# READING REGIONAL AIRPORT (RDG) MULTIPLE BUILDING RENOVATIONS

2501 Bernville Road Reading, PA 19605





### DEMOLITION GENERAL NOTES GENERAL NOTES

- 1. PRIOR TO SUBMISSION OF BID EACH CONTRACTOR SHALL VISIT THE SITE TO VERIFY THE EXTENT OF DEMOLITION WORK REQUIRED AND VERIFY THE EXISTING CONDITIONS AND MATERIALS TO BE DEMOLISHED. CONTRACTOR TO FIELD-VERIFY ROUTING OF ALL EXISTING CONCEALED UTILITIES PRIOR TO DEMOLITION.
- 2. DEMOLITION CONTRACTOR IS TO PROVIDE FOR TEMPORARY LIGHTING AND POWER, HVAC, AND WATER FACILITIES DURING DEMOLITION. USE OF EXISTING MEP INFASTRUCTURE IS PERMISSIBLE TO EXTENT POSSIBLE BASED ON THE DEPICTED SCOPE OF WORK
- 3. THE DEMOLITION SHOWN AND INDICATED ON THE DEMOLITION DRAWINGS IS NOT A COMPLETE INDICATION OF THE DEMOLITION REQUIRED FOR THIS PROJECT. ALL MISCELLANEOUS DEMOLITION REQUIRED FOR THIS PHASE OF THE PROJECT, AND THE INTENT OF THE CONSTRUCTION DOCUMENTS, SHALL BE COMPLETED.
- 4. BEFORE PROCEEDING WITH DEMOLITION OF ANY EXISTING CONSTRUCTION, THE CONTRACTOR MUST VERIFY THAT IT IS NOT SUPPORTING EXISTING CONSTRUCTION WHICH IS TO REMAIN. IF IN DOUBT, NOTIFY THE ARCHITECT BEFORE REMOVING THE MEMBERS.
- . DEMOLISHING CONTRACTOR TO PROVIDE TEMPORARY BRACING, SHORING, OR OTHER PROTECTION AS REQUIRED UNTIL THE WORK IS COMPLETE.
- 5. DEMOLITION IS TO BE DONE IN A MANNER WHICH WILL NOT DAMAGE EXISTING CONSTRUCTION TO REMAIN. PROVIDE TEMPORARY PROTECTION TO EXISTING FINISHES & MATERIALS AS REQUIRED.
- . DEBRIS FROM DEMOLITION MUST NOT BE STORED IN A MANNER WHICH WILL OVERLOAD THE EXISTING CONSTRUCTION.
- 8. THE SCOPE OF WORK INCULDES THE LEGAL DISPOSAL, OFF SITE, OF ALL CONSTRUCTION/DEMOLTION DEBRIS. NO CONSTRUCTION DEBRIS OR TRASH IS TO BE PLACED IN THE PROPERTY OWNERS DUMPSTERS.
- . ALL SOLID WALLS, PARTITIONS, AND FURRED AREAS WHICH ARE SHOWN AS BEING REMOVED SHALL INCLUDE DOORS, WINDOWS, FRAMES, FINISHES, SHELVING, ETC. THAT ARE PART OF THOSE WALLS AND PARTITIONS.
- 10. THE TENANT AND OR BUILDING OWNER RESERVES THE RIGHT TO HAVE THE CONTRACTOR TURN OVER ANY SALVAGED ITEMS OR MATERIALS
- PARTIAL REMOVAL OF EXISTING PARTITIONS OR FINISHES IS TO BE PERFORMED AS TO ALLOW FOR REFINISHING FOR NEW CONSTRUCTION. DEMOLITION OF CMU PARTITIONS THAT WILL REMAIN EXPOSED SHALL INCLUDE REMOVAL OF ENTIRE BLOCKS AS TO ALLOW FOR "TOOTHING" OF NEW MASONRY OR INSTALLATION OF BULLNOSE
- 12.INFILL/PATCH OPENINGS WHERE INDICATED ON THE DRAWINGS WITH SIMILAR, COMPATIBLE MATERIALS AND METHODS SUCH AS TO ENSURE UNIFORM APPEARANCE AND PERFORMANCE.

13.WHERE FINISHES ARE SCHEDULED FOR REMOVAL FROM SUBSTRATE SCHEDULED TO REMAIN; CLEAN AND PREPARE SUBSTRATE FOR NEW FINISHES TO

APPLICABLE FOR ADDITIONAL DEMOLITION INFORMATION AND SCOPES OF WORK.

CONDITION COMPLIANT WITH MANUFACTURER'S 14.SEE MECHANICAL, ELECTRICAL AND PLUMBING AS

### EXISTING CONDITIONS AND ALL DIMENSIONS BEFORE PROCEEDING WITH THE WORK OR PURCHASING ANY MATERIALS. VERIFY LAYOUT IN PHONE: 610.372.4666 RELATION TO PROPERTY LINES, BENCH MARKS, OR OTHER FIXED CONDITIONS AND REPORT DISCREPANCIES TO ARCHITECT IMMEDIATELY UPON DISCOVERY.

EACH PRIME CONTRACTOR SHALL VERIFY

- NOTIFY ARCHITECT OF DISCREPANCIES REGARDING THE CONTRACT DOCUMENTS OR DESIGN INTENT IMMEDIATELY UPON DISCOVERY CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN CLARIFICATION PRIOR TO PROCEEDING WITH THE WORK OR RELATED WORK.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WORK SITE IN A CLEAN AND ORDERLY MANNER AND ALLOW FOR SAFE USE OF PREMISES BY THE OWNER AND VISITORS.
- 4. EACH PRIME CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES PROCEDURES, SITE SAFETY, EROSION AND SEDIMENTATION CONTROL, AND COORDINATING WITH THE WORK OF OTHER TRADES.
- 5. GENERAL CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE OWNER PRIOR TO PROCEEDING WITH THE WORK.
- 6. ALL REFUSE SHALL BE THE RESPONSIBILITY OF EACH PRIME CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE IN A LEGAL MANNER.
- SKILLED WORKERS: EACH PRIME CONTRACTOR SHALL PROVIDE WORKERS EXPERIENCED IN THE TRADES AND ACTIVITIES TO BE PERFORMED AND BE FAMILIAR WITH THE PRODUCTS, MATERIALS, AND FINISHES INVOLVED IN THE SCOPE OF WORK OF THIS PROJECT.
- EACH PRIME CONTRACTOR SHALL PATCH ALL DISTURBED AREAS TO MATCH EXISTING, AND REPAIR OR REPLACE ANY DAMAGE TO THE SITE CAUSED BY CONSTRUCTION.
- GENERAL CONTRACTOR SHALL PLAN THE SCHEDULE OF ACTIVITIES TO MAINTAIN THE SECURITY OF THE BUILDING THROUGHOUT THE CONSTRUCTION PROCESS. GENERAL CONTRACTOR SHALL LOCK AND SECURE PROJECT AREA AT THE END OF EACH WORK
- 10. GENERAL CONTRACTOR TO ENSURE THAT ALL WORK AREAS, INCLUDING THOSE ON ROOFS, SHALL BE IN COMPLIANCE WITH OSHA STANDARDS AND REQUIREMENTS, INCLUDING ANY FLAGGING, TIE-OFFS, AND TEMPORARY
- . THE OWNER RESERVES THE RIGHT TO KEEP ANY ITEMS REMOVED AS SCHEDULED IN THE DOCUMENTS FOR REMOVAL.

### **PROJECT DIRECTORY**

READING REGIONAL AIRPORT 2501 BERNVILLE ROAD READING PA 19605 BERKS CONTACT: ZACKARY TEMPESCO

EMAIL: ztempesco@readingairport.org

MUHLENBERG/GREENE ARCHITECTS LTD. 955 BERKSHIRE BLVD. SUITE 101 WYOMISSING PA 19610 PHONE: 610.376.4927 CONTACT: JAMES SARRO AIA, LEED AP+

### **MECHANICAL, PLUMBING & ELECTRICAL ENGINEER** SYSTEMS DESIGN ENGINEERING, INC.

1032 JAMES DRIVE, LEESPORT, PA 19533 CONTACT: STEPHEN GRIBB, PE PHONE: 610.916.8500 EMAIL: s.gribb@sdei.net

EMAIL: JimS@MG-Architects.com

### **PROJECT DRAWING LIST**

**GENERAL & CODE INFO** 

	A-001	GENERAL INFORMATION			
	A-002	CONTRACTOR STAGING AREAS			
В	BASE BID				
	A-101	FLOOR PLANS			
	A-102	SLAB REPAIR			
	A-103	ENLARGED TOILET ROOM PLANS			
	A-104	ENLARGED PLANS			
	A-105	SCHEDULES			
	A-106	REFLECTED CEILING PLAN			
	H-201	HVAC PLAN			
	P-001	PLUMBING NOTES AND SCHEDULES			

P-101 PLUMBING PIPING PLAN E-001 ELECTRICAL LEGEND AND NOTES E-101 LIGHTING PLAN E-102 POWER AND SYSTEMS PLAN

### **ALTERNATE BID NO. 1** A-110 HANGER PLAN **ALTERNATE BID NO. 2**

A-120 EXISTING CONDITIONS A-121 LOWER ROOF PLAN & DETAILS A-122 UPPER ROOF PLAN

### **ALTERNATE BID NO. 3** A-130 FLOOR PLAN

H-101 HVAC NEW WORK PLAN H-101D HVAC DEMOLITION PLAN

HISTORIC PRESERVATION

WYOMISSING, PA 19610 610.376.4927 www.MG-Architects.com

### PROJECT #: 24-0022

PROFESSIONAL SEAL

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ISSUED REVISION HISTORY	
DESCRIPTION	DATE
BID	8/01/24

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CONSTRUCTION

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SHEET TITLE:

GENERAL

### **CONSTRUCTION DRAWINGS SET NOTE:**

HVAC HEAT, VENTILATION, AIR- PR. PAIR

INSUL. INSULATION / INSULATING R RISER

P.C. PLUMBING CONTRACTOR T.S.G. TEMPERED SAFETY

THESE DRAWINGS ARE BEING PROVIDED FOR THE CONVENIENCE OF THE PRIME CONTRACTORS. HOWEVER IT DOES NOT RELEIVE THE PRIME CONTRACTORS FROM ANY PROVISIONS SET FORTH IN THE PROVISIONS OF THE CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, THE BID DRAWINGS, SPECIFICATIONS, THE ADDENDA, NOR FROM ANY OMMISIONS IN THE CONSTRUCTION DRAWING SET.

P.T. PRESSURE TREATED

INCANDESCENT REINF. REINFORCING / REINFORCED

REQ. REQUIRED

REC. RECESSED

S.S. STAINLESS STEEL

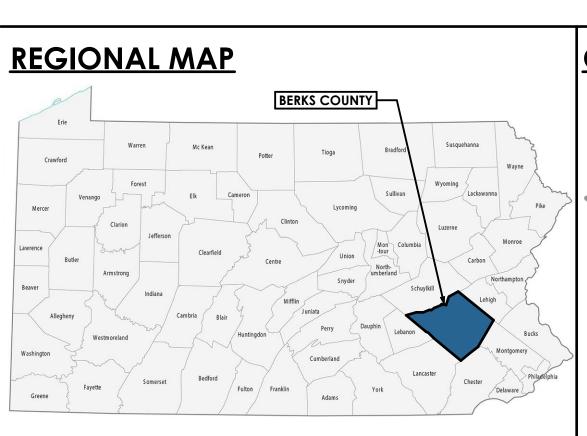
RAD. RADIUS

ST. STREET

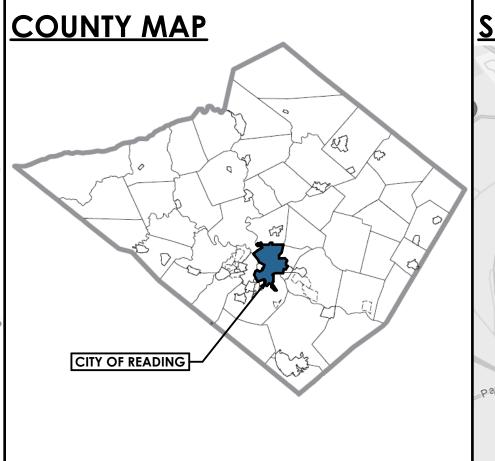
PL. LAM PLASTIC LAMINATE

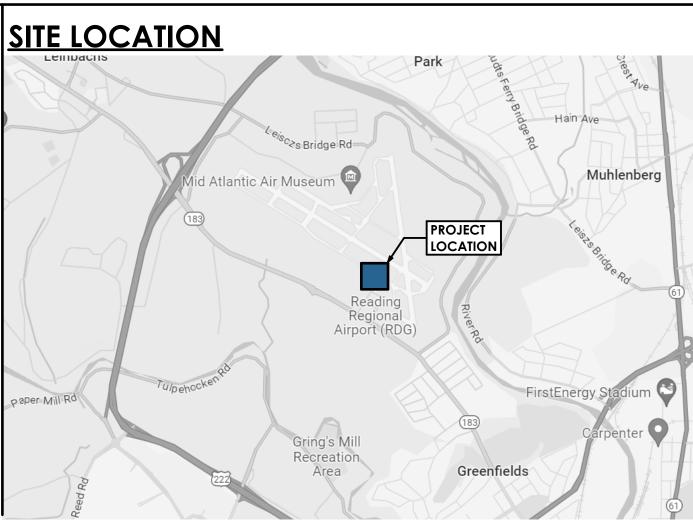
R.O. ROUGH OPENING

REV. REVISED / REVISION



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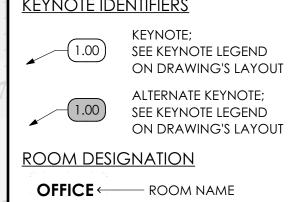


HANGAR 520-

### **GRAPHIC SYMBOLS KEYNOTE IDENTIFIERS**

FBO BUILDING &

HANGAR 1



- ROOM NUMBER A-401 ENLARGED PLAN REFERENCE <u>DRAWING REVISION MARKER</u> — CLOUD DENOTES CURRENT REVISION ISSUE REVISION No.

PAST REVISION MARKER

(REFERENCE ONLY)

DOOR IDENTIFIER (ELEVATIONS/SECTIONS)  $\longrightarrow$  101.1 ★★ OTHERWISE NOTED DOOR IDENTIFIER (PLANS)

**DOOR IDENTIFIERS** 

WINDOW MARKER (01) <u>SKYLIGHT MARKER</u> /01 WALL TYPE MARKER (SEE PARTITION LEGEND)

– INDICATES SHEET **DETAIL / ENL. PLAN MARKER** 

ON WHICH DRAWING is shown A1 — INDICATES ELEVATION LOCATION ON SHEET

- INDICATES SHEET

LOCATION ON SHEET

ELEVATION / SECTION MARKER A.D. AREA DRAIN ABOVE

**ABBREVIATIONS** 

ADJUSTABLE A.O.R. AREA OF REFUGE DR. DOOR ALT. ALTERNATE A.F.F. ABOVE FINISHED FLOOR EQ. APPX. APPROXIMATE / APPROXIMATELY ASBO AS SELECTED BY OWNER BOARD BLOCK / BLOCKING BLDG. BUILDING B.O.S. BOTTOM OF STEEL

CAB. CABINET C.C. CENTER-TO-CENTER -INDICATES DETAIL C.m. Construction manager f.p./fp  $\,$  filler panel LOCATION ON SH CMU CONCRETE MASONRY UNIT FT. FEET / FOOT C.J. CONTROL JOINT CONC. CONCRETE CORR. CORRIDOR -INDICATES SHEET COL. COLUMN ON WHICH DETAIL CONT. CONTINUE / CONTINUOUS G.C. GENERAL CONTRACTOR OPG. OPENING CONTR. CONTRACTOR

DIA. DIAMETER

WITH DISABILITIES ACT

ON WHICH ELEVATION B.O. BOTTOM OF

AC. ACOUSTIC / ACOUSTICAL E.C. ELECTRICAL CONTRACTOR LBS. POUNDS ELEV. ELEVATOR FLOOR

GA. GAUGE

H.P. HIGH POINT

HR. HOUR

FLOOR DRAIN F.E.C. FIRE EXTINGUISHER FINISH / FINISHED GALV. GALVANIZED

DOUBLE

LAM. LAMINATE MAX. MAXIMUM MFR. MANUFACTURER / MANUFACTURED MTL. METAL MIN. MINIMUM MIRR. MIRRORED MTD. MOUNTED M.O. MASONRY OPENING MISC. MISCELLANEOUS MECH. MECHANICAL N.I.C. NOT IN CONTRACT NO. NUMBER N.T.S. NOT TO SCALE O.C. ON CENTER O.D. OUTSIDE DIAMETER OPP. OPPOSITE

HORIZ. HORIZONTAL

I.D. INSIDE DIAMETER

HT. HEIGHT

JAN. JANITOR

JOINT

INCAND.

STL. STEEL SAN. SANITARY SUSP. SUSPENDED SPEC. SPECIFICATION T.O. TOP OF T.O.S. TOP OF STEEL T.O.W. TOP OF WALL TOIL. TOILET THK. THICK

ANGLE CHANNEL NUMBER SQUARE Ø ROUND / DIAMETER ☐ / C.L. CENTER LINE ☐ / PL. PLATE ∟ LEG-BAR

U.N.O. UNLESS NOTED

VEST. VESTIBULE

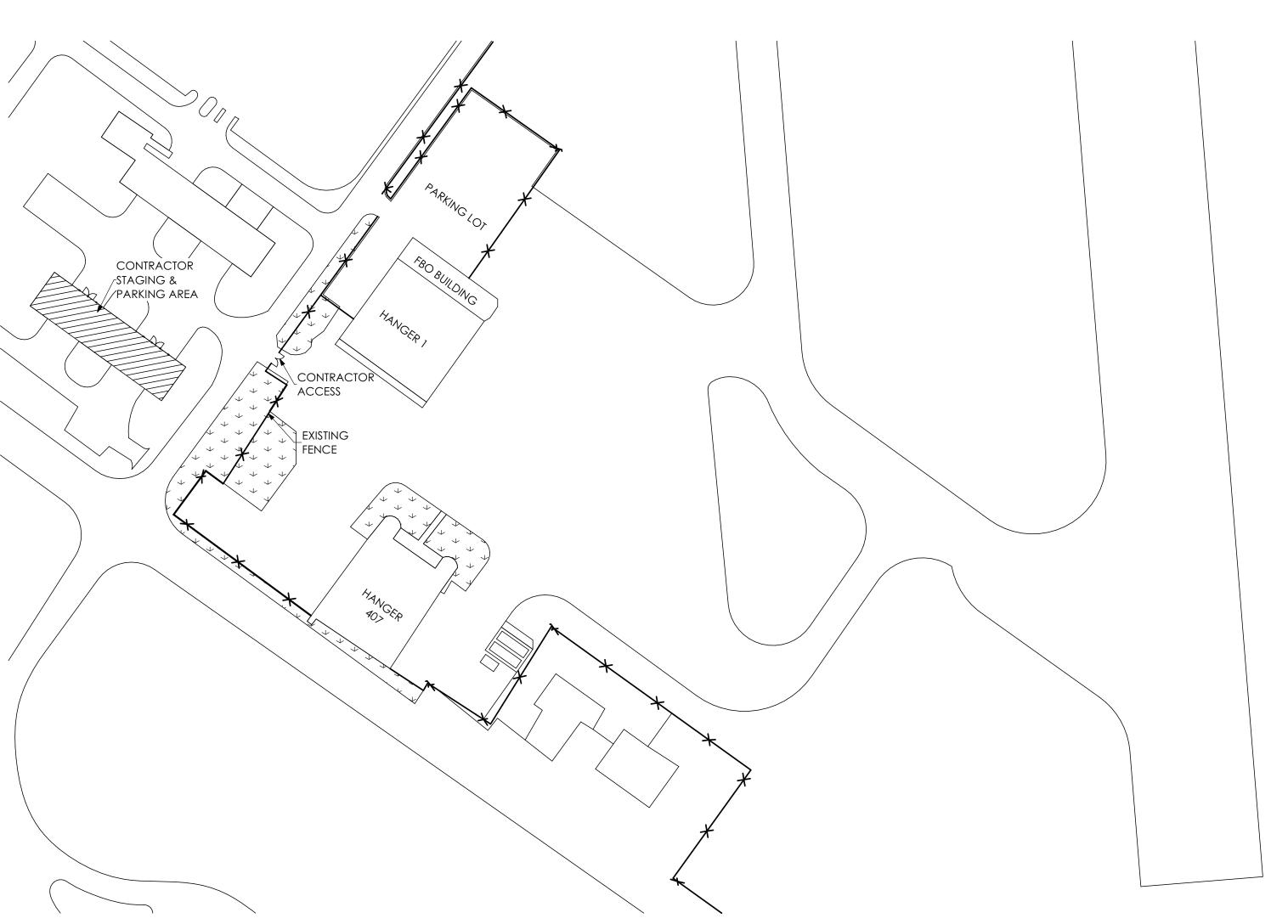
W.C. WATER CLOSET

AND

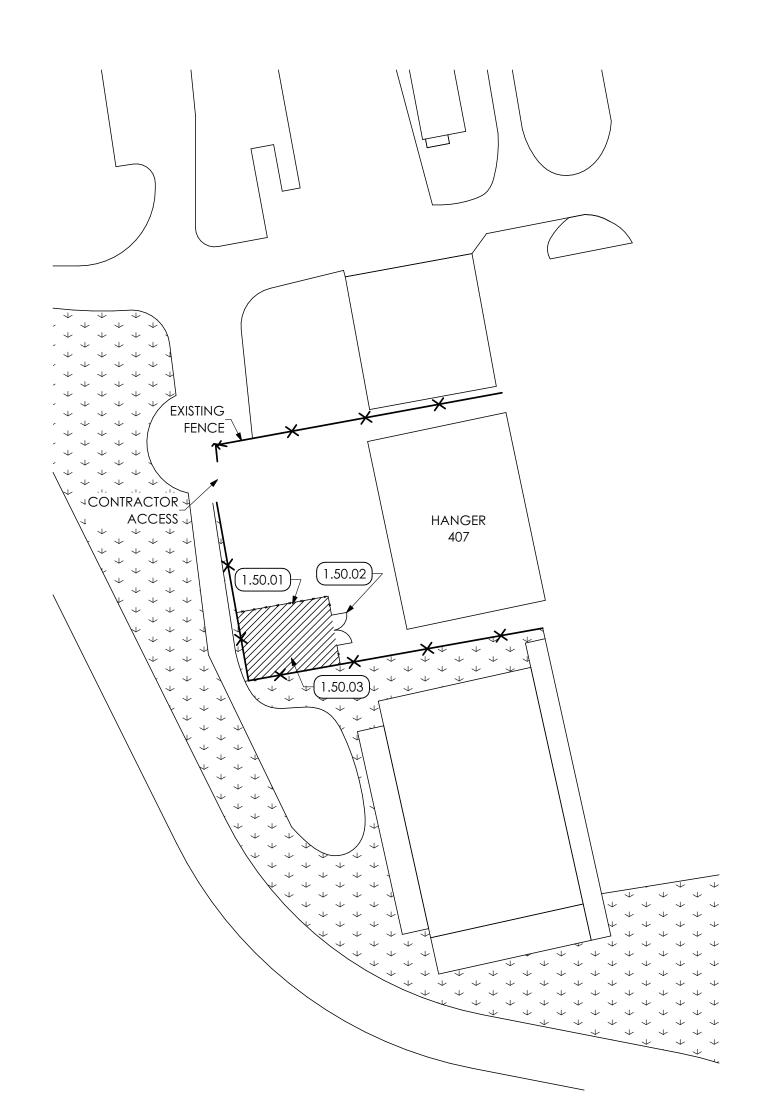
PLUS OR MINUS DEGREE

WD WOOD

R.W.C. RAIN WATER CONDUCTOR V.C.T. VINYL COMPOSITION







CONTRACTOR STAGING PLAN 2

SCALE: 1" = 50'

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**KEYED NOTES** 

01 GENERAL CONSTRUCTION

1.50 TEMPORARY FACILITIES AND CONTROLS

1.50.01 G.C. TO PROVIDE TEMPORARY 8'-0" HIGH CHAIN-LINK FENCE FOR PERIMETER OF STAGING AREA.

1.50.02 G.C. TO PROVIDE TWO (2) 8'-0" WIDE CHAIN-LINK FENCE GATES WITH PADLOCK.

1.50.03 EXISTING ASPHALT PARKING LOT. G.C. TO REPAIR ANY DAMAGE TO PARKING LOT PAVING CAUSED BY CONSTRUCTION ACTIVITIES WITHIN STAGING AREA OR ALONG ROUTE TO WORK AREA.

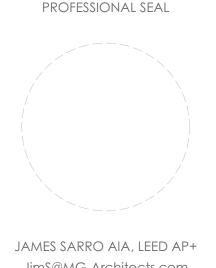


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24-0022

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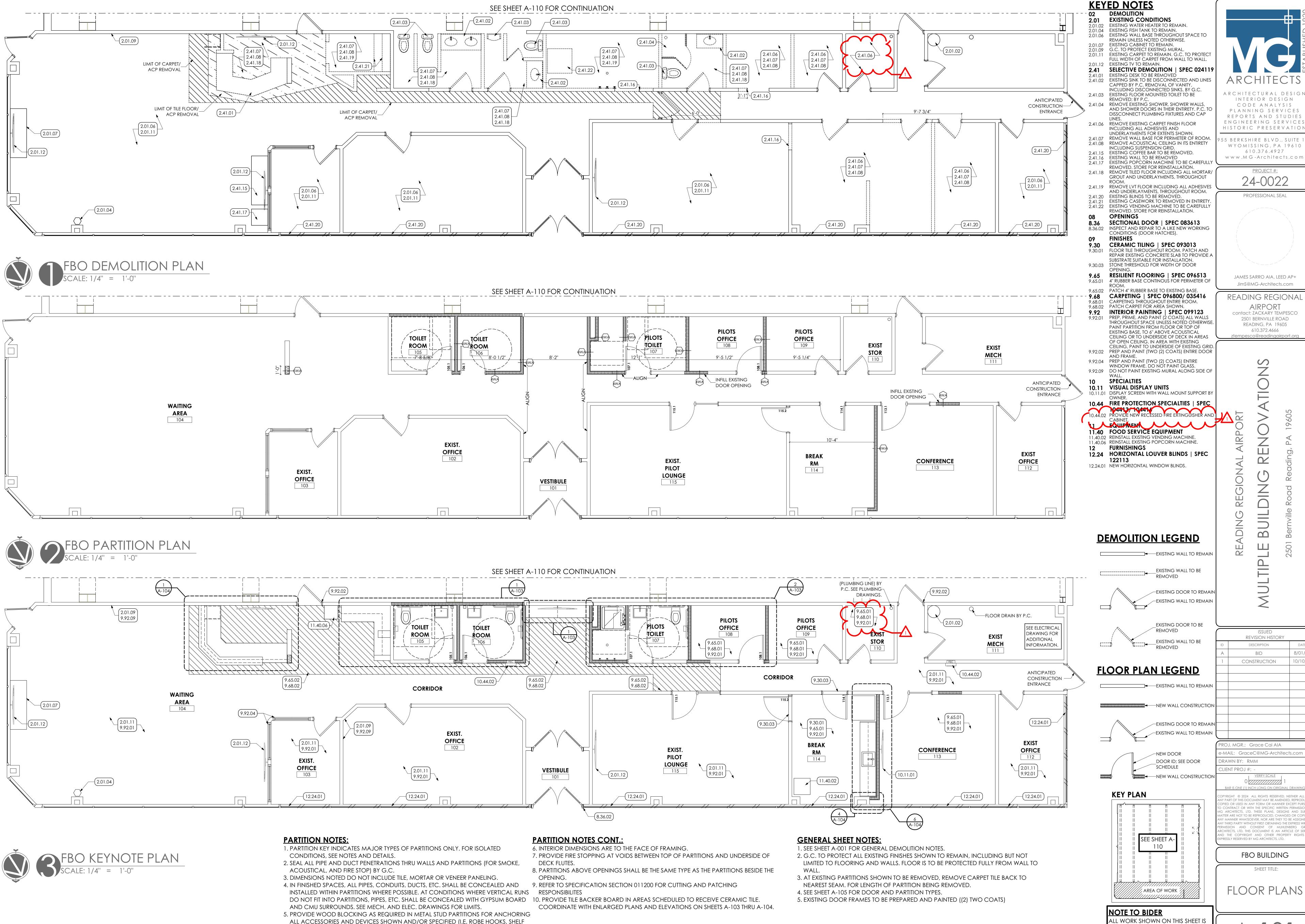
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CONTRACTOR



STANDARDS, HAND DRYERS, GRAB BARS, ETC.). COORDINATE WITH ACCESSORY

MANUFACTORS RECCOMENDATIONS.

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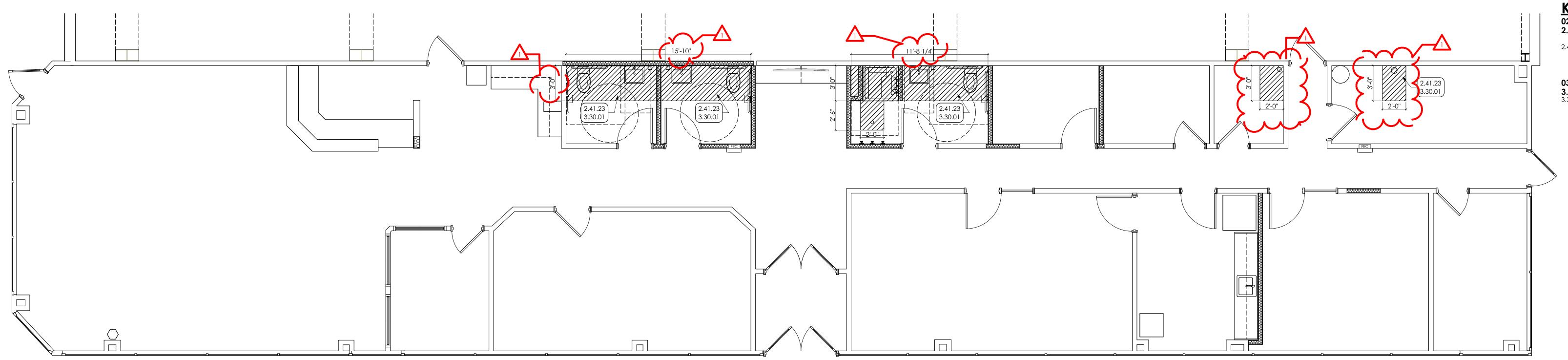
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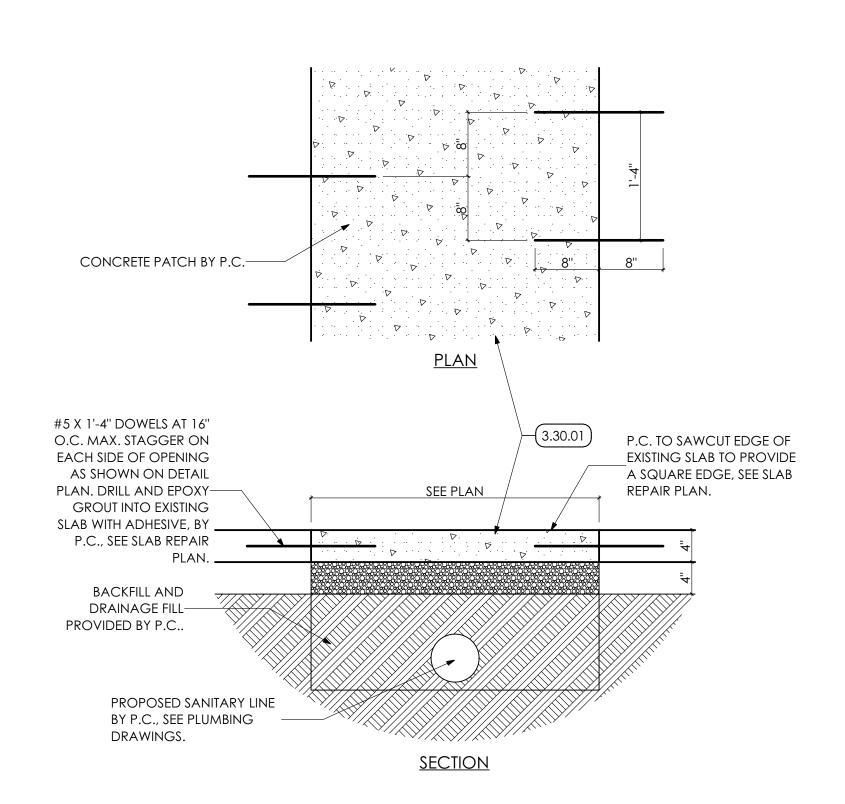
FBO BUILDING

FLOOR PLANS

A-10









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KEYED NOTES

02 DEMOLITION

2.41 SELECTIVE DEMOLITION | SPEC 024119

2.41.23 CAREFULLY CUT EXISTING CONCRETE SLAB AND EXCAVATE FOR NEW PLUMBING LINES, BY P.C. COORDINATE

WITH PLUMBING DRAWINGS. CONCRETE

3.30 CAST-IN-PLACE CONCRETE

3.30.01 P.C. SHALL PROVIDE BACKFILL, 4" DRAINAGE FILL AND 4" CONCRETE TO PATCH EXCAVATED AREAS. CONCRETE TO FINISH FLUSH WITH ADJACENT EXISTING SURFACE.

