ARCHITECT:

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KANSAS CITY, MO 64108

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STRUCTURAL ENGINEER:

FRACTAL STRUCTURAL

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OSCAR.VALDEZ@FRACTALSTRUCTURAL.COM

CIVIL ENGINEER:

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1620 LA JAITA DR STE 300 CEDAR PARK, TX 78613

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SHERRY@GOODEFAITHENG.COM

OWNER:

MIRA SAFETY

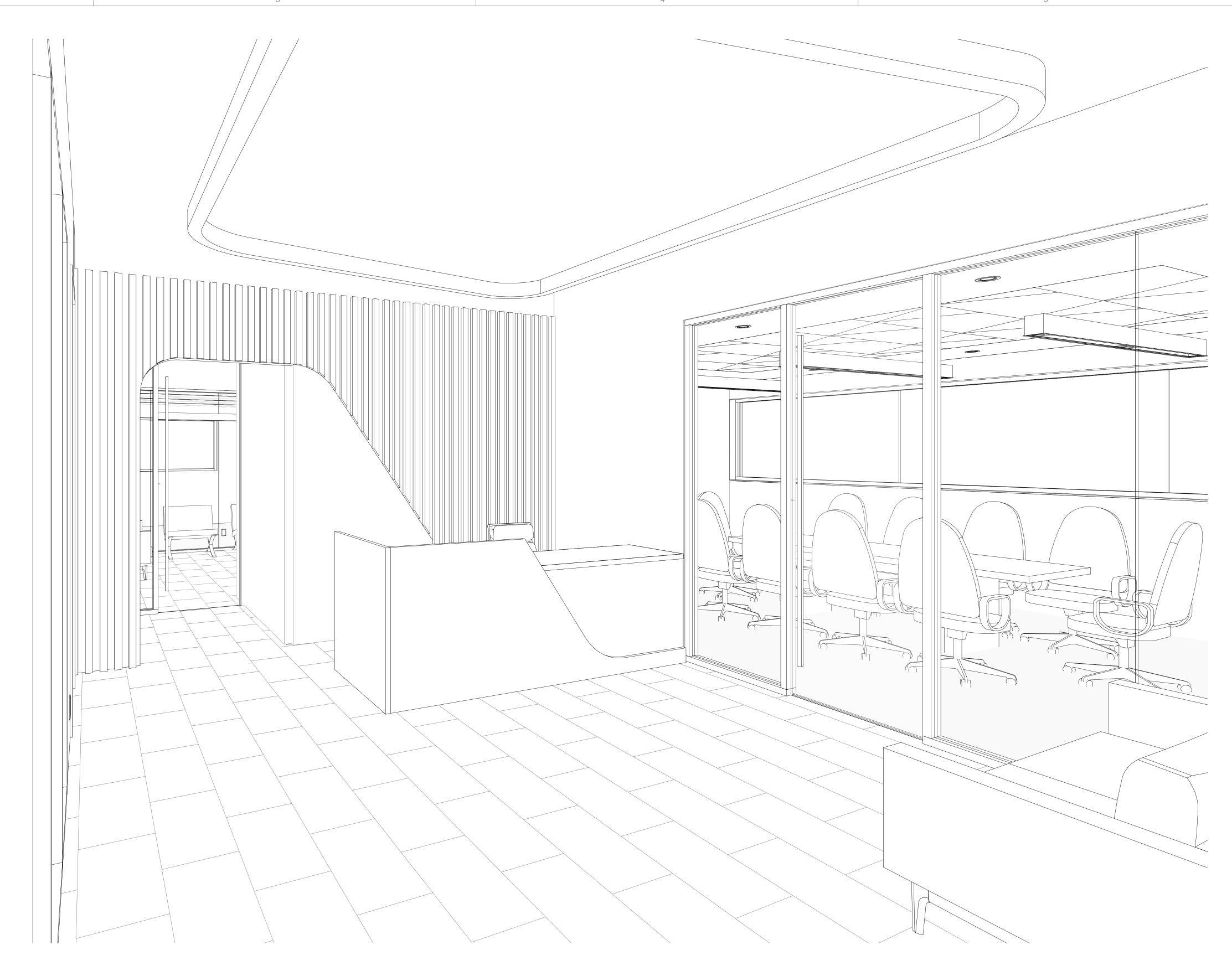
7301 RANCH RD 620 N STE 155 #259

AUSTIN, TX 78726

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OFFICE REMODEL

MIRA SAFETY 1713 HUR INDUSTRIAL BLVD, CEDAR PARK, TX 78613

tramonte design | studio





MIRA SAFETY

1713 Hur Industrial Blvd
Cedar Park, TX 78613

 ISSUE FOR PERMIT
 12/01/23

 △ Issues
 Project Number
 23-01-014

 Drawn By
 JO

 Checked By
 OS

G-001

COVER SHEET

NOT TO SCALE

FIRE BLANKET

SOLID CORE

WTW WALL TO WALL

NTS

GRADE, GRADING

GROUT

GR

GRT

DRINKING FOUNTAIN

DIAMETER

DIAM

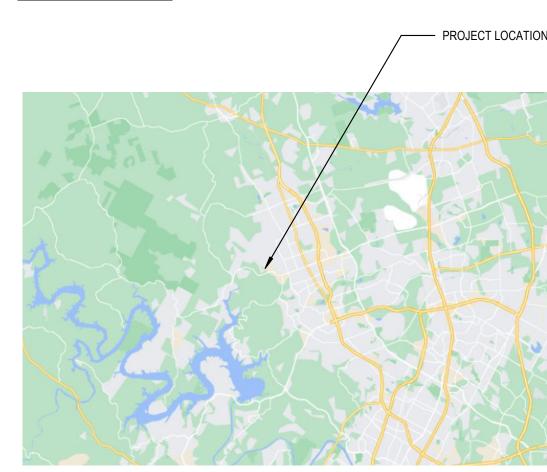
DIM

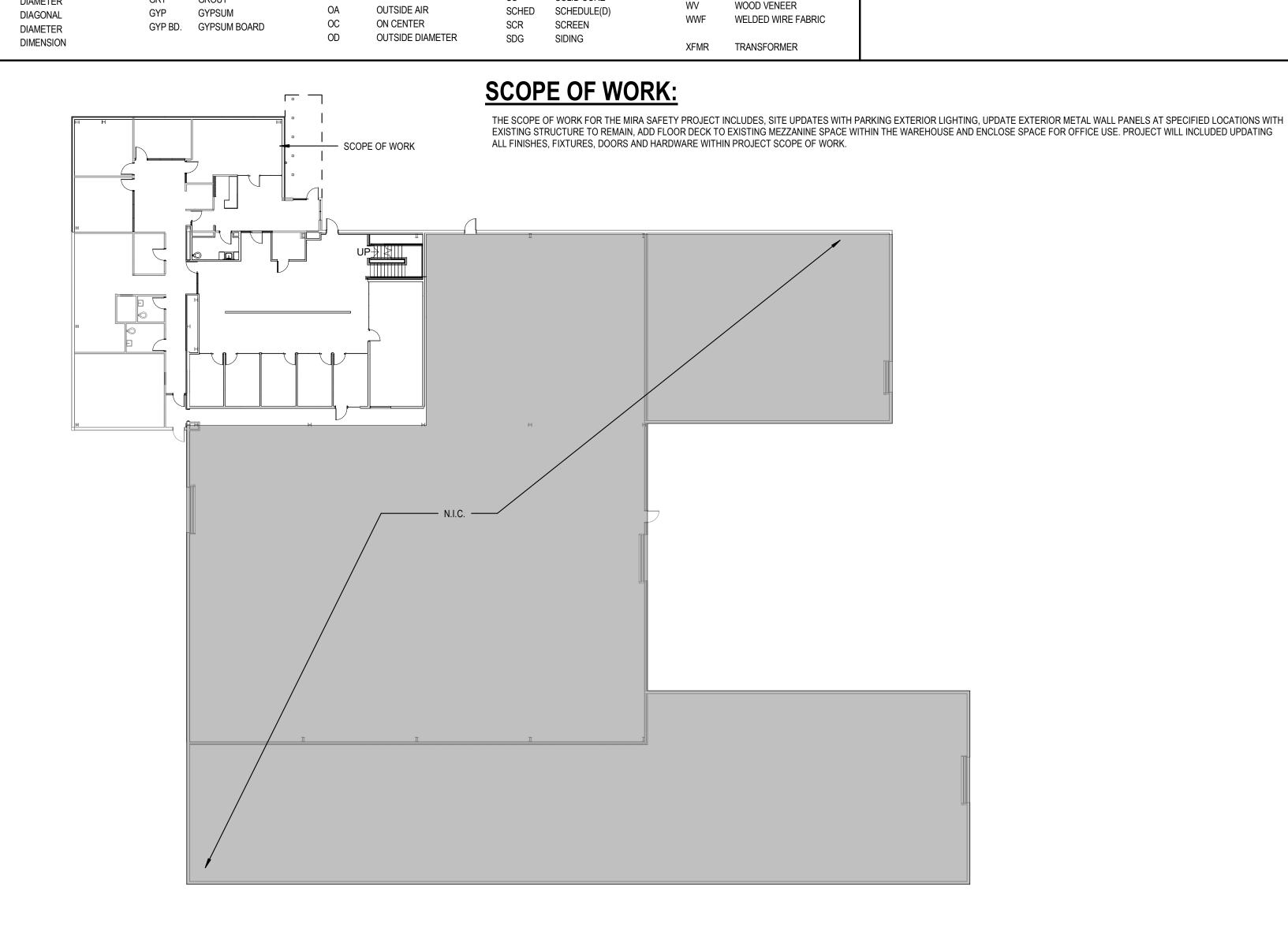
SUBMITTALS:

FIRE ALARM WORK.

- A. SUBMIT TO ARCHITECT FOR REVIEW FOR THE LIMITED PURPOSE OF CHECKING CONFORMANCE WITH INFORMATION GIVEN AND THE DESIGN CONCEPT EXPRESSED IN THESE DOCUMENTS. ALL SUBMITTALS MUST BE REVIEWED BY THE GENERAL CONTRACTOR PRIOR TO BEING TRANSMITTED TO THE ARCHITECT. APPLY CONTRACTOR'S STAMP, SIGNED OR INITIALED CERTIFYING THAT REVIEW, APPROVAL, VERIFICATION OF PRODUCTS REQUIRED, FIELD DIMENSIONS, ADJACENT CONSTUCTION WORK, AND COORDINATION OF INFORMATION IS IN ACCORDANCE WITH THE REQUIREMENTS OF THE WORK AND CONTRACT DOCUMENTS. SUBMITTALS NOT REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR MAY BE RETURNED, NOT REVIEWED, AND MUST BE RESUBMITTED PROPERLY.
- SAMPLES WILL BE REVIEWED ONLY FOR AESTHETIC, COLOR, OR FINISH SELECTION. ALLOW TEN (10) BUSINESS DAYS FOR SUBMITTAL REVIEW, EXCLUDING DELIVERY TIME TO AND FROM THE CONTRACTOR.
- WHEN REVISED FOR RESUBMISSION, IDENTIFY ALL CHANGES MADE SINCE PREVIOUS SUBMISSION.
- ALL WORK, OTHER THAN MANUFACTURERS CUT SHEETS MUST BE IN THE HAND OF THE SUBCONTRACTOR, SUPPLIER OR MANUFACTURER. REPRODUCTIONS OF THE CONSTRUCTION DOCUMENTS, IN WHOLE OR PART WILL NOT BE ACCEPTABLE SHOP SUBMITTALS.
- SHOP DRAWING SUBMITTALS ARE TO BE SUBMITTED IN ONE COMPLETE AND PROPERLY LABELED PACKAGE, IN PROPER QUANTITIES ACCORDING TO SPECIFICATIONS. INCOMPLETE AND INSUFFICIENT SUBMITTALS MAY BE RETURNED, NOT REVIEWED, AND MUST BE RESUBMITTED
- H. DRAWINGS, DETAILS, BUILDING SYSTEM COMPONENTS, ETC. ARE TO BE REFERENCED TO A WHERE CUT SHEETS INCLUDE MULTIPLE MODELS OR OPTIONS, SUBMITTALS MUST CLEARLY INDICATE WHICH MODEL AND OPTIONS ARE BEING PROVIDED
- SUBMIT SPRINKLER SYSTEM SHOP DRAWINGS AND CALCULATIONS AND FIRE ALARM SYSTEM SHOP DRAWINGS TO THE FIRE DEPARTMENT HAVING JURISDICTION OVER THE PROJECT, AND OBTAIN NECESSARY APPROVAL AND PERMIT PRIOR TO COMMENCEMENT OF SPRINKLER AND
- SUBMIT SPRINKLER HEAD SHOP DRAWINGS TO ARCHITECT FOR FINAL REVIEW AND COORDINATION WITH CEILING ELEMENTS. GENERAL CONTRACTOR SHALL SUBMIT ENOUGH HARD COPIES TO ANTICIPATE ONE COPY WILL BE RETAINED BY ARCHITECT AND/OR MEP CONSULTANT.
- A. DOCUMENT EACH REQUEST WITH COMPLETE SUBSTANTIATING COMPLIANCE OF PROPOSED SUBSTITUTION WITH CONTRACT DOCUMENTS. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT QUALITY, APPEARANCE AND FUNCTION CONFORM TO THE DESIGN INTENT.
- B. A REQUEST FOR SUBSTITUTION CONSTITUTES A REPRESENTATION THAT THE SUBMITTER: HAS INVESTIGATED PROPOSED PRODUCT AND DETERMINED THAT IT MEETS OR EXCEEDS THE QUALITY LEVEL OF THE SPECIFIED PRODUCT; WILL PROVIDE THE SAME WARRANTY FOR THE SUBSTITUTION AS FOR THE SPECIFIED PRODUCT; WILL COORDINATE INSTALLATION AND MAKE CHANGES TO OTHER WORK THAT MAY BE REQUIRED FOR THE WORK TO BE COMPLETE WITH NO ADDITIONAL COST TO OWNER; WAIVES CLAIMS FOR ADDITIONAL COSTS OR TIME EXTENSION THAT MAY SUBSEQUENTLY BECOME APPARENT. ALL SUBSTITUTIONS TO BE SUBMITTED TO BOTH OWNER AND ARCHITECT DURING BIDDING PERIOD.
- SUBSTITUTIONS WILL NOT BE CONSIDERED WHEN THEY ARE INDICATED OR IMPLIED ON SHOP DRAWINGS OR PRODUCT DATA SUBMITTALS, WITHOUT SEPARATE WRITTEN REQUEST, OR WHEN ACCEPTANCE WILL REQUIRE REVISION TO THE CONTRACT DOCUMENTS.
- SUBMITTALS MAY BE TRANSMITTED TO THE ARCHITECT IN PDF FORMAT VIA EMAIL OR AGREED UPON PROJECT MANAGEMENT WEB SITE (SEE B. & C. BELOW). SUBMITTALS SENT TO THE ARCHITECT ELECTRONICALLY WILL BE RETURNED TO THE CONTRACTOR ELECTRONICALLY SUBMIT ORIGINAL COLOR BROCHURES WHEN POSSIBLE RATHER THAN COPIES.
- STEEL SHOP DRAWINGS, FIRE PROTECTION DRAWINGS AND OTHER LARGE LAYOUT PLANS MUST BE SUBMITTED VIA PAPER COPIES. FINISH SAMPLES MUST ALSO BE SUBMITTED VIA AN ACTUAL SAMPLE.

AREA MAP:





- A. ALL WORK TO COMPLY WITH ALL APPLICABLE LOCAL. STATE. AND NATIONAL REGULATIONS ORDINANCES AND BUILDING CODE STANDARDS; WHERE DIFFERING RESTRICTIONS OCCUR, THE MORE STRINGENT WILL GOVERN. DIRECT ALL QUESTIONS REGARDING SUCH COMPLIANCE TO THE ARCHITECT FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK IN QUESTION.
- B. ALL MATERIALS AND INSTALLATIONS MUST BE IN CONFORMANCE w/ ADA REQUIREMENTS. THE GENERAL CONTRACTOR SHALL OBTAIN AND PAY FEES FOR ALL NECESSARY PERMITS, LICENSES, CERTIFICATIONS, TESTING, ETC.
- A. THE CONTRACTOR SHALL COORDINATE WITH THE BUILDING OWNER/PROPERTY MANAGER REGARDING ALL ISSUES RELATING TO STAGING AREA, USE OF LOADING DOCK, DUMPSTER AREAS, USE OF ELEVATOR AND/OR STAIR, AND ANY OTHER EXISTING FACILITIES DURING CONSTRUCTION PERIOD
- . THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION SEQUENCING WITH THE BUILDING OWNER/PROPERTY MANAGER AND SCHEDULE ALL SERVICE INTERRUPTIONS OUTSIDE NORMAL BUSINESS HOURS TO MINIMIZE INCONVENIENCE TO CURRENT TENANTS
- THE CONTRACTOR SHALL COORDINATE ALL ITEMS IDENTIFIED AS BUILDING STANDARD W/ BASE BUILDING SPECIFICATIONS PROVIDED BY BUILDING OWNER/PROPERTY MANAGER.

A. DO NOT DISASSEMBLE SETS OF CONSTRUCTION DRAWINGS OR SEPARATE FROM

- SPECIFICATIONS. DRAWINGS AND SPECIFICATIONS ARE INTERRELATED. THESE DOCUMENTS ARE NOT TO BE REPRODUCED OR USED FOR ANY PURPOSE OTHER THAN ORIGINALLY ISSUED UNLESS AUTHORIZED IN WRITING BY ARCHITECT.
- THE CONSTUCTION DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED PRODUCT THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. IT IS THE INTENT THAT THE GENERAL CONTRACTOR PROVIDES A SUCCESSFUL, EFFICIENT AND COMPLETE INSTALLATION INCLUDING ALL MATERIALS, EQUIPMENT, MECHANICAL, ELECTRICAL AND PLUMBING CONSTRUCTION REQUIRED TO FULFILL THAT INTENT. ALL ITEMS REQUIRED SHALL BE FURNISHED AND INSTALLED, REGARDLESS OF WHETHER OR NOT SHOWN ON THE DRAWINGS.
- DO NOT SCALE DRAWINGS, NOTIFY ARCHITECT IN EVENT NO DIMENSION IS GIVEN. GENERAL CONTRACTOR TO PROVIDE ELECTRONIC (PDF) SET OF RECORD DRAWINGS TO THE ARCHITECT, PROPERTY MANAGER, AND TENANT WITHIN 15 DAYS AFTER ISSUANCE OF CERTIFICATE OF OCCUPANCY.
- . THE CONTRACTOR SHALL KEEP A CURRENT COPY OF THE DRAWINGS AND SPECIFICATIONS ON THE JOBSITE AT ALL TIMES AND SHALL GIVE THE ARCHITECT ACCESS THERETO. THE ARCHITECT SHALL FURNISH ADDITIONAL DETAIL DRAWINGS WHICH SHALL BE CARRIED
- OUT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, WITHOUT INTENDED CHANGE IN THE CONTRACT TIME OR CONTRACT SUM. PRIOR TO PROCEEDING. THE CONTRACTOR SHALL INDICATE ACCEPTANCE OF SAID INSTRUCTIONS. A REQUEST FOR CHANGE IN CONTRACT TIME OR CONTRACT SUM MUST BE SUBMITTED WITH AN ITEMIZED PROPOSAL IMMEDIATELY BEFORE PROCEEDING WITH THIS WORK. PROCEEDING WITH THIS WORK SHALL INDICATE AN ACCEPTANCE OF THE WORK WITHOUT AMENDING THE CONTRACT TIME OR CONTRACT SUM H. TEXT SCALES CORRESPOND TO THEIR ASSIGNED DRAWINGS ON FULL SIZE SHEETS ONLY.
- THE CONTRACTOR SHALL CHECK ALL DRAWINGS AND SPECIFICATIONS IMMEDIATELY UPON THEIR RECEIPT. IN CASE OF DISCREPANCY, OR CONFLICT IN DETAILS OR GENERAL NOTES AND TYPICAL DETAILS, THE MATTER SHALL BE PROMPTLY SUBMITTED TO THE ARCHITECT FOR CLARIFICATION. ANY ADJUSTMENT BY THE CONTRACTOR WITHOUT SUCH
- CLARIFICATION SHALL BE AT HIS/HER RISK AND EXPENSE. NOTIFY ARCHITECT IN CASE OF PLAN LOCATION CONFLICTS BETWEEN DISCIPLINES. WHERE NO SPECIFIC DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT AND TO APPLICABLE CODES. TYPICAL DETAILS, NOT REFERENCED
- ON DRAWINGS, APPLY UNO. ANYTHING MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, SHALL BE OF LIKE EFFECT AS IF SHOWN OR MENTIONED IN BOTH. IN CASE OF DIFFERENCES BETWEEN
- SPECIFICATIONS AND DRAWINGS, THE MORE RESTRICTIVE OR PREMIUM ITEM SHALL ALL DRAWING REFERENCES TO MATERIALS ARE GENERAL IN NATURE. MATERIAL CALL-OUTS ON DRAWINGS, REFER TO COMPLETE MATERIAL SYSTEMS. REFERENCE SPECIFICATIONS OR
- FURTHER NOTATIONS, UNO. SITE, EXISTING CONDITIONS A. THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL REVIEW THE CONSTRUCTION DOCUMENTS, SPECIFICATIONS, AND PERFORM DUE DILIGENCE INSPECTION OF ALL EXISTING CONDITIONS TO THOROUGHLY ACQUAINT THEMSELVES WITHTHE EXISTING CONDITIONS. GENERAL CONTRACTOR SHALL BRING ALL CONFLICTS TO THE ATTENTION OF THE ARCHITECT FOR RESOLUTION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SUBMITTAL OF PROPOSAL. SUBMITTAL OF A PROPOSAL SHALL BE CONSIDERED CONFIRMATION THAT SUCH INSPECTION HAS BEEN MADE, AND NO FURTHER COMPENSATION

ROOM IDENTIFICATION

DIMENSION TO FACE

BUILDING/WALL SECTION

ENLARGED PLAN OR DETAIL

A - INSULATED B - NON INSULATED

FIRE RATING (HOURS)

EXISTING DOOR, PARTITION. AND/OR ELEMENT TO REMAIN

EXISTING DOOR, PARTITION,

AND/OR ELEMENT TO BE

REMOVED/RELOCATED

NEW DOOR, PARTITION,

AND/OR ELEMENT

DETAIL SECTION

A PARTITION TYPE

、 A ├── INSULATION DESIGNATION

DOOR SYMBOL

ELEVATION

PLAN SYMBOLS:

PERFORM SLICH INSPECTION ALL MEASUREMENTS ARE SUBJECT TO VERIFICATION IN THE FIELD BY THE CONTRACTOR AND HE SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO FABRICATION OR CONSTRUCTION. THE CONTRACTOR SHALL COMPARE ALL DRAWINGS AND VERIFY ALL INFORMATION ON THE DRAWINGS BEFORE LAYING OUT THE WORK, AND REPORT ANY DISCREPANCIES OR OMISSIONS TO ARCHITECT PRIOR TO COMMENCING ANY AFFECTED WORK. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ERRORS, WHICH MAY HAVE BEEN

SHALL BE DUE THE CONTRACTOR FOR CLAIMS ARISING AS A RESULT OF FAILURE TO

WALL FINISH

FLOOR FINISH

KEY NOTE

REVISION

BREAK LINE

FRAME TYPE

DUPLEX OUTLET

220V OUTLET

QUADPLEX OUTLET

SPECIAL PURPOSE

VOICE/DATA - PROVIDE

"J" BOX FOR FURNITURE

OR OTHER CONNECTION

COAXIAL CABLE, COORD

W/ AV VENDER

POWER POLE

CENTERLINE

CARD READER

BACK BOX AND PULL

OUTLET

STRING

VERTICAL ELEVATION

FLOOR DEVICE, REF TO MECH DWG FOR SPEC

XX.X

XX.X

XX.X

- A. ALL WORK SHALL BE ERECTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MAINTAIN STANDARD INSTALLATION / CONSTUCTION PRACTICES OF THE TRADE AND MANUFACTURER'S RECOMMENDATIONS FOR THE PARTICULAR ITEM B. ALL MATERIALS AND EQUIPMENT FURNISHED BY CONTRACTORS SHALL BE NEW AND FREE
- FROM DEFECTS. MATERIALS USED MUST HAVE THE MANUFACTURER'S WARRANTED SUPPORT FOR THE INSTALLATIONS AS INDICATED BY THE CONSTRUCTION DOCUMENTS C. WARRANTY ALL MATERIALS AND LABOR FOR A PERIOD OF ONE YEAR, UNLESS A GREATER WARRANTY IS CALLED FOR IN THE DOCUMENTS, FROM THE DATE OF SUBSTANTIAL COMPLETION, OR THE DATE OF BENEFICIAL OCCUPANCY BY THE OWNER, WHICHEVER IS LATER. REPAIR OR REPLACE ALL WORK THAT IS DISCOVERED TO BE DEFECTIVE DURING THAT
- ESTABLISH AND VERIFY ALL OPENING AND INSERTS FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING WITH APPROPRIATE TRADES, DRAWINGS, AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.
- E. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH
- STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDUM F. WHERE A CONSTRUCTION SYSTEM IS IDENTIFIED AND DESCRIBED IN THE DRAWINGS, IT SHALL ONLY TAKE PRECEDENCE IN THE ABSENCE OF SPECIFICATION SECTIONS. SPECIFICATIONS TAKE PRECEDENCE OVER DRAWINGS.

REPAIR OF CONSTRUCTION DAMAGE TO EXISTING FACILITIES AND UTILITIES, AS IDENTIFIED BY

- THE PROPERTY MANAGER OR ARCHITECT, IS THE CONTRACTOR'S RESPONSIBILITY AND MUST BE REPLACED AT NO ADDITIONAL COST TO THE OWNER. B. THE ARCHITECT, OWNER/TENANT, AND/OR OWNER/TENANT'S REPRESENTATIVE RESERVE THE
- RIGHT TO DIRECT REMOVAL AND REINSTALLATION OF WORK, WHICH DOES NOT, IN THE OPINION OF THE ARCHITECT, MAINTAIN WORKMANSHIP AND CRAFTSMANSHIP STANDARDS C. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE CURRENT EDITION OF APPLICABLE CODES AND REGULATIONS AT THE TIME OF PERMIT.
- D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE BUILDING AND SITE, CLEANING, AND PROVIDING ANY AND ALL SAFETY PROVISIONS TO ENSURE THE PUBLIC
- E. CONSTRUCTION MATERIAL SHALL BE SPREAD OUT IF PLACED ON FRAMING FLOORS OR ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.

A. LEAVE THE PROJECT CLEAN AND READY FOR OCCUPANCY BY THE OWNER OR TENANT.

- B. SEPARATE DISSIMILAR METALS WITH BITUMINOUS PAINT, SUITABLE SEALANT, NON-ABSORPTIVE PLASTIC, OR AN ELASTOMERIC TAPE OR GASKET, BETWEEN THE SURFACES. THE
- USE OF COATINGS WITH LEAD IS NOT PERMITTED. C. THE CONTRACTOR TO CONFIRM LOCATIONS OF STRUCTURAL MEMBERS PRIOR TO CUTTING HOLES IN FLOORS OR ROOFS PER PROPERTY MANAGER REQUIREMENTS. DO NOT CUT HOLES IN STRUCTURAL MEMBERS BEFORE OBTAINING WRITTEN PERMISSION FROM THE STRUCTURAL
- D. ITEMS FURNISHED BY THE TENANT BUT INSTALLED BY THE CONTRACTOR ARE NOTED "TFCI". CONTRACTOR SHALL INCLUDE COST FOR INSTALLATION ONLY, IN HIS PROPOSAL. E. ITEMS FURNISHED AND INSTALLED BY THE TENANT ARE NOTED "TFTI". CONTRACTOR SHALL
- NOT INCLUDE COSTS FOR FURNISHING OR INSTALLATION IN HIS PROPOSAL F. ITEMS OR WORK OUTSIDE OF THE CONTRACTOR'S SCOPE ARE NOTED "NIC". G. "ALIGN" AS USED IN THESE DOCUMENTS, MEANS TO ALIGN THE FINISHED FACE OF ELEMENTS
- IN THE SAME PLANE, EITHER IMMEDIATELY ADJACENT TO ONE ANOTHER OR ACROSS AN H. "SIMILAR" OR "SIM", AS USED IN THESE DOCUMENTS MEANS THAT THE ITEM OR DETAIL REFERENCED IS SUBSTANTIALLY THE SAME AS THE ITEM OR DETAIL BEING REFERRED TO,
- WITH MINOR VARIATIONS THAT DO NOT AFFECT FUNCTION OR APPEARANCE. "TYPICAL" OR "TYP.", AS USED IN THESE DOCUMENTS MEANS THAT THE ITEM OR DETAIL REFERENCED IS THE SAME FOR ALL CONDITIONS OF A SIMILAR NATURE THROUGHOUT THE
- PROJECT, UNLESS NOTED OTHERWISE. J. "OPPOSITE HAND" OR "OH" AS USED IN THESE DOCUMENTS MEANS THAT THE ITEM OR DETAIL REFERENCED IS THE SAME AS THE REFERENCED ITEM OR DETAIL EXCEPT THAT IT IS EXACTLY OPPOSITE (MIRRORED) IN ORIENTATION.
- K. THE DESIGN OF FIRE PROTECTION SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR'S FIRE PROTECTION SYSTEMS CONTRACTOR. ALL FIRE PROTECTION SYSTEMS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED BY THE STATE OF JURISDICTION OVER THE PROJECT FOR THE DESIGN OF THIS TYPE OF SYSTEM. MEP CONSULTANT WILL REVIEW DESIGN DRAWINGS FOR FIRE PROTECTION SYSTEMS FOR GENERAL COMPLIANCE WITH MEP DRAWINGS ONLY. COORDINATE INTERFACE WITH EXISTING BUILDING SYSTEMS WITH BUILDING OWNER.

MATERIAL PATTERNS:

EARTH - UNDISTURBED

BASE FILL MATERIAL

CONCRETE

MASONRY UNIT

STONE (MARBLE, GRANITE,

STEEL (LARGE SCALE)

GLASS/MIRROR

FLOOR OR WALL TILE

INSULATION (RIGID)

PLASTIC LAMINATE

#######

PLYWOOD

SHEATHING

ASPHALT CONCRETE

EARTH - FILL

SAND

CONCRETE

BRICK

LIMESTONE

ALUMINUM

FINISH WOOD

FRAMING WOOD

FRAMING WOOD

GYPSUM BOARD

(LARGE SCALE)

INSULATION (BATT

OR BLANKET)

PLASTER

(THROUGH MEMBER)

(INTERRUPTED MEMBER)

GENERAL	
G-001	COVER SHEET
G-002	GENERAL INFORMATION
G-003	TAS SHEET
G-004	SPECIFICATIONS
G-005	SPECIFICATIONS
G-006	SPECIFICATIONS
G-007	CODE REVIEW & EGRESS P

CODE REVIEW & EGRESS PLAN G-007 ARCHITECTURE DEMOLITION PLAN - LVL. 01 A-100 SITE PLAN

A-110 FLOOR PLANS A-120 REFLECTED CEILING PLANS A-130 POWER / FURNITURE PLANS A-140 FINISH PLANS A-150 **ROOF PLAN** EXTERIOR ELEVATIONS

INTERIOR ELEVATIONS BUILDING SECTIONS A-350 WALL SECTIONS SECTION AND PLAN DETAILS ENLARGED PLANS **ENLARGED STAIR PLAN & ELEVATIONS ENLARGED STAIR PLAN & ELEVATIONS** A-451

A-452 STAIR DETAILS A-502 MILLWORK DETAILS MILLWORK DETAILS PARTITION TYPES A-610 WINDOW WALL TYPES

STRUCTURAL S1.00 STRUCTURAL NOTES S2.01 FOUNDATION PLAN S2.02 FRAMING PLANS S3.00 FOUNDATION DETAILS S4.00 FRAMING DETAILS

MECHANICAL GENERAL NOTES AND LEGENDS MECHANICAL PLANS

MECHANICAL DETAILS M601 MECHANICAL SCHEDULES AND DIAGRAMS M701 MECHANICAL SPECIFICATIONS

ELECTRICAL E001 GENERAL NOTES AND LEGENDS E111 POWER PLANS E121 LIGHTING PLANS ELECTRICAL DETAILS

ELECTRICAL SCHEDULES AND DIAGRAMS E701 ELECTRICAL SPECIFICATIONS ELECTRICAL SPECIFICATIONS

PLUMBING NOTES, LEGENDS, AND SPECIFICATIONS PLUMBING PLANS PLUMBING ENLARGED WASTE AND VENT PLANS PLUMBING ENLARGED WATER AND GAS PLANS

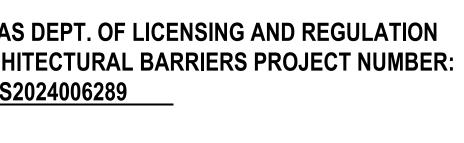
P501 PLUMBING DETAILS PLUMBING RISERS

SEPARATE PERMIT FIRE SPRINKLERS

DEFERRED SUBMITTALS:

 CANOPIES AND/OR AWNINGS PREFAB STEEL STAIRS

TEXAS DEPT. OF LICENSING AND REGULATION ARCHITECTURAL BARRIERS PROJECT NUMBER: TABS2024006289



CLIENT SIGN OFF:

Project Number Drawn By Checked By

23-01-014

ISSUE FOR PERMIT

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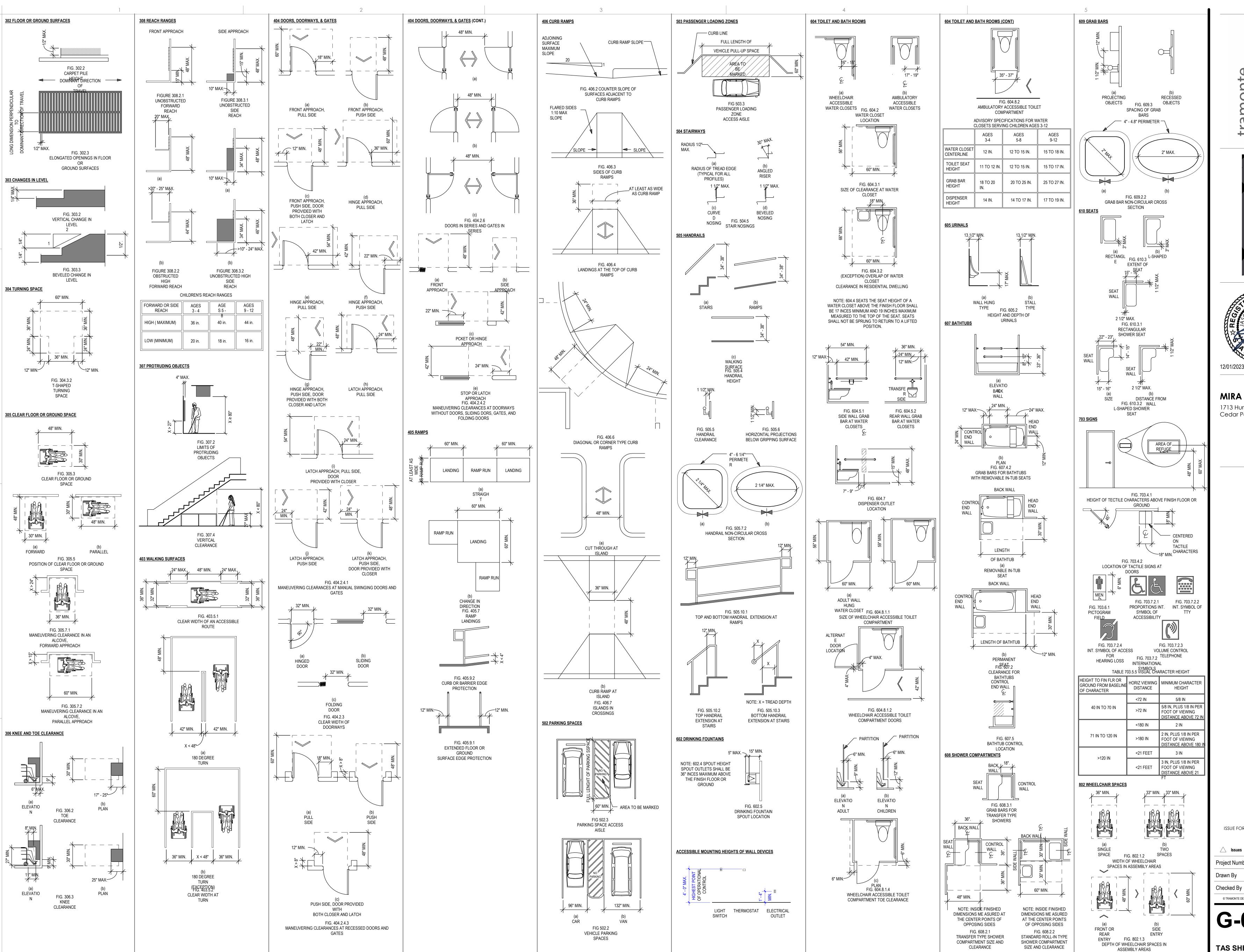
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1713 Hur Industrial Blvd

Cedar Park, TX 78613

GENERAL INFORMATION



∏ Si





MIRA SAFETY 1713 Hur Industrial Blvd Cedar Park, TX 78613

ISSUE FOR PERMIT 23-01-014 Project Number

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TAS SHEET

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

The following Conditions of Contract are included as if bound with this document:

AIA A105-2017, Standard Form of Agreement Between Owner and Contractor for a Small Project, Stipulated Sum, and AIA A205-2017, General Conditions of the Contract for a Small

Technical and administrative requirements for the Project are divided into 10 of the CSI MasterFormat 2004 49 Divisions. Division 01 General Requirements apply to all work for the

END OF DIVISION

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 00 00 - GENERAL REQUIREMENTS

Summary: 1. The Project consists of a renovation of the existing office space and extending that office space into the existing warehouse via an existing mezzanine structure. Project to include MEP upgrades as

1. Requirements for Sequence of Work, Phasing, and Occupancy: Requirements: Prior or Concurrent Work by Owner or Others: None. Existing Site Conditions and Restrictions: None 4. Contractor's Use of Premises and Adjacent Facilities: Full use of facilities as required to complete project. Prepurchased and Preordered Items: None 6. Owner-Furnished and Owner-Installed Items: None 7. Special Mock-Ups: As indicated in the individual Specifications Sections text. Related Future Work: None 9. Owner's Building Standards: None.

utility company backcharges required to perform the work. Submit copies to Architect. 1. Drawings and specifications are intended to provide the basis for the proper completion of the Project suitable for the intended use of the 2. Items not expressly set forth but which are reasonably implied or

necessary for the proper performance of this work shall be included. Coordination: 1. Coordinate the work of all trades. Prepare coordination drawings for areas above ceilings where close tolerances are required between building elements and mechanical and electrical work. Verify location of utilities and existing conditions. Notify Architect of conditions differing from those indicated on the Drawings.

1. Apply for, obtain, and pay for building permits, other permits, and

4. Verify dimensions on Drawings with dimensions at the Project. Do not scale Drawings. Cutting and 1. Provide cutting and patching work to properly complete the 2. Do not remove or alter structural components without written Cut with tools appropriate for materials to be cut. Patch with materials and methods to produce patch which is not visible

from a distance of five feet. 5. Do not cut and patch in a manner that would result in a failure of the work to perform as intended, decrease fire performance, decrease acoustical performance, decrease energy performance, decrease operational life, or decrease safety factors. Selective 1. Provide at least [72] hours notice to Owner if shutdown of utility

> service is required during Selective Demolition. 2. Cut with tools appropriate for materials to be cut. Remove and Reinstall the following items: Brick masonry. Remove and Salvage the following items: Brick masonry. Promptly dispose of demolished materials in a legal manner. Provide dustproof barriers where needed to control migration of dust, with negative air pressure in the construction zones.

Engineering: 2. Survey and layout improvements, utilities, structures, and

Project

Ouality

Assurance:

Meetings:

1. Arrange for a preconstruction conference prior to start of construction. Meeting shall be attended by Owner, Architect, Contractor, and major subcontractors. 2. Arrange for progress meetings once a month during construction, prior to application for payment. Record minutes and distribute promptly.

Submittals: 1. Submit a project schedule and update at least monthly. Submit for approval all submittals listed in individual sections with the following number of copies: Shop drawings, reviewed and annotated by the Contractor, 3 copies plus reproducible sepia; product data, 3 copies; samples, 3 sets plus range samples where applicable; test reports, 3 copies; warranties, 3 copies; other submittals, 3 copies. 3. Include details of construction and adjacent construction in shop drawings. Clearly indicate any deviations from requirements of the

contract documents. Fabricate materials from approved shop drawings

1. Comply with applicable codes, regulations, ordinances and requirements of authorities having jurisdiction, including accessibility guidelines where applicable. Submit copies of inspection reports, notices and similar documents to Architect. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for 3 years. 3. Use experienced installers. Furnish evidence of experience if

4. Deliver, handle, and store materials in strict accordance with manufacturer's instructions. Use of any supplier or subcontractor is subject to Owner's approval. 6. Engage and pay for testing agencies as required. Refer to individual

sections for additional requirements. 1. Provide temporary facilities and connections as required for the

proper completion of the project.

Provide and maintain temporary utility services. Owner will pay for utility service consumed. Do not waste. 4. Provide temporary protection for adjacent areas to prevent contamination by construction dust and debris.

Provide temporary barricades as necessary to ensure protection of the Provide suitable waste disposal units and empty regularly. Do not permit accumulation of trash and waste materials.

Provide temporary sanitary facilities. Maintain egress within and around construction areas. Maintain fire alarm systems in operation during construction. 10. Provide fire extinguishers in work areas during construction. 11. Provide temporary protection for adjacent construction. Promptly

repair any damage at no additional cost to the Owner. Products and 1. Provide products and materials specified. Request Architect's Substitutions: selection of colors and accessories in sufficient time to avoid delaying progress of the work.

Submit requests for substitutions shall be in writing, including reasons.

Submit sufficient information for Architect to evaluate proposed 3. Remove and replace work which does not conform to the contract documents at no additional expense to the Owner.

Installation: 1. Inspect substrates and report unsatisfactory conditions in writing. Do not proceed until unsatisfactory conditions have been corrected.

Take field measurements prior to fabrication where practical. Form to required shapes and sizes with true edges, lines and angles. Provide inserts and templates as needed for work of other trades. 4. Install materials in exact accordance with manufacturer's instructions and approved submittals. 5. Install materials in proper relation with adjacent construction and with

6. Restore units damaged during installation. Replace units which cannot be restored at no additional expense to the Owner. Refer to additional installation requirements and tolerances specified

under individual specification sections. Prepare punchlist for remaining work for review by the Architect. Complete punchlist items promptly at no additional expense to the

> Submit accurate record documents of building and site. 4. Submit operating manuals, maintenance manuals, and warranty Obtain and submit copy of occupancy permits. 6. Train Owner in use of building systems.

7. Remove temporary facilities and provide final cleaning and touch-up. 8. Restore portions of building, site improvements, landscaping and other items damaged by construction operations to the satisfaction of the Architect at no additional expense to the Owner. **END OF DIVISION**

DIVISION 04 - MASONRY SECTION 04 20 00 - UNIT MASONRY Summary: 1. Provide Unit Masonry Construction: a. Brick veneer cavity wall on metal studs. Submittals: 1. Submit product data, samples, shop drawings, 4 foot by 4 foot mockup, test reports. Products: Products: a. Brick to match existing 2. Face Brick: a. Standard modular size, 3-5/8 inches thick by 2-1/4 inches high by 7-5/8 inches long. f. Grade: ASTM C 216, Grade SW, severe weathering type areas subject to freeze-thaw and ASTM C 216, Grade MW, moderate weathering type elsewhere. g. Type: ASTM C 216, Type FBX, for general use in exposed masonry requiring minimum variations in size and color range Special Shapes: As required by building configuration. Bond Pattern: To match existing. 3. Mortar and Grout: a. Mortar Mix: ASTM C 270, Type S, for reinforced masonry, masonry below grade and masonry in contact with earth and ASTM C 270, Type N, for above-grade loadbearing and nonloadbearing walls and parapet walls and for interior loadbearing and nonloadbearing partitions. b. Mortar Materials: Portland cement, ASTM C 150, Type I or II materials. Mortar Aggregate: Natural color, ASTM C 144. Grout Aggregate: ASTM C 404. Hydrated Lime: ASTM C 207, Type S. Color: Natural color. 4. Reinforcing Steel: Reinforcing Bars: ASTM A 615, Grade 60. Deformed Reinforcing Wire: ASTM A 496.

Plain Welded Wire Fabric: ASTM A 185. 5. Joint Reinforcing: Welded wire with deformed side rods. a. Steel Wire: 9 gage (.1875 inch) galvanized wire. Type: Ladder or truss type. 6. Ties and Anchors: Bent Wire Ties: Galvanized steel. Rigid Anchors: Galvanized steel straps.

Masonry to Concrete Frame: Two-piece galvanized steel anchor. Masonry to Steel Frame: Anchor with crimped wire anchor section for welding to steel. Adjustable Masonry Veneer Anchors: Screw-attached two-piece galvanized triangular or rectangular wire tie and metal anchor. Screws for Steel Studs: ASTM C 954 organic polymer coated steel drill screws. Unit Type Masonry Inserts in Concrete: Malleable iron. Dovetail Slots: Galvanized sheet metal.

Anchor Bolts: ASTM A 307, Grade A, galvanized Post-installed Anchors: Chemical or expansion anchors. Masonry Accessories: a. Nonmetallic expansion joint strips. b. Preformed control joint gaskets. Bond breaker strips. d. Weep sash and tubes

Installation: 1. Comply with requirements of Section 01 00 00 - Project Requirements. Comply with PCA Recommended Practices for Laying Concrete Block, Brick Institute of America Tech Notes, and NCMA TEK Bulletins. 3. Comply with cold weather and warm weather protection procedures as recommended in BIA Tech Notes. Provide fire-rated assemblies complying with ASTM E 119.

5. Sawcut units when required. Maintain uniform joint width. Provide full bed, head and collar joints except at weepholes. Install lintels and accessories in masonry construction. Coordinate installation of flashings.

8. Comply with applicable codes and regulations for spacing of ties and horizontal reinforcing. 9. Provide expansion and control joints in accordance with referenced publications.

10. Remove and replace damaged units. 11. Clean concrete masonry by dry brushing, NCMA TEK No. 28.

DIVISION 05 - METALS

SECTION 05 12 00 - STRUCTURAL STEEL FRAMING - Refer Structural Drawings

SECTION 05 21 00 - STEEL JOIST FRAMING - Refer Structural Drawings

SECTION 05 31 00 - STEEL DECKING - Refer Structural Drawings

SECTION 05 40 00 - COLD-FORMED METAL FRAMING Summary: 1. Provide Cold Formed Metal Framing Units:

 a. Exterior load-bearing steel-stud walls. b. Interior load-bearing steel-stud walls. Steel joists. Steel trusses.

Design for deflection criteria not to exceed L/600 for masonry. 3. Tolerances: Fabrication tolerance 1/8 inch in 10 feet; erection tolerance, 1/16 inch.

Submittals: 1. Submit product data, shop drawings. Delegated design submittal by Structural Engineer licensed in the State of Texas. Refer Structural Drawings and notes.

Wall Framing: C-shaped load-bearing steel studs. Joist Framing: C-shaped load-bearing steel joists. Units 16 gage (0.598 inch) and heavier: ASTM A 446, yield point Units 18 gage (0.0358 inch): ASTM A 446, yield point 37,000 psi.

Units 20 gage (0.0329 inch): ASTM A 446, yield point 33,000 psi. Framing accessories, including bracing, bridging, solid blocking, plates, hangers, closers, reinforcement plates, anchors, clips, fasteners. Installation: 1. Comply with requirements of Section 01 00 00 - Project

Comply with AISC codes and specifications and with AWS Structural Welding Code.

SECTION 05 50 00 - METAL FABRICATIONS

Summary: 1. Provide metal fabrications: a. Rough hardware. Ladders. Loose bearing and leveling plates. Loose steel lintels. Miscellaneous steel trim. Tolerances: Fabrication tolerance 1/8 inch in 10 feet; erection

1. Submit product data, shop drawings.

tolerance, 1/16 inch.

Products: Steel Plates, Shapes and Bars: ASTM A 36. Steel Tubing: ASTM A 500 or A 501. Steel Pipe, Black Finish: ASTM A 53. Stainless Steel Bar Stock: ASTM A 276, Type 302 or 304. Stainless Steel Plate: ASTM A 167, Type 302 or 304. Stainless Steel Tubing: ASTM A 554, Grade TP 304 or TP 316. Aluminum Extruded Bars and Shapes: ASTM B 221 aluminum alloy. Steel Finish: Primed finish.

Fasteners: non-corrosive, suitable for service intended. 10. Zinc-Coating: Hot-dip galvanized coating for materials in exterior assemblies or exterior walls. 11. Aluminum Finish: Fluoropolymer finish.

12. Stainless Steel Finish: No. 6 satin directional polish Installation: 1. Comply with requirements of Section 01 00 00 - Project Requirements. Comply with ASTM E 985 for handrail and railing structural

performance Comply with AISC codes and specifications and with AWS Structural Welding Code.

END OF DIVISION

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

SECTION 06 10 00 - ROUGH CARPENTRY

Summary: 1. Provide Rough Carpentry: Framing with dimension lumber. b. Wood grounds, nailers, and blocking. c. Wood furring. d. Backing panels. e. Sheathing. Submittals: 1. Submit product data.

Lumber Standards and Grade Stamps: PS 20, American Softwood Lumber Standard and inspection agency grade stamps. 2. Construction Panel Standards: PS 1, U.S. Product Standard for Construction and Industrial Plywood; APA PRP-108. Wood Framing Standards: NFPA House Framing Manual. a. Exterior Wall Framing, 2x6: 2 inch by 6 inch nominal studs, 24

b. Exterior Wall Framing, 2x4: 2 inch by 4 inch nominal studs, 16 inches on center. c. Interior Wall Framing: 2 inch by 4 inch studs, 16 inches on 4. Preservative Treatment: AWPA U1 for lumber and for plywood;

waterborne pressure treatment. Comply with AWPA use categories U1 user specification and treatment standard T1. 5. Fire-Retardant Treatment: Tested in accordance with ASTM E84 or UL 723 with a listed flame index of 25 or less. All fire treated lumber and structural panels shall be fully labeled with the name of the fireretardant treatment for both interior and exterior uses.

Dimension Lumber a. Light Framing: Stud, No. 3 or Standard grade. Structural Framing: No. 2 grade. Species: Any species of grade indicated. Exposed Framing: Appearance grade.

a. Exposed Boards: 15 percent moisture content. Concealed Boards: 19 percent moisture content. 8. Miscellaneous Lumber, Blocking and Nailers: Moisture Content: 19 percent.

Grade: Standard grade light framing. Construction Panels: Wall Sheathing: APA Sheathing, Exposure 1 sheathing. d. Roof Sheathing: APA Sheathing, Exposure 1 sheathing. e. Plywood Backing Panels: APA C-D Plugged Exposure 1 with exterior glue, fire-retardant treated.

10. Gypsum Sheathing: a. Gypsum Material: Gypsum sheathing board with water-resistant

b. Surfaced Gypsum Material: Glass-fiber-surfaced gypsum sheathing board. c. Type: Regular and Type X fire-resistant where required ASTM C 11. Auxiliary Materials:

a. Sill Sealer Gaskets: Glass fiber strip resilient insulation. b. Framing Anchors and Fasteners: Non-corrosive, suitable for load and exposure.

1. Comply with requirements of Section 01 00 00 - Project Requirements.

> 3. Comply with APA Design and Construction Guide, Residential and Commercial Construction. 4. Provide nailers, blocking and grounds where required. Set work plumb, level and accurately cut.

Comply with manufacturer's requirements for treated materials.

SECTION 06 16 00 - SHEATHING

Model code evaluation reports for preservative-treated plywood and fire-retardant-treated plywood. Product Data for gypsum wall sheathing.

2.1 WOOD PANEL PRODUCTS, GENERAL A. Plywood: DOC PS 1. 2.2 TREATED PLYWOOD

A. Preservative-Treated Plywood: AWPA C9. 1. Use treatment containing no arsenic or chromium. 2. Kiln-dry plywood after treatment to a maximum moisture content of B. Provide preservative treated plywood for all plywood, unless otherwise indicated. C. Fire-Retardant-Treated Plywood: Comply with performance requirements in AWPA C27, labeled by a testing and inspecting agency acceptable to authorities having jurisdiction. 1. Use Exterior type for exterior locations and where indicated. 2. Use Interior Type A, High Temperature (HT) for roof sheathing

and where indicated. Use Interior Type A, unless otherwise indicated. 4. Identify with appropriate classification marking of a testing and inspecting agency acceptable to authorities having jurisdiction. D. Provide fire-retardant treated plywood for all plywood. 2.3 WALL SHEATHING A. Plywood Wall Sheathing: Exterior, Structural I sheathing, 5/8" thick. B. Gypsum Wall Sheathing: 1. Glass-Mat Gypsum Wall Sheathing: ASTM C 1177/1177M. a. CertainTeed Corporation; GlasRoc. b. G-P Gypsum Corporation; Dens-Glass Gold. c. National Gypsum Company; Gold Bond e(2)XP.

d. Temple-Inland Inc.; GreenGlass e. United States Gypsum Co.; Securock. 2. Type and Thickness: Regular, 5/8 inch thick. 3. Size: 48 by 96 inches, 48 by 108 inches, or 48 by 120 inches for vertical installation. 2.4 MISCELLANEOUS PRODUCTS A. Fasteners: Size and type indicated. 1. For roof and wall sheathing, provide fasteners of Type 304 stainless steel.

2. Power-Driven Fasteners: CABO NER-272. B. Sheathing Joint-and-Penetration Treatment Materials: 1. Sealant for Gypsum Sheathing Board: Joint sealant recommended by weather barrier manufacturer for application indicated. 2. Sheathing Tape for Gypsum Sheathing Board: Self-adhering glasstape recommended by weather barrier manufacturer for application indicated. C. Flexible Flashing: As required by Div 07 – Fluid Applied Membrane Air Barrier and Self-Adhered Sheet Waterproofing.

A. Securely attach to substrates, complying with the following: 1. CABO NER-272 for power-driven fasteners. B. Fastening Methods: 1. Screw to cold-formed metal framing. 2. Apply fasteners so heads bear tightly against face of sheathing,

END OF SECTION

SECTION 06 40 23 - INTERIOR ARCHITECTURAL WOODWORK

Summary: 1. Provide Interior Architectural Woodwork:

but do not cut into facing.

a. Standing and running trim and rails. b. Casework and countertops. g. Shelving. Submittals: 1. Submit product data, samples, mockup of each type. AWI Standards: Architectural Woodwork Institute (AWI) "Architectural Woodwork Quality Standards." Preservative Treatment: AWPA U1 for lumber and for plywood: waterborne pressure treatment. Comply with AWPA use categories U1 user specification and treatment standard T1.

Fire-Retardant Treatment: Tested in accordance with ASTM E84 or UL 723 with a listed flame index of 25 or less. All fire treated lumber and structural panels shall be fully labeled with the name of the fireretardant treatment for both interior uses. 4. Interior Plastic Laminate Clad Casework:

a. Laminate: High pressure decorative laminate, NEMA LD-3. Grade: Premium. Face Style: Flush overlay. Frame Fabrication: Frameless. Casework Hardware and Auxiliary Materials: Hardware Standard: ANSI/BHMA A156.9

Hardware Finish and Base Metal: Black

Glass: Clear tempered glass, ASTM C 1048 6. Solid Surfacing Material Countertops and Trim:

Type: Quartz as indicated on Finish Schedule.

Grade: Premium. Edge: Decorative as indicated. Special Fabrication: Decorative assemblies as indicated.

Auxiliary Materials: Screws: FS FF-S-111, countersunk. Nails: FS FF-N-105, countersunk.

Anchors: Type required for secure anchorage. Installation: 1. Comply with requirements of Section 01 00 00 - Project Requirements. Comply with standards referenced.

Backprime work before installation.

4. Provide trim for scribing and site cutting. Install work plumb, level and in proper alignment. 6. Provide work free from tool marks and blemishes. Securely fasten to substrates. 8. Install in lengths to minimize joints and seams. 9. Touch-up damaged or abraded finishes.

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

END OF DIVISION

SECTION 07 21 00 - THERMAL BUILDING INSULATION

Summary: 1. Provide Building Insulation and Vapor Retarders: Thermal insulation in exterior cavity walls, board type. Thermal insulation in exterior walls, blanket type. Thermal insulation at underside of roofs, over heated spaces and over soffits, blanket type. d. Acoustic insulation at interior partitions, blanket type.

3. Sound Attenuation Batts: Unfaced sound attenuation batts friction fit

Submittals: 1. Submit product data.

 Board Insulation: Products: a. Glass fiber board, semi-rigid, ASTM C 553, Class B-4. Blanket/Batt Insulation: a. Glass fiber, ASTM C 665, Type I (unfaced).

> between studs and direct lay on suspended ceilings systems. Accessories: Adhesives and mechanical anchors. Protection board.

 c. Crack sealers and tapes. Installation: 1. Comply with requirements of Section 01 00 00 - Project

2. Install insulation and vapor barriers with continuous coverage to

provide optimum performance.

SECTION 07 26 16 - BELOW-GRADE VAPOR RETARDERS - Refer Structural.

SECTION 07 27 26 - FLUID APPLIED MEMBRANE AIR BARRIER

Summary: 1. Section includes fluid-applied, vapor-permeable membrane air barriers.

Submit product data and shop drawings. Submittals:

1. Manufacturer: Henry Company; 999 N Sepulveda Blvd, Suite 800, El Segundo, CA 90245; (800) 598 7663; www.Henry.com a. Henry Company; Air-Bloc 17MR.

2. Accessory Materials: As recommended by air-barrier manufacturer to produce a complete air-barrier assembly and compatible with primary air-barrier material and not limited to the following: b. Counterflashing strip.

Modified Bituminous Transition Strip.

Preformed Silicone-Sealant Extrusion.

Joint reinforcing strip. Substrate patching membrane. Adhesive and tape. Stainless steel flashing Type 304. Sprayed Polyurethane Foam Sealant.

Installation: 1. Comply with requirements of Section 01 00 00 – General Requirements.

SECTION 07 42 44 – ALUMINUM COMPOSITE PANEL SYSTEM

Summary: 1. Provide manufactured composite panels of two sheets of aluminum bonded to a thermoplastic core.

Submittals: 1. Submit product data, shop drawings, and samples. submit 20-year finish warranty.

> 1. Aluminum Face Sheets: Arconic, Reynobond ASTM B 209 for alloy 3003. Pre-Painted both faces over an FR core. a. Thickness: 0.51 mm Finishes a. Front Side Finish: Fluorocarbon Coating System: 2 coat thermo-

cured system. (Colorweld 500/500XL coating.) b. Rear Side Finish: Washcoat, Manufacture's standard. c. Color: As selected by Architect. Refer to drawings. 3. Miscellaneous Materials: fasteners, accessories, bituminous coatings 4. Panel Thickness: 4mm

5. Fire Classification: ASTM E84; Flame Spread <25, Smoke Develop Installation: 1. Comply with requirements of Section 01 00 00 - Project

Requirements.

SECTION 07 50 00 - MEMBRANE ROOFING

Summary: 1. Provide adhered single-ply membrane roofing (TPO) and roof

2. Membrane Roofing Warranty: Manufacturer's 20 year warranty. Submittals: 1. Submit product data, shop drawings, 20 year warranty,

maintenance data. Products: 1. Manufacturers: Subject to compliance with requirements, provide

a. Thickness: 60 mils.

products by one of the following: Carlisle SynTec Incorporated. Firestone Building Products. GAF Materials Corporation. Johns Manville. 2. Membrane Roofing: Totally adhered type. 3. TPO Membrane: Fabric-Reinforced TPO Sheet: ASTM D 6878, internally fabric- or scrim-reinforced, uniform, flexible fabric-backed TPO sheet.

Color: White. 4. Tapered Insulation: Provide factory-tapered Polyisocyanurate insulation boards fabricated to slope of 1/4 inch per 12 inches (1:48) unless otherwise indicated 5. Cover Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, 1/2 inch (13 mm) thick. a. Fasteners: Factory-coated steel fasteners and metal or plastic

plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening substrate board to roof deck. 6. Sheet Metal Accessories: SMACNA and NRCA recommendations. Walkway Protection Board: Compatible with membrane. 8. Pedestal Pads: Provide precut 10"x10" TPO protection pads in quantity

as determined and installed by Deck Paver System Contractor.

Contractor shall coordinate. Refer Section 07 76 16 Roof Deck Pavers Installation: 1. Comply with requirements of Section 01 00 00 - Project

Requirements. 2. Coordinate membrane roofing installation with flashings and metal accessories to shed water properly.

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1713 Hur Industrial Blvd Cedar Park, TX 78613

MIRA SAFETY

ISSUE FOR PERMIT

Project Number 23-01-014 JO Drawn By Checked By

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SPECIFICATIONS

Install in proper relation with adjacent work.

4. Clean adjacent surfaces soiled with sealant immediately.

END OF DIVISION

DIVISION 08 - OPENINGS SECTION 08 11 13 - HOLLOW METAL DOORS AND FRAMES Summary: 1. Provide Steel Doors and Frames: Exterior doors and frames. Interior doors and frames. Submittals: 1. Submit product data, shop drawings. Products: Door Pro, Commercial Doors of Texas, Premier Steel Doors and Frames, American Door Products, Lunsford Door & Service, Inc. Standards: ANSI/SDI-100, Recommended Specifications for Standard Steel Doors and Frames. Fire-Rated Assemblies: NFPA 80, and acceptable testing agency 4. Steel Doors: Standard seamless steel doors with hollow or composite construction. a. Exterior Doors: ANSI/SDI-100, Grade III, extra-heavy-duty, minimum 16 gage galvanized sheet steel, 1-3/4 inches thick. Finish: Factory primed and field painted. a. Exterior Frames: Welded type, 16 gage galvanized sheet steel, mitered or coped corners. Accessories: Door silencers and plaster guards. c. Finish: Factory primed and field painted. Installation: 1. Comply with requirements of Section 01 00 00 - Project Requirements. 2. Comply with SDI-100, and NFPA 80 for fire-rated assemblies. **SECTION 08 14 16 - FLUSH WOOD DOORS** Summary: 1. Provide Flush Wood Doors: Interior solid core flush doors. Submit product data, samples, shop drawings, warranty. Products: Allegheny Wood Works, Inc., Algoma Hardwoods, Inc., Bison Doors, Door Masters of Texas, VT Industries, Inc. and as selected by Architect complying with the following. a. AWI Quality Standards: NWWDA I.S. 1-A, and AWI Architectural Quality Standards. b. Fire Rated Wood Doors: Meeting ASTM E 152 requirements. Interior Solid Core Doors for Plastic Laminate Finish: a. Grade: Premium grade. Construction: Particleboard or glued-block core. Faces: GP-50, 0.050 inch inch thick plastic laminate. Fitting and Finish: Fitting: Factory-prefit and premachine doors. b. Site Finish: Shop prime and site finish. Installation: 1. Comply with requirements of Section 01 00 00 - Project Comply with NWMA IS-1 and AWI Quality Standards. Prefit doors to frames, premachine doors for hardware, and factory Install with not more than 1/8 inch clearance at top and sides, 1/4 inch at bottom unless undercut is required. Comply with NFPA 80 for rated assemblies. **SECTION 08 31 13 - ACCESS DOORS AND FRAMES** Summary: 1. Provide access doors for walls and ceilings. Submittals: 1. Submit product data. 1. Products: <u>Babcock-Davis</u>, <u>Jensen Industries</u>; <u>Div. of Broan-Nutone</u>, LLC, J. L. Industries, Inc.; Div. of Activar Construction Products Group, <u>Larsen's Manufacturing Company</u>, <u>Milcor Inc</u>.
Frames: 16 gage sheet steel with flange suitable for adjacent Doors: 14 gage sheet steel doors. Door Type: Flush panel. Locking Devices: Cylinder locks. Fire Rating: NFPA 80. Finish for Sheet Steel Access Doors: Factory primed. Installation: 1. Comply with requirements of Section 01 00 00 – Project Requirements. **SECTION 08 41 26 - ALL-GLASS ENTRANCES AND STOREFRONTS** Summary: 1. Interior and Exterior swinging all-glass entrance doors. Submit product data, shop drawings. Warranty Period: Two years from date of Substantial Completion. Five years from date of Substantial Completion for concealed closures. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design all-glass entrances and storefronts. Structural loads as indicated. Submit engineered review with shop drawings. Subject to compliance with requirements, provide products as follows: a. Blumcraft of Pittsburgh; C.R. Laurence Co, Inc. 1301 Series Entrance System. Aluminum: ASTM B 221 (ASTM B 221M), with strength and durability characteristics of not less than Alloy Rails: Aluminum ¾ inch at top & bottom with end caps. Overhead doorstop. Center-housing lock. Weather Stripping: Pile type; replaceable without removing allglass entrance doors from pivots. Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated surfaces), Type I (transparent), tested for surface and edge compression per ASTM C 1048 and for impact strength per 16 CFR 1201 for Category II materials. Exterior Glass use: Vitro Solargray + Solarban 60(3) Clear. a. Class 1: Clear monolithic. Thickness Exterior: 5/8 inch (16 mm). Thickness Interior: 1/2 inch (13 mm). Exposed Edges: Machine ground and flat polished. Butt Edges: Flat ground. Corner Edges: Lap-joint corners with exposed edges Hardware: As indicated on Drawings. Miscellaneous: a. Butt Glazed Sealants: Single-Component, Nonsag, Acid-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Uses NT, G, and A. Installation: 1. Comply with requirements of Section 01 00 00 - Project Requirements. 2. Anchor securely in place; install plumb, level and in true alignment. 3. Isolate dissimilar metals. 4. Coordinate with glazing work and hardware requirements.

a. Hurricane-Resistance Test Performance: Comply with the South

Florida Building Code, 1994 Edition for Dade County, for the

locations where the pressure requirements as determined by

Structures", do not exceed the Design Pressure Rating values in

ASCE 7-95 "Minimum Design Loads for Buildings and other

Section 7 and within the limitations contained in Section 3.

Product Data, Shop Drawings, Samples, Test Reports, Structural

Delegated-Design Submittal: For glazed aluminum curtain walls

professional engineer responsible for their preparation.

indicated to comply with performance requirements and design

criteria, including analysis data signed and sealed by the qualified

a. Aluminum: ASTM B 209 for sheet and plate; ASTM B 221 for

b. Steel Reinforcement: ASTM A 36 for structural shapes, plates,

Glazing: specified in Division 8 Section "Glazing".

2. Manufacturers: Subject to compliance with requirements, provide

Glazing Accessories: dry glazing gaskets.

extruded bars, rods, shapes, and tubes; ASTM B 429 for extruded

and bars; ASTM A 611 for cold-rolled sheet and strip; A 570 for

hot-rolled sheet and strip. Apply corrosion-resistant protective

Kawneer North America: Kawneer 1600 Curtain Wall System 2.

system, including framing entrances and accessories, from single

Source Limitations: Obtain all components of curtain wall

Analysis Data and 5 year warranty.

structural pipe and tube.

products by the following:

manufacturer.

thermal and acoustical standards. d. Concealed fastener joinery. e. Shear block fabrication method. Anchors and Fasteners: corrosion-resistant materials. Concealed Flashing: corrosion-resistant flashing. Finishes as selected by Architect. a. Black Anodic Finish: Class I Fabrication: 1. Factory-Assembled Frame Units: a. Install glazing to comply with requirements in Section 08 80 00 "Glazina." b. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings. Installation: 1. Comply with requirements of Section 01 00 00 - Project Requirements. Fit joints to produce hairline joints free of burrs and distortion. Rigidly secure nonmovement joints. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints. Where welding is required, weld components in concealed locations to minimize distortion or discoloration of finish. Protect glazing surfaces from welding. Seal joints watertight unless otherwise indicated Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within glazed aluminum curtain wall to exterior. Install components plumb and true in alignment with established lines 10. Protect system materials against galvanic action and corrosion. 11. Perform water spray testing of glazed curtain wall system. SECTION 08 71 00 - DOOR HARDWARE Summary: 1. Provide hardware for swinging, sliding doors. Comply with code and accessibility requirements. Submittals: 1. Submit product data, samples, proposed hardware schedule, maintenance data. 1. Products: As selected by Architect complying with the following. Products: Product Requirements a. Hardware for Fire-Rated Openings: NFPA 80, and local requirements b. Handicapped Accessibility: ANSI A117.1, ADAAG, and local requirements. Materials and Application: ANSI A156 series standards. d. Quality Level: Residential type. Locksets and Latchsets: Cylinder type. Lock Cylinders: Interchangeable type. Keying: Owner's requirements keying and key control system. Hinges and Butts: Full-mortise type with nonremovable pins at exterior, entrance and security doors. Closers: Low frequency and Barrier-free type. Exit Devices: Low frequency type. Hardware Finishes: As selected by Architect finish on exposed surfaces. 12. Door Trim Units: Kickplates, armor plates, edge trim, and related 13. Stops for each door. Silencers. 15. Overhead door holders. 16. Flush bolts with dustproof strikes. 17. Coordinators. Automatic door bottoms. 19. Interior sliding door hardware. 20. Interior bifold door hardware. 21. Interior pocket door hardware 22. Coat hooks. 23. Soundstripping 24. Weatherstripping 25. Thresholds. Installation: 1. Comply with requirements of Section 01 00 00 - Project Requirements. 2. Comply with DHI "Recommended Locations for Builder's Hardware" and hardware manufacturers instructions. ((Refer to the door schedule for hardware sets.)) SECTION 08 80 00 - GLAZING 1. Provide glass and glazing for units not factory glazed. Hurricane-Resistance Test Performance: Comply with the South Florida Building Code, 1994 Edition for Dade County, for the locations where the pressure requirements as determined by ASCE 7-93 "Minimum Design Loads for Buildings and other Structures", do not exceed the Design Pressure Rating values in Section 7 and within the limitations contained in Section 3. Submittals: 1. Submit product data, samples, shop drawings, warranty, maintenance data. Products: Products: Drawing indications. a. Exterior Glass: 1 inch Vitro Solargray + Solarban 60(3) Clear a. Primary Glass Products: Clear float, glass, ASTM C 1036. Heat-Treated Glass Products: Heat-strengthened, tempered, coated, glass, ASTM C 1048. Sealed Insulating Glass Units: ASTM E 774, Class A. See Products list and Drawings. Mirrors: Silvering and protective coatings. High-Performance Coatings: Low e (low emissivity) type. See Products listed. Glazing: Elastomeric glazing sealant glazing. Setting blocks, spacers, and compressible filler rods. Installation: 1. Comply with requirements of Section 01 00 00 - Project Requirements. 2. Comply with FGMA Glazing Manual and manufacturer's recommendations. Set mirrors on stainless steel channels and adhere to wall with mastic. **END OF DIVISION DIVISION 09 - FINISHES SECTION 09 22 16 - NON-STRUCTURAL METAL FRAMING** 1.1 SECTION REQUIREMENTS A. Submittals: Product Data. B. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction. C. STC-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 90 and classified per ASTM E 413

by a qualified independent testing and inspecting agency.

