CITY OF CASTROVILLE
Little Alsace of Texas

COMMUNITY DEVELOPMENT DEPARTMENT
703 PARIS STREET
CASTROVILLE, TEXAS 78009
PHONE: (830) 931-4090
SUBMIT PERMIT TO: PERMITS@CASTROVILLETX.GOV

Permit # 2026001 Commercial Construction Permit Application

Valuation: $ 500,000 **Gross Square Footage:** 2576 **Zoning:** CG

Project Address: 702 Paris St. Castroville TX

IBC Construction Type: 2012 **IBC Use Group:** _____ **Design Occupant Load:** 52

Project Description: ☐ New Construction | ☒ Remodel/Addition | ☐ Demolition | ☐ Accessory Building
☐ Swimming Pool/Spa | ☐ Irrigation | ☐ Other: _____

Detailed Description of Work: Remodel of existing 2 story rock house for use as schoolhouse. Asbestos remediation and demo work was part of previous permit 2025309.

Utilities Needed: ☒ Water | ☐ Sewer | ☐ Electric | ☐ Gas | ☐ None

Project in Floodplain: ☐ No | ☐ Yes **If *Yes*, a Floodplain Development Permit is required.**

Asbestos Detected: ☐ No | ☒ Yes **If *Yes*, removal of asbestos material requires a licensed abatement contractor.**

TDLR-AB Registration: ☐ No | ☐ Yes **If *Yes*, provide registration number:** _____

APPLICANT / CONTRACTOR

Business Name: ~~RBD~~ Moye school **Contact Person:** Lance Rothe

Address: 702 Paris St.

Phone Number: 830-426-6502 **Email:** lancerothe@gmail.com

PROPERTY OWNER

Name: Castroville ~~Middle~~ Catholic Middle & High School

Address: ~~PO~~ 702 Paris St. PO Box 291 Castroville TX 78009

Phone Number: 830-426-6502 **Email:** lancerothe@gmail.com

Mechanical Contractor TBD	Contact Person	Phone Number	Contractor License Number
Electrical Contractor	Contact Person	Phone Number	Contractor License Number
Plumber/Irrigator	Contact Person	Phone Number	Contractor License Number

Must Include if applicable: ☒ Site Plan | ☒ Floor Plan | ☒ Elevations | ☐ COM Check
☐ Sealed Engineered Foundation Plan | ☒ Electrical Plan | ☒ Mechanical Plan | ☒ Plumbing Plan
☐ Engineered Foundation Letter (New Construction)

A permit becomes null and void if work or construction authorized is not commenced within 180 days of the date of permit issuance, or if construction or work is suspended or abandoned for a period of 180 days at any time after work is commenced. All permits require one or more inspections.

A certificate of occupancy must be issued before any building is occupied.

I hereby certify that I have read and examined this application and know the same to be true and correct. All provisions of laws and ordinances governing this type of work will be complied with whether specified or not. No work may begin until proper permits are approved, and all associated fees have been paid.

Signature of Applicant: _____ Date: 1-2-2026

BLESSED FATHER
MOYE
CATHOLIC SCHOOL

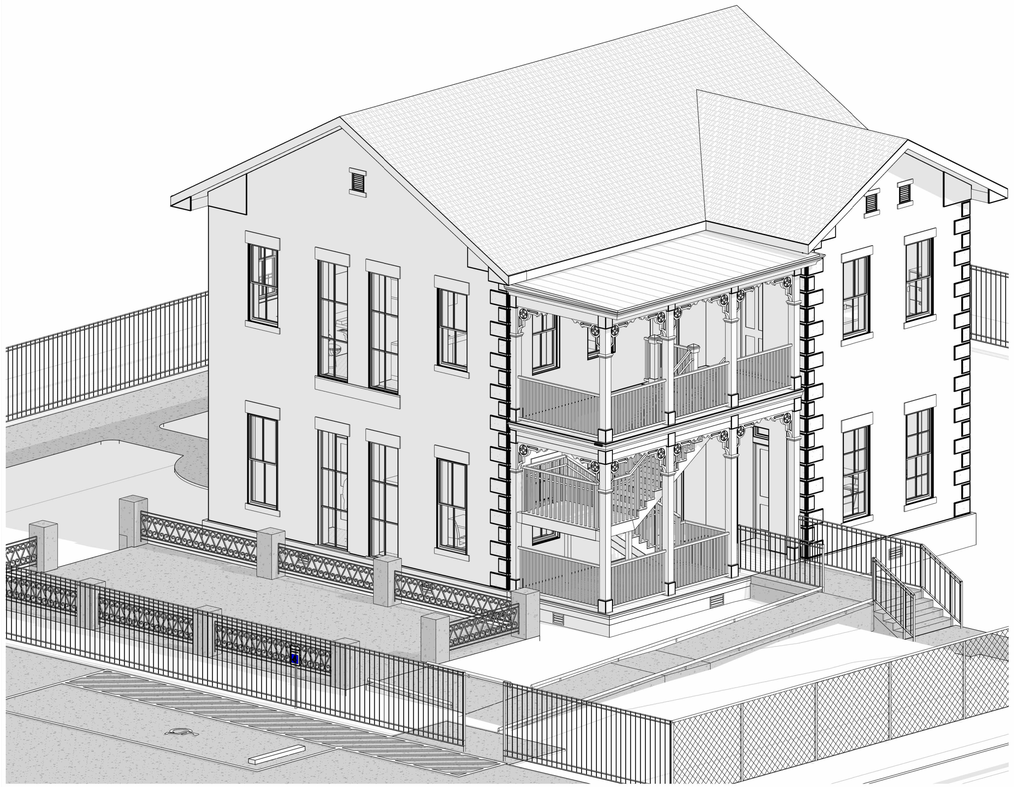
Studio E
architecture & interiors inc.

8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc., 8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are Copyright of Studio E Architecture • Interiors Inc.

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX





INDEX OF DRAWINGS

CIVIL

C1.0 UTILITY SITE PLAN

STRUCTURAL

S.01 GENERAL NOTES
S.02 FOUNDATION PLAN
S.03 2ND FLOOR FRAMING PLAN
S.04 ROOF FRAMING PLAN
S.05 FOUNDATION DETAILS
S.06 FRAMING DETAILS

ARCHITECTURAL

A.00 COVER
A.01 GENERAL REQUIREMENTS AND SUPPLEMENTARY CONDITONS
A.01.1 GENERAL NOTES / CODE ANALYSIS
A.01.2 OUTLINE SPECIFICATIONS
A.02 ACCESSIBILITY DETAILS
A.02.1 EVACUATION PLANS
A.03 SITE PLAN
A.04 DEMOLITION PLANS
A.05 DEMOLITION EXTERIOR ELEVATIONS
A.06 REVISED FLOOR PLANS
A.07 RCP PLANS
A.08 EXTERIOR ELEVATIONS
A.09 INTERIOR ELEVATIONS
A.10 INTERIOR ELEVATIONS
A.11 ENLARGED PLANS
A.12 DETAILS
A.13 DETAILS
A.14 PAINT SCHEDULE PLANS
A.15 DOOR AND WINDOW SCHEDULE
A.16 SUGGESTED FURNITURE PLAN LAYOUT

MECHANICAL, ELECTRICAL, PLUMBING

ES1.00 ELECTRICAL SITE PLAN
M0.00 MECHANICAL ABBREVIATIONS, NOTES AND SYMBOLS
M1.00 MECHANICAL ZONE AND PIPING FLOOR PLAN
M2.00 MECHANICAL DUCTWORK FLOOR PLAN
M4.00 MECHANICAL DETAILS
M4.01 MECHANICAL DETAILS
M5.00 MECHANICAL SCHEDULES AND DIAGRAMS
M6.00 MECHANICAL SPECIFICATIONS
M8.00 MECHANICAL CONTROLS
E0.00 ELECTRICAL ABBREVIATIONS, NOTES AND SYMBOLS
E1.00 ELECTRICAL LIGHTING FLOOR PLAN
E2.00 ELECTRICAL POWER FLOOR PLAN
E3.00 ELECTRICAL DETAILS
E3.01 ELECTRICAL DETAILS
E4.00 ELECTRICAL SCHEDULES AND DIAGRAMS
E4.01 ELECTRICAL SCHEDULES AND DIAGRAMS
E5.00 ELECTRICAL SPECIFICATIONS
E5.01 ELECTRICAL SPECIFICATIONS
P0.00 PLUMBING ABBREVIATIONS, SCHEDULES AND SYMBOLS
P1.00 PLUMBING FLOOR PLANS
P4.00 PLUMBING DETAILS
P6.00 PLUMBING SPECIFICATIONS

PERMIT SET - BID SET - 12-22-25

CIVIL
CDS MUERY ENGINEERS - SURVEYORS
John E. Rothe, PE,CFM
100 NE Loop 410, Ste. 300, San Antonio, TX. 78216
P: 210.581.1111
E: john.rothe@cdsmuery.com, marco.garza@cdsmuery.com
CONTACT: John Rothe, Marco Garza

ARCHITECT
Studio E. Architecture & Interiors, Inc.
Joaquin Escamilla, Registered Architect TX. 9333
8118 Broadway, San Antonio, TX 78209
P: 210.733.5300
E: joaquin@studio-e-design.com; aimee@studio-e-design.com
CONTACT: Joaquin Escamilla, Aimee Escamilla

STRUCTURAL ENGINEER
Mike Bledsoe, P.E.
Persyn Engineering
4734, College Park, SAN ANTONIO, TX 78249
P: 210.680.4126 ext 108
E: mbledsoe@spersyn.com
CONTACT: Mike Bledsoe

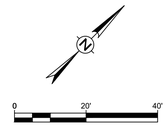
MEP
VISH HARIHARAPUTRAN, CEng
CES . Consulting Engineering Services
1370 Pantheon Way Suite 290 San Antonio, TX.78232
P: 210.686.1614
E: vish@ceseng.com,kdean@ceseng.com, kdean@ceseng.com, dwoody@ceseng.com
CONTACT: Vish Hariharaputran, Kameron S.Dean, Dylan R. Woody

CASTROVILLE CATHOLIC MIDDLE & HIGH SCHOOL
Joshua Kempf
PO BOX 291
CASTROVILLE, TX 78009
P: 830.521.0840
E: kempf.joshua@gmail.com
CONTACT: Joshua Kempf

12/22/2025 2:14:12 PM C:\Users\EmilyIDocuments\111025 CURRENT_damarisXHCK6.rvt







LEGEND

EXIST. / PROPOSED

- WATER METER (DOMESTIC, IRRIGATION, FIRE)
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- ELECTRIC METER
- SEWER CLEAN OUT
- GAS METER
- GAS MANHOLE
- STORM DRAIN MANHOLE
- SIGN
- WATER VALVE
- FIRE HYDRANT
- FDC FIRE DEPT. CONNECTION
- TELEPHONE PEDESTAL
- POWER/UTILITY POLE
- GUY WIRE
- LIGHT POLE
- SAN. SEWER MANHOLE
- MAIL BOX
- TREE TO REMAIN / TREE REMOVED

EXISTING

- PROJECT BOUNDARY
- ADJOINER PROPERTY LINE
- FEMA 100-YEAR EFFECTIVE FLOODPLAIN
- BUILDING SETBACK LINE
- EASEMENT LINE
- UE UNDERGROUND ELECTRIC
- UCM UNDERGROUND COMMUNICATION LINE
- FOC FIBER OPTIC LINE
- OHE OVERHEAD ELECTRIC
- SS SANITARY SEWER LINE
- W WATER LINE
- UG UNDERGROUND GAS LINE
- CABLE FENCE
- CHAIN LINK FENCE
- WROUGHT IRON FENCE
- WIRE FENCE
- WOODEN FENCE
- EDGE OF PAVEMENT
- 928 EXISTING CONTOURS
- EXISTING BUILDING

EXISTING UTILITY INFORMATION

THE LOCATION OF UTILITIES, EITHER UNDERGROUND OR OVERHEAD, ARE SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION AND DEPTH(IF UNDERGROUND) OF ALL UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER OF ANY DISCREPANCIES 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING TEXAS 811 OR LONE STAR 811 PRIOR TO CONSTRUCTION.

BOTH PRIVATE AND PUBLIC UTILITIES EXIST THROUGHOUT THE PROJECT SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES AND THE OWNER PRIOR TO CONSTRUCTION. UTILITIES IN CONFLICT WITH PROPOSED STREETS, DRAINAGE, UTILITIES, ETC. SHALL BE ADJUSTED, REMOVED AND/OR REALIGNED DURING THE CONSTRUCTION OF THE PROJECT, AS DIRECTED BY THE RESPECTIVE UTILITY COMPANY AND/OR OWNER.

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

NO	DATE	REVISION	BY
–			

DESIGNED BY
DRAWN BY
CHECKED BY
REVIEWED BY
DATE

CDS muery
ENGINEERS | SURVEYORS
100 NE LOOP 410, STE. 300 | SAN ANTONIO, TEXAS 78216
(210) 581-1111 | TBPE NO. F-1733 | TBPLS NO. 100495-00

UTILITY SITE PLAN

MOYE CATHOLIC SCHOOL
CASTROVILLE, TEXAS

SHEET NO.
C1.0

FILE NO. 124083
124083 UTIL

GENERAL NOTES

1. VERIFICATION:

A) Verify all dimensions and elevations; do not scale drawings for dimensions. Notify Engineer of any discrepancies between Drawings, fabricated items or actual field conditions. Contractor, Subcontractors, and Material Fabricator shall advise the Engineer of any deficiency or discrepancy of which they have knowledge, along with their suggested solution, prior to ordering and/or installing the material in question.
B) Assumptions have been made by this office regarding existing conditions. Actual conditions may vary from those assumed. The Contractor is to report any such discrepancies to the Engineer for possible modifications needed to the Contract Drawings.
C) Coordinate structural requirements with Civil, Mechanical, and Architectural to determine conflicts or discrepancies. Notify Architect in writing for direction to resolve conflicts.

2. SHOP DRAWINGS AND SUBMITTALS:

A) Submit Shop Drawings for Engineers review prior to fabrication. Shop drawing review, by the Engineer is for the Limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. In addition, the review is NOT conducted for purposes of determining accuracy of details (dimensions, quantities, installation, performance), does NOT relieve Contractor's obligation of means, methods, warranties, and does NOT constitute approval of safety precautions or means and methods.
B) Materials Fabricators shall provide complete Drawings showing location and position of all structural items. All submitted Shop Drawings shall contain clear identification of all deviations from the Contract Documents. Any deviations or substitutions not specifically addressed during shop drawing review shall be considered unacceptable unless sent separately to the engineer for his approval.
C) Before submitting each Shop Drawing, Contractor shall have determined and verified: All field dimensions, quantities, dimensions, the suitability of all materials for OSHA and other governing agencies. In addition, the Contractor shall verify that the material and assemblies are consistent with the proposed means, methods and techniques of the construction. Contractor shall also review and coordinate submittal with shop drawings of all other trades.
D) Details shown on shop drawings shall be cross-referenced to details shown on contract documents (i.e., give detail and sheet number where information is shown on contract documents).
E) As a minimum, the following Shop Drawings shall be submitted and reviewed by the Structural Engineer of Record:
   a. The Select Fill to be proposed for use shall be submitted to the testing laboratory to verify compliance with the project requirements prior to installation. The Testing Laboratory's approval letter shall be submitted to the Owner and Structural Engineer prior to installation.
   b. The Vapor Retarder manufacturer's specification sheets including requirements for laps, repairs, tape, or penetrations.
   c. Concrete Mix Design for each type of concrete to be used. Submit letter from concrete suppliers, which certifies proposed mixes meet the Project Specifications.
   d. Reinforcing Shop Drawings including placement drawings, cut sheets, proposed joint locations, and pour sequence as required. Refer to project specifications for additional submittal requirements.
   e. Pre-Engineered Steel Stairs, SEALED by licensed Stair Engineer, refer to specifications/structural steel notes for additional information.
F) If the Contractor or Sub-Contractor desires a copy of the Structural Drawings on CADD file, to be used in the preparation of Shop Drawings, the Contractor shall complete the Indemnification and Release for Computer (CADD) Files form, available through Engineers office.
G) DEFERRED SUBMITTALS: Those submittals and shop drawings which are required as part of the project, but will not be reviewed by the Structural Engineer of Record, will need to be submitted to the City as a "Deferred Submittal":
   a. None required for this project.

3. STRUCTURAL TESTING & INSPECTION REQUIREMENTS: (NON-SPECIAL INSPECTION PROJECTS)

A) The Testing Lab and/or inspector shall provide written confirmation to the structural engineer that all inspected material was installed in accordance with the project requirements.
B) In addition to the inspections and testing listed below, observations by the Structural Engineer are required. Refer to "Schedule of Site Observations by Engineer."
C) The following inspections and testing are required by the structural engineer of record. The contractor is to provide all additional inspections and quality control measures to comply with the currently adopted Building Code:
   a. SELECT/STRUCTURAL FILL:
      - Arrange for testing lab to sample material. Pit run materials shall be visually monitored by the testing lab with additional samples tested each day, or more often if material appears to vary.
      - Provide (1) one density test for each 2000 sq. ft. or fraction thereof, for each lift. Provide a min. of (3) three tests per lift. Refer to Notes on Building Pad for testing Specifications.
      - Trench Backfilling: Trench backfilling with clay cap and placing of clay plug shall be monitored by Geotechnical Engineer with a written report sent to Structural Engineer.
   b. CONCRETE REINFORCING:
      - Contractor is to provide knowledgeable and experienced personnel to inspect and approve reinforcing placement and clearances prior to engineers' field observations.
   c. DRILLED & EPOXIED DOWELS: (Adhesive Anchors):
      - Confirm proper installation as required by ICC ES ESR.
      - Installation of epoxied dowels/adhesive anchors shall be by personnel trained by manufacturer representative.
   d. CONCRETE TESTING:
      - Sampling and testing for concrete to follow ACI 318, latest edition.
      - All concrete testing is to be made after water, if any, is added at site.
      - Provide a set of (4) four cylinders to be taken for every 75 cubic yards of concrete, or fraction thereof, by testing lab.
      - Monitor slump of concrete and notify delivery driver if slump deviates more than plus or minus 1 inch from recommended value. Contact supplier for further directions.
   e. STRUCTURAL STEEL:
      - Quality Control: Contractor shall coordinate services of an independent testing lab to perform on-site inspections, and testing.
        1) Welds: Visually inspect approximately 33% of all structural welds. Inspect an additional two welds for every weld not meeting project requirements.

4. FOUNDATION NOTES:

A) Since a Geotechnical Investigation was not furnished, the foundation design was based upon average soil conditions. If highly expansive or moderately expansive soils or soft soils are encountered, differential foundation movements can be expected. Although we attempt to make assumptions that will not impair the structural integrity of the project, we do not have the benefit or laboratory investigation of a Geotechnical Engineer, therefore, this firm shall not assume responsibility for the performance of the designed foundation should actually surface or subsurface soil conditions vary from those assumed.
B) The design for this foundation is based upon proper surface drainage, away from the foundation, being maintained at all times. A uniform moisture content, in the soils around the foundation perimeter, through the continued maintenance of proper surface drainage, proper landscaping, and uniform yard watering practices, is extremely critical to the long-term structural stability of this foundation.
C) Landscaping, plumbing, and downspout drainage is also very important. It is vital that all roof drainage be transported away from the building so that no areas of water collect and/or pond around the building which can result in soil volume change under the building. Plumbing leaks shall be repaired as soon as possible in order to minimize the magnitude of moisture change under the slab. Large trees and shrubs shall not be planted in the immediate vicinity of the structure, since root systems can cause a substantial reduction in soil volume in the vicinity of the trees during dry periods.
D) This foundation has been designed as a ground supported concrete slab-on-grade, and as such will move with the soils upon which it bears. This design is intended to limit such movement to within the deflection tolerances set forth in the International Building Code Edition in force at time of design. It is possible however, that some sheet rock and/or brick and/or concrete cracking may occur.
E) It is the responsibility of the Builder/General Contractor to notify the Owner of the importance of these items and of the limitation as expressed above. No other warranties are expressed or implied.

5. SITE DRAINAGE:

A) Site drainage during construction is very important in controlling moisture problems associated with the below slab fill and subgrade soils. It is the responsibility of the Owner to maintain the external site drainage features. The following measures are to be taken by the Contractor:
B) Installation of berms or swales on the uphill side of the construction area to divert surface runoff away from the fill area during construction.
C) Sloping of the top of the subgrade with a min. downward slope of 1.5 percent out to the base of a dewatering trench located beyond the building perimeter.
D) Sloping the surface of the select fill during construction to promote runoff of rainwater until the final lift is placed.
E) During Construction, the contractor shall provide any means necessary so as to remove all standing water in the excavation within a 24-hour period. (i.e., dewatering trenches, pumps, etc.) Dewatering shall be maintained until final grading around building has been completed.
F) At all non-paved areas, provide a 12" thick (min.) Clay "Cap" outside of the foundation.
G) Construction of final surface drainage patterns to prevent ponding and limit surface water infiltration at the building perimeter.
H) Location of water-bearing utilities, roof drainage outlets and irrigation spray heads outside the granular fill and perimeter drain boundaries.

6. BUILDING PAD PREPARATION:

A) Structural Fill: Strip building area of all vegetation (6 inches deep). Install SELECT FILL by the "Bagging" method in 8-inch lifts, consolidating the select fill with a hand operated vibratory compactor at optimum moisture content. This select fill shall have a liquid limit less than 40 percent and PI less than 15. This fill material shall be a granular material with max. aggregate size of 3 inches and shall provide an adequate binder for compaction and stability. The bagging of the sides of the grade beams may be required. A minimum thickness of 6 mil for the plastic bagging material shall be used.
B) THE STABILIZING BASE COURSE below the concrete slab shall be a compacted, inert, non-expansive, flexible base material (crushed limestone) conforming to Texas Highway Department Specifications No. 247, Type A. Max. particle size shall be 3 inches. This base shall be compacted as noted above at optimum moisture content. This base shall be 6 inches min. thickness in the field compacted.
C) Where trees exist within 5 feet of foundation, grade beams shall be deepened to extend a min. of 24 inches below grade for a distance of 5 feet in each direction of the tree (total length of 10 feet). All roots extending under foundation shall be cut off and treated so as to prevent any future growth under foundation.
D) Final Site drainage is critical to the performance of the completed structure. All non-paved areas around the building shall have a min. of 12 inches of clay topsoil and slope away at a min. of 1 inch per foot. Contractor is to coordinate these requirements with the Civil and Landscaping Drawings.

7. TRENCH BACKFILLING:

A) Trench backfill for utilities shall be properly placed and compacted as required and in accordance with local City Standards, Civil, and Mechanical requirements. Beneath the building structures, backfill within the utility trenches shall meet the same requirements specified under Building Pad Preparation.
B) CLAY CAPS - Provide clay caps over all trenches in non-paved areas leading to and crossing building pad lines. The top 12 inches of trench backfill shall consist of on-site clays placed in two 8-inch loose lifts and compacted to 85 percent max. dry density as determined by ASTM D 698 at plus or minus 3 percent of optimum moisture content. In the event on-site clays are not readily available, contact Geotechnical Engineer for acceptable material options. At paved areas, CLAY CAPS are not required.
C) CLAY PLUGS - Provide clay plugs where utility lines cross building lines (and 3'-0" min. beyond extent of building line, or pad, whichever is further) to prevent water traveling in the trench backfill and entering beneath the structure. Clay plugs shall extend the full depth of the trench and granular bedding material shall be omitted at plug locations. Clay plugs shall be free of gravel and a min. of 95 percent of the material shall pass the #4 sieve as determined by washed sieve analysis. Clay shall be placed in 8-inch loose lifts and compacted to 85 percent max. dry density as determined by ASTM D 698 at plus or minus 3 percent of optimum moisture content. Compaction equipment shall be suitable for obtaining the required compaction without damage to mechanical lines.
D) No utility lines are to run parallel to the building, within 3'-0" clear of the building or 3'-0" clear of the building pad, whichever is furthest. Contractor shall notify Engineer if these guidelines are not met. Verify that conflicts between clay plug requirements, Civil requirements, and Mechanical requirements do not exist. Contact Structural Engineer regarding conflicts, if any.

8. CONCRETE REINFORCING:

A) All concrete and reinforcing shall meet ASTM A615 & ACI 117 (Standard Tolerances for Concrete Construction and Materials), U.N.O.
   a. Reinforcing: ASTM 615, Grade 60 deformed bars.
   b. Reinforcing on Drawings shall be lapped per the following: (U.N.O.)
      - Fill Supported Slabs.....40 dia
      - Fill Supported Beams.....60 dia
      - WWF.....2 Full Squares
      - Other.....60 dia (U.N.O.)
   c. Provide 2-#6 corner bars (top, bottom & mid if appropriate) at all corners and "T" intersections, (both interior and exterior). Each leg of corner bar to be 3'-0" long UNLESS DETAILED OTHERWISE. Provide "Z" bars at all slab and beam soffit drops, equal in size and number, to beam or slab reinf. respectively.
   d. Anchor Bolts, Embed plates, and column dowels shall NOT be "wet set". Securely tie dowels at proper spacing to reinforcing cage of supporting members. Use template to set and secure all anchor bolts.
   e. Welded Wire Fabric (W.W.F.): ASTM A185, or ASTM A497, flat sheets only.
   f. Unless indicated otherwise:
      - Provide chairs to support concrete reinforcing at 48 inches o.c.
      - For slab-on-grade: provide chairs to place reinforcing at mid-depth of slab.
      - For slabs on metal deck: Provide continuous slab bolsters with bottom runners perpendicular to deck to locate reinforcing at mid-height of slab (between top of deck and top of slab).
   g. Provide expansion joint material (1 inch min. X depth of walk) between building foundations and adjacent concrete walks/pavement. Seal expansion joints with flexible sealant. Unless noted otherwise, provide 3/8-inch diameter smooth bar dowels x 18 inch long @ 12 inches o.c. along all entries. Locate dowels below top bars of foundation beam.

9. CONCRETE:

A) GENERAL REQUIREMENTS:
   - Concrete to be placed within 90 minutes of batch time
   - Concrete temperature at time of placement shall be between 55 and 95 degrees

B) Proper curing of all concrete surfaces shall be provided by the Contractor in accordance with ACI 308, latest edition, "Standard Practice for Curing Concrete." If spray-on curing compounds are used, they shall be dissipating, and they need to be compatible with subsequent finish applications.

C) Contractor shall provide and maintain adequate facilities on the project for safe storage and initial curing of concrete test specimens as required by ASTMC31/C31M for the sole use of the testing agency.

D) All concrete shall be placed in accordance with ACI 302.1R. Finish tolerances shall be in accordance with ACI 117 and shall conform to at least an F number value of FF-25 / FL-20.

E) No coring, saw-cutting, or other removal of concrete will be permitted without prior approval of structural engineer.

F) Flowable Fill shall meet 2004 TxDOT Item 401
   - Max 28 day strength = 80psi to 150psi

G) Max aggregate size to be lesser of:
   - 1 ½"
   - 1" Where cover dimension is 1 ½"
   - 1/5 Least dimension of forms
   - 1/3 Depth of slab (1/4 depth of slab on metal deck)

H) Slump shall not exceed the following: 5" +/- 1"

I) Cementitious Material Requirements:
   - All mixes to contain a minimum of five (5) sacks of cementitious material per cubic yard.
   - Maximum ratio of fly ash to total cementitious content shall not exceed 20 percent.
   - Refer to section J for additional requirements

J) Additional Cementitious Material Requirements:
   1) Cement shall conform to the following when **SULFATES ARE NOT PRESENT** or if the concrete is not in contact with ground
   - ASTM C150 Type I or III
   - ASTM C595 Type 1L
   - All fly ash to be Type C or F

   2) Water cement ratio shall conform to the following when **SULFATES ARE NOT PRESENT** or if the concrete is not in contact with ground
   - 0.50 Typical

K) Concrete Strength: Based on 28 day compressive strength tests:
   1) Strength shall conform to the following when **SULFATES ARE NOT PRESENT** or if the concrete is not in contact with ground.
   - Fill Supported Slabs & Beams.....3,000 psi
   - Slabs on Metal Deck.....4,000 psi
   - Other.....4,000 psi

10. POST-INSTALLED CONCRETE ANCHORS:

A) Post-installed anchors shall only be used where specified on the construction documents. The contractor shall obtain approval from the engineer-of-record prior to installing post-installed anchors in place of missing or misplaced cast-in-place anchors.
B) Anchors shall be installed by qualified personnel in strict accordance with the manufacturer's specifications and the ICC-ES evaluation report. Installation of epoxy anchors in horizontal or upwardly inclined orientations to resist sustained tension loads must be performed by ACI-Certified Personnel.
C) Care shall be taken in placing post-installed anchors to avoid conflicts with existing rebar. Holes shall be drilled and cleaned in accordance with the manufacturer's written instructions.
D) Provide continuous or periodic inspection for all adhesive and mechanical anchors per the product's applicable ICC-ES evaluation report (ICC-ES ESR). Also see Structural Testing and Inspection Requirements.
E) Contact manufacturer's representative for initial training, installation, and product related questions. Call Simpson at (800) 999-5099. Call Hilti at (800) 879-6000. Call DEWALT at (800) 524-3244.
   a. Mechanical anchors shall have been tested and qualified for use in accordance with ACI 355.2 and ICC-ES AC193 for cracked and uncracked concrete recognition. Pre-approved mechanical anchors include:
      - SCREW ANCHORS: DEWALT 'SCREW BOLT+" (ICC-ES ESR-3889), Simpson "TITEN-HD" (ICC-ES ESR-2713), or Hilti "KWIK HUS-EZ" (ICC-ES ESR-3027), or DEWALT SNAKE + (ICC-ES-ESR-2272)
      - WEDGE/EXPANSION TYPE ANCHORS: DEWALT "POWER-STUD+ SD-1" (ICC-ES ESR-2818) or DEWALT "POWER STUD+ SD-2" (ICC-ES ESR-2502), DEWALT MINI-UNDERCUT+ (ICC-ES-ESR 3912), Simpson "STRONG-BOLT 2" (ICC-ES ESR-3037) , or Hilti "KWIK BOLT TZ2" (ICC-ES ESR-1917).
   b. Adhesive anchors shall have been tested and qualified for use in accordance with ACI 355.4 and ICC-ES AC308 for cracked and uncracked concrete recognition. Pre-approved adhesive anchors include:
      - DeWalt "AC200+" (ICC-ES ESR-4027), DeWalt "PURE 220+" (ICC-ES ESR-5144), or Simpson "SET-3G" (ICC-ES ESR-4057), Simpson "AT-3G" (ICC-ES ESR-5026), or Hilti "HIT-RE 500-V3" (ICC-ES ESR-3814), Hilti "HIT-HY 200 V3" (ICC-ES ESR-4868)
      - Refer to "Structural Testing and Inspection Requirements" for pull testing requirements.
F) Substitution requests for products other than those specified above shall be submitted by the contractor to the engineer-of-record along with calculations that are prepared and sealed by a registered professional engineer. The calculations shall demonstrate that the substituted product is capable of achieving the pertinent equivalent performance values (minimum) of the specified product using the appropriate design procedure and/or standard(s) as required by the building code.

11. CONCRETE ON GRADE CONSTRUCTION:

A) Refer to Architectural Drawings for all floor finishes, dimensions and locations of slab drops and depressions, and sawcut layouts not shown on structural plans.
B) Fill supported slabs, unless noted otherwise are 5 inches thick with #4 @ 12 inches o.c. each way in top of slab. Extend all slab bars over entire width of perimeter beams, or to edge of lug. Support bars on concrete bricks (3,000 psi). Place bricks under LOWER bars of reinforcing mat @ 48 inches o.c. Support bottom beam bars at 4'-0" intervals.
C) VAPOR RETARDER: Place slab directly over Vapor Retarder using 12" minimum laps, continuously taped, tested per the flowing guidelines, and meeting ALL of the following requirements:
   a. Class (ASTM E1745): A
   b. Permeance After Conditioning (ASTM E1745, E154): 0.01 Perms (grains/ft² ·hr ·inHg) (max.)
   c. Tensile Strength (ASTM E154, Section 9): 45.0 lbf/in (min.)
   d. Puncture Resistance (ASTM D1709, Method B): 2200 g. (min.)
   e. Thickness: Minimum thickness of 15 mil
   Vapor Retarder is to extend down sides of beam and footing trenches, to within 4 inches of trench bottom. DO NOT drape Vapor Retarder across bottom of trenches.
D) Grade beams are formed by walls and soffit of carefully shaped trench. Wood form exposed faces to a depth of 8 inches below finished grade, U.N.O. (See Architect), or to entire depth of beam if neat excavation is not possible to maintain exterior of beam within 1" of plan dimensions.
E) All beam soffits shall bear 18 inches min. into final grade or compacted fill. On perimeter, increase scheduled depth as required for soffit to bear 18 inches min. below final grade.
F) Where beam depth exceeds 36 inches, add #4 at 12 inches o.c. horizontal bars in each face of beam. Provide corner bar for all mid bars.
G) When mechanical line trenches are to intersect grade beams, they must be approved by the Engineer and pass under or thru @ 90 Deg. to the beam line. Fill and compact all mechanical trenches under the building as noted above.
   Provide sleeves for lines passing thru grade beams with additional #5 bars all around sleeve, each face of beam.
H) No Pipes or Conduit are to be cast into slabs, unless pre-approved by structural engineer, prior to placement of vapor retarder. Increase slab thickness as needed in the area of the conduits to maintain a minimum slab thickness as noted on plans above conduits.
I) Pipes or conduit can be cast into beams, provided they do not run along the length of the beam, and the following limits are met:
   a. 8 inches max O.D., unless detailed otherwise
   b. Min. spacing of pipes (thru beams): 3 x dia.

12. STRUCTURAL STEEL:

A) All structural steel shall meet the requirements of the current edition of the AISC Code of Standard Practice for Steel Buildings and Bridges.
B) All structural steel WIDE FLANGE shapes shall meet ASTM A992 (50 ksi min.).
C) Unless noted otherwise: All OTHER structural steel shall meet ASTM A36 or ASTM A992.
D) Structural Steel Tubes:
   a. (Rectangular HSS): ASTM A500, Grade C (Fy= 50 ksi min.), or ASTM A1085.
   b. (Round HSS): ASTM A500, Grade C (Fy=50 ksi min.).
E) Bolts: ASTM A325, F1554, or F1852. All bolted structural connections shall utilize twist-off-type tension control bolt assemblies, or approved equivalent. Bolts, nuts, and washers to be hot dipped galvanized where beams and columns are HDG. Bolt sizes and types to be as follows (unless noted otherwise on drawings):
   a. Roof Framing: 3/4-inch diameter, A325 or F1852
   b. Floor Framing: 1 inch diameter, A325 or F1852
   c. Anchor Bolts: F1554.
   d. Threaded Rods: A36.
F) Contractor to provide bracing during construction to resist all wind and construction loads in sufficient quantity to insure stability & plumbness requirements of the components and structure throughout the entire construction period.
G) All welding shall comply with the requirements of AWS D1.1 for steel construction and work shall be performed by pre-qualified Certified Welders. U.N.O., provide the following minimum welding requirements:
   a. E70 series (all positions) electrodes.
   b. 1/4-inch fillet welds.
   c. For material 12 inches long or less, fully weld all joints.
   d. For material over 12 inches long, weld 4" at 12" o.c.
   e. If weld size is shown on details, but length not given, weld the entire length of the joint.
H) Field welding is to be primed, painted, cold galvanized, or otherwise to match surrounding steel finishes. All cold galvanizing to be ZRC Galvilite, or approved equivalent.
I) All steel embed plates and angles shall be A36 steel. ALL anchors and bars fastened to embed plates shall conform to the following guidelines:
   a. Headed Concrete Anchor (HCA) shall be studs that are headed, bent, or of other configuration (1/2", 5/8", 3/4", 7/8"). Material shall conform to ASTM A108/A29 Grade C1010-C1020 and AWS D1.1. HCA shall be 65,000 psi min. (Tensile strength) and 51,000 psi min. (Yield strength) and automatically arc welded through ceramic ferrules. Welding of anchors shall comply with AWS D1.1.
   b. All rebar that is to be welded to steel plates or angles shall be a weldable type, conforming to A-706 60ksi. Welding of reinforcing bars to plates and angles shall conform to AWS D1.4/D1.4M.
J) Pre-engineered Steel Stairs shall be DESIGNED AND SEALED by a Texas Registered Professional Engineer. Shop Drawings shall be submitted showing the stairs, landings, connections and all pertinent dimensions. Design live load shall be 100 psf. Refer to Architectural Drawings for other requirements. Stair Engineer shall be retained by Steel Fabricator.
K) Connections not detailed on the Structural Drawings are to be designed by registered Professional Engineer. These details shall be submitted on Shop Drawings, bearing the seal of the Design Engineer.

13. STRUCTURAL WOOD:

A) All structural lumber shall be as specified below and conform to the AITC Code of Standard Practice, latest edition. Specifications by AITC shall govern those portions of work, fabrication and erection, of all structural wood.
B) Dimensional Lumber Properties: Southern Yellow Pine, No. 2 or better.
C) Special Lumber Properties: So. Yellow Pine, Select Structural or better.
D) Hardware shall be as specified on Drawings and be by "Simpson" or an approved equivalent.
E) Wood in direct contact with concrete or CMU, or exposed to weather, shall be pressure-treated or otherwise protected from moisture.
F) Connectors to pressure-treated wood shall be galvanized or stainless steel.

14. ENGINEERED WOOD:

A) Micro-lam LVL beams shall be solid rectangular sections constructed of high strength laminated veneer as manufactured by Truss-Joist Corporation or equal.
   a. Design properties shall be equal to or exceeding:
      - Fb = 2,600 psi multiplied by (12/D)^0.136 for member depths greater than 12"
      - Ft = 1,555 psi
      - Fc = perpendicular = 750 psi
      - Fc = parallel = 2,510 psi
      - Fv = 285 psi
      - E = 2,000,000 psi
B) Glu-lam beams shall conform to ANSI/AITC A190.1-2007.
   a. Design properties shall be equal to or exceeding:
      - Fb = 2,400 psi (Bending)
      - Ft = 1,100 psi (tension parallel to grain)
      - Fv = 265 psi (Shear)
      - E = 1,800,000 psi (Modulus of elasticity)
      - Fc = 650 psi (Compression perpendicular to grain on tension face)
      - Fc = 650 psi (Compression perpendicular to grain on compression face)
      - Fc = 1,650 psi (Compression parallel to grain)
      - Single span glu-lam beams to be combination 24F-V4
      - Multiple span or cantilevered beams to be combination 24F-V8
C) Adhesives shall meet the requirements for wet conditions of service. Members shall be individually wrapped.

15. STRUCTURAL DESIGN LOADS: (Non-Factored)

A) Dead Loads:
   a. Roof: weight of building components.
   b. Floor: weight of building components.
B) Live Loads:
   a. Roof: LL Reduction Not Used
      - Typical.....20 psf
   b. Floor: LL Reduction Not Used
      - Typical.....100 psf
C) Building Risk Category: III (IBC Table 1604.5)
D) Wind Load: per 2024 I.B.C. (Exposure B) (IBC Pg. 378)
   a. Basic Wind Speed: Category: III
      - Vult = 115 mph
      - Vasd = 89 mph
E) Snow Loads: 5 psf
F) Building Code 2024 I.B.C.
G) Seismic Design Data:
   a. Seismic Importance Factor (I) = 1.25 (ASCE 7 Table 1.5-2)
   b. Site Class..... = D (Assumed)
   c. Seismic Design Category..... = A
   d. Seismic Force Resisting System: Shear Walls (existing)
   e. Seismic Analysis Procedure: Equivalent Lateral Force Procedure

16. SCHEDULE OF SITE OBSERVATIONS BY ENGINEER:

A) This design shall not be considered valid, and Engineer accepts no responsibility, unless observations are performed by a representative of Persyn Engineering.
B) Observations made by Engineers Representative are to check for general conformance with the Structural Drawings. The responsibility for ensuring accuracy of the construction, and quality control procedures remains with the Contractor.
C) Prior to the beginning of construction, the contractor shall arrange a meeting with the Structural Engineer to set-up a schedule for the following observations:
   a. CONCRETE REINFORCING: Prior to each concrete pour unless noted otherwise by Engineer.
   b. STRUCTURAL WOOD: Before connections and structural members are hidden by installation of architectural finishes.
D) Notify Engineer at least 24 hours before each site observation is required.
E) NOTE: These structural observations are the requirements of the Structural Engineer. They are not meant to satisfy the requirements of Section 1705 of the International Building Code, "Special Inspections."

17. SPECIAL INSPECTIONS: (Not Required)

A) Special inspections are not required for the Structural portion of this project (IBC Section 1704.2, Exception 1).
B) The general contractor is responsible for coordinating all testing, inspections and notifying the Architect/Engineer and Inspectors of work ready for inspection. The general contractor must provide access to and means for proper inspection of such work.
C) List of IBC Section 110 Structural Inspections, which are to be made by the Building Official. (Note: The Building Official may accept a review by a licensed professional engineer in place of the Building Official conducting the review).
   a. Footing and Foundation Inspection (IBC Chapter 110.3.1).
   b. Concrete Slab and underfloor inspection (IBC Chapter 110.3.2).
   c. Frame Inspection (IBC Chapter 110.3.4).

MICHAEL J. BLEDSOE
103114
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
11-20-2025

PERSYN
ENGINEERING
4734 College Park
San Antonio Texas. 78249
Phone: 210-680-4126
Texas Firm Registration #F-188
Persyn Project # 9952

CASTROVILLE CATHOLIC SCHOOL
CASTROVILLE, TX

JOB NO: 240050
DRAWN BY: OH / MJB
BID SET
ISSUE / REVISION:

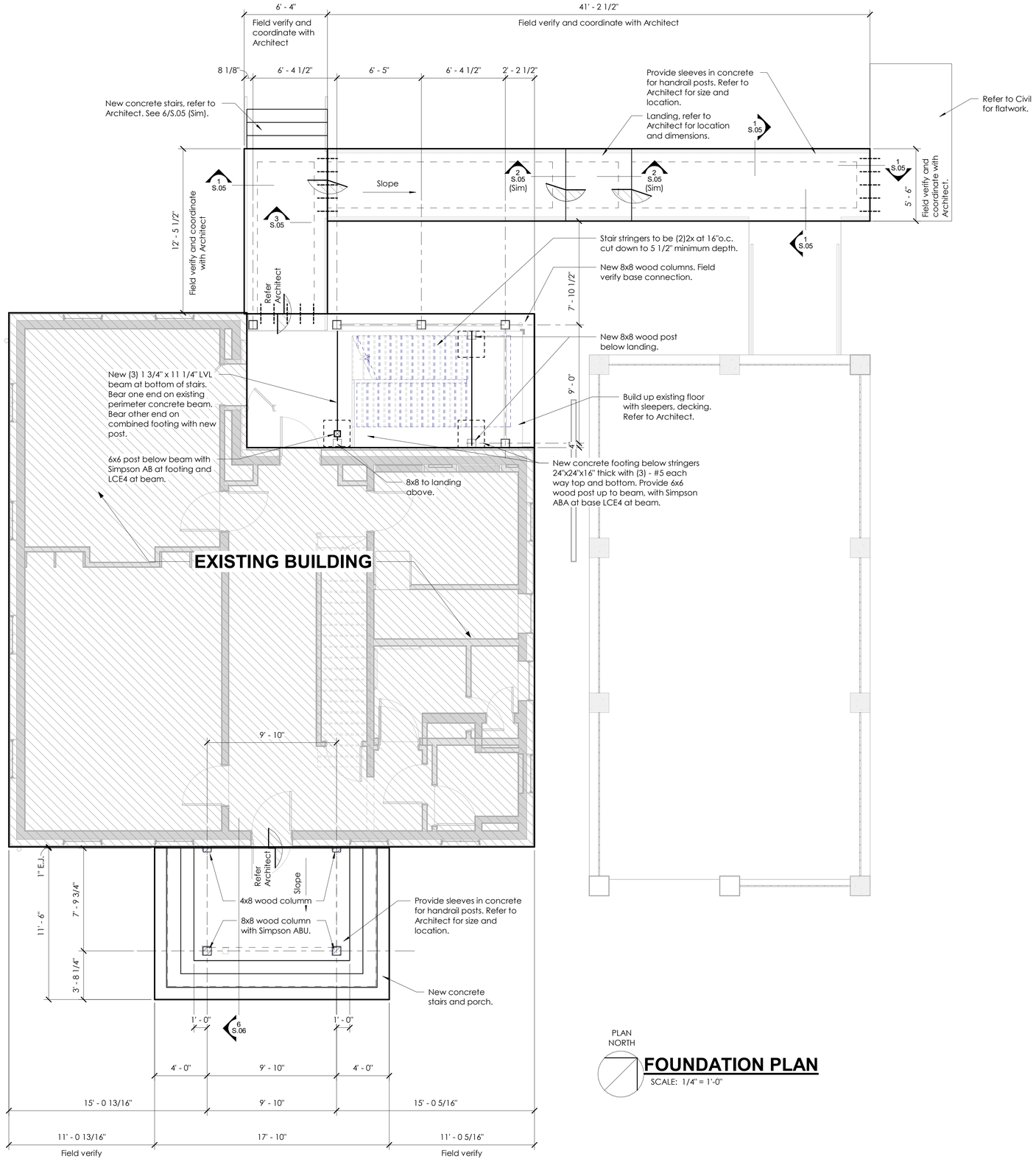
No.	Date

11-20-2025

SHEET TITLE
GENERAL NOTES

S.01

11/20/2025 11:04:29 AM C:\Users\olegario.hernandez\OneDrive - Persyn Engineering\Documents\9952 Castroville Catholic School_R26_Olehjr98.rvt



PLAN NORTH

FOUNDATION PLAN

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

Elevation Notes

Datum elevation of 100'-0" is for reference purposes only. Refer to Architect/Civil for actual elevations.

T.C. = Top of Concrete
T.L. = Top of Lug
T.S. = Top of Steel Beam/ Girder
J.B. = Joist Bearing
T.W. = Top of Wall
B.S. = Bottom of Steel Beam

See Foundation plans for location of 100'-0" datum elevation.

Dimension Note

Refer to Architectural plans for layout and dimensions. Verify all wall layouts with Architectural plans.

New Wood Framing Note

All wood framing to be Southern Yellow Pine, No.2 or better. All exposed wood to be treated against moisture and periodic maintenance will be required.

Existing Conditions

Verify all existing conditions. Notify Architect / Engineer if actual conditions vary from assumed conditions.

Existing Floor Joists

2x12 joists spanning more than 12'-0"
2x10 joists spanning more than 10'-0" or
2x8 joists spanning more than 8'-0" must be reinforced with a new full length 2x nailed together with (2)-16d at 16"o.c.

Wood Note

Wood in contact with concrete or exposed to weather to be treated.

STATE OF TEXAS
MICHAEL J. BLEDSOE
103114
LICENSED
PROFESSIONAL ENGINEER

11-20-2025

PERSYN
ENGINEERING
4734 College Park
San Antonio Texas. 78249
Phone: 210-680-4126
Texas Firm Registration #F-188
Persyn Project # 9952

CASTROVILLE CATHOLIC SCHOOL

CASTROVILLE, TX

JOB NO: 240050
DRAWN BY: OH / MJB
BID SET
ISSUE / REVISION:

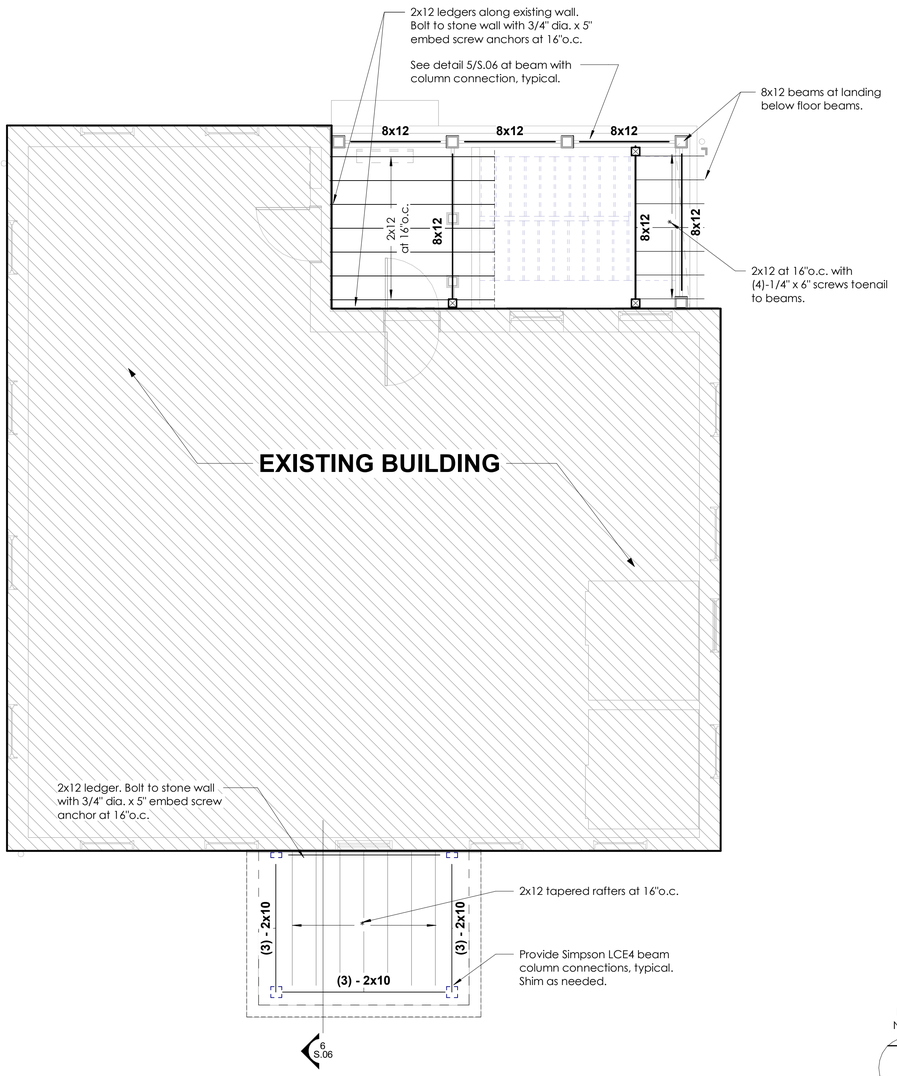
No.	Date

11-20-2025

SHEET TITLE
FOUNDATION PLAN

S.02

11/20/2025 11:04:30 AM C:\Users\olegario.hernandez\OneDrive - Persyn Engineering\Documents\9952 Castroville Catholic School_R26_Oehjr98.rvt



PLAN NORTH

2ND FLOOR FRAMING PLAN

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

Elevation Notes

Datum elevation of 100'-0" is for reference purposes only. Refer to Architect/Civil for actual elevations.

T.C. = Top of Concrete
T.L. = Top of Lug
T.S. = Top of Steel Beam/ Girder
J.B. = Joist Bearing
T.W. = Top of Wall
B.S. = Bottom of Steel Beam

See Foundation plans for location of 100'-0" datum elevation.

Dimension Note

Refer to Architectural plans for layout and dimensions. Verify all wall layouts with Architectural plans.

New Wood Framing Note

All wood framing to be Southern Yellow Pine, No.2 or better. All exposed wood to be treated against moisture and periodic maintenance will be required.

Wood Floor Deck

Provide 3/4" APA rated tongue and groove plywood deck, long dimension across supports, stagger joints. Grade as required by A.P.A. Fully glue to all supports. Provide 8d common nails at 8" o.c. in the field and 4"o.c. at ends and edges.

PLYWOOD ROOF DECK

5/8" OSB deck with long dimension across supports. Plywood to be APA rated sheathing. Nail at 6"o.c. along edges and at 12"o.c. at intermediate supports with 8d common nails. Allow 1/8" gap at panel ends and edges. Stagger end joints. Provide edge clips.

HEADER SCHEDULE

SPAN	MEMBER
0' - 3'-0"	(2)- 2x8 min.
3'-1" to 6'-0"	(2)- 2x10 min.
6'-1" to 8'-0"	(2)- 2x12 min.

Southern Yellow Pine #2 or better. Provide 1/2" OSB or plywood between 2x members. Provide additional members to match width of wall. Provide (3)- total studs each end of headers.

Existing Conditions

Verify all existing conditions. Notify Architect / Engineer if actual conditions vary from assumed conditions.

Existing Floor Joists

2x12 joists spanning more than 12'-0"
2x10 joists spanning more than 10'-0" or
2x8 joists spanning more than 8'-0" must be reinforced with a new full length 2x nailed together with (2)-16d at 16"o.c.

STATE OF TEXAS
MICHAEL J. BLEDSOE
103114
LICENSED
PROFESSIONAL ENGINEER

11-20-2025

PERSYN
ENGINEERING
4734 College Park
San Antonio Texas. 78249
Phone: 210-680-4126
Texas Firm Registration #F-188
Persyn Project # 9952

CASTROVILLE CATHOLIC SCHOOL

CASTROVILLE, TX

JOB NO: 240050
DRAWN BY: OH / MJB
BID SET
ISSUE / REVISION:

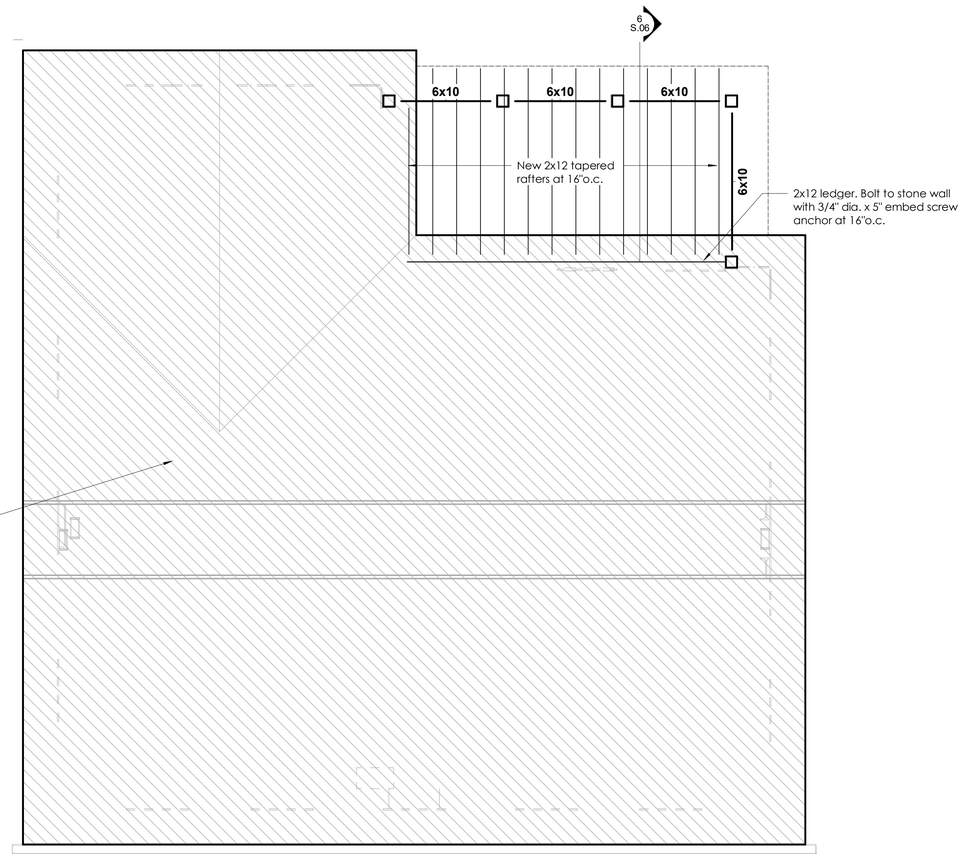
No.	Date

11-20-2025

SHEET TITLE
2ND FLOOR FRAMING PLAN

S.03

11/20/2025 11:04:31 AM C:\Users\olegario.hernandez\OneDrive - Persyn Engineering\Documents\9952 Castroville Catholic School_R26_Oehjr98.rvt



PLAN NORTH

ROOF FRAMING PLAN

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

Elevation Notes

Datum elevation of 100'-0" is for reference purposes only. Refer to Architect/Civil for actual elevations.

T.C. = Top of Concrete
T.L. = Top of Lug
T.S. = Top of Steel Beam/ Girder
J.B. = Joist Bearing
T.W. = Top of Wall
B.S. = Bottom of Steel Beam

See Foundation plans for location of 100'-0" datum elevation.

Dimension Note

Refer to Architectural plans for layout and dimensions. Verify all wall layouts with Architectural plans.

New Wood Framing Note

All wood framing to be Southern Yellow Pine, No.2 or better. All exposed wood to be treated against moisture and periodic maintenance will be required.

HEADER SCHEDULE

SPAN	MEMBER
0' - 3'-0"	(2)- 2x8 min.
3'-1" to 6'-0"	(2)- 2x10 min.
6'-1" to 8'-0"	(2)- 2x12 min.

Southern Yellow Pine #2 or better. Provide 1/2" OSB or plywood between 2x members. Provide additional members to match width of wall. Provide (3)- total studs each end of headers.

Existing Conditions

Verify all existing conditions. Notify Architect / Engineer if actual conditions vary from assumed conditions.

STATE OF TEXAS
MICHAEL J. BLEDSOE
103114
LICENSED
PROFESSIONAL ENGINEER

11-20-2025

PERSYN
ENGINEERING
4734 College Park
San Antonio Texas. 78249
Phone: 210-680-4126
Texas Firm Registration #F-188
Persyn Project # 9952

CASTROVILLE CATHOLIC SCHOOL

CASTROVILLE, TX

JOB NO: 240050
DRAWN BY: OH / MJB
BID SET
ISSUE / REVISION:

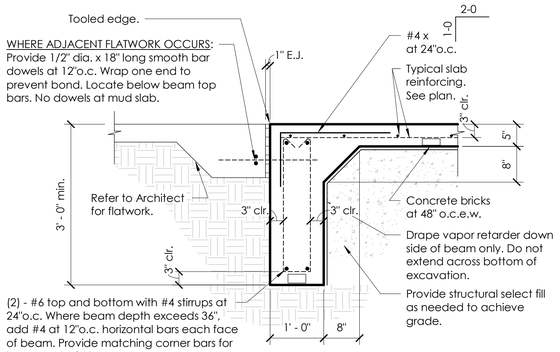
No.	Date

11-20-2025

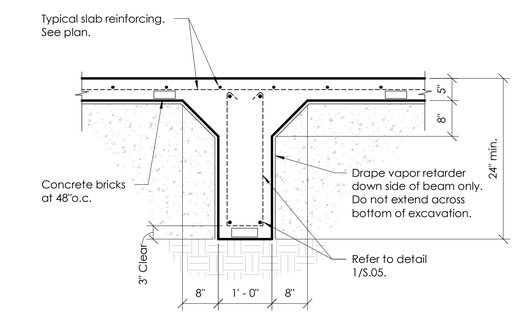
SHEET TITLE
ROOF FRAMING PLAN

S.04

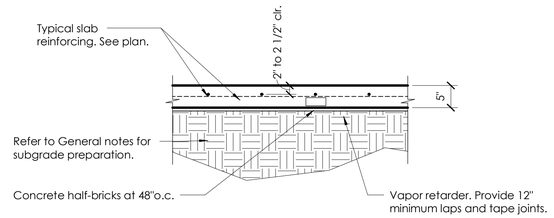
11/20/2025 11:04:31 AM C:\Users\olegario.hernandez\OneDrive - Persyn Engineering\Documents\9952 Castroville Catholic School_R26_Olehj98.rvt



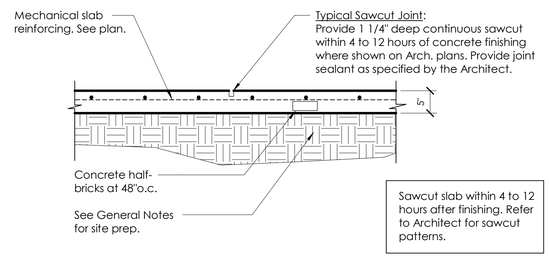
1 EXTERIOR GRADE BEAM
3/4" = 1'-0"



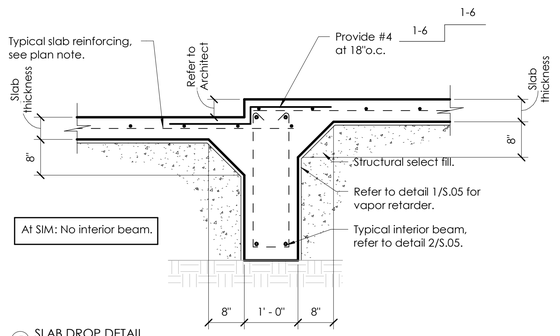
2 INTERIOR GRADE BEAM
3/4" = 1'-0"



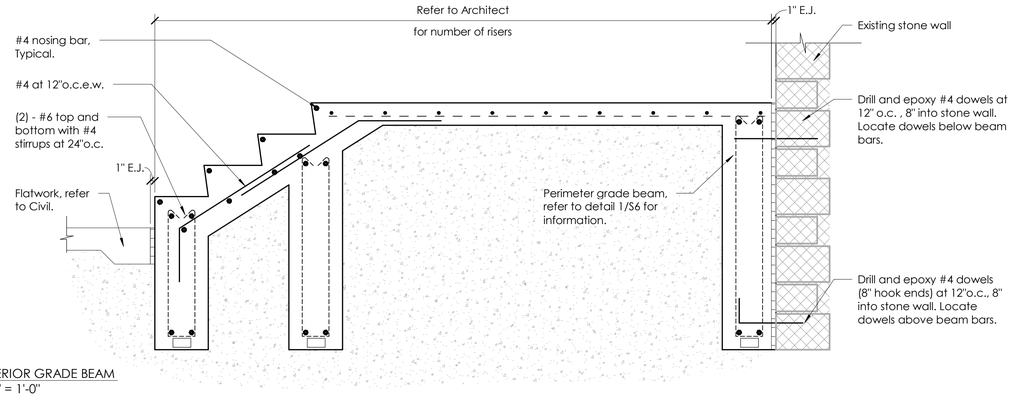
3 SLAB REINFORCING SUPPORT DETAIL
3/4" = 1'-0"



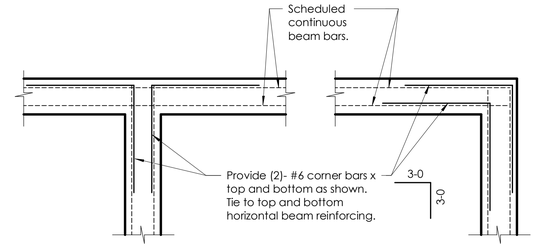
4 SAWCUT DETAIL
3/4" = 1'-0"



5 SLAB DROP DETAIL
3/4" = 1'-0"



6 EXTERIOR GRADE BEAM
3/4" = 1'-0"



7 TYPICAL BEAM CORNER BAR REINFORCING PLACEMENT
1/2" = 1'-0"

MICHAEL J. BLEDSOE
103114
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
11-20-2025

PERSYN
ENGINEERING
4734 College Park
San Antonio Texas. 78249
Phone: 210-680-4126
Texas Firm Registration #F-188
Persyn Project # 9952

CASTROVILLE CATHOLIC SCHOOL
CASTROVILLE, TX

JOB NO: 240050
DRAWN BY: OH / MJB
BID SET
ISSUE / REVISION:

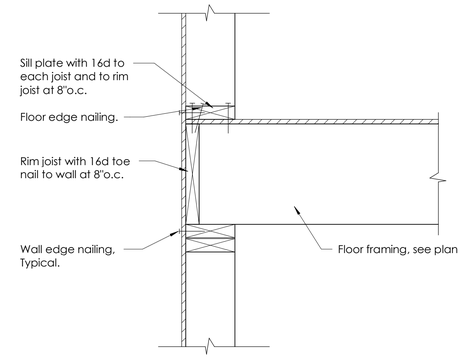
No.	Date

11-20-2025

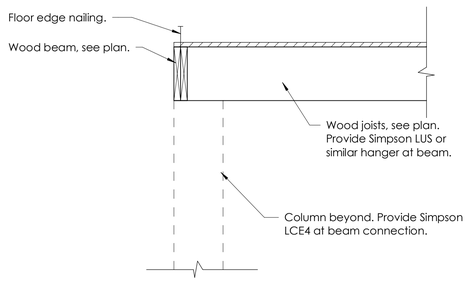
SHEET TITLE
FOUNDATION DETAILS

S.05

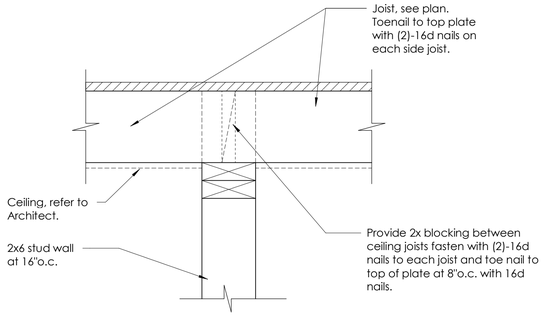
C:\Users\olegario.hernandez\OneDrive - Persyn Engineering\Documents\9952 Castroville Catholic School_R26_Olehjr98.rvt
11/20/2025 11:04:31 AM



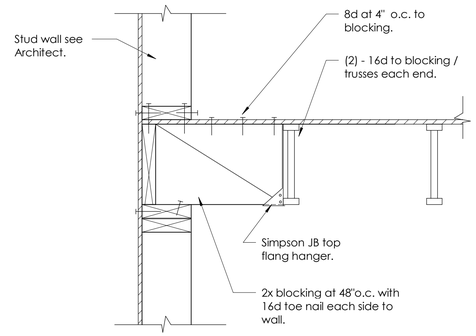
1 2ND FLOOR FRAMING PERPENDICULAR TO WALL
3/4" = 1'-0"



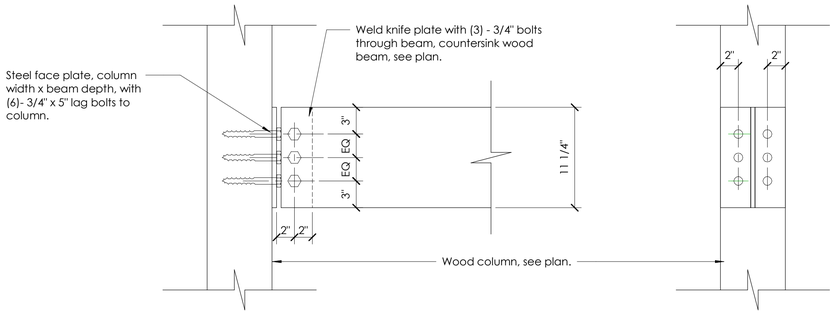
2 2ND FLOOR FRAMING PERPENDICULAR TO WALL
3/4" = 1'-0"



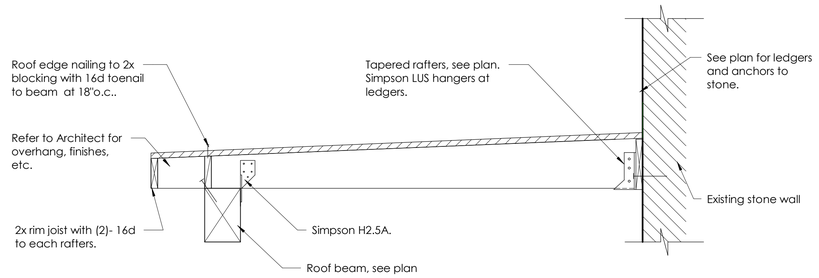
3 FLOOR JOIST AT INTERIOR STUD WALL
1 1/2" = 1'-0"



4 2ND FLOOR FRAMING PARALLEL TO WALL
3/4" = 1'-0"



5 BEAM COLUMN CONNECTION
1 1/2" = 1'-0"



6 NEW ROOF AT EXISTING WALL
3/4" = 1'-0"

PLYWOOD SHEARWALL SCHEDULE

TYPE	NAILING					Anchor Bolts to Concrete		
	Panel Thickness	Nail Size	Panel Edges	Panel Field	Sill Plate Nailing	Size	Spacing	Wall Capacity
1	15/32" one side	8d	6" o.c.	12" o.c.	16d @ 8" o.c.	5/8" dia. x 7" embed	48" o.c.	302 plf.

Shearwall Schedule Notes:
1. Panels may be installed vertically or horizontally.
2. Blocking is required at all panel edges between studs.
3. Provide shearwall sheathing and nailing for the entire length of the wall as shown on the plans, including above and below openings in shearwalls.
4. Provide shearwall edge nailing at hold-down posts.
5. Use hot-dipped galvanized nails and connector plates for connections to pressure-treated lumber.
6. 8d nails = 0.131" dia. x 2 1/2"long. 16d nails = 0.162" dia. x 3 1/2" long.
7. Where sheathing is applied to both sides of a wall, stagger panel edge joints so that the joints on opposite sides are not on the same stud.
8. Anchor bolts to be cast in place; contact the engineer for adhesive or expansion bolt alternatives (special inspections may be required).
9. Where edge nailing is 2" o.c., provide a single 3x or double 2x at panel edges and stagger nails. Nail double 2x studs together with 3" nails to match diameter and spacing of the sill plate nailing.
10. Wall capacity shear values include a 40% increase per IBC section 2306.3, and a 1.3 reduction for wind loads per IBC section 1605.3.2.
11. Values are based on DF or SP framing.
12. At double top plate, offset plate joints 48" minimum, and nail together with (16) 16d nails at 2" o.c. each side of joint.
13. All exterior walls to be Type 1 shearwall U.N.O.

7 SHEARWALL SCHEDULE
1/8" = 1'-0"

STATE OF TEXAS
MICHAEL J. BLEDSOE
103114
LICENSED
PROFESSIONAL ENGINEER
11-20-2025

PERSYN
ENGINEERING
4734 College Park
San Antonio Texas. 78249
Phone: 210-680-4126
Texas Firm Registration #F-188
Persyn Project # 9952

CASTROVILLE CATHOLIC SCHOOL
CASTROVILLE, TX

JOB NO: 240050
DRAWN BY: OH / MJB
BID SET
ISSUE / REVISION:

No.	Date

11-20-2025

SHEET TITLE
FRAMING DETAILS

S.06

C:\Users\olegario.hernandez\OneDrive - Persyn Engineering\Documents\09952 Castroville Catholic School_R26_Olehj98.rvt
11/20/2025 11:04:32 AM

GENERAL REQUIREMENTS AND SUPPLEMENTARY CONDITIONS

NOTES:

1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.

SCOPE OF WORK

The Scope of Work entails the renovations and restoration required to meet all improvements as shown on Construction Documents and in the Specifications and It includes, but is not limited to, portions of demolition, site work improvements, infrastructure utilities, structural systems, concrete, flatwork, metals, new and existing stairs, carpentry, standing seam metal roof, sealants, existing wood windows, existing and new wood doors, existing and new hardware, drywall, painting/staining, sealers, and mechanical, electrical and plumbing.

Schedule

General Contractor will be required to provide the n umber of calendar days required to substantially complete the project from the date of issuance of the building permit.

Prime Contract

All work, including general construction, architectural, structural, mechanical, electrical, plumbing work will be awarded under a single prime contract.

GENERAL REQUIREMENTS

1.1 The "General Conditions of the Contract for Construction", A.I.A. Document A201, 2007 Edition, is a part of this Contract.

1.2 The Contractor and Subcontractor are responsible for verifying all dimensions and conditions incidental to this work and taking site measurements for all items requiring fitting to work previously built or set.

1.3 Contractor is responsible for carefully inspecting work completed and verifying its accuracy and quality before subsequent work is commenced. If problems exist, contact Architect before starting work.

1.4 Contractor is responsible for installing all materials and equipment according to the manufacturer's recommendations. At least one qualified person who is familiar with the proper procedure and manufacturer's requirements shall be present during installation.

1.5 The Contractor shall remove and replace all defective work at his own expense.

1.6 The Contractor shall haul, stack and store all materials as is proper for their kind to protect them at all times.

1.7 The Contractor is responsible for hauling away trash, debris and surplus building materials.

1.8 Approval of shop drawings does not remove Contractor's responsibility for quantities, measurements, etc.

1.9 The Contractor shall guarantee the work under this contract for one (1) year from final acceptance date against defects in materials, equipment and workmanship and shall repair or replace defects to the Owner's satisfaction at no cost to the Owner. With the request for final payment, Contractor shall deliver to Owner all warranties and guarantees which extend beyond his own.

1.10 Project Closeout: The Contract will be considered fulfilled when all work has been completed; the final inspection made by Owner and Architect and final acceptance and final payment by the Owner. When the Architect and Owner determine that all work is substantially complete, they will prepare a punch list to give to the Contractor so he can make any adjustments or corrections as required to complete the project. The failure to include any items on such list does not alter the Contractor's responsibility to complete all work according to drawings and specifications.

SUPPLEMENTAL GENERAL CONDITIONS:

The General Conditions of this Contract are the American Institute of Architect's Document A-201, "General Conditions of the Contract for Construction", View www.AIA.ORG which is hereby made a part of these Specifications and shall apply to all contractors and subcontractors.

In event Document A201 is not bound herewith, a copy may be referred to or obtained from the office of the Architect.

THE SUPPLEMENTAL GENERAL CONDITIONS

The Supplemental General Conditions contain changes and additions to the AIA General Conditions. Where any part of the AIA General Conditions is modified or deleted by these Supplemental General Conditions, the unaltered provisions shall remain in effect.

MODIFICATIONS TO THE VARIOUS ARTICLES OF THE GENERAL CONDITIONS:

ARTICLE 1 - GENERAL PROVISIONS

1.1 Basic Definitions: Add the following sentence to paragraph 1.1.1, THE CONTRACT DOCUMENTS: "The Agreement takes precedence over all other Contract Documents".

1.2 Execution, Correlation, and Intent: Add the following paragraphs:

1.2.6 Titles of Sections and Articles in these specifications are introduced merely for convenience and are not to be construed as a correct or complete segregation or tabulation of the various units or materials and/or work. The Contractor shall be solely responsible for omissions or duplications by the Contractor or any Subcontractors due to real or alleged error, either direct or implied, in agreement of matter on the Contract Documents.

1.2.7 Contractor shall check drawings and specifications immediately upon their receipt, and shall notify the Architect in writing not later than Ten (10) days after receipt of them, of errors, discrepancies or omissions. Contractor shall verify dimensions and details before ordering materials or laying out work and shall be responsible for errors that might have been avoided by such check. Deviations from drawings and dimensions shall be made only with the Architect's permission.

1.2.8 Specifications and Drawings are intended to be complementary and in agreement with each other. All work or material called for by either shall be performed and/or furnished as if called for by both. In cases of discrepancy concerning dimensions, quantities and location, the Contractor shall in writing, call to the attention of the Architect any discrepancies between Specifications, Plans, Details or Schedules. The Architect will then inform the Contractor in writing which document takes precedence.

ARTICLE 3 - CONTRACTOR

3.4 Labor and Materials: Add the following paragraph:

3.4.3 Contractor and Subcontractors shall conform to the labor laws of the State of Texas, and the various acts amendatory and supplementary there to, and to all other laws, ordinances and legal requirements applicable thereto. Applicable Federal Laws shall be complied with.

3.6 Taxes: Add the following paragraph:

3.6.2 The Contractor shall pay all taxes and insurances required by the State and Federal Laws.

3.7 Permits, Fees and Notices: Add the following paragraph:

3.7.5 Costs related to all permitting. Licenses, etc., required in the prosecution of the work, whether of a permanent or temporary nature shall be paid by the Contractor. Upon completion of the work the Contractor shall deliver to the Owner through the Architect all required certificates of inspection.

ARTICLE 5 - SUBCONTRACTORS

5.1 Definitions: Add the following paragraph:

5.1.3 There shall be no obligation on the part of the Owner to pay or see to the payment of any sums due any Contractor or Subcontractor, nor create any obligation of any kind, express or implied, upon the Owner or the Architect in favor of any Subcontractor or Sub - subcontractor.