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24-0022 Professional seal

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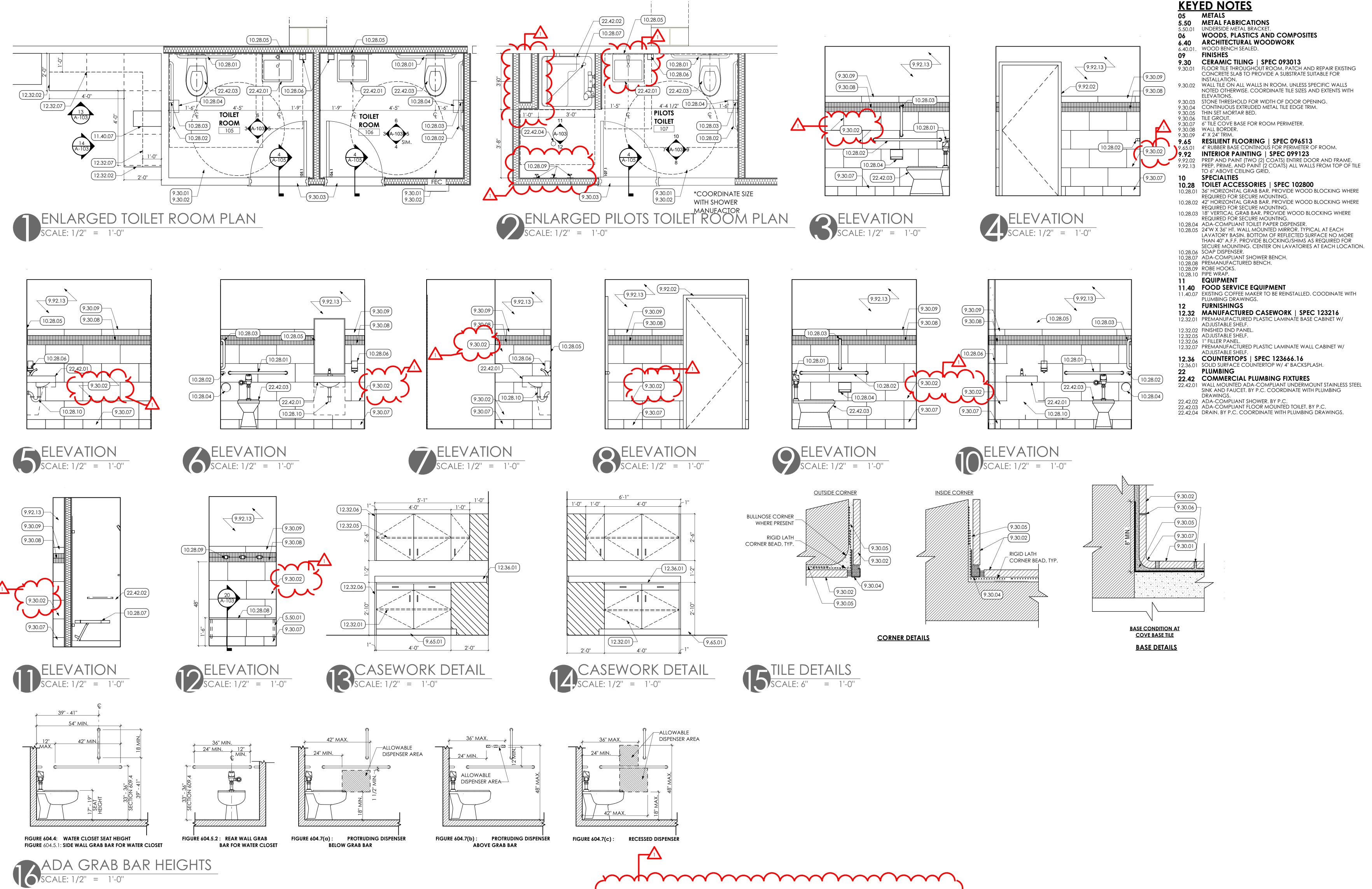
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TYPICAL MOUNTING HEIGHTS AND UPPER REACH RANGES FOR RESTROOM ACCESSORIES YPICAL MOUNTING HEIGHTS

35" MAX TO BOTTOM OF REFLECTIVE SURFACE.

(40" MAX ALLOWED OVER

SINKS AND COUNTERS)

48" MAX HEIGHT FOR ♦

FIN. FLR.

FORWARD REACH

MIRROR SEAT COVER PAPER TOWEL HAND DRYER SOAP

2. DIMENSIONS CHANGE IN MOUNTED OVER COUNTER OR LAVATORY.

. THIS IS A GENERAL REFERENCE, PLEASE CHECK ANSI A117.1 FOR ALL

. OPERABLE PARTS MUST BE BENEATH MAX HEIGHT.

OBSTRUCTED

OVER 20" DEEP

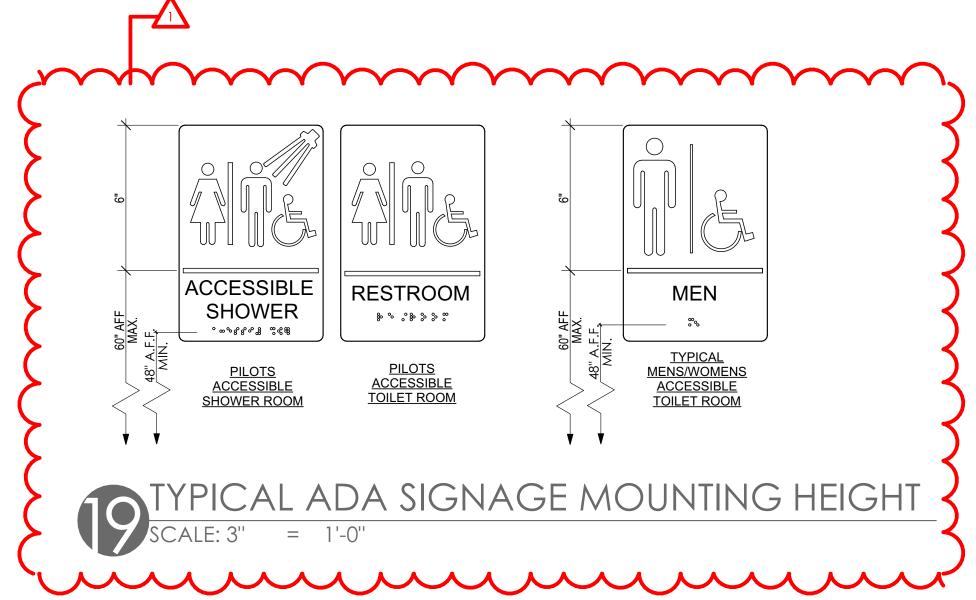
FORWARD REACH

<u>DISPENSER</u> <u>DISPENSER</u>

REQUIREMENTS.



FIGURE 606.3: HEIGHT OF LAVATORIES AND SINKS



NOTE TO BIDER ALL WORK SHOWN ON THIS SHEET IS PART OF BASE BID.

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> PROJECT #: 24-0022

PROFESSIONAL SEAL JAMES SARRO AIA, LEED AP+

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1	CONSTRUCTION	10/10/2
PROJ.	MGR.: Grace Cai AIA	

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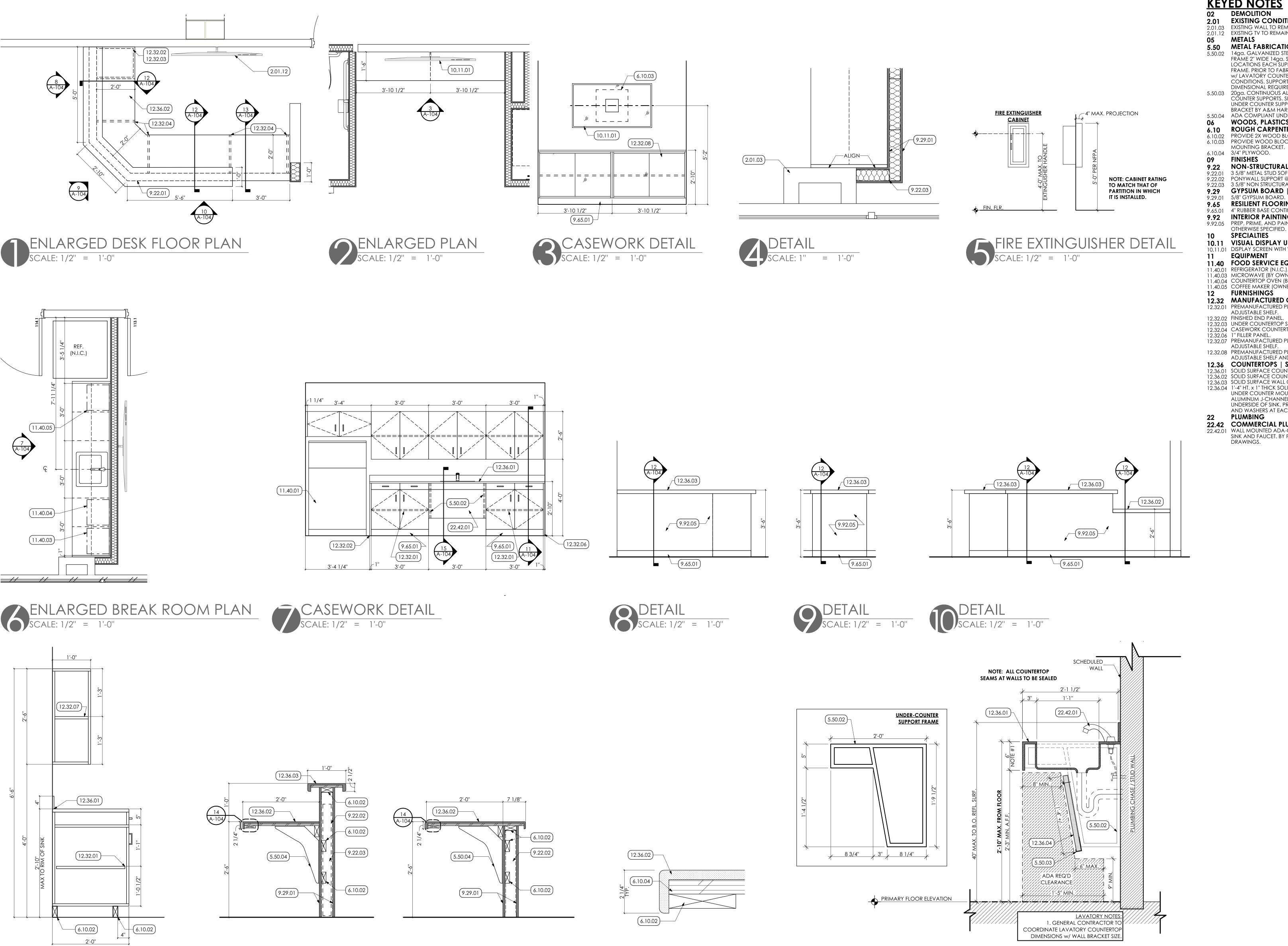
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FBO BUILDING

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ENLARGED TOILET ROOM PLANS



CASEWORK SECTION
SCALE: 1" = 1'-0"

SCALE: 1" = 1'-0"

SCALE: 1" = 1'-0"

DETAIL
SCALE: 6" = 1'-0"

SCALE: 6" = 1'-0"

**KEYED NOTES** 

2.01 EXISTING CONDITIONS

2.01.03 EXISTING WALL TO REMAIN.

2.01.12 EXISTING TV TO REMAIN.

METAL FABRICATIONS 5.50.02 14ga. GALVANIZED STEEL COUNTERTOP SUPPORT. FABRICATE FRÂME 2" WIDE 14ga. STEEL CHANNELS AND SECURELY BOLT 3 LOCATIONS EACH SUPPORT) TO STUDS OR BLOCKING IN WALL FRAME. PRIOR TO FABRICATION, COORDINATE FINAL DIMENSIONS W/ LAVATORY COUNTERTOP FABRICATOR AND IN-FIELD

CONDITIONS. SUPPORT FRAME TO CONFORM TO ANSI 117.1 DIMENSIONAL REQUIREMENTS. 5.50.03 20ga. CONTINUOUS ALUMINUM J-CHANNEL ATTACHED TO UNDER COUNTER SUPPORTS. SIZE TO ACCEPT 1" THICK COVER PANEL.

UNDER COUNTER SUPPORT BASIS OF DESIGN: ADA VANITY BRACKET BY A&M HARDWARE INC 5.50.04 ADA COMPLIANT UNDERCOUNTER SUPPORT BRACKETS.

WOODS, PLASTICS AND COMPOSITES

ROUGH CARPENTRY | SPEC 061053 6.10.02 PROVIDE 2X WOOD BLOCKING AS REQUIRED. 6.10.03 PROVIDE WOOD BLOCKING IN PARTITION FOR MONITOR MOUNTING BRACKET.

FINISHES NON-STRUCTURAL METAL FRAMING | SPEC 092216 9.22.01 3 5/8" METAL STUD SOFFIT FRAMING @16" O.C.

9.22.02 PONYWALL SUPPORT @ 48" O.C. 9.22.03 3 5/8" NON STRUCTURAL METAL STUD FRAMING @ 16" O.C. 9.29 GYPSUM BOARD | SPEC 092900

9.65 RESILIENT FLOORING | SPEC 096513 9.65.01 4" RUBBER BASE CONTINOUS FOR PERIMETER OF ROOM. 9.92 INTERIOR PAINTING | SPEC 099123 9.92.05 PREP, PRIME, AND PAINT (TWO (2) COATS) ENTIRE WALL UNLESS

OTHERWISE SPECIFIED. **SPECIALTIES** 

10.11 VISUAL DISPLAY UNITS 10.11.01 DISPLAY SCREEN WITH WALL MOUNT SUPPORT BY OWNER. 11 EQUIPMENT

11.40 FOOD SERVICE EQUIPMENT 11.40.01 REFRIGERATOR (N.I.C.). 11.40.03 MICROWAVE (BY OWNER).

11.40.04 COUNTERTOP OVEN (BY ÓWNER). 11.40.05 COFFEE MAKER (OWNER). 12 FURNISHINGS

12.32 MANUFACTURED CASEWORK | SPEC 123216 12.32.01 PREMANUFACTURED PLASTIC LAMINATE BASE CABINET W/

ADJUSTABLE SHELF. 12.32.02 FINISHED END PANEL. 12.32.03 UNDER COUNTERTOP SHELVING.

12.32.04 CASEWORK COUNTERTOP FRAMING. 12.32.06 1" FILLER PANEL.

12.32.07 PREMANUFACTURED PLASTIC LAMINATE WALL CABINET W/ ADJUSTABLE SHELF.

12.32.08 PREMANUFACTURED PLASTIC LAMINATE DISPLAY CABINET W/ ADJUSTABLE SHELF AND SLIDING GLASS DOOR. 12.36 COUNTERTOPS | SPEC 123666.16

12.36.01 SOLID SURFACE COUNTERTOP W/ 4" BACKSPLASH. 12.36.02 SOLID SURFACE COUNTERTOP.

12.36.03 SOLID SURFACE WALL CAP. 12.36.04 1'-4" HT. x 1" THICK SOLID SURFACE PANEL ATTACHED TO FACE OF

UNDER COUNTER MOUNTING BRACKETS AND SET IN CONTINUOUS ALUMINUM J-CHANNEL, PROVIDE CONTINUOUS PANEL ALONG UNDERSIDE OF SINK. PROVIDE STAINLESS STEEL SECURITY FASTENERS AND WASHERS AT EACH CORNER.

PLUMBING 22.42 COMMERCIAL PLUMBING FIXTURES

22.42.01 WALL MOUNTED ADA-COMPLIANT UNDERMOUNT STAINLESS STEEL SINK AND FAUCET. BY P.C. COORDINATE WITH PLUMBING DRAWINGS.

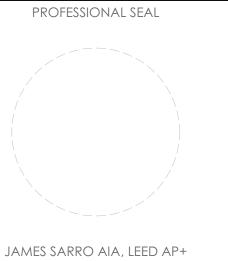
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PROJECT #:

24-0022



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	ISSUED REVISION HISTORY				
ID	DESCRIPTION	DATE			
Α	BID	8/01/24			
1	CONSTRUCTION	10/10/24			

ROJ. MGR.: Grace Cai AIA -MAIL: GraceC@MG-Architects.cor

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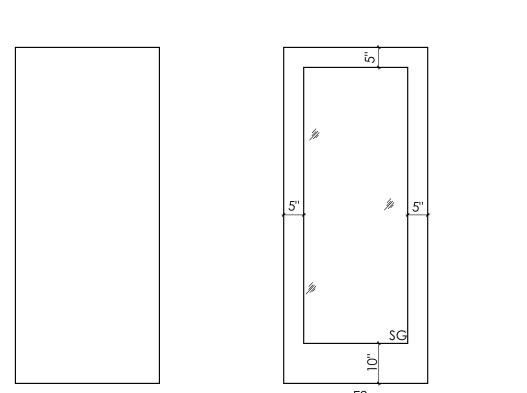
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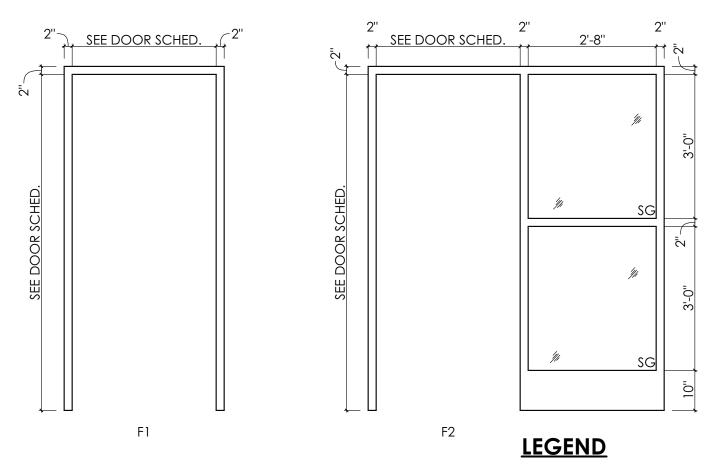
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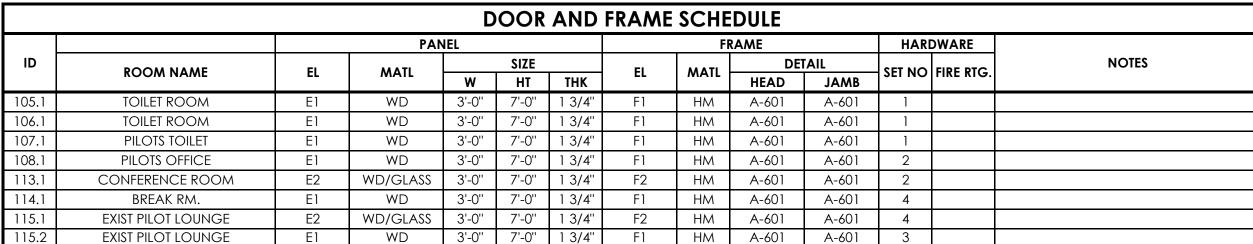
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	F1		F2	LEG	SEND
				SG	SAFETY GLA
_	)R FRA /2" = 1'-	ME I SPEC	C. 081	113	_



### **DOOR SCHEDULE LEGEND**

HM - HOLLOW METAL WD - WOOD

### HARDWARE SETS I SPEC. 087100

SET NO.1 1 1/2" PAIR HINGES; CLOSER, DOOR STOP,

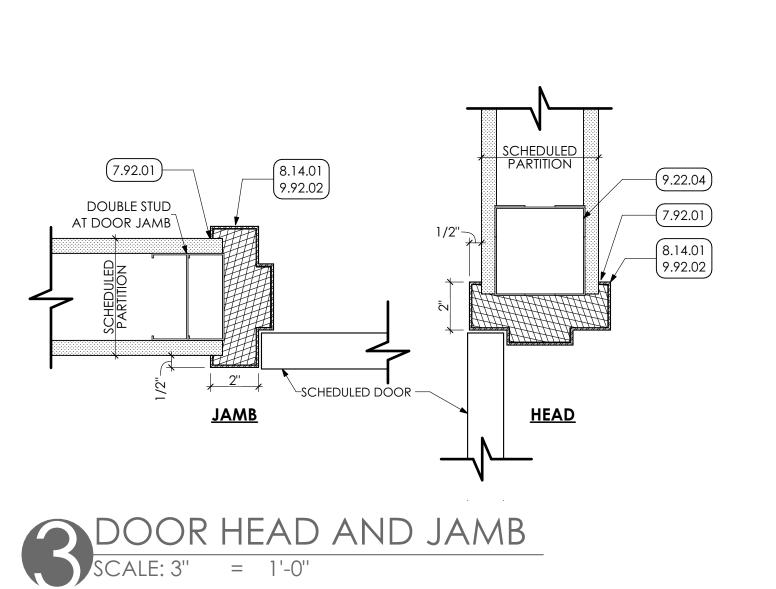
SILENCERS, PRIVACY HARDWARE SET NO.2 1 1/2" PAIR HINGES; DOOR STOP,

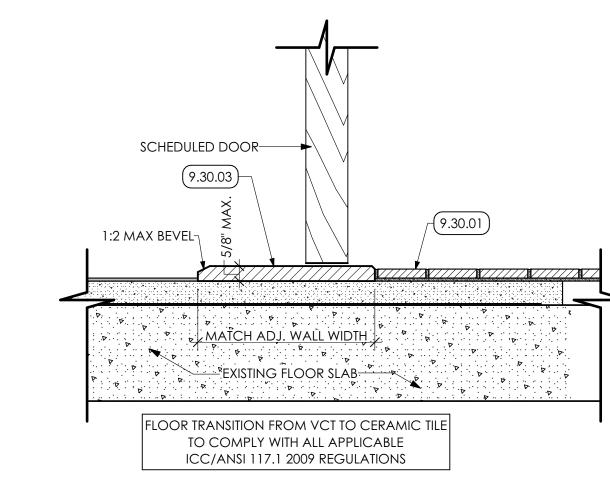
SILENCERS, PASSAGE HARDWARE SET NO.3 1 1/2" PAIR HINGES; CLOSER, DOOR STOP,

SILENCERS, PUSH/PULL PLATE

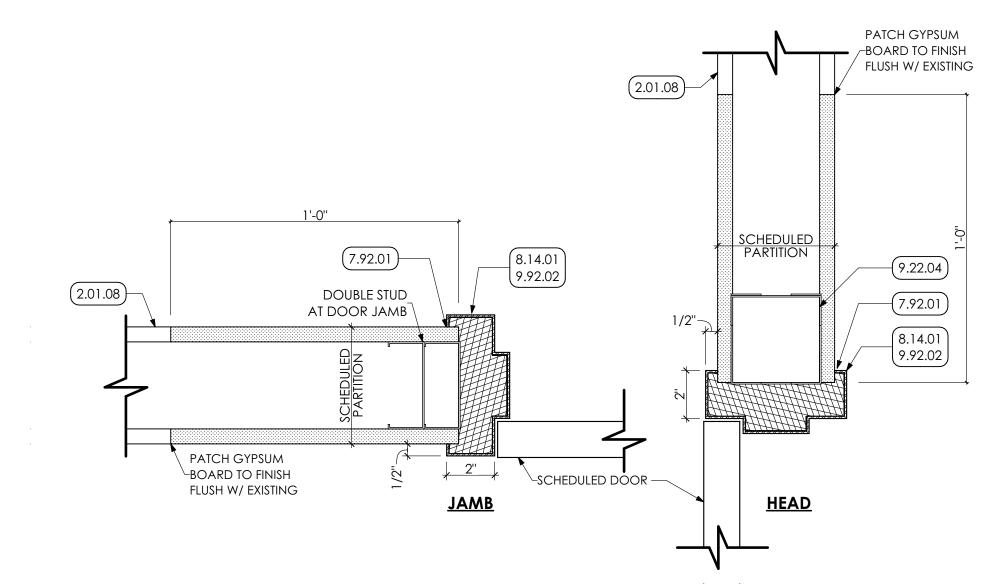
SET NO.4 1 1/2" PAIR HINGES; SILENCERS, PASSAGE

HARDWARE



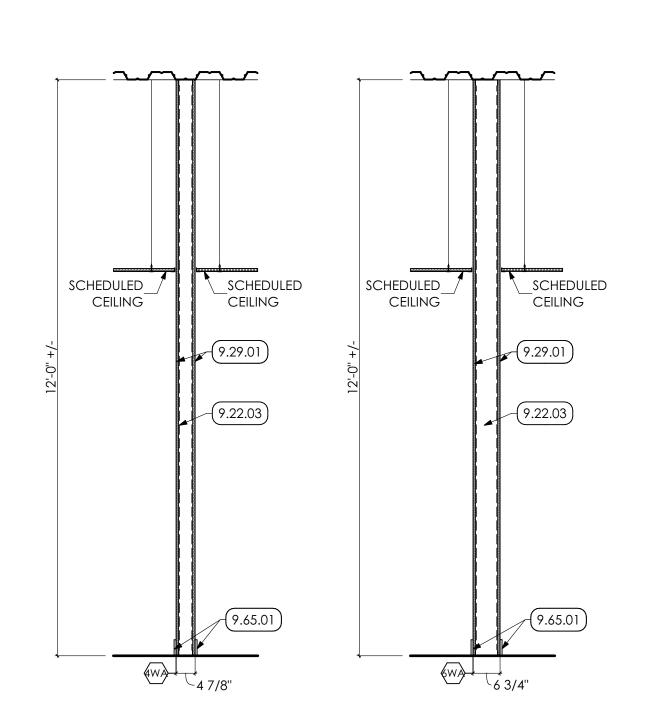






EXISTING DOOR HEAR AND FRAME

SCALE: 3" = 1'-0"







2.01 EXISTING CONDITIONS 2.01.08 EXISTING GYPSUM BOARD TO REMAIN. 07 THERMAL AND MOISTURE PROTECTION 7.92 JOINT SEALANTS | SPEC 079200 CONTINOUS SEALANT AROUND FRAME; BOTH SIDES. **OPENINGS** 

**KEYED NOTES** 

**DEMOLITION** 

9.29.01 5/8" GYPSUM BOARD.

8.14 FLUSH WOOD DOORS | SPEC 081416 8.14.01 1 3/4" SOLID CORE WOOD DOOR.

9.30 CERAMIC TILING | SPEC 093013

**FINISHES** 9.22 NON-STRUCTURAL METAL FRAMING | SPEC 092216 9.22.03 3 5/8" NON STRUCTURAL METAL STUD FRAMING @ 16" O.C. 9.22.04 METAL STUD BOX HEADER. 9.29 GYPSUM BOARD | SPEC 092900

9.30.01 FLOOR TILE THROUGHOUT ROOM. PATCH AND REPAIR EXISTING CONCRETE SLAB TO PROVIDE A SUBSTRATE SUITABLE FOR INSTALLATION. 9.30.03 STONE THRESHOLD FOR WIDTH OF DOOR OPENING. 9.65 RESILIENT FLOORING | SPEC 096513 9.65.01 4" RUBBER BASE CONTINOUS FOR PERIMETER OF ROOM. 9.92 INTERIOR PAINTING | SPEC 099123

9.92.02 PREP AND PAINT (TWO (2) COATS) ENTIRE DOOR AND FRAME.

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### 24-0022

**GENERAL DOOR NOTES** 1. ALL METAL THRESHOLDS SHALL BE SET IN A BED OF SEALANT. 2. PROVIDE SEALANT AT PERIMETER OF DOOR

- FRAMES. 3. UNLESS OTHERWISE NOTED, ALL DOORS SHALL
- BE PREFINISHED, REFER TO SPECIFICATIONS. 4. UNLESS NOTED "R.O." (ROUGH OPENING),
- DIMINSIONS REPRESENT UNIT SIZES. SEE SCHEDULE FOR DOOR TYPES AND HEIGHTS. 5. SEE SCHEDULE FOR GLASS TYPES.
- JAMES SARRO AIA, LEED AP+



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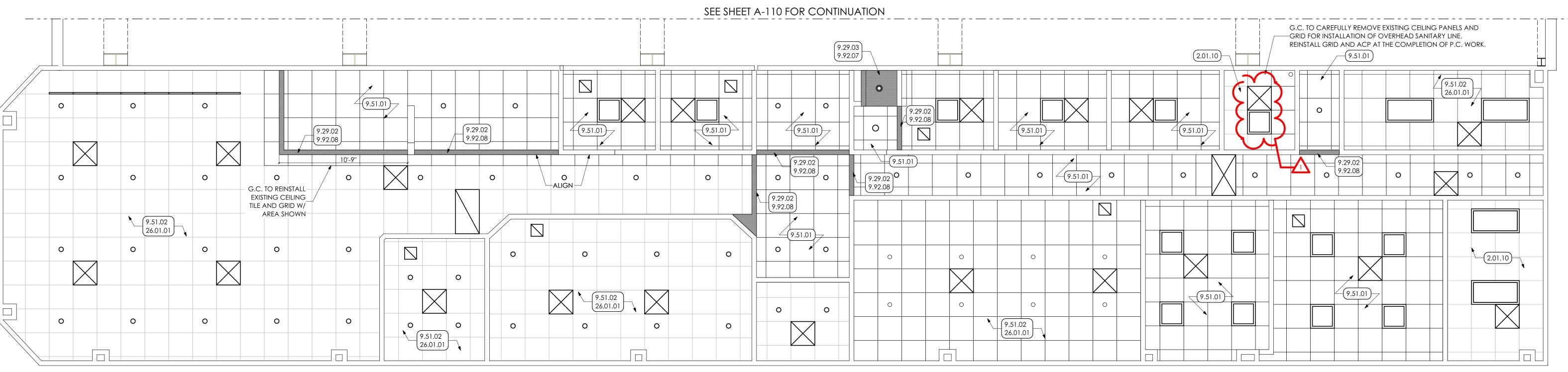
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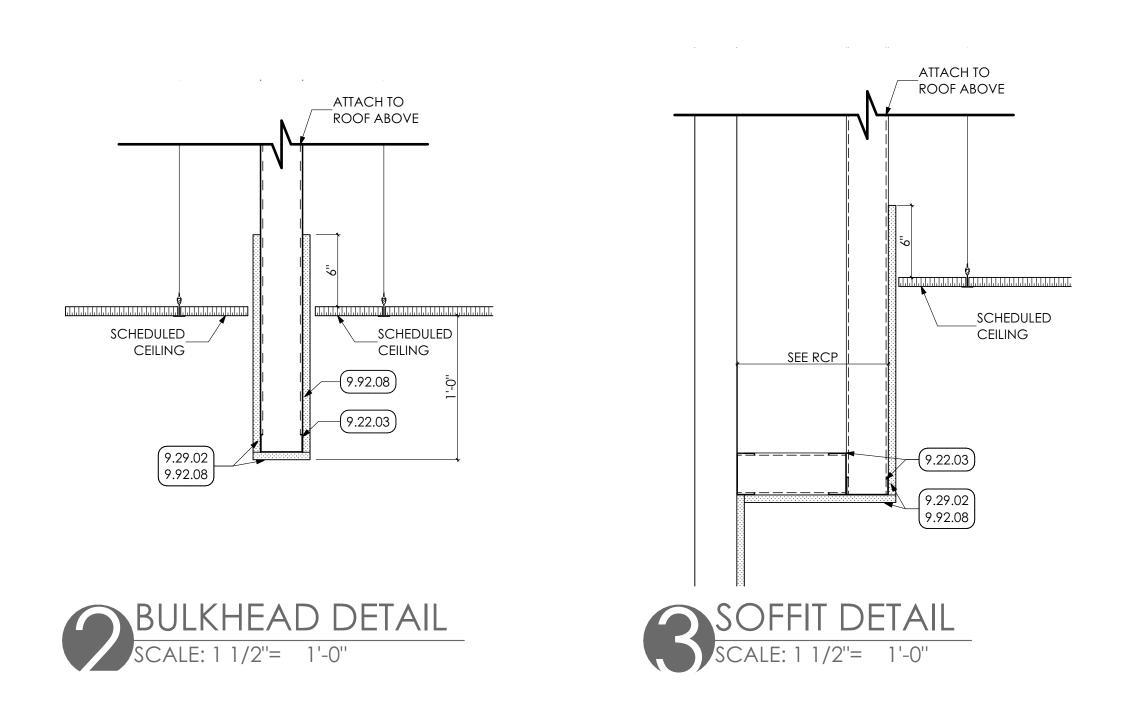
SCHEDULES

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**KEYED NOTES** 

DEMOLITION 2.01 EXISTING CONDITIONS

2.01.10 EXISTING CEILING TO REMAIN. 09 FINISHES 9.22 NON-STRUCTURAL METAL FRAMING

SPEC 092216 9.22.03 3 5/8" NON STRUCTURAL METAL STUD FRAMING

9.29 GYPSUM BOARD | SPEC 092900 9.29.02 5/8" GYPSUM BOARD BULKHEAD OR SOFFIT. 9.29.03 5/8" MOLD RESISTANT GYPSUM BOARD. 9.51 ACOUSTIC CEILINGS | SPEC095113 9.51.01 24" X 24" ACOUSTICAL CEILING PANELS AND SUSPENSION GRID THROUGHOUT SPACE.

