

# PROJECT ADJUSTED CONSTRUCTION COST:

c. AND d. The adjusted construction cost for this project is below the current valuation threshold of \$203,000.00. Compliance measures will be provided within the 20% cost limitation.

### POT - STATEMENT OF COMPLIANCE:

THE PATH OF TRAVEL (POT) IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IS COMPLIANT WITH THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE ACCESSIBILITY PROVISIONS FOR "PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS".

AS PART OF THE DESIGN OF THIS PROJECT, THE POT WAS EXAMINED TO DETERMINE COMPLIANCE WITH THESE REQUIREMENTS. ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NON-COMPLIANT 1) HAVE BEEN IDENTIFIED AND 2) THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NON-COMPLIANT ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE SO INDICATED IN THESE CONSTRUCTION DOCUMENTS.

DURING CONSTRUCTION, IF POT ITEMS REPRESENTED AS CODE COMPLIANT ARE FOUND TO BE NON-CONFORMING, THEY SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT.







2022 California Administrative Code 2022 California Building Code (CBC)

2022 California Electrical Code 2022 California Mechanical Code 2022 California Plumbing Code

2022 California Energy Code 2022 California Historical Building Code 2022 California Fire Code

2022 California Existing Building Code 2022 California Green Building Standards Code 2022 California Reference Standards Code

### CODE ANALYSIS

### SUMMARY

• CONSTRUCTION TYPE: V-N, V-B, S1 • EXISTING BUILDING: NON-SEPARATED OCCUPANCY, ONE-

STORY, NON-COMBUSTIBLE CONSTRUCTION • FIRE PROTECTION: AUTOMATIC SPRINKLER SYSTEM THROUGHOUT

### **USE AND OCCUPANCY**

• OCCUPANCY CLASSIFICATION: AMBULATORY CARE "URGENT CARE" (GROUP B)

OVERNIGHT STAY: NOT PERMITTED

**BUILDING CHARACTERISTICS** BUILDING HEIGHT: 21'-6"

 NUMBER OF STORIES: ONE • TOTAL AREA: 15,300 SF

#### **OCCUPANT LOAD & EGRESS** • OCCUPANT LOAD: 251 OCCUPANTS

NUMBER OF EXITS: 7

### **EXISTING PARKING**

• TOTAL SPACES ON SITE: 20

 ACCESSIBLE SPACES: 6 VAN-ACCESSIBLE SPACES: 1

• ELECTRIC VEHICLE CHARGING STATIONS: 5

AREA ANALYSIS:
<ul> <li>EXISTING BUILDING:15,500 SQ. FT.</li> </ul>
<ul><li>PROJECT AREAS:</li></ul>
• ADMINISTRATION137 SQ. FT.
• EXAM ROOMS258 SQ. FT.
RECEPTION AND
RECEPTION OFFICE443 SQ. FT.
• TOTAL PROJECT AREA838 SQ. FT.

### \..... FIRE SPRINKLERS:

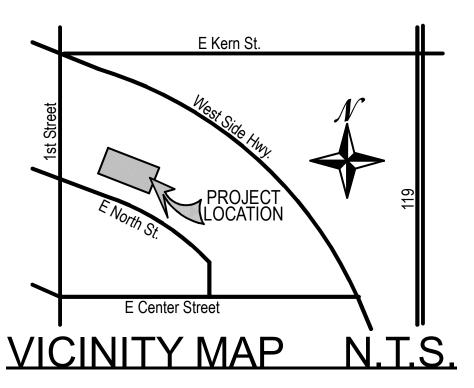
FIRE SPRINKLERS ARE A SEPARATE PERMIT. NEW EXAM ROOM WALL LOCATION WILL EFFECT COVERAGE.

FIRE SPRINKLER HEADS TO BE REPOSITIONED TO ACCOMMODATE THE WALL RELOCATION IN THE EXAM ROOMS. PERMIT WILL BE BY FIRE SPRINKLER CONTRACTOR

#### LEGAL DESCRIPTION 115 E. NORTH ST. TAFT, CA. ADDRESS: SHORT LEGAL LM 2018-13 PAR A LEGAL TYPE: APN: 032-060-13

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		SHEET INDEX
1	A-1	SITE PLAN
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### **PAINTING**

- 1. Primers and undercoat paint shall be produced by the same manufacturer as a finish coat.
- 2. Metal shall be finished with one coat primer and two coats semi-gloss enamel.
- 3. Wood shall finished with one coat primer and two coats semi-gloss enamel.
- 4. Interior gypsum board shall be finished with one coat primer and two coats semi-gloss enamel, or per manufacturer's recommendations for complete coverage, typical throughout unless noted otherwise.
- 5. Furnish sufficient drop cloths, shields and protective equipment to prevent paint from fouling surfaces not being painted.
- 6. Remove electrical plates, surface hardware, fittings and fasteners prior to painting operations. Items not being replaced are to be stored, cleaned and re-installed on completion of work in each area.

### **INSTALLATION OF CARPET**

- Install carpet with pile laid in the same direction.
- Carpet tiles shall be installed using only enough adhesive or double stick tape to properly align and retain carpet tiles. All tiles shall be glued down.
- Carpet to be securely attached to the floor in compliance with Americans with Disabilities Act (ADA), section 4.5.3.
- Proper layout and planning must be completed prior to any application of adhesive or carpet tile.
- Two working chalk lines must be applied to the floor to insure a straight, square properly aligned installation. These chalk lines intersect at the starting point and are exactly 90 degrees to each
- Carpet tiles are to be installed with a full spread of wet adhesive applied with a paint roller. Allow adhesive to fully dry so it does not transfer to a finger or module placed on it.
- Begin installation using a pyramid technique and aligning the first tile at the intersection of the two chalk lines.
- Always slide each module into position from the side to prevent trapped yarn. Set each module by firmly rubbing both joints.
- Modules should be tight but not compressed. Peaking will occur when modules are too tight. Too loose an installation can slip and create obvious gaps with use.
- Arrows are embossed and printed on the back of each module indicating pile direction. All arrows shall run in the same direction.
- A parallel or "scribe" cutting technique shall be used when cutting the modules.
- Cuts shall be done through the face of the module.
- Locate change of color or pattern between rooms under door centerline, unless noted otherwise on the Drawings.
- Bind cut edges where not concealed by edge strips.

### **INSTALLATION OF BASE**

- Fit joints tight and vertical. Maintain minimum length of base should be 18 inches.
- Miter internal corners. At external corners, use factory-premolded units. At exposed ends, use factory-premolded units.
- Install base on solid backing. Bond tight to wall and floor surfaces.
- Scribe and fit to door frames and other interruptions.

SURFACE PROTECTION

- Protect installed carpet with kraft paper or polyethylene until removal of protective materials is
- Protect finished work adjacent to carpet being installed
- Prohibit traffic on floor finish for 24 hours after installation.

CLEANING

- A. Clean work area thoroughly
- B. Remove excess adhesive from floor, base and wall surfaces without damage.
- C. Clean and vacuum carpet surfaces

### CALIFORNIA GREEN CODE NOTES

CONSTRUCTION WASTE MANAGEMENT PLAN

- 1. Submit a construction waste management plan in conformance with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be available during construction for examination by the enforcing agency.
  - a. Identify the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale.
  - Specify if construction and demolition waste materials will be sorted on-site (source
  - separated) or bulk mixed (single stream). c. Identify diversion facilities where the construction and demolition waste material collected
  - d. Identify construction methods employed to reduce the amount of construction and
  - demolition waste generated. e. Specify that the amount of construction and demolition waste materials diverted shall be
- calculated by weight or volume, but not by both. 2. Documentation shall be provided to the enforcing agency which demonstrates compliance with section 5.408.2, items 1 thru 4. The waste management plan shall be updated as necessary and shall be
- accessible during construction for examination by the enforcing agency. 3. provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper,
- 4. The lighting and control systems shall be inspected and tested to ensure proper installation operation. tests shall include but are not limited to visual inspection of all fixtures to ensure conformance to specifications listed in the approved construction documents and manufacturer's recommended installation instructions.

FINISH MATERIAL POLLUTANT CONTROL

corrugated cardboard, glass, plastics and metals.

- 1. Adhesives, Sealants and Caulks. Adhesives, sealant and caulks used on the project shall meet the requirements of the following standards unless more stringent local or regional air pollution or air quality management district rules apply:
  - a. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and tricloroethylene), except for aerosol products, as specified in Subsection 2 below.
  - b. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with section 94507.

### PAINTS AND COATINGS

- 1. Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 4.504.3 shall apply.
- 2. Aerosol Paints and Coatings. Aerosol paints and coatings shall meet the Product-weighted MIR Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the iurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8, Rule 49. Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following:
  - a. Manufacturer's product specification.
  - b. Field verification of on-site product containers.

- 1. All carpet installed in the building interior shall meet the testing and product requirements of at least one of the following:
  - a. Carpet and Rug Institute's Green Label Plus Program.
- b. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" Version 1.1, February 2010 (also known as Specification 01350).
  - c. NSF/ANSI 140 at the Gold level.
  - d. Scientific Certifications Systems Indoor AdvantageTM Gold.
- 2. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program.

### SPECIFICATIONS

VERIFY BEFORE ORDERING. SUBSTITUTIONS SHALL BE EQUIVALENT AND

### APPROVED

**GYPSUM BOARD** 

I. Gypsum board Shall be type III, grade R, class 1, unless noted otherwise.

### 2. Gypsum board joints and finish Shall be level 5.

3. Install gypsum board per requirements of "American standard specifications for the application and finishing of gypsum wallboard".

### <u>CARPET</u>

Mohawk Drifted Ground Tile 12" x 36" or equivalent

### HARD SURFACE FLOORING:

Armstrong Flooring DecoArt Carlon Inlaid Commercial Sheet Flooring or equivalent.

Pinnacle Rubber Base 6" or equivalent.

### WINDOW BLINDS

SelectBlinds Premier Double Cell Light Filtering Shade or equivalent.

### **HARDWARE**

1. FURNISH FOR EACH ITEM ONLY THE PRODUCT OF A SINGLE MANUFACTURER.

- 2. Manufacturers for hardware items shall be as follows, or egual. Contractor shall submit a complete schedule of proposed manufacturers for approval by The City of Taft. Butts-"Stanley; Locks/cylinders/deadbolts-"Schlage; Closers-"Norton"; Thresholds-"Pemko"; Door stops-"Quality; Kick plates-"Quality; Signs-"ASI.
- 3. All "D" series lock and latch sets to be "RHODES" type

### <u>PAINT</u>

1. Only materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, etc.) listed in the latest edition of the MPI Approved Product List (APL) are acceptable for use on this project. All such material shall be from a single manufacturer for each system used.

- A. Manufacturers Paint
  - Benjamin Moore.
  - Dunn-Edwards.
- B. Manufacturers Stain
- **Dunn-Edwards** Olympic
- 3. Sinclair
- C. Manufacturers Sealer Thompson's
  - Sinclair

### **CABINETS**

- 1. All Millwork shall comply with grade requirements of the woodwork Institute of California, "Manual of Millwork". Construction Shall be custom grade, flush overlay.
- 2. Contractor shall provide all materials, not specifically described but required, for a complete and proper installation.

ADHESIVE VOC LIMIT

- 3. Cabinetry shall be flush overlay construction with laminate plastic finish.
- 4. High pressure laminate plastic shall be as manufactured by "Wilsonart" or equal.
- 5. Semi exposed portions of Cabinetry Shall be melamine finish.

### GENERAL NOTES

- 1. ALL WORK SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES AND
- 2. VERIFY, AT SITE, ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
- 3. THE CONTRACTOR SHALL EXAMINE THE PROJECT AREA AND SHALL HAVE SATISFIED HIMSELF AS TO THE EXISTING CONDITIONS AND THE CONDITIONS UNDER WHICH HE WILL BE OBLIGED TO OPERATE, OR WILL IN ANY MANNER EFFECT THE WORK UNDER THE CONTRACT.
- 4. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT ALL ELEMENTS OF THIS PROJECT WILL BE REPAIRED, REPAINTED, OR REPLACED TO NEW CONDITION WHETHER OR NOT SPECIFICALLY IDENTIFIED IN THESE PLANS IF DAMAGED, MISSING, DILAPIDATED, OR DETERIORATED.
- 5. THE CONTRACTOR SHALL INVESTIGATE EXISTING CONDITIONS TO ASCERTAIN WORK REQUIRED AND INCLUDE ALL NECESSARY PATCHING AND REFRESHING.
- 6. THE CONTRACTOR SHALL SUBMIT ACCURATE COLOR AND PATTERN SAMPLES FOR REVIEW BY THE CITY OF TAFT UNLESS THE PRECISE COLOR AND PATTERN IS SPECIFICALLY INDICATED ON THE DRAWINGS. ELECTRONIC SAMPLES ARE NOT ACCEPTABLE.
- 7. ALL NEW ITEMS PLACED ABOVE CEILING WITH IN PLENUM SPACE SHALL BE RATED AS NECESSARY FOR THAT INSTALLATION.

ARCHITECTURAL APPLICATIONS	
Indoor carpet adhesives	50
Carpet pad adhesives	50
Drywall and panel adhesives	50
Cove Base adhesives	50
Multi-purpose construction adhesive	70
Other adhesives not specifically listed	50
Contact adhesive	80
Trim adhesive	250
SUBSTRATE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material, except wood	50
Wood	30
Fiberglass	80
If an adhesive is used to bond dissimilar	-
substrates together the adhesive with	-
the highest VOC shall be allowed.	
COATINGS VOC LIMIT	
ARCHITECTURAL APPLICATIONS	
Flat coatings	50
Non-flat coatings	100
Non flat high gloss coatings	150
SPECIALITY COATINGS	
Primers, sealers and undercoaters	100
Shellacs:	
Clear	730
Opaque	550
Zinc rich primers	340



PROJECT CONTACT:

Ryan Shultz, MSHC

Executive Director

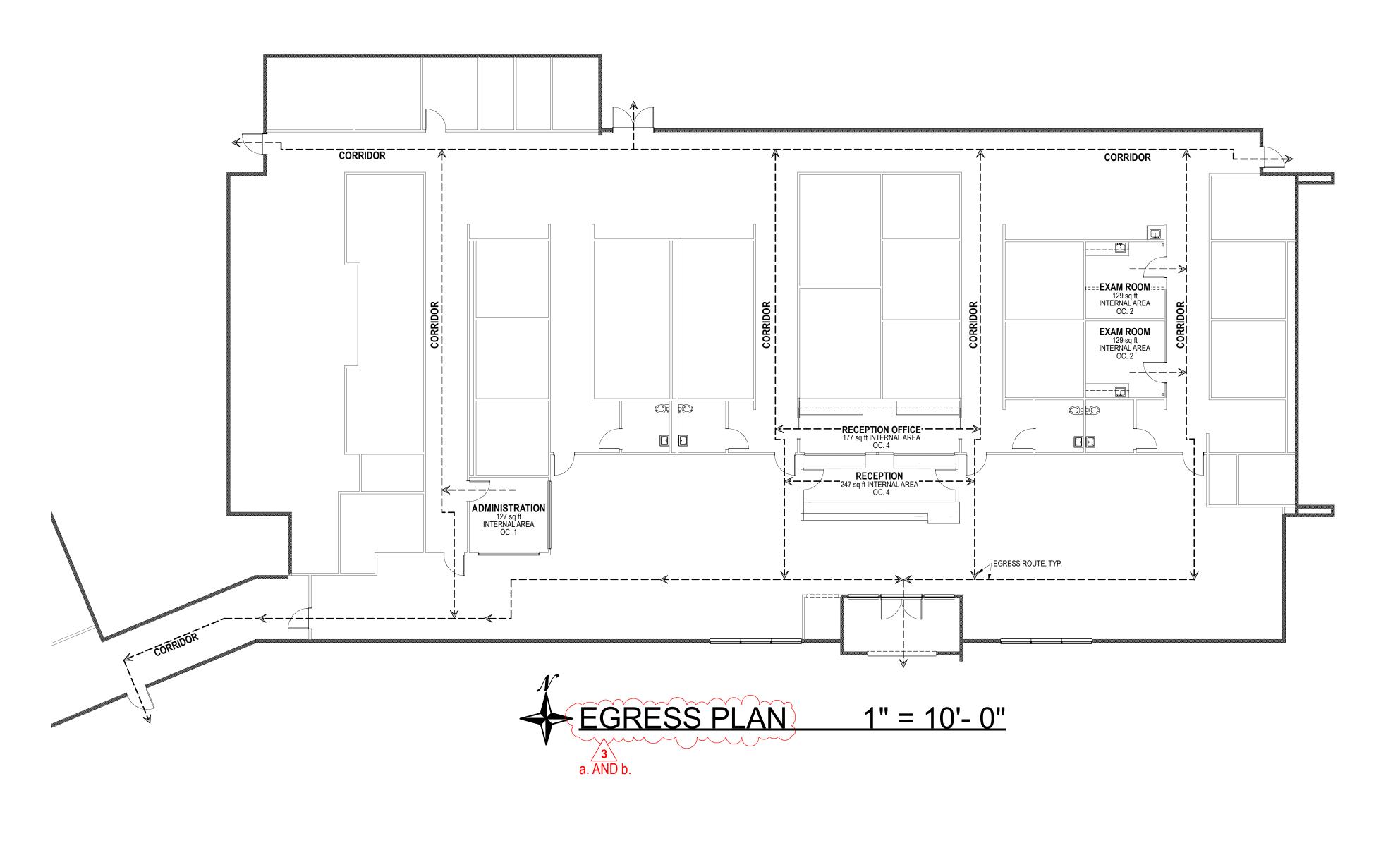
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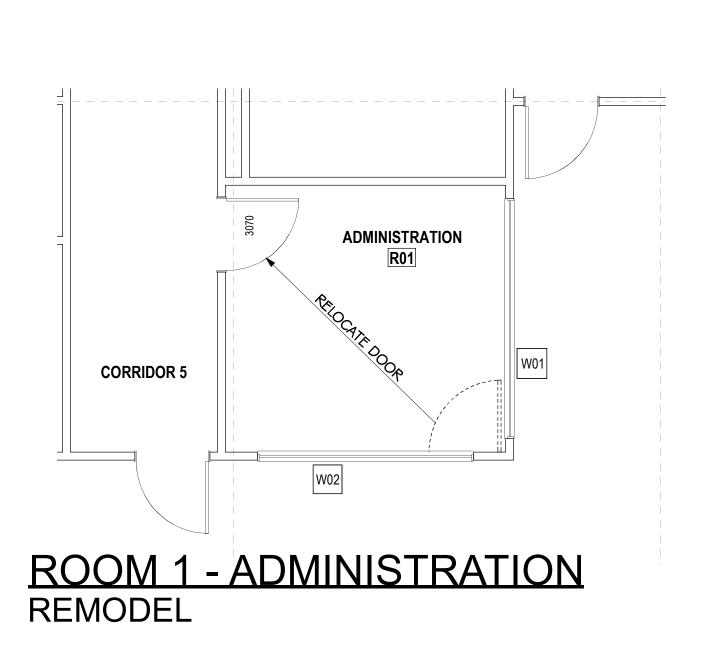
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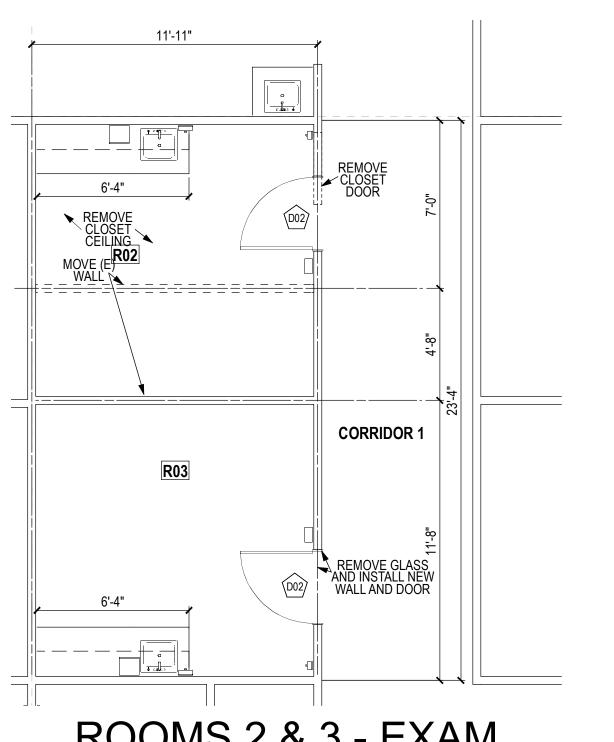


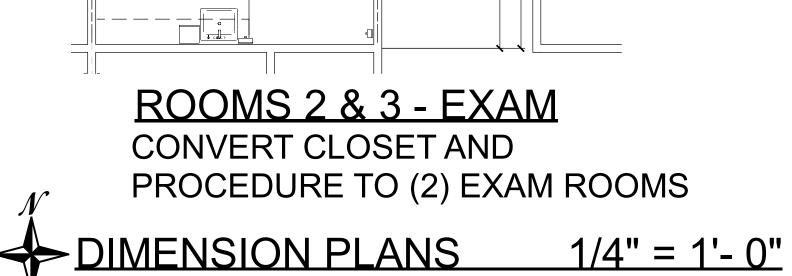
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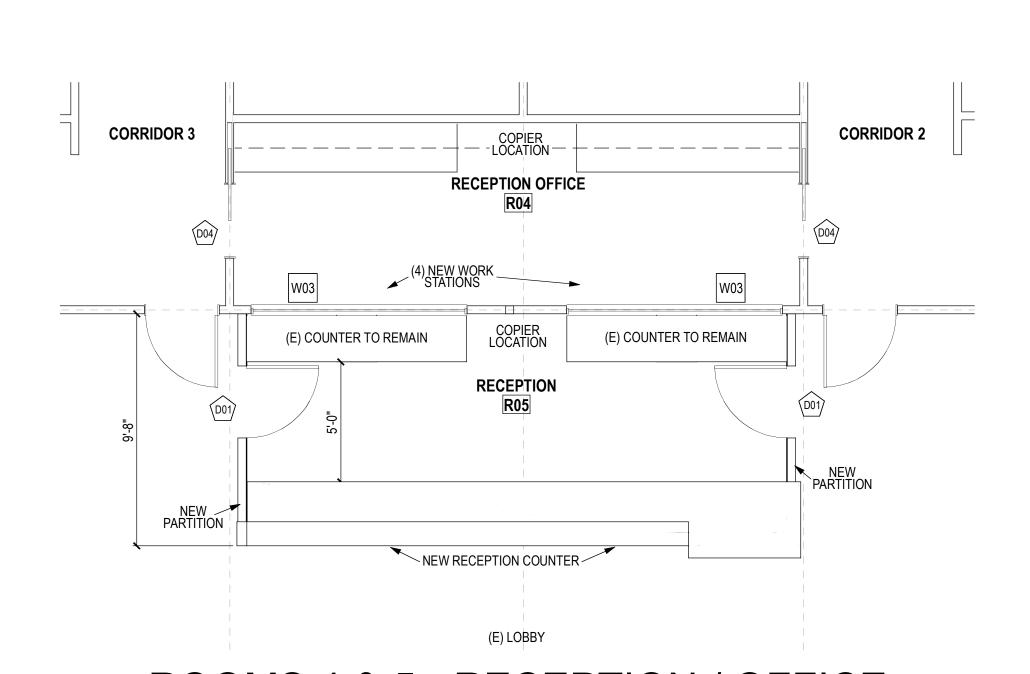
**OF 20 SHEETS** DATE: 5/19/2025



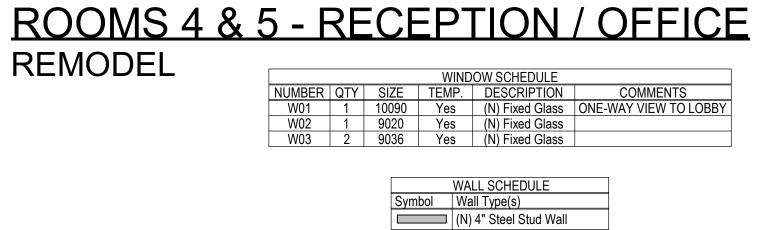








REMODEL

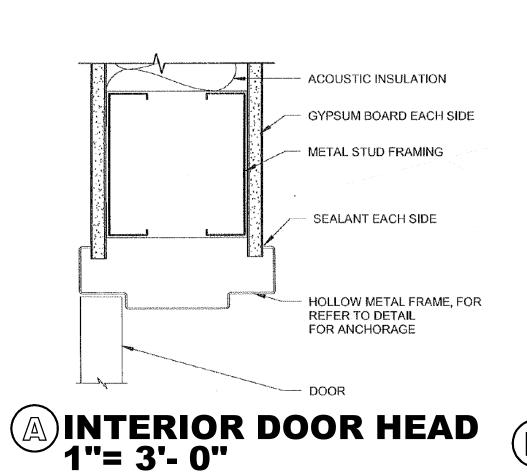


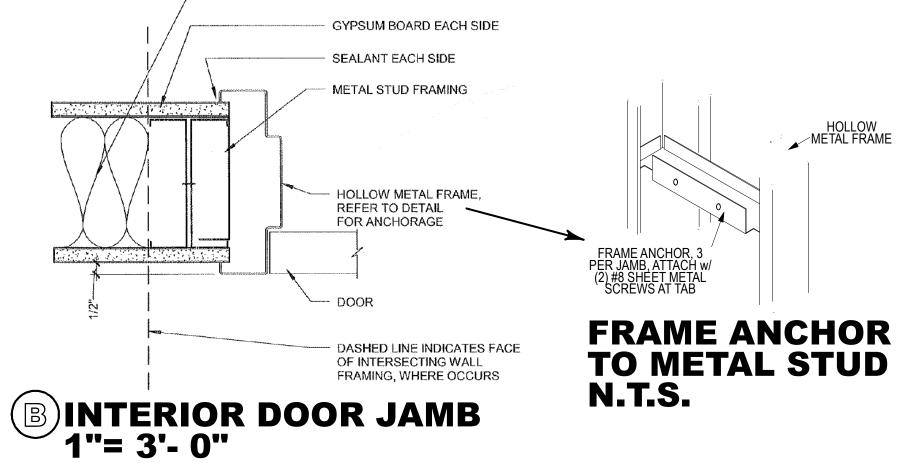
(E) Exterior Wall to Remain



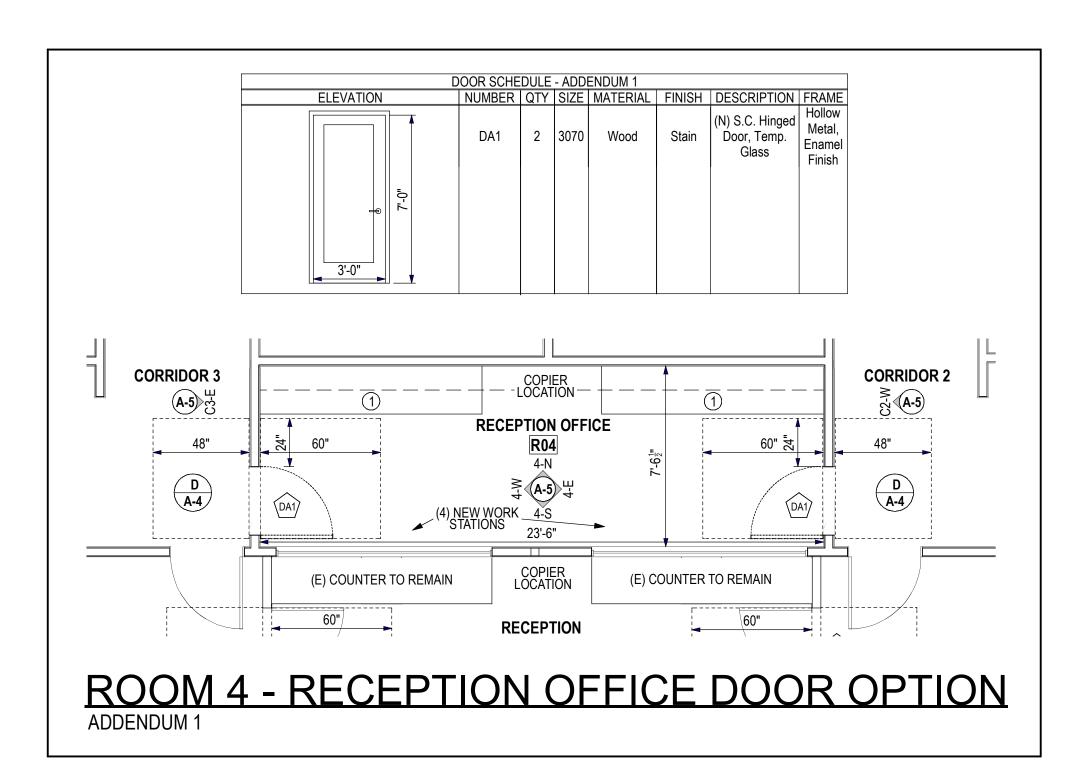
SHEET **A-3 OF 20 SHEETS**DATE: 5/19/2025

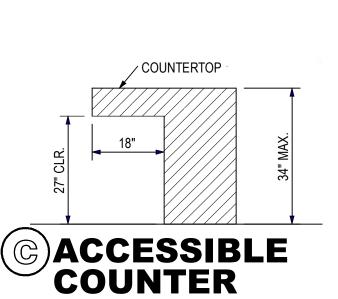
Cantelmi Engineering, Inc. Frank Cantelmi, PE 2130 F St, Bakersfield, CA 93301i cantelmi@cantelmi.net (661) 324-5252



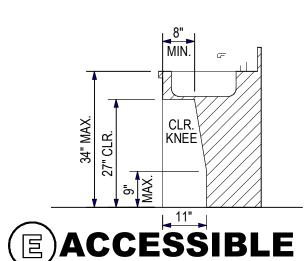


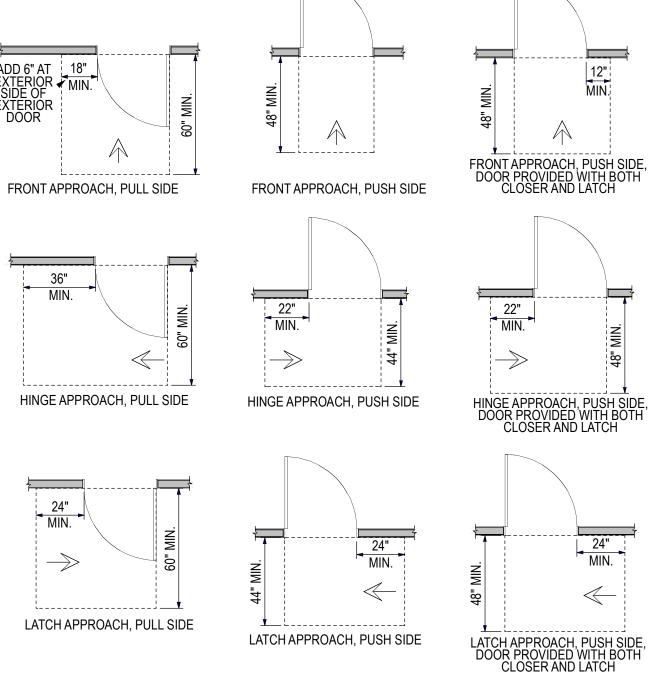
ACOUSTIC INSULATION





A PORTION OF THE COUNTER SURFACE THAT IS 36 INCHES LONG MINIMUM FOR A PARALLEL APPROACH OR 30 INCHES LONG MINIMUM FOR A FORWARD APPROACH AND 34 INCHES HIGH MAXIMUM ABOVE THE FINISH FLOOR SHALL BE PROVIDED. A 30 INCH BY 48 INCH CLEAR FLOOR SPACE ON AN ACCESSIBLE ROUTE MUST BE PROVIDED FOR EITHER A FORWARD OR PARALLEL APPROACH. ADDITIONALLY, IF A FORWARD APPROACH IS DESIRED, KNEE AND TOE SPACE MUST BE PROVIDED.







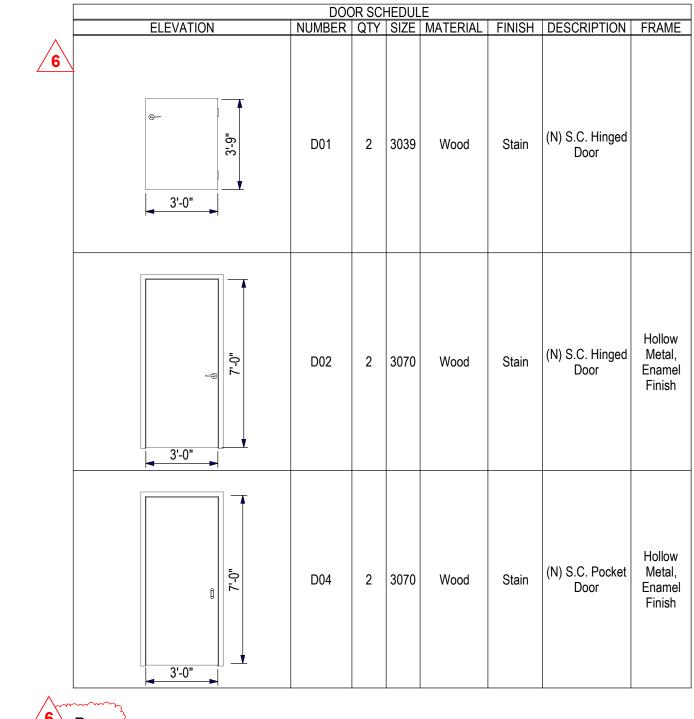
11B-404.2.4.1 Swinging Doors and Gates Swinging doors and gates shall have maneuvering clearances complying with Table 11B-404.2.4.1.

TABLE 11B-404.2.4.1 MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES MINIMUM MANEUVERING CLEARANCE TYPE OF USE

Approach direction	n Door or gate side	Perpendicular to doorway	Parallel to doorway
			(beyond latch side unless noted)
From front	Pull	60 inches (1524 mm)	18 inches (457 mm)5
From front	Push	48 inches (1219 mm)	0 inches (0 mm)1
From hinge side	Pull	60 inches (1524 mm)	36 inches (914 mm)
From hinge side	Push	44 inches (1118 mm)2	22 inches (559 mm)3
From latch side	Pull	60 inches (1524 mm)	24 inches (610 mm)
From latch side	Push	44 inches (1118 mm)4	24 inches (610 mm)
1 Add 12 inches (3	305 mm) if closer ar	nd latch are provided.	

