

PART 2 PRODUCTS 2.1 PERFORMANCE REQUIREMENTS A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction. B. STC-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing and inspecting agency. 2.2 METAL FRAMING AND SUPPORTS A. Steel Framing Members, General: ASTM C 754 1. Steel Sheet Components: ASTM C 645. Thickness specified is minimum uncoated base-meta 2. Protective Coating: ASTM A 653/A 653M, G40, hot-dip galvanized zinc coating. 3. Framing Systems: 1. Studs and Runners: In depth indicated and 0.033 inch thick unless otherwise indicated. 2. Flat Strap and Backing: 0.033 inch thick. Suspension Systems: 1. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch diameter, or double strand of 0.048-inch- diameter wire. 2. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, and 0.162-inch diameter. B. Grid Suspension System for Gypsum Board Ceilings: Interlocking, direct-hung system. a. Manufacturers: Subject to compliance with requirements, provide products by one of the 1) Armstrong World Industries, Inc. 2) Chicago Metallic Corporation. 3) United States Gypsum Company. 2.3 ACCESSORIES A. General: Comply with referenced installation standards. 1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates. **PART 3 EXECUTION** 3.1 INSTALLATION A. Install steel framing to comply with ASTM C 754." 1. Gypsum Plaster Assemblies: Also comply with ASTM C 841. 2. Portland Cement Plaster Assemblies: Also comply with ASTM C 1063.

END OF SECTION 08 14 16

SECTION 09 22 16 NON-STRUCTURAL METAL FRAMING

08 14 16 - FLUSH WOOD DOORS - CONTINUED

E. Install suspension systems level to within 1/8 inch in 12 feet. END OF SECTION 09 22 16

SECTION 09 28 16 - GLASS-MAT FACED GYPSUM BACKING BOARDS

PART 1 GENERAL 1.01 SUMMARY A. Section Includes: Fiberglass-mat faced, moisture resistant gypsum backer board. 1.02 REFERENCES A. ASTM International (ASTM)

1. ASTM C627 Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester. 2. ASTM C840 Standard Specification for Application and Finishing of Gypsum

3. ASTM C1002 Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.

4. ASTM C1178 Standard Specification for Glass Mat Water-Resistant Gypsum Backing Panel. 5. ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 6. ASTM D6329 Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers. 7. ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials.

. Tile Council of North America, Inc. (TCNA): TCA Handbook for Ceramic Tile Installation. Current 1.03 SUBMITTALS

A. Product Data: Manufacturer's specifications and installation instructions for each product specified.

2.01 MANUFACTURERS A. Georgia-Pacific Gypsum LLC: 1. Fiberglass-Mat Faced Gypsum Backing Board: 5/8-inch DensShield Fireguard Tile Backer. 2.02 MATERIALS

1.Thickness: 5/8 inch. 2. Width: 4 feet. 3. Length: 8 feet. 4. Weight: 2.5 lb/sq. ft.

Edges: Square. 6. Surfacing: Coated fiberglass mat on face, back, and long edges. 7. Mold Resistance (ASTM D3273): Not less than 10. in a test as manufactured. 8. Microbial Resistance (ASTM D6329): Will not support microbial growth.

10. Robinson Floor Test Rating (ASTM C627): Light commercial. 11. Acceptable Products: a. 5/8-inch DensShield Fireguard Tile Backer, Georgia-Pacific Gypsum. b. 5/8 inch Durock Glass Mat Tile Backer, USG Approve equal.

2.03 ACCESSORIES A. Screws: ASTM C1002, with corrosion resistant treatment.

PART 3 EXECUTION 3.01 EXAMINATION A. Verification of Conditions:

1. Inspection: Verify that project conditions and substrates are acceptable, to the installer, to begin installation of work of this section. 3.02 INSTALLATION A. General: In accordance with ASTM C840, manufacturer's recommendations and TCA Handbook for

Ceramic Tile Installation. 1. Manufacturer's Recommendations:

a. Current "Product Catalog", Georgia-Pacific Gypsum. 3.03 PROTECTION A. Protect gypsum board installations from damage and deterioration until the date of Substantial

END OF SECTION 09 28 16

SECTION 09 29 00 GYPSUM BOARD

PART 1 GENERAL 1.1 SECTION REQUIREMENTS

A. Submittals: Product Data. PART 2 - PRODUCTS

2.1 PPERFORMANCE REQUIREMENTS A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

B. STC-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing and inspecting 2.2 PANEL PRODUCTS

A. Provide in maximum lengths available to minimize end-to-end butt joints. B. Interior Gypsum Board: ASTM C 1396/C 1396M, in thickness indicated, with manufacturer's standard edges. Regular type unless otherwise indicated Foil backed where indicated Type X where indicated

Type as required for specific fire-resistance-rated assemblies Sag-resistant type for ceiling surfaces. 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following: a. CertainTeed Corporation.

 c. United States Gypsum Company. 2.3 ACCESSORIES A. Trim Accessories: ASTM C 1047, formed from galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet. For exterior trim, use accessories formed from hotdip galvanized-steel sheet, plastic, or rolled zinc.

b. Georgia-Pacific Building Products.

1. Provide NO-COAT® 90-degree cornerbead at outside corners unless otherwise indicated. 2. Provide LC-bead (J-bead) at exposed panel edges. 3. Provide control joints where indicated. B. Joint-Treatment Materials: ASTM C 475/C 475M.

1. Joint Tape: Paper unless otherwise recommended by panel manufacturer. 2. Joint Compounds: Setting-type or Drying-type. 3. Cementitious Backer Unit Joint-Treatment Materials: Products recommended by cementitious backer unit manufacturer. C. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate

1. Low-Emitting Materials: Comply with current VOC rules published by the SCAQMD. D. Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. 1. Low-Emitting Materials: Comply with current VOC rules published by the SCAQMD.

E. Sound-Attenuation Blankets: ASTM C 665, Type I (unfaced).

PART 3 EXECUTION 3.1 INSTALLATION

A. Install gypsum board to comply with ASTM C 840. 1. Isolate gypsum board assemblies from abutting structural and masonry work. Provide edge

trim and acoustical sealant. 2. Single-Layer Fastening Methods: Fasten gypsum panels to supports with screws. 3. Multilayer Fastening Methods: Fasten base layers and face layer separately to supports with screws with screws, and face layers to base layers with adhesive and supplementary fasteners. B. Install cementitious backer units to comply with ANSI A108.11.

C. Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies. D. Finishing Gypsum Board: ASTM C 840. 1. At concealed areas, unless a higher level of finish is required for fire-resistance-rated assemblies, provide Level 1 finish: Embed tape at joints.

2. At substrates for tile, provide Level 2 finish: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges. 3. Unless otherwise indicated, provide Level 3 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges. 4. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture free of starved spots or other evidence of thin application or of application

5. At public lobby, provide Level 4 smooth finish at all exposed gypsum board. No texture. END OF SECTION 09 29 00

SECTION 09 51 13 - ACOUSTICAL PANEL CEILING

PART 1 GENERAL 1.1 SECTION REQUIREMENTS A. Submittals: Product Data and Samples

PART 2 PRODUCTS 2.1 PERFORMANCE REQUIREMENTS A. Seismic Standard: Acoustical panel ceiling shall withstand the effects of earthquake motions determined according to ASCE/SEI 7 as indicated on drawings

2.2 ACOUSTICAL PANELS A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Armstrong World Industries, Inc.

2. United States Gypsum Company. 3. CertainTeed Corporation.

B. ACT-1 - Classification: As follows, per ASTM E 1264: 1. Refer to drawings. 2. CAC: Not less than 33

3. NRC: Not less than 0.60 4. Surface-Burning Characteristics: Class A. C. ACT-2 - Classification: As follows, per ASTM E 1264: 1. Refer to drawings.

2. CAC: Not less than 35 3. NRC: Not less than 0.80 4. Surface-Burning Characteristics: Class A. D. Color: White.

E. Edge Detail: Square Reveal sized-to-fit exposed flange of suspension system. Thickness: 15/16 inch. G. Modular Size: 24 by 48 inches.

2.3 CEILING SUSPENSION SYSTEM

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. United States Gypsum Company. 2. Armstrong World Industries, Inc. CertainTeed Corporation.

B. Ceiling Suspension System: Wide Narrow-face, direct-hung system; ASTM C 635, intermediate heavy-duty structural classification. Face Design: Flat, flush Flanges formed with an integral center reveal. 2. Face Finish: Painted white Painted in color as selected Plated with metallic finish. C. Attachment Devices: Sized for 5 times the design load indicated in ASTM C 635, Table 1, Direct

Hung, unless otherwise indicated. Comply with seismic design requirements. D. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire: ASTM A 641/A 641M. Class 1 zinc coating, soft temper.

1. Size: Provide yield strength at least 3 times the hanger design load (ASTM C 635, Table 1 Direct Hung), but not less than 12ga. wire.

PART 3 - EXECUTION 3.1 INSTALLATION

Gypsum board.

B. Related Requirements:

A. Install acoustical ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook." 1. Fire-Rated Assembly: Install fire-rated ceiling systems according to tested fire-rated design.

B. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit. C. Arrange directionally patterned acoustical units as indicated on Drawings with pattern parallel to long axis of space with pattern parallel to short axis of space.

END OF SECTION 09 51 13

SECTION 09 91 23 - INTERIOR PAINTING

PART 1 GENERAL 1.1 RELATED DOCUMENTS A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY A. Section includes surface preparation and the application of paint systems on the following interior substrates: 1. Concrete masonry units (CMU).

1.3 ACTION SUBMITTALS A. Product Data: For each type of product. Include preparation requirements and application instructions. B. Sustainable Design Submittals: 1. Product Data for Credit EQ 4.2: For paints and coatings, including printed statement of VOC

2. Laboratory Test Reports: For paints and coatings, indicating compliance with requirements for low-emitting materials.

SECTION 09 91 23 - INTERIOR PAINTING - CONTINUED

C. Samples for Initial Selection: For each type of topcoat product. D. Samples for Verification: For each type of paint system and in each color and gloss of topcoat 1. Submit Samples on rigid backing, 8 inches square.

2. Label each coat of each Sample

Label each Sample for location and application area. E. Product List: For each product indicated, include the following: 1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.

.4 CLOSEOUT SUBMITTALS

A. Coating Maintenance Manual: Provide coating maintenance manual including area summary with finish schedule, area detail designating location where each product/color/finish was used. product data pages, material safety data sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used. 1.5 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set

quality standards for materials and execution 1. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery and Handling: Deliver products to Project site in an undamaged condition in manufacturer's original sealed containers, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Packaging shall bear the manufacturer's label with the following information:

1. Product name and type (description). 2. Batch date.

3. Color number.

VOC content. 5. Environmental handling requirements. 6. Surface preparation requirements.

7. Application instructions. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue. 2. Remove rags and waste from storage areas daily. 1.7 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F. B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F

above the dew point; or to damp or wet surfaces.

PART 2 PRODUCTS 2.1 MANUFACTURERS

2. VOC content.

A. Approved Manufacturers: Subject to compliance with requirements, provide company products indicated or comparable product from one of the following:

 Sherwin-Williams. Vista Paint.

3. Or equal. 3. Comparable Products: Comparable products of approved manufacturers will be considered in accordance with Section 016000 "Product Requirements," and the following:

1. Products are approved by manufacturer in writing for application specified. 2. Products meet performance and physical characteristics of basis of design product including published ratio of solids by volume, plus or minus two percent.

C. Source Limitations: Obtain paint materials from single source from single listed manufacturer. 1. Manufacturer's designations listed on a separate color schedule are for color reference only and do not indicate prior approval.

2.2 PAINT, GENERAL Material Compatibility

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

3. All paints and coatings wet-applied on site must meet the applicable VOC limits of the California Air Resources Board (CARB) 2007, Suggested Control Measure (SCM) for Architectural Coatings, or the South Coast Air Quality Management District (SCAQMD) Rule 1113, effective June 3, 2011.

1. Flat Paints and Coatings: 50 g/L. 2. Nonflat Paints and Coatings: 100 g/L. 3. Dry-Fog Coatings: 150 g/L. 4. Primers, Sealers, and Undercoaters: 100 g/L

Industrial Maintenance Coatings: 250 g/L. 6. Stains: 250 g/L. 7. Wood Coatings: 275 g/L.

8. Floor Coatings: 100 g/L. C. Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of D. Threshold: At least 90% by volume, for emissions; 100% for VOC content Complies with California Department of Health Services "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" Version 1.1-2101 (CA

section 01350) E. Colors: As indicated in a color schedule

2.3 SOURCE QUALITY CONTROL A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure: 1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.

2. Testing agency will perform tests for compliance with product requirements 3. Owner may direct Contractor to stop applying coatings if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 EXECUTION

3.1 EXAMINATION A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers. Where acceptability of substrate conditions is in question, apply samples and perform in-situ testing to verify compatibility, adhesion, and film integrity of new paint application.

. Report, in writing, conditions that may affect application, appearance, or performance of paint.B.

1. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter

as follows:

a. Concrete: 12 percent. b. Masonry (Clay and CMU): 12 percent. c. Wood: 15 percent.

d. Gypsum Board: 12 percent. e. Plaster: 12 percent.

2. Gypsum Board Substrates: Verify that finishing compound is sanded smooth. 3. Plaster Substrates: Verify that plaster is fully cured. 4. Spray-Textured Ceiling Substrates: Verify that surfaces are dry.

2. Proceed with coating application only after unsatisfactory conditions have been corrected; application of coating indicates acceptance of surfaces and conditions. 3.2 PREPARATION A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to

substrates indicated 3. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surfaceapplied protection before surface preparation and painting. 1. After completing painting operations, use workers skilled in the trades involved to reinstall

items that were removed. Remove surface-applied protection if any. C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated. D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not

paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions. 1. Concrete Floors: Remove oil, dust, grease, dirt, and other foreign materials. Comply with

SSPC-SP-13/NACE 6 or ICRI 03732. . Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceed that permitted in manufacturer's written instructions. F. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods

recommended in writing by paint manufacturer. G. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion

of subsequently applied paints. H. Aluminum Substrates: Remove loose surface oxidation.

. Wood Substrates: 1. Scrape and clean knots, and apply coat of knot sealer before applying primer. 2. Sand surfaces that will be exposed to view, and dust off. 3. Prime edges, ends, faces, undersides, and backsides of wood.

4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried . Cotton or Canvas Insulation Covering Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates

2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged 4. Do not paint over labels of independent testing agencies or equipment name, identification,

SECTION 09 91 23 - INTERIOR PAINTING - CONTINUED

Before final installation, paint surfaces behind permanently fixed equipment or furniture with

5. Primers specified in painting schedules may be omitted on items that are factory primed or

h. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or

g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or

3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting

2. If test results show that dry film thickness of applied paint does not comply with paint

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from

trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an

D. At completion of construction activities of other trades, touch up and restore damaged or defaced

b. Intermediate Coat: Light industrial coating, interior, water based, matching topcoat

scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

1. Water-Based Light Industrial Coating System - Semigloss:

Water Based Epoxy, Semigloss.

Water Based Epoxy, Semigloss.

1. Water-Based Light Industrial Coating System:

Water Based Epoxy, Semigloss.

Water-Based Light Industrial Coating System:

B. Metal Substrates (Aluminum, Steel, Galvanized Steel):

a. Block Filler: Block filler, latex, interior/exterior.

a. Prime Coat: Primer, rust-inhibitive, water based.

a. Prime Coat: PVA Primer sealer, latex, interior.

3. After completing paint application, clean spattered surfaces. Remove spattered paints by washing,

. Protect work of other trades against damage from paint application. Correct damage to work of other

b. Intermediate Coat: Light industrial coating, interior, water based, matching topcoat.

c. Topcoat: Light industrial coating, interior, water based, semigloss: Pre-Catalyzed

c. Topcoat: Light industrial coating, interior, water based, semigloss: Pre-Catalyzed

b. Intermediate Coat: Light industrial coating, interior, water based, matching topcoat.

c. Topcoat: Light industrial coating, interior, water based, semigloss: Pre-Catalyzed

END OF SECTION 09 91 23

manufacturer's written recommendations, Contractor shall pay for testing and apply additional

coats as needed to provide dry film thickness that complies with paint manufacturer's written

1. Contractor shall touch up and restore painted surfaces damaged by testing.

3. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a

C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller

D. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and

tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI

1. Use applicators and techniques suited for paint and substrate indicated.

3.3 APPLICATION

prime coat only.

items to match exposed surfaces.

uniform paint finish, color, and appearance.

performance rating, or nomenclature plates.

factory finished if acceptable to topcoat manufacturers.

a. Equipment, including panelboards.

b. Uninsulated metal piping.

c. Uninsulated plastic piping.

d. Pipe hangers and supports

other paintable jacket material.

b. Uninsulated metal piping.

c. Uninsulated plastic piping

d. Pipe hangers and supports.

other paintable jacket material.

h. Other items as directed by Architect.

a. Equipment, including panelboards.

e. Metal conduit.

f. Plastic conduit.

e. Metal conduit.

f. Plastic conduit

that are visible from occupied spaces.

agency to inspect and test paint for dry film thickness.

3.4 FIELD QUALITY CONTROL

recommendations.

painted surfaces.

A. CMU Substrates:

C. Gypsum Board Substrates:

3.5 CLEANING AND PROTECTION

3.6 INTERIOR PAINTING SCHEDULE

1. Paint the following work where exposed in equipment rooms:

2. Paint the following work where exposed in occupied spaces:

g. Tanks that do not have factory-applied final finishes.

Manual.'

Security Work:

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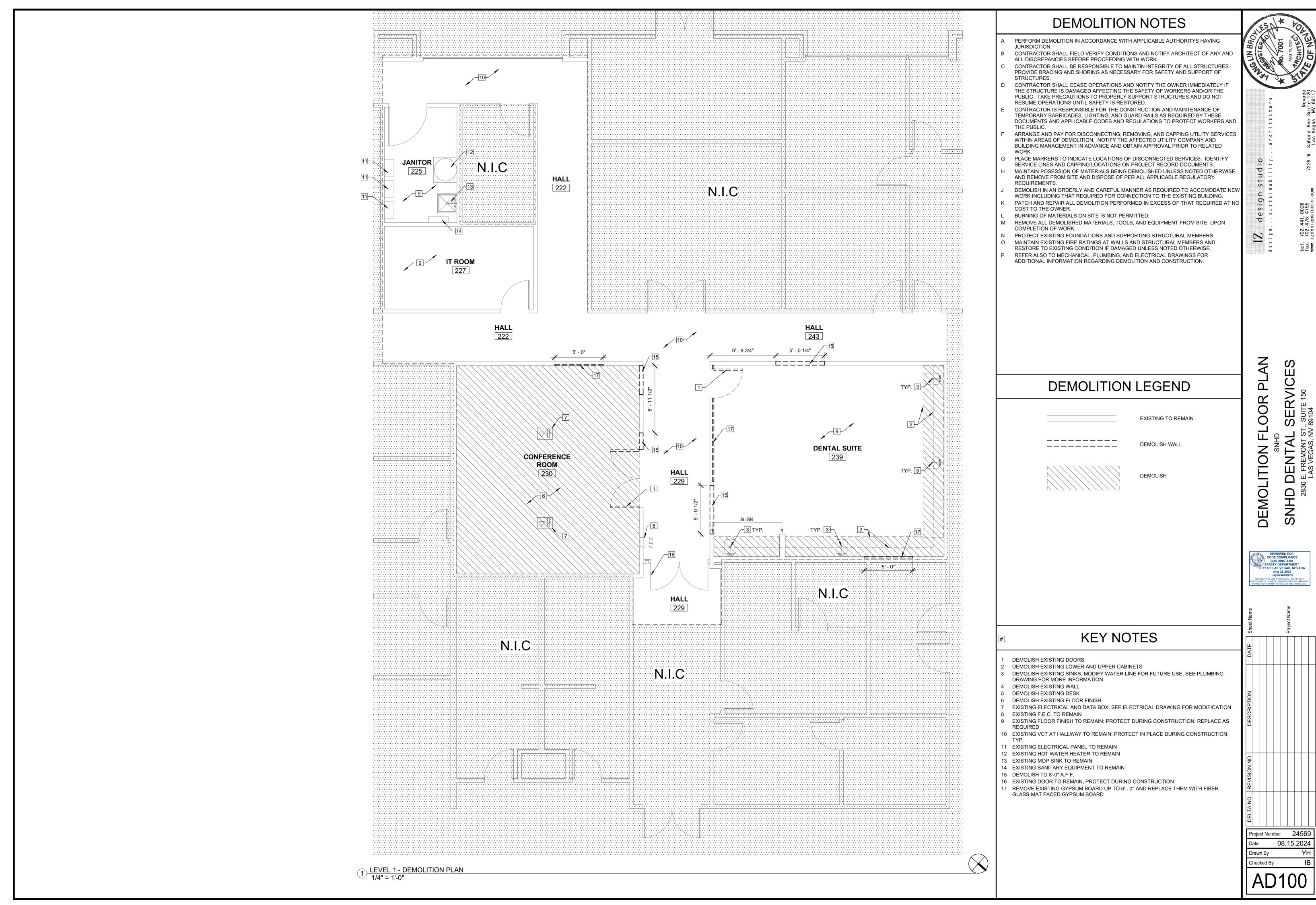
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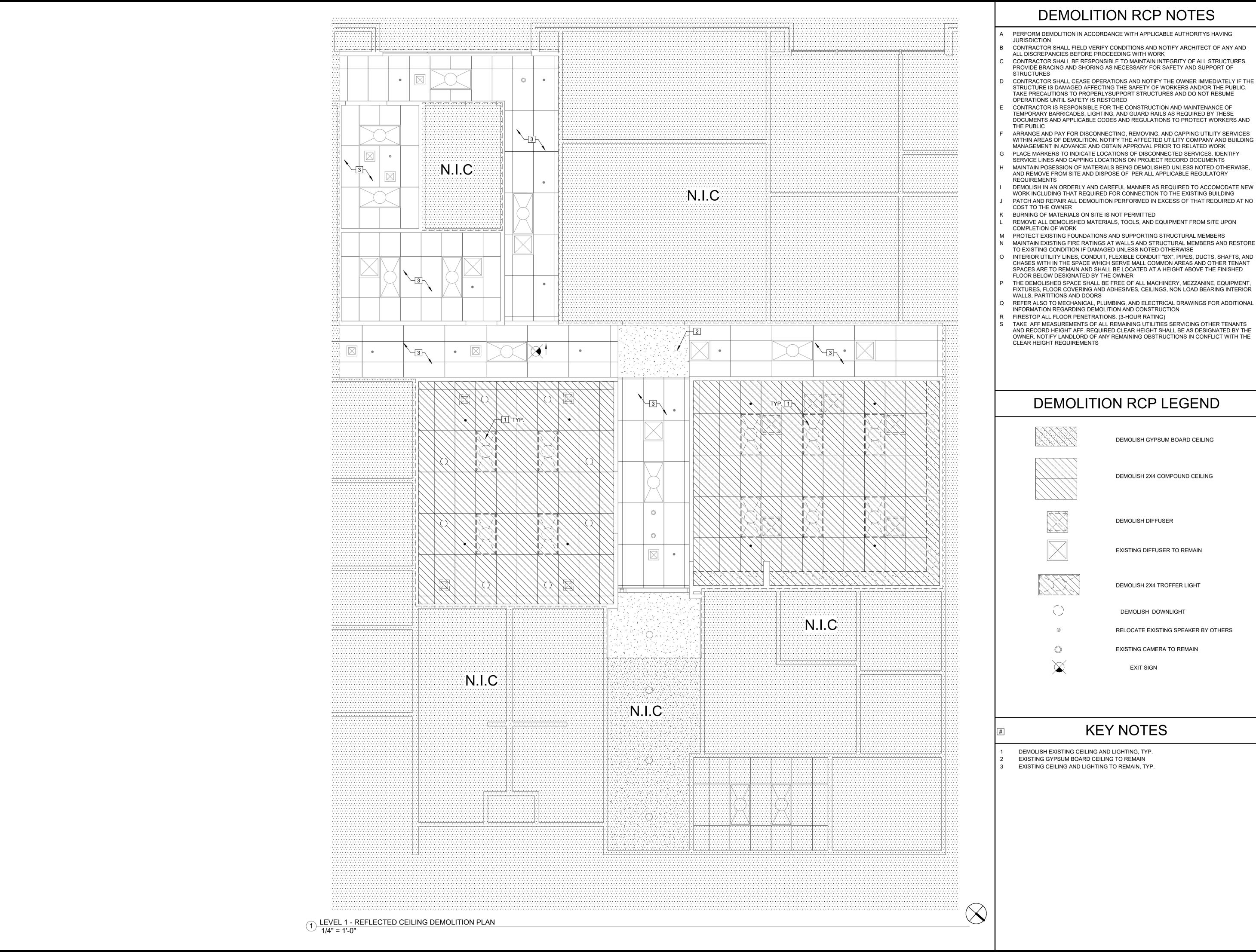
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Project Number 24569 08.15.2024

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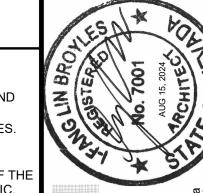
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- PERFORM DEMOLITION IN ACCORDANCE WITH APPLICABLE AUTHORITYS HAVING
- CONTRACTOR SHALL FIELD VERIFY CONDITIONS AND NOTIFY ARCHITECT OF ANY AND
- CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN INTEGRITY OF ALL STRUCTURES.
- CONTRACTOR SHALL CEASE OPERATIONS AND NOTIFY THE OWNER IMMEDIATELY IF THI STRUCTURE IS DAMAGED AFFECTING THE SAFETY OF WORKERS AND/OR THE PUBLIC. TAKE PRECAUTIONS TO PROPERLYSUPPORT STRUCTURES AND DO NOT RESUME
- CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION AND MAINTENANCE OF TEMPORARY BARRICADES, LIGHTING, AND GUARD RAILS AS REQUIRED BY THESE
- DOCUMENTS AND APPLICABLE CODES AND REGULATIONS TO PROTECT WORKERS AND
- MANAGEMENT IN ADVANCE AND OBTAIN APPROVAL PRIOR TO RELATED WORK
- MAINTAIN POSESSION OF MATERIALS BEING DEMOLISHED UNLESS NOTED OTHERWISE, AND REMOVE FROM SITE AND DISPOSE OF PER ALL APPLICABLE REGULATORY
- DEMOLISH IN AN ORDERLY AND CAREFUL MANNER AS REQUIRED TO ACCOMODATE NEW WORK INCLUDING THAT REQUIRED FOR CONNECTION TO THE EXISTING BUILDING PATCH AND REPAIR ALL DEMOLITION PERFORMED IN EXCESS OF THAT REQUIRED AT NO
- REMOVE ALL DEMOLISHED MATERIALS, TOOLS, AND EQUIPMENT FROM SITE UPON
- PROTECT EXISTING FOUNDATIONS AND SUPPORTING STRUCTURAL MEMBERS
- MAINTAIN EXISTING FIRE RATINGS AT WALLS AND STRUCTURAL MEMBERS AND RESTORE
- INTERIOR UTILITY LINES, CONDUIT, FLEXIBLE CONDUIT "BX", PIPES, DUCTS, SHAFTS, AND CHASES WITH IN THE SPACE WHICH SERVE MALL COMMON AREAS AND OTHER TENANT SPACES ARE TO REMAIN AND SHALL BE LOCATED AT A HEIGHT ABOVE THE FINISHED
- FIXTURES, FLOOR COVERING AND ADHESIVES, CEILINGS, NON LOAD BEARING INTERIOR
- REFER ALSO TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR ADDITIONAL
- TAKE AFF MEASUREMENTS OF ALL REMAINING UTILITIES SERVICING OTHER TENANTS AND RECORD HEIGHT AFF. REQUIRED CLEAR HEIGHT SHALL BE AS DESIGNATED BY THE OWNER. NOTIFY LANDLORD OF ANY REMAINING OBSTRUCTIONS IN CONFLICT WITH THE



DEMOLISH 2X4 TROFFER LIGHT



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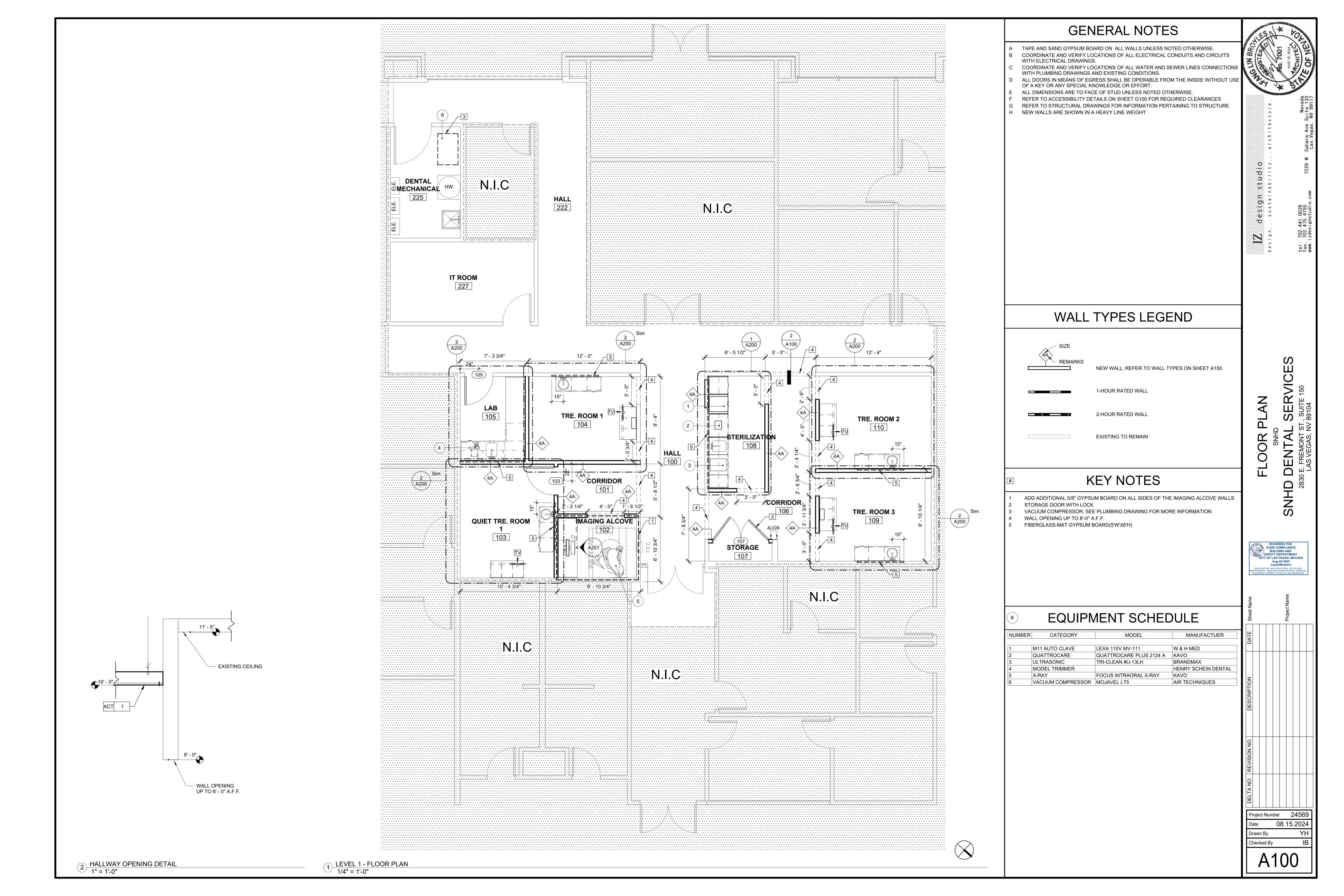
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DEMOLITION

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DESCRIPTION					
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Project Number 24569 08.15.2024



DOOR SCHEDULE | NUMBER | PAIR | W | H | T | TYPE | MATL. | FINISH | RATING | TYPE | MATL. | FINISH | FRAME | FRAME | FRAME | FINISH | FIN

		DOOF	HARDWARE SET	
MANUFACTURER ABBREVIATION:	IVE- IVES	YAL- YALE	ZER- ZERO	

DOOR: 1	07	PAIR WITH STORAGE FUNCTION or(s) with the following:	N				
QTY 8 1 1 1 1 2 1 2	EA EA EA EA EA EA	DESCRIPTION HINGE CONST LATCHING BOLT DUST PROOF STRIKE STOREROOM LOCK PERMANENT LFIC CORE COORDINATOR SURFACE CLOSER ASTRAGAL SILENCER	CATALOG NUMBER 5BB1 4.5 X 4.5 FB61P DP1/DP2 AS REQ LFIC-PB-5405 LN X CONST CORE 1210 MATCH EXIST KEYWAY/KEYING COR X FL X MB 4050A RW/PA 139A-S SR64/65 AS REQUIRED	FINISH 652 606 626 626 626 628 689 A GRY	MFR IVE IVE YAL C-R IVE LCN ZER IVE		
HW SET: 02 – WOOD SINGLE WITH OFFICE FUNCTION DOOR: 105 Provide each SGL door(s) with the following:							

CATALOG NUMBER

LFIC-PB-5404LN X CONST CORE

8400 10" X 2" LDW B-CS

SR64/65 AS REQUIRED

1210 MATCH EXIST KEYWAY/KEYING

5BB1 4.5 X 4.5

WS406/407CCV

HW SET: 03 – WOOD SINGLE WITH PASSAGE (NON-LOCKING) FUNCTION

PERMANENT LFIC CORE

DESCRIPTION

ENTRY LOCK

KICK PLATE

WALL STOP

SILENCER

HINGE

DOOR: 103
Provide each SGL door(s) with the following:

QTY

EA

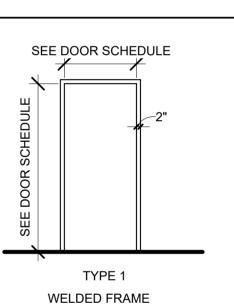
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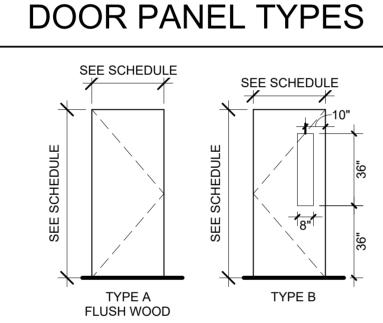
EA

EA

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MF
4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	PB-5401 LN	626	YA
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64/65 AS REQUIRED	GRY	IVE

