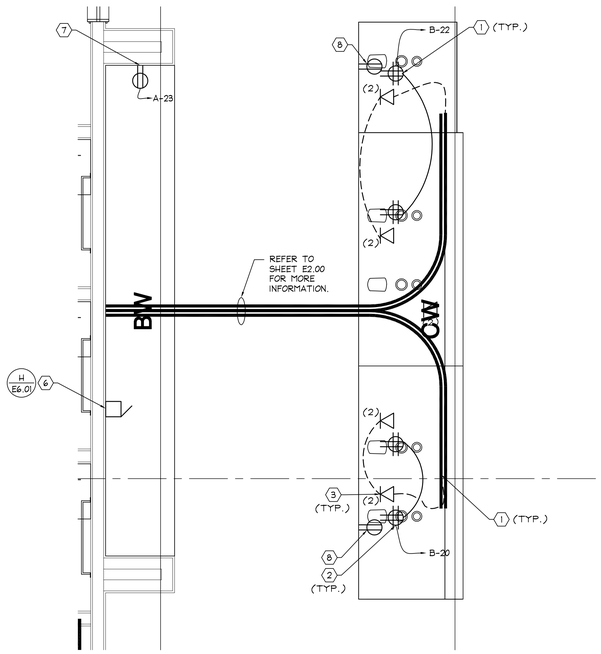
1. FLEX CONDUIT TO RECEPTACLE(S) AND DATA
2. QUAD RECEPTACLE FOR CASHWRAP POS EQUIPMENT IN CABINET.
3. DATA ROUGH-IN OUTLET BOX FOR CASHWRAP POS EQUIPMENT IN CABINET.
4. ~~QUAD RECEPTACLE FOR BACKWRAP. COORDIANTE FINAL LOCATION WITH TENANT PRIOR TO BID.~~
5. ~~DATA ROUGH-IN OUTLET BOX FOR TELEPHONE.~~
6. ROUGH-IN FOR BELL/BUZZER.
7. BACKWRAP UNDER CABINET ACCENT LIGHTS:
   COORDINATE LOCATIONS WITH LOCAL ARCHITECTURAL ELEMENTS AND COORDINATE LOCATION WITH TENANT REPRESENTATIVE PRIOR TO INSTALLATION. HOMERUN CIRCUIT THROUGH CONTACTOR CONTROLLED BY TIMECLOCK. THE COVERPLATE SHALL MATCH THE SURFACE COLOR. REFER TO LIGHTING CONTROL DETAIL ON SHEET E1.01 AND SHEET E3.00 FOR MORE INFORMATION.
8. DUPLEX ON EXTERIOR FACE OF CABINET CENTERED HORIZONTALLY. TENANT GC TO PROVIDE BLACK RECEPTACLE COVERS. HOLD TIGHT TO UNDERSIDE OF CABINET DRAWER, COORDINATE LOCATION IN FIELD.

CASHWRAP AND BACKWRAP GENERAL NOTES

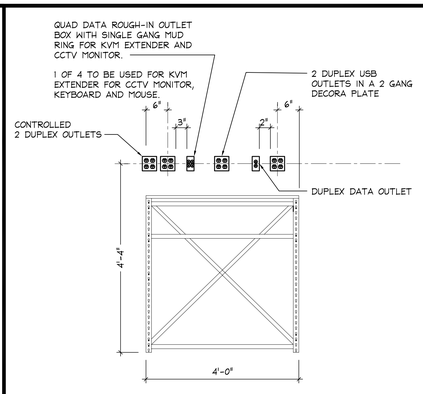
A. INSTALL 3/4" CONDUITS AS SHOWN UNLESS OTHERWISE NOTED. ELIMINATE INTERIM JUNCTION BOXES WHEREVER POSSIBLE. SUPPLY PULL STRING IN EACH CONDUIT. MAKE ALL FINAL ELECTRICAL CONNECTIONS FOR A COMPLETE WORKING SYSTEM.

B. REFER TO SHEET A9.00 FOR THE ARCHITECTURAL ELEVATION.

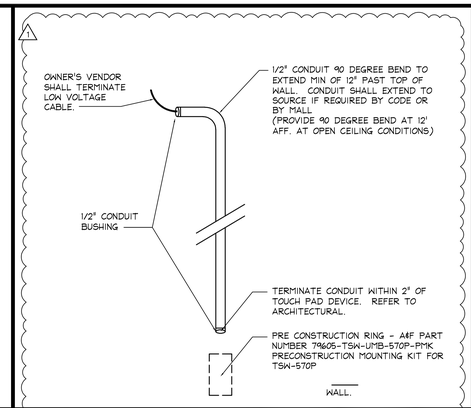
TOP VIEW OF CASHWRAP AND BACKWRAP (NOT TO SCALE)



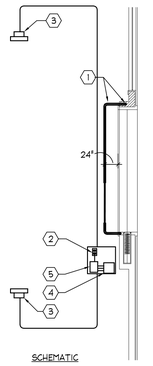
U E2.00 CASHWRAP AND BACKWRAP
SCALE: NONE



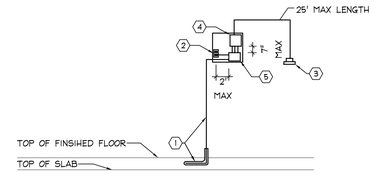
H E2.00 MANAGERS DESK DETAIL
SCALE: NONE



D E2.00 TOUCH PANEL CONDUIT
SCALE: NONE



SCHEMATIC

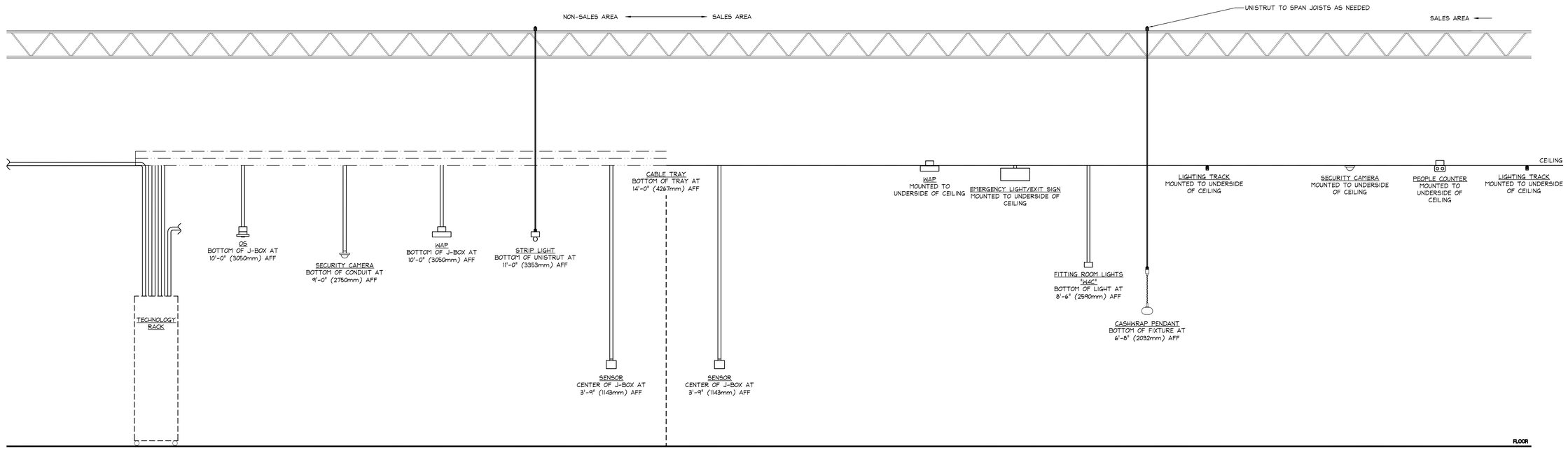


ELEVATION

CODED NOTES

1. 1/2" PVC IN FLOOR AND STUBBED UP INSIDE WALL OR EXTENDED AROUND STOREFRONT OPENING IF REQUIRED BY MALL OR LOCAL CODE (OWNER VENDOR TO INSTALL CABLE)
2. RECEPTACLE MOUNTED ON PLYWOOD
3. OWNER VENDOR TO INSTALL REMOTE ALARMS
4. OWNER VENDOR TO INSTALL POWER PACK
5. OWNER VENDOR TO INSTALL CAP BOARD (AS CLOSE AS POSSIBLE TO POWER PACK)

G E4.00 EAS - 3004 LOOP
SCALE: NONE



IT SCHEMATIC CODED NOTES

1. SEE E6.01 FOR FURTHER DETAILS.

NOTE: INSTALL 3/4" CONDUITS AS SHOWN UNLESS OTHERWISE NOTED. ELIMINATE INTERIM JUNCTION BOXES WHEREVER POSSIBLE. SUPPLY PULL STRING IN EACH CONDUIT. MAKE ALL FINAL ELECTRICAL CONNECTIONS FOR A COMPLETE WORKING SYSTEM.

S E2.00 IT SCHEMATIC SYSTEM
SCALE: NONE

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Project # 1712000124

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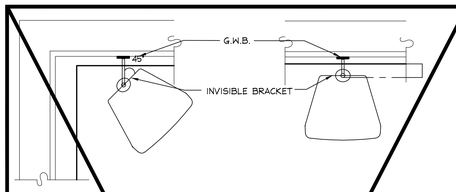
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ELECTRICAL DETAILS

E6.00



LOUDSPEAKER LOCATION - PLAN VIEW - CORNER LOUDSPEAKER LOCATION - PLAN VIEW - SIDE WALL

SUPPORT BLOCK - 355mm(14") x 254mm(3/4") x 355mm(14") PLYWOOD BACKING BEHIND WALL FOR SECURING GIMBAL BRACKET AT ALL LOUDSPEAKER LOCATIONS (IN LOCATIONS WHERE LOCAL CODE DOES NOT ALLOW FOR WOOD IN WALL SPACE, USE METAL PLATE WITH THE APPROPRIATE FASTENERS)

NOTE: SUPPORT BLOCK MUST BE SECURED IN PLACE (PROVIDED AND INSTALLED BY G.C.)

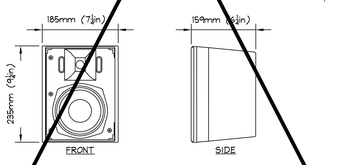
#10 x 38mm WOOD SCREWS (BLACK) (4) PLACES

COORDINATE MOUNTING HEIGHTS WITH DETAIL A-SECTIONS AND E6.10

G.C. TO MOUNT BLOCKING AND BRACKET, AV TECH TO TERMINATE AND MOUNT SPEAKER

JBL MTC-28/25CM INVISIBLE CEILING MOUNT BRACKET

SIDE VIEW



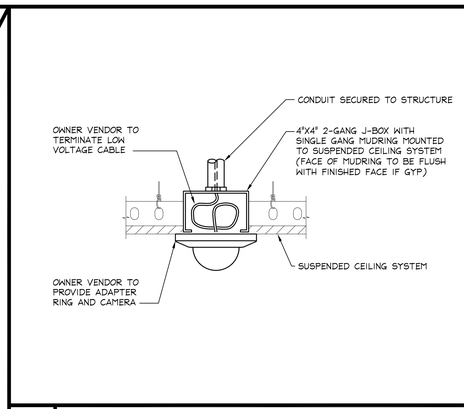
TYPICAL SURFACE MOUNT LOUDSPEAKER PLACEMENT GUIDELINES

LOUDSPEAKERS SHOULD BE INSTALLED AS CLOSE AS POSSIBLE TO LOCATIONS INDICATED ON AUDIO SYSTEM DRAWINGS - MOUNTED TO WALL AS INDICATED.

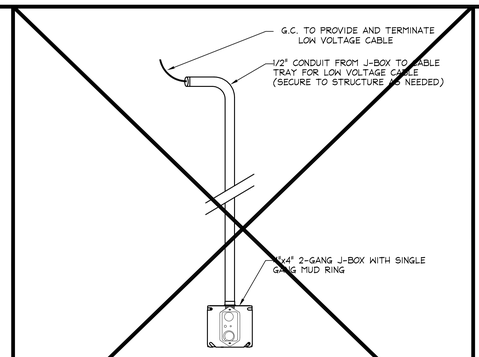
ALL LOW VOLTAGE WIRING TO BE RUN IN CABLE TRAY.

LOUDSPEAKER LOGOS TO BE ORIENTED RIGHT SIDE UP.

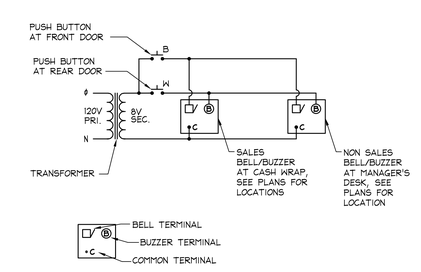
U E4.00 — SPEAKER - SURFACE MOUNT — SCALE: NONE



R E4.00 — CAMERA - FLUSH MOUNT — SCALE: NONE



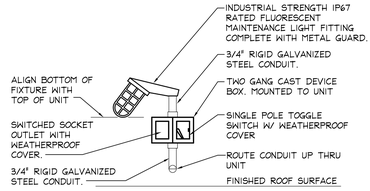
M E4.00 — SENSOR BACKBOX AND CONDUIT — SCALE: NONE



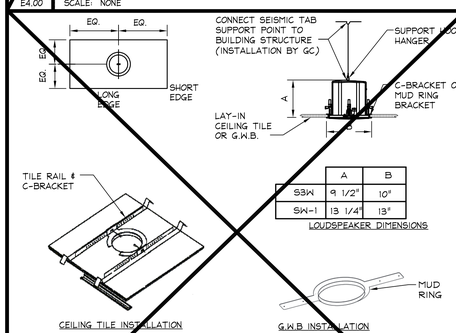
NOTES:
1. ROUTE CONDUIT UP IN WALL OR COLUMN TO CEILING SPACE.
2. RUN WIRE IN 3/4" CONDUIT IF REQUIRED BY CODE, OTHERWISE USE PLENUM RATED WIRE.
3. PARALLEL WIRE BELL/BUZZERS.
4. INSTALL BELL AT HIGH LEVEL.
5. REAR DOOR PUSH BUTTON MOUNTED AT 3'-4" A.F.F. TO CENTER OF DEVICE.
6. TRANSFORMER MUST BE MOUNTED IN 4x4 J-BOX WITH EXTENSION AND COVER AT 8' A.F.F.

H E2.00 — DOOR BELL/BUZZER SCHEMATIC — SCALE: NONE

NOTE:
- COORDINATE EXACT LOCATION OF SOCKET OUTLET AND LIGHT WITH MECH. CONTR. SO AS NOT TO BLOCK ACCESS PANELS



D E2.00 — MAINTENANCE LIGHT/RECEPTACLE — SCALE: NONE



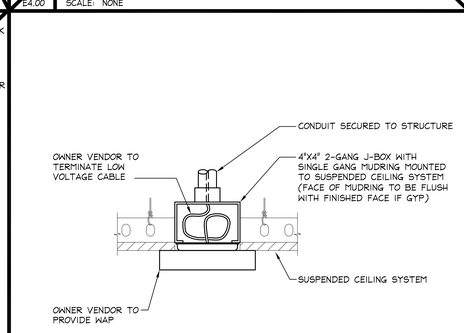
	A	B
SSW	9 1/2"	10"
SW-1	13 1/4"	13"

LOUDSPEAKER DIMENSIONS

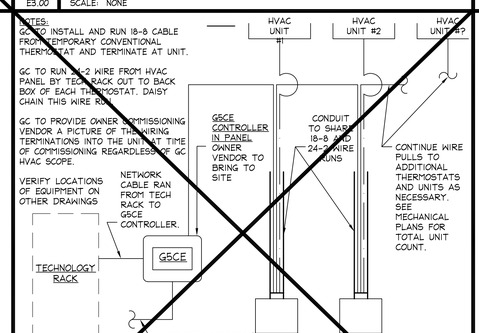
NOTES:
ALL LOUDSPEAKERS TO HAVE C-BRACKET AND TILE RAILS POSITIONED ON TOP OF FINISHED CEILING. DOG EARS CINCHED DOWN AGAINST C-BRACKET.

NOTES:
CONTRACTOR PRE-INSTALLS MUD RINGS AT DESIGNATED SPEAKER LOCATIONS. DOG EARS CINCHED DOWN AGAINST MUD RING. MUD RINGS PROVIDED BY OWNER, SHIPPED TO SITE DURING ROUGH-IN.

T E4.00 — SPEAKER - FLUSH MOUNT — SCALE: NONE



P E4.00 — WAP/PEOPLE COUNTER - FLUSH MOUNT — SCALE: NONE



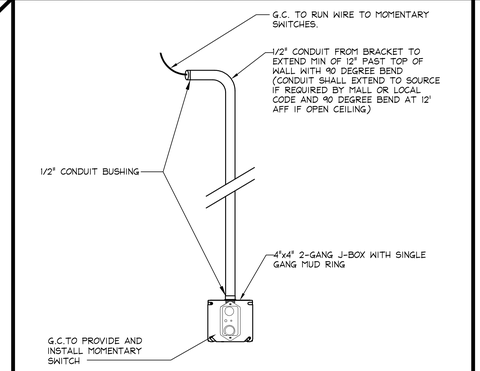
NOTES:
GC TO INSTALL AND RUN 18-8 CABLE FROM TEMPORARY CONVENTIONAL THERMOSTAT AND TERMINATE AT UNIT.

GC TO RUN 24-2 WIRE FROM HVAC PANEL BY TECH RACK OUT TO BACK BOX OF EACH THERMOSTAT. DAISY CHAIN THIS WIRE RUN.

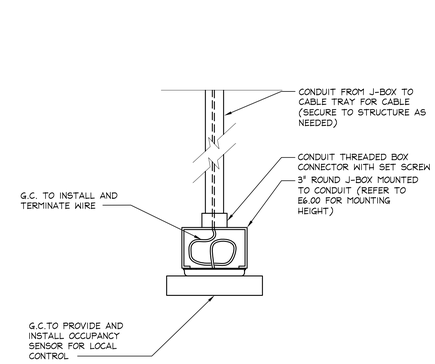
GC TO PROVIDE OWNER COMMISSIONING VENDOR A PICTURE OF THE WIRING TERMINATIONS INTO THE UNIT AT TIME OF COMMISSIONING REGARDLESS OF GC HVAC SCOPE.

VERIFY LOCATIONS OF EQUIPMENT ON OTHER DRAWINGS

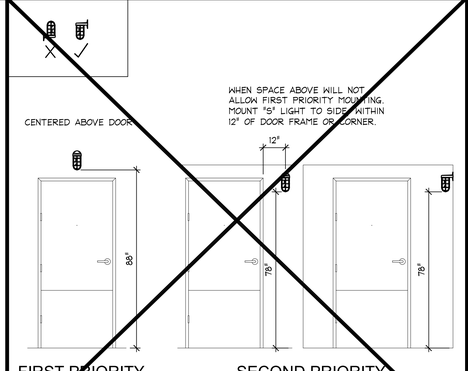
K E4.00 — HVAC CONTROLS WIRING DIAGRAM — SCALE: NONE



L E3.00 — MOMENTARY SWITCH — SCALE: NONE



G E3.00 — OS - PENDANT MOUNT — SCALE: NONE



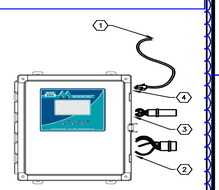
O E3.00 — SERVICE LIGHT - SURFACE MOUNT — SCALE: NONE

S E4.00 — SPEAKER - PENDENT MOUNT — SCALE: NONE

N E4.00 — WAP/PEOPLE COUNTER - PENDANT MOUNT — SCALE: NONE

OWNER'S IT TO PROVIDE, INSTALL, AND TERMINATE CAT-6 NETWORK CABLE FROM ENERGY METER TO IT RACK. PORT AT IT RACK TO BE LABELED "ENERGY METER". GC/EC IS RESPONSIBLE FOR END-TO-END CONNECTIVITY AND COORDINATION WITH IT VENDOR FOR FINAL ACTIVATION.

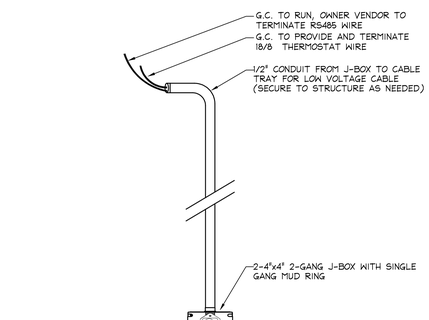
2. INSTALLER TO DRILL HOLE IN SIDE OF ENERGY METER FOR CONDUIT CARRYING LINE VOLTAGE POWER. SEE POWER RISER DIAGRAM FOR CONDUIT SIZE. CONDUIT SHALL BE FASTENED INTO METER BOX USING THREADED LOCK NUT
3. INSTALLER TO DRILL HOLE IN SIDE OF ENERGY METER AND INSTALL 1/2" CONDUIT CARRYING LOW VOLTAGE LINES FOR CURRENT SENSORS. CONDUIT SHALL BE FASTENED INTO METER BOX USING THREADED LOCK NUT
4. INSTALLER TO DRILL 1/2" HOLE IN SIDE OF ENERGY METER BOX FITTED WITH RUBBER GROMMET FOR CAT-6 NETWORK CONNECTION CABLE.



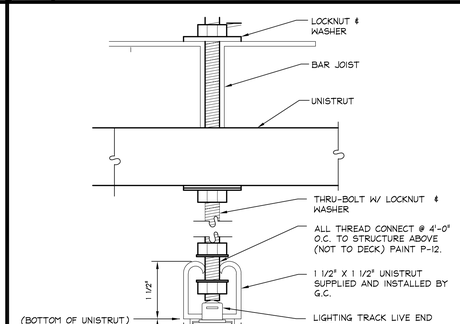
J E1.00 — ENERGY METER CONDUIT — SCALE: NONE

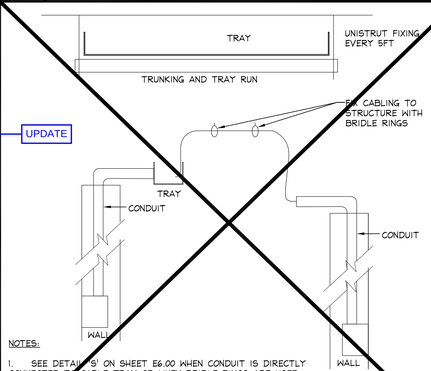
EC/GC ARE REQUIRED TO CALL A&F'S DESIGNATED CHECK OUT PHONE NUMBER AFTER INSTILLATION OS COMPLETE TO CONFIRM REMOTE CONNECTION TO OUR SERVER AND THAT ALL READINGS ARE CORRECT.
SYSTEMS GROUP TECHNOLOGIES MAIN OFFICE: 567-208-4334 (ASK FO RMIKE YAMMINE OR ADAM BUSEY AND STSTE YOU ARE CALLING ABOUT AN A&F OR HCO ENERGY METER CHECKOUT.
BE READY TO GIVE THEM THE 5-DIGIT STORE NUMBER (LOCATED ON THE DRAWING SET)
ADAM BUSEY CELL PHONE: 419-672-8295 (IF MIKE AND ADAM ARE OUT OF THE OFFICE)

F E4.00 — TEMPERATURE SENSOR BACKBOX AND CONDUIT — SCALE: NONE



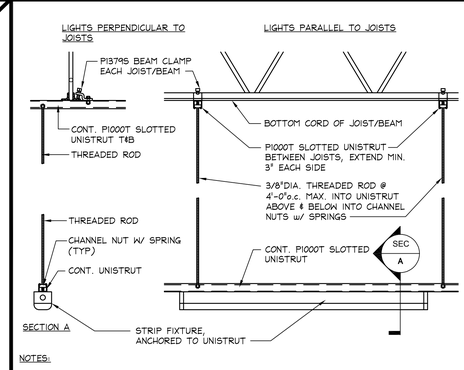
B E3.00 — LIGHTING TRACK - SUSPENDED — SCALE: NONE





NOTES:
1. SEE DETAIL 5' ON SHEET E6.00 WHEN CONDUIT IS DIRECTLY CONNECTED TO CABLE TRAY OR WHEN BRIDLE RINGS ARE USED.
2. ALL LOW VOLTAGE WIRING TO BE IN CONDUIT FROM TRAY TO BOX.

E E4.00 — CABLE TRAY - SUSPENDED — SCALE: NONE



NOTES:
1. UNISTRUT, THREADED ROD AND CONNECTIONS SUPPLIED AND INSTALLED BY CONTRACTOR.

A E3.00 — UNIVERSAL FIXTURE MOUNT — SCALE: NONE

HOLLISTER CALIFORNIA

ABERCROMBIE & FITCH CO.
6301 FITCH PATH
NEW ALBANY, OHIO 43054
614-283-6500

STATE OF TEXAS
BRADLEY AUSTIN WILT
148427
09/25/2026
LICENSED PROFESSIONAL ENGINEER

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Project #: 1012020.24

Dialectic, Inc.
310 W 20th Street, Suite 100
Kansas City, MO 64108
Texas Certificate of Authorization Number: F-3287

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F 816-997-6602
DialecticEng.com

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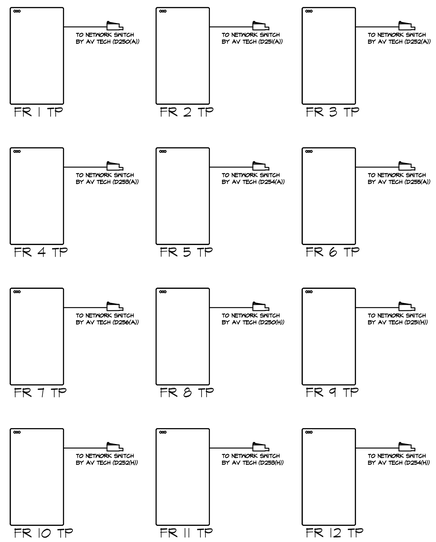
MEMORIAL CITY MALL
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

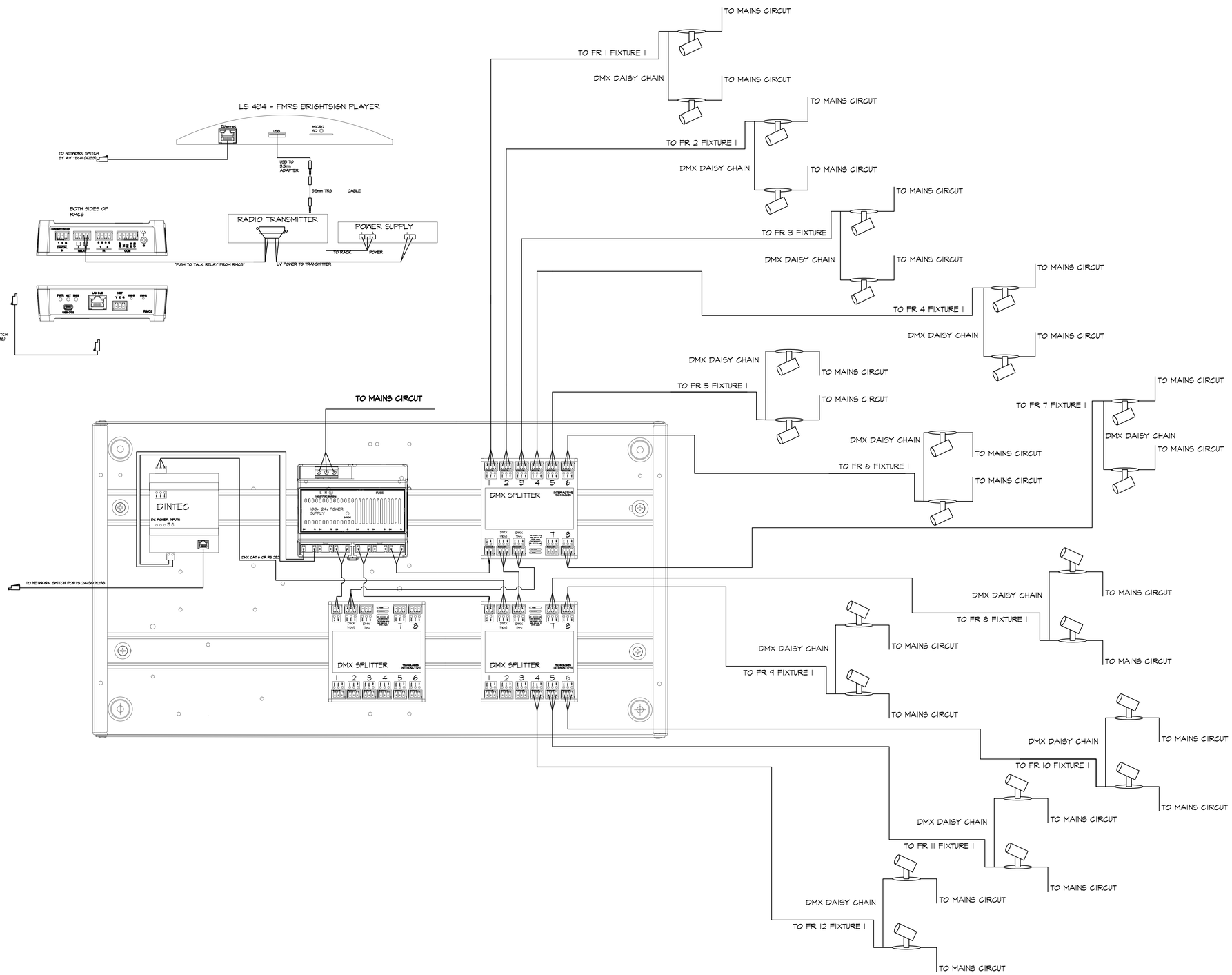
Project No.: 260348
Drawn By: LJW

Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

ELECTRICAL DETAILS

E6.01





S
E3.00

DIMMING SCHEMATIC

SCALE: NONE

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6301 FITCH PATH
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614-283-6500

STATE OF TEXAS
BRADLEY AUSTIN WILT
148427
09/25/2026
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Project # 1712000124

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MEMORIAL CITY MALL

303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No.:	260348
Drawn By:	LJW

Date	Issue
09.04.2026	CHECKSET
09.25.2026	1 BID SET

1 ELECTRICAL DETAILS

E6.02

COMcheck Software Version COMcheckWeb

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: Hollister-Houston, TX
Project Type: Alteration

Construction Site:
303 Memorial City Way Space #257
Houston, Texas 31909

Owner/Agent:
Dialectic Engineering
310 W 20th St. Suite #100
Kansas City, Missouri 64108
8169979601

Designer/Contractor:

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-Sales (Retail:Sales Area)	4374	1.05	4593
Allowance: Furniture, clothing, cosmetics highlighting / Fix. ID: Track	730 (a)	1.05	600 (b)
Allowance: Furniture, clothing, cosmetics highlighting / Fix. ID: Track	730 (a)	1.05	480 (b)
Allowance: Furniture, clothing, cosmetics highlighting / Fix. ID: Track	730 (a)	1.05	480 (b)
Allowance: Furniture, clothing, cosmetics highlighting / Fix. ID: Track	730 (a)	1.05	480 (b)
Allowance: Furniture, clothing, cosmetics highlighting / Fix. ID: Track	730 (a)	1.05	480 (b)
Allowance: Furniture, clothing, cosmetics highlighting / Fix. ID: Track	730 (a)	1.05	600 (b)
2-Fitting Room (Retail:Dressing/Fitting Room)	368	0.51	188
3-Electrical Room (Common Space Types:Electrical/Mechanical)	122	0.43	52
4-Restrooms (Common Space Types:Restrooms)	137	0.63	86
5-Remote Storage M6 (Common Space Types:Storage >=50 - <=1000 sq.ft.)	556	0.38	211
6-Corridor (Common Space Types:Corridor/Transition <8 ft wide)	173	0.41	71
7-BOH (Common Space Types:Storage >=50 - <=1000 sq.ft.)	862	0.38	328
		Total Allowed Watts =	8649

(a) Area claimed may exceed total floor area when Retail Merchandise Highlighting allowance(s) are specified.
(b) Allowance is (B x C) or the actual wattage of the fixtures given in Proposed Power section, whichever is less.

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
Sales (Retail: Sales Area, 4374 sq.ft.)				
Track Lighting: Track: Show Window: Wattage based on current limiting device capacity	0	0	600	600
Track Lighting: Track: Display Front 1: Wattage based on current limiting device capacity	0	0	480	480
Track Lighting: Track: General Sales Front 1: Wattage based on current limiting device capacity	0	0	480	480
Track Lighting: Track: General Sales Front 2: Wattage based on current limiting device capacity	0	0	480	480
LED: EP: Pendant: Other:	1	3	60	180
Track Lighting: Track: Display Front 2: Wattage based on current limiting device capacity	0	0	480	480
Track Lighting: Track: General Sales Rear 1: Wattage based on current limiting device capacity	0	0	480	480
Track Lighting: Track: General Sales Rear 2: Wattage based on current limiting device capacity	0	0	480	480
Track Lighting: Track: Display Rear 1: Wattage based on current limiting device capacity	0	0	480	480
Track Lighting: Track: Display Rear 2: Wattage based on current limiting device capacity	0	0	480	480
Track Lighting: Track: Display Rear 3: Wattage based on current limiting device capacity	0	0	600	600
Track Lighting: Track: Fitting Rm Hall: Wattage based on current limiting device capacity	0	0	480	480
LED: Z3: Existing in Clear Story: Other:	1	9	39	351
LED: U: Existing in Clear Story: Other:	1	1	28	28
Fitting Room (Retail: Dressing/Fitting Room, 368 sq.ft.)				
Track Lighting: Track: Fitting Rooms: Wattage based on total luminaires	0	0	840	840
LED: WAC: Linear LED: Other:	1	24	16	384
Electrical Room (Common Space Types: Electrical/Mechanical, 122 sq.ft.)				
LED: B: 4ft Strip: Other:	2	20	21	420
Restrooms (Common Space Types: Restrooms, 137 sq.ft.)				
LED: B: 4ft Strip: Other:	1	2	21	42
Remote Storage M6 (Common Space Types: Storage >=50 - <=1000 sq.ft., 556 sq.ft.)				
LED: B: 4ft Strip: Other:	1	10	21	210
Corridor (Common Space Types: Corridor/Transition <8 ft wide, 173 sq.ft.)				
LED: B: 4ft Strip: Other:	1	3	21	63
BOH (Common Space Types: Storage >=50 - <=1000 sq.ft., 862 sq.ft.)				
LED: B: 4ft Strip: Other:	1	20	21	420
			Total Proposed Watts =	8458

Interior Lighting PASSES

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2021 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Lisa J Wyant-Electrical Designer — Name - Title
Lisa J Wyant — Signature
9/21/2026 — Date

COMcheck Software Version COMcheckWeb

Inspection Checklist

Energy Code: 2021 IECC

Requirements: 100.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) | 2 Medium Impact (Tier 2) | 3 Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3.1 [EL22][1]	Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.1, C405.2.1.1 [EL18][1]	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, corridors, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.1.2 [EL19][1]	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more within 20 minutes of when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor. Lights not turned off by occupant sensors is done so by time-switch.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.1.3 [EL20][1]	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) general lighting in each zone permitted to turn on upon occupancy in control zone, 3) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 4) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.2, C405.2.2.1 [EL21][2]	Each area not served by occupancy sensors (per C405.2.1.1) have time-switch controls and functions detailed in sections C405.2.2.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

1 High Impact (Tier 1) | 2 Medium Impact (Tier 2) | 3 Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.4, C405.2.4.1, C405.2.4.2 [EL23][2]	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.5 [EL27][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.7 [EL26][2]	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.8 [EL27][2]	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.9.1, C405.9.2 [EL28][2]	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.10 [EL29][2]	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.1.1 [EL30][2]	At least 90% of dwelling unit permanently installed lighting shall have lamp efficacy >= 65 lm/W or luminaires with efficacy >= 45 lm/W or comply with C405.2.4 or C405.3.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.11, C405.11.1 [EL31][2]	50% of 15/20 amp receptacles installed in enclosed offices, conference rooms, copy rooms, break rooms, classrooms and workstations and > 25% of branch circuit feeders for modular furniture will have automatic receptacle control in accordance with C405.11.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1) | 2 Medium Impact (Tier 2) | 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.2 [FI17][3]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.1.1 [FI57][1]	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.5 [FI16][3]	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.3 [FI33][1]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) | 2 Medium Impact (Tier 2) | 3 Low Impact (Tier 3)

HOLLISTER
CALIFORNIA

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6301 FITCH PATH
NEW ALBANY, OHIO 43054
614-283-6500

STATE OF TEXAS
BRADLEY AUSTIN WILT
148427
09/25/2026
LICENSED PROFESSIONAL ENGINEER

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Project # 1712000124

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Project No.: 260348
Drawn By: LJW

Date	Issue
09.04.2026	CHECKSET
09.25.2026	1 BID SET

ENERGY COMPLIANCE

E7.00



REMOTE STORAGE FIRE
SPRINKLER HEAD PLAN
SCALE: 3/16"=1'-0"

FIRE SPRINKLER HEAD PLAN
SCALE: 3/16"=1'-0"

FIRE PROTECTION GENERAL NOTES

A. EQUIPMENT AND INSTALLATION

1. SPRINKLER HEADS:
   - A. ALL SPRINKLER HEADS SHALL BE NEW (HEADS IN EXISTING STORES ARE NOT TO BE REPLACED UNLESS NOTED OTHERWISE). HEADS SHALL BE U.L., F.M. LISTED AND APPROVED AUTOMATIC SPRAY TYPE AS MANUFACTURED BY CENTRAL SPRINKLER CO., GLOBE, GRINNELL, RELIABLE, STAR, OR VIKING.
   - B. ALL SPRINKLER HEADS SHALL BE RATED FOR 165°F UNLESS INDICATED OTHERWISE ON DRAWINGS OR REQUIRED BY LOCAL CODES.
   - C. ALL SPRINKLER HEADS ARE TO HAVE A FACTORY APPLIED COLOR FINISH. VERIFY HEAD TYPES AND COLORS WITH BRAND CONSTRUCTION MANAGER AND SUBMIT WITH SPRINKLER DRAWINGS FOR PERMIT.
   - D. SPRINKLER HEAD TYPES SHALL BE AS FOLLOWS:
     1. "SALES" AREA SPRINKLER HEADS ARE TO BE FLAT OR MATTE BLACK UPRIGHT PENDANT HEADS WITH FLAT OR MATTE BLACK ESCUTCHEON. BASED ON RELIABLE AND ALTERNATE MAY BE VIKING OR GRINNELL AND MUST BE APPROVED BY THE OWNER'S CONSTRUCTION MANAGER PRIOR TO ORDERING AND ANY INSTALLATIONS. ALL EXPOSED PIPING SHALL BE PAINTED BLACK IN COLOR AND MUST BE COORDINATED WITH ALL TRADES.
     2. "NON-SALES" AREA SPRINKLER HEADS ARE TO BE WHITE UPRIGHT PENDANT HEADS WITH WHITE ESCUTCHEON. BASED ON RELIABLE AND ALTERNATE MAY BE VIKING OR GRINNELL.
     3. "NON-SALES" OFFICE AND LAVATORY AREA SPRINKLER HEADS ARE TO BE SEMI RECESSED TYPE WITH WHITE ESCUTCHEON.
     4. "MALL BULKHEAD" AREA SPRINKLER HEADS ARE TO BE FULLY CONCEALED ADJUSTABLE SCREN TYPE WITH WHITE COVER PLATE.
2. PIPING:
   - A. SCHEDULE 40, BLACK STEEL PIPE, ASTM A-53 FOR FERROUS PIPING, WELDED AND SEAMLESS, ANSI B-36-10-70 FOR WROUGHT STEEL PIPE.
   - B. CAST IRON OR MALLEABLE IRON SCREWED FITTINGS FOR PIPES 2 INCHES AND SMALLER. SCREWED OR CAST IRON FLANGED JOINTS FOR PIPES LARGER THAN 2 INCHES.
   - C. GALVANIZED OR BLACK MALLEABLE IRON WITH BRASS SEAT SCREWED UNIONS FOR PIPES 2 INCHES AND SMALLER.
   - D. VICTUALIC TYPE COUPLINGS ARE ACCEPTABLE, WHERE APPROVED BY CODE AND THE LANDLORD.
   - E. ALL SPRINKLER PIPING THAT IS EXPOSED SHALL BE CLEANED & PRIMED FOR PAINT APPLICATION.
3. A FIRE PROTECTION SYSTEM TAP IS NORMALLY FURNISHED BY THE LANDLORD. VERIFY IN FIELD PRIOR TO BID. SPRINKLER SPACING SHALL NOT EXCEED 130 SQ. FT. IN "SALES" AREAS AND 100 SQ. FT. IN "STOCK" AREAS. COMPLY WITH LANDLORD'S DESIGN CRITERIA AND LOCAL CODES IF MORE STRINGENT. PIPE SIZING SHALL BE BASED ON NFPA 13 ORDINARY HAZARD CLASSIFICATION.
4. ALL SPRINKLER LINES SHALL BE INSTALLED CONCEALED, AVOIDING INTERFERENCE WITH LIGHTS, DUCTS, PIPES, STORAGE DECK, ETC. FIRE PROTECTION CONTRACTOR SHALL PREPARE COORDINATED SHOP DRAWINGS INDICATING THE LOCATIONS OF ALL SPRINKLER HEADS, SPRINKLER LINES, LIGHTS, DIFFUSERS, GRILLES AND REGISTERS PRIOR TO INSTALLATION.
5. WHERE POSSIBLE, REWORK THE EXISTING SPRINKLER SYSTEM TO MEET THE NEW REQUIREMENTS OF THIS DESIGN. RELOCATE ALL MAINS AND BRANCHES INTERFERING WITH CEILING HEIGHTS, EQUIPMENT, AND MAJOR COMPONENTS INCLUSIVE OF ADJACENT TENANTS AND MALL COMMON AREAS. REMOVE ALL UNUSED PIPING.
6. FURNISH AND INSTALL A VALVED TEST CONNECTION IN AN ACCESSIBLE LOCATION FOR THE SPRINKLER SYSTEM AS REQUIRED OR REQUESTED BY THE MALL, LOCAL INSPECTOR, OR INSURANCE CARRIER. COORDINATE LOCATION WITH LOCAL FIRE PROTECTION OFFICIAL PRIOR TO ROUGH IN.
7. PROPERLY COMPLETED AND SIGNED "SPRINKLER CONTRACTOR'S MATERIAL AND TEST CERTIFICATES" SHALL BE FURNISHED TO THE LANDLORD, AUTHORITIES HAVING JURISDICTION, AND HOLLISTER'S CONSTRUCTION MANAGER.
8. SPRINKLER HEADS LOCATED IN CEILINGS OR WALLS BELOW 8'-0" ABOVE THE FINISHED FLOOR AND ABOVE STORAGE DECKS ARE TO BE CONCEALED.
9. FURNISH AND INSTALL 10 LB. TYPE "ABC" FIRE EXTINGUISHERS, WITH CABINETS IF REQUIRED, AND AT LEAST A "2A10BC" RATING. LOCATIONS TO BE ESTABLISHED IN THE FIELD BY THE LOCAL FIRE PROTECTION OFFICIAL. MAXIMUM TRAVEL DISTANCE BETWEEN EXTINGUISHERS SHALL BE 75 FEET OR LESS AS REQUIRED BY LOCAL CODES.
10. SPRINKLER CONTRACTOR IS RESPONSIBLE FOR THE ENTIRE SPRINKLER SYSTEMS. WATER TIGHT INTEGRITY UNTIL SUCH TIME AS HOLLISTER OCCUPIES THE FACILITY. ANY WATER DAMAGE PRIOR TO THIS TIME SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
11. PROVIDE SPRINKLER HEADS (UP RIGHT) ABOVE THE CEILING IN CONCEALED SPACES HAVING EXPOSED COMBUSTIBLE CONSTRUCTION.
12. ALL FIRE PROTECTION EQUIPMENT ESSENTIAL TO SUCCESSFUL SYSTEM OPERATION SHALL BE UL LISTED FOR FIRE PROTECTION SERVICE.
13. ALL VALVES CONTROLLING WATER SUPPLIES SHALL BE PROVIDED WITH TAMPER SWITCHES (SEE NOTE E).
14. THE FIRE SPRINKLER SYSTEM SHALL BE SUPERVISED BY AN APPROVED CENTRAL STATION, PROPRIETARY STATION, OR REMOTE STATION MONITORING SYSTEM IN ACCORDANCE WITH N.F.P.A. 72, AND LOCAL AUTHORITY HAVING JURISDICTION.
15. THE FIRE PROTECTION CONTRACTOR SHALL COORDINATE WIRING OF ALL ELECTRICAL FIRE PROTECTION DEVICES AND EQUIPMENT WITH THE ELECTRICAL AND/OR FIRE ALARM CONTRACTOR. ALL FIRE ALARM WIRING BY ELECTRICAL CONTRACTOR. ALL DEVICES SHALL BE FURNISHED AND INSTALLED BY THE FIRE PROTECTION CONTRACTOR.
16. THE FIRE PROTECTION CONTRACTOR SHALL COORDINATE THE LAYOUT OF THE FIRE PROTECTION SYSTEM WITH ALL TRADES AND ARCHITECTURAL REFELECTED CEILING PLAN PRIOR TO INSTALLATION.
17. THE FIRE PROTECTION CONTRACTOR SHALL CENTER (WITHIN 1") ALL PENDENT SPRINKLER HEADS INSTALLLED IN ACOUSTICAL LAY-IN CEILING TILES. ALL SPRINKLER HEADS IN CEILINGS SHALL BE SYMMETRICAL WITH LIGHTING AND AIR DEVICES. SPRINKLER HEADS ARE REQUIRED ABOVE THE CEILING IN ALL AREAS OF CONCEALED SPACES.
18. A LANDLORD APPROVED FIRE PROTECTION CONTRACTOR SHALL BE EMPLOYED BY THE MECHANICAL CONTRACTOR TO PERFORM ALL SPRINKLER SYSTEM MODIFICATIONS.
19. PROVIDE O.S. & Y. VALVE, FLOW SWITCH AND TAMPER SWITCH AT CONNECTION(S) TO LANDLORD'S SPRINKLER MAIN.
20. WHENEVER POSSIBLE ALIGN SPRINKLER HEADS WITH LIGHT FIXTURES, AIR DEVICES AND TO CENTER OF TILE. THE PATTERN IN EACH ROOM SHALL BE CONSIDERED INDEPENDENT OF OTHER ROOMS.
21. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR CEILING HEIGHTS AND GENERAL COORDINATION.
22. ROUTE ALL PIPING AROUND ELECTRICAL PANELS. COORDINATE WITH ELECTRICAL CONTRACTOR.
23. PROVIDE SPRINKLER HEADS GUARDS IN ALL LOCATIONS SUBJECT TO DAMAGE.
24. THE INTENT OF THIS PLAN IS TO INDICATE THE GENERAL LAYOUT OF THE SPRINKLER HEAD LOCATIONS. FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR THE EXACT LOCATION OF ALL SPRINKLER HEADS AND TYPES OF HEADS USED.
25. SPRINKLER PIPES FEEDING COVERAGE BELOW STORAGE DECKS ARE TO BE FED BY ROUTHING LINES DOWN FULL HEIGHT WALLS AROUND PERIMETER OF DECK. FULL OPEN CLEARANCE OF STORAGE DECK IS TO BE MAINTAINED.
26. HYDRAULIC DESIGN CRITERIA FOR LIGHT HAZARD AREAS:

DENSITY:	0.10 GPM/SQ.FT
DESIGN AREA:	MOST DEMANDING 1500 SQ. FT.
MAX SPRINKLER COVERAGE:	225 SQ. FT./HEAD (130 SQ. FT. FOR DRY SYSTEM)
HOSE DEMAND:	100 GPM
DURATION:	30 MINUTES

27. ORDINARY HAZARD (GROUP 2) AREAS:

DENSITY:	0.20 GPM/SQ.FT
DESIGN AREA:	MOST DEMANDING 1500 SQ. FT.
MAX SPRINKLER COVERAGE:	130 SQ. FT./HEAD
HOSE DEMAND:	250 GPM
DURATION:	60 MINUTES

28. WHEN COMPLETED, THE ENTIRE FIRE PROTECTION PIPING SYSTEM SHALL BE HYDROSTATICALLY TESTED AS REQUIRED BY THE RULES AND REGULATIONS OF THE AUTHORITIES HAVING JURISDICTION. SYSTEM SHALL SHOW NO SIGNS OF LEAKAGE OR OTHER DEFECTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO THE WORK OF THE OTHER CONTRACTORS OR TO THE BUILDING, OR TO ITS CONTENTS, PEOPLE, ETC., CAUSED BY LEAKS IN ANY OF THE EQUIPMENT INSTALLED BY HIM. ALL REPAIRS OR REPLACEMENT OF DAMAGES SHALL BE AT THE CONTRACTOR'S EXPENSE.

