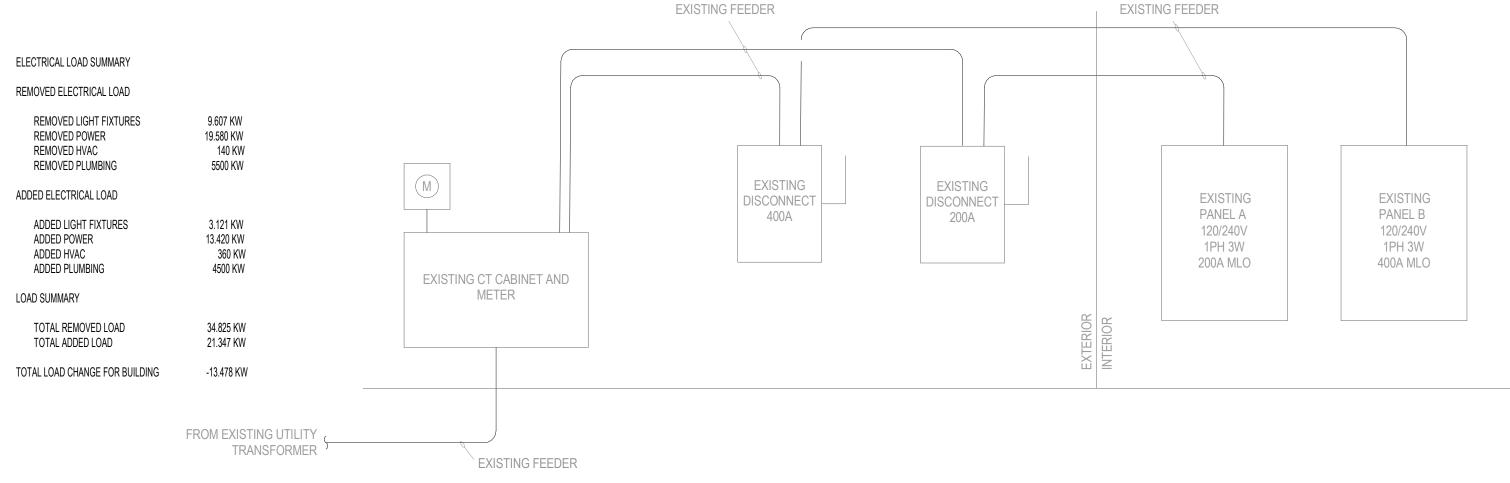
				·			
ELECTRICAL SYMBOL LEGEND			ELECTRICAL NOTATIONS				
CODED PLAN NOTE	XX	DETAIL #	AC	ABOVE COUNTER	LV	LOW VOLTAGE	
UIPMENT DESIGNATION	XXX	DETAIL # SHEET #	AFF	ABOVE FINISHED FLOOR	MBJ	MAIN BONDING JUMPER	
CIRCUIT DESIGNATION ESIGNATION - CIRCUIT NUMBER			AFG	ABOVE FINISHED GRADE	MC	MECHANICAL CONTRACTOR	
CTRIC UTILITY KEY BOX	\$ ³	WALL SWITCH-NUMBER INDICATES 2 POLE, 3 OR 4 WAY (NO NUMBER FOR SINGLE POLE)	BPS	BOLTED PRESSURE SWITCH	MTD	MOUNTED	
GHT COMBINATION FIXTURE	* \$	LOWER CASE LETTER INDICATES FIXTURE(S) TO BE CONTROLLED BY SWITCH	CLG	CEILING MOUNTED	NTS	NOT TO SCALE	
EXHAUST FAN	\$ ^D	DIMMER SWITCH	CKT CIRCUIT (PART) INDICATES CIRCUIT USED ELSEW			INDICATES CIRCUIT USED ELSEWHERE	
JUNCTION BOX	F \$	CEILING FAN SPEED CONTROL SWITCH	EC	ELECTRICAL CONTRACTOR	PC	PLUMBING CONTRACTOR	
JSED DISCONNECT SWITCH	**************************************	KEY-OPERATED SWITCH	EM	EMERGENCY	SSBJ	SUPPLY-SIDE BONDING JUMPER	
D DISCONNECT SWITCH	*M	MOTOR RATED DISCONNECT SWITCH	ETR	EXISTING TO REMAIN	SUC	SITE UTILITY CONTRACTOR	
MOTOR	OS \$	OCCUPANCY SENSOR WALL SWITCH	FLR	FLOOR MOUNTED	TYP	TYPICAL	
PUSH BUTTON	OR \$	OVERRIDE SWITCH	FSC	FIRE SUPPRESSION CONTRACTOR	UG	UNDERGROUND	
BUZZER/BELL	PL \$	SWITCH WITH PILOT LIGHT	GC	GENERAL CONTRACTOR	UNO	UNLESS NOTED OTHERWISE	
OLTAGE TRANSFORMER	, T \$	TIMER SWITCH	GFCI GROUND FAULT CIRCUIT INTERRUPTER WP WEATHERPROC		WEATHERPROOF		
E RECEPTACLE 20A, 120V	OS	WALL MOUNT OCCUPANCY SENSOR	GFEP	GFEP GROUND FAULT EQUIPMENT PROTECTION WG WIRE GUARD		WIRE GUARD	
PECIAL RECEPTACLE	(OS)	CEILING MOUNT OCCUPANCY SENSOR	GND	GND GROUND WR WEATHER RESISTANT		WEATHER RESISTANT	
EX RECEPTACLE 20A, 120V	SP	SWITCH PACK FOR OCCUPANCY SENSOR	HC	HVAC CONTRACTOR	XX"	DIMENSIONED HEIGHT	
PLEX RECEPTACLE 20A, 120V	Pc	PHOTOCELL	IG	ISOLATED GROUND			
PLEX RECEPTACLE 20A, 120V	TC	TIMECLOCK					
RUPLEX RECEPTACLE 20A, 120V	#A	CURRENT LIMITING DEVICE - NUMBER INDICATES MAX AMPERAGE OF DEVICE	ELECTRICAL LINETYPE LEGEND				
EX RECEPTACLE 20A, 120V	▼w	THORE WINING BY OTHERS					
JPLEX RECEPTACLE 20A, 120V	▼	3/4" CONDUIT STUB AND BOX FOR PHONE WIRING BY OTHERS		SWITC	_	ELECTRIC	
DUPLEX RECEPTACLE 20A, 120V	∇	3/4" CONDUIT STUB AND BOX FOR DATA WIRING BY OTHERS		LOW V	OLTAGE		
ED QUADRUPLEX RECEPTACLE 20A, 120V	∇	3/4" CONDUIT STUB AND BOX FOR DATA/PHONE WIRING BY OTHERS	UGLV				

	ELECTRICAL SHEET INDEX					
	SHEET NO.	SHEET DESCRIPTION				
	E001	ELECTRICAL COVER SHEET				
	E101	LIGHTING PLAN				
	E202	POWER PLAN				
	E501	ELECTRICAL DETAILS				
	E801	ENERGY CODE COMPLIANCE				
	E901	ELECTRICAL SPECIFICATIONS				
COMPLY	WITH THE NATION	AL ELECTRICAL CODE (NEC) AND ALL STATE AND LOCAL CODES.				

MAIN ELECTRICAL GENERAL NOTES:

- A. ALL ELECTRICAL INSTALLATIONS MUST (
- B. ELECTRICAL SERVICE TO BE INSTALLED IN COMPLIANCE WITH NEC ARTICLE 230.
- C. CONTRACTOR SHALL OBTAIN FAULT CURRENT INFORMATION FROM UTILITY COMPANY AND PERFORM SHORT CIRCUIT CALCULATIONS. SIZE FUSES AND EQUIPMENT A.I.C. RATINGS ACCORDINGLY.
- D. CONTRACTOR SHALL INSTALL A SEPARATE EQUIPMENT GROUNDING CONDUCTOR SIZED PER NEC TABLE 250.122 FOR ALL BRANCH CIRCUITS INSTALLED IN NON-METALLIC CONDUITS. METALLIC CONDUITS MAY BE USED AS EQUIPMENT GROUNDING CONDUCTORS PER NEC.
- E. CONTRACTOR SHALL VERIFY ALL WIRE SIZING DUE TO VOLTAGE DROP CAUSED BY IN-FIELD ROUTING / INSTALLATION DISTANCES.
- F. SERVICE ENTRANCE EQUIPMENT SHALL BE GROUNDED WITH A SEPARATE COPPER OR ALUMINUM CONDUCTOR AS INDICATED ON THE DRAWINGS AND PER NEC ARTICLE 250.52(A). GROUNDING CONDUCTOR SHALL ALSO BE CONNECTED TO A 5/8" DIAMETER X 8'-0" LONG GROUND ROD FOR SUPPLEMENTAL GROUNDING PER NEC ARTICLE 250.54.
- G. CONTRACTOR IS RESPONSIBLE FOR LABELING ALL PANELS, DISCONNECTS, LIGHTING CONTROLLERS, ETC., AND ALL CIRCUIT BREAKERS IN THE DISTRIBUTION PANELS PRIOR TO PROJECT COMPLETION. PROVIDE A TYPED DIRECTORY OF ALL CIRCUITS. BREAKERS USED FOR SWITCHING SHALL BE RATED ACCORDINGLY.
- H. CONTRACTOR SHALL SUPPLY AND INSTALL ALL NEC REQUIRED EQUIPMENT DISCONNECTS (NOT ALL DISCONNECTS MAY BE SHOWN ON THE DRAWINGS). CONTRACTOR SHALL VERIFY ALL DISCONNECT SIZING WITH EACH EQUIPMENT NAMEPLATE RATING.
- I. CONTRACTOR IS RESPONSIBLE TO SECURE AND PAY FOR ALL PERMITS. CONTRACTOR SHALL COMPLY WITH ALL STATE, LOCAL, AND NATIONAL CODES. CONTRACTOR SHALL SCHEDULE INSPECTIONS SO JOB PROGRESS IS NOT DELAYED.
- J. CONTRACTOR SHALL SUPPLY AND INSTALL ALL EQUIPMENT IN NEW CONDITION AND U.L. LISTED UNLESS NOTED OTHERWISE.
- K. CONTRACTOR SHALL MAKE ARRANGEMENTS WITH LOCAL POWER COMPANY FOR THE INSTALLATION OF NEW ELECTRICAL SERVICE AND METER. INSTALL NEW SERVICE DISTRIBUTION EQUIPMENT AS SPECIFIED ON ELECTRICAL DRAWINGS.
- L. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL WORK WITH OTHER TRADES AND ARCHITECTURAL DRAWINGS TO ELIMINATE CONFLICTS.
- M. PRIOR TO CONSTRUCTION START, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND OPERATION MANUALS FOR ALL EQUIPMENT AND ACCESSORIES FOR OWNER APPROVAL.
- N. CONTRACTOR SHALL PERFORM ALL WORK IN A NEAT AND PROFESSIONAL MANNER.
- PROVIDE FLEXIBLE CONDUIT FOR ALL VIBRATING EQUIPMENT. PROVIDE FLEXIBLE CONDUIT FOR LIGHT FIXTURE CONNECTIONS.
- P. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ELECTRICAL EQUIPMENT INFORMATION WITH MANUFACTURERS. CONTRACTOR SHALL PROVIDE ANY ADDITIONAL ELECTRICAL CONNECTIONS OR SERVICES TO EQUIPMENT WHICH ARE NOT SHOWN ON DRAWINGS.
- Q. ALL PENETRATIONS OF WALL, ROOF, AND CEILINGS TO BE SEALED AS REQUIRED WITH U.L. APPROVED FIRE SEALANT TO MAINTAIN FIRE RATING AS REQUIRED. ALL ROOF PENETRATIONS, IF APPLICABLE, ARE TO BE COORDINATED WITH THE OWNER'S DESIGNATED ROOFING
- R. ELECTRICAL EQUIPMENT EXPOSED TO WEATHER CONDITIONS SHALL BE WEATHERPROOF TYPE. CONDUIT EXPOSED TO WEATHER CONDITIONS OR IN CONTACT WITH CONCRETE SHALL BE POLYVINYL CHLORIDE (PVC) OR GALVANIZED HEAVY WALL STEEL (GRC).
- S. ALL EXTERIOR RECEPTACLES SHALL BE WEATHER RESISTANT AS WELL AS WEATHERPROOF PER NEC 406.9.
- T. CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS TO THE OWNER IF INSTALLATION VARIES FROM THE CONTRACT DRAWINGS.
- U. ANY CONDUIT AND WIRE SIZES SHOWN ARE MINIMUMS. CONTRACTOR SHALL INCREASE SIZES (DUE TO VOLTAGE DROP, QUANTITY OF CURRENT CARRYING CONDUCTORS IN THE SAME CONDUIT/RACEWAY, ETC.) AS REQUIRED BY THE NEC.
- ROOFTOP EQUIPMENT (IF APPLICABLE): CONTRACTOR SHALL INSTALL A WEATHERPROOF DISCONNECT FOR EACH UNIT. CONDUITS SHALL ENTER THE UNDERSIDE OF EACH HVAC UNIT FROM WITHIN THE CURBED AREA FOR THAT UNIT (THEREBY AVOIDING PENETRATIONS THROUGH THE ROOF MEMBRANE). IF J-BOX IS USED FOR SUPPLYING POWER TO MULTIPLE UNITS, THE J-BOX MUST BE LOCATED WITHIN 25 FEET OF EACH UNIT'S DISCONNECT PER THE NE.C. ARTICLE 240.21(B)(2). CONTRACTOR SHALL SUPPLY AND INSTALL A 120 VAC WEATHERPROOF GFCI RECEPTACLE WITHIN 25' OF EACH UNIT.
- W. ALL CONTRACTORS, PRIOR TO BID SUBMISSION PROCESS, SHALL VISIT PROPOSED WORK SITE AND FIELD VERIFY ALL EXISTING CONDITIONS. ANY CONDITIONS THAT DIFFER FROM THAT SHOWN ON THIS PLAN SHALL BE REPORTED TO THE ARCHITECT/ENGINEER SO THAT NEW AND REVISED BID DRAWINGS OR INFORMATION MAY BE ISSUED. MODIFICATIONS TO SCOPE OF WORK WHICH RESULT FROM CONTRACTORS NEGLECT TO VISIT THE SITE PRIOR TO BID SUBMISSION SHALL BE CONTRACTOR'S SOLE RESPONSIBILITY.
- X. ALL WORK SHALL BE MEET OR EXCEED THE APPLICABLE PORTIONS OF THE DEPARTMENT OF AGING AND DISABILITY SERVICES (DADS) LICENSING STANDARDS.



TELEVISION OUTLET

WIRELESS ACCESS

MEDIA BOX DEMARC LOCATION

120V CARBON MONOXIDE ALARM WITH

SOUNDER BASE AND BATTERY BACK-UP

AND BATTERY BACK-UP

120V COMBINATION SMOKE ALARM / CARBON

SA 120V SMOKE ALARM WITH SOUNDER BASE

MONOXIDE ALARM WITH SOUNDER BASE AND BATTERY BACK-UP

RISER DIAGRAMGENERAL NOTES:

PANELBOARD.

- A. ALL WORK SHALL MEET OR EXCEED ALL NEC STANDARDS.
- B. EC SHALL VERIFY ALL WIRE SIZING DUE TO IN FIELD ROUTING AND VOLTAGE DROP.
- C. ALL 15A-20A CIRCUITS SHALL HAVE A MINIMUM #12 CU WIRE.
- D. ALL BRANCH CIRCUIT WIRING SHALL BE COPPER UNLESS NOTED OTHERWISE.
- E. PROVIDE APPROPRIATELY RATED EQUIPMENT, BREAKERS, FUSES, ETC. BASED ON SHORT CIRCUIT CALCULATIONS AND FAULT CURRENT INFORMATION FROM LOCAL UTILITY.
- F. PROVIDE TYPE WRITTEN CIRCUIT DIRECTORY FOR EACH
- G. PROVIDE PLACARD ON EACH PIECE OF DISTRIBUTION EQUIPMENT INDICATING EQUIPMENT DESIGNATION, VOLTAGE AND PHASE IDENTIFICATION. PLACARD SHALL BE ENGRAVED PHENOLIC WITH 1/4"
- H. ENTIRE RISER DIAGRAM IS EXISTING TO REMAIN AND SHOWN FOR REFERENCE ONLY.



CONTRACTOR NOTE

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BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF THE WORK. THE BASE BID SHALL REFLECT MODIFICATIONS TO SYSTEMS AND DEVICES AS REQUIRED BY STATE, LOCAL AND FEDERAL CODES WHETHER INDICATED OR NOT ON CONTRACT DOCUMENTS. THE SUBMISSIONS OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION AND COMPLIANCE WITH GOVERNING CODES/REQUIREMENTS HAS BEEN MADE. LATE CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION AND CODE/REQUIREMENTS REVIEW BEEN MADE, WILL NOT BE ALLOWED.

	SEAL STATE OF TEXAS
	ROBERTAR RUDOLPH 106840
5	SOLLISENSED WES
	PE-SERVICES F-10841 EXP: 09/30/25

ELECTRICAL COVER

SUBMITTAL DATE: SHEET NUMBER: 02/24/25 ISSUED FOR:

EQUIPMENT DESIGNATION CIRCUIT DESIGNATION PANEL DESIGNATION - CIRCUIT NUMBER

ELECTRIC UTILITY KEY BOX

FAN/LIGHT COMBINATION FIXTURE

NON-FUSED DISCONNECT SWITCH

FUSED DISCONNECT SWITCH

LOW VOLTAGE TRANSFORMER

SINGLE RECEPTACLE 20A, 120V

SPECIAL RECEPTACLE

DUPLEX RECEPTACLE 20A, 120V

QUADRUPLEX RECEPTACLE 20A, 120V

GFCI DUPLEX RECEPTACLE 20A, 120V

IG DUPLEX RECEPTACLE 20A, 120V

SPLIT WIRED DUPLEX RECEPTACLE 20A, 120V

SPLIT WIRED QUADRUPLEX RECEPTACLE

TWISTLOCK RECEPTACLE

SURFACE MOUNT

PANELBOARD/LOADCENTER

UTILITY SERVICE METER

PLUGMOLD - SEE PLAN VIEW FOR SPECIFIC

LENGTHS

GENERATOR ANNUNCIATOR

POWER POLE

UNINTERRUPTIBLE POWER SUPPLY

FLUSH MTD AS INDICATED BY BOX AROUND
WA
WA

FLUSH MOUNT PANELBOARD/LOADCENTER CO

GFCI QUADRUPLEX RECEPTACLE 20A, 120V #A

IG QUADRUPLEX RECEPTACLE 20A, 120V

RISER DIAGRAM

C. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO ROUGH-IN.