9.51.02 REMOVE EXISTING ACP TILES AND PROVIDE NEW TILES IN EXISTING GRID. 9.92 INTERIOR PAINTING | SPEC 099123 9.92.07 PREP, PRIME, AND PAINT (TWO (2) COATS) GYP.

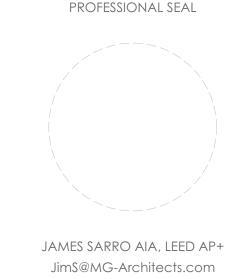
BOARD WITH MOLD RESISTANT PAINT. 9.92.08 PREP, PRIME, AND PAINT (TWO (2) COATS) BULKHEAD/ SOFFIT UNLESS NOTED OTHERWISE. PAINT BULKHEAD/ SOFFIT FROM BOTTOM BULKHEAD/ SOFFIT, TO 6" ABOVE ACOUSTICAL CEILING OR TO UNDERSIDE OF DECK IN AREAS OF OPEN CEILING. IN AREA WITH EXISTING CEILING, PAINT TO UNDERSIDE OF EXISTING

**ELECTRICAL** 26.01.01 E.C. TO DISCONNECT EXISTING LIGHTS AND CAREFULLY REMOVE AND STORE FOR REINSTALLATION. IN AREAS TO RECEIVE NEW ACP. REINSTALL EXISTING LIGHTS AFTER ACP IS installed.

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REVISION HISTORY

DESCRIPTION

BID

CONSTRUCTION

PROJ. MGR.: Grace Cai AlA

DRAWN BY: RMM CLIENT PROJ #: -

e-MAIL: GraceC@MG-Architects.com

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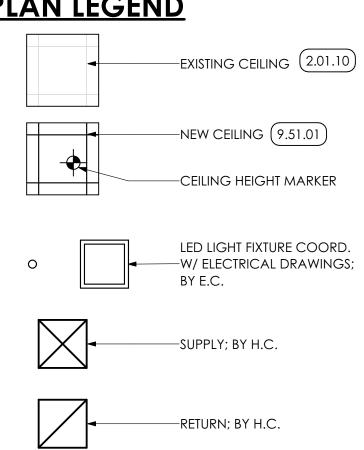
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SHEET TITLE:

### **GENERAL SHEET NOTES:**

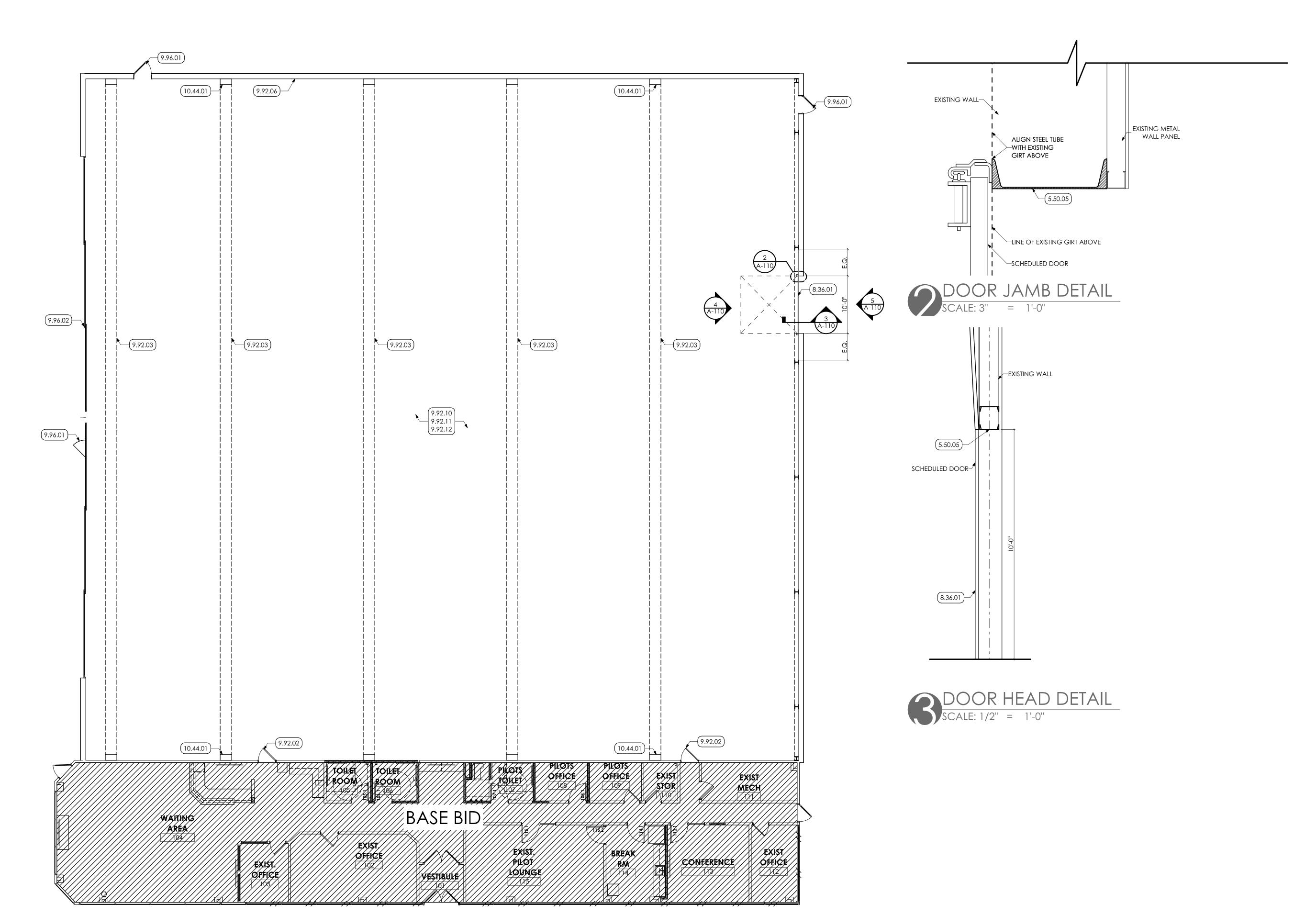
- 1. FIXTURES SHALL BE CENTERED IN SOFFITS AND CEILING GRIDS UNLESS NOTED OTHERWISE. COORDINATE WITH ENGINEERING DRAWINGS.
- 2. WHERE THERE IS A DISCREPANCY BETWEEN THE REFLECTED CEILING PLAN AND FIRE PROTECTION, FIRE ALARM, AND/OR LIGHTING PLANS, THE ENGINEERING PLANS SHALL TAKE PRECEDENCE, EXCEPT IF LIGHTING LAYOUTS SHOWN ARE IMPACTED, IN THAT CASE CONSULT THE ARCHITECT.
- 3. SUSPENDED ACOUSTICAL CEILING PANELS ARE TO BE 9'-0"
- A.F.F. UNLESS NOTED OTHERWISE. 4. SOFFITS AND BULKHEADS ARE TO BE 8'-0" HIGH, UNLESS NOTED OTHERWISE.

### REFLECTED CEILING PLAN LEGEND

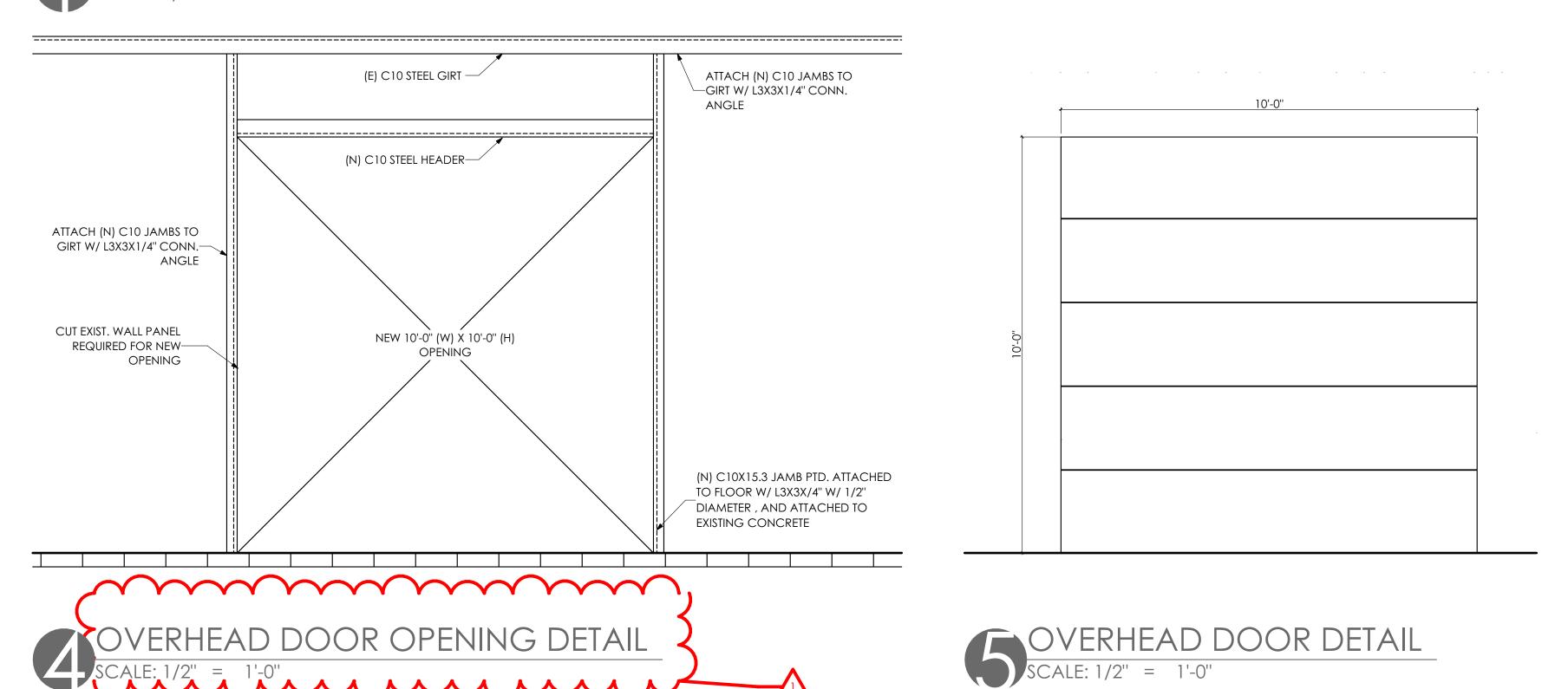


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CEILING PLAN







**KEYED NOTES** 

05 METALS 5.50 METAL FABRICATIONS

5.50.05 NEW C10 X15.3 FRAME. PREP AND PAINT.

OPENINGS 8.36 SECTIONAL DOOR | SPEC 083613 8.36.01 NEW 10' X 10' OVERHEAD DOOR.

9.92 INTERIOR PAINTING | SPEC 099123 9.92.02 PREP AND PAINT (TWO (2) COATS) ENTIRE DOOR AND FRAME.
9.92.03 PREP AND PAINT (TWO (2) COATS) ENTIRE LENGTH OF BOTTOM

FLANGE OF BEAM SAFETY YELLOW. 9.92.06 DO NOT PAINT KALWALL WINDOWS ALONG THIS SIDE. 9.92.10 PREP AND PAINT (TWO (2) COATS) ENTIRE CONCRETE FLOOR SURFACE WITH EPOXY PAINT.

9.92.11 PREP AND PAINT (TWO (2) COATS) ENTIRE WALL SURFACE FROM FLOOR TO UNDERSIDE OF ROOF STRUCTURE, INCLUDING COLUMNS WITH EPOXY PAINT. 9.92.12 PREP AND PAINT (TWO (2) COATS) ENTIRE ROOF STRUCTURE,

INCLUDING BEAMS AND PURLINS, WITH EPOXY PAINT. EXTERIOR PAINTING | SPEC 099660 9.96.01 PREP AND PAINT (TWO (2) COATS) ENTIRE DOOR AND FRAME.
9.96.02 PREP AND PAINT (TWO (2) COATS) ENTIRE HANGER DOOR AND

10 SPECIALTIES 10.44 FIRE PROTECTION SPECIALTIES | SPEC 104413/

10.44.01 PROVIDE NEW ADHERED FIRE EXTINGUISHER SIGN ON FACE OF COLUMN.

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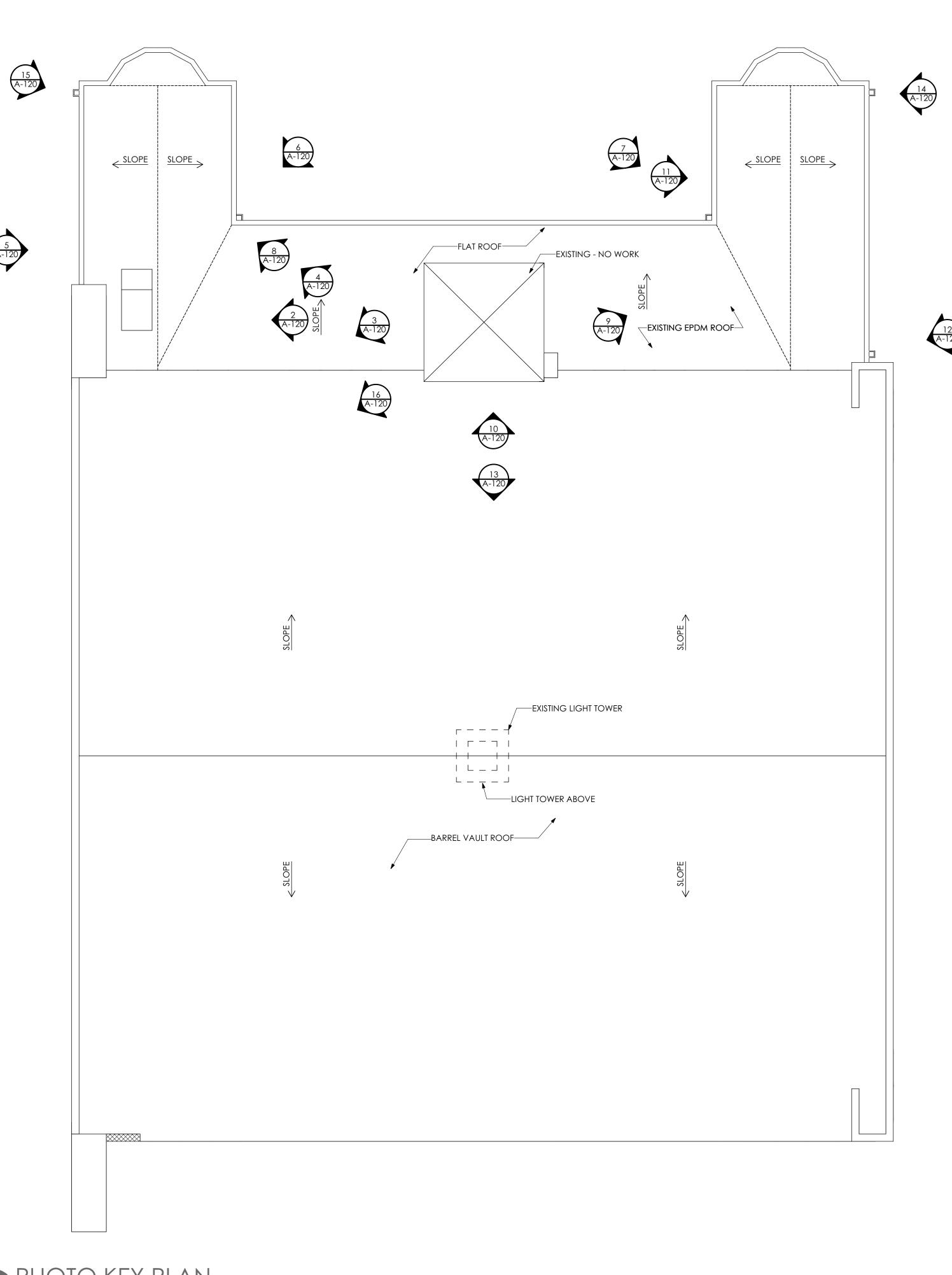
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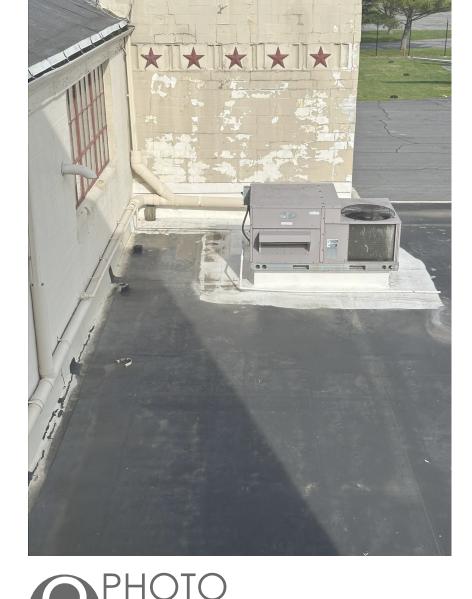
HANGER 1

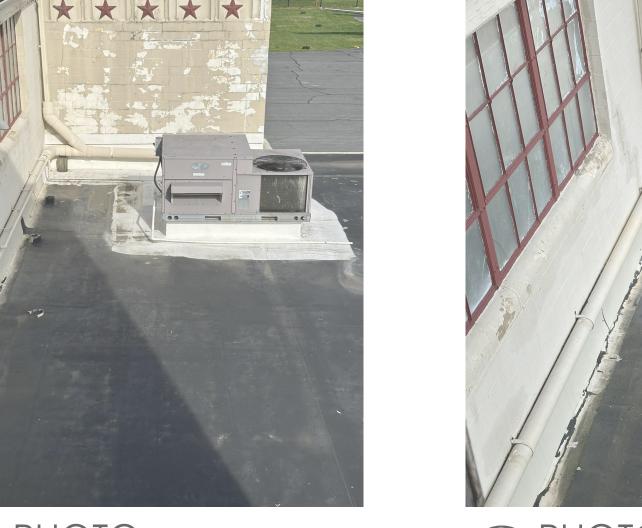
SHEET TITLE:

HANGER PLAN

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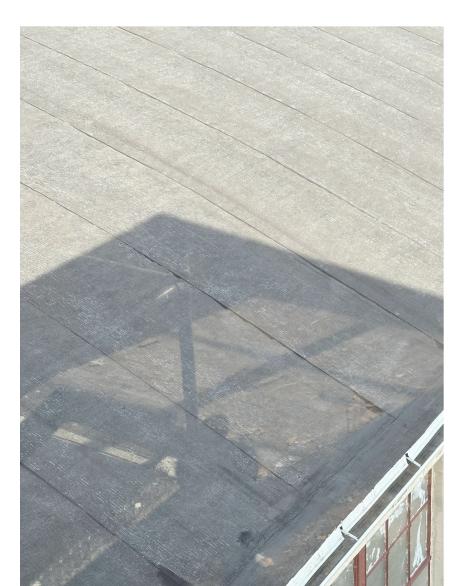


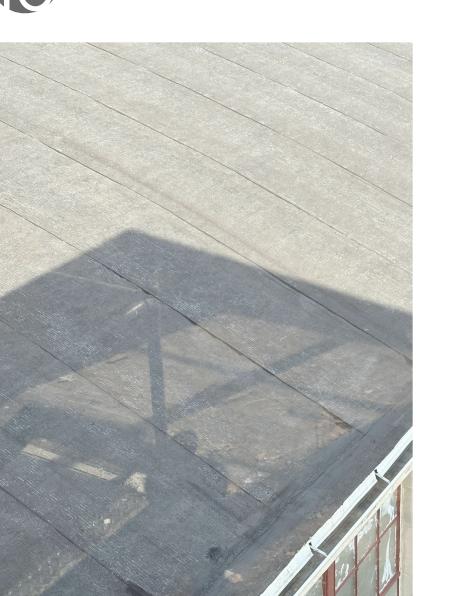












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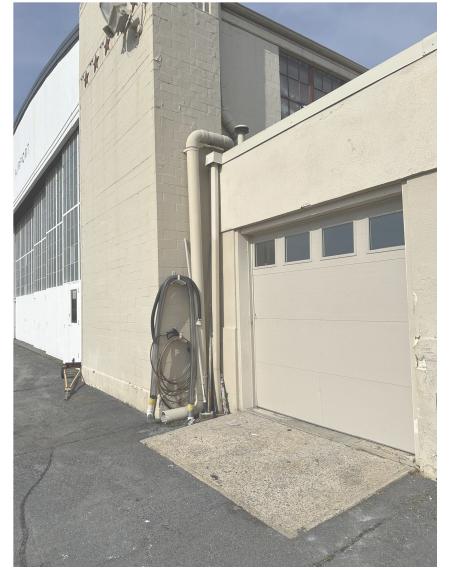
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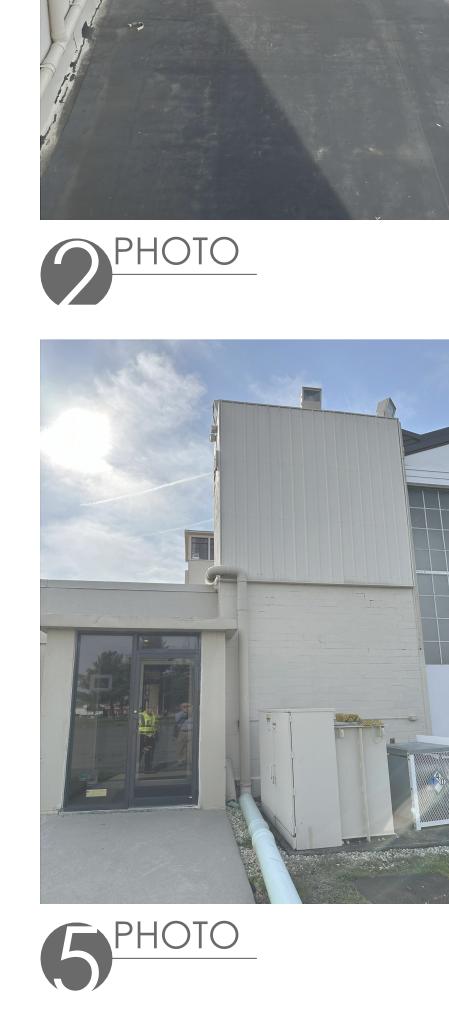