FIRE PROTECTION PLAN NOTES

1. GENERAL: PROVIDE AUTOMATIC WET PIPE SPRINKLER SYSTEM THROUGHOUT ENTIRE BUILDING, UNLESS OTHERWISE NOTED OR INDICATED. COVERAGE SHALL BE FOR LIGHT HAZARD OCCUPANCY.
2. GENERAL: ROUTE FIRE PROTECTION PIPING AS REQUIRED TO AVOID NEW AND EXISTING PLUMBING, HVAC, AND ELECTRICAL.
3. PROVIDE SHIELDS, TRAYS, AND OTHER PROTECTION IN ACCORDANCE WITH NFPA REQUIREMENTS FOR THIS AREA.

LEGEND

SYMBOL	DESCRIPTION
W	SEMI RECESSED SPRINKLER HEAD (WHITE)
	CONCEALED SPRINKLER HEAD WITH BLACK FINISH
	CONCEALED SPRINKLER HEAD WITH WHITE FINISH
B	SEMI RECESSED SPRINKLER HEAD (BLACK)
U	UPRIGHT SPRINKLER HEAD
	PENDANT SPRINKLER HEAD
	SIDEWALL SEMI-RECESSED SPRINKLER HEAD
E	EXISTING SPRINKLER HEAD

HOLLISTER CALIFORNIA

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614-283-6500

STATE OF TEXAS
ERIC MICHAEL LOVICH
161877
09/25/2026
LICENSED PROFESSIONAL ENGINEER

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Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

FIRE SPRINKLER HEAD PLAN

FP2.00

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SECTION 23 0523 - GENERAL-DUTY VALVES FOR HVAC PIPING

PART 1 GENERAL
1.01 SECTION INCLUDES
A. APPLICATIONS.
B. GENERAL REQUIREMENTS.
C. BALL VALVES.
D. CHECK VALVES.
1.02 DELIVERY, STORAGE, AND HANDLING
A. USE THE FOLLOWING PRECAUTIONS DURING STORAGE:
1. MAINTAIN VALVE END PROTECTION AND PROTECT FLANGES AND SPECIALTIES FROM DIRT.
a. PROVIDE TEMPORARY INLET AND OUTLET CAPS.
b. MAINTAIN CAPS IN PLACE UNTIL INSTALLATION.
PART 2 PRODUCTS
2.01 APPLICATIONS
A. SEE DRAWINGS FOR SPECIFIC VALVE LOCATIONS.
B. REQUIRED VALVE END CONNECTIONS FOR NON-WAFER TYPES:
1. STEEL PIPE:
a. 2 NPS (50 DN) AND SMALLER: THREADED ENDS.
b. 2-1/2 NPS (65 DN) AND LARGER: GROOVED ENDS.
2. COPPER TUBE:
a. 2 NPS (50 DN) AND SMALLER: THREADED ENDS (EXCEPTION: SOLDER-JOINT VALVE-ENDS).
b. 2-1/2 NPS (65 DN) AND LARGER: GROOVED ENDS.
C. CHILLED WATER VALVES:
1. 2 NPS (50 DN) AND SMALLER, BRASS, BRONZE VALVES:
a. THREADED ENDS.
b. BALL: FULL PORT, ONE PIECE, BRASS TRIM.
c. SWING CHECK: BRONZE DISC, CLASS.
2. 2-1/2 NPS (65 DN) AND LARGER, IRON VALVES:
a. BALL: 2-1/2 NPS (65 DN) TO 10 NPS (250 DN), CLASS 150.
b. GROOVED-END CHECK: 3 NPS (80 DN) TO 12 NPS (300 DN), 300 CWP.
c. CENTER-GUIDED CHECK: COMPACT-WAFER, METAL SEAT, CLASS 125.
d. PLATE-TYPE CHECK: SINGLE PLATE, METAL SEAT, CLASS 125.
D. CONDENSER WATER VALVES:
1. 2 NPS (50 DN) AND SMALLER, BRASS, BRONZE VALVES:
a. THREADED ENDS.
b. BALL: FULL PORT, ONE PIECE, BRASS TRIM.
c. SWING CHECK: BRONZE DISC, CLASS 125.
d. GATE: NRS, CLASS 125.
2. 2-1/2 NPS (65 DIN) AND LARGER, IRON VALVES:
a. BALL: 2-1/2 NPS (65 DN) TO 10 NPS (250 DN), CLASS 150.
b. GROOVED-END SWING CHECK: 3 NPS (80 DN) TO 12 NPS (300 DN), 300 CWP.
c. IRON CENTER-GUIDED CHECK: 2-1/2 NPS (65 DN) TO 24 INCH (600 MM), COMPACT-WAFER, METAL SEAT, CLASS 125.
d. IRON PLATE-TYPE CHECK: SINGLE PLATE, METAL SEAT, CLASS 125.
e. IRON GATE: NRS, CLASS 125.
E. HEATING HOT WATER VALVES:
1. 2 NPS (50 DN) AND SMALLER, BRASS, BRONZE VALVES:
a. THREADED ENDS.
b. BALL: FULL PORT, ONE PIECE, BRASS TRIM.
c. SWING CHECK: BRONZE DISC, CLASS 125.
2. 2-1/2 NPS (65 DN) AND LARGER, IRON VALVES:
a. BALL: 2-1/2 NPS (65 DN) TO 10 NPS (250 DN), CLASS 150.
b. GROOVED-END SWING CHECK: 3 NPS (80 DN) TO 12 NPS (300 DN), 300 CWP.
c. CENTER-GUIDED CHECK: COMPACT-WAFER, METAL SEAT, CLASS 125.
d. PLATE-TYPE CHECK: SINGLE PLATE, METAL SEAT, CLASS 125 .
2.02 GENERAL REQUIREMENTS
A. VALVE PRESSURE AND TEMPERATURE RATINGS: NO LESS THAN RATING INDICATED; AS REQUIRED FOR SYSTEM PRESSURES AND TEMPERATURES.
B. VALVE SIZES: MATCH UPSTREAM PIPING UNLESS OTHERWISE INDICATED.
C. VALVE ACTUATOR TYPES:
1. GEAR ACTUATOR: QUARTER-TURN VALVES 8 NPS (200 DN) AND LARGER.
2. HANDWHEEL: VALVES OTHER THAN QUARTER-TURN TYPES.
3. HAND LEVER: QUARTER-TURN VALVES 6 NPS (150 DN) AND SMALLER.
D. VALVES IN INSULATED PIPING: PROVIDE 2 NPS (50 DN) STEM EXTENSIONS AND THE FOLLOWING FEATURES:
1. GATE VALVES: RISING STEM.
2. BALL VALVES: EXTENDED OPERATING HANDLE OF NON-THERMAL-CONDUCTIVE MATERIAL, AND PROTECTIVE SLEEVE THAT ALLOWS OPERATION OF VALVE WITHOUT BREAKING THE VAPOR SEAL OR DISTURBING INSULATION.
3. BUTTERFLY VALVES: EXTENDED NECK.
4. MEMORY STOPS: FULLY ADJUSTABLE AFTER INSULATION IS INSTALLED.
E. VALVE-END CONNECTIONS:
1. THREADED END VALVES: ASME B1.20.1.
2. FLANGES ON IRON VALVES: ASME B16.1 FOR FLANGES ON IRON VALVES.
3. SOLDER JOINT CONNECTIONS: ASME B16.18.
4. GROOVED END CONNECTIONS: AWWA C606.
F. GENERAL ASME COMPLIANCE:
1. BUILDING SERVICES PIPING VALVES: ASME B31.9.
2.03 BRONZE BALL VALVES
A. ONE PIECE, REDUCED PORT WITH BRONZE TRIM:
1. COMPLY WITH MSS SP-110.
2. CWP RATING: 400 PSIG (2760 KPA).
3. BODY: BRONZE.
4. ENDS: THREADED.
5. SEATS: PTFE.
B. TWO PIECE, STANDARD PORT, FULL PORT WITH BRONZE OR BRASS TRIM:
1. COMPLY WITH MSS SP-110.
2. SWP RATING: 150 PSIG (1035 KPA).
3. CWP RATING: 600 PSIG (4140 KPA).
4. BODY: BRONZE.
5. ENDS: THREADED.
6. SEATS: PTFE .
C. THREE PIECE, FULL PORT WITH STAINLESS STEEL TRIM:
1. COMPLY WITH MSS SP-110.
2. SWP RATING: 150 PSIG (1035 KPA).
3. CWP RATING: 600 PSIG (4140 KPA).
4. BODY: BRONZE.
5. ENDS: THREADED.
6. SEATS: PTFE.
2.04 BRONZE SWING CHECK VALVES
A. CLASS 125: CWP RATING: 200 PSIG (1380 KPA), CLASS 150: CWP RATING: 300 PSIG (2070 KPA).
1. COMPLY WITH MSS SP-80, TYPE 3.
2. BODY DESIGN: HORIZONTAL FLOW.
3. BODY MATERIAL: BRONZE, ASTM B62.
4. ENDS: THREADED.
5. DISC: BRONZE.
2.05 IRON, GROOVED-END SWING CHECK VALVES
A. 300 CWP:
1. 10 NPS (250 DN) TO 12 NPS (300 DN).
2. CWP RATING: 300 PSIG (2070 KPA).
3. BODY MATERIAL: ASTM A536, GRADE 65-45-12 DUCTILE IRON.
4. SEAL: EPDM, NITRILE.
5. DISC: DUCTILE IRON.
6. COATING: BLACK, NON-LEAD PAINT.
2.06 IRON, PLATE-TYPE CHECK VALVES
A. CLASS 125 SINGLE-PLATE:
1. COMPLY WITH API STD 594.
2. BODY DESIGN: WAFER, SPRING-LOADED PLATE.
3. BODY MATERIAL: ASTM A126, GRAY IRON.
4. RESILIENT SEAT: EPDM, NBR.
B. CLASS 125 DUAL-PLATE:
1. COMPLY WITH API STD 594.
2. BODY DESIGN: WAFER, SPRING-LOADED PLATES.
3. BODY MATERIAL: ASTM A126, GRAY IRON.
PART 3 EXECUTION
3.01 EXAMINATION
A. DISCARD ALL PACKING MATERIALS AND VERIFY THAT VALVE INTERIOR, INCLUDING THREADS AND FLANGES, ARE COMPLETELY CLEAN WITHOUT SIGNS OF DAMAGE OR DEGRADATION THAT COULD RESULT IN LEAKAGE.
B. VERIFY VALVE PARTS TO BE FULLY OPERATIONAL IN ALL POSITIONS FROM CLOSED TO FULLY OPEN.
C. CONFIRM GASKET MATERIAL TO BE SUITABLE FOR THE SERVICE, TO BE OF CORRECT SIZE, AND WITHOUT DEFECTS THAT COULD COMPROMISE EFFECTIVENESS.
D. SHOULD VALVE IS DETERMINED TO BE DEFECTIVE, REPLACE WITH NEW VALVE.
3.02 INSTALLATION
A. PROVIDE UNIONS OR FLANGES WITH VALVES TO FACILITATE EQUIPMENT REMOVAL AND MAINTENANCE WHILE MAINTAINING SYSTEM OPERATION AND FULL ACCESSIBILITY FOR SERVICING.
B. PROVIDE SEPARATE VALVE SUPPORT AS REQUIRED AND LOCATE VALVE WITH STEM AT OR ABOVE CENTER OF PIPING, MAINTAINING UNIMPEDED STEM MOVEMENT.
C. INSTALL CHECK VALVES WHERE NECESSARY TO MAINTAIN DIRECTION OF FLOW AS FOLLOWS:
1. LIFT CHECK: INSTALL WITH STEM PLUMB AND VERTICAL.
2. SWING CHECK: INSTALL HORIZONTAL MAINTAINING HINGE PIN LEVEL.

SECTION 23 0529 - HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

PART 1 GENERAL
1.01 SECTION INCLUDES
A. SUPPORT AND ATTACHMENT COMPONENTS FOR EQUIPMENT, PIPING, AND OTHER HVAC/HYDRONIC WORK.
1.02 ADMINISTRATIVE REQUIREMENTS
A. COORDINATION:
1. COORDINATE SIZES AND ARRANGEMENT OF SUPPORTS AND BASES WITH THE ACTUAL EQUIPMENT AND COMPONENTS TO BE INSTALLED.
2. COORDINATE THE WORK WITH OTHER TRADES TO PROVIDE ADDITIONAL FRAMING AND MATERIALS REQUIRED FOR INSTALLATION.
3. COORDINATE COMPATIBILITY OF SUPPORT AND ATTACHMENT COMPONENTS WITH MOUNTING SURFACES AT THE INSTALLED LOCATIONS.
4. COORDINATE THE ARRANGEMENT OF SUPPORTS WITH DUCTWORK, PIPING, EQUIPMENT AND OTHER POTENTIAL CONFLICTS INSTALLED UNDER OTHER SECTIONS OR BY OTHERS.
5. NOTIFY ARCHITECT OF ANY CONFLICTS WITH OR DEVIATIONS FROM CONTRACT DOCUMENTS. OBTAIN DIRECTION BEFORE PROCEEDING WITH WORK.
B. SEQUENCING:
1. DO NOT INSTALL PRODUCTS ON OR PROVIDE ATTACHMENT TO CONCRETE SURFACES UNTIL CONCRETE HAS FULLY CURED IN ACCORDANCE WITH SECTION 03 3000.
1.03 DELIVERY, STORAGE, AND HANDLING
A. RECEIVE, INSPECT, HANDLE, AND STORE PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
PART 2 PRODUCTS
2.01 SUPPORT AND ATTACHMENT COMPONENTS
A. GENERAL REQUIREMENTS:
1. PROVIDE ALL REQUIRED HANGERS, SUPPORTS, ANCHORS, FASTENERS, FITTINGS, ACCESSORIES, AND HARDWARE AS NECESSARY FOR THE COMPLETE INSTALLATION OF PLUMBING WORK.
2. PROVIDE PRODUCTS LISTED, CLASSIFIED, AND LABELED AS SUITABLE FOR THE PURPOSE INTENDED, WHERE APPLICABLE.
3. STEEL COMPONENTS: USE CORROSION RESISTANT MATERIALS SUITABLE FOR THE ENVIRONMENT WHERE INSTALLED.
a. INDOOR DRY LOCATIONS: USE ZINC-PLATED STEEL OR APPROVED EQUIVALENT UNLESS OTHERWISE INDICATED.
b. OUTDOOR AND DAMP OR WET INDOOR LOCATIONS: USE GALVANIZED STEEL, STAINLESS STEEL, OR APPROVED EQUIVALENT UNLESS OTHERWISE INDICATED.
c. ZINC-PLATED STEEL: ELECTROPLATED IN ACCORDANCE WITH ASTM B633.
d. GALVANIZED STEEL: HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123/A123M OR ASTM A153/A153M.
B. METAL CHANNEL (STRUT) FRAMING SYSTEMS: FACTORY-FABRICATED CONTINUOUS-SLOT METAL CHANNEL (STRUT) AND ASSOCIATED FITTINGS, ACCESSORIES, AND HARDWARE REQUIRED FOR FIELD-ASSEMBLY OF SUPPORTS.
1. PROVIDE FACTORY-FABRICATED CONTINUOUS-SLOT METAL CHANNEL (STRUT) AND ASSOCIATED FITTINGS, ACCESSORIES, AND HARDWARE REQUIRED FOR FIELD-ASSEMBLY OF SUPPORTS.
2. COMPLY WITH MFMA-4.
3. CHANNEL MATERIAL:
a. INDOOR DRY LOCATIONS: USE PAINTED STEEL, ZINC-PLATED STEEL, OR GALVANIZED STEEL.
b. OUTDOOR AND DAMP OR WET INDOOR LOCATIONS: USE GALVANIZED STEEL.
4. MINIMUM CHANNEL THICKNESS: STEEL SHEET, 12 GAGE, 0.1046 INCH (2.66 MM).
5. MINIMUM CHANNEL DIMENSIONS: 1-5/8 INCH (41 MM) WIDTH BY 13/16 INCH (21 MM) HEIGHT.
C. HANGER RODS: THREADED ZINC-PLATED STEEL UNLESS OTHERWISE INDICATED.
1. MINIMUM SIZE, UNLESS OTHERWISE INDICATED OR REQUIRED:
a. PIPING UP TO 1 INCH (27 MM) NOMINAL: 1/4 INCH (6 MM) DIAMETER.
b. PIPING LARGER THAN 1 INCH (27 MM) NOMINAL: 3/8 INCH (10 MM) DIAMETER.
c. TRAPEZE SUPPORT FOR MULTIPLE PIPES: 3/8 INCH (10 MM) DIAMETER.
D. THERMAL INSULATED PIPE SUPPORTS:
1. GENERAL CONSTRUCTION AND REQUIREMENTS:
a. INSULATED PIPE SUPPORTS TO BE PROVIDED AT HANGER, SUPPORT, AND GUIDE LOCATIONS ON PIPE REQUIRING INSULATION OR ADDITIONAL SUPPORT.
b. SURFACE BURNING CHARACTERISTICS: FLAME SPREAD INDEX/SMOKE DEVELOPED INDEX OF 5/30, MAXIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM E84 OR UL 723.
c. PIPE SUPPORTS TO BE PROVIDED FOR NOMINALLY SIZED, 1/2 INCH TO 30 INCH (12.7 MM TO 762 MM) IRON PIPES.
d. INSULATION INSERTS TO CONSIST OF RIGID POLYISOCYANURATE (URETHANE) INSULATION SURROUNDED BY A 360 DEGREE, PVC JACKETING.
2. PVC JACKET:
a. PIPE INSULATION PROTECTION SHIELDS TO BE PROVIDED WITH A BALL BEARING HINGE AND LOCKING SEAM.
b. MINIMUM SERVICE TEMPERATURE: MINUS 40 DEGREES F (MINUS 40 DEGREES C).
c. MAXIMUM SERVICE TEMPERATURE: 180 DEGREES F (82 DEGREES C).
d. MOISTURE VAPOR TRANSMISSION: 0.0071 PERM INCH (0.0092 NG/PA S M), WHEN TESTED IN ACCORDANCE WITH ASTM E96/E96M.
e. THICKNESS: 60 MIL (1.524 MM).
f. CONNECTIONS: BRUSH ON WELDING ADHESIVE.
3. PIPE INSULATION PROTECTION SHIELDS TO BE PROVIDED AT THE HANGER POINTS AND GUIDE LOCATIONS ON PIPES REQUIRING INSULATION AS INDICATED ON DRAWINGS.
E. PIPE SUPPORTS:
1. LIQUID TEMPERATURES UP TO 122 DEGREES F (50 DEGREES C):
a. OVERHEAD SUPPORT: MSS SP-58 TYPES 1, 3 THROUGH 12.
b. SUPPORT FROM BELOW: MSS SP-58 TYPES 35 THROUGH 38.
F. PIPE STANCHIONS: FOR PIPE RUNS, USE STANCHIONS OF SAME TYPE AND MATERIAL WHERE VERTICAL ADJUSTMENT IS REQUIRED FOR STATIONARY PIPE.
1. MATERIAL: MALLEABLE IRON, ASTM A47/A47M; OR CARBON STEEL, ASTM A36/A36M.
2. PROVIDE COATED OR PLATED SADDLES TO ISOLATE STEEL HANGERS FROM DISSIMILAR METAL TUBE OR PIPE.
G. BEAM CLAMPS: MSS SP-58 TYPES 19 THROUGH 23, 25 OR 27 THROUGH 30 BASED ON REQUIRED LOAD.
1. MATERIAL: ASTM A36/A36M CARBON STEEL OR ASTM A181/A181M FORGED STEEL.
2. PROVIDE CLAMPS WITH HARDENED STEEL CUP-POINT SET SCREWS AND LOCK-NUTS FOR ANCHORING IN PLACE.
H. RISER CLAMPS:
1. PROVIDE COPPER PLATED CLAMPS FOR COPPER TUBING SUPPORT.
I. OFFSET PIPE CLAMPS: DOUBLE-LEG DESIGN TWO-PIECE PIPE CLAMP.
J. STRUT CLAMPS: TWO-PIECE PIPE CLAMP.
K. INSULATION CLAMPS: TWO BOLT-TYPE CLAMPS DESIGNED FOR INSTALLATION UNDER INSULATION.
L. PIPE HANGERS: FOR A GIVEN PIPE RUN, USE HANGERS OF THE SAME TYPE AND MATERIAL.
1. MATERIAL: MALLEABLE IRON, ASTM A47/A47M; OR CARBON STEEL, ASTM A36/A36M.
2. PROVIDE COATED OR PLATED HANGERS TO ISOLATE STEEL HANGERS FROM DISSIMILAR METAL TUBE OR PIPE.
M. NONMETALLIC PIPE HANGERS:
N. INTERMEDIATE PIPE GUIDES: USE PIPE CLAMPS WITH OVERSIZE PIPE SLEEVE THAT PROVIDES CLEARANCE AROUND PIPE.
1. PIPE DIAMETER 6 INCHES (150 MM) AND SMALLER: PROVIDE MINIMUM CLEARANCE OF 0.16 INCH (4 MM).
2. PIPE DIAMETER 8 INCHES (200 MM): PROVIDE U-BOLTS WITH DOUBLE NUTS PROVIDING MINIMUM CLEARANCE OF 0.28 INCH (7 MM).
3. PIPE DIAMETER 8 INCHES (200 MM): 0.625 INCH (16 MM) U-BOLT.
4. PIPE DIAMETER 10 INCHES (250 MM): 0.75 INCH (19 MM) U-BOLT.
5. PIPE DIAMETER 12 TO 16 INCHES (300 TO 400 MM): 0.875 INCH (24 MM) U-BOLT.
6. PIPE DIAMETER 18 TO 30 INCHES (450 TO 750 MM): 1 INCH (25 MM) U-BOLT.
O. PIPE ALIGNMENT GUIDES: GALVANIZED STEEL.
1. PIPE DIAMETER 8 INCHES (200 MM) AND SMALLER: SPIDER OR SLEEVE TYPE.
2. PIPE DIAMETER 10 INCHES (250 MM) AND LARGER: ROLLER TYPE.
P. DIELECTRIC BARRIERS: PROVIDE BETWEEN METALLIC SUPPORTS AND METALLIC PIPING AND ASSOCIATED ITEMS OF DISSIMILAR TYPE; ACCEPTABLE DIELECTRIC BARRIERS INCLUDE RUBBER OR PLASTIC SHEETS OR COATINGS ATTACHED SECURELY TO PIPE OR ITEM.
PART 3 EXECUTION
3.01 EXAMINATION
A. VERIFY THAT FIELD MEASUREMENTS ARE AS INDICATED.
B. VERIFY THAT MOUNTING SURFACES ARE READY TO RECEIVE SUPPORT AND ATTACHMENT COMPONENTS.
C. VERIFY THAT CONDITIONS ARE SATISFACTORY FOR INSTALLATION PRIOR TO STARTING WORK.
3.02 INSTALLATION
A. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. PROVIDE INDEPENDENT SUPPORT FROM BUILDING STRUCTURE. DO NOT PROVIDE SUPPORT FROM PIPING, DUCTWORK, CONDUIT, OR OTHER SYSTEMS.
C. UNLESS SPECIFICALLY INDICATED OR APPROVED BY ARCHITECT, DO NOT PROVIDE SUPPORT FROM SUSPENDED CEILING SUPPORT SYSTEM OR CEILING GRID.
D. UNLESS SPECIFICALLY INDICATED OR APPROVED BY ARCHITECT, DO NOT PROVIDE SUPPORT FROM ROOF DECK.
E. DO NOT PENETRATE OR OTHERWISE NOTCH OR CUT STRUCTURAL MEMBERS WITHOUT APPROVAL OF STRUCTURAL ENGINEER.
F. PROVIDE THERMAL INSULATED PIPE SUPPORTS COMPLETE WITH HANGERS AND ACCESSORIES. INSTALL THERMAL INSULATED PIPE SUPPORTS DURING THE INSTALLATION OF THE PIPING SYSTEM.
G. EQUIPMENT SUPPORT AND ATTACHMENT:
1. USE METAL FABRICATED SUPPORTS OR SUPPORTS ASSEMBLED FROM METAL CHANNEL (STRUT) TO SUPPORT EQUIPMENT AS REQUIRED.
2. USE METAL CHANNEL (STRUT) SECURED TO STUDS TO SUPPORT EQUIPMENT SURFACE-MOUNTED ON HOLLOW STUD WALLS WHEN WALL STRENGTH IS NOT SUFFICIENT TO RESIST PULL-OUT.
3. USE METAL CHANNEL (STRUT) TO SUPPORT SURFACE-MOUNTED EQUIPMENT IN WET OR DAMP LOCATIONS TO PROVIDE SPACE BETWEEN EQUIPMENT AND MOUNTING SURFACE.
4. SECURELY FASTEN FLOOR-MOUNTED EQUIPMENT. DO NOT INSTALL EQUIPMENT SUCH THAT IT RELIES ON ITS OWN WEIGHT FOR SUPPORT.
H. PRESET CONCRETE INSERTS: USE MANUFACTURER-PROVIDED CLOSURE STRIPS TO INHIBIT CONCRETE SEEPAGE DURING CONCRETE POUR.
I. SECURE FASTENERS ACCORDING TO MANUFACTURER'S RECOMMENDED TORQUE SETTINGS.
J. REMOVE TEMPORARY SUPPORTS.

SECTION 23 0548 - VIBRATION AND SEISMIC CONTROLS FOR HVAC

PART 1 GENERAL
1.01 SECTION INCLUDES
A. VIBRATION-ISOLATED EQUIPMENT SUPPORT BASES.
B. VIBRATION ISOLATORS.
C. EXTERNAL SEISMIC SNUBBER ASSEMBLIES.
D. SEISMIC RESTRAINT SYSTEMS.
E. VIBRATION-ISOLATED AND/OR SEISMICALLY ENGINEERED ROOF CURBS.
1.02 ADMINISTRATIVE REQUIREMENTS
A. COORDINATION:
1. COORDINATE SELECTION AND ARRANGEMENT OF VIBRATION ISOLATION AND/OR SEISMIC CONTROL COMPONENTS WITH THE ACTUAL EQUIPMENT TO BE INSTALLED.
2. COORDINATE THE WORK WITH OTHER TRADES TO PROVIDE ADDITIONAL FRAMING AND MATERIALS REQUIRED FOR INSTALLATION.
3. COORDINATE COMPATIBILITY OF SUPPORT AND ATTACHMENT COMPONENTS WITH MOUNTING SURFACES AT THE INSTALLED LOCATIONS.
4. SEISMIC CONTROLS:
a. COORDINATE THE ARRANGEMENT OF SEISMIC RESTRAINTS WITH PIPING, CONDUIT, EQUIPMENT, AND OTHER POTENTIAL CONFLICTS INSTALLED UNDER OTHER SECTIONS OR BY OTHERS.
b. COORDINATE THE WORK WITH OTHER TRADES TO ACCOMMODATE RELATIVE POSITIONING OF ESSENTIAL AND NONESSENTIAL COMPONENTS IN CONSIDERATION OF SEISMIC INTERACTION.
5. NOTIFY ARCHITECT OF ANY CONFLICTS WITH OR DEVIATIONS FROM CONTRACT DOCUMENTS. OBTAIN DIRECTION BEFORE PROCEEDING WITH WORK.
B. SEQUENCING:
1. DO NOT INSTALL PRODUCTS ON OR PROVIDE ATTACHMENT TO CONCRETE SURFACES UNTIL CONCRETE HAS FULLY CURED IN ACCORDANCE WITH SECTION 03 3000.
1.03 DELIVERY, STORAGE, AND HANDLING
A. RECEIVE, INSPECT, HANDLE, AND STORE PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
PART 2 PRODUCTS
2.01 EXTERNAL SEISMIC SNUBBER ASSEMBLIES
A. DESCRIPTION: STEEL SNUBBING ASSEMBLIES DESIGNED FOR EXTERNAL ATTACHMENT TO BOTH EQUIPMENT AND SUPPORTING STRUCTURE THAT, AS PART OF A COMPLETE SYSTEM, RESTRAIN EQUIPMENT MOTION IN ALL DIRECTIONS DURING A SEISMIC EVENT WHILE MAINTAINING VIBRATION ISOLATION DURING NORMAL OPERATION.
B. SEISMIC SNUBBING ELEMENTS:
1. AIR GAP: BETWEEN 0.125 INCHES (3 MM) AND 0.25 INCHES (6 MM) UNLESS OTHERWISE INDICATED.
2. POINTS OF CONTACT: CUSHIONED WITH RESILIENT MATERIAL, MINIMUM 0.25 INCH (6 MM) THICK; CAPABLE OF BEING VISUALLY INSPECTED FOR DAMAGE AND REPLACED.
2.02 SEISMIC RESTRAINT SYSTEMS
A. DESCRIPTION: SYSTEM COMPONENTS AND ACCESSORIES SPECIFICALLY DESIGNED FOR FIELD ASSEMBLY AND ATTACHMENT OF SEISMIC RESTRAINTS.
B. CABLE RESTRAINTS:
1. COMPLY WITH ASCE 19.
2. CABLES: PRE-STRETCHED, GALVANIZED STEEL WIRE ROPE WITH CERTIFIED BREAK STRENGTH.
3. CABLE CONNECTIONS: USE ONLY SWAGED END FITTINGS. CABLE CLIPS AND WEDGE TYPE END FITTINGS ARE NOT PERMITTED IN ACCORDANCE WITH ASCE 19.
4. USE PROTECTIVE THIMBLES FOR CABLE LOOPS WHERE POTENTIAL FOR CABLE DAMAGE EXISTS.
C. RIGID RESTRAINTS: USE MFMA-4 STEEL CHANNEL (STRUT), STEEL ANGLE, OR STEEL PIPE FOR STRUCTURAL ELEMENT; SUITABLE FOR BOTH COMPRESSIVE AND TENSILE DESIGN LOADS.
2.03 VIBRATION-ISOLATED AND/OR SEISMICALLY ENGINEERED ROOF CURBS
A. VIBRATION ISOLATION CURBS:
1. NONSEISMIC CURB RAIL:
a. LOCATION: BETWEEN EXISTING ROOF CURB AND ROOFTOP EQUIPMENT.
b. CONSTRUCTION: ALUMINUM.
c. INTEGRAL VIBRATION ISOLATION TO COMPLY WITH REQUIREMENTS OF THIS SECTION.
d. WEATHER EXPOSED COMPONENTS CONSIST OF CORROSION RESISTANT MATERIALS.
2. NONSEISMIC CURB:
a. LOCATION: BETWEEN STRUCTURE AND ROOFTOP EQUIPMENT.
b. CONSTRUCTION: ALUMINUM.
c. INTEGRAL VIBRATION ISOLATION TO COMPLY WITH REQUIREMENTS OF THIS SECTION.
d. WEATHER EXPOSED COMPONENTS CONSIST OF CORROSION RESISTANT MATERIALS.
3. SEISMIC CURB:
a. LOCATION: BETWEEN STRUCTURE AND ROOFTOP EQUIPMENT.
b. CONSTRUCTION: STEEL.
c. INTEGRAL VIBRATION ISOLATION TO COMPLY WITH REQUIREMENTS OF THIS SECTION.
d. SNUBBERS CONSIST OF MINIMUM 0.25 INCH (6 MM) THICK RESILIENT PADS TO AVOID METAL-TO-METAL CONTACT WITHOUT COMPROMISING VIBRATION ISOLATING CAPABILITIES.
e. WEATHER EXPOSED COMPONENTS CONSIST OF CORROSION RESISTANT MATERIALS.
B. SEISMIC TYPE NONISOLATED CURB AND FABRICATED EQUIPMENT PIERS:
1. LOCATION: BETWEEN STRUCTURE AND ROOFTOP EQUIPMENT.
2. CONSTRUCTION: STEEL.
3. WEATHER EXPOSED COMPONENTS CONSIST OF CORROSION RESISTANT MATERIALS.
PART 3 EXECUTION
3.01 EXAMINATION
A. VERIFY THAT FIELD MEASUREMENTS ARE AS SHOWN ON THE DRAWINGS.
B. VERIFY THAT MOUNTING SURFACES ARE READY TO RECEIVE VIBRATION ISOLATION AND/OR SEISMIC CONTROL COMPONENTS AND ASSOCIATED ATTACHMENTS.
C. VERIFY THAT CONDITIONS ARE SATISFACTORY FOR INSTALLATION PRIOR TO STARTING WORK.
3.02 INSTALLATION
A. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. INSTALL ANCHORS AND FASTENERS IN ACCORDANCE WITH ICC EVALUATION SERVICES, LLC (ICC-ES) EVALUATION REPORT CONDITIONS OF USE WHERE APPLICABLE.
C. SECURE FASTENERS ACCORDING TO MANUFACTURER'S RECOMMENDED TORQUE SETTINGS.
D. INSTALL FLEXIBLE PIPING CONNECTIONS TO PROVIDE SUFFICIENT SLACK FOR VIBRATION ISOLATION AND/OR SEISMIC RELATIVE DISPLACEMENTS AS INDICATED OR AS REQUIRED.
E. VIBRATION ISOLATION SYSTEMS:
1. VIBRATION-ISOLATED EQUIPMENT SUPPORT BASES:
a. PROVIDE SPECIFIED MINIMUM CLEARANCE BENEATH BASE.
2. SPRING ISOLATORS:
a. POSITION EQUIPMENT AT OPERATING HEIGHT; PROVIDE TEMPORARY BLOCKING AS REQUIRED.
b. LIFT EQUIPMENT FREE OF ISOLATORS PRIOR TO LATERAL REPOSITIONING TO AVOID DAMAGE TO ISOLATORS.
c. LEVEL EQUIPMENT BY ADJUSTING ISOLATORS GRADUALLY IN SEQUENCE TO RAISE EQUIPMENT UNIFORMLY SUCH THAT EXCESSIVE WEIGHT OR STRESS IS NOT PLACED ON ANY SINGLE ISOLATOR.
3. ISOLATOR HANGERS:
a. USE PRECOMPRESSED ISOLATOR HANGERS WHERE REQUIRED TO FACILITATE INSTALLATION AND PREVENT DAMAGE TO EQUIPMENT UTILITY CONNECTION PROVISIONS.
b. LOCATE ISOLATOR HANGERS AT TOP OF HANGER RODS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
4. THRUST RESTRAINTS:
a. ADJUST RESTRAINT MOVEMENT UNDER NORMAL OPERATING STATIC PRESSURE.
5. CLEAN DEBRIS FROM BENEATH VIBRATION-ISOLATED EQUIPMENT THAT COULD CAUSE SHORT-CIRCUITING OF ISOLATION.
6. USE ELASTOMERIC GROMMETS FOR ATTACHMENTS WHERE REQUIRED TO PREVENT SHORT-CIRCUITING OF ISOLATION.
7. ADJUST ISOLATORS TO BE FREE OF ISOLATION SHORT CIRCUITS DURING NORMAL OPERATION.
8. DO NOT OVERTIGHTEN FASTENERS SUCH THAT RESILIENT MATERIAL ISOLATOR PADS ARE COMPRESSED BEYOND MANUFACTURER'S MAXIMUM RECOMMENDED DEFLECTION.
F. SEISMIC CONTROLS:
1. PROVIDE SPECIFIED SNUBBING ELEMENT AIR GAP; REMOVE ANY FACTORY-INSTALLED SPACERS, DEBRIS, OR OTHER OBSTRUCTIONS.
2. USE ONLY SPECIFIED COMPONENTS, ANCHORAGE, AND HARDWARE EVALUATED BY SEISMIC DESIGN. COMPLY WITH CONDITIONS OF SEISMIC CERTIFICATION WHERE APPLICABLE.
3. WHERE MOUNTING HOLE DIAMETER EXCEEDS BOLT DIAMETER BY MORE THAN 0.125 INCH (3 MM), USE EPOXY GROUT, ELASTOMERIC GROMMET, OR WELDED WASHER TO REDUCE CLEARANCE TO 0.125 INCH (3 MM) OR LESS.
4. EQUIPMENT WITH SHEET METAL HOUSINGS:
a. USE BELLEVILLE WASHERS TO DISTRIBUTE STRESS OVER A LARGER SURFACE AREA OF THE SHEET METAL CONNECTION INTERFACE AS APPROVED BY MANUFACTURER.
b. ATTACH ADDITIONAL STEEL AS APPROVED BY MANUFACTURER WHERE REQUIRED TO TRANSFER LOADS TO STRUCTURE.
c. WHERE MOUNTING SURFACE IS IRREGULAR, DO NOT SHIM HOUSING; REINFORCE HOUSING WITH ADDITIONAL STEEL AS APPROVED BY MANUFACTURER.
5. CONCRETE HOUSEKEEPING PADS:
a. SIZE IN ACCORDANCE WITH SEISMIC DESIGN TO MEET ANCHOR REQUIREMENTS.
b. INSTALL PAD REINFORCEMENT AND DOWELING IN ACCORDANCE WITH SEISMIC DESIGN TO ENSURE INTEGRITY OF PAD AND ASSOCIATED CONNECTION TO SLAB.
6. SEISMIC RESTRAINT SYSTEMS:
a. DO NOT ATTACH SEISMIC RESTRAINTS AND GRAVITY SUPPORTS TO DISSIMILAR PARTS OF STRUCTURE THAT MAY MOVE DIFFERENTLY DURING AN EARTHQUAKE.
b. INSTALL RESTRAINTS WITHIN PERMISSIBLE ANGLES IN ACCORDANCE WITH SEISMIC DESIGN.
c. INSTALL CABLE RESTRAINTS STRAIGHT BETWEEN COMPONENT/RUN AND STRUCTURAL ATTACHMENT; DO NOT BEND AROUND OTHER NONSTRUCTURAL COMPONENTS OR STRUCTURAL ELEMENTS.
d. INSTALL CABLE RESTRAINTS FOR VIBRATION-ISOLATED COMPONENTS SLIGHTLY SLACK TO PREVENT SHORT-CIRCUITING OF ISOLATION.
e. INSTALL HANGER ROD STIFFENERS WHERE INDICATED USING ONLY SPECIFIED CLAMPS; DO NOT WELD STIFFENERS TO HANGER ROD.
3.03 FIELD QUALITY CONTROL
A. SEE SECTION 01 4000 - QUALITY REQUIREMENTS, FOR ADDITIONAL REQUIREMENTS.
B. INSPECT VIBRATION ISOLATION AND/OR SEISMIC CONTROL COMPONENTS FOR DAMAGE AND DEFECTS.
C. VIBRATION ISOLATION SYSTEMS:
1. VERIFY ISOLATOR STATIC DEFLECTIONS.
2. VERIFY VIBRATION ISOLATION PERFORMANCE DURING NORMAL OPERATION; INVESTIGATE SOURCES OF ISOLATION SHORT CIRCUITS.
D. SEISMIC CONTROLS:
1. VERIFY SNUBBING ELEMENT AIR GAPS.
E. CORRECT DEFICIENCIES AND REPLACE DAMAGED OR DEFECTIVE VIBRATION ISOLATION AND/OR SEISMIC CONTROL COMPONENTS.

SECTION 23 0553 - IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

PART 1 GENERAL
1.01 SECTION INCLUDES
A. NAMEPLATES.
B. TAGS.
C. STENCILS.
D. PIPE MARKERS.
E. CEILING TACKS.
PART 2 PRODUCTS
2.01 IDENTIFICATION APPLICATIONS
A. AIR HANDLING UNITS: NAMEPLATES.
B. AIR TERMINAL UNITS: TAGS.
C. AUTOMATIC CONTROLS: TAGS. KEY TO CONTROL SCHEMATIC.
D. CONTROL PANELS: NAMEPLATES.
E. DAMPERS: CEILING TACKS, WHERE LOCATED ABOVE LAY-IN CEILING.
F. HEAT TRANSFER EQUIPMENT: NAMEPLATES.
G. PIPING: TAGS.
H. PUMPS: NAMEPLATES.
I. SMALL-SIZED EQUIPMENT: TAGS.
J. THERMOSTATS: NAMEPLATES.
K. VALVES: TAGS AND CEILING TACKS WHERE LOCATED ABOVE LAY-IN CEILING.
2.02 NAMEPLATES
A. MANUFACTURERS:
1. ADVANCED GRAPHIC ENGRAVING, LLC.
2. BRIMAR INDUSTRIES, INC.
3. SETON IDENTIFICATION PRODUCTS, A TRICOR DIRECT COMPANY.
B. LETTER COLOR: WHITE.
C. LETTER HEIGHT: 1/4 INCH (6 MM).
D. BACKGROUND COLOR: BLACK.
2.03 TAGS
A. MANUFACTURERS:
1. ADVANCED GRAPHIC ENGRAVING.
2. BRADY CORPORATION.
3. BRIMAR INDUSTRIES, INC.
4. SETON IDENTIFICATION PRODUCTS, A TRICOR COMPANY.
B. PLASTIC TAGS: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED BLACK LETTERS ON LIGHT CONTRASTING BACKGROUND COLOR. TAG SIZE MINIMUM 1-1/2 INCH (40 MM) DIAMETER.
C. METAL TAGS: BRASS WITH STAMPED LETTERS; TAG SIZE MINIMUM 1-1/2 INCH (40 MM) DIAMETER WITH SMOOTH EDGES.
D. VALVE TAG CHART: TYPEWRITTEN LETTER SIZE LIST IN ANODIZED ALUMINUM FRAME.
2.04 STENCILS
A. MANUFACTURERS:
1. BRADY CORPORATION.
2. SETON IDENTIFICATION PRODUCTS, A TRICOR COMPANY.
B. STENCILS: WITH CLEAN CUT SYMBOLS AND LETTERS OF FOLLOWING SIZE:
1. 3/4 TO 1-1/4 INCH (20-30 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 8 INCH (200 MM) LONG COLOR FIELD, 1/2 INCH (15 MM) HIGH LETTERS.
2. 1-1/2 TO 2 INCH (40-50 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 8 INCH (200 MM) LONG COLOR FIELD, 3/4 INCH (20 MM) HIGH LETTERS.
3. 2-1/2 TO 6 INCH (65-150 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 12 INCH (300 MM) LONG COLOR FIELD, 1-1/4 INCH (30 MM) HIGH LETTERS.
4. 8 TO 10 INCH (200-250 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 24 INCH (600 MM) LONG COLOR FIELD, 2-1/2 INCH (65 MM) HIGH LETTERS.
2.05 PIPE MARKERS
A. MANUFACTURERS:
1. BRADY CORPORATION.
2. BRIMAR INDUSTRIES, INC.
3. SETON IDENTIFICATION PRODUCTS, A TRICOR COMPANY.
B. COLOR: COMPLY WITH ASME A13.1.
C. PLASTIC PIPE MARKERS: FACTORY FABRICATED, FLEXIBLE, SEMI- RIGID PLASTIC, PREFORMED TO FIT AROUND PIPE OR PIPE COVERING; MINIMUM INFORMATION INDICATING FLOW DIRECTION ARROW AND IDENTIFICATION OF FLUID BEING CONVEYED.
D. PLASTIC TAPE PIPE MARKERS: FLEXIBLE, VINYL FILM TAPE WITH PRESSURE SENSITIVE ADHESIVE BACKING AND PRINTED MARKINGS.
E. COLOR CODE AS FOLLOWS:
1. HEATING, COOLING, AND BOILER FEEDWATER: GREEN WITH WHITE LETTERS.
2. COMPRESSED AIR: BLUE WITH WHITE LETTERS.
2.06 CEILING TACKS
A. MANUFACTURERS:
1. CRAFTMARK PIPE MARKERS.
B. DESCRIPTION: STEEL WITH 3/4 INCH (20 MM) DIAMETER COLOR CODED HEAD.
C. COLOR CODE AS FOLLOWS:
1. HVAC EQUIPMENT: YELLOW.
2. FIRE DAMPERS AND SMOKE DAMPERS: RED.
3. HEATING/COOLING VALVES: BLUE.
PART 3 EXECUTION
3.01 PREPARATION
A. DEGREASE AND CLEAN SURFACES TO RECEIVE ADHESIVE FOR IDENTIFICATION MATERIALS.
B. PREPARE SURFACES IN ACCORDANCE WITH SECTION 09 9123 FOR STENCIL PAINTING.
3.02 INSTALLATION
A. INSTALL NAMEPLATES WITH CORROSIVE-RESISTANT MECHANICAL FASTENERS, OR ADHESIVE. APPLY WITH SUFFICIENT ADHESIVE TO ENSURE PERMANENT ADHESION AND SEAL WITH CLEAR LACQUER.
B. INSTALL TAGS WITH CORROSION RESISTANT CHAIN.
C. APPLY STENCIL PAINTING IN ACCORDANCE WITH SECTION 09 9123.
D. INSTALL PLASTIC PIPE MARKERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
E. INSTALL PLASTIC TAPE PIPE MARKERS COMPLETE AROUND PIPE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
F. USE TAGS ON PIPING 3/4 INCH (20 MM) DIAMETER AND SMALLER.
1. LOCATE IDENTIFICATION NOT TO EXCEED 20 FEET (6 M) ON STRAIGHT RUNS INCLUDING RISERS AND DROPS, ADJACENT TO EACH VALVE AND TEE, AT EACH SIDE OF PENETRATION OF STRUCTURE OR ENCLOSURE, AND AT EACH OBSTRUCTION.
G. LOCATE CEILING TACKS TO LOCATE VALVES OR DAMPERS ABOVE LAY-IN PANEL CEILINGS. LOCATE IN CORNER OF PANEL CLOSEST TO EQUIPMENT.