DOOR FRAME TYPES





IVE

YAL C-R

IVE IVE

626

626

630

630

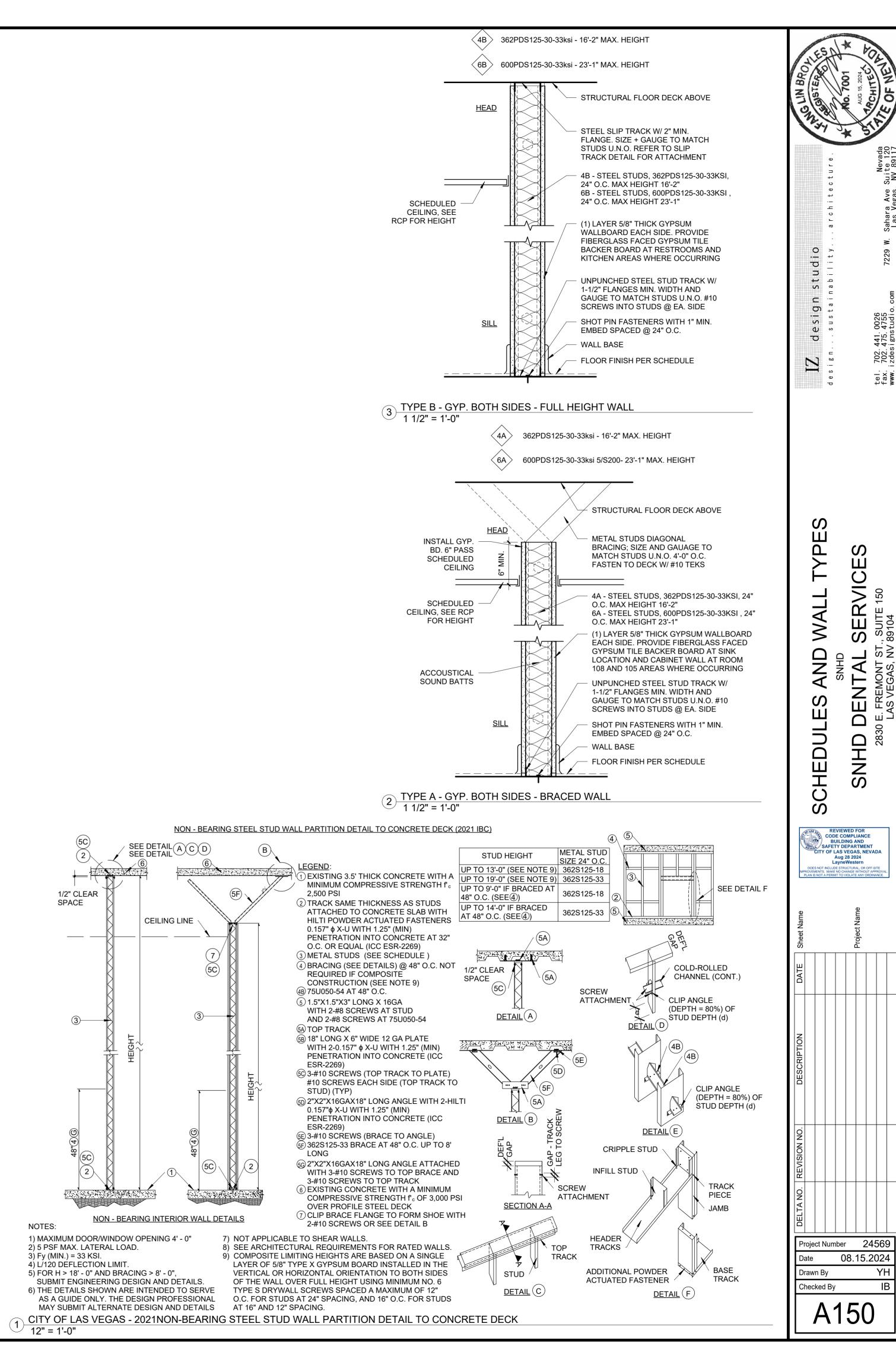
GRY

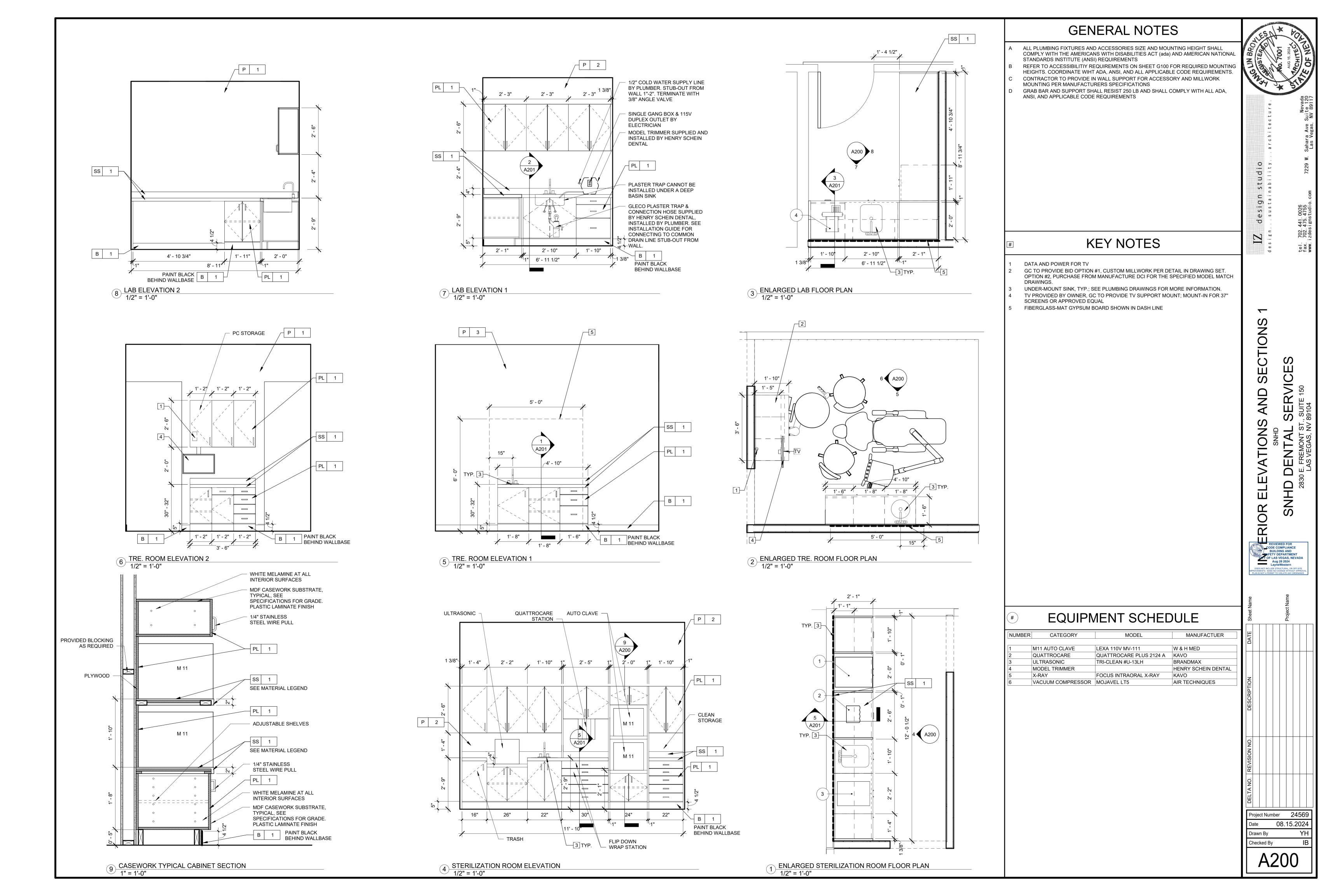
ROOM FINISH SCHEDULE

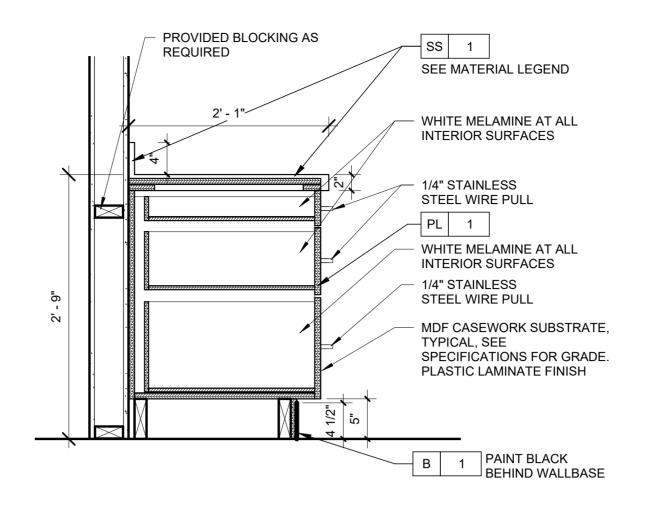
					CELLING	
NUMBER	NANAE	ELOOD EINICH	DACE FINICIA	MALL FINICIA	CEILING	COMMENTS
NUMBER	NAME	FLOOR FINISH	BASE FINISH	WALL FINISH	FINISH	COMMENTS
100	HALL	SEE FLOOR PLAN	B - 1	P - 2	SEE RCP	
101	CORRIDOR	SEE FLOOR PLAN	B - 1	P - 2	SEE RCP	
102	IMAGING ALCOVE	SEE FLOOR PLAN	B - 1	P - 1	SEE RCP	
103	QUIET TRE. ROOM 1	SEE FLOOR PLAN	B - 1	P - 1; P - 3	SEE RCP	
104	TRE. ROOM 1	SEE FLOOR PLAN	B - 1	P - 1; P - 3	SEE RCP	
105	LAB	SEE FLOOR PLAN	B - 1	P - 1; P - 2	SEE RCP	
106	CORRIDOR	SEE FLOOR PLAN	B - 1	P-2	SEE RCP	
107	STORAGE	SEE FLOOR PLAN	B - 1	P-2	SEE RCP	
108	STERILIZATION	SEE FLOOR PLAN	B - 1	P-2	SEE RCP	
109	TRE. ROOM 3	SEE FLOOR PLAN	B - 1	P - 1; P - 3	SEE RCP	
110	TRE. ROOM 2	SEE FLOOR PLAN	B - 1	P - 1; P - 3	SEE RCP	
222	HALL	SEE FLOOR PLAN	B - 1	P - 2	SEE RCP	
225	DENTAL MECHANICAL	SEE FLOOR PLAN	B - 1	P - 1	SEE RCP	
227	IT ROOM	SEE FLOOR PLAN	B - 1	P - 1	SEE RCP	

FINISH LEGEND

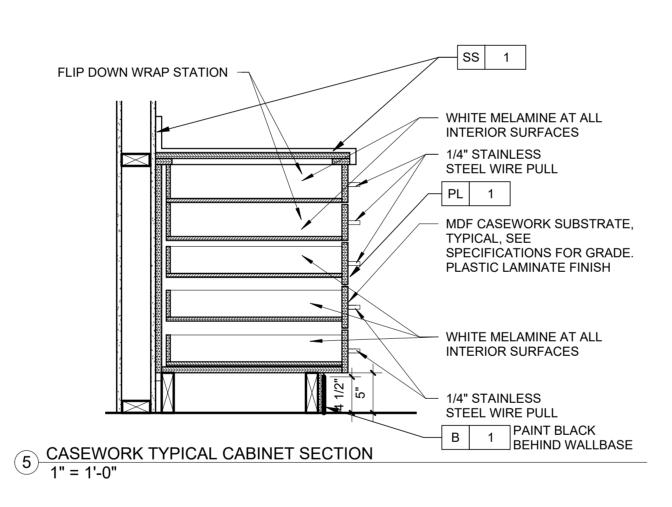
REF#	DESCRIPTION/CLASS	PRODUCT NAME	COLOR/FINISH	SIZE	SOURCE	CONTACT	NOTES
ACT - 1	ACOUSTIC CEILING TILE	CIRRUS TEGULAR SECOND LOOK, W.15/16" SQUARE LAY-IN	WHITE	24 X 48	ARMSTRONG OR EQUAL		
ACT - 2	MINERAL FIBER CEILING TILE	ULTIMA HEALTH ZONE 15/16" SQUARE LAY-IN	WHITE	24 X 48	ARMSTRONG		
B -1	RUBBER BASE	4" TALL COVE;4.5" TALL COVE UNDER CABINETS	00004	4"	PHILADELPHIA COMMERCIAL	thomas.love@philadelphia- commercial.com	
LVT - 1	WOOD VINYL PLANK	PURVIEW ILLE	URBANE KHAKI 00720	6" X 48" X 5MM	PHILADELPHIA COMMERCIAL		DIAGONAL RUNNING BOND INSTALLATION
P - 1	ZERO VOC PAINT	2 COATS LATEX	PURE WHITE SW7005, STAIN		SHERWIN WILL		GYPSUM BOARD TEXTURE T MATCH EXISTING
P - 2	ZERO VOC PAINT	2 COATS LATEX	SANDBAR SW7547, STAIN		SHERWIN WILL		GYPSUM BOARD TEXTURE T MATCH EXISTING
P - 3	ZERO VOC PAINT	2 COATS LATEX	DRIZZLE SW6479, STAIN		SHERWIN WILL	I	GYPSUM BOARD TEXTURE T MATCH EXISTING
PL - 1	PLASTIC LAMINATE	PLASTIC LAMINATE	GRAYSTONE 464-58		FORMICA		CABINETS
PL - 2	PLASTIC LAMINATE	PLASTIC LAMINATE	HAZEL WALNUT 5788-NG		FORMICA		
SS - 1	SOLID SURFACE	SOLID SURFACE	608 LIMED CONCRETE		FORMICA		CONTERTOP/ BACKSPLASH
VCT - 1	RESILIENT FLOOR	ADMIX	SHARKS TOOTH, SUNDIAL AND SCALLOP	36 X 36	PATCRAFT		STRAIGHT GRID INSTALLATI

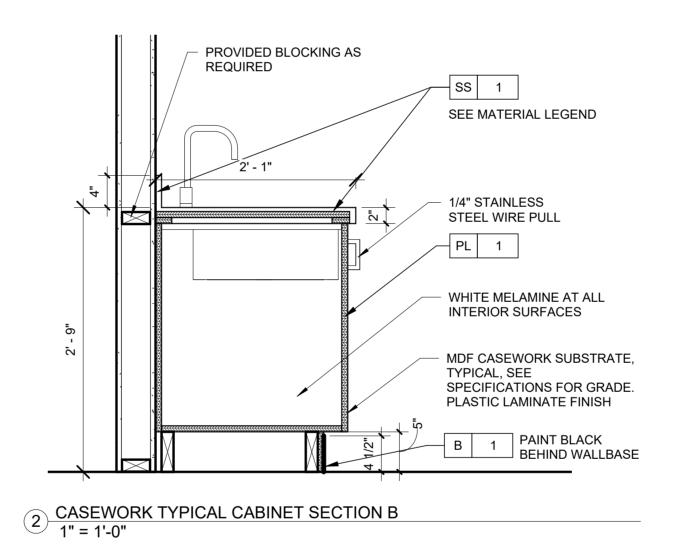


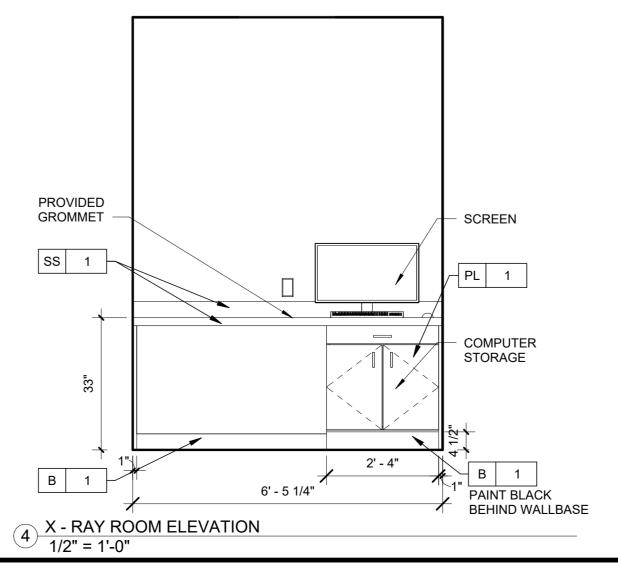


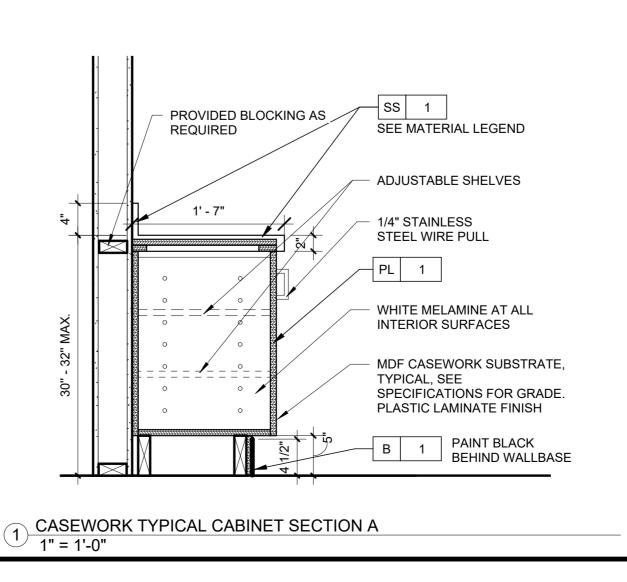


3 CASEWORK TYPICAL CABINET SECTION C 1" = 1'-0"









GENERAL NOTES

- ALL PLUMBING FIXTURES AND ACCESSORIES SIZE AND MOUNTING HEIGHT SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ada) AND AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) REQUIREMENTS
- B REFER TO ACCESSIBILITIY REQUIREMENTS ON SHEET G100 FOR REQUIRED MOUNTING HEIGHTS. COORDINATE WIHT ADA, ANSI, AND ALL APPLICABLE CODE REQUIREMENTS.

 C CONTRACTOR TO PROVIDE IN WALL SUPPORT FOR ACCESSORY AND MILLWORK
- MOUNTING PER MANUFACTURERS SPECIFICATIONS

 D GRAB BAR AND SUPPORT SHALL RESIST 250 LB AND SHALL COMPLY WITH ALL ADA,
 ANSI, AND APPLICABLE CODE REQUIREMENTS

KEY NOTES

ELEVATIONS AND SECTIONS 2

SNHD

HD DENTAL SERVICES

LAS VEGAS, NV 89104

design studio

441. 475. signs

702. 702. zdes

tel. fax. www.

Project Name

REVIEWED FOR CODE COMPLIANCE BUILDING AND AFETY DEPARTMENT OF LAS VEGAS, NEVADA Aug 28 2024 LayneWestern DOES NOT INCLUDE STRUCTURAL, OR OFF-SITE MPROVEMENTS. MAKE NO CHANGE WITHOUT APPROV. PLAN IS NOT A PERMIT TO VIOLATE ANY ORDINANCE.

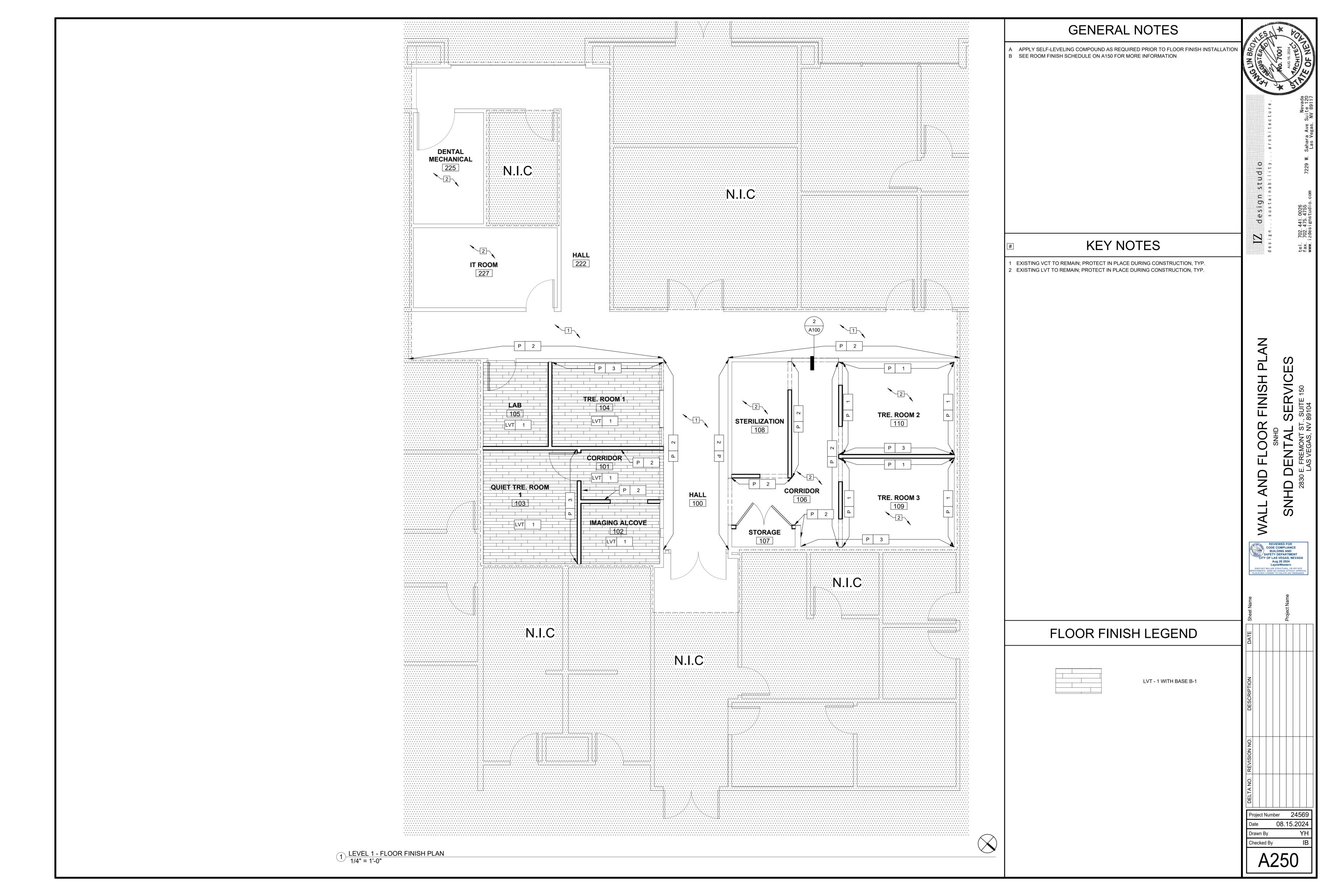
 Project Number
 24569

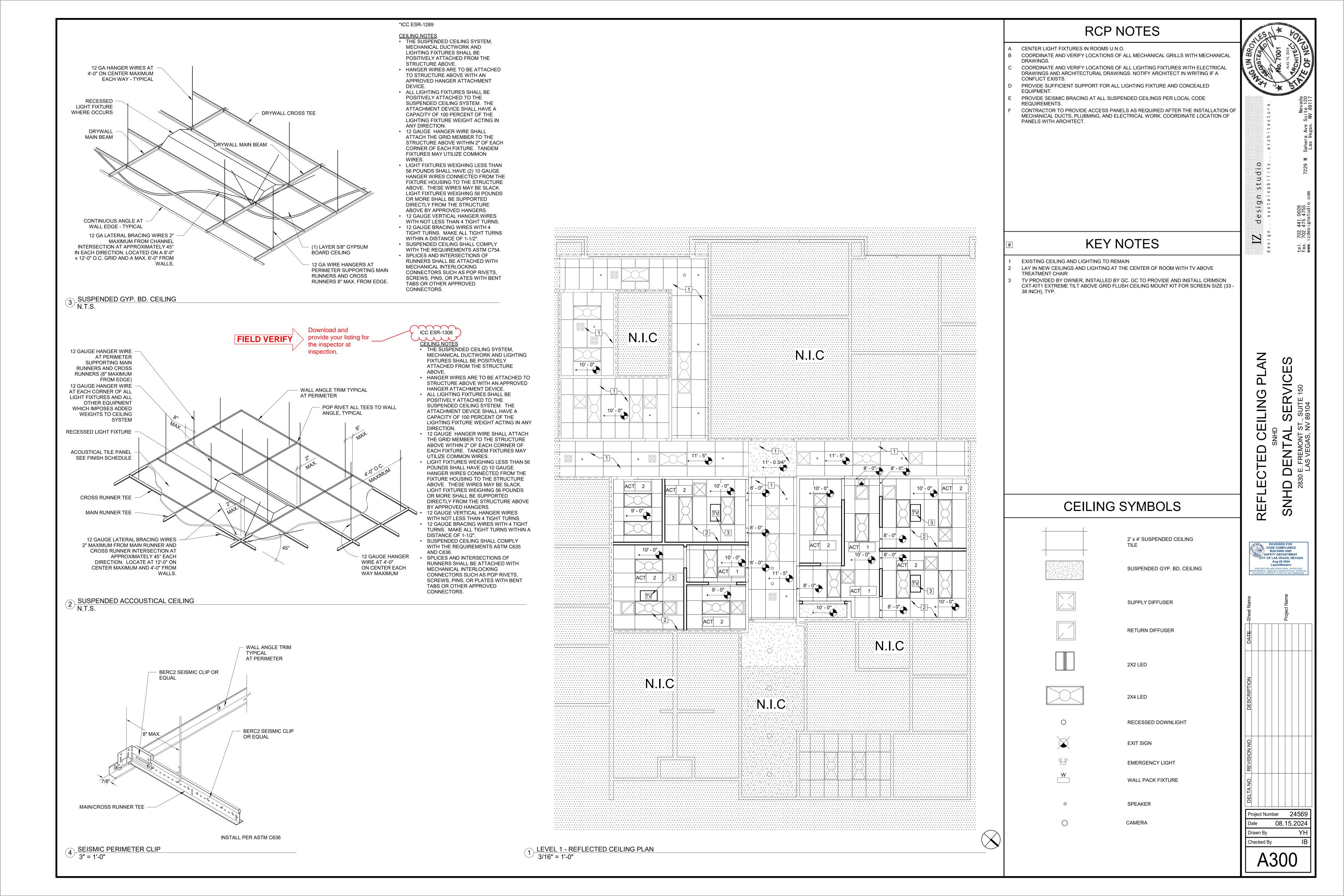
 Date
 08.15.2024

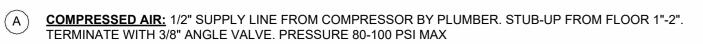
 Drawn By
 YH

 Checked By
 IB

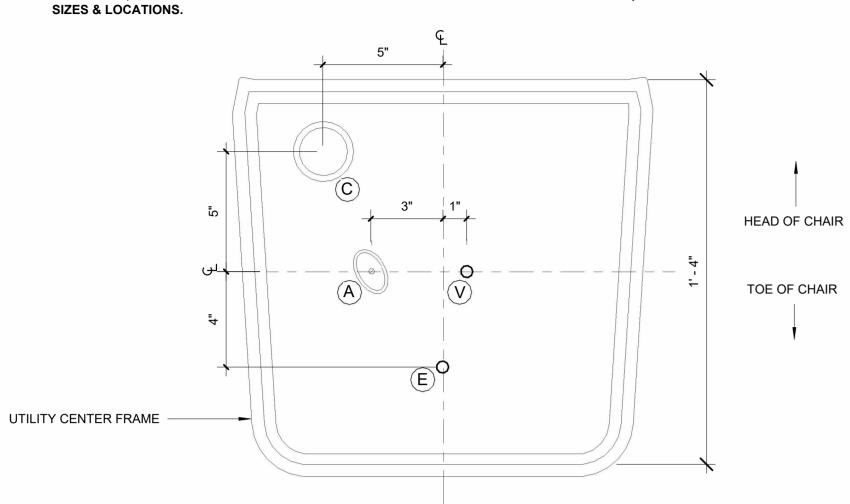
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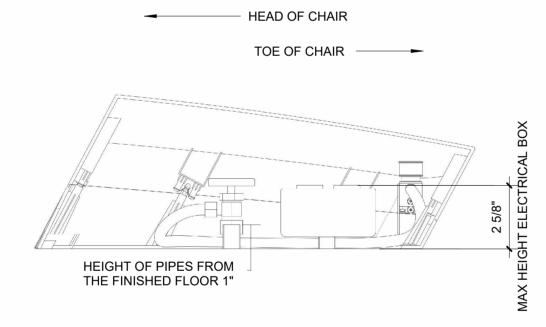


- CENTRAL VACUUM: 5/8" RISER BY PLUMBER (SCH. 40 PVC OR TYPE M COPPER). TERMINATE 1"-2" A.F.F.
- **ELECTRICAL:** TWO GANG BOX & 115V QUAD OUTLET BY ELECTRICIAN. CHAIR MAX DRAW: 8.5A
- <u>CONDUIT:</u> PVC CONDUIT WITH PULL- STRING BY ELECTRICIAN. 6" MIN. RADIUS FOR ALL BENDS. STUB-UP FLUSH WITH SUB-FLOOR, MARK LOCATION AT FINISH. **QUANTITY OF CONDUIT TERMINATIONS WILL VARY, SEE SHEET SE. 1 FOR**

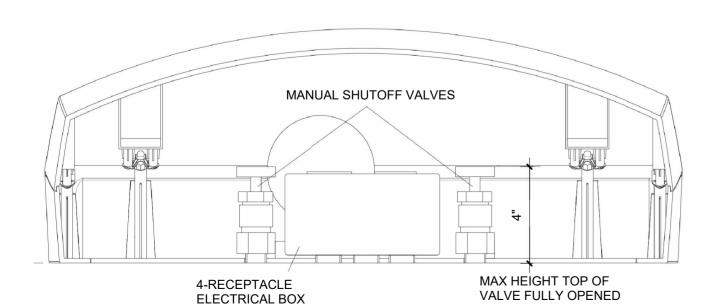


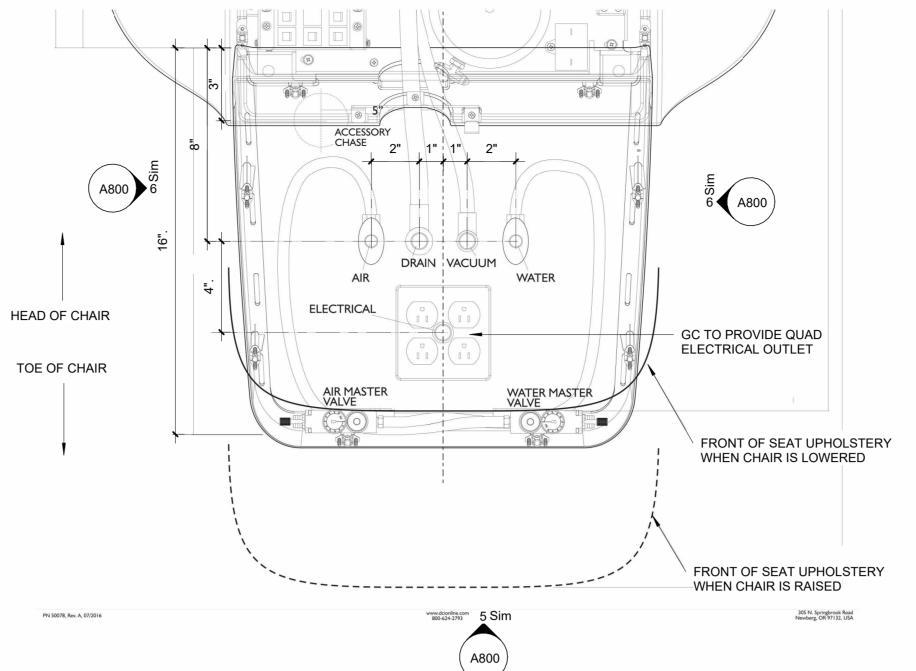
1. ALL UTILITIES HEREIN TO BE SUPPLIED & INSTALLED BY LICENSED CONTRACTORS. FINAL CONNECTIONS TO EQUIPMENT BY HENRY SCHEIN 2. ALL UTILITIES MUST BE NO HIGHER THAN 4 1/4" A.F.F. AT FINISH. 3. ALL PLUMBED SYSTEMS MUST BE FLUSHED CLEAN OF ANY DEBRIS PRIOR TO EQUIPMENT INSTALLATION.

7 PLAN VIEW CHAIR UTILITIES DETAIL 3" = 1'-0"

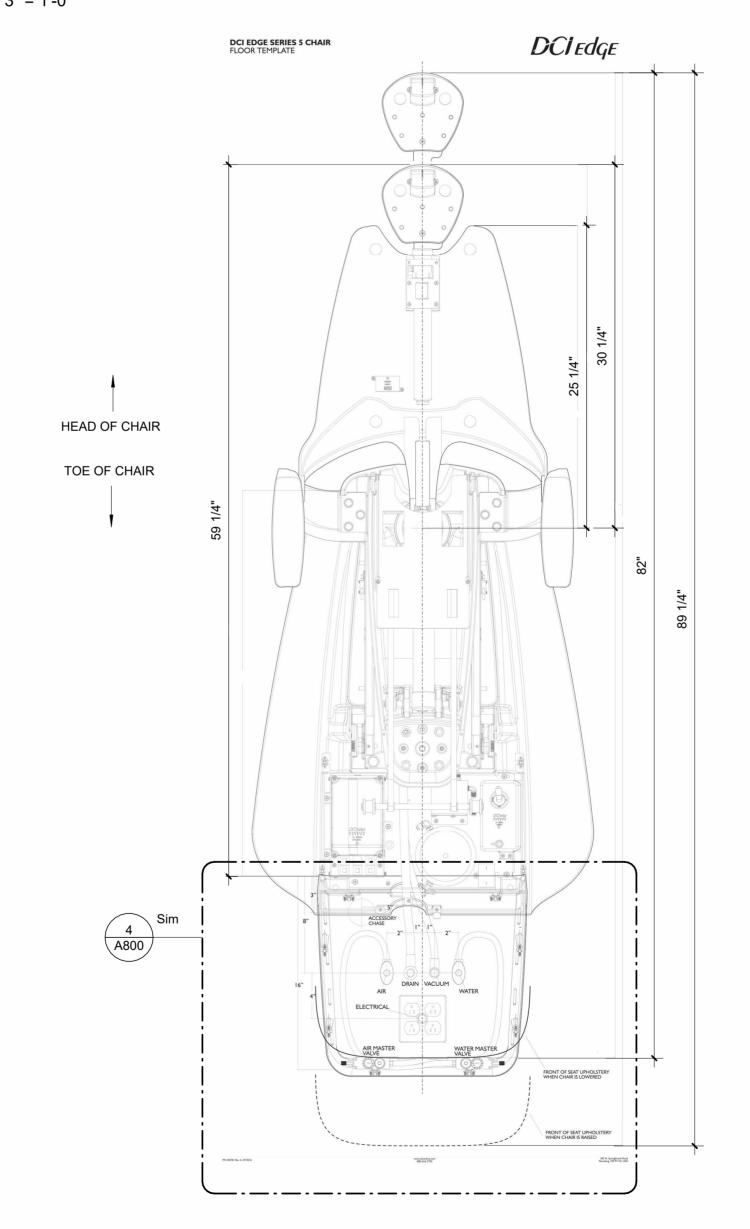


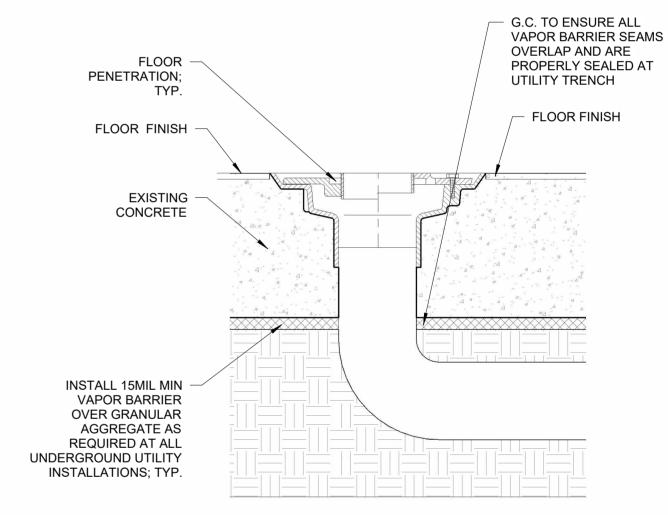
6 DENTAL CHAIR SIDE VIEW
3" = 1'-0"





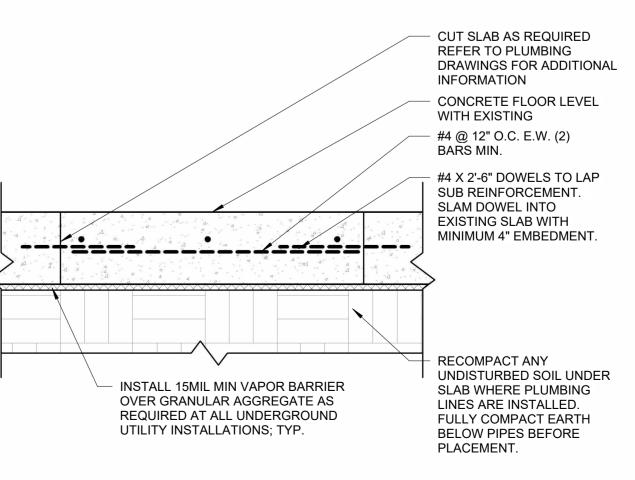
4 DENTAL CHAIR ENLARGE DETAIL 3" = 1'-0"

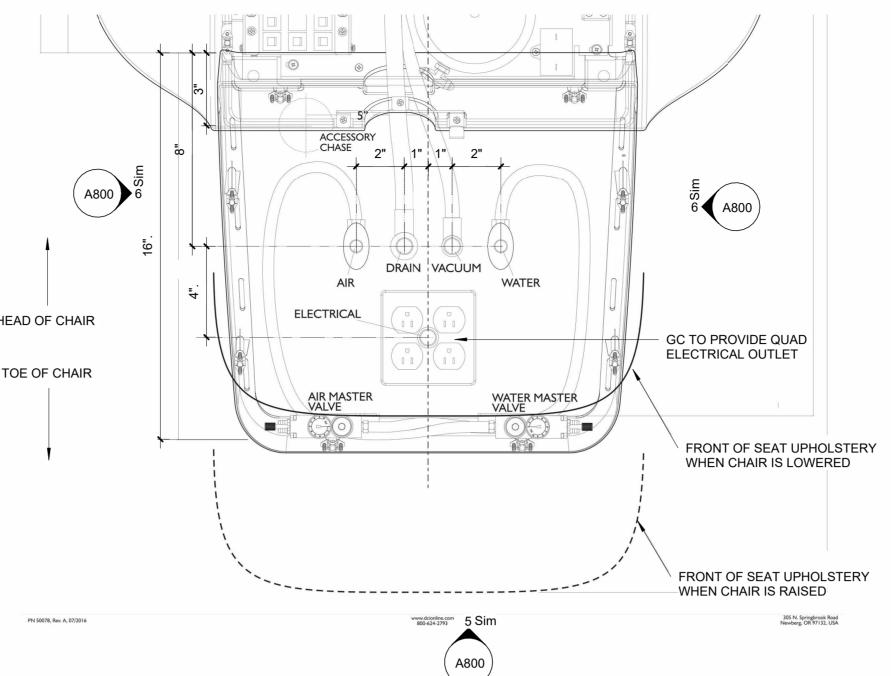






1 1/2" = 1'-0"





* DENTAL CHAIR FINAL CONECTION BY OTHERS

3 DENTAL CHAIR DETAIL 1 1/2" = 1'-0"

5 DENTAL CHAIR FRONT VIEW
3" = 1'-0"

REVIEWED FOR
CODE COMPLIANCE
BUILDING AND
SAFETY DEPARTMENT
CITY OF LAS VEGAS, NEVADA
Aug 28 2024
LayneWestern

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441. 475. i gns

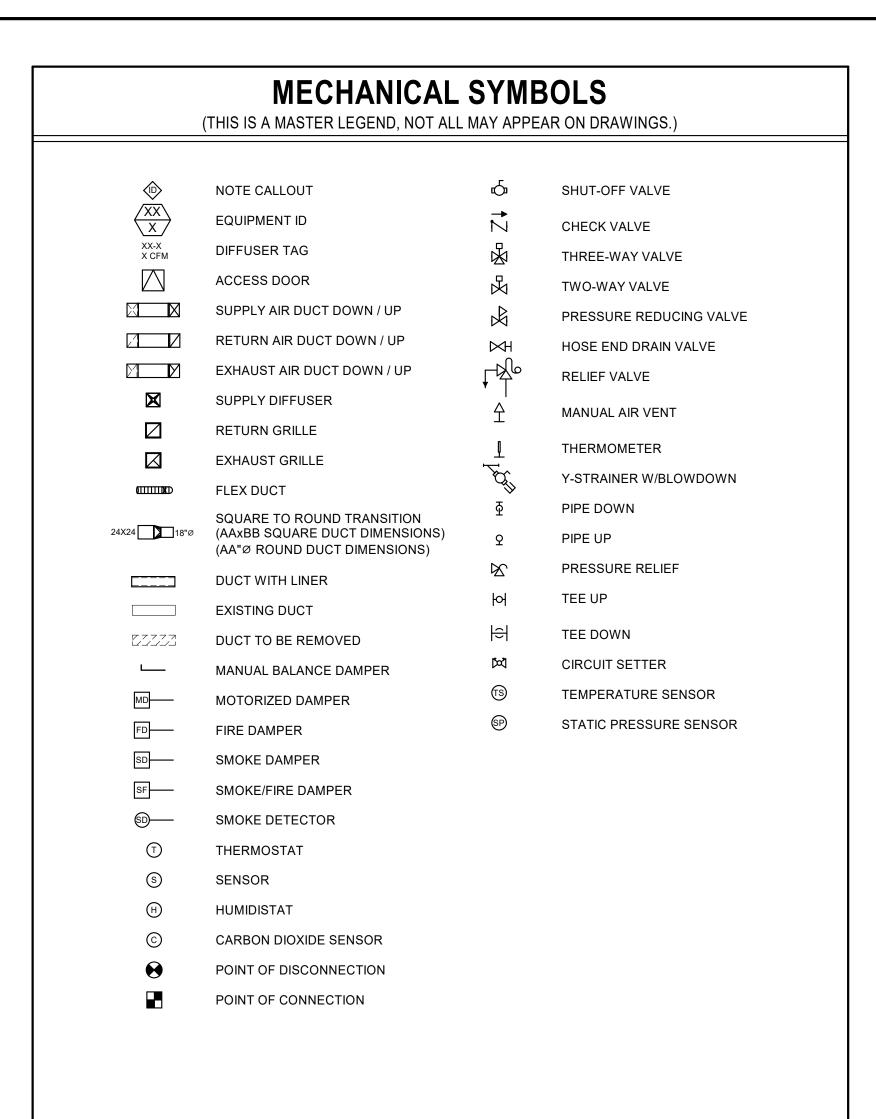
tel. fax. www.