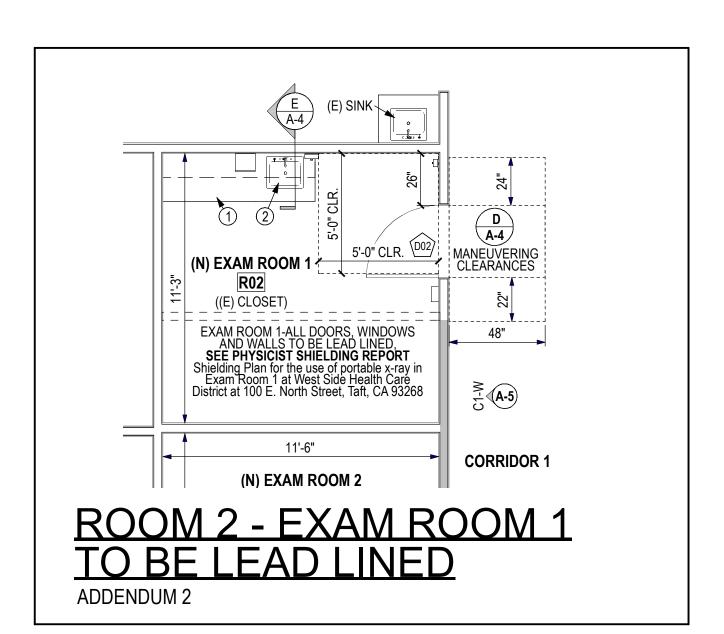
2 Add 4 inches (102 mm) if closer and latch are provided. 3 Beyond hinge side. 4 Add 4 inches (102 mm) if closer is provided.

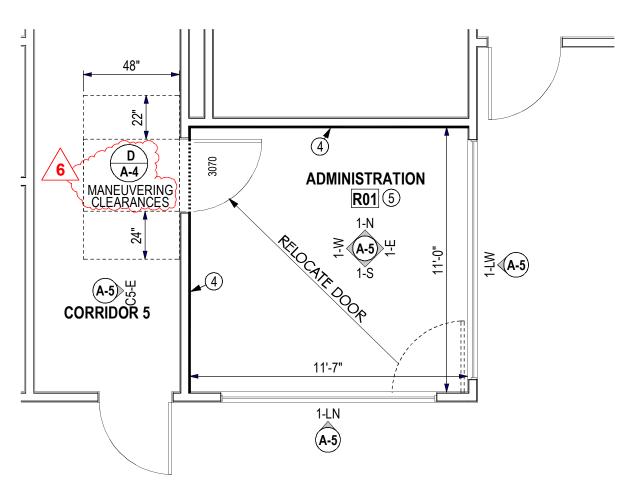
5 Add 6 inches (152 mm) at exterior side of exterior doors.



**6** Doors:

- . 11B-404.2.7 Door and Gate Hardware. Handles, pulls, latches, locks, and other operable parts on doors and gates shall comply with 11B-309.4 (Operation). Operable parts of such hardware shall be 34 inches minimum and 44 inches maximum above the finish floor or ground. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides.
- 11B-404.2.8.1 Door closers and gate closers shall be adjusted so that from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum.
- 3. 11B-404.2.9 Door and Gate Opening Force. The force for pushing or pulling open a door or gate shall be as follows: 1. Interior hinged doors and gates: 5
- 4. 11B-404.2.10 Door and Gate Surfaces. Swinging door and gate surfaces within 10 inches of the finish floor or ground measured vertically shall have a smooth surface on the push side extending the full width of the door or gate. Parts creating horizontal or vertical joints in these surfaces shall be within 1/16 inch of the same plane as the other and be free of sharp or abrasive edges. Cavities created by added kick plates shall be capped.

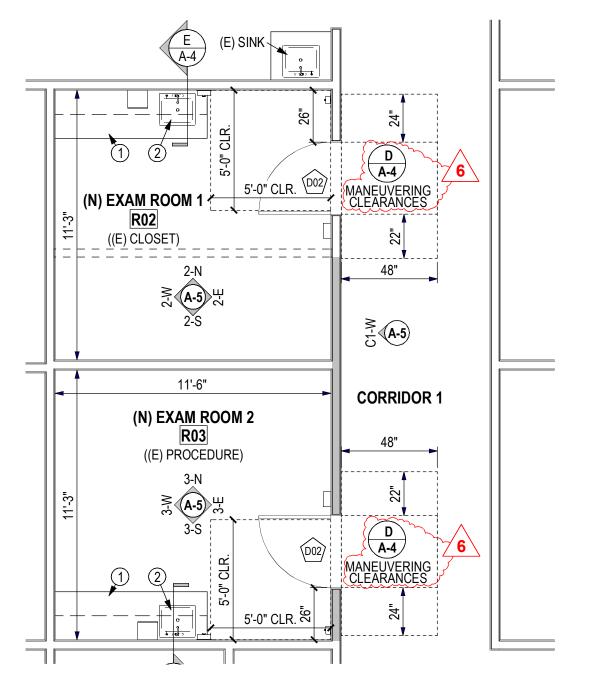




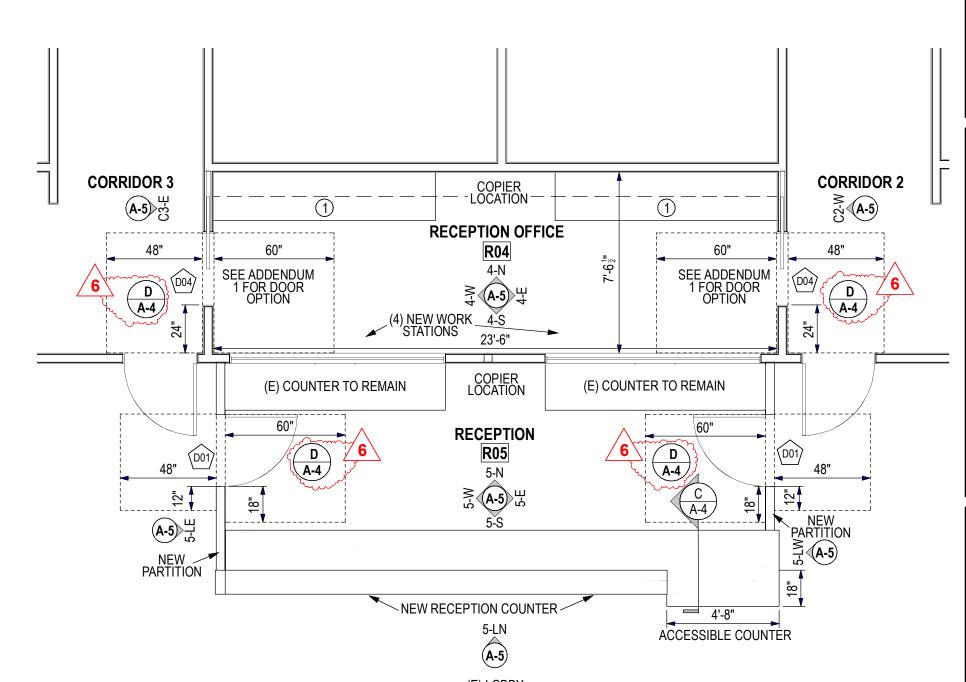
### **ROOM 1 - ADMINISTRATION** REMODEL

	FLOOR PLAN SCHEDULE
1	(N) CABINETS
2	(N) SINK
4	SOUNDPROOF WALL, FLOOR TO ROOF
(5)	REMOVE AND REPLACE T-BAR CEILING

ROOM FINISH SCHEDULE								
NUMBER	ROOM NAME	FLOOR FINISH	BASE	WALL MATERIAL	WALL FINISH	CEILING HEIGHT	CEILING FINISH	AREA, (SQ FT)
R01	ADMINISTRATION	VINYL PLANK	TOP SET BASE	GYPSUM BOARD	ENAMEL PAINT	109"	ACOUSTICAL CEILING TILES	127
R02	EXAM 1	RUBBER SHEET	TOP SET BASE	GYPSUM BOARD	ENAMEL PAINT, 4' HIGH FRP	120"	ACOUSTICAL CEILING TILES	129
R03	EXAM 2	RUBBER SHEET	TOP SET BASE	GYPSUM BOARD	ENAMEL PAINT, 4' HIGH FRP	120"	ACOUSTICAL CEILING TILES	129
R04	RECEPTION OFFICE	SMOOTH CONCRETE	TOP SET BASE	GYPSUM BOARD	ENAMEL PAINT	120"	ACOUSTICAL CEILING TILES	177
R05	RECEPTION	SMOOTH CONCRETE	TOP SET BASE	GYPSUM BOARD	ENAMEL PAINT			247
TOTALS:								809



ROOMS 2 & 3 - EXAM **CONVERT CLOSET AND** PROCEDURE TO (2) EXAM ROOMS



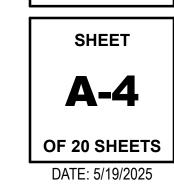
# ROOMS 4 & 5 - RECEPTION / OFFICE REMODEL

			WIND	OW SCHEDULE	
NUMBER	QTY	SIZE	TEMP.	DESCRIPTION	COMMENTS
W01	1	10090	Yes	(N) Fixed Glass	ONE-WAY VIEW TO LOBBY
W02	1	9020	Yes	(N) Fixed Glass	
W03	2	9036	Yes	(N) Fixed Glass	

WALL SCHEDULE
Symbol Wall Type(s)

(N) 4" Steel Stud Wall (E) Exterior Wall to Remain





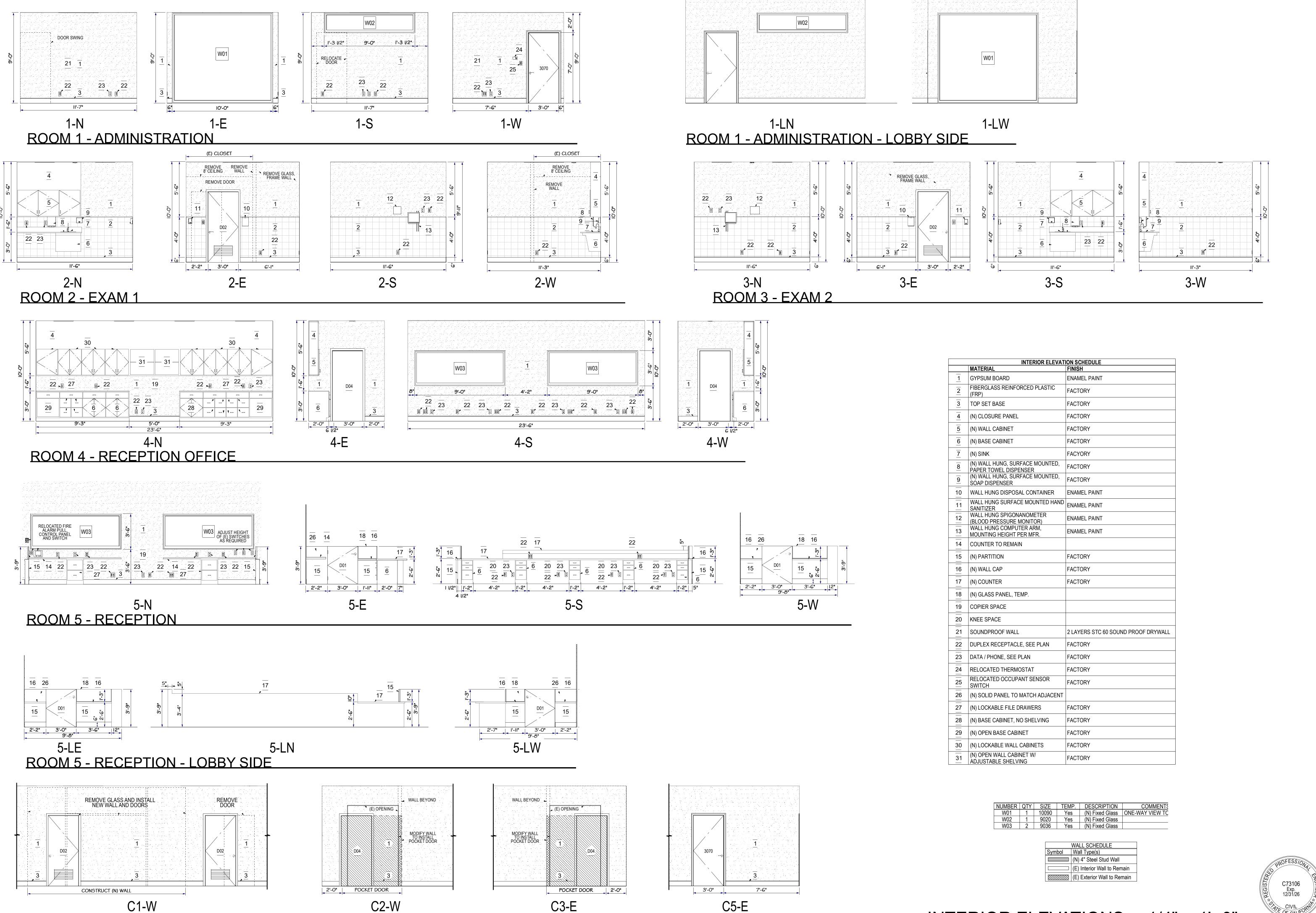
PROJECT CONTACT:

Ryan Shultz, MSHC

Executive Director

**District** let

1/4" = 1'- 0" FLOOR PLANS



**CORRIDOR 5** 

**ADMINISTRATION** 

CORRIDOR 1 EXAM

CORRIDOR 2

RECEPTION OFFICE

CORRIDOR 3

**RECEPTION OFFICE** 

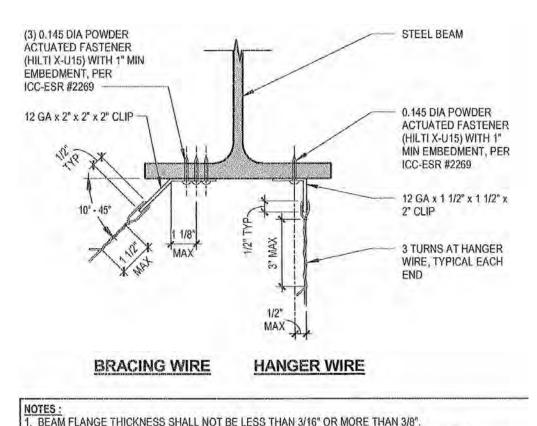
OF 20 SHEETS

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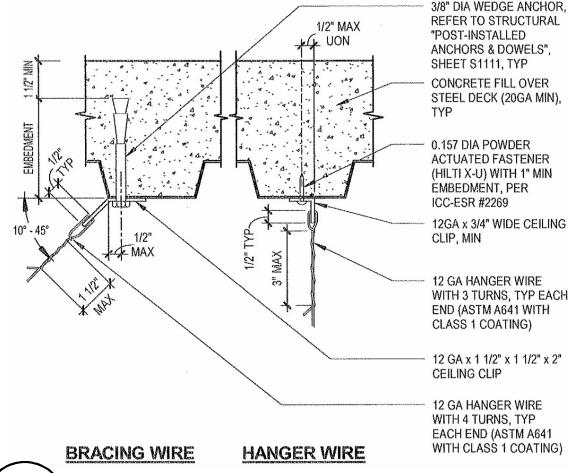
SHEET

INTERIOR ELEVATIONS <u> 1/4" = 1'- 0"</u>

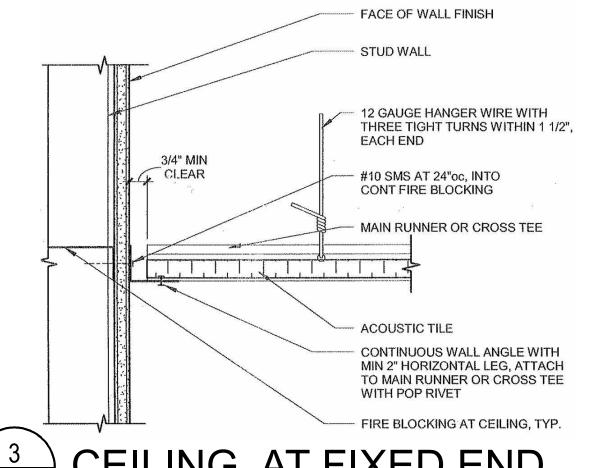


. BEAM FLANGE THICKNESS SHALL NOT BE LESS THAN 3/16" OR MORE THAN 3/8". 2. FRAMING MEMBERS SHALL BE DESIGNED TO CARRY THE CEILING LOADS, RDP TO VERIFY. 3. RDP IN RESPONSIBLE CHARGE, IOR AND CONTRACTOR SHALL VERIFY THAT NO PAF IS INSTALLED IN THE PROTECTED ZONE OF ANY STEEL MEMBER, PER ANSI/AISC 34.

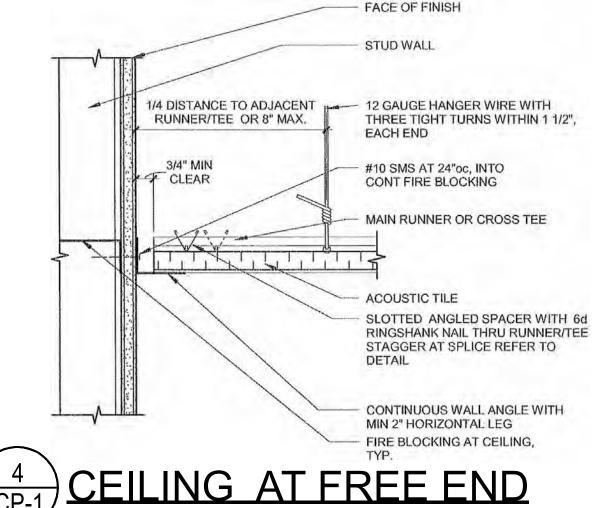
WIRE ATTACHMENT

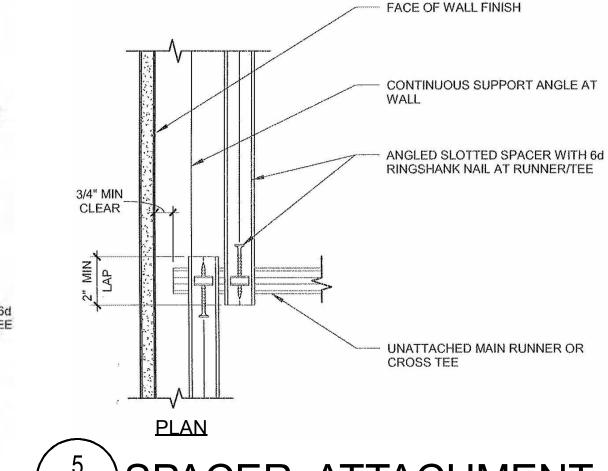


WIRE TIE ATTACHMENT

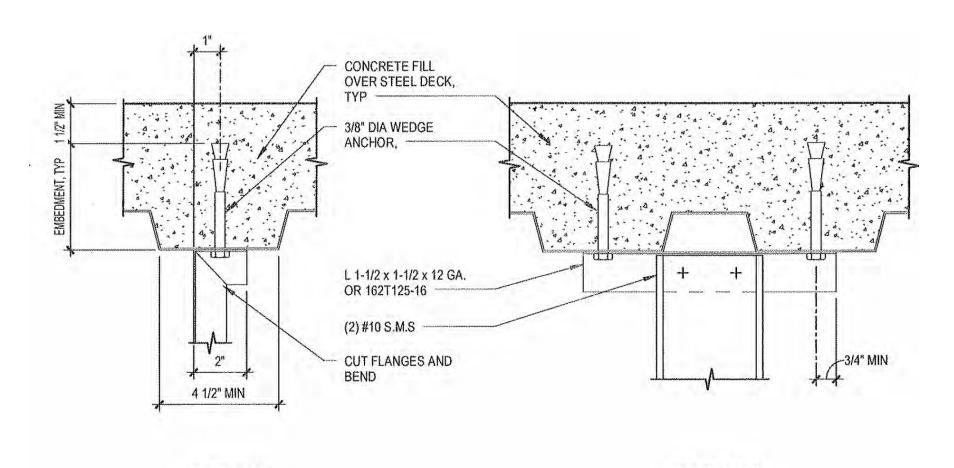




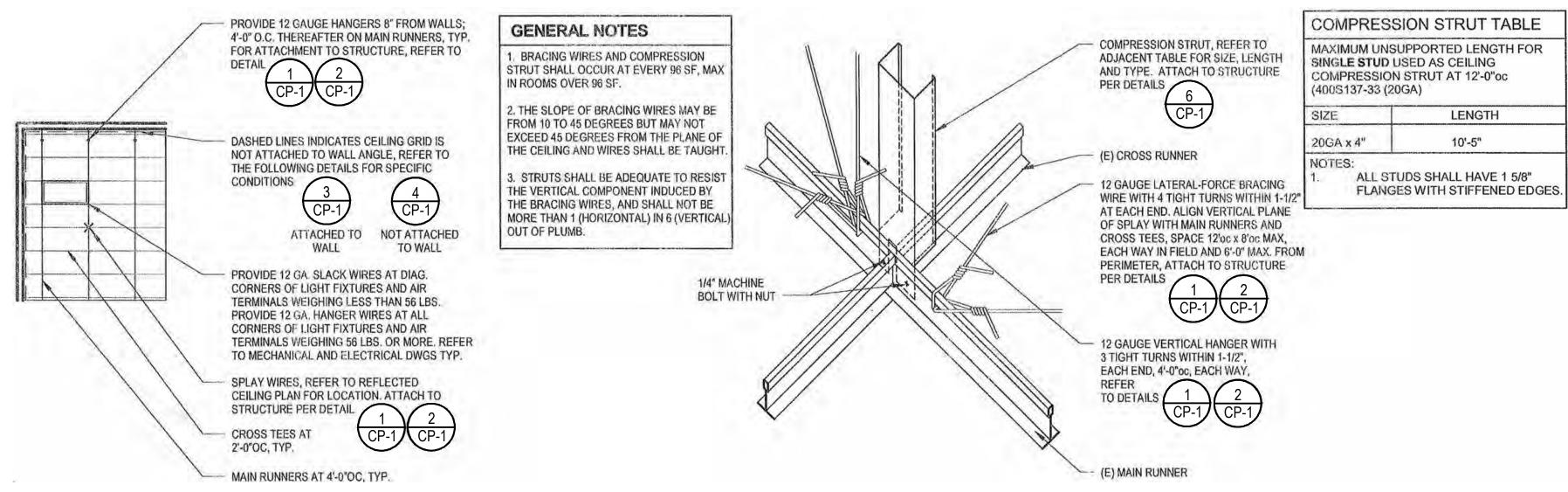




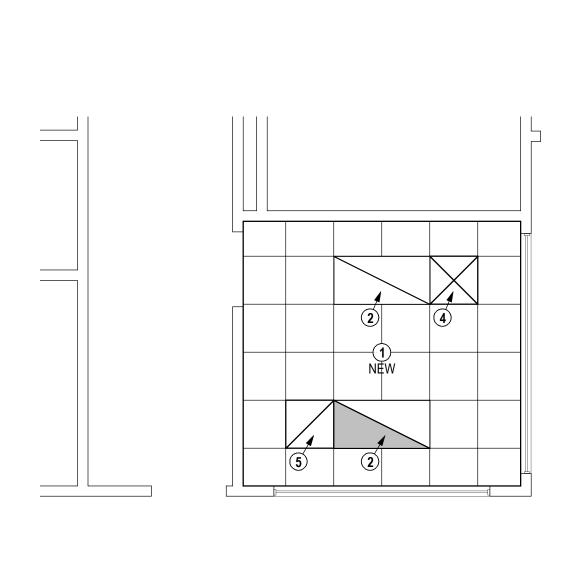
SPACER ATTACHMENT



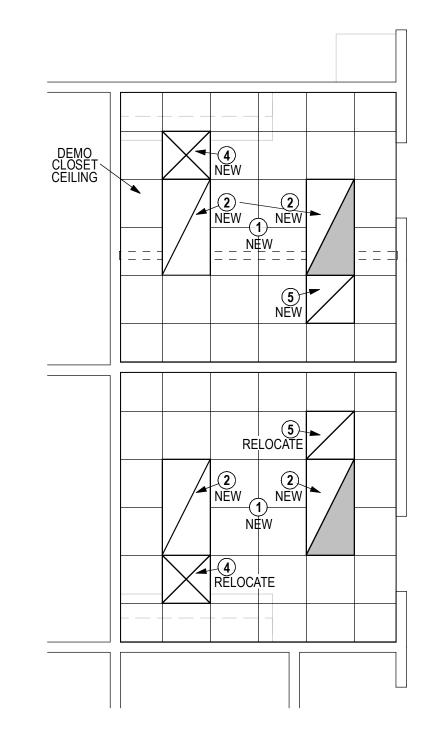
**CHANNEL STRUT** 



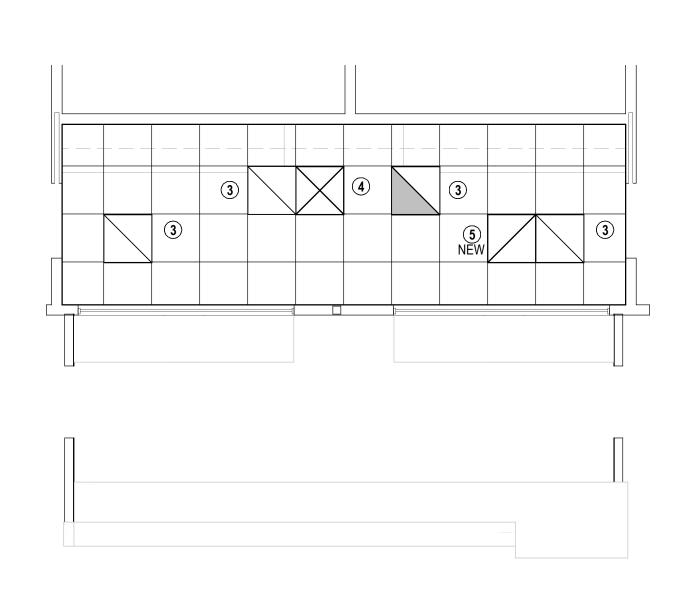
# SUSPENDED ACOUSTICAL CEILING LEGEND - SPLAY WIRE N.T.S.



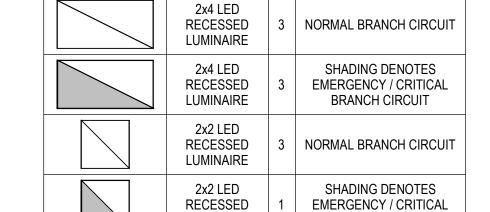
ROOM 1	- ADMINISTRATION
REMODEL	



ROOMS 2 & 3 - EXAM CONVERT CLOSET AND PROCEDURE TO (2) EXAM ROOMS



ROOMS 4 & 5 - RECEPTION / OFFICE REMODEL



**BRANCH CIRCUIT** 

LUMINAIRE

RCP LEGEND

Symbol

> REFLECTED CEILING PLANS	1/4" = 1'- 0"
MELLECTED OFICINO LAND	<u> </u>

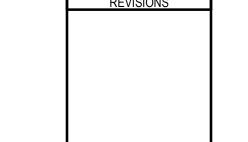
	RCP NOTE SCHEDULE
1	"HEAVY DUTY" 2X2 SUSPENDED ACOUSTICAL CEILING SYSTEM
2	2X4 LED RECESSED LUMINARY
3	2X2 LED RECESSED LUMINARY
4	CEILING DIFFUSER
5	RETURN AIR



SHEET CP-1 OF 20 SHEETS

Cantelmi Engineering, Inc. Frank Cantelmi, PE 2130 F St, Bakersfield, CA 93301i cantelmi@cantelmi.net (661) 324-5252

Ryan Shultz, MSHC Executive Director (661) 765-7234 Office (661) 203-5757 Cell



Ryan Shultz, MSHCA
Executive Director
(661) 765-7234 Office
(661) 203-5757 Cell
rebultz@webcd.org

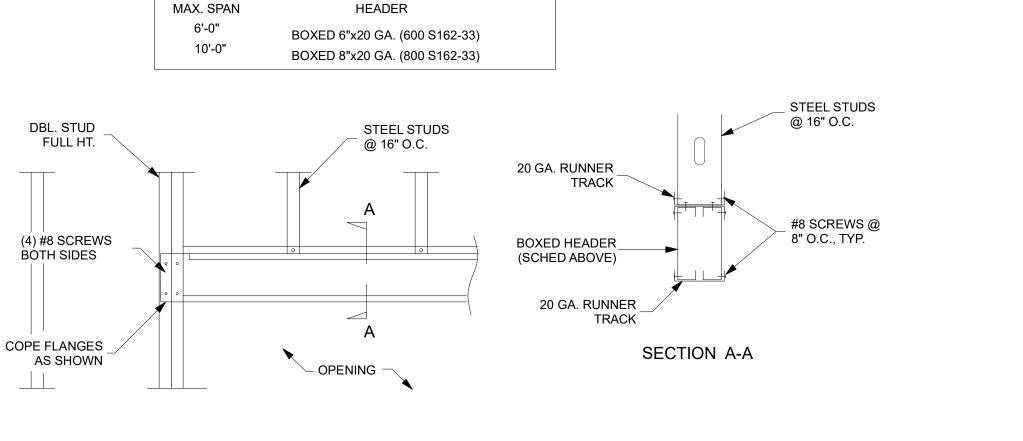
**District** 

itside | 100 Ta

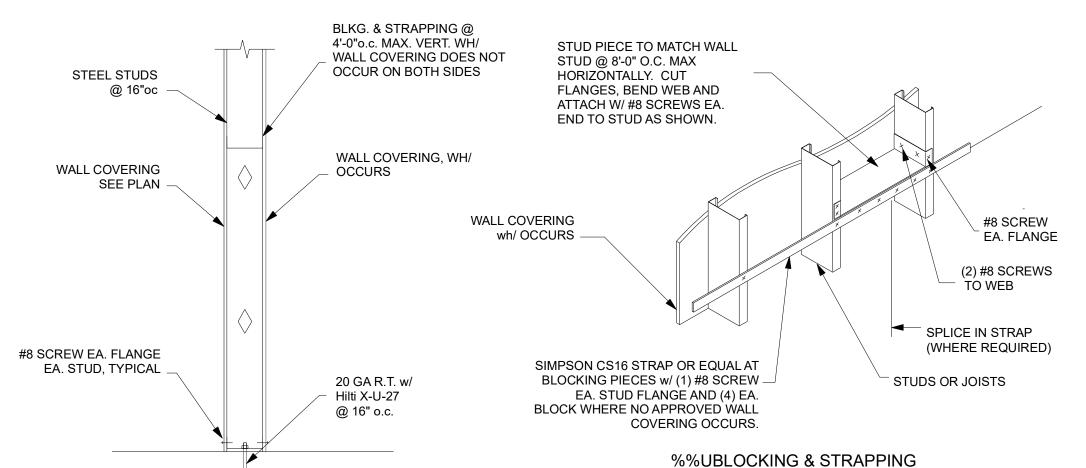
neering, elmi, PE field, CA 9330 t (661) 324

Engine nk Cantelr Bakersfiel

tantelmi | Fran Fran 2130 F St, ∣ Intelmi@cante



**HEADER SCHEDULE** 

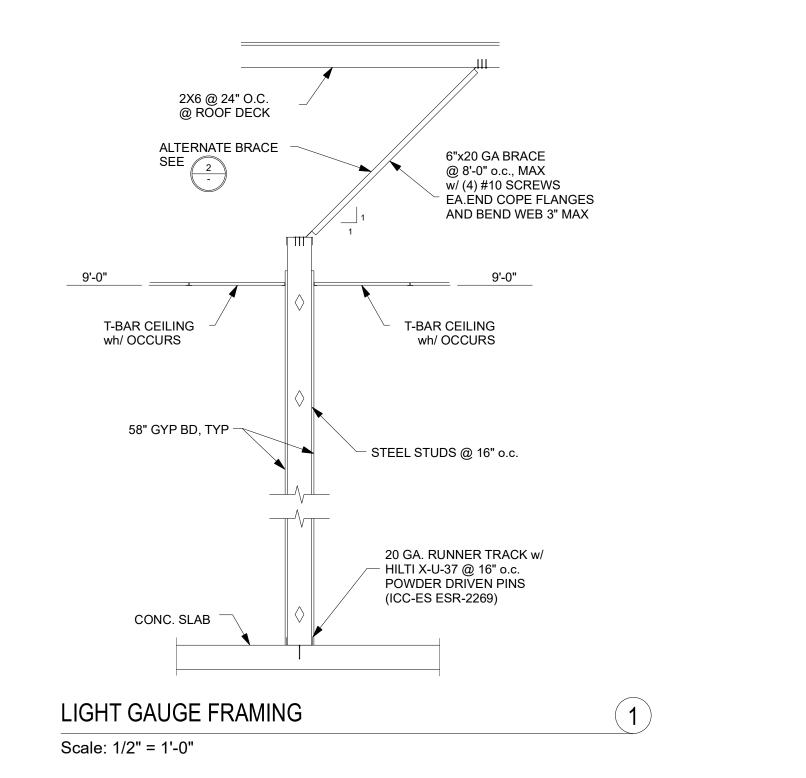


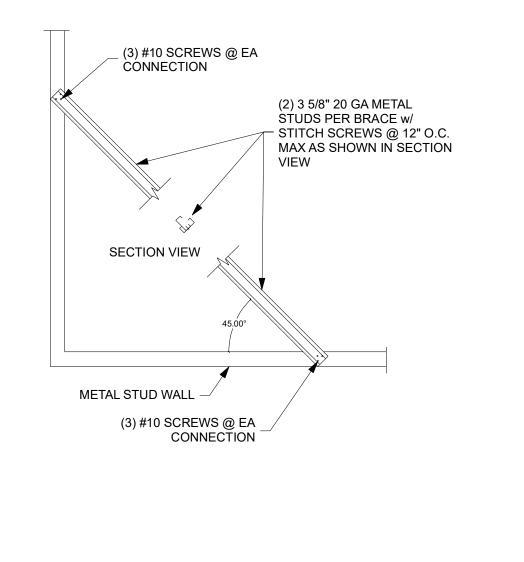
STUD DESIGNATIONS SSMA 3 5/8" x 20 GA RUNNER TRACK 362 S162-33 6" x 20 GA 362 T125-33 6" x 20 GA RUNNER TRACK 600 S162-33 8" x 20 GA 600 T125-33 8" x 20 GA RUNNER TRACK 800 S162-33 800 T125-33

A STRAP SHALL BE PLACED AT A DISTANCE NO GREATER THAN 10" FROM THE TOP TRACK

Steel Studs

Header

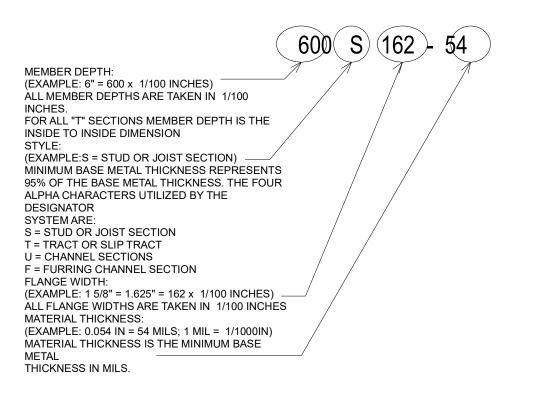




LIGHT GAUGE FRAMING

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

METAL TO META	L FASTENER SIZE
METAL THICKNESS 'T'	SCREW TYPE
T < 12 GA	#10 W/ #3 POINT
12 GA < T < 3/16"	#12 W/ #3 POINT
3/16" < T < 5/16"	1/4" DIA. W/ #4 POINT



SIELL I HAI CORRESPONDS TO THE MINIMUM REQUIREMENTS OF THE LATEST AISI-NAS. STANDARD.