1. Steel Sheet Components: ASTM C 645. Thickness specified is

2. Protective Coating: ASTM A 653/A 653M, G60 (Z180), hot-dip

1. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper,

0.0625-inch (1.59-mm) diameter, or double strand of 0.0475-inch-

2. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper,

3. Carrying Channels: Cold-rolled steel, 0.0538 inch (1.37 mm) thick, [2-

0.0538 inch (1.37 mm) thick; [Steel studs, 0.0179 inch (0.454

thick, in depth indicated; Steel, rigid hat-shaped channels; 7/8 inch (22.2

mm) deep, 0.0296 inch (0.752 mm) thick; Resilient furring channels, 1/2

5. Grid Suspension System for Interior Ceilings: Interlocking, direct-hung

1/2 inches (63.5 mm)] [2 inches (50.8 mm)] [1-1/2 inches (38.1 mm)]

4. Furring Channels: 3/4-inch- (19.1-mm-) deep, cold-rolled channels,

mm) thick, in depth indicated] [Steel studs, 0.0296 inch (0.752 mm)

inch (12.7 mm) deep, with single- or double-leg configuration.

A. Steel Framing Members, General: ASTM C 754.

and 0.162-inch (4.12-mm) diameter

galvanized zinc coating.

B. Suspended Ceiling and Soffit Framing:

(1.21-mm-) diameter wire.

minimum uncoated base-metal thickness.

PART 2 - PRODUCTS

2.1 METAL FRAMING AND SUPPORTS

Components and Features:

Thermally broken.

Size: 2 1/2" x 6" as indicated.

Tested to high performance air, water, structural, seismic,

C. Partition and Soffit Framing: 1. Studs and Runners: In depth indicated and 0.0296 inch (0.752 mm) thick unless otherwise indicated. In depth indicated and 0.0396 inch (1.005 mm) thick at walls supporting cabinets, millwork, handrails and grab bars unless otherwise indicated. 2. Flat Strap and Backing: 0.0296 inch (0.752 mm) thick. inch (0.752 mm) thick. double-leg configuration. (19.1 mm) deep. flange, 7/8-inch (22.2-mm) wall-attachment flange, and 0.0179 inch (0.454 mm) thick. system composed of main beams and cross-furring members that curved ceiling systems. 2. Armstrong World Industries, Inc.; Drywall Grid Systems. 3. Chicago Metallic Corporation; Drywall Grid System. 4. USG Corporation; Drywall Suspension System. A. General: Comply with referenced installation standards. 1. Fasteners for Metal Framing: Of type, material, size, corrosion members to substrates. ASTM C 834. Installation: A. Install steel framing to comply with ASTM C 754 and with ASTM C 840 Gypsum's "Gypsum Construction Handbook.' 1. Gypsum Plaster Assemblies: Also comply with ASTM C 841 construction. C. Isolate steel framing from building structure, except at floor, to prevent transfer of loading imposed by structural movement. felt or foam-gasket isolation strip between studs and wall. D. Fire-Resistance-Rated Assemblies: Comply with requirements of Isited assemblies. SECTION 09 24 00 - PORTLAND CEMENT PLASTERING Summary: 1. Provide Portland cement plaster and lath systems for exterior walls and ceilings. Submittals: 1. Submit product data, Mockup to demonstrate aesthetic effects and set become part of the completed Work if undisturbed at time of Substantial Completion. Products: a. Dryvit Systems, Inc.; Dryvit TAFS. LaHabra, a brand of ParexLaHabra, Inc.; Acrylic Finish. Senergy, BASF Wall Systems, Inc.; Senerflex. Sto Corp.; Powerwall Finish. Portland Cement Plaster: a. Application: 3 coats over metal lath type. ASTM C 150, Type I or II material. c. Finish Coat: Acrylic-Based Finish Coatings: Factory-mixed acrylic-emulsion coating systems, formulated with colorfast mineral pigments and fine aggregates; for use over Portland cement plaster base coats. Include manufacturer's recommended primers and sealing topcoats for acrylic-based finishes. Custom Color to be selected by Architect. d. Finish: Troweled finish. 3. Lath and Plaster Support Systems: a. Metal Supports for Suspended and Furred Ceilings: ASTM C 1063, for Portland cement plaster installations. b. Steel Studs and Runners, Non-Load (Axial) Bearing: ASTM C Metal Framing. c. Vertical Metal Furring: Channel furring and braces, Z-furring members, and furring brackets. vapor-permeable paper. 4. Auxiliary Materials: a. Zinc and Zinc-Coated (Galvanized) Accessories: Corner beads, casing bead, and control joints b. Bonding compounds and agents. c. Acoustical sealant. Installation: 1. Comply with requirements of Section 01 00 00 - Project Requirements. Install gypsum plaster in accordance with ASTM C 842. Install Portland cement plaster in accordance with ASTM C 926. Install metal trim at perimeters and joints. Provide control and expansion joints as recommended by manufacturer. SECTION 09 29 00 - GYPSUM BOARD Summary: 1. Provide Gypsum Board Assemblies: a. Interior walls, partitions, and ceilings for tape and joint compound finish. d. Cementitious backer units for application of tile. e. Glass-reinforced gypsum fabrications. 2. Gypsum Board Attachment: a. Gypsum board screw-attached to steel framing and furring. Submittals: 1. Submit product data, 4 foot by 4 foot mockup showing joint treatment. Gypsum Company, Certain Teed. 2. Gypsum Board: inch typical thickness. b. Water-Resistant Gypsum Backing Board: ASTM C 630, regular and fire-rated types, 5/8 inch typical thickness c. Joint Treatment: ASTM C 475 and ASTM C 840, 3-coat system. d. Installation Standard: ASTM C 840. 3. Glass-Mat Water-Resistant Gypsum Backing Board:

3. Rigid Hat-Shaped Furring Channels: In depth indicated and 0.0296 4. Resilient Furring Channels: 1/2 inch (12.7 mm) deep, with single- or 5. Cold-Rolled Furring Channels: 0.0538 inch (1.37 mm) thick, 3/4 inch 6. Z-Furring: In depth required by insulation, 1-1/4-inch (31.8-mm) face D. Grid Suspension System for Gypsum Board Ceilings: ASTM C 645, direct-hung interlock. Provide components, moldings and trims for a complete flat and 1. Products: Subject to compliance with requirements, provide one of the resistance, holding power, and other properties required to fasten steel B. Acoustical Sealant for Concealed Joints: Nonsag, latex sealant complying with requirements that apply to framing installation and with United States 2. Portland Cement Plaster Assemblies: Also comply with ASTM C 1063. 3. Gypsum Veneer Plaster Assemblies: Also comply with ASTM C 844. B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar 1. Where studs are installed directly against exterior walls, install asphaltquality standards for materials and execution. Approved mockups may b. Base Coats (Scratch & Brown Coat) Cements: Portland cement, 645, 20 gage (.0329 inch) steel studs, 2-1/2 inch, 3-5/8 inch, 4 inch and 6 inch typical depth. Refer Division 05 for Cold Formed d. Expanded Metal Lath: ASTM C 847, self-furring diamond mesh or rib lath. Paper Backing: FS UU-B-790, Type I, Grade D, Style 2, 1. Products: United States Gypsum Company, Georgia Pacific, National a. Gypsum Wallboard: ASTM C 36, regular and fire-rated types, 5/8 a. Type: ASTM C 1178, Type X, 5/8 inch thick type. 6. Cementitious Backer Units: a. Type: ANSI A 118.9, cement-coated Portland cement panels. b. Thickness: 5/8 inch nominal. 7. Trim Accessories: Material: Metal trim. Types: Cornerbead, edge trim, and control joints. Decorative Profiles: Aluminum reveals and channels. 8. Steel Framing for Walls and Partitions:

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12/01/2023

MIRA SAFETY

1713 Hur Industrial Blvd

Cedar Park, TX 78613

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Project Number 23-01-014 JO Drawn By Checked By

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SPECIFICATIONS

Comply with requirements of Section 01 00 00 - Project Requirements.

Measure and layout acoustical ceilings to avoid less than 1/2 panel

Install suspension systems in accordance with ASTM C 636.

4. Install panels with pattern or grain running one-way.

units whenever practical.

Test sample area for adhesion for each type of paint. Remove cover plates and protect hardware and adjacent surfaces. Sand before painting until smooth and flat and sand between coats. 6. Apply paint to achieve manufacturer's recommended dry film Paint entire surface where patch painting is required. Recoat areas which show bleed-through or defects. Clean paint spatter from adjacent surfaces and glass. 10. Touch-up damaged surfaces at completion of construction. Provide paint systems complying with the following schedule. **INTERIOR PAINT SCHEDULE** Gypsum Drywall Walls LES, Eggshell 1 coat latex prime 2 coats latex finish Gypsum Drywall Ceilings FL, Flat 1 coat latex prime 2 coats latex finish Gypsum Drywall to 1 coat latex primer Receive Wallcovering Wood for Painted Finish OSG, Semi Gloss 1 coat interior alkyd enamel 2 coats alkyd enamel 1 coat rust-inhibiting primer 2 coats alkyd enamel **EXTERIOR PAINT SCHEDULE** Wood for Preservative Finish Clear 2 coats, clear acrylic sealer. UV/Fade Resistant, Waterproof Wood for Painted Finish Semi Gloss 1 coat exterior primer 2 coats acrylic latex enamel Concrete and Stucco Flat Gloss 1 coat latex primer 2 coats acrylic latex finish 1 coat, rust-inhibiting primer 2 coats alkyd enamel finish 1 coat, galvanized metal primer 2 coats alkyd enamel finish **END OF DIVISION DIVISION 10 - SPECIALTIES** SECTION 10 44 00 - FIRE-PROTECTION SPECIALTIES DELETE SINCE NOT REQ' Summary: 1. Provide fire extinguishers and cabinets Fire extinguishers. Fire extinguisher cabinets. c. Fire extinguisher mounting brackets. Submittals: 1. Submit product data. Products: Larsens's Manufacturing Company. Standards: UL and FM listed products. 3. Fire Extinguishers: a. Type: Multipurpose dry chemical type. b. Rating: Sized for project requirements. Public Area Mounting: Cabinet mounted. Service Area Mounting: Metal brackets. Cabinets: a. Mounting: Semirecessed mounting. b. Trim: Exposed trim. Doors: Enameled steel, baked enamel finish. Doors: Enameled steel, baked enamel doors. d. Door Style: Break glass panel door style. e. Accessories: Glass breaker or fire handle. Installation: 1. Comply with requirements of Section 01 00 00 - Project Requirements. **END OF DIVISION DIVISION 11 - EQUIPMENT** SECTION 11 01 00 - SUANA ROOM Summary: 1. Provide a site installed sauna. Submittals: 1. Submit product data, shop drawings, warranty, and maintenance Products: 1. Manufactures: Subject to compliance with requirements, provide products from: Saunatec, Inc. a. Infrared Saunas: S-Series – Model #S-840 by Finnleo Installation Requirements: 1. Comply with requirements of Section 01 00 00 – Project Requirements. 2. Coordinate installation in accordance with product data. 3. Refer to drawings for installation location. Section 11 03 01 - COLD PLUNGE Summary: 1. Install an ice bath. Submittals: 2. Submit product data, warranty, and maintenance data. Products: 1. Manufactures: Subject to compliance with requirements, provide products from: Plunge, Reboot Labs, LLC. Plunge Pro Commercial Requirements: 1. Comply with requirements of Section 01 00 00 - Project Requirements. Coordinate installation in accordance with product data. Refer to drawings for installation location. Section 11 10 01 - RED LIGHT THERAPY Summary: 1. Section for Red Light Therapy lighting fixture. Submittals: 1. Submit product data, warranty, and maintenance data. 1. Manufacture: Subject to compliance with requirements, provide

products from: PlatinumLED Therapy Lights

END OF DIVISION

Biomax Wall Mount Bracket

Requirements: 1. Comply with requirements of Section 01 00 00 – Project

2. Refer to drawings for install locations.

Biomax 900

Requirements.

Installation

Regulations: Compliance with VOC and environmental regulations.

Provide field-applied mock-ups of each color and finish selected on

3. First-line commercial-quality products for all coating systems.

Installation: 1. Comply with requirements of Section 01 00 00 - Project Requirements.

actual surfaces to be painted.

tramonte design | studio





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SPECIFICATIONS

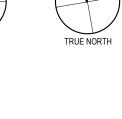
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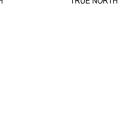




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CODE REVIEW & EGRESS PLAN

A3 EGRESS PLAN - LV 02 1/8" = 1'-0"

2.0 BUILDING CODE INFORMATION: BUILDING CODE ENFORCEMENT: CEDAR PARK - DEVELOPMENT SERVICES 450 CYPRESS CREEK ROAD, BUILDING #1

CEDAR PARK, TX 78613 PHONE: (512) 401-5100 www.cedarparktexas.gov BUILDING CODES: 2021 INTERNATIONAL BUILDING CODE (IBC) W/ LOCAL AMENDMENTS 2021 INTERNATIONAL PLUMBING CODE (IPC) W/ LOCAL AMENDMENTS 2021 INTERNATIONAL MECHANICAL CODE (IMC) W/ LOCAL AMENDMENTS 2021 INTERNATIONAL FUEL & GAS CODE (IF&GC) W/ LOCAL AMENDMENTS 3.0 FIRE CODE REVIEW:

"B" / BUISNESS (SECT. 306.2)

"S-1" / STORAGE (SECT. 304)

SEE STRUCTURAL SHEETS

NOT REQUIRED (SECT. 405)

2 STORIES / APPROXIMATELY 29'-6"

"B" / BUISINESS = 5,925 SQ. FT. "S-1" / STORAGE = 25,625 SQ. FT.

0 HOUR (IBC TABLE 601, 602 & 704.8)

THEREFORE OKAY

0-HOUR

0 -HOUR

0 -HOUR

0 -HOUR

0 -HOUR

II-B (IBC TABLE 503 & SECT. 602.2)

NO SEPARATION REQUIREMENT (TABLE 508.4)

NFPA 13 / SPRINKLERED THROUGHOUT (SECT. 903.2.4)

3 STORIES / 75 FEET (TABLE 503 (BASED ON "_" OCCUPANCY))

70,000 SF PER LEVEL (TABLE 503 (BASED ON "S-1" OCCUPANCY))

_ SF (IBC SECT. 506) (SEE CALCULATION, THIS SHEET)

= 31,550 SQ. FT.

0-HOUR (NOT APPLICABLE TO PROJECT)

0-HOUR (NOT APPLICABLE TO PROJECT)

0-HOUR (SEPARATION ON THIS PROJECT IS GREATER THAN 30')

28,000 SQ. FT. (GROUND LEVEL) < _ SQ. FT. (ALLOWED)

(BASED ON MOST RESTRICTIVE OCCUPANCY TYPE (IBC SECT. 508.3.2)

(BASED ON MOST RESTRICTIVE OCCUPANCY TYPE (IBC SECT. 508.3.2)

OCCUPANCY CLASSIFICATION:

OCCUPANCY SEPARATION:

STRUCTURAL DESIGN LOADS:

AUTOMATIC FIRE DETECTION:

ALLOWABLE AREA (PER FLOOR):

W/ INCREASE (SEE CALC.):

GROUND LEVEL (GROSS):

TOTAL GROSS AREA:

FIRE-RESISTANCE RATINGS:

STRUCTURAL FRAME:

SEPARATION < 5' =

10' ≤ SEPARATION =

FLOOR CONSTRUCTION:

ROOF CONSTRUCTION:

STAIRWELL:

5' ≤ SEPARATION < 10' =

EXTERIOR WALLS (BEARING OR NON):

INTERIOR WALLS (BEARING OR NON):

ALLOWABLE HEIGHT:

ACTUAL HEIGHT:

GROSS FLOOR AREA:

AREA CHECK:

AUTOMATIC SPRINKLER SYSTEM:

CONSTRUCTION TYPE:

2020 NATIONAL ELECTRIC CODE (NEC) W/ LOCAL AMENDMENTS FIRE CODES: 2021 INTERNATIONAL FIRE CODE (IFC) W/ LOCAL AMENDMENTS ACCESSIBILITY CODES: 2012 TEXAS ACCESSIBILITY STANDARDS (TAS)

WATER CLC	SET	S	OCCUPANTS	FIXTURE COUNT
BUISNESS	=	1 PER 25, FIRST 50 & 1 PER 50 REMAINDER EXCEEDING 50	58	4
STORAGE	=	1 PER 100	86	1
LAVATORIE	S		OCCUPANTS	FIXTURE COUNT
BUISNESS	=	1 PER 40, FIRST 80 & 1 PER 80 REMAINDER EXCEEDING 80	58	4
STORAGE	=	1 PER 100	86	1
DRINKING F	OUN	TAIN	OCCUPANTS	FIXTURE COUNT
BUISNESS	=	1 PER 100	58	1
STORAGE	=	1 PER 1.000	86	1

5 0 PLUMBING FIXTURE REQUIREMENTS:

WATER CLOSETS	OCCUPANTS	FIXTURE COUNT
BUISNESS = 1 PER 25, FIRST 50 & 1 PER 50 REMAINDER EXCEE	DING 50 58	4
STORAGE = 1 PER 100	86	1
LAVATORIES	OCCUPANTS	FIXTURE COUNT
BUISNESS = 1 PER 40, FIRST 80 & 1 PER 80 REMAINDER EXCEE	DING 80 58	4
STORAGE = 1 PER 100	86	1
DRINKING FOUNTAIN	OCCUPANTS	FIXTURE COUNT
BUISNESS = 1 PER 100	58	1
STORAGE = 1 PER 1,000	86	1
SERVICE SINK		FIXTURE COUNT
BUISNESS = 1 SERVICE SINK		1
STORAGE = 1 SERVICE SINK		1

WATER CLC	SETS	5	OCCUPANTS	FIXTURE COUNT
BUISNESS	=	1 PER 25, FIRST 50 & 1 PER 50 REMAINDER EXCEEDING 50	58	4
STORAGE	=	1 PER 100	86	1
LAVATORIE	S		OCCUPANTS	FIXTURE COUNT
BUISNESS	=	1 PER 40, FIRST 80 & 1 PER 80 REMAINDER EXCEEDING 80	58	4
STORAGE	=	1 PER 100	86	1
DRINKING F	OUN	TAIN	OCCUPANTS	FIXTURE COUNT
BUISNESS	=	1 PER 100	58	1
STORAGE	=	1 PER 1,000	86	1
SERVICE SI	NK			FIXTURE COUN
BUISNESS	=	1 SERVICE SINK		1
STORAGE	=	1 SERVICE SINK		1

NATER CLOS	SETS	3	OCCUPANTS	FIXTURE COUNT
BUISNESS	=	1 PER 25, FIRST 50 & 1 PER 50 REMAINDER EXCEEDING 50	58	4
STORAGE	=	1 PER 100	86	1
AVATORIES	3		OCCUPANTS	FIXTURE COUN
BUISNESS	=	1 PER 40, FIRST 80 & 1 PER 80 REMAINDER EXCEEDING 80	58	4
STORAGE	=	1 PER 100	86	1
ORINKING FO	ראטכ	TAIN	OCCUPANTS	FIXTURE COUNT
BUISNESS	=	1 PER 100	58	1
STORAGE	=	1 PER 1.000	86	1

(IFC TABLE 1006.2.1; "B" OCCUPANCY WITH SPRINKLERS) EXITING REQUIREMENTS: 100 FEET _ FEET 100 FEET COMMON PATH LIMIT: DEAD ENDS:

6.0 EGRESS / LIFE-SAFETY PLAN:

1.0 DEVELOPER AND SITE INFORMATION:

PRIMARY CONTACT:

1713 HUR INDUSTRIAL BLVD

LOT 2 BLK A HUR INDUSTRIAL PARK II SEC 1

https://stage.travis.prodigycad.com/property-detail/487030

=145 OCCUPANTS (IBC TABLE 1004.1.1)

= 5.7" CLEAR (36" WIDE STAIR PROVIDED)

7.8" CLEAR REQUIRED (1/2 OF TOTAL OCCUPANT LOAD)

0-HOUR (IFC TABLE 1017.1; "B" OCCUPANCY WITH SPRINKLERS)

MIN. 1 FOOT-CANDLE (11 LUX) AT WALKING SURFACE (SEC. 1006)

(IBC CHAPTER 10)

.3 INCHES PER OCCUPANT

.2 INCHES PER OCCUPANT

(ONE 3'-0" DOORS PROVIDED)

(IBC TABLE 1005.3)

CEDAR PARK, TX78641

www.traviscountytx.gov

TRAVIS COUNTY

3.607 ACRES

487030

05004000532

4.0 OCCUPANCY / EXITING REQUIREMENTS:

5,925 SF /150 = 40 OCCUPANTS

25,625 SF / 300 = 86 OCCUPANTS

"B" MEZZANINE: (1 PER 150) 2,775 SF / 150 = 19 OCCUPANTS

STAIR 1: .3" x 19 (MEZZANINE OCC.)

OTHER EGRESS COMPONENTS:

@ MAIN ENTRY:

EXIT DOORS:

EXIT ACCESS TRAVEL DISTANCE:

CORRIDOR FIRE-RESISTANCE RATING:

050147

PHONE:

E-MAIL:

MIRA SAFETY - RENOVATION & MEZZANINE ADDITION

PROJECT:

SITE ADDRESS:

LEGAL DESCRIPTION:

PARCEL NUMBER:

ACCESSOR ACCOUNT NUMBER:

PIN (GIS MAPPING NUMBER):

OCCUPANCY CALCULATION: "B" LEVEL 1: (1 PER 150)

"S": (1 PER 300)

EXITING REQUIREMENTS:

MIN. EGRESS WIDTH:

STAIRWAYS:

EGRESS ILLUMINATION:

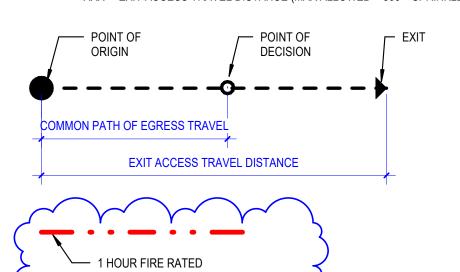
COUNTY:

LOT SIZE:

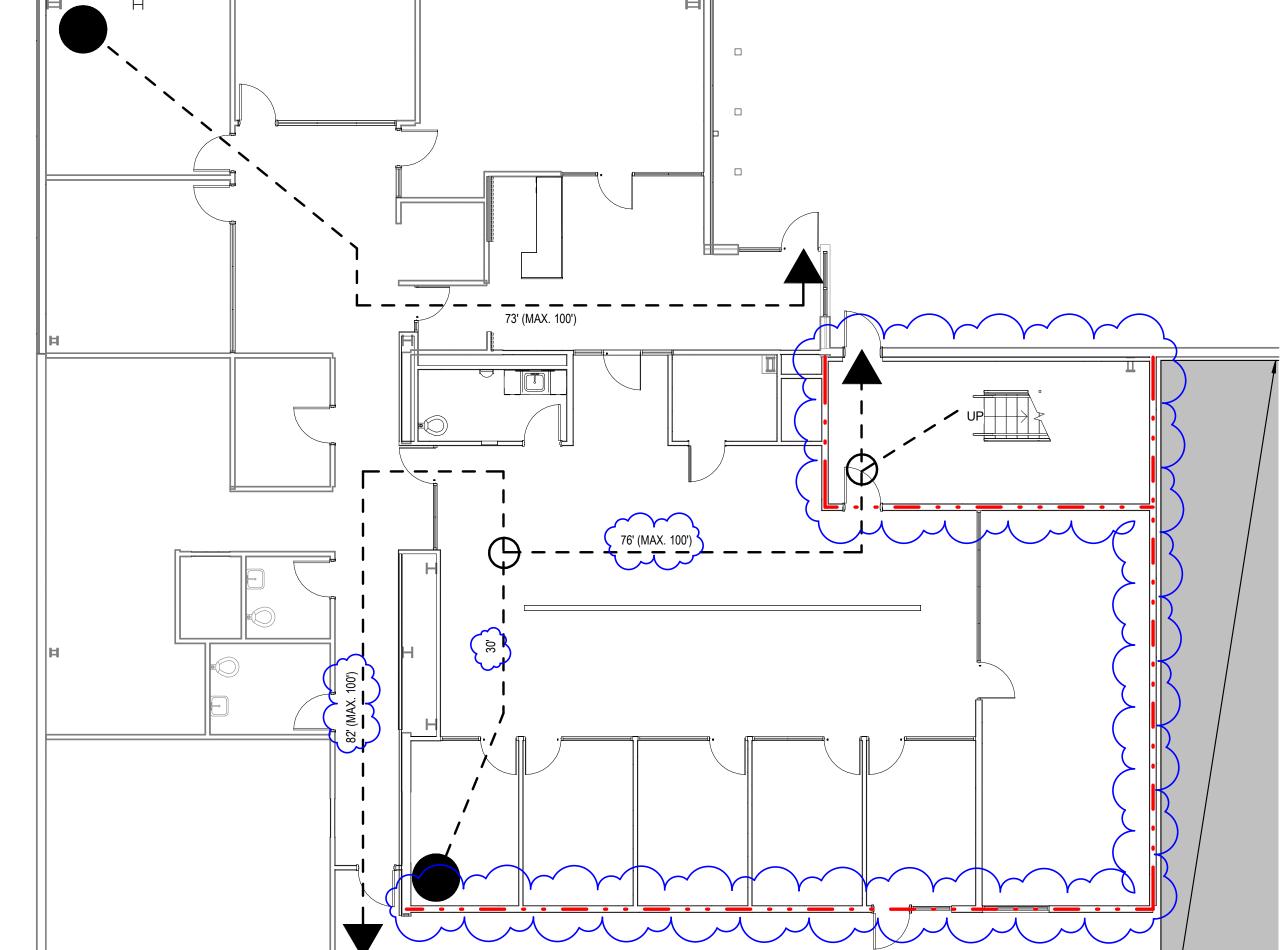
BUILDING OWNER / DEVELOPER:

EGRESS LEGEND

XX' / XXX' XX' = COMMON PATH OF EGRESS TRAVEL (MAX. ALLOWED = 100' - SPRINKLED) XXX' = EXIT ACCESS TRAVEL DISTANCE (MAX ALLOWED = 300' - SPRINKLED)



*NOTE: EXISTING 1-HOUR FIRE RATED WALL MODIFIED TO INCLUDED OFFICE EXPANSION AND EGRESS STAIR



EXISTING WAREHOUSE

EGRESS PLAN - LV 01

GENERAL NOTES: DEMOLITION

- A. ALL DEMOLITION WORK SHALL COMPLY WITH AND BE EXECUTED IN CONFORMANCE WITH ALL APPLICABLE CODES AND AS SET FORTH BY ALL GOVERNING AUTHORITIES, INCLUDING THE REGULATIONS OF THE ENVIRONMENTAL PROTECTION AGENCY, STATE DEPARTMENT OF HEALTH, AND REQUIREMENTS OF NFPA 241. GENERAL CONTRACTOR TO REQUEST MSDS SHEETS IDENTIFYING ALL ASBESTOS CONTAINING BUILDING MATERIALS FROM PROPERTY MANAGEMENT COMPANY.
- B. SEPARATE AREAS IN WHICH DEMOLITION IS BEING CONDUCTED FROM OTHER AREAS THAT ARE STILL OCCUPIED; PROVIDE, ERECT, AND MAINTAIN TEMPORARY DUSTPROOF BARRIERS. MINIMIZE EFFECTS ON AND INTERFERENCE WITH ADJACENT STRUCTURES AND OCCUPANTS. 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.
- C. IF HAZARDOUS MATERIALS ARE DISCOVERED DURING REMOVAL OPERATIONS, STOP WORK AND NOTIFY ARCHITECT AND OWNER; HAZARDOUS MATERIALS INCLUDE REGULATED ASBESTOS CONTAINING MATERIALS,
- LEAD, PCB'S, AND MERCURY. D. FIELD VERIFY EXISTING FIELD CONDITIONS AND NOTIFY THE ARCHITECT IMMEDIATELY IF ANY WORK INDICATED IN THE CONSTUCTION DOCUMENTS THAT CANNOT BE PERFORMED DUE TO EXISTING FIELD CONDITIONS. DRAWINGS ARE BASED ON CASUAL FIELD OBSERVATION AND EXISTING RECORD DOCUMENTS ONLY. REPORT DISCREPANCIES TO ARCHITECT BEFORE DISTURBING EXISTING INSTALLATION. BEGINNING OF DEMOLITION WORK CONSTITUTES ACCEPTANCE OF EXISTING CONDITIONS THAT WOULD BE APPARENT UPON EXAMINATION PRIOR TO STARTING DEMOLITION.
- E. NO WORK SHALL BE PERFORMED WITHIN THE BUILDING CORE OR OTHER NOT IN CONTRACT (NIC) AREAS, UNLESS NOTED OTHERWISE.
- F. GENERAL CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR, EQUIPMENT, AND SERVICES REQUIRED TO COMPLETE THE REMOVAL OF ALL ITEMS AS INDICATED ON THE CONSTUCTION DOCUMENTS.
- G. GENERAL CONTRACTOR SHALL MAINTAIN THE JOB SITE IN SUCH A MANNER TO REDUCE EXCESSIVE DUST AND DEBRIS DURING DEMOLITION/CONSTUCTION.

H. GENERAL CONTRACTOR SHALL COMPLY WITH ALL TEMPORARY LIGHTING REQUIREMENTS SET FORTH BY ALL

- **GOVERNING AUTHORITIES** REMOVE EXISTING CONSTRUCTION AS INDICATED. TYPICAL WALL REMOVAL INCLUDES MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS CONTAINED THEREIN. REMOVE DOORS, WINDOWS, FRAMES, AND
- OTHER ATTACHED FIXTURES AS REQUIRED. CONTRACTOR TO REMOVE MEP SYSTEMS TO THE GREATEST EXTENT POSSIBLE WHILE MAINTAINING THE ABILITY TO COMPLETE THE NEW SCOPE OF WORK
- J. GENERAL CONTRACTOR TO PATCH AND RESTORE PREVIOUS FIRE RATING IN ALL WALLS AND FLOORS AS REQUIRED BY ALL GOVERNING AUTHORITIES. K. REMOVE ALL EXISTING LIGHTING UNLESS NOTED OTHERWISE IN SEPARATE CEILING DEMOLITION PLAN OR AS
- SHOWN ON THE REFLECTED CEILING PLAN. GENERAL CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO THE EXISTING BUILDING AND GROUNDS ARISING FROM DEMOLITION PROCESS, GC SHALL NOTIFY THE ARCHITECT AND PROPERTY MANAGER / OWNER OF ANY ITEMS SHOWN TO REMAIN THAT, IN THE OPINION OF THE GC, WILL BE DAMAGED OR DESTROYED BY THE WORK SHOWN ON THE PLANS, THE GC SHALL TAKE APPROPRIATE MEASURES TO PROTECT ALL ITEMS TO REMAIN INCLUDING, BUT NOT LIMITED TO, EXISTING PARTITIONS, CEILINGS, FLOORING, WINDOWS, SUN SHADE
- DEVICES, ELEVATORS, HVAC EQUIPMENT, ELECTRICAL, DOORS AND FRAMES M. GENERAL CONTRACTOR TO REMOVE ALL EXISTING UNUSED DEBRIS INCLUDING, ABANDONED DUCT, WIRING,
- CONDUIT, AND CABLING WITHIN THE CEILING PLENUM. N. GENERAL CONTRACTOR TO COORDINATE WITH PROPERTY MANAGER ALL ITEMS TO BE RETURNED TO
- O. REMOVE ALL WALL COVERING, ABANDONED NAILS, MOUNTING DEVICES, AND OTHER HINDRANCES FROM WALLS TO RECEIVE NEW FINISHES, UNLESS NOTED OTHERWISE, REFER TO FINISH PLANS FOR WALL FINISHES P. REMOVAL OF DOORS INCLUDES REMOVAL OF DOOR FRAMES, AND HARDWARE, UNLESS NOTED OTHERWISE.
- Q. GENERAL CONTRACTOR TO COORDINATE DISABLING ANY FIRE ALARM DEVICES WITH THE PROPERTY
- R. RELOCATION OF MEP SYSTEMS TO REMAIN IN ORDER TO MAINTAIN CONFLICT WITH NEW CONSTRUCTION IS THE RESPONSIBILITY OF THE GC AND MEP SUBCONTRACTORS

3' - 4"

sign

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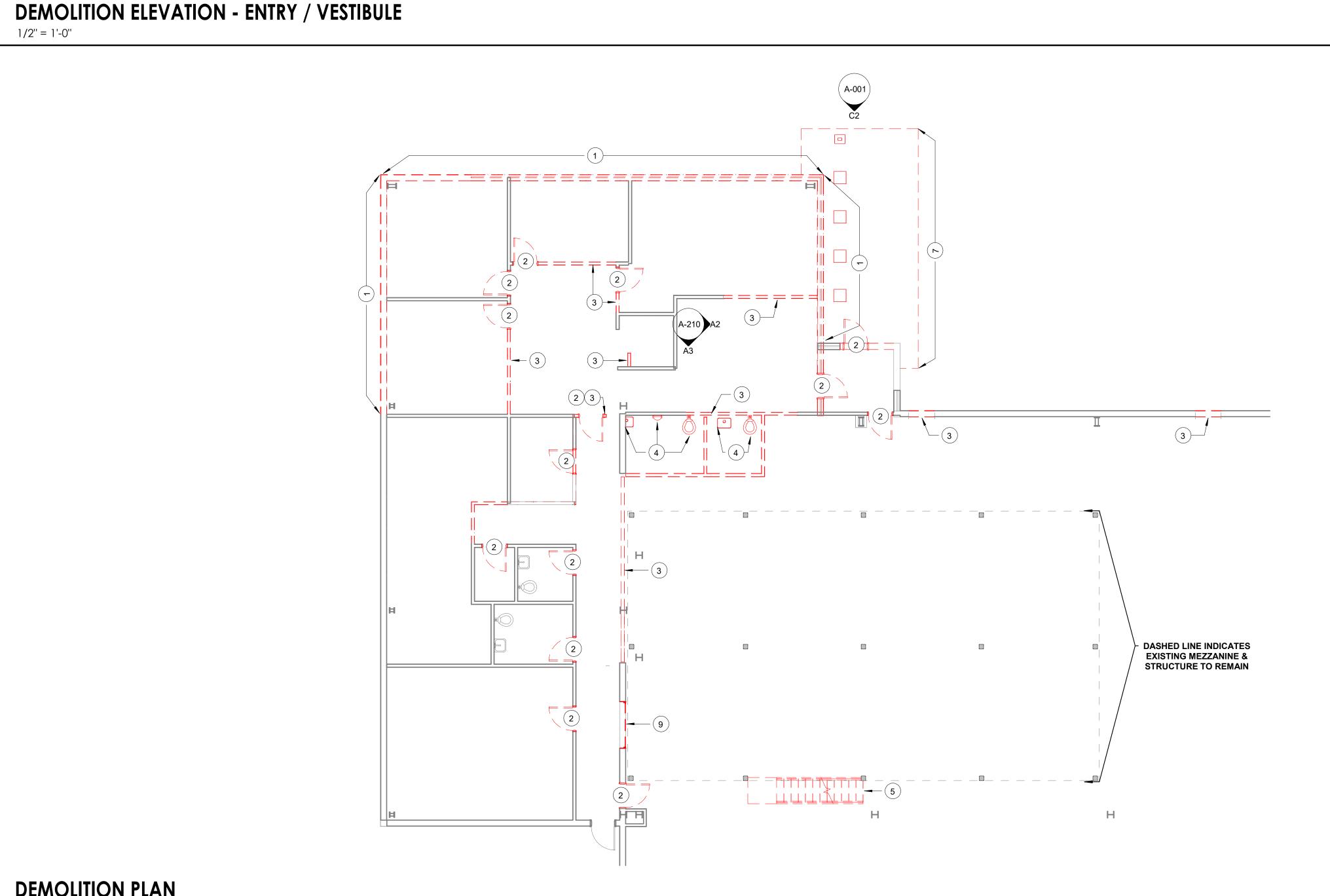
Cedar Park, TX 78613





KEYED NOTES - DEMOLITION PLAN

- 1 DEMOLISH EXISTING EXTERIOR WALL AND WINDOWS, INCLUDE METAL PANEL, BRICK, AND SUBSTRATE. METAL BUILDING STRUCTURE TO REMAIN. REFER TO DEMO ELEVATION FOR DETAILED INFORMATION ON ITEMS TO BE REMOVED. 2 DEMOLISH EXISTING DOOR AND FRAME IN IT'S ENTIRETY
- 3 DEMOLISH EXISTING WALL TO EXTENTS SHOWN. COORDINATE WITH BUILDBACK REQUIREMENTS, RE: A-110 4 REMOVE EXISTING PLUMBING FIXTURES AND PIPING TO THE EXTENT REQUIRED BY NEW LAYOUT. REFER TO FLOOR AND
- PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION. 5 DEMOLISH EXISTING STAIR IN IT'S ENTIRETY
- 6 DEMOLISH EXISTING WINDOW 7 DEMOLISH EXISTING CANOPY & PARTIAL OF EXISTING STRUCTURE, REFER TO NEW ELEVATIONS AND DETAILS FOR FULL
- INTENT OF CANOPY STRUCTURE 8 DEMOLISH EXISTING ROOF AND STRUCTURE
- 9 DEMOLISH EXISTING WINDOW AND FRAME IN ITS ENTIRETY. PREP WALL FOR INFILL. 10 DEMOLISH EXISTING LOUVER IN IT ENTIRETY. PREP WALL TO RECEIVE SCHEDULED STOREFRONT



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DEMOLITION PLAN -

A2 DEMOLITION PLAN
1/8" = 1'-0"

PARKING ANALYSIS:

GROSS FLOOR AREA:

GROUND LEVEL (GROSS):

"B" / BUISINESS = 5,925 SQ. FT. "S-1" / STORAGE = 25,625 SQ. FT.

MEZZANINE:

"B" / BUISINESS = 2,775 SQ. FT.

TOTAL GROSS AREA:

= 34,060 SQ. FT.

RE: CEDAR PARK CITY CODE, SECTION 14.05.005(j)(2)

WAREHOUSE (1 PER 2000 SQ. FT) 25,625 SQ FT / 2000 = 12.8 (OR 13 PARKING SPACES)

OFFICE (1 PER 300 SQ. FT.) 8,200 SQ FT. / 300 = 27.3 (OR 28 PARKING SPACES)

= 41 TOTAL PARKING

EXISTING PARKING TOTAL = 26 PROPOSED PARKING TOTAL

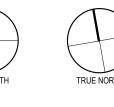
PROPOSED PARKING EXISTING PAKRING EXISTING WATER METER TO BE RELOCATED; RE: CIVIL NEW CONCRETE





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SITE PLAN

A2 SITE PLAN 3/64" = 1'-0"

GENERAL NOTES: FLOOR

- A. ALL NEW PARTITIONS TO BE TYPE 'B', WITH FULL BATT INSULATION, UNLESS NOTED OTHERWISE. REFER TO PARTITION SCHEDULE FOR ADDITIONAL INFORMATION.
- B. ALL DIMENSIONS ARE FROM FINISH FACE OF PARTITIONS, UNLESS NOTED OTHERWISE.
 C. ALL AREAS SHOWN WITH A HALFTONE POCHE ARE NOT IN CONTRACT, AND NO WORK SHALL BE EXECUTED IN THESE
- AREAS, UNLESS NOTED OTHERWISE D. ALL PARTITIONS SHOWN WITH A DARK GREY POCHE INFILL ARE EXISTING TO REMAIN. PATCH PARTITIONS WHERE INTERSECTING PARTITIONS OR OTHER ITEMS HAVE BEEN REMOVED, AND WHERE PARTITION IS SCHEDULED TO
- RECIEVE NEW FINISH. E. NO WORK SHALL BE EXECUTED ON THE CORE AREA (SHOWN SHADED), UNLESS NOTED OTHERWISE.

 F. FLOOR AREAS ARE TO BE PREPARED FOR FINISH MATERIALS IN ACCORDANCE WITH MANUFACTURER'S SPECIFIC REQUIREMENTS. RESPONSIBILITY INCLUDES FLASH PATCHING TO LEVEL AND SMOOTH FLOOR TO 1" IN 20'-0" NON-
- G. NEW CONSTRUCTION THAT MEETS EXISTING CONSTRUCTION IN THE SAME PLANE SHALL BE FLUSH WITHOUT VISIBLE JOINT, UNLESS OTHERWISE NOTED.

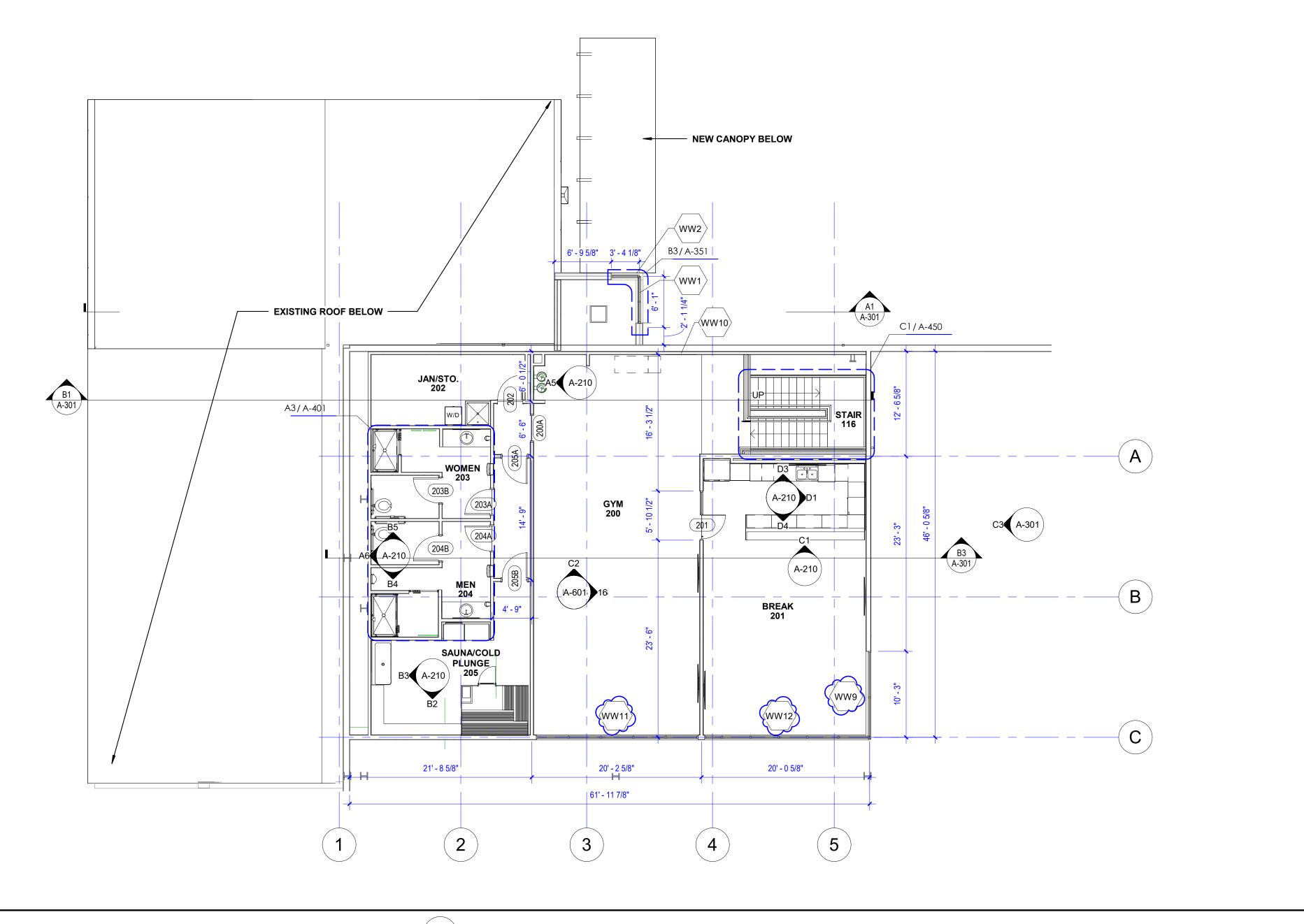
CUMULATIVE AND 1/4" PER 10'-0" AT CRITICAL AREAS UNDER MILLWORK, FILES, SPECIAL FINISH MATERIALS, AND

- H. ALL NEW PARTITIONS ARE TO BE PERPENDICULAR OR PARALLEL WITH CORE OR EXTERIOR WINDOW WALL ELEMENTS, UNLESS NOTED OTHERWISE. CENTER PARTITIONS ON COLUMNS OR MULLIONS, UNLESS NOTED OTHERWISE.

 ALL DOOR JAMBS ARE TO BE LOCATED 4" FROM AN INSIDE CORNER, UNLESS NOTED OTHERWISE.
- K. ALL WOODWORK, BLOCKING, AND MOUNTED BOARDS SHALL BE FIRE-RETARDANT-TREATED FOR USE IN NON-COMBUSTIBLE CONSTRUCTION.
- L. PROVIDE ACOUSTIC SOUND SEAL AT ALL PARTITION/MULLION AND PARTITION/COLUMN CONDITIONS.
 M. GENERAL CONTRACTOR TO VERIFY THAT ALL ELEVATOR CALL BUTTONS, CALL LATERNS, BRAILLE CHARACTERS, AND CAB CONTROLSARE TAS COMPLIANT AS SHOWN ON SHEET G-002. NOTIFY ARCHITECT IF DISCREPANCIES ARE FOUND.
- N. PROTECT EXISTING WINDOW COVERINGS TO REMAIN DURING CONSTRUCTION. COORDINATE WITH PROPERTY MANAGER LOCATIONS THAT NEED TO BE REPLACED.
- O. PROVIDE FIRE STOPPING FOR ALL PENETRATIONS OF FIRE RATED WALLS AND HORIZONTAL ASSEMBLIES WHERE REQUIRED, REFER TO FIRE STOPPING SPECIFICATIONS ON G-103.L ASSEMBLIES WHERE REQUIRED, REFER TO FIRE STOPPING SPECIFICATIONS ON G-103.

KEYED NOTES - FLOOR PLAN

1 EXISTING FIRE RISER, GC TO MODIFY AS NECESSARY TO AVOID CONFLICT WITH STAIR 2 EXISTING ELECTRICAL PANELS TO REMAIN, RE: ELEC.

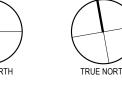


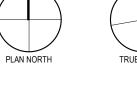


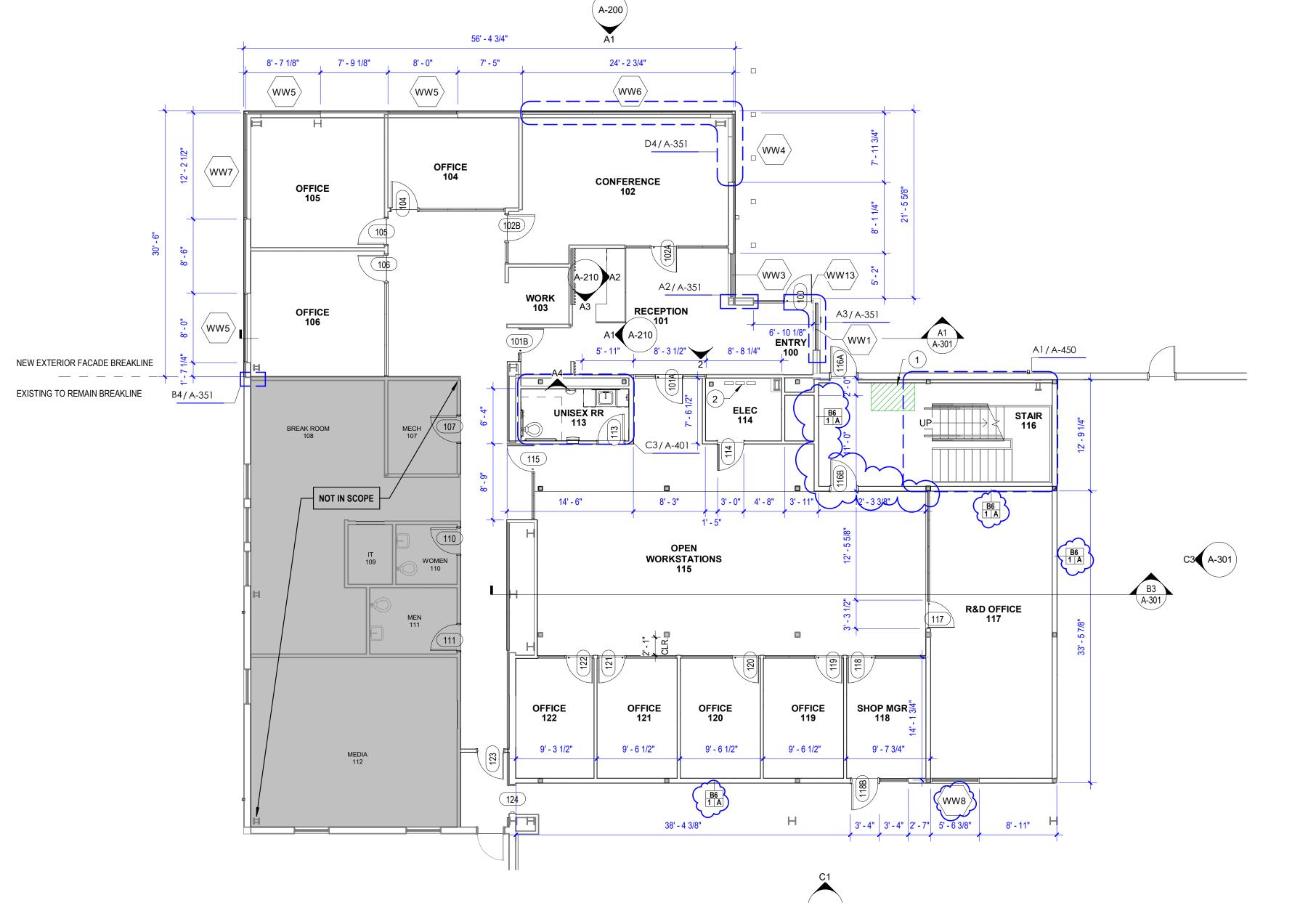


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ISSUE FOR PERMIT 12/01/23

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FLOOR PLANS

A2 FLOOR PLAN - LV 01 1/8" = 1'-0"

C2 FLOOR PLAN - LV 02
1/8" = 1'-0"

GENERAL NOTES: REFLECTED CEILING PLAN

- A. TYPICAL CEILING TO BE TYPE C @ 9'-0" A.F.F. U.N.O. CONTRACTOR TO FIELD VERIFY ADEQUATE CLEARANCE IS MAINTAINED ABOVE PLENUM. NOTIFY ARCHITECT IMMEDIATELY FOR CLARIFICATION OF DISCREPANCIES OR EXISTING CONFLICTS PRIOR TO PROCEEDING WITH WORK IN QUESTION. NEW STRUCTURAL ELEMENTS OR EQUIPMENT (HVAC UNITS, DUCTWORK, PLUMBING, ETC.) SHALL BE LOCATED AS TO NOT INTERFERE WITH ANY OTHER PORTION OF NEW CONSTRUCTION AS SHOWN.
- REFLECTED CEILING PLANS TAKE PRECEDENCE OVER LOCATIONS SHOWN ON MEP DRAWINGS.

 C. EXISTING PERIMETER SLOT DIFFUSERS TO BE TOUCHED UP TO APPEAR "LIKE-NEW". NO AIR DIFFUSER SHALL STRADDLE OVER PARITTIONS. PROVIDE NEW BLANK-OFF PLATES AT INTERSECTIONS WITH PARTITIONS AND WHERE NO AIR DEVICE OCCURS, FINISH TO MATCH SLOT DIFFUSER SPECIFICATION.

B. LIGHT FIXTURES, HVAC DEVICES AND OTHER CEILING-MOUNTED ELEMENT LOCATIONS ON ARCHITECTURAL

- D. REFER TO ENGINEER'S DRAWINGS FOR FIRE ALARMS, ADA VISUAL STROBES, SMOKE DETECTORS, AND EXIT SIGN LOCATIONS. COMPLETE LIFE SAFETY SYSTEMS INSTALLATION AND TAS REQUIREMENTS TO BE COORDINATED BY THE GENERAL CONTRACTOR. COORDINATE CEILING DEVICE LOCATIONS WITH ARCHITECT FOR ALL GYP. BD., PREMIUM, AND UPGRADED CEILING SPACES.
- E. REFER TO MECHANICAL PLAN FOR SUPPLY REGISTERS AND RETURN AIR GRILLE LOCATIONS.
 F. ALL PRIVATE OFFICES AND CONFERENCE ROOMS SHALL BE INDIVIDUALLY SWITCHED, UNLESS NOTED OTHERWISE.
 G. REFLECTED CEILING PLANS ARE FOR LIGHTING LOCATION AND ARCHITECTURAL NOTES ONLY. REFER TO ENGINEER'S
- ELECTRICAL LIGHTING PLAN FOR SWITCHING, CIRCUITING, AND SPECIFICATIONS.

 H. ALL LAMPS TO BE OF CONSISTENT COLOR AND SHALL MATCH BUILDING STANDARD, UNLESS NOTED OTHERWISE.

 I. CENTER ALL CEILING-MOUNTED DEVICES IN UPGRADED CEILING WITH LIGHT FIXTURES.

 J. CENTER ALL DOWNLIGHTS, WALL WASHERS, AND OTHER CEILING DEVICES IN CEILING TILE, UNLESS OTHERWISE
- NOTED OR DIMENSIONED ON PLAN.

 K. ALL UNDER- AND ABOVE-CABINET LIGHTING TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR, WITH LAMPS MATCHING ALL OTHERS. CONDUIT TO BE COMPLETELY CONCEALED FROM VIEW.
- NEW LIGHT SWITCHES SHALL BE GANGED IF MORE THAN ONE IS NOTED.
 GENERAL CONTRACTOR SHALL PROVIDE SUBMITTALS AND SHOP DRAWINGS TO ARCHITECT FOR WRITTEN APPROVAL ON ALL EQUIPMENT, FIXTURES, LIGHTING DEVICES, AND SPECIALTY ITEMS PROVIDED BY THE GENERAL CONTRACTOR
- ON ALL EQUIPMENT, FIXTURES, LIGHTING DEVICES, AND SPECIALTY ITEMS PROVIDED BY THE GENERAL CONTRACTO PRIOR TO ORDERING.

 N. ALL ROOM WITH MULTIPLE FIXTURE TYPES ARE TO BE SWITCHED WITH SEPARATE LIGHT SWITCHES PER FIXTURE
- TYPE.

 O. WHERE EXISTING CEILING REMAINS, SUSPENSION SYSTEM TO REMAIN CONTINUOUS THROUGHOUT, UNLESS OTHERWISE NOTED. NO MAIN TEES SHALL BE CUT UNLESS NOTED ON DRAWINGS. NOTIFY ARCHITECT IF LIGHTING
- CONFLICT OCCURS. REPAIR DAMAGED GRID WHERE SAGGING OR BROKEN TO LIKE-NEW CONDITION.

 P. COORDINATE WITH PROPERTY MANAGER TO REPAIR LEAKS AT AND ABOVE CEILING.

 Q. ACCESS PANELS IN GYP. BD. CEILINGS ARE TO BE FLOATABLE ACCESS PANELS. WIND-LOCK STEALTH ACCESS PANEL

LIGHT FIXTURE LEGEND:

A 48" APERTURE SLOT LED LUMINAIRE FIXTURE

[®]B1 4" RECESSED DOWNLIGHT, LOW OUTPUT

[®]B2 4" RECESSED DOWNLIGHT, MEDIUM OUTPUT

C1 8' LINEAR SUSPENSION MOUNT

C2 12' LINEAR SUSPENSION MOUNT

□ DECORATIVE WALL SCONCE

4" CYLINDER PENDANT SUSPENSION MOUNT FIXTURE

DECORATIVE PENDANT FIXTURE

Н

SUSPENSION MOUNT WITH CURVED CORNERS FIXTURE

GYM HIGHBAY SUSPENSION

K

LED STRIP LIGHT FIXTURE

GYM HIGHBAY SUSPENSION MOUNT FIXTURE



CEILING MOUNTED MODULAR PENDANT FIXTURE



EXISTING RECESSED 2X4 FIXTURE (OUT OF SCOPE)

X

CEILING MOUNTED EMERGENCY EXIT SIGNAGE

CEILING TYPE LEGEND:

ACOUSTICAL CEILING TILE

TILE - ARMSTRONG, DUNE, 24" X 24", WHITE

ASTM E84 FLAME SPREAD: CLASS A

GRID - SUPRAFINE XL, WHITE
TYPE B

SUSPENDED GYP. BD. CEILING
USG DRYWALL SUSPENSION SYSTEM (OR EQUAL), STANDARD DETAILS.
PREPARE SURFACE TO RECEIVE DRYFALL FLAT PAINT (PT-1)

PE C
TRAPEZOID ACOUSTICAL CEILING TILE

TILE - ARMSTRONG, DESIGNFLEX SHAPES - PATTERN SH 31
- Lyra 9/16" Square Tegular 60Deg. 24in Base Triangle, Lyra 9/16" Square Tegular 60Deg. 48in Base Trapezoid

- ASTM E84 FLAME SPREAD: CLASS A
GRID - SUPRAFINE ID/HD, COLOR: WHITE

- COLOR: ORANGE CRUSH

- COLOR: ORANGE CRUSH

SUSPENDED ACOUSTICAL BAFFLE SYSTEM
SPEC - TURF BEAM CEILING BAFFLE

- LARGE RANGE LENGTH
- REFERENCE CEILING PLAN FOR CUSTOM SIZING TO FIT BETWEEN EXPOSED STRUCTURE BEAMS
- SUSPENDED FLAT, AS CLOSE AS POSSIBLE TO EXPOSED STRUCTURE

PE D2 SUSPENDED ACOUSTICAL BAFFLE SYSTEM

SPEC - TURF BEAM CEILING BAFFLE
- LARGE RANGE LENGTH
- REFERENCE CEILING PLAN FOR SPACING

YPE E EXPOSED STRUCTURE

- STRUCTURE TO BE PAINTED TYPICAL PAINT, "PT-1"

STAIR

2.4

WOMEN

WOMEN

D

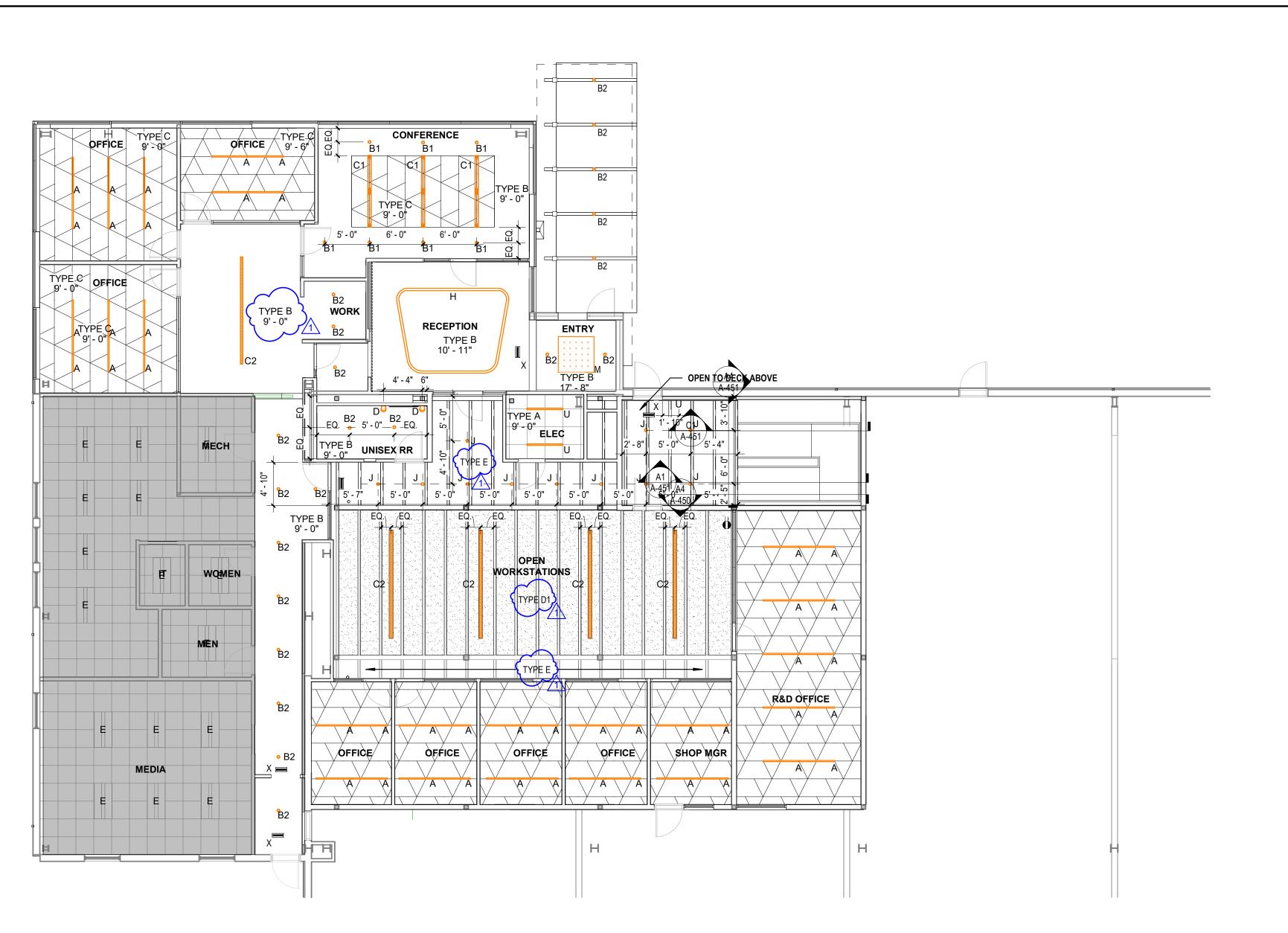
WOMEN

D

TYPE B

REFLECTED CEILING PLAN - LV 02

1/8" = 1'-0"



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ADDENDUM 01 01/10/2024
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Project Number 23-01-014

Drawn By JO

Checked By OS

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A-120

REFLECTED CEILING

A2 REFLECTED CEILING PLAN
1/8" = 1'-0"

EQUIPMENT SCHEDULE

DESIGNATION	TYPE	MANUFACTURER	MODEL #	GC PROVIDED	FINISH	SIZE (WxHxD)	NOTES
COF	COFFEE			-			GC TO COORD PLUMBING REQUIREMENTS
COP	COPIER			-			GC TO COORD NEMA CONFIGURATION WITH TENANT
DW	DISHWASHER	GE	GLDT696DSS	YES	STAINLESS STEEL	24" x 32 1/2" x 24"	
FCT	FAUCET	ELKAY	LKLFH2031	YES	BRUSHED NICKEL		SINGLE HOLE
ICE	ICE MAKER	HOSHIZAKI	C-101BAH-AD	YES	STAINLESS STEEL	14.88" x 31.5" x 20"	
MW	MICROWAVE	GE PROFILE SERIES	PEB7226SFSS	YES	STAINLESS STEEL		
PLOT	PLOTTER			-			GC TO COORD NEMA CONFIGURATION WITH TENANT
REF	REFRIGERATOR	GE	GYE22KSHSS	YES	STAINLESS STEEL		
SHADE	MOTORIZED ROLLER SHADE	MECHOSHADE		YES			
SHRED	PAPER SHRED BINS			-			
SK	SINK	ELKAY	ECTRU31179	YES	STAINLESS STEEL	31.5" x 18.5" x 9"	WITH FAUCET
TR	TRASH	ULINE	S-13527.	YES	GRAY		
TV	FLAT SCREEN DISPLAY			·			PROVIDE RECESSED "ENTERTAINMENT BOX" FOR POWER, DATA CABLE, ETC.
W/D	WASHER & DRYER		(YES			WASHER & DRYER (STACKED)

GENERAL NOTES: POWER

- A. THIS PLAN IS FOR LOCATION OF OUTLETS, FURNISHINGS, EQUIPMENT, AND RELATED ARCHITECTURAL NOTES. REFER TO ENGINEER'S ELECTRICAL PLAN FOR CIRCUITING. STOP WORK AND NOTIFY ARCHITECT IF ANY DISCREPANCIES EXIST BETWEEN ARCHITECTURAL, ENGINEERING, AND EXISTING CONDITIONS. ANY WORK DONE PRIOR TO ARCHITECT'S
- WRITTEN AUTHORIZATION TO PROCEED SHALL BE AT THE GENERAL CONTRACTOR'S RISK. B. GENERAL CONTRACTOR TO PROVIDE EMPTY OUTLET BOX AND PULL STRING TO CEILING PLENUM ABOVE AT ALL COMMUNICATIONS, THERMOSTAT, SECURITY, AND MISC. CONTROL OUTLETS AS SHOWN ON THIS PLAN, ENGINEERED DRAWINGS, MECHANICAL DRAWINGS, AND OTHER PLANS & DRAWINGS AS PROVIDED BY OTHER VENDORS AND CONSULTANTS. WHERE THESE LOCATIONS OCCUR IN INSULATED PARTITIONS, CONTRACTOR TO PROVIDE CONDUIT AND PULL STRING TO CEILING PLENUM. TENANT'S CABLING VENDOR TO PROVIDE AND INSTALL ALL NECESSARY CABLING. C. ALL ELECTRICAL DEVICES AND COVER PLATES SHALL BE FLUSH, PLUMB, AT SAME HEIGHT AND OF CONSISTANT COLOR
- D. GC TO COORDINATE COLOR OF ALL COVER PLATES FOR SWITCHES AND ELECTRICAL OUTLETS ON ALL NONE WHITE
- WALLS WITH ARCHITECT. STYLE SHOULD BE RECTANGULAR AND SCREWLESS, UNLESS OTHERWISE NOTED.

 E. CONTACT ARCHITECT OR TENANT WHERE OUTLETS CAN NOT BE INSTALLED AS SHOWN ON DRAWINGS DUE TO CONFLICTS WITH BUILDING STRUCTURAL, MECHANICAL, OR ELECTRICAL ELEMENTS. DO NOT PROCEED WITH WORK IN
- THESE AREAS UNTIL CLARIFICATION IS OBTAINED. F. INSTALL WALL OUTLETS OCCURRING ON OPPOSITE SIDES OF A PARTITION WITH A MINIMUM SPACING OF 2'-0" O.C.,
- UNLESS DIMENSIONED OTHERWISE.
- G. INSTALL ADJACENT TELEPHONE AND ELECTRICAL OUTLETS 6" ON CENTER, U.N.O.
- H. INSTALL WALL OUTLETS SO THAT CENTER LINE OF OUTLET IS 16" A.F.F., UNLESS NOTED OTHERWISE. I. TURN OUTLET BOXES MARKED AT 42" OR HIGHER (INCLUDING THOSE THAT OCCUR ABOVE COUNTER TOPS AND BACKSPLASH) TO HORIZONTAL POSITION FOR INSTALLATION. INSTALL WITH OUTLET BOX AT 42" TO CENTERLINE OF BOX.
- DUPLEX RECEPTACLES MOUNTED ABOVE COUNTER TOPS IN WET AREAS SHALL BE GFCI TYPE AS REQUIRED BY CODE. K. GENERAL CONTRACTOR TO VERIFY ALL CORE DRILLS IN FIELD TO AVOID ANY EXISTING STRUCTURAL, ELECTRICAL, OR MECHANICAL ELEMENTS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO PROCEEDING. CONTRACTOR TO X-RAY AND/OR VERIFY STRUCTURAL COMPONENTS AS REQUIRED BY FIELD CONDITIONS AND/OR PROPERTY MANAGER. L. ELECTRICAL SUBCONTRACTOR SHALL PROVIDE A RATED ASSEMBLY TO MATCH ADJACENT CONDITIONS AT ALL NEW, EXISTING, OR ABANDONED WALL AND FLOOR PENETRATIONS. WHERE FLOOR OUTLETS ARE REMOVED, PROVIDE ABANDONMENT CAP AND SEAL TO MAINTAIN FIRE RATING AND IN SUCH A MANNER WITHOUT NOTICEABLE DEFLECTION OR
- RISE IN CARPET OR FINISHED FLOOR SURFACE. M. EVERY OFFICE AND WORKSTATION HAS ONE PERSONAL COMPUTER. PC OUTLETS TO BE DESIGNATED WITH GRAY RECEPTACLES.

FURNITURE COORDINATION

FURNITURE SHOWN FOR COORDINATION ONLY, AND IS NIC. HOLD TO DIMENSIONS FOR POWER/ELECTRICAL AND DATA IN ALL PRIVATE OFFICES; DIMENSIONS TO BE PROVIDED BY

ALL FLOOR CORE DEVICE LOCATIONS SHALL BE COORDINATED WITH FURNITURE VENDOR. CONTRACTOR IS RESPONSIBLE FOR COORDINATING LOCATIONS OF BASE END FEEDS WITH FURNITURE VENDOR.