ARTICLE 6 - CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.2 Mutual Responsibility: Add the following paragraph:

6.2.7 The Contractor shall be responsible for the fitting of all work and for the coordination of the operation of all trades, other Contractors, Subcontractors and material suppliers engaged upon or in connection with the work, as well as those of his own employees and he shall exercise every effort to assure a harmonious cooperative effort on the part of all those concerned. He shall be prepared to guarantee to each of his subcontractors and foremen all of the dimensions which they may require for the fitting of their own work to adjoining work and shall do or cause to do, all fittings and adjusting necessary to make the several parts of the work come together properly and fit the work to receive or be received by the work of other Contractors.

ARTICLE 7 - CHANGES IN THE WORK

7.3 Construction Change Directives

7.3.6 A "reasonable allowance for overhead and profit" as referred to in the first sentence of this paragraph shall not exceed fifteen percent (15%).

ARTICLE 9 - PAYMENTS AND COMPLETION

9.5 Decisions to Withhold Certification: Add the following paragraph:

9.5.1 The Architect will not issue any Certificates of Payment for any progress payment to the Contractor subsequent to the work completion date specified in Article 3 of the AIA Document A101, "Standard Form of Agreement Between Owner and Contractor", 1987 Edition.

9.6 Progress Payments: Delete in its entirety 9.6.1 and add the following paragraph:

9.6.1 After the Architect has issued a Certificate of Payment, and unless otherwise provided in the Agreement, the Owner shall make payment on account of Contract on or about the Fifteenth (15th) day of each month as follows:

a. Prior to application for first payment, file with the Architect a complete schedule on AIA Documents G702 "Application and Certificate for Payment and G702A "Continuation Sheet", showing the value of various portions of the work in detail. The Contractor, upon approval of the Architect, may use other formats in lieu of G702 & G702A as long as all information required is supplied.

b. Contractor's Application for Payment shall be submitted on Documents G702 and G702A on or before the last day of each month, Ninety percent (90%) of the value based on the Contract prices of labor and materials suitably stored at the site thereof, or in a bonded warehouse up to the last day of that month, as estimated by the Architect, less the aggregate of previous payments. Upon approval of the Owner, the Contractor may make application on the middle and last day of each month.

c. Final payment shall be due Thirty (30) days after acceptance as Substantial Completion of the work, provided the work be then fully completed, and the Contract fully performed. Contractor shall submit to the Architect a notarized statement stating that all bills for labor and materials have been paid in full.

ARTICLE 11 - INSURANCE:

Each bid shall be accompanied by a bid guarantee in the form of a certified check, cashier's check, or bid bond in the amount of five percent (5%) of the total bid price.

The successful bidder will be required to furnish a one hundred percent (100%)
Performance Bond and one hundred percent (100%) Payment Bond.

11.1 Workmen's Compensation and Employer's Liability Insurance

11.1. For the duration of this Contract, the Contractor shall maintain Statutory Workmen's Compensation and shall maintain Employer's Liability Insurance with minimum limits of not less than $100,000.00. Contractor shall require Subcontractors to provide workmen's Compensation and Employer's Liability Insurance with the same minimum limits.

11.2 Comprehensive General Liability Insurance

11.2. For the duration of this Contract, the Contractor shall maintain comprehensive General Liability Insurance with Minimum Bodily Injury limits of not less than $500,000.00 for each person and not less than $500,000.00 for each accident. He shall maintain Property Damage Insurance with minimum limits of not less than $500,000.00 for each accident and not less than $500,000.00 aggregate. In addition, the Contractor shall maintain in force an Umbrella Liability Policy covering Bodily Injury and Property Damage in the amount of not less than$500,000.00. Each policy shall include contractor's Protective Liability Insurance with the same minimum limits and completed operations coverage.

11.4 Owner's Liability Insurance

11.4.1 For the duration of this Contract, the Contractor shall purchase and maintain insurance described in paragraphs 11.2.1 in the minimum amount of the cost of construction and for the Owner's Liability and shall contain the same specific endorsements which the Contractor places on the insurance required by paragraphs 11.2.1.

11.5 All Risk Builders' Risk

11.5.1 For the duration of this Contract, the Contractor shall maintain an All Risk Builder's Risk Policy including collapse endorsements up to 100% of the insurable value of the work. This insurance shall include the interest of the Contractor, Subcontractors and the Owner. Form of policy used shall be Builder's Risk.

11.6 General Insurance Requirements

11.6.1 The Contractor shall not commence work at the site under this Contract until he has obtained all the required insurance and until such insurance has been approved by the Owner and the Architect. Contractor shall not allow any Subcontractor to commence work until all similar required insurance has been obtained and approved. Approval of insurance by the Owner and the Architect shall not relieve or decrease the liability of the Contractor hereunder.

11.6.2 Certificates of Insurance shall be filed with the Owner and the Architect prior to commencing the work. Failure to furnish either satisfactory insurance or the required certificates within Ten (10) days of Notice to Proceed shall not be considered cause for modification of any contractual time limits.

11.6.3 The required insurance must be written by a company licensed to do business in Texas at the time policy is issued. In addition the Company must be acceptable to the Owner.

11.6.4 The Contractor shall not cause any insurance to be cancelled or permit any insurance to lapse. All insurance policies shall include a clause to the effect that the policy shall not be cancelled or reduced, restricted or limited until Fifteen (15) days after the Owner has received written notice as evidenced by return receipt of registered or certified letter.

11.6.5 Certificates of Insurance shall contain transcripts from the proper Officer of the Insurer, evidencing in particular those insured, the extent of the insurance, the location and the operations in which the insurance applies, the expiration date and the above mentioned Notice of Cancellation Clause.

ARTICLE 12 - UNCOVERING AND CORRECTION OF WORK

12.2 Correction of Work: Add the following paragraph:

12.2.7 The Contractor shall furnish the Owner with a written guarantee against defective material and workmanship for a period of ONE YEAR from the date of FINAL ACCEPTANCE OF THE WORK. He shall secure all written guarantees and warranties called for in the specification. The Contractor is responsible for the guarantee on the entire work performed under this agreement with the Owner. Where guarantees are specified in any section of the specifications for longer periods, such longer periods shall apply.

ARTICLE 14 - TERMINATION OR SUSPENSION OF THE CONTRACT

14.2 Termination by the Owner for Cause: Add the following sentence:

14.2.4 The cost incurred by the Owner as herein provided and damage incurred through the Contractor's default shall be certified by the Architect, and his findings shall be prima facie evidence as to the facts of such damage and expense.

END OF SECTION

Studio E
architecture & interiors inc.
8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

12/22/25

CASTROVILLE CATHOLIC SCHOOL
702 PARIS ST, CASTROVILLE, TX

PERMIT SET - BID SET - 12-22-25

JOB NO: Project Number
DRAWN BY: Author
BID SET
ISSUE / REVISION:

No.	Date

12/22/25

SHEET TITLE
GENERAL REQUIREMENTS AND SUPPLEMENTARY CONDITONS

A.01

©COPYRIGHT 2025 Studio e, Architecture and Interiors Inc.

12/22/2025 2:14:13 PM C:\Users\Emily\Documents\111025 CURRENT_damaris\KHCK6.rvt

ABBREVIATIONS

ADA. - AMERICAN DISABILITIES ACT
A/C. - AIR CONDITION(ING)
ACT. - ACOUSTICAL
ALT. - ALTERNATE
ALUM. - ALUMINUM
CLG. - CEILING
CONC. - CONCRETE
CONS. - CONSTRUCTION
C.J. - CONTROL JOINT
CPT. - CARPET
C.U. - CONDENSING UNIT-SEE MECHANICAL
DET. - DETAIL
DIA. - DIAMETER
DISP. - DISPENSER
DN. - DOWN
DWG. - DRAWINGS
ELEV. - ELEVATOR
EXIST. - EXISTING
EXP. - EXPOSED
EQUIP. - EQUIPMENT
EX. - EXISTING
F.E.C. - FIRE EXTINGUISHER CABINET
FD. - FLOOR DRAIN
F.G. - FIXED GLASS
F.H. - FIRE HYDRANT
FLUOR. - FLUORESCENT
GA. - GAUGE
GL. - GALVANIZED
GYP. BD. - GYPSUM BOARD
GWB. - GYPSUM WALL BOARD
HDW. - HARDWARE
H.M. - HOLLOW METAL
LAM. - LAMINATE/LAMINATED
L.O.P. - LIGHT ORANGE PEEL
MECH. - MECHANICAL
MEP. - MECHANICAL ELECTRICAL PLUMBING
MFR. - MANUFACTURER
MTL. - METAL
N. - NORTH
NIC. - NOT IN CONTRACT
NO. - NUMBER
O.C. - ON CENTER
OFCI - OWNER FURNISHED CONTRACTOR INSTALLED
O.H. - OPPOSITE HAND
PLAS LAM. - PLASTIC LAMINATE
PNT./PT. - PAINT
PR. - PAIR
PREP. - PREPARE
PVC. - POLYVINYL
REF/RE. - REFERENCE
RM. - ROOM
RUB. - RUBBER
SCHED. - SCHEDULE(D)
SIM. - SIMILAR
SL. - SLOPE
SP. - SPANDREL GLASS
STC. - SOUND TRANSMISSION COEFFICIENT
STRUCT. - STRUCTURAL
SPEC. - SPECIFIED
T. - TEMPERING FILM
TAS. - TEXAS ACCESSIBILITY STANDARDS
TBD. - TO BE DETERMINED
TEL. - TELEPHONE
TEMP. - TEMPERED
THK. - THICK
TYP. - TYPICAL
VCT. - VINYL COMPOSITION TILE
VEST. - VESTIBULE
WD. - WOOD
W/. - WITH
WRB. - WEATHER RESISTANT BARRIER
XB. - X BRACING

SYMBOL LEGEND

NEW DOOR & FRAME DOOR NUMBER-SEE DOOR SCHEDULE

SECTION

INTERIOR ELEVATION

ROOM NAME & NUMBER

DETAIL TAG

NEW WINDOW (FIXED) & FRAME

COLUMN GRID LINE

ELEVATION DRAWING TAG

WALL SECTION TAG

GENERAL NOTES

1. GENERAL INTENT: THE INTENT OF THE DRAWINGS AND GENERAL NOTES & REQUIREMENTS ARE TO PROVIDE DESIGN INTENT. **VALUE ENGINEERING (COST SAVINGS) TO THE MATERIALS AND SCOPE OF WORK WILL BE ENTERTAINED BUT SHALL BE DULY NOTED AND ITEMIZED IN THE BID FORM AND PROPOSALS.**

THE TERM CONTRACTOR REFERS TO THE GENERAL CONTRACTOR, SUB-CONTRACTORS AND SUPPLIERS NECESSARY TO SUCCESSFULLY COMPLETE THE WORK.

THE SUBCONTRACTOR ACKNOWLEDGES AND AGREES THAT HE OR SHE HAS INDIVISIBLE, INELIGIBLE, INTRANSFERABLE AND A CONTRACTUAL OBLIGATION TO THE OWNER TO MAKE INSPECTIONS OF THE WORK AT THE STAGES OF CONSTRUCTION AND SHALL SUPERVISE AND SUPERINTEND PERFORMANCE OF WORK IN SUCH MANNER AS TO ENABLE CONFIRMATION, CERTIFICATION AND CORROBORATION AT ALL TIMES THAT ALL WORK HAS BEEN EXECUTED ACCORDING TO CODE AND THE CONTRACT DOCUMENTS.

2. BUILDER'S SET: THE SCOPE OF THESE DRAWINGS OR SET OF PLANS ARE TO PROVIDE A "BUILDER'S SET" OF CONSTRUCTION DOCUMENTS AND GENERAL NOTES HEREINAFTER REFERRED TO AS "PLANS." AFTER FORMAL REVIEW AND APPROVAL BY A LICENSED ENGINEER AND/OR ARCHITECT, THIS SET OF PLANS IS SUFFICIENT TO OBTAIN A BUILDING PERMIT; HOWEVER, ALL MATERIALS AND METHODS OF CONSTRUCTION NECESSARY TO COMPLETE THE PROJECT ARE NOT NECESSARILY DESCRIBED. THE PLANS DELINEATE AND DESCRIBE ONLY LOCATIONS, DIMENSIONS, TYPES OF MATERIALS AND GENERAL METHODS OF ASSEMBLING OR FASTENING. THIS PLAN SET SPECIFIES THE PARTICULAR PRODUCTS OR MATERIALS RECOMMENDED FOR THIS DESIGN. THE IMPLEMENTATIONS OF THESE PLANS REQUIRES THE SUBCONTRACTORS THOROUGHLY KNOWLEDGEABLE WITH THE APPLICABLE BUILDING CODES AND METHODS SPECIFIC TO THIS PRODUCT TYPE AND TYPE OF CONSTRUCTION.

3. SET OF DRAWINGS: DO NOT DISASSEMBLE THIS SET OR GIVE PARTIAL SETS TO SUBCONTRACTORS. ALL SHEETS CONTAIN DATA PERTINENT TO ALL SHEETS. A PDF OF THE DOCUMENTS WILL BE PROVIDED TO THE GENERAL CONTRACTOR.

4. SCALING OF DRAWINGS: DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, OWNER'S REPRESENTATIVE AND SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT AND/OR ENGINEER BEFORE CONTINUING WITH CONSTRUCTION.

5. DRAWINGS: IN THE EVENT OF CIRCUMSTANCES A CONSTRUCTION DRAWING OR SPECIFICATION CONTAIN AN ITEM OR ITEMS REFERENCING ANOTHER DISCIPLINES DRAWINGS SUCH AS BUT NOT LIMITED TO "REFER TO MEP" OR "SEE MEP", CONTRACTOR SHALL HAVE ALLOWED FOR THE PROVISION OF THAT ITEM WHETHER SHOWN OR INDICATED IN THE OTHER DISCIPLINES OR NOT.

ENGINEERING DRAWINGS ARE OF EQUAL IMPORTANCE WITH THE ARCHITECTURAL DRAWINGS IN DEFINING THE WORK OF THE CONTRACT DOCUMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK WITH THE ARCHITECTURAL DRAWINGS BEFORE THE INSTALLATION OF STRUCTURAL, MECHANICAL AND ELECTRICAL WORK. SHOULD THERE BE A DISCREPANCY BETWEEN THE ARCHITECTURAL DRAWINGS AND THE ENGINEERING DRAWINGS, IT SHALL BE BROUGHT TO THE ARCHITECTS AND ENGINEER'S ATTENTION FOR CLARIFICATION PRIOR TO INSTALLATION OF SAID WORK. ANY WORKS INSTALLED IN CONFLICT WITH THE ARCHITECTURAL DRAWINGS SHALL BE CORRECTED AT THE EXPENSE OF THE CONTRACTOR.

6. SHOP DRAWINGS: IF REQUIRED, ALL STRUCTURAL SHOPS DRAWINGS INCLUDING STEEL AND SPECIAL CONDITIONS MUST ALSO HAVE STRUCTURAL AND MEP ENGINEERS OF RECORD SIGN-OFF. NO STRUCTURAL SUBSTITUTIONS WILL BE ACCEPTED WITHOUT ENGINEER'S DOCUMENTED PRE-APPROVAL AND APPROVAL.

7. CITY ORDINANCES: SUBCONTRACTORS TO CONFORM TO ANY AND ALL JURISDICTIONAL ENTITIES INCLUDING BUT NOT LIMITED TO CITY OF CASTROVILLE REQUIREMENTS SUCH AS BUT NOT LIMITED TO ALLOWABLE WORKING HOURS, WORKER PARKING/ACCESS, SIGNAGE, ETC.. COORDINATE PARKING REQUIREMENTS WITH OWNER.

8. MECHANICAL, ELECTRICAL & PLUMBING (MEP): REFER TO MEP DRAWINGS FOR HVAC, ELECTRICAL, AND PLUMBING DRAWINGS. INFORMATION FOR CITY REVIEW AND PERMITTING. COORDINATE ALL DESIGN AND CONSTRUCTION AND DOCUMENTS WITH THE ARCHITECT/DESIGNER AND/OR ENGINEER THROUGHOUT THE WORK. CONTRACTORS TO COORDINATE EXACT LOCATIONS OF ALL HVAC, SWITCHING, OUTLETS, SUPPLY & RETURN VENTS AND FIXTURES WITH OWNER, ARCHITECT/DESIGNER PRIOR TO INSTALLATION.

9. SUBCONTRACTOR RESPONSIBILITIES : REFERENCE IS MADE THROUGHOUT THESE GENERAL REQUIREMENTS AND NOTES TO RESPONSIBILITIES AND STANDARDS OF CARE TO BE FULFILLED BY THOSE PROVIDING SERVICES IN THE CONSTRUCTION OF THIS PROJECT. GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR ADHERENCE TO THOSE REQUIREMENTS AND BRING UP ANY DISCREPANCIES PRIOR TO THE WORK BEING ACCOMPLISHED. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR OBSERVING THAT ALL SUB-CONTRACTOR WORK IS BEING ACCOMPLISHED ACCORDING TO THE MOST CURRENT CONSTRUCTION DOCUMENTS, INCLUDING ALL REVISIONS AND ADDENDA.

10. MATERIAL LEAD TIME : ALL MATERIALS REQUIRING ORDER "LEAD TIME" SHALL BE IDENTIFIED AND/OR ORDERED AT THE START OF THE CONSTRUCTION. ANY ORDER TIME PROBLEMS SHOULD BE IDENTIFIED AND BROUGHT TO THE ARCHITECT/DESIGNER/OWNER ATTENTION BEFORE OR AT THE START OF CONSTRUCTION. IF THE SUBCONTRACTOR FAILS TO ORDER THE FIXTURES, MATERIALS OR EQUIPMENT IN A TIMELY MANNER CAUSING DELAY IN CONSTRUCTION, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE DELAY AND SHALL BE OBLIGATED TO OBTAIN ALL THE FIXTURES, MATERIALS AND EQUIPMENT AT ADDITIONAL EXPENSE IF NEEDED TO SPEED ITS DELIVERY. THIS APPLIES TO ALL ASPECTS OF WORK INCLUDING BUT NOT LIMITED TO HVAC, MEP AND FINISH MATERIALS.

ALL AREA CALCULATIONS ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ALL ACTUAL AREA SQUARE FOOTAGE PRIOR TO ORDERING MATERIALS.

11. SITE CONDITIONS : WHILE THE SCOPE OF THE WORK IS LIMITED AS DESCRIBED ON THE DRAWINGS, IT IS THE RESPONSIBILITY ALL THE SUBCONTRACTORS TO VISIT THE SITE TO FAMILIARIZE THEMSELVES AND FIELD VERIFY EXISTING CONDITIONS INCLUDING, BUT NOT LIMITED TO, GRADES, DIMENSIONS, TREES, DRIVEWAYS, ETC. AND TO BRING ANY LIFE AND SAFETY ISSUES AND DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE PROPOSED PROJECT TO THE ARCHITECT'S AND ENGINEER'S ATTENTION PRIOR TO THE COMMENCEMENT OF WORK. THE OWNER IS RESPONSIBLE FOR CONDUCTING A PRELIMINARY FORMAL SURVEY AND FINAL SURVEY TO VERIFY THE PLACEMENT OF AND TO INSURE THAT ALL IMPROVEMENTS FALL WITHIN PLAT & SURVEY BOUNDARIES, AS WELL AS INSURING APPROVAL FROM THE AUTHORITIES HAVING JURISDICTION TO COMMENCE WITH CONSTRUCTION.

PROTECT ADJACENT SURFACES & FINISHES (I.E..SIDEWALKS, LANDSCAPE, TREES)TO REMAIN. GENERAL CONTRACTOR TO REPAIR EXISTING ASPHALT DRIVE/PARKING LOT IF DAMAGED DURING CONSTRUCTION.

12. UTILITIES : SUBCONTRACTORS SHALL NOTIFY THE OWNER, ARCHITECT/DESIGNER AND/OR ENGINEER IF ANY REPAIRS TO EXISTING BUILDING SYSTEMS (MECHANICAL, ELECTRICAL, AND PLUMBING), ARE REQUIRED PRIOR TO BEGINNING THE WORK.

13. TEMPORARY FACILITIES : PLACEMENT OF TEMPORARY TOILET TO BE DETERMINED AND PLACED ON SITE, VERIFY FINAL LOCATION WITH THE OWNER.

14. INTERIM AND FINAL CLEANUP : GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL PROVIDE INTERIM CLEANUP AS NECESSARY TO KEEP THE JOBSITE CLEAN OF ALL PERSONAL TRASH AND CONSTRUCTION DEBRIS ON A WEEKLY BASIS. UNDER NO CIRCUMSTANCES SHALL CONSTRUCTION DEBRIS BE LEFT FOR CITY OF CASTROVILLE OR NEIGHBORHOOD TRASH PICK-UP. FINAL CLEANUP SHALL CONSIST OF REMOVAL OF ALL PERSONAL TRASH AND CONSTRUCTION DEBRIS OF CONTRACTED WORK AND PROVIDE A FINAL "MAKE READY" INTERIOR AND EXTERIOR CLEANUP AS APPLICABLE TO THAT TRADE. FINAL CLEANUP SHALL INCLUDE BUT NOT LIMITED TO WINDOW AND DOOR CLEANING, RESTROOMS, KITCHEN CLEANING, FLOORS, WALLS, AND CEILING HVAC & ELECTRICAL AND THE GENERAL REMOVAL OF CONSTRUCTION DUST AND DEBRIS FOR THE ENTIRE HOUSE.

15. PHOTOGRAPHS: GENERAL CONTRACTOR AND SUBCONTRACTORS TO KEEP A PHOTOGRAPHIC RECORD OF THE CONSTRUCTION PROGRESS AT A MINIMUM OF TWICE A MONTH AND SHALL SHARE WITH THE OWNER / ARCHITECT VIA EMAIL AND/OR DROPBOX. ALL PHOTOGRAPHS SHALL BE DATED AND LABELED AND SHALL INCLUDE WALLS, CEILINGS, FRAMING AT INTERIM AND FINISHED STAGES SHOWING HVAC, ELECTRICAL ITEMS LOCATIONS SUCH AS PANELS, WIRING, ETC. AND PLUMBING BEFORE THE FINISH MATERIALS ARE INSTALLED.

16. RECORD DRAWINGS: GENERAL CONTRACTOR SHALL DOCUMENT ON THE DRAWINGS ANY CHANGES OR MODIFICATIONS TO THE ORIGINAL INTENT OF THE DRAWINGS AS THE CONSTRUCTION PROGRESSES TO INCLUDE BUT NOT LIMITED TO UNDERGROUND UTILITIES, HVAC, ELECTRICAL CHANGES, FENCING,ETC. AT THE END OF THE PROJECT THE OWNER'S REPRESENTATIVE WILL UPLOAD A SCANNED VERSION OF THE RECORD DRAWINGS TO THE DROPBOX.

17. BUILDING MAINTENANCE : THE EXPOSED MATERIALS USED IN THE CONSTRUCTION OF THIS PROJECT WILL DETERIORATE AS THE COMPLETED PROJECT AGES UNLESS PROPERLY AND ROUTINELY MAINTAINED. OWNER SHALL PROVIDE OR IMPLEMENT THE DEVELOPMENT OF A PLAN TO KEEP THESE EXPOSED MATERIALS PROTECTED AND MAINTAINED.

18. CODES: ALL CONSTRUCTION SHALL COMPLY WITH THE MOST ESTRANGEMENT REQUIREMENTS OF ALL CURRENT APPLICABLE CITY, COUNTY, STATE AND FEDERAL LAWS, RULES, CODES, ORDINANCES, AND REGULATIONS, INCLUDING BUT NOT LIMITED TO OSHA AND CODES APPLYING TO THE A.D.A. (AMERICANS WITH DISABILITIES ACT),T.A.S. (TEXAS ACCESSIBILITY STANDARDS), AND ARCHITECTURAL BARRIERS ACT ACCESSIBILITY STANDARDS (ABAAS),.. IF THE GENERAL CONTRACTOR OR ANY SUBCONTRACTOR PERFORMS ANY WORK IN CONFLICT WITH THE ABOVE THE MENTIONED LAWS, RULES, CODES, ORDINANCES, AND REGULATIONS, THEN THE CONTRACTOR IN VIOLATION SHALL BEAR ALL COST OF REPAIR ARISING OUT OF NON-CONFORMING WORK. REFER TO STANDARDS AND REGULATIONS SECTION ON THIS SHEET FOR APPLICABLE CODES TO THIS PROJECT.

19. PERMITS: THE GENERAL BUILDING PERMIT AND PLAN CHECK(S) SHALL BE SECURED AND PAID FOR BY THE OWNER. ALL OTHER PERMITS SHALL BE SECURED AND PAID FOR BY THE SUBCONTRACTOR DIRECTLY RESPONSIBLE.

20. INSURANCE: OWNER'S AND EVERY SUBCONTRACTOR PERFORMING WORK OR PROVIDING SERVICES AND / OR MATERIAL FOR THE WORK ARE REQUIRED TO PURCHASE AND MAINTAIN IN FORCE WORKMEN'S COMPENSATION, EMPLOYER'S LIABILITY, COMPREHENSIVE GENERAL LIABILITY AND BUILDER'S RISK INSURANCE FOR THE DURATION OF CONSTRUCTION AND CONTRACT IS COMPLETE AND ACCEPT BY THE OWNER. THE OWNER SHALL BE LISTED AS ADDITIONALLY INSURED FOR THE CONSTRUCTION PERIOD AND THROUGH FINAL PUNCH IN AN AMOUNT SUFFICIENT TO COVER THE REPLACEMENT VALUE OF THE WORK BEING PERFORMED AND / OR THE LABOR, SERVICES AND MATERIALS BEING SUPPLIED BY THE GENERAL CONTRACTOR, SUBCONTRACTORS, ARCHITECT, ENGINEER AND ALL PROFESSIONAL CONSULTANTS, VERIFY WITH OWNER THE GENERAL LIABILITY INSURANCE REQUIRED BY THE OWNER'S INSURANCE REPRESENTATIVE PRIOR TO BID. THE OWNER SHALL BE LISTED AS ADDITIONALLY INSURED FOR THE CONSTRUCTION PERIOD.

21. NAMED PRODUCTS: THE ARCHITECT, DESIGNER AND ENGINEER MAKES NO GUARANTEE FOR PRODUCTS IDENTIFIED BY TRADE NAME OR MANUFACTURER. ALL PRODUCTS SHALL BE INSTALLED AS PER MANUFACTURER RECOMMENDATIONS, REQUIREMENTS, AND/OR INSTRUCTIONS.

22. SCOPE: ALL SUBCONTRACTORS SHALL FURNISH ALL LABOR, EQUIPMENT, AND MATERIAL INDICATED ON THE PLANS AND REASONABLY INFERRED OR REQUIRED BY THE APPLICABLE CODES. ALL SUBCONTRACTORS SHALL SUBMIT ALL SUBPROPOSALS DESCRIBING SCOPE OF WORK AND MATERIALS IN WRITING TO THE OWNER AND GENERAL CONTRACTOR.

23. SUBSTITUTIONS : SUBSTITUTIONS OF SPECIFIC MATERIALS OR PRODUCTS LISTED SHALL NOT BE MADE WITHOUT WRITTEN AUTHORIZATION BY ARCHITECT, DESIGNER AND / OR ENGINEER AS APPLICABLE. THE GENERAL CONTRACTOR AND ANY SUBCONTRACTOR SHALL NOT MAKE THE STRUCTURAL SUBSTITUTIONS OR CHANGES WITHOUT PRIOR WRITTEN AUTHORIZATION.

24. CHANGES: ANY ADDITION, DELETION, OR CHANGE IN THE SCOPE OF THE WORK DESCRIBED BY THE PLANS SHALL BE WRITTEN CHANGE ORDER ONLY . ANY APPROVAL FROM THE BUILDING OFFICIAL IF APPLICABLE FOR A CHANGE IN THE WORK SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SUBCONTRACTORS.

25. MEANS AND METHODS : THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL INSURE THAT ALL LABOR, MATERIALS, EQUIPMENT AND TRANSPORTATION SHALL BE INCLUDED IN THE WORK FOR COMPLETE EXECUTION OF THE PROJECT. THE ARCHITECT, DESIGNER AND / OR ENGINEER SHALL NOT BE RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SUBCONTRACTORS TO NOTIFY OF ANY CHANGES MADE DURING CONSTRUCTION.

ALL WORK AT PHASES OF CONSTRUCTION SHALL BE EXECUTED BY EXPERIENCED PERSONNEL, SPECIALIZING IN THE TYPE OF WORK BEING EXECUTED, USING METHODS OF APPLICATION RECOMMENDED BY MANUFACTURER OF THE MATERIAL AND INDUSTRY STANDARDS AT EACH PHASE OF THE CONSTRUCTION. COORDINATE WORK WITH OTHER TRADES. LINES, LEVELS AND DIMENSIONS SHALL BE VERIFIED ON JOB SITE AND ALL PARTS MADE FIT AND FINISHED.

26. REVIEW OF DRAWINGS : THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL REVIEW THE FULL CONTENT OF THE PLANS FOR DISCREPANCIES AND OMISSIONS PRIOR TO COMMENCEMENT OF WORK AND NOTIFY THE ARCHITECT, DESIGNER, ENGINEER AND OWNER. ALL SUBCONTRACTORS SHALL BE RESPONSIBLE FOR ANY WORK NOT IN CONFORMANCE WITH THE PLANS OR IN CONFLICT WITH ANY BUILDING CODE.

27. USE OF THE DRAWINGS : DIMENSIONS TAKE PRECEDENCE OVER SCALED MEASUREMENTS. DETAILS AND SECTIONS ON THE DRAWINGS ARE SHOWN AT SPECIFIC LOCATIONS AND ARE INTENDED TO SHOW GENERAL REQUIREMENTS THROUGHOUT. DETAILS NOTED "TYPICAL," IMPLY ALL LIKE CONDITIONS TREATED SIMILARLY, UNLESS NOTED OTHERWISE. THE ARCHITECTURAL DETAILS SHOWN ARE INTENDED TO FURTHER ILLUSTRATE THE VISUAL CONCEPT AND THE MINIMUM RECOMMENDED WEATHER PROTECTION FOR THIS PROJECT. BUILDING CODE REQUIREMENTS, STRUCTURAL CONSIDERATIONS, TRADE ASSOCIATION MANUALS AND PUBLICATIONS AND PRODUCT MANUFACTURE'S WRITTEN INSTRUCTION SHALL ALSO BE CONSIDERED IN ORDER TO COMPLETE THE CONSTRUCTION OF THE DETAILS, AND IN SOME CASES MAY SUPERSEDE THE DETAILS.

28. COPYRIGHT: THESE DESIGN AND DRAWINGS ARE SPECIFICALLY TO BE USED FOR THIS PROJECT ONLY. ALL DESIGNS, CONCEPTS ARE COPYRIGHTED BY STUDIO E ARCHITECTURE · INTERIORS INC.

29. APPROVED DRAWINGS : THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK BETWEEN THE DIFFERENT SUBCONTRACTORS AND REQUIRING ALL SUBCONTRACTORS TO USE THE MOST CURRENT SET OF PLANS OR IF APPLICABLE, BUILDING DEPARTMENT APPROVED SET OF PLANS. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO KEEP THE MOST CURRENT SET OF APPROVED DRAWINGS AT THE JOBSITE .

30. CUTTING AND PATCHING : ALL SUBCONTRACTORS SHALL DO THEIR OWN CUTTING, FITTING, PATCHING, ETC. TO MAKE THE SEVERAL PARTS COME TOGETHER PROPERLY AND FIT IT TO RECEIVE OR WORK OF OTHER TRADES.

31. TEMPORARY FENCING : OWNER TO PROVIDE TEMPORARY CHAIN LINK FENCING BARRIERS AND PROTECTION AS PER CITY OF CASTROVILLE AS REQUIRED TO MAKE SAFE AND PROTECT THE ALL THE VISITORS OR NEIGHBORS FROM AREAS UNDER CONSTRUCTION.

32. STAGING AREA: GENERAL CONTRACTOR TO VERIFY LOCATION OF STAGING AREA WITH OWNER AT BID.

33. FIRE PROTECTION : GENERAL CONTRACTOR TO PROVIDE FIRE EXTINGUISHERS AS REQUIRED BY THE CITY OF CASTROVILLE FIRE DEPARTMENT DURING ALL PHASES OF CONSTRUCTION. INCLUDING FINAL OCCUPANCY.

34. MOCK-UPS: ALL SUBCONTRACTORS TO PROVIDE MOCK-UPS FOR DESIGNER, ARCHITECT, AND OWNER APPROVAL FOR TEXTURE OVER GYPSUM BOARD, EXTERIOR PAINT, INTERIOR PAINT, WINDOW TRIM, DOOR TRIM, WOOD BASE. IN GENERAL, THE INTENT IS FOR NEW FINISHES TO MATCH EXISTING FINISHES. ALLOW FOR 5 PAINT COLOR MOCK UPS.

35. STORAGE OF MATERIALS: THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR STORING THE MATERIALS ON THE SITE ACCORDING TO MATERIAL SUPPLIER'S OR MANUFACTURE'S INSTRUCTION. THE MATERIALS SHALL BE KEPT SECURE AND PROTECTED FROM MOISTURE, PESTS, AND VANDALS. ANY LOSS ARISING OUT OF MATERIALS STORED AT THE SITE SHALL BE THE RESPONSIBLY OF THE GENERAL CONTRACTOR AND/OR SUBCONTRACTOR WHO STORED THE DAMAGED THE DAMAGED OR LOST MATERIALS.

36. WARRANTIES: SUBCONTRACTORS WILL WARRANTY ALL MATERIALS AND LABOR FOR A PERIOD OF ONE (1) YEAR AFTER SUBSTANTIAL COMPLETION OR THE DATE OF BENEFICIAL OCCUPANCY TO THE OWNER WHICHEVER OCCURS LATER. REPAIR OR REPLACE ALL WORK THAT IS DISCOVERED TO BE DEFECTIVE DURING THAT PERIOD. A COPY OF ALL WARRANTIES EXTENDED OR OTHERWISE SUCH AS EQUIPMENT, APPLIANCES AND ROOFS WARRANTIES WILL BE GIVEN TO THE OWNER IN AN ANNOTATED 3-RING BINDER AND/OR IN ELECTRONIC FORMAT AT THE COMPLETION OF THE PROJECT.

37. SECURITY : SECURITY LIGHTS, CAMERAS, ACCESS CONTROL TO DOOR TO PROVIDED BY THE OWNER. GENERAL CONTRACTOR TO COORDINATE WITH OWNER.

38. SUBMITTALS AND SHOP DRAWINGS : ALL SUBMITTALS (FROM THE SUBCONTRACTOR'S) TO BE SUBMITTED TO GENERAL CONTRACTOR. GENERAL CONTRACTOR SHALL SEND TO ARCHITECT AND ENGINEER FOR REVIEW AND APPROVAL FOR INTENT. ALLOW SEVEN (7) DAYS FOR APPROVAL FROM THE OWNER, ARCHITECT, ENGINEER AND/OR CONTRACTOR PRIOR TO PLACING MATERIAL ORDERS. REFER TO STRUCTURAL & MEP ENGINEERS FOR ADDITIONAL REQUIREMENTS.
THE FOLLOWING SHOP DRAWINGS OR SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO THE FOLLOWING:

- LIGHTING FIXTURES
- PLUMBING FIXTURES AND FITTINGS
- HVAC EQUIPMENT AND GRILLES AND DUCT LAYOUT
- EXTERIOR AND INTERIOR DOORS
- APPLIANCES
- HARDWARE TO INCLUDE BUT NOT LIMITED TO DOOR AND MILLWORK.
- AUDIO/VISUAL AND SECURITY SPECIFICATIONS AND LAYOUTS IF APPLICABLE
- REFER TO STRUCTURAL AND MEP ENGINEER FOR ADDITIONAL SUBMITTALS.

39. SURVEY: IF REQUIRED, THE OWNER'S REPRESENTATIVE TO COORDINATE WITH CITY OF CASTROVILLE ENGINEER'S OFFICE OR GOVERNMENT ENTITY HAVING JURISDICTION TO DETERMINE IF A FINAL NEW SURVEY IS REQUIRED.

40. MODIFICATIONS : MODIFICATIONS TO THE "PLANS" ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER'S PREFERENCES.

41. TERMITE PROTECTIONS: THE GENERAL CONTRACTOR SHALL ENGAGE A LICENSED TERMITE CONTROL COMPANY TO CONDUCT REGULAR TERMITE INSPECTIONS DURING THE COURSE OF CONSTRUCTION. SHOULD ANY TERMITE ACTIVITY BE IDENTIFIED, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT APPROPRIATE TREATMENT IS ADMINISTERED IN ACCORDANCE WITH INDUSTRY STANDARDS IN AN ENVIRONMENTALLY SENSITIVE MANNER USING SUSTAINABLE AND NON-TOXIC METHODS WHENEVER POSSIBLE. GENERAL CONTRACTOR TO NOTIFY THE ARCHITECT & OWNER AS THE WORK PROGRESSES.

BUILDING CODE DATA

APPLICABLE STANDARDS OF CONSTRUCTION INDUSTRY AND BUILDING CODES HAVE THE SAME FORCE AND AFFECT ON PERFORMANCE OF THE WORK AS IF COPIED DIRECTLY INTO CONTRACT DOCUMENTS. GOVERNING REGULATIONS HAVE PRECEDENCE OVER NON - REFERENCED STANDARDS. IN SO FAR AS DIFFERENT STANDARDS MAY CONTAIN OVERLAPPING OR CONFLICTING REQUIREMENTS, COMPLY WITH LOCAL BUILDING CODES AND INDUSTRY STANDARDS. CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE TO THESE STANDARDS AND REGULATIONS AND FOR THE CONSTRUCTION PERMITS. THE INSTALLATION SHALL MEET THE MINIMUM STANDARD PRESCRIBED IN THE LATEST EDITION OF THE FOLLOWING CODES, STANDARDS AND REGULATIONS:

BUILDING CODE
2012 INTERNATIONAL BUILDING CODE, IBC

EXISTING BUILDING CODE
2012 INTERNATIONAL EXISTING BUILDING CODE, IEBC

FIRE CODE
2012 INTERNATIONAL FIRE CODE, IFC

MECHANICAL CODE
2012 INTERNATIONAL MECHANICAL CODE, IMC

PLUMBING CODE
2012 INTERNATIONAL PLUMBING CODE, IPC

FUEL GAS CODE
2012 INTERNATIONAL FUEL GAS CODE, IFGC

ENERGY CODE
2012 INTERNATIONAL ENERGY CONSERVATION CODE, IECC

ELECTRICAL CODE
2014 NATIONAL ELECTRIC CODE, NEC

MAINTENANCE CODE
2025 CASTROVILLE CITY CODE OF ORDINANCES, CHAPTER 22 - BUILDINGS AND BUILDING REGULATIONS (PROPERTY MAINTENANCE CODE)

ACCESSIBILITY CODE
2010 TEXAS ACCESSIBILITY STANDARDS AND AMERICAN DISABILITIES ACT (ADA), ALL MECHANICAL, ELECTRICAL AND PLUMBING INDICATED ON THE DRAWINGS IS SIMPLY TO AID THE CONTRACTOR ON GENERAL LOCATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL, PLUMBING AND MECHANICAL SIZING AND SHALL ADHERE TO THESE CODES.

ELEVATOR EXCEPTIONS:

ARCHITECTURAL BARRIERS TEXAS ACCESSIBILITY STANDARDS (TAS)
CHAPTER 2: SCOPING REQUIREMENTS
206 ACCESSIBLE ROUTES
206.2.3 MULTI-STORY BUILDINGS AND FACILITIES.

EXCEPTIONS
1. IN A PRIVATE BUILDINGS OR FACILITIES THAT ARE LESS THAN THREE STORIES OR THAT HAVE LESS THAN 3,000 SQUARE FEET (279m2) PER STORY, AN ACCESSIBLE ROUTE SHALL NOT BE REQUIRED TO CONNECT STORIES PROVIDED THAT THE BUILDING OR FACILITY IS NOT A SHOPPING CENTER, A SHOPPING MALL, THE PROFESSIONAL OFFICE OF A HEALTHCARE PROVIDER, A TERMINAL, DEPOT OR OTHER STATIONS USED FOR SPECIFIED PUBLIC TRANSPORTATION, AN AIRPORT PASSENGER TERMINAL, OR ANOTHER TYPE OF FACILITY AS DETERMINED BY THE U.S. ATTORNEY GENERAL.

ADA STANDARDS FOR ACCESSIBLE DESIGN
28 CFR PART 36, SUBPART D – NEW CONSTRUCTION AND ALTERATIONS
36.404 ALTERATIONS: ELEVATOR EXEMPTION

(a) THIS SECTION DOES NOT REQUIRE THE INSTALLATION OF AN ELEVATOR IN AN ALTERED FACILITY THAT IS LESS THAN THREE STORIES OR HAS LESS THAN 3,000 SQUARE FEET PER STORY, EXCEPT WITH RESPECT TO ANY FACILITY THAT HOUSES A SHOPPING CENTER, A SHOPPING MALL, THE PROFESSIONAL OFFICE OF A HEALTH CARE PROVIDER, A TERMINAL, DEPOT, OR OTHER STATION USED FOR SPECIFIED PUBLIC TRANSPORTATION, OR AN AIRPORT PASSENGER TERMINAL.

STAIR EXCEPTIONS:

1. 2012 INTERNATIONAL EXISTING BUILDING CODE (IEBC) :
   1203.9 STAIRWAY RAILINGS:
   GRAND STAIRWAYS SHALL BE ACCEPTED WITHOUT COMPLYING WITH THE HANDRAIL AND GUARD REQUIREMENTS, EXISTING HANDRAILS AT ALL STAIRS SHALL BE PERMITTED TO REMAIN, PROVIDED THEY ARE NOT STRUCTURALLY *DANGEROUS.*

CODE MODIFICATION REQUEST:

1. RISER HEIGHT AT INTERIOR STAIRS - FIRST STEP AT FIRST FLOOR

NOTES:

1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.

LOCATION PLAN

ADDRESS: 702 PARIS ST., CASTROVILLE, TEXAS. 78009

PROJECT LOCATION



LEGAL DESCRIPTION

CASTROVILLE RANGE 6 BLOCK 7 LOT 1 - 8, OF THE CITY OF CASTROVILLE, MEDINA COUNTY, TEXAS, PROPERTY ID: 13567

SCHEDULE OF ALTERNATES

FURNISH THE LABOR AND MATERIALS TO INSTALL "OFF THE SHELF" WOOD BALUSTERS IN LIEU OF THE LABOR AND MATERIALS ASSOCIATED IN THE DRAWINGS (1 1/2") x 1 1/2"). NOTIFY ARCHITECT WITH ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND DESIGN PRIOR TO INSTALLATION. PROVIDE MOCK-UP FOR APPROVAL.

ALLOWANCES:

ALLOWANCE 1:	HARDWARE - CABINETS	$1,000.00
ALLOWANCE 2:	HARDWARE - EXISTING EXTERIOR DOORS TO RECEIVE PANI

OUTLINE SPECIFICATIONS

NOTES:

1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.

BIDDING & CONTRACTING PRE-REQUISITES:

1. ALL WORK TO COMPLY WITH THE FOLLOWING CODES;
   2012 INTERNATIONAL ENERGY CONSERVATION CODES,
   2014 NATIONAL ELECTRIC CODE,
   2012 INTERNATIONAL BUILDING CODE,
   2012 INTERNATIONAL EXISTING BUILDING CODE,
   2012 INTERNATIONAL MECHANICAL CODE,
   2012 INTERNATIONAL PLUMBING CODE,
   2012 INTERNATIONAL FUEL GAS CODE,
   2012 INTERNATIONAL FIRE CODE.
2. THE TERM CONTRACTOR REFERS TO THE GENERAL CONTRACTOR, SUB-CONTRACTORS AND SUPPLIERS NECESSARY TO SUCCESSFULLY COMPLETE THE WORK.
3. OWNER'S AND EVERY SUBCONTRACTOR PERFORMING WORK OR PROVIDING SERVICES AND / OR MATERIAL FOR THE WORK ARE REQUIRED TO PURCHASE AND MAINTAIN IN FORCE WORKMEN'S COMPENSATION, EMPLOYER'S LIABILITY, COMPREHENSIVE GENERAL LIABILITY AND BUILDER'S RISK INSURANCE FOR THE DURATION OF CONSTRUCTION AND CONTRACT IS COMPLETE AND ACCEPT BY THE OWNER. THE OWNER SHALL BE LISTED AS ADDITIONALLY INSURED FOR THE CONSTRUCTION PERIOD AND THROUGH FINAL PUNCH IN AN AMOUNT SUFFICIENT TO COVER THE REPLACEMENT VALUE OF THE WORK BEING PERFORMED AND / OR THE LABOR, SERVICES AND MATERIALS BEING SUPPLIED BY THE GENERAL CONTRACTOR, SUBCONTRACTORS, ARCHITECT, ENGINEER AND ALL PROFESSIONAL CONSULTANTS. VERIFY WITH OWNER THE GENERAL LIABILITY INSURANCE REQUIRED BY THE OWNER'S INSURANCE REPRESENTATIVE PRIOR TO BID. THE OWNER SHALL BE LISTED AS ADDITIONALLY INSURED FOR THE CONSTRUCTION PERIOD
4. THE PRE-REQUISITES LISTED BELOW ARE REQUIRED BEFORE FINALIZATION OF THE CONTRACT.
5. THE CONTRACTOR IS EXPECTED TO VISIT THE JOB SITE BEFORE SUBMITTING HIS/HER BID. INCONSISTENCIES BETWEEN THE DRAWINGS AND EXISTING CONDITIONS ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER AND OWNER. GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE TO FAMILIARIZE THEMSELVES WITH ALL CONSTRUCTION DOCUMENTS INCLUDING BUT NOT LIMITED TO DRAWINGS AND SPECIFICATIONS.
6. THE CONTRACTOR SHOULD ENGAGE IN A BIDDING PHASE TO PROVIDE A CONSTRUCTION BUDGET (LABOR, MATERIAL AND METHOD) FOR OWNER APPROVAL PRIOR TO CONTRACTING AND PROCEEDING WITH ANY WORK.
7. PRIOR TO THE CONSTRUCTION, GENERAL CONTRACTOR SHALL HOLD COORDINATION MEETING WITH ARCHITECT, OWNER, AND ALL CONSULTING DISCIPLINES.
8. INSPECTIONS ARE REQUIRED FOR FOUNDATION SUB-SOIL DRAINAGE SYSTEM; FOUNDATION DAMP PROOFING AND WATER PROOFING; FLASHING AT WINDOWS, EXTERIOR DOORS, EXTERIOR WALLS AND DRAINAGE AND FLASHING OF ROOF SYSTEMS.
9. THE CONTRACTOR IS TO REVIEW THE PROPERTY PLAT, COVENANTS, CONDITIONS AND RESTRICTIONS AND ALL OTHER REGULATORY DOCUMENTS, INCLUDING THE DESIGN GUIDELINES TO VERIFY COMPLIANCE.
10. CONTRACTOR TO VISIT THE JOB SITE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND CONDITIONS INCLUDING BUT NOT LIMITED TO SETBACKS & EASEMENTS, UTILITY LOCATIONS AND THOSE IMPACTING THE SCOPE OF WORK E.G. SITE ACCESS, WORKING & STAGING AREAS, ETC.
11. CONTRACTOR TO REVIEW THE PLANS AND COORDINATE WITH THE ARCHITECT AND ENGINEER TO ENSURE ADEQUATE LOCATION(S) AND SPACE FOR MECHANICAL EQUIPMENT AND DUCT INSTALLATIONS PRIOR TO INSTALLATION.
12. COLLABORATE WITH OWNER, INTERIOR DESIGNER AND ARCHITECT TO CREATE AN ACCURATE BUDGET AND ALLOWANCES FOR ANY REMAINING ITEMS, INCLUDING BUT NOT LIMITED TO HARDWARE, APPLIANCES, PLUMBING FIXTURES, FINISHES, DECORATIVE LIGHT FIXTURES, A.V. SECURITY SYSTEM, ETC. IF APPLICABLE, REFER TO ALLOWANCES.
13. SUBCONTRACTOR SHALL INCLUDE IN CONSTRUCTION CONTRACT INSTALLATION OF ALL FINISH HARDWARE, INCLUDING BUT NOT LIMITED TO PANIC HARDWARE, CABINET PULLS, KNOBS, DOOR STOPS, TOWEL BARS, TOILET PAPER HOLDERS AND OTHER MISCELLANEOUS ITEMS, REGARDLESS OF WHETHER THOSE ITEMS ARE SUPPLIED BY OWNER OR PROVIDED BY AN ALLOWANCE. PROVIDE SOLID BLOCKING FOR ALL ACCESSORIES.
14. GENERAL CONTRACTOR SHALL CONFIRM ARRANGEMENTS FOR TEMPORARY POWER WITH OWNER.
15. SUBCONTRACTORS TO LOCATE AND VERIFY UTILITY LOCATIONS AND HOOKUPS. VERIFY LOCATIONS OF GUTTERS AND DOWNSPOUTS.
16. COMMERCIAL WATERPROOFING SUBCONTRACTOR TO REVIEW DRAWINGS AND PROPOSE ANY MEASURES TO MAKE ROOF AND ALL FLASHING CONDITIONS WATER-TIGHT.
17. CONTRACTOR SHALL NOTIFY THE OWNER AND ARCHITECT IN THE EVENT LEAD, ASBESTOS OR MOLD ARE FOUND TO BE PRESENT IN THE BUILDING.
18. CONTRACTOR SHALL NOTIFY THE ARCHITECT AND OWNER OF ANY FINDINGS DURING DEMOLITION OF BUILDING EXTERIOR ELEMENTS, I.E. REAR BALCONY, PORCH AND WALLS.
19. CONTRACTOR TO NOTIFY THE ARCHITECT AND OWNER OF ANY DAMAGED MASONRY DURING DEMOLITION AND/OR CONSTRUCTION.

SMOKE AND FIRE SAFETY:

1. REFER TO MEP DRAWINGS & SPECIFICATIONS FOR EXISTING SMOKE DETECTORS AND CARBON MONOXIDE ALARMS WITH PRIMARY POWER AND BATTERY BACKUP IN ACCORDANCE WITH APPLICABLE CODES.
2. FIRE BLOCKING TO BE WITHIN ALL STUD WALLS AT EXCEEDING TEN FEET OR AS PER CURRENT BUILDING CODE AND IS TO BE ADDRESSED IN BLOCKING ENCLOSED AND CONCEALED SPACES, AND AT OPENINGS AROUND VENTS, PIPES, AND DUCTS, CHASE, AT STAIR STRINGERS, AND AT SIMILAR PLACES AT CEILING AND FLOOR CONNECTIONS.
3. ALL PENETRATIONS SHALL BE INSTALLED IN A MANNER THAT WILL PRESERVE AIR AND WATER TIGHTNESS, FIRE-RESISTIVE AND STRUCTURAL INTEGRITY. REFER TO MEP.

ROOF FLASHING AND DRAINAGE:

1. EXISTING ASPHALT COMPOSITION ROOF TO REMAIN. COMMERCIAL WATERPROOFING SUBCONTRACTOR TO CONFIRM WATER PROTECTIVE MEASURES PRIOR REPAIR & REPLACEMENT OF FASCIA & SOFFITS. VERIFY SCOPE OF WORK AT THE JOBSITE.
2. CONTRACTOR SHALL EMPLOY A QUALIFIED COMMERCIAL WATERPROOFING SERVICE TO INSPECT EXISTING ROOF INSTALLATION, INCLUDING ANY FLASHING, AND SHALL CONFIRM ARRANGEMENTS WITH OWNER, ARCHITECT, MANUFACTURER'S REPRESENTATIVE AND ROOFING CONTRACTOR PRIOR TO CONSTRUCTION.
3. SUBCONTRACTORS SHALL FURNISH AN UNCONDITIONAL WRITTEN GUARANTEE TO OWNER COVERING ALL MATERIALS AND INSTALLATION OF FLASHING AND MEMBRANES FOR A PERIOD OF 30 YEARS FOLLOWING COMPLETION OF PROJECT.
4. ALL OPENING/ PENETRATION AND WATERPROOFING DETAILS ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SUBCONTRACTOR. VERIFY SCOPE OF WORK AT THE JOBSITE.
5. LOW SLOPE ROOF AREAS SHALL HAVE A MINIMUM 1/4" PER FOOT PITCH TO GUTTERS & DOWNSPOUTS.
6. VERIFY ROOF DRAINAGE STRATEGY WITH OWNER FOR INSTALLATION OF GUTTER, DOWNSPOUTS AND DRAIN TO DAYLIGHTS.
7. ALL GUTTERS, DOWNSPOUTS OR OTHER SHEET METAL WORK SHALL BE PROPERLY FLASHED AND SHALL HAVE WELDED OR SEALED WATERPROOF JOINTS. ALL BENDS, SEAMS, SPLICES, OR OTHER CONNECTIONS SHALL BE STRAIGHT AND CONTINUOUS. SHEET METAL GAUGE SHALL BE SUFFICIENT TO WITHSTAND DENTING AND BENDING. INSTALL AS PER MANUFACTURER RECOMMENDATION, REQUIREMENTS AND INSTRUCTIONS. ALL GUTTERS TO BE 26 GAUGE GALVANIZED METAL.
8. GENERAL CONTRACTOR AND LANDSCAPE SUBCONTRACTOR TO REVIEW SURFACE DRAINAGE STRATEGY WITH OWNER. FINISHED GRADE IS TO DIRECT WATER AWAY FROM THE BUILDING AND STRUCTURE.
9. GENERAL CONTRACTOR SHALL SHOOT ELEVATIONS AT ALL WALKWAYS, RAMPS AND PERIMETER OF BUILDING TO ENSURE PROPER DRAINAGE AWAY FROM BUILDING.

STANDING SEAM METAL ROOFING:

1. SUPPLY AND INSTALL A SHOP-FABRICATED OR FIELD-FORMED 24 GAUGE 7/8" TALL SEAMS GALVALUM OR G-90 GALAVNIZED STEEL OR APPROVED EQUAL, STANDING SEAM METAL ROOF PANELS SYSTEM INCLUDING PANELS, CLIPS, FASTENERS, UNDERLAYMENT, FLASHING, TRIMS, AND ACCESSORIES REQUIRED FOR WATERTIGHT ROOF INSTALLATION. UNDERLAYMENT SHALL BE HIGH-TEMPERATURE SELF-ADHERED MEMBRANE OR APPROVED EQUAL INSTALLED AS PER MANUFACTURER'S RECOMMENDATION AND INSTRUCTIONS AND APPROVED SHOP DRAWINGS. SUBSTITUTIONS SHALL BE SUBMITTED 10 DAYS PRIOR TO BID DATE AND ACCEPTANCE PUT FORTH IN AN ADDENDUM. FABRICATION AND MATERIALS SHALL COMPLY WITH ALL LATEST ASTM AND SMACNA STANDARDS AND CURRENT CODES.
2. FLASHING AND TRIMS SHALL BE 24 GUAGE OR THICKER, SHOP-FABRICATED OR FIELD-FORMED. THE PANEL WIDTH SHALL BE 16" TO 18" NOMINAL. ALL EXPOSED ADJACENT FLASHING SHALL BE OF THE SAME MATERIAL AND FINISH AS THE ROOF PANELS.
3. PROVIDE PRODUCT DATA AND SHOP DRAWINGS INCLUDING, BUT NOT LIMITED TO, PANEL PROFILES, GAUGES, COATING, CLIPS, AND ACCESSORIES. SHOP DRAWINGS SHALL INDICATE PANEL LAYOUT, SEAM LOCATION, TRANSITIONS, FLASHING DETAILS, EDGE CONDITIONS, AND SEALANTS.
4. SUBMIT RESULTS INDICATING COMPLIANCE WITH MINIMUM REQUIREMENTS OF THE PERFORMANCE TESTS OF WIND UPLIFT AS PER LATEST BUILDINGS CODES. IF REQUIRED, SUBMIT CALCULATIONS WITH REGISTERED ENGINEER SEAL, VERIFYING ROOF ATTACHMENT METHOD, RESISTS WIND PRESSURES IMPOSED ON IT PURSUANT TO APPLICABLE BUILDING CODES.
5. CLEAN ANY GREASE, FINGER MARKS OR STAINS FROM THE PANELS PER MANUFACTURER'S RECOMMENDATIONS.
6. FINAL INSPECTION WILL BE PERFORMED BY OWNER APPOINTED AND PAID INSPECTOR.
7. PROVIDE A MINIMUM OF A 20-YEAR WARRANTY MANUFACTURER'S STANDARD WEATHER TIGHTNESS AND FINISH WARRANTY AND A 20-YEAR GUARANTEE AGAINST FAILURE DUE TO CORROSION, RUPTURE, OR PERFORATION.

THERMAL

1. R-38 MINIMUM OPEN CELL INSULATION BETWEEN EXISTING RAFTERS IS TO MEET ALL APPLICABLE CODES & STANDARDS , INCLUDING BUT NOT LIMITED TO THERMAL AND IGNITION BARRIER REQUIREMENTS. INSTALLED AS PER MANUFACTURER AND CODE REQUIREMENTS FOR THE SLOPES.

CARPENTRY AND MILLWORK

1. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, AND ACCESSORIES REQUIRED FOR FURNISHING, FABRICATING, AND INSTALLING FINISH CARPENTRY, TRIM, AS SHOWN ON THE DRAWINGS AND/OR AS SPECIFIED. NO PARTICLE BOARD SHALL BE USED FOR ANY TYPE OF CONSTRUCTION OR FABRICATION IN THIS PROJECT.
2. LUMBER SHALL CONFORM TO AMERICAN "LUMBER STANDARDS, SIMPLIFIED PRACTICE RECOMMENDATION R 16", LATEST EDITION, AND TO GRADING RULES OF MANUFACTURER'S ASSOCIATION UNDER WHOSE RULES IT IS PRODUCED. LUMBER SHALL BEAR GRADE AND TRADEMARK OF MANUFACTURER'S ASSOCIATION. ALL LUMBER SHALL BE DRESSED AND KILN DRIED.
3. HARDWOODS SHALL CONFORM TO CURRENT STANDARDS OF THE NATIONAL HARDWOOD LUMBER ASSOCIATION. ALL HARDWOODS SHALL BE DRESSED AND KILN DRIED.
4. CONSTRUCTION GRADE #1 FIR OR APPROVED EQUAL SHALL BE USED FOR ALL NAILING STRIPS, GROUND, BUCKS AND MISCELLANEOUS LUMBER LESS THAN 2" X 4" THAT IS CONCEALED FROM VIEW.
5. REFER TO STRUCTURAL FOR WOOD SPECIES FOR ALL STRUCTURAL COMPONENTS ON COLUMNS. ALL EXPOSED WOOD TO BE PAINTED SUCH AS COLUMNS, BEAMS, AND SOFFITS SHALL BE STRAIGHT, SMOOTH, FREE OF DEFECTS, KNOTS, RAISED GRAIN, TOOL MARKS, AND SURFACE CONTAMINATION. AND FULLY PREPARED TO RECEIVE PAINT.
6. WOOD TRIM SHALL BE STRAIGHT, SMOOTH, FREE OF DEFECTS, KNOTS, RAISED GRAIN, TOOL MARKS, AND SURFACE CONTAMINATION, AND FULLY PREPARED TO RECEIVE THE TRIM PAINT OR STAIN FINISH.
7. SUBMIT SHOP DRAWINGS AND MOCKUPS FOR ALL EXTERIOR AND INTERIOR TRIM INCLUDING BUT NOT LIMITED TO, FACIAS, SOFFITS, PORCH DETAILS, COLUMNS, BRACKETS, RAILINGS, BALUSTERS, TRIM, AND ALL ASSOCIATED TRIM ASSEMBLIES FOR APPROVAL PRIOR TO PROCUREMENT, FABRICATION AND INSTALLATION. SUBMITTALS AND MOCKUPS SHALL INDICATE MATERIAL PROFILES DIMENSIONS, JOINERY FINISHES, AND INSTALLATION DETAILS.
8. EXECUTION:
   8.1 PROTECT FINISHED WOODWORK FROM WEATHER WHILE IN TRANSIT FROM POINT OF PRODUCTION OR FABRICATION TO BUILDING. WHEN DELIVERED TO SITE IMMEDIATELY PLACE UNDER COVER AND ADEQUATELY PROTECT FROM WEATHER. DO NOT STORE IN WET OR DAMP PORTIONS OF THE BUILDING.
   8.2 FURNISH ALL NAILS, SCREWS, SPIKES, BOLTS, HOOKS, HANGERS, ANCHORS, TIES, CLIPS AND OTHER ACCESSORIES REQUIRED FOR THE PROPER INSTALLATION OF THE WORK UNDER THIS SECTION. ANCHORS OR OTHER ITEMS REQUIRED TO BE BUILT IN SHALL BE FURNISHED IN AMPLE TIME FOR BUILDING-IN AND THE CONTRACTOR SHALL SUPERVISE THEIR INSTALLATION TO INSURE PROPER LOCATION.
   8.3 ALL WORK SHALL BE BUILT PLUMB, LEVEL, TRUE AND SQUARE TO THE LINES AND DIMENSIONS SHOWN. POSITION OF OPENINGS AND OFFSETS AND SLOPES AND ANGLES SHALL BE LAID OFF WITH EXTREME CARE. ALL WORK SHALL BE RIGIDLY FASTENED AS BEST SUITED FOR EACH CONDITION AS NEEDED TO PERMANENTLY HOLD THE FINISHED WORK TO CORRECT SURFACES, LINES AND LEVELS.
   8.4 NAILERS, PLATES AND BLOCKING: PROVIDE PERMANENT DRESSED WOOD, NAILERS, PLATES AND BLOCKING OF SIZES INDICATED OR REQUIRED FOR ATTACHMENT OF WORK OF OTHER TRADES. CLOSELY FIT AND ACCURATELY SET MEMBERS TO REQUIRED LINES AND LEVELS RIGIDLY SECURED IN PLACE.
   8.5 INSTALLATION OF TRIM: INSTALL MEMBERS, PLUMB, TRUE AND SQUARE IN ACCORD WITH DRAWING REQUIREMENTS. DRILL HOLES IN HARDWOOD FOR NAILS. BLIND NAIL WHEREVER POSSIBLE WITH SURFACE NAILS SET. MAKE JOINTS TIGHT IN AN APPROVED MANNER TO CONCEAL SHRINKAGE. SET NAILS AND COUNTERSINK SCREWS. DRAW MEMBERS TIGHT AGAINST FINISHED SURFACES. SECURE ALL INTERIOR FINISH TRIM WITH FINE FINISHING NAILS AND GLUE WHERE REQUIRED TO ASSURE PERMANENT TIGHT JOINTS.
   8.6 WOODWORK WHICH IS TO BE PAINTED SHALL HAVE EXPOSED SURFACES FREE OF DEFECTS THAT WOULD SHOW AFTER BEING PAINTED.
   8.7 WOODWORK WHICH IS TO BE STAINED SHALL HAVE EXPOSED SURFACES FREE OF DEFECTS THAT WOULD SHOW AFTER BEING STAINED. NEW STAIN TO MATCH ADJACENT STAIN FINISHES.
   8.8 CLEAN UP: CLEAN UP ALL DEBRIS CAUSED BY WORK IN THIS SECTION KEEPING PREMISES NEAT AND CLEAN AT ALL TIMES.

FRAMING:

1. VERIFY ALL EXISTING AND NEW FRAMING DIMENSIONS AT THE JOBSITE AND FLOOR PLANS PRIOR TO CONSTRUCTION.
2. COLUMN & BEAM LOCATIONS ON ARCHITECTURAL PLANS ARE SUGGESTED LOCATIONS AND MAY NOT INDICATE ALL LOCATIONS. SEE STRUCTURAL FOR LOCATIONS, SIZES & DETAILS. REVIEW ARCHITECTURAL & STRUCTURAL AND NOTIFY ARCHITECT OF ANY DISCREPANCIES.
3. DIMENSIONS ARE TO OUTSIDE OF FRAMING UNLESS NOTED OTHERWISE. ANY DISCREPANCIES SHALL BE BROUGHT TO ARCHITECT'S ATTENTION PRIOR TO INSTALLATION.
4. GENERAL CONTRACTOR TO EVALUATE AND COORDINATE ALL MECHANICAL, ELECTRICAL AND PLUMBING DESIGN PRIOR TO FRAMING INSTALLATION.
5. GENERAL CONTRACTOR TO VERIFY EXISTING OPENINGS SUCH AS BUT NOT LIMITED TO, WINDOWS, DOORS, AND VENTS AT THE JOBSITE.
6. VERIFY EXISTING WINDOWS, INTERIOR DOORS AND TRANSOMS TO REMAIN AND TO BE REUSED.
7. ALL NEW DOORS TO MATCH HEIGHT & STYLE OF EXISTING DOORS, SEE DRAWINGS. VERIFY SCOPE OF WORK AT THE JOBSITE.
8. REFER TO STRUCTURAL DRAWINGS FOR STRUCTURAL WOOD GRADE REQUIREMENTS. ALL EXPOSED WOOD BEAMS AND POSTS SHALL BE SELECTED FOR BEST APPEARANCE GRADE, WITH NO KNOTS, CRACKS AND CHECKS.
9. CONTRACTOR SHALL COORDINATE EXISTING & NEW FRAMING WITH PROPOSED LOCATIONS OF ELECTRICAL, MECHANICAL AND PLUMBING WORK SO AS TO AVOID FRAMING WHICH MIGHT CONFLICT WITH EQUIPMENT, DUCTS, FIXTURES OR DIFFUSERS.
10. CONTRACTOR SHALL PROVIDE ACCESS TO ALL ATTIC AREAS AND PLUMBING AS REQUIRED BY CODE AND SHALL CONFIRM ACCESS LOCATIONS WITH ARCHITECT, & MEP ENGINEER PRIOR TO FRAMING. WHEN PLACING ELECTRICAL BOXES FOR FIXTURES, ENSURE THEY LINE UP ON CENTER WITH SOMETHING: A DOORWAY, A WINDOW, THE CENTER OF A ROOM OR HALLWAY, ETC. REFER TO ELECTRICAL PLANS FOR PLACEMENT AND GENERAL IDEA. **IF THERE IS NO EXISTING FRAMING IN THE EXACT SPOT WHERE A BOX WOULD GO TO LINE UP WITH SOMETHING, ADD A FRAMING MEMBER OR PIECE OF WOOD TO ACHIEVE THIS OR JUST ADJUSTABLE ELECTRICAL BOXES. IN THE CASE THAT A "J BOX" IS IN THE WAY OF FRAMING, ADJUST THE FRAMING INCLUDING MOVING AND/OR BLOCKING OUT FOR IT.**
11. SUBCONTRACTOR SHALL PROVIDE ALL NECESSARY BLOCKING, STIFFENERS, BRACING, FRAMING HANGERS, OR OTHER SUPPORT FOR ALL GUARD & HANDRAILS, FIXTURES, EQUIPMENT, CABINETRY AND ALL OTHER ITEMS REQUIRED BY APPLICABLE CODES AND STRUCTURAL ENGINEER OF RECORD.
12. PROVIDE SOLID BLOCKING AND VERIFY BLOCKING LOCATIONS WITH THE OWNER AND DESIGNER DURING FRAMING FOR ALL LED PROJECTORS, TV LOCATIONS, BREAK ROOM CABINETRY & BATHROOM ACCESSORIES, TOILET PAPER HOLDERS (TP), ETC., AS WELL AS DECORATIVE FIXTURES, FURNISHINGS AND ARTWORK.
13. WOOD MEMBERS IN CONTACT WITH CONCRETE, NEXT TO THE EARTH AND EXPOSED TO THE WEATHER SHALL BE PRESSURE TREATED AND NON-COMBUSTIBLE.
14. ALL POSTS, WALL & ROOF FRAMING SHALL BE ANCHORED TO THE FOUNDATION TO PROVIDE RESISTANCE AGAINST LATERAL LOADS AND UPLIFT. VERIFY REQUIREMENTS WITH THE STRUCTURAL ENGINEER OF RECORDS.
15. ALL EXPOSED WOOD BEAMS, DECKING OR OTHER MEMBERS INSTALLED PRIOR TO ENCLOSING THE BUILDING ENVELOPE AND COMPLETING ROOF ENCLOSURE AND MEMBRANE SHALL BE PROTECTED DURING CONSTRUCTION AGAINST MOISTURE, STAINING AND OTHER DAMAGE BY PROTECTING WITH WEATHERPROOFING MATERIAL AND ADDITIONAL PROTECTIVE MEASURES AS MAY BE REQUIRED.
16. ALL EXPOSED EXTERIOR WOOD MEMBERS TO BE FULLY SOAKED IN WATERPROOFING/ SEALANT AND NON-COMBUSTIBLE AFTER CUTS AND ARE TO RECEIVE AT LEAST ONE COATING OF WATERPROOFING OR PRIMER, IF TO BE PAINTED, AFTER INSTALLATION.
17. REFER TO STRUCTURAL DRAWINGS AND SPECIFICATIONS, FRAMING AND STRUCTURAL WORK.

ENERGY:

1. OPENINGS, JOINTS AND PENETRATIONS BETWEEN SPACES, FLOORS, WALLS AND ROOF, SHALL BE SEALED, CAULKED OR WEATHER-STRIPPED TO LIMIT AIR LEAKAGE AS REQUIRED BY CODE. REFER TO MEP ENGINEER.
2. FIELD MANUFACTURED FENESTRATION PRODUCTS, EXTERIOR DOORS SHALL BE CAULKED BETWEEN THE FENESTRATION PRODUCT OR DOOR AND THE BUILDING, AND SHALL BE WEATHER-STRIPPED.
3. REFER TO MECHANICAL ELECTRICAL PLUMBING ENGINEER FOR THERMOSTAT LOCATIONS AND INSTALLATION. REFER TO THE CITY OF CASTROVILLE AND BUILDING CODES.
4. DUCTS SHALL BE CONSTRUCTED, INSTALLED AND INSULATED PER THE MOST STRINGENT STANDARD OR CODE VERSION. REFER TO MEP ENGINEER OF RECORD.
5. REFER TO MEP DRAWINGS AND SPECIFICATIONS FOR HVAC, ELECTRICAL, PLUMBING & INSULATION.
6. EXISTING EXTERIOR ELECTRICAL SWITCHES, J-BOX'S, CONDUITS, WIRING, PLUMBING FIXTURES, PIPES, MECHANICAL EQUIPMENTS, ETC. THAT ARE TO BE REMOVED, ARE TO BE DONE IN ACCORDANCE TO THE MECHANICAL ELECTRICAL PLUMBING DRAWINGS, SPECIFICATIONS AND APPROPRIATE CODES.

WINDOWS AND DOORS - EXISTING AND NEW:

1. MANUFACTURER'S REPRESENTATIVE AND CONTRACTOR TO VERIFY ALL WINDOWS FOR EGRESS AND TEMPERING REQUIREMENTS PRIOR TO ORDERING & INSTALLATION.
2. GENERAL CONTRACTOR TO INSPECT INSTALLATION AND FLASHING AT TIME OF INSTALLATION TO ENSURE WATER TIGHTNESS.
3. STRIP ALL EXISTING PAINT TO WOOD AND PREPARE TO RECEIVE NEW PAINT AT ALL EXISTING DOORS AND WINDOWS. VERIFY SCOPE OF WORK AT THE JOBSITE.
4. ALL PAINTED WOOD DOORS, WINDOW FRAMES, FRAME BUCKS AND END GRAIN CUTS SHALL BE PRIMED WITH AN OIL BASED PRIMER. STAINED WOOD FRAMES SHALL BE BACK-PRIMED SO AS NOT TO SHOW IN FINISH. REFER TO DESIGNER AND OWNER FOR STAIN AND PAINT.
5. EXIT DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. GENERAL CONTRACTOR TO PROVIDE PANIC HARDWARE AT ALL EXTERIOR DOORS. SUBMIT SHOP DRAWINGS PRIOR TO ORDERING.
6. ALL GLAZING IN HAZARDOUS LOCATIONS MUST BE IDENTIFIED BY A LABEL (PERMANENT IF TEMPERED) AS SAFETY GLAZING. AS REQUIRED BY CODE. LOCATIONS ARE IDENTIFIED AS FOLLOWS:
   A. GLAZING IN ALL DOORS AND TRANSOMS
   B. GLAZING IN BATHROOMS AND OTHER WET AREAS, INCLUDING ROOMS WITH FLOOR DRAINS
   C. GLAZING WITHIN A 24" ARC OF A DOOR EDGE
   D. GLAZING PANELS HAVING THE LOWEST EDGE LESS THAN 18" ABOVE THE FINISH FLOOR.
   E. AREAS IDENTIFIED IN THE LATEST BUILDING CODE
   F. VERIFY TEMPERED GLAZING REQUIREMENTS WITH DEVELOPER AT GROUND LEVEL FOR SECURITY PURPOSES.
7. ALL EXISTING TRANSOMS AND AND IDENTIFIED WINDOWS TO RECEIVE AN APPLIED TEMPERING FILM.
8. GENERAL CONTRACTOR TO PROVIDE "WATER SPRAY TESTING" AT EXTERIOR DOORS, AND WINDOWS PRIOR TO DRYWALL TO ENSURE PROPER FLASHING AND SEALING.

SECURITY NOTES:

1. VERIFY WITH THE OWNERS SITE AND BUILDING LIGHTING SECURITY AND SECURITY SYSTEM REQUIREMENTS AND FEATURES PRIOR TO BIDING AND CONTRACTING.
2. DOOR STOPS OF IN-SWINGING DOORS SHALL BE OF ONE PIECE CONSTRUCTION WITH THE JAMB OR JOINED BY RABBET TO THE JAMB.
3. ALL PIN TYPE HINGES WHICH ARE ACCESSIBLE FROM OUTSIDE THE SECURED AREA WHEN THE DOOR IS CLOSED SHALL HAVE NON-REMOVABLE HINGE PINS.
4. THE STRIKE PLATE FOR LATCHES AND THE HOLDING DEVICE FOR PROJECTING DEADBOLTS IN WOOD CONSTRUCTION SHALL BE SECURED TO THE JAMB AND THE WALL FRAMING WITH SCREWS NOT LESS THE 2 1/2" IN LENGTH.
5. DEADBOLTS SHALL CONTAIN HARDENED INSERTS. STRAIGHT DEADBOLTS SHALL HAVE A MINIMUM THROW OF 1" AND AN EMBEDMENT THROW OF 3/4". COORDINATE WITH MOST STRINGENT CODE.
6. CYLINDER GUARDS SHALL BE INSTALLED ON ALL CYLINDER LOCKS WHENEVER THE CYLINDER PROJECTS BEYOND THE FACE OF THE DOOR OR IS OTHERWISE ACCESSIBLE TO GRIPPING TOOLS.
7. GLAZED OPENINGS WITHIN 40" OF THE DOOR LOCK WHEN THE DOOR IS IN THE CLOSED POSITION SHALL BE FULLY TEMPERED GLASS OR AS REQUIRED BY BUILDING CODES AS ADOPTED BY THE CITY.

INTERIOR FINISHES, CABINETRY, RAILINGS, STAIRS, ETC.