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SNHD

Project Number 24569 08.15.2024 Drawn By Checked By

A800



MECHANICAL LINETYPES

(THIS IS A MASTER LEGEND, NOT ALL MAY APPEAR ON DRAWINGS.)

CHILLED WATER RETURN PIPING

CHILLED WATER SUPPLY PIPING

HEATING WATER RETURN PIPING

HEATING WATER SUPPLY PIPING

CONDENSATE DRAIN PIPING

CONDENSER WATER RETURN PIPING

CONDENSER WATER SUPPLY PIPING

REFRIGERANT PIPING (SUCTION / LIQUID)

------ 4" CHR ------

----- 4" CHS -----

———4" HWR ———

-----4" HWS -----

-----4" CWR -----

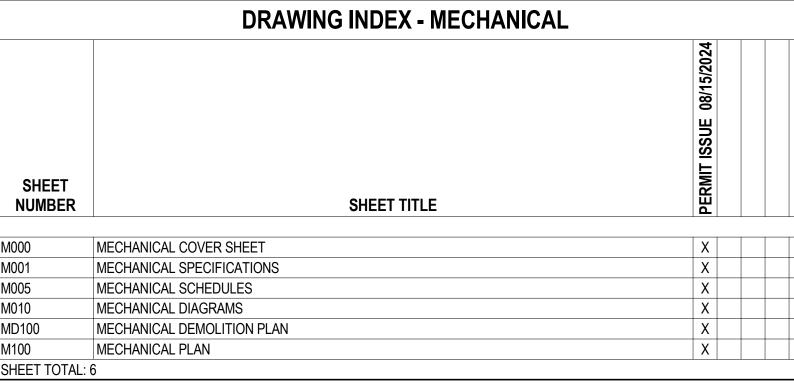
-----4" CWS ------

_____ 0" CD _____

----- 4" RS/RL-----

	(THIS IS A MASTER LEGEND, NOT A		,
AABC	AMERICAN BUILDING COUNCIL	N/A	NOT APPLICABLE
AFF	ABOVE FINISHED FLOOR	NC	NORMALLY CLOSED
ASHRAE	AMERICAN SOCIETY OF HEATING,	NEBB	NATIONAL ENVIRONMENTAL
7.0111.7.L	REFRIGERATION, AND AIR CONDITIONING	NEBB	BALANCING BUREAU
	ENGINEERS	NEC	NATIONAL ELECTRIC CODE
		NFPA	NATIONAL FIRE PROTECTION
BHP	BRAKE HORSEPOWER		ASSOCIATION
BTUH	BRITISH THERMAL UNIT PER HOUR	NIC	NOT IN CONTRACT
		NO	NORMALLY OPEN
CFM	CUBIC FEET PER MINUTE	NTS	NOT TO SCALE
CHR CHS	CHILLED WATER SUPPLY	OA	OUTSIDE AID
CND	CHILLED WATER SUPPLY CONDENSATE DRAIN	OAT	OUTSIDE AIR OUTSIDE AIR TEMPERATURE (°F
CR	CONDENSATE DRAIN CONDENSER WATER RETURN	OBD	OPPOSED BLADE DAMPER
CS	CONDENSER WATER SUPPLY	OFCI	OWNER FURNISHED, CONTRACT
		2. 2.	INSTALLED
D	DRAIN		
DB	DRY BULB TEMPERATURE (°F)	PD	PRESSURE DROP
DDC DEG	DIRECT DIGITAL CONTROLS DEGREES FAHRENHEIT	PSI PSIA	POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH ABS
DIA, Ø	DIAMETER	PSID	POUNDS PER SQUARE INCH ABS
DIA, Ø DX	DIRECT EXPANSION	1 010	DIFFERENTIAL
	DIRECT EXTANOION	PSIG	POUNDS PER SQUARE INCH GAL
(E)	EXISTING TO REMAIN		
ĖA	EXHAUST AIR, EACH	(R)	EXISTING TO BE RELOCATED
EAT	ENTERING AIR TEMPERATURE (°F)	RA	RETURN AIR
EER	ENERGY EFFICIENCY RATIO	RH RPM	RELATIVE HUMIDITY REVOLUTIONS PER MINUTE
EFF ELEC	EFFICIENCY ELECTRICAL	KPIVI	REVOLUTIONS PER MINUTE
ESP	EXTERNAL STATIC PRESSURE	SA	SUPPLY AIR
EWT	ENTERING WATER TEMPERATURE (°F)	SD	SMOKE DAMPER
	(.,	SEER	SEASONAL ENERGY EFFICIENCY
°F	DEGREES FAHRENHEIT	SFD	SMOKE FIRE DAMPER
FPM	FEET PER MINUTE	SP	STATIC PRESSURE
0.4	0405 00 041105	SQ.FT. SS	SQUARE FEET STAINLESS STEEL
GA GAL	GAGE OR GAUGE GALLONS	33	STAINLESS STEEL
GAL	GALLONS	TAB	TEST AND BALANCE
HP	HORSEPOWER	TEMP	TEMPERATURE
HPG	HIGH PRESSURE GAS	TSP	TOTAL STATIC PRESSURE
HSPF	HEATING SEASONAL PERFORMANCE	TYP	TYPICAL
LID	FACTOR	LIDC	LINIEODM BLULDING CODE
HR	HEATING WATER SURBLY	UBC UMC	UNIFORM BUILDING CODE UNIFORM MECHANICAL CODE
HS HZ	HEATING WATER SUPPLY HERTZ	UON	UNLESS OTHERWISE NOTED
I I L	HENIZ	UPC	UNIFORM PLUMBING CODE
IBC	INTERNATIONAL BUILDING CODE		
IMC	INTERNATIONAL MECHANICAL CODE	V/PH	VOLTS/PHASE
IPC	INTERNATIONAL PLUMBING CODE	VFD	VARIABLE FREQUENCY DRIVE
L /\//	KII OMATT	WB	WET BULB TEMPERATURE
KW	KILOWATT	WG	WATER GAUGE
LAT	LEAVING AIR TEMPERATURE (°F)	WMS	WIRE MESH SCREEN
LBS,#	POUNDS		
LWT	LEAVING WATER TEMPERATURE	(X)	EXISTING TO BE DEMOLISHED
MDU	ONE THOUSAND BY HE		
MBH MCA	ONE THOUSAND BTUH MINIMUM CIRCUIT AMPS		
MOCP	MAXIMUM OVER CURRENT PROTECTION		

	DRAWING INDEX - MECHANICA	L	
SHEET NUMBER	SHEET TITLE	ERMIT ISSUE 08/15/2024	
NOWIDER	SHEET TITLE		
M000	MECHANICAL COVER SHEET	X	
M001	MECHANICAL SPECIFICATIONS	X	•
M005	MECHANICAL SCHEDULES	X	
M010	MECHANICAL DIAGRAMS	X	
MD100	MECHANICAL DEMOLITION PLAN	X	•
M100	MECHANICAL PLAN	X	•
SHEET TOTAL:	6	,	



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441. 475. signs

702. 702. zdes

tel. fax. www.

design studio

SHEE.

COVER () MECHANIC SNHD

Project Number 24569 08.15.2024

Drawn By

Checked By

HPA HPA

Consulting Engineers 6280 South Valley View Blvd, Suite #416 Las Vegas, NV 89118 Phone: (702) 685-0136 Fax: (702) 685-8890 Web: www.hpace-lv.com

L24060

MECHANICAL SPECIFICATIONS

GENERAL PROVISIONS

THE MECHANICAL CONTRACTOR SHALL PROVIDE THE WORK SHOWN ON THE PLANS:

OWNER AN APPROVED FULLY FUNCTIONING AND OPERATIONAL SYSTEM.

- "PROVIDE" SHALL BE DEFINED AS INSTALL, MAKE ALL FINAL CONNECTIONS, AND TURNOVER TO THE
- "WORK" SHALL INDICATE ALL MATERIALS, LABOR, TRANSPORTATION, EQUIPMENTS, TOOLS, SUPERVISION, AND ANY OTHER SERVICES AND/OR MATERIALS REQUIRED FOR THE INSTALLATION AND PROPER OPERATION OF THE ENTIRE SYSTEM.
- ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH THE LATEST EDITIONS OF THE ADOPTED CODES AS IDENTIFIED BY THE AUTHORITY HAVING JURISDICTION.
- ANY FEES AND REQUIRED PERMITS SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
- PRIOR TO INSTALLATION, THE MECHANICAL CONTRACTOR SHALL CAREFULLY EXAMINE ALL CONSTRUCTION DOCUMENTS AND COORDINATE THE WORK WITH ALL OTHER TRADES. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE WORK FITS INTO THE BUILDING AS SHOWN WITH REASONABLE EXCEPTIONS TO THE LAYOUT AS REQUIRED TO AVOID INTERFERENCE WITH OTHER TRADES. CONTRACTOR IS TO MAINTAIN ACCURATE AS BUILT SET AND DOCUMENT ALL EXCEPTIONS AND MODIFICATIONS TO THE PLANS.
- CONSTRUCTION DOCUMENTS PROVIDED ARE DIAGRAMMATIC IN NATURE AND INDICATE THE SIZE, TYPE, CONFIGURATION, AND LOCATIONS OF THE WORK. ALL COMPONENTS OF THE SYSTEM MAY NOT BE SHOWN. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL COMPONENTS ARE PROVIDED AND INSTALLED TO COMPLETE THE WORK ACCORDING TO INDUSTRY STANDARDS.
- DO NOT SCALE DRAWINGS.
- CONTRACTOR TO INSTALL THE WORK REASONABLY PLUMB TO BUILDING CONSTRUCTION AND MAY REQUIRE ALTERNATE ROUTING BASED ON UNFORESEEN FIELD CONDITIONS.
- IDENTICAL ITEMS SHOWN ON PLANS SHALL BE PROVIDED THOUGH EACH SIMILAR ITEM MAY NOT BE DETAILED.
- THE CONTRACTOR IS TO CONFIRM AND FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO PERFORMING WORK. ANY VARIATIONS FROM THE CONTRACT DOCUMENTS SHOULD BE COMMUNICATED TO THE ENGINEER FOR REVIEW.
- WORK IS INDICATED NEW UNLESS NOTED OTHERWISE.
- THE CONTRACTOR, PRIOR TO BIDDING, SHALL VISIT THE SITE AND NOTE THE EXISTING CONDITIONS, WORK SHOWN ON CONTRACT DOCUMENTS SHALL BE EVALUATED IN RELATION TO THE EXISTING CONDITIONS. ANY DEVIATION SHALL BE NOTED AND IN WRITING, NOTIFY THE ENGINEER OF SUCH DIFFERENCES. NO CHANGE ORDERS WILL BE ALLOWED DUE TO UNFAMILIARITY OF EXISTING CONDITIONS BY THE CONTRACTOR.
 - THE CONTRACTOR PROPOSAL SHOULD BE BASED ON THE MANUFACTURERS OR AS APPROVED EQUALS AS LISTED ON THE PLANS.

SUBMITTAL

- CONTRACTOR TO SUBMIT THREE SETS (OR AS REQUIRED BY OWNER/OWNER'S REPRESENTATIVE) OF SHOP DRAWINGS (OR ELECTRONIC VERSION IF APPROVED BY OWNER/ARCHITECT) INCLUDING TECHNICAL PERFORMANCE DATA FOR ALL HVAC EQUIPMENT AND ACCESSORIES AS IDENTIFIED ON THE PLANS TO THE ENGINEER FOR REVIEW. COMPLIANCE OR NON-COMPLIANCE WITH CONTRACT DOCUMENTS WILL BE NOTED AND RETURNED BACK TO OWNER PRIOR TO BEGINNING WORK. THE CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL ENGINEERING FEES ASSOCIATED WITH PERMIT DOCUMENT MODIFICATIONS BASED ON EQUIPMENT SUBSTITUTIONS.
- ANY AND ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THE OWNER /OWNER'S REPRESENTATIVE SHALL PRELIMINARILY APPROVE THE SUBSTITUTION PROPOSED IN WRITING.
 - IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE THE BURDEN OF PROOF OF EQUAL IN THE SUBMITTAL WITH PERFORMANCE, SPECIFICATIONS, DIMENSIONS, WEIGHTS, ELECTRICAL REQUIREMENTS AS APPLICABLE, WITH ALL ITEMS CLEARLY IDENTIFIED AND IS TO COORDINATE THE CHANGE WITH ALL OTHER TRADES AND FIELD CONDITIONS.
 - CONTRACTOR SHALL ALSO IDENTIFY ALL COST DEBITS OR CREDITS IN WRITING TO EVALUATE THE PROPOSED SUBSTITUTION AS IT RELATES TO THE OTHER TRADES.
 - FINAL DETERMINATION OF AN OR EQUAL IS ENTIRELY BASED ON ENGINEERS EVALUATION OF THE INFORMATION INCLUDED IN THE SUBMITTAL.
- AT THE CONCLUSION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE MINIMUM THREE (OR AS REQUIRED BY OWNER/OWNER'S REPRESENTATIVE) COPIES OF AS-BUILT DOCUMENTS.
- CONTRACTOR TO SUBMIT SHOP DRAWINGS OF TEMPERATURE CONTROL SYSTEM DRAWINGS SHOWING DEVICES PROPOSED FOR USE, LOCATION OF DEVICES, WIRING, SEQUENCE OF OPERATIONS, SCREENSHOTS OF USER INTERFACE SCREENS, AND NETWORK DIAGRAMS.

WARRANTY

- ALL MATERIALS AND INSTALLATION SHALL BE GUARANTEED FOR A MINIMUM OF ONE YEAR FROM TURNOVER DATE TO OWNER AS ACCEPTED, WITH THE FOLLOWING EXCEPTION.
 - A. REFRIGERATION COMPRESSORS FIVE YEAR WARRANTY.
- THE CONTRACTOR SHALL GUARANTEE THAT THE INSTALLATION WILL MEET OR EXCEED ALL PERFORMANCE REQUIREMENTS AS OUTLINED IN THE CONTRACT DOCUMENTS AS OPERATED BY THE OWNER IN ACCORDANCE WITH CONTRACTOR INSTRUCTIONS.
 - IN THE EVENT THAT THE SYSTEMS DO NOT MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL REMEDY THE SITUATION AT NO COST TO THE OWNER AND WITHOUT DELAY TO RECTIFY THE PROBLEM AND SATISFY THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

MECHANICAL PRODUCTS

- EQUIPMENT
 - PROVIDED AS SPECIFIED AND/OR SCHEDULED AND IS TO BE INSTALLED PER APPLICABLE BUILDING CODES AND MANUFACTURER'S RECOMMENDATIONS. UNIT IS TO BE INSTALLED PER MANUFACTURER'S OPERATION AND MAINTENANCE MANUAL AND IN PROPER OPERATING CONDITION PRIOR TO PERFORMING TEST AND BALANCE PROCEDURES.
- DUCT WORK
 - GALVANIZED SHEET METAL IN ACCORDANCE WITH ASTM A90, SMACNA CONSTRUCTION STANDARDS, AND ASHRAE RECOMMENDATIONS.
 - MECHANICAL DUCTWORK IS TO BE SEALED AT ALL PENETRATIONS THROUGH BUILDING
 - CONSTRUCTION AND SUPPORTED AND SEALED PER SMACNA STANDARDS FOR RIGID DUCTWORK.
 - ALL PLANS SHOW MINIMUM CLEAR INSIDE DIMENSIONS. VISIBLE PORTIONS OF INTERIOR DUCTWORK SHALL BE PAINTED BLACK OR AS PER ARCHITECTURAL REQUIREMENTS.

- SUPPLY DUCT CLASSIFICATION 2" PRESSURE CLASS.
- RETURN AND EXHAUST DUCT CLASSIFICATION 1" PRESSURE CLASS.
- FLEXIBLE DUCTS WHERE INDICATED ON THE PLANS, SHALL BE INSULATED AND PROVIDED WITH VAPOR BARRIER ON THE INTERIOR AND EXTERIOR, AND REINFORCED WITH STEEL WIRE. JOINTS TO BE BAND CLAMPED AND SEALED WITH TAPE FOR VAPOR BARRIER INTEGRITY. INSULATION TO HAVE MAXIMUM 0.23 K VALUE AT 75°F. FLEXIBLE DUCT TO BE INSTALLED WITH ADEQUATE SUPPORT TO ELIMINATE
- MANUAL BALANCE DAMPERS FOR AIR BALANCING ARE TO BE PROVIDED AT EACH BRANCH DUCT OR AIR DEVICE UNLESS OTHERWISE NOTED. PROVIDE LOCKING QUADRANTS AND DAMPER HANDLE IDENTIFICATION.

DUCT INSULATION

- SUPPLY AND RETURN DUCTWORK IS TO BE EXTERNALLY WRAPPED WITH MINIMUM 1-1/2" FLEXIBLE GLASS FIBER WITH MAXIMUM "K" VALUE OF 0.29 AT 75°F AND SHALL HAVE A FLAME RESISTANT VAPOR BARRIER AT 0.75 LBS/CUBIC FOOT DENSITY
- EXHAUST DUCTS AND BUILDING NEUTRAL OUTSIDE AIR DUCTS ARE NOT INSULATED. SUPPLY AND RETURN DUCTWORK WITHIN 20' OF FAN INLETS AND DISCHARGES ARE TO BE INTERNALLY
- LINED FOR ACOUSTICAL REDUCTIONS WITH 1" THICK, 1-1/2 LB DENSITY DUCT LINER. LINING SHALL BE APPLIED WITH FIRE RESISTANT ADHESIVES AND CADMIUM OR COPPER FASTENERS.
- DISHWASHER OR GREASE EXHAUST HOOD DUCTWORK SHALL NOT BE LINED.

AIR DEVICES

MAXIMUM NOISE CRITERIA (NC) SHALL NOT EXCEED VALUES LISTED IN AIR DEVICE SCHEDULE. APPROVED MANUFACTURERS - TITUS, KRUEGER, NAILOR, PRICE, J&J, METAL AIRE.

TEST AND BALANCE

- BALANCE ALL DIFFUSERS AND GRILLES TO OBTAIN THE AIRFLOWS SHOWN ON THE HVAC FLOOR PLANS.
- THE TEST AND BALANCE (TAB) REPORT SHALL CONTAIN ALL DESIGN AIRFLOW QUANTITIES, ACTUAL AIRFLOW QUANTITIES, SUPPLY AIR TEMPERATURES, EQUIPMENT DESIGN POWER, EQUIPMENT ACTUAL POWER, EQUIPMENT CURRENT DRAW, OUTSIDE AIR QUANTITIES AS APPLICABLE.
- TEST AND BALANCE WORK SHALL BE DONE BY A CERTIFIED NEBB OR AABC, INDEPENDENT CONTRACTOR.
- PROVIDE OWNER/OWNER'S REPRESENTATIVE WITH THREE COPIES OF THE FINAL REPORT.

INSTALLATION

- CONTRACTOR TO REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF THE FOLLOWING:
- MECHANICAL EQUIPMENT.
- ANY OTHER DEVICE OR EQUIPMENT INDICATED IN THESE PLANS.
- CONTRACTOR TO PROVIDE ALL OPENINGS, SLEEVES, CUTTING, PATCHING, AS REQUIRED. ALL WORK TO BE DONE BY SKILLED WORKMAN IN THE APPROPRIATE TRADES REQUIRED AND PAID BY THE CONTRACTOR REQUIRING THE WORK. SLEEVES PENETRATING FIRE RATED CONSTRUCTION SHALL BE APPROPRIATELY FIRE PROOFED WITH APPROVED MATERIAL FOR THE RATING AND UL LISTED. SLEEVES PASSING THROUGH WATER PROOF OR DAMP PROOF ASSEMBLIES ARE TO BE WATER TIGHT.
- ESCUTCHEON PLATES WITH COLORS AND FINISHES SHALL BE PROVIDED AND COORDINATED WITH ARCHITECT WHERE CONDUIT OR PIPING PASSES THROUGH FLOORS, CEILING, WALLS IN FINISHED AREAS.
- PROVIDE BASE AND COUNTER FLASHING AND WATER PROOFING FOR EXTERIOR WALL OR ROOF PENETRATIONS. COORDINATE WITH GENERAL CONTRACTOR AND/OR LANDLORD ROOFING CONTRACTOR ANY PROCEDURES, PROVISIONS, MEASURES RELATED TO ROOF WARRANTY, IF APPLICABLE,
- CONTRACTOR TO PROVIDE HANDLING OF MATERIALS, RIGGING, HANDLING OF EQUIPMENT.
 - CONTRACTOR TO PROVIDE PROTECTION OF ALL MATERIALS AND EQUIPMENT AGAINST DAMAGE, DIRT, THEFT, ETC, UNTIL ACCEPTED BY THE OWNER. ALL WORK SHALL BE TURNED OVER FULLY FUNCTIONAL. IN NEW CONDITION, AND CLEAN.
- CONTRACTOR TO PROVIDE ALL EQUIPMENT SUPPORTS REQUIRED WITHIN THEIR SCOPE OF WORK.

 - HANGERS, FOUNDATION, AND SUPPORTS. EQUIPMENT WITH MOVING PARTS SHALL BE PROVIDED WITH, AS APPLICABLE FLEXIBLE DUCT CONNECTIONS.
 - FLEXIBLE PIPING CONNECTIONS. VIBRATION ISOLATION.

SEISMIC RESTRAINTS

- THE MECHANICAL CONTRACTOR IS TO INCLUDE IN THEIR SCOPE OF WORK, THE DESIGN SERVICES OF A REGISTERED STRUCTURAL ENGINEER TO PRODUCE STAMPED AND SIGNED CONSTRUCTION DOCUMENTS OF MECHANICAL/PLUMBING SYSTEMS SEISMIC RESTRAINT SUPPORTS PER THE APPLICABLE BUILDING CODE.
- SHOP DRAWINGS TO BE SUBMITTED PRIOR TO PERFORMING WORK AND SHALL INCLUDE COORDINATION BETWEEN ALL AFFECTED TRADES. INCLUDED, BUT NOT LIMITED TO, THE FOLLOWING: TYPES OF SEISMIC SUPPORT REQUIRED.
 - SYSTEM SUPPORT REQUIRED.
 - AREAS REQUIRING SUPPORT. DRAWINGS DEPICTING DESIGN AND DETAILS.
- DRAWINGS TO BE SENT TO LOCAL BUILDING DEPARTMENT APPROVAL ANY INSTALLATION WITHOUT THE APPROVAL OF THE LOCAL BUILDING DEPARTMENT IS ENTIRELY AT THE RISK OF THE CONTRACTOR.
- 8. AT THE CONCLUSION OF THE JOB. PROVIDE THE FOLLOWING. INCLUDING BUT NOT LIMITED TO:
 - ALL AIR SIDE SYSTEMS TO BE BALANCED, TESTED AND ADJUSTED.
- ALL EQUIPMENT TO BE OPERATING SAFELY, QUIETLY, AND STABLE AS PER MANUFACTURER RECOMMENDATIONS.
- PROVIDE SYSTEM OPERATION DEMONSTRATION TO OWNER/OWNER'S REPRESENTATIVE. PROVIDE IDENTIFICATION FOR THE FOLLOWING, WHETHER VISIBLE OR CONCEALED IN ACCORDANCE WITH OSHA AND ANSI REQUIREMENTS:

GENERAL

DUCT

- MAINTAIN RATED WALL ASSEMBLY INTEGRITY AS REQUIRED. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF ALL OCCUPANCY/FIRE RATED WALL ASSEMBLIES AND ASSOCIATED DETAILS OF CONSTRUCTION. PROVIDE FIRE DAMPERS, SMOKE/FIRE DAMPERS, SMOKE DAMPERS AND ALL
- ASSOCIATED ACCESSORIES AND CONSTRUCTION REQUIREMENTS AS REQUIRED. STARTERS AND MOTOR CONTROLS TO BE FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE ALL NECESSARY COMPONENTS REQUIRED FOR INSTALLATION. MECHANICAL CONTRACTOR TO FURNISH ALL CONTROLS AND RELATED
- ACCESSORIES REQUIRED. PROVIDE APPROPRIATE ACCESS PANELS FOR INACCESSIBLE COMPONENTS WHERE REQUIRED.





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1. PROVIDE SUPPLEMENTAL SUPPORT STEEL AS REQUIRED. PROVIDE DUCT TRANSITION AS REQUIRED TO CONNECT TO DIFFUSER.
 COORDINATE FINISH, COLOR, BORDER, AND EXACT LOCATION WITH ARCHITECTURAL RCP. 4. PROVIDE REMOTE CABLE OPERATOR IN HARD-LID APPLICATIONS. AIR DEVICE SCHEDULE MAX NC AIRFLOW RANGE NECK SIZE PANEL MANUFACTURER MODEL NUMBER EQUIP ID TITUS TMS 101-210 8 24X24 1,2,3,4 D-2 35

MECHANICAL SCHEDULES SNHD

Project Number 24569 Date 08.15.2024

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HPA

HPA

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DENTAL SERVICES 2830 E. FREMONT ST. LAS VEGAS, NV 89104

FOR DUCTS OVER 48" WIDE, BOTTOM SHALL BE ANGLE BRACED. FOR CROSS SECTION AREA GREATER THAN 8 SQUARE FEET, DUCT SHALL
BE ANGLE BRACED ON ALL FOUR SIDES.
SUPPORTS SHALL BE SPACED AND SIZED PER
SMACNA STANCARDS.

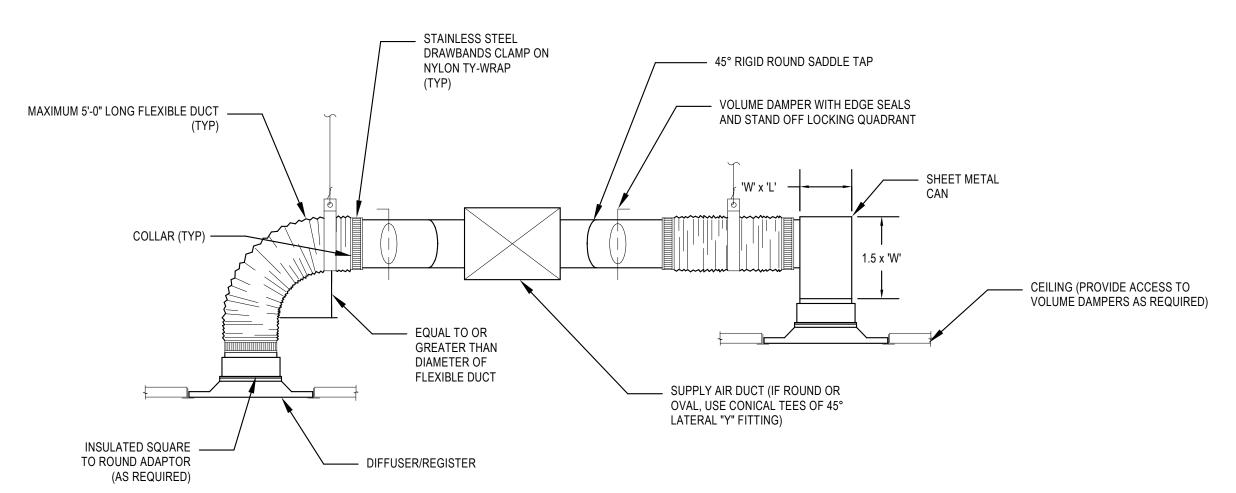


DIAGRAM - DIFFUSER REGISTER MOUNTING M010 NO SCALE

— GALVANIZED HANGER — 48" MAXIMUM THREADED — HANGER ROD HANGER STRAP UNISTRUT OR —— ANGLE IRON

DIAGRAM - DUCT HANGER SUPPORT

M010 /

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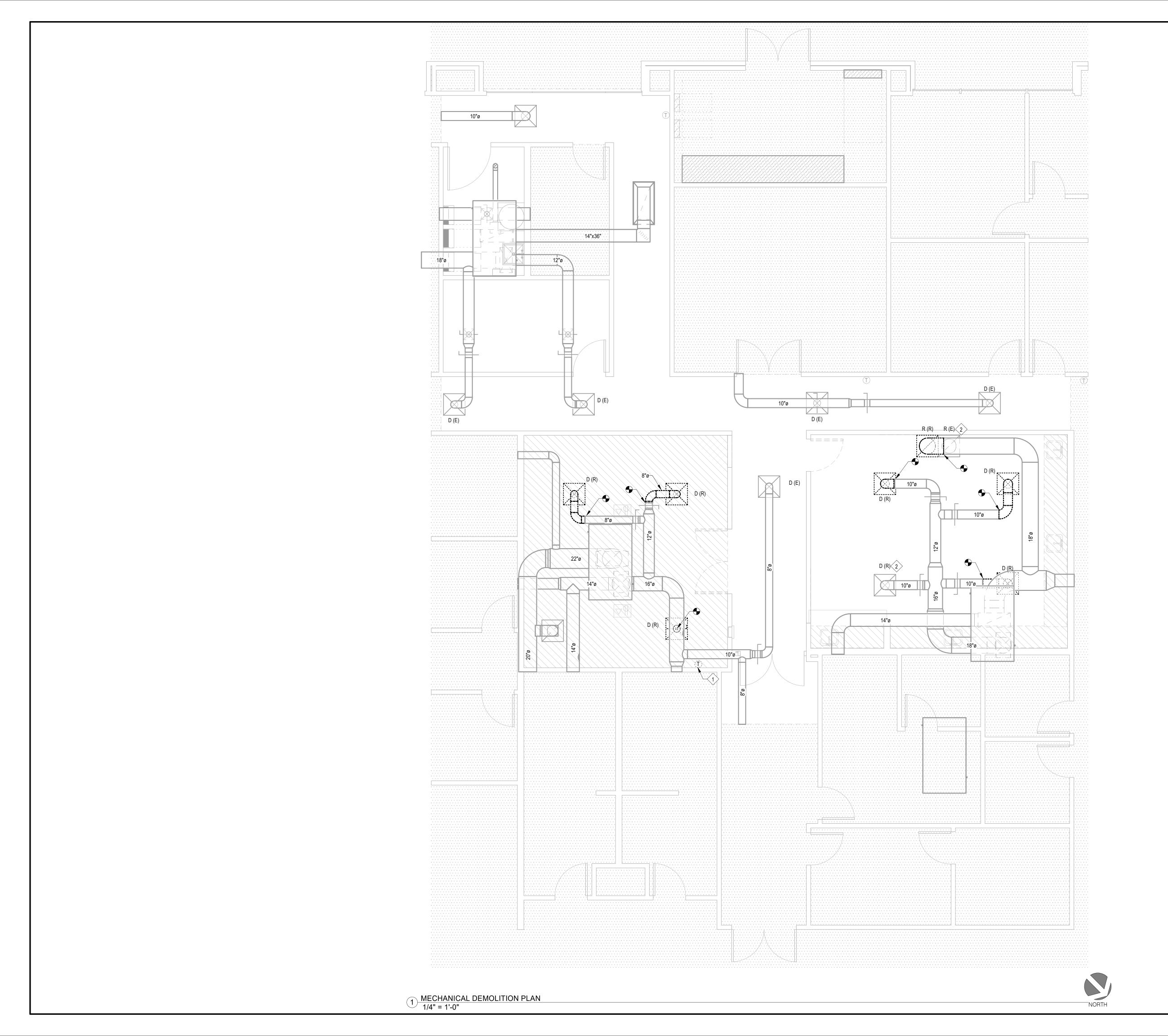
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DIAGRAMS MECHANICAL

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- WHERE DUCT OR PIPING IS TO BE REMOVED AT A SPECIFIC POINT, DUCT OR PIPE IS TO BE BLANKED OFF OR CAPPED AND REPAIRED TO LIKE NEW CONDITION.
 PIPING AND EQUIPMENT LOCATIONS SHOWN ARE FROM BEST AVAILABLE INFORMATION. CONTRACTOR TO FIELD VERIFY
- SPECIFIC LOCATION.
- 3. PIPING DISCONNECTED FROM EQUIPMENT REMOVED SHALL BE BLANKED OFF OR CAPPED IN CEILING, FLOORS OR WALLS. 4. ANY EQUIPMENT OR COMPONENT REMOVED SHALL BE RETURNED TO OWNER, LABELED, AND MOVED BY THE CONTRACTOR TO THE OWNER'S STORAGE ON SITE. AT THE DISCRETION OF THE OWNER, THESE COMPONENTS MAY BECOME PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE PROJECT SITE.