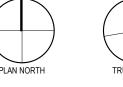




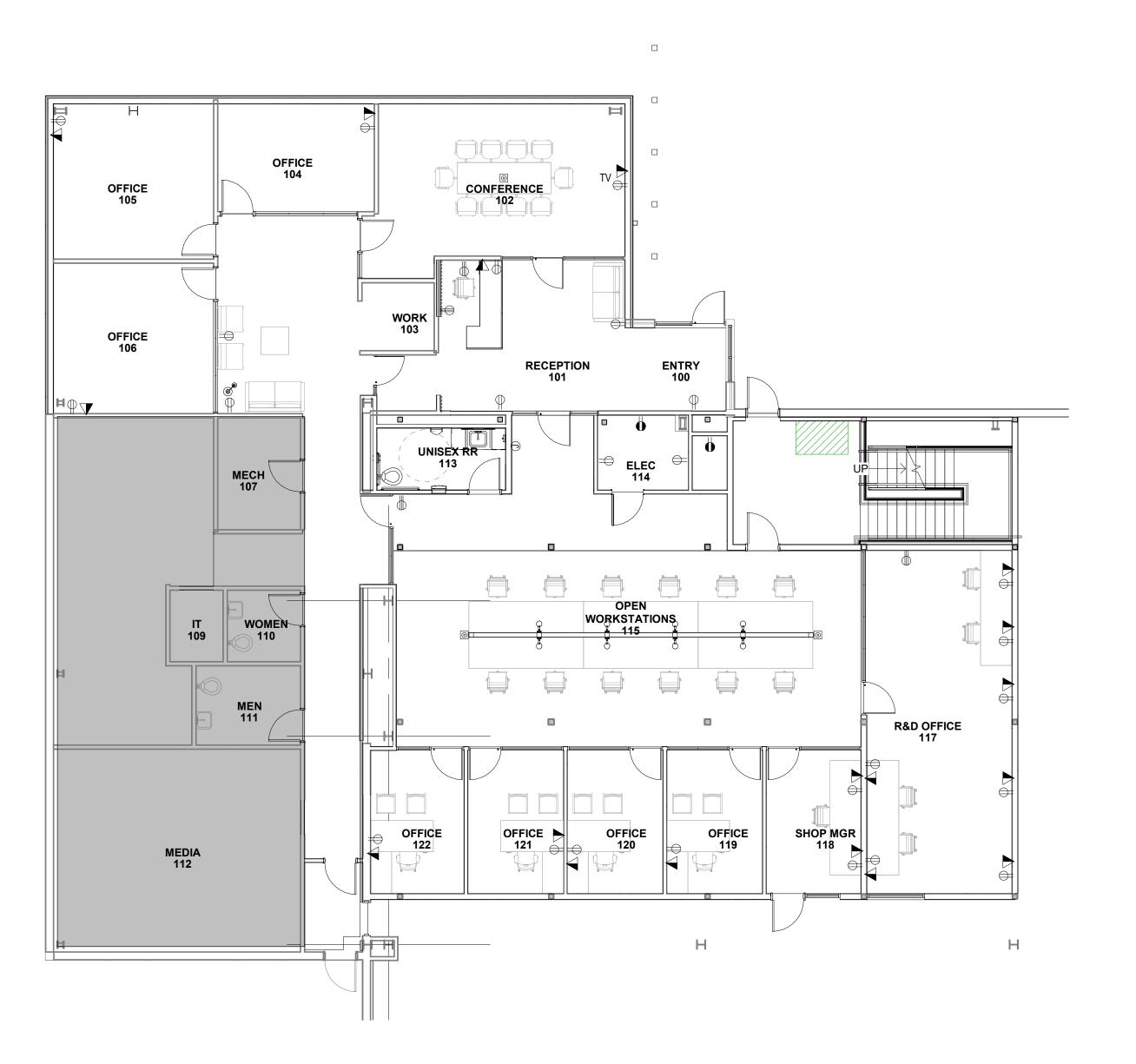


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POWER / FURNITURE PLANS

FURNITURE / POWER PLAN - LV 01

FURNITURE / POWER PLAN - LV 02
1/8" = 1'-0"

FINISH SCHEDULE

MARK	MATERIAL	MANUFACTURER	STYLE	COLOR	SIZE	LOCATION	ADDITIONAL COMPONENTS	FLAME SPREAD NOTES
C-1	ACOUSTICAL FELT PANELING	HUSH ACOUSTICS		APRICOT		OPENWORKSTATION CEILING		ASTM E 84, CLASS A
CPT-1	CARPET	INTERFACE	NIGHT FLIGHT	106471 TITANIUM	50CM X 50CM	OPEN WORKSTATIONS / OFFICES / CONFERENCE		ASTM E 648, CLASS 1
PL-1	PLASTIC LAMINATE	FELIX	STANDARD	J0724 GRIGIO BROMO		RECEPTION DESK / BREAKROOM MILLWORK		TO BE USED ON CASEWORK, CLASS B BONDED
PL-2	PLASTIC LAMINATE	WILSONART	RIDGEWOOD TEXTURE FINISH	VALLEY FORGE ELM 8231K-79		RECEPTION WOOD SLATS		TO BE USED ON CASEWORK, CLASS B BONDED
PT-1	PAINT	SHERWIN WILLIAMS		SNOWBOUND SW 7004		TYPICAL PAINT UNLESS NOTED OTHERWISE		EXEMPT, IBC 2012, 803.2 (THICKNESS
PT-2	PAINT	BENJAMIN MOORE		AFTER MIDNIGHT CSP-630		REF. ELEVATIONS		EXEMPT, IBC 2012, 803.2 (THICKNESS
PT-3	PAINT	BENJAMIN MOORE		CITY SHADOW CSP-60		REF. ELEVATIONS		EXEMPT, IBC 2012, 803.2 (THICKNESS
RB-1	RUBBER BASE	ROPPE	2.5" BASE	TBD	2.5" TALL	BASE FOR ALL WALLS WITH TYPICAL PAINT		ASTM E 648, CLASS 1, ASTM E 662 <450
RF-1	RUBBER FLOORING	CENTAUR FLOOR SYSTEMS	WORKOUT	CS21 TERRACOTTA 10	8mm x 4' x 50LF roll	GYM RUBBER FLOORING		
SS-1	SOLID SURFACE	SILESTONE	POLISHED	DESERT SILVER		RECEPTION DESK		UL 723 CLASS A
SS-2	SOLID SURFACE	SILESTONE		CHARCOAL SOAPSTONE		BREAKROOM COUNTER		UL 723 CLASS A
T-1	PORCELAIN TILE	CONCEPT SURFACES	LONDON	ATHRACITE	12X24	FIRST FLOOR TILE		EXEMPT, NON-COMBUSTIBLE (PORCELAIN)
T-2	PORCELAIN TILE	CONCEPT SURFACES	HARMONY - MATTE	ASH	12X24	SPA FLOOR TILE		EXEMPT, NON-COMBUSTIBLE (PORCELAIN)
VCT-1	VINYL COMPOSITION TILE	ARMSTRONG	IMPERIAL TEXTURE	TBD	12X12			ASTM E 648, CLASS 1
WC-1	WALLCOVERING	MOMENTUM / TRIKES		LIQUORICE LV-LU-14				ASTM E 84, CLASS A
WC-2	WALLCOVERING	CARNEGIE	XOREL	TBD		TACKABLE SURFACE AT RECEPTION DESK		ASTM E 84, CLASS A
WD-1	WOOD FLOORING	DUCHATEAU	VINYL DELUXE LUXETECH 20 COLLECTION	BETTONY	9" PLANK	BREAKROOM FLOORING		
WT-1	WALL TILE	CONCEPT SURFACES	RIBBED	ASH	12X24	SPA WALL TILE		EXEMPT, FINISH: NATURAL NON-COMBUSTIBLE (PORCELAIN)
WT-2	WALL TILE	STONESOURCE	SEGMENTS - LARGE	ICE (MATTE)	9" x 28"	BREAKROOM BACKSPLASH		EXEMPT, NON-COMBUSTIBLE (PORCELAIN)

GENERAL NOTES: FINISH

- A. NO SUBSTITUTIONS OF GRADE, QUALITY, OR MANUFACTURER SHALL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM
- ARCHITECT OR TENANT.

 B. REFER TO FINISH PLAN, REFLECTED CEILING PLAN, ELEVATIONS, AND DETAILS FOR ACCENT FINISH LOCATIONS,
- APPLICATION, AND TERMINATION.

 C. ALL FLOORING FINISH TRANSITIONS TO BE MADE AT CENTERLINE OF DOORS AND CASED OPENING FRAMES, UNLESS NOTED OTHERWISE
- D. FLOORING TO HAVE ANTI-FRACTURE MEMBRANE APPLIED TO SUBFLOOR AT TILE LOCATIONS.
 E. LEVELING COMPOUND TO BEGIN SLOPE 4'-0" FROM EDGE OF TRANSITION STRIP. SLOPE NOT TO EXCEED 1/16" PER
- FOOT.

 F. PAINT ALL EXPOSED CONDUIT AT UNDER-CABINET TASK LIGHTING TO MATCH CABINET FINISH.
- G. WALL TEXTURE TO BE "LIGHT ROLLER STIPPLE". CUT IN STIPPLE WITHIN 1/4" OF FRAMES, CORNERS, AND OTHER ITEMS.
 H. SURFACES WHICH ARE TO RECEIVE FINISHES ARE TO BE CLEAN, TRUE, AND FREE FROM IRREGULARITIES.
 I. CONTRACTOR TO SUBMIT TWO SAMPLES OF EACH FINISH TO ARCHITECT FOR APPROVAL. SUBMITTALS TO BE IDENTIFIED WITH FINISH CODE, NAME, DATE, NUMBER, FORMULA, SHEEN, AND TEXTURE AS REQUIRED. CONTRACTOR TO PLACE FULL ORDER ONLY AFTER WRITTEN APPROVAL OF ACCEPTANCE IS RECEIVED. GENERAL CONTRACTOR TO
- ALLOW ADEQUATE TIME FOR REVIEW AND RE-SUBMITTAL AS REQUIRED.

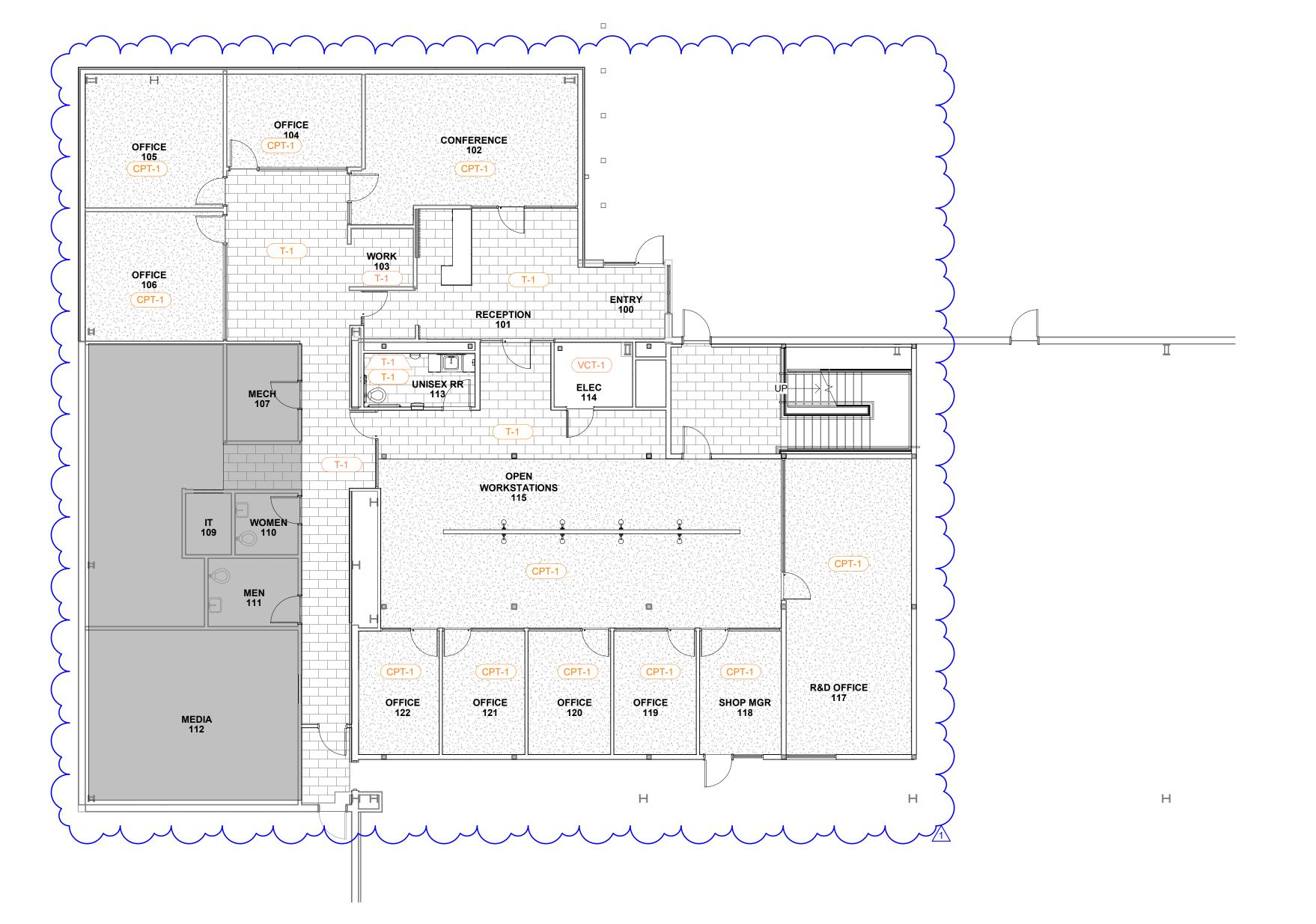
 J. PROVIDE 8' X 8' (MINIMUM) MOCK-UP OF EACH WALL PAINT ON-SITE WITH FINAL LIGHTING FOR ARCHITECT AND TENANT'S
- K. CARPET SHALL LAY IN SAME DIRECTION, UNLESS OTHERWISE SHOWN. CARPET TO RECEIVE A MINIMUM OF SEAMS WITH NO CROSS-JOINTS. AVOID SEAMING NEAR DOORS AND CORNERS. CONTRACTOR SHALL PROVIDE TWO COPIES OF SEAMING SUBMITTALS TO ARCHITECT FOR APPROVAL PRIOR TO PLACING ORDER. CARPET SHALL BE TRIMMED EVENLY AND NEATLY FOR A TIGHT FIT. FINAL INSTALLATION SHALL BE FREE FROM RIPPLES AND PUNCTURES AND PER MANUFACTURER'S AND INDUSTRY STANDARDS.
- L. REFER TO MANUFACTURER'S INSTRUCTION FOR TEMPERATURE OF SURFACES TO BE PAINTED AND OF SURROUNDING AIR. DO NOT APPLY MATERIALS WHEN RELATIVE HUMIDITY EXCEEDS 85% AND DO NOT APPLY TO DAMP OR WET SURFACES
- M. ALL CARPETED AREAS TO BE CLEANED AND VACUUMED PRIOR TO FINAL INSPECTION. ALL VCT, WOOD, TILE, STONE, SEALED CONCRETE, OR OTHER HARD SURFACE FLOOR FINISHES TO BE CLEANED AND WAXED PER MANUFACTURER'S
- RECOMMENDATIONS PRIOR TO FINAL INSPECTION.

 N. PAINT ALL SIDE EDGES OF CUT CEILING TILES TO MATCH FINISH FACE.

 O PROVIDE EDGY CROUT AT ALL WELL COATIONS DEFENDED SCHEDULE FOR
- O. PROVIDE EPOXY GROUT AT ALL WET LOCATIONS, REFER TO FINISH SCHEDULE FOR COLOR P. ALL FLOORS TO BE <u>CPT-1</u>, UNLESS NOTED OTHERWISE.
- P. ALL FLOORS TO BE <u>CPT-1</u>, UNLESS NOTED OTHERWISE.
 Q. ALL WALLS TO BE <u>PT-1</u>, UNLESS NOTED OTHERWISE.
 R. ALL BASE TO BE <u>RB-1</u>, UNLESS NOTED OTHERWISE.

MASTO SEE AND SEE AND

FINISH PLAN - LV 02
1/8" = 1'-0"



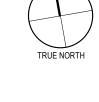
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ADDENDUM 01 01/10/2024
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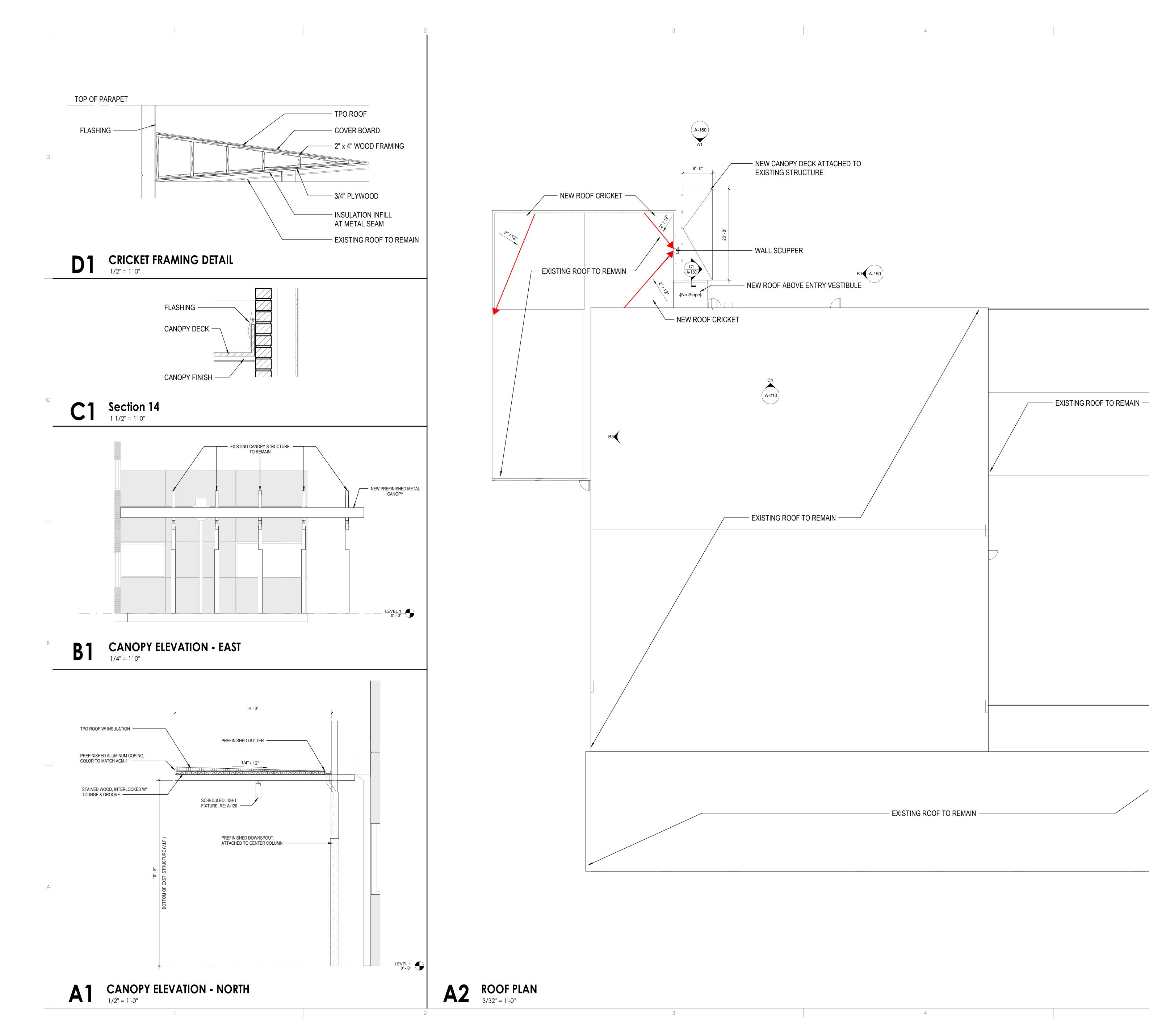
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FINISH PLANS

FINISH PLAN - LV 01

1/8" = 1'-0"



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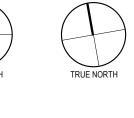




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 ✓ Issues

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 23-01-014

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 Author

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Checked By

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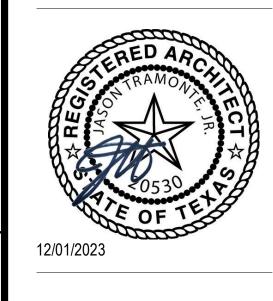
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ROOF PLAN





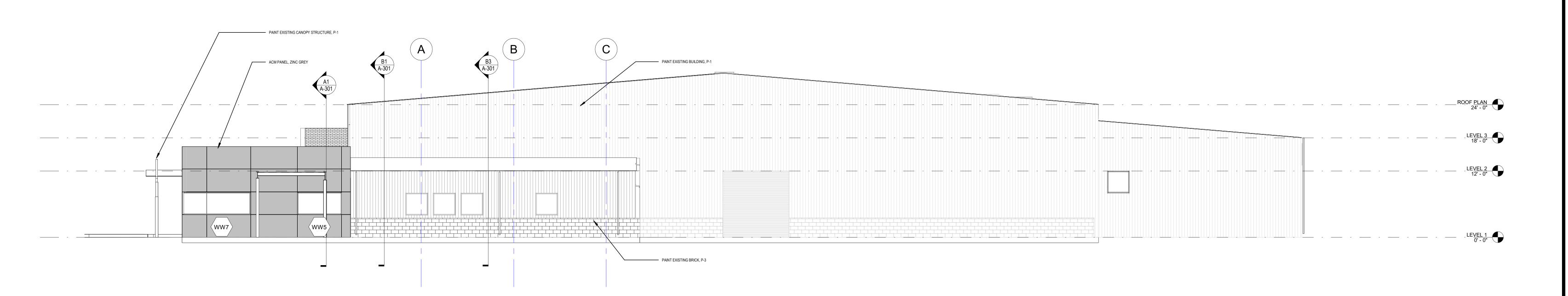


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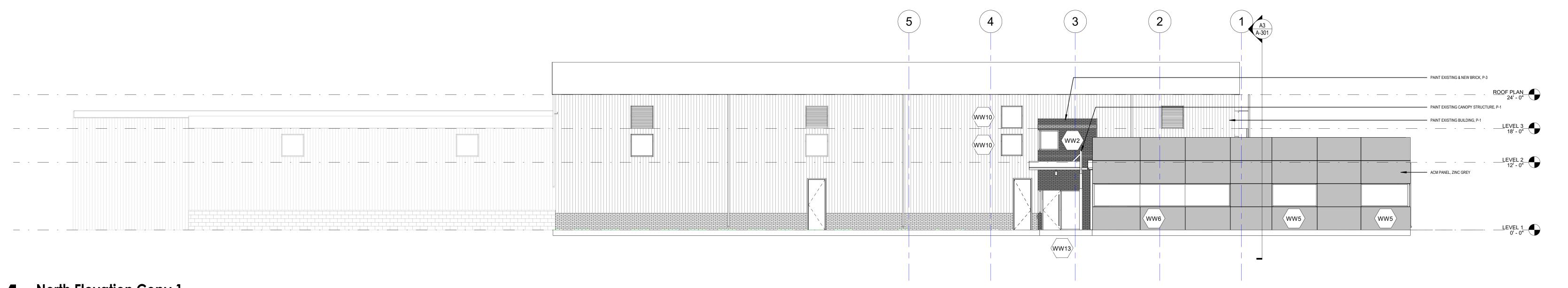
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C B A INCOMESSAN OF THE PROPERTY OF THE PROPER

C1 East Elevation Copy 1
1/8" = 1'-0"



B1 West Elevation Copy 1
1/8" = 1'-0"



A 1 North Elevation Copy 1

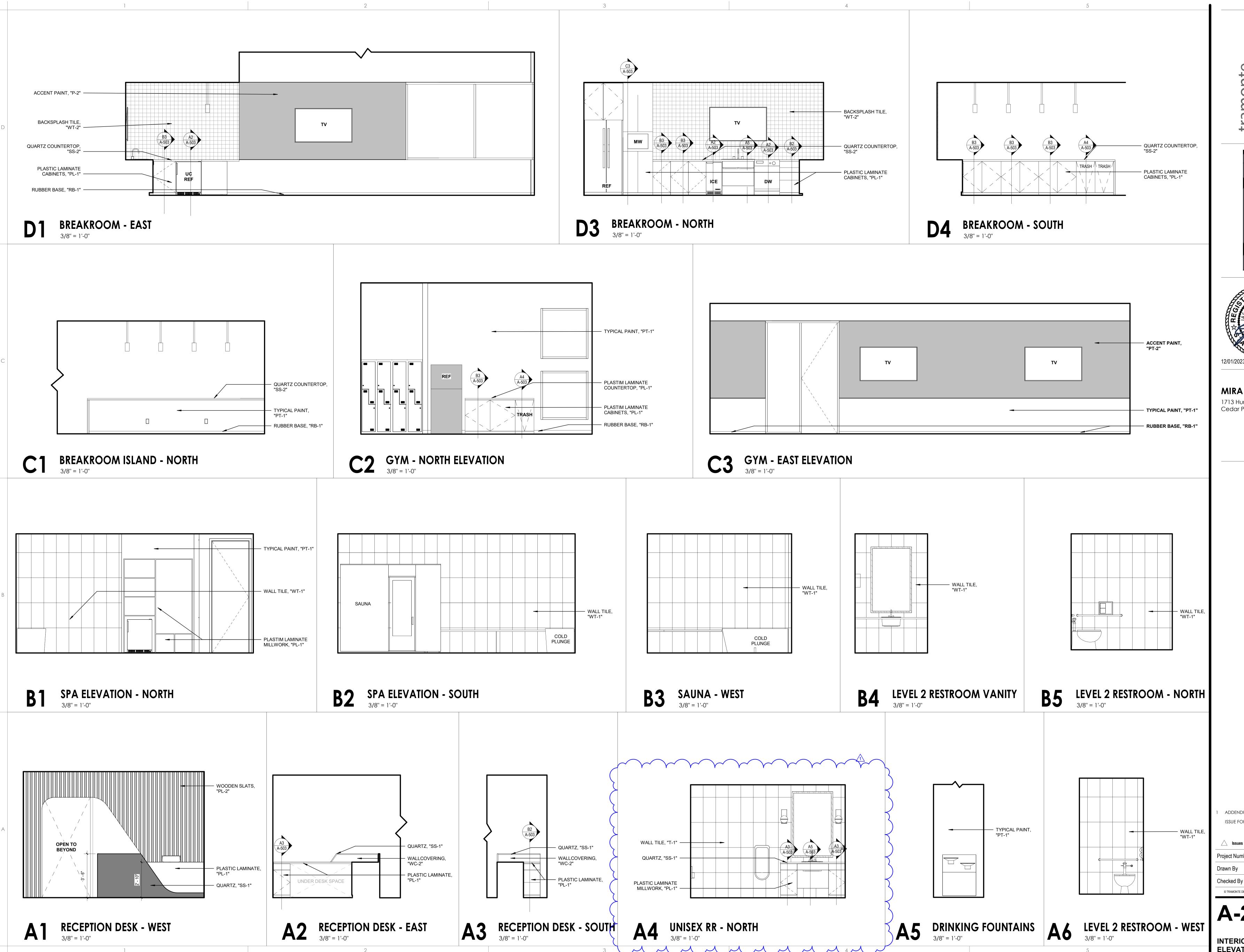
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EXTERIOR ELEVATIONS

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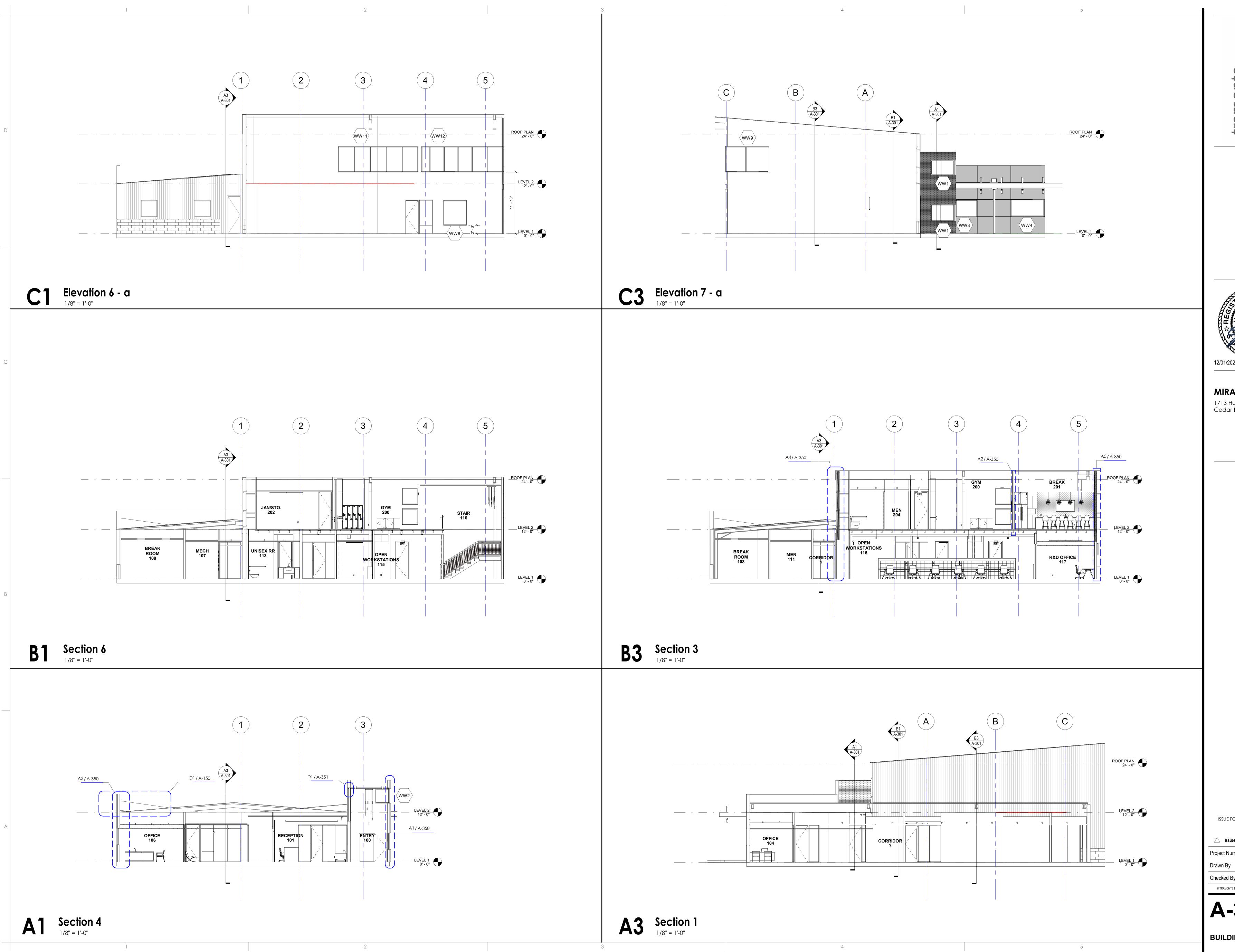


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INTERIOR **ELEVATIONS**







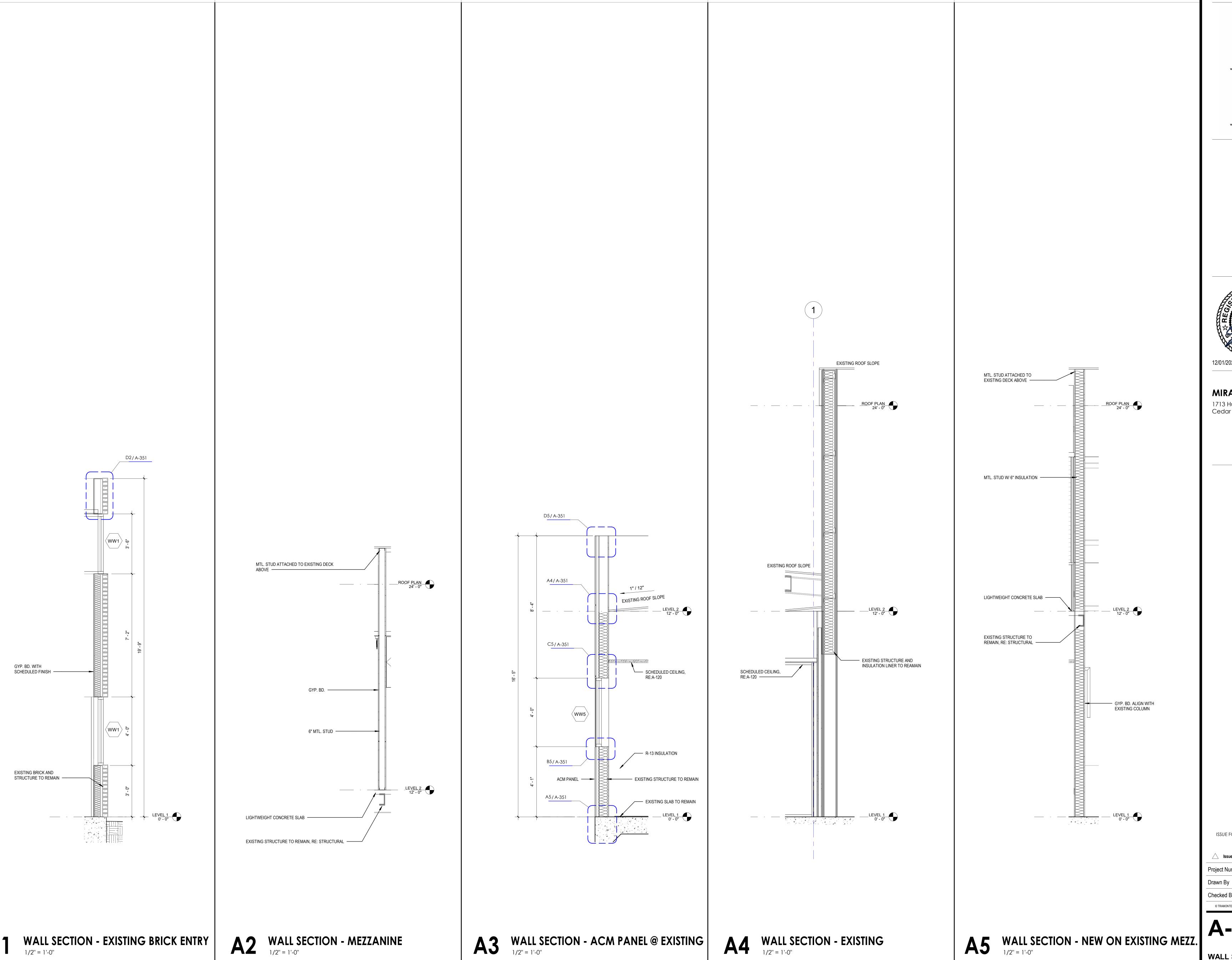
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BUILDING SECTIONS



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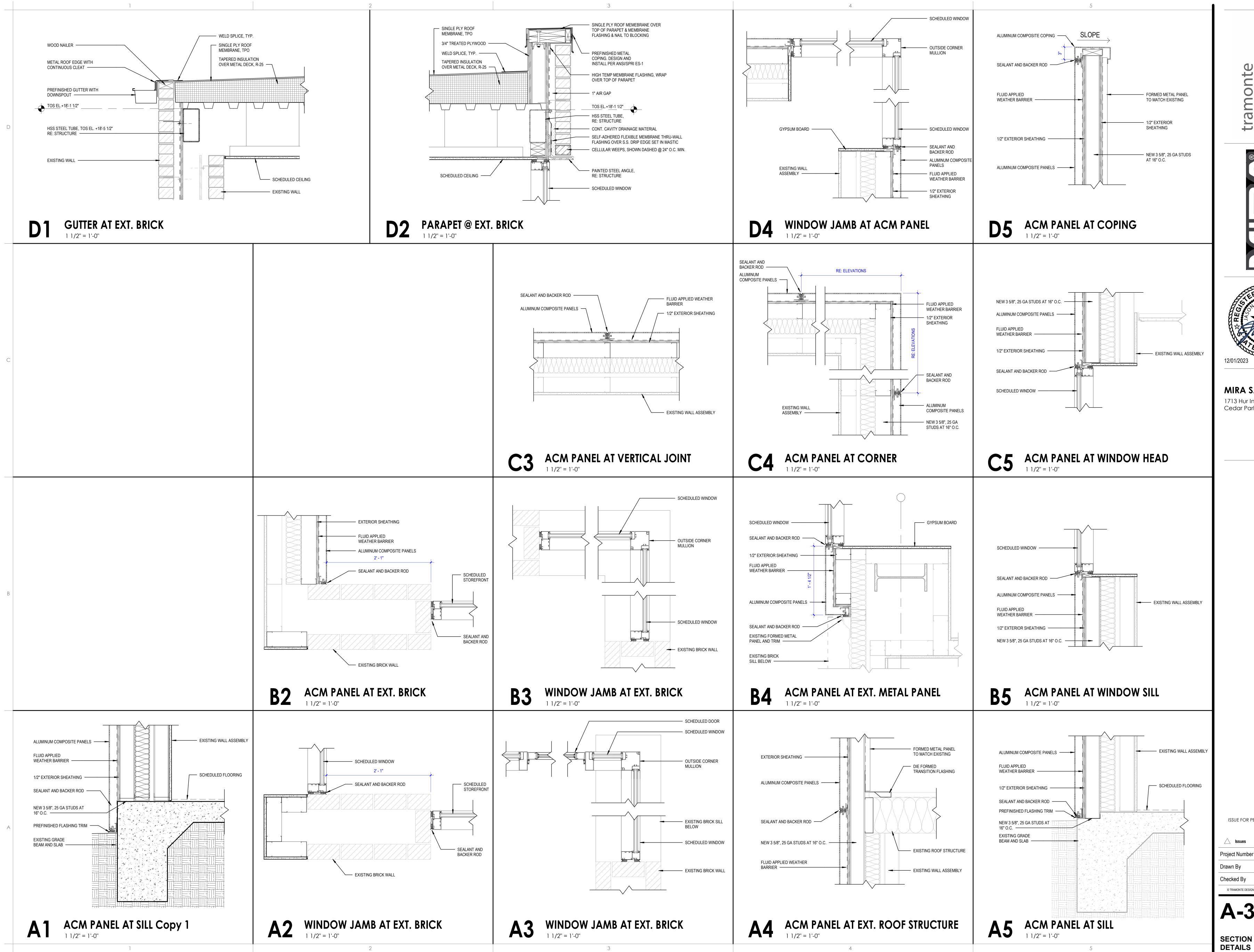
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WALL SECTIONS



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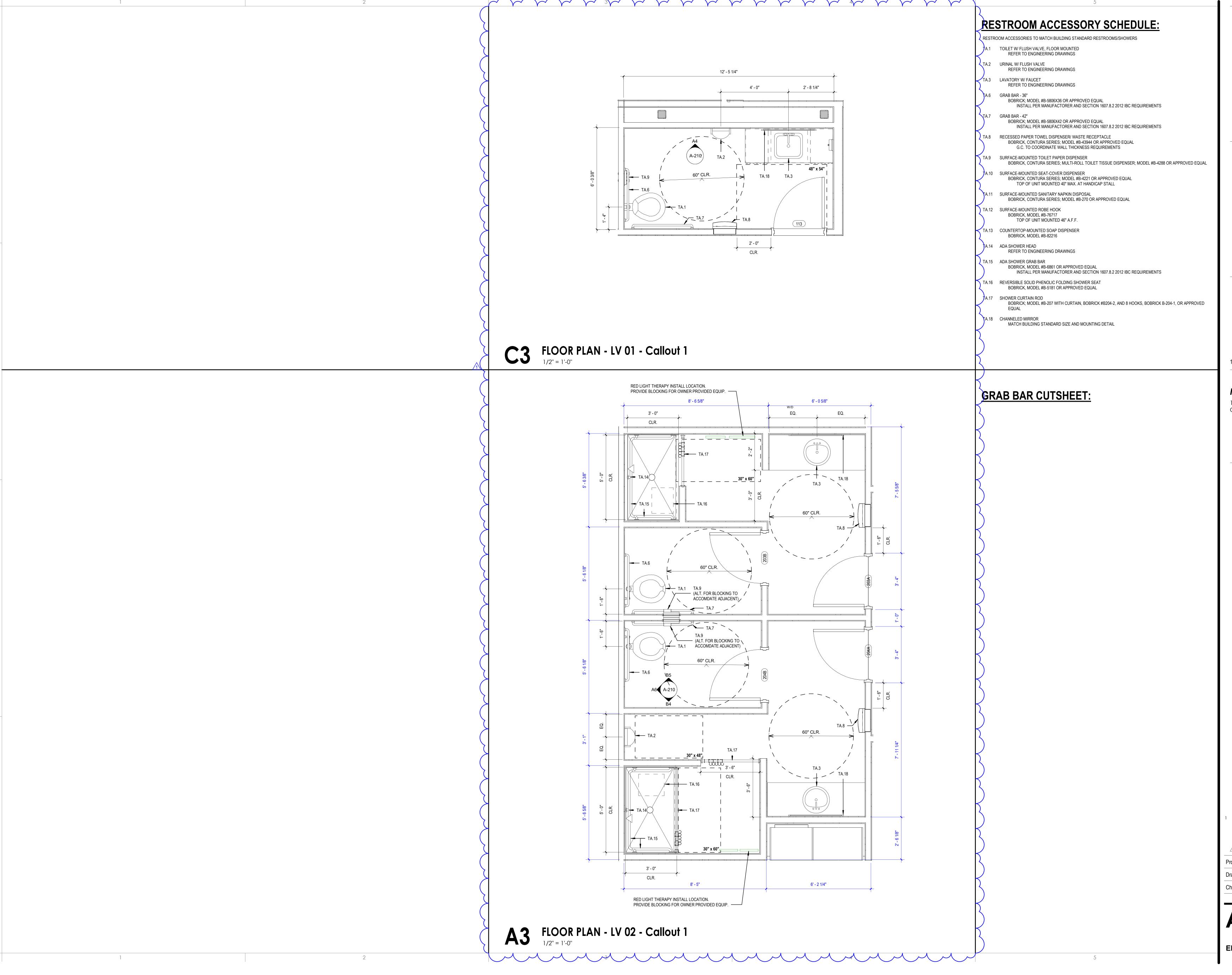


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SECTION AND PLAN



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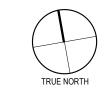




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ADDENDUM 01 01/10/2024
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ENLARGED PLANS





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A. METAL PAN STAIRS AND RAILINGS ARE DESIGN BUILD BY FABRICATOR, TYP. - SEE STRUCTURAL SHEETS FOR ADDITIONAL INFORMATION. STAIR FABRICATOR TO SUBMIT SHOP DRAWINGS AND CALCULATIONS SEALED BY A LICENSED TEXAS ENGINEER TO THE ARCHITECT AND BUILDING STRUCTURAL ENGINEER FOR REVIEW AND COMMENT PRIOR TO FABRICATION. SIZES OF ALL STAIR, HANDRAIL AND GUARDRAIL MEMBERS SHOWN ARE MINIMUM AND SHOWN FOR DESIGN INTENT ONLY. FABRICATOR SHALL BE RESPONSIBLE FOR DETERMINING MEMBER SIZES TO COMPLY WITH CODE REQUIRED LOADING CRITERIA. STAIR FABRICATOR TO FIELD VERIFY EXISTING SITE CONDITIONS PRIOR TO FABRICATION OF STAIRS.

COORDINATE SUPPORT MEMBERS WITH STRUCTURAL DRAWINGS. COORDINATE STAIR OPENINGS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO FABRICATION.

INTERIOR AND EXTERIOR STAIRS TO COMPLY WITH THE FOLLOWING MINIMUM REQUIREMENTS ESTABLISHED BY THE 2006 INTERNATIONAL BUILDING CODE (IBC) WITH CITY OF HOUSTON AMENDMENTS REQUIREMENTS AND THE 2012 TEXAS ACCESSIBILITY STANDARDS (TAS). WHERE DIMENSIONS GIVEN IN THE STAIR PLANS, SECTIONS AND DETAILS EXCEED THESE MINIMUM REQUIREMENTS, THE DIMENSIONS GIVEN IN THE STAIR PLANS, SECTIONS AND DETAILS GOVERN.

STAIR WIDTH (IBC SEC. 1009.1 (OR AS REQUIRED BY IBC SEC. 1005.1)): 44" MINIMUM CLEAR. HEADROOM (IBC SEC. 1009.2): 80" MINIMUM CLEAR HEADROOM MEASURED VERTICALLY FROM A LINE CONNECTING THE EDGE OF THE NOSINGS.

STAIR RISE (IBC SEC. 1009.3 / TAS SEC. 504.2): 7" MAXIMUM AND 4" MINIMUM STAIR RUN (IBC SEC. 1009.3 / TAS SEC. 504.2): 11" MINIMUM

GENERAL NOTES: STAIRS

STAIR DIM. UNIFORMITY (IBC SEC. 1009.3.2): 0.375" MAXIMUM RISER OR TREAD DIMENSIONAL DEFERENTIAL STAIR PROFILE (IBC SEC. 1009.3.3 / TAS SEC. 504.5): 1/2" MAXIMUM RADIUS OR BEVEL OF STAIR NOSING. CLOSED RISERS; VERTICAL OR SLOPED (30 DEGREE MAXIMUM).

STAIR LANDINGS (IBC SEC. 1009.4): REQUIRED AT TOP AND BOTTOM OF EACH STAIR RUN, MINIMUM LANDING WIDTH NOT TO BE LESS THAN WIDTH OF STAIR. STAIR CONSTRUCTION (IBC SEC. 1009.5): STAIRWAYS SHALL BE BUILT OF MATERIALS CONSISTENT WITH THE TYPES PERMITTED FOR THE TYPE OF CONSTRUCTION OF THE BUILDING.

STAIR WALKING SURFACE (IBC SEC. 1009.5.1 / TAS SEC. 302 & 504.4): INTERIOR STAIRS SHALL HAVE LEVEL TREADS. EXTERIOR STAIRS SHALL HAVE SLOPED TREADS TO PREVENT WATER ACCUMULATION (2% MAX.). STAIR VERTICAL RISE (IBC SEC. 1009.6): MAXIMUM VERTICAL RISE SHALL BE LIMITED TO 12' BETWEEN LANDINGS.

CURVED STAIRWAYS (IBC SEC. 1009.7): NOT APPLICABLE TO THIS PROJECT. SPIRAL STAIRWAYS (IBC SEC. 1009.8): NOT APPLICABLE TO THIS PROJECT.

ALTERNATING TREAD DEVICES (IBC SEC. 1009.9): NOT APPLICABLE TO THIS PROJECT. STAIR HANDRAILS (IBC SEC. 1009.10): UNLESS EXCEPTIONS ALLOW, STAIRS SHALL BE PROVIDED WITH HANDRAILS ON EACH SIDE.

. ADDITIONAL EXTERIOR STAIR NOTES: NOT APPLICABLE TO THIS PROJECT. SEE CIVIL SHEETS FOR BOTTOM OF STAIR ELEVATION. COORDINATE OVERALL VERTICAL RISE WITH ACTUAL FIELD CONDITIONS. PROVIDE CONCRETE PAD AT BASE OF EXTERIOR STAIRS - SEE CIVIL/ LANDSCAPE SHEETS FOR ADDITIONAL INFORMATION.

EXPOSED CONCRETE TREAD COLOR TO MATCH ADJACENT HARDSCAPE COLOR - SEE LANDSCAPE/ CIVIL DRAWINGS.

RAMP LANDING LENGTH (IBC SEC. 1010.6.3 / TAS 405.7.3): LANDINGS SHALL HAVE A CLEAR LENGTH NOT LESS THAN 60".

INTERIOR AND EXTERIOR RAMPS TO COMPLY WITH THE FOLLOWING MINIMUM REQUIREMENTS ESTABLISHED BY THE 2006 INTERNATIONAL BUILDING CODE (IBC) WITH CITY OF HOUSTON AMENDMENTS REQUIREMENTS AND THE 2012 TEXAS ACCESSIBILITY STANDARDS (TAS). WHERE DIMENSIONS GIVEN IN THE STAIR PLANS, SECTIONS AND DETAILS EXCEED THESE MINIMUM REQUIREMENTS, THE DIMENSIONS GIVEN IN THE STAIR PLANS, SECTIONS AND DETAILS GOVERN. RAMP SLOPE (IBC SEC. 1010.2 / TAS 405.2): RUNNING SLOPE SHALL NOT BE STEEPER THAN ONE UNIT VERTICAL IN 12 UNITS HORIZONTAL (8-PERCENT SLOPE). RAMP CROSS SLOPE (IBC SEC. 1010.3 / TÁS 405.3): CROSS SLOPE SHALL NOT BE STEEPER THAN ONE UNIT VERTICAL IN 48 UNITS HORIZONTAL (2-PERCENT SLOPE).

RAMP VERTICAL RISE (IBC SEC. 1010.4 / TAS 405.6): THE RISE FOR ANY RAMP RUN SHALL NOT EXCEED 30 INCHES. RAMP CLEAR WIDTH (IBC SEC. 1010.5.1 / TAS 405.5): CLEAR WIDTH BETWEEN HANDRAILS TO BE NO LESS THAN 36" OR AS NEEDED FOR EGRESS WIDTH, WHICHEVER IS LARGER.

RAMP HEADROOM (IBC SEC. 1010.5.2 / TAS 307.4): MINIMUM CLEAR HEADROOM SHALL NOT BE LESS THAN 80". RAMP WIDTH RESTRICTIONS (IBC SEC. 1010.5.3): RAMPS USED AS MEANS OF EGRESS SHALL NOT REDUCE IN WIDTH IN THE DIRECTION OF EGRESS TRAVEL. DOORS OPENING INTO LANDINGS SHALL NOT REDUCE THE CLEAR WIDTH TO LESS THAN 42". RAMP LANDINGS SLOPE (IBC SEC. 1010.6.1 / TAS 405.7.1): LANDINGS SHALL NOT HAVE A SLOPE STEEPER THAN ONE UNIT VERTICAL IN 48 UNITS HORIZONTAL (2-PERCENT SLOPE). CHANGES IN LEVEL ARE NOT PERMITTED. RAMP LANDING WIDTH (IBC SEC. 1010.6.2 / TAS 405.7.2): LANDINGS SHALL BE AT LEAST AS WIDE AS THE WIDEST RAMP RUM ADJOINING THE LANDING.

RAMP LANDINGS WITH CHANGE IN DIRECTION (IBC SEC. 1010.6.4 / TAS 405.7.4): WHERE CHANGES IN DIRECTION OCCUR AT LANDINGS, LANDINGS SHALL HAVE A MINIMUM CLEAR DIMENSION OF 60" X 60" DOORWAYS AT RAMP LANDINGS (IBC SEC. 1010.6.5 / TAS 405.7.5): WHERE DOORWAYS ARE LOCATED ADJACENT TO RAMP LANDINGS, REQUIRED DOOR CLEARANCES MAY OVERLAP WITH THE REQUIRED LANDING AREA. RAMP CONSTRUCTION (IBC SEC. 1010.7): RAMPS SHALL BE BUILT OF MATERIALS CONSISTENT WITH THE BUILDING CONSTRUCTION TYPE.

RAMP SURFACE (IBC SEC. 1010.7.1): RAMP SURFACES SHALL BE SLIP-RESISTANT. OUTDOOR RAMPS (IBC SEC. 1010.7.2 / TAS 405.10): OUTDOOR RAMPS AND OUTDOOR APPROACHES TO RAMPS SHALL BE DESIGNED SO THAT WATER DOES NOT ACCUMULATE ON WALKING SURFACES.

RAMP HANDRAILS (IBC SEC. 1010.8 / TAS 405.8): RAMPS RUNS WITH A RISE GREATER THAN 6" SHALL HAVE HANDRAILS. RAMP EDGE PROTECTION (IBC SEC. 1010.9 / TAS 405.9): RAMP EDGE PROTECTION REQUIRED UNLESS RAMP IS NOT REQUIRED TO HAVE HANDRAILS AND SIDES ARE FLARED. RAMP LANDINGS EDGE PROTECTION REQUIRED UNLESS 1) SIDE OF LANDING SERVES AN ADJOINING RAMP OR STAIRWAY OR 2) RAMP LANDINGS HAVE A VERTICAL DROP OF NO MORE THAN 0.5" WITHIN 10" OF THE REQUIRED LANDING AREA. EDGE PROTECTION SHALL CONSIST OF 1) A CURB, RAIL, WALL OR BARRIER THAT PREVENTS THE PASSAGE OF A 4" SPHERE WHERE ANY PORTION OF THE SPHERE IS WITHIN 4" OF THE FLOOR OR GROUND SURFACE OR 2) THE ADJACENT GROUND SURFACE OF THE RAMP RUN OR LANDINGS EXTENDS A MINIMUM OF 12" BEYOND THE

RAMP GUARDS (IBC SEC. 1010.10): WHERE GUARDRAILS ARE REQUIRED BY OTHER CODE PROVISIONS, GUARDS SHALL COMPLY WITH GUARDRAIL REQUIREMENTS. HANDRAILS TO COMPLY WITH THE FOLLOWING MINIMUM REQUIREMENTS ESTABLISHED BY THE 2006 INTERNATIONAL BUILDING CODE (IBC) WITH CITY OF HOUSTON AMENDMENTS REQUIREMENTS AND THE 2012 TEXAS ACCESSIBILITY STANDARDS (TAS). WHERE DIMENSIONS GIVEN IN THE STAIR PLANS, SECTIONS AND DETAILS EXCEED THESE MINIMUM REQUIREMENTS, THE DIMENSIONS GIVEN IN THE STAIR PLANS, SECTIONS AND DETAILS GOVERN.

HANDRAIL STRENGTH (IBC SEC. 1012.1 & 1607.7): HANDRAIL ASSEMBLIES AND GUARDS SHALL BE DESIGNED TO RESIST A LOAD OF 50 plf (0.73 kN/m) APPLIED IN ANY DIRECTION AT THE TOP AND TO TRANSFER THIS LOAD THROUGH THE SUPPORTS TO THE STRUCTURE. GLASS HANDRAILS SHALL COMPLY WITH SEC. 2407. WHERE REQUIRED (IBC SEC. 1012.1): HANDRAILS SHALL BE REQUIRED AT ALL STAIRS AND RAMPS WITH A RISE GREATER THAN 6".

HANDRAIL HEIGHT (IBC SEC. 1012.2 / TAS 505.4): TOP OF HANDRAIL SHALL BE 34" TO 38" ABOVE NOSING OF TREADS, LANDINGS AND RAMP SURFACE. HANDRAIL GRASPABILITY (IBC SEC. 1012.3 / TAS 505.7): HANDRAILS TO HAVE A CIRCULAR CROSS SECTIONAL OUTSIDE DIAMETER OF 1-1/4" TO 2". NONE CIRCULAR CROSS SECTION HANDRAILS SHALL HAVE A PERIMETER OF AT LEAST 4" BUT NOT GREATER THAN 6.25" AND SHALL HAVE A MAXIMUM CROSS-SECTION DIMENSION OF 2.25". EDGES SHALL HAVE A MINIMUM RADIUS OF 0.01".

HANDRAIL CONTINUITY (IBC SEC. 1012.4): UNLESS EXCEPTIONS ALLOW, HANDRAIL GRIPPING SURFACE SHALL BE CONTINUOUS, WITHOUT INTERRUPTION. HANDRAIL EXTENSIONS (IBC SEC. 1012.5 / TAS 505.10): HANDRAILS SHALL RETURN TO A WALL, GUARD OR THE WALKING SURFACE OR SHALL BE CONTINUOUS TO THE HANDRAIL OF AN ADJACENT STAIR FLIGHT OR RAMP RUN. WHERE STAIR HANDRAILS TERMINATE, THE HANDRAIL SHALL EXTEND HORIZONTALLY AT LEAST 12" BEYOND THE TOP RISER AND SHALL CONTINUE TO SLOPE FOR THE DEPTH OF ONE TREAD BEYOND THE BOTTOM RISER. WHERE RAMP HANDRAILS TERMINATE, THE HANDRAIL SHALL EXTEND HORIZONTALLY ABOVE THE LANDING 12" MINIMUM BEYOND THE TOP AND BOTTOM OF RAMP RUNS.

HANDRAIL CLEARANCE (IBC SEC. 1012.6 / TAS 505.5 & 505.6): CLEAR SPACE BETWEEN HANDRAIL AND ADJACENT SURFACES SHALL BE A MINIMUM OF 1.5". HANDRAIL PROJECTIONS (IBC SEC. 1012.7 / TAS 405.5): ON RAMPS, THE CLEAR WIDTH BETWEEN HANDRAILS SHALL BE 36" MINIMUM. PROJECTS INTO THE REQUIRED WITH OF STAIRWAYS AND RAMPS AT EACH HANDRAIL SHALL NOT EXCEED 4.5" AT OR BELOW THE HANDRAIL HEIGHT. PROJECTS INTO THE REQUIRED WIDTH SHALL NOT BE LIMITED ABOVE THE MINIMUM HEADROOM HEIGHT REQUIREMENT.

INTERMEDIATE HANDRAILS (IBC SEC. 1012.8): INTERMEDIATE HANDRAILS REQUIRED WHERE STAIR WIDTH EXCEED 60". SURFACES (TAS 505.8): HANDRAIL GRIPPING SURFACE AND ANY SURFACE ADJACENT TO THEM SHALL BE FREE OF SHARP OR ABRASIVE ELEMENTS AND SHALL HAVE ROUNDED EDGES. FITTINGS (TAS 505.9): HANDRAILS SHALL NOT ROTATE WITHIN THEIR FITTINGS.

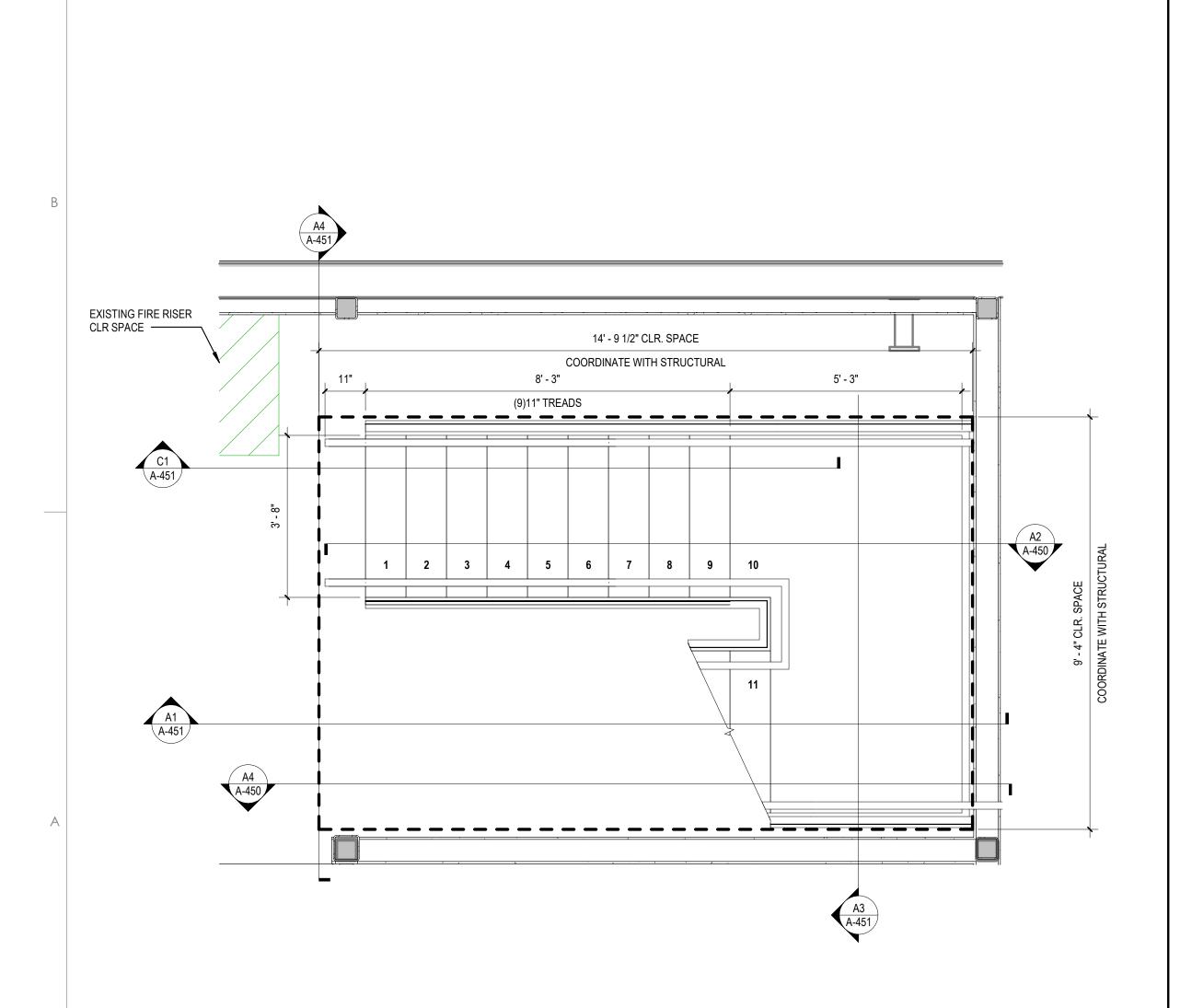
GUARDRAILS TO COMPLY WITH THE FOLLOWING MINIMUM REQUIREMENTS ESTABLISHED BY THE 2006 INTERNATIONAL BUILDING CODE (IBC) WITH CITY OF HOUSTON AMENDMENTS REQUIREMENTS. WHERE DIMENSIONS GIVEN IN THE STAIR PLANS, SECTIONS AND DETAILS EXCEED THESE MINIMUM REQUIREMENTS, THE DIMENSIONS GIVEN IN THE STAIR PLANS, SECTIONS AND DETAILS GOVERN.

GUARDRAIL STRENGTH (IBC SEC. 1013.1 & 1607.7): HANDRAIL ASSEMBLIES AND GUARDS SHALL BE DESIGNED TO RESIST A LOAD OF 50 plf (0.73 kN/m) APPLIED IN ANY DIRECTION AT THE TOP AND TO TRANSFER THIS LOAD THROUGH THE SUPPORTS TO THE STRUCTURE. GLASS HANDRAILS SHALL COMPLY WITH SEC. 2407. 30" ABOVE THE FLOOR OR GRADE BELOW.

GUARDRAILS HEIGHT (IBC SEC. 1013.2): TOP OF GUARDRAIL TO BE NOT LESS THAN 42" HIGH. MEASURED VERTICALLY ABOVE THE LEADING EDGE OF THE TREAD. ADJACENT WALKING SURFACE OR ADJACENT SEATBOARD. OPENING LIMITATIONS (IBC SEC. 1013.3): UNLESS EXCEPTIONS ALLOW, FROM FLOOR LEVEL TO A HEIGHT OF 34", GUARDS SHALL NOT ALLOW A 4" SPHERE TO PASS THROUGH. FROM A HEIGHT OF 34" TO 42" ABOVE THE FLOOR LEVEL, GUARDS SHALL NOT ALLOW A 8" SPHERE TO PASS THROUGH. THE TRIANGULAR OPENING FORMED BY THE RISER, TREAD AND BOTTOM RAIL AT THE OPEN SIDE OF A STAIRWAY SHALL BE OF MAXIMUM SIZE SUCH THAT A SPHERE 6" IN DIAMETER CANNOT PASS

ALL EXPOSED METAL STAIR MEMBERS SHALL RECEIVE PRIMER AND FINISH PAINT, UNLESS NOTED OTHERWISE. INTERIOR STAIR FINISHES TO BE PER INTERIOR DESIGNER.

C1 ENLARGED STAIR PLAN - LV 02 1/2" = 1'-0"

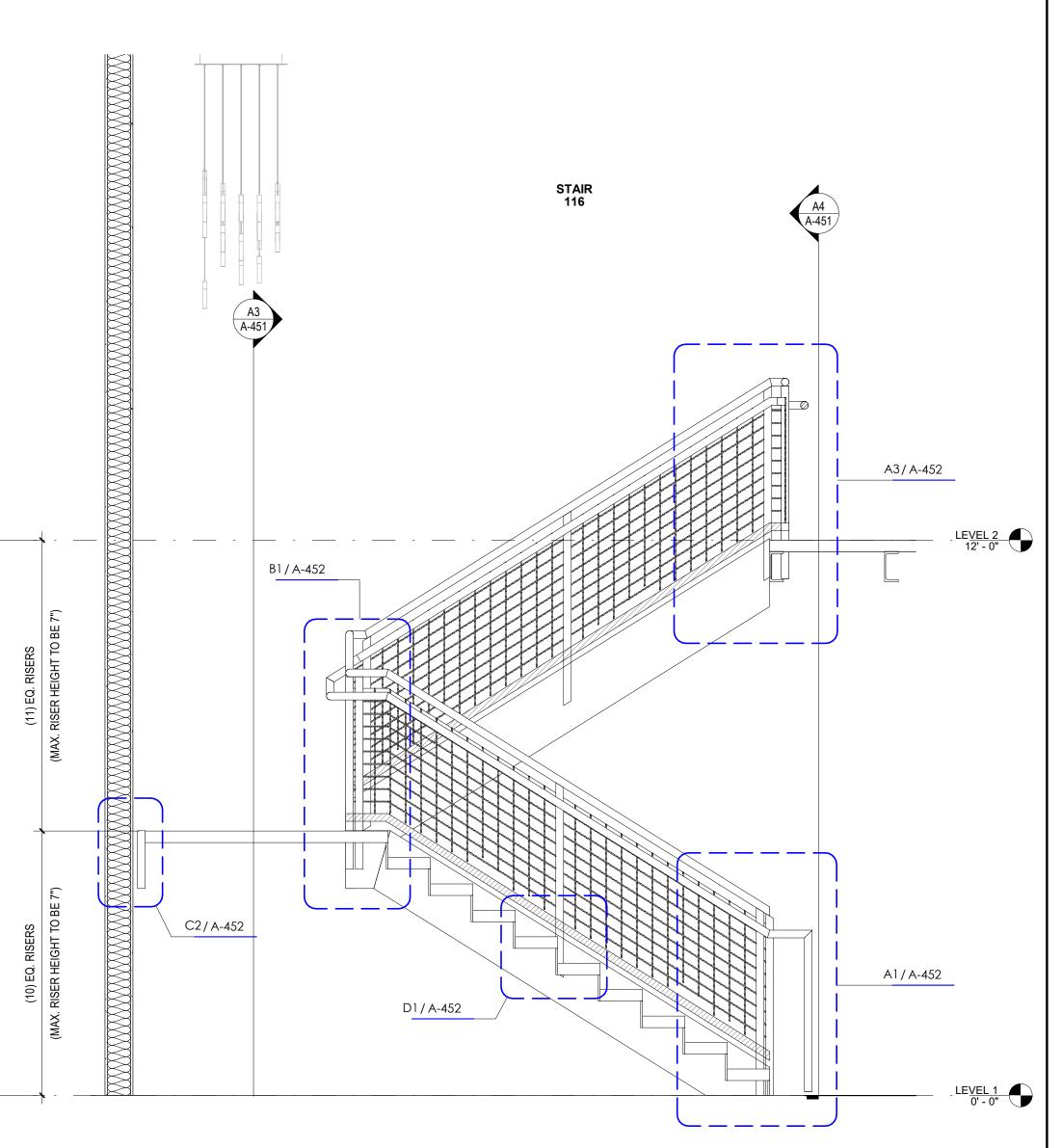


9' - 2"

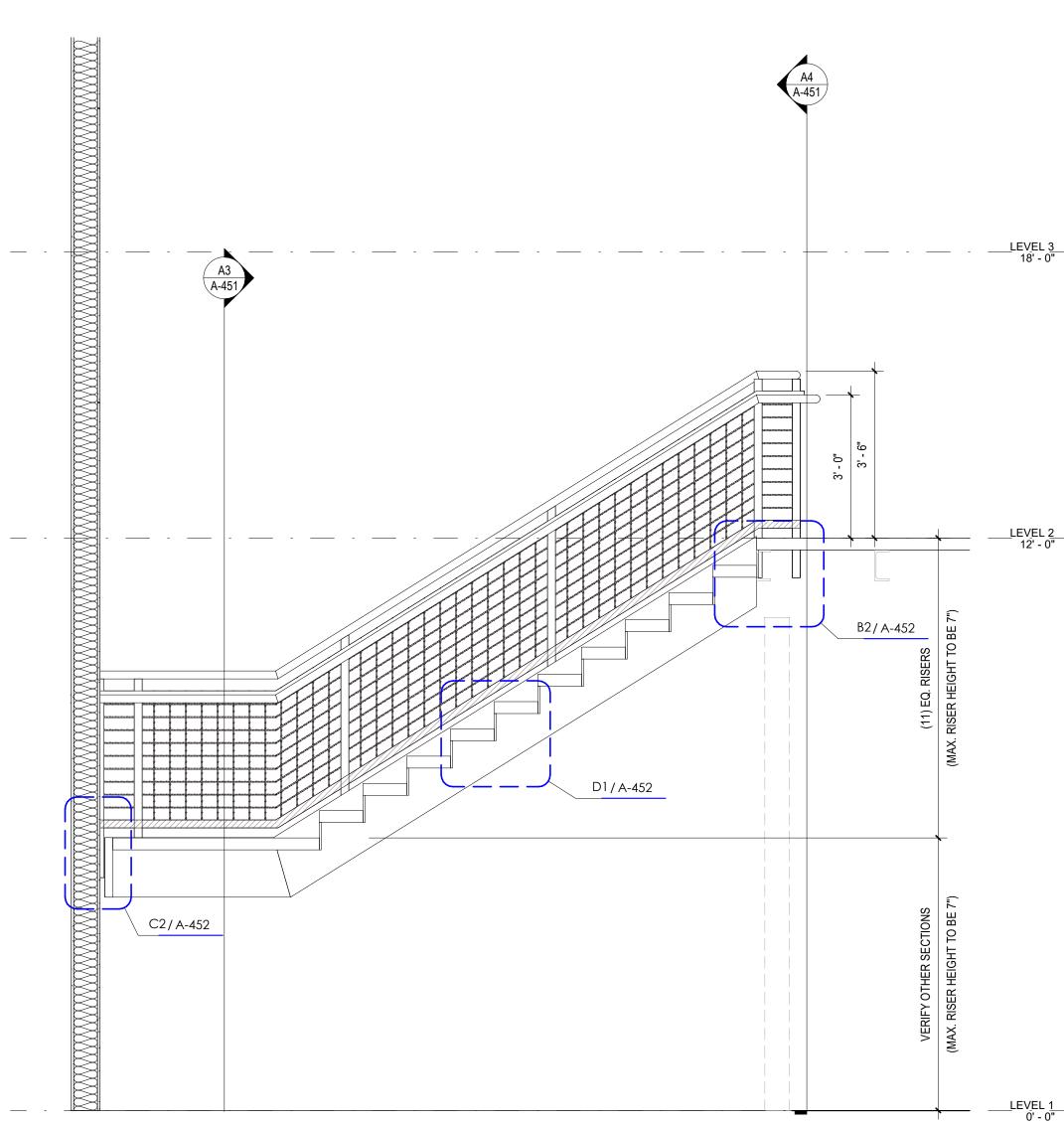
(10) 11" TREADS

4' - 4"

ENLARGED STAIR PLAN - LV 01



LANDING SECTION



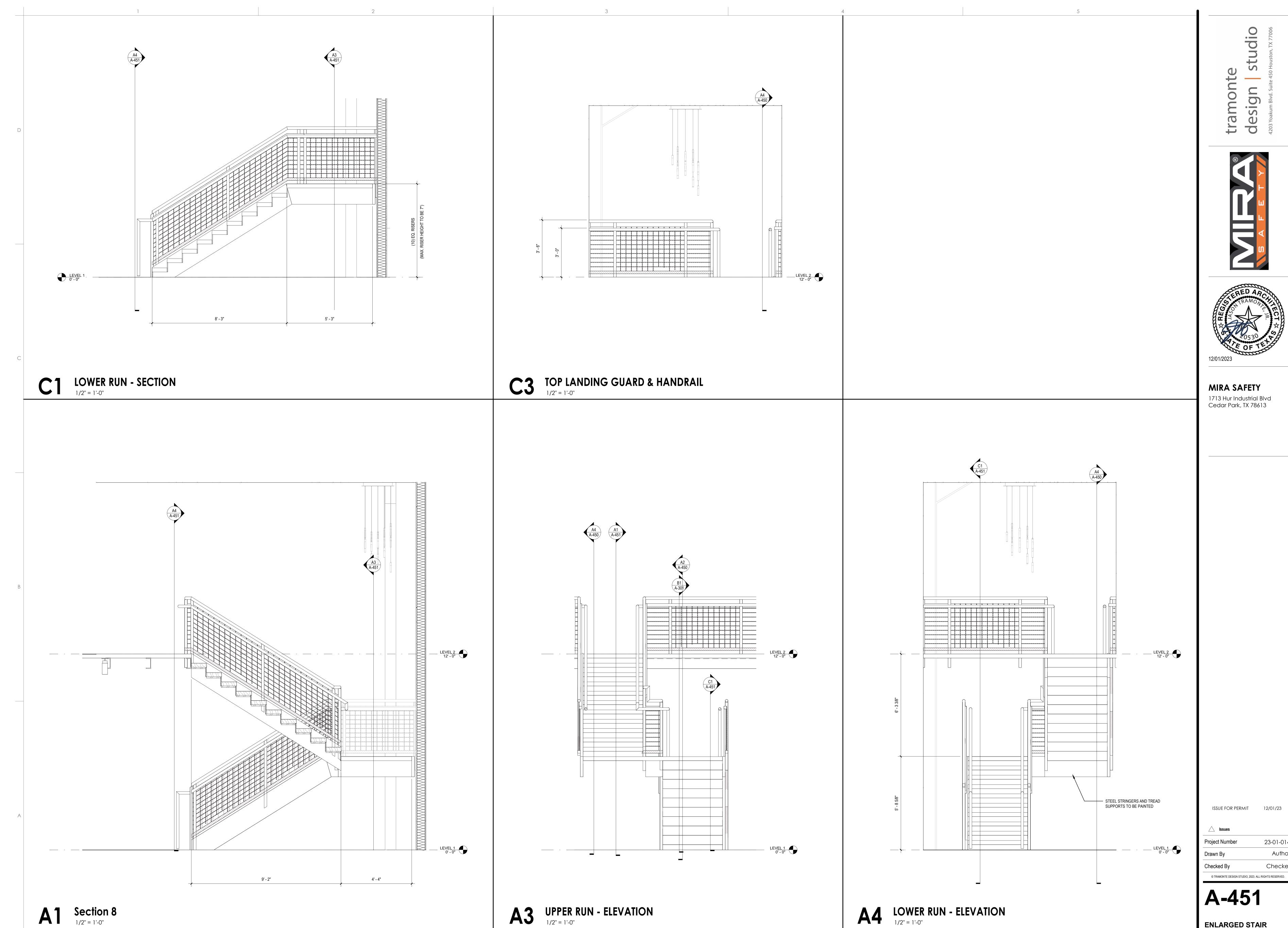
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ENLARGED STAIR PLAN & ELEVATIONS