D. VERIFY EXACT LOCATIONS AND MOUNTING HEIGHTS FOR ALL

E. ALL EXIT/EMERGENCY LIGHTING SHALL BE PROVIDED WITH AN UNSWITCHED CONDUCTOR ON THE INDICATED CIRCUIT.

FIXTURES AND DEVICES PRIOR TO ROUGH-IN.

F. ALL FIXTURES USED FOR EMERGENCY EGRESS LIGHTING SHALL COME EQUIPPED WITH AN EMERGENCY BATTERY FOR BACK-UP POWER.

G. ALL FIXTURES SHOWN WITH A "NL" TAG SHALL BE CONSIDERED A NIGHT LIGHT AND BE CONNECTED AHEAD OF ALL CONTROLS.

H. VERIFY THE COLOR OF ALL FIXTURES, DEVICES, AND COVER PLATES WITH OWNER.

I. PROVIDE PORCELAIN LAMP HOLDER WITH OUTLET COMBO AT ALL ATTIC ACCESS POINTS. MOUNT TO STRUCTURE IN ATTIC. COORDINATE EXACT LOCATION IN FIELD PRIOR TO ROUGH-IN.

J. FOR ALL OCCUPANCY SENSORS, PROVIDE SWITCHPACK AND ALL OTHER REQUIRED HARDWARE WHERE NECESSARY. COORDINATE ALL SETTINGS WITH OWNER PRIOR TO ROUGH-IN.

PLAN NOTES:

DESCRIPTION / REMARKS

DINING ROOM DECO. LIGHTING, LACQUERED BRASS FINISH

FAMILY ROOM DECO. LIGHTING, SOFT BRASS FINISH

INTERIOR DECO SCONCE LIGHT, SOFT BRASS FINISH

EXIT LIGHT WITH 90 MINUTE BATTERY BACKUP

(2) HEAD REMOTE EXTERIOR EMERGENCY EGRESS

EXIT SIGN WITH 90 MINUTE BATTERY BACKUP

2X4 TROFFER

6" DOWNLIGHT

- 1. CIRCUIT NEW LIGHT FIXTURES TO EXISTING LIGHTING CIRCUIT MADE AVAILABLE THROUGH DEMOLITION. EXTEND, MODIFY, SUPPLEMENT, AND TRUNCATE ALL WIRING AND CONDUIT AS NEEDED. E.C. TO FIELD VERIFY EXISTING CIRCUIT IS NOT OVERLOADED WITH ADDED DEVICES.
- 2. PROVIDE CEILING MOUNT OCCUPANCY SENSOR.
- 3. ALL EXTERIOR LIGHTING DEVICES, CIRCUITS, AND CONTORLS ARE EXISTING TO REMAIN.

■ ARCHITECTURE ROBERT R. RUDOLPH



CONTRACTOR NOTE IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIF THE ARCHITECT, LANDLORD AND TENANT OF ANY DISCREPANCIES ENCOUNTERED ON THE PLANS OR IN

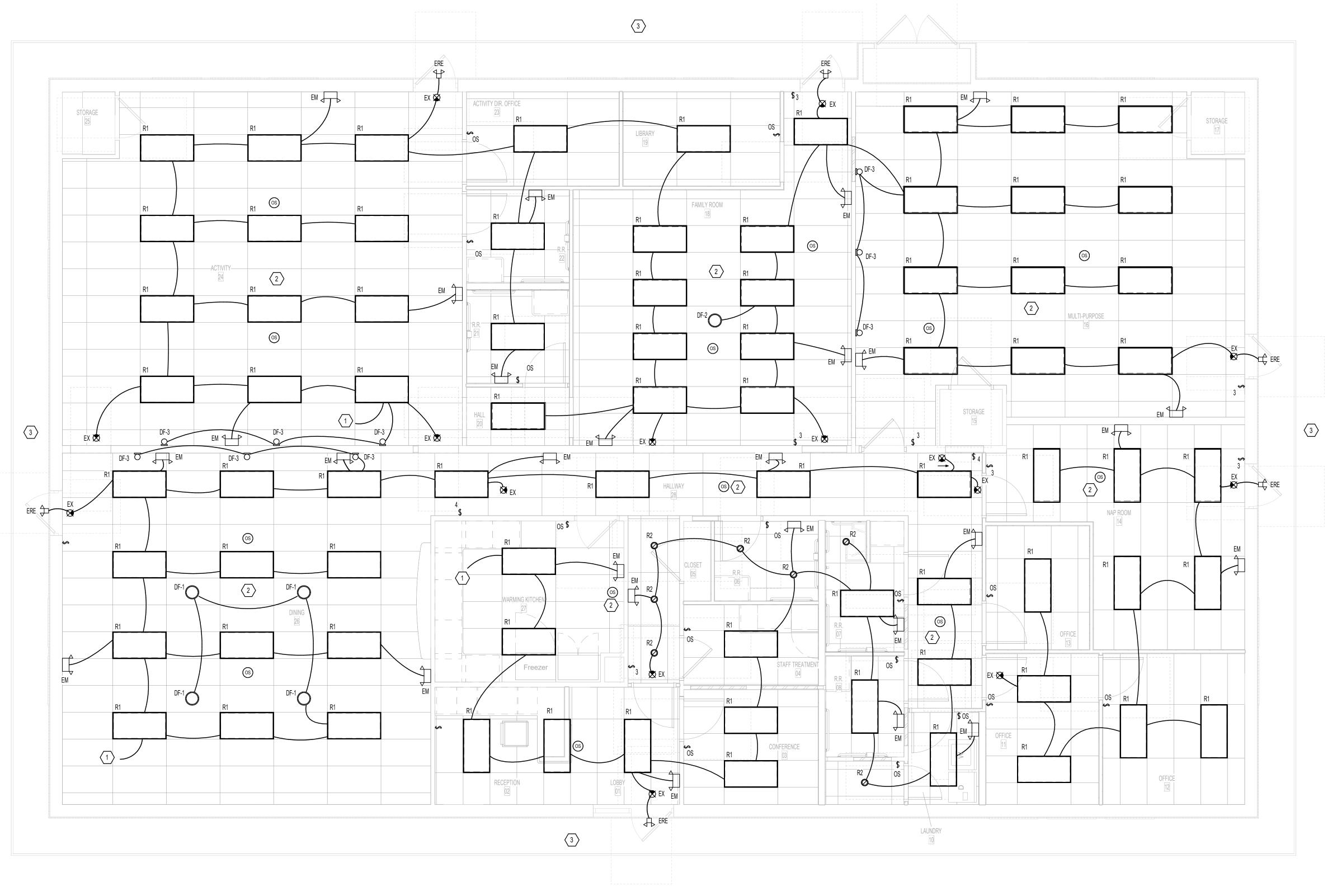
BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF THE WORK. THE BASE BID SHALL REFLECT MODIFICATIONS TO SYSTEMS AND DEVICES AS REQUIRED BY STATE, LOCAL AND FEDERAL CODES WHETHER INDICATED OR NOT ON CONTRACT DOCUMENTS. THE SUBMISSIONS OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION AND COMPLIANCE WITH GOVERNING CODES/REQUIREMENTS HAS BEEN MADE. LATE CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION AND CODE/REQUIREMENTS REVIEW BEEN MADE, WILL NOT BE ALLOWED.



EXISTING SITE CONDITIONS PRIOR TO SUBMISSION OF

LIGHTING PLAN

SUBMITTAL DATE: SHEET NUMBER: 02/24/25 ISSUED FOR: PERMIT



MANUFACTURER

HINKLEY

MINKKA LAVERY

MINKKA LAVERY

LITHONIA

LITHONIA

LITHONIA

LITHONIA

LITHONIA

MODEL NUMBER

47573LCB

5615-695-L

924-695-L

ELM2L-M12

ERE-GY-T-SQ-WP

EXRG-M6

LDNSQ-30-20-LS4-AR-LSS-MVOLT-EZ1

-TRW

LDN6-35/10-MVOLT-GZ10-HSG

L06AR-LSS-TRIM

120

120

120

120

120

120

LED

LED

LED

LED

LED

LED

LED

LED

TAG

DF-2

ERE

R2

LUMINAIRE SCHEDULE

SUSPENDED

SUSPENDED

WALL

SURFACE

SURFACE

SURFACE

RECESSED

RECESSED

60 VA

20 VA

15 VA

2 VA

1 VA

2 VA

22 VA

20 VA

VOLTAGE LAMP TYPE KELVIN WATTS LUMENS MOUNTING TYPE

3500

3500

ROBERT R. RUDOLPH

ENGINEERING FOR YOUR SUCCESS

CONTRACTOR NOTE IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIF THE ARCHITECT, LANDLORD AND TENANT OF ANY DISCREPANCIES ENCOUNTERED ON THE PLANS OR IN EXISTING SITE CONDITIONS PRIOR TO SUBMISSION OF

GENERAL NOTES:

WITH OWNER.

A. ALL WORK SHALL MEET OR EXCEED ALL NEC STANDARDS.

AND DEVICES PRIOR TO ROUGH-IN.

B. SEE MAIN ELECTRICAL GENERAL NOTES FOR MORE INFORMATION.

C. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO ROUGH-IN.

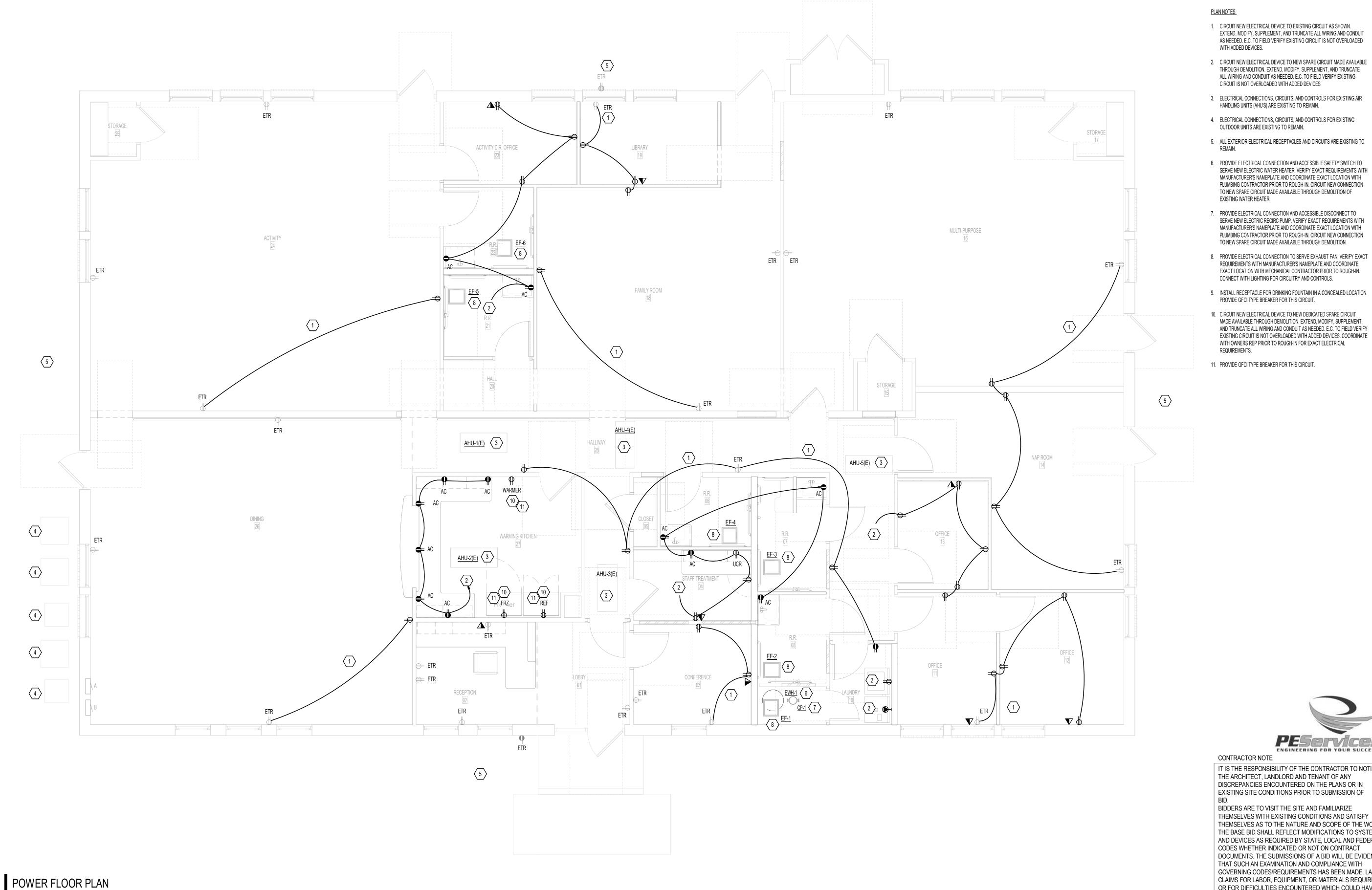
D. VERIFY EXACT LOCATIONS AND MOUNTING HEIGHTS FOR ALL FIXTURES

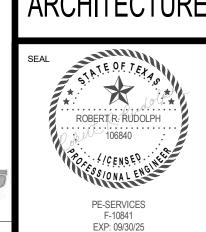
E. VERIFY THE COLOR OF ALL FIXTURES, DEVICES, AND COVER PLATES

BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF THE WORK. THE BASE BID SHALL REFLECT MODIFICATIONS TO SYSTEMS AND DEVICES AS REQUIRED BY STATE, LOCAL AND FEDERAL CODES WHETHER INDICATED OR NOT ON CONTRACT DOCUMENTS. THE SUBMISSIONS OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION AND COMPLIANCE WITH GOVERNING CODES/REQUIREMENTS HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION AND CODE/REQUIREMENTS REVIEW BEEN MADE, WILL NOT BE ALLOWED.

POWER PLAN

SUBMITTAL DATE: SHEET NUMBER: 02/24/25 ISSUED FOR: PERMIT





ENGINEERING FOR YOUR SUCCESS

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WHITE VINYL SELF-ADHESIVE

LETTERING DENOTING PANEL

- WHITE PAPER TAGS WITH 1/4"

BLACK LETTERING DENOTING LINK

IDENTIFICATION PROTECTED BY

PLASTIC COVER/FILM PROVIDED

WITH FACE PLATE/OUTLET.

IDENTIFICATION DETAILS - DEVICES

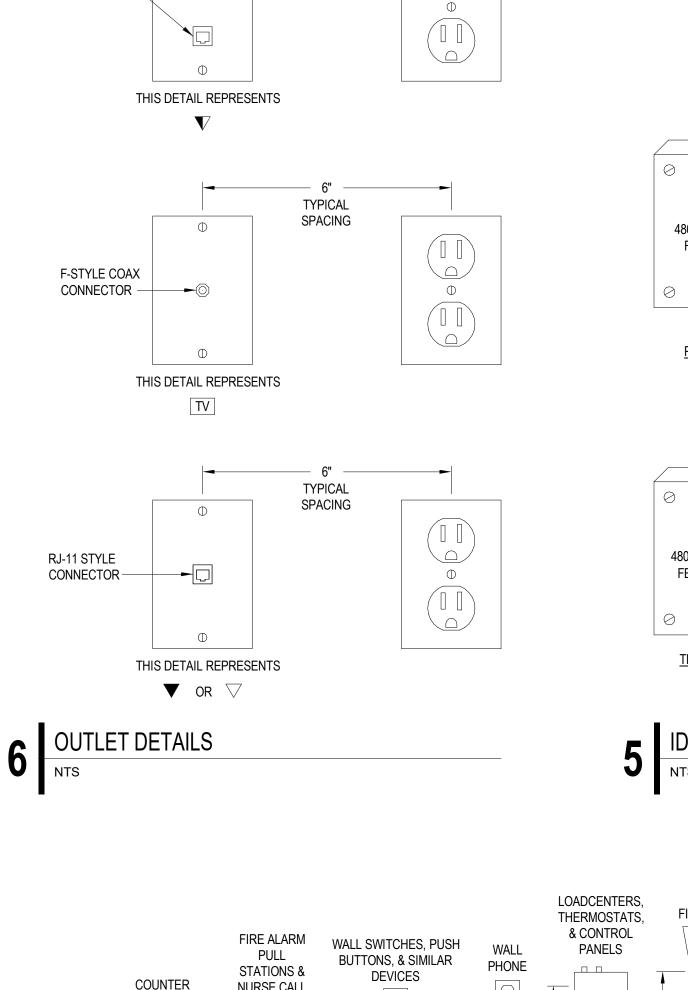
AND CIRCUIT DESIGNATION. -

LABEL WITH 1/4" BLACK

BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF THE WORK. THE BASE BID SHALL REFLECT MODIFICATIONS TO SYSTEMS AND DEVICES AS REQUIRED BY STATE, LOCAL AND FEDERAL CODES WHETHER INDICATED OR NOT ON CONTRACT DOCUMENTS. THE SUBMISSIONS OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION AND COMPLIANCE WITH GOVERNING CODES/REQUIREMENTS HAS BEEN MADE. LAT CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION AND CODE/REQUIREMENTS REVIEW BEEN MADE, WILL NOT BE ALLOWED.