SECTION 23 0593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 GENERAL
1.01 SECTION INCLUDES
A. TESTING, ADJUSTMENT, AND BALANCING OF AIR SYSTEMS.
B. TESTING, ADJUSTMENT, AND BALANCING OF HYDRONIC, STEAM, AND REFRIGERATING SYSTEMS.
C. MEASUREMENT OF FINAL OPERATING CONDITION OF HVAC SYSTEMS.
D. SOUND MEASUREMENT OF EQUIPMENT OPERATING CONDITIONS.
1.02 SUBMITTALS
A. TAB PLAN: SUBMIT A WRITTEN PLAN INDICATING THE TESTING, ADJUSTING, AND BALANCING STANDARD TO BE FOLLOWED AND THE SPECIFIC APPROACH FOR EACH SYSTEM AND COMPONENT.
1. INCLUDE AT LEAST THE FOLLOWING IN THE PLAN:
a. LIST OF ALL AIR FLOW, WATER FLOW, SOUND LEVEL, SYSTEM CAPACITY AND EFFICIENCY MEASUREMENTS TO BE PERFORMED AND A DESCRIPTION OF SPECIFIC TEST PROCEDURES, PARAMETERS, FORMULAS TO BE USED.
b. COPY OF FIELD CHECKOUT SHEETS AND LOGS TO BE USED, LISTING EACH PIECE OF EQUIPMENT TO BE TESTED, ADJUSTED AND BALANCED WITH THE DATA CELLS TO BE GATHERED FOR EACH.
c. FINAL TEST REPORT FORMS TO BE USED.
d. PROCEDURES FOR FORMAL DEFICIENCY REPORTS, INCLUDING SCOPE, FREQUENCY AND DISTRIBUTION.
B. CONTROL SYSTEM COORDINATION REPORTS: COMMUNICATE IN WRITING TO THE CONTROLS INSTALLER ALL SETPOINT AND PARAMETER CHANGES MADE OR PROBLEMS AND DISCREPANCIES IDENTIFIED DURING TAB THAT AFFECT, OR COULD AFFECT, THE CONTROL SYSTEM SETUP AND OPERATION.
C. FINAL REPORT: INDICATE DEFICIENCIES IN SYSTEMS THAT WOULD PREVENT PROPER TESTING, ADJUSTING, AND BALANCING OF SYSTEMS AND EQUIPMENT TO ACHIEVE SPECIFIED PERFORMANCE.
1. REVISE TAB PLAN TO REFLECT ACTUAL PROCEDURES AND SUBMIT AS PART OF FINAL REPORT.
2. SUBMIT DRAFT COPIES OF REPORT FOR REVIEW PRIOR TO FINAL ACCEPTANCE OF PROJECT. PROVIDE FINAL COPIES FOR ARCHITECT AND FOR INCLUSION IN OPERATING AND MAINTENANCE MANUALS.
3. PROVIDE REPORTS IN SOFT COVER, LETTER SIZE, 3-RING BINDER MANUALS, COMPLETE WITH INDEX PAGE AND INDEXING TABS, WITH COVER IDENTIFICATION AT FRONT AND SIDE. INCLUDE SET OF REDUCED DRAWINGS WITH AIR OUTLETS AND EQUIPMENT IDENTIFIED TO CORRESPOND WITH DATA SHEETS, AND INDICATING THERMOSTAT LOCATIONS.
4. INCLUDE ACTUAL INSTRUMENT LIST, WITH MANUFACTURER NAME, SERIAL NUMBER, AND DATE OF CALIBRATION.
5. FORM OF TEST REPORTS: WHERE THE TAB STANDARD BEING FOLLOWED RECOMMENDS A REPORT FORMAT USE THAT; OTHERWISE, FOLLOW ASHRAE STD 111.
6. UNITS OF MEASURE: REPORT DATA IN I-P (INCH-POUND) UNITS ONLY.
7. INCLUDE THE FOLLOWING ON THE TITLE PAGE OF EACH REPORT:
a. NAME OF TESTING, ADJUSTING, AND BALANCING AGENCY.
b. ADDRESS OF TESTING, ADJUSTING, AND BALANCING AGENCY.
c. TELEPHONE NUMBER OF TESTING, ADJUSTING, AND BALANCING AGENCY.
d. PROJECT NAME.
e. PROJECT LOCATION.
f. PROJECT ARCHITECT.
g. PROJECT ENGINEER.
h. PROJECT CONTRACTOR.
i. PROJECT ALTITUDE.
j. REPORT DATE.
D. PROJECT RECORD DOCUMENTS: RECORD ACTUAL LOCATIONS OF FLOW MEASURING STATIONS AND BALANCING VALVES AND ROUGH SETTING.
PART 2 PRODUCTS - NOT USED
PART 3 EXECUTION
3.01 GENERAL REQUIREMENTS
A. PERFORM TOTAL SYSTEM BALANCE IN ACCORDANCE WITH ONE OF THE FOLLOWING:
1. AABC (NSTSB), AABC NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE.
2. ASHRAE STD 111, PRACTICES FOR MEASUREMENT, TESTING, ADJUSTING AND BALANCING OF BUILDING HEATING, VENTILATION, AIR-CONDITIONING, AND REFRIGERATION SYSTEMS.
3. SMACNA (TAB).
B. BEGIN WORK AFTER COMPLETION OF SYSTEMS TO BE TESTED, ADJUSTED, OR BALANCED AND COMPLETE WORK PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT.
C. WHERE HVAC SYSTEMS AND/OR COMPONENTS INTERFACE WITH LIFE SAFETY SYSTEMS, INCLUDING FIRE AND SMOKE DETECTION, ALARM, AND CONTROL, COORDINATE SCHEDULING AND TESTING AND INSPECTION PROCEDURES WITH THE AUTHORITIES HAVING JURISDICTION.
D. TAB AGENCY QUALIFICATIONS:
1. COMPANY SPECIALIZING IN THE TESTING, ADJUSTING, AND BALANCING OF SYSTEMS SPECIFIED IN THIS SECTION.
2. HAVING MINIMUM OF THREE YEARS DOCUMENTED EXPERIENCE.
3. CERTIFIED BY ONE OF THE FOLLOWING:
a. AABC, ASSOCIATED AIR BALANCE COUNCIL: WWW.AABC.COM/#SLE; UPON COMPLETION SUBMIT AABC NATIONAL PERFORMANCE GUARANTY.
b. NEBB, NATIONAL ENVIRONMENTAL BALANCING BUREAU: WWW.NEBB.ORG/#SLE.
c. TABB, THE TESTING, ADJUSTING, AND BALANCING BUREAU OF NATIONAL ENERGY MANAGEMENT INSTITUTE: WWW.TABBCERTIFIED.ORG/#SLE.
E. TAB SUPERVISOR AND TECHNICIAN QUALIFICATIONS: CERTIFIED BY SAME ORGANIZATION AS TAB AGENCY.
3.02 EXAMINATION
A. VERIFY THAT SYSTEMS ARE COMPLETE AND OPERABLE BEFORE COMMENCING WORK. ENSURE THE FOLLOWING CONDITIONS:
1. SYSTEMS ARE STARTED AND OPERATING IN A SAFE AND NORMAL CONDITION.
2. TEMPERATURE CONTROL SYSTEMS ARE INSTALLED COMPLETE AND OPERABLE.
3. PROPER THERMAL OVERLOAD PROTECTION IS IN PLACE FOR ELECTRICAL EQUIPMENT.
4. FINAL FILTERS ARE CLEAN AND IN PLACE. IF REQUIRED, INSTALL TEMPORARY MEDIA IN ADDITION TO FINAL FILTERS.
5. DUCT SYSTEMS ARE CLEAN OF DEBRIS.
6. FANS ARE ROTATING CORRECTLY.
7. FIRE AND VOLUME DAMPERS ARE IN PLACE AND OPEN.
8. AIR COIL FINS ARE CLEANED AND COMBED.
9. ACCESS DOORS ARE CLOSED AND DUCT END CAPS ARE IN PLACE.
10. AIR OUTLETS ARE INSTALLED AND CONNECTED.
11. DUCT SYSTEM LEAKAGE IS MINIMIZED.
12. HYDRONIC SYSTEMS ARE FLUSHED, FILLED, AND VENTED.
13. PUMPS ARE ROTATING CORRECTLY.
14. PROPER STRAINER BASKETS ARE CLEAN AND IN PLACE.
15. SERVICE AND BALANCE VALVES ARE OPEN.
B. SUBMIT FIELD REPORTS. REPORT DEFECTS AND DEFICIENCIES THAT WILL OR COULD PREVENT PROPER SYSTEM BALANCE.
C. BEGINNING OF WORK MEANS ACCEPTANCE OF EXISTING CONDITIONS.
3.03 PREPARATION
A. HOLD A PRE-BALANCING MEETING AT LEAST ONE WEEK PRIOR TO STARTING TAB WORK.
1. REQUIRE ATTENDANCE BY ALL INSTALLERS WHOSE WORK WILL BE TESTED, ADJUSTED, OR BALANCED.
3.04 ADJUSTMENT TOLERANCES
A. AIR HANDLING SYSTEMS: ADJUST TO WITHIN PLUS OR MINUS 5 PERCENT OF DESIGN FOR SUPPLY SYSTEMS AND PLUS OR MINUS 10 PERCENT OF DESIGN FOR RETURN AND EXHAUST SYSTEMS.
B. AIR OUTLETS AND INLETS: ADJUST TOTAL TO WITHIN PLUS 10 PERCENT AND MINUS 5 PERCENT OF DESIGN TO SPACE. ADJUST OUTLETS AND INLETS IN SPACE TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN.
C. HYDRONIC SYSTEMS: ADJUST TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN.
3.05 RECORDING AND ADJUSTING
A. FIELD LOGS: MAINTAIN WRITTEN LOGS INCLUDING:
1. RUNNING LOG OF EVENTS AND ISSUES.
2. DISCREPANCIES, DEFICIENT OR UNCOMPLETED WORK BY OTHERS.
3. CONTRACT INTERPRETATION REQUESTS.
4. LISTS OF COMPLETED TESTS.
B. ENSURE RECORDED DATA REPRESENTS ACTUAL MEASURED OR OBSERVED CONDITIONS.
C. PERMANENTLY MARK SETTINGS OF VALVES, DAMPERS, AND OTHER ADJUSTMENT DEVICES ALLOWING SETTINGS TO BE RESTORED. SET AND LOCK MEMORY STOPS.
D. MARK ON DRAWINGS THE LOCATIONS WHERE TRAVERSE AND OTHER CRITICAL MEASUREMENTS WERE TAKEN AND CROSS REFERENCE THE LOCATION IN THE FINAL REPORT.
E. AFTER ADJUSTMENT, TAKE MEASUREMENTS TO VERIFY BALANCE HAS NOT BEEN DISRUPTED OR THAT SUCH DISRUPTION HAS BEEN RECTIFIED.
F. LEAVE SYSTEMS IN PROPER WORKING ORDER, REPLACING BELT GUARDS, CLOSING ACCESS DOORS, CLOSING DOORS TO ELECTRICAL SWITCH BOXES, AND RESTORING THERMOSTATS TO SPECIFIED SETTINGS.
3.06 AIR SYSTEM PROCEDURE
A. ADJUST AIR HANDLING AND DISTRIBUTION SYSTEMS TO PROVIDE REQUIRED OR DESIGN SUPPLY, RETURN, AND EXHAUST AIR QUANTITIES AT SITE ALTITUDE.
B. MAKE AIR QUANTITY MEASUREMENTS IN DUCTS BY PITOT TUBE TRAVERSE OF ENTIRE CROSS SECTIONAL AREA OF DUCT.
C. MEASURE AIR QUANTITIES AT AIR INLETS AND OUTLETS.
D. ADJUST DISTRIBUTION SYSTEM TO OBTAIN UNIFORM SPACE TEMPERATURES FREE FROM OBJECTIONABLE DRAFTS AND NOISE.
E. USE VOLUME CONTROL DEVICES TO REGULATE AIR QUANTITIES ONLY TO EXTEND THAT ADJUSTMENTS DO NOT CREATE OBJECTIONABLE AIR MOTION OR SOUND LEVELS. EFFECT VOLUME CONTROL BY DUCT INTERNAL DEVICES SUCH AS DAMPERS AND SPLITTERS.
F. VARY TOTAL SYSTEM AIR QUANTITIES BY ADJUSTMENT OF FAN SPEEDS. PROVIDE DRIVE CHANGES REQUIRED. VARY BRANCH AIR QUANTITIES BY DAMPER REGULATION.
G. MEASURE STATIC AIR PRESSURE CONDITIONS ON AIR SUPPLY UNITS, INCLUDING FILTER AND COIL PRESSURE DROPS, AND TOTAL PRESSURE ACROSS THE FAN. MAKE ALLOWANCES FOR 50 PERCENT LOADING OF FILTERS.
H. ADJUST OUTSIDE AIR AUTOMATIC DAMPERS, OUTSIDE AIR, RETURN AIR, AND EXHAUST DAMPERS FOR DESIGN CONDITIONS.
I. MEASURE TEMPERATURE CONDITIONS ACROSS OUTSIDE AIR, RETURN AIR, AND EXHAUST DAMPERS TO CHECK LEAKAGE.
J. WHERE MODULATING DAMPERS ARE PROVIDED, TAKE MEASUREMENTS AND BALANCE AT EXTREME CONDITIONS. BALANCE VARIABLE VOLUME SYSTEMS AT MAXIMUM AIR FLOW RATE, FULL COOLING, AND AT MINIMUM AIR FLOW RATE, FULL HEATING.
K. MEASURE BUILDING STATIC PRESSURE AND ADJUST SUPPLY, RETURN, AND EXHAUST AIR SYSTEMS TO PROVIDE REQUIRED RELATIONSHIP BETWEEN EACH TO MAINTAIN APPROXIMATELY 0.05 INCHES (12.5 PA) POSITIVE STATIC PRESSURE NEAR THE BUILDING ENTRIES.
L. FOR VARIABLE AIR VOLUME SYSTEM POWERED UNITS SET VOLUME CONTROLLER TO AIR FLOW SETTING INDICATED. CONFIRM CONNECTIONS PROPERLY MADE AND CONFIRM PROPER OPERATION FOR AUTOMATIC VARIABLE AIR VOLUME TEMPERATURE CONTROL.
M. ON FAN POWERED VAV BOXES, ADJUST AIR FLOW SWITCHES FOR PROPER OPERATION.
3.07 WATER SYSTEM PROCEDURE
A. ADJUST WATER SYSTEMS TO PROVIDE REQUIRED OR DESIGN QUANTITIES.
B. USE CALIBRATED VENTURI TUBES, ORIFICES, OR OTHER METERED FITTINGS AND PRESSURE GAGES TO DETERMINE FLOW RATES FOR SYSTEM BALANCE. WHERE FLOW METERING DEVICES ARE NOT INSTALLED, BASE FLOW BALANCE ON TEMPERATURE DIFFERENCE ACROSS VARIOUS HEAT TRANSFER ELEMENTS IN THE SYSTEM.
C. ADJUST SYSTEMS TO PROVIDE SPECIFIED PRESSURE DROPS AND FLOWS THROUGH HEAT TRANSFER ELEMENTS PRIOR TO THERMAL TESTING. PERFORM BALANCING BY MEASUREMENT OF TEMPERATURE DIFFERENTIAL IN CONJUNCTION WITH AIR BALANCING.
D. EFFECT SYSTEM BALANCE WITH AUTOMATIC CONTROL VALVES FULLY OPEN TO HEAT TRANSFER ELEMENTS.
E. EFFECT ADJUSTMENT OF WATER DISTRIBUTION SYSTEMS BY MEANS OF BALANCING COCKS, VALVES, AND FITTINGS. DO NOT USE SERVICE OR SHUT-OFF VALVES FOR BALANCING UNLESS INDEXED FOR BALANCE POINT.
F. WHERE AVAILABLE PUMP CAPACITY IS LESS THAN TOTAL FLOW REQUIREMENTS OR INDIVIDUAL SYSTEM PARTS, FULL FLOW IN ONE PART MAY BE SIMULATED BY TEMPORARY RESTRICTION OF FLOW TO OTHER PARTS.
3.08 SCOPE
A. TEST, ADJUST, AND BALANCE THE FOLLOWING:
1. HVAC PUMPS.
2. PACKAGED ROOF TOP HEATING/COOLING UNITS.
3. PACKAGED TERMINAL AIR CONDITIONING UNITS.
4. UNIT AIR CONDITIONERS.
5. AIR COILS.
6. AIR HANDLING UNITS.
7. FANS.
8. AIR FILTERS.
9. AIR TERMINAL UNITS.
10. AIR INLETS AND OUTLETS.
3.09 MINIMUM DATA TO BE REPORTED
A. ELECTRIC MOTORS:
1. MANUFACTURER.
2. MODEL/FRAME.
3. HP/BHP.
4. PHASE, VOLTAGE, AMPERAGE; NAMEPLATE, ACTUAL, NO LOAD.
5. RPM.
6. SERVICE FACTOR.
7. STARTER SIZE, RATING, HEATER ELEMENTS.
8. SHEAVE MAKE/SIZE/BORE.
B. V-BELT DRIVES:
1. IDENTIFICATION/LOCATION.
2. REQUIRED DRIVEN RPM.
3. DRIVEN SHEAVE, DIAMETER AND RPM.
4. BELT, SIZE AND QUANTITY.
5. MOTOR SHEAVE DIAMETER AND RPM.
C. PUMPS:
1. IDENTIFICATION/NUMBER.
2. MANUFACTURER.

HOLLISTER CALIFORNIA

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STATE OF TEXAS
ERIC MICHAEL LOVICH
161877
09/25/2026
LICENSED
PROFESSIONAL ENGINEER

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Project No.: 260348
Drawn By: AJB

Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

MECHANICAL SPECIFICATIONS

M0.01

3. SIZE/MODEL.
4. IMPELLER.
5. SERVICE.
6. DESIGN FLOW RATE, PRESSURE DROP, BHP.
7. ACTUAL FLOW RATE, PRESSURE DROP, BHP.
8. DISCHARGE PRESSURE.
9. SUCTION PRESSURE.
10. TOTAL OPERATING HEAD PRESSURE.

D. AIR COOLED CONDENSERS:
1. IDENTIFICATION/NUMBER.
2. LOCATION.
3. MANUFACTURER.
4. MODEL NUMBER.
5. SERIAL NUMBER.
6. ENTERING DB AIR TEMPERATURE, DESIGN AND ACTUAL.
7. LEAVING DB AIR TEMPERATURE, DESIGN AND ACTUAL.
8. NUMBER OF COMPRESSORS.

E. COOLING COILS:
1. IDENTIFICATION/NUMBER.
2. LOCATION.
3. SERVICE.
4. MANUFACTURER.
5. AIR FLOW, DESIGN AND ACTUAL.
6. ENTERING AIR DB TEMPERATURE, DESIGN AND ACTUAL.
7. ENTERING AIR WB TEMPERATURE, DESIGN AND ACTUAL.
8. LEAVING AIR DB TEMPERATURE, DESIGN AND ACTUAL.
9. LEAVING AIR WB TEMPERATURE, DESIGN AND ACTUAL.
10. WATER FLOW, DESIGN AND ACTUAL.
11. WATER PRESSURE DROP, DESIGN AND ACTUAL.
12. ENTERING WATER TEMPERATURE, DESIGN AND ACTUAL.
13. LEAVING WATER TEMPERATURE, DESIGN AND ACTUAL.
14. AIR PRESSURE DROP, DESIGN AND ACTUAL.

F. HEATING COILS:
1. IDENTIFICATION/NUMBER.
2. LOCATION.
3. SERVICE.
4. MANUFACTURER.
5. AIR FLOW, DESIGN AND ACTUAL.
6. WATER FLOW, DESIGN AND ACTUAL.
7. WATER PRESSURE DROP, DESIGN AND ACTUAL.
8. ENTERING WATER TEMPERATURE, DESIGN AND ACTUAL.
9. LEAVING WATER TEMPERATURE, DESIGN AND ACTUAL.
10. ENTERING AIR TEMPERATURE, DESIGN AND ACTUAL.
11. LEAVING AIR TEMPERATURE, DESIGN AND ACTUAL.
12. AIR PRESSURE DROP, DESIGN AND ACTUAL.

G. ELECTRIC DUCT HEATERS:
1. MANUFACTURER.
2. IDENTIFICATION/NUMBER.
3. LOCATION.
4. MODEL NUMBER.
5. DESIGN KW.
6. NUMBER OF STAGES.
7. PHASE, VOLTAGE, AMPERAGE.
8. TEST VOLTAGE (EACH PHASE).
9. TEST AMPERAGE (EACH PHASE).
10. AIR FLOW, SPECIFIED AND ACTUAL.
11. TEMPERATURE RISE, SPECIFIED AND ACTUAL.

H. AIR MOVING EQUIPMENT:
1. LOCATION.
2. MANUFACTURER.
3. MODEL NUMBER.
4. SERIAL NUMBER.
5. AIR FLOW, SPECIFIED AND ACTUAL.
6. RETURN AIR FLOW, SPECIFIED AND ACTUAL.
7. OUTSIDE AIR FLOW, SPECIFIED AND ACTUAL.
8. TOTAL STATIC PRESSURE (TOTAL EXTERNAL), SPECIFIED AND ACTUAL.
9. INLET PRESSURE.
10. DISCHARGE PRESSURE.
11. SHEAVE MAKE/SIZE/BORE.
12. NUMBER OF BELTS/MAKE/SIZE.
13. FAN RPM.

I. RETURN AIR/OUTSIDE AIR:
1. IDENTIFICATION/LOCATION.
2. DESIGN AIR FLOW.
3. ACTUAL AIR FLOW.
4. DESIGN RETURN AIR FLOW.
5. ACTUAL RETURN AIR FLOW.
6. DESIGN OUTSIDE AIR FLOW.
7. ACTUAL OUTSIDE AIR FLOW.
8. RETURN AIR TEMPERATURE.
9. OUTSIDE AIR TEMPERATURE.

J. EXHAUST FANS:
1. LOCATION.
2. MANUFACTURER.
3. MODEL NUMBER.
4. SERIAL NUMBER.
5. AIR FLOW, SPECIFIED AND ACTUAL.
6. TOTAL STATIC PRESSURE (TOTAL EXTERNAL), SPECIFIED AND ACTUAL.
7. INLET PRESSURE.
8. DISCHARGE PRESSURE.
9. SHEAVE MAKE/SIZE/BORE.
10. NUMBER OF BELTS/MAKE/SIZE.
11. FAN RPM.

K. DUCT TRAVERSES:
1. SYSTEM ZONE/BRANCH.
2. DUCT SIZE.
3. AREA.
4. DESIGN VELOCITY.
5. DESIGN AIR FLOW.
6. TEST VELOCITY.
7. TEST AIR FLOW.
8. DUCT STATIC PRESSURE.
9. AIR TEMPERATURE.

L. DUCT LEAK TESTS:
1. DESCRIPTION OF DUCTWORK UNDER TEST.
2. DUCT DESIGN OPERATING PRESSURE.
3. DUCT DESIGN TEST STATIC PRESSURE.
4. DUCT CAPACITY, AIR FLOW.
5. MAXIMUM ALLOWABLE LEAKAGE DUCT CAPACITY TIMES LEAK FACTOR.
6. TEST APPARATUS:
a. BLOWER.
b. ORIFICE, TUBE SIZE.
c. ORIFICE SIZE.
d. CALIBRATED.
7. TEST STATIC PRESSURE.
8. TEST ORIFICE DIFFERENTIAL PRESSURE.
9. LEAKAGE.

M. FLOW MEASURING STATIONS:
1. IDENTIFICATION/NUMBER.
2. LOCATION.
3. SIZE.
4. MANUFACTURER.
5. MODEL NUMBER.
6. SERIAL NUMBER.
7. DESIGN FLOW RATE.
8. DESIGN PRESSURE DROP.
9. ACTUAL/FINAL PRESSURE DROP.
10. ACTUAL/FINAL FLOW RATE.

N. TERMINAL UNIT DATA:
1. MANUFACTURER.
2. TYPE, CONSTANT, VARIABLE, SINGLE, DUAL DUCT.
3. IDENTIFICATION/NUMBER.
4. LOCATION.
5. MODEL NUMBER.
6. SIZE.
7. MINIMUM DESIGN AIR FLOW.
8. MAXIMUM DESIGN AIR FLOW.
9. MAXIMUM ACTUAL AIR FLOW.

O. AIR DISTRIBUTION TESTS:
1. AIR TERMINAL NUMBER.
2. ROOM NUMBER/LOCATION.
3. TERMINAL TYPE.
4. TERMINAL SIZE.
5. AREA FACTOR.
6. DESIGN VELOCITY.
7. DESIGN AIR FLOW.
8. TEST (FINAL) VELOCITY.
9. TEST (FINAL) AIR FLOW.

P. SOUND LEVEL REPORTS:
1. LOCATION.
2. OCTAVE BANDS - EQUIPMENT OFF.
3. OCTAVE BANDS - EQUIPMENT ON.

SECTION 23 0713 - DUCT INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES
A. DUCT INSULATION.
B. DUCT LINER.
C. INSULATION JACKETS.

1.02 DELIVERY, STORAGE, AND HANDLING
A. ACCEPT MATERIALS ON SITE IN ORIGINAL FACTORY PACKAGING, LABELLED WITH MANUFACTURER'S IDENTIFICATION, INCLUDING PRODUCT DENSITY AND THICKNESS.
B. PROTECT INSULATION FROM WEATHER AND CONSTRUCTION TRAFFIC, DIRT, WATER, CHEMICAL, AND MECHANICAL DAMAGE, BY STORING IN ORIGINAL WRAPPING.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS
A. SURFACE BURNING CHARACTERISTICS: FLAME SPREAD INDEX/SMOKE DEVELOPED INDEX OF 25/50, MAXIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM E84 OR UL 723.

2.02 GLASS FIBER, FLEXIBLE
A. MANUFACTURER:
1. CERTAINTEED CORPORATION.
2. JOHNS MANVILLE.
3. KNAUF INSULATION; ATMOSPHERE DUCT WRAP.
4. OWENS CORNING CORPORATION.
B. INSULATION: ASTM C553; FLEXIBLE, NONCOMBUSTIBLE BLANKET.
1. K (KSI) VALUE: 0.36 AT 75 DEGREES F (0.052 AT 24 DEGREES C), WHEN TESTED IN ACCORDANCE WITH ASTM C518.
2. MAXIMUM SERVICE TEMPERATURE: 1200 DEGREES F (649 DEGREES C).
3. MAXIMUM WATER VAPOR ABSORPTION: 5.0 PERCENT BY WEIGHT.
C. VAPOR BARRIER JACKET:
1. KRAFT PAPER WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM.
2. MOISTURE VAPOR PERMEABILITY: 0.02 PERM INCH (0.029 NG/PA S M), WHEN TESTED IN ACCORDANCE WITH ASTM E96/E96M.
3. SECURE WITH PRESSURE SENSITIVE TAPE.
D. VAPOR BARRIER TAPE:
1. KRAFT PAPER REINFORCED WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM, WITH PRESSURE SENSITIVE RUBBER BASED ADHESIVE.
E. INDOOR VAPOR BARRIER MASTIC:
1. VINYL EMULSION TYPE ACRYLIC OR MASTIC, COMPATIBLE WITH INSULATION, BLACK COLOR.
F. OUTDOOR VAPOR BARRIER MASTIC:
1. VINYL EMULSION TYPE ACRYLIC OR MASTIC, COMPATIBLE WITH INSULATION, BLACK COLOR.

2.03 GLASS FIBER, RIGID
A. MANUFACTURER:
1. CERTAINTEED CORPORATION.
2. JOHNS MANVILLE.
3. KNAUF INSULATION.
4. OWENS CORNING CORPORATION; 700 SERIES FIBERGLAS INSULATION:.
B. INSULATION: ASTM C612; RIGID, NONCOMBUSTIBLE BLANKET.
1. K (KSI) VALUE: 0.24 AT 75 DEGREES F (0.036 AT 24 DEGREES C), WHEN TESTED IN ACCORDANCE WITH ASTM C518.
2. MAXIMUM SERVICE TEMPERATURE: 450 DEGREES F (232 DEGREES C).
3. MAXIMUM WATER VAPOR ABSORPTION: 5.0 PERCENT.
4. MAXIMUM DENSITY: 8.0 LB/CU FT (128 KG/CU M).
C. VAPOR BARRIER JACKET:
1. KRAFT PAPER WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM.
2. MOISTURE VAPOR PERMEABILITY: 0.02 PERM INCH (0.029 NG/PA S M), WHEN TESTED IN ACCORDANCE WITH ASTM E96/E96M.
3. SECURE WITH PRESSURE SENSITIVE TAPE.
D. VAPOR BARRIER TAPE:
1. KRAFT PAPER REINFORCED WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM, WITH PRESSURE SENSITIVE RUBBER BASED ADHESIVE.
E. PROTECTIVE COATING:
1. MANUFACTURERS:
a. DESIGN POLYMERICS; DP 2540 WATER BASED, LOW VOC, EPA REGISTERED ANTI-MICROBIAL PROTECTIVE COATING: WWW.DESIGNPOLY.COM/#SLE.
F. INDOOR VAPOR BARRIER FINISH:
1. VINYL EMULSION TYPE ACRYLIC, COMPATIBLE WITH INSULATION, BLACK COLOR.

2.04 FLEXIBLE ELASTOMERIC CELLULAR INSULATION
A. MANUFACTURERS:
1. AEROFLEX USA, INC; AEROCEL SHEET & ROLL WITH PSA: WWW.AEROFLEXUSA.COM/#SLE.
2. ARMACELL LLC; AP ARMAFLEX ; [______]: WWW.ARMACELL.US/#SLE.
3. K-FLEX USA LLC; INSUL-SHEET: WWW.KFLEXUSA.COM/#SLE.
B. INSULATION: PREFORMED FLEXIBLE ELASTOMERIC CELLULAR RUBBER INSULATION COMPLYING WITH ASTM C534/C534M GRADE 1, IN SHEET FORM.
1. MINIMUM SERVICE TEMPERATURE: MINUS 40 DEGREES F (MINUS 40 DEGREES C).
2. MAXIMUM SERVICE TEMPERATURE: 180 DEGREES F (82 DEGREES C).
3. CONNECTION: WATERPROOF VAPOR BARRIER ADHESIVE.
C. ELASTOMERIC FOAM ADHESIVE: AIR DRIED, CONTACT ADHESIVE, COMPATIBLE WITH INSULATION.

2.05 JACKETS
A. CANVAS JACKET: UL LISTED 6 OZ/SQ YD (220 G/SQ M) PLAIN WEAVE COTTON FABRIC TREATED WITH DILUTE FIRE RETARDANT LAGGING ADHESIVE.
1. LAGGING ADHESIVE:
a. COMPATIBLE WITH INSULATION.
B. FLEXIBLE WEATHER-PROOFING OUTDOOR JACKET: SELF-HEALING, FIELD-APPLIED OUTDOOR CLADDING.
1. MATERIAL: ALUMINUM FOIL/POLYMER LAMINATE WITH RUBBERIZED ASPHALT LAYER AND ACRYLIC ADHESIVE.
2. THICKNESS: 34 MILS (0.86 MM).
3. FINISH: EMBOSSED.
4. COLOR: WHITE.
5. WATER VAPOR TRANSMISSION: 0.002 PERM INCH (0.0029 NG/PA S M), MAXIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM E96/E96M.
6. MOLD RESISTANCE: PASS WHEN TESTED IN ACCORDANCE WITH ASTM C1338.
7. EMISSIVITY: 0.30 WHEN TESTED IN ACCORDANCE WITH ASTM C1371.

2.06 DUCT LINER
A. MANUFACTURERS:
1. ARMACELL LLC; AP COILFLEX.
2. CERTAINTEED CORPORATION.
3. DUCTMATE INDUSTRIES, INC, A DMI COMPANY.
4. JOHNS MANVILLE.
5. KNAUF INSULATION.
6. OWENS CORNING CORPORATION; QUIETR ROTARY DUCT INSULATION.
B. ELASTOMERIC FOAM INSULATION: PREFORMED FLEXIBLE ELASTOMERIC CELLULAR RUBBER INSULATION COMPLYING WITH ASTM C534/C534M GRADE 1, IN SHEET FORM.
1. MINIMUM SERVICE TEMPERATURE: MINUS 40 DEGREES F (MINUS 40 DEGREES C).
2. MAXIMUM SERVICE TEMPERATURE: 180 DEGREES F (82 DEGREES C).
3. FUNGAL RESISTANCE: NO GROWTH WHEN TESTED ACCORDING TO ASTM G21.
4. CONNECTION: WATERPROOF VAPOR BARRIER ADHESIVE.
C. ELASTOMERIC FOAM ADHESIVE: AIR DRIED, CONTACT ADHESIVE, COMPATIBLE WITH INSULATION. COMPLY WITH ASTM C916.
D. LINER FASTENERS: GALVANIZED STEEL, SELF-ADHESIVE PAD WITH INTEGRAL HEAD.

PART 3 EXECUTION

3.01 EXAMINATION
A. TEST DUCTWORK FOR DESIGN PRESSURE PRIOR TO APPLYING INSULATION MATERIALS.
B. VERIFY THAT SURFACES ARE CLEAN, FOREIGN MATERIAL REMOVED, AND DRY.

3.02 INSTALLATION
A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. INSTALL IN ACCORDANCE WITH NAIMA NATIONAL INSULATION STANDARDS.
C. INSULATED DUCTS CONVEYING AIR BELOW AMBIENT TEMPERATURE:
1. PROVIDE INSULATION WITH VAPOR BARRIER JACKETS.
2. FINISH WITH TAPE AND VAPOR BARRIER JACKET.
3. CONTINUE INSULATION THROUGH WALLS, SLEEVES, HANGERS, AND OTHER DUCT PENETRATIONS.
4. INSULATE ENTIRE SYSTEM, INCLUDING FITTINGS, JOINTS, FLANGES, FIRE DAMPERS, FLEXIBLE CONNECTIONS, AND EXPANSION JOINTS.
D. INSULATED DUCTS CONVEYING AIR ABOVE AMBIENT TEMPERATURE:
1. PROVIDE WITH OR WITHOUT STANDARD VAPOR BARRIER JACKET.
2. INSULATE FITTINGS AND JOINTS. WHERE SERVICE ACCESS IS REQUIRED, BEVEL AND SEAL ENDS OF INSULATION.
E. DUCTS EXPOSED IN MECHANICAL EQUIPMENT ROOMS OR FINISHED SPACES: FINISH WITH CANVAS JACKET SIZED FOR FINISH PAINTING.
F. SLOPE EXTERIOR DUCTWORK TO SHED WATER.
G. EXTERNAL DUCT INSULATION APPLICATION:
1. SECURE INSULATION WITH VAPOR BARRIER WITH WIRES AND SEAL JACKET JOINTS WITH VAPOR BARRIER ADHESIVE OR TAPE TO MATCH JACKET.
2. SECURE INSULATION WITHOUT VAPOR BARRIER WITH STAPLES, TAPE, OR WIRES.
3. INSTALL WITHOUT SAG ON UNDERSIDE OF DUCT. USE ADHESIVE OR MECHANICAL FASTENERS WHERE NECESSARY TO PREVENT SAGGING. LIFT DUCT OFF TRAPEZE HANGERS AND INSERT SPACERS.
4. SEAL VAPOR BARRIER PENETRATIONS BY MECHANICAL FASTENERS WITH VAPOR BARRIER ADHESIVE.
5. STOP AND POINT INSULATION AROUND ACCESS DOORS AND DAMPER OPERATORS TO ALLOW OPERATION WITHOUT DISTURBING WRAPPING.
H. DUCT AND PLENUM LINER APPLICATION:
1. ADHERE INSULATION WITH ADHESIVE FOR 90 PERCENT COVERAGE.
2. SECURE INSULATION WITH MECHANICAL LINER FASTENERS. REFER TO SMACNA (DCS) FOR SPACING.
3. SEAL AND SMOOTH JOINTS. SEAL AND COAT TRANSVERSE JOINTS.
4. SEAL LINER SURFACE PENETRATIONS WITH ADHESIVE.
5. DUCT DIMENSIONS INDICATED ARE NET INSIDE DIMENSIONS REQUIRED FOR AIR-FLOW. INCREASE DUCT SIZE TO ALLOW FOR INSULATION THICKNESS.

3.03 SCHEDULES
A. ~~EXHAUST DUCTS WITHIN 10 FT (3 M) OF EXTERIOR OPENINGS.~~
B. ~~EXHAUST DUCTS EXPOSED TO OUTDOOR AIR.~~
C. ~~OUTSIDE AIR INTAKE DUCTS.~~
D. ~~PLENUMS.~~
E. ~~PLENUMS (COOLING SYSTEM).~~
F. SUPPLY DUCTS: 1-1/2" BLANKET TYPE
G. ~~SUPPLY DUCTS FROM FANS TO VERTICAL DUCTS IN SHAFTS (COOLING SYSTEM).~~
H. ~~SUPPLY DUCTS IN VERTICAL SHAFTS (COOLING SYSTEMS).~~
I. ~~SUPPLY DUCTS AFTER TERMINAL BOXES.~~
J. ~~RETURN AND RELIEF DUCTS IN MECHANICAL ROOMS.~~

SECTION 23 0716 - HVAC EQUIPMENT INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES
A. EQUIPMENT INSULATION.

1.02 DELIVERY, STORAGE, AND HANDLING
A. ACCEPT MATERIALS ON SITE IN ORIGINAL FACTORY PACKAGING, LABELED WITH MANUFACTURER'S IDENTIFICATION, INCLUDING PRODUCT DENSITY AND THICKNESS.
B. PROTECT INSULATION FROM WEATHER AND CONSTRUCTION TRAFFIC, DIRT, WATER, CHEMICAL, AND MECHANICAL DAMAGE, BY STORING IN ORIGINAL WRAPPING.

1.03 FIELD CONDITIONS
A. MAINTAIN AMBIENT TEMPERATURES AND CONDITIONS REQUIRED BY MANUFACTURERS OF ADHESIVES, MASTICS, AND INSULATION CEMENTS.
B. MAINTAIN TEMPERATURE DURING AND AFTER INSTALLATION FOR MINIMUM PERIOD OF 24 HOURS.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS
A. SURFACE BURNING CHARACTERISTICS: FLAME SPREAD INDEX/SMOKE DEVELOPED INDEX OF 25/50, MAXIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM E84 OR UL 723.

2.02 FLEXIBLE ELASTOMERIC CELLULAR INSULATION
A. MANUFACTURER:
1. AEROFLEX USA, INC; AEROCEL AC SHEET AND ROLL.
2. ARMACELL LLC; ARMAFLEX ULTRA WITH FLAMEDEFENSE.
3. K-FLEX USA LLC; INSUL-SHEET.
B. INSULATION: PREFORMED FLEXIBLE ELASTOMERIC CELLULAR RUBBER INSULATION COMPLYING WITH ASTM C534/C534M GRADE 1, IN SHEET FORM.
1. MINIMUM SERVICE TEMPERATURE: MINUS 40 DEGREES F (MINUS 40 DEGREES C).
2. MAXIMUM SERVICE TEMPERATURE: 220 DEGREES F (104 DEGREES C).
3. CONNECTION: WATERPROOF VAPOR BARRIER ADHESIVE.
C. ELASTOMERIC FOAM ADHESIVE: AIR DRIED, CONTACT ADHESIVE, COMPATIBLE WITH INSULATION.

PART 3 EXECUTION

3.01 EXAMINATION
A. VERIFY THAT EQUIPMENT HAS BEEN TESTED BEFORE APPLYING INSULATION MATERIALS.
B. VERIFY THAT SURFACES ARE CLEAN AND DRY, WITH FOREIGN MATERIAL REMOVED.

3.02 INSTALLATION
A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. FACTORY INSULATED EQUIPMENT: DO NOT INSULATE.
C. EXPOSED EQUIPMENT: LOCATE INSULATION AND COVER SEAMS IN LEAST VISIBLE LOCATIONS.
D. APPLY INSULATION CLOSE TO EQUIPMENT BY GROOVING, SCORING, AND BEVELING INSULATION. FASTEN INSULATION TO EQUIPMENT WITH STUDS, PINS, CLIPS, ADHESIVE, WIRES, OR BANDS.
E. FILL JOINTS, CRACKS, SEAMS, AND DEPRESSIONS WITH BEDDING COMPOUND TO FORM SMOOTH SURFACE. ON COLD EQUIPMENT, USE VAPOR BARRIER CEMENT.
F. INSULATED EQUIPMENT CONTAINING FLUIDS BELOW AMBIENT TEMPERATURE; INSULATE ENTIRE SYSTEM.
G. FOR HOT EQUIPMENT CONTAINING FLUIDS OVER 140 DEGREES F (60 DEGREES C), INSULATE FLANGES AND UNIONS WITH REMOVABLE SECTIONS AND JACKETS.
H. COVER GLASS FIBER INSULATION WITH METAL MESH AND FINISH WITH HEAVY COAT OF INSULATING CEMENT.

3.03 SCHEDULE
A. HEATING SYSTEMS:
1. PUMP BODIES: 1 INCH FLEXIBLE ELASTOMERIC CELLULAR
2. HEAT EXCHANGERS/CONVERTERS: 1 INCH FLEXIBLE ELASTOMERIC CELLULAR
3. AIR SEPARATORS: 1 INCH FLEXIBLE ELASTOMERIC CELLULAR
4. EXPANSION TANKS: 1 INCH FLEXIBLE ELASTOMERIC CELLULAR
5. HOT THERMAL STORAGE TANKS: 1 INCH FLEXIBLE ELASTOMERIC CELLULAR
6. BOILER FEED WATER STORAGE TANKS: 1 INCH FLEXIBLE ELASTOMERIC CELLULAR
B. COOLING SYSTEMS:
1. PUMP BODIES: 1 INCH FLEXIBLE ELASTOMERIC CELLULAR
2. AIR SEPARATORS: 1 INCH FLEXIBLE ELASTOMERIC CELLULAR
3. EXPANSION TANKS: 1 INCH FLEXIBLE ELASTOMERIC CELLULAR
4. EQUIPMENT EXPOSED TO FREEZING WITH HEAT TRACING: 1 INCH FLEXIBLE ELASTOMERIC CELLULAR

SECTION 23 0719 - HVAC PIPING INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES
A. PIPING INSULATION.
B. FLEXIBLE REMOVABLE AND REUSABLE BLANKET INSULATION.
C. JACKETS AND ACCESSORIES.

1.02 FIELD CONDITIONS
A. MAINTAIN AMBIENT CONDITIONS REQUIRED BY MANUFACTURERS OF EACH PRODUCT.
B. MAINTAIN TEMPERATURE BEFORE, DURING, AND AFTER INSTALLATION FOR MINIMUM OF 24 HOURS.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS
A. SURFACE BURNING CHARACTERISTICS: FLAME SPREAD INDEX/SMOKE DEVELOPED INDEX OF 25/50, MAXIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM E84 OR UL 723.

2.02 GLASS FIBER, RIGID
A. MANUFACTURERS:
1. CERTAINTEED CORPORATION.
2. JOHNS MANVILLE CORPORATION.
3. KNAUF INSULATION; EARTHWOOL 1000 DEGREE PIPE INSULATION.
4. OWENS CORNING CORPORATION; FIBERGLAS PIPE INSULATION ASJ.
B. INSULATION: ASTM C547 AND ASTM C795; RIGID MOLDED, NONCOMBUSTIBLE.
1. K (KSI) VALUE: ASTM C177, 0.24 AT 75 DEGREES F (0.035 AT 24 DEGREES C).
2. MAXIMUM SERVICE TEMPERATURE: 850 DEGREES F (454 DEGREES C).
3. MAXIMUM MOISTURE ABSORPTION: 0.2 PERCENT BY VOLUME.
C. VAPOR BARRIER JACKET: WHITE KRAFT PAPER WITH GLASS FIBER YARN, BONDED TO ALUMINIZED FILM; MOISTURE VAPOR TRANSMISSION WHEN TESTED IN ACCORDANCE WITH ASTM E96/E96M OF 0.02 PERM-INCHES (0.029 NG/PA S M).

2.03 FLEXIBLE ELASTOMERIC CELLULAR INSULATION
A. MANUFACTURERS:
1. AEROFLEX USA, INC; AEROCEL STAY-SEAL WITH PROTAPE (SSPT).
2. ARMACELL LLC; ARMAFLEX ULTRA WITH FLAMEDEFENSE.
3. K-FLEX USA LLC; K-FLEX TITAN.
B. INSULATION: PREFORMED FLEXIBLE ELASTOMERIC CELLULAR RUBBER INSULATION COMPLYING WITH ASTM C534/C534M GRADE 1; USE MOLDED TUBULAR MATERIAL WHEREVER POSSIBLE.
1. MINIMUM SERVICE TEMPERATURE: MINUS 40 DEGREES F (MINUS 40 DEGREES C).
2. MAXIMUM SERVICE TEMPERATURE: 180 DEGREES F (82 DEGREES C).
3. CONNECTION: WATERPROOF VAPOR BARRIER ADHESIVE.

2.04 JACKETS
A. PVC PLASTIC.
1. MANUFACTURERS:
a. JOHNS MANVILLE CORPORATION.
2. JACKET: ONE PIECE MOLDED TYPE FITTING COVERS AND SHEET MATERIAL, OFF-WHITE COLOR.
a. MINIMUM SERVICE TEMPERATURE: 0 DEGREES F (MINUS 18 DEGREES C).
b. MAXIMUM SERVICE TEMPERATURE: 150 DEGREES F (66 DEGREES C).
c. MOISTURE VAPOR PERMEABILITY: 0.002 PERM INCH (0.0029 NG/PA S M), MAXIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM E96/E96M.
d. THICKNESS: 10 MIL (0.25 MM).
e. CONNECTIONS: BRUSH ON WELDING ADHESIVE.

PART 3 EXECUTION

3.01 EXAMINATION
A. TEST PIPING FOR DESIGN PRESSURE, LIQUID TIGHTNESS, AND CONTINUITY PRIOR TO APPLYING INSULATION MATERIALS.
B. VERIFY THAT SURFACES ARE CLEAN AND DRY, WITH FOREIGN MATERIAL REMOVED.