SHEET NOTES: **(#**)

- 1 THERMOSTAT TO BE RELOCATED.
- 2 REMOVE EXISTING DIFFUSER/GRILLE AND PREPARE FOR REINSTALLATION.



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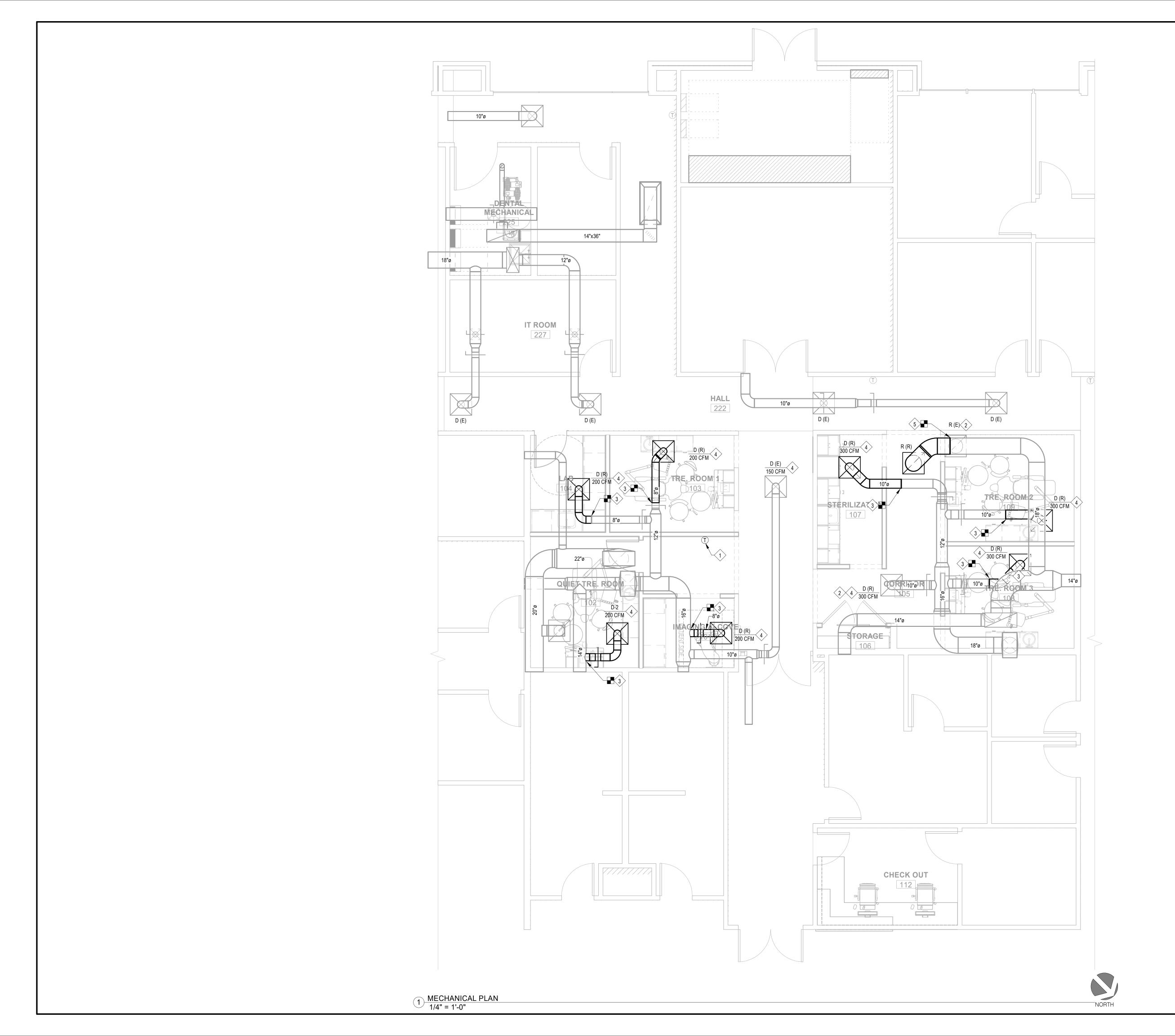
MECHANIC

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- MECHANICAL CONTRACTOR TO COORDINATE ROUTING AND LOCATION OF MECHANICAL COMPONENTS AND EQUIPMENT WITH ALL OTHER TRADES AND EXISTING FIELD CONDITIONS PRIOR TO PERFORMING WORK.
- 2. CONTRACTOR TO CUT AND PATCH AS REQUIRED TO PERFORM
- THE WORK. 3. ACCESS DOORS ARE REQUIRED FOR ANY COMPONENT REQUIRING ACCESS ABOVE HARD LID CEILINGS. COORDINATE SIZE, LOCATION AND FINISH WITH ARCHITECT PRIOR TO PERFORMING
- 4. REFER TO THE DIAGRAMS THAT APPLY TO THIS SHEET WHICH PROVIDE GENERAL GUIDANCE FOR INSTALLATION THOUGH NOT
- ALL COMPONENTS AND ACCESSORIES MAY BE SHOWN. 5. PRIOR TO INSTALLATION, CONFIRM SPECIFIC LOCATION FOR ALL THERMOSTATS / SENSORS WITH ARCHITECT. MOUNT AT 48" A.F.F. OR IN ACCORDANCE WITH ADA REQUIREMENTS.
- 6. COORDINATE AND CONFIRM BORDER, FRAME, FINISH, AND LOCATION WITH ARCHITECT PRIOR TO ORDERING. 7. ANY PENETRATIONS THROUGH WALL STUDS, FLOOR JOISTS, OR ROOF TO BE IN ACCORDANCE WITH THE LATEST ADOPTED
- BUILDING CODE.

 8. DUCT DIMENSIONS SHOWN ARE CLEAR INSIDE DIMENSIONS. 9. BRANCH DUCTWORK SHALL MATCH DIFFUSER NECK SIZE UNLESS NOTED OTHERWISE.

SHEET NOTES: **(#)**

- 1 RELOCATED THERMOSTAT. PROVIDE NEW CONDUIT AND WIRING AS REQUIRED.
- 2 REINSTALL EXISTING DIFFUSER/GRILLE TO EXISTING DUCTWORK. MODIFY DUCTWORK AS NECESSARY TO ALIGN TO NEW CEILING.
- 3 CONNECT NEW SA DUCTWORK TO EXISTING SA DUCTWORK. FIELD VERIFY EXACT SIZE PRIOR TO ROUGH-IN.
- 4 CONTRACTOR SHALL BALANCE DIFFUSER TO AIRFLOW INDICATED.
- 5 CONNECT NEW RA DUCTWORK TO EXISTING RA DUCTWORK. FIELD VERIFY EXACT SIZE PRIOR TO ROUGH-IN.



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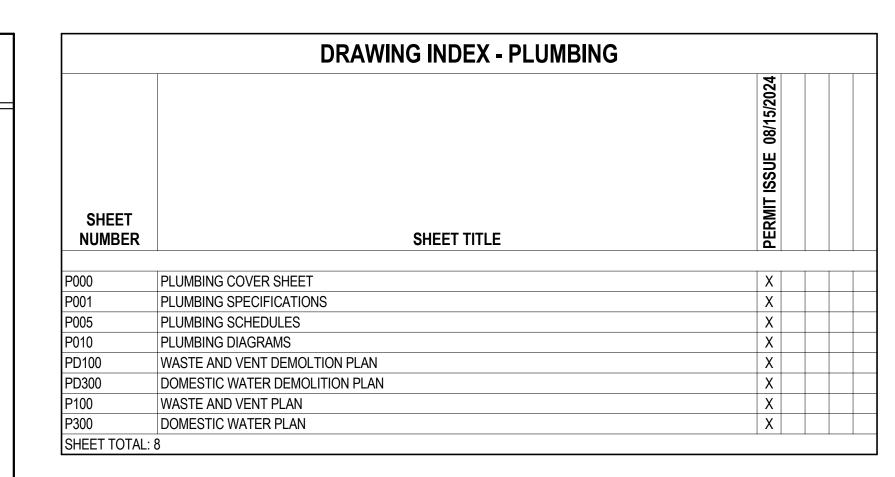
MECHANICAL

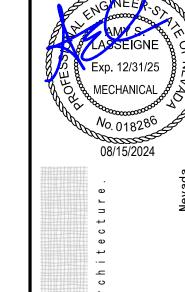
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PLUMBING SYMBOLS (THIS IS A MASTER LEGEND, NOT ALL MAY APPEAR ON DRAWINGS.) NOTE CALLOUT MANUAL AIR VENT **EQUIPMENT ID** THERMOMETER М **GAS METER** Y-STRAINER W/BLOWDOWN WATER METER PIPE DOWN BACKFLOW PREVENTION STATION PIPE UP POINT OF DISCONNECTION PRESSURE RELIEF POINT OF CONNECTION TEE UP FLOOR DRAIN TEE DOWN **ROOF DRAIN** BALANCING VALVE ASSEMBLY OVERFLOW ROOF DRAIN CLEANOUT \bowtie SHUT-OFF VALVE FLOOR SINK GAS VALVE FLOOR/GRADE CLEAN OUT CHECK VALVE THREE-WAY VALVE TWO-WAY VALVE PRESSURE REDUCING VALVE \bowtie H HOSE END DRAIN VALVE RELIEF VALVE

	PLUMBING LINETYPES (THIS IS A MASTER LEGEND, NOT ALL MAY APPEAR ON DRAWINGS.)					
	COMPRESSED AIR PIPING					
4" CW	COLD WATER PIPING					
——————————————————————————————————————	FILTERED COLD WATER PIPING					
4" CWS	SOFTENED COLD WATER PIPING					
4" SD	ROOF DRAIN PIPING					
4" OSD	OVERFLOW ROOF DRAIN PIPING					
4" W	WASTE PIPING					
4"W	UNDERGROUND WASTE PIPING					
	GREASE WASTE PIPING					
— — — 4" GW — — —	UNDERGROUND GREASE WASTE PIPING					
4" V	VENT PIPING					
	CONDENSATE DRAIN PIPING					
	HOT WATER PIPING					
	140°F HOT WATER PIPING					
	HOT WATER RETURN PIPING					
	140°F HOT WATER RETURN PIPING					
	TEMPERED WATER PIPING					
——————————————————————————————————————	NATURAL GAS PIPING - LOW PRESSURE					
	NATURAL GAS PIPING - MEDIUM PRESSURE					
4" LPG	PROPANE GAS PIPING					
	ACID WASTE PIPING					
— — — 4"AW — — —	UNDERGROUND ACID WASTE PIPING					
——————————————————————————————————————	ACID VENT PIPING					
	VACUUM PIPING					

	ABBREVIATIONS LIST							
	(THIS IS A MASTER LEGEND, NOT	ALL MAY APPEA	R ON DRAWINGS.)					
CD CO CW CWF CWS	CONDENSATE DRAIN CLEAN OUT COLD WATER FILTERED COLD WATER SOFTENED COLD WATER	PD PRV PSI PSIA	PRESSURE DROP PRESSURE REDUCING VALVE POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH ABSOLUTE					
D	DRAIN	PSID	POUNDS PER SQUARE INCH DIFFERENTIAL					
(E)	EXISTING TO REMAIN	PSIG	POUNDS PER SQUARE INCH GAUGE					
G GA GAL GCO	LOW PRESSURE GAS GAGE OR GAUGE GALLONS GRADE CLEANOUT	(R) RD RPPA	EXISTING TO BE RELOCATED ROOF DRAIN REDUCED PRESSURE PRINCIPAL ASSEMBLY					
GI GPF GPH GPM GW	GREASE INTERCEPTOR GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE GREASE WASTE	SOI SQ.FT. SS	SAND OIL SEPARATOR SQUARE FEET STAINLESS STEEL TEMPERATURE					
HP HPG HW	HORSEPOWER HIGH PRESSURE GAS HOT WATER	TW TYP UBC	TEMPERED WATER TYPICAL UNIFORM BUILDING CODE					
HWR HZ IBC	HOT WATER RETURN HERTZ INTERNATIONAL BUILDING CODE	UMC UON UPC	UNIFORM MECHANICAL CODE UNLESS OTHERWISE NOTED UNIFORM PLUMBING CODE					
IE IMC IPC	INVERT ELEVATION INTERNATIONAL MECHANICAL CODE INTERNATIONAL PLUMBING CODE	V V/PH VFD VTR	VENT VOLTS/PHASE VARIABLE FREQUENCY DRIVE VENT THROUGH ROOF					
KW	KILOWATT	W	WASTE					
LPG MBH	LIQUID PROPANE GAS ONE THOUSAND BTUH	WCO WG WMS	WALL CLEANOUT WATER GAUGE WIRE MESH SCREEN					
MCA MOCP	MINIMUM CIRCUIT AMPS MAXIMUM OVER CURRENT PROTECTION	(X)	EXISTING TO BE REMOVED					
MG	MEDIUM PRESSURE GAS							
N/A NC NEBB	NOT APPLICABLE NORMALLY CLOSED NATIONAL ENVIRONMENTAL BALANCING BUREAU							
NEC NFPA	NATIONAL ELECTRIC CODE NATIONAL FIRE PROTECTION ASSOCIATION							
NIC NO NTS	NOT IN CONTRACT NORMALLY OPEN NOT TO SCALE							
ORD	OVERFLOW ROOF DRAIN							





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SHEE. COVER **PLUMBING**

Project Number 24569 Date 08.15.2024

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PLUMBING SPECIFICATIONS

GENERAL PROVISIONS

1. THE MECHANICAL CONTRACTOR SHALL PROVIDE THE WORK SHOWN ON THE PLANS:

PROPER OPERATION OF THE ENTIRE SYSTEM.

- . "PROVIDE" SHALL BE DEFINED AS INSTALL, MAKE ALL FINAL CONNECTIONS, AND TURNOVER TO THE
- OWNER AN APPROVED FULLY FUNCTIONING AND OPERATIONAL SYSTEM.

 "WORK" SHALL INDICATE ALL MATERIALS, LABOR, TRANSPORTATION, EQUIPMENTS, TOOLS,
 SUPERVISION, AND ANY OTHER SERVICES AND/OR MATERIALS REQUIRED FOR THE INSTALLATION AND
- 2. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH THE LATEST EDITIONS OF THE ADOPTED CODES AS IDENTIFIED BY THE AUTHORITY HAVING JURISDICTION.
- 3. ANY FEES AND REQUIRED PERMITS SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
- 4. PRIOR TO INSTALLATION, THE MECHANICAL CONTRACTOR SHALL CAREFULLY EXAMINE ALL CONSTRUCTION DOCUMENTS AND COORDINATE THE WORK WITH ALL OTHER TRADES. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE WORK FITS INTO THE BUILDING AS SHOWN WITH REASONABLE EXCEPTIONS TO THE LAYOUT AS REQUIRED TO AVOID INTERFERENCE WITH OTHER TRADES. CONTRACTOR IS TO MAINTAIN ACCURATE AS BUILT SET AND DOCUMENT ALL EXCEPTIONS AND MODIFICATIONS TO THE PLANS.
- 5. CONSTRUCTION DOCUMENTS PROVIDED ARE DIAGRAMMATIC IN NATURE AND INDICATE THE SIZE, TYPE, CONFIGURATION, AND LOCATIONS OF THE WORK. ALL COMPONENTS OF THE SYSTEM MAY NOT BE SHOWN. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL COMPONENTS ARE PROVIDED AND INSTALLED TO COMPLETE THE WORK ACCORDING TO INDUSTRY STANDARDS.
 - A. DO NOT SCALE DRAWINGS.
- B. CONTRACTOR TO INSTALL THE WORK REASONABLY PLUMB TO BUILDING CONSTRUCTION AND MAY REQUIRE ALTERNATE ROUTING BASED ON UNFORESEEN FIELD CONDITIONS.
- 6. IDENTICAL ITEMS SHOWN ON PLANS SHALL BE PROVIDED THOUGH EACH SIMILAR ITEM MAY NOT BE DETAILED.
- THE CONTRACTOR IS TO CONFIRM AND FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO PERFORMING WORK. ANY VARIATIONS FROM THE CONTRACT DOCUMENTS SHOULD BE COMMUNICATED TO THE ENGINEER FOR REVIEW.
- 8. WORK IS INDICATED NEW UNLESS NOTED OTHERWISE
- 9. THE CONTRACTOR, PRIOR TO BIDDING, SHALL VISIT THE SITE AND NOTE THE EXISTING CONDITIONS. WORK SHOWN ON CONTRACT DOCUMENTS SHALL BE EVALUATED IN RELATION TO THE EXISTING CONDITIONS. ANY DEVIATION SHALL BE NOTED AND IN WRITING, NOTIFY THE ENGINEER OF SUCH DIFFERENCES. NO CHANGE ORDERS WILL BE ALLOWED DUE TO UNFAMILIARITY OF EXISTING CONDITIONS BY THE CONTRACTOR.
 - A. THE CONTRACTOR PROPOSAL SHOULD BE BASED ON THE MANUFACTURERS OR AS APPROVED EQUALS AS LISTED ON THE PLANS.

SUBMITTALS

- 1. CONTRACTOR TO SUBMIT THREE SETS (OR AS REQUIRED BY OWNER/OWNER'S REPRESENTATIVE) OF SHOP DRAWINGS (OR ELECTRONIC VERSION IF APPROVED BY OWNER/ARCHITECT) INCLUDING TECHNICAL PERFORMANCE DATA FOR ALL HVAC EQUIPMENT AND ACCESSORIES AS IDENTIFIED ON THE PLANS TO THE ENGINEER FOR REVIEW. COMPLIANCE OR NON-COMPLIANCE WITH CONTRACT DOCUMENTS WILL BE NOTED AND RETURNED BACK TO OWNER PRIOR TO BEGINNING WORK. THE CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL ENGINEERING FEES ASSOCIATED WITH PERMIT DOCUMENT MODIFICATIONS BASED ON EQUIPMENT SUBSTITUTIONS.
- 2. ANY AND ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THE OWNER /OWNER'S REPRESENTATIVE SHALL PRELIMINARILY APPROVE THE SUBSTITUTION PROPOSED IN WRITING.
 - A. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE THE BURDEN OF PROOF OF EQUAL IN THE SUBMITTAL WITH PERFORMANCE, SPECIFICATIONS, DIMENSIONS, WEIGHTS, ELECTRICAL REQUIREMENTS AS APPLICABLE, WITH ALL ITEMS CLEARLY IDENTIFIED AND IS TO COORDINATE THE CHANGE WITH ALL OTHER TRADES AND FIELD CONDITIONS.
 - B. CONTRACTOR SHALL ALSO IDENTIFY ALL COST DEBITS OR CREDITS IN WRITING TO EVALUATE THE PROPOSED SUBSTITUTION AS IT RELATES TO THE OTHER TRADES.
 - C. FINAL DETERMINATION OF AN OR EQUAL IS ENTIRELY BASED ON ENGINEERS EVALUATION OF THE INFORMATION INCLUDED IN THE SUBMITTAL.
- 3. AT THE CONCLUSION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE MINIMUM THREE (OR AS REQUIRED BY OWNER/OWNER'S REPRESENTATIVE) COPIES OF AS-BUILT DOCUMENTS.
- 4. CONTRACTOR TO SUBMIT SHOP DRAWINGS OF TEMPERATURE CONTROL SYSTEM DRAWINGS SHOWING DEVICES PROPOSED FOR USE, LOCATION OF DEVICES, WIRING, SEQUENCE OF OPERATIONS, SCREEN SHOTS OF USER INTERFACE SCREENS, AND NETWORK DIAGRAMS.

WARRANTY

ALL MATERIALS AND INSTALLATION SHALL BE GUARANTEED FOR A MINIMUM OF ONE YEAR FROM TURNOVER DATE TO OWNER AS ACCEPTED, WITH THE FOLLOWING EXCEPTION.

PLUMBING PRODUCTS

- 1. EQUIPMENT
 - PROVIDED AS SPECIFIED AND/OR SCHEDULED AND IS TO BE INSTALLED PER APPLICABLE BUILDING CODES AND MANUFACTURER'S RECOMMENDATIONS. UNIT IS TO BE INSTALLED PER MANUFACTURER'S OPERATION AND MAINTENANCE MANUAL AND CONFORMING TO THE ONE YEAR WARRANTY.
 - B. PLUMBING FIXTURES TO COMPLY WITH ADOPTED WATER CONSERVATION CODES AND LOCAL JURISDICTION REGULATIONS.
- 2. DOMESTIC WASTE AND VENT PIPING
 - A. BELOW GROUND PVC/ABS DWV MAY BE USED BASED ON SOIL CONDITIONS.
 B. ABOVE GROUND ABS SCHEDULE 40 (ASTM D-1527) FITTINGS (ASTM D-2661).
- 3. DOMESTIC WATER
- A. BELOW GROUND TYPE "K" (ASTM B-88), WROUGHT FITTINGS (ASME B16.22), HARD DRAWN, WITH AWS
- A5.8, BCuP SILVER BRAZE JOINTS.

 ABOVE GROUND TYPE "L" (ASTM B-88), WROUGHT FITTINGS (ASME B16.22), WITH SOLDER, MAX LEAD 0.2%, GRADE 95 TA, ANSI/ASTM B32 JOINTS.

4. PIPE HANGERS

- A. FOR PIPE SIZES 1/2" TO 1-1/2", MALLEABLE IRON, CARBON STEEL, SPLIT RING, ADJUSTABLE SWIVEL.
- B. FOR PIPE SIZES 2" TO 4", ADJUSTABLE, CLEVIS, CARBON STEEL.
 C. FOR PIPE SIZES 6" AND LARGER, CAST IRON ROLL, DOUBLE HANGER, ADJUSTABLE STEEL YOKE.
- 5. PIPE INSULATION
 - A. 1" THICK FIBERGLASS WITH ALL SERVICE JACKET, MAXIMUM K VALUE OF 0.27 AT 75°F.
 - B. PROVIDE INSULATION FOR ALL DOMESTIC HOT WATER AND DOMESTIC HOT WATER RETURN PIPING ABOVE GRADE.
 - C. PROVIDE INSULATION FOR ALL DOMESTIC COLD WATER PIPING IN UNCONDITIONED SPACES ONLY.
 D. PROVIDE INSULATION FOR ALL CONDENSATE PIPING.
- D. PROVIDE INSULATION FOR ALL CONDENSATE PIPING.
 E. PROVIDE 15' OF INSULATION FOR ALL ROOF DRAINS AND OVERFLOW ROOF DRAINS

INSTALLATION

- CONTRACTOR TO REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF THE FOLLOWING:
- A. PLUMBING FIXTURES.
- B. FLOOR DRAINS/FLOOR SINKS.C. ANY OTHER DEVICE OR EQUIPMENT INDICATED IN THESE PLANS.
- 2. CONTRACTOR TO PROVIDE ALL OPENINGS, SLEEVES, CUTTING, PATCHING, AS REQUIRED. ALL WORK TO BE DONE BY SKILLED WORKMAN IN THE APPROPRIATE TRADES REQUIRED AND PAID BY THE CONTRACTOR REQUIRING THE WORK. SLEEVES PENETRATING FIRE RATED CONSTRUCTION SHALL BE APPROPRIATELY FIRE PROOFED WITH APPROVED MATERIAL FOR THE RATING AND UL LISTED. SLEEVES PASSING THROUGH WATER PROOF OR DAMP PROOF ASSEMBLIES ARE TO BE WATER TIGHT.
- ESCUTCHEON PLATES WITH COLORS AND FINISHES SHALL BE PROVIDED AND COORDINATED WITH ARCHITECT WHERE CONDUIT OR PIPING PASSES THROUGH FLOORS, CEILING, WALLS IN FINISHED AREAS. CONTRACTOR TO PROVIDE HANDLING OF MATERIALS, RIGGING, HANDLING OF EQUIPMENT.
 - A. CONTRACTOR TO PROVIDE PROTECTION OF ALL MATERIALS AND EQUIPMENT AGAINST DAMAGE, DIRT, THEFT, ETC, UNTIL ACCEPTED BY THE OWNER.
- B. ALL WORK SHALL BE TURNED OVER FULLY FUNCTIONAL, IN NEW CONDITION, AND CLEAN.
- 4. CONTRACTOR TO PROVIDE ALL EQUIPMENT SUPPORTS REQUIRED WITHIN THEIR SCOPE OF WORK.
- A. HANGERS, FOUNDATION, AND SUPPORTS.
- B. EQUIPMENT WITH MOVING PARTS SHALL BE PROVIDED WITH, AS APPLICABLE: VIBRATION ISOLATION.

5. SEISMIC RESTRAINTS

- A. THE MECHANICAL CONTRACTOR IS TO INCLUDE IN THEIR SCOPE OF WORK, THE DESIGN SERVICES OF A REGISTERED STRUCTURAL ENGINEER TO PRODUCE STAMPED AND SIGNED CONSTRUCTION DOCUMENTS OF MECHANICAL/PLUMBING SYSTEMS SEISMIC RESTRAINT SUPPORTS PER THE APPLICABLE BUILDING CODE.
- B. SHOP DRAWINGS TO BE SUBMITTED PRIOR TO PERFORMING WORK AND SHALL INCLUDE
 COORDINATION BETWEEN ALL AFFECTED TRADES. INCLUDED, BUT NOT LIMITED TO, THE FOLLOWING:
 TYPES OF SEISMIC SUPPORT REQUIRED.
- SYSTEM SUPPORT REQUIRED.AREAS REQUIRING SUPPORT.
- DRAWINGS DEPICTING DESIGN AND DETAILS.
- DRAWINGS TO BE SENT TO LOCAL BUILDING DEPARTMENT APPROVAL ANY INSTALLATION WITHOUT
- THE APPROVAL OF THE LOCAL BUILDING DEPARTMENT IS ENTIRELY AT THE RISK OF THE CONTRACTOR.

6. PLUMBING

- A. CLEAN OUTS TO BE PROVIDED IN DRAIN, SANITARY, WASTE AS SHOWN AND AS REQUIRED BY LOCAL PLUMBING CODE AND AMENDMENTS.
- CLEANOUTS TO BE PROVIDED IN CHANGES OF PIPING DIRECTION.
- DIELECTRIC FITTINGS ARE TO BE PROVIDED WHEREVER DISSIMILAR METALS ARE JOINED.
 PROVIDE BALANCE VALVE FOR HOT WATER RETURN SYSTEM AS REQUIRED.
- PROVIDE CHROME PLATED LOOSE KEY ANGLE STOPS WITH ESCUTCHEON PLATES AT ALL PLUMBING FIXTURES.
- FIXTURES.

 F. ALL POTABLE WATER SYSTEMS TO BE DISINFECTED PER AWWA STANDARD AND/OR PLUMBING CODE.

 PROVIDE OWNER OR OWNER'S REPRESENTATIVE WITH OFFICIAL DOCUMENT STATING COMPLIANCE.
- 7. AT THE CONCLUSION OF THE JOB, PROVIDE THE FOLLOWING, INCLUDING BUT NOT LIMITED TO:
 - A. ALL EQUIPMENT TO BE OPERATING SAFELY, QUIETLY, AND STABLE AS PER MANUFACTURER
 - RECOMMENDATIONS.

 B. PROVIDE SYSTEM OPERATION DEMONSTRATION TO OWNER/OWNER'S REPRESENTATIVE.
 - C. PROVIDE IDENTIFICATION FOR THE FOLLOWING, WHETHER VISIBLE OR CONCEALED IN ACCORDANCE WITH OSHA AND ANSI REQUIREMENTS:
 VALVES PROVIDE 2" LACQUERED BRASS TAGS WITH STAMPED LETTERS ON CHAINS OR "S"
 - VALVES PROVIDE 2" LACQUERED BRASS TAGS WITH STAMPED LETTERS ON CHAINS OR "S HOOKS.

8. GENERAL

- MAINTAIN RATED WALL ASSEMBLY INTEGRITY AS REQUIRED. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF ALL OCCUPANCY/FIRE RATED WALL ASSEMBLIES AND ASSOCIATED DETAILS OF CONSTRUCTION. PROVIDE FIRE DAMPERS, SMOKE/FIRE DAMPERS, SMOKE DAMPERS AND ALL ASSOCIATED ACCESSORIES AND CONSTRUCTION REQUIREMENTS AS REQUIRED.
- B. PROVIDE APPROPRIATE ACCESS PANELS FOR INACCESSIBLE COMPONENTS WHERE REQUIRED

FIRE SPRINKLER SPECIFICATIONS

- SPRINKLER CONTRACTOR SHALL PROVIDE SYSTEM DESIGN, MATERIALS, EQUIPMENT, LABOR, COORDINATION, AND SERVICES NECESSARY FOR THE COMPLETE DESIGN BUILD FIRE SPRINKLER SYSTEM INSTALLATION IN ACCORDANCE WITH ALL REQUIREMENTS OF THE LOCAL FIRE DEPARTMENT, NFPA 13, APPLICABLE SECTION IN THE LATEST ADOPTED VERSION OF THE IBC, AND OWNER'S INSURANCE REQUIREMENTS.
- 2. ALL EQUIPMENT AND MATERIALS USED SHALL BE LISTED AS APPROVED BY UL, INC'S., "LIST OF INSPECTED FIRE PROTECTION EQUIPMENT AND MATERIALS," OR APPROVED BY OTHER APPROPRIATE, NATIONALLY RECOGNIZED TESTING LABORATORIES FOR USE IN SPRINKLER SYSTEMS. FURTHER, MATERIALS AND EQUIPMENT SHALL BE THE LATEST DESIGN OF THE MANUFACTURER.
- INCLUDED IN THE INSTALLATION ARE AS FOLLOWS, BUT IS NOT LIMITED TO:
 - SPRINKLER HEADS ESCUTCHEONS FITTINGS
 - E. DRAINS F. VALVES

PIPING

- G. HANGERS
- H. WET TEST CONNECTIONS
 I. SIGNS AND OTHER IDENTIFICATION MARKINGS AS REQUIRED
- . SPRINKLER CONTRACTOR SHALL COORDINATE WITH OTHER TRADES, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
- A. DIFFUSERS
- B. DUCTWORKC. ELECTRICAL
- D. PLUMBING PIPING
- E. GRILLES
 F. ANY COMPONENTS OF THE FIRE SPRINKLER PIPING REQUIRED TO INTERFACE PROPERLY WITH OTHER
 WORK
- PRIOR TO INSTALLATION OF CEILING SYSTEM, SPRINKLER DROPS ARE TO BE INSTALLED, THEN REMOVED AND REINSTALLED AFTER INSTALLATION OF CEILING SYSTEM. DROPS ARE TO BE MODIFIED AS REQUIRED. ESCUTCHEONS AT EACH SPRINKLER HEAD ARE TO BE PROVIDED.
- 6. INSTALL SPRINKLER HEADS AT FINISHED HEIGHT WITH ESCUTCHEON OR DIRECTLY IN REDUCER OF EXTRA DROP LENGTH RATHER THAN PLUGGING. IF EXTRA LENGTH DROPS ARE INSTALLED, CUT BACK HEADS AFTER CEILING INSTALLATION AS PER STANDARD PRACTICE.
- 7. ALL SPRINKLERS SHALL BE INSTALLED CENTERED WITHIN THE CEILING GRID. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO SUBMITTAL OF DRAWINGS TO FIRE DEPARTMENT.
- 8. ALL SPRINKLER HEADS AND ESCUTCHEONS SHALL HAVE THE FOLLOWING SELECTED BY THE ARCHITECT.
- A. SEMI-RECESSED OR FLUSH MOUNTING TYPE
- B. FINISH C. COLOR
- 9. ENTIRE SPRINKLER SYSTEM SHALL BE FILLED AND TESTED IN ACCORDANCE WITH LOCAL AND NFPA REQUIREMENTS UPON INSTALLATION COMPLETION.
- 10. SPRINKLER SYSTEM TO BE ACTIVATED FOR PROTECTION PURPOSES AS SOON AS DROPS HAVE BEEN COMPLETED AND TESTED IN ANY SECTION OF THE SPRINKLER SYSTEM.
- 11. FINAL SHOP DRAWINGS SHALL GATHER APPROVALS IN THE SEQUENCE LISTED BELOW (ONLY AFTER APPROVAL DOES THE NEXT APPROVAL PHASE BEGIN):
 - A. STATE FIRE MARSHAL
 - A. STATE FIRE MARSHAL

 B. OWNER'S INSURANCE COMPANY
 - C. ARCHITECT (FOR CEILING DESIGN COORDINATION ONLY)
 - IF REQUIRED BY EITHER THE STATE FIRE MARSHAL OR OWNER'S INSURANCE COMPANY, THE SUBMITTAL SHALL BE REVISED AS NEEDED. IF THE REVIEW COMMENTS REQUIRE MAJOR REVISIONS, THE SUBMITTAL SHALL BE REVISED AND RESUBMITTED FOR APPROVAL PRIOR TO SUBMISSION TO THE ARCHITECT'S OFFICE.
- 12. CONTRACTOR WARRANTS THAT ALL WORK INSTALLED SHALL BE FREE OF ALL DEFECTS AND GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER.

CASSEIGNE BOY MECHANICAL No. 018286
08/15/2024

Nevada Ave Suite 120 Las Vegas, NV 89117

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DESCRIPTION DATE S

REVISION NO. DESCRIPTION

DATE

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HPA

	PLUMBING	3 FIXTUF	RE SCHE	DULE					
EQUIP ID	DESCRIPTION	FLOW	CW	HW	TW	V	SS	TRAP	REMARKS
S-1	SINK: ACORN SDADA-1918 SINGLE COMPARTMENT, RECTANGULAR, STAINLESS STEEL, SENSOR OPERATED FAUCET ADVANCE TABCO K-180 HARD WIRED SENSOR ACTIVATED FAUCET.	1.5 GPM	1/2"	1/2"		2"	2"	1-1/2"	
S-2	SINK: ELKAY RLR12FB INGLE COMPARTMENT, CIRCULAR, STAINLESS STEEL, SENSOR OPERATED FAUCET. ADVANCE TABCO K-180 HARD WIRED SENSOR ACTIVATED FAUCET.	1.5 GPM	1/2"	1/2"		2"	2"	1-1/2"	
S-3	SINK: ACORN SDADA-1918 SINGLE COMPARTMENT, RECTANGULAR, STAINLESS STEEL, SENSOR OPERATED FAUCET ADVANCE TABCO K-180 HARD WIRED SENSOR ACTIVATED FAUCET. INSTALL OWNER SUPPLIED SOLIDS INTERCEPTOR PER MANUFACUTURES SPECIFICATIONS.	1.5 GPM	1/2"	1/2"		2"	2"	1-1/2"	
WCO	WALL CLEANOUT: JAY R SMITH 4440 - C.I. SQ CO W/TAPPER THRD-BRZ PLUG & NB SCORIATED. COVER								SIZE PER PLANS



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DOES NOT INCLUDE STRUCTURAL, OR OFF-SITE
MPROVEMENTS. MAKE NO CHANGE WITHOUT APPROVAL
PLAN IS NOT A PERMIT TO VIOLATE ANY ORDINANCE.