ELECTRICAL DETAILS

SUBMITTAL DATE: SHEET NUMBER: 02/24/25 ISSUED FOR: **PERMIT**



TYPICAL SPACING

RJ-11 STYLE CONNECTOR -

1900 BOX WITH COVER

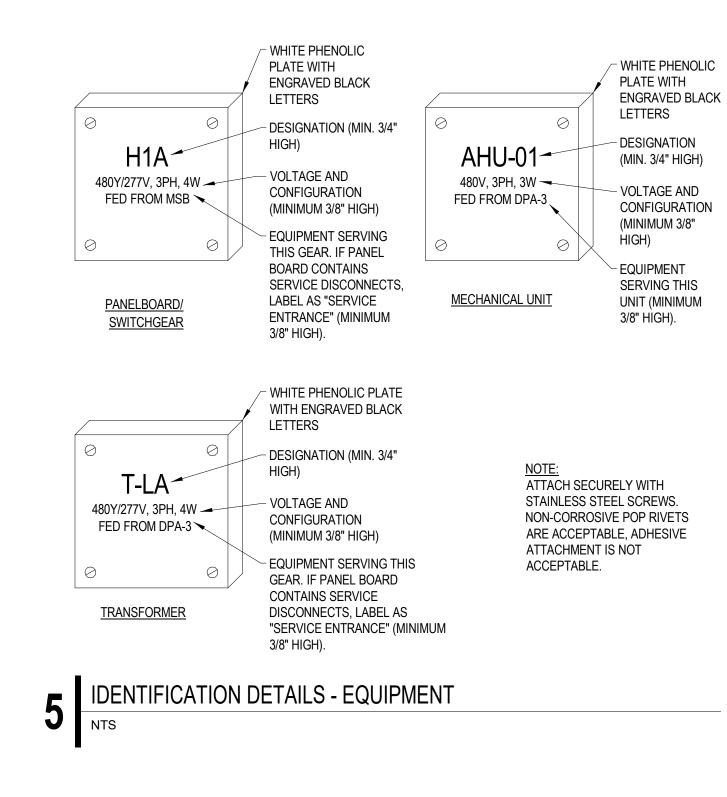
- BRANCH CIRCUIT

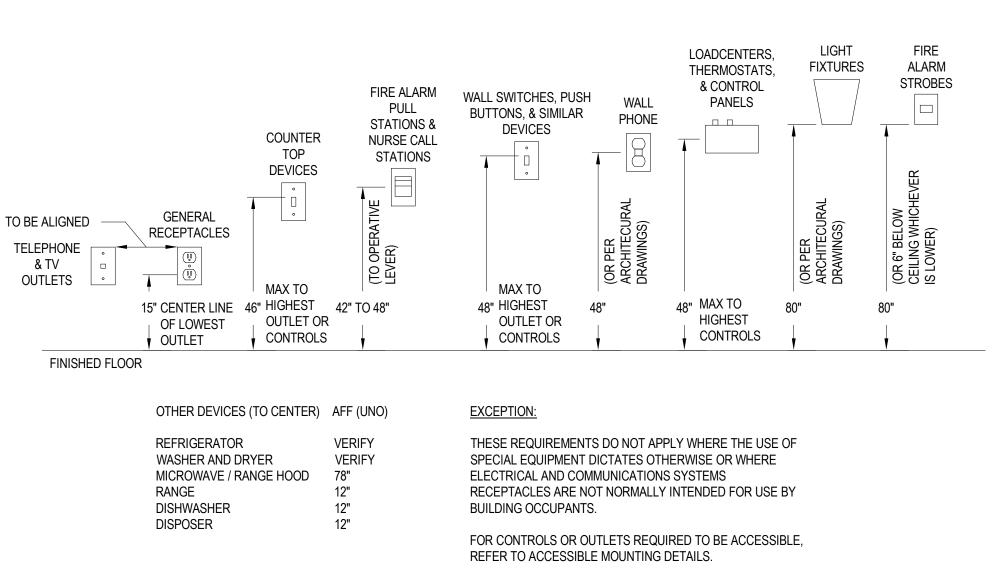
CONDUIT SUPPORT

PER SPECIFICATIONS

- FINISHED CEILING

(TYPICAL)





DEVICE MOUNTING DETAILS - GENERAL

MOUNTING BRACKET (TYP) INSULATOR : EXOTHERMIC WELD CABLE TO BAR (TYP) BONDING CONDUCTORS -

- Building

STRUCTURE

MINIMUM 3/8" FLEXIBLE CONDUIT, MAXIMUM

LENGTH SHALL BE 6'-0"

- STEEL TIE WIRE AT TWO

FIXTURE (MATCH CEILING

CORNERS OF LIGHT

SUPPORT SIZE).

RECESSED DOWNLIGHT DETAIL

SUPPORT PER

SPECIFICATIONS. -

GROUND BUS DETAIL - COMMUNICATIONS - NO IDF ROOMS NTS

TO MAIN SERVICE GROUND -

ATTACH TO TOP CHORD OF STRUCTURE AS REQUIRED WITH BEAM CLAMPS 1/4" CONTINUOUS THREADED ROD CHANNEL PIPE STRAP OR CLIPS — CONDUIT(S) AS REQUIRED GALVANIZED CHANNEL -1-5/8" x 1-5/8" x 12 GAUGE SPACED AS DIRECTED - FINISHED CEILING AS SCHEDULED

USE WHERE ATTIC SPACE

IS GREATER THAN 3'-0"

CONDUIT SUPPORT DETAIL NTS

COMcheck Software Version COMcheckWeb

Project Information

Energy Code: Project Title: Project Type:

Construction Site: 1504 North Garden Ridge LEWISVILLE, Texas 75077 Alteration

Owner/Agent:

2018 IECC

Adult Daycare

Designer/Contractor: 9 N Broadway St LEBANON, Ohio 45036

Allowed Interior Lighting Power

A Area Category	B C Floor Area Allowed (ft2) Watts / ft2	D Allowed Watts
1-Daycare (Office)	5000 0.79	3950
	Total Allowed Watts =	= 3950

Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	(C X D)
Daycare (Office, 5000 sq.ft.)				
R1: R1: 2X4 TROFFER: Other:	1	77	34	2618
R2: R2: 6" LED DOWNLIGHT: Other:	1	12	7	84
DF1: DF1: PENDANT: Other:	4	4	60	240
DF2: DF2: PENDANT: Other:	1	1	20	20
DF3: DF3: SCONCE: Other:	1	9	15	135
The second of the second depoint depoint of the second depoint depoint depoint depoint d	To	al Propose	ed Watts =	3097

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title

Signature

Project Title: Adult Daycare

Report date: 03/20/25 Page 2 of 6

Page 5 of 6

COMcheck Software Version COMcheckWeb

Energy Code: 2018 IECC

Requirements: 100.0% were addressed directly in the COMcheck software

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

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

control devices. Additional Comments/Assumptions:

	reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	Not Applicable	
C405.2.1, C405.2.1. 1 [EL18] ¹	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.2.1. 2 [EL19] ¹	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.2.1. 3 [EL20] ¹	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 3) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone, and 4) are configured such that any daylight responsive control will activate space general lighting or control zone general lighting only when occupancy for the same area is detected.		Requirement will be met.
C405.2.2. 1,	Each area not served by occupancy sensors (per C405.2.1) have timeswitch controls and functions detailed in sections C405.2.2.1 and C405.2.2.2.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

__Complies □Does Not Comments/Assumptions

Requirement will be met.

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Rough-In Electrical Inspection Complies?

reduce the connected lighting load in a reasonably uniform illumination

C405.2.2. Spaces required to have light-reduction controls have a manual

[EL22]¹ control that allows the occupant to

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

Additional Comments/Assumptions:

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

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CONTRACTOR NOTE IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ARCHITECT, LANDLORD AND TENANT OF ANY DISCREPANCIES ENCOUNTERED ON THE PLANS OR IN EXISTING SITE CONDITIONS PRIOR TO SUBMISSION OF

BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF THE WORK. THE BASE BID SHALL REFLECT MODIFICATIONS TO SYSTEMS AND DEVICES AS REQUIRED BY STATE, LOCAL AND FEDERAL CODES WHETHER INDICATED OR NOT ON CONTRACT DOCUMENTS. THE SUBMISSIONS OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION AND COMPLIANCE WITH GOVERNING CODES/REQUIREMENTS HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION AND CODE/REQUIREMENTS REVIEW BEEN MADE, WILL NOT BE ALLOWED.

ENERGY CODE

COMPLIANCE SUBMITTAL DATE: SHEET NUMBER: 03/23/22 ISSUED FOR:

- A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.
- B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIAL WHICH VIOLATES ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
- C. INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- D. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF CONDUIT TO AVOID OBSTRUCTIONS.
- E. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT
- F. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
- G. SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL.
- H. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THE BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF CONDUIT AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AS REQUIRED.
- THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK DURING OVERTIME HOURS AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- J. ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING
- K. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND
- L. THE FINAL ACCEPTANCE SHALL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

SCOPE OF WORK:

- A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR. MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMITY WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL OTHER APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HEREIN
- B. ALL DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLEMENTED OR SPECIFIED HEREIN.
- C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.
- D. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE. FILE DRAWINGS AND SPECIFICATIONS WITH ALL DEPARTMENTS HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.

SHOP DRAWINGS:

- A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT, CONTRACTOR SHALL PROVIDE COMPLETE SETS OF COORDINATED SHOP DRAWINGS OF ALL EQUIPMENT, INDICATING CAPACITY, DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT, ENGINEER, AND OWNER.
- B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED: 1) PROJECT NAME AND LOCATION. 2) NAME OF ARCHITECT AND ENGINEER. 3) ITEM IDENTIFICATION. 4) APPROVAL STAMP OF PRIME CONTRACTOR.
- C. SUBMISSIONS: 1) SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE. 2) SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT TWO PRINTS AND ONE PAPER SEPIA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPIA TO THE ENGINEER.
- D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING: 1) SWITCHES. 2) FUSES. 3) CIRCUIT BREAKERS. 4) PANELBOARDS (INCLUDING DIMENSIONS, SCHEDULES, AND CATALOG CUTS). 5) RACEWAYS. 6) WIRE AND CABLE. 7) WALL SWITCHES. 8) INSERTION RECEPTACLES. 9) MOMENTARY CONTACT SWITCHES. 10) TIME SWITCHES. 11) SURFACE METAL RACEWAY. 12) LIGHTING LUMINAIRES. 13) TRANSFORMERS.

4. AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS:

- A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.
- B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.
- C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND
- D. REPRODUCIBLE "AS-BUILT" DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED CONDITIONS OF THE WORK, "AS-BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION.

5. GENERAL PROVISIONS FOR ELECTRICAL WORK:

- A. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.
- B. DEFINITIONS: 1) "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED. 2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES. 3) "FURNISH" OR "SUPPLY: TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES. 4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION. 5) "WIRING": RACEWAY, FITTINGS, WIRE, BOXES AND RELATED ITEMS. 6) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES. 7) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE. 8) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.
- C. TEMPORARY LIGHT AND POWER: PROVIDE TEMPORARY LIGHT AND POWER SYSTEMS AT EARLIEST POSSIBLE DATE WITHIN THE CONSTRUCTION AREAS FOR THE REQUIREMENTS OF ALL TRADES AS HEREIN DESCRIBED. EXTEND SYSTEMS TO NEW CONSTRUCTION AS SOON AS PHYSICALLY POSSIBLE. MAINTAIN SYSTEM DURING WORKING HOURS OF ALL TRADES. COST OF ENERGY WILL BE PAID FOR BY OWNER. PROVIDE ALL REQUIRED MAINTENANCE, INCLUDING LAMPS AND SOCKETS.
- D. QUALITY ASSURANCE: 1) QUALITY AND GAUGE OF MATERIALS: NEW, BEST OF THEIR RESPECTIVE KINDS, FREE FROM DEFECTS AND LISTED BY UNDERWRITERS LABORATORIES, INC., OR OTHER NATIONALLY APPROVED TESTING AGENCY AND BEARING THEIR LABEL. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED. 2) GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AS DEFINED IN PARAGRAPH 2.C. 3) CURRENT CHARACTERISTICS: a. SERVICE: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL. b. DISTRIBUTION: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL. 4) HEIGHTS OF OUTLETS: (UNLESS OTHEWISE SPECIFIED BY ARCHITECT) a. FROM FINISHED FLOOR TO CENTERLINE OF OUTLETS FOR: - RECEPTACLES AND TELEPHONES: 1'-6". - WALL SWITCHES: 3'-2". - WALL LUMINAIRES: 7'-0". - MOTOR CONTROLLERS: 5'-0". - STROBE LIGHTS: 6'-8". OR 6" BELOW CEILING (WHICHEVER IS LOWER) - FIRE ALARM PULL STATIONS: 4'-0". b. EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH MATERIALS, ON MOLDING OR BREAK IN WALL SURFACE, IN VIOLATION OF CODE, OR AS NOTED OR DIRECTED.
- E. PRODUCT DELIVERY, STORAGE AND HANDLING: 1) MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES. 2) ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS SHALL BE PERMITTED. CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW. GROUP CONCEALED ELECTRICAL EQUIPMENT REQUIRING ACCESS WITH EQUIPMENT FREELY ACCESSIBLE THROUGH
- F. MATERIALS: 1) NAMEPLATES: PROVIDE BLACK LAMICOID SHEET WITH 3/4" WHITE LETTERING, FASTENED WITH EPOXY CEMENT FOR EACH DISCONNECT SWITCH, CIRCUIT BREAKER, PANEL, CABINET, TRANSFORMER, ENCLOSURE, MOTOR CONTROLLER AND THE LIKE. NAMEPLATES SHALL DESCRIBE THE NAME AND NUMBER OF EACH COMPONENT. 2) CABLE TAGS: TAG EACH CONDUCTOR PASSING THROUGH SPLICE OR PULLBOX WITH A WHITE LINEN TAG, INDICATING POINT OF ORIGIN AND TERMINATION OF THE CIRCUIT. 3) INSERTS AND SUPPORTS: a. INSERTS: STEEL, SLOTTED TYPE, FACTORY PAINTED. - SINGLE ROD: SIMILAR TO GRINNELL FIG. 281. - MULTI-ROD: SIMILAR TO FEE AND MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. - CLIP FORM NAILS FLUSH WITH INSERTS. - MAXIMUM LOADING 75 PERCENT OF RATING. b. SUPPORTS FROM BUILDING CONSTRUCTION: INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), CANTILEVER BRACKETS OR OTHER MEANS. SUBMIT FOR REVIEW. c. GROUPED LINES AND SERVICES: TRAPEZE HANGERS OF BOLTED ANGLES OR CHANNELS. d. WHERE BUILDING CONSTRUCTION IS INADEQUATE: PROVIDE ADDITIONAL FRAMING. SUBMIT FOR REVIEW.
- G. GPAINT SHALL BE THE BEST GRADE FOR ITS PURPOSE. DELIVER IN ORIGINAL SEALED CONTAINERS AND APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, COLORS SHALL BE AS SELECTED BY ARCHITECT OR ENGINEER, LITHLIZE GALVANIZED IRON. PRIMER ON PANEL AND PULL BOXES, AFTER FABRICATION. UTILIZE HOT DIPPED GALVANIZED OR DIPPED IN ZINC BASED PRIMER FOR: OUTLET BOXES, JUNCTION BOXES, CONDUIT HANGERS, RODS, INSERTS AND SUPPORTS. ZINC BASED PRIMER OF STEEL EQUIPMENT AND RACEWAYS. A FIELD-APPLIED ZINC BASED PRIME COAT SHALL BE UTILIZED FOR STEEL OR IRONWORK.
- H. BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK SOILED OR DAMAGED; CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF MATERIAL AND EQUIPMENT.
- I. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL SWITCHES, RECEPTACLES AND LIGHT LUMINAIRES SHALL BE VERIFIED
- J. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.

6. LOW-VOLTAGE DISTRIBUTION EQUIPMENT:

- A. PROVIDE COMPLETE EQUIPMENT INCLUDING: SWITCHES, FUSES, CIRCUIT BREAKERS, PANELS AND TRANSFORMERS.
- B. ALL EQUIPMENT SHALL CONFORM TO NEMA, ANSI, IEEE STANDARDS AND BUILDING STANDARDS.
- C. DISCONNECT SWITCHES SHALL BE FUSED OR NONFUSED AS NOTED AND HORSEPOWER RATED FOR MOTOR LOADS. TOGGLE TYPE SWITCHES SHALL BE NONFUSED, LOAD BREAK, HAVING MAXIMUM RATINGS OF 20 AMP AT 600 VOLTS AND 30 AMP AT 240 VOLTS. TWO-POLE SWITCHES SHALL BE LEVITON MODEL SIMILAR TO HART AND HEGEMAN NO. 7810F. KNIFE-BLADE TYPE SWITCHES SHALL BE LOAD BREAK, QUICK-MAKE-QUICK-BREAK, UL CLASS R UP TO 600 AMP MAXIMUM RATING EXCEPT AS NOTED DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED.
- D. FUSES: 1) CIRCUIT 601 TO 6000 AMPERES SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMANN LOW-PEAK TIME-DELAY FUSES KRP-C (AMP)SP, CLASS L LISTED BY UL WITH AN INTERRUPTING RATING OF 300,000 AMPERES RMS SYMMETRICAL. 2) CIRCUITS 0 TO 600 AMPERES SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMAN LOW-PEAK DUAL-ELEMENT TIME-DELAY LPN-RK (AMP)SP (250V) /LPS-RK (AMP)SP (600V) OR LPJ (AMP)SP (600V) (UL CLASS RK1 OR CLASS J), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 300,000 AMPERES RMS SYMMETRICAL. 3) MOTOR CIRCUITS - ALL INDIVIDUAL MOTOR CIRCUITS WITH FULL LOAD AMPERE RATINGS (FLA) OF 480 AMPERES OR LESS SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMANN LOW-PEAK DUAL-ELEMENT TIME-DELAY LPN-RK (AMP)SP (250V) /LPS-RK (AMP)SP (600V) OR LPJ (AMP)SP (600V) (UL CLASS RK1 OR CLASS J), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 300,000 AMPERES RMS SYMMETRICAL. 4) ALL FUSES SHALL BE PROVIDED BY SAME MANUFACTURER. 5) PROVIDE 1 SPARE MATCHING FUSE FOR
- E. CIRCUIT BREAKERS: MOLDED CASE BREAKERS SHALL BE THERMAL- MAGNETIC, QUICK-MAKE-QUICK-BREAK, BOLT-ON TYPE, MANUALLY OPERATED WITH INSULATED TRIP-FREE HANDLE. MULTI-POLE TYPE BREAKERS SHALL CONTAIN INTERNAL TRIP BAR. TERMINALS SHALL BE SUITABLE FOR COPPER OR ALUMINUM CABLE. FURNISH AUXILIARY DEVICES WHERE REQUIRED. ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED. FRAMES, IC AND INTERCHANGEABLE TRIPS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED: 1) 120 VOLTS, 100-AMP FRAME: 10,000 AMPS, 1 POLE. 2) 240 VOLTS, 100-AMP FRAME: 18,000 AMPS, 2 AND 3 POLES.
- F. DISTRIBUTION PANELS: SWITCHING UNITS SHALL BE 3 PHASE, 4 WIRE CIRCUIT-BREAKER TYPE UNLESS OTHERWISE NOTED ON PANEL SCHEDULES. BUS BARS SHALL BE HARD DRAWN COPPER, MINIMUM 98 PERCENT CONDUCTIVITY, SILVER OR TIN-PLATED JOINTS. CABINETS SHALL BE WELDED CORNERS. HARDWARE SHALL BE CHROME-PLATED WITH FLUSH LOCK/LATCH HANDLE ASSEMBLY (UP TO 48 IN. HIGH DOORS) OR VAULT HANDLE, LOCK AND 3-POINT CATCH (LARGER THAN 48 IN. HIGH DOORS). HINGES SHALL BE SEMI-CONCEALED, 5-KNUCKLE STEEL WITH NONFERROUS PINS, 180-DEG OPENING, LOCATED A MAXIMUM 26 IN. ON CENTERS. MINIMUM GUTTER SPACES FOR LIGHTING PANELS SHALL BE 5-3/4 IN. SIDES, PLASTIC, TRANSPARENT COVER. A TYPEWRITTEN LIST INDICATING FEEDER CABLE AND CONDUIT SIZE, CIRCUIT NUMBERS, OUTLETS SUPPLIED AND THEIR LOCATIONS SHALL BE PROVIDED.
- G. BALANCE THE LOAD OVER PHASES WHEN NEW CIRCUITS ARE ADDED TO PANELS. PROVIDE MULTI-CABLE LUGS WHERE REQUIRED. DOUBLE LUGGING SHALL NOT BE PERMITTED. MOUNTING HEIGHT SHALL BE A MAXIMUM OF 6 FT-6 IN. FROM FLOOR TO TOP SWITCH UNIT. UPDATE DIRECTORIES ON EXISTING PANELBOARDS WHERE CIRCUITING IS CHANGED
- H. TESTS: OPEN AND CLOSE LOAD BREAK SWITCHING DEVICES UNDER LOAD.

