BRASAO REMODEL

CONCEPT RENDERING FOR REFERENCE ONLY

SYMBOL LEGEND

1 / A3.0	ELEVATION	ROOM NAME 1.01 200 SF	ROOM NAME NUMBER AREA
1 / A3.0	BUILDING SECTION	1.01	DOOR NUMBER
1 / A3.0	WALL SECTION	1.01	WINDOW TYPE
1 / A3.0	SECTION DETAIL	A1	PARTITION TYPE
1 / A3.0	DETAIL	A	PLUMBING FIXTURE TYPE
		TA-1	TOILET ACCESSORY TYPE

PROJECT TEAM

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SAN ANTONIO, TX 78232

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INTERIOR DESIGN E G D + COMPANY, LLC

ELA GANCAYCO
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GENERAL NOTES

1. ALL WORK SHALL BE IN CONFORMANCE WITH APPLICABLE BUILDING CODES, AND TO INCLUDE ALL REQUIREMENTS OF OTHER AGENCIES HAVING JURISDICTION.
2. EXAMINATION OF THE SITE AND PORTIONS THEREOF THAT AFFECT THIS WORK SHALL BE MADE BY THE GENERAL CONTRACTOR, WHO SHALL COMPARE EXISTING CONDITIONS WITH THE CONTRACT DOCUMENTS AND SATISFY HIM/HERSELF AS TO THE EXISTING CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED. CONTRACTOR SHALL AT SUCH TIME ASCERTAIN AND VERIFY THE LOCATIONS OF EXISTING STRUCTURES.
3. THE CONTRACT DOCUMENTS DESCRIBE DESIGN INTENT, AND ARE NOT INTENDED TO BE ALL INCLUSIVE. CONTRACTOR IS RESPONSIBLE FOR MEANS AND METHODS TO PROVIDE COMPLETE OPERATIONAL SYSTEMS AND INSTALLATIONS. NO CLAIMS FOR ADDITIONAL WORK WILL BE AWARDED FOR WORK WHICH IS DESCRIBED IN THESE DOCUMENTS OR WHICH IS REASONABLY INFERABLE FROM THEM.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THOROUGH COORDINATION OF TRADES. ALL CLAIMS FOR ADDITIONAL WORK WILL NOT BE AWARDED FOR ANY AND ALL WORK RELATED TO SUCH COORDINATION.
5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND CONDITIONS AT THE SITE, CONFIRM THAT THE WORK IS BUILDABLE AS SHOWN, AND NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH ANY AND ALL WORK IN QUESTION.
6. ALL DIMENSIONS ARE TO FINISH FACE OF CONCRETE, CENTERLINE OF STEEL, FACE OF STUD OR CASEWORK UNLESS NOTED OTHERWISE. DIMENSIONS NOTED AS "CLR" MUST BE PRECISELY MAINTAINED. DIMENSIONS ARE NOT ADJUSTABLE WITHOUT ARCHITECTS APPROVAL UNLESS NOTED AS "+/-". VERIFY DIMENSIONS MARKED "V.I.F." PRIOR TO COMMENCEMENT OF CONSTRUCTION, AND NOTIFY ARCHITECT OF ANY INCONSISTENCIES.
7. ALL DIMENSIONS, NOTES AND DETAILS SHOWN ON ONE PORTION OF A DRAWING SHALL APPLY TYPICALLY TO ALL OPPOSITE HAND AND/OR CONDITIONS UNLESS OTHERWISE NOTED.
8. "ALIGN" SHALL MEAN TO ACCURATELY LOCATE FINISH FACES IN THE SAME PLANE.
9. THE CONTRACT DOCUMENTS ARE COMPLIMENTARY. WHAT IS SHOWN OR REFERRED TO PARTIALLY OR WHOLE ON ANY SHALL BE PROVIDED AS THOUGH SHOWN ON ALL.
10. DO NOT SCALE DRAWINGS. DIMENSIONS SHALL GOVERN. DRAWINGS AT A LARGE SCALE SHALL TAKE PRECEDENCE OVER DRAWINGS OF A SMALL SCALE. DETAILS SHALL GOVERN OVER PLANS AND ELEVATIONS.
11. CONTRACTOR SHALL VERIFY LAYOUT OF PARTITIONS, DOORS, ELECTRICAL OUTLETS, DATA AND TELEPHONE OUTLETS, LIGHT FIXTURES, AND SWITCHES WITH ARCHITECT PRIOR TO PROCEEDING WITH CONSTRUCTION. CONTRACTOR SHALL VERIFY THAT NO CONFLICTS EXIST IN LOCATIONS OF ANY MECHANICAL, TELEPHONE, DATA, ELECTRICAL, LIGHTING, PLUMBING, AND SPRINKLER EQUIPMENT (TO INCLUDE BUT NOT LIMITED TO ALL PIPING, DUCTWORK AND CONDUIT AND THAT ALL REQUIRED CLEARANCES FOR INSTALLATION AND MAINTENANCE ARE PROVIDED.
12. DAMAGE TO NEW AND EXISTING MATERIALS, FINISHES, STRUCTURES AND EQUIPMENT SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER AT THE EXPENSE OF THE CONTRACTOR.
13. ALL WORK LISTED, SHOWN OR IMPLIED ON ANY CONTRACT DOCUMENT SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR, EXCEPT WHERE NOTED OTHERWISE.
14. IN CASE OF CONFLICTS BETWEEN ARCHITECT'S AND ENGINEER'S DRAWINGS IN THE LOCATION OF MATERIALS AND/OR EQUIPMENT, ARCHITECTURAL DRAWINGS SHALL GOVERN. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF SUCH CONFLICT.
15. ALL MANUFACTURED ARTICLES, MATERIALS AND EQUIPMENT SHALL BE INSTALLED, CONNECTED, ERECTED CLEANED, AND CONDITIONED PER THE MANUFACTURER'S INSTRUCTIONS. IN CASE OF DIFFERENCES BETWEEN MANUFACTURER'S INSTRUCTIONS AND THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT BEFORE PROCEEDING WITH THE WORK IN QUESTION.
16. ALL WORK NOTED AS "BY OTHERS" OR "N.I.C." SHALL BE PROVIDED BY OWNER OR UNDER SEPARATE CONTRACT. SUBMIT TO THE ARCHITECT AND OWNER SCHEDULE REQUIREMENTS FOR THIS "OTHER" WORK IN THE CONSTRUCTION PROGRESS SCHEDULE AND COORDINATE AS REQUIRED TO ASSURE ORDERLY SEQUENCE OF INSTALLATION.
17. THE CONTRACTOR SHALL REMOVE ALL RUBBISH AND WASTE MATERIALS OF ALL SUBCONTRACTORS AND TRADES ON A DAILY BASIS AND SHALL EXERCISE STRICT CONTROL OVER JOB CLEANING TO PREVENT ANY DIRT, DEBRIS, OR DUST FROM AFFECTING ANY FINISHED AREAS IN OR OUTSIDE THE JOB SITE. BURNING OF DEBRIS ON SITE SHALL NOT BE PERMITTED.
18. CONTRACTOR SHALL NOT PROCEED WITH ANY WORK REQUIRING ADDITIONAL COMPENSATION BEYOND THE CONTRACT AMOUNT WITHOUT AUTHORIZATION FROM THE ARCHITECT OR OWNER'S REPRESENTATIVE. FAILURE TO OBTAIN AUTHORIZATION SHALL INVALIDATE ANY CLAIM FOR ADDITIONAL COMPENSATION.
19. INSTALL ALL MATERIALS, ASSEMBLIES AND PRODUCTS PER MANUFACTURER'S LATEST WRITTEN INSTRUCTIONS. IF DISCREPANCIES ARE FOUND, NOTIFY OWNER AND ARCHITECT, IN WRITING, IMMEDIATELY.
20. CONTRACTOR TO PROVIDE ACCESS PANELS PER LOCATIONS SHOWN IN DRAWINGS AND/OR AS REQUIRED BY CODE FOR ACCESS TO MECHANICAL, ELECTRICAL AND PLUMBING EQUIPMENT. ACCESS PANELS TO CARRY APPROPRIATE FIRE RATINGS TO CORRESPOND WITH ASSEMBLY RATINGS REQUIRED. MANUFACTURER, FINISHES AND LOCATIONS TO BE APPROVED AND COORDINATED WITH ARCHITECT.

ZONING & CODE ANALYSIS

LEGAL DESCRIPTION	LOT 1, BLOCK 9, NCB 14747, NORTH RIM UNIT 1A SUBDIVISION (PLAT NO. 130632, VOL 9661, PG 28. DPR)
ZONING	C-3, CG-1
BUILDING CODES	2021 INTERNATIONAL BUILDING CODE 2021 INTERNATIONAL MECHANICAL CODE 2021 INTERNATIONAL PLUMBING CODE 2020 NATIONAL ELECTRIC CODE 2021 INTERNATIONAL ENERGY CONSERVATION CODE 1 — ENERGY COMPLIANCE PATH: IECC PRESCRIPTIVE COMPLIANCE R-VALUE BASED METHOD 2021 INTERNATIONAL FIRE CODE 2021 INTERNATIONAL EXISTING BUILDING CODE CITY OF SAN ANTONIO UNIFIED DEVELOPMENT CODE & AMENDMENTS
BUILDING DESCRIPTION	SINGLE STORY STEEL FRAMED BUILDING FOR FOOD AND BEVERAGE
LEGAL JURISDICTION	SAN ANTONIO, TEXAS, BEXAR COUNTY
OCCUPANCY CLASSIFICATION	GROUP A-2
OCCUPANT LOAD	1 — 673
TYPE OF CONSTRUCTION	V-B
FIRE SPRINKLER	NFPA 13 FULLY SPRINKLERED

AREA CALCULATIONS

LOT SIZE - 112,690 SF (2.587 ACRES)	EXISTING	NEW/ADDED	TOTAL
1ST FLOOR CONDITIONED	11,035 SF	4,198 SF	15,233 SF — 1
STORAGE UNCONDITIONED	0 SF	200 SF	200 SF
TOTAL BUILDING COVERAGE* 1	11,035 SF	4,398 SF	15,433 SF* — 1
% BUILDING COVERAGE (15,433 / 112,690) = 13.7%			

*TOTAL NEW WORK REMODEL / ADDITION OCCUPIES EXISTING IMPERVIOUS COVER FOOTPRINT. TOTAL IMPERVIOUS COVER IS NOT CHANGED BY SCOPE OF REMODEL / ADDITION.

PLUMBING FIXTURES (ASSEMBLY RESTAURANT)	IBC 2902.1 — 1 OCCUPANT LOAD 673 337 MALE / 337 FEMALE	REQUIRED / PROVIDED MALE / FEMALE
WATER CLOSETS	1 PER 75 / 1 PER 75	5 / 5	5 / 5
LAVATORIES	1 PER 200	2 /2	2 / 3
SERVICE SINK	1	1	1

PARKING SPACES	REQUIRED	PROVIDED*
	149 + 5 ADA	146 + 5 ADA

* ADDITIONAL OFF-SITE VALET PARKING TO BE PROVIDED

DRAWING INDEX

castro studio
architecture

REGISTERED ARCHITECT JAVIER S. CASTRO STATE OF TEXAS 25118

ISSUED DATE 1 11/8/2024
PROJECT NUMBER 2401

PERMIT REVIEW

BRASAO REMODEL
19210 I10 WEST
SAN ANTONIO, TX 78257

G000
COVER SHEET

DIVISION 01 - PROCUREMENT AND CONTRACTING REQUIREMENTS

General Conditions
A. AIA Document A201 - 2017

A. Supplementary Conditions
Weather Delays: Precipitation and freezing weather days in excess of area norms
Retainage: 10 percent until Final Payment
Permitting: Provide fees for permitting as a line item
Insurance:
1. Types:
   A. Commercial general liability insurance, with premises operations, products & completed operations, and contractual liability, on an occurrence basis with a minimum single limit of One Million Dollars ($1,000,000) each occurrence and Two Million Dollars ($2,000,000) general aggregate.
   B. Commercial Umbrella/Excess liability insurance in the amount of Four Million Dollars ($4,000,000).
   C. Statutory Workers' compensation and employer's liability insurance covering all persons employed, directly or indirectly, by Contractor with a limit of $1,000,000 Each Accident, $1,000,000 Each Employee and $1,000,000 Policy Limit.
   D. Comprehensive automobile liability insurance covering all owned vehicles and including employer's non-ownership and hired car liability with limits of not less than $1,000,000 combined single limit.
   E. Pollution Liability required if work includes environmental or remediation or if required by written contract. Limits shall be no less than $1,000,000 Each Claim and $1,000,000 Aggregate.
   F. Provide Builder's Risk Policy equal to the value of the Work as an Add Alternate #1. If Alternate is accepted, provide such insurance (as a Cost of Work) with Owner as a named insured, or Owner may secure its own Builders Risk insurance coverage.
2. Requirements:
   A. Insurance, except workers' compensation insurance, shall be written in name of Contractor, and shall name Owner (and any designees of Owner) as an additional insured, for both ongoing work and completed operations. Insurance shall be written by one or more insurance companies licensed or approved to sell insurance in Texas and rated A-/VIII or better in current Best's Rating Guide at the time such policies are issued or renewed. Insurance shall contain endorsements that insurance may not be canceled or coverages therein reduced with respect to Owner except upon thirty (30) days' prior written notice to Owner (and any such designees).
   B. Contractor's insurance policies shall be primary and non-contributory to any other insurance carried by Contractor and Owner with respect to Work.
   C. Contractor's insurance policies shall provide waiver of subrogation in favor of additional insureds. Contractor shall be solely responsible for payment of premiums and Owner shall not be required to pay any premium for such insurance.
   D. In event of payment of loss covered by such policy, Owner (or its designees) shall be paid first by insurance company for Owner's loss. Minimum limits of commercial general liability policy of insurance shall in no way limit or diminish Contractor's liability hereunder.
   E. Contractor shall deliver to Owner at least fifteen (15) days prior to time such insurance is first required to be carried by Contractor, and thereafter at least fifteen (15) days prior to the expiration of such policy, either a stamped certified true duplicate originals of such policies or a certificate of insurance of all required policies as may be specified by Owner, together with evidence satisfactory to Owner of the payment of the premiums therefore. If Contractor fails to obtain and provide any of the insurance required, then Owner may, but shall not be required to, purchase such insurance on behalf of Contractor and receive reimbursement thereof from Contractor or offset cost of such insurance against amounts otherwise due by Owner to Contractor.
3. Bonds:
   A. Provide line item allowance for Performance & Payment Bond for Contract Sum, for Owner's consideration. Bonding requirements to be confirmed with Owner. Termination for Owner's Convenience

DIVISION 01 - GENERAL REQUIREMENTS

A. SCOPE OF WORK
   1. The remodel/addition of the Brasao Brazilian Steakhouse at 19210 IH10 West, San Antonio TX 78257 consists of added conditioned restaurant dining space, a cigar lounge, and interior alterations. The Work shall include all labor, materials, equipment, and services required to complete construction of the project in accordance with the Drawings and Specifications, and as required for a complete and operable installation. The Drawings consist of Architectural, Structural, Electrical, Mechanical, and Plumbing Drawings. They convey the intent of the design and show the kind of materials to be used and their form, fabrication and assembly. However, not every condition has been drawn and there may be a need for interpretation by the Architect. All dimensions must be verified on site prior to construction. The General Contractor shall call the Owner for a visual inspection if discrepancies arise.
   2. Special care must be taken to ensure and protect the good condition of the existing property throughout construction.
B. CONSTRUCTION DOCUMENTS: Small-scale and large-scale drawings are intended to be mutually explanatory, and not to be scaled. In case of variance, the following order of preference is established to define the intent of the Work:
   1. Explanatory notes on Drawing
   2. Figured dimensions
   3. Large Scale Details
   4. Small Scale Details
C. LAYING OUT WORK, MEASUREMENTS AND LEVELS:
   1. The General Contractor shall establish and maintain all levels and lines and shall be responsible for the accuracy thereof.
   2. Before installation of any materials or doing of Work, each Subcontractor shall verify all measurements at the building site and shall be responsible for correctness of same. No extra charge or compensation will be allowed because of difference between actual dimensions and the measurements indicated on the drawings. Any differences that may be found shall be submitted to the Architect for consideration before proceeding with the Work.
D. PERMITS: Contractor shall submit for permit. CM/GC to pick up and pay for the permit.
E. UTILITIES:
   1. Contractor shall confirm location of all utilities prior to excavation and construction.
   2. Owner shall provide all utilities during construction.
F. COMPLIANCE WITH ALL GOVERNING CODES AND ORDINANCES:
   1. It is the Contractor's responsibility to assure that all Work is performed according to governing codes and ordinances.
   2. Should any discrepancy exist between Plans and Specifications and the governing codes, the governing codes shall govern. It is the responsibility of the Contractor to determine any such discrepancies and to call them to the Owner's immediate attention for resolution.
G. REPORTS: The General Contractor shall furnish the following to the Owner within ten (10) days after award of the Contract:
   1. Insurance Certificates
   2. Complete cost breakdown (per specification division)
   3. Progress Schedule - to be revised monthly and submitted with each Payment Application.
   4. Complete list of Subcontractors with addresses and phone numbers
H. PAYMENTS AND COMPLETION: Progress payments shall occur approximately once a month, or at intervals appropriate to the progress of work, as approved by the Owner. The Contractor's Application for Payment shall include an itemization of work by category of specification section, the valued amount, & percentage of completion. General Contractor shall submit Application for Payment to Owner for review, approval and payment within five days of receipt.
I. ALLOWANCES: All allowances as provided for in various Sections of these Specifications shall be for materials with sales tax only, and do not include any shipping costs, etc. The allowance shall not include Subcontractor and Contractor overhead or cost of installation, unless otherwise stated. Owner shall be given advantage of Contractor's normal discounts so that allowance items selected are at "Builder's Cost". Owner shall receive/pay difference should actual amount be less than/exceed specified allowance. The following items are amounts to be used as cash allowances for bid purposes:
   1. Cabinet pulls and miscellaneous hardware which is unspecified, allow $1,000
   2. Door Hardware:
      A. Allow $600 per leaf for all public spaces door hardware.
      B. Allow $500 per leaf for all common space door hardware.
   3. Light fixtures: for all sconces, pendants and chandeliers to be provided by Owner, allow $20,000 Base price shall include all fixtures specified on Lighting Schedule. Base price should include installation of all Owner-provided fixtures.
   4. Toilet Accessories:
      A. Allow $3,000 per public restroom for trash bins, paper towel dispenser, hand dryers, grab bars, etc.
      B. Allow $500 per public restroom for mirrors.
   5. Ceramic/Porcelain/Stone Tile: Allow $25 per square foot , material only. Installation, backerboard and other material required for installation is part of base bid.
   6. Wood Flooring: Allow $20 per square foot, material only.
   7. Carpet: Allow $15 per square foot, material only. Verify carpet scope with Interior Designer.
   8. Stone Veneer (both interior and exterior): Allow $250 per ton.
   9. Countertops: Allow $120 per square foot, material only.
   10. Wall Finishes: Interior finishes to be further developed in coordination with Interior Designer. Provide $20 per square foot for premium interior wall surface material and labor.
   11. Motorized window shades and fabric: Allow $50,000. Fabric selection to be further developed in coordination with Interior Designer.
J. ITEMS PROVIDED BY OWNER: The General Contractor shall coordinate scheduling and installation with Owner and shall provide the Owner with adequate notification for required delivery. The Owner shall receive any and all discounts available to the General Contractor on purchase price.
K. USE OF PREMISES: The General Contractor is to determine the Limits of Construction with the Owner on site prior to construction. The General Contractor shall stay entirely within the Limits of the Construction Area and shall also be responsible for all persons approaching the site to stay within the designated Construction Area. It is the responsibility of the Contractor to see that great care is taken to protect areas of the land that are not affected by the Work of this Contract. It is also the responsibility of the Contractor to secure and protect the premises at all times during construction.
L. DUTIES, INSPECTIONS AND REPORTS:
   1. Architect: The Architect will make on-site observations on weekends or after typical business hours as needed and will be available for consultation throughout construction. The contractor shall notify the Architect one week in advance of date required for on-site observations.
   2. General Contractor: The General Contractor will assume responsibility for materials and methods of Construction.
   3. Engineer: The Architect recommends Owner contact Structural Engineer for standard inspections: prior to concrete pour, to inspect placement of structural steel, and again upon completion of rough framing. The contractor shall notify the Engineer one week in advance of date required for Engineer's inspections. The Engineer will also be available on an as-needed basis for on-site inspection.
M. ADMINISTRATIVE REQUIREMENTS
   1. Progress Schedule:
      A. Contractor to submit a Progress Schedule within 15 days after date of Notice to Proceed.
      B. Format: Horizontal bar chart with separate bar for each trade or operation, identifying first work day of each week, in chronological order of beginning of each item of work.
N. SUBMITTAL PROCEDURES:
   1. Shop Drawings:
      a. Present in clear and thorough manner.
      b. Identify details by reference to sheet and detail numbers or room number shown on
   A. Drawings.
      1. Maximum sheet size: 30 x 42 inches.
      2. Submit electronically in Adobe PDF format.
      3. Submit the following for review, refer to individual specification sections for further requirements:
         a. Concrete mix submittals.
         b. Structural steel shop drawings.
         c. Membrane roof submittal and details.
         d. HVAC equipment, duct/grille location submittals and diffuser selection submittals.
         e. Door and window shop drawings.
         f. Millwork shop drawings.
         g. Hardware submittal.
         h. Lighting fixture, and controls submittal.
         i. Plumbing fixture and fitting submittal.
   2. Product Data:
      A. Manufacturer's standard schematic drawings and diagrams; modify and supplement standard information to provide information specifically applicable to work.
      B. Submit electronically in Adobe PDF format.
   1. Samples:
      A. Sufficient size and quantity to clearly illustrate functional characteristics of product and full range of color, texture, and pattern.
      B. Number required: Two of each sample unless otherwise specified in individual specifications.
   2. Quality control submittals:
      A. Quality control submittals are for information and do not require Architect's responsive action except to require resubmission of incomplete or incorrect information.
      B. Design data and calculations:
         a. Accuracy of design data and calculations is the responsibility of the Contractor.
         b. When so specified, prepare design data and calculations under the direction of a professional engineer licensed in the state in which the Project is located.
      C. Test reports and certifications:
         a. Indicate that material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
         b. Submittals may be recent or previous test results on material or Product, but must be acceptable to Architect.
      D. Manufacturer's installation instructions:
         a. Submit manufacturers' printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing, in quantities specified for Product Data.
         b. Identify conflicts between manufacturers' instructions and requirements of Contract Documents.
      E. Submit electronically in Adobe PDF format.
   3. Contractor's responsibilities:
      A. Review and approve submittals prior to submittal. Verify field measurements, construction criteria, catalog numbers, and similar data.
      B. Coordinate submittals with requirements of work and Contract Documents.
      C. Contractor's responsibility for errors, omissions, or deviations from requirements of Contract Documents is not relieved by Architect's review, unless Architect is notified of deviations in writing at time of submittal and gives written acceptance of specific deviations.
      D. On resubmittals, indicate any changes that have been made other than those requested by Architect.
   4. Architect's responsibilities:
      A. Review for conformance with design concept of project and information given in Contract Documents.
      B. Architect is not responsible for verification of field measurements, construction criteria, catalog numbers, and other similar data.
      C. Review of separate item does not constitute review of an assembly in which item functions.
      D. Allow minimum 14 days for Architect's review and response to each submittal.
   5. Requests for Information:
      A. Submit RFI's on Contractor's standard form. Informal requests for information via text message, phone call, etc. are not acceptable.
      B. Include on each RFI:
         a. Name of Contractor.
         b. Project name.
         c. Date submitted.
         d. Sequential RFI number.
         e. Applicable Drawing sheet and detail numbers or Specification Section numbers.
         f. Date when response information is required to avoid impact on Construction Schedule and Construction Cost.
      C. Review and sign RFI's submitted by Subcontractors, Sub-Subcontractors, or Suppliers prior to submittal to Architect.
      D. Maintain log of RFI's showing RFI number and current status of each RFI.
      E. When RFI's require submittal of drawings, follow submittal procedures specified for Shop Drawings.
      F. Submit electronically in Adobe PDF format.
      G. Allow minimum 7 days for Architect's review and response to each RFI.
A. CLEANING: Contractor shall maintain building, grounds and access free from accumulations of waste materials and rubbish. Dispose of waste materials properly and in a timely manner. A minimum of 80% of excess lumber and drywall are recycled/reused (not landfilled);G.C. to provide documentation. A minimum of 40% by weight of waste shall be recycled/reused (not landfilled) G.C. to provide documentation.
B. DUMPSTER and PORTABLE TOILET: to be located in Owner-approved locations to minimize impact on vegetation.
C. FINAL CLEANUP: Contractor shall remove grease, dirt, fingerprints, stains, labels, dust and other foreign materials from interior and exterior finished surfaces. Wash all windows, polish all glass and bright metal surfaces, and clean plumbing fixtures, appliances, etc. to make ready for occupancy. Repair, patch, and touch-up marred surfaces to specified finish matching adjacent surfaces. Broom clean paved surfaces, and rake clean other surfaces of ground. Replace air-conditioning filters if units were operated during construction (to be avoided if possible). Clean ducts, blowers and coil if air-conditioning units were operated without filters during construction. Maintain cleaning until project or portion thereof is accepted by Owner.
D. FINAL SUBMITTALS: Contractors and Sub-Contractors shall submit record drawings of changes made during construction, operating and maintenance data, guarantees, warranties, and bonds; key and keying schedule. General Contractor shall instruct Owner in operation of mechanical, plumbing and electrical equipment and systems.

DIVISION TWO - SITEWORK

A. SITE PREPARATION: Prior to any work and in the presence of the Owner, General Contractor shall tag all trees, branches and limbs to be removed. Determine location of Construction Area, access, dumpster, and portable toilet at that time.
B. General Contractor to coordinate site preparation and sitework with Owner.
C. TREE PROTECTION: General Contractor shall take great care to protect all existing trees and vegetation within the Construction Area. Protect all other trees from damage during entire job. Remove from site all debris and underbrush immediately after Owner-approved clearing. Trees and critical root zones to be protected per City of San Antonio requirements.
D. EXCAVATION:
   1. Excavate as required for building construction, as per Foundation Plans on Structural Drawings.
   2. General Contractor shall store all excavated earth in specified area by Owner and haul off all excavated earth not used for fill. Extreme care must be taken to protect the existing vegetation, trees and root systems. Refer to Foundation Notes on Drawings for suitable fill materials.
E. SELECTIVE BUILDING DEMOLITION:
   1. Removal of designated building construction, equipment, and fixtures:
      a. Refer to Architectural Drawings for scope of demolition at existing buildings.
      b. Means of protection for items to remain and items in path of any waste removal from site.
      c. Protections: Conduct operations to prevent injury to adjacent structures, landscaping to remain, other facilities, and persons.
   2. Utility Services:
      a. Identification of utilities
      b. Do not interrupt existing utilities serving adjacent facilities, except when authorized in writing by authorities having jurisdiction.
      c. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.
   3. Remove, salvage, and store items designated to remain property of Owner where directed by Owner.

DIVISION THREE - CONCRETE

A. Refer to Structural plans and notes.
B. NOTIFY Structural Engineer one week prior to concrete pour for Required Inspection of Steel Placement.
C. COORDINATION - Provide all sleeves, insets and openings, as required for passage, provision and/or incorporation of the Work of the Contract, including but not limited to Mechanical, Electrical and Plumbing work.
D. ARCHITECTURAL CONCRETE:
   1. Mockups: Minimum 4x4 feet
   2. Forms: Smooth finish: PS1, HD Overlay Plyform, Structural I Exterior grade.
   3. All exposed concrete to be architectural grade.

DIVISION FOUR - MASONRY

A. CONCRETE MASONRY UNITS:
   1. Type: 120 PCF heavyweight aggregate, ASTM C90, Type 1, Grade N, D-2 classification 2-hr. CMU for fire walls or as otherwise required.
   2. Provide standards, bond beams, solids, and other special shapes as required.
   3. Horizontal reinforcement: Hot dip zinc coated, wire type with truss design.
   4. Ties: Two-piece adjustable type, galvanized steel
   5. Pointing mortar joints: Concave profile
B. STONE VENEER:
   1. To be selected by Architect, with natural face exposed on exterior.
   2. Size: Approximately 4 inch thick with varying heights from approximately 18 inches to 6 inches.
   3. Free from defects that could impair it's structural integrity or function. Inherent variations characteristic to quarry from which it is obtained are acceptable.
   4. Exterior stone veneer: cut stone.
   5. Interior stone veneer: honed stone.
C. MORTAR: at masonry shall be Type N made with Portland cement (ASTM C150, Type I); hydrated lime, (ASTM C207, Type S), and sand (ASTM C144). Mixing water must be clean and free of deleterious amounts of acids, alkalis, organic materials, or other substances which would adversely affect the quality or appearance of mortar or stone.
D. MORTAR DROPPING CONTROL: High density polyethylene or nylon, 90 percent open mesh, 10 inches high x thickness to suit cavity width; The Mortar Net by Mortar Net USA Ltd. or approved substitute.
E. SAMPLES: Contractor to provide 48"x48" sample mock-ups of stone & mortar joints for Owner approval prior to installation. Provide cured mortar for review. Mason's price shall provide for adjustments in mortar color by sand or additives and placement of enough samples to confirm Owner's approval.
F. ANCHORS: No. 276 stainless steel pin type screw on anchors by Heckman Building Products or approved substitute.
G. FLASHING: install thru-wall flashing of Moistop sheeting reinforced with glass fiber (minimum product acceptable, coated copper sheet is preferred) for use at base of wall and over all openings. Flashing to step along slopes as necessary while maintaining continuous flow to weeps.
H. WEEPS: Provide plastic tube weeps of 3/8" inside diameter and length required, spaced @ 16" o.c. at Stone Ledge and one course above grade, and at window and door lintel locations. Air space to be kept clean of debris and excessive mortar to ensure that weeps do not become blocked.

DIVISION FIVE - METALS

A. GENERAL: Refer to Structural Plan and Notes. All dimensions to be verified at the job site. Any discrepancies shall be brought to the attention of the Owner and Structural Engineer for resolution.
B. STRUCTURAL STEEL: All structural steel shall be 100% primed with red metal primer prior to installation, unless noted otherwise. Refer to structural drawings for more information.
C. STEEL LINTELS (where applicable): Prior to laying stone veneer on angles, apply asphaltic damproofing or waterproofing to entire steel angle/anchor bolt system. Refer to structural drawings for member sizing and relevant details.

DIVISION SIX - WOOD, PLASTICS, AND COMPOSITES

A. ROUGH CARPENTRY - Refer to notes on Structural Drawings in addition to those below.
   1. STANDARD: ANSI/American Forest and Paper Association, National Design Specification, 2001.
B. INTERIOR WOOD:
   1. Premium grade AA woodwork, stained wood finish typical.
   2. Species for Transparent Finish: To be determined, provide material allowance for a premium stain grade wood such as white oak, walnut, cherry etc.
   3. Painted Millwork, Paneling, Wood Wainscot, and Trim:
      A. Custom grade, verify wainscot areas with Interior Designer.
      B. Wood Species for Opaque Finish: Paint grade poplar.
      C. Cope running trim to internal corners and miter at external corners. Biscuited miters.
      D. Splice butt joints over solid bearings and nail securely. Splices not permitted in sections less than 12 feet.
      E. Set exposed nail heads to receive putty or filler. Sand trim to eliminate marks and defects that could affect finish.
   4. Finish: To be confirmed with Interior Designer:
      A. Factory Finishing: AWI Finish System No. 10 - UV Curable, Water Based
   5. Architectural Wood Casework
      A. Submittals:
         a. Review submittals: Shop Drawings, Samples
         b. Quality control submittals: Certificate of Compliance
   6. Casework:
      A. Transparent and Opaque finish: AWI Premium Grade, wood species and cut to be selected
      B. Full-overlay (with 1/8" gaps) frame cabinet construction typical.
      C. Cabinet drawer box construction: Premium Grade plywood with clear sealed finish. Species to be selected.
      D. Cabinet drawer and door panels with opaque finish may be medium density fiberboard meeting ANSI A208.2, grade MD.
      E. Typical millwork face frames, cabinet door and drawer panels to be 1" thick, solid wood material.
      F. Finish system: AWI Finish System No. 10 - UV Curable, Water Based
   7. Cabinet hardware:
      A. Soft closing European style, clip-on hinges, suitable for cabinet doors with flush frames, Blum or equal
      B. Drawer slides; under mount soft-closing slides, Blum or equal
      C. Cabinet pulls to be selected by interior designer. GC to provide $20.00 per lineal foot material allowance.

DIVISION SEVEN - THERMAL & MOISTURE PROTECTION

A. SPRAY FOAM OPEN CELL INSULATION: R-21 in wall cavity. Confirm w/ current local energy code.
B. RIGID INSULATION: Type AST C1289, Type II rigid polyisocoyanurate faced both sides with glass fiber mat facings. R-36 (minimum) above roof deck. Confirm w/ current local energy code. Average LTTR value of 30 with minimum 1 inch thickness at roof drains. Provide insulation in two approximately equal thickness with staggered horizontal and vertical seams. Provide board tapered to 1/4 inch per foot.
C. BATT INSULATION: ASTM C665 Rockwool where indicated in drawings.
D. EXTERIOR SHEATHING: 7/16" oriented strand board panel laminated with a water-resistant facer on the exterior and a 1/2" rigid foam insulation panel bonded on the opposite (interior face). Basis of design = ZIP System R-sheathing or approved equal. R-3 (minimum) continuous insulation.
E. AIR INFILTRATION PROTECTION: Install an expanded polycell foam sealer to all sole plates, projections though exterior walls, around all exterior doors and windows & at penetrations through drywall of electrical and mechanical outlets.
F. CAULK: All plates, openings, cracks for watertight construction; use water-based products. Foam sealer acceptable where not exposed.
G. AIR AND WATER BARRIER: Henry Air Blok single component acrylic type, or approved substitute, installed in accordance with manufacturer's recommendations over exterior sheathing at all walls.
H. MOISTURE BARRIER AT WINDOWS and DOORS: Provide membrane flashings at all window and door rough openings.
I. FLASHING: Provide metal flashing at all openings, penetrations, roof valleys and locations necessary for watertight construction.
J. ROOF: ASTM D6878, reinfoced Thermoplastic Polyolefin (TPO) roof, ultraviolet resistant, to be installed in accordance with manufacturer's recommendations, over roof sheathing.
   a. Thickness: 60 mils.
   b. Color: White.
   c. Thermal emmittance: Minimum 0.75, tested to ASTM C1371.
   d. Solar Reflectance Index: Minimum 75, tested to ASTM C1549 and calculated in accordance with ASTM E1980.
   e. Aged Solar Reflectance: Minimum 0.64, tested to ASTM C1549 and calculated in accordance with ASTM E1980.
   f. Acceptable Manufacturers
      1. Carlisle Syntec
      2. Johns Manville
      3. Firestone Building Products
K. GUTTERS: Integral concealed roof gutter as detailed on drawings.

DIVISION EIGHT - DOORS & WINDOWS

A. DOORS:
   1. Hollow Metal Doors: ANSI/SDI A250.8
      A. Grade: II - Heavy Duty.
      B. Model: 2 - Seamless.
      C. Maximum thermal transmittance (U-value) of 0.50, tested to ASTM C518.
   2. Frames: ASNI/SDI A250.8
      A. Grade: II - Heavy Duty.
      B. Width: 1 inch wide face profile.
   3. Acceptable Manufacturers
      1. Ceco Door
      2. Curries
      3. Steelcraft
   4. Interior Doors:Wood doors. Paint grade. Refer to Door Schedule on Drawings for door types and sizes.
B. ALUMINUM WINDOWS AND GLASS DOORS:
   a. Windows
      1. Source: Arcadia T225 (Thermal) Series, or approved substitute.
      2. Type: Thermally broken aluminum windows, fixed.
      3. Provide standard base sill, flush stops.
      4. Refer to Division Eight section E. GLASS.
      5. Maximum air lekage for fenestration storefront assembly of 0.06 (cfm/sf), test procedure NFRC 400 or ASTM E2833 at 1.57 psf (75 Pa)
   b. Doors
      1. Source: Arcadia T225 (Thermal) Series, or approved substitute.
      2. Type: Thermally broken aluminum hinged doors.
      3. Hardware: Commercial ADA compliant threshold, premium handle, black, and single-point locksets.
      4. Refer to Division Eight section E. GLASS.
      5. Maximum air lekage for fenestration storefront assembly of 1.00 (cfm/sf), test procedure NFRC 400 or ASTM E2833 at 1.57 psf (75 Pa)
C. STILE AND RAIL WOOD DOORS AND FRAMES:
   a. Submittals:
      1. Review submittals: Shop Drawings, Product Data, Samples .
   b. Stile and Rail Wood Doors:
      1. AWI Custom Grade, species and cut to be selected.
      2. Door to be solid core, raised slabs, final style to be determined by Interior
      3. Designer with a stained finish.
      4. Provide reeded glass lites where indicated in Drawings.
   c. Wood Frames:
      1. 1 1/4" stain grade wood door frames.
      2. Frames to be stained, finish to be determined.
D. HARDWARE: requires Owner approval prior to order.
   a. Door Hardware:
      a. Key all exterior doors to match.
      b. Entry Set: by Owner.
      c. Interior Sets: by Owner.
      d. Door hinges must match finish of levers.
   b. Window Hardware: clear anodized, per Owner's approval.
E. GLASS:
   1. GL-1 - All exterior glass shall be double strength, High Performance Low-E.
      a. Performance characteristics:
         1. Assembly U value: 0.28
         2. Solar heat gain coefficient: 0.25
         3. Source: Guardian, or approved substitute.
   2. Safety Glass to be provided at locations required by Code.
   3. All interior glass to be 1/4 inch thick, tempered where required by code. Clear or reeded as indicated in drawings.
   4. Mirrors shall be 1/4"float glass with warranted silvering.
   5. Sealants and Caulking: all fixed glass exposed to weather to be set in butyl rubber.

DIVISION NINE - FINISHES

A. GENERAL NOTE: Owner and Interior Designer shall select all interior finishes and colors. Contractor to confirm all materials with Owner prior to order. Installation of all materials by Contractor, unless otherwise noted.
B. GYPSUM WALLBOARD:
   1. Walls: 5/8" thick with level 5 smooth finish.
   2. Ceiling: 5/8" thick with level 5 smooth finish.
   3. Provide "Hardibacker" cement-board backing at tile installation locations, painted with Red Guard.
C. WOOD FLOORING: Owner and Interior Designer to select wood flooring; G.C. to install.
D. CERAMIC/PORCELAIN/STONE TILE: Owner and Interior Designer to select all tile and grout; G.C. to install. Install tile per CTNA's latest guidelines.
E. CEMENTITIOUS STUCCO: 3-Coat Portland Cement Stucco rain screen system with galvanized metal mesh lath with 10mm Sure Cavity drainage board by MTI. Expansion and control joints as indicated on drawings.
   1. Rainscreen: Dorken Delta-Dry Stucco & Stone 2-in-1 Ventilated Rainscreen. Installation per manufacturers recommendation.
   2. Control Joints: Philips #1 5 3/8" galvanized steel control joints (or approved alternate).
   3. Screeds: Philips J Weep, J casing trim and #1 expanded corner bead galvanized steel screeds (or approved alternate).
   4. Finish Coat: LaHabra Perma-Flex acrylic finish or approved alternate: Texture 'Fine'.
   5. Samples: Provide (3) 2'x2' movable samples of LaHabra colors: Color RBD. Final selection shall be reviewed and approved by Architect and Owner.
F. PAINTING:
   1. Acceptable Brands -Benjamin Moore, Sherwin Williams, Kelley Moore.
   2. Protection of Vegetation - Extreme care must be taken to protect vegetation from over-spray. No dumping paint or chemicals on site.
   3. Samples - Contractor shall provide up to three color samples for each area to be painted/stained, as directed by Owner. Color combinations may be up to two per room/area. Contractor to provide up to 15 quarts of different paint samples 24" x 24" on site for color verification/selection by Owner.
   4. EXTERIOR:
      a. Preparation:
      b. Exterior staining or painting is not to be done during or immediately following foggy, rainy or frosty weather, or when the temperature is likely to drop below 50 degrees F.
      c. Remove all dirt, dust, grit, etc. Caulk all gaps and cracks.
      d. Avoid painting surfaces while they are exposed to hot sun. Allow all coats to dry thoroughly before applying succeeding coats.
      e. Take every precaution to mask off all adjacent areas not to receive paint.
      f. All colors selected by Owner on site.
      g. Steel: one coat rust inhibitive primer. Two finish coats semi-gloss oil-based enamel.
      h. Misc. Metals: one coat rust inhibitive primer. Two finish coats semi-gloss oil-based enamel.
   5. INTERIOR:
      a. All interior paint shall be Low VOC consisting of 100g / Liter or less
      b. Preparation:
         1. All surfaces to be painted should be dry, clean and free of loose dirt, dust or grit, and sanded to a smooth surface.
         2. Putty all nail holes, cracks, etc. in woodwork after undercoat is applied and lightly sand to a smooth surface. Putty should be tinted to match wood where transparent stain is to be used.
         3. Top and bottom edges of all doors to be primed the same as face of doors, after fitting by carpenter.
         4. All coats shall be thoroughly dry before applying succeeding coats and lightly sanded between coats.
      c. Interior Paint Schedule: all colors selected by Owner on site.
         1. Drywall: Seal all walls with one coat vinyl primer and cover with two coats of latex satin wall paint.
         2. Wood, painted: one coat oil base enamel undercoat, two finish coats, oil base semi-gloss at trim, doors, windows, as noted at areas of new work. Carefully examine all existing wood for reuse. Patch, repair, replace as needed. Scrape loose paint, sand thoroughly for good bond with new primer. Remove all loose paint and "alligatoring". Sand (feather) edges so that transition (old paint/bare wood) is not visible after finish coat. Architect to review and approve prep work.
         3. Wood, stained: Provide varnish or lacquer sealer for Owner approval.
         4. Wood Floor: 1 coat stain, color to be selected by Owner. 3 coats polyurethane sealer, satin finish.
         5. Note: All recessed can light trims and HVAC grills to be painted to match adjacent surface.

DIVISION TEN - SPECIALTIES

A. BATH ACCESSORIES- shall include all towel bars, toilet paper holders, soap holders and any other misc. accessories. Owner and Interior Designer to select all accessories. G.C. to install.
B. GRAB BAR BLOCKING - G.C. to provide blocking for grab bars.
   1. Blocking Placement
      a. Lateral two-inch by 6-inch or larger nominal wood blocking must be installed flush with stud edges of bathroom walls within the +/or grab bar space.
      b. The centerline of the blocking must be 34 inches from and parallel to the interior floor level.
C. OPERABLE PARTITIONS:
   1. Modernfold Acousti-Seal Legacy Paired Panel with ADA passage door
      a. Partition sized as detailed in drawings.
      b. Owner and Interior Designer to select finish.
      c. 3'-0" x 7'-0" pass door hand pull and push plate
      d. Recessed mounted chemical exit sign w/ red faceplate.
      e. Brushed aluminum frame
      f. Concealed door closer.

DIVISION TWELVE - FURNISHINGS

A. MOTORIZED ROLLER SHADES:
   1. Window Shades:
      a. Provide an allowance for motorized operation solar fabric roller shades. Owner and Interior Designer to select fabric.
      b. Shadecloth orientation: Regular rolling with shade cloth falling on window side of roller.
      c. Mounting: As detailed in drawings.
      d. Head tube: Extruded aluminum.
   2. Shade Cloth:
      a. Fabric hem pocket with RF-welded seams and hem weights concealed in continuous sealed hem pocket.
      b. Fabricate with heat-sealed trimmed edges to hang straight without curling or raveling.
      c. Provide battens when required to ensure proper tracking and uniform rolling of shade cloth.
      d. Fabricate shade cloth to completely fill openings from head to sill and jamb-to-jamb.
      e. Fabricate shade cloth to hang flat without buckling and distortion.
   3. Electric Operator:
      a. Source: Lutron Sivoia QS, or approved substitute.
      b. Motor: UL listed, asynchronous, tubular type, thermally protected, totally enclosed, with built-in reversible contractor.
      c. Total hanging weight of shade not to exceed 80 percent of rated lifting capacity of motor and tube assembly.
   4. Controls:
      a. Source: Lutron Homeworks, or approved substitute.
      b. UL listed, double pole, double throw master switch.

castro studio architecture
REGISTERED ARCHITECT JAVIER S. CASTRO STATE OF TEXAS 25118

ISSUED DATE 11/8/2024
PROJECT NUMBER 2401

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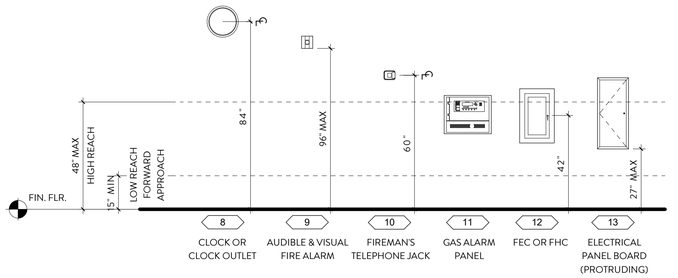
19210 I10 WEST
SAN ANTONIO, TX 78257

G001
SPECIFICATIONS



GENERAL NOTES

1. TYPICAL HEIGHTS AND CLEARANCES ON THIS SHEET ARE GENERAL REQUIREMENTS THAT ALLOW FIXTURES AND ACCESSORIES INSTALLED TO BE ACCESSIBLE TO PERSONS WITH DISABILITIES.

2. MOUNTING HEIGHTS, CLEARANCES AND CONFIGURATIONS ON THIS SHEET INCLUDE A VARIETY OF CONFIGURATIONS WHICH MAY NOT ALL APPLY TO THIS PROJECT. REFER TO PLANS, SECTIONS AND ELEVATIONS FOR FIXTURES, ACCESSORIES AND CONFIGURATIONS APPLICABLE TO THIS PROJECT.

3. MOUNTING HEIGHTS, CLEARANCES, AND CONFIGURATIONS ON THIS SHEET ARE TYPICAL AND REPRESENT GENERAL REQUIREMENTS. THEY APPLY TO ALL INSTANCES OF THE ITEMS (OR GROUPS OF ITEMS) SHOWN.

4. TYPICAL DIMENSIONS ON THIS SHEET TAKE PRECEDENCE OVER TYPICAL DIMENSIONS ON MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS. HOWEVER, IN ALL CASES, COORDINATE MOUNTING HEIGHTS AND CLEARANCES IN MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS WITH THE ACCESSIBLE DIMENSION REQUIREMENTS ON THIS SHEET.

5. MOUNTING HEIGHTS AND CLEARANCES FOR TOILET FIXTURES AND ACCESSORIES ON THIS SHEET ARE BASED ON A SPECIFIED "BASIS OF DESIGN" PRODUCT. THEY ARE PROVIDED FOR REFERENCE ONLY. WHEN SIMILAR PRODUCTS BY OTHER ACCEPTABLE MFR'S ARE USED, COORDINATE INSTALLATION SO THAT DIMENSIONS FOR ACCESSIBLE REQUIREMENTS ARE MET.

6. HEIGHT OF SHOWER HEAD CORRESPONDS TO CENTERLINE OF PIPE AT FIXTURE AND MAY VARY DEPENDING ON FIXTURE TYPE. COORDINATE WITH ARCHITECT BEFORE INSTALLATION.

7. PROVIDE SIGNAGE MEETING THE REQUIREMENTS OF THE 2012 TEXAS ACCESSIBILITY STANDARDS.

8. VERIFY POSITIONS OF ALL SIGNAGE WITH ARCHITECT.

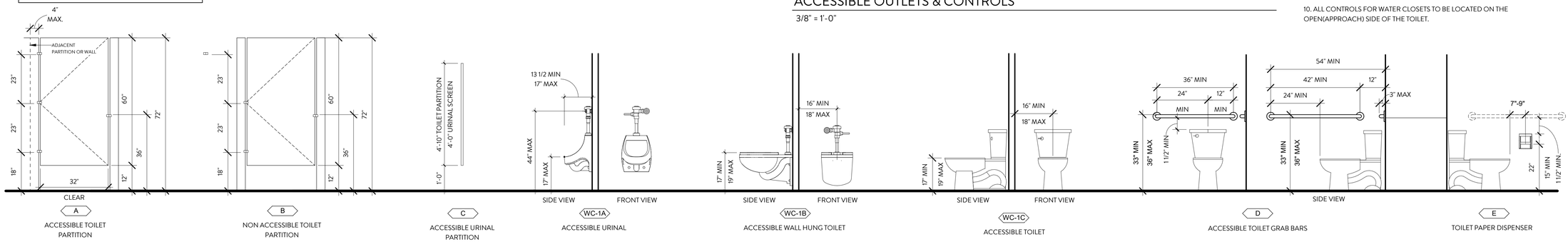
9. INSTALL STAIR SIGNS WITHIN STAIR ENCLOSURES ON WALLS IMMEDIATELY ADJACENT TO DOORS ON STRIKE SIDE, WITH ONE EDGE WITHIN 2" OF JAMB, AND READILY VISIBLE WHEN DOORS IS OPEN, 60" ABOVE FINISHED FLOOR.

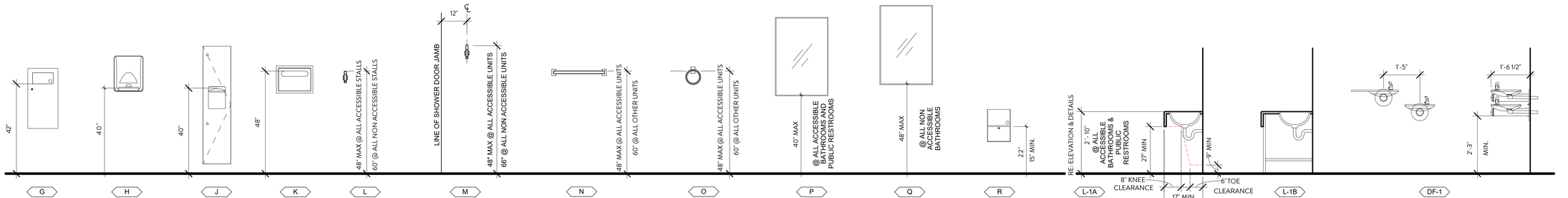
10. ALL CONTROLS FOR WATER CLOSETS TO BE LOCATED ON THE OPEN(APPROACH) SIDE OF THE TOILET.

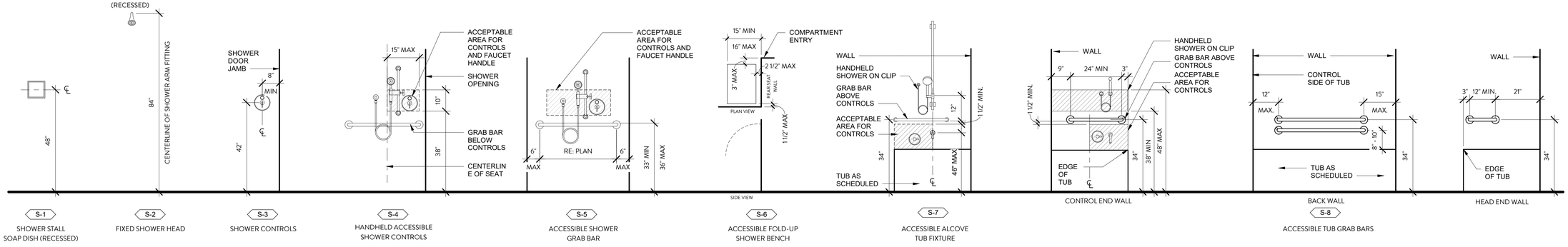
NOTE: NOT ALL ACCESSORIES ARE USED.

ACCESSIBLE OUTLETS & CONTROLS

3/8" = 1'-0"







MOUNTING HEIGHTS

1/2" = 1'-0"

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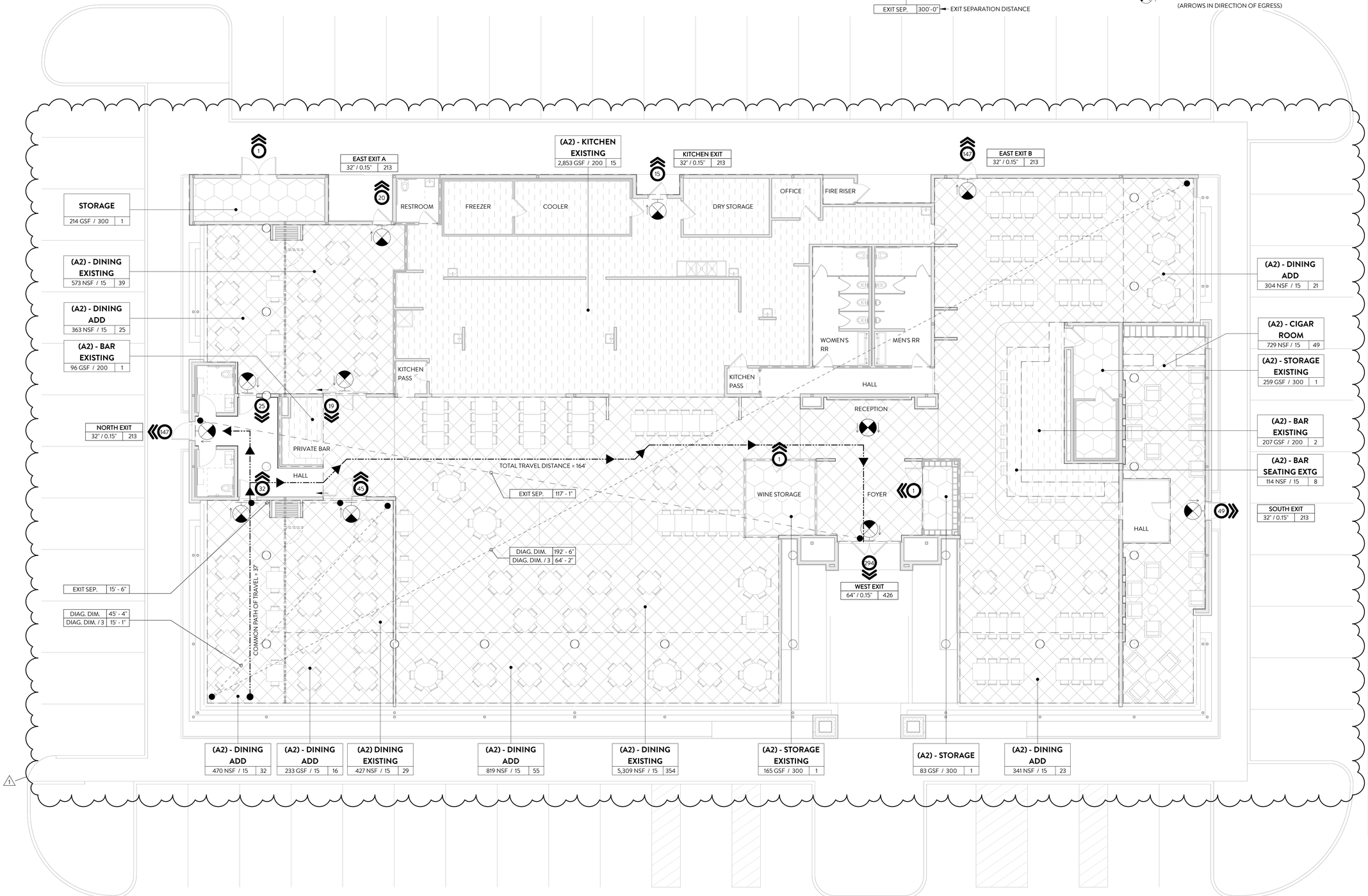
TYP. MOUNTING LOCATIONS & TAS COMPLIANCE

LIFE SAFETY LEGEND

(X) AREA NAME	OCCUPANCY CLASSIFICATION
9,500 GSF / 200 | 48	AREA (NET OR GROSS SF) / OCCUPANT LOAD FACTOR / ALLOWABLE OCCUPANTS
DIAG. DIM. 300'-0" / DIAG. DIM. / 2 150'-0"	DIAGONAL DISTANCE OF AREA / MINIMUM EXIT SEPARATION DISTANCE
EXIT SEP. 300'-0"	EXIT SEPARATION DISTANCE
DOOR 33" / 0.15" | 220	CLEAR WIDTH / EGRESS WIDTH PER OCCUPANT SERVED (SPRINKLERED) / CALCULATED EXIT CAPACITY / MEANS OF EGRESS
100	NUMBER OF OCCUPANTS AT EXIT DISCHARGE
XX DISTANCE = 100'	PATH OF EGRESS TRAVEL DISTANCE
	EXIT LIGHT FIXTURE (ARROWS IN DIRECTION OF EGRESS)



1 LIFE SAFETY PLAN
1/8" = 1'-0"

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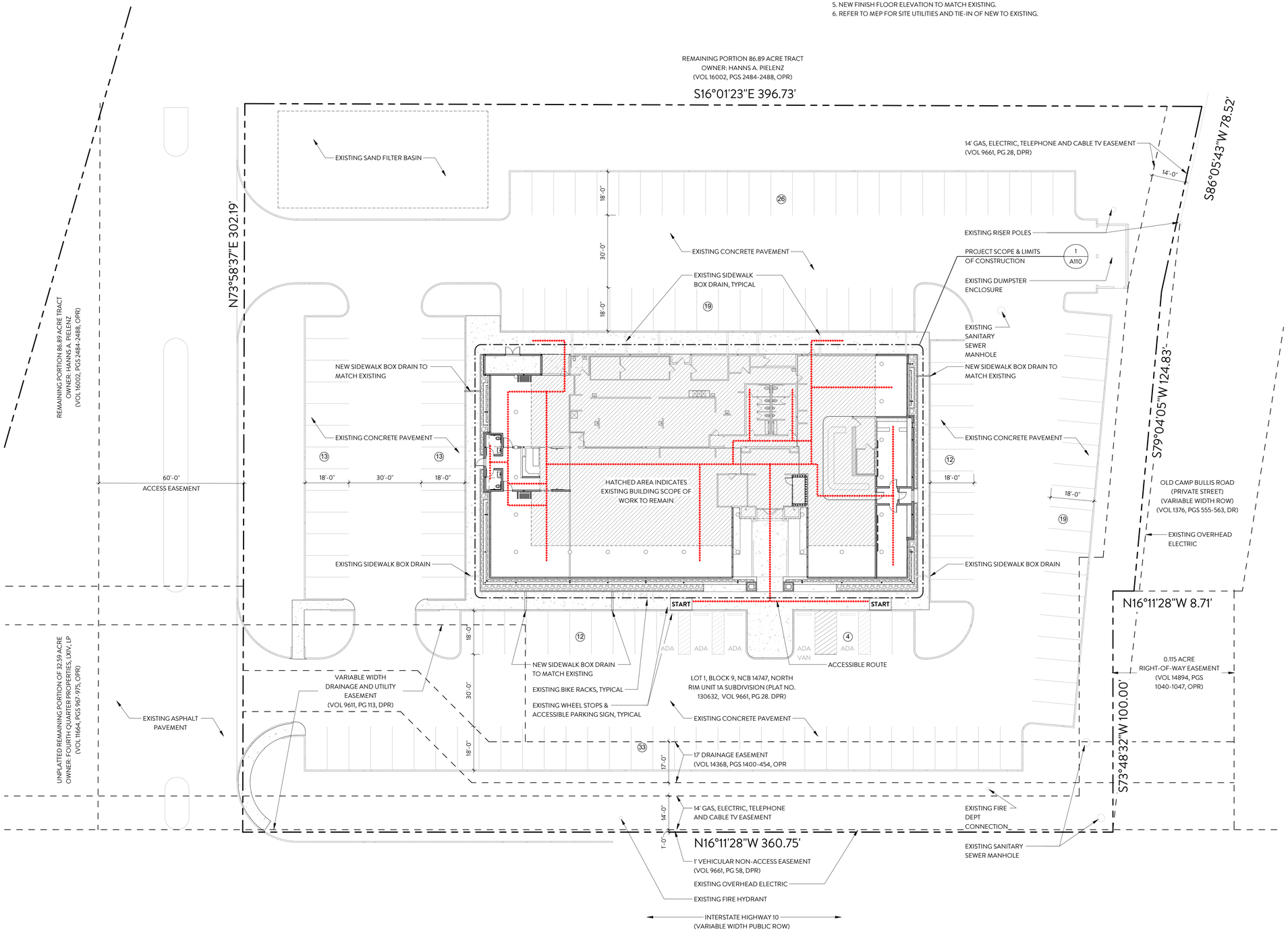
LIFE SAFETY PLAN

SITE PLAN GENERAL NOTES

1. EXISTING SITE INFORMATION PROVIDED BY OWNER. CONTRACTOR TO VERIFY ALL DIMENSIONS, CONDITIONS, ETC., PRIOR TO BEGINNING CONSTRUCTION AND NOTIFY ARCHITECT IN WRITING OF ANY DISCREPANCIES. PROCEEDING WITH WORK SHALL CONSTITUTE ACCEPTANCE BY THE CONTRACTOR THAT ALL CONDITIONS ARE CORRECT AND THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY.
2. DO NOT SCALE DRAWINGS; IF DIMENSIONS ARE IN QUESTIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT BEFORE CONTINUING WITH CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR THE DISPOSAL OF ALL DEMOLISHED MATERIALS NOT IDENTIFIED FOR REUSE OR SALVAGE. THE CONTRACTOR SHALL VERIFY ANY REGULATIONS, LAWS AND/OR ORDINANCES AFFECTING THE METHODS OF DEMOLITION AND THE DISPOSAL OF WASTE MATERIALS. THE OWNER ASSUMES NO LIABILITY FOR EXTRA WORK OR ADDITIONAL COMPENSATION DUE TO FAILURE OF THE CONTRACTOR OR SUBCONTRACTOR TO COMPLY WITH APPLICABLE REGULATIONS.
4. IT IS THE INTENT OF THE OWNER AND ARCHITECT THAT THIS PROJECT COMPLY WITH THE ADA AND TEXAS ACCESSIBILITY STANDARDS.
5. NEW FINISH FLOOR ELEVATION TO MATCH EXISTING.
6. REFER TO MEP FOR SITE UTILITIES AND TIE-IN OF NEW TO EXISTING.



1 SITE PLAN
1" = 20'-0"

PROJECT TRUE

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REGISTERED ARCHITECT
JAVIER S. CASTRO
STATE OF TEXAS
25118

ISSUED DATE 2024-09-16
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A001

ARCHITECTURAL SITE PLAN

DEMOLITION NOTES

1. THE INTENT OF THE DEMOLITION PLAN IS TO REMOVE ALL ITEMS NOT REQUIRED FOR THE FINISHED PROJECT; OR THAT IS IN CONFLICT WITH NEW CONSTRUCTION. THE CONTRACTOR SHALL REMOVE/ RELOCATE ALL SUCH ITEMS AS REQUIRED FOR CONSTRUCTION. DOCUMENT ALL AREAS TO BE SELECTIVELY DEMOLISHED PRIOR TO PERFORMING ANY WORK. DOCUMENTATION TO INCLUDE PHOTOGRAPHS AND MEASURED DRAWINGS. DOCUMENTATION TO BE CLEARLY LABELED AND DELIVERED TO ARCHITECT AND OWNER.

2. THE DEMOLITION STAGE IS CRITICAL TO THE SUCCESS OF THIS PROJECT AND MUST BE CONSIDERED A STAGE OF DISCOVERY. EXTREME CARE MUST BE TAKEN, ESPECIALLY IN AREAS OF QUESTION TO NOT DESTROY ORIGINAL MATERIALS. RECKLESS DESTRUCTION OF SALVAGEABLE, RE-USEABLE ORIGINAL MATERIALS WILL NOT BE ALLOWED AND GC WILL BE RESPONSIBLE FOR REPLACEMENT OF DAMAGED MATERIALS.

3. ALL EXISTING COMPONENTS TO REMAIN ARE TO BE PROTECTED DURING DEMOLITION AND CONSTRUCTION BY THE GENERAL CONTRACTOR (G.C.). ANY DAMAGED MATERIAL IS TO BE REPAIRED, REPLACED OR REBUILT IN A MANNER ACCEPTABLE TO THE OWNER & ARCHITECT.

4. COORDINATE SUPPORT FOR NEW WALL OPENINGS WITH STRUCTURAL DRAWINGS. WHERE APPLICABLE, INSTALL NEW STRUCTURAL MEMBERS (OR ADEQUATE SHORING/ BRACING) BEFORE CUTTING OPENINGS.

5. REFERENCE MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR DEMOLITION WORK ASSOCIATED WITH NEW SYSTEMS CONSTRUCTION AND FOR THE EXTENT OF EXISTING SYSTEMS TO BE REMOVED.

6. SPECIAL NOTE CONCERNING HAZARDOUS MATERIALS: THE WORK INDICATED HEREIN AND IN RELATED SPECIFICATIONS (INCLUDING REQUIRED DEMOLITION WORK) DOES NOT ADDRESS THE PRESENCE OF HAZARDOUS MATERIALS. THE ARCHITECT IS NOT INVOLVED IN THE REMOVAL, TREATMENT OR IDENTIFICATION OF ASBESTOS OR ANY OTHER HAZARDOUS MATERIAL IN ANY WAY.

7. PATCH, REPAIR, AND PREPARE ALL SURFACES AS REQUIRED TO ACCOMMODATE FINISHES INDICATED.

8. GENERAL CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING PROPERTY UTILITIES PRIOR TO PERFORMING ANY WORK, AND GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS WITH EXISTING UTILITIES DURING DEMOLITION & CONSTRUCTION PHASES.

9. SALVAGE ALL DOORS, HARDWARE, FIXTURES, TRIM, & ALL ITEMS NOTED ON DEMOLITION PLAN TO BE REMOVED. REVIEW WITH ARCHITECT & OWNER TO DETERMINE ITEMS FOR REUSE.

10. REMOVE ROTTED WOOD WHEN ENCOUNTERED. DOCUMENT EXISTING CONDITION FOR REPLACEMENT. REVIEW SCOPE WITH OWNER AND ARCHITECT PRIOR TO REMOVAL.

11. EXISTING WALLS AND STRUCTURE ARE NOT NECESSARILY SHOWN IN THEIR ENTIRETY OR ABSOLUTELY CORRECT LOCATION. CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO BIDDING. ANY DISCREPANCIES TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR DIRECTION AND OR CLARIFICATION.

12. POTABLE WATER AND ELECTRICITY WILL BE PROVIDED BY THE GC AS NEEDED FOR DEMOLITION & CONSTRUCTION PHASES.

13. ITEMS NOTED TO BE SAVED OR SALVAGED FOR REUSE ARE TO BE STORED OFF SITE IN OWNER COORDINATED STORAGE FACILITY FOR REUSE BY THE OWNER OR GENERAL CONTRACTOR AT THIS SITE. ALL ITEMS NOTED REMOVE/RETAIN FOR FUTURE USE SHALL BE PHOTOGRAPHED IN PLACE, CLEARLY LABELED AND STORED.

14. THE CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY DEMOLITION OF THE BUILDING SYSTEMS, AND PATCHING OR REPAIR OF EXISTING BUILDING FINISHES/SITE FEATURES AFFECTED BY NEW CONSTRUCTION.

15. ALL DIMENSIONS AND CONDITIONS ABUTTING THE EXISTING CONSTRUCTION ARE APPROXIMATE. ALL SUCH CONDITIONS SHALL BE FIELD VERIFIED BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT. OPENING SIZES NOTED ON THE DEMOLITION DRAWINGS ARE TO BE COORDINATED WITH THE ARCHITECTURAL, STRUCTURAL, AND MEP DRAWINGS, PRIOR TO CUTTING OPENINGS.

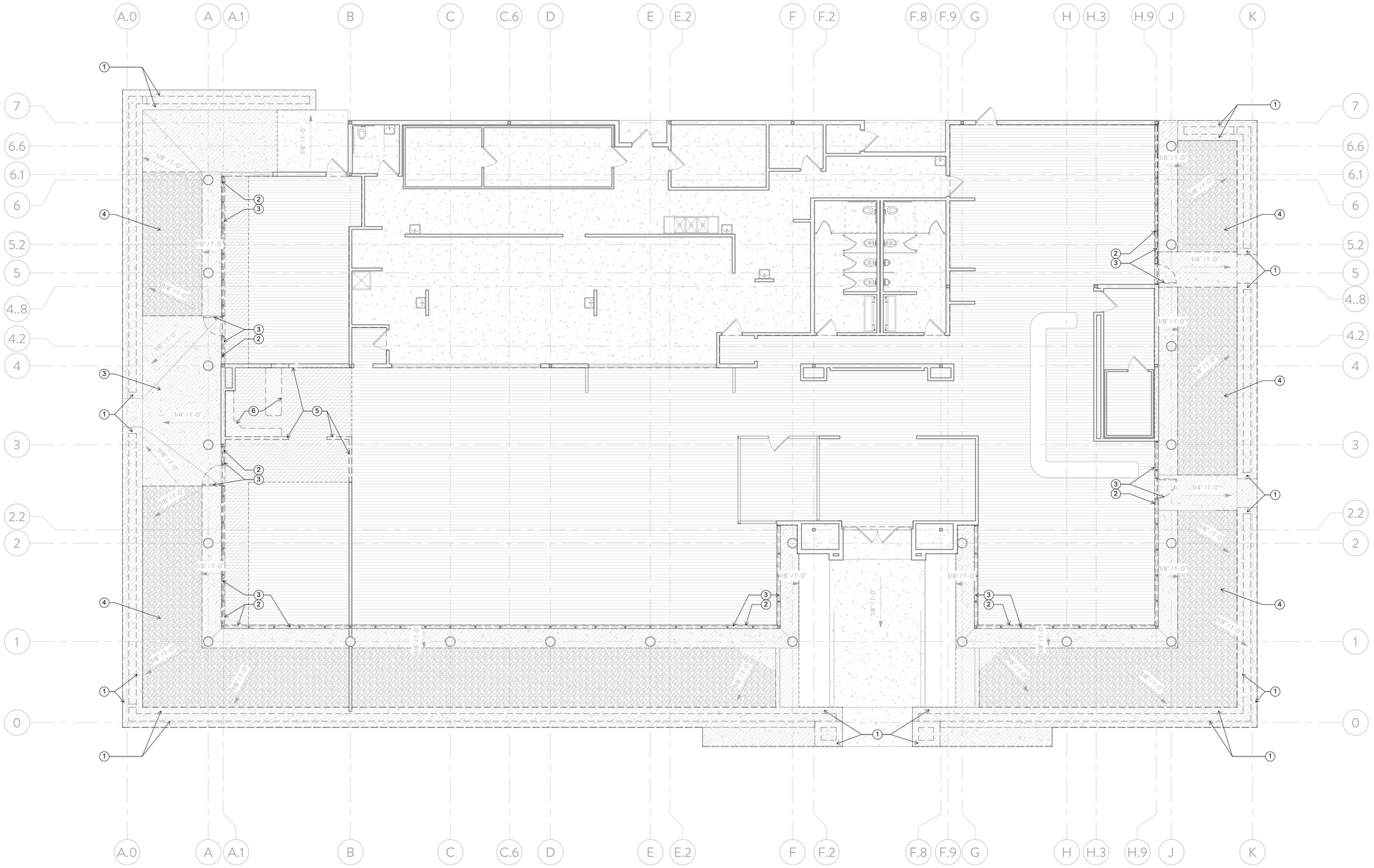
DEMOLITION KEY NOTES

* NOT ALL KEY NOTES USED

1. DEMO PLANTER WALLS.
2. DEMO CONCRETE CURB - REFER TO NEW WORK FOR EXTENTS.
3. DEMO STOREFRONT GLAZING ASSEMBLY.
4. SALVAGE RIVER ROCK FOR NEW WORK REUSE.
5. DEMO PARTITION.
6. REMOVE BAR & MILLWORK FOR NEW WORK RE-INSTALLATION.

DEMOLITION LEGEND

- EXISTING CONSTRUCTION TO REMAIN
- EXISTING CONCRETE SLAB TO BE REMOVED
- EXISTING CONSTRUCTION TO BE REMOVED



1 FIRST FLOOR PLAN - DEMO
1/8" = 1'-0"

architecture

REGISTERED ARCHITECT
JAVIER S. CASTRO
STATE OF TEXAS
25118

ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

PERMIT REVIEW

BRASAO REMODEL

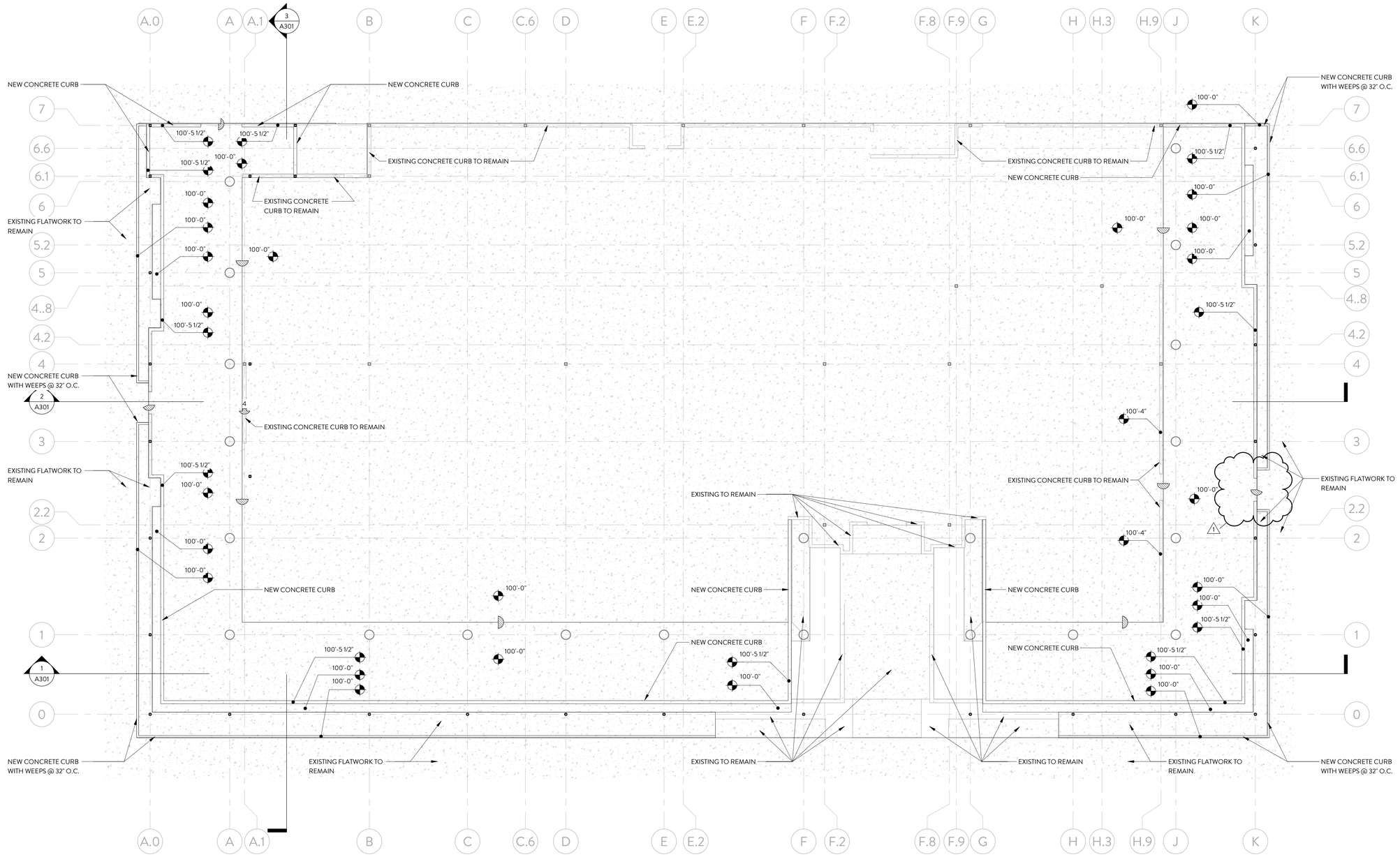
19210 110 WEST
SAN ANTONIO, TX 78257

AD100

FLOOR PLAN - DEMOLITION

ARCHITECTURAL SLAB PLAN NOTES

1. ARCHITECTURAL SLAB PLAN IS FOR REFERENCE ONLY. REFER TO STRUCTURAL SLAB PLAN.



1 SLAB PLAN

1/8" = 1'-0"

PROJECT TRUE

architecture

REGISTERED ARCHITECT
JAVIER S. CASTRO
STATE OF TEXAS
25118

ISSUED DATE 1 11/8/2024
PROJECT NUMBER 2401

PERMIT REVIEW

BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

A100

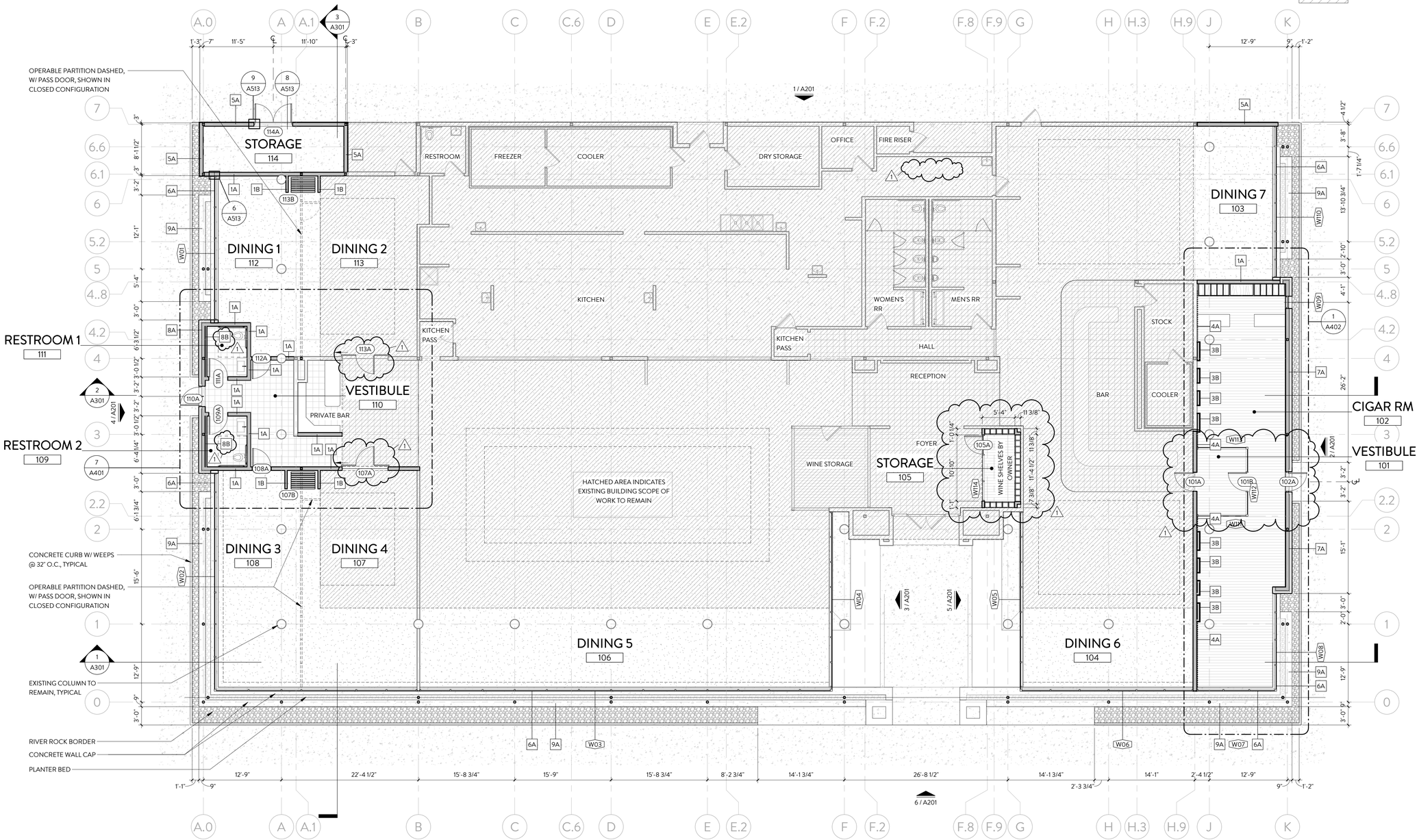
ARCHITECTURAL SLAB PLAN

GENERAL NOTES

1. CONTRACTOR TO VERIFY ALL DIMENSIONS, CONDITIONS, ETC., PRIOR TO BEGINNING CONSTRUCTION AND NOTIFY ARCHITECT IN WRITING OF ANY DISCREPANCIES. PROCEEDING WITH WORK SHALL CONSTITUTE ACCEPTANCE BY THE CONTRACTOR THAT ALL CONDITIONS ARE CORRECT AND THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY.
2. DO NOT SCALE DRAWINGS; IF DIMENSIONS ARE IN QUESTIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT BEFORE CONTINUING WITH CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR THE DISPOSAL OF ALL DEMOLISHED MATERIALS NOT IDENTIFIED FOR REUSE OR SALVAGE. THE CONTRACTOR SHALL VERIFY ANY REGULATIONS, LAWS AND/OR ORDINANCES AFFECTING THE METHODS OF DEMOLITION AND THE DISPOSAL OF WASTE MATERIALS. THE OWNER ASSUMES NO LIABILITY FOR EXTRA WORK OR ADDITIONAL COMPENSATION DUE TO FAILURE OF THE CONTRACTOR OR SUBCONTRACTOR TO COMPLY WITH APPLICABLE REGULATIONS.
4. IT IS THE INTENT OF THE OWNER AND ARCHITECT THAT THIS PROJECT COMPLY WITH THE ADA AND TEXAS ACCESSIBILITY STANDARDS.
5. CONTRACTOR IS TO PROCEED WITH EXTREME CARE AND PRECISION TO MITIGATE DAMAGES TO EXISTING FINISHES AND MATERIALS SLATED TO REMAIN OR BE REUSED. ALL ELEMENTS TO REMAIN ARE TO BE PROTECTED FOR DURATION OF DEMOLITION/ CONSTRUCTION. ALL ELEMENTS TO BE SALVAGED FOR REUSE ARE TO BE CAREFULLY REMOVED, INSPECTED, CATALOGED AND PLACED INTO PREDESIGNATED BUILDING STORAGE AREA FOR THE PROJECT DURATION OR UNTIL A TIME IN WHICH ITEM IS REQUIRED IN PROJECT.
6. FOR DIMENSIONAL DISCREPANCIES IN FIELD CONDITIONS DISCOVERED OF 4" OR GREATER COORDINATE RESOLUTION WITH ARCHITECT PRIOR TO COMMENCING WITH WORK.
7. TYPICAL DOOR JAMBS TO WALL CLEARANCE AT HINGE SIDE TO BE 4" U.N.O.
8. REFER TO ENLARGED FLOOR PLANS FOR WALL TYPE TAGS. REFER TO SHEET A501 FOR TYPICAL WALL ASSEMBLIES.