3. ALL STEEL MEMBERS SHALL HAVE PHYSICAL MARKING AND IDENTIFICATION NUMBERS AS REQUIRED BY ASTM C645 AND ASTM C955. THESE MARKINGS MUST INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING INFORMATION: DEPTH, FLANGE WIDTH, MINIMUM STEEL THICKNESS, MANUFACTURER DESIGNATION, STEEL YIELD STRENGTH AND PROTECTIVE COATING WEIGHT.

4. STRUCTURAL STEEL FRAMING MEMBERS MUST MEET THE PHYSICAL REQUIREMENTS OF ASTM C955. THE INSTALLATION REQUIREMENTS OF ASTM C1007 AND THE MINIMUM COATING REQUIREMENTS OF ASTM A653 COATING DESIGNATION G-80.

5. NON-STRUCTURAL STEEL FRAMING MEMBERS MUST MEET THE PHYSICAL REQUIREMENTS OF ASTM C645. THE INSTALLATION REQUIREMENTS OF ASTM C754 AND THE MINIMUM COATING REQUIREMENTS OF ASTM A653 COATING DESIGNATION G-40.

6. STEEL SHALL BE ASTM A1003, GRADE 50 FOR 12, 14, AND 16 GAUGE SECTIONS, AND ASTM A1003, GRADE 33 FOR 18 AND HIGHER GAUGE SECTIONS.

7. PROVIDE STEEL MEMBERS WITH SECTION PROPERTIES EQUAL TO OR GREATER THAN THOSE SPECIFIED BY THE "STEEL STUD MANUFACTURER'S ASSOCIATION" (SSMA) CATALOG, ICBO-ER 4943P, FOR THE MEMBER SIZES DESIGNATED ON THE PLANS.

8. THE CONTRACTOR MUST PROVIDE A MATERIAL SUBMITTAL INDICATING THE SIZE, GAUGE, SECTIONAL PROPERTIES AND MATERIALS TO BE USED TO THE ARCHITECT AND ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION ACCORDANCE WITH THE SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AGENCY APPROVAL FOR ANY SUBSTITUTIONS.

9. BENT, KINKED, DISTORTED, CORRODED OR DAMAGED SECTIONS SHALL NOT BE USED. RESPONSIBLE FOR DESTORTED, CORRODED OR DAMAGED SECTIONS SHALL NOT BE USED.

10. STUDS MAY HAVE CUTOUTS (OR KNOCKOUTS). CUTOUTS MAY BE A MAXIMUM DIMENSION OF 1 1/2" WIDE x 4" LONG AND HAVE A MINIMUM SPACING OF 24" O.C. EXCEPT CUTOUTS FOR 1 5/8" AND 2 1/2" MUST NOT EXCEED A WIDTH OF 3/4". CUTOUTS SHALL NOT BE CLOSER THAN 12" FROM MEMBER ENDS.

11. ALL WELDING TO BE PERFORMED BY LIGHT GAUGE WELDERS CERTIFIED FOR ALL APPROPRIATE DIRECTIONS COMPLYING WITH A.W.S. D1.3. WELDING RODS SHALL CONFORM TO THE FOLLOWING:
11.1. 18 GA. AND LIGHTER: E60XX
11.2. 16 GA. AND HEAVIER: E70XX OR E6013
11.3. LIGHT GAUGE TO STRUCTURAL STEEL: F70XX LOW HYDROGEN
12. ALL WELDS OF GALVANIZED STEEL SHALL BE TOUCHED UP WITH A ZINC-RICH PAINT. ALL WELDS OF CARBON SHEET STEEL SHALL BE TOUCHED UP WITH PAINT.
13. WIRE TYING OF COMPONENTS SHALL NOT BE PERMITTED.
14. LATERAL BRIDGING FOR STEEL STUD IS REQUIRED WHEN WALL BOARD, INSTALLED IN ACCORDANCE WITH AISI-NAS REQUIREMENTS, DOES NOT CONTINUE FULL HEIGHT ON BOTH SIDES, BRIDGING SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND TYPICAL BRIDGING DETAILS. ALL EXTERIOR WALLS SHALL HAVE BRIDGING PER TYPICAL BRIDGING DETAILS. ALL EXTERIOR WALLS SHALL HAVE BRIDGING PER TYPICAL BRIDGING DETAILS. ALL EXTERIOR WALLS SHALL HAVE BRIDGING PER TYPICAL BRIDGING DETAILS. SCREWS SHALL BE SELF-DRILLING/SELF-TAPPING STEEL SCREWS INSTALLED IN ACCORDANCE WITH THE AISI-NAS SCREWS SHALL HAVE SUFFICIENT LENGTH TO ENSURE A MINIMUM OF 3 FULL THREADS SHOWING AFTER PENETRATION OF JOINED LIGHT GAUGE MATERIALS. SCREWS SHALL HAVE SUFFICIENT LENGTH TO ENSURE A MINIMUM OF 3 FULL THREADS SHOWING AFTER PENETRATION OF JOINED LIGHT GAUGE MATERIALS. SCREWS SHALL HAVE SUFFICIENT LENGTH TO ENSURE A MINIMUM OF 3 FULL THREADS SHOWING AFTER PENETRATION OF JOINED LIGHT GAUGE MATERIALS. SCREWS SHALL HAVE A MINIMUM OF 1" EDGE/SPACING DISTANCE. THE MINIMUM SCREW HEAD DIAMETER SHALL BE SCIED TO TRACTS, CLIPS, WEB STIFFENERS, ANCHORS, FASTENING DEVICES, RESILIENT CLIPS AND OTHER ACCESSORIES INCLUDING, BUT NOT LIMITED TO USED.

17. STEEL TRACTS THAT OCCUR UNDER ALL EXTERIOR CURTAIN WALLS, BEARING WALLS AND SHEAR WALLS SHALL BE BOLTED TO MASONRY OR CONCRETE WITH 5/8" DIA x 12" BOLTS SPACED NOT MORE THAN 5'-0" O.C., WITH A MIN. OF 2 BOLTS FOR EACH PIECE OF TRACK, U.N.O.. USE STANDARD STEEL PLATE WASHERS AT EACH BOLT LOCATION.

18. ALL ANCHOR BOLTS IN STEEL TRACKS SHALL BE 4 INCH MINIMUM AND 12 INCH MAXIMUM FROM THE END OF THE TRACK, AND HAVE 7 INCH MINIMUM EMBEDMENT INTO CONCRETE OR MASONRY. ANY LOCATION WHERE A HOLE OR NOTCH OCCURS THROUGH A TRACK FLANGE, TRACK SHALL HAVE AN ADDITIONAL ANCHOR BOLT PLACED 4 INCHES TO 12 INCHES ON EACH SIDE OF THE HOLE OR NOTCH.

19. ALL ANCHOR BOLTS SHALL BE MACHINE MADE TYPE F1554 GRADE 36 U.N.O. BOLTS WITH UPSET THREADS ARE NOT PERMITTED.

20. ALL STEEL FRAMING MEMBERS SHALL BE DESIGNATED ON PLANS WITH THE SSMA STUD AND TRACK SECTION NOMENCLATURE AS DESCRIBED BELOW:



SHEET **S-1** 

DATE: 5/19/2025

OF 20 SHEETS

	DATE		ISSUE
1	DATE	MARK	
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**Indoor Lighting Indoor Lighting Mechanical Systems** CALIFORNIA ENERGY COMMISSION CALIFORNIA ENERGY COMMISSION CALIFORNIA ENERGY COMMISSION CERTIFICATE OF COMPLIANCE CERTIFICATE OF COMPLIANCE CERTIFICATE OF COMPLIANCE NRCC-LTI-E NRCC-LTI-E (Page 3 of 7) (Page 6 of 7) oject Name: (Page 2 of 9) 1/16/202 1/16/2025 F. INDOOR LIGHTING FIXTURE SCHEDULE S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF) C. COMPLIANCE RESULTS This table includes all planned permanent and portable lighting other than dwelling unit/ hotel/ motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are This section does not apply to this project. Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. If this table says "DOES" NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D., or the table indicated as not compliant for guidance. not included here. **Designed Wattage: Conditioned Spaces** T. DWELLING UNIT LIGHTING System This section does not apply to this project. Summary Excluded per Field Inspector Pumps Controls Name or Ite Watts per 110.1, Controls 120.3, **Cooling Tower** 140.6(a)3 / Aperture & Design Watts 140.4(k). 140.4(c), 110.2, 120.2, (Track) Fixture luminaire<sup>2</sup> 140.4(1). Description determined of Luminaires Pass 110.2 120.1, 160.2 140.4(d), 110.2(e)2 Compliance Results Color Change<sup>1</sup> 170.2(e)2C 170.2(c)4I 140.4(e), 140.4(f), U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION 140.4 170.2(c)4B 160.2, 160.3 170.2(c) 170.2(c) 2X4 LED 51 Mfr. Spec 170.2(c) Selections have been made based on information provided in this document. If any selections have been changed by permit applicant, an explanation should be included in Table E. Total Designed Watts: CONDITIONED SPACES (See Table F) (See Table G) (See Table K) (See Table M Additional Remarks. These documents must be provided to the building inspector during construction and can be found online I(See Table H)I l (See Table I) l (See Table J) (See Table L) <sup>1</sup>FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per 140.6(a)4B / 170.2(e)2D is adjusted to be 75% /80% of their rated wattage. Table F AND AND AND Yes AND Yes AND AND Yes AND COMPLIES Form/Title automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05. Mandatory Measures Compliance (See Table Q for Details COMPLIES <sup>2</sup>Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b). Wattage used must be the maximum rated for the NRCI-LTI-E - Must be submitted for all buildings luminaire, not the lamp. D. EXCEPTIONAL CONDITIONS V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE his table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form. G. MODULAR LIGHTING SYSTEMS Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. This section does not apply to this project. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html E. ADDITIONAL REMARKS Systems/Spaces To Be Field This table includes remarks made by the permit applicant to the Authority Having Jurisdiction. H. INDOOR LIGHTING CONTROLS (Not including PAFs) Verified This table includes lighting controls for conditioned and unconditioned spaces. NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls. Whole Building Time Switch F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS) **Building Level Controls** NRCA-LTI-03-A - Must be submitted for automatic daylight controls. Whole Building; 03 is section does not apply to this project. NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls. Whole Building Demand Field Inspector Mandatory Demand Response 110.12(c) Shut-off controls 130.1(c) / 160.5(b)40 Pass G. PUMPS Required >= 4,000W subject to multilevel Whole Building Auto Time Switch This section does not apply to this project. Generated Date/Time: Documentation Software: EnergyPro Generated Date/Time: Documentation Software: EnergyPro Generated Date/Time: Documentation Software: EnergyPro Report Version: 2022.0.000 Compliance ID: EnergyPro-2545-0125-6682 Report Version: 2022.0.000 Compliance ID: EnergyPro-2545-0125-6682 Compliance ID: EnergyPro-2545-0125-6681 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Report Generated: 2025-01-16 10:30:33 Report Generated: 2025-01-16 10:30:33 Report Generated: 2025-01-16 10:30:33 Schema Version: rev 20220101 Schema Version: rev 20220101 Schema Version: rev 20220101 STATE OF CALIFORNIA STATE OF CALIFORNIA STATE OF CALIFORNIA Indoor Lighting Indoor Lighting Mechanical Systems CALIFORNIA ENERGY COMMISSION CALIFORNIA ENERGY COMMISSION **CALIFORNIA ENERGY COMMISSION** CERTIFICATE OF COMPLIANCE NRCC-LTI-E CERTIFICATE OF COMPLIANC NRCC-MCH-E (Page 4 of 7 Project Name: (Page 7 of 7 oject Name: (Page 3 of 9) Report Page: Report Page: **Project Address:** H. INDOOR LIGHTING CONTROLS (Not including PAFs) DOCUMENTATION AUTHOR'S DECLARATION STATEMENT H. FAN SYSTEMS & AIR ECONOMIZERS I certify that this Certificate of Compliance documentation is accurate and complete **Area Level Controls** his section does not apply to this project. 08 09 | 10 | 11 06 07 nentation Author Name I. SYSTEM CONTROLS Frank Cantelmi Mechanical Engineerin Manual Area | Multi-Level Shut-Off Controls Complete Building or Area Field Inspector Controls Controls Daylighting Systems This table is used to demonstrate compliance with mandatory controls in 110.2 and 120.2 and prescriptive controls in 140.4(f) and (n), 170.2(c)4D 170.2(c)4L or requirements in Category Primary Function Area Description 130.1(c) // Daylighting 130.1(a)/ 130.1(b)/ 130.1(d) / 140.6(a)1/ \$1.0(b)2E 180.2(b)2 for altered space conditioning systems. Area 160.5(b)4C 130.1(d)/ 160.5(b)4A 160.5(b)4B 160.5(b)4D 170.2(e)2A RESPONSIBLE PERSON'S DECLARATION STATEMENT 160.5(b)4D Pass Fail I certify the following under penalty of perjury, under the laws of the State of California The information provided on this Certificate of Compliance is true and correct Shut-Of Whole Building All Other Space Types Demand Response See Building Level Included Dimmer I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer) Floor Area 110.2(b) & (c)<sup>1</sup>, 120.2(a) Controls Window Interlocks per 110.12 120.2(b) & System Name Controls The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the require Zoning Being Served 160.3(a)2A or 141.0(b)2E & 120.2(e) & 140.4(f) & 140.4(n) & 170.2(c)4D 120.2(g) & 160.3(a)2B of Title 24, Part 1 and Part 6 of the California Code of Regulations. 160.3(a)2D 160.3(a)2F (ft<sup>2</sup>) 180.2(b)2 170.2(c)4D The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations Plan Sheet Showing Daylit Zones plans and specifications submitted to the enforcement agency for approval with this building permit application. FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable have setback thermostats. I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS J. VENTILATION AND INDOOR AIR QUALITY 2025-01-16 Each area complying using the Complete Building or Area Category Methods per 140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per stable is used to demonstrate compliance with mandatory ventilation requirements in 120.1 120.2(e)3B 140.4(p) and 140.4(q) for all nonresidential and hotel/motel and 140.6(c) or adiustments per 140.6(a) are beina used d:t24refnolink/]160.2, 160.3(a)3D, 170.2(a)4N, 170.2(a)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit Conditioned Spaces pplication need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented 03 | 04 | Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table. lditional Allowance / Adjustme Complete Building or Area Category Primary Allowed Densit Allowed Wattage Area Description Area (ft<sup>2</sup> Check this box if the project included Nonresidential, Hotel/Motel Spaces or Multifamily Common Use Spaces Function Area  $(W/ft^2)$ (Watts) Area Category PAF 1.15 270 310.5 Hospital - Exam/Treatment No Zone 1 03 Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per 120.1(c)2. 171 Office ( >250 square feet) 0.6 102.6 Zone Ionresidential and Hotel/ Motel Multifamily Common Use Ventilation Systems TOTALS: 441 413.1 See Tables J, or P for detail Air Filtration per 120.1(c) 141.0(b)2 and J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM System Design OA CFM System Design EX AC 1 System 160.2(c)21<sup>2</sup> Transfer Air CFM Airflow<sup>1</sup> This section does not apply to this project. Provided 12 | 13 | 14 Generated Date/Time: Documentation Software: EnergyPro Generated Date/Time: Documentation Software: EnergyPro Documentation Software: EnergyPro Generated Date/Time: Compliance ID: EnergyPro-2545-0125-6681 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-2545-0125-6682 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-2545-0125-6682 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Schema Version: rev 20220101 Report Generated: 2025-01-16 10:30:33 Schema Version: rev 20220101 Report Generated: 2025-01-16 10:30:33 Schema Version: rev 20220101 Report Generated: 2025-01-16 10:30:33 STATE OF CALIFORNIA STATE OF CALIFORNIA STATE OF CALIFORNIA Mechanical Systems **Mechanical Systems Indoor Lighting** CALIFORNIA ENERGY COMMISSION CALIFORNIA ENERGY COMMISSION CALIFORNIA ENERGY COMMISSION CERTIFICATE OF COMPLIANCE NRCC-LTI-E NRCC-MCH-E CERTIFICATE OF COMPLIANCE NRCC-MCH-E CERTIFICATE OF COMPLIANC (Page 5 of 7) Project Name: (Page 4 of 9) Project Name: Report Page: This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive Report Page: path outlined in 140.4, or 141.0(b)2 for alterations. Date Prepared 1/16/2025 Date Prepared: 1/16/2025 Project Name: (Page 1 of 9 Project Address: 1/16/202 J. VENTILATION AND INDOOR AIR QUALITY K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE A. GENERAL INFORMATION Exh. Vent per 120.1(c)4 & Mechanical Ventilation Required per 120.1(c)3<sup>3</sup> & 160.2(c)3 This section does not apply to this project. 160.2(c)4 DCV or Sensor Controls per 120.1(d)3, 01 Project Location (city) 04 Total Conditioned Floor Area 441 Space Name 120.1(d)5, and 120.1(e)3<sup>6</sup> 160.2(c)5D or Item Tag # of Min OA Min CFM 02 Climate Zone 05 Total Unconditioned Floor Area Required Provided per Design Floor Area heads/ 160.2(c)5E 160.2(c)5D Occupancy Type<sup>4</sup> people<sup>5</sup> L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY CFM 03 Occupancy Types Within Project: 06 # of Stories (Habitable Above Grade) (ft<sup>2</sup>) toilets CFM This section does not apply to this project. Healthcare Facility
 Office Provided per §120.1(d)4 270 40.5 Zone 1 All others NA: Not required M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING Occ Sensor B. PROJECT SCOPE space type This section does not apply to this project. 17 Total System Required Min OA CFM 40 18 Ventilation for this System Complies? This table Includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, 170.2(b) or 141.0(b)2 and 180.2(b)2 for alterations. N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE /SPECIAL EFFECTS Air Filtration per 120.1(c) 141.0(b)2 and System Design OA CFM System Design 160.2(c)21<sup>2</sup> Wet System Components Dry System Components Air System(s) This section does not apply to this project. Transfer Air CFM ☐ Air Economizer ☐ Heating Air System ☐ Water Economizer Pumps ☐ Electric Resistance Heat 08 10 | 11 | 12 | 13 | 14 ☐ Cooling Air System O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE Exh. Vent per 120.1(c)4 & ☐ System Piping Fan Systems Mechanical Controls Mechanical Ventilation Required per 120.1(c)3<sup>3</sup> & 160.2(c)3 160.2(c)4 This section does not apply to this project. DCV or Sensor Controls per 120.1(d)3. Mechanical Controls (existing to remain, altered Space Name ☐ Cooling Towers onditioned # of Shower # of Ductwork (existing to remain, altered or new) 120.1(d)5, and 120.1(e)3<sup>6</sup> 160.2(c)5D or new) or Item Tag Required Provided per Design Floor Area heads/ 160.2(c)5E 160.2(c)5D Occupancy Type<sup>4</sup> Min OA Chillers people<sup>5</sup> Min CFM CFM P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF)) (ft<sup>2</sup>) toilets CFM ☐ Boilers Zonal Systems/ Terminal Boxes This section does not apply to this project. Provided per ALERT! Healthcare facilities must be ventilated in accordance with Chapter 4 of the CMC as amended by OSHPD and do not need to show compliance with Title 24, Part 6 ventilation §120.1(d)4 requirements in Table J. Office space 171 25.6 NA: Not required Occ Sensor O. RATED POWER REDUCTION COMPLIANCE FOR ONE-FOR-ONE ALTERATIONS space type This section does not apply to this project. 17 Total System Required Min OA CFM 26 | 18 | Ventilation for this System Complies? <sup>1</sup> FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system <sup>2</sup> Air filtration requirements apply to the following three system types per 120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to This section does not apply to this project occupiable space. <sup>3</sup> Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence. Generated Date/Time: Documentation Software: EnergyPro Generated Date/Time: Documentation Software: EnergyPro Generated Date/Time: Documentation Software: EnergyPro CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-2545-0125-6682 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-2545-0125-6681 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-2545-0125-6681 Report Generated: 2025-01-16 10:30:33 Schema Version: rev 20220101 Report Generated: 2025-01-16 10:30:33 Report Generated: 2025-01-16 10:30:33 Schema Version: rev 20220101 Schema Version: rev 20220101

STATE OF CALIFORNIA

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STATE OF CALIFORNIA

CLARIFICATION FROM ENGINEER OF RECORD WHERE CONFLICTS IN DRAWING OR DIMENSIONS ARISE PRIOR TO PROCEEDING WITH CONSTRUCTION.

NOTHING IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT AN INSTALLATION IN VIOLATION OF APPLICABLE CODES AND/OR RESTRICTIONS AND REQUIREMENTS, THE CONTRACTOR TO OBTAIN

								-
state of California  Mechanical Sy	ystems				CALIFORNIA ENERGY COMMISSION	state of california  Mechanical Systems		CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COM Project Name:	1PLIANCE			Report Page:	NRCC-MCH-E (Page 5 of 9)	CERTIFICATE OF COMPLIANCE Project Name:	Report Page:	NRCC-MCH-E (Page 8 of 9)
				Date Prepared:	1/16/2025		Date Prepared:	1/16/2025
J. VENTILATION A	AND INDOOR A	IR QUALITY				N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLAT	TION	
<sup>4</sup> See Standards Tab <sup>5</sup> For lecture halls w			all be determin	ned in accordance with the California Building Code.		Selections have been made based on information provided in previous These documents must be provided to the building inspector during	ious tables of this document. If any selection needs to be char	nged, please explain why in Table E Additional Remarks.
Examples of spaces	which require li	ghting occupancy sensors include office	es 250ft² or sm	occupancy sensing controls to also have occupancy sen aller, multipurpose rooms less than 1,000 ft², classroom	s, conference rooms, restrooms, aisles	https://www.energy.ca.gov/title24/2019standards/2019_complian		
K. TERMINAL BO		ry book stack aisles, corridors, starwe	ns, parking gar	rages, and loading and unloading zones, unless excepted	1 by 130.1(c).	NRCI-MCH-01-E - Must be submitted for all buildings	Tomy nac	
This section does no		roject.				O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTAN  There are no NRCA forms required for this project.	NCE	
L. DISTRIBUTION  This table is used to	show complian	ce with mandatory pipe insulation requ		d in 120.3 and mandatory requirements found in 120.4		P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICAT	ION	
01		weather shall be installed with a cover	r suitable for ou	s that due to sunlight, moisture, equipment maintenanc utdoor service. Insulation covering chilled water piping Class II vapor retarder. All penetrations and joints of wh	and refrigerant suction piping located	There are no NRCV forms required for this project.	ion	
Duct Leakage Testing The answers to the		v apply to the following duct systems:	EX AC 1 System	NR/ Common Use: Duct leakage testing shall not e NA7.5.3 required for these systems?	xceed 6% per No	Q. MANDATORY MEASURES DOCUMENTATION LOCATION  This table is used to indicate where mandatory measures are docu	mented in the plan set or construction documentation.	
			] 3,510	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		O1  Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	Yes	02 Plan sheet or construction document location M-Sheets
CA Building Energy E	Efficiency Standard	ls - 2022 Nonresidential Compliance	Repo	erated Date/Time: ort Version: 2022.0.000 ema Version: rey 20220101	Documentation Software: EnergyPro  Compliance ID: EnergyPro-2545-0125-6681	CA Building Energy Efficiency Standards - 2022 Nonresidential Complianc		Documentation Software: EnergyPro  Compliance ID: EnergyPro-2545-0125-6681
STATE OF CALIFORNIA			Sche	ma Version: rev 20220101	Report Generated: 2025-01-16 10:30:33	STATE OF CALIFORNIA	Schema Version: rev 20220101	Report Generated; 2025-01-16 10:30:33
Mechanical Syccertificate of com	<u>-                                      </u>				CALIFORNIA ENERGY COMMISSION  NRCC-MCH-E	Mechanical Systems  CERTIFICATE OF COMPLIANCE	En una	CALIFORNIA ENERGY COMMISSION  NRCC-MCH-E
Project Name:				Report Page:  Date Prepared:	(Page 6 of 9) 1/16/2025	Project Address:	Report Page:  Date Prepared:	(Page 9 of 9) 1/16/2025
L. DISTRIBUTION	(DUCTWORK a	and PIPING)				DOCUMENTATION AUTHOR'S DECLARATION STATEMENT		
				<b>Dwelling Units:</b> Total duct leakage of duct system shall or duct system to outside shall not exceed 6% per RA3		I certify that this Certificate of Compliance documentation  Documentation Author Name:	is accurate and complete.  Documentation Author Signature:	affects -
				systems?  Duct leakage testing per CMC Section 603.10.1 requestion systems?	uired for these Yes	Company: Frank Cantelmi Mechanical Engineering Address:	Signature Date:  CEA/ HERS Certification Identification (if ap	inlicable):
11 12		The scope of the project includes only			litioning system.	City/State/Zip:  RESPONSIBLE PERSON'S DECLARATION STATEMENT	Phone:	pricaviej
13 14	Yes	The space conditioning system serves	less than 5,000			I certify the following under penalty of perjury, under the laws of the State of Calife  1. The information provided on this Certificate of Compliance is true and 2. I am eligible under Division 3 of the Business and Professions Code to a		nis Certificate of Compliance (responsible designer)
15		The scope of the project includes exte	ending an existi	ing duct system, which is constructed, insulated or seale stem that is documented to have been previously seale	ed with asbestos.	<ol> <li>The energy features and performance specifications, materials, compo of Title 24, Part 1 and Part 6 of the California Code of Regulations.</li> </ol>	onents, and manufactured devices for the building design or system design id	lentified on this Certificate of Compliance conform to the requirements
16 17		and diagnostic testing in accordance v All Ductwork and plenums with pressu		s in the Reference Nonresidential Appendix NA2. s shall be constructed to Seal Class A			roval with this building permit application. ance shall be made available with the building permit(s) issued for the buildi ate of Compliance is required to be included with the documentation the bui	
18 19		All ductwork is an extension of an exis Ductwork serving individual dwelling u	<u> </u>	m		Responsible Designer Name: Company:	Responsible Designer Signature: Date Signed: 2025-01-16	uffento
20 21		< 25 ft of new or replacement space c Duct Insulation R-value	onditioning du	cts installed		Address: City/State/Zip:	License: Phone:	
22 23								= = =
CA Building Energy E	Efficiency Standard	ls - 2022 Nonresidential Compliance	Repo	erated Date/Time: ort Version: 2022.0.000 ema Version: rev 20220101	Documentation Software: EnergyPro Compliance ID: EnergyPro-2545-0125-6681 Report Generated: 2025-01-16 10:30:33	CA Building Energy Efficiency Standards - 2022 Nonresidential Complianc	Generated Date/Time: ce Report Version: 2022.0.000 Schema Version: rev 20220101	Documentation Software: EnergyPro Compliance ID: EnergyPro-2545-0125-6681 Report Generated: 2025-01-16 10:30:33
state of california Mechanical Sy	ystems				CALIFORNIA ENERGY COMMISSION	STATE OF CALIFORNIA Indoor Lighting		CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COM Project Name:				Report Page:	NRCC-MCH-E (Page 7 of 9)	CERTIFICATE OF COMPLIANCE Project Name:	Report Page:	NRCC-LTI-E (Page 2 of 7)
				Date Prepared:	1/16/2025		Date Prepared:	1/16/2025
L. DISTRIBUTION	(DUCTWORK a	and PIPING)	T	Dwelling Uniter Total dust lealers of dust vivi	not exceed 120/	C. COMPLIANCE RESULTS		
				<b>Dwelling Units:</b> Total duct leakage of duct system shall or duct system to outside shall not exceed 6% per RA3 systems?		If any cell on this table says "DOES NOT COMPLY" or "COMPLIES w	Adjusted Lighting Powe	r per 140.6(a) / 170.2(e)
		En .		Duct leakage testing per CMC Section 603.10.1 requestions?	uired for these Yes	Allowed Lighting Power per 140.66  Lighting in 01 02 03  conditioned and	04 05 06 07	08 09
11 12		The scope of the project includes only Duct system provides conditioned air		serving healthcare facilities le space for a constant volume, single zone, space-cond	litioning system.	conditioned and unconditioned spaces must not be Complete Category	Tailored ≥ Total PAF Light	ting Total Adjusted
13 14	No		ts is more than	25% of the total surface area of the entire duct system		combined for Building Category Additional	140.6(c)3 / 170.2(e)4B (+)	Conting
15 16	No	The scope of the project includes an e	existing duct sys	ing duct system, which is constructed, insulated or sealer stem that is documented to have been previously sealers in the Reference Nonresidential Appendix NA2		(+) (See Table I) (See Table I) (See Table J) (See Table J)	(-)	Adjustifierits
17		All Ductwork and plenums with pressu	ure class ratings			Conditioned 413.1 0 Unconditioned	= 413 ≥ 204 0 = ≥	= 204 COMPLIES
18 19		All ductwork is an extension of an exis	unit				Controls Complia Rated Power Reduction Complia	nce (See Table H for Details) COMPLIES nce (See Table Q for Details)
20 21		< 25 ft of new or replacement space of Duct Insulation R-value	onuluoning du	eta mataneu		D. EXCEPTIONAL CONDITIONS		
22						This table is auto-filled with uneditable comments because of select	ctions made or data entered in tables throughout the form.	
M. COOLING TOV	WERS					E. ADDITIONAL REMARKS		
This section does no	ot apply to this p	roject.				This table includes remarks made by the permit applicant to the Ad	uthority Having Jurisdiction.	
CA Building Energy E	Efficiency Standard	s - 2022 Nonresidential Compliance	Repo	erated Date/Time: ort Version: 2022.0.000 ema Version: rev 20220101	Documentation Software: EnergyPro  Compliance ID: EnergyPro-2545-0125-6681  Report Generated: 2025-01-16 10:30:33	CA Building Energy Efficiency Standards - 2022 Nonresidential Complianc	Generated Date/Time:  Report Version: 2022.0.000 Schema Version: rev 20220101	Documentation Software: EnergyPro  Compliance ID: EnergyPro-2545-0125-6682  Report Generated: 2025-01-16 10:30:33

Indoor Lighting CALIFORNIA ENERGY COMMISSION									
CERTIFICATE OF COMPLIANCE					NRCC-I				
This document is used to demonstrate compliance with requirements in 110.9, 110.12(c), 130.0, 130.1, 140.6 and 141.0(b)2 for indoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e) and 180.2(b)4 for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitory and senior living facilities.									
Project Name:		Report Page:			(Page 1				
Project Address:		Date Prepared:			1/16/2				
03 Occupancy Types Within Pro	ject (select all that apply):		06 # of Stories (Habitable Above Grade) 1						
01 Project Location (city) 02 Climate Zone			oned Floor Area (ft²)	441					
	iect (select all that apply):		05 Total Unconditioned Floor Area (ft²) 0  06 # of Stories (Habitable Above Grade) 1						
Healthcare Facility • Office									
Treattricare racinty • Office									
B. PROJECT SCOPE									
B. PROJECT SCOPE	•	annlication and are demonstrating of	ompliance using the pre	scriptive path outlined in 140	.6 / 170.2(e)				
	ystems that are within the scope of the permit ions.	application and are demonstrating to							
This table includes any lighting s 141.0(b)2 / 180.2(b)4 for alterat		Conditioned Space	ces	Unconditioned Sp	aces				
This table includes any lighting s 141.0(b)2 / 180.2(b)4 for alterat	ions.		ces 03	Unconditioned Sp	aces 05				

Total Area of Work (ft<sup>2</sup>)

Generated Date/Time: Documentation Software: EnergyPro Report Version: 2022.0.000 Schema Version: rev 20220101 Compliance ID: EnergyPro-2545-0125-6682 Report Generated: 2025-01-16 10:30:33 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance

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L	DWG. BY	
	CHK'D BY	
	DATE	1/16/2025
	JOB NO.	C24-189
ľ	FILE NO.	C24-000 T-24.DWG
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NOTHING IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT AN INSTALLATION IN VIOLATION OF APPLICABLE CODES AND/OR RESTRICTIONS. SHOULD ANY CHANGE IN THE DRAWINGS AND/OR RESTRICTIONS BE NECESSARY IN ORDER TO COMPLY WITH APPLICABLE CODES AND/OR RESTRICTIONS. SHOULD ANY CHANGE IN THE DRAWINGS AND/OR RESTRICTIONS BE NECESSARY IN ORDER TO COMPLY WITH APPLICABLE CODES AND/OR RESTRICTIONS BE NECESSARY IN ORDER TO COMPLY WITH APPLICABLE CODES AND/OR RESTRICTIONS. SHOULD ANY CHANGE IN THE DRAWINGS AND/OR RESTRICTIONS. SHOULD ANY CHANGE IN THE DRAWINGS AND/OR RESTRICTIONS BE NECESSARY IN ORDER TO COMPLY WITH APPLICABLE CODES AND/OR RESTRICTIONS. SHOULD ANY CHANGE IN THE DRAWINGS AND/OR RESTRICTIONS AND REQUIREMENTS. CONTRACTOR TO OBTAIN CLARIFICATION FROM ENGINEER OF RECORD WHERE CONFICE IN DRAWING OR DIMENSIONS ARISE PRIOR TO PROCEEDING WITH CONSTRUCTION.