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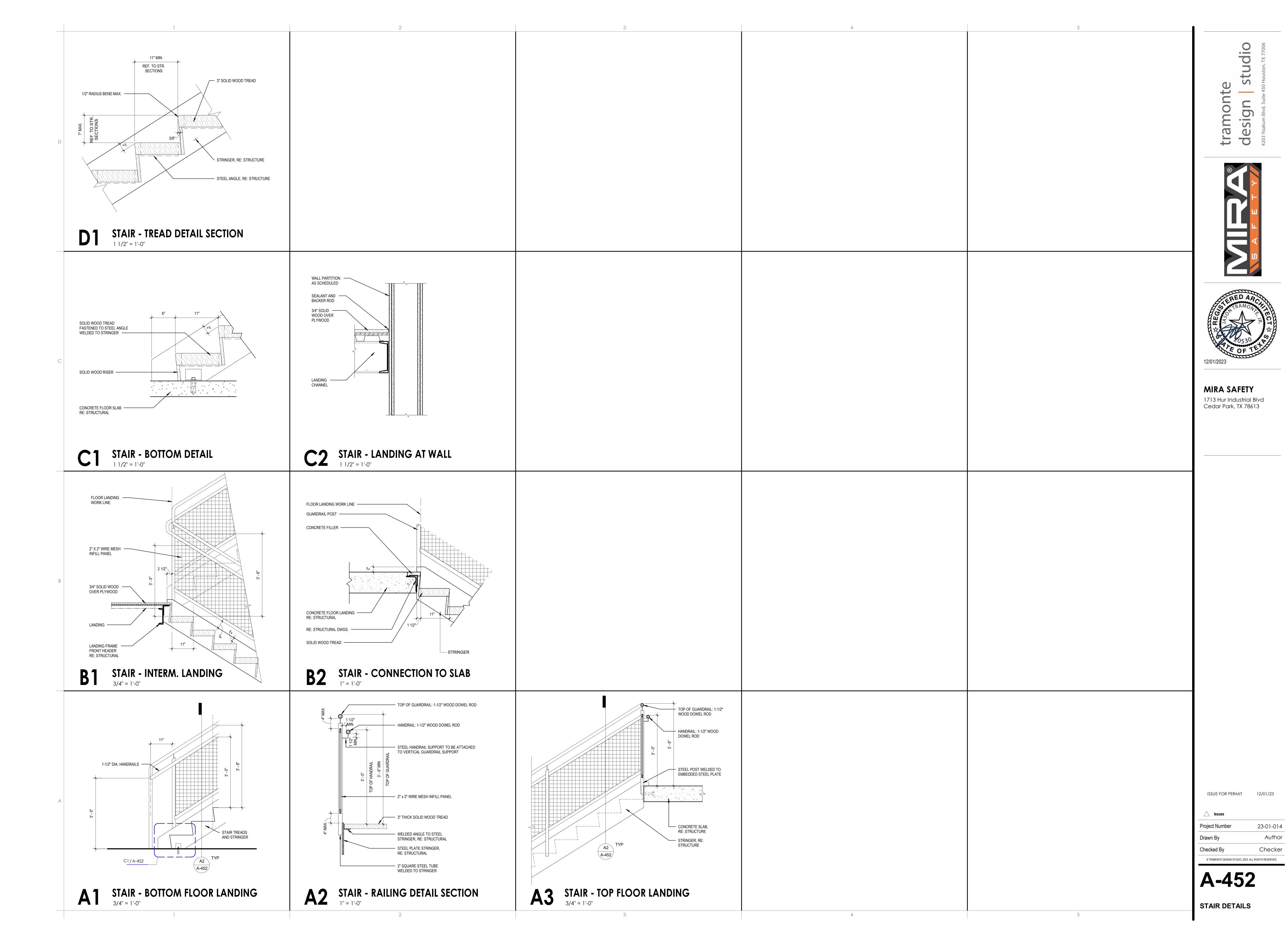


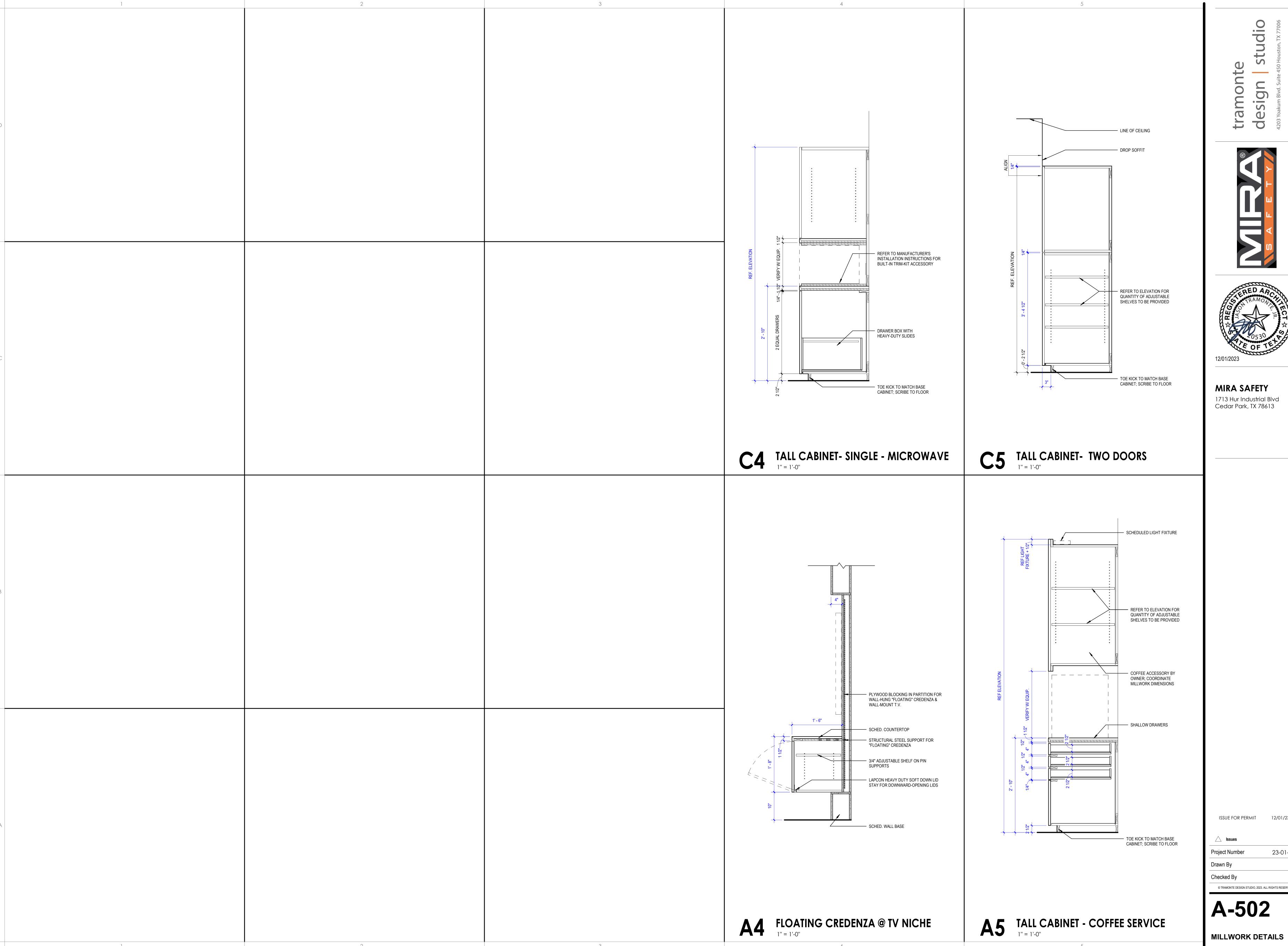
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ENLARGED STAIR PLAN & ELEVATIONS





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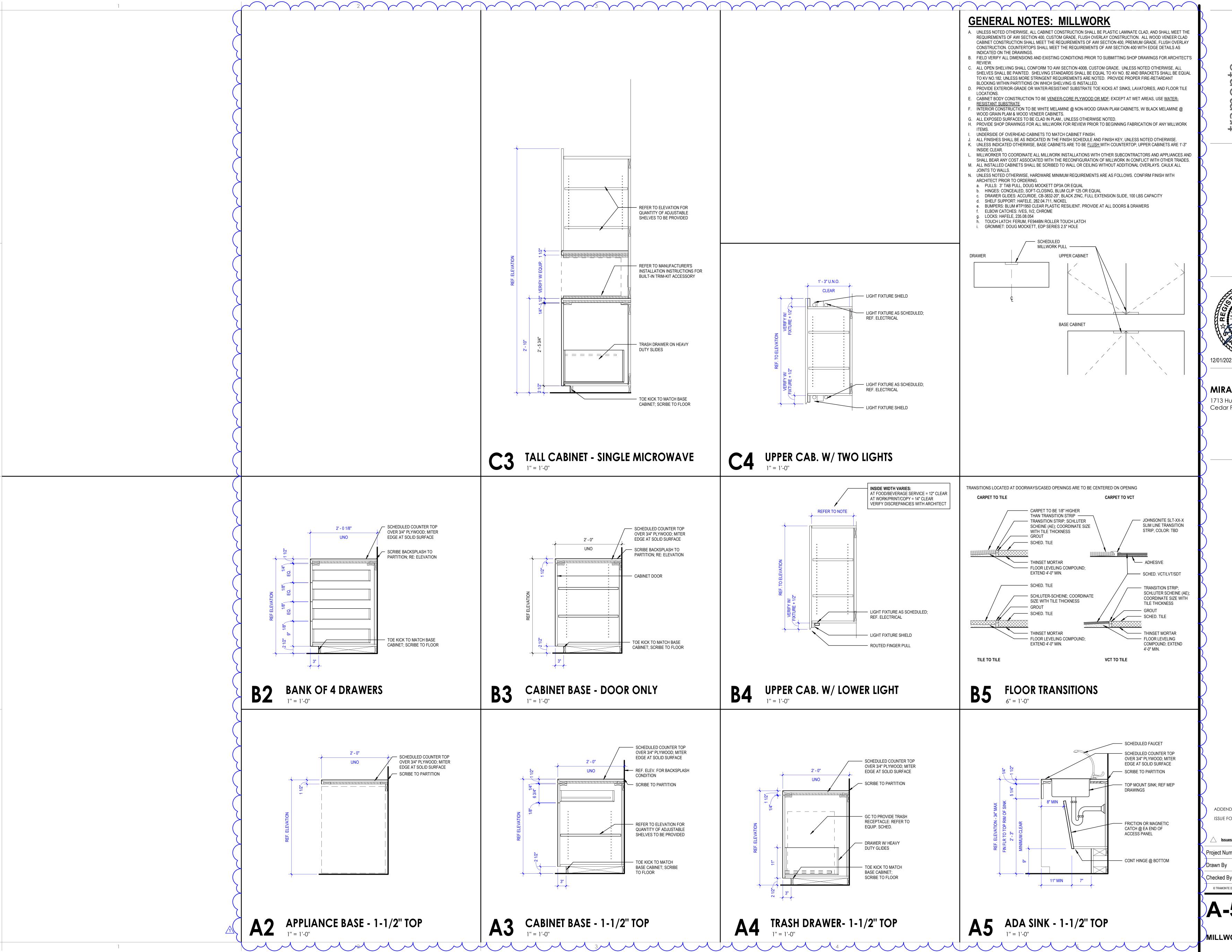


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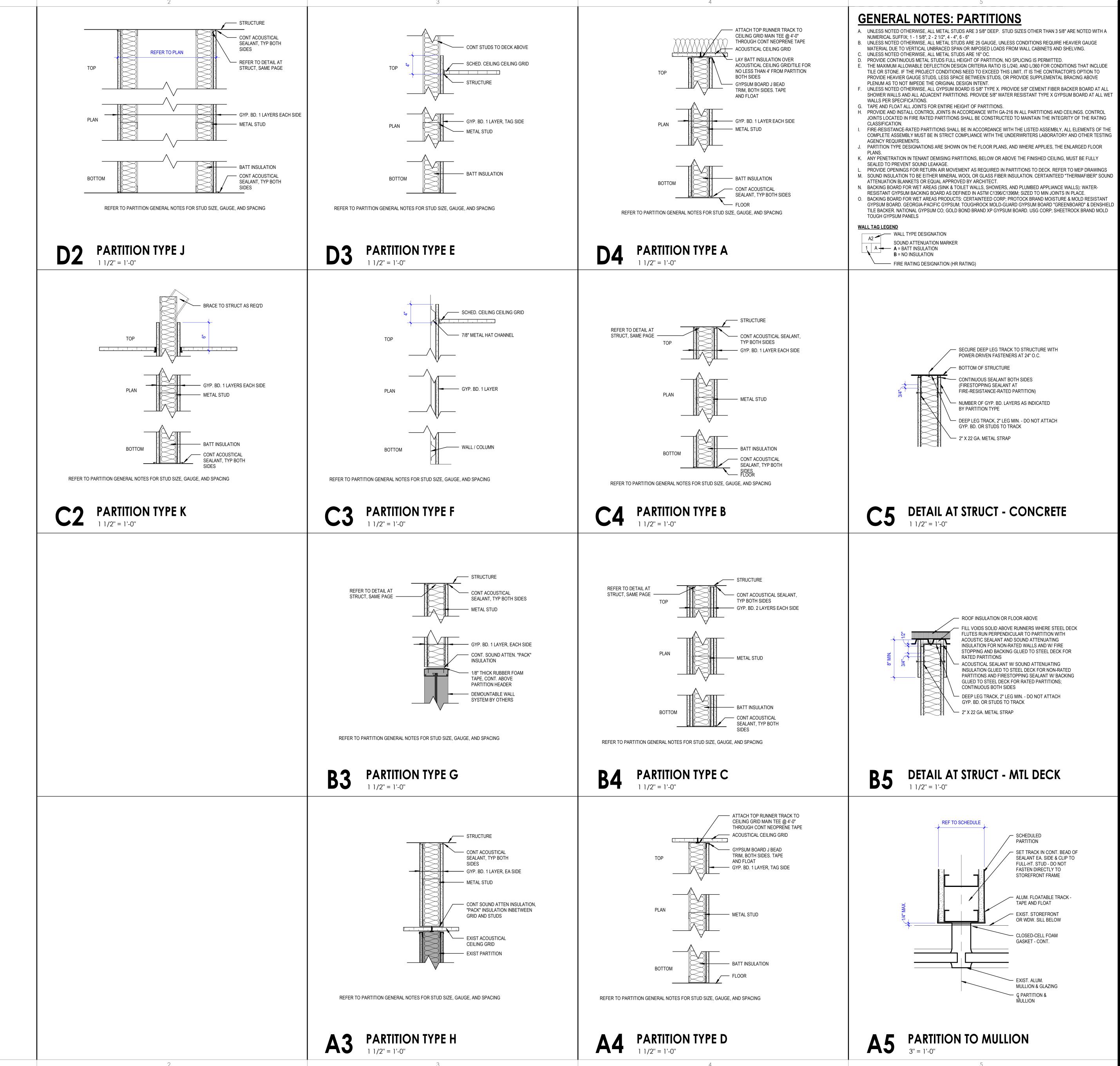
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MILLWORK DETAILS



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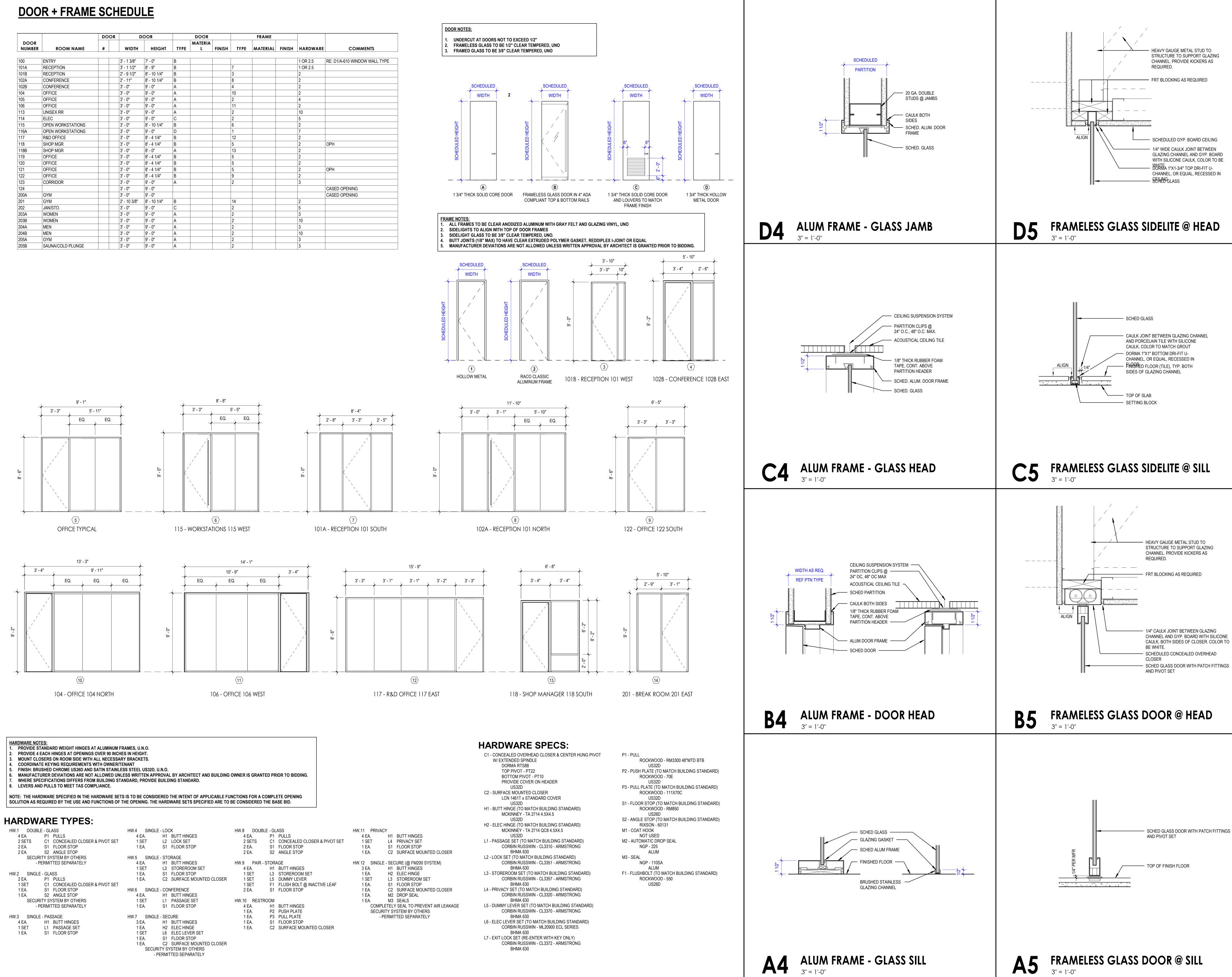
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PARTITION TYPES



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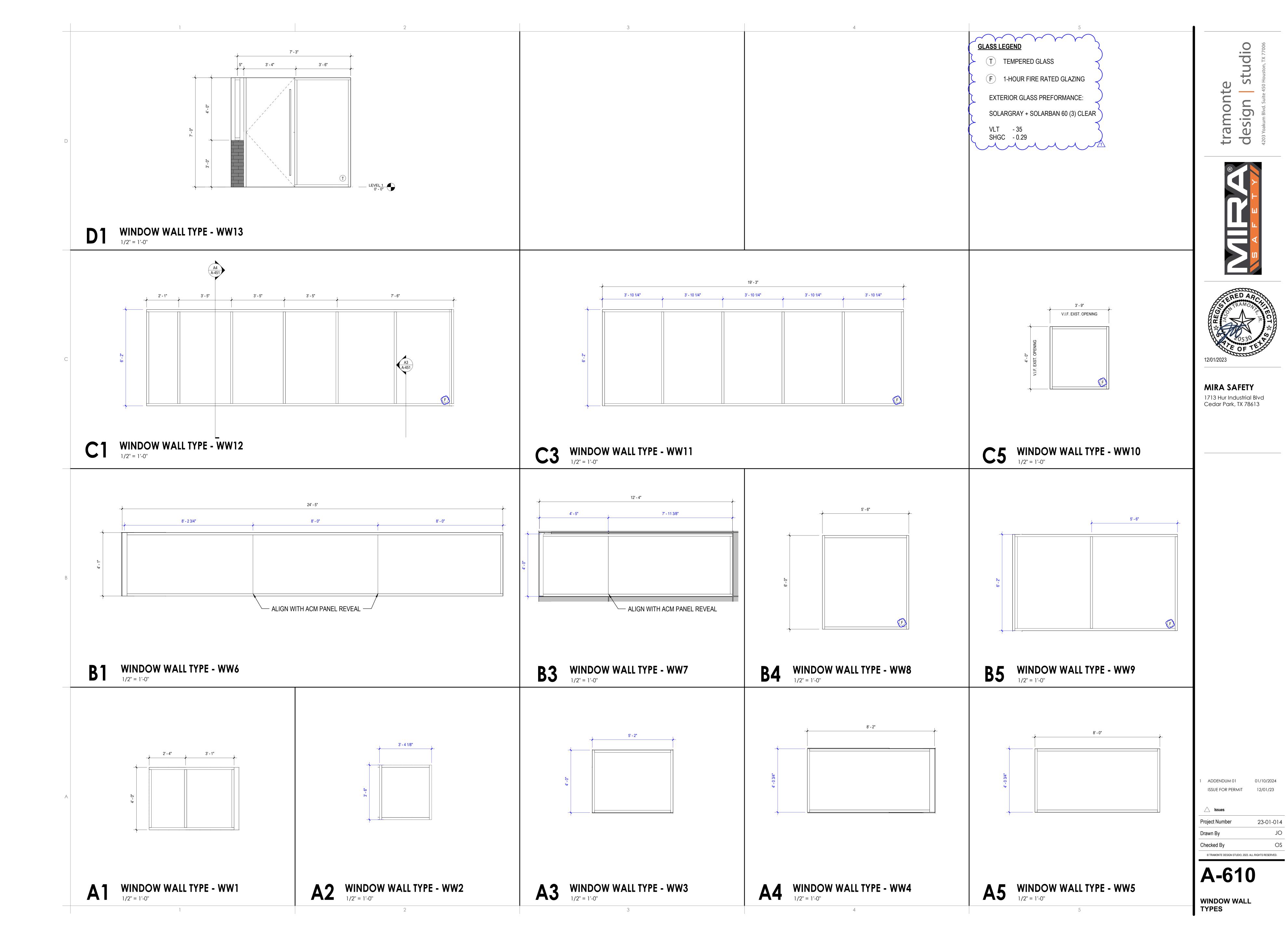
- SCHED GLASS DOOR WITH PATCH FITTINGS

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DOOR TYPES & SCHEDULE



STRUCTURAL NOTES

A. GENERAL

- THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL DETERMINE THE SCOPE OF THE STRUCTURAL WORK FOR BIDDING AND CONSTRUCTION FROM THE CONTRACT DOCUMENTS TAKEN AS A WHOLE. DUE CONSIDERATION SHALL BE GIVEN TO OTHER STRUCTURAL WORK OR WORK RELATED TO THE STRUCTURE, INCLUDING NECESSARY COORDINATION DESCRIBED OR IMPLIED BY THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, CIVIL AND LANDSCAPE DRAWINGS.
- 2. THE STRUCTURE HAS BEEN DESIGNED FOR THE IN-SERVICE LOADS ONLY. METHODS, PROCEDURES, AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.
- 3. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING DETAILS AND ACCURACY OF THE WORK; FOR CONFIRMING AND CORRELATING ALL QUANTITIES, DIMENSIONS AND EXISTING CONDITIONS; AND FOR PERFORMING WORK IN A SAFE AND SECURE MANNER PER OSHA AND DOSH STANDARDS
- 4. WHERE CONFLICTS EXIST AMONG VARIOUS PARTS OF THE STRUCTURAL AND ARCHITECTURAL DRAWINGS, GENERAL NOTES AND SPECIFICATIONS, THE STRICTEST REQUIREMENTS, AS INDICATED BY THE ENGINEER, SHALL GOVERN. REPORT ANY DISCREPANCY TO THE ARCHITECT AND ENGINEER PRIOR TO THE FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBERS.
- 5. CONDITIONS DESCRIBED BY DETAILS, SECTIONS, NOTES AND SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS SHALL ALSO APPLY TO SIMILAR CONDITIONS NOT SPECIFICALLY INCLUDED. IF CONDITIONS ARE FOUND NOT TO BE APPLICABLE, THE STRUCTURAL ENGINEER OF RECORD AND ARCHITECT SHALL BE NOTIFIED BEFORE PROCEEDING WITH WORK.
- 6. THE REPRODUCTIVE USE OF THE STRUCTURAL CONTRACT DOCUMENTS OR ELECTRONIC FILES AS STRUCTURAL SHOP DRAWING DOCUMENTS BY THE CONTRACTOR OR SUB-CONTRACTORS IS AT THEIR OWN RISK. FRACTAL LLC ASSUMES NO LIABILITY AS THE RESULT OF THE REPRODUCTIVE USE OF THE STRUCTURAL CONTRACT DOCUMENTS FOR SHOP DRAWINGS.
- 7. SCALES NOTED ON THE DRAWINGS ARE FOR GENERAL REFERENCE ONLY. NO DIMENSIONAL INFORMATION SHALL BE OBTAINED BY DIRECT SCALING OF THE DRAWINGS.
- 8. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ALL RESULTING REVISIONS TO THE STRUCTURAL SYSTEM OR OTHER TRADES AS A RESULT OF ACCEPTANCE OF CONTRACTOR PROPOSED ALTERNATIVES OR SUBSTITUTIONS.
- 9. PRINCIPAL OPENINGS IN THE STRUCTURE ARE INDICATED ON THE CONTRACT DOCUMENTS. REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR SLEEVES, CURBS, INSERTS, ETC. NOT HEREIN INDICATED. THE LOCATION OF SLEEVES OR OPENINGS IN STRUCTURAL MEMBERS SHALL BE SUBMITTED TO FRACTAL LLC FOR REVIEW.
- 10. ARCHITECTURAL ITEMS OR PREFABRICATED ITEMS SHOWN ON THE STRUCTURAL DRAWINGS ARE REFERENCED FOR GENERAL COORDINATION PURPOSES ONLY.

B. <u>DESIGN CRITERIA</u>

- THE STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE 2021 INTERNATIONAL BUILDING CODE WITH LOCAL AMENDMENTS.
- 2. THE DESIGN GRAVITY LOADS ARE AS FOLLOWS:
- SUPERIMPOSED DEAD LOADS (INCLUDED BUT NOT LIMITED TO THE FOLLOWING):

MECHANICAL AND CEILING 6 PSF
BUILT UP ROOF 4 PSF
FINISHES AS REQUIRED

FINISHES

MECHANICAL AND PIPING LOADS

AS NOTED ON PLANS

(THE CONTRACTOR SHALL DISTRIBUTE THE CONCENTRATED LOADS FROM PIPES, DUCTS AND CEILING TO THE STRUCTURAL MEMBERS IN SUCH A FASHION TO AVOID EXCEEDING SPECIFIED PERMISSIBLE VALUES. CASES WHERE THE PERMITTED DISTRIBUTED LOAD IS EXCEEDED SHALL BE SUBMITTED TO THE ENGINEER OF RECORD AND ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.

LIVE LOADS:

ROOF
GYM
100 PSF
LOUNGE
LOUNGE
LOBBIES, STAIRS & ASSEMBLY AREAS
MECHANICAL EQUIPMENT AND PADS
20 PSF
100 PSF
100 PSF
ACTUAL WEIGHTS

- CONTRACTOR SHALL PROVIDE COMPLETE STRUCTURAL DESIGN OF STEEL FRAMED STAIRS, LANDING PLATFORMS, TREADS, HANDRAILS, GUARDS, BRACING, BRIDGING AND CONNECTIONS TO BUILDING STRUCTURE, PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS. CONTRACTOR SHALL SUBMIT CALCULATIONS AND SHOP DRAWINGS BEARING THE SEAL
- AND SIGNATURE OF THE RESPONSIBLE PROFESSIONAL ENGINEER.

 4. HANDRAILS AND GUARDS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION 1607.7 AND TABLE 1607.1 OF THE INTERNATIONAL BUILDING CODE AS FOLLOWS:
- A. HANDRAIL ASSEMBLES AND GUARDS SHALL BE DESIGNED TO SUPPORT A LATERAL LOAD OF 50 POUNDS PER LINEAR FOOT (PLF) APPLIED IN ANY DIRECTION AT THE TOP AND TO TRANSFER THIS LOAD THROUGH THE SUPPORTS TO THE STRUCTURE.

 B. HANDRAIL ASSEMBLIES AND GUARDS SHALL BE DESIGNED TO SUPPORT A LOAD OF 200 lbs
- APPLIED IN ANY DIRECTION AT ANY POINT ALONG THE TOP. THESE LOADS NEED NOT BE ASSUMED TO ACT CUMULATIVELY WITH THOSE IN NOTE (A) ABOVE.

 C. INTERMEDIATE RAILS, BALUSTERS, AND PANEL FILLERS SHALL BE DESIGNED TO SUPPORT A HORIZONTALLY APPLIED NORMAL LOAD OF 50 POUNDS ON AN AREA EQUAL TO ONE SQUARE FOOT, INCLUDING OPENINGS AND SPACE BETWEEN RAILS. REACTIONS DUE TO THIS LOADING ARE NOT REQUIRED TO BE SUPERIMPOSED WITH THOSE IN NOTE (A) OR (B)
- 5. STAIR TREADS AND STRINGERS SHALL BE DESIGNED FOR A UNIFORM LOAD OF 100 PSF. INDIVIDUAL STAIR TREADS SHALL ALSO BE DESIGNED TO SUPPORT A 300 LB. LOAD ON A 4 SQUARE INCH AREA IN A POSITION THAT WILL CAUSE MAXIMUM STRESS.
- 6. FLOOR LIVE LOADS ARE REDUCED FOR SLAB SYSTEMS, BEAMS, GIRDERS, COLUMNS, PIERS, WALLS, AND FOUNDATIONS IN ACCORDANCE WITH SECTION 1607.9 OF THE INTERNATIONAL BUILDING CODE.
- 7. THE STRUCTURE HAS BEEN DESIGNED TO WITHSTAND THE WIND PRESSURES SPECIFIED IN CHAPTER 16, SECTION 1609, OF THE INTERNATIONAL BUILDING CODE, ACCORDING TO THE FOLLOWING INFORMATION:

ULTIMATE DESIGN WIND SPEED, V(ult) 106 MPH
WIND DIRECTIONALITY FACTOR 0.85
BUILDING CATEGORY II
EXPOSURE CATEGORY B

8. THE FLOOR SYSTEM HAS BEEN DESIGNED TO WITHSTAND A CONCENTRATED LOAD OF 2000 POUNDS PLACED UPON ANY SPACE 2'-6" SQUARE, IN ACCORDANCE WITH SECTION 1607.4 OF THE

C. EXISTING BUILDING

- INSTALL TEMPORARY SUPPORTS AND OTHER MEASURES AS REQUIRED TO PREVENT DAMAGE TO THE EXISTING BUILDING DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION AND FINAL CLEARANCE OF REQUIRED NEEDLING, SHORING, UNDERPINNING OR BRACING OF THE EXISTING BUILDING.
- 2. FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS AND CONDITIONS WHICH AFFECT THE NEW CONSTRUCTION PRIOR TO THE START OF WORK. EXISTING CONDITIONS SHOWN ON THE DRAWINGS ARE BASED ON THE ORIGINAL CONSTRUCTION DRAWINGS PROVIDED BY THE ARCHITECT AND HAVE NOT BEEN CONFIRMED, ARE NOT GUARANTEED AND MAY CONFLICT WITH THE NEW WORK REQUIRED.
- 3. FIELD VERIFY THAT THE EXISTING FRAMING AFFECTED BY THE NEW WORK IS IN SOUND CONDITION AND DOES NOT DISPLAY VISIBLE SIGNS OF DISTRESS OR DETERIORATION OR HAS BEEN PREVIOUSLY MODIFIED OR ALTERED.
- 4. IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BETWEEN THE INFORMATION SHOWN ON THE DRAWINGS AND ACTUAL FIELD CONDITIONS; DO NOT PROCEED WITH THAT PORTION OF WORK UNTIL ALL DISCREPANCIES HAVE BEEN RESOLVED. THE CONTRACTOR SHALL SUBMIT A FIELD SURVEY SHOWING ALL DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND THE NEW WORK. BASED ON THE REPORTED FIELD CONDITIONS, THE ARCHITECT WILL SUBMIT SUPPLEMENTAL INSTRUCTIONS FOR ALL WORK (NEW OR EXISTING) REQUIRING MODIFICATION.

D. FOUNDATION AND SLAB ON GRADE

- 1. THE CONTRACTOR SHALL PERFORM EXCAVATIONS, FOOTING CONSTRUCTION, AND PREPARATION OF THE SUB-GRADE UNDER THE SLAB ON GRADE IN ACCORDANCE WITH THE REQUIREMENTS NOTED IN THESE DRAWINGS AND SECTION 1804 OF THE IBC.
- 2. THE FOUNDATION (SHALLOW SPREAD FOOTINGS) FOR THE STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING ALLOWABLE SOIL BEARING PRESSURES PER TABLE 1806.2 OF THE IBC. THE SOIL MATERIAL AT THE SITE CONSISTS OF SANDY SILTY CLAY (CL-ML), SANDY LEAN CLAY (CL), FAT CLAY (CH):

VERTICAL FOUNDATION PRESSURE......1,500 PSF
LATERAL BEARING PRESSURE......100 PSF/FT BELOW NATURAL GRADE
LATERAL SLIDING RESISTANCE......130 PSF COHESION*

* COHESION VALUE TO BE MULTIPLIED BY THE CONTACT AREA, AS LIMITED BY SECTION 1806.3.2.F

- DRILLED PIERS SHALL BE EXCAVATED, CLEANED, REINFORCED AND THE CONCRETE SHALL BE PLACED ON THE SAME DAY. DRILLED PIERS WITH LESS THAN 2'-0" CLEAR BETWEEN BELLS OR SHAFTS SHALL BE EXCAVATED AND CONCRETE PLACED A MINIMUM OF 24 HOURS APART. IF BELLS CANNOT BE FORMED WITHOUT CAVING OF THE SOIL, THE ARCHITECT, GEOTECHNICAL ENGINEER AND FRACTAL LLC SHALL BE NOTIFIED BEFORE FURTHER CONSTRUCTION IS ATTEMPTED.
- 4. EXCAVATIONS FOR FOOTINGS SHALL BE CLEANED AND HAND TAMPED TO A UNIFORM SURFACE. FOOTING EXCAVATIONS SHALL HAVE THE SIDES AND BOTTOMS TEMPORARILY LINED WITH 6 MIL VISQUEEN IF PLACEMENT OF CONCRETE DOES NOT OCCUR WITHIN 24 HOURS OF THE EXCAVATION OF
- 5. FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION, WHICH DIFFER FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT SHALL BE REPORTED TO THE ARCHITECT, GEOTECHNICAL ENGINEER AND FRACTAL LLC BEFORE FURTHER CONSTRUCTION IS ATTEMPTED.
- 6. REINFORCEMENT PLACEMENT SEQUENCE FOR FOOTINGS IS NOTED ONLY FOR MAJOR REINFORCEMENT BAR LAYERS. IN SPREAD FOOTINGS AND MATS THE CONTRACTOR SHALL SEQUENCE ALL OTHER BAR PLACEMENTS AS REQUIRED TO CONFORM TO THE CONTRACT DOCUMENTS.
- 7. GENERAL CONTRACTOR SHALL NOTIFY THE ARCHITECT AND FRACTAL LLC., 48 HOURS PRIOR TO PLACEMENT OF CONCRETE IN THE FOOTINGS.
- 8. SUBGRADE UNDER SLABS ON FILL SHALL HAVE A PLASTICITY INDEX BETWEEN 7 AND 15 PERCENT AND SHALL BE PREPARED, PLACED, AND COMPACTED IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT.
- 9. THE FOUNDATION EXCAVATIONS AND FLOOR SUBGRADE SHALL BE PROPERLY COMPACTED AND FREE OF STANDING WATER, MUD, AND FROZEN SOIL.
- 10. A VAPOR BARRIER WITH A PERFORMANCE EQUIVALENT TO A 15 MIL STEGOWRAP SHALL BE PLACED BENEATH THE SLAB ON GRADE.
- 11. WHERE THE SLAB IS TO RECEIVE SENSITIVE ARCHITECTURAL FLOOR FINISHES, ALL JOINTS IN THE SLAB CONSTRUCTION SHALL BE PLACED TO ALIGN WITH JOINTS IN THE FLOOR FINISHES.
- 12. THE SLAB ON GRADE SHALL HAVE CONSTRUCTION JOINTS OR CRACK CONTROL JOINTS AT EACH COLUMN LINE IN EACH DIRECTION. ADDITIONAL CRACK CONTROL JOINTS SHALL BE PROVIDED USING THE FOLLOWING GUIDELINES: (SEE S3.00 FOR ADD'L DETAILS AND REINFORCEMENT)

 A. NO AREA BOUNDED BY CONTROL JOINTS SHALL CONTAIN MORE THAN 225 SQUARE FEET.

 B. THE SPACING OF THE JOINTS SHALL NOT EXCEED 36 TIMES THE SLAB THICKNESS.

 C. MAXIMUM ASPECT RATIO (LENGTH/WIDTH) = 1.5.

E. CONCRETE DECK ON STEEL FORMS

NO RE-ENTRANT CORNERS.

- 1. ELEVATED FLOOR SLABS SHALL BE NORMAL WEIGHT CONCRETE, THREE (3) INCHES THICK (2 7/16" NW CONCRETE PLUS 9/16" DEEP STEEL DECK). STEEL DECK SHALL BE 24 GA (MIN.) COLD FORMED STEEL CONFORMING TO ASTM A653, STRUCTURAL GRADE QUALITY 40 WITH COATING DESIGNATION G60 (GALVANIZED). COMPOSITE STEEL DECK SHALL BE 9/16 INCHES DEEP AND SHALL HAVE A MINIMUM SECTION MODULUS OF 0.057 INCHES CUBED PER FOOT OF WIDTH. REINFORCE SLAB WITH 6X6 W2.1xW2.1 WELDED WIRE FABRIC. DESIGN IS BASED ON VULCRAFT 0.6C AND THE INFORMATION PROVIDED IN THE VULCRAFT STEEL ROOF AND FLOOR DECK CATALOG, 2008 EDITION.
- PROPERTIES AND ALLOWABLE STRESSES OF STEEL FLOOR DECKS SHALL BE BASED ON THE AMERICAN IRON AND STEEL INSTITUTE (AISI) "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS".
- THE COMPOSITE STEEL DECK SHALL BE PLACED TO HAVE A THREE SPAN CONFIGURATION WHERE POSSIBLE AND AT LEAST A TWO SPAN CONFIGURATION UNLESS NOTED OTHERWISE. GENERAL CONTRACTOR SHALL COORDINATE WITH DECK SUPPLIER TO DETERMINE DECK GAGE REQUIRED FOR SINGLE SPAN CONDITIONS.
- ATTACHMENT OF COMPOSITE STEEL DECK:
 - STEEL DECK UNITS SHALL BE WELDED TO SUPPORT MEMBERS WITH 5/8" DIAMETER PUDDLE WELDS AT EACH END OF SHEET AND EACH INTERMEDIATE SUPPORT AT EACH LOW FLUTE, U.N.O. AT MEMBERS PARALLEL TO DECK SPAN, SPACING OF PUDDLE WELDS SHALL BE 12" O.C. A SHEAR CONNECTOR WELDED THROUGH THE DECK CAN REPLACE A
- B. SIDE LAPS OF ADJACENT UNITS SHALL BE FASTENED AT MID-SPAN OR 36 INCH INTERVALS, WHICHEVER IS LESS. TEK SCREWS CAN BE SUBSTITUTED FOR WELDS AFTER THE APPROVAL OF THE ENGINEER.
- 5. DECK FLUTES SHALL BE ALIGNED AND DECK ENDS SHALL BE BUTTED OVER SUPPORTS. CLOSURE STRIPS SHALL BE USED AT DISCONTINUOUS ENDS ONLY.
- 6. IN ADDITION TO THE SPECIFICATIONS NOTED ELSEWHERE, THE FLOOR DECK CONCRETE SHALL CONFORM TO THE FOLLOWING:

 MAXIMUM WATER CEMENT RATIO BY WEIGHT

 MAXIMUM SLUMP PRIOR TO PLASTICIZERS

 MAXIMUM AGGREGATE SIZE

 1/4 INCH
- 7. STEEL DECK SHALL BE FREE FROM OIL, DIRT, AND ANY OTHER DELETERIOUS MATERIALS THAT WOULD TEND TO REDUCE THE BOND BETWEEN THE CONCRETE AND THE STEEL DECK.
- 8. PROVIDE SUFFICIENT CHAIRS, BOLSTER BARS, ETC. TO MAINTAIN THE WELDED WIRE FABRIC AND REINFORCEMENT BARS AT THE DEPTH SPECIFIED.

F. STEEL ROOF DECK

- 1. ROOF DECK SHALL BE RIGID INSULATION BOARD ON GALVANIZED TYPE B STEEL ROOF DECK. TYPE B STEEL DECK SHALL BE 22 GAGE COLD FORMED STEEL CONFORMING TO ASTM A653, STRUCTURAL QUALITY GRADE 33, COATING DESIGNATION G60. STEEL ROOF DECK SHALL BE 1-1/2 INCHES DEEP WITH A MINIMUM SECTION MODULUS (SP) OF 0.186 INCHES CUBED PER FOOT OF WIDTH. GENERAL CONTRACTOR SHALL COORDINATE ABILITY OF INSULATION BOARD TO SPAN OVER FLUTES OF TYPE B DECK.
- PROPERTIES AND ALLOWABLE STRESSES OF STEEL ROOF DECKS SHALL BE BASED ON THE AMERICAN IRON AND STEEL INSTITUTE (AISI) "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS".
- STEEL ROOF DECK SHALL BE PLACED TO HAVE A THREE SPAN CONFIGURATION WHERE POSSIBLE AND AT LEAST A TWO SPAN CONFIGURATION UNLESS NOTED OTHERWISE. GENERAL CONTRACTOR SHALL COORDINATE WITH DECK SUPPLIER TO DETERMINE DECK GAGE REQUIRED FOR SIMPLE SPAN CONFIGURATION.
- 4. PLUG WELD ROOF DECK TO SUPPORTING STEEL AND ADJOINING DECK SHEETS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AMERICAN WELDING SOCIETY STANDARD D1.3. 36 INCH WIDE DECK SHEETS SHALL BE WELDED AT END LAPS, END SUPPORTS, AND INTERMEDIATE SUPPORTS USING 5/8" DIAMETER PUDDLE WELDS. DECK SHEETS SHALL BE WELDED WITH 36/7 PATTERN WITHIN 10 FEET OF THE PERIMETER OF THE BUILDING (7 WELDS, ONE AT EACH SIDELAP AND ONE AT EACH VALLEY) AND SIDE LAPS IN THESE AREAS SHALL BE FASTENED TOGETHER WITH 1-#10 TEK SCREW AT MID-SPAN BETWEEN SUPPORTS. IN OTHER AREAS, DECK SHEETS SHALL BE WELDED WITH 36/4 PATTERN (4 WELDS, ONE AT EACH SIDELAP AND ONE AT EVERY OTHER VALLEY) AND SIDE LAPS IN THESE AREAS SHALL BE FASTENED TOGETHER WITH 1-#10 TEK SCREW AT MID-SPAN BETWEEN SUPPORTS.

G. CONCRETE

- ALL CONCRETE WORK SHALL CONFORM TO ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AND ACI 301 "SPECIFICATION FOR STRUCTURAL CONCRETE".
- 2. CONCRETE SHALL HAVE NATURAL SAND FINE AGGREGATE AND NORMAL WEIGHT COARSE AGGREGATES CONFORMING TO ASTM C33, TYPE I PORTLAND CEMENT CONFORMING TO ASTM C150, AND SHALL HAVE THE FOLLOWING COMPRESSIVE STRENGTH (F'c) AT 28 DAYS.

GRADE BEAMS AND PLINTHS 3000 PSI SLAB-ON-GRADE 3000 PSI SLABS ON STEEL DECK 4000 PSI

- FLY ASH MAY BE USED AS A POZZOLAN TO REPLACE A PORTION OF THE PORTLAND CEMENT IN A CONCRETE MIX, SUBJECT TO THE APPROVAL OF THE GENERAL CONTRACTOR AND THE STRUCTURAL ENGINEER. FLY ASH, WHEN USED, SHALL CONFORM TO ASTM C618, TYPE C OR F. CONCRETE MIXES USING FLY ASH SHALL BE PROPORTIONED TO ACCOUNT FOR THE PROPERTIES OF THE SPECIFIC FLY ASH USED AND TO ACCOUNT FOR THE SPECIFIC PROPERTIES OF THE FLY ASH CONCRETE THUS RESULTING. THE RATIO OF THE AMOUNT OF THE FLY ASH TO THE TOTAL AMOUNT OF FLY ASH AND CEMENT IN THE MIX SHALL NOT EXCEED 25 PERCENT.
- 4. GROUT FOR BASE PLATES SHALL BE NONSHRINKABLE, NON-METALLIC CONFORMING TO ASTM C827, AND SHALL HAVE A SPECIFIED COMPRESSIVE STRENGTH AT 28 DAYS OF 5000 PSI. PREGROUTING OF BASE PLATES WILL NOT BE PERMITTED.
- 5. SLUMP TESTS SHALL BE MADE PRIOR TO THE ADDITION OF PLASTICIZERS. CONCRETE FOR THE PREPARATION OF TEST CYLINDERS SHALL BE TAKEN FROM THE HOSE END FOR CONCRETE PLACED BY PLIMP
- 6. WATER SHALL NOT BE ADDED TO THE CONCRETE AT THE JOBSITE UNLESS THE TOTAL WATER QUANTITY INCLUDING THE WATER ADDED AT THE JOBSITE DOES NOT EXCEED THE TOTAL WATER QUANTITY OF THE REVIEWED MIX DESIGN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE REQUIREMENTS OF THE CONCRETE SUPPLIER AND PUMPER TO MEET THIS REQUIREMENT AND TO ENSURE A PUMPABLE AND WORKABLE MIX. THE USE OF PLASTICIZERS, RETARDANTS, AND OTHER ADDITIVES SHALL BE AT THE OPTION OF THE CONTRACTOR SUBJECT TO THE APPROVAL OF FRACTAL LLC. FOLLOW THE RECOMMENDATIONS OF THE MANUFACTURER FOR THE PROPER USE OF ADDITIVES. THE USE OF CALCIUM CHLORIDE OR OTHER CHLORIDE BEARING SALTS IS
- 7. PLACE CONCRETE IN A MANNER SO AS TO PREVENT SEGREGATION OF THE MIX. DELAY FLOATING AND TROWELING OPERATIONS UNTIL THE CONCRETE HAS LOST SURFACE WATER SHEEN OR ALL FREE WATER. DO NOT SPRINKLE FREE CEMENT ON THE SLAB SURFACE. FINISHING OF SLAB SURFACES SHALL COMPLY WITH THE RECOMMENDATIONS OF ACI 302.1 AND 304.
- 8. PROVIDE CURING OF DECK IMMEDIATELY AFTER FINISHING. REFER TO THE SPECIFICATIONS FOR REQUIREMENTS. PROTECT THE CONCRETE SURFACE BETWEEN FINISHING OPERATIONS ON HOT, DRY, OR WINDY DAYS OR ANY TIME PLASTIC SHRINKAGE CRACKS COULD DEVELOP BY USING WET BURLAP, PLASTIC MEMBRANES, OR FOGGING. PROTECT CONCRETE DECK AT ALL TIMES FROM RAIN, HAIL, OR OTHER INJURIOUS EFFECTS.
- 9. THE CONTRACTOR SHALL SUBMIT FOR REVIEW A MIX DESIGN FOR THE PROPOSED CONCRETE. MIX DESIGNS SHALL BE IN COMPLIANCE WITH THE METHODS PERMITTED IN IBC AND PROJECT SPECIFICATIONS. THE CONTRACTOR SHALL NOT VARY FROM THE MIX DESIGN WITHOUT THE APPROVAL OF FRACTAL LLC.
- 10. DETAILING AND PLACING OF CONCRETE REINFORCEMENT BARS AND ACCESSORIES SHALL CONFORM TO THE RECOMMENDATIONS OF ACI SP-66 "DETAILING MANUAL" AND CRSI "MANUAL OF STANDARD PRACTICE"
- SLABS, WALLS, JOISTS (ALL OTHER BARS)......1-1/2 INCHES
 BEAMS AND COLUMNS......1-1/2 INCHES

PROVIDE STANDARD BAR CHAIRS AND SPACERS AS REQUIRED TO MAINTAIN CONCRETE PROTECTION

..3/4 INCHES

CONCRETE REINFORCEMENT BARS SHALL CONFORM TO ASTM A615, GRADE 60.

SLABS, WALLS, JOISTS (#11 BARS AND SMALLER)...

- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. FABRIC SHALL BE SUPPLIED IN FLAT SHEETS. FABRIC SHALL BE LAPPED TWO MESH AT SPLICES.
- 14. REINFORCEMENT BARS SHALL NOT BE TACK WELDED, WELDED, HEATED, OR CUT UNLESS INDICATED ON THE CONTRACT DOCUMENTS OR REVIEWED BY THE STRUCTURAL ENGINEER.
- 15. WELDING OF REINFORCEMENT BARS, WHEN ACCEPTED BY THE STRUCTURAL ENGINEER, SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STANDARD D1.4. ELECTRODES FOR SHOP AND FIELD WELDING OF REINFORCEMENT BARS SHALL CONFORM TO ASTM A233, CLASS E90XX.
- 16. REINFORCEMENT DESIGNATED AS "CONTINUOUS" MAY BE SPLICED USING TYPE "B" SPLICES.
 REINFORCEMENT BAR SPLICE LENGTHS IN BEAMS WHICH ARE LOCATED AT THE CENTERLINE OF
 SUPPORTS FOR BOTTOM BARS AND AT MIDSPAN FOR TOP BARS MAY BE 36 BAR DIAMETERS, UNLESS
 NOTED OTHERWISE. PROVIDE STANDARD ACI HOOKS FOR TOP AND BOTTOM BARS AT DISCONTINUOUS
- ENDS OF ALL GRADE BEAMS.

 17. HORIZONTAL FOOTING AND HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS AND SHALL HAVE 90- DEGREE BENDS AND EXTENSIONS, OR CORNER BARS OF EQUIVALENT SIZE LAPPED 36 BAR DIAMETERS, AT CORNERS AND INTERSECTIONS.
- 18. HORIZONTAL JOINTS WILL NOT BE PERMITTED IN CONCRETE CONSTRUCTION EXCEPT AS SHOWN ON THE CONTRACT DOCUMENTS. VERTICAL JOINTS MAY OCCUR AT CENTER OF SPANS AT LOCATIONS REVIEWED BY FRACTAL LLC.
- 19. CONSTRUCTION JOINTS BETWEEN FOOTINGS AND THE FLOOR SYSTEM THEY SUPPORT SHALL BE PREPARED BY ROUGHENING THE CONTACT SURFACE TO A FULL AMPLITUDE OF APPROXIMATELY 1/4 INCH, LEAVING THE CONTACT SURFACE CLEAN AND FREE OF LAITANCE.
- FROM THE TOP AND THE SIDE OF THE SLAB AT THE CORNER.

 21. CONDUIT, PIPES, AND SLEEVES EMBEDDED IN CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF

ACI 318, CHAPTER 6.3.

PROVIDE 1- NO. 4 REINFORCEMENT BAR X 4'-0" AT RE-ENTRANT CORNERS AND AROUND RECTANGULAR

HOLES IN SLABS UNLESS NOTED OTHERWISE. PLACE BAR DIAGONAL TO CORNER WITH 1" CLEARANCE

H. <u>STRUCTURAL STEEL</u>

- 1. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC 360 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AND THE AISC 303 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
- 2. CONTRACTOR SHALL FABRICATE AND ERECT STEEL IN ACCORDANCE WITH LATEST OSHA SAFETY REQUIREMENTS, INCLUDING 29 CFR PART 1926 SAFETY STANDARDS FOR STEEL ERECTION.
- 3. STRUCTURAL STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS UNLESS NOTED OTHERWISE ON THE CONTRACT DOCUMENTS:

WIDE FLANGE SHAPES (W) GRADE 50 (50 KSI) ASTM A992, CHANNELS, AND ANGLES ASTM A36 SQUARE AND RECTANGULAR TUBES (HSS) GRADE B (46 KSI) ASTM A500 ROUND TUBES (HSS) ASTM A500 GRADE B (42 KSI) STEEL PIPE ASTM A53 GRADE B (35 KSI) M, S AND MC SHAPES ASTM A36 (36 KSI) PLATES AND BARS ASTM A36 (36 KSI) ANCHOR BOLTS (ANCHOR RODS) ASTM F1554 OR ASTM A307 (36 KSI)

- THE DETAILS ON THESE DRAWINGS INDICATE GENERAL CRITERIA FOR DESIGN AND DETAILING OF CONNECTIONS AND ARE NOT INTENDED TO CONVEY COMPLETE CONNECTION DESIGN. ALL CONNECTIONS, SPLICES AND ERECTION PIECES SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR'S STRUCTURAL ENGINEER LICENSED IN THE JURISDICTION OF THE PROJECT, UNLESS CONNECTIONS ARE INDICATED AS BEING FULLY DESIGNED IN THE STRUCTURAL DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED BEARING THE ENGINEER'S SEAL AND SIGNATURE. CALCULATIONS BEARING THE ENGINEER'S SEAL AND SIGNATURE SHALL BE AVAILABLE UPON REQUEST OF THE STRUCTURAL ENGINEER.
- 5. DESIGN ALL CONNECTIONS FOR FORCES INDICATED ON THE DRAWINGS. CONNECTION DESIGN FORCES INDICATED ON THE DRAWINGS ARE UNFACTORED U.N.O. WHERE THE REACTION IS OMITTED FROM THE DRAWINGS, DESIGN THE CONNECTION FOR ONE HALF OF THE MAXIMUM TOTAL UNIFORM LOAD AS DEFINED IN THE AISC STEEL CONSTRUCTION MANUAL 13TH EDITION, TABLE 3-6. MOMENT CONNECTIONS SHALL BE DESIGNED FOR THE FULL PLASTIC MOMENT OF THE BEAM IF THE MOMENT IS OMITTED FROM THE DRAWINGS.
- 6. CONNECTION BOLTS FOR STRUCTURAL STEEL MEMBERS SHALL BE HIGH STRENGTH BOLTS WHICH MEET OR EXCEED THE REQUIREMENTS OF ASTM A325, TYPE N, X, OR SC CLASS A. BOLTS SHALL BE DESIGNED AS BEARING TYPE BOLTS, EXCEPT AS NOTED. BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH THE "SNUG TIGHT" CONDITION AS OUTLINED IN THE "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS". BOLTS SHALL HAVE A HARDENED WASHER PLACED UNDER THE ELEMENT TO BE TIGHTENED.
- 7. NO CONNECTION SHALL CONSIST OF LESS THAN (2) 3/4" DIA. A325-N BOLTS OR WELDS DEVELOPING LESS THAN 12 KIPS. MINIMUM WELD SIZE SHALL BE 3/16" FILLET WELD.
- 8. DO NOT USE OVERSIZED OR SLOTTED HOLES FOR ANY CONNECTIONS UNLESS SPECIFICALLY
- PRIOR TO DETAILING CONNECTIONS FOR STRUCTURAL STEEL, THE STEEL FABRICATOR SHALL SUBMIT FOR APPROVAL REPRESENTATIVE DETAILS AND CALCULATIONS FOR EACH TYPE OF STRUCTURAL STEEL CONNECTION TO BE UTILIZED. AFTER APPROVAL, THE CONNECTIONS MAY BE INCORPORATED INTO THE SHOP DRAWINGS.

INDICATED ON THE DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.

- WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STANDARD D1.1. ELECTRODES FOR SHOP AND FIELD WELDS SHALL CONFORM TO AWS A5.1 OR AWS A5.5, CLASS E70XX, LOW
- 11. SPLICING OF STRUCTURAL STEEL MEMBERS WHERE NOT DETAILED ON THE CONTRACT DOCUMENTS IS PROHIBITED WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER AS TO LOCATION, TYPE OF SPLICE AND CONNECTION TO BE MADE.
- 12. BEAMS SHALL BE CAMBERED UPWARD WHERE SHOWN ON THE CONTRACT DOCUMENTS. WHERE NO UPWARD CAMBER IS INDICATED, ANY MILL CAMBER SHALL BE DETAILED UPWARD IN THE BEAMS.
- 13. NO MISFABRICATED STRUCTURAL STEEL MAY BE ERECTED PRIOR TO REVIEW BY THE ENGINEER.
- 14. PENETRATIONS SHALL NOT BE CUT IN STRUCTURAL STEEL MEMBERS UNLESS SO INDICATED IN THE DRAWINGS OR AS REVIEWED BY THE ENGINEER.
- HEADED CONCRETE ANCHORS SHALL BE NELSON OR KSM HEADED CONCRETE ANCHORS (OR ACCEPTABLE EQUAL), AND SHALL CONFORM TO ASTM A108, GRADES C-1010 THROUGH C-1020.

 ANCHORS SHALL BE AUTOMATICALLY END WELDED WITH SUITABLE STUD WELDING EQUIPMENT.

 WELDING SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE NELSON STUD WELDING COMPANY OR THE KSM WELDING SYSTEMS COMPANY.
- DEFORMED BAR ANCHORS (D.B.A.) SHALL BE NELSON OR KSM DEFORMED BAR ANCHORS (OR ACCEPTABLE EQUAL), AND SHALL BE MADE FROM COLD DRAWN WIRE PER ASTM A496 CONFORMING TO ASTM A108 WITH A MINIMUM YIELD STRENGTH OF 70 KSI. ANCHORS SHALL BE AUTOMATICALLY END WELDED WITH SUITABLE WELDING EQUIPMENT. WELDING SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE NELSON STUD WELDING COMPANY OR THE KSM WELDING SYSTEMS COMPANY.
- 17. WHERE INDICATED ON THE DRAWINGS, STRUCTURAL STEEL MEMBERS, FABRICATIONS, AND WELDED ASSEMBLIES SHALL BE GALVANIZED AFTER FABRICATION BY HOT DIP PROCESS IN ACCORDANCE WITH ASTM A123. WEIGHT OF ZINC COATING SHALL CONFORM TO THE REQUIREMENTS SPECIFIED UNDER "WEIGHT OF COATING" IN ASTM A123 OR ASTM A386, AS APPLICABLE. THE AFFECTED PORTIONS OF FIELD WELDED GALVANIZED ASSEMBLIES SHALL BE FIELD PAINTED WITH ZINC RICH CORROSION RESISTANT PAINT.
- ARCHITECTURALLY EXPOSED STRUCTURAL STEEL MEMBERS AND CONNECTIONS SHALL CONFORM WITH THE REQUIREMENTS OF THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" FOR ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS), SECTION 10, UNLESS MORE STRINGENT REQUIREMENTS ARE SHOWN OR SPECIFIED ELSEWHERE.

PAINTED.FIREPROOFING MATERIAL THICKNESS SHALL BE INCREASED AS REQUIRED FOR STEEL

MEMBERS NOT CONFORMING TO THE MINIMUM SIZES INDICATED IN THE U.L. FIRE RESISTANCE

STRUCTURAL STEEL MEMBERS TO RECEIVE FIREPROOFING SHALL NOT BE PRIMED NOR

DIRECTORY-VOLUME 1 AND FOR STEEL MEMBERS DETERMINED UNRESTRAINED.

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12/01/2023

MIRA SAFETY

1713 Hur Industrial Blvd
Cedar Park, TX 78613

Drawn By
Checked By

Texas Firm Registration No. F-16958
FRACTAL Project No.23-065-00
9722 Gaston Road Suite 150-241
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Office +1-832-404-2280

S1.00

STRUCTURAL NOTES

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23-01-014

ISSUE FOR PERMIT

Project Number

15' - 0"

15' - 7 113/256"

PARTIAL FOUNDATION PLAN
SCALE: 1/4" = 1'-0"



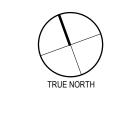




12/01/2023

MIRA SAFETY 1713 Hur Industrial Blvd Cedar Park, TX 78613





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FOUNDATION PLAN

LOW ROOF AND MEZZANINE FRAMING PLAN

_______ HSS8X4X1/4 HSS8X4X1/4 HSS8X4X1/4

ROOF FRAMING PLAN NOTES

- 1. SEE PLAN FOR B.O.D. ELEVATIONS, WITH RESPECT ELEVATION (+)0'-0" EXAMPLE (B.O.D. = 31'-7 1/2")
- ROOF DECK SHALL BE 1 1/2" DEEP GALV., 22 GA, TYPE "B" ROOF DECK (U.N.O.). SEE STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.
- REFER TO SHEET \$1.00 FOR STRUCTURAL NOTES. REFER TO SHEET \$4.00 FOR ROOF FRAMING DETAILS.

PARTIAL ROOF FRAMIN PLAN

Project Number Drawn By

12/01/2023

MIRA SAFETY

1713 Hur Industrial Blvd Cedar Park, TX 78613

23-01-014 Checked By

ISSUE FOR PERMIT 12.01.2023

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FRAMING PLANS

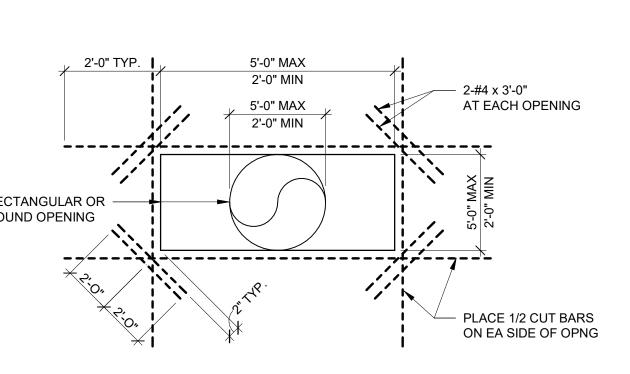
Texas Firm Registration No. F-16958 FRACTAL Project No.23-065-00 9722 Gaston Road Suite 150-241 Katy, TX 77494 Office +1-832-404-2280

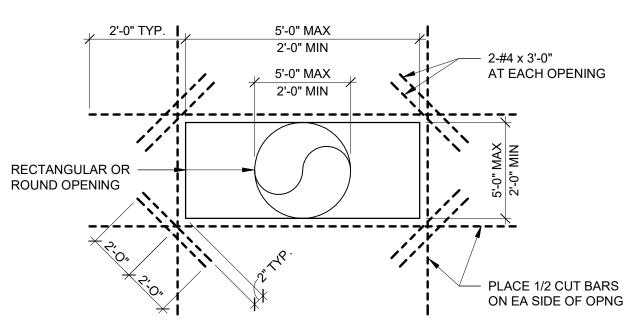


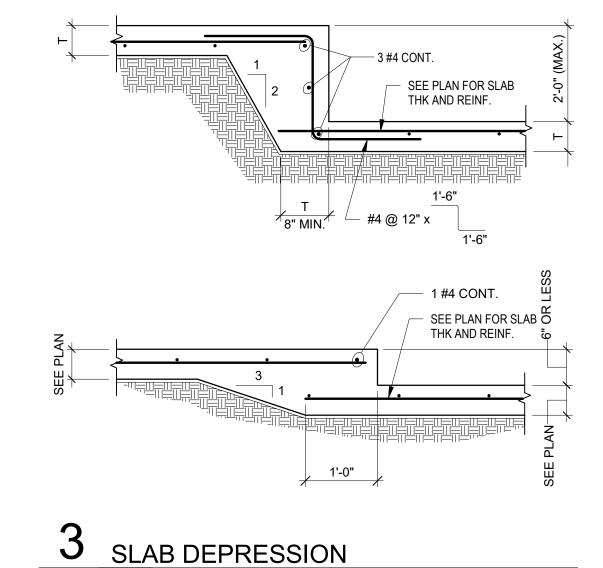


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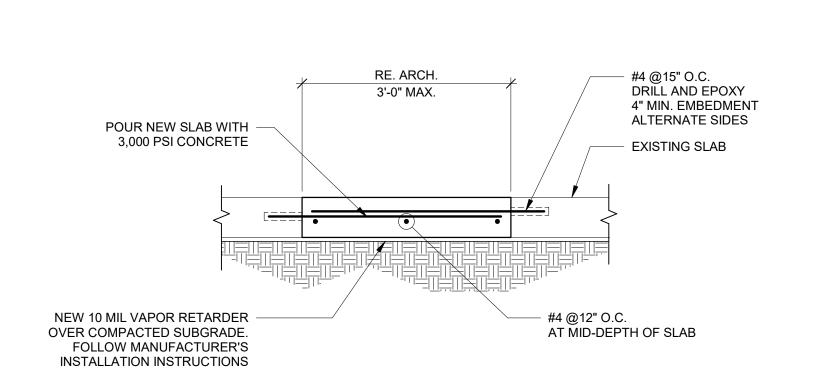




SCALE: 3/4" = 1'-0"

OPENING IN SLAB ON GRADE

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



NOTE: SIZE AND LOCATION OF THE PENETRATIONS IS SUBJECT TO REVIEW BY ENGINEER OF RECORD PRIOR TO INSTALLATION. TYP.

PIPE AND CONDUIT PENETRATION THRU GRADE BEAM

ADDITIONAL REINF. 2 - # 5 x 6'-0" @ TOP & BOTT.

C - CONDUIT THRU GRADE BEAM

2 - TIES AT EA. SIDE OF CONDUIT

BACKFILL COMPACTION IN ACCORDANCE WITH

GEOTECHNICAL REPORT

A - CONDUIT BELOW GRADE BEAM

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

SCALE: 1" = 1'-0"

PIPING BELOW GRADE BEAM

EXISTING COLUMN AND BASE PLATE — TO BE REMOVED WHILE NEW FOOTING IS INSTALLED AND PLACED NEW 3'-0" x 3'-0" CONC. FTGREINF. W/#4 AT 12" O.C. MAX. BACK ONCE CONCRETE HAS CURED. TOP AND BOTTOM NEW ANCHOR BOLTS TYPE A TO BE -EMBEDED IN CONCRETE - RE. 4 / S3.00 FOR DOWELS - VAPOR BARRIER COMPACTED SUBGRADE 3' - 0"

A - CONDUIT CLOSE TO BOTTOM OF GRADE BEAM

TOP GRADE BEAM BARS

BOTT. GRADE BEAM BARS CUT AS REQUIRED

> > ADDITIONAL REINF.