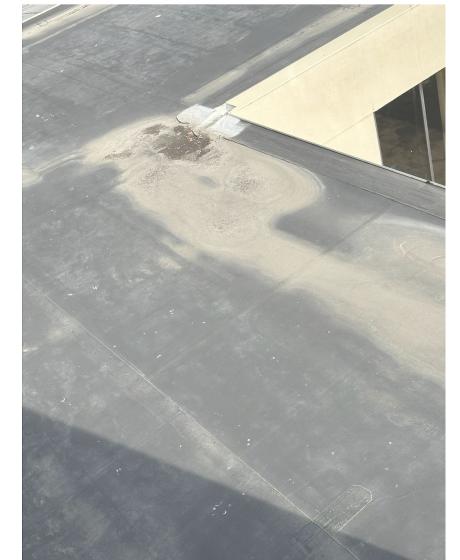




















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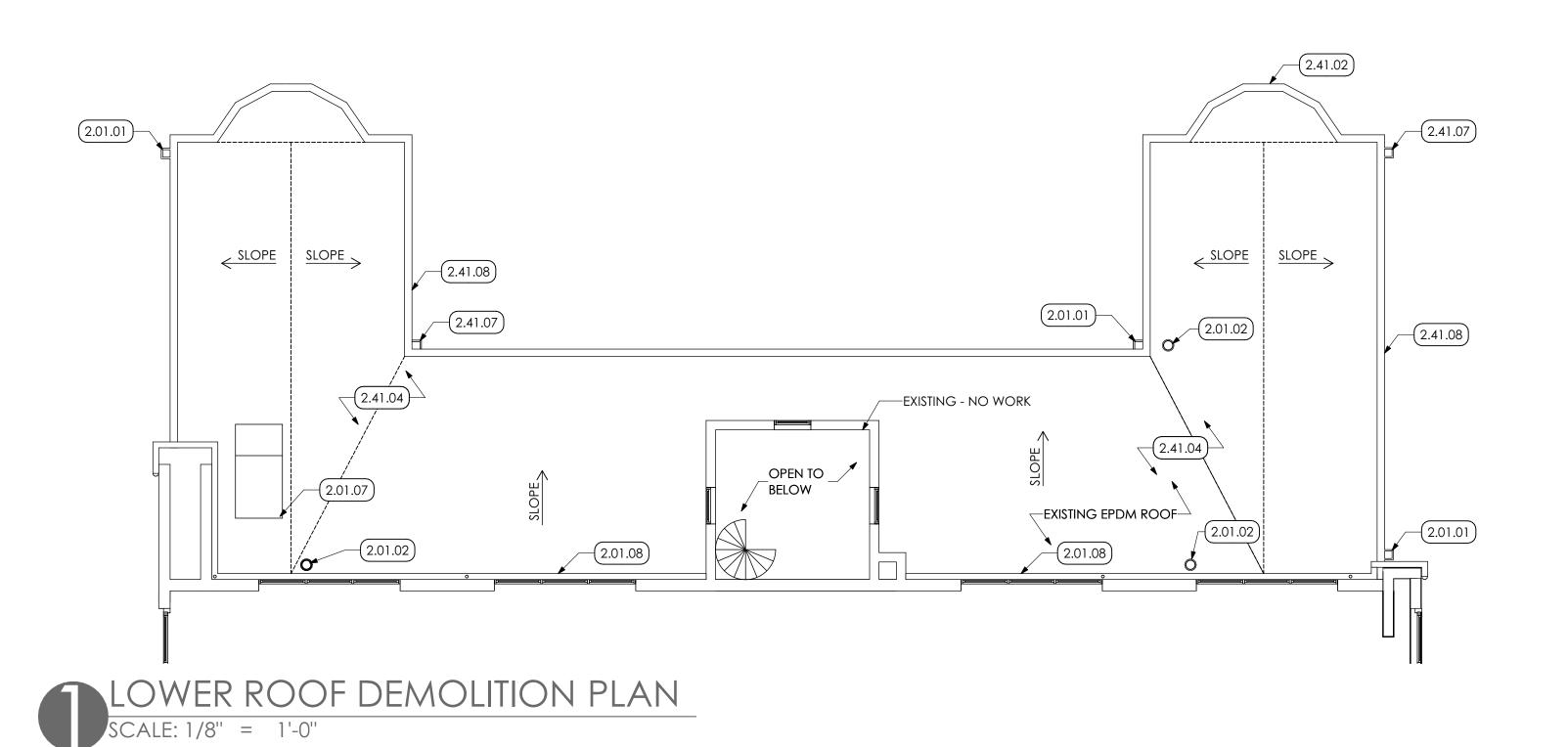
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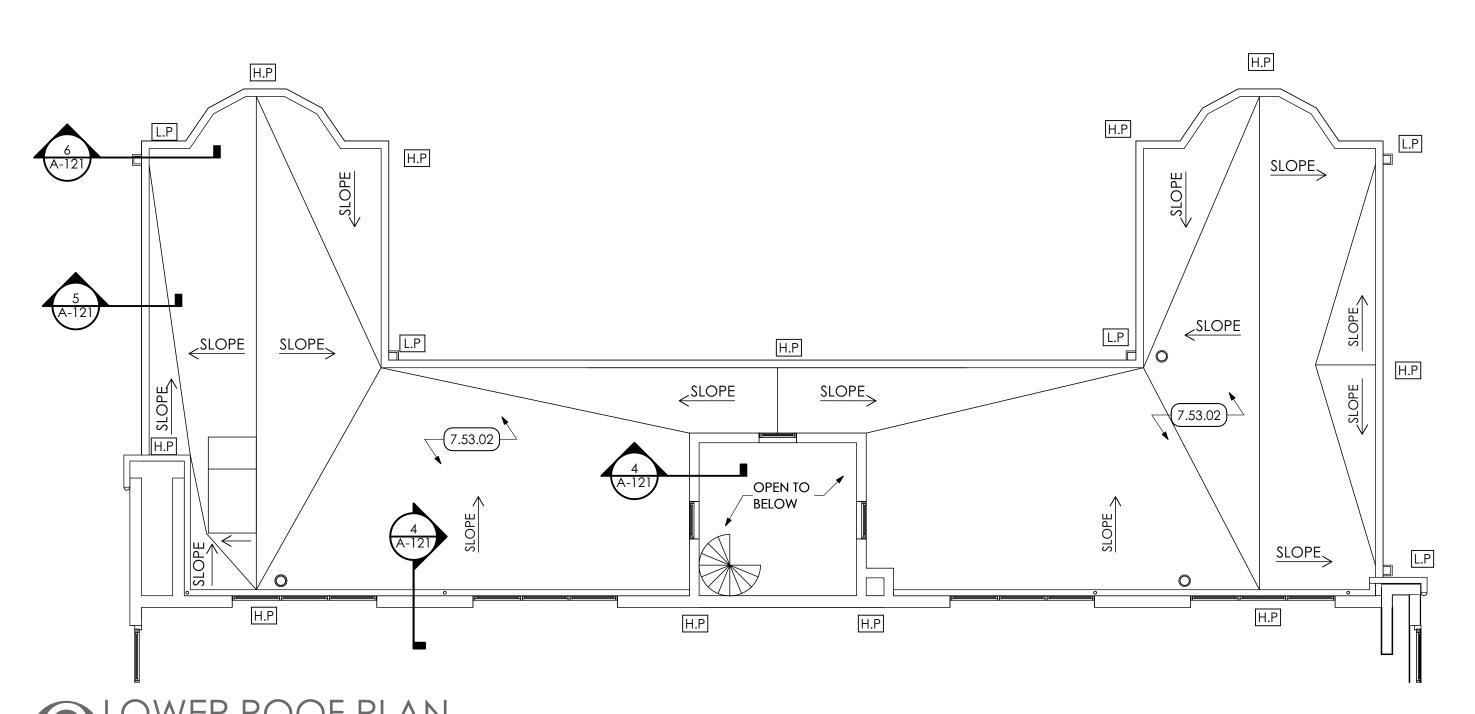
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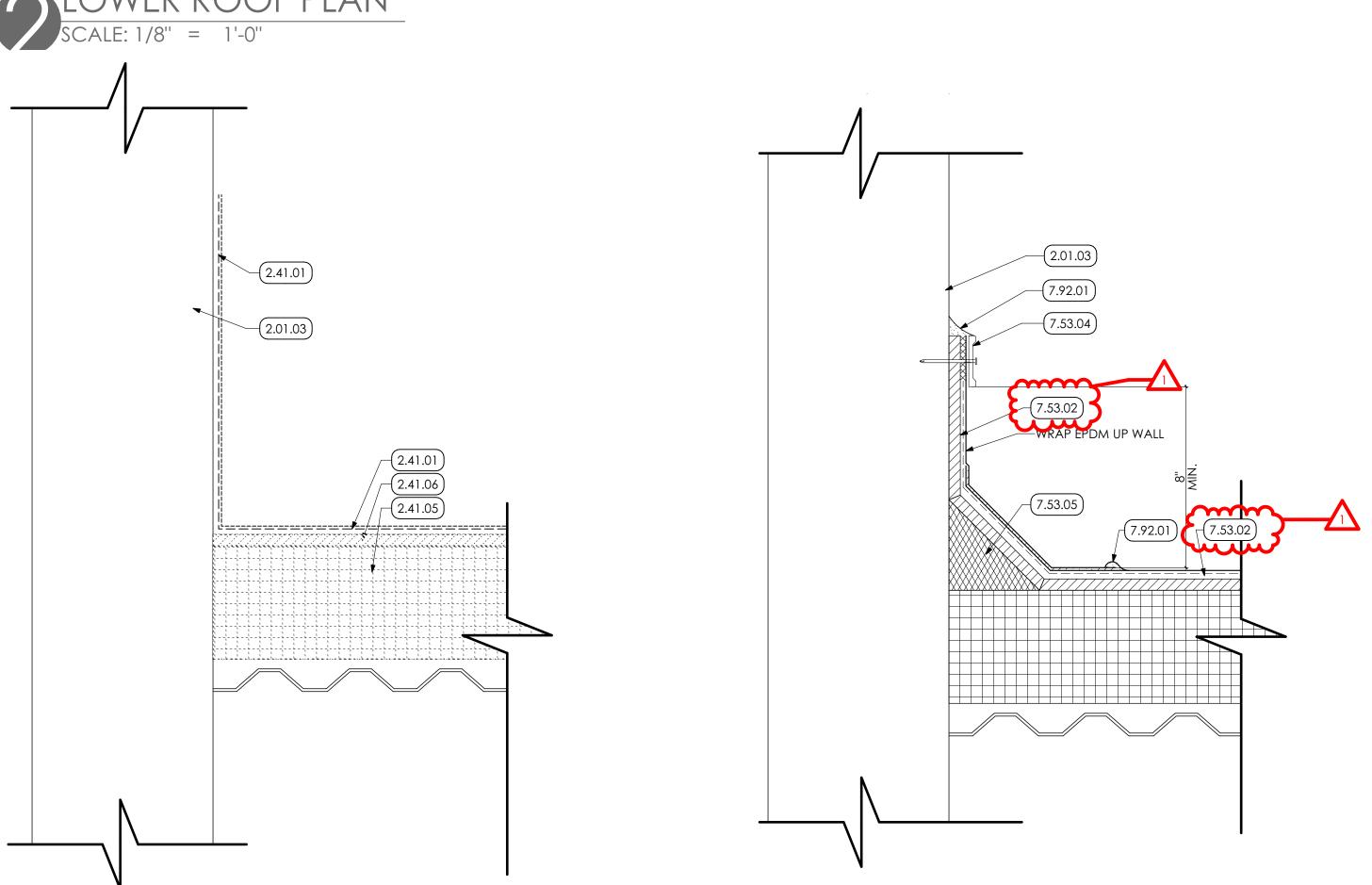
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CONDITION PHOTOS

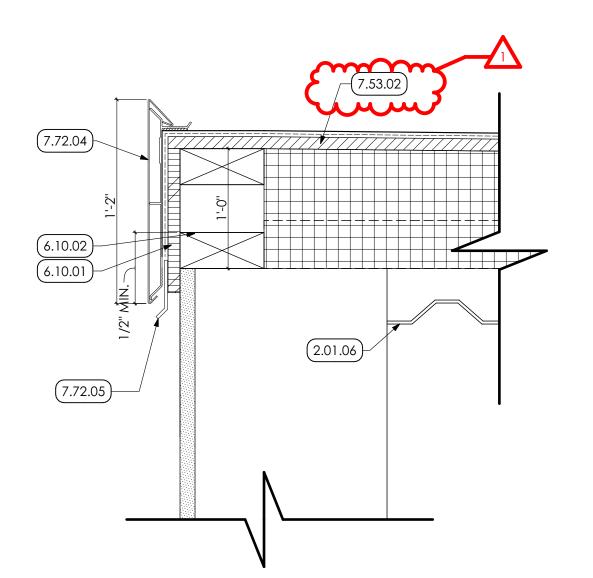


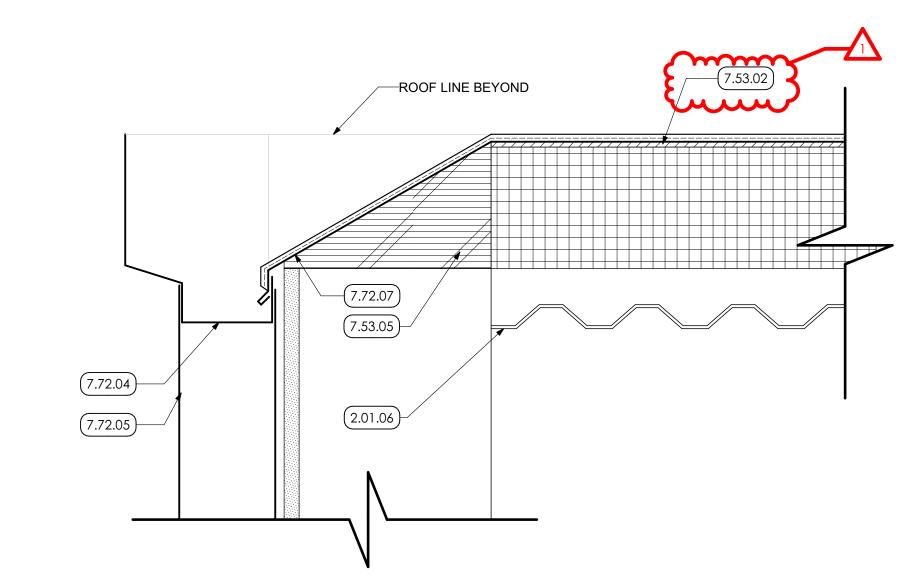




EXIST. WALL&ROOF CONNECTION SCALE: 3" = 1'-0"

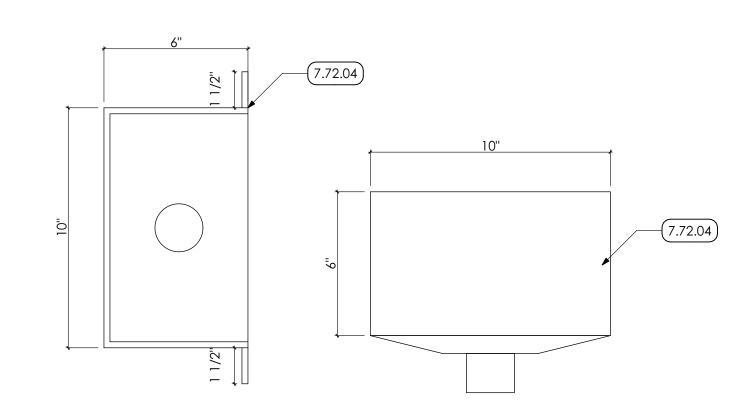






ROOF EDGE W/ SCUPPER DETAIL

SCALE: 3" = 1'-0"





### **KEYED NOTES**

02 DEMOLITION 2.01 EXISTING CONDITIONS

2.01.01 EXISTING DOWNSPOUT TO REMAIN 2.01.02 EXISTING OVERFLOW ROOF DRAIN TO REMAIN. 2.01.03 EXISTING WALL TO REMAIN. 2.01.06 EXISTING ROOF DECK TO REMAIN.

2.01.07 EXISTING HVAC EQUIPMENT TO REMAIN.
2.01.08 EXISTING PIPE TO REMAIN. 2.41 SELECTIVE DEMOLITION | SPEC 024119
2.41.01 REMOVE ALL EXISTING EPDM ROOFING, FLASHING, AND

INSULATION DOWN TO EXISTING CONCRETE DECK.
TYPICAL FOR ENTIRE ROOF SURFACE, INCLUDING ALL PARAPET WALLS. 2.41.02 CAREFULLY REMOVE MOTORIZED OWL. 2.41.04 REMOVE EXISTING ROOF IN ITS ENTIRETY. 2.41.05 REMOVE TAPERED INSULATION OVER ENTIRE ROOF AREA.

2.41.06 REMOVE 1/2" COVER BOARD OVER ENTIRE ROOF AREA. 2.41.07 REMOVE EXISTING SCUPPER AND DOWNSPOUT. 2.41.08 REMOVE METAL COPING. 06 WOODS, PLASTICS AND COMPOSITES 6.10 MISCELLANEOUS ROUGH CARPENTRY | SPEC 061053

6.10.01 3/4" PLYWOOD SHEATHING. 6.10.02 INSTALL NEW 2x4 PRESERVATIVE TREATED WOOD STUDS

THERMAL AND MOISTURE PROTECTION 7.53.02 NEW FLASTOMERIC ROCEING | SPEC 075323 7.53.02 NEW EPDM ROOFING SYSTEM OVER 1/2" COVERBOARD ON TAPERED INSULATION OVER ENTIRE ROOF AREA. SEE LOWER ROOF PLAN FOR THICKNESS.

7.53.04 STANKLESS STEEL TERMINATION DAD.

7.53.05 FIBER ROOFING CANT.

7.72 ROOF ACCESSORIES | SPEC 077233, 077253
7.72.04 METAL ROOF SCUPPER.
7.72.05 METAL DOWNSPOUT.

7.72.07 NEW METAL FLASHING W/DRIP EDGE BY G.C. 7.92 JOINT SEALANTS | SPEC 079200 7.92.01 CONTINUOUS SEALANT.

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1 CONSTRUCTION 10/10/2	Α	BID	7/25/24
	1	CONSTRUCTION	10/10/24

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HANGAR 520

SHEET TITLE:

LOWER ROOF PLAN & DETAILS

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1. TAPERED INSULATION PLAN IS BEING PROVIDED FOR

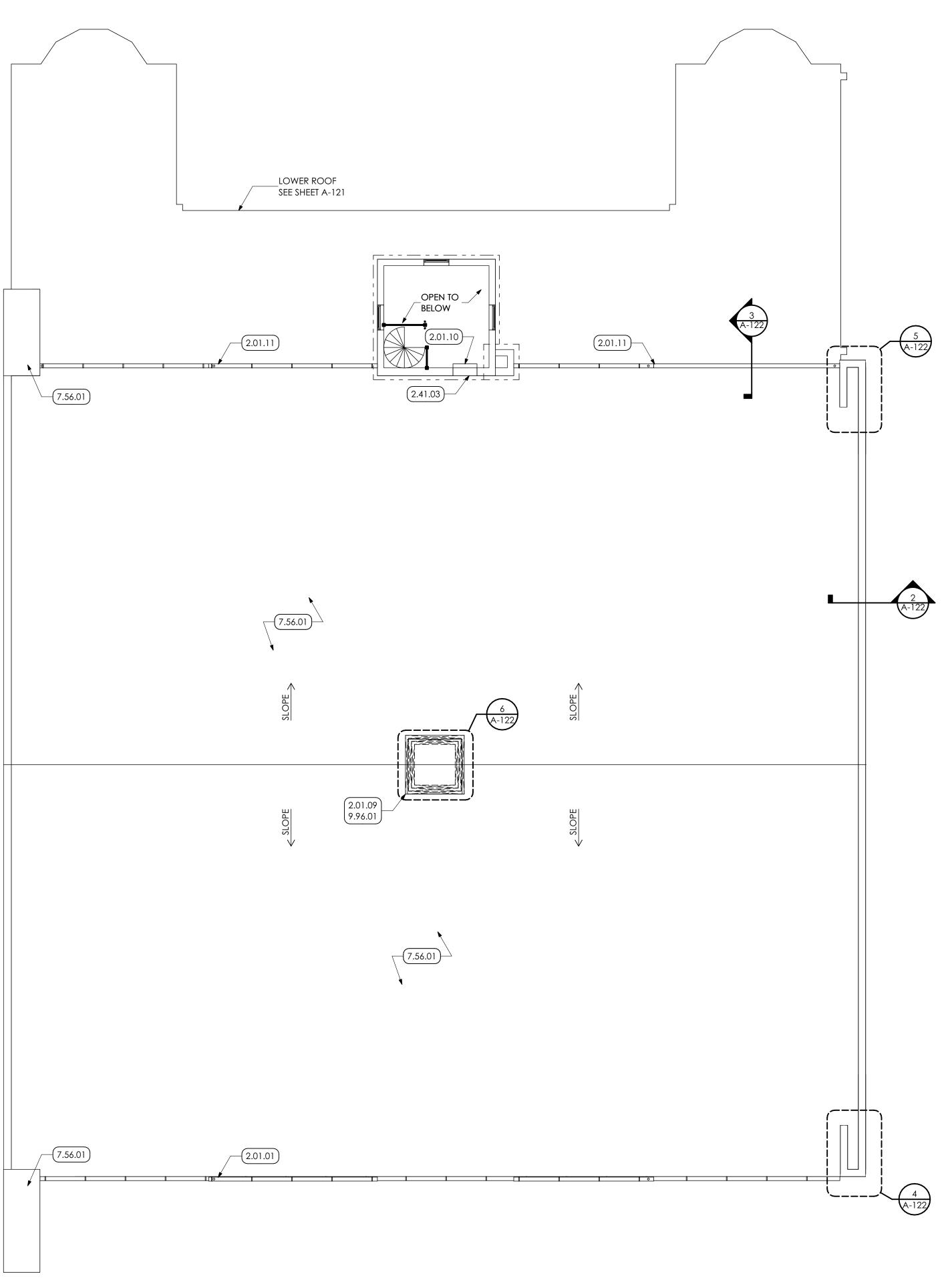
INFORMATION ONLY. CONTRACTOR TO PREPARE A TAPERED

ROOF INSULATION PLAN UNDER THE SUPERVISION OF THE ROOF

**GENERAL SHEET NOTE:** 

MANUFACTUER.

A-121

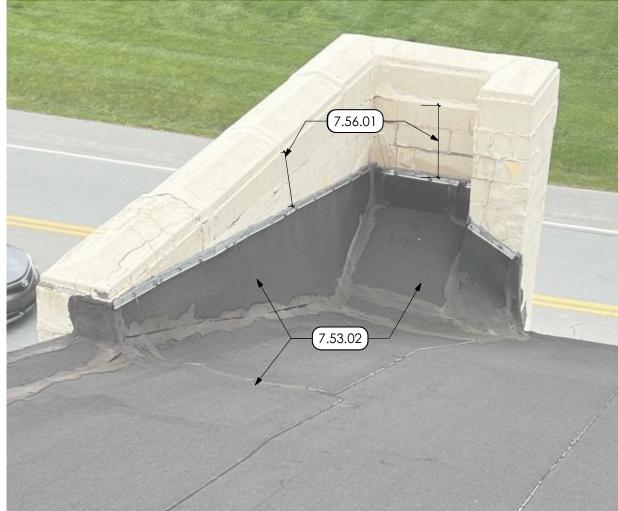














**KEYED NOTES** 02 DEMOLITION

2.01 EXISTING CONDITIONS 2.01.01 EXISTING DOWNSPOUT TO REMAIN 2.01.06 EXISTING ROOF DECK TO REMAIN.

INSULATED ACCESS PANEL.

2.01.09 EXISTING SPOTLIGHT STRUCTURE TO REMAIN.
2.01.10 EXISTING LADDER TO REMAIN.

2.01.11 EXISTING GUTTER TO REMAIN 2.01.12 EXISTING METAL FASCIA TO REMAIN 2.41 SELECTIVE DEMOLITION | SPEC 024119 2.41.03 REMOVE EXISTING PLYWOOD ENCLOSURE AND PROVIDE NEW

THERMAL AND MOISTURE PROTECTION 7.53 NEW ELASTOMERIC ROOFING | SPEC 075323 7.53.02 TAPERED INSULATION OVER ENTIRE ROOF AREA. SEE TAPERED INSULATION PLAN FOR THICKNESS.

7.56 FLUID APPLIED ROOFING | SPEC 075600 7.56.01 ELASTOMERIC COATING SYSTEM OVER ENTIRE EXISITING BARREL VAULT ROOF.

7.56.02 ELASTOMERIC BASE COAT 7.56.03 ELASTOMERIC REINFORCING COAT 7.56.04 ELASTOMERIC FINAL COAT

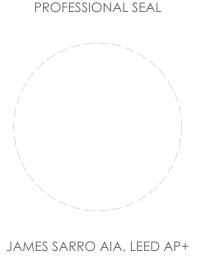
09 FINISHES 9.96
9.96.01
HIGH PERFORMANCE COATINGS | SPEC 099600
PREP AND PAINT (TWO (2) COATS) ENTIRE EXISTING SPOTLIGHT STRUCTURE.



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	ISSUED REVISION HISTORY				
ID	DESCRIPTION	DATE			
Α	BID	7/25/24			
1	CONSTRUCTION	10/10/24			

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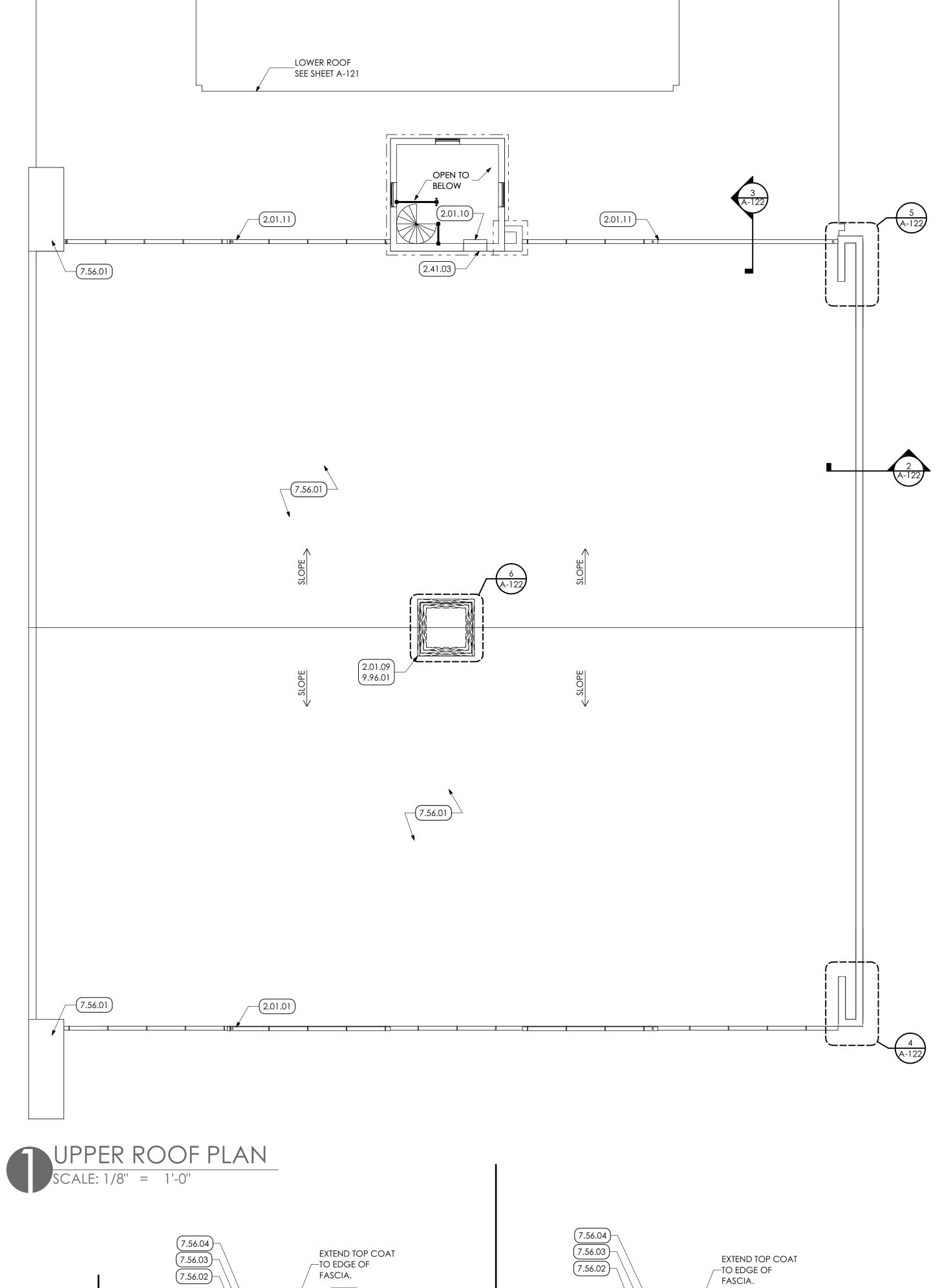
HANGAR 520

SHEET TITLE:

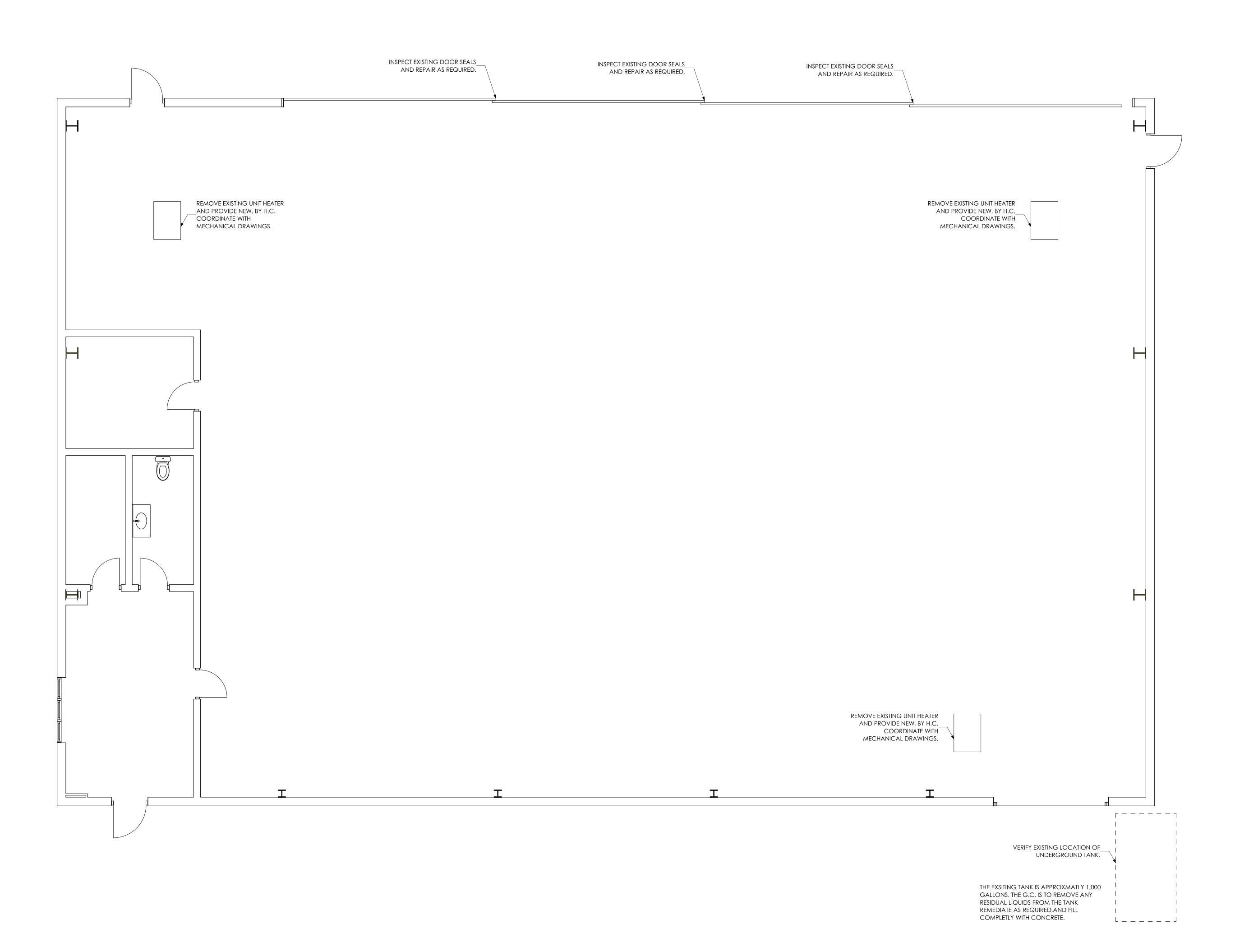
UPPER ROOF PLAN

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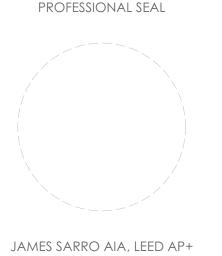


INTERIOR DESIGN
CODE ANALYSIS
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# LTIPLE BUILDING REGIONAL AIRPORI

	issued revision history	
ID	DESCRIPTION	DATE
Α	BID	7/25/24

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DRAWN BY: RMM

CLIENT PROJ #: -

VERIFY SCALE

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HANGAR 407

SHEET TITLE:

FLOOR PLAN

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UNLESS NOTED OTHERWISE.

A-130

AMPERE FRAME ABOVE FINISHED FLOOR ABOVE RAISED FLOOR AMPS INTERRUPTING CURRENT AMP SENSOR AMPERE TRIP AUTOMATIC TRANSFER SWITCH AIR CONDITIONING ABOVE FINISHED GRADE CIRCUIT BREAKER CURRENT LIMITING CURRENT LIMITING FUSE CEILING CONTRACTOR CURRENT TRANSFORMER CONDUI CONDENSING UNIT BY OTHERS DISCONNECT

DISTRIBUTION DRAW OUT ELECTRIC BASEBOARD HEAT ELECTRICAL CONTRACTOR EMERGENCY ELECTRICAL METALLIC TUBING EXISTING TO BE DEMOLISHED

EXISTING TO REMAIN EXISTING TO BE RELOCATED ELECTRIC WATER COOLER ELECTRIC WATER HEATER FIRE ALARM FIXTURE GROUND GROUND FAULT INTERRUPTER HAND - OFF - AUTOMATIC SWITCH HORSEPOWER INTERMEDIATE DISTRIBUTION FRAME

ISOLATED GROUND JUNCTION BOX KII OVOLT KILOVOLT-AMPERES KILOWAT1 LIGHT EMITTING DIODE LONG, SHORT, INSTANTANEOUS AND GROUND FAULT TRIP FUNCTIONS LIGHTING MAXIMUM MAIN CIRCUIT BREAKER MAIN DISTRIBUTION FRAME MOTOR CONTROL CENTER

> MOUNTING HEIGH MAIN LUGS ONLY NEUTRAL NORMALLY CLOSET NOT IN CONTRACT NOT TO SCALE OWNER FURNISHED EQUIPMENT PANEL PRIMARY POTENTIAL TRANSFORMER POLYVINYL CHLORIDE

RECEPTACLE RECESSED RETURN FAN EXISTING SHOWN RELOCATED SCHED SCHEDULE. SOLENOID KEY RELEASE UNIT SOLID NEUTRAL SWITCH SWITCHBOARD SWITCHGEAR TIME DELAY RELAY TWISTED PAIR TYPICAL UNIT HEATER UNLESS OTHERWISE NOTED

**WEATHERPROOF** 

TRANSFORME

ELECTRICAL LEGEND

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<del>---//---</del>

NOTE: THIS LEGEND IS A STANDARD AND SOME ITEMS MAY NOT APPLY

NEW LIGHTING AND APPLIANCE BRANCH CIRCUIT PANELBOARD EXISTING LIGHTING AND APPLIANCE BRANCH CIRCUIT PANELBOARD DISCONNECT SWITCH, 600V, HEAVY DUTY, QUICK MAKE, QUICK BREAK, SIZE AND NUMBER OF POLES AS INDICATED ON PLANS, FUSIBLE OR NON-FUSIBLE AS INDICATED ON PLANS.

MAGNETIC MOTOR STARTER COMBINATION MAGNETIC MOTOR STARTER AND DISCONNECT SWITCH, NEMA SIZE AS INDICATED ON PLANS VARIABLE FREQUENCY DRIVE

ENCLOSED CIRCUIT BREAKER, SIZE AND NUMBER OF POLES AS INDICATED ON PLANS.

(#) MOTOR - HORSEPOWER AS INDICATED OR 'F' FOR FRACTIONAL JUNCTION BOX EMERGENCY POWER OFF STATION

EMERGENCY POWER OFF STATION WITH KEY RESET HOME RUN TO PANELBOARD INDICATES CONDUIT TURNING DOWN

INDICATES TURNING UP WIRING CONNECTED TO SAME CIRCUIT, CONTROLLED SEPARATELY DUPLEX RECEPTACLE OUTLET, # INDICATES SPECIAL MODIFIER, COMMERCIAL SPECIFICATION GRADE, NEMA 5-20R, 125 VOLTS, HUBBELL #BR20, OR EQUIVALENT BY

GF - DENOTES GROUND-FAULT CIRCUIT INTERRUPTER, HUBBELL #GFWRST20. FINISH SELECTED BY THE ARCHITECT. TP - DENOTES TAMPER RESISTANT RECEPTACLE, HUBBELL #BR20\*TR. FINISH SELECTED BY

LEVITON, PASS & SEYMOUR, OR ARROW HART. FINISH SELECTED BY THE ARCHITECT.