- A. PROVIDE RACEWAYS COMPLETE WITH BOXES, FITTINGS AND ACCESSORIES. CONDUIT OR TUBING SIZES REFERRED TO IN SPECIFICATIONS AND ON DRAWINGS ARE NOMINAL DIAMETERS.
- B. MATERIALS: 1) RACEWAYS: a. RIGID STEEL CONDUIT: FULL-WEIGHT PIPE, GALVANIZED, THREADED. b. ELECTROMETALLIC TUBING (EMT): THIN WALL PIPE. GALVANIZED. THREADLESS. c. FLEXIBLE STEEL CONDUIT: CONTINUOUS SINGLE STRIP. GALVANIZED. d. WIREWAYS: WIRE SHALL BE AS NOTED, MINIMUM NO. 16 GAUGE STEEL WITH GROUND CONTINUITY. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW-ON. e. SURFACE METAL RACEWAY: SIZE AS NOTED. BASE 0.04 IN., COVER 1/4". MATERIAL SHALL BE STEEL. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW-ON. 2) FITTINGS AND ACCESSORIES: a. RIGID STEEL NONSPLIT, THREADED, STEEL OR MALLEABLE IRON. ZINC DIE CAST NOT PERMITTED. b. ELECTROMETALLIC TUBING: COMPRESSION TYPE. GALVANIZED RIGID STEEL ELBOWS, 2" OR LARGER. c. FLEXIBLE METALLIC CONDUIT: ANGLE WEDGE TYPE WITH INSULATED THROAT. d. BUSHINGS: METALLIC INSULATED TYPE. 3) BOXES: a. OUTLET BOXES: EXCEPT AS OTHERWISE REQUIRED BY CONSTRUCTION, DEVICES OR WIRING, BOXES SHALL BE STAMPED STEEL, 4" SQUARE OR OCTAGON FOR LUMINAIRES. BOXES ABOVE CEILING SHALL BE 11/2" DEEP. BOXES IN CEILING OR SLAB SHALL BE 3" DEEP. BOXES IN WALL FOR LUMINAIRES SHALL BE 23/4" DEEP. BOXES IN WALL FOR RECEPTACLES AND SWITCHES SHALL BE 11/2" DEEP. FURNISH WITH RAISED COVERS AND LUMINAIRE STUDS WHERE REQUIRED. WITHOUT LUMINAIRE OR DEVICE: FURNISH BLANK COVER. OFFSET BACK-TO-BACK OUTLETS WITH MINIMUM 6" SEPARATION. b. JUNCTION AND PULL BOXES: GALVANIZED SHEET STEEL WITH SCREW-ON COVERS, EXCEPT AS NOTED. FURNISH WITH INSULATED SUPPORTS FOR CABLES. LOCATIONS SHALL BE AS NOTED OR REQUIRED AND ACCESSIBLE. FLOOR BOXES SHALL BE SUITABLE FOR CONDUIT AND DEVICES NOTED. RAISED OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH ABOVE FLOOR FITTING. TELEPHONE: BUSHED HOLE. POWER: DUPLEX RECEPTACLE OR OTHER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY. FLUSH OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH FLUSH FLOOR FITTING FOR TELEPHONE AND FLUSH DUAL FLAP COVER WITH DUPLEX RECEPTACLE FOR POWER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY.
- C. PROVIDE RACEWAYS ONLY AS HEREIN SPECIFIED, EXCEPT AS NOTED. RACEWAYS SHALL BE RUN CONCEALED. EXCEPT AS NOTED. PROVIDE RACEWAY SUPPORT UTILIZING CEILING TRAPEZE, STRAP HANGERS, OR WALL BRACKETS. SECURE ALL RACEWAYS TO SUPPORTS WITH PIPE STRAPS OR U-BOLTS. SPACING OF SUPPORTS SHALL BE A MINIMUM OF 10' ON CENTER FOR METALLIC RACEWAY AND AS REQUIRED FOR NONMETALLIC RACEWAY. SPACING SHALL BE 5' ON CENTER FOR WIREWAYS AND PER CODE AND AS NOTED FOR OTHERS. MOUNT SUPPORTS TO STRUCTURE MASONRY WITH TOGGLE BOLTS ON HOLLOW MASONRY, EXPANSION SHIELDS OR INSERTS IN CONCRETE AND BRICK, MACHINE SCREWS ON METAL, BEAM CLAMPS ON FRAMEWORK, WOOD SCREWS ON WOOD, AND PAN THROUGH STRAPS IN METAL DECK. NAILS, RAWL PLUGS OR WOOD PLUGS SHALL NOT BE PERMITTED. WHERE REQUIRED BY STRUCTURE, FURNISH THROUGH BOLTS AND FISHPLATES. EXPOSED RACEWAYS SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS. PROVIDE CLEARANCE WITH WATER, STEAM OR OTHER PIPING (MINIMUM 3 IN. SEPARATION FROM STEAM AND HOT WATER PIPES, EXCEPT 1" FROM PIPE COVER AT CROSSINGS AND 18" FOR PARALLEL RUNS). FOR HUNG CEILING OUTLETS, RUN IN HUNG CEILING AND CONNECT TO CEILING SUPPORT CHANNELS. IN MASONRY AND POURED CONCRETE, RUN VERTICALLY ONLY. MAINTAIN GROUNDING CONTINUITY OF INTERRUPTED METALLIC RACEWAYS WITH GROUND CONDUCTOR, AND IN FLEXIBLE CONDUIT FOR FEEDERS AND MOTOR TERMINAL CONNECTIONS. EMPTY RACEWAYS OVER 10' LONG: PROVIDE FISH OR PULL WIRE, GALVANIZED OR NYLON ROPE. RIGID STEEL CONDUIT SHALL BE PERMITTED FOR FEEDERS AND BRANCH CIRCUITS. PAINT MALE THREADS OF FIELD-THREADED CONDUIT WITH GRAPHITE-BASE PIPE COMPOUND AND BUTT CONDUIT ENDS. TOUCH UP MARRED SURFACES AND FIELD-CUT THREADS, CRC-COLD GALVANIZED. EMT SHALL BE PERMITTED FOR BRANCH CIRCUITS ONLY, IN DRY LOCATIONS. DRY WALLS, HUNG CEILINGS, HOLLOW BLOCK WALLS AND FURRED SPACES, EMT SHALL NOT BE PERMITTED IN RAISED FLOORS. FLEXIBLE STEEL CONDUIT SHALL BE UTILIZED FOR SHORT CONNECTIONS WHERE RIGID CONDUIT IS IMPRACTICAL. FROM OUTLET BOX TO RECESSED LIGHTING LUMINAIRE: PROVIDE MINIMUM 4' AND MAXIMUM 6' LENGTHS. FOR FINAL CONNECTION TO MOTOR TERMINAL BOX, TRANSFORMER AND OTHER VIBRATING EQUIPMENT: PROVIDE WITH POLYVINYL SHEATHING AND GROUND CONDUCTOR. MINIMUM LENGTH: 18" WITH SLACK. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END. FOR EXPANSION JOINT CROSSINGS, CROSS AT RIGHT ANGLES AND ANCHOR ENDS. CUT CONDUIT ENDS SQUARE. REAM SMOOTH. PAINT MALE THREADS OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY COUPLING. EXPANSION FITTINGS SHALL BE INSTALLED AT RIGHT ANGLES WITH CLIP JOINT CENTERED IN EXPANSION JOINT. PROVIDE A LENGTH OF RUN IN ACCORDANCE MANUFACTURER'S RECOMMENDATIONS. PRESET FITTINGS SHALL ALLOW FOR TEMPERATURE VARIATION. RACEWAYS PASSING THROUGH FIRE-RATED CONSTRUCTION: SEAL OPENING WITH FIRE
- D. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING, OUTLET BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRON OR GROUT IN WITH MASONRY. VERIFY OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISHES. PROVIDE BARRIERS BETWEEN SWITCHES CONNECTED TO DIFFERENT PHASES FOR VOLTAGES EXCEEDING 150 VOLTS TO GROUND.
- E. PANEL, JUNCTION AND PULL BOXES SHALL BE LOCATED CLEAR OF OTHER TRADES. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. BOXES SHALL BE ACCESSIBLE. SUPPORT BOXES FROM BUILDING STRUCTURE, INDEPENDENT OF CONDUIT. PROVIDE FLOOR-TO-CEILING CHANNELS FOR MOUNTING ON DRYWALL AND LIGHTWEIGHT CONSTRUCTION. OUTLET BOXES FOR LUMINAIRES RECESSED IN HUNG CEILINGS SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF LUMINAIRE. SECURE TO BLACK IRON SUPPORT. MOTOR TERMINAL BOXES: COORDINATE WITH MOTOR BRANCH CIRCUIT CONDUIT AND WIRING; ADD BOX VOLUME
- F. FIRE SEALANTS: PROVIDE FOR RACEWAYS AND WIRE PASSING THROUGH FLOOR SLOTS. SLEEVES OR OPENINGS IN FIRE-PARTITIONS ROOMS.
- G. PERFORM CONTINUITY TESTS OF RESISTANCE OF FEEDER CONDUITS FROM SERVICE TO POINT OF FINAL DISTRIBUTION USING 1 CONDUCTOR RETURN. MAXIMUM RESISTANCE SHALL BE 25 OHMS.
- H. METAL-CLAD CABLE (TYPE MC) WITH GROUND WIRE MUST COMPLY WITH NEMA WC70/ICEA S-95-658. MC CABLE IS ACCEPTABLE FOR BRANCH CIRCUITS THAT ARE CONCEALED WITHIN CEILINGS, WALL, PARTITIONS, OR FLOORS. INSTALL EXPOSED CABLES PARALLEL AND PERPENDICULAR TO SURFACES OF EXPOSED STRUCTURAL MEMBERS AND FOLLOW SURFACE CONTOURS WHERE

8. WIRE AND CABLE:

- A. PROVIDE WIRE AND CABLE COMPLETE WITH ACCESSORIES. SIZE REFERENCE SHALL BE AWG EXCEPT AS NOTED.
- B. CONDUCTORS SHALL BE COPPER, ASTM STANDARD SOLID (NO. 10 AND SMALLER) OR STRANDED (NO. 8 AND LARGER). GENERAL USE CABLING SHALL BE NO. 12 MINIMUM. AT 120 VOLTS AND OVER 100' CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM. AT 265 VOLTS AND OVER 200' CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM. CONTROL AND ALARM CABLING, EXCEPT AS NOTED, SHALL BE NO. 14 MINIMUM. AT 120 VOLTS AND OVER 200' CIRCUIT LENGTH PROVIDE NO. 8 MINIMUM. OTHER VOLTAGES AND PHASES: ADJUST CABLE SIZING AS REQUIRED TO MAINTAIN VOLTAGE DROP. INCREASE RACEWAY SIZES FOR LARGER WIRE AS REQUIRED.
- C. INSULATION SHALL BE RUBBER AND THERMOPLASTIC MEETING ASTM AND IPCEA STANDARDS. TYPE THW OR THWN SHALL BE UTILIZED FOR FEEDERS AND BRANCH CIRCUITS EXCEPT AS NOTED. TYPE SFF-2 SHALL BE UTILIZED FOR BRANCH CIRCUITS LOCATED IN WIRING CHANNELS OF CONTINUOUS FLUORESCENT LUMINAIRES AND IN AMBIENT TEMPERATURES OVER 90 DEG C. FOR UNGROUNDED ISOLATED BRANCH CIRCUITS PROVIDE CROSS-LINKED POLYETHYLENE INSULATION (TYPE XHHW).
- D. COLOR CODING SHALL BE AS FOLLOWS: 1) 120/208 VOLT SYSTEM: BLACK FOR A PHASE RED FOR B PHASE BLUE FOR C PHASE 2) NEUTRAL WIRE SHALL UTILIZE WHITE OUTER COVERING THROUGHOUT. EQUIPMENT GROUND WIRE SHALL UTILIZE GREEN OUTER COVERING THROUGHOUT. WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION TO OVERLAP CONDUCTORS WITH 6" OF COLOR TAPING IN ACCESSIBLE LOCATIONS.
- PROVIDE FLAMEPROOF LINEN OR FIBER TAGS IN ACCESSIBLE LOCATIONS. FOR FEEDERS INDICATE FEEDER NUMBER, SIZE, PHASE AND POINTS OF ORIGIN AND TERMINATIONS. FOR CONTROL AND ALARM WIRING INDICATE TYPE (CONTROL OR ALARM), SIZE OF WIRE, AND POINTS OF ORIGIN AND TERMINATIONS.
- F. TERMINATIONS, SPLICES AND TAPS UNDER 600 VOLTS: COPPER CONDUCTORS NO. 10 AND SMALLER SHALL UTILIZE COMPRESSION-TYPE OF TWIST-ON SPRING-LOADED CONNECTORS AND CLEAR NYLON-INSULATED COVERING. COPPER CONDUCTORS NO. 8 AND LARGER SHALL UTILIZE MECHANICAL BOLTED PRESSURE OR HYDRAULIC COMPRESSION TYPE USING MANUFACTURER'S RECOMMENDED TOOLING. CABLE LUGS AND CONNECTORS SHALL UTILIZE COMPRESSION TYPE OF SAME METAL AS CONDUCTOR. PROVIDE TO MATCH CABLE, WITH MARKING INDICATING SIZE AND TYPE. COPPER LUG CONNECTIONS TO BUS BARS: USE ANTISEIZE COMPOUND ON TANG.
- G. NOT MORE THAN 3 LIGHTING OR CONVENIENCE OUTLET CIRCUITS SHALL BE INSTALLED IN ONE CONDUIT UNLESS OTHERWISE INDICATED. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32 DEG F. PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF 120/208 AND 265/460 VOLT SYSTEMS, EXCEPT 460 VOLT MOTOR BRANCH CIRCUIT WIRING AND RELATED 120 VOLT CONTROL WIRING. THERMOPLASTIC WIRES SHALL NOT BE INSTALLED IN COMPUTER AREA RAISED FLOORS.
- H. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS.
- PERFORM CONTINUITY AND INSULATION TESTS. MEGGER TEST 100 PERCENT OF FEEDERS, 10 PERCENT OF BRANCH CIRCUITS AND ALL MOTOR BRANCH CIRCUITS OVER 25 HP. PERFORM TESTS PRIOR TO CONNECTING EQUIPMENT AND IN PRESENCE OF AUTHORIZED REPRESENTATIVES. SUBMIT WRITTEN REPORT OF RESULTS. CORRECT OR REPLACE CABLE TESTING BELOW MANUFACTURER'S STANDARDS.

- A. PROVIDE COMPLETE MATERIAL AND ACCESSORIES AS PER BUILDING STANDARDS.
- SIMILAR TO HUBBELL NOS. 1221 (SINGLE POLE), 1222 (DOUBLE POLE), 1223 (3-WAY) AND 1224 (4-WAY).
- C. INSERTION RECEPTACLES SHALL BE SPECIFICATION GRADE DUPLEX CONVENIENCE 125 VOLTS, 2 POLE, 3 WIRE, U GROUND SLOT. GROUNDED, EXCEPT AS NOTED. MEETING NEMA STANDARDS, PUBLICATION WD-1-1971. LEVITON MODEL SIMILAR TO HUBBELL NOS. 5362 (20 AMP) AND 5262 (15 AMP). 1) SINGLE, EXCEPT AS NOTED: a. 20 AMP STRAIGHT BLADE, SIMILAR TO HUBBELL NO. 5361. b. 125 VOLT, 2 POLE, 3 WIRE, GROUNDED. 2) SPECIAL USE: NONINTERCHANGEABLE TYPES AND RATINGS. 3) GROUND FAULT INTERRUPTER RECEPTACLES: a. FEED-THRU TYPE. LEVITON MODEL SIMILAR TO HUBBELL NOS. GF5362 (20 AMP) AND GF5262 (15
- D. MOMENTARY CONTACT SWITCHES. FOR REMOTE CONTROL SWITCHES, LEVITON MODEL SIMILAR TO HUBBELL NO. 4354.
- E. PILOT LIGHTS: NEON LAMP, LEVITON MODEL SIMILAR TO HUBBELL NO. T1375, WITH 125 VOLT LAMP.
- F. DEVICE PLATES: SEE ARCHITECT FOR TYPE, FOR RECEPTACLES WITH OTHER THAN 120 VOLT, INSCRIBED VOLTAGE AVAILABLE.
- G. COLORS: COORDINATE COLORS WITH ARCHITECT.
- H. MOUNTING ORIENTATION OF RECEPTACLES (VERTICAL): COORDINATE WITH ARCHITECT.
- I. FLUSH FLOOR MOUNTED POKE THROUGH OUTLET POKE THROUGH FLOOR FITTING WITH 2 HOUR FIRE RATING. MOUNTS 4" DIAMETER HOLE. PAINTABLE, DIE CAST ALUMINUM CARPET FLANGE. PROVIDE MODIFIED LEXAN SLIDE HOLDER TO SUPPORT A QUAD ELECTRICAL OUTLET. COMPLETE WITH ALL NECESSARY HARDWARE FOR COMPLETE INSTALLATION. SIMILAR TO WIREMOLD PART NO. RC-4.