PLAN LEGEND

- EXISTING DOOR
- NEW DOOR
- EXISTING CONSTRUCTION
- NEW CONSTRUCTION
- NEW CMU WALL
- VLT FLOORING
- TILE FLOORING
- RIVER ROCK
- CONCRETE
- CARPET
- AREA NOT IN SCOPE



1 FIRST FLOOR PLAN
1/8" = 1'-0"

PROJECT TRUE

architecture
REGISTERED ARCHITECT JAVIER S. CASTRO STATE OF TEXAS 25118

ISSUED DATE 1 11/8/2024
PROJECT NUMBER 2401

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BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

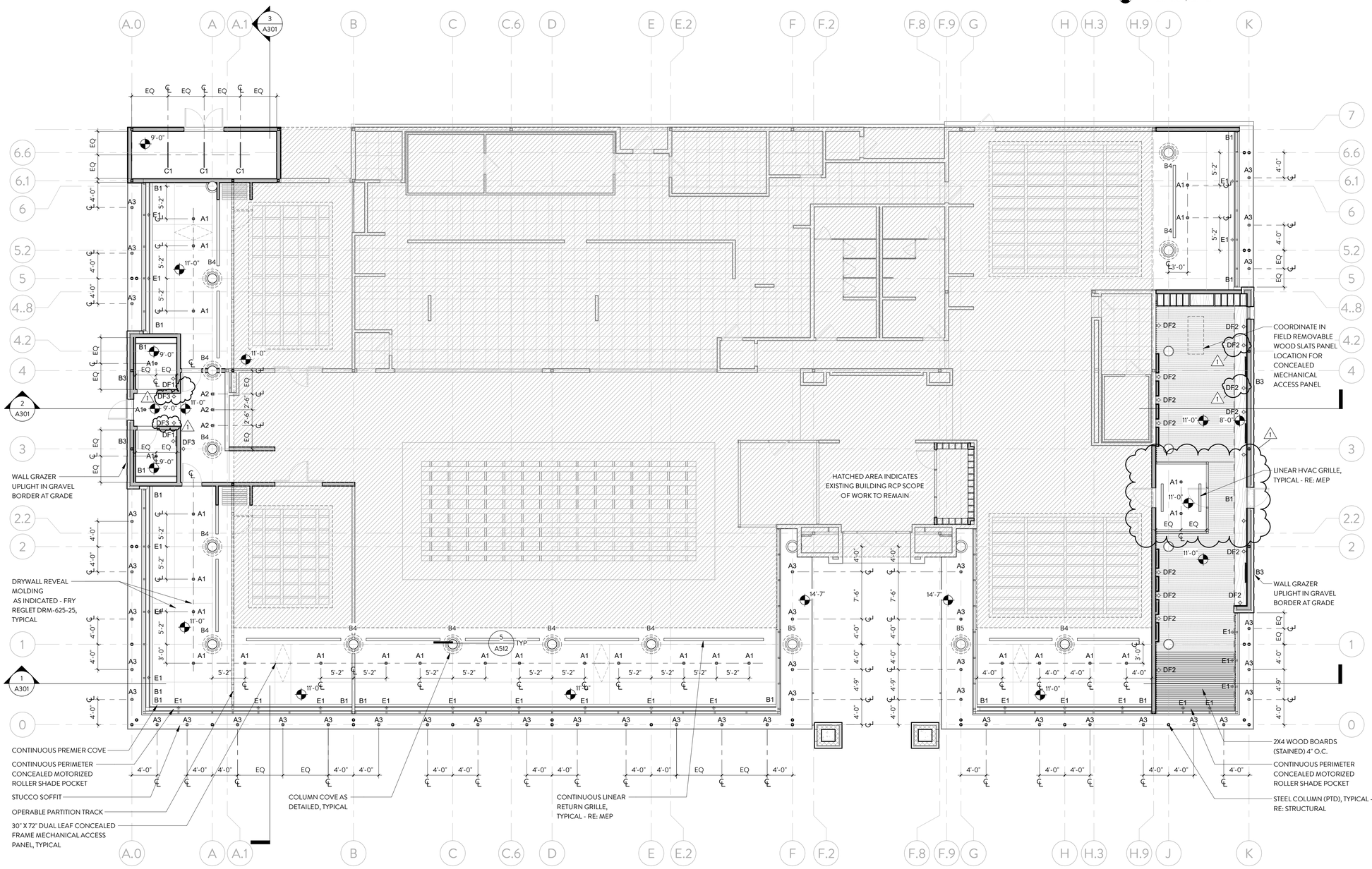
A110
FLOOR PLANS

GENERAL NOTES

1. ALL FIRE RATED WALLS TERMINATE AT STRUCTURAL DECK ABOVE. SEAL ALL PENETRATIONS PER UL DETAILS.
2. PROPERLY FUNCTIONING ACOUSTIC ASSEMBLIES ARE CRUCIAL TO THE SUCCESS OF THIS PROJECT. "FIRST IN PLACE" MOCKUPS ARE REQUIRED, FOR REVIEW AND APPROVAL.
3. PROVIDE FOAM SILL GASKET AT ALL EXTERIOR AND ACOUSTIC WALL FRAMING LOCATIONS.
4. MAINTAIN FIRE RATING THROUGH RATED ASSEMBLIES FOR ALL PENETRATIONS.
5. FINAL LOCATIONS MAY VARY DUE TO EXISTING CONDITIONS. VERIFY FINAL LOCATION WITH ARCHITECT.
6. REFER TO LIGHT FIXTURE SCHEDULE ON ELECTRICAL DRAWINGS.

RCP LEGEND (NOT AS SYMBOLS USED)

- GYPSUM CEILING
- WOOD CEILING
- ACT CEILING
- STUCCO CEILING
- SUPPLY DIFFUSER OR REGISTER, RE: MEP
- EXHAUST GRILLE OR REGISTER, RE: MEP
- RETURN GRILLE OR REGISTER, RE: MEP
- 2X LIGHT FIXTURE
- EXIT SIGN, RE: MEP
- RECESSED LIGHT FIXTURE - FIXED
- RECESSED LIGHT FIXTURE - DIRECTIONAL
- RECESSED STEP LIGHT
- SURFACE MOUNTED LIGHT FIXTURE
- IN-GRADE LIGHT FIXTURE
- PENDANT LIGHT FIXTURE
- WALL SCONCE PENDANT
- FIRE SPRINKLER HEAD
- LINEAR LED FIXTURE
- EF EXHAUST FAN



1 FIRST FLOOR CEILING PLAN

1/8" = 1'-0"

castro architecture
JAVIER S. CASTRO 25118 REGISTERED ARCHITECT STATE OF TEXAS

ISSUED DATE 1 11/8/2024
PROJECT NUMBER 2401

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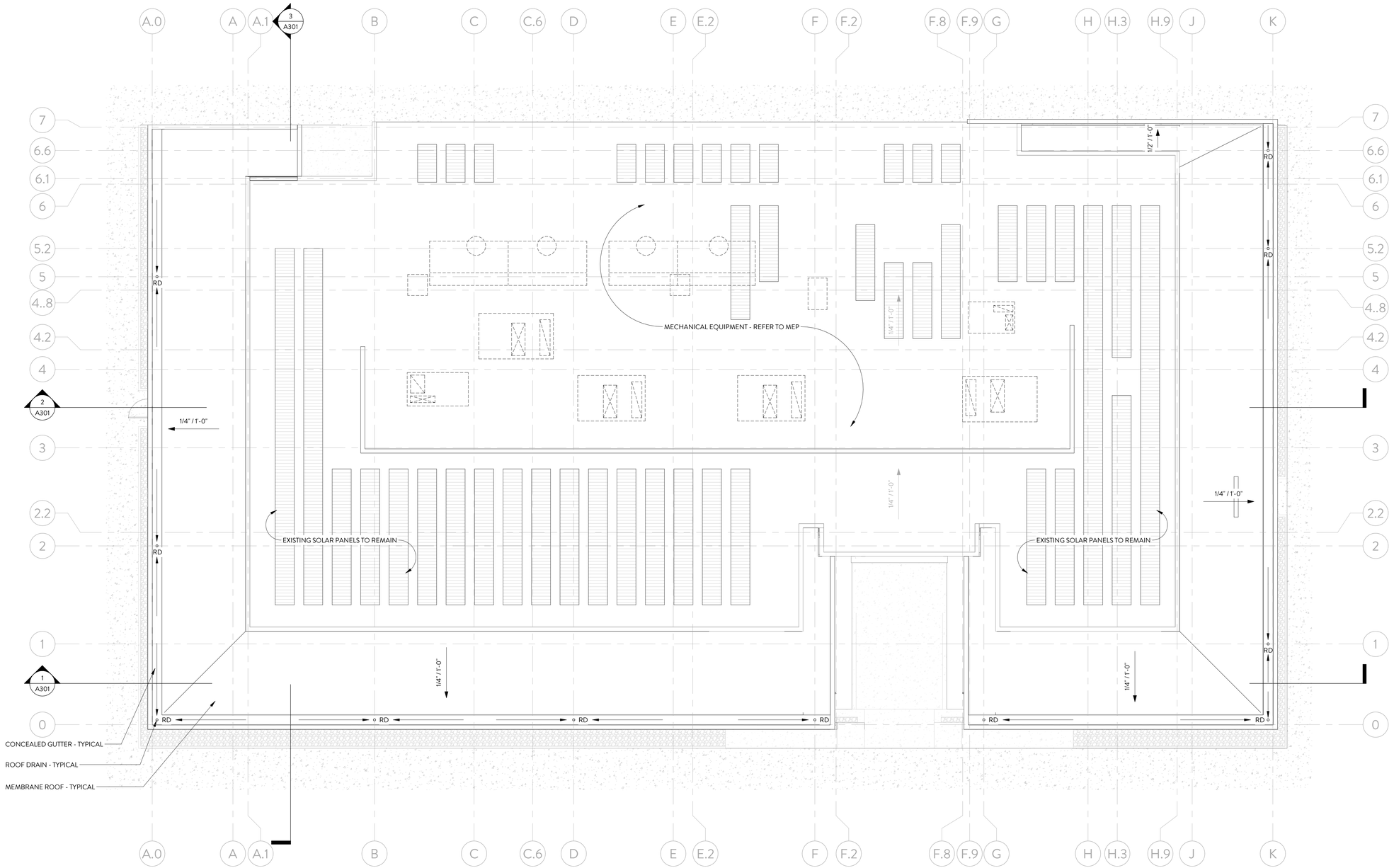
SAN ANTONIO, TX 78257

A120

REFLECTED CEILING PLANS

ROOF PLAN GENERAL NOTES

1. ARCHITECTURAL DIAGRAMMATIC REPRESENTATION OF EXISTING EQUIPMENT IS FOR REFERENCE ONLY. EXISTING ROOF EQUIPMENT TO BE VERIFIED IN FIELD BY CONTRACTOR. CONTRACTOR TO VERIFY ALL DIMENSIONS, CONDITIONS, ETC., PRIOR TO BEGINNING CONSTRUCTION AND NOTIFY ARCHITECT IN WRITING OF ANY DISCREPANCIES. PROCEEDING WITH WORK SHALL CONSTITUTE ACCEPTANCE BY THE CONTRACTOR THAT ALL CONDITIONS ARE CORRECT AND THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY.
2. DO NOT SCALE DRAWINGS; IF DIMENSIONS ARE IN QUESTIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT BEFORE CONTINUING WITH CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR THE DISPOSAL OF ALL DEMOLISHED MATERIALS NOT IDENTIFIED FOR REUSE OR SALVAGE. THE CONTRACTOR SHALL VERIFY ANY REGULATIONS, LAWS AND/OR ORDINANCES AFFECTING THE METHODS OF DEMOLITION AND THE DISPOSAL OF WASTE MATERIALS. THE OWNER ASSUMES NO LIABILITY FOR EXTRA WORK OR ADDITIONAL COMPENSATION DUE TO FAILURE OF THE CONTRACTOR OR SUBCONTRACTOR TO COMPLY WITH APPLICABLE REGULATIONS.



1 ROOF PLAN
1/8" = 1'-0"

PROJECT TRUE

architecture

REGISTERED ARCHITECT
JAVIER S. CASTRO
STATE OF TEXAS
25118

ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

PERMIT REVIEW

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19210 110 WEST
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A130

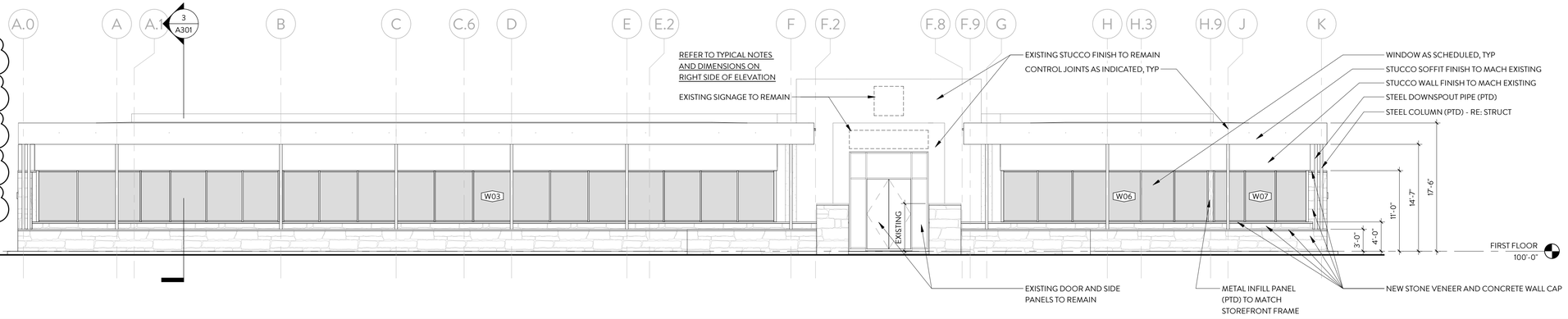
ROOF PLAN

VERTICAL FENESTRATION AREA

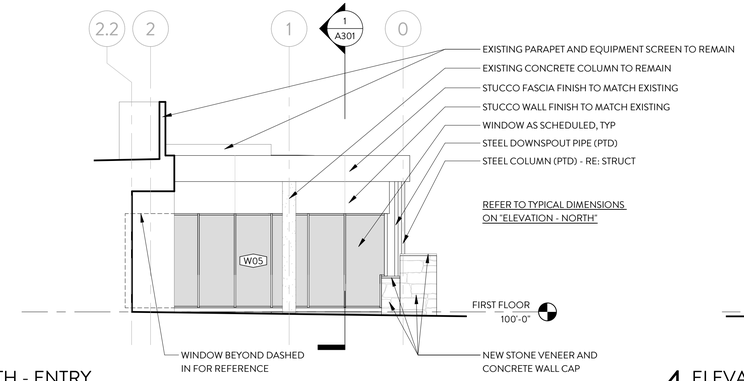
ELEVATION	WALL*	VERTICAL FENESTRATION AREA
WEST ELEVATION	2,522 SF	1,000 SF
NORTH ENTRY ELEVATION	470 SF	307 SF
NORTH ELEVATION	1,584 SF	413 SF
SOUTH ENTRY ELEVATION	470 SF	307 SF
SOUTH ELEVATION	1,719 SF	207 SF
EAST ELEVATION	2,725 SF	0 SF
TOTAL:	9,490 SF	2,234

% VERTICAL FENESTRATION AREA (2,234 / 9,490) = 23.5%

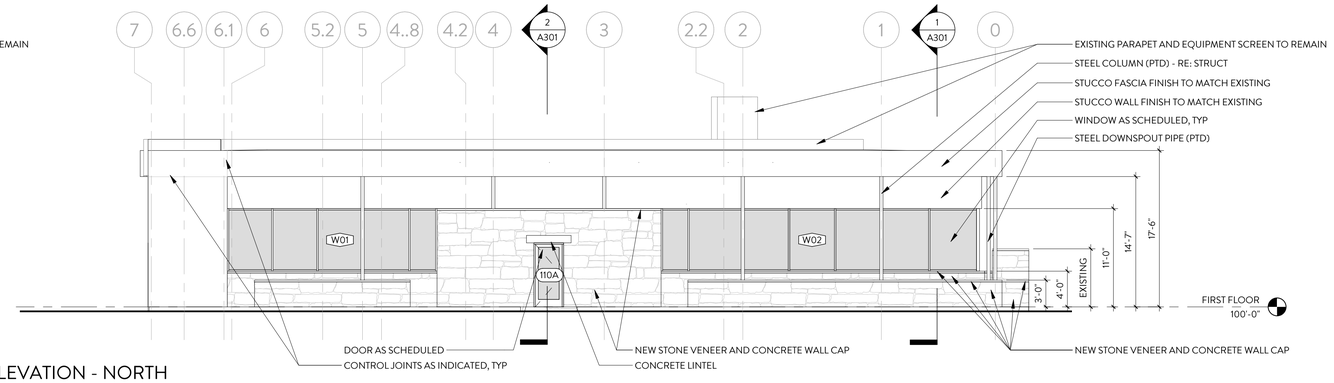
* GROSS ABOVE GRADE WALL AREA



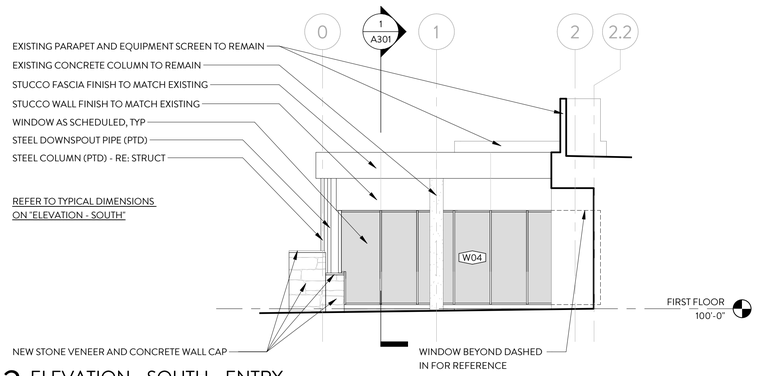
6 ELEVATION - WEST
1/8" = 1'-0"



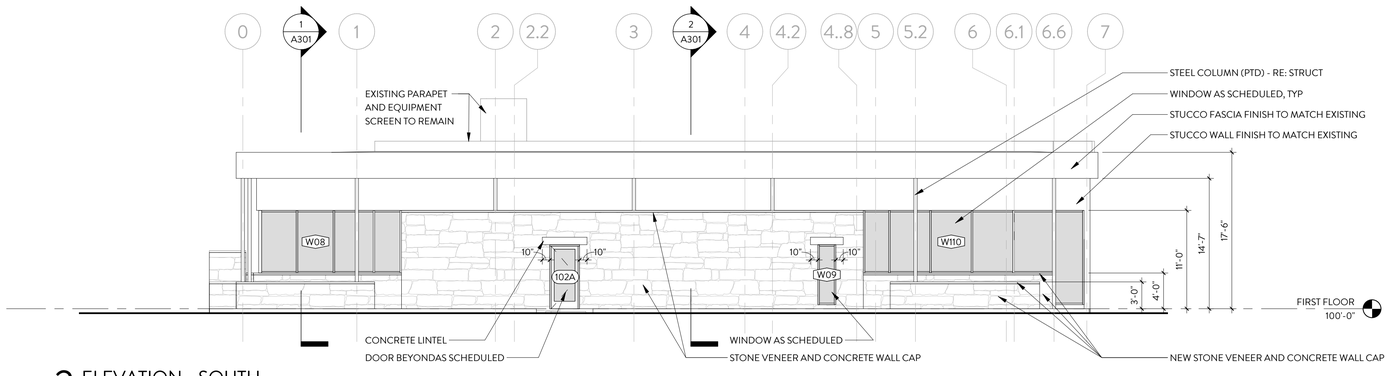
5 ELEVATION - NORTH - ENTRY
1/8" = 1'-0"



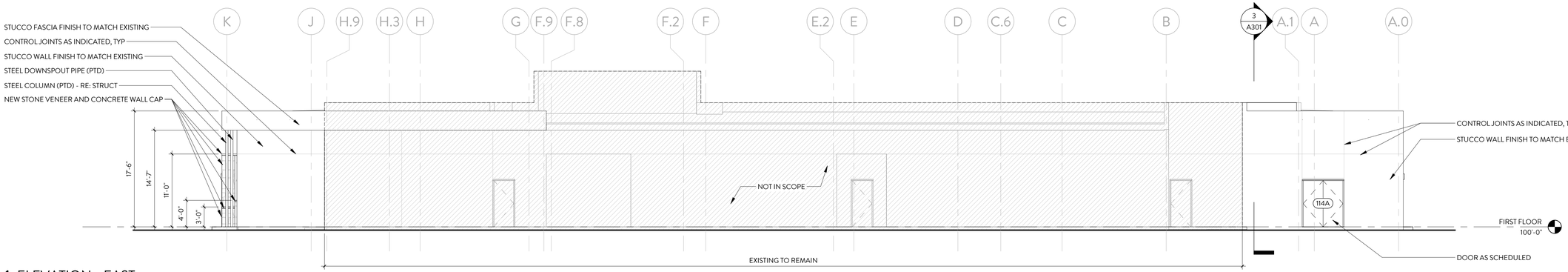
4 ELEVATION - NORTH
1/8" = 1'-0"



3 ELEVATION - SOUTH - ENTRY
1/8" = 1'-0"



2 ELEVATION - SOUTH
1/8" = 1'-0"



1 ELEVATION - EAST
1/8" = 1'-0"

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REGISTERED ARCHITECT
JAVIER S. CASTRO
25118
STATE OF TEXAS

ISSUED DATE 1 11/8/2024
PROJECT NUMBER 2401

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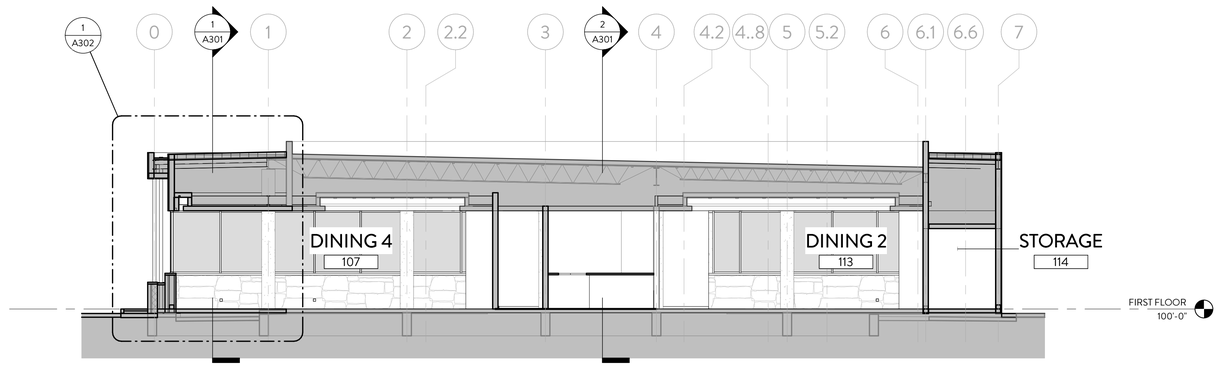
SAN ANTONIO, TX 78257

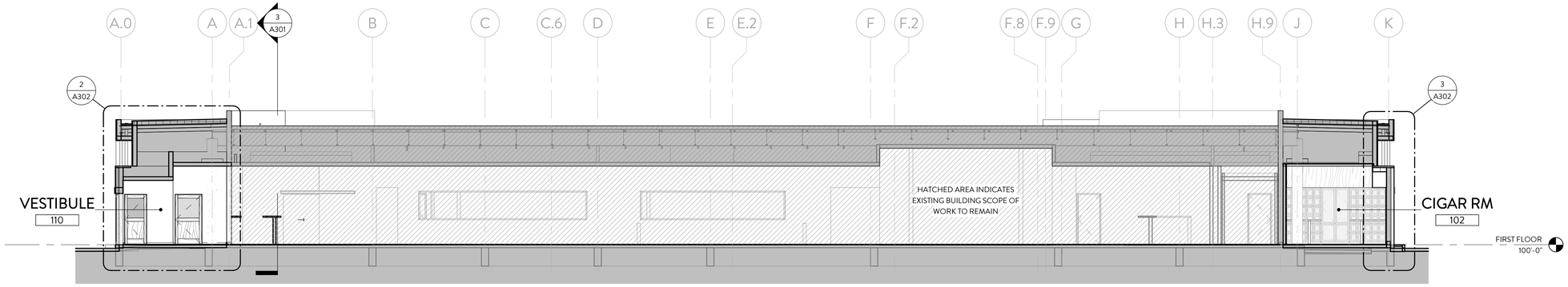
A201

EXTERIOR ELEVATIONS



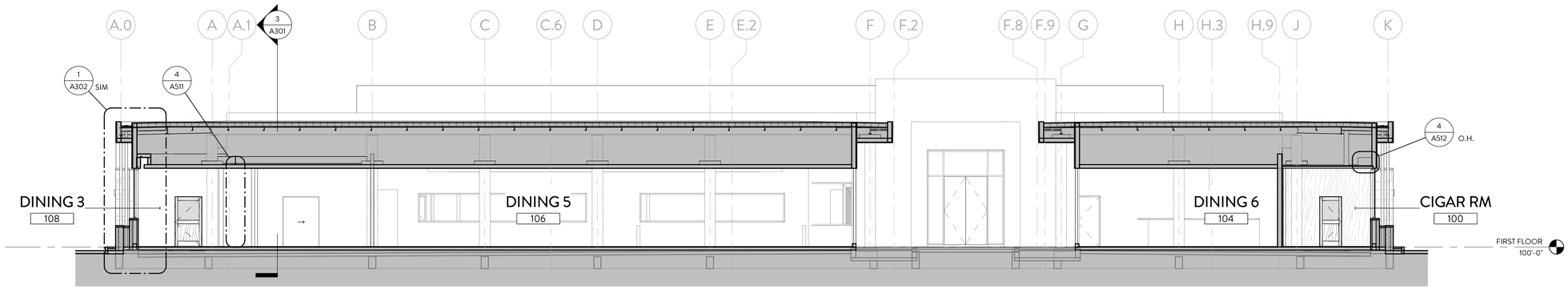
3 BUILDING SECTION - WEST / EAST

1/8" = 1'-0"



2 BUILDING SECTION - NORTH / SOUTH B

1/8" = 1'-0"



1 BUILDING SECTION - NORTH / SOUTH A

1/8" = 1'-0"

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JAVIER S. CASTRO
STATE OF TEXAS
25118

ISSUED DATE 2024-09-16
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SAN ANTONIO, TX 78257

A301

SECTIONS

BUILDING ASSEMBLY NOTES

1. UNDERLINED NOTES LOCATED IN THE BUILDING AND WALL SECTIONS INDICATE ASSEMBLIES.
2. WALL ASSEMBLIES ARE LISTED FROM THE EXTERIOR LAYER TO THE INTERIOR LAYER.
3. ROOF AND FLOOR ASSEMBLIES ARE LISTED FROM THE TOP TO THE BOTTOM LAYER.

FLOOR ASSEMBLY NOTES

FLOOR TYPE - A
- FINISH FLOOR - RE: ROOM FINISH SCHEDULE
- CONCRETE SLAB - RE: STRUCTURAL

ROOF ASSEMBLY NOTES

ROOF TYPE - A
- TPO MEMBRANE ROOF
- COVERBOARD
- RIGID INSULATION - 6" THICKNESS
- STEEL FRAMING - RE: STRUCTURAL
- CEILING FRAMING AS REQUIRED
- CEILING - RE: ROOM FINISH SCHEDULE

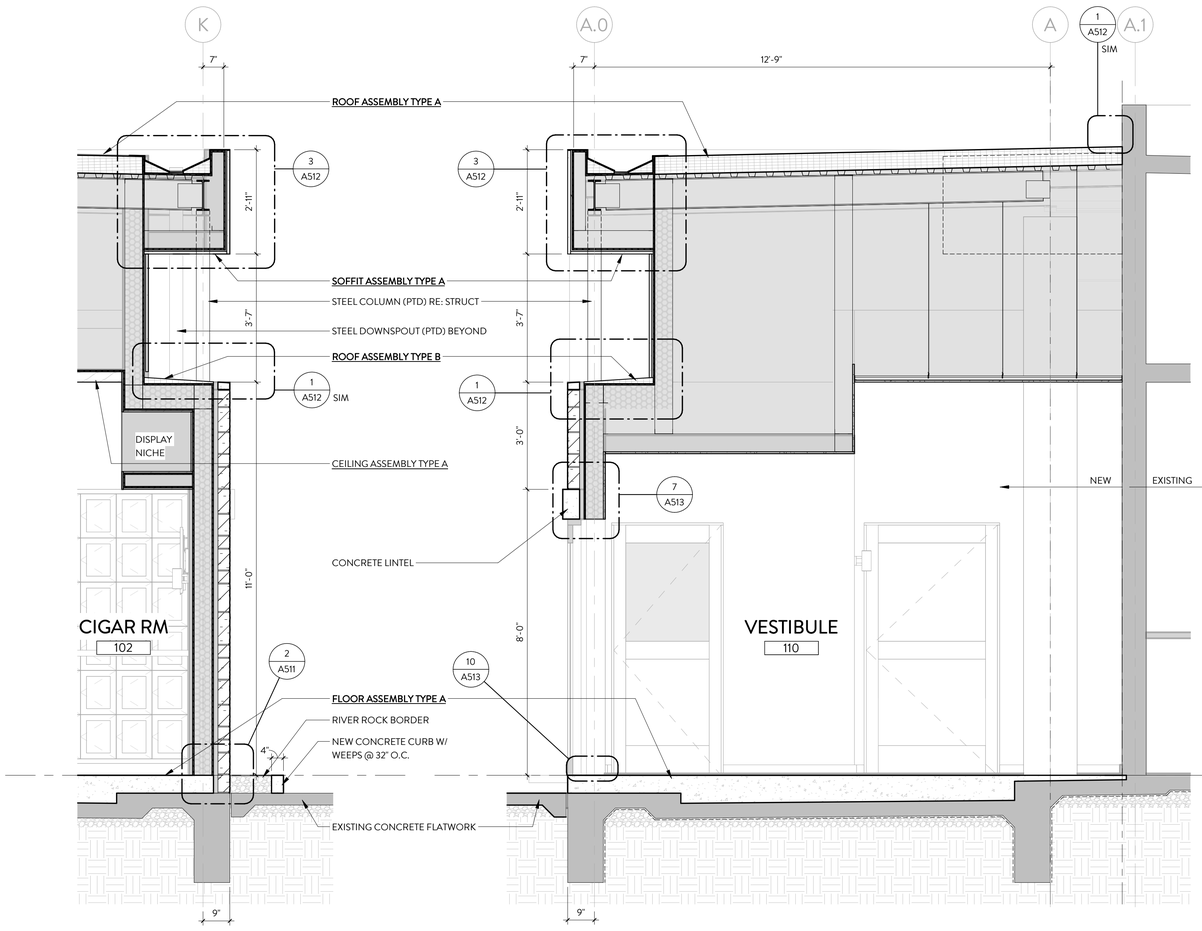
ROOF TYPE - B
- TPO MEMBRANE ROOF
- TAPERED INSULATION - SLOPE AS INDICATED
- PLYWOOD SHEATHING
- LIGHT GAUGE METAL FRAMING - RE: STRUCT
- CEILING FRAMING AS REQUIRED
- CEILING - RE: ROOM FINISH SCHEDULE

SOFFIT ASSEMBLY NOTES

SOFFIT TYPE - A
- STUCCO ASSEMBLY
- DIMPLE MAT (BASIS OF DESIGN = DORKEN DELTA DRY STUCCO & STONE)
- WATER RESISTANT BARRIER
- PLYWOOD SHEATHING
- SOFFIT FRAMING AS REQUIRED

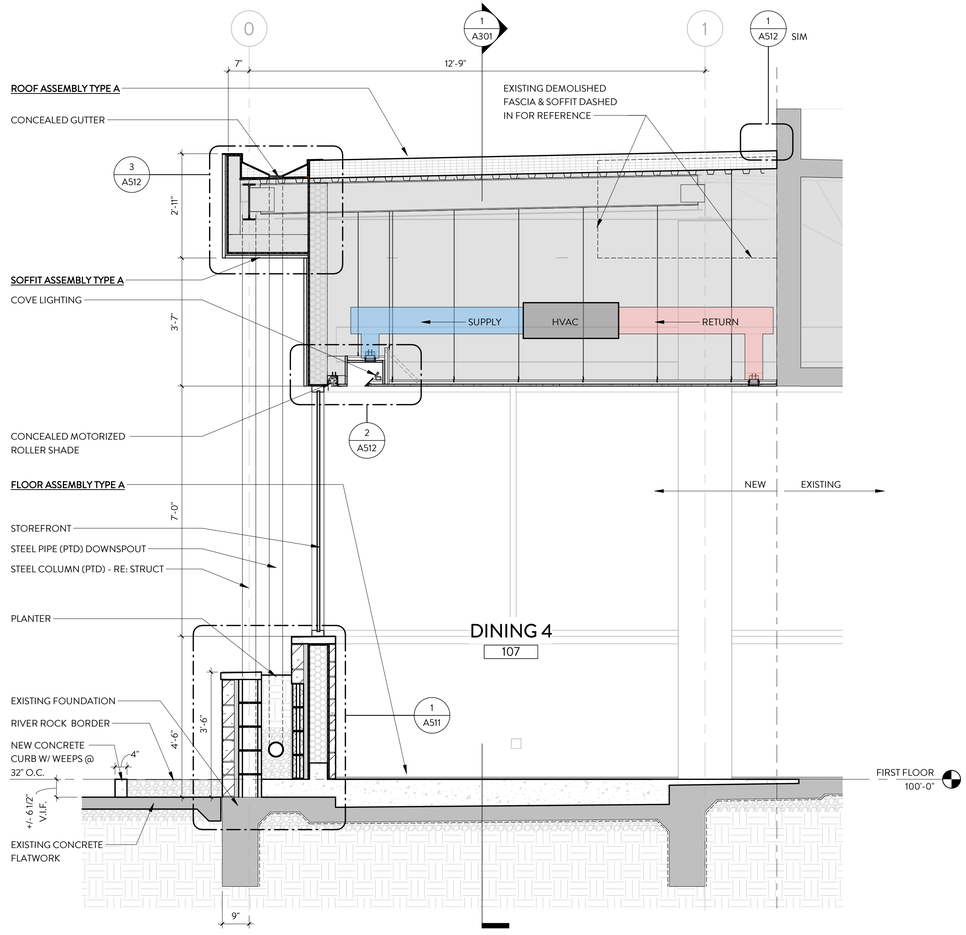
CEILING ASSEMBLY NOTES

CEILING TYPE - A
- 2X4 WOOD BOARD SLATS - RE: ROOM FINISH SCHEDULE
- 3/4" WOOD PANELING - RE: ROOM FINISH SCHEDULE
- 1/2" PLYWOOD SHEATHING
- CEILING FRAMING AS REQUIRED



3 WALL SECTION - CIGAR ROOM
1/2" = 1'-0"

2 WALL SECTION - VESTIBULE SECTION
1/2" = 1'-0"



1 WALL SECTION - PATIO ENCLOSURE
1/2" = 1'-0"

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REGISTERED ARCHITECT
JAVIER S. CASTRO
STATE OF TEXAS
25118

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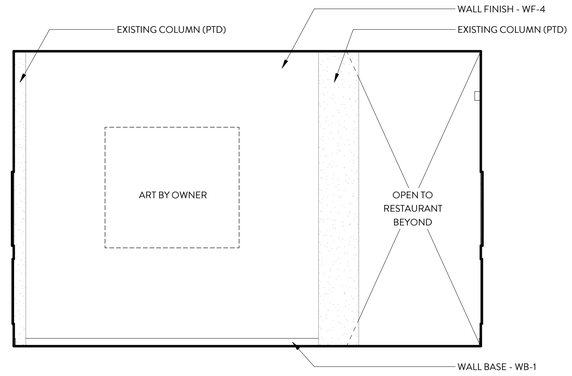
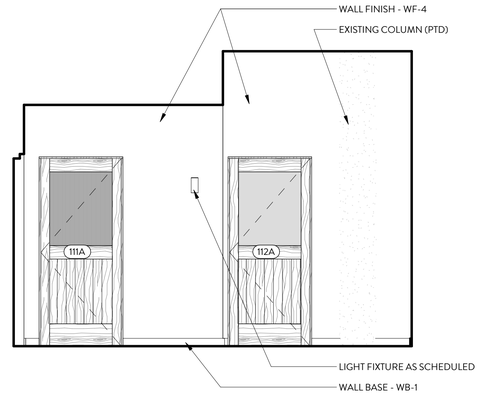
SAN ANTONIO, TX 78257

A302

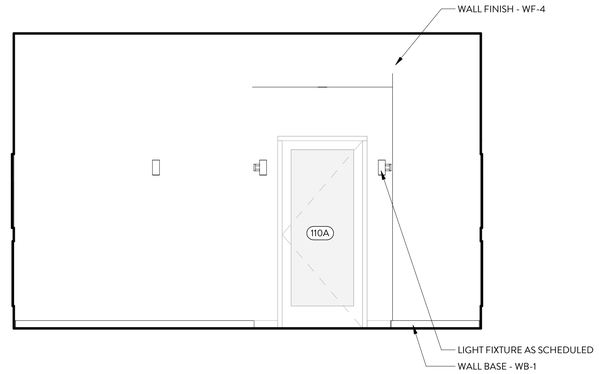
WALL SECTIONS



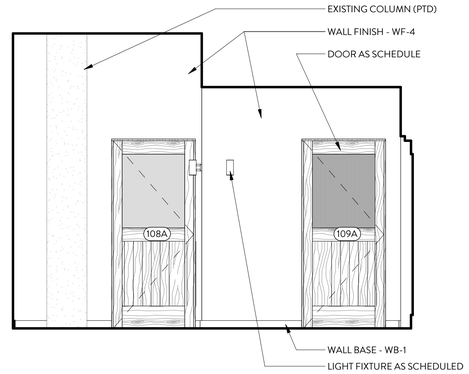
11 VESTIBULE - EAST
3/8" = 1'-0"



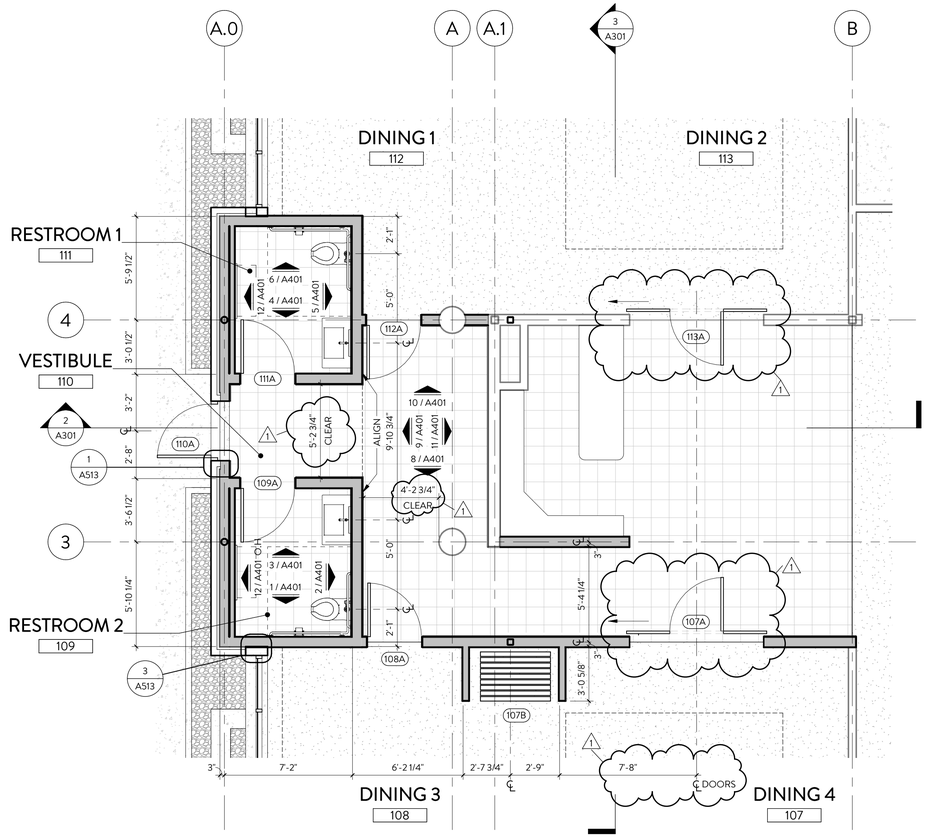
10 VESTIBULE - NORTH
3/8" = 1'-0"



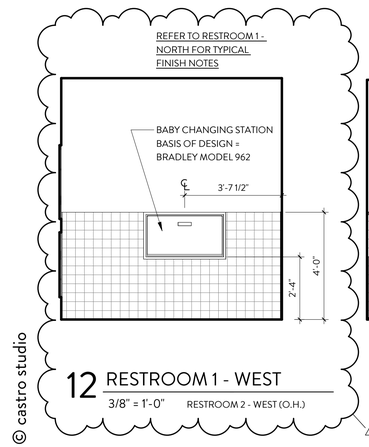
9 VESTIBULE - WEST
3/8" = 1'-0"



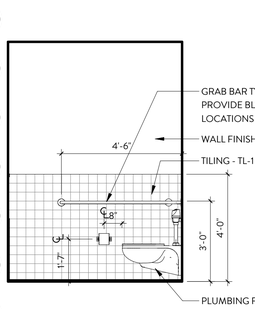
8 VESTIBULE - SOUTH
3/8" = 1'-0"



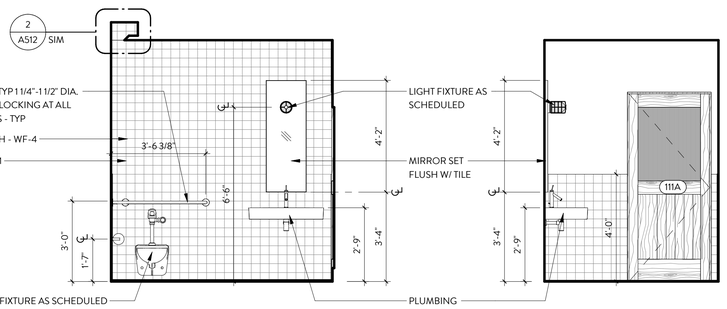
7 ENLARGED PLAN - RESTROOMS
1/4" = 1'-0"



12 RESTROOM 1 - WEST
3/8" = 1'-0" RESTROOM 2 - WEST (O.H.)

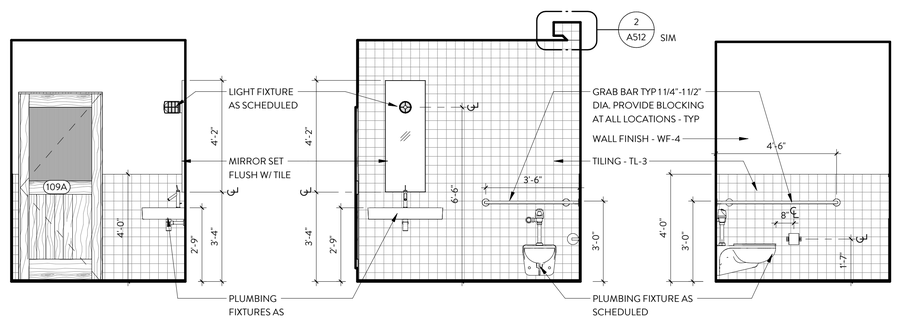


6 RESTROOM 1 - NORTH
3/8" = 1'-0"



5 RESTROOM 1 - EAST
3/8" = 1'-0"

4 RESTROOM 1 - SOUTH
3/8" = 1'-0"



3 RESTROOM 2 - NORTH
3/8" = 1'-0"

2 RESTROOM 2 - EAST
3/8" = 1'-0"

1 RESTROOM 2 - SOUTH
3/8" = 1'-0"

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REGISTERED ARCHITECT JAVIER S. CASTRO STATE OF TEXAS 25118

ISSUED DATE 1 11/8/2024
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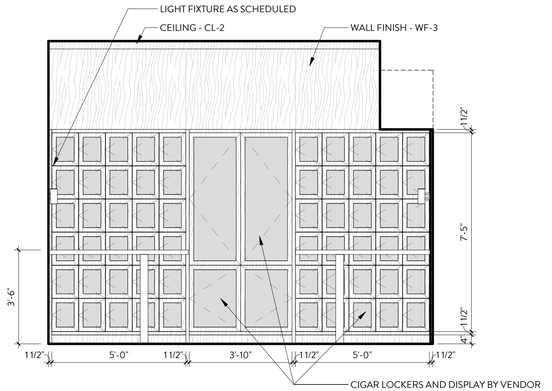
ENLARGED PLANS & INTERIOR ELEVATIONS

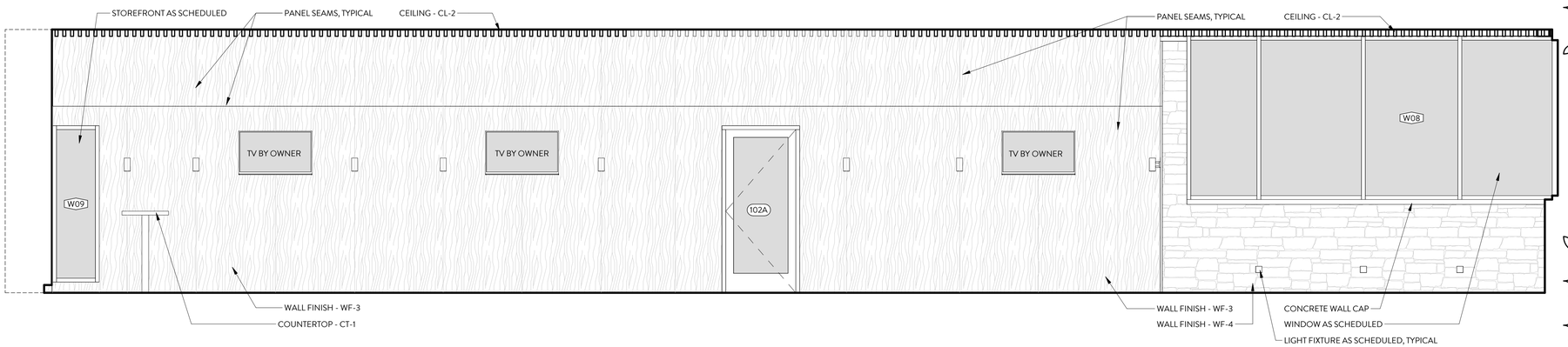


6 CIGAR LOCKERS - NORTH

3/8" = 1'-0"

5 NOT USED

3/8" = 1'-0"

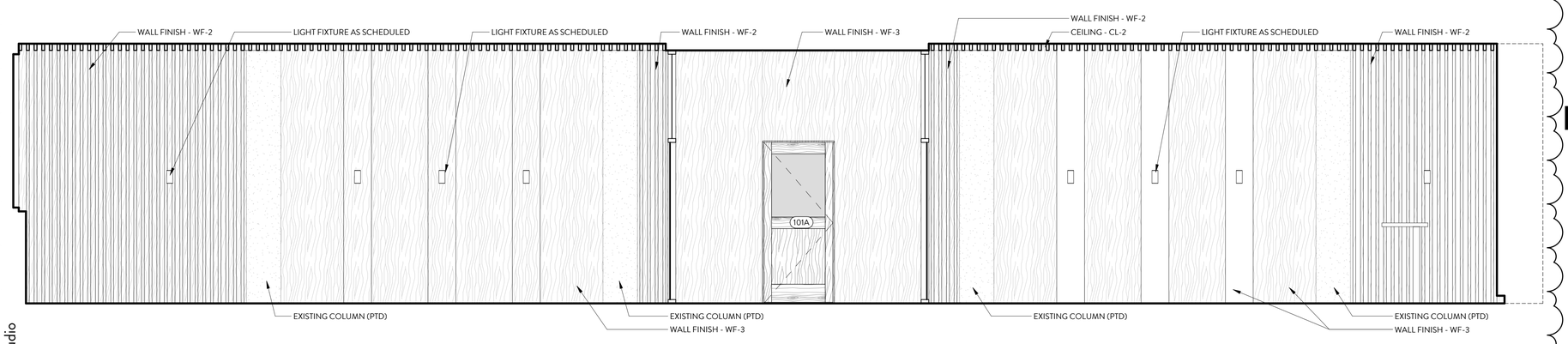


4 CIGAR LOUNGE 102 - EAST

3/8" = 1'-0"

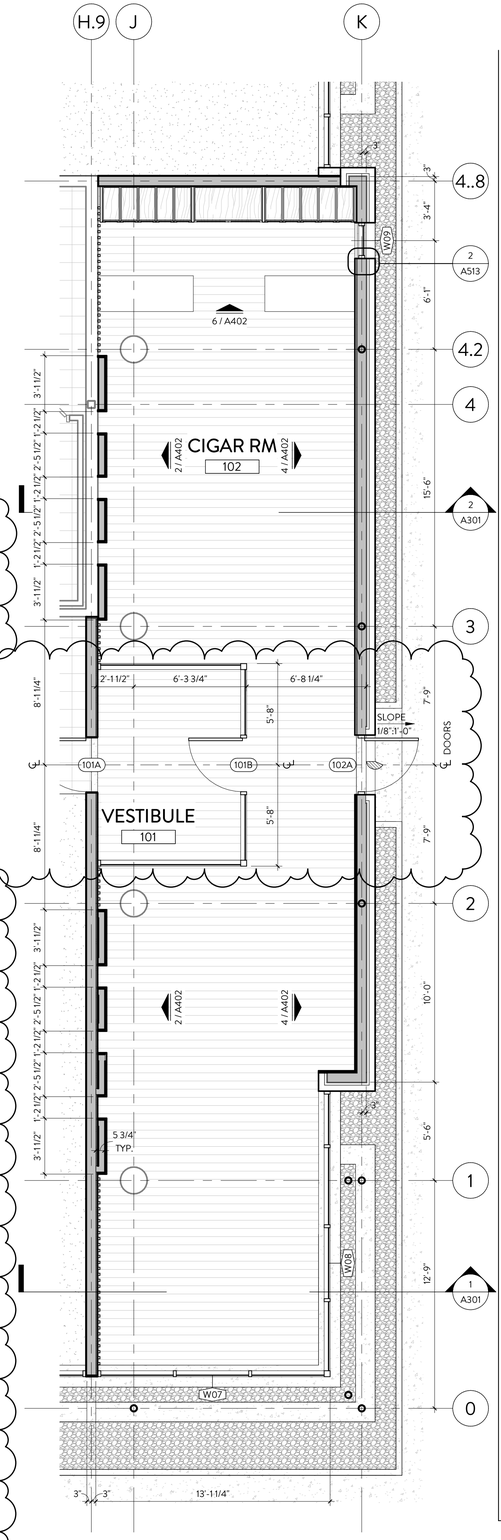
3 NOT USED

3/8" = 1'-0"



2 CIGAR LOUNGE 102 - WEST

3/8" = 1'-0"



1 ENLARGED PLAN - CIGAR LOCKERS

1/4" = 1'-0"

architecture

REGISTERED ARCHITECT
JAVIER S. CASTRO
25118
STATE OF TEXAS

ISSUED DATE 1 11/8/2024
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A402

ENLARGED PLANS & INTERIOR ELEVATIONS

MATERIAL AND ATTACHMENT NOTES

GYPSUM SHEATHING

1. GYPSUM SHEATHING SHALL BE FASTENED WITH ASTM C1002, TYPE S SCREWS, HOT-DIPPED GALVANIZED OR FLOUROPOLYMER COATED STEEL, MINIMUM 5/8" PENETRATION INTO FRAME AND IN ACCORDANCE WITH ASTM C1280 AND MANUFACTURERS INSTRUCTIONS. FASTEN PANELS TO FRAMING AT MAXIMUM 8" O.C. AND MINIMUM 3/8" FROM EDGE OF PANELS. DRIVE HEADS FLUSH WITH SURFACE AND STAGGER FASTENERS AT ABUTTING EDGES.

WOOD TRIM

1. WOOD TRIM TO BE ATTACHED TO SUBSTRATE W/ 16 GA STAINLESS STEEL FINISH NAILS.

STEEL PANELING / CLADDING / TRIM / BASE PLATE

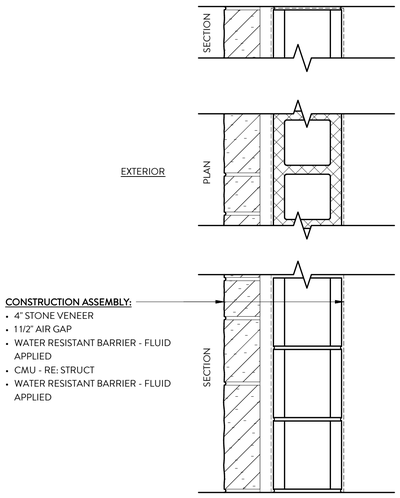
1. STEEL PANELING / CLADDING SHALL BE ATTACHED WITH #8 COUNTERSUNK SQUARE DRIVE BLACK OXIDE SCREWS @ MAXIMUM OF 24" O.C. UNLESS NOTED OTHERWISE IN THE DRAWINGS.

WOOD BLOCKING

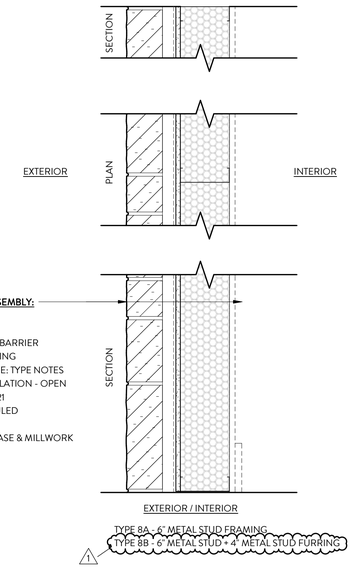
1. DOUGLAS FIR WOOD BLOCKING SHALL BE ATTACHED TO METAL ELEMENTS WITH SIMPSON F08TI62BDC SCREWS TO SUCH AN EXTENT THAT SECURELY ATTACHES THE BLOCKING TO THE SUBSTRATE.

WALL TYPE GENERAL NOTES

1. WALL AND CEILING MATERIALS SHALL NOT EXCEED THE FLAME SPREAD CLASSIFICATION IN IBC.
2. PROVIDE IN-WALL BLOCKING FOR ALL COAT HOOKS, CASEWORK, AND OTHER WALL MOUNTED ACCESSORIES AS REQUIRED. DO NOT OMIT IN-WALL BLOCKING WITH ANY ALTERNATE.
3. REFER TO ROOM FINISH SCHEDULE AND INTERIOR ELEVATIONS FOR ALL APPLIED FINISHES AND APPLIED FINISH LOCATIONS.
4. REFER MEP FOR OPENINGS IN PARTITIONS ABOVE CEILING.
5. CARRY GYP BOARD AND STUDS TO UNDERSIDE OF DECK ABOVE AND SEAL (TYP) AT ALL RATED PARTITIONS WALLS WITH ACOUSTIC BATT INSULATION.
6. INSTALL DEFLECTION HEADS AT ALL PARTITIONS (FIRE RATED AT RATED PARTITIONS).
7. FIRE SEAL OR INSTALL THROUGH PENETRATION FIRESTOP SYSTEMS @ ALL PENETRATIONS THROUGH FIRE RESISTANCE RATED CONSTRUCTION.
8. INSTALL FIRE RESISTIVE JOINTS AT JOINTS BETWEEN AND IN FIRE RATED CONSTRUCTION.
9. NO GYP BOARD OR WALL FINISH AT INTERIOR FACE OF CHASES, UNLESS NOTED OTHERWISE.

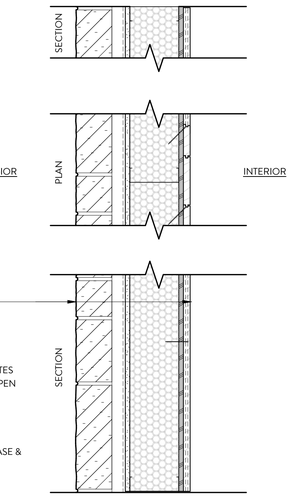


TYPE 9A - 8X8X16 CMU

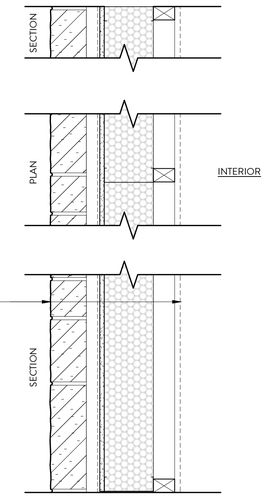


TYPE 8A - 6" METAL STUD FRAMING

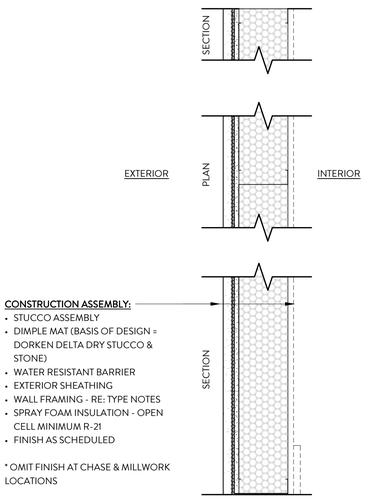
1 TYPE 8B - 6" METAL STUD + 4" METAL STUD FURRING



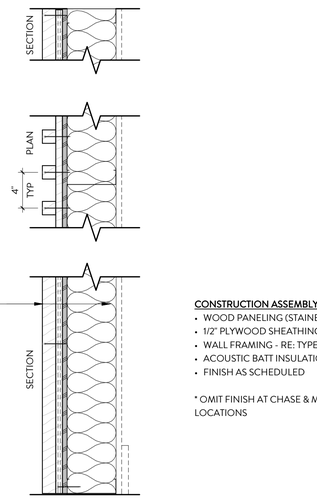
TYPE 7A - 6" METAL STUD FRAMING



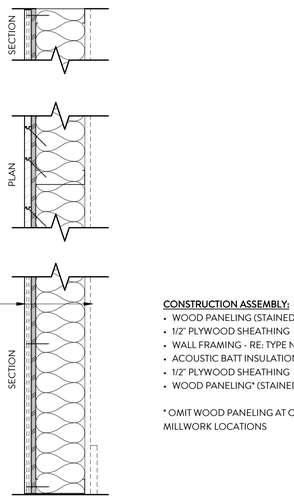
TYPE 6A - 6" METAL STUD FRAMING



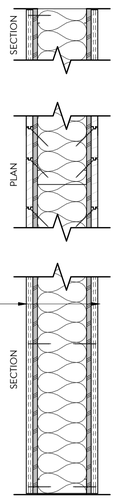
TYPE 5A - 6" METAL STUD FRAMING
TYPE 5B - 4" METAL STUD FRAMING



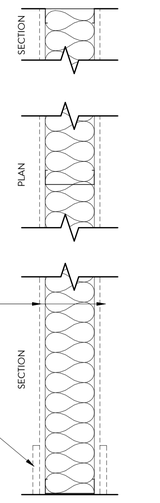
TYPE 4A - 6" METAL STUD FRAMING
TYPE 4B - 4" METAL STUD FRAMING



TYPE 3A - 6" METAL STUD FRAMING
TYPE 3B - 4" METAL STUD FRAMING



TYPE 2A - 6" METAL STUD FRAMING



TYPE 1A - 6" METAL STUD FRAMING
TYPE 1B - 4" METAL STUD FRAMING

WALL TYPES

1 1/2" = 1'-0"

architecture
REGISTERED ARCHITECT JAVIER S. CASTRO STATE OF TEXAS 25118

ISSUED DATE 1 11/8/2024
PROJECT NUMBER 2401

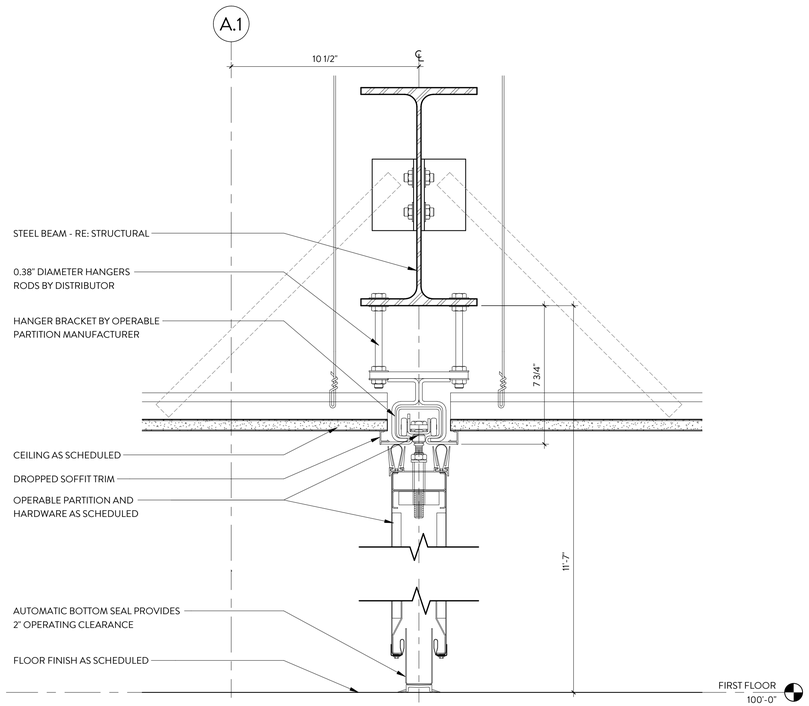
PERMIT REVIEW

BRASAO REMODEL

19210 110 WEST
SAN ANTONIO, TX 78257

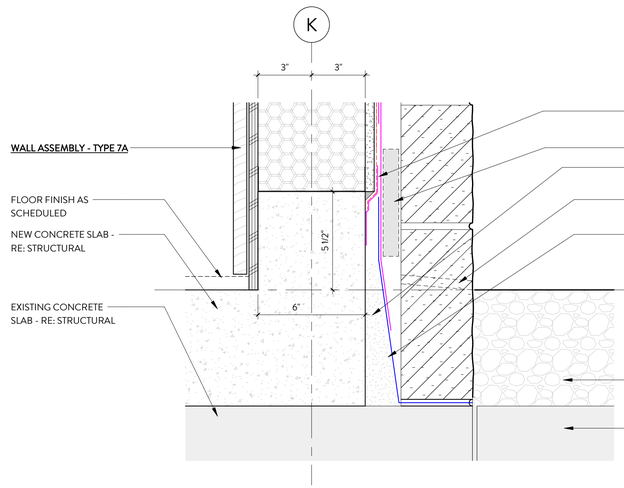
A501

WALL ASSEMBLIES



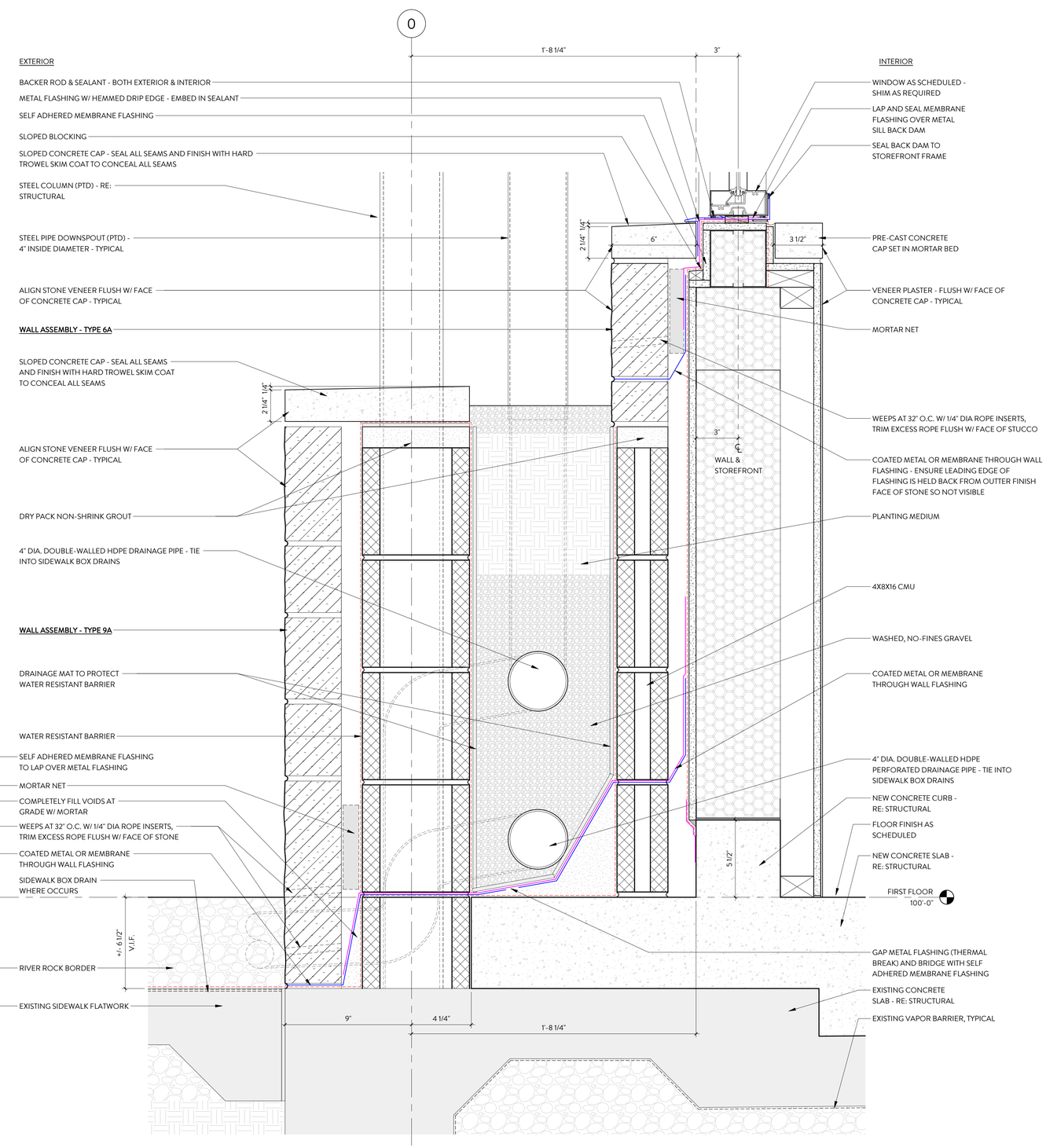
4 SECTION DTLT - OPERABLE PARTITION

3" = 1'-0"



2 SECTION DTL - STONE LUG

3" = 1'-0"



1 SECTION DTL - BASE OF WALL

3" = 1'-0"

architecture

REGISTERED ARCHITECT
JAVIER S. CASTRO
STATE OF TEXAS
25118

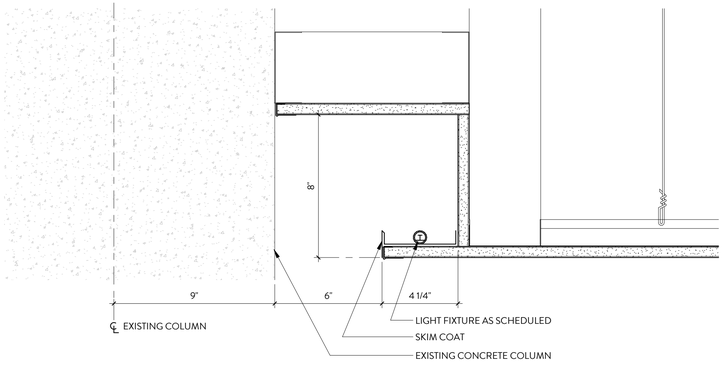
ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

PERMIT REVIEW

BRASAO REMODEL

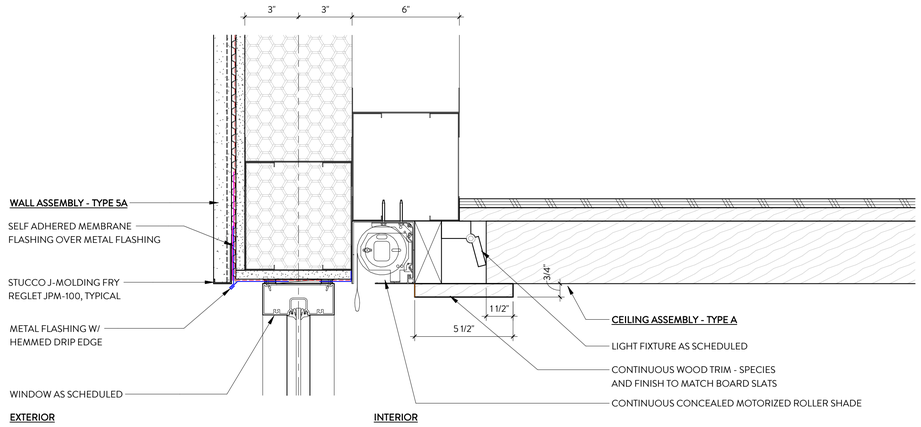
19210 110 WEST
SAN ANTONIO, TX 78257

A511
DETAILS



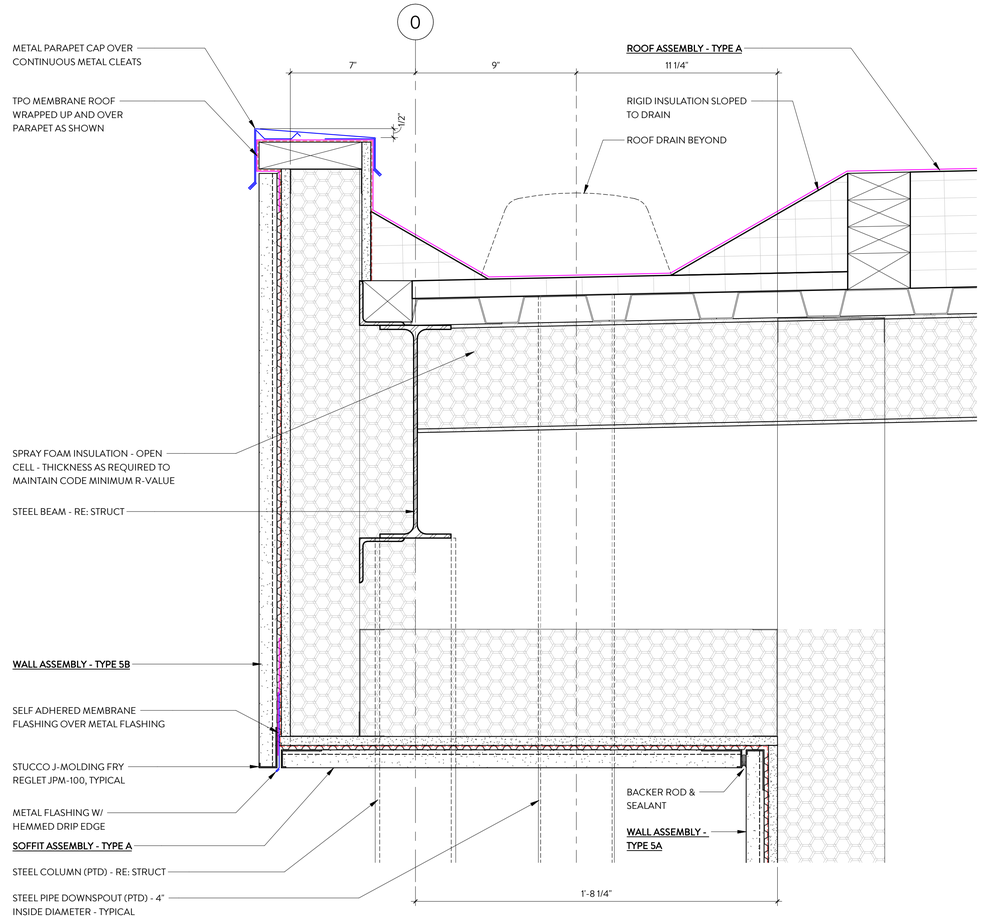
5 SECTION DTL - COLUMN COVE

3" = 1'-0"



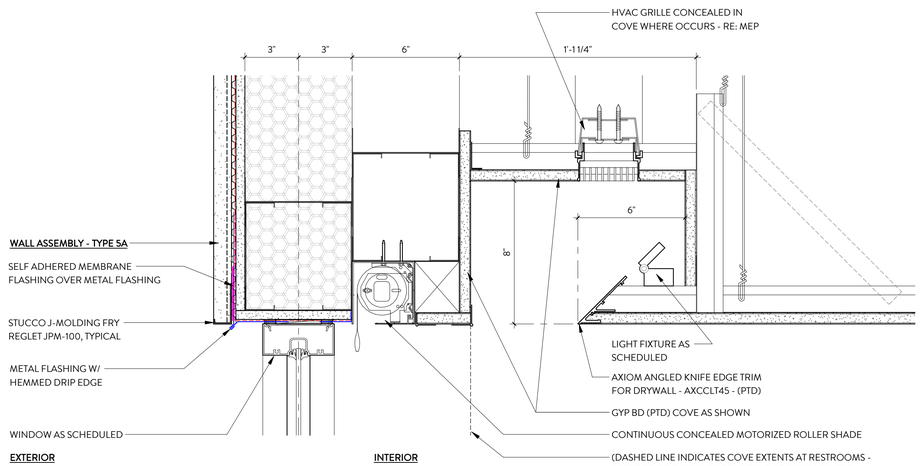
4 SECTION DTL - WINDOW HEAD / SHADE POCKET / CEILING SLATS