#### **SYMBOLS** LIGHT FIXTURES POWER/COMM CONDUIT/WIRE MISCELLANEOUS MOTOR MOTOR SINGLE RECEPT CEILING SURFACEMOUNT ---- NEW - — - UNDERGROUND THERMOSTAT +48" A.F.F. TO TOP OF UNIT DUPLEX RECEPT WALL SURFACEMOUNT NEW POWER HOMERUN (3 HOTS & NEUT SHOWN) \_\_\_ CIRCUIT BREAKER DUPLEX-HALF SWITCHED PENDANT MOUNT ISOLATED GROUND — FUSIBLE SWITCH ISOLATED GROUND RECESSED DOWNLIGHT DOUBLE DUPLEX GROUND (E) POWER HOMERUUN WIRE LINE-CONTINUES Ø PHASE SPECIAL CONFIGURATION RECESSED WALLWASH CONDUIT STUB (W/MARKER) CLOCK VERTICAL CONDUIT RUN FLOORMOUNT 208V, 1¢ RECEPT CONDUIT SEAL CLOCK/SPEAKER COMBINATION DUPLEX-FLOOR OUTLET SURFACE FLEXIBLE CONNECTION WALL MOUNTED CLOCK GROUND FAULT CIRCUIT INTERRUPT → STRIP UON LOW VOLTAGE PUSHBUTTON SURFACEMOUNT RACEWAY TRACK LIGHT JUNCTION BOX INDICATES LINE CONTINUES FLUSHMOUNT PANEL DIRECTIONAL FLOOD CORD W/PLUG SPECIAL SYSTEM JUNCTION BOX SURFACEMOUNT PANEL DATA - J-BOX w/ **EMERGENCY FIXTURE** 3/4"C. TO ATTIC SPACE FLUSHMOUNT PANEL PHONE - J-BOX w/ POLE LIGHT SURFACEMOUNT PANEL 3/4"C. TO ATTIC SPACE PHONE & DATA - J-BOX w/ DAMPER MOTOR POLE LIGHT-DECORATIVE 3/4"C. TO ATTIC SPACE HUMIDISTAT (1)RG-6/U CABLE UPLIGHT-FLUSH IN GRADE (1)F-CONNECTOR MAGNETIC CONTACTOR SAFETY DISCONNECT COMBINATION STARTER DROP CORD RECEPT **SWITCHES** TANDEM-WIRED LAMPS ABOVE-CLGMOUNT J-BOX **\$** SPST UNDERCABINET LIGHT \$2 DPST TV OUTLET-FLOORMOUNT WALL SURFACEMOUNT LINEAR TYPE **\$3** 3-WAY 4-WAY PENDANT LINEAR TELEPHONE FLOOR OUTLET DIMMER RECESSED WALLMOUNT TIMER SWITCH DATA FLOOR OUTLET W/THERMAL OVERLOAD W/PILOT LIGHT WIRELESS ACCESS POINT IN CEILING EMERGENCY WALLPACK KEY OPERATED DUAL LEVEL SWITCHING MOUNT DEVICE ABOVE COUNTER PER ARCHITECTURAL REQUIREMENTS SWITCHLEG DESIGNATION EXIT LIGHT-CEILING OCCUPANCY SENSOR (ARROW INDICATES DIRECTION) LETTER ADJACENT INDICATES FIXTURE TYPE "E" LETTER ADJACENT INDICATES EMERGENCY FIXTURE TYPE

### **ELECTRICAL ABBREVIATIONS**

A	AMPERE	DIA	DIAMETER	GRS	GALVANIZED RIGID STEEL	N3R	NEMA 3R	SQ	SQUARE
AB	AMP BREAKER	DISC	DISCONNECT	GWS	GANG WITH SWITCH	NC	NORMALLY CLOSED	STR'G	STORAGE
ABAND	ABANDONED	DIST	DISTRIBUTION	Н	HEIGHT, HIGH	NEC	NATIONAL ELECTRICAL CODE	SURF	SURFACE
ABV	ABOVE	DPST	DOUBLE POLE SINGLE THROW	HACR	HEATING, AC & REFRIG	NEMA	NAT'L ELEC MANUFACTURER'S ASSOC	SVC	SERVICE
AC	ALTERNATING CURRENT	DW	DISHWASHER	HID	HIGH INTENSITY DISCHARGE	NIC	NOT IN CONTRACT	SW	SWITCH
AC-#	AIR CONDITIONER	EM	EMERGENCY	НО	HIGH OUTPUT	NL	NIGHT LIGHT	T	TRANSFORMER, TERMINAL
ADJ	ADJACENT	(E)	EXISTING	HOA	HAND-OFF-AUTO	NO	NORMALLY OPEN	-T-	TELEPHONE CONDUIT
AF	AMP FUSE, AMP FRAME	EA	EACH	hp	HORSEPOWER	NPF	NORMAL POWER FACTOR	TBR	TO BE REMOVED
AFF	ABOVE FINISH FLOOR	EB	ELECTRONIC BALLAST	HPF	HIGH POWER FACTOR	NTS	NOT TO SCALE	TC	TIME CLOCK
AFG	ABOVE FINISH GRADE	EC	ELECTRICAL CONTRACTOR	HPS	HIGH PRESSURE SODIUM	OC	ON CENTER	TEL	TELEPHONE
AIC	AMPERES INTERRUPTING CAPACITY	EC-#	EVAPORATIVE COOLER	IC	INTERCOM	OCP	OVERCURRENT PROTECTION	TELCO	TELEPHONE COMPANY
Al	ALUMINUM	EF-#	EXHAUST FAN	ID	IDENTIFICATION	OD	OUTSIDE DIAMETER	TS	TIME SWITCH
AS	AMP SWITCH RATING	"		IF	INSIDE FROST	ОН	OVERHEAD	TSO	TIME SWITCH OVERRIDE
ATS	AUTOMATIC TIME SWITCH	EL	EVENING LIGHT	IG	ISOLATED GROUND	OSA	OFFICE of the STATE ARCHITECT	TSP	TWISTED SHIELDED PAIR
ATS	AUTOMATIC TRANSFER SWITCH	ELEC	ELECTRICAL	J-BOX	JUNCTION BOX	OSHPD	OFFICE of STATEWIDE HEALTH	πв	TELEPHONE TERMINAL BOARD
AV	AUDIBLE/AUDIO VISUAL	EM	EMERG BATTERY BACKUP	kVA	KILOVOLTAMPS		PLANNING & DEVELOPMENT	TTC	TELEPHONE TERMINAL CABINET
AWG	AMERICAN WIRE GAGE	EMB	EMERGENCY BALLAST	kW	KILOWATT	OVLD	OVERLOAD	TX	TRANSFORMER
BFG	BELOW FINISH GRADE		EMERGENCY END. OF LINE	LC	LIGHTING CONTACTOR	Р	POLE	TYP	TYPICAL
BIL	BASIC IMPULSE LEVEL	EOL IID'T	END OF LINE	LPS	LOW PRESSURE SODIUM	PA	PUBLIC ADDRESS	TYP SIM	TYPICAL SIMILAR
BLDG	BUILDING		EQUIPMENT	LRA	LOCKED ROTOR AMPS	PB	PULLBOX	UC	UNDERCABINET, UNDERCOUNTER
С	CONDUIT	ES	ENERGY SAVING	LS	LIFE SAFETY BRANCH	PC	PULL CHAIN		UNDERGROUND
-c-	CATV CONDUIT	(EXN)	(E) IN (N) LOCATION	LT	LIGHT	PC	PHOTOCELL	UGPS	UNDERGROUND PULL SECTION
CAB'T	CABINET	(EXR)	(E) TO BE (R)	LTG	LIGHTING	ph	PHASE	UL	UNDERWRITERS LABORATORIES
CATV	CABLE TELEVISION	EXT	EXTERIOR	LV	LOW VOLTAGE	PNL	PANEL	UON	UNLESS OTHERWISE NOTED
CB	CIRCUIT BREAKER, CODE BLUE	F	FLUORESCENT	MC	MECHANICAL CONTRACTOR	POC	POINT OF CONNECTION	USA	UG SVC ALERT 800-642-24444
CBC	CA. BUILDING CODE	(F)	FUTURE	MCA	MINIMUM CKT AMPS	-PP-	POWER PRIMARY	٧	VOLT
CEC	CA. ELECTRICAL CODE	F-#	FURNACE	MCB	MAIN CIRCUIT BREAKER	-PS-	POWER SECONDARY	VA	VOLT AMPERES
	CA. ENERGY COMMISSION	FA .	FIRE ALARM	MCTB	MAIN CATV TERMINAL BOARD	(R)	RELOCATE(D)	VAC	VOLT ALTERNATING CURRENT
GF	COMPACT FLUORESCENT	FACP	FIRE ALARM CONTROL PANEL	MCTC	MAIN CATV TERMINAL CABINET			VHO	VERY HIGH OUTPUT
CFC	CALIFORNIA FIRE CODE	FAT	FIRE ALARM TERMINAL	MECH	MECHANICAL	REF	REFRIGERATOR	WP	WEATHER RESISTANT
CLG	CEILING	FAU	FORCED AIR UNIT	MFR	MANUFACTURER	REQ'D	REQUIRED		
CL	CENTER LINE	FB0	FURNISHED BY OTHERS	MFS	MAIN FUSIBLE SWITCH	RLA	RATED LOAD AMPS		
CKT	CIRCUIT	FC-#	FAN COIL	MH	METAL HALIDE	RM	ROOM		
CNT'R	CONTRACTOR	FLA	FULL LOAD AMPS	MLO	MAIN LUGS ONLY	RMC	RIGID METAL CONDUIT		
C.O.	CONDUIT ONLY (W/PULLROPE)	FLR	FLOOR	MOCP	MAXIMUM OCP	RMV	REMOVE		
COND	CONDUIT, CONDUCTOR	FLUOR	FLUORESCENT	MSB	MAIN SWITCHBOARD	RPLC	REPLACE		
CR	CRITICAL BRANCH	FS	FUSIBLE SWITCH	MT	MOUNT	RS	RAPID START		
CSFM	CALIFORNIA SFM	FVNR	FULL VOLTAGE NON-REVERSING	MT HT	MOUNTING HEIGHT	SC	SIGNAL CABINET		
CT	CURRENT TRANSFORMER	G	GROUNDING CONDUCTOR	MTS	MANUAL TRANSFER SWITCH	SCC	SHORT CKT CURRENT		
CU	COPPER	GC	GENERAL CONTRACTOR	MTTB	MAIN TELEPHONE TERMINAL BOARD	SFM	STATE FIRE MARSHAL		
CU-#	CONDENSING UNIT	GD	GARBAGE DISPOSAL	MTTC	MAIN TELEPHONE TERMINAL CABINET	SHT	SHEET		
D "	DEPTH	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	MW	MICROWAVE	SL	SLIMLINE, SWITCH LEG		

NEUTRAL (GROUNDED CONDUCTOR)

GROUND FAULT CIRCUIT INTERRUPTER N

SPEC SPECIFICATION

SPST SINGLE POLE SINGLE THROW

DIRECT CURRENT

DRINKING FOUNTAIN

## GENERAL ELECTRICAL NOTES

# **GENERAL LIGHTING PLAN NOTES**

- NIGHT LIGHT (NL) DESIGNATED LUMINARIES IN INTERIOR LOCATIONS SHALL HAVE ONE BALLAST CONTINUOUSLY ENERGIZED. LÙMÍNARIES IN EXTERIOR LOCATIONS SHALL BE AUTOMATICALLY CONTROLLED TO BE ON FROM DUSK
- LIGHTING FIXTURE LOCATIONS SHOWN ARE SCHEMATIC. REFER TO ARCHITECTURAL PLANS (REFLECTED CEILING, ELEVATIONS, ETC.) FOR EXACT LOCATIONS AND MOUNTING HEIGHTS PRIOR TO ROUGH-IN
- REFER TO ARCHITECT'S REFLECTED CEILING PLAN(S) FOR CEILING HEIGHTS, TYPES, FINISHES, ETC. IN EACH AREA. VERIFY FLANGE TYPES, TRIM KITS, STEM LENGTHS, ETC. FOR ALL FIXTURES PRIOR TO SUBMITTALS.
- CONFIRM LOCATION OF ALL DOORS SWINGS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN OF SWITCHES.
- PROVIDE UNSWITCHED HOT LEG OF ROOM LIGHTING BRANCH CIRCUIT TO EACH BATTERY POWERED EMERGENCY LIGHT AND EXIT SIGN FOR CONTINUOUS CHARGING

### GENERAL POWER PLAN NOTES

- FUSING: ALL FUSIBLE SAFETY DISCONNECT SWITCHES SHALL BE PROVIDED WITH DUAL-ELEMENT TIME DELAY TYPE FUSES SIZED AND RATED PER EQUIPMENT MANUFACTURERS' RECOMMENDATIONS. VERIFY WITH EQUIPMENT NAMEPLATE BEFORE INSTALLATION.
- INSTALL SEPARATE NEUTRALS FOR EACH BRANCH CIRCUIT SERVING ISOLATED GROUND RECEPTACLES.
- MOTOR OVERLOAD PROTECTION: WHERE REQUIRED BY NEC ARTICLE 430 PART C AND NOT SHOW ON PLAN OR PROVIDED INTEGRAL WITH EQUIPMENT, PROVIDE AND INSTALL THERMAL OVERLOAD PROTECTION FOR ALL
- SPARE CONDUIT FOR RECESSED PANELS: PROVIDE (1) 3/4" SPARE CONDUIT STUB UP TO ACCESSIBLE ABOVE CEILING SPACE AND/OR ACCESSIBLE SPACE BELOW FOR EVERY (3) SPARE BREAKER SPACES AS INDICATED ON PANEL SCHEDULES.
- DEVICE LOCATIONS SHOWN ARE SCHEMATIC AND APPROXIMATE, EXACT LOCATIONS SHALL BE FIELD VERIFIED DURING ROUGH-IN WITH ARCHITECTURAL ELEVATIONS, CASEWORK SHOP DRAWINGS, FURNITURE, ETC. AND SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICT WITH OTHER EQUIPMENT.
- ELECTRICAL AND COMMUNICATIONS OUTLETS SHOWN IN THE SAME LOCATION, SHALL BE MOUNTED ON OPPOSITE SIDES OF THE SAME STUD. COORDINATE BETWEEN ELECTRICAL AND COMMUNICATIONS PLANS.

### GENERAL COMMUNICATION PLAN NOTES

- SIGNAL AND COMMUNICATIONS SYSTEMS RACEWAYS AND BOXES: PROVIDE AND INSTALL 4" SQUARE RECESSED JUNCTION BOX WITH 1-GANG RING AND (1) 3/4" CONDUIT STUB TO ACCESSIBLE CEILING SPACE AT EACH WALL TELEPHONE (VOICE), TELEVISION AND DATA OUTLET LOCATION SHOWN ON THE PLANS UNLESS OTHERWISE NOTED. FOR EACH COMBINATION VOICE/DATA OUTLET, PROVIDE AND INSTALL (2) 3/4" CONDUIT STUBS TO ACCESSIBLE
- BEFORE CONSTRUCTION, COORDINATE AND VERIFY ALL DATA AND TELEPHONE LOCATIONS WITH OWNER OR ARCHITECT
- TELEPHONE WIRING: EACH TELEPHONE OUTLET LOCATION SHOWN ON THE PLANS SHALL HAVE A 4 PAIR, 24 GAUGE CONTINUOUS CABLE, CATEGORY 6 (BERK-TEK LANMARK SERIES OR APPROVED EQUAL), HOMERUN TO THE TELEPHONE TERMINAL BOARD "TTB" TERMINATE AT OUTLET LOCATION WITH OWNER APPROVED JACK, VERIFY LOCATIONS WITH OWNER OR ARCHITECT PRIOR TO CONSTRUCTION.
- TELEVISION PREWIRE: EACH TELEVISION OUTLET SHOWN ON THE PLANS SHALL HAVE AN RG6U (WITH QUAD SHIELD) COAXIAL CABLE HOMERUN PREWIRED TO THE CATV TERMINAL BOARD LABEL AND LEAVE ADEQUATE SLACK FOR UTILITY CONNECTION.
- VOICE/DATA WIRING: EACH VOICE/DATA OUTLET LOCATION SHOWN ON THE PLANS SHALL HAVE (4) 4 PAIR, 24 GAUGE, CATEGORY 6, UTP CABLES (BERK-TEK LANMARK SERIES OR APPROVED EQUAL) HOMERUN TO THE TELEPHONE TERMINAL BOARD. TERMINATE AT OUTLET LOCATION WITH OWNER APPROVED JACK. VERIFY SYSTEM
- DEVICE LOCATIONS SHOWN ARE SCHEMATIC AND APPROXIMATE. EXACT LOCATIONS SHALL BE FIELD VERIFIED DURING ROUGH-IN WITH ARCHITECTURAL ELEVATIONS, CASEWORK SHOP DRAWINGS, FURNITURE, ETC. AND SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICT WITH OTHER EQUIPMENT.
- ELECTRICAL AND COMMUNICATIONS OUTLETS SHOWN IN THE SAME LOCATION, SHALL BE MOUNTED ON OPPOSITE SIDES OF THE SAME STUD. COORDINATE BETWEEN ELECTRICAL AND COMMUNICATIONS PLANS.

### ROOF PLAN NOTES

- ALL EQUIPMENT SHOWN ABOVE ROOF IS NEMA 3R.
- VERIFY EXACT EQUIPMENT LOCATIONS AND POINTS OF CONNECTION WITH MECHANICAL CONTRACTOR PRIOR TO
- CONDUIT SHOWN IS ROUTED IN CEILING SPACE BELOW ROOF DECK
- NO ROOF MOUNT CONDUIT IS ALLOWED UNLESS OTHERWISE NOTED
- FUSE DISCONNECT SWITCHES PER EQUIPMENT NAMEPLATE RATING
- ALL ROOF PENETRATIONS SHALL BE MADE WITH ROOF JACKS, SEAL ALL PENETRATIONS PER THE WATER PROOF MEMBRANE MANUFACTURER'S RECOMMENDATIONS.

### **GENERAL NOTES**

- 1. CODE COMPLIANCE ALL WORK SHALL CONFORM TO AND BE PERFORMED IN ACCORDANCE WITH CODES. STANDARDS AND ORDINANCES AS SET FORTH BY THE AUTHORITIES HAVING JURISDICTION AND THEIR LATEST ADOPTED EDITIONS (IN EFFECT AT TIME OF BUILDING PERMIT APPLICATION) OF THE FOLLOWING PUBLICATIONS:
- A. CALIFORNIA CODE OF REGULATIONS TITLE 24; CURRENT CALIFORNIA ELECTRICAL CODE, NEC , NFPA, CURRENT CALIFORNIA BUILDING CODE UNIFORM BUILDING CODE, AMERICANS WITH DISABILITIES ACT (ADA), AND OTHER LOCAL AMENDMENTS AS APPLICABLE.
- 2. SAFETY: THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL EQUIPMENT IN A SAFE AND RESPONSIBLE MANNER. KEEP DEAD FRONT EQUIPMENT IN PLACE WHILE EQUIPMENT IS ENERGIZED. CONDUCT ALL CONSTRUCTION OPERATIONS IN A SAFE MANNER FOR EMPLOYEES AS WELL AS OTHER WORKPERSONS OR ANYONE VISITING THE JOB SITE. PROVIDE BARRIERS, FLAGS, TAPE, ETC. AS REQUIRED FOR SAFETY. THE CONTRACTOR SHALL HOLD ALL PARTIES HARMLESS OF NEGLIGENT SAFETY PRACTICES, WHICH MAY CAUSE INJURY TO OTHERS ON OR NEAR THE JOB SITE.
- 3. FIRE RATED ASSEMBLIES SHALL MAINTAIN RATINGS AS SPECIFIED IN THE CALIFORNIA BUILDING CODE CHAPTER 7. CONTRACTOR SHALL PROVIDE AND INSTALL PHYSICAL ENCLOSURE AROUND FIXTURES, PANELS, ETC. AS REQUIRED. ALL ASSEMBLIES TO BE PENETRATED SHALL BE INSTALLED WITH APPLICABLE THROUGH-PENETRATION FIRESTOP SYSTEM AS DETERMINED BY UL CLASSIFICATION. BEFORE CONSTRUCTION, VERIFY AND COMPLY WITH REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION.
- 4. MOUNTING HEIGHTS IN INCHES ABOVE FINISH FLOOR SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

FROM BOTTOM OF PLATE +15" MIN. & FROM TOP OF BOX 44" MAX. OVER THE OBSTRUCTIONS AFF: RECEPTACLES, TELEPHONE, TV & DATA OUTLETS FROM TOP OF SWITCH PLATE +48" MAX. AFF: LIGHT SWITCHES FROM TOP OF BOX +48" AFF: T-STATS FROM TOGGLE +48" MAX. AFF: FIRE ALARM MANUAL PULL STATIONS FROM THE LOWER OF +80" AFF OR 6" BELOW CEILING: FIRE ALARM VISUALS & AUDIBLE DEVICES UNLESS MOUNTED ON CEILING

BEFORE ROUGH-IN, VERIFY ALL MOUNTING HEIGHTS AND EXACT LOCATIONS FOR ALL EQUIPMENT ELECTRICAL CONNECTIONS, STUB-UPS, RECEPTACLES, OUTLETS, ETC. WITH ARCHITECT OR OWNER. PLACE DEVICES LOCATED ABOVE COUNTERS, SHELVING, ETC. AND BATHROOMS SO AS NOT TO CONFLICT WITH EDGES OF WAINSCOTING, COUNTER SPLASH, SHELVING, ETC. ARCHITECTURAL SHEETS SHALL GOVERN.

- 5. LABEL PANELS, CABINETS, BACKBOARDS, MAIN DEVICES, SAFETY SWITCHES, CONTACTORS AND OTHER SPECIFICALLY DESIGNATED EQUIPMENT SHOWN ON PLANS. USE ENGRAVED LAMINATED PLASTIC NAMEPLATES ATTACHED BY SCREWS OR RIVETS. FOR FEEDERS, NEATLY AND INDELIBLY LABEL CONDUIT DESTINATIONS ON BOTH VISIBLE ENDS OF CONDUIT RUNS WHERE CONDUITS TERMINATE AT DESIGNATED ENCLOSURES, STRUCTURES OR EQUIPMENT (INCLUDING PULL AND SPLICE BOXES)
- 6. EQUIPMENT ANCHORAGE: BRACE OR ANCHOR ALL ELECTRICAL EQUIPMENT TO RESIST A HORIZONTAL FORCE ACTING IN ANY DIRECTION. USE THE FOLLOWING CRITERIA FOR DETERMINING:
- A. FIXED EQUIPMENT ON GRADE 30% OF OPERATING WEIGHT. B. FIXED EQUIPMENT ON STRUCTURE 45% OF OPERATING WEIGHT.
- C. EMERGENCY POWER EQUIPMENT ON GRADE 40% OF OPERATING WEIGHT. D. EMERGENCY POWER EQUIPMENT ON STRUCTURE 60% OF OPERATING WEIGHT.

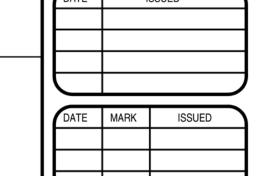
EXCEPTIONS: FOR FLEXIBLY MOUNTED EQUIPMENT USE 4X THE ABOVE VALUES: FOR SIMULTANEOUS VERTICAL FORCE, USE 1X HORIZONTAL FORCE. SEE STRUCTURAL PLANS FOR ANCHORAGE DETAILS AND WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS, THE FIELD INSTALLATION SHALL BE SUBJECT TO the approval of the structural engineer and the field representative of the authority having JURISDICTION. SHOULD SAID APPROVAL BE WITHHELD, ELECTRICAL CONTRACTOR SHALL, AT NO EXTRA COST TO THE OWNER, MODIFY AND JUSTIFY INSTALLATION AS REQUIRED TO GAIN APPROVAL.

### MECHANICAL SYSTEMS

- 1. MECHANICAL UNIT CONDUITS: TO PREVENT DAMAGE DUE TO VIBRATION, BOTH POWER AND CONTROL WIRING CONDUITS FEEDING EXTERIOR MECHANICAL UNITS SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR WITH LIQUID TIGHT FLEXIBLE TYPE AT FINAL CONNECTION
- 2. NOT USED
- 3. T-STAT J-BOXES: PROVIDE AND INSTALL 4" SQUARE JUNCTION BOX WITH 1-GANG RING AND 1/2" CONDUIT TO ACCESSIBLE CEILING SPACE ABOVE AT EACH THERMOSTAT LOCATION
- 4. EXHAUST FANS SHALL BE PROVIDED & INSTALLED BY MECHANICAL CONTRACTOR WITH WIRING CONNECTIONS MADE BY ELECTRICAL CONTRACTOR
- 5. MECHANICAL EQUIPMENT CONTROLS: MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOW VOLTAGE WIRE AND CONNECTIONS (BELOW 120 VOLT) TO AND FROM ALL MECHANICAL CONTROL DEVICES. ALL LOW VOLTAGE CONTROL WIRE SHALL BE IN CONDUIT, UNLESS OTHERWISE NOTED.
- 6. PULL ROPES: ANY RACEWAY WITHOUT CABLE OR WIRE SHALL BE INSTALLED WITH MINIMUM 200 POUND TEST PULL LINE AND LARGER IF REQUIRED BY SERVING UTILITY COMPANY. ANY NEW OR EXISTING COMMUNICATION OR SIGNAL RACEWAY ROUTED BETWEEN BUILDINGS, SIGNAL CABINETS, AND/OR SIGNAL CLOSETS WITH FUTURE CAPACITY SHALL BE INSTALLED WITH MINIMUM 200 POUND TEST PULL LINE AS WELL AS THE CALLED FOR CABLE
- 7. ELECTRICAL SWITCHES: WHERE A REACH IS UNOBSTRUCTED. CONTROLS AND SWITCHES INTENDED TO BE USED BY THE OCCUPANT OF THE ROOM OR AREA TO CONTROL LIGHTING AND RECEPTACLE OUTLETS, APPLIANCES OR COOLING, HEATING AND VENTILATING EQUIPMENT, SHALL BE LOCATED 48 INCHES MAXIMUM (44 INCHES MAXIMUM WHERE A REACH IS OBSTRUCTED), MEASURED TO THE TOP OF THE OUTLET BOX; AND 15 INCHES MINIMUM, MEASURED TO THE BOTTOM OF THE OUTLET BOX, ABOVE THE FINISH FLOOR OR GROUND.
- 8. ELECTRICAL RECEPTACLE OUTLETS: WHERE A REACH IS UNOBSTRUCTED, ELECTRICAL RECEPTACLE OUTLETS ON BRANCH CIRCUITS OF 30 AMPERES OR LESS AND COMMUNICATION SYSTEM RECEPTACLES SHALL BE LOCATED 48 INCHES MAXIMUM (44 INCHES MAXIMUM WHERE A REACH IS OBSTRUCTED). MEASURED TO THE TOP OF THE OUTLET BOX; AND 15 INCHES MINIMUM, MEASURED TO THE BOTTOM OF THE OUTLET BOX, ABOVE THE FINISH

### CODES

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC) (PART 1, TITLE 24, CCR)
2022 CALIFORNIA BUILDING CODE (CBC), VOLUMES 1 & 2 (PART 2, TITLE 24, CCR)
2022 CALIFORNIA ELECTRICAL CODE (PART 3, TITLE 24, CCR)
2022 CALIFORNIA MECHANICAL CODE (CMC) (PART 4, TITLE 24, CCR)
2022 CALIFORNIA PLUMBING CODE (CPC) (PART 5, TITLE 24, CCR)
2022 CALIFORNIA ENERGY CODE (PART 6, TITLE 24, CCR)
2022 CALIFORNIA FIRE CODE (CFC) (PART 9, TITLE 24, CCR)
2022 CALIFORNIA EXISTING BUILDING CODE (CEBC) (PART 10, TITLE 24, CCR)
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (PART 11, TITLE 24, CCR)
TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHALL REGULATIONS.



DWG. BY	A.F.
CHK'D BY	K.M.
DATE	2/11/2025
JOB NO.	C24-189
FILE NO.	C24-189 ELECT.DWG



NOTHING IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT AN INSTALLATION IN VIOLATION OF REQUIREMENTS, THE CONTRACTOR TO OBTAIN ORDER TO COMPLY WITH APPLICABLE CODES AND/OR RESTRICTIONS BE NECESSARY IN ORDER TO COMPLY WITH APPLICABLE CODES AND/OR RESTRICTIONS. SHOULD ANY CHANGE IN THE DRAWINGS AND/OR RESTRICTIONS BE NECESSARY IN ORDER TO COMPLY WITH APPLICABLE CODES AND/OR RESTRICTIONS. SHOULD ANY CHANGE IN THE CONTRACTOR SHOULD ANY CHANGE CLARIFICATION FROM ENGINEER OF RECORD WHERE CONFLICTS IN DRAWING OR DIMENSIONS ARISE PRIOR TO PROCEEDING WITH CONSTRUCTION.

3.01 GENERAL

A. PROVIDE A SET OF INSTALLATION AND MAINTENANCE INSTRUCTIONS WITH EACH POWERWALL. INSTRUCTIONS ARE TO BE EASILY IDENTIFIED AND AFFIXED WITHIN THE INCOMING, OR MAIN SECTION OD THE LINE-UP 4.04 WARRANTY MANUFACTURER SHALL WARRANT ALL EQUIPMENT TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF ENERGIZATION OR EIGHTEEN MONTHS FROM THE DATE OF SHIPMENT, WHICHEVER COMES FIRST

A. GENERAL REQUIREMENTS INCLUDE THOSE SPECIFIED BY MANUFACTURER AND AS SPECIFIED HEREIN. THE WORK INCLUDES THE PROVISION OF NEW

POWERWALLS FOR INDOOR USE AND SERVICE ENTRANCE SECTION (SES) FOR OUTDOOR USE, IF NEEDED

A.A. PROVIDE LAMINATED PLASTIC NAMEPLATES FOR EACH DEVICE TO IDENTIFY ITS FUNCTION, AND WHERE APPLICABLE, ITS POSITION EACH NAMEPLATE WILL BE LAMINATED PLASTIC: # THICK MELAMINE BLACK PLASTIC WITH WHITE CORE. EACH LABEL SHALL HAVE A MATTE FINISH AND SQUARE CUT CORNERS, ACCURATELY ALIGN LETTERING AND ENGRAVE INTO THE WHITE CORE, THESE NAMEPLATES SHALL BE A MINIMUM OF 1" BY 2 1" WITH 1" HIGH (MINIMUM) LETTERING B.A. THE ONLY ACCEPTABLE MANUFACTURER OF PANELBOARDS AND MAIN DISTRIBUTION PANELS CONTAINED IN THE ELECTRICAL POWERWALL AND SES (IF

REQUIRED) IS ABB/GENERAL ELECTRIC CO. "RELIAGEAR NEXT" FOR SES, MDP AND GE A-SERIES TYPE AE OR AQ PANEL BOARDS INTER-CONNECTIONS BETWEEN ALL LIGHT FIXTURES (NOT TO INCLUDE HOMERUN FROM FIXTURE OR DEVICE TO PANELBOARD, WHICH MUST BE RIGID). SHORT CIRCUIT CURRENT RATING: MAIN DISTRIBUTION PANEL (MDP) OF THE POWERWALL SHALL BE FULLY RATED AT A SHORT CIRCUIT RATING OF 65KAIC UNLESS NOTED OTHERWISE ON PLAN. PANELBOARD LP SHALL BE SERIES RATED BACK TO MDP AT 65KAIC PER MANUFACTURERS SPECIFICATIONS UNLESS NOTED OTHERWISE. APPROPRIATE LABELS SHALL BE INCLUDED IN THE EQUIPMENT. PANELBOARDS P1, P2, AND RP ON T1 CONDARY SHALL BE 10KAIC UNLESS OTHERWISE NOTED ON PRINTS THE POWERWALL SHALL CONSIST OF REQUIRED MDP, TRANSFORMER, PABELBOARDS AND THE LIGHTING CONTRACTORS. THE MDP SECTION SHALL BE GE "RELIAGEAR NEXT" FEEDING A GROUP MOUNTED DISTRUBUTION SECTION. THE MEDP SECTION SHALL BE FRON ACCESSIBLE. EACH SECTION SHALL contain grounding lugs per service requirements, the panel sections shall include pre=wired distribution panelboards. transformer shall be factory pre—wired on both primary and secondary. Lighting contactors (BB type A16) pre—wired to

APPROPRIATE CIRCUIT BREAKER. THE POWERWALL MANUFACTURER SHALL BE RESPONSIBLE FOR INTEGRATING AND PRE-WIRING LIGHTING CONTROLS \* THE POWERWALL SHALL BE DESIGNED, BUILD AND TESTED IN ACCORDANCE WITH NEWA PB-2 AND UNDERWRITERS LABORATORIES UL 891 and the latest requirements of the national electrical code, all sections and devices shall be ul 891 listed and labeled.

\* THE POWERWALL DIMENSIONS BE A COMPLETE SELF-SUPPORTING STRUCTURE WITH 90" HIGH VERTICAL SECTIONS BOLTED TOGETHER TO FORM THE REQUIRED ARRANGEMENT, SEE ATTACHED DRAWING, ALL SECTIONS SHALL BE REAR ALIGNED AND MAY BE ROLLED, MOVED, OR LIFTED INTO THE INSTALLATION POSITION AND BOLTED DIRECTLY TO THE FLOOR WITHOUT THE ADDITION OF FLOOR SILLS. ALL SECTIONS HALL CONTAIN APPROPRIATE PLATES FOR LIFTING, THE STRUCTURE FRAME SHALL BE 12 GAUGE GALVANIZED PER UL 891. THIS enclosure shall have a front accessible "lift—off" hinged galvanized door, distribution panelboards shall be indimidually ACCESSIBLE BY "LIFT-OFF" HINGED DOORS WITH HANDLES. THE CONTRACTOR SHALL FURNISH AND COMPLETELY INSTALL THE POWERWALL AS SHOWN ON THE DRAWINGS AND DESCRIBED IN THESE SPECIFICATIONS. BUS BARS SHALL BE COPPER HAVING A CROSS-SECTIONS CURRENT DENSITY NOT EXCEEDING 1000 AMPERES PER SQUARE INCH OF ALUMINUM HAVING A CROSS-SECTION DENSITY NOT EXCEEDING 750 AMPERES PER SQUARE INCH. THEY SHALL BE MOUNTED ON SUPPORTS OF HIGH IMPACT NON-TRACKING INSULATING MATERIAL, AND SHALL BE BRACED TO WITHSTAND THE MECHANICAL FOR EXERTED DURING SHORT CIRCUIT CONDITIONS. SHORT CIRCUIT BRACING SHALL BE 65,000 AMPERES RMS SYMMETRICAL MINIMUM. A GROUND BUS IS secured to each vertical section. A—B—C type bus arrangement (left—to—right, top—to—bottom, front—to—rear) shall be USED THROUGHOUT TO ASSURE CONVENIENT AND SAFE TESTING AND MAINTENANCE

ALL LUGS SHALL BE UL LISTED FOR USE WITH COPPER OR ALUMINUM CABLE WITH AMPACITY PASED ON 75 DEGREE C CONDUCTOR TEMPERATURE RATINGS. POWERWALL CURRENT RATINGS INCLUDING DEVICES SHALL BE BASED ON OPERATION IN A 25 DEGREE C ROOM

MBIENT, PER UL 891

SHORT CIRCUIT CURRENT RATING: SES SHALL BE FULLY RATED AT A SHORT CIRCUIT RATING OF 65KAIC PAINTING. PENETRATIONS MADE AFTER WALL FINISH IS APPLIED MUST BE AS SMALL AS POSSIBLE AND PROVIDED WITH ESCUTCHEONS, ONE ON EACH THE MAIN CIRCUIT BREAKER SHALL BE 80% RATED CURRENT AND BRACED FOR 65,000 KAIC UNLESS OTHERWISE NOTED. THE UTILITY REQUIREMENTS WILL BE AS PER PRINTS

D.A. THE SES SHALL BE DESIGNED, BUILT AND TESTED IN ACCORDANCE WITH NEWA PB-2 AND UNDERWRITERS LABORATORIES IL 891 AND THE LATEST

FORCE EXERTED DURING SHORT CIRCUIT CONDITIONS. SHORT CIRCUIT BRACING SHALL BE 65,000 AMPERES RMS SYMMETRICAL E.B. A GROUND BUS IS SECURED TO EACH VERTICAL SECTION E.C. A-B-C TYPE BUS ARRANGEMENT (LEFT-TO-RIGHT, TOP-TO-BOTTOM, FRONT-TO-REAR) SHALL BE USED THROUGHOUT TO ASSURE CONVENIENT AND

SAGE TESTING AND MAINTENANCE. ALL LUGS SHALL BE UL LISTED FOR USE WITH COPPER OR ALUMINUM CABLE WITH AMPACITY BASED ON 75 DEGREE C CONDUCTOR TEMPERATURE RATINGS

EXAMINE AREA TO RECEIVE SWITCHBOARD TO PROVIDE ADEQUATE CLEARANCE FOR POWERWALL INSTALLATION
CHECK THAT CONCRETE PADS ARE LEVEL, AND FREE FROM IRREGULARITIES
THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR AND MANUFACTURER IN WRITING AS TO ANY DEFICIENCIES FOUND AND SHALL WAIT FOR SAID DEFICIENCIES TO BE CORRECTED. THE ELECTRICAL CONTRACTOR SHALL NOTE ON THE BILL OF LADIN (RECEIVING DOCUMENT) ANY SHORTAGES AND/OR DAMAGED MATERIAL SIGNED BY THE DRIVER TO BE USED IN CONJUNCTION WITH CLAIM FILING. THE COMMENCING OF WORK IN any area indicates acceptance of existing conditions and any future deficiencies found are the responsibility of the electric/ INSTALLATION:

B.A. INSTALL POWERWALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, NEC, AND LOCAL CODES

EACH AT MINIMUM TEST VOLTAGE OF 1,000 VOLTS DC. MINIMUM ACCEPTABLE VALUE FOR INSULATION RESISTANCE IS 1 MEGOHM. CAUTION, DO NOT

APPLY TEST VOLTAGE TO ELECTRONIC DEVICES. C.C. CHECK TIGHTNESS OF ACCESSIBLE BOLTED BUS JOINTS USING CALIBRATED TORQUE WRENCH PER MANUFACTURER'S RECOMMENDED TORQUE VALUES

 FIELD QUALITY CONTROL C.A. INSPECT COMPLETED INSTALLATION FOR PHYSICAL DAMAGE, PROPER ALIGNMENT, ANCHORAGE, AND GROUNDING C.B. MEASURE, USING A MEGGER, THE INSULATION RESISTANCE OF EAACH BUS SECTION PHASE TO PHASE, AND PHASE TO GROUND FOR ONE MINUTE

4.06 OUTDOOR UTILITY SES SERVICE ENTRANCE (IF REQUIRED)

THE ONLY ACCEPTABLE MANUFACTURER OF THE SES IS GENERAL ELECTRIC CO. "RELIAGEAR NEXT"

REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE. ALL SECTIONS AND DEVICES SHALL BE UL 891 LISTED AND LABELED. THIS UNIT WILL BE NEMA E.A. BUS BARS SHALL BE TIN PLATED ALUMINUM HAVING A CROSS-SECTION CURRENT DENSITY NOT EXCEEDING 750 AMPERES PER SQUARE INCH. THEY SHALL BE MOUNTED ON SUPPORTS OF HIGH IMPACT NON=TRACKING INSULATING MATERIAL, AND SHALL BE BRACED TO WITHSTAND THE MECHANICAL

4.07 EXECUTIONS

4.01 GENERAL REQUIREMENTS

4.05 PRODUCTS

INSTALLATION AND MAINTENANCE MANUALS

PROTECTION AND MOUNTED ON SHIPPING SKID

ND COMMUNICATION SYSTEMS IN A SIMILAR MANNER.