TO MATCH GRADE

BEAM BOTT. BARS

CLASS 'B' SPLICE

HEXNUT HARDENED WASHER ─ 3/4" DIA. A307 OR F1554 GRADE 36 ANCHOR ROD (BOLT) **ANCHOR ROD TYPE A**

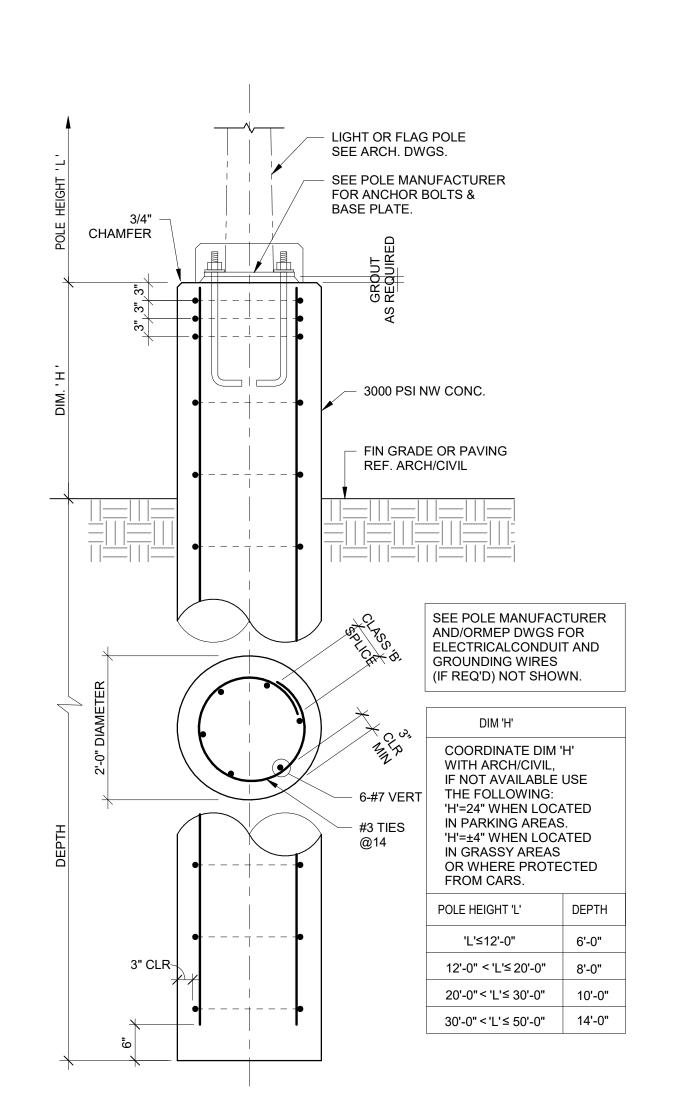
NEW COLUMN -RE. PLAN - BASE PLATE TYPE 1 F.F. ELEV. RE. PLAN EXISTING SLAB TO REMAIN

3/4" THICK PLATE W/ (4) 5/8" DIA. EXPA. BOLTS W/ 3 1/4" MIN. EMBEDMENT

BASE PLATE TYPE 1

5 NEW FOOTING AT EXISTING COLUMN

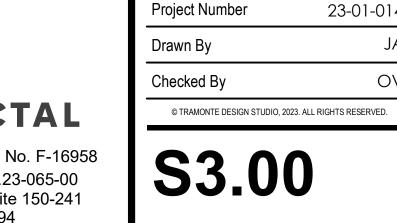
NEW COLUMN BASE PLATE
SCALE: 3/4" = 1'-0"



TYP. LIGHT AND FLAG POLE FOUNDATION

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





FOUNDATION

DETAILS

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23-01-014

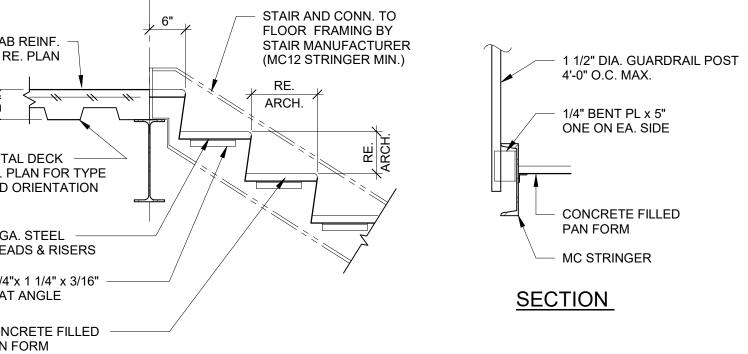


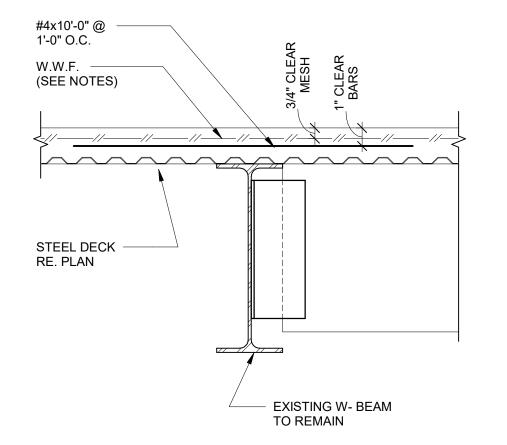


12/01/2023

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STAIR AND CONN. TO FLOOR FRAMING BY SLAB REINF. STAIR MANUFACTURER (MC12 STRINGER MIN.) RE. PLAN METAL DECK
RE. PLAN FOR TYPE
AND ORIENTATION 12 GA. STEEL -TREADS & RISERS 1 1/4"x 1 1/4" x 3/16" -SEAT ANGLE CONCRETE FILLED PAN FORM

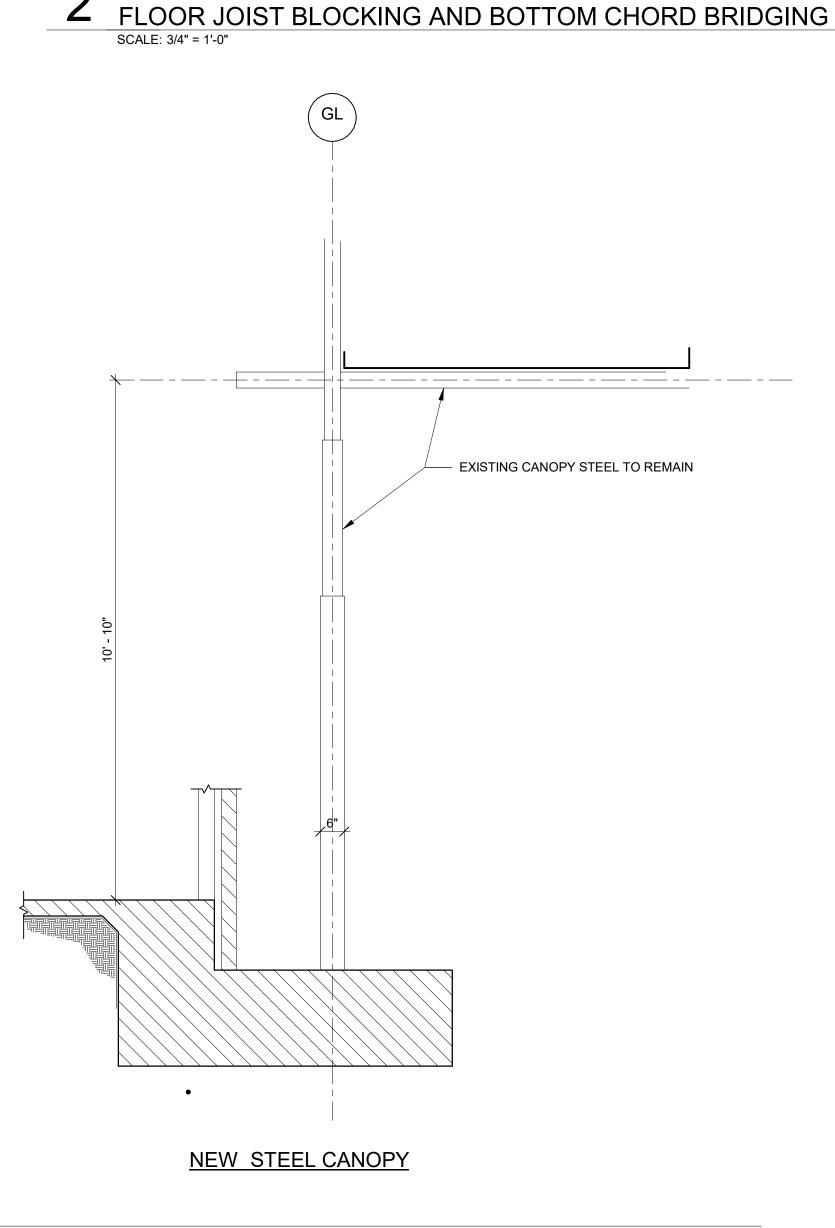




TYPICAL STAIR DETAIL SCALE: 3/4" = 1'-0"

4 COMPOSITE GIRDER SCALE: 1 1/2" = 1'-0"

SLAB EDGE DETAILS
SCALE: 1 1/2" = 1'-0"



3" x 3" x 6" LONG x 14 GA. — CLIP ANGLE AT ALL SOLID

SOLID BLOCKING IN

TWO END SPACES

RE. PLAN FOR TYPE AND SPACING

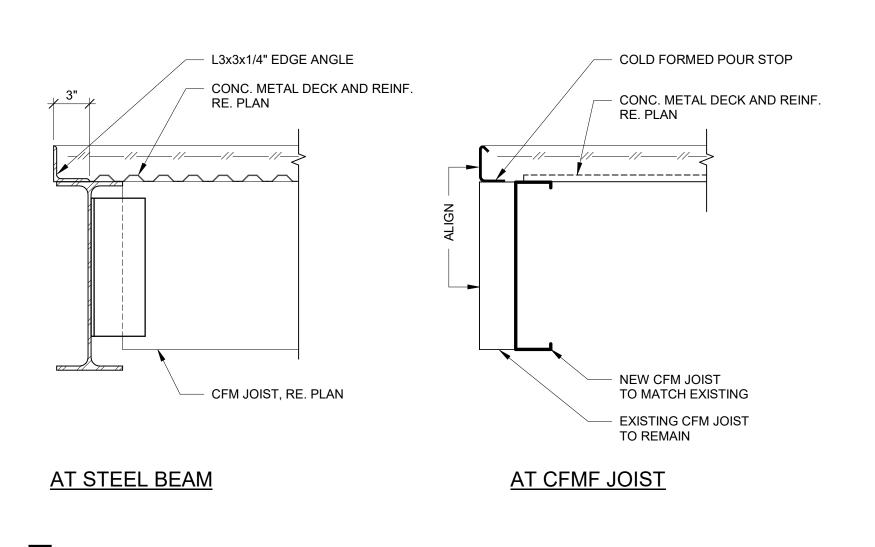
TYPICAL BLOCKING AND BOTTOM CHORD BRIDGING SHALL BE AT 8'-0" O.C. (MAX.)

COTINUOUS BOTTOM CHORD BRIDGING ATTACHED TO EACH RAFTER AND BLOCK

BLOCKS

(3) # 12-24 SCREWS TO EACH BLOCK

NEW CONC. SLAB -RE. PLAN B.O. DECK RE. PLAN EXISTING PEMB COLUMN TO REMAIN NEW COLUMN -RE. PLAN EXISTING SLAB ON GRADE AND FOUNDATION



NEW COLUMN ALONG BUILDING WALL

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

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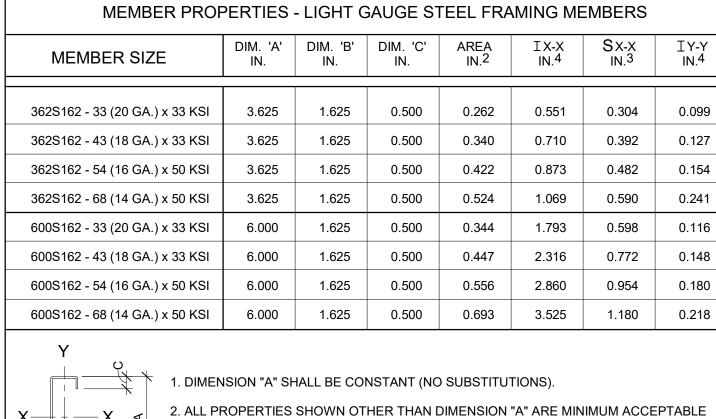
FRAMING DETAILS

Project Number

ISSUE FOR PERMIT 12.01.2023

23-01-014

Texas Firm Registration No. F-16958 FRACTAL Project No.23-065-00 9722 Gaston Road Suite 150-241 Katy, TX 77494 Office +1-832-404-2280



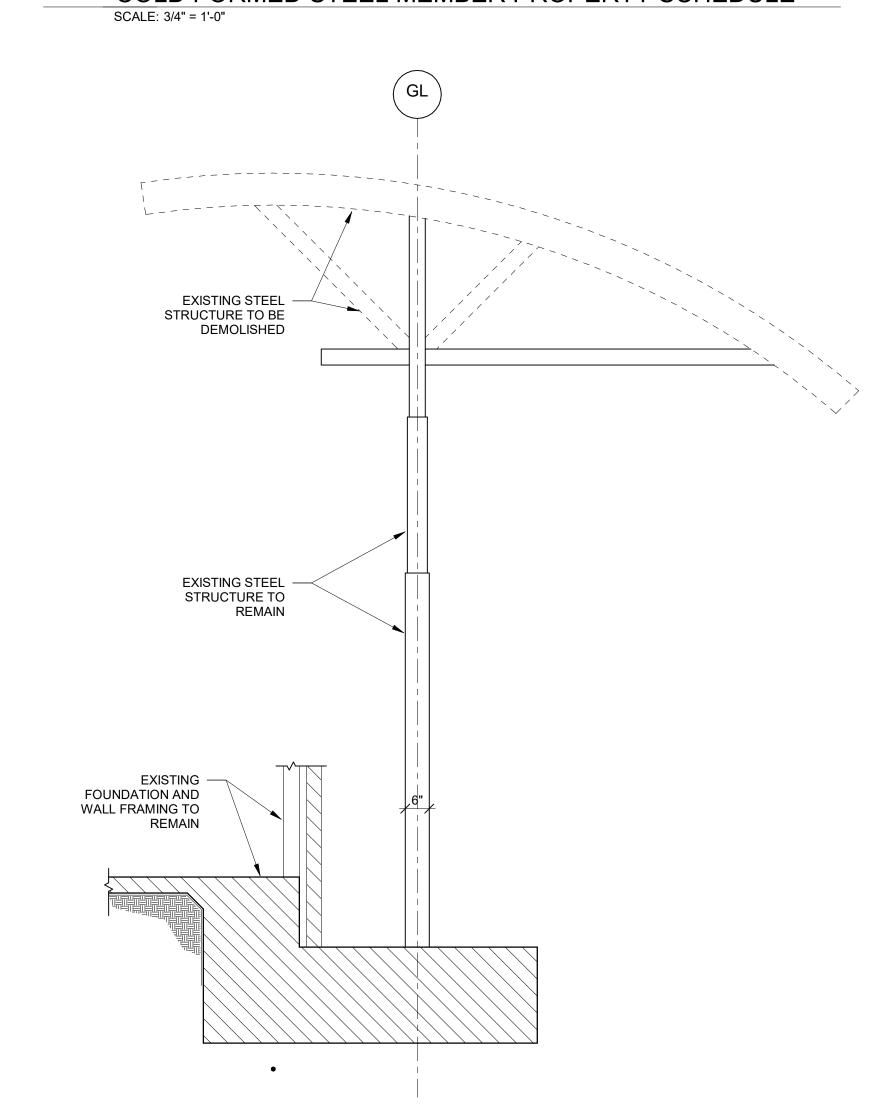
3. ALL PROPERTIES & DIMENSIONS SHOWN ARE BASED ON STRUCTURAL PROPERTIES LISTED IN THE COLD-FORMED STEEL FRAMING CATALOG FROM CLARK DIETRICH, INC. IF DIFFERENT BRAND MATERIALS ARE USED, CONSTRACTOR SHALL VERIFY THAT PROPERTIES MEET OR EXCEED VALUES LISTED IN TABLE.

TYPICAL MEMBER SIZES ARE SHOWN. ALL MEMBER SIZES AND CONNECTIONS NOT FULLY DETAILED SHALL BE DESIGNED BY THE

COLD-FORMED STEEL SUBCONTRACTOR.

REFERENCE CLARK DIETRICH, INC.'S COLD FORMED STEEL FRAMING SYSTEMS TECHNICAL INFORMATION CATALOG FOR ADDITIONAL INFORMATION.

COLD FORMED STEEL MEMBER PROPERTY SCHEDULE



EXISTING STEEL CANOPY 5 CANOPY DETAIL
SCALE: 1/2" = 1'-0"

MECHANICAL SYMBOLS AND ABBREVIATIONS GRILLES/DIFFUSERS: **EQUIPMENT:** SUPPLY DIFFUSER IN-LINE CABINET FAN SUPPLY DIFFUSER WITH 3-WAY THROW **FURNACE** SUPPLY DIFFUSER WITH 2-WAY THROW **UNIT HEATER** SUPPLY DIFFUSER WITH 1-WAY THROW THERMOSTAT SLOT DIFFUSER ROUND SUPPLY DIFFUSER TEMPERATURE SENSOR SIDEWALL MOUNTED SUPPLY REGISTER SPACE CARBON DIOXIDE SENSOR RETURN GRILLE **HUMIDITY SENSOR** EXHAUST GRILLE PRESSURE SENSOR DUCT SMOKE DETECTOR DUCT SYMBOLS: GENERAL REFERENCES/NOTATIONS: NEW SHEET METAL DUCTWORK EXISTING DUCT/PIPE TO BE REMOVED CONNECT TO EXISTING NOTE DESIGNATION EXISTING DUCT/PIPE TO REMAIN REVISION DESIGNATION SUPPLY OR OUTSIDE AIR DUCT MECHANICAL EQUIPMENT DESIGNATION RETURN AIR DUCT DIFFUSER DESIGNATION AND CFM EXHAUST AIR DUCT CFM DUCTWORK TRANSITION LINE TYPES: DUCTWORK TRANSITION - RECTANGULAR TO ROUND ──HWS── HEATING HOT WATER SUPPLY NCLINED RISE IN DUCTWORK INCLINED DROP IN DUCTWORK CWS CHILLED WATER SUPPLY CWR— CHILLED WATER RETURN SUPPLY DUCT ELBOW UP OR DOWN PIPE SYMBOLS: RETURN DUCT ELBOW UP OR DOWN NWOD/PU DAINANT PIPE TURNING UP/DOWN EXHAUST DUCT ELBOW UP OR DOWN DUCT ELBOW WITH FIXED TURNING VANES DUCT BRANCH TAKE-OFF ROUND SPIN-IN WITH DAMPER SQUARE TO ROUND TAP WITH DAMPER FLEXIBLE DUCT CONNECTION FIRE DAMPER SMOKE DAMPER COMBINATION FIRE/SMOKE DAMPER ELECTRIC OPERATED DAMPER BACKDRAFT DAMPER **VOLUME DAMPER** FLEXIBLE DUCTWORK SYMBOLS LEGEND NOTES:

1. REFER TO PLANS AND SPECIFICATIONS FOR DETAILED DESCRIPTION OF ALL DEVICES SHOWN, PROVIDED BY THIS CONTRACTOR.

PROJECT MAY NOT USE ALL SYMBOLS OR DEVICES INDICATED ON THIS LEGEND.

MECHANICAL GENERAL NOTES

- CONTRACTORS AND SUB-CONTRACTORS SHALL CAREFULLY REVIEW CONSTRUCTION DOCUMENTS. INFORMATION REGARDING COMPLETE WORK IS DISPERSED THROUGHOUT DOCUMENT SET AND CANNOT BE ACCURATELY DETERMINED WITHOUT REFEERENCE TO COMPLETE DOCUMENT SET.
- COORDINATE WITH WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF OWNER, AND WITH CONSTRAINTS OF EXISTING CONDITIONS OF PROJECT SITE, PROVIDE DUCT AND PIPE RISES AND DROPS AS REQUIRED FOR FIELD INSTALLATION AND TRADE COORDINATION. NOTIFY ARCHITECT OF DISCREPANCIES BEFORE STARTING WORK.
- DRAWINGS FOR HVAC WORK ARE DIAGRAMMATIC. SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE 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. ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE GOVERNING AUTHORITY. PURCHASE ALL PERMITS ASSOCIATED WITH WORK. OBTAIN
- INSTALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS AND MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCE.

ALL INSPECTIONS REQUIRED BY CODE..

INSTALL EXHAUST FANS DISCHARGE MINIMUM OF 10 FT FROM INTAKE AIR

HVAC SEQUENCE OF OPERATIONS

PROVIDE ALL NECESSARY SENSORS, DAMPER ACTUATORS, CONTROL TRANSFORMERS WITH SECONDARY OVERLOAD PROTECTION, WIRING IN CONDUIT, AND ALL MISCELLANEOUS ITEMS TO ACCOMPLISH THE FOLLOWING SEQUENCE OF OPERATION:

THE UNIT CONTROLLER SHALL BE SET TO DETERMINE OCCUPIED AND UNOCCUPIED HOURS OF OPERATION. HOURS SHALL BE COORDINATED WITH

OCCUPIED MODE:

SUPPLY FAN SHALL RUN CONTINUOUSLY AND OUTSIDE AIR DAMPER SHALL OPEN TO MINIMUM POSITION TO DELIVER SCHEDULED QUANTITY OF VENTILATION AIR.

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.

UPON SIGNAL FROM UNIT CONTROLLER, WHEN SPACE TEMPERATURE FALLS 2 DEGREES OR MORE BELOW SET POINT, GAS HEAT SHALL BE ENERGIZED AND OPERATE UNTIL SPACE TEMPERATURE IS SATISFIED. WHEN TEMPERATURE RISES 2

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.

DEGREES ABOVE SET POINT, GAS HEAT SHALL BE DE-ENERGIZED.

UPON SIGNAL FROM UNIT CONTROLLER, WHEN SPACE TEMPERATURE FALLS 2 DEGREES OR MORE BELOW SET POINT, OUTSIDE AIR DAMPER SHALL REMAIN CLOSED, SUPPLY FAN SHALL BE ACTIVATED AND GAS HEAT SHALL BE ENERGIZED UNTIL SPACE TEMPERATURE IS SATISFIED. WHEN TEMPERATURE RISES 2 DEGREES ABOVE SET POINT, GAS HEAT AND SUPPLY FAN SHALL BE DE-ENERGIZED.

SET POINTS:

OCCUPIED COOLING: OCCUPIED HEATING: 70°F UNOCCUPIED COOLING: 80°F UNOCCUPIED HEATING:

SMOKE DETECTOR SHUT DOWN:

SMOKE DETECTOR SHALL DE-ENERGIZE SUPPLY FAN AND CLOSE OUTSIDE AIR DAMPER IN BOTH OCCUPIED AND UNOCCUPIED MODES WHENEVER SMOKE IS SENSED BY SMOKE DETECTOR.

REFRIGERANT PIPING NOTE

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.

MECHANICAL REMODEL NOTES

THIS DRAWING IS BASED ON BEST AVAILABLE INFORMATION AT TIME OF DESIGN AND MAY NOT REFLECT AS-BUILT CONDITIONS. ALL MECHANICAL INSTALLATIONS INDICATED ON THIS SHEET SHALL BE FIELD VERIFIED PRIOR TO BID AND DEMOLITION.

EXISTING DUCTWORK NOTES

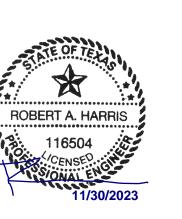
REUSE AS MUCH OF THE EXISTING DUCTWORK AS POSSIBLE. DUCTWORK SIZES LISTED ON DUCTWORK SHOWN AS EXISTING ON DRAWING ARE MINIMUM REQUIRED DUCT SIZES FOR AIR FLOWS LISTED. FIELD VERIFY SIZES OF EXISTING DUCTWORK PRIOR TO BID. IF EXISTING DUCT SIZE DOES NOT MEET MINIMUM REQUIRED SIZE LISTED ON DRAWING, PROVIDE NEW.

S

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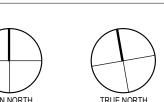


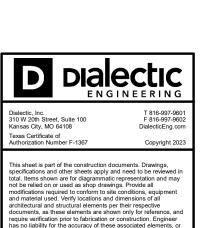




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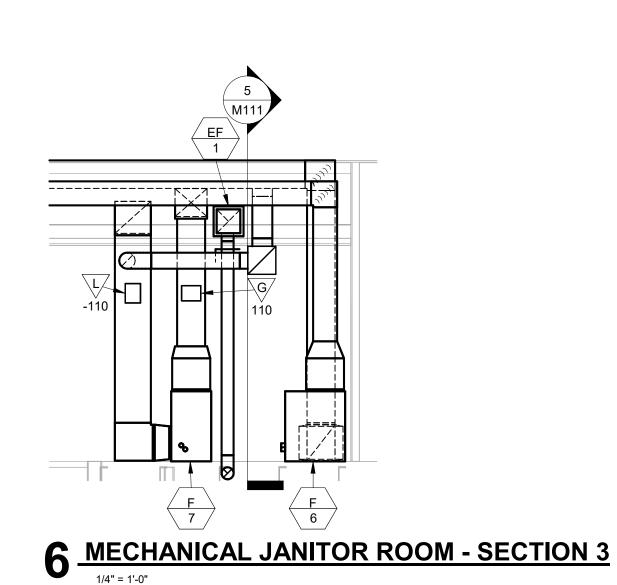


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GENERAL NOTES AND LEGENDS

2 OVERALL MECHANICAL PLAN - LV 2 1/8" = 1'-0"



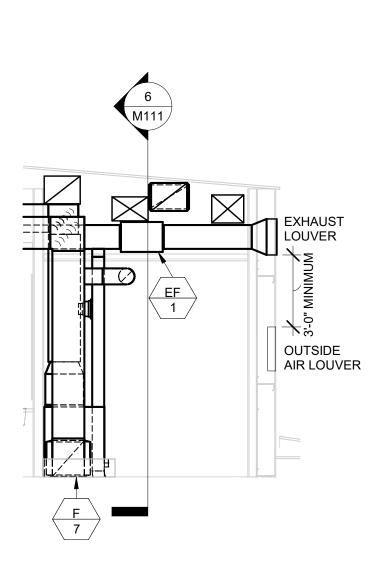
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1 OVERALL MECHANICAL PLAN - LV 1

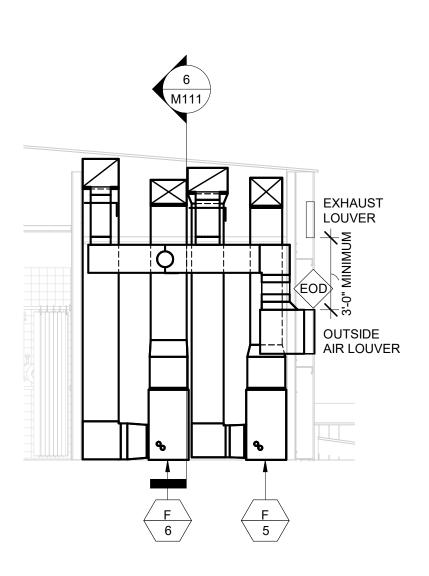
CU X1

CU X2

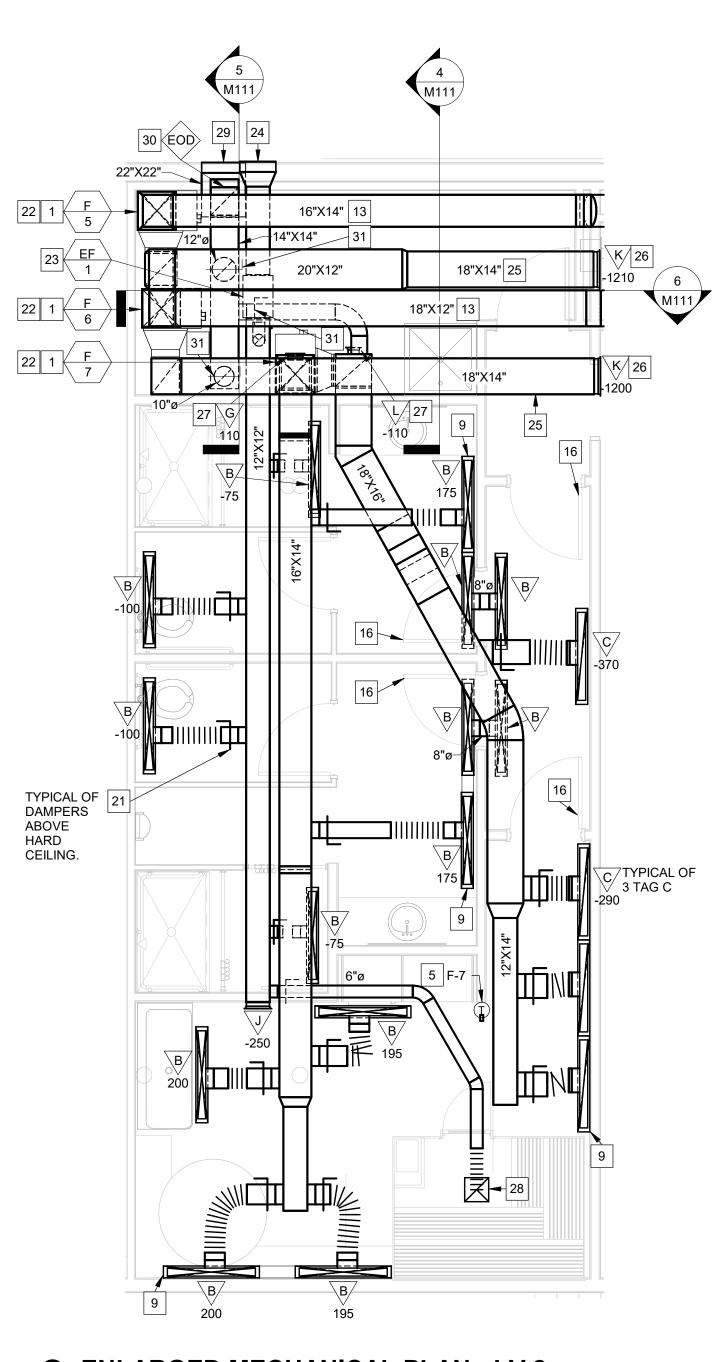
CU X3 //NOT IN SCOPE



4 MECHANICAL JANITOR ROOM - SECTION 1



MECHANICAL JANITOR ROOM - SECTION 21/4" = 1'-0"



TYPICAL OF

DAMPERS
ABOVE HARD

CEILING.

3 ENLARGED MECHANICAL PLAN - LV 2

MECHANICAL KEY NOTES

- 1 PROVIDE FURNACE AND DIRECT EXPANSION COOLING COIL AND HOUSE KEEPING PAD. INSTALL UNIT LEVEL FOR PROPER CONDENSATE DRAINAGE. PROVIDE FLEXIBLE CONNECTORS ON THE SUPPLY AND RETURN AIR DUCT CONNECTIONS.
- PROVIDE CONDENSING UNIT AND CONCRETE PAD. COORDINATE INSTALLATION LOCATION WITH OWNER REPRESENTATIVE. PROVIDE MANUFACTURER'S RECOMMENDED TYPE AND SIZE OF REFRIGERANT PIPING FROM AIR HANDLING UNIT TO CONDENSING UNIT. INSULATE SUCTION LINE WITH 1" THICK ARMAFLEX AP. PAINT INSULATION LOCATED OUTDOORS WITH ARMAFLEX WB FINISH. TRAP AND SLOPE LINES PER MANUFACTURER'S RECOMMENDATIONS.
- 3 PROVIDE WALL MOUNTED DUCTLESS SPLIT SYSTEM AIR HANDLING UNIT. INSTALL UNIT LEVEL FOR PROPER CONDENSATE DRAINAGE. PROVIDE WITH CONDENSATE PAN AND OVERFLOW SWITCH. MOUNT UNIT 2" ABOVE DOOR HEIGHT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- PROVIDE DEHUMIDIFICATION UNIT. MOUNT BOTTOM OF DEHUMIDIFICATION UNIT 12'-0" ABOVE FINISHED FLOOR. INSTALL UNIT LEVEL FOR PROPER CONDENSATE DRAINAGE SUPPORT UNIT FROM STRUCTURE ABOVE WITH CHANNEL

AND ALL-THREAD ROD WITH SPRING VIBRATION ISOLATORS.

5 PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH AUTO-CHANGEOVER AND AUTOMATIC START CAPABILITY.

MOUNT THERMOSTAT 48" ABOVE FINISHED FLOOR.

EOD 30

- PROVIDE WALL MOUNTED DEH-3000 REMOTE MOUNTED DIGITAL CONTROLLER. MOUNT SENSOR AT 48" ABOVE FINISHED FLOOR.
- PROVIDE WIRED REMOTE CONTROLLER FOR DUCTLESS SPLIT SYSTEM. MOUNT 48" ABOVE FINISHED FLOOR.
- PROVIDE UNIT HEATER. MOUNT HEATER 10'-0" ABOVE FINISHED FLOOR FROM STRUCTURE ABOVE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. SUSPEND FROM STRUCTURE WITH STEEL CHANNEL AND THREADED ROD
- PROVIDE CONTINUOUS SLOT DIFFUSER. PROVIDE BLANK OFF SECTIONS AS REQUIRED TO PROVIDE CONTINUOUS LOOK.
- 10 MOUNT GRILLE AS HIGH AS POSSIBLE.
- 11 MOUNT DUCTWORK APPROXIMATELY 10'-1" ABOVE FINISHED
- 12 MOUNT DUCTWORK APPROXIMATELY 9'-5" ABOVE FINISHED
- 13 MOUNT DUCTWORK TIGHT TO STRUCTURE ABOVE.
- 14 MOUNT BOTTOM OF GRILLE/REGISTER ABOVE ADJACENT
- 15 DIRECT SUPPLY GRILLE VANES 22.5° DOWNWARD WITH A
- 22.5° SPREAD.16 UNDERCUT DOOR 1" FOR TRANSFER AIR.
- 17 PROVIDE 14"X14" WITH LOUVER IN WALL. LOUVER SHALL BE GREENHECK MODEL EVH-501 OR APPROVED EQUAL. LOUVER SHALL HAVE A MINIMUM 0.4 SF OF FREE AREA. MOUNT LOUVER APPROXIMATELY 8'-1" ABOVE GRADE. COORDINATE FINAL LOCATIONS WITH ARCHITECTURAL PLANS. PROVIDE WITH KYNAR FINISH, EXTENDED SILL AND BIRD SCREEN. ARCHITECT TO SPECIFY COLOR OF KYNAR.
- 18 PROVIDE CONECTRIC VENT KIT THROUGH EXTERIOR WALL FOR GAS FURNACE COMBUSTION AIR INTAKE AND FLUE IN ACCORDANCE WITH FURNACE MANUFACTURER'S INSTALLATION INSTRUCTIONS. INSTALL CONCENTRIC VENT KIT PER MANUFACTURER'S INSTALLATION MANUAL. RUN FURNACE COMBUSTION AIR INTAKE AND FLUE FROM FURNACE TO TERMINATION LOCATION SHOWN AS EFFICIENTLY AS POSSIBLE TO STAY WITHIN FURNACE MANUFACTURER'S LENGTH LIMITATIONS. SIZE FURNACE COMBUSTION AIR INTAKE AND FLUE PER MANUFACTURER'S INSTRUCTIONS.

MECHANICAL KEY NOTES

- 19 ALL EXISTING MECHANICAL EQUIPMENT, DUCTWORK, ACCESSORIES, ETC. IN AREA TO REMAIN. CLEAN AND REPAIR EQUIPMENT TO GOOD WORKING CONDITION.
- 20 DEMOLISH ALL EXISTING DIFFUSES/GRILLE AND ASSOCIATED BRANCH DUCTWORK IN SHOWN AREA. PATCH, SEAL, AND

CAP MAIN TRUNK DUCTWORK AS REQUIRED.

DAMPERS ABOVE HARD CEILING.

- PROVIDE YOUNG REGULATOR MODEL 5020CC ROUND CABLE CONTROLLED OPPOSED BLADE BALANCING DAMPER, MODEL 270-301EZ BOWDEN CABLE CONTROL KIT, AND BCW CONTROL WIRE AND CASINGS. COORDINATE INSTALLATION LOCATION WITH ARCHITECT AND MOUNT CABLE CONTROLLER IN DIFFUSER PLENUM IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PROVIDE FOR ALL
- PROVIDE CONECTRIC VENT KIT THROUGH EXTERIOR WALL FOR GAS FURNACE COMBUSTION AIR INTAKE AND FLUE IN ACCORDANCE WITH FURNACE MANUFACTURER'S INSTALLATION INSTRUCTIONS. INSTALL CONCENTRIC VENT KIT PER MANUFACTURE'S INSTALLATION MANUAL. RUN FURNACE COMBUSTION AIR INTAKE AND FLUE FROM FURNACE TO EXTERIOR WALL PLAN WEST BEHIND UNIT AS EFFICIENTLY AS POSSIBLE TO STAY WITHIN FURNACE MANUFACTURER'S LENGTH LIMITATIONS. SIZE FURNACE COMBUSTION AIR INTAKE AND FLUE PER MANUFACTURER'S INSTRUCTIONS.
- 23 PROVIDE INLINE RESTROOM EXHAUST FAN. MOUNT BOTTOM OF INLINE FAN 9'-5" ABOVE FINISHED FLOOR. SUPPORT UNIT FROM STRUCTURE ABOVE WITH CHANNEL AND ALL-THREAD ROD WITH SPRING AND VIBRATION ISOLATORS. PROVIDE FLEXIBLE CONNECTIONS IN THE INLET AND OUTLET CONNECTIONS.
- PROVIDE 18"X18" WITH LOUVER IN WALL. LOUVER SHALL BE GREENHECK MODEL EVH-501 OR APPROVED EQUAL. LOUVER SHALL HAVE A MINIMUM 0.8 SF OF FREE AREA. MOUNT LOUVER APPROXIMATELY 22'-3" ABOVE GRADE. COORDINATE FINAL LOCATIONS WITH ARCHITECTURAL PLANS. PROVIDE WITH KYNAR FINISH, EXTENDED SILL AND BIRD SCREEN. ARCHITECT TO SPECIFY COLOR OF KYNAR.
- 25 MOUNT DUCTWORK APPROXIMATELY 11'-1" ABOVE FINISHED FLOOR
- 26 MOUNT BOTTOM OF GRILLE APPROXIMATELY 11'-1" ABOVE FINISHED FLOOR.
- 27 MOUNT BOTTOM OF GRILLE/REGISTER 7'-0" ABOVE FINISHED FLOOR
- 28 CONNECT EXHAUST DUCTWORK TO SAUNA EXHAUST CONNECTION PER MANUFACTURER'S REQUIREMENTS. SIZE EXHAUST DUCTWORK AND BALANCE TO AIRFLOW RECOMMENDED BY MANUFACTURER. NOTIFY ENGINEER IMMEDIATELY IF AIRFLOW REQUIREMENT IS 100 CFM OR GREATER.
- 29 PROVIDE 22"X22" WITH LOUVER IN WALL. LOUVER SHALL BE GREENHECK MODEL EVH-501 OR APPROVED EQUAL. LOUVER SHALL HAVE A MINIMUM 1.4 SF OF FREE AREA MOUNT LOUVER APPROXIMATELY 17'-5" ABOVE GRADE. COORDINATE FINAL LOCATIONS WITH ARCHITECTURAL PLANS. PROVIDE WITH KYNAR FINISH, EXTENDED SILL AND BIRD SCREEN. ARCHITECT TO SPECIFY COLOR OF KYNAR.
- 30 PROVIDE (1) 120 VOLT ELECTRICALLY OPERATED DAMPER (EOD) IN OUTSIDE AIR DUCT AS INDICATED. EOD SHALL FULLY OPEN DURING OCCUPIED HOURS AND FULLY CLOSE DURING UNOCCUPIED PERIODS.
- PROVIDE (1) MANUAL DAMPER IN OUTSIDE AIR DUCT AS INDICATED. SET MANUAL DAMPER TO PROVIDE SCHEDULED OUTSIDE AIR FLOW.
- PROVIDE THERMOSTAT FOR UNIT HEATER. INSULATE EXTERIOR WALL BEHIND THERMOSTAT AND CAULK WIRE PENETRATION THROUGH WALL. MOUNT THERMOSTAT 48" ABOVE FINISHED FLOOR.

33 CONTINUE EXHAUST DUCTWORK UP THROUGH FLOOR.

- CONNECT TO EXHAUST DUCTWORK MAIN SHOWN ON FLOOR 2.
- BALANCE DIFFUSER/GRILLE AIRFLOW TO 150 CFM IN SHOWN AREA. FIELD VERIFY EXACT CONDITIONS PRIOR TO BID.
- BALANCE AIRFLOW IN AREA TO 225 CFM. FIELD VERIFY EXACT CONDITIONS PRIOR TO BID.

ROUND DUCT SIZING

UNLESS NOTED OTHERWISE ON PLANS, THE FOLLOWING CHART SHALL APPLY TO ROUND DUCT SIZES FOR SUPPLY AIR*, RETURN AIR AND OUTSIDE AIR.

SUPPLY AND EXHAUST		RETURN AIR
AIR CFM RANGE	DUCT SIZE	CFM RANGE
0-100	6"ø	0-70
105-200	8"ø	75-155
205-395	10"ø	160-285
400-605	12"ø	290-465
610-920	14"ø	470-710
925-1200	16"ø	715-1015

* DIFFUSER NECK SIZES SHALL MATCH SUPPLY AIR DUCT SIZING.

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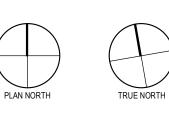
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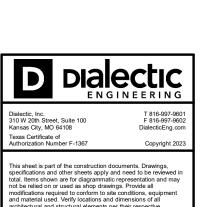




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12/01/23

△ Issues	
Project Number	23-01-014
Drawn By	ХН
Checked By	EML

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M111

MECHANICAL PLANS

— FILTER CABINET 7 VERTICAL FURNACE INSTALLATION DETAIL NOT TO SCALE

└ MOUNT UNIT LEVEL

ON CONCRETE PAD

- CASED COIL SECTION

- FLEXIBLE CONNECTION

(TYPICAL)

4 INLINE CABINET FAN DETAIL NOT TO SCALE

ROUND OR RECTANGULAR

TRANSITION AS REQUIRED AT INLET AND OUTLET

FLEXIBLE DUCT CONNECTOR

INLINE CABINET EXHAUST FAN -

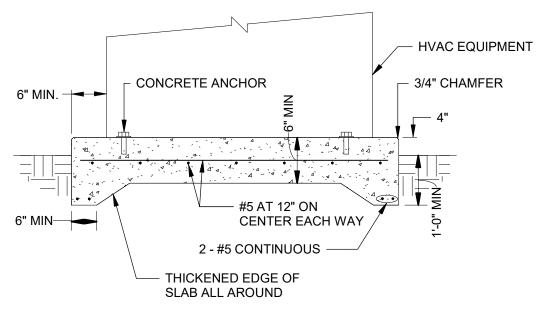
(TYPICAL) ---

SUPPORT FROM STRUCTURE ABOVE WITH 3/8" (MINIMUM)

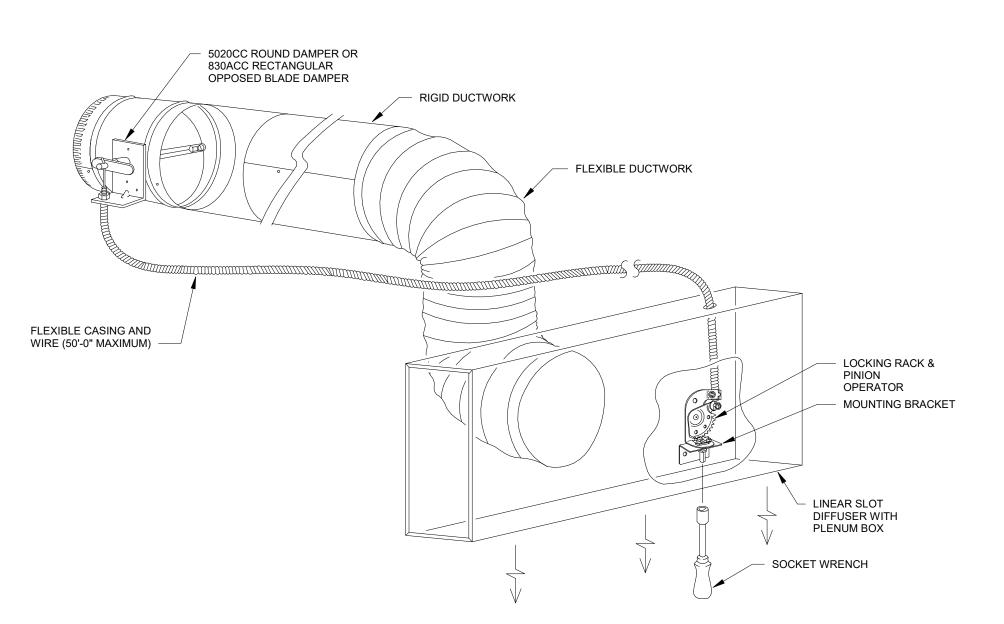
THREADED ROD -

HANGER ---

VIBRATION ISOLATION



NOTE: INSTALL PAD LEVEL. 5 CU CONCRETE EQUIPMENT PAD NOT TO SCALE



- DOUBLE NUT AND

WASHER (TYPICAL)

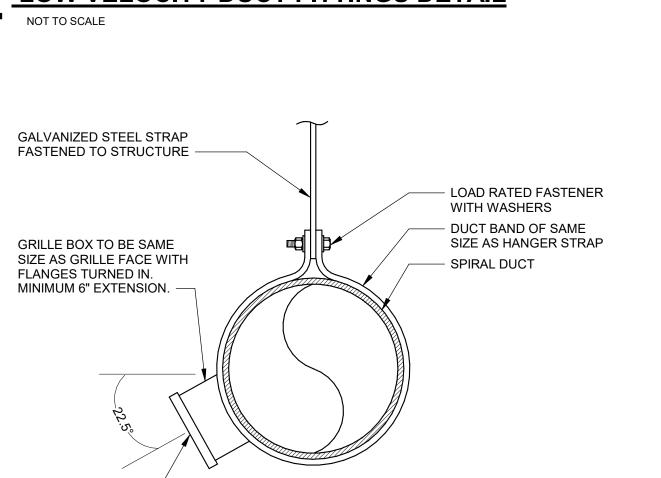
NOTES:

1. THE 270-275 BOWDEN CABLE CONTROL SYSTEM IS DESIGNED FOR USE WITH EXTERNALLY CONTROLLED ROUND OR RECTANGULAR DAMPERS, AND CAN BE MOUNTED IN A WIDE VARIETY OF LOCATIONS INCLUDING CEILING JOISTS, LAY-IN CEILINGS, BEHIND GRILLES, ON OR INSIDE OTHER VARIOUS TYPES OF DIFFUSERS, ETC. USED TO CONVERT ROTARY MOTION INTO PUSH-PULL MOTION.

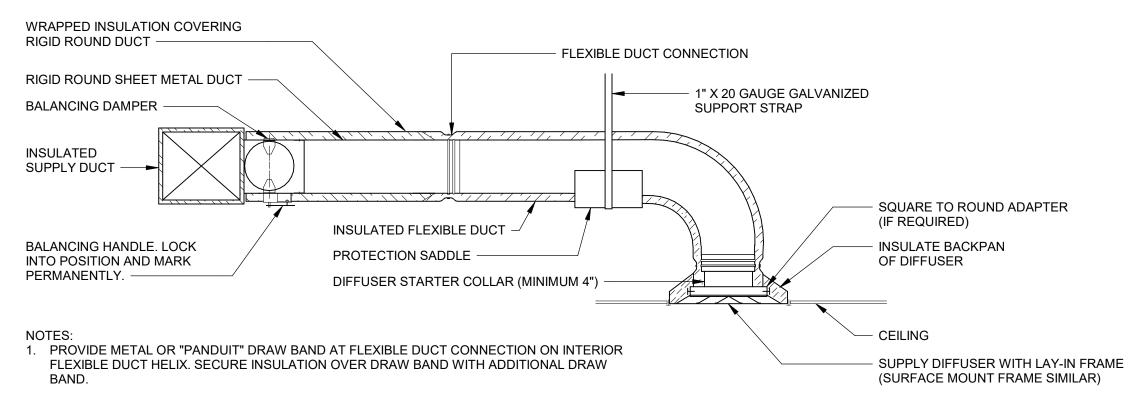
2. CABLE SHALL CONSIST OF BOWDEN CABLE 0.054" STAINLESS STEEL CONTROL WIRE ENCAPSULATED IN 1/16" FLEXIBLE GALVANIZED SPIRAL WIRE SHEATH. 3. LOCKING RACK AND PINIOIN GEAR DRIVE SHALL BE CONSTRUCTED OF 14 GAUGE STEEL AND SHALL BE 4. CONTROL SHAFT SHALL BE "D"-STYLE FLATTENED 1/4" DIAMETE WITH 265" ROTATION PROVIDING 1-1/2"

6 VERTICAL FURNACE INSTALLATION DETAIL NOT TO SCALE

REGISTER -



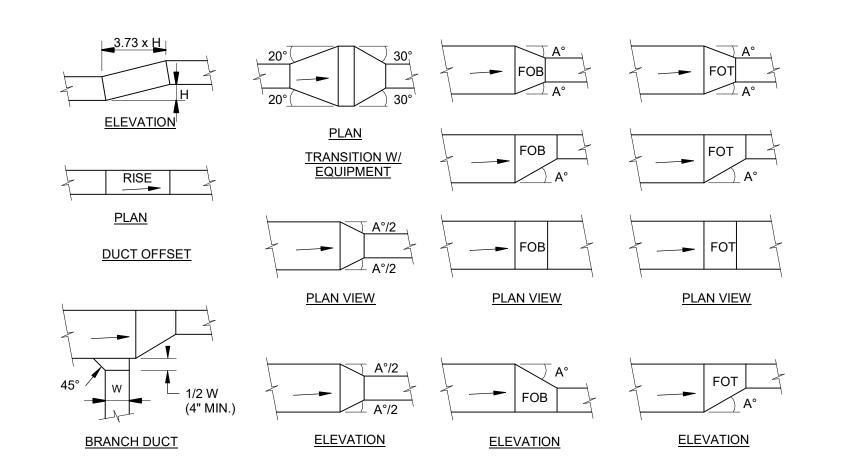
3 SPIRAL DUCT WITH REGISTER NOT TO SCALE



2. PROVIDE BEADING ON ROUND METAL DUCT 12" OR LARGER IN DIAMETER.

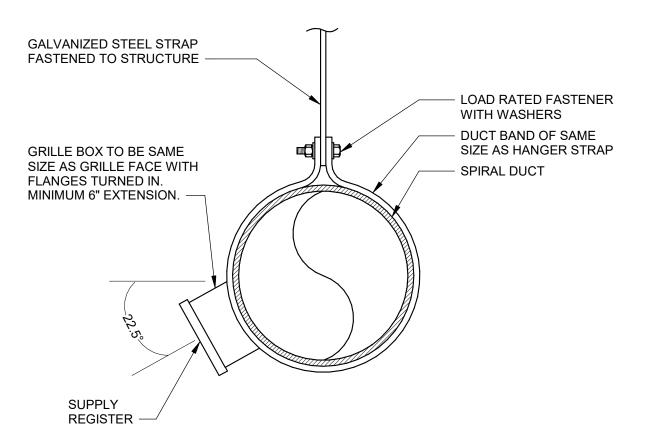
- 3. PROVIDE MINIMUM 4" COLLARS FOR ATTACHMENT OF FLEXIBLE DUCT TO ROUND DUCT, DAMPERS, AND DIFFUSERS.
- BAND RIGID ROUND DUCT INSULATION TO DUCT AND PROVIDE TAPE FOR INSULATION OVERLAP.

DIFFUSER CONNECTION DETAIL - FLEX DUCT



NOTES: 1) ANGLE A = 30° WHEN AIR FLOWS IN DIRECTION OF ARROW (SUPPLY AIR). 2) ANGLE A = 20° WHEN AIR FLOWS IN OPPOSITE DIRECTION OF ARROW (RETURN OR EXHAUST).

2 LOW VELOCITY DUCT FITTINGS DETAIL NOT TO SCALE



D DIALECTIC

tudio

sign

ROBERT A. HARRIS

MIRA SAFETY

1713 Hur Industrial Blvd

Cedar Park, TX 78613

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MECHANICAL DETAILS

OCCUPANCY CATEGORY	PEOPLE OUTDOOR AIR RATE - (Rp)	AREA OUTDOOR AIR RATE - (Ra)	OCCUPANCY DENSITY	OCCUPANCY CLASSIFICATION			PEOPLE EXPECTED TO OCCUPY THE ZONE - (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*RpPz+Ra Az	VENTILATION EFFICIENCY	CORRECTED OUTDOOR AIRFLOW (Vot)	OUTDOOR
	(CFM/PERSON)	(CFM/SQ.FT.)	P/1,000 SQ.FT.	P/1,000 SQ.FT.						SQ.FT.		CFM					CFM	Ev	CFM	CFM
:-4 DFFICE 1	5.0	0.06	F	OFFICE-Office Space	1		1	2	7	110	0.8	10	13	125	0.10		10		12	
OFFICE 2	5.0	0.06) 	OFFICE-Office Space	1		1	3	7	118		10	13	125	0.10		10		12	
			5	•	1	_	1	3	7	118	0.8		· · ·				10			
OFFICE 3	5.0	0.06	5	OFFICE-Office Space	1		1	3	7	118	0.8	10	13	125	0.10				12	
OFFICE 4	5.0	0.06	5	OFFICE-Office Space	1		1	3	7	118	0.8	10	13	125	0.10		10		12	
OFFICE 5	5.0	0.06	5	OFFICE-Office Space	1	_	1	3	7	119	0.8	10	13	105	0.12		10		12	
PEN OFFICE	5.0	0.06	5	OFFICE-Office Space	6		6	30	73	1218	0.8	104	129	725	0.18		104		125	
R&D OFFICE	5.0	0.06	5	OFFICE-Office Space	1		1	/	17	284	0.8	24	30	270	0.11		24		29	
JNISEX	_	<u> </u>	_	PUBLIC-Toilet rooms	<u> </u>	<u> </u>	_	_		43	0.8	_	<u> </u>	50	_				_	10-
				SYSTEM POPULATION	INCLUDING DIVI	ERSITY (Ps) =	10							MAX. Zp =	0.18	1.00	178	0.97	183	185
- -5																				
BREAKROOM	5.0	0.06	25	HOTEL-Multipurpose Assembly	13	_	13	67	32	533	0.8	99	123	390	0.32		99		119	
KITCHEN	5.0	0.06	25	OFFICE-Conference Room	5		5	24	11	190	0.8	35	44	820	0.05		35		42	
		1		SYSTEM POPULATION	INCLUDING DIV	ERSITY (Ps) =	18							MAX. Zp =	0.32	1.00	134	0.83	161	165
F-6																				
GYM	20.0	0.18	7	SPORT-Gym, Stadium, Arena	8		8	151	194	1078	0.8	345	431	1200	0.36		345		416	
		1 00		SYSTEM POPULATION	INCLUDING DIVI	ERSITY (Ps) =	8							MAX. Zp =		1.00	345	0.80	431	435
F-7																				
/ IANITOR CLOSET	_	_	_	PUBLIC-Toilet rooms	_	_	_	<u> </u>	_	136	0.8	_	_	110	_		_		_	
RESTROOM 1		_	<u> </u>	PUBLIC-Toilet rooms		<u> </u>	<u> </u>	_	_	176	0.8	_	<u> </u>	175	<u> </u>		_		_	
RESTROOM 2	<u> </u>	_		PUBLIC-Toilet rooms		<u> </u>	<u> </u>		_	176	0.8			175	<u> </u>					
SUANA/COLD PLUNGE		_		PUBLIC-Toilet rooms	_	<u> </u>	_	_	_	364	0.8		<u> </u>	790	<u> </u>		_		_	
DOMINA COLD I LUNGL	_			SYSTEM POPULATION			<u> </u>	_		304	0.0		_	MAX. Zp =	<u> </u>	1.00		1.00	_	200

	GRILLE, REGISTER, AND DIFFUSER SCHEDULE												
	MANUFACTURE			NECK SIZE				NOISE CRITERIA					
MARK	R	MODEL	TYPE	(L"XW")	FACE SIZE (L"XW")	FRAME TYPE	FINISH	LEVEL	ACCESSORIES	NOTES			
Α	TITUS	FL-15	LINEAR SLOT DIFFUSER	PER PLAN	(2) 1.5" SLOT, 4'-0" LENGTH	PER ARCHITECH	PER ARCHITECT	<30	ILSP	1			
В	TITUS	FL-15-HT	LINEAR SLOT DIFFUSER	PER PLAN	(1) 1.5" SLOT, 4'-0" LENGTH	PER ARCHITECH	PER ARCHITECT	<30	ILSP	1			
С	TITUS	FL-20	LINEAR SLOT DIFFUSER	PER PLAN	(1) 2" SLOT, 4-0" LEGNTH	PER ARCHITECH	PER ARCHITECT	<30	ILSP	1			
D	TITUS	FL-25-HT	LINEAR SLOT DIFFUSER	PER PLAN	(1) 2.5" SLOT X 4'-0" LENGTH	PER ARCHITECH	PER ARCHITECT	<30	ILSP	1			
Е	TITUS	TMS	SQUARE CONE DIFFUSER	PER PLAN	12"X12"	LAY-IN	PER ARCHITECT	<30	OBD, STR	-			
F	TITUS	300RS	SUPPLY REGISTER	12"X6"	14"X8"	SURFACE	PER ARCHITECT	<30	OBD	-			
G	TITUS	300RS	SUPPLY REGISTER	8"X6"	10"X8"	SURFACE	PER ARCHITECT	<30	OBD	-			
Н	TITUS	350FL	LOUVERED EXHAUST GRILLE	10"X10"	12"X12"	LAY-IN	PER ARCHITECT	<30	STR,TRM	-			
I	TITUS	350RL	LOUVERED RETURN GRILLE	30"X12"	32"X14"	SURFACE	PER ARCHITECT	<30	-	-			
J	TITUS	350RL	LOUVERED EXHAUST GRILLE	12"X12"	14"X14"	SURFACE	PER ARCHITECT	<30	-	-			
K	TITUS	350RL	LOUVERED RETURN GRILLE	18"X14"	20"X16"	SURFACE	PER ARCHITECT	<30	-	-			
L	TITUS	350RL	LOUVERED RETURN GRILLE	8"X6"	10"X8"	SURFACE	PER ARCHITECT	<30	-	-			
М	TITUS	350RL	LOUVERED RETURN GRILLE	48"X12"	50"X14"	SURFACE	PER ARCHITECT	<30	-	-			

ACCESSORIES:
ILSP - INSULATED LINEAR SLOT PLENUM, OBD - OPPOSED BLADE DAMPER, STR - SQUARE TO ROUND TRANSITION, TRM - RAPID MOUNT SHEET ROCK FRAME.

1. PROVIDE WITH END CAPS, PATTERN CONTROLLERS AND OTHER ACCESSORIES AS REQUIRED FOR COMPLETE INSTALLATION.

			DEHUM	MIDIFIER	SCHE	DULE				
				CAPACITY AT		ELECTRICA	L		APPROX.	
MARK			AIRFLOW	70°F			MCA	MOCP	WEIGHT	
(DEH-#)	MANUFACTURER	MODEL	(CFM)	(PINTS/DAY)	VOLTAGE	NO. OF POLES	(AMPS)	(AMPS)	(LBS)	NOTES
1	QUEST	100	280	100	120	1	8	15	70	1-5

NOTES:
1. PROVIDE ALL REQUIRED SUSPENSION HARDWARE, ACCESSOIRES, ETC. FOR COMPLETE INSTALLATION.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECT SWITCH.
3. PROVIDE WITH DISCHARGE BACKDRAFT DAMPER.

4. PROVIDE WITH CONDENSATE PUMP KIT.
5. PROVIDE WITH DEH-3000 REMOTE MOUNTED DIGITAL CONTROLLER.

						F	URNA	CE S	CHEDULE									
						DX	COOLING C	OIL	GA	S HEAT			ELI	ECTRICAL				
			AIR	OA				SENSIBL									APPROX.	
					EXT. S.P.	EAT	TOTAL	E		INPUT	OUTPUT				MCA	MOCP	WEIGHT	
MARK (F-#)	MANUFACTURER	MODEL	(CFM)	(CFM) ((IN. W.C.)	(°FDB/WB)	(BTU/HR)	(BTU/HR)	FUEL	(BTU/HR)	(BTU/HR)	VOLTAGE	PHASE	MOTOR HP	(AMPS)	(AMPS)	(LBS)	NOT
4	CARRIER	59TP6C120V24/CAPMP4824	1,700	185	8.0	78.3/64.7	42,652	35,493	NATURAL GAS	78,000	76,000	120	1	1	12.6	20	200	1-9
5	CARRIER	59TP6C080V21/CAPMP3721	1,210	165	0.8	77.4/64.5	31,009	24,027	NATURAL GAS	52,000	51,000	120	1	1	14.7	20	200	1-
6	CARRIER	59TP6C080V21/CAPMP3721	1,200	435	8.0	82.7/67.6	32,771	28,790	NATURAL GAS	52,000	51,000	120	1	1	14.7	20	200	1-
7	CARRIER	59TP6C080V21/CAPMP3721	1,250	200	0.8	76.2/63.1	30,214	25,576	NATURAL GAS	65,000	63,000	120	1	1	12.6	20	200	1-9
					-	-		_			_							

NOTES:

1. PROVIDE WITH CONCENTRIC VENT KIT FOR INSTALLATION THROUGH EXTERIOR WALL.

2. PROVIDE WITH CASED COIL FOR HORIZONTAL UPFLOW AIRFLOW. THERMAL EXPANSION VALVE AND BRAZED CONNECTIONS.

3. ELECTRICAL CONTRACTOR PROVIDED DISCONNECT SWITCH.

4. PROVIDE FILTER RACK.

5. PROVIDE WITH CONDENSATE PAN OVERFLOW SWITCH.

6. PROVIDE WITH CONDENSATE NEUTRALIZER KIT.

7. SET MINIMUM OUTSIDE AIR AS SPECIFIED ABOVE.

8. PROVIDE WITH ELECTRICALLY COMMUTATED MOTORS.

9. PROVIDE UPFLOW UNIT CONFIGURATION.

3. PROVIDE WITH CONDENSATE PUMP.

					PE	RFORMANCI	E	E	ELECTRICA	\L		APPROX.		
MARK				DRIVE	AIR FLOW	EXT. S.P. F.	AN SPEED					WEIGHT	ACCESSORIE	
EF-#)	MANUFACTURER	MODEL	TYPE	TYPE	(CFM)	(IN. W.C.)	(RPM)	VOLTAGE	PHASE	MOTOR HP	SERVES	(LBS)	S	NOTES
1	GREENHECK	SQ-99-VG	INLINE	DIRECT	650	0.5	1525	120	1	1/4	NEW ADDITION RESTROOMS	60	BD, DS, FSC,	1

							PHYSIC	AL DATA		ELECTRI	CAL		APPROX.	
MARK (CU-#)	MANUFACTURER	MODEL	EER	SEER A	MBIENT OAT (°FDB)	TOTAL (BTU/HR)	NO. OF FANS	NO. OF COMP.	VOLTAGE	PHASE	MCA (AMPS)	MOCP (AMPS)	WEIGHT (LBS)	NOTES
4	CARRIER	24TPA748W	14.9	17	100	42,652	1	1	208	1	26	40	260	1-4
5	CARRIER	24TPA736W	15.6	18	100	31,009	1	1	208	1	20	35	220	1-4
6	CARRIER	24TPA736W	15.6	18	100	32,771	1	1	208	1	20	35	220	1-4
7	CARRIER	24TPA736W	15.6	18	100	30,214	1	1	208	1	20	35	220	1-4
8	MITSUBISHI	PUY-A12NKA7	14	22.4	100	12,000	1	1	208	1	11	30	220	1-3

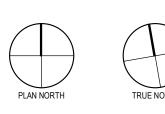
				AIR	DX (COOLING C	OIL		ELECTRIC	CAL		APPROX.	
MARK				FLOW	EAT	TOTAL	SENSIBLE			MCA	MOCP	WEIGHT	
(AHU-#)	MANUFACTURER	MODEL	SEER	(CFM)	(°FDB/WB)	(BTU/HR)	(BTU/HR)	VOLTAGE	PHASE	(AMPS)	(AMPS)	(LBS)	NOTES
1	MITSUBISHI	PKA-A12LA1	22.4	325	80/67	12,000	10,000	208	1	1.0	15	50	1-3

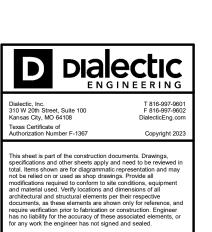
		UNI	T HEA	ΓER	SCHE	DUL	E - ELE	CTRIC	HEA	Т			
				AIR	ELECTR	IC HEAT		ELE	CTRICAL			APPROX.	
MARK (UH-#)	MANUFACTURER	MODEL	TYPE	FLOW (CFM)	INPUT (WATTS)	OUTPUT (BTU/HR)	MOTOR HP	VOLTAGE	PHASE	MCA (AMPS)	MOCP (AMPS)	WEIGHT (LBS)	NOTES
1	QMARK	MUH-15-8	SUSPENDED	910	15,000	51,150	1/20	208	1	1	15	80	1-3
2. PROVID	E WITH INTEGRAL E WITH ALL HARD E WITH INTEGRAL	DISCONNE WARE REC	ECT SWITCH.		·	,	1720	200	<u>'</u>		10		1.0





MIRA SAFETY 1713 Hur Industrial Blvd Cedar Park, TX 78613





23-01-014 Project Number Drawn By Checked By

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MECHANICAL SCHEDULES AND DIAGRAMS

PROVIDE EQUIPMENT INDICATED ON DRAWINGS, AND AS REQUIRED FOR A COMPLETE FUNCTIONING SYSTEM.

DEFINITIONS: <u>FURNISH</u> MEANS TO SUPPLY AND DELIVER TO PROJECT SITE, READY FOR INSTALLATION. <u>INSTALL</u> MEANS TO PLACE IN POSITION AND MAKE CONNECTIONS FOR SERVICE OR USE. <u>PROVIDE</u> MEANS TO FURNISH AND INSTALL, COMPLETE AND READY FOR INTENDED USE.

WARRANTY: PROVIDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE PARTS AND MATERIALS AS REQUIRED FOR ONE YEAR AFTER SUBSTANTIAL COMPLETION OR OWNER ACCEPTANCE OF COMPLETED PROJECT. PROVIDE SEPARATE LINE ITEM DEDUCT AMOUNT ON THE PROPOSAL FORM TO DELETE WARRANTY SERVICE, AT OWNER'S OPTION.

COORDINATION: COORDINATE WITH WORK OF OTHER TRADES, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF OWNER, AND WITH CONSTRAINTS OF EXISTING CONDITIONS OF PROJECT SITE.

DUCT DIMENSIONS: UNLESS OTHERWISE NOTED, DUCT DIMENSIONS ON DRAWINGS ARE INSIDE CLEAR DIMENSIONS.

SHEET METAL DUCTWORK: PROVIDE SHEET METAL DUCTWORK FABRICATED AND INSTALLED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS, FOR 1" W.G. PRESSURE CLASS, SEAL CLASS "A". SHEET METAL SHALL BE GALVANIZED SHEET STEEL OF LOCK FORMING QUALITY, WITH G90 ZINC COATING. SHEET STEEL SHALL COMPLY WITH ASTM A653 STANDARD SPECIFICATION FOR STEEL SHEET METAL, ZINC COATED (GALVANIZED) OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY HOT DIP PROCESS, AND A924 STANDARD SPECIFICATION FOR GENERAL REQUIREMENTS FOR SHEET, METALLIC-COATED BY HOT DIP PROCESS. ALL ANGLE IRON USED FOR SUPPORT SHALL BE GALVANIZED. CONNECTIONS TO WALLS OR FLOOR SHALL BE AIR TIGHT WITH ANGLE IRON AND CAULKING. SEAL ALL DUCT SEAMS, TRANSVERSE AND LONGITUDINAL, AIR TIGHT. PROVIDE TURNING VANES AT ALL 90° ELBOWS.

REFRIGERANT PIPING: TYPE ACR HARD DRAWN COPPER TUBING MEETING THE REQUIREMENTS OF ASTM B280, WITH WROUGHT COPPER FITTINGS MEETING REQUIREMENTS OF ANSI B16.22, WITH BRAZED JOINTS MEETING REQUIREMENTS OF AWS A 5.8, USING BAG-1 (SILVER) FILLER MATERIAL. INSULATE SUCTION LINE PIPING WITH 1" THICK ARMAFLEX TYPE AP. PAINT INSULATION LOCATED OUTDOORS WITH ARMAFLEX WB FINISH.

ROUND SHEET METAL DUCT: PROVIDE SPIRAL SEAM (ALL SIZES) OR SNAP LOCK (CONCEALED DUCT SIZES UP TO 10") GALVANIZED STEEL COMPLYING WITH SMACNA STANDARDS. SPIRAL SEAM DUCTWORK SHALL HAVE SMACNA SEAM TYPE RL-1.

FLEXIBLE DUCT: PROVIDE FACTORY ASSEMBLED CLASS 1 AIR DUCT (UL 181) WITH 1" THICK 1 PCF FIBERGLASS INSULATION AND REINFORCED OUTER PROTECTIVE COVER/VAPOR BARRIER. FLEXIBLE DUCT SHALL MEET NFPA 90A WITH FLAME SPREAD UNDER 25, SMOKE DEVELOPED UNDER 50, AND SHALL BE RATED FOR MINIMUM 2" W.G. PRESSURE AND 0 TO 250°F TEMPERATURE. PROVIDE SCREW-OPERATED METAL ADJUSTABLE CLAMPING DEVICES. USE TWIST-LOCK TAP COLLARS AT CONNECTIONS INTO SHEET METAL DUCTWORK. MAXIMUM EXTENDED LENGTH OF FLEXIBLE DUCT SHALL NOT EXCEED 6 FEET.

EXPOSED DUCTWORK: EXPOSED DUCTWORK SHALL BE CLEANED OF DEBRIS AND OIL, THEN WIPED DOWN WITH VINEGAR OR OTHER SURFACE PREPARING CHEMICAL TO PREPARE DUCT FOR PAINT.

DUCT SEALANT FOR DUCTWORK LOCATED INDOORS: PROVIDE WATER BASED SYNTHETIC LATEX EMULSION PERMANENTLY FLEXIBLE HIGH VELOCITY DUCT SEALANT, DUCTMATE INDUSTRIES INC., PRO SEAL OR EQUAL. SEALANT TO BE LOW VOC LEED COMPLIANT CAPABLE OF 15" W.G., NFPA 90A AND 90B APPROVED, UL 181B-M LISTED AND UL 723 CLASSIFIED. INSTALL PER MANUFACTURER INSTRUCTIONS. SEALANT SHALL BE APPROVED FOR PLENUM INSTALLATIONS AND MEET FLAME SPREAD AND SMOKE DEVELOPED RATINGS FOR PLENUM APPLICATIONS.

DUCT INSULATION (ALL ROUND SUPPLY DUCT AND ROUND RETURN DUCT ABOVE CEILING): PROVIDE MINIMUM 1-1/2" THICK BLANKET TYPE FIBERGLASS INSULATION COMPLYING WITH ASTM C-553, TYPE II, WITH FACTORY APPLIED KRAFT BONDED TO ALUMINUM FOIL, REINFORCED WITH FIBERGLASS VAPOR BARRIER/JACKET. JACKET SHALL CONFORM TO ASTM C-1136, TYPE II. INSTALLED R VALUE SHALL BE 4.2 OR HIGHER WITH 0.75 PCF DENSITY.

DUCT INSULATION (EXTERIOR DUCT): 2" THICK RIGID FIBERGLASS BOARD INSULATION PINNED TO DUCT SURFACE. THERMAL CONDUCTIVITY SHALL BE EQUAL TO OR LESS THAN 0.24 AT 75°F (MINIMUM R VALUE OF 8.0). FINISH EDGES OF INSULATION WITH REINFORCED INSULATING CEMENT OR REINFORCED MASTIC. INSULATION SHALL HAVE FOIL REINFORCED KRAFT OUTER JACKET. PROVIDE WEATHERPROOF OUTER JACKET EQUAL TO POLYGUARD ALUMAGUARD OR EQUAL FLEXIBLE WEATHERPROOFING JACKET, SELF SEALING.

DUCT LINER (ALL RECTANGULAR SUPPLY AND RETURN DUCT, ALL EXPOSED ROUND DUCTWORK): PROVIDE MINIMUM 1" THICK, LONG TEXTILE FIBER TYPE DUCT LINER, WITH COATING ON AIR STREAM SIDE CONFORMING TO NFPA 90A. DUCT LINER SHALL BE SECURED TO DUCT WITH BOTH ADHESIVE AND MECHANICAL FASTENERS. ADHESIVE SHALL BE LEED COMPLIANT LOW VOC AS RECOMMENDED BY DUCT LINER MANUFACTURER, AND SHALL COMPLY WITH ASTM C-916. DUCT LINER FASTENERS SHALL COMPLY WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS", LATEST EDITION. THERMAL CONDUCTIVITY SHALL BE EQUAL TO OR LESS THAN 0.24 AT 75°F (MINIMUM R-VALUE OF 4.2).

ROUND VOLUME DAMPERS: PROVIDE MINIMUM 20 GAUGE GALVANIZED STEEL FRAME AND BLADES, MINIMUM 3/8" SQUARE STEEL AXLE, MOLDED SYNTHETIC BEARINGS, WITH LOCKING POSITION REGULATOR. REGULATOR SHALL BE POSITIONED WITH SHEET METAL STAND-OFF BRACKET BEYOND DUCT COVERING. WHERE POSITIONING REGULATOR IS NOT ACCESSIBLE, PROVIDE COUPLING AND EXTENSION ROD WITH REGULATOR FOR CEILING OR WALL INSTALLATION, AS REQUIRED.

RECTANGULAR VOLUME DAMPERS: PROVIDE MINIMUM 16 GAUGE GALVANIZED STEEL CHANNEL FRAME, 16 GAUGE GALVANIZED STEEL BLADES, MINIMUM 1/2" HEXAGONAL AXLE, MOLDED SYNTHETIC BEARINGS, WITH 3/8" SQUARE PLATED STEEL CONTROL SHAFT. LINKAGES SHALL BE CONCEALED IN FRAME. OPERATING SHAFT SHALL EXTEND BEYOND FRAME AND DUCT TO A LOCKING QUADRANT WITH ADJUSTABLE LEVER. MAXIMUM BLADE WIDTH SHALL NOT EXCEED 6".

DUCT TURNING VANES: PROVIDE FABRICATED TURNING VANES AND VANE RUNNERS CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS". PROVIDE TURNING VANES CONSTRUCTED OF CURVED BLADES, SUPPORTED WITH BARS PERPENDICULAR TO BLADES, AND SET INTO SIDE STRIPS SUITABLE FOR MOUNTING IN DUCTWORK. FOLLOW SMACNA GUIDELINES FOR SPACING SUPPORT, AND CONSTRUCTION. ALL BLADES SHALL BE DOUBLE THICKNESS AIRFOIL TYPE.

FLEXIBLE DUCT CONNECTORS: PROVIDE UL LABELED 30 OUNCE NEOPRENE COATED FIBERGLASS FABRIC DUCT CONNECTORS AT DUCT CONNECTIONS TO VIBRATING EQUIPMENT.

DUCT ACCESS DOORS: PROVIDE HINGED ACCESS DOORS IN DUCTWORK WHERE REQUIRED FOR ACCESS TO EQUIPMENT. PROVIDE INSULATED ACCESS DOORS FOR INSULATED DUCTWORK. CONSTRUCT OF SAME OR THICKER GAUGE SHEET METAL AS DUCT IN WHICH IT IS INSTALLED. PROVIDE FLUSH FRAMES FOR UNINSULATED DUCTS, AND EXTENDED FRAMES FOR EXTERNALLY INSULATED DUCTS. PROVIDE CONTINUOUS HINGE ON ONE SIDE, WITH ONE HANDLE-TYPE LATCH FOR ACCESS DOORS 12" HIGH AND SMALLER, AND TWO HANDLE-TYPE LATCHES FOR LARGER ACCESS DOORS.