3.02 INSTALLATION
A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. INSTALL IN ACCORDANCE WITH NAIMA NATIONAL INSULATION STANDARDS.
C. EXPOSED PIPING: LOCATE INSULATION AND COVER SEAMS IN LEAST VISIBLE LOCATIONS.
D. INSULATED PIPES CONVEYING FLUIDS BELOW AMBIENT TEMPERATURE:
1. INSULATE ENTIRE SYSTEM, INCLUDING FITTINGS, VALVES, UNIONS, FLANGES, STRAINERS, FLEXIBLE CONNECTIONS, PUMP BODIES, AND EXPANSION JOINTS.
E. GLASS FIBER INSULATED PIPES CONVEYING FLUIDS BELOW AMBIENT TEMPERATURE:
1. PROVIDE VAPOR BARRIER JACKETS, FACTORY-APPLIED OR FIELD-APPLIED; SECURE WITH SELF-SEALING LONGITUDINAL LAPS AND BUTT STRIPS WITH PRESSURE SENSITIVE ADHESIVE. SECURE WITH OUTWARD CLINCH EXPANDING STAPLES AND VAPOR BARRIER MASTIC.
2. INSULATE FITTINGS, JOINTS, AND VALVES WITH MOLDED INSULATION OF LIKE MATERIAL AND THICKNESS AS ADJACENT PIPE. FINISH WITH GLASS CLOTH AND VAPOR BARRIER ADHESIVE OR PVC FITTING COVERS.
F. FOR HOT PIPING CONVEYING FLUIDS OVER 140 DEGREES F (60 DEGREES C), INSULATE FLANGES AND UNIONS AT EQUIPMENT.
G. GLASS FIBER INSULATED PIPES CONVEYING FLUIDS ABOVE AMBIENT TEMPERATURE:
1. PROVIDE STANDARD JACKETS, WITH OR WITHOUT VAPOR BARRIER, FACTORY-APPLIED, OR FIELD-APPLIED. SECURE WITH SELF-SEALING LONGITUDINAL LAPS AND BUTT STRIPS WITH PRESSURE-SENSITIVE ADHESIVE. SECURE WITH OUTWARD CLINCH EXPANDING STAPLES.
2. INSULATE FITTINGS, JOINTS, AND VALVES WITH INSULATION OF LIKE MATERIAL AND THICKNESS AS ADJOINING PIPE. FINISH WITH GLASS CLOTH AND ADHESIVE OR PVC FITTING COVERS.
H. INSERTS AND SHIELDS:
1. APPLICATION: PIPING 1-1/2 INCHES (40 MM) DIAMETER OR LARGER.
2. SHIELDS: GALVANIZED STEEL BETWEEN PIPE HANGERS OR PIPE HANGER ROLLS AND INSERTS.
3. INSERT LOCATION: BETWEEN SUPPORT SHIELD AND PIPING AND UNDER THE FINISH JACKET.
4. INSERT CONFIGURATION: MINIMUM 6 INCHES (150 MM) LONG, OF SAME THICKNESS AND CONTOUR AS ADJOINING INSULATION; MAY BE FACTORY FABRICATED.
I. CONTINUE INSULATION THROUGH WALLS, SLEEVES, PIPE HANGERS, AND OTHER PIPE PENETRATIONS. FINISH AT SUPPORTS, PROTRUSIONS, AND INTERRUPTIONS. AT FIRE SEPARATIONS, SEE SECTION 07 8400.
J. PIPE EXPOSED IN MECHANICAL EQUIPMENT ROOMS OR FINISHED SPACES (LESS THAN 10 FEET (3 METERS) ABOVE FINISHED FLOOR): FINISH WITH PVC JACKET AND FITTING COVERS .
K. EXTERIOR APPLICATIONS: PROVIDE VAPOR BARRIER JACKET. INSULATE FITTINGS, JOINTS, AND VALVES WITH INSULATION OF LIKE MATERIAL AND THICKNESS AS ADJOINING PIPE, AND FINISH WITH GLASS MESH REINFORCED VAPOR BARRIER CEMENT. COVER WITH ALUMINUM JACKET WITH SEAMS LOCATED ON BOTTOM SIDE OF HORIZONTAL PIPING. PROVIDE TWO COATS OF UV RESISTANT FINISH FOR FLEXIBLE ELASTOMERIC CELLULAR INSULATION WITHOUT JACKETING.
L. BURIED PIPING: PROVIDE FACTORY-FABRICATED ASSEMBLY WITH INNER ALL-PURPOSE SERVICE JACKET WITH SELF-SEALING LAP, AND ASPHALT IMPREGNATED OPEN MESH GLASS FABRIC, WITH ONE MIL (0.025 MM) THICK ALUMINUM FOIL SANDWICHED BETWEEN THREE LAYERS OF BITUMINOUS COMPOUND; OUTER SURFACE FACED WITH POLYESTER FILM.
M. HEAT TRACED PIPING: INSULATE FITTINGS, JOINTS, AND VALVES WITH INSULATION OF LIKE MATERIAL, THICKNESS, AND FINISH AS ADJOINING PIPE. SIZE LARGE ENOUGH TO ENCLOSE PIPE AND HEAT TRACER. COVER WITH ALUMINUM JACKET WITH SEAMS LOCATED ON BOTTOM SIDE OF HORIZONTAL PIPING.

3.03 SCHEDULE
A. HEATING SYSTEMS:
1. HEATING WATER SUPPLY AND RETURN: 1 INCH
2. GLYCOL HEATING SUPPLY AND RETURN: 1 INCH
3. BOILER FEED WATER: 1 INCH
B. COOLING SYSTEMS:
1. CHILLED WATER: 1 INCH
2. CONDENSER WATER: 1 INCH
3. DUAL TEMPERATURE WATER: 1 INCH
4. GLYCOL COOLING SUPPLY AND RETURN: 1 INCH
5. CONDENSATE DRAINS (PVC): NONE
6. CONDENSATE DRAINS (COPPER): 1/2 INCH
7. REFRIGERANT SUCTION: 1/2 INCH
8. REFRIGERANT HOT GAS: 1/2 INCH
C. OTHER SYSTEMS:
1. ENGINE EXHAUST PIPING: 2-1/2 INCH
2. PIPING EXPOSED TO FREEZING WITH HEAT TRACING: 2-1/2 INCH

SECTION 23 2113 - HYDRONIC PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES
A. HYDRONIC SYSTEM REQUIREMENTS.
B. HEATING WATER PIPING, ABOVE GRADE.
C. HEATING WATER AND GLYCOL PIPING, ABOVE GRADE.
D. CHILLED WATER PIPING, ABOVE GRADE.
E. CONDENSER WATER PIPING, ABOVE GRADE.
F. EQUIPMENT DRAINS AND OVERFLOWS.
G. UNIONS, FLANGES, MECHANICAL COUPLINGS, AND DIELECTRIC CONNECTIONS.
H. VALVES:
1. BALL VALVES.
2. BUTTERFLY VALVES.
3. CHECK VALVES.
4. PRESSURE INDEPENDENT TEMPERATURE CONTROL VALVES AND BALANCING VALVES.
I. FLOW CONTROLS.

1.02 DELIVERY, STORAGE, AND HANDLING
A. ACCEPT VALVES ON SITE IN SHIPPING CONTAINERS WITH LABELING IN PLACE. INSPECT FOR DAMAGE.
B. PROVIDE TEMPORARY PROTECTIVE COATING ON CAST IRON AND STEEL VALVES.
C. PROVIDE TEMPORARY END CAPS AND CLOSURES ON PIPING AND FITTINGS. MAINTAIN IN PLACE UNTIL INSTALLATION.
D. PROTECT PIPING SYSTEMS FROM ENTRY OF FOREIGN MATERIALS BY TEMPORARY COVERS, COMPLETING SECTIONS OF THE WORK, AND ISOLATING PARTS OF COMPLETED SYSTEM.

1.03 FIELD CONDITIONS
A. DO NOT INSTALL UNDERGROUND PIPING WHEN BEDDING IS WET OR FROZEN.

PART 2 PRODUCTS

2.01 HYDRONIC SYSTEM REQUIREMENTS
A. COMPLY WITH ASME B31.9 AND APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
B. PIPING: PROVIDE PIPING, FITTINGS, HANGERS, AND SUPPORTS AS REQUIRED, AS INDICATED, AND AS FOLLOWS:
1. WHERE MORE THAN ONE PIPING SYSTEM MATERIAL IS SPECIFIED, PROVIDE JOINING FITTINGS THAT ARE COMPATIBLE WITH PIPING MATERIALS AND ENSURE THAT THE INTEGRITY OF THE SYSTEM IS NOT JEOPARDIZED.
2. USE NON-CONDUCTING DIELECTRIC CONNECTIONS WHENEVER JOINTING DISSIMILAR METALS.
3. GROOVED MECHANICAL JOINTS MAY BE USED IN ACCESSIBLE LOCATIONS ONLY.
a. ACCESSIBLE LOCATIONS INCLUDE THOSE EXPOSED ON INTERIOR OF BUILDING, IN PIPE CHASES, AND IN MECHANICAL ROOMS, ABOVEGROUND OUTDOORS, AND AS APPROVED BY ARCHITECT.
b. GROOVED MECHANICAL CONNECTIONS AND JOINTS COMPLY WITH AWWA C606.
1) DUCTILE IRON: COMPLY WITH ASTM A536, GRADE 65-45-12.
2) STEEL: COMPLY WITH ASTM A106/A106M, GRADE B OR ASTM A53/A53M.
c. USE RIGID JOINTS UNLESS OTHERWISE INDICATED.
d. DEPENDING ON PIPE SIZE, THREE OR FOUR FLEXIBLE JOINTS MAY BE USED IN LIEU OF A FLEXIBLE CONNECTOR.
e. USE GASKETS OF MOLDED SYNTHETIC RUBBER WITH CENTRAL CAVITY, PRESSURE-RESPONSIVE CONFIGURATION, AND COMPLYING WITH ASTM D2000, GRADE 2CA615A15B44F17Z FOR CIRCULATING MEDIUM UP TO MAXIMUM 230 DEGREES F (110 DEGREES C) OR GRADE M3BA610A15B44Z FOR CIRCULATING MEDIUM UP TO MAXIMUM 200 DEGREES F (93 DEGREES C).
f. PROVIDE STEEL COUPLING NUTS AND BOLTS COMPLYING WITH ASTM A183.
4. PROVIDE PIPE HANGERS AND SUPPORTS IN ACCORDANCE WITH ASME B31.9 OR MSS SP-58 UNLESS INDICATED OTHERWISE.
C. PIPE-TO-VALVE AND PIPE-TO-EQUIPMENT CONNECTIONS: USE FLANGES, UNIONS, OR GROOVED COUPLINGS TO ALLOW DISCONNECTION OF COMPONENTS FOR SERVICING; DO NOT USE DIRECT WELDED, SOLDERED, OR THREADED CONNECTIONS.
1. WHERE GROOVED JOINTS ARE USED IN PIPING, PROVIDE GROOVED VALVE/EQUIPMENT CONNECTIONS IF AVAILABLE; IF NOT AVAILABLE, PROVIDE FLANGED ENDS AND GROOVED FLANGE ADAPTERS.
D. VALVES: PROVIDE VALVES WHERE INDICATED:
1. PROVIDE DRAIN VALVES WHERE INDICATED, AND IF NOT INDICATED, PROVIDE AT LEAST AT MAIN SHUT-OFF, LOW POINTS OF PIPING, BASES OF VERTICAL RISERS, AND AT EQUIPMENT. USE 3/4 INCH (20 MM) GATE VALVES WITH CAP; PIPE TO NEAREST FLOOR DRAIN.
2. ON DISCHARGE OF CONDENSER WATER PUMPS, USE SPRING-LOADED CHECK VALVES.
3. ISOLATE EQUIPMENT USING BUTTERFLY VALVES WITH LUG END FLANGES OR GROOVED MECHANICAL COUPLINGS.
4. FOR THROTTLING, BYPASS, OR MANUAL FLOW CONTROL SERVICES, USE GLOBE, BALL, OR BUTTERFLY VALVES.
5. FOR THROTTLING AND ISOLATION SERVICE IN CHILLED AND CONDENSER WATER SYSTEMS, USE ONLY BUTTERFLY VALVES.
6. IN HEATING WATER, CHILLED WATER, OR CONDENSER WATER SYSTEMS, BUTTERFLY VALVES MAY BE USED INTERCHANGEABLY WITH GATE AND GLOBE VALVES.
7. FOR SHUT-OFF AND TO ISOLATE PARTS OF SYSTEMS OR VERTICAL RISERS, USE GATE, BALL, OR BUTTERFLY VALVES.
8. FOR THROTTLING SERVICE, USE PLUG COCKS. USE NON-LUBRICATED PLUG COCKS ONLY WHEN SHUT-OFF OR ISOLATING VALVES ARE ALSO PROVIDED.

2.02 HEATING WATER AND GLYCOL PIPING, ABOVE GRADE
A. STEEL PIPE: ASTM A53/A53M, SCHEDULE 40, BLACK, USING ONE OF THE FOLLOWING JOINT TYPES:
1. WELDED JOINTS: ASTM A234/A234M, WROUGHT STEEL WELDING TYPE FITTINGS; AWS D1.1/D1.1M WELDED.
B. COPPER TUBE: ASTM B88 (ASTM B88M), TYPE K (A), DRAWN, USING ONE OF THE FOLLOWING JOINT TYPES:
1. SOLDER JOINTS: ASME B16.18 CAST BRASS/BRONZE OR ASME B16.22 SOLDER WROUGHT COPPER FITTINGS.
a. SOLDER: ASTM B32 LEAD-FREE SOLDER, HB ALLOY (95-5 TIN-ANTIMONY) OR TIN AND SILVER.
b. BRAZE: AWS A5.8M/A5.8 BCUP COPPER/SILVER ALLOY.
2. TEE CONNECTIONS: MECHANICALLY EXTRACTED COLLARS WITH NOTCHED AND DIMPLED BRANCH TUBE.

2.03 CHILLED WATER PIPING, ABOVE GRADE
A. STEEL PIPE: ASTM A53/A53M, SCHEDULE 40, BLACK; USING ONE OF THE FOLLOWING JOINT TYPES:
1. WELDED JOINTS: ASTM A234/A234M, WROUGHT STEEL WELDING TYPE FITTINGS; AWS D1.1/D1.1M WELDED.
2. THREADED JOINTS: ASME B16.3, MALLEABLE IRON FITTINGS.
3. GROOVED JOINTS: AWWA C606 GROOVED PIPE, FITTINGS OF SAME MATERIAL, AND MECHANICAL COUPLINGS.
B. COPPER TUBE: ASTM B88 (ASTM B88M), TYPE K (A), HARD DRAWN; USING ONE OF THE FOLLOWING JOINT TYPES:
1. SOLDER JOINTS: ASME B16.18 CAST BRASS/BRONZE OR ASME B16.22, SOLDER WROUGHT COPPER FITTINGS.
a. SOLDER: ASTM B32 LEAD-FREE SOLDER, HB ALLOY (95-5 TIN-ANTIMONY) OR TIN AND SILVER.
2. GROOVED JOINTS: AWWA C606 GROOVED TUBE, FITTINGS OF SAME MATERIAL, AND COPPER-TUBE-DIMENSION MECHANICAL COUPLINGS.
3. TEE CONNECTIONS: MECHANICALLY EXTRACTED COLLARS WITH NOTCHED AND DIMPLED BRANCH TUBE.

2.04 CONDENSER WATER PIPING, ABOVE GRADE
A. STEEL PIPE: ASTM A53/A53M, SCHEDULE 40, BLACK.
1. WELDED JOINTS: ASTM A234/A234M, WROUGHT STEEL WELDING TYPE FITTINGS WITH FINISH MATCHING PIPING; AWS D1.1/D1.1M WELDED.
2. THREADED JOINTS: ASME B16.3, MALLEABLE IRON FITTINGS WITH FINISH MATCHING PIPING.
3. GROOVED JOINTS: AWWA C606 GROOVED PIPE, FITTINGS OF SAME MATERIAL, AND MECHANICAL COUPLINGS.
B. COPPER TUBE: ASTM B88 (ASTM B88M), TYPE K (A), DRAWN; USING ONE OF THE FOLLOWING JOINT TYPES:
1. SOLDER JOINTS: ASME B16.18 CAST BRASS/BRONZE OR ASME B16.22 SOLDER WROUGHT COPPER FITTINGS.
a. SOLDER: ASTM B32 LEAD-FREE SOLDER, HB ALLOY (95-5 TIN-ANTIMONY) OR TIN AND SILVER.
2. GROOVED JOINTS: AWWA C606 GROOVED TUBE, FITTINGS OF SAME MATERIAL, AND COPPER-TUBE-DIMENSION MECHANICAL COUPLINGS.
3. TEE CONNECTIONS: MECHANICALLY EXTRACTED COLLARS WITH NOTCHED AND DIMPLED BRANCH TUBE.

2.05 EQUIPMENT DRAINS AND OVERFLOWS
A. STEEL PIPE: ASTM A53/A53M, SCHEDULE 40 GALVANIZED; USING ONE OF THE FOLLOWING JOINT TYPES:
B. COPPER TUBE: ASTM B88 (ASTM B88M), TYPE K (A), DRAWN; USING ONE OF THE FOLLOWING JOINT TYPES:
1. SOLDER JOINTS: ASME B16.18 CAST BRASS/BRONZE OR ASME B16.22 SOLDER WROUGHT COPPER FITTINGS; ASTM B32 LEAD-FREE SOLDER, HB ALLOY (95-5 TIN-ANTIMONY) OR TIN AND SILVER.
2. GROOVED JOINTS: AWWA C606 GROOVED PIPE, FITTINGS OF SAME MATERIAL, AND MECHANICAL COUPLINGS.

2.06 UNIONS, FLANGES, MECHANICAL COUPLINGS, AND DIELECTRIC CONNECTIONS
A. UNIONS FOR PIPE 2 INCHES (50 MM) AND LESS:
1. FERROUS PIPING: 150 PSIG (1034 KPA) MALLEABLE IRON, THREADED.
2. COPPER PIPE: BRONZE, SOLDERED JOINTS.
B. FLANGES FOR PIPE 2 INCHES (50 MM) AND GREATER:
1. FERROUS PIPING: 150 PSIG (1034 KPA) FORGED STEEL, SLIP-ON.
2. COPPER PIPING: BRONZE.
3. GASKETS: 1/16 INCH (1.6 MM) THICK, PREFORMED NEOPRENE.
C. MECHANICAL COUPLINGS FOR GROOVED AND SHOULDERED JOINTS: TWO OR MORE CURVED HOUSING SEGMENTS WITH CONTINUOUS KEY TO ENGAGE PIPE GROOVE, CIRCULAR C-PROFILE GASKET, AND BOLTS TO SECURE AND COMPRESS GASKET.
1. DIMENSIONS AND TESTING: IN ACCORDANCE WITH AWWA C606.
2. MECHANICAL COUPLINGS: COMPLY WITH ASTM F1476.
3. BOLTS AND NUTS: HOT DIPPED GALVANIZED OR ZINC-ELECTROPLATED STEEL.
4. WHEN PIPE IS FIELD GROOVED, PROVIDE COUPLING MANUFACTURER'S GROOVING TOOLS.
5. MANUFACTURERS:
a. APOLLO VALVES WWW.APOLLOVALVES.COM
b. GRINNELL PRODUCTS; WWW.GRINNELL.COM
c. VICTAULIC COMPANY; WWW.VICTAULIC.COM
D. DIELECTRIC CONNECTIONS:
1. WATERWAYS:
a. WATER IMPERVIOUS INSULATION BARRIER CAPABLE OF LIMITING GALVANIC CURRENT TO 1 PERCENT OF SHORT CIRCUIT CURRENT IN A CORRESPONDING BIMETALLIC JOINT.
b. DRY INSULATION BARRIER ABLE TO WITHSTAND 600-VOLT BREAKDOWN TEST.
c. CONSTRUCT OF GALVANIZED STEEL WITH THREADED END CONNECTIONS TO MATCH CONNECTING PIPING.
d. SUITABLE FOR THE REQUIRED OPERATING PRESSURES AND TEMPERATURES.
2. FLANGES:
a. DIELECTRIC FLANGES WITH SAME PRESSURE RATINGS AS STANDARD FLANGES.
b. WATER IMPERVIOUS INSULATION BARRIER CAPABLE OF LIMITING GALVANIC CURRENT TO 1 PERCENT OF SHORT CIRCUIT CURRENT IN A CORRESPONDING BIMETALLIC JOINT.
c. DRY INSULATION BARRIER ABLE TO WITHSTAND 600-VOLT BREAKDOWN TEST.
d. CONSTRUCT OF GALVANIZED STEEL WITH THREADED END CONNECTIONS TO MATCH CONNECTING PIPING.
e. SUITABLE FOR THE REQUIRED OPERATING PRESSURES AND TEMPERATURES.
3. UNIONS:
a. 1/2 TO 1 INCHES (15 TO 25 MM): BRASS SOLDER TO GALVANIZED FPT.
b. 1/2 TO 2 INCHES (15 TO 50 MM): BRASS SOLDER TO GALVANIZED FPT.
c. 1/2 TO 1 INCHES (15 TO 25 MM): BRASS TO GALVANIZED FPT OR FIP (FEMALE IRON PIPE).
d. 3/4 TO 1/2 INCH (20 TO 15 MM) REDUCER: BRASS SOLDER TO GALVANIZED FPT.
e. SERVICE: 250 PSI (1,723.6 KPA), MINUS 20 TO 180 DEG F (MINUS 28.9 TO 82.2 DEG F).

2.07 BALL VALVES
A. MANUFACTURERS:
1. APOLLO VALVES.
2. GRINNELL PRODUCTS.
3. VIEGA LLC.
B. UP TO AND INCLUDING 2 INCHES (50 MM):
1. BRONZE ONE PIECE BODY, CHROME PLATED BRASS BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE WITH BALANCING STOPS, SOLDER ENDS WITH UNION.
C. OVER 2 INCHES (50 MM):
1. DUCTILE IRON BODY, CHROME PLATED STAINLESS STEEL BALL, TEFLON, VIRGIN TFE SEAT AND STUFFING BOX SEALS, LEVER HANDLE, GEAR OPERATED FLANGED ENDS, RATED TO 800 PSI (5515 KPA).

2.08 BUTTERFLY VALVES
A. MANUFACTURERS:
1. APOLLO VALVES.
2. GRINNELL PRODUCTS.
3. VIEGA LLC.
B. BODY: CAST OR DUCTILE IRON WITH RESILIENT REPLACEABLE EPDM SEAT, WAFER, LUG, OR GROOVED ENDS, EXTENDED NECK.
C. DISC: CONSTRUCT OF ALUMINUM BRONZE, CHROME PLATED DUCTILE IRON, STAINLESS STEEL, DUCTILE IRON WITH EPDM ENCAPSULATION, OR BUNA-N ENCAPSULATION.
D. OPERATOR: 10 POSITION LEVER HANDLE.

2.09 SWING CHECK VALVES
A. MANUFACTURERS:
1. APOLLO VALVES.
2. GRINNELL PRODUCTS.
3. VIEGA LLC.
B. UP TO AND INCLUDING 2 INCHES (50 MM):
1. BRONZE BODY, BRONZE TRIM, BRONZE ROTATING SWING DISC, WITH COMPOSITION DISC, SOLDER ENDS.
C. OVER 2 INCHES (50 MM):
1. IRON BODY, OR BRONZE TRIM, STAINLESS STEEL, BRONZE, OR BRONZE FACED ROTATING SWING DISC, RENEWABLE DISC AND SEAT, FLANGED, OR GROOVED ENDS.

2.10 SPRING LOADED CHECK VALVES
A. MANUFACTURERS:
1. APOLLO VALVES.
2. GRINNELL PRODUCTS.
3. VIEGA LLC.
B. IRON BODY, BRONZE TRIM, SPLIT PLATE, HINGED WITH STAINLESS STEEL SPRING, RESILIENT SEAL BONDED TO BODY, WAFER, OR THREADED LUG ENDS.

2.11 PRESSURE INDEPENDENT TEMPERATURE CONTROL VALVES AND BALANCING VALVES
A. MANUFACTURERS:
1. DANFOSS; AB-QM VALVE.
2. SCHNEIDER ELECTRIC.
B. CONTROL VALVES: FACTORY-FABRICATED PRESSURE INDEPENDENT WITH INTERNAL DIFFERENTIAL PRESSURE REGULATOR (DPRV), WHICH AUTOMATICALLY ADJUSTS TO NORMAL CHANGES IN SYSTEM PRESSURE AND PROVIDES 100 PERCENT CONTROL VALVE AUTHORITY AT ALL POSITIONS OF THE VALVE.
1. MAINTAIN PROPORTIONAL AND LINEAR FLOW COIL CHARACTERISTICS.
2. PICV TO ACCURATELY CONTROL THE FLOW FROM 0 TO 100 PERCENT FULL RATED FLOW WITH AN OPERATING PRESSURE DIFFERENTIAL RANGE OF 3 TO 60 PSIG (21 TO 414 KPA).
3. PROVIDE CONTROL VALVE TO INCORPORATE CONTROL, BALANCING, AND FLOW LIMITING. HYDRONIC SYSTEM PRESSURE INDEPENDENT CONTROL VALVE BODIES TO COMPLY WITH ASME B16.34 OR ASME B16.15 PRESSURE AND TEMPERATURE CLASS RATINGS BASED ON THE DESIGN OPERATING TEMPERATURE AND 150 PERCENT OF THE SYSTEM DESIGN OPERATING PRESSURE AND HAVE THE FOLLOWING CHARACTERISTICS:
a. 2 NPS (50 DN) AND SMALLER: CLASS 150 BRONZE OR BRASS BODY WITH UNION CONNECTIONS, STAINLESS STEEL TRIM, STAINLESS STEEL RISING STEM, STAINLESS STEEL DISC OR BALL, AND SCREWED ENDS WITH BACKSEATING CAPACITY REPACKABLE UNDER PRESSURE.
b. 2-1/2 NPS (65 DN) AND LARGER: CLASS 125 IRON OR DUCTILE IRON BODY, STAINLESS STEEL TRIM, STAINLESS STEEL RISING STEM, STAINLESS STEEL DISC OR BALL, FLANGED ENDS WITH BACKSEATING CAPACITY REPACKABLE UNDER PRESSURE.
c. PRESSURE CONTROL SEAT: BRASS CONSTRUCTION WITH VULCANIZED EPDM.
d. SIZING: LINE-SIZE.
e. FITTINGS AND COMPONENTS: ALL FITTINGS AND COMPONENTS TO MEET ANSI STANDARDS AND BE COMPATIBLE WITH READILY AVAILABLE COMPONENTS. 8-INCH (200 MM) VALVES AND ABOVE TO BE PROVIDED WITH PROPER COMPANION FLANGES.
f. CLOSE-OFF (DIFFERENTIAL) PRESSURE RATING: COMBINATION OF ACTUATOR, DPRV ACTION, AND TRIM TO PROVIDE A MINIMUM CLOSE-OFF PRESSURE RATING OF 150 PERCENT OF TOTAL SYSTEM (PUMP) HEAD. PROVIDE ACTUATOR FROM THE SAME MANUFACTURER AS THE PRESSURE INDEPENDENT CONTROL VALVE.
C. ELECTRONIC ACTUATORS: DIRECT-MOUNTED, SELF-CALIBRATING TYPE DESIGNED FOR MINIMUM 60,000 FULL-STROKE CYCLES AT RATED FORCE.
D. PROVIDE ACTUATOR WITH VISIBLE POSITION INDICATION. FAIL POSITIONS ON POWER FAILURE TO INCLUDE IN-PLACE, OPEN OR CLOSED AS INDICATED IN THE CONTROLS SPECIFICATIONS.
1. VALVES: SIZED FOR MAXIMUM CIRCUIT FLOW RATE AND NOMINALLY, LINE-SIZED.

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09/25/2026
LICENSED PROFESSIONAL ENGINEER

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Project No.:	260348
Drawn By:	AJB
Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

MECHANICAL SPECIFICATIONS

M0.02

2. OVERLOAD PROTECTION: ELECTRONIC OVERLOAD OR DIGITAL ROTATION-SENSING CIRCUITRY.
3. FAIL-SAFE OPERATION: MECHANICAL, SPRING-RETURN MECHANISM OR CAPACITANCE RETURN.
4. POWER REQUIREMENTS (TWO-POSITION SPRING RETURN): 24 VAC.
5. POWER REQUIREMENTS (MODULATING): MAXIMUM 10 VA AT 24 VAC OR 8 WATTS AT 24 VDC.
6. PROPORTIONAL SIGNAL: 0 TO 10 VDC OR 2 TO 10 VDC OR 4 TO 20 MA, AND 2 TO 10 VDC POSITION FEEDBACK SIGNAL.
7. PROVIDE PLENUM-RATED ACTUATORS FOR SERVICE ABOVE CEILINGS TO POSSESS UL LISTINGS AND APPROVALS.
8. TEMPERATURE RATING: 40 TO 104 DEGREES F (4.5 TO 40 DEGREES C).

2.12 FLOW CONTROLS

A. MANUFACTURERS:
1. ANVIL INTERNATIONAL.
2. GRISWOLD CONTROLS.
3. HAYS FLUID CONTROLS.
4. ITT BELL & GOSSETT.

B. CONSTRUCTION: CLASS 125, BRASS OR BRONZE BODY WITH UNION ON INLET AND OUTLET, TEMPERATURE AND PRESSURE TEST PLUG ON INLET AND OUTLET, BLOWDOWN/BACKFLUSH DRAIN.

C. CALIBRATION: CONTROL FLOW WITHIN 10 PERCENT OF SELECTED RATING, OVER OPERATING PRESSURE RANGE OF 10 TIMES MINIMUM PRESSURE REQUIRED FOR CONTROL, MINIMUM PRESSURE 2 PSI (13.7 KPA).

PART 3 EXECUTION

3.01 PREPARATION

A. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN END FERROUS PIPE.
B. PREPARE PIPE FOR GROOVED MECHANICAL JOINTS AS REQUIRED BY COUPLING MANUFACTURER.
C. REMOVE SCALE AND DIRT ON INSIDE AND OUTSIDE BEFORE ASSEMBLY.
D. PREPARE PIPING CONNECTIONS TO EQUIPMENT USING JOINTING SYSTEM SPECIFIED.
E. KEEP OPEN ENDS OF PIPE FREE FROM SCALE AND DIRT. PROTECT OPEN ENDS WITH TEMPORARY PLUGS OR CAPS.
F. AFTER COMPLETION, FILL, CLEAN, AND TREAT SYSTEMS. SEE SECTION 23 2500 FOR ADDITIONAL REQUIREMENTS.

3.02 INSTALLATION

A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. INSTALL HEATING WATER, GLYCOL, CHILLED WATER, CONDENSER WATER, AND ENGINE EXHAUST PIPING TO ASME B31.9 REQUIREMENTS.
C. ROUTE PIPING IN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT.
D. INSTALL PIPING TO CONSERVE BUILDING SPACE AND TO AVOID INTERFERENCE WITH USE OF SPACE.
E. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.
F. SLEEVE PIPE PASSING THROUGH PARTITIONS, WALLS, AND FLOORS.
G. INSTALL FIRESTOPPING TO PRESERVE FIRE RESISTANCE RATING OF PARTITIONS AND OTHER ELEMENTS, USING MATERIALS AND METHODS SPECIFIED.
H. SLOPE PIPING AND ARRANGE TO DRAIN AT LOW POINTS.
I. GROOVED JOINTS:
1. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S LATEST PUBLISHED INSTALLATION INSTRUCTIONS.
2. GASKETS TO BE SUITABLE FOR THE INTENDED SERVICE, MOLDED, AND PRODUCED BY THE COUPLING MANUFACTURER.
J. INSERTS:
1. PROVIDE INSERTS FOR PLACEMENT IN CONCRETE FORMWORK.
2. PROVIDE INSERTS FOR SUSPENDING HANGERS FROM REINFORCED CONCRETE SLABS AND SIDES OF REINFORCED CONCRETE BEAMS.
3. PROVIDE HOOKED ROD TO CONCRETE REINFORCEMENT SECTION FOR INSERTS CARRYING PIPE OVER 4 INCHES (100 MM).
4. WHERE CONCRETE SLABS FORM FINISHED CEILING, LOCATE INSERTS FLUSH WITH SLAB SURFACE.
5. WHERE INSERTS ARE OMITTED, DRILL THROUGH CONCRETE SLAB FROM BELOW AND PROVIDE THROUGH-BOLT WITH RECESSED SQUARE STEEL PLATE AND NUT ABOVE SLAB.
K. USE ECCENTRIC REDUCERS TO MAINTAIN TOP OF PIPE LEVEL.
L. WHERE PIPE SUPPORT MEMBERS ARE WELDED TO STRUCTURAL BUILDING FRAMING, SCRAPE, BRUSH CLEAN, AND APPLY ONE COAT OF ZINC-RICH PRIMER TO WELDS.
M. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED.

SECTION 23 2300 - REFRIGERANT PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. PIPING.
B. REFRIGERANT.
C. MOISTURE AND LIQUID INDICATORS.
D. VALVES.
E. STRAINERS.
F. FLEXIBLE CONNECTIONS.
G. ENGINEERED WALL SEALS AND INSULATION PROTECTION.

1.02 SYSTEM DESCRIPTION

A. WHERE MORE THAN ONE PIPING SYSTEM MATERIAL IS SPECIFIED ENSURE SYSTEM COMPONENTS ARE COMPATIBLE AND JOINED TO ENSURE THE INTEGRITY OF THE SYSTEM IS NOT JEOPARDIZED. PROVIDE NECESSARY JOINING FITTINGS. ENSURE FLANGES, UNION, AND COUPLINGS FOR SERVICING ARE CONSISTENTLY PROVIDED.
B. PROVIDE PIPE HANGERS AND SUPPORTS IN ACCORDANCE WITH ASME B31.5 UNLESS INDICATED OTHERWISE.
C. LIQUID INDICATORS:
1. USE LINE SIZE LIQUID INDICATORS IN MAIN LIQUID LINE LEAVING CONDENSER.
2. IF RECEIVER IS PROVIDED, INSTALL IN LIQUID LINE LEAVING RECEIVER.
3. USE LINE SIZE ON LEAVING SIDE OF LIQUID SOLENOID VALVES.
D. VALVES:
1. USE SERVICE VALVES ON SUCTION AND DISCHARGE OF COMPRESSORS.
2. USE GAUGE TAPS AT COMPRESSOR INLET AND OUTLET.
3. USE GAUGE TAPS AT HOT GAS BYPASS REGULATORS, INLET AND OUTLET.
4. USE CHECK VALVES ON COMPRESSOR DISCHARGE.
5. USE CHECK VALVES ON CONDENSER LIQUID LINES ON MULTIPLE CONDENSER SYSTEMS.
E. REFRIGERANT CHARGING (PACKED ANGLE) VALVE: USE IN LIQUID LINE BETWEEN RECEIVER SHUT-OFF VALVE AND EXPANSION VALVE.
F. STRAINERS:
1. USE LINE SIZE STRAINER UPSTREAM OF EACH AUTOMATIC VALVE.
2. WHERE MULTIPLE EXPANSION VALVES WITH INTEGRAL STRAINERS ARE USED, USE SINGLE MAIN LIQUID LINE STRAINER.
3. ON STEEL PIPING SYSTEMS, USE STRAINER IN SUCTION LINE.
4. USE SHUT-OFF VALVE ON EACH SIDE OF STRAINER.
G. FLEXIBLE CONNECTORS: UTILIZE AT OR NEAR COMPRESSORS WHERE PIPING CONFIGURATION DOES NOT ABSORB VIBRATION.

1.03 DELIVERY, STORAGE, AND HANDLING

A. DELIVER AND STORE PIPING AND SPECIALTIES IN SHIPPING CONTAINERS WITH LABELING IN PLACE.
B. PROTECT PIPING AND SPECIALTIES FROM ENTRY OF CONTAMINATING MATERIAL BY LEAVING END CAPS AND PLUGS IN PLACE UNTIL INSTALLATION.
C. DEHYDRATE AND CHARGE COMPONENTS SUCH AS PIPING AND RECEIVERS, SEAL PRIOR TO SHIPMENT, UNTIL CONNECTED INTO SYSTEM.

PART 2 PRODUCTS

2.01 PIPING

A. COPPER TUBE: ASTM B280, H58 HARD DRAWN OR O60 SOFT ANNEALED.
1. FITTINGS: ASME B16.22 WROUGHT COPPER.
2. JOINTS: BRAZE, AWS A5.8M/A5.8 BCUP SILVER/PHOSPHORUS/COPPER ALLOY.
3. MECHANICAL PRESS SEALED FITTINGS: DOUBLE PRESSED TYPE COMPLYING WITH UL 207 AND ICC (IMC)-2018.
B. COPPER TUBE TO 7/8 INCH (22 MM) OD: ASTM B88 (ASTM B88M), TYPE K (A), ANNEALED.
1. FITTINGS: ASME B16.26 CAST COPPER.
2. JOINTS: FLARED.
3. MECHANICAL PRESS SEALED FITTINGS: DOUBLE PRESSED TYPE COMPLYING WITH UL 207 AND ICC (IMC)-2018.
C. PIPE SUPPORTS AND ANCHORS:
1. PROVIDE HANGERS AND SUPPORTS THAT COMPLY WITH MSS SP-58.
a. IF TYPE OF HANGER OR SUPPORT FOR A PARTICULAR SITUATION IS NOT INDICATED, SELECT APPROPRIATE TYPE USING MSS SP-58 RECOMMENDATIONS.
2. HANGERS FOR PIPE SIZES 1/2 TO 1-1/2 INCH (13 TO 38 MM): MALLEABLE IRON ADJUSTABLE SWIVEL, SPLIT RING.
3. HANGERS FOR PIPE SIZES 2 INCHES (50 MM) AND OVER: CARBON STEEL, ADJUSTABLE, CLEVIS.
4. MULTIPLE OR TRAPEZE HANGERS: STEEL CHANNELS WITH WELDED SPACERS AND HANGER RODS.
5. WALL SUPPORT FOR PIPE SIZES TO 3 INCHES (75 MM): CAST IRON HOOK.
6. VERTICAL SUPPORT: STEEL RISER CLAMP.
7. COPPER PIPE SUPPORT: CARBON STEEL RING, ADJUSTABLE, COPPER PLATED.
8. HANGER RODS: MILD STEEL THREADED BOTH ENDS, THREADED ONE END, OR CONTINUOUS THREADED.
9. INSERTS: MALLEABLE IRON CASE OF GALVANIZED STEEL SHELL AND EXPANDER PLUG FOR THREADED CONNECTION WITH LATERAL ADJUSTMENT, TOP SLOT FOR REINFORCING RODS, LUGS FOR ATTACHING TO FORMS; SIZE INSERTS TO SUIT THREADED HANGER RODS.

2.02 REFRIGERANT

A. REFRIGERANT: USE ONLY REFRIGERANTS THAT HAVE OZONE DEPLETION POTENTIAL (ODP) OF ZERO AND GLOBAL WARMING POTENTIAL (GWP) OF LESS THAN 50.

2.03 MOISTURE AND LIQUID INDICATORS

A. INDICATORS: SINGLE PORT TYPE, UL LISTED, WITH COPPER OR BRASS BODY, FLARED OR SOLDER ENDS, SIGHT GLASS, COLOR CODED PAPER MOISTURE INDICATOR WITH REMOVABLE ELEMENT CARTRIDGE AND PLASTIC CAP; FOR MAXIMUM TEMPERATURE OF 200 DEGREES F (93 DEGREES C) AND MAXIMUM WORKING PRESSURE OF 500 PSI (3450 KPA).

2.04 VALVES

A. DIAPHRAGM PACKLESS VALVES:
1. UL LISTED, GLOBE OR ANGLE PATTERN, FORGED BRASS BODY AND BONNET, PHOSPHOR BRONZE AND STAINLESS STEEL DIAPHRAGMS, RISING STEM AND HANDWHEEL, STAINLESS STEEL SPRING, NYLON SEAT DISC, SOLDER OR FLARED ENDS, WITH POSITIVE BACKSEATING; FOR MAXIMUM WORKING PRESSURE OF 500 PSI (3450 KPA) AND MAXIMUM TEMPERATURE OF 275 DEGREES F (135 DEGREES C).
B. PACKED ANGLE VALVES:
1. FORGED BRASS OR NICKEL PLATED FORGED STEEL, FORGED BRASS SEAL CAPS WITH COPPER GASKET, RISING STEM AND SEAT WITH BACKSEATING, MOLDED STEM PACKING, SOLDER OR FLARED ENDS; FOR MAXIMUM WORKING PRESSURE OF 500 PSI (3450 KPA) AND MAXIMUM TEMPERATURE OF 275 DEGREES F (135 DEGREES C).
C. BALL VALVES:
1. TWO PIECE BOLTED FORGED BRASS BODY WITH TEFLON BALL SEALS AND COPPER TUBE EXTENSIONS, BRASS BONNET AND SEAL CAP, CHROME PLATED BALL, STEM WITH NEOPRENE RING STEM SEALS; FOR MAXIMUM WORKING PRESSURE OF 500 PSI (3450 KPA) AND MAXIMUM TEMPERATURE OF 300 DEGREES F (149 DEGREES C).
D. SERVICE VALVES:
1. FORGED BRASS BODY WITH COPPER STUBS, BRASS CAPS, REMOVABLE VALVE CORE, INTEGRAL BALL CHECK VALVE, FLARED OR SOLDER ENDS, FOR MAXIMUM PRESSURE OF 500 PSI (3450 KPA).

2.05 STRAINERS

A. STRAIGHT LINE OR ANGLE LINE TYPE:
1. BRASS OR STEEL SHELL, STEEL CAP AND FLANGE, AND REPLACEABLE CARTRIDGE, WITH SCREEN OF STAINLESS STEEL WIRE OR MONEL REINFORCED WITH BRASS; FOR MAXIMUM WORKING PRESSURE OF 430 PSI (2960 KPA).
B. STRAIGHT LINE, NON-CLEANABLE TYPE:
1. STEEL SHELL, COPPER PLATED FITTINGS, STAINLESS STEEL WIRE SCREEN, FOR MAXIMUM WORKING PRESSURE OF [_____] PSI ([_____] KPA).

2.06 CHECK VALVES

A. GLOBE TYPE:
1. CAST BRONZE OR FORGED BRASS BODY, FORGED BRASS CAP WITH NEOPRENE SEAL, BRASS GUIDE AND DISC HOLDER, PHOSPHOR-BRONZE OR STAINLESS STEEL SPRING, TEFLON SEAT DISC; FOR MAXIMUM TEMPERATURE OF 300 DEGREES F (149 DEGREES C) AND MAXIMUM WORKING PRESSURE OF 425 PSI (2930 KPA).
B. STRAIGHT THROUGH TYPE:
1. BRASS BODY AND DISC, PHOSPHOR-BRONZE OR STAINLESS STEEL SPRING, NEOPRENE SEAT; FOR MAXIMUM WORKING PRESSURE OF 500 PSI (3450 KPA) AND MAXIMUM TEMPERATURE OF 200 DEGREES F (93 DEGREES C).

2.07 FLEXIBLE CONNECTORS

A. CORRUGATED STAINLESS STEEL HOSE WITH SINGLE LAYER OF STAINLESS STEEL EXTERIOR BRAIDING, MINIMUM 9 INCHES (230 MM) LONG WITH COPPER TUBE ENDS; FOR MAXIMUM WORKING PRESSURE OF 500 PSI (3450 KPA).

PART 3 EXECUTION

3.01 PREPARATION

A. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN END FERROUS PIPE.
B. REMOVE SCALE AND DIRT ON INSIDE AND OUTSIDE BEFORE ASSEMBLY.
C. PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES OR UNIONS.

3.02 INSTALLATION

A. INSTALL REFRIGERATION SPECIALTIES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. ROUTE PIPING IN ORDERLY MANNER, WITH PLUMBING PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT.
C. INSTALL PIPING TO CONSERVE BUILDING SPACE AND AVOID INTERFERENCE WITH USE OF SPACE.
D. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS AND LOCATIONS. SLOPE PIPING ONE PERCENT IN DIRECTION OF OIL RETURN.
E. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.
F. PIPE HANGERS AND SUPPORTS:
1. INSTALL IN ACCORDANCE WITH ASME B31.5.
2. SUPPORT HORIZONTAL PIPING AS INDICATED.
3. INSTALL HANGERS TO PROVIDE MINIMUM 1/2 INCH (13 MM) SPACE BETWEEN FINISHED COVERING AND ADJACENT WORK.
4. PLACE HANGERS WITHIN 12 INCHES (300 MM) OF EACH HORIZONTAL ELBOW.
5. SUPPORT VERTICAL PIPING AT EVERY OTHER FLOOR. SUPPORT RISER PIPING INDEPENDENTLY OF CONNECTED HORIZONTAL PIPING.
6. WHERE SEVERAL PIPES CAN BE INSTALLED IN PARALLEL AND AT SAME ELEVATION, PROVIDE MULTIPLE OR TRAPEZE HANGERS.
7. PROVIDE COPPER PLATED HANGERS AND SUPPORTS FOR COPPER PIPING.
G. ARRANGE PIPING TO RETURN OIL TO COMPRESSOR. PROVIDE TRAPS AND LOOPS IN PIPING, AND PROVIDE DOUBLE RISERS AS REQUIRED. SLOPE HORIZONTAL PIPING 0.40 PERCENT IN DIRECTION OF FLOW.
H. PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS.
I. FLOOD PIPING SYSTEM WITH NITROGEN WHEN BRAZING.
J. INSULATE PIPING AND EQUIPMENT; REFER TO SECTION AND SECTION 23 0716.
K. FOLLOW ASHRAE STD 15 PROCEDURES FOR CHARGING AND PURGING OF SYSTEMS AND FOR DISPOSAL OF REFRIGERANT.
L. PROVIDE REPLACEABLE CARTRIDGE FILTER-DRIERS, WITH ISOLATION VALVES AND VALVED BYPASS.
M. LOCATE EXPANSION VALVE SENSING BULB IMMEDIATELY DOWNSTREAM OF EVAPORATOR ON SUCTION LINE.
N. PROVIDE EXTERNAL EQUALIZER PIPING ON EXPANSION VALVES WITH REFRIGERANT DISTRIBUTOR CONNECTED TO EVAPORATOR.
O. INSTALL FLEXIBLE CONNECTORS AT RIGHT ANGLES TO AXIAL MOVEMENT OF COMPRESSOR, PARALLEL TO CRANKSHAFT.
P. FULLY CHARGE COMPLETED SYSTEM WITH REFRIGERANT AFTER TESTING.

3.03 FIELD QUALITY CONTROL

A. SEE SECTION 01 4000 - QUALITY REQUIREMENTS, FOR ADDITIONAL REQUIREMENTS.
B. TEST REFRIGERATION SYSTEM IN ACCORDANCE WITH ASME B31.5.
C. PRESSURE TEST SYSTEM WITH DRY NITROGEN TO 200 PSI (1380 KPA). PERFORM FINAL TESTS AT 27 INCHES (92 KPA) VACUUM AND 200 PSI (1380 KPA) USING HALIDE TORCH. TEST TO NO LEAKAGE.

3.04 SCHEDULES

A. HANGER SPACING FOR COPPER TUBING.
1. 1/2 INCH (13 MM), 5/8 INCH (16 MM), AND 7/8 INCH (22 MM) OD: MAXIMUM SPAN, 5 FEET (1500 MM); MINIMUM ROD SIZE, 1/4 INCH (6.3 MM).
2. 1-1/8 INCH (29 MM) OD: MAXIMUM SPAN, 6 FEET (1800 MM); MINIMUM ROD SIZE, 1/4 INCH (6.3 MM).
3. 1-3/8 INCH (35 MM) OD: MAXIMUM SPAN, 7 FEET (2100 MM); MINIMUM ROD SIZE, 3/8 INCH (9.5 MM).
4. 1-5/8 INCH (41 MM) OD: MAXIMUM SPAN, 8 FEET (2400 MM); MINIMUM ROD SIZE, 3/8 INCH (9.5 MM).

SECTION 23 3100 - HVAC DUCTS AND CASINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. METAL DUCTWORK.
B. CASINGS AND PLENUMS.
C. DUCT CLEANING.

1.02 FIELD CONDITIONS

A. DO NOT INSTALL DUCT SEALANTS WHEN TEMPERATURES ARE LESS THAN THOSE RECOMMENDED BY SEALANT MANUFACTURERS.
B. MAINTAIN TEMPERATURES WITHIN ACCEPTABLE RANGE DURING AND AFTER INSTALLATION OF DUCT SEALANTS.