1. SUBCONTRACTOR SHALL SUBMIT ACTUAL MATERIAL SAMPLES FOR REVIEW OF ALL FINISH MATERIALS, PAINT AND STAINS PRIOR TO ORDERING.
2. CABINET SUBCONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS OR ALL CABINETS, COUNTER, AND OTHER BUILT-IN CABINETRY FOR REVIEW BY OWNER, ARCHITECT, AND DESIGNER.
3. CONTRACTOR TO SUBMIT DETAILED SHOP DRAWINGS FOR GUARDRAILS, STAIRS AND HANDRAILS FOR REVIEW PRIOR ORDERING MATERIALS.
4. VERIFY ALL LAYOUTS,TRIM,SHAPES, GROUT SELECTIONS AND WIDTH AND OTHER SPECIFICATIONS PRIOR TO ORDERING TILE. COORDINATE TILE SIZE AND PATTERN PRIOR TO FINALIZING LOCATION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ORDERING ALL FINISH MATERIALS WITH ENOUGH LEAD TIME SO THAT ORDERED MATERIAL CAN BE CONFIRMED ACCEPTABLE, AND ANY UNACCEPTABLE MATERIAL REPLACED, WITHOUT DELAYING CONSTRUCTION.
6. THE USE OF GYPSUM BOARD FOR TILED WALLS IN WET AREAS IS PROHIBITED. APPROPRIATE MATERIAL SUCH AS HARDIE BACKER BOARD OR APPROVED EQUAL TO BE USED. INSTALL AS PER MANUFACTURER RECOMMENDATIONS.
7. USE FULL SHEETS WHEREVER POSSIBLE TO ELIMINATE JOINTS. WHERE JOINTS ARE UNAVOIDABLE, HOLD BOARDS APART 1/8" AND USE 2" FIBERGLASS TAPE TO REINFORCE JOINTS. APPLY MIN. 1/2" THICK MORTAR BED PLUS 1/8" BONDING OVER BACKING SURFACES. INSTALL AS PER MANUFACTURERS REQUIREMENTS AND INSTALLATION INSTRUCTIONS.

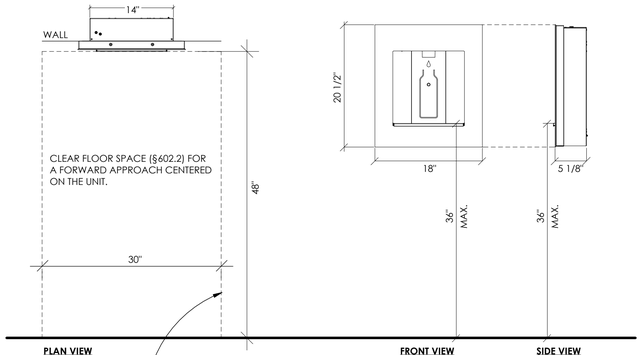
INTERIOR FINISHES, CABINETRY, RAILINGS, STAIRS, ETC. CONTINUED.

8. ALL DUST SHALL BE COMPLETELY WASHED OFF TILE PRIOR TO APPLICATION OF THE BOND COAT. BONDING MORTAR SHALL COVER 100% OF BOTH THE TILE AND THE SURFACE TO BE COVERED APPROXIMATELY 1/8" THICK. ON MARBLE TILE, USE GRAY BONDING MORTAR WITH DARKER TILE, WHITE BONDING MORTAR WITH LIGHT COLORED TILE.
9. FINISH CAULKING FOR COUNTERS AND OTHER ITEMS SHALL BE DAP LATEX CAULK WITH SILICONE MADE FOR THIS PURPOSE.
10. ALL DRAWERS TO BE SOFT CLOSE. DRAWERS & SLIDING UNITS TO BE INSTALLED WITH FULL EXTENSION ACCURIDE GUIDES OR EQUAL AS APPROVED.
11. PROVIDE 42" GUARDRAILS AS INDICATED ON PLANS WITH LESS THAN 4" MIN. CLEARANCE BETWEEN INTERMEDIATE BALAUSTERS. REFER TO ACCEPTED OR CURRENT BUILDING CODE. INSTALL AS PER MANUFACTURER RECOMMENDATIONS AND REQUIREMENTS.
12. GUARDRAILS ARE REQUIRED AT FLOOR OPENINGS, LANDINGS, BALCONIES, AND AT OPEN SIDES OF STAIRS OVER 30" IN HEIGHT.
13. CONTRACTOR TO PROVIDE SUBMITTALS AND SAMPLES FOR ALL FINISH FLOORS FOR APPROVAL PRIOR TO EXECUTION. PROVIDE TILE LAYOUT SAMPLES AND PRIOR TO ORDERING MATERIAL AND INSTALLATION. REFER TO GENERAL NOTES FOR SUBMITTAL REQUIREMENTS.
14. PROVIDE/INSTALL SIGNAGE AS SPECIFIED. PROVIDE SUBMITTAL AND NUMBERING LAYOUT FOR APPROVAL PRIOR TO ORDERING. SIGNAGE SHALL MEET ALL A.D.A. AND T.A.S., AND ARCHITECTURAL BARRIERS ACT ACCESSIBILITY STANDARDS (ABASS). PROVIDE SAMPLE FOR APPROVAL.

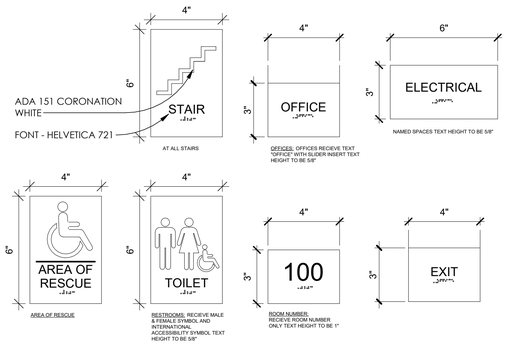
INTERIOR WOOD FLOOR

1. BEFORE BEGINNING, INSPECT ALL WORK TO DETERMINE THE SCOPE OF THE WORK AS INDICATED ON THE DRAWINGS AND/OR AS DIRECTED. REMOVES EXISTING CARPET AT ALL DESIGNATED FLOOR AREAS AND STAIR ASSEMBLIES. INVESTIGATE AND DOCUMENT CONDITION OF UNDERLYING FINISH FLOOR, INCLUDING BUT NOT LIMITED TO, EXISTING WOOD FLOORS, STAIR TREADS, AND RISERS. PROVIDE CONDITION ASSESSMENT REPORT AFTER CARPET REMOVAL. IF IT IS DICOVERED THAT

TYPICAL ADA REQUIREMENTS



STANDARD ROOM SIGNAGE



BACKGROUND COLOR - Formica 8792 - 58 - Winter Sky Matt Finish

TEXT COLOR - Bright White

LINE COLOR - Painted Bright White

EDGE COLOR - Paint to Match

RAISED TEXT FONT - Helvetica 721 Upper Case Only

SECONDARY TEXT FONT - Helvetic Medium and Helvetica Medium condense as required

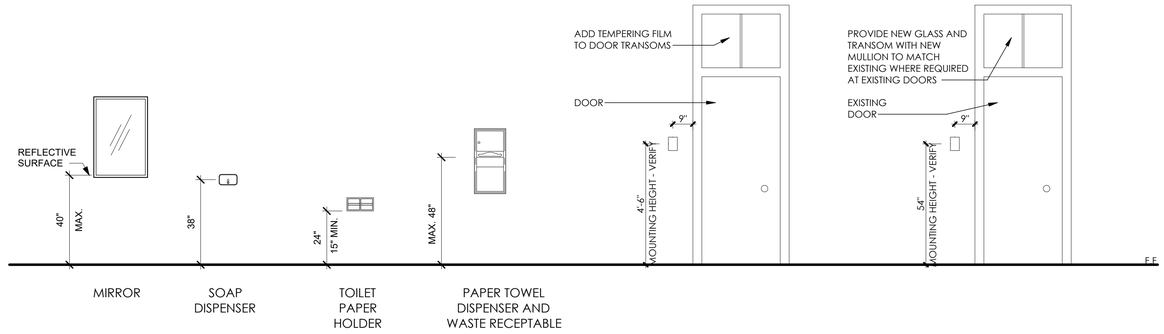
MOUNTING - 3M VHB - 3M VHB Foam Tape / Silicon

Notes:
1. SIGNAGE TACTILE CHARACTERS AND MOUNTING PLACEMENT SHALL COMPLY WITH LATEST ISSUES TAS 2012 SECTION 703. AND ARCHITECTURAL BARRIERS ACT ACCESIBILITY STANDARDS (ABAAS).
2. COORDINATE LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.
3. PROVIDE SIGNAGE SCHEDULE. PROVIDE SUFFICIENT INFORMATION TO COMPLETELY DEFINE EACH SIGN FOR FABRICATION, INCLUDING ROOM NUMBER, ROOM NAME, OTHER TEXT TO BE APPLIED, SIGN AND LETTER SIZES, FONTS, AND COLORS. SUBMIT FOR APPROVAL BY ARCHITECT PRIOR TO FABRICATION.
4. PROVIDE SAMPLE FOR COLORS AND LETTERING FOR APPROVAL PRIOR TO ORDERING.

NOTES:

1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.

TYPICAL TOILET AND DOOR ACCESSORIES MOUNTING HEIGHTS



ADA - TYPICAL THRESHOLD PROFILE

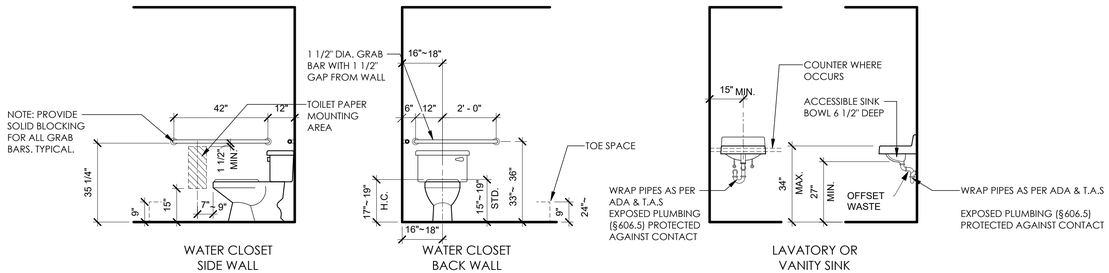


NOTE: VERTICAL EDGE MUST BE LOCATED BELOW BEVEL, NOT ABOVE.

THIS DRAWING IS FOR DESIGN INTENT ONLY.

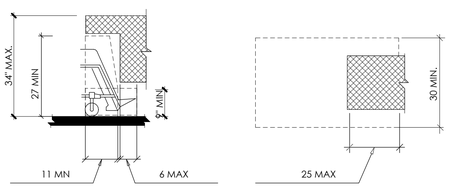
TYPICAL PLUMBING FIXTURES AND ACCESSORIES MOUNTING HEIGHTS

NOTE: { 59" MIN. @ FLOOR-MOUNTED TOILET
56" MIN. @ WALL-HUNG TOILET



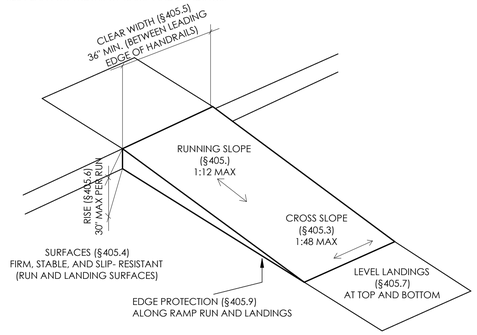
NOTE:
CONTRACTOR TO COMPLY WITH ARCHITECTURAL BARRIERS ACT ACCESSIBILITY STANDARDS (ABAAS) IN ADDITION TO TAS/ADA REQUIREMENTS AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.

TYPICAL ADA REQUIREMENTS
KNEE CLEARANCE - CABINETS



ADA RAMP REQUIREMENTS

SEE PLAN FOR WIDTHS OF RAMP AND LANDINGS.



ALTERATIONS (§405.2)
PERMITTED RUNNING SLOPES WHERE SPACE IS LIMITED:
1:10 MAX (6" MAX RISE) OR 1:8 MAX (3" MAX RISE)

WET CONDITIONS (§405.10)
LANDINGS MUST BE DESIGNED TO PREVENT THE ACCUMULATION OF WATER

NOT TO SCALE

Studio E
architecture & interiors inc.
8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

12/22/25

CASTROVILLE CATHOLIC SCHOOL
702 PARIS ST, CASTROVILLE, TX

PERMIT SET - BID SET - 12-22-25

JOB NO: Project Number
DRAWN BY: Author
BID SET
ISSUE / REVISION:

No.	Date

12/22/25

SHEET TITLE
ACCESSIBILITY DETAILS

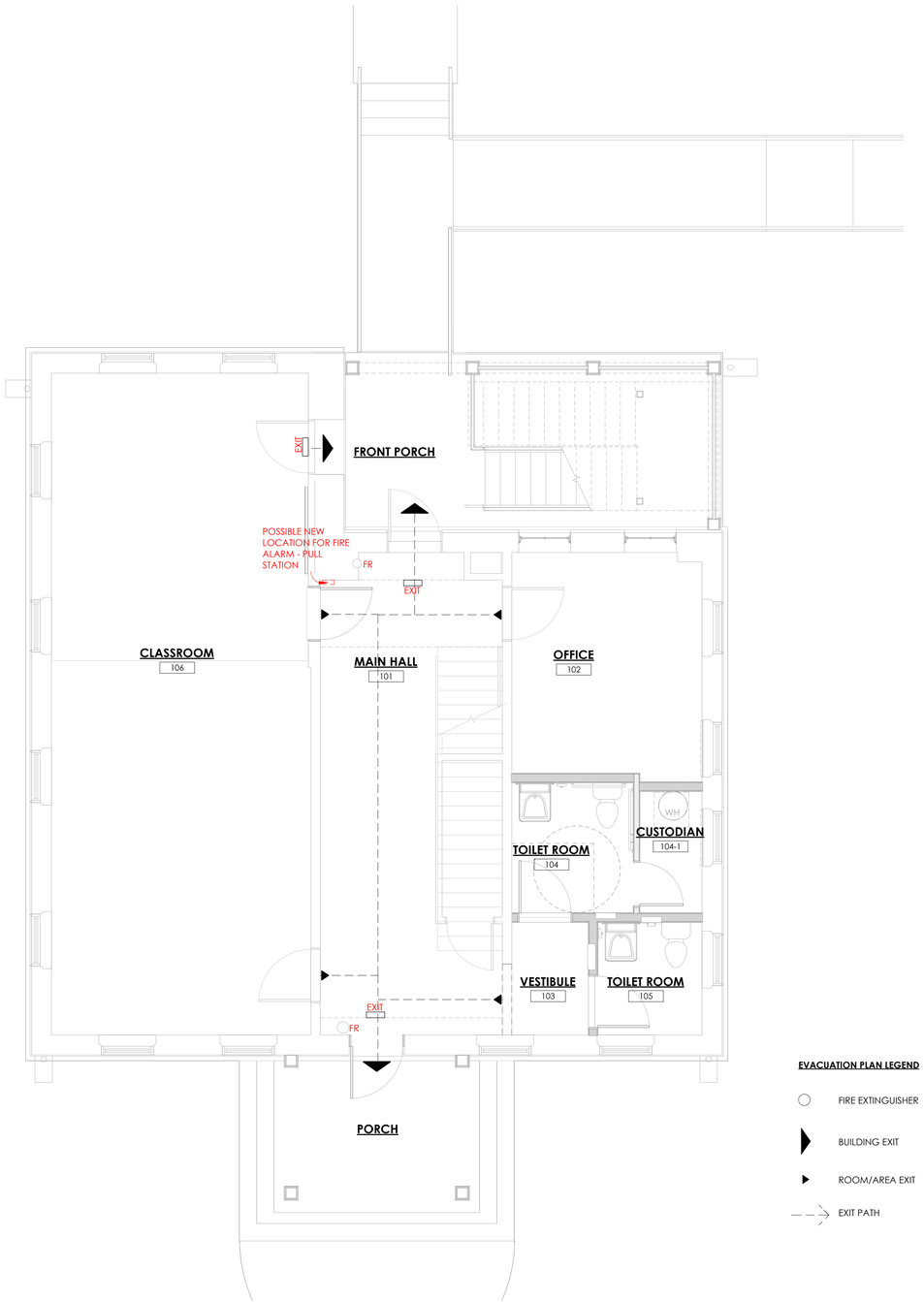
A.02

©COPYRIGHT 2025 Studio e, Architecture and Interiors Inc.

C:\Users\Emily\Documents\111025 CURRENT_damarisXHCK6.rvt
12/22/2025 2:14:16 PM

NOTES:

1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.

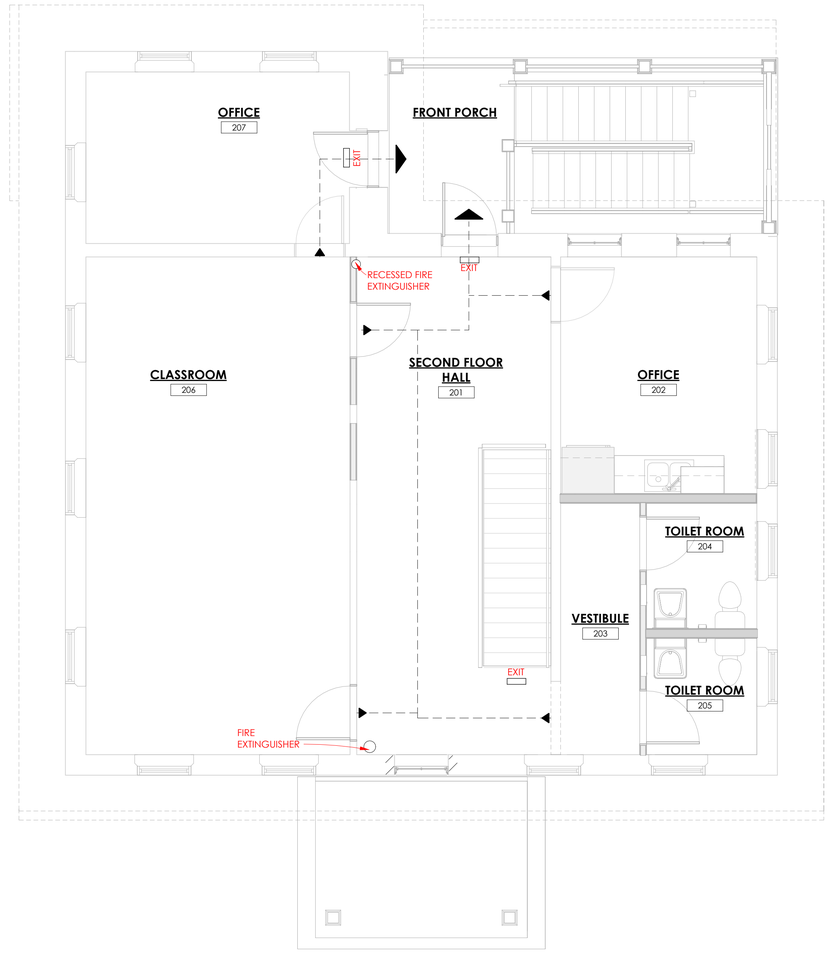


EVACUATION PLAN LEGEND

- FIRE EXTINGUISHER
- BUILDING EXIT
- ROOM/AREA EXIT
- EXIT PATH

PLAN NORTH / TRUE NORTH

1 FIRST FLOOR PLAN - EVACUATION PLAN
1/4" = 1'-0"



PLAN NORTH / TRUE NORTH

2 SECOND FLOOR PLAN - EVACUATION PLAN
1/4" = 1'-0"

REGISTERED ARCHITECT JOAQUIN F. ESTRADA 29333 STATE OF TEXAS
12/22/25

Studio E
architecture & interiors inc.

8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

PERMIT SET - BID SET - 12-22-25

JOB NO: Project Number
DRAWN BY: Author
BID SET
ISSUE / REVISION:

No.	Date

12/22/25

SHEET TITLE
EVACUATION PLANS

A.02.1

©COPYRIGHT 2025 Studio e. Architecture and Interiors Inc.

12/22/2025 2:14:17 PM C:\Users\Emily\Documents\111025 CURRENT_damarisXHCK6.rvt

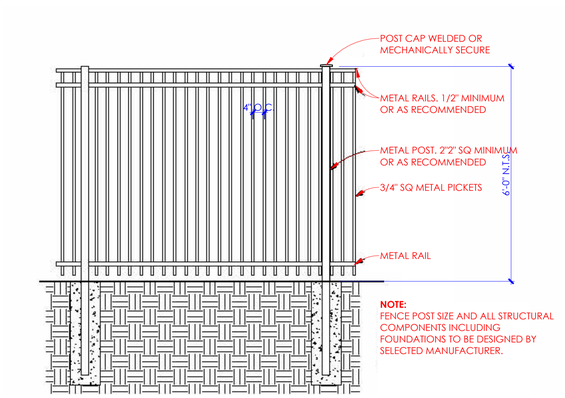
ORNAMENTAL FENCE & ACCESS GATES:

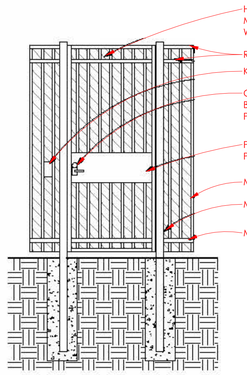
PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY TO FURNISH AND INSTALL A COMPLETE ORNAMENTAL FENCE AND GATE SYSTEM AS MANUFACTURED BY QUALITY FENCE & WELDING (210-305-4269) OR COMAL FENCE (210-686-3932) OR APPROVED EQUAL.

WORK INCLUDES STEEL FENCE PANELS, POST, GATES, HARDWARE, COATING, FOUNDATIONS, AND ACCESSORIES REQUIRED FOR A COMPLETE AND FUNCTIONAL INSTALLATION.

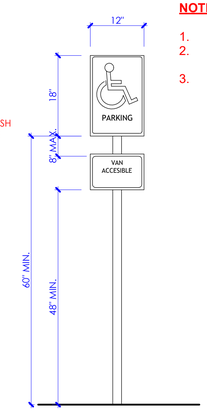
INDICATED SIZES ARE INDICATED FOR PURPOSES OF DESIGN INTENT. PROVIDE RECOMMENDED POST SIZE AND ALL STRUCTURAL COMPONENTS INCLUDING FOUNDATIONS TO BE DESIGNED BY MANUFACTURER SELECTED. GATES, 3'-0" WIDE AND 6'-0 (DOUBLE GATES) TO MATCH THE FENCE SYSTEM. REFER TO PLANS FOR LOCATIONS. PROVIDE ADJUSTABLE GATE CLOSURE AND HINGES FOR HINGE/CLOSURE ON ALL GATES.

PROVIDE LAYOUT AND MANUFACTURER SPECIFICATIONS, CUTSHEETS, AND SHOP DRAWINGS FOR APPROVAL AND MANUFACTURER'S STANDARD WARRANTY FOR MATERIALS AND FINISHES.





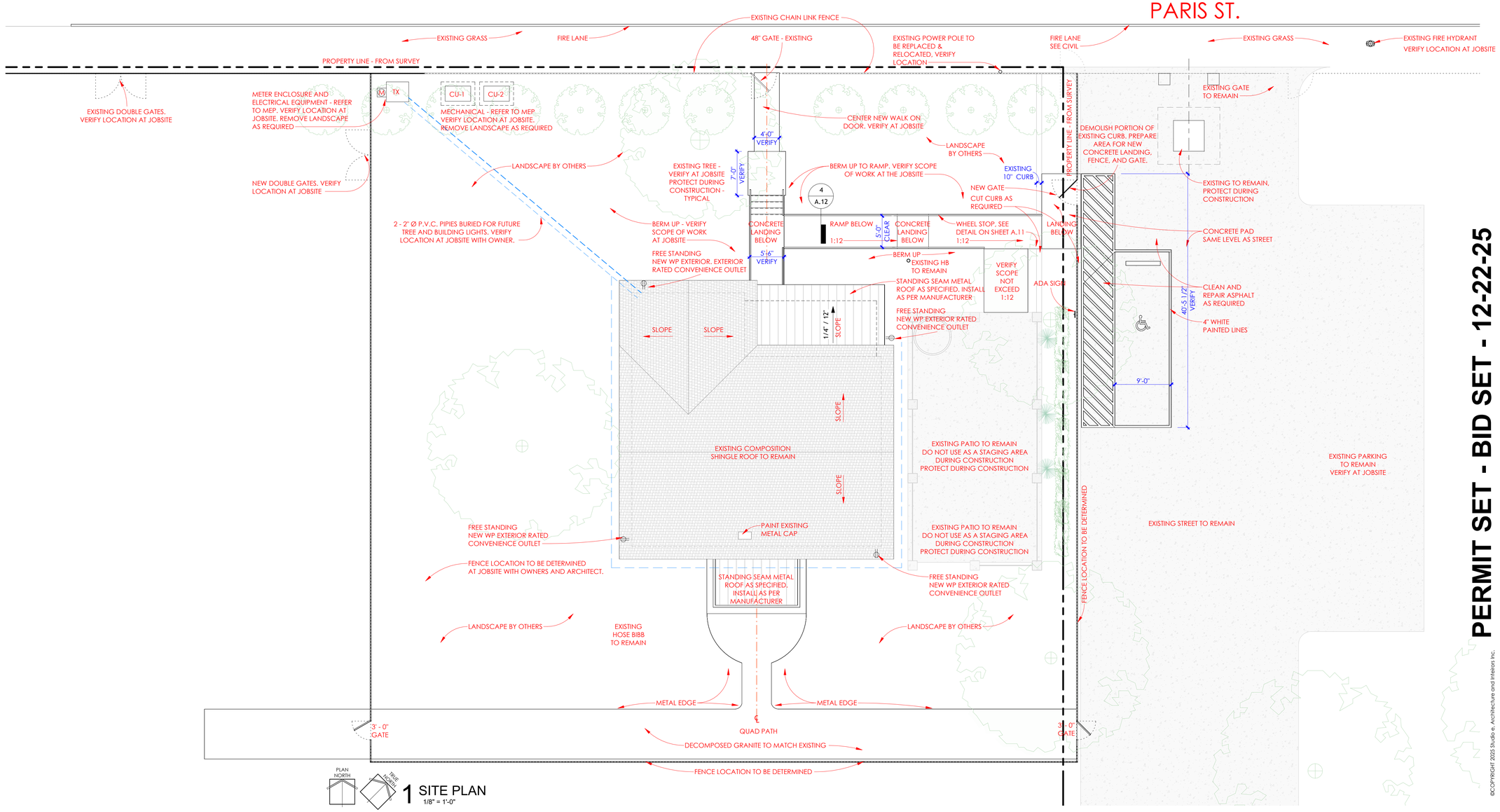
2 ORNAMENTAL FENCE & ACCESS GATES ELEVATIONS
1/2" = 1'-0"



3 PARKING SIGN
3/4" = 1'-0"

NOTES:

1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.



PLAN NORTH
TRUE NORTH

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

Studio E
architecture & interiors inc.
8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

REGISTERED ARCHITECT JOAQUIN F. ESPINOSA 19333 STATE OF TEXAS
12/22/25

CASTROVILLE CATHOLIC SCHOOL
702 PARIS ST, CASTROVILLE, TX

PERMIT SET - BID SET - 12-22-25

JOB NO:	Project Number
DRAWN BY:	Author
BID SET	
ISSUE / REVISION:	

No.	Date

12/22/25

SHEET TITLE
SITE PLAN

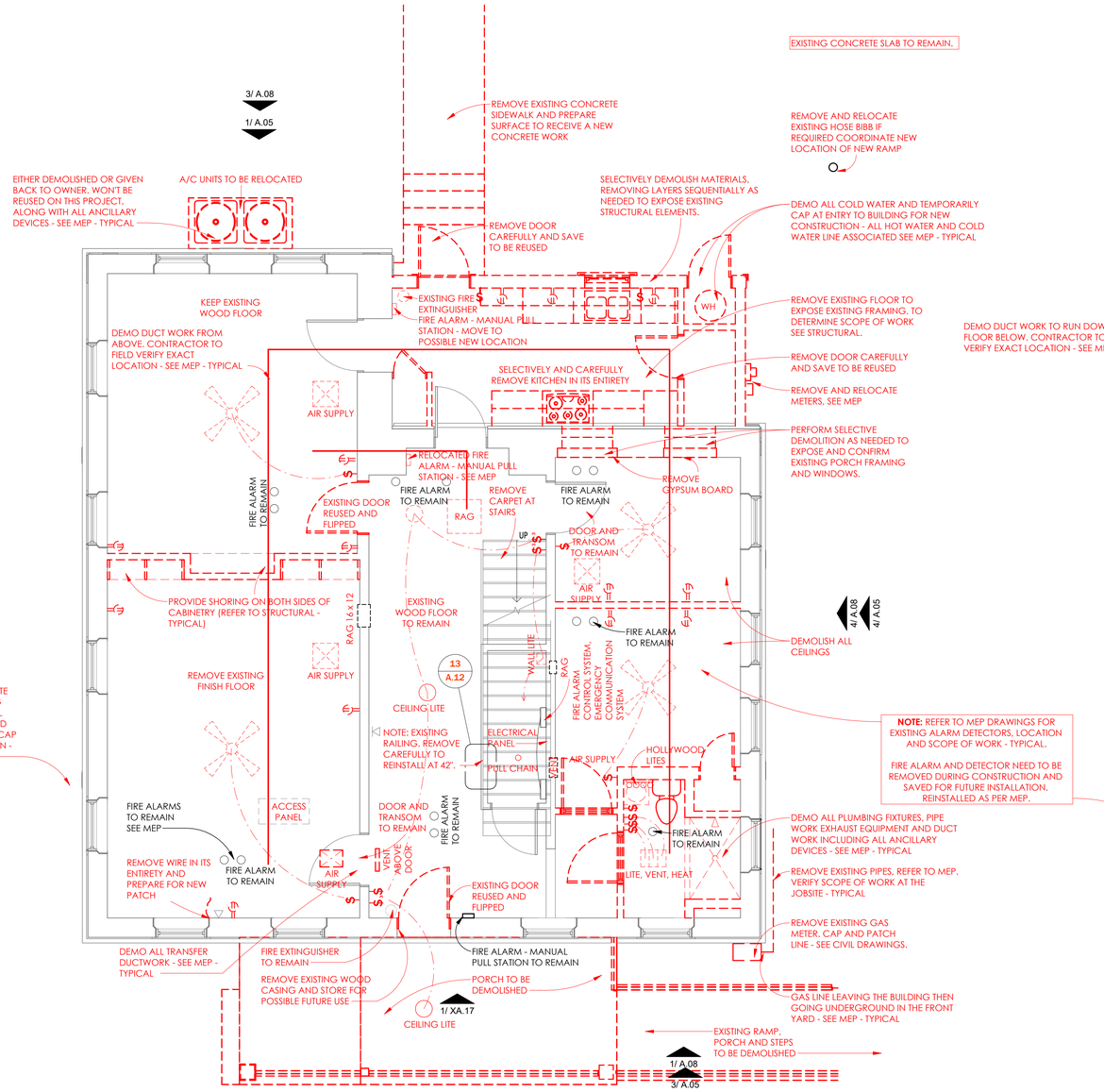
A.03

©COPYRIGHT 2025 Studio e, Architecture and Interiors Inc.

12/22/2025 2:14:19 PM C:\Users\Emily\Documents\111025 CURRENT_damarisXHCK6.rvt

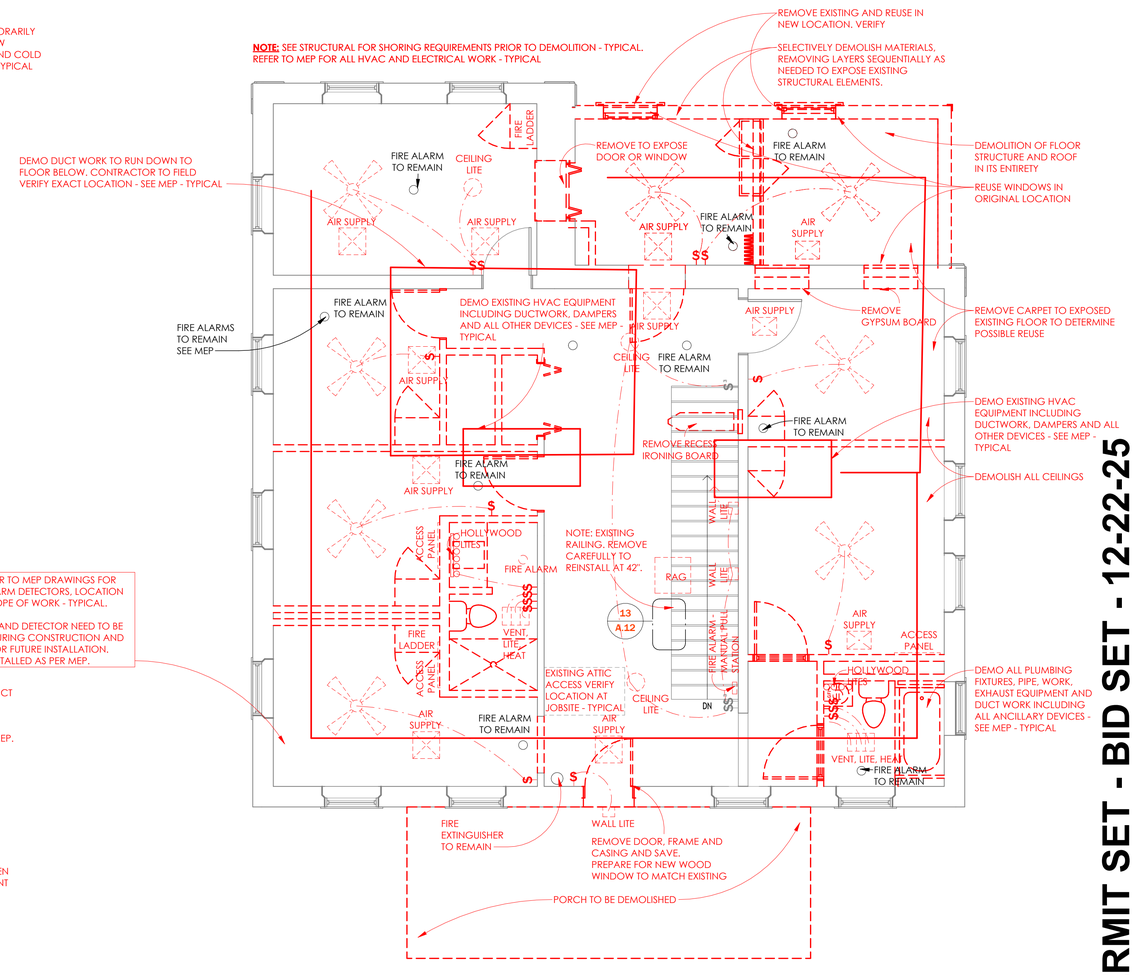
NOTES:

1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.



PLAN NORTH / TRUE NORTH

1 FIRST FLOOR PLAN - DEMOLITION
1/4" = 1'-0"



PLAN NORTH / TRUE NORTH

2 SECOND FLOOR PLAN - DEMOLITION
1/4" = 1'-0"

DEMOLITION GENERAL NOTES

1. CONTRACTOR TO VERIFY EXISTING CONDITIONS AT THE JOBSITE PRIOR TO BID AND WORK. DISCREPANCIES BETWEEN DRAWINGS AND EXISTING CONDITIONS SHALL TO BE BROUGHT TO THE ATTENTION OF ARCHITECT/ENGINEER/ OWNER AT THE TIME OF BID PROPOSAL.
2. CONTRACTOR TO REFER TO MEP DRAWINGS FOR HVAC, ELECTRICAL AND PLUMBING NOTES.
3. CONTRACTOR TO PROTECT EXISTING FLOORS TO REMAIN, WALLS AND CEILINGS DURING DEMOLITION AND CONSTRUCTION.
4. DIMENSIONS SHOWN ON DRAWINGS ARE FOR INTENT ONLY AND MAY VARY DEPENDING ON EXISTING CONDITIONS AND DISCOVERY.
5. CAREFULLY REMOVE EXISTING DOORS AND WINDOWS AFFECTED BY DEMOLITION AND SAVE FOR REUSE.
6. COORDINATE REMOVAL OF CEILING WITH INSTALLATION UNITS.

NOTE: THIS DRAWING IS INCLUDED FOR GENERAL INTENT. REFER TO MEP ENGINEER DRAWINGS FOR DEMOLITION AND ITEMS TO REMAIN.

WALL LEGEND

- EXISTING WOOD STUD
- DEMOLISH
- NEW 2 x 6 WOOD STUDS WITH SOUND BATT INSULATION
- NEW 2 x 4 WOOD STUDS WITH SOUND BATT INSULATION

©COPYRIGHT 2025 Studio e. Architecture and Interiors Inc.

REGISTERED ARCHITECT JOAQUIN F. ESTRADA 19333 STATE OF TEXAS
12/22/25

Studio E
architecture & interiors inc.
8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

CASTROVILLE CATHOLIC SCHOOL
702 PARIS ST, CASTROVILLE, TX

PERMIT SET - BID SET - 12-22-25

JOB NO: Project Number
DRAWN BY: Author
BID SET
ISSUE / REVISION:

No.	Date

12/22/25

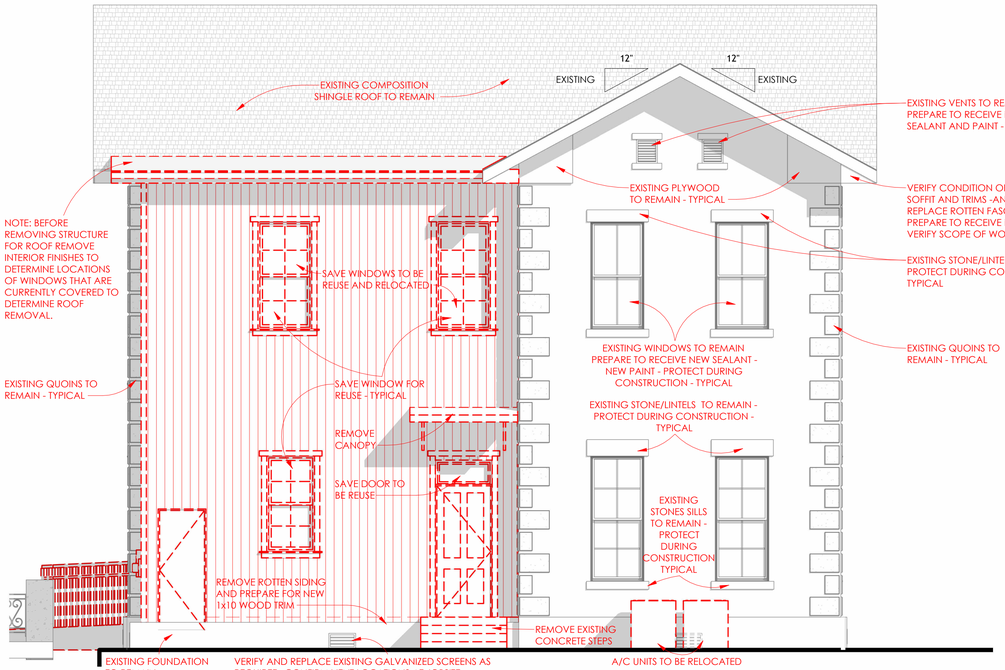
SHEET TITLE
DEMOLITION PLANS

A.04

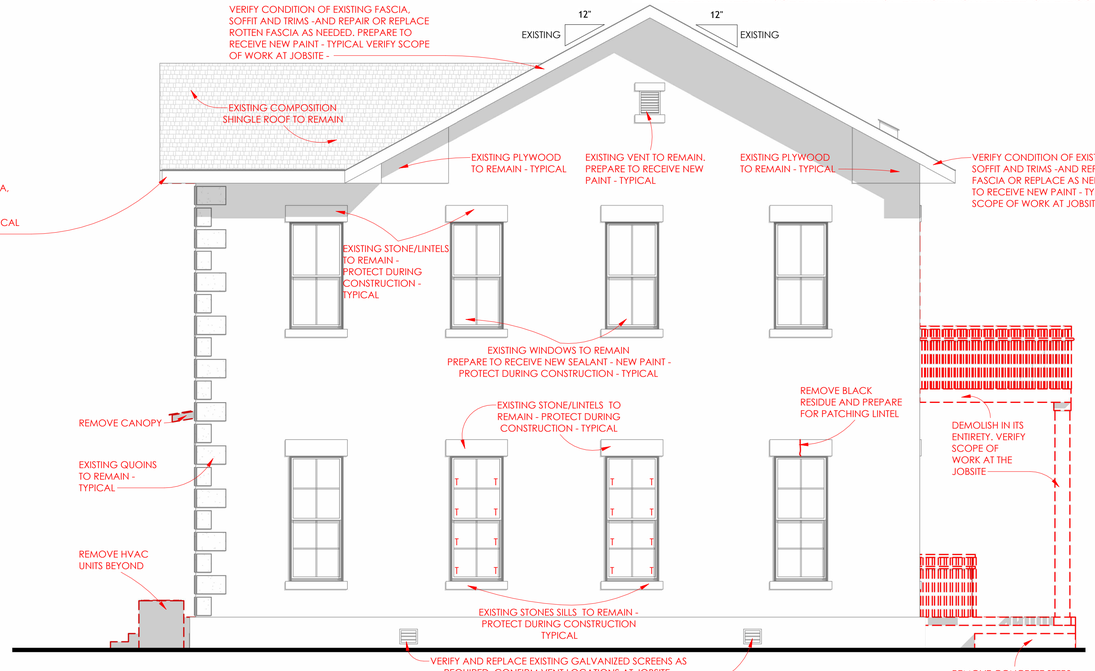
C:\Users\Emily\Documents\111025 CURRENT_damarisXHCK6.rvt
12/22/2025 2:14:21 PM

NOTES:

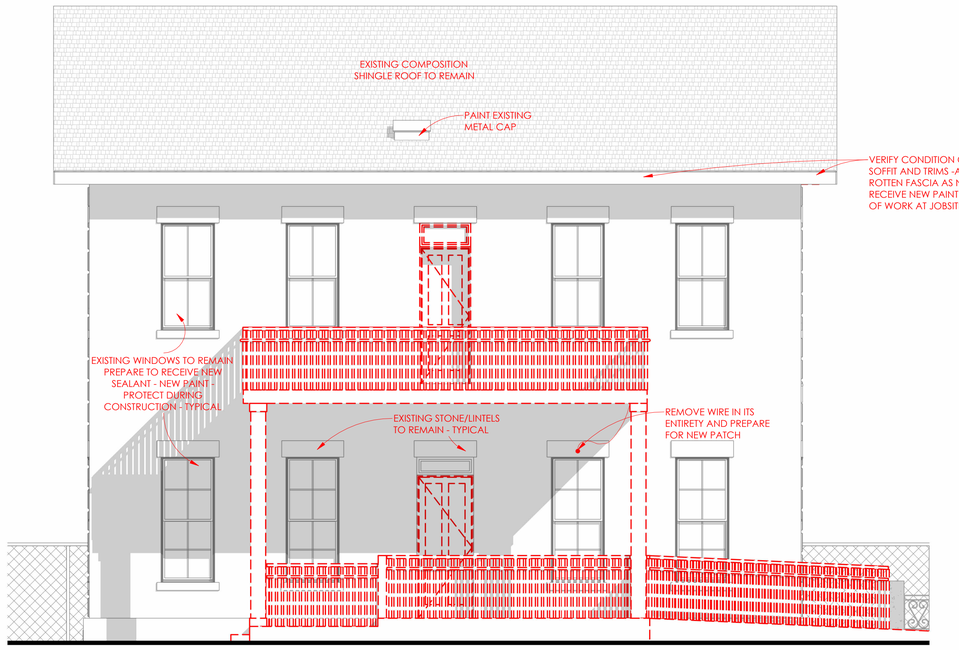
1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.



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



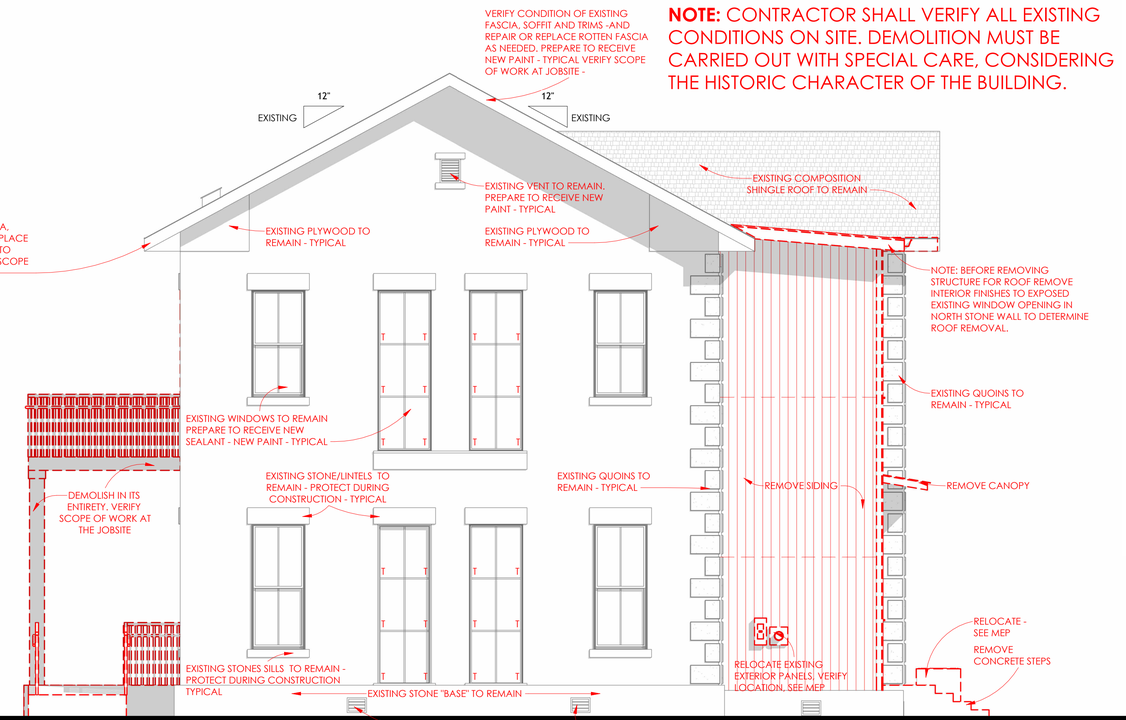
2 WEST ELEVATION - DEMOLITION
1/4" = 1'-0"
T= TEMPERING FILM



3 SOUTH ELEVATION - DEMOLITION
1/4" = 1'-0"

NOTE: SEE SITE PLAN FOR COMPLEMENTARY AND OTHER ITEMS TO BE REMOVE SUCH AS BUT NOT LIMITED TO LANDSCAPE.

NOTE: CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS ON SITE. DEMOLITION MUST BE CARRIED OUT WITH SPECIAL CARE, CONSIDERING THE HISTORIC CHARACTER OF THE BUILDING.



4 EAST ELEVATION - DEMOLITION
1/4" = 1'-0"
T= TEMPERING FILM

PERMIT SET - BID SET - 12-22-25

Studio E
architecture & interiors inc.
8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

12/22/25

CASTROVILLE CATHOLIC SCHOOL
702 PARIS ST, CASTROVILLE, TX

JOB NO: Project Number
DRAWN BY: Author
BID SET
ISSUE / REVISION:

No.	Date

12/22/25

SHEET TITLE
DEMOLITION EXTERIOR ELEVATIONS

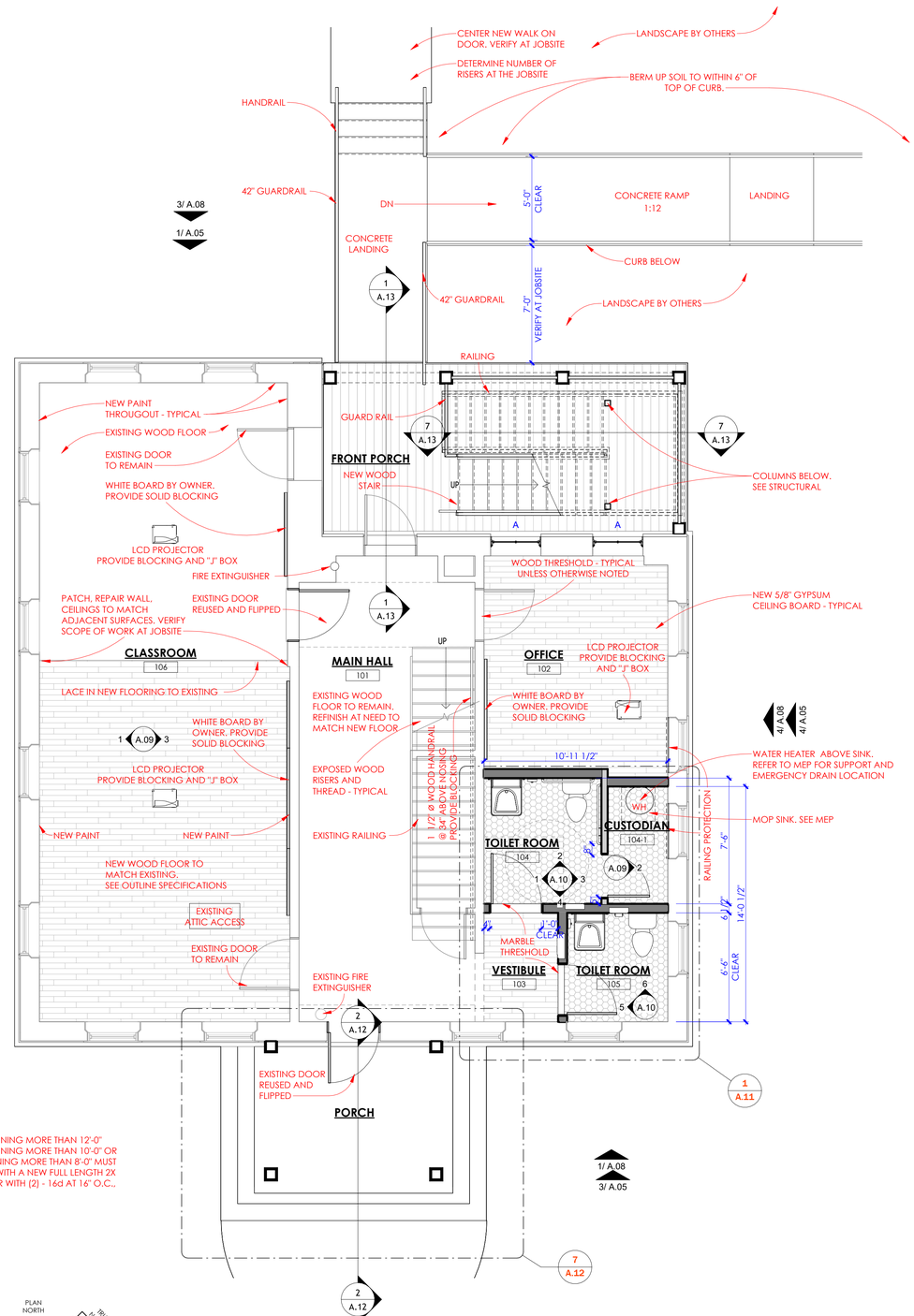
A.05

©COPYRIGHT 2025 Studio e. Architecture and Interiors Inc.

12/22/2025 2:14:27 PM C:\Users\EmilyJ\Documents\111025 CURRENT_damarisXHCK6.rvt

NOTES:

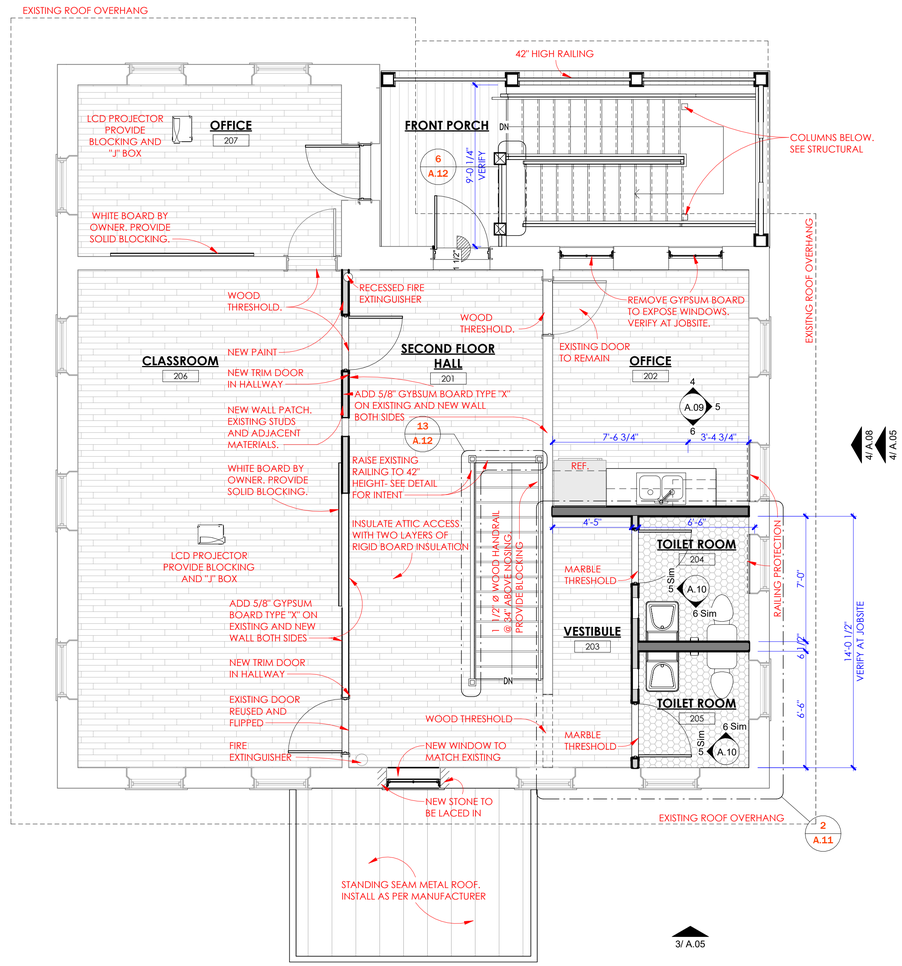
1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.



NOTE:
2X12 JOISTS SPANNING MORE THAN 12'-0"
2X10 JOISTS SPANNING MORE THAN 10'-0" OR
2X8 JOISTS SPANNING MORE THAN 8'-0" MUST
BE REINFORCED WITH A NEW FULL LENGTH 2X
NAILED TOGETHER WITH (2) - 16d AT 16" O.C.,
SEE STRUCTURAL

PLAN NORTH / TRUE NORTH

1 REVISED FIRST FLOOR PLAN
1/4" = 1'-0"



PLAN NORTH / TRUE NORTH

2 REVISED SECOND FLOOR PLAN
1/4" = 1'-0"

WALL LEGEND

- EXISTING WOOD STUD
- DEMOLISH
- NEW 2 x 6 WOOD STUDS WITH SOUND BATT INSULATION
- NEW 2 x 4 WOOD STUDS WITH SOUND BATT INSULATION

©COPYRIGHT 2025 Studio e, Architecture and Interiors Inc.

PERMIT SET - BID SET - 12-22-25

12/22/25

Studio E
architecture & interiors inc.
8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

JOB NO:	Project Number
DRAWN BY:	Author
BID SET	
ISSUE / REVISION:	

No.	Date

12/22/25

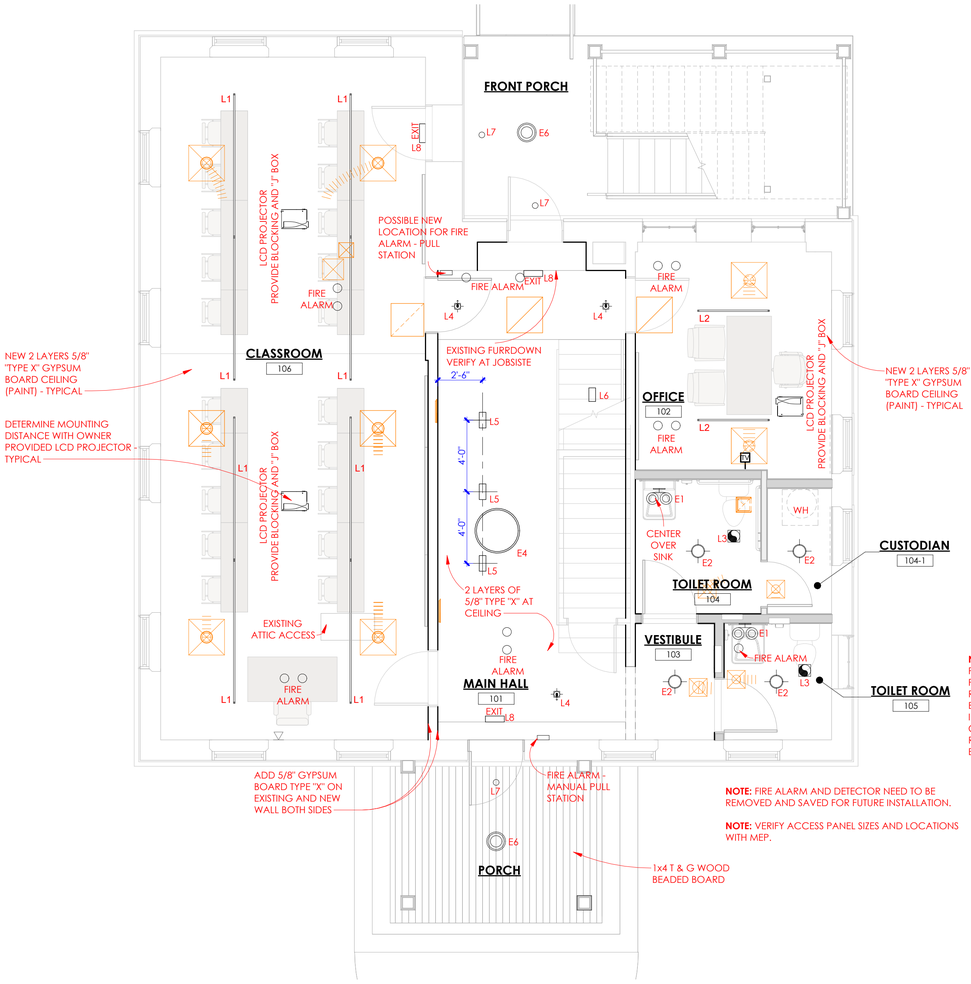
SHEET TITLE
REVISED FLOOR PLANS

A.06

12/22/2025 2:14:29 PM C:\Users\Emily\Documents\1111025 CURRENT_damarisXHCK6.rvt

NOTES:

1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.

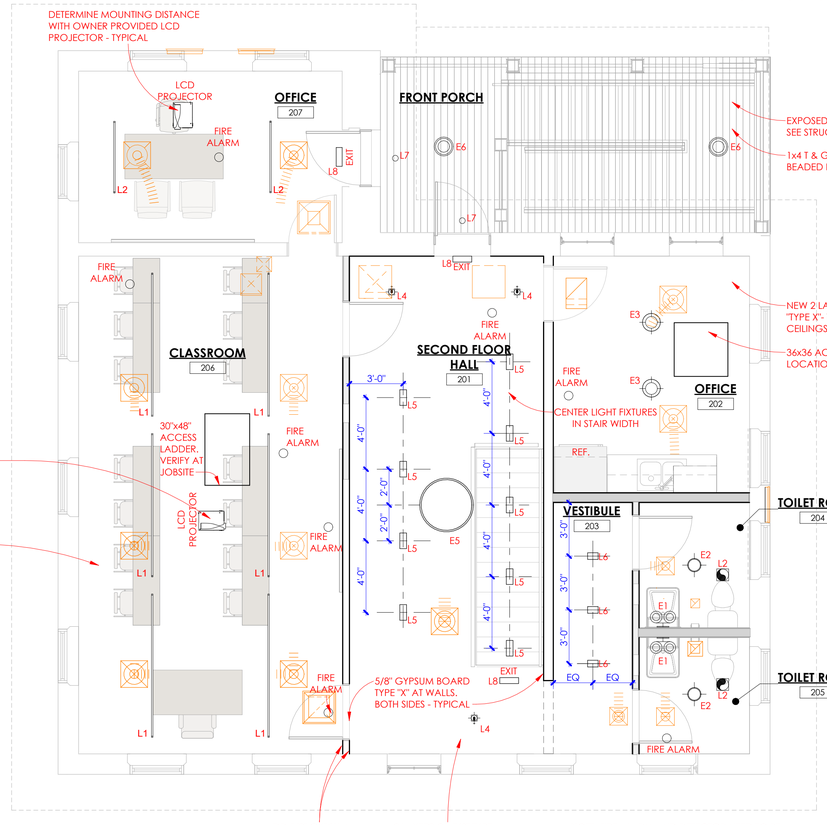


NOTE: FIRE STOPPING NOTE:
PROVIDE FIRE CAULKING ALL FENESTRATIONS, PENETRATIONS, HOLES, JOINTS AND OPENINGS AS REQUIRED BY LOCAL, REGIONAL AND NATIONAL BUILDING CODES. FIRE STOPPING MATERIALS AND INSTALLATION SHALL COMPLY WITH APPLICABLE CODES, TESTED ASSEMBLIES, AND MANUFACTURER'S REQUIREMENTS. COORDINATE WITH ALL TRADES TO ENSURE CONTINUITY OF THE FIRE - RESISTIVE BARRIER.

NOTE: FIRE ALARM AND DETECTOR NEED TO BE REMOVED AND SAVED FOR FUTURE INSTALLATION.

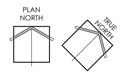
NOTE: VERIFY ACCESS PANEL SIZES AND LOCATIONS WITH MEP.

1 FIRST FLOOR PLAN - REFLECTED CEILING PLAN
1/4" = 1'-0"



NOTE: FIRE ALARM AND DETECTOR NEED TO BE REMOVED AND SAVED FOR FUTURE INSTALLATION.

NOTE: COORDINATE LOCATIONS OF ACCESS PANEL WITH EQUIPMENT AND MEP.



2 SECOND FLOOR PLAN - REFLECTED CEILING PLAN
1/4" = 1'-0"

LIGHTING LEGEND

NOTES:

1. ALL LIGHT FIXTURES TO BE LED. **VERIFY ALL FIXTURE MOUNTING HEIGHTS WITH DESIGNER PRIOR TO INSTALLATION** . ALL LIGHTING SELECTION TO BE DETERMINED BY OWNER AND/OR DESIGNER. ALL LIGHTS TO MEET CURRENT LOCAL REGIONAL, STATE AND NATIONAL CODES.
2. WATER RESISTANT 5/8" GYPSUM BOARD ON ALL WET AREAS SUCH AS BATHROOMS.
3. VERIFY EXISTING POWER AND LIGHTING AT THE JOBSITE. COORDINATE WITH NEW POWER AND LIGHTING. SEE MEP
4. DECORATIVE FIXTURES TO BE SELECTED BY OWNER AND/OR DESIGNER. VERIFY FINAL LOCATIONS AND MOUNTING HEIGHTS OF ALL FIXTURES AND SWITCH LOCATIONS PRIOR TO INSTALLATION.
5. AT ALL EXISTING SWITCHES/OUTLETS TO REMAIN, REPLACE PLATES WITH NEW TO BE SELECTED. SEE MEP.
6. MEP COORDINATE SWITCHING WITH DESIGN TEAM.

DECORATIVE LIGHTING

E1	WALL SCONCE FIXTURE / VANITY LIGHT
E2	SURFACE MOUNT FIXTURE 8"
E3	SURFACE MOUNT FIXTURE 12"
E4	PENDANT LIGHT 27.3"
E5	PENDANT LIGHT 35.3"
E6	FLUSH MOUNT LIGHT 12.75"

ARCHITECTURAL LIGHTING

L1	LINEAR FIXTURE 8'
L2	LINEAR FIXTURE 4'
L3	VENT FAN - BY MEP
L4	ADJUSTABLE DOWNLIGHT
L5	RECESSED LINEAR LIGHT
L6	RECESSED LINEAR LIGHT
L7	EMERGENCY (BATTERY) RECESSED LIGHT
L8	EXIT WITH EMERGENCY LIGHT BAR

REGISTERED ARCHITECT
JOAQUIN F. ESTRADA
9333
STATE OF TEXAS
12/22/25

Studio E
architecture & interiors inc.

8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

PERMIT SET - BID SET - 12-22-25

JOB NO: Project Number
DRAWN BY: Author
BID SET
ISSUE / REVISION:

No.	Date

12/22/25

SHEET TITLE
RCP PLANS

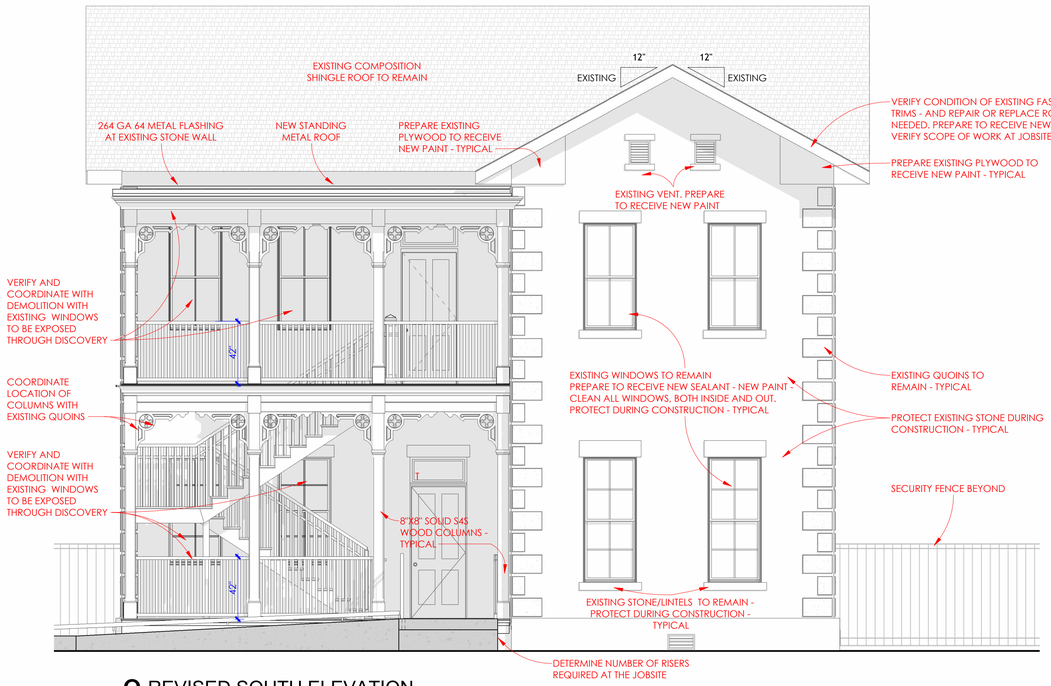
A.07

©COPYRIGHT 2025 Studio e, Architecture and Interiors Inc.

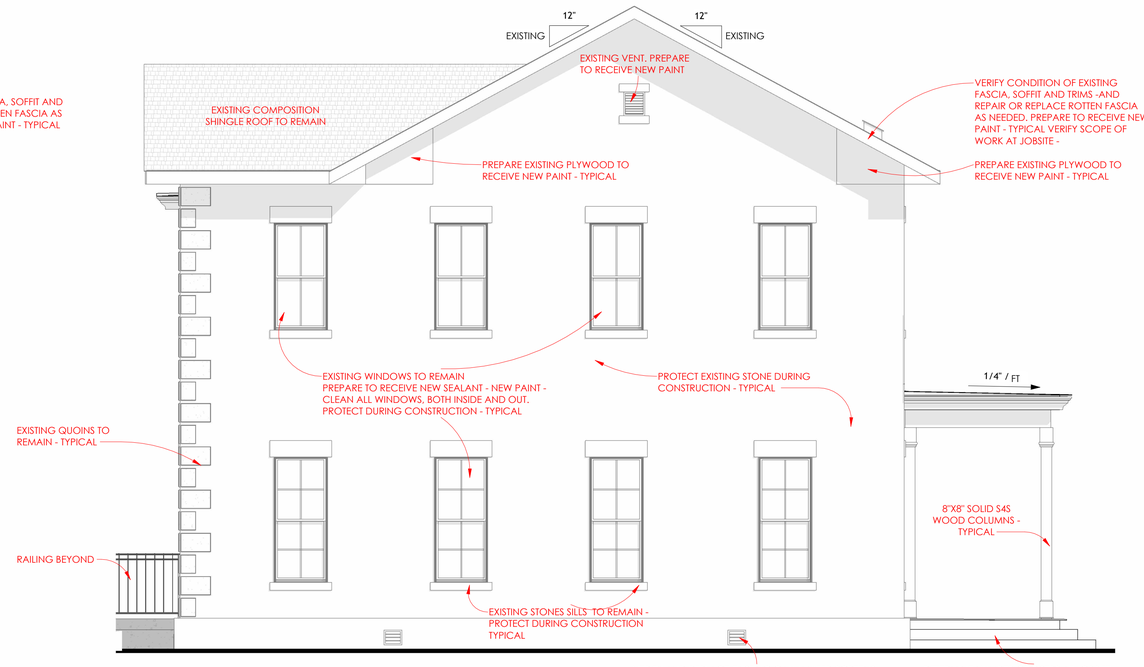
C:\Users\Emily\Documents\111025 CURRENT_damaris\KHCK6.rvt
12/22/2025 2:14:30 PM

NOTES:

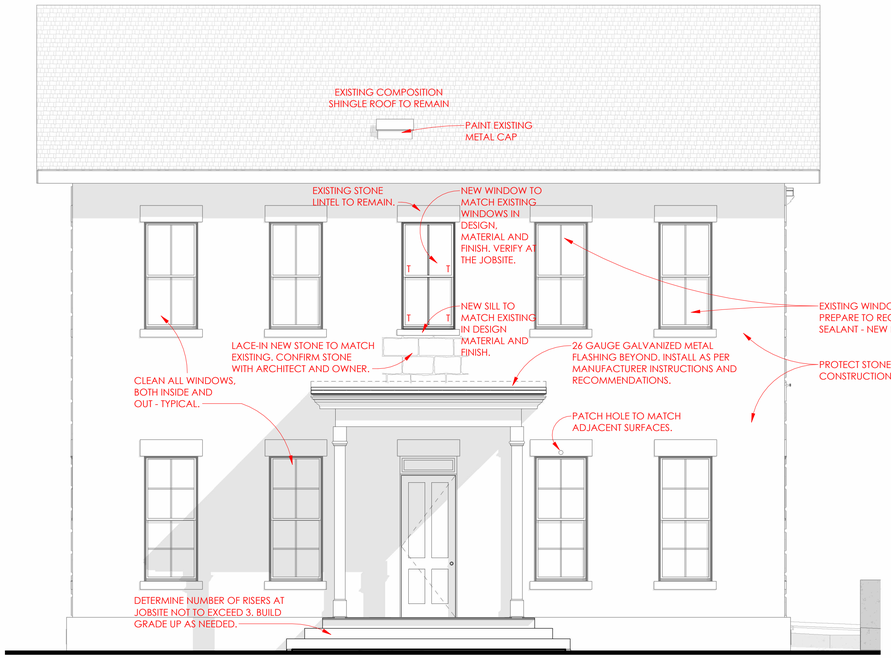
1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.



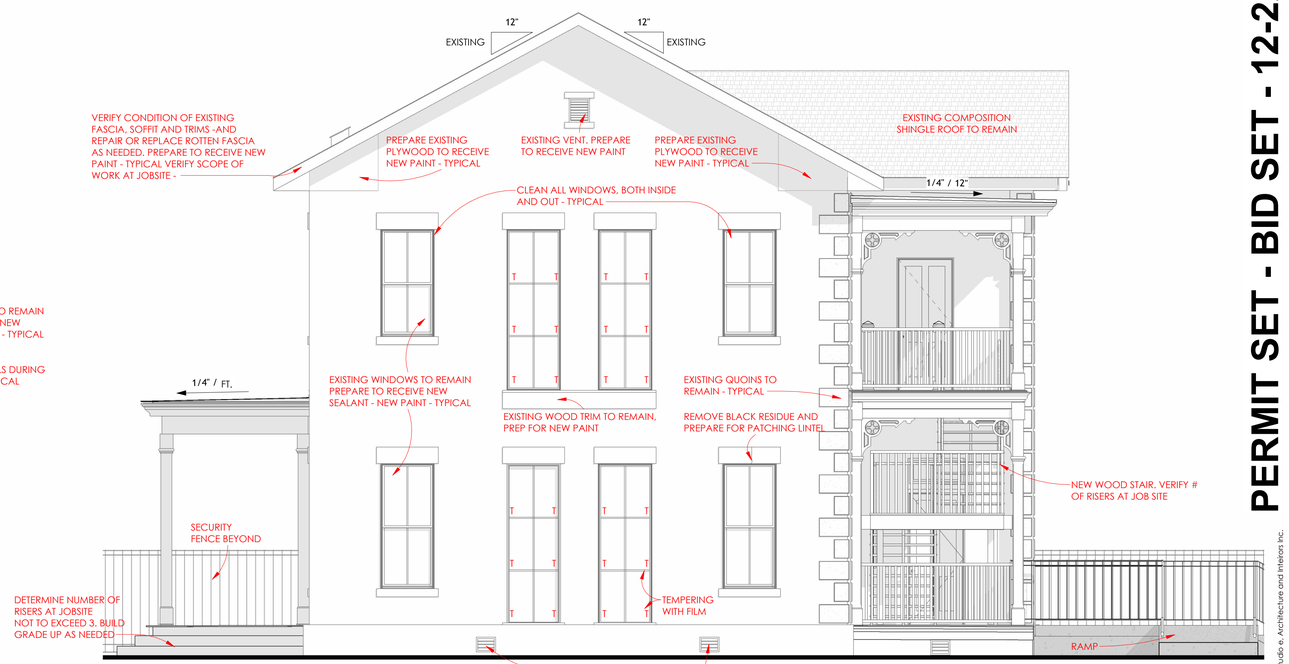
3 REVISED SOUTH ELEVATION
1/4" = 1'-0"



2 REVISED WEST ELEVATION
1/4" = 1'-0"



1 REVISED NORTH ELEVATION
1/4" = 1'-0"
T= TEMPERING FILM



4 REVISED EAST ELEVATION
1/4" = 1'-0"
T= TEMPERING FILM

©COPYRIGHT 2025 Studio e, Architecture and Interiors Inc.

PERMIT SET - BID SET - 12-22-25

CASTROVILLE CATHOLIC SCHOOL
702 PARIS ST, CASTROVILLE, TX

REGISTERED ARCHITECT
JOAQUIN F. ESTRADA
9333
STATE OF TEXAS
12/22/25

Studio E
architecture & interiors inc.
8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of Studio E Architecture • Interiors CONSULTANTS

JOB NO: Project Number
DRAWN BY: Author
BID SET
ISSUE / REVISION:

No.	Date

12/22/25

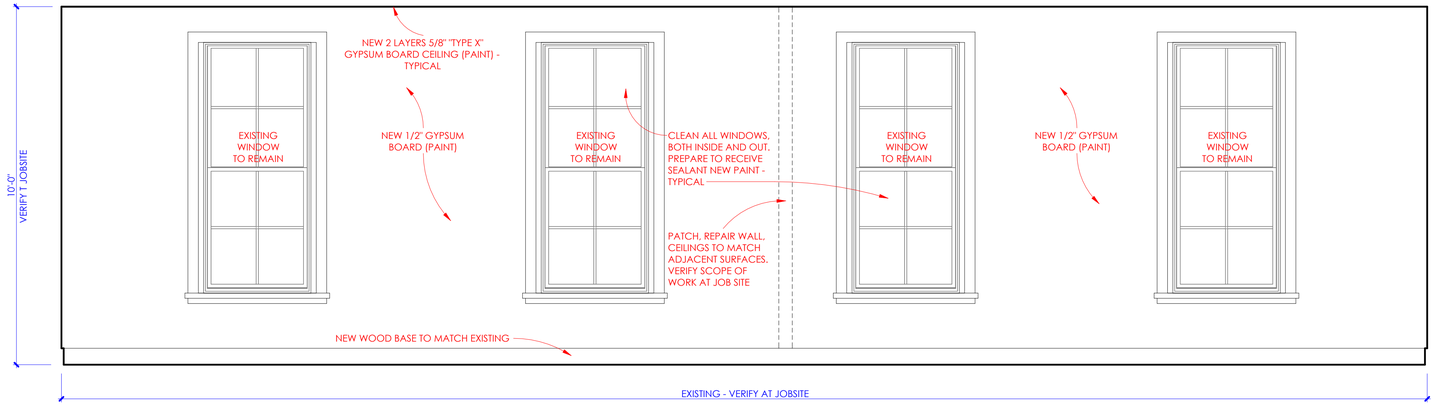
SHEET TITLE
EXTERIOR ELEVATIONS

A.08

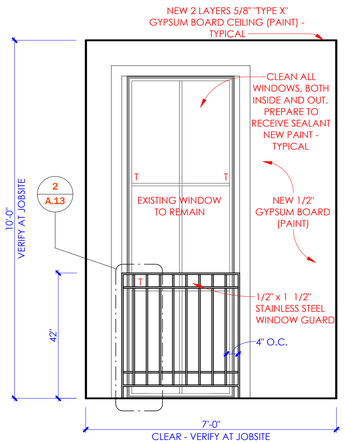
C:\Users\Emily\Documents\111025 CURRENT_damarisXHCK6.rvt
12/22/2025 2:14:41 PM

NOTES:

1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.