3" = 1'-0"



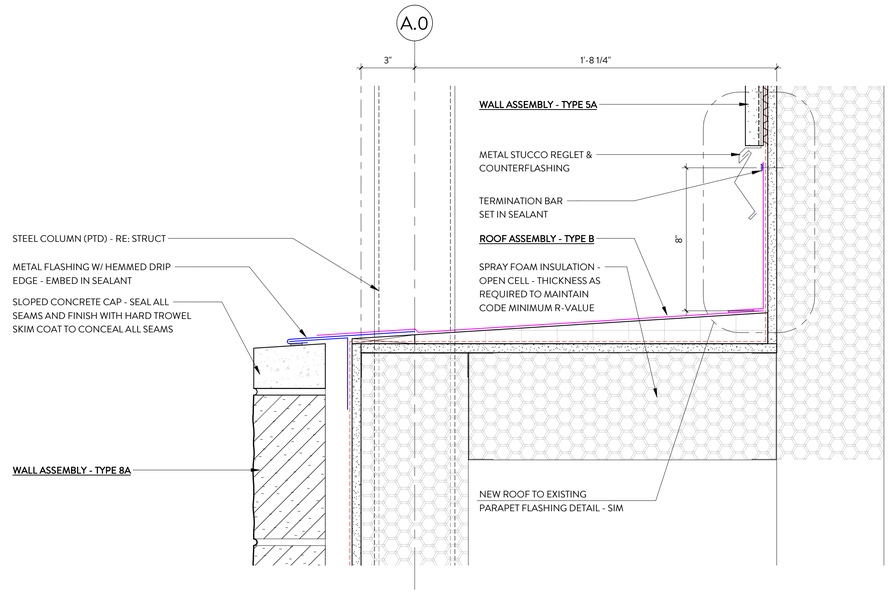
3 SECTION DTL - FASCIA

3" = 1'-0"



2 SECTION DTL - WINDOW HEAD / SHADE POCKET

3" = 1'-0"



1 SECTION DTL - STONE CAP

3" = 1'-0"

architecture

REGISTERED ARCHITECT
JAVIER S. CASTRO
STATE OF TEXAS
25118

ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

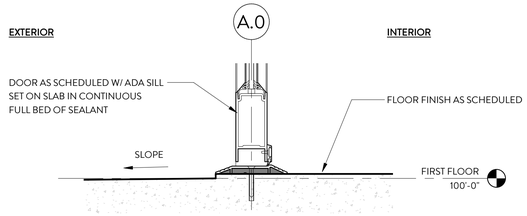
PERMIT REVIEW

BRASAO REMODEL

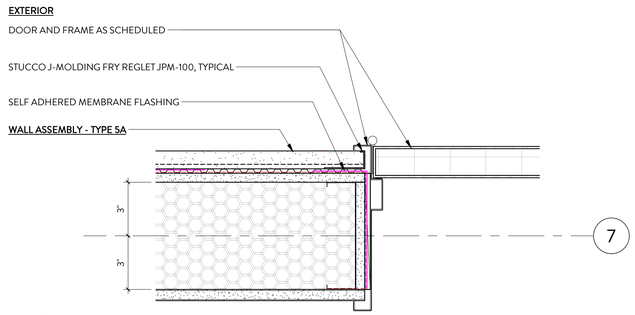
19210 110 WEST
SAN ANTONIO, TX 78257

A512

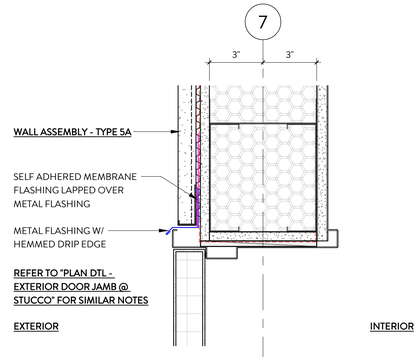
DETAILS



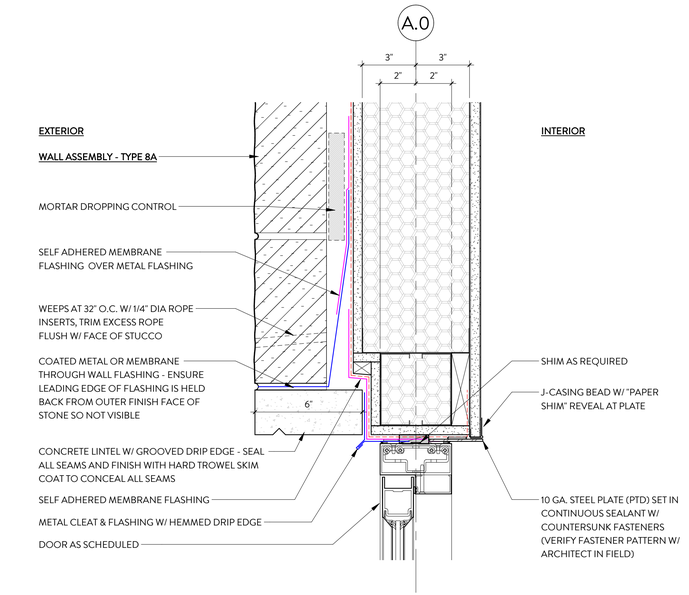
10 SECTION DTL - EXTERIOR DOOR SILL
3" = 1'-0"



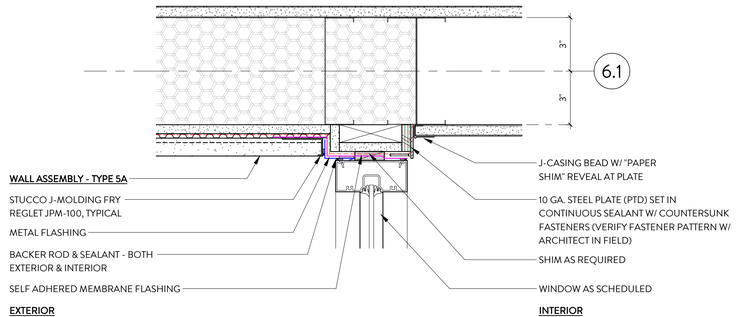
9 PLAN DTL - EXTERIOR DOOR JAMB @ STUCCO
3" = 1'-0"



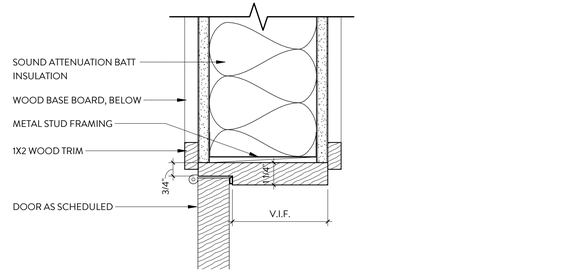
8 SECTION DTL - EXTERIOR DOOR HEAD @ STUCCO
3" = 1'-0"



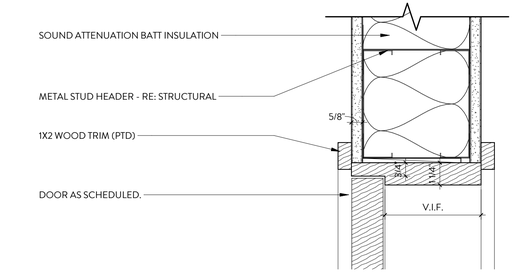
7 SECTION DTL - EXTERIOR DOOR HEAD
3" = 1'-0"



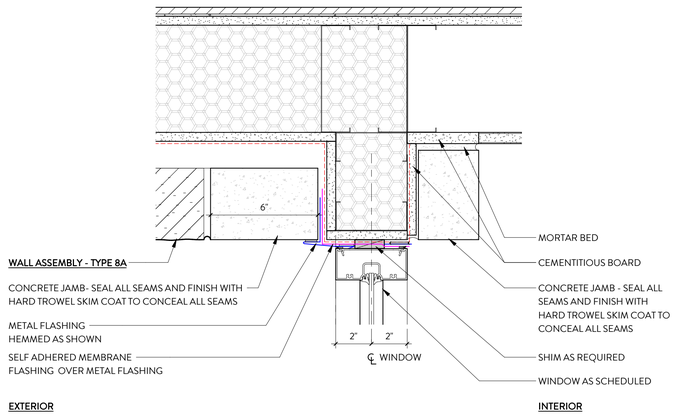
6 PLAN DTL - WINDOW JAMB @ STUCCO
3" = 1'-0"



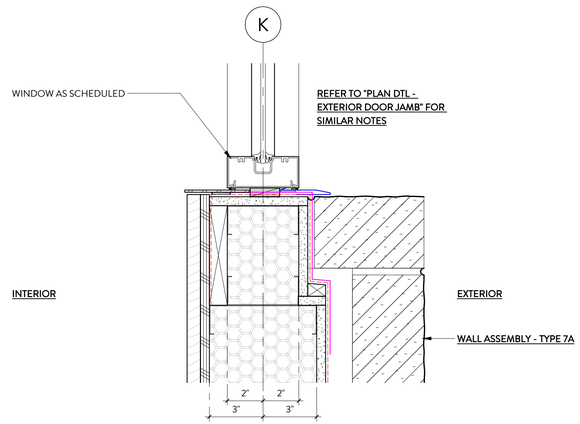
5 PLAN DTL - DOOR JAMB - TYP
3" = 1'-0"



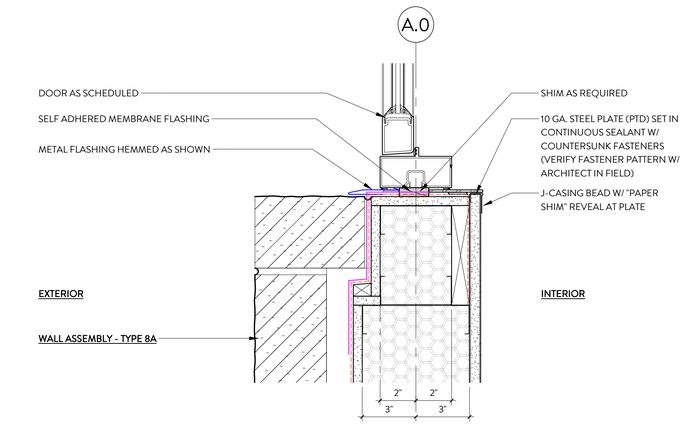
4 SECTION DTL - DOOR HEAD - TYP
3" = 1'-0"



3 PLAN DTL - WINDOW JAMB @ CONCRETE
3" = 1'-0"



2 PLAN DTL - WINDOW JAMB @ STONE
3" = 1'-0"



1 PLAN DTL - EXTERIOR DOOR JAMB
3" = 1'-0"

architecture

REGISTERED ARCHITECT
JAVIER S. CASTRO
STATE OF TEXAS
25118

ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

PERMIT REVIEW

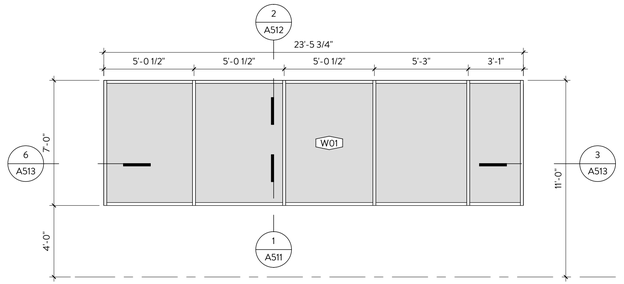
BRASAO REMODEL
19210 I10 WEST
SAN ANTONIO, TX 78257

A513
DETAILS

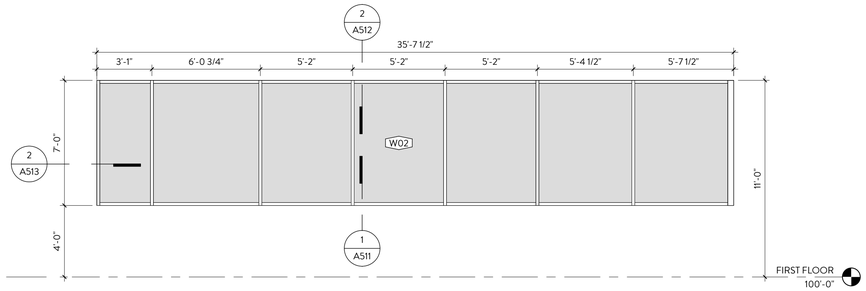
WINDOW SCHEDULE

MARK	GLAZING	FRAME TYPE	FRAME FINISH	LOCATION	COMMENTS
W01	GL-1	ALUMINUM	PAINTED	EXTERIOR	REFER TO SPECIFICATIONS FOR GLAZING TYPE - TYPICAL
W02	GL-1	ALUMINUM	PAINTED	EXTERIOR	
W03	GL-1	ALUMINUM	PAINTED	EXTERIOR	
W04	GL-1	ALUMINUM	PAINTED	EXTERIOR	
W05	GL-1	ALUMINUM	PAINTED	EXTERIOR	
W06	GL-1	ALUMINUM	PAINTED	EXTERIOR	
W07	GL-1	ALUMINUM	PAINTED	EXTERIOR	
W08	GL-1	ALUMINUM	PAINTED	EXTERIOR	
W09	GL-1	ALUMINUM	PAINTED	EXTERIOR	
W110	GL-1	ALUMINUM	PAINTED	EXTERIOR	
W111	GL-1	ALUMINUM	PAINTED	INTERIOR	
W112	GL-1	ALUMINUM	PAINTED	INTERIOR	
W113	GL-1	ALUMINUM	PAINTED	INTERIOR	
W114	GL-1	ALUMINUM	PAINTED	INTERIOR	

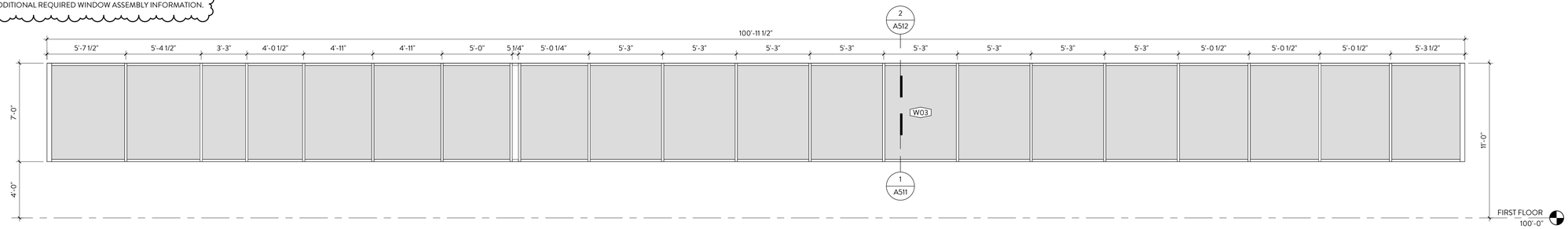
GENERAL NOTE:
1. PROVIDE TEMPERED GLAZING AS REQUIRED PER CODE. ALL GLAZING UNITS DESIGNATED WITH A "T" NOTE IN WINDOW ELEVATIONS ARE TO RECEIVE TEMPERED GLAZING.
2. REFER TO SPECIFICATIONS ON SHEET G001 FOR ADDITIONAL REQUIRED WINDOW ASSEMBLY INFORMATION.



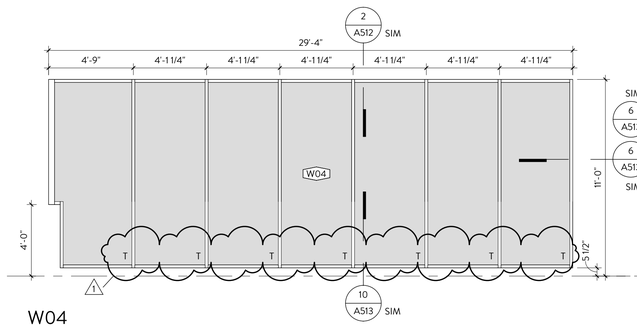
W01
1/4" = 1'-0"



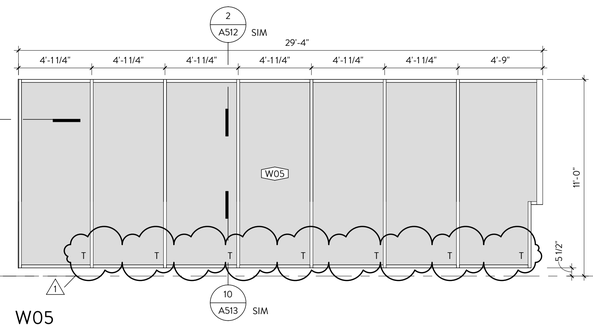
W02
1/4" = 1'-0"



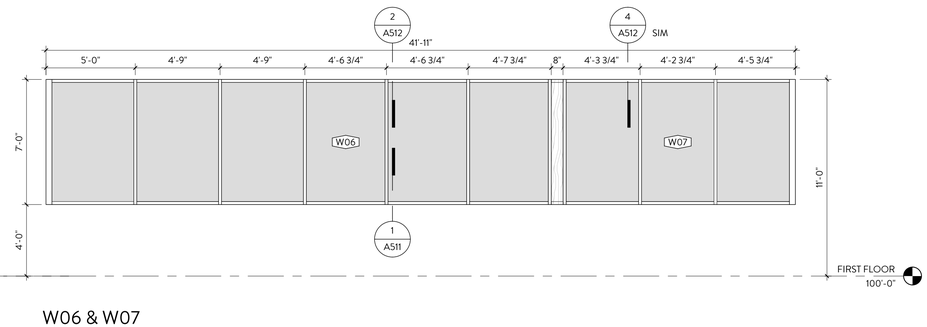
W03
1/4" = 1'-0"



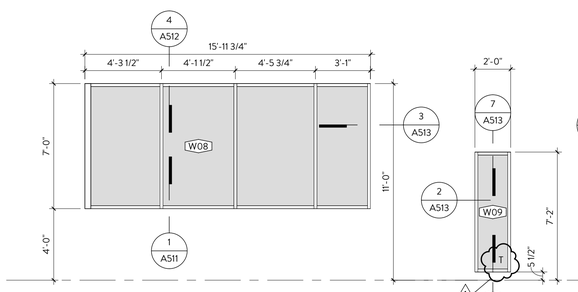
W04
1/4" = 1'-0"



W05
1/4" = 1'-0"

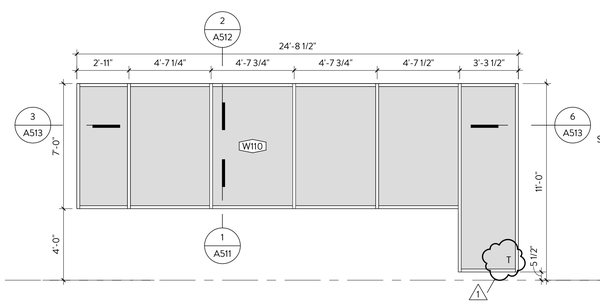


W06 & W07
1/4" = 1'-0"

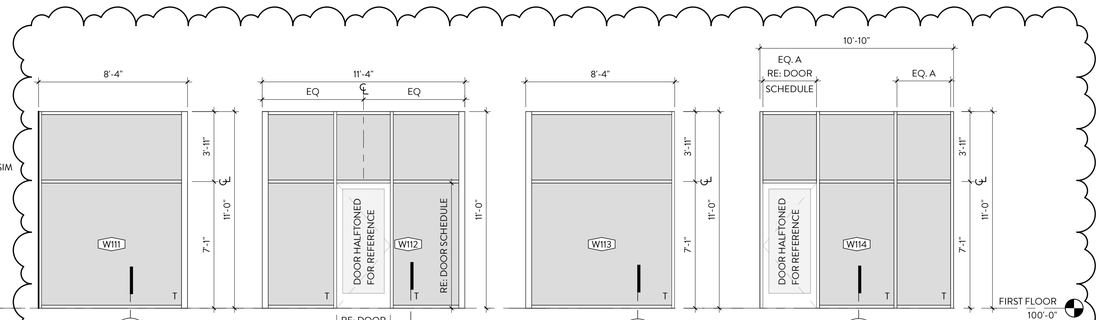


W08
1/4" = 1'-0"

W09
1/4" = 1'-0"



W110
1/4" = 1'-0"



W111
1/4" = 1'-0"

W112
1/4" = 1'-0"

W113
1/4" = 1'-0"

W114
1/4" = 1'-0"

architecture

REGISTERED ARCHITECT JAVIER S. CASTRO STATE OF TEXAS 25118

ISSUED DATE 1 11/8/2024
PROJECT NUMBER 2401

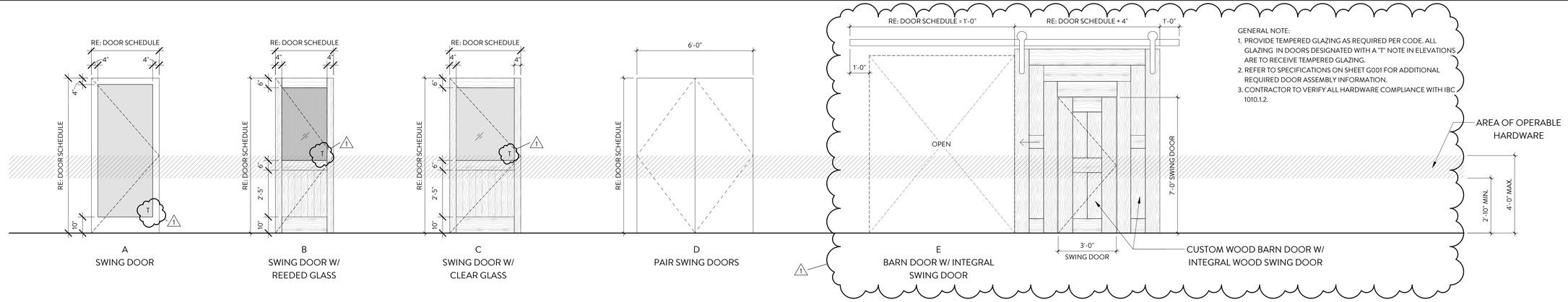
PERMIT REVIEW

BRASAO REMODEL

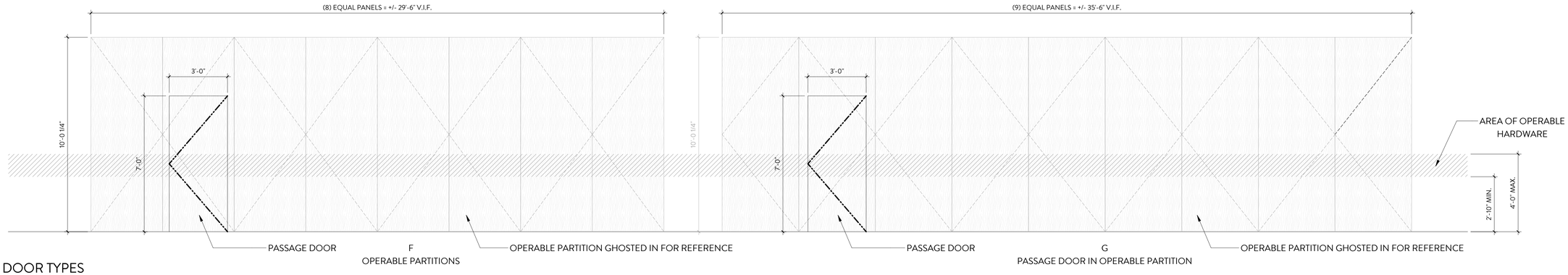
19210 110 WEST
SAN ANTONIO, TX 78257

A601

WINDOW TYPES & SCHEDULES

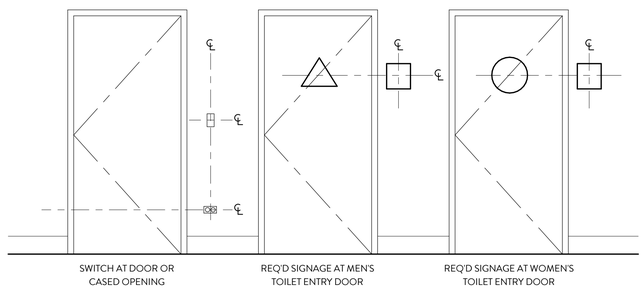


GENERAL NOTE:
1. PROVIDE TEMPERED GLAZING AS REQUIRED PER CODE. ALL GLAZING IN DOORS DESIGNATED WITH A "T" NOTE IN ELEVATIONS ARE TO RECEIVE TEMPERED GLAZING.
2. REFER TO SPECIFICATIONS ON SHEET G001 FOR ADDITIONAL REQUIRED DOOR ASSEMBLY INFORMATION.
3. CONTRACTOR TO VERIFY ALL HARDWARE COMPLIANCE WITH IBC 1010.1.2.



DOOR TYPES

3/8" = 1'-0"



MOUNTING HEIGHTS FOR ACCESSIBLE DOORS

1/2" = 1'-0"

DOOR SCHEDULE

NUMBER	WIDTH	HEIGHT	DOOR		FRAME	DETAIL			COMMENTS
			TYPE	MATERIAL	MATERIAL	JAMB	HEAD	THRESHOLD	
101A	3'-0"	7'-0"	C	WOOD / GLASS	WOOD	5/A513	4/A513	-	CLEAR GLASS
101B	3'-0"	7'-0"	A	ALUMINUM / GLASS	ALUMINUM	PER MFR	PER MFR	-	
102A	3'-0"	7'-0"	A	ALUMINUM / GLASS	ALUMINUM	1/A513	7/A513	10/A513	
105A	3'-0"	7'-0"	A	ALUMINUM / GLASS	ALUMINUM	PER MFR	PER MFR	-	
107A	7'-6"	9'-0"	E	WOOD	-	-	-	-	
107B	35'-6"	10'-0 1/4"	G	STEEL / VINYL	-	PER MFR	PER MFR	PER MFR	
108A	3'-0"	7'-0"	C	WOOD / GLASS	WOOD	5/A513	4/A513	-	CLEAR GLASS
109A	3'-0"	7'-0"	B	WOOD / GLASS	WOOD	5/A513	4/A513	-	REEDED GLASS
110A	3'-0"	7'-0"	A	ALUMINUM / GLASS	ALUMINUM	1/A513	7/A513	10/A513	
111A	3'-0"	7'-0"	B	WOOD / GLASS	WOOD	5/A513	4/A513	-	REEDED GLASS
112A	3'-0"	7'-0"	C	WOOD / GLASS	WOOD	5/A513	4/A513	-	CLEAR GLASS
113A	7'-6"	9'-0"	E	WOOD	-	-	-	-	
113B	29'-6"	10'-0 1/4"	F	STEEL / VINYL	-	PER MFR	PER MFR	PER MFR	
114A	6'-0"	7'-0"	D	HOLLOW METAL	HOLLOW METAL	9/A513	8/A513	-	

DOOR HARDWARE SCHEDULE

MARK		DOOR TYPE	DOOR HANDLE	DEADBOLT	LATCH FUNCTION	HINGES/OPERATING HARDWARE	HARDWARE FINISH	THRESHOLD	WEATHERSTRIP / SEAL	ADDITIONAL HARDWARE	DOOR STOP/TYPE	MARK
101A	VESTIBULE	WOOD AND GLASS SWING DOOR	HOPPE- 1140/42K/42KS STOCKHOLM LEVER	-	PUSH/PULL	BALDWIN SQUARE CORNER HINGE #1035.190 X3	MATTE BLACK	ADA COMPLIANT	SEE NOTE 1	DORMA TS93 15 T SN3 693 CLOSER	DELTANA DEL-UFB7500U10B STOP	101A
101B	VESTIBULE	ALUM AND GLASS SWING DOOR	VOGUE I MULTIPOINT HANDLE - BLACK FINISH	BY MFR	PUSH/PULL	BY MANUFACTURER	BLACK	ADA COMPLIANT	BY MANUFACTURER	-	CLOSER BY MANUFACTURER	101B
102A	CIGAR ROOM	ALUM AND GLASS SWING DOOR	VOGUE I MULTIPOINT HANDLE - BLACK FINISH	BY MFR	PUSH/PULL	BY MANUFACTURER	BLACK	ADA COMPLIANT	BY MANUFACTURER	-	CLOSER BY MANUFACTURER	102A
105A	STORAGE	ALUM AND GLASS SWING DOOR	VOGUE I MULTIPOINT HANDLE - BLACK FINISH	BY MFR	PUSH/PULL	BY MANUFACTURER	BLACK	ADA COMPLIANT	BY MANUFACTURER	-	CLOSER BY MANUFACTURER	105A
107A	DINING 4	WOOD SLIDING BARN DOOR	KROWN LAB- ASTA 10" FLUSH- BLACK	-	SLIDING	KROWN LAB- AXEL TOP MOUNT FLAT TRACK	RAW STEEL	-	SEE NOTE 3	-	-	107A
107B	DINING 4	PARTITION SWING PASS DOOR	BY MANUFACTURER	-	PUSH/PULL	BY MANUFACTURER	-	-	-	-	CLOSER BY MANUFACTURER	107B
108A	VESTIBULE	WOOD AND GLASS SWING DOOR	HOPPE- 1140/42K/42KS STOCKHOLM LEVER	-	PUSH/PULL	BALDWIN SQUARE CORNER HINGE #1035.190 X3	MATTE BLACK	ADA COMPLIANT	SEE NOTE 1	DORMA TS93 15 T SN3 693 CLOSER	DELTANA DEL-UFB7500U10B STOP	108A
109A	RESTROOM 2	WOOD AND GLASS SWING DOOR	HOPPE- 1140/42K/42KS STOCKHOLM LEVER	PRIVACY LOCK	PULL	BALDWIN SQUARE CORNER HINGE #1035.190 X3	MATTE BLACK	-	-	DORMA TS93 15 T SN3 693 CLOSER	DELTANA DEL-UFB7500U10B STOP	109A
110A	VESTIBULE	ALUM AND GLASS SWING DOOR	VOGUE I MULTIPOINT HANDLE - BLACK FINISH	-	PUSH/PULL	BY MANUFACTURER	BLACK	ADA COMPLIANT	BY MANUFACTURER	-	CLOSER BY MANUFACTURER	110A
111A	RESTROOM 1	WOOD AND GLASS SWING DOOR	HOPPE- 1140/42K/42KS STOCKHOLM LEVER	PRIVACY LOCK	PULL	BALDWIN SQUARE CORNER HINGE #1035.190 X3	MATTE BLACK	-	-	DORMA TS93 15 T SN3 693 CLOSER	DELTANA DEL-UFB7500U10B STOP	111A
112A	DINING 1	WOOD AND GLASS SWING DOOR	HOPPE- 1140/42K/42KS STOCKHOLM LEVER	-	PUSH/PULL	BALDWIN SQUARE CORNER HINGE #1035.190 X3	MATTE BLACK	ADA COMPLIANT	SEE NOTE 1	DORMA TS93 15 T SN3 693 CLOSER	DELTANA DEL-UFB7500U10B STOP	112A
113A	DINING 2	WOOD SLIDING BARN DOOR	KROWN LAB- ASTA 10" FLUSH- BLACK	-	SLIDING	KROWN LAB- AXEL TOP MOUNT FLAT TRACK	RAW STEEL	-	SEE NOTE 3	-	-	113A
113B	DINING 2	PARTITION SWING PASS DOOR	BY MANUFACTURER	-	PUSH/PULL	BY MANUFACTURER	-	-	-	-	CLOSER BY MANUFACTURER	113B
114A	STORAGE	PAIR HM DOORS - METAL CLAD	HOPPE- 1140/42K/42KS STOCKHOLM LEVER	-	PUSH/PULL	BALDWIN SQUARE CORNER HINGE #1035.190 X3	MATTE BLACK	-	SEE NOTE 1	-	DELTANA DEL-DCSM10U10B LIMITER	114A

NOTE 1	USE PEMKO OR ROVERPLASTIK A 265 APPROVED BLACK OR DARK BRONZE COMPRESSIBLE/KERF IN JAMB AND HEAD...
NOTE 2	TYPICAL BACKSET FOR DEADBOLT ON SOLID CORE DOORS TO BE 2 3/4"
NOTE 3	GC TO COORDINATE REQUIREMENTS FOR HARDWARE PRIOR TO INSTALLATION AND COMPLIANCE WITH IBC 1010.1.2.
NOTE 4	REFER TO ARCHITECTURAL SPECIFICATIONS FOR ADDITIONAL DOOR AND HARDWARE INFORMATION

architecture

REGISTERED ARCHITECT JAVIER S. CASTRO STATE OF TEXAS 25118

ISSUED DATE 1 11/8/2024
PROJECT NUMBER 2401

PERMIT REVIEW

BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

A611

DOOR TYPES & SCHEDULES

FINISH MATERIAL LEGEND

KEY	DESCRIPTION	MANUFACTURER	PRODUCT	COLOR / FINISH	DIMENSIONS	SOURCE	COMMENTS
BASE AND TRIM							
WB-1	WALL BASE	-	-	TBD	1X3 WOOD WALL BASE	-	
WB-2	WALL BASE	-	-	-	RUBBER WALL BASE	-	
CEILINGS							
CL-1	PAINTED GYPSUM BOARD	-	-	TBD	-	-	
CL-2	WOOD SLATS	-	STAIN GRADE SPECIES	TBD	2X4 WOOD BOARD SLATS - 4" O.C.	-	RE: CEILING ASSEMBLIES
CONCRETE							
CN-1	CONCRETE FLOOR	-	-	BROOM FINISH	-	-	
COUNTERTOPS							
CT-1	COUNTERTOP	VICOSTONE	JAVA NOIR	BQ8812	RE: DRAWINGS	-	VERIFY COUNTERTOP W/ INTERIOR DESIGNER
FLOORING							
FL-1	VINYL FLOORING	SHAW FLOORS	BREAKER'S POINT 20	SAGURO 00720	6"X48"	-	
PAINTING AND COATING							
PT-1	INTERIOR PAINT	TBD	-	TBD	-	-	
PT-2	INTERIOR PAINT	TBD	-	TBD	-	-	
PT-3	WOOD STAIN	TBD	-	TBD	-	-	
TILING							
TL-1	FLOOR TILE	DALTILE	BRAZILIAN GREEN	-	TBD	-	VERIFY SIZES W/ INTERIOR DESIGNER
TL-2	FLOOR TILE	TBD - TO MATCH EXISTING	-	-	-		VERIFY FLOOR TILE W/ INTERIOR DESIGNER
TL-3	WALL TILE	DALTILE	BRAZILIAN GREEN	-	3"X3"		STRAIGHT JOINT
WALL FINISHES							
WF-1	PAINTED GYPSUM BOARD	-	-	TBD			
WF-2	WOOD BOARD & BATTEN PANELING	-	STAIN GRADE SPECIES	TBD	2X4 WOOD BATTENS - 4" O.C.		RE: WALL ASSEMBLIES
WF-3	WOOD PANELING	-	STAIN GRADE SPECIES	TBD	3/4" THICK		RE: WALL ASSEMBLIES
WF-4	VENEER PLASTER	ARCUSSTONE	ARCUS LIME PLASTER, FINE	TBD	-		TO MATCH EXISTING PLASTER - VERIFY W/ INTERIOR DESIGNER
WF-5	FABRIC BACKED VINYL	MDC	ESQUIRE GIOTTO DAPPER	MG19913	-		VERIFY LOCATIONS WITH INTERIOR DESIGNER

ROOM FINISH SCHEDULE

				WALL				
NUMBER	NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	CEILING
100	CIGAR RM	FL-1	-	WF-3	WF-3 / WF-4	WF-4	WF-2 / WF-3 / WF-4 / WF-5	CL-2
101	VESTIBULE	FL-1	-	WF-3	WF-3	WF-3	WF-.3	CL-1
102	CIGAR RM	FL-1	-	WF-3	WF-3	WF-3	WF-2 / WF-3 / WF-5	CL-2
103	DINING 7	TL-2	WB-1	WF-4	WF-4	WF-4	-	CL-1
104	DINING 6	TL-2	WB-1	-	WF-4	WF-4	-	CL-1
105	STORAGE	TL-2	-	-	-	-	-	CL-1
106	DINING 5	TL-2	-	-	-	WF-4	WF-4	CL-1
107	DINING 4	TL-2	WB-1	WF-4	-	WF-4	-	CL-1
108	DINING 3	TL-2	WB-1	WF-4	-	WF-4	WF-4	CL-1
109	RESTROOM 2	TL-1	-	TL-3 / WF-4	TL-3	TL-3 / WF-4	TL-3 / WF-4	CL-1
110	VESTIBULE	TL-2	WB-1	WF-4	WF-4	WF-4	WF-4	CL-1
111	RESTROOM 1	TL-1	-	TL-3 / WF-4	TL-3	TL-3 / WF-4	TL-3 / WF-4	CL-1
112	DINING 1	TL-2	WB-1	WF-4	-	WF-4	WF-4	CL-1
113	DINING 2	TL-2	WB-1	WF-4	EXISTING	EXISTING	-	EXISTING
114	STORAGE	CN-1	WB-2	WF-1	WF-1	WF-1	WF-1	CL-1

PLUMBING FIXTURE SCHEDULE

ROOM NO & NAME	FUNCTION	MOUNTING	MANUFACTURER	MODEL	MODEL #	FINISH	ASSOCIATED HARDWARE	COMMENTS
109 - RR 2								
109 - RR 2	TOILET	WALL	RE: MEP	RE: MEP	-	-	-	
109 - RR 2	SINK	WALL	DURAVIT	VERO	0329850000	00 WHITE	TOTO HELIX FAUCET #TEL115-D10E#CP	
109 - RR 2	FAUCET	DECK	TOTO	HELIX	TEL115-D10E	CHROME		
111 - RR 1								
111 - RR 1	TOILET	WALL	RE: MEP	RE: MEP	-	-	-	
111 - RR 1	SINK	WALL	DURAVIT	VERO	0329850000	00 WHITE	TOTO HELIX FAUCET #TEL115-D10E#CP	
111 - RR 1	FAUCET	DECK	TOTO	HELIX	TEL115-D10E	CHROME		

architecture

REGISTERED ARCHITECT
JAVIER S. CASTRO
STATE OF TEXAS
25118

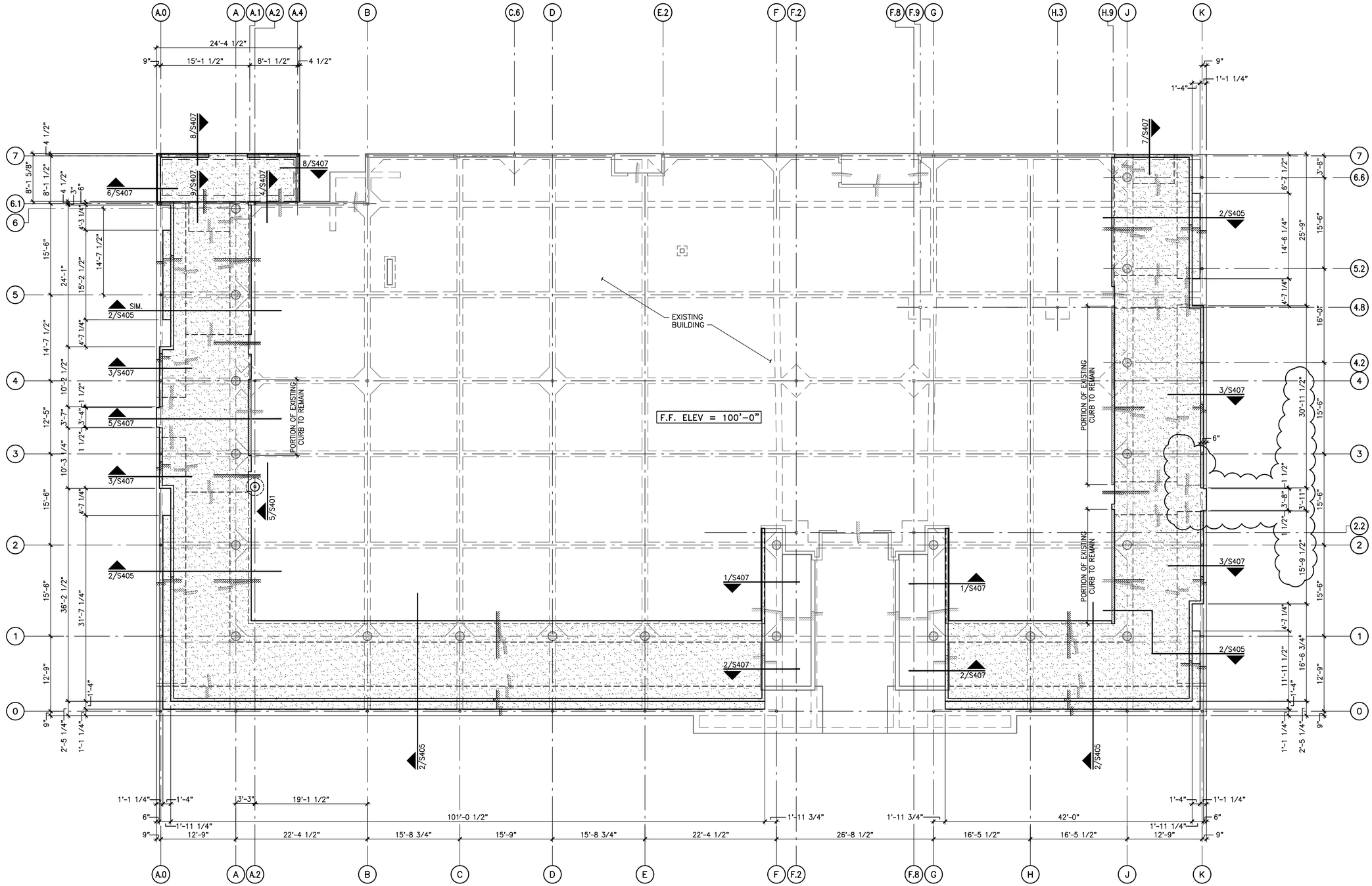
ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

PERMIT REVIEW

BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

A621
SCHEDULES



FOUNDATION FRAMING PLAN

SCALE:1/8"=1'-0"

architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

PERMIT REVIEW

DANYSH & ASSOCIATES
STRUCTURAL ENGINEERS
F-002228

STATE OF TEXAS
RONALD CRAIG TORBET
57092
REGISTERED PROFESSIONAL ENGINEER
11/13/24
DANYSH & ASSOCIATES, INC.
F-002228

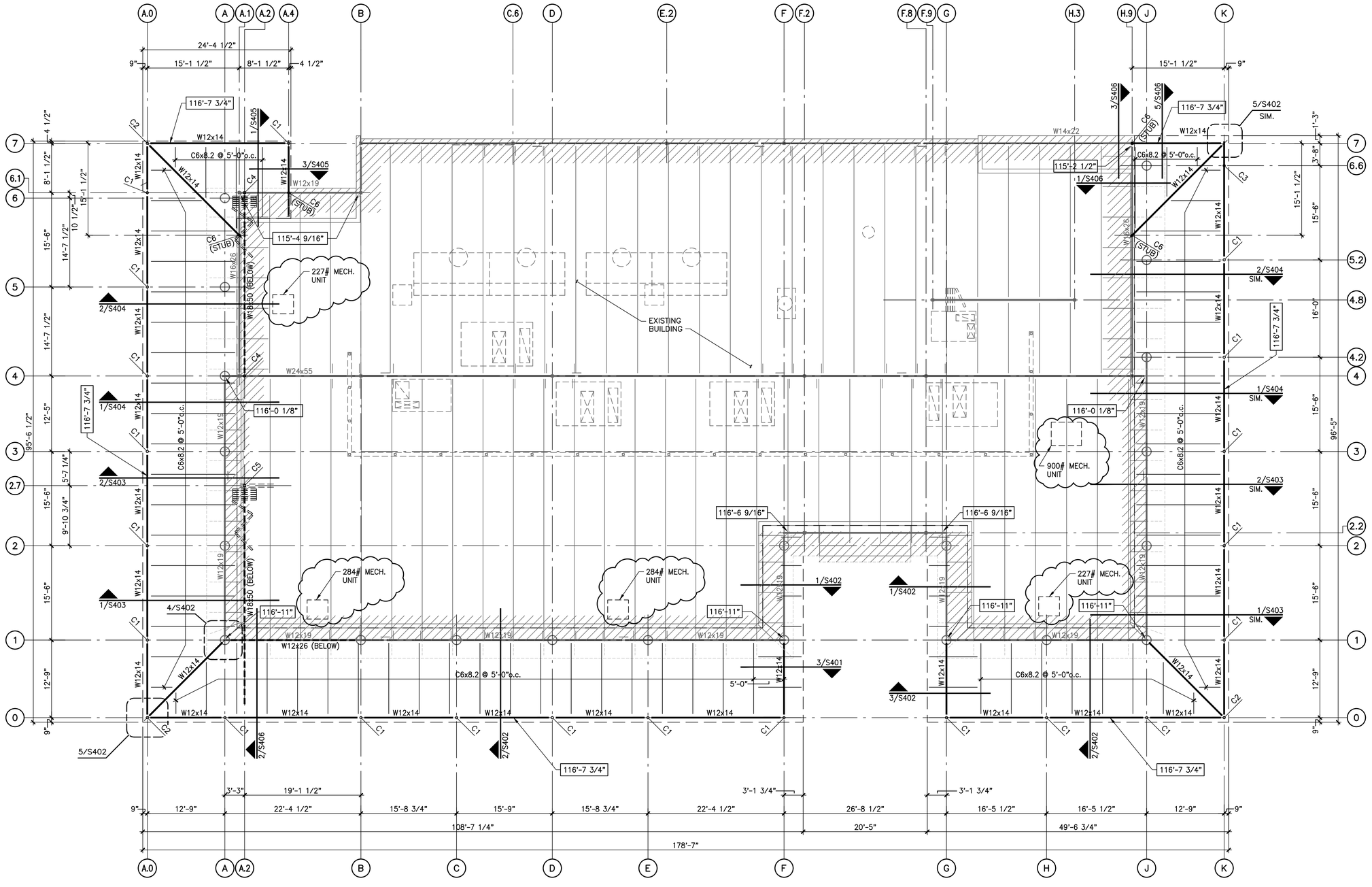
1 2024.11.08 CITY COMMENTS

BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

S110
FOUNDATION FRAMING PLAN

D&A PROJECT NO.: 64-396-00
D&A FILE NO.: BRASAOREMODELS110



PLAN NOTES:

1.) [ ] - DENOTES TOP OF JOIST OR BOTTOM OF METAL DECK ELEVATION RELATIVE TO FINISH FLOOR DATUM ELEVATION.

PROJECT NORTH

ROOF FRAMING PLAN

SCALE: 1/8"=1'-0"

D&A PROJECT NO.: 64-396-00
D&A FILE NO.: BRASAOREMODELS130

architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

PERMIT REVIEW

DANYSH & ASSOCIATES
STRUCTURAL ENGINEERS
F-002228

STATE OF TEXAS
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REGISTERED PROFESSIONAL ENGINEER
11/8/24
DANYSH & ASSOCIATES, INC.
F-002228

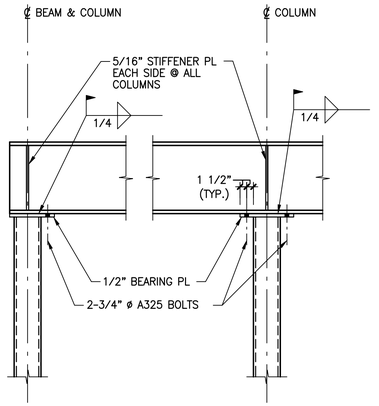
1 2024.11.08 CITY COMMENTS

BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

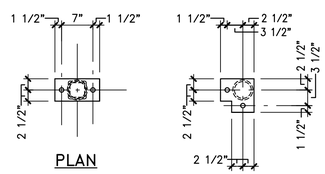
S130

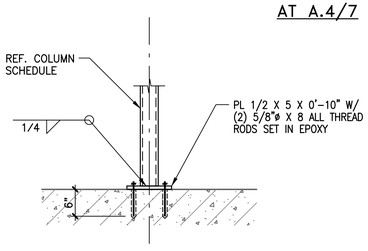
ROOF FRAMING PLAN



3 DETAIL — BEAM TO COL. CONN.

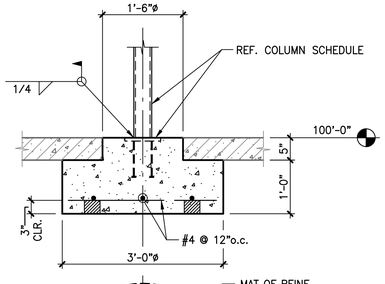
N.T.S.





4 DETAIL — TYPICAL COLUMN BASE CONN.

N.T.S.



5 SECTION

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

D&A PROJECT NO.: 64-396-00
D&A FILE NO.: BRASAOREMODELS401

COLD FORMED METAL FRAMING NOTES:

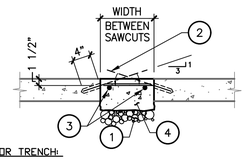
CM-1 REFER TO SPECIFICATION 05 40 00 (COLD-FORMED METAL FRAMING).

CM-2 CERTAIN LIGHT GAGE GALVANIZED STEEL STUDS ARE DESIGNATED WITH CLARK STEEL FRAMING SYSTEMS NOMENCLATURE. USE 50 KSI STEEL. STUDS SUBMITTED FOR APPROVAL SHALL HAVE AT LEAST EQUAL PROPERTIES.

CM-3 LIGHTGAGE METAL STUDS SHALL HAVE PROPERTIES AND CAPACITIES COMPUTED IN ACCORDANCE WITH THE 2007 AISI STANDARD FOR COLD-FORMED STEEL FRAMING (AISI S100-07 AND AISI S200-07 AND SUPPLEMENTS), ASD PROVISIONS. DESIGN, MANUFACTURE, ERECTION AND QUALITY CONTROL/QUALITY ASSURANCE SHALL BE IN ACCORDANCE WITH AISI S240 NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL STRUCTURAL FRAMING.

CM-4 SHOP DRAWINGS FOR STUDS ARE TO BE PROVIDED. STUD SIZES, SPACING, AND CONNECTIONS ARE AS SHOWN ON PLANS AND SECTIONS / DETAILS. REFERENCE SPECIFICATION SECTION 05 40 00 (COLD-FORMED METAL FRAMING) AND SECTION 01 14 10 (STRUCTURAL QUALITY CONTROL AND TESTING).

CM-5 TO FACILITATE INSPECTIONS ALL MEMBERS TO BE LABELED IN ACCORDANCE WITH CHAPTER A OF AISI S240 STANDARD.

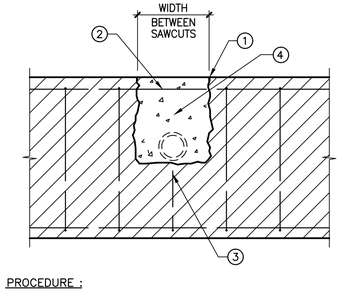


NOTES FOR TRENCH:

1. USE A CRUSHED LIMESTONE BASE MATERIAL TO FILL ANY DEPRESSIONS IN THE SUBGRADE. THEN HAND COMPACT TO DENSIFY THE TOP OF THE FILL. ALTERNATELY USE FLOWABLE FILL.
2. #4 DOWELS X 1'-3" LONG, SPACED AT 12" o.c. ARE TO BE SET IN EPOXY. DRILL IN AT A 1:3 ANGLE AND THEN BEND DOWN. USE INJECTABLE EPOXY ADHESIVE (HILTI HIT HY 200 OR EQUAL) FOR ANCHORING REINFORCING STEEL DOWELS. ADHESIVE SHALL BE FURNISHED IN CONTAINERS WHICH KEEP COMPONENT A AND COMPONENT B SEPARATE. CONTAINERS SHALL BE DESIGNED TO ACCEPT STATIC MIXING NOZZLE WHICH THOROUGHLY BLENDS COMPONENT A AND COMPONENT B AND ALLOWS INJECTION DIRECTLY INTO DRILLED HOLE. ONLY INJECTION TOOLS AND STATIC MIXING NOZZLES AS RECOMMENDED BY THE MANUFACTURER SHALL BE USED.
3. RUN TWO #4 REINFORCING BARS CONTINUOUS IN THE TRENCH, TIED TO THE UNDERSIDE OF THE DOWELS. LAP SPLICE 1'-8" WHERE NECESSARY.
4. CONCRETE SHALL BE DESIGNED TO DEVELOP MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI (MINIMUM OF 5 SACKS OF CEMENT/CU. YD.; MAXIMUM SLUMP OF 5 INCHES) FLY ASH WILL BE PERMITTED UP TO 20% PORTLAND CEMENT REPLACEMENT.

1 DETAIL — TYPICAL MECHANICAL TRENCH AT EXISTING SLAB

N.T.S.



PROCEDURE :

1. - SAW CUT 3/4" DEEP (MAX.) GROOVES ON EA. SIDE OF PLUMBING/CONDUIT LINE AS SHOWN
2. - "CHIP-OUT" EXIST. BM. LEAVING TOP BM. REINF. INTACT
3. - CUT AWAY BEAM STIRRUPS AS REQUIRED. TO ROUTE PLUMBING LINES BENEATH TOP STEEL
4. - COAT EXISTING BEAM SURFACES WITH EPOXY BONDING AGENT (EUCO WELD BY EUCLID OR EQUAL) AND POUR CONCRETE

2 DETAIL — TYPICAL MECHANICAL TRENCH AT EXISTING GRADE BEAM

N.T.S.

FLOOR TOPPINGS NOTES:

FT-1 PREPARATION:

A) CHIP SURFACE OF CONCRETE DOWN TO INSURE MINIMUM DEPTH OF TOPPING IS 1/4". SAWCUT EDGES TO INSURE 1/4" DEPTH. DO NOT FEATHER THE EDGES.

B) CONCRETE SURFACES MUST BE CLEAN AND ROUGH. ALL OIL, DIRT, DEBRIS, PAINT AND UNSOUND CONCRETE MUST BE REMOVED. THE SURFACE MUST BE PREPARED MECHANICALLY USING A SCABBLER, BUSHHAMMER, CHIPPING HAMMER, SHOTBLAST, OR SCARIFIER WHICH WILL GIVE A SURFACE PROFILE OF A MINIMUM 1/8" (3 MM) AND EXPOSE THE COARSE AGGREGATE OF THE CONCRETE. THE FINAL STEP IN CLEANING SHALL BE THE COMPLETE REMOVAL OF ALL DUST, DIRT, AND RESIDUE BY PRESSURE WASHING AND/OR VACUUM.

FT-2 TOPPING:

A) FEATHEREDGE (MIN. 1/4" DEPTH) TO 1" MAX:

i) AFTER THE CONCRETE SURFACE HAS BEEN PREPARED AND CLEANED APPLY MASTEREMACO ADH 326 BY SIKA, WHICH IS A TWO-COMPONENT 100% SOLIDS LIQUID EPOXY BONDING ADHESIVE.

ii) FOLLOWING MANUFACTURER'S INSTRUCTIONS, MASTEREMACO T 310CI BY SIKA SHALL BE USED AS THE REPAIR MORTAR, WHICH IS A ONE PART FLOWABLE MORTAR REQUIRING ONLY THE ADDITION OF WATER FOR MIXING.

B) ONE INCH (1") TWO INCHES (2"):

i) AFTER THE CONCRETE SURFACE HAS BEEN PREPARED AND CLEANED, PRIME ALL AREAS WITH A BOND COAT PRIOR TO PLACEMENT OF CONCRETE TOPPING. BOND COAT SHALL BE MASTEREMACO ADH 326 BY SIKA, WHICH IS A TWO-COMPONENT 100% SOLIDS LIQUID EPOXY BONDING ADHESIVE. CONCRETE TO BE PLACED ON BOND COAT BEFORE BOND COAT DRIES.

ii) USE A CONCRETE MIX DESIGNED TO DEVELOP MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI (MINIMUM OF 5.5 SACKS OF CEMENT/CU. YD.; MAXIMUM AGGREGATE SIZE OF 3/8"; MAXIMUM SLUMP OF 5 INCHES).

(ALTERNATELY EXTEND MASTEREMACO T 310CI BY SIKA WITH ROUNDED 3/8" PEA GRAVEL AS RECOMMENDED BY MANUFACTURER).

iii) ADD WELDED WIRE FABRIC, 6x6-W2.9xW2.9, 1' FROM TOP.

C) TWO INCHES (2") TO FOUR INCHES (6"):

i) SAME PROCEDURE AS FOR "B-i"
ii) SAME PROCEDURE AS FOR "B-ii"
iii) ADD #4 @ 12"o.c., 1-1/2" FROM TOP.

STEEL FRAMING NOTES:

SF-1 STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 EXCEPT FOR WIDE FLANGE (W-SHAPES) WHICH MUST CONFORM TO ASTM A992 (Fy=50 KSI). HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500, GRADE B, FY=46 KSI FOR RECTANGULAR HSS, FY=42 KSI FOR ROUND HSS. PIPE SHALL CONFORM TO ASTM A53, GRADE B, FY=35 KSI. CONNECTIONS SHALL CONFORM TO REQUIREMENTS OF AISC (DESIGN IN ACCORDANCE WITH ASD).

SF-2 ROOF DECK IS 1-1/2"-22 GAUGE, PAINTED, TYPE B WIDE RIB DECK COMPLYING WITH STEEL DECK INSTITUTE, WITH MINIMUM I=.183, SN=.192, ATTACH TO SUPPORTING MEMBERS BY WELDING DIRECTLY THROUGH BOTTOM OF THE RIBS AT EVERY SUPPORT. USE 5/8" PUDDLE WELDS FOR SUPPORT FASTENERS AND #10 TEK SCREWS FOR SIDELAP FASTENERS (36/3 + 1).

SF-3 WHERE METAL DECK IS SUPPORTED CONTINUOUSLY AT EDGES, WELD DECK TO STEEL SUPPORT AT 12" O.C.

SF-4 STRUCTURAL FRAMING CONNECTIONS SHALL BE SEATED COLUMN CAPS, CLIP ANGLES OR WEB PLATES AS SHOWN ON DETAILS. USE A325 HIGH STRENGTH BOLTS OR WELDS SUFFICIENT TO DEVELOP REACTION CAPACITY SHOWN IN AISC MANUAL (9TH EDITION) AS THE ALLOWABLE UNIFORM LOAD/SPAN DIVIDED BY TWO AS SHOWN IN THE (9TH EDITION) OR THE MAXIMUM TOTAL UNIFORM LOAD/SPAN DIVIDED BY TWO AS SHOWN IN TABLES 3-6 THROUGH 3-9 OF THE 13TH EDITION (ASD).

SF-5 DECK STOP ANGLES, FASCIA ANGLES, HANGERS, CLIPS AND OTHER STRUCTURAL AND MISCELLANEOUS MEMBERS SHALL BE CONNECTED OR JOINED USING 3/16" OR LARGER FILLET OR GROOVE WELDS AS REQUIRED FOR ADEQUATE CONNECTION.

SF-6 ALL EXPOSED STRUCTURAL STEEL AND LINTEL ANGLES SHALL BE CLEANED AND GALVANIZED. APPLY ZINC COATING BY THE HOT-DIP PROCESS AND ACCORDING TO ASTM A123. FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS SHALL BE CLEANED AND "TOUCHED UP" WITH GALVANIZING REPAIR PAINT IN ACCORDANCE WITH ASTM A780. THE GALVANIZING REPAIR PAINT SHALL HAVE A HIGH ZINC-DUST CONTENT AND DRY FILM CONTAINING NO LESS THAN 95% ZINC-DUST AND COMPLYING WITH THE DOD-P-21035 OR SSPC-PAINT 20.

COLUMN SCHEDULE

MK	SECTION	TOP CONN.	BASE PLATE W x D x t	BASE PLATE ANCHORS	BASE PLATE SECT.	REMARKS
C1	4"ø STD. PIPE	6/S402	5x10x1/2	(2) 5/8"ø X 0'-8" ALL THD	4/S401	
C2	4"ø STD. PIPE	5/S402	5x10x1/2	(2) 5/8"ø X 0'-8" ALL THD	4/S401	
C3	4"ø STD. PIPE	3/S401	5x10x1/2	(2) 5/8"ø X 0'-8" ALL THD	4/S401	
C4	HSS 4x4x1/4	3/S401	5x10x1/2	(2) 5/8"ø X 0'-8" ALL THD	4/S401	
C5	HSS 4x4x1/4	3/S401	8x8x3/4	(4) 3/4"ø X 0'-8" HCA	5/S401	
C6	3"ø STD. PIPE	3/S405	-	-	-	STUB

GENERAL NOTES CONT.:

GN-12 "HEADED CONCRETE ANCHORS" (HCA) SHALL BE OF 50,000 psi STEEL ROD WITH UPSET ENDS, AUTOMATICALLY ARC WELDED THROUGH CERAMIC FERRULES, CONFORMING TO ASTM F108-60T.

GN-13 USE INJECTABLE EPOXY ADHESIVE TESTED & QUALIFIED IN ACCORDANCE WITH ICC-ES-AC308 AND ESR-2322 (HILTI HIT-RE500-V3 OR EQUAL) WHERE REQUIRED FOR ANCHORING BOLTS. ADHESIVE SHALL BE FURNISHED IN CONTAINERS WHICH KEEP COMPONENT A AND COMPONENT B SEPARATE. CONTAINERS SHALL BE DESIGNED TO ACCEPT STATIC MIXING NOZZLE WHICH THOROUGHLY BLENDS COMPONENT A AND COMPONENT B AND ALLOWS INJECTION DIRECTLY INTO DRILLED HOLE. ONLY INJECTION TOOLS AND STATIC MIXING NOZZLES AS RECOMMENDED BY MANUFACTURER SHALL BE USED.

GN-14 EXPANSION ANCHORS SHALL BE HILTI KWIK BOLT TZ2, CARBON STEEL WITH HOT-DIP GALVANIZED COATING (OR EQUAL), MEETING FEDERAL SPECIFICATION A-A 1923A, TYPE 4. ALTERNATIVE SHALL HAVE PUBLISHED PULLOUT AND SHEAR VALUES EQUAL TO OR GREATER THAN THAT OF SPECIFIED ANCHOR.

GN-15 UTILITIES PENETRATING BUILDING SHALL BE FLEXIBLE, USING SLEEVE JOINTS, BENDS, LOOPS, ETC. TO PERMIT MOVEMENTS DUE TO PVR OF UNDERLYING SOILS.

GN-16 REFER TO SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS. AS A MINIMUM THE FOLLOWING IS REQUIRED:

1. CONCRETE MIX DESIGNS: SECTION 03 30 01
2. SHOP DRAWINGS (REF. TO SPECIFICATION SECTION)
   * REINFORCING STEEL PLACEMENT AND CUT SHEETS
   * STRUCTURAL STEEL: 05 12 00

GN-17 THE STRUCTURAL DRAWINGS FOR THIS PROJECT ARE NOT INTENDED FOR USE AS ERECTION DRAWINGS. THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUB-CONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREIN AS CORRECT, AND OBLIGATES HIMSELF TO ANY AND ALL EXPENSES, REAL OR IMPLIED, ARISING FROM SUCH ACCEPTANCE. THE CONTRACTOR SHALL MAINTAIN THESE DRAWINGS AT A CURRENT STATUS, INCLUDING ALL ADDENDA AND REVISIONS.

DEMOLITION NOTES:

DN-1 THE CONTRACTOR MUST REVIEW ALL WORK IN PROGRESS TO ASCERTAIN THAT ACTUAL STRUCTURAL CONDITIONS ENCOUNTERED REFLECT THOSE SHOWN ON THE DRAWING, AND REPORT ANY DISCREPANCIES TO THE ENGINEER.

DN-2 DURING DEMOLITION CONTRACTOR SHALL IDENTIFY STRUCTURAL FRAMING AND LOAD PATHS IN AREA OF DEMOLITION TO PREVENT ACCIDENTAL COLLAPSE. BEFORE DEMOLISHING ANY WALLS OR COLUMNS HAVE STRUCTURAL ENGINEER REVIEW.

DN-3 SELECTIVE DEMOLITION IS DETAILED ON RESPECTIVE SECTIONS AND DETAILS. CARE MUST BE TAKEN TO FOLLOW INSTRUCTIONS EXPLICITLY TO AVOID DAMAGING ITEMS THAT WILL REMAIN. ANY OBJECTIONS OR SUGGESTIONS FOR MORE SECURE/SAFER PROCEDURES ARE ENCOURAGED FOR DISCUSSION PRIOR TO BEGINNING DEMOLITION.

DN-4 CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL BRACING AND SHORING REQUIRED TO INSURE THE SAFETY AND STRUCTURAL INTEGRITY OF THE PROJECT DURING DEMOLITION OPERATIONS.

DN-5 CONTRACTOR SHALL INSPECT EXISTING STRUCTURAL ELEMENTS AND REPAIR OR REPLACE THOSE FOUND TO BE STRUCTURALLY UNSOUND AS DIRECTED BY STRUCTURAL ENGINEER.

DN-6 A) WHERE EXISTING CONCRETE IS NOTED TO BE REMOVED, WORK SHALL BE INITIATED BY MEANS OF SAW CUTS AT LEAST 1" DEEP OR BY PERFORATING WITH CLOSELY SPACED THRU-DRILLED HOLES.

B) USE CUTTING METHODS LEAST LIKELY TO DAMAGE CONSTRUCTION TO REMAIN OR ADJOINING CONSTRUCTION. TO MINIMIZE DISTURBANCE OF ADJACENT SURFACES, USE HAND OR SMALL POWER TOOLS DESIGNED FOR SAWING OR GRINDING, NOT HAMMERING OR CHOPPING.

DN-7 SAWCUTTING THRU WALLS AND SLABS SHALL BE INITIATED BY 3" CORE HOLES AT ALL CORNERS TO PREVENT OVERCUTS. OVERCUTS ARE NOT PERMITTED.

2021 IBC CHAPTER 17 SPECIAL INSPECTIONS:

SP-1 REFER TO SPECIFICATION SECTION 01 14 11: SPECIAL INSPECTIONS: IBC CHAPTER 17.

SP-2 THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE (RDPIRC) FOR THIS PROJECT IS THE ARCHITECT. SUBMIT ALL SPECIAL INSPECTION REPORTS DIRECTLY TO THE RDPIRC FOR REVIEW. ALSO SUBMIT THE STRUCTURALLY RELATED SPECIAL INSPECTION REPORTS TO THE STRUCTURAL ENGINEER FOR REVIEW.

SP-3 THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL TESTING, INSPECTIONS AND NOTIFYING THE ARCHITECT / ENGINEER AND SPECIAL INSPECTORS OF WORK READY FOR INSPECTION. THE GENERAL CONTRACTOR MUST PROVIDE ACCESS TO AND MEANS FOR PROPER INSPECTION OF SUCH WORK.

SP-4 SPECIAL INSPECTIONS REQUIRED FOR THIS PROJECT:

A. CONCRETE CONSTRUCTION: IBC 1705.3, TABLE 1705.3
B. STRUCTURAL STEEL: IBC 1705.2
C. COLD-FORMED STEEL DECK: IBC 1705.2.2 AND SDI QA/QC.

SP-5 THE RDPIRC IS RESPONSIBLE TO PREPARE, SIGN AND SUBMIT THE "FINAL REPORT OF REQUIRED INSPECTIONS" AFTER THE GENERAL CONTRACTOR COMPLETES HIS WORK ACCORDING TO THE APPROVED PLANS.

GENERAL NOTES:

GN-1 STRUCTURAL FRAMING MODIFYING THE EXISTING BUILDING IS DESIGNED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE (IBC 2021 - CHAPTER 16), AS ADOPTED AND AMENDED BY THE CITY OF SAN ANTONIO, AND APPLICABLE INDUSTRY STANDARDS (AISC, ACI, ETC.).

GN-2 THE DESIGN GRAVITY LOADS ARE:

SUPERIMPOSED DEAD LOADS

MEZZANINE/PLATFORMS
FLOOR FRAMING ..... 6 PSF
CEILING ..... 2 PSF
MISC ..... 2 PSF

LIVE LOADS
ROOF ..... 20 PSF
GROUND SNOW ..... 5 PSF

NOTE: NO LIVE LOAD REDUCTIONS WERE TAKEN.

WIND LOAD (ASCE 7-16 & IBC 2021 LOCATION SPECIFIC AS PER NOTE 6 FIG. 1609.3 (1) OF IBC AND IN ACCORDANCE WITH LOCAL BUILDING DEPARTMENT)
RISK CATEGORY (TABLE 1604.5-IBC) - II
EXPOSURE (SECT. 1609.4.3-IBC) - B
BASIC DESIGN WIND SPEED (FIG. 1609.3 (1) -IBC)
V = 108 MPH
ALLOWABLE STRESS DESIGN WIND SPEED (TABLE 1609.3.1 - IBC)
Vasd = 84 MPH

SEISMIC DESIGN CRITERIA (PER IBC 2021)
A. SEISMIC SITE CLASS = C
B. SPECTRAL RESPONSE COEFFICIENTS: Ss=0.051g; S1=0.023g; Sds=0.044g; Sd1=0.023g
C. SEISMIC DESIGN CATEGORY = A

GN-3 INSPECTIONS AND QUALITY CONTROL SHALL COMPLY WITH ASTM STANDARD E329 AND THE INTERNATIONAL BUILDING CODE (IBC). TESTING/INSPECTIONS SHALL BE PROVIDED BY AN APPROVED TESTING LABORATORY. THE STRUCTURAL ENGINEER - OF - RECORD OR HIS AUTHORIZED REPRESENTATIVE WILL MAKE PERIODIC VISITS TO THE JOBSITE TO ASCERTAIN THE WORK IS GENERALLY IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. SPECIFIC VISITS TO INCLUDE REVIEW OF REINFORCING STEEL PRIOR TO PLACING CONCRETE; WALL AND ROOF FRAMING PRIOR TO SHEATHING, AND REVIEW OF DECK INSTALLATION/ROOFING PLACEMENT.

GN-4 CONCRETE SHALL BE LABORATORY DESIGNED, TO DEVELOP A MINIMUM 28-DAY COMPRESSIVE STRENGTHS AS GIVEN BELOW.
BEAMS AND SLABS ..... 3000 PSI

1. FLY ASH WILL BE PERMITTED UP TO 20% PORTLAND CEMENT REPLACEMENT.
2. 28-DAY STRENGTH/MIN. SACKS OF CEMENT/CU. YD: 3,000 PSI 5
3. MAX. SLUMP = 5"
4. MAX. AGGREGATE: ..... 3/4"
5. THE USE OF ADMIXTURES SHALL BE COORDINATED BETWEEN BATCH PLANT AND THE CONCRETE CONTRACTOR TO ADJUST FOR PLANT CONDITIONS AND JOBSITE CONDITIONS INCLUDING SIZE OF POUR, TRAVEL TIME BETWEEN BATCH PLANT AND JOBSITE, AND TIME ESTIMATED FOR COMPLETING POUR AND CURING.
6. TESTING LAB. TO BE ENGAGED BY CONTRACTOR TO TAKE A SET OF FOUR (4) CYLINDERS FOR EVERY 75 YARDS OF CONCRETE, OR FRACTION THEREOF, AND PERFORM COMPRESSION TESTS IN ACCORDANCE WITH ACI-318 AND ACI-311.5R; TWO (2) BREAKS AT 7 DAYS AND TWO (2) BREAKS AT 28 DAYS.

GN-5 REINFORCING STEEL SHALL BE FROM NEW BILLET AND SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS:

A615-GR 60 ..... ALL REINFORCING
ASTM A108-60T ..... HEADED CONCRETE ANCHORS

GN-6 DETAILING OF CONCRETE REINFORCEMENT BARS AND ACCESSORIES SHALL BE IN ACCORDANCE WITH LATEST ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI 315). BAR SUPPORTS SHALL HAVE PLASTIC COATED LEGS OR BE HOT DIP GALVANIZED AFTER FABRICATION.

GN-7 BAR LAPS AND SPLICES SHALL BE A LENGTH EQUAL TO AT LEAST 40-BAR DIAMETERS. PROVIDE CONTINUOUS BARS AT CORNERS. WELDED WIRE MESH SHALL BE LAPPED 8" MINIMUM AT SPLICE POINTS, OR 1-1/2 MESHES, WHICHEVER IS GREATEST.

GN-8 MECHANICAL AND ELECTRICAL CONDUITS IN SLABS SHALL RUN UNDER THE TOP LAYER OF SLAB REINFORCING. PROVIDE A MINIMUM OF 1-1/2" CLEAR BETWEEN CONDUITS AND BETWEEN CONDUIT AND PARALLEL REINFORCING. DO NOT "BUNDLE" CONDUITS. INDIVIDUAL CONDUITS IN SLAB SHALL NOT EXCEED 1" DIAMETER. GROUPS OF CONDUITS OR CONDUITS LARGER THAN 1" DIAMETER WILL REQUIRE SLAB TO BE THICKENED TO MAINTAIN FULL SCHEDULED THICKNESS.

GN-9 REFER TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR DIMENSIONS, LOCATIONS AND SIZES OF FLOOR DEPRESSIONS, FLOOR OPENINGS, SLEEVES, INSERTS, ANCHORS AND BOLTS REQUIRED BY THE VARIOUS TRADES.

GN-10 THE CONTRACTOR AND FABRICATOR SHALL VERIFY ALL QUANTITIES, DIMENSIONS AND CONDITIONS AND NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

GN-11 CONTRACTOR SHALL PROVIDE NECESSARY CONSTRUCTION JOINTS IN MONOLITHIC CONCRETE FRAMING SO THAT NOT MORE THAN 400 CUBIC YARDS ARE POURED IN ONE DAY. LOCATION OF CONSTRUCTION JOINTS MUST HAVE PRIOR APPROVAL OF STRUCTURAL ENGINEER AND SHALL GENERALLY BE LOCATED AT OR NEAR MID-POINTS OF SPANS OF SLABS AND BEAMS. ALL CONTINUOUS REINFORCING SHALL BE CARRIED THROUGH THE JOINT. SEE DETAILS FOR CONTINUOUS KEY BETWEEN ADJACENT POURS.

architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

PERMIT REVIEW

DANYSH & ASSOCIATES
STRUCTURAL ENGINEERS
F-002228

STATE OF TEXAS
RONALD CRAIG TORBET
57092
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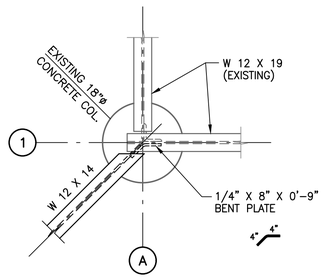
9/16/24
DANYSH & ASSOCIATES, INC.
F-002228

BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

S401

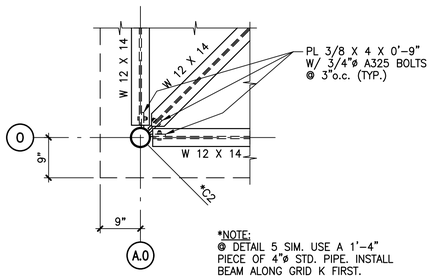
NOTES
SECTIONS
AND DETAILS



PLAN

4 DETAIL — BEAM TO BEAM CONN.

N.T.S.

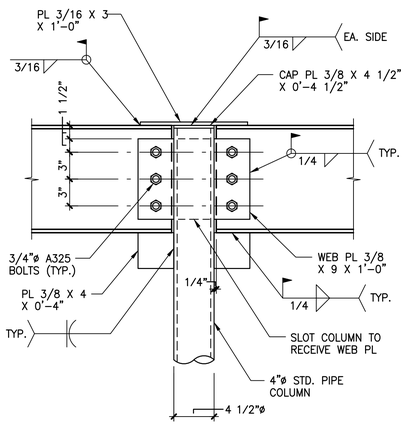


*NOTE:
@ DETAIL 5 SIM. USE A 1'-4" PIECE OF 4"ø STD. PIPE. INSTALL BEAM ALONG GRID K FIRST.

PLAN

5 DETAIL — BEAM TO COL. CONN.

N.T.S.