PART 2 PRODUCTS

2.01 DUCT ASSEMBLIES

A. REGULATORY REQUIREMENTS: CONSTRUCT DUCTWORK TO COMPLY WITH NFPA 90A STANDARDS.
B. DUCTS: GALVANIZED STEEL, UNLESS OTHERWISE INDICATED.
C. LOW PRESSURE SUPPLY (HEATING SYSTEMS): 1/2 INCH WG (125 PA) PRESSURE CLASS, GALVANIZED STEEL.
D. LOW PRESSURE SUPPLY (SYSTEM WITH COOLING COILS): 1/2 INCH WG (125 PA) PRESSURE CLASS, GALVANIZED STEEL.
E. RETURN AND RELIEF: 1/2 INCH WG (125 PA) PRESSURE CLASS, GALVANIZED STEEL.
F. GENERAL EXHAUST: 1/2 INCH WG (125 PA) PRESSURE CLASS, GALVANIZED STEEL.
G. OUTSIDE AIR INTAKE: 1/2 INCH WG (125 PA) PRESSURE CLASS, GALVANIZED STEEL.
H. TRANSFER AIR AND SOUND BOOTS: 1/2 INCH WG (125 PA) PRESSURE CLASS, FIBROUS GLASS.

2.02 MATERIALS

A. GALVANIZED STEEL FOR DUCTS: HOT-DIPPED GALVANIZED STEEL SHEET, ASTM A653/A653M FS TYPE B, WITH G60/Z180 COATING.
B. UN-GALVANIZED STEEL FOR DUCTS: ASTM A1008/A1008M DESIGNATION CS (COMMERCIAL STEEL), COLD-ROLLED.
C. ALUMINUM FOR DUCTS: ASTM B209 (ASTM B209M); ALUMINUM SHEET, ALLOY 3003-H14. ALUMINUM CONNECTORS AND BAR STOCK: ALLOY 6061-T651 OR OF EQUIVALENT STRENGTH.
D. STAINLESS STEEL FOR DUCTS: ASTM A666, TYPE 304.
E. JOINT SEALERS AND SEALANTS: NON-HARDENING, WATER RESISTANT, MILDEW AND MOLD RESISTANT.
1. TYPE: HEAVY MASTIC OR LIQUID USED ALONE OR WITH TAPE, SUITABLE FOR JOINT CONFIGURATION AND COMPATIBLE WITH SUBSTRATES, AND RECOMMENDED BY MANUFACTURER FOR PRESSURE CLASS OF DUCTS.
2. VOC CONTENT: NOT MORE THAN 250 G/L, EXCLUDING WATER.
3. SURFACE BURNING CHARACTERISTICS: FLAME SPREAD INDEX OF ZERO AND SMOKE DEVELOPED INDEX OF ZERO, WHEN TESTED IN ACCORDANCE WITH ASTM E84.
F. GASKET TAPE: PROVIDE BUTYL RUBBER GASKET TAPE FOR A FLEXIBLE SEAL BETWEEN TRANSFER DUCT CONNECTOR (TDC), TRANSVERSE DUCT FLANGE (TDF), APPLIED FLANGE CONNECTIONS, AND ANGLE RINGS CONNECTIONS.
G. HANGER ROD: ASTM A36/A36M; STEEL, GALVANIZED; THREADED BOTH ENDS, THREADED ONE END, OR CONTINUOUSLY THREADED.
H. HANGER FASTENERS: ATTACH HANGERS TO STRUCTURE USING APPROPRIATE FASTENERS, AS FOLLOWS:
1. CONCRETE WEDGE EXPANSION ANCHORS: COMPLYING WITH ICC-ES AC193.
2. MASONRY WEDGE EXPANSION ANCHORS: COMPLYING WITH ICC-ES AC01.
3. CONCRETE SCREW TYPE ANCHORS: COMPLYING WITH ICC-ES AC193.
4. MASONRY SCREW TYPE ANCHORS: COMPLYING WITH ICC-ES AC106.
5. CONCRETE ADHESIVE TYPE ANCHORS: COMPLYING WITH ICC-ES AC308.

2.03 DUCTWORK FABRICATION

A. FABRICATE AND SUPPORT IN ACCORDANCE WITH SMACNA (DCS) AND AS INDICATED.
B. NO VARIATION OF DUCT CONFIGURATION OR SIZE PERMITTED EXCEPT BY WRITTEN PERMISSION. SIZE ROUND DUCT INSTALLED IN PLACE OF RECTANGULAR DUCTS IN ACCORDANCE WITH ASHRAE (FUND) HANDBOOK - FUNDAMENTALS.
C. DUCT SYSTEMS HAVE BEEN DESIGNED FOR METAL DUCT. AT THE CONTRACTOR'S OPTION, FIBROUS GLASS DUCT MAY BE SUBSTITUTED FOR METAL DUCT.
D. PROVIDE DUCT MATERIAL, GAUGES, REINFORCING, AND SEALING FOR OPERATING PRESSURES INDICATED.
E. CONSTRUCT T'S, BENDS, AND ELBOWS WITH RADIUS OF NOT LESS THAN 1-1/2 TIMES WIDTH OF DUCT ON CENTERLINE. WHERE NOT POSSIBLE AND WHERE RECTANGULAR ELBOWS MUST BE USED, PROVIDE AIR FOIL TURNING VANES OF PERFORATED METAL WITH GLASS FIBER INSULATION.
F. PROVIDE TURNING VANES OF PERFORATED METAL WITH GLASS FIBER INSULATION WHEN ACOUSTICAL LINING IS INDICATED.
G. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE WHEREVER POSSIBLE; MAXIMUM 30 DEGREES DIVERGENCE UPSTREAM OF EQUIPMENT AND 45 DEGREES CONVERGENCE DOWNSTREAM.
H. FABRICATE CONTINUOUSLY WELDED ROUND AND OVAL DUCT FITTINGS IN ACCORDANCE WITH SMACNA (DCS).
I. WHERE DUCTS ARE CONNECTED TO EXTERIOR WALL LOUVERS AND DUCT OUTLET IS SMALLER THAN LOUVER FRAME, PROVIDE BLANK-OUT PANELS SEALING LOUVER AREA AROUND DUCT. USE SAME MATERIAL AS DUCT, PAINTED BLACK ON EXTERIOR SIDE; SEAL TO LOUVER FRAME AND DUCT.

2.04 MANUFACTURED DUCTWORK AND FITTINGS

A. DOUBLE WALL INSULATED ROUND DUCTS: ROUND SPIRAL LOCKSEAM DUCT WITH GALVANIZED STEEL OUTER WALL, PERFORATED GALVANIZED STEEL INNER WALL; FITTING WITH SOLID INNER WALL.
1. MANUFACTURE IN ACCORDANCE WITH SMACNA (DCS).
2. INSULATION:
a. THICKNESS: 1 INCH (25 MM).
b. MATERIAL: AIR.
B. DOUBLE WALL INSULATED RECTANGULAR DUCTS: RECTANGULAR SPIRAL LOCKSEAM DUCT WITH GALVANIZED STEEL OUTER WALL, PERFORATED GALVANIZED STEEL INNER WALL; FITTING WITH SOLID INNER WALL.
1. MANUFACTURE IN ACCORDANCE WITH SMACNA (DCS).
2. INSULATION:
a. THICKNESS: 1 INCH (25 MM).
b. MATERIAL: AIR.
C. SPIRAL DUCTS: ROUND SPIRAL LOCKSEAM DUCT WITH GALVANIZED STEEL OUTER WALL.
1. MANUFACTURE IN ACCORDANCE WITH SMACNA (DCS).
D. ROUND DUCTS: ROUND LOCKSEAM DUCT WITH GALVANIZED STEEL OUTER WALL.
1. MANUFACTURE IN ACCORDANCE WITH SMACNA (DCS).
E. FLEXIBLE DUCTS: TWO PLY VINYL FILM SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE.
1. INSULATION: FIBERGLASS INSULATION WITH POLYETHYLENE VAPOR BARRIER FILM.
2. PRESSURE RATING: 10 INCHES WG (2.50 KPA) POSITIVE AND 1.0 INCHES WG (250 PA) NEGATIVE.
3. MAXIMUM VELOCITY: 4000 FPM (20.3 M/SEC).
4. TEMPERATURE RANGE: MINUS 10 DEGREES F TO 160 DEGREES F (MINUS 23 DEGREES C TO 71 DEGREES C).
F. FLEXIBLE DUCTS: BLACK POLYMER FILM SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE.
1. UL LABELED.
2. INSULATION: FIBERGLASS INSULATION WITH POLYETHYLENE VAPOR BARRIER FILM.
3. PRESSURE RATING: 4 INCHES WG (1000 PA) POSITIVE AND 0.5 INCHES WG (175 PA) NEGATIVE.
4. MAXIMUM VELOCITY: 4000 FPM (20.3 M/SEC).
5. TEMPERATURE RANGE: MINUS 20 DEGREES F TO 175 DEGREES F (MINUS 28 DEGREES C TO 79 DEGREES C).
G. TWO-HOUR, FIRE RATED DUCTS:
1. UL OR ETL LABELED.
2. CONSTRUCT OF 18 GAUGE, 0.0500 INCH (1.27 MM) STAINLESS STEEL.

2.05 CASINGS AND PLENUMS

A. FABRICATE CASINGS IN ACCORDANCE WITH SMACNA (DCS) AND CONSTRUCT FOR OPERATING PRESSURES INDICATED.
B. MOUNT FLOOR MOUNTED CASINGS ON 4 INCH (100 MM) HIGH CONCRETE CURBS. AT FLOOR, RIVET PANELS ON 8 INCH (200 MM) CENTERS TO ANGLES. WHERE FLOORS ARE ACOUSTICALLY INSULATED, PROVIDE LINER OF GALVANIZED 18 GAUGE, 0.0478 INCH (1.21 MM) EXPANDED METAL MESH SUPPORTED AT 12 INCH (300 MM) CENTERS, TURNED UP 12 INCHES (300 MM) AT SIDES WITH SHEET METAL SHIELDS.
C. REINFORCE DOOR FRAMES WITH STEEL ANGLES TIED TO HORIZONTAL AND VERTICAL PLENUM SUPPORTING ANGLES. INSTALL HINGED ACCESS DOORS WHERE INDICATED OR REQUIRED FOR ACCESS TO EQUIPMENT FOR CLEANING AND INSPECTION.
D. FABRICATE ACOUSTIC CASINGS WITH REINFORCING TURNED INWARD. PROVIDE 16 GAUGE, 0.0598 INCH (1.52 MM) SHEET STEEL BACK FACING AND 22 GAUGE, 0.0299 INCH (0.76 MM) PERFORATED SHEET STEEL FRONT FACING WITH 3/32 INCH (2.4 MM) DIAMETER HOLES ON 5/32 INCH (4 MM) CENTERS. CONSTRUCT PANELS 3 INCHES (75 MM) THICK PACKED WITH 4.5 LB/CU FT (72 KG/CU M) MINIMUM GLASS FIBER INSULATION MEDIA, ON INVERTED CHANNELS OF 16 GAUGE, 0.0598 INCH (1.52 MM) SHEET STEEL.

PART 3 EXECUTION

3.01 INSTALLATION

A. INSTALL, SUPPORT, AND SEAL DUCTS IN ACCORDANCE WITH SMACNA (DCS).
B. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
C. DURING CONSTRUCTION PROVIDE TEMPORARY CLOSURES OF METAL OR TAPED POLYETHYLENE ON OPEN DUCTWORK TO PREVENT CONSTRUCTION DUST FROM ENTERING DUCTWORK SYSTEM.
D. FLEXIBLE DUCTS: CONNECT TO METAL DUCTS WITH ADHESIVE.
E. DUCT SIZES INDICATED ARE INSIDE CLEAR DIMENSIONS. FOR LINED DUCTS, MAINTAIN SIZES INSIDE LINING.
F. PROVIDE OPENINGS IN DUCTWORK WHERE REQUIRED TO ACCOMMODATE THERMOMETERS AND CONTROLLERS. PROVIDE PILOT TUBE OPENINGS WHERE REQUIRED FOR TESTING OF SYSTEMS, COMPLETE WITH METAL CAN WITH SPRING DEVICE OR SCREW TO ENSURE AGAINST AIR LEAKAGE. WHERE OPENINGS ARE PROVIDED IN INSULATED DUCTWORK, INSTALL INSULATION MATERIAL INSIDE A METAL RING.
G. LOCATE DUCTS WITH SUFFICIENT SPACE AROUND EQUIPMENT TO ALLOW NORMAL OPERATING AND MAINTENANCE ACTIVITIES.
H. USE CRIMP JOINTS WITH OR WITHOUT BEAD FOR JOINING ROUND DUCT SIZES 8 INCH (200 MM) AND SMALLER WITH CRIMP IN DIRECTION OF AIR FLOW.
I. USE DOUBLE NUTS AND LOCK WASHERS ON THREADED ROD SUPPORTS.
J. CONNECT TERMINAL UNITS TO SUPPLY DUCTS DIRECTLY OR WITH ONE FOOT (300 MM) MAXIMUM LENGTH OF FLEXIBLE DUCT. DO NOT USE FLEXIBLE DUCT TO CHANGE DIRECTION.
K. CONNECT DIFFUSERS OR LIGHT TROFFER BOOTS TO LOW PRESSURE DUCTS DIRECTLY OR WITH 5 FEET (1.5 M) MAXIMUM LENGTH OF FLEXIBLE DUCT HELD IN PLACE WITH STRAP OR CLAMP.
L. SET PLENUM DOORS 6 TO 12 INCHES (150 TO 300 MM) ABOVE FLOOR. ARRANGE DOOR SWINGS SO THAT FAN STATIC PRESSURE HOLDS DOOR IN CLOSED POSITION.
M. AT EXTERIOR WALL LOUVERS, SEAL DUCT TO LOUVER FRAME AND INSTALL BLANK-OUT PANELS.

3.02 CLEANING

A. CLEAN DUCT SYSTEM AND FORCE AIR AT HIGH VELOCITY THROUGH DUCT TO REMOVE ACCUMULATED DUST. TO OBTAIN SUFFICIENT AIR, CLEAN HALF THE SYSTEM AT A TIME. PROTECT EQUIPMENT THAT COULD BE HARMED BY EXCESSIVE DIRT WITH TEMPORARY FILTERS, OR BYPASS DURING CLEANING.
B. CLEAN DUCT SYSTEMS WITH HIGH POWER VACUUM MACHINES. PROTECT EQUIPMENT THAT COULD BE HARMED BY EXCESSIVE DIRT WITH FILTERS, OR BYPASS DURING CLEANING. PROVIDE ADEQUATE ACCESS INTO DUCTWORK FOR CLEANING PURPOSES.

SECTION 23 3300 - AIR DUCT ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. AIR TURNING DEVICES/EXTRACTORS.
B. BACKDRAFT DAMPERS - METAL.
C. COMBINATION FIRE AND SMOKE DAMPERS.
D. DUCT ACCESS DOORS.
E. DUCT TEST HOLES.
F. FIRE DAMPERS.
G. FLEXIBLE DUCT CONNECTORS.
H. SMOKE DAMPERS.
I. VOLUME CONTROL DAMPERS.
J. MISCELLANEOUS PRODUCTS:
1. DAMPER OPERATORS.
2. DAMPER POSITION SWITCH.
3. FIRE-RATED ENCLOSURES.
4. INTERNAL STRUT END PLUGS.
5. DUCT OPENING CLOSURE FILM.

1.02 DELIVERY, STORAGE, AND HANDLING

A. PROTECT DAMPERS FROM DAMAGE TO OPERATING LINKAGES AND BLADES.

PART 2 PRODUCTS

2.01 AIR TURNING DEVICES/EXTRACTORS

A. MULTI-BLADE DEVICE WITH RADIUS BLADES ATTACHED TO PIVOTING FRAME AND BRACKET, STEEL CONSTRUCTION, WITH PUSH-PULL OPERATOR STRAP.

2.02 BACKDRAFT DAMPERS - METAL

A. GRAVITY BACKDRAFT DAMPERS, SIZE 18 BY 18 INCHES (450 BY 450 MM) OR SMALLER, FURNISHED WITH AIR MOVING EQUIPMENT: AIR MOVING EQUIPMENT MANUFACTURER'S STANDARD CONSTRUCTION.
B. MULTI-BLADE, PARALLEL ACTION GRAVITY BALANCED BACKDRAFT DAMPERS: GALVANIZED STEEL, WITH CENTER PIVOTED BLADES OF MAXIMUM 6 INCH (150 MM) WIDTH, WITH FELT OR FLEXIBLE VINYL SEALED EDGES, LINKED TOGETHER IN RATTLE-FREE MANNER WITH 90 DEGREE STOP, STEEL BALL BEARINGS, AND PLATED STEEL PIVOT PIN; ADJUSTMENT DEVICE TO PERMIT SETTING FOR VARYING DIFFERENTIAL STATIC PRESSURE.

2.03 COMBINATION FIRE AND SMOKE DAMPERS

A. FABRICATE IN ACCORDANCE WITH NFPA 90A, UL 555, UL 555S, AND AS INDICATED.
B. PROVIDE FACTORY SLEEVE AND COLLAR FOR EACH DAMPER.
C. MULTIPLE BLADE DAMPERS: FABRICATE WITH 16 GAUGE, 0.0598 INCH (1.52 MM) GALVANIZED STEEL FRAME AND BLADES, OIL-IMPREGNATED BRONZE OR STAINLESS STEEL SLEEVE BEARINGS AND PLATED STEEL AXLES, STAINLESS STEEL JAMB SEALS, 1/8 BY 1/2 INCH (3.2 BY 12.7 MM) PLATED STEEL CONCEALED LINKAGE, STAINLESS STEEL CLOSURE SPRING, BLADE STOPS, AND LOCK, AND 1/2 INCH (12.7 MM) ACTUATOR SHAFT.
D. OPERATORS: UL LISTED AND LABELLED SPRING RETURN PNEUMATIC TYPE SUITABLE FOR OPERATION ON 0-20 PSIG (0-140 KPA) INSTRUMENT AIR. PROVIDE END SWITCHES TO INDICATE DAMPER POSITION. LOCATE DAMPER OPERATOR ON INTERIOR OF DUCT AND LINK TO DAMPER OPERATING SHAFT.
E. OPERATORS: UL LISTED AND LABELLED SPRING RETURN ELECTRIC TYPE SUITABLE FOR 120 VOLTS, SINGLE PHASE, 60 HZ. PROVIDE END SWITCHES TO INDICATE DAMPER POSITION. LOCATE DAMPER OPERATOR ON INTERIOR OF DUCT AND LINK TO DAMPER OPERATING SHAFT.
F. NORMALLY CLOSED SMOKE RESPONSIVE FIRE DAMPERS: CURTAIN TYPE, OPENING BY GRAVITY UPON ACTUATION OF ELECTRO THERMAL LINK, FLEXIBLE STAINLESS STEEL BLADE EDGE SEALS TO PROVIDE CONSTANT SEALING PRESSURE.
G. NORMALLY OPEN SMOKE RESPONSIVE FIRE DAMPERS: CURTAIN TYPE, CLOSING UPON ACTUATION OF ELECTRO THERMAL LINK, FLEXIBLE STAINLESS STEEL BLADE EDGE SEALS TO PROVIDE CONSTANT SEALING PRESSURE, STAINLESS STEEL SPRINGS WITH LOCKING DEVICES TO ENSURE POSITIVE CLOSURE FOR UNITS MOUNTED HORIZONTALLY.
H. ELECTRO THERMAL LINK: FUSIBLE LINK MELTING AT 165 DEGREES F (74 DEGREES C); 120 VOLTS, SINGLE PHASE, 60 HZ; UL LISTED AND LABELED.

2.04 DUCT ACCESS DOORS

A. FABRICATE IN ACCORDANCE WITH SMACNA (DCS) AND AS INDICATED.
B. FABRICATION: RIGID AND CLOSE-FITTING OF GALVANIZED STEEL WITH SEALING GASKETS AND QUICK FASTENING LOCKING DEVICES. FOR INSULATED DUCTS, INSTALL MINIMUM 1 INCH (25 MM) THICK INSULATION WITH SHEET METAL COVER.
1. LESS THAN 12 INCHES (300 MM) SQUARE: SECURE WITH SASH LOCKS.
2. UP TO 18 INCHES (450 MM) SQUARE: PROVIDE TWO HINGES AND TWO SASH LOCKS.
3. UP TO 24 BY 48 INCHES (600 BY 1200 MM): THREE HINGES AND TWO COMPRESSION LATCHES WITH OUTSIDE AND INSIDE HANDLES.

2.05 DUCT TEST HOLES

A. TEMPORARY TEST HOLES: CUT OR DRILL IN DUCTS AS REQUIRED. CAP WITH NEAT PATCHES, NEOPRENE PLUGS, THREADED PLUGS, OR THREADED OR TWIST-ON METAL CAPS.
B. PERMANENT TEST HOLES: FACTORY FABRICATED, AIR TIGHT FLANGED FITTINGS WITH SCREW CAP. PROVIDE EXTENDED NECK FITTINGS TO CLEAR INSULATION.

2.06 FIRE DAMPERS

A. FABRICATE IN ACCORDANCE WITH NFPA 90A AND UL 555, AND AS INDICATED.
B. CEILING (RADIATION) DAMPERS: GALVANIZED STEEL, 22 GAUGE, 0.0299 INCH (0.76 MM) FRAME AND 16 GAUGE, 0.0598 INCH (1.52 MM) FLAP, TWO LAYERS 0.125 INCH (3.2 MM) CERAMIC FIBER ON TOP SIDE AND ONE LAYER ON BOTTOM SIDE FOR ROUND FLAPS, WITH LOCKING CLIP.
1. RATED FOR THREE HOUR SERVICE IN COMPLIANCE WITH UL 555C.
C. HORIZONTAL DAMPERS: GALVANIZED STEEL, 22 GAUGE, 0.0299 INCH (0.76 MM) FRAME, STAINLESS STEEL CLOSURE SPRING, AND LIGHTWEIGHT, HEAT RETARDANT NON-ASBESTOS FABRIC BLANKET.
D. CURTAIN TYPE DAMPERS: GALVANIZED STEEL WITH INTERLOCKING BLADES. PROVIDE STAINLESS STEEL CLOSURE SPRINGS AND LATCHES FOR HORIZONTAL INSTALLATIONS. CONFIGURE WITH BLADES OUT OF AIR STREAM EXCEPT FOR 1.0 INCH (250 PA) PRESSURE CLASS DUCTS UP TO 12 INCHES (300 MM) IN HEIGHT.
E. MULTIPLE BLADE DAMPERS: 16 GAUGE, 0.0598 INCH (1.52 MM) GALVANIZED STEEL FRAME AND BLADES, OIL-IMPREGNATED BRONZE OR STAINLESS STEEL SLEEVE BEARINGS AND PLATED STEEL AXLES, 1/8 BY 1/2 INCH (3.2 BY 12.7 MM) PLATED STEEL CONCEALED LINKAGE, STAINLESS STEEL CLOSURE SPRING, BLADE STOPS, AND LOCK.
F. FUSIBLE LINKS: UL 33, SEPARATE AT 160 DEGREES F (71 DEGREES C) WITH ADJUSTABLE LINK STRAPS FOR COMBINATION FIRE/BALANCING DAMPERS.

2.07 FLEXIBLE DUCT CONNECTORS

A. FABRICATE IN ACCORDANCE WITH SMACNA (DCS) AND AS INDICATED.
B. FLEXIBLE DUCT CONNECTIONS: FABRIC CRIMPED INTO METAL EDGING STRIP.
1. FABRIC: UL LISTED FIRE-RETARDANT NEOPRENE COATED WOVEN GLASS FIBER FABRIC TO NFPA 90A, MINIMUM DENSITY 30 OZ PER SQ YD (1.0 KG/SQ M).
2. METAL: 3 INCHES (75 MM) WIDE, 24 GAUGE, 0.0239 INCH (0.61 MM) THICK GALVANIZED STEEL.
C. LEADED VINYL SHEET: MINIMUM 0.55 INCH (14 MM) THICK, 0.87 LBS PER SQ FT (4.2 KG/SQ M), 10 DB ATTENUATION IN 10 TO 10,000 HZ RANGE.

2.08 SMOKE DAMPERS

A. FABRICATE IN ACCORDANCE WITH NFPA 90A AND UL 555S, AND AS INDICATED.
B. DAMPERS: UL CLASS 1 AIRFOIL BLADE TYPE SMOKE DAMPER, NORMALLY OPEN AUTOMATICALLY OPERATED BY PNEUMATIC ACTUATOR.
C. ELECTRO THERMAL LINK: FUSIBLE LINK MELTING AT 165 DEGREES F (74 DEGREES C); 120 VOLTS, SINGLE PHASE, 60 HZ; UL LISTED AND LABELED.

2.09 VOLUME CONTROL DAMPERS

A. FABRICATE IN ACCORDANCE WITH SMACNA (DCS) AND AS INDICATED.
B. SPLITTER DAMPERS:
1. MATERIAL: SAME GAUGE AS DUCT TO 24 INCHES (600 MM) SIZE IN EITHER DIRECTION, AND TWO GAUGES HEAVIER FOR SIZES OVER 24 INCHES (600 MM).
2. BLADE: FABRICATE OF SINGLE THICKNESS SHEET METAL TO STREAMLINE SHAPE, SECURED WITH CONTINUOUS HINGE OR ROD.
3. OPERATOR: MINIMUM 1/4 INCH (6 MM) DIAMETER ROD IN SELF ALIGNING, UNIVERSAL JOINT ACTION, FLANGED BUSHING WITH SET SCREW.
C. SINGLE BLADE DAMPERS:
1. FABRICATE FOR DUCT SIZES UP TO 6 BY 30 INCH (150 BY 760 MM).
2. BLADE: 24 GAUGE, 0.0239 INCH (0.61 MM), MINIMUM.
D. MULTI-BLADE DAMPER: FABRICATE OF OPPOSED BLADE PATTERN WITH MAXIMUM BLADE SIZES 8 BY 72 INCH (200 BY 1825 MM). ASSEMBLE CENTER AND EDGE CRIMPED BLADES IN PRIME COATED OR GALVANIZED CHANNEL FRAME WITH SUITABLE HARDWARE.
1. BLADE: 18 GAUGE, 0.0478 INCH (1.21 MM), MINIMUM.
E. END BEARINGS: EXCEPT IN ROUND DUCTS 12 INCHES (300 MM) AND SMALLER, PROVIDE END BEARINGS. ON MULTIPLE BLADE DAMPERS, PROVIDE OIL-IMPREGNATED NYLON, THERMOPLASTIC ELASTOMER, OR SINTERED BRONZE BEARINGS.
F. QUADRANTS:
1. PROVIDE LOCKING, INDICATING QUADRANT REGULATORS ON SINGLE AND MULTI-BLADE DAMPERS.
2. ON INSULATED DUCTS MOUNT QUADRANT REGULATORS ON STAND-OFF MOUNTING BRACKETS, BASES, OR ADAPTERS.
3. WHERE ROD LENGTHS EXCEED 30 INCHES (750 MM) PROVIDE REGULATOR AT BOTH ENDS.
G. CONSTANT AIRFLOW REGULATORS:
1. GENERAL REQUIREMENTS:
a. PROVIDE BI-DIRECTIONAL, AIR BALANCING REGULATOR FOR PRESSURE INDEPENDENT AIR VOLUME CONTROL.
b. COMPLIES WITH UL 2043 FOR HEAT AND SMOKE RELEASE.
c. COMPLIES WITH AMCA 500-D FOR THE ALLOWABLE LEAKAGE RATES.
2. CONSTRUCTION:
a. NOMINAL DIAMETER: 4 INCH (104 MM).
b. FRAME: THERMOPLASTIC RESIN IN COMPLIANCE WITH UL 94.
c. BLADE: THERMOPLASTIC RESIN IN COMPLIANCE WITH UL 94.
d. BEARINGS: HYDRAULIC BLADE DAMPENER.
e. OUTER SEAL: REMOVABLE RUBBER GASKET-TYPE AROUND CIRCUMFERENCE OF DAMPER.
f. SPRING: STAINLESS STEEL LEAF-TYPE.
g. TEMPERATURE RANGE: 25 DEGREES F TO 150 DEGREES F (MINUS 4 DEGREES C TO 65 DEGREES C) .
h. OPERATING RANGE: 0.2 INCH W.C. TO 2.0 INCH W.C. (50 PA TO 498 PA).
3. ACCESSORIES:
a. PROVIDE AIRFLOW REGULATORS WITH RECTANGULAR TO ROUND TRANSITIONS.

2.10 MISCELLANEOUS PRODUCTS

A. FIRE-RATED ENCLOSURES:
1. PROVIDE AS REQUIRED TO PRESERVE FIRE RESISTANCE RATING OF BUILDING ELEMENTS.
B. INTERNAL STRUT END PLUGS: COMBINATION END-MOUNTING AND SEALING PLUGS FOR METAL CONDUIT USED AS INTERNAL REINFORCEMENT STRUTS FOR METAL DUCTS; PLUG CRIMPED INSIDE CONDUIT WITH OUTSIDE GASKETED WASHER SEAL.
C. DUCT OPENING CLOSURE FILM: MOLD-RESISTANT, SELF-ADHESIVE FILM TO KEEP DEBRIS OUT OF DUCTS DURING CONSTRUCTION.
1. THICKNESS: 2 MILS (0.6 MM).
2. HIGH TACK WATER BASED ADHESIVE.
3. UV STABLE LIGHT BLUE COLOR.
4. ELONGATION BEFORE BREAK: 325 PERCENT, MINIMUM.

PART 3 EXECUTION

3.01 INSTALLATION

A. INSTALL ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, NFPA 90A, AND FOLLOW SMACNA (DCS). REFER TO SECTION 23 3100 FOR DUCT CONSTRUCTION AND PRESSURE CLASS.
B. PROVIDE BACKDRAFT DAMPERS ON EXHAUST FANS OR EXHAUST DUCTS NEAREST TO OUTSIDE AND WHERE INDICATED.
C. PROVIDE DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER FILTERS, COILS, FANS, AUTOMATIC DAMPERS, AT FIRE DAMPERS, COMBINATION FIRE AND SMOKE DAMPERS, AND ELSEWHERE AS INDICATED. PROVIDE MINIMUM 8 BY 8 INCH (200 BY 200 MM) SIZE FOR HAND ACCESS, SIZE FOR SHOULDER ACCESS, AND AS INDICATED. PROVIDE 4 BY 4 INCH (100 BY 100 MM) FOR BALANCING DAMPERS ONLY. REVIEW LOCATIONS PRIOR TO FABRICATION.
D. PROVIDE DUCT TEST HOLES WHERE INDICATED AND REQUIRED FOR TESTING AND BALANCING PURPOSES.
E. PROVIDE FIRE DAMPERS, COMBINATION FIRE AND SMOKE DAMPERS, AND SMOKE DAMPERS AT LOCATIONS INDICATED, WHERE DUCTS AND OUTLETS PASS THROUGH FIRE RATED COMPONENTS, AND WHERE REQUIRED BY AUTHORITIES HAVING JURISDICTION. INSTALL WITH REQUIRED PERIMETER MOUNTING ANGLES, SLEEVES, BREAKAWAY DUCT CONNECTIONS, CORROSION RESISTANT SPRINGS, BEARINGS, BUSHINGS AND HINGES.
F. INSTALL SMOKE DAMPERS AND COMBINATION SMOKE AND FIRE DAMPERS IN ACCORDANCE WITH NFPA 92.
G. DEMONSTRATE RE-SETTING OF FIRE DAMPERS TO OWNER'S REPRESENTATIVE.
H. AT FANS AND MOTORIZED EQUIPMENT ASSOCIATED WITH DUCTS, PROVIDE FLEXIBLE DUCT CONNECTIONS IMMEDIATELY ADJACENT TO THE EQUIPMENT.
I. AT EQUIPMENT SUPPORTED BY VIBRATION ISOLATORS, PROVIDE FLEXIBLE DUCT CONNECTIONS IMMEDIATELY ADJACENT TO THE EQUIPMENT.
J. FOR FANS DEVELOPING STATIC PRESSURES OF 5.0 INCHES (1250 PA) AND OVER, COVER FLEXIBLE CONNECTIONS WITH LEADED VINYL SHEET, HELD IN PLACE WITH METAL STRAPS.
K. PROVIDE BALANCING DAMPERS AT POINTS ON SUPPLY, RETURN, AND EXHAUST SYSTEMS WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS AS REQUIRED FOR AIR BALANCING. INSTALL MINIMUM 2 DUCT WIDTHS FROM DUCT TAKE-OFF.
L. USE SPLITTER DAMPERS ONLY WHERE INDICATED.
M. PROVIDE BALANCING DAMPERS ON HIGH VELOCITY SYSTEMS WHERE INDICATED. REFER TO SECTION 23 3600 - AIR TERMINAL UNITS.
N. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFF TO DIFFUSERS, GRILLES, AND REGISTERS, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, GRILLE, OR REGISTER ASSEMBLY.

HVAC SEQUENCE OF OPERATIONS

PROVIDE ALL NECESSARY CONTROLLERS, SENSORS, DAMPER ACTUATORS, CONTROL TRANSFORMERS WITH SECONDARY OVERLOAD PROTECTION, WIRING IN CONDUIT, AND ALL MISCELLANEOUS ITEMS TO ACCOMPLISH THE FOLLOWING SEQUENCE OF OPERATION:

ROOFTOP UNIT:

UNIT CONTROLLER SHALL BE SET TO DETERMINE OCCUPIED AND UNOCCUPIED HOURS OF OPERATION. HOURS SHALL BE COORDINATED WITH OWNER.

OCCUPIED MODE:

SUPPLY FAN SHALL RUN CONTINUOUSLY. SUPPLY FAN SPEED SHALL VARY AIRFLOW AS FUNCTION OF LOAD (WHERE APPLICABLE). DURING NON-COOLING, FIRST STAGE COOLING, AND NON-HEATING TIMES, SUPPLY FAN SHALL RUN AT MINIMUM SPEED. DURING SECOND STAGE COOLING AND HEATING TIMES, SUPPLY FAN SHALL RUN AT FULL SPEED. OUTSIDE AIR DAMPER SHALL MODULATE POSITION TO MAINTAIN REQUIRED QUANTITY OF OUTSIDE AIR AS SUPPLY FAN VARIES SPEED.

COOLING:
WHEN SPACE TEMPERATURE RISES ABOVE OCCUPIED COOLING SET POINT, PACKAGED DIRECT EXPANSION COOLING SHALL BE ENERGIZED AND STAGED AS REQUIRED TO MAINTAIN SPACE TEMPERATURE.

ECONOMIZER:
WHEN OUTSIDE AIR TEMPERATURE IS BELOW 60°F (ADJUSTABLE), ECONOMIZER SHALL MODULATE BETWEEN ITS MINIMUM SET POINT AND FULL OPEN TO MAINTAIN SPACE COOLING SET POINT, SUBJECT TO A MIXED AIR TEMPERATURE LOW LIMIT CONTROLLER SET POINT OF 55°F. IF OUTDOOR TEMPERATURE IS ABOVE COMPRESSOR LOCKOUT THERMOSTAT SETTING, MECHANICAL COOLING SHALL BE ENABLED AS SECOND STAGE OF COOLING.

HEATING:
WHEN SPACE TEMPERATURE FALLS BELOW OCCUPIED HEATING SET POINT, HEATING SHALL BE ENERGIZED IN STAGES (WHERE APPLICABLE) TO MAINTAIN SPACE TEMPERATURE.

UNOCCUPIED MODE:

COOLING:
UPON SIGNAL FROM UNIT CONTROLLER, SUPPLY FAN SHALL BE DEENERGIZED AND OUTSIDE AIR DAMPER SHALL CLOSE. IF SPACE TEMPERATURE RISES 2 DEGREES OR MORE ABOVE UNOCCUPIED SET POINT, OUTSIDE AIR DAMPER SHALL REMAIN CLOSED, SUPPLY FAN SHALL BE ACTIVATED AND DX COOLING SHALL BE STAGED AS REQUIRED TO MAINTAIN UNOCCUPIED SPACE TEMPERATURE. WHEN TEMPERATURE FALLS 2 DEGREES BELOW SET POINT, COMPRESSOR SHALL BE DEENERGIZED AND SUPPLY FAN SHALL SHUT OFF.

HEATING:
UPON SIGNAL FROM UNIT CONTROLLER, SUPPLY FAN SHALL BE DEENERGIZED AND OUTSIDE AIR DAMPER SHALL CLOSE. IF SPACE TEMPERATURE FALLS 2 DEGREES OR MORE BELOW SET POINT, OUTSIDE AIR DAMPER SHALL REMAIN CLOSED, FAN SHALL BE ACTIVATED AND HEAT SHALL BE ENERGIZED UNTIL UNOCCUPIED SPACE TEMPERATURE IS SATISFIED. WHEN TEMPERATURE RISES 2 DEGREES ABOVE SET POINT, HEATING SHALL BE DISABLED AND FAN SHALL BE DEENERGIZED.

MORNING WARM-UP/COOL DOWN:
CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY ADJUSTING DAILY START TIME OF UNIT IN ORDER TO BRING EACH SPACE TO SPECIFIED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

AIR HANDLING UNIT:

THE UNIT CONTROLLER SHALL BE SET TO DETERMINE OCCUPIED AND UNOCCUPIED HOURS OF OPERATION. HOURS SHALL BE COORDINATED WITH OWNER.

OCCUPIED MODE:
SUPPLY FAN SHALL RUN CONTINUOUSLY AND OUTSIDE AIR DAMPER SHALL OPEN TO MINIMUM POSITION TO DELIVER SCHEDULED QUANTITY OF VENTILATION AIR.

COOLING:
UPON SIGNAL FROM UNIT CONTROLLER, IF SPACE TEMPERATURE RISES 2 DEGREES OR MORE ABOVE SET POINT, COOLING SHALL BE ENERGIZED. WHEN TEMPERATURE FALLS 2 DEGREES BELOW SET POINT, COMPRESSOR SHALL BE DE-ENERGIZED.

HEATING:
WHEN SPACE TEMPERATURE FALLS 2 DEGREES OR MORE BELOW HEATING SETPOINT, COMPRESSOR(S) SHALL BE ACTIVATED IN HEATING MODE. ONCE TEMPERATURE REACHES 2 DEGREES ABOVE SET POINT, COMPRESSOR(S) SHALL BE DEACTIVATED. IF HEAT PUMP HEATING CANNOT MEET SPACE REQUIREMENTS, ELECTRIC BACKUP HEATER SHALL BE ACTIVATED AND STAGED AS REQUIRED TO MAINTAIN SPACE TEMPERATURE.

UNOCCUPIED MODE:
COOLING:
UPON SIGNAL FROM UNIT CONTROLLER, SUPPLY FAN SHALL BE DE-ENERGIZED AND OUTSIDE AIR DAMPER SHALL CLOSE. IF SPACE TEMPERATURE RISES 2 DEGREES OR MORE ABOVE UNOCCUPIED SET POINT, OUTSIDE AIR DAMPER SHALL REMAIN CLOSED, SUPPLY FAN SHALL BE ACTIVATED AND COOLING SHALL BE ENERGIZED. WHEN TEMPERATURE FALLS 2 DEGREES BELOW SET POINT, COMPRESSOR SHALL BE DE-ENERGIZED AND FAN SHALL SHUT OFF.

HEATING:
UPON SIGNAL FROM UNIT CONTROLLER, SUPPLY FAN SHALL BE DEENERGIZED AND OUTSIDE AIR DAMPER SHALL CLOSE. IF SPACE TEMPERATURE FALLS 2 DEGREES OR MORE BELOW SET POINT, OUTSIDE AIR DAMPER SHALL REMAIN CLOSED, FAN SHALL BE ACTIVATED AND HEAT PUMP HEATING SHALL BE ENERGIZED. IF SPACE TEMPERATURE CONTINUES TO DROP, ELECTRIC HEATING SHALL BE ENERGIZED. HEATING SHALL OPERATE UNTIL UNOCCUPIED SPACE TEMPERATURE IS SATISFIED. WHEN TEMPERATURE RISES 2 DEGREES ABOVE SET POINT, HEATING SHALL BE DISABLED AND FAN SHALL BE DEENERGIZED.

MORNING WARM-UP/COOL DOWN:
CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY ADJUSTING DAILY START TIME OF UNIT IN ORDER TO BRING EACH SPACE TO SPECIFIED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

SET POINTS:

OCCUPIED COOLING:	75°F
OCCUPIED HEATING:	70°F
UNOCCUPIED COOLING:	85°F
UNOCCUPIED HEATING:	55°F

SMOKE DETECTOR SHUT DOWN:
SMOKE DETECTOR SHALL DE-ENERGIZE ROOFTOP UNIT AND CLOSE OUTSIDE AIR DAMPER IN BOTH OCCUPIED AND UNOCCUPIED MODES WHENEVER SMOKE IS SENSED BY SMOKE DETECTOR.

HOLLISTER
CALIFORNIA

ABERCROMBIE & FITCH CO.
6301 FITCH PATH
NEW ALBANY, OHIO 43054
614-283-6500

STATE OF TEXAS
ERIC MICHAEL LOVICH
161877
09/25/2026
LICENSED
PROFESSIONAL ENGINEER

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MEMORIAL CITY MALL
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No.:	260348
Drawn By:	AJB
Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

MECHANICAL SPECIFICATIONS

M0.03

HVAC SYMBOL LEGEND

SYMBOL	DESCRIPTION
	RETURN DUCT SECTION
	SUPPLY DUCT SECTION
	EXHAUST DUCT SECTION
	RETURN AIR GRILLE
	SUPPLY DIFFUSER
	HORIZONTALLY MOUNTED DIFFUSER
	EXHAUST AIR GRILLE
	EXHAUST FAN
	TRANSITION DUCT
	TURNING VANE
	VOLUME DAMPER
MOD	MOTOR OPERATED DAMPER
FD	FIRE DAMPER
FSD	FIRE/SMOKE DAMPER
SD	SMOKE DAMPER
SD	DUCT MOUNTED SMOKE DETECTOR
T	THERMOSTAT/CONTROLLER/TEMPERATURE SENSOR
TH	TEMPERATURE/HUMIDITY SENSOR
THC	TEMPERATURE/HUMIDITY/CARBON DIOXIDE SENSOR
CO	CARBON MONOXIDE SENSOR
	TEMPERATURE AND PRESSURE GAUGE
	CONNECT TO EXISTING
	BALANCING VALVE
	BACKFLOW PREVENTER
	CHECK VALVE
	CONTROL VALVE (2-WAY)
	CONTROL VALVE (3-WAY)
	PRESSURE REDUCING VALVE
	REMOVE TO POINT AND CAP
	REMOVE TO POINT FOR RECONNECTION
	CLEAN OUT
	SHUT OFF VALVE
	UNION
	WYE STRAINER
	VENT THROUGH ROOF
	EXHAUST THROUGH ROOF
	BLOW DOWN VALVE WITH HOSE CONNECTION
M	MOTORIZED VALVE (2-WAY)
FS	FLOW SWITCH
	AUTOMATIC AIR VENT

HVAC PIPING SYMBOL LEGEND

SYMBOL	DESCRIPTION
CWR	CHILLED WATER RETURN PIPING
CWS	CHILLED WATER SUPPLY PIPING
CD	CONDENSATE DRAIN PIPING
CR	CONDENSER WATER RETURN PIPING
CS	CONDENSER WATER SUPPLY PIPING
D	DRAIN PIPING
HWR	HEATING WATER RETURN PIPING
HWS	HEATING WATER SUPPLY PIPING
HCWR	HEATING & CHILLED WATER RETURN PIPING
HCSR	HEATING & CHILLED WATER SUPPLY PIPING
RL	REFRIGERANT LIQUID PIPING
RS	REFRIGERANT SUCTION PIPING

NOT ALL SYMBOLS AND ABBREVIATIONS ARE UTILIZED

EQUIPMENT TAGGING LEGEND

DESIGNATION	DESCRIPTION
S, R, E	EQUIPMENT DESIGNATION TYPE DUCT CONNECTION SIZE (SEE AIR DEVICE SCHEDULE FOR ADDITIONAL INFORMATION) XX-XX XXX — CFM
EAV, FPVAV, HAV, RHC, SAV, VAV, RTU, TEF	CFM XXX CFM XXX-X — DESIGNATED EQUIPMENT NUMBER EQUIPMENT DESIGNATION
VFD	SERVICING EQUIPMENT MARK VFD-XX-XXXX SPECIFIC COMPONENT DESIGNATION

ABBREVIATIONS

ABBREV	DESCRIPTION
AC	AIR CURTAIN
ACU	AIR CONDITIONING UNIT
AHU	AIR HANDLING UNIT
BAL	BALANCE
CC	COOLING COIL
CD	CONDENSATE DRAIN
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CU	CONDENSING UNIT
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
DH	DUCT HEATER
DR	DRAIN
ECON	ECONOMIZER
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
EG	EXHAUST GRILLE
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT
FLTR	FILTER
FP	FIRE PROTECTION
FPVAV	FAN POWERED VARIABLE AIR VOLUME
FSD	FIRE SMOKE DAMPER
MOD	MOTOR OPERATED DAMPER
SD	SUPPLY DIFFUSER
RG	RETURN GRILLE
TG	TRANSFER GRILLE

ONE CHARACTER STATUS ABBREVIATIONS:

E EXISTING TO REMAIN
M ITEM TO BE MOVED
R RELOCATED ITEM

* REFER ALSO TO ELECTRICAL & PLUMBING

HOLLISTER CALIFORNIA

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Project # 31720001.24

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MEMORIAL CITY MALL

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STORE #31909

Project No.:	260348
Drawn By:	AJB

Date	Issue
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MECHANICAL SYMBOLS AND ABBREVIATIONS

M0.10

SCHEDULE - SALES AREA/NON-SALES AREA										
REFERENCE	MAKE	MODEL	TYPE	SIZE (INCH) FACE	SIZE (INCH) NECK	MAX PRESSURE DROP (IN. W.G.)	MAX NOISE CRITERIA (NC)	MOUNTING	FINISH	NOTES
SD-X	EXISTING SUPPLY	--	--	--	--	--	--	--	--	1
RG-X	EXISTING RETURN	--	--	--	--	--	--	--	--	1
SD-1	KRUEGER	4880	DOUBLE DEFLECTION GRILLE	14"X8"	12"X6"	0.1	35	DUCT MOUNT	44 BRITISH WHITE	2
SD-2	KRUEGER	PLQ	PLAQUE DIFFUSER	24"X24"	10"ø	0.1	25	LAY-IN T-BAR F23	44 BRITISH WHITE	--
SD-3	KRUEGER	PLQ	PLAQUE DIFFUSER	24"X24"	12"ø	0.1	25	LAY-IN T-BAR F23	44 BRITISH WHITE	--
RG-1	KRUEGER	S85	SINGLE DEFLECTION STEEL GRILLE	24"X24"	22"X22"	0.5	25	LAY-IN T-BAR F23	44 BRITISH WHITE	--
EG-1	KRUEGER	S85	SINGLE DEFLECTION GRILLE	12"X12"	8"ø	0.1	25	SURFACE MOUNT	44-BRITISH WHITE	2,3,4
TG-1	KRUEGER	S85	SINGLE DEFLECTION GRILLE	20"X12"	18"X10"	0.025	25	SURFACE MOUNT	44-BRITISH WHITE	3
TG-2	KRUEGER	S85	SINGLE DEFLECTION GRILLE	10"X10"	8"X8"	0.025	25	SURFACE MOUNT	44-BRITISH WHITE	3
TG-3	KRUEGER	S85	SINGLE DEFLECTION GRILLE	12"X12"	10"X10"	0.025	25	SURFACE MOUNT	44-BRITISH WHITE	3

NOTES:

1. EXISTING AIR DEVICE TO REMAIN.
2. PROVIDE OPPOSED BLADE DAMPERS.
3. PROVIDE FRAME FOR DRYWALL MOUNTING AS REQUIRED.
4. PROVIDE SQUARE TO ROUND TRANSITION.