PLUMBING SCHEDULES

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1 DIAGF P010 NO SCALE DIAGRAM - CLEANOUT - WALL

 PIPE HANGER PIVOT JOINT LOCKING NUT TOP AND BOTTOM ADJUSTABLE SWIVEL RING HANGER PIPE WITHOUT INSULATION PIPE CENTERLINE PIPE INSULATION WITH PROTECTIVE COVER RUBBER OR COPPER
COATED SURFACE
WHEN IN CONTACT
WITH UNINSULATED 16 GAUGE GALVANIZED PIPE
 SADDLES 12" LONG BY
 HALF THE INSULATION CIRCUMFERENCE. PROVIDE WITH RIGID INSULATION INSERT AT HANGER TO SUPPORT PIPE WEIGHT.

2 DIAGRAM - PIPE HANGER (4" AND BELOW)
NO SCALE

Consulting Engineers
6280 South Valley View Blvd, Suite #416
Las Vegas, NV 89118
Phone: (702) 685-0136 Fax: (702) 685-8890 Web: www.hpace-lv.com L24060

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PLUMBING DIAGRAMS

- WHERE PIPING IS TO BE REMOVED AT A SPECIFIC POINT, DUCT OR PIPE IS TO BE BLANKED OFF OR CAPPED AND REPAIRED TO LIKE NEW CONDITION.
- 2. PIPING AND EQUIPMENT LOCATIONS SHOWN ARE FROM BEST AVAILABLE INFORMATION. CONTRACTOR TO FIELD VERIFY SPECIFIC LOCATION.

SHEET NOTES: #

EXACT LOCATION.

1 REMOVE EXISTING SINK AND ASSOCIATED SERVICES. CAP WASTE IN THE WALL AND VENT IN THE CEILING. REMOVE VENT PIPIONG BACK TO POINT OF DISCONNECTION INDICATED. FIELD VERIFY

- 3. PIPING DISCONNECTED FROM EQUIPMENT REMOVED SHALL BE BLANKED OFF OR CAPPED IN CEILING, FLOORS OR WALLS. 4. ANY EQUIPMENT OR COMPONENT REMOVED SHALL BE RETURNED TO OWNER, LABELED, AND MOVED BY THE CONTRACTOR TO THE OWNER'S STORAGE ON SITE. AT THE DISCRETION OF THE OWNER, THESE COMPONENTS MAY BECOME PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE PROJECT SITE.

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- WHERE PIPING IS TO BE REMOVED AT A SPECIFIC POINT, DUCT OR PIPE IS TO BE BLANKED OFF OR CAPPED AND REPAIRED TO LIKE NEW CONDITION.
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- 3. PIPING DISCONNECTED FROM EQUIPMENT REMOVED SHALL BE BLANKED OFF OR CAPPED IN CEILING, FLOORS OR WALLS. 4. ANY EQUIPMENT OR COMPONENT REMOVED SHALL BE RETURNED TO OWNER, LABELED, AND MOVED BY THE CONTRACTOR TO THE OWNER'S STORAGE ON SITE. AT THE DISCRETION OF THE OWNER, THESE COMPONENTS MAY BECOME PROPERTY OF THE

CONTRACTOR AND REMOVED FROM THE PROJECT SITE.

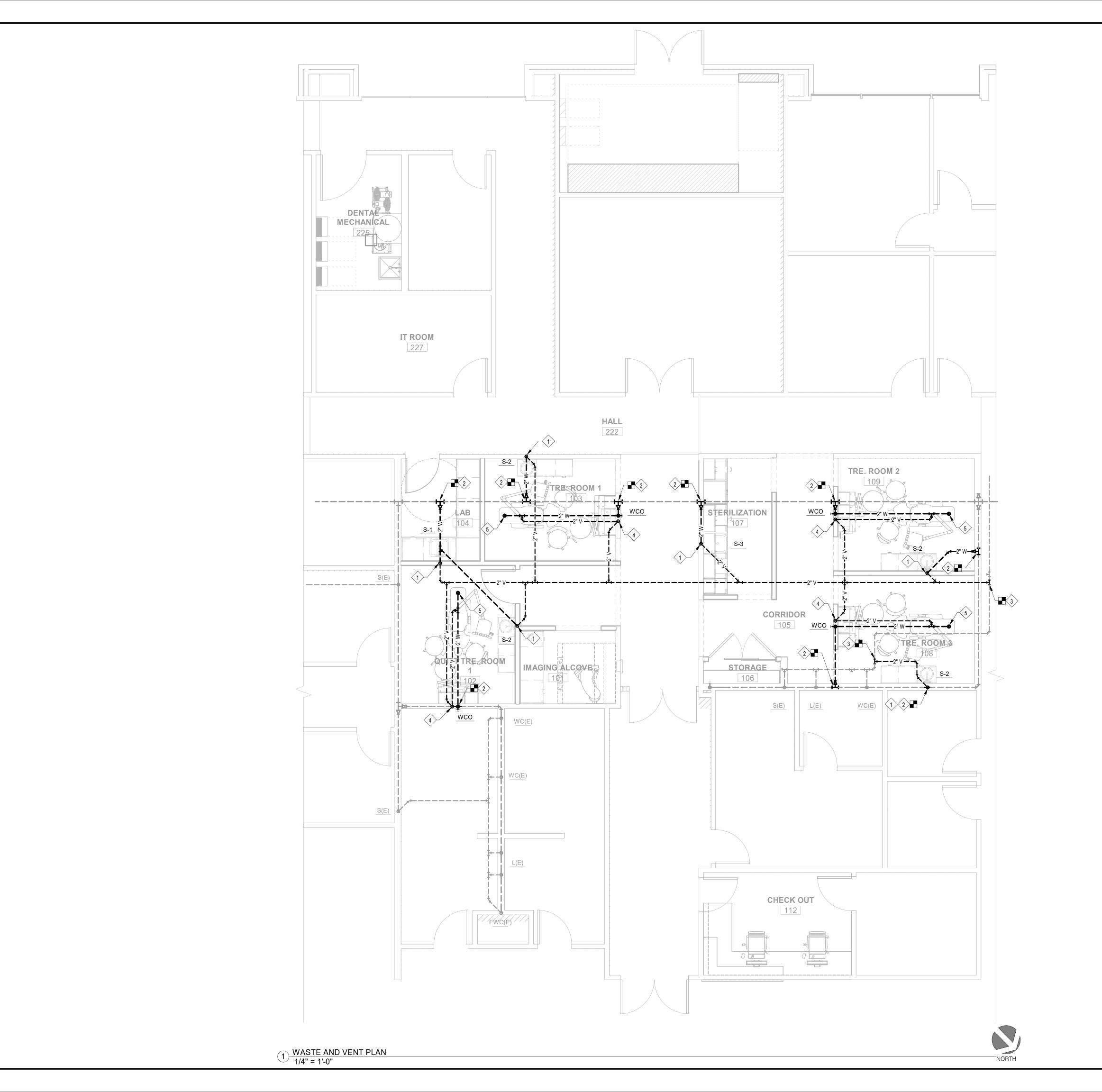
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- 1. PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE EXACT PIPE SIZES, INVERT ELEVATIONS, PRESSURES FOR LOCATIONS OF ANY SEWER, WATER PIPING AND WATER METER WITH CIVIL UTILITIES DRAWINGS, AND ANY OTHER ENGINEER AS
- APPLICABLE. 2. REFER TO THE PLUMBING DIAGRAMS FOR GUIDANCE OF INSTALLATION INTENT. CONTRACTOR IS TO PROVIDE ALL COMPONENTS NECESSARY TO MEET THE DESIGN INTENT,
- WHETHER SHOWN IN DIAGRAM OR NOT. 3. PRIOR TO PERFORMING WORK, CONTRACTOR COORDINATE PIPE ROUTING WITH ALL OTHER TRADES AND EXISTING FIELD CONDITIONS.
- 4. CONTRACTOR IS RESPONSIBLE FOR ROUGH-IN COORDINATION AND LOCATIONS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS AND FIXTURES.
- 5. CONTRACTOR IS RESPONSIBLE FOR ANY REQUIRED CUTTING AND
- 6. ALL NOTCHING, BORING, AND CUTTING OF HOLES IN WALL STUDS AND FLOOR JOISTS SHALL BE PERFORMED BASED ON THE LATEST ADOPTED AND APPROVED EDITION OF THE BUILDING CODE. 7. ALL WATER CLOSETS IDENTIFIED AS ACCESSIBLE SHALL HAVE THE
- FLUSH VALVE ACTUATOR INSTALLED ON THE WIDE SIDE. 8. ALL SANITARY DRAINAGE PIPING 3" AND SMALLER SHALL BE SLOPED AT 1/4" PER FOOT. PIPING 4" AND LARGER SHALL BE
- SLOPED AT 1/8" PER FOOT. 9. ALL CONDENSATE DRAIN PIPING SHALL BE SLOPED AT 1/8" PER FOOT AND PROVIDE ACCESSIBLE CLEANOUTS AT ALL CHANGES
- OF DIRECTION. 10. VENTS THAT TERMINATE AT THE ROOF SHALL BE A MINIMUM OF 10'
- FROM ANY FRESH AIR INTAKE. 11. SECONDARY CONDENSATE DRAIN FROM MECHANICAL UNIT DRAIN
- PAN ROUTE AND DISCHARGE AT A POINT THAT IS READILY OBSERVED. COORDINATE FINAL LOCATION WITH ARCHITECT.

SHEET NOTES:

- 1 2" WASTE AND VENT IN WALL.
- 2 CONNECT WASTE TO EXISTING WASTE MAIN BELOW GRADE. FIELD VERIFY EXACT LOCATION OF EXISTING SERVICES PRIOR TO ROUGH-IN.
- 3 CONNECT VENT TO EXISTING VENT PIPING ABOVE THE CEILING. FIELD VERIFY EXACT LOCATION OF EXISTING SERVICES PRIOR TO ROUGH-IN.
- 4 2" VENT UP IN WALL.
- 5 2" WASTE STUB UP AT FLOOR WITH TRAP TO SERVE DENTAL CHAIR. CAP FOR FUTURE CONNECTION 2" ABOVE FLOOR.



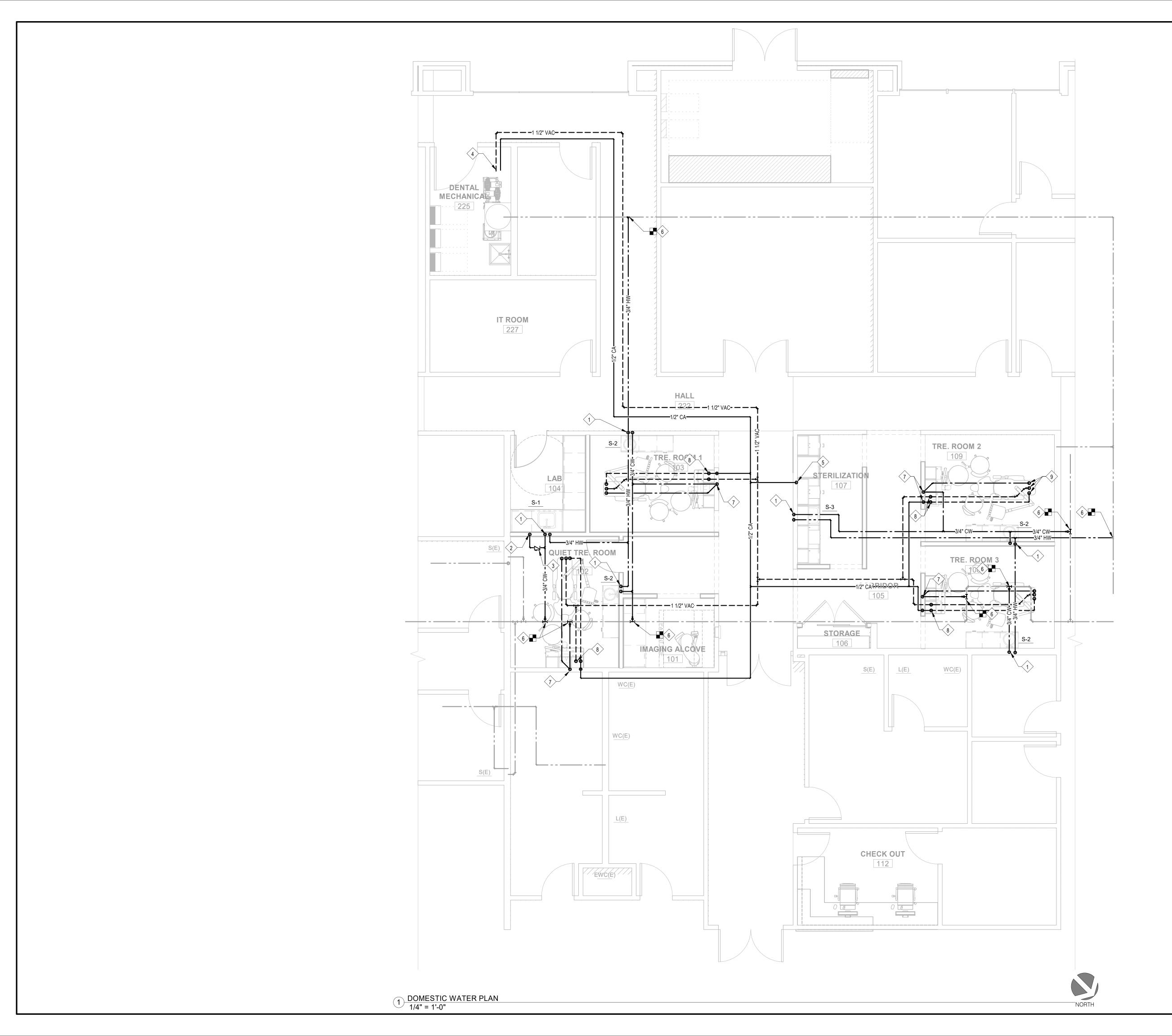
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- 1. PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE EXACT PIPE SIZES, INVERT ELEVATIONS, PRESSURES FOR LOCATIONS OF ANY WATER PIPING AND WATER METER WITH CIVIL UTILITIES DRAWINGS, AND ANY OTHER ENGINEER AS APPLICABLE. 2. REFER TO THE PLUMBING DIAGRAMS FOR GUIDANCE OF
- INSTALLATION INTENT. CONTRACTOR IS TO PROVIDE ALL COMPONENTS NECESSARY TO MEET THE DESIGN INTENT, WHETHER SHOWN IN DIAGRAM OR NOT.
- 3. PRIOR TO PERFORMING WORK, CONTRACTOR COORDINATE PIPE ROUTING WITH ALL OTHER TRADES AND EXISTING FIELD 4. CONTRACTOR IS RESPONSIBLE FOR ROUGH-IN COORDINATION
- AND LOCATIONS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS AND FIXTURES. 5. CONTRACTOR IS RESPONSIBLE FOR ANY REQUIRED CUTTING AND
- 6. ALL NOTCHING, BORING, AND CUTTING OF HOLES IN WALL STUDS AND FLOOR JOISTS SHALL BE PERFORMED BASED ON THE LATEST
- ADOPTED AND APPROVED EDITION OF THE BUILDING CODE. 7. ALL PLUMBING FIXTURES SHALL BE OF WATER CONSERVATION
- TYPE AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION. 8. ALL WATER CLOSETS IDENTIFIED AS ACCESSIBLE SHALL HAVE THE
- FLUSH VALVE ACTUATOR INSTALLED ON THE WIDE SIDE.
- 9. ALL WATER PIPING SHALL BE INSTALLED ON INTERIOR SIDE OF THE BUILDING WALL INSULATION.
- 10. CONTRACTOR SHALL PROVIDE VALVES LOCATED ABOVE LAY-IN CEILING OR 24"X24" CEILING ACCESS PANEL COORDINATE FINAL LOCATION AND SIZE WITH ARCHITECT. PROVIDE BALANCING VALVES FOR HOT WATER RETURN SYSTEM AS REQUIRED.

SHEET NOTES:

- 1 3/4" CW/HW DOWN IN WALL TO SINK.
- 2 3/4" CW DOW IN WALL TO MODEL TRIMMER. STUB OUT OF WALL A MAXIMUM OF 2" AND TERMINATE WITH 3/8" ANGLE STOP.
- 3 PROVIDE RPPA EQUAL TO WILKINS 975XL.
- 4 VACUUM PUMP (OFCI). ROUTE 1" INDIRECT DRAIN FROM VACUUM PUMP TO SERVICE SINK IN ROOM. TERMINATE WITH AIRGAP.
- 5 1/2" CA DOWN IN WALL TO QUATTROCARE. TERMINATE WITH 3/8"
- 6 CONNECT WATER TO EXISTING PIPING ABOVE THE CEILING. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
- 7 3/4" CW AND 1/2" CA DOWN IN WALL TO BELOW GRADE. STUB CW OUT OF WALL 12" AFF WITH ANGLE STOP.
- 8 1/2" CA AND 1" VAC UP FROM BELOW GRADE. STUB 2" ABOVE FINISHED FLOOR WITH ANGLE STOP.
- 9 3/4" CW, 1/2" CA, AND 1" VAC UP FROM BELOW GRADE. STUB UP 2" ABOVE FINISHED FLOOR WITH ANGLE STOP.



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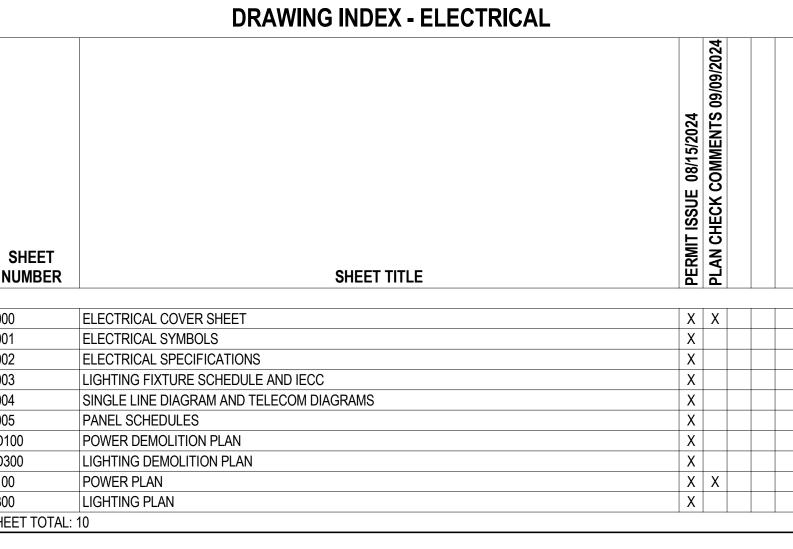
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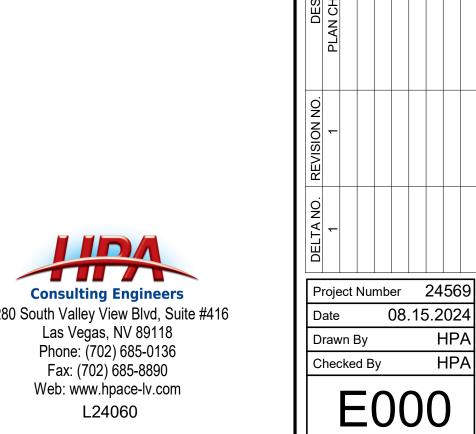
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ELECTRICAL ABBREVIATIONS						
	EGEND, NOT ALL ABBREVIATIONS MAY APPEAR ON DRAWINGS.)					
AFF AFG AIC AL ATS	ABOVE FINISHED FLOOR ABOVE FINISHED GRADE AMP INTERRUPTING CURRENT ALUMINUM AUTOMATIC TRANSFER SWITCH					
BFG BKBD	BELOW FINISHED GRADE BACKBOARD					
C CU	CONDUIT COPPER					
DB	DISTRIBUTION BOARD					
(E) EA EM EMCS EWC	EXISTING TO REMAIN EACH EMERGENCY ENERGY MANAGEMENT CONTROL SYSTEM ELECTRIC WATER COOLER					
F FBO FPN	FUSE (DUAL ELEMENT, TIME DELAY) FURNISHED BY OTHERS FUSE PER NAMEPLATE					
GFI GND	GROUND FAULT CIRCUIT INTERRUPTER GROUND					
HOA HP	HAND-OFF-AUTOMATIC HORSEPOWER					
IG	ISOLATED GROUND					
JBOX	JUNCTION BOX					
KVA KW	KILOVOLT-AMPS KILOWATT					
MCC MPC	MOTOR CONTROL CENTER MINI POWER CENTER					
NC NEC NF NFPA NIC NL NO NTS	NORMALLY CLOSED NATIONAL ELECTRIC CODE NON-FUSED NATIONAL FIRE PROTECTION ASSOCIATION NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN NOT TO SCALE					
PB PNL	PULLBOX PANEL BOARD					
(R) RGS	EXISTING TO BE RELOCATED RIGID GALVANIZED STEEL					
SWBD SQFT	SWITCH BOARD SQUARE FEET					
TL TVSS TYP	TWISTLOCK TRANSIENT VOLTAGE SURGE SUPPRESSION TYPICAL					
UG UMC UON UPS	UNDERGROUND UNIFORM MECHANICAL CODE UNLESS OTHERWISE NOTED UNINTERRUPTIBLE POWER SUPPLY					
V VA V/PH/A V/PH/HZ VFD WP WR	VOLTS VOLT-AMPS VOLTS/PHASE/AMPS VOLTS/PHASE/HERTZ VARIABLE FREQUENCY DRIVE - PROVIDED BY MECHANICAL WEATHER PROOF (NEMA 3R) WEATHER RESISTANT (EXTRA DUTY IN USE COVER)					

EXISTING TO BE REMOVED TRANSFORMER EXPLOSION PROOF

	DRAWING INDEX - ELECTRICAL	
SHEET NUMBER	SHEET TITLE	PERMIT ISSUE 08/15/2024 PLAN CHECK COMMENTS 09/09/2024
E000	ELECTRICAL COVER SHEET	XX
E001	ELECTRICAL SYMBOLS	X
E002	ELECTRICAL SPECIFICATIONS	X
E003	LIGHTING FIXTURE SCHEDULE AND IECC	X
E004	SINGLE LINE DIAGRAM AND TELECOM DIAGRAMS	X
E005	PANEL SCHEDULES	X
	POWER DEMOLITION PLAN	X
ED100	POWER DEWOLITION PLAN	
	LIGHTING DEMOLITION PLAN	X
ED100		





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C24-02571

ELECTRICAL COVER SHEET

ELECTRICAL SYMBOLS

(THIS IS A MASTER LEGEND, NOT ALL SYMBOLS MAY APPEAR ON DRAWINGS.)

			(THIS IS A MIASTER LEGEND, NOT ALL STRIBULE MAT ALL EAR ON DIVAVINOS.)		
	LIGHT FIXTURE - RECESSED	Ф	SINGLE RECEPTACLE - CEILING MOUNTED	Ф	JUNCTION BOX - WALL MOUNTED - HEIGHT AS INDICATED
	LIGHT FIXTURE - RECESSED EMERGENCY	\oplus	DUPLEX RECEPTACLE - CEILING MOUNTED		JUNCTION BOX - FLOOR FLUSH
0	LIGHT FIXTURE - CEILING SURFACE	\oplus	DOUBLE DUPLEX RECEPTACLE - CEILING MOUNTED	<u></u>	SIGNAGE JUNCTION BOX
	LIGHT FIXTURE - CEILING SURFACE EMERGENCY	\Diamond	SPECIAL RECEPTACLE - CEILING MOUNTED	$\dot{\Phi}$	SIGNAGE JUNCTION BOX - WALL MOUNTED - HEIGHT AS INDICATED
$\vdash \multimap$	LIGHT FIXTURE - STRIP	\bigoplus^{IG}	ISOLATED GROUND TYPE (ORANGE) DUPLEX RECEPTACLE- CEILING MOUNTED	Ť	NON-FUSED DISCONNECT SWITCH - SIZE AS INDICATED
├	LIGHT FIXTURE - STRIP EMERGENCY	$lacktriangledown_{X}$	TELEPHONE OUTLET - WALL MOUNTED @ +18" AFF UNLESS NOTED - PROVIDE 4-SQUARE STANDARD J-BOX	\square	FUSED DISCONNECT SWITCH - SIZE AS INDICATED
• •	LIGHT FIXTURE - PENDANT		WITH SINGLE GANG MUD RING. X INDICATES NUMBER OF VOICE JACKS. STANDARD DEVICE WITH NO NUMBERS IS (1) 4 PAIR CATEGORY 6 VOICE CABLE WITH SINGLE-PORT FACEPLATE UNLESS NOTED. PROVIDE	\boxtimes_{h}	COMBINATION NON-FUSED/FUSED SWITCH AND STARTER - SPECIFIED ON DRAWINGS
	LIGHT FIXTURE - PENDANT EMERGENCY	$\nabla_{\!\scriptscriptstylex}$	STAINLESS STEEL FACEPLATE FOR ALL OUTLETS IN FOODSERVICE AREAS. DATA OUTLET - WALL MOUNTED @ +18" AFF UNLESS NOTED - PROVIDE 4-SQUARE STANDARD J-BOX WITH	\boxtimes	MAGNETIC MOTOR STARTER
	LIGHT FIXTURE - WALL MOUNTED	Vx	SINGLE GANG MUD RING. X INDICATES NUMBER OF DATA JACKS. STANDARD DEVICE WITH NO NUMBERS IS (2) 4 PAIR CATEGORY 6 DATA CABLES WITH TWO-PORT FACEPLATE UNLESS NOTED. PROVIDE STAINLESS	/ /	MOTOR
	LIGHT FIXTURE - WALL MOUNTED EMERGENCY	-	STEEL FACEPLATE FOR ALL OUTLETS IN FOODSERVICE AREAS. (P) INDICATES POINT OF SALES OUTLET.	С	CONTACTOR
—N—	NEON FIXTURE	$\mathbf{V}_{\!\scriptscriptstyleX/Y}$	TELEPHONE/DATA OUTLET - WALL MOUNTED @ +18" AFF UNLESS NOTED - PROVIDE 4-SQUARE STANDARD J-BOX WITH SINGLE GANG MUD RING. X INDICATES NUMBER OF VOICE JACKS AND Y INDICATES NUMBER OF DATA	R	RELAY
—LED—	LED FIXTURE		JACKS. STANDARD DEVICE WITH NO NUMBERS IS (2) 4 PAIR CATEGORY 6 DATA CABLES, (1) 4 PAIR CATEGORY 6 VOICE CABLE AND (1) BLANK WITH FOUR-PORT FACEPLATE UNLESS NOTED. PROVIDE STAINLESS STEEL FACEPLATE FOR ALL OUTLETS IN FOODSERVICE AREAS	PC	PHOTOCELL
0	DOWNLIGHT FIXTURE			Ф	THERMOSTAT OUTLET - PROVIDED BY MECHANICAL
	DOWNLIGHT FIXTURE - EMERGENCY	X	TELEPHONE OUTLET - FLUSH FLOOR - HUBBELL #B2527 OR EQUIVALENT. PROVIDE FLANGE AND TRIM COMPATIBLE FOR FLOOR COVERING, COORDINATE WITH ARCHITECTURALS/INTERIORS. X INDICATES NUMBER	T _F	TRANSFORMER
\Diamond	WALL WASHER FIXTURE		OF VOICE JACKS. STANDARD DEVICE WITH NO NUMBERS IS (1) 4 PAIR CATEGORY 6 VOICE CABLE WITH SINGLE-PORT FACEPLATE UNLESS NOTED.		277/480V, 3PH, 4W PANELBOARD
>	WALL WASHER FIXTURE - EMERGENCY	$\nabla_{\mathbf{x}}$	DATA OUTLET - FLUSH FLOOR - HUBBELL #B2527 OR EQUIVALENT. PROVIDE FLANGE AND TRIM COMPATIBLE FOR FLOOR COVERING, COORDINATE WITH ARCHITECTURALS/INTERIORS. X INDICATES NUMBER OF DATA JACKS.		120/208V, 3PH, 4W PANELBOARD
Q	LIGHT FIXTURE - WALL MOUNTED		STANDARD DEVICE WITH NO NUMBERS IS (2) 4 PAIR CATEGORY 6 DATA CABLES WITH TWO-PORT FACEPLATE UNLESS NOTED.		120/240V, 1PH, 3W LOAD CENTER
\mathbf{P}	LIGHT FIXTURE - WALL MOUNTED - EMERGENCY	T	TELEPHONE/DATA OUTLET - FLUSH FLOOR - HUBBELL #B2527 OR EQUIVALENT. PROVIDE FLANGE AND TRIM COMPATIBLE FOR FLOOR COVERING, COORDINATE WITH ARCHITECTURALS/INTERIORS. X INDICATES NUMBER	sinn.	MEDIA CONSOLIDATION CENTER
P	SPOT OR FLOOD LIGHT	~1	OF VOICE JACKS AND Y INDICATES NUMBER OF DATA JACKS. STANDARD DEVICE WITH NO NUMBERS IS (2) 4 PAIR CATEGORY 6 DATA CABLES, (1) 4 PAIR CATEGORY 6 VOICE CABLE AND (1) BLANK WITH FOUR-PORT FACEPLATE	N•	AUTOMATIC TRANSFER SWITCH
∘ -⊖	POLE MOUNTED FIXTURE - OVAL/CIRCULAR		UNLESS NOTED.	MECH	HVAC EQUIPMENT - PROVIDED BY MECHANICAL
■-	POLE MOUNTED FIXTURE - SQUARE/RECTANGULAR	×	TELEPHONE OUTLET - CEILING MOUNTED - HUBBELL #B2527 OR EQUIVALENT. X INDICATES NUMBER OF VOICE JACKS. STANDARD DEVICE WITH NO NUMBERS IS (1) 4 PAIR CATEGORY 6 VOICE CABLE WITH SINGLE-PORT FACEPLATE UNLESS NOTED.	000	ELEVATOR CONTROLLER - FURNISHED BY OTHERS
-	PENDANT FIXTURE	0	DATA OUTLET - CEILING MOUNTED - HUBBELL #B2527 OR EQUIVALENT. X INDICATES NUMBER OF	L	FOOD SERVICE EQUIPMENT - FURNISHED BY OTHERS
\triangleleft	TRACK LIGHT	\bigotimes_{x}	DATA OUTLET - CEILING MOUNTED - HUBBELL #B2527 OR EQUIVALENT. X INDICATES NUMBER OF DATA JACKS. STANDARD DEVICE WITH NO NUMBERS IS (2) 4 PAIR CATEGORY 6 DATA CABLES WITH TWO-PORT FACEPLATE UNLESS NOTED.	PB	PULL BOX
A	LETTER INDICATES FIXTURE TYPE PER FIXTURE SCHEDULE		TWO-FORT FACEFLATE UNLESS NOTED.	NUMB SHEET	ELECTRICAL RISER
4	EMERGENCY BATTERY LIGHTING UNIT WITH TWIN HEADS - WALL MOUNTED @ +78" AFF UNLESS NOTED	\bigcirc _{X/Y}	TELEPHONE/DATA OUTLET - CEILING MOUNTED - HUBBELL #B2527 OR EQUIVALENT. X INDICATES NUMBER OF VOICE JACKS AND Y INDICATES NUMBER OF DATA JACKS. STANDARD DEVICE WITH NO NUMBERS IS (2) 4		FIXED CAMERA - FURNISHED BY OTHERS
$\overline{\otimes}$	EXIT LIGHT FIXTURE SINGLE FACE AND DIRECTIONAL ARROW - CEILING MOUNTED		PAIR CATEGORY 6 DATA CABLES, (1) 4 PAIR CATEGORY 6 VOICE CABLE AND (1) BLANK WITH FOUR-PORT 'ARCEPLATE UNLESS NOTED.	Θ	PAN/TILT CAMERA WITH DOME - FURNISHED BY OTHERS
	EXIT LIGHT FIXTURE DOUBLE FACE - CEILING MOUNTED	M	AUDIO MICROPHONE - WALL MOUNTED @ +48" AFF UNLESS NOTED	~ _	FUSED SWITCH
igotimes	EXIT LIGHT FIXTURE SINGLE FACE - WALL MOUNTED	V	VOLUME CONTROL - WALL MOUNTED @ +48" AFF UNLESS NOTED		POTENTIAL TRANSFORMER
\bigotimes	EXIT LIGHT FIXTURE DOUBLE FACE - WALL MOUNTED	S	SPEAKER - CEILING MOUNTED	XX	CURRENT TRANSFORMER
-	GROUND MOUNTED FIXTURE	S	SPEAKER - WALL MOUNTED @ +78" AFF UNLESS NOTED	_^_	CIRCUIT BREAKER
S	LIGHT SWITCH - WALL MOUNTED @ +48" AFF UNLESS NOTED SUBSCRIPTS: 2 = 2-POLE SWITCH	TV	TELEVISION OUTLET - CEILING MOUNTED. PROVIDE 4-SQUARE STANDARD J-BOX WITH SINGLE GANG MUD RING AND (1) RG-6 CABLE WITH SINGLE PORT FACEPLATE UNLESS NOTED.	PANEL	PANELBOARD ON SINGLE LINE DIAGRAMS
	3 = 3 WAY SWITCH 4 = 4 WAY SWITCH	T_V	TELEVISION OUTLET - WALL MOUNTED. PROVIDE 4-SQUARE STANDARD J-BOX WITH SINGLE GANG MUD	\bigcirc	METER
	D = DIMMER SWITCH K = KEY OPERATED SWITCH	F	RING AND (1) RG-6 CABLE WITH SINGLE PORT FACEPLATE UNLESS NOTED. FIRE ALARM MANUAL PULL STATION - WALL MOUNTED @ +48" AFF UNLESS NOTED	ST	SHUNT TRIP
	OS = OCC SENSOR SWITCH P = SWITCH WITH PILOT LIGHT	(Fs)	FIRE ALARM SPEAKER - CEILING MOUNTED	GFP GFP	GROUND FAULT PROTECTION
	T = THERMAL OVERLOAD SWITCH	(Fs)	FIRE ALARM SPEAKER - WALL MOUNTED @ +80" AFF UNLESS NOTED	(ii)	NOTE CALLOUT
•	PUSHBUTTON SWITCH - WALL MOUNTED @ +48" AFF UNLESS NOTED	¥ ⊠ 4	COMBINATION FIRE ALARM SPEAKER OR HORN/STROBE - WALL MOUNTED @ +80" AFF UNLESS NOTED	+18"	MOUNTING HEIGHT TO CENTERLINE OF DEVICE AFF OR AFG
•	PUSHBUTTON TYPE CONTROL STATION - WALL MOUNTED @ +48" AFF UNLESS NOTED	<u></u>	FIRE ALARM STROBE LIGHT - WALL MOUNTED @ +80" AFF UNLESS NOTED		HOMERUN CONDUIT - STROKES INDICATE QUANTITY OF CONDUCTORS
φ	SINGLE RECEPTACLE - WALL MOUNTED @ +18" AFF UNLESS NOTED	(S)_	SELF CONTAINED SMOKE DETECTOR/ANNUNCIATOR (120V W/ BATTERY BACKUP) - WALL MOUNTED @ +80"		UNSWITCHED, HOT CONDUCTORS
\bigoplus_{-}	DUPLEX RECEPTACLE - WALL MOUNTED @ +18" AFF UNLESS NOTED	S)	AFF UNLESS NOTED SMOKE DETECTOR		CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING
#	DOUBLE DUPLEX RECEPTACLE - WALL MOUNTED @ +18" AFF UNLESS NOTED	\$ \$	DUCT DETECTOR		CONDUIT BELOW FLOOR OR GRADE
P	GFI DUPLEX RECEPTACLE - WALL MOUNTED @ +18" AFF UNLESS NOTED	✓ _D	HEAT DETECTOR	—E—	EXISTING CONDUIT AND WIRE TO REMAIN
Ψ	1/2 SWITCHED (BOTTOM HALF) DUPLEX RECEPTACLE - WALL MOUNTED @ +18" AFF UNLESS NOTED	→ (F)	FIRE SMOKE DAMPER - PROVIDED BY MECHANICAL	—X—	EXISTING CONDUIT AND WIRE TO BE REMOVED
Y G	SPECIAL RECEPTACLE - WALL MOUNTED @ +18" AFF UNLESS NOTED	FACP	FIRE ALARM CONTROL PANEL		1/2"-2 #12 & 1 #12 GND THWN UNLESS NOTED
ΨGIG	ISOLATED GROUND TYPE (ORANGE) DUPLEX RECEPTACLE - WALL MOUNTED +18" UNLESS NOTED	TS	TAMPER SWITCH		1/2"-3 #12 & 1 #12 GND THWN UNLESS NOTED
₩	ISOLATED GROUND TYPE (ORANGE) DOUBLE DUPLEX RECEPTACLE - WALL MOUNTED @ +18" AFF UNLESS NOTED (ONE NORMAL DEVICE, ONE ISOLATED GND DEVICE UON)	DL	DOOR LOCK - ELECTRONIC - WALL MOUNTED @ +48" AFF UNLESS NOTED		1/2"-4 #12 & 1 #12 GND THWN UNLESS NOTED
$led {f \odot}$	CLOCK RECEPTACLE - WALL MOUNTED @ +78" AFF UNLESS NOTED	DC	DOOR CONTACT - ELECTRONIC		CABLE TRAY - TYPE SPECIFIED ON DRAWINGS
======	MULTI-OUTLET PLUG STRIP - WALL MOUNTED @ +18" UNLESS NOTED	<u></u>	OCCUPANCY SENSOR - CEILING MOUNTED	(1)	RISER UP - SEE RISER DIAGRAM FOR WIRE SIZE, CABLE TYPE AND/OR QUANTITIES
	SINGLE RECEPTACLE - FLUSH FLOOR	os	OCCUPANCY SENSOR - WALL MOUNTED @ +48" AFF UNLESS NOTED	√ ①	RISER DOWN - SEE RISER DIAGRAM FOR WIRE SIZE, CABLE TYPE AND/OR QUANTITIES
	DUPLEX RECEPTACLE - FLUSH FLOOR	TC	TIMECLOCK - WALL MOUNTED @ +48" AFF UNLESS NOTED		
	DOUBLE DUPLEX RECEPTACLE - FLUSH FLOOR	WL	WIRELESS NETWORK ACCESS CONTROL SYSTEM INTEGRAL TO DOOR		
	SPECIAL RECEPTACLE - FLUSH FLOOR	<u> </u>	CARD READER - ELECTRONIC - WALL MOUNTED @ +48" AFF UNLESS NOTED		
	ISOLATED GROUND TYPE (ORANGE) DUPLEX RECEPTACLE - FLUSH FLOOR	MS	MOTION SENSOR - WALL MOUNTED ABOVE DOORWAY UNLESS NOTED		
	ISOLATED GROUND TYPE (ORANGE) DOUBLE DUPLEX RECEPTACLE - FLUSH FLOOR (ONE NORMAL DEVICE, ONE ISOLATED GND DEVICE UON)	(JUNCTION BOX		