WP - DENOTES WEATHER PROOF, HUBBELL #BR20\*WR, INSTALLED IN WEATHER TIGHT WHILE IN USE, FINISH SELECTED BY THE ARCHITECT. C - DENOTES MOUNTED ABOVE COUNTER TOP OR CASEWORK QUADRAPLEX RECEPTACLE (TWO DUPLEX RECEPTACLES UNDER COMMON COVER PLATE)

SIMPLEX (SINGLE) RECEPTACLE, HUBBELL #HBL5361. SPECIAL PURPOSE RECEPTACLE, NEMA CONFIGURATION AS INDICATED ON PLANS CORD REEL WITH DROP CORD, HUBBELL #HBLW25123W, PROVIDE NEMA L5-15 FE- MALE CONNECTOR AT END OF CORD. PROVIDE RECEPTACLE AT CEILING FOR CORD REEL

CONNECTION. MOTOR RATED SWITCH, 30 AMP, 2 POLE, ALUMINUM COVER AND BASE, LOCKABLE IN THE 'OFF' POSITION. MOUNT ON, OR ADJACENT TO EQUIPMENT. HUBBELL #HBLI372D, OR EQUIVALENT BY SQUARE D, EATON, OR SIEMENS.

FRACTIONAL HORSEPOWER MANUAL STARTER WITH MELTING ALLOY THERMAL OVERLOAD RELAY, 115 VOLTS, 16 AMP CONTINUOUS CURRENT RATING, TOGGLE OPERATOR, LOCKABLE IN THE 'OFF' POSITION. MOUNT ON, OR ADJACENT TO EQUIPMENT. SQUARE D #FGI OR EQUIVALENT BY EATON OR SIEMENS.

PHONE OUTLET, 'W' INDICATES WALL PHONE DATA OUTLET, NUMBER INDICATES TOTAL NUMBER OF PORTS IN WALL PLATE, PROVIDE FLUSH MOUNTED, SINGLE GANG, DEEP WALL BOX, AND I" CONDUIT TO ACCESSIBLE CEILING SPACE TERMINATE WITH PLASTIC BUSHING.

CABLE TV OUTLET - PROVIDE FLUSH MOUNTED, SINGLE GANG, DEEP WALL BOX, AND I" CONDUIT TO ACCESSIBLE CEILING SPACE TERMINATE WITH PLASTIC BUSHING. FLUSH POKE-THROUGH ASSEMBLY WITH QUAD RECEPTACLE, VOICE AND DATA; WIREMOLD

#RC4ATC, FINISHES SELECTED BY THE ARCHITECT. FLUSH POKE THROUGH ASSEMBLY WITH CONDUIT FEED THROUGH PROVISIONS FOR DIRECT CONNECTION OF POWER AND DATA, WIREMOLD #4FFATC, FINISHES SELECTED BY THE

FLUSH POKE THROUGH ASSEMBLY WITH ONE 2" CONDUIT FEED THROUGH FOR VOICE DATA (VD) OR AUDIO VIDEO (AV); WIREMOLD #RC9AM2TC, FINISHES SELECTED BY THE ARCHITECT. PEDESTAL STYLE POKE THROUGH ASSEMBLY WITH RECEPTACLE AS SHOWN ON PLANS AND EQUIPMENT SCHEDULE; WIREMOLD #FIT WITH 200-H/BTC HEAD, AND FIFP FACEPLATES,

FINISHES SELECTED BY THE ARCHITECT. FLOOR BOX WITH QUAD RECEPTACLE, VOICE, AND DATA; WIREMOLD #RFB4 (RFB4-CI-I FOR SLAB ON GRADE), FINISHES SELECTED BY THE ARCHITECT

SINGLE POLE SMITCH, COMMERCIAL SPECIFICATION GRADE, HUBBELL #C5BI2O, OR EQUIVALENT BY LEVITON, PASS & SEYMOUR, OR ARROW HART. THREE-WAY SWITCH, COMMERCIAL SPECIFICATION GRADE, HUBBELL #C5320, OR EQUIVALENT BY LEVITON, PASS & SEYMOUR, OR ARROW HART.

SINGLE POLE SWITCH, COMMERCIAL SPECIFICATION GRADE, HUBBELL #CSB420, OR EQUIVALENT BY LEVITON, PASS & SEYMOUR, OR ARROW HART. WALL SWITCH TYPE OCCUPANCY SENSOR, SENSORSWITCH #WSXA-WH, OR EQUIVALENT BY

WATT STOPPER OR HUBBELL. FINISH SELECTED BY THE ARCHITECT. DUAL RELAY WALL SWITCH TYPE OCCUPANCY SENSOR, SENSORSWITCH #WSXA-2P-WH, OR EQUIVALENT BY WATT STOPPER OR HUBBELL. CONNECT EXHAUST FAN TO AUTO-ON POLE.

SINGLE POLE, WALL SWITCH TYPE DUAL-TECHNOLOGY OCCUPANCY WITH O-IOV DIMMING CONTROLLER, SENSORSWITCH #WSXA-PDT-D-SA-WH, OR EQUIVALENT BY WATT STOPPER OR

PHOTO CONTROL SWITCH (WEATHER PROOF FOR OUTDOOR INSTALLATION) POWER / RELAY PACK FOR OCCUPANCY SENSOR, SENSORSWITCH #PP20, OR EQUIVALENT, BY WATT STOPPER OR HUBBELL. CEILING MOUNTED OCCUPANCY SENSOR, SENSORSWITCH 'CM' SERIES, OR EQUIVALENT, BY

WATT STOPPER OR HUBBELL PASSIVE INFRARED (CM SERIES) M = MICROPHONIC D = DUAL TECHNOLOGY (CM PDT SERIES) WIDE OPTICS (CM 10 SERIES) NARROW OPTICS (CM 9 SERIES)

H = HALL WAY OPTICS (CM II SERIES) DAYLIGHT SENSOR DIMMING CONTROLLER - O-10 VOLT UNLESS OTHERWISE NOTED, LOWER CASE LETTER INDICATES SWITCHING ZONE. SENSORSWITCH SPODMRA-D-XX, OR EQUIVALENT.

LOW VOLTAGE SWITCH CONNECTED TO NETWORKED LIGHTING CONTROL SYSTEM. RECESSED TROFFER OR FLAT PANEL LUMINAIRE, LETTER INDICATES TYPE, REFER TO LUMINAIRE SCHEDULE. LOWER CASE LETTER INDICATES CONTROL ZONE. RECESSED DOWNLIGHT OR PENDANT LUMINAIRE, LETTER INDICATES TYPE, REFER TO

LUMINAIRE SCHEDULE, LOWER CASE LETTER INDICATES CONTROL ZONE. WALL MOUNTED EXIT SIGN, FILLED SEGMENT INDICATES ILLUMINATED FACE, LETTER INDICATES TYPE, PROVIDE DIRECTIONAL ARROWS AS INDICATED ON PLAN

CEILING MOUNTED EXIT SIGN, FILLED SEGMENT INDICATES ILLUMINATED FACE, LETTER INDICATES TYPE, PROVIDE DIRECTIONAL ARROWS AS INDICATED ON PLAN WALL MOUNTED COMBINATION EXIT SIGN, EMERGENCY LIGHTING BATTERY UNIT, FILLED SEGMENT INDICATES ILLUMINATED FACE, LETTER INDICATES TYPE, PROVIDE DIRECTIONAL

ARROWS AS INDICATED ON PLAN EMERGENCY LIGHTING BATTERY UNIT, LETTER INDICATES TYPE, REFER TO LUMINAIRE TWIN EMERGENCY LIGHTING REMOTE HEAD, LETTER INDICATES TYPE, REFER TO LUMINAIRE

POLE MOUNTED AREA LIGHTING LUMINAIRE, LETTER INDICATES TYPE, REFER TO LUMINAIRE

PHOTOELECTRIC SMOKE DETECTOR HEAT DETECTOR WITH RATE COMPENSATION

 $\langle s \rangle_{1D}$ 

FIRE ALARM AUDIBLE APPLIANCE - HORN

IN - DUCT SMOKE DETECTOR

FIRE ALARM MANUAL PULL STATION

FIRE ALARM AUDIBLE APPLIANCE-SPEAKER ONLY, WALL MOUNTED, 'W' INDICATES WATTAGE. FINAL WATTAGE TAP TO BE DETERMINED DURING AUDIBLE FIELD TEST. FIRE ALARM AUDIBLE APPLIANCE-SPEAKER ONLY, CEILING MOUNTED, 'W' INDICATES WATTAGE. FINAL WATTAGE TAP TO BE DETERMINED DURING AUDIBLE FIELD TEST. FIRE ALARM VISUAL APPLIANCE, WALL MOUNTED, 'CD' INDICATES CANDELA RATING FIRE ALARM VISUAL APPLIANCE, CEILING MOUNTED, 'CD' INDICATES CANDELA RATING

FIRE ALARM COMBINATION HORN / VISIBLE NOTIFICATION APPLIANCE, 'CD' INDICATES FIRE ALARM COMBINATION SPEAKER / VISIBLE NOTIFICATION APPLIANCE, 'CD' INDICATES CANDELA RATING, 'W' INDICATES WATTAGE. FINAL WATTAGE TAP TO BE DETERMINED DURING AUDIBLE FIELD TEST.

FLOW SWITCH VALVE SUPERVISORY SWITCH

> PRESSURE SWITCH ADDRESSABLE INPUT MONITOR MODULE

ADDRESSABLE INPUT / OUTPUT MODULE, # DENOTES NUMBER OF INPUTS AND OUTPUTS ADDRESSABLE OUTPUT MONITOR MODULE

DUCT SMOKE DETECTOR REMOTE ALARM / TEST / RESET STATION

FIRE ALARM CONTROL PANEL FIRE ALARM ANNUNCIATOR

FIRE ALARM NOTIFICATION APPLIANCE PANEL

CARD READER (FAIL OPEN IN EMERGENCY) DURESS BUTTON

DOOR CONTACT - ROUGH-IN 3/4" CONDUIT AND PULL STRING FROM DOOR FRAME TO ACCESSIBLE CEILING SPACE - COORDINATE FINAL ROUGH-IN LOCATION WITH G.C.

DOOR MAGNETIC LOCK DOOR RELEASE BUTTON EXIT BUTTON

ELECTRIC LOCK SET OVERHEAD DOOR CONTACT

SECURITY SYSTEM MOTION DETECTOR

SOUNDER (DOOR ALARM) SINGLE MAGNETIC LOCK

REQUEST TO EXIT

□

SECURITY CAMERA SECURITY CAMERA - PAN-TILT-ZOOM

SPEAKER, CEILING MOUNTED SPEAKER, WALL MOUNTED

SPEAKER VOLUME CONTROL, WALL MOUNTED CLOCK, WALL MOUNTED

MICROPHONE OUTLET, WALL MOUNTED, NUMBER INDICATES QUANTITY OF OUTLETS UNDER

CIRCUIT BREAKER - AF=INDICATES AMPERE FRAME, AT=INDICATES AMPERE TRIP IP=SINGLE POLE, 2P=TWO POLE, 3P=THREE POLE

CIRCUIT BREAKER WITH SHUNT-TRIP

 $\mathcal{M}$ TRANSFORMER NON-FUSED DISCONNECT SWITCH

GENERATOR

FUSED DISCONNECT SWITCH CURRENT TRANSFORMER

POTENTIAL TRANSFORMER OVERLOAD RELAY NORMALLY OPEN CONTACTS NORMALLY CLOSED CONTACTS

START PUSH BUTTON STOP PUSH BUTTON

HAND - OFF - AUTO SELECTOR SWITCH

PILOT LIGHT - 'R' FOR RED, 'G' FOR GREEN, 'A' FOR AMBER

AUTOMATIC TRANSFER SWITCH

ELECTRICAL EQUIPMENT MOUNTING HEIGHTS

WALL MOUNTED FIRE ALARM AUDIBLE NOTIFICATION APPLIANCE (OR AS SHOWN ON ARCHITECTURAL DETAILS)	9" BELOW FINISHED CEILING
TV MONITOR OUTLETS AND SERVICE RECEPTACLES FOR SHELF MOUNTED TV	8'-0" ABOVE FINISHED FLOOR
WARNING AND SIGNALING LUMINAIRES / SIGNS	CENTERED ABOVE DOOR OR WINDOM OPENING
FIRE ALARM VISUAL NOTIFICATION APPLIANCE MOUNTED AT 6'-8" MEASURED FROM THE FINISHED FLOOR TO THE BOTTOM OF THE DEVICE OR 6" BELOW FINISHED CEILING MEASURED FROM THE FINISHED CEILING TO THE TOP OF THE DEVICE, WHICHEVER IS LOWER	6'-8" ABOVE FINISHED FLOOR
TOP OF FLUSH AND SURFACE MOUNTED LIGHTING CONTROL PANELS OR POWER PANELBOARDS AND TELEPHONE CABINETS.	6'-6" ABOVE FINISHED FLOOR
TOP OF HIGHEST ELECTRICAL SAFETY DISCONNECT SWITCHES	4'-0" ABOVE FINISHED FLOOR
WALL MOUNTED TELEPHONE AND WALL MOUNTED INTERCOMS	4'-0" ABOVE FINISHED FLOOR
WALL MOUNTED ELECTRICAL DEVICES, SUCH AS, LIGHTING SWITCHES, MANUAL MOTOR STARTERS, THERMOSTATS, AND FIRE ALARM PULL STATIONS. GF OUTLETS IN TOILET ROOMS ALL FLOOR EQUIPMENT IN LABS AND EQUIPMENT ROOMS	3'-6" ABOVE FINISHED FLOOR
ELECTRICAL RECEPTACLES INCLUDING THOSE USED WITHIN MECHANICAL SPACES AND ELEVATOR ROOMS, TELEPHONE, DATA, AND COMMUNICATION OUTLETS CATV AND A/V JUNCTION BOXES	I'-6" ABOVE FINISHED FLOOR
WALL CLOCK AT 8'-0" OR CENTER BETWEEN DOOR FRAME AND CEILING	8'-0" ABOVE FINISHED FLOOR

MOUNTING HEIGHTS ARE TO CENTER OF OUTLETS UNLESS SPECIFICALLY NOTED OTHERWISE. IN MASONRY CONSTRUCTION, THE ABOVE HEIGHTS SHALL BE USED FOR REFERENCE TO NEAREST BLOCK OR BRICK COURSING. THE ABOVE MOUNTING HEIGHTS SHALL BE ADHERED TO UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE ON THE ARCHITECTURAL DRAWINGS OR SPECIFICATIONS.

### ELECTRICAL SPECIFICATIONS

I. IT IS THE INTENT OF THESE SPECIFICATIONS AND ACCOMPANYING DRAWINGS THAT THE CONTRACTOR SHALL, UNLESS OTHERWISE SPECIFIED HEREIN, FURNISH ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT INCLUDING SCAFFOLDING TO COMPLETE THE INSTALLATION OF THE ENTIRE ELECTRICAL SYSTEM AS SPECIFIED HEREIN. CONTRACTOR SHALL PROPERLY INSTALL, EQUIP, ADJUST, AND PUT INTO PERFECT OPERATION, THE RESPECTIVE PORTIONS OF THE INSTALLATION SPECIFIED, AND SO INTERCONNECT THE VARIOUS ITEMS OR

SECTIONS OF THE WORK IN ORDER TO FORM A COMPLETE AND PROPERLY OPERATING WHOLE. APPLICABLE CODES. 2. THE WORK SHALL INCLUDE ALL MATERIAL AND LABOR REQUIRED TO PROVIDE THE ELECTRICAL WORK SPECIFIED AND SHOWN ON DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ACCESSORIES,

PARTS, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM. 3. THE WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING: . MODIFICATIONS TO THE EXISTING 400 AMP, 208Y/120V, 30, 4W ELECTRIC SERVICE PANELBOARDS AND DISCONNECT SWITCHES

WIRING DEVICES d. LIGHTING CONTROLS INTERIOR LIGHTING SYSTEM

EXTERIOR LIGHTING SYSTEMS BATTERY BACKED EMERGENCY LIGHTING

BRANCH CIRCUITS CONNECTIONS TO EQUIPMENT PROVIDED BY OTHERS GROUNDING

m. CUTTING AND PATCHING n. DEMOLITION o. VOICE/DATA CABLING AND TERMINATIONS

4. THE WORK SHALL INCLUDE OBTAINING ALL PERMITS, PAYING ALL PERMIT FEES, SCHEDULING ALL REQUIRED INSPECTIONS AND PAYING ALL UTILITY AND INSPECTION FEES.

5. ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES, AND REGULATIONS ADOPTED BY MUNICIPAL, COUNTY, STATE, AND FEDERAL AUTHORITIES, INCLUDING THE 2017 EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND WITH THE REQUIREMENTS/AMENDMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ).

6. CONTRACT DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO CONVEY SCOPE, DESIGN INTENT, AND GENERAL ARRANGEMENT ONLY. CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES INCLUDING RESOLUTION OF FIELD CONFLICTS THAT MAY ARISE.

7. ALL OF THE ELECTRICAL INSTALLATION SHALL BE PERFORMED IN A NEAT, WORKMANLIKE MANNER AND IN ACCORDANCE WITH INDUSTRY STANDARDS.

8. EACH FEEDER AND BRANCH CIRCUIT SHALL INCLUDE AN INSULATED EQUIPMENT GROUND CONDUCTOR PER N.E.C. ARTCLE 250. BOND ALL ELECTRICAL EQUIPMENT, OUTLET BOXES, GROUNDING TYPE RECEPTACLES, ETC IN ACCORDANCE WITH N.E.C. ARTICLE 250.

9. MULTI-WIRE BRANCH CIRCUITS ARE NOT PERMITTED. EACH 120V BRANCH CIRCUIT SHALL INCLUDE A DEDICATED NEUTRAL AND INSULATED GROUND CONDUCTOR.

IO. GROUPING OF BRANCH CIRCUITS AND FEEDERS SHALL BE PERMITTED, PROVIDED THAT THE N.E.C. RULES PERTAINING TO MAXIMUM ALLOWABLE PERCENT FILL OF RACEWAYS, AND AMPACITY ADJUSTMENT FACTORS FOR MORE THAN THREE (3) CURRENT CARRYING CONDUCTORS IN A RACEWAY ARE STRICTLY ADHERED TO. THE CONTRACTOR SHALL EXERCISE CAUTION IN PROVIDING AN EQUAL NUMBER OF A, B, AND C PHASE CONDUCTORS IN RACEWAYS WHEN GROUPING CIRCUITS.

II. TROUGHS, JUNCTION BOXES, AND PULL BOXES ARE NOT NECESSARILY INDICATED, BUT SHALL BE PROVIDED WHERE REQUIRED BY THE N.E.C. AND AS REQUIRED FOR EASE OF INSTALLATION. BOXES SHALL BE SIZED, AT A MINIMUM, IN ACCORDANCE WITH N.E.C. ARTICLE 314. TROUGHS SHALL BE SIZED PER N.E.C. ARTICLE 366.

12. ALL BRANCH CIRCUITS AND FEEDERS PROVIDED UNDER THIS CONTRACT ARE TO BE NEW UNLESS OTHERWISE a. EXPOSED INTERIOR WIRING IN DRY LOCATIONS, SHALL BE INSTALLED IN ELECTRICAL METALLIC TUBING (E.M.T.) OR GALVANIZED RIGID STEEL (GRS) CONDUIT. 3/4" MINIMUM SIZE. FLEXIBLE METAL CONDUIT (FMC), OR LIQUID-TIGHT FLEXIBLE METAL CONDUIT (LFMC), SHALL BE USED FOR CONNECTIONS TO VIBRATION PRODUCING EQUIPMENT, IN LENGTHS NOT EXCEEDING 6'.

. WIRING IN INTERIOR, DRY SPACES, CONCEALED IN STRUCTURE, OR ABOVE ACCESSIBLE CEILINGS MAY BE INSTALLED IN E.M.T. OR METAL CLAD (TYPE MC) CABLE AS ALLOWED BY CODE AND SPECIFICATIONS. FOR EXPOSED DAMP OR WET LOCATIONS WHERE WIRING IS SUBJECT TO DAMAGE, GALVANIZED RIGID STEEL CONDUIT SHALL BE USED. d. FOR UNDERGROUND CIRCUITS AND FEEDERS, UTILIZE SCHEDULE 40 PVC CONDUIT, EXCEPT THAT IN AREAS

SUBJECT TO VEHICULAR TRAFFIC SCHEDULE 80 PVC CONDUIT SHALL BE USED.

13. ALL 600 VOLT OVER-CURRENT PROTECTIVE DEVICES SHALL HAVE INTERRUPTING RATINGS (AIC OR AIR) IN RMS AMPERES SYMMETRICAL. ALL DEVICES SHALL BE FULLY RATED FOR AVAILABLE FAULT CURRENT. ALL PANELBOARDS, SWITCHBOARDS, DISTRIBUTION BOARDS, DEVICES ETC. SHALL BE FULLY RATED. SERIES RATED EQUIPMENT IS NOT ALLOWED.

14. ALL BUILDING WIRE SHALL BE TYPE THHN/TWHN (DUAL LISTED) COPPER CONDUCTORS. WITH 90° CELSIUS RATED INSULATION, #12 MINIMUM SIZE. UTILIZE #10 WIRE FOR ANY 120V, 15 OR 20A CIRCUIT THAT EXCEEDS 100 FEET TO LAST DEVICE OR OUTLET. 15. DO NOT UTILIZE FEED-THROUGH GFCI RECEPTACLES FOR DOWNSTREAM DEVICE PROTECTION, ALL DEVICES

LISTED AS GF SHALL BE STAND ALONE. 16. CONTRACTOR SHALL PROVIDE AND INSTALL AN APPROVED, UL LISTED, FIRE STOP SEALANT TOTALLY ENCLOSING ALL PENETRATIONS THROUGH RATED WALLS, CEILINGS, FLOORS, ROOFS, ETC. ALL FLOOR PENETRATIONS SHALL BE CORE DRILLED, SLEEVED, AND SEALED WITH AN APPROVED, FIRE RATED SEALANT.

ALL EXISTING PENETRATIONS IN WALLS AND FLOORS MUST BE SEALED TO MAINTAIN FIRE RATING. 17. EGRESS AND EMERGENCY LIGHTING SHALL BE CONNECTED AND INSTALLED TO MEET THE REQUIREMENTS OF N.E.C. 700.12(F) AND 700.16. FINAL LOCATIONS SHALL BE APPROVED BY THE LOCAL A.H.J.

18. THE CONTRACTOR SHALL PERFORM THE WORK AS INDICATED ON THE DRAWINGS, DEVIATIONS FROM THE DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OR ARCHITECT FOR REVIEW AND APPROVAL IN WRITING. IF CHANGES ARE MADE WITHOUT WRITTEN CONSENT, THE CONTRACTOR SHALL BE LIABLE FOR ANY ISSUES THAT ARISE DUE TO THE CHANGES.

19. UNLESS NOTED OTHERWISE, ALL WIRE SIZES SHALL BE BASED ON THE FOLLOWING: TABLE 310.15, 60° COLUMN FOR #14 THROUGH #1, TABLE 310.15, 75° COLUMN FOR #1/O AND GREATER, AND OTHER ALLOWANCES OF

20. UNLESS OTHERWISE NOTED, FEEDER TAPS ARE DESIGNED BASED ON THE IO' RULE OF 240.21(B)(1) AND

21. UNLESS OTHERWISE NOTED, ALL CONDUIT SIZES ARE BASED ON E.M.T., R.M.C., OR R.N.C. (PVC SCHEDULE 40). 22. ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE NEW, LABELED AND LISTED

BY A NATIONALLY RECOGNIZED TESTING LABORATORY OR AGENCY (E.G. UL), UNLESS OTHERWISE NOTED. 23. ELECTRICAL CONTRACTOR SHALL FOLLOW MANUFACTURERS INSTALLATION INSTRUCTIONS FOR ALL EQUIPMENT. IF THERE IS A DISCREPANCY, MANUFACTURERS INSTRUCTIONS TAKE PRECEDENCE.

24. THE E.C. SHALL FURNISH ALL EQUIPMENT, LABOR, SERVICES, AND MATERIALS REQUIRED FOR COMPLETE AND FUNCTIONAL INSTALLATION OF THE WORK INDICATED. UNLESS OTHERWISE NOTED, ALL MATERIALS SHALL BE

25. PROVIDED ACCESS PANELS AS REQUIRED FOR ACCESS TO EQUIPMENT.

CONVENIENCE OF THE USER AT THEIR OWN RISK.

26. ALL WIRING, EQUIPMENT, STARTERS, AND CONTROLS SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE AND TO THE REQUIREMENTS OF THE LOCAL UTILITY COMPANY. 27. NEW LIGHTING CONTROLS SHALL COMPLY WITH THE 2018 EDITION OF THE INTERNATIONAL ENERGY CONSERVATION CODE (I.E.C.C.).

28. ALL WIRING METHODS SHALL BE N.E.C. COMPLIANT AND MEET THE REQUIREMENTS OF THE SPACE, OCCUPANCY, AND CONDITION OF USE.

29. <u>DO NOT SCALE DRAWINGS</u>. CONTRACTOR SHALL VERIFY AND CONFIRM ALL DIMENSIONS IN THE FIELD AND OTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES ON THE DRAWINGS. COPIES OF THESE DRAWINGS

WITHOUT A PROFESSIONAL ENGINEERS SEAL SHALL NOT BE CONSIDERED VALID, AND ARE FOR THE

3I. CALL BEFORE YOU DIG (PA ONE CALL SYSTEM I-800-242-IT16 OR DIAL 8II). E.C. TO HIRE AN INDEPENDENT UTILITY LOCATING COMPANY TO MARK OUT CUSTOMER OWNED/PRIVATE PROPERTY

FACILITIES, IF REQUIRED, BEFORE DIGGING, AT E.C.'S EXPENSE.

32. CONTRACTOR TO PLACE NEW EQUIPMENT, RELOCATE EXISTING EQUIPMENT, RE-WORK EXISTING ROOM AS REQUIRED TO COMPLY WITH WORKING CLEARANCE ISSUES, DEDICATED SPACE ISSUES, AND WITH

33. ALL NEW BREAKERS AND/OR DEVICES BEING INSTALLED IN EXISTING ELECTRICAL PANELS OR EQUIPMENT SHALL MATCH THE CHARACTERISTICS OF EXISTING EQUIPMENT IN MANUFACTURER, TYPE, SHORT CIRCUIT

34. E.C. TO RE-FEED AND/OR CONNECT NEW FEEDERS TO EXISTING EQUIPMENT AS REQUIRED. EC IS RESPONSIBLE TO MAKE ANY REQUIRED CHANGES TO THE EXISTING INSTALLATION TO ALLOW FOR NEW SERVICE/FEEDER CONFIGURATION.

35. EXACT DIMENSIONS OF BUILDING AND ALL SPACES MUST BE VERIFIED IN THE FIELD. IF DIFFERENCES ARE

DISCOVERED, THE EC IS RESPONSIBLE TO NOTIFY THE ENGINEER AND COORDINATE THE NECESSARY CORRECTIONS AS REQUIRED. 36. FURNISH ALL NECESSARY MATERIALS, TOOLS, AND LABOR AND INSTALL A COMPLETE AND FULLY OPERATIONAL WIRING SYSTEM AS INDICATED OR REASONABLY IMPLIED. ALL OUTLETS SHALL BE SHALL BE FULLY CONNECTED TO SOURCES OF CURRENT SUPPLY AND LEFT READY FOR USE. UNLESS NOTED

37. CONTRACTOR SHALL MEET INSTALLATION CRITERIA FOR SEISMIC REQUIREMENTS IN THE PROJECT LOCATION.

OTHERWISE ALL MATERIALS SHALL BE NEW, FREE OF DEFECTS, AND BE U.L. LISTED.

38. ALL SMALL MOTORS UNDER I HORSEPOWER SHALL HAVE INTEGRAL OVERLOAD PROTECTION PER N.E.C. 430.32 AND 430.53(A) IF MULTIPLE MOTORS ARE PLANNED TO BE INSTALLED ON THE SAME BRANCH

39. THE E.C. IS RESPONSIBLE FOR THE CONTRACTIBILITY OF THE DRAWINGS FROM A PRACTICAL AND EXISTING FIELD CONDITIONS PERSPECTIVE. 40. EACH CONTRACTOR SHALL REVIEW ALL PROJECT DOCUMENTS OF ALL TRADES AND REVIEW ALL PROJECT

REQUIREMENTS PRIOR TO BIDDING. DISCREPANCIES BETWEEN DOCUMENTS SHALL BE REPORTED BEFORE BIDS ARE DUE TO ALLOW FOR RESOLUTION AS REQUIRED. 41. THE E.C. SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT MAY AFFECT HIS WORK. THE E.C. SHALL NOT BE ENTITLED TO CHANGE ORDERS DUE TO FAILURE TO COMPLY.

42. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT FINAL LOCATION OF ALL CEILING

MOUNTED APPURTENANCES INCLUDING BUT NOT LIMITED TO LIGHT FIXTURES, EXIT SIGNAGE, ETC. VERIFY IN 43. COORDINATE WITH OTHER TRADES FOR ROUGH IN SUPPORT AS REQUIRED.

44. PRIOR TO ACCEPTANCE OF THE SPACE, ALL SYSTEMS SHALL TESTED, BALANCED AND OPERATED TO DEMONSTRATE TO THE OWNER THAT THE INSTALLATION AND PERFORMANCE OF THE INSTALLED SYSTEMS AND/OR PARTS THEREOF CONFORM TO THE DESIGN INTENT.

45. THE CONTRACTOR SHALL GUARANTEE THE ENTIRE INSTALLATION FOR A MINIMUM PERIOD OF ONE YEAR (EXCEPT WHERE EXTENSIONS OF THIS PERIOD ARE NOTED) FROM THE DATE OF ACCEPTANCE OF THE SYSTEM AS A WHOLE. ANY DEFECTS IN WORKMANSHIP, MATERIALS, MALFUNCTION OF EQUIPMENT, OR UNSATISFACTORY PERFORMANCE AND ALL OTHER PARTS OF THE BUILDING DAMAGED THEREBY SHALL BE REPAIRED, REPLACED, OR OTHERWISE REMEDIED WITHOUT EXPENSE TO THE OWNER. SUCH REPAIRS OR REPLACEMENTS SHALL BE MADE IN A TIMELY MANNER AND AT THE CONVENIENCE OF THE OWNER.

46. WIRING DEVICES AND OUTLET BOXES SHALL BE RECESSED IN NEW CONSTRUCTION WITH CONCEALED CONDUIT / WIRING, UNLESS OTHERWISE NOTED.

47. CONTRACTOR SHALL UPON COMPLETION OF THE WORK SUBMIT A SET OF RECORD DRAWINGS SHOWING ALL BURIED OR CONCEALED EQUIPMENT OF PARTS OF THE WORK. 48. EACH TRADE CONTRACTOR SHALL COORDINATE THE ELECTRICAL REQUIREMENTS OF HIS/HER WORK WITH THE PROJECT ELECTRICAL CONTRACTOR PRIOR TO SHOP DRAWING SUBMISSION.

PANELS, THROUGH ELECTRICAL CLOSETS, ETC. IN COMPLIANCE WITH CODE. 50. ALL COMMUNICATIONS WORK SHALL MEET THE REQUIREMENTS OF CHAPTER 8 OF THE N.EC, AND ALL

49. COORDINATE INSTALLATION OF PIPING, DUCTWORK, EQUIPMENT, ETC. TO AVOID PASSING OVER ELECTRICAL

INDUSTRY STANDARDS (BICSI, EIA/TIA, ETC.). 51. THE EXACT LOCATIONS OF DEDICATED OUTLETS FOR COPIER, PHONE AND COMPUTER ARE TO BE

54. UNLESS OTHERWISE NOTED, ALL ELECTRICALLY DRIVEN EQUIPMENT PROVIDED OR FURNISHED BY THE

CONFIRMED WITH THE OWNER PRIOR TO INSTALLATION.