U GC SUPPLIED AIR DEVICE SCHEDULE

SCALE: NONE

2021 UNIFORM MECHANICAL CODE TABLE 402.1 VENTILATION SUMMARY

OCCUPANCY CATEGORY	PEOPLE OUTDOOR AIR RATE - (Rp)	AREA OUTDOOR AIR RATE - (Ra)	OCCUPANCY DENSITY	OCCUPANCY CLASSIFICATION	CALCULATED OCCUPANCY DENSITY	ZONE OCCUPANCY OVERRIDE	PEOPLE EXPECTED TO OCCUPY THE ZONE - (Pz)	Rp*Pz	Ra*Az	AREA - (Az)	ZONE AIR DISTRIBUTION EFFECTIVENESS - Ez	BREATHING ZONE OUTDOOR AIRFLOW - (Vbz) Vbz=Rp*Pz+Ra*Az	ZONE OUTDOOR AIRFLOW (Voz) Voz=Vbz/Ez	ZONE PRIMARY AIRFLOW (Vpz)	PRIMARY OUTDOOR AIR FRACTION (Zp) Zp=Voz/Vpz	OCCUPANT DIVERSITY RATIO (D)	UNCORRECTED OUTDOOR AIR INTAKE (Vou) Vou=D*Rp*Pz+Ra Az	SYSTEM VENTILATION EFFICIENCY	CORRECTED OUTDOOR AIRFLOW (Vot)	PROVIDED OUTDOOR AIRFLOW
	(CFM/PERSON)	(CFM/SQ.FT.)	P/1,000 SQ.FT.							SQ.FT.		CFM					CFM	Ev	CFM	CFM
RTU-1 & 2																					
Sales	7.5	0.12	15	RETAIL-Sales	72	—	72	542	578	4818	0.8	1120	1400	4410	0.32		1120		1350	
				SYSTEM POPULATION INCLUDING DIVERSITY (Ps) =			72							MAX Zp =	0.32	1.00	1120	0.83	1350	1350
AHU-X1																					
STORAGE A	—	0.12	—	RETAIL-Storage Rooms	—	—	—	—	24	202	0.8	24	30	230	0.13		24		24		
STORAGE B	—	0.12	—	RETAIL-Storage Rooms	—	—	—	—	67	561	0.8	67	84	600	0.14		67		67		
HALL	—	0.06	—	PUBLIC-Corridors	—	—	—	—	19	322	0.8	19	24	295	0.08		19		19		
STORAGE ELEC	—	0.12	—	RETAIL-Storage Rooms	—	—	—	—	29	245	0.8	29	37	730	0.05		29		29		
				SYSTEM POPULATION INCLUDING DIVERSITY (Ps) =			—							MAX Zp =	0.14	1.00	140	1.00	140	145
AHU-2 (REMOTE STOCK)																					
Storage	—	0.12	—	RETAIL-Storage Rooms	—	—	—	—	70	583	0.8	70	87	1100	0.08		70		87		
				SYSTEM POPULATION INCLUDING DIVERSITY (Ps) =			—							MAX Zp =	0.08	1.00	70	0.80	87	90

T OUTSIDE AIR CALCULATION

SCALE: NONE

AIR CONDITIONING UNITS SCHEDULE											
REFERENCE	MAKE	MODEL	COOLING CAPACITY (MBH)	SENSIBLE COOLING CAPACITY (MBH)	SUPPLY CFM	O.A. CFM	ELECTRICAL REQUIREMENTS VOLTAGE (V)	PHASE	MCA	MOCP	UNIT WEIGHT LBS.	NOTES
AHU-X1	CARRIER	FX4NB061	--	--	1850	150	208	1	52.8	60	--	1,2,10
CU-X1	CARRIER	24ABB360	--	--	--	--	480	3	10.5	15	--	1,2,10
AHU-2	MITSUBISHI	PLA-AE36NL	36,000	27,360	1100	70	208	3	2	15	75	3,4,5,6,10
CU-2	MITSUBISHI	PUY-AK36NL	36,000	27,360	--	--	208	3	34	40	250	6,7,8,9,10

NOTES:

1. SET MINIMUM OUTSIDE AIR AS SPECIFIED ABOVE. FIELD SET 2 MINIMUM POSITIONS TO MAINTAIN SCHEDULED OUTSIDE AIR FLOW RATE AT SUPPLY FAN MINIMUM AND MAXIMUM SPEEDS. OUTSIDE AIR DAMPER SHALL FULLY CLOSE ON UNIT SHUTDOWN.
2. EXISTING UNIT TO REMAIN.
3. INDOOR UNIT IS POWERED FROM OUTDOOR UNIT.
4. PROVIDE WITH CONDENSATE PUMP.
5. PROVIDE WITH WALL MOUNTING KIT AND ALL REQUIRED EQUIPMENT.
6. PROVIDE WITH FACTORY MOUNTED AND WIRED DISCONNECT SWITCH.
7. PROVIDE LIQUID LINE SIGHT GLASS, MOISTURE INDICATOR, AND FILTER DRYER FOR EACH CIRCUIT.
8. PROVIDE 5 MINUTE TIME DELAY ON COMPRESSOR RESTART.
9. PROVIDE WITH LOCKING DATA OUTLET.
10. FOR GC START-UP AND BALANCING RESPONSIBILITY. COORDINATE WITH STORE MAINTENANCE FOR TIME SCHEDULING.

THESE WILL NEED A STAND ALONE T-STAT FOR LOCAL CONTROL

GC. IS RESPONSIBLE FOR START UP AND BALANCING. GC. TO COORDINATE WITH SITE MAINTANCE FOR TIME SCHEDULING.

EXISTING PACKAGED ROOFTOP UNIT SCHEDULE												
REFERENCE	MAKE	MODEL	COOLING CAPACITY (MBH)	SENSIBLE COOLING CAPACITY (MBH)	SUPPLY CFM	O.A. CFM	ELECTRICAL REQUIREMENTS VOLTAGE (V)	PHASE	MCA	MOCP	UNIT WEIGHT LBS.	NOTES
RTU-X1	CARRIER	50HC-D09	103.6	81.0	3000	565	480	3	26	30	--	1,2,3
RTU-X2	CARRIER	50HC-D09	103.6	81.0	2750	565	480	3	26	30	--	1,2,3

NOTES:

1. SET MINIMUM OUTSIDE AIR AS SPECIFIED ABOVE. FIELD SET 2 MINIMUM POSITIONS TO MAINTAIN SCHEDULED OUTSIDE AIR FLOW RATE AT SUPPLY FAN MINIMUM AND MAXIMUM SPEEDS. OUTSIDE AIR DAMPER SHALL FULLY CLOSE ON UNIT SHUTDOWN.
2. EXISTING UNIT TO REMAIN.
3. PROVIDE RAWAL APR DEVICE ON UNIT. COORDINATE REQUIRED SIZING WITH RAWAL REPRESENTATIVE.

V GC SUPPLIED MECHANICAL EQUIPMENT SCHEDULE

SCALE: NONE

City Name ..... **Houston**
Location ..... **Texas**
Latitude ..... **29.7** Deg.
Longitude ..... **95.4** Deg.
Elevation ..... **69.0** ft
Summer Design Dry-Bulb ..... **99.8** °F
Summer Coincident Wet-Bulb ..... **77.0** °F
Summer Daily Range ..... **18.3** °F
Winter Design Dry-Bulb ..... **32.0** °F
Winter Design Wet-Bulb ..... **22.0** °F
Atmospheric Clearness Number **0.90**
Average Ground Reflectance **0.20**
Soil Conductivity ..... **0.800** BTU/(hr·ft·°F)
Local Time Zone (GMT +/- N hours) ..... **6.0** hours
Consider Daylight Savings Time ..... **No**
Simulation Weather Data ..... **N/A**
Current Data is ..... **User Modified**
Design Cooling Months ..... **January to December**

Air System Information
Air System Name ..... **BLOCK**
Equipment Class ..... **PKG ROOF**
Air System Type ..... **SZCAV**
Number of zones **1**
Floor Area ..... **6731.1** ft²
Location ..... **Houston, Texas**

Sizing Calculation Information
Calculation Months ..... **Jan to Dec**
Sizing Data ..... **User-Modified**
Zone CFM Sizing ..... **Peak zone sensible load**
Space CFM Sizing ..... **Coincident space loads**

Central Cooling Coil Sizing Data
Total coil load ..... **20.6** Tons
Total coil load ..... **247.6** MBH
Sensible coil load ..... **195.9** MBH
Coil CFM at Jun 1600 ..... **8450** CFM
Max block CFM ..... **8450** CFM
Sum of peak zone CFM ..... **8450** CFM
Sensible heat ratio **0.791**
CFM/Ton **409.5**
ft²/Ton **326.2**
BTU/(hr·ft²) **36.8**
Water flow @ 10.0 °F rise ..... **N/A**
Load occurs at ..... **Jun 1600**
OA DB / WB ..... **98.3 / 76.9** °F
Entering DB / WB ..... **78.8 / 65.8** °F
Leaving DB / WB ..... **57.3 / 56.1** °F
Coil ADP ..... **54.9** °F
Bypass Factor **0.100**
Resulting RH ..... **60** %
Design supply temp. ..... **57.0** °F
Zone T-stat Check ..... **1 of 1** OK
Max zone temperature deviation ..... **0.0** °F

Central Heating Coil Sizing Data
Max coil load ..... **100.7** MBH
Coil CFM at Des Htg ..... **8450** CFM
Max coil CFM ..... **8450** CFM
Water flow @ 20.0 °F drop ..... **N/A**
Load occurs at ..... **Des Htg**
BTU/(hr·ft²) **15.0**
Ent. DB / Lvg DB ..... **62.1 / 73.1** °F

Supply Fan Sizing Data
Actual max CFM ..... **8450** CFM
Standard CFM ..... **8429** CFM
Actual max CFM/ft² ..... **1.26** CFM/ft²
Fan motor BHP ..... **3.47** BHP
Fan motor kW ..... **2.75** kW
Fan static ..... **1.50** in wg

Outdoor Ventilation Air Data
Design airflow CFM ..... **1350** CFM
CFM/ft² ..... **0.20** CFM/ft²
CFM/person ..... **15.15** CFM/person

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1600			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 98.3 °F / 76.9 °F			HEATING OA DB / WB 32.0 °F / 22.0 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²		
Wall Transmission	179 ft²	1296	-	179 ft²	1916	-
Roof Transmission	6731 ft²	15273	-	6731 ft²	25772	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	6731 ft²	0	-	6731 ft²	403	-
Partitions	3791 ft²	13549	-	3791 ft²	17107	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	0 W	0	-	0	0	-
Task Lighting	4764 W	14109	-	0	0	-
Electric Equipment	6184 W	19856	-	0	0	-
People	89	14897	18268	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	25%	11299	0
>> Total Zone Loads	-	**78980**	**18268**	-	**56497**	**0**
Zone Conditioning	-	91203	18268	-	58056	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	35637	-	0	0	-
Plenum Lighting Load	30%	0	-	0	0	-
Return Fan Load	8450 CFM	0	-	8450 CFM	0	-
Ventilation Load	1350 CFM	33688	33434	1350 CFM	52036	0
Supply Fan Load	8450 CFM	9396	-	8450 CFM	-9396	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**169924**	**51702**	-	**100695**	**0**
Central Cooling Coil	-	195941	51702	-	0	0
Central Heating Coil	-	-26017	-	-	100695	-
>> Total Conditioning	-	**169924**	**51702**	-	**100695**	**0**
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

G MECHANICAL LOAD CALCULATIONS

SCALE: NONE

E COMMISSIONING SPECIFICAITONS

SCALE: NONE

COMMISSIONING

A. GENERAL
- A.1. ALL REFERENCES TO THE TERM "OWNER" REFER TO ABERCROMBIE & FITCH, A&F, OR HOLLISTER.
- A.2. ALL REFERENCES TO THE TERM "VENDOR" REFER TO THE OWNER SUPPLIED HVAC & CONTROLS COMMISSIONING VENDOR.
- A.3. ALL REFERENCES TO THE TERM "PROGRAM" REFERS THE HVAC & CONTROLS COMMISSIONING PROGRAM.
- A.4. ALL REFERENCES TO "ALC" REFER TO THE A&F OWNER SUPPLIED ENERGY MANAGEMENT SYSTEM VENDOR, AUTOMATED LOGIC CONTROLS.

B. PURPOSE
- B.1. A&F HAS IMPLEMENTED AN OWNER SUPPLIED HVAC & CONTROLS COMMISSIONING PROGRAM TO GUARANTEE ALL NEW STORES ARE 100% COMMISSIONED AT THE PUBLISHED STORE TURNOVER DATE.

C. EXPECTATIONS
- C.1. THE VENDOR IS EXPECTED TO WORK IN A METHODICAL AND PROFESSIONAL MANNER.
- C.2. THE VENDOR SHALL FOLLOW ALL LOCAL, COUNTRY, LANDLORD, & A&F RULES/REGULATIONS.
- C.3. THE VENDOR IS REQUIRED TO PROVIDE ALL NECESSARY LABOR, MATERIALS, & EQUIPMENT TO COMPLETE THE PROGRAM. THE VENDOR IS RESPONSIBLE FOR COORDINATING ALL SITE VISITS WITH THE GENERAL CONTRACTOR.
- C.4. THE VENDOR IS RESPONSIBLE FOR ALL TRAVEL ARRANGEMENTS.
- C.5. THE VENDOR IS RESPONSIBLE FOR ACCESSING AND DOWNLOADING THE LATEST REVISION OF SHOP DRAWINGS, EQUIPMENT SUBMITTALS, AND CONSTRUCTION DOCUMENTS FOR EACH SITE VISIT.
- C.6. THE VENDOR SHALL MAKE ONE SITE VISIT FOR EACH STORE. THE VISIT SHALL COORDINATE WITH THE A&F CONSTRUCTION SCHEDULE UNLESS OTHERWISE COORDINATED WITH OWNER AND GC.
- C.7. THE VENDOR SHALL REVIEW THE CONSTRUCTION SCHEDULE ON A WEEKLY BASIS TO PLAN AND COORDINATE TRAVEL TO SITES AS REQUIRED.
- C.8. THE VENDOR SHALL CHECK IN & OUT WITH THE GC SITE SUPERINTENDENT EACH DAY OF THE SITE VISIT.
- C.9. THE VENDOR SHALL REVIEW, IN PERSON, ALL DEFICIENCIES WITH THE GC'S SUPERINTENDENT PRIOR TO LEAVING THE SITE EACH DAY..
- C.10. THE VENDOR SHALL COMPLETE AN HVAC & CONTROLS INSPECTION REPORT, FORM DEFINED BY A&F, THAT LISTS ALL DEFICIENCIES WITH PHOTOS OF EACH DEFICIENCY. REVIEW THE REPORT WITH THE GC'S SITE SUPERINTENDENT AND HAVE THEM SIGN THE REPORT. SUBMIT THE REPORT VIA EMAIL TO THE A&F CONSTRUCTION TEAM WITHIN 24 HOURS OF LEAVING THE JOBSITE.
- C.11. THE VENDOR SHALL WORK WITH THE GC, ALC, & HVAC EQUIPMENT MANUFACTURERS TO RESOLVE ALL DEFICIENCIES.

A&F PROJECT MANAGER

D. OWNER MAINTENANCE VENDOR SITE VISIT - MECHANICAL REVIEW
- D.1. AUDIT THE INSTALLED HVAC EQUIPMENT VERSUS THE APPROVED GC SUBMITTALS.
- D.2. AUDIT THE GC FIELD INSTALLATION VERSUS THE CONSTRUCTION DOCUMENTS. THE REVIEW SHALL INCLUDE BUT NOT BE LIMITED TO:
  - D.2.1. HVAC EQUIPMENT (INDOOR & OUTDOOR)
  - D.2.2. ROOF CURBS & PENETRATIONS
  - D.2.3. PIPING (REFRIGERANT, CONDENSER, CONDENSATE, CHILLED WATER, POTABLE WATER, STEAM, NATURAL GAS, ETC.)
  - D.2.4. DUCTWORK
  - D.2.5. SEISMIC HANGARS (IF APPLICABLE)
  - D.2.6. VIBRATION ISOLATORS
  - D.2.7. AIR DEVICES (DIFFUSERS, GRILLES, VCD'S, ETC.)
  - D.2.8. INSULATION (DUCTWORK, PIPING, ETC.)
  - D.2.9. MAINTENANCE ACCESSIBILITY (FILTERS, COILS, MOTORS, ISOLATORS, ETC.)
  - D.2.10. FIRE DAMPER(S)
  - D.2.11. CONTROLS

COMMISSIONING VENDOR

COMMISSIONING

D. OWNER MAINTENANCE VENDOR SITE VISIT - MECHANICAL REVIEW
- D.1. AUDIT THE GC CONTROLS FIELD INSTALLATION VERSUS THE ALC SHOP DRAWINGS. THE REVIEW SHALL INCLUDE BUT NOT BE LIMITED TO:
  - D.1.1. EQUIPMENT INSTALLED (EMS PANEL, SENSORS, ETC.)
  - D.1.2. CONTROLS CABLE PULLED & LABELED
  - D.1.3. NOTIFY A&F IMMEDIATELY IF CABLE IS NOT INSTALLED OR INSTALLED CABLE IS NOT WHAT ALC PROVIDED
- D.2. PRODUCE HVAC & CONTROLS INSPECTION REPORT TO BE SAVED IN JOB'S SITE VISIT FOLDER.

E. PM VISIT #3 - EQUIPMENT START UP AND AIR/WATER.
- E.1. GC TO SAVE A COPY OF THE HVAC EQUIPMENT STARTUP REPORT(S) WITH SIGNATURE OF MANUFACTURER'S REPRESENTATIVE WHO PERFORMED THE STARTUP FROM GC & SAVE TO STORE FOLDER IN NOT COMPLETE UNTIL AFTER PM VISIT #3, PM TO OBTAIN REPORT AS SOON AS STARTUP IS COMPLETE.

A&F PROJECT MANAGER

COMMISSIONING

F. COMMISSIONING SITE VISIT
- F.1. CONTACT ALC'S CUSTOMER SERVICE LINE (PHONE #: (678) 797-5088) AND COMPLETE A POINT-TO-POINT AUDIT OF THE CONTROLS SYSTEM WITH ALC.
- F.2. GC TO HAVE ALL CONTROL CABLE INSTALLED PER E4.00 DRAWINGS PRIOR TO OWNER COMMISSIONING VENDOR ARRIVAL. FAILURE TO DO SO WILL RESULT IN $1,000 BACK CHARGE TO GC.
- F.3 TERMINATE ALL CONTROLS CABLES INTO THE EMS PANEL AND CONTROL DEVICES PER THE ALC SHOP DRAWINGS IF AVAILABLE & HVAC EQUIPMENT SUBMITTALS. THE FOLLOWING IS A LIST ITEMS TO TERMINATE. ITEMS SHALL INCLUDE BUT NOT LIMITED TO:
  - F.3.1. EMS SPACE TEMPERATURE SENSOR(S)
  - F.3.2. EMS RELATIVE HUMIDITY SENSOR(S)
  - F.3.3. EMS SUPPLY AIR TEMPERATURE SENSOR(S)
  - F.3.4. EMS OUTDOOR AIR SENSOR(S)
  - F.3.5. PROGRAMMING EQUIPMENT MANUFACTURER GATEWAY.
  - F.3.6. EMS CHILLED, HOT, AND CONDENSING WATER SENSOR(S)
  - F.3.7. EMS CURRENT OPERATED SWITCH(ES)
  - F.3.8. EMS CONTROLS WIRE AND POWER. FOR ALL NON-DAIKIN HVAC EQUIPMENT. THIS WILL INCLUDE, BUT NOT LIMITED TO, CARRIER, TRANE, YORK, LENNOX, ETC
  - F.3.9. EMS CONTROLS WIRE: FOR ALL THIRD PARTY EXHAUST, SUPPLY OR CIRCULATION PUMPS.
  - F.3.10. ALL MODBUS CONNECTIONS
- F.4. NOT INCLUDED IN OWNER COMMISSIONING VENDOR SCOPE:
  - F.4.1. ELECTRICAL OR POWER TERMINATIONS TO THE EMS PANEL AND LIGHTING CONTACTORS
  - F.4.2. PROVIDING OR INSTALLING THE COMMUNICATION OR CONTROLS CABLE
  - F.4.3. FIRE PROTECTION OR FIRE ALARM SYSTEMS
- F.5. THE VENDOR IS TO REMAIN ON SITE UNTIL THE STORE HAS BEEN 100% COMMISSIONED. VENDOR SHALL NOT LEAVE THE SITE UNTIL 100% COMMISSIONED UNLESS APPROVED BY A&F'S PROJECT MANAGER.
- F.6. PRODUCE HVAC & CONTROLS INSPECTION REPORT DAILY.

A. GC CHARGE BACK
- A.1. A $2000.00 PER DAY BACK CHARGE WILL BE APPLIED TOWARDS THE GC CONTRACT FOR ALL ADDITIONAL DAYS REQUIRED ON SITE DUE TO GC ISSUES. TO INCLUDE BUT NOT LIMITED TO COSTS TO CHANGE FLIGHT, HOTEL, AND PER DIEM.

HOLLISTER CALIFORNIA

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STATE OF TEXAS
ERIC MICHAEL LOVICH
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PROFESSIONAL ENGINEER
09/25/2026

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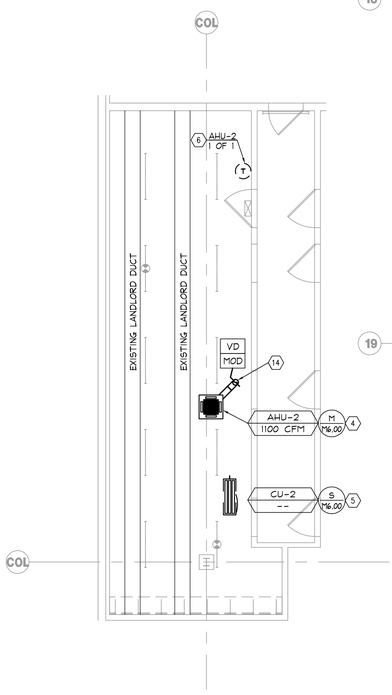
Project No.:	260348
Drawn By:	AJB

Date	Issue
09.04.2026	CHECKSET
09.25.2026	1 BID SET

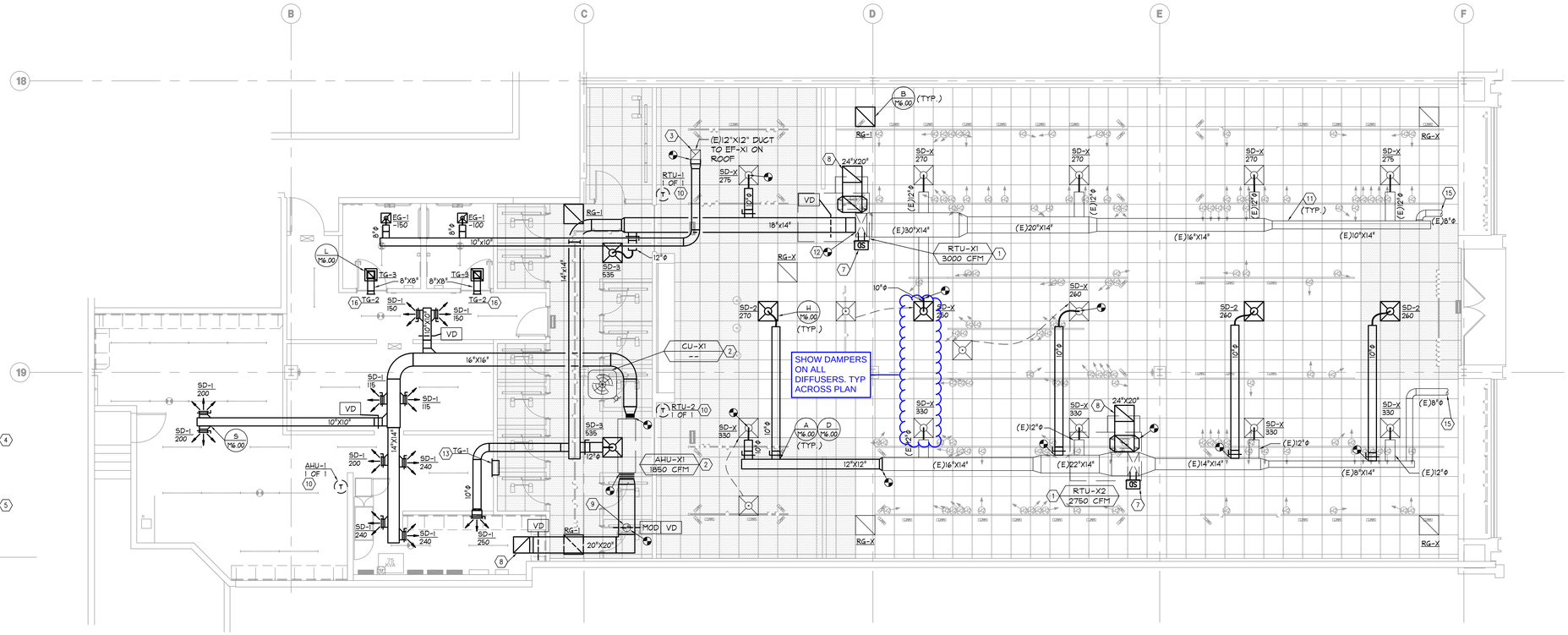
MECHANICAL SCHEDULES AND LOAD CALCULATIONS

M1.00

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REMOTE STORAGE
MECHANICAL PLAN
SCALE: 3/16"=1'-0"



MECHANICAL PLAN
SCALE: 3/16"=1'-0"

EXISTING DUCTWORK NOTES

REUSE AS MUCH OF THE EXISTING DUCTWORK AS POSSIBLE. EXISTING DUCTWORK SHALL BE UTILIZED SUCH THAT RESULTING AIR FLOW THROUGH DUCT DOES NOT EXCEED THE FOLLOWING DESIGN CONDITIONS:

SUPPLY DUCTWORK:
MAXIMUM FRICTION LOSS OF 0.08" PER 100 FEET AND MAXIMUM VELOCITY OF 1,200 FEET PER MINUTE.

RETURN DUCTWORK:
MAXIMUM FRICTION LOSS OF 0.05" PER 100 FEET AND A MAXIMUM VELOCITY OF 1,000 FEET PER MINUTE.

REFRIGERANT PIPING NOTES

REFRIGERANT PIPE(S) SIZES SHALL BE DETERMINED BY THE COMPRESSORIZED EQUIPMENT MANUFACTURER OR THEIR REPRESENTATIVE, WHO SHALL ALSO DETERMINE THE NEED FOR DOUBLE SUCTION PIPE RISERS, ACCUMULATORS AND OTHER APPURTENANCES REQUIRED FOR PROPER LONG TERM OPERATION OF THE EQUIPMENT. REFRIGERANT PIPE(S) SIZING AND ROUTING SHALL MEET ALL SYSTEM OPERATING CONDITIONS. THE CONTRACTOR SHALL PROVIDE TO THE OWNER AND ENGINEER LETTERS AND DRAWINGS THAT ADEQUATELY DEPICT THE REFRIGERANT PIPING AND COMPONENTS, AND INDICATE THE RECOMMENDATIONS PROVIDED TO THEM BY THE MANUFACTURER OR THEIR REPRESENTATIVE.

DEMOLITION NOTES

REMOVE ALL EXISTING MECHANICAL EQUIPMENT, DUCTWORK, HANGERS, SUPPORTS, PIPING, AND ACCESSORIES ONLY SERVING THIS SPACE AND NOT UTILIZED IN COMPLETED PROJECT. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID.

REMODEL NOTES

DRAWING IS BASED ON BEST AVAILABLE INFORMATION AT TIME OF DESIGN AND MAY NOT REFLECT AS-BUILT CONDITIONS. ALL MECHANICAL INSTALLATIONS INDICATED THROUGHOUT DRAWING SET SHALL BE FIELD VERIFIED PRIOR TO BID AND DEMOLITION.

GENERAL PLAN NOTES

A. COORDINATE ROUTE OF DUCTWORK WITH SUPPORTS FOR LIGHTING IN ALL SALES AREA. REFER TO ELECTRICAL LIGHTING PLAN FOR FURTHER INFORMATION.

B. TEMPERATURE SENSORS TO BE MOUNTED 45" AFF UNLESS OTHERWISE NOTED.

C. ALL NON-SALES AREA GRILLES SHALL BE MOUNTED AT 12'-0".

D. ALL MECHANICAL EQUIPMENT SHALL BE LABELED ANF-XXX-# (WHERE XXX IS THE EQUIPMENT DESIGNATION, AHU, CU, EF, ETC.) IN ACCORDANCE WITH THE LABELING REQUIREMENTS IN SPEC BOOK.

E. BRANCH DUCT SIZE TO MATCH DIFFUSER NECK SIZE

F. BOTTOM OF HVAC UNITS TO BE 12'-0" AFF IF ABLE TO DO SO WITH NO OBSTRUCTIONS (MALL DUCT, SPRINKLER MAINS, ETC.).

G. CONTRACTOR TO CHANGE OUT ALL FILTERS AFTER FINAL STORE CLEAN.

H. CONTRACTORS AND SUB-CONTRACTORS SHALL CAREFULLY REVIEW CONSTRUCTION DOCUMENTS. INFORMATION REGARDING COMPLETE WORK IS DISPERSED THROUGHOUT DOCUMENT SET AND CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO COMPLETE DOCUMENT SET.

I. COORDINATE WITH WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF OWNER, AND WITH CONSTRAINTS OF EXISTING CONDITIONS OF PROJECT SITE. PROVIDE DUCT RISES AND DROPS AS REQUIRED FOR FIELD INSTALLATION AND TRADE COORDINATION. NOTIFY ARCHITECT OF DISCREPANCIES BEFORE STARTING WORK.

J. DRAWINGS FOR HVAC WORK ARE DIAGRAMMATIC, SHOWING GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.

K. ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY GOVERNING AUTHORITY. PURCHASE ALL PERMITS ASSOCIATED WITH THE WORK. OBTAIN ALL INSPECTIONS REQUIRED BY CODE.

L. INSTALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS AND MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCE.

M. USE OF COMBUSTIBLE MATERIALS IS NOT ALLOWED IN RETURN AIR PLENUMS. MATERIALS USED IN PLENUMS SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25, AND SMOKE DEVELOPED RATING NOT TO EXCEED 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. ALL EXPOSED WIRING IN PLENUMS SHALL BE PLENUM RATED.

N. CONTRACT LANDLORD APPROVED ROOFING CONTRACTOR TO FLASH AND SEAL RELATED ROOF PENETRATIONS TO MAINTAIN ROOFING WARRANTY.

O. REBALANCE ALL DIFFUSERS (NEW AND EXISTING) TO AIRFLOWS INDICATED ON PLAN.

P. PATCH AND SEAL EXISTING DUCTWORK TO MATCH SEAL CLASS "A".

MECHANICAL PLAN NOTES

1. EXISTING ROOFTOP UNIT TO REMAIN. FIELD VERIFY EXACT LOCATION OF UNIT AND ADJUST ROUTING OF DUCTWORK ACCORDINGLY. CLEAN UNIT, GREASE ALL BEARINGS, LEAK-CHECK AND CHARGE REFRIGERANT SYSTEM, REPLACE FILTERS, AND CLEAN OUTDOOR AND INDOOR COILS. PROVIDE FLEXIBLE CONNECTORS ON THE SUPPLY AND RETURN AIR DUCT CONNECTIONS AS REQUIRED. TRANSITION TO DUCT SIZES SHOWN. RESHEAVE MOTOR AS REQUIRED TO DELIVER SPECIFIED AIRFLOW.
2. EXISTING AIR HANDLING UNIT AND ASSOCIATED CONDENSING UNIT TO REMAIN. FIELD VERIFY EXACT LOCATION OF UNIT AND ADJUST ROUTING OF DUCTWORK ACCORDINGLY. CLEAN UNIT, GREASE ALL BEARINGS, LEAK-CHECK AND CHARGE REFRIGERANT SYSTEM, REPLACE FILTERS, AND CLEAN OUTDOOR AND INDOOR COILS. PROVIDE FLEXIBLE CONNECTORS ON THE SUPPLY AND RETURN AIR DUCT CONNECTIONS AS REQUIRED. TRANSITION TO DUCT SIZES SHOWN. RESHEAVE MOTOR AS REQUIRED TO DELIVER DESIRED AIRFLOW.
3. EXISTING ROOF MOUNTED EXHAUST FAN TO REMAIN IN SERVICE IF OPERATIONAL. REMOVE, CLEAN, ADJUST AND REPAIR TO GOOD WORKING CONDITION. PROVIDE BID ALTERNATE TO REPLACE WITH EQUIVALENT NEW FAN IF REQUIRED.
4. PROVIDE CEILING MOUNTED DUCTLESS SPLIT SYSTEM AIR HANDLING UNIT. INSTALL UNIT LEVEL FOR PROPER CONDENSATE DRAINAGE. SUPPORT UNIT FROM STRUCTURE ABOVE WITH CHANNEL AND ALL-THREAD ROD WITH SPRING VIBRATION ISOLATORS.
5. PROVIDE CONDENSING UNIT AND EQUIPMENT SUPPORT RAILS FOR MOUNTING ON ROOF. PROVIDE MANUFACTURER'S RECOMMENDED TYPE AND SIZE OF REFRIGERANT PIPING FROM AIR HANDLING UNIT TO CONDENSING UNIT. PROVIDE PIPE CURB PENETRATIONS AND SUPPORTS. INSULATE VAPOR AND LIQUID LINE WITH 1" THICK ARMAFLEX AP. PAINT INSULATION LOCATED OUTDOORS WITH ARMAFLEX WB FINISH. TRAP AND SLOPE LINES PER MANUFACTURER'S RECOMMENDATIONS.
6. PROVIDE DELUXE WIRED REMOTE CONTROLLER FOR DUCTLESS SPLIT SYSTEM. MOUNT 48" ABOVE FINISHED FLOOR.
7. PROVIDE 120 VOLT DUCT MOUNTED SMOKE DETECTOR. DETECTOR SHALL MEET REQUIREMENTS OF UL 268A. INTERLOCK SMOKE DETECTOR TO SHUT DOWN UNIT UPON DETECTION OF SMOKE. PROVIDE SMOKE DETECTOR WITH AN ANNUNCIATOR WITH PIEZO ALARM AND POWER LEDS FOR VISIBLE AND AUDIBLE ALARM SIGNAL, AND VISIBLE TROUBLE SIGNAL. MOUNT ANNUNCIATOR ON ROOM SIDE OF CEILING OR STRUCTURE.
8. PROVIDE RETURN AIR BOOT WITH ACOUSTICAL DUCT LINER. LINER SHALL BE 1" THICK, LONG TEXTILE TYPE FIBER, WITH SURFACE CLEANABLE PER NAIMA DUCT CLEANING GUIDELINES. INSTALL LINER IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS. LAMINATE LINER TO INTERNAL SURFACES OF DUCT IN ACCORDANCE WITH LINER MANUFACTURER'S INSTRUCTIONS, AND FASTEN WITH MECHANICAL FASTENERS. ELBOW END OF RETURN DUCT UP 4".
9. TAP RETURN AIR BOOT WITH EXISTING OUTSIDE AIR (O/A) DUCT. PROVIDE (1) MANUAL DAMPER AND (1) 120 VOLT ELECTRICALLY OPERATED DAMPER (EOD) AS INDICATED. SET MANUAL DAMPER TO PROVIDE SCHEDULED OUTSIDE AIR FLOW. EOD SHALL FULLY OPEN DURING OCCUPIED HOURS AND FULLY CLOSE DURING UNOCCUPIED PERIODS.
10. RELOCATE EXISTING THERMOSTAT TO THIS VICINITY. FIELD VERIFY EXISTING LOCATION PRIOR TO BID.
11. EXISTING DUCTWORK TO REMAIN. FIELD VERIFY EXACT LOCATION AND CONDITION. PATCH/REPAIR/SEAL AIR TIGHT. REPLACE AND PROVIDE NEW INSULATION AS REQUIRED. VACUUM CLEAN PER 2021 NADCA, SECTION 4, AFTER CONSTRUCTION AND PRIOR TO OCCUPANCY.
12. PROVIDE SHOE TAP AT CONNECTION TO DUCT DROP FROM ROOFTOP UNIT.
13. MOUNT TRANSFER GRILLE IN WALL AS HIGH AS POSSIBLE ABOVE SALES FLOOR CEILING.
14. TAP RETURN AIR BOOT WITH OUTSIDE AIR (O/A) DUCT AND EXTEND UP THROUGH ROOF. PROVIDE ROOF JACK, STORM COLLAR, AND ALL-WEATHER CAP. PROVIDE (1) MANUAL DAMPER AND (1) 120 VOLT ELECTRICALLY OPERATED DAMPER (EOD) AS INDICATED. SET MANUAL DAMPER TO PROVIDE SCHEDULED OUTSIDE AIR FLOW. EOD SHALL FULLY OPEN DURING OCCUPIED HOURS AND FULLY CLOSE DURING UNOCCUPIED PERIODS.
15. EXISTING DUCT EXTENDING TO STOREFRONT. REMOVE, CLEAN, AND BALANCE ASSOCIATED AIR DEVICE TO 50 CFM.
16. MOUNT TRANSFER GRILLE IN WALL AS HIGH AS POSSIBLE ABOVE RESTROOM CEILING.

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STORE #31909

Project No.:	260348
Drawn By:	AJB

Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

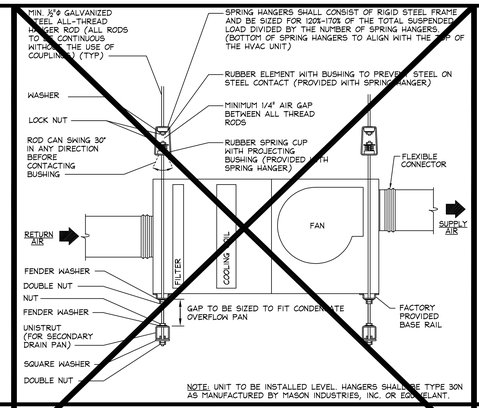
MECHANICAL PLAN

M2.00

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Drawn By: Chris Hanke

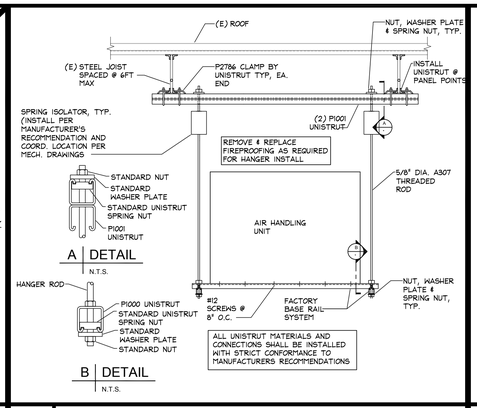
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R ACU MOUNTING DETAIL
M2.00 — SCALE: NONE

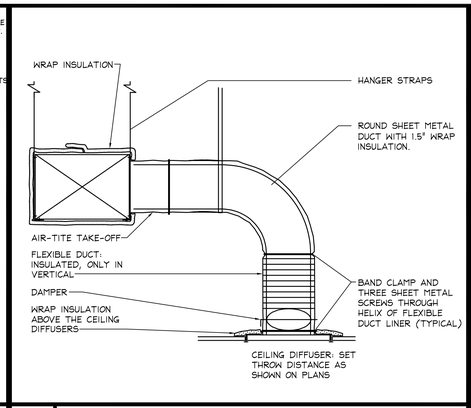


NOTE: UNIT TO BE INSTALLED LEVEL. HANGERS SHALL BE TYPE 30N AS MANUFACTURED BY MASON INDUSTRIES, INC. OR EQUIVALENT.

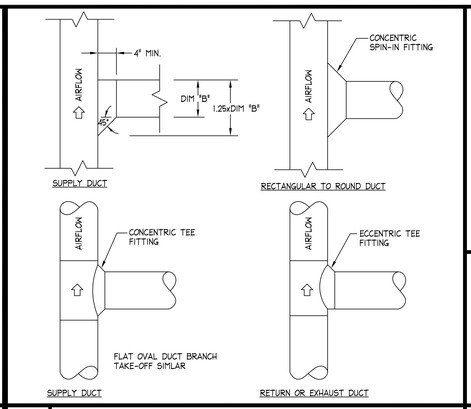
M TYPICAL HANGING DETAIL
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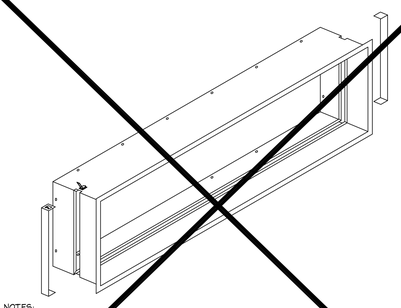
H DIFFUSER MOUNTING
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D BRANCH DUCT TAKE-OFF DETAILS
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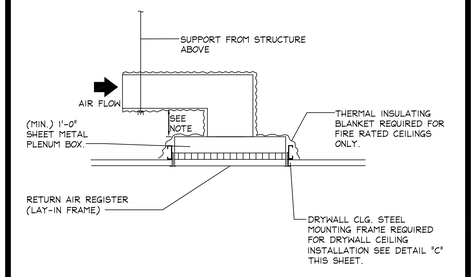
U FILTER RACK
M2.00 — SCALE: NONE



NOTES:
1. FILTER RACK TO BE OF STRONG SPOTWELDED M/S SHEET CONSTRUCTION HOT GALVANIZATION DIPPED.
2. FILTER RACK TO BE INTERNALLY LAGGED WITH 1/2"MM CLOSED CELL ELASTOMERIC FOAM.
3. FILTER RACK TO HAVE CHANNEL FOR FILTERS.
4. FILTER RACK TO HAVE REMOVABLE SIDE ACCESS.

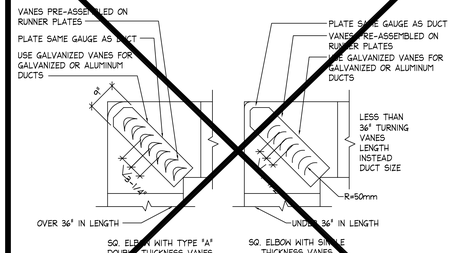
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L TRANSFER GRILLE - RESTROOM
M2.00 — SCALE: NONE

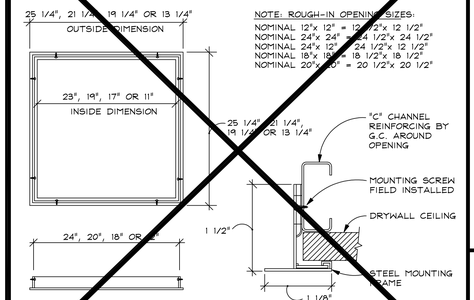


NOTE: 10" OR MAX THAT CLEARANCE ALLOWS

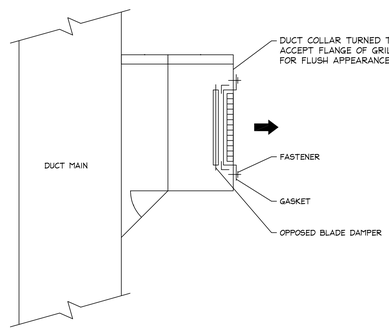
G TURNING VANES DETAIL
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C DRYWALL MOUNTING FRAME DETAIL
M2.00 — SCALE: NONE

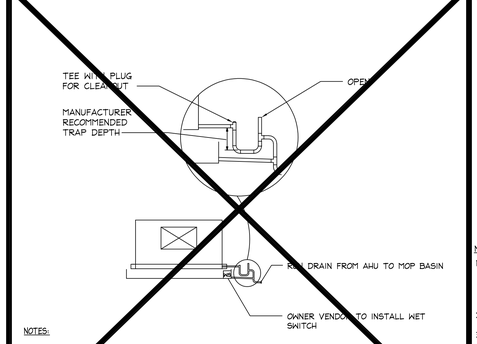


T REGISTER DUCT CONNECTION
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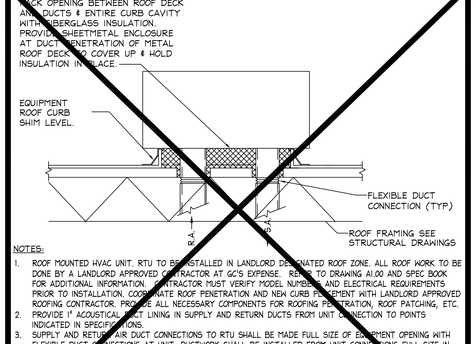
NOTE: GAUGE OF SHEET METAL SHALL BE SUCH THAT DUCT COLLAR IS ABLE TO SUPPORT WEIGHT OF GRILLE & DAMPER AND BE LEVEL.

P ACU SECONDARY DRAIN PAN DETAIL
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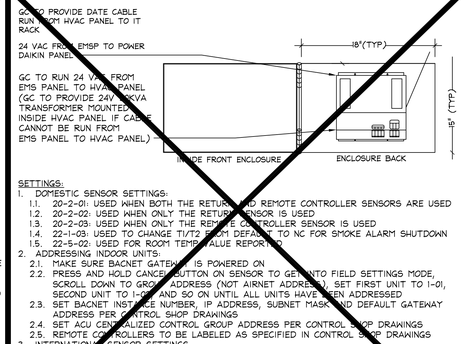
NOTES:
1. ALL CONDENSATE PIPING SHALL BE INSULATED, 1" MINIMUM
2. INSTALL CONDENSATE DRAIN PIPE AT SLOPE OF 1" PER 4' TO NEAREST LL APPROVED RECEPTOR
3. CONDENSATE DRAIN TRAP DEPTH OF 1.5 X UNIT TOTAL STATIC PRESSURE, MINIMUM 6" DEEP

K ROOFTOP UNIT
M2.10 — SCALE: NONE



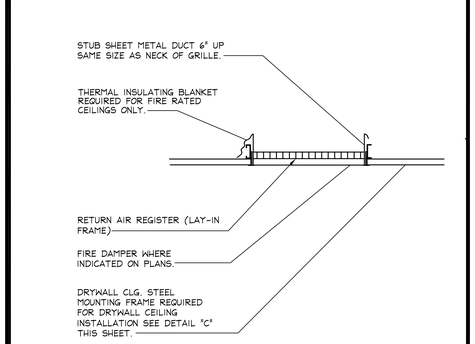
NOTES:
1. ROOF MOUNTED HVAC UNIT. RTU TO BE INSTALLED IN LANDLORD DESIGNATED ROOF ZONE. ALL ROOF WORK TO BE DONE BY A LANDLORD APPROVED CONTRACTOR AT GC'S EXPENSE. REFER TO DRAWING A1.00 AND SPEC BOOK FOR ADDITIONAL INFORMATION. CONTRACTOR MUST VERIFY MODEL NUMBERS AND ELECTRICAL REQUIREMENTS PRIOR TO INSTALLATION. COORDINATE ROOF PENETRATION AND NEW CURB PLACEMENT WITH LANDLORD APPROVED ROOFING CONTRACTOR. PROVIDE ALL NECESSARY COMPONENTS FOR ROOFING PENETRATION, ROOF PATCHING, ETC.
2. PROVIDE 1" ACOUSTICAL DUCT LINING IN SUPPLY AND RETURN DUCTS FROM UNIT CONNECTION TO POINTS INDICATED IN SPECIFICATIONS.
3. SUPPLY AND RETURN AIR DUCT CONNECTIONS TO RTU SHALL BE MADE FULL SIZE OF EQUIPMENT OPENING WITH FLEXIBLE DUCT CONNECTIONS AT UNIT. DUCTWORK SHALL BE INSTALLED FROM UNIT CONNECTIONS FULL SIZE IN THE VERTICAL DROP FROM THE UNIT. TRANSITION TO SIZES SHOWN ON PLANS. ELBOWS SHALL HAVE DOUBLE THICKNESS TURNING VANES INSTALLED.
4. COORDINATE WITH LANDLORD ROOFING CONTRACTOR.