MECHANICAL PIPING IDENTIFICATION: PROVIDE PIPE MARKERS, FLOW ARROWS AND ENGRAVED PLASTIC-LAMINATE SIGNS FOR MECHANICAL PIPING AND VALVES TO COMPLY WITH ANSI A13.1. PROVIDE ONLY ONE TYPE OF PIPE MARKERS AND FLOW ARROWS FOR ALL SYSTEMS.

PRESSURE/TEMPERATURE TEST PLUGS (PETE'S PLUG): 1/4" NPT FITTINGS TO RECEIVE EITHER TEMPERATURE OR PRESSURE PROBE, 1/8" O.D. FITTING AND CAPS SHALL BE BRASS WITH VALVE CORE OF NORDEL, RATED AT 150 PSIG AT 0°F TO 200°F.

COMBINATION BALANCING AND SHUT-OFF VALVES: BELL & GOSSETT CIRCUIT SETTER WITH LOCKING SET POINT. PROVIDE CIRCUIT SETTER BALANCE WHEEL WITH O&M MANUAL. TACO OR HOMESTEAD ARE CONSIDERED AS

MECHANICAL EQUIPMENT IDENTIFICATION: PROVIDE ENGRAVED PLASTIC LAMINATE LABEL FOR EACH MAJOR ITEM OF MECHANICAL EQUIPMENT AND EACH OPERATIONAL DEVICE. LETTERS SHALL BE MINIMUM OF 1/2" HIGH. PROVIDE SIGNS TO INFORM OPERATOR OF OPERATIONAL REQUIREMENTS, TO INDICATE SAFETY AND EMERGENCY PRECAUTIONS, AND TO WARN OF HAZARDS AND IMPROPER OPERATION.

TESTING AND BALANCING: TEST AND ADJUST ALL MECHANICAL SYSTEMS AND EQUIPMENT TO ASSURE PROPER BALANCE AND OPERATION. PERFORM TESTS IN ACCORDANCE WITH THE MOST CURRENT NEBB OR AABC, AND ASHRAE STANDARDS. ELIMINATE OBJECTIONABLE NOISE AND VIBRATION, AND ASSURE PROPER FUNCTION OF CONTROLS. BALANCING CONTRACTOR SHALL BE AN INDEPENDENT CERTIFIED TEST AND BALANCE CONTRACTOR, WITH NEBB OR AABC CERTIFICATION. SUBMIT COMPLETED AND CERTIFIED TEST AND BALANCE REPORT TO OWNER'S REPRESENTATIVE. BALANCE ALL SYSTEMS TO WITHIN 5% OF AIR FLOWS INDICATED ON THE DRAWINGS, AND REPORT DISCREPANCIES TO HVAC INSTALLER FOR CORRECTION. MARK FINAL BALANCE POSITIONS ON DAMPERS WITH PERMANENT MARKER.

OPERATIONS AND MAINTENANCE MANUALS (O&M): AT COMPLETION OF PROJECT PROVIDE A MINIMUM OF TWO O&M MANUALS IN THREE RING BINDERS TO OWNER/TENANT. MANUALS SHALL HAVE TABS LABELED WITH ALL SECTIONS SEPARATED WITH A CLEAR INDEX AT FRONT. PROVIDE WARRANTY LETTER AT FRONT OF MANUAL STATING DATES OF WARRANTY (START DATE AND END DATE) AND CONTACTS WITH PHONE NUMBERS FOR WARRANTY WORK. PROVIDE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE INCLUDING RECOMMENDED SETPOINTS. MANUALS SHALL INCLUDE SUBMITTALS OF ALL EQUIPMENT, SIZE AND OPTIONS SELECTED. PROVIDE ALL BALANCING REPORTS. PROVIDE MANUFACTURER LITERATURE FOR OPERATIONS AND MAINTENANCE FOR ALL EQUIPMENT ON PROJECT. ALL PERIODIC AND ROUTINE MAINTENANCE SHALL BE CLEARLY IDENTIFIED. PROVIDE CONTROLS SECTION LISTING SYSTEM OPERATING AND CONTROL INSTRUCTIONS, MAINTENANCE, CALIBRATION, WIRING DIAGRAMS, SCHEMATICS AND CONTROL SEQUENCE DESCRIPTIONS.

SHOP DRAWINGS/SUBMITTALS: SUBMIT ELECTRONIC SUBMITTALS AND SHOP DRAWINGS VIA EMAIL AS PDF ELECTRONIC FILES. PROVIDE SEPARATE PDF SUBMITTALS ON ALL MECHANICAL EQUIPMENT (INCLUDING CONTROLS PACKAGES), AIR DISTRIBUTION DEVICES, DUCTWORK, DAMPERS, AND INSULATION. SUBMITTALS AND SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING INFORMATION:

• PROJECT NAME

DATE
NAME AND ADDRESS OF ARCHITECT AND MEP ENGINEER
NAME OF CONSTRUCTION MANAGER

NAME OF CONTRACTOR
NAME OF FIRM OR ENTITY THAT PREPARED SUBMITTAL
NAMES OF SUBCONTRACTOR, MANUFACTURER, AND SUPPLIER.
CATEGORY AND TYPE OF SUBMITTAL
SUBMITTAL PURPOSE AND DESCRIPTION

PRODUCT NAME
DRAWING NUMBER AND DETAIL REFERENCES, AS APPROPRIATE
INDICATION OF FULL OR PARTIAL SUBMITTAL
TRANSMITTAL NUMBER
REMARKS

IDENTIFY DEVIATIONS FROM THE CONTRACT DOCUMENTS ON SHOP DRAWINGS AND SUBMITTALS. 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.

SUBMITTALS SHALL INCLUDE (AS APPLICABLE):

MANUFACTURER'S CATALOG CUTS

MANUFACTURER'S PRODUCT SPECIFICATIONS

MANUFACTURER NAME

MANUFACTURER'S PRODUCT SPECIFICATIONS
 STATEMENT OF COMPLIANCE WITH SPECIFIED REFERENCED
 STANDARDS
 TESTING BY RECOGNIZED TESTING AGENCY

APPLICATION OF TESTING AGENCY LABELS AND SEALS

WIRING DIAGRAMS SHOWING FACTORY-INSTALLED WIRING
PERFORMANCE CURVES
OPERATIONAL RANGE DIAGRAMS
CLEARANCES REQUIRED TO OTHER CONSTRUCTION, IF NOT INDICATED ON SHOP DRAWINGS.

FULL SIZE SHOP DRAWINGS SHALL INCLUDE (AS APPLICABLE):

ILL SIZE SHOP DRAWINGS SHALL INCLUDE (AS APPLICABLE):
IDENTIFICATION OF PRODUCTS
SCHEDULES
COMPLIANCE WITH SPECIFIED STANDARDS

NOTATION OF COORDINATION REQUIREMENTS
 NOTATION OF DIMENSIONS ESTABLISHED BY FIELD MEASUREMENT
 RELATIONSHIP AND ATTACHMENT TO ADJOINING CONSTRUCTION
 CLEARLY INDICATED.

MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING DUCT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION AND INSTALLATION.

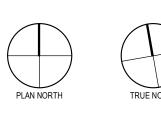
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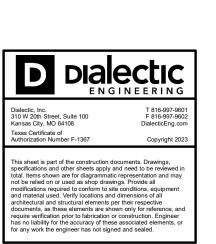




MIRA SAFETY

1713 Hur Industrial Blvd
Cedar Park, TX 78613





12/01,

Project Number 23-01-014

Drawn By XH

Checked By EML

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M701

MECHANICAL SPECIFICATIONS

SPRINKLER TAMPER SWITCH, PROVIDED BY PLUMBING CONTRACTOR

COMBINATION FIRE/SMOKE DAMPER PROVIDED BY MECHANICAL CONTRACTOR

FIRE SPRINKLER SYSTEM BELL (GONG), +10'-0" AFG

LIGHTING GENERAL NOTES

- CONNECT EXIT SIGNS, EMERGENCY AND NIGHT LIGHTS TO UNSWITCHED LIGHTING CIRCUIT, NOT CONTROLLED BY OCCUPANCY SENSORS. SWITCHES OR CONTACTORS.
- PROVIDE DEDICATED NEUTRAL WITH ALL DIMMING SYSTEM CIRCUITS. NO COMMON NEUTRALS SHALL BE ALLOWED.

MOUNT DEVICE +6" ABOVE TOP OF COUNTER TO BOTTOM OF DEVICE

REFER TO LIGHT FIXTURE SCHEDULE FOR SPECIFICATION AND INFORMATION ON ALL

SHOWN IN THIS SCHEDULE, PROVIDED BY CONTRACTOR.

OF THE DEVICE UNLESS NOTED OTHERWISE.

REFER TO SPECIFICATIONS AND PLAN NOTES FOR DETAILED DESCRIPTION OF ALL DEVICES

MOUNTING HEIGHTS INDICATED ARE MEASURED FROM FINISHED FLOOR TO THE CENTERLINE

DETAIL OR SECTION REFERENCE

REVISION DESIGNATION

MECHANICAL CONTRACTOR

NIGHT LIGHT

EQUIPMENT DESIGNATION.

FOODSERVICE EQUIPMENT DESIGNATION

MOUNTING HEIGHT ABOVE FINISHED FLOOR TO CENTERLINE OF DEVICE

- REFER TO "RECESSED LIGHTING FIXTURE SUPPORT DETAIL" FOR INFORMATION ON SUPPORT OF ALL RECESSED LIGHT FIXTURES.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLAN AND DETAILS FOR LOCATION OF ALL LIGHTING FIXTURES AND ALL OTHER EQUIPMENT INSTALLED IN THE CEILING SYSTEM. VERIFY MOUNTING HEIGHTS AND FINISHES WITH ARCHITECT PRIOR TO ROUGH-IN.
- REFER TO POWER PLANS FOR LOCATIONS OF ELECTRICAL EQUIPMENT. PROVIDE (2) ADDITIONAL #12 CONDUCTORS FOR ALL 0-10V DIMMING

POWER GENERAL NOTES

- VERIFY EXACT LOCATIONS OF HVAC AND PLUMBING EQUIPMENT, CONDUIT STUB-UPS AND POWER CONNECTIONS PRIOR TO ROUGH-IN.
- VERIFY EXACT LOCATION, MOUNTING HEIGHTS AND CONDUIT ROUTING FOR ALL THERMOSTATS, TEMPERATURE SENSORS, HUMIDISTATS AND C02 SENSORS PRIOR TO ROUGH-IN.
- REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR ADDITIONAL ELECTRICAL REQUIREMENTS. COORDINATE PROVISIONS FOR CONTROL CONDUIT AND WIRING AS REQUIRED FOR INTERLOCKING OF FANS, MOTORS, ETC. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- MOUNT DEVICES INSTALLED ON EQUIPMENT, ON NON-REMOVABLE PANEL. COORDINATE LOCATION PRIOR TO COMMENCING ROUGH-IN

GENERAL ELECTRICAL NOTES

INCLUDE ALLOWANCE FOR UNFORESEEN CONDITIONS THAT MAY AFFECT THE SCOPE OF WORK. MINOR DEVIATIONS REQUIRED FOR ACCOMPLISHING THE INTENT OF THIS DESIGN SHALL BE INCLUDED IN THE ALLOWANCE.

TERMINATION.

IN RACEWAY.

- SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, TRANSFORMERS AND CONTACTORS SHALL BE "LISTED" AND "IDENTIFIED" AS RATED FOR MINIMUM OF 75°C CONDUCTOR
- ELECTRICAL DESIGN IS BASED ON INSTALLATION OF 75°C CONDUCTORS CONNECTED TO TERMINAL LUGS AND EQUIPMENT U.L. LISTED FOR MINIMUM 75°C. CONDUCTORS TERMINATED ON EQUIPMENT WITH LOWER RATING (60°C) OR NO RATING SHOWN SHALL HAVE CONDUCTOR SIZE INCREASED TO CONFORM TO ADOPTED ELECTRICAL CODE AND UL/CUL NO. 489 REQUIREMENTS.
- CONDUIT INSTALLED INDOORS SHALL BE ELECTRICAL METALLIC TUBING (EMT), MINIMUM 3/4" OR AS NOTED.
- CONDUIT INSTALLED BELOW SLAB SHALL BE RIGID STEEL, IMC, PVC OR HDPE, MINIMUM 3/4". IF PVC OR HDPE IS USED, TRANSITION TO RIGID STEEL BEFORE TURNING UP AND PENETRATING FLOOR SLAB.
- CONDUCTORS SHALL BE MINIMUM #12 THHN/THWN COPPER UNLESS NOTED OTHERWISE ON PLANS OR IN SPECIFICATIONS. BRANCH CIRCUITS SHALL BE PROVIDED WITH (2) #12 CONDUCTORS AND (1) #12
- EQUIPMENT GROUND CONDUCTOR UNLESS NOTED OTHERWISE. BRANCH CIRCUITS SHOWN WITH TWO GROUNDING CONDUCTORS SHALL HAVE ONE EQUIPMENT GROUND CONDUCTOR (GREEN) AND ONE

ISOLATED GROUND CONDUCTOR (GREEN W/YELLOW STRIP) INSTALLED

- DIRECT CURRENT WIRING SHALL BE (2) #10 IN 3/4" CONDUIT UNLESS NOTED OTHERWISE.
- CONTROL VOLTAGE WIRING SHALL BE PLENUM RATED OR INSTALLED IN
- THERMOSTATS, TEMPERATURE SENSORS, CARBON DIOXIDE SENSORS AND HUMIDISTATS: UNLESS NOTED OTHERWISE, PROVIDE WALL BOX AT +3'-10" AFF WITH 3/4" CONDUIT STUBBED OUT TO ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS AND PULLSTRING.
- PROVIDE FLEXIBLE CONNECTIONS ONLY FOR FINAL CONNECTION TO EQUIPMENT, 6'-0" MAXIMUM LENGTH. PROVIDE LIQUID TIGHT FLEXIBLE CONNECTION AT EXTERIOR LOCATIONS AND WHERE EXPOSURE TO MOISTURE IS POSSIBLE.
- ALL EMPTY CONDUITS SHALL BE PROVIDED WITH A PULL WIRE.
- M. ALL RACEWAYS SHALL CONTAIN A GROUNDING ELECTRODE SIZED PER THE ADOPTED ELECTRICAL CODE.
- . COORDINATE WORK ABOVE THE CEILING WITH OTHER TRADES TO PROVIDE THE GREATEST POSSIBLE CLEARANCE. CONDUIT RUNS SHALL BE RUN THROUGH TRUSSES WHERE POSSIBLE.
- VERIFY EXACT PLACEMENT OF ALL DEVICES SHOWN ON CONSTRUCTION DOCUMENTS PRIOR TO FINAL PLACEMENT.
- ALL RECESSED PANELBOARDS SHALL BE INSTALLED WITH MINIMUM OF (3) 3/4" CONDUITS STUBBED UP TO ACCESSIBLE CEILING SPACE FOR
- ALL PANELBOARDS. SWITCHBOARDS AND LINE VOLTAGE CONTROL EQUIPMENT SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTING, SERVICING OR MAINTENANCE OF EQUIPMENT. MARKING SHALL BE SELF ADHESIVE, COMMERCIAL LABEL
- CONFORMING TO ADOPTED CODES. LIGHT SWITCHES, ELECTRICAL OUTLETS, THERMOSTATS AND OTHER ENVIRONMENTAL CONTROLS SHALL HAVE OPERABLE PARTS OF THE CONTROLS LOCATED NO HIGHER THAN 48" AND NO LOWER THAN 15" ABOVE THE FLOOR. IF THE REACH IS OVER AN OBSTRUCTION BETWEEN 20" AND 25" IN DEPTH, THE MAXIMUM HEIGHT IS REDUCED TO 44" FOR FORWARD APPROACH OR 46" FOR SIDE APPROACH, PROVIDED THE OBSTRUCTION IS NO MORE THAN 24" IN DEPTH. OBSTRUCTIONS SHALL

NOT EXTEND MORE THAN 25" FROM THE WALL BENEATH A CONTROL.

- SHALL ACTION THAT IS REQUIRED WITHOUT OPTION OR QUALIFICATION.
- FURNISH CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING. INSTALL - CONTRACTOR SHALL BE RESPONSIBLE FOR LABOR AND CONSTRUCTION EQUIPMENT NECESSARY TO SET IN PLACE, CONNECT, CALIBRATE AND/OR TEST EQUIPMENT FURNISHED BY HIM OR OTHERS.
- PROVIDE CONTRACTOR SHALL FURNISH AND INSTALL.

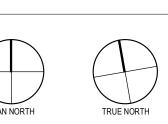
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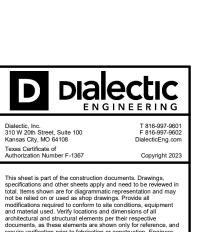






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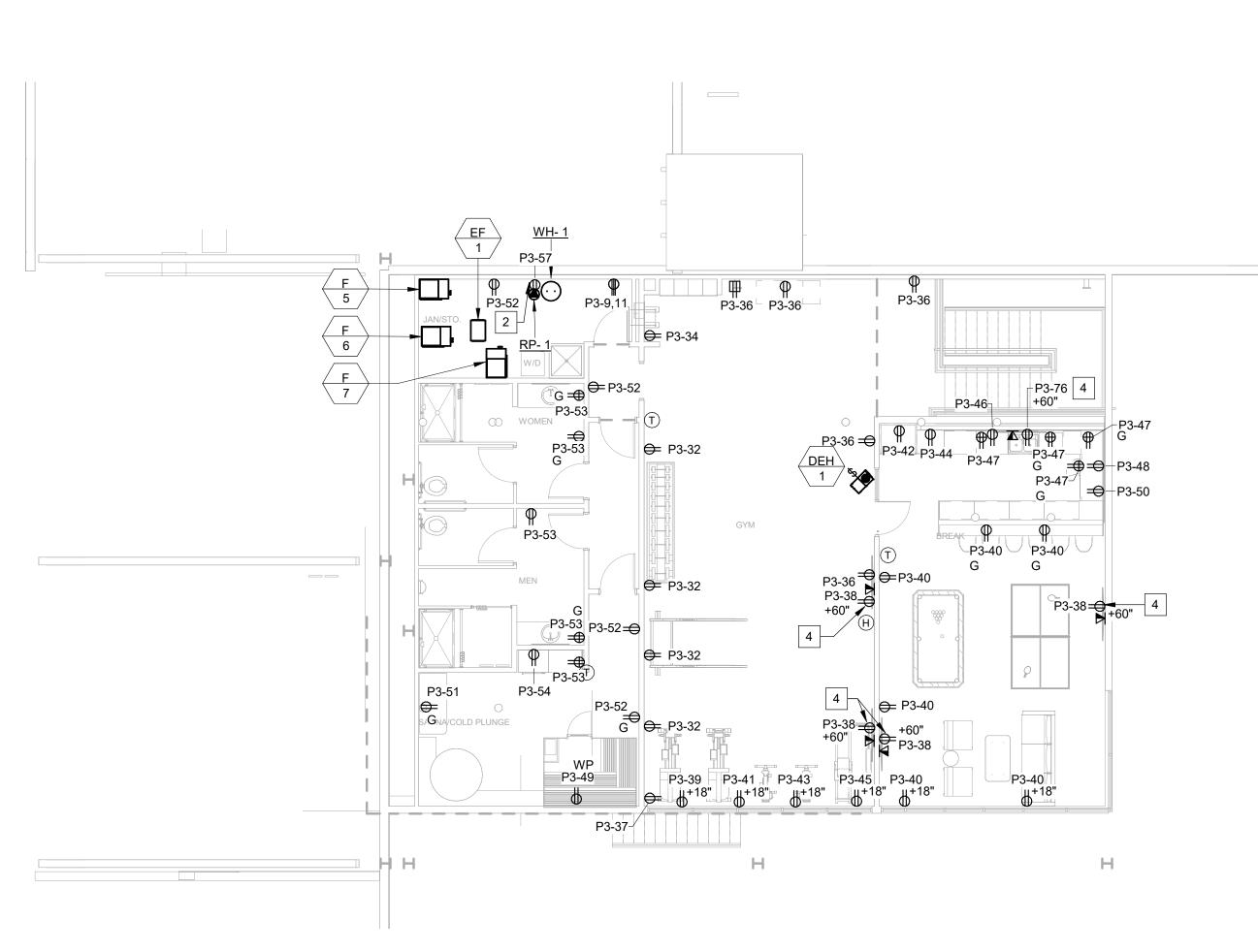


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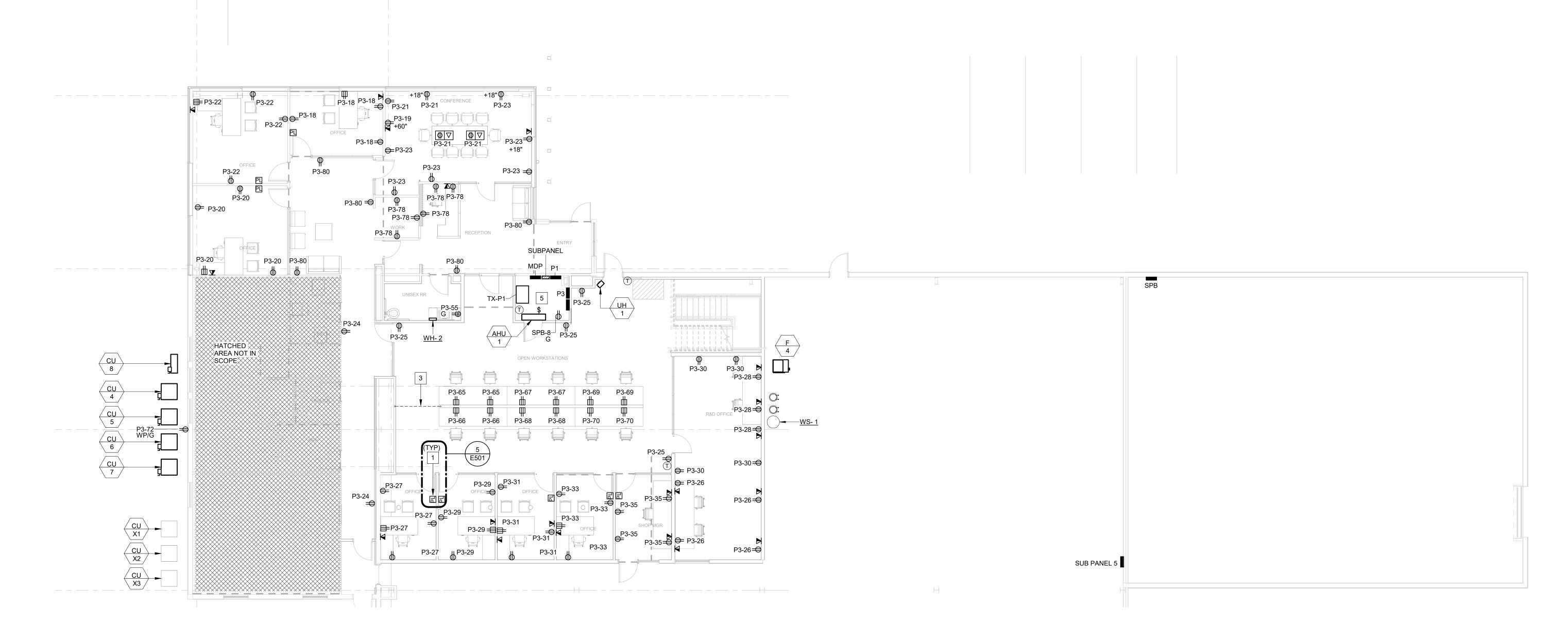
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E001

GENERAL NOTES AND LEGENDS



2 OVERALL POWER PLAN - LV 2 1/8" = 1'-0"



1 OVERALL POWER PLAN - LV 1

ELECTRICAL KEY NOTES

1 ROUTE CIRCUIT THROUGH PLUGLOAD (PL) FOR CONTROLLED RECEPTACLE CIRCUIT. SEE DETAIL 9 ON SHEET E501 FOR WIRING DETAILS.

- 2 PROVIDE RECEPTACLE FOR RECIRCULATION PUMP. COORDINATE EXACT LOCATION WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.
- 3 PROVIDE CONDUIT IN SLAB FOR POWER TO GYP WALL AS REQUIRED. PROVIDE ALL SAW CUTTING AS REQUIRED. 4 COORDINATE FINAL MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.

5 MAINTAIN ALL NEC CLEARANCES FOR NEW AND EXISTING EQUIPMENT WITHIN ELECTRICAL ROOM.



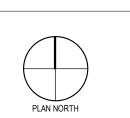
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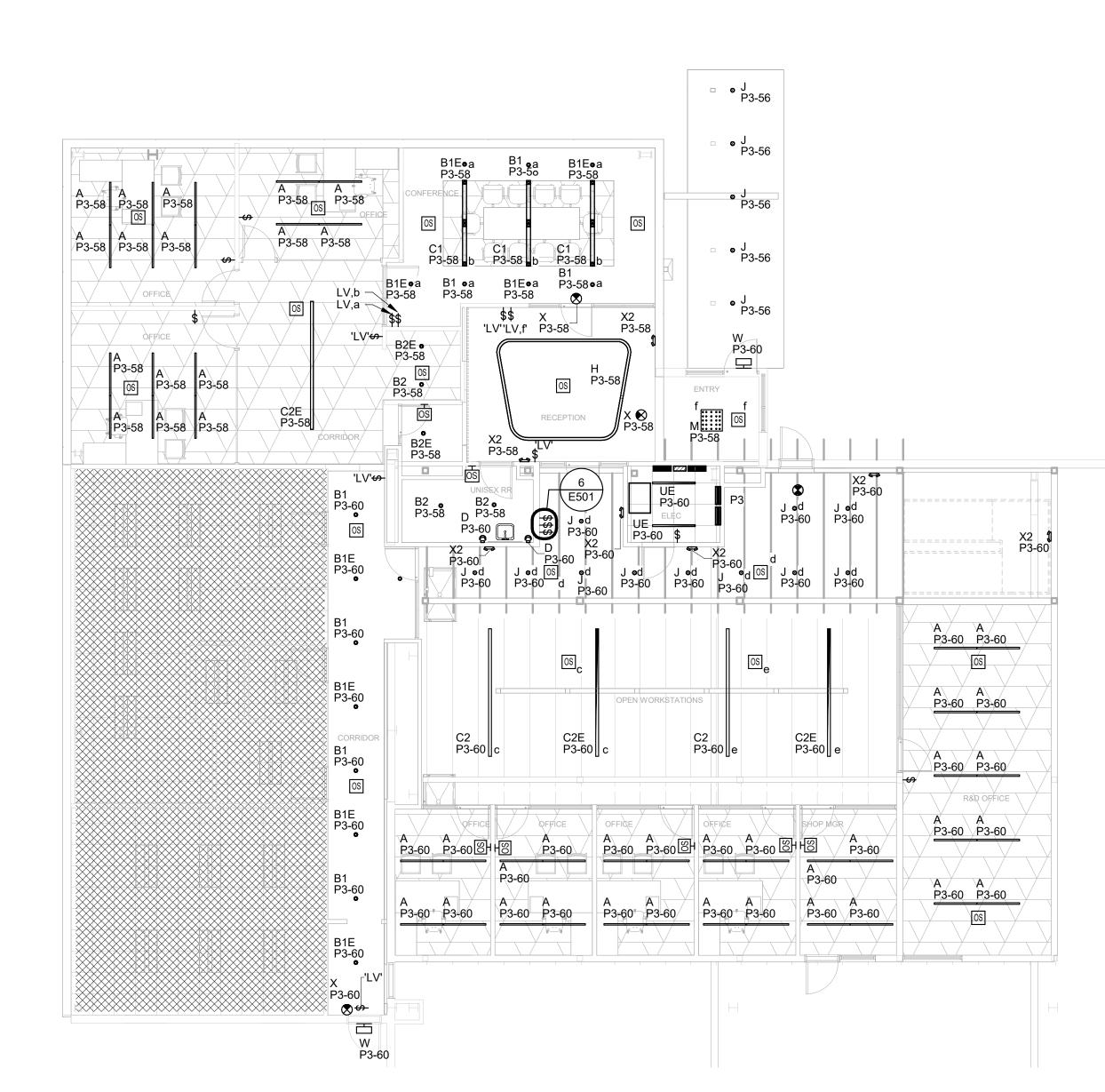


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E111

POWER PLANS

2 OVERALL LIGHTING PLAN - LV 2 1/8" = 1'-0"



1 OVERALL LIGHTING PLAN - LV 1 1/8" = 1'-0"

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modifications required to conform to site conditions, equipment
and material used. Verify locations and dimensions of all
architectural and structural elements per their respective
documents, as these elements are shown only for reference, and
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Project Number 23-01-014

Drawn By TH

Checked By JGW

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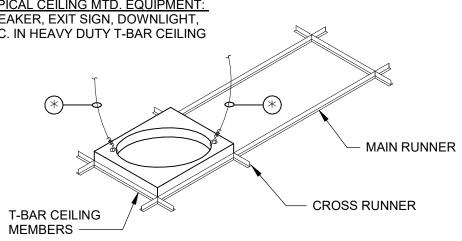
F121

LIGHTING PLANS

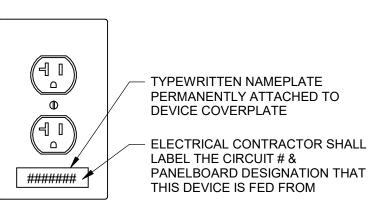
ALL LETTERS - 3/16" LENGTH AS LINE 1 - EQUIPMENT NAME - LINE 2 - SIZE OF FEEDER C/B OR FUSED SWITCH

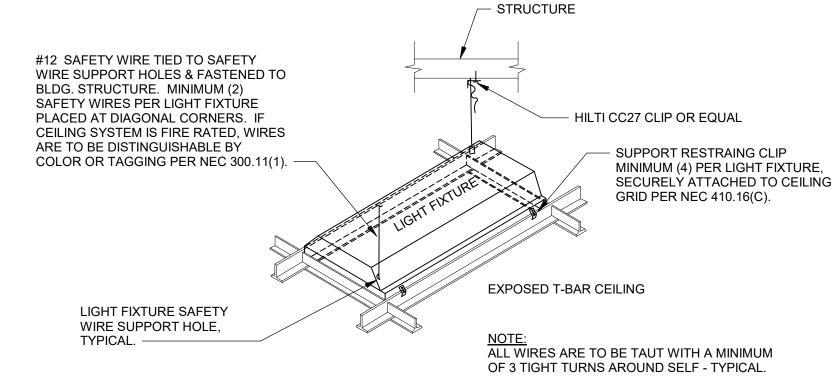
— LINE 3 - ACTUAL INSTALLED

EQUIPMENT PANELBOARD NAMEPLATE DETAIL

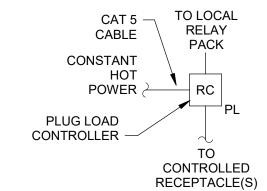


* MINIMUM 12 GUAGE SLACK WIRE AT 45 DEGREES FROM OPPOSITE EQUIPMENT HOUSING CORNERS TO STRUCTURE ABOVE. ATTACH DIRECTLY TO FIXTURE WITH MINIMUM (3) WRAPPED TURNS. ATTACH TO STRUCTURE PER ACOUSTICAL CEILING ATTACHMENT DETAILS. SET WIRE SLIGHTLY SLACK TO ALLOW FULL SEATING INTO T-BAR.





4 RECESSED LIGHTING FIXTURE SUPPORT DETAIL 1/4" = 1'-0"



NOTES
NETWORKED LIGHTING CONTROLS SHALL BE EQUAL TO ACUITY BRANDS 'NLIGHT' CONTROLS
REFER TO PLAN FOR DEVICE TYPE. NOT ALL CONTROLS ARE SHOWN. THIS DIAGRAM IS INTENDED TO PROVIDE GENERAL WIRING AND CONTROL PROVIDE ALL CONTROL WIRING FOR EACH DIMMING TYPE.
PROVIDE SUFFICIENT SPACING BETWEEN DIMMING SWITCHES PER MANUFACTURER'S INSTRUCTIONS.

5 PLUG LOAD CONTROLLER 12" = 1'-0"

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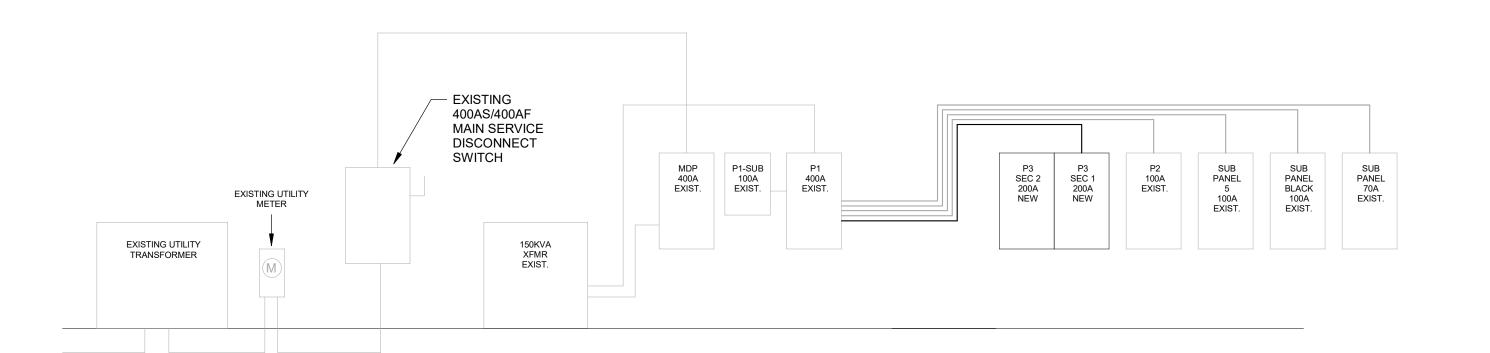
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E501

ELECTRICAL DETAILS



1 One-Line NOT TO SCALE

				EQ	UIPMEN	T FEEDER SCH	IEDULE				
MARK								DISCON	INECT		
EQUIPMENT TYPE	#	VOLTAGE PHASE	PANEL	CIRCUIT	MOCP	FEEDER	PROVIDER	SIZE-POLES	FUSES	NEMA	REMARKS
AHU	1	208V - 1P	P3	71,73	15 A	(2)#12 & (1)#12 G, 1/2"	CONTRACTOR	30A - 2P	NF	11211111	
CU	4	208V - 1P	P3	2,4	40 A	(2)#8 & (1)#10 G, 3/4"	CONTRACTOR	30A - 2P	NF	3R	
CU	5	120/208V - 1P	P3	14,16	35 A	(2)#10 & (1)#10 G, 1/2"	CONTRACTOR	30A - 1P	NF	3R	
CU	6	120/208V - 1P	P3	6,8	35 A	(3)#10 & (1)#10 G, 3/4"	CONTRACTOR	30A - 2P	NF	3R	
CU	7	120/208V - 1P	P3	10,12	35 A	(3)#10 & (1)#10 G, 3/4"	CONTRACTOR	30A - 2P	NF	3R	
CU	8	208V - 1P	P3	15,17	30 A	(2)#10 & (1)#10 G, 1/2"	CONTRACTOR	30A - 2P	NF	3R	
DEH	1	120V - 1P	P3	74	15 A	(2)#12 & (1)#12 G, 1/2"	CONTRACTOR	20A - 1P	NF		
EF	1	120V - 1P	P3	1	15 A	(2)#12 & (1)#12 G, 1/2"	INTEGRAL				
F	4	120V - 1P	P3	13	20 A	(2)#12 & (1)#12 G, 1/2"	INTEGRAL				
F	5	120V - 1P	P3	59	20 A	(2)#12 & (1)#12 G, 1/2"	INTEGRAL				
=	6	120V - 1P	P3	61	20 A	(2)#12 & (1)#12 G, 1/2"	INTEGRAL				
=	7	120V - 1P	P3	63	20 A	(2)#12 & (1)#12 G, 1/2"	INTEGRAL				
RP	1	120V - 1P	P3	57	20 A	(2)#12 & (1)#12 G, 1/2"	CONTRACTOR				RECEPTACL CONNECTION
UH	1	120/208V - 1P	P3	75,77	15 A	(3)#12 & (1)#12 G, 1/2"	INTEGRAL				
WH	1	480V - 3P	MDP	32,34,36	20 A	(3)#12 & (1)#12 G, 1/2"	CONTRACTOR	30A - 3P	NF		
VH	2	208V - 1P	P3	5,7	30 A	(2)#10 & (1)#10 G, 1/2"	CONTRACTOR	30A - 2P	NF		
WS	1	120V - 1P	P3	3	15 A	(2)#12 & (1)#12 G, 1/2"	INTEGRAL				

EQUIPMENT		FEEDE	ER	
MARK	RATING	PHASE	WIRE-CONDUIT SIZE	NOTES
MDP	400 A	277/480V - 3P	EXISTING	
P1	400 A	120/208V - 3P	EXISTING	
P2	100 A	120/208V - 3P	EXISTING	
P3	200 A	120/208V - 3P	(4)#3/0 & (1)#6 G, 2-1/2"	
SPB	100 A	120/208V - 3P	EXISTING	
SUB PANEL	70 A	120/208V - 3P	EXISTING	
SUB PANEL 5	100 A	120/208V - 3P	EXISTING	
TX-P1	200 A	480V - 3P	EXISTING	

/OLTAGE DR	OP	FALLE	VOLTACE		FAULT CU	IRRENT	
EQUIPMENT MARK	VOLTAGE - PHASE	FAULT CURRENT	VOLTAGE DROP	ЗРН	L-L	L-N 46262 15679 0 9298	MTR
UTILITY	500kVA 277/480V-3P INFINITE	46262		46262	40248	46262	
MDP	277/480V-3P	23426	0.8%	23426	20334	15679	0
TX-P1 PRI	480V-3P	20547	0.9%	20547	17830	0	0
TX-P1	150kVA: 480V-3P to 120/208V-3P, CU	9298	0.9%	9298	8089	9298	0
TX P1 SEC	120/208V-3P	9084	1.1%	9084	7902	8880	0
P1	120/208V-3P	8700	1.3%	8700	7567	8174	0
Р3	120/208V-3P	8021	1.4%	8021	6974	7052	0
	1	1					

		LIGH	TING FIXTURE SCHEDULE				
Туре	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LAMPS	VOLTS	FIXTURE WATTS	REMARKS
4	PRUDENTIAL	BPRO2-REC-FLSH-LED35-MO-XXX-XXX-BTW-SC-UNV-XXX-XXX-DM01	2" RECESSED LINEAR FIXTURE	LED	120 V	22 VA	
31	ALPHABET	NU4-RD-SW-10LM-35K-80-HET40-W H-WH-NC-UNV-DIM10	4" RECESSED DOWNLIGHT, LOW OUTPUT	LED	120 V	9 VA	
31E	ALPHABET	NU4-RD-SW-10LM-35K-80-HET40-W H-WH-NC-UNV-DIM10-EM7	SAME AS TYPE B1 WITH EMERGENCY BATTERY BACKUP CAPABLE OF SUPPLYING EMERGENCY ILLUMINATION FOR 90 MINUTES.	LED	120 V	9 VA	EMERGENCY LIGHT
32	ALPHABET	NU4-RD-SW-25LM-35K-80-HET60-W H-WH-NC-UNV-DIM10	4' RECESSED DOWNLIGHT, MEDIUM OUTPUT	LED	120 V	20 VA	
32E	ALPHABET	NU4-RD-SW-25LM-35K-80-HET60-W H-WH-NC-UNV-DIM10-EM7	SAME AS TYPE B2 WITH EMERGENCY BATTERY BACKUP CAPABLE OF SUPPLYING EMERGENCY ILLUMINATION FOR 90 MINUTES.	LED	120 V	20 VA	
C1	FLUXWERX	APS-S-R-D-A-35-XXX-XXX-XXX-F2- M-XXX	SUSPENEDED LINEAR, LOW OUTPUT	LED	120 V	34 VA	COORDINATE SUSPENSION LENGTH AND FINISHES WITH LIGHTING DESIGNER AND ARCHITECT.
C2	FLUXWERX	APS-S-R-D-C-35-XXX-XXX-XXX-F2- M-XXX	SUSPENDED LINEAR, MEDIUM OUTPUT	LED	120 V	52 VA	COORDINATE SUSPENSION LENGTH AND FINISHES WITH LIGHTING DESIGNER AND ARCHITECT.
C2E	FLUXWERX	APS-S-R-D-C-35-XXX-XXX-XXX-F2- M-XXX-B1	SAME AS TYPE B2 WITH EMERGENCY BATTERY BACKUP CAPABLE OF SUPPLYING EMERGENCY ILLUMINATION FOR 90 MINUTES.	LED	120 V	52 VA	EMERGENCY LIGHT, COORDINATE SUSPENSION LENGTH AND FINISHES WITH LIGHTING DESIGNER AND ARCHITECT.
)	ALW	CCS3-0590-35-55-DF-D-V01-R-GO-C G	3.5" ROUND LED SCONCE, DIRECT ONLY, ORANGE HEAT SINK, CHARCOAL GRAY SHELL	LED	120 V	7 VA	COORDINATE MOUNTING HEIGHT AND FINISHES WITH LIGHTING DESIGNER AND ARCHITECT.
3	ALW	CCP3-05-90-CCT-55-DF-D-V01-R-G O-CG	3.5" ROUND LED PENDANT, DIRECT ONLY, ORANGE HEAT SINK, CHARCOAL GRAY SHELL	LED	120 V	7 VA	COORDINATE PENDENT LENGTH AND FINISHES WITH LIGHTING DESIGNER AND ARCHITECT.
1	XAL	CURVE2.5-XXX-OP-35K-C80-UNV-1 0V-0455LF-MOD	SUSPENSION MOUNT WITH CURVED CORNERS	LED	120 V	163 VA	COORDINATE SUSPENSION LENGTH AND FINISHES WITH LIGHTING DESIGNER AND ARCHITECT.
J	LUMENPULSE	LACYS-A-PMF-XXX-XXX-D-XXX-9-IT G-DL20-35K-CR80-W-DA1-NA-B	SUSPENSION MOUNT DOWNLIGHT	LED	120 V	0 VA	COORDINATE PENDENT LENGTH AND FINISHES WITH LIGHTING DESIGNER AND ARCHITECT.
<	SPECTRUM	PRDDH16X-65L-35K-DS10X-XXX-DF 16-TF3-XXX	GYM HIGHBAY	LED	120 V	59 VA	COORDINATE MOUNTING HEIGHT AND FINISHES WITH LIGHTING DESIGNER AND ARCHITECT.
KE	SPECTRUM	PRDDH16X-65L-35K-DS10X-XXX-DF 16-TF3-XXX-EMEN	SAME AS TYPE K WITH EMERGENCY BATTERY BACKUP CAPABLE OF SUPPLYING EMERGENCY ILLUMINATION FOR 90 MINUTES.	LED	120 V	59 VA	EMERGENCY LIGHT
-	XAL	CURVE2.5-XXX-OP-35K-C80-UNV-1 0V-0455LF-MOD	SUSPENSION MOUNT WITH CURVED CORNERS	LED	120 V	202 VA	COORDINATE SUSPENSION LENGTH AND FINISHES WITH LIGHTING DESIGNER AND ARCHITECT.
M	BLACKJACK	MQ-2425-XXX-NV3LR02-4S-Z-35K-X XX	LARGE DECORATIVE PENDENT	LED	120 V	125 VA	
J	LITHONIA	CLX-L48-5000LM-SEF-RDL-MVOLT- GZ10-35K-80CRI-WH	BOH LED STRIP.	LED	120 V	32 VA	
JE	LITHONIA	CLX-L48-5000LM-SEF-RDL-MVOLT- GZ10-35K-80CRI-WH-E10WLCP	SAME AS TYPE U WITH EMERGENCY BATTERY BACKUP CAPABLE OF SUPPLYING EMERGENCY ILLUMINATION FOR 90 MINUTES.	LED	120 V	32 VA	
N	LITHONIA	AFO-W-MVOLT-N-SD	EXTERIOR WALL PACK	LED	120 V	3 VA	MOUNT WALL PACK 10' 0" ABOVE GROUND.
<	LITHONIA	EDGR-XXX-XXX-R	EDGE LIT EXIT	LED	120 V	4 VA	
2	COOPER LIGHTING	AP2SQLED Series	TWO SQUARE HEADS	LED	120 V	5 VA	EMERGENCY LIGHT

ANEL: MDP					_	TION: R		ON 101				NEMA EI			,,
SYSTEM : 277/480V - 3P				В	US RA	TING: 4	00 A				C	ABINET	MOUN	TING: S	Surface
FEEDER: SEE RISER DIAGRA	М				M	AINS: 4	00 A - M	LO					L	.UGS:	
OPTIONS:												A	AIC RA	TING:	
LOAD DESCRIPTION	BKR SIZE	BKR PO	NOTE	CKT NO.		A	i	В	C	;	CKT NO.	NOTE	BKR PO	BKR SIZE	LOAD DESCRIPTION
OFFICE LIGHTS	20 A	1	EX	1	0	0					2	EX	1	20 A	WALL PACKS
OFFICE LIGHTS	20 A	1	EX	3			0	0			4	EX	1	20 A	WH LIGHTING
OFFICE LIGHTS	20 A	1	EX	5					0	0	6	EX	1	20 A	WH LIGHTING
WH LIGHTS	20 A	1	EX	7	0	0					8	EX	1	20 A	SPARE
WH LIGHTS	20 A	1	EX	9			0	0			10	EX	1	20 A	SPARE
WH LIGHTS	20 A	1	EX	11					0	0	12	EX	1	20 A	SPARE
OFFICE LIGHTS	20 A	1	EX	13	0	0					14	EX	1	20 A	SPARE
WH LIGHTS	20 A	1	EX	15			0	0			16	EX	1	20 A	SPARE
WH LIGHTS	20 A	1	EX	17					0	0	18	EX	1	20 A	SPARE
SPARE	20 A	1		19	0	0					20	EX	1	20 A	SPARE
EMERGENCY LIGHTS	20 A	1	EX	21			0	0			22	EX	1	20 A	SPARE
SPARE	20 A	1	EX	23					0	0	24	EX	1	20 A	SPARE
SPACE		1	EX	25		0					26	EX	1	20 A	SPARE
SPACE		1	EX	27				0			28	EX	1	20 A	SPARE
AIR COMPRESSOR	80 A	3	EX	29					0	0	30	EX	1	20 A	SPARE
			-	31	0	5000					32	N	3	20 A	WH-1
				33			0	5000			34				
EXISTING EQUIPMENT	20 A	3	EX	35					0	5000	36				
				37	0						38	EX	1		SPACE
				39			0				40	EX	1		SPACE
EXISITNG 150 KVA XFMR	200 A	3	EX	41					0		42	EX	1		SPACE
				43	0						44		1		EXTRA SPACE FOR SUB FEED
				45			0				46		1		EXTRA SPACE FOR SUB FEED
					РΗΔ	SE A:	2937	76 W		ſ		CONNE	CTED		DEMAND
						SE B:		69 W				8874			76609 W
						SE C:		99 W		ł		107			92 A

PANEL: P1				LOCATION: ELEC 114 BUS RATING: 400 A										URE: Type 1			
SYSTEM : 120/208V - 3P				В							C	ABINET		TING: Su	ırface		
FEEDER: SEE RISER DIAGRAM	Л				M	AINS: 4	100 A - M	CB						UGS:			
OPTIONS:													AIC RA	TING:			
LOAD DESCRIPTION	BKR SIZE	BKR PO	NOTE	CKT NO.		A	E	3	С		CKT NO.	NOTE	BKR PO	BKR SIZE	LOAD DESCRIPTION		
DOCK LEVELER	20 A	1	EX	1	0	180					2	EX	3	100 A	SUB PANEL BLACK (SPB)		
EAST WALL REC	20 A	1	EX	3			0	0			4						
FOCK LEVELER	20 A	1	EX	5					0	0	6						
SOUTH WALL REC	20 A	1	EX	7	0	0					8	EX	3	100 A	P2		
SOUTH WALL REC	20 A	1	EX	9			0	0			10						
SUBPANEL 5	100 A	3	EX	11					0	0	12						
				13	0	0					14	EX	1	20 A	SPRINKLER ALARM		
				15			0	0			16	EX	1	20 A	UNIT HTR		
UNIT HEATER	20 A	1	EX	17					0	0	18	EX	1	20 A	LT/ 6FI SPRINKLER		
SHIPPING DESK	20 A	1	EX	19	0	0					20	EX	3	70 A	SUB PANEL		
ELEC HTR SPRINKLER RM	20 A	2	EX	21			0	0			22						
				23					0	0	24						
DRYER	30 A	2	EX	25	0	0					26	EX	2	20 A	VENT FANS		
				27			0	0			28						
EXISITNG EQUIPMENT	20 A	1	EX	29					0	0	30	EX	2	20 A	VENT FANS		
A/C	40 A	2	EX	31	0	0					32						
				33			0	0			34	EX	2	20 A	VENT FANS		
NORTH WALL REC	20 A	1	EX	35					0	0	36						
A/C	50 A	2	EX	37	0	0					38	EX	2	20 A	A/C		
				39			0	0			40						
TIME CLOCK/VENT LOUVERS	20 A	1	EX	41					0	0	42		1	20 A	SPARE		
P3	200 A	3	EX	43	241						44		1		EXTRA SPACE		
				45			24469				46		1		EXTRA SPACE		
				47					24899		48		1		EXTRA SPACE		
					PHA	SE A:	2437	6 W				CONNE	CTED	1	DEMAND		
						SE B:	2446				l	7374		i	61609 W		
						SE C:	2489					205		ŀ	171 A		

EXISTING PEAK DEMAND OVER THE LAST 12 MONTHS IS 37.15 KW. NEW LOAD ADDED IS 95.39 KW. TOTAL LOAD ON EXISTING SYSTEM IS 132.54
MONTHS IS 37.15 KW. NEW LOAD ADDED IS 95.39
KW. TOTAL LOAD ON EXISTING SYSTEM IS 132.54
1041

	LIGHTING CONTROL IN	TENT
ROOM TYPE	TYPE OF CONTROLS	<u>OPERATION</u>
		AUTOMATIC ON / INTEGRAL OCCUPANCY. GENERAL LIGHTING
		IN EACH CONTROL ZONE SHALLK BE PERMITTED TO
		AUTOMATICALLY TURN ON UPON OCCUPANCY WITHIN THE
		INDICATED ZONE. GENERAL LIGHTING WITHIN OTHER
		OCCUPIDED ZONES SHALL BE PERMITTED TO TURN ON NOT
		MORE THAN 20% OF FULL POWER.
	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY	SENSOR TO TURN OFF LIGHTS WITHIN 20 MINUTES AFTER ALL
	SENSOR WITH LOW VOLTAGE DIMMER.	OCCUPANTS HAVE LEFT THE OPEN OFFICE SPACE. SWITCHES
OPEN WORKSTATIONS	PROVIDE MANUAL OFF CONTROL.	LOCATED WITHIN SPACE.
ELECTRICAL ROOM	LINE VOLTAGE SWITCH	MANUAL ON/ MANUAL OFF
	PASSIVE INFRARED WALL VACANCY SENSOR	
SMALL OFFICES	SWITCH WITH INTEGRAL DIMMER	MANUAL ON/ AUTOMATIC OFF WITH 20 MINUTE TIME DELAY.
LARGE OFFICES,	LOW VOLTAGE SWITCH, DUAL TECHNOLOGY	
CONFERENCE ROOMS	OCCUPANCY SENSOR.	MANUAL ON/ AUTOMATIC OFF WITH 20 MINUTE TIME DELAY.
ENTRY, RESTROOMS,		
CORRIDORS, GYM, STAIRS,	LOW VOLTAGE SWITCH, DUAL TECHNOLOGY	AUTOMATIC ON / AUTOMATIC OFF WITH 20
SAUNA	OCCUPANCY SENSOR.	MINUTE TIME DELAY.
	PASSIVE INFRARED WALL VACANCY SENSOR	
STORAGE	SWITCH.	MANUAL ON/ AUTOMATIC OFF WITH 20 MINUTE TIME DELAY.
	CEILING MOUNTED DUAL TECHNOLOGY VACANCY	AUTOMATIC ON / AUTOMATIC OFF WITH 20
	SENSOR SWITCH WITH LOW VOLTAGE DIMMER	MINUTE TIME DELAY AND DIMMING AT WALL
BREAK ROOM	SWITCH.	SWITCH.

PANEL: P3					LOCA	TION: C	PEN W	ORKSTA	TIONS 1	15		NEMA E	NCLOS	SURE: T	ype 1
SYSTEM: 120/208V - 3P				В	US RA	TING: 2	200 A				C	ABINET	MOUN	ITING: S	Surface
EEDER: SEE RISER DIA	GRAM				M	AINS: 2	200 A - M	LO						LUGS:	
OPTIONS:													AIC RA	TING: 1	0.000
LOAD DESCRIPTION	BKR SIZE	BKR PO	NOTE	CKT NO.		A	E	3	C	:	CKT NO.	NOTE	BKR PO		LOAD DESCRIPTION
EF-1	15 A	1		1	300	1758					2		2	40 A	CU-4
WS-1	15 A	1		3			600	1758			4				
WH-2	30 A	2		5					2500	1529	6		2	35 A	CU-6
				7	2500	1529					8				
WASHER/DRYER	30 A	2	G	9			2496	1529			10		2	35 A	CU-7
				11					2496	1529	12				
F-1	20 A	1		13	1512	1409					14		2	35 A	CU-5
CU-8	30 A	2		15			1581	1409			16				
				17					1581	900	18		1	20 A	OFFICE C
CONFERENCE TV	20 A	1		19	400	900					20		1	20 A	OFFICE A
CONFERENCE A	20 A	1		21			360	900			22		1	20 A	OFFICE B
CONFERENCE B	20 A	1		23					1080	360	24		1	20 A	RR/IT/MECH/OFFICE CONV.
OPEN OFFICE CONV.	20 A	1		25	720	720					26		1	20 A	R&D OFFICE DESK A
OFFICE D	20 A	1		27			720	540			28		1	20 A	R&D OFFICE DESKS B
OFFICE E	20 A	1		29					720	720	30		1	20 A	R&D OFFICE CONV.
OFFICE F	20 A	1		31	720	720					32		1	20 A	GYM CONV. A
OFFICE G	20 A	1		33			720	500			34	G	1	20 A	WATER COOLER
SHOP MGR OFFICE	20 A	1		35				333	720	900	36		1	20 A	GYM CONV. B
EXERCISE EQUIPMENT		1		37	500	720			120	000	38		1	20 A	GYM/BREAK TV'S
EXERCISE EQUIPMENT		1		39	000	. 20	500	1080			40		1	20 A	BREAK CONV.
EXERCISE EQUIPMENT		1		41				1000	500	1000	42	G	1	20 A	BREAK FRIDGE
EXERCISE EQUIPMENT	-	1		43	500	1200				1000	44	G	1	20 A	MICROWAVE
EXERCISE EQUIPMENT		1		45	000	1200	500	1000			46	G	1	20 A	DISHWASHER
BREAK KITCHEN CONV		1		47			000	1000	720	500	48	G	1	20 A	UC ICE MAKER
SAUNA	20 A	1	G	49	1920	500			720	000	50	G	1	20 A	BREAK FRIDGE
COLD PLUNGE	20 A	1		51	1020	000	1920	720			52		1	20 A	JAN/STOR/SAUAN CONV.
RR CONV.	20 A	1		53			1320	720	900	500	54	G	1	20 A	SAUNA UC FRIDGE
UNISEX RR CONV.	20 A	1		55	180	0			300	300	56	-	1	20 A	EXTERIOR CANOPY LTG
RP-1	20 A	1		57	100	U	65	982			58		1	20 A	OFFICE LTG LVL 1
F-2	20 A	1		59			0.5	302	1764	1070	60		1	20 A	OFFICE LTG LVL 1
F-3	20 A	1		61	1764	725			1704	1070	62		1	20 A	RESTROOM/SAUNA LTG LVL
F-4	20 A	1		63	1704	123	1512	1307			64		1	20 A	GYM/BREAKROOM LTG
		_					1312	1307	720	720			1		
WORKSTATION A WORKSTATION B	20 A 20 A	1	-	65 67	720	720			720	720	66 68		1	20 A 20 A	WORKSTATION D WORKSTATION E
WORKSTATION B WORKSTATION C	20 A	1	-	69	120	120	720	720			70		1	20 A	WORKSTATION E WORKSTATION F
AHU-1	15 A	2		71			720	720	60	180	70		1	20 A	EXTERIOR CONV.
AUU-1	15 A		-	73	60	600			- 50	100	74		1	20 A 15 A	
 UH-1	15 A			75	00	600	150	180			76	G	-		DEH-1 BREAKROOM TV
		2	-				150	180	150	1000		G	1	20 A	
 CDADE	20.4			77	0	000			150	1080	78	-	1	20 A	RECEPTION/WORK RM
SPARE	20 A	1		79	0	900	0	0			80		1	20 A	RECEPTION CONV.
SPARE	20 A	1	-	81			0	0			82		1	20 A	SPARE
SPARE	20 A	1		83					0	0	84		1	20 A	SPARE
					РНΔ	SE A:	2410	96 W				CONNE	CTFD)	DEMAND
						SE B:		69 W				7356			61519 W
						SE C:	2489					204			171 A
					FIIA	OL C.	2408	73 VV		ļ		202	+ ^		1/1A

PANEL: SPB					LOCA	TION:						NEMA E	NCLOS	SURE: T	/pe 1
SYSTEM : 120/208V - 3P				В	US RA	TING: 1	00 A				C	ABINET	MOUN	TING: Si	urface
FEEDER: SEE RISER DIAGF	RAM				М	AINS: 1	00 A - M	СВ					L	UGS:	
OPTIONS:													AIC RA	TING:	
LOAD DESCRIPTION	BKR SIZE	BKR PO	NOTE	CKT NO.		Α	E	3	С	;	CKT NO.	NOTE	BKR PO	BKR SIZE	LOAD DESCRIPTION
AC #1 HEATER	50 A	2	EX	1	0	0					2	EX	1	20 A	SPARE
				3			0	0			4	EX	1	20 A	SPARE
AC #2 HEATER	50 A	2	EX	5					0	0	6	EX	1	20 A	SPARE
				7	0	180					8	N	1	20 A	ELEC ROOM CONV.
A/C #1 INDOOR	50 A	2	EX	9			0				10		1		SPACE
				11					0		12		1		SPACE
A/C #2 INDOOR	30 A	2	EX	13	0						14		1		SPACE
				15			0				16		1		SPACE
A/C #1 OUTDOOR	40 A	2	EX	17					0		18		1		SPACE
				19	0						20		1		SPACE
A/C #2 OUTDOOR	40 A	2	EX	21			0				22		1		SPACE
				23					0		24		1		SPACE
SPACE		1		25	-						26		1		SPACE
SPACE		1		27			-				28		1		SPACE
SPACE		1		29							30		1		SPACE
SPACE		1		31	-						32		1		SPACE
SPACE		1		33			1				34		1		SPACE
SPACE		1		35							36		1		SPACE
SPACE		1		37							38		1		SPACE
SPACE		1		39							40		1		SPACE
SPACE		1		41							42		1		SPACE
					PHA	SE A:	180	W				CONNE	CTED		DEMAND
					PHA	SE B:	0	W				180	W	l	180 W
					PHA	SE C:	0	W				0.	Α		0 A

	PANEL SCHEDULE NOTES
GENERAL	NOTES:
	CONTRACTOR TO VERIFY NEW LOAD ADDED TO EXISTING PANELS DOES NOT OVERLOAD PANELBOARD.
	BALANCE PANELS WITHIN 10% PHASE TO PHASE.
CIRCUIT KI	EY NOTES:
G	GROUND FAULT CIRCUIT INTERRUPTING BREAKER
FX	CIRCUITS ARE EXISTING TO REMAIN

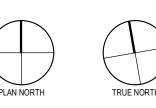
tramonte design | studio





MIRA SAFETY

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12/01/23

 ✓ Issues

 Project Number
 23-01-014

 Drawn By
 TH

 Checked By
 JGW

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E601

ELECTRICAL SCHEDULES AND DIAGRAMS

- 2. COORDINATE WORK WITH OTHER TRADES AND EXISTING CONDITIONS TO PREVENT CONFLICTS CAUSING UNNECESSARY EXPENSE OR DELAYS IN THE INSTALLATION OF WORK. WHEN CONFLICTS ARISE, REMOVE AND RELOCATE ITEMS CAUSING SUCH CONFLICTS AT NO ADDITIONAL COST TO OWNER. REFER TO OTHER DISCIPLINE'S DRAWINGS, RELEVANT EQUIPMENT DRAWINGS, AND SHOP DRAWINGS TO DETERMINE AVAILABLE CLEARANCES AND POSSIBLE OBSTRUCTIONS. MAKE NECESSARY OFFSETS OR TRANSITIONS AS REQUIRED TO CLEAR STRUCTURAL MEMBERS, EXISTING EQUIPMENT, AND TO FACILITATE INSTALLATION OF THE WORK IN THE MANNER INDICATED.
- 3. ALL WORK SHALL COMPLY WITH THE LOCALLY ADOPTED ELECTRICAL CODE AND ALL APPLICABLE LAWS, CODES, RECOMMENDATIONS, REGULATIONS, AND INTERIM AMENDMENTS, OF THE GOVERNMENTAL BODIES HAVING JURISDICTION INCLUDING ADA COMPLIANCE. ELECTRICAL WORK SHALL BE PERFORMED IN COMPLIANCE WITH APPLICABLE GOVERNING SAFETY REGULATIONS, INCLUDING OSHA REGULATIONS. PROVIDE ALL SAFETY LIGHTS, GUARDS AND SIGNS REQUIRED FOR PERFORMANCE OF ELECTRICAL WORK
- 4. DRAWINGS INDICATE THE GENERAL EXTENT OF WORK REQUIRED FOR THE PROJECT. DRAWINGS FOR ELECTRICAL WORK ARE DIAGRAMMATIC, SHOWING THE LOCATION, TYPE, DEVICES AND EQUIPMENT REQUIRED. DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. PROVIDE ALL FIXTURES, DEVICES, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY TO FACILITATE THE SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT FURNISHED BY OTHERS.
- 5. ELECTRICAL DESIGN IS BASED ON FIELD INSPECTIONS AND PREVIOUS DESIGN DRAWINGS FOR THE EXISTING BUILDING. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BIDDING. ALLOWANCES ARE TO BE INCLUDED FOR UNFORESEEN EXISTING CONDITIONS THAT MAY AFFECT THE CONTRACTOR'S SCOPE OF WORK. MINOR DEVIATIONS REQUIRED FOR ACCOMPLISHING THE INTENT OF THE DESIGN SHALL BE INCLUDED IN THIS ALLOWANCE.
- 6. FIELD VERIFY EXISTING UTILITIES. ITEMS DAMAGED BY THIS CONTRACTOR SHALL BE REPAIRED IMMEDIATELY AND AT NO COST TO OWNER.

OTHERWISE LIMIT THE EXISTING ROOFING WARRANTY.

10. TEMPORARY ELECTRICAL SERVICE:

- 7. ROOF PENETRATIONS SHALL COMPLY WITH "SMACNA" AND "NRCA" STANDARDS, AND WITH THE REQUIREMENTS OF THE EXISTING ROOFING WARRANTY, IF APPLICABLE. DO NOT PERFORM ROOFING PENETRATIONS IN A MANNER WHICH WOULD VOID OR
- 8. ALL EQUIPMENT AND COMPONENTS FURNISHED AND/OR INSTALLED SHALL BE LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL).
- A. PROVIDE TEMPORARY ELECTRICAL SERVICE FOR POWER AND LIGHTING DURING CONSTRUCTION. MAINTAIN DURING CONSTRUCTION AND REMOVE SERVICE AFTER CONSTRUCTION IS COMPLETED. TEMPORARY SYSTEM SHALL CONSIST OF AN ELECTRICAL SERVICE, DISTRIBUTION SYSTEM, LOAD-CENTER PANEL, GROUNDING, 15 AMP AND/OR 20 AMP BRANCH CIRCUITS, GROUNDED TYPE RECEPTACLES AND LIGHTING FIXTURES.
- B. PROVIDE SUFFICIENT NUMBER OF TEMPORARY LIGHT FIXTURES FOR A SAFE INSTALLATION FOR ALL TRADES THROUGHOUT THE BUILDING. ALL LAMPS FOR GENERAL ILLUMINATION SHALL BE PROTECTED FROM ACCIDENTAL CONTACT OR BREAKAGE BY SUITABLE FIXTURE OR LAMP HOLDER WITH GUARD. (NO EXCEPTIONS.)

11. WARRANTIES:

- A. CONTRACTOR SHALL WARRANT ALL WORK PERFORMED AND MATERIAL AND LABOR PROVIDED UNDER THE CONTRACT AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR FROM SUBSTANTIAL COMPLETION. PROVIDE ALL SERVICES AS REQUIRED TO IMMEDIATELY REPAIR OR REPLACE, AT NO ADDITIONAL COST, DEFECTIVE PARTS OF THE INSTALLATION RESULTING FROM THE SUPPLY OF FAULTY WORKMANSHIP OR MATERIAL. LACK OF MAINTENANCE, ACCIDENTS, OR CARLESSNESS ON THE PART OF THE OWNER SHALL NOT BE INCLUDED IN THIS
- B. ALL LAMPS SHALL BE WARRANTED ACCORDING TO LAMP MANUFACTURER, WHICH IS ALSO BASED ON AVERAGE LIFE DATA FOR EACH SPECIFIC TYPE OF LAMP. PROVIDE LABOR TO REPLACE DEFECTIVE LAMPS THAT ARE WITHIN LAMP MANUFACTURER'S WARRANTY PERIOD.
- C. ALL EQUIPMENT, APPARATUS AND APPLIANCES WHICH ARE SPECIFIED AND/OR COME WITH WARRANTIES LONGER THAN ONE YEAR SHALL BE REGISTERED WITH THE MANUFACTURER IN THE OWNER'S NAME.

12. CUTTING AND PATCHING:

- A. NO STRUCTURAL MEMBERS SHALL BE CUT, DRILLED, OR PENETRATED WITHOUT PRIOR APPROVAL FROM THE ARCHITECT.
- B. PROVIDE CUTTING, PATCHING, AND PATCH PAINTING IN EXISTING STRUCTURES, AS REQUIRED FOR INSTALLATION OF WORK OF THIS SECTION. EXTENT OF CUTTING SHALL BE MINIMIZED. USE CORE DRILLS, POWER SAWS, AND OTHER MACHINES WHICH WILL PROVIDE NEAT, MINIMUM OPENINGS. REFER TO STRUCTURAL DRAWINGS FOR LINTELS AND SUPPORTS TO BE FURNISHED BY OTHERS FOR ELECTRICAL WORK. ALL OTHER LINTELS AND SUPPORTS REQUIRED FOR ELECTRICAL WORK SHALL BE FURNISHED BY DIVISION 16. PATCHING SHALL MATCH AND EQUAL ADJACENT MATERIALS AND SURFACES AND SHALL BE PERFORMED BY CRAFTSMAN SKILLED IN THE RESPECTIVE CRAFT REQUIRED. PATCHED FINISHES SHALL BE APPROVED BY THE ARCHITECT.
- C. ALL PUBLIC AND PRIVATE PROPERTY DAMAGED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT SHALL BE REPAIRED AND REPLACED BY THIS CONTRACTOR, TO THE SATISFACTION OF THE AUTHORITIES HAVING REGULATORY JURISDICTION AND BUILDING OWNER.