6 DETAIL — TYP. BEAM TO COL. CONN.

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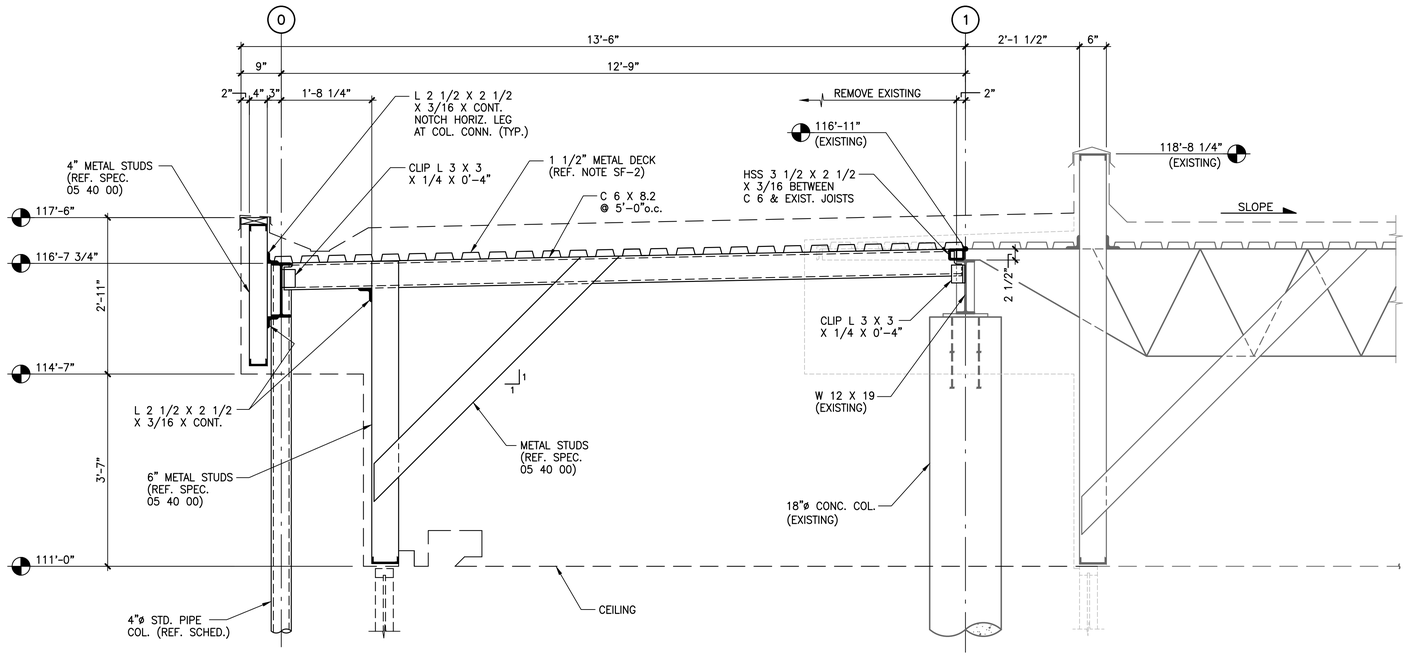

2 SECTION

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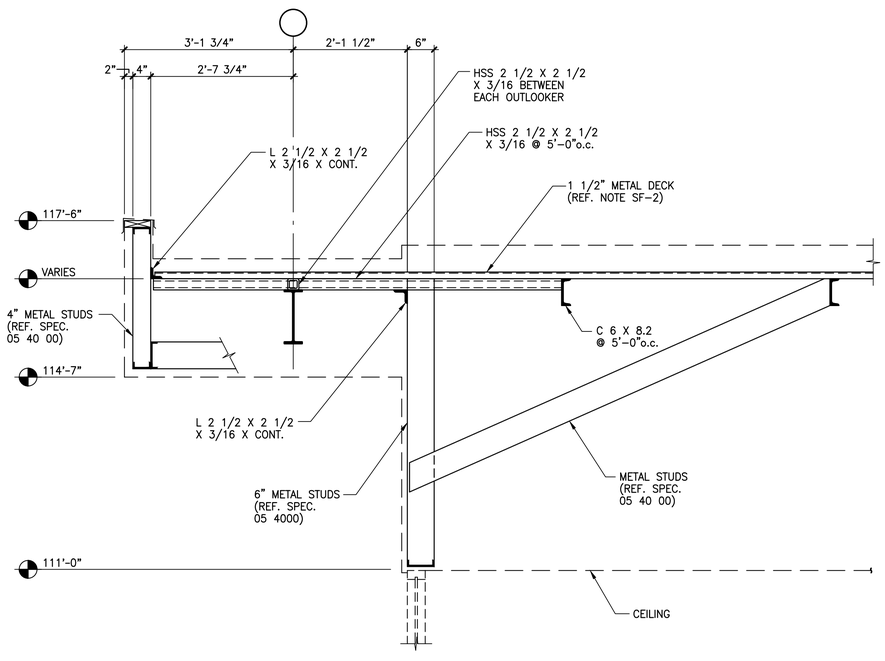

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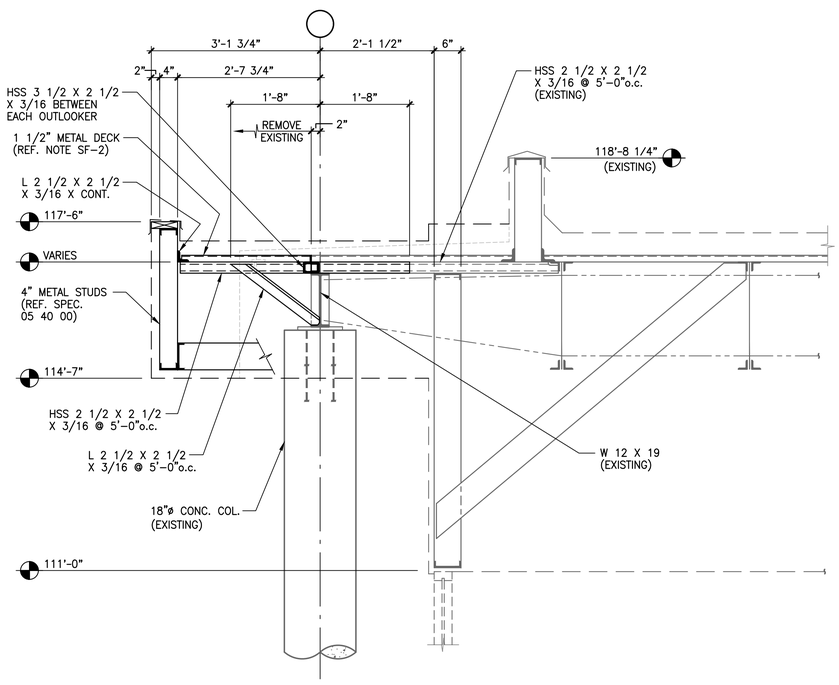

1 SECTION

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D&A PROJECT NO.: 64-396-00
D&A FILE NO.: BRASAOREMODELS402

architecture

ISSUED DATE 2024-09-16
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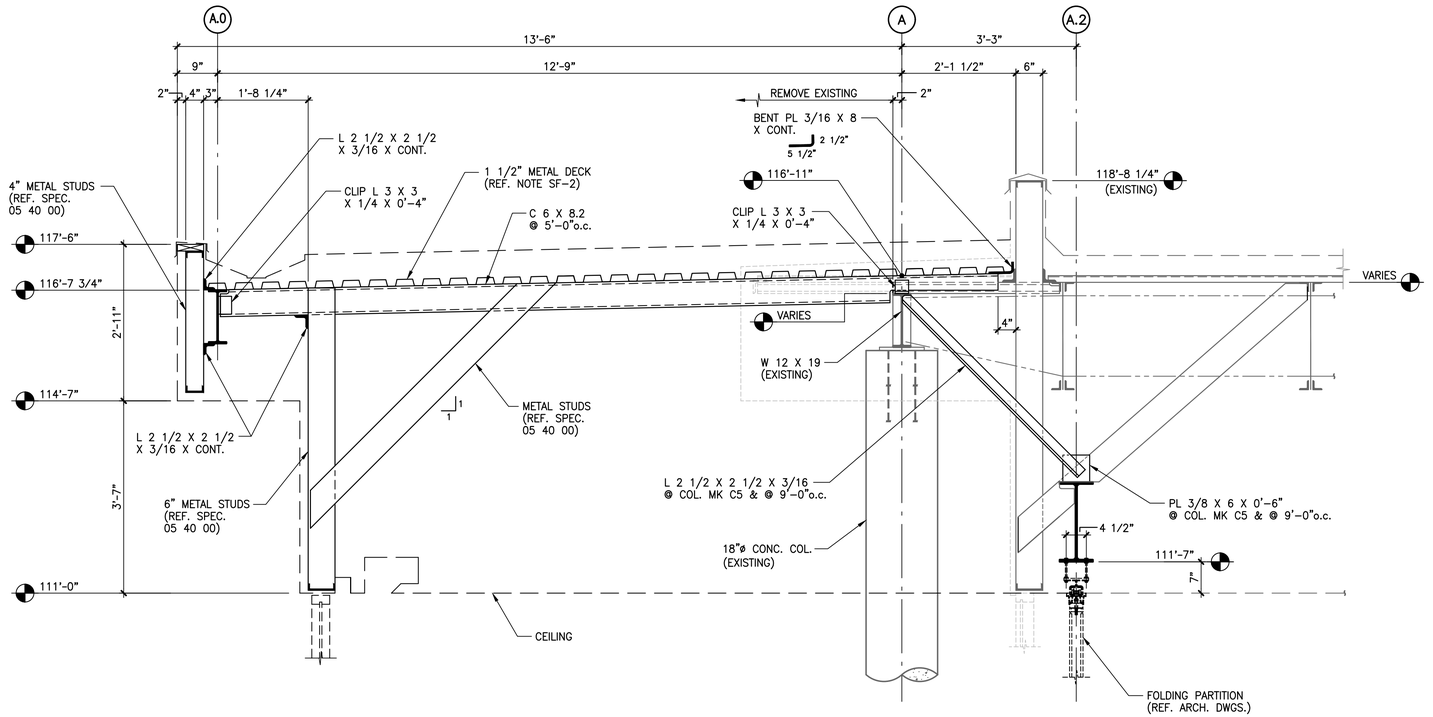
SECTIONS AND DETAILS



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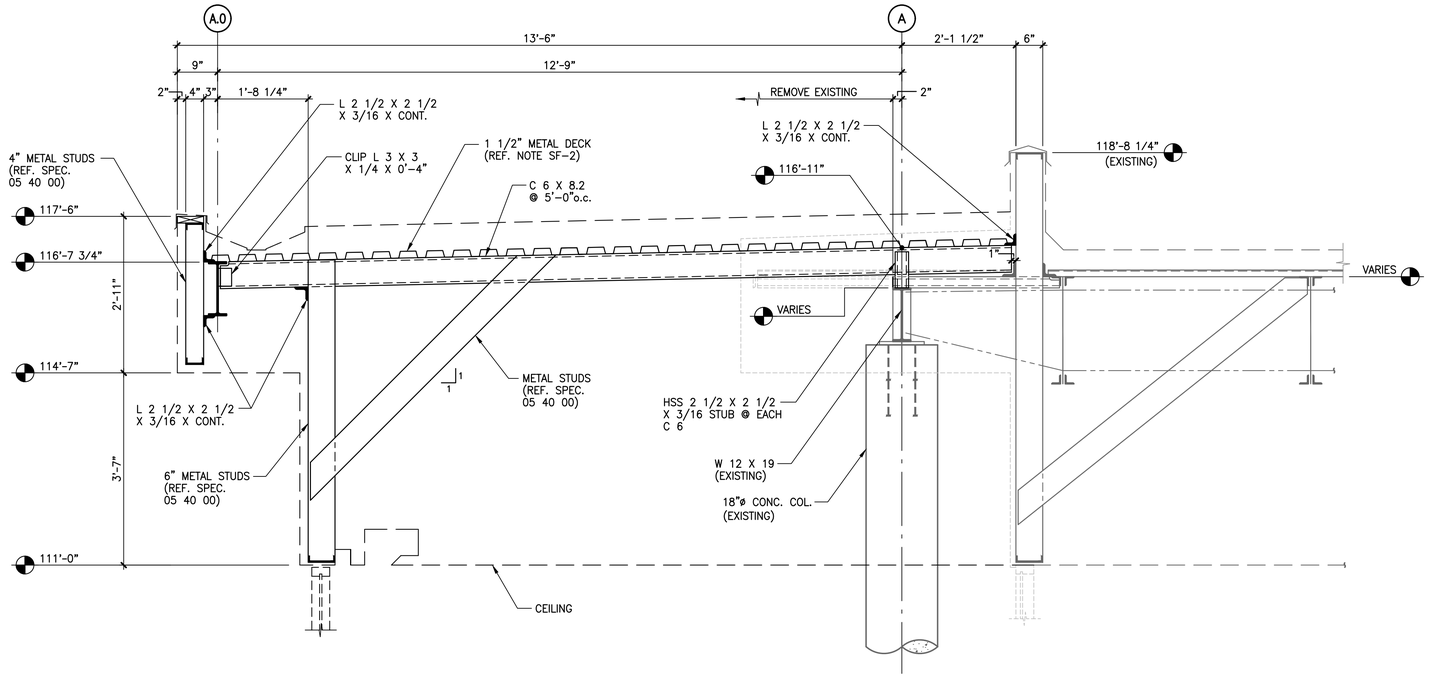

2 SECTION

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D&A PROJECT NO.: 64-396-00
D&A FILE NO.: BRASAOREMODELS403

architecture

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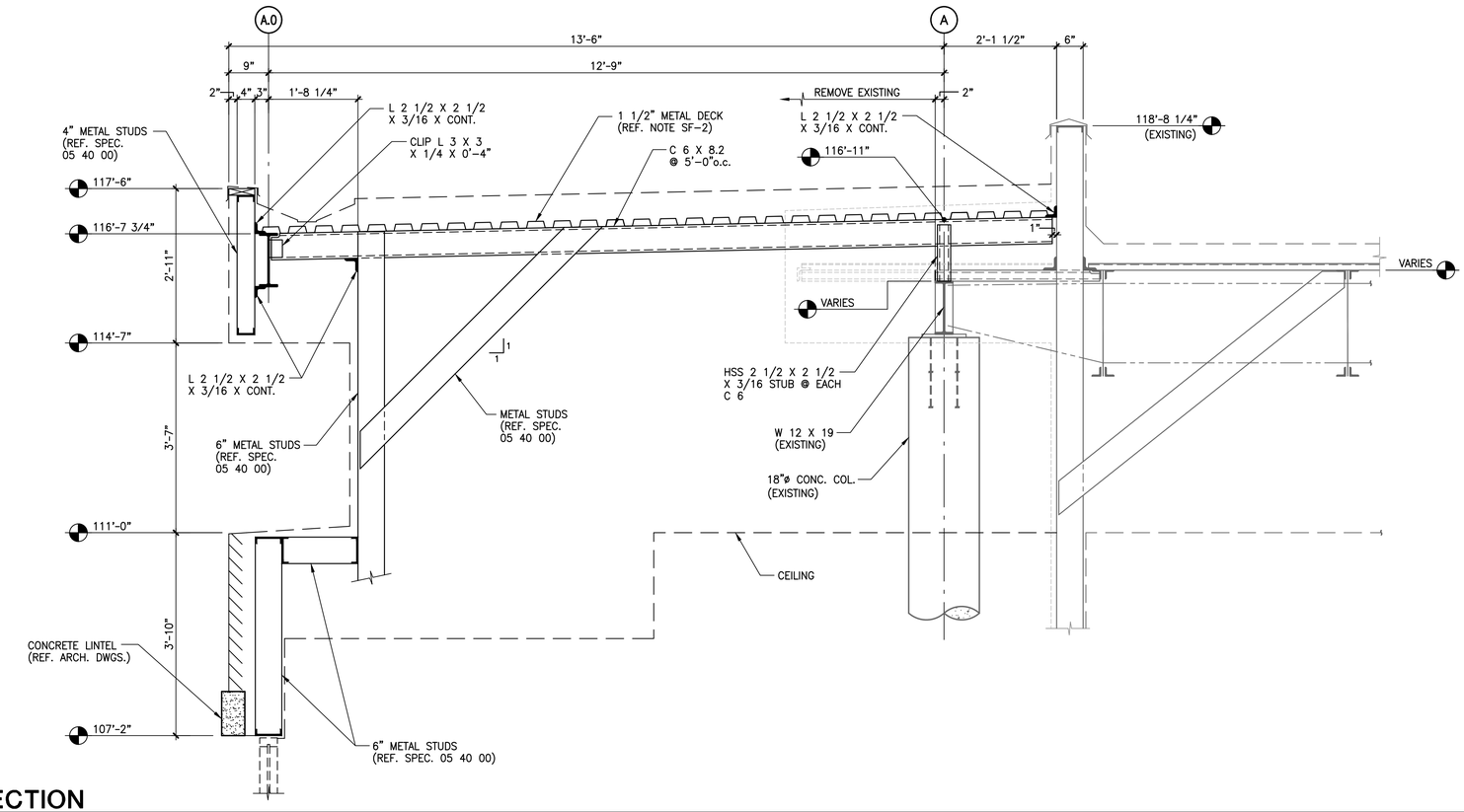
SECTIONS
AND DETAILS



1 **SECTION**

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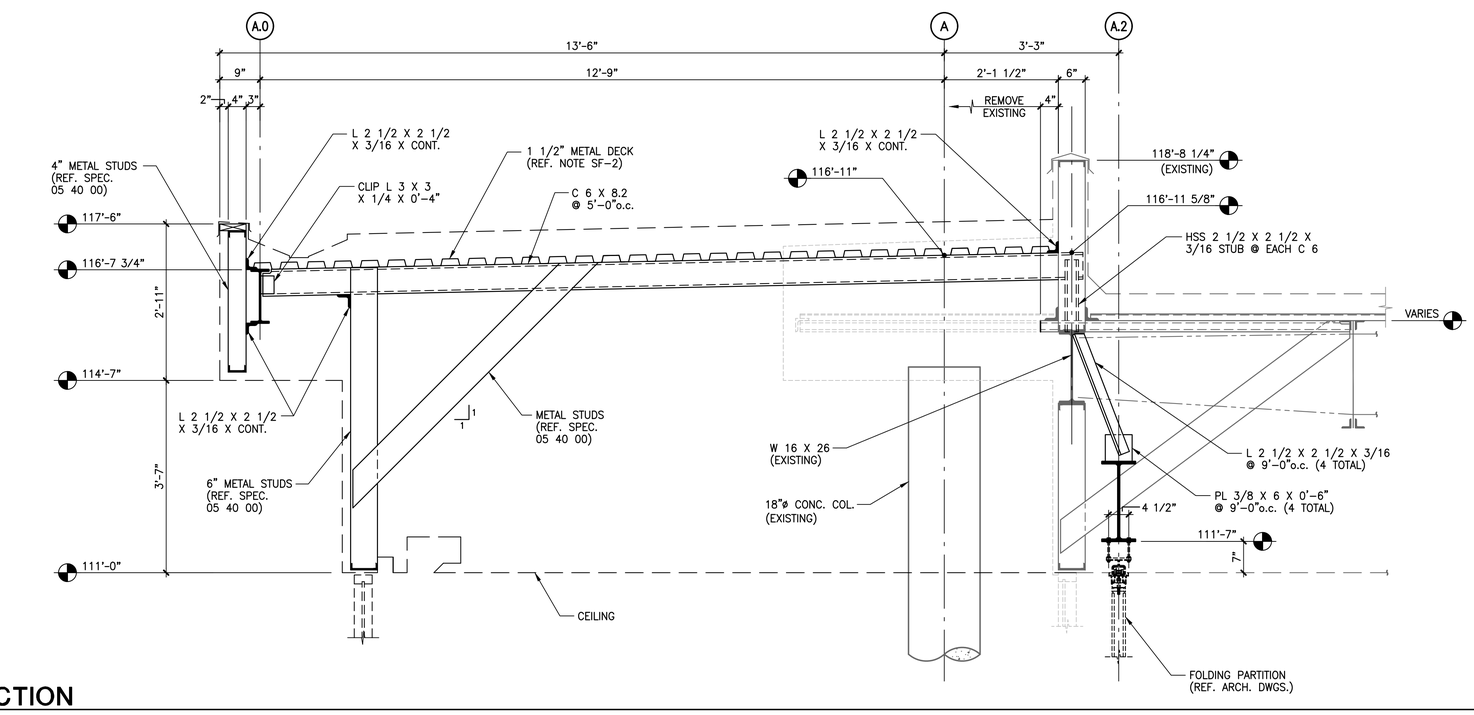

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D&A PROJECT NO.: 64-396-00
D&A FILE NO.: BRASAOREMODELS404

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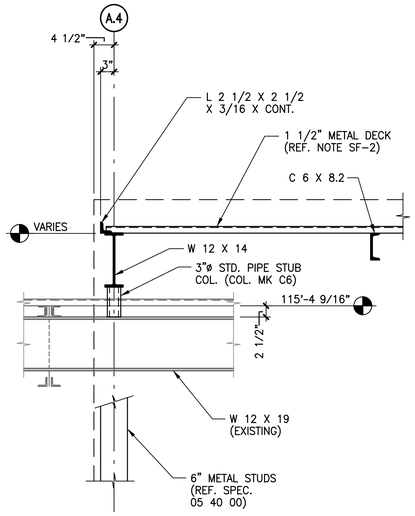
SECTIONS AND DETAILS



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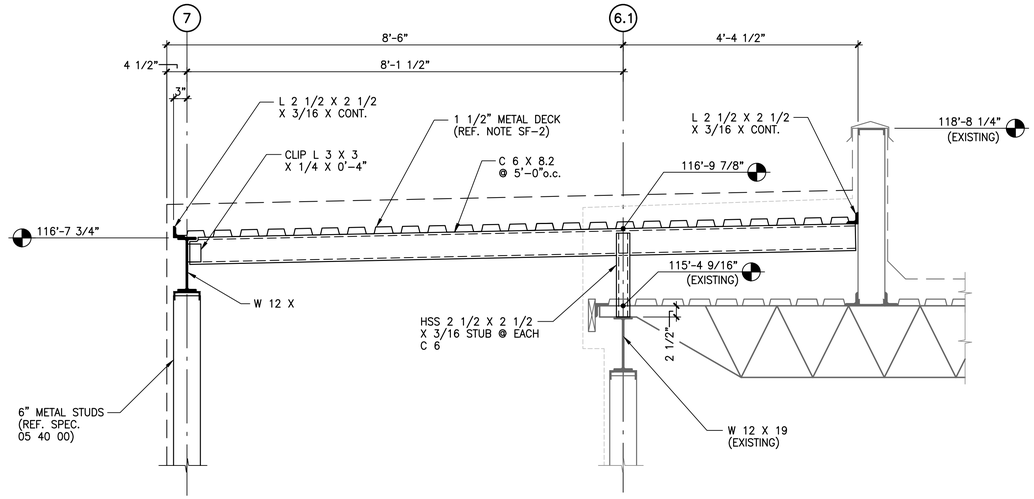

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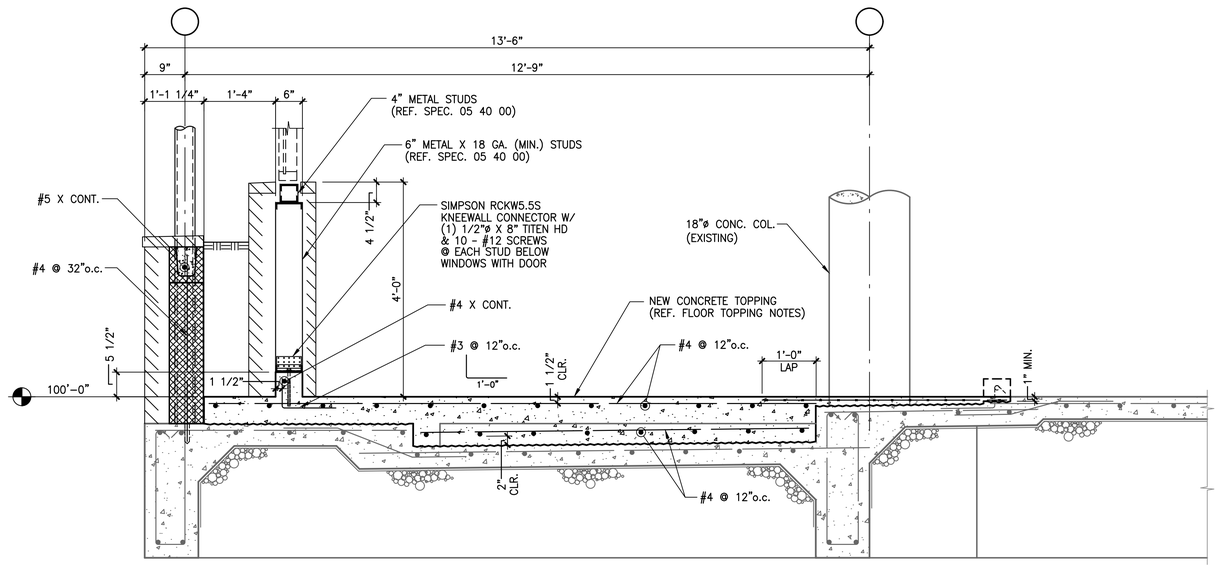

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D&A FILE NO.: BRASAOREMODELS405

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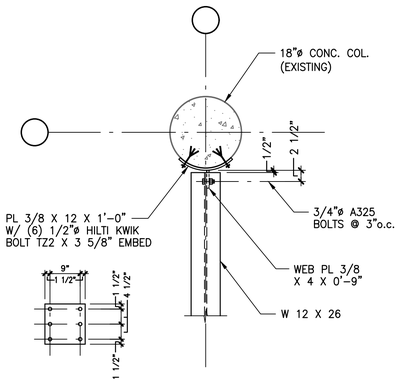
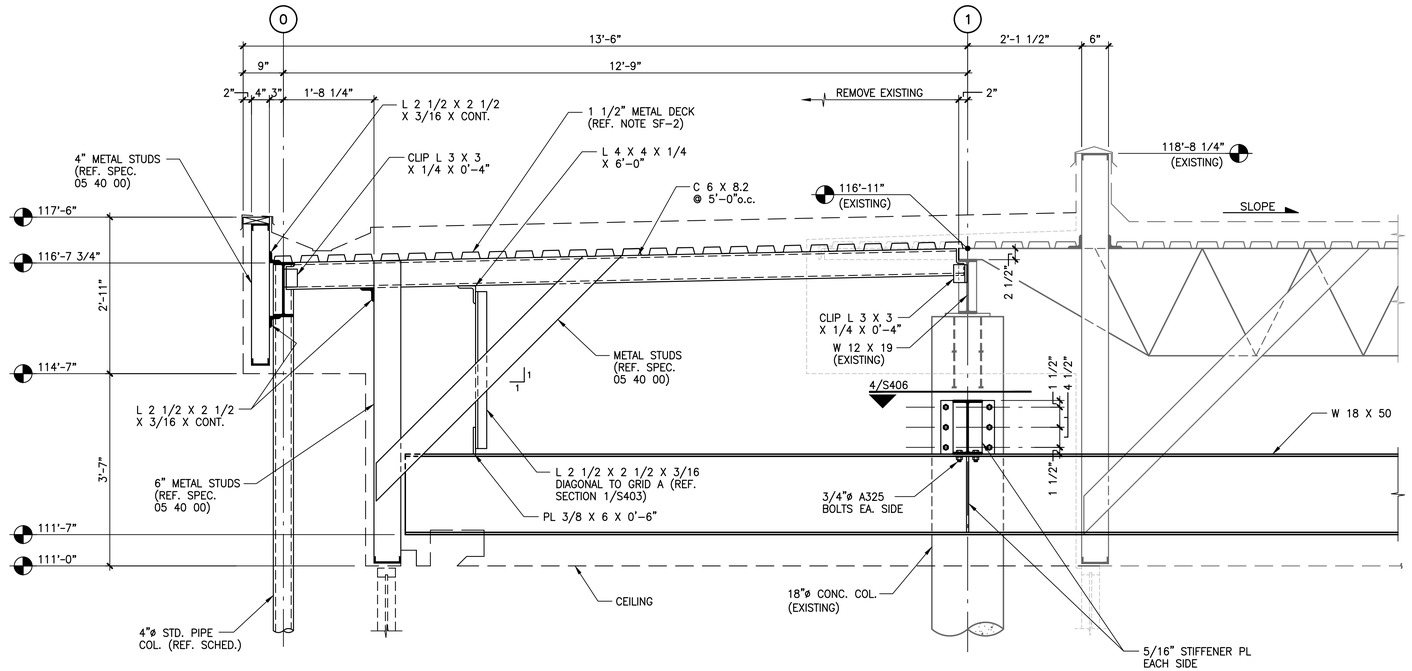
SECTIONS
AND DETAILS



PLAN

4 DETAIL BEAM TO BEAM CONN.

N.T.S.



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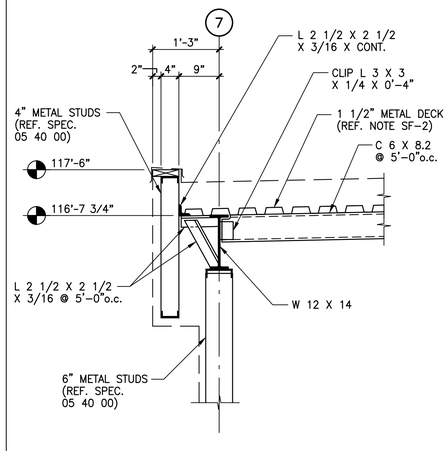

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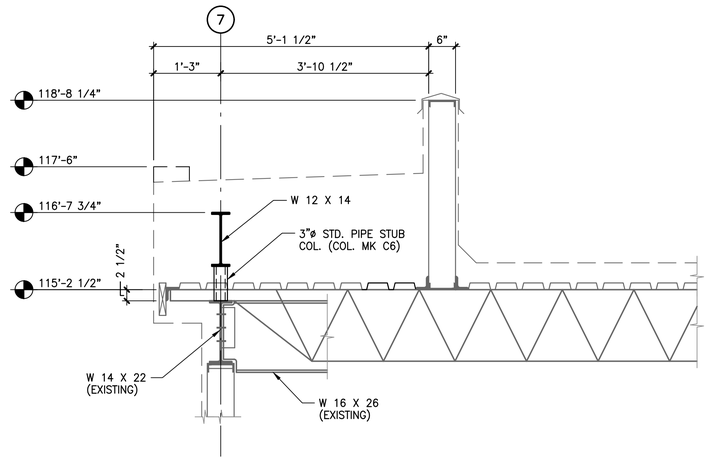

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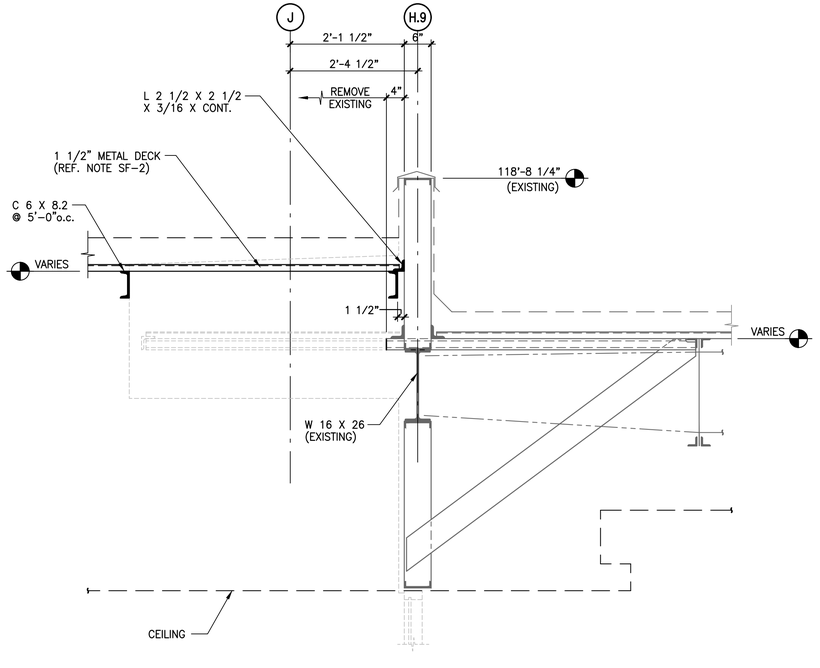

1 SECTION

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D&A PROJECT NO.: 64-396-00
D&A FILE NO.: BRASAOREMODELS406

architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

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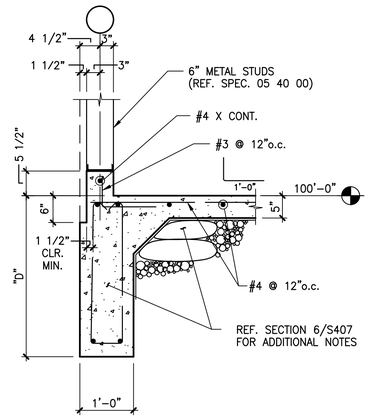
SECTIONS
AND DETAILS



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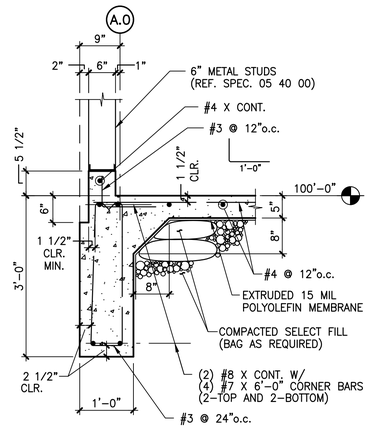

6 SECTION

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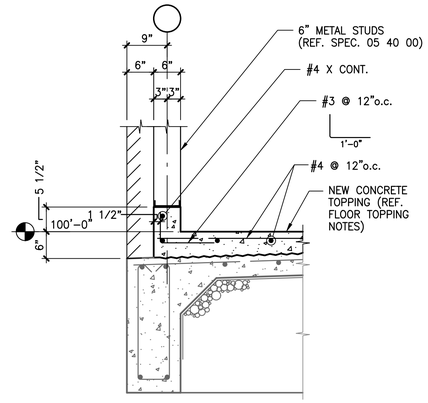

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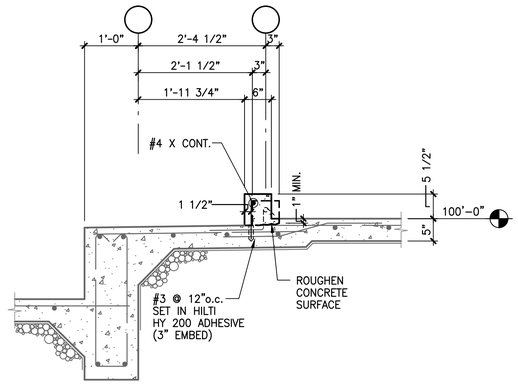

1 SECTION

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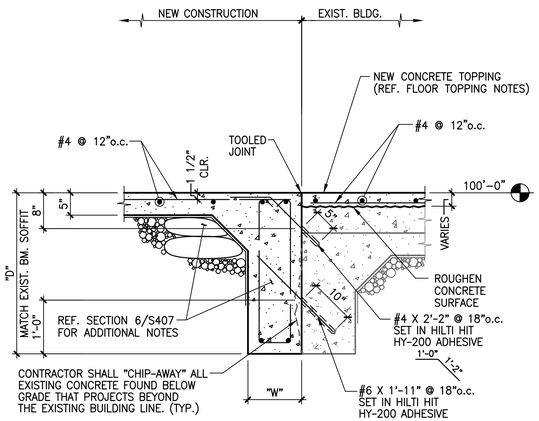

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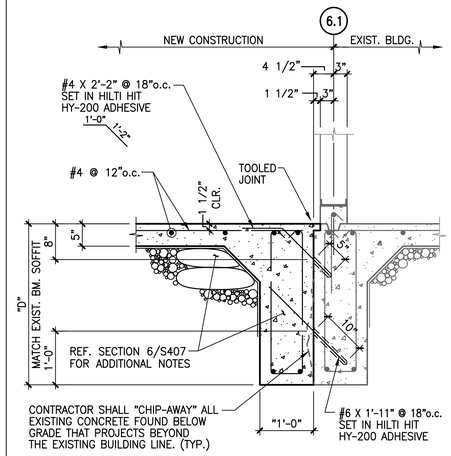
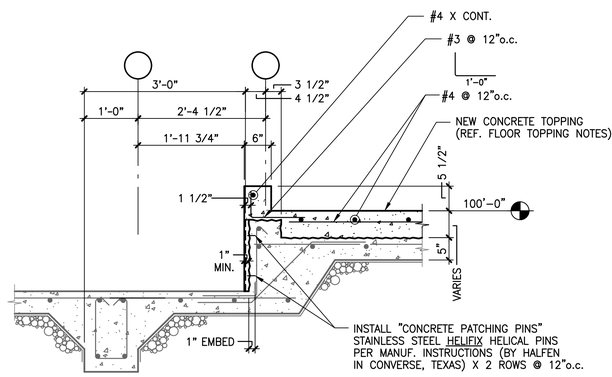
SCALE: 3/4" = 1'-0"



4 SECTION

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



2 SECTION

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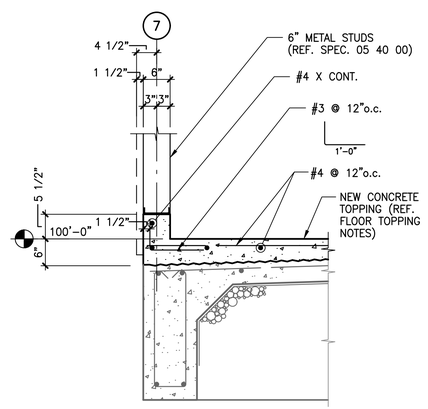

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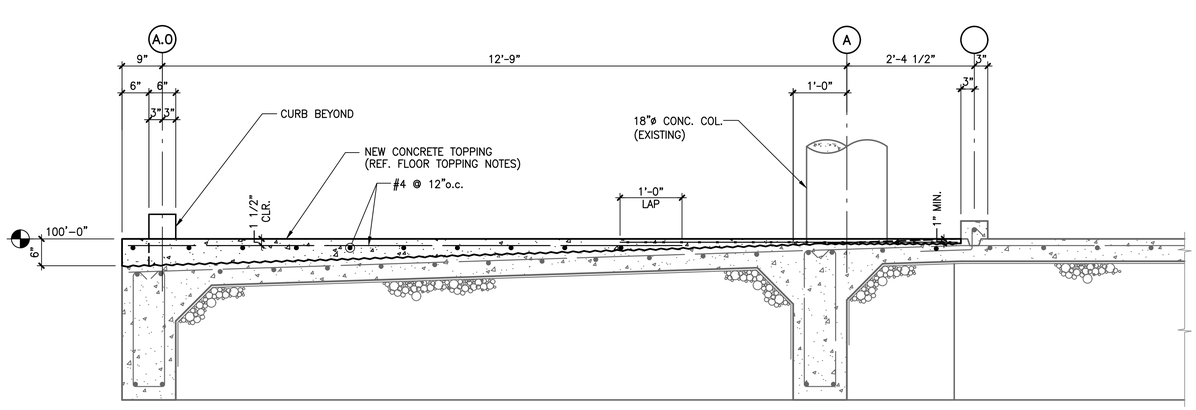

5 SECTION

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

D&A PROJECT NO.: 64-396-00
D&A FILE NO.: BRASAOREMODELS407

architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

PERMIT REVIEW

DANYSH & ASSOCIATES
STRUCTURAL ENGINEERS
F-002228

STATE OF TEXAS
RONALD CRAIG TORBET
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F-002228

BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

S407

SECTIONS
AND DETAILS

SECTION 01 33 41 **STRUCTURAL ENGINEER: SHOP DRAWINGS/FIELD VISITS**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract apply to work of this section. Refer to Architect for items not covered herein.

1.2 SCOPE

A. This section defines and clarifies specific items that are peculiar to the structural engineer's responsibilities. Refer to Architect for specifics on shop drawing, product data, and samples submitted.

PART 2 - GENERAL DEFINITIONS

2.1 STRUCTURAL ENGINEER OF RECORD

A. The engineer responsible for the design of the primary structural system and whose seal/signature appears on the contract structural drawings. Responsibility for any secondary structural and non-structural systems not shown on the structural drawings rests with the prime professional, the architect.

2.2 SPECIALTY ENGINEER

A. The engineer who is lawfully eligible to seal plans and designs for pre-engineered elements on systems which become part of the overall building.

2.3 SUBMITTALS

A. Items identified in the contract documents to be submitted by the contractor. Refer to individual sections of the specifications for specific items to be submitted.

2.4 FIELD OBSERVATIONS

A. Visits to the jobsite by the structural engineer-of-record or his authorized representative to ascertain whether the work is generally in accordance with the structural contract documents. These observations are not exhaustive nor continuous.

PART 3 - PROCEDURAL REQUIREMENTS

3.1 SHOP DRAWINGS

A. Refer to Architect for specific requirements for number of copies to be submitted, time for review, etc. All submittals must come by way of the general contractor through the architect. Certain submittals, identified in specific sections of the specifications, generally regarding pre-engineered elements, will require a specialty engineer's seal and signature.

3.2 FIELD OBSERVATIONS

A. Structural engineer shall be notified at least 24 hours in advance of any concrete pour or other action that will cover up structural elements that have not been reviewed by the structural engineer. Refer to individual sections for specific stages of construction which require observation.

3.3 ENGINEER'S ACTIONS

A. Shop Drawings
1. The structural engineer will review shop drawings for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
2. The structural engineer-of-record shall review the submittals and return them to the architect with one of the following statements checked off on the stamp:

☐ NO EXCEPTION TAKEN
☐ MAKE CORRECTIONS NOTED
☐ REVISE AND RESUBMIT
☐ RETURN ONE CORRECTED COPY FOR FILE

Review is only for general conformance with design concept of project and general compliance with the Contract Documents. Contractor is responsible for confirming and correlating dimensions at job site: for information which pertains to fabrication processes or construction techniques: and for coordination of work of all trades. Review of shop drawings shall not relieve Contractor, any Subcontractor, and/or Material Supplier or responsibility for deviation from requirements of Contract Documents nor for errors or omissions in shop drawings.

DATE _____

BY _____

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"NO exceptions Taken" informs the Architect that the structural engineer takes no exception to the submittal being approved as per and in accordance with AIA Document 201, section 4.2.7.

"Make Corrections Noted" informs the Architect that the structural engineer has made corrections on the submittals but otherwise takes no exception to the submittal being approved as per and in accordance with AIA Document 201, section 4.2.7.

"Revise and Resubmit" indicates important items must be corrected and resubmitted. Marks on the submittal may not necessarily cover all of the defects of the submittal. This action constitutes the structural engineer's concern and his recommendation to the Architect that the submittal be reviewed and resubmitted as per and in accordance with AIA Document 201, section 4.2.7.

"Return One Corrected Copy For File" informs the Architect that the submittal may be approved as per AIA Document 201, section 4.2.7, but a corrected copy showing that corrections have been acknowledged must be returned for the structural engineer's file.

B. Shop drawings with specialty engineer's seal and signature:
1. Certain shop drawings may be identified in specific sections of the specifications pertaining to pre-engineered structural elements specified by the structural engineer-of-record and designed by specialty engineers. The structural engineer shall verify that submittals have received prior approvals as required by the contract documents. Submittals shall bear the signature and professional seal of the specialty engineer responsible for the design as required by the contract documents. The structural engineer shall review the submittal for type, position, and connection to other elements within the primary structural system, and for criteria and loads used for their design. Action on these submittals will be the same as for other shop drawings.

3.4 SITE VISITS

A. The structural engineer-of-record ("SER") will make site visits at intervals appropriate to the stage of construction and as defined by the contract to visually observe the quality and the progress of the construction work relative to the primary structural system. The general contractor is responsible to notify the SER when structural elements are ready for review and prior to their being covered up. Failure to do so may result in key observations not being made, preventing the engineer from recommending acceptance of the work. A written report will be made of each visit listing discrepancies, if any, and describing what was observed. One copy will be sent to the Architect. If a follow-up visit is necessary the contractor on site will be informed and it will be noted on the report.

B. The SER shall not have control over or charge of and shall not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work for This Part of the Project, since these are solely the Contractor's responsibility under the Contract for Construction. The SER shall not be responsible for the Contractor's or a Subcontractor's schedule or failure to carry out the Work in accordance with the Contract Documents. The SER shall not have control over or charge of acts or omissions of the Contractor, Subcontractors, their agents or employees or other persons performing portions of the Work.

END OF SECTION 01 33 41

2.4 COLD-FORMED STEEL DECK

VERIFICATION AND INSPECTION	FREQUENCY	REFERENCED STANDARD
COLD-FORMED STEEL DECK		IBC 1705.2.2
1. Inspection of deck shall be made at the project site. • Schedule such that interruption of constructor's work is minimized.	Periodic	SDI QA/QC Section 4.2A
2. Review the document referred to in Table 1704.5 (herein) for compliance with construction documents.	NA	SDI QA/QC Section 4.2B
3. Deck Installation		
a. Prior to Deck Placement		
i. Verify compliance of materials (deck and all accessories) with construction documents, including profiles, material properties, and base metal thickness	Continuous	SDI QA/QC Appendix 1, Table 1.1
ii. Document acceptance or rejection of deck and deck accessories	Continuous	
b. After Deck Placement		
i. Verify compliance of deck and all deck accessories installation with construction documents	Continuous	SDI QA/QC Appendix 1, Table 1.2
ii. Verify deck materials are represented by the mill certifications that comply with the construction documents	Continuous	
iii. Document acceptance or rejection of installation of deck and deck accessories	Continuous	
4. Welding of Deck		
a. Prior to Welding		
i. Welding procedure specifications (WPS) available	Periodic	SDI QA/QC Appendix 1, Table 1.3; AWS D1.3
ii. Manufacturer certifications for welding consumable available	Periodic	
iii. Material identification (type/grade)	Periodic	
iv. Check welding equipment	Periodic	
b. During Welding		
i. Use of qualified welders	Periodic	SDI QA/QC Appendix 1, Table 1.4; AWS D1.3
ii. Control and handling of welding consumables	Periodic	
iii. Environmental conditions (wind speed, moisture, temperature)	Periodic	
iv. WPS followed	Periodic	
c. After Welding		
i. Verify size and location of welds, including support, sidelap, and perimeter welds	Continuous	SDI QA/QC Appendix 1, Table 1.5; AWS D1.3
ii. Welds meet visual acceptance criteria	Continuous	
iii. Verify repair activities	Continuous	
iv. Document acceptance or rejection of installation of welds	Continuous	
5. Mechanical Fastening of Deck		
a. Prior to Mechanical Fastening		
i. Manufacturer installation instructions available for mechanical fasteners	Periodic	SDI QA/QC Appendix 1, Table 1.6; Manufacturer's Instructions
ii. Proper tools available for fastener installation	Periodic	
iii. Proper storage for mechanical fasteners	Periodic	
b. During Mechanical Fastening		
i. Fasteners are positioned as required	Periodic	SDI QA/QC Appendix 1, Table 1.7; Manufacturer's Instructions
ii. Fasteners are installed IAW manufacturer's instructions	Periodic	
c. After Mechanical Fastening		
i. Check spacing, type and installation of support fasteners	Continuous	SDI QA/QC Appendix 1, Table 1.8; Manufacturer's Instructions
ii. Check spacing, type and installation of sidelap fasteners	Continuous	
iii. Check spacing, type and installation of perimeter fasteners	Continuous	
iv. Verify repair activity	Continuous	
v. Document acceptance or rejection of mechanical fasteners	Continuous	

2.5 STEEL FABRICATION AND IMPLEMENTATION PROCEDURES

VERIFICATION AND INSPECTION	REFERENCED STANDARD
1. Special inspection of the steel fabrication process shall not be required where the fabricator does not perform any welding, thermal cutting or heating operations of any kind as part of the fabrication process. In such cases, the fabricator shall be required to submit a detailed procedure for material control that demonstrates the fabricator's ability to maintain suitable records and procedures such that, at any time, during the fabrication process, the material specification, and grade for the main stress-carrying elements are capable of being determined. Mill test reports shall be identifiable to the main stress-carrying elements and required by the approved construction documents.	IBC 1705.2
2. At completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building official stating that the work was performed in accordance with the approved construction documents.	IBC 1704.2.5.1

PART 3 - QUALIFICATIONS/DEFINITIONS

3.1 Inspector Qualifications: Qualifications given above are the recommendations of the local members of the Texas Council of Engineering Laboratories. It is also recommended that the Special Inspectors should be employed by an agency accredited by any nationally recognized accrediting body: AASHTO, A2LA, NVLAP, ICC, etc.

3.2 These inspections do not relive engineer from structural observations as may be required by IBC 2015, Section 1704.6, and/or contractual requirements of architect/client, (i.e. C141).

3.3 Definitions/Terms: Periodic vs Continuous Inspections - Reference IBC Section 1702

A. ADSC The International Association of Foundation Drilling

B. ASNT American Society for Nondestructive Testing

C. ASTM American Society for Testing Materials

D. AWS American Welding Society

E. CWI Certified Welding

F. CRSI Concrete Reinforcing Steel Institute

G. Testing and inspection directed by ASTM E329 guidelines.

END OF SECTION 01 14 11

b. During Welding		
i. Use of Qualified Welders	Periodic	AISC 360 Table N5.4-2, and AWS D1.1
ii. Control and Handling of Welding • Consumables • Packaging • Exposure Control	Periodic	
iii. No welding over cracked tack welds	Periodic	
iv. Environmental conditions • Wind speed within limits • Precipitation and temperature	Periodic	
v. WPS followed • Settings on welding equipment • Travel speed • Selected welding materials • Shielding gas types/flow rate • Preheat applied • Interpass temperature maintained (min. /max.) • Proper position (F, V, H, OH)	Periodic	AISC 360 Table N5.4-2, and AWS D1.1
c. After Welding		
i. Welds cleaned	Periodic	AISC 360 Table N5.4-3, and AWS D1.1
ii. Size, length and location of welds	Continuous	
iii. Welds meet visual acceptance criteria • Crack prohibition • Weld/ base-metal fusion • Crater cross section • Weld profiles • Weld size • Undercut • Porosity	Continuous	
iv. Arc strikes	Continuous	
v. k-area[2]	Continuous	
vi. Backing removed and weld tabs removed (if required)	Continuous	
vii. Repair activities	Continuous	
viii. Document acceptance or rejection of welded joint or member	Continuous	

2. Nondestructive Testing (NDT) of Welded Joints:
-All NDT performed shall be documented in an NDT report:
• Shop Fabrication: Identify the tested weld by piece mark and location in the piece.
• Field Work: Identify the tested weld by location in the structure, piece mark and location in the piece.
-When a weld is rejected on the basis of NDT, the report shall indicate the location of the defect and the basis of rejection.

a. CJP Groove Weld NDT		
i. Structures in Risk Category II – Perform Ultrasonic Testing on 10% of welds with butt, T- and corner joints subject to transversely applied tension loading in materials=5/16"	Periodic[3]	AISC 360 Section N5.5, and AWS D1.1
ii. Structures in Risk Category III or IV – Perform Ultrasonic Testing on all welds with butt, T- and corner joints subject to transversely applied tension loading in materials=5/16"	Continuous	
a. Access Holes – Perform Magnetic Particle Testing or Liquid Penetration Testing when the flange thickness exceeds 2" for rolled shapes, or when the web thickness exceeds 2" for built-up shapes	Continuous	
b. Welded Joints Subject to Fatigue per Appendix 3, Table A-3.1	Continuous	
3. Inspection of High-Strength Bolting		
a. Prior to Bolting		
i. Manufacturer's certifications available for fastener materials	Continuous	AISC 360 Table N5.6-1, and RCSC Specification
ii. Fasteners marked in accordance with ASTM requirements	Periodic	
iii. Proper fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	Periodic	
iv. Proper bolting procedure selected for joint detail	Periodic	
v. Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	Periodic	
vi. Pre-installation verification testing by installation personnel observed and documents or fastener assemblies and methods used[4]	Periodic	
vii. Proper storage provided for bolts, nuts, washers and other fastener components	Periodic	
b. During Bolting		
i. Fastener assemblies, of suitable condition, placed in all holes and washers (if required) are positioned as required	Periodic	AISC 360 Table N5.6-2, and RCSC Specification
ii. Joint brought to the snug-tight condition prior to the pretensioning operation	Periodic	
iii. Fastener component not turned by the wrench prevented from rotating	Periodic	
iv. Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges	Periodic[5]	AISC 360 Table N5.6-2, and RCSC Specification
c. After Bolting		
i. Document acceptance or rejection of bolted connections	Continuous	AISC 360 Table N5.6-3
4. Other Inspection Tasks		
a. Anchor rods and other embedments to support structural steel		
i. Verify the diameter, grade, type, and length of the anchor rod or embedded item prior to the placement of concrete	Periodic	AISC 360 Section N5.7
ii. Verify the extent or depth of embedment into the concrete prior to placement of concrete	Periodic	

[1] The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress type.
[2] When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. of the weld.
[3] AISC 360 Section N5.5f requires 100% testing should the reject rate exceed 5% for an individual welder or welding operator. Refer to 'N5.5f' for additional details on reject rate, sampling requirements, etc.
[4] Not applicable to snug-tight joints.
[5] For pretensioned and slip-critical joints reference AISC 360 Section N5.6 (2).
[6] Refer to AISC 360 Section N6 for the details associated with inspection of the attachment of steel deck.
[7] The provisions of AWS D1.1 apply.

SECTION 01 14 11 **SPECIAL INSPECTIONS: IBC CHAPTER 17**

PART 1 - GENERAL

1.1 SCOPE

A. The 2021 International Building Code (IBC), Chapter 17, "Structural Tests and Special Inspections" requires materials of construction and tests to conform to applicable standards listed therein. This section determines which inspections are required, frequency, and qualification required of the inspector.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 33 41: Structural Engineer: Shop Drawings/Field Visits

B. Section 03 30 01: C.I.P. Concrete

C. Section 05 12 00: Structural Steel

D. Section 05 31 00 Metal Decking

1.3 GENERAL

A. Section 1704.- "……..the owner or the Registered Design Professional in Responsible Charge (RDPIRC) acting as the owner's agent shall employ one or more approved agencies to provide special inspections and tests during construction on the types of work listed under Section 1705 and identify the approved agencies to the Building Official."

1.4 APPROVED LIST

A. The firm intended to be retained for conducting such inspections shall be designated by the Registered Design Professional in Responsible Charge (RDPIRC), the Architect.

PART 2 - SPECIAL INSPECTIONS

2.1 SOILS (SLAB-ON-GRADE)

REQUIRED	FREQUENCY	DESCRIPTION	IBC SECTION & REFERENCE
SOILS (SLAB-ON-GRADE)		Site Preparation	IBC 1705.6
1. Excavation	Periodic	Verify excavations are extended to proper depth and have reached proper material.	Geotechnical Report; Under Floor Fill Notes.

2.2 CONCRETE CONSTRUCTION

REQUIRED	FREQUENCY	IBC SECTION & REFERENCE
CONCRETE CONSTRUCTION		IBC 1705.3
1. Reinforcing Steel a. Provide inspection of reinforcing sizes, spacing, grade of rebar; and placement.	Periodic	ACI 318 Ch. 20, 25.2, 25.3, 26.5.1-26.5.3; General Notes; Specifications 03 10 00, 03 20 00 and 03 30 00
2. Reinforcing Steel Welding		
a. Verify weldability of rebar other than ASTM A 706	Periodic	AWS D1.4 & ACI 318: 26.6.4
b. Inspect single-pass fillet welds=5/16"	Periodic	
c. Inspect all other welds.	Continuous	
3. Cast-in-Place Anchors	Periodic	ACI 318: 17.8.2
4. Post-Installed Anchors1		
a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.	Continuous	ACI 318: 17.8.2.4
b. Mechanical anchors and adhesive anchors not defined in 4.a	Periodic	ACI 318: 17.8.2
5. Verify use of approved concrete mix design	Each Concrete Pour-Periodic	ACI318: Ch.19, 26.4.3, 26.4.4
6. Sampling of fresh concrete a. All concrete testing is to be made after water, if any, is added at site. b. Provide a set of (4) four cylinders to be taken for every 75 cubic yards of concrete, or fraction thereof, by testing lab. c. c. Monitor slump and air content of concrete and notify delivery driver if slump deviates more than plus or minus 1 inch from recommended value. Contact supplier for further directions.	Each Concrete Pour-Continuous	ACI318: 26.4.4, 26.12
7. Placement of concrete & shotcrete	Continuous	ACI318: 26.4.4
8. Maintenance of specified curing temperature & techniques	Each Concrete Pour-Periodic	ACI318: 26.4.7-26.4.9
9. Removal of shores and forms from beams and structural slabs • Verify in-situ concrete strength prior to removal.	Periodic	ACI 318: 26.10.2; Concrete Joist General Notes
10. Formwork • Inspect for shape, location and dimensions of the concrete member being formed.	Periodic	ACI 318: 26.10.1(b)

[1]Specific requirements for special inspection shall be included in the research report for the anchor issued by an approved source in accordance with 17.8.2 in ACI 318, or other qualification procedures. Where specific requirements are not provided, special inspection requirements shall be specified by the Registered Design Professional in Responsible Charge (RDPIRC) and shall be approved by the Building Official prior to the commencement of the work.

2.3 STEEL CONSTRUCTION

VERIFICATION & INSPECTION	FREQUENCY	IBC SECTION & REFERENCE
STEEL CONSTRUCTION		IBC 1705.2
1. Observation of Welding Operations and Visual Inspection of In-process and Completed Welds:		
a. Prior to Welding:		
i. Welding procedure specifications (WPS) available	Continuous	AISC 360 Table N5.4-1, and AWS D1.1
ii. Manufacturer certifications for welding consumables available	Continuous	
iii. Material identification (type/grade)	Periodic	
iv. Welder identification system[1]	Periodic	
v. Fit-up of groove welds (including joint geometry) • Joint preparation • Dimensions (alignment, root opening, root face, bevel) • Cleanliness (condition of steel surface) • Tacking (tack weld quality and location) • Backing type and fit (if applicable)	Periodic	
vi. Configuration and finish of access holes	Periodic	
vii. Fit-up of fillet welds • Dimensions (alignment, gaps at root) • Cleanliness (condition of steel surface) • Tacking (tack weld quality and location)	Periodic	

SECTION 01 14 10 **STRUCTURAL QUALITY CONTROL AND TESTING**

PART 1 - GENERAL

1.1 SCOPE

A. Inspection and testing of materials, composites and construction practices shall be conducted to determine whether or not their characteristics and qualities as used in the construction comply with the construction documents. Inspection and testing shall be according to American Society for Testing Materials (ASTM) Standard E 329, latest edition requirements.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Conditions of the Contract: Inspections and testing required by laws, ordinances, rules, regulations, order of approvals of public authorities.
B. Each specification section listed, laboratory tests required, and standards for testing:

1. Section 01 14 11: Special Inspections: IBC Chapter 17
2. Section 01 33 41: Structural Engineer: Shop Drawings/Field Visits
3. Section 03 30 01: C.I.P. Concrete
4. Section 05 12 00: Structural Steel
5. Section 05 31 00: Metal Decking
6. Section 05 40 00: Cold-Formed Metal Framing
7. Section 07 26 20: Vapor Barrier

1.3 QUALITY ASSURANCE

A. In addition to the requirements according to ASTM E329, the Testing Laboratory and its personnel shall meet the following qualifications:

1. Testing Laboratory Qualifications:

a. The Testing Laboratory office performing the service(s) shall subscribe (or show that application has been made and is scheduled for an audit of the tests that will be required for the project) to an independent audit by a national agency such as the American Association of State Highway and Transportation Officials (AASHTO) and/or American Association for Laboratory Accreditation (AALA) that routinely monitors, assesses, and certifies the professional and technical activities of testing laboratories. Provide the Architect/Engineer a copy of the Laboratory's certification for the specific services and tests certified to perform under its audit prior to the Laboratory initiating work on the project.
b. The Testing Laboratory shall show evidence that it participates in reference laboratory testing programs for the testing services that it is offering for the project. The reference programs may include national, state or regional reference laboratories but shall extend beyond the limits of in-house or inter-office testing within the same company. Acceptable reference laboratories include AASHTO Materials Reference Laboratory (AMRL), Cement and Concrete Reference Laboratory (CCRL) or other organizations with an established charter and being recognized in the industry as an institution that promotes education and improved materials science.

2. Testing Laboratory Personnel

a. The Testing Laboratory shall assign qualified personnel to the project. Services and tests requiring engineering duties shall be performed by a licensed Professional Engineer or personnel under his direct supervision.
b. Submit the name of the licensed Professional Engineer who has responsible charge of the firm's services on the project along with his resume that illustrates experience in performing and managing quality assurance activities for the scope of work involved.
c. Services and tests that will be provided by non-engineering personnel shall be performed by personnel that have appropriate certification from either The National Institute for the Certifications of Engineering Technicians (NICET) for concrete, masonry and steel testing and monitoring, American Concrete Institute (ACI) for concrete and masonry testing and monitoring or American Welding Society (AWS) for steel testing and monitoring.
d. Submit certificates or written evidence of their qualifications to the Architect/Engineer prior to initiating work.

B. Responsibility of Testing Laboratory:

1. In addition to the responsibilities and duties according to ASTM 329, the Testing Laboratory shall:

a. Attend preconstruction meeting.
b. Promptly and verbally notify by phone call the Structural Engineer immediately from the jobsite when test results (not limited to irregularities or deficiencies) are known and prior to delaying the project.
c. Promptly notify the Architect/Engineer responsible for the design of materials not meeting specified requirements so that the Work can be rejected by the party with authority to reject the Work.
d. Promptly submit written report of each test and inspection with a copy directly to the Structural Engineer.
e. Recommend and perform additional inspections, sampling, and testing of materials and methods of construction to the Architect/Engineer in writing if specified requirements by Architect/Engineer appear insufficient, or ambiguous.
f. Submit a written statement with a copy directly to the Structural Engineer at the completion of the Part of the Project summarizing the tests/inspections performed and the compliance of the test results/items inspected with the specified requirements.
g. Perform additional tests as required by Architect/Engineer or the Owner.

C. Limitations of Authority of Testing Laboratory:

1. Laboratory is not authorized to:

a. Release, revoke, alter or enlarge on requirements of Contract Documents;
b. Approve or accept any portion of the Work;
c. Perform any duties of the Contractor.

D. Responsibility of the Contractor:

1. Cooperate with testing personnel, provide access to Work and to Manufacturer's operations and provide adequate facilities as required for storage and curing of test samples. Secure and/or deliver to the testing agency adequate quantities of representational samples of materials proposed to be used and which require testing.
2. Provide copies of product's test reports as required.
3. Furnish one complete set of project plans and specifications to the Testing Laboratory to facilitate inspections and testing and to provide direction on the storage and curing of test samples.
4. Assist testing agency in obtaining and handling samples at the Project site or at the source of the product to be tested.
5. Notify testing agency sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.

E. Specific Tests, Inspections and Methods Required:

1. Section 03 32 00 - Concrete Reinforcing:

a. Reinforcing steel shall be inspected as required by the Building Code requirements for additional reinforcing steel inspections; IBC Chapter 17.

2. Section 03 30 00 - Concrete Mix Design Statement:

a. Submit letter with a copy directly to the Structural Engineer stating that the concrete mix and concrete to be used on the project meets these specifications prior to placement. All concrete furnished shall be in strict accordance with the specification requirements.
b. Mix design shall be in accordance with Section 03 30 00 Cast-in-Place Concrete.

3. Section 03 30 00 - Concrete Monitoring and Testing:

a. Concrete shall be monitored and tested by the testing laboratory in accordance with ACI 311.5R and additionally in accordance with ACI 301, Section 16.4 and as required by the Building Code requirements for additional concrete inspections, IBC Chapter 17. Concrete tests shall be performed by certified technicians in accordance with ACI 301. Batch plant inspection is not required. Frequency of testing shall be in accordance with ACI 318. Number of test specimens shall be in accordance with ACI 311.5R. Results of tests shall be basis for rejection or acceptance of concrete.

4. Section 05 12 00 - Welding of Structural Steel:

a. Check qualifications of welders at the start of the work and then make periodic inspections of all welders for compliance prior to welding.
b. Welds have been designed with single pass fillet welds stressed to less than 50 percent. Welders shall be certified and qualifications submitted for acceptance prior to construction. Check all welders for compliance prior to completion of welding.

5. Section 05 12 00 - Bolting of Structural Steel:

a. Inspect all bolted connections using larger than 1/2 inch diameters bolts.
b. Verify the bolt type for conformance with specifications, check the surfaces being bolted together. Verify the output capacity of the bolt tightening equipment for all bolts including anchor bolts, for bolts larger than 1/2 inch diameter. Tightening the bolts shall be the turn-of-the-nut method, the minimum fastener tension requirements of the American Institute of Steel Construction (AISC) Specification for Structural Joints. Make spot checks with calibrated torque wrench to verify bolt tightness. As a minimum, test 10 percent of the bolts, minimum of two in each connection, for proper torque. Mark failed and passing areas on each connection in the field.

END OF SECTION 01 14 10

architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

PERMIT REVIEW

DANYSH & ASSOCIATES
STRUCTURAL ENGINEERS
F-002228

STATE OF TEXAS
REGISTERED
PROFESSIONAL ENGINEER
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BRASAO REMODEL
19210 I10 WEST
SAN ANTONIO, TX 78257

S501
SPECIFICATIONS

D&A PROJECT NO.: 64-396-00
D&A FILE NO.: BRASAOREMODELS501

C. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floor and slabs, concrete floor toppings, and other surfaces, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
   a. Water
   b. Continuous water-fog spray
2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
3. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

2.10 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix Dry-pack patching mortar, consisting of one part Portland cement to two and one-half parts fine aggregate passing a No. 16 (1.2 mm) sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13mm) in any dimension in solid concrete but not less than 1 inch (25 mm) in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
2. Repair defects on surfaces exposed to view by blending white Portland cement and standard Portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that affect concrete's durability structural performance as determined by Architect.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spall, pop outs, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
5. Repair defective areas, except random cracks and single hole 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least 3/4 inch (19 mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mix as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
6. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched are continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

2.11 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement according to requirement specified in this Article. Coordinate with Section 01 1410 Special Inspections.

B. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control may include those specified in this Article.

C. Testing Services: Testing of samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain at least one sample for each 80 cu. yd. (76 cu. m.) Or fraction thereof of each concrete mix placed each day. When more than 80 cu. yds. is being continuously placed, the interval between test samples shall be at least 50 cu. yds.
   a. When frequency of testing will provide fewer than five compressive- strength tests for each concrete mix, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
2. Slump: ASTM C 143; one test at point of placement for each sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231; pressure method, for normal-weight concrete; one test for each sample, but not less than one test for each day's pour of each concrete mix.
4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 degrees F (4.4 degrees C) and below and when 80 degrees F (27 degrees C) and above, and one test for each sample.
5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of four standard cylinder specimens for each sample.
   a. Cast and field cure one set of four standard cylinder specimens for each sample.
6. Compressive-Strength Tests: ASTM C 39; test two laboratory-cured specimens at 7 days and two at 28 days.
   a. Test two field-cured specimens at 7 days and two at 28 days. Compressive- strength test shall be the average compressive strength from two specimens obtained from same sample and tested at age indicated.

D. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.

E. Strength of each concrete mix will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).

F. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7 and 28 day tests.

G. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.

H. Additional Tasks: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strength, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C-42 or by other methods as directed by Architect.

END OF SECTION 03 30 01

H. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood sawdust, dirt, and other debris just before placing concrete.

I. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

J. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

K. Metal Forms:

1. Floor slab permanent corrugated steel forms shall be hot-dip galvanized, 28 gage cold rolled steel, having minimum "S" of 0.0356 and a minimum yield strength of 80,000 psi. Attach to supporting members by plug welding through 16 gage mild steel weld washers. Weld side laps of sheets to each member, and in addition, weld the middle of each sheet at end laps. At free edges of deck (entire perimeter of decked area) weld to supports at 12" on center. Provide additional welds where required to insure that all sheets lie flat prior to placement of concrete.

2.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instruction, and directions furnished with items to be embedded. Install embedded plates, accurately located, to elevations required.

2.3 REMOVING AND REUSING FORMS

A. General: Formwork, for sides of beams, and similar parts of the Work, that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete provided concrete is hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

2.4 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

B. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

C. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.

D. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

1. Shop or field weld reinforcement according to AWS D1.4, where indicated.

E. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

2.5 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

2.6 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Do not add water to concrete during delivery, at Project site, or during placement, unless approved by Testing Laboratory.

C. Before placing concrete, water may be added at Project site, subject to limitations of ACI 301.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mix.

D. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation.

E. Deposit concrete in forms in horizontal layers no deeper than 24 inches (600 mm) and in a manner to avoid inclined construction joints. Place each layer while preceding layer is still plastic, to avoid cold joints.

1. Consolidate placed concrete with mechanical vibrating equipment. Use equipment and procedures for consolidating concrete recommended by ACI 309R.
2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the vibrator. Place vibrators to rapidly penetrate placed layer and at least 6 inches (150 mm) into proceeding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix constituents to segregate.

F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When air temperature has fallen to or is expected to fall below 40 degrees F (4.4 degrees C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature placement.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.

G. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows, when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 degrees F (32 degrees C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

2.7 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding ACI 347R limits for class of surface specified.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch (3 mm) in height.

1. Apply to concrete surfaces exposed to public view or to be covered with a coating or covering material applied directly to concrete, such as waterproofing, damp proofing, veneer plaster, or painting.
2. Do not apply rubbed finish to smooth-formed finish.

C. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

2.8 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete Work.

B. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in inserts and accessories as shown on Drawings. Screed, tamp, and trowel finish concrete surfaces.

2.9 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with recommendations in ACI 305R for hot-weather protection during curing.

B. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing by one or a combination of the following methods:

1.8 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A-615, Grade 60.

B. Plain-Steel Wire: ASTM A-82, as drawn.

C. Plain-Steel Welded Wire Fabric: ASTM A-185, fabricated from as-drawn steel wire into flat sheets.

1.9 CONCRETE MATERIALS

A. Portland Cement: ASTM C-150, Type I or Type III.

B. Fly Ash: ASTM C-618, Class C (maximum of 20% cement replacement).

C. Normal-Weight Aggregate: ASTM C-33, uniformly graded, with maximum aggregate size of 1-1/2".

D. Water: Potable and complying with ASTM C-94.

1.10 ADMIXTURES

A. The use of admixtures shall be coordinated between the batch plant and the concrete contractor to adjust for conditions in the batch plant, atmospheric conditions, and jobsite conditions including size of pour, travel time between batch plant and jobsite, and time estimated for completing pour and curing.

B. The specific effects produced by chemical admixtures may vary with the properties and proportions of the other ingredients of the concrete including the cement, pozzolan, aggregates, air-entraining admixture, and the mixture proportions, batching sequence, and other physical conditions proposed for the specific work.

C. Admixtures to conform to ASTM standards and include:

1. Air entrainment (ASTM C260)
2. Accelerators (ASTM C 494, Type C)
3. Retarders (ASTM C 494, Type B)
4. Water-reducing and retarding admixture (ASTM C 494, Type D)
5. Water-reducing and accelerating admixture (ASTM C 494,Type E)
6. Water-reducing, high range admixtures (ASTM C 494, Type F)
7. Water-reducing, high range , and retarding (ASTM C 494, Type G)

1.11 RELATED MATERIALS

A. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene

1.12 CONCRETE MIXES

A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test databases, as follows:

1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.
2. Proportion lightweight concrete according to ACI 211.2, and ACI 301.

B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the laboratory trial mix basis. Use a qualified independent testing agency to verify field test data and that existing ingredients in plant are same as in the test sample.

C. Proportion normal-weight concrete mix as follows:

1. Compressive Strength (28 Days): 3000 psi.
2. Maximum Slump: 5 inches.
3. Maximum Slump for Concrete Containing High-Range Water-Reducing Admixture: 8 inches after admixture is added to concrete with 2 to 4 inch slump.
4. Minimum of 5 sacks of cement per cubic yard of concrete.

D. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than Portland cement in concrete as follows:

1. Fly Ash: 20 percent.
2. Combined Fly Ash and Pozzolan: 20 percent.

E. Limit Water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

F. Admixtures: Use admixtures according to manufacturers' written instructions.

1. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

1.13 CURING MATERIAL

A. For all slabs except those on which additional concrete or other toppings are to be bonded, use a water-based acrylic membrane curing compound that has a maximum volatile organic compound (VOC) rating of 350 g/L (3 lbs/gal.) complying with ASTM C309, Type I, Class B. Available products include VOCOMP-20 (W. R. Meadows, Inc.), MasterKure CC 160WB (BASF Construction Materials), Dress and Seal WB (L & M Construction Chemicals, Inc.), or approved equal.

B. For slabs having bonded toppings, use "Orange Label Sisalkraft" paper as manufactured by Fortifiber Building Systems Group.

1.14 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice".

1.15 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C-94, and furnish batch ticket information.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C-94. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixer capacity for 1 cu. yd. (0.76 cu. m) or smaller, continue mixing at least one and one-half minutes, but not more than five minutes after ingredients are in mixer, before any part of batch is released.
2. For mixer capacity larger than 1 cu. yd. (0.76 cu. m), increase mixing time by 15 seconds for each additional 1 cu. yd. (0.76 cu. m).
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mix type, mix time, quantity, and amount of water added. Record approximate location of final deposit in structure.

1.16 ADHESIVE ANCHORING SYSTEM

A. Adhesive for anchoring dowels and reinforcing steel shall have been tested and qualified in accordance with ICC-ES AC58 and ICC-ES AC308.

B. Pre-Approved Adhesives Include:

1. Simpson Strong-Tie SET-XP (ICC-ES ESR-2508).
2. Hilti Hit-Hy 200 Safe Set Adhesive Anchoring System (ICC-ES ESR-3187).

C. Installation shall be in accordance with manufacturer's instructions including but not limited to hole diameter, screen tubes, etc.

D. Dowels and Reinforcement subject to tension shall be subject to jobsite certification by epoxy supplier to insure installer(s) are qualified and are following the manufacturer's instructions.

PART 2 - EXECUTION

2.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevations, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:

1. Class B, 1/4 inch (6mm).

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal.

1. Do not use rust-stained steel form-facing material.

F. Chamfer exterior corners and edges of permanently exposed concrete.

G. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

SECTION 03 30 01 **CAST-IN-PLACE CONCRETE**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies cast-in-place concrete, including formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes.

B. Related Sections include the following:

1.	Shop Drawing Submittals:	Section 01 30 00
2.	Structural Engineer: Shop Drawings/Field Visits	Section 01 33 41
3.	Structural Quality Control & Testing	Section 01 14 10

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and silica fume.

1.4 SUBMITTALS

A. Product Data: For each type of manufactured material and product indicated.

B. Design Mixes: Independent Laboratory to submit mix designs. Include alternate mix design when characteristics of material, project conditions, weather, test results, or other circumstances warrant adjustments.

1. Using the proposed mix design, the laboratory shall make one set of four test cylinders for each type of concrete. The results of two 7-day compression tests shall be submitted with proposed mix design prior to placement of concrete on the job. Subsequently, results of two 28-day compression test shall be submitted and the strength shall be at least 25% greater than the specified minimum strength for concrete placed on the job.
2. Existing Mix Designs: The laboratory may submit data of previously prepared "standard" mix designs provided:
   a. The laboratory prepared the mix design in strict accordance with the provisions of this section of the project specifications.
   b. The mix design shall have been prepared within the preceding six months. Documentation shall not reference any specific construction project.
   c. The laboratory shall submit written certification that the materials used in the submitted mix designs are currently stocked at the batching plant.

C. Steel Reinforcement Shop Drawings:

1. Details of fabrication, bending, and placement, prepared according to ACI 315, "Details and Detailing of Concrete Reinforcement." Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures.

D. Formwork Shop Drawings: Design and engineering of formwork are Contractor's responsibility.

E. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirement indicated, based on comprehensive testing of current materials.

F. Material Certificates: Signed by manufacturers certifying that each of the following items (if used) complies with requirements:

1. Cementitious materials and aggregates.
2. Form materials and form-release agents.
3. Steel reinforcement and reinforcement accessories.
4. Admixtures.
5. Curing materials.
6. Bonding agents.
7. Adhesives.
8. Repair materials.

1.5 QUALITY ASSURANCE

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

B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated.

C. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C94 requirements for production facilities and equipment.

1. Manufacturer must be certified according to the National Ready Mixed Concrete Associations Certification of Ready Mixed Concrete Production Facilities.

D. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1.77 and ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

E. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, each aggregate from one source, and each admixture from the same manufacturer.

F. ACI Publications: Comply with the following, unless more stringent provisions are indicated:

1. ACI 301, "Specification for Structural Concrete."
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle steel reinforcement to prevent bending and damage.

1.7 FORM-FACING MATERIALS

A. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

B. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.

C. Form-Release Agent: commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces. Formulate form-release agent with rust inhibitor for steel form-facing materials.

D&A PROJECT NO.: 64-396-00
D&A FILE NO.: BRASAOREMODELS502

architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

PERMIT REVIEW

DANYSH & ASSOCIATES
STRUCTURAL ENGINEERS
F-002228

STATE OF TEXAS
RONALD CRAIG TORBET
57092
REGISTERED
PROFESSIONAL ENGINEER
9/16/24
DANYSH & ASSOCIATES, INC.
F-002228

BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

S502

SPECIFICATIONS

J. Reinforce openings over 18 inches in size in accordance with structural framing details indicated on drawings.

K. Install minimum 6 inch wide cover plates where deck changes direction. Spot weld in place at maximum 12 inches on center.

L. Install closure strips and angles flashings as required to close openings between deck and walls, columns and openings.

M. At hip-and-valley framing, provide continuous plates ¼"x6" bent to the roof planes at ridges and valleys for support.

3.3 TOUCH-UP PAINTING

A. After decking installation, wire brush, clean and paint scarred areas, welds and rust spots on top and bottom surfaces of decking units and supporting steel members.

B. Touch-up galvanized surfaces with galvanizing repair paint applied in accordance with manufacturer's instructions.

C. Touch-up painted surfaces with same type of shop paint used on adjacent surfaces.

3.4 ACCEPTANCE

A. Testing Agency: A qualified independent testing agency employed and paid by Owner will perform field quality-control testing.
1. Field welds will be subject to inspection.

B. Contractor shall notify the structural engineer when steel deck installation is complete to permit observation prior to placement of insulation or roofing substrate.

END OF SECTION 05 31 00

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Steel roof deck complete with cover plates, cell closures and flashings and acoustical closures.

1.2 REFERENCE STANDARDS

A. ASTM A-36 - Structural Steel

B. Steel Deck Institute - "Basic Design Specifications".

C. ASTM A-611 - Grade "C" and ASTM A-653 carbon steel sheet.

D. AISI - Specification for the Design of Cold-Formed Steel Structural Members.

E. AWS D1.1 "Structural Welding Code- Steel"

F. AWS D1.3 "Structural Welding Code- Sheet Steel."

1.3 SHOP DRAWINGS

A. Submit shop drawings in accordance with Architect.

B. The Contractor shall obtain completely detailed shop drawings showing type of deck section employed in each area of roof, how they are adapted to special conditions, method of welding deck to supporting members, method of reinforcing deck at openings, and location and type of all accessories which are part of the deck proper. The Contractor shall carefully check these drawings, then submit them to the Architect/Engineer. The Architect/Engineer may conduct limited spot checks aimed solely at determining general comprehension of the design intent, then return them to the Contractor. The Contractor shall then carefully recheck the shop drawings and approve them prior to fabrication.