52. COORDINATE / UPGRADE ELECTRICAL REQUIREMENTS FOR NEW / MODIFIED MECHANICAL SYSTEMS. 53. UPON COMPLETION OF WORK, THOROUGHLY CLEAN ALL SYSTEMS OF OBSTRUCTIONS, DEBRIS, SCALE, DUST, DIRT, ETC. AND PLACE SYSTEMS IN OPERATION.

MECHANICAL CONTRACTOR SHALL INCLUDE MOTORS, PUSHBUTTONS, RELAYS, CONTACTORS, DISCONNECTS AND ALL OTHER CONTROLLING DEVICES REQUIRED FOR PROPER AND SATISFACTORY OPERATION OF THE EQUIPMENT. E.C. SHALL INSTALL EQUIPMENT AS REQUIRED FROM THE LINE SIDE OF THE LAST DISCONNECTING MEANS (INCLUDING SUPPLIED DISCONNECT) BACK TO POWER SOURCE. ALL DDC AND OTHER CONTROL WIRING (INCLUDING VFD'S) SHALL BE SUPPLIED AND INSTALLED BY THE MC.

55. WHERE EQUIPMENT, DEVICES, LUMINAIRES, EQUIPMENT, ETC. ARE SHOWN WITH A DASHED LINE TYPE ON THE DEMOLITION PLAN, THEY SHALL BE REMOVED IN THEIR ENTIRETY, INCLUDING BOXES, SUPPORTS, CONDUIT AND WIRING TO THE NEXT DEVICE IN THE SAME CIRCUIT, AND ASSOCIATED CONTROLS. IF ALL THE DEVICES ON A BRANCH CIRCUIT ARE NOT BEING REMOVED, MAINTAIN THE BRANCH CIRCUIT CONTINUOUS TO ALL THE REMAINING DEVICES.

CONTACTS KEYPADS MOTION SENSORS AND WIRING AS REQUIRED TO ACCOMMODATE THE CONSTRUCTION SCHEDULE. COORDINATE WITH THE OWNER'S SECURITY SERVICE CONTRACTOR AND INCLUDE ALL REQUIRED MAINTAIN THE EXISTING ACCESS CONTROL SYSTEMS IN SERVICE DURING CONSTRUCTION, REMOVE CARD

56. MAINTAIN THE EXISTING INTRUSION DETECTION SYSTEM IN SERVICE DURING CONSTRUCTION, REMOVE DOOR

READERS, REQUEST-TO-EXIT DEVICES, POWER SUPPLIES, AND WIRING TO ACCOMMODATE THE

59. SMOKE DETECTORS SHOWN ON THE DRAWING ARE NOT CODE REQUIRED AND ARE BEING PROVIDED FOR

OWNER'S SECURITY CONTRACTOR AND CONNECTED TO THE SECURITY SYSTEM.

PROTECTION TO SUPPLEMENT THE EXISTING SPRINKLER SYSTEM. THESE WILL BE PROVIDED BY THE

ALL REQUIRED PROGRAMMING 58. THE OWNER'S I.T. CONTRACTOR WILL MAKE ALL TERMINATIONS AND PROVIDE ANY NECESSARY HARDWARE IN THE EXISTING DATA RACK.

CONSTRUCTION SCHEDULE. COORDINATE WITH THE OWNER'S SECURITY SERVICE CONTRACTOR AND INCLUDE

**EXISTING PANEL 'A' SCHEDULE** N/A AMPS MOUNTING COPPER BUS, DOOR-IN-DOOR CONSTRUCTION, UL OPTIONS: VAILABLE SHORT CIRCUIT CIRCUIT KAIĆ MAIN BUS RECTIFIER RAMP / HANGER PANEL 'B' RAMP FLOODS HANGER LIGHTS HANGER LIGHTS HANGER LIGHTS HANGER DOORS - 3HP ' PARKING LOT LIGHTS RAMP FLOODS LOBBY HEAT /AC OTAL CONNECTED LOAD (VA) A, B, C **9155 | 16445 | 7945 |** KVA WITH DIVERSITY APPLIEI 59.6 137.0 66.2 AMPS WITH DIVERSITY APPLIED TOTAL CONNECTED LOAD (AMP) A,B,

W / DIVERSIT

N.E.C. TABLE 220.56

NO DIVERSITY 0.0 LIGHTING (L) KVA

NO DIVERSITY 0.5 MOTOR (M) KVA

NO DIVERSITY 4.5 ELECTRIC HEAT (EH) KVA

0.0 RECEPTACLE (R) KVA

.0 UNASSIGNED (N)

0.0 AIR CONDITIONING (AC) KVA

16.2

"EX" DENOTES EXISTING BRANCH BREAKER AND EXISTING BRANCH CIRCUIT. 'EB' DENOTES EXISTING BRANCH BREAKER AND NEW BRANCH CIRCUIT. 'NB' DENOTES NEW BRANCH BREAKER AND NEW BRANCH CIRCUIT.

'EC' DENOTES NEW BRANCH BREAKER AND EXISTING BRANCH CIRCUIT.

CONNECTED

OAD BREAKDOWN.

EAT PUMP (HP) KVA

ITE LIGHTING (SL) KVA

UNASSIGNED (S)

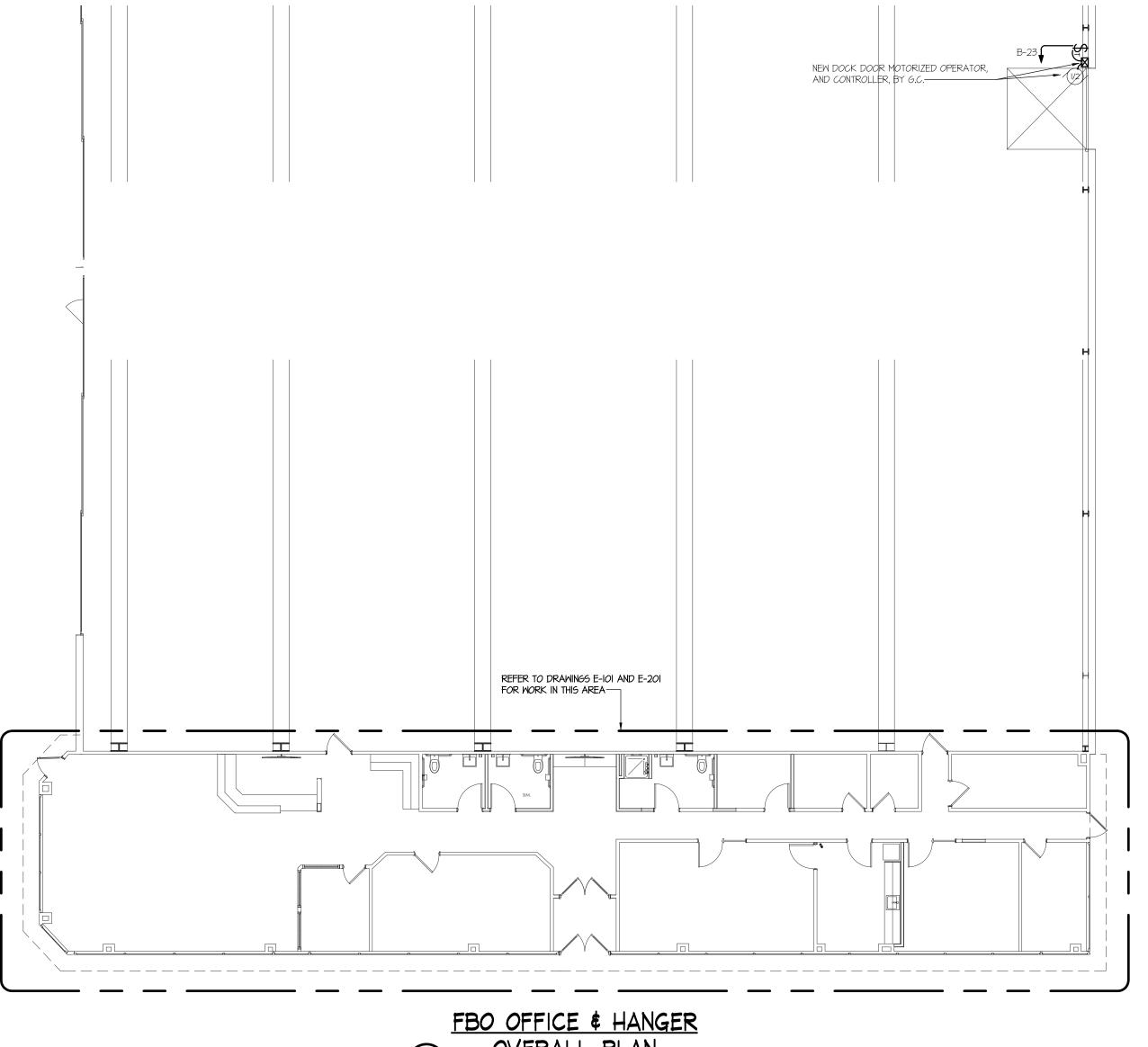
NASSIGNED (T

CHEN EQUIPMENT (K) KVA

ELECTRIC WATER HEATING (WH) KVA

								NE	W P	ANEL'	B' SCH	IEDL	JLE							
	VOLTA	GE	120	/ 208	,1ø,3V	MAIN L	.UGS			100	AMPS	MOUN	TING		SL	JRFACE	ODTU	ONIC		
	SHORT	CIRCUIT DUTY	10	KAIC		MAIN E	BUS			100	AMPS	MAIN C.B.		N/A AMPS		OPTIONS				
	СКТ.	DECEMBRION	LOAD	LOAD	CONDU	JCTORS	GND	COND	BKR	LI	:G	BKR	COND	GND	CONDL	JCTORS	LOAD	LOAD	DECCRIPTION	скт.
	#	DESCRIPTION	TYPE	(VA)	QTY	SIZE	SIZE	SIZE	A/P	L1	L2	A/P	SIZE	SIZE	SIZE	QTY	(VA)	TYPE	DESCRIPTION	#
:c	1	LOBBY LIGHTS	L						20/1	900		20/1	MC	#12	#12	2	900	R	PILOT'S LOUNGE #115	2
c	3	LOBBY LIGHTS	L						20/1		720	20/1	MC	#12	#12	2	720	R	PILOT'S LOUNGE #115	4
c	5	CONF. / LOBBY RECEPTS	R						20/1	0		20/1							SPARE	6
c	7	ENTRY/VEST. LIGHTS	L						20/1		0	20/1							SPARE	8
IВ	9	SOFFIT LIGHTS	SL	505	2	#12	#12	MC	20/1	505		20/1							SPARE	10
	11	SPARE							20/1		0	20/1							CLOSET	12
c	13	FLIGHT PLAN							20/1	0		20/1							NORTH HALL / EXIT	14
c	15	UTILITY / SNOOZE RM.							20/1		50	20/1	MC	#12	#12	2	50	L	LIGHTING CONTROL PANEL	16
:c	17	ACCOUNTING OFFICE							20/1	0		20/1							COMPUTER	18
c	19	OFFICE 3							20/1		180	20/1	MC	#12	#12	2	180	R	CORRIDOR COUNTER	20
	21	SPARE							20/1	180		20/1	MC	#12	#12	2	180	R	CORRIDOR COUNTER	22
IB .	23	DOCK DOOR - 1/2HP	M	1180	2	#10	#10	3/4"	20/1		1900	20/1	MC	#12	#12	2	720	R	WAITING AREA 104 DESK	24
IВ	25	LIGHTING	L	955	2	#12	#12	МС	20/1	1495		20/1	MC	#12	#12	2	540	R	WAITING AREA 104 DESK	26
ıв	27	RTU-2 RECEPT	R	180	2	#12	#12	3/4"	20/1		720	20/1	MC	#12	#12	2	540	R	WAITING AREA 104 DESK	28
ıв	29	BREAK #114, LOUNGE #115	R	720	2	#12	#12	MC	20/1	1440		20/1	MC	#12	#12	2	720	R	TOILET'S 105,106, MONITORS	30
ΙВ	31	BREAK #114 COUNTER	R	1500	2	#12	#12	МС	20/1		3000	20/1	MC	#12	#12	2	1500	R	PILOT'S TOILET #107	32
ıв	33	BREAK #114 COUNTER	R	1500	2	#12	#12	МС	20/1	1860		20/1	MC	#12	#12	2	360	R	PILOT'S OFFICE #108	34
ΙВ	35	BREAK #114 COUNTER	R	1500	2	#12	#12	MC	20/1		1860	20/1	MC	#12	#12	2	360	R	PILOT'S OFFICE #109	36
IB _	37	BREAK #114 COUNTER	R	1500	2	#12	#12	MC	20/1	2580		20/1	MC	#12	#12	2	1080	R	CONFERENCE #113 RECEPTS	38
ΙВ	39	BREAK #114 REFRIGERATOR	R	900	2	#12	#12	MC	20/1		1440	20/1	MC	#12	#12	2	540	R	OFFICE #112 RECEPTS	40
TOTAL CONNECT LOAD (VA) L1,L2										8960	<del>9</del> 870	KVA W	ITH DIV	ERSITY	APPLIED	)			16.1	L KVA
	OTAL	CONNECT LOAD (AMP) L1,L2								74.7	82.3	AMPS	WITH D	IVERSIT	Y APPLII	ED			77.58	3 AMPS

TOTAL CONNECT LOAD (AMP) L1,L2			74.7	82.3 AMPS WITH DIVERSITY AP	PLIED	77.58	AMPS
LOAD BREAKDOWN							
	CONNECTED	W/DI	VERSITY		CONNECTED	w / DIVE	RSITY
HEAT PUMP (HP) KVA	0.0	NO DIVERSITY	0.0	LIGHTING (L) KVA	1.0	CONTINUOUS LOAD @ 125%	1.3
KITCHEN EQUIPMENT (K) KVA	0.0	N.E.C. TABLE 220.56	0.0	RECEPTACLE (R) KVA	16.1	N.E.C. TABLE 220.44	13.1
SITE LIGHTING (SL) KVA	0.5 (	CONTINUOUS LOAD @125%	0.6	MOTOR (M) KVA	1.2	N.E.C. ARTICLE 430.24	1.2
WATER HEATING (WH) KVA	0.0	NO DIVERSITY	0.0	ELECTRIC HEAT (EH) KVA	0.0	N.E.C. ARTICLE 220.51	0.0
UNASSIGNED (S) KVA	0.0	NO DIVERSITY	0.0	AIR CONDITIONING (AC) KVA	0.0	N.E.C. ARTICLE 440.6	0.0
UNASSIGNED (T) KVA	0.0	NO DIVERSITY	0.0	UNASSIGNED (N) KVA	0.0	NO DIVERSITY	0.0



OVERALL PLAN



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N.E.C. ARTICLE 220.42

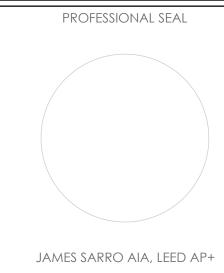
N.E.C. TABLE 220.24

N.E.C. ARTICLE 430.24

N.E.C. ARTICLE 220.41

N.E.C. ARTICLE 440.6 16

PROJECT #: 24-0022



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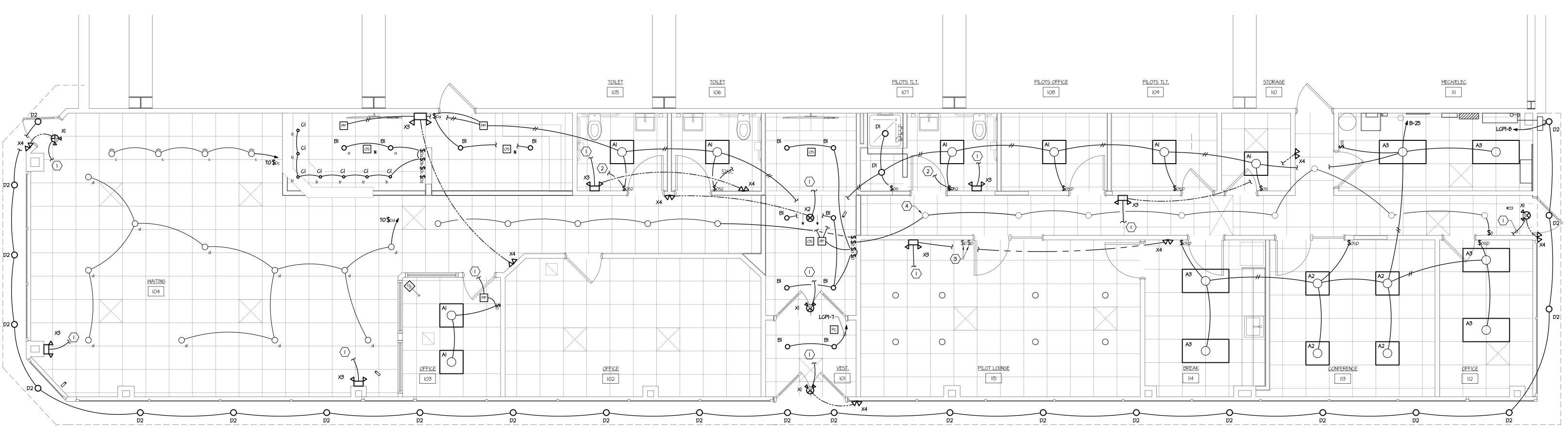
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CLIENT PRO I #:

FBO BUILDING & HANGAR SHEET TITLE: ELECTRICAL LEGEND AND NOTES



				LUMINAIRE S	CHEDULE					
SYMBOL	ТҮРЕ	DESCRIPTION	MANUFACTURER (DESIGN BASE)	CATALOG NO.	LAMPS	BALLAST / DRIVER	VOLTS	мтс	RMK	ACCEPTABLE EQUIVALENT MANUFACTURER
	A1	2'x2' L.E.D. BACK-LIT FLAT PANEL LUMINAIRE, I.C. RATED, WHITE ALUMINUM LENS FRAME, FROSTED ACRYLIC LENS, FIELD SELECTABLE LUMEN OUTPUT AND COLOR TEMPERATURE	COLUMBIA	CBT-22-LSCS-EDD	80+ CRI, 3500K, 3300 LUMEN, 28 WATT, L.E.D. LIGHT ENGINE	1	120-277	CR	1	
	A2	2'x2' L.E.D. BACK-LIT FLAT PANEL LUMINAIRE, I.C. RATED WHITE ALUMINUM LENS FRAME, FROSTED ACRYLIC LENS, FIELD SELECTABLE LUMEN OUTPUT AND COLOR TEMPERATURE	COLUMBIA	CBT-22-LSCS-EDD	80+ CRI, 3500K, 4400 LUMEN, 38 WATT, L.E.D. LIGHT ENGINE	1	120-277	CR	1	
	А3	2'x4' L.E.D., BACK-LIT FLAT PANEL LUMINAIRE, I.C. RATED, WHITE ALUMINUM LENS FRAME, FROSTED ACRYLIC LENS, FIELD SELECTABLE LUMEN OUTPUT AND COLOR TEMPERATURE	COLUMBIA	CBT-24-LSCS-EDD	80+ CRI, 3500K, 4400 LUMEN, 38 WATT, L.E.D. LIGHT ENGINE	MFR'S STD, 0-10V DIM TO OFF DRIVER	120-277	CR	1	
	B1	4.5" L.E.D. DOWNLIGHT, OPEN, SEMI- SPECULAR ANODIZE REFLECTOR, 45 DEG. OPTICS, MATTE WHITE TRIM FLANGE	WILLIAMS	4DR-L20-8-35-DIM1-UNV-O-M-OF-CS-WH-MWT-N	80+ CRI, 3500K, 2000 LUMEN, 19.8 WATT, L.E.D. LIGHT ENGINE	MFR'S STD 1%, 0-10V DIMMING DRIVER	120-277	CR		
	C1	2.5" L.E.D. DOWNLIGHT, OPEN, SEMI- SPECULAR, ANODIZE REFLECTOR, 15 DEG. OPTICS, MATTE WHITE TRIM FLANGE.	WILLIAMS	2DR-L15-8-35-DIM1-UNV-O- N-OF-CS-MWT-N	-80+ CRI, 3500K, 1500 LUMEN, 18 WATT L.E.D. LIGHT ENGINE	MFR'S STD 1%, 0-10V DIMMING DRIVER	120-277	CR		
	D1	6" LENSED, L.E.D. DOWNLIGHT, WET LOCATION LISTING, WIDE OPTICS, WITH NON-METALLIC SHOWER TRIM	WILLIAMS	6DR-TL-L15-8-35-DIM-UNV- S-W-OF-WH-WET/CC-N	80+ CRI, 3500K, 1500 LUMEN, 20 WATT L.E.D. LIGHT ENGINE	MFR'S STD 1%, 0-10V DIMMING DRIVER	120-277	CR		
	D2	6" REGRESSED LENS, L.E.D. DOWNLIGHT, WET LOCATION LISTED, SEMI-SPECULAR REFLECTOR, DIFFUSE ACRYLIC LENS, 55 DEG. OPTICS, MATTE WHITE TRIM FLANGE	WILLIAMS	6DR-TL-L20-8-35-DIM-UNV- R-W-OF-WH-AD-R	80+ CRI, 3500K, 2000 LUMEN, 20 WATT L.E.D. LIGHT ENGINE	MFR'S STD 1%, 0-10V DIMMING DRIVER	120-277	CR	2	
	E1	NOT USED								
	X1	ARCHITECTURAL, SINGLE FACE, COMBINATION EXIT SIGN / EMERGENCY LIGHTING BATTERY WITH TWO 1 WATT LMP HEADS, WHITE FINISH, RED LETTERS	DUAL LITE	EVC-U-R-W-D4-I	RED L.E.D.'S AND (2) 1 WATT EMERGENCY LAMP HEADS	N/A	120-277	cs		
	Х2	ARCHITECTURAL, DUAL FACE, EXIT SIGN , WHITE FINISH, RED LETTERS, DIRECTIONAL ARROW AS INDICATED	DUAL LITE	EVC-U-R-W-D4-I-0	RED L.E. D. 'S	N/A	120-277	CS		
	ХЗ	ARCHITECTURAL EMERGENCY LIGHTING BATTERY UNIT, WHITE FINISH.	DUAL LITE	EV-4-D-I-	TWO 1 WATT LAMP HEADS	N/A	120-277	ws		
	Х4	ARCHITECTURAL DUAL REMOTE EMERGENCY HEADS, OUTDOOR RATED.	DUAL LITE	EVO-D	TWO 1 WATT LAMP HEADS	N/A	4.8 VDC	ws		

MOUNTING LEGEND C= CEILING W= WALL

S= SURFACE

R= RECESSED

1. CONTRACTOR TO FIELD SELECT COLOR TEMPERATURE AND LUMEN OUTPUT TO MATCH REQUIREMENTS IN THE 'LAMP' COLUMN 2 LUMINAIRE WILL BE INSTALLED IN AN EXTERIOR, CORRUGATED METAL SOFFIT. UTILIZE EXISTING OPENINGS IN SOFFIT FOR NEW LUMINAIRE. VERIFY EXACT

SIZE OF ROUGH OPENING PRIOR TO ORDERING LUMINAIRE. SEAL AROUND TRIM FLANGE.

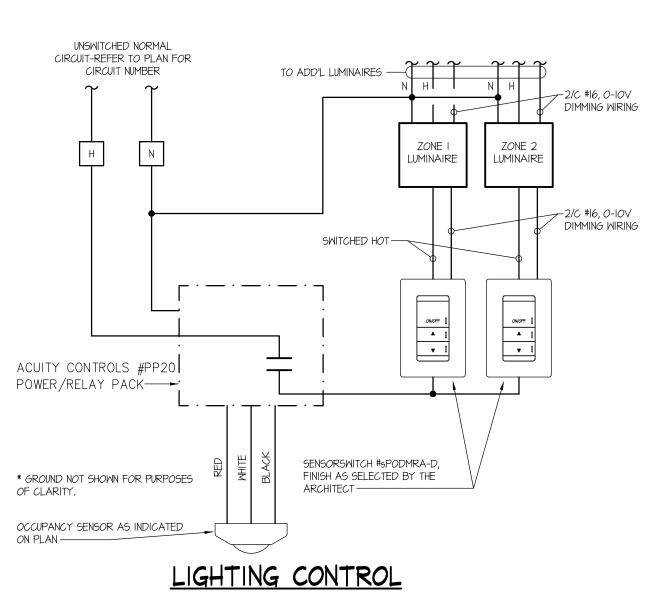
### KEYED DRAWING NOTES

 $\langle$  I  $\rangle$  CONNECT TO UN-SWITCHED LEG OF LIGHTING CIRCUIT SERVING THIS AREA.

- CONNECT TO EXHAUST FAN TO POLE 2 OF 2 POLE WALL SWITCH/ OCCUPANCY SENSOR. POLE 2 SHALL BE CONFIGURED TO OPERATE FOR A MINIMUM OF IO MINUTES AFTER THE LAST DETECTION OF MOTION.
- $\langle 3 \rangle$  Existing switch(ES) to Remain.
- RELOCATE ONE OF THE DOWNLIGHTS REMOVED FROM THE CORRIDOR TO THIS LOCATION AND (4) CONNECT TO EXISTING CORRIDOR LIGHTING CIRCUIT. CONTRACTOR TO SELECT THE DOWNLIGHT IN THE BEST CONDITION FOR RELOCATION.
- INTERCEPT EXISTING OUTGOING BRANCH CIRCUIT WIRING TO EXISTING LIGHTING CIRCUITS AND EXTEND 5 INTERCEPT EXISTING OUTGOING DRANGE CINCUIT ATION TO NEW LIGHTING CONTROL PANEL AS INDICATED.
- 6 PROVIDE NEW (2) #12, (1) #12 GND. TO EXISTING 20A, 2P, BRANCH CIRCUIT BREAKER IN PANEL 'A'.

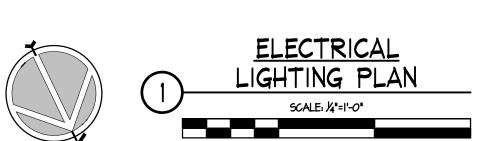
### GENERAL NOTES

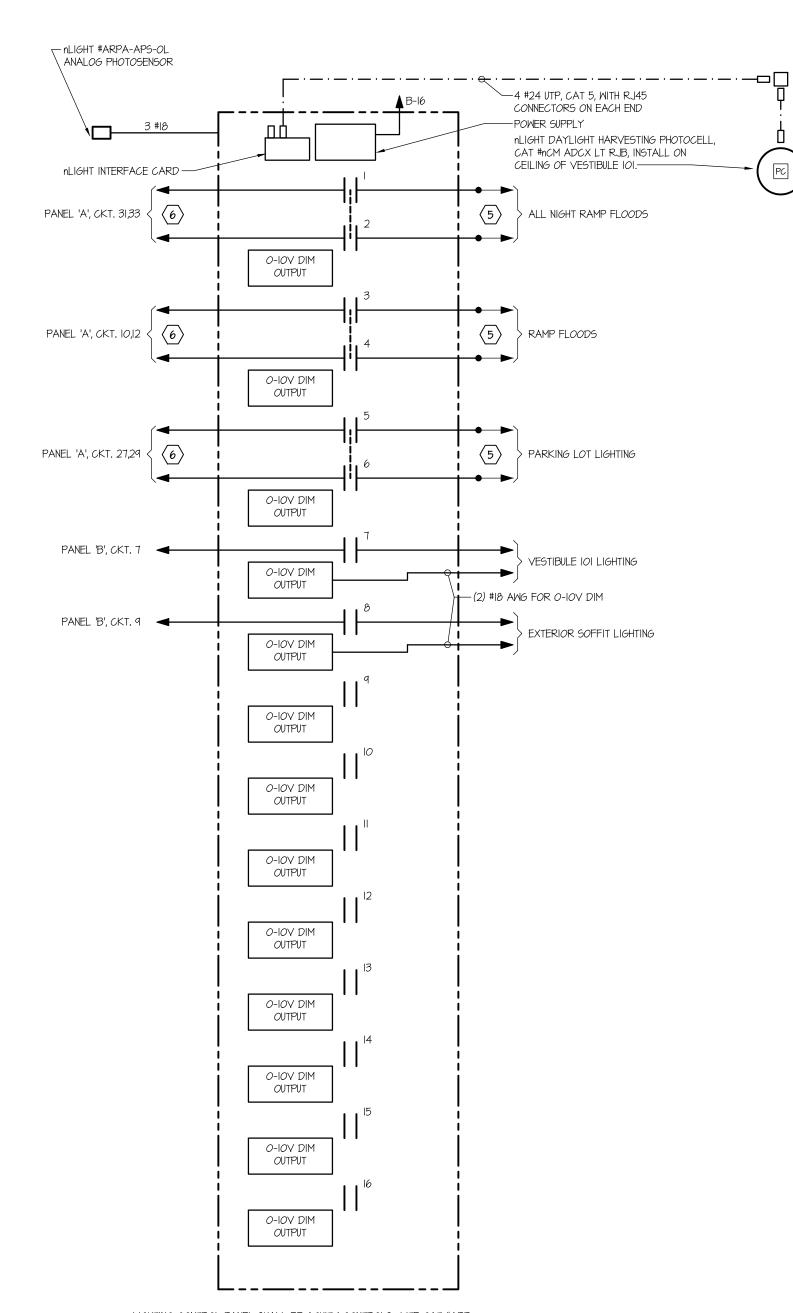
- I. EXACT ARRANGEMENT OF EXISTING LIGHTING BRANCH CIRCUITS COULD NOT BE CONFIRMED. THE E.C. SHALL CONFIRM ALL EXISTING LIGHTING BRANCH CIRCUITS AND PROVIDE ELECTRICAL DIRECTORY THAT CORRECTLY REFLECTS NEW AND EXISTING BRANCH CIRCUITS.
- 2. ALL NEW LIGHTING BRANCH CIRCUITS OR BRANCH CIRCUIT EXTENSIONS, SHALL UTILIZE METAL CLAD CABLE (MC) THAT INCORPORATES O-IOV DIMMING WIRING, WHETHER DIMMING IS SPECIFIED, OR NOT. WHERE DIMMING IS NOT SPECIFIED, TERMINATE THE O-IOV WIRING FOR FUTURE USE.



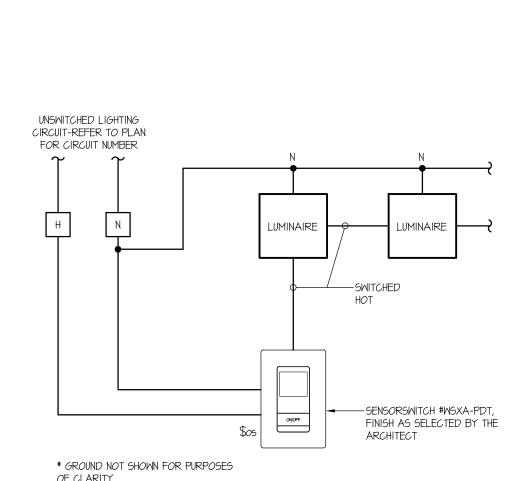
OCCUPANCY SENSOR.