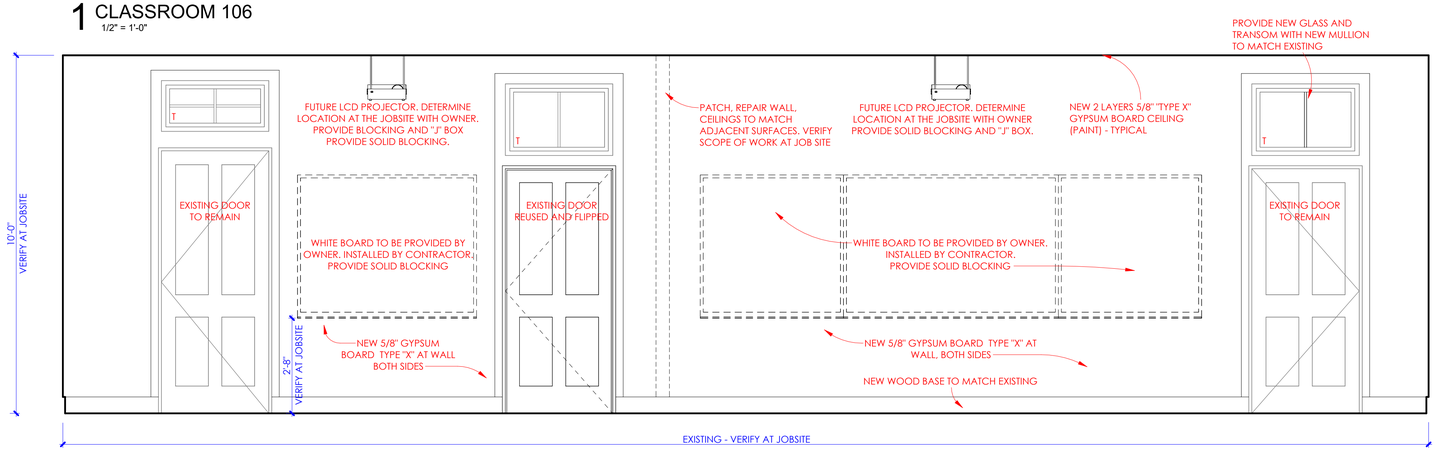


1 CLASSROOM 106
1/2" = 1'-0"



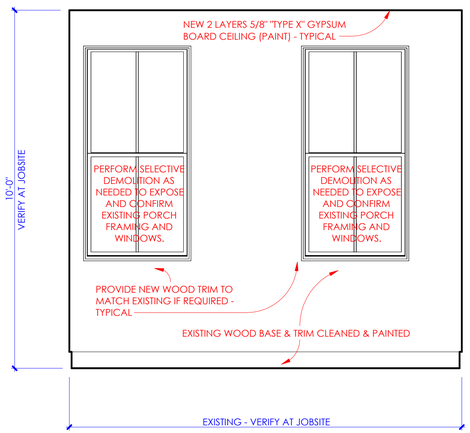
2 CUSTODIAN
1/2" = 1'-0"

T= TEMPERING FILM

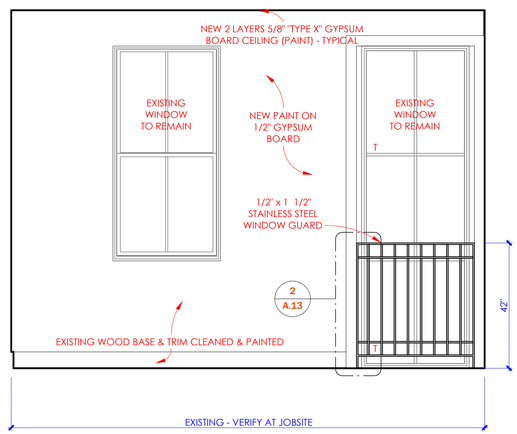


3 CLASSROOM 106
1/2" = 1'-0"

T= TEMPERING FILM

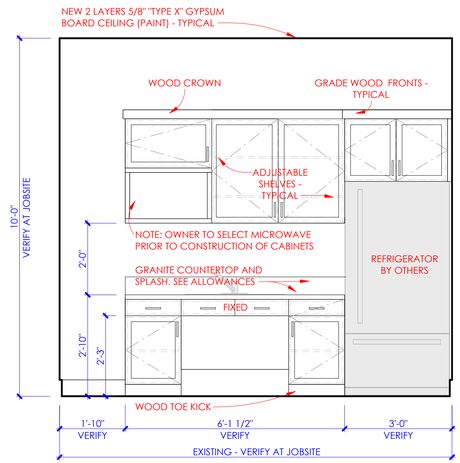


4 OFFICE 202
1/2" = 1'-0"



5 OFFICE 202
1/2" = 1'-0"

T= TEMPERING FILM



6 OFFICE 202
1/2" = 1'-0"

NOTES:

- CONTRACTOR TO COMPLY WITH ARCHITECTURAL BARRIERS ACT ACCESSIBILITY STANDARDS (ABAAS) IN ADDITION TO TAS/ADA REQUIREMENTS AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.
- REFER TO SHEET A.02 ACCESIBILITY DETAILS FOR TYPICAL PLUMBING FIXTURES AND ACCESORIES MOUNTING HEIGHTS.
- ALL FURNITURE, APPLIANCES, PLUMBING FIXTURES AND ACCESORIES TO BE SELECTED BY OWNER.

©COPYRIGHT 2025 Studio e, Architecture and Interiors Inc.

REGISTERED ARCHITECT
JOAQUIN F. CASH
9333
STATE OF TEXAS
12/22/25

Studio E
architecture & interiors inc.

8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

CASTROVILLE CATHOLIC SCHOOL
702 PARIS ST, CASTROVILLE, TX

PERMIT SET - BID SET - 12-22-25

JOB NO: Project Number
DRAWN BY: Author
BID SET
ISSUE / REVISION:

No.	Date

12/22/25

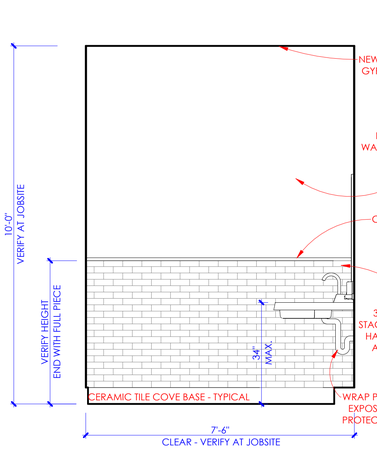
SHEET TITLE
INTERIOR ELEVATIONS

A.09

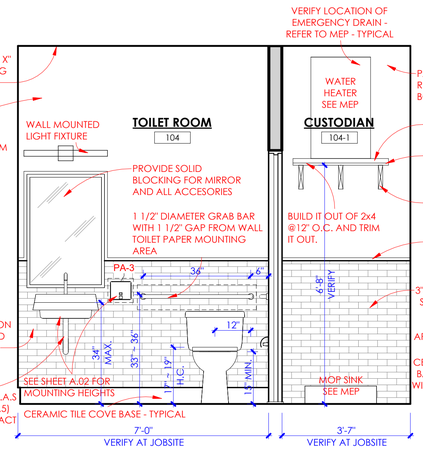
C:\Users\Emily\Documents\1111025 CURRENT_damarisXHCK6.rvt
12/22/2025 2:14:42 PM

NOTES:

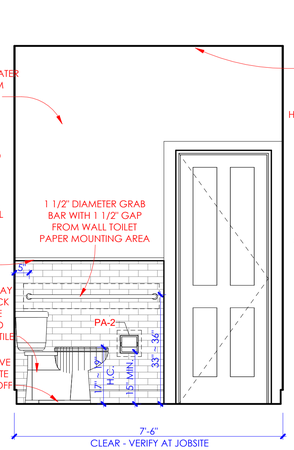
1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.



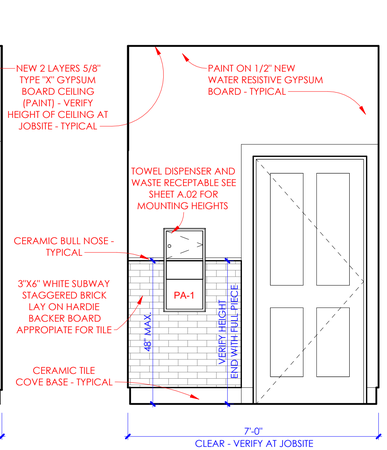
1 TOILET ROOM 104
1/2" = 1'-0"



2 TOILET ROOM 104
1/2" = 1'-0"



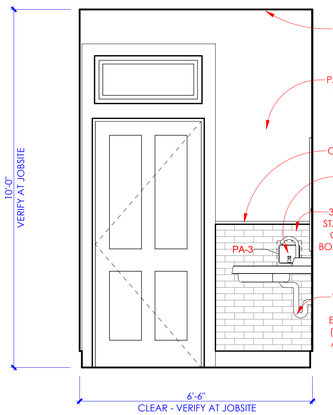
3 TOILET ROOM 104
1/2" = 1'-0"



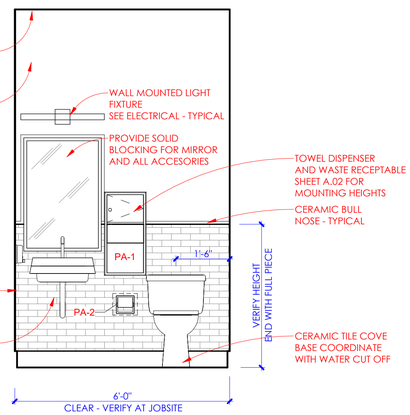
4 TOILET ROOM 104
1/2" = 1'-0"

NOTES:

- CONTRACTOR TO COMPLY WITH ARCHITECTURAL BARRIERS ACT ACCESSIBILITY STANDARDS (ABAAS) IN ADDITION TO TAS/ADA REQUIREMENTS AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.
- REFER TO SHEET A.02 ACCESSIBILITY DETAILS FOR TYPICAL PLUMBING FIXTURES AND ACCESORIES MOUNTING HEIGHTS.
- REFER TO MEP FOR RESTROOM SELECTIONS.
- PROVIDE SOLID BLOCKING FOR ALL PLUMBING ACCESSORIES.
- VERIFY SELECTIONS OF PLUMBING FIXTURES AND PLUMBING ACCESORIES WITH OWNER. VERIFY LOCATION WITH OWNER, ARCHITECT AND DESIGNER.



5 TOILET ROOM 105
1/2" = 1'-0"



6 TOILET ROOM 105
1/2" = 1'-0"

PLUMBING FIXTURE SCHEDULE				
TYPE MARK	**ITEM**	**MANUFACTURER**	**DESCRIPTION**	**NOTES**
PF1	WATER DISPENSER	ELKAY	LIV. BUILT-IN FILTERED REFRIGERATED WATER DISPENSER REMOTE CHILLER ASPEN WHITE	MODEL: LBWD06WHK

PLUMBING ACCESORIES SCHEDULE				
ACCESORY #	**ITEM**	**MANUFACTURER**	**DESCRIPTION**	**NOTES**
PA-1	PAPER TOWEL DISPENSER	BOBRICK	RECESSED PAPER TOWEL DISPENSER AND WASTE RECEPTABLE	MODEL: B-369
PA-2	TOILET TISSUE DISPENSER	BOBRICK	RECESSED TOILET TISSUE DISPENSER WITH HOOD	MODEL: B-6697
PA-3	SOAP DISPENSER	BOBRICK	SURFACE - MOUNTED SOAP DISPENSER	MODEL: 4112

REGISTERED ARCHITECT JOAQUIN F. ESTRADA 9333 STATE OF TEXAS
12/22/25

Studio E
architecture & interiors inc.
8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

CASTROVILLE CATHOLIC SCHOOL
702 PARIS ST, CASTROVILLE, TX

PERMIT SET - BID SET - 12-22-25

JOB NO: Project Number
DRAWN BY: Author
BID SET
ISSUE / REVISION:

No.	Date

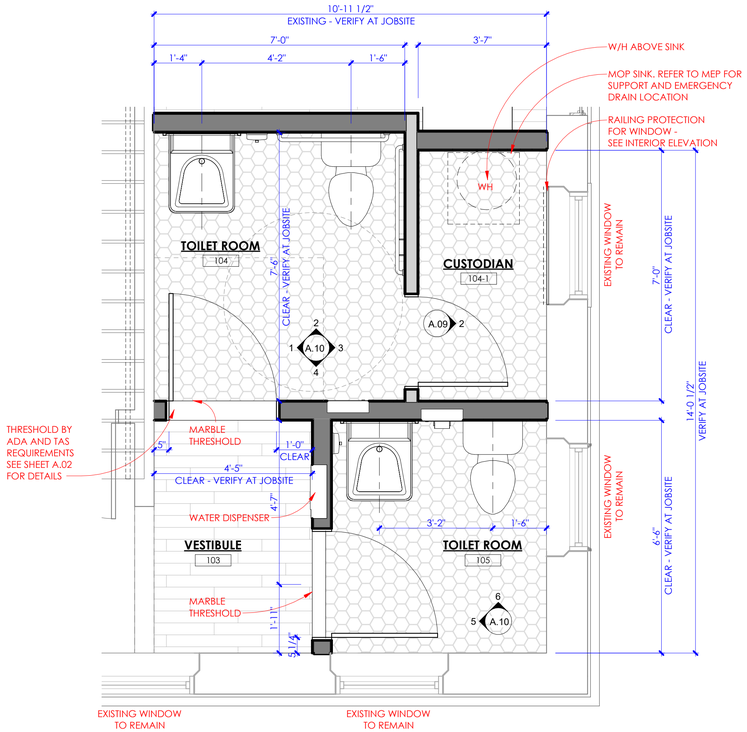
12/22/25

SHEET TITLE
INTERIOR ELEVATIONS

A.10

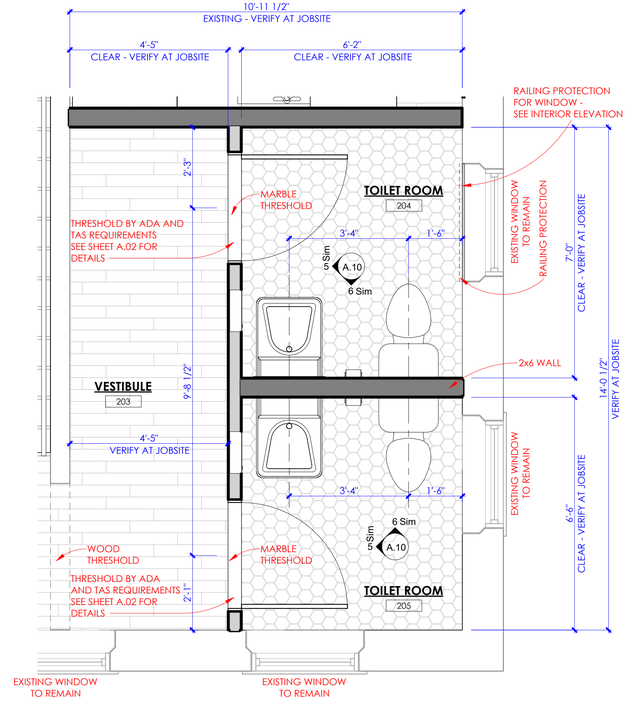
©COPYRIGHT 2025 Studio e, Architecture and Interiors Inc.

12/22/2025 2:14:43 PM C:\Users\Emily\Documents\1111025 CURRENT_damarisXHCK6.rvt



PLAN NORTH
TRUE NORTH

1 FIRST FLOOR TOILET ROOM - ENLARGED PLAN
1/2" = 1'-0"



PLAN NORTH
TRUE NORTH

2 SECOND FLOOR - TOILET ROOM - ENLARGED PLAN
1/2" = 1'-0"

NOTES:

1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.

WALL LEGEND

- EXISTING WOOD STUD
- DEMOLISH
- NEW 2 x 6 WOOD STUDS WITH SOUND BATT INSULATION
- NEW 2 x 4 WOOD STUDS WITH SOUND BATT INSULATION

PERMIT SET - BID SET - 12-22-25

©COPYRIGHT 2025 Studio e, Architecture and Interiors Inc.

REGISTERED ARCHITECT JOAQUIN F. ESTRADA 29333 STATE OF TEXAS
12/22/25

Studio E
architecture & interiors inc.

8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

CASTROVILLE CATHOLIC SCHOOL
702 PARIS ST, CASTROVILLE, TX

JOB NO: Project Number
DRAWN BY: Author
BID SET
ISSUE / REVISION:

No.	Date

12/22/25

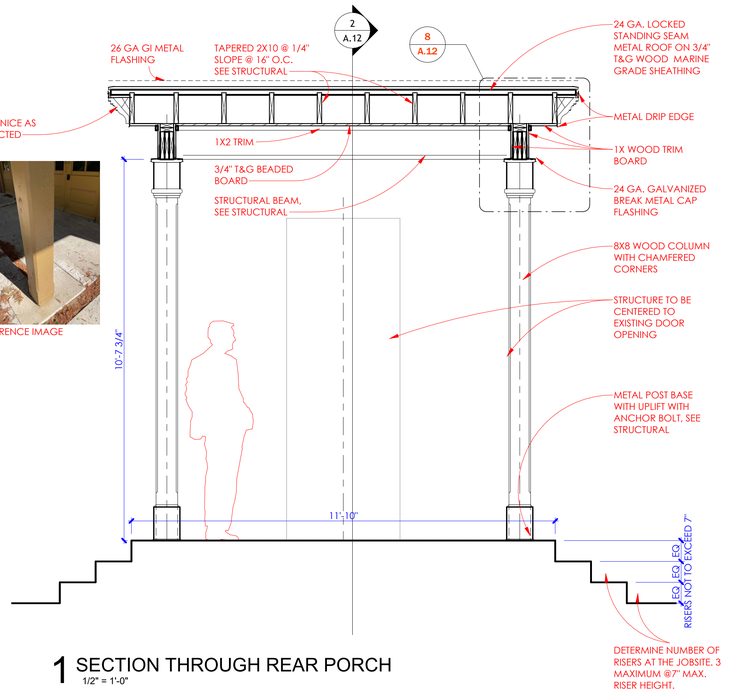
SHEET TITLE
ENLARGED PLANS

A.11

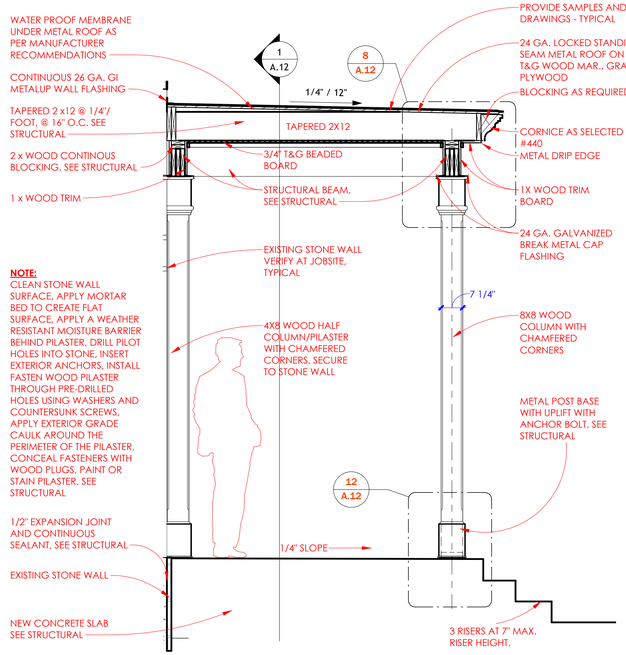
12/22/2025 2:14:44 PM C:\Users\Emily\Documents\111025 CURRENT_damarisXHCK6.rvt



REFERENCE IMAGE



1 SECTION THROUGH REAR PORCH
1/2" = 1'-0"

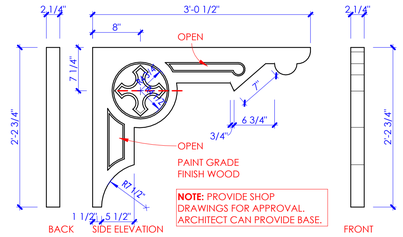


2 SECTION THROUGH REAR PORCH
1/2" = 1'-0"

NOTE:
CLEAN STONE WALL SURFACE, APPLY MORTAR BED TO CREATE FLAT SURFACE, APPLY A WEATHER RESISTANT MOISTURE BARRIER BEHIND PILASTER, DRILL PILOT HOLES INTO STONE, INSERT EXTERIOR ANCHORS, INSTALL FASTEN WOOD PILASTER THROUGH PRE-DRILLED HOLES USING WASHERS AND COUNTERSUNK SCREWS, APPLY EXTERIOR GRADE CAULK AROUND THE PERIMETER OF THE PILASTER, CONCEAL FASTENERS WITH WOOD PLUGS, PAINT OR STAIN PILASTER. SEE STRUCTURAL

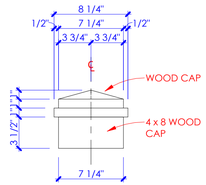
NOTES:

1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.

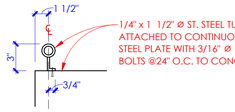


NOTE: PROVIDE SHOP DRAWINGS FOR APPROVAL. ARCHITECT CAN PROVIDE BASE.

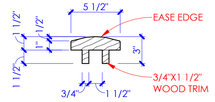
3 DETAIL - BRACKET
1" = 1'-0"



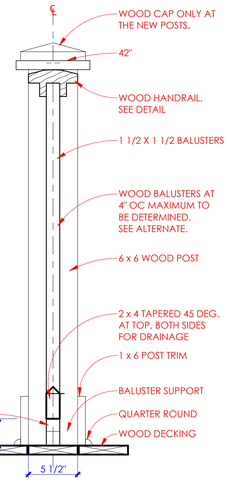
6 DETAIL - CAP
1 1/2" = 1'-0"



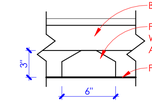
4 RAMP WHEEL STOP DETAIL
1 1/2" = 1'-0"



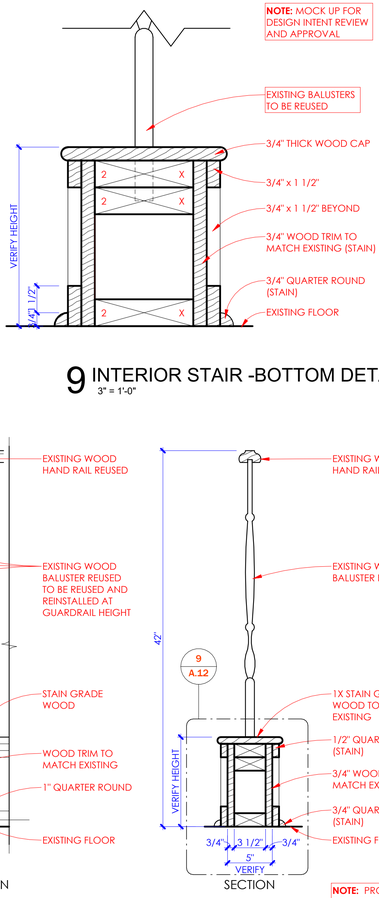
5 RAIL DETAIL
1 1/2" = 1'-0"



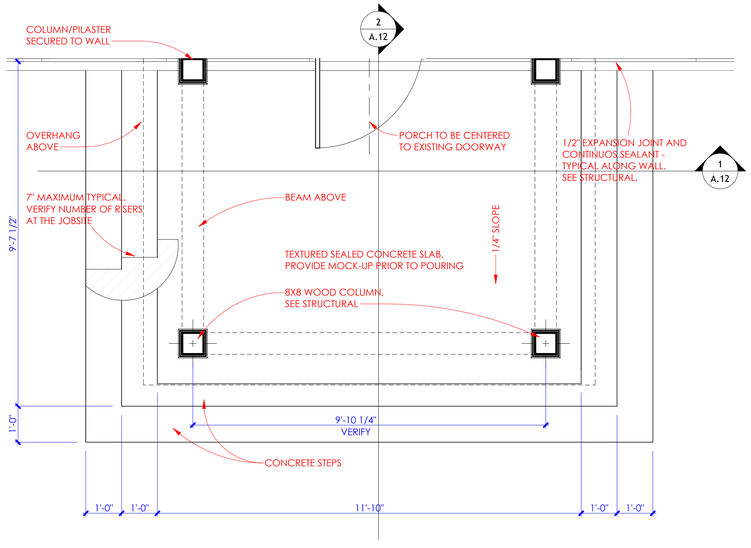
10 RAILING DETAIL AT PORCH
1 1/2" = 1'-0"
SEE STRUCTURAL FOR BEAM UNDERNEATH



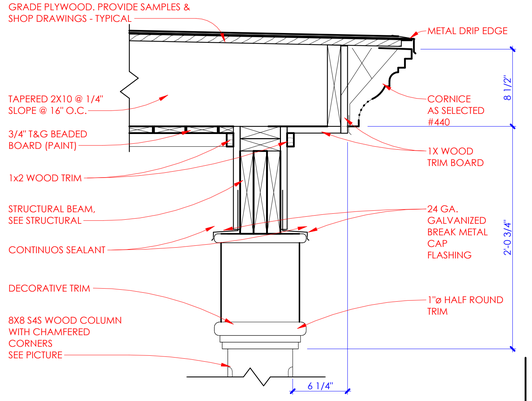
11 FOOT BLOCK @ BOTTOM RAIL
1 1/2" = 1'-0"



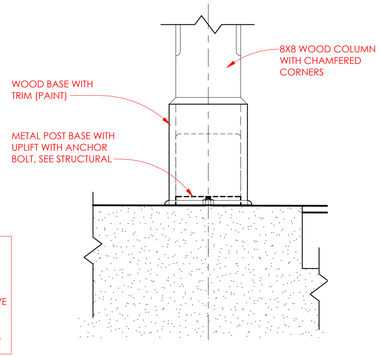
9 INTERIOR STAIR -BOTTOM DETAIL



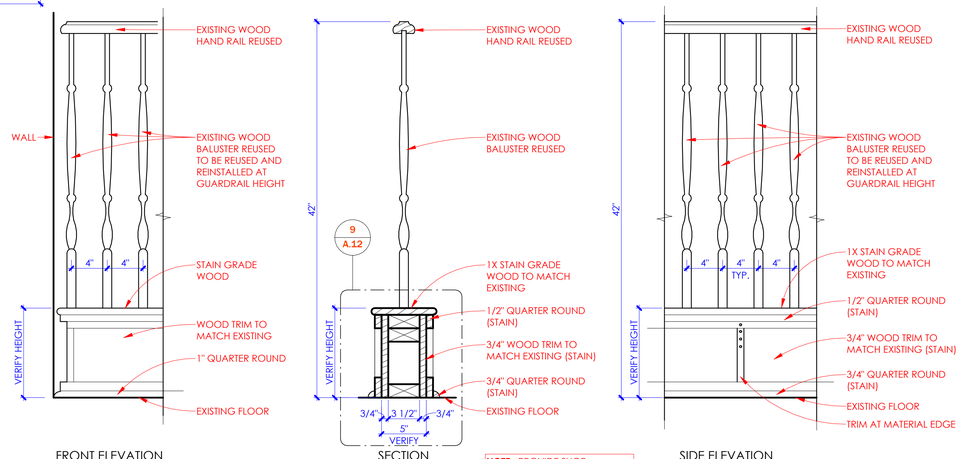
7 REAR PORCH PLAN
1/2" = 1'-0"



8 TYPICAL POST CAPITAL @ PORCH
1 1/2" = 1'-0"



12 TYPICAL POST BASE @ PORCH
1 1/2" = 1'-0"



13 INTERIOR STAIR - 2ND FLOOR RAILING
1 1/2" = 1'-0"

NOTE:
- ALL EXTERIOR GRADE WOOD, PAINT GRADE #1

NOTE:

ALL WOOD TO BE PINE OR APPROVED EQUAL WITH NO DEFECTS, KNOTS, CUTS, CHECKS. PREPARE TO RECEIVE PAINT - TYPICAL

PROVIDE SHOP DRAWINGS & MOCK UP

NOTE: PROVIDE SHOP DRAWING AND MOCK UP FOR APPROVAL PRIOR TO INSTALL

Studio E
architecture & interiors inc.
8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

12/22/25

CASTROVILLE CATHOLIC SCHOOL
702 PARIS ST, CASTROVILLE, TX

PERMIT SET - BID SET - 12-22-25

JOB NO: Project Number
DRAWN BY: Author
BID SET
ISSUE / REVISION:

No.	Date

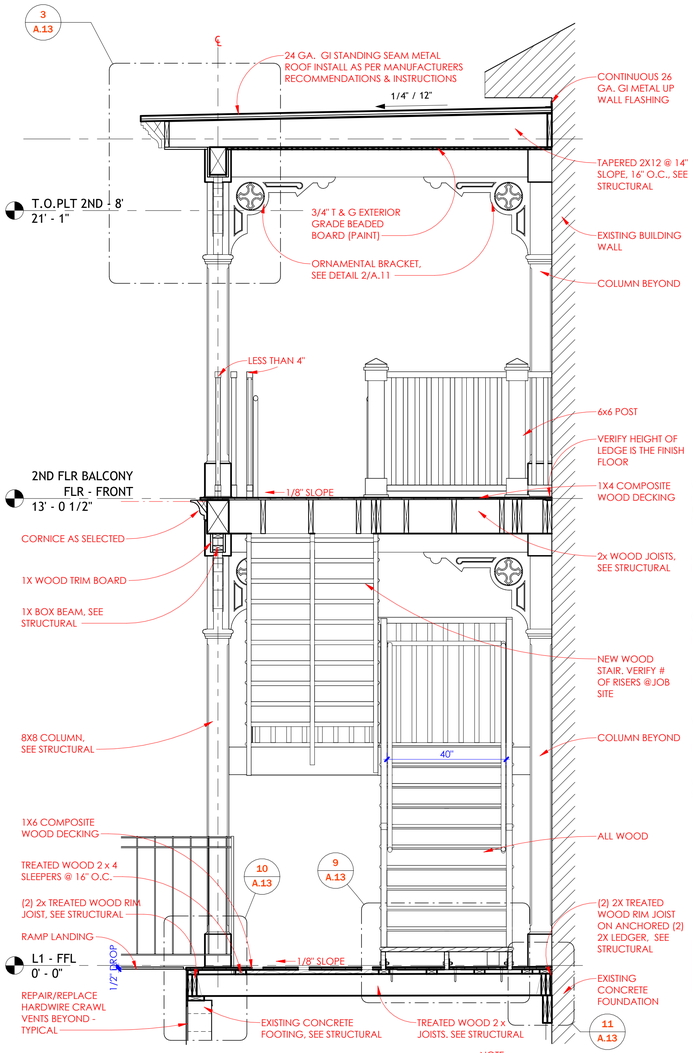
12/22/2025

SHEET TITLE
DETAILS

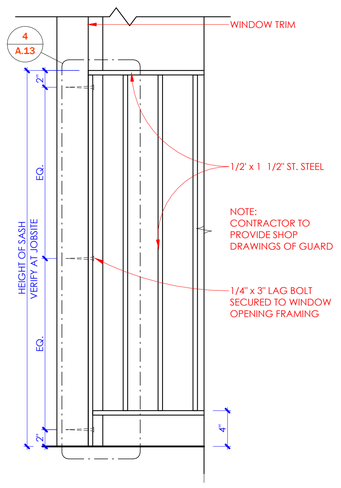
A.12

©COPYRIGHT 2025 Studio e. Architecture and Interiors Inc.

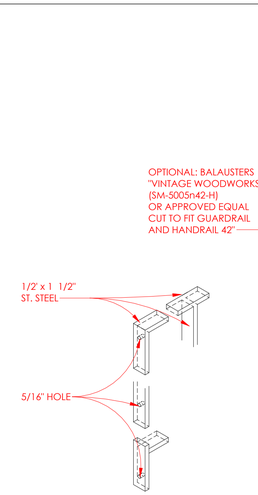
12/22/2025 2:14:45 PM C:\Users\Emily\Documents\111025 CURRENT_damarisXHCK6.rvt



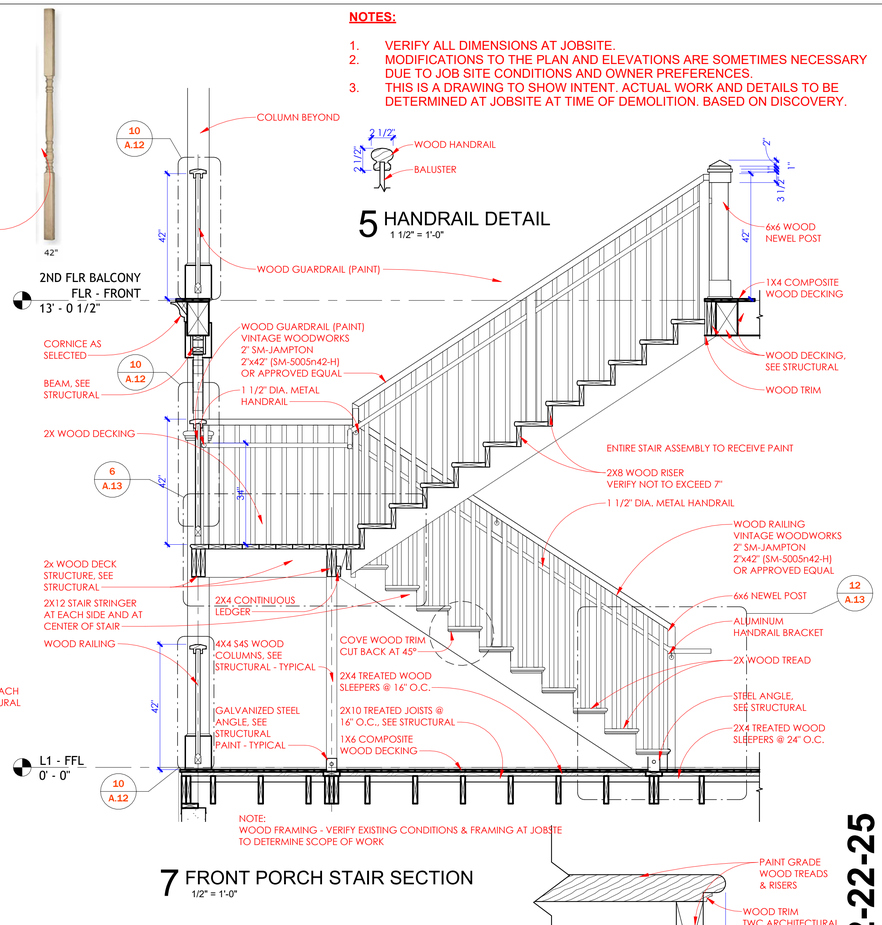
1 FRONT PORCH DETAIL - ALTERNATE 1
1/2" = 1'-0"



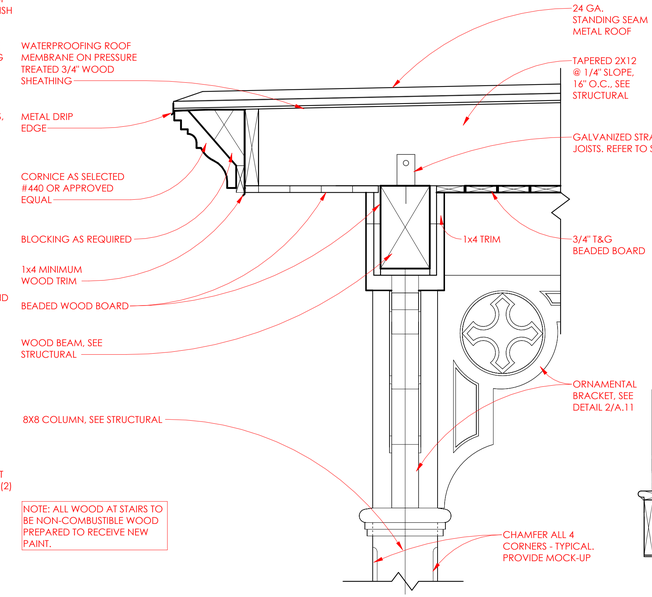
2 WINDOW GUARD
1 1/2" = 1'-0"



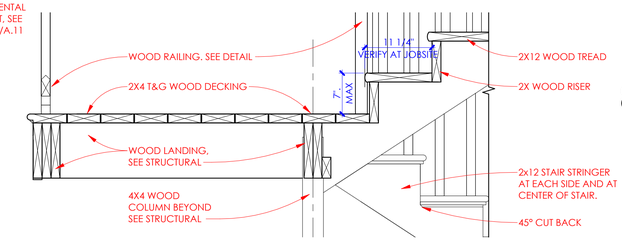
4 WINDOW GUARD DETAIL
1 1/2" = 1'-0"



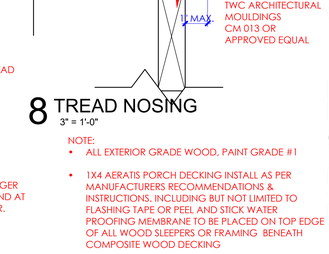
7 FRONT PORCH STAIR SECTION
1/2" = 1'-0"



3 DETAIL - PORCH ROOF OVERHANG
1 1/2" = 1'-0"

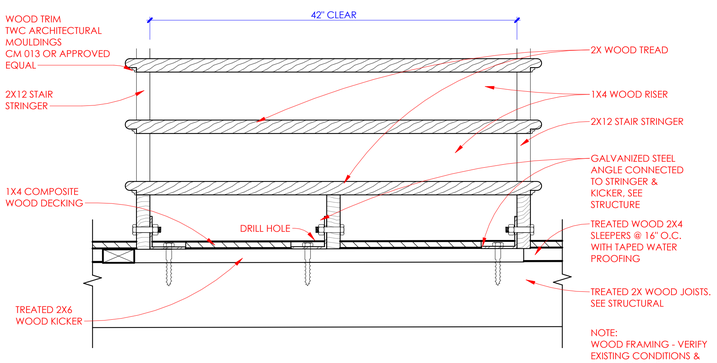


6 FRONT PORCH STAIR LANDING DETAIL
1" = 1'-0"

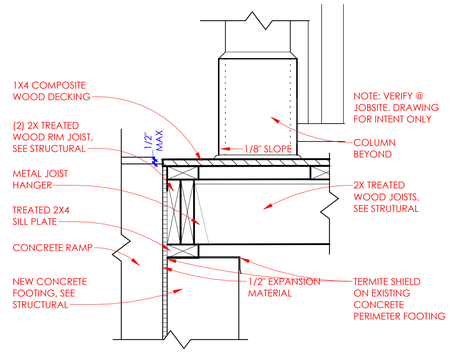


8 TREAD NOSING
3" = 1'-0"

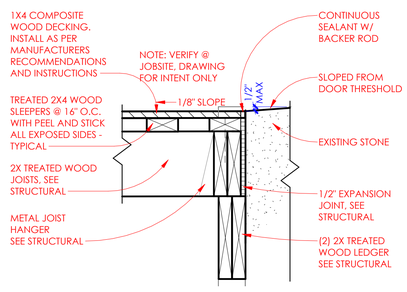
NOTE:
- ALL EXTERIOR GRADE WOOD, PAINT GRADE #1
- 1X4 AERATIS PORCH DECKING INSTALL AS PER MANUFACTURERS RECOMMENDATIONS & INSTRUCTIONS. INCLUDING BUT NOT LIMITED TO FLASHING TAPE OR PEEL AND STICK WATER PROOFING MEMBRANE TO BE PLACED ON TOP EDGE OF ALL WOOD SLEEPERS OR FRAMING BENEATH COMPOSITE WOOD DECKING
- CONTRACTOR TO VERIFY EXISTING WOOD FRAMING CONDITIONS AND FRAMING AT JOBSITE



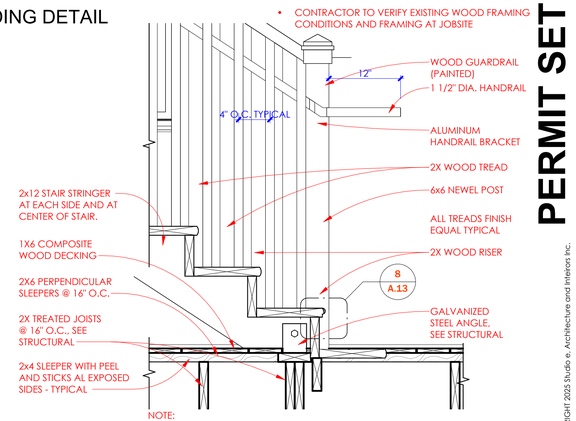
9 FRONT PORCH STAIR SECTION DETAIL@
1 1/2" = 1'-0"



10 PORCH TRANSITION DETAIL @ RAMP
1 1/2" = 1'-0"



11 TYPICAL PORCH DETAIL @ TRANSITION
1 1/2" = 1'-0"



12 FRONT PORCH STAIR SECTION DETAIL
1" = 1'-0"

©COPYRIGHT 2025 Studio e, Architecture and Interiors Inc.

REGISTERED ARCHITECT JOAQUIN F. ESTRADA 19333 STATE OF TEXAS
12/22/25

Studio E
architecture & interiors inc.
8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

CASTROVILLE CATHOLIC SCHOOL
702 PARIS ST, CASTROVILLE, TX

PERMIT SET - BID SET - 12-22-25

JOB NO:	Project Number
DRAWN BY:	Author
BID SET	
ISSUE / REVISION:	

No.	Date

12/22/25

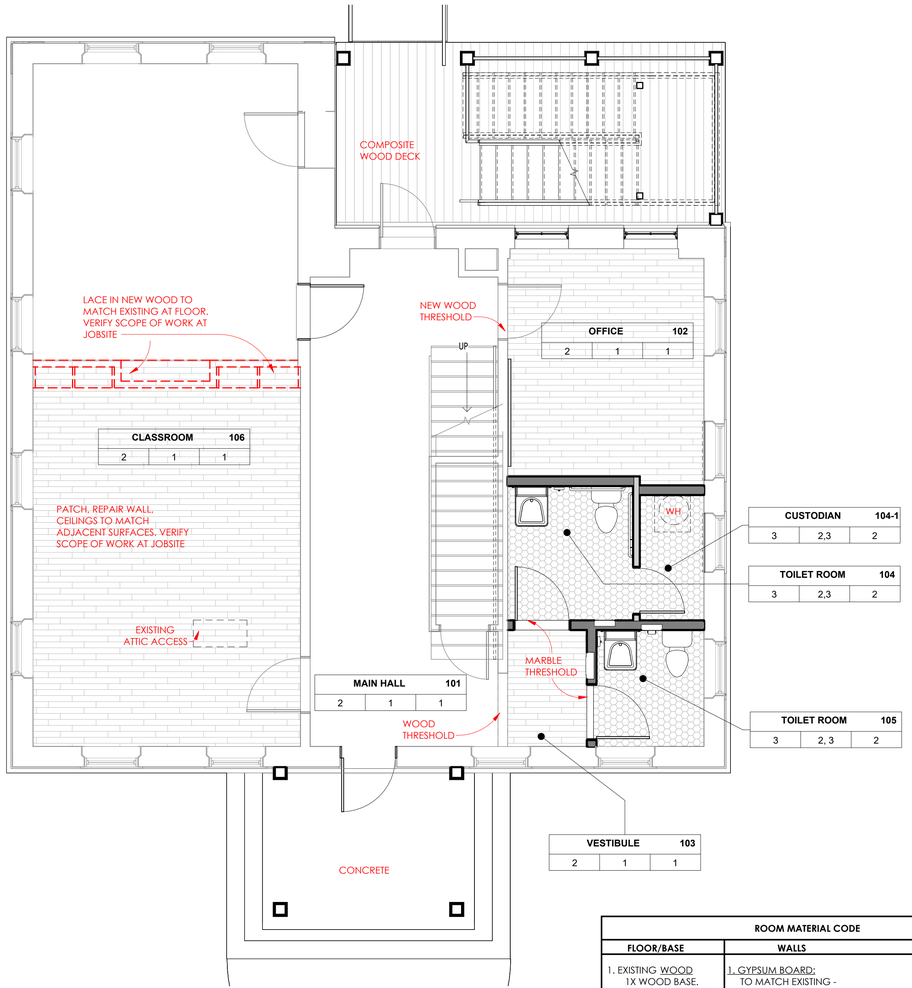
SHEET TITLE
DETAILS

A.13

C:\Users\Emily\Documents\111025 CURRENT_damarisXHCK6.rvt
12/22/2025 2:14:47 PM

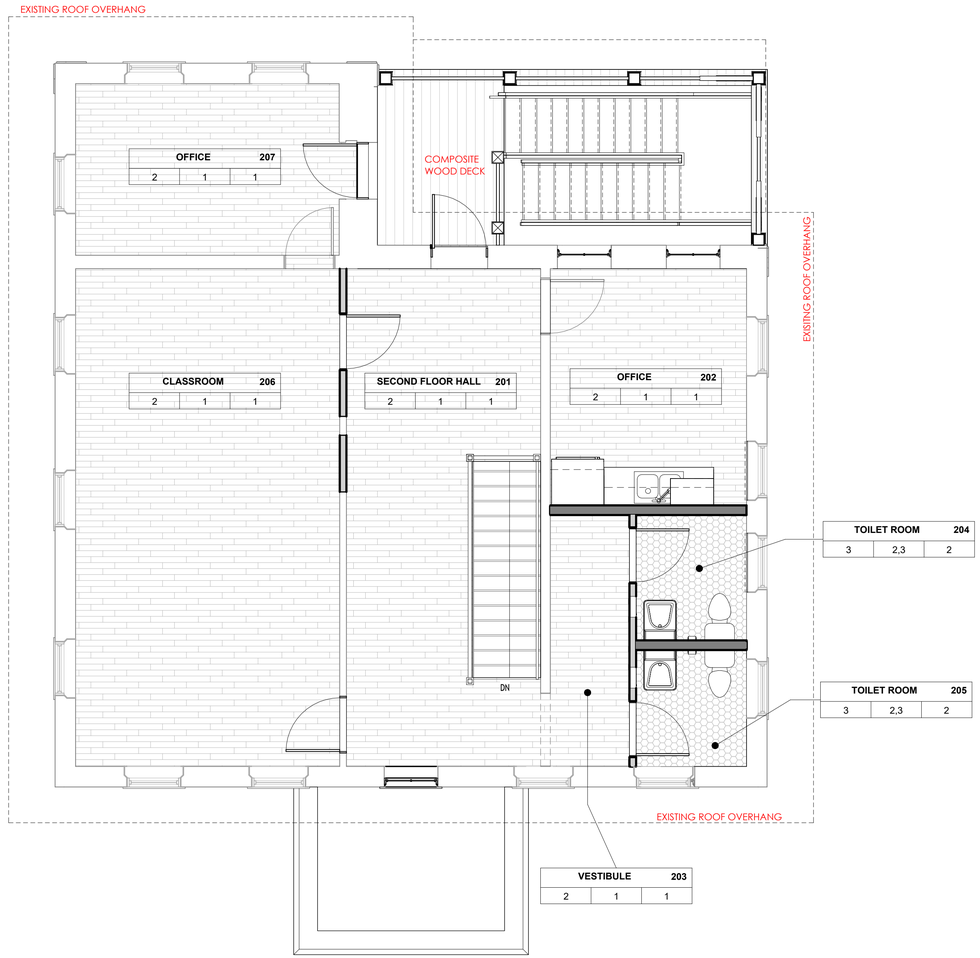
NOTES:

1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.



PLAN NORTH / TRUE NORTH

1 FIRST FLOOR PLAN- PAINT SCHEDULE
1/4" = 1'-0"

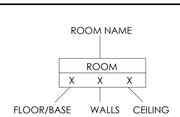


PLAN NORTH / TRUE NORTH

2 SECOND FLOOR PLAN- PAINT SCHEDULE
PLAN
1/4" = 1'-0"

ROOM MATERIAL CODE

FLOOR/BASE	WALLS	CEILING
1. EXISTING WOOD 1X WOOD BASE. VERIFY AT JOBSITE 2. NEW WOOD 1X WOOD BASE VERIFY AT JOBSITE 3. TILE MEROLA TILE MADISON 1X1 HEXAGON PENNY FLOOR AND - COVE BASE	1. GYPSUM BOARD: TO MATCH EXISTING - SHERWIN WILLIAMS SW 6204 SEA SALT 2. WATER RESISTIVE GYPSUM BOARD : TAPE, FLOAT, SMOOTH FINISH AND PAINT - SHERWIN WILLIAMS - SW 6189 OPALINE. 3. CERAMIC TILE : MEROLA 3"x6" RECTANGLE SUBWAY TILE WITH BULLNOSE TRIM - SATIN ON HARDIBOARD BACKER BOARD OR APPROVED EQUAL	1. GYPSUM BOARD : TO MATCH EXISTING - SHERWIN WILLIAMS - SW 7757 HIGH REFLECTIVE WHITE. 2. WATER RESISTIVE GYPSUM BOARD : TAPE, FLOAT, SMOOTH FINISH AND PAINT - SHERWIN WILLIAMS - SW 7757. HIGH REFLECTIVE WHITE
TRIM / DOORS / WOOD WORK - SHERWIN WILLIAMS - SW 7551 GREEK VILLA		



WALL FINISH SELECTIONS (PROVIDE MOCK-UP SAMPLES)

1. WALL FINISHES: PROVIDE GYPSUM BOARD FOR ALL WALLS AND CEILINGS AS SHOWN ON DRAWINGS. PROVIDE MOCK-UPS FOR FINISH FOR APPROVAL.

2. PAINT: PROVIDE A MINIMUM OF 3 COLOR CHOICES OF EGGSHELL LATEX PAINT FOR ALL LIVING SPACES OVER GYPSUM BOARD, AND SEMI-GLOSS PAINT FOR ALL BATHROOM LOCATIONS.

3. WOOD BASE: VERIFY LOCATION OF EXISTING AND NEW BASE. NEW BASE TO BE SOLID 3/4" PINE OR POPLAR (NO MDF). BASE TO BE PAINTED WITH SEMI-GLOSS LATEX PAINT. NOTE: MATCH BASE OF CABINETRY COLOR AND MATERIAL TO SELECTED CABINET FINISH.

CEILING FINISH SELECTIONS (PROVIDE MOCK UP SAMPLES)

1. GYPSUM BOARD CEILINGS: PROVIDE GYPSUM BOARD WITH SMOOTH FINISH READY FOR PAINT.

REGISTERED ARCHITECT JOAQUIN F. ESTRADA 9333 STATE OF TEXAS
12/22/25

Studio E
architecture & interiors inc.

8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are Copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

CASTROVILLE CATHOLIC SCHOOL
702 PARIS ST, CASTROVILLE, TX

PERMIT SET - BID SET - 12-22-25

JOB NO: Project Number
DRAWN BY: Author
BID SET
ISSUE / REVISION:

No.	Date

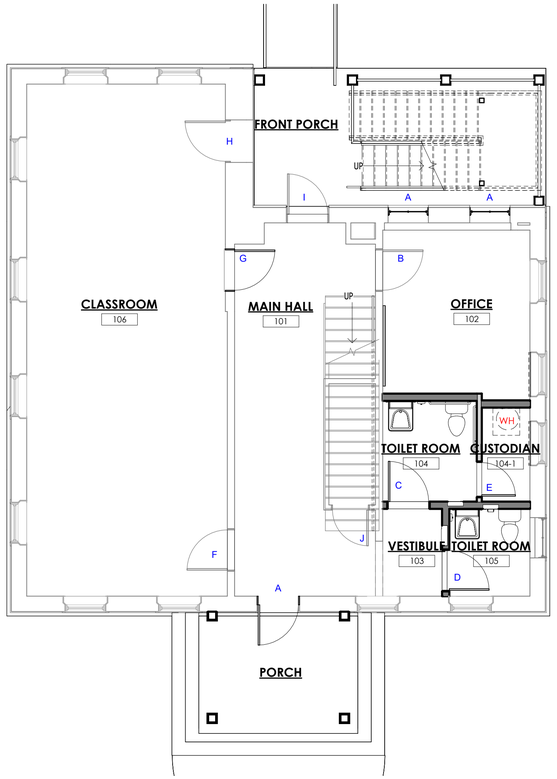
12/22/25

SHEET TITLE
PAINT SCHEDULE PLANS

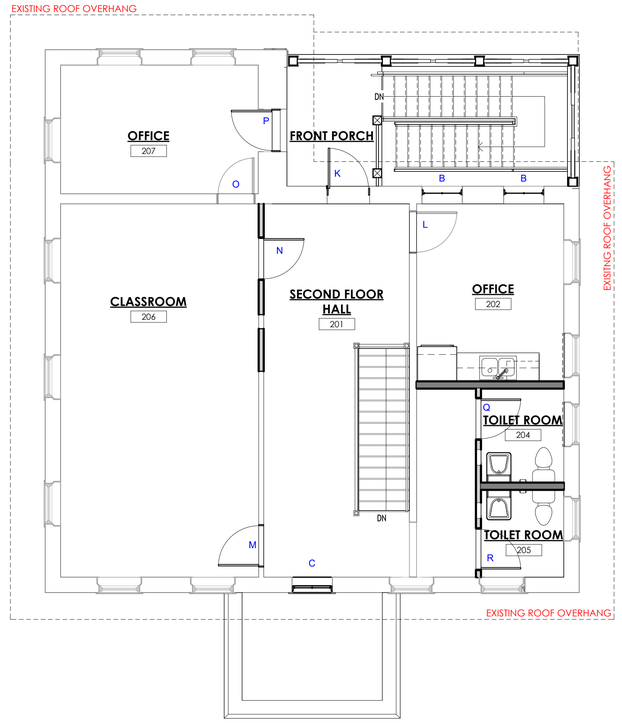
A.14

©COPYRIGHT 2025 Studio e, Architecture and Interiors Inc.

12/22/2025 2:14:48 PM C:\Users\Emily\Documents\1111025 CURRENT_damarisXHCK6.rvt



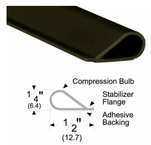
1 FIRST FLOOR DOOR AND WINDOW SCHEDULE
3/16" = 1'-0"



2 SECOND FLOOR DOOR AND WINDOW SCHEDULE
3/16" = 1'-0"

NOTES:

1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.



PEMKO S88 ADHESIVE - BACKED FIRE / SMOKE SILICONE SEAL PERIMETER GASKETING - OR APPROVED EQUAL FOR INTERIOR DOORS. COORDINATE WITH EXISTING DOORS.



ED900 DOOR STOP - OR APPROVED EQUAL FOR DOORS - VERIFY WITH OWNER AND ARCHITECT. COORDINATE WITH EXISTING DOORS.



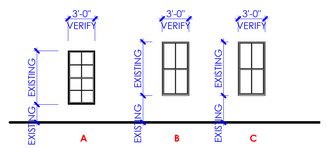
CROSS BAR PANIC EXIT DEVICE, UL PANIC RATED OR APPROVED EQUAL, MUST MEET ADA REQUIREMENTS. COORDINATE WITH EXISTING DOORS.

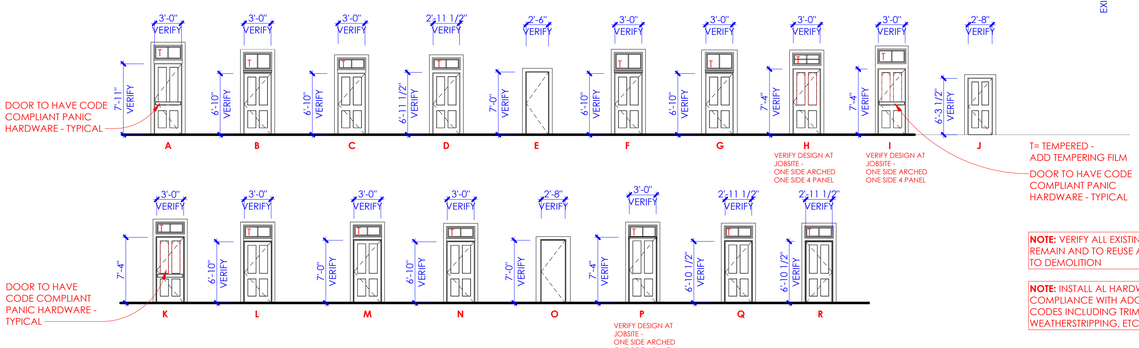
DOOR SCHEDULE

TYPE MARK	WIDTH	HEIGHT	COMMENTS	FROM ROOM	TO ROOM
L1 - FFL					
A	3' - 0"	7' - 11"	EXISTING DOOR - REUSED AND FLIPPED	PORCH	MAIN HALL
B	3' - 0"	6' - 10"	EXISTING DOOR TO REMAIN	MAIN HALL	OFFICE
C	3' - 0"	6' - 10"	DOOR POTENTIALLY TO BE REUSED FROM EXISTING BATHROOMS	VESTIBULE	TOILET ROOM
D	2' - 11 1/2"	6' - 10 1/2"	DOOR POTENTIALLY TO BE REUSED FROM EXISTING BATHROOMS	VESTIBULE	TOILET ROOM
E	2' - 6"	7' - 0"	DOOR POTENTIALLY TO BE REUSED FROM EXISTING PANTRY	TOILET ROOM	CUSTODIAN
F	3' - 0"	6' - 10"	EXISTING DOOR TO REMAIN	MAIN HALL	CLASSROOM
G	3' - 0"	6' - 10"	DOOR - REUSED AND FLIPPED	MAIN HALL	CLASSROOM
H	3' - 0"	7' - 4"	EXISTING DOOR TO REMAIN	FRONT PORCH	CLASSROOM
I	3' - 0"	7' - 4"	REUSE DOOR SALVAGED FROM EXISTING DOORS REMOVED IN DEMOLITION AREAS	MAIN HALL	FRONT PORCH
J	2' - 8"	6' - 3 1/2"	EXISTING DOOR TO REMAIN	ELECTRICAL ROOM	MAIN HALL
L2 - FFL					
K	3' - 0"	7' - 4"	REUSE DOOR SALVAGED FROM EXISTING DOORS REMOVED IN DEMOLITION AREAS	FRONT PORCH	SECOND FLOOR HALL
L	3' - 0"	6' - 10"	EXISTING DOOR TO REMAIN	SECOND FLOOR HALL	OFFICE
M	3' - 0"	7' - 0"	EXISTING DOOR - REUSE AND FLIPPED	SECOND FLOOR HALL	CLASSROOM
N	3' - 0"	6' - 10"	REUSE DOOR SALVAGED FROM EXISTING DOORS REMOVED IN DEMOLITION AREAS	CLASSROOM	SECOND FLOOR HALL
O	2' - 8"	7' - 0"	EXISTING DOOR TO REMAIN	CLASSROOM	OFFICE
P	3' - 0"	7' - 4"	REUSE DOOR SALVAGED FROM EXISTING DOORS REMOVED IN DEMOLITION AREAS	OFFICE	FRONT PORCH
Q	2' - 11 1/2"	6' - 10 1/2"	REUSE DOOR SALVAGED FROM EXISTING DOORS REMOVED IN DEMOLITION AREAS	TOILET ROOM	VESTIBULE
R	2' - 11 1/2"	6' - 10 1/2"	REUSE DOOR SALVAGED FROM EXISTING DOORS REMOVED IN DEMOLITION AREAS	VESTIBULE	TOILET ROOM

WINDOW SCHEDULE

TYPE MARK	COUNT	WIDTH	HEIGHT	COMMENTS
L1 - FFL				
A	1	VERIFY	VERIFY	WINDOW MAY BE REUSED IF FOUND DURING SELECTIVE DEMOLITION AT FRONT PORCH WALL.
A	1	VERIFY	VERIFY	WINDOW MAY BE REUSED IF FOUND DURING SELECTIVE DEMOLITION AT FRONT PORCH WALL.
L2 - FFL				
B	1	VERIFY	VERIFY	WINDOW MAY BE REUSED IF FOUND DURING SELECTIVE DEMOLITION AT FRONT PORCH WALL.
B	1	VERIFY	VERIFY	WINDOW MAY BE REUSED IF FOUND DURING SELECTIVE DEMOLITION AT FRONT PORCH WALL.
C	1	VERIFY	VERIFY	IF POSSIBLE REUSE WINDOW SALVAGED FROM EXISTING WINDOWS REMOVED IN DEMOLITION AREAS. TO MATCH EXISTING





NOTE: VERIFY ALL EXISTING DOORS TO REMAIN AND TO REUSE AT THE JOBSITE PRIOR TO DEMOLITION

NOTE: INSTALL AL HARDWARE IN COMPLIANCE WITH ADOPTED AND LATEST CODES INCLUDING TRIMS, WEATHERSTRIPPING, ETC.

NOTE: VERIFY THE WIDTH AND HEIGHT OF ALL DOORS AND WINDOWS SCHEDULED FOR DEMOLITION TO DETERMINE THEIR SUITABILITY FOR REUSE AND RELOCATION IN OTHER DESIGNATED AREAS.

REGISTERED ARCHITECT JOAQUIN F. ESTRADA 19333 STATE OF TEXAS
12/22/25

Studio E
architecture & interiors inc.

8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

CASTROVILLE CATHOLIC SCHOOL
702 PARIS ST, CASTROVILLE, TX

PERMIT SET - BID SET - 12-22-25

JOB NO: Project Number
DRAWN BY: Author
BID SET
ISSUE / REVISION:

No.	Date

12/22/25

SHEET TITLE
DOOR AND WINDOW SCHEDULE

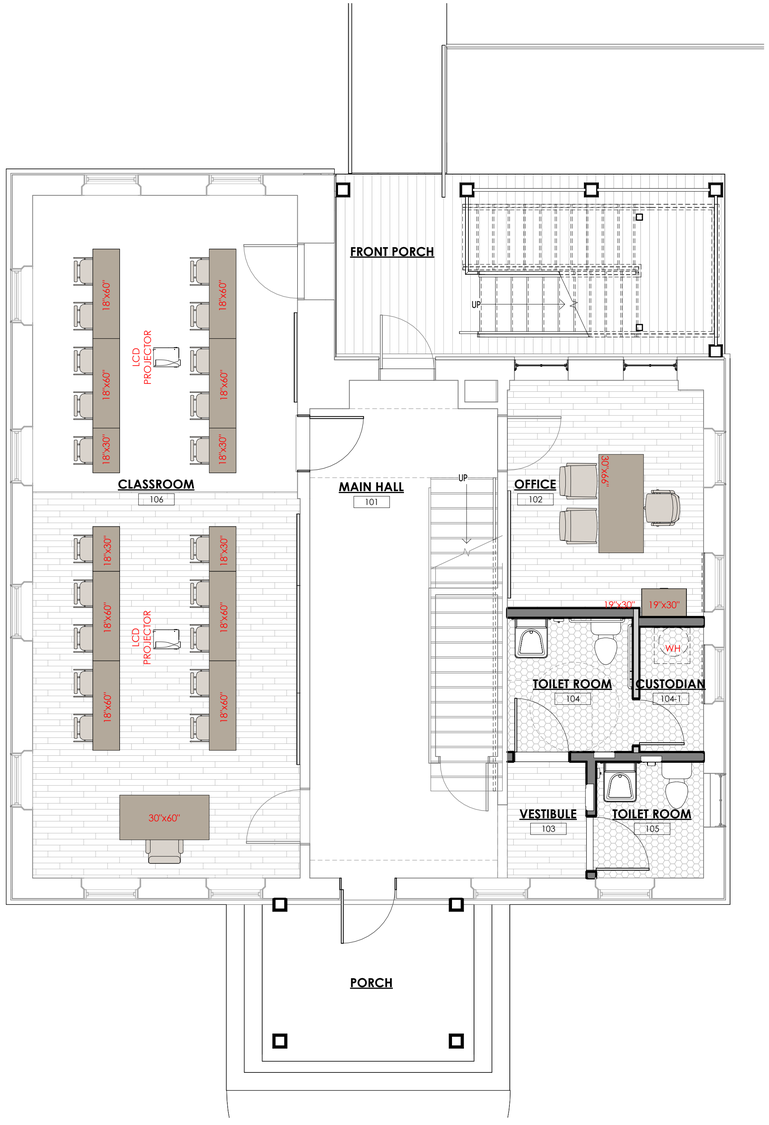
A.15

©COPYRIGHT 2025 Studio e, Architecture and Interiors Inc.

C:\Users\Emily\Documents\111025 CURRENT_damarisXHCK6.rvt
12/22/2025 2:14:50 PM

NOTES:

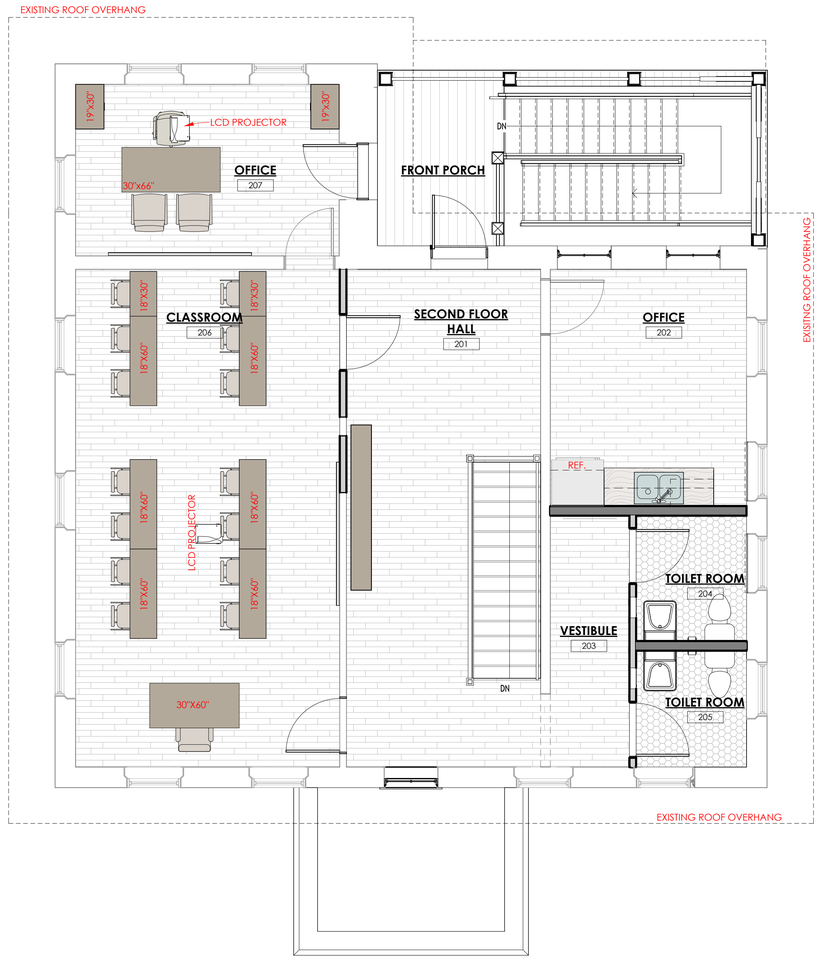
1. VERIFY ALL DIMENSIONS AT JOBSITE.
2. MODIFICATIONS TO THE PLAN AND ELEVATIONS ARE SOMETIMES NECESSARY DUE TO JOB SITE CONDITIONS AND OWNER PREFERENCES.
3. THIS IS A DRAWING TO SHOW INTENT. ACTUAL WORK AND DETAILS TO BE DETERMINED AT JOBSITE AT TIME OF DEMOLITION. BASED ON DISCOVERY.



PLAN NORTH / TRUE NORTH

1 FIRST FLOOR PLAN - SUGGESTED FURNITURE LAYOUT
1/4" = 1'-0"

NOTE: FURNITURE NOT IN CONTRACT



PLAN NORTH / TRUE NORTH

2 SECOND FLOOR PLAN - SUGGESTED FURNITURE LAYOUT
1/4" = 1'-0"

NOTE: FURNITURE NOT IN CONTRACT

REGISTERED ARCHITECT JOAQUIN F. ESTRADA 29333 STATE OF TEXAS
12/22/25

Studio E
architecture & interiors inc.

8118 Broadway
San Antonio, Texas 78209
210.733.5300 T

The record copy of this drawing is on file at the offices of Studio E Architecture • Interiors Inc.,
8118 Broadway San Antonio, Texas 78209
This document is under the authority of the named professional, registration number and date on the seal affixed above.
All designs, concepts and drawings are ©copyright of STUDIO E ARCHITECTURE • INTERIORS CONSULTANTS

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

PERMIT SET - BID SET - 12-22-25

JOB NO: Project Number
DRAWN BY: Author
BID SET
ISSUE / REVISION:

No.	Date

12/22/25

SHEET TITLE
SUGGESTED FURNITURE PLAN LAYOUT

A.16

©COPYRIGHT 2025 Studio e. Architecture and Interiors Inc.

C:\Users\Emily\Documents\111025 CURRENT_damarisXHCK6.rvt
12/22/2025 2:14:51 PM

UNDERGROUND UTILITY NOTE

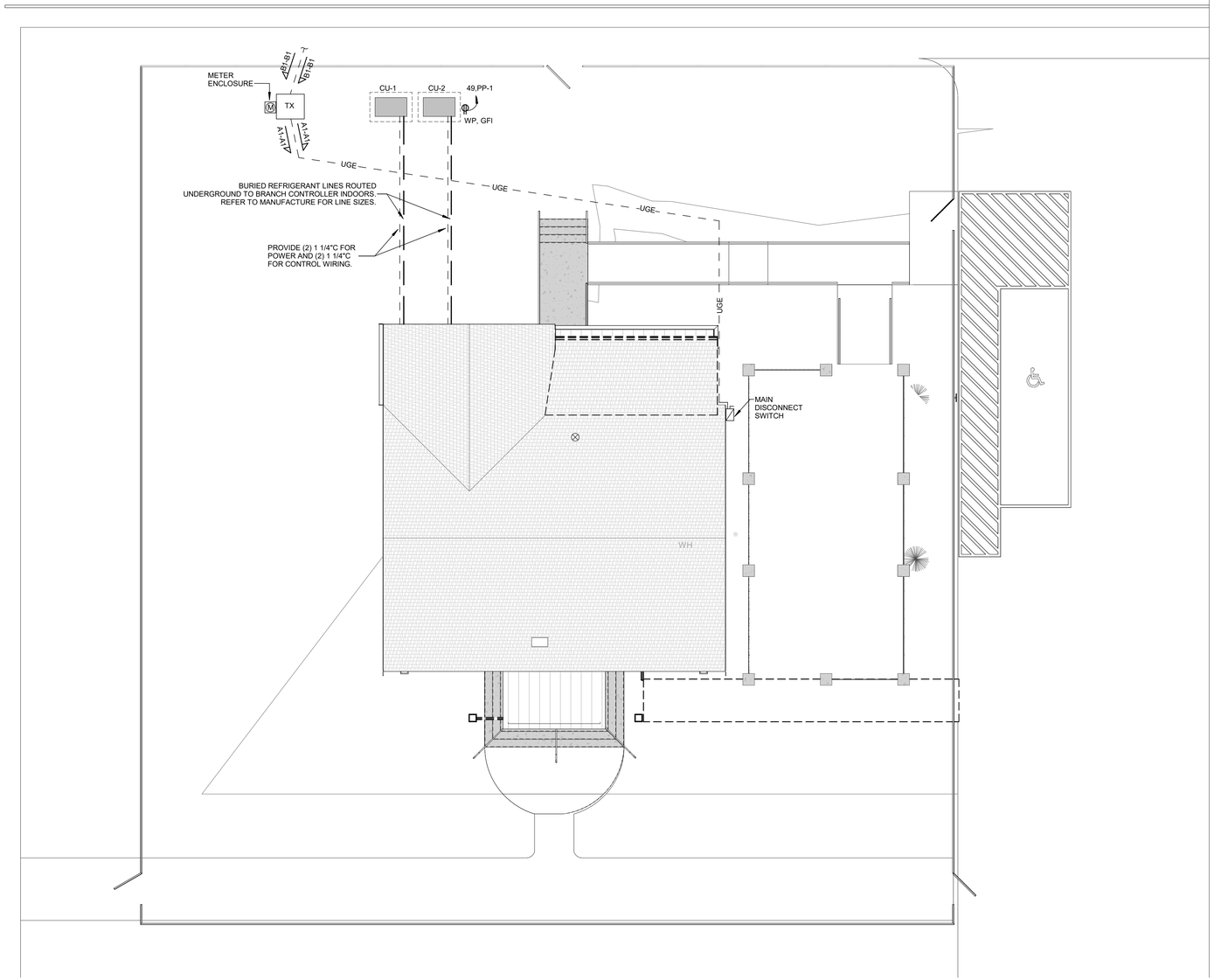
THE CONTRACTOR IS TO BE FULLY RESPONSIBLE FOR CONTACTING THE LOCAL CABLE TELEVISION COMPANY, POWER COMPANY, TELEPHONE COMPANY, GAS COMPANY, WATER AND SEWER COMPANY AND ANY OTHER UTILITY COMPANY WITHIN THE AREA PRIOR TO PROCEEDING WITH ANY EXCAVATION. BY LAW, THE CONTRACTOR IS REQUIRED TO CALL BEFORE DOING ANY EXCAVATION, DIGGING HOLES OR DRIVING POSTS REGARDLESS OF WHETHER IT IS WITHIN THE STREET LINE OR ON PRIVATE PROPERTY. OBTAIN INFORMATION REGARDING THE EXISTENCE AND LOCATION OF ANY UNDERGROUND FACILITIES BY CALLING 811.

WATER PREVENTION MEASURES

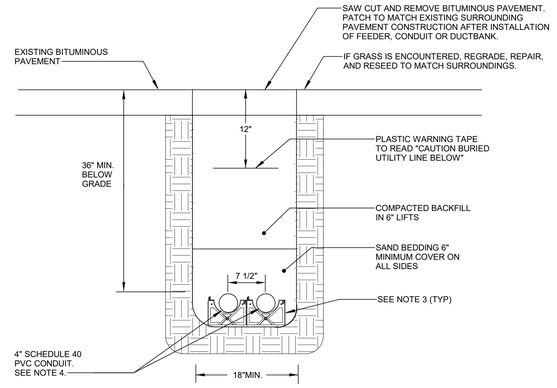
1. PITCH ALL UNDERGROUND CONDUITS SUCH THAT THEY ARE ANGLED DOWNWARDS AWAY FROM THE BUILDING. CONDUITS SHALL NOT BE PITCHED DOWNWARDS TOWARD THE BUILDING, ALLOWING GROUND WATER TO ENTER BUILDING.
2. PROVIDE FOAM SEALANT FOR ALL ACTIVE ELECTRIC CONDUITS CONTAINING CONDUCTORS, EQUAL TO POLYWATER FST. LOCATE AT INTERIOR END OF EACH ACTIVE CONDUIT (AT EXTERIOR ENCLOSURE AND WHERE CONDUIT TERMINATES IN BUILDING). FOR SPARE CONDUITS WITHOUT CONDUCTORS, PROVIDE CAP AT EACH END.
3. ALL CONDUITS (ACTIVE AND SPARE) SHALL SWEEP UPWARD A MINIMUM OF 12" ABOVE THE BASE OF HANDHOLES OR OTHER EXTERIOR STRUCTURES.
4. COORDINATE SWEEP AT TRANSFORMER PADS WITH UTILITY COMPANY DETAILS AND STANDARDS.