10. LUMINAIRES:

- A. PROVIDE LUMINAIRES, COMPONENTS AND LAMPS. LUMINAIRES SHALL BE COMPLETELY FACTORY ASSEMBLED, WIRED AND EQUIPPED WITH ALL NECESSARY SOCKETS, DRIVERS, SUPPORTING HARDWARE AND ACCESSORIES. REFER TO ARCHITECTURAL DRAWINGS FOR INDIVIDUAL LUMINAIRE DESCRIPTIONS.
- B. LUMINAIRE CATALOG NUMBERS USED TO ILLUSTRATE EQUIPMENT TYPE DO NOT NECESSARILY DENOTE REQUIRED MOUNTING EQUIPMENT OR ACCESSORIES. PROVIDE ACCESSORIES TO SUIT.

11. TELEPHONE AND SECURITY CONDUIT SYSTEM:

- A. PROVIDE COMPLETE SYSTEM OF: EMPTY CONDUIT, PULL BOXES, OUTLETS, SLEEVES AND FISHWIRES.
- B. OUTLETS SHALL BE: 1) WALL: 4" SQUARE WITH BUSHED COVER PLATE. 2) FLOOR: CAST IRON WITH LOW TENSION FITTING.
- C. PROVIDE FISHWIRES, IN RACEWAYS OVER 10' LONG.
- D. CONDUIT SHALL BE 3/4" MINIMUM. PROVIDE EMPTY CONDUIT FROM OUTLET TO NEAREST ACCESSIBLE HUNG CEILING.



CONTRACTOR NOTE

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIF THE ARCHITECT, LANDLORD AND TENANT OF ANY DISCREPANCIES ENCOUNTERED ON THE PLANS OR IN EXISTING SITE CONDITIONS PRIOR TO SUBMISSION OF

BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF THE WORK. THE BASE BID SHALL REFLECT MODIFICATIONS TO SYSTEMS AND DEVICES AS REQUIRED BY STATE, LOCAL AND FEDERAL CODES WHETHER INDICATED OR NOT ON CONTRACT DOCUMENTS. THE SUBMISSIONS OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION AND COMPLIANCE WITH GOVERNING CODES/REQUIREMENTS HAS BEEN MADE. LATE CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION AND CODE/REQUIREMENTS REVIEW BEEN MADE. WILL NOT BE ALLOWED.



ELECTRICAL SPECIFICATIONS

FXP: 09/30/25

SUBMITTAL DATE: | SHEET NUMBER: 02/24/25 ISSUED FOR:

2. THE LOCATIONS, ARRANGEMENT AND EXTENT OF EQUIPMENT, DEVICES, CONDUIT, AND OTHER APPURTENANCES RELATED TO THE INSTALLATION OF MECHANICAL WORK SHOWN ON DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL NOT SCALE DRAWINGS, BUT SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS OF BUILDING COMPONENTS. SHOULD A CONFLICT EXIST BETWEEN THE ARCHITECTURAL AND ENGINEERING DRAWINGS REGARDING DIMENSIONS AND SCALE, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF CEILING STRUCTURE. DUCT SUPPORTS AND ATTACHMENT TO STRUCTURE SHALL BE PER SMACNA STANDARDS. THE DISCREPANCY.

3. THE CONSTRUCTION DOCUMENTS SHALL BE COMPRISED OF BOTH PLANS AND SPECIFICATIONS; THEREFORE, ALL HVAC WORK PERFORMED SHALL CONFORM TO THE REQUIREMENTS DESCRIBED IN BOTH. NEITHER SHALL TAKE PRECEDENCE OVER THE OTHER, BUT RATHER, THEY SHALL BE AN EXTENSION OF EACH OTHER. SHOULD A CONFLICT EXIST BETWEEN THE PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF THE DISCREPANCY.

4. MATERIALS, EQUIPMENT OR LABOR NOT INDICATED BUT WHICH CAN BE REASONABLY INFERRED TO BE NECESSARY FOR A COMPLETE INSTALLATION SHALL BE PROVIDED. DRAWINGS AND SPECIFICATIONS DO NOT UNDERTAKE TO INDICATE EVERY ITEM OF MATERIAL, EQUIPMENT, OR LABOR REQUIRED TO PRODUCE A COMPLETE AND PROPERLY OPERATING INSTALLATION.

5. ANY WALL, FLOOR, OR CEILING SURFACE THAT IS DISTURBED DURING THE COURSE OF THE HVAC WORK SHALL BE REPAIRED TO NEW CONDITION.

6. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH UNDERWRITER'S APPROVAL, MANUFACTURER'S RECOMMENDATIONS, GOOD ENGINEERING PRACTICE, AND ALL APPLICABLE CODE REQUIREMENTS.

7. ALL MECHANICAL EQUIPMENT AND SYSTEMS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE BY OWNER.

8. ALL HVAC COMPRESSORS SHALL HAVE EXTENDED 4 YEAR MANUFACTURER'S WARRANTY FOR A 5-YEAR TOTAL

9. INSTALL GRADE MOUNTED OUTDOOR AIR CONDITIONING EQUIPMENT LEVEL ON 4" THICK REINFORCED CONCRETE PADS, EXTENDING 6" ON ALL SIDES BEYOND UNIT PERIMETER.

10. EQUIPMENT SHALL BE LOCATED AT LEAST 10'-0" FROM ALL ROOF EDGES OR OPEN SIDES OF A WALKING SURFACE 34. DUCTWORK DIMENSIONS SHOWN ON THE DRAWINGS ARE INSIDE CLEAR DIMENSIONS. WHERE SUCH OPEN SIDE IS MORE THAN 30" ABOVE THE ADJACENT SURFACE. WHERE EQUIPMENT IS WITHIN 10'-0" OF SUCH DROPOFFS, FALL PROTECTION GUARDS SHALL BE PROVIDED. GUARDS SHALL BE MINIMUM 42" TALL AND EXTEND AT LEAST 30" BEYOND EACH END OF THE EQUIPMENT. GUARD SHALL BE CONSTRUCTED SO AS TO PREVENT THE PASSAGE OF A 21" SPHERE AND SHALL COMPLY WITH LOADING REQUIREMENTS OF THE IBC.

11. AIR HANDLING AND FAN COIL UNITS LOCATED ABOVE THE LOWEST LEVEL FINISHED FLOOR SHALL BE INSTALLED WITH AN AUXILIARY CONDENSATE DRAIN PAN UNDER THE UNIT. PROVIDE AN ELECTRONIC WATER LEVEL DETECTOR WIRED TO SHUTDOWN THE UNIT UPON DETECTION IN SECONDARY DRAIN PAN. INSTALL MINIMUM 4' X 4' X 3/4" THICK PLYWOOD SERVICE PLATFORM ON SERVICE SIDE OF UNITS LOCATED IN ATTIC SPACES.

12. PANCAKE STYLE AIR HANDLERS LOCATED ABOVE TOILET AREAS SHALL BE INSTALLED IN A MINIMUM 14-INCH DEEP INSIDE CLEAR FURRDOWN RETURN AIR PLENUM, REFERENCE ARCHITECTURAL PLANS.

13. MOUNT TOP OF THERMOSTATS AND OTHER CONTROL DEVICES 46" AFF UNLESS NOTED OTHERWISE. PROVIDE CLEAR LOCKING COVER FOR ALL PUBLIC AREA THERMOSTATS. COORDINATE THERMOSTAT LOCATIONS WITH OTHER

14. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL MECHANICAL EQUIPMENT, DUCTWORK, PIPING, ETC. 37. INSTALL SMOKE DAMPERS IN ALL DUCT PENETRATIONS THROUGH SMOKE-RATED WALLS. WHERE DUCTS TO FIT WITHIN THE SPACE ALLOWED BY THE ARCHITECTURAL AND STRUCTURAL CONDITIONS. CUTTING OR OTHERWISE ALTERING ANY STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM FIRE AND SMOKE DAMPERS. ALL DAMPERS SHALL BE U.L. 555 AND/OR 555S LABELED.

15. ALL PIPE AND DUCT PENETRATIONS OF FIRE AND/OR SMOKE-RATED ASSEMBLIES SHALL BE FIRE-STOPPED AS REQUIRED TO RESTORE THE ASSEMBLY TO ITS ORIGINAL INTEGRITY. FIRE BARRIER PRODUCTS SHALL BE AS MANUFACTURED BY TREMCO, HILTI, 3M OR APPROVED EQUAL.

16. PROVIDE ACCESS PANELS IN NON-ACCESSIBLE CEILINGS AND IN WALL STRUCTURE TO ALLOW ADEQUATE ROOM FOR MAINTENANCE OF EQUIPMENT AND BALANCING OF SYSTEMS. ACCESS PANELS IN CEILING AND WALLS SHALL BE PROVIDED WHERE SHOWN ON THE DRAWINGS OR NECESSARY TO ACCESS DAMPERS, VALVES, ETC. COORDINATE EXACT LOCATION OF ALL ACCESS PANELS WITH THE ARCHITECT DURING THE SHOP DRAWING PROCESS.

17. ALL MECHANICAL EQUIPMENT SHALL BE LABELED WITH A SEMI-RIGID PLASTIC LAMINATE NAMEPLATE WITH 2" HIGH WHITE LETTERS ON A BLACK BACKGROUND SECURELY AFFIXED TO THE EQUIPMENT. THE NAMEPLATE SHALL SHOW THE EQUIPMENT TAG USED ON THESE DRAWINGS. ON RESIDENTIAL PROJECTS, THE NAMEPLATE ON THE OUTDOOR EQUIPMENT SHALL INDICATE THE APARTMENT OR CONDOMINIUM UNIT NUMBER IT SERVES AS WELL AS THE EQUIPMENT ID TAG.

18. REFER TO ARCHITECTURAL PLANS FOR FLOOR AND CEILING ASSEMBLY UL RATINGS AND DETAILS.

19. WHERE PLANS CALL FOR UNDERCUT DOORS IN FIRE-RATED WALLS, UNDERCUT SHALL NOT EXCEED 3/4" PER

20. SHOP DRAWINGS SHALL BE SUBMITTED TO AND APPROVED BY THE ARCHITECT PRIOR TO ORDERING. PURCHASING, OR FABRICATING ANY MECHANICAL EQUIPMENT. SHOP DRAWINGS SHALL INCLUDE: ALL EQUIPMENT SCHEDULED OR SPECIFIED ON THE DRAWINGS. DUCTWORK DRAWN THE SCALE SHOWN ON THE DRAWINGS. REFRIGERANT PIPING AND CONTROL WIRING SCHEMATICS CERTIFIED BY THE AIR CONDITIONING EQUIPMENT MANUFACTURER. LONG LINE REFRIGERANT PIPING APPLICATIONS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S CURRENT SPLIT SYSTEM LONG-LINE APPLICATION GUIDELINE.

MECHANICAL/ELECTRICAL COORDINATION:

21. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL DRAWINGS PRIOR TO ORDERING EQUIPMENT OR SUBMITTING SHOP DRAWINGS, AND SHALL FURNISH EQUIPMENT WIRED FOR THE VOLTAGES SHOWN THEREIN. SHOP DRAWING SUBMITTALS SHALL CLEARLY STATE THAT THE ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT HAS BEEN COORDINATED WITH THE ELECTRICAL CONTRACT DOCUMENTS AND THE ELECTRICAL CONTRACTOR.

SWITCHES AT EACH PIECE OF EQUIPMENT. COORDINATE SWITCH TYPE (FUSED OR NON-FUSED) WITH EQUIPMENT CHARACTERISTICS, MANUFACTURER'S RECOMMENDATIONS AND THE ELECTRICAL DRAWINGS.

22. ALL MECHANICAL EQUIPMENT REQUIRING ELECTRICAL POWER SHALL BE INSTALLED WITH DISCONNECT

23. ALL REQUIRED CONTROL WIRING (INCLUDING POWER WIRING REQUIRED FOR CONTROL PANELS, DEVICES, ETC.) NOT SHOWN ON THE ELECTRICAL DRAWINGS SHALL BE INCLUDED AS PART OF THE MECHANICAL WORK. WIRING IN HVAC PLENUM SPACES SHALL BE INSTALLED ACCORDING TO CODE REQUIREMENTS.

24. UNLESS NOTED OTHERWISE, TRANSFORMERS, CONTROLS AND CONTROL WIRING REQUIRED FOR ALL MECHANICAL SYSTEMS SHALL BE FURNISHED WITH THE EQUIPMENT IT SERVES AND INSTALLED BY THE MECHANICAL CONTRACTOR. MOTOR STARTERS FOR HVAC EQUIPMENT SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

AIR DISTRIBUTION:

25. SUPPLY, RETURN, OUTSIDE, AND EXHAUST AIR DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEETMETAL IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS, LATEST EDITION. WHERE DUCTWORK PENETRATES A 1-HR FIRE-RATED ASSEMBLY, MINIMUM 26 GAGE GALVANIZED STEEL SHALL BE USED FOR 47.6. HEATING/COOLING = SYSTEM SHALL BE CONTROLLED BY AN ON/OFF/AUTO THERMOSTAT (7-DA) THE ENTIRE LENGTH OF THE DUCT. ALL JOINTS AND SEAMS IN ALL SHEETMETAL DUCTWORK SHALL BE SEALED WITH PROGRAMMABLE UNLESS NOTED OTHERWISE). THE FAN SHALL OPERATE CONTINUOUSLY. WHEN THE SPACE

26. ALL EXPOSED DUCTWORK TO HAVE MILL PHOSPHATIZED FINISH TO BE PAINTED BLACK BY OTHERS.

27. ALL DUCTWORK SHALL BE SUPPORTED BY THE BUILDING STRUCTURE AND SHALL NOT REST ON CEILING TILES OR

28. FLEXIBLE DUCTWORK SHALL BE THERMAFLEX M-KE (U.L. 181 LISTED, CLASS 1 FLEXIBLE AIR DUCT) OR EQUAL PROVIDE MINIMUM INSULATION VALUE OF R-6, R-8 WHEN LOCATED OUTSIDE THE THERMAL ENVELOPE OF THE BUILDING. AIR CONNECTORS ARE NOT ACCEPTABLE. FLEX DUCT DIAMETER SHALL MATCH DEVICE NECK DIAMETER. PROVIDE ROUND GALVANIZED STEEL DUCT RUNOUTS TO MAINTAIN A MAXIMUM FLEXIBLE DUCT LENGTH OF 8'-0" (EXCEPT IN RESIDENTIAL APPLICATIONS LENGTH SHALL BE AS INDICATED). FLEXIBLE DUCTWORK SHALL BE INSTALLED LIMIT THROTTLING LOSSES, THEN FAN POWER SHALL BE ADJUSTED TO ACHIEVE DESIGN AIRFLOWS SHOWN ON AS STRAIGHT AS POSSIBLE AND SHALL BE ROUTED AND SUPPORTED WITHOUT FORMING CRIMPS OR OTHER AIR FLOW PLANS. RESTRICTIONS. PROVIDE SQUARE TO ROUND ADAPTERS OR BOOTS TO CONNECT TO AIR DEVICE NECK WHEN

29. ROUND AND FLEXIBLE SUPPLY AIR DUCTWORK SHALL BE CONNECTED TO MAIN DUCTS WITH A SPIN-IN FITTING WITH SCOOP AND BALANCING DAMPER. IN RESIDENTIAL SPACES, TAB-TYPE FITTINGS ARE ACCEPTABLE, AND AIRFLOW SHALL BE BALANCED AT THE AIR DEVICES.

30. TAPE, BED AND SEAL AIR TIGHT ALL PENETRATIONS FROM RETURN AIR PLENUMS TO NON RETURN AIR PLENUMS THAT ARE REQUIRED DUE TO DUCTWORK, PIPING OR OTHER ITEMS.

31. EXHAUST AND OUTDOOR AIR INTAKE DUCTWORK SHALL BE FURNISHED WITH A BUILT-IN BACK-DRAFT DAMPER

32. DRYER VENT DUCTWORK SHALL BE 4-INCH ROUND AND BE 26 GAUGE GALVANIZED STEEL INSTALLED WITH LONGITUDINAL SEAMS FACING UP AND MALE CRIMPED END INSTALLED IN THE DIRECTION OF FLOW. ROUTE DRYER VENT TO THE EXTERIOR WALL CAP AS DIRECT AS POSSIBLE. DO NOT SECURE DUCTWORK WITH SHEET METAL

(GRAVITY TYPE UNLESS NOTED OTHERWISE ON PLANS) AND MESH INSECT SCREEN (EXCEPT DRYER VENTS).

33. PORTIONS OF DUCTWORK AND PIPE INSULATION VISIBLE THROUGH AIR DISTRIBUTION DEVICES IN FINISHED AREAS SHALL BE PAINTED FLAT BLACK.

35. INSTALL FIRE DAMPERS IN ALL THROUGH PENETRATIONS IN FIRE-RATED WALLS, FLOOR AND CEILINGS. IN DYNAMIC SYSTEMS (SYSTEMS NOT DESIGNED TO STOP OPERATING DURING A FIRE EVENT), FIRE DAMPERS SHALL BE THE DYNAMIC TYPE WITH BLADES OUT OF THE AIRSTREAM WHERE POSSIBLE. FOR SYSTEMS DESIGNED TO STOP OPERATING DURING A FIRE EVENT, STATIC FIRE DAMPERS SHALL BE ALLOWED. REFER TO THE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF RATED ASSEMBLIES.