F HVAC PANEL
M2.00 — SCALE: NONE

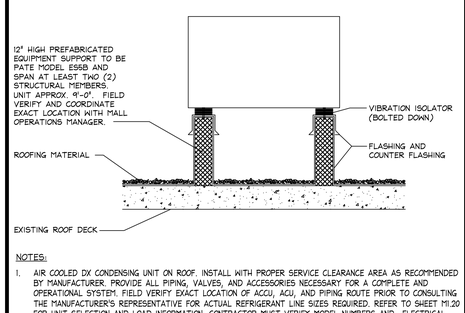


SETTINGS:
1. DOMESTIC SENSOR SETTINGS:
   1.1. 20-2-01: USED WHEN BOTH THE RETURN AND REMOTE CONTROLLER SENSORS ARE USED
   1.2. 20-2-02: USED WHEN ONLY THE RETURN SENSOR IS USED
   1.3. 20-2-03: USED WHEN ONLY THE REMOTE CONTROLLER SENSOR IS USED
   1.4. 22-1-03: USED TO CHANGE T1/T2 FROM DEFAULT TO NC FOR SMOKE ALARM SHUTDOWN
   1.5. 22-5-02: USED FOR ROOM TEMP VALUE REPORTED
2. ADDRESSING INDOOR UNITS:
   2.1. MAKE SURE BACNET GATEWAY IS POWERED ON
   2.2. PRESS AND HOLD CANCEL BUTTON ON SENSOR TO GET INTO FIELD SETTINGS MODE, SCROLL DOWN TO GROUP ADDRESS (NOT AIRNET ADDRESS) SET FIRST UNIT TO 1-01, SECOND UNIT TO 1-02 AND SO ON UNTIL ALL UNITS HAVE BEEN ADDRESSED
   2.3. SET BACNET INSTANCE NUMBER, IP ADDRESS, SUBNET MASK AND DEFAULT GATEWAY ADDRESS PER CONTROL SHOP DRAWINGS
   2.4. SET ACU CENTRALIZED CONTROL GROUP ADDRESS PER CONTROL SHOP DRAWINGS
   2.5. REMOTE CONTROLLERS TO BE LABELED AS SPECIFIED IN CONTROL SHOP DRAWINGS
3. INTERNATIONAL SENSOR SETTINGS:
   3.1. 20-04-02: USED TO SET TEMPERATURE CONTROL AND CHANGE OVER PARAMETER
   3.2. 23-16-02: USED FOR HIGH STATIC UNITS (DUCTED UNITS)
   3.3. 17-4-02: USED FOR VAM UNITS

B RETURN GRILLE MOUNTING
M2.00 — SCALE: NONE

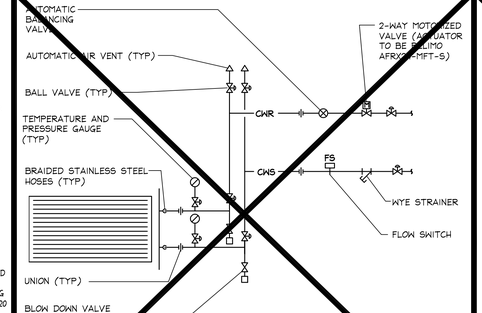


S ROOF MOUNTED EQUIPMENT
M2.10 — SCALE: NONE



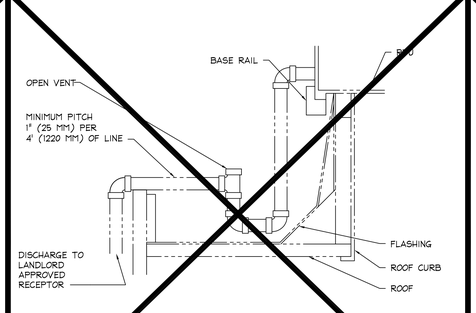
NOTES:
1. AIR COOLED DX CONDENSING UNIT ON ROOF. INSTALL WITH PROPER SERVICE CLEARANCE AREA AS RECOMMENDED BY MANUFACTURER. PROVIDE ALL PIPING, VALVES, AND ACCESSORIES NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM. FIELD VERIFY EXACT LOCATION OF ACCU, ACU, AND PIPING ROUTE PRIOR TO CONSULTING THE MANUFACTURER'S REPRESENTATIVE FOR ACTUAL REFRIGERANT LINE SIZES REQUIRED. REFER TO SHEET M1.20 FOR UNIT SELECTION AND LOAD INFORMATION. CONTRACTOR MUST VERIFY MODEL NUMBERS AND ELECTRICAL REQUIREMENTS PRIOR TO INSTALLATION.
2. INSTALL NEW REFRIGERANT LINES FROM THE AIR HANDLING UNITS DX COIL TO AIR COOLED DX CONDENSING UNIT AND MAKE FINAL CONNECTIONS. REFER TO MECHANICAL SPECIFICATIONS, "REFRIGERANT PIPING" ON SHEET M1.1 FOR ADDITIONAL REQUIREMENTS. ROOF PENETRATIONS TO BE COORDINATED WITH THE LANDLORD AND ALL ROOF WORK TO BE DONE BY THE LANDLORD'S ROOFING CONTRACTOR AT THE MECHANICAL CONTRACTOR'S EXPENSE.

N HYDRONIC COIL DETAIL
M2.00 — SCALE: NONE



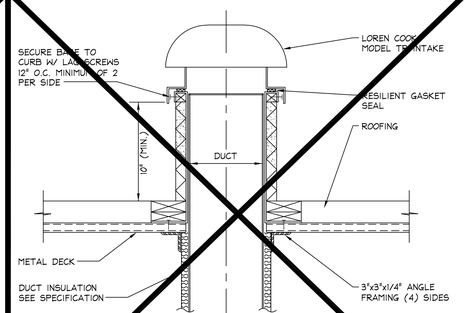
NOTES:
PIPING INSTALLATION SHALL NOT RESTRICT EQUIPMENT ACCESS

J RTU CONDENSATE DRAIN
M2.10 — SCALE: NONE



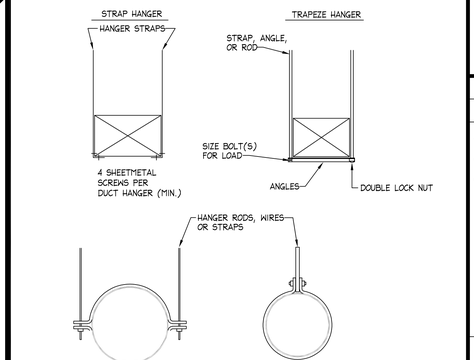
NOTE: TRAP SHALL BE DEEP ENOUGH TO OFFSET MAXIMUM UNIT STATIC DIFFERENCE. INSTALL TRAP AT LEAST 4" (102 MM) DEEP TO PROTECT AGAINST FREEZE-UP. DO NOT USE A PIPE SIZE SMALLER THAN THE UNIT CONNECTION.

E AIR INTAKE/EXHAUST HOOD
M2.10 — SCALE: NONE



NOTE: CONTRACTOR TO COORDINATE INSTALLATION WITH ROOFER FOR PROPER SEQUENCE TO PERMIT FLASHING AND COUNTERFLASHING INSTALLATION

A DUCT HANGING DETAIL
M2.00 — SCALE: NONE



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09/25/2026
LICENSED PROFESSIONAL ENGINEER

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Issued # 1 07/25/2025 24

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MEMORIAL CITY MALL
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No.:	260348
Drawn By:	AJB

Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

MECHANICAL DETAILS

M6.00

J:\1716_Dialectic_4_CTR Proj\260348_Memorial City Mall\Revit\260348_Oakbrook_R24.rvt
Plotted: 9/25/2026 3:16:47 PM
Drawn By: Chris Maine

COMcheck Software Version COMcheckWeb

Mechanical Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: Hollister - Houston, TX
Location: Houston, Texas
Climate Zone: 2a
Project Type: Alteration

Construction Site: Owner/Agent: Designer/Contractor:

Mechanical Systems List

Quantity System Type & Description

1 CU/AHU-2 (Single Zone):
Cooling: 1 each - Split System, Capacity = 36 kBtu/h, Air-Cooled Condenser, Unknown Economizer
Proposed Efficiency = 23.30 SEER2, Required Efficiency = 13.40 SEER2
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00
Fan System: FAN SYSTEM 1 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 1 Supply, Constant Volume, 1100 CFM, 1.0 motor nameplate hp, 0.00 fan energy index , fan exception: Part of code listed equipment

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2021 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

AJ Barry - Mechanical Designer — Name - Title
AJ Barry — Signature
09/01/2026 — Date

COMcheck Software Version COMcheckWeb

Inspection Checklist

Energy Code: 2021 IECC

Requirements: 100.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR2][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical and service water heating systems and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks. Hot water system sized per manufacturer's sizing guide.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Plumbing Rough-In Inspection	Complies?	Comments/Assumptions
C404.5, C404.5.1, C404.5.2 [PL6][1]	Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.2.6 [ME41][1]	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.12.3 [ME61][1]	HVAC piping insulation insulated in accordance with Table C403.11.3. Insulation exposed to weather is protected from damage and is provided with shielding from solar radiation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.8.4 [ME142][1]	Motors for fans that are not less than 1/12 hp and less than 1 hp are electronically commutated motors or have a minimum motor efficiency of 70 percent. These motors have the means to adjust motor speed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.8.6 [ME143][1]	Each DX cooling system > 65 kBtu and chiller water/evaporative cooling system with fans > 1/4 hp are designed to vary the indoor fan airflow as a function of load and comply with detailed requirements of this section.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.9 [ME144][1]	Large diameter fans where installed shall be tested and labeled in accordance with AMCA 230.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.13.1 [ME71][1]	Systems that heat outside the building envelope are radiant heat systems controlled by an occupancy sensing device or timer switch.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.3 [ME55][1]	HVAC equipment efficiency verified.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Mechanical Systems list for values.*
C403.2.2 [ME59][1]	Natural or mechanical ventilation is provided in accordance with International Mechanical Code Chapter 4. Mechanical ventilation has capability to reduce outdoor air supply to minimum per IMC Chapter 4.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.7.1 [ME59][1]	Demand control ventilation provided for spaces >500 ft2 and >15 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.7.2 [ME115][1]	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.7.6 [ME141][1]	HVAC systems serving guestrooms in Group R-1 buildings with > 50 guestrooms: Each guestroom is provided with controls that automatically manage temperature setpoint and ventilation (see sections C403.7.6.1 and C403.7.6.2).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.7.4 [ME57][1]	Exhaust air energy recovery on systems meeting Table C403.7.4(1) and C403.7.4(2).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.7.5 [ME116][1]	Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and satisfy hood rating requirements and maximum exhaust rate criteria.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.12.1 ,C403.12.2 [ME60][1]	HVAC ducts and plenums insulated in accordance with C403.11.1 and constructed in accordance with C403.11.2, verification may need to occur during Foundation Inspection.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.1.4 [ME63][1]	Heating for vestibules and air curtains with integral heating include automatic controls that shut off the heating system when outdoor air temperatures > 45F. Vestibule heating and cooling systems controlled by a thermostat in the vestibule with heating setpoint <= 60F and cooling setpoint >= 80F.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.3.3 [ME35][1]	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.2.1 [ME53][1]	Air outlets and zone terminal devices have means for air balancing.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.11.3 ,C403.11.3.1, C403.11.3.2 [ME123][1]	Refrigerated display cases, walk-in coolers or walk-in freezers served by remote compressors and remote condensers not located in a condensing unit, have fan-powered condensers that comply with Sections C403.11.3.1 and refrigeration compressor systems that comply with C403.11.3.2.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.7 [EL26][1]	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.8 [EL27][1]	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.9.1, C405.9.2 [EL28][1]	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.10 [EL29][1]	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.1.1 [EL30][1]	At least 90% of dwelling unit permanently installed lighting shall have lamp efficacy >= 65 lm/W or luminaires with efficacy >= 45 lm/W or comply with C405.2.4 or C405.3.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.11, C405.11.1 [EL31][1]	50% of 15/20 amp receptacles installed in enclosed offices, conference rooms, copy rooms, break rooms, classrooms and workstations and > 25% of branch circuit feeders for modular furniture will have automatic receptacle control in accordance with C405.11.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.3 [FI8][1]	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.1.1 [FI50][1]	HVAC systems and equipment design loads calculated in accordance with ANSI/ASHRAE/ACCA Standard 183 or by an approved equivalent computational procedure	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.3.1 [FI27][1]	HVAC systems and equipment capacity does not exceed calculated loads.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.1 [FI47][1]	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.1.2 [FI38][1]	Thermostatic controls have a 5 °F deadband.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.1.3 [FI20][1]	Temperature controls have setpoint overlap restrictions.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.2 [FI39][1]	Each zone equipped with setback controls using automatic time clock or programmable control system.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.2.1, C403.4.2.2 [FI40][1]	Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.2.3 [FI41][1]	Systems include optimum start controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.1.1 [FI57][1]	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.1 [FI28][1]	Commissioning plan developed by registered design professional or approved agency.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C408.2.3.1 [FI31][1]	HVAC equipment, systems and system-to-system relationships have been tested to ensure proper operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.3.2 [FI10][1]	HVAC and service water heating control systems have been tested to ensure proper operation, calibration and adjustment of controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.4 [FI29][1]	Preliminary commissioning report completed and certified by registered design professional or approved agency.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.5 [FI7][1]	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.5.1 [FI43][1]	An air and/or hydronic system balancing report is provided for HVAC systems.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.5.2 [FI30][1]	Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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STATE OF TEXAS
REGISTERED
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116877
09/25/2026
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PROFESSIONAL ENGINEER

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MEMORIAL CITY MALL

303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No.: 260348
Drawn By: AJB

Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

MECHANICAL ENERGY COMPLIANCE

M7.00

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Model Path: C:\Users\ajbarry\Documents\1716_Outlands_IL_tx117716_Outlands_IL_MEP_R24_ajbarry.rvt
Plotted By: Chris Meola

SECTION 22 0519 - METERS AND GAUGES FOR PLUMBING PIPING

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Positive displacement meters.
B. Pressure gauges and pressure gauge taps.
C. Thermometers and thermometer wells.
D. Static pressure gauges.
PART 2 PRODUCTS
2.01 POSITIVE DISPLACEMENT METERS (LIQUID)
A. AWWA C700, positive displacement disc type suitable for fluid with bronze case and cast iron frost-proof, breakaway bottom cap, hermetically sealed register, remote reading.
B. Meter: Brass body turbine meter with magnetic drive register.
1. Accuracy: 1-1/2 percent.
2.02 PRESSURE GAUGES
A. Pressure Gauges: ASME B40.100, UL 393 drawn steel case, phosphor bronze bourdon tube, rotary brass movement, brass socket, with front recalibration adjustment, black scale on white background.
1. Case: Steel with brass bourdon tube.
2. Size: 4-1/2 inch (115 mm) diameter.
3. Mid-Scale Accuracy: One percent.
4. Scale: Psi and kPa.
2.03 DIAL THERMOMETERS
A. Thermometers - Adjustable Angle: Dial type bimetallic actuated; ASTM E1; stainless steel case, adjustable angle with front recalibration, silicone fluid damping, white with black markings and black pointer, hermetically sealed lens, stainless steel stem.
1. Size: 5 inch (125 mm) diameter dial.
2. Accuracy: 1 percent.
3. Calibration: Degrees F.
2.04 STATIC PRESSURE GAUGES
A. 3-1/2 inch (90 mm) diameter dial in metal case, diaphragm actuated, black figures on white background, front recalibration adjustment, 2 percent of full scale accuracy.
PART 3 EXECUTION
3.01 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Provide one pressure gauge per pump, installing taps before strainers and on suction and discharge of pump. Pipe to gauge.
C. Install thermometers in piping systems in sockets in short couplings. Enlarge pipes smaller than 2-1/2 inch (60 mm) for installation of thermometer sockets. Ensure sockets allow clearance from insulation.
D. Install gauges and thermometers in locations where they are easily read from normal operating level. Install vertical to 45 degrees off vertical.
E. Adjust gauges and thermometers to final angle, clean windows and lenses, and calibrate to zero.

SECTION 22 0523 - GENERAL-DUTY VALVES FOR PLUMBING PIPING

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Applications.
B. General requirements.
C. Angle valves.
D. Ball valves.
E. Butterfly valves.
F. Check valves.
G. Gate valves.
H. Globe valves.
1.02 DELIVERY, STORAGE, AND HANDLING
A. Prepare valves for shipping as follows:
1. Minimize exposure of operable surfaces by setting plug and ball valves to open position.
2. Protect valve parts exposed to piped medium against rust and corrosion.
3. Protect valve piping connections such as grooves, weld ends, threads, and flange faces.
4. Adjust globe, gate, and angle valves to the closed position to avoid clattering.
5. Secure check valves in either the closed position or open position.
6. Adjust butterfly valves to closed or partially closed position.
B. Use the following precautions during storage:
1. Maintain valve end protection and protect flanges and specialties from dirt.
a. Provide temporary inlet and outlet caps.
b. Maintain caps in place until installation.
2. Store valves in shipping containers and maintain in place until installation.
a. Store valves indoors in dry environment.
b. Store valves off the ground in watertight enclosures when indoor storage is not an option.
PART 2 PRODUCTS
2.01 APPLICATIONS
A. Provide the following valves for the applications if not indicated on drawings:
1. Shutoff: Ball, butterfly, gate or plug.
2. Dead-End: Single-flange butterfly (lug) type.
3. Throttling: Provide globe, angle, ball, or butterfly.
4. Swing Check (Pump Outlet):
a. 2 NPS (50 DN) and Smaller: Bronze swing check valves with disc.
b. 2-1/2 NPS (65 DN) and Larger for Domestic Water: Iron swing check valves with closure control, metal or resilient seat check valves.
B. Domestic, Hot and Cold Water Valves:
1. 2 NPS (50 DN) and Smaller:
a. Bronze and Brass: Provide with solder-joint or threaded ends.
b. Bronze Angle: Class 125, bronze disc.
c. Ball: One piece, full port, brass or bronze with brass trim.
2. 2-1/2 NPS (65 DN) and Larger:
a. Iron, 2-1/2 NPS (65 DN) to 4 NPS (100 DN): Provide with threaded or flanged ends.
b. Iron Ball: Class 150.
2.02 GENERAL REQUIREMENTS
A. Valve Pressure and Temperature Ratings: No less than rating indicated; as required for system pressures and temperatures.
B. Valve Sizes: Match upstream piping unless otherwise indicated.
C. Valve Actuator Types:
1. Gear Actuator: Quarter-turn valves 8 NPS (200 DN) and larger.
D. Valves in Insulated Piping: With 2 NPS (50 DN) stem extensions and the following features:
1. Gate Valves: Rising stem.
2. Ball Valves: Extended operating handle of non-thermal-conductive material, and protective sleeve that allows operation of valve without breaking the vapor seal or disturbing insulation.
E. Valve-End Connections:
1. Threaded End Valves: ASME B1.20.1.
2. Flanges on Iron Valves: ASME B16.1 for flanges on iron valves.
3. Pipe Flanges and Flanged Fittings 1/2 NPS (15 DN) through 24 NPS (600 DN): ASME B16.5.
F. Valve Materials for Potable Water: NSF 61 and NSF 372.
G. Bronze Valves:
1. Fabricate from dezincification resistant material.
2. Copper alloys containing more than 15 percent zinc are not permitted.
H. Valve Bypass and Drain Connections: MSS SP-45.
I. Source Limitations: Obtain each valve type from a single manufacturer.
2.03 BRONZE ANGLE VALVES
A. Class 125: CWP Rating: 200 psig: (1380 kPa).
1. Comply with MSS SP-80, Type 1.
2. Body: Bronze; ASTM B62, with integral seat and screw in bonnet.
3. Ends: Threaded.
4. Stem: Bronze.
5. Disc: Bronze.
6. Packing: Asbestos free.
7. Handwheel: Bronze or aluminum.
2.04 BRASS BALL VALVES
A. Two Piece, Full Port and Regular Port with Brass Trim:
1. Comply with MSS SP-110.
2. SWP Rating: 150 psig (1035 kPa).
3. CWP Rating: 600 psig (4140 kPa).
4. Body: Forged brass.
5. Ends: Threaded.
6. Seats: PTFE.
2.05 BRONZE BALL VALVES
2.06 IRON BALL VALVES
A. Class 125, Full Port, Stainless Steel Trim:
1. Comply with MSS SP-72.
2. CWP Rating: 200 psig (1380 kPa).
3. Body: ASTM A536 Grade 65-45-12, ductile iron.
4. Ends: Flanged.
5. Seats: PTFE.
6. Operator: Lever, with locking handle.
2.07 BRONZE SWING CHECK VALVES
A. Class 125: CWP Rating: 200 psig (1380 kPa).
1. Comply with MSS SP-80, Type 3.
2. Design: Horizontal flow.
3. Body: Bronze, ASTM B62.
4. Ends: Threaded as indicated.
5. Disc: Bronze.
2.08 IRON SWING CHECK VALVES WITH CLOSURE CONTROL
A. Class 125 with Lever and Spring-Closure Control.
1. Comply with MSS SP-71, Type 1.
2. Description:
a. CWP Rating: 200 psig (1380 kPa).
b. Design: Clear or full waterway.
c. Body: ASTM A126, gray iron with bolted bonnet.
d. Ends: Flanged as indicated.
e. Trim: Bronze.
f. Gasket: Asbestos free.
g. Closer Control: Factory installed, exterior lever, and weight.

SECTION 22 0529 - HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Support and attachment components for equipment, piping, and other plumbing work.
PART 2 PRODUCTS
2.01 SUPPORT AND ATTACHMENT COMPONENTS
A. General Requirements:
1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of plumbing work.
2. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
3. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.
4. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
5. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel, stainless steel, or approved equivalent unless otherwise indicated.
c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
B. Metal Channel (Strut) Framing Systems:
1. Channel Material:
a. Indoor Dry Locations: Use painted steel, zinc-plated steel, or galvanized steel.
b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel.
C. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.
D. Pipe Supports:
1. Manufacturers:
a. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.
2. Liquid Temperatures Up To 122 degrees F (50 degrees C):
a. Overhead Support: MSS SP-58 Types 1, 3 through 12.
b. Support From Below: MSS SP-58 Types 35 through 38.
3. Operating Temperatures from 122 to 446 degrees F (50 to 230 degrees C):
a. Overhead Support: MSS SP-58 Type 1 or 3 through 12, with appropriate saddle of MSS SP-58 Type 40 for insulated pipe.
b. Roller Support: MSS SP-58 Types 41 or 43 through 46, with appropriate saddle of MSS SP-58 Type 39 for insulated pipe.
c. Sliding Support: MSS SP-58 Types 35 through 38.
E. Beam Clamps: MSS SP-58 Types 19 through 23, 25 or 27 through 30 based on required load.
1. Manufacturers:
a. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.
2. Material: ASTM A36/A36M carbon steel or ASTM A181/A181M forged steel.
3. Provide clamps with hardened steel cup-point set screws and lock-nuts for anchoring in place.
F. Riser Clamps:
1. Manufacturers:
a. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.
2. Provide copper plated clamps for copper tubing support.
3. For insulated pipe runs, provide two bolt-type clamps designed for installation under insulation.
G. Strut Clamps: Two-piece pipe clamp.
1. Manufacturers:
a. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.
H. Insulation Clamps: Two bolt-type clamps designed for installation under insulation.
1. Manufacturers:
a. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.
I. Pipe Hangers: For a given pipe run, use hangers of the same type and material.
1. Manufacturers:
a. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.
2. Material: Malleable iron, ASTM A47/A47M; or carbon steel, ASTM A36/A36M.
3. Provide coated or plated hangers to isolate steel hangers from dissimilar metal tube or pipe.
J. Dielectric Barriers: Provide between metallic supports and metallic piping and associated items of dissimilar type; acceptable dielectric barriers include rubber or plastic sheets or coatings attached securely to pipe or item.
1. Manufacturers:
a. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.
K. Nonpenetrating Rooftop Supports for Low-Slope Roofs:
1. Manufacturers:
a. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.
2. Provide steel pedestals with thermoplastic or rubber base that rest on top of roofing membrane, not requiring any attachment to the roof structure and not penetrating the roofing assembly, with support fixtures as specified.
3. Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
4. Attachment/Support Fixtures: As recommended by manufacturer, same type as indicated for equivalent indoor hangers and supports.
5. Mounting Height: Provide minimum clearance of 6 inches (150 mm) under supported component to top of roofing.
L. Anchors and Fasteners:
1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
2. Concrete: Use preset concrete inserts, expansion anchors, or screw anchors.
3. Solid or Grout-Filled Masonry: Use expansion anchors or screw anchors.
4. Hollow Masonry: Use toggle bolts.
5. Hollow Stud Walls: Use toggle bolts.
6. Steel: Use beam clamps, machine bolts, or welded threaded studs.
7. Sheet Metal: Use sheet metal screws.
8. Wood: Use wood screws.
9. Plastic and lead anchors are not permitted.
10. Preset Concrete Inserts: Continuous metal channel (strut) and spot inserts specifically designed to be cast in concrete ceilings, walls, and floors.
a. Comply with MFMA-4.
b. Channel Material: Use galvanized steel.
c. Manufacturer: Same as manufacturer of metal channel (strut) framing system.
M. Pipe Installation Accessories:
1. Copper Pipe Supports:
a. Manufacturers:
1) Source Limitations: Furnish supports, associated fittings, accessories, and hardware produced by a single manufacturer.
2. PEX Pipe Supports:
a. Manufacturers:
1) Source Limitations: Furnish supports, associated fittings, accessories, and hardware produced by a single manufacturer.
3. CPVC Pipe Supports:
a. Manufacturers:
1) Source Limitations: Furnish supports, associated fittings, accessories, and hardware produced by a single manufacturer.
4. Overhead Pipe Supports:
a. Manufacturers:
1) Source Limitations: Furnish supports, associated fittings, accessories, and hardware produced by a single manufacturer.
5. Inserts and Clamps:
a. Manufacturers:
1) Source Limitations: Furnish supports, associated fittings, accessories, and hardware produced by a single manufacturer.
PART 3 EXECUTION
3.01 INSTALLATION
A. Install products in accordance with manufacturer's instructions.
B. Provide independent support from building structure. Do not provide support from piping, ductwork, conduit, or other systems.
C. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.
D. Unless specifically indicated or approved by Architect, do not provide support from roof deck.
E. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
F. Equipment Support and Attachment:
1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
2. Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
3. Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
4. Unless otherwise indicated, mount floor-mounted equipment on properly sized 4 inch (100 mm) high concrete pad, 6 inches larger in all directions constructed in accordance with Section 03 3000.
5. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
G. Preset Concrete Inserts: Use manufacturer-provided closure strips to inhibit concrete seepage during concrete pour.
H. Secure fasteners according to manufacturer's recommended torque settings.
I. Remove temporary supports.

SECTION 22 0548 - VIBRATION AND SEISMIC CONTROLS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Vibration isolation requirements.
B. Seismic control requirements.
C. Vibration isolators.
D. Seismic restraint systems.
1.02 SUBMITTALS
A. Product Data: Provide manufacturer's standard catalog pages and data sheets for products, including materials, fabrication details, dimensions, and finishes.
1. Vibration Isolators: Include rated load capacities and deflections; include information on color coding or other identification methods for spring element load capacities.
PART 2 PRODUCTS
2.01 VIBRATION ISOLATION REQUIREMENTS
A. Design and provide vibration isolation systems to reduce vibration transmission to supporting structure from vibration-producing plumbing equipment and/or plumbing connections to vibration-isolated equipment.
B. General Requirements:
1. Select vibration isolators to provide required static deflection.
2. Select vibration isolators for uniform deflection based on distributed operating weight of actual installed equipment.
C. Equipment and Piping Isolation: As indicated on drawings.
2.02 VIBRATION ISOLATORS
A. General Requirements:
1. Resilient Materials for Vibration Isolators: Oil, ozone, and oxidant resistant.
2. Spring Elements for Spring Isolators:
a. Color code or otherwise identify springs to indicate load capacity.
b. Lateral Stability: Minimum lateral stiffness to vertical stiffness ratio of 0.8.
c. Designed to operate in the linear portion of their load versus deflection curve over deflection range of not less than 50 percent above specified deflection.
d. Designed to provide additional travel to solid of not less than 50 percent of rated deflection at rated load.
e. Selected to provide designed deflection of not less than 75 percent of specified deflection.
f. Selected to function without undue stress or overloading.
3. Seismic Snubbing Elements for Seismic Isolators:
a. Air Gap: Between 0.125 inches (3 mm) and 0.25 inches (6 mm) unless otherwise indicated.
b. Points of Contact: Cushioned with resilient material, minimum 0.25 inch (6 mm) thick; capable of being visually inspected for damage and replaced.
B. Vibration Isolators for Nonseismic Applications:
1. Resilient Material Isolator Pads:
a. Description: Single or multiple layer pads utilizing elastomeric (e.g., neoprene, rubber) or fiberglass isolator material.
b. Pad Thickness: As required for specified minimum static deflection; minimum 0.25 inch (6 mm) thickness.
c. Multiple Layer Pads: Provide bonded, galvanized sheet metal separation plate between each layer.
2. Resilient Material Isolator Mounts, Nonseismic:
a. Description: Mounting assemblies for bolting equipment to supporting structure utilizing elastomeric (e.g., neoprene, rubber) or fiberglass isolator material; fail-safe type.
3. Open (Unhoused) Spring Isolators:
a. Description: Isolator assembly consisting of single or multiple free-standing, laterally stable steel spring(s) without a housing.
b. Bottom Load Plate: Nonskid, molded, elastomeric isolator material or steel with nonskid elastomeric isolator pad with provisions for bolting to supporting structure as required.
c. Furnished with integral leveling device for positioning and securing supported equipment.
4. Housed Spring Isolators:
a. Description: Isolator assembly consisting of single or multiple free-standing, laterally stable steel spring(s) within a metal housing.
b. Furnished with integral elastomeric snubbing elements, nonadjustable type, for limiting equipment movement and preventing metal-to-metal contact between housing elements.
c. Bottom Load Plate: Steel with nonskid, elastomeric isolator pad with provisions for bolting to supporting structure as required.
d. Furnished with integral leveling device for positioning and securing supported equipment.
C. Vibration Isolators for Seismic Applications:
1. Resilient Material Isolator Mounts, Seismic:
a. Description: Mounting assemblies for bolting equipment to supporting structure utilizing elastomeric (e.g., neoprene, rubber) isolator material; specifically designed and rated for seismic applications with integral snubbing in all directions.
2. Restrained Spring Isolators, Seismic:
a. Description: Isolator assembly consisting of single or multiple free-standing, laterally stable steel spring(s) in series with elastomeric (e.g., neoprene, rubber) isolator material within a metal housing designed to prevent movement of supported equipment above an adjustable vertical limit stop; specifically designed and rated for seismic applications with integral snubbing in all directions.
b. Bottom Load Plate: Steel with provisions for bolting to supporting structure as required.
c. Furnished with integral leveling device for positioning and securing supported equipment.
d. Provides constant free and operating height.
3. Resilient Material Isolator Hangers, Seismic:
a. Description: Isolator assembly designed for installation in hanger rod suspension system utilizing elastomeric (e.g., neoprene, rubber) isolator material for the lower hanger rod connection; specifically designed and rated for seismic applications with vertical limit stop to prevent upward travel of hanger rod and cushion impact.
4. Spring Isolator Hangers, Seismic:
a. Description: Isolator assembly designed for installation in hanger rod suspension system utilizing single or multiple free-standing, laterally stable steel spring(s) in series with an elastomeric element for the lower hanger rod connection; specifically designed and rated for seismic applications with vertical limit stop to prevent upward travel of hanger rod and cushion impact.
b. Designed to accommodate misalignment of bottom hanger rod up to 30 degrees (plus/minus 15 degrees) without short-circuiting of isolation.
2.03 SEISMIC RESTRAINT SYSTEMS
A. Description: System components and accessories specifically designed for field assembly and attachment of seismic restraints.
B. Cable Restraints:
1. Comply with ASCE 19.
2. Cables: Pre-stretched, galvanized steel wire rope with certified break strength.
3. Cable Connections: Use only swaged end fittings. Cable clips and wedge type end fittings are not permitted in accordance with ASCE 19.
4. Use protective thimbles for cable loops where potential for cable damage exists.
C. Rigid Restraints: Use MFMA-4 steel channel (strut), steel angle, or steel pipe for structural element; suitable for both compressive and tensile design loads.
PART 3 EXECUTION
3.01 INSTALLATION
A. Install products in accordance with manufacturer's instructions.
B. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.
C. Secure fasteners according to manufacturer's recommended torque settings.
D. Install flexible piping connections to provide sufficient slack for vibration isolation and/or seismic relative displacements as indicated or as required.
E. Vibration Isolation Systems:
1. Vibration-Isolated Equipment Support Bases:
a. Provide specified minimum clearance beneath base.
2. Spring Isolators:
a. Position equipment at operating height; provide temporary blocking as required.
b. Lift equipment free of isolators prior to lateral repositioning to avoid damage to isolators.
c. Level equipment by adjusting isolators gradually in sequence to raise equipment uniformly such that excessive weight or stress is not placed on any single isolator.
3. Isolator Hangers:
a. Use precompressed isolator hangers where required to facilitate installation and prevent damage to equipment utility connection provisions.
b. Locate isolator hangers at top of hanger rods in accordance with manufacturer's instructions.
4. Clean debris from beneath vibration-isolated equipment that could cause short-circuiting of isolation.
5. Use elastomeric grommets for attachments where required to prevent short-circuiting of isolation.
6. Adjust isolators to be free of isolation short circuits during normal operation.
7. Do not overtighten fasteners such that resilient material isolator pads are compressed beyond manufacturer's maximum recommended deflection.

SECTION 22 0553 - IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Nameplates.
B. Tags.
C. Pipe markers.
D. Ceiling tacks.
PART 2 PRODUCTS
2.01 IDENTIFICATION APPLICATIONS
A. Piping: Tags.
B. Pumps: Nameplates.
C. Small-sized Equipment: Tags.
D. Tanks: Nameplates.
E. Valves: Tags and ceiling tacks where located above lay-in ceiling.
F. Water Treatment Devices: Nameplates.
2.02 NAMEPLATES
A. Description: Laminated three-layer plastic with engraved letters.
2.03 TAGS
A. Metal Tags: Brass with stamped letters; tag size minimum 1-1/2 inch (40 mm) diameter with smooth edges.
B. Valve Tag Chart: Typewritten letter size list in anodized aluminum frame.
2.04 PIPE MARKERS
A. Plastic Pipe Markers: Factory fabricated, flexible, semi- rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.
B. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings.
C. Underground Plastic Pipe Markers: Bright colored continuously printed plastic ribbon tape, minimum 6 inches (150 mm) wide by 4 mil (0.10 mm) thick, manufactured for direct burial service.
D. Color code as follows:
1. Potable, Cooling, Boiler, Feed, Other Water: Green with white letters.
2. Fire Quenching Fluids: Red with white letters.
3. Toxic and Corrosive Fluids: Orange with black letters.
4. Flammable Fluids: Yellow with black letters.
5. Combustible Fluids: Brown with white letters.
6. Compressed Air: Blue with white letters.
2.05 CEILING TACKS
A. Description: Steel with 3/4 inch (20 mm) diameter color coded head.
B. Color code as follows:
1. Plumbing Valves: Green.
PART 3 EXECUTION
3.01 PREPARATION
A. Degrease and clean surfaces to receive adhesive for identification materials.
3.02 INSTALLATION
A. Install plastic nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
B. Install tags with corrosion resistant chain.
C. Install plastic pipe markers in accordance with manufacturer's instructions.
D. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.
E. Install underground plastic pipe markers 6 to 8 inches (150 to 200 mm) below finished grade, directly above buried pipe.
F. Locate ceiling tacks to locate valves or dampers above lay-in panel ceilings. Locate in corner of panel closest to equipment.

SECTION 22 0716 - PLUMBING EQUIPMENT INSULATION

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Equipment insulation.
B. Flexible removable and reusable blanket insulation.
C. Covering.
D. Breeching insulation.
1.02 SUBMITTALS
A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for equipment scheduled.
1.03 DELIVERY, STORAGE, AND HANDLING
A. Accept materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.
1.04 FIELD CONDITIONS
A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.
B. Maintain temperature during and after installation for minimum period of 24 hours.
PART 2 PRODUCTS
2.01 REGULATORY REQUIREMENTS
A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.
2.02 FLEXIBLE REMOVABLE AND REUSABLE BLANKET INSULATION
A. Insulation: ASTM C553 Type V; flexible, noncombustible.
2.03 GLASS FIBER, RIGID
A. Insulation: ASTM C612 or ASTM C592; rigid, noncombustible.
2.04 FLEXIBLE ELASTOMERIC CELLULAR INSULATION
A. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 3, in sheet form.
1. Minimum Service Temperature: Minus 40 degrees F (Minus 40 degrees C).
2. Maximum Service Temperature: 220 degrees F (104 degrees C).
3. Connection: Waterproof vapor barrier adhesive.
2.05 JACKETS
A. PVC Plastic:
1. Jacket: Sheet material, off-white color.
B. Aluminum Jacket: ASTM B209 (ASTM B209M) formed aluminum sheet.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that equipment has been tested before applying insulation materials.
B. Verify that surfaces are clean and dry, with foreign material removed.
3.02 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Factory Insulated Equipment: Do not insulate.
C. Apply insulation close to equipment by grooving, scoring, and beveling insulation. Fasten insulation to equipment with studs, pins, clips, adhesive, wires, or bands.
D. Insulated equipment containing fluids below ambient temperature: Insulate entire system.
E. For hot equipment containing fluids 140 degrees F (60 degrees C) or less, do not insulate flanges and unions, but bevel and seal ends of insulation.
F. For hot equipment containing fluids over 140 degrees F (60 degrees C), insulate flanges and unions with removable sections and jackets.
G. Inserts and Shields:
1. Shields: Galvanized steel between hangers and inserts.
2. Insert location: Between support shield and equipment and under the finish jacket.
H. Equipment in Mechanical Equipment Rooms or Finished Spaces: Finish with PVC jacket and fitting covers.
I. Exterior Applications:
1. Provide vapor barrier jacket or finish with glass mesh reinforced vapor barrier cement.
2. Cover with aluminum or stainless steel.
J. Cover glass fiber insulation with metal mesh and finish with heavy coat of insulating cement.
K. Nameplates and ASME Stamps: Bevel and seal insulation around; do not insulate over.
L. Equipment Requiring Access for Maintenance, Repair, or Cleaning: Install insulation so it can be easily removed and replaced without damage.
3.03 SCHEDULES
A. Plumbing Systems:
1. Domestic Hot Water Storage Tanks:
a. Glass Fiber, Rigid Insulation: 2" thick.

SECTION 22 0719 - PLUMBING PIPING INSULATION

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Piping insulation.
B. Jackets and accessories.
1.02 DELIVERY, STORAGE, AND HANDLING
A. Accept materials on site, labeled with manufacturer's identification, product density, and thickness.
1.03 FIELD CONDITIONS
A. Maintain ambient conditions required by manufacturers of each product.
B. Maintain temperature before, during, and after installation for minimum of 24 hours.
PART 2 PRODUCTS
2.01 REGULATORY REQUIREMENTS
A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.
2.02 GLASS FIBER
A. Manufacturers:
1. CertainTeed Corporation.
2. Johns Manville Corporation.
3. Knauf Insulation; Earthwool 1000 Degree Pipe Insulation.
4. Owens Corning Corporation; Fiberglas Pipe Insulation ASJ.
5. Owens Corning Corporation; VaporWick Pipe Insulation.
B. Insulation: ASTM C547 and ASTM C795; rigid molded, noncombustible.
1. K (Ksi) Value: ASTM C177, 0.24 at 75 degrees F (0.035 at 24 degrees C).
2. Maximum Service Temperature: 850 degrees F (454 degrees C).
3. Maximum Moisture Absorption: 0.2 percent by volume.
C. Insulation: ASTM C547 and ASTM C795; rigid molded, noncombustible, with wicking material to transport condensed water to the outside of the system for evaporation to the atmosphere.
1. K (Ksi) Value: ASTM C177, 0.23 at 75 degrees F (0.034 at 24 degrees C).
2. Maximum Service Temperature: 220 degrees F (104 degrees C).
3. Maximum Moisture Absorption: 0.2 percent by volume.
D. Vapor Barrier Jacket: White Kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm-inches (0.029 ng/Pa s m).
E. Vapor Barrier Lap Adhesive: Compatible with insulation.
2.03 FLEXIBLE ELASTOMERIC CELLULAR INSULATION
A. Manufacturers:
1. Aeroflex USA, Inc; Aerocel Stay-Seal with Protape (SSPT): www.aeroflexusa.com/#sle.
2. Armacell LLC; AP Armaflex: www.armacell.us/#sle.
3. K-Flex USA LLC; Insul-Tube: www.kflexusa.com/#sle.
B. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 1; use molded tubular material wherever possible.
1. Minimum Service Temperature: Minus 40 degrees F (Minus 40 degrees C).
2. Maximum Service Temperature: 220 degrees F (104 degrees C).
3. Connection: Waterproof vapor barrier adhesive.
2.04 JACKETS
A. PVC Plastic.
1. Manufacturers:
a. Johns Manville Corporation.
2. Jacket: One piece molded type fitting covers and sheet material, off-white color.
a. Minimum Service Temperature: 0 degrees F (Minus 18 degrees C).
b. Maximum Service Temperature: 150 degrees F (66 degrees C).
c. Moisture Vapor Permeability: 0.002 perm inch (0.0029 ng/Pa s m), maximum, when tested in accordance with ASTM E96/E96M.
d. Thickness: 10 mil (0.25 mm).
e. Connections: Brush on welding adhesive.
3. Covering Adhesive Mastic: Compatible with insulation.
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that piping has been tested before applying insulation materials.
B. Verify that surfaces are clean and dry, with foreign material removed.
3.02 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Install in accordance with North American Insulation Manufacturers Association (NAIMA) National Insulation Standards.
C. Exposed Piping: Locate insulation and cover seams in least visible locations.
D. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.
E. Glass fiber insulated pipes conveying fluids below ambient temperature:
1. Provide vapor barrier jackets, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples and vapor barrier mastic.
2. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapor barrier adhesive or PVC fitting covers.
F. For hot piping conveying fluids 140 degrees F (60 degrees C) or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation.
G. For hot piping conveying fluids over 140 degrees F (60 degrees C), insulate flanges and unions at equipment.
H. Glass fiber insulated pipes conveying fluids above ambient temperature:
1. Provide standard jackets, with or without vapor barrier, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples.
2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.
I. Inserts and Shields:
1. Application: Piping 1-1/2 inches (40 mm) diameter or larger.
2. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.
3. Insert Location: Between support shield and piping and under the finish jacket.
4. Insert Configuration: Minimum 6 inches (150 mm) long, of same thickness and contour as adjoining insulation; may be factory fabricated.
J. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions. At fire separations, refer to Section 07 8400.
K. Pipe Exposed in Mechanical Equipment Rooms or Finished Spaces (less than 10 feet (3 meters) above finished floor): Finish with PVC jacket and fitting covers.
L. Exterior Applications: Provide vapor barrier jacket. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish with glass mesh reinforced vapor barrier cement. Cover with aluminum jacket with seams located on bottom side of horizontal piping.
M. Buried Piping: Provide factory fabricated assembly with inner all-purpose service jacket with self-sealing lap, and asphalt impregnated open mesh glass fabric, with one mil (0.025 mm) thick aluminum foil sandwiched between three layers of bituminous compound; outer surface faced with a polyester film.
N. Heat Traced Piping: Insulate fittings, joints, and valves with insulation of like material, thickness, and finish as adjoining pipe. Size large enough to enclose pipe and heat tracer. Cover with aluminum jacket with seams located on bottom side of horizontal piping.
3.03 SCHEDULES
A. Plumbing Systems:
1. Domestic Hot Water Supply:
a. Glass Fiber Insulation:
1) Pipe Size Range: 1 1/2 inch and larger.
2) Thickness: 1 inch.
b. Glass Fiber Insulation:
1) Pipe Size Range: 1 1/4 inch and smaller.
2) Thickness: 1/2 inch.
c. Cellular Foam Insulation:
1) Pipe Size Range: 1 1/4 inch and smaller.
2) Thickness: 1/2 inch.
2. Domestic Hot Water Recirculation:
a. Glass Fiber Insulation:
1) Pipe Size Range: All sizes.
2) Thickness: 1 inch (25 mm).
3. Tempered Domestic Water Supply: 1 inch
4. Tempered Domestic Water Recirculation: 1 inch
5. Domestic Cold Water: 1 inch
6. Roof Drain Bodies: Glass Fiber 1 inch
7. Roof Drainage Above Grade: Glass Fiber 1 inch
8. Roof Drainage Within 10 Feet (3 Meters) of the Exterior: Glass FIber 1 inch
9. Roof Drainage Run Horizontal at Roof Level:
10. Plumbing Vents Within 10 Feet (3 Meters) of the Exterior: Glass Fiber 1 inch
B. Other Systems:
1. Piping Exposed to Freezing with Heat Tracing:

SECTION 22 1005 - PLUMBING PIPING

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Pipe, pipe fittings, specialties, and connections for piping systems.
1. Sanitary sewer.
2. Domestic water.
3. Storm water.
4. Flanges, unions, and couplings.
5. Pipe hangers and supports.
6. Manufactured sleeve-seal systems.
7. Valves.
8. Flow controls.
9. Check.
10. Water pressure reducing valves.
11. Relief valves.
12. Strainers.
1.02 FIELD CONDITIONS
A. Do not install underground piping when bedding is wet or frozen.
PART 2 PRODUCTS
2.01 GENERAL REQUIREMENTS
A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.
2.02 SANITARY SEWER PIPING, BURIED WITHIN 5 FEET (1500 mm) OF BUILDING
A. Cast Iron Pipe: CISPI 301, hubless.
1. Fittings: Cast iron.
2. Joints: CISPI 310, neoprene gasket and stainless steel clamp and shield assemblies.
B. PVC Pipe: ASTM D2665 or ASTM D3034.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement.
2.03 SANITARY SEWER PIPING, ABOVE GRADE
A. Cast Iron Pipe: CISPI 301, hubless, service weight.
1. Fittings: Cast iron.
2. Joints: CISPI 310, neoprene gaskets and stainless steel clamp-and-shield assemblies.
B. PVC Pipe: ASTM D2729.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement.
2.04 DOMESTIC WATER PIPING, ABOVE GRADE
A. Copper Tube: ASTM B88 (ASTM B88M), Type K (A), Drawn (H).
1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
2. Joints: ASTM B32, alloy Sn95 solder.
3. Mechanical Press Sealed Fittings: Double-pressed type, NSF 61 and NSF 372 approved or certified, utilizing EPDM, nontoxic, synthetic rubber sealing elements.
a. Manufacturers:
1) Anvil International.
2) Apollo Valves.
3) Grinnell Products.
4) Viega LLC.
B. CPVC Pipe: ASTM D2846/D2846M, ASTM F441/F441M, or ASTM F442/F442M.
1. Fittings: CPVC; ASTM D2846/D2846M, ASTM F437, ASTM F438, or ASTM F439.
2. Joints: ASTM D2846/D2846M, solvent weld with ASTM F493 solvent cement.
C. Cross-Linked Polyethylene (PEX) Pipe: ASTM F876 or ASTM F877.