GROUNDING CONDUCTOR SHALL BE PROVIDED IN EACH CABLE.

ABOVE GROUND: USE RIGID STEEL, IMC OR EMT

WET LOCATIONS: RIGID STEEL OR IMC ONLY

FINAL CONNECTIONS TO VIBRATING EQUIPMENT

FINAL CONNECTIONS TO MOTOR

3.03 INSTALLATION OF CONDUITS

CONDUIT SUPPORTS:

CONDUIT PENETRATION

BELOW CEILING.

3.04 CONNECTIONS TO EQUIPMENT

3.05 INSTALLATION OF WIRES

3.06 WIRE COLOR CODE

VOLTAGE 120/208V

B.B. VOLTAGE 277/408V \* PHASE A

\* PHASE B

PHASE C

\* NEUTRAL

3.07 IDENTIFICATION

3.08 GROUNDING

\* ISOLATED GROUND

THE INSULATION OF CONDUCTORS SHALL BE:

LARGER CONDUCTORS ARE SHOWN ON DRAWINGS.

SHALL NOT PROTRUDE ABOVE THE FLOOR.

REPAIR ALL SURFACE, ETC., AS REQUIRED

3.10 ELECTRICAL ACCEPTANCE TESTING

nd openings are protected.

G. FIRESTOP ALL PENETRATIONS

MAINTAIN AREA AS EXISTING

INSULATION TES

\* ISOLATED GROUND GREEN WITH ORANGE STRIPE

CODES AND REGULATIONS. CONDUIT SHALL BE RIGID STEEL, IMC OR EMT A FOLLOWS:

DRY LOCATIONS AND NOT SUBJECT TO MECHANICAL INJURY EMT, IMC OR RIGID STEEL CONDUIT

IN WALLS (FOR LIGHT SWITCHES AND 120C POWER RECEPTACLES AND HVAC CONTROL EQUIPMENT

THE CONNECTION TO OUTDOOR EQUIPMENT MUST BE WEATHERPROOF, I.E. LIQUID—TIGHT OR SEAL—TIGHT

DUCT SHAFT MUST BE COORDINATED WITH MECHANICAL WORK TO AVOID ANY CONFLICT

FLEXIBLE METALLIC CONDUIT OR MC CABLE MUST BE THE SAME SIZE AS THE RIGID CONDUIT TO WHICH IT IS CONNECTED

LOCATIONS SUBJECT TO MECHANICAL INJURY: RIGID STEEL OR IMC ONLY

JSE FLEXIBLE CONDUITS OR MX CABLE IN THE FOLLOWING APPLICATIONS:

FINAL CONNECTIONS INTO AND OUT OF THE TRANSFORMER

BUILDING WEATHERPROOF INTEGRITY MUST BE PRESERVED

EQUIPMENT NAMEPLATE CURRENT RATINGS PRIOR TO INSTALLATION

E. PROVIDE BRADY WIRE MARKERS WHERE NUMBER OF CONDUCTORS IN A BOX EXCEEDS FOUR

FURNISH 120V POWER TO EACH CONTROL PANEL AND TIME SWITCH REQUIRING A SOURCE OF POWER TO OPERATE.

SPLICES IN WIRES AND CABLES SHALL BE MADE UTILIZING MATERIALS AND METHODS DESCRIBED HEREIN BEFORE.

FINAL CONNECTIONS WHERE RIGID CONDUIT IS NOT PRACTICAL.

Underground: Use rigid steel at last transition to above ground

L ELECTRICAL SYSTEM LAYOUTS INDICATED ON THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION AND WORK OF OTHER TRADES WILL PERMIT. GOVERN EXACT ROUTING OF CABLE AND WIRING AND THE LOCATIONS OF OUTLETS BY THE STRUCTURE AND EQUIPMENT SERVED. TAKE ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS.

CONSULT ALL OTHER DRAWINGS, VERIFY SCALES AND REPORT ANY DIMENSIONAL DISCREPANCIES OR OTHER CONFLICTS WITH OWNER BEFORE SUBMITTING

THAT PANEL. CONTINUE SUCH CIRCUITS TO THE PANEL AS THOUGH THE ROUTES WERE COMPLETELY INDICATED. TERMINATE HOMERUNS OF SIGNAL, ALARM,

C. ALL HOME RUNS TO PANELBOARDS ARE INDICATED AS STARTING FROM THE OUTLET NEAREST THE PANEL AND CONTINUING IN THE GENERAL DIRECTION OF

AVOID CUTTING AND BORING HOLES THROUGH STRUCTURE OR STRUCTURAL MEMBERS WHEREVER POSSIBLE. OBTAIN PRIOR APPROVAL OF OWNER AND

FURNISH AND INSTALL ALL NECESSARY HARDWARE, HANGERS, BLOCKING, BRACKETS, BRACING, RUNNERS, ETC. REQUIRED FOR EQUIPMENT SPECIFIED UNDER THIS SECTION. INSTALLATION SHALL MEET SEISMIC 4 REQUIREMENTS.
PROVIDE NECESSARY BACKING REQUIRED TO INSURE RIGID MOUNTING OF OUTLET BOXES.

Factory—Fabricated, pre—assembled ul labeled type "NMC" and type "ac" cables as preferred wiring method for branch circuits. A

B. WHEN CONDITIONS DETERMINED IN "A" ABOVE ARE NOT MET, INSTALL ALL WIRING IN RACEWAY, OR USE MC CABLE WHERE APPROVED BY ALL APPLICABLE

MINIMUM SIZE OF CONDUIT SHALL BE 🗗 FOR INDIVIDUAL LIGHTING FIXTURE CONNECTIONS OR TO INDIVIDUAL LIGHT SWITCHES IF APPROVED BY ALL

BE A ₹ MINIMUM, UNLESS OTHERWISE NOTED ON DRAWINGS. ALL IN/UNDER FLOOR CONDUITS SHALL BE ₹ MINIMUM SIZE.

USE OF RIGID NO METALLIC CONDUIT IS LIMITED TO OUTDOOR, UNDERGROUND UP TO THE LAST PULLBOX PRIOR TO ENTERING OR TRANSITIONING TO ABOVE GROUND. TRANSITION SHALL BE TAPED WRAPPED RIGID STEEL CONDUIT.

AA. RUN ALL CONDUITS CONCEALED UNLESS OTHERWISE NOTED OR SOWN. RUN ALL CONDUIT PARALLEL TO OR AT RIGHT ANGLES TO CENTER LINES OF

B.A. SUPPORT CONDUITS WITH UNDERWRITER'S LABORATORIES LISTED STEEL CONDUIT SUPPORTS AT INTERVALS REQUIRED BY THE NATIONAL ELECTRIC

B.C. AVOID ATTACHING CONDUIT TO FAN PLENUMS. WHEN IT IS NECESSARY TO SUPPORT CONDUIT FROM FAN PLENUM, PROVIDE A LENGTH OF FLEXIBLE CONDUIT BETWEEN PORTION ATTACHED FAN PLENUM AND PORTION ATTACHED TO THE BUILDING TO MINIMIZE TRANSMISSION OF VIBRATION TO THE

C.B. PENETRATING ROOF OR EXTERIOR WALL: AVOID PENETRATING ROOF OR EXTERIOR WALL WHERE POSSIBLE/ WHERE PENETRATIONS ARE NECESSARY,

PENETRATING NON-FIRE RATED DRY WALL: CONDUIT SLEEVES ARE NOT REQUIRED. PENETRATIONS MUST BE SEALED WITH PLASTER PRIOR TO

PENETRATING SUSPENDED CEILING" CUT HOLE AS SMALL AS POSSIBLE TO PERMIT CONDUIT PENETRATION. PROVIDE ESCUTCHEON FOR EACH CONDUIT

FURNISH AND INSTALL REQUIRED POWER SUPPLY CONDUIT AND WIRING TO ALL EQUIPMENT IDENTIFIED IN THE CONSTRUCTION DOCUMENTS.
FURNISH AND INSTALL A DISCONNECT SWITCH IMMEDIATELY AHEAD OF AND ADJACENT TO EACH MAGNETIC MOTOR STARTER OR APPLIANCE UNLESS

THE MOTOR APPLIANCE IS LOCATED ADJACENT AND WITHIN SIGHT OF THE SERVING PANELBOARD, CIRCUIT BREAKER OR SWITCH, VERIFY ALL

INSTALL ALL ROUGH—IN WORK FOR EQUIPMENT FROM APPROVED SHOP DRAWINGS TO SUIT THE SPECIFIC REQUIREMENTS OF THE EQUIPMENT FURNISH AND INSTALL MANUAL THERMAL PROTECTION FOR ALL MOTORS NOT INTEGRALLY EQUIPPED WITH THERMAL PROTECTION.

. PULL NO WIRE INTO ANY PORTION OF THE CONDUIT SYSTEM UNTIL ALL CONSTRUCTION WORK WHICH MIGHT DAMAGE THE WIRE HAS BEEN COMPLETED . INSTALL ALL WIRE CONTINUOUS FROM OUTLET TO OUTLET OR TERMINAL TO TERMINAL. SPLICES IN CABLES WHEN REQUIRED SHALL BE MADE IN

MAKE ALL GROUND, NEUTRAL AND LINE CONNECTIONS TO RECEPTACLE AND WIRING DEVICE TERMINALS AS RECOMMENDED BY MANUFACTURER. PROVIDE

A. COLOR CODING SHALL BE CONTINUOUS FOR WIRE #12 THROUGH #10 AWG. PHASE CONDUCTORS #8 AND LARGER AND CONDUCTORS OF ANY SIZE IN

A. PROVIDE NAMEPLATES FOR ALL ELECTRICAL EQUIPMENT AND ALL SIMILAR EQUIPMENT AND DEVICES. NAMEPLATES SHALL BE SCREWED (NO ADHESIVES)

C. EACH PANELBOARD SHALL CONTAIN A METAL-FRAMED CIRCUIT DIRECTORY INSIDE COVER, WITH PLASTIC PROTECTOR
PANELBOARD SCHEDULE: AFTER COMPLETION OF WORK, PROVIDE ELECTRONIC UPDATED PANELBOARD SCHEDULES FOR ALL PANELBOARDS. USE EXCEL FORMAT.

CONDUCTOR IN EACH RACEWAY SYSTEM IN ADDITION TO CONDUCTORS SHOWN, EQUIPMENT GROUND CONDUCTOR SHALL BE ELECTRICALLY AND

GROUNDING CONDUCTORS SHALL BE IDENTIFIED WITH GREEN INSULATION. WHERE GREEN INSULATION IS NOT AVAILABLE ON LARGER SIZES, BLACK INSULATION

A. EXISTING ELECTRICAL WIRING WHICH WILL NOT BE MADE OBSOLETE AND WHICH WILL BE DISTRIBUTED DUE TO CONSTRUCTION CHANGES REQUIRED BY THIS

OUTLETS FROM WHICH FIXTURES, SWITCHES, RECEPTACLES, AND/OR OTHER ELECTRICAL DEVICES ARE MOVED AND WHICH AR NOT REPLACED OR REUSED

where conduits extending through floors are to be abandoned, the contractor shall cut and cap or plug conduit, and the conduit

WHERE EXISTING CONDUIT IS TO BE ABONDED, THE CONDUIT SHALL BE REMOVED IF IT IS EXPOSED, IN A CRAWL SPACE OR IN ACCESSIBLE CEILING. WHERE IT IS IMPOSSIBLE TO REMOVE THE CONDUIT, IT SHALL BE CUT OFF AND CAPPED OR PLUGGED REMOVE ALL EXISTING WIRING NOT REUSED OR REQUIRED TO MAINTAIN CONTINUITY TO CIRCUITS TO REMAIN THE CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF ALL EXISTING SURFACES REQUIRING PATCHING, PLASTERING,

PAINTING, AND/OR OTHER REPAIRS DUE TO THE INSTALLATION OF ELECTRICAL WORK UNDER THE TERMS OF THIS SPECIFICATION. CLOSE ALL OPENINGS,

L PERFORM PHYSICAL AND VISUAL INSPECTION OF ELECTRICAL INSTALLATION. ENSURE THAT ALL WIRES HAVE BEEN TERMINATED, CONNECTIONS TIGHTENED,

VERIFY THAT MOTORS ARE ROTATING IN THE CORRECT DIRECTION. VERIFY THAT EACH PHASE LOAD IS WITHIN 20% OF EACH OTHER. ADJUST AS

SOURCE AND LOAD. A) 600V CONDUCTORS SIZE # AND LARGER. B) MCC, SWITCHGEAR, SWITCHBOARD, AND PANELBOARD BUSS BARS. C) MOTOR

SUBMIT TEST RESULTS TO ENGINEER. EQUIPMENT THAT HAVE FAILED TESTS SHALL BE REPLACED WITHIN 2 WEEKS AND PRIOR TO PROJECT COMPLETION

C.A. PERFORM MEGGER AND RECORD INSULATION RESISTANCE, 1000 VOLT MEGGER FOR ONE MINUTE. MAKE TESTS WITH CIRCUITS ISOLATED FROM

MAINTAIN CIRCUIT CONTINUITY TO AREAS OUTSIDE OF THIS WORK. PROVIDE NEW CONDUIT AND CONDUCTORS AS REQUIRED TO MAINTAIN CONTINUITY AND

SHALL BE REMOVED, WHERE OUTLETS BOXES, ETC. ARE COMPLETELY REMOVED, THE CONTRACTOR SHALL CUT OFF CONDUITS AND REMOVE WIRING

CONTRACT SHALL BE RESTORED TO OPERATING CONDITION. WHERE CONSTRUCTION CHANGES REWIRE, OUTLETS AND CONDUIT RUNS SHALL BE RELOCATED. EXTEND CONDUITS AND PILL IN NEW WIRING OR INSTALL JUNCTION BOXES AND SPLICE IN NEW WIRING.

SHALL BE USED AND SUITABLY IDENTIFIED WITH GREEN TAPE AT EACH JUNCTION BOX OR DEVICE ENCLOSURE

VOLTAGE READINGS SHALL BE TAKEN AT VARIOUS TEST POINTS, OR AT THE DISCRETION OF THE AHJ

VOLTAGE, PHASE, AND AMP READINGS SHALL BE TAKEN ON ALL THREE PHASES UNDER LOAD CONDITIONS

ENGRAVED BAKELITE OR PHOTO-ETCHED METALLIC NAMEPLATE IDENTIFICATION SHOWING PANEL DESIGNATION, VOLTAGE AND PHASE IN MINIMUM 🐉 HIGH

PROVIDE DEMO LABELS ON ALL LIGHTING SWITCHES AND CONVENIENCE AND SPECIAL PURPOSE RECEPTACLES TO SHOW PANEL AND CIRCUIT NUMBER TO

ELECTRICAL SERVICE AND SEPARATELY DERIVED ALTERNATING CURRENT SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH CEC 2019, ARTICLE 250 GROUND NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT ENCLOSURES, FRAMES, CONDUCTOR RACEWAYS OR CABLE TRAYS TO PROVIDE A LOW IMPEDANCE PATH FOR LINE-TO-GROUND FAULT CURRENT AND TO BAND ALL NON-CURRENT CARRYING METAL PARTS TOGETHER. PROVIDE GROUND

MECHANICALLY CONTINUOUS FROM THE ELECTRICAL CIRCUIT SOURCE TO THE EQUIPMENT TO BE GROUNDED. SIZE GROUND CONDUCTORS PER CEC UNLESS

CABLE ASSEMBLIES MAY HAVE COLORED PHASING TAPE AT TERMINATIONS.
WHERE MORE THAN ON NOMINAL VOLTAGE SYSTEM EXISTS IN A BUILDING, EACH UNDERGROUNDED SYSTEM CONDUCTOR SHALL BE IDENTIFIED BY PHASE

AND SYSTEM. THE MEANS OF IDENTIFICATION SHALL BE PERMANENTLY POSTED AT EACH BRANCH CIRCUIT PANELBOARD. THE PHASE COLOR CODING OF

ground jumper from outlet box to ground terminal of devices when the device is not approved for grounding through the mounting

HANDHOLES, PULL BOXES, OR JUNCTION BOXES. MAKE BRANCH CIRCUIT SPLICES IN OUTLET BOXES WITH 8" OF CORRECTLY COLOR-CODED TAILS LEFT IN

COLUMNS AND BEAMS. CONDUITS ABOVE CEILINGS SHALL NOT OBSTRUCT REMOVAL OF CEILING TILES, LIGHTING FIXTURES, AIR DIFFUSERS, ETC. CONDUITS SHALL NOT CROSS ANY DUCT SHAFT OR AREA DESIGNATED AS FUTURE DUCT SHAFT HORIZONTALLY. CONDUIT RISERS WHEN ALLOWED IN

CODE. WIRES OR SHEET METAL STRIPS ARE NOT ACCEPTABLE FOR CONDUIT SUPPORT. USE CONDUIT HANGERS FOR ALL CONDUITS NOT DIRECTLY FASTENED TO STRUCTURE AND FOR ALL MULTIPLE CONDUIT RUNS. DO NOT ATTACH ANY CONDUIT TO MECHANICAL DUCTS OR PIPES

INDIVIDUAL CONDUITS 1 AND 3 SIZE FOR LIGHTING MAY BE SUPPORTED FROM CEILING SUPPORT WIRES WITH CADDY CLIPS ONLY IF ACCEPTABLE TO LOCAL CODE. ONLY ONE CONDUIT IS PERMITTED TO BE ATTACHED TO ANY CEILING SUPPORT WIRE. HANG SUCH CONDUIT SO AS NOT TO AFFECT

PENETRATING DIRE RATED FLOOR OR WALL: INSTALL CONDUIT IN CONDUIT SLEEVE OR FRAMED OPENING. SEAL PENETRATION WITH FIRE RETARDANT

applicable codes. Minimum size for all other locations shall be 🐉 if hvac control wiring is required to be run in conduit, it shall

ELECTRICAL INSTALLATION IN PUBLIC LOCATIONS SHALL BE ACCESSIBLE AND INSTALLATION SHALL COMPLY WITH AMERICAN DISABILITIES ACT (ADA)

A. IN CONCEALED SPACES WHERE THE USE OF "ROMEX" AND "BX" WIRING IS PERMITTED BY ALL APPLICABLE CODES AND REGULATIONS, PROVIDE

Conform to all structural requirements when cutting or boring the structure is necessary and permitted

REQUIREMENTS. ELECTRICAL INSTALLATION SHALL COMPLY WITH APPLICABLE CODES AS LISTED IN CONSTRUCTION DOCUMENTS.

2.01 MATERIAL APPROVAL A. ALL MATERIALS MUST BE NEW AND BEAR UNDERWRITER'S LABORATORIES LABEL. MATERIALS THAT ARE NOT COVERED BY UL TESTING STANDARDS shall be tested and approved by an independent testing laboratory or a governmental agency. Material not in accordance with hese specifications may be rejected either before or after installation.

FOR LEED QUALIFIED BUILDINGS, PRODUCTS SHALL BE MANUFACTURED WITHIN 100 MILES OF PROJECT SITE. 2.02 BASIC ELECTRICAL MATERIALS

ELECTRICAL METALLIC TUBING (EMT): ECLTRO-GALVANIZED RIGID NON METALLIC CONDUIT (PVC SCHEDULE 40)

wireway: code gauge steel, with knockouts and hinfed cover, corrosion resistant gray baked enamel finish AND COUPLINGS SHALL BE STEEL SETSCREW TYPE INDOORS AND STEEL COMPRESSION TYPE IN WET LOCATIONS AND OUTDOORS . WIRES AND CABLES B.A. FOR POWER AND LIGHTING SYSTEM 600V OR LESS

\* MINIMUM SIZE #12 AWG \* #12 AND #10 AWG SOLID COPPER \* #8 AWG AND LARGER SHALL BE STRANDED COPPER INSULATION TYPE:

METAL CLAD (MC) CABLES: \* conductors are made from class b copper. Sizes 14 AWG, 12AWG, and 10 AWG MAY BE either solid or stranded, 8 AWG and larger are stranded. The conductors are constructed with thhin/thwn or xhhw—2 insulation rated for 900C dry OR WET AT 600 VOLTS MAX. A COPPER GROUNDING CONDUCTOR IS CABLED WITH THE PHASE CONDUCTORS, THE GROUND CONDUCTOR HAS A GREEN INSULATION. AN INTERLOCKED ALUMINUM ARMOR IS HELICALLY FORMED AROUND THE CONDUCTOR.

ASSEMBLY AND IS 45% LIGHTER THAN STEEL MC CABLE B.B. FOR SIGNAL AND COMMUNICATIONS CIRCUIT SPECIAL CABLES SHALL BE AS SPECIFIED ON DRAWINGS. B.B.B. CONDUCTORS FOR GENERAL USE SHALL BE STRANDED COPPER, #16 AWG MINIMUM, WITH THWN INSULATION FOR UNDERGROUND

ACCEPTABLE PRODUCTS: GENERAL ELECTRIC, ANACONDA, OKONITE, PARANITE OR TRIANGLE PRODUCTS CONFORMING OR EXCEEDING APPLICABLE

Interior use and cast metal type fs or FD with matching screw covers for exterior and exposed interior locations (gasketed IN DAMP OR WET LOCATIONS) C.B. JUNCTION BOXES (FLOOR BOX NOT INCLUDED) SHALL BE SAME AS OUTLET BOXES UP TO 42 CU. IN. AND CODE—GAUGE STEEL IN LARGER SIZES WITH SURFACE OR FLUSH-TYPE SCREW-MOUNTED TRIMCOVERS, BOTH BOXES AND COVERS INHIBITOR-PRIMED AND PAINTED INSIDE OUT.

4-11/16" SQUARE X 2-1/8" DEEP WITH SINGLE-GANG RING AND SIERRA #S-754N SPLIT PLATE BUSHING UNDERGROUND AND SITE JUNCTION BOXES, HANDHOLES, AND MANHOLES SHALL BE MADE UP OF PRECAST CONCRETE WITH TRAFFIC RATED STEEL COVERS. EXTENSIONS SHALL BE PROVIDED AS NECESSARY TO MAIN REQUIRED COVERAGE FOR DUCT BANKS. PROVIDE 10" X 17" (MIN) FOR PULLBOXES, 36" X 60" (MIN) FOR HANDHOLES, AND 6' X 8' X 6' (MIN) FOR MANHOLES

WIRING DEVICES AND PLATES WIRING DEVICES AND PLATES SHALL BE LISTED FOR SPECIFIC USE ALL POWER RECEPTACLES AND SWITCHES FOR GENERAL PURPOSE CIRCUITS SHALL BE NEMA SPECIFICATION GRADE, RATED AS FOLLOWS:

A. GENERAL PURPOSE RECEPTACLES: NEMA 5-15R OR 5-20R LAB BENCH RECEPTACLES: NEMA 5-20R

D.C.A. IN MECHANICAL AND ELECTRICAL EQUIPMENT ROOMS, ILLUMINATED LIGHT SWITCHES SHALL BE PROVIDED. ALL GENERAL PURPOSE TWENTY (20) A, 125/250 V RECEPTACLES AND 120/277 V SWITCHES SHALL CONFORM TO NEMA WD-1 SPECIFICATIONS UNLESS OTHERWISE INDICATED, WIRING DEVICES AND COVER PLATES SHALL BE FURNISHED AND INSTALLED IN COLOR TO MATCH FINISH SURFACE WHERE IT IS LOCATED ON, I.E, DARK BROWN, BEIGE, WHITE OR STAINLESS STEEL.

A. OUTLETS SERVED FROM AN EMERGENCY POWER SYSTEM SHALL BE RED

OUTLETS SERVED FROM AN ISOLATED GROUND SHALL BE ORANGE WITH ISOLATED GROUND (TRIANGULAR) MARKING FOR INDMIDUAL CONDUIT RUNS NOT DIRECTLY FASTENED TO THE STRUCTURE, USE ROD HANGERS MANUFACTURED BY CADDY, UNISTRUT OR POWERSTRUT. FOR MULTIPLE CONDUIT RUNS, USE UNISTRUT OR POWERSTRUT TRAPEZE TYPE CONDUIT SUPPORT DESIGNED FOR MAXIMUM DEFLECTION NOT GREATER

L UNLESS OTHERWISE NOTED, ACCEPTABLE MANUFACTURERS ARE CUTLER HAMMER, SQUARE D, SIEMENS, GENERAL ELECTRIC, OR APPROVED EQUAL. electrical equipment are based on the following LIGHTING AND APPLIANCE PANELBOARDS — SQUARE D NG AND NQOD

OF COLD—ROLLED STEEL WITH CONCEALED HINGES AND FLUSH CATCH AND LOCK, ALL PANELS SHALL BE KEYED ALIKE, PANELS LOCATED adjacent to each other shall have identically sized enclosure and trims, minimum panel width shall be 20", finish exposed PART WITH ONE COAT OF PRIMER AND ONE COAT OF LIGHT FREY ENAMEL SUITABLE FOR OVER PAINTING IN FIELD IF DESIRED.
BUS BARS: PROVIDE GROUND BLOCK WITH FULL COMPLEMENT OF TERMINALS IN ADDITION TO INSULATED NEUTRAL BUS. FUTURE BREAKER PACES SHALL HAVE COMPLETE PROVISION INCLUDING BUSSES AND CONNECTING HARDWARE.

\* Provide Multi-Pole Units with Common trip element. iii. Circuit Breakers used on "on-off" control of fluorescent LIGHTING (PANELBOARD SWITCHING) SHALL BE UNDERWRITERS' LABORATORIES LISTED AND MARKED "SWD"

B. IDENTIFICATION PROVIDE SCREWED-ON (NO ADHESIVES\_ BAKELITE OR PHOTOOETCHED METALLIC NAMEPLATE IDENTIFICATION ON OUTSIDE OF EACH Panel showing panel designation, voltage and phase in minimum 🖁 High Letters. Each panel shall contain a metal—framed circuit

indicated, and specified Herein. B. ENCLOSURE SHALL BE FABRICATED OF COLD ROLLED STEEL FOR NEMA 1 AND GALVANNEALED STEEL OR EQUIVALENT RUST—RESISTANT STEEL FOR NEMA 3R. INDOOR TYPE ENCLOSURES SHALL HAVE A FLUSH FRONT, WITH FINISH TO BE AS SELECTED BY ARCHITECT. WHEN USED, OUTDOOR TYPE ir enclosures shall have a hasp to secure the cover. A directory label shall be provided with circuits identified as indicated on

CURRENT RATINGS AMPERE RMS SYMMETRICAL SHORT CIRCUIT RATINGS SHALL BE COORDINATED WITH PG&E D. CIRCUIT BREAKERS SHALL BE SQUARE D TYPE OO (PLUG-ON) THERMAL MAGNETIC TRIP OR APPROVED EQUAL, WITH AN INTEGRAL CROSSBAR TO ENSURE SIMULTANEOUS OPENING OF ALL POLES IN MULTI-POLE CIRCUIT BREAKERS. CIRCUIT BREAKERS SHALL HAVE AN OVERCENTER, TRIPFREE, TOGGLE-TYPE OPERATING MECHANISM WITH QUICK-MAKE, QUICK-BREAK ACTION AND POSITIVE HANDLE INDICATION. HANDLES SHALL HAVE ON, OFF, "tripped" positions. In addition, trip indication shall include a visi—trip indicator appearing 1 the window of the circuit breaker CASE (THROUGH 125 AMPERES). CIRCUIT BREAKERS SHALL BE UL LISTED IN ACCORDANCE WITH UL STANDARD 489 WITH CURRENT RATINGS AS NOTED ON THE PLANS. INTERRUPTING RATINGS SHALL BE SELECTED TO PROVIDE THE REQUIRED LOAD CENTER SHORT CIRCUIT CURRENT RATING.

MANUFACTURERS: PANELBOARDS SHALL BE GENERAL ELECTRIC TYPE "AQ" OR TYPE "AE" OR EQUIVALENT PRODUCTS OF WESTINGHOUSE, SQUARE-D OR

2.05 SERVICE ENTRANCE EQUIPMENT

FRAMEWORK SHALL BE STEEL, SECURED TOGETHER TO SUPPORT ALL COVER PLATES, BUSSING, AND COMPONENT DEVICES DURING SHIPMENT AND INSTALLATION. ALL COVERS SHALL HAVE UTILITY SEALING PROVISIONS WHERE REQUIRED BY THE UTILITY THE ENTIRE SERVICE ENTRANCE EQUIPMENT SHALL BE SUITABLE FOR OPERATION AT THE SPECIFIED AVAILABLE FAULT CURRENT. THE EQUIPMENT

SEALING PROVISIONS. THE METERING COMPARTMENTS SHALL MEET EUSERC STANDARDS, OR THE APPLICABLE UTILITIES STANDARDS.

THE MAIN DISCONNECT SHALL BE CIRCUIT BREAKER. EQUIPMENT GROUND FAULT SHALL BE PROVIDED WHEN REQUIRED PER THE NATIONAL

OR EUSERC APPROVED TEST BLOCK. THE METER SOCKET SHALL PLUG ON TO A VERTICAL BUS ASSEMBLY ON THE LINE SIDE AND BE CABLED FROM THE LOAD SIDE OF THE METER SOCKET TO THE LINE SIDE OF THE TENANT MAIN DISCONI h. Branch devices — circuit breakers shall be common trop for simultaneous opening of all poles, breakers shall have a

A. FOR POLYPHASE MOTORS: MAGNETIC STARTER OR COMBINATION MOTOR CIRCUIT PROTECTOR AND MAGNETIC STARTER, WITH 3-LEG OVERLOAD PROTECTION. PROVIDE TWO INTERLOCK CONTACTS OF THE INTERCHANGEABLE OPEN—CLOSE TYPE. PROVIDE HAND—OFF—AUTOMATIC SELECTOR SWITCH, MOTOR RUNNING PILOT LIGHT AND RESET BUTTON IN COVER. CIRCUITS 300V AND OVER SHALL BE PROVIDED WITH 120V CONTROL TRANSFORMERS. B. STARTERS FOR FRACTIONAL HORSEPOWER 120V MOTORS SHALL BE MANUAL TYPE UNLESS SHOWN OTHERWISE, EQUIPPED WITH BUILT—IN OVERLOAD

ACCEPTABLE MANUFACTURERS: GENERAL ELECTRIC, SQUARE D OR WESTINGHOUSE. 2.08 LOW VOLTAGE DRY TYPE DISTRIBUTION TRANSFORMERS

SOUND LEVELS SHALL BE WARRANTED BY THE MANUFACTURER NOT TO EXCEED THE FOLLOWING: 15 TO 50KVA-45DB: 51 TO 150HVA-50DB: 151 TO 300KVA-55DB.

END OF SECTION

TESTING SHALL BE PER NEMA ACCEPTANCE STANDARDS

PERFORM PHASE ROTATION, CONTINUITY TEST, AND PHASE BALANCE

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DWG. BY CHK'D BY DATE 2/11/2025 C24-189 JOB NO. FILE NO. C24-189 ELECT.DV



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1.01 SCOPE OF WORK

1.02 REGULATORY REQUIREMENT

FURNISH AND INSTALL ALL MATERIALS AND EQUIPMENT AND PROVIDE ALL LABOR, TOOLS, TRANSPORTATION, SUPERINTENDENCE AND SERVICES REQUIRED AND NECESSARY TO COMPLETE THE WORK SHOWN PM THE DRAWINGS AND/OR SPECIFIED HEREIN. ALSO INCLUDE ALL OTHER WORK AND MISCELLANEOUS ITEMS, NOT SPECIFICALLY MENTIONED, BUT REASONABLY INFERRED FOR A COMPLETE INSTALLATION INCLUDING ALL ACCESSORIES AND APPURTENANCES REQUIRED FOR TESTING THE SYSTEM. IT IS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS THAT ALL SYSTEMS BE COMPLETE, AND READY FOR

A. CODE COMPLIANCE IS MANDATORY. NOTHING IN THESE DRAWINGS AND SPECIFICATIONS PERMITS WORK NOT CONFORMING TO THESE CODES. WHERE WORK IS SHOWN TO EXCEED MINIMUM CODE REQUIREMENTS, COMPLY WITH DRAWINGS AND SPECIFICATIONS. ALL WORK AND MATERIALS SHALL COMPLY WITH THE LATEST RULES, CODES AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING: 1. OCCUPATIONAL SAFETY AND HEALTH ACT STANDARDS (OSHA)

2. NFPA \$70: NATIONAL ELECTRIC CODE (NEC) 3. NFPA #101: LIFE SAFETY CODE 4. STATE FIRE MARSHALL 5. LOCAL UTILITY COMPANIES

B. LANDLORD REQUIREMENTS 1.03 LICENSE, FEES, AND PERMITS ELECTRICAL CONTRACTOR SHALL PAY FOR ALL LICENSES, PERMITS AND INSPECTION FEES REQUIRED BY THE AUTHORITY HAVING JURISDICTION AND SHALL vrrange for all required inspections

1.04 SAFETY AND INDEMNITY THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE HOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF WORK. THIS REQUIREMENTS WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. NO ACT, SERVICE, DRAWING REVIEW OR CONSTRUCTION REVIEW BY THE OWNER, THE ENGINEERS OR THEIR CONSULTANTS, IS INTENDED TO INCLUDE REVIEW OF THE

ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON, OR NEAR THE CONSTRUCTION SITE.