C. The Architect/Engineer's spot check does not relieve the Contractor from correcting, at his own expense, any items that may thereafter be found not to comply with the plans and specifications.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has completed steel deck similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

B. Testing Agency Qualifications: To qualify for acceptance, an independent testing agency must demonstrate to Architect's satisfaction, based on evaluation of agency-submitted criteria conforming to ASTM E 699, that it has the experience and capability to satisfactorily conduct the testing indicated without delaying the Work.

C. Welding Standards: Comply with applicable provisions of AWS D1.1 "Structural Welding Code--Steel" and AWS D1.3 "Structural Welding Code--Sheet Steel." Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

PART 2 - PRODUCTS

2.1 PRODUCTS

A. Acceptable Manufacturers
1. Design based on published tables from Vulcraft Division of Nucor. Substitutions: Items of same function and performance are acceptable if product data is submitted and approved.

B. Materials and Components
1. Refer to plan notes for deck finish; painted or galvanized.
2. Steel for painted deck: ASTM A-611, Grade C, F_y=33,000 psi.
3. Steel for galvanized deck: ASTM A-446, F_y=33,000 psi
4. Bearing Plates and Angles: of ASTM A-36 type steel.
5. Anchor Bolts and Required Nuts and Washers: High strength type recommended for structural steel joints; ASTM A-325.

C. Galvanizing Repair Paint
1. High zinc-dust content paint for repair of damaged galvanized surfaces complying with Military Specifications MIL-P-21035 (Ships)

D. Welds and Mechanical Fasteners:
1. Mechanical Fasteners (Powder Actuated and Screw Fasteners)
a. Material: AISI 1070 modified
b. Hardness: Minimum Rockwell Hardness C 54.5
c. Hilti or approved equal
d. Sidelap Connectors
e. Hilti, Inc. Elco Textron, or approved equal
2. Applicable AWS D1.1 type required for materials being welded.

E. Decking and Related Accessories
1. Roof Decking: Minimum 22 gauge sheet steel; 36 inch wide sheet; double span; manufactured by Vulcraft or equal. Refer to plan for specific section properties required.

F. Fabrication
1. Fabricate metal decking as recommended by the Steel Deck Institute. Fabricate to accommodate maximum working stress of 20,000 psi and maximum deflection of 1/360 of span.

G. Shop Finish
1. Steel shall be thoroughly cleaned in a chemical bath, followed by a rinse, phosphatized, rinsed, dried and properly prepared for painting. After phosphatizing, the surface shall be roller coat painted to insure an even protective covering with a gray flexible primer which when oven cured, shall have a moderate reflectance value.
2. Galvanized steel deck shall be structural Grade C standard black gage coated before fabrication in continuous strip by the Cook-Norteman process. Coating shall conform to ASTM A-525 Class G90 or QQ-S-775 Class d or ASTM G-01.

PART 3 - DELIVERY, STORAGE AND HANDLING

3.1 PRODUCTS

A. Steel Roof Deck:
1. Do not rack, bend or mar steel roof deck sheets.
2. Store steel roof deck sheets and accessories above ground and protected from free weathering with one end elevated.
3. Cover and ventilate unpainted or uncoated steel roof deck sheets until final installation.
4. Architecturally exposed steel roof deck sheets shall be appropriately packaged or protected to prevent damage during delivery, storage and handling.

B. Welding Electrodes and Mechanical Fasteners
1. Store welding electrodes, mechanical fasteners and powder-actuated cartridges in original packages in a cool, dry location until final installation.
2. Comply with all project and national safety regulations regarding handling of welding equipment and powder-actuated fastening systems.

C. Sidelap Connectors:
1. Store sidelap connectors in original packages in a cool, dry location until final installation.

3.2 INSTALLATION

A. Erect metal decking as recommend by the SDI. Properly align and level on structural supports. Deck sheets shall extend over three or more spans, where possible. End laps of sheets shall be a minimum of 2" and shall occur over supports.

B. Allow minimum 1-1/2 inch bearing when supported by structural steel and minimum 4 inch bearing when supported by masonry.

C. Deck shall be anchored by welding directly through the bottom of the ribs to all structural supports. Welds to supports shall be made at the side ribs and at the center of each sheet and at other ribs so that the spacing between welds across the width of each sheet does not exceed 12 inches. Arc spot puddle welds shall be 5/8 inch minimum visible diameter. Exception, use 3/8" x 1-1/4" arc seam welds with "F" deck or "A" deck. When deck spans exceed 5'-0", side laps of adjacent units shall be fastened together at midspan by tack welding, sheet metal screws, or bottom punching. At free edges of deck (entire perimeter of decked area) weld to supports at 12" on center.

D. Refer to Plans for specific instructions on weld patterns necessary for diaphragm action.

E. Exercise care to avoid overloading the supporting structural elements when placing bundles of steel deck or other construction loads on the framing. Do not use deck units for storage or working platforms until permanently fastened in position.

F. Damaged or bent sections, or sections which do not properly mesh together at the side laps, shall not be used.

G. Sloping roofs having a slope of 1/4" per foot or more shall be erected beginning at the low side so that laps are made "shingle" fashion.

H. Minor openings, not shown on the plans or detailed on the shop drawings, shall be neatly cut and trimmed in the field; and shall be reinforced as required to maintain the strength and continuity of the deck.

I. Reinforce openings 6 inches to 18 inches in size with 2 inch x 2 inch x 1/4 inch steel angles. Place angles perpendicular to flutes, extended minimum two flutes each side of openings and weld to deck.

2.8 NON-SHRINK GROUT

A. The grout shall be non-shrink in the plastic state and show no expansion after set as tested under ASTM C-191. The effective bearing area shall be no less than 95%. The grout must not contain any water reducers, fluidifiers, accelerators or other chemicals which cause drying shrinkage, reference ASTM C-596.

2.9 DECK SUPPORT

A. All edges of floor and roof deck must be continuously supported by steel members. Where deck changes direction 90 degrees, provide a continuous angle 3x2-1/2x3/16 (L.L.H.) across the ends of the seated joists. Where deck miters in a horizontal plane, provide a continuous 1/4x6 plate support.

B. At hip-and-valley construction, provide continuous 1/4x6 bent plates for deck support, positioned in the plane of the deck.

2.10 MECHANICAL EQUIPMENT SUPPORT

A. Provide adequate and appropriate structural steel framing, approved by engineer, to support and mount all mechanical equipment resting on structural steel framing including roof top units. Loads shall be transmitted directly to steel beams, joists, etc., which shall be modified or strengthened to properly support such loading.

2.11 OTHER MATERIALS

A. All other materials, not specifically described, but required for a complete and proper installation of structural steel, shall be new, free from rust, first quality of their respective kinds, and subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. INSPECTION
1. Prior to installation of the work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
2. Verify that it is possible for the structural steel to be fabricated and erected in strict accordance with the original design, the approved Shop Drawings, and the referenced standards.
3. After the contractor has properly completed the structural steel framing and verified the final conditions of installation, the structural engineer shall be notified to permit observation of the completed work.

3.2 DISCREPANCIES

A. In the event of discrepancy, immediately notify the Architect/ Engineer.

B. Do not proceed with fabrication or installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.3 FABRICATION AND ERECTION

A. General
1. Fabricate all structural steel in strict accordance with the approved Shop Drawings and the referenced standards.

B. Shop Cleaning and Priming
1. Shop paint all structural steel one coat of primer, with the exception of:
a. Steel to be encased in concrete.
b. Surfaces to be field welded with full penetration groove welds or fillet welds larger than 3/16" size.
c. Surfaces at welds smaller than (b) may be prepared by abrasive paint removal in the field. Touch-up with same paint as used for original shop primer coat.

C. Connections
1. If beam reactions or connection details are not shown on plans, the connections to be made shall be sufficient to support half the total uniform load capacity tabulated in the table for "Uniform Load Constants" as shown in the AISC Manual for the given shape, span and steel specifications for the beam in question.
2. Beam connections, unless noted otherwise, shall conform to the provisions of "Framed Beam Connections" as shown in AISC Manual.
3. All bolts shall be tightened to the snug-tight condition as defined in AISC Specification on Structural Joints and as follows: "Snug tight is the condition that exists when all of the plies in a connection have been pulled into firm contact by the bolts in the joints and all of the bolts in the joint have been tightened sufficiently to prevent the removal of the nuts without the use of a wrench…The snug tightened condition is typically achieved with a few impacts of an impact wrench, application of an electric torque wrench until the wrench begins to slow or the full effort of a worker on an ordinary spud wrench."
4. Erection bolts used in weld construction shall be tightened and left in place.
5. Provide holes for securing nailers and/or other work to structural steel, and for passage of other work through structural steel. Provide threaded studs welded to framing, and other specialty items as shown to receive other work.
6. Field correcting or altering by "torching", or otherwise, will not be permitted unless prior approval is obtained from the Engineer. This applies to fabrication errors as well as work to accommodate other trades. Any errors which prevent the prior assembly of parts as detailed shall be reported to the fabricator for correction.
7. Splices will be permitted only when indicated. Splices may be omitted and beams furnished continuous in long lengths if desired.
8. The procedure and sequence of all shop and field welding shall be such as will avoid distortion of members and connections.
9. Erect structural steel accurately to lines and levels. Members shall be in final position before permanent connections are made.
10. Provide temporary bracing for accurate plumbing and to resist all wind and construction loads, using cable and/or angle "X" bracing in sufficient quantity to completely brace and stabilize the structure throughout the entire construction period. Erection equipment, shoring, scaffolding, etc., shall be suitable and safe for workmen, and shall be maintained in a safe and stable condition.

D. Special Joist Connection
1. At all columns not framed by beams in at least two directions, joist closest to the column centerline shall be field bolted to provide lateral stability during construction prior to welding.

E. Anchorage
1. Furnish anchor bolts, plates, and other connectors required for securing structural steel to foundations and other in-place work. Anchor bars welded to embedded plates, unless noted otherwise, shall be A-36 smooth round bars shop welded to the plate in a manner such that the full tensile strength of the bar will be developed without failure of the weld or surrounding heat affecting metal.
2. Nelson Stud Anchors shall be used where indicated and shall be applied in full compliance with the Manufacturer's instructions.
3. Grout shall completely fill space under base plates.

F. Exposed Steel Members
1. Exposed Steel members shall be specially selected for uniformity of texture, straightness, and freedom from kinks, twist, warp, pits, and scale. Connections shall be accurately aligned, have close tolerances and neat smooth finishes. Appearance is fully as important as strength and will constitute grounds for rejection even after members are in final position. Refer to Section 10, "Architecturally Exposed Structural Steel" (AESS) of the "Code of Standard Practice for Steel Buildings and Bridges" (adapted 9/1/86).

END OF SECTION 05 12 00

PART 1 - GENERAL

1.1 SCOPE

A. Structural steel required for this work is indicated on the Drawings and includes, but is not limited to the following:
1. Columns and Beams.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Structural Quality Control and Testing	Section 01 14 10
B. Structural Engineer: Shop Drawings/Field Visit	Section 01 33 41
C. C.I.P. Concrete (Reinforcement)	Section 03 30 01
D. Open Web Steel Joists	Section 05 21 00
E. Miscellaneous Metals	Division 5

1.3 QUALITY ASSURANCE

A. Qualifications of Suppliers and Personnel
1. The steel fabricator shall have not less than five years continuous experience in the fabrication of structural steel.
2. The steel erector shall have not less than five years continuous experience in the erection of structural steel.

B. Welder's Qualifications
1. Welds shall be made only by welders and welding operators who have been qualified within the preceding 12 months by tests as prescribed in the "Code for Welding in Building Construction" of the American Welding Society, to perform the type of work required. All welders working on the project shall be assigned an identifying symbol or mark. Each welder will be required to mark his symbol on each weldment completed for identification. The Contractor shall maintain a record of welders employed, date of qualification and symbol or identification mark assigned to each. Testing laboratory shall visually inspect all welds, for size and quality, providing written confirmation of conformance.
2. Full penetration shop or field welds shall be inspected by non-destructive testing methods and the results shall be submitted in writing to the Structural Engineer. Acceptable methods are as follows:
a. Liquid Penetrant Inspection: ASTM E-165.
b. Magnetic Particle Inspection: ASTM E-109; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration not acceptable.
c. Radiographic Inspection: ASTM E-94 and ASTM E-142; minimum quality level "2-2T".
d. Ultrasonic Inspection: ASTM E-164.
3. When requested by Engineer, supplier of structural steel shall furnish evidence that all materials delivered to the project meet the requirements of the specifications.

C. Bolting
1. Testing laboratory shall inspect all bolted connections using larger than 2 inch diameter bolts.
2. Verify the bolt type for conformance with specifications, check the surfaces being bolted together. Verify the output capacity of the bolt tightening equipment for all bolts including anchor bolts, for bolts larger than the 2 inch diameter. Tightening the bolts shall be snug-tight as defined by the American Institute of Steel Construction (AISC) Specification for Structural Joints. Make spot checks with calibrated torque wrench to verify bolt tightness. As a minimum, test 10 percent of the bolts, minimum of two in each connection in the field.

D. Codes and Standards
1. In addition to complying with all pertinent codes and regulations, structural steel shall comply with the following:
a. Unless noted otherwise, shall meet the requirements of the "Manual of Steel Construction, Specification for the Design, Fabrication and Erection of Structural Steel for Buildings" as amended to date and the "Code of Standard Practice" latest edition as adopted by the American Institute of Steel Construction.
b. "Code for Welding in Building Construction" of the American Welding Society.
c. "Specifications for Architecturally Exposed Structural Steel" of the American Institute of Steel Construction.

E. Conflicting Requirements
1. In the event of conflict between pertinent codes and regulations and the requirements of the referenced standards or these Specifications, the provisions of the more stringent shall govern.

1.4 SUBMITTALS

A. Submit Shop Drawings in Accordance with Architect

B. Shop Drawings
1. The Contractor shall obtain completely detailed shop drawings showing anchorage placing plans, member placing and erection plans, all member sizes, location, bridging, bracing, connections, methods of assembly, etc. The Contractor shall carefully check these drawings, then submit them to the Architects. The Architect/Engineer may conduct limited spot checks aimed solely at determining general comprehension of the design intent, then return them to the Contractor. The Contractor shall then carefully recheck the shop drawings and approve them prior to fabrication. The structural construction documents shall not be copied by the fabricator for use as erection drawings.
2. The contractor/fabricator shall check and verify the overall assembly of structural framing elements, including connection details, to ensure that proper erection is feasible. Adequate clearance shall be provided at connections to ensure correct fitting of connected elements, taking into account mill tolerance, weld clearance, etc.
3. The Architect's spot check shall not relieve the Contractor from correcting, at his own expense, any items that may thereafter be found not to comply with the plans and specifications.
4. Show all shop and erection details including cuts, copes, connections, holes for threaded fasteners, rivets, and welds.
5. Show all welds, both shop and field, by the currently recommended symbols of the American Welding Society.

C. Proof of Qualification
1. Within five days after award of Contract, submit to the Architect satisfactory evidence that the steel fabricator and steel erector are qualified for the work in accordance with the requirements of this section of these Specifications.

1.5 PRODUCT HANDLING

A. Protection
1. Use all means necessary to protect structural steel before, during, and after installation and to protect the installed work and materials of all other trades.

B. Replacements
1. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect/Engineer and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 WIDE FLANGE W-SHAPES

A. W-Shapes shall meet the requirements of ASTM A992 (A572) high-strength, low alloy structural steel with minimum yield stress of 50 KSI.

2.2 STRUCTURAL STEEL AND PLATES

A. Steel shapes and plates shall meet the requirements of ASTM A-36, F_y = 36 KSI.

2.3 RECTANGULAR TUBING

A. Rectangular Hollow Structural Sections (HSS) shall meet the requirements of ASTM A-500, Grade B, F_y = 46 KSI.

2.4 CIRCULAR STEEL PIPE

A. Steel pipe shall meet the requirements of ASTM A-53, Type E or S, Grade B (F_y = 35 KSI).

B. Round Hollow Structural Sections (HSS) shall conform to ASTM A500, Grade B (F_y = 42 KSI).

2.5 BOLTS AND NUTS

A. HIGH STRENGTH BOLTS
1. Use high strength bearing type bolts conforming to ASTM A-325 for all bolted connections unless otherwise indicated on the Drawings.
2. Make bolt holes 1/16 inch larger than nominal bolt diameter.
3. All bolts shall have threads excluded from the shear plane.

2.6 HEADED CONCRETE ANCHORS

A. HCAs - ASTM A108-60T, Installation AWS D1.1.

B. DBAs - ASTM A496, Installation AWS D1.1.

2.7 PRIMER PAINT

A. All primer paint for structural steel shall be lead-and chromate-free and shall be compatible with the finish coatings described in other sections of these Specifications, and shall be Sherwin-Williams "Kromik", Pittsburgh "Ironhide", Negley "Zinc Chromate Rust-Inhibitive Paint", or equal.

D&A PROJECT NO.: 64-396-00
D&A FILE NO.: BRASAOREMODELS503

architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

PERMIT REVIEW

DANYSH & ASSOCIATES
STRUCTURAL ENGINEERS
F-002228

STATE OF TEXAS
RONALD CRAIG TORBET
57092
REGISTERED PROFESSIONAL ENGINEER
9/16/24
DANYSH & ASSOCIATES, INC.
F-002228

BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

S503

SPECIFICATIONS

SECTION 31 23 16 **STRUCTURAL EARTHWORK FOR BUILDING FOUNDATIONS**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.2 RELATED WORK DESCRIBED ELSEWHERE

A.	Structural Quality Control and Testing	Section 01 14 10
B.	Special Inspections: IBC Chapter 17	Section 01 14 11
C.	Geotechnical Quality Control & Testing	Section 01 14 20

1.3 1.3 DESCRIPTION OF WORK

A. Extent
1. Extent of earthwork in this section is limited to the requirements of construction of structural building foundation.

B. Excavation for Mechanical/Electrical Work
1. Excavation and backfill required in conjunction with underground mechanical and electrical utilities, and buried mechanical and electrical utilities, and buried mechanical and electrical appurtenances is not included as work in this section, but is specified elsewhere.

C. Definitions
1. "Excavation" consists of removal of material encountered to subgrade elevations indicated and subsequent disposal of material removed.
2. "Building" shall include any attached walkway or other foundations shown on the structural foundation drawings.

1.4 QUALITY ASSURANCE

A. Special Inspections as required and specified by the International Building Code Chapter 17 will be conducted at Owner's expense. A commercial construction testing laboratory will perform soil testing and inspection services for quality control during earthwork operations. The testing laboratory shall be designated by the RDPIRC representing the Owner.

1.5 SUBMITTALS

A. Test Reports-Excavating
1. Submit following reports directly to Architect/Engineer from the testing services, with copy to Contractor:
a. Verification of specified depth of excavation.
b. Field density test reports, as follows:
1) One optimum moisture-maximum density curve for each type of soil encountered.
2) Report of actual unconfined compressive strength and/or results of bearing tests of each strata tested.

PART 2 - PRODUCTS

2.1 SELECT STRUCTURAL FILL

A. Refer to "Underfloor Fill Notes" on Sheet 6.1.

2.2 READY MIXED FLOWABLE FILL (RFF)

A. Flowable fill, also known as Controlled Low-Strength Material (CLSM), is to be used as fill where shown on the plans. It is unreinforced.
1. MATERIALS
a. Cement – ASTM C 150
b. Fly Ash – ASTM C 618, Class C or Class F
c. Water – ASTM C94
d. Fine Aggregate – natural or manufactured sand, or a combination thereof, free from injurious amounts of salt, alkali, organic matter, etc.

Sieve Size	%Passing
¾ Inch	100
No. 200	0 -10

2. MIX DESIGN
a. The following is a typical trial mix. Adjust proportions to achieve proper suspension and optimum flowability with a minimum density of 125pcf and a minimum 28 day compressive strength of 75psi. Use admixtures as necessary.

Cement	100 lbs.
Fly Ash	250 lbs.
Fine Aggregates	2800 lbs.
Water (approx.)	500 lbs. (60 gals.)

PART 3 - EXECUTION

3.1 EXCAVATION

A. Excavation is Unclassified
1. Excavation is unclassified, and includes excavation to subgrade elevations indicated, regardless of character of materials and obstructions encountered. Refer to plan notes.

B. Unauthorized Excavation
1. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Architect/Engineer. Unauthorized excavation, as well as remedial work directed by Architect, shall be at Contractor's expense.
2. Perform all earthwork described above before trenching for grade beams or mechanical lines.

C. Excavation
1. Refer to "Underfloor Fill Notes" Sheet 6.1.

3.2 DE-WATERING

A. Prevent surface water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area.

B. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability or subgrades and foundation. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other de-watering system components necessary to convey water away from excavations.

C. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavations to collecting or run-off areas. Do not use trench excavations as temporary drainage ditches.

3.3 PROOF ROLLING

A. Refer to "Underfloor Fill Notes" Sheet 6.1.

3.4 COMPACTION

A. Refer to "Underfloor Fill Notes" Sheet 6.1.

3.5 FIELD QUALITY CONTROL

A. Allow testing service to inspect and approve subgrades and fill layers before further construction work is performed.

B. Perform field density tests in accordance with Texas Department of Transportation (TXDOT) Specification TEX-113-E.

3.6 TESTING OF SUBGRADE AND COMPACTED FILL

A. Refer to "Underfloor Fill Notes" Sheet 6.1.

B. If, in opinion of the testing laboratory and/or the Architect/Engineer, based on testing service reports and inspection, subgrade or fills which have been placed are below specified density, the contractor shall perform additional compaction and testing at no additional expense.

3.7 MAINTENANCE

A. Protect newly graded areas from traffic and erosion.

B. Keep area free of trash and debris.

3.8 RECONDITIONING COMPACTED AREAS

A. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, re-shape, and compact to required density prior to further construction.

3.9 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Remove waste materials, including unacceptable excavated material, trash and debris, and dispose of it off Owner's property.

END OF SECTION 31 23 16

1.4 SUBMITTALS

A. Refer to Architect - Submittals, for submittal procedures.

B. Product Data: Provide manufacturer's printed product literature and description, including tests and standards that have been performed on the vapor barrier material.

C. Samples: Submit two, 8 1/2 x 11 inch in size, illustrating the vapor barrier and two (2) 8 1/2 inch long sample strips of the joint tape.

D. One each of all accessories that will be used in the installation.

E. Verification by Independent testing labs indicating that materials comply with specified requirements.

F. Certificates: Certify that products of this section meet or exceed specified requirements.

G. Manufacturer's Instructions: Indicate complete installation instruction.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section with minimum five years of experience.

1.6 DELIVERY, STORAGE, AND PROTECTION

A. Deliver Vapor Barrier to project site in manufacturers' original container/packaging.

1.7 PROJECT CONDITIONS

A. Coordinate Vapor Barrier installation with size, location and installation of service utilities.

B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis of Design: Stego Wrap 15- mil Vapor Barrier by Stego Industries LLC, 949.257.4100

B. Approved Alternate: Vapor Guard by Reef Industries, 713-507-4250. www.reefindustries.com.

C. Approved Alternate: PMPC by WR Meadows

D. Alternates shall be equal in all specifications and applications

2.2 MATERIALS

A. Vapor barrier shall have all of the following qualities:
1. Maintain permeance of less than 0.01 Perms [grains/(ft2 ?hr ?inHg)] as tested in accordance with mandatory conditioning tests per ASTM E1745 Section 7.1 (7.1.1-7.1.5).
2. Other performance criteria:
a. Strength: ASTM E1745 Class A.
b. Thickness: as shown on plans
3. Provide third party documentation that all testing was performed on a single production roll per ASTM E1745 Section 8.1
4. Extruded polyolefin membrane with thickness matching that specified on the plan notes.
5. Material manufactured with ISO certified virgin resins.
6. Sheet polyethylene is not an acceptable substitution.

2.3 ACCESSORIES

A. Tape:
1. High Density Polyethylene Tape with pressure sensitive adhesive: Minimum width 4".
2. Pipe Boot:
a. Construct pipe boots from vapor barrier material and pressure sensitive tape per manufacturer's instructions.

B. Penetration Prevention:
1. Do not puncture vapor barriers. Use a fixed-elevation point-to-point guide screed system with non-penetrating elevation guides and vapor barrier-safe interior forming and interior form bracing applications with non-penetrating devices.
a. Penetration Prevention:
1) Beast Foot by Stego Industries LLC, (877) 464-7834 www.stegoindustries.com or equal.
b. Vapor Barrier-Safe Screed System
1) Beast Screed by Stego Industries, LLC, (877) 464-7834 www.stegoindustries.com or equal.

C. Perimeter/Edge Seal:
1. Edges to be sealed to concrete.
2. Sealing the perimeter with one-sided seam tape is prohibited.
3. Crete Claw by Stego Industries LLC, (877) 464-7834 www.stegoindustries.com or equal

2.4 CE QUALITY CONTROL AND TESTS

A. Reference Standards:
1. Water Vapor Retarders Used in Contact with Earth under Concrete Slabs: Exceeds Class A According to ASTM E 1745.
2. Water Vapor Transmission Rates: 0.006 gr./ft2/hr. according to ASTM E 96.
3. Permeance Rating Result: 0.01 gr./ft2/hr. according to ASTM E96
4. Puncture Resistance Result: 204.0-lbs/sq. ft, according to GRI-GS-1-86.
5. Puncture Resistance Result: 1972.5 grams according to ASTM D 1709.
6. Tensile Strength Result: 54.2 lbs./MD and 55.5lbs./CMD according to ASTM D 638.
7. Low Temperature Brittleness: Pass according to ASTM D1790.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that conditions are acceptable for the placement of the vapor barrier.

3.2 PREPARATION

A. Ensure that subsoil is approved by Structural Engineer.
1. Vapor Barrier may be installed over an aggregate, sand or tamped earth base.

3.3 INSTALLATION

A. Install Vapor barrier per manufacturer's instructions, illustrations and ASTM E1643-94-Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth Concrete Slabs.

3.4 INTERFACE WITH OTHER WORK

A. Coordinate work of all other trades related to the slab base and utility services.

3.5 CLEANING, AND PROTECTION

A. Clean all contaminants from surface.

B. Protect installed vapor barrier from subsequent damaging construction operations.

C. Do not permit vehicular/heavy equipment traffic over unprotected vapor barrier.

END OF SECTION 07 26 20

1) Any substitutions must be approved in writing ten (10) day prior to bid date, by the Architect and/or Engineer of record.
c. Galvanizing Repair Paint
1) High zinc dust content paint for repair of galvanized surfaces damaged by welding, complying with M.I. Spec. MIL-P-21035.
4. Cement Grout: Portland cement, ASTM C 150, Type I; and clean, natural sand, ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.
5. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, non-staining grout containing selected silica sands, portland cement, shrinkage-compensating agents, and plasticizing and water-reducing agents, complying with ASTM C 1107/C 1107M, with fluid consistency and 30-minute working time.
6. Shims: Load bearing, high-density multimonomer plastic, and nonleaching; or of cold-formed steel of same grade and coating as framing members supported by shims.
7. Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to match width of bottom track or rim track members.

2.3 FABRICATION

A. General
1. Framing components may be prefabricated into panels prior to erection. Fabricate panels plumb, square, true to line and braced against racking with joints welded. Perform lifting of prefabricated panels in a manner to prevent damage or distortion. Fabricate panels in jig templates to hold members in proper alignment and position and to assure consistent component placement.

B. Anchors, Clips, And Fasteners
1. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123/A 123M.
2. Anchor Bolts: ASTM F 1554, Grade 36, threaded carbon-steel hex-headed bolts and carbon-steel nuts; and flat, hardened-steel washers; zinc coated by hot-dip process according to ASTM A 153/A 153M, Class C
3. Expansion Anchors: Fabricated from corrosion-resistant materials, with allowable load or strength design capacities calculated according to ICC-ES AC193 and ACI 318 greater than or equal to the design load, as determined by testing per ASTM E 488 conducted by a qualified testing agency.
4. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with allowable load capacities calculated according to ICC-ES AC70, greater than or equal to the design load, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.
5. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.
6. Attach components by welding, bolting, or screw fasteners, as required by structural design criteria specified herein.
7. Wire tying of framing components is not permitted.

C. Fabrication Tolerances
Fabricate panels to a maximum allowable tolerance variation from plumb, level, and true to line of 1/8" in 10'-0".

PART 3 - EXECUTION

3.1 PREPARATION AND INSTALLATION

A. Pre-Installation Conference
1. Prior to start of installation of metal framing systems, meet at project site with installers of other work including door and window frames and mechanical and electrical work. Review areas of potential interference and conflicts, and coordinate layout and support provisions for interfacing work.

B. Installation
1. Manufacturer's Instructions
a. Install metal framing systems in accordance with manufacturer's printed or written instructions and recommendations, unless otherwise indicated. Refer to ASTM C1007 for storage and installation.
2. Runner Tracks
a. Install continuous tracks sized to match studs. Align tracks accurately to layout at base and tops of studs. Secure tracks as recommended by stud manufacturer for type of construction involved, except do not exceed 24" o.c. spacing for nail or power-driven fasteners, or 16" o.c. for other types of attachment. Provide fasteners at corners and ends of tracks.
b. Install load bearing shims or grout between the underside of load-bearing wall bottom track and the top of foundation wall or slab at locations with a gap larger than 1/4 inch to ensure a uniform bearing surface on supporting concrete or masonry construction.
c. Install sealer gaskets at the underside of wall bottom track or rim track and at the top of foundation wall or slab at stud or joist locations.
3. Installation of Wall Stud System
a. Secure studs to top and bottom runner tracks by either welding or screw fastening at both inside and outside flanges.
b. Where indicated and at conditions where back-up curtain wall bypasses structure, attach vertical metal framing components to structure with curtain wall clips. Attach clips to steel structural components by welding.
c. Frame wall openings larger than 2'-0" square with double stud at each jamb of frame except where more than 2 are shown or indicated in manufacturer's instructions. Install runner tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with stud shoes or by welding, and space jack studs same as full-height studs of wall. Secure stud system wall opening frame in manner indicated.
d. Frame both sides of expansion and control joints, with separate studs; do not bridge the joint with components of stud system.
e. Install horizontal stiffeners in stud system, spaced (vertical distance) at not more than 4'-6" o.c. Weld or through bolt at each intersection.
4. Erection Tolerances
a. Bolt or weld wall panels (at both horizontal and vertical junctures) to produce flush, even, true to line joints.
b. Step in face and jog in alignment between panels not to exceed 1/16".
c. Fasten surface of any framing or furring members shall not vary more than 1/16" from plane of faces of adjacent furring or framing members, nor vary cumulatively across the plane of the surface more than 1/8" in 10'-0".
5. Field Touch-up
a. Touch-up shop-applied protective coatings damaged during handling and installation. Use specified galvanizing repair paint for galvanized surfaces.

3.2 QUALITY CONTROL AND QUALITY ASSURANCE

A. Minimum observation and inspection tasks deemed necessary to ensure quality cold-formed steel light-frame construction are specified in Chapter D QUALITY CONTROL AND QUALITY ASSURANCE of the AISI S240 standards.

B. An independent laboratory hired by the Owner shall function as the Quality Assurance Agency for Erection and shall provide documentation as per Chapter D

C. Quality Assurance Agency Documents are to be submitted in accordance with Section D4.

D. Inspection Tasks and Reports shall be in accordance with Section D6 Inspection Tasks. Note in particular the tasks are identified as "Observe" or "Perform".

END OF SECTION 05 40 00

SECTION 07 26 20 **VAPOR BARRIER**

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Installation of a vapor barrier under concrete slab.

B. This vapor barrier shall be used in lieu of any vapor barrier of lesser thickness under the slab.

1.2 RELATED SECTIONS

A.	Concrete Forms and Accessories	Section 03 10 00
B.	Concrete Reinforcement	Section 03 20 00
C.	C.I.P. Concrete	Section 03 30 01
D.	Structural Earthwork for Building Foundation	Section 31 23 16

1.3 REFERENCES

A. ASTM E 1643-11- Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.

B. ASTM E-1745 -11 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs: Exceeds Class A.

C. ASTM E-96 - Standard Test Methods for Water Vapor Transmission of Materials

D. GRI-GS-1-86 - Puncture Resistance

E. ASTM D 1709 - Standard Test Methods for Puncture Resistance.

F. ASTM D 638 - Standard Test Methods for Tensile Properties of Plastic; 1996

G. ASTM D 1790 - Standard Test Methods for Low Temperature Brittleness

H. ACI 02.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials

SECTION 05 40 00 **COLD-FORMED STRUCTURAL METAL FRAMING**

PART 1 - GENERAL

1.1 SCOPE

A. This section shall include all materials, equipment and labor necessary for the design and installation of cold-formed structural metal framing in accordance with this specification and the contract drawings and may include, but is not limited to, studs, joists, braces, struts, track and bridging.

B. The framing members covered in this section apply only to components which function as structural elements and which resist wind and gravity loads as follows:
1. Exterior wall studs.
2. Parapet framing.
3. Fascia framing.

1.2 RELATED WORK

A.	Structural Quality Control and Testing	Section 01 14 10
B.	Structural Engineer: Shop Drawings/Field Visit	Section 01 33 41
C.	Structural Steel	Section 05 12 00
D.	Metal Fabrications	Division 5
E.	Framing for Gypsum Drywall Partitions	Division 9

1.3 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM), Standard Specifications and Methods of Testing.

B. American Iron and Steel Institute, (AISI) Specification for the Design of Light Gage Cold-Formed Steel Structural Members and Light Gage Steel Design Manual.

C. American Iron and Steel Institute, (AISI) S240 North American Standard For Cold-Formed Steel Structural Farming, 2015 or latest edition.

D. American Welding Society (AWS), Code for Arc and Gas Welding in Building Construction and Recommend Practice for the Spot Welding of Low Carbon Steel.

E. American Institute of Steel Construction (AISC), Specification for the Design, Fabrication and Erection of Structural Steel for Buildings.

1.4 SUBMITTALS

A. Product Data
1. Submit manufacturer's product information and installation instructions for each item of cold-formed metal framing and accessories.

B. Certification
1. Submit a copy of the manufacturer's test report or a statement by the supplier accompanied by a copy of the test results, stating that materials and fabrication comply with the provisions of this specification. Each certification so furnished shall be signed by an authorized agent of the supplier or manufacturer.

1.5 DESIGN CRITERIA

A. Design Loads
1. Design loads shall be as indicated on plans. Comply with the latest edition of the Building Code, but in no case shall design wind load be less than 20 pounds per square foot. Deflections shall not exceed L/360, with no allowance for contribution of sheathing materials. Limit deflection to L/600 for studs backing up masonry.

B. Design
1. Member sizes, gauges and spacing shown on the drawings are for typical situations and shall be verified by the Specialty Engineer, particularly in areas of discontinuity. Detailing and design of connections, welded, screwed or bolted joints shall be performed by a registered Professional Engineer (Specialty Engineer) licensed to practice in this state or governing jurisdiction. Submit field erection details, bearing the specialty Engineer's seal and be prepared to submit design calculations upon request.

C. Shop Drawings
1. Submit shop drawings prepared by the Specialty Engineer showing type, size and spacing of members, connections and joining of components.
2. Indicate reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.

D. Erection Drawings
1. Submit field erection drawings prepared by the specialty engineer showing the specific location of each member detailed, along with spacing, bridging, bracing, field connection details and method of assembly.
2. Allowance shall be made for vertical deflection of the primary structural frame by means of connection devices, such as curtain wall clips, bypass clips, or slip-joints, at laterally loaded walls.
a. Single Deflection Track: Manufacturer's single, deep-leg, U-shaped steel track; unpunched, with unstiffened flanges, of web depth to contain studs while allowing free vertical movement, with flanges designed to support horizontal loads and transfer them to the primary structure.
b. Double Deflection Tracks: Manufacturer's double, deep-leg, U-shaped steel tracks, consisting of nested inner and outer tracks; unpunched, with unstiffened flanges.
c. Drift Clips: Manufacturer's standard bypass or head clips, capable of isolating wall stud from upward and downward vertical displacement and lateral drift of primary structure through positive mechanical attachment to stud web and structure.

1.6 QUALITY ASSURANCE

A. Component Design
1. Calculate structural properties of studs in accordance with American Iron and Steel Institute (AISI) "Specification for Design of Cold-Formed Steel Structural Members".

B. Quality Assurance procedures and Inspections by the component manufacturer shall be in accordance with the AISI S240 Standards, Chapter D. Documentation shall be available/submitted as per section D3 Quality Control Documentation.

C. Welding
1. Use qualified welders and comply with American Welding Society (AWS) D1.3, "Structural Welding Code - Sheet Steel". Members with welded connections shall be 18 gauge or heavier.

1.7 DELIVERY, STORAGE AND HANDLING

A. Protect metal framing units from rusting and damage. Deliver to project site in manufacturer's unopened containers or bundles, fully identified with name, brand, type and grade. Store off ground in a dry ventilated space or protect with breathable waterproof tarpaulins.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products of one of the following:
1. Clark Dietrich Building Systems
2. Marino/Ware Steel Framing Systems
3. Cemco Steel Framing

2.2 METAL FRAMING

A. System Components
1. With each type of metal framing required, provide manufacturer's standard steel runners (tracks), blocking, bridging, lintels, clip angles, shoes, reinforcements, fasteners, and accessories as recommended by manufacturer for applications indicated, as needed to provide a complete metal framing system.
2. In accordance with Chapter A, section A5.5 Product Identification of the AISI S240 Standards. In particular item A5.5.2 Identification of Individual Framing Members prescribes minimum information to be labeled in a prescribed manner on each member "…at a maximum distance of 96in. (2440 mm) on center."

B. Materials and Finishes
1. All structural members shall be designed in accordance with American Iron and Steel Institute North American "Specification for design of Cold-Formed Steel Structural Members," [NASPEC] 2001 w/2004 supplement.
2. All structural members shall be formed from corrosion-resistant steel, corresponding to the requirements of ASTM C955, A653 and A1003.
3. Provide galvanized finish to metal framing components complying with ASTM A924 for minimum G90 coating.
a. Properties
1) The physical and structural properties listed by Clark Dietrich Building Systems were used as the minimum for all framing members. Specifically, the following minimum properties, calculated in accordance with the latest A.I.S.I. Specification shall be provided: Ix (in.⁴), SX (in.3), Area (in.5), Rx (in.), Fy (KSI), Resisting Moment (in.-lb.).
b. Substitutions

D&A PROJECT NO.: 64-396-00
D&A FILE NO.: BRASAOREMODELS504

architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 2401

PERMIT REVIEW

DANYSH & ASSOCIATES
STRUCTURAL ENGINEERS
F-002228

STATE OF TEXAS
RONALD CRAIG TORSET
57092
REGISTERED PROFESSIONAL ENGINEER
9/16/24
DANYSH & ASSOCIATES, INC.
F-002228

BRASAO REMODEL

19210 110 WEST
SAN ANTONIO, TX 78257

S504

SPECIFICATIONS

	CAD
PM	RGM
M	CF/CS/TSA
E	HN/MG
P	FC
	RGM/FHG/TSA/LS

MECHANICAL SYMBOLS AND ABBREVIATIONS

A

ABV	ABOVE
A/C	AIR CONDITIONING
ACCH	AIR COOLED CHILLER
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR, AREA DRAIN
ADJ	ADJUSTABLE
AF	AIR FILTER
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMB	AMBIENT
APD	AIR PRESSURE DROP
ARI	AMERICAN REFRIGERANT INSTITUTE
ARCH	ARCHITECT, ARCHITECTURAL
ASHRAE	AMERICAN SOCIETY OF HEATING AND REFRIGERATION ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
AVG	AVERAGE
AWS	AMERICAN WELDING SOCIETY
AUX	AUXILIARY

B

B/C	BACK OF CURB
BF	BELOW FLOOR
BFF	BELOW FINISHED FLOOR
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STRUCTURE
BTU	BRITISH THERMAL UNIT

C

C	CELSIUS
CAB	CABINET
CD	CONDENSATE DRAIN LINE
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CH	CHILLER
CHP	CHILLED WATER PUMP
CHR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CI	CAST IRON
CL	CENTERLINE
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPRESSOR
COND	CONDENSER
CONTR	CONTROLLER
CRAC	COMPUTER ROOM A/C UNIT
CT	COOLING TOWER
CW	COLD WATER
CWP	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY

D

DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DTL	DETAIL
DIA	DIAMETER
DIFF	DIFFUSER
DIM	DIMENSION
DN	DOWN
DPR	DAMPER
DS	DOWNSPOUT, DUCTLESS SPLIT
DSCU	DUCTLESS SPLIT CONDENSING UNIT
DWH	DOMESTIC WATER HEATER
DWP	DOMESTIC WATER PUMP

E

EA	EACH
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
EFF	EFFICIENCY
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPTMENT
ESP	EXTERNAL STATIC PRESSURE
ETR	EXISTING TO REMAIN
EVAP	EVAPORATOR
EWB	ENTERING WET BULB
EXT	EXTERNAL
EXTG	EXISTING

F

F	FAHRENHEIT
FBO	FURNISHED BY OTHERS
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FLEX	FLEXIBLE
FLR	FLOOR
FP	FAN POWERED MIXING BOX
FRZR	FREEZER
FT	FOOT, FEET
FUT	FUTURE

G

GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR, GRADE CLEANOUT
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GSH	GRAND SENSIBLE HEAT
GTH	GRAND TOTAL HEAT

H

HE	HEAT EXCHANGER
HP	HORSEPOWER, HALON PANEL
HPU	HEAT PUMP UNIT
HKP	HOUSEKEEPING PAD
HSC	HORIZONTAL SPLIT CASE
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HZ	HERTZ

I

ID	INSIDE DIAMETER
IN	INCH
INSUL	INSULATION
INT	INTERNAL, INTERIOR

J

K

L

LAT	LEAVING AIR TEMPERATURE
LF	LINEAR FEET
LP	LOW PRESSURE
LVL	LEVEL
LWB	LEAVING WET BULB

M

MAT	MIXED AIR TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND OF BTU'S
MC	MECHANICAL CONTRACTOR
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MP	MEDIUM PRESSURE
MTD	MOUNTED
MUA	MAKE-UP AIR
MVD	MANUAL VOLUME DAMPER

N

N.C.	NOISE CRITERIA
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE

O

OA	OUTSIDE AIR
OAHU	OUTSIDE AIR HANDLING UNIT
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DIAMETER, OVERFLOW DRAIN
OFCU	OUTSIDE AIR FAN COIL UNIT

P

PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP, PLANTER DRAIN
PNTH	PENTHOUSE
PPM	PART PER MILLION
PRI	PRIMARY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE

Q

QTY	QUANITY

R

RA	RETURN AIR
RAD	REFRIGERATED AIR DRYER
RF	RETURN AIR FAN
RAG	RETURN AIR GRILL
RAT	RETURN AIR TEMPERATURE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RE	REFERENCE,REFER
RECIRC	RECIRCULATE
REFR	REFRIGERATOR
REV	REVISION, REVISE
RH	RELATIVE HUMIDITY
RHG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID
RM	ROOM, REFRIGERATION MACHINE
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RTU	ROOFTOP UNIT

S

S	STEAM
SA	SUPPLY AIR
SF	SUPPLY AIR FAN
SAG	SUPPLY AIR GRILLE
SAR	SUPPLY AIR REGISTER
SEC	SECONDARY
SECT	SECTION
SENS	SENSIBLE
SF	SQUARE FEET
SM	SHEETMETAL
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ	SQUARE
SS	STEAM SUPPLY
SR	STEAM RETURN
STD	STANDARD
SURF	SURFACE
SUSP	SUSPEND

T

TC	TEMPERATURE CONTROL
TCC	TEMPERATURE CONROL COMPRESSOR
TF	TRANSFER FAN
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TYP	TYPICAL

U

UC	UNDER CUT DOOR
UG	UNDERGROUND
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
U/F	UNDERFLOOR

V

VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VEL	VELOCITY
VERT	VERTICAL

W

W	WASTE, WIDTH
W/	WITH
W/O	WITHOUT
WB	WET BULB

Y

Z

Z	ZONE

HVAC SYMBOLS

	RETURN GRILLE WITH SQUARE DUCT NECK CONNECTION
	RETURN AIR DIFFUSER
	4-WAY SUPPLY DIFFUSER UNLESS OTHERWISE NOTED ON PLANS
	EXHAUST AIR DIFFUSER
	EXHAUST DUCT UP
	EXHAUST DUCT DOWN
	RETURN DUCT UP
	RETURN DUCT DOWN
	SUPPLY DUCT UP
	SUPPLY DUCT DOWN
XX-X	EQUIPMENT TAG
X , 12"ø 600	DIFFUSER KEY: TYPE / NECK CFM
T	THERMOSTAT / TEMPERATURE SENSOR (MOUNT 48" A.F.F.)
H	HUMIDISTAT (MOUNT 48" A.F.F.)
S	TEMPERATURE SENSOR (MOUNT 48" A.F.F.)
P	PRESSURIZATION SENSOR
	POINT OF CONNECTION, NEW AND EXISTING
	EXISTING DUCTWORK TO REMAIN
	EXISTING DUCTWORK TO BE REMOVED
12/10	NEW DUCTWORK, WIDTH / HEIGHT
	ELBOW WITH TURNING VANES
	DUCT TRANSITION, SINGLE AND DOUBLE LINE
	FLEXIBLE CONNECTION
	FLEXIBLE DUCT CONNECTION TO AIR DIFFUSER
	FLEXIBLE DUCT
	SQUARE TO ROUND DUCT TRANSITION
	RECTANGULAR DUCT WITH EXTERNAL INSULATION
	ROUND DUCT WITH EXTERNAL INSULATION
	BALANCING DAMPER
	BRANCH TAP WITH DAMPER
	ROUND DUCT DOWN
	ROUND DUCT UP
SD D	DUCT MOUNTED SMOKE DETECTOR
T S	REMOTE TEMPERATURE SENSOR
FD	FIRE DAMPER
VD	OPPOSED BLADE VOLUME DAMPER
FSD	FIRE/SMOKE DAMPER
M	MOTORIZED DAMPER
VFD	VARIABLE FREQUENCY DRIVE
AD	ACCESS DOOR
U	UNDER CUT DOOR
DL	LOUVERED DOOR
SPLITTER SD	SPLITTER DAMPER

MECHANICAL SYMBOLS

	EXISTING CONDENSATE DRAIN PIPING TO REMAIN.
CD	DEMO CONDENSATE DRAIN PIPING TO BE REMOVED
	NEW CONDENSATE DRAIN PIPING
R	EXISTING REFRIGERANT PIPING TO REMAIN.
R	DEMO REFRIGERANT PIPING TO BE REMOVED.
R	NEW REFRIGERANT PIPING.
	EXISTING DUCTWORK TO REMAIN.
	EXISTING DUCTWORK TO BE REMOVED.
	NEW DUCTWORK.
	NEW DUCTWORK WITH DUCT TRANSITION.
CHWS	CHILLED WATER SUPPLY PIPE TO REMAIN.
CHWS	EXISTING CHILLED WATER SUPPLY PIPE TO BE REMOVED
CHWS	NEW CHILLED WATER SUPPLY PIPE.
CHWR	CHILLED WATER RETURN PIPE TO REMAIN.
CHWR	EXISTING CHILLED WATER RETURN PIPE TO BE REMOVED.
CHWR	NEW CHILLED WATER RETURN PIPE.
SS	STEAM SUPPLY TO REMAIN
SS	EXISTING STEAM SUPPLY PIPE TO BE REMOVED.
SS	NEW STEAM SUPPLY PIPE.
SR	STEAM RETURN TO REMAIN
SR	EXISTING STEAM RETURN PIPE TO BE REMOVED.
SR	NEW STEAM RETURN PIPE.
	EXISTING AIR DEVICE TO REMAIN.
	EXISTING AIR DEVICE TO BE REMOVED.
	NEW AIR DEVICE.

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LICENSED
PROFESSIONAL ENGINEER

architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 24-064

PERMIT REVIW

BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

MECHANICAL SYMBOLS AND ABBREVIATIONS

M100

FILE NAME: 24-064 M100 Mechanical Symbols & Abbreviations.dwg
FILE LOCATION: C:\Users\carlo\RGM Engineering Dropbox\Projects\2024\24-064 Brasao Restaurant\Mechanical_Standard Mechanical Files\
DATE: Fri, 13 Sep 2024 - 10:35am
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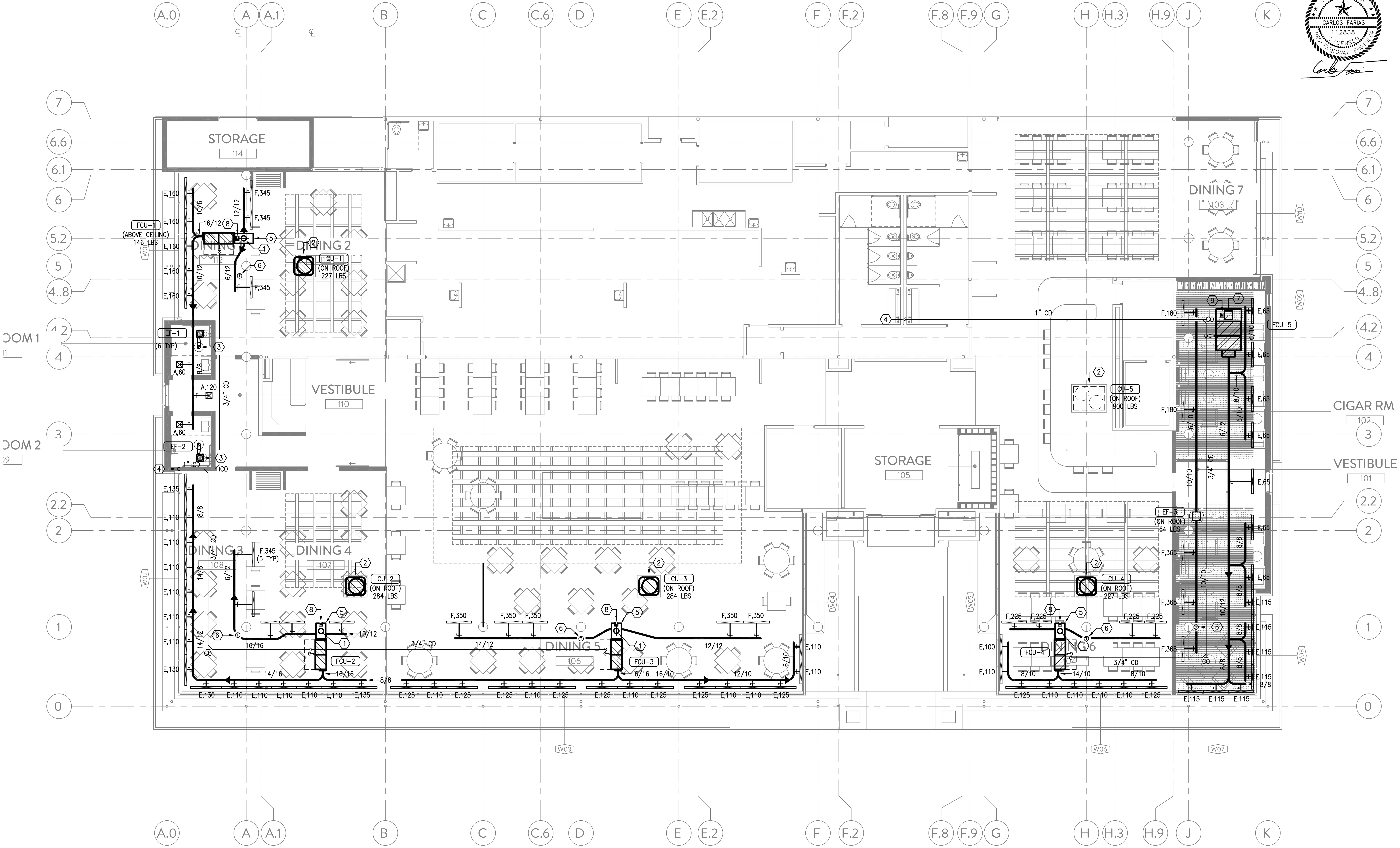
FOR GENERAL AND KEYED NOTES, SEE DRAWING SHEET M201.



1 MECHANICAL FLOOR PLAN
SCALE: 1/8"=1'-0"

BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

MECHANICAL FLOOR PLAN

M101

FILE NAME: 24-064 M101 Mechanical Floor Plan.dwg
DATE: Wed, 13 Nov 2024 - 3:24pm
PLOTTED BY: carlo

PM	M	E	P	CAD
RGM	CF/LS/TSA	HN/MG	FC	RAM/HG/TSA/LS

	CAD
M	CF/JS/TSA
E	HN/MG
P	FC
	RM/HG/TSA/LS
PM	RGM

GENERAL MECHANICAL NOTES:

1. ALL MECHANICAL EQUIPMENT SHALL BE 10'-0" MIN. FROM EDGE OF ROOF.
2. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
3. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION OF EQUIPMENT, DUCTS, AND GRILLES, ETC. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS THAT COMPLETE MECHANICAL SYSTEMS BE FURNISHED, INSTALLED, TESTED AND READY FOR OPERATION WHETHER EVERY ITEM OF EQUIPMENT, ACCESSORY, DEVICE, ETC. IS SHOWN. REFERENCE SHALL BE MADE TO THE FULL DRAWING PACKAGE INCLUDING ARCHITECTURAL, STRUCTURAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR COORDINATION AND POTENTIAL CONFLICTS. THE MECHANICAL SUBCONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN THE LAYOUT AS NEEDED TO PREVENT CONFLICTS WITH OTHER TRADES, OR FOR PROPER EXECUTION OF THE WORK. FIELD VERIFY ALL DIMENSIONS BEFORE FABRICATING DUCTWORK.
4. DUCT DIMENSIONS INDICATED ON DRAWINGS ARE CLEAN INSIDE AIR STREAM DIMENSIONS.
5. NEW A/C EQUIPMENT SHALL BE CLEANED AFTER THE FINISHING OF DRYWALL AND PRIOR TO THE RELEASE OF BUILDING TO OWNER. MECHANICAL CONTRACTOR TO PROVIDE ALL DOCUMENTATION WITH DATE AND TIME OF UNIT CLEANING AND CONSTRUCTION FILTER REPLACED WITH NEW.
6. ALL UNITS GREATER THAN 2,000 CFM REQUIRE A DUCT MOUNTED SMOKE DETECTOR. VERIFY CURRENT ADOPTED STATE AND LOCAL CODE REQUIREMENTS FOR MOUNTING LOCATION OF SMOKE DETECTOR.
7. REFLECTED CEILING PLANS ARE FOR DESIGN INTENT. ALIGNMENT OF FIXTURES, SPRINKLER HEADS, DIFFUSERS AND OTHER DEVICES TO BE SYMMETRICAL IN THE ROOMS, ALIGNED WITH EACH OTHER, AND AS SHOWN. CEILING HEIGHTS ARE SCHEDULED IN ROOM FINISH SCHEDULE. ABOVE CEILING SPACE IS LIMITED, THEREFORE COORDINATION OF ALL SYSTEMS WITH NEW STRUCTURES IS CRITICAL. COORDINATION SHOP DRAWINGS FOR REFLECTED CEILING SHALL BE SUBMITTED SHOWING LOCATIONS OF ALL FIXTURES, SPRINKLER HEADS, DIFFUSERS, AND OTHER DEVICES FOR REVIEW BY THE ARCHITECT PRIOR TO INSTALLATION OF ANY SYSTEMS.
8. EQUIPMENT SIZES, DIMENSIONS, AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE MANUFACTURER DRAWINGS AND CUTSHEETS BEFORE FABRICATING OF DUCTWORK, PIPING, OR POURING OF HOUSEKEEPING PADS.
9. ALL DUCTWORK AND ASSOCIATED ACCESSORIES SHALL BE CONSTRUCTED TO MEET THE LATEST SMACNA STANDARDS FOR LOW, MEDIUM, AND HIGH PRESSURE DUCTWORK.
10. MECHANICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF ALL OUTSIDE AIR INTAKES TO MAINTAIN 10 FEET DISTANCE BETWEEN OUTSIDE AIR INTAKES AND ANY EXHAUST AIR OUTLET, FLUES, OR PLUMBING VENTS. COORDINATE WITH PLUMBING CONTRACTOR AND OTHER TRADES.
11. COORDINATE LOCATIONS OF ROOF OPENINGS WITH ARCHITECT AND STRUCTURAL ENGINEER.
12. PROVIDE VOLUME DAMPERS AT ALL SUPPLY, RETURN, AND EXHAUST BRANCH LINES AS ESTABLISHED BY THE LATEST EDITION OF SMACNA DUCT CONSTRUCTION MANUAL AND MECHANICAL DETAILS.
13. ALL DUCTWORK SHALL BE CONSTRUCTED OF A MINIMUM OF 26 GAUGE GALVANIZED STEEL OR GREATER OF U.S. STANDARD SHEET METAL A GAUGE ONE HOUR RATED, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
14. THE EXHAUST GRILLES ARE LOCATED CLOSE TO THE SOURCE AT THE HEIGHT INDICATED, PREFERABLE AT CORNERS. REVIEW EXACT LOCATION WITH THE LATEST FURNITURE. EXHAUST GRILLES ON RESTROOMS AND JANITOR AREAS ARE CEILING MOUNTED.
15. ENSURE THAT DUCT CONSTRUCTION AND SEALING STANDARDS COMPLY WITH IECC SECTION C.403.12.2.
16. ENSURE THAT THERMOSTAT SELECTIONS COMPLY WITH IECC SECTION C403.4.
17. PIPING INSULATION EXPOSED TO THE WEATHER SHALL BE PROTECTED FROM DAMAGE, INCLUDING THAT CAUSE BY SUNLIGHT, MOISTURE, EQUIPMENT MAINTENANCE AND WIND, AND SHALL PROVIDE SHIELDING FROM SOLAR RADIATION THAT CAN CAUSE DEGRADATION OF THE MATERIAL. ADHESIVE TAPE SHALL NOT BE PERMITTED.
18. PIPING SERVING AS PART OF THE HEATING OR COOLING SYSTEM SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH SECTION AND TABLE C403.12.3 OF THE IECC UNLESS EXEMPTIONS PROVIDED THEREIN APPLY.

1
19. ENSURE THAT DUCT AND PLENUM INSULATION AND SEALING COMPLY WITH IECC SECTION C403.12.1.
20. FOR OUTDOOR AIR INTAKE AND EXHAUST FANS ENSURE THAT ASSOCIATED MOTORIZED AND NON-MOTORIZED DAMPERS COMPLY WITH IECC SECTION C403.7.7.

1
THERMOSTATIC CONTROLS

PROVIDE 24/7 PROGRAMMABLE THERMOSTATS FOR EACH THERMAL ZONE.

1. THERMOSTAT MUST COME WITH INTEGRATED HEATING AND COOLING CONTROL CAPABILITY.
2. THERMOSTAT MUST BE CAPABLE OF OFF-HOUR THERMOSTATIC SETBACK VIA PROGRAMMABLE CONTROL.
3. THERMOSTAT SETBACK MUST BE CAPABLE OF TEMPORARILY OPERATING THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55 DEG-F AND UP TO 85 DEG-F FOR UP TO 2 HOURS..
4. THERMOSTAT MUST BE CAPABLE OF PROGRAMMING NOT LESS THAN 7 DIFFERENT DAILY SCHEDULES PER WEEK.
5. THERMOSTAT MUST BE CAPABLE OF RETAINING THEIR PROGRAMMING AND TIME SETTING FOR NOT LESS THAN 10 HOURS DURING POWER LOSS.
6. THERMOSTAT SHALL INCLUDE AUTOMATIC START AND STOP CONTROLS THAT WILL AUTOMATICALLY ADJUST THE DAILY START TIME OF THE HVAC SYSTEM IN ORDER TO BRING EACH ZONE TO THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY AND AUTOMATIC STOP CONTROLS SHALL BE CONFIGURED TO REDUCE THE HVAC SYSTEM HEATING TEMPERATURE SETPOINT AND INCREASE THE COOLING TEMPERATURE SETPOINT BUT NOT LESS THAT 2 DEG-F BEFORE THE SCHEDULE UNOCCUPIED PERIOD BASED ON THE THERMAL LAG AND ACCEPTABLE DRIFT IN ZONE TEMPERATURE THAT IS WITHIN COMPORT LIMITS.
7. THERMOSTATS SHALL BE CONFIGURED TO PROVIDE A TEMPERATURE RANGE OR DEADBAND OF NOT LEES THAN 5 DEG-F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM.

(X) KEYED MECHANICAL NOTES:

1. ROUTE 10" OUTSIDE AIR DUCT UP THRU ROOF. TERMINATE WITH RAIN CAP.
2. MOUNT CONDENSING UNIT ON HOUSEKEEPING PAD SUITABLE FOR ROOF TOP APPLICATIONS.
3. ROUTE 6" EXHAUST AIR DUCT UP THRU ROOF. TERMINATE WITH RAIN CAP.
4. ROUTE CONDENSATE LINE TO SINK TAILPIECE. PROVIDE TAILPIECE CONNECTION AND COORDINATE WITH PLUMBING CONTRACTOR.
5. PROVIDE RETURN AIR FILTER PLENUM BOX SIZED TO MATCH RETURN OPENING OF FAN COIL.
6. PROVIDE 24/7 PROGRAMMABLE THERMOSTAT MOUNTED AS ADA HEIGHT.
7. ROUTE 16X16 OUTSIDE AIR DUCT UP THRU ROOF. TERMINATE WITH GRAVITY DAMPER.
8. INSTALL MOTORIZED DAMPER IN 10ø" OUTSIDE AIR DUCT. DAMPER SHALL FULLY OPEN WHEN FAN COIL IS ENERGIZED AND FULLY CLOSE WHEN FAN COIL IS DE-ENERGIZED.
9. INSTALL MOTORIZED DAMPER IN 16X16 OUTSIDE AIR DUCT. DAMPER SHALL FULLY OPEN WHEN FAN COIL IS ENERGIZED AND FULLY CLOSE WHEN FAN COIL IS DE-ENERGIZED.

AIR DEVICE SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	AIR FLOW (CFM)	NECK SIZE (IN)	MAX STATIC PRESSURE DROP (INWC)	MAX NOISE CRITERIA (NC)	REMARKS	NOTES
A	TITUS	TMS-AA	SUPPLY	25 - 135	6	0.025	26	12" X 12", ALUMINUM CONSTRUCTION.	1, 2, 3
				140 - 245	8	0.038			
B	TITUS	TMS-AA	SUPPLY	25 - 135	6	0.017	26	24" X 24", ALUMINUM CONSTRUCTION.	1, 2, 3
				140 - 245	8	0.018			
				250 - 375	10	0.020			
				380 - 545	12	0.020			
E	PRICE	LV	SUPPLY	21 - 40	3.25 X 48	0.040	26	LINEAR VANE DIFFUSER, 1-WAY DEFLECTION, ALUMINUM CONSTRUCTION	1, 2, 3, 4
F	PRICE	LPB	RETURN	30 - 100	3 X 48	0.098	26	LINEAR BAR GRILLE, 1-WAY DEFLECTION, ALUMINUM CONSTRUCTION	1, 2, 3, 4

NOTES:
1. PROVIDE STANDARD WHITE FINISH FOR ALL AIR DEVICES UNLESS NOTED OTHERWISE ON PLAN.
2. PROVIDE FRAME FOR MOUNTING AIR DEVICE IN LAY-IN GRID CEILING UNLESS REFLECTED CEILING PLAN INDICATES HARD CEILING. IN AREAS WITH HARD CEILINGS, PROVIDE FRAMES FOR
3. UNLESS OTHERWISE NOTED, BRANCH DUCTS SERVING AIR DEVICES SHALL BE SAME SIZE AS NECK OF AIR DEVICE.
4. AIRFLOW DATA IS PER LINEAR FOOT OR AIR DEVICE.

SPLIT SYSTEM DOAS SCHEDULE

R410A ELECTRIC / ELECTRIC

DESIGNATION	FCU-5 / CU-2
SERVES	
MANUFACTURER	CARRIER
MODEL (INDOOR / OUTDOOR)	UDC
NOMINAL TONS	8
MINIMUM EFFICIENCY (SEER2)	13.4
INDOOR UNIT	
SUPPLY AIRFLOW (CFM)	1260
OUTSIDE AIRFLOW (CFM)	1260
OUTSIDE AIR TEMPERATURE (DB, DEG-F)	105.0
OUTSIDE AIR TEMPERATURE (WB, DEG-F)	78.0
LEAVING AIR TEMPERATURE (DB, DEG-F)	56.1
LEAVING AIR TEMPERATURE (WB, DEG-F)	55.9
OUTSIDE AIR TEMPERATURE (DB, DEG-F)	25.0
LEAVING AIR TEMPERATURE (DB, DEG-F)	85.0
SUPPLY AIRFLOW (CFM)	1260
MINIMUM HEATING CAPACITY (KW)	35.1
TYPE	MODULATING
EXTERNAL STATIC PRESSURE (INWG)	1.00
MOTOR SIZE (HP)	2.4
POWER (V / PH / HZ)	208 / 3 / 60
MINIMUM CIRCUIT AMPACITY (AMPS)	100.1
MAXIMUM FUSE SIZE (AMPS)	110
WEIGHT (LBS)	690
OUTDOOR UNIT	
OUTDOOR VOLTAGE/PHASE/HZ	208-230 / 1 / 60
MIN TOTAL COOLING CAPACITY (MBH)	91.9
MIN SENSIBLE COOLING CAPACITY (MBH)	63.9
MINIMUM CIRCUIT AMPACITY (AMPS)	36.5
MAXIMUM FUSE SIZE (AMPS)	60
WEIGHT (LBS)	600
MISCELLANEOUS	
COND DRAIN LINE SIZE (" NPT)	3/4
NOTES:	1,2,3,4,5,6,7

NOTES:
1. CASING LEAKAGE RATES SHALL BE 2% OR LESS.
2. FURNISH WITH SLIDE OUT BLOWER ASSEMBLY.
3. FURNISH WITH SINGLE WALL CASING WITH R-4 INSULATION AND MICROBIAL
4. FURNISH WITH ELECTRONIC EXPANSION VALVE WITH LOW AMBIENT AND
5. PROVIDE 1" THROWAWAY FILTERS.
6. PROVIDE WITH PROGRAMMABLE THERMOSTAT.
7. PROVIDE CONDENSING UNITS WITH HAIL GUARDS.

SPLIT SYSTEM SCHEDULE

R410A ELECTRIC / ELECTRIC

DESIGNATION	FCU-1 / CU-1	FCU-2 / CU-2	FCU-3 / CU-3	FCU-4 / CU-4
SERVES	EXECTUTIVE OFFICES	EXECTUTIVE OFFICES	EXECTUTIVE OFFICES	EXECTUTIVE OFFICES
MANUFACTURER	CARRIER	CARRIER	CARRIER	CARRIER
MODEL (INDOOR / OUTDOOR)	FT4BNBC36 / 24TPB736W	FT4BNBD60L / 24TPB760W	FT4BNBD60L / 24TPB760W	FT4BNBC36 / 24TPB736W
NOMINAL TONS	3	5	5	3
MINIMUM EFFICIENCY (SEER2)	16	16	16	16
INDOOR UNIT				
SUPPLY AIRFLOW (CFM)	1040	1740	1770	900
OUTSIDE AIRFLOW (CFM)	210	310	390	150
INDOOR AIR TEMPERATURE (DB, DEG-F)	75.0	75.0	75.0	75.0
INDOOR AIR TEMPERATURE (WB, DEG-F)	62.5	62.5	62.5	62.5
OUTSIDE AIR TEMPERATURE (DB, DEG-F)	105.0	105.0	105.0	105.0
OUTSIDE AIR TEMPERATURE (WB, DEG-F)	78.0	78.0	78.0	78.0
MIX AIR TEMPERATURE (DB, DEG-F)	81.1	80.3	81.6	80.0
MIX AIR TEMPERATURE (WB, DEG-F)	66.1	65.7	66.4	65.5
LEAVING AIR TEMPERATURE (DB, DEG-F)	58.9	57.8	58.7	56.2
LEAVING AIR TEMPERATURE (WB, DEG-F)	56.4	55.6	56.5	54.4
OUTSIDE AIR TEMPERATURE (DB, DEG-F)	25.0	25.0	25.0	25.0
LEAVING AIR TEMPERATURE (DB, DEG-F)	83.7	89.2	86.9	88.8
SUPPLY AIRFLOW (CFM)	1040	1740	1770	900
MINIMUM HEATING CAPACITY (KW)	7.5	15.0	15.0	7.5
EXTERNAL STATIC PRESSURE (INWG)	1.00	1.00	1.00	1.00
MOTOR SIZE (BHP)	0.50	0.75	0.75	0.50
POWER (V / PH / HZ)	208 / 1 / 60	208 / 1 / 60	208 / 1 / 60	208 / 1 / 60
MINIMUM CIRCUIT AMPACITY (AMPS)	49.5	96.3	96.3	49.5
MAXIMUM FUSE SIZE (AMPS)	60	100	100	60
WEIGHT (LBS)	146	203	203	146
OUTDOOR UNIT				
OUTDOOR VOLTAGE/PHASE/HZ	208-230 / 1 / 60	208-230 / 1 / 60	208-230 / 1 / 60	208-230 / 1 / 60
MIN TOTAL COOLING CAPACITY (MBH)	31.3	54.1	54.8	30.3
MIN SENSIBLE COOLING CAPACITY (MBH)	24.9	42.3	43.9	23.2
MINIMUM CIRCUIT AMPACITY (AMPS)	19.8	33.2	33.2	19.8
MAXIMUM FUSE SIZE (AMPS)	35	50	50	35
WEIGHT (LBS)	227	284	284	227
MISCELLANEOUS				
COND DRAIN LINE SIZE (" NPT)	3/4	3/4	3/4	3/4
NOTES:	1,2,3,4,5,6,7	1,2,3,4,5,6,7	1,2,3,4,5,6,7	1,2,3,4,5,6,7

NOTES:
1. CASING LEAKAGE RATES SHALL BE 2% OR LESS.
2. FURNISH WITH SLIDE OUT BLOWER ASSEMBLY.
3. FURNISH WITH SINGLE WALL CASING WITH R-4 INSULATION AND MICROBIAL COATING.
4. FURNISH WITH ELECTRONIC EXPANSION VALVE WITH LOW AMBIENT AND SUPERHEAT PROTECTION.
5. PROVIDE 1" THROWAWAY FILTERS.
6. PROVIDE WITH PROGRAMMABLE THERMOSTAT.
7. PROVIDE CONDENSING UNITS WITH HAIL GUARDS.

EXHAUST FAN SCHEDULE

MARK	EF-1	EF-2	EF-3
SERVES	RESTROOM 1 111	RESTROOM 2 109	CIGAR ROOMS
CFM	75	75	1455
E.S.P. (IN W.G.)	0.1	0.1	0.3
TYPE	CEILING	CEILING	ROOF
CONTROL	OCCUPANCY SENSOR	OCCUPANCY SENSOR	SEE NOTE 2
DIRECT/BELT DRIVE	DIRECT	DIRECT	DIRECT
FAN RPM	900	900	1,725
MOTOR POWER (W)	17	17	1/4 (HP)
VOLTS/PHASE/HERTZ	115 / 1 / 60	115 / 1 / 60	115 / 1 / 60
SONES	1.1	1.1	10.3
WEIGHT (LBS)	11	11	64
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK
MODEL NO.	SP-B80	SP-B80	CUE-120VG
NOTES	1	1	2

NOTES:
1. PROVIDE STD DISCONNECT, WHITE ALUM GRILLE, PREWIRED FAN SPEED CONTROLLER, GRAVITY
2. PROVIDE BALANCING DAMPER SET TO 0.5 INWH, GREENHECK MODEL BD-100 OR EQUIVALENT.
3. INTERLOCK WITH FCU-5

1
4. MECHANICAL VENTILATION SYSTEM FANS WITH MOTORS 1/12 HP (0.062 kW) IN CAPACITY SHALL MEET THE EFFICACY REQUIREMENTS OF SECTION C403.8.5 AT ONE OF MORE RATING POINT UNLESS SUCH FANS

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CARLOS FARIAS, P.E. 112838
ON 09/16 ,20 24

architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 24-064

PERMIT REVIW

BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

MECHANICAL SCHEDULES

M201

FILE NAME: 24-064 M201 Mechanical Schedules.dwg
FILE LOCATION: C:\Users\carlo\RGM Engineering Dropbox\Projects\2024\24-064 Brasao Restaurant\Mechanical_Standard Mechanical Files\
DATE: Thu, 31 Oct 2024 - 9:54am
PLOTTED BY: carlo

	CAD
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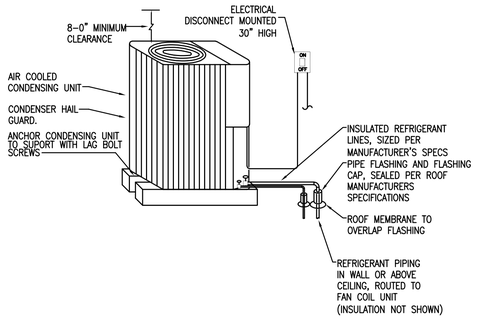
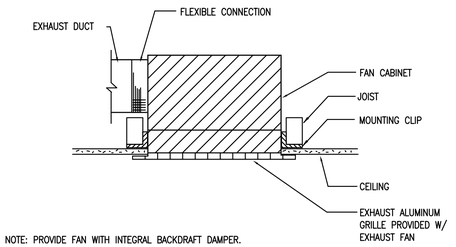
P	FC
E	HN/MG
M	CF/LS/TSM
PM	RGM



1 ROOF MOUNTED CONDENSING UNIT DETAIL

SCALE: NOT TO SCALE

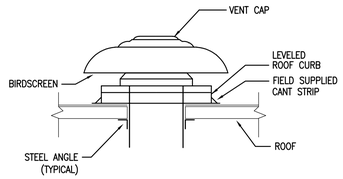
NOTE: COORDINATE ROOF PENETRATION WITH ROOFING CONTRACTOR FOR PROPER COMPLIANCE. FOR INSTALLATION AND WARRANTY ASSURANCE.



NOTE: PROVIDE FAN WITH INTEGRAL BACKDRAFT DAMPER.

2 CEILING MOUNTED FAN DETAIL

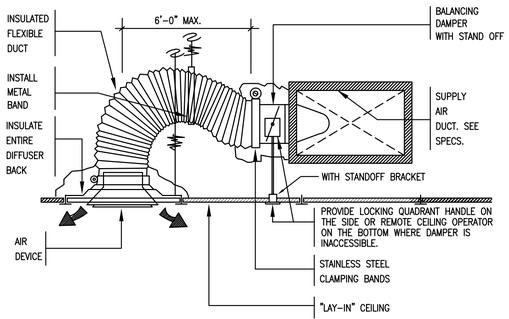
SCALE: NOT TO SCALE



3 GRAVITY HOOD DETAIL

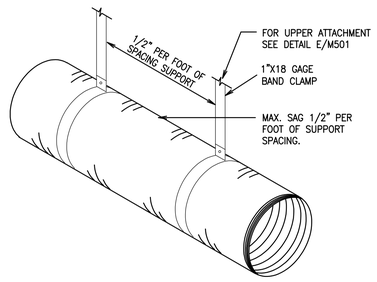
SCALE: NOT TO SCALE

MAXIMUM ALLOWABLE LENGTH OF FLEX DUCT RUNOUTS TO SUPPLY DIFFUSERS = 6'-0". FLEX DUCT IS NOT ALLOWED ON EXHAUST. RETURN, AND EXPOSED DUCTWORK.



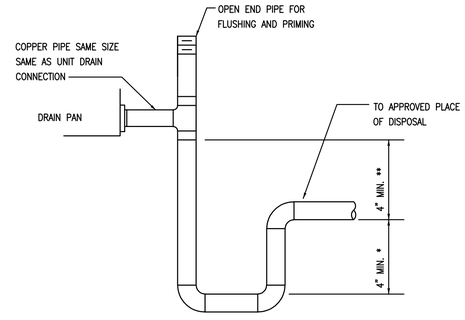
4 FLEXIBLE DUCT AND TAP DETAIL

SCALE: NOT TO SCALE



5 FLEXIBLE DUCT SUPPORT DETAIL

SCALE: NOT TO SCALE

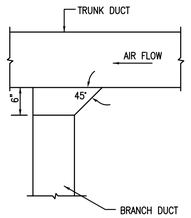


* OR 1" PLUS UNIT TOTAL PRESSURE WHICHEVER IS GREATER FOR BLOW THRU UNIT.

** OR 1" PLUS UNIT TOTAL PRESSURE WHICHEVER IS GREATER FOR DRAW THRU UNIT.

6 CONDENSATE DRAIN TRAP DETAIL

SCALE: NOT TO SCALE



7 DUCT BRANCH DETAIL

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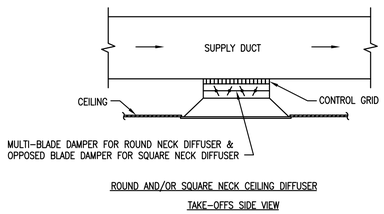

8 CEILING DIFFUSER DUCTWORK TAKE-OFFS

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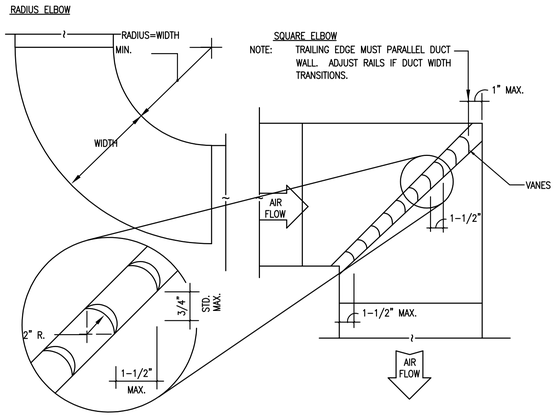

9 TYP. DUCT ELBOW

SCALE: NOT TO SCALE

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ISSUED DATE 2024-09-16
PROJECT NUMBER 24-064

PERMIT REVIW

BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

MECHANICAL DETAILS

M301

FILE NAME: 24-064 M301 Mechanical Details.dwg
FILE LOCATION: C:\Users\carlo\RGM Engineering Dropbox\Projects\2024\24-064 Brasao Restaurant\Mechanical_Standard Mechanical Files\
DATE: Fri, 13 Sep 2024 - 10:32am
PLOTTED BY: carlo

PM	M	E	P	CAD
RGM	CF/LS/TSA	HN/MG	FC	RAM/HG/TSA/LS

HEATING, VENTILATION AND AIR CONDITIONING SPECIFICATIONS
DIVISION 15 – MECHANICAL
SECTION – 15700

15700.01 GENERAL

A. PROVISIONS OF THE GENERAL CONDITIONS AND SUPPLEMENTARY GENERAL CONDITIONS, WHETHER ATTACHED HERETO OR NOT, SHALL GOVERN ALL WORK UNDER THIS SECTION.