35.1. WHERE DUCTS PENETRATE FIRE-RATED WALLS AND HAVE DUCT OPENINGS SERVING SPACES ON BOTH SIDES 56.2. MANUFACTURER'S OPERATIONS MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT OF THE RATED WALL, FIRE/SMOKE DAMPERS SHALL BE PROVIDED AT FIRE-RATED WALL PENETRATION.

36. INSTALL CEILING RADIATION DAMPERS AT DIFFUSERS MOUNTED IN FIRE-RATED CEILING ASSEMBLIES. WHERE DUCTWORK PENETRATES THE MEMBRANE OF A FIRE-RATED CEILING ASSEMBLY, INSTALL DUCT-DROP RATED CEILING 56.4. HVAC AND SERVICE HOT WATER CONTROLS SYSTEM MAINTENANCE AND CALIBRATION INFORMATION, RADIATION DAMPER. DAMPER SHALL BE DYNAMIC RATED OR SYSTEM SHALL BE DESIGNED TO STOP OPERATING DURING A FIRE EVENT. ALL DAMPERS SHALL BE U.L. 555C LABELED. ALL DAMPERS SHALL BE SPECIFICALLY LISTED (MAKE AND MODEL) AS APPROVED FOR USE IN THE UL LISTING OF THE FIRE-RESISTANCE-RATED CEILING ASSEMBLY

PENETRATE WALLS THAT CARRY BOTH FIRE AND SMOKE RATINGS, THE DAMPERS INSTALLED SHALL BE COMBINATION THE BUILDING OWNER (OR OWNER'S AGENT). THE FINAL REPORT SHALL INCLUDE ALL INFORMATION AS DESCRIBED

38. DUCT ACCESS DOORS: PROVIDE ACCESS DOORS IN DUCTWORK AT EACH FIRE, SMOKE, FIRE/SMOKE, OR DUCT-DROP RATED CEILING RADIATION DAMPER LOCATION.

39. LOCATIONS OF GRILLES, REGISTERS, & DIFFUSERS SHOWN ON THE DRAWINGS ARE APPROXIMATE. COORDINATE EXACT LOCATIONS WITH CEILING GRID, LIGHT FIXTURES, SPRINKLER HEADS, SPEAKERS, SMOKE ALARMS, ETC. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN.

40. AFTER CONSTRUCTION, THE ENTIRE HVAC SYSTEM SHALL BE TESTED, ADJUSTED, AND BALANCED TO DELIVER THE AIR AND WATER QUANTITIES SHOWN ON THE DRAWINGS (NOT APPLICABLE TO DWELLING UNITS). SUBMIT CERTIFIED (AABC OR NEBB) TEST AND BALANCE REPORT TO THE ARCHITECT FOR APPROVAL. NOT APPLICABLE TO DWELLING UNITS.

41. REFRIGERANT PIPING SHALL BE TYPE L OR REFRIGERATION SERVICE COPPER TUBING WITH BRAZED JOINTS.

42. REFRIGERANT LINE SET ACCESS PORTS SHALL HAVE LOCKING CAPS.

43. CONDENSATE FROM ALL AIR CONDITIONING EQUIPMENT SHALL BE TRAPPED AND ROUTED TO THE NEAREST FLOOR DRAIN OR OTHER PLUMBING DRAIN AS SHOWN ON PLANS. CONDENSATE PIPING SHALL BE SCHEDULE 40 PVC (EXCEPT CPVC IN HVAC PLENUMS). CONDENSATE SHALL BE PUMPED AS REQUIRED.

44. ALL PIPING ABOVE GRADE SHALL BE SUPPORTED BY THE BUILDING STRUCTURE AND SHALL NOT REST ON CEILING TILES OR CEILING STRUCTURE. PIPING HUNG FROM JOISTS SHALL BE HUNG FROM THE TOP CHORDS OF THE JOISTS. **INSULATION:**

45. DUCT INSULATION:

45.1. DUCT WRAP SHALL BE UL LISTED FIBERGLASS BLANKET INSULATION WITH FOIL VAPOR BARRIER. PUNCTURES AND TEARS IN THE FOIL JACKET SHALL BE PATCHED WITH FOIL TAPE TO MAINTAIN THE INTEGRITY OF THE VAPOR BARRIER. INSULATE SHEET METAL DUCTWORK IN THE THICKNESSES AND DENSITIES AS LISTED BELOW: 45.1.1. SHEET METAL SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK: R-6 MINIMUM INSTALLED. 45.5.2. EXHAUST DUCTWORK ROUTED WITHIN THE BUILDING THERMAL ENVELOPE SHALL NOT BE INSULATED UNLESS

NOTED OTHERWISE 45.5.3. ALL SHEET METAL DUCT LOCATED OUTSIDE THE THERMAL ENVELOPE OF THE BUILDING: R-8 MINIMUM INSTALLED.

46. LINE ALL SHEETMETAL DUCTWORK A MINIMUM OF 10'-0" DOWNSTREAM OF ALL AIR HANDLING UNITS, FAN COIL UNITS AND TERMINAL UNITS. THE LEADING EDGE OF THE DUCT LINER SHALL HAVE A SHEETMETAL NOSING.

SEQUENCE OF OPERATION:

47. CONSTANT VOLUME DIRECT EXPANSION (DX) SYSTEM

TEMPERATURE DEVIATES OUTSIDE THE THERMOSTAT SETPOINT, HEATING OR COOLING SHALL ENGAGE UNTIL THE SPACE TEMPERATURE RETURNS TO THE SETPOINT.

SYSTEM COMMISSIONING:

51. PRIOR TO THE FINAL MECHANICAL AND PLUMBING INSPECTIONS, AN APPROVED AGENCY CONTRACTED BY THE OWNER SHALL COMMISSION ALL MECHANICAL SYSTEMS AS DESCRIBED BELOW. EXCEPTION: EQUIPMENT SERVING INDIVIDUAL DWELLING OR SLEEPING UNITS.

52. ALL AIR-MOVING SYSTEMS WITH A FAN MOTOR GREATER THAN 1 HP SHALL BE BE TESTING AND BALANCED. ALL SUPPLY AIR DUCTS SHALL HAVE A MANUAL VOLUME DAMPER. ALL DAMPERS SHALL FIRST BE ADJUSTED SO AS TO

52.1. ALL SYSTEMS WITH FAN MOTORS OF 1 HP OR LESS WITH SUPPLY AIR DUCTS INDICATED ELSEWHERE IN THESE DOCUMENTS TO HAVE MANUAL VOLUME DAMPERS SHALL BE BALANCED TO DELIVER THE AIRFLOWS SHOWN ON PLANS, BUT ARE NOT REQUIRED TO BE INCLUDED IN THE PRELIMINARY OR FINAL COMMISSIONING REPORT GIVEN TO THE OWNER AND INSPECTOR.

53. ALL SYSTEMS WITH SUPPLY AIR ECONOMIZERS SHALL RECEIVE A FULL FUNCTION TESTING TO CONFIRM COMPLIANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND PERFORMANCE SETPOINTS DESCRIBED ON PLANS. TESTING SHALL INCLUDE ALL MODES AND SEQUENCE OF OPERATION, INCLUDING UNDER FULL-LOAD, PART-LOAD, AND THE FOLLOWING EMERGENCY CONDITIONS:

53.1. ALL MODES AS DESCRIBED IN THE SEQUENCE OF OPERATION. 53.2. REDUNDANT OR AUTOMATIC BACK-UP MODE.

53.3. PERFORMANCE OF ALARMS. 53.4. MODE OF OPERATION UPON A LOSS OF POWER AND RESTORATION OF POWER.

54. A "PRELIMINARY COMMISSIONING REPORT" DETAILING ALL TESTING ACTIVITIES, ITEMIZED LIST OF DEFICIENCIES, DEFERRED TESTS NOT PERFORMED DUE TO CLIMATIC CONDITIONS, AND CLIMATIC CONDITIONS AT THE TIME OF TESTING SHALL BE PROVIDED TO THE OWNER (OR OWNER'S AGENT) AND THE CODE OFFICIAL.

55.1. THE BUILDING OWNER (OR OWNER'S AGENT) MUST ISSUE A LETTER OF TRANSMITTAL TO THE CODE OFFICIAL ACKNOWLEDGING RECEIPT OF THE PRELIMINARY COMMISSIONING REPORT BEFORE THE BUILDING WILL BE CONSIDERED ELIGIBLE FOR FINAL INSPECTION.

56. CONTRACTOR SHALL PROVIDE THE BUILDING OWNER (OR OWNER'S AGENT) WITH AN OPERATIONS AND MAINTENANCE MANUAL INCLUDING THE FOLLOWING:

56.1. SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTION FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE, EXCEPT EQUIPMENT NOT FURNISHED AS PART OF THE PROJECT. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.

56.3. NAME AND ADDRESS OF AT LEAST ONE SERVICE AGENCY. INCLUDING WIRING DIAGRAMS, SCHEMATICS AND CONTROL SEQUENCE DESCRIPTIONS. DESIRED OF FIELD-DETERMINED SET POINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT CONTROL DEVICES OR, FOR DIGITAL CONTROL SYSTEMS, IN SYSTEM PROGRAMMING INSTRUCTIONS. 56.5. A NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING RECOMMENDED SET POINTS.

57. A "FINAL COMMISSIONING REPORT" DETAILING ALL TESTING PROCEDURES AND RESULTS SHALL BE DELIVERED TO ABOVE IN THE PRELIMINARY REPORT, EXCEPT THAT NO DEFERRED TESTS SHALL BE PERMITTED.

AIR CONDITIONING DWG HVAC | HEATING / VENTING / AIR CONDITIONING | RG-# | RETURN AIR GRILLE AFF ABOVE FINISHED FLOOR ELECTRICAL CONTRACTOR HOT WATER PUMP REQ'D EC HWP REQUIRED ABOVE FINISHED GRADE EF-# EXHAUST FAN HWR HOT WATER RETURN ROOM AHU-# AIR HANDLING UNIT EFF **EFFICIENCY** HOT WATER SUPPLY REVOLUTIONS PER MINUTE EG-# EXHAUST GRILLE INSULATION / INSULATE SMOKE DAMPER ALTERNATIVE INSUL AMB AMBIENT EL ELEVATION KILOWATTS SUPPLY AIR APPROX **APPROXIMATE** ELEC ELECTRIC(AL) LENGTH / LONG SUPPLY AIR DIFFUSER ARCH ARCHITECT(URAL) ELEV ELEVATOR LOUVER SUPPLY AIR GRILLE EQUIPMENT MAXIMUM STATIC PRESSURE AUTO AUTOMATIC EQUIP MAX SP SPECIFICATION(S) BRAKE HORSEPOWER ETR EXISTING TO REMAIN MECHANICAL CONTRACTOR MC SPEC(S) BLDG MECH STD BUILDING EXH EXHAUST MECHANICAL STANDARD CD-# CEILING DIFFUSER EXIST/EX MANUFACTURER **TEMPERATURE** EXISTING CFM **CUBIC FEET PER MINUTE** EXT **EXTERIOR** TYPICAL MINIMUM CENTERLINE FC-# FAN COIL UNIT UNIT HEATER MISC MISCELLANEOUS UH-# CLG CEILING FD FIRE DAMPER NO / # NUMBER UNLESS NOTED OTHERWISE COL FPM FEET PER MINUTE NTS NOT TO SCALE VENT F/S COMBINATION FIRE/SMOKE DAMPER OA CONDENSATE OUTSIDE AIR VARIABLE AIR VOLUME CU-# CONDENSING UNIT FT FEET ON CENTER VOLUME DAMPER OC VD DEPTH / DEEP GAUGE OUTSIDE DIAMETER VELOCITY GΑ OD VEL DRY BULB TEMPERATURE GALV GALVANIZE(D) PLUMBING CONTRACTOR VFD VARIABLE FREQUENCY DRIVE DCW DOMESTIC COLD WATER GALLON POUNDS PER SQUARE INCH VIF VERIFY IN FIELD

PVC

RA

POLYVINYL CHLORIDE

RADIUS

RETURN AIR

RETURN AIR GRILLE

RADIUS

RETURN AIR

MECHANICAL NOTATIONS

		MECHANICAL S	YMB	OL LEGENI)	
		NOTE: NOT ALL SYM	BOLS I	MAY APPLY.		
(1)	KEYED PLAN NOTE			X	REFERENCE TAG	
XX-##	EC	QUIPMENT DESIGNATION		XX.X	REFERENCE TAG	
XX Ø CFM		AIR TERMINAL TAG	→	DIRE	ECTION OF AIR FLOW	
•	F	POINT OF CONNECTION	?		CONTINUATION	
\bigcirc		HUMIDISTAT	1		THERMOSTAT	
©		CO2 SENSOR	S	F	REMOTE SENSOR	
\boxtimes	RECTA	NGULAR SUPPLY DUCT RISER	\otimes	ROUN	D SUPPLY DUCT RISER	Sheet Number
	RECTAN	NGULAR RETURN DUCT RISER	\bigcirc	ROUNI	D RETURN DUCT RISER	M001
	RECTAN	GULAR EXHAUST DUCT RISER	\otimes	ROUNE	EXHAUST DUCT RISER	M101
727	90	DEGREE TURNING VANE	ŵ	45 DE	GREE TURNING VANE	M102 M501
世	RECTANGULAR DUCT TAKEOFF		8	ROI	UND DUCT TAKEOFF	M601
_	DUCT WITH SMOKE DAMPE		R	FD	DUCT WITH FIRE DAMPER	
F	F/S DUCT WITH FIRE / SMOKE DAN		1PER		CEILING RADIATION DAMPER	
	M MOTORIZED DAMPER				VOLUME DAMPER	
		SUPPLY AIR DIFFUSER			RETURN AIR GRILLE / REGISTER	
EXHAUST AIR GRILLE / REGISTER						
DOUBLE LINE DUCTWORK						
NEW DUCTWORK				EXISTING DUCTWORK TO BE REMOVED		
RADIUS ELBOW				100	MITERED ELBOW WITH TURNING VANES	
		90 DEGREE RETURN AIR ELBOW UP/DOWN			90 DEGREE SUPPLY AIR ELBOW UP/DOWN	
		SIZE TRANSITION			90 DEGREE EXHAUST AIR ELBOW UP/DOWN	

SHAPE TRANSITION

TEE WITH SQUARE ELBOWS, TURNING VANES,

AND SPLITTER DAMPER

RECTANGULAR DUCT

BEVELED TAP

DHW

DIFF

DIA / Ø

DIFF

DOMESTIC HOT WATER

DIAMETER

DIFFUSER

DRAWING

DIAMETER

DIFFUSER

GC

GF-#

GPM

GENERAL CONTRACTOR

GAS FURNACE

GALLONS PER MINUTE

GAS WATER HEATER

HEIGHT / HIGH

HORSE POWER

ROUND DUCT

TAKEOFF

FLEXIBLE DUCT TAP

ROUND DUCT

TAKFOFF

WITH DAMPER

MECHANICAL LINETYPE LEGEND	
GENERAL NEW GENERAL DEMO GENERAL EXISTING CD CD CONDENSATE DRAIN	
ALL OTHER LINETYPES DENOTED WITH: (AB) = ABANDONED; (D) = DEMO; (EX) = EXISTING	
MECHANICAL SHEET INDEX	

VENT THROUGH ROOF

WIDTH / WIDE

WITH

WITHOUT

WET BULB TEMPERATURE

MECHANICAL SHEET INDEX			
Sheet Number	Sheet Name		
M001	MECHANICAL COVER SHEET		
M101	MECHANICAL PLAN		
M102	ROOF MECHANICAL PLAN		
M501	MECHANICAL DETAILS		
M601	MECHANICAL SCHEDULES		

CONTRACTOR NOTE

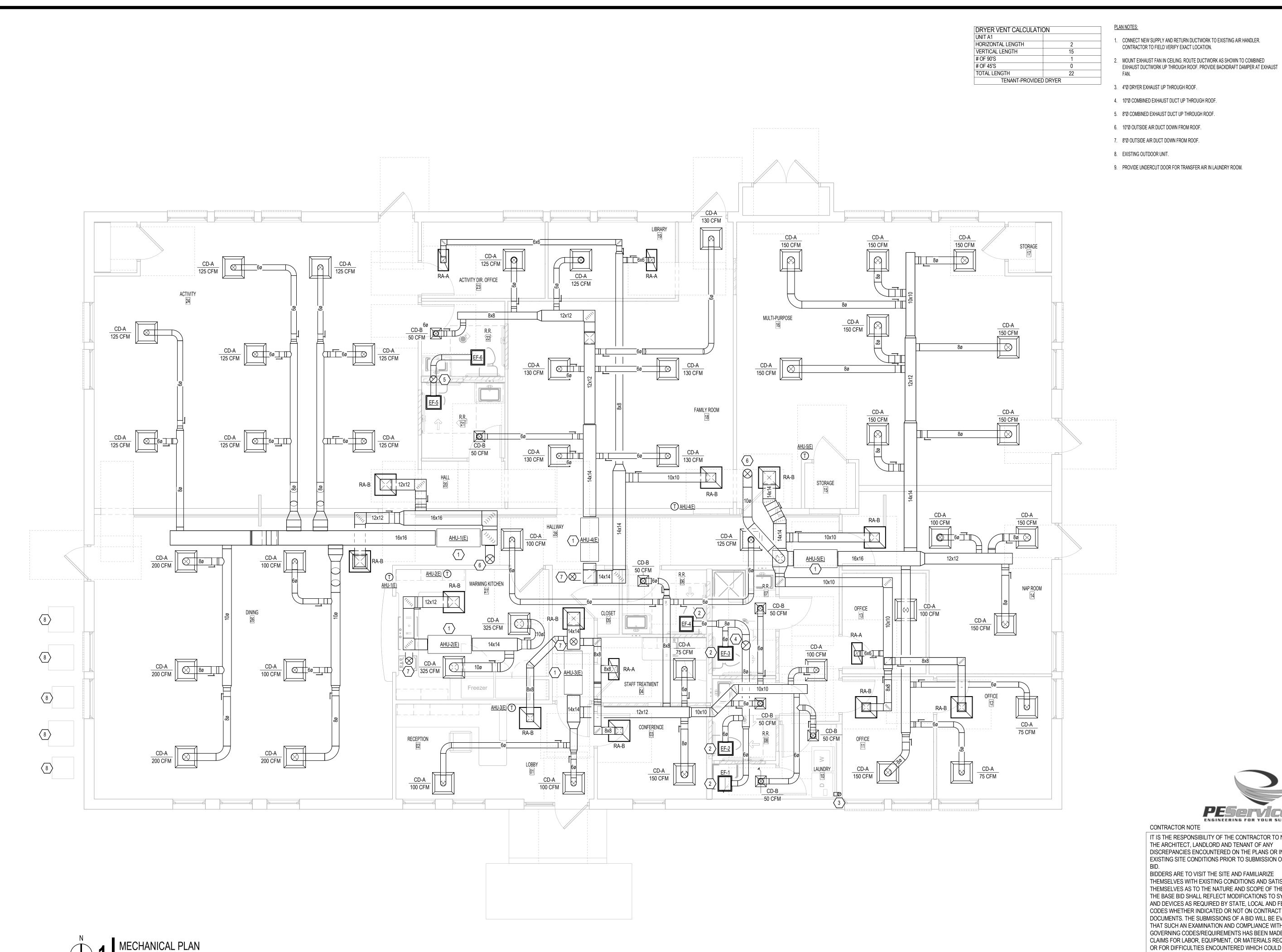
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIF THE ARCHITECT, LANDLORD AND TENANT OF ANY DISCREPANCIES ENCOUNTERED ON THE PLANS OR IN EXISTING SITE CONDITIONS PRIOR TO SUBMISSION OF

BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF THE WORK. THE BASE BID SHALL REFLECT MODIFICATIONS TO SYSTEMS AND DEVICES AS REQUIRED BY STATE, LOCAL AND FEDERAL CODES WHETHER INDICATED OR NOT ON CONTRACT DOCUMENTS. THE SUBMISSIONS OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION AND COMPLIANCE WITH GOVERNING CODES/REQUIREMENTS HAS BEEN MADE. LAT CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION AND CODE/REQUIREMENTS REVIEW BEEN MADE, WILL NOT BE ALLOWED.