A. ALL DRAWINGS AND ALL DIVISIONS OF THESE SPECIFICATIONS SHALL BE CONSIDERED AS A WHOLE AND WORK OF THIS DIVISION SHOWN ANYWHERE THEREIN SHALL BE FURNISHED UNDER THIS DIVISION. DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF EQUIPMENT AND WIRING. MOST DIRECT ROUTING OF CONDUITS AND WIRING IS NOT ASSURED. EXACT REQUIREMENTS SHALL BE GOVERNED BY CONDUITIONS OF THE JOB. CONSULT ALL OTHER DRAWINGS IN PREPARATION OF THE BID. EXTRA LENGTHS OF WIRING OR ADDITION OF FULL OR JUNCTIONS BOXES, ETC., NECESSITATE BY SUCH CONDITIONS SHALL BE INCLUDED IN THE BID

1.06 CONDITIONS AT SITE A. VISIT SITE OF THE WORK, COMPARE IT WITH THE DRAWINGS AND SPECIFICATIONS AS TO THE CONDITIONS UNDER WHICH WORK IS TO BE PREFORMED, ASCERTAIN AND CHECK ALL CONDITIONS AND ELEVATIONS AND TAKE ALL MEASUREMENTS WHICH MAY AFFECT THE WORK. NO ALLOWANCE SHALL SUBSEQUENTLY BE MADE FOR ANY EXTRA EXPENSE OR CLAIMS DUE TO FAILURE OR NEGLECT UNDER THIS REQUIREMENT TO MAKE SUCH EXAMINATION, INCLUDING EXAMINATION OF RESTRICTED WORKING CONDITIONS OR SUCH OTHER DIFFICULTIES VISUALLY OBSERVED DURING SITE VISIT. CONTRACTOR IS RESPONSIBLE FOR BECOMING COMPLETELY FAMILLAR WITH THE ARCHITECTURAL AND STRUCTURAL CONDITIONS AND LIMITATIONS WHICH WILL EXIST IN THE BUILDING AND TO PROVIDE ALL LABOR, TOOLS, AND MATERIALS REQUIRED TO PRODUCE A COMPLETELY CONCEALED INSTALLATION AS INDICATED ON THE PLANS, SPECIFICATIONS, AND REQUIRED BY THE CODE.

1.07 WORKMANSHIP AND CONTRACTOR'S QUALIFICATIONS A. ONLY QUALITY WORKMANSHIP WILL BE ACCEPTED. HAPHAZARD OR POOR INSTALLATION WILL BE CAUSE FOR REJECTION OF WORK.

1.08 SUBMITTALS A. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ENGINEER WITH SUBMITTAL PACKAGES FOR REVIEW FOR ALL EQUIPMENT SPECIFIED ON THESE DRAWINGS. CONTRACTOR IS ONLY PERMITTED TO PURCHASE SPECIFIED EQUIPMENT FOLLOWING RECEIPT OF REVIEWED SUBMITTALS IN COMPLIANCE WITH ALL OF ENGINEER'S COMMENTS. IF CONTRACTOR PURCHASES ANY SPECIFIED EQUIPMENT WITHOUT SUBMITTING A SUBMITTAL AND RECEIVING ENGINEER COMMENTS, THEN CONTRACTOR IS TAKING SOLE RESPONSIBILITY FOR THE ACCURACY OF PURCHASED EQUIPMENT AND IS SOLELY RESPONSIBLE FOR REPLACING SAID EQUIPMENT IF IMPROPERLY FURNISHED.

B. SUBMITTALS, UNLESS OTHERWISE NOTED, SHALL BE A SINGLE PACKAGE OF SIX (6) COPIES SUBMITTED TO OWNER FOR REVIEW. WORK SHALL NOT COMMENCE UNLESS SUBMITTALS HAVE BEEN APPROVED. SUBMIT CUTSHEETS, MATERIAL DATA, AND SHOP DRAWINGS, AS NOTED BELOW. FOR PREVIEW WITHIN FIFTEEN (15) DAYS AFTER AWARD OF CONTRACT SUBMITTALS REQUIRED AS FOLLOWS: C.A. BASIC ELECTRICAL MATERIALS INCLUDING BUT NOT LIMITED TO

WIRING DEVICES - RECEPTACLES, SWITCHES, FACEPLATES WIRES, CONNECTORS, TAPES, SPLICES, TERMINATIONS, AND ACCESSORIES RACEWAYS AND ACCESSORIES

DEVICE IDENTIFICATION C.B. ELECTRICAL EQUIPMENT

S. SPARE PARTS

POWER DISTRIBUTION EQUIPMENT - PANELBOARDS, SWITCHBOARDS, DISCONNECT SWITCHES, CIRCUIT BREAKERS, TRANSFORMERS, ators, inverters, ups, power distribution units, etc. SERVICE ENTRANCE EQUIPMENT - BUS DUCT, TERMINATION CANS, METERED SWITCHBOARDS, ETC. C.C. LIGHTING LIGHT FIXTURES AND SUPPORT DEVICES

LAMPS AND BALLASTS - INCLUDE BALLASTS CERTIFICATION. BALLAST SHALL HAVE LOCAL DISCONNECTS. POLES CONTROLS - OCCUPANCY SENSORS, PHOTOCELL, LIGHTING CONTACTORS, LIGHTING CONTROL PANELS, DIMMERS, ETC. FOR PROJECTS THAT ARE SUBJECT TO CALIFORNIA ENERGY CODES, PROVIDE SUBMITTALS CONFIRMING THAT PRODUCTS SUBMITTED MEET THE REQUIRED MANDATORY MEASURES AS WELL AS MEETS MAXIMUM STATED ENERGY CONSUMPTION SHOWN IN TITLE 24 CALCULATIONS

C.D. SUBMIT COMPLETE TEST REPORTS AND ANALYSIS FOR REVIEW WITHIN FIFTEEN (15) DAYS AFTER TESTING FOR LEED PROJECTS, SUBMIT LEED COMPLIANCE FORMS AT VARIOUS STAGES OF THE PROJECTS, OR AS REQUESTED SUBMIT TITLE 24 COMPLIANCE FORMS AT VARIOUS STAGES OF THE PROJECTS, OR AS REQUESTED SUBMIT VERIFIED PUNCHLIST TWO (2) WEEKS AFTER ISSUANCE DATE. INDICATE PUNCHLIST ITEMS THAT HAVE BEEN COMPLETED BY CONTRACTOR. INCLUDE DATE FOR REPUNCH

1.09 SUBSTITUTIONS A. ONE OR MORE MAKES OF MATERIALS OR METHODS MAY HAVE BEEN SPECIFIED TO ESTABLISH THE STANDARD OF QUALITY, WORKMANSHIP, FINISH, AND DESIGN REQUIRED, BUT OTHER MATERIALS OR METHODS EQUAL OR BETTER IN QUALITY, WORKMANSHIP, FINISH, DESIGN, AND GUARANTEED PERFORMANCE, MAY BE SUBMITTED FOR REVIEW AND APPROVAL AS SUBSTITUTION. ALL SUBSTITUTIONS ARE SUBJECT TO GUARANTEED PERFORMANCE, MAY BE SUBMITTED FOR REVIEW AND APPROVAL AS SUBSTITUTION. ALL SUBSTITUTIONS ARE SUBJECT TO REVIEW AND APPROVAL BY ARCHITECT,

SUBSTITUTIONS SHALL BE REQUESTED IN A WRITTEN FORM AND SHALL BE ACCOMPANIED WITH A SIGNED STATEMENT THAT PROPOSED SUBSTITUTION IS EQUAL, OR BETTER THAN SPECIFIED. ADDITIONAL DOCUMENTATION TO SUBSTANTIATED PROPOSED SUBSTITUTION MAY BE REQUIRED BY OWNER, ARCHITECT, AND ENGINEER, CONTRACTOR SHALL SUBMIT AS DIRECTED. CONTRACTOR SHALL ACCOMPANY REQUEST FOR SUBSTITUTION LETTER WITH A COMPLETED CSI SUBSTITUTION FORM INCLUDING THE COMPARISON FOR

COSTS AND SCHEDUL A WRITTEN SIGNED STATEMENT FROM THE GENERAL CONTRACTOR SHALL ACCOMPANY SUBSTITUTION REQUEST FORM ASSURING THAT HE HAS VERIFIED DIMENSIONS WITH PROJECT CONDITIONS AND HAS COORDINATED WITH OTHER TRADES. SUBSTITUTION DOES NOT AFFECT

D.B. HE SHALL PAY AND BURDEN THE COSTS FOR CHANGES TO THE PROJECT INCLUDING RE-DESIGN, RE-ENGINEERING AND REVIEW OF substitution. Only one (1) engineering review time is allowed for each product substitution. Contractor shall be responsible for additional review time and shall pay architect and engineer's time at their professional rate schedule HE HAS CONFIRMED THAT THE PROPOSED SUBSTITUTION WILL HAVE NO ADVERSE AFFECT ON OTHER TRADES, THE CONSTRUCTION SCHEDULE, OR SPECIFIED WARRANTY REQUIREMENTS HE HAS CONFIRMED THAT MAINTENANCE AND SERVICE PARTS WILL BE LOCALLY AVAILABLE FOR THE PROPOSED SUBSTITUTION

COST SAVINGS RESULTING FROM SUBSTITUTION SHALL BE RETURNED TO THE CONTRACT OR THE OWNER IF THE SUBSTITUTION IS PERMITTED.

NO WORK INVOLVING MATERIALS SUBMITTED FOR SUBSTITUTION SHALL PROCEED UNTIL WRITTEN ACCEPTANCE IS RECEIVED FROM THE OWNER. THE OWNER IS THE FINAL JUDGE OF ACCEPTABILITY OF PREFERRED SUBSTITUTIONS. 1.10 COORDINATION A. COORDINATE WORK WITH OTHER TRADES TO AVOID CONFLICT AND TO PROVIDE CONFLICT AND TO PROVIDE CORRECT ROUGH—IN AND CONNECTION FOR EQUIPMENT FURNISHED UNDER OTHER TRADES THAT REQUIRE ELECTRICAL CONNECTIONS. INFORM CONTRACTORS OF OTHER TRADES OF THE EQUIRED ACCESS TO AND CLEARANCES AROUND ELECTRICAL EQUIPMENT TO MAINTAIN SERVICEABILITY AND CODE COMPLIANCE. FERIFY EQUIPMENT DIMENSIONS AND REQUIREMENTS WITH PROVISIONS SPECIFIED UNDER THIS SECTION. CHECK ACTUAL JOB CONDITIONS BEFORE

CATING WORK. REPORT NECESSARY CHANGES IN TIME TO PREVENT NEEDLESS WORK. CHANGES OR ADDITIONS, SUBJECT TO ADDITIO compensation, which are made without written authorization and an agreed price, shall be at the contractor's risk and expense 1.11 CUTTING AND PATCHING A. ALL CUTTING AND PATCHING REQUIRED FOR WORK OF THIS DECISION IS INCLUDED HEREIN. COORDINATION WITH GENERAL CONTRACTOR AND OTHER TRADES IS IMPERATIVE. CONTRACTOR SHALL BEAR THE RESPONSIBILITY FOR AND THE ADDED EXPENSE OF ADJUSTING FOR IMPROPER HOLES, SUPPORTS, ETC

1.12 ACCEPTANCE OF DEMONSTRATION A. UPON COMPLETION OF THE WORK, AT A TIME TO BE DESIGNATED BY THE OWNER, THE CONTRACTOR SHALL DEMONSTRATE FOR THE OWNER THE OPERATION OF THE ELECTRICAL INSTALLATION, INCLUDING ANY AND ALL SPECIAL ITEMS INSTALLED BY HIM OR INSTALLED UNDER HIS SUPERVISION PROPERLY SET LIGHTING CONTROL PANELS, AUTOMATIC TIME SWITCHES, ETC. TO PERFORM SWITCHING OPERATIONS IN ACCORDANCE WITH SCHEDULES PROVIDED BY THE OWNER'S REPRESENTATIVE, AND DEMONSTRATE (USING THE MANUFACTURER'S OPERATING INSTRUCTIONS) HOW TO OVERRIDE AND/OR TEST TIME SWITCHES PROGRAMMING

A. MAINTAIN ONE SET OF CLEAN WORKING DRAWINGS AT THE JOB SITE AND ENTER DAILY SUCH "AS-BUILT" INFORMATION AS FEEDER AND SERVICE ROUTES, PULL BOX LOCATIONS AND CHANGES IN LAYOUT OR ARRANGEMENT WHICH OCCUR DURING CONSTRUCTION. DELIVER COMPLETED "RED LINE AS-BUILTS" DRAWINGS TO THE OWNER B. SUBMIT TO THE OWNER;S REPRESENTATIVE A SET OF "AS BUILT" DRAWINGS IN VELLUM AND CAD FILE. AS BUILT COMMENTS SHALL BE WRITTEN IN A LEGIBLE MANNER IN THE SAME STYLE AS THE CONTRACT DOCUMENTS. ALSO SUBMIT THREE COPIES OF DATA SHEETS OR OTHER CURRENT

MANUFACTURERS' PUBLICATIONS FOR EACH ITEM OF ELECTRICAL EQUIPMENT FURNISHED FOR THE PROJECT INCLUDING AT LEAST THIS DATA: TECHNICAL DESCRIPTION AND REPLACEABLE PARTS LIST PHYSICAL DESCRIPTION AND INSTALLATION INSTRUCTIONS

USER'S MANUAL AND OPERATING INSTRUCTIONS B.D. MANUFACTURER'S WARRANTY 1.14 CLEAN-UP

1.13 RECORD DRAWINGS AND EQUIPMENT DATA

A. RID THE PREMISES OF SCRAP MATERIALS, TRASH AND DEBRIS BOTH DURING CONSTRUCTION AND AT COMPLETION OF THE PROJECT. LEAVE THE BUILDING AND SURROUNDING AREA IN A CLEAN AND ORDERLY CONDITION. GUARANTEE THE INSTALLATION FREE FROM DEFECTS OF WORKMANSHIP AND MATERIALS FOR A PERIOD OF ON YEAR AFTER DATE OF CERTIFICATION

OF FINAL PAYMENT AND PROMPTLY REMEDY ANY DEFECTS DEVELOPING DURING THIS PERIOD, WITHOUT CHARGE 1.16 TEMPORARY SERVICES PROVIDE ADEQUATE AND SAFE TEMPORARY ELECTRICAL POWER AND LIGHTING THROUGHOUT THE CONSTRUCTION AND FINISHING OF THE PREMISES. IN ADDITION TO SPECIAL OR UNUSUAL REQUIREMENTS, PROVIDE AT LEAST THESE ITEMS: THREE (3) 20-AMP CIRCUITS FOR CONSTRUCTION POWER TOOLS. PROVIDE GFI TEMPORARY CIRCUITS WITH COVERPLATES TO MEET OSHA

THREE OR MORE LIGHT STRINGS SUSPENDED APPROXIMATELY ONE FOOT BELOW THE HEIGHT OF THE FINISH CEILING WITH LAMPS SPACED NOT MORE THAN TWELVE FEET ON CENTER. STRINGS SHALL BE RUN THE LENGTH OF THE STORE SPACE PARALLEL TO THE DEMISING WALLS, WITH ON STRING WITHIN EIGHT FEET OF EACH WALL AND ONE (OR MORE) INTERMEDIATE STRING(S) ARRANGED TO LIMIT THE SPACING BETWEEN ROWS

A.C. FLOOD LIGHTING AND TASK LIGHTING FOR PAINTING AND OTHER FINISH WORK

B. WHERE SCOPE INCLUDES THE REMOVAL OF EXTERIOR LIGHTING, CONTRACTOR SHALL PROVIDE TEMPORARY EXTERIOR LIGHTING UNTIL THE NEW EXTERIOR LIGHTING HAS BEEN ACCEPTED BY THE OWNER. TEMPORARY EXTERIOR LIGHTING SHALL COMPLY WITH IESNA STANDARDS FOR SECURITY WHERE SCOPE INCLUDES THE DISABLING OF A FIRE ALARM SYSTEM, CONTRACTOR SHALL PROVIDE A FIRE WATCH. FIRE WATCH SHALL COMPLY WITH WHEN PERMANENT ELECTRICAL SERVICE IS OPERABLE. DISCONNECT AND REMOVE FROM THE PREMISES THE MATERIALS AND EQUIPMENT USED FOR

TEMPORARY POWER AND LIGHTING. RESTORE AND REPAIR DAMAGE CAUSED BY THE INSTALLATION, USE OR REMOVAL OF TEMPORARY SERVICE

CLARIFICATION FROM ENGINEER OF RECORD WHERE CONFLICTS IN DRAWING OR DIMENSIONS ARISE PRIOR TO PROCEEDING WITH CONSTRUCTION

END OF SECTION

A. CONDUITS AND RACEWAYS A.A. RIGID STEEL: HOT-DIPPED GALVANIZED A.B. INTERMEDIATE METAL CONDUIT (IMC): HOT-DIPPED GALVANIZED

PROVIDE FITTINGS AND ACCESSORIES APPROVED FOR THE PURPOSE EQUAL IN ALL RESPECTS TO THE CONDUIT OR RACEWAY. EMT CONNECTORS

B.A.A. CONDUCTOR

\* #12 TO #1 AWG: THWN FOR WET OR UNDERGROUND AND THHN FOR DRY LOCATIONS

\* # THROUGH # AWG: XHHW (55 MILS) \$250 MCM AND LARGER: XHHW (65 MILS) GROUNDING WIRE: TW

OR WET LOCATIONS AND THHN INSULATION FOR DRY LOCATIONS

C.A. OUTLET BOXES: 4" SQUARE X 1-1/2" DEEP (OR LARGER) GALVANIZED SHEET STEEL KO-TYPE WITH PLASTER RING AND COVER FOR GENERAL

PULL BOXES SHALL BE SAM AS JUNCTION BOXES UNLESS INDICTED OTHERWISE ON THE DRAWINGS, WITH COVERS
TELEPHONE OUTLET BOXES SHALL BE THE TUPE AND SIZE REQUIRED BY THE SERVINF TELEPHONE COMPANY BUT NOT SMALLER THAN

DEDICATED RECEPTACLES: NEMA 5-20R D.C. SWITCHES: TWENTY (20) AMPERES

2.03 PANELBOARDS

OUTLETS SERVED FROM THE NORMAL POWER SYSTEM SHALL BE IVORY OR WHITE, TO MATCH ADJACENT FINISH

A.B. POWER PANELBOARDS — SQUARE D, I LINE
A.B.A. CONSTRUCTION: CABINETS SHALL BE OF CODE GAUGE, GALVANIZED STEEL, SURFACE OR FLUSH MOUNTED AS INDICATED. DOORS SHALL BE

CIRCUIT BREAKERS: SHALL BE QUICK—MAKE, QUICK—BREAK, MOLDED CASE TYPE:

\* 120/240V PANELS: SHALL BE SQUARE D TYPE "QOB" LINE, BOLT—ON TYPE, WITH MINIMUM SYMMETRICAL INTERRUPTING CAPACITY AS

COMPLETE SHOP DRAWINGS ARE REQUIRED. DIMENSIONS SHALL MATCH FLOOR PLANS AND ELEVATIONS. 2.04 LOAD CENTERS A. LOAD CENTERS TO BE FURNISHED AND INSTALLED AT LOCATIONS AS SHOWN ON THE DRAWINGS, LOAD CENTERS SHALL BE OF THE TYPE APPROVED,

BUS BAR CONNECTIONS TO THE BRANCH CIRCUIT BREAKERS SHALL BE THE DISTRIBUTED PHASE TYPE AND SHALL ACCEPT PLUG—ON CIRCUIT BREAKERS. 300—400 A LOAD CENTERS SHALL ACCEPT A 150A MAXIMUM BOLT—ON BREAKER IN ADDITION TO PLUG—ON TYPES. C. SHORT CIRCUIT

SINGLE—POLE. 15 AND 20 AMPERE CIRCUIT BREAKERS INTENDED TO SWITCH FLUORESCENT LIGHTING LOADS ON A REGULAR BASIS SHALL HAVE THE SWD MARKING. TWO— ND THREE—POLE CIRCUIT BREAKERS 15—60 AMPERES INTENDED FOR USE WITH AIR CONDITIONING, HEATING, AND REFRIGERATION EQUIPMENT HAVING MOTOR GROUP COMBINATIONS AND MARKED AS SUCH SHALL HAVE THE HACR MARKING.

A. SERVICE ENTRANCE EQUIPMENT ARE SUBJECT TO THE REQUIREMENTS OF THE UTILITY COMPANIES PROVIDING SERVICES TO PROJECT SITE. EQUIPMENT SHOWN ON THE CONSTRUCTION DOCUMENTS IS A GENERAL GUIDELINE AND SHALL BE ADJUSTED TO MEET SPECIFIC UTILITIES REQUIREMENTS. ENCLOSURES, PULL SECTIONS, AND TERMINATIONS SHALL BE TOTALLY ENCLOSED, DEAD FRONT, FREE-STANDING, FRONT AND REAR ALIGNED ACCESSIBILITY SHALL BE FROM THE FRONT. THE EQUIPMENT SHALL BE NEMA TYPE 1 OR NEMA TYPE 3R NON-WALK-IN RAINPROOF. THE

THE METERING EQUIPMENT THROUGH BUS SHALL BE TIN-PLATED ALUMINUM. THE BUSSING SHALL BE OF SUFFICIENT CROSS-SECTIONAL AREA TO MEET UL STANDARD 891 FOR TEMPERATURE RISE. THE THROUGH BUS SHALL EXTEND THE FULL LENGTH OF THE EQUIPMENT AND BE 100% RATED THROUGHOUT THE LINE-UP. TAPERED BUS IS NOT ACCEPTABLE. THERE SHALL BE PROVISIONS FOR FUTURE SPLICING OF ADDITIONAL SECTIONS FROM EITHER END. THE NEUTRAL BUS SHALL ALSO BE 100% RATED. THE GROUND BUS SHALL BE SIZED PER UL STANDARD 891, AND OF THE SAME MATERIAL AS THE THROUGHO BUS. BUS CONNECTIONS SHALL BE BOLTED WITH GRADE 5 BOLTS AND CONICAL SPRING WASHERS.

UTILITY COMPARTMENTS SHALL BE ARRANGED IN HOT SEQUENCE. THE METERING COMPARTMENTS SHALL BE BARRIERED AND COVERS SHALL HAVE

ELECTRICAL CODE (NEC), OR WHEN REQUESTED BY THE CUSTOMER. . METER SOCKETS SHALL BE RING TYPE METER SOCKETS SHALL BE RATED AS NOTED IN THE DRAWINGS. THE METER SOCKET SHALL HAVE PROVISIONS

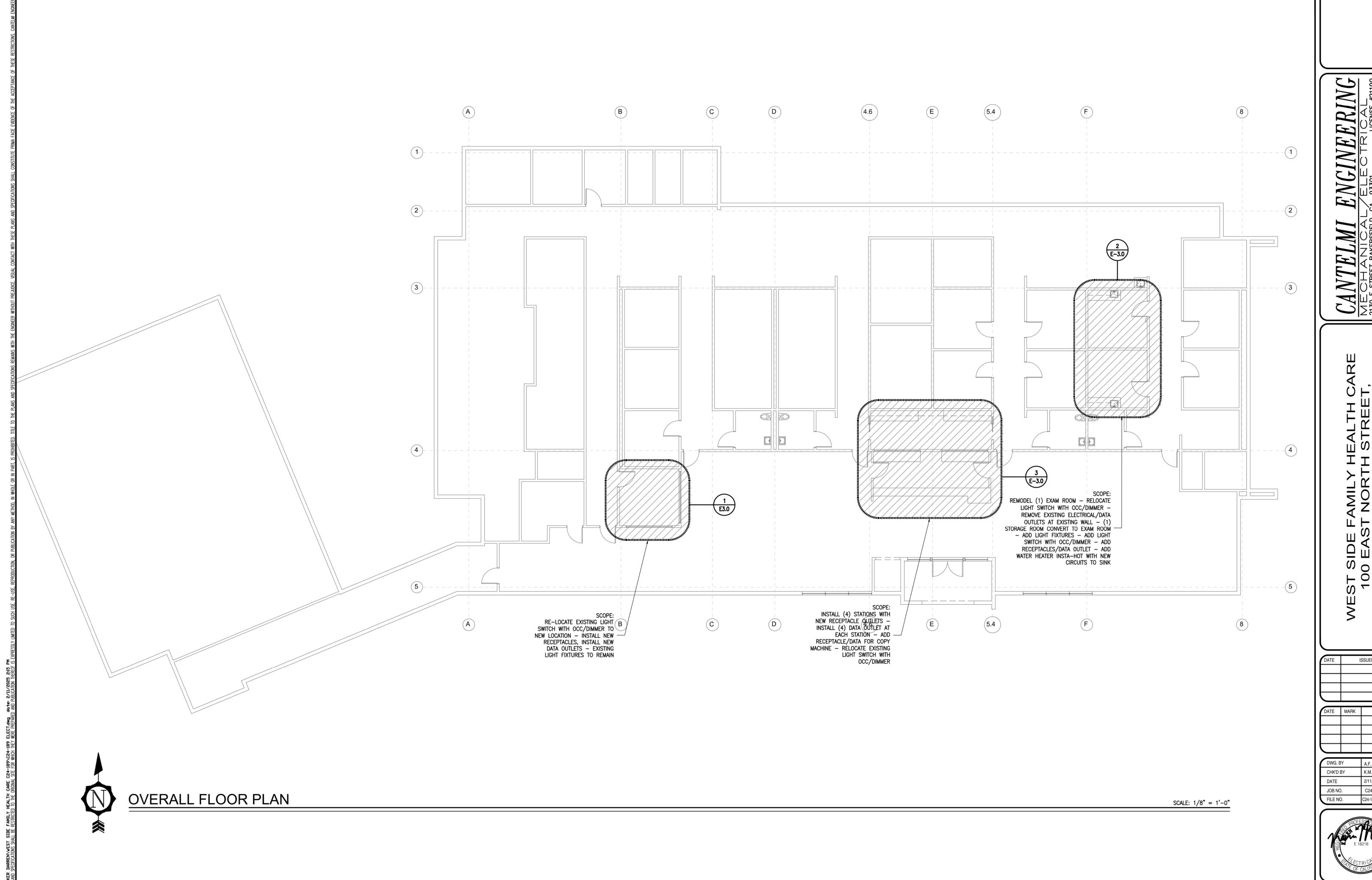
over—center, trip—free, toggle—type operating mechanism with quick—make, quick—break action and positive handle indication. CIRCUIT BREAKERS SHALL BE UL LISTED IN ACCORDANCE WITH UL STANDARD 489 AND SHALL BE RATED FOR THE MAXIMUM VOLTAGE SPECIFIED AND WITH CONTINUOUS CURRENT RATINGS AS NOTED ON THE PLANS. THE CIRCUIT BREAKERS SHALL BE CURRENT LIMITING.
COMMERCIAL MULTI-METERING SHALL BE TOTALLY ENCLOSED, DEAD FRONT, FREE-STANDING, FRONT AND REAR ALIGNED. ACCESSIBILITY SHALL BE FROM THE FRONT. THE EQUIPMENT SHALL BE NEMA TYPE 1 OR NEMA TYPE 3R NON-WALK-IN RAINPROOF. 2.06 INDIVIDUALLY MOUNTED MOTOR CONTROLLERS

ACCEPTABLE MANUFACTURERS: GENERAL ELECTRIC, SIEMENS, SQUARE D, WESTINGHOUSE, AND ALLEN BRADLEY. SAFETY SWITCHES: HEAVY DUTY TYPE, 480 OR 240 V, HORSEPOWER RATED FOR MOTORS, FUSED OR NON-FUSED AS REQUIRED. PROVIDE FUSE AS SHOWN IN CONSTRUCTION DOCUMENTS. MOUNT IN ENCLOSURE WITH NEMA RATING AS REQUIRED FOR THE SPECIFIC APPLICATION.

A. TRANSFORMER 15KVA UP TO 500KVA SHALL BE TP-1. TRANSFORMER COILS SHALL BE OF THE CONTINUOUS WOUND CONSTRUCTION. CORE AND COIL SHALL BE OF COPPER. THE COMPLETED CORE AND COIL SHALL BE BOLTED TO THE BASE OF THE ENCLOSURE BUT ISOLATED BY MEANS OF RUBBER VIBRATION—ABSORBING MOUNTS. THERE SHALL BE NO METAL—TOMOMETAL CONTACT BETWEEN THE CORE AND COIL AND THE ENCLOSURE except for a flexible safety ground strap, sound isolation systems requiring the complete removal of all fastening devices will NOT BE ACCEPTABLE. THE CORE OF THE TRANSFORMER SHALL BE VISIBLY GROUNDED TO THE ENCLOSURE BY MEANS OF A FLEXIBLE GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH APPLICABLE UL AND NEC STANDARDS. B. THE TRANSFORMER ENCLOSURES SHALL BE VENTILATED AND BE FABRICATED OF HEAVY GAUGE. SHEET STEEL CONSTRUCTION

2.09 INTEGRATED POWER CENTERS A. INTEGRATED POWER CENTER (IPC(2)) SHALL BE COMPROMISED OF COMBINATION OF POWER PANEL, LIGHTING AND APPLIANCE PANELS, LIGHTING CONTROLS, DRY TYPE TRANSFORMERS, METERING, AND THIRD PARTY AUTOMATION. EACH COMPONENT OF INTEGRATED POWER CENTER IS SUBJECT TO OTHER APPLICABLE AND CERTIFIED FOR SPECIFIC USE AND METERS APPLICABLE AND CERTIFIED FOR SPECIFIC USE AND

END OF SECTION

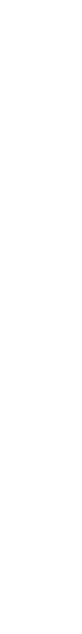


NOTHING IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT AN INSTALLATION IN VIOLATION OF APPLICABLE CODES AND/OR RESTRICTIONS. SHOULD ANY CHANGE IN THE DRAWINGS AND/OR SPECIFICATIONS BE NECESSARY IN ORDER TO COMPLY WITH APPLICABLE CODES AND/OR RESTRICTIONS. SHOULD ANY CHANGE IN THE DRAWINGS AND/OR RESTRICTIONS BE NECESSARY IN ORDER TO COMPLY WITH APPLICABLE CODES AND/OR REQUIREMENTS. CONTRACTOR TO OBTAIN CLARIFICATION FROM ENGINEER OF RECORD WHERE CONFLICTS IN DRAWING OR DIMENSIONS ARISE PRIOR TO PROCEEDING WITH CONSTRUCTION.

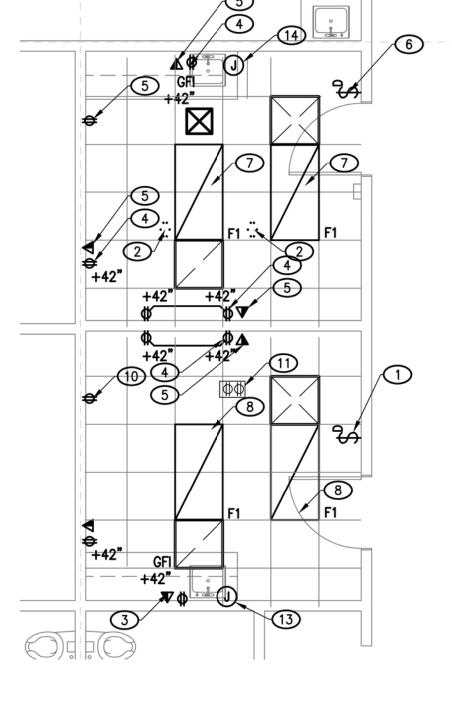
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- 1 REMOVE AND RELOCATE EXISTING LIGHT
- 2 REMOVE AND RELOCATE EXISTING RECEPTACLE
- 3 REMOVE AND RELOCATE EXISTING CATS DATA WIRE
- 4 INSTALL NEW RECEPTACLE RUN NEW 1"C AND NEW CIRCUIT TO EXISTING ELECTRICAL PANEL
- 5 INSTALL NEW DATA RUN 1"C AND NEW CAT5 WIRE TO DATA PANEL
- 6 RELOCATE LIGHT SWITCH AND THERMOSTAT TO THIS WALL 1"C USE EXISTING CIRCUIT FIELD VERIFY
- 7 INSTALL NEW 2X4 LIGHT FIXTURE
- 8 REMOVE AND REPLACE EXISTING 2X4 LIGHT FIXTURE
- 9 INSTALL NEW RECEPTACLE FOR COPY MACHINE RUN 1"C AND NEW CIRCUIT TO EXISTING PANEL
- 10 EXISTING RECEPTACLE TO REMAIN
- EXISTING FLOOR MOUNT RECEPTACLE TO BE REMOVED CAP AND FILL W/CONCRETE TO MATCH EXISTING FLOOR
- 12 EXISTING 2X2 LIGHT FIXTURE TO REMAIN
- 13 EXISTING WATER HEATER CIRCUIT TO REMAIN
- 14 INSTALL NEW WATER HEATER CIRCUIT RUN 1"C TO EXISTING PANEL REFER TO PLUMBING SHEET FOR SCHEDULE
- 15 ADJUST HEIGHT AS REQUIRED FIELD VERIFY SEE ARCH. ELEVATION PLANS FOR EXACT
- ADJUST HEIGHT TO EXISTING LIGHT SWITCHES AS REQUIRED FIELD VERIFY SEE ARCH. ELEVATION PLANS FOR EXACT LOCATIONS
- 17) EXISTING RECEPTACLE TO REMAIN FIELD VERIFY LOCATION
- (18) REMOVE EXISTING SMOKE DETECTOR REINSTALL AT NEW LOCATION
- 19 RELOCATE FIRE ALARM PULL STATION CONTROL PANEL TO NEW LOCATION SEE ARCH PLANS FOR EXACT LOCATION







2 - PARTIAL ELECTRICAL PLAN

SCALE: 1/4" = 1

3 - PARTIAL ELECTRICAL PLAN

ROOMS 4 & 5 - RECEPTION/OFFICE

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WEST SIDE FAMILY HEALTH C 100 EAST NORTH STREET

DATE ISSUED

DATE MARK ISSUED

 DWG. BY
 A.F.

 CHK'D BY
 K.M.