SECTION 26 05 26 - GROUNDING

- EXTENT OF ELECTRICAL GROUNDING AND BONDING WORK IS INDICATED BY DRAWINGS AND AS SPECIFIED HEREIN. GROUNDING AND BONDING WORK IS DEFINED TO ENCOMPASS SYSTEMS, CIRCUITS, AND EQUIPMENT.
- 2. EXCEPT AS OTHERWISE INDICATED, PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEMS INDICATED WITH ASSEMBLY OF MATERIALS, INCLUDING, BUT NOT LIMITED TO, CABLES/WIRES, CONNECTORS, SOLDERLESS LUG TERMINALS, GROUNDING ELECTRODES AND PLATE ELECTRODES, BONDING JUMPER BRAID, AND ADDITIONAL ACCESSORIES NEEDED FOR A COMPLETE INSTALLATION. WHERE MORE THAN ONE TYPE COMPONENT PRODUCT MEETS INDICATED REQUIREMENTS, SELECTION IS INSTALLER'S OPTION. WHERE MATERIALS OR COMPONENTS ARE NOT INDICATED, PROVIDE PRODUCTS WHICH COMPLY WITH BUILDING CODES, UL, AND IEEE REQUIREMENTS AND WITH ESTABLISHED INDUSTRY STANDARDS FOR THOSE APPLICATIONS INDICATED.
- 3. INSTALL ELECTRICAL GROUNDING AND BONDING SYSTEMS AS INDICATED, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPLICABLE PORTIONS OF THE BUILDING CODES, NECA'S "STANDARD OF INSTALLATION", AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PRODUCTS COMPLY WITH REQUIREMENTS.
- 4. RACEWAY SYSTEMS SHALL <u>NOT</u> BE USED AS GROUNDING METHOD. ALL BRANCH AND FEEDER CONDUITS TO HAVE A GROUNDING CONDUCTOR INSTALLED WITH PHASE AND NEUTRAL CONDUCTORS. SIZE OF GROUND CONDUCTOR TO BE IN ACCORDANCE WITH THE ADOPTED ELECTRICAL CODE. TERMINATE FEEDER AND BRANCH CIRCUIT INSULATED EQUIPMENT GROUNDING CONDUCTORS WITH GROUNDING LUG, BUS, OR
- 5. INSTALLATION OF ELECTRICAL GROUNDING AND BONDING SYSTEMS:
 - A. GROUNDING ELECTRODE CONDUCTORS, WHERE NOT INSTALLED AS PART OF A BRANCH CIRCUIT OR FEEDER, SHALL BE INSTALLED IN PVC CONDUIT, TO PROTECT THE WIRING FROM PHYSICAL DAMAGE.
 - B. CONNECT GROUNDING ELECTRODE CONDUCTORS TO METAL COLD WATER PIPE AND ALL OTHER TYPES OF METAL PIPING WITHIN THE BUILDING USING A SUITABLY SIZED GROUND CLAMP. PROVIDE CONNECTIONS TO FLANGED PIPING TO STREET SIDE OF FLANGE. PROVIDE BONDING AS DESCRIBED IN ADOPTED ELECTRICAL CODE INCLUDING BONDING JUMPER AROUND WATER METER.
 - C. CONNECT TOGETHER SYSTEM NEUTRAL, SERVICE EQUIPMENT ENCLOSURES, EXPOSED NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT, METAL RACEWAY SYSTEMS, GROUNDING CONDUCTOR IN RACEWAYS AND CABLES, RECEPTACLE GROUND CONNECTORS, AND PLUMBING SYSTEMS.
 - D. THE UTILITY COMPANY METER SOCKET SHALL BE GROUNDED TO A 1/2" X 10'
 COPPER CLAD STEEL GROUND ROD WITH COPPER WIRE INSTALLED IN P.V.C.
 CONDUIT. THE GROUND ROD SHALL BE DRIVEN INTO THE EARTH WITH THE TOP 1'-0"
 BELOW GRADE, AS NEAR AS POSSIBLE TO THE LOCATION OF THE METER SOCKET
 WITH THE TOP 1'-0" BELOW FINISHED GRADE.
 - E. THE NEUTRAL CONDUCTOR OF ALL SEPARATELY DERIVED SYSTEMS TRANSFORMERS, EMERGENCY GENERATORS, ETC., SHALL BE GROUNDED TO THE NEAREST AVAILABLE GROUNDED STRUCTURE METAL MEMBER OR TO THE NEAREST AVAILABLE GROUNDED METAL WATER PIPE. THE GROUNDING CONDUCTOR SHALL BE SIZED AS SHOWN ON DRAWINGS OR AS REQUIRED BY THE ADOPTED ELECTRICAL CODE.
 - F. RAISED FLOOR GROUNDING: PROVIDE (1) PEDESTAL GROUNDING CONNECTION POINT EVERY 1200 SQUARE FEET. WHERE REQUIRED OR AS INDICATED ON THE PLANS. ROUTE (1) #4 AWG BARE SOLID COPPER FROM THE GROUND BUS IN THE LOCAL DISTRIBUTION PANEL TO THE CLOSEST RAISED FLOOR PEDESTAL CONNECTION POINT AND MAKE THE APPROPRIATE CONNECTIONS. WHEREVER A GROUND WIRE IS REQUIRED TO BE INSTALLED IN CONDUIT THE CONDUIT SHALL BE

SECTION 26 05 53 - IDENTIFICATION

- 1. ENGRAVED, PLASTIC-LAMINATED LABELS, SIGNS, AND INSTRUCTION PLATES: ENGRAVING STOCK MELAMINE PLASTIC LAMINATE, 1/16-INCH MINIMUM THICK FOR SIGNS UP TO 20 SQUARE INCHES, OR 8 INCHES IN LENGTH; 1/8-INCH THICK FOR LARGER SIZES. ENGRAVED LEGEND IN WHITE LETTERS ON BLACK FACE AND PUNCHED FOR MECHANICAL FASTENERS.
- CABLE TIES: FUNGUS-INERT, SELF-EXTINGUISHING, ONE-PIECE, SELF-LOCKING NYLON CABLE TIES, 0.18-INCH MINIMUM WIDTH, 50-LB MINIMUM TENSILE STRENGTH, AND SUITABLE FOR A TEMPERATURE RANGE FROM MINUS 50 F TO 350 F. PROVIDE TIES IN SPECIFIED COLORS WHEN USED FOR COLOR-CODING.
- 3. SELF ADHESIVE, COMMERCIALLY AVAILABLE ARC FLASH HAZARD LABELS. LABELS TO CONFORM TO THE ADOPTED ELECTRICAL CODE AND A.N.S.I. Z535.4.
- 4. CONDUCTOR COLOR CODING: PROVIDE COLOR CODING FOR SECONDARY SERVICE, FEEDER, AND BRANCH CIRCUIT CONDUCTORS THROUGHOUT THE PROJECT SECONDARY ELECTRICAL SYSTEM PER WIRES AND CABLING SECTION.
- 5. APPLY EQUIPMENT IDENTIFICATION LABELS OF ENGRAVED PLASTIC- LAMINATE ON EACH MAJOR UNIT OF ELECTRICAL EQUIPMENT IN BUILDING, INCLUDING CENTRAL OR MASTER UNIT OF EACH ELECTRICAL SYSTEM. THIS INCLUDES COMMUNICATION/SIGNAL/ALARM SYSTEMS, UNLESS UNIT IS SPECIFIED WITH ITS OWN SELF-EXPLANATORY IDENTIFICATION. EXCEPT AS OTHERWISE INDICATED, PROVIDE SINGLE LINE OF TEXT, WITH 1/4-INCH-HIGH LETTERING ON 1-INCH-HIGH LABEL (1-1/2-INCH-HIGH WHERE TWO LINES ARE REQUIRED), WHITE LETTERING IN BLACK FIELD. TEXT SHALL MATCH TERMINOLOGY AND NUMBERING OF THE CONTRACT DOCUMENTS AND SHOP DRAWINGS. APPLY LABELS FOR EACH UNIT OF THE FOLLOWING CATEGORIES OF ELECTRICAL EQUIPMENT.
- A. PANELBOARDS, ELECTRICAL CABINETS, AND ENCLOSURES
 B. ELECTRICAL SWITCHGEAR AND SWITCHBOARDS
- C. MOTOR STARTERS AND/OR VFDs FURNISHED BY THIS CONTRACTORD. DISCONNECT SWITCHES
- E. CONTACTORSF. TRANSFORMERSG. UPS UNITS
- H. POWER DISTRIBUTION UNITS
 I. REMOTE POWER PANELS
- J. GENERATORS
 K. TRANSFER SWITCHES
- 1. PROVIDE MULTIPLE SIGNS OR ONE CONSOLIDATED SIGN INSIDE ELEVATOR MACHINE ROOMS. SIGN(S) TO IDENTIFY THE EXACT LOCATION OF THE SUPPLY SIDE OVERCURRENT PROTECTIVE DEVICE. SIGN(S) TO BE PROVIDED AT ELEVATOR CONTROLLER DISCONNECT, CAR LIGHTING & CONTROL DISCONNECT, AND HEATING & AIR-CONDITIONING DISCONNECTING MEANS. SIGN(S) TO BE IN CONFORMANCE WITH THE ADOPTED ELECTRICAL CODE. EXACT WORDING TO BE VERIFIED WITH LOCAL JURISDICTION.
- 2. PROVIDE ENGRAVED SIGN AT THE SERVICE ENTRANCE EQUIPMENT INDICATING TYPE AND LOCATION OF ON-SITE STANDBY OR EMERGENCY POWER SOURCES. SIGNS TO BE IN CONFORMANCE WITH THE ADOPTED ELECTRICAL CODE. EXACT WORDING TO BE VERIFIED WITH LOCAL JURISDICTION. SIGNS SHALL BE RED LETTERING ON WHITE BACKGROUND.

SECTION 26 08 00 - TESTING

- ALL ELECTRICAL EQUIPMENT ON THIS PROJECT PROVIDED UNDER THIS DIVISION AND ALL ELECTRICAL EQUIPMENT FURNISHED BY OTHERS SHALL BE ADJUSTED, ALIGNED AND TESTED BY THE ELECTRICAL CONTRACTOR.
- 2. MECHANISMS OF ALL ELECTRICAL EQUIPMENT SHALL BE CHECKED, ADJUSTED AND TESTED FOR PROPER OPERATION. MOTORS SHALL BE CHECKED FOR ALIGNMENT WITH DRIVE AND ADJUSTED AS REQUIRED. PROTECTIVE DEVICES AND PARTS SHALL BE CHECKED AND TESTED FOR SPECIFIED AND REQUIRED APPLICATION AND ADJUSTED AS REQUIRED. ADJUSTABLE PARTS OF ALL LIGHTING FIXTURES AND ELECTRICAL EQUIPMENT SHALL BE CHECKED, TESTED AND ADJUSTED AS REQUIRED TO PRODUCE THE INTENDED PERFORMANCE.
- 3. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE OPERATION, SERVICE AND MAINTENANCE OF ALL NEW ELECTRICAL EQUIPMENT DURING CONSTRUCTION AND PRIOR TO ACCEPTANCE BY THE OWNER OF THE COMPLETED PROJECT UNDER THIS CONTRACT. ALL ELECTRICAL EQUIPMENT SHALL BE MAINTAINED IN THE BEST OPERATING CONDITION INCLUDING PROPER LUBRICATION. OPERATIONAL FAILURE CAUSED BY DEFECTIVE MATERIAL AND/OR LABOR SHALL BE IMMEDIATELY CORRECTED AND THE ARCHITECT SHALL BE IMMEDIATELY NOTIFIED OF ANY OPERATIONAL FAILURE CAUSED BY DEFECTIVE MATERIAL AND/OR LABOR PROVIDED BY OTHERS.
- 4. THIS CONTRACTOR SHALL MAINTAIN SERVICE AND EQUIPMENT FOR THE TESTING OF ELECTRICAL EQUIPMENT AND APPARATUS UNTIL ALL WORK IS APPROVED AND ACCEPTED BY THE OWNER. A FIRST CLASS VOLTMETER AND AMMETER SHALL BE KEPT AVAILABLE AT ALL TIMES AND THIS CONTRACTOR SHALL PROVIDE SERVICE FOR TEST READINGS WHEN AND AS REQUIRED.
- 5. THE ELECTRICAL DISTRIBUTION DESIGN HAS BEEN PROVIDED WITH A LOAD-BALANCED ELECTRICAL SYSTEM. IF MODIFICATIONS, DUE TO CONTRACTORS CONSTRUCTION OR CHANGE-ORDERS HAVE BEEN MADE TO THE DESIGN THEN THIS CONTRACTOR IS TO MEASURE ALL FEEDERS CONDUCTORS CURRENTS AND BALANCE ALL SINGLE PHASE LOADS AT THOSE PANELS, REDISTRIBUTING BRANCH CIRCUIT CONNECTIONS UNTIL A MAXIMUM 10% LOAD BALANCE IS ACHIEVED. DISTRIBUTION SYSTEMS ARE TO BE MEASURED AND BALANCED UNDER FULL-LOAD CONDITIONS.

SECTION 26 05 19 - WIRES AND CABLES

- 1. CONDUCTORS: PROVIDE SOLID CONDUCTORS FOR POWER AND LIGHTING CIRCUITS NO. 10 AWG AND SMALLER. PROVIDE STRANDED CONDUCTORS FOR SIZES NO. 8 AWG AND
- 2. CONDUCTOR MATERIAL: COPPER FOR ALL WIRES AND CABLES.
- 3. INSULATION: PROVIDE THHN/THWN INSULATION FOR ALL CONDUCTORS NO. 14 AWG THRU NO. 10 AWG. PROVIDE USE-RHH/RHW INSULATION FOR ALL SERVICE ENTRANCE CONDUCTORS. FOR ALL OTHER SIZES PROVIDE THHN/THWN OR XHHW INSULATION AS APPROPRIATE FOR THE LOCATION WHERE INSTALLED.
- 4. ALUMINUM CONDUCTORS:
 A. AT THE CONTRACTOR'S OPTION, ALUMINUM CONDUCTORS WILL BE ALLOWED FOR COPPER SIZES RATED FOR 100 AMPERES AND LARGER BUT, SIZE MUST BE INCREASED TO EQUAL OR EXCEED THE COPPER AMPACITY IN ACCORDANCE WITH ADOPTED ELECTRICAL CODE. RACEWAY AND PULL BOXES MUST BE INCREASED TO CONFORM TO ADOPTED ELECTRICAL CODE. ALL ALUMINUM CONDUCTORS MUST BE MADE BASED ON COMPACT STRANDED, AA-8000 SERIES ALUMINUM ALLOY MATERIAL EQUAL TO "STABILOY" ALCAN CABLE.
- B. IF ALUMINUM CABLE IS TO BE INSTALLED ON THIS PROJECT, CONTRACTOR IS TO NOTIFY ENGINEER IN WRITING, AT TIME OF SUBMITTAL DRAWINGS. CONTRACTOR IS TO LIST ALL FEEDERS THAT WILL BE CHANGED TO ALUMINUM, AND INDICATE THE REVISED ALUMINUM CONDUCTOR SIZE.
- C. CONNECTORS AND TERMINATIONS INSTALLED WITH ALUMINUM-ALLOY CONDUCTORS SHALL BE COMPRESSION TYPE ONLY, AND ONLY THOSE LISTED BY UNDERWRITER'S LABORATORIES STRANDED 486-B AND MARKED "AL7CU" FOR 75C RATED CIRCUITS.
- D. IF THE CONTRACTOR DECIDES TO EXERCISE THE OPTION OF ALUMINUM CONDUCTORS FOR CONNECTIONS TO EQUIPMENT PROVIDED AND/OR INSTALLED BY OTHER TRADES, THEN THIS CONTRACTOR SHALL REIMBURSE THE EQUIPMENT SUPPLIER FOR ANY COST ASSOCIATED WITH THE MODIFICATIONS REQUIRED TO THAT EQUIPMENT.
- E. ENDS OF ALL CONDUCTORS ARE TO BE BRUSHED CLEAN AND PRIOR TO FINAL CONNECTION, EXPOSED PORTION OF CONDUCTOR TO BE COVERED WITH ALUMINUM OXIDE INHIBITOR. CONDUCTOR TERMINATION MADE WITH SET-SCREW TERMINAL LUGS ARE TO BE TORQUED, USING A TORQUE WRENCH, IN ACCORDANCE WITH LUG MANUFACTURER SPECIFICATIONS OR ACCORDING TO UL STANDARD 486B. AT THE COMPLETION OF THE PROJECT CONTRACTOR IS TO CHECK TORQUE VALUES ON ALL ALUMINUM TERMINATIONS. CONTRACTOR IS TO SUBMIT IN WRITING, AT TIME OF RECORD DRAWINGS, A COMPLETE LIST OF APPLIED TORQUE VALUES FOR ALL ALUMINUM TERMINATIONS.
- 5. VARIABLE FREQUENCY DRIVE CABLES: WHERE A VFD IS INSTALLED, PROVIDE A VFD CABLING SYSTEM FROM THE VFD TO THE CONTROLLED EQUIPMENT MANUFACTURED MEETING THE FOLLOWING SPECIFICATIONS:
- A. ASTM B3 AND B8
- B. UL 44, UL 1277
 C. COLOR CODE PER ICEA S-58-679 METHOD 4

RETARDANT PVC JACKET OUTER JACKET.

D. IEEE 1202/FT4 FLAME TEST
 E. CONDUCTORS SHALL BE CLASS B STRANDED, UNCOATED ANNEALED COPPER; EACH CONDUCTOR SHALL BE INSULATED WITH BLACK POLYETHYLENE. A 5 MIL UNCOATED COPPER TAPE SHIELD, HELICALLY WRAPPED OVER THE TWISTED ASSEMBLY WITH A 50% OVERLAP AND IN CONTACT WITH THE GROUND WIRE. WITH A FLAME

6. INSTALLATION OF WIRES AND CABLES:

208Y/120V NORMAL

- A. ALL BRANCH CIRCUIT WIRES, FEEDER CABLES, ETC., SHALL BE CONTINUOUS FROM OUTLET TO OUTLET. NO JOINTS SHALL BE MADE EXCEPT IN OUTLET, JUNCTION OR PULL BOXES, PANELBOARD AND SWITCHBOARD GUTTERS. FOR THE SPLICING OF EXISTING FEEDER CONDUCTORS, COMPRESSION TYPE BUTT SPLICES WITH COLD SHRINK INSULATION KITS ARE TO BE USED.
- B. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES. WHERE MANUFACTURER'S TORQUE REQUIREMENTS ARE NOT INDICATED, TIGHTEN CONNECTORS AND TERMINALS TO COMPLY WITH TIGHTENING TORQUE'S SPECIFIED IN UL 486A AND UL 486B.
- C. TERMINALS ON SWITCHES AND CONVENIENCE OUTLETS SHALL NOT BE USED TO "FEED THROUGH" TO THE NEXT SWITCH OR OUTLET. WHERE MORE THAN ONE GROUND, COMMON NEUTRAL, OR COMMON PHASE CONDUCTOR ENTERS A BOX, ALL LIKE CONDUCTORS SHALL BE IN GOOD ELECTRICAL CONTACT WITH EACH OTHER AND THE ARRANGEMENT SHALL BE SUCH, THAT THE DISCONNECTING OR REMOVAL OF A DEVICE FED FROM THE BOX, WILL NOT INTERFERE WITH OR INTERRUPT SERVICE TO THE REMAINDER OF THE BRANCH CIRCUIT WIRING.

PHASE

480Y/277V NORMAL

BLACK	А	BROWN	
RED	В	ORANGE	
BLUE	С	YELLOW	
WHITE	NEUTRAL	GRAY	
GREEN	GROUND	GREEN	
GREEN W/ YELLOW STRIP	ISOLATED GROUND	GREEN W/ YELLOW STRIP	
<u>208Y/120V - UPS</u>	<u>PHASE</u>		
BLACK W/ ORANGE STRIP	А		
RED W/ ORANGE STRIP	В		
BLUE W/ ORANGE STRIP	С		
WHITE W/ ORANGE STRIP	NEUTRAL		
GREEN W/ ORANGE STRIP	GROUND		
GREEN W/ YELLOW STRIP	ISOLATED GROUND		
IF THE SERVICE VOLTAGE I "C" COLOR CODING SHALL	•	E HI-LEG, THEN THE PHASE	

SECTION 26 05 33 - RACEWAYS

- 1. THIS SECTION INCLUDES RACEWAYS FOR ELECTRICAL WIRING. TYPES OF RACEWAYS IN THIS SECTION INCLUDE THE FOLLOWING:
 - A. ELECTRICAL METALLIC TUBING (EMT)
 B. INTERMEDIATE METAL CONDUIT (IMC)
 - C. FLEXIBLE METAL CONDUIT
 D. LIQUID-TIGHT FLEXIBLE CONDUIT
 - E. RIGID METAL CONDUITF. RIGID NONMETALLIC CONDUIT (PVC)G. SURFACE RACEWAYS
 - H. WIREWAY
 I. METAL CLAD (MC) AND ALUMINUM CLAD (AC) CABLE
- 2. WIREWAYS:
 A. ELECTRICAL WIREWAYS SHALL BE OF TYPES, SIZES, AND NUMBER OF CHANNELS AS INDICATED. FITTINGS AND ACCESSORIES INCLUDING BUT NOT LIMITED TO COUPLINGS, OFFSETS, ELBOWS, EXPANSION JOINTS, ADAPTERS, HOLD-DOWN STRAPS, AND END CAPS SHALL MATCH AND MATE WITH WIREWAY AS REQUIRED FOR A COMPLETE SYSTEM. WHERE FEATURES ARE NOT INDICATED, SELECT TO FULFILL WIRING REQUIREMENTS AND COMPLY WITH APPLICABLE PROVISIONS OF ADOPTED ELECTRICAL CODE.
- 3. SURFACE RACEWAYS:
 A. SIZES AND CHANNELS AS INDICATED, MINIMUM SIZE TO BE EQUAL TO WIREMOLD # 500 SERIES. PROVIDE FITTINGS THAT MATCH AND MATE WITH RACEWAY. CONSTRUCT OF GALVANIZED STEEL WITH SNAP-ON COVERS, WITH 1/8-INCH MOUNTING SCREW KNOCKOUTS IN BASE APPROXIMATELY 8 INCHES ON-CENTER. FINISH WITH MANUFACTURER'S STANDARD PRIME COATING SUITABLE FOR PAINTING. PROVIDE RACEWAYS OF TYPE SUITABLE FOR EACH APPLICATION REQUIRED.
- WIRING METHOD:
 A. OUTDOORS: USE THE FOLLOWING WIRING METHODS:
- EXPOSED: INTERMEDIATE METAL CONDUIT.
 CONCEALED: INTERMEDIATE METAL CONDUIT
- UNDERGROUND, RIGID NONMETAL CONDUIT.
 CONNECTION TO VIBRATING EQUIPMENT: INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC OR ELECTRIC SOLENOID OR MOTOR-DRIVEN
- EQUIPMENT: LIQUID-TIGHT FLEXIBLE METAL CONDUIT.

 5. INDOORS OR OUTDOORS: CONNECTION TO VIBRATING EQUIPMENT AND HYDRAULIC, PNEUMATIC, OR ELECTRIC SOLENOID OR MOTOR-DRIVEN EQUIPMENT IN MOIST OR HUMID LOCATION OR CORROSIVE ATMOSPHERE, OR WHERE SUBJECT TO WATER SPRAY OR DRIPPING OIL, GREASE, OR WATER: LIQUID-TIGHT FLEXIBLE METAL CONDUIT.
- B. INDOORS: USE THE FOLLOWING WIRING METHODS:
 1. CONNECTION TO VIBRATING EQUIPMENT: INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC OR ELECTRIC SOLENOID OR MOTOR-OPERATED EQUIPMENT: FLEXIBLE METAL CONDUIT.
- EXPOSED: ELECTRICAL METALLIC TUBING.
 CONCEALED: ELECTRICAL METALLIC TUBING.
 CONCEALED, IN CONCRETE EMBEDDED, STRUCTURAL INTERIOR WALLS. OR
- 4. CONCEALED, IN CONCRETE EMBEDDED, STRUCTURAL INTERIOR WALLS, OR ROOF DECK PENETRATIONS: INTERMEDIATE METAL OR RIGID METAL CONDUIT.
 5. UNDER CONCRETE FLOOR (SLAB ON GRADE): INTERMEDIATE METAL OR RIGID METAL CONDUIT.
- C. PVC CONDUIT CAN BE INSTALLED BELOW FLOOR SLAB INDOORS, ONLY IF RIGID STEEL ELBOWS ARE USED WHEN PASSING THRU FLOOR SLAB. MINIMUM SIZE PVC CONDUIT THAT CAN BE INSTALLED IS 3/4" UNLESS NOTED OTHERWISE. ALL PVC CONDUIT JOINTS SHALL BE GLUED AND SEALED TO PREVENT MOISTURE FROM ENTERING RACEWAY SYSTEM. CONDUITS FOUND TO CONTAIN MOISTURE SHALL BE REPAIRED OR REPLACED AS REQUIRED PRIOR TO INSTALLATION OF CONDUCTORS.
- D. METAL CLAD (MC) AND ALUMINUM CLAD (AC) CABLE

 1. MC AND AC CABLE MAY BE USED IN LIEU OF EMT CONDUIT IF ACCEPTABLE TO LOCAL AUTHORITIES AND INSTALLED PER ELECTRICAL CODE REGARDING SUPPORT, GROUNDING AND CABLE TERMINATIONS. ALL MC AND AC CABLE NOT INSTALLED PER ADOPTED CODE SHALL BE REMOVED, REINSTALLED AND CORRECTED AT CONTRACTOR'S EXPENSE WITH NO EXTENSION IN
- CONSTRUCTION SCHEDULE.
 MC AND AC CABLE SHALL BE SUPPORTED AND SECURED BY STAPLES, CABLE TIES. STRAPS. HANGERS. OR SIMILAR FITTINGS. DESIGNED AND INSTALLED SO

MEMBERS ARE CONSIDERED SECURED AND SUPPORTED WHERE SUCH

- AS NOT TO DAMAGE THE CABLE.

 3. MC AND AC CABLE WITH FOUR OR LESS CONDUCTORS SIZED NO LARGER THAN
- 10 AWG SHALL BE SECURED WITHIN 12 IN. OF EVERY OUTLET BOX, JUNCTION BOX, CABINET, OR FITTING AND AT INTERVALS NOT EXCEEDING 6 FT.
 4. MC AND AC CABLE SHALL BE SUPPORTED AT INTERVALS NOT EXCEEDING 6 FT. CABLES INSTALLED HORIZONTALLY THROUGH WOODEN OR METAL FRAMING
- SUPPORT DOES NOT EXCEED 6 FT INTERVALS.

 5. MC AND AC CABLE SHALL NOT BE USED IN EXTERIOR APPLICATIONS

 6. CONDUIT SHALL BE INSTALLED AS A COMPLETE SYSTEM, CONTINUOUS FROM OUTLET TO OUTLET, CABINET OR FITTING, AND BE SO MECHANICALLY AND ELECTRICALLY CONNECTED THAT ADEQUATE ELECTRICAL CONTINUITY FROM ONE CONDUIT TO ANOTHER IS SECURIFIED IN THE CONTINUITY OF THE PROPERTY OF THE PRO
- 5. CONDUIT SHALL BE INSTALLED AS A COMPLETE SYSTEM, CONTINUOUS FROM OUTLET TO OUTLET, CABINET OR FITTING, AND BE SO MECHANICALLY AND ELECTRICALLY CONNECTED THAT ADEQUATE ELECTRICAL CONTINUITY FROM ONE CONDUIT TO ANOTHER IS SECURED. ENTIRE SYSTEMS SHALL BE SECURELY FASTENED IN PLACE WITHIN 3' OF EACH OUTLET OR JUNCTION BOX, CABINET OR FITTING, AND AT INTERVALS NOT EXCEEDING 10', EXCEPT AS OTHERWISE SPECIFIED OR SHOWN. SINGLE CONDUITS FOR FEEDERS SHALL BE HUNG WITH GRINNEL, CRANE, OR EQUAL, MALLEABLE SPLIT RING HANGERS WITH ROD SUSPENSION SPACED NOT OVER 10' APART FROM CONSTRUCTION ABOVE. GROUPS OF HORIZONTAL FEEDER AND BRANCH CIRCUIT CONDUITS SHALL BE CLAMPED TO UNISTRUT, OR EQUAL, STEEL CHANNELS AND SUSPENDED FROM RODS SUPPORTED FROM STRUCTURE, SPACED NOT OVER 10' APART FROM CONSTRUCTION ABOVE. WHERE POSSIBLE CONDUITS MAY BE CLAMPED DIRECTLY TO STEEL JOISTS.
- 6. USE RACEWAY FITTINGS THAT ARE OF TYPES COMPATIBLE WITH ASSOCIATED RACEWAY AND SUITABLE FOR USE AND LOCATION. FOR INTERMEDIATE METAL CONDUIT, USE THREADED RIGID STEEL CONDUIT FITTINGS. FOR EMT CONDUITS, FITTINGS SHALL BE COMPRESSION OR SET SCREW TYPE.
- INSTALL PULL WIRES IN EMPTY RACEWAYS. USE NO. 14 AWG ZINC-COATED STEEL OR MONOFILAMENT PLASTIC LINE HAVING NOT LESS THAN 200-LB TENSILE STRENGTH. LEAVE NOT LESS THAN 12 INCHES OF SLACK AT EACH END OF PULL WIRE.
- 8. TELEPHONE AND SIGNAL SYSTEM RACEWAYS 2-INCH TRADE SIZE AND SMALLER: IN ADDITION TO ABOVE REQUIREMENTS, INSTALL RACEWAYS IN MAXIMUM LENGTHS OF 150 FEET AND WITH MAXIMUM OF TWO 90 DEGREE BENDS OR EQUIVALENT. INSTALL PULL OR JUNCTION BOXES WHERE NECESSARY TO COMPLY WITH THESE REQUIREMENTS.
- 9. CONDUITS ABOVE LAY-IN CEILING SYSTEM SHALL NOT BE SUPPORTED FROM CEILING SUSPENSION WIRES.
- PROVIDE 36" MINIMUM RADIUS RIGID STEEL CONDUIT ELBOWS FOR PRIMARY SERVICE CONDUITS UNDER TRANSFORMER PAD.
- 11. CONDUITS CAPPED OUTSIDE OF BUILDING FOR FUTURE ADDITION SHALL BE MINIMUM OF 1'-6" BELOW FINISH GRADE, CAPPED AND PAINTED WITH BITUMINOUS PAINT, WHICH SHALL BE THOROUGHLY DRY BEFORE BACKFILL IS INSTALLED.
- 12. METAL CLAD (MC) AND ALUMINUM CLAD (AC) CABLES:A. HOMERUNS TO PANELBOARDS SHALL REMAIN IN EMT CONDUIT.
- B. MC AND AC CABLES SHALL NOT BE USED IN EXPOSED AREAS.C. FITTINGS SHALL BE LISTED FOR USE WITH MC AND AC CABLE USED.
- D. CONDUCTORS IN MC AND AC CABLE SHALL COMPLY WITH SECTION "WIRES & CABLES".

SECTION 26 05 33 - CABINETS, BOXES, AND FITTINGS

- THIS SECTION INCLUDES CABINETS, BOXES, AND FITTINGS FOR ELECTRICAL INSTALLATIONS AND CERTAIN TYPES OF ELECTRICAL FITTINGS NOT COVERED IN OTHER
- SECTIONS

CLAMPS. EXTERIOR RINGS AND FIXTURE STUDS.

2. METAL OUTLET, DEVICE, AND SMALL WIRING BOXES:

A. GENERAL: CONFORM TO UL 514A, "METALLIC OUTLET BOXES, ELECTRICAL," AND UL 514B, "FITTINGS FOR CONDUIT AND OUTLET BOXES." BOXES SHALL BE OF TYPE,

SHAPE, SIZE, AND DEPTH TO SUIT EACH LOCATION AND APPLICATION.

- B. STEEL BOXES: CONFORM TO NEMA OS 1, "SHEET STEEL OUTLET BOXES, DEVICE BOXES, COVERS, AND BOX SUPPORTS." BOXES SHALL BE SHEET STEEL WITH STAMPED KNOCKOUTS, THREADED SCREW HOLES AND ACCESSORIES SUITABLE FOR EACH LOCATION INCLUDING MOUNTING BRACKETS AND STRAPS, CABLE
- C. CAST-IRON FLOOR BOXES: FULLY ADJUSTABLE, WATERPROOF, WITH THREADED RACEWAY ENTRANCES, RECTANGULAR BOX OPENING, ADJUSTING RINGS, GASKETS, BRASS FLOOR PLATES, AND POLYCARBONATE CARPET FLANGE. WHERE INDICATED, PROVIDE MULTI-SECTION BOXES WITH INDIVIDUAL HINGED SECTION COVERS AND PROVIDE FOR DUPLEX RECEPTACLE UNDER ONE OR MORE OF THE
- 3. PULL AND JUNCTION BOXES:

APPLICATION.

- A. COMPLY WITH UL 50, "ELECTRICAL CABINETS AND BOXES" FOR BOXES OVER 100 CUBIC INCHES VOLUME. BOXES SHALL HAVE SCREWED OR BOLTED ON COVERS OF MATERIAL SAME AS BOXES AND SHALL BE OF SIZE AND SHAPE TO SUIT
- B. STEEL BOXES: SHEET STEEL WITH WELDED SEAMS. WHERE NECESSARY TO PROVIDE A RIGID ASSEMBLY, CONSTRUCT WITH INTERNAL STRUCTURAL STEEL
- C. HOT-DIPPED GALVANIZED STEEL BOXES: SHEET STEEL WITH WELDED SEAMS.
 WHERE NECESSARY TO PROVIDE A RIGID ASSEMBLY, CONSTRUCT WITH INTERNAL
 STRUCTURAL STEEL BRACING. HOT-DIP GALVANIZED AFTER FABRICATION.
- 4. CABINETS:
- A. COMPLY WITH UL 50, "ELECTRICAL CABINETS AND BOXES." SHEET STEEL, NEMA 1 CLASS EXCEPT AS OTHERWISE INDICATED. CABINET SHALL CONSIST OF BOX AND FRONT CONSISTING OF ONE-PIECE FRAME AND HINGED DOOR. ARRANGE DOOR TO CLOSE AGAINST A RABBET PLACED ALL AROUND THE INSIDE EDGE OF THE FRAME, WITH UNIFORMLY CLOSE FIT BETWEEN DOOR AND FRAME. PROVIDE CONCEALED FASTENERS, NOT OVER 24-INCHES APART, TO HOLD FRONTS TO CABINET BOXES AND PROVIDE FOR ADJUSTMENT. PROVIDE FLUSH OR CONCEALED DOOR HINGES NOT OVER 24-INCHES APART AND NOT OVER 6-INCHES FROM TOP AND BOTTOM OF DOOR. FOR FLUSH CABINETS, MAKE FRONT APPROXIMATELY 3/4 INCH LARGER THAN BOX ALL AROUND. FOR SURFACE MOUNTED CABINETS MAKE FRONT SAME HEIGHT
- B. DOORS: DOUBLE DOORS FOR CABINETS WIDER THAN 24-INCHES. TELEPHONE CABINETS WIDER THAN 48-INCHES MAY HAVE SLIDING OR REMOVABLE DOORS.
- C. LOCKS: COMBINATION SPRING CATCH AND KEY LOCK, WITH ALL LOCKS FOR CABINETS OF SAME SYSTEM KEYED ALIKE. LOCKS MAY BE OMITTED ON SIGNAL, POWER, AND LIGHTING CABINETS LOCATED WITHIN WIRE CLOSETS AND MECHANICAL-ELECTRICAL ROOMS. LOCKS SHALL BE OF TYPE TO PERMIT DOORS TO LATCH CLOSED WITHOUT LOCKING.
- 5. STEEL ENCLOSURES WITH HINGED DOORS:
- A. COMPLY WITH UL 50, "CABINETS AND ENCLOSURES" AND NEMA ICS 6, "ENCLOSURES FOR INDUSTRIAL CONTROLS AND SYSTEMS." SHEET STEEL, 16 GAGE MINIMUM, WITH CONTINUOUS WELDED SEAMS. NEMA CLASS AS INDICATED ARRANGED FOR SURFACE MOUNTING.
- B. DOORS: HINGED DIRECTLY TO CABINET AND REMOVABLE, WITH APPROXIMATELY 3/4-INCH FLANGE AROUND ALL EDGES, SHAPED TO COVER EDGE OF BOX. PROVIDE HANDLE OPERATED, KEY LOCKING LATCH. INDIVIDUAL DOOR WIDTH SHALL BE NO GREATER THAN 24-INCHES. PROVIDE MULTIPLE DOORS WHERE REQUIRED.
- C. ENCLOSURE: WHERE DOOR GASKETING IS REQUIRED, PROVIDE NEOPRENE GASKET ATTACHED WITH OIL-RESISTANT ADHESIVE, AND HELD IN PLACE WITH STEEL RETAINING STRIPS. FOR ALL ENCLOSURES OF CLASS HIGHER THAN NEMA 1, USE HUBBED RACEWAY ENTRANCES.
- 6. WEATHERPROOF PULL AND SPLICE BOXES:
- A. BOXES SHALL BE NEMA 12 AND 13 RATED, ALL STEEL CONSTRUCTION CONFORMING TO JIC STANDARD EGP-1-1997, WITH EXTERNAL MOUNTING FEET FOR SURFACE MOUNTING, OIL-RESISTANT GASKET ATTACHED TO INSIDE OF DOOR COVER, AND CONTINUOUS HINGE AND EXTERNAL SCREW CLAMP FOR QUICK OPENING AND CLOSING
- 7. FIRESTOP FOR RECESSED WALL BOXES:

BOXES FLUSH WITH FINISHED FLOOR.

- A. INSTALLATIONS OF MULTIPLE BOXES (LESS THAN 24" APART) WITH MAXIMUM 4-11/16" BY 4-11/16" FLUSH DEVICE UL LISTED METAL OUTLET BOXES IN FIRE RATED GYPSUM WALL BOARD WALL ASSEMBLIES FRAMED WITH MINIMUM 3-1/2" WIDE WOOD OR STEEL STUDS AND CONSTRUCTED AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE FIRE RESISTANCE DIRECTORY. 3M #MPP-4S MOLDABLE PUTTY PADS SHALL BE INSTALLED ON EXTERIOR SURFACES OF FLUSH DEVICE BOX IN 1 AND 2 HOUR FIRE RATED WALLS AND PARTITIONS.
- 8. FLOOR BOXES IN SLABS ON GRADE AND WET LOCATIONS SHALL BE NEMA TYPE 4, CAST-IRON BOXES WITH THREADED HUBS. FLOOR BOXES LOCATED IN SLABS ABOVE GRADE

CAN BE STAMPED STEEL. PLASTIC FLOOR BOXES ARE NOT APPROVED.

- A. INSTALL IN CONCRETE FLOOR SLABS SO THEY ARE COMPLETELY ENVELOPED IN CONCRETE EXCEPT FOR THE TOP. WHERE NORMAL SLAB THICKNESS WILL NOT ENVELOP BOX AS SPECIFIED ABOVE, PROVIDE INCREASED THICKNESS OF SLAB. PROVIDE EACH COMPARTMENT OF EACH FLOOR BOX WITH GROUNDING TERMINAL CONSISTING OF A WASHER-IN-HEAD MACHINE SCREW, NOT SMALLER THAN NO. 10-32, SCREWED INTO A TAPPED HOLE IN THE BOX. ADJUST COVERS OF FLOOR
- 9. WHEN TWO OR MORE PHASES OF 277/480 VOLTS SYSTEM ARE CONNECTED TO ADJACENT SWITCHES IN THE SAME BOX, PROVIDE BARRIERS BETWEEN THE SWITCHES. PROVIDE BARRIERS BETWEEN 120 AND 277 VOLTS.
- 10. PULL AND SPLICE BOXES LOCATED OUTDOORS OR WHERE INDICATED ON DRAWINGS SHALL BE WEATHERPROOF TYPE JIC BOXES. CONDUIT TERMINATIONS SHALL BE ACCOMPLISHED BY USING MEYER HUBS.

11. ELECTRICALLY GROUND METALLIC CABINETS, BOXES, AND ENCLOSURES. WHERE WIRING TO ITEM INCLUDES A GROUNDING CONDUCTOR, PROVIDE GROUNDING TERMINAL IN INTERIOR OF CABINET, BOX OR ENCLOSURE.

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Checked By

ELECTRICAL SPECIFICATIONS

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE

C. EATON

2. POWER DISTRIBUTION PANELS: PROVIDE DEAD-FRONT SAFETY-TYPE DISTRIBUTION PANELBOARDS RATED 208/120 OR 480/277 VOLT, 3-PHASE, 4-WIRE. SHORT CIRCUIT RATING OF PANEL AND DEVICES SHALL BE 22,000 RMS MINIMUM UNLESS NOTED OTHERWISE ON DRAWINGS. PROVIDE PANELBOARD SWITCHING AND PROTECTIVE DEVICES IN QUANTITIES, RATINGS, TYPE AND WITH ARRANGEMENT SHOWN, WITH ANTI-TURN SOLDERLESS PRESSURE-TYPE LINE SIDE CONNECTORS APPROVED FOR COPPER

3. 480/277 VOLT LIGHTING PANELBOARDS: PROVIDE DEAD-FRONT SAFETY TYPE LIGHTING PANELBOARDS RATED 480/277V, 3-PHASE, 4-WIRE. SHORT CIRCUIT RATING OF PANEL AND DEVICES SHALL BE 14,000A AIC MINIMUM UNLESS NOTED OTHERWISE ON DRAWINGS. PROVIDE PANELBOARD SWITCHING AND PROTECTIVE DEVICES IN QUANTITIES, RATINGS, TYPE AND WITH ARRANGEMENT SHOWN, WITH ANTI-TURN SOLDERLESS PRESSURE TYPE MAIN LUG CONNECTORS APPROVED FOR COPPER CONDUCTORS, EQUIP WITH COPPER, COPPER-PLATED OR ALUMINUM BUS BARS, AND FULL-SIZED NEUTRAL BUS. PROVIDE SUITABLE LUGS ON NEUTRAL BUS FOR OUTGOING FEEDERS REQUIRING NEUTRAL CONNECTIONS. PROVIDE MOLDED-CASE MAIN AND BRANCH CIRCUIT BREAKERS FOR EACH CIRCUIT, WITH TOGGLE HANDLES THAT INDICATE WHEN TRIPPED. WHERE MULTIPLE-POLE BREAKERS ARE INDICATED, PROVIDE WITH COMMON TRIP SO OVERLOAD ON ONE POLE WILL TRIP ALL POLES SIMULTANEOUSLY. PROVIDE BARE UNINSULATED GROUNDING BAR SUITABLE FOR BOLTING TO ENCLOSURE.

4. 120/208 VOLT LIGHTING AND APPLIANCE PANELBOARDS: PROVIDE DEAD-FRONT SAFETY WITH ANTI-TURN SOLDERLESS PRESSURE TYPE LUG CONNECTORS. APPROVED FOR PANEL. EQUIP WITH COPPER, COPPER PLATED OR ALUMINUM BUS BARS. FULL-SIZED POLE CIRCUIT-BREAKERS. WITH TOGGLE HANDLES THAT INDICATE WHEN TRIPPED. PROVIDE BARE UNINSULATED GROUNDING BARS SUITABLE FOR BOLTING TO ENCLOSURES. SELECT ENCLOSURES FABRICATED BY SAME MANUFACTURER AS INTERRUPTING CAPACITY OF MANUFACTURED PANELBOARDS SHALL BE 10,000 AIC, UNLESS NOTED OTHERWISE ON DRAWINGS.

. MOLDED-CASE CIRCUIT BREAKERS: PROVIDE FACTORY ASSEMBLED. MOLDED CASE MECHANISMS WITH QUICK-MAKE, QUICK-BREAK ACTION AND POSITIVE HANDLE WITH MECHANICAL SCREW TYPE REMOVABLE CONNECTOR LUGS, AL/CU RATED. ALL BREAKERS SHALL BE BOLT-IN TYPE CONSTRUCTION. ALL BREAKERS SHALL BE UL489

B. ALL CIRCUIT BREAKERS PROTECTING HIGH INTENSITY DISCHARGE (HID) LIGHTING

C. CIRCUIT BREAKERS USED FOR HEATING, AIR CONDITIONING, OR REFRIGERATION EQUIPMENT SHALL BE TYPE "HACR" AND UL LISTED FOR SUCH USE.

OF OVERCURRENT PROTECTION WITH ALL DOWN-STREAM OVERCURRENT DEVICES. COORDINATION STUDY SHALL BE USED TO ADVISE CONTRACTOR OF FINAL SETTINGS OF BREAKER EQUIPMENT FIELD ADJUSTMENTS. ALL SUBMITTALS WILL BE REJECTED UNLESS COORDINATION STUDY IS PROVIDED AT TIME OF SHOP DRAWING REVIEW.

SUBMITTALS WILL BE REJECTED UNLESS ARC FLASH STUDY IS PROVIDED AT TIME OF SHOP DRAWING REVIEW.

1. PROVIDE LIGHTING FIXTURES, OF SIZES, TYPES AND RATINGS INDICATED; COMPLETE WITH, BUT NOT LIMITED TO, HOUSINGS, ENERGY-EFFICIENT LAMPS, LAMP HOLDERS, REFLECTORS, ENERGY EFFICIENT BALLAST, STARTERS AND WIRING. SHIP FIXTURES FACTORY-ASSEMBLED, WITH THOSE COMPONENTS REQUIRED FOR A COMPLETE INSTALLATION. DESIGN FIXTURES WITH CONCEALED HINGES AND CATCHES, WITH METAL PARTS GROUNDED AS COMMON UNIT, AND SO CONSTRUCTED AS TO DAMPEN BALLAST GENERATED NOISE

ACCORDANCE WITH FIXTURE MANUFACTURER'S WRITTEN INSTRUCTIONS, APPLICABLE REQUIREMENTS OF NEC, NECA'S "STANDARD OF INSTALLATION," NEMA STANDARDS,

PANELBOARD PRODUCTS FROM ONE OF THE FOLLOWING (FOR EACH TYPE AND RATING OF PANELBOARD AND ENCLOSURE): A. GENERAL ELECTRIC

B. SQUARE D D. SIEMENS, I.T.E.

TYPE LIGHTING AND APPLIANCE PANELBOARDS AS INDICATED. WITH SWITCHING AND PROTECTIVE DEVICES IN QUANTITIES, RATINGS, TYPES AND ARRANGEMENTS SHOWN, USE WITH COPPER CONDUCTORS. CONSTRUCT UNIT FOR CONNECTING FEEDERS TO NEUTRAL BAR, WITH BOLT-IN TYPE HEAVY-DUTY, QUICK-MAKE, QUICK-BREAK, SINGLE-PROVIDE SUITABLE LUGS ON NEUTRAL BUS FOR EACH OUTGOING FEEDER REQUIRED. PANELBOARDS, WHICH MATE AND MATCH PROPERLY WITH PANELBOARDS. MINIMUM

FOR OPERATION ON FLUORESCENT LIGHTING SOURCES.

2. INSTALL LIGHTING FIXTURES AT LOCATIONS AND HEIGHTS AS INDICATED. IN AND WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT LIGHTING FIXTURES

CIRCUIT BREAKERS OF FRAME SIZE INDICATED. PROVIDE BREAKERS WITH PERMANENT THERMAL AND INSTANTANEOUS MAGNETIC TRIPS IN EACH POLE AND AMPERE RATING AS INDICATED. CONSTRUCT WITH OVER CENTER, TRIP-FREE, TOGGLE TYPE OPERATING INDICATION, CONSTRUCT BREAKERS FOR MOUNTING AND OPERATING IN ANY PHYSICAL POSITION AND OPERATING IN AN AMBIENT TEMPERATURE OF 40°C. PROVIDE BREAKERS

A. ALL SINGLE POLE BREAKERS SHALL BE RATED FOR "SWITCHING DUTY" (SWD) AND

SHALL BE RATED AND LABELED "HID" FOR OPERATION ON HID LIGHTING SOURCES.

6. PANELBOARD MANUFACTURER SHALL PROVIDE A COMPLETE "COORDINATION STUDY"

7. PANELBOARD MANUFACTURER SHALL PROVIDE A COMPLETE "ARC FLASH STUDY". ALL

SECTION 16510 - LIGHTING FIXTURES

FULFILL REQUIREMENTS.

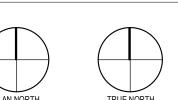
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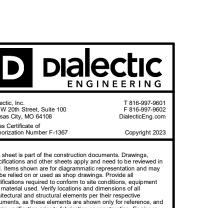
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ELECTRICAL

SECTION 26 27 26 - WIRING DEVICES (CONT.) SECTION 26 28 16 - DISCONNECTS, CONTACTS, STARTERS

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE

2. TEMPERATURE RATINGS: ALL CONDUCTOR TERMINALS AND EQUIPMENT ENCLOSURES

A. PROVIDE CIRCUIT AND MOTOR DISCONNECT SWITCHES OF TYPES, SIZES AND

INTEGRAL PART OF ENCLOSURE BASE AND WHOSE POSITION IS EASILY

TYPE, RATED 250 OR 600 VOLTS, 60 HZ, 2- OR 3-POLES, SOLID NEUTRAL, AND

INCORPORATING QUICK-MAKE, QUICK-BREAK TYPE SWITCHES. CONSTRUCT SO

THAT SWITCH BLADES ARE VISIBLE IN OFF POSITION WITH DOOR OPEN. SWITCH

SHALL HAVE DUAL COVER INTERLOCK TO PREVENT UNAUTHORIZED OPENING OF

SWITCH DOOR WHEN HANDLE IS IN "ON" POSITION, AND TO PREVENT CLOSING OF

RECOGNIZABLE, AND IS PAD-LOCKABLE IN OFF POSITION. CONSTRUCT CURRENT CARRYING PARTS OF HIGH-CONDUCTIVITY COPPER, WITH SILVER-TUNGSTEN TYPE

SWITCH CONTACTS, AND POSITIVE PRESSURE TYPE REINFORCED FUSE CLIPS.

B. EQUIPMENT REQUIRING DISCONNECTING MEANS RATED FOR 120 OR 208 VOLT

REFER TO SECTION 26 27 26 FOR MINIMUM SPECIFICATIONS FOR TOGGLE

SWITCHES. SWITCHES LOCATED OUTDOORS OR IN COOLER/FREEZER

CONTROLS. RELAY SHALL BE MOUNTED IN NEMA TYPE 1 ENCLOSURE.

B. LIGHTING CONTACTORS SHALL BE PROVIDED WITH NUMBER OF POLES, COIL

A. MOTOR STARTER CHARACTERISTICS: COMPLY WITH NEMA STANDARDS AND

FLOOR OR PANEL AS INDICATED. PROVIDE TYPE AND SIZE OF STARTER

EQUIPMENT SECTIONS FOR BASIC LOAD REQUIREMENTS.

PROTECTION AS PART OF MANUAL STARTER SWITCH.

ACCEPTABLE. INCLUDE THE FOLLOWING:

OPERATION AS INDICATED.

6. INSTALLATION OF DISCONNECTS AND STARTERS:

PANELS AND EQUIPMENT NAME PLATE.

ABOVE FLOOR WHERE POSSIBLE.

MOUNTING SUPPORTS.

MELTING ALLOY NOT ACCEPTABLE).

5. EXTERNALLY OPERATED MANUAL RESET.

ELECTRICAL CODE. PROVIDE TYPE I GENERAL PURPOSE ENCLOSURES WITH

APPLICABLE PROTECTION AND START-UP CONDITION. REFER TO INDIVIDUAL

B. MANUAL MOTOR SWITCHES: PROVIDE MANUAL SWITCH AND GREEN PILOT LIGHT

FOR MOTORS 3/4 HP AND SMALLER, EXCEPT WHERE INTERLOCK OR AUTOMATIC

OPERATION IS INDICATED. PROVIDE MELTING ALLOY TYPE THERMAL OVERLOAD

C. MAGNETIC STARTERS: PROVIDE MAGNETIC STARTERS FOR MOTORS INDICATED ON

DRAWINGS. ALL STARTERS SHALL BE NEMA RATED. <u>IEC RATED STARTERS ARE NOT</u>

RUN), PROPERLY ARRANGED FOR SINGLE-SPEED OR MULTI-SPEED

4. BUILT-IN 120 VOLT CONTROL CIRCUIT TRANSFORMER, FUSED FROM LINE

2. SOLID-STATE OVERLOAD RELAY PROTECTION (BI-METAL AND METAL

SIDE, WHERE SERVICE EXCEEDS 240 VOLTS (WHERE REQUIRED).

3. INTERLOCKS CONTACTS AND SIMILAR DEVICES AS REQUIRED.

6. NEMA 1 OR NEMA 3R ENCLOSURE AS INDICATED ON DRAWINGS.

A. SURFACE MOUNT ON WALLS OR COLUMNS APPROXIMATELY 5'-0" TO CENTERLINE

B. DISCONNECT SWITCHES MOUNTED ON ROOFTOP AIR CONDITIONING UNITS SHALL

BE CAULKED BETWEEN SWITCH AND UNIT TO PROVIDE WEATHERPROOF SEAL.

C. WHEN RELAYS OR CONTACTORS ARE INDICATED TO BE LOCATED ABOVE CEILING,

EQUIPMENT SHALL BE READILY ACCESSIBLE AND SOUND INSULATED FROM THE

VERIFY EXACT MOUNTING LOCATION ON UNIT SO AS NOT TO COVER UP REMOVABLE

1. HAND-OFF-AUTO SELECTOR SWITCH AND RED & GREEN PILOT LIGHTS (OFF -

PADLOCK EARS, AND WITH FRAMES AND SUPPORTS FOR MOUNTING ON WALL,

RECOMMENDED BY MOTOR MANUFACTURER AND EQUIPMENT MANUFACTURER FOR

GASKETED WEATHERPROOF COVER PLATE.

MOUNTED IN A NEMA TYPE 1 ENCLOSURE.

SWITCH MECHANISM WITH DOOR OPEN. EQUIP WITH OPERATING HANDLE WHICH IS

PROVIDE SWITCH IN NEMA 1 OR NEMA 3R ENCLOSURE AS INDICATED OR REQUIRED.

PROVIDE ENGRAVED PLASTIC PLATE IDENTIFYING WHAT EACH SWITCH CONTROLS.

SINGLE PHASE. UP TO 30 AMPERES MAY BE PROVIDED WITH SNAP-SWITCH TYPE

RATING EQUAL TO OR GREATER THAN BRANCH CIRCUIT FEEDING EQUIPMENT. IF

EQUIPMENT IS MOTOR RELATED, THEN SWITCH SHALL BE HORSEPOWER RATED.

APPLICATIONS SHALL BE MOUNTED IN DIE-CAST ALUMINUM DEVICE BOX WITH

A. GENERAL POWER PURPOSE RELAYS FOR CONTROL OF MISCELLANEOUS MOTORS,

SHALL BE PROVIDED WITH NUMBER OF POLES AND COIL VOLTAGE AS SHOWN ON

DRAWINGS. RELAY SHALL BE HORSEPOWER RATED FOR MOTOR LOAD TO WHICH IT

VOLTAGE, AND LOAD CONTACT RATINGS AS SHOWN ON DRAWINGS. CONTACTORS

SHALL BE PROVIDED WITH SILVER ALLOY DOUBLE BREAK CONTACTS RATED FOR

TUNGSTEN AND BALLAST LIGHTING LOADS. CONTACTS SHALL BE CONVERTIBLE

WITH NORMALLY OPEN AND NORMALLY CLOSED INDICATORS. RELAY SHALL BE

TOGGLE DEVICE AT EQUIPMENT. DEVICE SHALL HAVE AMPERE AND VOLTAGE

ELECTRICAL CHARACTERISTICS INDICATED ON DRAWING. FUSIBLE OR NON-FUSED

SHALL BE UL LISTED FOR USE WITH MINIMUM 75°C RATED CONDUCTORS.

PRODUCTS BY ONE OF THE FOLLOWING:

A. GENERAL ELECTRIC CO.

C. EATON CORPORATION

B. SQUARE D COMPANY

ALLEN-BRADLEY CO.

). SIEMENS, I.T.E.

3. DISCONNECT SWITCHES:

4. RELAYS AND CONTACTORS:

MOTOR STARTERS:

F. FURNAS CO.

- 1. THIS SECTION INCLUDES THE FOLLOWING: F. FLOOR RECEPTACLES:
- A. RECEPTACLES B. LIGHTING AND EQUIPMENT SWITCHES WALL PLATES
- D. FLOOR SERVICE OUTLETS . OCCUPANCY SENSORS
- MANUAL DIMMERS
- G. MULTI-OUTLET ASSEMBLIES H. TELE-POWER POLES
- 2. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS. PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- A. WIRING DEVICES & ACCESSORIES:
- COPPER WIRING DEVICES CROUSE-HINDS CO. HUBBELL INC. LEVITON
- PASS AND SEYMOUR INC. B. FLOOR BOXES: AMERICAN ELECTRIC. STEEL CITY WALKER / WIREMOLD COMPANY RACO, INC., HUBBELL INC.
- 4. RACEWAY COMPONENTS, INC. C. DIMMERS:
- . HUBBELL INC. 2. LEVITON LIGHTING CONTROLS 3. LUTRON LIGHTING
- D. PLUGMOLD AND TELE-POWER POLES: WIREMOLD COMPANY
- MONO SYSTEMS INC.
- E. OCCUPANCY SENSOR LIGHTING CONTROL: HUBBELL INC. LEVITON MANUFACTURING INC.
- WATT STOPPER INC. SENSOR SWITCH
- GREENGATE F. NETWORK LIGHTING CONTROLS:

1. HUBBELL INC

- GREENGATE LIGHTING CONTROL AND DESIGN WATT STOPPER INC.
- 3. WIRING DEVICES:
- A. PROVIDE WIRING DEVICES, IN TYPES, CHARACTERISTICS, GRADES, COLORS, AND ELECTRICAL RATINGS FOR APPLICATIONS INDICATED WHICH ARE UL LISTED AND WHICH COMPLY WITH NEMA WD 1 AND OTHER APPLICABLE UL AND NEMA STANDARDS, ALL DEVICES SHALL BE SPECIFICATION GRADE (HEAVY DUTY UL GRADE), WITH GREEN HEXAGONAL EQUIPMENT GROUND SCREW, METAL PLASTER EARS AND SIDE TERMINAL SCREWS FOR BACK AND SIDE WIRING.
- B. ALL WIRING DEVICES SHALL BE PROVIDED BY SAME MANUFACTURER UNLESS
- NOTED OTHERWISE. C. ALL WIRING DEVICES AND COVERPLATES SHALL BE:
- WHITE, (CONFIRM REQUIREMENTS WITH ARCHITECT) WHITE - WHERE INSTALLED IN WHITE CEILINGS.
- BLACK WHERE INSTALLED IN DARK CEILINGS. ORANGE - WHERE SUPPLYING A UPS CIRCUIT. (DEVICE ONLY, COVERPLATE SHALL BE AS ABOVE).
- D. RECEPTACLES: DUPLEX RECEPTACLE, 15 AMP, 125 VOLT, 2-POLE, 3-WIRE, GROUNDING TYPE WITH NEMA CONFIGURATION 5-15R, MEETS FEDERAL SPEC. WC-596-F. LEVITON
- SINGLE RECEPTACLE, 20 AMP, 125 VOLT, 2-POLE, 3-WIRE, GROUNDING TYPE WITH NEMA CONFIGURATION 5-20R, MEETS FEDERAL SPEC. WC-596-F. LEVITON
- 3. DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, 2-POLE, 3-WIRE, GROUNDING TYPE WITH NEMA CONFIGURATION 5-20R, MEETS FEDERAL SPEC. WC-596-F. LEVITON
- 4. GROUND FAULT INTERRUPTER RECEPTACLE, 20 AMP, 125 VOLT, 2-POLE, 3-WIRE. GROUNDING TYPE WITH NEMA CONFIGURATION 5-20R. UL943 APPROVED, SELF-TESTING. SOLID STATE GROUND FAULT SENSING LEVEL WITH 5 MILLIAMPERES GROUND FAULT TRIP LEVEL. LED INDICATOR LIGHT WITH TEST/RESET BUTTONS
- THAT MATCH THE COLOR OF THE FACE. LEVITON #G5362-WT*. 5. USB RECEPTACLE, 20A, 125V, 2-POLE, 3-WIRE, GROUNDING TYPE WITH NEMA CONFIGURATION 5-20R, (2) VERTICAL USB PORTS WITH 3.6A CHARGING CAPACITY (MINIMUM), MEETS FEDERAL SPEC, WC-596-F, LEVITON #T5832.
- WHERE SHOWN AS QUAD RECEPTACLE ON PLANS, PROVIDE (2) USB RECEPTACLES AS SPECIFIED ABOVE. WEATHERPROOF RECEPTACLE SHALL BE GROUND-FAULT INTERRUPTER WITH THOMAS & BETTS #CKSUV DIE-CAST ALUMINUM "SMALL" COVER PLATE. LOCATE
- WET LOCATIONS WHILE IN USE. ISOLATED GROUND DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, 2-POLE, 3-WIRE, FACE WITH ORANGE TRIANGLE, GROUND SCREW ISOLATED FROM MOUNTING YOKE, NEMA CONFIGURATION 5-20RIG. LEVITON #5362-IG.

BOX VERTICAL IN WALL. PLATE SHALL BE LISTED AND LABELED "SUITABLE FOR

- 8. SURGE PROTECTED. ISOLATED GROUND. DUPLEX RECEPTACLE. 20 AMP. 125 VOLT, 2-POLE, 3-WIRE, FACE WITH ORANGE TRIANGLE; FOUR SERIES-PARALLEL, 130 VOLT 20 MM METAL OXIDE VARISTORS (MOV'S), AND BUILT-IN AUDIBLE AND VISUAL ALARM INDICATORS. DEVICE SHALL BE PROVIDED WITH NORMAL AND COMMON PROTECTION MODES, TRANSIENT SUPPRESSION OF 280 JOULES PEAK ENERGY, CLAMPING VOLTAGE OF 420, AND RESPONSE TIME OF APPROXIMATELY 5 NS. NEMA CONFIGURATION 5-20R. LEVITON #8380-IG.
- CONTROLLED DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, 2-POLE, 3-WIRE, GROUNDING TYPE WITH NEMA CONFIGURATION 5-20R, PERMANENTLY LABELED WITH CONTROLLED SYMBOL, MEETS FEDERAL SPEC. WC-596-F. LEVITON #5362-2. WHERE SHOWN AS QUAD RECEPTACLE ON PLANS, PROVIDE (1) CONTROLLED
- RECEPTACLE AND (1) DUPLEX RECEPTACLE AS SPECIFIED ABOVE. 10. HEAVY DUTY RECEPTACLES SHALL BE OF THE SAME MANUFACTURER AS THE CONVENIENCE OUTLETS AND HAVE THE RATINGS AND CHARACTERISTICS (VOLTAGE, AMPS, POLES, WIRES) AS SHOWN ON DRAWINGS.
- E. SWITCHES: TOGGLE TYPE SWITCH, 20 AMP, 120/277 VOLT AC SINGLE-POLE, QUIET TYPE, WITH MOUNTING YOKE INSULATED FROM MECHANISM, EQUIPPED WITH PLASTER EARS, SIDE-WIRED SCREW TERMINALS, MEETS FEDERAL SPEC WS-896. LEVITON #1121-2. DOUBLE-POLE, 3-WAY, AND 4-WAY SWITCHES SHALL BE OF SAME MAKE AS FOR SINGLE-POLE.
- KEY TYPE SWITCH, 20 AMP, 120/277 VOLT AC SINGLE-POLE, WITH MOUNTING YOKE INSULATED FROM MECHANISM, EQUIPPED WITH PLASTER EARS, SIDE-WIRED SCREW TERMINALS, POLISHED METAL TOP AND PROVIDE WITH ONE STEEL KEY. LEVITON #1121-2L. DOUBLE-POLE, 3-WAY, AND 4-WAY SWITCHES SHALL BE OF SAME MAKE AS FOR SINGLE-POLE.
- SWITCH DEVICE WITH 1/25 WATT NEON PILOT INTEGRAL WITH TOGGLE HANDLE. RATED 120/277 VOLT. GLOWS WHEN SWITCH IS "OFF". PASS & SEYMOUR #20AC1-

WHEN LIGHTED HANDLE IS INDICATED WITH SWITCHING DEVICE, PROVIDE

4. WHEN PILOT LIGHT IS INDICATED WITH SWITCHING DEVICE, PROVIDE SWITCH DEVICE WITH 1/25 WATT NEON PILOT INTEGRAL WITH TOGGLE HANDLE. RATED 120/277 VOLT. GLOWS WHEN SWITCH IS "ON". PASS & SEYMOUR #20AC1-RPL.

- 1. TYPE 'A': HUBBELL #B-2436, RECTANGULAR SINGLE-GANG, WATERTIGHT BOX VITH ONE S-3825 DUPLEX FLAP COVER. BOX COVER PLATE SHALL BE BRASS. COVER SHALL BE PROVIDED WITH BRASS CARPET FLANGE FOR FLUSH INSTALLATION IN LINOLEUM, WOOD OR CARPET FLOORS, EACH FLOOR OUTLET SHALL BE COMPLETE WITH ONE 20 AMP, 125 VOLT DUPLEX BROWN RECEPTACLE AS SPECIFIED UNDER "RECEPTACLES".
 - 2. TYPE 'B': HUBBELL #B-4233, RECTANGULAR DOUBLE-GANG, FULLY ADJUSTABLE, WATERTIGHT BOX WITH ONE S-3825 DUPLEX FLAP COVER COMPLETE WITH ONE 20 AMP, 125 VOLT DUPLEX BROWN RECEPTACLE AS SPECIFIED UNDER "RECEPTACLES". ALSO PROVIDE ONE #S-2625 COVER PLATE WITH ONE #S-3067 SPLIT NOZZLE FOR PROTECTION OF TELEPHONE/COMPUTER CABLES. BOX COVER PLATES SHALL BE BRASS. COVER SHALL BE PROVIDED WITH BRASS CARPET FLANGE FOR FLUSH INSTALLATION IN LINOLEUM, WOOD OR CARPET
 - 3. TYPE 'C': HUBBELL #B-2436, RECTANGULAR SINGLE-GANG BOX, BRASS PLATE #S2425 WITH 3/4 PLUG OPENING FOR CONNECTION OF FLEXIBLE CONDUIT FROM EQUIPMENT. COVER SHALL BE PROVIDED WITH BRASS CARPET FLANGE FOR FLUSH INSTALLATION IN LINOLEUM, WOOD OR CARPET FLOORS.
 - 4. TYPE 'D': HUBBELL #B-2536, ROUND, WATERTIGHT BOX WITH ONE S-3925 BRASS DUPLEX FLAP COVER. COVER SHALL BE PROVIDED WITH BRASS CARPET FLANGE FOR FLUSH INSTALLATION IN LINOLEUM, WOOD OR CARPET FLOORS. EACH FLOOR OUTLET SHALL BE COMPLETE WITH ONE 20 AMP. 125 VOLT DUPLEX BROWN RECEPTACLE AS SPECIFIED UNDER "RECEPTACLES".
 - TYPE 'E': HUBBELL #B-2536, ROUND, WATERTIGHT BOX WITH ONE #S-2525 BRASS COVER PLATE WITH ONE #S-3067 SPLIT NOZZLE FOR PROTECTION OF TELEPHONE/COMPUTER CABLES, COVER SHALL BE PROVIDED WITH BRASS CARPET FLANGE FOR FLUSH INSTALLATION IN LINOLEUM, WOOD OR CARPET
- 6. TYPE 'F': HUBBELL MODEL PT7 ONE PIECE UNIT FOR FLOORS 2-1/2" 7" THICK, FIRE RATED POKE THROUGH FITTINGS. PROVIDE UNIT WITH SERVICE FITTINGS DESIGNER NEEDS TO SPECIFY WHAT DEVICES ARE NEEDED, RECEPTACLES, TELEPHONE/DATA, ETC.
- 7. TYPE 'G': FIRE RATED POKE THROUGH FITTING FOR 4" CORE SHALL BE AS MANUFACTURED BY WALKER RC2001 SERIES OR APPROVED EQUAL, ONE-PIECE UNIT FOR FLOORS 2-1/2" - 7" THICK. PROVIDE UNIT WITH (1) 20 AMP DUPLEX RECEPTACLE AND (2) CATEGORY 5 RJ45 OUTLETS, UNLESS OTHERWISE INDICATED ON DESIGN DRAWINGS. POKE THROUGH SHALL BE UL CLASSIFIED FOR FIRE RESISTANCE IN 1 THROUGH 4 HOUR RATED FLOORS.
- G. WALL PLATES: SINGLE AND COMBINATION, OF TYPES, SIZES, AND WITH GANGING AND CUTOUTS AS INDICATED. PROVIDE PLATES WHICH MATE WITH WIRING DEVICES TO WHICH ATTACHED. PROVIDE METAL SCREWS FOR SECURING PLATES TO DEVICES WITH SCREW HEADS TO MATCH FINISH OF PLATES. PROVIDE WALL PLATES WITH ENGRAVED LEGEND WHERE INDICATED. CONFORM TO REQUIREMENTS OF SECTION "ELECTRICAL IDENTIFICATION."
- H. OCCUPANCY SENSOR LIGHTING CONTROL: 1. WALL MOUNTED OCCUPANCY SENSOR SHALL BE PASSIVE INFRARED COVERING 1200 (OR 900) SQUARE FEET, RATED FOR 120/277 VOLT, 1500 WATTS MAXIMUM LOAD OF INCANDESCENT OR FLUORESCENT LIGHT. SENSOR SHALL HAVE 180° FIELD OF VIEW, OFF/AUTO/ON SLIDE SWITCH, ADJUSTABLE TIME-OUT FROM 1 TO 20 MINUTES, AND LED MOVEMENT INDICATOR PILOT. SENSOR SHALL BE MOUNTED IN SINGLE-GANG WALL BOX AT SAME ELEVATION AS STANDARD WALL SWITCHES. WATT STOPPER #PW-100 SINGLE RELAY (OR #PW-200 DUAL RELAY).
- 2. CEILING MOUNTED OCCUPANCY SENSOR SHALL BE DUAL TECHNOLOGY WITH ULTRASONIC & PASSIVE INFRARED TYPE SENSORS. SENSORS SHALL HAVE TWO-WAY OR ONE-WAY DISTRIBUTION DEPENDING ON MOUNTING LOCATION, AND SHALL BE CAPABLE OF ADJUSTING SENSITIVITY AND LENGTH OF OPERATION BASED ON PAST ACTIVITY LEVEL OF AREA'S OCCUPANTS. CUSTOM PERFORMANCE CONTROLS SHALL BE LOCATED BEHIND SENSOR LENS FOR FIELD MODIFICATION OF SENSOR. UNIT SHALL BE MOUNTED TO RECESSED JUNCTION BOX. WATT STOPPER #DT-355, 800W @ 120V (1200W @ 277V).
- I. MANUAL DIMMERS: 1. PROVIDE AC DIMMER CONTROLS FOR LIGHTING FIXTURES, 120 VOLT, 60 HERTZ. WITH PRESET SLIDE CONTROLS AND PUSHBUTTON FOR ON/OFF CONTROLS, SINGLE-POLE. WATTAGE SHALL BE AS INDICATED BELOW: a. ID1 = 1000 WATTS, LEVITON #IPI10-1LX (120/277V INCANDESCENT)
 - b. D1 = 1200/1500 VA, LEVITON #IP710-LFZ (120/277V LED) c. LD2 = 400 VA, LEVITON #IPE04-1LX (ELECTRONIC LOW VOLTAGE) d. LD3 = 1000 VA. LEVITON #IPM10-1LX (MAGNETIC LOW VOLTAGE) e. FD1 = 1200/1500 VA, LEVITON #IP710-DLX (120/277V FLUORESCENT 0-10V)
- f. FD2 = 1000 VA, LEVITON #IPX10-10 (120V FLUORESCENT LINE VOLTAGE) g. FD3 = 1200 VA, LEVITON #IPX12-70 (277V FLUORESCENT LINE VOLTAGE) J. MULTI-OUTLET ASSEMBLY: 1. MULTI-OUTLET, TWO COMPARTMENT ASSEMBLY WITH ISOLATED GROUND TYPE
- DUPLEX RECEPTACLES. 20 AMP. 125 VOLT AC. 2-POLE. 3-WIRE. GROUNDING TYPE WITH NEMA 5-20R CONFIGURATION AND WIREMOLD #G-4046B, 18" ON CENTER. WIREMOLD SERIES 4000 CONTINUOUS WIREWAY WITH INTERNAL DIVIDER AND #G-4000C WIREWAY COVER OR APPROVED EQUAL OF MONO-SYSTEMS, INC.
- 2. PLUGMOLD ASSEMBLY SHALL CONSIST OF TWO-PIECE SURFACE METAL RACEWAY WITH 20 AMP, 120 VOLT, SINGLE RECEPTACLE WITH GRAY FACTORY PAINTED FINISH.
- a. WIREMOLD #20GB06-G, SINGLE CIRCUIT, RECEPTACLE ON 6" CENTERS. b. WIREMOLD #20GB12-G, SINGLE CIRCUIT, RECEPTACLE ON 12" CENTERS c. WIREMOLD #20GB18-G, SINGLE CIRCUIT, RECEPTACLE ON 18" CENTERS. d. WIREMOLD #20GB30-G, SINGLE CIRCUIT, RECEPTACLE ON 30" CENTERS e. WIREMOLD #20GBA06-G, TWO CIRCUIT, RECEPTACLE ON 6" CENTERS. WIREMOLD #20GBA12-G, TWO CIRCUIT, RECEPTACLE ON 12" CENTERS. WIREMOLD #20GBA18-G, TWO CIRCUIT, RECEPTACLE ON 18" CENTERS.

h. WIREMOLD #20GBA30-G, TWO CIRCUIT, RECEPTACLE ON 30" CENTERS.