B. ALL WORK COVERED UNDER THE FOLLOWING HVAC SPECIFICATIONS AND CONTRACT DRAWINGS IS TO BE PROVIDED AND INSTALLED BY AND IS TO BE THE RESPONSIBILITY OF THE HVAC CONTRACTOR, HERE IN REFERRED TO AS THE CONTRACTOR.

C. WHERE MANUFACTURERS' NAMES, CATALOG NUMBERS, OR TRADE NAMES APPEAR IN THE SPECIFICATIONS, IT IS NOT THE INTENT TO RESTRICT OR ELIMINATE COMPETITION, BUT MERELY TO ESTABLISH QUALITY OF MATERIAL REQUIRED. WHERE THE WORDS "OR APPROVED EQUAL" APPEAR THE "EQUAL" ITEM MUST CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS AND MUST BE SUBMITTED WITH COMPLETE INFORMATION TO THE ENGINEER FOR APPROVAL. IT IS IMPORTANT TO NOTE THAT ALL COSTS OF ADDITIONAL WORK REQUIRED OF OTHER TRADES CAUSED BY A SUBSTITUTION OF EQUIPMENT AND/OR MATERIALS SHALL BE BORNE BY THE CONTRACTOR.

D. FOR FURTHER DETAILS OF THE INSTALLATION REQUIREMENTS, REFER TO THE FIXTURE PLANS, REFRIGERATION SCHEDULES, FLOOR PLANS, PLUMBING PLANS, ELECTRIC PLANS, AIR CONDITIONING, HEATING AND VENTILATION PLANS, MANUFACTURER'S INSTALLATION INSTRUCTIONS AND ALL APPLICABLE CODES AND ORDINANCES.

E. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED COMPONENTS AND ACCESSORIES NECESSARY TO FACILITATE A COMPLETE INSTALLATION, INCLUDING ALL LABOR REQUIRED TO COMPLETE THE INSTALLATION AND PERFORM THE SERVICE COVERED BY THIS SPECIFICATION. THE CONTRACTOR IS RESPONSIBLE FOR UNLOADING, ASSEMBLING, AND INSTALLING ALL HVAC EQUIPMENT AND RELATED ITEMS UNLESS OTHERWISE SPECIFIED.

F. THE CONTRACTOR SHALL FAMILIARIZE THEMSELF WITH THE PROJECT AND SHALL COOPERATE WITH OTHER CONTRACTORS DOING WORK IN THE BUILDING. IF ANY CONFLICT, INTERFERENCE OR DISCREPANCIES COME TO THE ATTENTION OF THE CONTRACTOR, HE SHALL NOTIFY THE ENGINEER IMMEDIATELY, BEFORE PROCEEDING ANY FURTHER WITH THE INSTALLATION.

G. NO ADDITIONAL PAYMENT OVER AND ABOVE THE CONTRACT PRICE WILL BE MADE UNLESS THE CONTRACTOR RECEIVES A WRITTEN ORDER BY THE OWNER OR HIS REPRESENTATIVE FOR THE ADDITIONAL WORK.

H. PRIOR TO SUBMITTING THE PROPOSALS, THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS, SPECIFICATIONS, AND OTHER AVAILABLE ESTIMATING DATA, AND SHALL BECOME FULLY INFORMED AS TO THE EXTENT AND CHARACTER OF THE WORK REQUIRED, AND IT'S RELATION TO THE OTHER WORK IN THIS PROJECT. NO CONSIDERATION WILL BE GIVEN FOR ANY ALLEGED MISUNDERSTANDING OF THE MATERIALS TO BE FURNISHED OR WORK TO BE DONE; IT SHALL BE CLEARLY UNDERSTOOD THAT THE SUBMISSION OF A PROPOSAL INDICATES A COMPLETE UNDERSTANDING OF AND AGREEMENT TO ALL THE ITEMS AND CONDITIONS SPECIFIED HEREIN, OR INDICATED ON THE DRAWINGS.

I. PLANS AND SPECIFICATIONS ARE COMPLEMENTARY TO EACH OTHER, ANY DISCREPANCIES INDICATED ON DIFFERENT DRAWINGS, OR BETWEEN DRAWINGS AND SPECIFICATIONS, OR BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS, OR ERRORS SHOWN ON EITHER DRAWINGS OR SPECIFICATIONS SHALL BE PROMPTLY BROUGHT TO THE ATTENTION OF RGM ENGINEERING AND ASSOCIATES, INC. FOR DECISION PRIOR TO BID SUBMISSION.

J. COMPLY WITH THE LATEST APPLICABLE REQUIREMENTS OF THE IMC, IECC, NFPA AND THE LOCAL INSPECTION AUTHORITY WHO SHALL HAVE FINAL JURISDICTION. COMPLY ALSO WITH ALL REQUIREMENTS OF AMENDMENTS TO THE CODES FROM AUTHORITY HAVING JURISDICTION.

15700.02 DESIGN CONDITIONS

A. OUTDOOR DESIGN CONDITIONS ARE TO CONFORM TO VALUES FOR THE SPECIFIC LOCATION AS OUTLINED IN ASHRAE HANDBOOK FUNDAMENTALS VOLUME, LISTED IN CHAPTER 26 TABLE 1A, FROM COLUMNS OF 99.6% VALUES FOR HEATING AND 0.4% VALUES FOR COOLING.

B. INDOOR DESIGN TEMPERATURES FOR MAIN SALES AREA ARE INDICATED ON THE PLANS. ALL OTHER HEATED AND COOLED AREAS ARE TO MAINTAIN 70 DEG. F. HEATING AND 75 DEG. F. COOLING DURING OCCUPIED HOURS AT PUBLISHED OUTDOOR CONDITIONS. UNOCCUPIED REQUIREMENTS SHALL BE IN ACCORDANCE WITH INTERNATIONAL CODE SETBACK REQUIREMENTS.

C. INDOOR DESIGN RELATIVE HUMIDITY SHALL NOT EXCEED 30 PERCENT FOR HEATING. THE ACTUAL DESIGN RELATIVE HUMIDITY FOR COOLING SHALL BE WITHIN THE COMFORT ENVELOPE AS DEFINED IN ASHRAE 55, LISTED IN APPENDIX A, AND SELECTED FOR THE MINIMUM SYSTEM ENERGY USE FOR AIR CONDITIONING AND VENTILATION AND IN ACCORDANCE WITH THE OPERATING REQUIREMENTS OF THE DISPLAY FIXTURES, WHICH SHALL NOT EXCEED 55% RH.

15700.03 SCOPE OF WORK

A. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, RIGGING, APPLIANCES, TOOLS AND ACCESSORIES REQUIRED TO PROVIDE, INSTALL, CONNECT, AND TEST THE COMPLETE HEATING, VENTILATING AND AIR CONDITIONING SYSTEM AND ASSOCIATED EQUIPMENT IN ACCORDANCE WITH THESE SPECIFICATIONS AND THE APPLICABLE DRAWINGS.

B. THE HVAC CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS AND PAY ALL TAXES, FEES AND OTHER COSTS IN CONNECTION WITH HIS WORK. THE CONTRACTOR SHALL FILE ALL NECESSARY APPROVALS OF ALL DEPARTMENTS HAVING JURISDICTION, AND OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION FOR HIS WORK AND DELIVER SAME TO THE ARCHITECT BEFORE REQUEST FOR ACCEPTANCE AND FINAL PAYMENT FOR THE WORK. THE CONTRACTOR SHALL INCLUDE IN HIS SCOPE OF WORK, WITHOUT EXTRA COST TO THE OWNER, ALL LABOR, MATERIALS, SERVICES, APPARATUS, DRAWINGS (IN ADDITION TO CONTRACT DRAWINGS AND DOCUMENTS), IN ORDER TO COMPLY WITH ALL APPLICABLE CODES, LAWS, ORDINANCES, RULES AND REGULATIONS.
ALL MATERIALS FURNISHED AND ALL WORK INSTALLED SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER AND ALL APPLICABLE CODES AND REGULATIONS, INCLUDING BUT NOT LIMITED TO THE LATEST APPLICABLE EDITIONS OF THE ASHRAE GUIDE AND DATA BOOK, UL, ASME, NEMA, IBR, AMCA, NEC, NFPA, IEEE, OSHA, SMACNA, UNIFORM BUILDING AND MECHANICAL CODES.

IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL HVAC WORK IS PROVIDED AND INSTALLED IN STRICT ACCORDANCE WITH STATE AND LOCAL CODE SEISMIC RESTRAINT REQUIREMENTS.

SCOPE OF WORK SHALL INCLUDE, BUT NOT BE LIMITED TO:

* SPLIT SYSTEMS
* EXHAUST FANS
* SHEET METAL WORK AND INSULATION
* AIR DEVICES INCLUDING DIFFUSERS, REGISTERS AND GRILLES
* SYSTEM TEST AND BALANCE
* WARRANTY FOR ONE YEAR

15700.04 CONTRACT DRAWINGS

A. THE DRAWINGS ARE INTENDED TO SHOW THE GENERAL ARRANGEMENT AND THE EXTENT OF THE WORK TO BE DONE, HOWEVER, THE EXACT LOCATION AND ARRANGEMENT OF ALL PARTS SHALL BE DETERMINED AS THE WORK PROGRESSES.

B. THE LOCATIONS OF ALL PIPING, DUCTS AND EQUIPMENT AS SHOWN ON THE PLANS ARE APPROXIMATELY CORRECT, BUT THEY ARE SUBJECT TO SUCH MODIFICATIONS AS MAY BE NECESSARY AT THE TIME OF INSTALLATION TO MEET ANY CONDITIONS. SUCH CHANGES SHALL BE IMMEDIATELY REVIEWED WITH THE ENGINEER AND INSTITUTED BY THIS CONTRACTOR WITHOUT EXTRA COST.

C. THE LOCATIONS OF ALL PARTS AND EQUIPMENT SHALL BE COORDINATED WITH THE WORK OF ALL OTHER TRADES PRIOR TO SUBMITTING SHOP DRAWINGS FOR FABRICATION AND EQUIPMENT PURCHASE APPROVALS.

15700.05 SHOP DRAWING REVIEWS AND APPROVALS

A. ALL DETAILED EQUIPMENT CUTS, SHOP DRAWINGS, SUBSTITUTIONS, CHANGES, ETC. MUST BE SUBMITTED TO ARCHITECT, ENGINEER AND OWNER REPRESENTATIVE FOR FINAL REVIEW AND APPROVAL PRIOR TO PURCHASING, FABRICATING OR INSTALLING ANY PORTION OF THE HVAC CONTRACT.

B. SHOP DRAWINGS MUST SHOW ALL HVAC COMPONENTS WITH DUCTWORK DRAWN IN DOUBLE LINE, AT A SCALE OF 1/4" = 1'-0". THESE DRAWINGS MUST BE FULLY DETAILED, DIMENSIONED AND COORDINATED, INDICATING ALL OTHER TRADES AND DISCIPLINES.

C. FURNISH TO THE ARCHITECT/ENGINEER FOR REVIEW, SIX(6) COPIES OF SUCH EQUIPMENT SUBMITTALS AND SETTING DRAWINGS OR DIAGRAMS AS MAY BE REQUIRED FOR THE PROPER EXECUTION OF THE WORK. PROVIDE THREE (3) SETS OF DRAWINGS FOR ALL SHEET METAL WORK TO ARCHITECT/ENGINEER FOR USE IN REVIEW PROCESS.

D. CONTRACTORS MAY MAKE NECESSARY ADJUSTMENTS TO SUIT CONDITIONS AND IN ORDER TO COMPLY WITH THE GUARANTEE OF PERFORMANCE OF THE SYSTEMS. APPROVALS MUST BE OBTAINED FROM THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION CHANGES.

E. APPROVALS MUST ALSO BE OBTAINED FROM LOCAL AND STATE AUTHORITIES, INSURANCE UNDERWRITERS, OR OTHER AGENCIES HAVING JURISDICTION.

F. ALL WIRING DIAGRAMS OF THERMOSTATS, DAMPERS, INTERLOCKS ETC. SHALL BE INCLUDED ON SHOP DRAWINGS OR IF SUBMITTED SEPARATELY, SIX COPIES SHALL BE PROVIDED PRIOR TO ANY INSTALLATION OF THE HVAC CONTRACT.

G. UPON OWNER REQUEST, CONTRACTOR IS TO SUBMIT ACCURATE AS-BUILT SHOP DRAWINGS IN DIGITAL FORMAT REFLECTING ALL CHANGES TO THE MECHANICAL PLANS PRIOR TO REQUESTING FINAL PAYMENT.

15700.06 DETAILS OF EQUIPMENT

A. SUBMIT FOR APPROVAL SIX (6) COPIES OF THE MANUFACTURER'S DETAILED CERTIFIED DIMENSIONAL DRAWINGS OF ALL EQUIPMENT.

15700.07 SUBSTITUTIONS

A. AS NOTED ON THE PLANS AND DESCRIBED ON THE SCHEDULES, SUBSTITUTIONS MUST SATISFY ALL REQUIREMENTS AND MUST BE APPROVED BY THE ARCHITECT/ENGINEER.

15700.08 MATERIALS AND LABOR

A. ALL MATERIALS SHALL BE NEW AND MUST MEET THE STANDARDS AS STIPULATED IN THE LATEST EDITION OF ASHRAE GUIDE AND DATA BOOK.

B. GOOD WORKMANSHIP AND LABOR SHALL BE PERFORMED BY QUALIFIED MECHANICS AND MUST COMPLY WITH ASHRAE STANDARDS.

15700.09 ORDINANCES, SERVICES, PERMITS AND FEES

A. AS REQUIRED FOR THE PROPER INSTALLATION, ALL WORK SHALL BE PROVIDED BY THE CONTRACTOR IN FULL ACCORDANCE WITH THE REQUIREMENTS OF ALL LOCAL, STATE AND NATIONAL BUREAUS, BOARD OF FIRE UNDERWRITERS AND AUTHORITIES HAVING JURISDICTION, WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

B. CONTRACTOR SHALL PAY FOR AND OBTAIN ALL NECESSARY PERMITS PRIOR TO WORK COMMENCEMENT.

C. CONTRACTOR SHALL PREPARE, AT HIS EXPENSE, ANY AND ALL SHOP DRAWINGS AS REQUIRED TO OBTAIN PERMITS AND APPROVALS.

THESE DOCUMENTS SHALL BE SIGNED AND SEALED BY A DULY LICENSED ENGINEER AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.

15700.10 CHASES, CUTTING, PATCHING, ETC.

A. ALL CHASES, ROOF OPENINGS, CUTTING AND PATCHING SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH FULL INFORMATION REGARDING SIZE AND LOCATIONS, AND DETAILS OF ALL REQUIRED OPENINGS, CHASES OR OTHER PROVISIONS FOR THIS WORK TO THE GENERAL CONTRACTOR.

B. SHOULD ANY CUTTING AND PATCHING BE NECESSARY AS A RESULT OF FAILURE TO FURNISH SUCH INFORMATION IN A TIMELY MANNER, IT WILL THEN BE DONE BY THE GENERAL CONTRACTOR AT THE EXPENSE OF THE CONTRACTOR.

15700.11 TEMPORARY LIGHT AND POWER

A. THE ELECTRICAL CONTRACTOR ARRANGES FOR, INSTALLS AND MAINTAINS TEMPORARY LIGHT AND POWER AS DESCRIBED IN THE ELECTRICAL SPECIFICATIONS.

B. IT WILL BE THE DUTY OF THE CONTRACTOR TO ACQUAINT HIMSELF WITH THE LIMITATIONS OF THIS SERVICE BY THE ELECTRICAL CONTRACTOR, AND TO PLAN HIS WORK ACCORDINGLY.

15700.12 TEMPORARY HEAT

A. TEMPORARY HEAT FOR CONSTRUCTION PURPOSES AND FOR DRYING OUT THE BUILDING SHALL BE PROVIDED WHEN ORDERED BY THE GENERAL CONTRACTOR AND COSTS THEREOF WILL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

B. REFER TO THE GENERAL CONDITIONS WHEREIN TEMPORARY HEAT IS PROVIDED BY THE GENERAL CONTRACTOR AT HIS EXPENSE.

C. THE USE OF THE PERMANENT HEATING SYSTEM FOR TEMPORARY HEAT IS AT THE DIRECTION AND EXPENSE OF THE GENERAL CONTRACTOR AND SHALL NOT OBLIGATE THE OWNERS IN ANY MANNER WHATEVER.

15700.13 ELECTRICAL WORK

A. THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS FOR POWER WIRING AND CONNECTIONS OF ALL EQUIPMENT AND CONTROLS. THE CONTRACTOR SHALL PROVIDE CONTROL COMPONENTS AND WIRING DIAGRAMS FOR ALL HVAC EQUIPMENT TO ELECTRICAL CONTRACTOR AS REQUIRED. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONTROL WIRING, AND THE CONTRACTOR SHALL SUPERVISE ITS INSTALLATION WHEN REQUESTED.

B. THE DELIVERY OF ALL CONTROL COMPONENTS SHALL BE SCHEDULED SO AS NOT TO DELAY THE PROJECT. THE CONTRACTOR SHALL RECEIVE A SIGNED, DATED RECEIPT OF ALL ITEMS DELIVERED TO ELECTRICAL CONTRACTOR.

C. FUSED DISCONNECT SWITCHES WHERE REQUIRED, WILL BE FURNISHED BY THE HVAC CONTRACTOR UNLESS SPECIFICALLY NOTED TO BE SUPPLIED BY THE ELECTRICAL CONTRACTOR. WEATHERPROOF FUSED DISCONNECTS SHALL BE FURNISHED FOR ALL OUTDOOR AND WET, INDOOR APPLICATIONS.

D. HVAC CONTRACTOR SHALL PROVIDE ALL MOTOR STARTERS AS FOLLOWS: MOTORS 1/2 HP AND LARGER SHALL BE PROVIDED WITH COMBINATION UNFUSED LINE SWITCH AND CROSS-THE-LINE MAGNETIC STARTERS WITH START-STOP PUSH BUTTONS AND PILOT LIGHTS UNLESS AUTOMATIC CONTROL IS REQUIRED. IN THIS CASE, STARTERS ARE TO BE PROVIDED WITH H.O.A. SELECTOR SWITCH AND CONTROL TRANSFORMER.

ALL MOTORS BELOW 1/2 HP WHICH ARE NOT AUTOMATICALLY CONTROLLED SHALL BE PROVIDED WITH MANUALLY OPERATED STARTERS. ALL STARTERS SHALL BE BUILT AND RATED IN ACCORDANCE WITH NEMA AND AIEE STANDARDS.

ALL STARTERS TO INCLUDE THERMAL OVERLOAD RELAYS AND HEATERS PROPERLY SIZED TO PROTECT MOTOR. ALL POLY-PHASE MOTORS SHALL BE PROVIDED WITH PHASE PROTECTION.

E. THE CONTRACTOR TO VERIFY ALL ELECTRICAL POWER ON JOB SITE PRIOR TO ORDERING NEW EQUIPMENT.

F. THE CONTRACTOR SHALL PROVIDE ALL SMOKE DETECTORS FOR EMERGENCY SHUTDOWN TO COMPLY TO THE LATEST STATE & NFPA

90A CODES.

15700.14 LABELING

A. ALL CONTROL DEVICES SHALL BE CLEARLY LABELED WITH PLASTIC NAME PLATES WITH NUMBERS AND LETTERS NO LESS THAN 3/8" IN HEIGHT. A FRAMED PERMANENT OPERATING WIRING DIAGRAM SHALL BE LOCATED NEAR EACH SYSTEM SO THAT OPERATION OF THAT SYSTEM IS READILY AVAILABLE AT ALL TIMES. INTERNAL WIRING DIAGRAM OF INDIVIDUAL RELAYS, SHALL ALL BE LOCATED IN THEIR RESPECTIVE BOXES.

15700.15 SCHEDULING REQUIREMENTS

A. THE CONTRACTOR SHALL PERFORM HIS WORK IN THE BUILDING WHEN AND AS DIRECTED, AND GENERALLY IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION AND OPERATION OF THE BUILDING, SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE OTHER TRADES, OWNER AND OCCUPANTS.

B. CONSULT WITH THE GENERAL CONTRACTOR FOR SEQUENCE OF CONSTRUCTION PRIOR TO SUBMITTING BID. SOME OR ALL OF THIS WORK MAY BE PERFORMED IN PHASES OR ON AN OVERTIME SCHEDULE.

BID SHALL INCLUDE ALL SUCH PREMIUM TIME COSTS AND SHALL ELIMINATE ANY SUBSEQUENT REQUESTS FOR EXTRA COMPENSATION.

15700.16 COORDINATION

A. ALL WORK SHALL BE COORDINATED WITH THE STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, ARCHITECTURAL, FIRE PROTECTION AND LIGHTING DRAWINGS APPLYING TO THIS PROJECT PRIOR TO SUBMITTING SHOP DRAWINGS FOR FABRICATION APPROVAL.

B. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH ALL INVOLVED PARTIES AND PREPARE A SHOP DRAWING WHICH WILL ACCURATELY LOCATE AND DIMENSION ALL REQUIRED ROOF OPENINGS, CURBS AND SUPPORT PLATFORMS BASED UPON APPROVED EQUIPMENT SUBMITTALS.

C. ALL DIFFUSERS AND CEILING RETURNS SHALL BE COORDINATED WITH LIGHTING, SPEAKERS, SPRINKLER HEADS, ETC. IN FIELD WITH OWNER, TENANT AND ARCHITECT.

15700.17 RIGGING

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RIGGING, HOISTING AND FASTENING INTO PLACE ALL EQUIPMENT UNDER THIS CONTRACT AND SHALL COORDINATE WITH THE GENERAL CONTRACTOR REGARDING THE LOCATION OF ALL EQUIPMENT WITHIN, OUTSIDE AND ON TOP OF THE BUILDING TO INSURE PROPER ACCESS, SAFETY AND PROTECTION OF PEOPLE AND BUILDING SYSTEMS.

B. WHERE EQUIPMENT MUST BE MOVED OVER THE ROOF, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REINFORCING AND PROTECTING THE ROOF STRUCTURE AS REQUIRED TO AVOID OVERLOADING. SUCH SITUATIONS MUST BE APPROVED BY THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO MOVING EQUIPMENT.

15700.18 ROOF PROTECTION

A. WHEN WORKING ON THE FINISHED ROOF, THE CONTRACTOR MUST PROVIDE PLYWOOD SHEETS TO PROTECT ROOFING AND MUST TAKE ALL PRECAUTIONS TO AVOID DAMAGING THE ROOF. NO OPENINGS SHALL BE CUT IN THE ROOF AFTER THE ROOFING HAS BEEN COMPLETED UNLESS THEY ARE INSTALLED BY THE ROOFING CONTRACTOR, PAID FOR BY THE CONTRACTOR AND COORDINATED WITH THE GENERAL CONTRACTOR.

15700.20 FLASHING & CURBS

A. ALL DUCTS AND PIPING PASSING THROUGH THE ROOF SHALL BE FITTED WITH INSULATED CURBS, FLASHING COLLARS, RINGS OR SIMILAR DEVICES TO PROVIDE WEATHERTIGHT PROTECTION.

B. PROVIDE PRE-FAB CURBS AROUND ALL ROOF OPENINGS AND FLASHINGS TO MAKE WATERTIGHT OPENINGS. INCLUDE PITCH COLLARS AROUND ALL OPENINGS WHICH DO NOT HAVE CURBS. ALL CURBS TO SET ON ROOF STEEL, NOT DECKING AND ALL EQUIPMENT TO BE SET LEVEL. THE CONTRACTORS SHALL PROVIDE TAPERED CURBS AS REQUIRED.

C. FLASHINGS AND CURB WORK SHALL ALL BE INSTALLED IN COORDINATION WITH THE WORK OF THE ROOFING AND GENERAL CONTRACTORS.

D. FURNISH AND INSTALL PATE EQUIPMENT SUPPORTS FOR ROOF MOUNTED CONDENSING UNITS, UTILITY TYPE FANS, CHILLERS, ETC. ALL EQUIPMENT SUPPORTS SHALL BE PROPERLY SECURED TO BUILDING STRUCTURE. PROVIDE FLASHING AND COUNTER FLASHING TO MAKE WATERTIGHT CONSTRUCTION.

15700.21 FIRE RATED CONSTRUCTION

A. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY FROM THE ARCHITECTURAL PLANS, AREAS IN THE BUILDING WHICH HAVE BEEN DESIGNATED AS HAVING A FIRE RATING AND PROVIDE AND INSTALL THE NECESSARY FIRE DAMPERS WITH ACCESS DOORS. IF ANY DISCREPANCY EXISTS BETWEEN THE INDICATED AND REQUIRED FIRE DAMPER REQUIREMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO BID DATE.

B. THE CONTRACTOR MUST PROVIDE ALL FIRE RATED, DAMPERS, DIFFUSERS, GRILLES, REGISTERS, FIRE LINKS, ETC., IN ORDER TO COMPLY WITH ALL APPLICABLE CODES FOR FIRE RATED CONSTRUCTION, EVEN IF NOT EXPLICITLY SHOWN ON DRAWINGS.

15700.22 TEST & INSPECTIONS

A. THE CONTRACTOR SHALL PERFORM TESTS AND INSPECTIONS TO THE COMPLETE DUCT INSTALLATION FOR ANY LEAKS, DEFECTS OR DEFICIENCIES. ALL SUCH DEFICIENCIES DISCOVERED AS A RESULT OF THE TESTS, SHALL BE IMMEDIATELY REPAIRED.

B. THE CONTRACTOR SHALL MAKE ALL NECESSARY ADJUSTMENTS AND CORRECTIONS TO THE HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS FOR THE PURPOSE OF EQUALIZING THE FLOW OF AIR. ANY DAMPERS, DEFLECTORS OR DIFFUSERS NECESSARY TO BRING ABOUT

THIS ADJUSTMENT, WHETHER SPECIFICALLY SHOWN AND SPECIFIED OR NOT, SHALL BE PROVIDED BY THE CONTRACTOR.

C. EQUIPMENT AND SYSTEMS WHICH NORMALLY OPERATE DURING CERTAIN SEASONS OF THE YEAR SHALL BE TESTED DURING THE APPROPRIATE SEASON. TESTS SHALL BE PERFORMED ON INDIVIDUAL EQUIPMENT, SYSTEMS, AND THEIR RESPECTIVE CONTROLS.

D. WHENEVER THE EQUIPMENT OR SYSTEM UNDER TEST IS INTERRELATED WITH, AND DEPENDS UPON THE OPERATION OF OTHER EQUIPMENT, SYSTEMS AND CONTROLS FOR PROPER OPERATION, THE LATTER SHALL BE OPERATED SIMULTANEOUSLY WITH THE EQUIPMENT OR SYSTEM BEING TESTED.

E. AIR LEAKAGE TEST -- THE COMPLETE AIR HANDLING SYSTEMS, ALL VENTILATING EXHAUST SYSTEMS, INCLUDING ALL CONVENTIONAL SUPPLY AND RETURN DUCTWORK SHALL BE TESTED. LEAKAGE SHALL NOT EXCEED 5% OF RATED CFM AT RATED PRESSURE. ALL THE AIR LEAKS FOUND SHALL BE CORRECTED WITHIN ACCEPTABLE MARGIN.

F. THE CONTRACTOR SHALL DEMONSTRATE THAT ALL EQUIPMENT AND APPARATUS FULFILLS THE REQUIREMENTS OF THE SPECIFICATIONS.

G. ALL WORK PROVIDED UNDER THE CONTRACT SHALL OPERATE WITHOUT ANY OBJECTIONABLE NOISE OR VIBRATION. SHOULD OPERATION OF ANY ONE OR MORE OF THE SYSTEMS PRODUCE NOISE, OR VIBRATION, WHICH IS IN THE OPINION OF THE ENGINEER OBJECTIONABLE, THE CONTRACTOR SHALL AT HIS OWN EXPENSE MAKE CHANGES IN EQUIPMENT, ETC., AND DO ALL WORK NECESSARY TO ELIMINATE THE OBJECTIONABLE NOISE OR VIBRATION.

15700.24 OPERATIONS

A. THE HVAC CONTRACTOR SHALL HAVE COMPETENT MECHANICAL PERSONNEL PRESENT TO OWNER PROPER OPERATION OF ALL EQUIPMENT.

15700.25 BALANCING

A. NEBB CERTIFIED BALANCING CONTRACTOR MUST BE A COMPANY WHICH IS INDEPENDENT OF THE MECHANICAL CONTRACTOR AND BE APPROVED FOR USE BY THE ENGINEER PRIOR TO BALANCING THE SYSTEM.

B. BALANCE THE HEATING AND COOLING SYSTEMS TO PROVIDE UNIFORM TEMPERATURES IN ALL HEATED OR COOLED AREAS AND ROOMS.

C. BALANCE NEW AIR SYSTEMS TO QUANTITIES INDICATED AND FURNISH TO OWNER A REPORT INDICATING FAN PERFORMANCE, DIFFUSER, REGISTER AND GRILLE SIZES, LOCATIONS, CFM VALUES, DX COIL BYPASS VALUES, OUTSIDE AIR CFM QUANTITIES, MOTOR HP, RATED AMP, ACTUAL AMP, RATED VOLTAGE, ACTUAL VOLTAGE ETC..

D. THE CONTRACTOR SHALL SUBMIT BALANCE REPORT PRIOR TO FINAL ACCEPTANCE.

15700.26 WARRANTY

A. THE CONTRACTOR SHALL WARRANTY IN WRITING ALL MATERIALS AND WORKMANSHIP FOR THE PERIOD OF ONE(1) YEAR FROM DATE OF FINAL ACCEPTANCE BY OWNER. THIS SHALL INCLUDE AN AGREEMENT TO REPAIR AND MAKE GOOD OR REPLACE AT NO COST TO OWNER ANY AND ALL DEFECTS OF HIS WORK, EQUIPMENT, APPARATUS, OR MATERIALS DURING THAT PERIOD, WHICH ARISE FROM INCORRECT WORKMANSHIP, IMPERFECT OR INFERIOR MATERIALS, OR DEFECTIVE EQUIPMENT. THIS WARRANTY SHALL INCLUDE REPLACEMENT OF ALL PARTS OR BASIC COMPONENTS AS REQUIRED INCLUDING LABOR.

B. ALL NEW COMPRESSORS TO BE PROVIDED WITH A TOTAL OF FIVE(5) YEARS WARRANTY PERIOD, LABOR AND PARTS FOR FIRST YEAR, AND PARTS FOR REMAINING FOUR(4) YEARS.

C. WHEN SPECIAL GUARANTEES COVERING INSTALLATION, OPERATION OR PERFORMANCE OF ANY SYSTEMS OR APPLIANCES FURNISHED UNDER THE HVAC CONTRACT ARE HEREIN REQUIRED, THE FULL RESPONSIBILITY FOR FULFILLMENT OF SUCH GUARANTEES MUST BE ASSUMED BY THE HVAC CONTRACTOR, WHO SHALL OBTAIN WRITTEN GUARANTEES IN TRIPLICATE FROM ANY AND ALL SUBCONTRACTORS WITH TWO (2) COPIES TO BE FILED WITH THE ARCHITECT PRIOR TO FINAL ACCEPTANCE.

D. CERTAIN EQUIPMENT HAVE BEEN SPECIFIED WITH STAINLESS STEEL HEAT EXCHANGERS. IF APPROVED ALTERNATES OR A DESIGN CHANGE ON THE SPECIFIED EQUIPMENT RENDERS THIS OPTION UNAVAILABLE THEN AN EQUIVALENT WARRANTY SHALL BE PROVIDE WITH THE STANDARD HEAT EXCHANGER.

15700.27 FINAL APPROVAL

A. UPON WRITTEN APPROVAL NOTIFICATION BY THE CONTRACTOR THAT HIS WORK IS COMPLETED AND READY FOR ACCEPTANCE, ALL REQUIRED INSPECTIONS AND TESTS SHALL BE PERFORMED BY THE CONTRACTOR, AS DIRECTED BY, AND IN THE PRESENCE OF THE OWNER. IF FAILURE TO COMPLY WITH THE CONTRACT REQUIREMENTS ARE DISCOVERED, THE HVAC CONTRACTOR SHALL AT ONCE REMEDY ALL DEFECTS AND SHORTCOMINGS AND PERFORM ANY ADDITIONAL REQUIRED TESTS AT HIS EXPENSE.

15700.28 FILTER CHANGES

A. HVAC CONTRACTOR MUST NOT OPERATE ANY HVAC UNITS WITHOUT FILTERS INSTALLED DURING CONSTRUCTION SEQUENCE.

B. FILTERS MUST BE CHANGED TWO (2) WEEKS PRIOR TO FINAL BALANCING OF THE SYSTEM. THIS FILTER CHANGE MUST BE WITNESSED BY A REPRESENTATIVE OF THE OWNER.

15700.29 MISCELLANEOUS

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL OF HIS DEBRIS.

B. THE CONTRACTOR SHALL FIELD VERIFY PROJECT REQUIREMENTS, AND EXISTING CONDITIONS PRIOR TO BID SUBMISSION.

C. THE CONTRACTOR SHALL PROVIDE SUFFICIENT FIREPROOF TARPAULINS, AND COVER ALL EQUIPMENT IN WORK AREA WITH SAME DURING WORK OPERATIONS.

D. DO NOT SCALE FROM THE DRAWINGS; FOLLOW WRITTEN DIMENSIONS WHERE GIVEN AND FIELD VERIFY ALL DIMENSIONS WHERE NECESSARY.

E. REFER TO CONTRACT DRAWINGS FOR GENERAL HVAC NOTES.

15700.30 SHEET METAL WORK

A. FURNISH AND INSTALL ALL SHEET METAL DUCTWORK, PLENUMS, GOOSENECKS, AND ALL ITEMS OF METAL WORK AS NECESSARY TO COMPLETE THE VARIOUS AIR CONDITIONING, VENTILATING AND HEATING SYSTEMS OF THE BUILDING SO THEY ARE READY FOR SATISFACTORY OPERATION. WHILE THE INSTALLATION SHOULD ADHERE TO THE PLANS AND SPECIFICATIONS AS MUCH AS POSSIBLE, THE CONTRACTOR SHALL BE ENTITLED TO MODIFY THE RUNS AND SIZES OF THE DUCTWORK AND TO MAKE OFFSETS, WHERE NECESSARY TO ACCOMMODATE BUILDING CONDITIONS, ONLY AFTER RECEIPT OF WRITTEN APPROVAL FROM THE ENGINEER. ALL SUCH CHANGES OR OFFSETS SHALL BE INDICATED IN THE "AS-BUILT" DRAWINGS SUBMITTED AT THE END OF THE JOB.

B. PROVIDE DEFLECTOR FINS, TURNING VANES, PLENUMS, FIRE DAMPERS, AIR INTAKES, EXHAUST DUCTS, GOOSENECKS AND ALL ITEMS OF METAL WORK, AS REQUIRED.

C. DUCTWORK SHALL BE CONSTRUCTED ACCORDING TO THE "EQUIPMENT HANDBOOK" PUBLISHED BY ASHRAE AND "HVAC DUCT CONSTRUCTION STANDARDS" PUBLISHED BY SMACNA.

D. SHEET METAL GAUGES, TRANSVERSE JOINTS, LONGITUDINAL SEAMS AND INTERMEDIATE REINFORCING MUST BE IN CONFORMANCE WITH SMACNA STANDARDS AS FOLLOWS:

1) LOW PRESSURE DUCTS PER SMACNA TABLE 2" W.G.
2) MEDIUM PRESSURE DUCTS PER SMACNA TABLE 4" W.G.
3) HIGH PRESSURE DUCTS PER SMACNA TABLE 6" W.G.

E. ALL DUCTWORK SHALL BE CONSTRUCTED OF A MINIMUM OF 26 GAUGE GALVANIZED STEEL OR GREATER OF U.S. STANDARD SHEET METAL GAUGE ONE HOUR FIRE RATED, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

F. ALL CHANGES IN DIRECTION, HORIZONTAL OR VERTICAL, SHALL BE SHAPED TO PERMIT THE EASIEST POSSIBLE AIR FLOW, USING CENTERLINE RADIUS OF 1-1/2 X WIDTH. FOR ALL CASES WHERE 90 DEGREE SQUARE ELBOWS ARE USED, APPROVED DOUBLE THICKNESS TURNING VANES SHALL BE USED. HVAC CONTRACTOR TO SUBMIT DETAILS FOR APPROVAL.

G. ALL DUCTWORK SHALL BE BUILT WITH APPROVED JOINTS AND SEAMS SMOOTH ON THE INSIDE WITH LAPS MADE IN THE DIRECTION OF THE AIR FLOW AND NO FLANGES PROJECTING INTO THE AIR STREAM. OUTSIDE SEAMS AND JOINTS SHOULD BE AS NEAR TO AIR TIGHT AS POSSIBLE WITH A NEAT FINISH. THE CONTRACTOR TO CAULK ALL JOINTS WHICH ARE NOT MECHANICALLY TIGHT.

H. VOLUME DAMPERS AS SHOWN ON DRAWINGS AND AS REQUIRED FOR PROPER OPERATION, SHALL BE INSTALLED IN THE VARIOUS BRANCHES FOR USE IN BALANCING THE SYSTEM. VOLUME DAMPERS SHALL BE OF MULTI-OPPOSED BLADE CONSTRUCTION FOR ALL DUCTS OVER 12" IN DEPTH. ALL VOLUME DAMPERS TO BE OF THE LOCKING QUADRANT TYPE WITH APPROVED LOCKING DEVICES MOUNTED OUTSIDE OF THE DUCT IN AN ACCESSIBLE PLACE.

I. FIRE DAMPERS – WHERE DUCTWORK PIERCES FIRE RATED WALLS, SHAFTS, STOPPING OR FLOORS TYPE B, UL LISTED FIRE DAMPERS SHOULD BE INSTALLED. FIRE DAMPERS SHALL BE AS MANUFACTURED BY AIR BALANCE INC., RUSKIN, OR APPROVED EQUAL. REFER TO THE DRAWINGS FOR SPECIFIC INSTALLATION REQUIREMENTS.

J. ACCESS DOORS SHALL BE PROVIDED IN THE SHEET METAL DUCTWORK WHERE REQUIRED FOR INSPECTION, AUTOMATIC CONTROL DAMPERS, FIRE DAMPERS, FILTERS, OR ANY OTHER APPARATUS CONCEALED BEHIND SHEET METAL WORK. ACCESS DOORS IN INSULATED DUCT SHALL BE DOUBLE PANEL AND INSULATED. ALL ACCESS DOORS TO BE SECURED WITH HEAVY DUTY WINDOW TYPE LATCHES, COMPLETE WITH GASKETS AND FRAMES.

K. ALL DUCTWORK AND PIPING TO BE LOCATED ABOVE THE CEILING SPACE UNLESS OTHERWISE NOTED.

L. ALL SUPPLY AND EXHAUST DUCTWORK SHALL BE HUNG FROM THE TOP OF STRUCTURAL MEMBERS.

M. WHEN USED, ALL GREASE HOOD EXHAUST DUCT SHALL BE WELDED STEEL WITH CURRENT FIRE RATED INSULATION, PROVIDE FIRE RATED ACCESS PANELS WHERE REQUIRED.

15700.31 FLEXIBLE CONNECTIONS

A. THE INTAKE AND DISCHARGE COLLARS OF ALL IN-LINE FANS, AIR CONDITIONING UNITS AND HEATERS SHALL BE PROVIDED WITH APPROVED FLEXIBLE CONNECTIONS TO ELIMINATE VIBRATION IN THE DUCTWORK. USE 10 OZ. DOUBLE WOVEN CANVAS CONNECTIONS AND INSTALL IN CLOSE PROXIMITY TO THE HVAC EQUIPMENT.

15700.32 FLEXIBLE DUCTWORK

A. USE UL LISTED, STANDARD 181, CLASS 1 AIR DUCT MATERIAL WITH FLAME SPREAD NO HIGHER THAN 25, AND SMOKE DEVELOPMENT NO HIGHER THAN 50.

B. ALL FLEXIBLE DUCTWORK MUST BE INSULATED.

C. FLEXIBLE DUCTWORK IS USED TO ALLOW FOR FLEXIBILITY IN FINAL LOCATION OF DIFFUSERS, GRILLES, AND REGISTERS. LENGTH IS NOT TO EXCEED LINEAR MEASURE OF 5'-0". EXTEND SHEET METAL DUCT WITHIN 5'-0" OF AIR DEVICE FOR COMPLIANCE. FLEXIBLE DUCTWORK IS NOT ALLOWED FOR USE IN ANY PART OF RETURN OR EXHAUST AIR SYSTEMS. FLEXIBLE DUCTS SHALL NOT PASS THROUGH FIRE RATED CONSTRUCTION.

D. FLEXIBLE DUCTWORK IS TO BE INSTALLED WITH GOOD WORKMANSHIP, SUPPORTED 24" ON CERTAIN TO MAINTAIN FULL CROSS SECTIONAL AREA THROUGHOUT.

15700.33 DUCT INSULATION

A. ON ALL CONCEALED SUPPLY DUCTWORK, FURNISH AND INSTALL OWENS CORNING FOIL FACED, FIBERGLASS DUCTWRAP WITH AN INSTALLED INSULATING VALUE OF R-6. INSULATION SHALL BE ATTACHED TO SHEET METAL DUCTS BY MEANS OF WIRE, BANDS OR SIMILAR FASTENING. ALL JOINTS AND GAPS IN THE APPLIED INSULATION SHALL BE FILLED WITH MASTIC TO A THICKNESS OF THE APPLIED INSULATION. THIS SHALL APPLY TO ALL HEATING AND COOLING DUCTS, UNLESS OTHERWISE NOTED ON THE PLANS.

B. INTERNALLY LINE ALL EXPOSED SUPPLY DUCTS. FURNISH AND INSTALL NOT LESS THAN 1-1/2" ULTRA LINER, WITH A THERMAL EFFICIENCY OF (.24). APPLY TO METAL WITH ADHESIVE AND FURTHER SECURE WITH WELDED PINS AND SPEED WASHERS 12" O.C. ENSURE THAT IMPRINTED SURFACE FACES AIR STREAM. FURTHERMORE, INSTALL 2" WIDE SHEET METAL NOSING ON LEADING EDGES OF LINER TO PREVENT THE LINER FROM BEING PICKED UP BY AIR FLOW.

C. INSULATION SHALL BE CUT SLIGHTLY LONGER THAN CIRCUMFERENCE OF DUCT TO ENSURE FULL THICKNESS AT CORNERS. INSULATION SHALL BE ADHERED TO DUCT WITH FIRE RESISTANT ADHESIVE, FOSTER 30-33 OR APPROVED EQUAL, APPLIED TO DUCT IN 4" WIDE BRUSH STRIPS, ON 12" CENTERS. INSULATION SHALL BE FURTHER SECURED WITH LOOPS OF #12 WIDTH GAUGE GALVANIZED STEEL WIRE ON 12" CENTERS.

D. DUCT INSULATION SHALL HAVE A VAPOR BARRIER FACING TYPE FSK (.001 ALUMINUM FOIL, GLASS SCRIM, KRAFT) LAMINATE, APPLIED OVER THE INSULATION. ALL JOINTS SHALL BE SEALED WITH 2" SIDE VAPOR BARRIER TAPE SEALED WITH FOSTER 30-33 OR EQUAL.

E. ALL FLEXIBLE DUCTWORK SHALL BE INSULATED.

F. ALL ROUND DUCTWORK SHALL BE INSULATED WITH FIBERGLASS DUCTWRAP.

G. ALL SHEET METAL DUCTWORK LOCATED OUTDOORS SHALL BE EXTERNALLY LINED WITH 1" THICK OWENS CORNING 800 FR DUCT BOARD STAPLED EVERY 2" WITH HEAT SENSITIVE FOIL TAPE COVERING AT ALL JOINTS. USE MECHANICAL DUCT, FASTENERS 2'-0" ON CENTER ALONG CENTER LINE OF EACH SIDE OF DUCT. COAT DUCT BOARD WITH MARATHON INDUSTRIES IC 550 WHITE MASTIC IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

H. INTERNALLY LINE ALL DUCTS FROM UNIT SUPPLY AND RETURN CONNECTIONS TO 10'-0" FROM UNIT TO MINIMIZE NOISE. FURNISH AND INSTALL NOT LESS THAN 1" ULTRA LINER, WITH A THERMAL EFFICIENCY OF (.24). APPLY TO METAL WITH ADHESIVE AND FURTHER SECURE WITH WELDED PINS AND SPEED WASHERS 12" O.C. ENSURE THAT IMPRINTED SURFACE FACES AIR STREAM. FURTHERMORE, INSTALL 2" WIDE SHEET METAL NOSING ON LEADING EDGES OF LINER TO PREVENT THE LINER FROM BEING PICKED UP BY AIR FLOW.

15700.36 CONDENSATE CONNECTIONS

A. ALL INTERIOR HVAC EQUIPMENT CONDENSATE DRAINS ARE TO BE BY CONTRACTOR.

B. THE CONTRACTOR TO SUPPLY AND INSTALL TRAPPED CONDENSATE TRAPS AND DRAINS TO NEAREST APPROVED PLUMBING SYSTEM FOR ALL HVAC EQUIPMENT.

15700.37 AIR CONDITIONING UNITS

SPLIT SYSTEMS AIR CONDITIONING UNITS

A. FURNISH AND INSTALL "SPLIT SYSTEM TYPE" EQUIPMENT AS SHOWN ON THE SCHEDULES. REFER TO EQUIPMENT SCHEDULE FOR MANUFACTURER. SPLIT-SYSTEM AIR-CONDITIONING AND HEAT PUMP UNITS CONSISTING OF SEPARATE EVAPORATOR AND COMPRESSOR-CONDENSER COMPONENTS. UNITS ARE DESIGNED FOR EXPOSED OR CONCEALED MOUNTING, MAY BE CONNECTED TO DUCTS.

B. PRODUCT DATA: FOR EACH UNIT INDICATED. INCLUDE PERFORMANCE DATA IN TERMS OF CAPACITIES, OUTLET VELOCITIES, STATIC PRESSURES, SOUND POWER CHARACTERISTICS, MOTOR REQUIREMENTS, AND ELECTRICAL CHARACTERISTICS.

C. INSTALL EVAPORATOR-FAN COMPONENTS USING MANUFACTURER'S STANDARD MOUNTING DEVICES SECURELY FASTENED TO BUILDING STRUCTURE.

D. REFRIGERATION CYCLES MUST BE SUCH THAT AT 40 DEG.F. AMBIENT OR ABOVE, WHEN THE THERMOSTATS CALL FOR COOLING, THE COMPRESSOR WILL START AND REMAIN IN OPERATION UNTIL THE THERMOSTAT IS SATISFIED. PROVIDE TWO STAGES CONTROL OF COOLING WITH TWO CIRCUIT COOLING COIL WHEN SPECIFIED ON SCHEDULES.

E. FILTERS TO BE INSTALLED IN THE RETURN SIDE OF AIR HANDLING UNIT, SHALL BE 1" MERV 8 PLEATED MINIMUM WITH MEDIA CONTAINED IN A RIGID FRAME HAVING MESH MESH ACROSS BOTH ENTERING AND LEAVING FACES OF THE MEDIA. REFER TO SCHEDULES FOR ANY SPECIAL FILTER REQUIREMENT.

F. ALL CONTROLS TO BE FACTORY WIRED AND ENCLOSED IN A WEATHER-PROOF CABINET. FURNISH AS STANDARD ALL MOTOR STARTERS AND FUSING FOR SINGLE POINT CONNECTION WITH CONTROL TRANSFORMER, HIGH PRESSURE CUT OUT AND FAN CYCLING HEAD PRESSURE CONTROL, LOW PRESSURE CUT OUT, SINGLE PUMP DOWN, FREEZESTAT, OIL PRESSURE SWITCH, AND THERMOSTATS WITH AUTOMATIC SUMMER WINTER CHANGEOVER.

G. LEAK TEST: AFTER INSTALLATION, CHARGE SYSTEM AND TEST FOR LEAKS. REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST.

H. OPERATIONAL TEST: AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, START UNITS TO CONFIRM PROPER MOTOR ROTATION AND UNIT OPERATION. REMOVE MALFUNCTIONING UNITS, REPLACE WITH NEW COMPONENTS, AND RETEST.

I. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS AND EQUIPMENT.

15700.38 SUPPORTS

A. ALL SUPPORTS AND HANGERS FOR EQUIPMENT TO BE INSTALLED UNDER THIS CONTRACT, SHALL BE PROVIDED BY THE CONTRACTOR. WHERE EXCESSIVE LOADING REQUIRES PROPER DISTRIBUTION OF THE WEIGHT, PROPER SUPPORTS MUST BE PROVIDED, SUBJECT TO THE ARCHITECT'S APPROVAL. ALL SUPPORTS SHALL BE OF STRUCTURAL STEEL.

B. NO SUPPORTING MEMBERS MAY BE LAID UPON THE COMPLETED ROOFING. IF ADDITIONAL UNPREDICTED SUPPORTS ARE REQUIRED, THEN THEY MUST BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BONDING COMPANY AT THE EXPENSE OF THE CONTRACTOR.

C. CHECK ROOFTOP SUPPORTS WHICH ARE PROVIDED BY OTHERS, AND MAKE ADJUSTMENTS AS REQUIRED FOR THE PROVIDED EQUIPMENT. VERIFY ALL DIMENSIONS OF SUPPORTS AND OPENINGS WITH ARCHITECT AND GENERAL CONTRACTOR BASED UPON APPROVED SUBMITTALS.

D. INTERIOR UNITS MUST BE HUNG FROM THE ROOF STEEL AND THE TOP CHORD ONLY OF STEEL JOISTS USING PROPER VIBRATION ISOLATORS.

15700.39 EXHAUST FANS & INTAKE DUCTS

A. FURNISH AND INSTALL WHERE SHOWN ON THE PLANS, COOK, GREENHECK, PENN OR EQUAL EXHAUST FANS OF TYPE AND SIZE AS INDICATED. FANS SHALL BE EQUIPPED WITH HOUSINGS WEATHER-STRIPPED FOR WALL MOUNTING OR WITH A BASE FOR ROOF MOUNTING AND FLASHING.

B. ALL FANS SHALL BE EQUIPPED WITH THE ACCESSORIES AS OUTLINED ON THE DRAWINGS AND SCHEDULES.

C. ROOF AND WALL OPENINGS, IF NOT PROVIDED IN THE STRUCTURAL FRAMING, MUST BE CUT AND FRAMED BY THE CONTRACTOR.

D. PROVIDE ALL COMBUSTION AIR INTAKES AS SHOWN ON THE PLANS. FOR ROOF INTAKE, PROVIDE GOOSENECK WITH BIRD SCREEN.

E. FLUES AND EXHAUST FANS SHALL BE INSTALLED A MINIMUM OF 10 FEET AWAY FROM FRESH AIR INTAKE.

F. ALL MULTI PHASE FANS 1 HP. AND HIGHER SHALL BE PROVIDED WITH A SOFT STARTER.

15700.41 UNIT HEATERS (NOT APPLICABLE)

A. FOR GAS UNIT HEATERS, REFER TO SECTION 15700.42 FOR FLUE SPECIFICATIONS. INSTALL IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURERS OF THAT EQUIPMENT, AND LOCAL AUTHORITIES, AS SHOWN ON THE PLANS.

B. FOR ELECTRIC UNIT HEATERS, INSTALL IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURERS OF THAT EQUIPMENT, AND LOCAL AUTHORITIES, AS SHOWN ON THE PLANS.

15700.42 FLUES

A. PROVIDE AND INSTALL TYPE B GAS VENT, METALBESTOS GALVANIZED DOUBLE WALL ROUND VENT, OR APPROVED EQUAL, INSULATED FLUES WITH NON DRAFT CAP FOR ALL GAS APPLIANCES. INSTALL IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURERS OF THAT EQUIPMENT, AND LOCAL AUTHORITIES, AS SHOWN ON THE PLANS.

B. FLUES SHALL BE INSTALLED WITH CLEARANCES OF NOT LESS THAN THAT INDICATED BY THE BUREAU OF COMBUSTIBLE, FIRE INSURANCE RATING ORGANIZATION. FLUE SHALL BE PROPERLY FLASHED TO ROOF WITH HOOD ETC. THE CONTRACTOR SHALL PROVIDE FLASHINGS TO THE ROOFING CONTRACTOR WHO WILL SET AND FLASH AS REQUIRED.

C. ALL FLUES UNDER POSITIVE PRESSURE SHALL BE OF GAS TIGHT CONSTRUCTION.

D. FLUES SHALL BE INSTALLED A MINIMUM OF 10 FEET AWAY FROM FRESH AIR INTAKE.

15700.44 AIR DEVICES

A. PROVIDE WHERE SHOWN ON DRAWINGS AND INDICATED ON SCHEDULES, ALL DIFFUSERS, GRILLES AND REGISTERS OF SIZES INDICATED. ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE MANUFACTURED BY TITUS, CARNES, NAILOR OR PRICE.

B. SUPPLY REGISTERS SHALL BE ADJUSTABLE, DOUBLE DEFLECTION TYPE WITH OPPOSED BLADE DAMPERS.

15700.46 VIBRATION ELIMINATORS

A. APPROVED VIBRATION ELIMINATORS SHALL BE PROVIDED FOR ALL VIBRATING EQUIPMENT INCLUDING MOTORS, COMPRESSORS, AIR CONDITIONING UNITS, ETC.

15700.47 CONTROLS

A. PROVIDE FACTORY CONTROLS AS INDICATED ON DRAWINGS FOR ALL UNITS.

B. MISCELLANEOUS CONTROLS -- PROVIDE SMOKE DETECTORS AND ALL NECESSARY SWITCHES, SENSORS, RELAYS TO TO ENSURE A COMPLETE AND OPERABLE SYSTEM, IN COMPLIANCE WITH ALL CODE REQUIREMENTS.

C. REFER TO HVAC DRAWINGS FOR CONTROLS TO BE PROVIDED FOR REMAINING AND MISCELLANEOUS HVAC EQUIPMENT.

GENERAL NOTE: IF CONFLICT EXISTS BETWEEN THESE SPECIFICATION AND THE CONTRACT, CODES, UFC OR REGULATION THE MOST STRINGENT REQUIREMENT(S) SHALL PREVAIL.

END OF HVAC SPECIFICATIONS

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ON 09/16 ,2024

STATE OF TEXAS
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LICENSED
PROFESSIONAL ENGINEER

architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 24-064

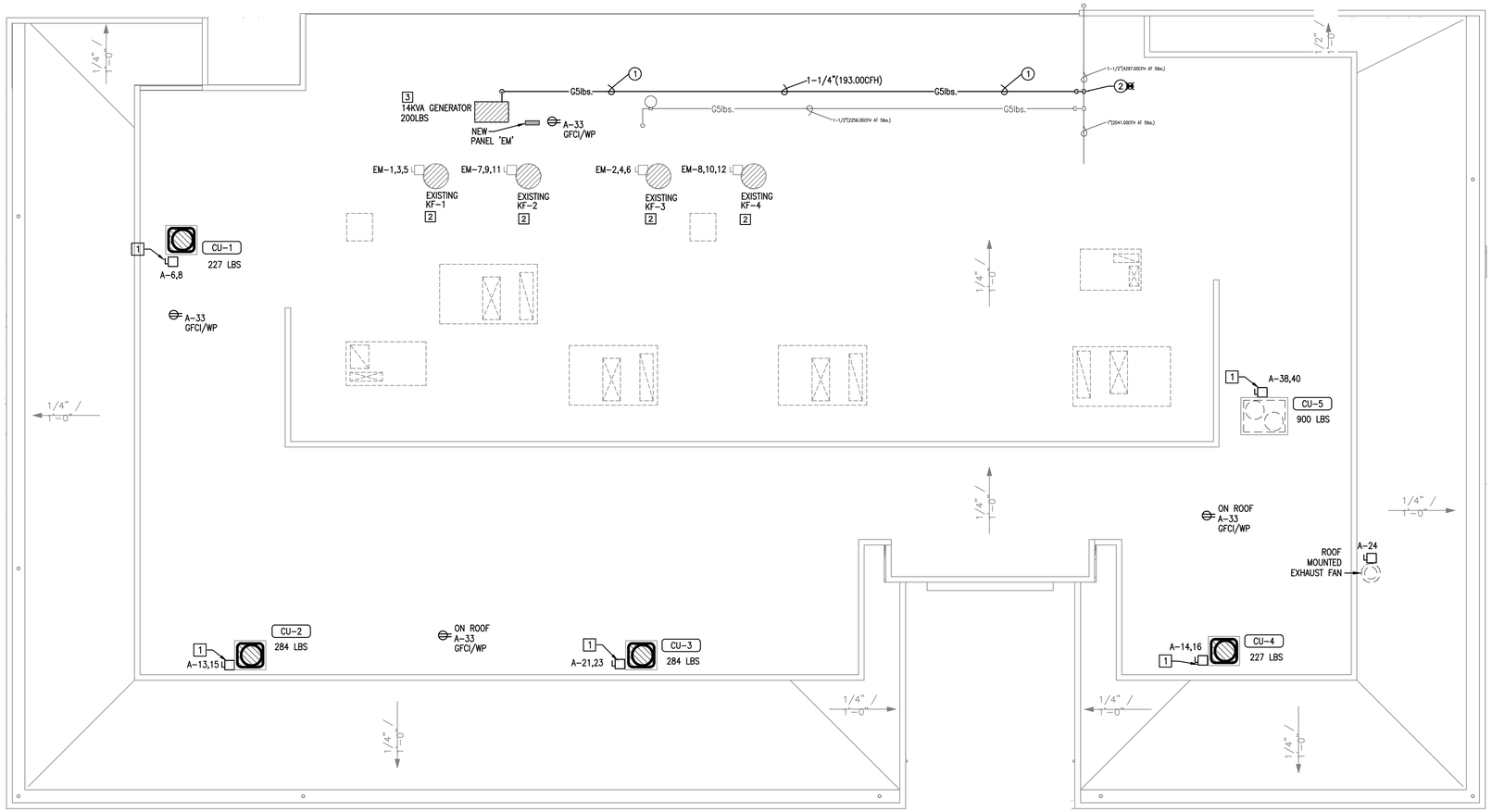
PERMIT REVIW

BRASAO REMODEL
19210 I10 WEST
SAN ANTONIO, TX 78257

MECHANICAL SPECIFICATIONS
M401

FILE NAME: 24-064 M401 Mechanical Specifications.dwg
FILE LOCATION: C:\Users\carlo\RGM Engineering Dropbox\Projects\2024\24-064 Brasao Restaurant\Mechanical_Standard Mechanical Files\
DATE: Fri, 13 Sep 2024 - 10:35am
PLOTTED BY: carlo

PM	M	E	P		CAD
RGM	CF/LS/TSA	HN/MG	FC		RAM/HG/TSA/LS



1 MEP ROOF PLAN
SCALE: 1/8"=1'-0"

KEYED POWER NOTES:

1. 60A/NF/2P/NE3R/HD DISCONNECT SWITCH.
2. REMOVE EXISTING KF1, KF2, KF4 & KF5 KITCHEN EXHAUST FANS FROM EXISTING PANELS 'LD' & 'LC' AND CONNECT TO NEW PANEL 'EM'
3. NEW 14KVA GENERATOR.

PLUMBING GENERAL NOTES:

1. FIELD VERIFY EXISTING SITE CONDITIONS AND COORDINATE WITH ALL OTHER TRADES.

KEYED PLUMBING NOTES:

1. INSTALL NEW GAS PIPING ON ROOF. INSTALL WITH MAPA MS-4 NYLON BASED ROLLER SUPPORTS WITH SPACING AS REQUIRED BY CODE.

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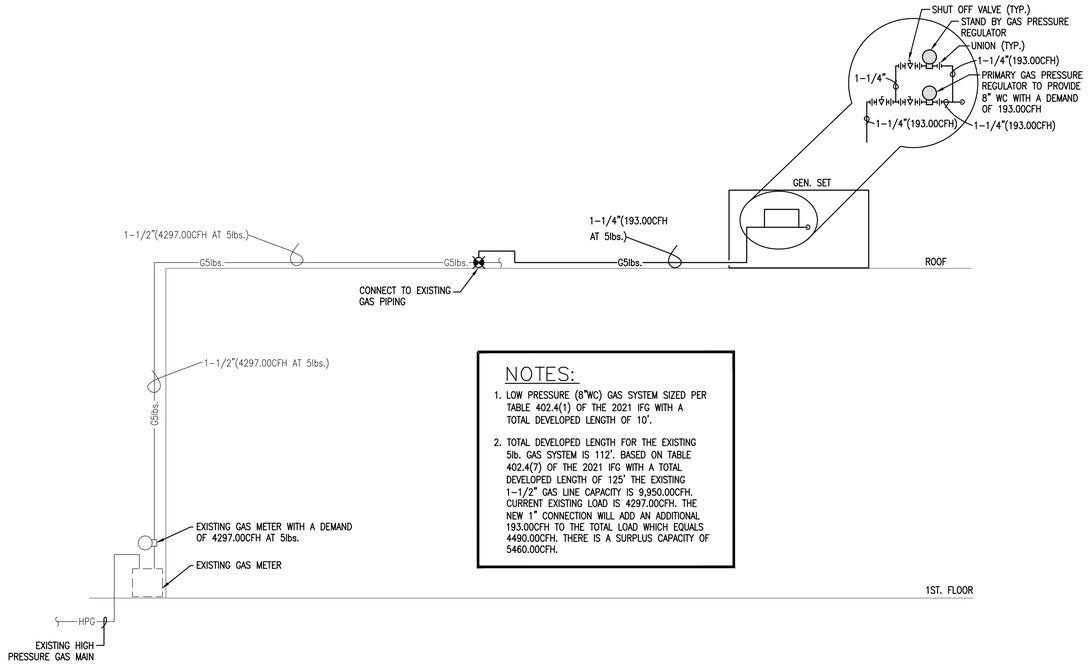

NOTES:

1. LOW PRESSURE (8"WC) GAS SYSTEM SIZED PER TABLE 402.4(1) OF THE 2021 IFG WITH A TOTAL DEVELOPED LENGTH OF 10'.
2. TOTAL DEVELOPED LENGTH FOR THE EXISTING 5lb. GAS SYSTEM IS 112'. BASED ON TABLE 402.4(7) OF THE 2021 IFG WITH A TOTAL DEVELOPED LENGTH OF 125' THE EXISTING 1-1/2" GAS LINE CAPACITY IS 9,950.00CFH. CURRENT EXISTING LOAD IS 4297.00CFH. THE NEW 1" CONNECTION WILL ADD AN ADDITIONAL 193.00CFH TO THE TOTAL LOAD WHICH EQUALS 4490.00CFH. THERE IS A SURPLUS CAPACITY OF 5460.00CFH.

2 GAS PIPE SIZING SCHEMATIC
SCALE: NOT TO SCALE

architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 24-064

PERMIT REVIW

BRASAO REMODEL

19210 110 WEST
SAN ANTONIO, TX 78257

MEP101

MEP ROOF PLAN

SYMBOLS & ABBREVIATIONS

CIRCUITS

- CONDUIT CONCEALED IN WALL OR CEILING WITH PHASE, NEUTRAL AND GROUND CONDUCTOR UNLESS OTHERWISE NOTED
- SWITCH LEG
- CONDUIT UNDERGROUND / UNDER SLAB
- HOME RUN TO PANEL. CIRCUIT NUMBERS, PHASE, NEUTRAL AND GROUND CONDUCTORS INDICATED. ALL CONDUCTORS TO BE #12 EXCEPT WHERE NOTED. CONDUIT TO BE 1/2" OR AS NOTED ON PLANS AND SPECIFICATIONS.
- (SC) SPLIT CIRCUIT

EQUIPMENT

- MOTOR, HP AS INDICATED
- CONTROLLER TO BE FURNISHED UNDER DIVISION 15
- VFD VARIABLE FREQUENCY DRIVE CONTROLLER FURNISHED UNDER DIVISION 15
- DISCONNECT SWITCH
- COMBINATION MOTOR STARTER/DISCONNECT SWITCH
- IC INTERCOM J BOX, WALL MOUNTED AT HEIGHT INDICATED ON DRAWINGS
- IC INTERCOM J BOX, CEILING MOUNTED
- J JUNCTION BOX, CEILING MOUNTED
- J JUNCTION BOX, WALL MOUNTED
- PB PULL BOX
- PC PULL CORD
- S SPEAKER, CEILING MOUNTED
- EQUIPMENT CONNECTION
- PC PHOTOCELL ON ROOF
- PANELBOARD (SURFACE MOUNTED)
- PANELBOARD (RECESSED MOUNTED)
- SWBD SWITCHBOARD OR DISTRIBUTION BOARD
- PLYWOOD TELEPHONE BACKBOARD
- DUCT TYPE SMOKE DETECTOR WITH SAMPLING TUBES FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR.

RECEPTACLES

- GROUND CONNECTION.
- 20 AMP SIMPLEX RECEPTACLE, +16" OR AS NOTED.
- 20 AMP DUPLEX RECEPTACLE, +16" OR AS NOTED.
- WP,GFCI 20 AMP GROUND FAULT DUPLEX RECEPTACLE, +16" OR AS NOTED.
- AC 20 AMP DUPLEX RECEPTACLE MOUNTED 6" ABOVE COUNTER TOP OR AS NOTED ON ARCHITECTURAL DRAWINGS.
- T TAMPER RESISTANT DUPLEX RECEPTACLE, +16" OR AS NOTED.
- 20 AMP QUAD PLEX RECEPTACLE, +16" OR AS NOTED.
- GROUND FAULT DUPLEX RECEPTACLE, +16" OR AS NOTED.
- RECEPTACLE ON EMERGENCY CIRCUIT (COLOR RED)
- 20 AMP FLOOR MOUNTED DUPLEX RECEPTACLE
- 20 AMP CEILING MOUNTED DUPLEX RECEPTACLE
- 120V, 1PH EQUIPMENT CONNECTION RECEPTACLE, +16" OR AS NOTED
- 208V, 1PH EQUIPMENT CONNECTION RECEPTACLE, +16" OR AS NOTED
- 208V, 3PH EQUIPMENT CONNECTION RECEPTACLE, +16" OR AS NOTED
- 480V, 1PH EQUIPMENT CONNECTION RECEPTACLE, +16" OR AS NOTED
- 480V, 3PH EQUIPMENT CONNECTION RECEPTACLE, +16" OR AS NOTED
- T THERMOSTAT PROVIDED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE JUNCTION BOX AND CONDUIT.
- T.V. OUTLET
- DATA OUTLET. PROVIDE 4"X4" J-BOX WITH SINGLE GANG RING AND 1" CONDUIT AND PULLSTRING STUBBED ABOVE CEILING, +16" OR AS NOTED.
- PHONE OUTLET. PROVIDE 4"X4" J-BOX WITH SINGLE GANG RING AND 1" CONDUIT AND PULLSTRING STUBBED ABOVE CEILING, +16" OR AS NOTED.
- TELE/DATA JACK

LIGHTING

- HID SITE LIGHTING FIXTURE MOUNTED ON A POLE
- INCANDESCENT, FLUORESCENT OR HID FIXTURE, RECESSED FIXTURE
- DOWNLIGHT
- INCANDESCENT, FLUORESCENT OR HID FIXTURE, WALL MOUNTED
- FLUSH MOUNT FIXTURE
- PENDANT FIXTURE
- WALL SCONCE FIXTURE
- WALL PACK
- X FLUORESCENT 2x4 FIXTURE, CEILING OR SURFACE MOUNTED,
- X FLUORESCENT 2x4 FIXTURE, WITH EMERGENCY BATTERY PACK
- X FLUORESCENT 2x2 FIXTURE, CEILING OR SURFACE MOUNTED,
- X FLUORESCENT 2x2 FIXTURE, WITH EMERGENCY BATTERY PACK
- X FLUORESCENT 1x4 FIXTURE
- X FLUORESCENT 1x4 FIXTURE, WITH EMERGENCY BATTERY PACK
- FLUORESCENT STRIP FIXTURE
- FLUORESCENT STRIP FIXTURE, WITH EMERGENCY BATTER PACK
- EXIT LIGHT, DIRECTION ARROWS AS INDICATED
- EXIT LIGHT, DIRECTION ARROWS AS INDICATED
- EMERGENCY LIGHT
- MS MOTION SENSOR, WALL OR POLE MOUNTED
- $ SINGLE POLE LINE VOLTAGE TOGGLE SWITCH, 48" OR AS NOTED.
- $x SINGLE POLE LINE VOLTAGE TOGGLE SWITCH, SUBSCRIPT INDICATES ASSOCIATED CIRCUITRY
- $3 THREE-WAY SWITCHED, 48" OR AS NOTED.
- $DS DIMMER SWITCH- LINE VOLTAGE
- $DC DIMMER CONTROL- LOW VOLTAGE
- $P PILOT LIGHT
- $OD OCCUPANCY/DIMMER CONTROL- LOW VOLTAGE
- $OS OCCUPANCY SWITCH- LINE VOLTAGE
- $OC OCCUPANCY CONTROL- LOW VOLTAGE
- $M,$MT MANUAL MOTOR STARTER (T=THERMAL OVERLOAD SIZED FOR MOTOR)
- $V VACANCY SWITCH- LINE VOLTAGE
- OS OCCUPANCY SENSOR- CEILING MOUNTED LINE VOLTAGE
- OC OCCUPANCY CONTROL- CEILING MOUNTED LOW VOLTAGE
- $T TIMER SWITCHWITH (4) TIME PRESETS 2-5-10-15 MINUTES, 1000W, 20A, 1HP, 120V, 3-WIRE. EQUAL TO LEVITON 6215M.
- DS DAYLIGHT SENSOR- CEILING MOUNTED LOW VOLTAGE
- $F FAN SPEED CONTROL SWITCH

SPECIAL SYSTEMS

- SD D DUCT MOUNTED SMOKE DETECTOR
- SD CEILING MOUNTED SMOKE DETECTOR
- B DOOR LOCK RELEASE BUTTON
- BL BEACON LIGHT
- DL DOOR LOCKS
- AV AUDIO/VISUAL FIRE ALARM
- AV AUDIO/VISUAL FIRE ALARM, CEILING
- V VISUAL FIRE ALARM
- A AUDIO FIRE ALARM
- F FIRE PULL STATION
- F FIRE PULL STATION HORN
- H HORN
- NC NURSE CALL STATION
- FACP FIRE ALARM CONTROL PANEL
- ANN FIRE ALARM ANNUNCIATOR

DEMOLITION

- CONDUIT, EQUIPMENT, DEVICE TO BE DEMOLISHED.
- (LIGHT SHADE) EXISTING TO REMAIN.