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NOT INCLUE STRUCTURAL, OR OFF-S

NTS. MAKE NO CHANGE WITHOUT AP

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ELECTRICAL SYMBOLS

SNHD
SNHD
SNHD
DENTAL SERVICE

Project Name

Project Number 24569
Date 08.15.2024
Drawn By HPA
Checked By HPA

ELECTRICAL AND TELECOMMUNICATION SPECIFICATIONS

<u>GENERAL</u>

- DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS IN FIELD PRIOR TO COMMENCEMENT OF WORK.
- WHEREVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN TO "PROVIDE AND INSTALL"
- FINAL CONNECTIONS TO EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
- IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY. THE ENGINEER RESERVES THE RIGHT TO APPROVE METHODS AND MATERIALS NOT REFLECTED HEREIN.
- CONTRACTOR SHALL REVIEW ARCHITECTURAL, STRUCTURAL, MECHANICAL AND OTHER RELATED DRAWINGS PRIOR TO BID.
- CONTRACTOR SHALL VISIT SITE PRIOR TO BID AND VERIFY THAT CONDITIONS ARE AS INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR SHALL INCLUDE IN HIS BID, ANY COSTS REQUIRED TO MAKE HIS WORK MEET THE CONTRACT SCOPE UTILIZING EXISTING CONDITIONS.
- WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE ARCHITECT
- WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE AND NATIONAL CODES AND ORDINANCES.
- PROVIDE PERMITS AND INSPECTIONS REQUIRED.
- VERIFY SPECIFIC LOCATION OF EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.
- SEE MECHANICAL DRAWINGS FOR LOCATION OF MECHANICAL EQUIPMENT. PROVIDE SERVICE TO AND CONNECT EQUIPMENT AS
- ELECTRICAL CONTRACTOR SHALL PROVIDE CONTROLS, INTERLOCKS, ACCESSORIES, ETC., IN MOTOR CONTROL STARTERS AS REQUIRED BY THE TEMPERATURE CONTROL CONTRACTOR. STARTERS SHALL CONTAIN 120V CONTROL TRANSFORMER, PILOT LIGHT, AND PUSH BUTTONS OR SELECTOR SWITCH AS REQUIRED, IN ADDITION TO OTHER ITEMS (AUXILIARY CONTACTS, DOOR SWITCHES, RELAYS, ETC.) REQUIRED. SUBMIT ELEMENTARY CONTROL DIAGRAMS FOR APPROVAL. SUBMITTALS SHALL INCLUDE INDICATION OF PRIOR REVIEW AND ACCEPTANCE BY TEMPERATURE CONTROL CONTRACTOR. REFER TO DIV. 15 DRAWINGS AND TEMPERATURE CONTROL DIAGRAMS FOR ADDITIONAL CONDUIT, WIRE, RELAYS, TRANSFORMERS, CONNECTIONS, ETC. REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.
- CONTRACTOR SHALL REVIEW ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS AND SHALL PROVIDE LIGHTS, SWITCHES, RECEPTACLES, EQUIPMENT CONNECTIONS, ETC., AND ASSOCIATED CIRCUITING IN NEW AND REMODELED AREAS, EVEN IF SUCH AREAS ARE NOT SHOWN ON ELECTRICAL DRAWINGS. LAYOUTS, FIXTURE TYPES, QUANTITIES AND SPACING SHALL BE IN ACCORDANCE WITH SIMILAR AREAS ON THIS PROJECT. CONTRACTOR SHALL INCLUDE COSTS FOR THE ABOVE IN HIS BID. IN ADDITION, CONTRACTOR SHALL PROVIDE LAYOUT DRAWINGS FOR WORK IN SUCH AREAS AND SUBMIT FOR APPROVAL PRIOR TO ROUGH-IN.

SYSTEM OUTAGES SHALL BE PERMITTED ONLY AT TIMES APPROVED BY OWNER. IN WRITING. WORK WHICH COULD RESULT IN AN

- ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY U.L. OR OTHER RECOGNIZED TESTING FACILITY
- ACCIDENTAL OUTAGE (BEYOND BRANCH CIRCUITS) SHALL BE PERFORMED WITH THE OWNER'S MAINTENANCE PERSONNEL ADVISED OF SUCH WORK
- ELECTRICAL SERVICE SHALL BE MAINTAINED TO EXISTING AREAS DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE PORTABLE GENERATORS, CABLES, OUTLETS, ETC., AS REQUIRED TO MAINTAIN CONTINUITY OF SERVICE. PLACEMENT OF SUCH PORTABLE EQUIPMENT SHALL BE SUBJECT TO OWNER APPROVAL
- CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS, EQUIPMENT OR INSTALLATION METHODS.
- PROPOSED SUBSTITUTIONS OF ELECTRICAL EQUIPMENT OR REQUEST FOR "OR EQUIVALENT" OR "APPROVED EQUIVALENT" LISTING SHALL BE SUBMITTED TO ARCHITECT NOT LESS THAN TEN (10) WORKING DAYS PRIOR TO BID. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

EXAMINATION OF BIDDING DOCUMENTS

- EACH BIDDER SHALL EXAMINE THE BIDDING DOCUMENTS CAREFULLY AND, NOT LATER THAN SEVEN DAYS PRIOR TO THE DATE OF RECEIPT OF BIDS, SHALL MAKE WRITTEN REQUEST TO THE ARCHITECT/ENGINEER FOR INTERPRETATION OR CORRECTION OF ANY DISCREPANCIES, AMBIGUITY, INCONSISTENCY OR ERROR THEREIN WHICH HE MAY DISCOVER. ANY INTERPRETATION OR CORRECTION WILL BE ISSUED AS AN ADDENDUM BY THE ARCHITECT. ONLY A WRITTEN INTERPRETATION OR CORRECTION BY ADDENDUM SHALL BE BINDING. NO BIDDER SHALL RELY UPON INTERPRETATIONS OR CORRECTIONS GIVEN BY ANY OTHER METHOD. IF DISCREPANCIES, AMBIGUITY, INCONSISTENCY OR ERROR ARE NOT COVERED BY ADDENDUM OR WRITTEN DIRECTIVE, CONTRACTOR SHALL INCLUDE IN HIS BID, LABOR, MATERIALS AND METHODS OF CONSTRUCTION RESULTING IN HIGHER COST. AFTER AWARD OF CONTRACT, NO ALLOWANCE OR EXTRA COMPENSATION WILL BE MADE IN BEHALF OF THE CONTRACTOR DUE TO HIS FAILURE TO MAKE THE WRITTEN REQUESTS AS DESCRIBED ABOVE.
- THE PERSON SUBMITTING THE REQUEST WILL BE RESPONSIBLE FOR ITS PROMPT DELIVERY. FAILURE TO SO REQUEST CLARIFICATION OF ANY INADEQUACY. OMISSION OR CONFLICT WILL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY. THE SIGNING OF THE CONTRACT WILL BE CONSIDERED AS IMPLICITLY DENOTING THAT THE CONTRACTOR HAS A THOROUGH COMPREHENSION OF THE FULL INTENT AND SCOPE OF THE WORKING DRAWINGS AND SPECIFICATIONS.
- THE ENGINEER OF RECORD HAS PERFORMED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS INDICATED FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.
- 21. THE ENGINEER OF RECORD HAS PERFORMED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUITS AND FEEDERS COMPLY WITH NEC 210-19(A) FPN NO 4.

EXISTING CONDITIONS

- CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY EXISTING EQUIPMENT OR CIRCUITS THAT ARE REMAINING AND TO BE RECONNECTED TO NEW OR EXISTING SWITCHBOARDS/PANELBOARDS. PROVIDE CONDUIT, WIRE, ETC., AS REQUIRED TO RESTORE CONTINUITY OF CIRCUIT(S).
- IMMEDIATELY AFTER AWARD OF CONTRACT, CONTRACTOR SHALL VERIFY AVAILABLE PHYSICAL SPACE AND AMPACITY OF EXISTING PANELBOARDS, SWITCHBOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS, ETC., AND PROVIDE WRITTEN DOCUMENTATION OF FINDINGS TO THE ARCHITECT / ENGINEER. DOCUMENTATION SHALL INCLUDE A MINIMUM 30 DAY RECORDING (THREE PHASE AMPERES, KW, KVAR AND PF) READING ON ALL EXISTING SWITCHGEAR BEING UTILIZED FOR THIS PROJECT.

DEMOLITION

- PROVIDE ELECTRICAL DEMOLITION REQUIRED. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR LOCATION AND EXTENT OF DEMOLITION REQUIRED. CONTRACTOR SHALL VISIT SITE PRIOR TO BID TO DETERMINE EXTENT OF WORK INVOLVED. PROVIDE LABOR AND MATERIALS AS REQUIRED TO MAINTAIN AND/OR RESTORE CONTINUITY OF SERVICE TO EXISTING CIRCUITS.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY DEMOLITION TO REMOVE EXISTING UNUSED CONDUIT, WIRE, J-BOXES, RECEPTACLES, SWITCHES, LIGHTS, FIRE ALARM DEVICES, ETC., COMPLETE WITH ASSOCIATED CIRCUITING TO SOURCE. WHERE IT IS NOT FEASIBLE TO REMOVE THE ABOVE, OUTLET SHALL BE ABANDONED, WIRE REMOVED, AND BLANK COVER PLATES PROVIDED.
- ALL ABANDONED ELECTRICAL CONDUCTORS, AND RACEWAYS SHALL BE REMOVED BACK TO THE SOURCE.
- 27. ALL EXPOSED WIRING THAT IS NOT IN USE SHALL BE REMOVED BACK TO SOURCE (ABOVE OR BELOW GRADE). IF EXISTING EXPOSED WIRING IS IN USE, IT SHALL BE INSTALLED IN CONDUIT.
- EXISTING LIGHT FIXTURES, SWITCHGEAR, ELECTRICAL EQUIPMENT, TELECOMMUNICATIONS EQUIPMENT, DEVICES, ETC., BEING REMOVED AND NOT REINSTALLED SHALL BE OFFERED TO THE OWNER, BEFORE IT IS DISCARDED.

<u>UNDERGROUND</u>

VERIFY SPECIFIC LOCATIONS OF EXISTING AND NEW UNDERGROUND UTILITIES, PIPING AND RACEWAY SYSTEMS PRIOR TO TRENCHING. PROVIDE NECESSARY TRENCHING, BACKFILL, EXCAVATION, SUPPORTS, SERVICE FEEDERS (CONDUIT AND/OR WIRE), PULLBOXES, TRANSFORMER PADS, SAWCUTTING AND PATCHING, CONCRETE/PAVING, ETC., REQUIRED. BACKFILL TRENCHES TO 90% COMPACTION AND PATCH TO MATCH EXISTING. CONTRACTOR SHALL OBTAIN AND VERIFY SPECIFIC UTILITY COMPANY DRAWINGS AND REQUIREMENTS.

<u>IDENTIFICATION</u>

- THE CONTRACTOR SHALL COLOR CODE THE FOLLOWING RACEWAY SYSTEMS, JBOXES AND A 1" WIDE STRIPE EVERY 20' ON CONTINUOUS CONDUIT RUNS:
 - EMERGENCY (E) YELLOW
 - OPTIONAL STANDBY (X) BLUE UPS (U) - GREEN
 - NORMAL WHITE
 - FIRE ALARM RED
- PROVIDE ENGRAVED NAMEPLATES ON SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, MOTOR CONTROL CENTERS, TRANSFORMERS, ETC., INDICATING EQUIPMENT DESIGNATION (OR DESIGNATION OF EQUIPMENT SERVED), VOLTAGE, FUSE OR CIRCUIT BREAKER AMPACITY AND WHERE THE EQUIPMENT IS FED FROM (EXAMPLE: PNL L1, 200A OCP FED FROM SL1). THE ENGRAVED
- NAMEPLATES SHALL BE COLOR CODED AS FOLLOWS: EMERGENCY/LIFE SAFETY POWER EQUIPMENT - WHITE LETTERS/RED FACE BACKGROUND
 - OPTIONAL STANDBY POWER EQUIPMENT WHITE LETTERS/BLUE BACKGROUND UPS POWER EQUIPMENT - WHITE LETTERS/BLUE BACKGROUND
 - NORMAL POWER EQUIPMENT BLACK LETTERS ON YELLOW FACE BACKGROUND
- PROVIDE DYMO-TAPE TAG INSIDE COVER OF EACH FUSIBLE SWITCH, INDICATING SIZE AND TYPE OF FUSES PROVIDED.
- PHENOLIC LABELS SHALL BE INSTALLED ON ALL ELECTRICAL EQUIPMENT WITH NAME AND "FED FROM" INFO

- ALL TRIM PLATES AND JUNCTION BOXES SHALL REFLECT THE PANEL NAME AND CIRCUIT NUMBER. INFORMATION SHALL BE PRINTED BEHIND THE TRIM PLATE OR WRITTEN ON THE EXTERIOR OF THE BOX.
- ELECTRICAL OUTLETS BACKED UP BY THE UPS SHALL HAVE BLUE TRIM PLATES.
- STICKY-BACK DOUBLE SIDE TAPE IS ACCEPTABLE FOR UPDATING LABELS

RACEWAYS AND JUNCTION BOXES

- THE MINIMUM SIZE DIAMETER FOR ALL CONDUITS IS 1/2" FOR ALL ELECTRICAL AND 1" MINIMUM DIAMETER FOR ALL DATA.
- BOXES FOR WIRING AND DEVICES SHALL BE MINIMUM 4" SQUARE.
- JUNCTION BOXES THAT CONNECT TO CONDUITS GREATER THAN 1 1/4" SHALL BE SIZED PER NEC 314.28.
- PULLBOXES, CABINETS, ETC., MOUNTED ON THE EXTERIOR AT GRADE LEVEL, SHALL BE WEATHERPROOF TYPE WITH HINGED LOCKABLE COVERS SECURED WITH TAMPER-PROOF SCREWS.
- ALL WIRING SHALL BE INSTALLED IN LISTED METALLIC RACEWAYS WITH STEEL COMPRESSION CONNECTORS. (DIECAST OR SET-SCREW ARE NOT ALLOWED). RACEWAYS IN SLAB-ON-GRADE OR BELOW GRADE SHALL BE SCHEDULE 40 PVC ENCASED IN CONCRETE. PVC-COATED RIGID STEEL FACTORY ELBOWS SHALL BE PROVIDED FOR BENDS IN PVC RUNS LONGER THAN 100 FEET. ELECTRICAL RUNS SHALL NOT EXCEED 270 DEGREES OF 100' BETWEEN JUNCTION BOXES.
- INSTALL ALL OVERHEAD RACEWAYS AS HIGH AS POSSIBLE. USE MINERALLACS FOR SINGLE OVERHEAD RUNS AND STRUT/ALL-THREAD TRAPEZE SYSTEMS FOR MULTIPLE RUNS.
- EXPOSED WIRING TRAYS OR EXPOSED CONDUITS WITHIN THE BUILDING ARE EXPRESSLY FORBIDDEN WITHOUT THE PRIOR APPROVAL AND CONSENT OF ARCHITECT OR ENGINEER. EMT CONDUIT AND FITTINGS SHALL BE USED FOR CONDUIT INSIDE OF WALLS OR ABOVE THE CEILING.
- UNDERGROUND CONDUITS SHALL BE PVC ELECTRICAL CONDUIT ENCASED IN CONCRETE. ALL UNDERGROUND ELECTRICAL OVER 600 VOLTS SHALL BE IDENTIFIED ON THE DRAWINGS IN CONDUIT AND ENCASED IN RED COLORED CONCRETE.
- RIGID STEEL CONDUIT AND FITTINGS SHALL BE USED FOR ALL EXTERIOR CONDUITS EXPOSED TO PHYSICAL DAMAGE. ALL CONDUITS SHALL BE INSTALLED AND RIGIDLY SUPPORTED USING APPROVED CONDUIT HANGERS, UNI-STRUT, OR ALL THREAD AS REQUIRED.
- ALL ELECTRICAL RACEWAYS SHALL HAVE A SEPARATE (GREEN) GROUND WIRE. PROVIDE EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS.
- ALL EMPTY RACEWAY SYSTEMS SHALL HAVE A PULL STRING OR EQUIVALENT AND SHALL BE IDENTIFIED AT ALL JUNCTION, PULL AND TERMINATION POINTS, USING PERMANENT METALLIC TAGS. TAG SHALL INDICATE INTENDED USE OF CONDUIT, ORIGINATION AND
- TERMINATION POINTS OF EACH INDIVIDUAL CONDUIT.
- CONDUITS PENETRATING THRU ROOF SHALL HAVE ROOF FLASHING WITH CAULK TYPE COUNTER FLASHING SLEEVE. INSTALLATION
- DO NOT INSTALL JUNCTION BOXES BACK-TO-BACK IN WALLS. PROVIDE A MINIMUM 6 INCH (150MM) SEPARATION EXCEPT PROVIDE A MINIMUM 24 INCH (600MM) SEPARATION IN ACOUSTIC AND FIRE RATED WALLS. WHERE A 24 INCH SEPARATION IN ACOUSTIC AND/OR FIRE RATED WALLS IS NOT POSSIBLE, PROVIDE LISTED SOUND PUTTY PAD OR FIRE RATED PUTTY PAD WHERE APPLICABLE. THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE THE JUNCTION BOX SIZE AND THE DERATING OF CONDUCTORS WHEN USING AN INSERT TYPE PUTTY PAD WITHIN THE INTERIOR OF THE JUNCTION BOX. THESE MATERIALS SHALL BE SUBMITTED TO THE ARCHITECT AND THE ENGINEER FOR APPROVAL.
- TYPE 'MC' CABLE WITH A FULL SIZED GROUNDING CONDUCTOR MAY BE USED WHERE PERMITTED BY BOTH THE N.E.C. AND LOCAL ORDINANCES (EXCEPT FOR HOMERUNS FROM THE PANELBOARD TO THE FIRST DEVICE).
- NO BATWINGS EXCEPT FOR 6' MC LIGHT FIXTURE WHIP.
- FLEX CABLE IS ALLOWED FOR WHIPS ONLY (MAXIMUM 6 FEET). FLEX CABLE IS PERMITTED IN CASEWORK. COORDINATE W/ DOA INSPECTOR.
- ALL FLEX SHALL BE STEEL, MAXIMUM LENGTH OF 6' WITH STEEL FITTINGS, NO DIE-CAST, NO ALUMINUM
- FINAL CONNECTIONS TO VIBRATING EQUIPMENT SHALL BE WITH FLEX (LIQUIDTIGHT FOR EXTERIOR APPLICATIONS) AND APPROVED FITTINGS. DO NOT SECURE CONDUITS, DISCONNECTS OR DEVICES TO DUCTWORK OR MECHANICAL EQUIPMENT.
- PLASTIC BUSHINGS ARE REQUIRED ON ALL CONNECTORS, PRIOR TO PULLING WIRE, 1" AND SMALLER; 1-1/4" AND LARGER SHALL HAVE GROUND BUSHINGS.

- WIRE TERMINATION PROVISIONS FOR PANELBOARDS, CIRCUIT BREAKERS, SAFETY SWITCHES, AND ALL OTHER ELECTRICAL APPARATUS SHALL BE LISTED AS SUITABLE FOR 75 DEGREE C.
- 58. THE FOLLOWING CONDUCTOR SIZES SHALL BE UTILIZED FOR 20 AMP CIRCUITS PERTAINING TO DISTANCES (IN FEET) INDICATED:

120VOLT, 1F	PH CONDUCTOR	208VOLT, 3
0-64	#12AWG	0-129
65-106	#10AWG	130-212

#8AWG

NOTE: BASED ON 75°c COPPER CONDUCTORS INSTALLED IN EMT WITH 16AMP LOAD @ 85% P.F.

213-321

- WIRE SHALL BE COPPER, 75 DEGREES C RATED FOR GENERAL USE, #10 AWG AND SMALLER SHALL BE SOLID, #8 AWG AND LARGER SHALL BE STRANDED. FOR HID FIXTURES AND WIRING WITHIN 3 INCHES OF FLUORESCENT BALLASTS WIRE SHALL BE COPPER. MINIMUM 90 DEGREES C RATED. SIZES INDICATED ARE FOR INSTALLATION IN A MAXIMUM 30 DEGREES C AMBIENT. CONDUCTOR AMPACITY SHALL BE DE-RATED FOR HIGHER AMBIENT INSTALLATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE GROUNDING SYSTEMS OF INDIVIDUAL UNIT PANELS AND COMBINATION MAIN/METER SECTIONS. EACH INDIVIDUAL UNIT SHALL HAVE A NO. 6 BARE COPPER GROUNDING CONDUCTOR FROM THE COLD WATER PIPING OF THAT PARTICULAR UNIT TO THE PANEL GROUND BUS.

LIGHT FIXTURES

- RECESSED LIGHT FIXTURES INSTALLED IN GYP. BOARD OR PLASTER CEILINGS SHALL HAVE PLASTER FRAMES INSTALLED PRIOR TO
- RECESSED FIXTURES INSTALLED INDOORS SHALL BE THERMALLY PROTECTED.
- FIXTURES INDICATED AS BEING ON EMERGENCY OR NIGHT LIGHT CIRCUITS SHALL BE PROVIDED WITH SELF-CONTAINED INTEGRAL BATTERY POWERED INVERTER UNIT FOR DIRECT MOUNTING IN FIXTURE. PROVIDE UNIT WITH FULLY AUTOMATIC TWO RATE CHARGER, NICKEL CADMIUM BATTERY, AC "ON" PILOT LIGHT, AND TEST SWITCH. DESIGN AND WIRE UNIT TO AUTOMATICALLY TRANSFER TO BATTERY SUPPLY ON LOSS OF NORMAL AC POWER AND TO OPERATE LED OR FLUORESCENT LAMP WITH MINIMUM OUTPUT OF 1400 LUMENS FOR MINIMUM 1-1/2 HOURS.
- ALL INDOOR FLUORESCENT FIXTURES THAT UTILIZE DOUBLE-ENDED LAMPS AND CONTAIN BALLAST(S) THAT CAN BE SERVICED IN PLACE OR BALLASTED LUMINARIES THAT ARE SUPPLIED FROM MULTIWIRE BRANCH CIRCUITS AND CONTAIN BALLAST(S) THAT CAN BE SERVICED IN PLACE SHALL COMPLY WITH 410.73 (G) OF THE NEC.
- FIXTURES RECESSED IN "T-BAR" CEILING SHALL BE SUPPORTED INDEPENDENTLY OF CEILING SYSTEM, WITH TWO #12 HANGER WIRES UP TO STRUCTURE. SECURE HANGER WIRES TO CORNERS OF FIXTURE. CLIP FIXTURE TO GRID ON TWO SIDES WITH FACTORY-FURNISHED CLIPS. FINAL CONNECTION TO FIXTURE SHALL BE MADE WITH A FLEXIBLE U.L. APPROVED ASSEMBLY.
- MULTI-BALLASTED FLUORESCENT FIXTURES SHALL BE DUAL SWITCHED UNLESS NOTED OTHERWISE

PANEL BOARDS, SWITCHBOARDS, AND DISCONNECT SWITCHES

- SWITCHBOARDS, (DISTRIBUTION BOARDS), PANELBOARDS, DISCONNECT SWITCHES, MOTOR CONTROL CENTERS AND TRANSFORMERS SHALL BE MANUFACTURED BY CUTLER HAMMER, GENERAL ELECTRIC, SIEMENS (ITE) OR SQUARE 'D'. BOLT FREE STANDING EQUIPMENT TO 4" HIGH CONCRETE PADS.
- DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE. FUSIBLE SWITCHES SHALL ACCEPT CLASS 'R' FUSES ONLY AND REJECT ALL OTHERS.
- CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE AND FUSES SHALL BE BUSSMANN CLASS "J", 300KAIC, DUAL ELEMENT, TIME DELAY OR EQUIVALENT FOR UP TO 600A AND CLASS "L" FUSES ABOVE 600A.

- WHERE PANELS ARE INSTALLED FLUSH WITH WALLS, EMPTY CONDUITS SHALL BE EXTENDED FROM THE PANEL TO AN ACCESSIBLE SPACE ABOVE OR BELOW. A MINIMUM OF ONE 3/4"C SHALL BE INSTALLED FOR EVERY THREE SINGLE POLE SPARE CIRCUIT BREAKERS OR SPACES, OR FRACTION THEREOF, BUT NOT LESS THAN TWO CONDUITS. FLUSH MOUNTED PANEL SHALL BE INSTALLED IN 6" WALLS. COORDINATE WITH GENERAL CONTRACTOR.
- CONTRACTOR SHALL PROVIDE NEW UPDATED PANELBOARD DIRECTORIES FOR EXISTING AND NEW CIRCUITS BEING UTILIZED AT COMPLETION OF PROJECT.
- PANEL DIRECTORIES SHALL BE REMOVABLE. SUBMIT PROPOSED SCHEDULE OF DIRECTORIES TO OWNER FOR APPROVAL. ROOM NAMES AND NUMBERS SHALL BE AS DIRECTED BY OWNER. DIRECTORIES SHALL BE TYPED AND INSTALLED UNDER CLEAR PLASTIC COVERS.
- ALL NEWLY INSTALLED ELECTRICAL PANELS SHALL BE INSPECTED AND PERFORM AN INFRARED SCAN TO VERIFY PROPERLY TERMINATED CONNECTIONS
- ALL NEWLY INSTALLED TRANSFORMERS SHALL BE INSPECTED AND PERFORM AN INFRARED SCAN TO VERIFY PROPERLY TERMINATED CONNECTIONS. RECEPTACLES AND DEVICES
- RECEPTACLES WHICH ARE SHOWN WALL MOUNTED ON THE ELECTRICAL DRAWINGS ON WALLS WHICH, ON THE ARCHITECTURAL DRAWINGS AND
- ELEVATIONS ARE SHOWN AS GLASS OR PARTITIONS, SHALL BE FLUSH FLOOR DUPLEX RECEPTACLES MOUNTED ADJACENT TO BASE OR WALLS.
- THE CONTRACTOR SHALL COORDINATE THE SPECIFIC LOCATION, MOUNTING HEIGHT, ROTATION, TYPE, COLOR, ETC. OF ALL DEVICES PRIOR TO INSTALLATION.

RECEPTACLES AT COUNTER SHALL BE MOUNTED WITH THEIR LONG AXIS HORIZONTAL AT +46" UNLESS NOTED.

- CONTRACTOR SHALL REFER TO FOOD SERVICE DRAWINGS FOR SPECIFIC LOCATIONS AND ADDITIONAL ELECTRICAL REQUIREMENTS OF ALL FOOD SERVICE EQUIPMENT. PROVIDE J-BOXES, RECEPTACLES, CONNECTIONS, CONDUITS (TO INCLUDE SODA AND LIQUOR DISPENSING SYSTEMS), WIRE, INTERLOCKS, CONTROLS, ETC., AS REQUIRED BY THE FOOD SERVICE EQUIPMENT SUPPLIER.
- THE CONTRACTOR SHALL PROVIDE 120V CONNECTION TO NEAREST MAINTENANCE RECEPTACLE WHERE REQUIRED FOR CONDENSATE PUMPS ASSOCIATED WITH FAN COIL UNITS. COORDINATE WITH MECHANICAL CONTRACTOR.
- FLUSH FLOOR RECEPTACLE OUTLETS SHALL BE HUBBELL #B-2527 WITH BRASS COVER #S-3925. PROVIDE CARPET OR TILE FLANGE TO MATCH FLOOR

 - **DEVICES SHALL BE AS FOLLOWS:** RECEPTACLES - HUBBELL #5362 SERIES
 - SWITCHES HUBBELL #1221 SERIES
 - DIMMERS LUTRON NOVA N-2000 SERIES OCCUPANCY SENSORS
 - THE COLOR OF THE DEVICES AND COVER PLATES SHALL BE AS DIRECTED BY ARCHITECT. IN DAMP OR WET LOCATIONS COVER PLATES SHALL BE STAINLESS STEEL. IN DRY LOCATIONS. COVER PLATES SHALL BE SMOOTH HIGH ABUSE NYLON OR EQUIVALENT. PROVIDE COVER PLATES FOR SWITCHES, RECEPTACLES, TELEPHONE, TELEVISION, COMPUTER AND J-BOX OUTLETS AS REQUIRED.

- FIRE ALARM SYSTEM. CONTRACTOR SHALL PROVIDE DEVICES, CONDUIT, WIRES AND CABLE AS DIRECTED BY EQUIPMENT MANUFACTURER. MATERIALS, EQUIPMENT AND WORKMANSHIP SHALL MEET PREVAILING CODES. THE SYSTEM SHALL BE COMPLETE AND OPERABLE IN EVERY RESPECT. SUBMIT SINGLE LINE OF SYSTEM WITH SHOP DRAWINGS. THIS SINGLE LINE DIAGRAM SHALL SHOW DEVICES, CONDUIT, WIRE AND CABLE SIZES, EQUIPMENT TO BE USED AND SHALL BE STAMPED AND SIGNED BY LOCAL FIRE DEPARTMENT. SYSTEM CALIBRATION AND TESTING SHALL BE BY FACTORY CERTIFIED TECHNICIAN.
- SMOKE DETECTORS SHALL BE SELF-CONTAINED WITH AUDIBLE ALARM, U.L. LISTED AND COMPLY WITH N.F.P.A. STANDARD 74

- ALL POWER CONDUIT AND CONDUCTORS SHALL BE ROUTED AROUND ALL TELECOMMUNICATION IDF/MDF ROOMS UNLESS SERVING THESE SPECIFIC
- THE MINIMUM SIZE DIAMETER FOR ALL TELECOMMUNICATION CONDUITS IS 1" MINIMUM DIAMETER
- ALL COMMUNICATIONS WIRING CONCEALED IN WALLS SHALL BE IN CONDUIT AND IDENTIFIED (EG: TELEPHONE, SECURITY, PAGING, EMS, ETC.)
- DATA CONDUIT RUNS SHALL NOT EXCEED 180 DEGREES OF BEND OR 100' IN LENGTH BETWEEN JUNCTION BOXES
- DATA RUNS SHALL NOT CHANGE DIRECTIONS IN A JUNCTION BOX. ALL DIRECTIONAL CHANGES SHALL BE MADE IN THE RACEWAY WITH PROPER RADIUS
- TELEPHONE INSTALLATION SHALL NOT HAVE ANY COMPONENTS IN COMMON WITH THE POWER OR LIGHTING INSTALLATION.
- TELEPHONE BACKBOARDS SHALL BE 3/4" A/C RATED FIRE RATED PLYWOOD WITH C SIDE AGAINST WALL. BOARD SHALL BE PAINTED WITH (TWO COATS) WHITE FIRE RESISTANT PAINT ON ALL SIDES.
- 94. BOXES FOR TELEPHONE, T.V., COMPUTER, DEVICES, ETC., SHALL BE MINIMUM 4" SQUARE

AND COMPLETED WITHIN 90 DAYS OF OCCUPANCY PER SNA #408.3.1.

- 95. ALL DATA CABLES SHALL BE CAT6 COMMSCOPE SYSTEMAX. BLUE FOR DATA AND GRAY FOR VOICE TELEPHONE BOARDS SHALL BE 3/4" A-C GRADE OR BETTER, VOID-FREE PLYWOOD, (8FT) HIGH WITH THE "C" SURFACE FACING THE WALL. THE PLYWOOD
- SHALL BE TREATED ON ALL SIDES WITH AT LEAST TWO (2) COATS OF FLAT WHITE, FIRE-RESISTANT PAINT. SECURELY FASTEN THE PLYWOOD TO WALL-

SUBMITTALS

- PROVIDE SHOP DRAWING SUBMITTAL DATA AT ONE TIME, IN ELECTRICAL PDF FORMAT, INDEXED IN A NEAT AND ORDERLY MANNER. PARTIAL SUBMITTALS WILL NOT BE ACCEPTED. SUBMITTALS SHALL INCLUDE BUT NOT BE LIMITED TO: LIGHTING FIXTURES, SWITCHGEAR, PANELBOARDS, WIRING DEVICES, SAFETY SWITCHES, FUSES, MOTOR STARTERS, LAMPS, CONDUIT, CONDUIT FITTINGS AND TRANSFORMERS.
- PROVIDE RECORD DRAWINGS TO ENGINEER. DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, REROUTINGS, ETC. WARRANTY / QUALITY CONTROL
- 99. ELECTRICAL SYSTEMS SHALL BE COMPLETE, OPERABLE AND READY FOR CONTINUOUS OPERATION AT COMPLETION OF PROJECT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING EQUIPMENT WHICH IS DAMAGED DUE TO INCORRECT FIELD WIRING PROVIDED UNDER THIS SECTION OR FACTORY WIRING IN EQUIPMENT PROVIDED UNDER THIS SECTION.
- GUARANTEE THE INSTALLATION AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP WHICH MAY OCCUR UNDER NORMAL USAGE FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE. DEFECTS SHALL BE PROMPTLY REMEDIED WITHOUT COST TO THE OWNER.