SEQUENCE OF OPERATION WHEN SOMEONE ENTERS THE SPACE AND OCCUPANCY IS DETECTED, LUMINAIRES ENERGIZE. LUMINAIRES MAY BE DIMMED OR BRIGHTENED AT THE SWITCH LUMINAIRES MAY BE EXTINGUISHED MANUALLY AT THE SWITCH OR AUTOMATICALLY AFTER A 15 MINUTE TIME OUT PERIOD BY THE





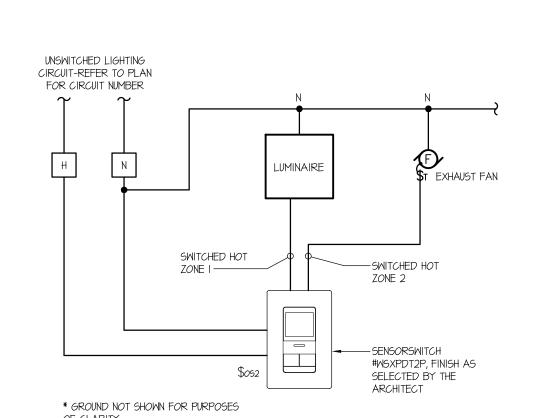
LIGHTING CONTROL PANEL SHALL BE ACUITY CONTROLS ILITE CAT #ARP INTENCI6 NLT - 16FCR - MVOLT - SC - SM - DTC WITH VOLTAGE BARRIERS AS REQUIRED. EQUIVALENT PRODUCTS FROM CURRENT CONTROLS 'NX' SERIES ARE ACCEPTABLE. PROVIDE PROGRAMMING PER THE OWNER'S SCHEDULING REQUIREMENTS FOR OUTDOOR LIGHTING CIRCUITS.



LIGHTING MAY BE EXTINGUISHED MANUALLY AT THE SWITCH OR AUTOMATICALLY AFTER A 15 MINUTE

SINGLE ZONE SWITCHING WITH OCCUPANCY OVER RIDE SEQUENCE OF OPERATION WHEN SOMEONE ENTERS THE SPACE AND OCCUPANCY IS DETECTED, LIGHTING ENERGIZES.

TIME OUT PERIOD BY THE OCCUPANCY SENSOR.

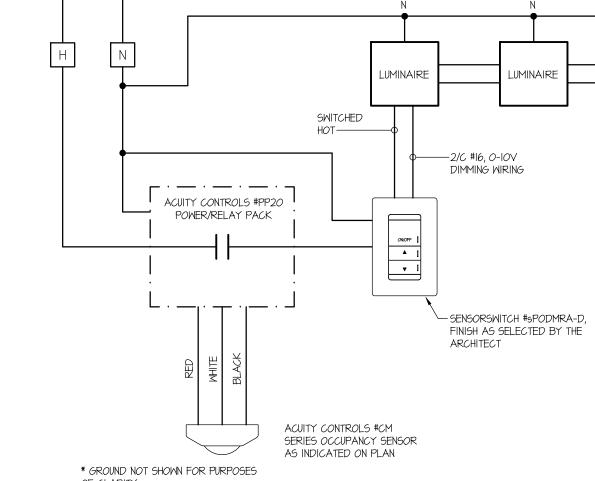


LIGHTING CONTROL

TWO ZONE SWITCHING WITH OCCUPANCY OVER RIDE SEQUENCE OF OPERATION WHEN SOMEONE ENTERS THE SPACE AND OCCUPANCY IS DETECTED, ZONE I AND ZONE 2 ENERGIZE. ZONE I AND ZONE 2 MAY BE EXTINGUISHED MANUALLY AT THE SWITCH OR AUTOMATICALLY AFTER

A 15 MIINUTE TIME OUT PERIOD BY THE OCCUPANCY SENSOR. ZONE 2 (EXHAUST FAN) WILL REMAIN

ENERGIZED FOR AN ADDITIONAL IO MINUTES IF MANUAL SWITCH IS USED TO TURN OFF ZONE 2.

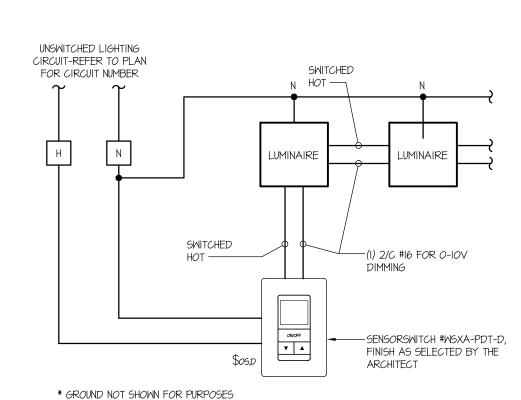


UNSWITCHED LIGHTING

CIRCUIT-REFER TO PLAN FOR CIRCUIT NUMBER

> LIGHTING CONTROL WIRING DIAGRAM #4

SINGLE ZONE DIMMING WITH OCCUPANCY OVER RIDE SEQUENCE OF OPERATION WHEN SOMEONE ENTERS THE SPACE AND OCCUPANCY IS DETECTED, LUMINAIRES ENERGIZE. LUMINAIRES MAY BE DIMMED OR BRIGHTENED AT THE SWITCH LUMINAIRES MAY BE EXTINGUISHED MANUALLY AT THE SWITCH OR AUTOMATICALLY AFTER A 15 MIINUTE TIME OUT PERIOD BY THE OCCUPANCY SENSOR.



SINGLE ZONE DIMMING WITH OCCUPANCY OVER RIDE SEQUENCE OF OPERATION

WHEN SOMEONE ENTERS THE SPACE AND OCCUPANCY IS DETECTED, ZONE I AND ZONE 2 ENERGIZE. ZONE I AND ZONE 2 MAY BE EXTINGUISHED MANUALLY AT THE SWITCH OR AUTOMATICALLY AFTER A 15 MIINUTE TIME OUT PERIOD BY THE OCCUPANCY SENSOR, ZONE 2 (EXHAUST FAN) WILL REMAIN ENERGIZED FOR AN ADDITIONAL IO MINUTES IF MANUAL SWITCH IS USED TO TURN OFF ZONE 2.

ARCHITECTURAL DESIGN

INTERIOR DESIGN CODE ANALYSIS PLANNING SERVICES REPORTS AND STUDIES ENGINEERING SERVICES HISTORIC PRESERVATION 955 BERKSHIRE BLVD., SUITE 101

WYOMISSING, PA 19610 610.376.4927 www.MG-Architects.com

PROJECT #: 24-0022

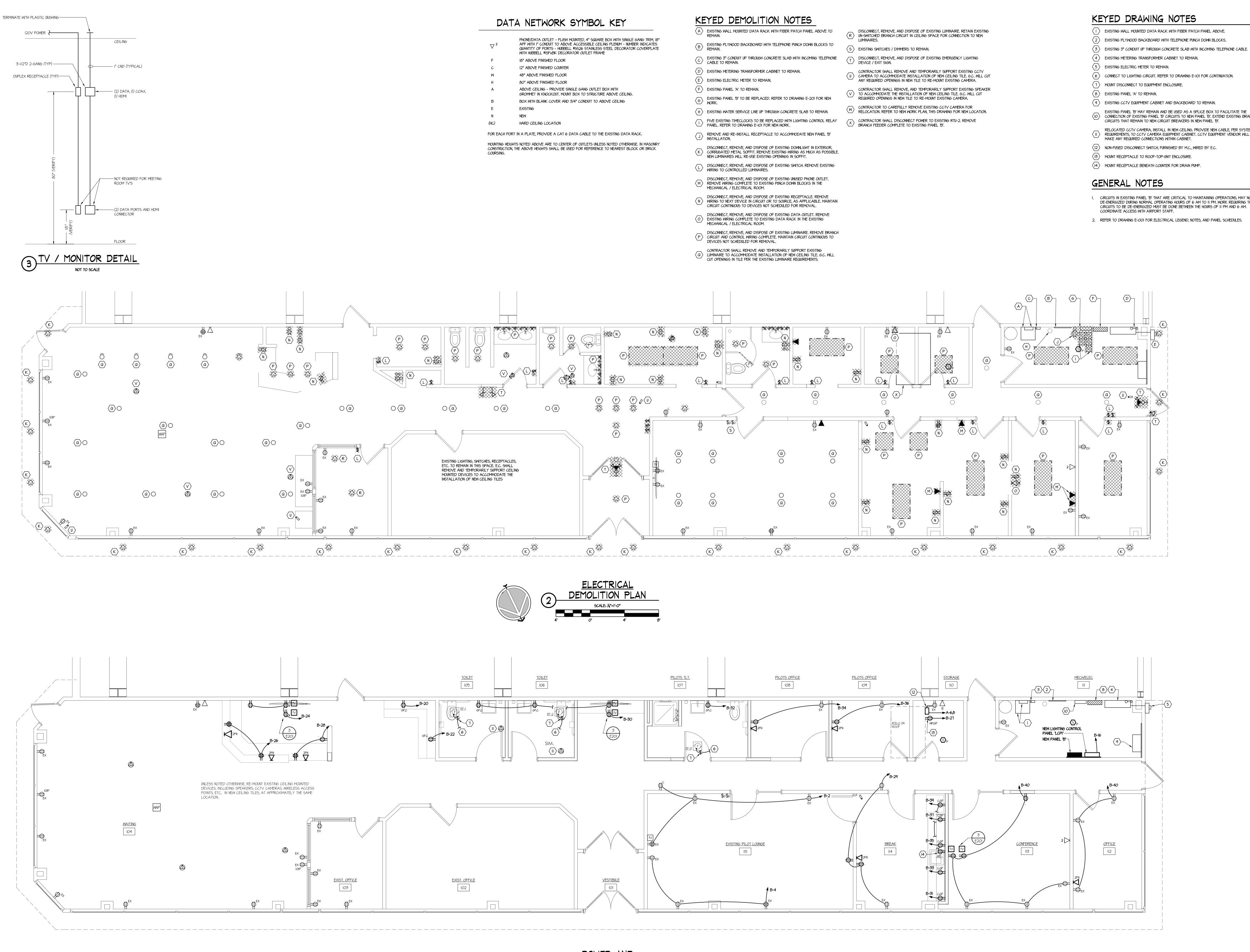
Professional seal JAMES SARRO AIA, LEED AP+ JimS@MG-Architects.com

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 $\Box$ REVISION HISTORY ISSUED FOR BIDDING 7-25-2024

FBO BUILDING & HANGAR

SHEET TITLE: LIGHTING PLAN



KEYED DRAWING NOTES

EXISTING WALL MOUNTED DATA RACK WITH FIBER PATCH PANEL ABOVE.

 $\langle$  2  $\rangle$  Existing Plymood Backboard with Telephone punch down Blocks.

(3) EXISTING 3" CONDUIT UP THROUGH CONCRETE SLAB WITH INCOMING TELEPHONE CABLE. 4 EXISTING METERING TRANSFORMER CABINET TO REMAIN.

 $\langle$  9  $\rangle$  Existing CCTV Equipment cabinet and backboard to remain.

(IO) CONNECTION OF EXISTING PANEL 'B' CIRCUITS TO NEW PANEL 'B'. EXTEND EXISTING BRANCH CIRCUITS THAT REMAIN TO NEW CIRCUIT BREAKERS IN NEW PANEL 'B'.

RELOCATED CCTV CAMERA, INSTALL IN NEW CEILING. PROVIDE NEW CABLE, PER SYSTEM REQUIREMENTS, TO CCTV CAMERA EQUIPMENT CABINET. CCTV EQUIPMENT VENDOR WILL

 $\langle 12 \rangle$  NON-FUSED DISCONNECT SWITCH, FURNISHED BY M.C., WIRED BY E.C.

I. CIRCUITS IN EXISTING PANEL 'B' THAT ARE CRITICAL TO MAINTAINING OPERATIONS, MAY NOT BE DE-ENERGIZED DURING NORMAL OPERATING HOURS OF 6 AM TO II PM. WORK REQUIRING THESE CIRCUITS TO BE DE-ENERGIZED MUST BE DONE BETWEEN THE HOURS OF II PM AND 6 AM.

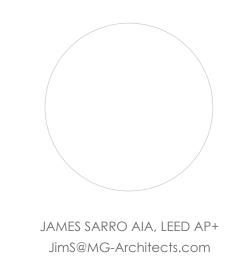


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DRAWN BY: S. GOODMAN CLIENT PROJ #: -

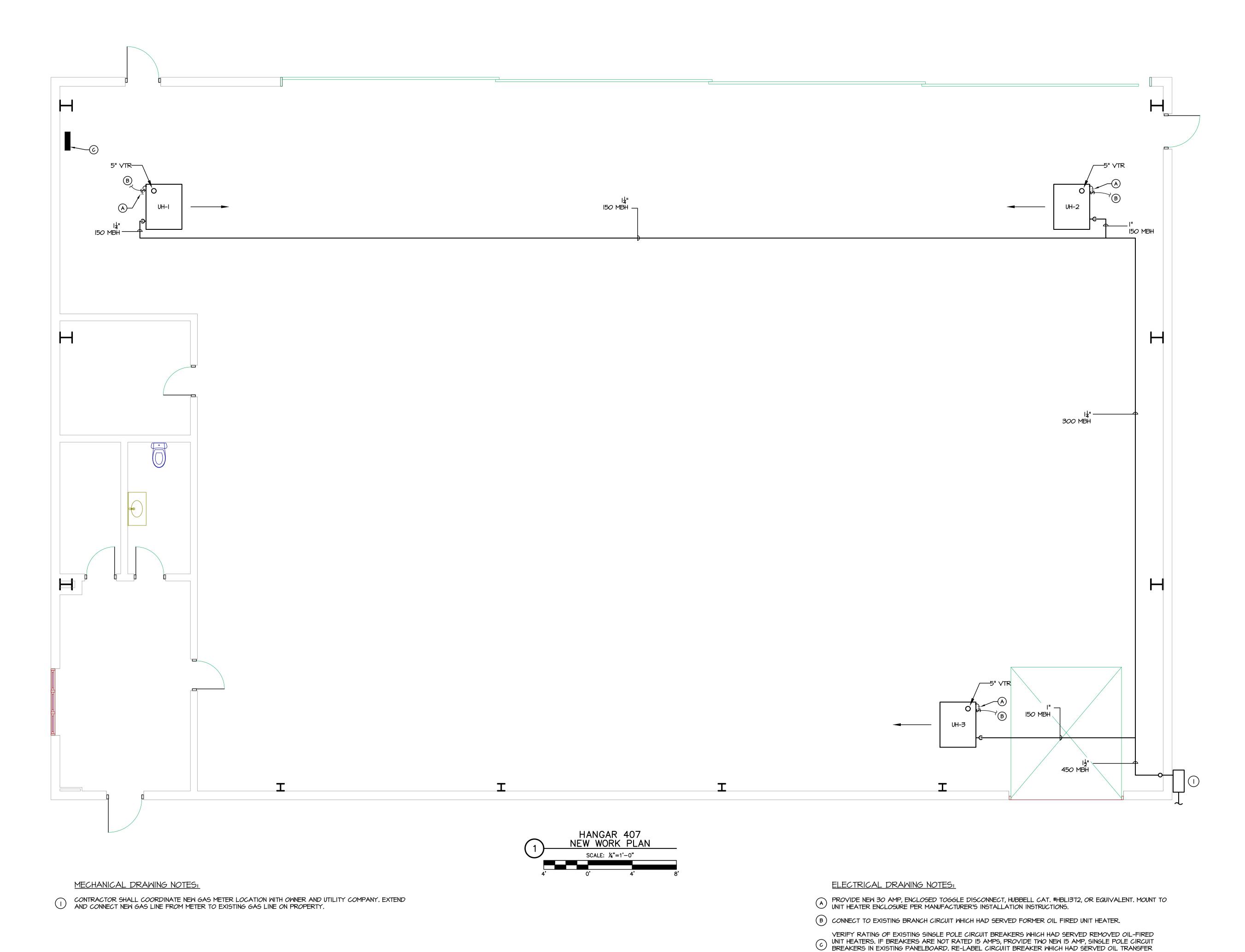
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FBO BUILDING & HANGAR

SERVED BY MG ARCHITECTS, LTD.

SHEET TITLE: POWER &



PUMP AS SPARE.

UN	IT HEATE	R SCHE	DULE													
					BLO	NER		HEATING		ELECTRIC (	CHARA	CTERIS	STICS			
TAG	MANUFACTURER	MODEL	TYPE	ARRANGEMENT	HP/W	CFM	MBH (INPUT)	MBH (OUTPUT)	TEMP. RISE	VOLT/PH/HZ	FLA	MCA	МОСР	HEATER VOLTAGE	OPERATING WEIGHT (LBS)	NOTES
UH-I	REZNOR	UDXC-TSL	NAT. GAS	CEILING HUNG	0.3HP	1921	150.0	124.5	20.0	115/1Φ/6Ο	3.8	-	15	II5	178	ı
UH-2	REZNOR	UDXC-TSL	NAT. GAS	CEILING HUNG	0.3HP	1921	150.0	124.5	20.0	115/1Φ/6Ο	3.8	-	15	II5	178	_
UH-3	REZNOR	UDXC-TSL	NAT. GAS	CEILING HUNG	0.3HP	1921	150.0	124.5	20.0	115/1Φ/6Ο	3.8	-	15	II5	178	I

NOTES:
I. PROVIDE WITH WALL MOUNTED PROGRAMMABLE THERMOSTAT

### MECHANICAL NOTES

- I. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS REQUIRED TO FABRICATE, INSTALL, AND PLACE IN WORKING ORDER ALL SYSTEMS SHOWN ON DRAWINGS, CONTRACTOR SHALL PROVIDE COMPLETE AND OPERATIONAL SYSTEMS. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE AND PROFESSIONAL MANNER CONSISTENT WITH ALL APPLICABLE INDUSTRY
- 2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH 2018 INTERNATIONAL MECHANICAL CODE (2018 IMC) AND THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. CONTRACTOR SHALL BE RESPONSIBLE TO APPLY FOR AND PROCURE ALL REQUIRED PERMITS, CERTIFICATES AND AGENCY APPROVALS.
- 3. DRAWINGS INDICATE THE GENERAL LOCATION AND ARRANGEMENT OF THE NEW CONSTRUCTION. SO FAR AS PRACTICAL, INSTALL NEW WORK AS INDICATED. CONTRACTOR SHALL BE RESPONSIBLE TO THOROUGHLY INVESTIGATE AND VERIFY ALL FIELD CONDITIONS AND ALL OTHER NEW SYSTEMS INSTALLED PRIOR TO FABRICATION AND INSTALLATION OF NEW SYSTEMS.
- 4. UNLESS OTHERWISE NOTED, EQUIPMENT AND MATERIALS OF CONSTRUCTION AS SCHEDULED AND SHOWN ON THE DRAWINGS CONSTITUTE A STANDARD OF QUALITY AND CONTRACTOR BASIS OF CONTRACT BID. AT THE CONTRACTOR'S DISCRETION, EQUIVALENT PRODUCT SUBSTITUTIONS MAY BE SUBMITTED TO THE OWNER FOR APPROVAL. WRITTEN APPROVAL AND ACCEPTANCE BY THE OWNER OF AN EQUIVALENT PRODUCT SUBSTITUTION SHALL NOT HOWEVER RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF PROVIDING COMPLETE AND OPERATIONAL SYSTEMS. THIS CONTRACTOR SHALL AT NO ADDITIONAL COST TO THE CONTRACT, BE RESPONSIBLE FOR ANY AND ALL MODIFICATIONS AND/OR ADDITIONAL CONSTRUCTION REQUIRED TO ACCOMMODATE INSTALLATION AND OPERATION OF ANY SUBSTITUTE PRODUCT.
- 5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL MAJOR MANUFACTURED ITEMS REQUIRED ON THIS PROJECT. ELECTRONIC COPIES SHALL BE SUBMITTED. PURCHASE OR INSTALLATION OF EQUIPMENT OR SYSTEMS COMPONENTS WITHOUT PRIOR WRITTEN APPROVALS IS FORBIDDEN. APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBLY OF PROVIDING COMPLETE OPERATIONAL SYSTEMS.
- 6. CONTRACTOR SHALL INFORM THE ENGINEER OF ANY QUESTIONS OR DISCREPANCIES PRIOR TO PURCHASE, FABRICATION, AND/OR INSTALLATION OF ANY MATERIAL.
- 7. ALL EQUIPMENT PROVIDED UNDER THIS CONTRACTOR SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
- 8. CONTRACTOR SHALL FURNISH AND INSTALL ALL STRUCTURAL STEEL, SUPPORTS, BRACES, HANGERS, ETC. REQUIRED FOR HIS CONTRACT UNLESS OTHERWISE NOTED. CONTRACTOR SHALL COORDINATE ALL EQUIPMENT SUPPORT LOCATIONS AND INSTALLATION WITH ROOFING AND STRUCTURAL CONTRACTORS.
- 9. CONTRACTOR SHALL PROVIDE ALL LABOR, DEVICES, WIRE, CONDUIT, ETC. REQUIRED FOR CONTROL INSTALLATION. REQUIRED ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC.
- 10. CONTRACTOR SHALL LEAVE THE WORK IN PROPER WORKING ORDER AND SHALL, WITHOUT ADDITIONAL CHARGE, REPLACE ANY WORK, MATERIALS, OR EQUIPMENT FURNISHED AND INSTALLED BY HIM UNDER HIS CONTRACT WHICH DEVELOPS DEFECTS, EXCEPT FROM ORDINARY WEAR AND TEAR WITHIN ONE (I) YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER.
- II. CONTRACTOR SHALL PROVIDE TESTING, ADJUSTING, AND BALANCING, INCLUDING A WRITTEN REPORT TO THE OWNER FOR APPROVAL FOR SYSTEM INSTALLED. TEST SHALL BE PERFORMED TO ASCERTAIN WHETHER SYSTEM AND EQUIPMENT INSTALLED COMPLY TO THE EQUIPMENT SPECIFICATION AND ARE IN PROPER WORKING ORDER. BALANCE ALL BRANCHES, DUCTWORK, SUPPLY AIR DIFFUSERS, RETURN AIR REGISTERS, AND EXHAUST REGISTERS, ETC. TO QUANTITIES SHOWN ON THE PLANS. ALL DEVICES SHALL BE BALANCED TO WITHIN 5% OF QUANTITIES SHOWN. (WORK SHALL BE PERFORMED BY A FIRM CERTIFIED BY THE NATIONAL ENVIRONMENTAL BALANCING BUREAU OR THE ASSOCIATED AIR BALANCE COUNCIL.)
- 12. AT THE COMPLETION OF CONSTRUCTION CONTRACTOR SHALL BE PROVIDE COMPLETE AND ACCURATE "AS CONSTRUCTED DOCUMENTATION" FOR ALL SYSTEMS INSTALLED UNDER THIS CONTRACT. PROVIDE COMPUTER DISK TO THE ARCHITECT CONTAINING AUTOCAD DRAWING FILE. CONTRACTOR SHALL ALSO PROVIDE ONE COMPLETE SET OF OPERATING AND MAINTENANCE INSTRUCTIONS IN AN ELECTRONIC FORMAT. CONTRACTOR SHALL INSTRUCT THE OWNER OR HIS AGENT WITH REGARD TO THE PROPER USE OF THE SYSTEM UNTIL SUCH INSTRUCTION IS COMPLETE TO THE OWNER'S SATISFACTION.

### MATERIALS OF CONSTRUCTION:

### NATURAL GAS PIPING:

2" AND SMALLER: BLACK STEEL PIPE, ASTM A53, TYPE S, GRADE B, SCHEDULE 40. FITTINGS: MALLEABLE IRON THREADED FITTINGS, ASME BI6.3, CLASS I5O, ASME

2-I/2" AND LARGER; PIPE: BLACK STEEL PIPE, ASTM A53, TYPE E, GRADE B, SCHEDULE 40. FITTINGS: WROUGHT STEEL BUTT WELD FITTINGS, ASME BI6.9, STANDARD WEIGHT, AWS DIO.12 WELDED JOINTS.



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PROJECT #: <cons. proj. no.>



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HANGAR 407

SHEET TITLE:

HVAC NEW **WORK PLAN** 



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

HVAC DEMOLITION NOTES:

- CONTRACTOR SHALL REMOVE EXISTING OIL FIRED UNIT HEATER AND ASSOCIATED ACCESSORIES. CONTRACTOR REMOVE EXISTING FLUE, AND RETAIN EXISTING ROOF OPENING.
- (2) CONTRACTOR SHALL REMOVE EXISTING OIL BURNER.
- CONTRACTOR SHALL FIELD LOCATE AND REMOVE ALL EXISTING OIL PIPING UP TO WHERE IT ENTERS THE BUILDING. CONTRACTOR SHALL CAP PIPING WHERE IT ENTERS THE BUILDING.

ELECTRICAL DEMOLITION NOTES:

- DISCONNECT POWER FROM OIL TRANSFER PUMP. REMOVE AND DISPOSE OF DISCONNECT SWITCH, BRANCH CIRCUIT CONDUIT AND WIRE COMPLETE TO EXISTING ELECTRICAL PANEL.
- B) DISCONNECT POWER FROM EXISTING OIL FIRED UNIT HEATER. REMOVE AND DISPOSE OF DISCONNECT SWITCH. RETAIN EXISTING BRANCH CIRCUIT WIRING FOR CONNECTION TO NEW GAS FIRED UNIT HEATER.
- CONTRACTOR SHALL FIELD LOCATE AND REMOVE ALL EXISTING OIL PIPING UP TO WHERE IT ENTERS THE BUILDING. CONTRACTOR SHALL CAP PIPING WHERE IT ENTERS THE BUILDING.

ARCHITECTURAL DESIGN INTERIOR DESIGN CODE ANALYSIS PLANNING SERVICES reports and studies ENGINEERING SERVICES HISTORIC PRESERVATION

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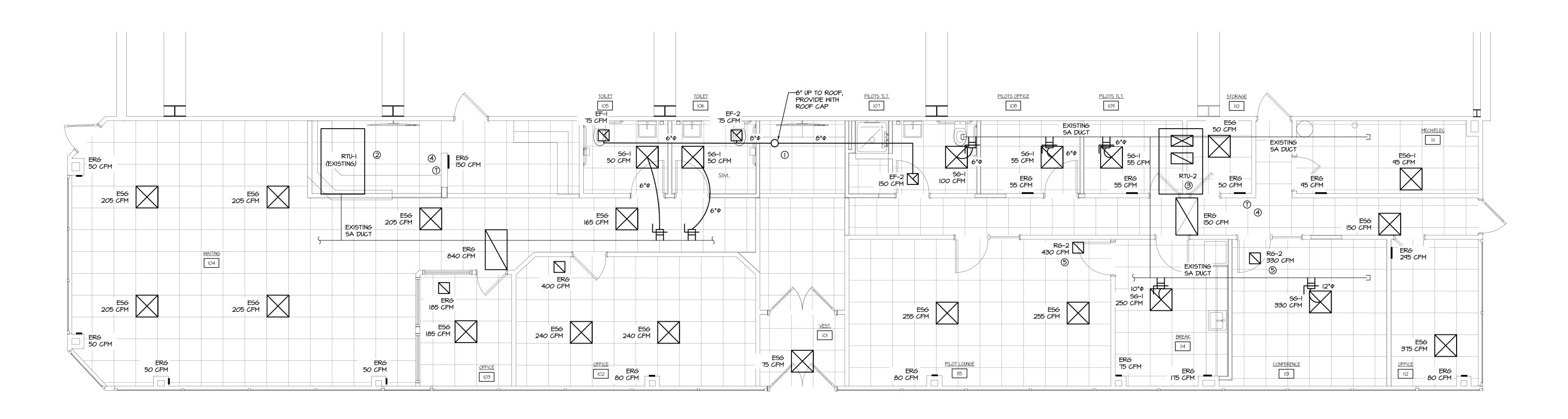
PROJ. MGR.: Grace Cai AlA e-MAIL: GraceC@MG-Architects.com DRAWN BY: S. GOODMAN

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HANGAR 407

SHEET TITLE: HVAC DEMOLITION PLAN



HVAC PLAN

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

### GENERAL NOTES:

- PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL EXISTING ROOF PENETRATIONS, ROOFTOP EQUIPMENT, DUCTWORK, AND DIFFUSERS/GRILLES. CONTRACTOR SHALL ENSURE THAT ALL EXISTING EQUIPMENT SHALL BE SUITABLE FOR REUSE
- ANY AND ALL NECESSARY MODIFICATIONS TO THE SPRINKLER SYSTEM SHALL BE COORDINATED WITH THE READING REGIONAL AIRPORT AND THEIR SELECTED CONTRACTOR.
- CONTRACTOR SHALL RETAIN AND REUSE ALL EXISTING DUCTWORK, DIFFUSERS, ETC. UNLESS OTHERWISE SPECIFIED ON THIS DWG.

### **DRAWING NOTES:**

- ONTRACTOR SHALL FIELD VERIFY LOCATION OF EXISTING EXHAUST FAN ROOF OPENING. CONTRACTOR SHALL EXHAUST FANS THROUGH EXISTING ROOF OPENING.
- ONTRACTOR SHALL RE-BALANCE EXISTING ROOFTOP UNIT AND ASSOCIATED DIFFUSERS/GRILLES TO CFM VALUES SHOWN ON THIS DWG.
- 3 CONTRACTOR SHALL DISCONNECT EXISTING ROOFTOP UNIT AND INSTALL NEW ROOFTOP UNIT ON EXISTING ROOF CURB. CONTRACTOR SHALL CONNECT EXISTING DUCTWORK TO NEW ROOFTOP UNIT. CONTRACTOR SHALL RE-BALANCE ROOFTOP UNIT AND ASSOCIATED DIFFUSERS/GRILLES TO THE VALUES SHOWN ON THIS DWG. CONTRACTOR SHALL VERIFY EXISTING NATURAL GAS PIPING AND EXTEND AND CONNECT EXISTING NATURAL GAS PIPING TO NEW ROOFTOP UNIT. IN THE CASE THAT SPECIFIED ROOFTOP UNIT IS NOT AVAILABLE, CONTRACTOR SHALL INSTALL ACCEPTABLE ALTERNATE UNIT NOTED, CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WIRING AND BREAKER SIZE FOR ALTERNATE UNIT WITH EC.
- (A) CONTRACTOR SHALL REUSE/RELOCATE EXISTING THERMOSTAT. CONTRACTOR SHALL COORDINATE THERMOSTAT LOCATION WITH OWNER.
- © CONTRACTOR SHALL FIELD VERIFY LOCATION OF EXISTING RETURN DUCT. CONTRACTOR SHALL EXTEND AND CONNECT NEW RETURN GRILLE TO NEAREST EXISTING RETURN DUCT.

### MECHANICAL NOTES

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### MECHANICAL LEGEND

<del>  2 + x   2</del>	DUCT SIZE
	DUCT SECTION, RETURN
	DUCT SECTION, SUPPLY
+ + + + + + + + + + + + + + + + + + + +	YOLUME DAMPER
	TRANSITION
FKKK	TURNING VANES
	FLEXIBLE CONNECTION
	FLEX DUCT
	EXISTING ITEM
	NEW ITEM
$oldsymbol{\Theta}$	CONNECTION TO EXISTII
SD	SUPPLY AIR DIFFUSER
RG	RETURN AIR GRILLE
CFM	CUBIC FEET PER MINUTE
EF	EXHAUST FAN
рті	PAGETOR UNIT

THERMOSTAT

PAC	CKAGED ROO	FTOP UNIT SO	CHEDULE (GAS H	HEA	T/D>	< CC	OLI	NG)										
TAG	MANUFACTURER	MODEL	AREA SERVED	C	FM	SI	IPPLY FA	ΔN			DX (	COOLI	NG			GAS	HEAT	_
IAG	MANUFACTURER	MODEL	ARLA SERVED	SA	OA.	HP	TSP INCH	ESP INCH	MBH (TOT)	MBH (SENS)	EAT	. IAID	LAT	 REFRIG (TYP)	MBH (IN)	MBH (OUT)	AIR	

LEFT SIDE OF BLDG | 1995 | 215 |

- PROVIDE UNIT MOUNTED NON-FUSED DISCONNECT SMITCH.
- PROVIDE FULLY MODULATING ENTHALPY ECONOMIZER. 3. PROVIDE RETURN AIR SMOKE DETECTOR WIRED TO SHUT DOWN UNIT IF

RTU-2 | JOHNSON CONTROLS | ZEO60HIOAIC5ACA2B4 |

- COMBUSTION PRODUCTS ARE SENSED. 4. PROVIDE WITH STAINLESS STEEL IAQ COIL DRAIN PAN.
- 5. PROVIDE WCONDENSATE PAN FLOAT SWITCH WIRED TO SHUT DOWN UNITY IF DRAIN PAN FLUID LEVEL BECOMES TO HIGH.