ABBREVIATIONS

ABV	ABOVE
AC	ABOVE COUNTER
A/C	AIR CONDITIONED
AD	ACCESS DOOR
A.F.	ARC FAULT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AMCA	AIR MOVING AND CONDITIONING ASSOCIATION, INC.
AMP	AMPERE(S)
&	AND
AP	ACCESS PANEL
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
@	AT
AV	AUTOMATIC AIR VENT ASSEMBLY
AUX	AUXILIARY
BLDG	BUILDING
C	CONDUIT
CA	COMPRESSED AIR
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CI	CAST IRON
CLG	CEILING
CKT	CIRCUIT
CO	CLEANOUT
COND	CONDENSATE
CONN	CONNECTION
CONT	CONTINUATION
CU	CONDENSING UNIT
CU	COPPER
℄	CENTER LINE
D	DRAIN
DB	DRY BULB
DIA	DIAMETER
DIST	DISTRIBUTION
DN	DOWN
DWGS	DRAWINGS
(e)	EXISTING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
ELEV	ELEVATION
ELEC	ELECTRICAL
EG	EXHAUST GRILLE
EGC	EQUIPMENT GROUNDING CONDUCTOR
ENT	ENTERING
EQUIP	EQUIPMENT
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMP.
EXH	EXHAUST
EXIST	EXISTING
F	DEGREES FAHRENHEIT
FD	FIRE DAMPER
FLEX	FLEXIBLE
FLR	FLOOR
FPM	FEET PER MINUTE
FT	FEET
GAL	GALLON
GALV	GALVANIZED
GEC	GROUNDING EQUIPMENT CONDUCTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HZ	HERTZ
IC	INTERCOM
IE	INVERT ELEVATION
IG	ISOLATED GROUND
IN	INCHES
INC	INCANDESCENT
IN WG	INCHES OF WATER
INSUL	INSULATION
JB	JUNCTION BOX
KVA	KILOVOLT AMPERE
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LB	POUND
LPA	LINE PRESSURE ALARM
LVR	LOUVER
MA	MEDICAL AIR
MAX	MAXIMUM
MD	MANUAL DAMPER
MECH	MECHANICAL
MH	MOUNTING HEIGHT
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTG	MOUNTING
MV	MEDICAL VACUUM
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
N_2	NITROGEN
O_2	OXYGEN
OA	OUTSIDE AIR
OAH	OUTSIDE AIR INTAKE HOOD
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OH	OVERHEAD
OS&Y	OUTSIDE SCREW & YOKE GATE VALVE
P	PUMP
P-2	PLBG. FIXTURE DESIGNATION
PCT	PERCENT (%)
PLBG	PLUMBING
PNL	PANELBOARD
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH GAS
PWR	POWER
RA	RETURN AIR
RE:4P6	REFER TO DETAIL 4 DRAWING P-6
REQ'D	REQUIRED
RET	RETURN
RF	RELIEF FAN
RG	RETURN GRILLE
RH	RELATIVE HUMIDITY
RHD	RELIEF HOOD
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SC	SPLIT CIRCUIT
SD	SMOKE DAMPER
SEC	SECOND
SF	SUPPLY FAN
SMACNA	SHEET METAL AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SP	STATIC PRESSURE
SPEC	SPECIFICATION
STD	STANDARD
STL	STEEL
SU	STUB UP FROM FLOOR
SW	SWITCH
SWBD	SWITCHBOARD
T	TELEPHONE
TEMP	TEMPERATURE
TXV	THERMOSTATIC EXPANSION VALVE
TV	TELEVISION
TYP	TYPICAL
UF	UNDER FLOOR
UGSE	UNDERGROUND SECONDAY ELECTRIC
UL	UNDERWRITERS LABORATORIES
UPE	UNDERGROUND PRIMARY ELECTRIC
UON	UNLESS OTHERWISE NOTED
V	VACUUM
V	VOLT(S)
VB	VALVE BOX
VEL	VELOCITY
VENT	VENTILATE
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
VTR	VENT THRU ROOF
W	WIRE
W/	WITH
W/O	WITHOUT
W.A.G.E.	WASTE ANESTHESIA GAS EVACUATION
WB	WET BULB
WP	WEATHERPROOF
Y.C.O.	YARD CLEANOUT
ZVB	ZONE VALVE BOX
1P	ONE POLE
2P	TWO POLE
3P	THREE POLE
ø	PHASE
+44	HEIGHT ABOVE FLOOR TO CENTER LINE OF OUTLET BOX

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architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 24-0

PERMIT REVIW

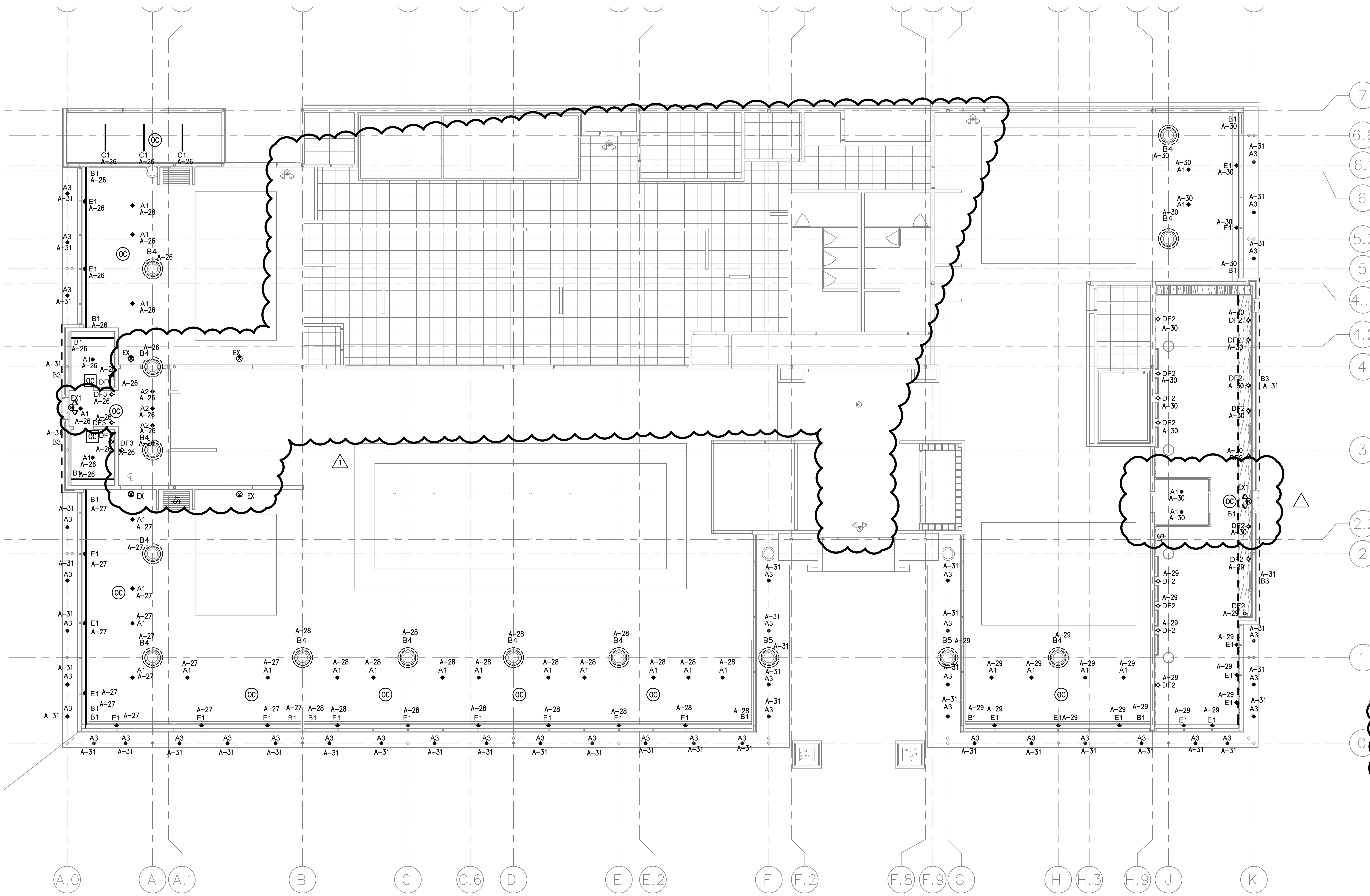
BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

E100

ELECTRICAL SYMBOLS AND ABBREVIATIONS

RGM | CF/LS/TSH | HN/MG | FC | RAM/HE/TSH/LS



1 ELECTRICAL LIGHTING FLOOR PLAN

SCALE: 1/8"=1'-0"

LIGHTING FIXTURE SCHEDULE						
TYPE	MANUFACTURER	ITEM	DESCRIPTION	WATTS	VOLTAGE	COMMENTS
A1	TECH LIGHTING	E2R-L-LO-930-40-DS-(HOUSING)-(DRIVER) + E2R-L-B-L-(FINISH) + MOC-SF	RECESSED LED - FIXED DOWNLIGHT - 2" SROUND APERTURE	12	UNV	3000K
A2	TECH LIGHTING	E2R-(CEILING)-LH-930-30-A-(HOUSING)-(DRIVER) + E2R-(CEILING)-W-W-(FINISH)	RECESSED LED - WALL WASHER - 2" ROUND APERTURE	17	UNV	3000K
A3	TECH LIGHTING	E2R-L-LO-930-40-DS-(HOUSING)-(DRIVER) + E2R-L-B-L-(FINISH) + MOC-SF	RECESSED LED - FIXED DOWNLIGHT - 2" SROUND APERTURE	12	UNV	3000K
B1	ECOSENSE	L35-I-(LENGTH)-08-30-80-MULT-120	LINEAR LED STRIP LIGHT - COVE	8	UNV	3000K
B2	KKDC	MO-SA-A-0404-27-I (LENGTH)-67-0300-TBD-G+KKBK-21	EXTERIOR WALL GRAZE UPLIGHT	12.2	UNV	2700K
B3	LIGHT ENGINE	GLS-FLEX-4SQ-ICKR-XX (RADIUS)-BAR-0-10V	LED RING COLUMN GRAZE - CONCEALED	9	UNV	2700K
B4	LIGHT ENGINE	GLS-FLEX-4SQ-ICKR-XX (RADIUS)-BAR-0-10V	LED RING COLUMN GRAZE - CONCEALED - DAMP RATED	9	UNV	2700K
C1	GAMMALUX	GB22D2-1 SLED9-(VOLTAGE)-(DRIVER)-8S-(MOUNTING)-ASLMD-(FINISH)	LINEAR LED LIGHT - UTILITARIAN - 4' LONG	8	UNV	3000K
DF1	SCHOOL HOUSE	LUNA SCONCE W/ 6" SHADE	DECORATIVE FIXTURE - RESTROOMS	15	UNV	
DF2	DELTA	NOCTA SQ85 DOWN-UP VWFL 927 DIM5	WALL SCONCE - UP/DOWN - CIGAR ROOM SCONCE	13	UNV	
DF3	DELTA	NOCTA SQ85 DOWN-UP VWFL 927 DIM5	WALL SCONCE - UP/DOWN - RESTAURANT	13	UNV	
E1	LUCIFER	ISL1-1-XX-80L-02B-1-SSL-BB / PSA-24V-60-1AT2	RECESSED LED STEP LIGHT - DIMMABLE	3.4	UNV	2700K
X1	CHLORIDE	VERWEM	EXIT SIGN	5	UNV	
EX1	SIGNIFY	CLXNRW	EXIT SIGN EMERGENCY LIGHT COMBO		UNV	

LEGEND:

- $D — 0-10V DIMMER SWITCH, GREENGATE OR EQUAL
- $T — PROGRAMMABLE 7-DAY TIMER WALL SWITCH – INTERMATIC E1600 SERIES OR EQUAL BY OTHERS
- $OD — WALL SENSOR/DIMMING SWITCH COMBINATION.
- VS — VACANCY SENSOR, MANUAL– ON/SENSOR OFF AFTER MAX. 20 MINUTES GREENGATE "ONW-D" OR EQUAL
- OC — OCCUPANCY SENSOR, SENSOR– ON/OFF GREENGATE "ONW-D" OR EQUAL
- (VS) — CEILING MOUNTED VACANCY SENSOR, GREENGATE "VAC-DT'
- (OC) — CEILING MOUNTED OCCUPANCY SENSOR, GREENGATE "OAC-DT'

LIGHTING GENERAL NOTES:

1. SWITCH LOCATIONS SHALL BE VERIFIED BY ARCHITECT PRIOR TO CLOSING OF WALLS
2. EMERGENCY LIGHT FIXTURES AND EXIT SIGNS SHALL HAVE THEIR BATTERY UNIT CONNECTED TO THE NORMAL AREA LIGHTING CIRCUIT AHEAD OF ANY LOCAL SWITCHES. IN ACCORDANCE WITH NEC 700.12(F)(2)(3).
3. LIGHTING CONTROLS SHALL COMPLY WITH IECC 2021.
4. ALL AREAS CONTROLLED BY OCCUPANCY SENSORS SHALL BE DIMMABLE.
5. THEY SHALL AUTOMATICALLY TURN OFF LIGHTS WITHIN 20 MINUTES AFTER ALL OCCUPANTS HAVE LEFT THE SPACE
6. THEY SHALL BE MANUAL ON OR CONTROLLED TO AUTOMATICALLY TURN ON THE LIGHTING TO NOT MORE THAN 50-PERCENT POWER
7. THEY SHALL INCORPORATE A MANUAL CONTROL TO ALLOW OCCUPANTS TO TURN OFF LIGHTS.
8. BUILDING FACADE LIGHTING SHALL AUTOMATICALLY SHUT OFF FROM NOT LATER THAN ONE HOUR AFTER BUSINESS CLOSING TO NOT EARLIER THAN ONE HOUR BEFORE BUSINESS OPENING, PER IECC SECT C405.2.7.2
9. EXTERIOR TIME SWITCH CONTROL SHALL HAVE A CLOCK CAPABLE OF BEING PROGRAMMED FOR NOT FEWER THAN 7 DAYS. 2) EXTERIOR TIME SWITCH CONTROL SHALL BE CAPABLE OF BEING SET FOR 7 DIFFERENT DAY TYPES PER WEEK. 3) EXTERIOR TIME SWITCH CONTROL SHALL INCORPORATE AN AUTOMATIC HOLIDAY SETBACK FEATURE. 4) THEY SHALL HAVE PROGRAM BACKUP CAPABILITIES THAT PREVENT THE LOSS OF PROGRAM AND TIME SETTINGS FOR A PERIOD OF NOT LESS THAN 10 HOURS IN THE EVENT THAT POWER IS INTERRUPTED.

LIGHTING FUNCTIONAL TESTING/PLAN:

LIGHTING FUNCTIONAL TESTING/ PLAN

THE CONTRACTOR SHALL COMPLETE THE TASKS BELOW TO COMMISSION THE LIGHTING CONTROL SYSTEM AND SUBMIT WRITTEN DOCUMENTATION DETAILING THE TASKS BELOW. FOR EACH TASK, LIST THE DATE PERFORMED, PERSON COMPLETING THE TASK, THE INITIAL SETTING/CONDITION, ACTIONS PERFORMED, AND FINAL SETTING CONDITION. SUBMIT DOCUMENTATION AT OR BEFORE SUBSTANTIAL COMPLETION TO FACILITATE OBTAINING THE CERTIFICATE OF OCCUPANCY.

1. ENSURE ALL LIGHTING FIXTURES HAVE THE PROPER LAMPS INSTALLED AND ARE FUCTIONAL.
2. TEST ALL EXIT SIGNS, EMERGENCY LIGHTING FIXTURES, AND EMERGENCY BALLASTS FURNISHED INTEGRAL TO FIXTURES.
3. EXTERIOR LIGHTING CONTROLLERS ARE WORKING AND THE PHOTOCELL OVERRIDE IS WORKING. SET EXTERIOR LIGHTING CONTROLLER TIME SEQUENCE PER OWNER'S INSTRUCTIONS.

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architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 24-064

PERMIT REVIW

BRASAO REMODEL
19210 I10 WEST
SAN ANTONIO, TX 78257

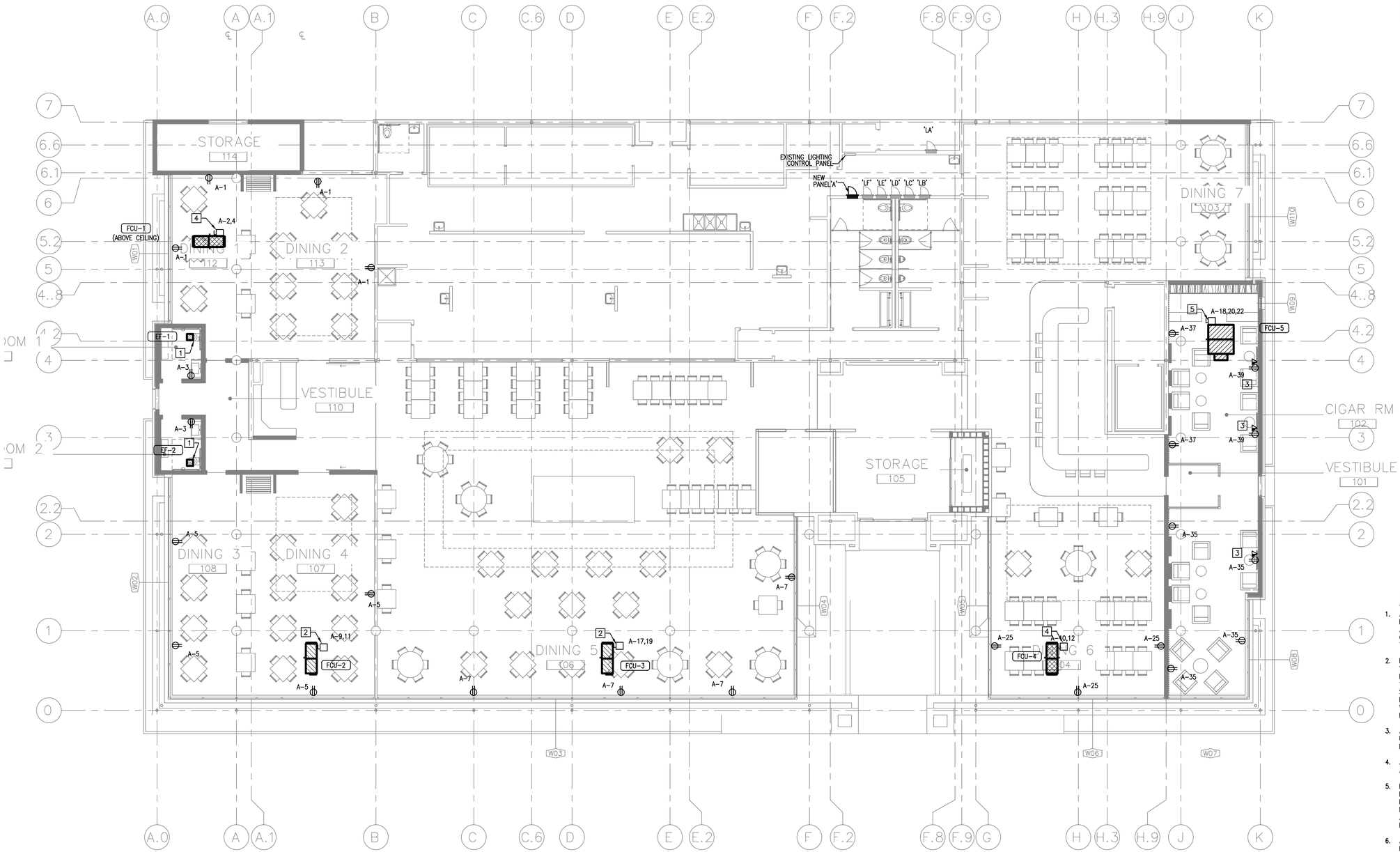
E101

ELECTRICAL LIGHTING FLOOR PLAN

PM	M	E	P	CAD
RGM	CF/LS/TSA	HN/MG	FC	RAM/HG/TSA/LS

FILE NAME: 24-064 E101 Electrical Lighting Floor Plan.dwg
FILE LOCATION: C:\Users\roger\RGM Engineering Dropbox\Projects\2024\24-064 Brasao Restaurant\Electrical_Standard Electrical Files\
DATE: Wed, 13 Nov 2024 - 3:03pm
PLOTTED BY: roger

PM	RGM	CAD
M	CF/JS/TSM	RAM/FHG/TSM/LS
E	HN/MG	P
		FC



1 ELECTRICAL POWER FLOOR PLAN

SCALE: 1/8"=1'-0"

KEYED POWER NOTES:

1. CONNECT EXHAUST FAN TO UNSWITCHED HOT LEG OF LIGHTING CIRCUIT.
2. 100A/NF/2P/NE1R/HD DISCONNECT SWITCH.
3. COORDINATE TV HEIGHT WITH OWNER PRIOR TO INSTALL.
4. 60A/NF/2P/NE1R/HD DISCONNECT SWITCH.
5. 200A/NF/3P/NE1R/HD DISCONNECT SWITCH.

GENERAL POWER NOTES:

1. ALL 15 AND 20 AMP, 120V AND 250V NON LOCKING-TYPE RECEPTACLES IN BUSINESS OFFCES, CORRIDORS, WAITING ROOMS AND THE LIKE IN CLINICS, MEDICAL AND DENTAL OFFCES AND OUTPATIENT FACILITIES AS DEFINED BY NEC 406.2 SHALL BE TAMPER PROOF IN ACCORDANCE WITH NEC 406.12.
2. PER NEC 210.8B ALL SINGLE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 50 AMPERES OR LESS AND THREE PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 100 AMPERES OR LESS INSTALLED IN THE FOLLOWING LOCATIONS SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL IN BATHROOMS, KITCHENS, ROOFTOPS, INDOOR WET LOCATIONS AND RECEPTACLES LOCATED 6 FT. FROM TOP INSIDE EDGE OF THE BOWL SINK.
3. ANY AND ALL SUSPENDED ITEMS SHALL BE DONE UTILIZING UNISTRUT. ITEMS SHALL NOT BE ATTACHED TO STRUCTURE OR METAL DECK DIRECTLY.
4. ANY AND ALL ROOF PENETRATION SHALL BE COORDINATED WITH AND CONSTRUCTED BY THE LANDLORD'S ROOFING CONTRACTOR.
5. PROVIDE SLAB POUR-BACK DETAIL ADDRESSING EXISTING LEAVE-PUT AND TRENCHING OF EXISTING SLAB FOR UTILITY INSTALLATION. SLAB THICKNESS AND STEEL REINFORCING SHALL MATCH EXISTING. 15-MIL VAPIR BARRIER TO MATCH EXISTING AND OVERLAP BY 12-INCHES MINIMUM ALL DIRECTIONS, NO EXCEPTIONS.
6. ANY AND ALL PENETRATIONS INTO FIRE RATED DEMISING PARTITIONS SHALL BE FIRE CAULKED AND SEALED ACCORDING TO JURISDICTIONAL AND BUILDING CODE REQUIREMENTS.
7. ALL WIRING SHALL BE INSTALLED IN EMT CONDUIT OR MC CABLE. FLEXIBLE CONDUIT MAY BE USED AT INTERIOR JUNCTION BOXES FOR CLOSE EQUIPMENT CONNECTIONS ONLY. CARLON PVC TYPE SCH 40 HEAVY WALL CONDUIT WITH GROUND WIRE MAY BE USED BELOW_FLOOR SLAB OR UNDERGROUND IN LIEU OF RIGID, THREADED, GALVANIZED CONDUIT. PVC SCH. 40 CONDUIT SHALL NOT BE RUN IN OR ABOVE FLOOR SLAB, OR IN TILT WALL PANELS. PVC CONDUIT SHALL TERMINATE BELOW FLOOR SLAB WITH RIGID, THREADED METAL CONDUIT ADAPTER. CONDUIT ABOVE SLAB SHALL BE METAL.

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ISSUED DATE 2024-09-16
PROJECT NUMBER 24-064

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BRASAO REMODEL
19210 I10 WEST
SAN ANTONIO, TX 78257

E102
ELECTRICAL POWER FLOOR PLAN

FILE NAME: 24-064 E102 Electrical Power Floor Plan.dwg
FILE LOCATION: C:\Users\roger\RGM Engineering Dropbox\Projects\2024\24-064 Brasao Restaurant\Electrical_Standard Electrical Files\
DATE: Wed, 13 Nov 2024 - 3:16pm
PLOTTED BY: roger

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ISSUED DATE 2024-09-16
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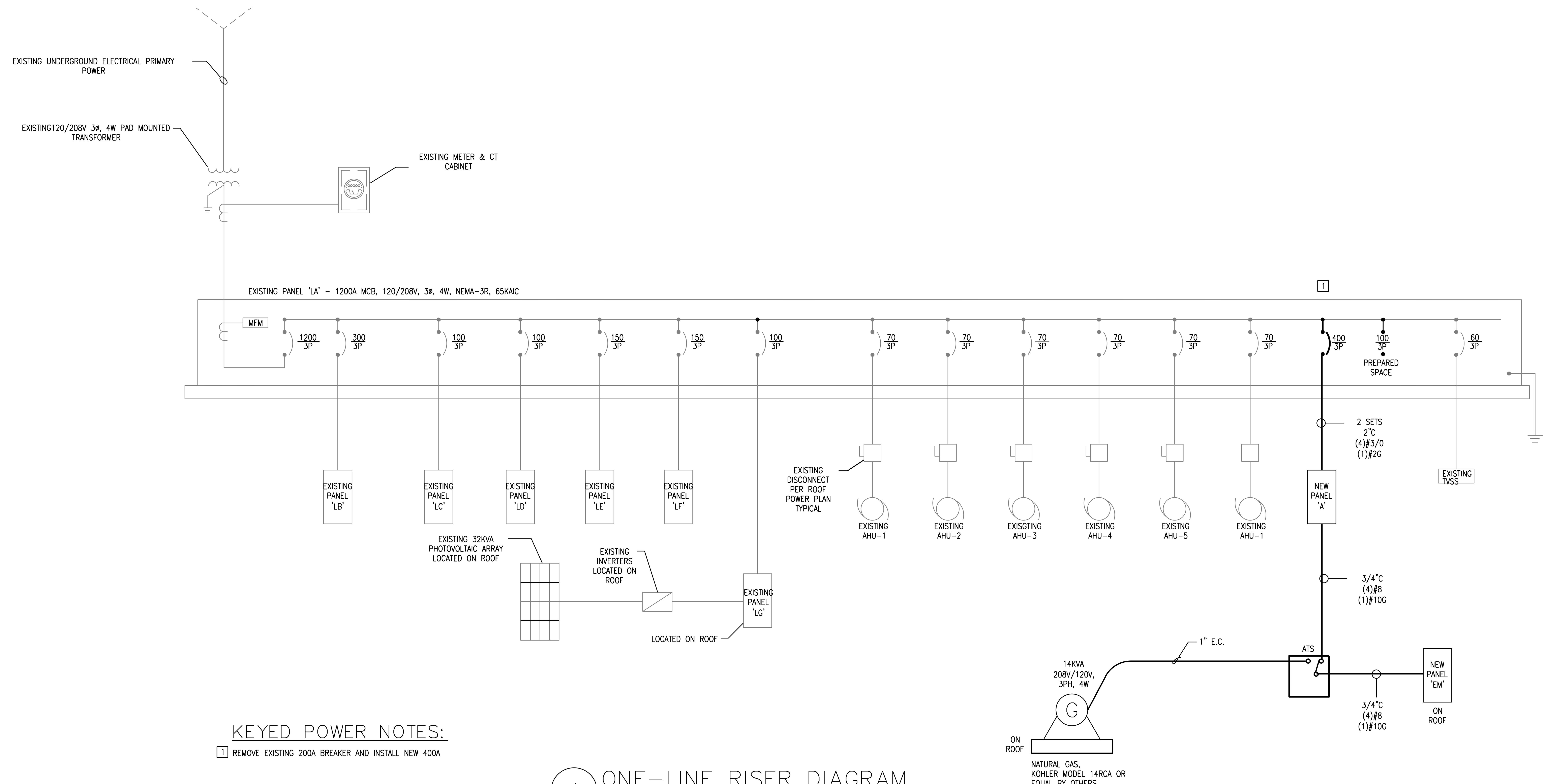

KEYED POWER NOTES:

1. REMOVE EXISTING 200A BREAKER AND INSTALL NEW 400A

1 ONE-LINE RISER DIAGRAM

SCALE: NOT TO SCALE

ELECTRICAL LOAD ANALYSIS

PROJECT:	BRASAO RESTAURANT
ADDRESS:	
CITY/STATE:	
VOLTAGE:	208
VOLTAGE TO GND	120
PHASE	3
WIRE	4
SQUARE FOOTAGE:	

TYPE OF LOAD DESCRIPTION	TYPE LOAD REF. NO.	CONN LOAD (KVA)		NEC DEMAND FACTOR	DEMAND LOAD (KVA)	DEMAND LOAD (AMPS)	KEYED NOTES
1. RECEPTACLES	1	6.2	x	SEE NOTE	6.2	17.3	1
2. LIGHTING (VA/Sq.FT)	2	0.0	x	125%	0.0	0.0	2
2a. LIGHTING (CONNECT)	2	6.0	x	125%	7.5	36.1	2
3. AIR CONDITIONING	3	35.2	x	0%	0.0	0.0	3
4. ELECTRIC HEATING	4	97.0	x	100%	97.0	269.3	4
5. MOTORS	5	7.4	x	100%	7.4	20.4	5
6 WATER HEATING	6	0.0	x	100%	0.0	0.0	6
7. ELEVATORS	7	0.0	x	100%	0.0	0.0	7
8. KITCHEN EQUIPMENT	8	0.0	x	80%	0.0	0.0	8
9. MISCELLANEOUS	9	0.0	x	100%	0.0	0.0	9
10. EXTERIOR LIGHTING	10	0.0	x	125%	0.0	0.0	10
TOTALS =		151.9			118.2	343.2	

LOAD ANALYSIS NOTES	NEC REFERENCE	DEMAND LOAD SUMMARY (KVA)		(AMPS)
NOTE 1	PER NEC TABLE 220.44	DEMAND LOAD	118.2	327.9
NOTE 2	PER NEC TABLE 220.12	LARGEST MTR	0.0	0.0
NOTE 3	PER NEC 220.60 & ARTICLE 440	ADD -LTG. VA/SF (SEE NOTE 10)	0.0	0.0
NOTE 4	PER NEC 220.60			
NOTE 5	PER NEC TABLE 430.22(E), 430.24, 430.26	SUB-TOTAL	118.2	327.9
NOTE 6	PER NEC ARTICLE 422	**EXISTING LOAD**	**313.2**	**869.3**
NOTE 7	PER NEC TABLE 430.22(E), 430.26, & 620.13, 14, 15.	NEW LOAD	118.2	327.9
NOTE 8	PER NEC TABLE 220.56	TOTAL LOAD	431.4	1197.2
NOTE 9	NO NOTES- DEMAND FACTOR AT 100%	THE NEW ELECTRICAL SERVICE ENTRANCE		
NOTE 10	NO NOTES- DEMAND FACTOR AT 100%	WILL BE SIZED AT AMPS. ALLOWING		
LOAD ANALYSIS COMPUTATIONS PER NEC 2020		FOR A AMP SPARE CAPACITY.		

BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

E201

ELECTRICAL ONE LIN RISER PLAN

RGM | CF/LS/TSH | HN/MG | FC | RAM/HE/TSH/LS

PANELBOARD SCHEDULE

PANEL: A
PROJECT: BRASAO RESTAURANT
FED FROM
VOLTAGE: 208 120
PH/WIRE: 3 4W
SUB-FEED LUGS:
CONDUIT/CONDUCTORS:

MOUNTING: RECESSED
TYPE: NEMA1
BUSSING: COPPER
MLO: 400A
MAIN C.B.:
A.I.C. RATING:
KEY NOTES:

NOTE: ALL BRANCH CIRCUITS SHALL BE RUN IN EMT CONDUIT FROM PANEL TO DEVICE. WHERE CONDUIT SIZE IS NOT INDICATED E.C. MAY COMBINE SIMILAR TYPE CIRCUITS IN LARGER CONDUIT NOT TO EXCEED 40% FILL PER TABLES IN NEC 2020 AND PER TABLE 310.15 (B) (2) (a) FOR CONDUCTOR DERATING WHERE APPLICABLE. ALL OTHER BR. CKTS WITH #12 OR #10 CU. SHALL BE RUN IN 3/4"C.

CIRCUIT DESCRIPTION	CONDUIT SIZE	COND. SIZE (AWG)	NEUT SIZE (AWG)	E.G.C SIZE (AWG)	TYPE LOAD	LOAD VA	CKT BKR	CKT #	CKT #	CKT BKR	LOAD VA	TYPE LOAD	CONDUIT SIZE	COND. SIZE (AWG)	NEUT SIZE (AWG)	E.G.C SIZE (AWG)	CIRCUIT DESCRIPTION
RCPT	1/2"	#12	#12	#12	1	900	20/1	1	2	60/2	5148	4	3/4"	#8		#10	FCU1
RCPT	1/2"	#12	#12	#12	1	900	20/1	3	4		5148	4		#8			
RCPT	1/2"	#12	#12	#12	1	720	20/1	5	6	35/2	2059	3	1/2"	#12		#10	CU1
RCPT	1/2"	#12	#12	#12	1	183	20/1	7	8		2059	3		#12			
FCU2	1-1/4"	#3		#8	4	10015	100/2	9	10	60/2	5148	4	3/4"	#8		#10	FCU4
		#3			4	10015		11	12		5148	4		#8			
CU2	1/2"	#10		#10	3	3453	50/2	13	14	35/2	2059	3	1/2"	#12		#10	CU4
		#10			3	3453		15	16		2059	3		#12			
FCU3	1-1/4"	#3		#8	4	10015	100/2	17	18	110/3	12129	4	1-1/4"	#3		#6	FCU5
		#3			4	10015		19	20		12129	4		#3			
CU3	1/2"	#10		#10	3	3453	50/2	21	22		12129	4		#3			
		#10			3	3453		23	24	20/1	600	5	1/2"	#12	#12	#12	EF-3
RCPT	1/2"	#12	#12	#12	1	720	20/1	25	26	20/1	1000	2	1/2"	#12	#12	#12	LIGHTS
								27	28	20/1	1000	2	1/2"	#12	#12	#12	LIGHTS
LIGHTS	1/2"	#12	#12	#12	2	1000	20/1	29	30	20/1	1000	2	1/2"	#12	#12	#12	LIGHTS
LIGHTS	1/2"	#12	#12	#12	2	1000	20/1	31	32	20/1	1000	2	1/2"	#12	#12	#12	LIGHTS
RCPT ON ROOF	1/2"	#12	#12	#12	1	540	20/1	33	34	60/2	6575	3	3/4"	#8		#10	CU5
RCPT	1/2"	#12	#12	#12	1	720	20/1	35	36		6575	3		#8			
RCPT	1/2"	#12	#12	#12	1	360	20/1	37	38		2256						
RCPT	1/2"	#12	#12	#12	1	1200	20/1	39	40	50/3	2256						PANEL 'EM'
								41	42		2256						
								43	44								
								45	46								
								47	48								
								49	50								
								51	52								
								53	54								
								55	56								
								57	58								
								59	60								

CONNECTED LOADS SUMMARY

	VA/PH	AMPS/PH
PHASE 'A'	42282	352
PHASE 'B'	53876	449
PHASE 'C'	55690	464
TOTALS	151848	421

PANELBOARD LOAD ANALYSIS

	KVA	AMPS
1. TOTAL NEC DEMAND LOAD	118.15	327.9
2. ADD LARGEST MOTOR (25%)	7.04	19.5
3. ADD LIGHTINEG PER VA/SF (SEE NOTE 2	0.00	0.0
4. SUB-TOTAL LOAD	125.19	347.4
5. NOT USED.		
6. TOTAL NEC LOAD WITH FUTURE LOAD	125.19	347.4

LOAD ANALYSIS NOTES AND PANELBOARD TYPICAL NOTES:
1. REFER TO THE TYPICAL LOAD ANALYSIS NOTES ON THIS DRAWING SHEET.
2. REFER TO THE TYPICAL PANELBOARD KEYED NOTES ON THIS DRAWING SHEET.

PANELBOARD LOAD COMPUTATIONS - LOAD SUMMARY

TYPE	LOAD DESCRIPTION	SUB FEED	KVA	D.F.	DEMAND LOAD (KVA)
1	1. RECEPTACLES	0.00	6.24	NOTE 1	6.2
2	2. LIGHTING	0.00	6.00	125%	7.5
3	3. AIR CONDITIONING	0.00	35.20	0%	0.0
4	4. ELECTRIC HEATING	0.00	97.04	100%	97.0
5	5. MOTORS	6.77	7.37	100%	7.4
6	6. ELECT WATER HTG.	0.00	0.00	100%	0.0
7	7. ELEVATOR	0.00	0.00	100%	0.0
8	8. KITCHEN EQUIP.	0.00	0.00	80%	0.0
9	9. MISCELANEOUS	0.00	0.00	100%	0.0
10	10.EXT. LIGHTING	0.00	0.00	125%	0.0
	TOTAL KVA	6.77	151.85		118.15
	TOTAL AMPERES	18.8	421.4		327.9

PANELBOARD SCHEDULE

PANEL: EM
PROJECT:
FED FROM
VOLTAGE: 208 120
PH/WIRE: 3 4W
SUB-FEED LUGS:
CONDUIT/CONDUCTORS:

MOUNTING: RECESSED
TYPE: NEMA3R
BUSSING: COPPER
MLO: 100A
MAIN C.B.:
A.I.C. RATING:
KEY NOTES:

NOTE: ALL BRANCH CIRCUITS SHALL BE RUN IN EMT CONDUIT FROM PANEL TO DEVICE. WHERE CONDUIT SIZE IS NOT INDICATED E.C. MAY COMBINE SIMILAR TYPE CIRCUITS IN LARGER CONDUIT NOT TO EXCEED 40% FILL PER TABLES IN NEC 2020 AND PER TABLE 310.15 (B) (2) (a) FOR CONDUCTOR DERATING WHERE APPLICABLE. ALL OTHER BR. CKTS WITH #12 OR #10 CU. SHALL BE RUN IN 3/4"C.

CIRCUIT DESCRIPTION	CONDUIT SIZE	COND. SIZE (AWG)	NEUT SIZE (AWG)	E.G.C SIZE (AWG)	TYPE LOAD	LOAD VA	CKT BKR	CKT #	CKT #	CKT BKR	LOAD VA	TYPE LOAD	CONDUIT SIZE	COND. SIZE (AWG)	NEUT SIZE (AWG)	E.G.C SIZE (AWG)	CIRCUIT DESCRIPTION
KF-1	1/2"	#12		#12	5	564	15/3	1	2	15/3	564	5	1/2"	#12		#12	KF-3
		#12			5	564		3	4		564	5		#12			
		#12			5	564		5	6		564	5		#12			
KF-2	1/2"	#12		#12	5	564	15/3	7	8	15/3	564	5	1/2"	#12		#12	KF4
		#12			5	564		9	10		564	5		#12			
		#12			5	564		11	12		564	5		#12			
								13	14								
								15	16								
								17	18								
								19	20								
								21	22								
								23	24								

CONNECTED LOADS SUMMARY

	VA/PH	AMPS/PH
PHASE 'A'	2256	19
PHASE 'B'	2256	19
PHASE 'C'	2256	19
TOTALS	6768	19

PANELBOARD LOAD ANALYSIS

	KVA	AMPS
1. TOTAL NEC DEMAND LOAD	6.77	18.8
2. ADD LARGEST MOTOR (25%)	7.04	19.5
3. ADD LIGHTINEG PER VA/SF (SEE NOTE 2	0.00	0.0
4. SUB-TOTAL LOAD	13.81	38.3
5. NOT USED.		
6. TOTAL NEC LOAD WITH FUTURE LOAD	13.81	38.3

LOAD ANALYSIS NOTES AND PANELBOARD TYPICAL NOTES:
1. REFER TO THE TYPICAL LOAD ANALYSIS NOTES ON THIS DRAWING SHEET.
2. REFER TO THE TYPICAL PANELBOARD KEYED NOTES ON THIS DRAWING SHEET.

PANELBOARD LOAD COMPUTATIONS - LOAD SUMMARY

TYPE	LOAD DESCRIPTION	SUB FEED	KVA	D.F.	DEMAND LOAD (KVA)
1	1. RECEPTACLES	0.00	0.00	NOTE 1	0.0
2	2. LIGHTING	0.00	0.00	125%	0.0
3	3. AIR CONDITIONING	0.00	0.00	100%	0.0
4	4. ELECTRIC HEATING	0.00	0.00	100%	0.0
5	5. MOTORS	0.00	6.77	100%	6.8
6	6. ELECT WATER HTG.	0.00	0.00	100%	0.0
7	7. ELEVATOR	0.00	0.00	100%	0.0
8	8. KITCHEN EQUIP.	0.00	0.00	80%	0.0
9	9. MISCELANEOUS	0.00	0.00	100%	0.0
10	10.EXT. LIGHTING	0.00	0.00	125%	0.0
	TOTAL KVA	0.00	6.77		6.77
	TOTAL AMPERES	0.0	18.8		18.8

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PROJECT NUMBER 24-0

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SAN ANTONIO, TX 78257

ELECTRICAL
PANELBOARD SCHEDULES

E301

PM	M	E	P		CAD
RGM	CF/LS/TSA	HN/MG	FC		RAM/HG/TSA/LS

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ISSUED DATE 2024-09-16
PROJECT NUMBER 24-064

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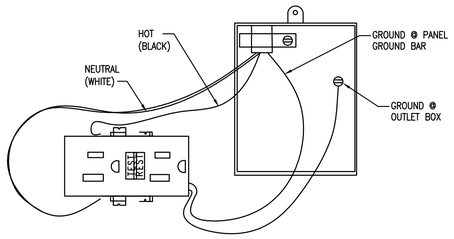
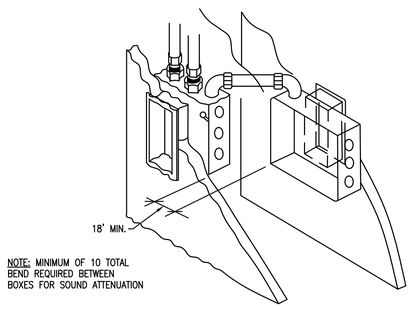
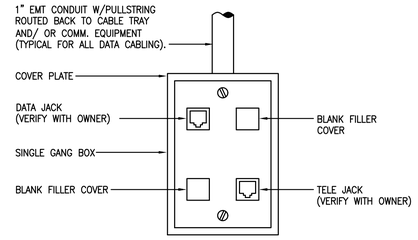


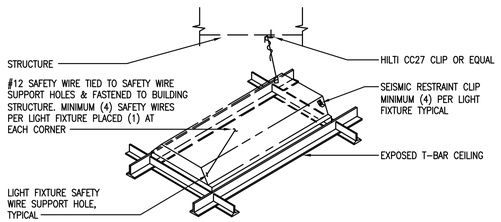
1 ABOVE COUNTER G.F.C.I. INSTALLATION DETAIL
NOT TO SCALE



2 (BACK TO BACK) TYPICAL CONDUIT BOX MOUNTING DTL.
NOT TO SCALE

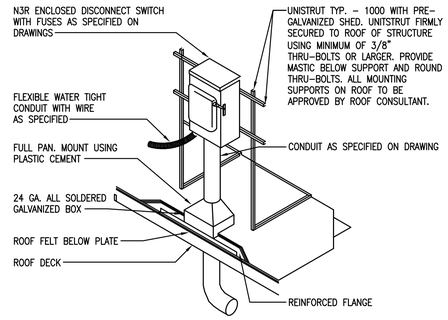


3 TYPICAL COMM. OUTLET DETAIL
NOT TO SCALE

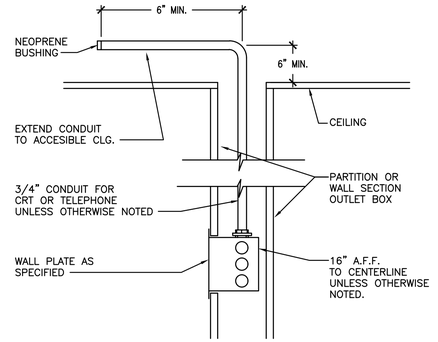


NOTES:
1. ALL WIRES ARE TO BE TAUT WITH A MINIMUM OF 3 TIGHT TURNS AROUND SELF – TYPICAL.
2. THIS DETAIL IS FOR REFERENCE ONLY. MOUNTING LOCATIONS MAY REQUIRE ADDITIONAL STRUCTURAL SUPPORT WHICH SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR DURING INSTALLATION.

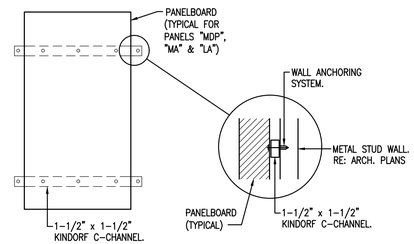
4 LIGHTING FIXTURE SUPPORT DETAIL
NOT TO SCALE



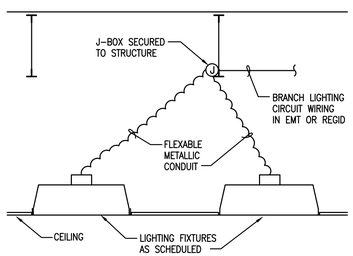
5 ROOFTOP MOUNTED DISCONNECT SWITCH
NOT TO SCALE



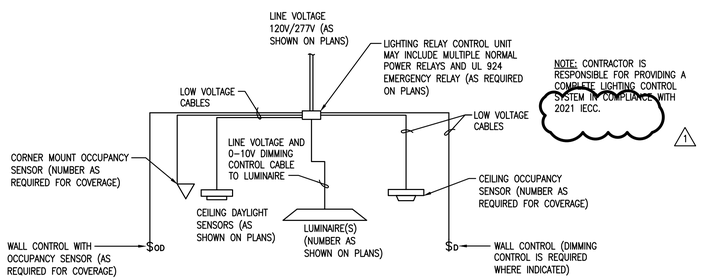
6 TYPICAL TELEPHONE OUTLET DETAIL
NOT TO SCALE



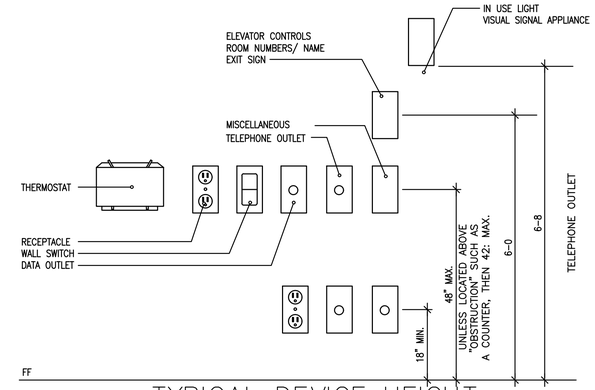
7 TYPICAL PANELBOARD WALL SURFACE MOUNTING DETAIL
NOT TO SCALE



8 LIGHTING FIXTURE WIRING DETAIL
NOT TO SCALE



9 LIGHTING CONTROL SYSTEM DETAIL–TYPICAL RELAY CONTROL SCHEMATIC
NOT TO SCALE



10 TYPICAL DEVICE HEIGHT REQUIREMENTS DIAGRAM
NOT TO SCALE

BRASAO REMODEL
19210 I10 WEST
SAN ANTONIO, TX 78257

E401

ELECTRICAL DETAILS

FILE NAME: 24-064 E401 Electrical Details.dwg
FILE LOCATION: C:\Users\roger\RGM Engineering Dropbox\Projects\2024\24-064 Brasao Restaurant\Electrical_Standard Electrical Files\
DATE: Wed, 13 Nov 2024 - 2:32pm
PLOTTED BY: roger

RGM | CF/LS/TSA | HN/MG | FC | RAM/HG/TSA/LS

ELECTRICAL SPECIFICATIONS
DIVISION 16 - ELECTRIC

16100.02 DRAWINGS AND SPECIFICATIONS

A. DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO EACH OTHER, AND WHAT IS CALLED FOR ONE, SHALL BE AS IF CALLED FOR BY BOTH.

B. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL DESIGN, LAYOUT, AND ARRANGEMENT OF EQUIPMENT AND VARIOUS SYSTEMS. HOWEVER, BEING DIAGRAMMATIC THE DRAWINGS DO NOT NECESSARILY SHOW ALL DETAILS SUCH AS JUNCTION BOXES, PULL BOXES, WIRING, ETC. NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.

C. STUDY AND REVIEW ALL CONTRACT DOCUMENTS, INCLUDING DRAWINGS AND SPECIFICATIONS FOR ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND OTHER PORTIONS OF THE WORK TO AVERT POSSIBLE INSTALLATION CONFLICTS. ADJUST ELECTRICAL WORK TO CONFORM TO ALL CONDITIONS INDICATED THEREIN. SHOULD CONFLICTS ARISE WHICH REQUIRE CHANGES IN THE CONTRACT DOCUMENTS, NOTIFY THE ARCHITECT AND OWNER. SECURE WRITTEN APPROVAL AND AGREEMENT ON NECESSARY ADJUSTMENTS BEFORE THE BIDDING.

D. DISCREPANCIES BETWEEN DRAWINGS, BETWEEN DRAWINGS AND SPECIFICATIONS, OR BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS, OR ERRORS ON EITHER DRAWINGS OR SPECIFICATIONS SHALL BE PROMPTLY BROUGHT TO THE ATTENTION OF RGM ENGINEERING FOR A DECISION BEFORE THE SPECIFIC BIDDING.

16100.05 PERMITS, FEES, TAXES AND ROYALTIES

A. ARRANGE AND PAY FOR ALL NECESSARY PERMITS, FEES, TAXES, AND ROYALTIES IN CONNECTION WITH ELECTRICAL WORK.

16100.06 CODES AND REGULATIONS

A. COMPLY WITH THE LATEST APPLICABLE REQUIREMENTS OF THE NEC, NESC, OSHA, NFPA AND THE LOCAL ELECTRICAL INSPECTION AUTHORITY WHO SHALL HAVE FINAL JURISDICTION. COMPLY ALSO WITH ALL REQUIREMENTS OF LOCAL UTILITY AND TELEPHONE COMPANIES.

REPORT TO THE ENGINEER PRIOR TO SUBMITTING BIDS, ANY PART OR PORTION OF THE ELECTRICAL DESIGN WHICH DOES NOT CONFORM TO THE REQUIREMENTS OF THE APPLICABLE LOCAL OR STATE CODES OR REQUIREMENTS OF LOCAL UTILITY OR TELEPHONE COMPANIES, OTHERWISE BE HELD RESPONSIBLE TO PROVIDE INSTALLATION WHICH WILL COMPLY WITH THESE CODES AND REGULATIONS.

APPLICABLE CODES AND ORDINANCES AND LOCAL INTERPRETATIONS ARE TO TAKE PRECEDENCE WHEN THEY CONFLICT WITH, OR ARE MORE STRINGENT THAN THE ELECTRICAL DESIGN. DRAWINGS AND SPECIFICATIONS TAKE PRECEDENCE WHERE DESIGN IS MORE STRINGENT THAN CODES AND ORDINANCES.

16100.07 STANDARDS

A. MATERIALS AND INSTALLATION SHALL ALSO CONFORM TO LATEST STANDARDS AND PRACTICES OF THE INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE), THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA), INSULATED POWER CABLE ENGINEERS ASSOCIATION (IPCEA), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AMERICAN SOCIETY OF TESTING MATERIALS (ASTM), AND THE NATIONAL BUREAU OF STANDARDS.

B. THE FOREGOING RULES, STANDARDS AND REGULATIONS SHALL NOT RELIEVE THE CONTRACTOR FROM FURNISHING AND INSTALLING HIGHER GRADES OF MATERIALS AND WORKMANSHIP WHICH ARE SPECIFIED HEREIN OR INDICATED ON DRAWINGS.

16100.09 PRODUCT DATA AND SUBMITTALS

A. FURNISH PRODUCT DATA AND SUBMITTALS FOR REVIEW BY THE CONSULTING ENGINEER AND OWNER PRIOR TO INSTALLATION.

B. FURNISH DETAILED AND DIMENSIONED PRODUCT DATA, SUBMITTALS, AND SHOP DRAWINGS FOR ALL ELECTRICAL DISTRIBUTION EQUIPMENT, LIGHTING FIXTURES AND LAMPS, SPECIAL EQUIPMENT, SPECIAL SYSTEMS AND SPECIAL APPARATUS WHICH ARE TO BE PROVIDED FOR INSTALLATION IN THIS WORK.

C. INCLUDE CATALOG CUTS, DIMENSIONAL AND OPERATING DATA, WIRING DIAGRAMS FOR SPECIAL SYSTEMS, AND SUCH OTHER DATA AS MAY BE REQUIRED BY RGM ENGINEERING AND OWNER. SUBMIT SAMPLES OF EQUIPMENT WHEN REQUESTED BY THE CONSULTING ENGINEER AND OWNER.

D. SUBMITTALS SHALL BE PROVIDED IN 3-RING HARD BACK BINDERS.

16100.10 MINOR DEVIATIONS AND CHANGES

A. FURNISH AND INSTALL ENTIRE ELECTRICAL INSTALLATIONS AS DESIGNED AND IN ACCORDANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. MINOR DEVIATIONS NECESSITATED BY FIELD CONDITIONS OR EQUIPMENT BEING SUPPLIED MAY BE MADE UPON APPROVAL OF RGM ENGINEERING AND OWNER. CHANGES IN DESIGN AND INSTALLATION SHALL BE DONE IN THE MANNER PROVIDED FOR IN THE GENERAL CONDITIONS.

16100.11 CUTTING AND REPAIRING

A. PROVIDE ALL CUTTING, PATCHING CHANNELING, CORE DRILLING, ETC., IN BUILDING STRUCTURE NECESSARY FOR ELECTRICAL WORK. LOCATE HOLES TO BE DRILLED, OUTLETS, ETC., COORDINATE WORK WITH ALL OTHER TRADES ON THE JOB, AND MAKE ARRANGEMENTS FOR NECESSARY OPENINGS AND CHASES. SEAL ALL HOLES CUT FOR WIRING RUNS. NO CUTTING, CHANNELING, CORE DRILLING, ETC., SHALL BE DONE WITHOUT PRIOR APPROVAL OF THE ARCHITECT. MAKE NECESSARY REPAIRS TO FINISHED BUILDING WHERE PATCHING ON REFINISHING IS NECESSARY DUE TO ELECTRIC WORK. ACTUAL WORK INVOLVED IN THESE REPAIRS SHALL BE DONE BY SKILLED CRAFTSMEN IN THE TRADES INVOLVED.

16100.12 MATERIALS

A. FURNISH AND INSTALL ALL MATERIAL, EQUIPMENT, AND DEVICES WHICH ARE NEW, FIRST QUALITY, BEAR THE LISTED LABEL OF THE UNDERWRITERS LABORATORIES, INC. AND WHICH ARE ACCEPTED BY RGM ENGINEERING FOR INSTALLATION IN THIS PROJECT. REPLACE, IN A MANNER ACCEPTED BY THE CONSULTING ENGINEER AND PAY FOR ALL EQUIPMENT OR MATERIALS DAMAGED IN THE COURSE OF INSTALLATION OR TESTING.

BASIC BID SHALL INCLUDE MANUFACTURERS AND CATALOG NUMBERS AS SHOWN IN THESE SPECIFICATIONS, OR ON THE DRAWINGS WITH NO EQUALS, UNLESS SPECIFICALLY INDICATED. SPECIFIED MATERIALS, EQUIPMENT, AND DEVICES SHALL BE FURNISHED AND INSTALLED UNDER THE CONTRACT UNLESS CHANGED BY MUTUAL AGREEMENT BETWEEN CONTRACTOR AND THE CONSULTING ENGINEER.

SUBSTITUTE EQUIPMENT OF OTHER MANUFACTURERS WHICH IS EQUIVALENT TO OR SUPERIOR THAN THAT SPECIFIED MAY BE PROPOSED. HOWEVER, SUCH SUBSTITUTIONS MUST BE ACCEPTED IN WRITING BY THE CONSULTING ENGINEER PRIOR TO BIDDING.

IF SUBSTITUTIONS ARE NOT REQUESTED OR GRANTED, THE SPECIFIED MATERIALS AND EQUIPMENT MUST BE INSTALLED. THE DECISION OF RGM ENGINEERING REGARDING SUBSTITUTIONS SHALL BE FINAL. IT SHALL BE THE ELECTRICAL CONTRACTORS RESPONSIBILITY UNDER THIS SECTION OF THE SPECIFICATION TO NOTIFY ALL CREATED TRADES OF THE ACCEPTED SUBSTITUTIONS AND TO ASSUME FULL RESPONSIBILITY FOR ALL COSTS CAUSED AS A RESULT OF THE SUBSTITUTION. PRIOR TO START OF WORK, SUBMIT TO THE ENGINEER A COMPLETE LIST OF TYPES, MATERIALS, AND EQUIPMENT AND MANUFACTURERS OF THESE ITEMS WHICH ARE TO BE FURNISHED FOR THIS WORK.

B. COPPER WIRE MUST BE USED. ALUMINUM WIRE WILL NOT BE ACCEPTED.

C. EQUIPMENT AND MATERIALS MUST COMPLY WITH THE REQUIREMENTS OF THE UTILITY COMPANY, AND WHERE REQUIRED, SHALL BE SUBMITTED TO THEM FOR THEIR APPROVAL.

16100.15 GUARANTEE

A. FURNISH TO OWNER A FORMAL GUARANTEE COVERING ENTIRE ELECTRICAL SYSTEM, TO BE FREE FROM DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE OF INSTALLATION BY OWNER. DURING THIS PERIOD, PROVIDE ALL LABOR AND NEW MATERIALS WHERE REQUIRED, TO REPAIR OR REPLACE ALL DEFECTS TO THE SATISFACTION OF OWNER AT NO ADDITIONAL COST.

16100.16 FINAL ACCEPTANCE AND WORK CLOSE-OUT

A. CONTRACTOR SHALL INSPECT THE ENTIRE ELECTRICAL INSTALLATION TO ASSURE THAT ALL WORK IS COMPLETED AND ALL SYSTEMS ARE COMPLETELY OPERATIONAL BEFORE CALLING FOR A FINAL ACCEPTANCE OF THE WORK. ALL CERTIFICATES INCLUDING ACCEPTANCE OF LOCAL INSPECTION AUTHORITY MUST BE PRESENTED AT THAT TIME.

16100.19 CLEANING AND PAINTING

A. IN GENERAL, EXCEPT WHERE SPECIFIED OTHERWISE HEREIN, FINISH PAINTING OF CONDUITS, BOXES, POLES, AND EQUIPMENT WHERE SPECIFIED TO BE DONE IN FIELD, SHALL BE DONE BY OTHER TRADES UNDER ANOTHER SECTION OF THE SPECIFICATIONS. PROTECT ELECTRICAL APPARATUS, CABINETS, BOXES AND ALL OTHER EQUIPMENT NORMALLY FURNISHED ON THE JOB WITH FACTORY APPLIED FINISH, EITHER PAINTED OR GALVANIZED, DURING STORAGE AND INSTALLATION. CLEAR ALL ELECTRICAL EQUIPMENT SUCH AS LIGHTING FIXTURES, LAMPS, SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, ETC., OF CONSTRUCTION DIRT, DRILL CHIPS, DEBRIS, DUST PAINT SMEARS, ETC., BEFORE COMPLETION OF WORK. CLEAN OR TOUCH-UP AND REPAINT ALL SCARS BLEMISHES, RUST SPOTS, ETC., TO ORIGINAL STATE OF FINISH.

16100.20 TRENCHING AND BACKFILL

A. PROVIDE ALL TRENCHING AND BACKFILLING REQUIRED FOR ELECTRICAL WORK.

16100.21 SCOPE OF WORK

A. WORK UNDER THIS CONTRACT COMPRISES THE PROVIDING OF ALL LABOR, MATERIAL, EQUIPMENT, TRANSPORTATION, SCAFFOLDING, RIGGING, TOOLS AND RELATED ITEMS AND SUBCONTRACT WORK FOR A COMPLETE OPERATING ELECTRICAL SYSTEM AND INCLUDES BUT IS NOT LIMITED TO:

TRENCHING AND BACKFILL.
TEMPORARY LIGHT AND POWER.
CUTTING AND PATCHING.
SHOP DRAWINGS.
TESTING AND ADJUSTMENTS.
CLEANING AND PAINTING.
ELECTRICAL SERVICE CONDUITS.
LOW VOLTAGE FEEDERS
LIGHT AND POWER DISTRIBUTION PANELS.
LIGHTING BRANCH CIRCUIT WIRING.
CONNECTIONS TO EQUIPMENT FURNISHED BY OTHERS.
LIGHTING FIXTURES AND LAMPS.
TELEPHONE SYSTEM AS INDICATED ON PLANS.

B. ITEMS MENTIONED IN THE ABOVE SCHEDULE ARE LISTED FOR THE PURPOSE OF DESCRIBING BASIC SPECIFICATION CONTENTS AND SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR FROM EXECUTING ANY WORK DESCRIBED THROUGHOUT THE SPECIFICATION OR INDICATED ON DRAWINGS BECAUSE OF ITS DETAILED OMISSION IN THIS SCHEDULE.

16100.22 SHOP DRAWINGS AND MANUFACTURER'S SUPERVISION REQUIRED

A. PROVIDE SHOP DRAWINGS FOR THE FOLLOWING, PRIOR TO FABRICATION, INCLUDING ALL ACCESSORIES AND MANUFACTURER'S SUPERVISION WHERE INDICATED:

PANELS
MOLDED CASE CIRCUIT BREAKERS.
LIGHTING FIXTURES AND LAMPS.
CABLE TRAYS
SECURITY SYSTEM
FIRE ALARM

16100.23 GROUNDING

A. PROVIDE ALL ELECTRICAL SYSTEM GROUNDING IN ACCORDANCE WITH THE NEC AND ANY STATE AND LOCAL CODE REQUIREMENTS, EVEN IF NOT SHOWN ON THE DRAWINGS. INCLUDE ADDITIONAL GROUNDING CONDUCTORS IN NON-METALLIC RACEWAYS, EVEN THOUGH THE DRAWINGS SHOW ONLY CIRCUIT AND/OR NEUTRAL CONDUCTORS.

B. RECEPTACLES WHICH DO NOT HAVE THEIR MOUNTING YOKES CONNECTED TO RECEPTACLE GROUNDING POINT SHALL BE GROUNDED WITH A GREEN INSULATED GROUNDING JUMPER CONNECTED TO OUTLET BOX. PROVIDE A SEPARATE GROUND CONDUCTOR WITH BRANCH CIRCUIT WIRING WHEN INDICATED ON DRAWINGS OR WHEN REQUIRED BY CODE.

C. GROUND CABLES SHALL BE CONTINUOUS WITHOUT JOINTS OR SPLICES THROUGH ITS LENGTH. IF BARE GROUND CONDUCTORS ARE RUN THROUGH METALLIC CONDUIT, THEY BE SECURELY BONDED TO EACH CONDUIT AT THE ENTRANCE AND EXIT. ALL CONNECTIONS TO EQUIPMENT OR CONDUIT SHALL BE MADE WITH APPROVED TYPE OF SOLDERLESS CONNECTOR, AND SAME SHALL BE THOROUGHLY CLEANED AND BRIGHT BEFORE CONNECTION IS MADE SO AS TO ENSURE A GOOD METAL CONTACT. CONNECTIONS WHICH WILL BE INACCESSIBLE AFTER COMPLETION OF PROJECT SHALL BE MADE BY THE CADWELD OR THERMO WELD PROCESS.

D. GROUNDING CONNECTIONS: UTILIZE BURNDY "THERMOWELD" PROCESS FOR ALL CABLE-TO-CABLE, CABLE-TO-STEEL, AND CABLE-TO-GROUND ROD CONNECTIONS.

E. WHEN THE MAXIMUM RESISTANCE TO GROUND SPECIFIED ABOVE CANNOT BE ACHIEVED, THE CONTRACTOR SHALL INCREASE THE LENGTH AND QUANTITY OF GROUND RODS TO ACHIEVE THIS RESISTANCE REQUIRED. WHERE INCREASED, QUANTITY AND LENGTH OF GROUND RODS DO NOT PRODUCE THE MAXIMUM SPECIFIED RESISTANCE, SOIL TREATMENT AROUND GROUND RODS SHALL BE PROVIDED.

F. SOIL TREATMENT TO REDUCE GROUND RESISTANCE AROUND COPPER WELD GROUND RODS SHALL BE PROVIDED AS FOLLOWS:

1. EXCAVATE CIRCULAR TRENCH AROUND EACH ELECTRODE AND 2'-6" BELOW TOP OF ELECTRODE. FILL WITH 100 POUNDS OF MAGNESIUM SULFATE.

2. SEPARATE ELECTRODE FROM CHEMICAL TO 18" RADIUS WITH STONEFREE EARTH BACKFILL. USE EXTREME CARE TO AVOID DIRECT CHEMICAL CONTACT WITH THE ELECTRODE.

16100.24 WIRING - GENERAL

A. ALL BRANCH CIRCUIT WIRING RUN WITHIN THE BUILDING AND NOT EXPOSED TO MOISTURE, SHALL BE INSTALLED IN ELECTRO-METALLIC TUBING AND RUN CONCEALED IN NEW WALLS, CEILINGS AND/OR SLABS, BUT EXPOSED ON EXISTING SURFACES WHERE CONDUITS CANNOT BE CONCEALED.

B. ALL BRANCH CIRCUIT WIRING RUN OUTSIDE OF THE BUILDING AND EXPOSED TO MOISTURE SHALL BE INSTALLED IN RIGID INTERMEDIATE GALVANIZED CONDUIT AND RUN CONCEALED IN NEW CONSTRUCTION, BUT EXPOSED ON EXISTING CONSTRUCTION.

C. ALL ELECTRIC AND TELEPHONE SERVICE SHALL BE IN RIGID METALLIC CONDUIT. SLOPE CONDUIT AWAY FROM BUILDING A MINIMUM OF 3" IN 100'.

D. ALL RACEWAYS UNDER ROADS, WALKS OR OTHER PAVED AREAS SHALL BE RIGID GALVANIZED CONDUIT.

E. ALL UNDERGROUND WIRING OUTSIDE BUILDING AND UTILITY COMPANY SERVICES, SHALL BE IN RIGID NON-METALLIC CONDUIT SCHEDULE-40 (UNLESS NOTED OTHERWISE ON DRAWINGS) AND SHALL BE ENCASED IN CONCRETE, BURIED BELOW THE FROST LINE.

F. RIGID NON-METALLIC CONDUIT SHALL BE ALLOWED IN STRUCTURAL SLABS, UNLESS DISAPPROVED BY THE STRUCTURAL ENGINEERS.

G. INSTALL RACEWAYS FROM BOX-TO-BOX OR TERMINATIONS AS SHOWN ON THE DRAWINGS OR AS REQUIRED TO AFFECT CIRCUITING DESCRIBED WITH CIRCUIT NUMBERS ADJACENT TO EQUIPMENT. GROUPING HOME RUNS OR COMBINING WIRES IN COMMON RACEWAYS WILL BE ALLOWED, WITH A MAXIMUM OF FOUR SINGLE POLE BRANCH CIRCUITS IN A RACEWAY. INCREASE WIRE SIZES AND RACEWAYS WHERE REQUIRED TO AVOID LOSS OR AMPACITY AS REQUIRED BY NATIONAL ELECTRICAL CODE.

H. PROVIDE 'OZ' OR EQUAL CONDUIT SEALS FOR ALL RACEWAYS, WIRES OR CABLES PASSING THROUGH FOUNDATIONS, FLOORS, WALLS, FOOTINGS, COOLER AND FREEZER WALLS.

I. ALL UNDERGROUND WIRING AND RACEWAYS SHALL BE A MINIMUM OF 24" BELOW FINISHED GRADE EXCEPT WIRING OVER 600 VOLTS WHICH SHALL BE 30" BELOW FINISHED GRADE, UNLESS NOTED OTHERWISE. WIRING IN SLAB SHALL BE INSTALLED IN SCHEDULE 40 RIGID NON METALLIC CONDUIT.

16100.25 CONDUITS AND RACEWAYS

A. ALL CONDUITS SHALL BE 1/2" MINIMUM TRADE SIZE DIAMETER, UNLESS SPECIFIED OTHERWISE.

B. ALL RIGID STEEL CONDUITS SHALL HAVE THREADS PAINTED WITH THOMAS AND BETTS COPPER SHIELD WHERE CONDUIT IS EXPOSED TO WEATHER OR DAMPNESS.

C. RIGID NON-METALLIC CONDUIT SHALL BE INSTALLED IN ACCORDANCE WITH ARTICLE 347 OF THE NATIONAL ELECTRICAL CODE. NO SECTION OR LENGTH OF CONDUIT SHALL BE EXPOSED. ALL ELBOWS SHALL BE RIGID GALVANIZED TO AVOID CUTTING WITH PULL WIRES AND TAPES. CONDUIT SHALL BE PROTECTED FROM LIGHT DURING STORAGE AND INSTALLATION.

D. RACEWAYS SHALL BE CAPPED WITH BUSHINGS DURING CONSTRUCTION AND SWABBED CLEAN BEFORE DRAWING IN WIRE.

E. CONDUITS SHALL BE CUT SQUARE AND REAMED AND ALL TERMINALS SHALL BE MADE UP TIGHT.

F. RIGID CONDUIT SYSTEM SHALL BE MADE UP WITH THREADED FITTINGS AND COUPLINGS.

G. EXPOSED RACEWAYS SHALL RUN PARALLEL TO OR AT RIGHT ANGLES TO SURFACES WIRED OVER AND SHALL BE PROVIDED WITH FITTINGS OR STANDARD MANUFACTURED ELBOWS.

H. SUPPORTS ON ALL RACEWAYS SHALL RUN PARALLEL TO OR AT RIGHT ANGLES TO SURFACES WIRED OVER AND SHALL BE SPACED AT A MAXIMUM OF 10'. SUPPORTS ON RACEWAYS LARGER THAN 2" SHALL BE SPACED AT A MAXIMUM OF 6'.

I. FASTENINGS SHALL BE LAD SHIELDS, RAW PLUGS, WOOD SCREWS, LAG BOLTS, BEAM CLAMPS OR TOGGLE BOLTS. NO WOODEN PLUGS WILL BE PERMITTED. NO NAILS WILL BE PERMITTED.

J. CONDUITS AND HANGERS SHALL BE INSTALLED IN A MANNER NOT TO INTERFERE WITH THE WORK OF OTHER TRADES. THIS SHALL INCLUDE TRAPEZE HANGERS TO STRADDLE DUCTS, PIPES OR OTHER OBSTRUCTIONS, WHERE NECESSARY. NO PERFORATED STRAP IRON WILL BE PERMITTED.

K. PROVIDE A CONDUIT EXPANSION FITTING WHEREVER RUN CROSSES AND EXPANSION JOINT IN THE STRUCTURE, AND WHERE CONDUIT IS ATTACHED TO SEPARATE STRUCTURES. EXPANSION FITTING SHALL BE "OZ" TYPE "AX," THOMAS AND BETTS, STEEL CITY OR APPROVED EQUAL.

L. RIGID NON-METALLIC CONDUIT SHALL BE POLYVINYL CHLORIDE SCHEDULE-40 HEAVY WALL, MADE BY CARLON OR APPROVED EQUAL.

M. SURFACE METAL RACEWAY SHALL BE WIREMOLD, KINDORF OR APPROVED EQUAL.

N. RIGID CONDUIT BUSHINGS SHALL BE IMPACT RESISTANT PLASTIC INSULATING TYPE, AS MADE BY THOMAS & BETTS, APPLETON, STEEL CITY OR APPROVED EQUAL.

O. ELECTRO-METALLIC TUBING SHALL BE REPUBLIC, ETP, NATIONAL OR APPROVED EQUAL WITH SCREW-TYPE FITTINGS.

P. ALL STEEL CONDUITS IN DIRECT CONTACT WITH EARTH SHALL BE PAINTED WITH TWO(2) COATS OF BLACK ASPHALT, PRIOR TO INSTALLATION.

Q. PROVIDE A CONTINUOUS RED PLASTIC STRIP 1'-0" ABOVE TOP OF ALL UNDERGROUND RACEWAYS.

R. CONDUIT SUPPORTS AND HANGERS SHALL BE GALVANIZED BY STEEL CITY, KINDORF OR EQUAL.

16100.27 PULL OR JUNCTION BOXES AND WIRING TROUGHS

A. FURNISH AND INSTALL PULL OR JUNCTION BOXES WHERE INDICATED OR WHERE NECESSARY TO FACILITATE PULLING OF CONDUCTORS. ALL BOXES SHALL BE SIZED ACCORDING TO NEC REQUIREMENTS.

B. BOXES SHALL BE FORMED OF HOT DIPPED GALVANIZED SHEET STEEL EXCEPT WHERE SPECIFIED OTHERWISE.

C. BOXES INSTALLED IN WET AREAS OR WHERE EXPOSED TO WEATHER SHALL BE GALVANIZED WITH CAST BOLTED COVERS.

E. ALL COVERS ON BOXES AND TROUGHS SHALL BE SCREW COVER TYPE, OR COMBINATION HINGED AND SCREWED TYPE.

16100.28 WIRES AND CABLES - 600 VOLT INSULATION

A. WIRE AND CABLE SHALL BE COPPER AND SHALL HAVE CURRENT CARRYING CAPACITY NOT LESS THAN INDICATED AND SHALL CONFIRM TO UL STANDARDS. CONDUCTOR SIZES SHALL BE AS INDICATED ON THE DRAWINGS AND SHALL NOT BE LESS THAN NO. 12 AWG FOR POWER AND LIGHTING WORK UNLESS OTHERWISE INDICATED OR SPECIFIED. ALL NO. 8 B&S GAUGE WIRE AND LARGER SHALL BE STRANDED UNLESS OTHERWISE NOTED ON DRAWINGS. VOLTAGE RATING OF CONDUCTORS WHICH OPERATE AT 600 VOLTS AND BELOW SHALL BE 600 VOLTS. TYPE THWN INSULATION SHALL BE USED FOR ALL SIZES OF WIRE WITH XHHW USED FOR RISERS, UNLESS OTHERWISE NOTED. RECESSED LIGHTING FIXTURES IN HUNG CEILINGS SHALL BE SUPPLIED WITH TYPE AF INSULATED WIRE IN FLEXIBLE METAL CONDUIT, IN LENGTHS NOT EXCEEDING 6 FEET, FROM ADJACENT JUNCTION BOX. TYPE THHN INSULATED WIRE MAY BE USED FOR BRANCH CIRCUIT WIRING, PROVIDING THE AMPACITIES AT WHICH IT IS EMPLOYED ARE BASED ON THE ALLOWABLE AMPACITY OF 75?C. WIRE.

B. CABLES IN HIGH TEMPERATURE AREAS SHALL HAVE AN INSULATION TYPE SUITABLE FOR THE TEMPERATURE CABLES USED IN SPACES FOR ENVIRONMENTAL AIR SHALL CONFORM WITH APPLICABLE NEC REQUIREMENTS.

16100.29 WIRE SPLICING AND TERMINATING OF 600 VOLT CONDUCTORS

A. SPLICES OF WIRES UP TO 3 #8 CONDUCTORS SHALL BE MADE WITH PRESSURE TYPE CONNECTORS. WIRE NUTS OR SCREW CAPS WILL NOT BE PERMITTED. SPLICES ABOVE THIS SIZE SHALL BE MADE WITH APPROVED MECHANICAL CONNECTORS, SCOTCHFILL AND SCOTCH #88 VINYL TAPE.

B. SPLICES IN CABLES #6 GAUGE AND LARGER SHALL BE MADE WITH CAST SLEEVE TYPE CONNECTORS WITH SET SCREWS, SCOTCHFILL AND SCOTCH #88 VINYL TAPE.

C. COPPER CONDUCTOR TERMINATIONS SHALL BE MADE WITH MECHANICAL, SET SCREW, PRESSED COPPER LUGS. TWO(2) BOLT LUGS SHALL BE USED IF NECESSARY, TO OBTAIN SUFFICIENT CONTACT SURFACE OR 200 AMPERES PER SQUARE INCH CAPACITY TO MAINTAIN RIGIDITY IN TERMINATING LARGE CABLES.

D. SMALL WIRE SPLICES SHALL BE MADE WITH THOMAS AND BETTS WIRE NUTS OR APPROVED EQUAL CONNECTORS.

E. LARGE WIRE SPLICES SHALL BE MADE WITH "OZ" TYPE XW AND "OZ" TYPE XTP, OR APPROVED EQUAL CONNECTORS.

F. TERMINAL LUGS SHALL BE PRESSED COPPER SCREW LUGS AS MADE BY MAC OR EQUAL.

16100.30 WIRING DEVICES AND PLATES

A. PROVIDE AT EVERY INDICATED OUTLET THE PROPER DEVICES AND PLATES AS SPECIFIED HEREIN OR ON THE DRAWINGS. WHERE MORE THAN ONE DEVICE IS INDICATED IN ONE LOCATION, THEY SHALL BE GANGED TOGETHER IN ONE BOX AND UNDER ONE PLATE AS REQUIRED.

B. DEVICES LISTED ARE TO ESTABLISH TYPE, COLOR, OPERATION AND CAPACITY. MANUFACTURERS SHALL BE HUBBELL, PASS AND SEYMOUR, OR ARROW HART.

C. COLOR TO BE CHOSEN BY ARCHITECTS.

16100.32 LAMPS AND FIXTURES

A. PROVIDE FIXTURES AS SHOWN ON THE FIXTURE SCHEDULE AND DESCRIBED BELOW. THE FIXTURES SHALL BE SUPPLIED COMPLETE WITH LAMPS AND ANY AUXILIARY DEVICES NECESSARY FOR THEIR FUNCTION. FIXTURES SHALL BE SECURELY FASTENED TO THE CEILING STRUCTURE, AS WELL AS THE OUTLET BOX WHERE NECESSARY TO MAINTAIN PROPER ALIGNMENT.

B. HID BALLAST SHALL BE HIGH POWER FACTOR TYPE.

C. FIXTURES SHALL BE DESIGNED AND APPLIED SUCH THAT THE BALLAST/FIXTURE COMBINATION WITH ALL UNITS IN-PLACE IN THE ROOM OR SPACE SHALL HAVE AN INAUDIBLE SOUND.

D. FIXTURE/BALLAST COMBINATION SHALL BE DESIGNED TO LIMIT MAXIMUM BALLAST CASE TEMPERATURE TO 90 DEG.C.

E. LIGHTING FIXTURES SHALL CONFORM TO ARTICLES 410 AND 300-22 OF THE NEC.

F. FOR THE SIGNS, PROVIDE CONNECTIONS WITH WATERPROOF JUNCTION BOXES OR AS SPECIFIED ON THE PLANS.

G. ALL EXTERIOR LIGHTING FIXTURES WHERE EXPOSED TO WEATHER SHALL BE UL TESTED FOR WET LOCATIONS. OUTDOOR CANOPY LIGHTING FIXTURES SHALL BE UL LISTED FOR DAMP LOCATIONS.

E. EXTERIOR LIGHTING FIXTURES SHALL BE CONTROLLED BY A PHTOCELL-ON/ TIMER-OFF SCHEME. CONTRACTOR TO PROVIDE ALL MATERIALS, CONTACTORS, AND HARDWARE AS REQUIRED.

16100.33 TELEPHONE CONDUIT SYSTEM

A. PROVIDE A COMPLETE TELEPHONE SYSTEM AS INDICATED ON THE PLANS WITH OUTLET BOXES, PLATES AND CABINETS FOR THE INSTALLATION OF TELEPHONE AND WIRING BY THE TELEPHONE COMPANY.

B. ALL RACEWAYS, CABINETS, OUTLETS, ETC., AND THE METHOD OF INSTALLATION SHALL COMPLY WITH THE REGULATIONS AND REQUIREMENTS OF THE TELEPHONE COMPANY.

16100.36 SERVICE AND CURRENT CHARACTERISTICS

A. ELECTRICAL SERVICE SHALL BE BROUGHT IN OVERHEAD OR UNDERGROUND BY THIS CONTRACTOR FROM THE UTILITY COMPANY POLE TO THE PAD OR POLE MOUNTED TRANSFORMER AND TO THE MAIN FUSED SWITCHBOARD LOCATED AS SHOWN ON THE DRAWINGS. ELECTRICAL CONTRACTOR TO COORDINATE ALL NECESSARY REQUIREMENTS WITH THE UTILITY COMPANY.

B. SERVICE SHALL BE THREE PHASE, FOUR WIRE, 120/208 VOLTS OR AS SHOWN ON PLANS.

16100.38 SAFETY AND DISCONNECT SWITCHES

A. BASE NAMED MANUFACTURER - SQUARE 'D'.

B. UNLESS NOTED OTHERWISE, ALL OTHER SWITCHES SHALL SQUARE 'D' HEAVY DUTY CLASS 3110.

C. ALL DISCONNECT SWITCHES SHALL BE LOCKABLE IN THE "ON" OR "OFF" POSITION.

D. OTHER ACCEPTABLE MANUFACTURERS - GENERAL ELECTRIC, WESTINGHOUSE, CUTLER-HAMMER.

16100.42 MOLDED CASE CIRCUIT BREAKERS

A. BASED NAMED MANUFACTURER - "G.E."

B. CIRCUIT BREAKERS SHALL BE OF THE MOLDED CASE BOLTED IN TYPE CONSISTING OF THE NUMBER OF POLES AND AMPERE RATINGS AS NOTED ON THE DRAWINGS.

C. CIRCUIT BREAKERS SHALL BE OF THE INDICATING TYPE PROVIDING "ON," "OFF," AND "TRIPPED" POSITIONS OF THE OPERATING HANDLE. WHEN THE BREAKER IS TRIPPED, THE HANDLE SHALL ASSUME A POSITION BETWEEN "ON" AND "OFF" POSITIONS. BREAKERS SHALL BE OF THE QUICK-MAKE QUICK-BREAK TYPE WITH INVERSE TIME CHARACTERISTICS SECURED THROUGH THE USE OF A BI-METALLIC AND A MAGNETIC TRIPPING ELEMENT.

D. TWO AND THREE POLE BREAKERS SHALL BE THE COMMON TRIP TYPE. HANDLE EXTENSIONS PROVIDING COMMON MANUAL OPERATION WILL NOT BE ACCEPTABLE.

16100.43 LIGHTING AND POWER PANELS

A. BASED NAME MANUFACTURER - "G.E."

B. THE LIGHTING PANELBOARDS SHALL BE FOR THE DEAD FRONT, AUTOMATIC MOLDED CASE CIRCUIT BREAKER TYPE.

C. CABINETS SHALL BE CODE GAUGE WITH MINIMUM 4" SIDE, TOP, AND BOTTOM GUTTERS AND A MINIMUM OF 20" WIDE. PROVIDE SUBFEED LUGS AND A MINIMUM OF 8" TOP, BOTTOM AND SIDE GUTTERS FOR FEEDER TAPS WITHIN PANELBOARDS AND WHEN FEEDERS ARE INSTALLED IN SIDE GUTTERS.

D. THE PANELS SHALL BE FACTORY ASSEMBLED COMPLETE WITH BREAKERS. ANY CIRCUIT BREAKER SHALL BE CAPABLE OF REPLACEMENT WITHOUT DISTURBING ANY OTHER BREAKER, THE MAIN BUS BARS OR BRANCH WIRE CONNECTORS. THE PANELS SHALL BE CAPABLE OF HAVING BRANCH CIRCUITS ADDED WITHOUT ADDITIONAL MACHINING, DRILLING, OR TAPPING. BRANCH CIRCUITS SHALL BE SEQUENCED PHASED ON THE MAIN BUS CARRYING CAPACITY SHALL BE DETERMINED ON A BASIS OF NOT MORE THAN 750 AMPERES PER SQUARE INCH OF CROSS SECTIONAL AREA FOR ALUMINUM BUSES.

E. THE PANELS SHALL BE ARRANGED FOR 3 PHASE, 4 WIRE, 120/208 VOLT SERVICE AS REQUIRED.

F. CIRCUIT BREAKERS SHALL BE AS SPECIFIED IN "MOLDED CASE CIRCUIT BREAKER" SECTION OF THE H. ALL PANELS SHALL BE PROVIDED WITH A COMPLETE TYPE-WRITTEN DIRECTORY OF ALL CONNECTED AND SPECIFICATIONS. MINIMUM INTERRUPTING CAPACITY - 120/208 VOLT SYSTEMS TO BE COORDINATED WITH LOCAL UTILITY COMPANIES SO AS TO INTERRUPT THE AVAILABLE FAULT CURRENT.