ENGINEERING FOR YOUR SUCCES!

FXP: 09/30/25 MECHANICAL COVER

SUBMITTAL DATE: | SHEET NUMBER: 03/20/2025 ISSUED FOR: PERMIT



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MEMORY

■ ARCHITECTURE

PE-SERVICES F-10841 EXP: 09/30/25

ENGINEERING FOR YOUR SUCCESS IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ARCHITECT, LANDLORD AND TENANT OF ANY DISCREPANCIES ENCOUNTERED ON THE PLANS OR IN

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MECHANICAL PLAN

03/20/2025 ISSUED FOR: PERMIT

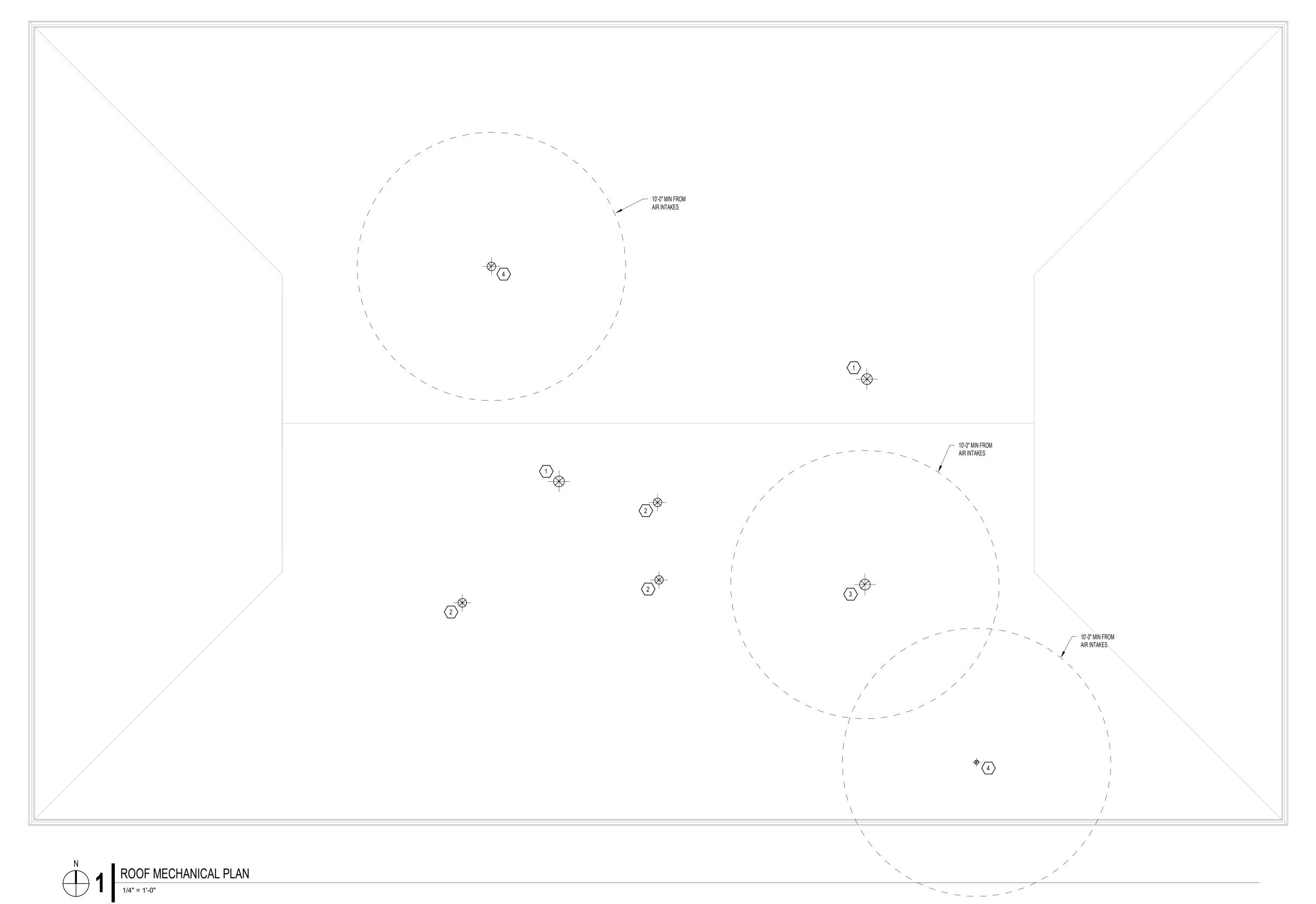
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PLAN NOTES:

 10"Ø COMBINED EXHAUST DUCT UP FROM BELOW. PROVIDE BIRDSCREEN AND BACKDRAFT DAMPER. 4. 10"Ø COMBINED EXHAUST DUCT UP FROM BELOW. PROVIDE BIRDSCREEN AND

BACKDRAFT DAMPER.

5. DRYER EXHAUST DUCT UP THROUGH ROOF. REFER TO DETAIL.





CONTRACTOR NOTE IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ARCHITECT, LANDLORD AND TENANT OF ANY DISCREPANCIES ENCOUNTERED ON THE PLANS OR IN EXISTING SITE CONDITIONS PRIOR TO SUBMISSION OF

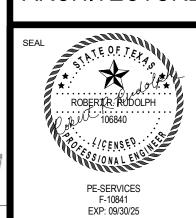
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GOVERNING CODES/REQUIREMENTS HAS BEEN MADE. LATER
CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED,
OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE
BEEN FORESEEN HAD AN EXAMINATION AND CODE/REQUIREMENTS REVIEW BEEN MADE, WILL NOT BE ALLOWED.

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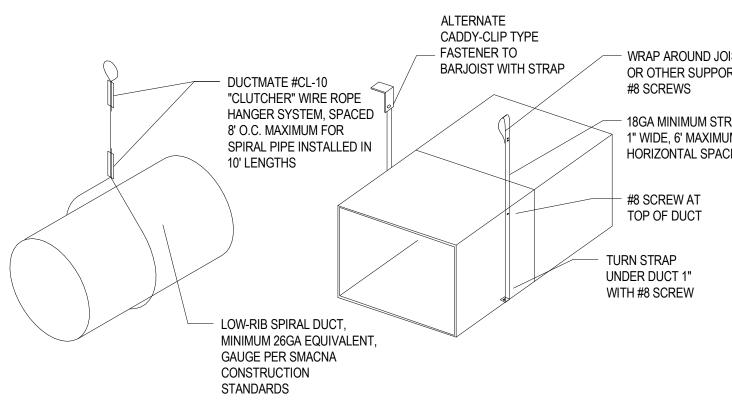
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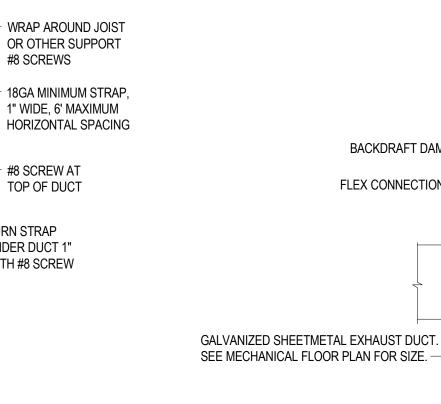
ROUTE DRYER EXHAUST THROUGH ROOF -4"Ø DRYER VENT SHALL BE A MINIMUM OF 26 GAUGE CONNECTION FOR DRYER 2" METAL FLANGE SECURE TO WALL WITH DRYER VENT BOX BY DRYWALL SCREWS IN-O-VATE, MODEL# DB-350, UL RATED FLEXIBLE DRYER HOSE FOR 1 HOUR WALL, BY OWNER REFER TO DETAIL W-L-7129. CAN ALSO SPEC. DB-480 FOR EITHER **UPFLOW OR** DOWNFLOW APPLICATION. 1. PROVIDE RATED BOX WHEN INSTALLED IN RATED WALL. 2. COORDINATE VENT BOX LOCATION W/ DRYER OUTLET.

DRYER VENT DROP BOX DETAIL | 5

ALTERNATE CADDY-CLIP TYPE - FASTENER TO - WRAP AROUND JOIST BARJOIST WITH STRAP OR OTHER SUPPORT DUCTMATE #CL-10 #8 SCREWS "CLUTCHER" WIRE ROPE HANGER SYSTEM, SPACED 18GA MINIMUM STRAP, 8' O.C. MAXIMUM FOR 1" WIDE, 6' MAXIMUM SPIRAL PIPE INSTALLED IN 10' LENGTHS #8 SCREW AT TOP OF DUCT TURN STRAP UNDER DUCT 1" WITH #8 SCREW LOW-RIB SPIRAL DUCT, MINIMUM 26GA EQUIVALENT, GAUGE PER SMACNA CONSTRUCTION STANDARDS



RIGID DUCT MOUNTING DETAIL | 2 NTS | M501



— FACTORY INTAKE GRILLE CEILING EXHAUST FAN DETAIL | 1 NTS M501

CEILING EXHAUST FAN

MECHANICAL CONTRACTOR SHALL LOCATE ROOF CURB OPENING FOR ROOFER. ROOFER SHALL OPEN ROOFING AND DECK AS REQUIRED TO INSTALL CURB. ROOFER

DUCT AND COUNTER FLASHING. ROOFER SHALL WARANTY ROOFING WORK.

SHALL INSTALL CURB AND FLASHING. MECHANICAL CONTRACTOR SHALL PROVIDE

OPPOSED BLADE DAMPER -

BACKDRAFT DAMPER -

FLEX CONNECTION -



- ½" HARDWARE GALVANIZED

COUNTER FLASHING

SEAL AIR DUCT

PLATE ROOF CURB

INSTALLED BY ROOFER

- FLASHING INSTALLED

NTS | M501

SUPPORT RODS . SUPPORT FROM

STRUCTURE PER CODE.

(TYPICAL)

- PLASTER FRAME

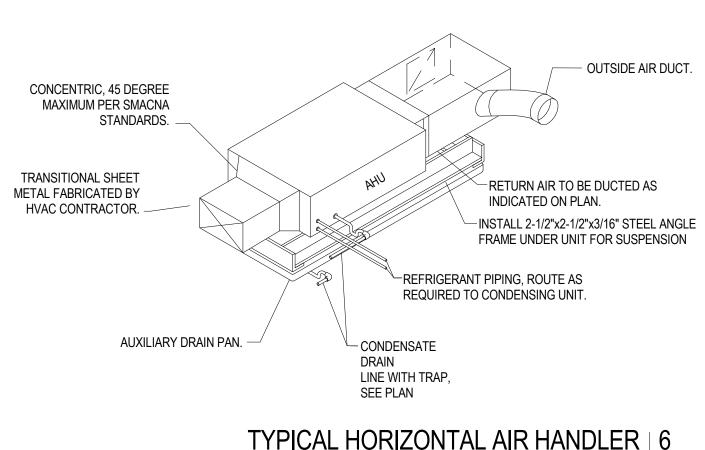
— CEILING

BY ROOFER

GOOSENECK DETAIL | 4

CONTRACTOR NOTE IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ARCHITECT, LANDLORD AND TENANT OF ANY DISCREPANCIES ENCOUNTERED ON THE PLANS OR IN

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	SUBMITTAL DATE:	SHEET NUMBER:
	03/20/2025	M501
	ISSUED FOR:	



TYPICAL HORIZONTAL AIR HANDLER | 6

REFER TO

ARCHITECTURAL DWGS.

FOR CEILING TYPE

MAXIMUM HANGER SPACING 5'-0" ON HORIZONTAL RUNS -1" STRAP AND CEILING HANGER WIRE ATTACHED TO JOIST ABOVE ROUND FLEXIBLE DUCT SAME SIZE AS DIFFUSER NECK (6'-0" MAX. LENGTH) COLLAR WITH -UL CLASS 1 INSULATED DUCT MATERIAL DAMPER

THERMAFLEX # M-KE 2" INSULATED, R-6.0 RIGID MAIN SUPPLY DUCT 2 IN.-INSULATED FLEX DUCT DUCT THICK DUCT WRAP, 1.0PCF, R-6.0 INSTALLED, FSK FOIL FACED JACKET, KNAUF, OWENS CORNING OR EQUAL SEAL AND TAPE OUTER JACKET AT RIGID DUCT AND DIFFUSER NECK SEAL JOINTS IN ROUND ---- $^{'}$ MINIMUM 2 DUCT -RIGID DUCT & AT TAPS WITH DIAMETERS 4" LONG DUCT COLLAR INSULATE TOP OF TYP. FOR ALL USE DRAW BANDS AT -DIFFUSER AND REGISTER CONNECTIONS TO CONNECTION POINTS OF (TYP.) CEILING DIFFUSERS FLEXIBLE WITH RIGID DUCT & AT

CEILING DIFFUSER SEE -

SCHEDULE FOR MODEL#

DIFFUSER

1. METHOD OF INSTALLATION FOR AIRTIGHT SEAL WILL BE TYPICAL FOR ALL FLEX CONNECTIONS TO AIR DISTRIBUTION DEVICES. 2. INSULATE TOP OF DIFFUSER ABOVE CEILING AS SCHEDULED.

BRANCH DUCT TAKE-OFF DETAIL | 3

PE-SERVICES F-10841 EXP: 09/30/25
MECHANICAL

■ ARCHITECTURE

SCHEDULES SUBMITTAL DATE: SHEET NUMBER: ■ 03/20/2025 M601 PERMIT

			F	ANS						
			1	/ \l \ \ \						
DESIGNATION	SERVES	CONTROL	CFM	ESP (IN WG)	DRIVE TYPE	MOTOR WATTS (HP)	GREENHECK Model Number	ACCESSORIES	VOLT	Ø
EF-1	RESTROOM	LIGHT	70 CFM	0.35	DIRECT	80	SP-B110	1,2,3,4	120	1
EF-2	RESTROOM	LIGHT	70 CFM	0.35	DIRECT	80	SP-B110	1,2,3,4	120	1
EF-3	RESTROOM	LIGHT	70 CFM	0.35	DIRECT	80	SP-B110	1,2,3,4	120	1
EF-4	RESTROOM	LIGHT	70 CFM	0.35	DIRECT	80	SP-B110	1,2,3,4	120	1
EF-5	RESTROOM	LIGHT	70 CFM	0.35	DIRECT	80	SP-B110	1,2,3,4	120	1
EF-6	RESTROOM	LIGHT	70 CFM	0.35	DIRECT	80	SP-B110	1,2,3,4	120	1

A. ALL FANS TO HAVE OSHA GUARDS.

B. ALL EQUIPMENT SHALL BE INSTALLED SO AS TO MAINTAIN ALL CODE AND MANUFACTURER REQUIRED CLEARANCES FOR SERVICE, ACCESS, AND OPERATION.

C. REFER TO DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
D. CONTROL TYPE:
LIGHT = INTERLOCK TO LIGHT IN SPACE SERVED.