TESTING

- ELECTRICAL SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO OWNER.
- 103. FUNCTIONAL TESTING. CONTRACTOR SHALL PROVIDE TESTING AND DOCUMENTATION BY THE AUTHORIZED MANUFACTURERS REPRESENTATIVE FOR THE INSTALLED EQUIPMENT OR REGISTERED AND CERTIFIED TESTING COMPANY TO ENSURE THAT LIGHTING CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED, AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THESE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTALLATION INSTRUCTION TO MEET THE REQUIREMENTS OF 2012 IECC SECTION C405. CONTRACTOR SHALL COMPLETE IECC INSPECTION AND COMPLIANCE FORMS INCLUDED WITH THIS DRAWING SET AND RETURN TO ENGINEER WITH ASBUILT DRAWINGS. THIS SHALL BE DONE

Consulting Engineers 6280 South Valley View Blvd, Suite #416 Las Vegas, NV 89118 Phone: (702) 685-0136 Fax: (702) 685-8890 Web: www.hpace-lv.com L24060



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BUILDING AND
SAFETY DEPARTMENT
CITY OF LAS VEGAS, NEVADA
Sep 17 2024
LayneWestern

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Project Number 24569 08.15.2024 HPA Drawn By Checked By

Project Information

2018 IECC Energy Code: Project Title: SNHD DENTAL SERVICES Project Type: Alteration

Construction Site: 2830 E. FREMONT ST LAS VEGAS, NV 89104 Owner/Agent:

Designer/Contractor: **HPA Consulting Engineers** 6280 S. Valley View Blvd Suite 416 Las Vegas, NV 89118 (702) 685-0136

Total Proposed Watts = 1228

Allowed Interior Lighting Power

Area Category	Floor Area (ft2)	Allowed Watts / ft	Watts = D Fixture	owed Watts (B X C)	
1-Healthcare Facility:Exam/Treatment	1951	1.68		3278	
	Tot	al Allowed W	/atts =	3278	
Proposed Interior Lighting Power					
A	В	С	D	E	
Fixture ID: Description / Lamp / Wattage Per Lamp / Ballast	Lamps/ Fixture	# of Fixtures		e (C X D)	
Healthcare Facility:Exam/Treatment (1951 sq.ft.)					
LED: F1/F1E: 2'x4' LED TROFFER: Other:	2	13	40	520	
LED: (E): EXISTING 2'x4' LED TROFFER: Other:	2	11	56	616	
LED: (E): EXISTING 6" RECESSED LED: Other:	1	1	10	10	
LED: (E): EXISTING 4' LINEAR LED: Other:	1	2	41	82	

nterior Lighting PASSES

Interior Lighting Compliance Statement Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklish Kmyl Karl Pils, Principal 08/15/2024 Name - Title

Project Title:	SNHD DENTAL SERVICES	Report date: 07/12/24
Data filename:	J:\2024\L24060_SNHD Dental Office\Design\Calcs\IECC\L24060_Elec.cck	Page 1 of 6

[EL21]²

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

Project Title: Data filename

Rough-In Electrical Inspection

reduction controls have a manual

control that allows the occupant to

a reasonably uniform illumination

conference/meeting/multipurpose

open plan office areas, restrooms, storage rooms, locker rooms.

warehouse storage areas, and other

by floor-to-ceiling height partitions.

warehouses and section C405.2.1.3 for open plan office spaces.

C405.2.1. Occupancy sensors control function in \square Complies

by 50% or more when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being

off general lighting in all control zones within 20 minutes after all occupants

have left the space, 3) are configured

so that general lighting power in each control zone is reduced by >= 80% of

the full zone general lighting power

within 20 minutes of all occupants leaving that control zone, and 4) are

configured such that any daylight

general lighting or control zone

for the same area is detected.

responsive control will activate space

general lighting only when occupancy

C405.2.2, Each area not served by occupancy \square Complies

C405.2.2. sensors (per C405.2.1) have time-

2405.2.2. sensors (per C405.2.1) nave time switch controls and functions detailed in sections C405.2.2.1 and C405.2.2.2. Not Observable Not Applicable

open plan office areas: Occupant

>= 300 sq.ft. have controls 1)

be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) automatically turn

controlled by the sensor.

lighting in aisleways and open areas is controlled with occupant sensors that

automatically reduce lighting power

sensor controls in open office spaces

Not Observable

configured so that general lighting can Not Applicable

C405.2.1.2 for control function in

Reference section language

spaces <= 300 sqft that are enclosed

lounges/breakrooms, enclosed offices, \square Not Applicable

reduce the connected lighting load in

C405.2.2. Spaces required to have light-

pattern >= 50 percent.

C405.2.1. classrooms/lecture/training rooms,

rooms, copy/print rooms,

C405.2.1, Occupancy sensors installed in

& Req.ID

Complies?

□Not Observable

□Not Applicable

□Not Observable

□Does Not

Comments/Assumptions

::	SNHD DENTAL SERVICES	Report date:	07/12/2	24
ne:	J:\2024\L24060_SNHD Dental Office\Design\Calcs\IECC\L24060_Elec.cck	Page	3 of	6

COMcheck Software Version 4.1.5.5 Inspection Checklist

Energy Code: 2018 IECC Requirements: 0.0% were addressed directly in the COMcheck software

Data filename: J:\2024\L24060_SNHD Dental Office\Design\Calcs\IECC\L24060_Elec.cck

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

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

Additional Comments/Assumptions:

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3, C405.2.3. 1,	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	□Complies □Does Not □Not Observable □Not Applicable	
C405.2.4 [EL26] ¹	Separate lighting control devices for specific uses installed per approved lighting plans.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.4 [EL27] ¹	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	□Complies □Does Not □Not Observable □Not Applicable	
C405.3 [EL6] ¹	Exit signs do not exceed 5 watts per face.	□Complies □Does Not □Not Observable □Not Applicable	
C405.6 [EL26] ²	electric transformers meet the minimum efficiency requirements of Table C405.6.	□Complies □Does Not □Not Observable □Not Applicable	
C405.7 [EL27] ²	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	□Complies □Does Not □Not Observable □Not Applicable	
C405.8.2, C405.8.2. 1 [EL28] ²	automatic controls configured to	□Complies □Does Not □Not Observable □Not Applicable	
C405.9 [EL29] ²	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

	1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)	
Project Title:	SNHD DENTAL SERVICES		Report	t date: 07/12/2

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1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: SNHD DENTAL SERVICES Data filename: J:\2024\L24060_SNHD Dental Office\Design\Calcs\IECC\L24060_Elec.cck

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Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5. 2 [FI17] ³	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.4.1 [FI18] ¹	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	□Complies □Does Not □Not Observable □Not Applicable	See the Interior Lighting fixture schedule for values.
C408.1.1 [FI57] ¹	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	□Complies □Does Not □Not Observable □Not Applicable	
C408.2.5. 1 [FI16] ³	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.3 [FI33] ¹	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	□Complies □Does Not □Not Observable □Not Applicable	

Additional Comments/Assumptions:

	1 High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)			
Project Title:	SNHD DENTAL SERVICES				Repor	t date:	07/12/	/24
Data filename:	$J:\2024\L24060_SNHD$ Dental Office	Des	ign\Calcs\IECC\L24060_Elec.c	ck	I	age	5 of	6

Project Title: SNHD DENTAL SERVICES Data filename: J:\2024\L24060_SNHD Dental Office\Design\Calcs\IECC\L24060_Elec.cck

LIGHTING FIXTURE SCHEDULE

1. FIXTURES SHALL HAVE APPROPRIATE U.L. LABEL (i.e., DAMP OR WET) AS REQUIRED BY CODES AND ORDINANCES.

2. FIXTURES SHALL INCLUDE ALL ACCESSORIES NECESSARY FOR INSTALLATION ACCORDING TO MANUFACTURER'S SHOP DRAWINGS AND AS REQUIRED BY CODES AND LOCAL ORDINANCES.

B. PRIOR TO ORDERING ANY LIGHTING EQUIPMENT, THE CONTRACTOR SHALL COORDINATE ALL FIXTURE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS AND CEILING CAVITY DEPTHS. 4. CONTRACTOR SHALL VERIFY FIXTURE VOLTAGES AND CEILING TRIM COMPATIBILITY PRIOR TO ORDERING FIXTURE.

5. PROVIDE APPROVED FIRE-RATED ENCLOSURES FOR ALL LIGHTING FIXTURES LOCATED IN FIRE-RATED CEILINGS. 3. LIGHTING FIXTURE CATALOG NUMBERS ARE SERIES TYPE ONLY. PROVIDE ALL NECESSARY HARDWARE AS REQUIRED BY THE SPECIFICATIONS, DRAWINGS, AND PROJECT CONDITIONS FOR A COMPLETE INSTALLATION.

ENSURE COMPATIBILITY OF ALL LIGHTING SYSTEM COMPONENTS, ESPECIALLY DIMMED SYSTEMS. FIXTURES, LAMPS, BALLAST(S), AND DIMMING SYSTEMS/INDIVIDUAL CONTROLS MUST BE FACTORY CERTIFIED COMPATIBLE FOR FULL RANGE OF DIMMING COMPATIBILITY.

Report date: 07/12/24

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3. PROVIDE CLEARANCES FROM COMBUSTIBLES, A MINIMUM OF 3/4" (OTHER THAN AT POINTS OF SUPPORT) AND 3" FROM INSULATION FOR RECESSED LIGHTING FIXTURES WHICH ARE NON-IC RATED. 9. PROVIDE A MINIMUM OF TWO (2) #12 SUPPORT WIRES ATTACHED TO BUILDING FRAME IN ADDITION TO T-BAR CLIPS FOR FIXTURES RECESSED IN SUSPENDED T-BAR CEILING.

. FIXTURES WITH EMERGENCY BATTERY BACKUP SHALL BE WIRED AHEAD OF ANY LOCAL SWITCHING IN COMPLIANCE WITH NEC ARTICLE 700.

EMERGENCY LIGHTING UNITS SHALL BE EQUIPPED WITH FACTORY-INSTALLED INTEGRAL TEST SWITCHES. PROVIDE DOOR-TO-FRAME AND LENS-TO-DOOR GASKETING, INVERTED LENS, AND FOOD SERVICE RATING FOR ALL FIXTURES LOCATED IN FOOD SERVICE AREAS.								
FIXTURE			MANUFACTURER		FIXTURE	FIXTURE		
TYPE	FIXTURE DESCRIPTION	NAME	MODEL NUMBER	LAMP TYPE	VOLTAGE	WATTAGE	LOCATION/MOUNTING	
(R)	EXISTING 2'X4' LED GRID TROFFER WITH 0-10V DIMMING			LED / 4000K	120 V	40 VA		
F1	2'X4' LED GRID TROFFER WITH 0-10V DIMMING	LITHONIA	2ALL4-4800-120V-EZ1-LP840	LED / 4000K	120 V	40 VA		
F1E	2'X4' LED GRID TROFFER WITH 0-10V DIMMING AND BATTERY BACKUP	LITHONIA	2ALL4-4800-120V-EZ1-LP840 -EL14L	LED / 4000K	120 V	40 VA		
	POLYCARBONATE LED WHITE EXIT SIGN WITH GREEN LETTERS AND CHEVRONS - MOUNTING PER DRAWINGS.	LITHONIA	LQM-S-W-3-G-MVOLT-ELN-SD	FURN W/UNIT	120 V		SURFACE-CHEVRONS PER DRAWINGS. CONTRACTOR SUPPLIED/INSTALLED.	

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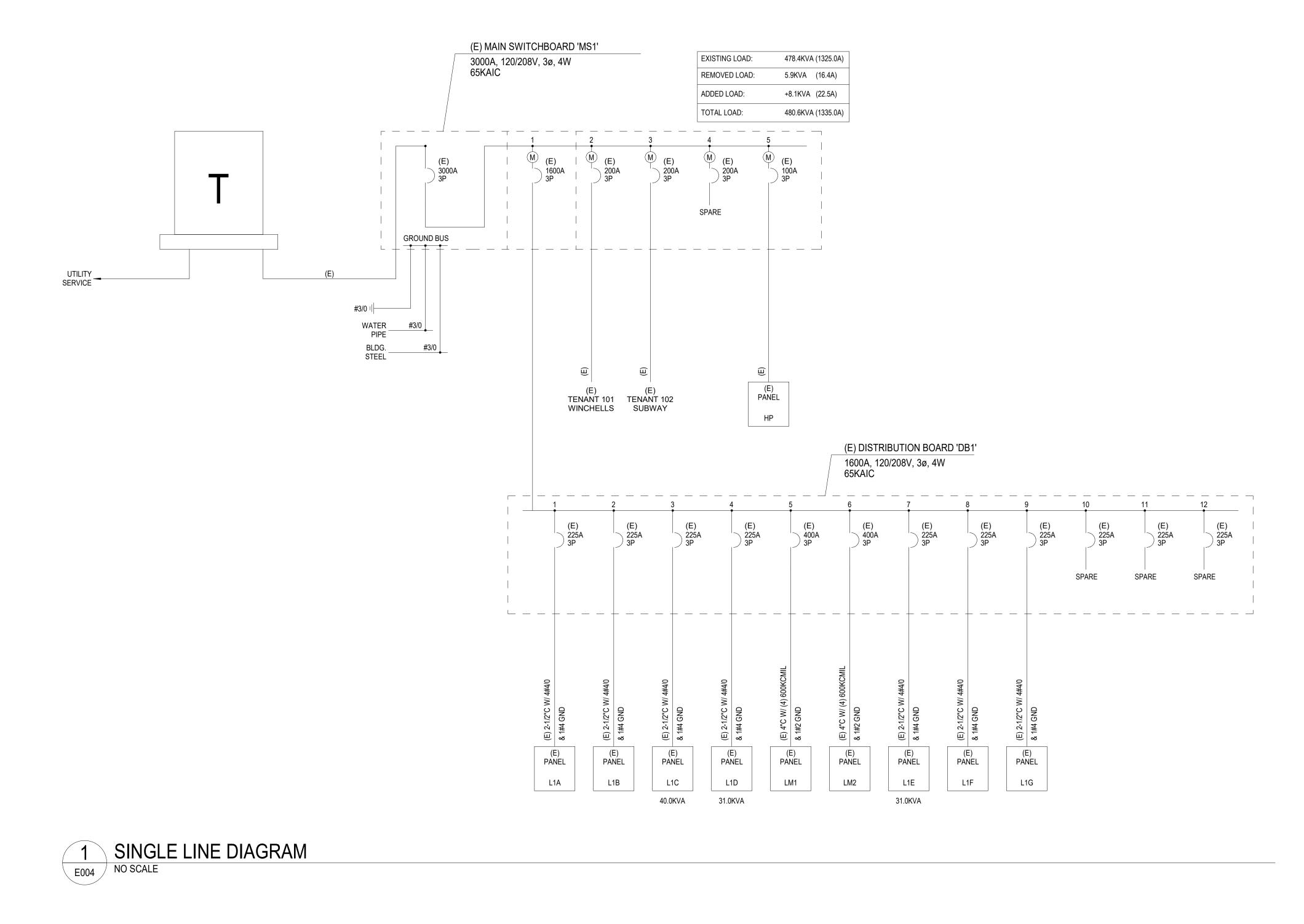
REVIEWED FOR CODE COMPLIANCE BUILDING AND SAFETY DEPARTMENT CITY OF LAS VEGAS, NEVADA Sep 17 2024

AND SCHEDULE

FIXT

LIGHTING

Project Number 24569 08.15.2024 Drawn By Checked By E003



 PRE-PRINTED UNIQUE ADHESIVE LABELS 6 INCHES FROM TERMINATION, BOTH ENDS OF ALL LOW VOLTAGE CABLE CLOSET NUMBER 1 CABLE NUMBER UNIT NUMBER FLOOR NUMBER 1

2 TELE/ E004 NO SCALE TELE/DATA OUTLET

4-PORT — FACEPLATE

8 POSITION -MODULAR JACK

XX-1

XX-1

WITH ID NUMBER

- VOICE ICON

DATA ICONS

TYPICAL TELEPHONE/DATA CONDUIT DIAGRAM E004 NO SCALE

TO ZONE JUNCTION BOX OR TELECOMM ROOM AS SHOWN ON DRAWINGS

1. TELEPHONE ONLY, DATA ONLY AND P.O.S. OUTLETS SIMILAR.
2. REFER TO SYMBOL LIST FOR CABLE TYPE AND QUANTITY.

CABLE LABEL DRAWING E004

GENERAL NOTES:

- EXISTING TO REMAIN SHOWN LIGHT AND/OR DESIGNATED WITH AN '(E)'. EXISTING TO BE REMOVED SHOWN LIGHT AND/OR DESIGNATED WITH A '(X)'. NEW SHOWN BOLD.
- EXISTING SINGLE LINE DIAGRAMS ARE BASED UPON EXISTING DRAWINGS AND INFORMATION AVAILABLE AT THE TIME OF DESIGN. CONTRACTOR TO VERIFY EXISTING TO BE REUSED SWITCH BOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS, PANELS AND NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK.
- THE ENGINEER OF RECORD HAS PERFORMED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUITS AND FEEDERS COMPLY WITH NEC 210.19(A) FPN NO 4.
- EMERGENCY FEEDERS SHALL BE PROTECTED BY THE METHODS DEFINED IN NEC 700.10(D).
- THE BUILDING GROUNDING AND BONDING SYSTEM SHALL COMPLY WITH NEC 250 AND THE PROJECT SPECIFICATIONS. THE GROUNDING ELECTRODE SYSTEM SHALL BE IN ACCORDANCE WITH NEC 250.50. PIPING SYSTEMS AND EXPOSED STRUCTURAL METAL SHALL BE GROUNDED PER NEC 250.104.
- CIRCUIT BREAKERS 1200A AND LARGER SHALL BE EQUIPPED WITH ARC FLASH REDUCTION MEANS PER NEC 240.87.

SHEET NOTES: (#)

SINGLE Project Number 24569 08.15.2024 Drawn By

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Exp. 12-31-25

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REVIEWED FOR CODE COMPLIANCE BUILDING AND SETTY DEPARTMENT LAS VEGAS, NEVADA Sep 17 2024
LayneWestern
DOES NOT LIDE STRUCTURAL, OR OFF-SITE (PROVEMENT OF NOT ANY ORBINANCE)

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HPA Checked By E004

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L24060

EXISTING RELAY PANEL Project: SNHD DENTAL SERVICES

Location: MAIN ELECTRICAL

Relay	Type	Panel-Circuit	Voltage	Source	Control Zone	Description	Load Watts
1	NO	L1A-5 (PART)	120V	Normal	а	(E) AREA 1 - OPEN OFFICE 127	420.4
2	NO	L1A-5 (PART)	120V	Normal	b	(E) AREA 1 - OPEN OFFICE 127	420.4
3	NO	L1A-5 (PART)	120V	Normal	С	(E) AREA 1 - OPEN OFFICE 100	353.8
4	NO	L1A-5 (PART)	120V	Normal	d	(E) AREA 1 - OPEN OFFICE 100	285.4
5	NO	L1A-7 (PART)	120V	Normal	е	(E) AREA 1 - CONF RM 101	222.8
6	NO	L1A-7 (PART)	120V	Normal	f	(E) AREA 1 - CONF RM 101	83.5
7	NO	L1A-7 (PART)	120V	Normal	mm	(E) AREA 1 - MENS RR 104	161.6
8	NO	L1A-7 (PART)	120V	Normal	nn	(E) AREA 1 - WOMENS RM 103	161.6
9	NO	L1C-9 (PART)	120V	Normal	g	(E) AREA 2 - BREAKROOM 221	249.1
10	NO	L1C-9 (PART)	120V	Normal	h	(E) AREA 2 - BREAKROOM 221	166
11	NO	L1C-9 (PART)	120V	Normal	i	(E) AREA 2 - CONF RM 228	83.5
12	NO	L1C-9 (PART)	120V	Normal	j	(E) AREA 2 - CONF RM 228	222.8
13	NO	L1E-36	120V	Normal	k	TREATMENT RMS, LAB, IMAGING, STER., COR	222.8
14						REMOVED LOAD	
15	NO	L1C-9 (PART)	120V	Normal	mm	(E) AREA 2 - OPEN OFFICE 202	103.4
16	NO	L1C-9 (PART)	120V	Normal	nn	(E) AREA 2 - OPEN OFFICE 202	103.4
17	NO	L1C-9 (PART)	120V	Normal	0	(E) AREA 2 - OPEN OFFICE 203	103.4
18	NO	L1C-9 (PART)	120V	Normal	р	(E) AREA 2 - OPEN OFFICE 203	103.4
19	NO	L1C-11 (PART)	120V	Normal	q	(E) AREA 2 - WAITING AREA 201	192.7
20	NO	L1C-11 (PART)	120V	Normal	r	(E) AREA 2 - WAITING AREA 201	192.7
21	NO	L1C-11 (PART)	120V	Normal	S	(E) AREA 2 - VESTIBULE 200	180.2
22	NO	L1C-11 (PART)	120V	Normal	t	(E) AREA 2 - VESTIBULE 200	180.2
23	NO	L1C-11 (PART)	120V	Normal	u	(E) AREA 2/3 - WAITING AREA 240	210.2
24	NO	L1C-11 (PART)	120V	Normal	V	(E) AREA 2/3 - WAITING AREA 240	210.2
25	NO	L1C-13 (PART)	120V	Normal	hh	(E) AREA 2 - HALL 210/219/222/229/243	800.9
26	NO	L1C-13 (PART)	120V	Normal	ii	(E) AREA 2 - WOMENS RR 232	165.6
27	NO	L1C-13 (PART)	120V	Normal	ii	(E) AREA 2 - MENS RR 231	165.6
28	NO	L1C-13 (PART)	120V	Normal	kk	(E) AREA 2 - WOMENS RR 232	211.6
29	NO	L1C-13 (PART)	120V	Normal	II	(E) AREA 2 - MENS RR 231	211.6
30	NO	L1E-5 (PART)	120V	Normal	w	(E) AREA 3 - OPEN OFFICE 241	103.4
31	NO	L1E-5 (PART)	120V	Normal	×	(E) AREA 3 - OPEN OFFICE 241	103.4
32	NO	L1E-5 (PART)	120V	Normal	у	(E) AREA 3 - NURSE STATION 268	136.8
33	NO	L1E-5 (PART)	120V	Normal	Z	(E) AREA 3 - NURSE STATION 268	136.8
34	NO	L1E-5 (PART)	120V	Normal	aa	(E) AREA 3 - TESTING 301	166
35	NO	L1E-5 (PART)	120V	Normal	bb	(E) AREA 3 - TESTING 301	166
36	NO	L1E-5 (PART)	120V	Normal	cc	(E) AREA 3 - RECEPTION 300	249.1
37	NO	L1E-5 (PART)	120V	Normal	dd	(E) AREA 3 - RECEPTION 300	166
38	NO	L1E-7 (PART)	120V	Normal	ee	(E) AREA 3 - OPEN OFFICE 302	153.2
39	NO	L1E-7 (PART)	120V	Normal	ff	(E) AREA 3 - OPEN OFFICE 302	142.7
40	NO	L1E-7 (PART)	120V	Normal		(E) AREA 3 - OPEN OPPICE 302	598.8
41	NO	LIE-7 (FART)	120V	Normal	99	(E) AREA 3 - HALL 243/209	390.0
42	NO		120V	Normal			
42	NO						
			120V	Normal			
44	NO		120V	Normal			-
45	NO		120V	Normal			
46	NO		120V	Normal			
47	NO		120V	Normal			
48	NO		120V	Normal			
TOTAL NOTES:							8311

1. PROVIDE LIGHTING CONTROL PANEL WITH ACCESSORIES AND HARDWARE FOR A COMPLETE AND

RPA

Ckt 1

EXISTING

Panel: L1C LOCATION: **DENTAL MECHANICAL 225** CIRCUIT CODE: N: NON-CONTINUOUS PANEL VOLTAGE: 208/120V, 3PH, 4W M: MOTOR SUPPLY FROM: BUS: **225 A** C: CONTINUOUS K: KITCHEN MAIN: R: DEMANDABLE RECEPTS E: ELEV AIC RATING: MOUNTING: **SURFACE** RR: DWELLING RECEPTS Enclosure: Type 1 Ckt Code Trip Pole Description Description Pole Trip Code Ckt 1 -- 20 A 1 (E) LCP 'RPA' CTRL CKT 1000 180 (E) HALL 222 RECS 1 20 A R **2** 3 -- 20 A 1 (E) NECY CTRL CKT 1000 696 (E) EWC 1 20 A -- **4** 5 -- 20 A 1 (E) AREA 2 OFFICE LTG (E) DRYER / TOWEL DISPENSER 1158 1800 1 |20 A | -- | **6** 7 - 20 A 1 (E) AREA 2 OFFICE LTG 1626 1800 (E) DRYER / TOWEL DISPENSER 1 20 A --9 -- 20 A 1 (E) RELAY PNL CKTS 9 THRU 18 1442 1800 (E) DRYER / TOWEL DISPENSER 20 A --| 11 | -- | 20 A | 1 | (E) RELAY PNL CKTS 19 THRU 24 (E) DRYER / TOWEL DISPENSER 1 20 A --13 -- 20 A 1 (E) RELAY PNL CKTS 25 THRU 29 1556 900 (E) RESTROOM AUTOMATION 1 20 A --**15** R 20 A 1 (E) WH-1 500 720 (E) BREAKROOM 221 RECS 1 20 A --**17** R 20 A 1 (E) CP-1 1 20 A --(E) BREAKROOM 221 RECS 528 1160 **19** R 20 A 1 (E) JAN. 225, STOR. 226 RECS 1 20 A --900 1500 (E) BREAKROOM 221 REFRIG **21** -- 20 A 1 (E) EF-6/7/8/9/10/11/17 (E) BREAKROOM 221 REFRIG 1 20 A --292 1500 23 R 20 A 1 (E) IT RM RACK REC 1800 1800 (E) BREAKROOM 221 MICRO 1 20 A --**25** R 20 A 1 (E) IT RM RACK REC 1800 1800 (E) BREAKROOM 221 MICRO 1 20 A --**27** R 20 A 1 (E) IT RM RACK REC 1800 360 (E) BREAKROOM 221 CTR RECS 1 20 A --29 R 20 A 1 (E) IT RM RACK REC (E) BREAKROOM 221 CTR RECS 1800 1 20 A --**31** R 20 A 1 (E) TTB REC 360 (E) FIRE SMOKE DAMPER 1 20 A --DENT. MECH 225 DENTAL VACCUM 1 20 A R 880 N 20 A 2 DENT. MECH 225 COMPRESSOR SPARE 1 20 A --**37** -- 20 A 1 SPARE SPARE 1 20 A --**39** -- 20 A 1 SPARE SPARE 1 20 A --0

116 A 93 A 122 A LOAD CLASSIFICATION ESTIMATED DEMAND CONNECTED LOAD DEMAND FACTOR PANEL TOTALS 27337 VA 100.00% 27337 VA PANEL(S) TOTAL CONNECTED KVA: 39 kVA 9872 VA 100.00% 9872 VA 1760 VA 100.00% 1760 VA PANEL(S) DEMAND KVA: 39 kVA PANEL(S) DEMAND AMPS: 108.2 A

øΒ

11194 VA

øС

14253 VA

øΑ

PHASE TOTALS: 13522 VA

SPARE

1 20 A --

1. NEW LOAD ON EXISTING BREAKER.

41 -- 20 A 1 SPARE

EXISTING

	PLY FR	ROM:		AL MECHANICAL 225 PANEL VOI	BUS MAIN	6: 225 A I:	`	7⊓, 4 v v					C: CONTINUOUS R: DEMANDABLE REC	EPTS	K: I	MOTOF KITCHE ELEV	
Ckt			Pole	Description AIC R	Note	6: 42,00 øA	øΒ	øС	øΑ	øΒ	ø C	Note	SURFACE RR: DWELLING RECE Description		Trip	Code	
1		20 A		(E) STORAGE 220 REC	11010	180			720			11010	(E) OPEN OFFICE 202 RECS	1	20 A		1
3		20 A		(E) STORAGE 220 REFRIG		100	1500]	720	540]		(E) OPEN OFFICE 202 RECS	1	20 A		1
5		20 A	1	(E) STORAGE 220 REFRIG			1000	1500		010	1800		(E) OPEN OFFICE 202 CUB RECS	1	20 A		
7		20 A	1	(E) STORAGE 220 REFRIG		1500			1160				(E) WAITING AREA 201 RECS	1	20 A		1
9		20 A	1	(E) STORAGE 220 REC		.000	180]		900]		(E) WAITING AREA 201 / VEST RECS	1	20 A		†
11		20 A	1	(E) STORAGE 220 REFRIG				1500			1500		(E) VESTIBULE SLIDING DOOR	1	20 A		1
13		20 A	1	(E) STORAGE 220 REFRIG		1500			1500				(E) VESTIBULE 200 VENDING MACH	1	20 A		1
15		20 A	1	(E) STORAGE 220 REFRIG			1500			1500			(E) VESTIBULE 200 VENDING MACH	1	20 A		1
17		20 A	1	(E) UNISEX 213 DRYER / TOWEL				1800			1500		(E) VESTIBULE 200 VENDING MACH	1	20 A		1
19		20 A	1	(E) IMMUNIZATION 212 RECS		720			180				(E) VESTIBULE 200 EWC	1	20 A	R	1
21		20 A	1	(E) IMMUNIZATION 211 RECS			720			1800			(E) OPEN OFFICE 203 CUB RECS	1	20 A		Ī
23		20 A	1	(E) IMMUNIZATION 208/209 RECS				900			360		(E) OPEN OFFICE 203 RECS	1	20 A		T
25		20 A	1	(E) IMMUNIZATION 208/HALL 210		540			720				(E) OPEN OFFICE 203 RECS	1	20 A		Ī
27		20 A	1	(E) COPY/PRINT 207 REC			180			900			(E) IMMUNIZATION 205/206 RECS	1	20 A		Ī
29		20 A	1	(E) COPY/PRINT 207 REC				180			900		(E) IMMUNIZATION 204/205 RECS	1	20 A		Ī
31		20 A	1	(E) COPY/PRINT 207 REC		180							SPACE	1			Ī
33	R	20 A	1	IMAGING ALCOVE 101 REC	1		180						SPACE	1			Ī
35	R; N	20 A	1	TRE. ROOM 103 DENTAL LIGHT/TV	1			190					SPACE	1			Ī
37	R; N	20 A	1	TRE. ROOM 2 109 DENTAL LIGHT/TV	1	190							SPACE	1			Ī
39	R; N	20 A	1	TRE. ROOM 3 108 DENTAL LIGHT/TV	1		190						SPACE	1			
41	R	20 A	1	IMAGING ALCOVE 101 XRAY	1			490					SPACE	1			
						Ø	A	Ø		Ø							
								4000	- > / -	4000		+					

			76 A	85 A	106 A				
LOAD CLASSIFICATION	CONNECTED LOAD	DEM	AND FACTOR	ESTIMATED	DEMAND	PANEL TOTAL	LS		
Spare	30380 VA		100.00%	30380	VA				
R	1390 VA		100.00%	1390	VA	PANEL(S) TOTAL CONNECTED KVA:	32 kVA		
N	30 VA		100.00%	30 V	Ά	PANEL(S) DEMAND KVA:	31.8 kVA		
						PANEL(S) DEMAND AMPS:	88.3 A		

NOTES:

1. NEW LOAD ON EXISTING BREAKER.

GENERAL NOTES:

- 1. EXISTING TO REMAIN SHOWN LIGHT AND/OR DESIGNATED WITH AN '(E)'. EXISTING TO BE REMOVED SHOWN LIGHT AND/OR DESIGNATED WITH A '(X)'. NEW SHOWN BOLD.
- 2. EXISTING SINGLE LINE DIAGRAMS ARE BASED UPON EXISTING DRAWINGS AND INFORMATION AVAILABLE AT THE TIME OF DESIGN. CONTRACTOR TO VERIFY EXISTING TO BE REUSED SWITCH BOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS, PANELS AND NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK.
- 3. THE ENGINEER OF RECORD HAS PERFORMED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUITS AND FEEDERS COMPLY WITH NEC 210.19(A) FPN NO 4.
- 4. EMERGENCY FEEDERS SHALL BE PROTECTED BY THE METHODS DEFINED IN NEC 700.10(D).
- 5. THE BUILDING GROUNDING AND BONDING SYSTEM SHALL COMPLY WITH NEC 250 AND THE PROJECT SPECIFICATIONS. THE GROUNDING ELECTRODE SYSTEM SHALL BE IN ACCORDANCE WITH NEC 250.50. PIPING SYSTEMS AND EXPOSED STRUCTURAL METAL SHALL BE GROUNDED PER NEC 250.104.
- 6. CIRCUIT BREAKERS 1200A AND LARGER SHALL BE EQUIPPED WITH ARC FLASH REDUCTION MEANS PER NEC 240.87.