GENERAL SITE ELECTRICAL NOTES

1. REFER TO DRAWING E0.00 FOR SYMBOLS LIST.
2. REFER TO DRAWING E3.00 AND ES1.00 FOR SITE ELECTRICAL DETAILS.
3. WHERE UNDERGROUND UTILITIES ARE LIKELY TO BE ENCOUNTERED THE CONTRACTOR SHALL EXCAVATE BY HAND.
4. REFER TO LANDSCAPE & CIVIL SITE PLANS FOR FINAL LOCATIONS OF LIGHTING FIXTURES, FLAGPOLES AND OTHER SITE UTILITIES.
5. PROVIDE CONDUIT PLUGS WITH 1/4" NYLON DRAG LINE ATTACHED IN ALL EMPTY CONDUITS.
6. EXISTING OVERHEAD UTILITIES NOT SHOWN. COORDINATE WITH UTILITY COMPANY AS REQUIRED.



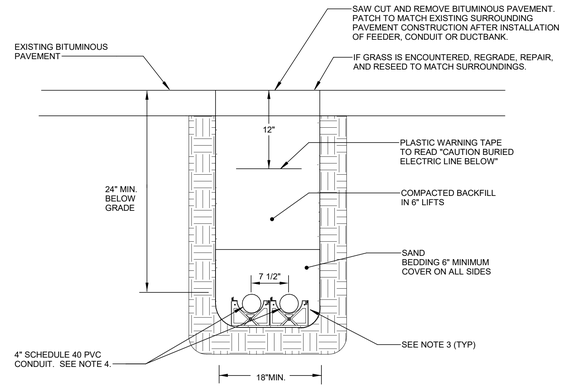
1 ELECTRICAL SITE PLAN
1/8" = 1'-0"



NOTES:

1. TYPICAL CONDUITS AND QUANTITIES SHOWN, REFER TO DRAWINGS FOR QUANTITIES AND SIZES.
2. COORDINATE AND GROUP CONDUITS IN COMMON TRENCH. SINGLE ROW SHOWN, MULTIPLE ROW DUCT BANKS ARE ACCEPTABLE, MAINTAINING SEPARATION DISTANCE REQUIREMENTS.
3. PROVIDE SUITABLE SEPARATORS AND CHAIRS 4 FT. MAX. ON CENTER, SET TO COMPACTED TRENCH BOTTOM AND BAND CONDUITS TOGETHER PRIOR TO BACKFILL OR PLACING CONCRETE.
4. REFER TO CONCRETE ENCASEMENT DETAIL WHERE CONCRETE ENCASEMENT IS REQUIRED. USE 'TYPE EB' SCHEDULE 40 PVC CONDUIT.

3 DUCTBANK DETAIL B1-B1
NTS



NOTES:

1. TYPICAL CONDUITS AND QUANTITIES SHOWN, REFER TO E4.00 FOR QUANTITIES AND SIZES.
2. COORDINATE AND GROUP CONDUITS IN COMMON TRENCH. SINGLE ROW SHOWN, MULTIPLE ROW DUCT BANKS ARE ACCEPTABLE, MAINTAINING SEPARATION DISTANCE REQUIREMENTS.
3. PROVIDE SUITABLE SEPARATORS AND CHAIRS 4 FT. MAX. ON CENTER, SET TO COMPACTED TRENCH BOTTOM AND BAND CONDUITS TOGETHER PRIOR TO BACKFILL OR PLACING CONCRETE.
4. REFER TO CONCRETE ENCASEMENT DETAIL WHERE CONCRETE ENCASEMENT IS REQUIRED. USE 'TYPE EB' SCHEDULE 40 PVC CONDUIT.

2 DUCTBANK DETAIL A1-A1
NTS

CES
CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

ELECTRICAL SITE PLAN

DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	DRW
CHECKED:	GYC
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:



SHEET NO.

ES1.00

GENERAL NOTES

1. GENERAL NOTES, SYMBOLS, AND DETAILS ARE APPLICABLE TO DRAWINGS WITHIN DIVISION 23.
2. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED, AND AS REQUIRED BY CODES.
3. DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO INDICATE CAPACITY, SIZE, APPROXIMATE LOCATION AND GENERAL ARRANGEMENT. COORDINATE LOCATIONS OF SYSTEMS AND COMPONENTS.
4. COORDINATE ROOF AND WALL PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS. COORDINATE SLAB PENETRATIONS WITH WORK OF OTHER SECTIONS.
5. RUN DUCTS AND PIPING CONCEALED UNLESS SPECIFIED OTHERWISE NOTED.
6. INSTALL SENSORS (TEMPERATURE, HUMIDITY, THERMOSTATS) AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY ARCHITECT. MOUNTING HEIGHT AFF SHALL COMPLY WITH ADA AND SHALL BE MOUNTED LEVEL WITH ADJACENT SWITCHES (IE LIGHT SWITCHES).
7. COORDINATE WORK OF THIS SECTION WITH THAT OF OTHER SECTIONS AND WITH ALL TRADES INVOLVED. PROVIDE OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS.
8. NOT ALL ACCESS DOORS HAVE BEEN SHOWN ON THE PLANS. PROVIDE ACCESS PANELS THROUGH BUILDING ASSEMBLIES TO SERVICE AND MAINTAIN EQUIPMENT UNLESS SUCH EQUIPMENT IS INSTALLED IN EXPOSED LOCATIONS OR ABOVE LAY-IN CEILINGS. COORDINATE THE LOCATION OF ACCESS DOORS AND PANELS AND VERIFY THE QUANTITY, SIZE, AND LOCATIONS AFTER THE SYSTEMS AND EQUIPMENT REQUIRING ACCESS HAVE BEEN INSTALLED AND PRIOR TO THE CLOSURE OF THE AFFECTED CEILINGS AND BUILDING ASSEMBLIES. SUBMIT ACCESS PANEL LOCATIONS FOR REVIEW.
9. AT SUBSTANTIAL COMPLETION, THE FOLLOWING ITEMS, NEW OR EXISTING, SHALL BE FULLY AND REASONABLY ACCESSIBLE: HVAC CONTROL BOXES, JUNCTION BOXES, VALVES, ELECTRICAL PANELS, FILTERS, BELTS, DISCONNECT SWITCHES AND ELEMENTS OF EQUIPMENT REQUIRING MAINTENANCE. "FULLY AND REASONABLY ACCESSIBLE" SHALL BE DEFINED AS NATIONAL ELECTRIC CODE REQUIRED CLEARANCE FOR POWERED EQUIPMENT AND CAPABLE OF BEING ACCESSED OR SERVICED WITHOUT REMOVING, MODIFYING OR DISTORTING OTHER COMPONENTS OF THE WORK. PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCE FOR ALL EQUIPMENT.
10. SUPPORT EQUIPMENT, PIPING AND DUCTWORK FROM BUILDING STRUCTURE OR WITH STEEL SUPPORTS AND PLATFORMS AS REQUIRED. PROVIDE VIBRATION ISOLATION FOR ROTATING EQUIPMENT, DUCTWORK, AND PIPING IN ACCORDANCE WITH THE SPECIFICATIONS.
11. CONTROL WIRING METHODS SHALL COMPLY WITH NEC, AND DIVISION 26 SPECIFICATIONS.
12. VERIFY EQUIPMENT CONNECTIONS WITH MANUFACTURER'S DRAWINGS. VERIFY AND PROVIDE FITTINGS TO TRANSITION TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE DIMENSIONS BEFORE FABRICATION.
13. PERFORM PRESSURE AND LEAKAGE TESTS BEFORE INSULATING DUCTWORK AND PIPING
14. MAINTAIN 6'-8" CLEARANCE TO THE UNDERSIDE OF PIPES, DUCTS, CONDUITS, SUSPENDED EQUIPMENT, ETC., THROUGHOUT ROUTES IN MECHANICAL ROOMS. MAINTAIN 3'-0" WIDE MEANS OF EGRESS IN MECHANICAL ROOMS.
15. WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH DUCTWORK OR PIPING, COORDINATE DUCTWORK AND PIPING LAYOUT WITH BEAM OPENING SIZE AND LOCATION. COORDINATION SHALL BE DONE PRIOR TO THE FABRICATION OF DUCTWORK, CUTTING OF PIPING, OR FABRICATING OF THE BEAMS.
16. MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND, AS SHOWN IN THE DETAILS FOR PIPING, DUCTWORK, AND EQUIPMENT, SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR.
17. AIR CONDITIONING CONDENSATE DRAIN LINES FROM EACH AIR HANDLING UNIT AND ROOFTOP UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET WITH P-TRAP, P TRAP ARRANGEMENT SHALL BE BASED ON THE UNIT (NEGATIVE OR POSITIVE PRESSURE).
18. INSTALL UNITS WITH CLEARANCE FOR SERVICE AS REQUIRED BY THE MANUFACTURER.

DUCTWORK LEGEND

SYMBOL	DESCRIPTION
12x6	RECTANGULAR DUCTWORK
12"ø	ROUND DUCTWORK
12/6	OVAL DUCTWORK
12x6	DUCTWORK SHOWN SINGLE LINE
	RECTANGULAR SUPPLY DUCTWORK TOWARDS (UP IN PLAN)
	ROUND SUPPLY DUCTWORK TOWARDS (UP IN PLAN)
	RECTANGULAR SUPPLY DUCTWORK AWAY (DOWN IN PLAN)
	ROUND SUPPLY DUCTWORK AWAY (DOWN IN PLAN)
	RECTANGULAR RETURN DUCTWORK TOWARDS (UP IN PLAN)
	ROUND RETURN DUCTWORK TOWARDS (UP IN PLAN)
	RECTANGULAR RETURN DUCTWORK AWAY (DOWN IN PLAN)
	ROUND RETURN DUCTWORK AWAY (DOWN IN PLAN)
	RECTANGULAR EXHAUST DUCTWORK TOWARDS (UP IN PLAN)
	ROUND EXHAUST DUCTWORK TOWARDS (UP IN PLAN)
	RECTANGULAR EXHAUST DUCTWORK AWAY (DOWN IN PLAN)
	ROUND EXHAUST DUCTWORK AWAY (DOWN IN PLAN)
	FLEXIBLE DUCT
	OPEN ENDED DUCT WITH WIRE MESH SCREEN
	CAPPED DUCT
	DUCT TRANSITION

AIR DEVICE LEGEND

SYMBOL	DESCRIPTION
	SUPPLY DIFFUSER
	RETURN GRILLE OR REGISTER
	EXHAUST GRILLE OR REGISTER
	SIDEWALL SUPPLY GRILLE
	SIDEWALL RETURN OR EXHAUST GRILLE OR REGISTER

DAMPER LEGEND

SYMBOL	DESCRIPTION
	MANUAL VOLUME DAMPER
MD	MOTORIZED CONTROL DAMPER
BD	BACKDRAFT DAMPER

MECHANICAL DUCTWORK NOTES

1. PROVIDE VOLUME DAMPERS IN EACH BRANCH DUCT FOR SUPPLY, RETURN, AND TOILET EXHAUST SYSTEMS. FOR DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS WITHOUT PROPER ACCESS FROM ARCHITECTURAL ACCESS DOOR, PROVIDE CABLE OPERATED DAMPERS IN A LOCATION WHERE CABLE IS REACHABLE FROM AIR OUTLET.
2. ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS. ALL SUPPLY AND RETURN DUCTWORK IS TO BE INSULATED.
3. PROVIDE FLEXIBLE CONNECTIONS FROM ALL MOVING EQUIPMENT (FANS, FAN COIL UNITS, ETC) AND DUCTWORK CONNECTIONS.

VRF GENERAL NOTES

VRF GENERAL NOTES:
1. MANUFACTURER MUST BE CERTIFIED, LISTED, AND LABELED PER AHRI 1230.
2. MANUFACTURER MUST MEET MINIMUM EFFICIENCIES AND PERFORMANCE EQUAL TO OR GREATER THAN THE BASIS OF DESIGN.
3. SUBMITTED PERFORMANCE DATA MUST BE FULLY DE-RATED FOR ALL COMPONENTS AND ACCESSORIES, INCLUDING BUT NOT LIMITED TO LINE LENGTH, VERTICAL SEPARATION, CONNECTION RATIO, DESIGN CONDITIONS (TEMPERATURE DB/WB), AND COIL COATINGS.
4. PROVIDE ALL CONTROL WIRING NECESSARY FROM THE OUTDOOR UNIT, INDOOR UNIT, CONTROLLER/THERMOSTAT, AND CONTROLS ASSOCIATED WITH THE SYSTEM IN ORDER TO BE FULLY OPERATIONAL.
5. SYSTEM SHALL BE PROVIDED WITH A MANUFACTURER-ASSISTED START-UP. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
6. INSTALLING CONTRACTORS MUST ATTEND THE REQUIRED VRF INSTALLATION TRAINING BY THE MANUFACTURER.
7. PROVIDE BACNET COMMUNICATION TO INTEGRATE WITH FUTURE BMS CONTROL SYSTEM

VRF OUTDOOR UNITS NOTES:
1. MANUFACTURER MUST PROVIDE HEATING DURING OIL EQUALIZATION AND DEFROST OPERATIONS.
2. LOCATE CONDENSING UNITS WITH 18-INCH SEPARATION BETWEEN CONDENSING UNIT MODULES FOR IMPROVED SERVICEABILITY.

VRF INDOOR UNITS NOTES:
1. VRF UNITS SHALL BE PROVIDED WITH FACTORY-INSTALLED, INTEGRATED CONDENSATE PUMPS.
2. VRF UNITS SHALL HAVE AN INTEGRATED OVERFLOW SWITCH.

VRF PIPING INSTALLATION NOTES (R410A):
1. ALL PIPING SIZES SHALL BE COORDINATED WITH VRF MANUFACTURER.
2. PROVIDE REFRIGERATION BALL VALVES WITH CHARGING PORTS DOWNSTREAM OF BRANCH SELECTOR BOX FOR SERVICE.
3. FOR REFRIGERANT PIPE SIZES, CONSULT THE MANUFACTURER; REFRIGERANT PIPE RISERS INCLUDED IN DRAWINGS SHALL BE REVIEWED AND CONFIRMED BY THE MANUFACTURER PRIOR TO PURCHASING EQUIPMENT.

CONTROLS LEGEND

PLAN SYMBOL	DESCRIPTION
DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE SENSOR AND TRANSMITTER
FE	FLOW METER
AFS	FLOW SWITCH
H	HUMIDISTAT - STAND ALONE
H	HUMIDITY SENSOR
S/D	SMOKE DETECTOR
T	THERMOSTAT - STAND ALONE
T	TEMPERATURE SENSOR
T/H/C	COMBINATION TEMPERATURE/HUMIDITY/CO2 SENSOR

ACTUATOR LEGEND

SYMBOL	DESCRIPTION
	DAMPER OR VALVE WITH TWO POSITION ACTUATOR
	DAMPER OR VALVE WITH MODULATING ACTUATOR

GENERAL ABBREVIATIONS

AD	ACCESS DOOR
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
AHJ	AUTHORITY HAVING JURISDICTION
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
AWT	AVERAGE WATER TEMPERATURE
BHP	BREAK HORSEPOWER
BTU	BRITISH THERMAL UNIT
BTUH	BTU / HOUR
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
CAP	CAPACITY
COP	COEFFICIENT OF PERFORMANCE
CFM	CUBIC FEET PER MINUTE
CUFT	CUBIC FEET
dB	DECIBELS
DB	DRY BULB TEMPERATURE
DDC	DIRECT DIGITAL CONTROL
DIA	DIAMETER
DN	DOWN
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE (DRY BULB)
EDB	ENTERING DRY BULB
EER	ENERGY EFFICIENCY RATIO
ELEC	ELECTRICAL
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB
°F	DEGREES FAHRENHEIT
FT	FEET
FT WG	FEET WATER GAUGE
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
GRD	GRILLE, REGISTER, DIFFUSER
HD	HEAD
HP	HORSEPOWER
HSPF	HEATING SEASON PERFORMANCE FACTOR
HZ	HERTZ
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
IN	INCHES
IN.WG	INCHES WATER GAUGE
IPLV	INTEGRATED PART LOAD VALUE
KW	KILOWATTS
L	LOUVER
LAT	LEAVING AIR TEMPERATURE
LDB	LEAVING DRY BULB
LWB	LEAVING WET BULB
MAX	MAXIMUM
MECH	MECHANICAL
MBH	THOUSANDS OF BTU / HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OAT	OUTSIDE AIR TEMPERATURE
OD	OUTER DIAMETER
OED	OPEN ENDED DUCT
P	PUMP
PH	PHASE
PLBG	PLUMBING
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH GAUGE
QTY	QUANTITY
RA	RETURN AIR
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SG	SIGHT GLASS
SP	STATIC PRESSURE
SPD	STATIC PRESSURE DROP
SS	STAINLESS STEEL
SQFT / SF	SQUARE FEET
TEMP	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TYP	TYPICAL
UOI	UNLESS OTHERWISE INDICATED
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THRU ROOF
W	WITH
W/O	WITHOUT
WB	WET BULB
WC	WATER COLUMN
WG	WATER GAUGE
WMS	WIRE MESH SCREEN
WPD	WATER PRESSURE DROP

EQUIPMENT ABBREVIATIONS

AC	AIR CONDITIONING UNIT
AHU	AIR HANDLING UNIT
CP	CONDENSATE PUMP
CU	CONDENSING UNIT
DOAS	DEDICATED OUTDOOR AIR SYSTEM
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
EG	EXHAUST GRILLE
ET	EXPANSION TANK
F	FAN
FCU	FAN COIL UNIT
RF	RELIEF FAN
SD	SUPPLY DIFFUSER
SG	SUPPLY GRILLE

SHEET INDEX - MECHANICAL

SHEET NUMBER	SHEET NAME
03 - MECHANICAL	
M0.00	MECHANICAL ABBREVIATIONS, NOTES AND SYMBOLS
M1.00	MECHANICAL ZONE AND PIPING FLOOR PLAN
M2.00	MECHANICAL DUCTWORK FLOOR PLAN
M4.00	MECHANICAL DETAILS
M4.01	MECHANICAL DETAILS
M5.00	MECHANICAL SCHEDULES AND DIAGRAMS
M6.00	MECHANICAL SPECIFICATIONS
M8.00	MECHANICAL CONTROLS
Grand total: 8	

CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

MECHANICAL ABBREVIATIONS, NOTES AND SYMBOLS

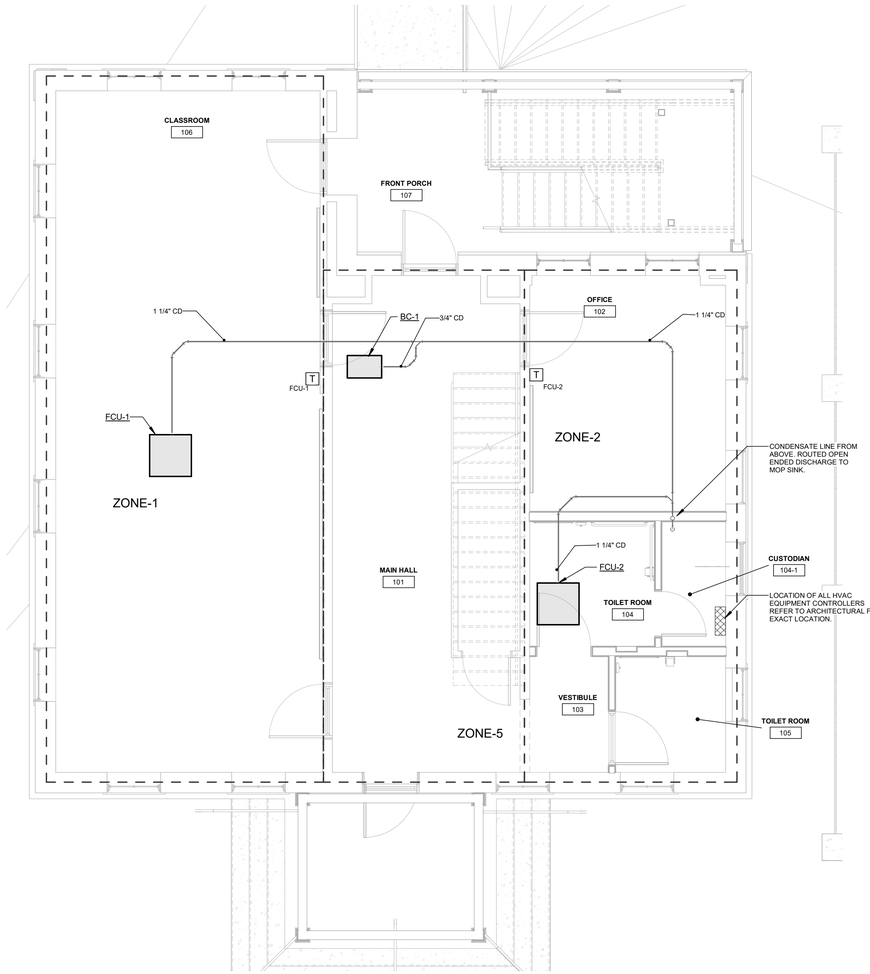
DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	KD
CHECKED:	MM
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:

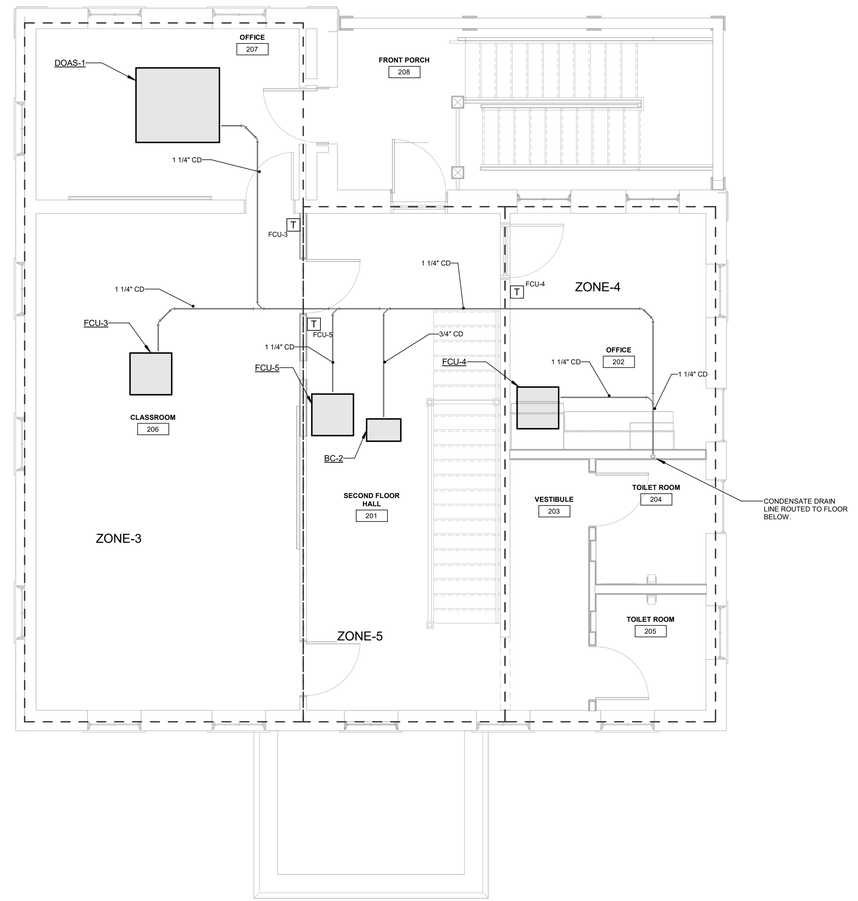
STATE OF TEXAS
155955
LICENSED
PROFESSIONAL ENGINEER

SHEET NO.

M0.00



1 MECHANICAL ZONE PLAN - LEVEL 1
1/4" = 1'-0"



2 MECHANICAL ZONE PLAN - LEVEL 2
1/4" = 1'-0"

CES
CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST,
CASTROVILLE, TX

MECHANICAL ZONE AND PIPING FLOOR PLAN

DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	KD
CHECKED:	MM
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:

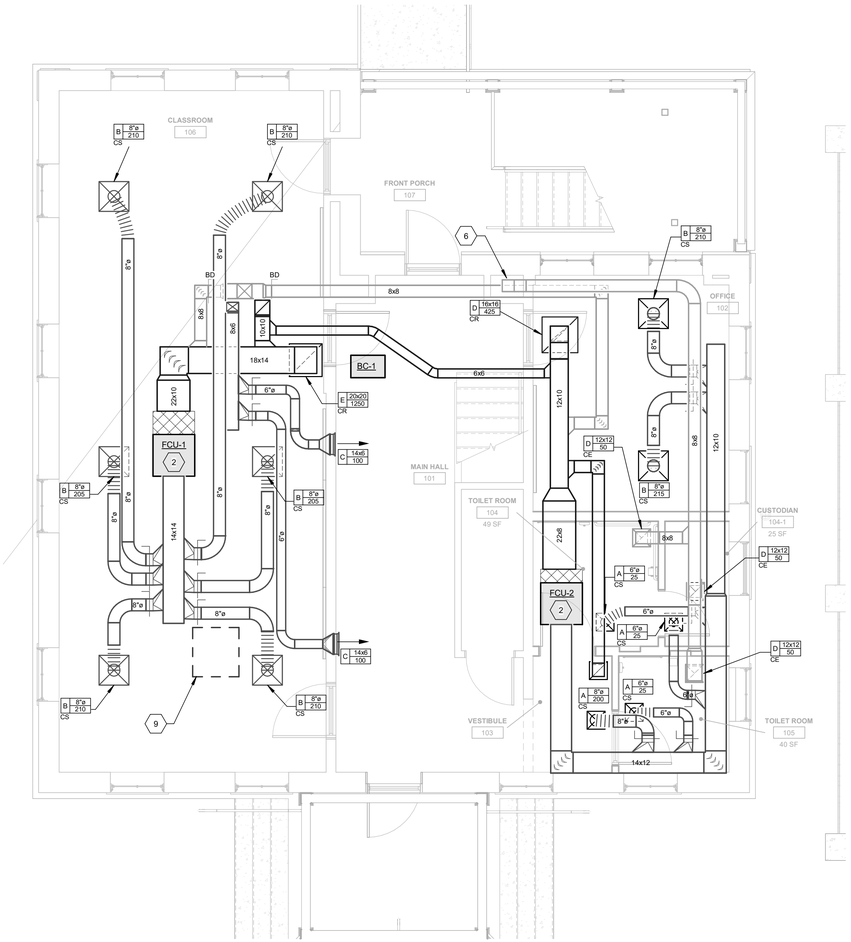


SHEET NO.

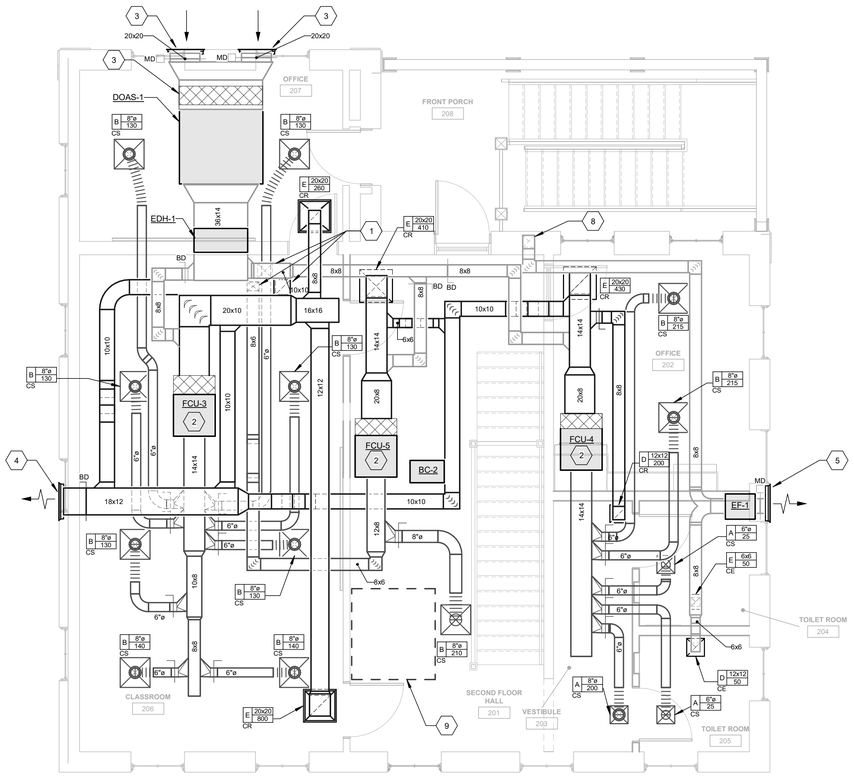
M1.00

MECHANICAL KEY NOTES

1	OA, RA AND SA DUCT ROUTED DOWN TO FLOOR BELOW IN EXISTING CHASE. CONTRACTOR TO FIELD VERIFY EXACT LOCATION DURING DEMO PHASE.
2	HORIZONTAL FAN COIL UNIT REFER TO SCHEDULES. PROVIDE WITH MANUFACTURE FILTER BOX INLINE AFTER OA TAP TO RETURN DUCT WORK. ENSURE ALL MANUFACTURES CLEARANCES ARE MET.
3	INTAKE AIR DUCT TO CONNECT TO EXISTING LOUVER. ENSURE LOUVER FREE AREA OPENING IS AT MINIMUM 144 IN^2
4	RELIEF AIR DUCT TO CONNECT TO EXISTING LOUVER WITH INTEGRAL BACKDRAFT DAMPER BALANCED 0.05INWC. ENSURE LOUVER FREE AREA OPENING IS AT MINIMUM 288Z IN^2
5	EXHAUST AIR DUCT TO CONNECT TO EXISTING LOUVER. ENSURE LOUVER FREE AREA OPENING IS AT MINIMUM 72IN^2
6	EA DUCT ROUTED UP THROUGH EXISTING CHASE. CONTRACTOR TO FIELD VERIFY EXACT LOCATION DURING DEMO PHASE.
7	FIELD CONSTRUCTED FILTER BOX WITH MERV 13 FILTER.
8	EA DUCT ROUTED DOWN TO FLOOR BELOW IN EXISTING CHASE. CONTRACTOR TO FIELD VERIFY EXACT LOCATION DURING DEMO PHASE.
9	EXISTING ACCESS PANEL TO REMAIN. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION.



1 MECHANICAL DUCTWORK - LEVEL 1
1/4" = 1'-0"



2 MECHANICAL DUCTWORK - LEVEL 2
1/4" = 1'-0"

CES
CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST,
CASTROVILLE, TX

MECHANICAL DUCTWORK FLOOR PLAN

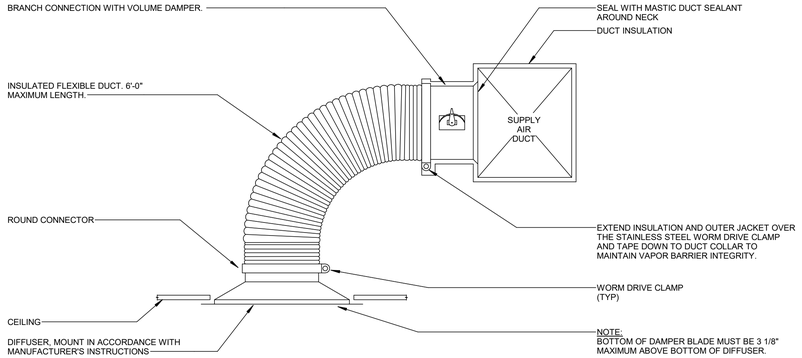
DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	KD
CHECKED:	MM
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:



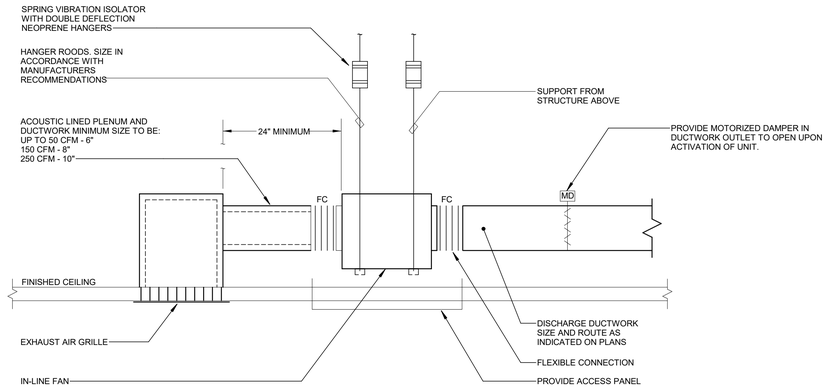
SHEET NO.

M2.00

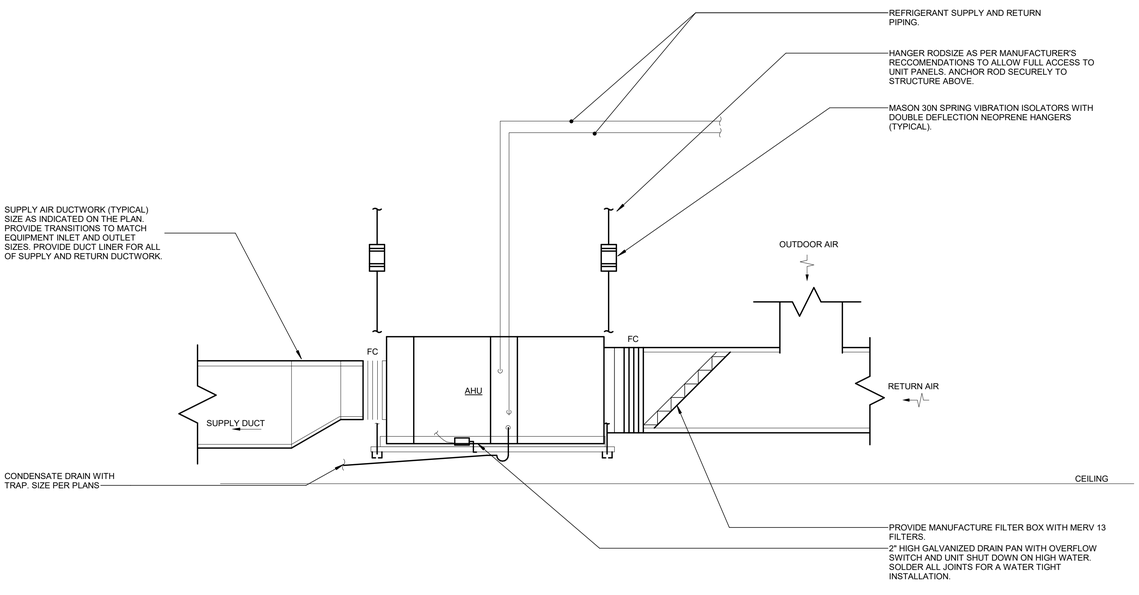


NOTES:
1. SUPPORT FLEXIBLE DUCT FROM STRUCTURE AS SPECIFIED. DUCT SHALL NOT KINK, SAG OR REST ON LIGHT FIXTURES, CEILING SUPPORT TEES OR TILE.
2. IN UNCONDITIONED CEILING PLENUMS, INSULATE BACK OF DIFFUSER WITH 1" DUCT WRAP AND SEAL WITH VAPOR BARRIER TAPE.

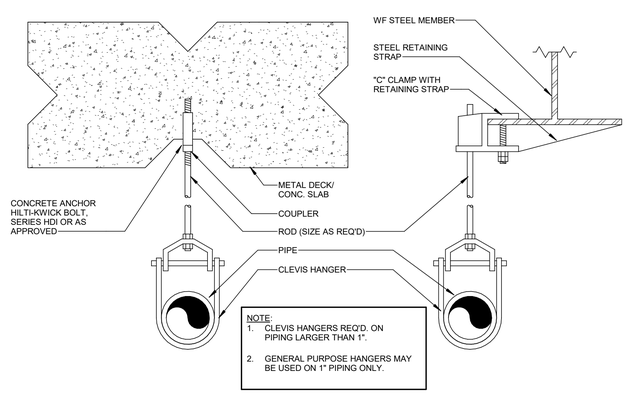
1 DIFFUSER WITH FLEX DUCT DETAIL
NTS



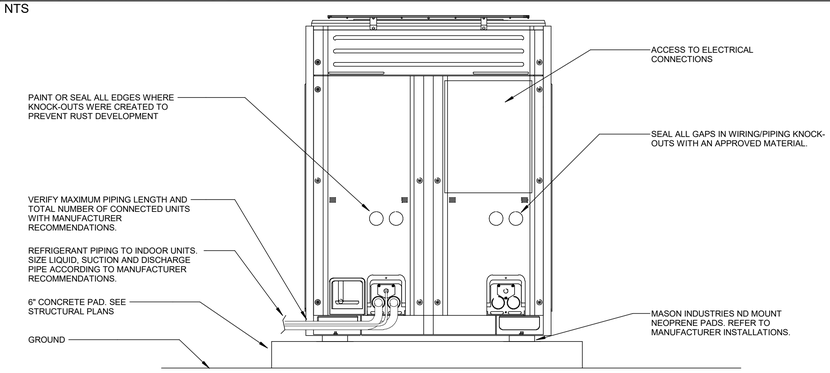
2 INLINE CEILING FAN DETAIL
NTS



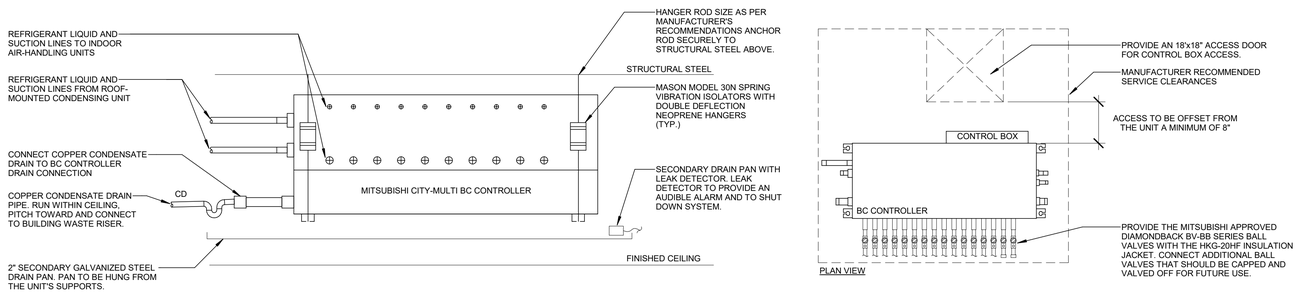
3 HORIZONTAL AIR HANDLING UNIT DETAIL
NTS



4 TYPICAL PIPE HANGER DETAIL
NTS



5 VRF THREE PHASE CONDENSING UNIT MOUNTING DETAIL
NTS



6 BC CONTROLLER DETAIL
NTS

CES
CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

MECHANICAL DETAILS

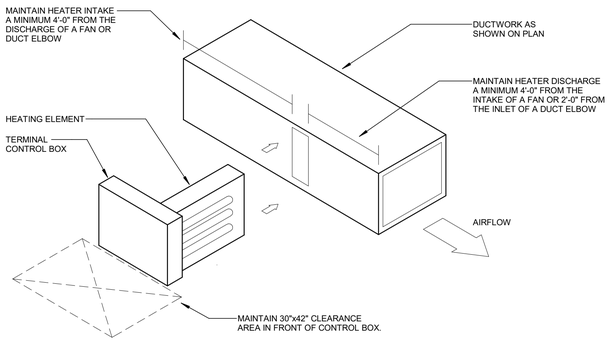
DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	KD
CHECKED:	MM
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:

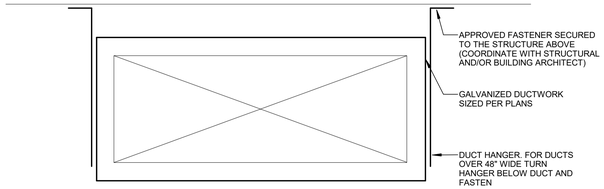
STATE OF TEXAS
155955
LICENSED
PROFESSIONAL ENGINEER

SHEET NO.

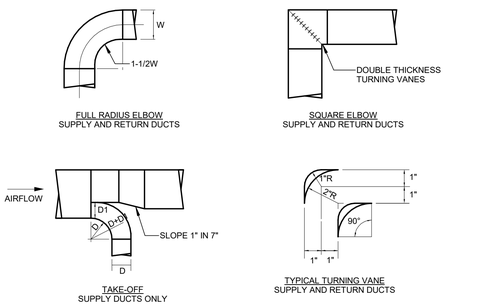
M4.00



1 SLIP IN TYPE ELECTRIC DUCT HEATER DETAIL
NTS



2 DUCTWORK HANGING DETAIL
NTS



3 TYPICAL DUCT DETAILS
NTS

CES
CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST,
CASTROVILLE, TX

MECHANICAL DETAILS

DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	KD
CHECKED:	MM
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:



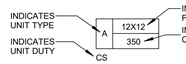
SHEET NO.

M4.01

AIR OUTLET SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NO.	TYPE	CONSTRUCTION		REMARKS
			MATERIAL	MAX N.C.	
A	TITUS/OMNI-AA	SQUARE PLAQUE (12x12)	ALUMINUM	25	1-4
B	TITUS/OMNI-AA	SQUARE PLAQUE (20x20)	ALUMINUM	25	1-4
C	TITUS/300FL	BLADED GRILLE	ALUMINUM	25	1-4
D	TITUS/PAR	SQUARE PERFORATED (12x12)	ALUMINUM	15	1-4
E	TITUS/PAR	SQUARE PERFORATED (20x20)	ALUMINUM	15	1-4

DUTY:
CS - CEILING SUPPLY
CR - CEILING RETURN
CE - CEILING EXHAUST
HWS - HIGH WALL SUPPLY
HWR - HIGH WALL RETURN
HWE - HIGH WALL EXHAUST



REMARKS:
1. DIFFUSER/GRILLE TO BE COORDINATED ARCHITECTURAL RCP. CONTRACTOR TO CONFIRM FINAL LOCATIONS AND WITH ARCH. RCP.
2. COORDINATE BORDER TYPE WITH CEILING CONSTRUCTION.
3. PERFORMANCE DATA LISTED ON PLAN IS AT MAX AIRFLOW.
4. PROVIDE CABLE-OPERATED DAMPER WITH REMOTE ACTUATOR FOR VOLUME DAMPERS LOCATED ABOVE GYP AND INACCESSIBLE CEILINGS.

SPLIT DEDICATED OUTDOOR AIR SYSTEM SCHEDULE

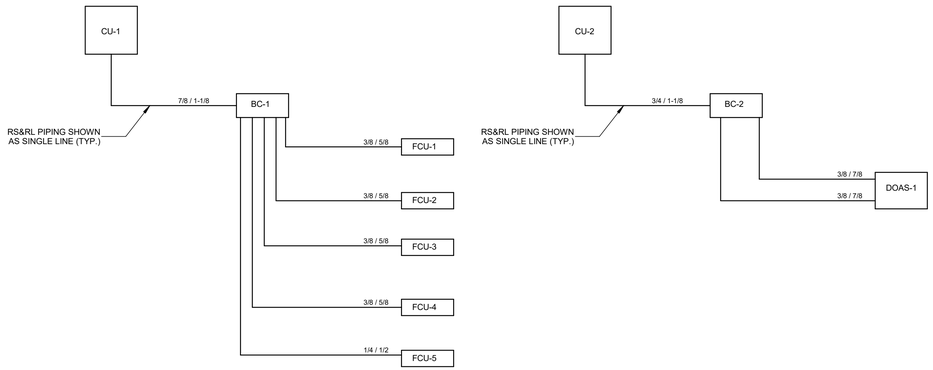
TAG	MANUFACTURER	MODEL	LOCATION	MATCHED COMP. UNIT	PHYS. WEIGHT (LBS)	PERFORMANCE NOMINAL TONS	COOLING TOTAL (MBH)	COOLING SENSIBLE (MBH)	COOLING EAT (°F) DB	COOLING EAT (°F) WB	COOLING LAT (°F) DB	COOLING LAT (°F) WB	REHEAT SENSIBLE (MBH)	REHEAT LAT DB	REHEAT LAT %RH	HEATING TOTAL (MBH)	HEATING EAT (°F)	HEATING LAT (°F)	FAN CFM	FAN ESP (IN WG)	ELECTRICAL MCA	ELECTRICAL MOP	ELECTRICAL VOLTAGE	ELECTRICAL PHASE	NOTES
DOAS-1	MITSUBISHI	TPEFYP120AR140A	ATTIC	CU-2	309	10	95	77	105	74	55	52.3	24.2	63	45	76	26	95	1200	0.8	3.99	15	208	1	1-5

NOTES:
1. COOLING CAPACITIES ARE AT ARI CONDITIONS - 95°F OAT, 80°F EDB, 67°F EWB, WITH MATCHED COMPRESSOR UNIT.
2. SUSPEND UNIT FROM STRUCTURE ABOVE AT FOUR CORNERS WITH NEOPRENE SPRING VIBRATION HANGERS.
3. PROVIDE FLEXIBLE DUCT CONNECTIONS AT INLET AND DISCHARGE.
4. PROVIDE SPLIT SYSTEM REFRIGERANT PIPING BETWEEN AIR HANDLING UNIT AND COMPRESSOR UNIT, SIZED AND CONFIGURED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PIPING AND CONDUIT (POWER & CONTROLS) WALL PENETRATIONS SHALL BE WATERTIGHT.
5. PROVIDE CONDENSATE DRAIN TO NEAREST WASTE RECEIVER, PITCHED AT MINIMUM 1/8" PER FOOT. PROVIDE MINIMUM 2" WATER SEAL TRAP AT CONNECTION TO COIL.

FAN SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	SERVICE	PHYSICAL WEIGHT (LBS)	PHYSICAL DRIVE	PHYSICAL WHEEL DIA. (IN.)	PERFORMANCE CFM	PERFORMANCE ESP (IN WG)	PERFORMANCE RPM	PERFORMANCE DRIVE LOSS (%)	PERFORMANCE BHP	ACOUSTICAL DATA INLET SONES	ACOUSTICAL DATA OUTLET SONES	ELECTRICAL WATTS	ELECTRICAL MCA	ELECTRICAL VOLTAGE/PH	ELECTRICAL MOCP	NOTES
EF-1	GREENHECK	CSP-A390-VG	ATTIC	TOILET EXHAUST	24	DIRECT	7.75	250	0.7	1,350	-	0.06	3.2	-	117	1.8	115/1	15	1-5

NOTES:
1. INLINE FAN WITH DIRECT DRIVE EC MOTOR.
2. INSTALL PER MANUFACTURES RECOMMENDATIONS.
3. PROVIDE FLEXIBLE DUCT CONNECTIONS AT INLET AND DISCHARGE.
4. PROVIDE WITH HANGING ISOLATORS.
5. PROVIDE DIAL ON MODE CONTROLLER FOR VG FAN.



1. THE INTENT OF THE REFRIGERANT PIPING DIAGRAMS IS TO SHOW THE ASSOCIATION OF OUTDOOR UNITS TO INDOOR UNITS.
2. SHOWN FOR REFERENCE ONLY, REFER TO MANUFACTURE FOR CONFIRMATION ON EXACT SIZES AND ROUTING.
3. ALL REFRIGERANT PIPING SHALL RUN IN CONCEALED LOCATIONS.

1 VRF REFRIGERANT RISER DIAGRAM
NTS

CONDENSING UNIT SCHEDULE

TAG	MANUFACTURER	MODEL	MATCHED BC. UNIT	PHYSICAL COMPRESSORS INVERTER	PHYSICAL COMPRESSORS TYPE	PHYSICAL WEIGHT (LBS)	PERFORMANCE NOMINAL TONS	PERFORMANCE COOLING MBH	PERFORMANCE COOLING EER	PERFORMANCE COOLING IEER/SEER	PERFORMANCE HEATING MBH	PERFORMANCE HEATING COP	PERFORMANCE SOUND PRESS. (dBA)	ELECTRICAL MCA	ELECTRICAL MOP	ELECTRICAL VOLTAGE	ELECTRICAL PHASE	NOTES
CU-1	MITSUBISHI	TURYE1443AN41AN	BC-1	1	SCROLL	680	12	104	21.9	-/10	120	3.675	85.5	60	100	208	3	1-5
CU-2	MITSUBISHI	TURYE1203AN41AN	BC-2	1	SCROLL	622	10	99	21.7	-/10.5	60	3.71	80.5	56	90	208	3	1-5

NOTES:
1. HEAT RECOVERY SIMULTANEOUS HEATING AND COOLING.
2. SCROLL COMPRESSOR(S), R-410A.
3. PROVIDE LOW AMBIENT KIT.
4. MOUNT UNIT ON 6" THICK REINFORCED CONCRETE PAD WITH 1" CHAMFERED EDGES.
5. UNIT TESTED CONDITIONS AT COOLING MBH AT 95°F ODB AND HEATING 43°F OWB.

VRF FAN COIL SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	COMP. UNIT	PERFORMANCE NOMINAL TONS	PERFORMANCE TOTAL COOLING MBH	PERFORMANCE SEN COOLING MBH	PERFORMANCE NET HEATING MBH	FAN SUPPLY CFM	FAN OA CFM	FAN ESP (IN WG)	ELECTRICAL KW	ELECTRICAL VOLTAGE	ELECTRICAL PHASE	REMARKS
FCU-1	MITSUBISHI	TPEFYP030MA145A	SEE PLANS	CU-1	2.5	25.2	19	29.4	1,250	400	0.5	0.22	208	1	1-7
FCU-2	MITSUBISHI	TPEFYP030MA145A	SEE PLANS	CU-1	2.5	23.2	18.0	18.4	700	125	0.5	0.22	208	1	1-7
FCU-3	MITSUBISHI	TPEFYP030MA145A	SEE PLANS	CU-1	2.5	24.9	18.4	28.6	1,060	400	0.5	0.22	208	1	1-7
FCU-4	MITSUBISHI	TPEFYP024MA144A	SEE PLANS	CU-1	2	18.6	13.6	18.3	680	125	0.5	0.14	208	1	1-7
FCU-5	MITSUBISHI	TPEFYP012MA144A	SEE PLANS	CU-1	1	7.5	7.2	11.1	410	150	0.6	0.05	208	1	1-7

NOTES:
1. HORIZONTAL DUCTED, HIGH STATIC.
2. COOLING MBH AT 80°F EDB, 67°F EWB, 95°F ODB. HEATING MBH AT 70°F EDB, 47°F ODB, 43°F OWB.
3. PROVIDE WITH CONDENSATE LIFT.
4. PROVIDE WITH MANUFACTURES FILTER BOX.
5. PROVIDE WITH FIELD FABRICATED 2" GALVANIZED STEEL SECONDARY DRAIN PAN WITH SECONDARY DRAIN TO LOCAL FUNNEL DRAIN.
6. SUSPEND UNIT FROM STRUCTURE ABOVE AT FOUR CORNERS WITH NEOPRENE VIBRATION HANGERS.
7. PROVIDE WITH FIELD DISCONNECT.

ELECTRIC DUCT HEATER SCHEDULE

SYMBOL	MANUFACTURER	MODEL	UNIT SERVED	TYPE	AIRFLOW (CFM)	DELTA T	ELECTRICAL DATA V/PH/HZ	ELECTRICAL DATA KW	REMARKS
EDH-1	GREENHECK	IDHB	DOAS-1	FLANGE	1,200	45°F	208/3/60	17	1-2

REMARKS:
1. PROVIDE WITH SCR CONTROLS.
2. INSTALL HEATER WITH DISTANCE FROM FAN AS PER MANUFACTURERS RECOMMENDATIONS.

VRF BRANCH CONTROLLER SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	MATCHED COMP. UNIT	PHYS. # OF BRANCHES	ELECTRICAL MCA	ELECTRICAL VOLTAGE	ELECTRICAL PHASE	NOTES
BC-1	MITSUBISHI	TCMBM0108JA21N4	1ST FLOOR	CU-1	8	0.8	208	1	1
BC-2	MITSUBISHI	TCMBG0108SJ11N4	ATTIC	CU-2	8	0.7	208	1	1

NOTES:
1. INSTALL PER MANUFACTURES RECOMMENDATIONS.

CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

MECHANICAL SCHEDULES AND DIAGRAMS

DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	KD
CHECKED:	MM
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:



SHEET NO.

M5.00

23 00 00 - GENERAL

A. THESE SPECIFICATIONS ARE APPLICABLE TO ALL PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS UNLESS NOTED OTHERWISE. REVIEW THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, PLUMBING DRAWINGS FOR NOTES, DIMENSIONS, ETC., AND COORDINATE WITH OTHER TRADES INVOLVED. THE WORK REQUIREMENTS DESCRIBED WITHIN DIVISION 20 SPECIFICATION SECTION "COMMON MECHANICAL / ELECTRICAL REQUIREMENTS" FORM COMPLIMENTARY REQUIREMENTS TO THE SCOPE OF WORK CONTAINED WITHIN DIVISION 23.

B. DESCRIPTION

1. THIS PROJECT COMPRISES ALTERATIONS AND RENOVATIONS TO THE EXISTING BUILDING. THE EXISTING BUILDING IS CURRENTLY OCCUPIED AND THE PROJECT SHALL PROCEED IN A MANNER THAT MINIMIZES ANY INCONVENIENCE TO THE BUILDING OCCUPANTS.

2. SCOPE OF WORK CONSISTS OF INSTALLATION OF MATERIALS TO BE FURNISHED UNDER THE CONTRACT DOCUMENTS AND WITHOUT LIMITING GENERALITY THEREOF CONSISTS OF FURNISHING LABOR, MATERIALS, EQUIPMENT, HOISTING, TRANSPORTATION, RIGGING, STAGING, APPURTENANCES, AND SERVICES NECESSARY AND/OR INCIDENTAL TO PROPERLY COMPLETE ALL WORK AS SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN.

C. DEFINITIONS: THE FOLLOWING DEFINITIONS APPLY TO THIS CONTRACT

1. FURNISH: THE TERM "FURNISH" MEANS TO "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS"

2. INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

3. PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

4. REMOVE: THE TERM "REMOVE" MEANS TO DISCONNECT FROM ITS PRESENT POSITION, REMOVE FROM THE PREMISES AND TO DISPOSE OF IN A LEGAL MANNER."

5. SUBSTITUTIONS: "SUBSTITUTIONS" ARE REQUESTS FOR CHANGES IN PRODUCTS, MATERIALS AND/OR METHODS OF CONSTRUCTION AS PROPOSED BY THE CONTRACTOR AFTER AWARD OF THE CONTRACT."

D. DRAWINGS

1. DRAWINGS ARE DIAGRAMMATIC. THE FINAL PLACEMENT OF EQUIPMENT OR DEVICES IN THE FIELD MAY NOT DIRECTLY CORRESPOND TO THAT WHICH IS SHOWN ON THE DRAWINGS. THOUGH SOME OFFSETS & TRANSITIONS MAY BE SHOWN IN PIPING & SHEET METAL TO HELP INDICATE THE PHYSICAL RELATIONSHIP BETWEEN THEM, IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW ALL PIPING & SHEET METAL OFFSETS & TRANSITIONS REQUIRED. THE CONTRACTOR SHALL FULLY COORDINATE THE WORK AND PROVIDE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THE WORK OUTLINED ON THESE CONTRACT DOCUMENTS. IF A CONFLICT IN POSITIONING OCCURS THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY TO ASCERTAIN WHAT THE INTENT WAS BY THE DESIGN PROFESSIONAL.

E. CODES AND STANDARDS: WORK SHALL CONFORM TO THE 2012 EDITIONS OF THE FOLLOWING:

1. SHEET METAL SMACNA STANDARDS
2. INTERNATIONAL MECHANICAL CODE
3. INTERNATIONAL ENERGY CONSERVATION CODE
4. INTERNATIONAL EXISTING BUILDING CODE
5. ALL OTHER APPLICABLE STATE AND LOCAL CODES AND ORDINANCES, OWNER STANDARDS AND BASE BUILDING SPECIFICATIONS AND STANDARDS.

F. PERMITS AND FEES:

1. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS; AND PAY ALL GOVERNMENT AND STATE SALES TAXES AND FEES WHERE APPLICABLE, AND OTHER COSTS, INCLUDING UTILITY CONNECTIONS OR EXTENSIONS IN CONNECTION WITH THE WORK, FILE ALL NECESSARY DRAWINGS, PREPARE ALL DOCUMENTS AND OBTAIN ALL NECESSARY APPROVALS OF ALL GOVERNMENTAL AND STATE DEPARTMENTS HAVING JURISDICTION, OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION FOR HIS WORK, AND DELIVER A COPY TO THE OWNER AND ENGINEER BEFORE REQUEST FOR ACCEPTANCE AND FINAL PAYMENT FOR THE WORK.

G. EXISTING SYSTEMS AND EQUIPMENT

1. EXISTING TO BE REUSED/RELOCATED EQUIPMENT: REPORT ANY EXISTING EQUIPMENT DEFICIENCIES TO THE OWNER AND THE ARCHITECT AND/OR ENGINEER.

2. CONNECT WORK TO VARIOUS EXISTING SYSTEMS AS INDICATED ON THE DRAWINGS. WORK SHALL BE COMPATIBLE WITH THE EXISTING SYSTEM CONDITIONS. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED AS WELL AS WITH EXISTING SYSTEMS, THE STRUCTURE, AND OTHER OBSTRUCTIONS.

3. PROVIDE THE FOLLOWING SERVICES ON ALL EXISTING HVAC EQUIPMENT INDICATED TO REMAIN:

   a. CLEAN CONDENSATE PAN AND TRAP
   b. CALIBRATE CONTROLS
   c. FILTER CHANGES
   d. VERIFY FAN ROTATION AND OPERATION
   e. BALANCING
   f. VERIFY PITCH OF CONDENSATE DRAIN PIPES AND DRAIN PAN
   g. VERIFY EQUIPMENT CONTROL OPERATION
   h. LUBRICATION OF FANS, MOTORS, ETC.
   i. CLEAN HEATING/COOLING COILS

H. SURVEY AND MEASUREMENTS

1. THIS PROJECT INVOLVES CONSTRUCTION INSIDE AN EXISTING STRUCTURE. CONTRACTORS, BY SUBMITTING A BID, SHALL BE COMPLETELY FAMILIAR WITH THE EXISTING CONDITION OF THE BUILDING AS IT INFLUENCES THE WORK DESCRIBED. NO COMPENSATION SHALL BE GRANTED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY IDENTIFIED BY EXPERIENCED OBSERVERS.

2. DO NOT SCALE DRAWINGS. SCALE INDICATED ON DRAWINGS IS FOR ESTABLISHING REFERENCE POINTS ONLY. ACTUAL FIELD CONDITIONS SHALL GOVERN ALL DIMENSIONS.

3. PRIOR TO ORDERING ANY MATERIALS AND EQUIPMENT, THOROUGHLY REVIEW THE SITE CONDITIONS TO DETERMINE IF ADEQUATE CLEARANCES AND ACCESS IS ALLOWED TO INSTALL THE COMPONENTS. ORDER EQUIPMENT BROKEN DOWN AS NECESSARY TO ALLOW FOR PROPER RIGGING THROUGH THE PROJECT AREA. PROVIDE ALL NECESSARY ALTERATIONS TO THE STRUCTURE OF THE BUILDING AS NECESSARY TO RIG THE EQUIPMENT IN PLACE.

4. CONTRACTORS SHALL VERIFY, LAYOUT AND BE RESPONSIBLE FOR ALL MEASUREMENTS OF ALL EXISTING CONDITIONS BEFORE COMMENCING WORK AND SHALL NOTIFY ARCHITECT AND/OR ENGINEER IF A CONDITION EXISTS THAT PREVENTS THE CONTRACTOR FROM ACCOMPLISHING THE INTENT OF THE DRAWINGS.

A. SUBMITTALS AND SHOP DRAWINGS

1. SUBMIT FOR REVIEW, ELECTRONIC SHOP DRAWINGS IN SEARCHABLE PDF FORMAT FOR THE FOLLOWING.

   a. SUBMITTAL DATA FOR ALL MATERIAL AND EQUIPMENT. CLEARLY IDENTIFY DEVIATIONS OF THE SUBMITTED PRODUCTS FROM THE DESIGN.

   b. DUCTWORK AND PIPING SHOP DRAWINGS: DRAWN TO ACCURATE SCALE OF 1/4"=1'0". HIGHLIGHT, ENCIRCLE, OR OTHERWISE INDICATE DEVIATIONS FROM THE CONTRACT DOCUMENTS. DO NOT REPRODUCE CONTRACT DOCUMENTS OR COPY STANDARD INFORMATION AS THE BASIS OF SHOP DRAWINGS. STANDARD INFORMATION PREPARED WITHOUT SPECIFIC REFERENCE TO THE PROJECT IS NOT CONSIDERED SHOP DRAWINGS.

   c. CONTROLS SHOP DRAWINGS: INCLUDE EQUIPMENT AND SYSTEM CONTROL SCHEMATICS, SEQUENCES OF OPERATIONS, LOGIC DIAGRAMS AND SYSTEM COMPONENTS INCLUDING DETAILS OF TIE-IN TO EXISTING BUILDING CONTROL MANAGEMENT SYSTEM.

2. DO NOT USE SHOP DRAWINGS WITHOUT AN APPROPRIATE FINAL STAMP INDICATING ACTION TAKEN IN CONNECTION WITH CONSTRUCTION.

3. DO NOT ORDER ANY MATERIALS OR EQUIPMENT PRIOR TO RECEIVING FINAL APPROVED SUBMITTALS.

4. SCHEDULE AT LEAST TEN WORKING DAYS EXCLUSIVE OF TRANSMITTAL TIME, FOR SUBMITTAL REVIEW.

B. AS-BUILT DRAWINGS

A. MAINTAIN ONE SET OF PRINTS ON THE SITE AND NOTE ALL CHANGES OR DEVIATIONS FROM THE ORIGINAL DESIGN THEREON. AT THE COMPLETION OF THE PROJECT, INCORPORATE ALL CHANGES INTO RECORD AS-BUILT DRAWINGS IN ELECTRONIC FORMAT AND SUBMIT FOR APPROVAL.

C. OPERATION AND MAINTENANCE

1. UPON COMPLETION OF ALL WORK AND TESTS, THE CONTRACTOR SHALL INSTRUCT THE OWNER OR THE OWNER'S REPRESENTATIVE IN THE OPERATION, ADJUSTMENT AND MAINTENANCE OF ALL EQUIPMENT FURNISHED. THE CONTRACTOR SHALL GIVE AT LEAST SEVEN (7) DAYS NOTICE TO THE OWNER AND THE ENGINEER IN ADVANCE OF THIS PERIOD.

2. THE CONTRACTOR SHALL PREPARE THREE (3) COPIES OF A COMPLETE OPERATION AND MAINTENANCE MANUAL, BOUND IN BOOKLET FORM. ORGANIZE OPERATING AND MAINTENANCE DATA INTO SUITABLE SETS OF MANAGEABLE SIZE. BIND PROPERLY INDEXED DATA IN INDIVIDUAL HEAVY-DUTY 3-RING VINYL-COVERED BINDERS, WITH POCKET FOLDERS FOR FOLDED SHEET INFORMATION AND DESIGNATION PARTITIONS WITH IDENTIFICATION TABS. MARK APPROPRIATE IDENTIFICATION ON FRONT AND SPINE OF EACH BINDER.

1. OPERATION AND MAINTENANCE MANUAL SHALL INCLUDE THE FOLLOWING:

   a. MANUFACTURER'S PRINTED OPERATING AND MAINTENANCE PROCEDURES.

   b. MAINTENANCE PROCEDURES FOR ROUTINE PREVENTATIVE MAINTENANCE AND TROUBLESHOOTING.

   c. COPIES OF WARRANTIES.

   d. APPROVED SHOP DRAWINGS AND PRODUCT DATA.

   e. BALANCE REPORTS.

   f. INCLUDE IN THE MANUAL, A TABULATED EQUIPMENT SCHEDULE FOR ALL EQUIPMENT. SCHEDULE SHALL INCLUDE PERTINENT DATA SUCH AS: MAKE, MODEL NUMBER, SERIAL NUMBER, VOLTAGE, NORMAL OPERATING CURRENT, BELT SIZE, FILTER QUANTITIES AND SIZES, BEARING NUMBER, ETC. SCHEDULE SHALL INCLUDE MAINTENANCE TO BE DONE AND FREQUENCY.

2. MAINTENANCE AND INSTRUCTION MANUALS SHALL BE SUBMITTED TO THE OWNER AT THE SAME TIME AS THE SEVEN (7) DAY NOTICE IS GIVEN PRIOR TO THE INSTRUCTION PERIOD.

D. CLEANING

1. ALL WORK AREAS SHALL BE LEFT AS CLEAN AS NEW. CLEAN INTERNALS OF ALL DUCTWORK AND AIR HANDLING UNITS AND REPLACE FILTERS AFTERWARDS.

2. DUCTWORK: DUCTS SHALL BE THOROUGHLY CLEANED SO THAT NO DIRT OR DUST SHALL BE DISCHARGED FROM DIFFUSERS, REGISTERS, OR GRILLES, WHEN SYSTEM IS OPERATED.

3. PIPING: AFTER CONDENSATE PIPING HAS BEEN PRESSURE TESTED AND APPROVED FOR TIGHTNESS, CLEAN AND FLUSH PIPING.

4. EQUIPMENT: AFTER COMPLETION OF PROJECT, CLEAN THE EXTERIOR SURFACE OF EQUIPMENT INCLUDED IN THIS SECTION, INCLUDING REMOVAL OF CONCRETE RESIDUE.

5. WORK AREA: AFTER COMPLETION OF PROJECT, REMOVE ALL CONSTRUCTION DEBRIS, TEMPORARY FACILITIES AND EQUIPMENT FROM WORK AREA. CLEAN WORK AREA TO PERMIT OCCUPATION.

E. GUARANTEE

1. GUARANTEE WORK OF THESE CONTRACT DOCUMENTS IN WRITING FOR NOT LESS THAN ONE (1) YEAR FROM DATE OF FINAL NOTICE OF ACCEPTANCE. REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATION THAT DEVELOP WITHIN THIS PERIOD, PROMPT AND TO OWNER'S SATISFACTION AND CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE WITHIN CONTRACT PRICE.

F. MEANS AND METHODS ALL TRADES

1. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

2. DO NOT BURN WASTE MATERIALS. DO NOT BURY DEBRIS OR EXCESS MATERIALS ON THE OWNER'S PROPERTY. DO NOT DISCHARGE VOLATILE, HARMFUL OR DANGEROUS MATERIALS INTO DRAINAGE SYSTEMS. REMOVE AND DISPOSE OF ALL WASTE MATERIALS, PACKAGING MATERIAL, SKIDS ETC. FROM THE SITE AND DISPOSE OF IN A LAWFUL MANNER IN ACCORDANCE WITH MUNICIPAL, STATE AND FEDERAL REGULATIONS.

3. MATERIALS AND EQUIPMENT SHALL BE UL LISTED WHERE STANDARD HAS BEEN ESTABLISHED.

4. CAREFULLY INSPECT ALL BUILDING ELEMENTS PRIOR TO CUTTING OR DRILLING INTO WALL, FLOORS OR CEILINGS. PATCH AND PAINT SURFACES DISTURBED BY WORK UNDER THIS CONTRACT AS REQUIRED TO RESTORE THEM TO THEIR ORIGINAL CONDITION.

5. SCAFFOLDING, RIGGING, HOISTING: THE CONTRACTOR SHALL FURNISH ALL SCAFFOLDING, RIGGING, HOISTING AND SERVICES NECESSARY FOR ERECTION AND DELIVERY INTO THE PREMISES ANY EQUIPMENT AND APPARATUS FURNISHED UNDER THIS DIVISION. REMOVE SAME FROM PREMISES WHEN NO LONGER REQUIRED.

6. EXCAVATION AND BACKFILLING: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE SIZES, DEPTHS, FILL AND BEDDING REQUIREMENTS AND ANY OTHER EXCAVATION WORK REQUIRED UNDER THESE SPECIFICATIONS

7. WATERPROOFING: WHERE ANY WORK PIERCES WATERPROOFING, INCLUDING WATERPROOF CONCRETE, ROOFS, EXTERIOR WALL AND FLOORS IN WET AREAS, THE METHOD OF INSTALLATION SHALL BE REVIEWED BY THE ENGINEER BEFORE WORK IS DONE. THE CONTRACTOR SHALL FURNISH ALL NECESSARY SLEEVES, CAULKING AND FLASHING REQUIRED TO MAKE OPENINGS ABSOLUTELY WATERTIGHT.

8. PROVIDE FIRESTOPPING AROUND ALL FIRE PROTECTION, PLUMBING, MECHANICAL AND ELECTRICAL PENETRATIONS THROUGH FIRE RATED PARTITIONS. PROVIDE ASBESTOS FREE FIRESTOPPING SYSTEM CAPABLE OF MAINTAINING AN EFFECTIVE BARRIER AGAINST FLAME AND GASES. SYSTEM SHALL BE UL LISTED AND COMPLY WITH ASTM E 814.

9. PROVIDE ACCESS PANELS IN WALLS, FLOORS AND GYPSUM WALL BOARD CEILINGS TO ALLOW ACCESS TO DAMPERS, HEATERS, VALVES, VARIABLE AIR VOLUME BOXES, FAN BOXES AND OTHER APPARATUS AND EQUIPMENT REQUIRING PERIODIC SERVICE AND INSPECTION. NOT ALL ACCESS PANELS ARE INDICATED ON THE PLANS. REVIEW ARCHITECTURAL AND MECHANICAL PLANS TO DETERMINE THE LOCATION AND QUANTITY OF ACCESS PANELS REQUIRED. COORDINATE TYPE AND LOCATION WITH ARCHITECTURAL PLANS.

23 05 17 - SLEEVES AND PENETRATIONS

A. GENERAL REQUIREMENTS

1. LAY OUT PENETRATION AND SLEEVE OPENINGS IN ADVANCE. COORDINATE WORK CAREFULLY WITH ARCHITECTURAL AND STRUCTURAL WORK. PROVIDE CORE DRILLING OF EXISTING CONSTRUCTION WHERE REQUIRED. SUBMIT PROPOSED LOCATIONS FOR REVIEW PRIOR TO CORE DRILLING.

2. MAINTAIN FIRE RATING OF WALLS, PARTITIONS, CEILINGS, AND FLOORS AT PENETRATIONS. SEAL PENETRATIONS WITH APPROVED FIRESTOP MATERIALS.

3. SLEEVES FOR INSULATED PIPE AND DUCT IN NON-FIRE RATED CONSTRUCTION SHALL ACCOMMODATE CONTINUOUS INSULATION WITHOUT COMPRESSION.

B. PIPE SLEEVES:

1. PROVIDE HOT-DIPPED GALVANIZED SCHEDULE 40 STEEL PIPE SLEEVES FOR PIPES PASSING THROUGH CONCRETE AND MASONRY WALLS AND CONCRETE FLOOR AND ROOF SLABS.

2. PROVIDE 26 GAUGE GALVANIZED STEEL SLEEVES THROUGH PARTITIONS AND NON-FIRE-RATED CONSTRUCTION.

3. PROVIDE MECHANICAL SLEEVE SEALS CONSISTING OF INTERLOCKING MODULES AT EXTERIOR PIPE PENETRATIONS.

4. PROVIDE ADJUSTABLE ESCUTCHEONS ON EXPOSED PIPING THAT PASSES THROUGH FINISHED FLOORS, WALLS AND CEILINGS. ESCUTCHEONS SHALL BE CHROMIUM-PLATED CAST BRASS, SIZED TO COVER SLEEVE OPENING AND TO ACCOMMODATE PIPE AND INSULATION.

C. DUCT SLEEVES AND OPENINGS:

1. PROVIDE GALVANIZED-STEEL SHEET DUCT SLEEVES FOR ROUND DUCTS 15 INCHES AND SMALLER. PROVIDE PREPARED, FRAMED OPENINGS FOR ROUND DUCTS LARGER THAN 15 INCHES AND FOR SQUARE, RECTANGULAR AND FLAT OVAL DUCTS, EXCEPT AS SPECIFIED OTHERWISE. SLEEVES SHALL MEET SMACNA REQUIREMENTS.

2. PROVIDE GALVANIZED-STEEL SHEET DUCT SLEEVES FOR SLEEVES THROUGH FIRE-RATED CONSTRUCTION AND THROUGH SMOKE PARTITIONS. SLEEVE AND SEAL MATERIALS, CONSTRUCTION AND CLEARANCES SHALL MEET REQUIREMENTS OF SMACNA FIRE DAMPER AND HEAT STOP GUIDE FOR AIR HANDLING SYSTEMS. WHERE FIRE DAMPERS ARE REQUIRED, INSTALL SLEEVE AND DAMPER ASSEMBLY IN ACCORDANCE WITH DAMPER LISTING.

23 05 29 - HANGERS AND SUPPORTS

A. PROVIDE PIPE STANDS, SUPPORTS, HANGERS AND OTHER SUPPORTING APPLIANCES AS NECESSARY TO SUPPORT WORK REQUIRED BY CONTRACT DOCUMENTS. SPACING OF HANGERS SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE BUILDING AND MECHANICAL CODES. STRUCTURAL STEEL SUPPORTS, HANGERS, ETC. SHALL BE ANGLE IRON, STEEL CHANNEL OR STEEL ROD USED WITH APPROVED CLAMPS, INSERTS, ETC. ALL SUPPORTS, HANGERS, BRACKETS, ETC., SHALL BE AS APPROVED BY THE ENGINEER.

B. ALL HANGERS SHALL BE GALVANIZED.

C. ATTACH HANGERS AND SUPPORTS DIRECTLY ONTO THE STRUCTURE BY FIRST REMOVING EXISTING FIRE PROOFING AND AFTER SECURING THE ATTACHMENT, REPAIRING THE FIRE PROOFING TO ITS ORIGINAL CONDITION, CONTINUOUSLY OVER THE ATTACHMENT.

D. FOR EXPANSION BOLTS/SHIELDS USE RED HEAD, HILTI OR WEJ-IT SELF DRILLING OR STEEL SHIELD, LOAD RATED. DO NOT USE DRILLED ANCHORS IN POST TENSION SLABS WITHOUT APPROVAL OF OWNER. DO NOT CUT REINFORCING STEEL WITH DRILLED INSERTS.

E. SUPPORT ALL GALVANIZED DUCTWORK WITH GALVANIZED HANGERS AND MOUNTS AS REQUIRED BY SMACNA (8 FT SPACING). DO NOT SUPPORT RISERS FROM SLEEVES IN SLABS.

23 05 48 - VIBRATION AND SEISMIC CONTROLS FOR HVAC

A. PROVIDE VIBRATION ISOLATION FOR EACH PIECE OF ROTATING OR RECIPROCATING HVAC EQUIPMENT SHOWN ON THE DRAWINGS. ALL ISOLATION COMPONENTS SHALL BE SUPPLIED BY A SINGLE MANUFACTURER - MASON INDUSTRIES, KINETICS OR AMBER BOOTH. TYPES OF ISOLATORS, REQUIRED DEFLECTIONS, AND INSTALLATION PRACTICES SHALL BE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE VIBRATION ISOLATION MANUFACTURER.

23 05 53 - PIPE AND DUCT IDENTIFICATION

A. DUCTWORK AND PIPING SHALL BE LABELED WITH PREPRINTED SELF-ADHESIVE, PREMIUM GRADE VINYL, COLOR-CODED, WITH LETTERING INDICATING SERVICE, AND SHOWING FLOW DIRECTION.

23 05 93 - TESTING ADJUSTING AND BALANCING

A. PROVIDE QUALIFIED PERSONNEL, EQUIPMENT, APPARATUS AND SERVICES FOR START-UP, TESTING AND BALANCING OF MECHANICAL SYSTEMS, TO PERFORMANCE DATA SHOWN IN SCHEDULES, AS SPECIFIED, AND AS REQUIRED BY CODES, STANDARDS, REGULATIONS AND AUTHORITIES HAVING JURISDICTION INCLUDING CITY INSPECTORS, OWNERS AND ARCHITECT

B. PROVIDE THE SERVICES OF AN INDEPENDENT TESTING, ADJUSTING, AND BALANCING (TAB) AGENCY TO PROVIDE TAB SERVICES FOR THE MECHANICAL SYSTEMS. THE TAB AGENCY SHALL BE CERTIFIED BY NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) OR THE ASSOCIATED AIR BALANCE COUNCIL (AABC) IN THOSE TESTING AND BALANCING DISCIPLINES REQUIRED FOR THIS PROJECT. THE TAB AGENCY SHALL HAVE AT LEAST ONE PROFESSIONAL ENGINEER REGISTERED IN THE STATE IN WHICH THE SERVICES ARE TO BE PERFORMED AND CERTIFIED BY NEBB OR AABC AS A TEST AND BALANCE ENGINEER.