HOLLISTER
CALIFORNIA

ABERCROMBIE & FITCH CO.
6301 FITCH PATH
NEW ALBANY, OHIO 43054
614-283-6500

STATE OF TEXAS
ERIC MICHAEL LOVICH
161877
09/25/2026
LICENSED
PROFESSIONAL ENGINEER

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Project # - 01202631.24

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STORE #31909

Project No.:	260348
Drawn By:	ESS
Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

PLUMBING SPECIFICATIONS

P0.01

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Job Path:J:\CLIENT\Abercrombie & Fitch\17095_Oakbrook_IL\A11716_Oakbrook_IL_P1.00.dwg
Drawn By:Chris Mierke

1. Manufacturers:
a. SharkBite, a brand of Reliance Worldwide Corporation.
b. Uponor, Inc.
c. Viega LLC.
d. Zurn Industries, LLC.
2. PPI TR-4 Pressure Design Basis:
a. 100 psig (689 kPa) at maximum 180 degrees F (82 degrees C).
3. Fittings: Brass and engineered polymer (EP) ASTM F1960.
4. Joints: Mechanical compression fittings.

2.05 STORM WATER PIPING, BURIED WITHIN 5 FEET (1500 mm) OF BUILDING
A. Cast Iron Pipe: CISPI 301, hubless, service weight.
1. Fittings: Cast iron.
2. Joints: Neoprene gaskets and stainless steel clamp-and-shield assemblies.
B. PVC Pipe: ASTM D2665 or ASTM D3034.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.06 STORM WATER PIPING, ABOVE GRADE
A. Cast Iron Pipe: CISPI 301, hubless, service weight.
1. Fittings: Cast iron.
2. Joints: Neoprene gaskets and stainless steel clamp-and-shield assemblies.
B. PVC Pipe: ASTM D2665 or ASTM D3034.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.07 NATURAL GAS PIPING, BURIED WITHIN 5 FEET (1500 mm) OF BUILDING
A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
1. Fittings: ASTM A234/A234M, wrought steel welding type.
2. Joints: ASME B31.1, welded.
3. Jacket: AWWA C105/A21.5 polyethylene jacket or double layer, half-lapped 10 mil (0.25 mm) polyethylene tape.

2.08 NATURAL GAS PIPING, ABOVE GRADE
A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
1. Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type.
2. Joints: Threaded or welded to ASME B31.1.

2.09 FLANGES, UNIONS, AND COUPLINGS
A. Unions for Pipe Sizes 3 Inches (80 mm) and Under:
1. Ferrous Pipe: Class 150 malleable iron threaded unions.
2. Copper Tube and Pipe: Class 150 bronze unions with soldered joints.
B. Flanges for Pipe Size Over 1 Inch (25 mm):
1. Ferrous Pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets.
2. Copper Tube and Pipe: Class 150 slip-on bronze flanges; preformed neoprene gaskets.
C. Mechanical Couplings for Grooved and Shouldered Joints: Two or more curved housing segments with continuous key to engage pipe groove, circular C-profile gasket, and bolts to secure and compress gasket.
1. Dimensions and Testing: In accordance with AWWA C606.
2. Housing Material: Provide ASTM A47/A47M malleable iron, ductile iron, or galvanized.
3. Gasket Material: EPDM suitable for operating temperature range from minus 30 degrees F (minus 34 degrees C) to 230 degrees F (110 degrees C).
4. Bolts and Nuts: Hot dipped galvanized or zinc-electroplated steel.
5. When pipe is field grooved, provide coupling manufacturer's grooving tools.
6. Manufacturers:
a. Anvil International.
b. Apollo Valves.
c. Grinnell Products.
D. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.10 PIPE HANGERS AND SUPPORTS
A. Provide hangers and supports that comply with MSS SP-58.
1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
2. Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers.
a. Cold and Hot Pipe Sizes 6 Inches (150 mm) and Over: Double hangers.
3. Trapeze Hangers: Welded steel channel frames attached to structure.
4. Vertical Pipe Support: Steel riser clamp.
5. Floor Supports: Concrete pier or steel pedestal with floor flange; fixture attachment.
B. Plumbing Piping - Drain, Waste, and Vent:
1. Hangers for Pipe Sizes 1/2 Inch (15 mm) to 1-1/2 Inches (40 mm): Malleable iron, adjustable swivel, split ring.
2. Hangers for Pipe Sizes 2 Inches (50 mm) and Over: Carbon steel, adjustable, clevis.
3. Wall Support for Pipe Sizes to 3 Inches (80 mm): Cast iron hook.
4. Wall Support for Pipe Sizes 4 Inches (100 mm) and Over: Welded steel bracket and wrought steel clamp.
5. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
6. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
C. Plumbing Piping - Water:
1. Hangers for Pipe Sizes 1/2 Inch (15 mm) to 1-1/2 Inches (40 mm): Malleable iron, adjustable swivel, split ring.
2. Hangers for Cold Pipe Sizes 2 Inches (50 mm) and Over: Carbon steel, adjustable, clevis.
3. Hangers for Hot Pipe Sizes 2 Inches (50 mm) to 4 Inches (100 mm): Carbon steel, adjustable, clevis.
4. Hangers for Hot Pipe Sizes 6 Inches (150 mm) and Over: Adjustable steel yoke, cast iron pipe roll, double hanger.
5. Wall Support for Pipe Sizes to 3 Inches (80 mm): Cast iron hook.
6. Wall Support for Pipe Sizes 4 Inches (100 mm) and Over: Welded steel bracket and wrought steel clamp.
7. Wall Support for Hot Pipe Sizes 6 Inches (150 mm) and Over: Welded steel bracket and wrought steel clamp with adjustable steel yoke and cast iron pipe roll.
8. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
9. Floor Support for Hot Pipe Sizes to 4 Inches (100 mm): Cast iron adjustable pipe saddle, locknut, nipple, floor flange, and concrete pier or steel support.
10. Floor Support for Hot Pipe Sizes 6 Inches (150 mm) and Over: Adjustable cast iron pipe roll and stand, steel screws, and concrete pier or steel support.
11. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
D. Hanger Fasteners: Attach hangers to structure using appropriate fasteners, as follows:
1. Concrete Wedge Expansion Anchors: Complying with ICC-ES AC193.
2. Masonry Wedge Expansion Anchors: Complying with ICC-ES AC01.
3. Concrete Screw Type Anchors: Complying with ICC-ES AC193.
4. Masonry Screw Type Anchors: Complying with ICC-ES AC106.

2.11 MANUFACTURED SLEEVE-SEAL SYSTEMS
A. Modular/Mechanical Seal:
1. Synthetic rubber interlocking links continuously fill annular space between pipe and wall/casing opening.
2. Provide watertight seal between pipe and wall/casing opening.
3. Elastomer element size and material in accordance with manufacturer's recommendations.
4. Glass reinforced plastic pressure end plates.

2.12 PIPING SPECIALTIES
A. Flow Controls:
1. Manufacturers:
a. Anvil International.
b. ITT Bell & Gossett.
c. Griswold Controls.
d. Taco, Inc.
2. Construction: Class 125, Brass or bronze body with union on inlet and outlet, temperature and pressure test plug on inlet and outlet, blowdown/backflush drain.
3. Calibration: Control flow within 5 percent of selected rating, over operating pressure range of 10 times minimum pressure required for control, maximum minimum pressure 3.5 psi (24 kPa).

2.13 WATER PRESSURE REDUCING VALVES
A. Manufacturers:
1. Amtrol Inc.
2. Apollo Valves.
3. Cash Acme, a brand of Reliance Worldwide Corporation.
4. Cla-Val Company.
5. Flomatic Valves.
6. Watts Regulator Company.
B. Up to 2 Inches (50 mm):
1. ASSE 1003, bronze body, stainless steel, and thermoplastic internal parts, fabric reinforced diaphragm, strainer, threaded single union ends.
C. Over 2 Inches (50 mm):
1. ASSE 1003, cast iron body with interior lining complying with AWWA C550, bronze fitted, elastomeric diaphragm and seat disc, flanged.

2.14 RELIEF VALVES
A. Pressure:
1. Manufacturers:
a. Cla-Val Co.
b. Henry Technologies.
c. Watts Regulator Company.
2. ANSI Z21.22, AGA certified, bronze body, teflon seat, steel stem and springs, automatic, direct pressure actuated.
B. Temperature and Pressure:
1. Manufacturers:
a. Cla-Val Co.
b. Henry Technologies.
c. Watts Regulator Company.
2. ANSI Z21.22, AGA certified, bronze body, teflon seat, stainless steel stem and springs, automatic, direct pressure actuated, temperature relief maximum 210 degrees F (98.9 degrees C), capacity ASME BPVC-IV certified and labelled.

2.15 STRAINERS
A. Manufacturers:
1. Armstrong International, Inc.
2. Green Country Filter Manufacturing.
3. WEAMCO.
B. Size 2 Inches (50 mm) and Under:
1. Threaded brass body for 175 psi (1200 kPa) CWP, Y pattern with 1/32 inch (0.8 mm) stainless steel perforated screen.
2. Class 150, threaded bronze body 300 psi (2070 kPa) CWP, Y pattern with 1/32 inch (0.8 mm) stainless steel perforated screen.
C. Size 1-1/2 inch (40 mm) to 4 inches (100 mm):
1. Class 125, flanged iron body, Y pattern with 1/16 inch (1.6 mm) stainless steel perforated screen.
D. Size 5 inch (125 mm) and Larger:
1. Class 125, flanged iron body, basket pattern with 1/8 inch (3.2 mm) stainless steel perforated screen.

PART 3 EXECUTION

3.01 EXAMINATION
A. Verify that excavations are to required grade, dry, and not over-excavated.

3.02 PREPARATION
A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
B. Remove scale and dirt, on inside and outside, before assembly.
C. Prepare piping connections to equipment with flanges or unions.

3.03 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
D. Install piping to maintain headroom, conserve space, and not interfere with use of space.
E. Group piping whenever practical at common elevations.
F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Refer to Section 22 0516.
G. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
H. Provide access where valves and fittings are not exposed.
I. Establish elevations of buried piping outside the building to ensure not less than 4 ft ([_____] m) of cover.
J. Install vent piping penetrating roofed areas to maintain integrity of roof assembly[_____].
K. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc-rich primer to welding.
L. Provide support for utility meters in accordance with requirements of utility companies.
M. Prepare exposed, unfinished pipe, fittings, supports, and accessories for finish painting.
N. Excavate in accordance with Section 31 2316.
O. Backfill in accordance with Section 31 2323.
P. Install bell and spigot pipe with bell end upstream.
Q. Install valves with stems upright or horizontal, not inverted. Refer to Section 22 0523.
R. Install water piping to ASME B31.9.
S. Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.
T. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.
U. Sleeve pipes passing through partitions, walls, and floors.
V. Inserts:
1. Provide inserts for placement in concrete formwork.
2. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches (100 mm).
4. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
5. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut above slab.
W. Pipe Hangers and Supports:
1. Install in accordance with ASME B31.9.
2. Support horizontal piping as indicated.
3. Install hangers to provide minimum 1/2 inch (15 mm) space between finished covering and adjacent work.
4. Place hangers within 12 inches (300 mm) of each horizontal elbow.
5. Use hangers with 1-1/2 inch (40 mm) minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
6. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
7. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
8. Provide copper plated hangers and supports for copper piping.
9. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.
10. Provide hangers adjacent to motor-driven equipment with vibration isolation; refer to Section 22 0548.
11. Support cast iron drainage piping at every joint.
X. Manufactured Sleeve-Seal Systems:
1. Install manufactured sleeve-seal systems in sleeves located in grade slabs and exterior concrete walls at piping entrances into building.
2. Provide sealing elements of the size, quantity, and type required for the piping and sleeve inner diameter or penetration diameter.
3. Locate piping in center of sleeve or penetration.
4. Install field assembled sleeve-seal system components in annular space between sleeve and piping.
5. Tighten bolting for a watertight seal.
6. Install in accordance with manufacturer's recommendations.
Y. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.

3.04 APPLICATION
A. Use grooved mechanical couplings and fasteners only in accessible locations.
B. Install unions downstream of valves and at equipment or apparatus connections.
C. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.
D. Install gate valves for shut-off and to isolate equipment, part of systems, or vertical risers.
E. Install globe valves for throttling, bypass, or manual flow control services.
F. Provide lug end butterfly valves adjacent to equipment when provided to isolate equipment.
G. Provide spring-loaded check valves on discharge of water pumps.
H. Provide flow controls in water recirculating systems where indicated.

3.05 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM
A. Disinfect water distribution system in accordance with Section 33 0110.58.
B. Prior to starting work, verify system is complete, flushed, and clean.
C. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.
D. Maintain disinfectant in system for 24 hours.
E. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.

3.06 SERVICE CONNECTIONS
A. Provide new sanitary sewer services. Before commencing work, check invert elevations required for sewer connections, confirm inverts and ensure that these can be properly connected with slope for drainage and cover to avoid freezing.
B. Provide new water service complete with approved reduced pressure backflow preventer and water meter with by-pass valves, pressure reducing valve, and sand strainer.
1. Provide sleeve in wall for service main and support at wall with reinforced concrete bridge. Calk enlarged sleeve and make watertight with pliable material. Anchor service main inside to concrete wall.
2. Provide 18 gage, 0.0478-inch (1.21 mm) galvanized sheet metal sleeve around service main to 6 inch (150 mm) above floor and 6 feet (1800 mm) minimum below grade. Size for minimum of 2 inches (50 mm) of loose batt insulation stuffing.

3.07 SCHEDULES
A. Pipe Hanger Spacing:
1. Metal Piping:
a. Pipe Size: 1/2 inches (15 mm) to 1-1/4 inches (32 mm):
1) Maximum Hanger Spacing: 6.5 ft (2 m).
2) Hanger Rod Diameter: 3/8 inches (9 mm).
b. Pipe Size: 1-1/2 inches (40 mm) to 2 inches (50 mm):
1) Maximum Hanger Spacing: 10 ft (3 m).
2) Hanger Rod Diameter: 3/8 inch (9 mm).
c. Pipe Size: 2-1/2 inches (65 mm) to 3 inches (75 mm):
1) Maximum Hanger Spacing: 10 ft (3 m).
2) Hanger Rod Diameter: 1/2 inch (13 mm).
d. Pipe Size: 4 inches (100 mm) to 6 inches (150 mm):
1) Maximum Hanger Spacing: 10 ft (3 m).
2) Hanger Rod Diameter: 5/8 inch (15 mm).
2. Plastic Piping:
a. All Sizes:
1) Maximum Hanger Spacing: 6 ft (1.8 m).
2) Hanger Rod Diameter: 3/8 inch (9 mm).

SECTION 22 1006 - PLUMBING PIPING SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Drains.
B. Cleanouts.
C. Backflow preventers.
D. Water hammer arrestors.
E. Mixing valves.

1.02 SUBMITTALS
A. Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.
B. Shop Drawings: Indicate dimensions, weights, and placement of openings and holes.

1.03 DELIVERY, STORAGE, AND HANDLING
A. Accept specialties on site in original factory packaging. Inspect for damage.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS
A. Specialties in Potable Water Supply Systems: Provide products that comply with NSF 61 and NSF 372 for maximum lead content.

2.02 DRAINS
A. Manufacturers:
1. Jay R. Smith Manufacturing Company.
2. Josam Company.
3. Zurn Industries, LLC.
B. Roof Drains:
1. Assembly: ASME A112.6.4.
2. Body: Lacquered cast iron with sump.
3. Strainer: Removable polyethylene dome with vandal proof screws.
4. Accessories: Coordinate with roofing type. [_______]
a. Membrane flange and membrane clamp with integral gravel stop.
b. Adjustable under deck clamp.
c. Roof sump receiver.
d. Waterproofing flange.
e. Controlled flow weir.
f. Leveling frame.
g. Adjustable extension sleeve for roof insulation.
C. Parapet Drains:
1. Lacquered cast iron body with aluminum flashing clamp collar and epoxy coated sloping grate.
D. Roof Overflow Drains:
1. Lacquered cast iron body and clamp collar and bottom clamp ring; pipe extended to 2 inches ([_____] mm) above flood elevation.
E. Downspout Nozzles:
1. Bronze round with straight bottom section.
F. Area Drains:
1. Assembly: ASME A112.6.4.
2. Body: Lacquered cast iron with sump.
3. Strainer: Round nickel-bronze.
4. Accessories: Membrane flange and membrane clamp with integral gravel stop, with adjustable under deck clamp.
G. Linear Drains:
1. Body: Provide PVC, ABS, or stainless-steel with sloped channel to vertical waste pipe.
2. Clamping Ring: Stainless steel mechanism to clamp waterproof membrane to linear drain body.
3. Strainer: Removable brushed stainless steel or tile top strainer furnished by manufacturer or others.
4. Grate: Cross-hatch.
5. Additional Components: Manufacturer's standard membrane, sealant, fasteners, and anchors.

2.03 CLEANOUTS
A. Manufacturers:
1. Jay R. Smith Manufacturing Company.
2. Josam Company.
3. MIFAB, Inc.
4. Zurn Industries, LLC.
B. Cleanouts at Exterior Surfaced Areas:
1. Round cast nickel bronze access frame and non-skid cover.
C. Cleanouts at Exterior Unsurfaced Areas:
1. Line type with lacquered cast iron body and round epoxy coated gasketed cover.
D. Cleanouts at Interior Finished Floor Areas:
1. Lacquered cast iron body with anchor flange, reversible clamping collar, threaded top assembly, and round gasketed scored cover in service areas and round gasketed depressed cover to accept floor finish in finished floor areas.
E. Cleanouts at Interior Finished Wall Areas (WCO):
1. Line type with lacquered cast iron body and round epoxy coated gasketed cover, and round stainless steel access cover secured with machine screw.

2.04 BACKFLOW PREVENTERS
A. Manufacturers:
1. MIFAB, Inc.
2. Watts Regulator Company, a part of Watts Water Technologies.
3. Zurn Industries, LLC.
B. Reduced Pressure Backflow Preventers:
1. ASSE 1013; bronze body with bronze internal parts and stainless steel springs; two independently operating, spring loaded check valves; diaphragm type differential pressure relief valve located between check valves; third check valve that opens under back pressure in case of diaphragm failure; non-threaded vent outlet; assembled with two gate valves, strainer, and four test cocks.

2.05 WATER HAMMER ARRESTORS
A. Manufacturers:
1. Jay R. Smith Manufacturing Company.
2. Watts Regulator Company, a part of Watts Water Technologies.
3. Zurn Industries, LLC.
4. Precision Plumbing Products..
B. Water Hammer Arrestors:
1. Stainless steel construction, bellows type sized in accordance with PDI-WH 201, precharged suitable for operation in temperature range minus 100 to 300 degrees F (minus 73 to 149 degrees C) and maximum 250 psi (1700 kPa) working pressure.

2.06 MIXING VALVES
A. Thermostatic Mixing Valves:
1. Manufacturers:
a. Leonard Valve Company.
b. Powers, a Watts brand.

2.07 FLOOR DRAIN TRAP SEALS
A. Manufacturers:
1. MIFAB, Inc.
B. Description: Push-fit EPDM or silicone fitting with a one-way membrane.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.
C. Encase exterior cleanouts in concrete flush with grade.
D. Install floor cleanouts at elevation to accommodate finished floor.
E. Install approved potable water protection devices on plumbing lines where contamination of domestic water may occur; on boiler feed water lines, janitor rooms, fire sprinkler systems, premise isolation, irrigation systems, flush valves, interior and exterior hose bibbs.
F. Pipe relief from backflow preventer to nearest drain.
G. Install water hammer arrestors complete with accessible isolation valve on hot and cold water supply piping to lavatory sinks, washing machine outlets, or flush valves.

SECTION 22 3000 - PLUMBING EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Water Heaters:
1. Commercial electric.
2. Tankless electric.
B. In-line circulator pumps.
C. Cooling condensate removal pumps.

1.02 QUALITY ASSURANCE
A. Certifications:
1. Water Heaters: NSF approved.
2. Electric Water Heaters: UL listed and labeled to UL 174.
3. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.
B. Identification: Provide pumps with manufacturer's name, model number, and rating/capacity identified by permanently attached label.
C. Performance: Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, operate within 25 percent of midpoint of published maximum efficiency curve.

1.03 DELIVERY, STORAGE, AND HANDLING
A. Provide temporary inlet and outlet caps. Maintain caps in place until installation.

1.04 WARRANTY
A. Provide five year manufacturer warranty for domestic water heaters.

PART 2 PRODUCTS

2.01 WATER HEATERS
A. Manufacturers:
1. A.O. Smith Water Products Co.
2. Rheem Manufacturing Company.
B. Tankless Electric:
1. Manufacturers:
a. Chronomite, Inc.
b. Navien.
c. Rinnai.
2. Type: Automatic, electric.
3. Controls: Automatic water thermostat with externally adjustable temperature range from 120 to 170 degrees F (49 to 77 degrees C), flanged or screw-in nichrome elements, enclosed controls and electrical junction box and operating light. Wire double element units so elements do not operate simultaneously.
4. Accessories:
a. Water Connections: Brass.
b. Dip Tube: Brass.
c. Drain valve.
d. Anode: Magnesium.
e. Temperature and Pressure Relief Valve: ASME labeled.
C. Commercial Electric:
1. Type: Factory-assembled and wired, electric, vertical storage.
2. Tank: Glass lined welded steel; 4 inch (100 mm) diameter inspection port, thermally insulated with minimum 2 inches (50 mm) glass fiber encased in corrosion-resistant steel jacket; baked-on enamel finish.
3. Controls: Automatic immersion water thermostat; externally adjustable temperature range from 60 to 180 degrees F (16 to 82 degrees C), flanged or screw-in nichrome elements, high temperature limit thermostat.
4. Accessories:
a. Water Connections: Brass.
b. Dip Tube: Brass.
c. Drain valve.
d. Anode: Magnesium.
e. Temperature and Pressure Relief Valve: ASME labeled.
5. Heating Elements: Flange-mounted immersion elements; individual elements sheathed with Incoloy corrosion-resistant metal alloy, rated less than 75 W/sq in (11.6 W/sq m).

2.02 COOLING CONDENSATE REMOVAL PUMPS
A. Manufacturers:
1. Franklin Electric Company.
2. Liberty Pumps Inc.
3. Little Giant.
B. Construction: Commercial grade, nonferrous pump with stainless steel shaft, integral discharge check valve, integral float switch, safety switch, thermoplastic reservoir, motor assembly, and power cord with ground.
C. Safety: UL 778.

2.03 ELECTRICAL WORK
A. Provide electrical motor driven equipment specified complete with motors, motor starters, controls, and wiring.
B. Electrical characteristics to be as specified or indicated.
C. Furnish motor starters complete with thermal overload protection and other appurtenances necessary for the motor control specified.
D. Supply manual or automatic control and protective or signal devices required for the operation specified, and any control wiring required for controls and devices not shown.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install plumbing equipment in accordance with manufacturer's instructions, as required by code, and complying with conditions of certification, if any.
B. Coordinate with plumbing piping and related fuel piping work to achieve operating system.
C. Pumps:
1. Ensure shaft length allows sump pumps to be located minimum 24 inches (600 mm) below lowest invert into sump pit and minimum 6 inches (150 mm) clearance from bottom of sump pit.
2. Provide air cock and drain connection on horizontal pump casings.
3. Provide line sized isolating valve and strainer on suction and line sized soft seated check valve and balancing valve on discharge.
4. Decrease from line size with long radius reducing elbows or reducers. Support piping adjacent to pump such that no weight is carried on pump casings. Provide supports under elbows on pump suction and discharge line sizes 4 inches (100 mm) and over.
5. Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.
6. Align and verify alignment of base mounted pumps prior to start-up
7. Provide electrical interlocking from cooling condensate pump safety switch to associated HVAC unit(s) furnished under other Sections.

SECTION 22 4000 - PLUMBING FIXTURES

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Water closets.
B. Urinals.
C. Lavatories.
D. Sinks.
E. Service sinks.
F. Mop sinks.
G. Under-lavatory pipe supply covers.
H. Electric water coolers.
I. Drinking fountains.
J. Showers.
K. Eye and face wash fountains.

1.02 SUBMITTALS
A. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.

1.03 DELIVERY, STORAGE, AND HANDLING
A. Accept fixtures on site in factory packaging. Inspect for damage.
B. Protect installed fixtures from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS
A. Potable Water Systems: Provide plumbing fittings and faucets that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.
B. Water Efficiency: EPA WaterSense label is required for all water closets, urinals, lavatory faucets, and showerheads.

2.02 FLUSH VALVE WATER CLOSETS
A. Water Closets: Vitreous china, ASME A112.19.2, floor mounted, siphon jet flush action, china bolt caps.
1. Flush Valve: Exposed (top spud).
2. Handle Height: 44 inches (1117 mm) or less.
B. Flush Valves: ASME A112.18.1, diaphragm type, complete with vacuum breaker stops and accessories.
1. Exposed Type: Chrome plated, escutcheon, integral screwdriver stop.
C. Seats:
1. Solid white plastic, open front, extended back, self-sustaining hinge, brass bolts, without cover.
D. Water Closet Carriers:
1. ASME A112.6.1M; adjustable cast iron frame, integral drain hub and vent, adjustable spud, lugs for floor and wall attachment, threaded fixture studs with nuts and washers.

2.03 TANK TYPE WATER CLOSETS
A. Bowl: ASME A112.19.2; wall hung, vitreous china, reverse trap, whirlpool action close-coupled closet combination with regular rim, insulated vitreous china closet tank with fittings and lever flushing valve, chrome plated bolt caps.
B. Bowl: ASME A112.19.2; floor mounted, siphon jet, vitreous china, 16.5 inches (420 mm) high, close-coupled closet combination with elongated rim, insulated vitreous china closet tank with fittings and lever flushing valve, bolt caps, vandalproof cover locking device.
C. Bowl: ASME A112.19.2; floor mounted, vitreous china reverse trap, close-coupled closet combination with regular rim, insulated vitreous china closet tank with fittings and lever flushing valve, bolt caps.
D. Seat: Solid white plastic, open front, extended back, less cover, complete with self-sustaining hinge.
E. Handle Height: 44 inches (1117 mm) or less.
F. Water Closet Carrier:
1. ASME A112.6.1M; adjustable cast iron frame, integral drain hub and vent, adjustable spud, lugs for floor and wall attachment, threaded fixture studs with nuts and washers.

2.04 WALL HUNG URINALS
A. Urinals: Vitreous china, ASME A112.19.2, wall hung with side shields and concealed carrier.
1. Flush Valve: Exposed (top spud).
2. Trap: Integral.
B. Flush Valves: ASME A112.18.1, diaphragm type, complete with vacuum breaker stops and accessories.
1. Exposed Type: Chrome plated, escutcheon, integral screwdriver stop.
C. Carriers:
1. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded fixture studs for fixture hanger, bearing studs.

2.05 LAVATORIES
A. Thermostatic Mixing Valve: Thermostatic mixing valve, ASSE 1070 listed, with combination stop, strainer, and check valves, and flexible stainless steel connectors.
B. Provide lavatory with combination stop and strainer.
C. Accessories:
1. Chrome plated 17 gage, 0.0538 inch (1.37 mm) brass P-trap with clean-out plug and arm with escutcheon.
2. Offset waste with perforated open strainer.
3. Carrier:
a. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded studs for fixture hanger, bearing plate and studs.

2.06 UNDER-LAVATORY PIPE SUPPLY COVERS
A. Basis of Design: Plumberex Specialty Products, Inc; www.plumberex.com/#sle.
1. Fusion Molded Under-Lavatory Insulators (Non-Sewn): Plumberex Handy-Shield Maxx.
2. Slim Fit Under-Lavatory Insulators (Non-Sewn): Plumberex Trap Gear.
3. Under-Lavatory Covers with Snap-Lock Fasteners (Molded): Plumberex Pro-Extreme.
B. General:
1. Insulate exposed drainage piping including hot, cold and tempered water supplies under lavatories or sinks per ADA Standards.
2. Adhesives, sewing threads and two ply laminated materials are prohibited.
3. Exterior Surfaces: Smooth nonabsorbent with no finger recessed indentations for easy cleaning.
4. Construction: 1/8 inch (3.2 mm) PVC with antimicrobial, antifungal and UV resistant properties.
a. Comply with ASTM C1822 Type III for covers on accessible lavatory piping.
b. Comply with ASME A112.18.9 for covers on accessible lavatory piping.
c. Comply with ICC A117.1.
d. Microbial and Fungal Resistance for Interior and Exterior: Comply with ASTM G21.
5. Fasteners: Reusable, snap-locking fasteners with no sharp or abrasive external surfaces. No cable ties allowed.

2.07 SHOWERS
A. Thermostatic Mixing Valve: Thermostatic mixing valve, ASSE 1070 listed, with combination stop, strainer, and check valves, and flexible stainless steel connectors.

2.08 ELECTRIC WATER COOLERS
A. Water Cooler: Electric, mechanically refrigerated; surface mounted, ADA compliant; stainless steel top, vinyl on steel body, elevated anti-squirt bubbler with stream guard, automatic stream regulator, push button, mounting bracket; integral air cooled condenser and stainless steel grille.
1. Capacity: 8 gallons per hour (30.3 liters per hour) of 50 degrees F (10 degrees C) water with inlet at 80 degrees F (27 degrees C) and room temperature of 90 degrees F (32 degrees C), when tested in accordance with ASHRAE Std 18.
2. Electrical: 115 V, 60 Hertz compressor, 6 foot (2 m) cord and plug for connection to electric wiring system including grounding connector.

2.09 BI-LEVEL, ELECTRIC WATER COOLERS
A. Water Cooler: Bi-level, electric, mechanically refrigerated; surface mounted, ADA compliant; stainless steel top, vinyl on steel body, elevated anti-squirt bubbler with stream guard, automatic stream regulator, push button, mounting bracket; integral air cooled condenser and stainless steel grille.
1. Capacity: 8 gallons per hour (30.3 liters per hour) of 50 degrees F (10 degrees C) water with inlet at 80 degrees F (27 degrees C) and room temperature of 90 degrees F (32 degrees C), when tested in accordance with ASHRAE Std 18.
2. Electrical: 115 V, 60 Hertz compressor, 6 foot (2 m) cord and plug for connection to electric wiring system including grounding connector.

2.10 MOP SINKS
A. Material: Precast terrazzo composed of marble chips cast in Portland cement.
B. Dimensions: As indicated on drawings.
C. Accessories:
1. 5 feet (1.5 m) of 1/2 inch (13 mm) diameter plain end reinforced plastic hose.
2. Hose clamp hanger.
3. Mop hanger.

2.11 SERVICE SINKS
A. Trim: ASME A112.18.1 exposed wall type supply with cross handles, spout wall brace, vacuum breaker, hose end spout, strainers, eccentric adjustable inlets, integral screwdriver stops with covering caps and adjustable threaded wall flanges.
B. Accessories:
1. 5 feet (1.5 m) of 1/2 inch (13 mm) diameter plain end reinforced plastic hose.
2. Hose clamp hanger.
3. Mop hanger.

2.12 EMERGENCY EYE AND FACE WASH
A. Emergency Wash: ANSI Z358.1; wall-mounted, self-cleaning, non-clogging eye and face wash with quick opening, full-flow valves, stainless steel eye and face wash receptor, twin eye wash heads and face spray ring, stainless steel dust cover, copper alloy control valve and fittings.
B. Thermostatic Mixing Valve: Thermostatic mixing valve, ASSE 1070 listed, with combination stop, strainer, and check valves, and flexible stainless steel connectors.

PART 3 EXECUTION

3.01 PREPARATION
A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

3.02 INSTALLATION
A. Install each fixture with trap, easily removable for servicing and cleaning.
B. Provide chrome plated rigid or flexible supplies to fixtures with loose key stops, reducers, and escutcheons.
C. Install components level and plumb.

3.03 INTERFACE WITH WORK OF OTHER SECTIONS
A. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.

3.04 ADJUSTING
A. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

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Project # - 01202631.24

MEMORIAL CITY MALL
303 MEMORIAL CITY WAY
HOUSTON, TX 77024
STORE #31909

Project No.:	260348
Drawn By:	ESS
Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

PLUMBING SPECIFICATIONS

P0.02

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Drawn By:Chris Mierke

PLUMBING FIXTURE SCHEDULE

TAG	MFG	MODEL #	DESCRIPTION	ACC. MFG	ACC. MODEL	ACC. DESCRIPTION
WC	AMERICAN STANDARD	2467.100	FLOOR MOUNTED TANK TYPE PRESSURE ASSISTED WATER CLOSET, VITREOUS CHINA. ELONGATED BOWL. CLOSED COUPLED FLUSHOMETER TANK. 1.1 GALLONS PER FLUSH. WHITE COLOR. 16 1/2" RIM HEIGHT. FLUSH HANDLE TO BE ON OPEN SIDE OF WATER CLOSET.	AMERICAN STANDARD	#5324.019	RISE-AND-SHINE ELONGATED OPEN FRONT SEAT AND COVER, COLOR: WHITE
LAV	AMERICAN STANDARD	0355.012 "LUCERNE"	WALL MOUNTED 15" x 10" VITREOUS CHINA. 4" CENTERS. COLOR: WHITE, WITH THERMOSTATIC MIXING VALVE. PROVIDE WALL HANGER	CHICAGO MCGUIRE MCGUIRE	#895-317E2805-5ABCP #155-WC #155-WC	0.5 GPM GOOSENECK FAUCET WITH 4" CENTERS & BLADE HANDLES. FURNISH WITH #E39VPJKABCP AERATOR TO ACHIEVE 0.4 GPM. SUPPLY STOP STRAINER & OFFSET TRAP
MB	FIAT	MSB-2424	24" X 24" X 10" MOLDED STONE SERVICE, VINYL BUMPERGUARD	FIAT CHICAGO	832-AA 897-RCF	36" LONG, 3/4" HOSE BRACKET WITH WALL HOOK FAUCET WITH INTEGRAL VACUUM BREAKER
WH	A.O. SMITH	DEL-10	10 GALLON ELECTRIC WATER HEATER, 2000 WATT ELEMENT, GLASS LINED, FOAM INSULATION, BAKED ENAMEL FINISH, 208V SINGLE PHASE	-	-	
RP	GRUNDFOS	UP 15-18 BUC5	BRONZE BODY RECIRCULATING PUMP, INSTALL NEAR WATER HEATER PER MANUFACTURER'S RECOMMENDATIONS. 120V, 1P, 85W	-	-	PROVIDE WITH HONEYWELL L6006C SURFACE MOUNT AQUASTAT SET TO 5°F BELOW WATER HEATER TEMPERATURE.
FD	JOSAM	30003-5A	3" FLOOR DRAIN WITH NICKEL FINISH & DEEP SEAL TRAP	-	-	FURNISH WITH RECTOR SEAL 3" "SURE SEAL" INLINE FLOOR DRAIN TRAP SEALER IN LIEU OF TRAP PRIMER
EWC	OASIS	P8ACSL	WALL MOUNTED HI-LOW HANDICAPPED ELECTRIC WATER COOLER, GREYSTONE POWDERED COATED FINISH, 4-TIMED TOUCH PADS, 8.0 GPH @ 50°F, 1/4 HP,4.6 AMPS, 115V SINGLE PHASE. MOUNT WITH BUBBLER @ 36" A.F.F	-	-	-
WCO	JOSAM	58604-PLG4	CAST IRON CLEAN OUT TEE WITH BRONZE THREADED, WATER & GAS TIGHT CLEAN OUT PLUG	-	-	7-5/8" DIAMETER STAINLESS STEEL WALL ACCESS PANEL SET FLUSH TO FINISHED WALL

PLUMBING SYMBOL LEGEND

DESIGNATION	DESCRIPTION
	BALANCING VALVE
	BACKFLOW PREVENTER
	CHECK VALVE
FCO	CLEANOUT - FLOOR
WCO	CLEANOUT - WALL
	FLOOR DRAIN
	PIPE DROP
	PIPE RISE
	PIPE TEE DROP
	PIPE TEE RISE
	PRESSURE REDUCING VALVE
	REMOVE TO POINT AND CAP
	REMOVE TO POINT FOR RECONNECTION
	ROOF DRAIN/SANITARY VENT
	SHUT OFF VALVE
	UNION
V	VENT THROUGH ROOF
	WATER METER
	WYE STRAINER
CW	COLD WATER PIPING
HW	HOT WATER PIPING
HWR	HOT WATER RETURN PIPING
SAN	SANITARY PIPING
V	VENT PIPING
	WATER HEATER
	RECIRCULATION PUMP

ABBREVIATIONS

ABBREV	DESCRIPTION
EWC	ELECTRIC WATER COOLER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
DP	DRAIN PUMP
DF	DRINKING FOUNTAIN
LAV	LAVATORY (SINK)
MB	MOP BASIN
TP	TRAP PRIMER
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WCO	WALL CLEAN OUT
WH	WATER HEATER
WHA	WATER HAMMER ARRESTOR

ONE CHARACTER STATUS ABBREVIATIONS:

E EXISTING TO REMAIN
M ITEM TO BE MOVED
R RELOCATED ITEM

*REFER ALSO TO MECHANICAL AND ELECTRICAL ABBREVIATIONS

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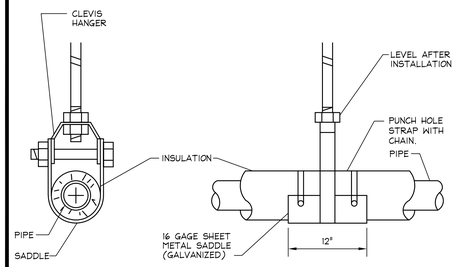
Project No.:	260348
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09.04.2026	CHECKSET
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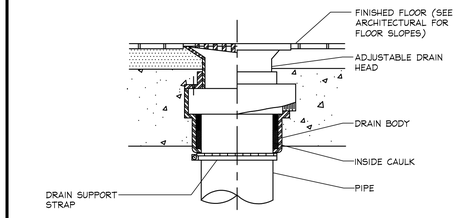
PLUMBING SCHEDULE, SYMBOLS & ABBREVIATIONS

P0.10

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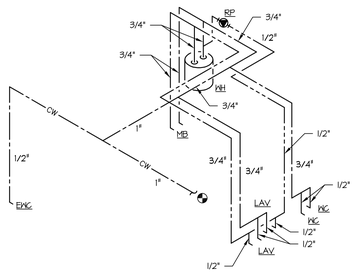


V PIPE HANGER
P2.00 SCALE: NONE

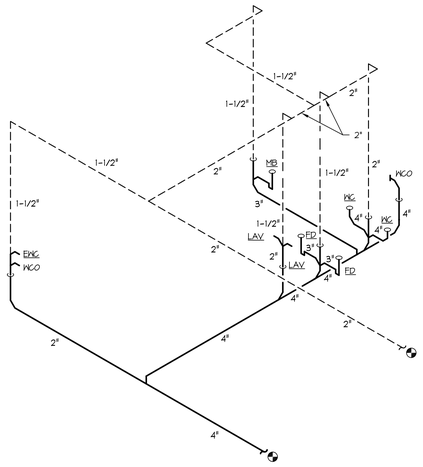


NOTES:
A. FLOOR DRAIN COVER FLUSH WITH TILE OR FLUSH WITH CONCRETE FLOOR IN AREA WITH NO TILE.
B. CONTRACTOR TO SNAKE DRAINS 2 DAYS PRIOR TO OPENING.

R FLOOR DRAIN
P2.00 SCALE: NONE



L WATER DIAGRAM
P2.00 SCALE: NONE



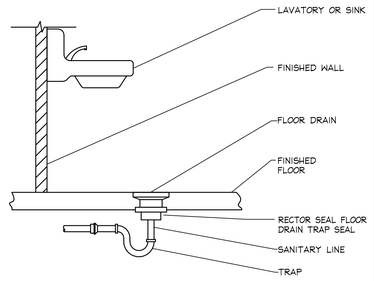
C SANITARY DIAGRAM
P2.00 SCALE: NONE

PLUMBING PLAN GENERAL NOTES

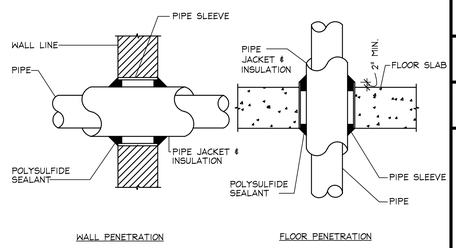
1. PROVIDE METER, SHUT-OFF VALVE, ETC. ALL IN ACCORDANCE WITH LANDLORD'S CRITERIA. OWNER TO INSTALL A PRESSURE REDUCING VALVE WHEN INCOMING WATER PRESSURE IS GREATER THAN 60PSI. ALL INSTALLATIONS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH THE APPLICABLE CODES, LOCAL AUTHORITY'S REQUIREMENTS AND LANDLORD'S CRITERIA.
2. ALL WATER LINES, VENT LINES, DRAIN LINES, SPRINKLER LINES, ETC. SHALL BE OFFSET BELOW SHELF AND CONCEALED IN WALL ABOVE SHELF. DO NOT ROUTE PIPING, ETC. ABOVE ELECTRICAL EQUIPMENT.
3. ALL PLUMBING FIXTURES SHALL BE INSTALLED WITH STOP VALVES TO ISOLATE EACH FIXTURE. REFER TO WATER RISER DIAGRAM AND PLUMBING SPECIFICATIONS FOR FURTHER INFORMATION.
4. ADJUSTABLE FLOOR DRAIN. CONTRACTOR SHALL CLEAR DRAINS 2 DAYS PRIOR TO OPENING.

Ⓧ PLUMBING PLAN CODED NOTES

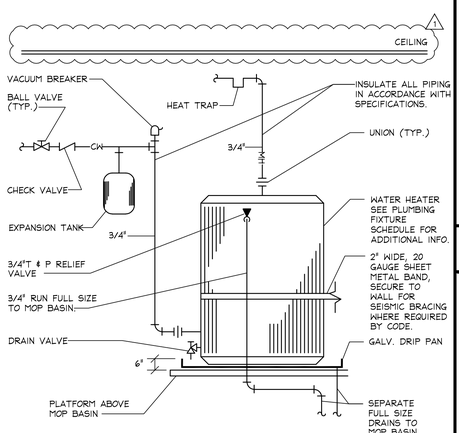
1. CONNECT NEW SANITARY PIPING TO EXISTING LANDLORD SANITARY MAIN. FIELD VERIFY EXACT LOCATION OF MAIN AND DIRECTION OF FLOW. TRANSITION PIPING AS REQUIRED.
2. CONNECT NEW COLD WATER PIPING TO EXISTING LANDLORD COLD WATER TAP. FIELD VERIFY EXACT LOCATION OF TAP. TRANSITION PIPING AS REQUIRED.
3. CONNECT NEW VENT PIPING TO EXISTING LANDLORD VENT MAIN. FIELD VERIFY EXACT LOCATION OF MAIN. TRANSITION PIPING AS REQUIRED.
4. CONNECT TO MECHANICAL EQUIPMENT PER "CONDENSATE DRAIN" DETAIL. REFER TO MANUFACTURER'S INSTALLATION MANUAL.
5. ROUTE CONDENSATE TO HUB DRAIN AND DISCHARGE INDIRECTLY.



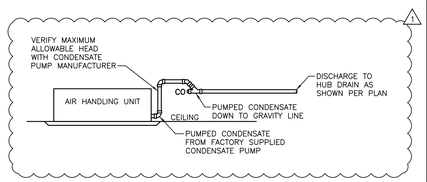
U TRAP SEAL
P2.00 SCALE: NONE



Q PIPE PENETRATION
P2.00 SCALE: NONE

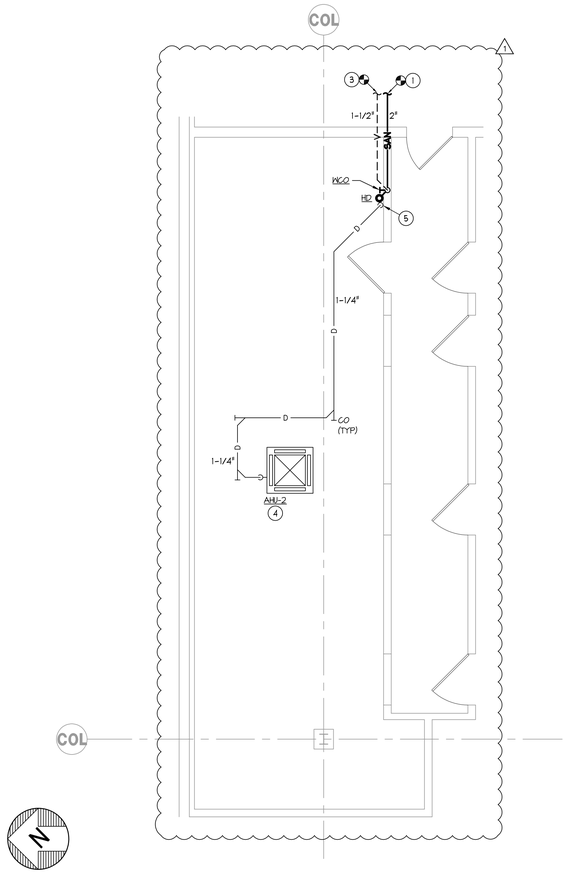


S WATER HEATER MOUNTING
P2.00 SCALE: NONE

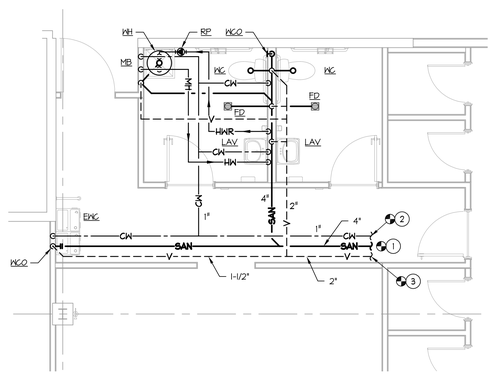


P CONDENSATE DRAIN
P2.00 SCALE: NONE

N NOT USED
P2.00 SCALE: NONE



E PLUMBING PLAN - REMOTE STORAGE
P2.00 SCALE: 1/4" = 1'-0"



A PLUMBING PLAN
P2.00 SCALE: 1/4" = 1'-0"

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Issue # 1 - 07/20/2026 JH

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LICENSED PROFESSIONAL ENGINEER

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Project No.:	260348
Drawn By:	ESS

Date	Issue
09.04.2026	CHECKSET
09.25.2026	BID SET

PLUMBING PLAN, DETAILS AND RISER DIAGRAMS

P2.00

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