LY FR		ENT	AL MECHA	NICAL 225 PANEL VC	BUS	S: 225 A	•	PH, 4W				C	CIRCUIT CODE: N: NON-CONTINUOUS C: CONTINUOUS R: DEMANDABLE REC		K: k	MOTOI KITCHE ELEV	
						•		øС	øΑ						Trin	Codo	7
			-	•	14016				360			14016	•				1
			· ,				0		_ 000	540]		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				+
			` '					0]	0-10	1500						$^{+}$
			` '			2510] [1800								+
			· ,		1	20.0	1440		1000	0]						\dagger
		1			1			360]		180	1	· /				\dagger
		1			1	180] '		0				-	1	20 A		1
N	20 A	1		•			900			720				1	20 A	R	
N	20 A	1	(E) DRYE	R / TOWEL DISPENSER				1800] '		540		(E) CONF RM 228 RECS	1	20 A	R	
N	20 A	1	(E) DRYE	R / TOWEL DISPENSER		1800] '		720				(E) CONF RM 228 RECS	1	20 A	R	T
N	20 A	1	(E) DRYE	R / TOWEL DISPENSER			1800			180]		(E) GRP RM 247 / BEH HLT 249 RECS	1	20 A	R	T
N	20 A	1	(E) DRYE	R / TOWEL DISPENSER				1800] '		1500		(E) SIGNAGE	1	20 A	N	1
R	20 A	1	(E) RESTI	ROOM / HALL 229 RECS		720] '		180				TRE. ROOM 3 108 D CHAIR,	1	20 A	R	T
R	20 A	1	(E) SECU	RITY 233 RECS			720			180			QUIET TRE. ROOM 102 D CHAIR,	1	20 A	R	2
R	20 A	1	(E) SECU	RITY 234 RECS				900	l '		180		TRE. ROOM 103 DENT. CHAIR,		20 A	R	30
R	20 A	1	(E) TRIAG	E 237 / 238 RECS		1080] `		360				LAB 104 COUNTER RECS	1	20 A	R	T
R	20 A	1	TRE. ROC	OM 3 108 RECS	2		720			360			LAB 104 COUNTER RECS	1	20 A	R	T
R	20 A	1	HALLWA'	Y, CORR. 105 RECS	2			540			600		TRE. RMS, LAB, STE., IMAGING LTG	1	20 A	С	
R; N	20 A	1	QUIET TR	E. ROOM 102 DENTAL	2	190] .		720				QUIET TRE. ROOM 102 RECS	1	20 A	R	
R	20 A	1	STER. 10	7 STERILIZER	2		1440			720			TRE. RM 103 RECS	1	20 A	R	
R	20 A	1	STER. 10	7 ULTRASONIC CLEANERS	2			450			540		TRE. ROOM 2 109 RECS	1	20 A	R	
						Ø	A	Ø	В	Ø	С						
				PHASE TO	TALS:												
			90 A											_			
		DEM								PANEL TOTALS				_			
											-1/0/				_		
C N										PANE					_		
		11410 VA	1		%		11410	VA		` ,							
													PANEL(S) DEMAND AMPS: 74.3 A	<u> </u>			
																	_
	Code	Code Trip 20 A 20 A R 20 A R 20 A R 20 A R 20 A N 20 A R 20 A	Code Trip Pole 20 A 1 20 A 1 R 20 A 1 R 20 A 1 R 20 A 1 R 20 A 1 N 20 A 1 R 20 A 1	20 A 1 (E) IMMUN 20 A 1 (E) IMMUN R 20 A 1 (E) IMMUN R 20 A 1 (E) HALL 2 R 20 A 1 STER. 102 R 20 A 1 TRE. ROC N 20 A 1 (E) DRYEI R 20 A 1 (E) DRYEI R 20 A 1 (E) SECUI R 20 A 1 (E) SECUI R 20 A 1 (E) SECUI R 20 A 1 (E) TRIAG R 20 A 1 TRE. ROC R 20 A 1 TRE. ROC R 20 A 1 STER. 103 R 20 A 1 STER. 103 R 20 A 1 STER. 103	Code Trip Pole Description 20 A 1 (E) IMMUNIZATION 214/215 RECS 20 A 1 (E) IMMUNIZATION 214/OFF 218 R 20 A 1 (E) IMMUNIZATION 216/REC 217 R R 20 A 1 (E) HALL 222 / OFF 218 / REC 217 R 20 A 1 STER. 107 STERILIZER R 20 A 1 STER. 107 CONV RECS R 20 A 1 (E) RESTROOM AUTOMATION N 20 A 1 (E) DRYER / TOWEL DISPENSER N 20 A 1 (E) DRYER / TOWEL DISPENSER N 20 A 1 (E) DRYER / TOWEL DISPENSER N 20 A 1 (E) DRYER / TOWEL DISPENSER N 20 A 1 (E) DRYER / TOWEL DISPENSER R 20 A 1 (E) SECURITY 233 RECS R 20 A 1 (E) SECURITY 234 RECS R 20 A 1 (E) TRIAGE 237 / 238 RECS R 20 A 1 (E) TRIAGE 237 / 238 RECS R 20 A 1 (E) TRIAGE 237 / 238 RECS R 20 A 1 (E) TRIAGE 237 / 238 RECS R 20 A 1 (E) TRIAGE 237 / 238 RECS R 20 A 1 STER. 107 STERILIZER R 20 A 1 STER. 107 STERILIZER PHASE TO	Enclosure: Type 1 Code Trip Pole Description Note 20 A 1 (E) IMMUNIZATION 214/215 RECS 20 A 1 (E) IMMUNIZATION 214/OFF 218 R 20 A 1 (E) IMMUNIZATION 216/REC 217 R R 20 A 1 (E) IMMUNIZATION 216/REC 217 R R 20 A 1 STER. 107 STERILIZER 1 R 20 A 1 STER. 107 CONV RECS 1 R 20 A 1 (E) RESTROOM AUTOMATION N 20 A 1 (E) DRYER / TOWEL DISPENSER N 20 A 1 (E) DRYER / TOWEL DISPENSER N 20 A 1 (E) DRYER / TOWEL DISPENSER N 20 A 1 (E) DRYER / TOWEL DISPENSER N 20 A 1 (E) DRYER / TOWEL DISPENSER N 20 A 1 (E) DRYER / TOWEL DISPENSER R 20 A 1 (E) DRYER / TOWEL DISPENSER R 20 A 1 (E) DRYER / TOWEL DISPENSER R 20 A 1 (E) SECURITY 233 RECS R 20 A 1 (E) SECURITY 234 RECS R 20 A 1 (E) SECURITY 234 RECS R 20 A 1 (E) TRIAGE 237 / 238 RECS R 20 A 1 TRE. ROOM 3 108 RECS 2 R; N 20 A 1 QUIET TRE. ROOM 102 DENTAL 2 R 20 A 1 STER. 107 STERILIZER 2 R 20 A 1 STER. 107 STERILIZER 2 R 20 A 1 STER. 107 ULTRASONIC CLEANERS 2 PHASE TOTALS: OCLASSIFICATION CONNECTED LOAD DEM. 19220 VA 600 VA	Code Trip Pole Description Note ØA	Code Trip Pole Description Note ØA ØB	Code Trip Pole Description Note ØA ØB ØC	Enclosure: Type 1 Code	AIC RATING: 22,000 Code Trip Pole Description Note ØA ØB ØC ØA ØA ØB ØC ØA ØC ØC ØC ØC ØC ØC	AIC RATING: 22,000 MOUNT	AIC RATING: 22,000	Mounth M	Code Trip Pole Description Note Pole Pole Description Note Pole Pole	Code Trip Pole Description Note Pole Description Note Pole Description Note Pole Description Note Pole Description Pole Pole Description Pole Pole Description Pole Pole Pole Description Pole Pole	MOUNTING: SURFACE RR: DWELLING RECEPTS RR: DWELLING RECEPTS





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MPROVEMENTS. MAKE NO CHANGE WITHOUT APPROVAL
PLAN IS NOT A PERMIT TO VIOLATE ANY ORDINANCE.

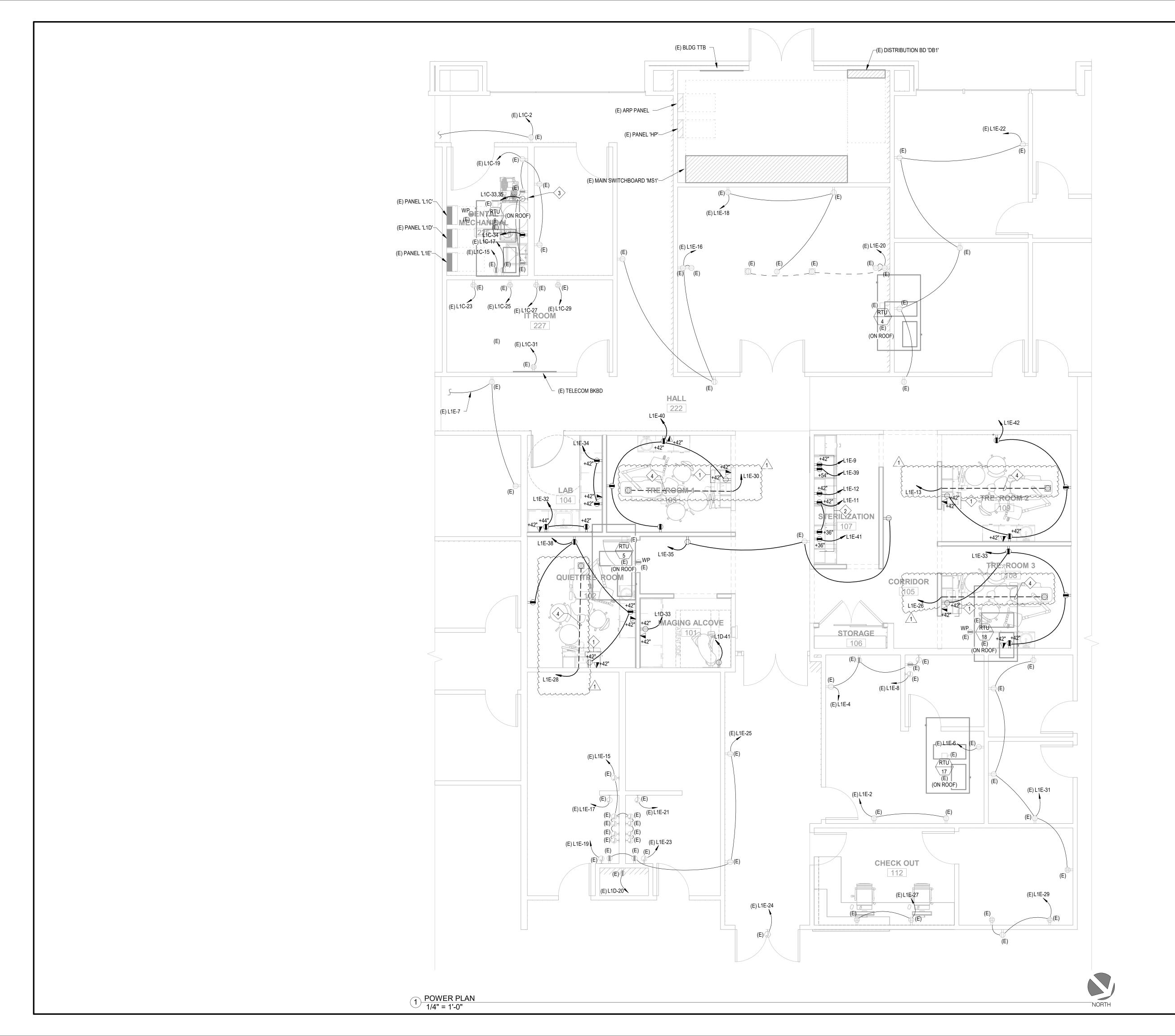
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NHD DENTAL

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Project Nam

Project Number 24569
Date 08.15.2024
Drawn By HPA
Checked By HPA



- 1. EXISTING TO REMAIN SHOWN LIGHT AND/OR DESIGNATED WITH AND (E), EXISTING TO BE RELOCATED DESIGNATED WITH AN (R), NEW SHOWN DARK.
- 2. EXISTING ITEMS AND CONDUIT ARE BASED UPON EXISTING DRAWINGS AND INFORMATION AVAILABLE AT THE TIME OF THE DESIGN. CONTRACTOR SHALL VERFIY EXISTING LOCATIONS.
- 3. EXISTING TO REMAIN ITEMS AND ITS ASSOCIATED CONDUIT, JUNCTION BOXES, WIRE, CABLE, ETC. SHALL BE INSPECTED FOR PROPER OPERATION AND CONDITION AS PER THEIR RESPECTIVE MANUFACTURER RECOMMENDATIONS AND LOCAL/NATIONAL CODES. IF ANY SUCH ITEM IS FOUND TO NOT MEET THESE REQUIREMENTS, IT SHALL BE REPLACED WITH EQUIVALENT ITEM.
- 4. CONTRACTOR SHALL MAINTAIN INTEGRITY OF EXISTING CIRCUITING. ALL EXISTING DEVICES SHALL BE IN WORKING CONDITION UPON COMPLETION OF CONSTRUCTION.
- 5. THE CONTRACTOR IS RESPONSIBLE FOR TRACING AND IDENTIFYING EXISTING CIRCUITS THAT SERVE THE AREAS WITHIN THE SCOPE OF WORK. CIRCUITS SHOWN ON DRAWINGS ARE BASED ON EXISTING DRAWINGS AND CASUAL FIELD SURVEY.
- 6. CONTRACTOR SHALL CUT AND PATCH AS REQUIRED TO PERFORM THE WORK.
- 7. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EQUIPMENT LOCATION AND REQUIREMENTS.
- 8. ALL RECEPTACLES AND OUTLETS LOCATED ON FURNITURE SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN.
- 9. VERIFY SPECIFIC LOCATIONS OF ALL EQUIPMENT PER ARCHITECTURAL DRAWINGS.
- 10. REFER TO ELECTRICAL SINGLE LINE DIAGRAM FOR FEEDER AND EQUIPMENT SIZES.
- 11. NEC 517.13(A) ALL BRANCH CIRCUITS SERVING PATIENT CARE SPACES SHALL BE PROVIDED WITH METAL RACEWAYS OR METALLIC CABLE (LISTED "HOSPITAL GRADE MC-HCF" MC CABLE) THAT ITSELF QUALIFIES AS AN EQUIPMENT GROUNDING CONDUCTOR PER 250.118.
- 12. PER NEC 517.13(B) AN INSULATED GROUND IS REQUIRED TO BE RUN IN THE CONDUIT.
- 13. PER NEC 406.12(5), BUSINESS OFFICES, CORRIDORS, WAITING ROOMS AND THE LIKE IN CLINICS, MEDICAL OFFICES, DENTAL OFFICES AND OUTPATIENT FACILITIES REQUIRE TAMPER RESISTANT RECEPTACLES.

SHEET NOTES: **(#**)

- 1 FURNISH AND INSTALL DUPLEX RECEPTACLE AND DATA FOR TV. COORDINATE EXACT LOCATION PRIOR TO INSTALLATION.
- 2 VERIFY EXACT MOUNTING HEIGHT AND LOCATION OF RECEPTACLES WITH CASEWORK INSTALLER PRIOR TO INSTALLATION.
- 3 FURNISH AND INSTALL 6-20R, 20-AMP, 208 VOLT RECEPTACLE.
- 4 ROUTE (1) 1" PVC-COATED STEEL CONDUIT UNDERGROUND WITH PULL STRING FOR DENTAL CHAIR POWER. CONDUIT, CONNECTIONS , AND INSTALLATION SHALL COMPLY WITH NEC 517.13 FOR GROUND-FAULT PATH THROUGH METAL RACEWAY. COORDINATE EXACT LOCATION PRIOR TO INSTALLATION.

Exp. 12-31-25 ELECTRICAL

09/09/2024

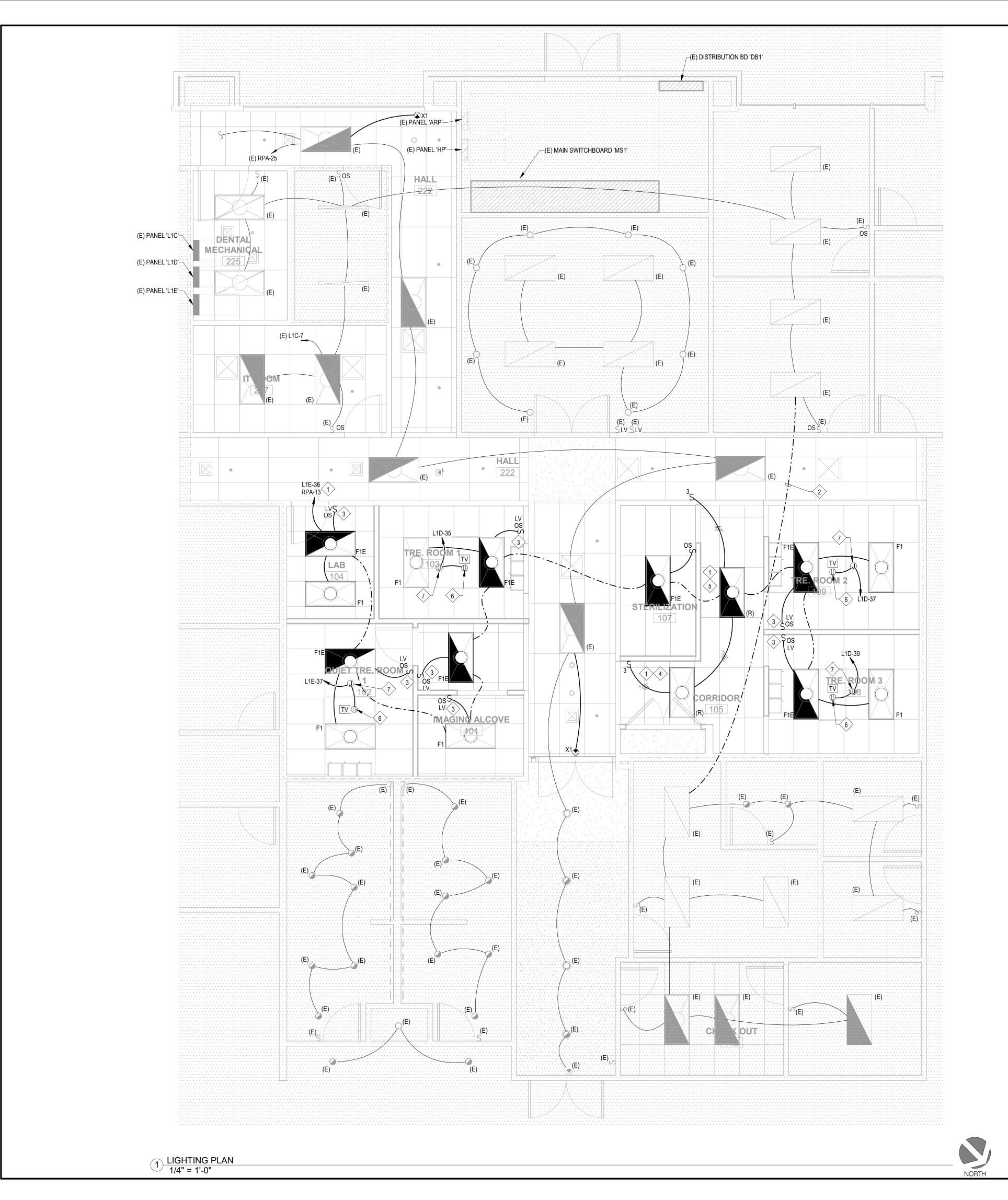
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- 1. EXISTING TO REMAIN SHOWN LIGHT AND/OR DESIGNATED WITH AND (E), EXISTING TO BE RELOCATED DESIGNATED WITH AN (R), NEW SHOWN DARK.
- 2. EXISTING ITEMS AND CONDUIT ARE BASED UPON EXISTING DRAWINGS AND INFORMATION AVAILABLE AT THE TIME OF THE

DESIGN. CONTRACTOR SHALL VERFIY EXISTING LOCATIONS.

- 3. EXISTING TO REMAIN ITEMS AND ITS ASSOCIATED CONDUIT, JUNCTION BOXES, WIRE, CABLE, ETC, SHALL BE INSPECTED FOR PROPER OPERATION AND CONDITION AS PER THEIR RESPECTIVE MANUFACTURER RECOMMENDATIONS AND LOCAL/NATIONAL CODES. IF ANY SUCH ITEM IS FOUND TO NOT MEET THESE REQUIREMENTS, IT SHALL BE REPLACED WITH EQUIVALENT ITEM.
- 4. CONTRACTOR SHALL MAINTAIN INTEGRITY OF EXISTING CIRCUITING. ALL EXISTING DEVICES SHALL BE IN WORKING CONDITION UPON COMPLETION OF CONSTRUCTION.
- 5. THE CONTRACTOR IS RESPONSIBLE FOR TRACING AND IDENTIFYING EXISTING CIRCUITS THAT SERVE THE AREAS WITHIN THE SCOPE OF WORK. CIRCUITS SHOWN ON DRAWINGS ARE BASED ON EXISTING DRAWINGS AND CASUAL FIELD SURVEY.
- 6. EXISTING TO BE RELOCATED LIGHT FIXTURES SHALL BE CLEANED AND RELAMPED PRIOR TO ROUGH-IN. IF ANY LIGHT FIXTURE IS DAMAGED OR DEFECTIVE, IT SHALL BE REPLACED WITH EQUIVALENT FIXTURE OF SAME TYPE, LAMP QUANTITY, AND
- 7. CONTRACTOR SHALL CUT AND PATCH AS REQUIRED TO PERFORM THE WORK.
- 8. ALL EMERGENCY FIXTURES WITH BATTERY PACK SHALL BE SUPPLIED WITH UNSWITCHED 'HOT'.
- 9. PROVIDE LOW VOLTAGE WIRING BETWEEN ALL EXISTING TO BE RLOCATED AND NEW NLIGHT LIGHTING CONTROL HARDWARE/LOW VOLTAGE LIGHTING CONTROL SWITCHES/LOW VOLTAGE OCCUPANCY AND DAYLIGHT SENSORS PER MANUFACTURERS WIRING DIAGRAM.
- 10. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT OF LIGHT FIXTURES.
- 11. ANY PENETRATIONS THROUGH WALL STUDS, FLOOR JOISTS, OR ROOF SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED BUILDING CODE.

SHEET NOTES: **(#**)

- 1 ROUTE CIRCUIT THROUGH EXISTING RELAY PANEL 'RPA'.
- 2 ROUTE 2#12 & 1#12 GROUND BETWEEN EXISTING LIGHT FIXTURES TO MAINTAIN CONTINUITY OF EXISTING CIRCUITING.
- 3 FURNISH AND INSTALL WALL MOUNTED OCCUPANCY SENSOR SWITCH WITH 0-10 VOLT DIMMING FOR CONTROL OF LIGHTS IN
- 4 EXISTING REMOVED LIGHT FIXTURE TO BE RE-USED AS SHOWN.
- 5 EXISTING REMOVED LIGHT FIXTURE TO BE RE-USED AS SHOWN. PROVIDE BATTERY BACKUP AS REQUIRED.
- 6 FURNISH AND INSTALL RECEPTACLE AND DATA JACK FOR TELEVISION FLUSH IN T-BAR CEILING.
- 7 FURNISH AND INSTALL JUNCTION BOX FOR CEILING MOUNT DENTAL

LIGHT. COORDINATE EXACT LOCATION PRIOR TO INSTALLATION.

Consulting Engineers

6280 South Valley View Blvd, Suite #416 Las Vegas, NV 89118 Phone: (702) 685-0136

Fax: (702) 685-8890 Web: www.hpace-lv.com L24060



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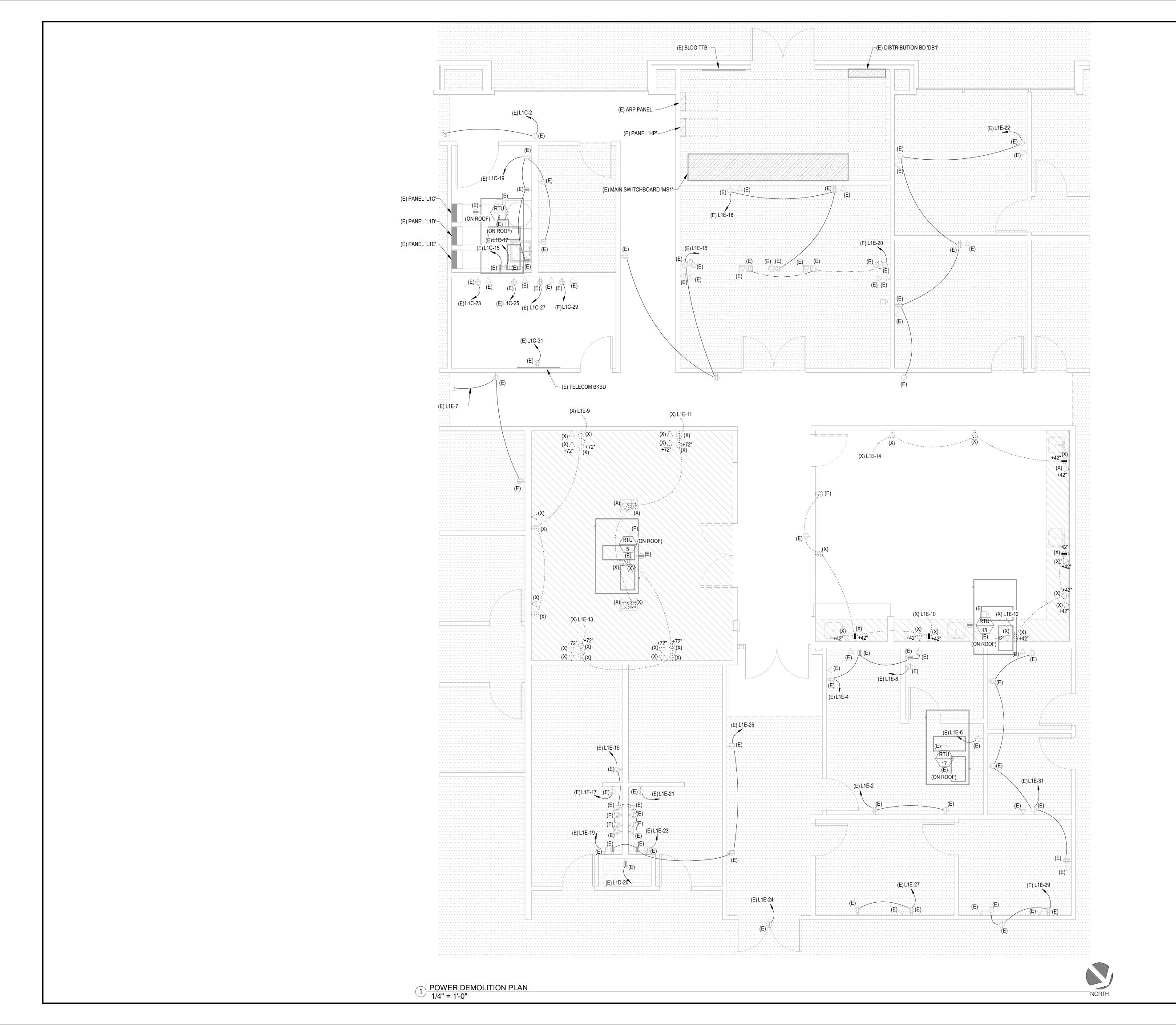
REVIEWED FOR CODE COMPLIANCE BUILDING AND SAFETY DEPARTMENT CITY OF LAS VEGAS, NEVADA Sep 17 2024
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- 1. EXISTING TO REMAIN SHOWN SOLID AND/OR DESIGNATED WITH AN (E), EXISTING TO BE REMOVED SHOWN DASHED AND/OR DESIGNATED WITH AN (X), EXISTING TO BE RELOCATED DESIGNATED WITH AN (R).
- 2. EXISTING ITEMS AND CONDUIT ARE BASED UPON EXISTING DRAWINGS AND INFORMATION AVAILABLE AT THE TIME OF THE DESIGN. CONTRACTOR SHALL VERIFY EXISTING LOCATIONS.
- 3. EXISTING TO BE REMOVED ITEMS SHALL HAVE ASSOCIATED CONDUIT, JUNCTION BOXES, WIRE, CABLE, ETC. REMOVED TO SOURCE OR FIRST EXISTING TO REMAIN ITEM.
- 4. EXISTING TO REMAIN ITEMS AND ITS ASSOCIATED CONDUIT, JUNCTION BOXES, WIRE, CABLE, ETC. SHALL BE INSPECTED FOR PROPER OPERATION AND CONDITION AS PER THEIR RESPECTIVE MANUFACTURER RECOMMENDATIONS AND LOCAL/NATIONAL CODES. IF ANY SUCH ITEM IS FOUND NOT MEET THESE REQUIREMENTS, IT SHALL BE REPLACED WITH EQUIVALENT ITEM.
- 5. CONTRACTOR SHALL MAINTAIN INTEGRITY OF EXISTING CIRCUITING. ALL EXISTING DEVICES SHALL BE IN WORKING CONDITION UPON COMPLETION OF CONSTRUCTION.
- 6. THE CONTRACTOR IS RESPONSIBLE FOR TRACING AND IDENTIFYING EXISTING CIRCUITS THAT SERVE THE AREAS WITHIN THE SCOPE OF WORK. CIRCUITS SHOWN ON DRAWINGS ARE BASED ON EXISTING DRAWINGS AND CASUAL FIELD SURVEY.
- 7. PER SOUTHERN NEVADA AMENDMENTS TO NEC 110.12, ELECTRICAL CONDUCTORS OR CABLES ARE NOT PERMITTED TO BE ABANDONED IN PLACE, AND SHALL BE REMOVED BACK TO SOURCE.

SHEET NOTES: *****



09/09/2024

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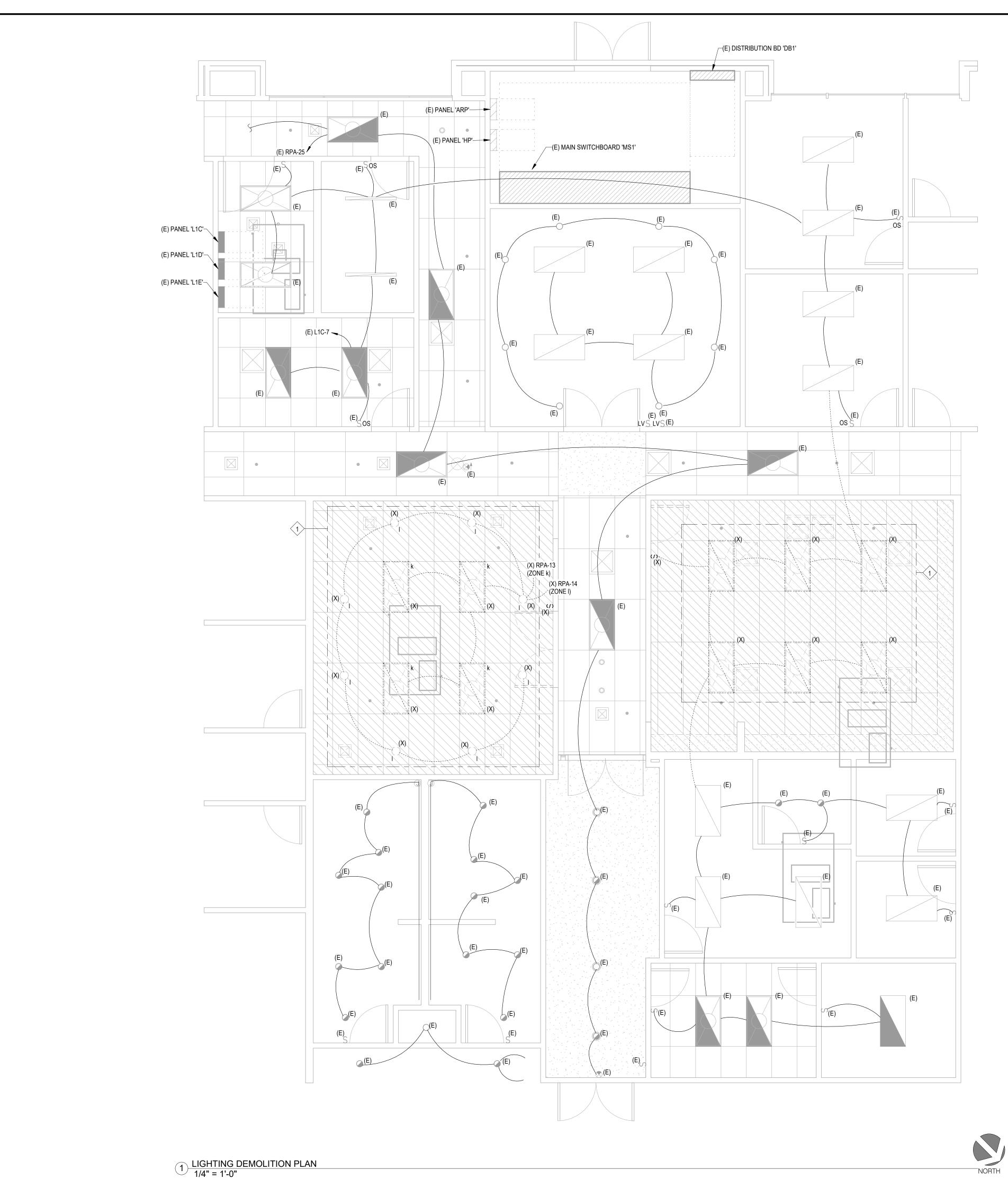
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REVIEWED FOR
CODE COMPLIANCE
BUILDING AND
SAFETY DEPARTMENT
CITY OF LAS VEGAS, NEVADA
Sep 17 2024
LayneWestern
DOES NOT INCLUDE STRUCTURAL OR OFF-SITE
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APPROVEMENTS, MAKE NO CHANGE WITHOUT APPROVA
PLAN IS NOT A PERMIT TO VIOLATE ANY ORDINANCE.

DEMOLITION POWER

Consulting Engineers
6280 South Valley View Blvd, Suite #416
Las Vegas, NV 89118
Phone: (702) 685-0136
Fax: (702) 685-8890
Web: www.hpace-lv.com Project Number 24569 08.15.2024 Drawn By HPA Checked By

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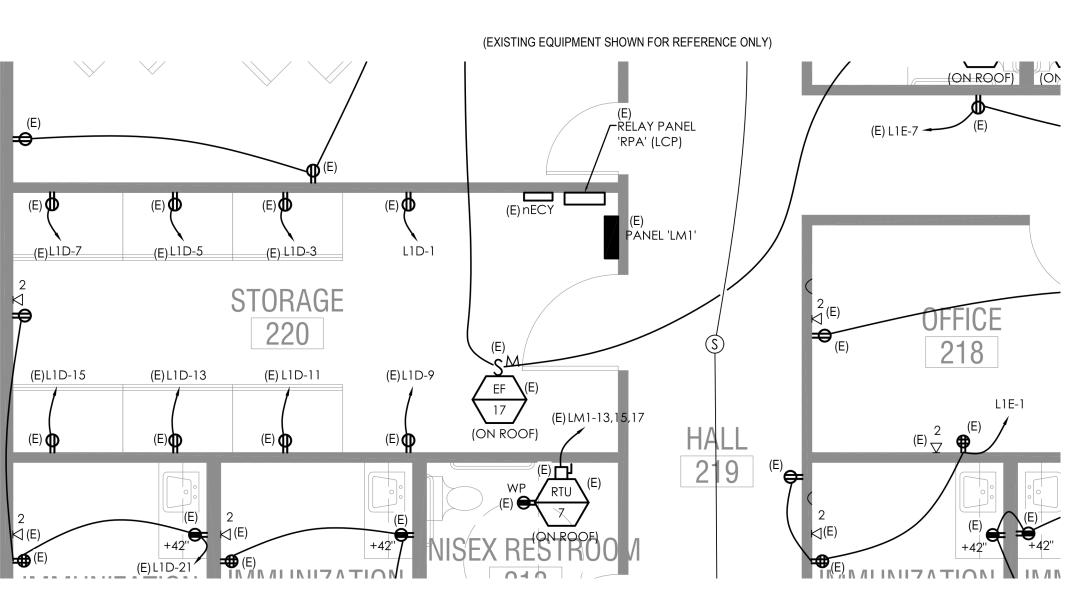
- 1. EXISTING TO REMAIN SHOWN SOLID AND/OR DESIGNATED WITH AN (E), EXISTING TO BE REMOVED SHOWN DASHED AND/OR DESIGNATED WITH AN (X), EXISTING TO BE RELOCATED DESIGNATED WITH AN (R).
- 2. EXISTING ITEMS AND CONDUIT ARE BASED UPON EXISTING DRAWINGS AND INFORMATION AVAILABLE AT THE TIME OF THE
- 3. EXISTING TO BE REMOVED ITEMS SHALL HAVE ASSOCIATED CONDUIT, JUNCTION BOXES, WIRE, CABLE, ETC. REMOVED TO SOURCE OR FIRST EXISTING TO REMAIN ITEM.

DESIGN. CONTRACTOR SHALL VERIFY EXISTING LOCATIONS.

- 4. EXISTING TO REMAIN ITEMS AND ITS ASSOCIATED CONDUIT, JUNCTION BOXES, WIRE, CABLE, ETC. SHALL BE INSPECTED FOR PROPER OPERATION AND CONDITION AS PER THEIR RESPECTIVE MANUFACTURER RECOMMENDATIONS AND LOCAL/NATIONAL CODES. IF ANY SUCH ITEM IS FOUND NOT MEET THESE REQUIREMENTS, IT SHALL BE REPLACED WITH EQUIVALENT ITEM.
- 5. CONTRACTOR SHALL MAINTAIN INTEGRITY OF EXISTING CIRCUITING. ALL EXISTING DEVICES SHALL BE IN WORKING CONDITION UPON COMPLETION OF CONSTRUCTION.
- 6. THE CONTRACTOR IS RESPONSIBLE FOR TRACING AND IDENTIFYING EXISTING CIRCUITS THAT SERVE THE AREAS WITHIN THE SCOPE OF WORK. CIRCUITS SHOWN ON DRAWINGS ARE BASED ON EXISTING DRAWINGS AND CASUAL FIELD SURVEY.
- 7. PER SOUTHERN NEVADA AMENDMENTS TO NEC 110.12, ELECTRICAL CONDUCTORS OR CABLES ARE NOT PERMITTED TO BE ABANDONED IN PLACE, AND SHALL BE REMOVED BACK TO SOURCE.
- 8. EXISTING TO BE RELOCATED LIGHT FIXTURES SHALL BE CLEANED AND RELAMPED PRIOR TO ROUGH-IN. IF ANY LIGHT FIXTURE IS DAMAGED OR DEFECTIVE, IT SHALL BE REPLACED WITH EQUIVALENT FIXTURE OF SAME TYPE, LAMP QUANTITY, AND ACCESSORIES.
- 9. EXISTING NLIGHT LIGHTING CONTROL NETWORKED HARDWARE SHALL BE PRESERVED AND RE-USED FOR NEW LIGHTING PLAN LIGHTING CONTROL. PRESERVE CONDITION OF FUNCTIONAL HARDWARE TO ALLOW FOR FULLY FUNCTIONAL RE-USE OF EQUIPMENT. NETWORKED NLIGHT EQUIPMENT BRIDGES, GATEWAYS, ETC. SHALL BE RELOCATED AS SHOWN ON NEW LIGHTING PLAN SHEETS.

SHEET NOTES: **(#**)

1 EXISTING LIGHT FIXTURES IN AREA TO BE REMOVED. EXISTING CIRCUITING IN AREA TO BE RE-USED TO POWER NEW FIXTURES. MAINTAIN THE CONTINUITY OF DOWN STREAM CIRCUITING TO FIXTURES NOT INTENDED TO BE DEMOLISHED.



2 EXISTING STORAGE 220 NTS





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LIGHTING SNHD

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