C. PRIOR TO TESTING, ADJUSTING, AND BALANCING, THE MECHANICAL CONTRACTOR SHALL VERIFY THAT THE SYSTEMS HAVE BEEN INSTALLED AND ARE OPERATING AS SPECIFIED. APPROVED SHOP DRAWINGS, AS BUILT DRAWINGS, AND ALL OTHER DATA REQUIRED FOR EACH SYSTEM AND/OR COMPONENT TO BE TESTED SHALL BE MADE AVAILABLE AT THE JOB SITE DURING THE ENTIRE TAB EFFORT. THE OWNER SHALL BE NOTIFIED IN WRITING OF ALL EQUIPMENT, COMPONENTS, OR BALANCING DEVICES, THAT ARE DAMAGED, INCORRECTLY INSTALLED, OR MISSING, AS WELL AS ANY DESIGN DEFICIENCIES THAT WILL PREVENT PROPER TESTING, ADJUSTING, AND BALANCING. TESTING, ADJUSTING, AND BALANCING SHALL NOT COMMENCE UNTIL APPROVED BY THE OWNER.

D. PERFORM TESTING AND BALANCING PROCEDURES ON EACH SYSTEM IDENTIFIED, IN ACCORDANCE WITH THE DETAILED PROCEDURES OUTLINED IN EITHER NEBB: "PROCEDURAL STANDARDS FOR TESTING, ADJUSTING, AND BALANCING OF ENVIRONMENTAL SYSTEMS" OR AABC: "NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE." THE TAB AGENCY SHALL TEST, ADJUST, AND BALANCE THE FOLLOWING MECHANICAL SYSTEMS:

1. ALL AIR HANDLING EQUIPMENT
2. ALL PUMPING SYSTEMS
3. ALL SUPPLY AIR SYSTEMS
4. ALL RETURN AIR SYSTEMS
5. ALL HYDRONIC SYSTEMS
6. VERIFY OPERATION OF ALL TEMPERATURE CONTROL SYSTEMS
7. TEST SYSTEMS FOR PROPER SOUND AND VIBRATION LEVELS

A. SUBMIT TESTING, ADJUSTING, AND BALANCING REPORTS BEARING THE SEAL AND SIGNATURE OF THE TAB PROFESSIONAL ENGINEER. PREPARE A REPORT OF RECOMMENDATIONS FOR CORRECTING UNSATISFACTORY MECHANICAL PERFORMANCES WHEN A SYSTEM CANNOT BE SUCCESSFULLY BALANCED.

B. START UP ALL SYSTEMS, PRESSURE TEST DUCTWORK AND PIPING, AND BALANCE SYSTEMS INCLUDING, BUT NOT LIMITED TO, ALL NEW AND EXISTING REGISTERS, GRILLES, DIFFUSERS, TERMINAL UNITS, FANS, ETC. WITHIN THE AREA OF WORK TO PERFORMANCE DATA SHOWN ON PLANS, SCHEDULES, AND AS SPECIFIED.

C. DO NOT COVER OR CONCEAL WORK BEFORE TESTING AND INSPECTION AND OBTAINING APPROVAL.

D. LEAKS, DAMAGE AND DEFECTS DISCOVERED OR RESULTING FROM STARTUP, TESTING, AND BALANCING SHALL BE REPAIRED OR REPLACED TO LIKE-NEW CONDITION WITH ACCEPTABLE MATERIALS. TEST SHALL BE CONTINUED UNTIL SYSTEM OPERATES WITHOUT ADJUSTMENT OR REPAIR.

E. REPORT ON REPORTING FORMS, SUBMITTED TO OWNER FOR APPROVAL IN ADVANCE.

F. SUBMIT PROCEDURES, RECORDING FORMS, AND TEST EQUIPMENT FOR REVIEW PRIOR TO BALANCING, AS DESCRIBED IN SPECIFICATIONS. SUBMIT ELECTRONIC COPY OF TESTING AND BALANCING REPORTS TO ARCHITECT FOR APPROVAL.

G. THE BALANCING CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL DIRECTIONAL ADJUSTMENT OF ALL LINEAR DIFFUSERS AS INDICATED ON PLANS. IF NO DIRECTIONAL FLOW IS INDICATED INTERIOR LINEAR DIFFUSERS SHALL BE DIRECTED HORIZONTALLY AND PERIMETER LINEAR DIFFUSER SHALL BE DIRECTED VERTICALLY, IF PERIMETER LINEAR DIFFUSERS HAVE MULTIPLE SLOTS THE PERIMETER SLOT DIRECTED VERTICALLY, AND THE INTERIOR SLOT DIRECTED HORIZONTALLY TOWARDS THE INTERIOR SPACE.

23 07 13 - HVAC INSULATION

A. GENERAL REQUIREMENTS

1. INSULATION SHALL BE CERTAIN-TEED, KNAUF, MANVILLE, OR OWENS CORNING. MATERIALS SHALL MEET REQUIREMENTS OF ADHESIVE AND SEALANT COUNCIL STANDARDS AND SMACNA. INSTALL INSULATION, MASTICS, ADHESIVES, COATINGS, COVERS, WEATHER-PROTECTION AND OTHER WORK IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ASTM E-84 FIRE HAZARD RATINGS SHALL BE 25 FLAME SPREAD, 50 SMOKE DEVELOPED.

2. INSULATION AND VAPOR BARRIER SHALL BE CONTINUOUS AROUND ENTIRE PERIMETER OF DUCTS. DUCTS SUPPORTED BY METAL STRAPS SHALL HAVE INSULATION ENCOMPASSING STRAPS, WHERE STRAPS PENETRATE AT TOP OF DUCT TIGHTLY SEAL AROUND STRAP WITH INSULATING TAPE. DUCTS SUPPORTED BY TRAPEZE TYPE HANGERS UNDER DUCTS SHALL HAVE 6 LB. DENSITY DUCT INSULATION PROVIDED BETWEEN DUCT AND HANGER. INSULATION SHALL BE SAME THICKNESS AND VAPOR BARRIER AS SPECIFIED FOR SPECIFIC DUCT TYPE. RIGID INSULATION SECTION SHALL BE FULL WIDTH OF DUCT AND MINIMUM 12" LONG. TAPE AND SEAL ALL SEAMS WHERE RIGID INSULATION MEETS OTHER INSULATION.

3. FITTINGS, VALVES AND FLANGES SHALL BE INSULATED WITH SAME MATERIAL AND TO SAME THICKNESS AS ADJOINING PIPE INSULATION, WITH PRESENT SECTIONS.

4. FOR STRAINERS AND OTHER VALVES OR FITTINGS WHICH NEED MAINTENANCE, PROVIDE PREFORMED REMOVABLE INSULATION SECTION.

B. PRODUCTS AND APPLICATIONS

1. INDOOR DUCT INSULATION SHALL BE MINERAL FIBER BLANKET DUCT INSULATION WITH FACTORY APPLIED FSK JACKET. PROVIDE MINIMUM OF R-6 (AS INSTALLED) INSULATION FOR THE FOLLOWING:

   a. SUPPLY AND FRESH AIR DUCTS WHEN LOCATED WITHIN CONCEALED SPACES INSIDE THE BUILDING ENVELOPE.

   b. RETURN AIR DUCTWORK IN UNCONDITIONED SPACES (WHERE SPACE TEMPERATURE IS MORE THAN 10 DEGREES F DIFFERENT FROM DUCT TEMPERATURE)

2. REFRIGERANT LINE AND CONDENSATE DRAIN LINE INSULATION SHALL BE 1 INCH THICK FLEXIBLE ELASTOMERIC. ACCEPTABLE MANUFACTURERS: ARMACELL OR K-FLEX.

3. CONDENSATE DRAIN LINE INSULATION SHALL BE 1 INCH THICK FLEXIBLE ELASTOMERIC. ACCEPTABLE MANUFACTURERS: ARMACELL OR K-FLEX.

4. EQUIPMENT INSULATION SHALL BE MINERAL FIBER BOARD INSULATION WITH FACTORY APPLIED ASJ. PROVIDE 2 INCH THICK FOR HEATING SYSTEM HEAT EXCHANGERS, 1 INCH THICK FOR OTHER EQUIPMENT. INSULATION SHALL BE FORMED OR FABRICATED TO FIT EQUIPMENT.

23 09 00 - INSTRUMENTATION AND CONTROLS

A. PROVIDE COMPLETE SYSTEM OF AUTOMATIC TEMPERATURE CONTROLS (ATC). CONTROL SYSTEM SHALL BE CAPABLE OF PERFORMING ALL SEQUENCES OF OPERATION SHOWN ON THE DRAWINGS OR DESCRIBED IN THESE SPECIFICATIONS. INDIVIDUAL CONTROL COMPONENTS MAY NOT BE SHOWN ON CONTRACT DOCUMENTS, BUT THE CONTRACTOR SHALL SUPPLY ALL COMPONENTS, AND CONTROL WIRING NECESSARY FOR A COMPLETE OPERABLE SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SYSTEM COMPONENTS, WHETHER THE ELECTRICAL OR OTHER WORK IS SUBCONTRACTED OR NOT.

B. INSTALL THERMOSTATS AT MOUNTING HEIGHTS ABOVE FINISHED FLOOR IN ACCORDANCE WITH "ADA" REQUIREMENTS, OR AS DIRECTED OTHERWISE BY ARCHITECT.

C. ALL SAFETY SWITCHES AND CUT OUTS SHALL BE FIELD CALIBRATED AND SET PRIOR TO START-UP EQUIPMENT.

D. ALL CONTROL WIRING SHALL COMPLY WITH THE REQUIREMENTS OF THE ELECTRICAL SPECIFICATIONS.

E. SUBMIT TO ARCHITECT A POINT-TO-POINT WIRING DIAGRAM AND AIR PIPING LAYOUT SHOWING MANUFACTURERS AND MODEL NUMBERS OF ALL CONTROL COMPONENTS. INCLUDE WRITTEN DESCRIPTION OF SYSTEM OPERATION.

F. WIRING BETWEEN FIRE ALARM SYSTEM AND TEMPERATURE CONTROL SYSTEM, EXCEPT FOR DUCT MOUNTED SMOKE DETECTORS, SHALL BE BY MECHANICAL CONTRACTOR.

G. ROOM THERMOSTAT SENSORS AND TRANSMITTERS IN PUBLIC AREAS SHALL HAVE METAL COVER WITH TAMPER PROOF SCREWS AND CONCEALED ADJUSTMENT. THERMOSTATS FOR PRIVATE OFFICES SHALL HAVE EXPOSED DIAL FOR SETPOINT ADJUSTMENT. HEATING/COOLING THERMOSTATS SHALL HAVE AN ADJUSTABLE DEADBAND.

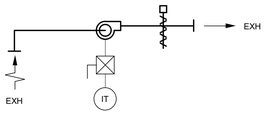
H. LOCAL CONTROLLERS, RELAYS, SWITCHES, AND OTHER CONTROL COMPONENTS SHALL BE MOUNTED ON ENCLOSED CONTROL PANELS WITH HINGE-LOCK DOOR MOUNTED NEXT TO SYSTEM CONTROLLED. TEMPERATURE SETTINGS, ADJUSTMENTS AND CALIBRATIONS SHALL BE MADE AT SYSTEM CONTROL PANEL. PANEL SHALL HAVE CANOPY LIGHT AND ON-OFF SWITCH.

23 31 00 - HVAC DUCTS

A. GENERAL REQUIREMENTS

1. FOR GALVANIZED DUCTWORK, SEAL AIR DUCT JOINTS AND JOINTS BETWEEN FITTINGS AND DUCTS WITH HARDCAST SEALANT OR APPROVED EQUAL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

2. DUCTWORK SHALL BE FREE FROM VIBR



SEQUENCE OF OPERATION

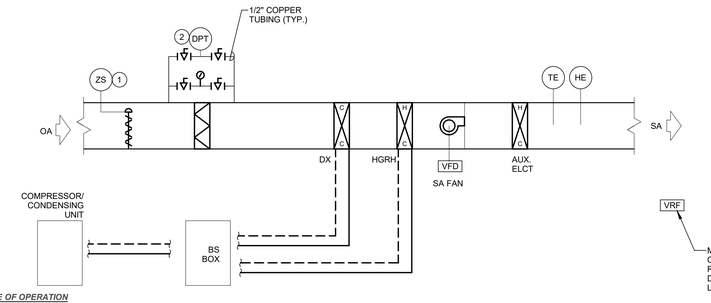
GENERAL

1. ***UNIT SHALL BE CONTROLLED BY DOAS CONTROLLER AND SHALL RUN IN CONJUNCTION WITH DOAS UNIT.***
2. ***THE FAN SHALL RUN CONTINUOUSLY AND MOTORIZED DAMPER SHALL FULLY OPEN DURING THE BUILDING'S OCCUPIED HOURS AND UNIT SHALL OFF DURING UNOCCUPIED HOURS.***

OPERATION

1. ***UPON STARTUP, DAMPER SHALL POWER OPEN (FAIL CLOSE)***
2. ***IF THE DAMPER IS PROVEN OPEN VIA ENDSWITCH, FAN SHALL ACTIVATE AND RUN CONTINUOUSLY AT CONSTANT VOLUME.***
3. ***DURING UNOCCUPIED MODE THE FAN SHALL DEENGERGIZE AND MOTORIZED DAMPER SHALL FULLY CLOSE.***

1 FANS - EXHAUST
NTS



GENERAL NOTES

1. CONSTRUCTION CONTRACTOR SHALL COORDINATE THE POINT OF RESPONSIBILITY FOR ALL EQUIPMENT AND DEVICES SHOWN.

KEYNOTES

1. MOTORIZED OUTSIDE AIR DAMPER WITH END SWITCH
2. FINAL FILTER

SEQUENCE OF OPERATION

GENERAL

1. ***SPLIT SYSTEM DEDICATED OUTDOOR AIR SYSTEM, PROVIDED WITH LOCAL FACTORY CONTROLS BY MANUFACTURE. UNIT SHALL CONSIST OF A MOTORIZED, OUTSIDE AIR DAMPER, FILTER SECTION, DX COOLING COIL, DX REHEAT COIL, DIRECT DRIVE FAN, AUXILIARY ELECTRIC DUCT HEATER AND SAFETY CONTROLS. THE UNIT TIES INTO THE BACK OF FAN COIL UNITS. ALL FAN COIL CONTROL SETPOINTS AND OPERATION ARE FACTORY PRESET; DOAS CONTROLS SHALL NOT ATTEMPT TO OVERRIDE***
2. ***FILTER STATUS SHALL BE MONITORED BY THE DOAS CONTROLLER VIA FACTORY-INSTALLED DIFFERENTIAL PRESSURE SENSOR.***
3. ***FAN STATUS SHALL BE MONITORED BY THE CONTROLLER VIA FACTORY CURRENT FEEDBACK.***
4. ***END SWITCHES SHALL VERIFY POSITION OF DAMPERS.***
5. ***DOAS SHALL UTILIZE FACTORY-INSTALLED DISCHARGE AIR TEMPERATURE AND RELATIVE HUMIDITY SENSORS FOR CONTROL AND MONITORING.***

TEMPERATURE/HUMIDITY CONTROL

1. ***DURING OCCUPIED MODE DOAS SHALL MAINTAIN A DISCHARGE AIR TEMPERATURE AND HUMIDITY USING FACTORY DIPSWITCH SETTING SETPOINT OF:***
   - ***A. COOLING MODE: 63 DEG. F.(DB)/ 45% RH***
   - ***B. HEATING MODE: 63 DEG. F(ADJ)***
     - ***a. AUXILIARY ELECTRIC DUCT HEATER SHALL ENGAGE ONLY IF DISCHARGE AIR DROPS BELOW SAFE LIMITS (FACTORY THRESHOLD) AND SHALL DE-ENERGIZE ONCE THE SETPOINT IS ACHIEVED.***
     - ***b. ONCE SET POINT IS REACHED, AUXILIARY HEATING ELEMENT SHALL DEENERGIZE.***

OA DAMPER CONTROL

1. ***WHEN THE SYSTEM IS IN OCCUPIED MODE, THE OUTSIDE AIR DAMPER SHALL OPEN FULLY TO PROVIDE REQUIRED AIRFLOW.***
2. ***WHEN THE SYSTEM IS IN UNOCCUPIED MODE, THE OUTSIDE AIR DAMPER SHALL CLOSE.***

OCCUPIED MODE

1. ***WHEN OCCUPIED MODE IS INITIATED, THE DOAS FAN SHALL ENERGIZE AND RUN CONTINUOUSLY***
2. ***THE OUTSIDE AIR DAMPER SHALL OPEN TO MAINTAIN MINIMUM VENTILATION REQUIREMENTS.***
3. ***DX COOLING AND HEATING SHALL MAINTAIN DISCHARGE AIR TEMPERATURE / HUMIDITY ACCORDING TO FACTORY DIP-SWITCH SETTINGS..***

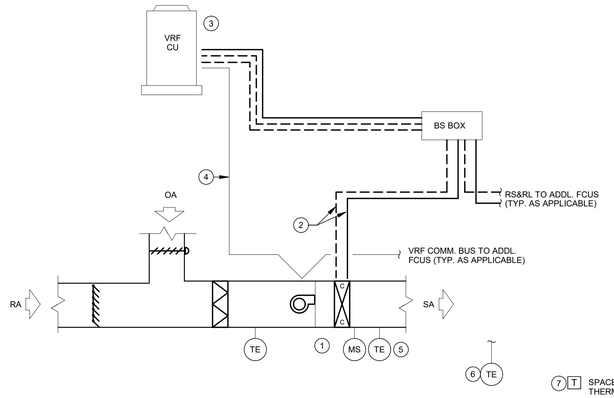
UNOCCUPIED MODE

1. ***WHEN UNOCCUPIED MODE IS INITIATED, THE DOAS FAN SHALL DEENERGIZE.***
2. ***THE OUTSIDE AIR DAMPER SHALL CLOSE.***

SAFETIES AND ALARMS

1. ***THE FOLLOWING SAFETIES, SHALL BE MONITORED AND INITIATE A SPECIFIC ALARM NOTICE AT THE FACTORY CONTROLLER:***
   - ***A. LEAVING AIR TEMPERATURE DROPS BELOW 40°F (ADJ), DOAS SHALL DEENERGIZE, OUTSIDE AIR DAMPERS SHALL CLOSE.***
   - ***B. FAILURE TO START WITHIN FACTORY DELAY SHALL GENERATE AN ALARM.***
   - ***C. DAMPER END SWITCH DOES NOT PROVE DAMPER IS IN DESIRED POSITION.***
   - ***D. FILTER PRESSURE IF DIFFERENTIAL PRESSURE EXCEEDS FACTORY ALARM SETPOINT, THE UNIT SHALL GENERATE A FILTER ALARM AND NOTIFY VIA THE CONTROLLER.***
   - ***E. FAILED SENSOR ALARM***

2 ENERGY RECOVERY UNIT - FIXED PLATE TYPE
NTS



SEQUENCE OF OPERATION

GENERAL

1. ***VRF FAN COIL UNITS SHALL BE FURNISHED WITH LOCAL FACTORY CONTROLS BY MITSUBISHI. PROVIDE WIRING BETWEEN THE OUTDOOR UNITS AND THE INDOOR UNITS, THE FRONT END CONTROLLER(S), AND OTHER CONTROLS COMPONENTS FURNISHED WITH THE VRF SYSTEMS, PER THE VRF SYSTEM SHOP DRAWINGS, FOR A COMPLETE AND OPERABLE SYSTEM.***
2. ***THE CONTROLS INTEGRAL TO THE VRF SYSTEMS SHALL CONTROL THE VRF SYSTEMS, WITH SETPOINTS, SCHEDULES, AND SIMILAR OPERATIONAL INFORMATION. THE VRF SYSTEMS SHALL OPERATE THE VRF SYSTEM EQUIPMENT TO MAINTAIN THOSE SETPOINTS AND SCHEDULES***
3. ***CONNECT THE UNITS TO LOCAL THERMOSTAT COMMUNICATIONS AND MONITORING PACKAGE PROVIDED BY THE VRF SYSTEM MANUFACTURER FOR MONITORING AND ADJUSTMENTS.***

TEMPERATURE CONTROL

1. ***DURING OCCUPIED MODE DOAS SHALL MAINTAIN A DISCHARGE AIR TEMPERATURE SETPOINT OF:***
   - ***A. COOLING MODE 55 DEG. F(ADJ)***
   - ***B. HEATING MODE 95 DEG. F(ADJ)***
2. ***DURING UNOCCUPIED MODE DOAS SHALL MAINTAIN A DISCHARGE AIR TEMPERATURE SETPOINT OF:***
   - ***A. COOLING MODE 80 DEG. F(ADJ)***
   - ***B. HEATING MODE 65 DEG. F(ADJ)***

FAN COILS

1. ***FAN COIL UNITS SHALL OPERATE TO MAINTAIN SPACE TEMPERATURE SETPOINTS AS MEASURED BY THE UNIT OR WALL-MOUNTED SENSORS, FOLLOWING MITSUBISHI FACTORY CONTROL LOGIC..***
2. ***FANS SHALL OPERATE ON DEMAND WHEN HEATING OR COOLING IS REQUIRED.***
3. ***THERMOSTAT MODES SHALL CONTROL UNIT OPERATION AS FOLLOWS:***
   - ***A. OFF: UNIT DEACTIVATES; UNOCCUPIED SETPOINTS OVERRIDDEN.***
   - ***B. FAN ONLY: FAN ENERGIZES; NO HEATING OR COOLING***
   - ***C. AUTO:UNIT AUTOMATICALLY SELECTS HEATING OR COOLING TO MAINTAIN SETPOINT.***
   - ***D. COOLING:COOLING STAGE ENERGIZES WHEN SPACE TEMPERATURE EXCEEDS SETPOINT***
   - ***E. HEATING:HEATING STAGE ENERGIZES WHEN SPACE TEMPERATURE FALLS BELOW SETPOINT***

OCCUPIED MODE

1. ***THE CONTROLLER SHALL INDEX THE VRF SYSTEM INTO OCCUPIED MODE BASED ON SCHEDULE. DURING THIS PERIOD THE VRF SYSTEM SHALL OPERATE TO MAINTAIN OCCUPIED SETPOINTS.***

UNOCCUPIED MODE

1. ***THE CONTROLLER SHALL INDEX THE VRF SYSTEM INTO UNOCCUPIED MODE BASED ON SCHEDULE. DURING THIS PERIOD THE VRF SYSTEM SHALL OPERATE TO MAINTAIN UNOCCUPIED SETPOINTS.***

SAFETIES AND ALARMS

1. ***THE FOLLOWING SAFETIES, SHALL BE MONITORED AND INITIATE A SPECIFIC ALARM NOTICE AT THE FACTORY CONTROLLER:***
   - ***A. CONDENSATE OVERFLOW.***
   - ***B. FAILURE TO START WITHIN FACTORY DELAY SHALL GENERATE AN ALARM.***
   - ***C. FAILED SENSOR ALARM.***

KEYNOTES

1. INDOOR EVAPORATOR UNIT. REFER TO PLANS FOR QTY. AND TYPE.
2. REFRIGERANT LIQUID AND SUCTION LINES SIZED PER MANUFACTURER
3. OUTDOOR CONDENSING UNIT
4. PROVIDE WIRING IN ACCORDANCE WITH UNIT MANUFACTURER'S INSTALLATION GUIDELINES
5. PLENUM RATED, UL508 CONDENSATE OVERFLOW SWITCH MOUNTED IN PRIMARY DRAIN PAN. SWITCH SHALL BE WIRED TO DE-ENERGIZE UNIT UPON DETECTION OF OF RISING WATER (BLOCKED DRAIN) AND GENERATE
6. WALL-MOUNTED VRF ROOM CONTROLLER WITH CONFIGURABLE DISPLAY, TEMPERATURE SENSOR, AND OPERATOR INTERFACE WITH ON/OFF, MODE, TEMPERATURE SETPOINT.
7. INDIVIDUAL WALL MOUNTED TEMPERATURE SENSOR IN SPACE.

3 VRF SYSTEMS
NTS

CES
CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

MECHANICAL CONTROLS

DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	KD
CHECKED:	MM
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:



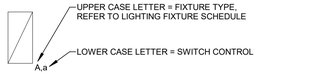
SHEET NO.

M8.00

FIRE ALARM LEGEND

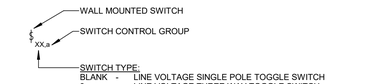
SYMBOL	DESCRIPTION
EQUIPMENT FACP	FIRE ALARM CONTROL PANEL
NOTIFICATION	CEILING MOUNTED COMBINATION HORN / STROBE LIGHT WITH A MULTI-CANDELA STROBE. MINIMUM 30 CD RATING FOR NOTIFICATION DEVICES, COORDINATE WITH ENGINEER IF CD RATINGS DIFFER IN FIELD.
INITIATING DEVICES S	CEILING MOUNTED SMOKE DETECTOR
F	WALL MOUNTED FIRE ALARM MANUAL PULL STATION. MOUNT AT 48" AFF.

LIGHTING FIXTURE TAGS



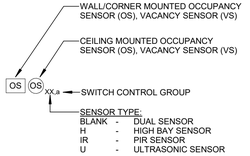
NOTES
1. FIXTURE CONTROL DESIGNATION REFERS TO ZONE/SWITCH/RELAY CONTROL OF FIXTURES CONTROLLED BY COMMON:
   A. SWITCH FOR LIGHTING IN ROOM, CORRIDOR, OPEN AREA.
   B. ZONE RELAY IN LOCAL LIGHTING CONTROL PANEL OR LIGHTING CONTROL RELAY PANEL.
   C. ALL CONTROL DEVICES (SWITCHES, CONTROL PANELS, OCCUPANCY/VACANCY SENSORS, ETC) WITH CONTROL DESIGNATIONS REFERS TO COMMON CONTROL OF THE SAME ZONE/SWITCH/RELAY CONTROL.
2. WHERE CONTROL DESIGNATION IS NOT SHOWN, ALL FIXTURES IN ASSOCIATED ROOM OR SPACE SHALL BE CONTROLLED SIMULTANEOUSLY VIA THE CONTROL DEVICES INDICATED ON PLANS.
3. WHERE EMERGENCY AND NORMAL FIXTURES ARE CONTROLLED FROM THE SAME ZONE/SWITCH/CONTROL RELAY, UL 924 EMERGENCY BYPASS RELAYS SHOWN WITH SAME CONTROL DESIGNATION BYPASS THAT ZONE/SWITCH/CONTROL RELAY. REFER TO EMERGENCY LIGHTING CIRCUIT SCHEMATICS FOR ADDITIONAL WIRING INFORMATION.
4. UNSWITCHED LIGHTING BRANCH CIRCUIT WIRING IS SHOWN TO A SINGLE FIXTURE IN EACH COMMON CONTROL ZONE. UNLESS OTHERWISE INDICATED, PROVIDE 2#12,#12G,3/4"C FOR SWITCHED WIRING TO ALL COMMON CONTROL FIXTURES.
5. PROVIDE LOW VOLTAGE DIMMING CONTROL WIRING AS INDICATED IN LIGHTING CONTROL DETAILS FOR DIMMABLE LIGHT FIXTURES IN COMMON CONTROL ZONES/SWITCHES/RELAY CONTROL.
6. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL WIRING AND CONTROL INFORMATION.
7. REFER TO LIGHTING CONTROL RELAY PANEL SCHEDULES WHERE APPLICABLE FOR ADDITIONAL CONTROL INFORMATION.

LIGHTING SWITCH AND SENSOR TAGS



SWITCH TYPE:

BLANK	-	LINE VOLTAGE SINGLE POLE TOGGLE SWITCH
3	-	LINE VOLTAGE THREE WAY TOGGLE SWITCH
4	-	LINE VOLTAGE FOUR WAY TOGGLE SWITCH
D	-	LINE VOLTAGE WALL DIMMER
K	-	KEYED SWITCH - SINGLE POLE
K3	-	KEYED SWITCH - THREE WAY
OS	-	LINE VOLTAGE OCCUPANCY SENSOR SWITCH (AUTO-ON / AUTO-OFF)
OSD	-	LINE VOLTAGE OCCUPANCY DIMMER SWITCH (AUTO-ON / AUTO-OFF)
VS	-	LINE VOLTAGE VACANCY SENSOR SWITCH (MANUAL-ON / AUTO-OFF)
VSD	-	LINE VOLTAGE VACANCY DIMMER SWITCH (MANUAL-ON / AUTO-OFF)
LOS	-	LOW VOLTAGE OCCUPANCY SENSOR SWITCH (AUTO-ON / AUTO-OFF)
LOSD	-	LOW VOLTAGE OCCUPANCY DIMMER SWITCH (AUTO-ON / AUTO-OFF)
LVS	-	LOW VOLTAGE VACANCY SENSOR SWITCH (MANUAL-ON / AUTO-OFF)
LVSD	-	LOW VOLTAGE VACANCY DIMMER SWITCH (MANUAL-ON / AUTO-OFF)
LV	-	LOW VOLTAGE MOMENTARY PUSHBUTTON FOR USE WITH CEILING SENSORS. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION.
LVD	-	LOW VOLTAGE DIMMER FOR USE WITH CEILING SENSORS. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION.
LK#	-	LIGHTING CONTROL KEYPAD FOR USE WITH ROOM CONTROLLER SYSTEM. "#" REPRESENTS TYPE OF KEYPAD. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION.



SENSOR TYPE:

BLANK	-	DUAL SENSOR
H	-	HIGH BAY SENSOR
IR	-	PIR SENSOR
U	-	ULTRASONIC SENSOR

NOTES:

1. FIXTURE(S) SHALL BE CONTROLLED BY SWITCH OR RELAY LOCATED IN THE ROOM UNLESS OTHERWISE NOTED ON PLAN.
2. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION ON WIRING AND SWITCHING.
3. WALL MOUNTED SWITCHES SHALL BE MOUNTED AT 42" AFF UNLESS OTHERWISE NOTED. COORDINATE WITH ARCHITECT.
4. SET ALL OCCUPANCY TYPE SENSORS TO AUTO-ON, AUTO-OFF MODE. SET ALL VACANCY TYPE SENSORS TO MANUAL-ON, AUTO-OFF MODE.
5. REFER TO CONTROL SCHEME NOTES AND CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.
6. REFER TO SYMBOL LIST FOR ADDITIONAL LIGHTING CONTROL DEVICES.
7. WHERE SWITCHES ARE NOT TAGGED WITH CONTROL LETTER ON PLANS, ALL FIXTURES IN ASSOCIATED ROOM SHALL BE CONTROLLED SIMULTANEOUSLY VIA CONTROLS SPECIFIED.

ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION
	SURFACE MOUNTED PANELBOARD
	RECESSED PANELBOARD
J	DISCONNECT SWITCH
J	FUSED DISCONNECT SWITCH
J	COMBINATION STARTER AND DISCONNECT SWITCH
	MOTOR STARTER OR CONTACTOR
S M	MANUAL MOTOR STARTER
	MOTOR (REFER TO MOTOR CIRCUIT SCHEDULE FOR POWER REQUIREMENTS)
S SH SH	ELECTRIC SHADE MOTOR AND CONTROL SWITCH FURNISHED BY DIV. 12 CONTRACTOR AND INSTALLED/WIRED BY EC. REFER TO MOTORIZED SHADE WIRING DETAIL FOR ADDITIONAL INFORMATION.
T	TRANSFORMER
M	ELECTRICAL METER
SPD	SURGE PROTECTIVE DEVICE
VFD	VARIABLE FREQUENCY DRIVE
	BRANCH CIRCUIT WIRING, CONCEALED IN WALLS OR CEILINGS
	HOMERUN TO PANELBOARD
	SWITCHED BRANCH CIRCUIT WIRING
J J	JUNCTION BOX
	SIMPLEX WALL MOUNTED RECEPTACLE, 18" AFF UNLESS OTHERWISE NOTED
	DUPLEX WALL MOUNTED RECEPTACLE, 18" AFF UNLESS OTHERWISE NOTED
M	DUPLEX WALL MOUNTED RECEPTACLE FOR MICROWAVE. COORDINATE WITH MICROWAVE LOCATION. VERIFY EXACT LOCATION AND MOUNTING HEIGHT WITH ARCH PRIOR TO ROUGH-IN.
DW	DUPLEX WALL MOUNTED RECEPTACLE FOR DISHWASHER. MOUNT 18" AFF UNLESS OTHERWISE NOTED. PROVIDE AND CONNECT TO GFCI BREAKER IN PANELBOARD.
REF	DUPLEX WALL MOUNTED RECEPTACLE FOR REFRIGERATOR. MOUNT 48" AFF UNLESS OTHERWISE NOTED. PROVIDE AND CONNECT TO GFCI BREAKER IN PANELBOARD.
EWC	DUPLEX WALL MOUNTED RECEPTACLE FOR ELECTRIC WATER COOLER. MOUNT 18" AFF UNLESS OTHERWISE NOTED. PROVIDE AND CONNECT TO GFCI BREAKER IN PANELBOARD.
	DOUBLE DUPLEX WALL MOUNTED RECEPTACLE, 18" AFF UNLESS OTHERWISE NOTED
a a	RECEPTACLE, MOUNT 6" ABOVE COUNTER OR CASEWORK
bc bc	RECEPTACLE MOUNTED BELOW FRONT OF COUNTER
GFI GFI	RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTION
WP WP	RECEPTACLE WITH WEATHERPROOF COVER
c c	RECEPTACLE, CEILING MOUNTED
PL	PLUG LOAD CONTROLLER FOR AUTOMATIC RECEPTACLE SHUTOFF. TIED INTO LIGHTING CONTROL SYSTEM. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION. CONTROLLED RECEPTACLES ARE INDICATED WITH SWITCHED WIRING ON PLANS.
	RECEPTACLE, HALF SWITCHED. REFER TO TYPICAL SWITCHED RECEPTACLE WIRING DIAGRAM FOR ADDITIONAL INFORMATION.

LIGHTING SYMBOLS

SYMBOL	DESCRIPTION
	PENDANT MOUNTED LIGHTING FIXTURE
	RECESSED DOWNLIGHT FIXTURE
	SURFACE MOUNTED ROUND FIXTURE
	PENDANT HUNG LIGHTING FIXTURE
	WALL SCONCE
	CEILING MOUNTED EXIT SIGN
	SELF CONTAINED EMERGENCY LIGHTING FIXTURE WITH BATTERY
PC	LIGHT SENSING PHOTOCELL / DAYLIGHT SENSOR
NLC	NORMAL LIGHTING CONTROLLER FOR LOW-VOLTAGE CONTROL SYSTEM. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION.

SHEET INDEX - ELECTRICAL

SHEET NUMBER	SHEET NAME
04 - ELECTRICAL	
E0.00	ELECTRICAL ABBREVIATIONS, NOTES AND SYMBOLS
E1.00	ELECTRICAL LIGHTING FLOOR PLAN
E2.00	ELECTRICAL POWER FLOOR PLAN
E3.00	ELECTRICAL DETAILS
E3.01	ELECTRICAL DETAILS
E4.00	ELECTRICAL SCHEDULES AND DIAGRAMS
E4.01	ELECTRICAL SCHEDULES AND DIAGRAMS
E5.00	ELECTRICAL SPECIFICATIONS
E5.01	ELECTRICAL SPECIFICATIONS
Grand total: 9	

ELECTRICAL ABBREVIATIONS

A/AMP	AMPERE
AC	ALTERNATING CURRENT
AFCI	ARC FAULT CIRCUIT INTERRUPTER
ACU	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPS INTERRUPTING CURRENT
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BSMT	BASEMENT
C	CONDUIT
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CKT	CIRCUIT
COMP	COMPRESSOR
CP	CONDENSATE PUMP
CT	CURRENT TRANSFORMER
CU	CONDENSING UNIT OR COPPER
CUH	CABINET UNIT HEATER
D	DRYER
DEG.	DEGREE
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
EF	EXHAUST FAN
ELEC	ELECTRICAL
ELEV	ELEVATOR
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING
EP	EMERGENCY PANEL
EUH	ELECTRIC UNIT HEATER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
F	FAHRENHEIT
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FC	FOOT CANDLE
FCU	FAN COIL UNIT
G	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HP	HORSE POWER
HPS	HIGH PRESSURE SODIUM
HR	HOUR
HZ	HERTZ
IG	ISOLATED GROUND
IN	INCHES
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERE
KW	KILOWATT
MAX	MAXIMUM
MAU	MAKE-UP AIR UNIT
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCCB	MOLDED CASE CIRCUIT BREAKER
MH	METAL HALIDE OR MANHOLE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
NA	NOT APPLICABLE
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
P	POLE
PE	PRIMARY ELECTRIC SERVICE
PF	POWER FACTOR
PH	PHASE
PNL	PANEL
PVC	POLYVINYL CHLORIDE CONDUIT
REF	REFRIGERATOR
RGS	RIGID GALVANIZED STEEL CONDUIT
RM	ROOM
RTU	ROOFTOP UNIT
SE	SECONDARY ELECTRICAL SERVICE
SPEC	SPECIFICATION
SWBD	SWITCHBOARD
SPD	SURGE PROTECTION DEVICE
TELE	TELECOMMUNICATIONS/TELEPHONE
TV	TELEVISION
T/TX	TRANSFORMER
TYP	TYPICAL
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VA	VOLT AMPERE
VAC	VOLTS ALTERNATING CURRENT
VIF	VERIFY IN FIELD
W	WATT OR WIRE
WA	WASHER
WG	WIRE GUARD
WP	WEATHERPROOF

ELECTRICAL GENERAL NOTES

1. BRANCH CIRCUITS AND FEEDER CIRCUITS SHALL BE CONCEALED IN WALLS AND ABOVE CEILINGS WHERE POSSIBLE, INCLUDING HOMERUNS TO PANELBOARDS. BRANCH CIRCUITS AND FEEDERS SHALL NOT BE ROUTED IN OR UNDER SLAB UNLESS SPECIFICALLY INDICATED ON ELECTRICAL FLOOR PLANS OR DETAILS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. BRANCH CIRCUITS SHALL BE 2#12,#12G.,3/4"C., TO NEW 20A/1P CIRCUIT BREAKER IN PANEL INDICATED UNLESS NOTED OTHERWISE.
3. 120V, 1-PHASE, 20A BRANCH CIRCUITS EXCEEDING 100' IN LENGTH SHALL BE 2#10,#10G., 3/4"C. UNLESS NOTED OTHERWISE.
4. 120V, 1-PHASE, 20A BRANCH CIRCUITS EXCEEDING 165' IN LENGTH SHALL BE 2#8,#10G., 3/4"C. UNLESS NOTED OTHERWISE.
5. DEVICES SHALL BE LABELED WITH SOURCE PANEL AND CIRCUIT NUMBER(S).
6. REFER TO ARCHITECTS REFLECTED CEILING PLAN FOR EXACT LOCATION OF CEILING MOUNTED ELECTRICAL DEVICES. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATION OF WALL MOUNTED ELECTRICAL DEVICES.
7. PROVIDE FIRE STOPPING AND SMOKE BARRIER SEALING OF PENETRATIONS THROUGH FIRE WALLS OR SMOKE BARRIERS AS REQUIRED. REFER TO ARCHITECTURAL FLOOR PLANS AND CODE SHEETS FOR WALLS.
8. COORDINATE LOCATIONS OF ELECTRICAL DEVICES AND CONTROLS WITH RESPECT TO LOCATIONS OF CASEWORK AND EQUIPMENT PRIOR TO ROUGH-IN.
9. WHEN DEVICES ARE SHOWN ON PLANS OFFSET FROM ONE ANOTHER, DEVICES SHALL BE MOUNTED IN LINE, CENTERED ON WALL.
10. SHARED NEUTRAL WIRING IS NOT ACCEPTABLE, UNLESS NOTED OTHERWISE ON DRAWINGS. PROVIDE A DEDICATED NEUTRAL WIRE FOR EACH CIRCUIT, WHERE APPLICABLE.
11. DRAWINGS ARE DIAGRAMMATIC ONLY. DO NOT SCALE ELECTRICAL DRAWINGS. FIELD CONDITIONS AND ARCHITECTURAL ELEVATIONS AND DIMENSIONS SHALL GOVERN EXACT LOCATION AND MOUNTING HEIGHTS OF ELECTRICAL DEVICES AND RACEWAYS.
12. FINISHES AND COLOR OF ELECTRICAL WIRING DEVICES, EXPOSED RACEWAY, LIGHT FIXTURES, AND OTHER ELECTRICAL DEVICES SHALL BE DETERMINED BY THE ARCHITECT.
13. ELECTRICAL WORK SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE (OTHER THAN ROOF DECK).
14. THE ELECTRICAL CONTRACTOR SHALL PERFORM CORES REQUIRED FOR ELECTRICAL WORK.
15. BUILDING WIRE AND CABLE NOT IN RACEWAY SHALL BE PLENUM RATED.

PHASED WORK ABBREVIATIONS

EX	EXISTING TO REMAIN
RL	EXISTING TO BE RELOCATED
RE	EXISTING TO BE REMOVED
RD	NEW LOCATION OF RELOCATED DEVICE
RN	REMOVE AND REPLACE WITH NEW

CES
CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST,
CASTROVILLE, TX

ELECTRICAL ABBREVIATIONS, NOTES AND SYMBOLS

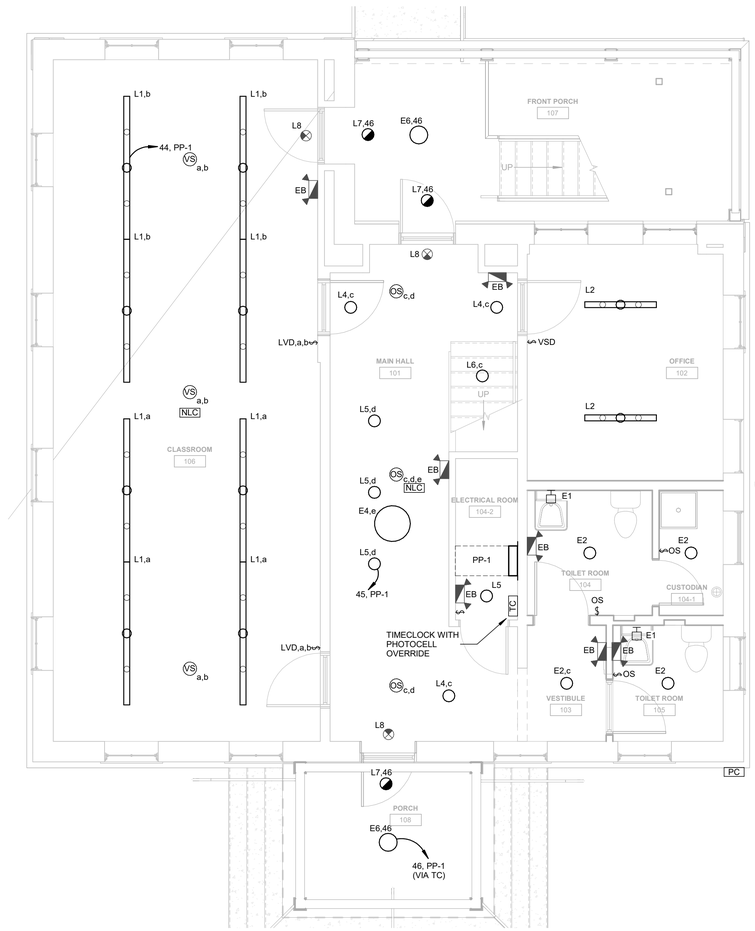
DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	DRW
CHECKED:	GYC
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:

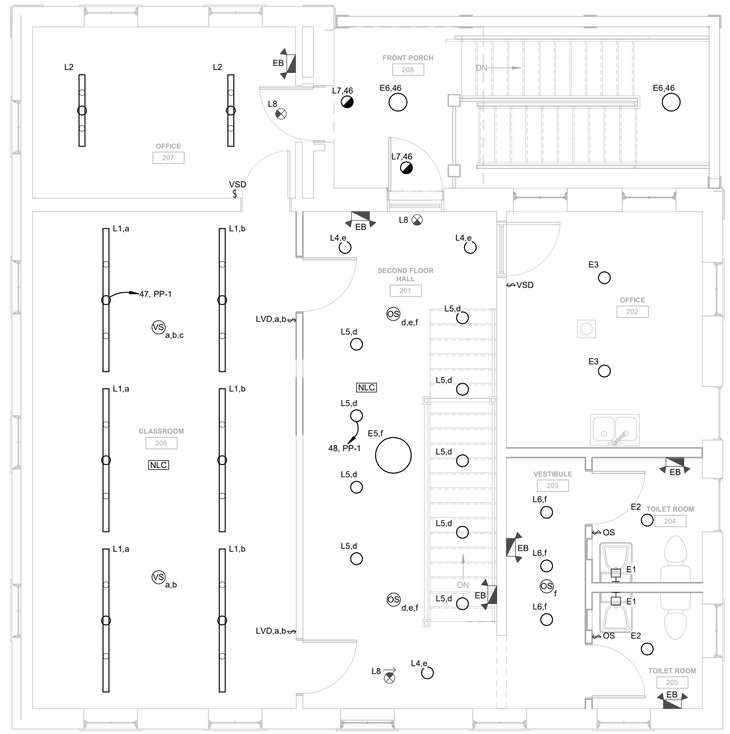


SHEET NO.

E0.00



1 ELECTRICAL LIGHTING PLAN - LEVEL 1
1/4" = 1'-0"



2 ELECTRICAL LIGHTING PLAN - LEVEL 2
1/4" = 1'-0"

CES
CES Engineering
Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST,
CASTROVILLE, TX

ELECTRICAL LIGHTING FLOOR PLAN

DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	DRW
CHECKED:	GYC
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:

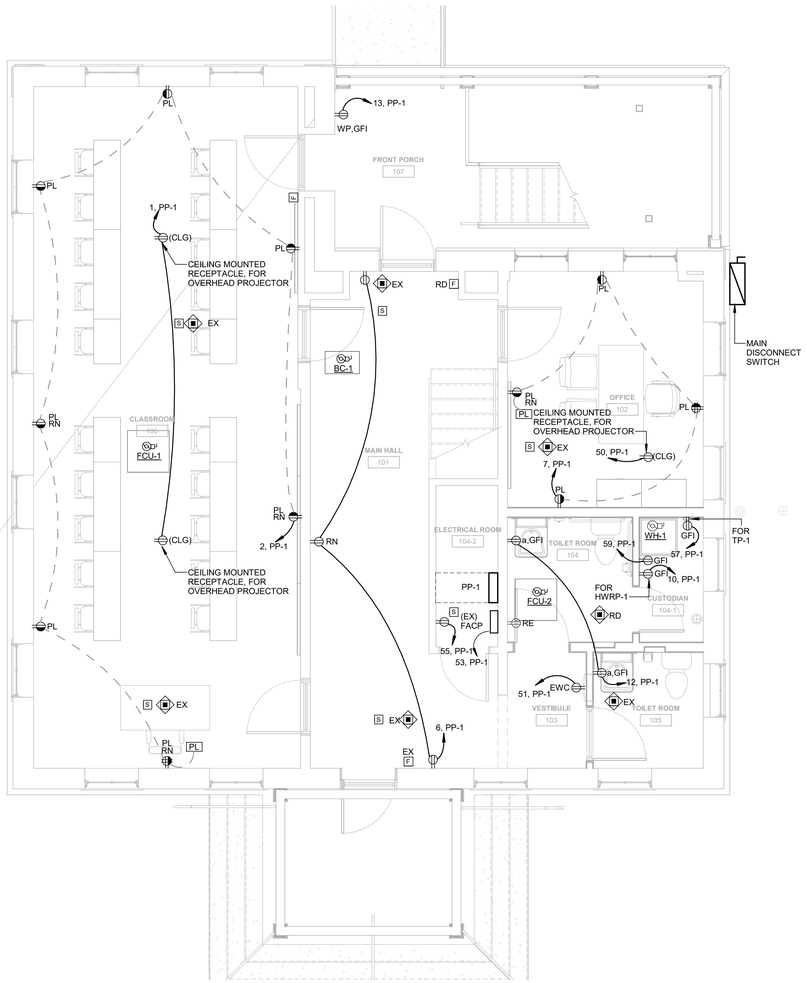
STATE OF TEXAS
155955
LICENSED
PROFESSIONAL ENGINEER

SHEET NO.

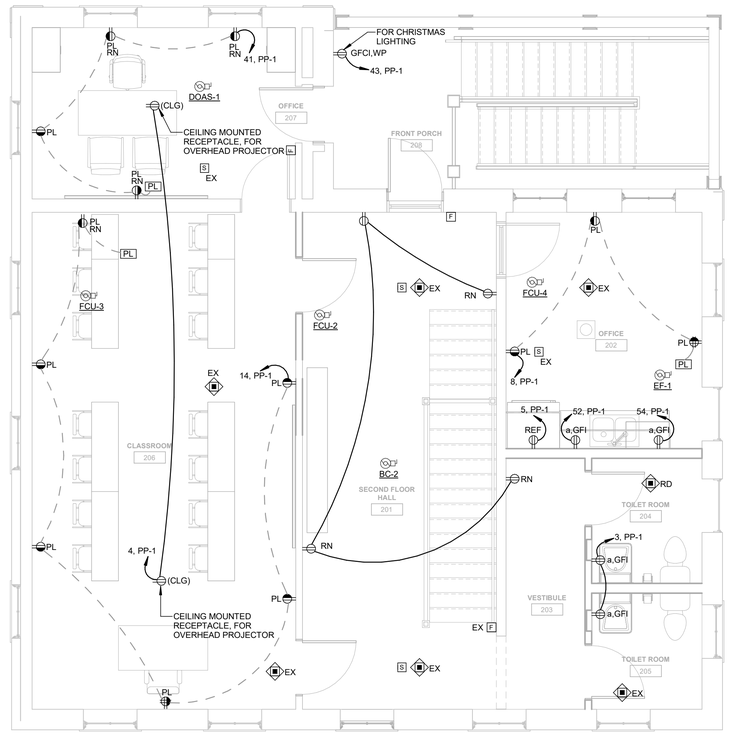
E1.00

FIRE ALARM NOTES

1. EXISTING FIRE ALARM NOTIFICATION DEVICES AND INITIATING DEVICES ARE TO BE REMOVED AND REINSTALLED/RELOCATED. EXISTING FIRE ALARM CONTROL PANEL TO REMAIN.
2. EXISTING NOTIFICATION AND INITIATING DEVICES:
   A. PULL STATIONS: 3
   B. CEILING HORN/STROBE: 13
   C. SMOKE ALARM: 13



1 ELECTRICAL POWER FLOOR PLAN - LEVEL 1
1/4" = 1'-0"



2 ELECTRICAL POWER FLOOR PLAN - LEVEL 2
1/4" = 1'-0"

CES
CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES		
NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS		
NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST,
CASTROVILLE, TX

ELECTRICAL POWER FLOOR PLAN

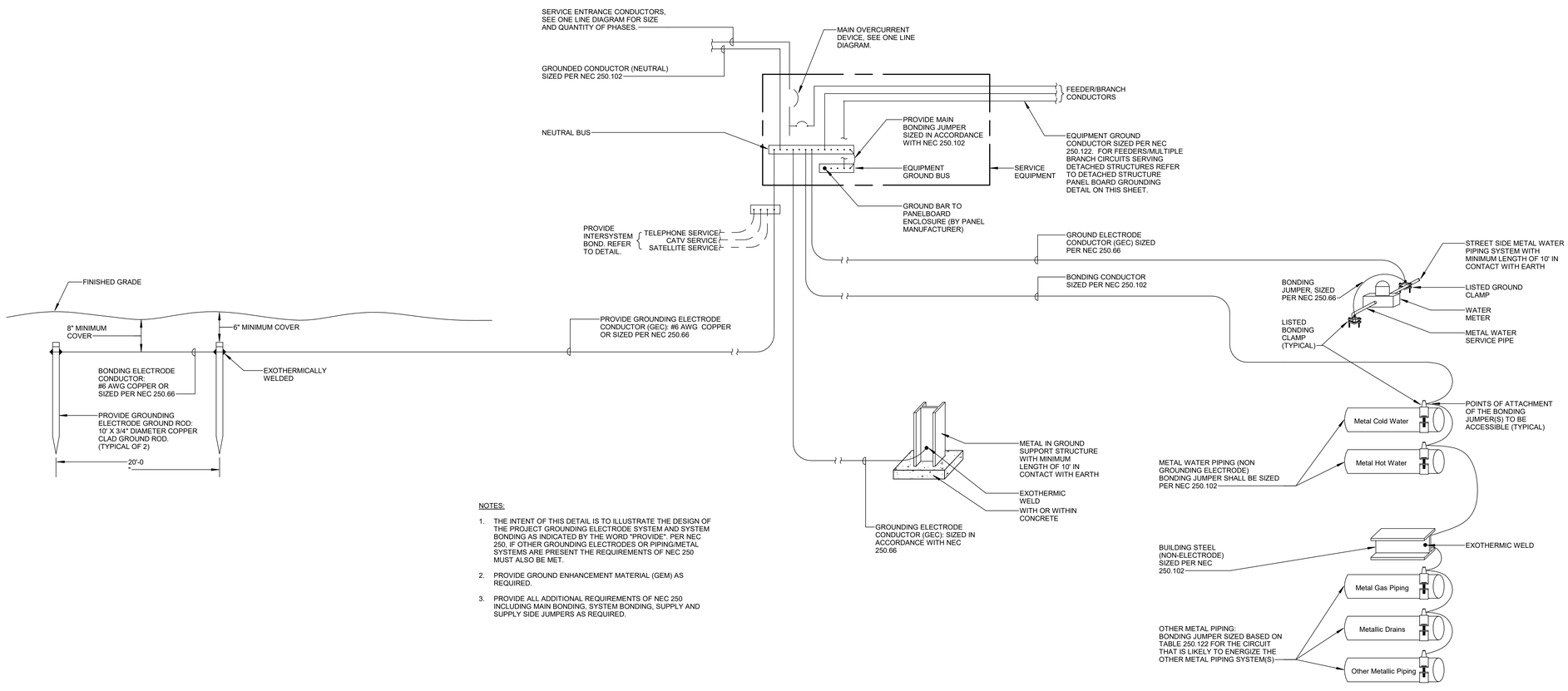
DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	DRW
CHECKED:	GYC
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:

STATE OF TEXAS
55955
LICENSED PROFESSIONAL ENGINEER

SHEET NO.

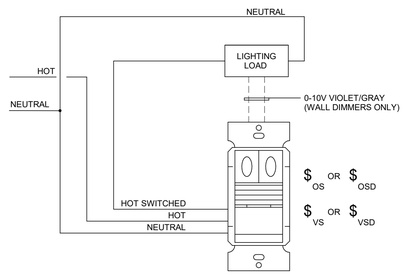
E2.00



NOTES:

1. THE INTENT OF THIS DETAIL IS TO ILLUSTRATE THE DESIGN OF THE PROJECT GROUNDING ELECTRODE SYSTEM AND SYSTEM BONDING AS INDICATED BY THE WORD "PROVIDE". PER NEC 250, IF OTHER GROUNDING ELECTRODES OR PIPING/METAL SYSTEMS ARE PRESENT THE REQUIREMENTS OF NEC 250 MUST ALSO BE MET.
2. PROVIDE GROUND ENHANCEMENT MATERIAL (GEM) AS REQUIRED.
3. PROVIDE ALL ADDITIONAL REQUIREMENTS OF NEC 250 INCLUDING MAIN BONDING, SYSTEM BONDING, SUPPLY AND SUPPLY SIDE JUMPERS AS REQUIRED.

1 GROUNDING ELECTRODE SYSTEM AND BONDING DETAIL
NTS



TYPICAL WALL SENSOR SWITCH

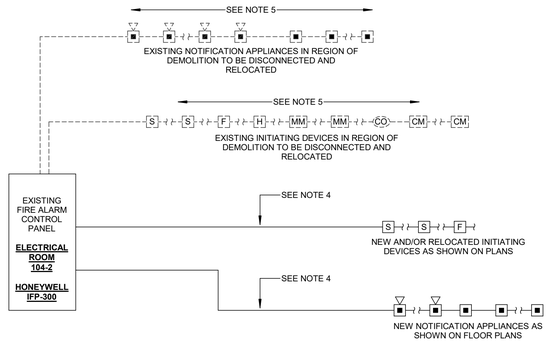
NOTES:

1. REFER TO MANUFACTURERS WIRING DIAGRAM FOR EXACT WIRING DETAIL.
2. WIRE IN SERIES WITH THREE-WAY SWITCH, WHERE INDICATED ON PLANS.
3. PROVIDE 0-10V WIRING FROM WALL DIMMERS, WHERE INDICATED ON PLANS.
4. LIGHTING SHALL TIME OUT AFTER 20 MINUTES.
5. REFER TO LIGHTING CONTROL SPECIFICATION FOR ADDITIONAL INFORMATION.

TYPICAL SPECIFICATIONS:

1. "OS" OCCUPANCY SENSOR SWITCH: (SET TO AUTO-ON, AUTO-OFF MODE)
2. "OSD" OCCUPANCY SENSOR 0-10V DIMMER: (SET TO AUTO-ON, AUTO-OFF MODE)
3. "VS" VACANCY SENSOR SWITCH: (SET TO MANUAL-ON, AUTO-OFF MODE)
4. "VSD" VACANCY SENSOR 0-10V DIMMER: (SET TO MANUAL-ON, AUTO-OFF MODE)

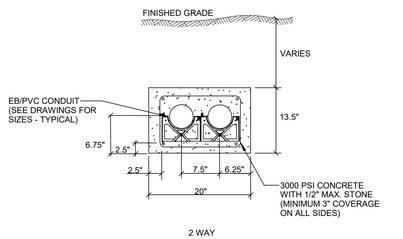
2 TYPICAL LINE VOLTAGE SENSOR SWITCH DETAIL
NTS



NOTES

1. PROVIDE ADDITIONAL BATTERIES, TERMINAL CABINETS, CONTROL CARDS, EXPANSION MODULES, AMPLIFIERS (FOR VOICE SYSTEMS) AND OTHER ACCESSORIES TO ACCOMMODATE NEW DEVICES AS REQUIRED BY MANUFACTURER. NEW COMPONENTS MUST BE BY SAME MANUFACTURER AS EXISTING.
2. PROVIDE TESTING AND REPROGRAMMING OF EXISTING CONTROL PANEL TO ACCOMMODATE NEW DEVICES.
3. PROVIDE ALL NECESSARY SYNCHRONIZATION OF NEW STROBES.
4. PROVIDE WIRING OF SAME CLASS/STYLE AS EXISTING FIRE ALARM WIRING USED IN BUILDING. CONNECT TO EXISTING NAC & SLC CIRCUITS MADE AVAILABLE DURING DEMOLITION. PROVIDE METAL-CLAD CABLING WHEN CONCEALED AND WIRE IN RACEWAY WHERE EXPOSED.
5. MAINTAIN OPERATION OF THE EXISTING FIRE ALARM SYSTEM DURING DEMOLITION. DEVICES ARE TO BE REMOVED BACK TO NEXT DEVICE OUTSIDE THE AREA OF WORK. EXTEND CIRCUITS WITH WIRING TO MATCH EXISTING CLASS AND STYLE TO MAINTAIN CONTINUITY OF CIRCUITS UPSTREAM AND DOWNSTREAM OF THE WORK AFFECTED BY DEMOLITION. PROTECT EXISTING DEVICES DURING CONSTRUCTION. TAKE DEVICES OFF-LINE IF NECESSARY, COORDINATE BYPASSING AND REACTIVATION OF THESE DEVICES WITH OWNER. PROVIDE TESTING AND REPROGRAMMING OF THE EXISTING SYSTEM. NOTE: EXISTING DEVICES MAY BE REQUIRED TO REMAIN UNTIL NEW DEVICES ARE INSTALLED, TESTED AND FUNCTIONAL.
6. REFER TO FLOOR PLANS FOR QUANTITY AND LOCATION OF DEVICES.
7. CONTRACT WITH THE SERVICES OF A FACTORY AUTHORIZED DEALER OF THE EXISTING SYSTEM TO PROVIDE ALL EQUIPMENT, SUPERVISION, FINAL CONNECTIONS, PROGRAMMING AND TESTING OF THE SYSTEM.

3 PARTIAL FIRE ALARM RISER DIAGRAM
NTS



2 WAY

NOTE: SEE DETAIL 3/ES1.00 FOR TYPICAL TRENCH EXCAVATION

NOTES:

1. TYPICAL CONDUITS AND QUANTITIES SHOWN, REFER TO DRAWINGS FOR QUANTITIES AND SIZES.
2. SEPARATOR DIMENSIONS BASED ON 4" PVC CONDUIT CHAIR SEPARATORS. USE SEPARATORS BASED ON LARGEST CONDUIT INSTALLED, MAINTAIN 2.5" ON ALL SIDES OF SEPARATORS. PROVIDE REDUCERS FOR SMALLER CONDUIT SIZES.
3. LOCATE SEPARATORS AND CHAIRS 4 FT. MAX. ON CENTER, SET ON CONCRETE LEVELING PADS AND BAND CONDUITS TOGETHER PRIOR TO BACKFILL OR PLACING CONCRETE.
4. REFER TO TRENCH DETAIL 3/ES1.00 FOR MORE INFORMATION.

4 CONCRETE ENCASED DUCT BANK DETAIL
NTS

CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

ELECTRICAL DETAILS

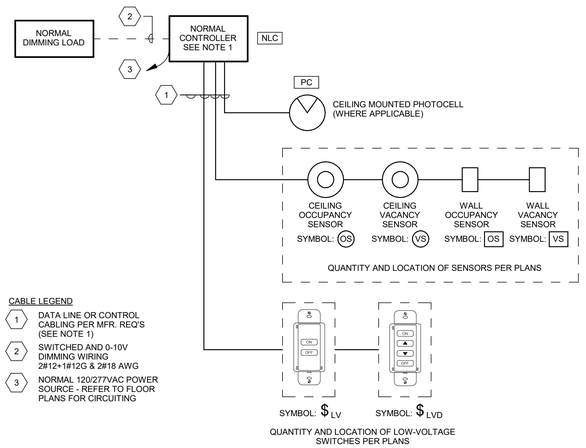
DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	DRW
CHECKED:	GYC
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:

STATE OF TEXAS 55955 LICENSED PROFESSIONAL ENGINEER

SHEET NO.

E3.00



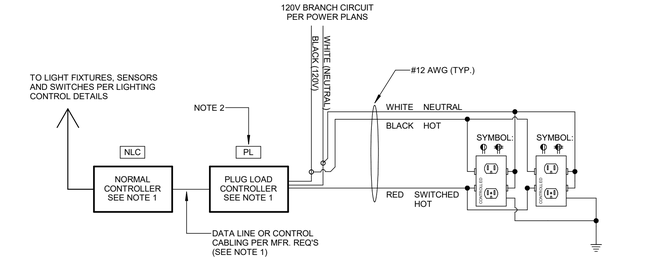
GENERAL NOTES:

1. DETAIL IS MANUFACTURER-AGNOSTIC. REFER TO SPECIFICATIONS FOR BASIS OF DESIGN LIGHTING CONTROL SYSTEM MANUFACTURER. SYSTEM TOPOLOGY AND ARCHITECTURE IS SHOWN DIAGRAMMATICALLY ON THIS DETAIL. FINAL CONNECTIONS, WIRING SCHEME, WIRE TYPE AND STYLE, AND OTHER SYSTEM COMPONENT CONFIGURATIONS SHALL BE AS REQUIRED BY APPROVED LIGHTING CONTROL MANUFACTURER. PROVIDE ADAPTERS, CONVERTERS AND OTHER SYSTEM COMPONENTS REQUIRED BY MANUFACTURER. SUBMIT FOR APPROVAL BY ENGINEER A WIRING DIAGRAM INDICATING ALL COMPONENTS AND CONNECTIONS.
2. PROVIDE FACTORY COMMISSIONING OF ALL SENSORS, PHOTOCELLS AND CONTROLS.
3. REFER TO FLOOR PLANS FOR EXACT LIGHTING FIXTURES ON EACH ZONE, AND QUANTITY AND LOCATION OF ALL DEVICES.
4. FINISHES AND COLORS OF ALL LIGHTING CONTROL DEVICES AND SWITCH PLATES SHALL BE SELECTED BY ARCHITECT
5. OCCUPANCY AND VACANCY SENSORS SHALL BE PROVIDED WITH AUXILIARY RELAY OPTION FOR CONNECTION TO BUILDING MANAGEMENT SYSTEM BY DIVISION 23 CONTRACTOR. IF SUBMITTED SENSORS DO NOT HAVE THIS ABILITY, PROVIDE ADDITIONAL INPUT/OUTPUT MODULES CAPABLE OF SUPPORTING RELAYED OUTPUT TO BMS.
6. SYSTEM SHALL BE PROVIDED WITH NETWORKED CONNECTIONS BETWEEN EACH CONTROLLER IN PROJECT, SO THAT EACH ROOM CAN BE SET UP AND CONFIGURED FROM A CENTRALLY OPERATED SYSTEM. PROVIDE BRIDGE MODULES AS REQUIRED BY MANUFACTURER TO SUPPORT THIS NETWORKING CAPABILITY.

SEQUENCE OF OPERATIONS:

1. ROOM OCCUPANCY SENSORS SHALL BE SET FOR AUTO ON, AUTO OFF OPERATION. TIMEOUT AFTER 20 MINUTES.
2. ROOM VACANCY SENSORS SHALL BE SET FOR MANUAL ON, AUTO OFF OPERATION. TIMEOUT AFTER 20 MINUTES.
3. 4-BUTTON "LVD" KEYPAD(S) SHALL PROVIDE MANUAL CONTROL OF FIXTURES AS FOLLOWS:
   - BUTTON 1: "ON": TURN ALL LIGHTS ON
   - BUTTON 2: "▲": PRESS TO RAISE ALL LIGHTS
   - BUTTON 3: "▼": PRESS TO LOWER ALL LIGHTS
   - BUTTON 4: "OFF": TURN ALL LIGHTS OFF
4. 2-BUTTON "LV" KEYPAD(S) SHALL PROVIDE MANUAL CONTROL OF FIXTURES AS FOLLOWS:
   - BUTTON 1: "ON": TOGGLE ALL LIGHTS ON
   - BUTTON 2: "OFF": TOGGLE ALL LIGHTS OFF
5. WHERE PHOTOCELL IS INDICATED ON PLANS, ZONE SHALL HAVE AUTOMATIC DIMMING VIA PHOTOCELL AND SHALL CAP MAXIMUM LIGHT LEVEL OF 40 FOOT-CANDLES IN THIS ZONE.

TYPICAL 1-ZONE LIGHTING CONTROL DETAIL - NORMAL FIXTURES ONLY



GENERAL NOTES:

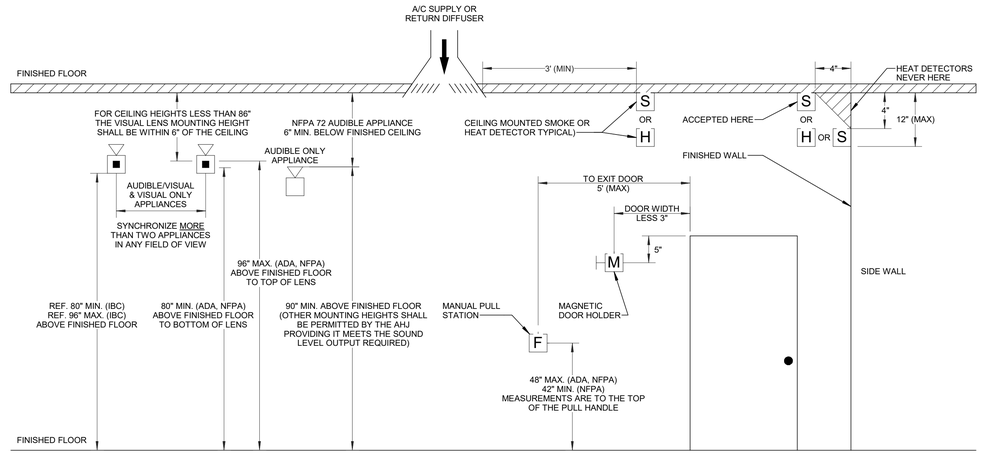
1. DETAIL IS MANUFACTURER-AGNOSTIC. REFER TO SPECIFICATIONS FOR BASIS OF DESIGN LIGHTING CONTROL SYSTEM MANUFACTURER. SYSTEM TOPOLOGY AND ARCHITECTURE IS SHOWN DIAGRAMMATICALLY ON THIS DETAIL. FINAL CONNECTIONS, WIRING SCHEME, WIRE TYPE AND STYLE, AND OTHER SYSTEM COMPONENT CONFIGURATIONS SHALL BE AS REQUIRED BY APPROVED LIGHTING CONTROL MANUFACTURER. PROVIDE ADAPTERS, CONVERTERS AND OTHER SYSTEM COMPONENTS REQUIRED BY MANUFACTURER. SUBMIT FOR APPROVAL BY ENGINEER A WIRING DIAGRAM INDICATING ALL COMPONENTS AND CONNECTIONS.
2. "PL" PLUG LOAD CONTROLLER SYMBOLS ARE SHOWN ON ELECTRICAL POWER FLOOR PLANS. PROVIDE MULTIPLE CONNECTIONS WHERE MULTIPLE SYMBOLS ARE SHOWN.
3. REFER TO TYPICAL CONTROLLED RECEPTACLE WIRING DIAGRAM ON ELECTRICAL DETAILS DRAWINGS FOR ADDITIONAL REQUIREMENTS.

SEQUENCE OF OPERATIONS:

1. ROOM OCCUPANCY SENSORS SHALL SWITCH LIGHTING USING AUTO ON, AUTO OFF OPERATION. TIMEOUT AFTER 20 MINUTES.
2. ROOM VACANCY SENSORS SHALL SWITCH LIGHTING USING MANUAL ON, AUTO OFF OPERATION. TIMEOUT AFTER 20 MINUTES.
3. PLUG LOAD CONTROLLER SHALL DE-ENERGIZE CONTROLLED RECEPTACLES UPON TIMEOUT SIGNAL FROM OCCUPANCY OR VACANCY SENSORS IN ROOM.
4. PLUG LOAD CONTROLLER SHALL NOT DE-ENERGIZE CONTROLLED RECEPTACLES UPON MANUAL-OFF SIGNAL TO LIGHT FIXTURES.
5. PROGRAM LIGHTING WITHIN THE SPACE TO TURN OFF (3) MINUTES PRIOR TO RECEPTACLE SHUTOFF IN ORDER FOR STILL OCCUPANTS TO RE-ESTABLISH OCCUPANCY IN THE SPACE.

TYPICAL PLUG LOAD CONTROL DETAIL

1 LOW VOLTAGE CONTROL DETAILS
NTS



NOTE:
REFER TO THE PROPER DEVICE INSTALLATION INSTRUCTIONS FOR BACKBOX MOUNTING HEIGHT.

2 FIRE ALARM DEVICE MOUNTING HEIGHT REFERENCE DETAIL
N.T.S.

CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

ELECTRICAL DETAILS

DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	DRW
CHECKED:	GYC
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:



SHEET NO.