 DATE
 2/11/2025

 JOB NO.
 C24-189

 FILE NO.
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MECHANICAL ABBREVIATIONS **SYMBOLS** SYMBOL DESCRIPTION SECTION 1 HOSE BIBB BASIC MECHANICAL MATERIALS AND METHODS **ANGLE** HANDICAPPED PART 1 - GENERAL AIR CONDITION UNIT HEAD 1.1 SUMMARY CENTER LINE HARDWARE A. LABOR, MATERIALS, TOOLS, AND SERVICES FOR A COMPLETE INSTALLATION OF EQUIPMENT AND SYSTEM CONTAINED PROPERTY LINE IN THE CONTRACT DOCUMENTS. HORIZ DIAMETER or ROUND HORIZONTAL PRINCIPAL FEATURES OF THE WORK INCLUDED ARE: **HORSEPOWER** SUPPLY AIR CEILING DIFFUSER EXISTING HOT WATER HEATING, VENTILATING, AIR CONDITIONING SYSTEMS, CONTROLS, AND MECHANICAL SYSTEM INSULATION. HOT WATER RETURN PERPENDICULAR ROOF CURBS FOR HVAC SYSTEMS, INTAKE HOODS, LOUVERS, SUPPLY FANS, AND RELIEF VENTS FURNISHED AND HOT WATER SUPPLY POUND or NUMBER SET UNDER THIS DIVISION. HEATING, VENTILATING REFRIGERANT PIPING, CONNECTIONS, REFRIGERANT AND REFRIGERANT CHARGES. THERMOSTAT SUPPLY AIR CEILING DIFFUSER AIR CONDITIONING EXCAVATING AND BACKFILLING FOR MECHANICAL WORK: COORDINATE WITH APPROPRIATE TRADE. AIR CONDITIONING ANCHOR BOLTS, SLEEVES. SUPPORTS AND SIMILAR ITEMS TO BE BUILT INTO CONCRETE OR MASONRY. INSIDE DIAMETER (DIM.) ACCESS PANEL PREPARATION FOR TESTING AND BALANCE OF MECHANICAL SYSTEMS AND CORRECTING DEFICIENCIES. INSULATION PREPARATION AND SUBMITTAL OF SHOP DRAWING AND PRODUCT DATA. INTERIOR SUPPLY VARIBLE AIR CEILING ADJUSTABLE MAINTAINING A RECORD SET OF BLUE LINE PRINTS AND MAKING THEM TO INDICATE LOCATIONS OF CONCEALED ABOVE FINISH FLOOR DIFFUSER HEAT & COOL ADJUSTABLE EXTRACTOR ITEMS. AND DEVIATIONS MADE TO SUIT CONDITIONS AND PRODUCTION OF MECHANICAL AS-BUILT (RECORD) LAVATORY AGGREGATE DRAWINGS. POUNDS ALUMINUM .2 JOB CONDITIONS. LIQUID PETROLEUM GAS RETURN AIR CEILING REGISTER **APPROX** APPROXIMATE SUBMITTAL OF BID IMPLIES BIDDER HAS READ APPLICABLE PARAGRAPHS OF THE SPECIFICATIONS AND WILL BE **APPOINTMENTS** BOUND BY THEIR CONDITIONS. ARCH. ARCHITECTURAL MACH MACHINE 1.3 LOCAL CONDITIONS AMERICAN REFRIGERATION INSTITUTE MATERIAL CONFORM WITH LOCAL CONDITIONS. COORDINATE WITH LOCAL UTILITIES ON SIZE OF UTILITY SERVICE. 1.4 INTENT **ASPHALT** EXHAUST AIR CEILING REGISTER MAXIMUM BTU PER HOUR (THOUSANDS) MAX. MBH MCA **ASST** ASSISTANT THE CONTRACT DOCUMENTS (DRAWINGS AND SPECIFICATIONS) DESCRIBE THE MECHANICAL WORK OF THIS PROJECT AUTOMATIC ANY ITEMS MENTIONED IN ONE PART SHALL BE AS BINDING AS THOUGH MENTIONED IN BOTH. MINIMUM CIRCUT AMPS THE CONTRACT DOCUMENTS FORM A GUIDE FOR A COMPLETE MECHANICAL INSTALLATION. WHERE AN ITEM IS MECHANICAL MTL MFGR REASONABLY NECESSARY BUT NOT SPECIFICALLY MENTIONED, SUCH AS DUCT HANGERS OR TRANSITIONS, PIPING BALANCING DAMPER SIZE SUPPLY AIR WALL DIFFUSER MANUFACTURER OFFSETS, DRAINS, ETC., FOR A COMPLETE SYSTEM, PROVIDE SAME. BACKDDRAFT SAMPER MANHOLE MECHANICAL LAYOUTS INDICATED ON DRAWINGS ARE DIAGRAMMATIC ONLY. EXACT LOCATIONS OF DUCTS, AND BELOW FINISH FLOOR MINIMUM BELOW FINISH GRADE EQUIPMENT SHALL BE GOVERNED BY THE DRAWINGS OF RELATED TRADES. **MISCELLANEOUS** BUIL DING MAKE UP AIR BLKG BLOCKING RETURN AIR WALL REGISTER A. NO DEVIATIONS FROM SPECIFICATIONS AND DRAWINGS SHALL BE MADE WITHOUT FULL KNOWLEDGE AND WRITTEN CONSENT OF CONSTRUCTION MANAGER. BRITISH THERMAL UNIT/ HOUR SHOULD CONTRACTOR FIND, DURING PROGRESS OF WORK, CONDITIONS WHICH DICTATE A MODIFICATION OF ANY воттом NOT IN CONTRACT PARTICULAR REQUIREMENTS, REPORT SUCH ITEM PROMPTLY FOR DECISION OF INSTRUCTIONS. BALL VALVE NO. or # NUMBER EXHAUST AIR WALL REGISTER .6 QUALITY ASSURANCE NOM NOMINAL CFM A. COMPLY WITH APPLICABLE LOCAL, STATE AND FEDERAL CODES. NTS NOT TO SCALE COMBUSTION AIR B. COMPLY WITH APPLICABLE REQUIREMENTS OF RECOGNIZED INDUSTRY ASSOCIATIONS WITH PROMULGATE STANDARDS FOR THE VARIOUS TRADES. ( SEE INDIVIDUAL SECTIONS OF DIVISION 15 ) CONDENSATE DRAIN EMPLOY ONLY QUALIFIED JOURNEYMEN FOR THIS WORK. EMPLOY COMPETENT, QUALIFIED MECHANICS TO SUPERVISE OVERALI TRANSFER GRILLE CEILING FIRE DAMPER OPPOSED BLADE DAMPER CFM CUBIC FEET PER MINUTE OC OSA OVHD ON CENTER 1.7 CODES AND STANDARDS CHILLED WATER OUTSIDE AIR PERFORM WORK SPECIFIED IN DIVISION 15 IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS LISTED CHILLED WATER RETURN OVERHEAD CHWS CHILLED WATER SUPPLY BELOW, AND SUCH STANDARDS THAT MAY BE SPECIFIED IN OTHER SECTIONS. WHEN THESE SPECIFICATIONS ARE DUCTWORK (RECTANGULAR) CONTROL JOINT MORE STRINGENT, THEY TAKE PRECEDENCE. IN CASE OF CONFLICT, OBTAIN A DECISION FROM THE MECHANICAL CLG CEILING **PARTITION** CLKG CAULKING NFPA 54: NATIONAL FUEL AND GAS CODE. PHYSICAL CLR PRESSURE RELIEF NFPA 90A: AIR CONDITIONING AND VENTILATION SYSTEMS. CLEANOUT DUCTWORK (ROUND) PVC POLY-VINYL CLORIDE PIPE NFPA 101: LIFE SAFETY CODE. COLUMN PLASTER COMPRESSED APPLICABLE STATE BUILDING CODE PLYWD PLYWOOD CONC CONCRETE APPLICABLE STATE MECHANICAL CODE. POINT OF CONNECTION CONFERENCE HANDICAPPED CODE ANSI A117.1 AND ADA PREFAB PREFABRICATED CONNECTION LINED DUCTWORK APPLICABLE STATE ENERGY CODE. PREPARATION CONST CONSTRUCTION POUNDS PER SQUARE INCH AGA: AMERICAN GAS ASSOCIATION. CONTINUOUS PROCESSED WATER ANSI: AMERICAN NATIONAL STANDARDS INSTITUTE CORRIDOR 10. ARI: AMERICAN REFRIGERATION INSTITUTE. CSE CALIFORNIA SEASONAL EFFICIENCY TURNIG VANE COUNTERSUNK ASHRAE: AMERICAN SOCIETY OF HEATING. REFRIGERATION AND AIR CONDITIONING ENGINEERS. RISER CTR CENTER ASME: AMERICAN SOCIETY FOR MECHANICAL ENGINEERS RETURN AIR CHECK VALVE 13. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS RADIUS RETURN AIR GRILLE MSS: MANUFACTURER'S STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY. FLEXIBLE DUCTWORK REFERENCE 15. NFPA: NATIONAL FIRE PROTECTION ASSOCIATION. RFINFORCED SMACNA: SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION. DRY BULD (TEMPERATURE) REQUIRED DEPT DEPARTMENT 17. UL: UNDERWRITERS' LABORATORIES. INC. 1.8 COORDINATION ROUND FLEXIBLE CONNECTION DRINKING FOUNTAIN CAREFULLY EXAMINE SPECIFICATIONS AND DRAWINGS TO BE THOROUGHLY FAMILIAR WITH ITEMS WHICH REQUIRE DHW DOMESTIC HOT WATER HVAC CONNECTIONS AND COORDINATION. DOMESTIC HOT WATER RETURN SOUTH COORDINATE WITH OTHER DIVISIONS TO LEAVE PROPER CHASES AND OPENINGS. PLACE OUTLETS, ANCHORS, DIA or DIAMETER SUPPLY AIR SLEEVES, AND SUPPORTS PRIOR TO POURING CONCRETE OF INSTALLATION OF MASONRY WORK. DIRECTOR MANUAL AIR VOLUME DAMPER SUPPLY AIR DIFFUSER 1.9 SUBMITTALS SUBMITTALS ARE ONLY REQUIRED FOR SPECIFIC ITEMS OF EQUIPMENT OR MATERIAL LISTED IN INDIVIDUAL SECTIONS SUPPLY AIR REGISTER DS DSP DOWNSPOU OF THESE SPECIFICATIONS. SCHD SCHEDULE DRY STANDPIPE WITHIN 15 DAYS AFTER AWARD OF CONTRACT FOR THIS WORK. SUBMIT A LIST OF PROPOSED MANUFACTURERS (OF SMOKE DETECTOR DUCT THRU ROOF DUCT THRU WALL SEASONAL ENERGY EFFICIENCY EQUIPMENT OR MATERIAL TO BE USED) FOR APPROVAL. SUBMIT THIS LIST BEFORE SUBMITTAL OF SHOP DRAWINGS DTW DWG SECT. SHT SECTION DRAWING AND PRODUCT DATA, AND OBTAIN APPROVAL BEFORE SUBMITTING REQUIRED ITEMS. SHEET SHOP DRAWINGS (NOT REQUIRED FOR OWNER FURNISHED EQUIPMENT). SIMILAR 1.10 DELIVERY AND STORAGE SQUARE SMOKE FIRE DAMPER SPECIFICATION INSOFAR AS POSSIBLE. DELIVER ITEMS IN MANUFACTURER'S ORIGINAL UNOPENED PACKAGING, WHERE THAT IS NOT EXHAUST AIR STATIC PRESSURE EXHAUST AIR GRILLE PRACTICAL. COVER ITEMS WITH PROTECTIVE MATERIALS TO KEEP THEM FROM BEING DAMAGED. USE CARE IN SHUT-OFF VALVE ENTERING DRY BUBL LOADING, TRANSPORT, UNLOADING, AND STORAGE TO KEEP ITEMS FROM BEING DAMAGED. SERVICE SINK ENERGY EFFICIENCY RATIO 1.11 FIRE RATINGS STAINLESS STEEL <u>OUTSIDE AIR INTAKE</u> ELECTRICAL MATERIALS USED ANYWHERE IN THE WORK MUST HAVE NFPA RATINGS AS FOLLOWING: **STANDARD** ELEVATION STL FLAME SPREAD - NOT OVER 25 **EMER** EMERGENCY SMOKE DEVELOPED - NOT OVER 50 STORAGE **ENCL ENCLOSURE** STRUCT STRUCTURAL FUEL CONTRIBUTED - NOT OVER 25 ELECTRICAL PANEL ROOM THERMOSTAT - SUBSCRIPT SUPERVISOR ① A/C-1 SUSPENDED INDICATES UNIT CONTROL EQUIPMENT B. MATERIALS SHALL BE "SELF EXTINGUISHING" SOIL & WASTE EXISTING 1.12 PERMITS AND FEES EXTERNAL STATIC PRESSURE OBTAIN, PAY FOR, AND DELIVER PERMITS, CERTIFICATION OF INSPECTION, AND OTHER SUCH ITEMS REQUIRED BY ENTERING WET BULB BYPASS TIMER THE AUTHORITIES HAVING JURISDICTION. DELIVER CERTIFICATION TO THE CONSTRUCTION MANAGER PRIOR TO FINAL TOP OF CURE EXPOSED TELEPHONE ACCEPTANCE OF THE WORK. AN INSPECTION CERTIFICATE FOR EACH CLASS OF WORK REQUIRING INSPECTION **EXTERIOR** MUST BE SUBMITTED PRIOR TO OR WITH THE FINAL PAYMENT INVOICE. THE RESPONSIBLE TRADE CONTRACTOR TRANSFER GRILLE MUST MAKE APPLICATION FOR THE INSPECTION, COORDINATE SAME AND PAY THE REQUIRED INSPECTION FEE. TIME CLOCK .13 EXTENDED WARRANTIES TOP OF CONCRETE FLEXIBLE CONNECTION A. WORK FURNISHED UNDER THE CONTRACT SHALL BE WARRANTED AGAINST DEFECTS IN WORKMANSHIP AND ( TRAP PRIMER FD FDN FIRE DAMPER TRANSCRIPTION CONTRACTOR FURNISHED) MATERIALS FOR A PERIOD OF NOT LESS THAT ONE (1) YEAR, OR AS OTHERWISE FOUNDATION TREAT. TREATMENT SPECIFIED, FROM THE DATE OF FINAL ACCEPTANCE OF THE INSTALLATION, DEFECTS OF WORKMANSHIP DEVELOPING FIRE EXTINGUISHER ON/OFF SWITCH FIRE EXTINGUISHER CABINET DURING THIS PERIOD SHALL BE REMEDIED, AND DEFECTIVE MATERIAL REPLACED, WITHOUT ADDITIONAL COST. WHEN TEMPERING VALVE FIRE HOSE CAB. DEFECTS IN A TRADE CONTRACTOR'S WORK CAUSES DAMAGE TO THE WORK OF THE OTHER TRADE CONTRACTORS, FHMS FLAT HEAD METAL SCREW SUCH DAMAGE SHALL BE REPAIRED BY THE TRADE CONTRACTOR CAUSING DAMAGE AND WORK RESTORED TO ITS ORIGINAL CONDITION, AT THE EXPENSE OF THE TRADE CONTRACTOR THAT CAUSED THE DAMAGE. UL UON UNDERWRITERS LABORATORIES FLA FULL LOAD AMPS UNLESS OTHERWISE NOTED FAN SPEED CONTROL FLASH. FLASHING URINAL FACE OF CONCRETE FOC FOF FACE OF FINISH VFNT FPM FEET PER MINUTE DUCT SMOKE DETECTOR VOLUME DAMPER FRPF FIREPROOFING VENT THRU ROOF FAN SPEED CONTROL VARIBLE SUPPLY AIR DIFFUSER VSAD FSD FIRE/SMOKE DAMPER FIRE SPRINKLER LINE FLUE THRU ROOF WASTE LINE POINT OF CONNECTION FUNC FUNCTION FURR FURRING

CEILING EXHAUST FAN

FURNACE (VERTICAL)

FURNACE (HORIZONTAL)

CONDENSING UNIT

WET BULB TEMPERATURE

WATER HAMMER ARRESTOR

WASHING MACHINE FITTING

DIAMETER DIAMETER

DIAMETER

DIAMETER DIAMETER

DIAMETER

DIAMETER

WALL FIRE DAMPER WATER HEATER

WITHOUT

WEIGHT

YARD

**DUCT SIZING REQUIREMENTS** 

2. ALL FITTINGS TO BE OF INDUSTRY STANDARD TYPE WITH COEFFICIENTS

600 FPM 700 FPM

800 FPM

875 FPM

900 FPM

900 FPM

900 FPM

.08 LOSS PER 100FT

WATERPROOF

FUT

GALV

GEN

GL GPM

GR GRD

**FUTURE** 

GAUGE OR GAGE

GALVANIZED IRON

GALLONS PER MINUTE

GALVANIZED

GENERAL

GROUND GAS LLINE

90-200 CFM

600-900 CFM

900-1200 CFM

1200-1600 CFM

1600-2000 CFM

2000-2400 CFM 900 FPM

PUBLISHED IN MANUAL Q

1. ALL ELBOWS TO BE SMOOTH RADIUS

### PART 2 -PRODUCTS 2.1 MATERIALS AND EQUIPMENT

A. WITHIN THE CONTRACT DOCUMENTS RELATING TO MECHANICAL WORK, MANUFACTURER'S NAMES, CATALOG NUMBERS, 2.1 AIR CONDITIONING UNITS, FANS AND AIR DEVICES AND OTHER PROPRIETARY REFERENCES TO MATERIALS AND EQUIPMENT ARE MADE. SUCH REFERENCES ARE MADE TO A. SHALL BE AS INDICATED ON THE DRAWINGS. ESTABLISH THE STANDARDS OF QUALITY AND TYPE REQUIRED, AND NOT TO LIMIT COMPETITION. ACCEPTABLE MANUFACTURER'S OF COMPETITIVE PRODUCTS ARE LISTED IN APPLICABLE SECTIONS AS "APPROVED EQUALS". REASONABLE REQUESTS FOR SUBSTITUTION OR ADDITIONS TO "APPROVED EQUALS" WILL BE CONSIDERED. BUT THE

GENERAL MECHANICAL NOTES

MECHANICAL ENGINEER WILL BE THE SOLE JUDGE OF ACCEPTABILITY OF ITEMS PROPOSED AS SUBSTITUTES. MATERIALS AND EQUIPMENT USED IN CARRYING OUT THESE SPECIFICATIONS SHALL BEAR UL OR OTHER RECOGNIZED TESTING LABORATORY LABEL WHEN SUCH LABELS ARE AVAILABLE.

### PART 3 - EXECUTION

- A. MECHANICAL LAYOUTS INDICATED ON DRAWINGS ARE DIAGRAMMATIC. EXACT LOCATIONS OF DUCT, AND EQUIPMENT MAY VARY BECAUSE OF CONFLICTS WITH WORK OF OTHER TRADES. WORK OUT CONFLICTS WHERE RELOCATION'S WILL NOT AFFECT OPERATION OR APPEARANCE OF SYSTEMS.
- B. LOCATE EQUIPMENT REQUIRING PERIODIC SERVICING SO THAT IT IS READILY ACCESSIBLE. DO NOT BACK UP SERVICE SIDES TO WALLS, NOR PLACE IT TOO CLOSE TO OTHER EQUIPMENT TO MAKE SERVICE IMPRACTICAL. EQUIPMENT SERVICE CLEARANCE SHALL MEET MINIMUM ACCEPTABLE DISTANCE AS RECOMMENDED BY EQUIPMENT MANUFACTURER. 3.2 UTILITIES EXCAVATING AND BACKFILLING
- PERFORM TRENCHING, EXCAVATING, BACKFILLING FOR MECHANICAL WORK IN ACCORDANCE WITH THE APPROPRIATE SECTIONS AND AS SET FORTH BELOW
- 1. PERFORM WORK NECESSARY FOR INSTALLATION OF MECHANICAL UTILITIES.
- 2. DEPTH OF EXCAVATION TO PROVIDE A MINIMUM OF 3' ABOVE TOP OF PIPE. EXCAVATION TO BE CARRIED TO A DEPTH OF AT LEAST 6" BELOW BOTTOM OF PIPE ELEVATION. FILL BELOW PIPE (6"), AROUND PIPE, AND A MINIMUM 2. OF 12" ABOVE PIPE WIT SAND OR CLASS "B" CRUSHED STONE TAMPED FIRM AND EVEN. SEPARATE TOPSOIL DURING EXCAVATION. FINAL LAYER OR DIRT (12" MINIMUM) TO BE TOPSOIL. TRENCHES TO BE AT LEAST 18" WIDER THAN PIPE WITH BATTER BOARDS PLACED EVERY 25'. BACKFILLING SHALL BE DONE TO EXCLUDE USE OF ROCK OR STONE ABOVE SAND OR CRUSHED STONE.

### 3.3 CUTTING AND PATCHING

- A. REPAIR OR REPLACE ROUTINE DAMAGE CAUSED BY CUTTING IN PERFORMANCE OF CONTRACT.
- B. CORRECT UNNECESSARY DAMAGE CAUSED DUE TO INSTALLATION OF MECHANICAL WORK. PERFORM REPAIRS WITH MATERIALS WHICH MATCH EXISTING AND INSTALL IN ACCORDANCE WITH THE APPROPRIATE SECTION OF THESE SPECIFICATIONS OR THE BEST STANDARDS OF THE INDUSTRY.
- CONNECT OR INSTALL EQUIPMENT SHOWN ON MECHANICAL DRAWINGS THAT REQUIRE MECHANICAL HOOKUPS.

### 3.5 SERVICE OF SYSTEM

- A. IF EQUIPMENT IS PLACED IN SERVICE PRIOR TO ACCEPTANCE OF THE PROJECT. OPERATE EQUIPMENT STRICTLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALL NEW FILTERS IN EQUIPMENT PRIOR TO OWNER OCCUPYING BUILDING
- EMPLOY COMPETENT, QUALIFIED PERSONNEL IN OPERATION OF THE EQUIPMENT.
- PROVIDE FOR PROPER OPERATION AND CLEANLINESS.

FURNISHED AND INSTALLED BY OWNER.

- OPEN UP EQUIPMENT FOR INSPECTION AS DIRECTED BY THE SUPERINTENDENT. LUBRICATE EQUIPMENT AND PERFORM SUCH OTHER MAINTENANCE AS REQUIRED TO PLACE IT IN FIRST CLASS
- OPERATING CONDITION.

### END OF SECTION

- HEATING, VENTILATION AND AIR CONDITIONING PART 1 GENERAL 1.1 RELATED DOCUMENTS A. REFER TO DRAWINGS AND CONTRACT FOR MATERIALS FURNISHED BY OWNER, INSTALLED BY CONTRACTOR OR
- 1.2 SCOPE OF WORK
- A. FURNISH ALL LABOR, SUPERVISION, AND EQUIPMENT ( UNLESS EQUIPMENT IS SPECIFICALLY NOTED AS 'OWNER FURNISHED') FOR THE COMPLETE INSTALLATION OF HEATING, VENTILATION, AND AIR CONDITIONING SYSTEM TOGETHER WITH ALL NECESSARY AUXILIARIES AND APPURTENANCES.
- 1.3 QUALITY ASSURANCE A. MANUFACTURER'S QUALIFICATIONS - INSTALL PACKAGED UNITS, AS INDICATED IN THE DRAWINGS, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND REQUIREMENTS. PROVIDE RELATED PRODUCTS AND ACCESSORIES FROM
- ONE MANUFACTURER. STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION PROTECTING FROM DIRT. MOISTURE, CONTAMINANTS, AND WEATHER. B. CODES AND STANDARDS - PERFORM ALL INSTALLATION IN ACCORDANCE WITH THE LATEST STANDARDS AS
- RECOGNIZED BY ASHRAE, SMACNA AND ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES. WORKMANSHIP - EXPERIENCED, WELL - TRAINED WORKERS, COMPETENT TO COMPLETE THE WORK AS SPECIFIEI
- SHALL PERFORM LABOR IN CONFORMANCE WITH GENERALLY ACCEPTED TRADE STANDARDS. INSTALL ALL EQUIPMENT SQUARE AND PLUMB ALLOWING ACCESS FOR PROPER OPERATION, ADJUSTMENT AND SERVICE.

### 1.4 STRUCTURAL AND SPACE CONDITIONS

- A. ALL WORK SHALL AVOID OBSTRUCTIONS AND INTERFERENCE WITH OTHER TRADES, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR AND FREE.
- 1.6 VIBRATION AND NOSE A. INSTALL EACH OF THE VARIOUS PIECES OF EQUIPMENT TO OPERATE WITHOUT OBJECTIONABLE VIBRATION OR NOISE.

- A. CUTTING OR PATCHING NECESSARY TO PERMIT THE INSTALLATION OF ANY WORK UNDER THIS CONTRACT SHALL BE THE RESPONSIBILITY OF THIS TRADE. CUTTING AND PATCHING SHALL BE COORDINATED WITH OTHER TRADES SO AS
- 1.8 BALANCING AND TESTING
- A. TEST AND BALANCE SHALL BE PERFORMED BY A NATIONALLY QUALIFIED TEST AND BALANCE COMPANY. BALANCE COMPANY SHALL BE AN NEBB COMPANY
- B. CONTRACTOR SHALL COORDINATE TESTING WITH THE TESTING AND BALANCE COMPANY. ALL SYSTEMS SHALL BE FULLY OPERATIONAL PRIOR TO COMMENCEMENT OF TESTING. CORRECT ALL DEFICIENCIES NOTED IN THE TEST AND BALANCE REPORT WITHIN THREE DAYS OR PRIOR TO ACCEPTANCE OF THE PROJECT.
- C. ASSUME RESPONSIBILITY FOR CORRECTING ALL ITEMS DETERMINED TO BE THE RESULT OF IMPROPER OR INCOMPLETE, INSTALLATION. EXTRA TESTING REQUIRED DUE TO SUCH DEFICIENCIES WILL BE AT CONTRACTOR'S EXPENSE.
- D. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEST REPORTS TO THE LOCAL BUILDING AND HEALTH DEPARTMENTS AS REQUIRED FOR CERTIFICATE OF OCCUPANCY.

### PART 2 - PRODUCTS

### 2.2 DUCTWORK

- RECTANGULAR AND ROUND DUCT FABRICATION, GENERAL EXCEPT AS OTHERWISE INDICATED, FABRICATE RECTANGULAR AND ROUND DUCTS WITH GALVANIZED SHEET STEEL, IN ACCORDANCE WITH SMACNA - HVAC DUCT CONSTRUCTION STANDARDS AND TABLES INCLUDING THEIR ASSOCIATED DETAILS. CONFORM TO THE REQUIREMENTS IN THE REFERENCED STANDARD FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE ROD APPLICATIONS, AND JOINT TYPES AND INTERVALS. AN APPROVED FLEXIBLE DUCT MAY BE USED FOR THE LAST 5 FT. CONNECTION TO REGISTERS.
- 2.3 DUCT ACCESS PANELS AND DOORS
- WHICH INSTALLED, PRODUCTS BY CESCO, VENT PRODUCTS, AIR BALANCE, OR EQUIVALENT. PROVIDE VENTLOK OR APPROVED HINGES AND LATCHES ON ALL DOORS; 100 SERIES HINGES AND LATCHES ON
- CONSTRUCT DOORS UP TO 18" MAXIMUM DIMENSION WITH ONE INCH OVERLAP FIT AND GASKET WITH 3/4" BY 1/8" SPONGE RUBBER, FIT LARGER DOORS AGAIN 1-1/2" BY 1/8" FLAT STOCK OR ANGLE FRAME AND GASKET
- DOOR SWING TO BE OPPOSITE OF AIRFLOW. 2.4 DUCTWORK SPECIALTIES
- VOLUME AND SPLITTER DAMPERS GALVANIZED SHEET METAL BLADE AND FRAME WITH VENTFABRICE INC. VENTLOK OPERATING HARDWARE. FOR ACCESSIBLE DAMPERS, PROVIDE #641 SELF — LOCKING DIAL REGULATORS AND #644 SELF — LOCKING DIAL REGULATORS FOR INSULATED DUCTWORK, #637 SQUARE END BEARING, AND #635 SPRING END BEARING, AS APPLICABLE
- FOR INACCESSIBLE DAMPERS, PROVIDE #666 OR #667 CONCEALED LOCKING DAMPER REGULATOR WITH BEARING AS ABOVE. FOR STATIC PRESSURES ABOVE 3" W.G., PROVIDE #640 HIVEL DIAL REGULATOR AND #609 HIVEL END BEARING FOR ACCESSIBLE DAMPERS.
- MULTI LOUVER VOLUME DAMPERS 16 - GAUGE GALVANIZED STEEL FRAME. OPPOSED, 6" WIDE, 16 - GAUGE GALVANIZED STEEL BLADES.
- CONCEALED LINKAGE IN FRAME. TITUS #AG - 35 - B, RUSKIN #CD35/ OBD OR EQUAL
- FLEXIBLE CONNECTIONS PROVIDE FLEXIBLE CONNECTORS AT THE DISCHARGE AND INLET OF FANS, AIR HANDLERS, ROTATING MECHANICAL
- NEOPRENE IMPREGNATED GLASS CLOTH WITH 24 GAUGE GALVANIZED METAL FRAME. MINIMUM DIMENSIONS 3" METAL. 3" FABRIC. 3" METAL.
- DURO DYNE #MFN4, VENT FABRICS #VENTGLAS, Q INDUSTRIES, CONSOLIDATED KINETICS, ELGEN, OR EQUAL. BACKDRAFT DAMPERS
- PROVIDE COUNTERWEIGHT TYPE COMPLETE WITH FRAME, END BEARING, COUNTERBALANCE ASSEMBLY, BLADES, AND
- INSTALL AT OUTSIDE AIR INTAKE, EXHAUST OUTLETS, AND WHERE SHOWN ON DRAWINGS.
- PACIFIC AIR PRODUCTS #PRD 100AL, RUSKIN #CBS 7 OR EQUAL BY AMERICAN WARMING. OR VENT
- TURNING VANES 1.PROVIDE TURNING VANES AT ALL 90° AND 45° SQUARE ELBOWS. TURNING VANES SHALL BE DOUBLE WALL AIR FOIL TYPE CONSTRUCTED AND INSTALLED AS PER SMACNA.
- 2.5 DUCT INSULATION ACCEPTABLE MANUFACTURERS: PROVIDE PRODUCTS OF THE FOLLOWING MANUFACTURES, COMPLYING WITH SPECIFIED
- REQUIREMENTS. EQUIVALENT PRODUCTS OF OTHER MANUFACTURERS WILL BE CONSIDERED.
- OWENS CORNING FIBERGLAS CORP. MANVILLE PRODUCTS CORP.
- CERTAINTEED CORE
- ADHESIVES) WITH FLAME SPEED INDEX OF 25 OR LESS, AND SMOKE DEVELOPED INDEX OF 50 OR LESS, AS TESTED BY ASTM E84 (NFPA 255) METHOD.
- BY INSULATION MANUFACTURER FOR APPLICATIONS INDICATED. PROVIDE CEMENTS, ADHESIVES, COATINGS, SEALERS, PROTECTIVE FINISHES, AND SIMILAR COMPOUNDS AS
- RECOMMENDED BY INSULATION MANUFACTURER FOR APPLICATIONS INDICATED. 6 REFRIGRANT PIPING
  - REFRIGERANT PIPING TO BE COPPER SEAMLESS, VACUUM PACKED TUBING.
- ALL SUCTION LINES TO SLOPE BACK TOWARDS CONDENSING UNIT.
- PROVIDE SIGHT GLASS AND FILTER DRIER ON LIQUID LINES AT CONDENSING UNITS.
- ALL REFRIGERANT PIPING UNDERGROUND TO BE CONTAINED IN A PVC SLEEVE REFRIGERANT PIPING TO BE SIZED AND INSTALLED AS PER EQUIPMENT MANUFACTURERS RECOMMENDATIONS.
- REFRIGERANT PIPING TO BE INSULATED WITH ARMAFLEX INSULATION. INSTALL AIREX PRO-SYSTEM KIT AIR-TIGHT SEALING WITH A WALL-MOUNTED PIPING OUTLET AND A UV/VAPOR
- RETARDER PIPING INSULATION PROTECTOR FOR EXTERIOR APPLICATIONS OF HVAC REFRIGERANT PIPING WALL PENETRATIONS AND OUTDOOR INSULATION. NO "ARMAFLEX" ALLOWED 2.7 HVAC CONTROLS
- ELECTRIC AND ELECTRONIC HVAC CONTROLS COMPONENTS AND OPERATING FEATURES AS INDICATED ON THE
- PART 3 EXECUTION 3.1 HVAC SYSTEM INSTALLATION, GENERAL SEQUENCE, COORDINATE, AND INTEGRATE THE VARIOUS ELEMENTS OF
- MECHANICAL SYSTEMS, MATERIALS, AND EQUIPMENT. COMPLY WITH THE FOLLOWING REQUIREMENTS COORDINATE MECHANICAL SYSTEMS, EQUIPMENT, AND MATERIALS WITH OTHER BUILDING COMPONENTS.
- VERIFY ALL DIMENSIONS BY FIELD MEASUREMENTS. ARRANGE FOR CHASES, SLOTS, AND OPENINGS IN OTHER BUILDING COMPONENTS DURING PROGRESS OF
- CONSTRUCTION, TO ALLOW FOR MECHANICAL INSTALLATIONS. COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES AND SLEEVES TO BE SET IN POURED IN PLACE CONCRETE AND OTHER STRUCTURAL COMPONENTS, AS THEY ARE CONSTRUCTED. SEQUENCE, COORDINATE, AND INTEGRATE INSTALLATIONS OF MECHANICAL MATERIALS AND EQUIPMENT FOR EFFICIENT
- FLOW OF THE WORK. GIVE PARTICULAR ATTENTION TO LARGE EQUIPMENT REQUIRING POSITIONING PRIOR TO CLOSING IN THE BUILDING. WHERE MOUNTING HEIGHTS ARE NOT DETAILED OR DIMENSIONED, INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT TO PROVIDE THE MAXIMUM HEADROOM POSSIBLE.
- COORDINATE CONNECTION OF MECHANICAL SYSTEMS WITH EXTERIOR UNDERGROUND AND OVERHEAD UTILITIES AND SERVICES. COMPLY WITH REQUIREMENTS OF GOVERNING REGULATIONS, FRANCHISED SERVICE COMPANIES, AND CONTROLLING AGENCIES. PROVIDE REQUIRED CONNECTION FOR EACH SERVICE
- INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT TO CONFORM WITH DRAWINGS AND SPECS, TO GREATEST EXTENT POSSIBLE. CONFORM TO ARRANGEMENTS INDICATED BY THE CONTRACT DOCUMENTS, RECOGNIZING THAT PORTIONS OF THE WORK ARE SHOWN ONLY IN DIAGRAMMATIC FORM. WHERE COORDINATION REQUIREMENTS CONFLICT WITH INDIVIDUAL SYSTEM REQUIREMENTS, REFER CONFLICT TO THE CONTRACTOR FOR RESOLUTION PRIOR TO
- INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER
- BUILDING SYSTEMS AND COMPONENTS, WHERE INSTALLED EXPOSED IN FINISHED SPACES 10. INSTALL MECHANICAL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE, AND REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. AS MUCH AS PRACTICAL.