EXISTING

CARRIER

6. PROVIDE WALL MOUNTED 7 DAY/WEEK, 4 PROGRAM/DAY, MATERIALS OF CONSTRUCTION:

### <u>DUCTMORK:</u>

RTU-I

EXHAUST DUCTWORK: HOT DIPPED GALVANIZED SHEET METAL, ASTM-A-525. FABRICATE AND INSTALL IN ACCORDANCE WITH THE LATEST EDITION OF THE 'SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.' SMACNA APPROVED JOINTS, SEAMS AND REINFORCING FOR ±3" W.G.

SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK: HOT DIPPED GALVANIZED SHEET METAL, ASTM-A-525. FABRICATE AND INSTALL IN ACCORDANCE WITH THE LATEST EDITION OF THE 'SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.' SMACNA APPROVED JOINTS, SEAMS AND REINFORCING FOR ±3" W.G. DUCTWORK SHALL INSULATED WITH FLEXIBLE FIBERGLASS BLANKET, 3" THICK 1-1/2" P.C.F DENSITY WITH A MINIMUM R VALUE OF 6.0. PROVIDE WITH ALL PURPOSE JACKET AND VAPOR RETARDER.

FLEXIBLE DUCTWORK: POLYESTER LAMINATED STEEL WIRE INNER CORE, R-6 LOW DENSITY FIBERGLASS BLANKET INSULATION WITH REINFORCED POLYESTER OUTER JACKET AND VAPOR BARRIER. UL STD. 181 APPROVED, CLASS I CONNECTOR. FLEXIBLE DUCTWORK SHALL BE LIMITED TO 6'-O" IN LENGTH.

HOT DIPPED GALVANIZED SHEET METAL. FABRICATE DAMPERS IN ACCORDANCE WITH THE LATEST EDITION OF THE 'SMACNA HVAC DUCT CONSTRUCTION STANDARDS -METAL AND FLEXIBLE.

VOLUME DAMPERS: SHALL BE MULTIBLADE TYPE, CONSTRUCTED OF ASTM-A-525

DUCTWORK SEALANT: ALL DUCTWORK SEAMS AND JOINTS SHALL BE SEALED WITH A NON-HARDENING, NON-MIGRATING SEALANT. 3% MAXIMUM ALLOWABLE DUCT SYSTEM LEAKAGE. SEALANT SHALL BE CLEAR IN COLOR.

DUCTWORK SUPPORT MATERIALS: GALVANIZED STEEL FASTENERS, ANCHORS, RODS, STRAPS, AND TRIM. <u>PIPING:</u>

AIR CONDITIONING CONDENSATE DRAINS: SCHEDULE 40 PVC PIPE, ASTM D2665 WITH SOCKET FITTINGS AND SOLVENT CEMENTED JOINTS.

REFRIGERANT LIQUID AND SUCTION PIPING: HARD OR SOFT COPPER TUBE, ASTM B280, TYPE ACR, WITH WROUGHT COPPER FITTINGS, ASME B16.22. AWS A5.8 SILVER BRAZED JOINTS WITH CLASS BAG-I FILLER. INSULATE PIPING WITH 34" THICK BY 6.0 P.C.F. DENSITY CLOSED CELL FLEXIBLE TUBULAR INSULATION. NATURAL GAS PIPING:

2" AND SMALLER: BLACK STEEL PIPE, ASTM A53, TYPE S, GRADE B, SCHEDULE 40. FITTINGS: MALLEABLE IRON THREADED FITTINGS, ASME BI6.3, CLASS 150, ASME BI.20.1 THREADS.

2-1/2" AND LARGER; PIPE: BLACK STEEL PIPE, ASTM A53, TYPE E, GRADE B, SCHEDULE 40. FITTINGS: WROUGHT STEEL BUTT WELD FITTINGS, ASME BI6.9, STANDARD WEIGHT, AWS DIO.12 WELDED JOINTS.

### COORDINATE WIRE AND BREAKER SIZE WITH EC.

RIGHT SIDE OF BLDG | 1675 | 285 | 1.0 | 1.02 | 0.91 | 54.5 | 44.9 | 75.9 | 62.5 | 52.7 | 51.8 | R-410A | 100.0 | 79.0 | 59.9 | 100.7 | MERV 8 |

OCCUPIED/UNOCCUPIED, HEATING/COOLING/ DEHUMIDIFICATION
THERMOSTATS.

ALTERNATE UNIT IS AS FOLLOWS: YORK PACKAGED ROOFTOP UNIT,

MODEL #ZE060HI2AIC6ECA5B4, 1995 CFM WITH 500 CFM OUTSIDE AIR,

7. IN THE CASE THAT SPECIFIED UNIT IS UNAVAILABLE, AN ACCEPTABLE

100 MBH GAS HEAT OUTPUT, 230V/14/60HZ. CONTRACTOR SHALL

EX	HAUS	ΓFAN	50	SHE	DUL	E					
TAC	T~DE	MOUNTING	CEM	EGD"	DDI\ /E	FAN	MOTOR	VOLTAGE	BASIS O	F DESIGN	NOTES
TAG	TYPE	MOUNTING	CFM	ESP	DRIVE	RPM	WATTS		MANUFACTURER	MODEL	NOTES
EF-I	EXHAUST	CEILING	75	0.25	DIRECT	III3	9.6	115/60/1	PANASONIC	FV-05IIVKS2	1,2
EF-2	EXHAUST	CEILING	75	0.25	DIRECT	III3	9.6	115/60/1	PANASONIC	FV-0511VKS2	1,2
EF-3	EXHAUST	CEILING	150	0.25	DIRECT	1075	45	115/60/1	COOK	GC-148	1,2

ELECTRICAL

CHARACTERISTICS

VOLT/PH/HZ | MCA | MOCF

230/1/60 | 40.9 | 60 |

OPERATING

MEIGHT

747

NOTES

I THROUGH 7

I. FAN SHALL BE INTERLOCKED WITH LIGHT SWITCH SUCH THAT WHEN LIGHT IS

TURNED ON, FAN SHALL BE TURNED ON. 2. PROVIDE FAN WITH TIME DELAY.

DIF	FUSER	/GRILL	E SCHED	DULE			
TAG	SIZE	BORDER	MANUFACTURER	MODEL	NOTES		
SD-I	24X24	LAY IN	TITUS	TMS	I		
RG-I	I2XI2	LAY IN	TITUS	50F	I		
RG-2	24X48	LAY IN	TITUS	50F	1		
E56	S EXISTING						
ERG		EXISTING					

I. FINISH AS SELECTED BY ARCHITECT/OWNER.

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FBO BUILDING & HANGAR

SHEET TITLE:

HVAC PLAN

IPC TABLE 605.4	IATER DISTRIBUTION PIPE
MATERIAL	STANDARD
COPPER OR COPPER-ALLOY TUBING (TYPE K, WK, L, WL, M OR WM)	ASTM B 75; ASTM B 88; ASTM B 251; ASTM B 447
CROSS-LINKED POLYETHYLENE (PEX) PLASTIC TUBING	ASTM F 876; ASTM F 877; CSA BI37.5
CROSS-LINKED POLYETHYLENE/ALUMINUM/CROSS-LINKED POLYETHYLENE (PEX-AL-PEX) PIPE	ASTM F 1281; ASTM F 2262; CAN/CSA BI37.IOM
CROSS-LINKED POLYETHYLENE/ALUMINUM/HIGH DENSITY POLYETHYLENE (PEX-AL-HDPE)	ASTM F 1986

IPC TABLE 605.5	PIPE FITTINGS
MATERIAL	STANDARD
COPPER OR COPPER-ALLOY	ASSE 1061; ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.23; ASME B16.26; ASME B16.29
CROSS-LINKED POLYETHYLENE/ALUMINUM/HIGH DENSITY POLYETHYLENE (PEX-AL-HDPE)	ASTM F 1986
FITTINGS FOR CROSS-LINKED POLYETHYLENE (PEX) PLASTIC TUBING	ASSE 1061; ASTM F 877; ASTM F 1807; ASTM F 1960; ASTM F 2080; ASTM F 2098; ASTM F 2159; ASTM F 2434; CSA B137.5
INSERT FITTINGS FOR POLYETHYLENE/ALUMINUM/POLYETHYLENE (PE-AL-PE) AND CROSS-LINKED POLYETHYLENE/ALUMINUM/CROSS-LINKED POLYETHYLENE (PEX-AL-PEX)	ASTM F 1974; ASTM F1281; ASTM F1282; CAN/CSA B137.9; CAN/CSA B137.10

IPC TABLE 702.1 ABOVE GROUN	D DRAINAGE AND VENT PIPE
MATERIAL	STANDARD
CAST-IRON PIPE	ASTM A 74; ASTM A 888; CISPI3OI
POLYVINYL CHLORIDE (PVC) PLASTIC PIPE IN IPS DIAMETERS, INCLUDING SCHEDULE 40. DR 22 (PS 200), AND DR 24 (IPS 140); WITH A SOLID CELLULAR CORE OR COMPOSITE WALL	ASTM D 2665; ASTM F 891; ASTM F 1488; CSA B181.2
POLYVINYL CHLORIDE (PVC) PLASTIC PIPE WITH A 3.25-INCH A.D AND A SOLID, CELLULAR CORE OR COMPOSITE WALL	ASTM D 2949; ASTM F 1488

	NDERGROUND BUILDING RAINAGE AND VENT PIPE
MATERIAL	STANDARD
ACRYLONITRITE BUTADIENE STYRENE (ABS) PLASTIC PIPE IN IPS DIAMETERS, INCLUDING SCHEDULE 40. DR 22 (PS 200) AND DR 24 (PS 140); WITH SOLID, CELLULAR CORE, OR COMPOSITE WALL	ASTM F 1488; CSA BIBI.I
POLYVINL CHLORIDE (PVC) PLASTIC PIPE IN IPS DIAMETERS, INCLUDING SCHEDULE 40. DR 22 (PS 200) AND DI 24 (PS 140); WITH SOLID, CELLULAR CORE, OR COMPOSITE WALL.	ASTM D 2665; ASTM F 891; ASTM F 1488; CSA BI81.2
POLYVINYL CHLORIDE (PVC) PLASTIC PIPE WITH A 3.25-INCH A.D AND A SOLID, CELLULAR CORE OR COMPOSITE	ASTM D 2949; ASTM F 148

IPC TABLE 702.4 P	IPE FITTINGS
MATERIAL	STANDARD
CAST-IRON PIPE	ASME BI6.4; ASME BI6.12; ASTM A 74; ASTM A 888; CISPI3OI
POLYVINYL CHLORIDE (PVC) IN IPS DIAMETERS	ASTM D 2665; ASTM F 1866
POLYVINL CHLORIDE (PVC) PLASTIC PIPE IN SEWER AND DRAIN DIAMETERS	ASTM D 3034
POLYVINL CHLORIDE (PVC) PLASTIC PIPE WITH A 3.25-INCH G.D.	ASTM D 2949

1 1 <b>27</b> • 1881 + 1041	OPE OF HORIZONTAL RAINAGE PIPE
SIZE (INCHES)	MINIMUM SLOPE (INCH PER FOOT)
2-1/2 OR LESS	1/4
3 TO 6	1/8
8 OR LARGER	1/16

### PLUMBING SPECIFICATIONS

### I. <u>DOMESTIC WATER</u>

- A. DOMESTIC WATER DISTRIBUTION PIPE MATERIAL SHALL BE PER TABLE 605.4 "WATER DISTRIBUTION PIPE" ON THIS
- B. DOMESTIC WATER PIPE FITTINGS SHALL BE PER TABLE 605.5 "PIPE FITTINGS" ON THIS DRAWING.

### 2. <u>SANITARY DRAINAGE</u>

- A. SANITARY AND VENT PIPE MATERIAL ABOVE GROUND SHALL BE PER TABLE 702.1 "ABOVE GROUND DRAINAGE AND VENT PIPE" ON THIS DRAWING. SANITARY AND VENT PIPE MATERIAL BELOW GROUND SHALL BE PER TABLE 702.2 "UNDERGROUND BUILDING DRAINAGE AND VENT PIPE" ON THIS DRAWING. SLOPE SANITARY PIPING PER TABLE 704.1 "SLOPE OF HORIZONTAL DRAINAGE PIPE" ON THIS
- B. SANITARY AND VENT PIPE FITTINGS SHALL BE PER TABLE 702.4 "PIPE FITTINGS" ON THIS DRAWING.
- C. SANITARY PIPING THAT IS LOCATED ABOVE GRADE SHOULD BE WRAPPED FOR SOUND ISOLATION
- D. SANITARY PIPING THAT IS LOCATED IN PLENUM AREAS SHOULD BE PROVIDED WITH A FIRE RATED PLENUM WRAP

### 3. <u>DOMESTIC WATER PIPE INSULATION</u>

A. INSULATE ALL DOMESTIC HOT WATER, HOT WATER RETURN AND COLD WATER PIPES WITH I" ARMAFLEX OR A MINIMUM R-VALUE PER AUTHORITY HAVING JURISDICTION, INSTALL INSULATION PER MANUFACTURER'S RECOMMENDATIONS.

### 4. <u>DISINFECTION OF POTABLE WATER SYSTEM:</u>

A. POTABLE WATER SYSTEM SHALL BE CLEANED AND DISINFECTED PER THE REQUIREMENTS OF THE AUTHORITY HAYING JURISDICTION.

### 5. <u>MATER HEATER (EXISTING) MH-I:</u> A. EXISTING RHEEM 40 GALLON WATER HEATER TO REMAIN.

INLET AND OUTLET PIPE SIZES.

MODEL NUMBER "XE40M09EL46UI". 6. <u>SANITARY PUMP, SP-I:</u> A. COMPACT DRAIN PUMP MODEL 406, MANUFACTURED BY LIBERTY PUMPS OR EQUIVALENT. SEE FLOOR PLAN FOR

### PLUMBING LEGEND

DOMESTIC COLD WATER PIPING DOMESTIC HOT WATER SUPPLY PIPING - PIPE DROP O PIPE RISE PIPE BREAK OFIXTURE DRAIN WITH P-TRAP FCOO FLOOR CLEANOUT BALL VALVE

### GENERAL PLUMBING NOTES

### GENERAL PLUMBING NOTES:

- I. CONTRACTOR TO PROVIDE ALL LABOR AND
- MATERIALS NEEDED FOR A COMPLETE AND PROPERLY OPERATING PLUMBING SYSTEM.
- 2. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATIVE OF WORK TO BE PERFORMED. THE DRAWINGS ARE NOT INTENDED TO SHOW EXACT LOCATIONS OR TO SHOW EVERY PIPE, FITTING, VALVE, OR APPURTENANCE REQUIRED FOR A COMPLETE INSTALLATION. DO NOT SCALE LOCATION DIMENSIONS
- FROM THESE DRAWINGS. 3. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND VERIFYING ALL EXISTING CONDITIONS AND DIMENSIONS, AND FOR COORDINATION OF HIS WORK
- WITH THAT OF OTHER TRADES. PERFORM WORK IN AN ORDERLY MANNER AND WITH THE LEAST POSSIBLE INTERFERENCE.
- 4. WORK SHALL CONFORM TO OR MEET THE REQUIREMENTS OF THE MOST CURRENT EDITION OF:
- A. INTERNATIONAL BUILDING CODE B. INTERNATIONAL PLUMBING CODE C. NEC (NFPA 70)
- D. ALL FEDERAL, STATE, AND LOCAL CODES AND ORDINANCES. 5. ALL MATERIALS, EQUIPMENT, AND DEVICES SHALL, AS
- A MINIMUM, MEET THE REQUIREMENTS OF UL WHERE UL REQUIREMENTS ARE ESTABLISHED FOR THOSE ITEMS.
- ALL ITEMS SHALL BE CLASSIFIED BY UL AS SUITABLE FOR THE PURPOSE USED. 6. WHERE PIPES OR CONDUIT PENETRATE FIRE RATED
- OR SMOKE RATED BARRIERS (WALLS, FLOORS, AND CEILINGS), SEAL PENETRATIONS IN ACCORDANCE WITH NFPA 90A WITH UL LISTED FIRE STOPPING SYSTEM. 7. ALL EQUIPMENT AND MATERIALS INCORPORATED IN THIS WORK SHALL BE NEW UNLESS NOTED OTHERWISE
- MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH PRODUCTS. 8. ALL FACTORY APPLIED COATINGS AND FINISHES

AND SHALL BE CURRENT PRODUCTS BY

- SHALL BE PROVIDED WITHOUT RUST, SCRATCHES, OR 9. PROVIDE OWNER WITH CERTIFICATES OF FINAL
- INSPECTIONS AND ACCEPTANCE FROM THE AUTHORITY HAVING JURISDICTION. IO. CONTRACTOR SHALL INSULATE ALL SANITARY PIPING ABOVE FIRST FLOOR CEILINGS OF OCCUPIED

SPACES WITH 2" FIBERGLASS.

### COORDINATION REQUIREMENTS:

- I. COORDINATE LOCATION AND INSTALLATION OF PLUMBING WORK WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES. MODIFICATIONS DUE TO FIELD CONDITIONS SHALL BE COMPLETELY RESOLVED BY CONTRACTOR IN ACCORDANCE WITH
- RECOMMENDATIONS OF THE CONSTRUCTION MANAGER/OWNER. 2. COORDINATE FINAL LOCATIONS OF PLUMBING
- EQUIPMENT WITH ARCHITECTURAL PLANS. 3. PROVIDE TO THE CONSTRUCTION MANAGER DIMENSIONED LOCATIONS AND SIZES OF ALL REQUIRED FLOOR, WALL, AND ROOF OPENINGS.

PROVIDE FOR INSTALLATION OF SLEEVES AND

### PLUMBING INSTALLATION REQUIREMENTS:

FRAMING AS REQUIRED.

- I. INSTALL ALL EQUIPMENT AND MATERIAL IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS. MAINTAIN CLEARANCES FOR CLEARANCE ACCESS TO MAINTAIN AND SERVICE EQUIPMENT, VALVES, AND
- CONTROLS. 2. ALL INSTALLATION AND WORK SHALL BE PERFORMED IN A NEAT, WORKMANLIKE MANNER SO AS NOT TO DAMAGE ANY SURFACES, EQUIPMENT, OR MATERIALS.
- 3. MOTOR OPERATED EQUIPMENT SHALL BE ISOLATED FROM THE BUILDING STRUCTURE BY THE INSTALLATION
- OF APPROVED VIBRATION HANGERS OR SUPPORTS. 4. ALL EQUIPMENT AND PIPING ABOVE THE CEILING
- SHALL BE SUPPORTED IN AN APPROVED MANNER FROM THE BUILDING STRUCTURE ABOVE. 5. PROVIDE PIPE ESCUTCHEONS AT ALL EXPOSED
- PENETRATIONS OF FLOORS, WALLS, AND CEILINGS. 6. PIPE SIZES ARE IN INCHES UNLESS NOTED OTHERWISE.
- 7. RUNOUTS TO EQUIPMENT SHALL BE SIZED AS INDICATED AND INCREASED OR REDUCED AT POINT
- OF FINAL CONNECTION TO EQUIPMENT. 8. ALL SYSTEMS SHALL BE TESTED FOR PROPER OPERATION IN ACCORDANCE WITH APPLICABLE CODE
- OR REGULATION. 9. SEAL ALL PIPE PENETRATIONS THROUGH WALLS,

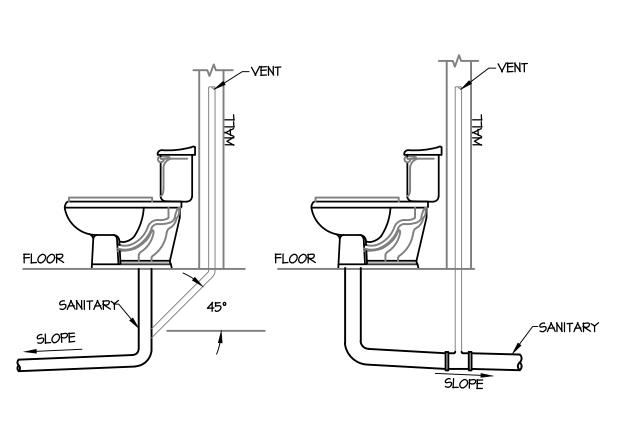
FLOORS, AND ROOFS TO BE WATERTIGHT.

PL	UMBING F	IXTURE SCI	HEDULE					
MARK	FIXTURE	MANUFACTURER	MODEL	CM	HM	DRAIN	VENT	REMARKS
P-I	WATER CLOSET (ADA)	AMERICAN STANDARD	2467.016	1/2"	ı	4"	2"	FLOOR MOUNTED, ELONGATED, ADA COMPLIANT, I.6 GPF, VITREOUS CHINA WATER CLOSET WITH AMERICAN STANDARD OPEN SEATLESS COVER MODEL 5901.100
P-2	WALL HUNG LAVATORY	AMERICAN STANDARD	355.0l2	1/2"	1/2"	l I/2"	1/4"	WALL HUNG, ADA COMPLIANT, VITREOUS CHINA LAVATORY WITH OFFSET TRAP AND GRID DRAIN. PROVIDE WITH MOEN ADA COMPLIANT, TWO HANDLE, SERIES 84603 FAUCET LESS POP-UP
P-3	SHOWER	COMFORT DESIGNS	XST 3838 TR 1.125	1/2"	1/2"	2"	l I/2"	PROVIDE WITH STAINLESS STEEL HORIZONTAL L-GRAB BAR AND VERTICAL SIDE GRAB BAR, FRAMELESS WHITE PADDED FOLD-UP SEAT, SUBWAY TILE PATTERN, INTEGRAL FRONT TENCH DRAIN.
P-4	COUNTERTOP SINK	ELKAY	ELUHAD2II545PD	l/2"	l/2"	l I/2"	l I/4"	SINGLE BOWL, ADA COMPLIANT, UNDER MOUNT, STAINLESS STEEL SINK WITH ADA COMPLIANT STRAINER, OFFSET TRAP, AND ELKAY SINGLE HANDLE ADA COMPLIANT FAUCET MODEL LK1500CR
FD-I	FLOOR DRAIN	JAY R. SMITH	2005-F37	-	-	4"	2	4" FLOOR DRAIN, PROVIDE WITH TRAP PRIMER CONNECTION AND VANDAL PROOF SCREWS.

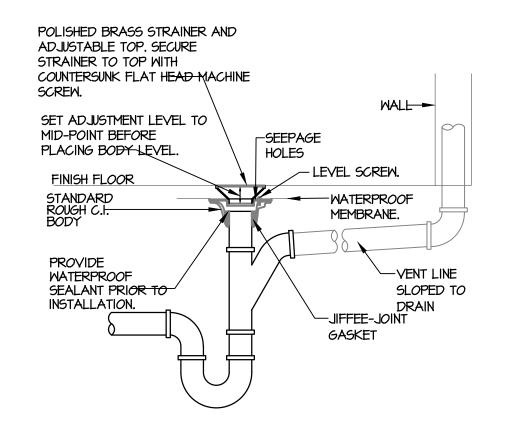
### NOTES:

- I. CONTRACTOR SHALL REVIEW ALL CONTRACTOR FURNISHED PLUMBING FIXTURES WITH OWNER PRIOR TO PURCHASE.
- 2. CONTRACTOR SHALL COORDINATE FIXTURE CARRIERS WITH ARCHITECTURAL DRAWINGS AND WALL TYPE.
- 3. CONTRACTOR SHALL FURNISH AND INSTALL STOPS ON SUPPLY LINES TO ALL FIXTURES. 4. CONTRACTOR SHALL FURNISH AND INSTALL ACCESS DOORS FOR ALL VALVES AS REQUIRED.
- 5. ALL EXPOSED PIPING UNDER ADA ACCESSIBLE COUNTERTOP SINKS AND LAVATORIES SHALL BE INSULATED AND PROTECTED WITH PREFABRICATED MOLDED COVERS AS MANUFACTURED BY PLUMBEREX OR EQUAL.

FI>	KTURE UNIT V	'ALUE	S			
				SFU'	5	DFU'S
	FIXTURE	QUANTITY	COLD	НОТ	TOTAL	
P-I	WATER CLOSET	3	2.2	1	2.2	4.0
P-2	LAVATORY	3	0.5	0.5	0.7	1.0
P-3	SHOWER	I	1.0	1.0	1.4	2.0
P-4	COUNTERTOP SINK	1	1.0	1.0	1.4	2.0
FD-I	FLOOR DRAIN		1	1	-	2.0



FLOOR MOUNTED WATER CLOSET <u>YENTING DETAIL</u> NO SCALE



FLOOR DRAIN & VENT DETAIL

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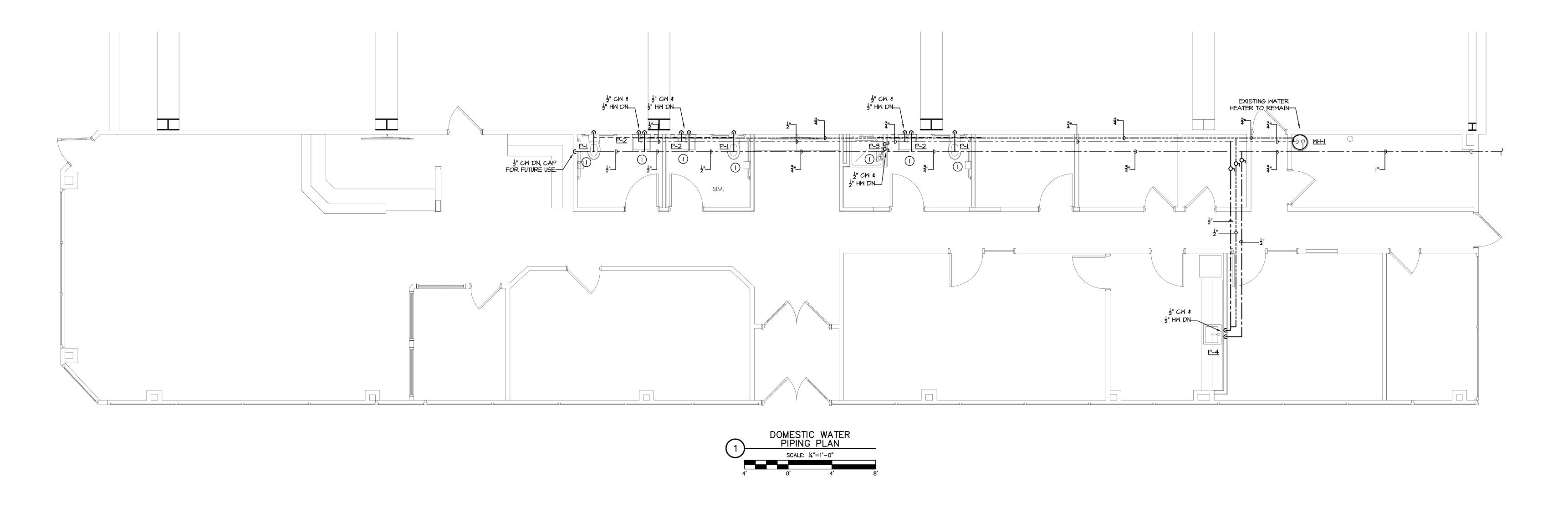
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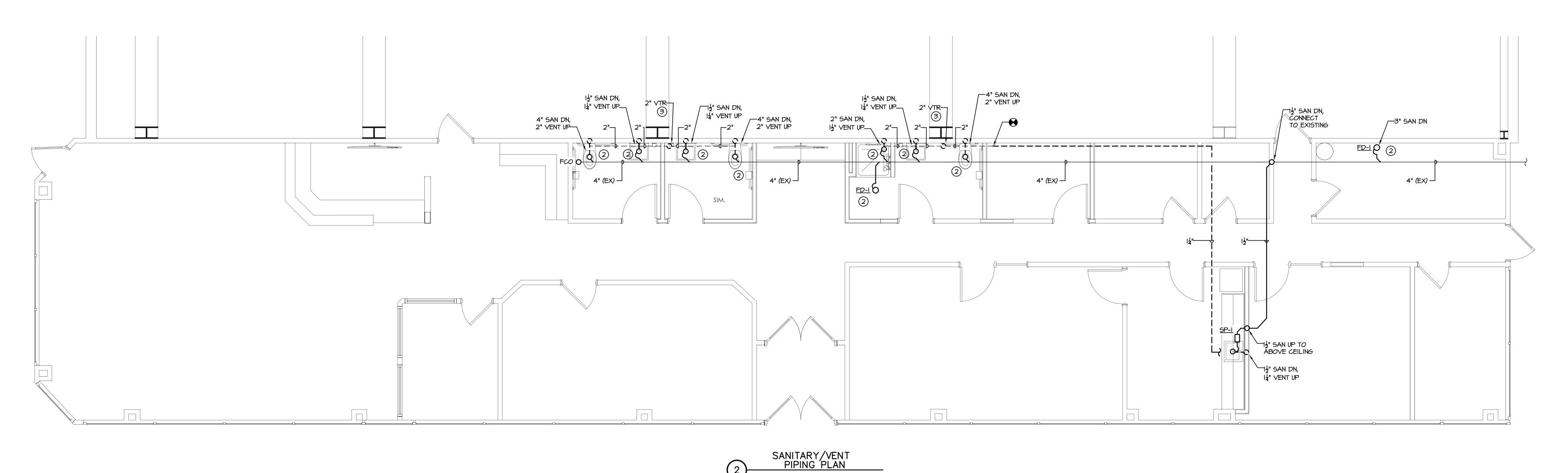
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SHEET TITLE: PLUMBING NOTES AND SCHEDULES





### **GENERAL NOTES:**

- CONTRACTOR SHALL SCOPE EXISTING SANITARY LINE PRIOR TO CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY SIZE AND LOCATION OF EXISTING SANITARY AND VENT LINES.
- CONTRACTOR SHALL FIELD VERIFY LOCATION AND SIZE OF EXISTING HOT AND COLD WATER LINES PRIOR TO STARTING CONSTRUCTION.

### DRAWING NOTES:

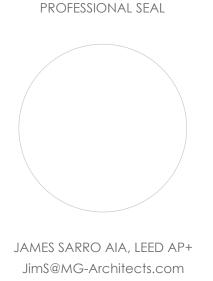
- CONTRACTOR SHALL FIELD VERIFY LOCATION OF NEAREST EXISTING HOT AND COLD WATER LINES.
  CONTRACTOR SHALL EXTEND AND CONNECT NEW FIXTURE TO EXISTING HOT AND COLD WATER LINES AS
- (2) CONTRACTOR SHALL FIELD VERIFY LOCATION AND SIZE OF NEAREST EXISTING SANITARY LINE.
  CONTRACTOR SHALL EXTEND AND CONNECT NEW FIXTURE TO EXISTING SANITARY AND VENT LINES AS
- CONTRACTOR SHALL LOCATE EXISTING ROOF PENETRATIONS FOR ROOF VENTS. CONTRACTOR SHALL RETAIN EXISTING ROOF PENETRATIONS AND EXISTING VENTS TO ROOF.



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PLUMBING PIPING PLAN

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