E3.01

Branch Panel: PP-1

Location: ELECTRICAL ROOM 104-2 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 22K
Supply From: MAIN DISCONNECT SWITCH | **Phases:** 3 | **Bus Material:** CU
Mounting: Surface | **Wires:** 4 | **Bus Rating:** 400 A
Enclosure: Type 1 | **MCB Rating / MLO:** MLO

CKT	Circuit Description	AFCI/ GFCI	Trip	Poles	A		B		C		Poles	Trip	AFCI/ GFCI	Circuit Description	CKT
1	RECEP - CEILING PROJECTOR 106		20 A	1	0.36	1.44					1	20 A		RECEP - CLASSROOM 106	2
3	RECEP - TOILET ROOM 204/205		20 A	1			0.36	0.36			1	20 A		RECEP - CEILING PROJECTOR 206	4
5	REF 202	GFCI	20 A	1					1.20	0.54	1	20 A		RECEP - MAIN HALL 101	6
7	RECEP - 102		20 A	1	0.90	0.72					1	20 A		RECEP - 202	8
9	WATER HEATER		70 A	2			5.50	0.18			1	20 A		HWRP-1	10
11	--	--	--	--					5.50	0.36	1	20 A		RECEP - 104/105	12
13	RECEP - FRONT PORCH 107		20 A	1	0.18	1.26					1	20 A		RECEP - 206	14
15	RECEP - SECOND FLOOR HALL 201		20 A	1			0.72	7.20			3	100 A		CU-1	16
17	DOAS-1		15 A	2					0.41	7.20	--	--	--	--	18
19	--	--	--	--	0.41	7.20					--	--	--	--	20
21	EDH-1		60 A	3			5.66	6.72			3	90 A		CU-2	22
23	--	--	--	--					5.66	6.72	--	--	--	--	24
25	--	--	--	--	5.66	6.72					--	--	--	--	26
27	FCU-1		20 A	2			0.11	0.07			2	20 A		FCU-4	28
29	--	--	--	--					0.11	0.07	--	--	--	--	30
31	FCU-2		20 A	2	0.11	0.01					2	20 A		FCU-5	32
33	--	--	--	--			0.11	0.01			--	--	--	--	34
35	FCU-3		20 A	2					0.11	0.08	2	20 A		BC-1	36
37	--	--	--	--	0.11	0.08					--	--	--	--	38
39	EF-1		20 A	1			0.12	0.08			2	20 A		BC-2	40
41	RECEP - OFFICE 207		20 A	1					0.72	0.08	--	--	--	--	42
43	RECEP - FRONT PORCH 208		20 A	1	0.18	1.27					1	20 A		LTG - 1ST FLOOR ROOMS	44
45	LTG - 1ST FLOOR CORRIDOR		20 A	1			0.66	0.32			1	20 A		LTG - EXTERIOR	46
47	LTG - 2ND FLOOR ROOMS		20 A	1					1.09	1.11	1	20 A		LTG - STAIR/2ND FLOOR...	48
49	SITE CU MAINT. RECEP.		20 A	1	0.18	0.18					1	20 A		RECEP - CEILING PROJECTOR	50
51	RECEP - WATER COOLER	GFCI	20 A	1			0.18	0.18			1	20 A		RECEP - COUNTERTOP 202	52
53	SPARE		20 A	1					0.18	0.18	1	20 A		RECEP - COUNTERTOP 202	54
55	RECEP - 104-2		20 A	1	0.18	0.00					1	20 A		SPARE	56
57	TP-1		20 A	1			0.18	0.00			1	20 A		SPARE	58
59	RECEP - MAINT		20 A	1					0.18	0.00	1	20 A		SPARE	60
				Phase...	27.12 kVA		28.72 kVA		31.47 kVA						
				Phase...	226 A		241.4 A		264.3 A						
				Total Load:	87.24 kVA										
				Total...	242.17 A										

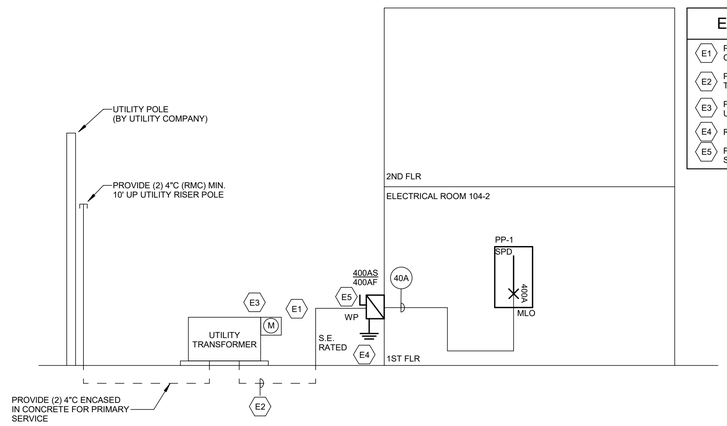
Notes:
PROVIDE WITH INTERGAL SURGE PROTECTION DEVICE
PROVIDE SINGLE TUB

THREE PHASE FEEDER SCHEDULE

CIRCUIT SYMBOL	CONDUCTORS (3 PH, 3W) WITH GROUND	CONDUIT SIZE	CONDUCTORS (3 PH, 4W) WITH GROUND	CONDUIT SIZE	OVERCURRENT RATING
1	3#12 & 1#12G	3/4"	4#12 & 1#12G	3/4"	15A
2	3#12 & 1#12G	3/4"	4#12 & 1#12G	3/4"	20A
2.5	3#10 & 1#10G	3/4"	4#10 & 1#10G	3/4"	25A
3	3#10 & 1#10G	3/4"	4#10 & 1#10G	3/4"	30A
3.5	3#8 & 1#10G	3/4"	4#8 & 1#10G	3/4"	35A
4	3#8 & 1#10G	3/4"	4#8 & 1#10G	1"	40A
4.5	3#8 & 1#10G	3/4"	4#8 & 1#10G	1"	45A
5	3#8 & 1#10G	1"	4#8 & 1#10G	1"	50A
6	3#6 & 1#10G	1"	4#6 & 1#10G	1"	60A
7	3#4 & 1#8G	1 1/4"	4#4 & 1#8G	1 1/4"	70A
8	3#4 & 1#8G	1 1/4"	4#4 & 1#8G	1 1/4"	80A
9	3#3 & 1#8G	1 1/4"	4#3 & 1#8G	1 1/4"	90A
10	3#3 & 1#8G	1 1/4"	4#3 & 1#8G	1 1/4"	100A
11	3#2 & 1#6G	1 1/4"	4#2 & 1#6G	1 1/2"	110A
12	3#1 & 1#6G	1 1/2"	4#1 & 1#6G	2"	125A
15	3#1/0 & 1#6G	2"	4#1/0 & 1#6G	2"	150A
17	3#2/0 & 1#6G	2"	4#2/0 & 1#6G	2"	175A
20	3#3/0 & 1#6G	2"	4#3/0 & 1#6G	2 1/2"	200A
22	3#4/0 & 1#4G	2 1/2"	4#4/0 & 1#4G	2 1/2"	225A
25	3#250KCMIL & 1#4G	3"	4#250KCMIL & 1#4G	3"	250A
30	3#350KCMIL & 1#4G	3"	4#350KCMIL & 1#4G	4"	300A
35	3#500KCMIL & 1#3G	3 1/2"	4#500KCMIL & 1#3G	4"	350A
40	3#500KCMIL & 1#3G	4"	4#600KCMIL & 1#3G	4"	400A
45	(2)3#4/0 & 1#2G	(2) 2 1/2"	2 SETS OF 4#4/0 & 1#2G	(2) 2 1/2"	450A
50	(2)3#250KCMIL & 1#2G	(2) 3"	2 SETS OF 4#250KCMIL & 1#2G	(2) 3"	500A
60	(2)3#350KCMIL & 1#1G	(2) 3"	2 SETS OF 4#350KCMIL & 1#1G	(2) 4"	600A
70	(2)3#500KCMIL & 1#1/0G	(2) 4"	2 SETS OF 4#500KCMIL & 1#1/0G	(2) 4"	700A
80	(2)3#500KCMIL & 1#1/0G	(2) 4"	2 SETS OF 4#600KCMIL & 1#1/0G	(2) 4"	800A
90	(3)3#350KCMIL & 1#2/0G	(3) 3"	3 SETS OF 4#350KCMIL & 1#2/0G	(3) 4"	900A
100	(3)3#500KCMIL & 1#2/0G	(3) 4"	3 SETS OF 4#500KCMIL & 1#2/0G	(3) 4"	1000A
120	(4)3#350KCMIL & 1#3/0G	(4) 3"	4 SETS OF 4#350KCMIL & 1#3/0G	(4) 4"	1200A

NOTES:
1. CONDUIT SIZES ARE BASED ON THE NEC ANNEX C TABLES FOR EMT/SCH.40 WITH THHN/THWN CONDUCTORS. CONDUCTOR SIZES USED IN CONDUIT CALCULATION ARE BASED ON THE SIZE OF THE HOT CONDUCTORS OF CIRCUIT. EXAMPLE: 40A 3PH, 4W CONDUIT SIZE IS BASED ON 4#8 + 1#8G + 1#8 'SPACE'. FOR ACTUAL WIRE INSTALL USE QUANTITY AND SIZES WITHIN SCHEDULE.
2. UNLESS OTHERWISE INDICATED, CONDUCTOR SIZING SHALL MATCH THE SIZE INDICATED ABOVE FOR THE APPLICABLE OVERCURRENT DEVICE. PROVIDE LARGER CIRCUIT WHERE INDICATED.
3. PROVIDE MINIMUM SIZE CONDUIT INDICATED IN THE SPECIFICATIONS OR ON THE DRAWINGS.
4. PROVIDE A 4-WIRE CIRCUIT UNLESS DEVICE SERVED DOES NOT HAVE PROVISIONS FOR A NEUTRAL.
5. MINIMUM SIZE CONDUIT UNDERGROUND IS 4 INCH EXCEPT FOR SITE BRANCH CIRCUITS SUCH AS LIGHTING AND MISCELLANEOUS POWER AND SYSTEMS WHICH SHALL BE A MINIMUM OF 1 INCH.
6. PROVIDE TYPE OF RACEWAY OR CABLE AS INDICATED IN THE SPECIFICATIONS OR ON THE DRAWINGS.
7. REFER TO PANELBOARD SCHEDULES AND RISER DIAGRAM DRAWINGS FOR CONDUCTOR AND CONDUIT SIZE REQUIREMENTS.
8. ALL CONDUCTOR SIZES ARE BASED ON 75°C (167°F), ALL EQUIPMENT CONNECTED TO WIRES SHALL BE RATED FOR 75°C (167°F).

* 500KCMIL CONDUCTORS ARE ONLY RATED FOR 380AMPS EACH



1 POWER RISER DIAGRAM
NTS

ELECTRICAL RISER DIAGRAM KEY NOTES

- E1 PROVIDE UTILITY APPROVED METER SOCKET. REFER TO UTILITY COMPANY.
- E2 PROVIDE 4#600KCMIL IN 4"C, PLUS (1) 4"C EMPTY SPARE FROM UTILITY TRANSFORMER TO SERVICE DISCONNECT SWITCH.
- E3 PROVIDE UTILITY TRANSFORMER PAD AND GROUNDING. REFER TO UTILITY COMPANY SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- E4 REFER TO 1/E3.00 SERVICE GROUND DETAIL.
- E5 PROVIDE NEMA 3R, SERVICE ENTRANCE RATED, 208V, 400A FUSED SERVICE DISCONNECT SWITCH.

CES
CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

ELECTRICAL SCHEDULES AND DIAGRAMS

DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	DRW
CHECKED:	GYC
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:



SHEET NO.

E4.00

LIGHTING FIXTURE SCHEDULE

TYPE	BASIS OF DESIGN MANUFACTURER / MODEL	VOLTAGE	SOURCE	FIXTURE DESCRIPTION - BASIS OF DESIGN
E1	KESWICK 1972-AGB	UNV	75W LED	VANITY FIXTURE, AGED BRASS
E2	WAC LIGHTING FM-240508	UNV	30W 3000K LED	5", LED SURFACE MOUNTED DOWNLIGHT, DIMMING 0-10V TO 5%, WHITE FINISH
E3	WAC LIGHTING FM-240512	UNV	30W 3000K LED	5", LED SURFACE MOUNTED DOWNLIGHT, DIMMING 0-10V TO 5%, WHITE FINISH
E4	HINKLEY LIGHTING, INC. ELEANOR 4956HB	120V	-	CHANDELIER FIXTURE, HERITAGE BRASS
E5	HINKLEY LIGHTING, INC. ELEANOR 4958HB	120V	-	CHANDELIER FIXTURE, HERITAGE BRASS
E6	VISUAL COMFORT & CO. SL 4002HAB-WG	UNV	60W 5000K	12.75", SURFACE MOUNTED DOWNLIGHT, BRASS FINISH
L1	SONNEMAN 2818.03-8	120V	94W 3000K LED	96", LED LINEAR PENDANT, DIMMING 0-10V TO 5%, WHITE FINISH
L2	SONNEMAN 2818.03-4	120V	44W 3000K LED	48", LED LINEAR PENDANT, DIMMING 0-10V TO 5%, WHITE FINISH
L4	WAC LIGHTING R2ESAR-W930-WT	UNV	30W 3000K LED	3.5", LED RECESSED DOWNLIGHT PENDANT, DIMMING 0-10V TO 5%, WHITE FINISH
L5	WAC LIGHTING R2ESAR-W930-WT	UNV	30W 3000K LED	10.5", LED RECESSED DOWNLIGHT PENDANT, DIMMING 0-10V TO 5%, WHITE FINISH
L6	WAC LIGHTING R2ESAR-W930-WT	UNV	30W 3000K LED	7", LED RECESSED DOWNLIGHT PENDANT, DIMMING 0-10V TO 5%, WHITE FINISH
L7	WAC LIGHTING R2FBFT-W930-WT	UNV	15W 3000K LED	4", LED RECESSED DOWNLIGHT PENDANT, DIMMING 0-10V TO 1%, WHITE FINISH
L8	LITHONIA LIGHTING ECBG LED M6	UNV	3W LED	DOUBLE FACED EXIT SIGN
EB	LITHONIA LIGHTING EU2C	UNV	1W 5000K LED	14.625", LED WALL MOUNTED EMERGENCY FIXTURE, WHITE FINISH

NOTES:
1. LIGHT FIXTURES IN THE SCHEDULE SHALL BE CONSIDERED BASIS OF DESIGN. EQUAL FIXTURE SUBSTITUTIONS ARE ACCEPTABLE FOR ALL FIXTURES IN THE LIGHTING FIXTURE SCHEDULE, UNLESS INDICATED OTHERWISE. EQUAL FIXTURE APPROVAL SHALL BE AS JUDGED BY THE ENGINEER AND THE ARCHITECT. IN ADDITION TO THE REQUIREMENTS LISTED IN THE LIGHTING FIXTURE SCHEDULE AND IN THE SPECIFICATIONS, THE PROPOSED EQUAL FIXTURES SHALL:
   A. BE THE SAME GENERAL SIZE, STYLE AND SHAPE, INCLUDING BUT NOT LIMITED TO LENS CONSTRUCTION AND SHADING.
   B. BE OF EQUAL QUALITY CONSTRUCTION AND FINISH.
   C. BE SUPPLIED WITH ALL REQUIRED ACCESSORIES TO MATCH THE SPECIFIED (BASIS OF DESIGN) FIXTURE.
   D. PROVIDE THE SAME DISTRIBUTION, EFFICACY AND SOURCE LUMEN OUTPUT.
   E. HAVE THE SAME LISTINGS AS THE BASIS OF DESIGN FIXTURE, INCLUDING DLC AND ENERGY STAR QUALIFICATIONS.
2. ALL FIXTURES SHALL BE UL LISTED.
3. ALL NECESSARY MOUNTING HARDWARE, HANGERS, BRACKETS, RAILS, YOKES, CANOPIES, STEMS, CHAINS, ROW JOINERS, ETC. SHALL BE FURNISHED AND INSTALLED.
4. REFER TO ARCHITECTURAL DRAWINGS FOR SPECIFIC DETAILS, ARRANGEMENT, MOUNTING HEIGHTS, SUSPENSION LENGTHS, CEILING CONSTRUCTION, ETC. ALL COLORS AND FINISHES SHALL BE SELECTED BY ARCHITECT.
5. FIXTURES SHALL BE SEISMICALLY SUPPORTED AS REQUIRED BY THE APPLICABLE BUILDING CODE. FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE AND SHALL BE INDEPENDENT OF DUCTS, PIPES, CEILINGS AND THEIR SUPPORTING MEMBERS. FIXTURES SHALL BE SUPPORTED WITH A MINIMUM OF 2 SUPPORTS.
6. WIRE EMERGENCY FIXTURES AND EXIT SIGNS AHEAD OF SWITCHED LEGS.
7. MINIMUM MOUNTING HEIGHT OF FIXTURES IN MECHANICAL AND ELECTRICAL SPACES IS 8'-6" AFF. COORDINATE MOUNTING HEIGHT IN FIELD WITH EQUIPMENT IN ROOM SUCH THAT LIGHTING IS NOT OBSTRUCTED BY DUCTWORK, PIPING AND CONDUIT. PROVIDE NECESSARY CHAIN-MOUNTING HARDWARE TO SUSPEND FIXTURES WHERE REQUIRED.
8. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
9. WHERE EXIT SIGNS ARE SHOWN AS WALL MOUNTED ABOVE A DOOR, MOUNT SUCH THAT THE BOTTOM OF THE SIGN IS NO MORE THAN 3" ABOVE THE DOOR FRAME, UNLESS INDICATED OTHERWISE ON PLANS.
10. UNLESS OTHERWISE NOTED, PENDANT FIXTURE MOUNTING HEIGHTS IN FINISHED SPACES SHALL BE AS FOLLOWS:
    A. CEILING HEIGHT 9'-0" OR LOWER: 7'-6" TO BOTTOM OF FIXTURE
    B. CEILING HEIGHT 9'-6" TO 11'-0": 8'-0" TO BOTTOM OF FIXTURE
    C. CEILING HEIGHT 11'-0" TO 12'-0": 9'-6" TO BOTTOM OF FIXTURE
    D. MINIMUM PENDANT LENGTH SHALL BE 1'-6"
    E. CONSULT WITH ARCHITECT AND ENGINEER FOR OTHER CEILING HEIGHTS.

MOTOR / EQUIPMENT CIRCUIT SCHEDULE

EQUIPMENT	OCPD	PANEL	LOAD					LOCAL DISC. SW	MOTOR STARTER			WIRING	REMARKS
			HP	MCA	KW	PH	VOLT		SIZE	TYPE	LOCATION		
FCU-1	20A-2P	PP-1	-	1.3	-	1	208	DIV. 23	-	SPC	AT UNIT	2#12, #12G, 3/4"C	
FCU-2	20A-2P	PP-1	-	1.3	-	1	208	DIV. 23	-	SPC	AT UNIT	2#12, #12G, 3/4"C	
FCU-3	20A-2P	PP-1	-	1.3	-	1	208	DIV. 23	-	SPC	AT UNIT	2#12, #12G, 3/4"C	
FCU-4	20A-2P	PP-1	-	0.8	-	1	208	DIV. 23	-	SPC	AT UNIT	2#12, #12G, 3/4"C	
FCU-5	20A-2P	PP-1	-	0.2	-	1	208	DIV. 23	-	SPC	AT UNIT	2#12, #12G, 3/4"C	
BC-1	20A-2P	PP-1	-	0.8	-	1	208	30A-NF	-	SPC	AT UNIT	2#12, #12G, 3/4"C	
BC-2	20A-2P	PP-1	-	0.7	-	1	208	30A-NF	-	SPC	AT UNIT	2#12, #12G, 3/4"C	
CU-1	100A-3P	PP-1	-	60	-	3	208	100A-NF	-	SPC	AT UNIT	3#3 & 1#8G , 1 1/4"C	
CU-2	90A-3P	PP-1	-	56	-	3	208	100A-NF	-	SPC	AT UNIT	3#3 & 1#8G , 1 1/4"C	
EF-1	20A-1P	PP-1	-	-	.14	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	
DOAS-1	15A-2P	PP-1	-	4	-	1	208	30A-NF	-	SPC	AT UNIT	2#12, #12G, 3/4"C	
EDH-1	60A-3P	PP-1	-	-	17	3	208	60A-NF	-	SPC	AT UNIT	3#6 & 1#10G, 1"C	
WH-1	70A-2P	PP-1	-	-	11	1	208	100A-NF	-	SPC	AT UNIT	3#4 & 1#8G, 1 1/4"C	

GENERAL NOTES:
1. DISCONNECT SWITCHES SHALL BE HEAVY-DUTY TYPE AND SHALL BE LOCATED AT EQUIPMENT LOCATION UNLESS OTHERWISE NOTED.
2. ABBREVIATIONS:
   - MAN: MANUAL STARTER (TOGGLE SWITCH WITH THERMAL OVERLOADS)
   - FVNR: COMBINATION FULL VOLTAGE NON-REVERSING STARTER/ DISCONNECT SWITCH
   - VFD: VARIABLE FREQUENCY DRIVE. FURNISHED BY DIV. 23, WIRED BY DIV. 26. PROVIDE POWER WIRING FROM SOURCE PANELBOARD TO VFD AND FROM VFD TO MOTOR(S). COORDINATE EXACT LOCATION IN FIELD WITH DIV.23.
   - DIV.21: EQUIPMENT FURNISHED BY DIVISION 21 FIRE PROTECTION CONTRACTOR
   - DIV.22: EQUIPMENT FURNISHED BY DIVISION 22 PLUMBING CONTRACTOR
   - DIV.23: EQUIPMENT FURNISHED BY DIVISION 23 HVAC CONTRACTOR
   - SPC: SINGLE POINT CONNECTION (STARTERS INTEGRAL TO EQUIPMENT). COORDINATE EXACT POINT OF CONNECTION IN FIELD.
3. OVERCURRENT PROTECTION DEVICES (OCPD) SHALL BE MOLDED CASE CIRCUIT BREAKERS UNLESS NOTED WITH AN "F" FOR FUSE.
4. DISCONNECT SWITCHES AND STARTERS SHALL BE NEMA 3R RATED WHEN LOCATED OUTSIDE.
5. REFER TO PANEL SCHEDULES FOR SOURCE PANEL/ CIRCUIT INFORMATION.
6. REFER TO ELECTRICAL AND MECHANICAL PLANS FOR EXACT LOCATIONS OF EQUIPMENT.
7. STARTERS SHALL BE SQUARE D CLASS 8536 OR APPROVED EQUAL.

REFERENCED REMARKS:
1. REFER TO FLOOR PLANS FOR CIRCUITING. ALL UNITS INDICATED ON PLANS SHALL BE DAISY-CHAINED TOGETHER. PROVIDE SEPARATE DISCONNECT SWITCH FOR EACH UNIT ON CIRCUIT.
2. CONDENSATE PUMP FOR AC/ FAN COIL UNIT SHALL BE FURNISHED/INSTALLED BY DIV.23. ELECTRICAL CONTRACTOR SHALL PROVIDE HARDWIRED CONNECTION TO PUMP VIA SAME CIRCUIT AS AC/ FAN COIL UNIT. PROVIDE MOTOR RATED TOGGLE SWITCH AT PUMP FOR DISCONNECTING MEANS.
3. CONDENSATE PUMP FOR AC/ FAN COIL UNIT SHALL BE FURNISHED/INSTALLED BY DIV.23. ELECTRICAL CONTRACTOR SHALL PROVIDE DUPLEX RECEPTACLE FOR PUMP, POWERED VIA LOCAL UNSWITCHED RECEPTACLE CIRCUIT. COORDINATE EXACT LOCATION WITH DIV.23.
4. PROVIDE POWER WIRING FROM SOURCE PANELBOARD TO OUTDOOR UNIT. PROVIDE INTERCONNECT WIRING IN 3/4"C, FROM OUTDOOR UNIT TO INDOOR UNIT. WIRE SIZE AND TYPE SHALL BE PER MANUFACTURER'S REQUIREMENTS. PROVIDE SEPARATE DISCONNECT SWITCH FOR EACH OF THE TWO UNITS.
5. PROVIDE SEPARATE 20A/120V/1PH CONNECTION TO UNIT FOR INTEGRAL LIGHTS AND RECEPTACLES. POWER VIA CIRCUIT INDICATED ON PLANS.
6. UNIT IS LOCATED OUTSIDE BUILDING ON PAD. CIRCUIT SHALL RUN UNDER SLAB FROM PANEL TO UNIT LOCATION. COORDINATE EXACT STUB-UP LOCATION IN FIELD WITH HVAC CONTRACTOR PRIOR TO ROUGH-IN.
7. POWER VIA EPO/ SHUTOFF SYSTEM AS SPECIFIED ON ELECTRICAL DETAILS.
8. VFD FURNISHED AND INSTALLED BY KITCHEN EQUIPMENT CONTRACTOR. PROVIDE WIRING FROM SOURCE PANEL TO VFD, AND FROM VFD TO MOTOR(S). PROVIDE CONTROL WIRING AS DICTATED ON FOOD SERVICE DETAILS AND ELECTRICAL DRAWINGS.
9. NEMA 3R DISCONNECT SWITCH FOR CHILLER SHALL BE MOUNTED IN AN ACCESSIBLE LOCATION ADJACENT TO UNIT. COORDINATE EXACT LOCATION OF STARTER/VFD AND CONTROL PANEL IN FIELD WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
10. DUPLEX PUMP ASSEMBLY - PROVIDE POWER WIRING TO CONTROL PANEL AND FROM CONTROL PANEL TO EACH OF THE TWO PUMPS.
11. PROVIDE EQUIPMENT RELAY FOR CONTROL. REFER TO SINGLE PHASE EQUIPMENT RELAY CONTROL DETAIL FOR ADDITIONAL INFORMATION.
12. PROVIDE EQUIPMENT RELAY FOR CONTROL. REFER TO THREE PHASE EQUIPMENT RELAY CONTROL DETAIL FOR ADDITIONAL INFORMATION.

CES
CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

ELECTRICAL SCHEDULES AND DIAGRAMS

DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	DRW
CHECKED:	GYC
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:



SHEET NO.

E4.01

SECTION 26 04 00 - GENERAL CONDITIONS FOR ELECTRICAL TRADES

A. DESCRIPTION

1. THIS PROJECT COMPRISES ALTERATIONS AND RENOVATIONS TO THE EXISTING BUILDING. THE EXISTING BUILDING IS CURRENTLY OCCUPIED AND THE PROJECT WILL PROCEED IN A MANNER WHICH WILL MINIMIZE ANY INCONVENIENCE TO THE BUILDING OCCUPANTS.
2. SCOPE OF WORK CONSISTS OF INSTALLATION OF MATERIALS TO BE FURNISHED UNDER THE CONTRACT DOCUMENTS AND WITHOUT LIMITING GENERALITY THEREOF CONSISTS OF FURNISHING LABOR, MATERIALS, EQUIPMENT, HOISTING, PLANT, TRANSPORTATION, RIGGING, STAGING, APPURTENANCES, AND SERVICES NECESSARY AND/OR INCIDENTAL TO PROPERLY COMPLETE ALL WORK AS SHOWN ON THE DRAWINGS AND AS DESCRIBED HEREIN.

B. DEFINITIONS:

1. FURNISH: THE TERM "FURNISH" MEANS TO "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."
2. INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."
3. PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."
4. REMOVE: THE TERM REMOVE MEANS TO DISCONNECT FROM ITS PRESENT POSITION; REMOVE FROM THE PREMISES AND TO DISPOSE OF IN A LEGAL MANNER."
5. SUBSTITUTIONS: "SUBSTITUTIONS" ARE REQUESTS FOR CHANGES IN PRODUCTS, MATERIALS AND METHODS OF CONSTRUCTION AS PROPOSED BY THE CONTRACTOR AFTER AWARD OF THE CONTRACT.

C. EQUIPMENT EQUIVALENTS AND SUBSTITUTIONS:

1. CERTAIN MANUFACTURERS OF MATERIAL, APPARATUS OR APPLIANCES ARE INDICATED IN THE DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT. THESE ITEMS HAVE BEEN USED AS THE BASIS OF DESIGN, AND AS A CONVENIENCE IN FIXING THE MINIMUM STANDARD OF WORKMANSHIP, FINISH AND DESIGN THAT IS REQUIRED. IF THE CONTRACTORS USES AN "APPROVED EQUAL" ALTERNATIVE TO THE BASIS OF DESIGN, AND IF THE FEATURES OF THAT ALTERNATIVE HAVE AN IMPACT ON OTHER COMPONENTS OF THE PROJECT, THE CONTRACTOR SHALL INCLUDE THE NECESSARY ADJUSTMENTS IN THOSE COMPONENTS, WHETHER FOR ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, FIRE PROTECTION, OR ANY OTHER ELEMENTS, PLUS ANY ADJUSTMENTS FOR DIFFERENCE IN PERFORMANCE.
2. EQUIPMENT, MATERIAL OR DEVICES SUBMITTED FOR REVIEW AS AN "EQUIVALENT" SHALL MEET THE FOLLOWING REQUIREMENTS:
   A. THE EQUIVALENT SHALL HAVE THE SAME CONSTRUCTION FEATURES SUCH AS, BUT NOT LIMITED TO:
      a. MATERIAL THICKNESS, GAUGE, WEIGHT, DENSITY, ETC.
      b. WELDED, RIVETED, BOLTED, ETC., CONSTRUCTION
      c. FINISH, UNDERCOATING, CORROSION PROTECTION
   B. THE EQUIVALENT SHALL PERFORM WITH THE SAMEOR BETTER OPERATING EFFICIENCY.
   C. THE EQUIVALENT SHALL BE LOCALLY REPRESENTED BY THE MANUFACTURER FOR SERVICE, PARTS AND TECHNICAL INFORMATION.
   D. THE EQUIVALENT SHALL BEAR THE SAME LABELS OF PERFORMANCE CERTIFICATION AS IS APPLICABLE TO THE SPECIFIED ITEM, SUCH AS UL OR NEMA LABELS OR DLC QUALIFICATIONS.

D. DRAWINGS:

1. PROVIDE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THE WORK OUTLINED ON THESE CONTRACT DOCUMENTS. THE CONTRACTOR IS TO NOTE THAT THESE DOCUMENTS ARE DIAGRAMMATIC ONLY AND THAT FINAL PLACEMENT OF EQUIPMENT OR DEVICES IN THE FIELD MAY NOT DIRECTLY CORRESPOND TO THAT WHICH IS SHOWN ON THE DRAWINGS. IF A CONFLICT IN POSITIONING OCCURS THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY TO ASCERTAIN WHAT THE INTENT WAS BY THE DESIGN PROFESSIONAL.
2. WHERE VARIANCES OCCUR BETWEEN THE DRAWINGS AND SPECIFICATIONS OR WITHIN EITHER OF THE DOCUMENTS, THE ITEM OR ARRANGEMENT OF BETTER QUALITY, HIGHER RATING, OR HIGHER VALUE SHALL BE INCLUDED IN THE CONTRACT PRICE. THE OWNER AND ENGINEER SHALL DECIDE ON THE ITEM AND THE MANNER IN WHICH THE WORK SHALL BE INSTALLED.

E. SURVEY AND MEASUREMENTS:

1. PRIOR TO SUBMITTING BID, VISIT SITE AND IDENTIFY EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT WORK TO BE PERFORMED. NO COMPENSATION WILL BE GRANTED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY IDENTIFIED BY EXPERIENCED OBSERVERS. INCLUDE IN THE BID ALL DEMOLITION WORK REQUIRED.
2. DO NOT SCALE DRAWINGS. SCALE INDICATED ON DRAWINGS IS FOR ESTABLISHING REFERENCE POINTS ONLY. ACTUAL FIELD CONDITIONS SHALL GOVERN ALL DIMENSIONS.
3. PRIOR TO ORDERING ANY MATERIALS AND EQUIPMENT, THOROUGHLY REVIEW THE SITE CONDITIONS TO DETERMINE IF ADEQUATE CLEARANCES AND ACCESS IS ALLOWED TO INSTALL THE COMPONENTS. ORDER EQUIPMENT BROKEN DOWN AS NECESSARY TO ALLOW FOR PROPER RIGGING THROUGH THE PROJECT AREA. PROVIDE ALL NECESSARY ALTERATIONS TO THE STRUCTURE OF THE BUILDING AS NECESSARY TO RIG THE EQUIPMENT IN PLACE.
4. ARRANGE INSTALLATION TO PROVIDE ACCESS TO EQUIPMENT FOR EASY MAINTENANCE AND REPAIR.

F. CODES AND STANDARDS: ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE MOST RECENTLY ADOPTED EDITIONS OF THE FOLLOWING CODES AND STANDARDS, INCLUDING ALL JURISDICTIONAL REVISIONS:

1. STATE BUILDING CODE INCLUDING ALL SUPPLEMENTS.
2. STATE FIRE SAFETY CODE INCLUDING ALL SUPPLEMENTS.
3. STATE FIRE PREVENTION CODE INCLUDING ALL SUPPLEMENTS.
4. THE INTERNATIONAL BUILDING CODE
5. THE INTERNATIONAL EXISTING BUILDING CODE
6. THE INTERNATIONAL FIRE CODE
7. THE INTERNATIONAL MECHANICAL CODE
8. THE INTERNATIONAL PLUMBING CODE
9. THE INTERNATIONAL ENERGY CONSERVATION CODE
10. NFPA 1: FIRE CODE
11. NFPA 70: NATIONAL ELECTRICAL CODE
12. NFPA 72: NATIONAL FIRE ALARM AND SIGNALING CODE
13. NECA 1: STANDARD FOR GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION
14. NETA ATS.

G. PERMITS AND FEES:

1. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS; AND PAY ALL GOVERNMENT AND STATE SALES TAXES AND FEES WHERE APPLICABLE, AND OTHER COSTS, FILE ALL NECESSARY DRAWINGS, PREPARE ALL DOCUMENTS AND OBTAIN ALL NECESSARY APPROVALS OF ALL GOVERNMENTAL AND STATE DEPARTMENTS HAVING JURISDICTION, OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION FOR HIS WORK, AND DELIVER A COPY TO THE OWNER AND ENGINEER BEFORE REQUEST FOR ACCEPTANCE AND FINAL PAYMENT FOR THE WORK.

H. SHOP DRAWINGS:

1. PROVIDE SHOP DRAWINGS FOR ALL DEVICES SPECIFIED UNDER EQUIPMENT SPECIFICATIONS FOR ALL SYSTEMS INCLUDING FIRE ALARM, SWITCHGEAR, CLOCK, LIGHTING, ETC., OR WHERE CALLED FOR ELSEWHERE IN THE SPECIFICATIONS, OR WHERE SCHEDULED ON THE DRAWINGS, OR WHERE CALLED OUT ON THE DRAWINGS. SHOP DRAWINGS SHALL INCLUDE MANUFACTURERS' NAMES, CATALOG NUMBERS, CUTS, DIAGRAMS, DIMENSIONS, IDENTIFICATION OF PRODUCTS AND MATERIALS INCLUDED, COMPLIANCE WITH SPECIFIED STANDARDS, NOTATION OF COORDINATION REQUIREMENTS, NOTATION OF DIMENSIONS ESTABLISHED BY FIELD MEASUREMENT AND OTHER SUCH DESCRIPTIVE DATA AS MAY BE REQUIRED TO IDENTIFY AND ACCEPT THE EQUIPMENT. A COMPLETE LIST IN EACH CATEGORY (EXAMPLE: ALL FIXTURES) OF ALL SHOP DRAWINGS, CATALOG CUTS, MATERIAL LISTS, ETC., SHALL BE SUBMITTED TO THE ENGINEER AT ONE TIME. NO CONSIDERATION WILL BE GIVEN TO A PARTIAL SHOP DRAWING SUBMITTAL.
2. SHOP DRAWINGS SHALL INCLUDE EQUIPMENT SUBMITTALS, FABRICATION AND INSTALLATION DRAWINGS, SETTING DIAGRAMS, SCHEDULES, PATTERNS, TEMPLATES AND SIMILAR DRAWINGS. INCLUDE THE FOLLOWING INFORMATION:
   A. DIMENSIONS
   B. WIRING DIAGRAMS AND RISER DIAGRAMS
   C. CALCULATIONS
   D. IDENTIFICATION OF PRODUCTS AND MATERIALS INCLUDED.
   E. COMPLIANCE WITH SPECIFIED STANDARDS AND PERFORMANCE DATA AS INDICATED.
   F. NOTATION OF COORDINATION REQUIREMENTS.
   G. NOTATION OF DIMENSIONS ESTABLISHED BY FIELD MEASUREMENT.
   H. DO NOT USE SHOP DRAWINGS WITHOUT AN APPROPRIATE FINAL STAMP INDICATING ACTION TAKEN IN CONNECTION WITH CONSTRUCTION.
   I. DO NOT ORDER ANY MATERIALS OR EQUIPMENT PRIOR TO RECEIVING FINAL APPROVED SHOP DRAWINGS.
3. SHOP DRAWINGS SHALL BE IN PDF/OCR FORMAT. PHOTOCOPIES ARE NOT ACCEPTABLE.

I. COORDINATION DRAWINGS:

1. PREPARE COORDINATION DRAWINGS AT A SCALE TO MATCH THE CONTRACT DOCUMENT FLOOR PLANS; DETAILING MAJOR ELEMENTS, COMPONENTS, AND SYSTEMS OF ELECTRICAL EQUIPMENT AND MATERIALS IN RELATIONSHIP WITH OTHER SYSTEMS, INSTALLATIONS, AND BUILDING COMPONENTS. INDICATE LOCATIONS WHERE SPACE IS LIMITED FOR INSTALLATION AND ACCESS AND WHERE SEQUENCING AND COORDINATION OF INSTALLATIONS ARE OF IMPORTANCE TO THE EFFICIENT FLOW OF THE WORK, INCLUDING (BUT NOT NECESSARILY LIMITED TO) THE FOLLOWING:
   A. INDICATE THE PROPOSED LOCATIONS OF LIGHT FIXTURES, PANELBOARDS, CONDUITS, CABINETS, ETC.
   B. CLEARANCES FOR INSTALLING AND MAINTAINING INSULATION.
   C. CLEARANCES FOR SERVICING AND MAINTAINING EQUIPMENT, INCLUDING NEC REQUIREMENTS AND SPACE FOR EQUIPMENT DISASSEMBLY REQUIRED FOR PERIODIC MAINTENANCE.
   D. EQUIPMENT CONNECTIONS AND SUPPORT DETAILS.
   E. EXTERIOR WALL AND FOUNDATION PENETRATIONS.
   F. FIRE-RATED WALL AND FLOOR PENETRATIONS.
   G. SIZES AND LOCATIONS OF REQUIRED CONCRETE PADS AND BASES.
2. INDICATE SCHEDULING, SEQUENCING, MOVEMENT, AND POSITIONING OF LARGE EQUIPMENT INTO THE BUILDING DURING CONSTRUCTION.
3. PREPARE FLOOR PLANS, ELEVATIONS, AND DETAILS TO INDICATE PENETRATIONS IN FLOORS, WALLS, AND CEILINGS AND THEIR RELATIONSHIP TO OTHER PENETRATIONS AND INSTALLATIONS.
4. PREPARE REFLECTED CEILING PLANS TO COORDINATE AND INTEGRATE INSTALLATIONS, AIR OUTLETS AND INLETS, LIGHT FIXTURES, COMMUNICATION SYSTEMS COMPONENTS, SPRINKLERS, AND OTHER CEILING-MOUNTED ITEMS.

J. AS-BUILT DRAWINGS:

1. PREPARE AS-BUILT DRAWINGS TO A SCALE TO MATCH THE CONTRACT DOCUMENT FLOOR PLANS; DETAILING THE ACTUAL INSTALLATION OF MAJOR ELEMENTS, COMPONENTS, AND SYSTEMS OF MECHANICAL EQUIPMENT AND MATERIALS. WHERE SHOP DRAWINGS ARE USED, RECORD A CROSS-REFERENCE AT THE CORRESPONDING LOCATION ON THE AS-BUILT DRAWINGS. GIVE PARTICULAR ATTENTION TO CONCEALED ELEMENTS THAT WOULD BE DIFFICULT TO MEASURE AND RECORD AT A LATER DATE.
2. MARK NEW INFORMATION THAT IS IMPORTANT TO THE OWNER, BUT WAS NOT SHOWN ON CONTRACT DRAWINGS OR SHOP DRAWINGS.
3. NOTE RELATED CHANGE ORDER NUMBERS WHERE APPLICABLE.
4. FINAL RECORD DOCUMENTS SHALL BE PREPARED IN THE LATEST AUTOCAD VERSION AND DIGITAL MEDIA FOR ALL DRAWINGS AND A CLEAN SET OF REPRODUCIBLE PAPER COPIES SHALL BE TURNED OVER TO THE OWNER AT THE COMPLETION OF THE WORK.

K. OPERATIONS AND MAINTENANCE MANUALS

1. THE CONTRACTOR SHALL PREPARE (1) PDF COPY AND (3) HARD COPIES OF A COMPLETE MAINTENANCE AND OPERATING INSTRUCTIONS MANUAL BOUND IN BOOKLET FORM. ORGANIZE OPERATING AND MAINTENANCE DATA INTO SUITABLE SETS OF MANAGEABLE SIZE. BIND PROPERLY INDEXED DATA IN INDIVIDUAL HEAVY-DUTY, 3-RING, VINYL-COVERED BINDERS, WITH POCKET FOLDERS FOR FOLDED SHEET INFORMATION. MARK APPROPRIATE IDENTIFICATION ON FRONT AND SPINE OF EACH BINDER.
2. MANUAL SHALL INCLUDE THE FOLLOWING:
   A. DESCRIPTION OF FUNCTION, NORMAL OPERATING CHARACTERISTICS AND LIMITATIONS, PERFORMANCE CURVES, ENGINEERING DATA AND TESTS, AND COMPLETE NOMENCLATURE AND COMMERCIAL NUMBERS OF REPLACEMENT PARTS.
   B. MANUFACTURER'S PRINTED OPERATING PROCEDURES TO INCLUDE START-UP, BREAK-IN, AND ROUTINE AND NORMAL OPERATING INSTRUCTIONS; REGULATION, CONTROL, STOPPING, SHUTDOWN, AND EMERGENCY INSTRUCTIONS; AND SUMMER AND WINTER OPERATING INSTRUCTIONS.
   C. MAINTENANCE PROCEDURES FOR ROUTINE PREVENTATIVE MAINTENANCE AND TROUBLESHOOTING; DISASSEMBLY, REPAIR, AND REASSEMBLY; ALIGNING AND ADJUSTING INSTRUCTIONS.
   D. SERVICING INSTRUCTIONS AND LUBRICATION CHARTS AND SCHEDULES.
   E. EMERGENCY INSTRUCTIONS.
   F. SPARE PARTS LIST.
   G. COPIES OF WARRANTIES.
   H. WIRING DIAGRAMS.
   I. RECOMMENDED "TURN AROUND" CYCLES.
   J. INSPECTION PROCEDURES.
   K. APPROVED SHOP DRAWINGS AND PRODUCT DATA.
   L. EQUIPMENT START-UP REPORTS.

L. WARRANTIES

1. ALL EQUIPMENT PROVIDED IN THIS PROJECT SHALL CARRY A MANUFACTURER'S WARRANTY FOR NO LESS THAN ONE (1) YEAR FROM DATE OF BENEFICIAL USE - UNLESS NOTED OTHERWISE IN THE CONTRACT DOCUMENTS.

M. MISCELLANEOUS REQUIREMENTS:

1. THE CONTRACTOR SHALL COORDINATE ALL INTERRUPTIONS OF SERVICES AND LIMITATIONS OF ACCESS WITH THE OWNER NO LESS THAN (5) DAYS PRIOR TO THE INTERRUPTION.
2. OBTAIN IN OWNER'S NAME WRITTEN EQUIPMENT AND MATERIAL WARRANTIES OFFERED IN MANUFACTURER'S PUBLISHED PRODUCT DATA WITHOUT EXCLUSION OR LIMITATION.
3. GUARANTEE WORK OF THESE CONTRACT DOCUMENTS IN WRITING FOR NOT LESS THAN ONE (1) YEAR FROM DATE OF BENEFICIAL USE. REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATION THAT DEVELOP WITHIN THIS PERIOD, PROMPT AND TO OWNER'S SATISFACTION AND CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE WITHIN CONTRACT PRICE.
4. SUBMIT TO THE OWNER AN OFFICIAL CERTIFICATE OF INSURANCE FOR THEIR RECORDS.

SECTION 26 05 19 - ELECTRICAL POWER CONDUCTORS AND CABLES

A. COORDINATION:
   A. COORDINATE SIZES OF RACEWAYS, BOXES, AND EQUIPMENT ENCLOSURES INSTALLED UNDER OTHER SECTIONS WITH THE ACTUAL CONDUCTORS TO BE INSTALLED, INCLUDING ADJUSTMENTS FOR CONDUCTOR SIZES INCREASED FOR VOLTAGE DROP.
   B. COORDINATE WITH ELECTRICAL EQUIPMENT INSTALLED UNDER OTHER SECTIONS TO PROVIDE TERMINATIONS SUITABLE FOR USE WITH THE CONDUCTORS TO BE INSTALLED.
B. PROVIDE SINGLE CONDUCTOR BUILDING WIRE INSTALLED IN SUITABLE RACEWAY UNLESS OTHERWISE INDICATED, PERMITTED OR REQUIRED.
C. CONDUCTOR SIZES AND AMPACITIES SHOWN ARE BASED ON COPPER.
D. MINIMUM CONDUCTOR SIZES:
   A. BRANCH CIRCUITS: 12 AWG
      a. 20A, 120V CIRCUITS LONGER THAN 100 FEET - #10 AWG MINIMUM AND SIZED FOR VOLTAGE DROP.
      b. 20A, 120V CIRCUITS LONGER THAN 165 FEET - #8 AWG MINIMUM AND SIZED FOR VOLTAGE DROP.
   B. CONTROL CIRCUITS: 14 AWG.
E. CONDUCTORS NO. 10 AWG AND SMALLER DIAMETER SHALL BE SOLID ANNEALED COPPER, EXCEPT THAT CONDUCTORS FOR REMOTE CONTROL, ALARM, AND SIGNAL CIRCUITS, CLASSES 1, 2, AND 3, SHALL BE STRANDED UNLESS SPECIFICALLY INDICATED OTHERWISE.
F. CONDUCTORS NO. 8 AWG AND LARGER DIAMETER SHALL BE STRANDED ANNEALED COPPER.
G. UNLESS SPECIFIED OR INDICATED OTHERWISE OR REQUIRED BY NFPA 70, POWER AND LIGHTING WIRES SHALL BE 600-VOLT, TYPE THWN/THHN OR THWN/THWN-2 ANNEALED COPPER, CONTROL AND SIGNAL CIRCUITS SHALL BE TYPE TW, THW, OR TF ANNEALED COPPER. UNDERGROUND CONDUCTORS SHALL BE TYPE XHHW-2.
H. WHERE LIGHTING FIXTURES REQUIRE 90 DEGREES C CONDUCTORS, PROVIDE ONLY CONDUCTORS WITH 90 DEGREE C INSULATION OR BETTER.
I. MAKE ALL SPLICES IN ACCESSIBLE LOCATIONS. MAKE SPLICES IN CONDUCTORS NO. 10 AWG AND SMALLER DIAMETER WITH INSULATED, SPRING WIRE CONNECTORS WITH PLASTIC CAPS. MAKE SPLICES IN CONDUCTORS NO. 8 AWG AND LARGER DIAMETER WITH SOLDERLESS PRESSURE CONNECTORS WITH INSULATING COVERS. MAKE SPLICES IN CONDUCTORS NO. 6 AND LARGER WITH PRESSURE CONNECTORS OR SPLIT BOLT CONNECTORS.
J. MAKE WIRE TERMINATIONS USING CRIMPED TERMINALS FOR CONDUCTORS NO. 10 AND SMALLER. MAKE WIRE TERMINATIONS FOR CONDUCTORS NO. 8 AND LARGER USING MECHANICAL OR PRESSURE CONNECTORS. PROVIDE SUITABLE REDUCERS WHERE OVERSIZED CONDUCTORS ARE LARGER THAN THE EQUIPMENT TERMINATION.
K. PHASE CONDUCTORS SHALL BE IDENTIFIED BY COLOR CODING. THE COLOR OF THE INSULATION ON PHASES A, B, AND C RESPECTIVELY (FOR THREE PHASE) OR PHASES A AND B RESPECTIVELY (FOR SINGLE PHASE) OF DIFFERENT VOLTAGE SYSTEMS SHALL BE AS FOLLOWS:
   A. 120/208 VOLT, THREE PHASE: BLACK, RED, AND BLUE.
L. UNLESS OTHERWISE INDICATED, THE WIRING METHOD SHALL CONSIST OF THE INSTALLATION OF INSULATED CONDUCTORS INSTALLED IN ELECTRICAL METALLIC AND/OR WIREMOLD RACEWAY.
M. METALLIC-ARMORED TYPE MC CABLES, WHERE ALLOWED, SHALL INCLUDE 600V INSULATION RATING, TYPE THHN/THWN-2 COPPER CONDUCTORS, DEDICATED NEUTRAL CONDUCTOR AND STEEL INTERLOCKING ARMOR. USES PERMITTED:
   A. WHERE CONCEALED ABOVE ACCESSIBLE CEILINGS FOR FINAL CONNECTIONS TO LUMINAIRES (MAXIMUM LENGTH 6 FEET).
   B. WHERE CONCEALED IN HOLLOW STUD WALLS, ABOVE ACCESSIBLE CEILINGS, AND UNDER RAISED FLOOR FOR BRANCH CIRCUITS UP TO 20A.
   C. EXCEPTION: PROVIDE SINGLE CONDUCTOR BUILDING WIRING IN RACEWAY FOR CIRCUIT HOMERUN FROM FIRST DEVICE IN SPACE TO PANELBOARD.
N. PROVIDE INSULATED, GREEN EQUIPMENT GROUNDING CONDUCTOR IN FEEDER AND BRANCH CIRCUITS, INSTALLED IN CONDUIT OR RACEWAYS; INCLUDING LIGHTING CIRCUITS. GROUNDING CONDUCTOR SHALL BE SEPARATE FROM ELECTRICAL SYSTEM NEUTRAL CONDUCTOR.

SECTION 26 05 26 - GROUNDING AND BONDING

A. GROUNDING SHALL BE COMPLETED IN ACCORDANCE WITH NFPA 70. GROUND EXPOSED, NON-CURRENT-CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, METALLIC RACEWAY SYSTEMS, GROUNDING CONDUCTOR IN METALLIC AND NONMETALLIC RACEWAYS, AND NEUTRAL CONDUCTOR OF WIRING SYSTEMS. WHERE GROUND FAULT PROTECTION IS EMPLOYED, ENSURE THAT CONNECTION OF GROUND AND NEUTRAL DOES NOT INTERFERE WITH CORRECT OPERATION OF FAULT PROTECTION.
B. EXISTING WORK: WHERE EXISTING GROUNDING AND BONDING SYSTEM COMPONENTS ARE INDICATED TO BE REUSED, THEY MAY BE REUSED ONLY WHERE THEY ARE FREE FROM CORROSION, INTEGRITY AND CONTINUITY ARE VERIFIED, AND WHERE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.
C. WHERE CONDUCTOR SIZE IS NOT INDICATED, SIZE TO COMPLY WITH NFPA 70.
D. USE INSULATED COPPER CONDUCTORS UNLESS OTHERWISE INDICATED. USE BARE COPPER CONDUCTORS WHERE INSTALLED UNDERGROUND OR ENCASED IN CONCRETE.
E. USE LISTED MECHANICAL CONNECTORS, COMPRESSION CONNECTORS OR EXOTHERMIC WELDED CONNECTIONS FOR ACCESSIBLE CONNECTIONS. USE EXOTHERMIC WELDED CONNECTIONS FOR UNDERGROUND, CONCEALED OR OTHERWISE INACCESSIBLE CONNECTIONS.
F. GROUNDING ELECTRODE SYSTEM: PROVIDE CONNECTION TO REQUIRED AND SUPPLEMENTAL GROUNDING ELECTRODES INDICATED TO FORM GROUNDING ELECTRODE SYSTEM. PROVIDE CONTINUOUS GROUNDING ELECTRODE CONDUCTORS WITHOUT SPLICE OR JOINT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN RACEWAY WHERE EXPOSED OR SUBJECT TO PHYSICAL DAMAGE. BOND GROUNDING ELECTRODE CONDUCTOR TO METALIC RACEWAY AT EACH END WITH BONDING JUMPER.
G. SERVICE-SUPPLIED SYSTEM GROUNDING: FOR EACH SERVICE DISCONNECT, PROVIDE GROUNDING ELECTRODE CONDUCTOR TO CONNECT NEUTRAL SERVICE CONDUCTOR TO GROUNDING ELECTRODE SYSTEM. UNLESS OTHERWISE INDICATED, MAKE CONNECTION AT NEUTRAL (GROUNDED) BUS IN SERVICE DISCONNECT ENCLOSURE
H. SEPARATELY DERIVED SYSTEM GROUNDING: PROVIDE GROUNDING ELECTRODE CONDUCTOR TO CONNECT DERIVED SYSTEM GROUNDED CONDUCTOR TO NEAREST EFFECTIVELY GROUNDED METAL BUILDING FRAME. PROVIDE SYSTEM BONDING JUMPER TO CONNECT SYSTEM GROUNDED CONDUCTOR TO EQUIPMENT GROUNDING BUS. MAKE CONNECTION AT SAME LOCATION AS GROUNDING ELECTRODE CONDUCTOR CONNECTION. WHERE GROUNDED METAL BUILDING FRAME DOES NOT EXIST, BOND TO METAL WATER PIPE AT POINT OF ENTRY TO BUILDING.

SECTION 26 05 29 - HANGERS AND SUPPORTS

A. PROVIDE ALL REQUIRED HANGERS, SUPPORTS, ANCHORS, FASTENERS, FITTINGS, ACCESSORIES AND HARDWARE NECESSARY FOR THE COMPLETE INSTALLATION OF THE ELECTRICAL WORK.
B. HANGERS AND SUPPORTS SHALL MEET ASTM STANDARDS FOR COATINGS, NECA 1 STANDARDS FOR WORKMANSHIP, NFPA 70, AND UL 5B FOR STRUT-TYPE CHANNEL RACEWAY AND FITTINGS.
C. WHERE SUPPORT AND ATTACHMENT COMPONENT TYPES AND SIZES ARE NOT INDICATED, SELECT IN ACCORDANCE WITH MANUFACTURER'S APPLICATION CRITERIA AS REQUIRED FOR THE LOAD TO BE SUPPORTED.
D. STEEL COMPONENTS: USE CORROSION RESISTANT MATERIALS SUITABLE FOR THE ENVIRONMENT WHERE INSTALLED. USE ZINC-PLATED STEEL FOR INDOOR DRY LOCATIONS. USE GALVANIZED STEEL, STAINLESS STEEL, FIBERGLASS OR APPROVED EQUIVALENT FOR OUTDOOR, DAMP AND WET LOCATION INSTALLATIONS.
E. CONDUIT AND CABLE SUPPORTS:
   A. CONDUIT STRAPS: ONE-HOLE OR TWO-HOLE, ZINC PLATED.
   B. CONDUIT CLAMPS: BOLTED TYPE.
F. OUTLET BOX SUPPORTS: HANGERS AND BRACKETS SUITABLE FOR BOXES TO BE SUPPORTED.
G. METAL CHANNEL (STRUT) FRAMING SYSTEMS: FACTORY FABRICATED CONTINUOUS SLOTTED METAL CHANNEL AND ASSOCIATED FITTINGS, ACCESSORIES, AND HARDWARE FOR FIELD-ASSEMBLY OF SUPPORTS. ALL LOCATIONS: USE 12 GA. GALVANIZED STEEL.
H. HANGER RODS: CONTINUOUS THREADING, ZINC-PLATED STEEL.
I. USE OF POWER-ACTUATED FASTENERS REQUIRES APPROVAL OF ARCHITECT AND STRUCTURAL ENGINEER.
J. UNLESS SPECIFICALLY INDICATED, DO NOT SUPPORT ANY ELECTRICAL COMPONENT FROM THE ROOF DECK.
K. PLASTIC AND LEAD ANCHORS ARE NOT PERMITTED.

SECTION 26 05 33 - RACEWAY AND BOXES

A. PROVIDE A COMPLETE WIRING SYSTEM OF RACEWAYS AND BOXES LOCATED AS INDICATED ON DRAWINGS AND AT LOCATIONS AS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS AND COMPLIANCE WITH REGULATORY REQUIREMENTS. LOCATIONS INDICATED ON DRAWINGS ARE APPROXIMATE UNLESS DIMENSIONED
B. STANDARDS: MATERIALS SHALL COMPLY WITH ANSI C80. NEMA AND UL REQUIREMENTS AS APPLICABLE FOR TYPE AND MATERIAL.
C. MINIMUM CONDUIT SIZE, UNLESS OTHERWISE NOTED: INTERIOR - 3/4", EXTERIOR EXPOSED 3/4", EXTERIOR UNDERGROUND - 1".
D. CONDUIT APPLICATIONS:
   A. UNDERGROUND:
      a. UNDER SLAB ON GRADE - SCHEDULE 40 PVC CONDUIT WITH RIGID METAL CONDUIT SWEEPS.
      b. EXTERIOR IN TRENCH - USE SCHEDULE 40 OR SCHEDULE 80 PVC CONDUIT WITH RIGID METAL CONDUIT SWEEPS.
      c. EXTERIOR, CONCRETE ENCASED - USE TYPE EB RIGID PVC CONDUIT, TRANSITION TO RIGID METAL WHERE EMERGING FROM UNDERGROUND.
   B. EMBEDDED WITHIN SLAB: FLOOR BOX SLAB-ON-GRADE APPLICATIONS ONLY.
   C. CONCEALED IN MASONRY WALLS: USE EMT WITH FLUSH MOUNTED MASONRY BOXES.
   D. CONCEALED IN HOLLOW STUD WALLS: USE EMT CONDUIT OR MC CABLE (WHERE ALLOWED). PROVIDE FLUSH SHEET-METAL BOXES.
   E. INTERIOR DAMP OR WET LOCATIONS: USE RIGID METAL CONDUIT, INTERMEDIATE METAL CONDUIT OR SCHEDULE 40 PVC CONDUIT. PROVIDE CAST METAL OR NONMETALLIC OUTLET, JUNCTION AND PULL BOXES.
   F. EXPOSED, INTERIOR DRY LOCATIONS: USE EMT CONDUIT.
   G. EXPOSED FINISHED LOCATIONS: PROVIDE SURFACE METAL RACEWAY AND FITTINGS. UNLESS SPECIFIED ON DRAWINGS, REQUIRES DESIGN TEAM APPROVAL. COORDINATE ALL VERTICAL RUNS OF SURFACE RACEWAY WITH ARCHITECT PRIOR TO INSTALLATION.
   H. CONNECTIONS TO LUMINAIRES ABOVE ACCESSIBLE CEILINGS: USE FLEXIBLE METAL CONDUIT, MAXIMUM LENGTH OF 6 FEET.
   I. CONNECTIONS TO VIBRATING EQUIPMENT: DRY LOCATIONS - USE FLEXIBLE METAL CONDUIT OR MC CABLE; DAMP, WET OR CORROSIVE LOCATIONS - USE LIQUIDTIGHT FLEXIBLE METAL CONDUIT; MAXIMUM LENGTH 6 FEET.
E. FITTINGS:
   A. EMT - COMPLY WITH NEMA FB 1 AND UL 514B. STEEL WITH COMPRESSION FITTINGS IN DAMP OR WET LOCATIONS, SET SCREW TYPE ELSEWHERE.
   B. RIGID METAL CONDUIT - COMPLY WITH ANSI C80.1 AND UL 6. THREADED STEEL OR MALLEABLE IRON. USE FITTING LISTED AND LABELED AS COMPLYING WITH UL 514B IN HAZARDOUS LOCATIONS.
   C. FLEXIBLE METAL CONDUIT - COMPLY WITH NEMA FB 1 AND UL 514B. USE STEEL FITTINGS.
   D. LIQUIDTIGHT FLEXIBLE METAL CONDUIT - COMPLY WITH NEMA FB 1 AND UL 514B. USE STEEL FITTINGS.
   E. SURFACE METAL RACEWAY - PROVIDE FITTINGS FROM SAME MANUFACTURER AS SURFACE RACEWAY. INCLUDE ALL REQUIRED ELBOWS, COUPLINGS MOUNTING CLIPS, COVERS, END FITTINGS AND DEVICE MOUNTING BRACKETS.
F. BOXES: WHERE A BOX SIZE IS NOT INDICATED, SIZE TO COMPLY WITH NFPA 70, BUT NOT LESS THAN APPLICABLE MINIMUM SIZE SPECIFIED.
   A. USE SHEET METAL STEEL BOXES IN DRY LOCATIONS.
   B. USE CAST IRON OR CAST ALUMINUM BOXES WITH THREADED HUBS WHERE EXPOSED RIGID METAL CONDUIT IS USED.
   C. USE NONMETALLIC BOXES WHERE EXPOSED RIGID PVC CONDUIT IS USED.
   D. USE SUITABLE CONCRETE TYPE BOXES WHERE FLUSH-MOUNTED IN CONCRETE.
   E. USE SUITABLE MASONRY TYPE BOXES WHERE FLUSH-MOUNTED IN MASONRY WALLS.
   F. USE RAISED COVERS SUITABLE FOR TYPE OF WALL CONSTRUCTION AND DEVICE CONFIGURATION WHERE REQUIRED.
   G. USE MULTI-GANG BOXES OF SINGLE-PIECE CONSTRUCTION, DO NOT USE FIELD CONNECTED GANGABLE BOXES.
   H. MINIMUM BOX SIZE, UNLESS OTHERWISE INDICATED: WIRING DEVICE - 4 INCH SQUARE BY 1-1/2" DEEP; COMMUNICATIONS SYSTEM OUTLET 4 INCH SQUARE BY 2-1/8" DEEP.
G. CABINETS AND ENCLOSURES: COMPLY WITH NEMA 250, UL 50 AND UL 50E OR UL 508A.
   A. USE NEMA TYPE 1, PAINTED STEEL FOR INDOOR CLEAN, DRY LOCATIONS.
   B. USE NEMA TYPE 3R, PAINTED STEEL FOR OUTDOOR AND WET LOCATIONS.
   C. PROVIDE SCREW COVER ENC

G. CONDUCTOR OR CABLE TO BE IDENTIFIED.
H. PROVIDE VOLTAGE MARKERS TO IDENTIFY HIGHEST VOLTAGE PRESENT FOR ACCESSIBLE CONDUITS (MAXIMUM 20 FT. INTERVALS).
I. PROVIDE PRE-LABELED, SNAP AROUND PIPE MARKERS ON ALL CONDUITS. MARKERS SHALL COMPLY WITH ANSI A 13.1-1988 STANDARDS AND INDICATED VOLTAGE.
J. WARNING LABELS: USE FACTORY PRE-PRINTED OR MACHINE-PRINTED SELF-ADHESIVE POLYESTER OR SELF-ADHESIVE VINYL LABELS; UV, CHEMICAL, WATER, HEAT AND ABRASION RESISTANT.
K. CLEAN SURFACES TO RECEIVE ADHESIVE PRODUCTS ACCORDING TO MANUFACTURERS INSTRUCTIONS.
L. INSTALL IDENTIFICATION PRODUCTS TO BE PLAINLY VISIBLE FOR EXAMINATION, ADJUSTMENT, SERVICING AND MAINTENANCE.

INSTALL IDENTIFICATION PRODUCTS CENTERED, LEVEL AND PARALLEL WITH LINES OF ITEM BEING IDENTIFIED.

SECTION 26 27 26 - WIRING DEVICES

A. RECEPTACLES:
   A. SELF-GROUNDING COMPLYING WITH NEMA WD 1 AND NEMA WD 6 AND LISTED COMPLYING WITH UL 498.
   B. SINGLE AND DUPLEX RECEPTACLES SHALL BE RATED 20 AMPERES, 125 VOLTS, TWO-POLE, THREE-WIRE, GROUNDING TYPE WITH POLARIZED PARALLEL SLOTS.
   C. COLOR OF BODIES SHALL BE SELECTED BY THE ARCHITECT.
   D. RECEPTACLE SHALL BE SIDE-WIRED OR BACK-WIRED WITH TWO SCREWS PER TERMINAL. THE THIRD GROUNDING POLE SHALL BE CONNECTED TO THE METAL MOUNTING YOKE.
   E. RECEPTACLES WITH GROUND FAULT CIRCUIT INTERRUPTERS SHALL HAVE THE CURRENT RATING AS INDICATED, AND SHALL BE UL 943, CLASS A TYPE UNLESS OTHERWISE SHOWN.
   F. GROUND FAULT CIRCUIT PROTECTION SHALL BE PROVIDED AS REQUIRED BY NFPA 70 OR AS INDICATED ON THE DRAWINGS.
   G. USB CHARGING DEVICES: PROVIDE DEVICES LISTED PER UL 1310 WITH TWO-PORT CHARGING CAPACITY OF 2.1 A, MINIMUM OR 4.2 A MINIMUM FOR FOUR-PORT DEVICES.
   H. LOCKING DEVICES: REFER TO DRAWINGS FOR NEMA LOCKING CONFIGURATIONS.
   I. MOUNT RECEPTACLES AND DATA OUTLETS 18" ABOVE FINISHED FLOOR, AND OTHER DEVICES AS INDICATED. MEASURE MOUNTING HEIGHTS OF WIRING DEVICES AND OUTLETS TO TOP OF DEVICE OR OUTLET.
   J. PROVIDE TAMPER RESISTANT RECEPTACLES WHERE INDICATED ON DRAWINGS.
B. LINE VOLTAGE WALL SWITCHES:
   A. AC ONLY, QUIET OPERATING GENERAL USE SNAP SWITCHES WITH SILVER ALLOY CONTACTS COMPLYING WITH NEMA WD 1 AND NEMA WD 6 AND UL 20, TYPE AS INDICATED ON DRAWINGS.
   B. INDUSTRIAL SPECIFICATION GRADE, 20A, 120/277 V WITH STANDARD TOGGLE TYPE SWITCH ACTUATOR AND MAINTAINED CONTACTS. SINGLE POLE SINGLE THROW, THREE-WAY, OR FOUR-WAY AS INDICATED ON DRAWINGS.
   C. COLOR OF BODIES SHALL BE SELECTED BY THE ARCHITECT.
   D. SWITCH SHALL BE SIDE-WIRED OR BACK-WIRED WITH BINDING CLAMP, WITH SEPARATE GROUND SCREW TERMINAL.
   E. LOCKING (KEYED) TYPE SWITCHES SHALL INCLUDE LEVER TYPE THREE POSITION SWITCH ACTUATOR WITH OFF POSITION IN CENTER.
C. DEVICE PLATES
   A. DEVICE PLATES SHALL BE ONE-PIECE TYPE AND SHALL BE PROVIDED FOR RECEPTACLES, OUTLETS, SWITCHES AND FITTINGS.
   B. PLATES ON UNFINISHED WALLS AND ON FITTINGS SHALL BE GALVANIZED SHEET STEEL.
   C. FINISH SELECTION BY ARCHITECT.
   D. PLATES SHALL BE INSTALLED WITH ALL FOUR EDGES IN CONTINUOUS CONTACT WITH FINISHED WALL SURFACES WITHOUT THE USE OF MATS OR SIMILAR DEVICES. PLASTER FILLINGS WILL NOT BE PERMITTED.
   E. PLATES INSTALLED IN WET LOCATIONS SHALL BE GASKETED AND PROVIDED WITH A HINGED, GASKETED COVER, UNLESS OTHERWISE SPECIFIED.

SECTION 26 09 23 - LIGHTING CONTROL DEVICES

A. GENERAL REQUIREMENTS
   1. MANUFACTURERS:
      A. ACUITY
      B. HUBBELL/ CURRENT
      C. CRESTRON
      D. CRISTAL
   2. REFER TO LIGHTING CONTROL DETAILS ON DRAWINGS FOR ADDITIONAL REQUIREMENTS.
   3. PROVIDE PRODUCTS LISTED, CLASSIFIED, AND LABELED AS SUITABLE FOR THE PURPOSE INTENDED.
   4. SOURCE LIMITATIONS: FURNISH PRODUCTS PRODUCED BY A SINGLE MANUFACTURER AND OBTAINED FROM A SINGLE SUPPLIER.
   5. COLOR AND FINISH: TO BE DETERMINED BY ARCHITECT.
B. LINE VOLTAGE OCCUPANCY/VACANCY SENSOR SWITCHES
   1. PRODUCT DESCRIPTION:
      A. PROVIDE WALL SWITCH STYLE OCCUPANCY/VACANCY SENSOR CAPABLE OF TURNING LIGHTS OFF WHEN THE SPACE BECOMES UNOCCUPIED AND ON WHEN THE SPACE BECOMES RE-OCCUPIED. PROVIDE WITH 0-10V DIMMING CAPABILITIES AND/OR INTEGRAL DAYLIGHT CONTROL, WHERE INDICATED ON THE DRAWINGS. REFER TO DRAWINGS FOR OCCUPANCY OR VACANCY MODE SETTING.
   2. SENSOR SWITCH REQUIREMENTS:
      A. SENSOR SWITCH SHALL BE LINE VOLTAGE @ 120/277 VAC, RATED FOR 20A. SENSOR TECHNOLOGY SHALL BE DUAL TECHNOLOGY (PIR AND ULTRASONIC) WITH FIELD OF VIEW OF 180 DEGREES. SENSOR SWITCH SHALL BE CAPABLE OF OPERATING WITH LED. SENSOR SWITCH SHALL BE SET TO:
         a. AUTO-ON, AUTO-OFF MODE (OCCUPANCY SENSOR)
         b. MANUAL-ON, AUTO-OFF MODE (VACANCY SENSOR)
         c. DIPSWITCH SELECTABLE TO TOGGLE BETWEEN OCCUPANCY AND VACANCY MODE.
      B. SENSOR SHALL BE CAPABLE OF TURNING LIGHTS OFF AFTER 20 MINUTES OF INACTIVITY. SWITCH SHALL ALSO HAVE 10 AND 20 MINUTE OVERRIDES. PROVIDE DEVICE CAPABLE OF ACCEPTING A 2-WIRE (HOT AND NEUTRAL) INPUT PLUS GROUND. SENSOR SWITCH SHALL BE CAPABLE OF OPERATING IN CONJUNCTION WITH A 3-WAY SWITCH PER MANUFACTURERS REQUIREMENTS, WHERE INDICATED ON DRAWINGS. PROVIDE WITH 0-10V DIMMING CONTROL.
C. LOW VOLTAGE OCCUPANCY/VACANCY SENSORS
   1. SENSOR REQUIREMENTS:
      A. SENSOR SHALL BE DUAL TECHNOLOGY (PIR AND ULTRASONIC), UNLESS OTHERWISE NOTED ON DRAWINGS. SENSOR SHALL BE SET TO:
         a. AUTO-ON, AUTO-OFF MODE (OCCUPANCY SENSOR)
         b. MANUAL-ON, AUTO-OFF MODE (VACANCY SENSOR)
         c. DIPSWITCH SELECTABLE TO TOGGLE BETWEEN OCCUPANCY AND VACANCY MODE.
      B. SPECIFIC APPLICATIONS:
      C. CORRIDORS AND HALLWAYS: CAPABLE OF DETECTING MAJOR MOTION WITH A LONG, NARROW PATTERN DESIGNED FOR CORRIDOR AND AISLE SENSING.
      D. HIGH BAY AREAS: FOR AREAS WITH CEILINGS MORE THAN 15 FEET ABOVE FINISHED FLOOR, PROVIDE HIGH-BAY PIR-ONLY CEILING MOUNTED OCCUPANCY SENSOR.
D. ROOM CONTROLLERS / POWER PACKS
   1. PRODUCT DESCRIPTION:
      A. INTEGRATED LIGHTING, DIMMING, AND EQUIPMENT SWITCHING CONTROL SYSTEM FOR MOUNTING IN A CONCEALED SPACE. ENCLOSURE SHALL BE PLENUM RATED. PROVIDE PRE-CONFIGURED LIGHTING CONTROLLER(S), WITH CAPABILITIES FOR MANUAL SETUP, AND SOFTWARE SETUP THROUGH PROGRAMMING PORT, CONFIGURED AS A STANDALONE CONTROLLER.
F. LOW VOLTAGE KEYPADS / SWITCHES
   1. LIGHTING KEYPAD SHALL BE PROVIDED BY THE SAME MANUFACTURER AS THE LIGHTING CONTROL SYSTEM.
   2. PROVIDE LOW VOLTAGE KEYPADS / SWITCHES WITH CONFIGURATION, FUNCTIONALITY AND OPERATION AS INDICATED ON DRAWINGS.
   3. GENERAL REQUIREMENTS:
      A. CUSTOM ENGRAVABLE BUTTONS/SWITCHES, REFER TO DRAWINGS FOR LABELING.
      B. QUANTITY AND FUNCTION AS INDICATED ON DRAWINGS.
      C. LED INDICATORS, AS SHOWN ON DRAWINGS.
      D. CONFIGURED TO FIT IN STANDARD GANG BOXES.
      E. COLOR: BY ARCHITECT
   4. LABELING:
      A. PROVIDE FACTORY ENGRAVED LABELS FOR ALL LOW VOLTAGE KEYPADS / SWITCHES BUTTONS.
      B. REFER TO LIGHTING CONTROL DETAILS ON DRAWINGS FOR SUGGESTED LABELING OF LIGHTING CONTROL EQUIPMENT. COORDINATE NAMING OF SCENES/CONTROL ZONES WITH THE OWNER. PROVIDE A WORKSHEET LISTING REMOTE KEYPAD CONTROLS, LABELING REQUESTS AND LOCATIONS TO THE OWNER FOR THEIR LABELING REQUESTS.
      C. DO NOT ORDER LABELS UNTIL OWNER COORDINATION IS COMPLETE.
G. I. CLASS 2 CONDUCTORS AND CABLES
   1. GENERAL REQUIREMENTS:
      A. LINE VOLTAGE WIRING: COMPLY WITH REQUIREMENTS OF DIVISION 26 SECTION "ELECTRICAL POWER CONDUCTORS AND CABLES".
      B. CLASS 2 LOW-VOLTAGE CABLE:
         a. PROVIDE PLENUM-RATED CABLE.
         b. UTP CABLE: CAT 5, CAT 6, OR AS REQUIRED BY MANUFACTURER.

SECTION 26 50 00 - LIGHTING FIXTURES

A. LUMINAIRE TYPES
   1. FURNISH PRODUCTS AS INDICATED IN LIGHTING FIXTURE SCHEDULE INCLUDED ON THE DRAWINGS. REFER TO NOTES ON LIGHTING FIXTURE SCHEDULE FOR SUBSTITUTION LIMITATIONS.
B. INTERIOR LUMINAIRES
   1. MANUFACTURERS:
      A. LITHONIA LIGHTING
   2. PROVIDE PRODUCTS THAT COMPLY WITH REQUIREMENTS OF NFPA 70.
   3. PROVIDE PRODUCTS THAT ARE LISTED AND LABELED AS COMPLYING WITH UL 1598, WHERE APPLICABLE.
   4. UNLESS OTHERWISE INDICATED, PROVIDE COMPLETE LUMINAIRES INCLUDING LAMP(S) AND ALL SOCKETS, BALLASTS, DRIVERS, REFLECTORS, LENSES, HOUSINGS AND OTHER COMPONENTS REQUIRED TO POSITION, ENERGIZE AND PROTECT THE LAMP AND DISTRIBUTE THE LIGHT.
   5. UNLESS SPECIFICALLY INDICATED TO BE EXCLUDED, PROVIDE ALL REQUIRED CONDUIT, BOXES, WIRING, CONNECTORS, HARDWARE, SUPPORTS, TRIMS, ACCESSORIES, ETC. AS NECESSARY FOR A COMPLETE OPERATING SYSTEM.
C. EMERGENCY LIGHTING UNITS
   1. PRODUCT DESCRIPTION: EMERGENCY LIGHTING UNITS COMPLYING WITH NFPA 101 AND ALL APPLICABLE STATE AND LOCAL CODES, AND LISTED AND LABELED AS COMPLYING WITH UL 924.
   2. BATTERY:
      A. SEALED MAINTENANCE FREE LEAD CALCIUM UNLESS OTHERWISE INDICATED.
      B. SIZE BATTERY TO SUPPLY ALL CONNECTED LAMPS/LED ARRAYS, INCLUDING EMERGENCY REMOTE HEADS WHERE INDICATED.
   3. SELF-DIAGNOSTICS: PROVIDE UNITS THAT SELF-MONITOR FUNCTIONALITY AND AUTOMATICALLY PERFORM TESTING REQUIRED BY NFPA 101 WHERE INDICATED; PROVIDE INDICATOR LIGHT(S) TO REPORT TEST AND DIAGNOSTIC STATUS.
D. DRIVERS
   A. CONTROL INPUT
      a. 4-WIRE (0-10V DC VOLTAGE CONTROLLED) DIMMING DRIVERS: CONNECT TO DEVICES COMPATIBLE WITH 0 TO 10V ANALOG CONTROL PROTOCOL, CLASS 2, CAPABLE OF SINKING 0.6 MA PER DRIVER AT A LOW END OF 0.3V. LIMIT THE NUMBER OF DRIVERS ON EACH 0-10V CONTROL OUTPUT BASED ON VOLTAGE DROP AND CONTROL CAPACITY.
      b. DIGITAL MULTIPLEX (DMX LOW VOLTAGE CONTROLLED) DIMMING DRIVERS: MUST MEET DMX / RDM: USITT DMX512A AND ANSI E1.20 (EXPLORE & ADDRESS) AND SHALL BE CAPABLE OF SIGNAL INTERPOLATION AND SMOOTHING OF COLOR AND INTENSITY TRANSITIONS.
   B. DRIVER: APPROVED BY DIMMING SYSTEM MANUFACTURER AS SUITABLE FOR OPERATION WITH CONTROL UNIT AND SUITABLE FOR LED SOURCE TYPE AND QUANTITY SPECIFIED FOR LUMINAIRE.