- K. TELE-POWER POLES: 1. SATIN ANODIZED ALUMINUM, 10'-5" TELE-POWER POLE WITH TWO SEPARATE WIREWAY COMPARTMENTS. ONE COMPARTMENT SHALL BE FOR POWER WIRING WITH TWO DUPLEX, 20 AMP, 125 VOLT RECEPTACLES IN COVER FACE AND POWER JUNCTION BOX AT TOP OF POLE. SECOND COMPARTMENT SHALL BE FOR COMMUNICATION WIRING WITH REMOVABLE COVER SECTION AT BOTTOM OF POLE FOR CABLE ACCESS. WIREMOLD #AMDTP-4.
- 2. POLE ASSEMBLY SHALL BE PROVIDED WITH ALL NECESSARY FITTINGS INCLUDING BUT NOT LIMITED TO ENTRANCE END FITTING FOR TOP OF ELECTRICAL CHANNEL. CEILING TRIM PLATE, POLE MOUNTING BRACKET, T-BAR MOUNTING BRACKET, VELCRO CARPET GRIPPER AND ADHESIVE PAD. NETWORK CONTROLS
- TWO OR THREE RELAY PLENUM-RATED CONTROLLERS FOR ON/OFF CONTROL. SELECTED MODELS INCLUDE 0-10 VOLT OR LINE VOLTAGE FORWARD PHASE CONTROL DIMMING OUTPUTS AND INTEGRAL CURRENT MONITORING CAPABILITIES. WATTSTOPPER LMRC-213. 2. DIGITAL DAYLIGHTING SENSORS - SINGLE-ZONE CLOSED LOOP, MULTI-ZONE OPEN LOOP AND SINGLE-ZONE DUAL-LOOP DAYLIGHTING SENSORS WITH TWO-WAY

. DIGITAL ROOM CONTROLLER: SELF-CONFIGURING, DIGITALLY ADDRESSABLE ONE,

ACTIVE INFRARED (IR) COMMUNICATIONS CAN PROVIDE SWITCHING, BI-LEVEL, TRI-

- LEVEL OR DIMMING CONTROL FOR DAYLIGHT HARVESTING. WATTSTOPPER LMLS-400. 3. DIGITAL SWITCHES - SELF-CONFIGURING, DIGITALLY ADDRESSABLE PUSHBUTTON
- ON/OFF, DIMMING, AND SCENE SWITCHES WITH TWO-WAY ACTIVE INFRARED (IR) COMMUNICATIONS. WATTSTOPPER LMDM-101. 4. DIGITAL OCCUPANCY SENSORS - SELF-CONFIGURING, DIGITALLY ADDRESSABLE AND CALIBRATED OCCUPANCY SENSORS WITH LCD DISPLAY AND TWO-WAY ACTIVE
- INFRARED (IR) COMMUNICATIONS. WATTSTOPPER LMDC-100 5. RECEPTACLE CONTROLLER. WATTSTOPPER LMPL-101
- 6. PRE-TERMINATED CABLES FOR CONNECTIONS OF DIGITAL LIGHTING MANAGEMENT. WATTSTOPPER LMRJ SERIES. 4. INSTALLATION OF WIRING DEVICES AND ACCESSORIES: A. GROUPS OF SWITCHES OR SWITCH AND OUTLET COMBINATIONS SHALL BE

MOUNTED UNDER ONE COVER PLATE. COVER PLATES SHALL FIT DEVICES

- SECURELY AND SHALL COVER WALL OPENING COMPLETELY TO PROVIDE A NEAT AND FINISHED APPEARANCE FLUSH WITH SURROUNDING SURFACES.
- THE NEXT DEVICES.
- D. RECEPTACLE MOUNTED ABOVE COUNTER-TOP SHALL BE INSTALLED HORIZONTAL, WITH LONG DIMENSION PARALLEL TO FLOOR AND COUNTER-TOP.

B. TERMINALS ON ALL WIRING DEVICES SHALL NOT BE USED TO FEED-THROUGH TO C. INSTALL WALL-MOUNTED RECEPTACLES WITH GROUND SLOT UP.

SPECIFICATIONS

					CONNECT	ION SIZES			
ID	FIXTURE TYPE	MANUFACTURER	MODEL NO.	CW	HW	WASTE	VENT	DESCRIPTION	TRIM AND REMARKS
SK-1	DOUBLE SINK	ELKAY	ECTRU31179T	1/2"	1/2"	2"	1 1/2"	DOUBLE BOWL UNDERMOUNT, 18 GA. STAINLESS STEEL SINK, 31-1/2" x 18-1/2" x 9" DEEP.	DELTA 9159-DST SINGLE HANDLE DECK MOUNT FAUCET WITH 2-FUNCTION PULL-DOWN SPRAYER. BRASSCRAFT QUARTER TUR LOOSE KEY STOPS, OFFSET DRAIN, BRAIDED SUPPLIES, AND CHROME ESCUTCHEONS. MCGUIRE PW2125 INSULATION KIT.
DF-1	DRINKING FOUNTAIN	ELKAY	LVRCTL8WSK	1/2"		2"	1 1/2"	BI-LEVEL WATER COOLER WITH SELF-CLOSING EASY-TOUCH CONTROLS ON FRONT, BOTTLE FILLER, CAPACITY OF 8.0 GPH FROM 80 TO 50 DEGREES FAHRENHEIT WITH AMBIENT TEMPERATURE OF 90 DEGREES FAHRENHEIT UTILIZING A 1/5 HP, 115V, 370W, 5A SINGLE-PHASE COMPRESSOR.	PROVIDE 1/4 TURN ANGLE BALL STOP WITH METAL HANDLE, P-TRAP WITH CLEANOUT AND WASTE ARM TO WALL. PROVIDE APRON FOR UPPER UNIT. COORDINATE MOUNTING HEIGHT AND COLOR WITH ARCHITECT.
FD-1	FLOOR DRAIN	JR SMITH	2010-NB			3"	1 1/2"	CAST IRON DRAIN WITH NICKEL BRONZE STRAINER, 1/2" TRAP PRIMER CONNECTION AND MEMBRANE FLASHING CLAMP.	PROVIDE OUTLET WITH P-TRAP AND CLEAN AND POLISH STRAINE TOP AFTER INSTALLATION. PROVIDE WITH 1/2" TRAP PRIMER CONNECTION WITH MEMBRANE FLASHING CLAMP.
FS-1	FLOOR SINK	JR SMITH	3411-AB			3"	1 1/2"	CAST IRON BODY, FLASHING CLAMP, ACID RESISTANT COATED INTERIOR AND CAST IRON GRATE, 8" SQUARE 1/2 GRATE AND ALUMINUM SEDIMENT BUCKET.	PROVIDE OUTLET WITH P-TRAP.
HB-1	HOSE BIBB	WOODFORD	MODEL 14	3/4"				ANTI-SIPHON, AUTOMATIC DRAINING QUARTER TURN WALL HYDRANT, NON-FREEZE INTEGRAL VACUUM BREAKER, ALL STAINLESS STEEL INTERIOR PARTS, 3/4" INLET	MOUNT 18" (MINIMUM) ABOVE FINISHED FLOOR. PROVIDE BALL VALVE ACCESSIBLE FROM FLOOR FOR MAINTENANCE.
LV-1	LAVATORY (ADA)	KOHLER	K-2882 "VERTICYL"	1/2"	1/2"	2"	1 1/2"	WHITE VITREOUS CHINA RECTANGULAR UNDERMOUNT BATHROOM SINK WITH OVERFLOW DRAIN.	PROVIDE SLOAN FAUCET #EAF-350-BAT-CP-0.35GPM-MLM-IR-IQ-F-BATTERY POWER SUPPLY, 0.35 GPM AERATOR, SINGLE HOLE MOUNTED, INFRARED SENSOR. PROVIDE SLOAN SOAP DISPENSE #ESD-2000-CP, BATTERY POWERED, INFRARED SENSOR ACTIVATED, SINGLE HOLE MOUNT. PROVIDE GRID STRAINER DRAWITH TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, WASTE ARM TO WALL WITH ESCUTCHEON AND 1/4 TURN ANGLE BALL STOPS WITH METAL HANDLE. INSULATE WATE AND WASTE PIPING UNDER LAVATORY WITH TRUEBRO "LAV GUARD2" #102E-Z. RI 34" AFF TO RIM.
MS-1	MOP SINK	FIAT	TSB100	1/2"	1/2"	3"	1 1/2"	24"x24"x10" ONE-PIECE MOLDED STONE CONSTRUCTION WITH 3" STAINLESS STEEL DRAIN.	PROVIDE #MSG-2424 STAINLESS STEEL WALL GUARD ON TWO SIDE, #E-88-AA STAINLESS STEEL BUMPER GUARD ON TWO SIDE, #830-AA SERVICE FAUCET AND #832-AA 30" HOSE AND HOSE BRACKET.
SH-1	SHOWER	JR SMITH	210-13	1/2"	1/2"	3"	1 1/2"	SET SQUARE SHOWER DRAIN IN FLOOR PER PLANS. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.	PROVIDE MOEN #TL182EP SINGLE LEVER VALVE WITH 1.75 GPM SHOWERHEAD AND #3558RP 1.75 GPM HAND SHOWER WITH 30" SLIDE BAR AND 69" SPIRAL HOSE. PROVIDE WITH ASSE1016 LIST SHOWER VALVE.
MV	THERMAL MIXING VALVE	SYMMONS	7-225-CK "MAXLINE"	3/4"	3/4"			1/2" INLETS AND OUTLET, THERMOSTATIC CONTROLLER WITH INTEGRAL CHECKS, ALL BRASS BODY WITH DUAL STAINLESS STEEL STRAINER, VANDAL-RESISTANT TEMPERATURE ADJUSTMENT HANDLE.	MOUNT IN ACCESSIBLE LOCATION.
TP	TRAP PRIMER	PRECISION PLUMBING PRODUCTS	PR-500 "PRIME-RITE"	1/2"				AUTOMATIC OPERATION, 1/2" INLET AND OUTLET. SERVICE UP TO FOUR (4) FLOOR DRAINS WITH DISTRIBUTION UNIT.	INSTALL IN ACCESSIBLE LOCATION WITH TRAP PRIMER LOCATED MINIMUM OF 6" ABOVE FLOOD LEVEL OF FLOOR DRAIN RIM.
UR-1	URINAL (ADA)	AMERICAN STANDARD	6002.001 "PINTBROOK"	3/4"		2"	1 1/2"	WHITE VITREOUS CHINA, 0.125 GPF, WASHOUT FLUSH ACTION 3/4" TOP SPUD AND RIM AT 24" AFF. LOCATE HANDLE ON ACCESSIBLE SIDE.	AMERICAN STANDARD 6063.013.002 0.125 GPF BATTERY POWERE FLUSH VALVE. ZURN Z1222 URINAL CARRIER.
WMB-1	WASHING MACHINE BOX	SIOUX CHIEF	696-1011	1/2"	1/2"	2"	1 1/2"	QUARTER TURN BALL VALVE WITH 3/8" COMPRESSION OUTLET AND 1/2" SUPPLY CONNECTION AND MINI-RESTER WATER HAMMER. PVC/ABS SUPPLY BOX.	FRAME AND DEBRIS COVER. GALVANIZED STEEL BRACKET.
WB-1	WATER BOX	SIOUX CHIEF	696-1011	1/2"				QUARTER TURN BALL VALVE WITH 3/8" COMPRESSION OUTLET AND 1/2" SUPPLY CONNECTION AND MINI-RESTER WATER HAMMER. PVC/ABS SUPPLY BOX.	FRAME AND DEBRIS COVER. GALVANIZED STEEL BRACKET.
WC-1	WATER CLOSET	AMERICAN STANDARD	3351.101 "AFWALL"	1 1/4"		4"	2"	WHITE VITREOUS CHINA, 1.28 GPF, WALL MOUNTED ELONGATED SIPHON JET BOWL. 1-1/2" TOP SPUD AND RIM AT 16-1/2" AFF. LOCATED HANDLE ON ACCESSIBLE SIDE.	AMERICAN STANDARD #6065.121.002 1.28 GPF SELECTRONIC BATTERY POWERED FLUSH VALVE. AMERICAN STANDARD #5901.110 STANDARD SEAT WITH EVERCLEAN. ZURN ZN1201 NARROW WATER CLOSET CARRIER.

					PLU	JMBIN	IG EC	UIP	MENT SCHEDULE	
						ELECTRIC	CAL DATA			
TYPE	MARK	FIXTURE TYPE	MANUFACTURER	MODEL	VOLT	PHASE	WATT	MOCP	DESCRIPTION	TRIM AND REMARKS
RP	1	RECIRCULATION PUMP	GRUNDFOS	ALPHA2	120 V	1	65 W	20 A	BRONZE BODY RECIRCULATING PUMP WITH "AUTOADAPT" VARIABLE SPEED MOTOR. 115V-1P, 0.65A, VARIABLE 5-65W.	INSTALL NEAR WATER HEATER PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE WITH HONEYWELL L6006C SURFACE MOUNT AQUASTAT SET TO 5 DEGREES FAHRENHEIT BELOW WATER HEATER OPERATING TEMPERATURE.
WH	1	ELECTRIC WATER HEATER	AO SMITH	DRE-80	480 V	3	15000 W	20 A	80 GALLON STORAGE, 78 GPH RECOVERY AT 80 DEGREES FAHRENHEIT RISE, 15KW HEATING INPUT (3 5KW HEATING ELEMENTS) AT 480V-3P, 20A ELECTRICAL SERVICE, MEETING THE CURRENT EDITION OF ASHRAE STANDARD 90 AND LOCAL ENERGY CONSERVATION CODES.	PROVIDE WATER HEATER ON HOUSEKEEPING PAD PER "ELECTRIC WATER HEATER WITH PUMP" DETAIL. PROVIDE AMTROL #ST-8 THERMAL EXPANSION TANK WITH A TOTAL VOLUME OF 3.2 GALLONS AND A MAX ACCEPTANCE VOLUME OF 1.9 GALLONS, 3/4" CONNECTION. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
WH	2	INSTANTANEOUS WATER HEATER	EEMAX	AMOO724OT	208 V	1	5000 W	30 A	INSTANTANEOUS WATER HEATER WITH INTEGRATED ASSE 1070 MIXING VALVE TO SERVE SINGLE LAVATORY.	68 DEGREES FAHRENHEIT RISE AT 0.5 GPM WITH 0.3 GPM TURN ON AND 105-110 DEGREES FAHRENHEIT STAGED FACTORY SET TEMPERATURE. REFER TO "INSTANTANEOUS WATER HEATER" DETAIL.
WS	1	WATER SOFTNER	CULLIGAN	CTM-120-PF	120 V	1	600 W	15 A	WATER SOFTENER WITH DESIGN FLOW OF 70 GPM, 3500 GALLONS DAILY USAGE, 24" x 50" BRINE DRUM, NON-ELECTRIC CONTROL VALVE, DUAL MEDIA TANK, VOLUMETRIC, DEMAND-INITIATED AND COUNTER CURRENT REGISTRATION.	INSTALL PER MANUFACTURER'S INSTRUCTIONS AND CONTACT CHRISTENE WISKUR AT WISKURC@CULLIGANKC.COM FOR FURTHER INSTALLATION QUESTIONS.

MARK	DESCRIPTION	CFH
F-4	MECHANICAL UNIT	76
F-5	MECHANICAL UNIT	51
F-6	MECHANICAL UNIT	51
F-7	MECHANICAL UNIT	64
	TOTAL:	242
PRESSUR	TEM DESIGNED BASED ON A SERVICE PRESSURE OF RE DROP OF 0.5" WC AND A TOTAL DEVELOPED LENG NG BASED ON THE 2021 IFGC TABLE 402.4(2).	

PLUMBING SPECIFICATION

THE WORK INCLUDES MODIFICATION TO THE EXISTING PLUMBING SYSTEM AND PROVIDING NEW MATERIALS, FITTINGS AND ACCESSORIES NECESSARY FOR A COMPLETE FUNCTIONING PLUMBING SYSTEM. THE WORK ALSO INCLUDES ROUGH-IN AND FINAL CONNECTIONS TO FOOD SERVICE EQUIPMENT AND BEVERAGE DISPENSING EQUIPMENT PROVIDED BY OTHERS. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND/OR ORDINANCES AND IS SUBJECT TO INSPECTION.

HOOK-UP CHARGES, PERMITS AND ALL OTHER EXPENSES RELATED TO A COMPLETE AND FUNCTIONIONG PLUMBING SYSTEM ARE INCLUDED AS A PART OF THIS SECTION.

THE INTENT OF THE DRAWINGS IS TO INDICATE THE GENERAL EXTENT OF WORK REQUIRED FOR THE PROJECT. THE DRAWINGS FOR PLUMBING WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, FIXTURES AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. REFER TO MANUFACTURER'S STANDARD ROUGH-IN DRAWINGS FOR PLUMBING FIXTURE INSTALLATION REQUIREMENTS. COMPLY WITH ALL APPLICABLE ADA INSTALLATION REQUIREMENTS.

COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE.

PIPING SYSTEMS - GENERAL: ALL PIPING SHALL BE RUN PARALLEL TO BUILDING LINES AND SUPPORTED AND ANCHORED AS REQUIRED TO FACILITATE EXPANSION AND CONTRACTION. ALL PIPING SHALL BE CONCEALED EXCEPT IN UNFINISHED SPACES. INSTALL AS REQUIRED TO MEET ALL CONSTRUCTION CONDITIONS AND TO ALLOW FOR INSTALLATION OF OTHER WORK SUCH AS DUCTS AND ELECTRICAL CONDUIT. AT ALL CONNECTIONS BETWEEN FERROUS PIPING AND NONFERROUS PIPING. PROVIDE AN ISOLATING DIELECTRIC UNION. ALL HANGERS SHALL BE COMPATIBLE WITH PIPING MATERIAL TO PREVENT CORROSION.F THE PROJECT SITE.

PROVIDE ALL FITTINGS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY TO FACILITATE THE PLUMBING SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT INDICATED.

FIXTURES/EQUIPMENT FURNISHED BY OTHERS: PLUMBING CONTRACTOR SHALL PROVIDE UTILITY CONNECTIONS REQUIRED SUCH AS WATER, GAS, AIR, SUPPLIES, WASTE OUTLET, TRAPS, ETCETERAS AT ALL PLUMBING TYPE FIXTURES OR EQUIPMENT FURNISHED BY OWNER, GENERAL CONTRACTOR, FOOD SERVICE CONTRACTOR, EQUIPMENT SUPPLIER, ETCETERA. INCLUDED ARE STOP VALVES, ESCUTCHEONS, AND CHROME PLATED BRASS TUBING WITH COMPRESSION FITTINGS.

SEWER AND WASTE PIPING: PROVIDE ALL DRAINS AND SEWERS WITHIN THE PROJECT SPACE WITH CONNECTION TO THE EXISTING DRAINAGE SYSTEMS ON-SITE. SANITARY WASTE AND GREASE WASTE DRAINAGE PIPING SHALL BE SERVICE-WEIGHT HUB AND SPIGOT TYPE CAST-IRON WITH NEOPRENE GASKET JOINT SYSTEM OR SERVICE-WEIGHT HUBLESS CAST-IRON PIPE AND FITTINGS AND CONNECTIONS. PUMPED WASTE SHALL BE SOLVENT WELDED PVC PIPE FROM THE PUMP TO THE POINT OF CONNECTION WITH THE EXISTING BUILDING DRAIN. ALL GRAVITY DRAINAGE PIPING SHALL BE UNIFORMLY PITCHED, 1/4" PER FOOT FOR PIPE SIZES 3" AND SMALLER, 1/8" PER FOOT FOR PIPE SIZES 4" AND LARGER, UNLESS OTHERWISE REQUIRED BY EXISTING CONDITIONS, OR INDICATED ON THE DRAWINGS.

VENTS: PROVIDE ALL VENTS WITHIN THE PROJECT SPACE WITH CONNECTION TO THE EXISTING VENT SYSTEMS ON-SITE. VENT PIPING SHALL BE SERVICE-WEIGHT HUB AND SPIGOT TYPE CAST-IRON WITH NEOPRENE GASKET JOINT SYSTEM OR SERVICE-WEIGHT HUBLESS CAST-IRON PIPE AND FITTINGS AND CONNECTIONS.

CONDENSATE AND INDIRECT DRAIN PIPING: TYPE M COPPER TUBING.

CLEANOUTS: PROVIDE CLEANOUTS AT THE END OF EACH HORIZONTAL RUN, AND AT THE BASE OF ALL VERTICAL WASTE AND DRAIN PIPES. CLEANOUTS SHALL BE OF THE SAME SIZE AS THE PIPES THEY SERVE, CONFORMING TO CODE REQUIREMENTS. PROVIDE SUITABLE WALL OR FLOOR CLEANOUTS WITH ACCESSORIES TO OBSCURE FROM VIEW.

WATER DISTRIBUTION PIPING: LAYOUT WATER PIPING SO THAT THE ENTIRE SYSTEM CAN BE DRAINED. ABOVE GRADE HOT AND COLD WATER PIPING SHALL BE 1/2" MINIMUM TYPE L COPPER TUBING WITH WROUGHT COPPER FITTINGS AND SWEAT CONNECTIONS OR CPVC WHERE ALLOWED BY AHJ. BELOW GRADE HOT AND COLD WATER PIPING SHALL BE 1/2" MINIMUM TYPE K COPPER TUBING WITH WROUGHT COPPER FITTINGS, AND SWEAT CONNECTIONS OR CPVC WHERE ALLOWED BY AHJ. PROVIDE WATER HAMMER ARRESTERS AT EACH FIXTURE OR GROUP OF FIXTURES AS REQUIRED. INSTALL CHROME PLATED BRASS ESCUTCHEON PLATES AT ALL PENETRATIONS THROUGH FINISHED SURFACES (INCLUDING CABINET INTERIORS). USE TIN-ANTIMONY SOLDER, 95/5 FOR ALL SWEAT FITTINGS OF COPPER PIPING.

PIPE INSULATION: RIDGE ONE-PIECE FIBERGLASS PIPE INSULATION WITH REQUIREMENTS COMPLYING WITH ASTM C 547, SELF-SEALING ADHESIVE LAP LONGITUDINAL JOINTS AND BUTT STRIPS FOR TRANSVERSE JOINTS. JACKETING SHALL CONFORM TO ASTM C 1136, TYPE I, MAXIMUM VAPOR TRANSMISSION RATING OF 0.02 PERM WHEN TESTED ACCORDING TO ASTM E 96, PROCEDURE A. (K VALUE) 0.25 BTU/IN./HR. * FT2 * °F AT 75°F MEAN TEMPERATURE WITH A R-VALUE OF R4. PROVIDE INSULATION THICKNESS AS

- DOMESTIC COLD WATER PIPING 1" AND SMALLER: 1/2" THICKNESS - DOMESTIC COLD WATER PIPING 1-1/4" - 2": 3/4" THICKNESS - DOMESTIC COLD WATER 2-1/2 AND LARGER: 1" THICKNESS - CONDENSATE PIPING: 1/2" THICKNESS - DOMESTIC HOT WATER PIPING 2" AND SMALLER: 1" THICKNESS - DOMESTIC HOT WATER PIPING 2" AND LARGER: 1-1/2" THICKNESS - HOT WATER AND WASTE PIPING BELOW HANDICAP LAVATORIES/SINKS

PIPE INSULATION: FLEXIBLE, ONE PIECE, EXPANDED CLOSED-CELL ELASTOMERIC PIPE INSULATION WITH REQUIREMENTS COMPLYING WITH ASTM C 518, SELF-SEALING, WITH A MAXIMUM VAPOR TRANSMISSION RATING OF 0.20 PERM WHEN TESTED ACCORDING TO ASTM E 96. THERMAL CONDUCTIVITY (K VALUE) SHALL NOT EXCEED 0.27 BTU/IN./HR. * FT2 * °F AT 75°F MEAN TEMPERATURE, WITH A MINIMUM R-VALUE OF R3.7, AND INSULATION AND JACKET SHALL BE RATED FOR OPERATING TEMPERATURES FROM 40°F TO

180°F. PROVIDE INSULATION THICKNESS AS INDICATED. - DOMESTIC COLD WATER PIPING 2" AND SMALLER: 1/2" THICKNESS - CONDENSATE PIPING: 1/2" THICKNESS - DOMESTIC HOT WATER PIPING 2" AND SMALLER: 1/2" THICKNESS

SHUTOFF VALVES, WITH UNIONS SHALL BE PROVIDED FOR SERVICE TO EACH PLUMBING FIXTURE. FOOD SERVICE EQUIPMENT ITEM OR OTHER EQUIPMENT ITEM, TO FACILITATE ISOLATION FOR REPAIR OR REPLACEMENT. VALVES SHALL BE EQUAL TO CRANE #9302-9322 BALL VALVE. CONSTRUCTION - TWO PIECE, BRONZE BODY, FULL PORTED, CHROME PLATED BRASS BALL, REPLACEABLE "TEFLON OR TFE" SEATS AND SEALS. RATING - 150 PSI WSP, 600 PSI WOG. CONNECTIONS - SOLDER OR THREADED ENDS TO MATCH PIPING. STANDARDS COMPLIANCE - BRONZE OR BRASS VALVES: MSS-SP-110.

ACCESS PANELS SHALL BE PROVIDED WHERE CONCEALED CONTROL DEVICES, VALVES, ETCETERA ARE CONCEALED WITHIN WALLS. WHERE ACCESS FOR ADJUSTMENT AND MAINTENANCE IS POSSIBLE THROUGH LAY-IN SUSPENDED CEILINGS, ACCESS PANELS ARE NOT REQUIRED.

INSTALLATION: THOROUGHLY CLEAN ITEMS BEFORE INSTALLATION. CAP PIPE OPENINGS TO EXCLUDE DIRT UNTIL FIXTURES ARE INSTALLED AND FINAL CONNECTIONS HAVE BEEN MADE. PROCEED AS RAPIDLY AS CONSTRUCTION WILL PERMIT. SET FIXTURES LEVEL AND IN PROPER ALIGNMENT. INSTALL SUPPLIES IN PROPER ALIGNMENT WITH FIXTURES. INSTALL SILICONE SEALANT BETWEEN FIXTURES AND ADJACENT MATERIAL, FOR SANITARY JOINT, AND OMIT ESCUTCHEONS.

REPAIR EXISTING PLUMBING SYSTEM COMPONENTS DAMAGED BY CONSTRUCTION OPERATIONS AND RESTORE TO ORIGINAL CONDITIONS.

TEST WATER SYSTEM UNDER 150 PSIG HYDROSTATIC PRESSURE, FOR FOUR (4) HOURS MINIMUM. WHEN TESTING INDICATES MATERIALS OR WORKMANSHIP IS DEFICIENT, REPLACE OR REPAIR AS REQUIRED, AND REPEAT TEST UNTIL STANDARDS ARE ACHIEVED.

TEST SANITARY DRAINAGE AND VENT SYSTEM BY FILLING WITH WATER, WITH ALL POINTS IN THE SYSTEM BEING SUBJECT TO PRESSURE OF AT LEAST 10' OF WATER. WATER LEVEL SHALL REMAIN STATIONARY FOR A PERIOD OF ONE HOUR, WITHOUT ANY PIPE OR JOINT LEAKAGE. IF TESTING INDICATES DEFICIENTS REPLACE OR REPAIR AS REQUIRED, AND REPEAT TEST UNTIL STANDARDS ARE ACHIEVED.

PROVIDE A COMPLETE GAS PIPING SYSTEM TO SERVE KITCHEN EQUIPMENT FURNISHED BY OTHERS. AS NOTED ON THE DRAWINGS. PROVIDE EITHER THREADED STEEL OR MALLEABLE IRON PIPE WITH MALLEABLE FITTINGS OR WELDED STEEL. PROVIDE ALL UNIONS, SHUT-OFF VALVES AND DIRT LEGS REQUIRED BY NFPA-54 AND GOVERNING LOCAL CODES AND AT EACH GAS APPLIANCE CONNECTION. PROVIDE ALL TESTS, METERS, INSPECTIONS, HANGERS AND EQUIPMENT CONNECTIONS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM. PAINT GAS LINES COORDINATE COLOR WITH OWNER.

PLUMBING CONTRACTOR TO HAVE A MINIMUM OF 5 YEARS EXPERIENCE AND BE LICENSED.

ALL SCHEDULING OF WORK ON SHUT DOWNS SHALL BE COORDINATED WITH THE BUILDING OWNERS/ENGINEER 72 HOURS IN ADVANCE OF ANY WORK

GENERAL PLUMBING NOTES

- REFER TO PLUMBING SPECIFICATION ELSEWHERE IN DRAWINGS FOR FURTHER INFORMATION AND REQUIREMENTS FOR PLUMBING
- CONTRACTOR. CONTRACTORS AND SUB-CONTRACTORS SHALL CAREFULLY REVIEW THE CONSTRUCTION DOCUMENTS. INFORMATION REGARDING THE COMPLETE WORK IS DISPERSED THROUGHOUT THE DOCUMENT SET
- THE COMPLETE DOCUMENT SET. COORDINATE WITH WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF OWNER, AND WITH CONSTRAINTS OF EXISTING CONDITIONS OF PROJECT SITE. PROVIDE PIPE RISES, DROPS, AND OFFSETS AS REQUIRED FOR FIELD INSTALLATION AND TRADE COORDINATION. NOTIFY ARCHITECT OF DISCREPANCIES BEFORE

AND CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO

- STARTING WORK. DRAWINGS FOR PLUMBING 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 PIPING, CONNECTIONS, FITTINGS, VALVES, OFFSETS AND ALL MATERIALS NECESSARY FOR A COMPLETE SYSTEM.
- ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE GOVERNING
- AUTHORITY. PURCHASE ALL PERMITS ASSOCIATED WITH THE WORK. OBTAIN ALL INSPECTIONS REQUIRED BY CODE.
- PROVIDE WATER HAMMER ARRESTORS THROUGHOUT WATER SYSTEMS AS REQUIRED PER "WATER HAMMER ARRESTERS" DETAIL.
- PROVIDE BACKFLOW PREVENTION DEVICES IN WATER LINES FEEDING PLUMBING FIXTURES AND EQUIPMENT AS SHOWN ON PLANS AND ELSEWHERE AS REQUIRED BY AUTHORITY HAVING JURISDICTION. USE DEVICES OF APPROVED MANUFACTURER AND TYPE IN ACCORDANCE WITH REQUIREMENTS OF AUTHORITY HAVING JURISDICTION.
- VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. IF PRESSURE AT BUILDING ENTRY PRIOR TO ALL LOCALLY REQUIRED DEVICES IS LESS THAN 60 PSIG STATIC, CONTACT OWNER'S REPRESENTATIVE. IF PRESSURE EXCEEDS 80 PSIG, PROVIDE PRESSURE REDUCING VALVE SET AT 80 PSIG.
- SUSPEND HORIZONTAL SERVICE PIPING FROM UNDERSIDE OF ROOF OR FLOOR STRUCTURE UNLESS OTHERWISE INDICATED. INSTALL PIPING AS HIGH AS POSSIBLE. EXTEND PIPING DOWN IN WALLS, PARTITIONS AND CHASES TO SERVE FIXTURES AND EQUIPMENT.
- VERIFY SERVICE CONNECTION POINTS, SIZES, ELEVATIONS AND METERING LOCATIONS FOR PROJECT WITH LOCAL UTILITY COMPANIES AND/OR CIVIL ENGINEER, AS APPLICABLE.

USE OF COMBUSTIBLE MATERIALS IS NOT ALLOWED IN RETURN AIR

WATER ENTRY SERVICE PIPING, NEW AND/OR REVISED, CONTRACTOR

- 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 E84.
- SHALL ENSURE AND PROVIDE MINIMUM 10'-0" LINEAR FEET OF METAL PIPING MATERIAL BELOW GRADE IN CONTACT WITH EARTH FOR CONNECTION OF ELECTRICAL SERVICE GROUNDING.
- . ALL PLUMBING LINES SHALL BE JET SPRAYED, CLEANED AND CHLORINATED. GREASE TRAPS SHALL BE PUMPED AND CLEANED. GC TO PROVIDE PROOF OF COMPLIANCE.

PLUMBING SYMBOLS LEGEND

ABBREVIATIONS:

AFF/AFG ABOVE FINISHED FLOOR/GRADE BACKFLOW PREVENTER CO CLEANOUT

FFCO/FGCO FLUSH FLOOR/GRADE CLEANOUT FOOD SERVICE EQUIPMENT CONTRACTOR

INDIRECT WASTE

PLUMBING CONTRACTOR ROUGH-IN TYPICAL

UNLESS NOTED OTHERWISE VTR VENT THRU ROOF WCO WALL CLEANOUT

LINETYPES: ———— EXISTING PLUMBING LINE - SEE DRAWING

EXISTING

—— – —— COLD WATER (CW) — — — — COLD WATER (CW) - BELOW SLAB/GRADE ——FW—— FILTERED WATER SUPPLY (FW) ——SW—— SOFT COLD WATER (SW)

FIRE PROTECTION (F) (SPRINKLER/STANDPIPE) —— – – HOT WATER (HW)

TEMPERED HOT WATER (TW) —— – – – HOT WATER RETURN (HWR) ———G——— GAS LINE (G) ——D—— CONDENSATE LINE (D)

— — PLUMBING VENT (V) **— — — PLUMBING VENT (V) - BELOW SLAB/GRADE** SANITARY WASTE (SAN) - BELOW SLAB/GRADE

CONNECT TO EXISTING

GENERAL REFERENCES/NOTATIONS:

PLAN NOTE DESIGNATION # CIRCLE NOTE DESIGNATION FIXTURE/EQUIPMENT NOTE DESIGNATION FIRE SPRINKLER NOTE DESIGNATION

REVISION DESIGNATION HVAC EQUIPMENT DESIGNATION

PIPE SYMBOLS:

→O+→O+ TEE TURNING UP/DOWN } SHUTOFF VALVE (BALL TYPE) **├──** CHECK VALVE

} BALANCING VALVE ————] END CAP

SYMBOLS LEGEND NOTES:
REFER TO SPECIFICATIONS AND PLAN NOTES FOR DETAILED DESCRIPTION OF ALL DEVICES SHOWN IN THIS SCHEDULE, PROVIDED BY THIS CONTRACTOR.

12/01/23

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D Dialectic

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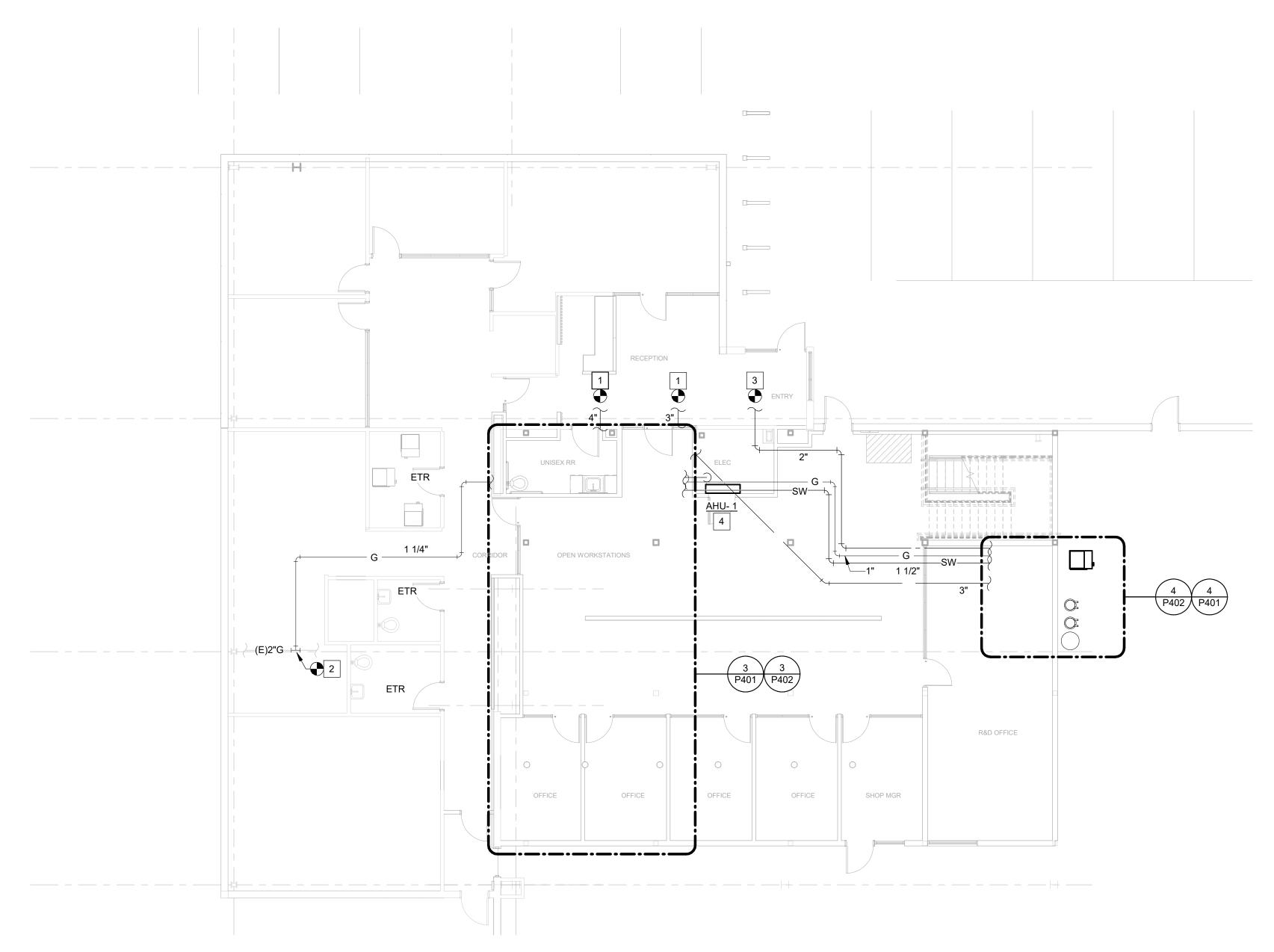
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PLUMBING NOTES LEGENDS AND **SPECIFICATIONS**

2 OVERALL PLUMBING PLAN - LV 2



1 OVERALL PLUMBING PLAN - LV 1

1/8" = 1'-0"

PLUMBING KEY NOTES

CONNECT NEW SANITARY PIPING TO EXISTING SANITARY PIPING. FIELD VERIFY EXACT LOCATION OF CONNECTION AND ROUTING REQUIREMENTS.

- 2 CONNECT NEW GAS PIPING TO EXISTING GAS PIPING. FIELD VERIFY EXACT LOCATION OF CONNECTION AND ROUTING REQUIREMENTS. GAS SYSTEM DESIGNED BASED ON A SERVICE PRESSURE OF 7" WC WITH A PRESSURE DROP OF 0.5" WC AND A TOTAL DEVELOPED LENGTH OF 150 FEET. PIPE SIZING BASED ON THE 2021 IFGC TABLE 402.(2).
- CONNECT NEW WATER PIPING TO EXISTING WATER PIPING. FIELD VERIFY EXACT LOCATION OF CONNECTION AND ROUTING REQUIREMENTS.
- 4 CONNECT TO AHU-1 PER "AIR HANDLING UNIT CONDENSATE" DETAIL.

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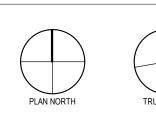
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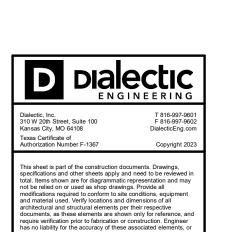




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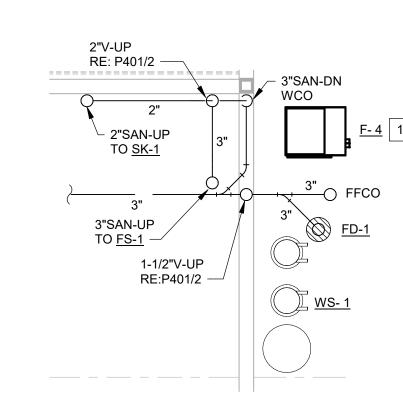
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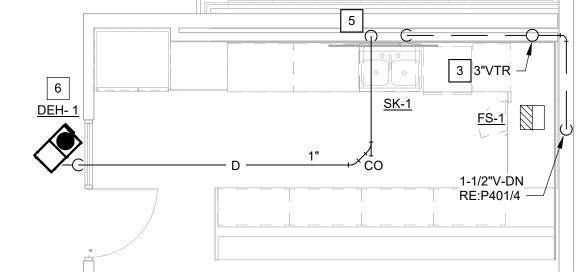
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PLUMBING PLANS

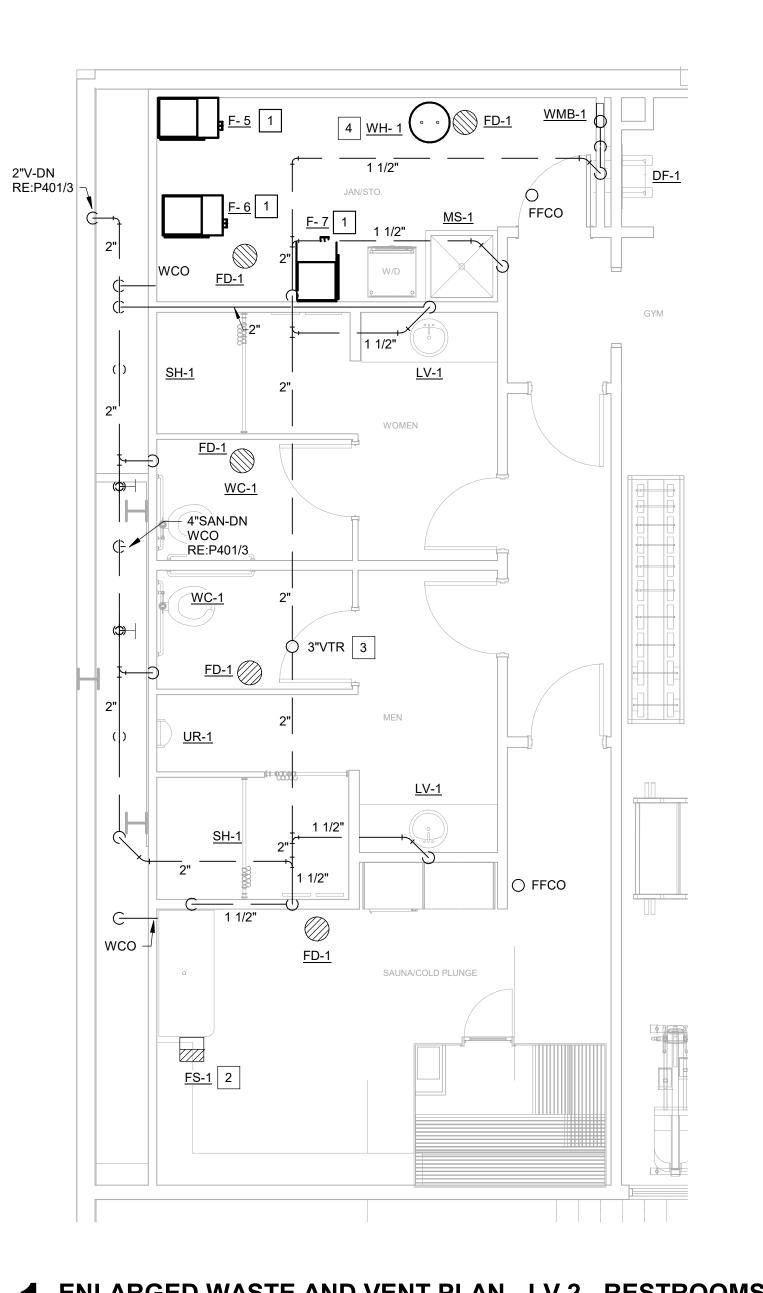
3 ENLARGED WASTE AND VENT PLAN - LV 1 - RESTROOMS



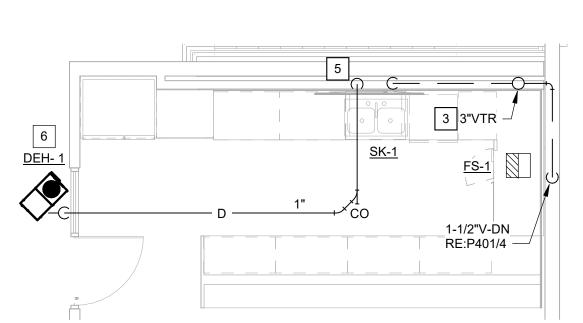
4 ENLARGED WASTE AND VENT PLAN - LV 1 - MECHANICAL ROOM 1/4" = 1'-0"



2 ENLARGED WASTE AND VENT PLAN - LV 2 - LOUNGE
1/4" = 1'-0"



1 ENLARGED WASTE AND VENT PLAN - LV 2 - RESTROOMS 1/4" = 1'-0"





PLUMBING KEY NOTES

CONNECT CONDENSATE DRAIN TO FURNACE PER "GAS FURNACE CONNECTION" DETAIL. ROUTE CONDENSATE TO DRAIN TO NEAREST FLOOR DRAIN PER "INDIRECT DRAIN"

PROVIDE FLOOR SINK IN ACCESSIBLE LOCATION FOR COLD PLUNGE DRAIN.

PROVIDE SANITARY VENT THROUGH ROOF PER "VENT THRU ROOF (VTR)" DETAIL. LOCATE VENT MINIMUM OF 20'-0" AWAY FROM AIR INTAKES ON ROOF, UNLESS APPROVED BY ENGINEER PRIOR TO INSTALLATION.

ROUTE WATER HEATER DRAINS TO DRAIN TO NEAREST FLOOR DRAIN PER "ELECTRIC WATER HEATER WITH PUMP"

ROUTE CONDENSATE TO SINK TAILPIECE PER "DISCHARGE TO TAILPIECE" DETAIL.

CONNECT TO DEH-1 PER "CONDENSATE DRAIN" DETAIL. FIELD VERIFY POINT OF CONNECTION TO UNIT AND ROUTING REQUIREMENTS. ROUTE CONDENSATE PIPING PER

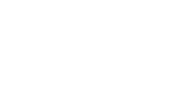
DETAIL.

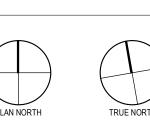
"INDIRECT DRAIN" DETAIL.

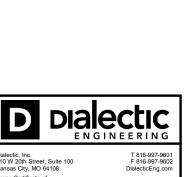


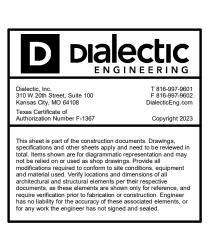


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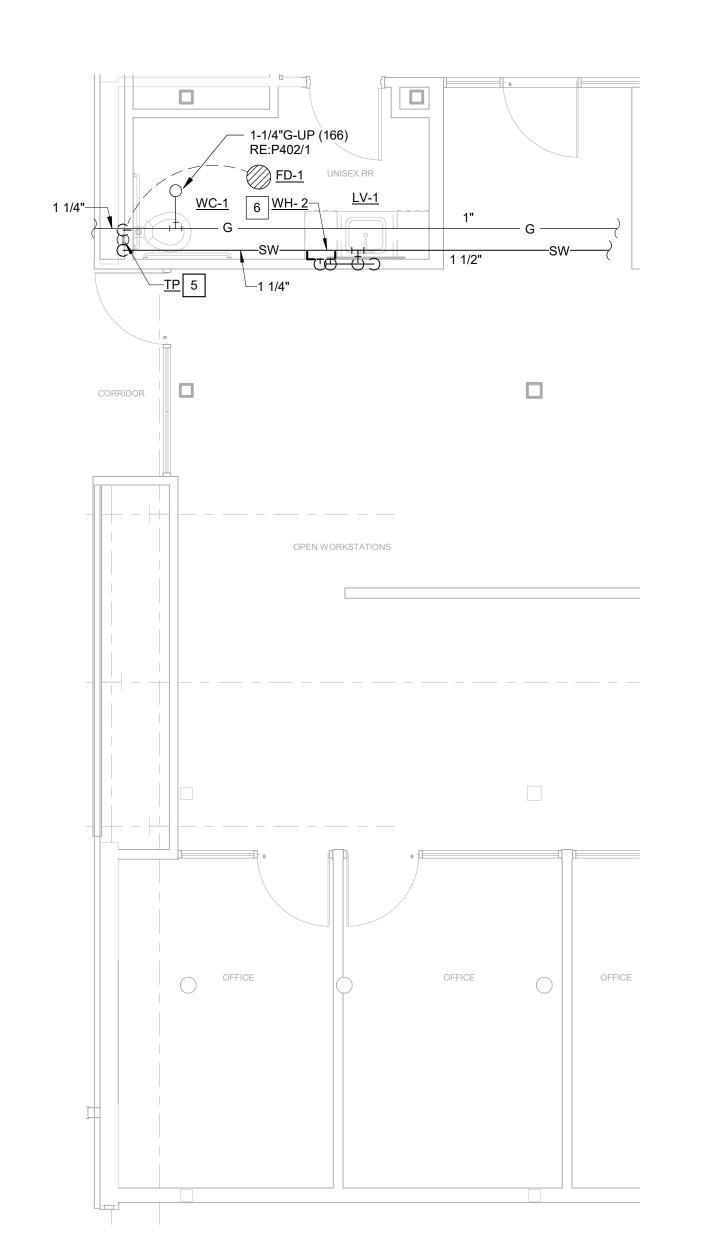




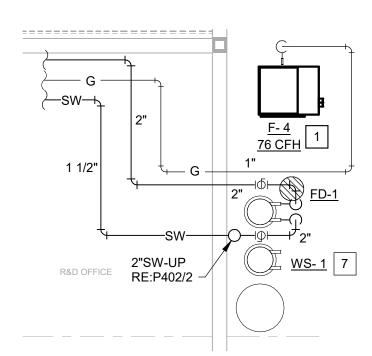


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PLUMBING ENLARGED WASTE AND VENT PLANS

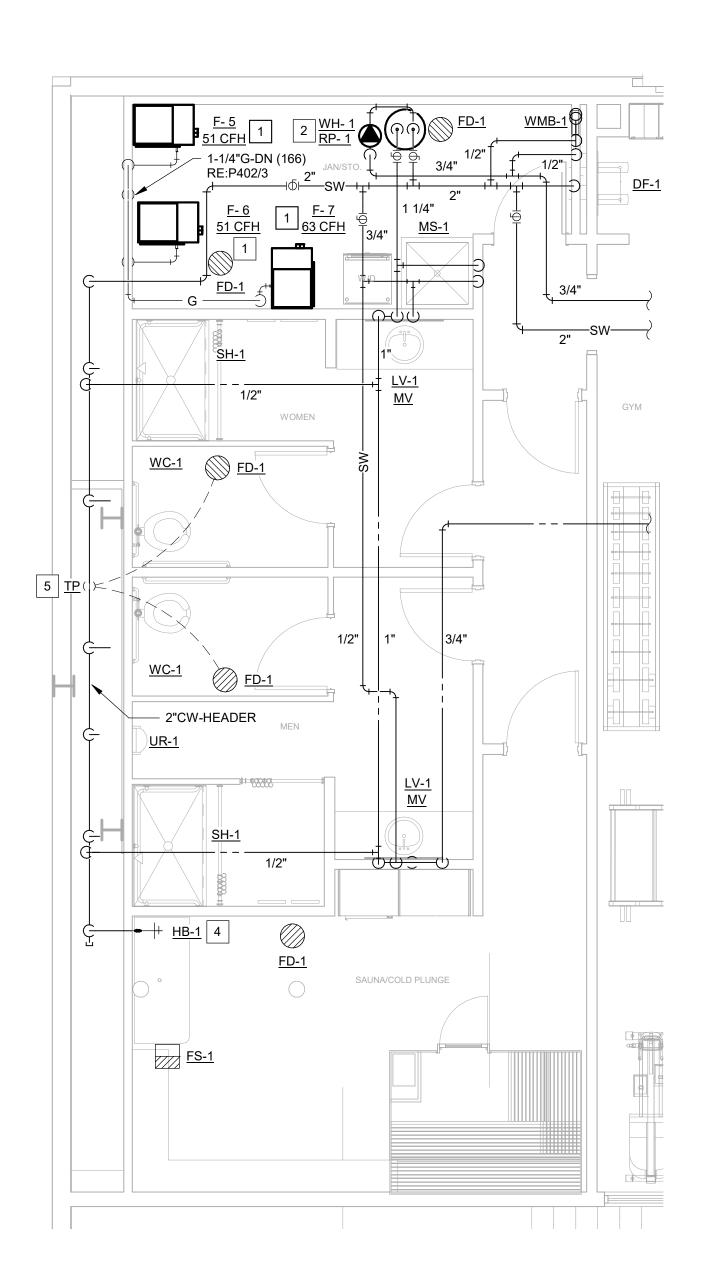


3 ENLARGED WATER AND GAS PLAN - LV 1 - RESTROOMS

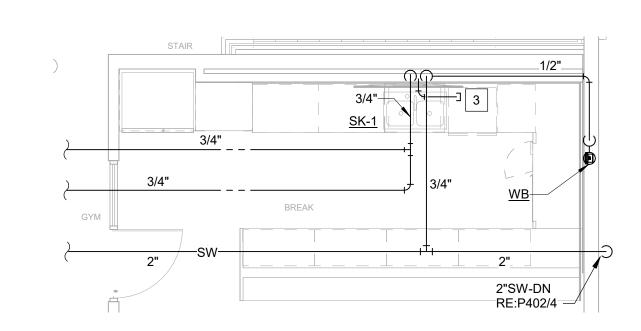


4 ENLARGED WATER AND GAS PLAN - LV 1 - MECHANICAL ROOM

1/4" = 1'-0"



1 ENLARGED WATER AND GAS PLAN - LV 2 - RESTROOMS

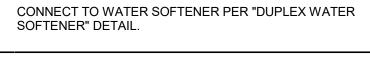


2 ENLARGED WATER AND GAS PLAN - LV 2 - LOUNGE
1/4" = 1'-0"

PLUMBING KEY NOTES

- 1 CONNECT GAS TO FURNACE PER "GAS FURNACE CONNECTIONS DETAIL. FIELD VERIFY CONNECTION REQUIREMENTS.
- 2 CONNECT TO WATER HEATER AND PUMP PER "ELECTRIC WATER HEATER WITH PUMP" DETAIL. ROUTE T&P RELIEF VALVE TO DRAIN TO NEAREST FLOOR DRAIN.
- 3 PROVIDE 1/2" HOT WATER LINE TO OWNER PROVIDED DISHWASHER.
- 4 MOUNT HOSE BIBB AT 30" AFF FOR FILLING THE COLD PLUNGE. VERIFY FINAL MOUNTING HEIGHT WITH OWNER
- PRIOR TO INSTALLATION.

 5 CONNECT TO TRAP PRIMER PER "TRAP PRIMER" DETAIL.
- CONNECT TO INSTANTANEOUS WATER HEATER PER
- "INSTANTANEOUS WATER HEATER" DETAIL.



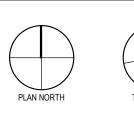


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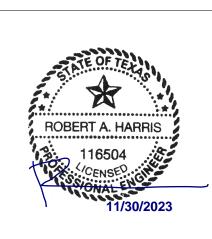
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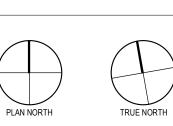
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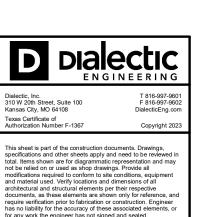
PLUMBING ENLARGED WATER AND GAS PLANS

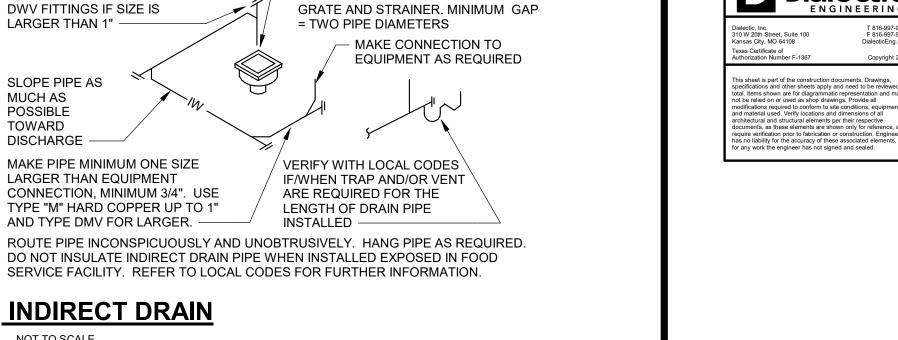


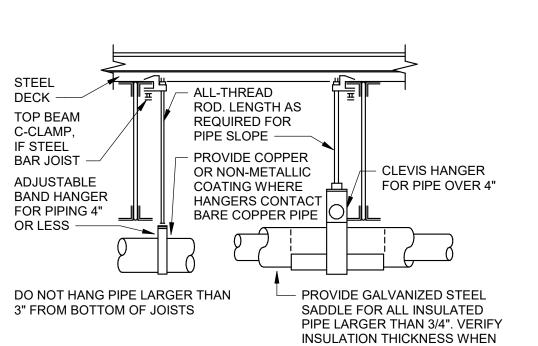


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COLD WATER SUPPLY TO WATER HEATER -

CHECK VALVE (TYP.) -

HOT WATER TO

FIXTURES AS

PIPE UNIONS,

(DIELECTRIC

DISSIMILAR

METALS) —

REQUIRED FOR

ELECTRIC WATER

SPECIFICATIONS

HEATER. REFER TO

PLUMBING FIXTURE

SCHEDULE ---

MASONRY UNITS -

LOCAL AUTHORITIES.

COLD WATER SUPPLY

TO WATER HEATER -

DISSIMILAR METALS -

BUTYL DIAPHRAGM -

AIR CHARGING VALVE

PRESSURE TO MATCH

WATER PRESSURE, THEN

2 EXPANSION TANK

NOT TO SCALE

PROVIDE CLEANOUTS IN

DWV FITTINGS IF SIZE IS

LARGER THAN 1" -

SLOPE PIPE AS

MUCH AS

POSSIBLE

TOWARD

DISCHARGE

TURNS/ENDS OF PIPE. USE

MAKE PIPE MINIMUM ONE SIZE

CONNECTION, MINIMUM 3/4". USE

AND TYPE DMV FOR LARGER. -

TYPE "M" HARD COPPER UP TO 1"

LARGER THAN EQUIPMENT

FILL TANK WITH AIR

OPEN VALVE -

PIPE UNION:

DIELECTRIC IF

SET WATER

HEATER ON

SHOWN

ON PLANS -

- MINIMUM 12" ABOVE ROOF

ROOF DECK

- ANCHOR PIPE TO ROOF DECK

OR JOISTS WITH U-BOLT

CONNECTORS ON CAST

TO DECK OR JOIST

- HUBLESS PIPE

IRON PIPE

AROUND PIPE AND ANGLE

IRON WELDED OR SCREWED

SHUT-OFF VALVES (TYP.)

STRAP-ON AQUASTAT

LOWER THAN HEATER

- RECIRCULATION PUMP

TANK IF REQ'D SEE

SET 5 DEGREES

TEMPERATURE

TO EXPANSION

- PROVIDE A 210° F TEMPERATURE

AND 150 PSI PRESSURE RELIEF

VALVE WITH TEST LEVER SIZED

WITH AGA/CGA TEMPERATURE

STEAM RATING 10% OVER

DISCHARGE LINE. FULL SIZE

OF VALVE OUTLET TO END

JANITOR'S SINK WITH 6 INCH

OVER FLOOR DRAIN OR

- HARD COPPER RELIEF

HEATER INPUT

- DRAIN VALVE

- PIPE HANGER

NEXT TO PIPE TEE

WELDED STEEL

EXPANSION TANK WITH

POLYPROYLENE LINING

- DISCHARGE INTO CENTER HOLE OF

AIR GAP SUFFICIENT TO REMOVE

GRATE OF WASTE RECEPTACLE WITH

PIPING ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST TO SUIT FIELD

CONDITIONS. REFER TO FLOOR PLAN FOR PIPE SIZES. SET WATER HEATER

THERMOSTAT AT 120° FAHRENHEIT. PROVIDE SEISMIC STRAP OR BRACING

AND FLEXIBLE CONNECTORS TO WATER CONNECTIONS IF/AS REQUIRED BY

ELECTRIC WATER HEATER WITH PUMP

PIPING ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST TO SUIT

FIELD CONDITIONS. MAKE PIPE SAME SIZE AS TANK FITTING.

FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION

PROCEDURE. VERIFY PROPER OPERATION WHEN INSTALLED

SPACE WATER SYSTEM OR BUILDING WATER SYSTEM.

EXPANSION TANK INSTALLATION SHALL OCCUR ONLY WHEN THERE IS

A BACKLOW PREVENTION DEVICE INSTALLED WITHIN THE TENANT

- STRAINER

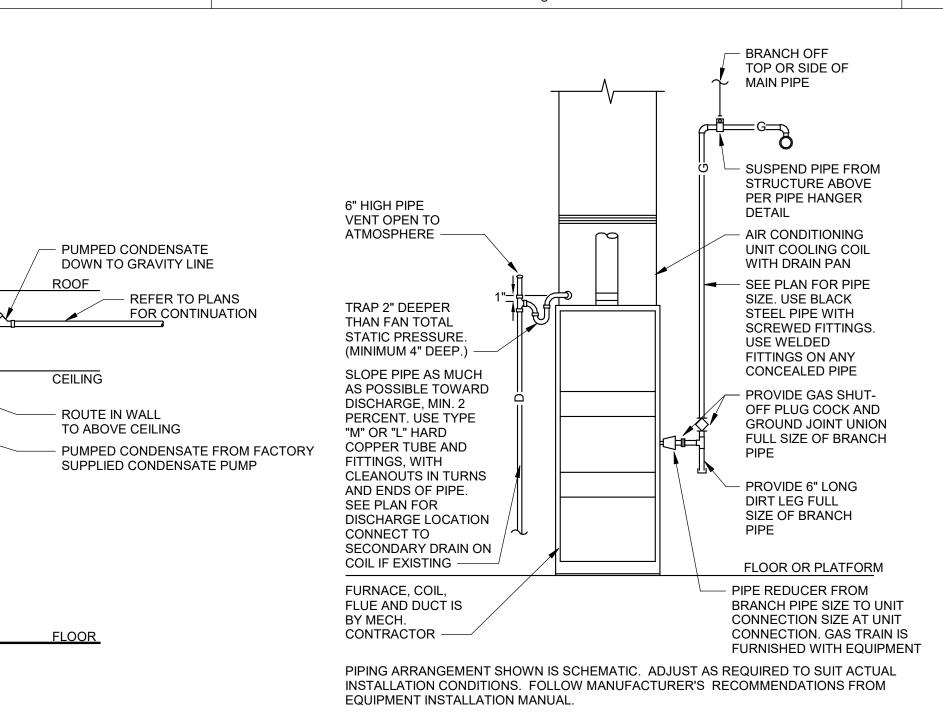
DETAIL

PROVIDE UPPER ATTACHMENT AS REQUIRED FOR CASES NOT SHOWN HERE. DO NOT INSTALL HANGER INSIDE INSULATION OR OTHERWISE PENETRATE VAPOR BARRIER. DO NOT HANG ONE PIPE FROM ANOTHER EXCEPT IN CHASES. TRAPEZE HANGERS MAY BE USED FOR MULTIPLE PARALLEL PIPES. HANGER SPACING FOR PIPE SIZE: COPPER: 4"=12'-0"; 3"=11'-0"; 2-1/2"=10'-0"; 2"=9'; 1-1/2"= 8'-0"; 1-1/4"=7'-0"; 3/4"=6'; 1/2"=5'. CAST IRON: 10' AND ONE NEAR ALL JOINTS. STEEL: 4"=14'; 3"=12'; 2-1/2"=11'; 2"=10'; 1-1/2"=9'; 1"=7', 3/4"=6'; 1/2"=5'. LOCATE HANGERS AS CLOSE AS POSSIBLE TO TURNS AND TEES OF PIPE. PROVIDE SUPPLEMENTARY STEEL STRUTS BETWEEN JOISTS IF REQUIRED, LOCATE PIPE AGAINST SWAYING DUE TO CHANGES IN WATER VELOCITY. PROVIDE SEISMIC BRACING IF/AS REQUIRED BY LOCAL AUTHORITIES. CHAINS OR PERFORATED STRAP IRON OR STEEL IS NOT ACCEPTABLE. REFER TO CODES AND

PIPE HANGERS

NOT TO SCALE

SPECIFICATIONS FOR FURTHER INFORMATION.



13 AIR HANDLING UNIT CONDENSATE NOT TO SCALE

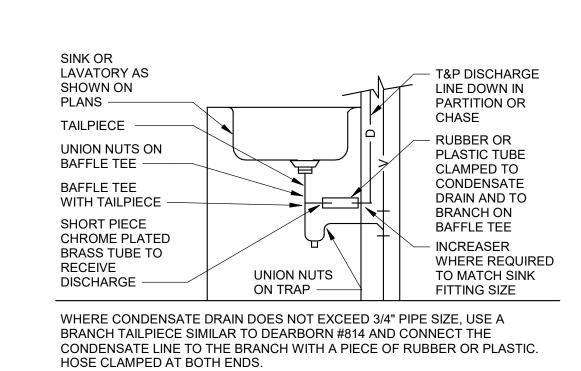
VERIFY MAXIMUM

ALLOWABLE HEAD

WITH CONDENSATE

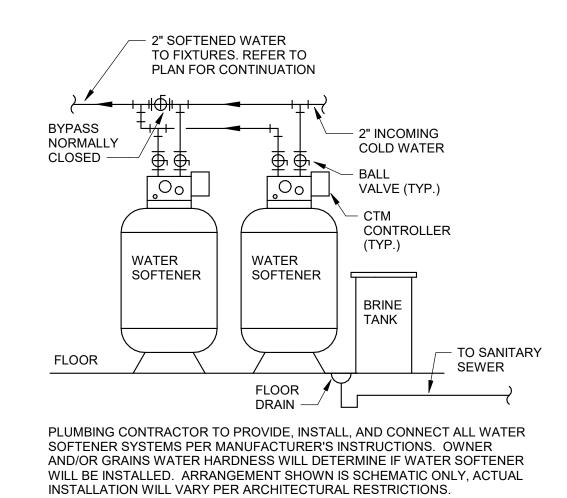
PUMP MANUFACTURER -

AIR HANDLING UNIT

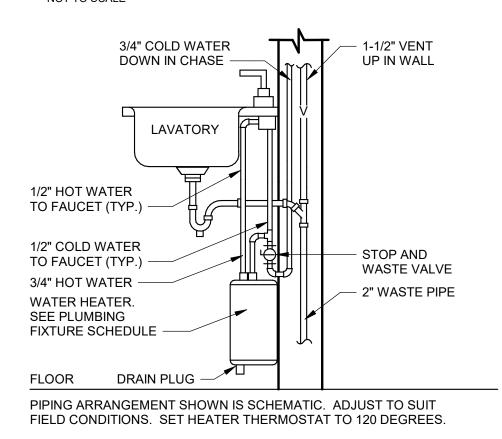


14 COND. DISCHARGE TO TAILPIECE
NOT TO SCALE

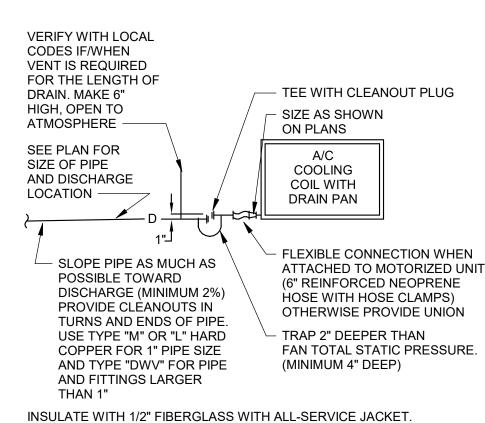
GAS FURNACE CONNECTIONS



10 DUPLEX WATER SOFTENER NOT TO SCALE



11 INSTANTANEOUS WATER HEATER NOT TO SCALE



ARRANGEMENT SHOWN IS SCHEMATIC. COORDINATE WITH OTHER ITEMS. DISCHARGE INTO RECEPTOR WITH AIR GAP OF TWO PIPE DIAMETERS. REFER TO LOCAL CODE FOR INDIRECT DRAIN REQUIREMENTS. VERIFY ROUTING OF CONDENSATE PIPE BEFORE HANGING UNIT.

12 CONDENSATE DRAIN NOT TO SCALE

5 VENT THROUGH ROOF (VTR)

REFER TO PLANS FOR VTR PIPE SIZES AND LOCATIONS. LOCATE VTR A

OR FRESH AIR INTAKE, AND ONE FOOT FROM ANY VERTICAL SURFACE.

PROVIDE 1" FIBERGLASS INSULATION WITH ALL-SERVICE JACKET ON VENT

PIPE INSIDE BUILDING WITHIN SIX FEET OF VENT THRU ROOF LOCATION.

VERIFY FLASHING AND COUNTERFLASHING WITH ROOFING CONTRACTOR.

MINIMUM OF 20 FEET HORIZONTAL (UNLESS APPROVED BY ENGINEER PRIOR

TO INSTALLATION) OR THREE FEET VERTICAL ABOVE ANY BUILDING OPENING

PROVIDE ONE PIECE SPUN

GRADUATED STEPPED PVC

STAINLESS STEEL CLAMPS. SET

ROOF INSULATION

ALUMINUM BASE WITH.

BOOT, AND ADJUSTABLE

BASE IN BED OF MASTIC -

REFER TO ARCHITECT'S

APPLICATION OF VENT

INSTALLATION WITH

ROOFING MATERIAL

PROVIDE SLEEVE

TYPE OF ROOF DECK -

PROVIDE PIPE INCREASER

WHERE REQUIRED TO

MAKE MINIMUM 3" VENT

IF REQUIRED BY

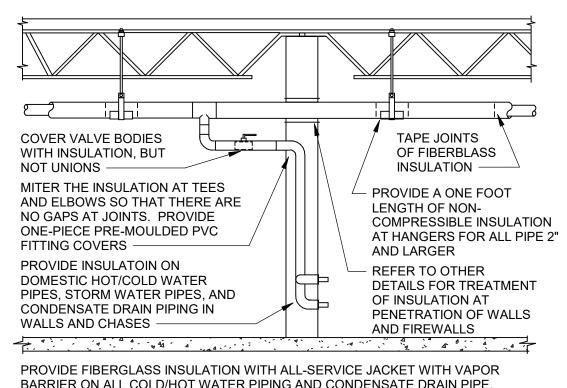
MINIMUM 12"

BELOW ROOF -

THRU ROOF —

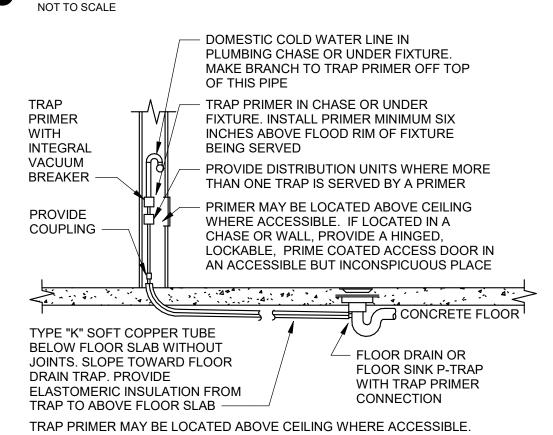
DRAWING FOR

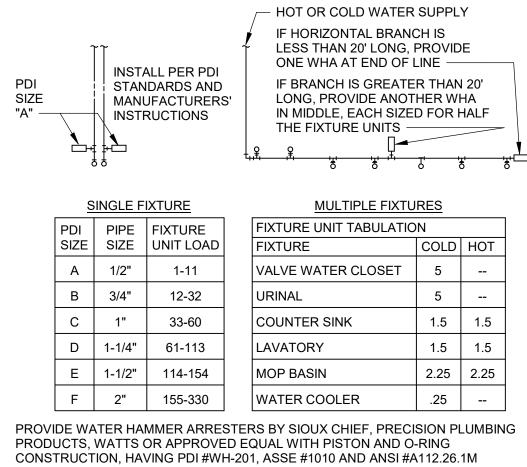
PIPE BOOT



BARRIER ON ALL COLD/HOT WATER PIPING AND CONDENSATE DRAIN PIPE. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION REGARDING INSULATION. INSTALL ALL ITEMS PER SPECIFICATIONS AND MANUFACTURERS INSTRUCTIONS. MAINTAIN VAPOR BARRIER ON COLD PIPING BY MEANS OF SEALANT AND TAPE. FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES SHALL NOT EXCEED 25/50. SEAL EXPOSED ENDS OF FIBERGLASS INSULATION WITH

6 PIPE INSULATION DETAIL NOT TO SCALE





CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL INLINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE UNITS PER TABLES ABOVE.

8 WATER HAMMER ARRESTORS NOT TO SCALE



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PLUMBING DETAILS

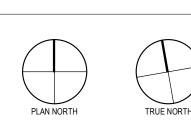
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total. Items shown are for diagrammatic representation and may not be relied on or used as shop drawings. Provide all modifications required to conform to site conditions, equipment and material used. Verify locations and dimensions of all architectural and structural elements per their respective documents, as these elements are shown only for reference, and require verification prior to fabrication or construction. Engineer has no liability for the accuracy of these associated elements, or for any work the engineer has not signed and sealed.

12/01/23

Project Number 23-01-014

Drawn By WRD

Checked By JMB

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PLUMBING RISER DIAGRAMS