G. OTHER ACCEPTABLE MANUFACTURERS - SIEMENS ITE, WESTINGHOUSE, GENERAL ELECTRICAL, CUTLER-HAMMER.

H. THE PANELS SHALL BE LOCATED AND SIZED AS INDICATED ON PRINTS AND CONNECTED AS SHOWN ON THE RISER DIAGRAM.

16100.48 TEMPORARY LIGHT AND POWER

A. THE ELECTRICAL CONTRACTOR SHALL PROVIDE, MAINTAIN, AND OPERATE A SUITABLE TEMPORARY ELECTRIC DISTRIBUTION SYSTEM FOR LIGHT AND POWER.

B. ALL NECESSARY MATERIALS, I.E., PANELBOARDS, SWITCHES, FUSES, CABLES, RECEPTACLE OUTLETS, SUPPORTS AND OVER CURRENT PROTECTION, INCLUDING GROUND FAULT CIRCUIT INTERRUPTERS, 15 AMP. SINGLE-PHASE RECEPTACLES, 30 AMP SINGLE-PHASE OUTLETS, AND ALL OTHER ACCESSORIES REQUIRED FOR THE TEMPORARY DISTRIBUTION SYSTEM SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

C. ALL NECESSARY LABOR AND MATERIALS REQUIRED FOR THE INSTALLATION AND MAINTENANCE AND SUBSEQUENT REMOVAL OF THE TEMPORARY DISTRIBUTION SYSTEM, INCLUDING ALL FUSES AND LAMPS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

D. ALL NECESSARY SLEEVES AND SUPPORTS, AS MAY BE REQUIRED FOR THE TEMPORARY DISTRIBUTION SYSTEM SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR.

E. MINIMUM TEMPORARY LIGHTING WITHIN ALL PORTIONS OF THE BUILDING SHALL BE BASED UPON A LIGHTING INTENSITY OF TEN(10) FOOT CANDLES THROUGHOUT. PROPERLY GUARDED LEFT HAND THREADED LAMPS FOR MEETING OSHA REQUIREMENTS AND THE FOLLOWING MINIMUM LAMPING REQUIREMENTS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR:

ROOMS OR SPACES 100 SQ. FT. TO 250 SQ. FT., NOT LESS THAN TWO(2) 100-WATT LAMPS. ROOMS OR SPACES OVER 250 SQ. FT. AND UNDER 500 SQ. FT., NOT LESS THAN FOUR(4) 100-WATT LAMPS.

ROOMS OR SPACES OVER 500 SQ. FT., NOT LESS THAN TWO(2) 200-WATT LAMPS OVER 1,000 SQ. FT. OR FRACTION THEREOF.

ALL WIRING, OUTLETS AND LAMPS AS REQUIRED SHALL BE PROVIDED TO CREATE PROPER ADEQUATE LIGHTING IN STAIRS, CORRIDORS AND PASSAGES.

FOR SECURITY REASONS, LIGHTING IN STAIRS, CORRIDORS AND PASSAGES SHALL REMAIN ENERGIZED CONSTANTLY, 24 HOURS OF EACH DAY.

THE ELECTRICAL CONTRACTOR SHALL MAINTAIN HIGHER LIGHTING INTENSITIES AS NECESSARY, IN AREAS WHERE CONCRETE FINISHING AND WORK OF SIMILAR NATURE IS IN PROGRESS, AT NO ADDITIONAL COST TO THE CONTRACTOR.

F. MINIMUM TEMPORARY POWER WITHIN ALL BUILDINGS PROVIDED BY ELECTRICAL CONTRACTOR FOR ELECTRICALLY OPERATED SMALL TOOLS SHALL BE BASED ON A MINIMUM OF 0.50 WATTS PER SQUARE FOOT. ALL POWER OUTLETS SHALL BE PROPERLY GROUNDED CONFORMING TO NEC AND RULES AND REGULATIONS PRESCRIBED BY OSHA, AS WELL AS ALL OTHER AGENCIES HAVING JURISDICTION WITHIN LOCALE. WHEN SUCH CODES OR REGULATIONS ARE INCONSISTENT, THE MORE STRINGENT SHALL PREVAIL.

G. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL FEEDERS AND LIGHTING/POWER DISTRIBUTION CENTERS OF SUFFICIENT CAPACITY FOR THE REQUIREMENTS OF THE ENTIRE BUILDING, WITH SUFFICIENT NUMBER OF OUTLETS AT SUCH CONVENIENT LOCATIONS SO THAT GROUNDED EXTENSION CORDS OF NOT OVER 100 FEET IN LENGTH WILL REACH ALL WORK AREAS REQUIRING TEMPORARY POWER OR LIGHT. FEEDERS AND BRANCH CIRCUITS SHALL BE EXTENDED TO KEEP PACE WITH CONSTRUCTION.

16289 SURGE PROTECTION DEVICE

A. GENERAL

B. SURGE PROTECTION DEVICE (SPD) SHALL BE UL1449 4th EDITION LISTED AND LABELED "TYPE 1" OR "TYPE 2" LISTED PER NEC ART 285.23 AND 285.24, AND UL1283 COMPLIMENTARY LISTED.

C. THE SPD SHALL HAVE A WARRANTY OF NOT LESS THAN 10 YEARS FROM ORIGINAL DATE OF SHIPMENT. AFTER PROPER INSTALLATION, THE WARRANTY SHALL NOT BE PRO-RATED AND SHALL COVER MANUFACTURING DEFECTS, WORKMANSHIP OR ANY END-OF-LIFE ELECTRICAL EVENT INCLUDING LIGHTNING.

D. PRODUCTS

E. APPROVED MANUFACTURERS FOR SERVICE ENTRANCE, AND BRANCH PANELS ARE,
1. THOR SYSTEMS TSR PRODUCT, AND TSN PRODUCT
2. CURRENT TECHNOLOGY SL3 PRODUCT, TG3 PRODUCT
3. ASCO 460 (ON SERVICE ENTRANCE) AND ASCO 430 (ON DISTRIBUTION OR BRANCH PANELS)

F. SSCR OR AIC: THE SPD SHALL HAVE A MINIMUM SCCR RATING OF 100K AIC OR GREATER THAN THAT OF THE CONNECTED SWITCHGEAR OR PANEL THAT IS BEING PROTECTED.

G. SERVICE ENTRANCE SPD'S SHALL HAVE A NOMINAL DISCHARGE RATING (IN) OF 20KA PER UL96A 12TH EDITION.

H. THE UL1449 4th EDITION VOLTAGE PROTECTION RATING (VPR) SHALL NOT BE MORE THAN INDICATED ON THE FOLLOWING CHART, AND THE PER MODE SURGE CURRENT RATING SHALL NOT BE LESS THAN INDICATED ON THE SAME FOLLOWING CHART UNLESS THE RISER, ONE LINE OR PANEL SCHEDULE INDICATES OTHERWISE.

PANEL AMPERAGE	SURGE CURRENT RATING PER MODE	UL1449-4th EDITION VPR 208Y/120V / 408Y/277V	MODES OF PROTECTION
≥2500 AMPS	300,000 AMPS	800V / 1200	L-N, L-G, N-G
1200 - 2000 AMPS	250,000 AMPS	800V / 1200	L-N, L-G, N-G
600 - 1000 AMPS	200,000 AMPS	800V / 1200	L-N, L-G, N-G
250 - 400 AMPS	150,000 AMPS	800V / 1200	L-N, L-G, N-G
125 - 225 AMPS	100,000 AMPS	800V / 1200	L-N, L-G, N-G
≤100 AMPS	50,000 AMPS	800V / 1200	L-N, L-G, N-G

I. THE SPD INTEGRAL MONITORING SHALL BE LED STATUS INDICATORS, AND DRY CONTACTS. THE SERVICE ENTRANCE DEVICES SHALL HAVE LED STATUS INDICATORS, DRY CONTACTS, A SURGE EVENT COUNTER WITH RE-SET, AND AUDIBLE ALARM WITH SILENCE SWITCH.

J. ENCLOSURE: THE SPD SHALL HAVE A NEMA RATING OF NEMA-4 OR A NEMA RATING EQUAL OR GREATER THAN THE CONNECTED SWITCHGEAR OR PANEL THAT IS BEING PROTECTED.

K. EXECUTION

L. SPD SHALL BE MOUNTED EXTERNAL THE SWITCHBOARD(S), DISTRIBUTION PANEL(S), BRANCH PANEL(S) AND/OR LOAD CENTER(S), PER MANUFACTURERS INSTALLATION INSTRUCTIONS, LOCAL CODES, NEC ART.110.3B AND ART.285, AND IEEE 1100-2005 SECTION 8.4.2.5.

M. THE SPD CONNECTIVITY SHALL BE VIA A DEDICATED 3-POLE BREAKER, SIZED PER THE SPD MANUFACTURERS INSTALLATION INSTRUCTIONS. TYPE 2 PER NEC2008 ART.285.24, AND LOW-Z WIRE PROVIDED BY SPD MANUFACTURER.

16541 - FIRE ALARM SYSTEM (IF REQUIRED)

16541.5 PERFORMANCE REQUIREMENTS

A. COMPLY WITH NFPA 72.

B. FIRE ALARM SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES:
1. MANUAL STATIONS.
2. HEAT DETECTORS.
3. SMOKE DETECTORS.

C. FIRE ALARM SIGNAL SHALL INITIATE THE FOLLOWING ACTIONS:
1. ALARM NOTIFICATION APPLIANCES SHALL OPERATE CONTINUOUSLY.
2. IDENTIFY ALARM AT THE FACP
3. DE-ENERGIZE ELECTROMAGNETIC DOOR HOLDERS
4. TRANSMIT AN ALARM SIGNAL TO THE REMOTE ALARM RECEIVING STATION.
5. UNLOCK ELECTRIC DOOR LOCKS IN DESIGNATED EGRESS PATHS.
6. RELEASE FIRE AND SMOKE DOORS HELD OPEN BY MAGNETIC DOOR HOLDERS.
7. SWITCH HEATING, VENTILATING, AND AIR-CONDITIONING EQUIPMENT CONTROLS TO FIRE ALARM MODE.
8. CLOSE SMOKE DAMPERS IN AIR DUCTS OF SYSTEM SERVING ZONE QHERE ALARM WAS INITIATED

D. SYSTEM TROUBLE SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES OR ACTIONS:
1. OPEN CIRCUITS, SHORTS AND GROUNDS OF WIRING FOR INITIATING DEVICE, SIGNALING LINE, AND NOTIFICATION-APPLIANCE CIRCUITS.
2. OPENING, TAMPERING, OR REMOVAL OF ALARM-INITIATING AND SUPERVISORY SIGNAL-INITIATING DEVICES.
3. LOSS OF PRIMARY POWER AT THE FACP.
4. GROUND OR DINGLE BREAK IN FACP INTERNAL CIRCUITS.
5. ABNORMAL AC VOLTAGE AT THE FACP.
6. A BREAK IN STANDBY BATTERY CIRCUITRY.
7. FAILURE OF BATTERY CHARGING.

E. SYSTEM TROUBLE AND SUPERVISORY SIGNAL ACTIONS: RING TROUBLE BELL AND ANNUNCIATE AT THE FACP.

F. IT IS THE INTENTION OF THE DESIGN DOCUMENTS TO HAVE A COMPLETE FIRE ALARM SYSTEM WITHIN THE PROJECT SCOPE OF WORK IN FULL COMPLIANCE WITH NFPA 72 AND ANY AND ALL OTHER APPLICABLE CODES AND /OR AS DIRECTED BY THE AUTHORITY HAVING JURISDICTION. AS PART OF HIS BID CONTRACTOR IS TO INCLUDE ALL ALARM INITIATING DEVICES, ALARM NOTIFICATION APPLIANCES, CONTROL UNITS, FIRE SAFETY CONTROL DEVICES, ANNUCIATORS, POWER SUPPLIES, AND WIRING REQUIRED TO MEET COMPLIANCE. NO ALLOWANCE SHALL BE MADE BECAUSE CONTRACTOR HAS NOT INCLUDED ALL REQUIRED MATERIALS FOR FULL COMPLIANCE.

16541.6 SUBMITTALS

A. SHOP DRAWINGS
1. SHOP DRAWINGS SHALL BE PREPARED BY PERSONS WITH THE FOLLOWING QUALIFICATIONS:
I. TRAINED AND CERTIFIED BY MANUFACTURER IN FIRE ALARM SYSTEM DESIGN.
II. FIRE ALARM CERTIFIED BY NICET, MINIMUM LEVEL III.
2. SYSTEM RISER DIAGRAM WITH DEVICE ADDRESSES, CONDUIT SIZES, AND CABLE AND WIRE TYPES AND SIZES.
3. FLOOR PLANS: INDICATE FINAL OUTLET LOCATIONS SHOWING ADDRESS OF EACH ADDRESSABLE DEVICE. SHOW SIZE AND ROUTE OF CABLE AND CONDUITS.

B.QUALIFICATION DATA: FOR INSTALLER

16541.7 QUALITY ASSURANCE

A. INSTALLER QUALIFICAITONS: PERSONNEL SHALL BE TRAINED AND CERTIFIED BY MANUFACTURER FOR INSTALLATION OF UNITS REQUIRED FOR THIS PROJECT. PERSONNELL CERTIFIED BY NICET AS FIRE ALARM LEVEL II.

16541.10 EXTRA MATERIALS

A. FURNISH EXTRA MATERIALS DESCRIBED BELOW THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS. PART MAY BE PROVIDED INSTALLED PER THE OWNERS REPRESENTATIVE.
1. AUDIBLE AND VISUAL NOTIFICATION APPLIANCES: THREE OF EACH TYPE INSTALLED.

B. CONTRACTOR SHALL INCLUDE AS PART OF HIS BID, THE BELOW LISTED DEVICES. PRICE SHALL INCLUDE ALL INSTALLATION, CONNECTIONS TO APPROPRIATE ZONES, ANY SOFTWARE PROGRAMMING, HARDWARE, ETC. REQUIRED FOR DEVICES TO BE A FUNCTIONING PART OF FIRE ALARM SYSTEM. ANY UNUSED DEVICES SHALL BE TURNED OVER TO OWNER AS SPARE PARTS.
1. ___5_____ CEILING MOUNTED SMOKE DETECTORS (IF SYSTEM REQUIRES)
2. ___3_____ MANUAL PULL STATIONS
3. ___3_____ AUDIO/VISUAL ALARM UNITS
4. ___3_____ VISUAL ALARM UNITS
5. ___2_____ DUCT DETECTORS

16541.11 MANUFACTURERS

A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1. FACP AND EQUIPMENT
I. EDWARDS SYSTEMS TECHNOLOGY INC.
II. NOTIFIER; A GE-HONEYWELL COMPANY.
III. SIEMENS BUILDING TECHNOLOGIES, INC.; A CERBERUS DIVISION.
IV. SILENT KNIGHT; A GE-HONEYWELL COMPANY.
V. SIMPLEXGRINNELL LP; A TYCO INTERNATIONAL COMPANY.

16541.12 FACP

A. GENERAL DESCRIPTION:
1. SYSTEM IS TO BE A NEW SYSTEM.

B. ELEVATOR CONTROLS: HEAT DETECTOR OPERATION SHUTS DOWN ELEVATOR POWER BY OPERATING A SHUNT TRIP IN A CIRCUIT BREAKER FEEDING THE ELEVATOR.

16541.14 MANUAL FIRE ALARM BOXES

A. DESCRIPTION: UL 38 LISTED; FINISHED IN RED WITH MOLDED, RAISED-LETTER OPERATING INSTRUCTIONS IN CONTRASTING COLOR.
1. SINGLE-ACTION MECHANISM, PULL-LEVER TYPE. WITH INTEGRAL ADDRESSABLE MODULE, ARRANGE TO COMMUNICATE MANUAL-STATION STATUS (NORMAL, ALARM, OR TROUBLE) TO FACP.

16541.15 SYSTEM SMOKE DETECTORS

A. GENERAL DESCRIPTION:
1. UL 268 LISTED, OPERATING A 24-V DC, NOMINAL.
2. INTEGRAL ADDRESSABLE MODULE: ARRANGED TO COMMUNICATE DETECTOR STATUS (NORMAL, ALARM, OR TROUBLE) TO FACP.

B. PHOTOELECTRIC SMOKE DETECTOR:
1. SENSOR: LED OR INFRARED LIGHT SOURCE WITH MATCHING SILICON-CELL RECEIVER.

C. IONIZATION SMOKE DETECTOR
1. SENSOR: RESPONSIVE TO BOTH VISIBLE AND INVISIBLE PRODUCTS OF COMBUSTION. SELF COMPENSATING FOR CHANGES IN ENVIRONMENTAL CONDITIONS.

16541.17 HEAT DETECTORS

A. GENERAL: UL 521 LISTED.

B. HEAT DETECTOR, COMBINATION TYPE: ACUATED BY EITHER A FIXTURE TEMPERATURE OF 135 DEG F (57 DEG C) OR RATE-OF-RISE OF TEMPERATURE THAT EXCEEDS 15 DEG F (8 DEG C) PER MINUTE, UNLESS OTHERWISE INDICATED.

16541.19 NOTIFICATION APPLIANCES

A. DESCRIPTION: EQUIPPED FOR MOUNTING AS INDICATED AND WITH SCREW TERMINALS FOR SYSTEM CONNECTIONS.
1. COMBINATION DEVICES: FACTORY-INTEGRATED AUDIBLE AND VISIBLE DEVICES IN A SINGLE-MOUNTING ASSEMBLY.

B. HORNS: ELECTRIC-VIBRATING-POLARIZED TYPE, 24-V DC; WITH PROVISION FOR HOUSING THE OPERATING MECHANISM BEHIND GRILLE. HORNS SHALL PRODUCE A SOUND-PRESSURE LEVEL OF 90dBA MEASURED 10 FEET (3M) FROM HORN.

C. VISIBLE ALARM DEVICES: XENON STOBE LIGHTS LISTED UNDER UL 1971, WITH CLEAR OR NOMINAL WHITE POLYCARBONATE LENS MOUNTED ON AN ALUMINUM FACEPLATE. THE WORK "FIRE" IS ENGRAVED IN MINIMUM 1-INCHO (25-MM-) HIGH LETTERS ON THE LENS.

16541.21 EXECUTION

A. HVAC: LOCATE DETECTORS NOT CLOSER THAN 3 FEET (1M) FROM AIR-SUPPLY DIFFUSER OR RETURN-AIR OPENING.

16541.22 WIRING INSTALLATION

A. INSTALL WIRING ACCORDING TO THE FOLLOWING:
1. NECA 1.
2. TIA/EIA 568-A.

B. WIRING METHOD: INSTALL WIRING IN METAL RACEWAY ACCORDING TO DIVISION 16 SECTION "RACEWAYS AND BOXES."
1. FIRE ALARM CIRCUITS AND EQUIPMENT CONTROL WIRING ASSOCIATED WITH THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN A DEDICATED RACEWAY SYSTEM. THIS SYSTEM SHALL NOT BE USED FOR ANY OTHER WIRE OR CABLE.

16541.25 FIELD QUALITY CONTROL

A. MANUFACTURER'S FIELD SERVICE: ENGAGE A FACTORY AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT[TEST AND ADJUST] FIELD-ASSEMBLED COMPONENTS AND EQUIPMENT INSTALLATION, INCLUDING CONNECTIONS[, AND TO ASSIST IN FIELD TESTING]. REPORT RESULTS IN WRITING.

END OF ELECTRICAL SPECIFICATIONS

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ISSUED DATE 2024-09-16
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PERMIT REVIW

BRASAO REMODEL
19210 I10 WEST
SAN ANTONIO, TX 78257

E501

ELECTRICAL SPECIFICATIONS

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CAD	RAM/RHG/TSM/LS
P	FC
E	HN/MG
M	CF/JS/TSM
PM	RGM

PLUMBING SYMBOLS AND ABBREVIATIONS

A

A	AIR (COMPRESSED)
ABV	ABOVE
AC	ABOVE CEILING
AD	ACCESS DOOR, AREA DRAIN
ADJ AFC	ADJUSTABLE ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AL	ALUMINUM
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
ARCH	ARCHITECT, ARCHITECTURAL
AS	AIR SEPARATOR
AV	ACID VENT, AIR VENT
AVG	AVERAGE
AW	ACID WASTE
AWS	AMERICAN WELDING SOCIETY
AUX	AUXILIARY

B

B	BOILER
BC	BELOW COUNTER
BF	BELOW FLOOR
BFF	BELOW FINISHED FLOOR
BFV	BUTTERFLY VALVE
BH	BOX HYDRANT
BLDG	BUILDING
BM	BENCHMARK
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STRUCTURE
BT	BATH TUB, BREAK TANK
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
BWV	BACK WATER VALVE

C

C°	CELSIUS DEGREES
CB	CATCH BASIN
CD	CONDENSATE DRAIN LINE
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CIRC	CIRCULATING
CL	CENTERLINE
CLG	CEILING
CLR	CLEAR
CMP	CORRIGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CPI	CAST IRON PIPE INSTITUTE
CPVC	CHLORINATED POLYVINYL CHLORIDE
CO	CLEAN OUT
COL	COLUMN
COMB	COMBINATION
CON	CONVERTER
CONN	CONNECTION
CONT	CONTINOUS,CONTINUATION
CT	COOLING TOWER
CTR	CENTER
CU	COPPER
CW	COLD WATER

D

D	DRAIN
DESIG	DESIGNATION
DTL	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DISC	DISCONNECT
DN	DOWN
DSCU	DUCTLESS SPLIT CONDENSING UNIT
DW	DISHWASHER
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
DWP	DOMESTIC WATER PUMP
DX	DIRECT EXPANSION

E

EA	EACH
EC	ELECTRICAL CONTRACTOR
EDF	ELECTRIC DRINKING FOUNTAIN
EJ	EXPANSION JOINT
EL	ELEVATION
ELEV	ELEVATOR
EMERG	EMERGENCY
ENCL	ENCLOSURE
EQ	EQUAL
EQUIP	EQUIPTMENT
ES	EMERGENCY SHOWER
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
ETR	EXISTING TO REMAIN
EVAP	EVAPORATOR
EWT	ENTERING WATER TEMPERATURE
EXT	EXTERNAL
EXTG	EXISTING

F

F°	FAHRENHEIT DEGREES
FBO	FURNISHED BY OTHERS
FCO	FLOOR CLEAN OUT
FCS	FLOOR CONTROL STATON
FD	FLOOR DRAIN
FDS	FIRE DEPARTMENT SIAMESE
FDV	FIRE DEPARTMENT VALVE
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FIN	FINISHED
FIXT	FIXTURE
FL	FLOW LINES
FLR	FLOOR
FRZR	FREEZER
FS	FLOOR SINK
FSK	FLOOR SINK
FT	FOOT, FEET
FUT	FUTURE

G

G	GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR, GRADE CLEANOUT
GV	GATE VALVE
GLV	GLOBE VALVE
GND	GROUND
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GSH	GRAND SENSIBLE HEAT
GTH	GRAND TOTAL HEAT
GVAC	GREASE VENT ABOVE CEILING

H

H	HUMIDIFIER
HB	HOSE BIBB
HD	HUB DRAIN
HE	HEAT EXCHANGER
HORIZ	HORIZONTAL
HP	HORSEPOWER, HALON PANEL
HPU	HEAT PUMP UNIT
HKP	HOUSEKEEPING PAD
HSC	HORIZONTAL SPLIT CASE
HSTAT	HUMIDISTAT
HT	HEIGHT
HTR	HEATER
HW	HOT WATER
HWC	HOT WATER CIRCULATOR
HWP	HEATING WATER PUMP
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY

I

IE	INVERT ELEVATION
IH	INFRARED HEATER
IN	INCH
INT	INTERNAL, INTERIOR
IW	INDIRECT WASTE

J

JB	JUCTION BOX
JP	JOCKEY PUMP

K

KEC	KITCHEN EQUIPTMENT CONTRACTOR

L

L	LENGTH, LAVATORY
LAV	LAVATORY
LF	LINEAR FEET
LP	LOW PRESSURE
LRA	LOCKED ROTOR AMPS
LVL	LEVEL
LWCO	LOW WATER CUT OFF
LWT	LEAVING WATER TEMPERATURE

M

MAX	MAXIMUM
MBH	THOUSAND OF BTU'S
MC	MECHANICAL CONTRACTOR
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MI	MALLEABLE IRON
MIN	MINIMUM
MP	MEDIUM PRESSURE
MS	MOP SINK
MTD	MOUNTED

N

NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
NC	NORMALLY CLOSED
NO.	NUMBER
NTS	NOT TO SCALE

O

OC	ON CENTER
OD	OUTSIDE DIAMETER, OVERFLOW DRAIN
OPG	OPENING
OS&Y	OPEN STEM AND YOLK

P

P	PUMP
PC	PLUMBING CONTRACTOR
PCR	PUMPED CONDENSATE RETURN
PD	PRESSURE DROP, PLANTER DRAIN
PH	PHASE, POST HYDRANT
PIV	POST INDICATOR VALVE
PLBG	PLUMBING
PNEU	PNEUMATIC
PNTH	PENTHOUSE
PP	POLYPROPYLENE
PPM	PART PER MILLION
PRI	PRIMARY
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	PLUMBING TRIM
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE

Q

QTY	QUANITY

R

RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RE	REFERENCE,REFER
RED	REDUCER
REINF	REINFORCING
REQD	REQUIRED
REV	REVISION, REVISE
RPM	REVOLUTIONS PER MINUTE
RV	RELIEF VALVE

S

S	STEAM
SAN	SANITARY SEWER
SC	STEAM CONDENSATE
SCHED	SCHEDULED
SCR	SILICON CONTROLLED RECTIFIER
SD	STORM DRAIN
SE	SEWAGE EJECTOR
SEC	SECONDARY
SECT	SECTION
SENS	SENSIBLE
SF	SQUARE FEET
SFCS	SPRINKLER FLOOR CONTROL STATION
SH	SHOWER
SIM	SIMILAR
SK	SINK
SP	SUMP PUMP, STATIC PRESSURE
SPEC	SPECIFICATION
SPR	SPRINKLER
SQ	SQUARE
SS	SANITARY SEWAGE
SSD	SUBSURFACE DRAIN
SSUF	SANITARY SEWER UNDER FLOOR
SSSC	SOLID STATE SPEED CONTROL
STD	STANDARD
STL	STEEL
STR	STRAINER
SURF	SURFACE
SUSP	SUSPEND
SV	SANITARY VENT
SW	SOFT WATER

T

TC	TEMPERATURE CONTROL
TD	TRENCH DRAIN
TDH	TOTAL DYNAMIC HEAD
TH BLK	THRUST BLOCK
TP	TRAP PRIMER
TPD	TRAP PRIMER DEVICE
TYP	TYPICAL

U

U	URINAL
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES, INC.
UNO	UNLESS NOTED OTHERWISE
UF	UNDERFLOOR
US	UNDERSLAB

V

V	VENT
VAC	VENT ABOVE CEILING
VCP	VITRIFIED CLAY PIPE
VFD	VARIABLE FREQUENCY DRIVE
VIB	VALVE IN BOX
VOV	VALVE ON VERTICAL
VP	VACUUM PUMP
VTR	VENT THRU ROOF
VUF	VENT UNDER FLOOR
VUG	VENT UNDER GROUND

W

WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT
WM	WATER METER
WP	WEATHERPROOF
WPD	WATER PRESSURE DROP
WWF	WELDED WIRE FABRIC
WT	WATERTIGHT, WEIGHT

Y

Z

PLUMBING PIPING SYMBOLS

SS	SANITARY SEWER/WASTE PIPING
–	COLD WATER SUPPLY PIPING
– –	HOT WATER SUPPLY PIPING
– – –	HOT WATER RETURN PIPING
- - - - - - - - - - - -	VENT/REVENT PIPING
O	OXYGEN
G	GAS PIPING
A	AIR PIPING
FW	FILTER WATER
F	FIRE LINE
CD	CONDENSATE DRAIN
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
V	VACUUM
N2O	NITROUS OXIDE
140°	HOT WATER 140°
160°	HOT WATER 160°
180°	HOT WATER 180°
GW	GREASE WASTE
RD	ROOF DRAIN PIPING
	DRAIN PIPING
RHG	REFRIGERANT HOT GAS LINE
RS	REFRIGERANT SUCTION LINE
RL	REFRIGERANT LIQUID LINE
S (30#)	STEAM (PSIG)
SC	STEAM CONDENSATE
OF	OVERFLOW DRAIN
AW	ACID WASTE
AV	ACID VENT
FS	FIRE SPRINKLER
TP	TRAP PRIMER
SS	EXISTING SANITARY SEWER/WASTE PIPING
–	EXISTING COLD WATER SUPPLY PIPING
– –	EXISTING HOT WATER SUPPLY PIPING
– – –	EXISTING HOT WATER RETURN PIPING
- - - - - - - - - - - -	EXISTING VENT / REVENT PIPING
O	EXISTING OXYGEN
G	EXISTING GAS PIPING
A	EXISTING AIR PIPING
FW	EXISTING FILTER WATER
F	EXISTING FIRE LINE
CD	EXISTING CONDENSATE DRAIN
CHWS	EXISTING CHILLED WATER SUPPLY
CHWR	EXISTING CHILLED WATER RETURN
CWS	EXISTING CONDENSER WATER SUPPLY
CWR	EXISTING CONDENSER WATER RETURN
V	EXISTING VACUUM
N2O	EXISTING NITROUS OXIDE
140°	EXISTING HOT WATER 140°
160°	EXISTING HOT WATER 160°
180°	EXISTING HOT WATER 180°
GT	EXISTING GREASE WASTE
	EXISTING ROOF DRAIN PIPING
	EXISTING DRAIN PIPING

PLUMBING VALVES

- BALL VALVE
- BEND VALVE
- BUCK VALVE
- BUTT VALVE
- CHECK VALVE
- GLOBE VALVE
- GATE VALVE
- GATE VALVE
- HOOK VALVE
- HOOK VALVE
- PLUG VALVE
- PLUG VALVE
- SHUT VALVE
- SHUT VALVE
- SHUT VALVE
- SQUARE VALVE
- UNION VALVE
- VALVE IN DROP
- YOKE VALVE
- 2–WAY VALVE
- 3–WAY ARC VALVE
- 3–WAY SQUARE VALVE

PLUMBING FITTINGS

- BIBB
- CAP
- DRAIN
- DRAIN WITH DROP
- DROP
- FLOW DIRECTION
- FLANGE
- ELBOW FITTING
- TEE FITTING
- FCO FLOOR CLEANOUT
- YCO YARD CLEANOUT
- FLOOR DRAIN (SIZE & TYPE NOTED IN SPECIFICATION)
- HD HUB DRAIN

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ISSUED DATE 2024-09-16
PROJECT NUMBER 24-064

PERMIT REVIW

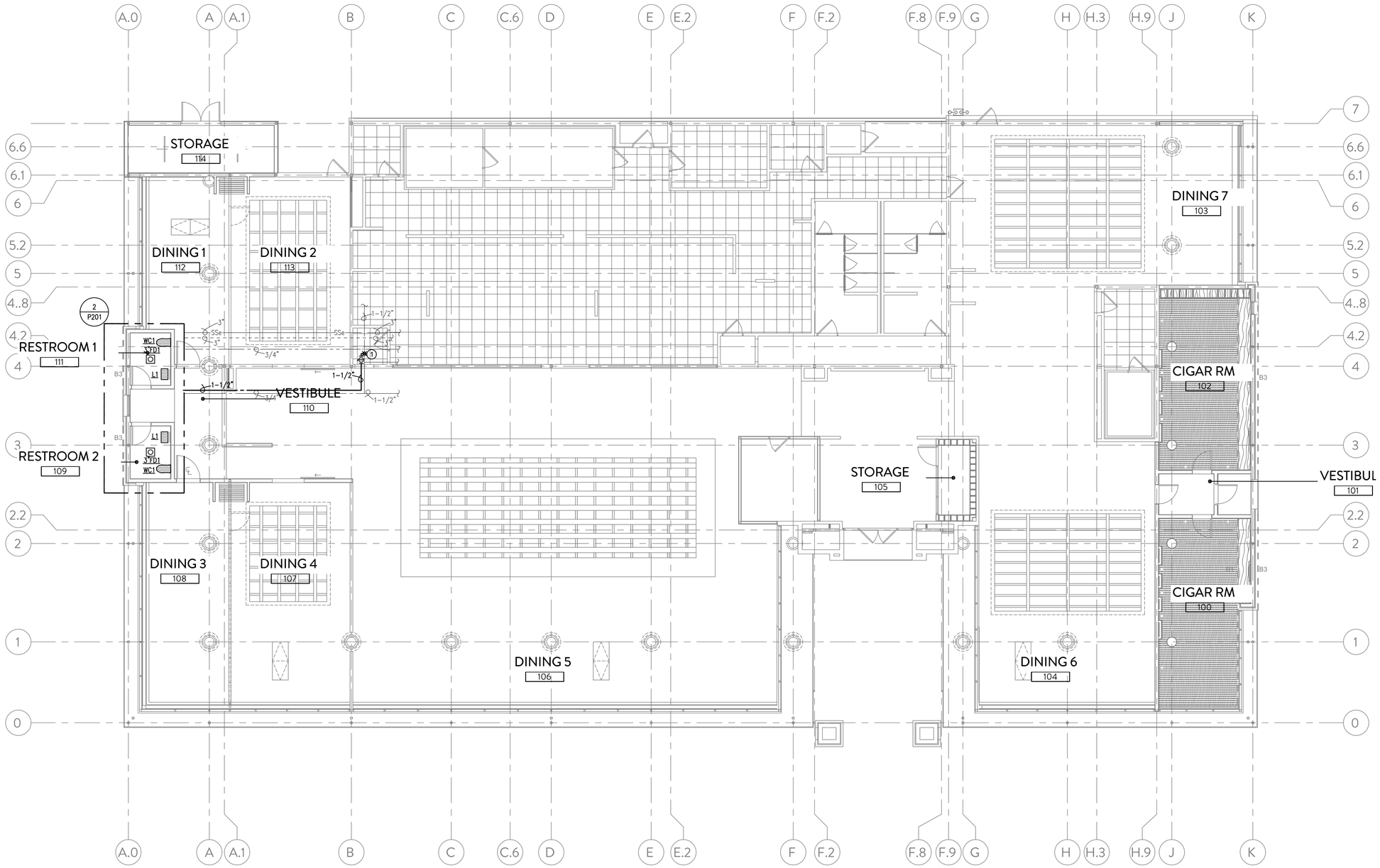
BRASAO REMODEL

19210 I10 WEST
SAN ANTONIO, TX 78257

P100
PLUMBING SYMBOLS AND ABBREVIATIONS

FILE NAME: 24-064 P100 Plumbing Symbols and Abbreviations.dwg
FILE LOCATION: C:\Users\carlo\RGM Engineering Dropbox\Projects\2024\24-064 Brasao Restaurant\Plumbing_Standard Plumbing Files\
DATE: Fri, 13 Sep 2024 - 10:36am
PLOTTED BY: carlo

	CAD
	RMM/FHG/TSM/LS
P	FC
E	HN/MG
M	CF/JS/TSM
PM	RGM



PLUMBING GENERAL NOTES:

1. FIELD VERIFY AND COORDINATE WITH ALL OTHER TRADES.
2. SANITARY SEWER PIPING 2" AND SMALLER TO BE INSTALLED AT A 2% SLOPE AND SANITARY SEWER PIPING 3" AND LARGER TO BE INSTALLED AT A 1% SLOPE.
3. PROVIDE A THERMOSTATIC MIXING VALVE SYMMONS MODEL #7-225-CK UNDER LAVATORIES/SINKS. PROVIDE DELIVERY TEMPERATURE OF 108°.
4. FIELD COORDINATE THAT ALL NEW VENTS THRU ROOF ARE 10' AWAY FROM ALL OUTSIDE AIR IINTAKES.
5. HOT/COLD WATER PIPING INSTALLED ABOVE CEILING; VENT PIPING TO BE INSTALLED ABOVE CEILING; WASTE PIPING TO BE INSTALLED BELOW FLOOR.

KEYED PLUMBING NOTES:

(1) CONNECT NEW COLD WATER LINE TO EXISTING 1-1/2" COLD WATER LINE.

1 PLUMBING FLOOR PLAN

SCALE: 1/8"=1'-0"

PLAN NORTH

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ISSUED DATE 2024-09-16
PROJECT NUMBER 24-064

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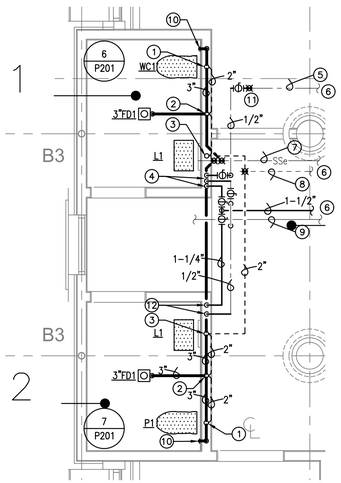
19210 110 WEST
SAN ANTONIO, TX 78257

P101

PLUMBING FLOOR PLAN

FILE NAME: 24-064 P101 Plumbing Floor Plan.dwg
FILE LOCATION: C:\Users\carlo\RGM Engineering Dropbox\Proyectos\2024\24-064 Brasao Restaurant\Plumbing_Standard Plumbing Files\
TIME: Fri, 13 Sep 2024 - 10:37am
PLOTTED BY: carlo

PM	M	E	P	CAD
RGM	CF/LS/TSA	HN/MG	FC	RAM/HG/TSA/LS



PLUMBING GENERAL NOTES:

1. FIELD COORDINATE WITH ALL OTHER TRADES.
2. SANITARY SEWER PIPING 2" AND SMALLER TO BE INSTALLED AT A 2% SLOPE AND SANITARY SEWER PIPING 3" AND LARGER TO BE INSTALLED AT A 1% SLOPE.
3. HOT/COLD WATER PIPING INSTALLED ABOVE CEILING; VENT PIPING TO BE INSTALLED ABOVE CEILING; WASTE PIPING TO BE INSTALLED BELOW FLOOR.

KEYED PLUMBING NOTES:

1. 4" WASTE DOWN; 2" VENT UP.
2. 3" WASTE DOWN; 1-1/2" VENT UP.
3. 2" WASTE DOWN; 1-1/2" VENT UP.
4. 1/2" HOT WATER DOWN; 1/2" HOT WATER FROM BELOW/1-1/4" COLD WATER DOWN.
5. EXISTING 3/4" HOT WATER ABOVE LINE ABOVE CEILING.
6. REFER TO 1/P101 FOR CONTINUATION.
7. EXISTING 3" WASTE LINE BELOW FLOOR.
8. EXISTING 3" VENT LINE ABOVE CEILING.
9. EXISTING 3/4" COLD WATER ABOVE CEILING.
10. 4" WALL CLEANOUT ABOVE FLOOR WITH ACCESS DOOR.
11. CONNECT NEW HOT WATER LINE TO EXISTING 3/4" HOT WATER LINE.
12. 1/2" HOT/1-1/4" COLD WATER DOWN.

1 ENLARGED PARTIAL PLAN

SCALE: NOT TO SCALE

FINAL PLUMBING FIXTURE SELECTIONS ARE PENDING

PLUMBING FIXTURE SCHEDULE

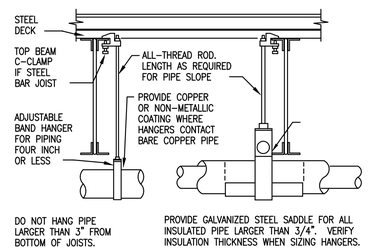
MARK	ITEM	MANUFACTURER	MODEL NO	UTILITIES				NOTES
				CW	HW	W	VT	
WC1	WATER CLOSET (WALL HUNG, FLUSH VALVE) (ADA)	ZURN	BOWL: ZURN MODEL #Z5615-BWL, 1.28 GPF ELONGATED FRONT RIM, 1-1/2" TOP SPUD FLUSH VALVE: ZURN MODEL #Z6000AV-WS1, EXPOSED FLUSH VALVE WITH SWEAT SOLDER KIT, CAST WALL FLANGE, VANDAL PROOF STOP CAP COVER TOILET SEAT: ZURN MODEL #S955SS-EL-STS, ELONGATED, EXTRA HEAVY DUTY, WHITE, OPEN FRONT TOILET SEAT, LESS COVER, WITH SELF SUSTAINING STAINLESS STEEL CHECK HINGE CARRIER: ZURN MODEL #Z1201-N_4, HORIZONTAL NO-HUB WITH 4" WASTE OUTLET	1"	-	4"	2"	*HANDLE TO BE ON THE "WIDE" SIDE OF THE STALL
L1	LAVATORY (WALL HUNG) (ADA)	ZURN	LAVATORY: ZURN MODEL #Z5344, 20"X18" WALL HUNG, CONCEALED ARM CARRIER, 4" CENTER FAUCET HOLE FAUCET: ZURN MODEL #Z7812B4-XL-3F, RIGID SPOUT, 4" WRIST BLADE HANDLES AND .5GPM FLOW RATE DRAIN: ZURN MODEL #Z8746-PC ADA GRID STRAINER P-TRAP: ZURN MODEL #Z8700-8B-PC - 1-1/4" CAST BRASS P-TRAP WITH CLEANOUT SUPPLY STOP: ZURN MODEL #Z8800-XL-LRLK-8860-12-PC - -XL LEAD FREE LOOSE KEY STOP LAVATORY SUPPLY KIT (CONNECTIONS 3/8" IPS X 3/8" OD) WITH BRAIDED STAINLESS STEEL SUPPLIES INSULATION KIT: ZURN MODEL #Z8946-3-NT, ONE TRAP KIT, TWO SUPPLY STOP PROTECTORS AND ONE OFFSET DRAIN PROTECTOR CARRIER: ZURN MODEL #Z1231-EZ CONCEALED ARM CARRIER SYSTEM (PROVIDE SUFFIX -D FOR BACK TO BACK SYSTEM APPLICATION)	1/2"	1/2"	2"	1-1/2"	
WHA	WATER HAMMER ARRESTOR	ZURN	WATER HAMMER ARRESTOR: ZURN MODEL #Z1700 STAINLESS STEEL	-	-	-	-	NONE
FD1	FLOOR DRAIN	ZURN	ZURN: #FRO5CPC CAST IRON FLOOR DRAIN WITH ROUND CHROME-PLATED TOP AND ROUGH-IN COVER.	-	-	3"	1-1/2"	NONE

*PLUMBING FIXTURE FLOW RATES TO COMPLY WITH TABLE 604.4 OF THE 2021 IPC

TABLE C403.12.3[C]

MINIMUM PIPE INSULATION THICKNESS (in inches)[a]

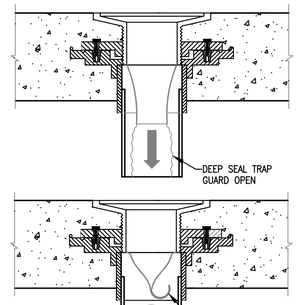
FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (inches)				
	Conductivity BTU * in/(ht * ft² * °F)	Mean Rating Temperature, °F	<1	1 to < 1-1/2	1-1/2 to < 4	4 to < 8	>8
> 350	0.32-0.34	250	4.5	5.0	5.0	5.0	5.0
251-350	0.29-0.32	200	3.0	4.0	4.5	4.5	4.5
201-250	0.27-0.30	150	2.5	2.5	2.5	3.0	3.0
141-200	0.25-0.29	125	1.5	1.5	2.0	2.0	2.0
105-140	0.21-0.28	100	1.0	1.0	1.5	1.5	1.5
40-60	0.21-0.27	75	0.5	0.5	1.0	1.0	1.0
<40	0.20-0.26	50	0.5	1.0	1.0	1.0	1.5



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' 3"=11' 2-1/2"=10' 2"=9' 1-1/2"=8' 1-1/4"=7' 1"=6' 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 HANGERS TO TAKE LOAD OFF OF EQUIPMENT CONNECTIONS. ANCHOR WATER 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 FOR FURTHER INFORMATION.

2 PIPE HANGER DETAIL

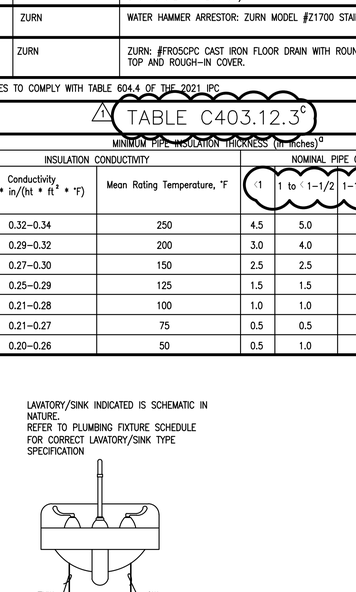
SCALE: NOT TO SCALE



NOTE:
THE TRAP GUARD SITS WATERTIGHT INSIDE THE DRAIN AND STAYS OPEN WHEN WATER IS FLOWING, BUT CLOSES WHEN THE WATER STOPS. WHEN THE TRAP GUARD IS CLOSED IT SUCCESSFULLY RESISTS ANY EMISSION OF SEWER GAS, EVEN IF THAT GAS IS UNDER SIGNIFICANT PRESSURE. IT USES A FLEXIBLE TUBE MADE OF SPACE AGE, ELASTOMERIC TM MATERIAL THAT IS TREATED TO ROLL UP WHEN WATER IS NOT PASSING THROUGH BUT IS FLEXIBLE ENOUGH TO OPEN AND PERMIT WATER FLOW, FROM AN INTERMITTENT DRIP TO FIRE-HOSE TYPE FLOWS.

3 TRAP GUARD DETAIL

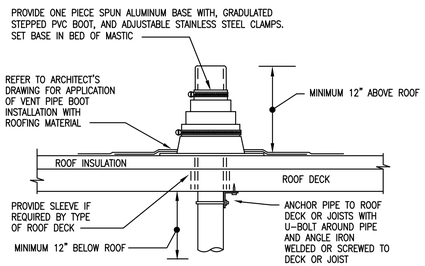
SCALE: NOT TO SCALE



*TMV1: THERMOSTATIC MIXING VALVE SYMMONS MODEL #7-225-CK OR APPROVED EQUAL. PROVIDE DELIVERY TEMPERATURE OF 108°

4 THERMOSTATIC MIXING VALVE DETAIL

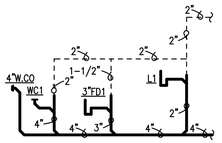
SCALE: NOT TO SCALE



REFER TO PLANS FOR VTR PIPE SIZES AND LOCATIONS. LOCATE VTR MINIMUM TEN FEET HORIZONTAL OR THREE FEET VERTICAL ABOVE ANY BUILDING OPENING 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 CONTERFLASHING WITH ROOFING CONTRACTOR.

5 VENT THRU ROOF DETAIL

SCALE: NOT TO SCALE

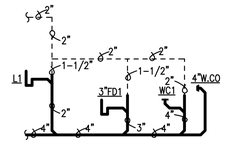


WASTE/VENT

HOT/COLD WATER

6 PLUMBING RISER DIAGRAM

SCALE: NOT TO SCALE



WASTE/VENT

HOT/COLD WATER

7 PLUMBING RISER DIAGRAM

SCALE: NOT TO SCALE

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architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 24-064

PERMIT REVIW

BRASAO REMODEL
19210 I10 WEST
SAN ANTONIO, TX 78257

P201
PLUMBING SCHEDULES, DETAILS AND RISERS

FILE NAME: 24-064 P201 Plumbing Schedules And Details.dwg
FILE LOCATION: C:\Users\Frank Cuellar\RGM Engineering Dropbox\Projects\2024\24-064 Brasao Restaurant\Plumbing_Standard Plumbing Plans\
DATE: Wed, 13 Nov 2024 - 10:30am
PLOTTED BY: Frank Cuellar

	CAD
P	RAM/FHG/TSA/LS
E	FC
M	HN/MG
PM	CF/LS/TSA
	RGM

SECTION 15050 – BASIC PLUMBING MATERIALS AND METHODS

PART 1 – GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES THE FOLLOWING:
   1. PIPING INSTALLATION INSTRUCTIONS COMMON TO MOST PIPING SYSTEMS.

PART 2 – EXECUTION

2.1 PIPING SYSTEMS – COMMON REQUIREMENTS

A. INSTALL PIPING INDICATED TO BE EXPOSED AND PIPING IN EQUIPMENT ROOMS AND SERVICE AREAS AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS. DIAGONAL RUNS ARE PROHIBITED UNLESS SPECIFICALLY INDICATED OTHERWISE.
B. INSTALL PIPING ABOVE ACCESSIBLE CEILINGS TO ALLOW SUFFICIENT SPACE FOR CEILING PANEL REMOVAL.
C. INSTALL PIPING AT INDICATED SLOPES.
D. INSTALL PIPING FREE OF SAGS AND BENDS.
E. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS.
F. INSTALL PIPING TO ALLOW APPLICATION OF INSULATION.
G. INSTALL ESCUTCHEONS FOR PENETRATIONS OF WALLS, CEILINGS, AND FLOORS.
H. INSTALL SLEEVES FOR PIPES PASSING THROUGH CONCRETE AND MASONRY WALLS, GYPSUM-BOARD PARTITIONS, AND CONCRETE FLOOR AND ROOF SLABS.

2.2 PIPING CONNECTIONS

A. MAKE CONNECTIONS ACCORDING TO THE FOLLOWING, UNLESS OTHERWISE INDICATED:
   1. INSTALL UNIONS, IN PIPING NPS 2 AND SMALLER, ADJACENT TO EACH VALVE AND AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT.
   2. INSTALL FLANGES, IN PIPING NPS 2-1/2 AND LARGER, ADJACENT TO FLANGED VALVES AND AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT.
   3. WET PIPING SYSTEMS: INSTALL DIELECTRIC COUPLING AND NIPPLE FITTINGS TO CONNECT PIPING MATERIALS OF DISSIMILAR METALS.

SECTION 15060 – HANGERS AND SUPPORTS

PART 1 – GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES HANGERS AND SUPPORTS FOR MECHANICAL SYSTEM PIPING AND EQUIPMENT.

PART 2 – EXECUTION

2.1 PIPING HANGERS

A. PIPE HANGERS USED ARE TO BE MANUFACTURED AND INSTALLED ACCORDING TO SPECIFICATIONS SP-58-1975 (PIPE HANGERS AND SUPPORTS – MATERIALS, DESIGN AND MANUFACTURE) AND SP-89-1978 (PIPE HANGERS AND SUPPORTS – FABRICATION AND INSTALLATION PRACTICES) OF THE MANUFACTURERS STANDARDIZATION SOCIETY (MSS).
B. PIPE HANGER SELECTION AND APPLICATION WILL FOLLOW RECOMMENDATIONS OF MSS SP-69-1976 (PIPE HANGERS AND SUPPORTS – SELECTION AND APPLICATION).
C. HANGERS USED DIRECTLY ON COPPER PIPE WILL BE COPPER OR CADMIUM PLATED. ALL OTHER HANGERS AND CHANNELS, ANGLES, AND SUPPORTING STEEL SHALL BE CARBON STEEL WITH A BLACK FINISH. TWO (2) OR MORE PIPES RUNNING PARALLEL MAY BE SUPPORTED ON TRAPEZE HANGERS.
D. HANGERS SHALL BE LOCATED AT WITHIN 2' OF EACH CHANGE OF DIRECTION.
E. WHERE INDIVIDUAL HANGERS ARE USED OUTSIDE OF INSULATION, APPLY A 9-INCH LENGTH OF 15 LB. DENSITY URETHANE INSULATION OR FOAMLESS TO PIPE AT POINT OF HANGING. PLACE HANGERS OUTSIDE OF INSULATION WITH A INSULATION SHIELD OF GALVANIZED METAL EXTENDING NOT LESS THAN 6" ON BOTH SIDES OF THE SUPPORT BEARING AREA, COVERING A MINIMUM OF HALF OF THE PIPE CIRCUMFERENCE. SHIELD TO BE MADE 12" IN LENGTH AND A MINIMUM OF 20 GAUGE OF GALVANIZED MEAL. AS AN OPTION, PIPE SHALL BE PROTECTED AT THE POINT OF SUPPORT BY A 360-DEGREE INSERT OF HIGH DENSITY, 100 PSI, WATERPROOFED CALCIUM SILICATE, ENCASED IN 360-DEGREE SHEET METAL SHIELD. INSERT TO BE SAME THICKNESS AS ADJOINING PIPE INSULATION.
F. TRAPEZE HANGERS – SUSPEND PIPING INSTALLED ON TRAPEZE HANGERS FROM CONCRETE INSETS OR APPROVED STRUCTURAL CLIPS. CONSTRUCT TRAPEZE HANGERS OF ANGLE IRON, UNISTRUT CHANNELS OR OTHER STRUCTURAL SHAPES WITH FLAT SURFACES FOR POINT OF SUPPORT.
G. HANGERS IN GENERAL – INSTALL ALL PIPING SO THAT IT WILL BE FREE TO EXPAND AND CONTRACT WITHOUT CREATING UNDUE STRESSES IN PIPING SYSTEM.

2.2 ADJUSTING

A. HANGER ADJUSTMENT: ADJUST HANGERS TO DISTRIBUTE LOADS EQUALLY ON ATTACHMENTS AND TO ACHIEVE INDICATED SLOPE OF PIPE.

SECTION 15075 – PLUMBING IDENTIFICATION

PART 1 – GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES THE FOLLOWING MECHANICAL IDENTIFICATION MATERIALS AND THEIR INSTALLATION:

2.1 PIPING IDENTIFICATION DEVICES

A. PROVIDE "OPTI-CODE" PIPE MARKERS AND BRASS VALVE TAGS AS MANUFACTURED BY SETON NAMEPLATE CORPORATION OR AN APPROVED EQUAL. PIPE MARKERS SHALL BE SPACED 20'-0" ON CENTER AND 10'-0" FROM ALL 90 DEGREE ELBOWS.

SECTION 15083 – PIPE INSULATION

PART 1 – GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES SEMI-RIGID AND FLEXIBLE PIPING INSULATION, INSULATING CEMENTS, FIELD-APPLIED JACKETS, ACCESSORIES AND ATTACHMENTS, AND SEALING COMPOUNDS.

1.2 QUALITY ASSURANCE

A. FIRE-TEST-RESPONSE CHARACTERISTICS: PROVIDE PRODUCTS WITH FLAME-SPREAD AND SMOKE-DEVELOPED CAPABILITIES OF 25 AND 50 FOR PVC PIPING IN RETURN AIR PLENUMS, RESPECTIVELY, ACCORDING TO ASTM E 84 BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

PART 2 – PRODUCTS

2.1 PIPE INSULATION MATERIALS

A. PROVIDE PIPING INSULATION OF MOLDED FIBERGLASS. THE INSULATION WILL BE USED FOR WATER PIPING INCLUDING HOT WATER SUPPLY LINES SUBJECT TO FREEZING OR CONDENSATION, CONDENSATE DRAINS, AND HORIZONTAL PORTIONS OF WASTE LINES ABOVE GRADE WHICH RECEIVE CONDENSATE FROM AIR HANDLING UNITS.

PART 3 – EXECUTION

3.1 PIPES

A. APPLY INSULATION TO CLEAN, DRY PIPE. BUTT SEGMENTS FIRMLY TOGETHER. WHERE PIPING IS INTERRUPTED BY FITTINGS, FLANGES, VALVES, OR HANGERS, AND AT INTERVALS NOT TO EXCEED 25 FEET ON STRAIGHT RUNS, FORM AN ISOLATING SEAL BETWEEN INSULATION AND PIPE BY LIBERAL APPLICATION OF ADHESIVE TO EXPOSED JOINT FACES AND ALONG 4 INCHES OF PIPE. ALL TURNS AND BENDS SHALL BE FITTED WITH PREMOLDED FITTING COVERS. MITERING OF THESE COMPONENTS SHALL NOT BE ACCEPTABLE.

3.2 FLANGES

A. AT FLANGES, SEAL OFF INSULATION WITH BF 30-35 VAPOR BARRIER MASTIC. APPLY ADDED LAYERS OF INSULATION AT LEAST 2 INCHES WIDE AND OF THE REQUIRED THICKNESS TO MAKE THE OUTSIDE DIAMETER OF THE INSULATION EQUAL TO THE OUTSIDE DIAMETER OF THE FLANGES. VAPOR SEAL EACH LAYER COMPLETELY AND INDEPENDENTLY WITH ADHESIVE. APPLY A FINAL RING OF INSULATION OF FULL THICKNESS AND LONG ENOUGH TO COVER THE BUILT-UP SECTION.

3.3 VALVES AND FITTINGS

A. SEAL OFF THE PIPE INSULATION AT VALVES AND FITTINGS, WITH BF 30-35 VAPOR BARRIER MASTIC. COVER VALVES AND FITTINGS WITH MOLDED OR MITERED FITTING COVERS AND VAPOR SEAL AS SPECIFIED FOR FLANGES.
B. CARRY THE INSULATION ON THE VALVE BONNET FULL THICKNESS TO THE PACKING NUT OR TO THE STUFFING BOX. MAKE THE TOP OF THE INSULATION BOX PARALLEL TO THE VALVE WHEEL, TO FORM A SQUARE CORNER AT THE INTERSECTION WITH THE BONNET COVERING.
C. OMIT INSULATION AT SCREWED UNIONS AND AT VALVES SMALLER THAN 1".

3.4 PIPE INSULATION APPLICATION SCHEDULE

A. INSULATING MATERIALS AND METHODS OF APPLICATION ARE BASED ON KNAUF ASJ/SSL-11 PRODUCTS. OTHERS WILL BE ACCEPTABLE PROVIDED THEY ARE EQUAL IN INSULATING COEFFICIENTS AND HAVE SIMILAR PERMEABILITY OF VAPOR BARRIER JACKETS.

SECTION 15110 – VALVES

PART 1 – GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES GENERAL-DUTY VALVES:

1.2 SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF VALVE INDICATED. INCLUDE BODY, SEATING, AND TRIM MATERIALS, VALVE DESIGN, PRESSURE AND TEMPERATURE CLASSIFICATIONS, END CONNECTIONS, ARRANGEMENT, DIMENSIONS, AND REQUIRED CLEARANCES. INCLUDE LIST INDICATING VALVE AND ITS APPLICATION. INCLUDE RATED CAPACITIES, FURNISHED SPECIALTIES, AND ACCESSORIES.

PART 2 – EXECUTION

2.1 VALVE APPLICATIONS

A. WATER PIPING CONTROL AND SERVICE VALVES SHALL BE PROVIDED BY THIS CONTRACTOR WHERE REQUIRED TO ADEQUATELY CONTROL AND ISOLATE THE VARIOUS WATER PIPING SYSTEMS. VALVES SHALL BE AS MANUFACTURED BY NIBCO, CRANE, STOCKHAM, JOMAR, JENKINS, KENNEDY, WALWORTH OR GRINNELL AND EQUAL TO NIBCO NUMBERS AS STATED BELOW:
   1. THE MAIN SHUT-OFF VALVE, INSIDE THE BUILDING ON THE WATER SUPPLY WILL BE A GATE VALVE. PROVIDE THE VALVE EQUAL TO NIBCO SOLDER JOINT, 125 LB. BRONZE GATE WITH RISING STEM AND DOUBLE-DISC. THIS VALVE SHALL BE SELECTED AT ONE FULL PIPE SIZE LARGER THAN THAT SPECIFIED ON THE PLAN.
   2. ALL OTHER VALVES THROUGHOUT THE WATER PIPING SHALL BE EQUAL TO NIBCO S-585-70 SOLDER JOINT, 125 LB., AND BRASS BALL VALVES WITH FULL PORT OPENINGS.
   3. CHECK VALVES SHALL BE EQUAL TO NIBCO, 600 SERIES, SPRING CHECK WITH BRONZE BODY.
   4. TEMPERATURE AND PRESSURE RELIEF VALVES SHALL BE ASME RATED WATTS VALVE OR APPROVED EQUAL.

SECTION 15140 – WATER PIPING

PART 1 – GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES WATER PIPING INSIDE THE BUILDING.

PART 2 – PRODUCTS

2.1 PIPING MATERIALS

A. WATER PIPING LOCATED ABOVE THE BUILDING SLAB, SHALL BE ASTM B 88 TYPE "L" HARD DRAWN COMMERCIAL COPPER WATER PIPE. FIITINGS TO BE ASME B 16.18, CAST BRONZE OR ASTM B 16.22 WROUGHT COPPER ALLOY. JOINTS TO BE ASTM B 32 SOLDER.
B. WATER PIPING LOCATED ABOVE THE BUILDING SLAB, SHALL BE PEX PIPING AND FITTINGS.
C. DIELECTRIC INSULATING COUPLINGS SHALL BE PROVIDED BETWEEN FERROUS AND COPPER PIPING SYSTEMS.

PART 3 – EXECUTION

3.1 EXCAVATION

A. TRENCHES FOR ALL UNDERGROUND PIPING SYSTEMS SHALL BE EXCAVATED TO THE REQUIRED DEPTHS. IN THE CASE OF SEWER LINES, THE BOTTOM OF THE TRENCHES SHALL BE GRADED TO SECURE THE NECESSARY FALL. NEVER ALLOW THE SEWER LINES TO COME IN CONTACT WITH UNDERGROUND REFRIGERANT PIPING. SANITARY SEWER LINES OUTSIDE THE BUILDING SHOULD BE KEPT AS DEEP AS PRACTICABLE WITH A MINIMUM COVER OF 12". PROVIDE CLEAN WASHED SAND FILL 6" BELOW, ON TOP AND BOTH SIDES OF THE LINES, TAMPED TO MAXIMUM COMPACTION INSIDE THE TRENCH LOCATED INSIDE OR OUTSIDE THE BUILDING.
B. ALL TRENCH EXCAVATION REQUIRED ON THIS PROJECT SHALL BE ACCOMPLISHED AS REQUIRED BY THE PROVISIONS AS PART 1926, SUBPART P-EXCAVATIONS, TRENCHING AND SHORING OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS STANDARD AND INTERPRETATIONS.

3.2 JOINT CONSTRUCTION

A. SOLDERED JOINTS: USE ASTM B 813, WATER-FLUSHABLE, LEAD-FREE FLUX, ASTM B 32, LEAD-FREE-ALLOY SOLDER, AND ASTM B 828 PROCEDURE, UNLESS OTHERWISE INDICATED.

3.3 HANGER AND SUPPORT INSTALLATION

A. PIPE HANGER AND SUPPORT DEVICES ARE SPECIFIED IN DIVISION 15 SECTION "HANGERS AND SUPPORTS."

3.4 FIELD QUALITY CONTROL

A. INSPECT WATER PIPING AS FOLLOWS:
   1. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT HAS BEEN INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION.
   2. REINSPECTION: IF AUTHORITIES HAVING JURISDICTION FIND THAT PIPING WILL NOT PASS TEST OR INSPECTION, MAKE REQUIRED CORRECTIONS AND ARRANGE FOR REINSPECTION.
B. TEST WATER PIPING AS FOLLOWS:
   1. LEAVE NEW, ALTERED, EXTENDED, OR REPLACED WATER PIPING UNCOVERED AND UNCONCEALED UNTIL IT HAS BEEN TESTED AND APPROVED. EXPOSE WORK THAT WAS COVERED OR CONCEALED BEFORE IT WAS TESTED.
   2. WATER PIPING SYSTEMS: WATER PIPING SYSTEMS SHALL BE PROPERLY TESTED TO A HYDROSTATIC PRESSURE OF ONE HUNDRED AND FIFTY POUNDS (150 PSI) PER SQUARE INCH GAUGE FOR A PERIOD OF NOT LESS THAN EIGHT HOURS. DURING THIS TEST PERIOD, ALL LEAKS IN PIPE, FITTINGS AND ACCESSORIES, IN THE PARTICULAR PIPING SYSTEM, WHICH IS BEING TESTED, SHALL BE STOPPED AND THE HYDROSTATIC TEST SHALL AGAIN BE APPLIED. THIS PROCEDURE SHALL BE REPEATED FOR AN ENTIRE EIGHT-HOUR PERIOD AND NO LEAKS CAN BE FOUND WHILE THE SYSTEM BEING TESTED IS SUBJECTED TO THE PRESSURE MENTIONED ABOVE.
   3. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST PIPING OR PORTION THEREOF UNTIL SATISFACTORY RESULTS ARE OBTAINED.

3.5 CLEANING

A. THE ENTIRE WATER PIPING SYSTEM UPON COMPLETION SHALL BE STERILIZED WITH A SOLUTION CONTAINING NOT LESS THAN 50 PARTS PER MILLION OF CHLORINE. THE STERILIZATION SOLUTION SHALL BE ALLOWED TO REMAIN IN THE SYSTEM FOR A PERIOD OF TWENTY-FOUR (24) HOURS, DURING WHICH TIME ALL VALVES AND FAUCETS SHALL BE OPENED AND CLOSED SEVERAL TIMES. AFTER STERILIZATION, THE SOLUTION SHALL BE FLUSHED FROM THE SYSTEM WITH CLEAN WATER UNTIL THE RESIDUAL CHLORINE CONTENT IS NOT GREATER THAN 0.2 PARTS PER MILLION.

3.6 FINAL SYSTEM PRESSURE DELIVERY

A. VERIFY INCOMING SYSTEM PRESSURE AND PROVIDE A PRESSURE REDUCING VALVE WITH FULL SIZE BY-PASS WHEN PRESSURE EXCEEDS 80PSI. SET PRV FOR A 60PSI SETTING.

SECTION 15150 – SANITARY WASTE AND VENT PIPING

PART 1 – GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES THE FOLLOWING SOIL AND WASTE, SANITARY DRAINAGE AND VENT PIPING
B. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT IS INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION. INSIDE THE BUILDING:
   1. PIPE, TUBE, AND FITTINGS.
   2. SPECIAL PIPE FITTINGS.

PART 2 – PRODUCTS

2.1 PIPING MATERIALS

A. SANITARY WASTE AND VENT PIPING WITHIN THE BUILDING ABOVE GRADE TO BE:
   1. PVC, ASTM D 1785/D 2665 SCHEDULE 40; PVC FITTINGS ASTM D 3311/D 2665 DRAINAGE PATTERN, WITH BELL AND SPIGOT ENDS TO BE FURNISHED BY THE SAME MANUFACTURER AS PIPE OR APPROVED EQUAL; ASTM D 2855, SOLVENT WELD WITH ASTM D 2564 SOLVENT CEMENT JOINTS.

PART 3 – EXECUTION

3.1 PIPING INSTALLATION

A. DURING INSTALLATION, NOTIFY AUTHORITIES HAVING JURISDICTION AT LEAST 24 HOURS BEFORE INSPECTION MUST BE MADE. PERFORM TESTS SPECIFIED BELOW IN PRESENCE OF AUTHORITIES HAVING JURISDICTION.

3.2 HANGER AND SUPPORT INSTALLATION

A. PIPE HANGERS AND SUPPORTS ARE SPECIFIED IN DIVISION 15 SECTION "HANGERS AND SUPPORTS."

3.3 FIELD QUALITY CONTROL

A. HORIZONTAL WASTE AND SOIL PIPE 2 1/2" AND SMALLER SHALL BE GIVEN A GRADE OF 1/4" PER FOOT AND PIPING 3" AND LARGER SHALL BE GRADED AT 1/8" PER FOOT.
B. REINSPECTION: IF AUTHORITIES HAVING JURISDICTION FIND THAT PIPING WILL NOT PASS TEST OR INSPECTION, MAKE REQUIRED CORRECTIONS AND ARRANGE FOR REINSPECTION.
C. SANITARY DRAINS: PIPES SHALL HAVE ALL OUTLETS TEMPORARILY PLUGGED. THE PIPES SHALL BE FILLED WITH WATER TESTING THE SYSTEM IN SECTION SUCH THAT NO SECTION SHALL BE TESTED WITH LESS THAN 10-FOOT (10') HEAD OF WATER. IF AFTER TWENTY-FOUR (24) HOURS, THE LEVEL OF THE WATER HAS BEEN LOWERED BY LEAKAGE, THE LEAKS MUST BE FOUND AND STOPPED BY THIS CONTRACTOR, AND THE WATER LEVEL SHALL AGAIN BE RAISED AND THE TEST REPEATED UNTIL AFTER TWENTY-FOUR HOUR RETENTION PERIOD THERE SHALL BE NO PERCEPTIBLE LOWERING OF THE WATER LEVEL OF THE SYSTEM BEING TESTED.

3.4 CLEANING

A. CLEAN INTERIOR OF PIPING. REMOVE DIRT AND DEBRIS AS WORK PROGRESSES.
B. PROTECT DRAINS DURING REMAINDER OF CONSTRUCTION PERIOD TO AVOID CLOGGING WITH DIRT AND DEBRIS AND TO PREVENT DAMAGE FROM TRAFFIC AND CONSTRUCTION WORK.
C. PLACE PLUGS IN ENDS OF UNCOMPLETED PIPING AT END OF DAY AND WHEN WORK STOPS.

SECTION 15430 – PLUMBING SPECIALTIES

PART 1 – GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES PLUMBING SPECIALTIES:

1.2 SUBMITTALS

A. PRODUCT DATA: INCLUDE RATED CAPACITIES AND INDICATE MATERIALS, FINISHES, DIMENSIONS, REQUIRED CLEARANCES, AND METHODS OF ASSEMBLY OF COMPONENTS, AND PIPING AND WIRING CONNECTIONS FOR THE FOLLOWING:
   1. WATER HAMMER ARRESTERS, AIR VENTS, AND TRAP SEAL PRIMER VALVES AND SYSTEMS.
   2. COMPLY WITH NSF 61, "DRINKING WATER SYSTEM COMPONENTS--HEALTH EFFECTS, SECTIONS 1 THROUGH 9," FOR POTABLE WATER PLUMBING SPECIALTIES.

SECTION 15440 – PLUMBING FIXTURES

PART 1 – GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES PLUMBING FIXTURES:

1.2 SUBMITTALS

A. FIXTURES AND ASSOCIATED TRIM: MANUFACTURER'S PRODUCT DATA SHOWING DIEMNSIONS, CERTIFICATIONS, MATERIALS AND INSTALLATION INSTRUCTIONS.

1.3 QUALITY ASSURANCE

A. ALL PLUMBING FIXTURES AND TRIM SHALL BE MANUFACTURED IN THE UNITED STATES.

1.4 PLUMBING FIXTURES:

A. REFER TO PLUMBING FIXTURE SCHEDULE.

PART 2 – EXECUTION

2.1 INSTALLATION

A. REFER TO DIVISION 15 SECTION "BASIC MECHANICAL MATERIALS AND METHODS" FOR PIPING JOINING MATERIALS, JOINT CONSTRUCTION, AND BASIC INSTALLATION REQUIREMENTS.
B. CLEAN-OUTS: THE SIZES OF CLEAN-OUTS SHALL BE IDENTICAL WITH THE SIZE OF THE SOIL OR WASTE LINES IN WHICH THEY ARE PLACED, EXCEPT WHERE CLEAN-OUTS LARGER THAN FOUR INCHES (4") IN DIAMETER WILL NOT BE REQUIRED. CLEAN-OUTS SHALL BE INSTALLED AS INDICATED ON PLANS. ALL CLEAN-OUTS LOCATED IN EXTERIOR LOCATIONS SHALL BE ENCASED IN 24" X 24" X 6" CONCRETE PAD UNLESS INSTALLED IN A CONCRETE WALK, DRIVE OR OTHER CONCRETE AREAS. ALL CLEAN-OUTS INSTALLED IN WALLS OR OTHER PAINTED SURFACES SHALL BE OF A TYPE FURNISHED IN PRIME COAT TO BE PAINTED ON THE JOB TO MATCH THE SURFACE IN WHICH THEY ARE INSTALLED. ALL COVER PLATES ON CLEAN-OUTS SHALL BE ATTACHED WITH VANDAL-PROOF SCREWS.
C. CLEAN-OUTS SHALL BE BY MIFAB OR APPROVED EQUAL.
D. WHERE COPPER PIPE PASSES THROUGH SHEET METAL STUDS, USE PVC INSERTS FROM "PLASTIC ODDITIES" TO ISOLATE PIPE FROM THE STUDS. ALSO USE IPC APPROVED TYPE ISOLATION TAPE AROUND THE CIRCUMFERENCE OF ALL COPPER WATER TUBING, WHERE STEEL PIPE SUPPORTS AND STEEL PIPE DAMPS WOULD COME IN CONTACT WITH COPPER TUBING. INSTALL TWO TO THREE WRAPS AT EACH PIPE SUPPORT.
E. INSTALL ESCUTCHEONS AT WALL, FLOOR, AND CEILING PENETRATIONS IN EXPOSED FINISHED LOCATIONS AND WITHIN CABINETS AND MILLWORK. USE DEEP-PATTERN ESCUTCHEONS IF REQUIRED TO CONCEAL PROTRUDING PIPE FITTINGS.

SECTION 15325 – FIRE PROTECTION SPRINKLER SYSTEM

PART 1 – GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES WET PIPE SPRINKLER SYSTEM:
B. PROVIDE SYSTEM DESIGN, INSTALLATION & CERTIFICATION.
C. THE BUILDING IS SERVED BY AN EXISTING WET PIPE SYSTEM.

1.2 SYSTEM DESCRIPTION

A. MODIFY EXISTING SYSTEM TO PROVIDE COVERAGE FOR THE ENTIRE RENOVATED SPACE AS REQUIRED BY NFPA.
B. DETERMINE VOLUME AND INCOMING PRESSURE FROM EXISTING WATER SUPPLY.
C. INTERFACE SYSTEM WITH BUILDING FIRE DETECTION AND ALARM SYSTEM AS REQUIRED.

1.3 SUBMITTALS

A. PRELIMINARY SHOP DRAWINGS: PRIOR TO DETAILED SUBMISSION, SUBMIT PRELIMINARY LAYOUT OF FINISHED CEILING AREAS INDICATING ONLY HEAD LOCATIONS COORDINATED WITH CEILING INSTALLATION.
B. SHOP DRAWINGS: IF REQUIRED PROVIDE HYDRAULIC CALCULATION. PROVIDE DETAILED PIPE LAYOUT, HANGERS AND SUPPORTS, COMPONENTS & ACCESSORIES. INDICATE SYSTEM CONTROLS.
C. PRODUCT DATA: PROVIDE DATA ON SPRINKLER HEADS, VALVES, AND SPECIALTIES, INCLUDING MANUFACTURES CATALOG INFORMATION. SUBMIT PERFORMANCE RATINGS ROUGH-IN DETAILS, WEIGHTS, SUPPORT REQUIREMENTS AND PIPING CONNECTIONS.
D. SUBMIT REQUIRED DATA TO AUTHORITY HAVING JURISDICTION FOR APPROVAL PRIOR TO SUBMISSION TO ARCHITECT/ENGINEER. SUBMIT PROOF OF APPROVAL TO ARCHITECT/ENGINEER.

1.4 PROJECT RECORD DOCUMENTS

A. RECORD ACTUAL LOCATIONS OF PIPING, SPRINKLER HEADS AND DEVIATIONS OF PIPING. INDICATE DRAIN AND TEST LOCATIONS.
B. MAINTENANCE DATA: INCLUDE COMPONENTS OF SYSTEM, SERVICING REQUIREMENTS, RECORD DRAWINGS, INSPECTION DATA, REPLACEMENT PART NUMBERS AND AVAILABILITY, LOCATION AND NUMBERS OF SERVICE AGENCY.
C. INCLUDE EXISTING FIRE PROTECTION VALVES.
D. SUBMIT REQUIRED DATA TO AUTHORITY HAVING JURISDICTION FOR APPROVAL PRIOR TO SUBMISSION TO ARCHITECT/ENGINEER. SUBMIT PROOF OF APPROVAL TO ARCHITECT/ENGINEER.

1.5 QUALIITY ASSURANCE

A. PERFORM WORK IN ACCORDANCE LATEST ADOPTED CODES, NFPA 13, INTERNATIONAL FIRE CODE, FIRE MARSHALS OFFICE AND LOCAL AMENDMENTS.
B. EQUIPMENT AND COMPONENTS SHALL BEAR UL AND FM LABEL OR MARKING.
C. ALL ELECTRICAL SHALL COMPLY WITH DIVISION 16.

1.6 QUALIFICATIONS

A. INSTALLER SHALL BE A COMPANY LICENSED BY THE STATE OF TEXAS SPECIALIZING IN PERFORMING WORK OF THIS SECTION WITH A MINIMUM OF THREE YEARS EXPERIENCE.

1.7 REGULATORY REQUIREMENTS

A. DESIGN AND INSTALLATION SHALL BEAR STAMP OF APPROVAL OF THE AUTHORITY HAVING JURISDICTION.

1.8 DELIVERY, STORAGE AND HANDLING

A. DELIVER, STORE AND PROTECT PRODUCTS AS REQUIRED.

1.9 EXTRA MATERIALS

A. PROVIDE EXTRA HEADS UNDER PROVISIONS OF NFPA 13.
B. PROVIDE SUITABLE WRENCHES FOR EACH TYPE OF HEAD.
C. IF REQUIRED, PROVIDE METAL STORAGE CABINET FOR SPRINKLER HEADS.

PART 2 – PRODUCTS

2.1 SPRINKLER HEADS

A. SHOULD ANY NEW SPRINKLER HEADS BE REQUIRED THEY SHALL MATCH EXISTING HEADS IN STYLE AND HAZARD CLASSIFICATION.

PART 3 – EXECUTION

3.1 PREPARATION

A. COORDINATE WORK WITH ALL DISCIPLINES.

3.2 INSTALLATION

A. INSTALL HEADS PER MANUFACTURERS INSTURCTIONS.
B. INSTALL PIPING TO MINIMIZE CONFLICTS WITH OTHER WORK.
C. INSTALL HEADS AS CLOSE AS POSSIBLE TO CENTER OF CEILING TILES.

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architecture

ISSUED DATE 2024-09-16
PROJECT NUMBER 24-064

PERMIT REVIW

BRASAO REMODEL
19210 I10 WEST
SAN ANTONIO, TX 78257

P301
PLUMBING SPECIFICATIONS

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