SECTION 26 20 00 -ELECTRICAL DISTRIBUTION

A. GENERAL REQUIREMENTS FOR EQUIPMENT UNDER THIS SECTION
   1. MANUFACTURERS:
      A. SQUARE D
      B. SIEMENS
      C. EATON
      D. ABB
   2. ENCLOSURE (UNLESS OTHERWISE INDICATED ON PLANS OR SCHEDULES):
      A. TYPE 1 (INDOOR, DRY LOCATIONS).
      B. TYPE 3R (OUTDOOR, WET LOCATIONS).
B. PANELBOARDS
   1. PRODUCT DESCRIPTION: NEMA PB 1, CIRCUIT BREAKER TYPE PANELBOARD, COMPLYING WITH UL 67.
   2. PANELBOARD BUS: COPPER CURRENT CARRYING COMPONENTS, RATINGS AS SHOWN ON DRAWINGS. FURNISH COPPERGROUND BUS IN EACH PANELBOARD.
   3. MINIMUM INTEGRATED SHORT CIRCUIT RATING: 10KAIC.
   4. MOLDED CASE CIRCUIT BREAKERS: NEMA AB 1, CIRCUIT BREAKERS WITH INTEGRAL THERMAL AND INSTANTANEOUS TRIP FUNCTION, BOLT-ON TYPE. PROVIDE ELECTRONIC TRIP CIRCUIT BREAKERS WHERE INDICATED.
   5. PROVIDE CIRCUIT BREAKERS WITH MAGNETIC TRIP IN EACH POLE.
   6. CIRCUIT BREAKERS RATED 1,000 AMPS OR MORE ON SOLIDLY GROUNDED 480V SYSTEMS SHALL INCLUDE GROUND FAULT PROTECTION.
   7. CIRCUIT BREAKERS RATED 1,200 AMPS OR MORE SHALL HAVE LONG TIME, SHORT TIME, INSTANTANEOUS, AND GROUND FAULT PROTECTION (LSI) FUNCTIONS. CIRCUIT BREAKERS SHALL HAVE ENERGY REDUCTION MAINTENANCE SETTING (ERMS) SYSTEM.
   8. ENCLOSURE: NEMA PB 1.
   9. CABINET FRONT: LOCKABLE HINGED DOOR, METAL DIRECTORY FRAME, FINISHED IN MANUFACTURER'S STANDARD GRAY ENAMEL.
C. DISCONNECT SWITCHES
   1. PRODUCT DESCRIPTION: HEAVY-DUTY, NEMA KS 1, ENCLOSED LOAD INTERRUPTER KNIFE SWITCH. HANDLE LOCKABLE IN "OFF" POSITION.
   2. ENCLOSURE: NEMA KS 1, TO MEET CONDITIONS. FABRICATE ENCLOSURE FROM STEEL FINISHED WITH MANUFACTURER'S STANDARD GRAY.
   3. PROVIDE WITH (2) SETS OF AUXILIARY CONTACTS.
   4. FURNISH SWITCHES WITH ENTIRELY COPPER CURRENT CARRYING PARTS.
   5. SWITCH VOLTAGE, PHASE AND AMPERAGE RATINGS AS INDICATED ON DRAWINGS.
   6. WHERE SPECIFIED AS FUSED DISCONNECT SWITCHES, PROVIDE WITH DUAL-ELEMENT, TIME DELAY, CLASS RK1 FUSES. FUSE RATINGS AND QUANTITIES AS INDICATED ON DRAWINGS. FUSES SHALL BE MANUFACTURED BY BUSSMAN, GOULD SHAWMUT OR LITTELFUSE. FURNISH (3) SPARE FUSES OF EACH TYPE.
D. PANELBOARD & DISCONNECT SWITCH INSTALLATION STANDARDS
   1. MOUNT PANELBOARDS, CIRCUIT BREAKERS (INCLUDING PROVISIONS FOR FUTURE BREAKERS), AND DISCONNECTING SWITCHES SO HEIGHT OF OPERATING HANDLE AT ITS HIGHEST POSITION IS MAXIMUM 78 INCHES ABOVE FLOOR.
   2. ARRANGE EQUIPMENT TO PROVIDE MINIMUM CLEARANCES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NFPA 70.
   3. INSTALL PANELBOARDS PLUMB. INSTALL FLUSH-MOUNTED PANELBOARDS SO THAT TRIMS FIT COMPLETELY FLUSH TO WALL WITH NO GAPS AND ROUGH OPENING COMPLETELY COVERED.
   4. INSTALL A PERMANENT LABEL INDICATING THE PANELBOARD OR TRANSFORMER WHERE THE POWER SUPPLY TO THE DEVICE ORIGINATES.
   5. PROVIDE FILLER PLATES TO COVER UNUSED SPACES IN PANELBOARDS.
   6. PROVIDE CIRCUIT BREAKER LOCK-ON DEVICES TO PREVENT UNAUTHORIZED PERSONNEL FROM DE-ENERGIZING ESSENTIAL LOADS AS INDICATED.
   7. PROVIDE WITH MANUFACTURER'S STANDARD ARC FLASH LABEL.

CES
CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST,
CASTROVILLE, TX

ELECTRICAL SPECIFICATIONS

DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	DRW
CHECKED:	GYC
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:



SHEET NO.

E5.01

WATER HEATER SCHEDULE-ELECTRIC

SYMBOL	MANUFACTURER/ MODEL NUMBER	TYPE	LOCATION	ELEMENTS (KW)	STORAGE CAPACITY (GALLONS)	RECOVERY (GPH AT 80°F RISE)	HW STORAGE TEMP.	ELEC DATA (VOLTS / PH)	REMARKS
WH-1	BRADFORD WHITE/ RE250LN6	S	SEE PLANS	11	40	48	140	208V /1Ø	3

TYPE:
S = STORAGE TYPE HEATER
I = INSTANTANEOUS TYPE HEATER

REMARKS:
1. SINGLE ELEMENT
2. DUAL ELEMENT (NON-SIMULTANEOUS OPERATION)
3. DUAL ELEMENT (SIMULTANEOUS OPERATION)

PUMP SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NUMBER	TYPE	LOCATION	SYSTEM SERVED	CAPACITY	CAPACITY FT OF HEAD	FLUID TEMP (F°)	ELEC. DATA	REMARKS
HWRP-1	BELL AND GOSSETT ECOCIRC XL N 20-3S	IL	SEE PLAN	DOMESTIC HW RECIRC WH-1	1 GPM	12.0	110°F	115 V / 1/12 HP	1,2

NOTES:
IL = IN-LINE PUMP

REMARKS:
1. PUMP SHALL BE STAINLESS STEEL FOR DOMESTIC WATER USE
2. PROVIDE WITH PACKAGED THERMOSTATIC MIXING STATION
3. PROVIDE HYDROMATIC DUPLEX "O" PANEL IN NEMA 3R CONTROL PANEL.

PLUMBING FIXTURE CONNECTION SCHEDULE

FIXTURE TYPE	WASTE CONNECTION	VENT CONNECTION	COLD WATER CONNECTION	HOT WATER CONNECTION
MOP BASIN (MB)	3	1-1/2"	1/2"	1/2"
HOSE BIB (HB) (BY OTHERS)	-	-	3/4"	-
LAVATORY (LAV)	1 1/2"	1 1/2"	1/2"	1/2"
SINK (SK)	1 1/2"	1 1/2"	1/2"	1/2"
WATER CLOSET (WC)	4"	2"	1/2"	-
WATER DISPENSER (WD)	1-1/2"	1-1/2"	1/2"	-

NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR ALL PLUMBING FIXTURE MOUNTING HEIGHTS.
2. ALL PIPE TRAPS AT SINKS AND LAVATORIES SHALL BE CHROME PLATED BRASS.
3. QUANTITY AND SIZE OF ALL PLUMBING CONNECTIONS SHALL BE COORDINATED WITH THE SPECIFIED FIXTURES.
4. NO PORTION OF THE DRAINAGE SYSTEM INSTALLED UNDERGROUND SHALL BE LESS THAN 2 INCHES IN DIAMETER.
5. HOSE BIB SIZE TO BE CONFIRMED BY CIVIL.

GENERAL NOTES

GENERAL

1. GENERAL NOTES, SYMBOLS AND DETAILS ARE APPLICABLE TO DRAWINGS WITHIN DIVISION 22.
2. DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO INDICATE CAPACITY, SIZE, APPROXIMATE LOCATION AND GENERAL ARRANGEMENT. DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD.
3. COORDINATE CONCRETE PADS AND STEEL PLATFORMS REQUIRED FOR PLUMBING WORK.
4. COORDINATE ROOF AND WALL PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS. COORDINATE SLAB PENETRATIONS WITH WORK OF OTHER SECTIONS.
5. RUN PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS.
6. COORDINATE WORK OF THIS SECTION WITH THAT OF OTHER SECTIONS AND WITH ALL TRADES INVOLVED.
7. NOT ALL ACCESS DOORS HAVE BEEN SHOWN ON THE PLANS. PROVIDE ACCESS PANELS THROUGH BUILDING ASSEMBLIES TO SERVICE AND MAINTAIN EQUIPMENT UNLESS SUCH EQUIPMENT IS INSTALLED IN EXPOSED LOCATIONS OR ABOVE LAY-IN CEILINGS. COORDINATE THE LOCATION OF ACCESS DOORS AND PANELS AND VERIFY THE QUANTITY, SIZE, AND LOCATIONS AFTER THE SYSTEMS AND EQUIPMENT REQUIRING ACCESS HAVE BEEN INSTALLED AND PRIOR TO THE CLOSURE OF THE AFFECTED CEILINGS AND BUILDING ASSEMBLIES. SUBMIT ACCESS PANEL LOCATIONS FOR REVIEW.
8. AT SUBSTANTIAL COMPLETION, THE FOLLOWING ITEMS, NEW OR EXISTING, SHALL BE FULLY AND REASONABLY ACCESSIBLE: CONTROL BOXES, JUNCTION BOXES, VALVES, DDC CONTROL BOXES, ELECTRICAL PANELS, CLEAN OUTS, DISCONNECT SWITCHES AND ELEMENTS OF EQUIPMENT REQUIRING MAINTENANCE. "FULLY AND REASONABLY ACCESSIBLE" SHALL BE DEFINED AS NATIONAL ELECTRIC CODE REQUIRED CLEARANCE FOR POWERED EQUIPMENT AND CAPABLE OF BEING ACCESSED OR SERVICED WITHOUT REMOVING, MODIFYING OR DISTORTING OTHER COMPONENTS OF THE WORK. PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCE FOR ALL EQUIPMENT.
9. VERIFY EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE FITTINGS TO TRANSITION TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE DIMENSIONS BEFORE FABRICATION.
10. INSTALL FOOD SERVICE AND/OR KITCHEN EQUIPMENT PLUMBING ACCESSORIES FURNISHED UNDER DIVISION 11, INCLUDING BUT NOT LIMITED TO: FAUCETS, VACUUM BREAKERS, SOLENOIDS, PRESSURE REDUCING VALVES, DRAINS, SINK TAILPIECES, AND OTHER PLUMBING TRIM SUPPLIED WITH EQUIPMENT IN ACCORDANCE WITH THE KITCHEN DESIGN DOCUMENTS
11. IN COMPLIANCE WITH THE FEDERAL SAFE DRINKING WATER ACT (SDWA), THE CONTRACTOR SHALL NOT PROVIDE ANY COMPONENTS IN THE DOMESTIC WATER SYSTEM THAT CONTAIN MORE THAN 0.25% LEAD ON ANY WETTED PARTS. THE CONTRACTOR SHALL PROVIDE THE LEAD FREE EQUIVALENT OF ANY EQUIPMENT SPECIFIED AND PROVIDE A LETTER CERTIFYING THAT ALL PLUMBING PRODUCTS PROVIDED MEET THIS REGULATION.
12. PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH THE STATE PLUMBING AND FUEL GAS CODE. COORDINATE WITH THE INSPECTOR FOR ALL PLUMBING INSPECTIONS.
13. IN THE EVENT THAT THERE ARE DISCREPANCIES BETWEEN PIPE SIZES SHOWN ON THE PLANS, DETAILS AND DIAGRAMS, THE LARGER PIPE SIZE SHALL BE PROVIDED.

PIPING SYSTEM SPECIFIC NOTES:

1. PROVIDE ESCUTCHEONS AT EXPOSED PIPE PENETRATIONS OF CEILINGS AND WALLS
2. TOPS OF FLOOR DRAINS SHALL BE FLUSH WITH FINISHED FLOOR.
3. PROVIDE SHUT-OFF VALVES ON BRANCH PIPING AND ON SUPPLIES TO INDIVIDUAL FIXTURES AND EQUIPMENT.
4. SUPPORT PIPING FROM STRUCTURE. PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING.
5. PROVIDE DRAIN WITH BALL VALVE, HOSE END VACUUM BREAKER, CAP AND CHAIN AT DOMESTIC WATER LOW POINTS AND PITCH PIPING TO DRAIN.
6. PROVIDE ACCESSIBLE CLEANOUTS AT THE BASE OF STACKS.
7. PLUMBING PIPING AND DRAINS SHALL BE PROTECTED FROM DEBRIS AND KEPT CLEAR OF BLOCKAGE DURING CONSTRUCTION.
8. PROVIDE DIELECTRIC FITTINGS WHEN JOINING PIPES OF DISSIMILAR METALS.
9. PROVIDE OFFSETS IN PIPING AROUND OBSTRUCTIONS.

FIRESTOPPING NOTES:

1. PROVIDE FIRE STOPPING AND SMOKE BARRIER SEALING OF PENETRATIONS THROUGH FIRE WALLS OR SMOKE BARRIERS INCLUDING BOTH EMPTY OPENINGS AND OPENINGS CONTAINING CABLES, PIPES, DUCTS, CONDUITS AND OTHER PENETRATING ITEMS. REFER TO ARCHITECTURAL FLOOR PLANS AND CODE SHEETS FOR WALL RATINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

GENERAL ABBREVIATIONS

AD	ACCESS DOOR
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
AHJ	AUTHORITY HAVING JURISDICTION
AP	ACCESS PANEL
BTU	BRITISH THERMAL UNIT
BTUH	BTU / HOUR
BOP	BOTTOM OF PIPE
CD	CONDENSATE DRAIN
CFH	CUBIC FEET PER HOUR
CI	CAST IRON
CO	CLEANOUT
CW	COLD WATER
DIA	DIAMETER
DN	DOWN
DW	DIRECT WASTE
ELEC	ELECTRICAL
ET	EXPANSION TANK
°F	DEGREES FAHRENHEIT
FCO	FLOOR CLEANOUT
FFE	FINISHED FLOOR ELEVATION
FGCO	FINISHED GRADE CLEANOUT
FLA	FULL LOAD AMPS
FLD	FLOOR DRAIN
FS	FLOOR SINK
FT	FEET
FT WG	FEET HEAD
GALL	GALLONS
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GSV	GAS SOLENOID VALVE
HB	HOSE BIB
HW	HOT WATER
HD	HEAD
HP	HORSEPOWER
HZ	HERTZ
HWR	HOT WATER RECIRCULATION
INV ELEV	INVERT ELEVATION
IW	INDIRECT WASTE
KW	KILOWATT
LAV	LAVATORY
MAX	MAXIMUM
MECH	MECHANICAL
MBH	THOUSAND BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PCD	PUMPED CONDENSATE DRAIN
PLBG	PLUMBING
PSIG	POUNDS PER SQUARE INCH GAUGE
QTY	QUANTITY
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
SAN	SANITARY
SQFT / SF	SQUARE FEET
TEMP	TEMPERATURE
TW	TEMPERED WATER
TYP	TYPICAL
V	VENT
VS	VENT STACK
VTR	VENT THRU ROOF
W	WASTE
WS	WASTE STACK
W&V	WASTE AND VENT

EQUIPMENT ABBREVIATIONS

BFP	BACKFLOW PREVENTER
COT	CLEANOUT TEE
ET	EXPANSION TANK
FCO	FLOOR CLEANOUT
L	LAVATORY
MB	MOP BASIN
P	PUMP
S	SINK
TP	TRAP PRIMER
TV	TEMPERING VALVE
VC	VENT CAP
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WATER HEATER
WHA	WATER HAMMER ARRESTOR
WHYD	WALL HYDRANT

VALVE AND SYMBOL LEGEND

SYMBOL	DESCRIPTION
	BALL VALVE
	BALL VALVE WITH HOSE BIBB, CAP & CHAIN (DRAIN VALVES)
	BUTTERFLY VALVE
	GLOBE VALVE
	GATE VALVE
	OS&Y VALVE
	PLUG VALVE
	PRESSURE REDUCING VALVE
	CHECK VALVE
	Y-PATTERN STRAINER
	SOLENOID VALVE
	AUTOMATIC CONTROL VALVE, MODULATING ACTUATOR
	AUTOMATIC CONTROL VALVE, TWO POSITION ACTUATOR
	THREE WAY AUTOMATIC CONTROL VALVE, MODULATING ACTUATOR
	THREE WAY AUTOMATIC CONTROL VALVE, TWO POSITION ACTUATOR
	COMBINATION SHUT OFF/BALANCING VALVE (CIRCUIT SETTER)
	SAFETY RELIEF VALVE
	PRESSURE GAUGE
	THERMOMETER
	DOUBLE CHECK VALVE ASSEMBLY
	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY AND DRAIN
	GATE VALVE IN ROAD CURB BOX
	BACKWATER VALVE
	PUMP
M	WATER METER
	FLOOR DRAIN / FLOOR SINK / AREA DRAIN WITH PIPE TRAP
	ROOF / OVERFLOW DRAIN
TP	TRAP PRIMER
GM	GAS METER
	WATER HAMMER ARRESTOR
	VENT THRU ROOF
	ADA ACCESSIBLE FIXTURE

PLUMBING EXPANSION TANK SCHEDULE

SYMBOL	MANUFACTURER	MODEL	TYPE	SYSTEM	SYSTEM VOLUME	MAXIMUM ACCEPTANCE FACTOR	PHYSICAL DATA			NOTES
							DIAMETER (IN)	HEIGHT (IN)	WEIGHT (LBS)	
PET-1	AMTROL	ST-5C-DD	DIAPHRAGM	HOT WATER	2 GAL	0.45	8	14	10	1,2

NOTES:
1. VERTICAL CONFIGURATION.
2. TANK SHALL BE ASME CONSTRUCTION.

SHEET INDEX - PLUMBING

SHEET NUMBER	SHEET NAME
02 - PLUMBING	
P0.00	PLUMBING ABBREVIATIONS, SCHEDULES AND SYMBOLS
P1.00	PLUMBING FLOOR PLANS
P4.00	PLUMBING DETAILS
P6.00	PLUMBING SPECIFICATIONS
Grand total: 4	

PIPING LEGEND

SYMBOL	DESCRIPTION
CW	COLD WATER
110°F HWR	HOT WATER RECIRCULATION (110°F)
120°F HW	HOT WATER (120°F)
SAN	SANITARY DRAIN/WASTE
V	VENT
	PIPE RISE
	PIPE DROP
	PIPE TEE TOWARDS (UP IN PLAN)
	PIPE TEE AWAY (DOWN IN PLAN)
	PIPE DROP AND RUN
	DIRECTION OF FLOW
	PIPE TRAP
	DIRT LEG
CO	CLEANOUT
	UNION OR FLANGE
	BLIND FLANGE
	END CAP
	REDUCER (ECCENTRIC)
	REDUCER (CONCENTRIC)

PLUMBING SPECIALTIES SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NO.	DESCRIPTION	REMARKS
FCO-1	JR. SMITH / 4023S	FLOOR CLEANOUT, CAST IRON, NO-HUB OUTLET, TAPER THREAD, BRONZE PLUG, POLISHED BRONZE (PB) VANDAL PROOF (U) ADJUSTABLE SCORIATED TOP PROVIDE FLASHING FLANGE (F) AND FLASHING CLAMP (C) WHERE NECESSARY TO ADEQUATELY SECURE CLEANOUT TO FLOOR ASSEMBLY.	1
FLD-1	JR. SMITH / 2010C	FLOOR DRAIN, CAST IRON BODY, FLASHING COLLAR, ADJUSTABLE NICKEL BRONZE (NB) STRAINER HEAD, VANDAL PROOF SCREWS (U), 5" ROUND STRAINER FOR 2" OUTLET, 6" ROUND STRAINER FOR 3" OUTLET, 8" ROUND STRAINER FOR 4" OUTLET.	2
TP-1	PRECISION PLUMBING PRODUCT / MP-500	TRAP PRIMER, ELECTRIC, MANIFOLD TYPE, 16 GAUGE GALVANIZED FLUSH MOUNTED STEEL CABINET, STAINLESS STEEL ACCESS DOOR. INTEGRAL VACUUM BREAKER, 3/4" INLET WITH BALL VALVE, CALIBRATED MANIFOLD FOR EQUAL WATER DISTRIBUTION WITH 1/2" OUTLETS, PRE-SET 24 HOUR ADJUSTABLE TIMER WITH TEST SWITCH, SOLENOID VALVE OPERATED, 115 V	3
TV-1	LEONARD / TM-26-LF	WALL CLEANOUT, CAST IRON BODY, "T" HANDLE PLUG (TH), VANDAL PROOF SCREW (U), POLISHED BRONZE COVER (PB)	1
WCO-1	JR. SMITH / 4510	WALL CLEANOUT, CAST IRON BODY, "T" HANDLE PLUG (TH), VANDAL PROOF SCREW (U), POLISHED BRONZE COVER (PB)	1
WHA-1	PRECISION PLUMBING PRODUCT / SC-500	WATER HAMMER ARRESTOR, PISTON TYPE, COPPER/BRASS, EPDM O-RING WITH FDA LISTED SILICONE SEAL LUBRICANT, -40F TO 212F OPERATING TEMPERATURE, 200 PSIG WORKING PRESSURE, 60 PSIG NITROGEN PRELOAD	4

REMARKS:
1. SAME SIZE AS THE PIPE SERVED UNLESS OTHERWISE INDICATED.
2. 4" OUTLET SIZE UNLESS OTHERWISE INDICATED. PROVIDE A VENTED TRAP WITH A TRAP PRIMER CONNECTION (PR-500) UNLESS OTHERWISE INDICATED.
3. PROVIDE A BALL VALVE ON THE SUPPLY PIPE, AND PROVIDE AN ACCESS PANEL WHERE THE BALL VALVE IS NOT ACCESSIBLE. MOUNTED TRAP PRIMER SUCH THAT DISCHARGE IS MINIMUM 1" ABOVE FLOOR FOR EVERY 2 FEET OF HORIZONTAL RUN, MAXIMUM 20" ABOVE FLOOR. COORDINATE QUANTITIES OF PRIMER OUTLETS PRIOR TO PURCHASING UNIT.
4. PROVIDE PER GENERAL NOTE ON THE PLAN SHEETS REGARDING LOCATIONS AND SIZE.

PLUMBING FIXTURE SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NUMBER	DESCRIPTION OF FIXTURE	TRIM AND ACCESSORIES	REMARKS	SYMBOL	MANUFACTURER/ MODEL NUMBER	DESCRIPTION OF FIXTURE	TRIM AND ACCESSORIES	REMARKS
EWC-1	ELKAY MODEL # LBWD06WHK	ELECTRIC WATER COOLER: ACCESSIBLE BUILT-IN FILTERED REFRIGERATED WATER DISPENSER REMOTE CHILLER	115V/1FLA/1GPH PROVIDE 3600-GAL CAPACITY FILTER WALL MOUNTED WITH ELECTRIC SENSOR. ASPEN WHITE FINISH	#3,4	**S-1**	AMERICAN STANDARD "QUINCE" MODEL # 77DB33223.308	SINK: TOP MOUNT, DOUBLE COMPARTMENT, , WHITE .308 FINISH, 3-9/16" CENTER DRAIN, 22-1/4"L X 29-9/16"W X 9" DEEP.	GERBER MODEL# **G0040168** MANUALLY OPERATED, CHROME PLATED FAUCET, 1.5 GPM WITH AERATOR, DRAIN WITH STRAINER IN STAINLESS STEEL AMERICAN STANDARD 9028000.07	#2,4,6
L-1	GERBET "WICKER PARK" MODEL# G0012592	LAVATORY: ACCESSIBLE, WALL MOUNT, SINGLE HOLE HOLE, VITREOUS CHINA,	GERBER FAUCET MODEL #**G0040023** 1.0 GPM WITH AERATOR, POP-UP DRAIN & LIFT ROD, POLISHED CHROME. JR SMITH MODEL # 0720 LAVATORY SUPPORTS.	#1,2,3,4,67	**WC-1**	GERBER MODEL # VIPER GWS31518	WATER CLOSET: ACCESSIBLE, FLOOR MOUNT, ELONGATED BOWL, VITREOUS CHINA, 3/8" INLET 1.28 MAX GPF.	GERBER #**99-213** ELONGATED SOFT CLOSE SEAT AND COVER.	#1,3,4
MB-1	SWANSTONE MODEL # MS02424WA.900	MOP BASIN: MOLDED STONE COMPOSITE BASIN, 24"x24"x10", SST INTEGRAL DRAIN BODY.	CHICAGO #897-RCF WALL MOUNTED 8" BODY FAUCET, 3/4" THREADED MALE HOSE OUTLET, PAIL HOOK, WALL BRACE AND VACUUM BREAKER SPOUT, 16 GAUGE STAINLESS STEEL STRAINER, WALL GUARD, MOP HANGER, HOSE AND BRACKET. PROVIDE ADJACENT TO SERVICE FAUCET, ONE CHICAGO # 952269CP WASH DOWN AND SILL FAUCET WITH VACUUM BREAKER INSPOUT, HOSE END THREAD.	#1,4,5					

REMARKS:
1. COLOR SHALL BE WHITE.
2. INSTALL TRUEBRO INC. MODEL #102, HANDI LAV-GUARD PROTECTOR ON THE HOT, COLD, AND DRAIN PIPING UNDER FIXTURE.
3. FIXTURES AND TRIM AS NOTED SHALL BE "ACCESSIBLE" AND SHALL BE INSTALLED TO ADA / ANSI A117 AND FEDERAL 504 REQUIREMENTS.
4. PROVIDE ISOLATION VALVES AT THE SUPPLY PIPE CONNECTIONS.
5. PROVIDE WATER HAMMER ARRESTORS AT THE PIPE CONNECTIONS, LOCATE ABOVE AN ACCESSIBLE CEILING OR LOCATED ABOVE AN ACCESSIBLE CEILING.
6. REFER TO ARCHITECTURAL DRAWINGS FOR FIXTURE MOUNTING HEIGHTS.
7. PROVIDE SYMMONS MODEL #7-225 THERMOSTATIC MIXING VALVE UNDER LAVATORY AND/OR SINK. TEMPERATURE SHALL BE SET AT 110. DEG.

CES
CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

PLUMBING ABBREVIATIONS, SCHEDULES AND SYMBOLS

DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	KD
CHECKED:	JS
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:

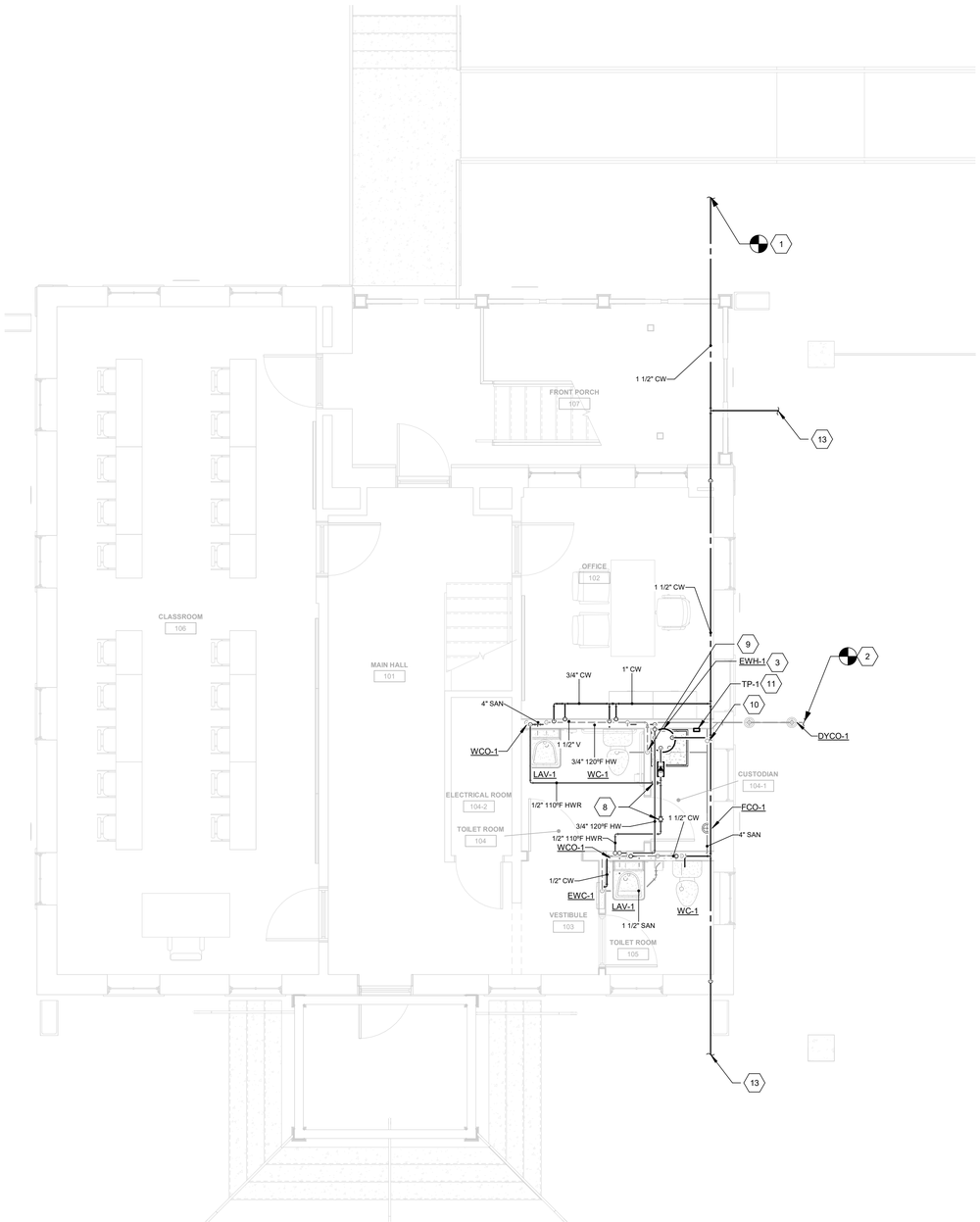
STATE OF TEXAS
155955
LICENSED
PROFESSIONAL ENGINEER

SHEET NO.

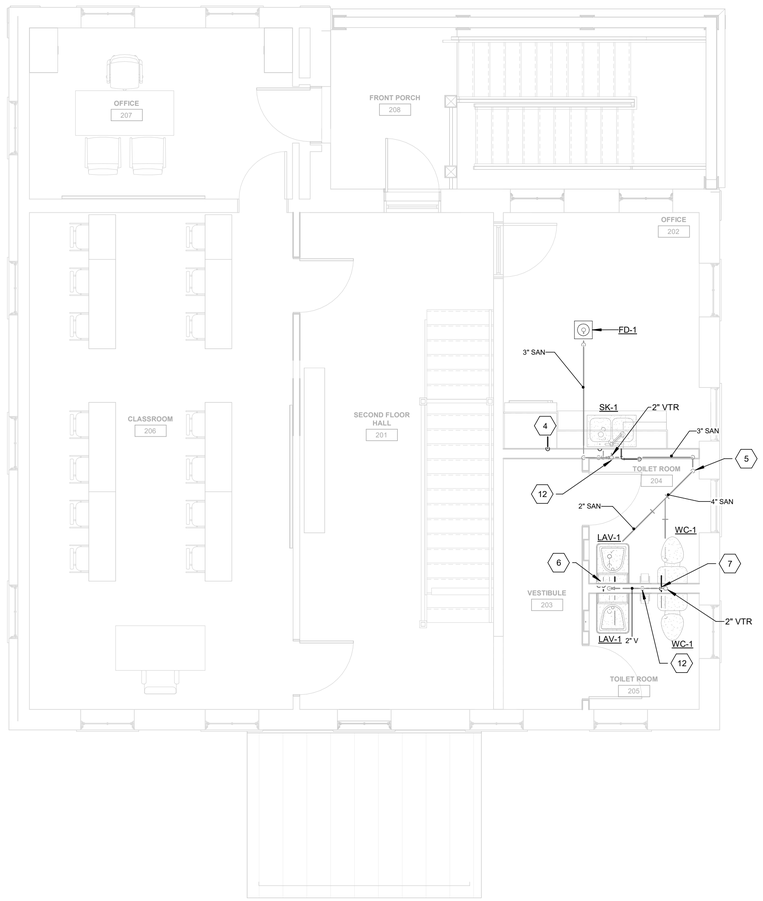
P0.00

PLUMBING KEY NOTES

1	1-1" CW TO CONTINUE 5' OUT OF BUILDING AND CONNECT TO EXISTING MAIN. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND ELEVATIONS. REFER TO CIVIL PLANS FOR CONTINUATION INCLUDING WATER METER AND BACKFLOW.
2	4" SAN TO CONTINUE 5' OUT OF BUILDING AND CONNECT TO EXISTING SANITARY SYSTEM. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND ELEVATIONS. REFER TO CIVIL PLANS FOR CONTINUATION.
3	1" CW, 1" HW, 3/4" HWR TO WATER HEATER. SEE DETAIL FOR CONTINUATION.
4	1/2" CW TO REFRIGERATOR.
5	4" SANITARY DROP TO FLOOR BELOW.
6	3/4" CW 1/2" HWR AND 3/4" HW UP FROM FLOOR BELOW TO SERVE LAVS.
7	3/4" CW UP FROM FLOOR BELOW.
8	BALANCE VALVE TO 0.5 GPM.
9	CIRCUIT VENT SERVING MS-1 AND WC-1.
10	4" SANITARY TIE IN FROM FLOOR ABOVE.
11	TP-1 SERVING FD-1 ON FLOOR ABOVE. SEE DETAIL 2/P4.00
12	2" VENT ROUTED FROM FLOOR BELOW.
13	3/4" CW LINE TO YARD HYDRANT. CONTRACTOR TO COORDINATE WITH CIVIL ON EXACT LOCATION AND INVERT REQUIRED.



1 PLUMBING LEVEL 1
1/4" = 1'-0"



2 PLUMBING LEVEL 2
1/4" = 1'-0"

CES
CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

PLUMBING FLOOR PLANS

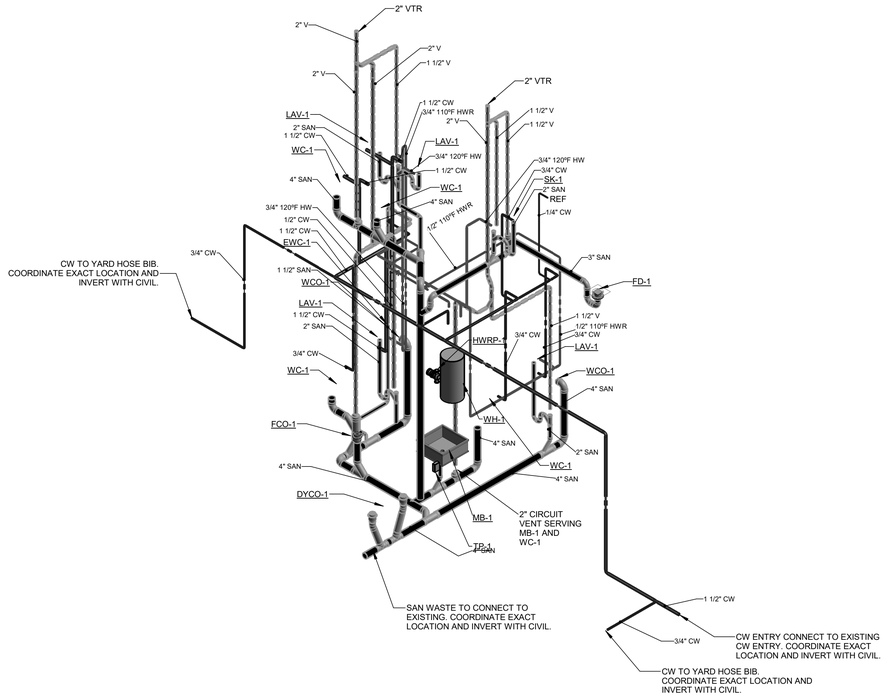
DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	KD
CHECKED:	JS
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:

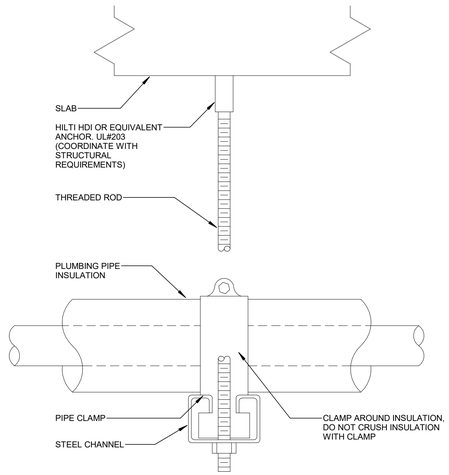
STATE OF TEXAS
155955
LICENSED
PROFESSIONAL ENGINEER

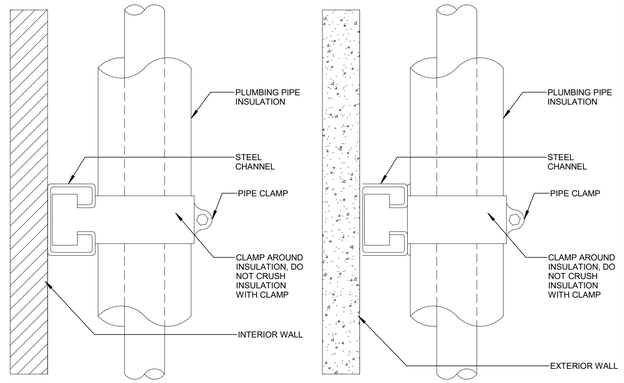
SHEET NO.

P1.00

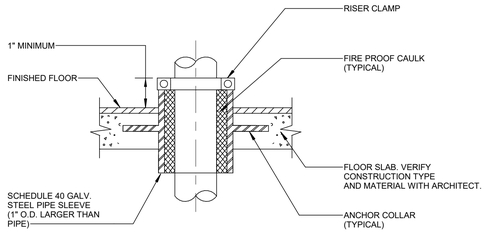


1 PLUMBING RISER

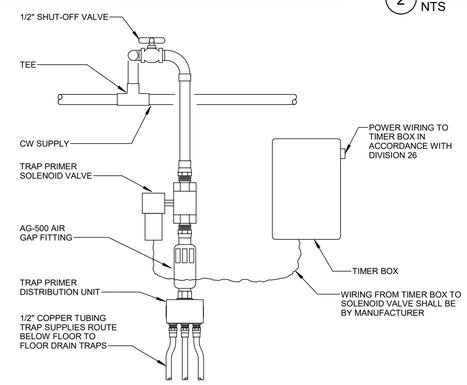




2 PIPE INSULATION & HANGER DETAIL
NTS

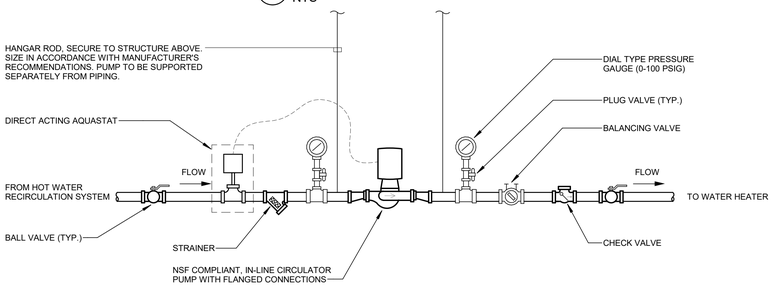


3 TYPICAL PIPE SLEEVE PENETRATION OF FLOOR INSTALLATION DETAIL
NTS

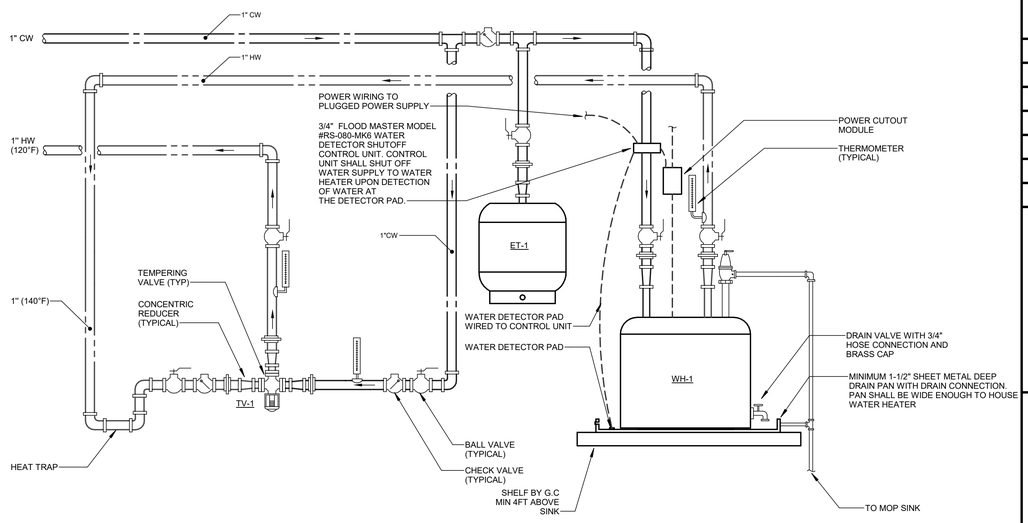


NOTE:
1. TRAP PRIMER SHALL BE LOCATED ABOVE AN ACCESSIBLE CEILING OR OTHER ACCESSIBLE LOCATION. PROVIDE ACCESS PANEL WHERE REQUIRED.
2. PROVIDE TRAP PRIMERS AT FLOOR DRAINS LOCATIONS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR WATER PIPE ROUTING FROM DISTRIBUTION UNIT TO ALL DRAINS NOTED ABOVE.

4 TRAP PRIMER DETAIL
NTS



5 PUMP - INLINE
NTS



6 ELECTRIC WATER HEATER DETAIL
NTS

CES
CES Engineering Services TX, LLC
License F-19994
1370 Pantheon Way, Ste. 290
San Antonio TX 78232
210.686.1614
ceseng.com
CES #250812.00

ISSUANCES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

REVISIONS

NO.	DATE	DESCRIPTION

CASTROVILLE CATHOLIC SCHOOL

702 PARIS ST, CASTROVILLE, TX

PLUMBING DETAILS

DATE:	12/19/2025
PROJECT NO:	250812.00
DRAWN:	KD
CHECKED:	JS
ISSUED FOR:	100% CD
REVISIONS:	

SEAL:



SHEET NO.

P4.00

22 00 00 - GENERAL

A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

B. THESE SPECIFICATIONS ARE APPLICABLE TO ALL PLUMBING DRAWINGS UNLESS NOTED OTHERWISE. REVIEW THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING DRAWINGS FOR NOTES, DIMENSIONS, ETC., AND COORDINATE WITH OTHER TRADES INVOLVED.

C. THIS SECTION APPLIES TO ALL DIVISION 22 SPECIFICATION SECTIONS. WHERE THERE ARE DIFFERENCES OR DISCREPANCIES BETWEEN THIS SPECIFICATION SECTION AND OTHER DIVISION 22 SPECIFICATION SECTIONS, THE MORE STRINGENT REQUIREMENT(S) SHALL APPLY.

D. DESCRIPTION

1. THIS PROJECT COMPRISES ALTERATIONS AND RENOVATIONS TO THE EXISTING BUILDING. THE EXISTING BUILDING IS CURRENTLY OCCUPIED AND THE PROJECT SHALL PROCEED IN A MANNER THAT MINIMIZES ANY INCONVENIENCE TO THE BUILDING OCCUPANTS.

2. SCOPE OF WORK CONSISTS OF INSTALLATION OF MATERIALS TO BE FURNISHED UNDER THE CONTRACT DOCUMENTS AND WITHOUT LIMITING GENERALITY THEREOF CONSISTS OF FURNISHING LABOR, MATERIALS, EQUIPMENT, HOISTING, TRANSPORTATION, RIGGING, STAGING, APPURTENANCES, AND SERVICES NECESSARY AND/OR INCIDENTAL TO PROPERLY COMPLETE ALL WORK AS SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN.

E. DEFINITIONS: THE FOLLOWING DEFINITIONS APPLY TO THIS CONTRACT

1. FURNISH: THE TERM "FURNISH" MEANS TO "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS"

2. INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

3. PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

4. REMOVE: THE TERM "REMOVE" MEANS TO DISCONNECT FROM ITS PRESENT POSITION, REMOVE FROM THE PREMISES AND TO DISPOSE OF IN A LEGAL MANNER."

5. SUBSTITUTIONS: "SUBSTITUTIONS" ARE REQUESTS FOR CHANGES IN PRODUCTS, MATERIALS AND/OR METHODS OF CONSTRUCTION AS PROPOSED BY THE CONTRACTOR AFTER AWARD OF THE CONTRACT."

F. DRAWINGS

1. DRAWINGS ARE DIAGRAMMATIC. THE FINAL PLACEMENT OF EQUIPMENT OR DEVICES IN THE FIELD MAY NOT DIRECTLY CORRESPOND TO THAT WHICH IS SHOWN ON THE DRAWINGS. THOUGH SOME OFFSETS & TRANSITIONS MAY BE SHOWN IN PIPING TO HELP INDICATE THE PHYSICAL RELATIONSHIP BETWEEN THEM, IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW ALL PIPING OFFSETS & TRANSITIONS REQUIRED. THE CONTRACTOR SHALL FULLY COORDINATE THE WORK AND PROVIDE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THE WORK OUTLINED ON THESE CONTRACT DOCUMENTS. IF A CONFLICT IN POSITIONING OCCURS THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY TO ASCERTAIN WHAT THE INTENT WAS BY THE DESIGN PROFESSIONAL.

G. CODES AND STANDARDS: WORK SHALL CONFORM TO THE FOLLOWING:

1. 2012 INTERNATIONAL BUILDING CODE
2. 2012 INTERNATIONAL PLUMBING CODE
3. 2012 INTERNATIONAL MECHANICAL CODE
4. 2014 NATIONAL ELECTRIC CODE (NFPA 70)
5. 2012 THE LIFE SAFETY CODE (NFPA 101)

H. PERMITS AND FEES:

1. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS; AND PAY ALL GOVERNMENT AND STATE SALES TAXES AND FEES WHERE APPLICABLE, AND OTHER COSTS, INCLUDING UTILITY CONNECTIONS OR EXTENSIONS IN CONNECTION WITH THE WORK, FILE ALL NECESSARY DRAWINGS, PREPARE ALL DOCUMENTS AND OBTAIN ALL NECESSARY APPROVALS OF ALL GOVERNMENTAL AND STATE DEPARTMENTS HAVING JURISDICTION, OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION FOR HIS WORK, AND DELIVER A COPY TO THE OWNER AND ENGINEER BEFORE REQUEST FOR ACCEPTANCE AND FINAL PAYMENT FOR THE WORK.

I. EXISTING SYSTEMS AND EQUIPMENT

1. EXISTING TO BE REMOVED/RELOCATED EQUIPMENT: REPORT ANY EXISTING EQUIPMENT DEFICIENCIES TO THE OWNER AND THE ARCHITECT AND/OR ENGINEER.

2. CONNECT WORK TO VARIOUS EXISTING SYSTEMS AS INDICATED ON THE DRAWINGS. WORK SHALL BE COMPATIBLE WITH THE EXISTING SYSTEM CONDITIONS. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED AS WELL AS WITH EXISTING SYSTEMS, THE STRUCTURE, AND OTHER OBSTRUCTIONS.

J. SURVEY AND MEASUREMENTS

1. THIS PROJECT INVOLVES CONSTRUCTION INSIDE AN EXISTING STRUCTURE. CONTRACTORS, BY SUBMITTING A BID, SHALL BE COMPLETELY FAMILIAR WITH THE EXISTING CONDITION OF THE BUILDING AS IT INFLUENCES THE WORK DESCRIBED. NO COMPENSATION WILL BE GRANTED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY IDENTIFIED BY EXPERIENCED OBSERVERS.

2. DO NOT SCALE DRAWINGS. SCALE INDICATED ON DRAWINGS IS FOR ESTABLISHING REFERENCE POINTS ONLY. ACTUAL FIELD CONDITIONS SHALL GOVERN ALL DIMENSIONS.

3. PRIOR TO ORDERING ANY MATERIALS AND EQUIPMENT, THOROUGHLY REVIEW THE SITE CONDITIONS TO DETERMINE IF ADEQUATE CLEARANCES AND ACCESS IS ALLOWED TO INSTALL THE COMPLETE ORDER EQUIPMENT BROKEN DOWN AS NECESSARY TO ALLOW FOR PROPER RIGGING THROUGH THE PROJECT AREA. PROVIDE ALL NECESSARY ALTERATIONS TO THE STRUCTURE OF THE BUILDING AS NECESSARY TO RIG THE EQUIPMENT IN PLACE.

4. CONTRACTORS SHALL VERIFY, LAYOUT AND BE RESPONSIBLE FOR ALL MEASUREMENTS OF ALL EXISTING CONDITIONS BEFORE COMMENCING WORK AND SHALL NOTIFY ARCHITECT AND/OR ENGINEER IF A CONDITION EXISTS THAT PREVENTS THE CONTRACTOR FROM ACCOMPLISHING THE INTENT OF THE DRAWINGS.

K. SUBMITTALS AND SHOP DRAWINGS

1. SUBMIT FOR REVIEW, ELECTRONIC SHOP DRAWINGS IN SEARCHABLE PDF FORMAT FOR THE FOLLOWING.

   a. SUBMITTAL DATA FOR ALL MATERIAL AND EQUIPMENT. CLEARLY IDENTIFY DEVIATIONS OF THE SUBMITTED PRODUCTS FROM THE DESIGN.

   b. SHOP DRAWINGS: DRAWN TO ACCURATE SCALE OF 1/4"=1'0". HIGHLIGHT, ENCIRCLE, OR OTHERWISE INDICATE DEVIATIONS FROM THE CONTRACT DOCUMENTS. DO NOT REPRODUCE CONTRACT DOCUMENTS OR COPY STANDARD INFORMATION AS THE BASIS OF SHOP DRAWINGS. STANDARD INFORMATION PREPARED WITHOUT SPECIFIC REFERENCE TO THE PROJECT IS NOT CONSIDERED SHOP DRAWINGS.

2. DO NOT USE SHOP DRAWINGS WITHOUT AN APPROPRIATE FINAL STAMP INDICATING ACTION TAKEN IN CONNECTION WITH CONSTRUCTION.

3. DO NOT ORDER ANY MATERIALS OR EQUIPMENT PRIOR TO RECEIVING FINAL APPROVED SUBMITTALS.

4. SCHEDULE AT LEAST TEN WORKING DAYS EXCLUSIVE OF TRANSMITTAL TIME, FOR SUBMITTAL REVIEW.

L. AS-BUILT DRAWINGS

A. MAINTAIN ONE SET OF PRINTS ON THE SITE AND NOTE ALL CHANGES OR DEVIATIONS FROM THE ORIGINAL DESIGN THEREON, AT THE COMPLETION OF THE PROJECT, INCORPORATE ALL CHANGES INTO RECORD AS-BUILT DRAWINGS IN ELECTRONIC FORMAT AND SUBMIT FOR APPROVAL.

M. OPERATION AND MAINTENANCE

1. UPON COMPLETION OF ALL WORK AND TESTS, THE CONTRACTOR SHALL INSTRUCT THE OWNER OR THE OWNER'S REPRESENTATIVE IN THE OPERATION, ADJUSTMENT AND MAINTENANCE OF ALL EQUIPMENT FURNISHED. THE CONTRACTOR SHALL GIVE AT LEAST SEVEN (7) DAYS NOTICE TO THE OWNER AND THE ENGINEER IN ADVANCE OF THIS PERIOD.

2. THE CONTRACTOR SHALL PREPARE THREE (3) COPIES OF A COMPLETE OPERATION AND MAINTENANCE MANUAL, BOUND IN BOOKLET FORM. ORGANIZE OPERATING AND MAINTENANCE DATA INTO SUITABLE SETS OF MANAGEABLE SIZE. BIND PROPERLY INDEXED DATA IN INDIVIDUAL HEAVY-DUTY 3-RING VINYL-COVERED BINDERS, WITH POCKET FOLDERS FOR FOLDED SHEET INFORMATION AND DESIGNATION PARTITIONS WITH IDENTIFICATION TABS. MARK APPROPRIATE IDENTIFICATION ON FRONT AND SPINE OF EACH BINDER.

3. MAINTENANCE AND INSTRUCTION MANUALS SHALL BE SUBMITTED TO THE OWNER AT THE SAME TIME AS THE SEVEN (7) DAY NOTICE IS GIVEN PRIOR TO THE INSTRUCTION PERIOD.

N. CLEANING

1. EQUIPMENT: AFTER COMPLETION OF PROJECT, CLEAN THE EXTERIOR SURFACE OF EQUIPMENT INCLUDED IN THIS SECTION, INCLUDING REMOVAL OF CONCRETE RESIDUE.

2. WORK AREA: AFTER COMPLETION OF PROJECT, REMOVE ALL CONSTRUCTION DEBRIS, TEMPORARY FACILITIES AND EQUIPMENT FROM WORK AREA. CLEAN WORK AREA TO PERMIT OCCUPATION.

3. DOMESTIC WATER PIPING: PRIOR TO STARTING WORK, VERIFY SYSTEM IS COMPLETE, FLUSHED AND CLEANED. ENSURE ACIDITY (pH) OF WATER TO BE TREATED IS BETWEEN 7.4 AND 7.6 BY ADDING ALKALI (CAUSTIC SODA OR SODA ASH) OR ACID (HYDROCHLORIC). INJECT DISINFECTANT, FREE CHLORINE IN LIQUID, POWDER, TABLET OR GAS FORM, THROUGHOUT SYSTEM TO OBTAIN 50 TO 80 mg/L RESIDUAL. BLEED WATER FROM OUTLETS TO ENSURE DISTRIBUTION AND TEST FOR DISINFECTANT RESIDUAL AT MINIMUM 15 PERCENT OF OUTLETS. MAINTAIN DISINFECTANT IN SYSTEM FOR 24 HOURS. IF FINAL DISINFECTANT RESIDUAL TESTS LESS THAN 25 mg/L, REPEAT TREATMENT. FLUSH DISINFECTANT FROM SYSTEM UNTIL RESIDUAL EQUAL TO THAT OF INCOMING WATER OF 1.0 mg/L. TAKE SAMPLES NO SOONER THAN 24 HOURS AFTER FLUSHING, FROM 10 PERCENT OF OUTLETS AND FROM WATER ENTRY, AND ANALYZE IN ACCORDANCE WITH AWWA C651.

O. GUARANTEE

1. GUARANTEE WORK OF THESE CONTRACT DOCUMENTS IN WRITING FOR NOT LESS THAN ONE (1) YEAR FROM DATE OF FINAL NOTICE OF ACCEPTANCE. REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATION THAT DEVELOP WITHIN THIS PERIOD, PROMPT AND TO OWNER'S SATISFACTION AND CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE WITHIN CONTRACT PRICE.

P. MEANS AND METHODS ALL TRADES

1. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

2. DO NOT BURN WASTE MATERIALS. DO NOT BURY DEBRIS OR EXCESS MATERIALS ON THE OWNER'S PROPERTY. DO NOT DISCHARGE VOLATILE, HARMFUL OR DANGEROUS MATERIALS INTO DRAINAGE SYSTEMS. REMOVE AND DISPOSE OF ALL WASTE MATERIALS, PACKAGING MATERIAL, SKIDS ETC. FROM THE SITE AND DISPOSE OF IN A LAWFUL MANNER IN ACCORDANCE WITH MUNICIPAL, STATE AND FEDERAL REGULATIONS.

3. MATERIALS AND EQUIPMENT SHALL BE UL LISTED WHERE STANDARD HAS BEEN ESTABLISHED.

4. CAREFULLY INSPECT ALL BUILDING ELEMENTS PRIOR TO CUTTING OR DRILLING INTO WALL, FLOORS OR CEILINGS. PATCH AND PAINT SURFACES DISTURBED BY WORK UNDER THIS CONTRACT AS REQUIRED TO RESTORE THEM TO THEIR ORIGINAL CONDITION.

5. SCAFFOLDING, RIGGING, HOISTING: THE CONTRACTOR SHALL FURNISH ALL SCAFFOLDING, RIGGING, HOISTING AND SERVICES NECESSARY FOR ERECTION AND DELIVERY INTO THE PREMISES ANY EQUIPMENT AND APPARATUS FURNISHED UNDER THIS DIVISION. REMOVE SAME FROM PREMISES WHEN NO LONGER REQUIRED.

6. EXCAVATION AND BACKFILLING: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE SIZES, DEPTHS, FILL AND BEDDING REQUIREMENTS AND ANY OTHER EXCAVATION WORK REQUIRED UNDER THESE SPECIFICATIONS.

7. WATERPROOFING: WHERE ANY WORK PIERCES WATERPROOFING, INCLUDING WATERPROOF CONCRETE, ROOFS, EXTERIOR WALL AND FLOORS IN WET AREAS, THE METHOD OF INSTALLATION SHALL BE REVIEWED BY THE ENGINEER BEFORE WORK IS DONE. THE CONTRACTOR SHALL FURNISH ALL NECESSARY SLEEVES, CAULKING AND FLASHING REQUIRED TO MAKE OPENINGS ABSOLUTELY WATERTIGHT.

8. PROVIDE FIRESTOPPING AROUND ALL FIRE PROTECTION, PLUMBING, MECHANICAL AND ELECTRICAL PENETRATIONS THROUGH FIRE RATED PARTITIONS. PROVIDE ASBESTOS FREE FIRESTOPPING SYSTEM CAPABLE OF MAINTAINING AN EFFECTIVE BARRIER AGAINST FLAME AND GASES. SYSTEM SHALL BE UL LISTED AND COMPLY WITH ASTM E 814. REFER TO ARCHITECTURAL DRAWINGS FOR RATINGS OF ASSEMBLIES.

9. PROVIDE ACCESS PANELS IN WALLS, FLOORS AND GYPSUM WALL BOARD CEILINGS TO ALLOW ACCESS TO: VALVES AND OTHER APPARATUS AND EQUIPMENT REQUIRING PERIODIC SERVICE AND INSPECTION. NOT ALL ACCESS PANELS ARE INDICATED ON THE PLANS. REVIEW ARCHITECTURAL AND PLUMBING PLANS TO DETERMINE THE LOCATION AND QUANTITY OF ACCESS PANELS REQUIRED. COORDINATE TYPE AND LOCATION WITH ARCHITECTURAL PLANS.

22 05 00 - COMMON WORK RESULTS FOR PLUMBING

A. IDENTIFICATION FOR PIPING AND EQUIPMENT:

1. MANUFACTURERS: CRAFTMARK IDENTIFICATION SYSTEMS, SAFETY SIGN CO., SETON IDENTIFICATION PRODUCTS, NORTHTOWN, KOLBI. SUBSTITUTIONS: DIVISION 01 – GENERAL REQUIREMENTS AND 22 04 00 – GENERAL REQUIREMENTS.

2. PLASTIC NAMEPLATES: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED BLACK LETTERS ON LIGHT BACKGROUND COLOR.

3. TAGS

   a. PLASTIC TAGS: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED BLACK LETTERS ON LIGHT BACKGROUND COLOR, MINIMUM 1-1/2 INCHES DIAMETER.

   b. METAL TAGS: ALUMINUM WITH STAMPED LETTERS; TAG SIZE MINIMUM 1-1/2 INCHES DIAMETER WITH FINISHED EDGES.

   c. INFORMATION TAGS: CLEAR PLASTIC WITH PRINTED "DANGER," "CAUTION," OR "WARNING" AND MESSAGE; SIZE 3-1/4 X 5-5/8 INCHES WITH GROMMET AND SELF-LOCKING NYLON TIES.

   d. TAG CHART: TYPEWRITTEN LETTER SIZE LIST OF APPLIED TAGS AND LOCATION IN ANODIZED ALUMINUM FRAME.

4. PIPE MARKERS

   a. COLOR AND LETTERING TO CONFORM TO ASME A13.1.

   b. PLASTIC PIPE MARKERS: FACTORY FABRICATED, FLEXIBLE, SEMI-RIGID PLASTIC, PREFORMED TO FIT AROUND PIPE OR PIPE COVERING. LARGER SIZES MAY HAVE MAXIMUM SHEET SIZE WITH SPRING FASTENER. MINIMUM INFORMATION INDICATING FLOW DIRECTION ARROW AND IDENTIFICATION OF FLUID BEING CONVEYED.

   c. PLASTIC TAPE PIPE MARKERS: FLEXIBLE, VINYL FILM TAPE WITH PRESSURE SENSITIVE ADHESIVE BACKING AND PRINTED MARKINGS.

   d. PLASTIC UNDERGROUND PIPE MARKERS: BRIGHT COLORED CONTINUOUSLY PRINTED PLASTIC RIBBON TAPE, MINIMUM 6 INCHES WIDE BY 4 MIL THICK, MANUFACTURED FOR DIRECT BURIAL SERVICE. TRACE WIRE: MAGNETIC DETECTABLE CONDUCTOR, BRIGHTLY COLORED PLASTIC COVERING, IMPRINTED WITH COLOR CODE AS FOLLOWS:

      1. POTABLE, COOLING, BOILER, FEED, OTHER WATER: GREEN WITH WHITE LETTERS.
      2. FIRE QUENCHING FLUIDS: RED WITH WHITE LETTERS.
      3. TOXIC AND CORROSIVE FLUIDS: ORANGE WITH BLACK LETTERS.
      4. FLAMMABLE FLUIDS: YELLOW WITH BLACK LETTERS.
      5. COMBUSTIBLE FLUIDS: BROWN WITH WHITE LETTERS.
      6. HEAT TRACED PIPING: TO MATCH THE COLOR CODE OF THE FLUID OR GAS BEING USED.

5. CEILING TACKS

   a. DESCRIPTION: STEEL WITH 3/4 INCH DIAMETER COLOR-CODED HEAD.

   b. COLOR CODE AS FOLLOWS: PLUMBING VALVES: GREEN.

6. LABELS

   a. DESCRIPTION: POLYESTER FOR ABOVE GRADE AND LAMINATED MYLAR FOR BELOW GRADE, SIZE 1.9 X 0.75 INCHES, ADHESIVE BACKED WITH PRINTED IDENTIFICATION.

B. SLEEVES

1. MANUFACTURERS: FLEXICRAFT INDUSTRIES; PIPE WALL SLEEVE, METRAFLEX; PIPE WALL SLEEVE, CCI PIPELINE; PIPE WALL SLEEVE, GPT – CENTURYLINE SLEEVE SERIES, GPT/THUNDERLINE LINK-SEAL, INC, METRAFLEX - METRASEAL, BWM – PIPE SEAL/ PS SERIES. SUBSTITUTIONS: SEE DIVISION 01 - GENERAL REQUIREMENTS AND 22 04 00 – GENERAL REQUIREMENTS.

2. VERTICAL PIPING:

   a. SLEEVE LENGTH: 1 INCH ABOVE FINISHED FLOOR.

   b. PROVIDE SEALANT FOR WATERTIGHT JOINT.

   c. BLOCKED OUT FLOOR OPENINGS: PROVIDE 1-1/2 INCH ANGLE SET IN SILICON ADHESIVE AROUND OPENING.

   d. DRILLED PENETRATIONS: PROVIDE 1-1/2 INCH ANGLE RING OR SQUARE SET IN SILICONE ADHESIVE AROUND PENETRATION.

3. SHEET METAL: PIPE PASSING THROUGH INTERIOR WALLS, PARTITIONS, AND FLOORS, UNLESS STEEL OR BRASS SLEEVES ARE SPECIFIED BELOW.

4. PIPE PASSING THROUGH BELOW GRADE OR EXTERIOR WALLS:

   a. ANCHORED SLEEVE - ZINC COATED OR CAST IRON PIPE.

   b. PROVIDE WATERTIGHT SPACE WITH LINK RUBBER OR MODULAR SEAL BETWEEN SLEEVE AND PIPE ON BOTH PIPE ENDS.

5. CLEARANCES:

   a. PROVIDE ALLOWANCE FOR INSULATED PIPING.

   b. WALL, FLOOR, FLOOR, PARTITIONS, AND BEAM FLANGES: 1 INCH GREATER THAN EXTERNAL PIPE DIAMETER.

   c. ALL RATED OPENINGS: CAULKED TIGHT WITH FIRE STOPPING MATERIAL CONFORMING TO HYPERLINK "HTTP://GLOBAL.IHS.COM/DOC_DETAIL.CFM?RID=BSD&DOCUMENT_NAME=ASTM E814" ASTM E814-13A IN ACCORDANCE WITH DIVISION 07 THERMAL AND MOISTURE PROTECTION TO PREVENT THE SPREAD OF FIRE, SMOKE, AND GASES.

6. SLEEVES FOR PIPES THROUGH NON-FIRE RATED FLOORS: 18 GAGE THICK GALVANIZED STEEL.

7. SLEEVES FOR PIPES THROUGH NON-FIRE RATED WALLS, AND POTENTIALLY WET FLOORS: STEEL PIPE OR 18 GAGE THICK GALVANIZED STEEL.

8. SEALANT: REFER TO DIVISION 07 THERMAL AND MOISTURE PROTECTION.

9. MECHANICAL SLEEVE SEALS

   a. PRODUCT DESCRIPTION: MODULAR MECHANICAL TYPE, CONSISTING OF INTERLOCKING SYNTHETIC NITRILE RUBBER LINKS SHAPED TO CONTINUOUSLY FILL ANNULAR SPACE BETWEEN OBJECT AND SLEEVE, CONNECTED WITH BOLTS AND PRESSURE PLATES CAUSING RUBBER SEALING ELEMENTS TO EXPAND WHEN TIGHTENED, PROVIDING WATERTIGHT SEAL AND ELECTRICAL INSULATION.

   b. PROVIDE NSF 61 CERTIFIED ASSEMBLY WHEN USED IN POTABLE WATER STORAGE TANK APPLICATIONS.

C. FORMED STEEL CHANNEL

1. MANUFACTURERS: B-LINE SYSTEMS, UNISTRUT CORP., ANVIL INTERNATIONAL. SUBSTITUTIONS: DIVISION 01 - GENERAL REQUIREMENTS AND 22 04 00 – GENERAL REQUIREMENTS.

2. PRODUCT DESCRIPTION: GALVANIZED 12 GAGE THICK STEEL. WITH HOLES 1-1/2 INCHES ON CENTER.

D. GENERAL INSTALLATION REQUIREMENTS FOR PLUMBING

1. CONNECTIONS BETWEEN COPPER & STEEL PIPING SHALL BE MADE WITH DIELECTRIC WATERWAYS, WITH BRONZE BODY VALVES, OR WITH BRASS ADAPTER FITTINGS.

2. INSTALL AND TEST GAS PIPING IN ACCORDANCE WITH THE FUEL GAS CODE AND NFPA 54.

3. PREPARATION

   a. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL OR GROOVE PLAIN END FERROUS PIPE.

   b. REMOVE SCALE AND DIRT ON INSIDE AND OUTSIDE BEFORE ASSEMBLY.

   c. PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES OR UNIONS.

   d. KEEP OPEN ENDS OF PIPE FREE FROM SCALE AND DIRT. PROTECT OPEN ENDS WITH TEMPORARY PLUGS OR CAPS.

   e. AFTER COMPLETION, FILL, CLEAN, AND TREAT SYSTEM.

E. INSTALLATION REQUIREMENTS FOR PLUMBING PIPING

1. INSTALL PIPING IN ACCORDANCE WITH ALL APPLICABLE PLUMBING CODES, ASME B31.1, AND ASME B31.9 AS APPLICABLE.

2. ROUTE PIPING PARALLEL TO BUILDING STRUCTURE AND MAINTAIN GRADIENT.

3. INSTALL PIPING TO CONSERVE BUILDING SPACE, AND NOT INTERFERE WITH USE OF SPACE.

4. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.

5. SLEEVE PIPE PASSING THROUGH PARTITIONS, WALLS AND FLOORS.

6. INSTALL FIRESTOPPING AT PENETRATIONS OF RATED ASSEMBLIES. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS AND RATINGS OF RATED ASSEMBLIES.

7. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.

8. PROVIDE ACCESS WHERE VALVES AND FITTINGS ARE NOT EXPOSED.

9. SLOPE DOMESTIC WATER PIPING AND ARRANGE SYSTEMS TO DRAIN AT LOW POINTS. USE ECCENTRIC REDUCERS TO MAINTAIN TOP OF PIPE ALIGNED.

10. WHERE PIPE SUPPORT MEMBERS ARE WELDED TO STRUCTURAL BUILDING FRAMING, SCRAPE, BRUSH CLEAN, AND APPLY ONE COAT OF ZINC RICH PRIMER TO WELDS.

11. PREPARE UNFINISHED PIPE, FITTINGS, SUPPORTS, AND ACCESSORIES, READY FOR FINISH PAINTING.

12. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED.

F. TESTING

1. TEST PIPING IN ACCORDANCE WITH ALL APPLICABLE PLUMBING CODES, ASME B31.1 AND ASME B31.9, AS APPLICABLE.

22 05 29 - HANGERS AND SUPPORTS

A. PROVIDE PIPE STANDS, SUPPORTS, HANGERS AND OTHER SUPPORTING APPLIANCES AS NECESSARY TO SUPPORT WORK REQUIRED BY CONTRACT DOCUMENTS. SPACING OF HANGERS SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE BUILDING AND MECHANICAL CODES. STRUCTURAL STEEL SUPPORTS, HANGERS, ETC. SHALL BE ANGLE IRON, STEEL CHANNEL OR STEEL ROD USED WITH APPROVED CLAMPS, INSERTS, ETC. ALL SUPPORTS, HANGERS, BRACKETS, ETC., SHALL BE AS APPROVED BY THE ENGINEER.

B. ALL HANGERS SHALL BE GALVANIZED.

C. ATTACH HANGERS AND SUPPORTS DIRECTLY ONTO THE STRUCTURE BY FIRST REMOVING EXISTING FIRE PROOFING AND AFTER SECURING THE ATTACHMENT, REPAIRING THE FIRE PROOFING TO ITS ORIGINAL CONDITION, CONTINUOUSLY OVER THE ATTACHMENT.

D. FOR EXPANSION BOLTS/SHIELDS USE RED HEAD, HILTI OR WEJ-IT SELF DRILLING OR STEEL SHIELD, LOAD RATED. DO NOT USE DRILLED ANCHORS IN POST TENSION SLABS WITHOUT APPROVAL OF OWNER. DO NOT CUT REINFORCING STEEL WITH DRILLED INSERTS.

E. INSTALLATION REQUIREMENTS FOR HANGERS AND SUPPORTS

1. INSTALL IN ACCORDANCE WITH ASME B31.9, ASTM F708 AND MSS SP 89.

2. SUPPORT HORIZONTAL PIPING AS SCHEDULED.

3. INSTALL HANGERS TO PROVIDE MINIMUM 1/2 INCH SPACE BETWEEN FINISHED COVERING AND ADJACENT WORK.

4. PLACE HANGERS WITHIN 12 INCHES OF EACH HORIZONTAL ELBOW.

5. USE HANGERS WITH 1-1/2 INCH MINIMUM VERTICAL ADJUSTMENT. DESIGN HANGERS FOR PIPE MOVEMENT WITHOUT DISENGAGEMENT OF SUPPORTED PIPE.

6. SUPPORT VERTICAL PIPING AT EVERY FLOOR. SUPPORT RISER PIPING INDEPENDENTLY OF CONNECTED HORIZONTAL PIPING.

7. WHERE INSTALLING SEVERAL PIPES IN PARALLEL AND AT SAME ELEVATION, PROVIDE MULTIPLE PIPE HANGERS OR TRAPEZE HANGERS.

8. PROVIDE COPPER PLATED HANGERS AND SUPPORTS FOR COPPER PIPING.

9. PRIME COAT EXPOSED STEEL HANGERS AND SUPPORTS. HANGERS AND SUPPORTS LOCATED IN CRAWL SPACES, PIPE SHAFTS, AND SUSPENDED CEILING SPACES ARE NOT CONSIDERED EXPOSED.

10. PROVIDE CLEARANCE IN HANGERS AND FROM STRUCTURE AND OTHER EQUIPMENT FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS.

22 05 48 - VIBRATION AND SEISMIC CONTROLS

A. PROVIDE VIBRATION ISOLATION FOR EACH PIECE OF ROTATING OR RECIPROCATING EQUIPMENT SHOWN ON THE DRAWINGS. ALL ISOLATION COMPONENTS SHALL BE SUPPLIED BY A SINGLE MANUFACTURER - MASON INDUSTRIES, KINETICS OR AMBER BOOTH. TYPES OF ISOLATORS, REQUIRED DEFLECTIONS, AND INSTALLATION PRACTICES SHALL BE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE VIBRATION ISOLATION MANUFACTURER.

22 07 00 - PLUMBING INSULATION

A. GENERAL REQUIREMENTS

1. INSULATION SHALL BE CERTAIN-TEED, KNAUF, MANVILLE, OR OWENS CORNING. MATERIALS SHALL MEET REQUIREMENTS OF ADHESIVE AND SEALANT COUNCIL STANDARDS AND SMACNA. INSTALL INSULATION, MASTICS, ADHESIVES, COATINGS, COVERS, WEATHER-PROTECTION AND OTHER WORK IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ASTM E-84 FIRE HAZARD RATINGS SHALL BE 25 FLAME SPREAD, 50 SMOKE DEVELOPED.

2. FITTINGS, VALVES AND FLANGES SHALL BE INSULATED WITH SAME MATERIAL AND TO SAME THICKNESS AS ADJOINING PIPE INSULATION, WITH PRESENT SECTIONS.

3. FOR STRAINERS AND OTHER VALVES OR FITTINGS WHICH NEED MAINTENANCE, PROVIDE PREFORMED REMOVABLE INSULATION SECTION.

4. INCREASE PIPE INSULATION AS REQUIRED FOR PIPING WITH HEAT TRACING PER MANUFACTURER'S REQUIREMENTS.

B. PRODUCTS AND APPLICATIONS

1. INSULATION SHALL BE FIBROUS GLASS PIPE INSULATION WITH FACTORY-APPLIED ASJ WITH K FACTOR OF AT LEAST 0.23 AT 75F MEAN TEMPERATURE.

2. PROVIDE INSULATION FOR THE FOLLOWING SYSTEMS:

   a. DOMESTIC HOT WATER PIPE INSULATION: MINIMUM 1 INCH THICKNESS. PROVIDE 1-1/2 INCH THICKNESS FOR DOMESTIC HOT WATER PIPES 1-1/2 INCH DIAMETER AND LARGER.

   b. DOMESTIC COLD WATER: MINIMUM 1/2 INCH THICKNESS. PROVIDE 1 INCH THICKNESS FOR COLD WATER PIPES 1-1/2 INCH DIAMETER AND GREATER.

22 10 00 - PLUMBING PIPING

A. DOMESTIC WATER PIPING - ABOVE GRADE

1. SOLDERED OR BRAZED: ASTM B88, TYPE L HARD DRAWN COPPER TUBING, WITH ASME B16.18 CAST BRASS OR ASME B16.22 WROUGHT COPPER FITTINGS. JOINTS SHALL BE SOLDER TYPE WITH ASTM B32 95-5 TIN-ANTIMONY OR TIN AND SILVER SOLDER, OR BRAZED TYPE WITH AWS A5.8 BCUP ALLOY BRAZE. TEES SHALL BE FITTINGS; MECHANICALLY EXTRACTED COLLARS TEES ARE NOT ALLOWED.

2. GROOVED: ASTM B88, TYPE L WITH ROLLED GROOVED ENDS, WITH ASME B16.18 CAST COPPER ALLOY, ASME B16.22 WROUGHT COPPER AND BRONZE, OR ASTM B584 BRONZE SAND CASTINGS, GROOVED END FITTINGS, AND ASTM F1476 GROOVED MECHANICAL COUPLINGS. JOINTS WITH ENAMEL COATED ASTM A395 DUCTILE IRON AND ASTM A536 DUCTILE IRON HOUSING CLAMPS, COMPATIBLE WITH COPPER TUBING SIZES, TO ENGAGE AND LOCK DESIGNED TO PERMIT SOME ANGULAR DEFLECTION, CONTRACTION, AND EXPANSION. ELASTOMER COMPOSITION GASKETS WITH AN OPERATING TEMPERATURE RANGE FROM -40°F TO 230°F, AND GALVANIZED OR STAINLESS STEEL BOLTS, NUTS, AND WASHERS. TEES SHALL BE FITTINGS; CLAMP TYPE TEES ARE NOT ALLOWED. MANUFACTURERS: ANVIL/GRUVLOK, TYCO/GRINNELL, VICTAULIC. FITTINGS AND JOINTS SHALL BE BY THE SAME MANUFACTURER.

3. PRESS CONNECTIONS: COPPER AND COPPER ALLOY PRESS CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. THE TUBING SHALL BE FULLY INSERTED INTO THE FITTING AND THE TUBING MARKED AT THE SHOULDER OF THE FITTING. THE FITTING ALIGNMENT SHALL BE CHECKED AGAINST THE MARK ON THE TUBING TO ASSURE THE TUBING IS FULLY ENGAGED (INSERTED) IN THE FITTING. THE JOINTS SHALL BE PRESSED USING THE TOOL(S) APPROVED BY THE MANUFACTURER.

B. DRAIN, WASTE, AND VENT PIPING (SANITARY)

1. BELOW GRADE: HUB & SPIGOT: ASTM A74 CAST IRON PIPE, WITH ASTM A74 CAST IRON FITTINGS AND ASTM C564 RUBBER GAS