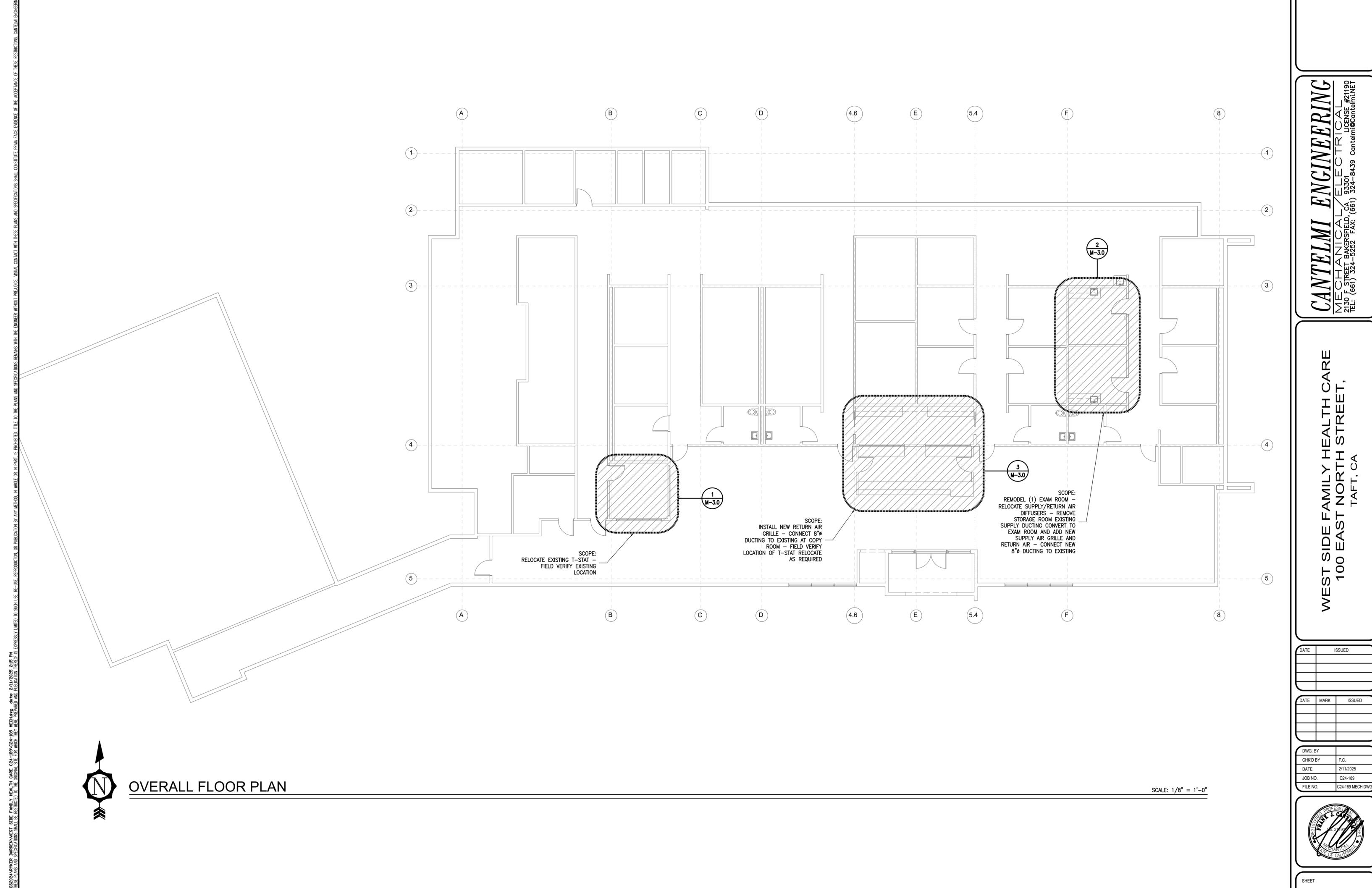
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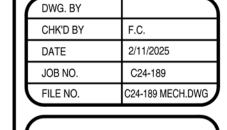
SHEET

NOTHING IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT AN INSTALLATION IN VIOLATION OF APPLICABLE CODES AND/OR RESTRICTIONS AND REQUIREMENTS. CONTRACTOR TO OBTAIN CLARIFICATION FROM ENGINEER OF RECORD WHERE CONFLICTS IN DRAWING OR DIMENSIONS ARISE PRIOR TO PROCEEDING WITH CONSTRUCTION.



NOTHING IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT AN INSTALLATION IN VIOLATION OF APPLICABLE CODES AND/OR RESTRICTIONS. SHOULD ANY CHANGE IN THE DRAWINGS AND/OR SPECIFICATIONS BE NECESSARY IN ORDER TO COMPLY WITH APPLICABLE CODES AND/OR RESTRICTIONS. SHOULD ANY CHANGE IN THE DRAWINGS AND/OR RESTRICTIONS BE NECESSARY IN ORDER TO COMPLY WITH APPLICABLE CODES AND/OR RESTRICTIONS AND REQUIREMENTS. CONTRACTOR TO OBTAIN CLARIFICATION FROM ENGINEER OF RECORD WHERE CONFLICTS IN DRAWING OR DIMENSIONS ARISE PRIOR TO PROCEEDING WITH CONSTRUCTION.





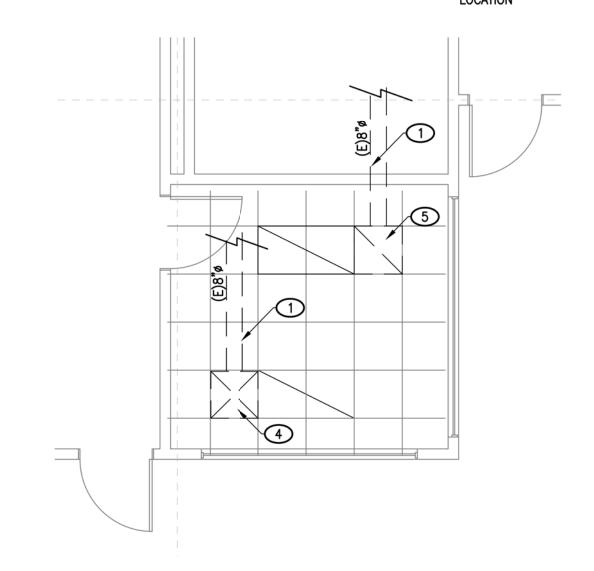


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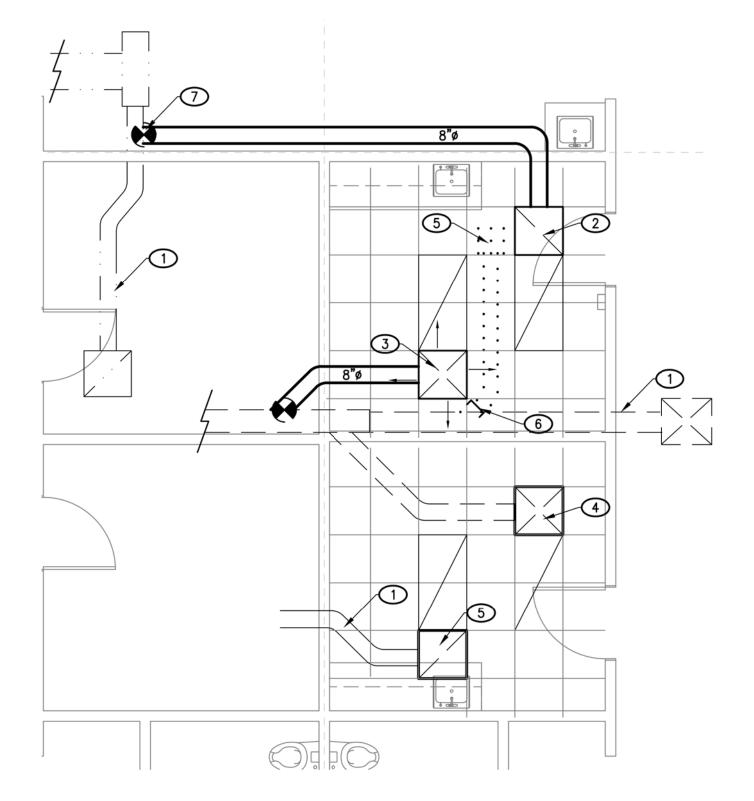
KEYNOTES

KEYNOTES LISTED BELOW PERTAIN TO PLAN ON THIS SHEET ONLY. KEYNOTES FROM THIS LIST THAT ARE NOT KEYED SHALL BE DISREGARDED. ITEMS NOT IDENTIFIED WITH A KEYNOTE BUT DRAWN SIMILAR TO THOSE ITEMS KEYNOTED SHALL BE CONSIDERED AS THOUGH THEY ARE KEYNOTED, CONSISTANT WITH LIKE KEYNOTED ITEMS.

- 1 EXISTING DUCTING TO REMAIN
- 2 INSTALL NEW 22"X22" RETURN AIR DIFFUSER W/8"DUCT CONNECT TO EXISTING AC UNIT
- 3 INSTALL NEW 22"X22" SUPPLY AIR GRILL W/8"DUCT CONNECT TO EXISTING AC UNIT
- 4 EXISTING SUPPLY AIR DIFFUSER TO REMAIN
- 5 EXISTING RETURN AIR GRILLE TO REMAIN
- 6 EXISTING SUPPLY AIR GRILLE AND DUCTING TO BE REMOVED AND CAPPED AT BRANCH LINE
- POINT OF CONNECTION TO EXISTING DUCTING FIELD VERIFY



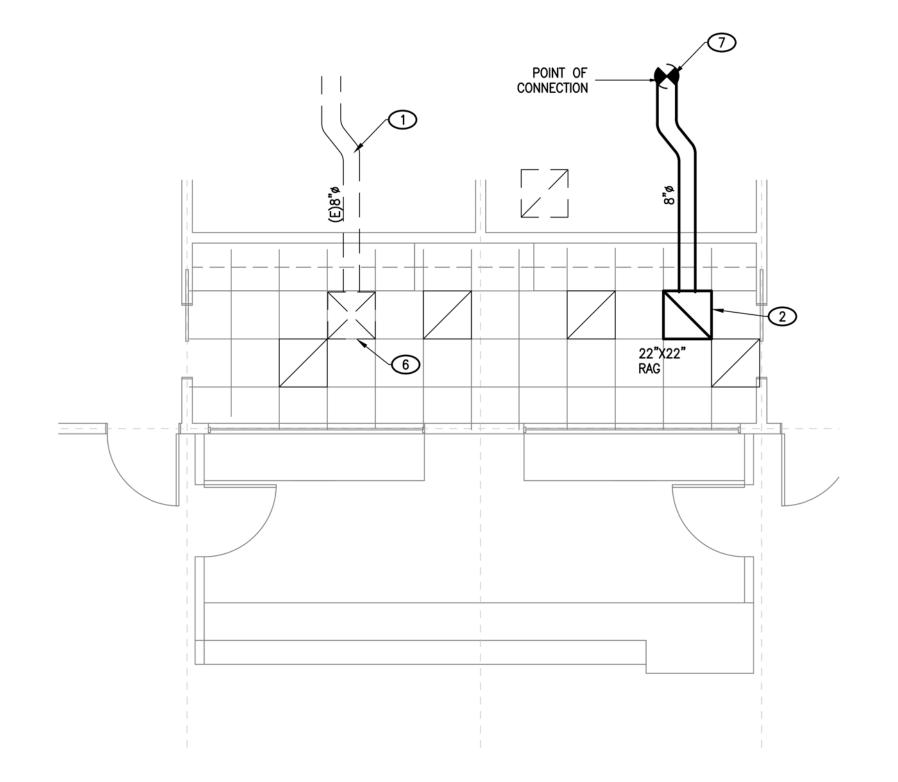




2 - PARTIAL MECHANICAL PLAN

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

ROOM 2 & 3 - EXAM ROOMS



3 - PARTIAL MECHANICAL PLAN SCALE: 1/4" = 1'-0"
ROOMS 4 & 5 - RECEPTION/OFFICE

FIN.

FUNC

FUT

FINISH

FLOOR

**FLASHING** 

FACE OF CONCRETE

FIRE SPRINKLER HEAD

FIRE SPRINKLER LINE

FLUE THRU ROOF

GALVANIZED IRON

FACE OF FINISH

FIREPROOFING

FLOOR SINK

FUNCTION

GAI VANIZED

GAS COCK

GENERAL

GRADE

GROUND GAS LINE GREASE WASTE

**FUTURE** 

TEMPERING VALVE

VENT

VTR

W/O WMF

VITRIFIED CLAY

VENT OFFSET

WASTE LINE

WATER CLOSET WALL CLEANOUT

WATER HEATER

WATERPROOF

WITHOUT

WEIGHT

YARD

WATER HAMMER ARRESTOR

WASHING MACHINE FITTING

VENT THRU ROOF

UNDERWRITERS LABORATORIES

UNLESS OTHERWISE NOTED

A. MATERIALS USED ANYWHERE IN THE WORK MUST HAVE NFPA RATINGS AS FOLLOWING:

SMOKE DEVELOPED - NOT OVER 50 FUEL CONTRIBUTED — NOT OVER 25

B. MATERIALS SHALL BE "SELF EXTINGUISHING".

CAST IRON SOIL PIPE AND CAST IRON/ NEOPRENE GASKET FITTINGS. YARD PIPING, PIPE AND FITTINGS. A.B.S. OR P.V.C. SCHEDULE 40 PIPE AND FITTINGS MAY BE INSTALLED, AS APPROVED BY LOCAL AUTHORITY IN CONCEALED LOCATIONS ONLY. EXCEPTION: ALL SOIL, WASTE & VENTS LOCATED WITHIN A FIRE RATED WALL SHALL BE METALLICS.(STEEL, CAST IRON ECT., NO PVC) IT SHALL BE THE RESPONIBLITY OF THE PLUMBER TO VERIFY ALL FIRE RATED WALLS & CONSTRUCTION AS SHOWN ON THE ARCHITECTURAL DRAWINGS & COORDINATE WITH THE GENERAL CONTRACTOR

SOIL, WASTE AND VENT PIPING ABOVE FLOOR: STANDARD WEIGHT COATED CAST IRON PIPE AND STAINLESS Steel/ Neoprene gasket fitting, or a.b.s. or p.v.c. schedule 40, as approved by local authority in

C. HOT & COLD WATER PIPING ABOVE FLOOR: TYPE "L" COPPER, HARD DRAWN. BELOW GROUND OUTSIDE OF BUILDING: TYPE "K" SOFT DRAWN COPPER TUBING WITH OUT JOINTS.

D. CONDENSATE DRAIN PIPING: TYPE "M" COPPER WITH 95-5 TIN ANTIMONY SOLDER AND WROUGH COPPER FITTINGS. INDIRECT WASTE PIPING: TYPE "M" COPPER WITH 95-5 TIN ANIMONY SOLDER AND WROUGHT COPPER FITTINGS OR

UNDERGROUND GAS PIPING: SCHEDULE 40 BLACK STEEL PIPE WITH LONG RADIUS STEEL WELDING FITTINGS INCLUDING CATHODIC PROTECTION OR POLYETHYLENE AS APPROVED BY LOCAL GAS COMPANY AND AUTHORITY HAVING JURISDICTION. INSTALLATION OF GAS SERVICE PIPING IN VENTED CONDUIT AND MEETING WITH THE

G. GAS PIPING ABOVE GROUND: SCHEDULE 40 BLACK STEEL WITH 125 POUND BLACK MALLEABLE IRON SCREWED FITTINGS. GAS PIPING COMPOUND AT JOINTS IN COMPLIANCE WITH NFPA BULLETIN #45 AND LOCAL applicable codes and suitable for natural gas service. Install moisture traps on "hvac units WATER HEATERS, AND KITCHEN EQUIPMENT. 4"GAS LINE TO BE WELDED AND WELDED BY CERTIFED WELDER.

H. STORM PIPING BELOW GROUND: STANDARD WEIGHT COATED CAST IRON PIPE AND STAINLESS STEEL/ NEOPRENE GASKET FITTING, OR A.B.S. OR P.V.C. SCHEDULE 40. AS APPROVED BY LOCAL AUTHORITY IN CONCEALED

STORM PIPING ABOVE GROUND: STANDARD WEIGHT COATED CAST IRON PIPE AND STAINLESS STEEL/ NEOPRENE GASKET FITTING, OR A.B.S. OR P.V.C. SCHEDULE 40, AS APPROVED BY LOCAL AUTHORITY.

J. TRAPS AND VENTS FOR SERVICE SINK: A.B.S. OR P.V.C. SCHEDULE 40, AS APPROVED BY LOCAL

A. INSULATE ALL HOT AND COLD WATER COPPER PIPING WITH AT LEAST 1" THICK FOAM RUBBER OR FOAM PLASTIC

A. ALL FIXTURES: AS INDICATED ON DRAWINGS WITH EQUAL PRODUCTS FURNISHED BY AMERICAN STANDARD,

A. ALL ACCESSORIES, AS INDICATED ON DRAWING WITH EQUAL PRODUCTS FURNISHED BY WADE, JOSAM, OR

SHUTOFF VALVES UNDERNEATH LAVATORIES, TANK TYPE WATER CLOSETS, AND KITCHEN EQUIPMENT WITH

A. RUN ALL PIPING CONCEALED EXCEPT WHERE OTHERWISE INDICATED ON DRAWINGS.

B. INSTALL VALVES TRAPS CLEANOUT AND OTHER APPARATUS IN AN EASILY ACCESSIBLE LOCATION

C. INSTALL SOIL, WASTE VENT OFFSETS AND CONDENSATE DRAINS WITH A MINIMUM UNIFORM GRADE OF ONE

D. MAINTAIN HOT AND COLD WATER LINES AT LEAST 6 INCHES APART WHERE PIPING IS PARALLEL.

E. PROVIDE ESCUTCHEON PLATES WHERE ALL PIPES PASS THROUGH A FINISHED WALL.

A. FURNISH AND INSTALL ALL PLUMBING FIXTURES COMPLETE WITH ALL EQUIPMENT FITTINGS, TRIMMING, AND

C. EXPOSED PIPING TO FIXTURES: A PRODUCT OF THE FIXTURE MANUFACTURE.

D. PROVIDE STOPS AS MANUFACTURED BY THE FIXTURE MANUFACTURER, WITH METAL — TO — SEAT FOR ALL

A. THE PLUMBING SYSTEM AND ASSOCIATED SYSTEM IS SUBJECT TO FINAL APPROVAL OF THE OWNER'S REPRESENTATIVE AND CODE AUTHORITIES HAVING JURDICTION. PERFORM ALL TESTS REQUIRED TO SHOW CODE

A. AFTER THE PLUMBING PIPING HAS BEEN INSTALLED, INSPECTED, AND APPROVED, FLUSH THE PIPING SYSTEM TO

3.5 MAINTENANCE

A. MAINTAIN ALL PARTS OF THE PLUMBING FIXTURES AND ASSOCIATED EQUIPMENT THROUGHOUT THE GUARANTEE

END OF SECTION

ISSUED

MARK

DWG. BY CHK'D BY

JOB NO.

ISSUED

2/11/2025

C24-189

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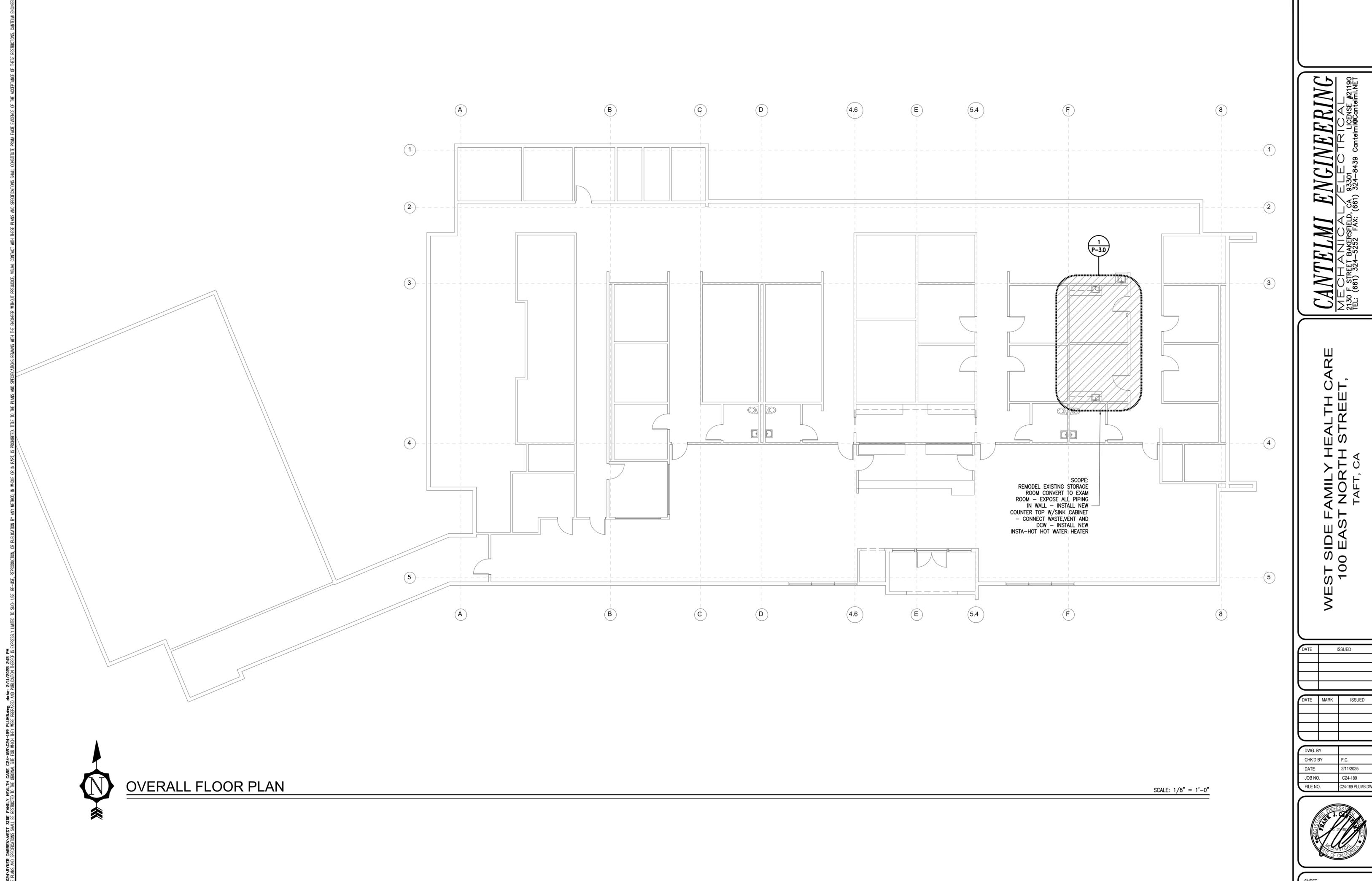
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SHEET

NOTHING IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT AN INSTALLATION IN VIOLATION OF APPLICABLE CODES AND/OR RESTRICTIONS. SHOULD ANY CHANGE IN THE LATEST CODES, REGULATIONS, RESTRICTIONS AND REQUIREMENTS. CONTRACTOR TO OBTAIN CLARIFICATION FROM ENGINEER OF RECORD WHERE CONFLICTS IN DRAWING OR DIMENSIONS ARISE PRIOR TO PROCEEDING WITH CONSTRUCTION.



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l	lacksquare	
L	DWG. BY	
	CHK'D BY	F.C.
ı	DATE	2/11/2025
ı	JOB NO.	C24-189
	FILE NO.	C24-189 PLUMB.DWG



KEYNOTES

EEMAX #SP3277 SINGLE POINT ELECTRIC TANKLESS WATER HEATER — .5 GPM — OUTLET TEMPERATURE 105°—110° — BRAIDED STAINLESS STEEL FLEX CONNECTORS — 3kw —

KEYNOTES LISTED BELOW PERTAIN TO PLAN
ON THIS SHEET ONLY. KEYNOTES FROM THIS LIST
THAT ARE NOT KEYED SHALL BE DISREGARDED.
ITEMS NOT IDENTIFIED WITH A KEYNOTE BUT DRAWN SIMILAR TO THOSE ITEMS KEYNOTED SHALL BE CONSIDERED AS THOUGH THEY ARE KEYNOTED, CONSISTANT WITH LIKE KEYNOTED ITEMS.

- 1 EXISTING COUNTER TOP AND SINK TO REMAIN
- 2 INSTALL NEW COUNTER TOP WITH SINK REFER TO ARCH. PLANS FOR SCHEDULE
- 3 INSTALL NEW WATER HEATER INSTA-HOT 3KW
- 4 EXPOSE ALL UTILITIES TO WALL BEHIND EXISTING SINK
- 5 CONNECT 2"WASTE, 2"VENT OFFSET TO NEW SINK
  6 CONNECT 1/2"DCW TO NEW SINK

3 4 2°V0 1 2°W 5
H 1
2 2°V0 2°W

1 - PARTIAL PLUMBING PLAN

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

ROOM 2 & 3 - EXAM ROOMS

PLUMBING FIXTURE SCHEDULE

DESCRIPTION

10.8 AMPS @277v/1ø

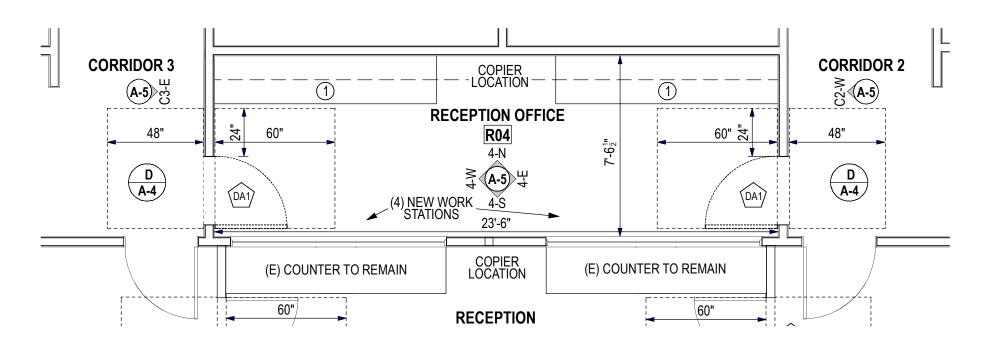
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DHW S&W TRAP VENT

**ELECTRIC** 

**HEATER** 

DOOR SCHEDULE - ADDENDUM 1												
ELEVATION	NUMBER	QTY	SIZE	MATERIAL	FINISH	DESCRIPTION	FRAME					
3'-0"	DA1	2	3070		Stain	(N) S.C. Hinged Door, Temp. Glass	Hallaur					
3'-0"												



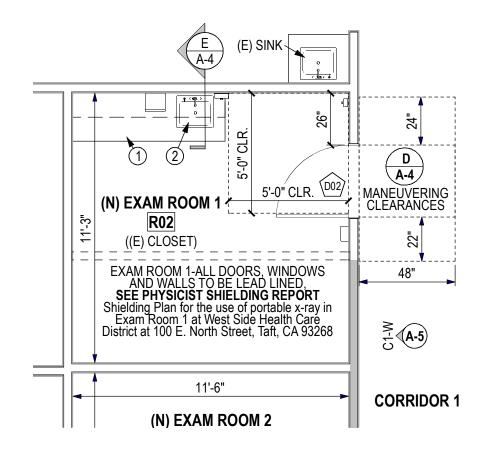
### ADDENDUM 1 - RECEPTION OFFICE DOOR OPTION



PROJECT CONTACT:

Ryan Shultz, MSHCA
Executive Director

(661) 765-7234 Office
(661) 203-5757 Cell
rshultz@wshcd.org



### ADDENDUM 2 - EXAM ROOM 1 TO BE LEAD LINED

PROJECT ADDRESS:

Westside Health Care District
100 E. North Street
Taft, CA. 93268

PROJECT CONTACT:

Ryan Shultz, MSHCA

Executive Director

(661) 765-7234 Office
(661) 203-5757 Cell
rshultz@wshcd.org



# Quality Assurance Services, Inc.

"Quality Is Never An Accident"

May 15, 2025

Attention: Mr. Ryan Shultz

RE: Shielding Plan for the use of portable x-ray in Exam Room 1 at West Side Health Care District at 100 E. North Street, Taft, CA 93268

The recommendations for radiation shielding contained in this Shielding Plan have been made in accordance with the guidance provided in NCRP Reports #49 and #147 and all State requirements.

Recommendations for the facility were made from information supplied by your offices and/or those of your architects or construction contractors.

### **DESIGN INFORMATION, DEFINITIONS, AND ASSUMPTIONS:**

- 1. Workload (W): The Workload (W) factor is supplied by the customer, is commercial data, or is assumed to be a common value for the specified use such as may be obtained from Dosimetry Impact 2004 data for CT or from tables of typical radiographic and fluoroscopic procedure rooms in NCRP-147, and is used in conjunction with shielding factors and equations provided in NCRP-147.
- 2. Occupancy (T): The occupancy (T) factor indicates the fraction of time of exposure at a specific location. Controlled areas are assigned the Occupancy factor of one (1). NCRP Report No. 49, Appendix C, Table 1, and NCRP Report No. 147, Table 4.1 are generally followed to determine appropriate occupancy factors.

### QAS, Inc.

- 3. Weekly Exposure Limit (P): The Weekly Exposure Limit (P) is 2 mrem per week for non-radiation workers and is 10 mrem per week for occupational radiation workers.
- 4. KiloVoltage Potential (kVp): The KiloVoltage Potential (kVp) is assumed to be an average of 120 kVp for scattered X-rays.
- 5. Distance (d): The Distance (d) used in shielding calculations is the distance from the scattering object or from the source of the primary beam to the position of occupancy.
- 6. Walls: The walls of the rooms, unless otherwise noted, are assumed to consist of two 5/8" layers of sheetrock with 3" between the layers which provide insignificant attenuation and do not enter into the calculations.
- 7. Doors: The standard doors of the rooms are assumed to be solid core doors which provide insignificant attenuation and do not enter into the calculations.
- 8. Windows: The standard windows of the rooms are assumed to provide insignificant attenuation and do not enter into the calculations.
- 9. Floor/Ceiling: The Floor and Ceiling occupancies must be specified. When not specified otherwise, a floor-to-floor height of 14 feet is assumed.
- 10. Height of Shielding for Xray: The height of shielding for xray attenuation must be 84 inches (or more if specified) pursuant to California Code of Regulations, Title 17.
- 11. Primary Barrier: The primary barrier has a design safety margin of 12 inches (approximately 0.5 meter).
- 12. Half-Value-Layer (HVL): Values for xray attenuation are taken from NCRP Report No. 49, Appendix C, Table 27, page 88, for specified values of kVp. This report assumes 120 kVp is a typical value resulting in a HVL of 0.286 mm of lead or 1.95 cm of standard concrete.

### QAS, Inc.

- 13. Shielding Value Minimum: The attached excel spreadsheet provides the minimum values of shielding for lead and are given in millimeters thickness or pounds per square foot area or in thickness of concrete. Larger thicknesses of shielding can be used if it is cost effective to do so.
- 14. Unless stated otherwise, all portions of a designated radiation barrier (i.e., doors, windows, and so forth) are to have the same attenuation characteristics as is stipulated for that given barrier. For example, where a radiation barrier is specified to contain 4-pound lead shielding, unless specified otherwise any door or window contained in that barrier must also provide an equivalent attenuation of 4-pound lead.
- 15. All penetrations in lead lined walls must be lined with an equivalent thickness of lead with overlapping lead edges. (No gaps in lead lining.)
- 16. Where existing lead barriers are to be re-used, any penetrations made in an existing lead barrier must be repaired to provide at least as much radiation protection as was afforded prior to the penetration being made.
- 17. Door and window frames must conform to the requirements of NCRP-49 and NCRP-147.

# All "notes" provided in this report and also all "notes" on the calculation spreadsheet(s) must be taken into consideration.

The assumptions indicated on the calculation spreadsheet(s) are important as they directly impact the calculated lead shielding. If you disagree with or wish to modify any of the indicated assumptions, notify the physicist. It is important to note that any assumptions used in determining the proper amount of shielding to be provided can be challenged and justification can be requested by the regulatory bodies. Therefore, it is prudent to be careful in requesting changes or modifications to any of the "standard" assumptions normally used by physicists.

### QAS, Inc.

**CERTIFICATION:** Based on my assumptions and calculations, I declare under penalty of perjury, that the radiation protection design for this project will conform to the applicable provisions of the State Regulations relating to radiation protections.

Any changes or modifications to any room configuration or to any of the specified equipment will require a review and/or modification of the shielding requirements by a qualified medical physicist.

My responsibility is for the design of the shielding as described above and is <u>not</u> for the installation of the shielding. Although not intended as an endorsement, should consultation regarding the installation of the specified lead shielding be desired, RAY-BAR Engineering Corporation, located in Azusa, CA, may be contacted at (626) 969-1818 for such assistance (Ask for Vince).

I further declare that I am a qualified radiation physicist, health physicist and medical physicist.

Sincerely,

Jonathan Casey, MS, DABR

Jonatha Casey

Approved and Reviewed by:

Glenn Deacon, MSEE, MS, DABR

Electrical Engineer and Diagnostic Medical Physicist

President

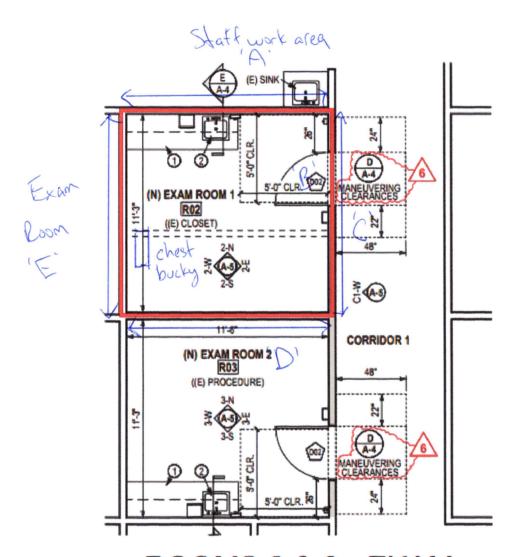
Facility: West Side Health Care District
Location: 100 E. North Street, Taft, CA 93268
Project: Exam Room 1 for Portable X-Ray Use
Number of patients per 40-hour week: 100

P Primary Beam S Scatter Radiation

5/15/2025

Barrier	Description of Barrier	P or S	Design Goal (P) NCRP-147 (mGy/wk)	Occupancy Factor (T) NCRP-147 Table 4.1	Distance To Barrier From Source (m)	NT/Pd <sup>2</sup> (mGy <sup>-1</sup> m <sup>-2</sup> )	Required Lead (lbs/ft²)	Comments
Α	Staff Work Area	s	0.02	1.000	2.03	1212	4.0	1:
В	Hall Door	S	0.02	0.125	2.16	133	2.0	
С	Hallway	S	0.02	0.200	2.10	227	2.0	
D	Exam Room	S	0.02	0.500	2.03	606	2.0	
E	Exam Room	Р	0.02	0.500	1.50	1114	4.0	Chest Bucky
F	Ceiling-Nothing Above	S	0.02	0.000	3.41	0	0.0	Note 1
G	Floor-On Grade	Р	0.02	0.000	1.00	0	0.0	Note 1

Note 1: The common contruction materials comprising this barrier provide sufficient attenuation.



ROOMS 2 & 3 - EXAM
CONVERT CLOSET AND
PROCEDURE TO (2) EXAM ROOM