ACCESSORIES:

1. GRAVITY BACKDRAFT DAMPER. GALVANIZED BIRDSCREEN.
 PRE-WIRED NON-FUSED SERVICE DISCONNECT.

4. SPEED CONTROLLER.

CDILLES - DECISTERS - DIFFLISERS	

GRILLES - REGISTERS - DIFFUSERS										
DESIGNATION	DUTY	FRAME TYPE	MATERIAL	FINISH	FACE SIZE (IN)	MODEL NUMBER				
CD-A	SUPPLY	CEILING	STEEL	WHITE	24x24	TITUS OMNI				
CD-B	SUPPLY	CEILING	STEEL	WHITE	12x12	TITUS OMNI AA				
RA-A	RETURN	CEILING/SIDEWALL	STEEL	WHITE	6X6	TITUS 350RL				
RA-B	RETURN	CEILING/SIDEWALL	STEEL	WHITE	6X6	TITUS 350RL				

					IMC Tab	le 403.3					
UNIT	ROOM	AREA	AREA	PERSONS	NO. OF	CFM PER	CFM	O.A.	S.A.	O.A.	
NO.	NO.	S.F.	SERVED	PER 1000 S.F.	PEOPLE	PERSON	PER S.F.	REQUIRED	PROVIDED	PROVIDED	NOTES
AHU-1(E)	24	785	ACTIVITY	20	16	5	0.12	173	1000	175	
	26	725	DINING	20	15	5	0.12	160	1000	175	
TOTALS					30			332	2000	350	А
NOTES:	Α	BALANCE U	JNIT OUTSIDE AIR TO	18%							
	В	DISTRIBUT	ION EFFECTIVENESS	1.0							
	С	SPACES CO	OMMUNICATE								

					IMC Tab	le 403.3					
UNIT	ROOM	AREA	AREA	PERSONS	NO. OF	CFM PER	CFM	O.A.	S.A.	O.A.	
NO.	NO.	S.F.	SERVED	PER 1000 S.F.	PEOPLE	PERSON	PER S.F.	REQUIRED	PROVIDED	PROVIDED	NOTES
AHU-2(E)	27	170	WARMING KITCHEN	20	3	7.5	0.18	56	650	60	
TOTALS					3			56	650	60	А
NOTES:	А	BALANCE (JNIT OUTSIDE AIR TO	9%							
	В	DISTRIBUT	ION EFFECTIVENESS	1.0							
	С	SPACES CO	OMMUNICATE								

					IMC Tab	le 403.3					
UNIT	ROOM	AREA	AREA	PERSONS	NO. OF	CFM PER	CFM	O.A.	S.A.	O.A.	
NO.	NO.	S.F.	SERVED	PER 1000 S.F.	PEOPLE	PERSON	PER S.F.	REQUIRED	PROVIDED	PROVIDED	NOTES
AHU-3(E)	01	70	LOBBY	10	1	5	0.06	8	100	17	
	02	90	RECEPTION	10	1	5	0.06	10	100	17	
	03	85	CONFERENCE	50	4	5	0.06	26	150	26	
	04	60	MED ROOM	5	0	5	0.06	5	75	13	
	06	45	RESTROOM	0	0	0	0.06	3	50	9	
	07	60	RESTROOM	0	0	0	0.06	4	50	9	
	08	45	RESTROOM	0	0	0	0.06	3	50	9	
	09	20	JANITOR	0	0	0	0.12	2	50	9	
	10	40	LAUNDRY	0	0	0	0.12	5	50	9	
	28	335	HALLWAY	0	0	0	0.06	20	325	55	
TOTALS					6			85	1000	170	А
NOTES:	Α	BALANCE UNI	T OUTSIDE AIR TO	17%		1	1				1

	IMC Table 403.3											
UNIT	ROOM	AREA	AREA	PERSONS	NO. OF	CFM PER	CFM	O.A.	S.A.	O.A.		
NO.	NO.	S.F.	SERVED	PER 1000 S.F.	PEOPLE	PERSON	PER S.F.	REQUIRED	PROVIDED	PROVIDED	NOTES	
AHU-4(E)	18	470	FAMILY ROOM	20	9	5	0.12	103	650	104		
	19	85	ROOM	5	0	5	0.06	7	125	20		
	21	55	RESTROOM	0	0	0	0.06	3	50	8		
	22	55	RESTROOM	0	0	0	0.06	3	50	8		
	23	80	ACTIVITY DIR. OFFICE	5	0	5	0.06	7	125	20		
TOTALS					10			124	1000	160	А	
NOTES:	Α	BALANCE U	JNIT OUTSIDE AIR TO	16%		1	1					
	В	DISTRIBUTI	ION EFFECTIVENESS	1.0								

C SPACES COMMUNICATE

C SPACES COMMUNICATE

AIR BALANCE SCHEDULE											
UNIT	SUPPLY AIR	RETURN AIR	OUTSIDE AIR	EXHAUST AIR	BALANCE						
AHU-1E	2000	1650	350	0	350						
AHU-2E	650	590	60	0	60						
AHU-3E	1000	830	170	280	-110						
AHU-4E	1000	840	160	140	20						
AHU-5E	2000	1720	280	0	280						
TOTAL	6650	5630	1020	420	600						

					IMC Tab	le 403.3					
UNIT	ROOM	AREA	AREA	PERSONS	NO. OF	CFM PER	CFM	O.A.	S.A.	O.A.	
NO.	NO.	S.F.	SERVED	PER 1000 S.F.	PEOPLE	PERSON	PER S.F.	REQUIRED	PROVIDED	PROVIDED	NOTE
AHU-5(E)	11	95	ROOM	5	0	5	0.06	8	150	21	
	12	120	OFFICE	5	1	5	0.06	10	150	21	
	13	70	OFFICE	5	0	5	0.06	6	100	14	
	14	250	LIBRARY	10	3	5	0.12	43	400	56	
	16	725	MULTI PURPOSE	20	15	5	0.12	160	1200	168	
TOTALS					18			226	2000	280	А



CONTRACTOR NOTE

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BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF THE WORK. THE BASE BID SHALL REFLECT MODIFICATIONS TO SYSTEMS AND DEVICES AS REQUIRED BY STATE, LOCAL AND FEDERAL CODES WHETHER INDICATED OR NOT ON CONTRACT DOCUMENTS. THE SUBMISSIONS OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION AND COMPLIANCE WITH GOVERNING CODES/REQUIREMENTS HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION AND CODE/REQUIREMENTS REVIEW BEEN MADE, WILL NOT BE ALLOWED.

C. NO PIPING SHALL PASS DIRECTLY OVER ELECTRICAL POWER DISTRIBUTION CABINETS. D. ALL FLOOR DRAIN AND HUB DRAIN TRAPS SHALL BE PROVIDED WITH TRAP PRIMERS OR COMPLETE VENTING SYSTEM IN ACCORDANCE WITH

<u>N</u>	IOTES:						
1.	. ALL SYMBOLS MAY NOT APPLY.						
	CODED PLAN NOTE		DETAIL#	REFERENCE TAG			
	EQUIPMENT DESIGNATION		SHEET#	REFERENCE IAG			
	BACKFLOW PREVENTER	-55-	BALANG	CING VALVE			
+0+	BALL VALVE	++++	BUTTER	RFLY VALVE			
	CAP OFF EXISTING	1	CHEC	CK VALVE			
CO	CLEANOUT PLUG		DOUBLE DETEC	CTOR CHECK VALVE			
♦	DRY-PIPE VALVE	A	FIRE AL	ARM VALVE			
\\\	FIRE DEPARTMENT CONNECTION	\ominus	FIRE PROTECTION CONCEALED SPRIN				
•	FIRE PROTECTION PENDANT SPRINKLER	\boxtimes	FIRE PROTECTION S	PRINKLER WITH GUARD			
0	FIRE PROTECTION UPRIGHT SPRINKLER	CO	FLOOR	CLEANOUT			
\ominus	FLOOR DRAIN	FS	FLOW SWITCH				
⊣ ∇⊦	GAS COCK	->>-	GAT	E VALVE			
	MIXING VALVE	-	PIPIN	IG DOWN			
	PIPING OUT BOTTOM	_U_	PIPINO	OUT TOP			
— <u> </u>	PIPING RISE OR DROP	-0	PIF	ING UP			
→ ∇ ⊢	PLUG VALVE	•	POINT OF	CONNECTION			
\Diamond	PRE-ACTION VALVE		PRESSURE F	REDUCING VALVE			
\bigcirc	RECIRCULATION PUMP	0	ROOF / OV	ERFLOW DRAIN			
-\$-	SOLENOID VALVE ++ STRAINER						
TS	SUPERVISED GATE VALVE	TEST PLUG					
+++	THERMOMETER	THERMOMETER - - UNION					
	UTILITY METER - GAS / WATER	l —	WALL HYDR	ANT / HOSE BIBB			

PLUMBING NOTATIONS

INV

LAV

LF

MAX

MIN

MS

NTS

OD

PC

RD

SA

SAN

SDL

SE

SF

SH

SP

SS

STM

SUC

SW

TD

TMV

TS

TYP

UF

UR

WC

WCO

HORSE POWER

HEIGHT

INVERT ELEVATION

LAVATORY

LINEAR FOOT

MAXIMUM

MECHANICAL CONTRACTOR

MINIMUM

MOP SINK

NOT TO SCALE

OVERFLOW DRAIN

PLUMBING CONTRACTOR

ROOF DRAIN

SINK

SHOCK ABSORBER

SANITARY

SPRINKLER DRAIN LINE

SEWAGE EJECTOR

SQUARE FOOT

SHOWER

SUMP PUMP

SANITARY SEWER

STORM

SITE UTILITY CONTRACTOR

SOFT WATER

TRENCH DRAIN

THERMOSTATIC MIXING VALVE

TRAP PRIMER

TAMPER SWITCH

TYPICAL

UTILITY FIXTURE

UNDERGROUND

UNLESS NOTED OTHERWISE

URINAL

VENT

VENT RISER

VENT THROUGH ROOF

WATER CLOSET

WALL CLEANOUT

WALL HYDRANT

140°F HOT WATER

140°F HOT WATER RETURN

AREA DRAIN

ABOVE FINISH FLOOR

ABOVE FINISHED GRADE

BACKFLOW PREVENTER

BALANCING VALVE

BATHTUB

CLEAN OUT

CLINIC SINK

COMBINATION WATER SERVICE

DOMESTIC COLD WATER

DECK DRAIN

DOUBLE DETECTOR CHECK VALVE

DRINKING FOUNTAIN

DOMESTIC HOT WATER

DOMESTIC HOT WATER RETURN

DOWN

DOWNSPOUT

DOMESTIC WATER HEATER

ELECTRICAL CONTRACTOR

EXPANSION TANK

ELECTRIC WATER COOLER

ELECTRIC WATER HEATER

FLOOR CLEANOUT

FLOOR DRAIN

FIRE DEPARTMENT CONNECTION

FIRE DEPARTMENT VALVE

FATS / OILS / GREASE

FIRE RISER

FLOW SWITCH

FIRE SUPPRESSION CONTRACTOR

GAS (NATURAL)

GENERAL CONTRACTOR

GRADE CLEANOUT

GALLONS PER MINUTE

GRADE

HOSE BIBB

HVAC CONTRACTOR

HORIZONTAL CLEANOUT

HUB DRAIN

140R

AD

AFG

BFP

CO

CS

CWS

DCW

DD

DDCV

DN

DS

FCO

FDV

FOG

FS

GCO

GRD

HB

HCO

PLUMBING LINETYPE LEGEND

CW ————————————————————————————————————	DOMESTIC COLD WATER UNDERGROUND DOMESTIC HOT WATER DOMESTIC HOT WATER RETURN SANITARY UNDERGROUND
V	· - : · · ·

GENERAL NOTES:

- A. THIS WORK SHALL BE EXECUTED IN STRICT CONFORMITY WITH THE LATEST EDITION OF THE PREVAILING STATE PLUMBING AND BUILDING CODES AND ALL LOCAL REGULATIONS THAT MAY APPLY. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND A GOVERNING CODE OR ORDINANCE, THE MORE STRINGENT STANDARD SHALL
- B. ALL PLUMBING FIXTURES SHALL BE SUPPLIED WITH INDIVIDUAL HEAVY DUTY SUPPLY STOPS AND CODE APPROVED P-TRAPS WITH CLEANOUTS. EXPOSED PIPING SHALL BE CHROME PLATED WITH CHROMED ESCUTCHEONS AT WALL PENETRATIONS.
- CONTRACTOR SHALL COORDINATE PANEL LOCATIONS, PRIOR TO PIPING
- TRAP GUARDS, PER LOCAL E. ALL HORIZONTAL VENT PIPING MAY NOT BE SHOWN ON THIS PLAN FOR THE SAKE OF CLARITY. REFER TO SANITARY ISOMETRIC FOR VENT PIPE ROUTING AND PROVIDE
- F. ALL PLUMBING WORK SHALL BE COORDINATED WITH ALL OTHER TRADES, PRIOR TO CONSTRUCTION.
- G. ALL DOMESTIC WATER BRANCH LINES SHALL HAVE FULL PORT, TWO PIECE BALL TYPE,
- VALVES. H. PROVIDE WATER HAMMER ARRESTORS (WHA) AS REQUIRED, WITH QUICK CLOSING VALVES AND ON SYSTEMS WITH HIGHER THAN NORMAL PRESSURE, WHERE WATER HAMMER MAY BE AN
- I. INSTALL ALL FLOOR CLEANOUTS TO CLEAR EQUIPMENT AND PROVIDE REQUIRED ACCESSIBILITY FOR
- MAINTENANCE. J. VERIFY INVERT ELEVATIONS AND EXACT LOCATIONS OF ALL UNDERGROUND UTILITIES, PRIOR TO INSTALLING ANY UNDERGROUND PIPING. COORDINATE WITH SITE UTILITY CONTRACTOR.

	PLUMBING SHEET INDEX					
Sheet Number	Sheet Name					
P001	PLUMBING COVER SHEET					
P101	SANITARY & VENT PLAN					
P201	WATER PLAN					
P501	PLUMBING DETAILS					
P601	PLUMBING SCHEDULES					
P701	PLUMBING ISOMETRICS					





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PLUMBING COVER SUBMITTAL DATE: SHEET NUMBER: 03/20/2025 ISSUED FOR:

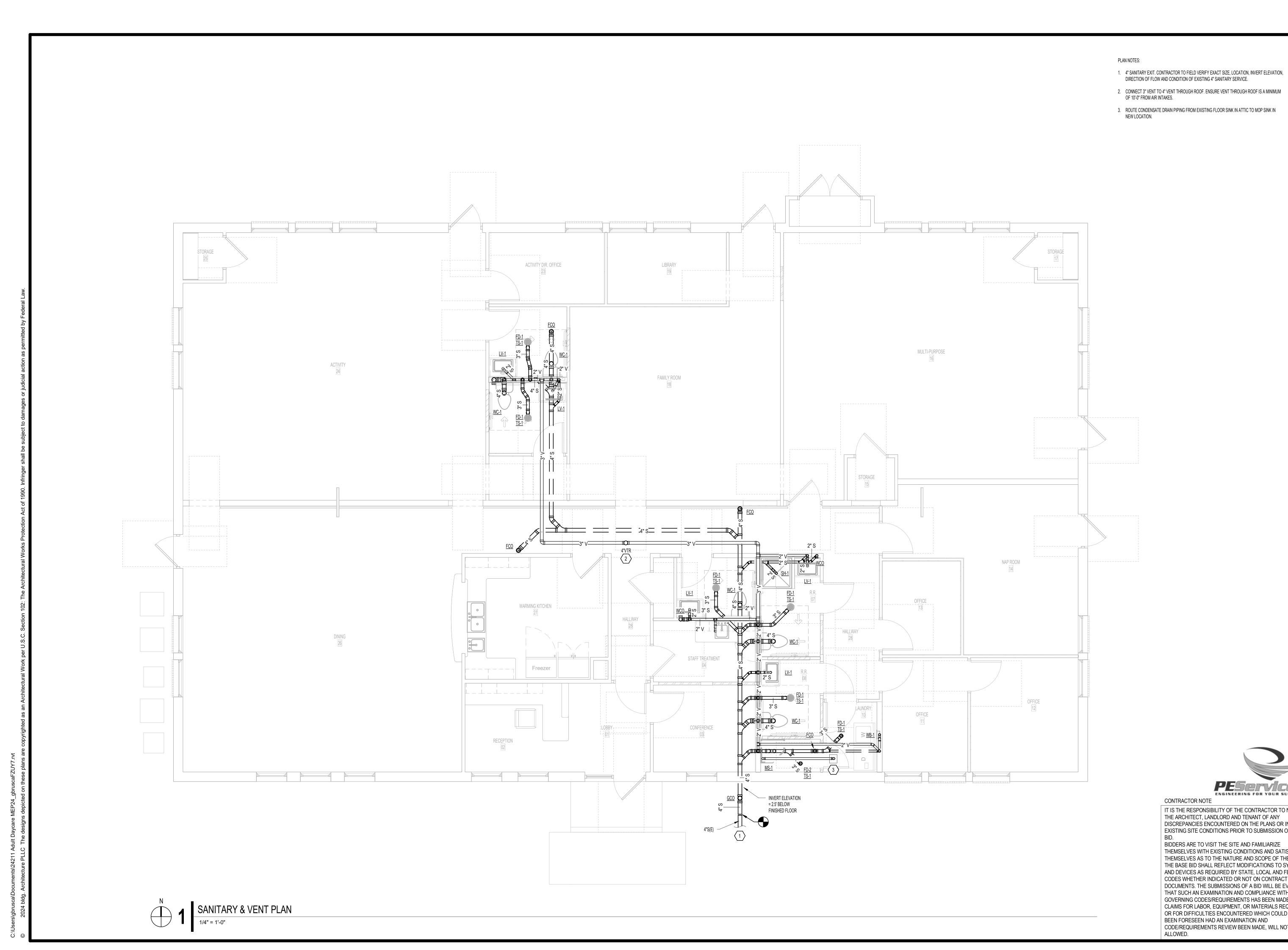
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PESERVICES ENGINEERING FOR YOUR SUCCESS

SANITARY & VENT

SUBMITTAL DATE: SHEET NUMBER: ■ 03/20/2025 P101 PERMIT



■ ARCHITECTURE PE-SERVICES F-10841 EXP: 09/30/25

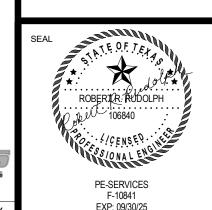
PESETVICES
ENGINEERING FOR YOUR SUCCESS CONTRACTOR NOTE IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ARCHITECT, LANDLORD AND TENANT OF ANY DISCREPANCIES ENCOUNTERED ON THE PLANS OR IN

EXISTING SITE CONDITIONS PRIOR TO SUBMISSION OF BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF THE WORK. THE BASE BID SHALL REFLECT MODIFICATIONS TO SYSTEMS AND DEVICES AS REQUIRED BY STATE, LOCAL AND FEDERAL CODES WHETHER INDICATED OR NOT ON CONTRACT DOCUMENTS. THE SUBMISSIONS OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION AND COMPLIANCE WITH GOVERNING CODES/REQUIREMENTS HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION AND CODE/REQUIREMENTS REVIEW BEEN MADE, WILL NOT BE ALLOWED.

WATER PLAN

SUBMITTAL DATE: SHEET NUMBER: ₫ 03/20/2025 P201

ARCHITECTURE



ENGINEERING FOR YOUR SUCCESS

THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF THE WORK. THE BASE BID SHALL REFLECT MODIFICATIONS TO SYSTEMS AND DEVICES AS REQUIRED BY STATE, LOCAL AND FEDERAL CODES WHETHER INDICATED OR NOT ON CONTRACT DOCUMENTS. THE SUBMISSIONS OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION AND COMPLIANCE WITH GOVERNING CODES/REQUIREMENTS HAS BEEN MADE. LATE CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION AND CODE/REQUIREMENTS REVIEW BEEN MADE, WILL NOT BE ALLOWED.

CONTRACTOR NOTE THE ARCHITECT, LANDLORD AND TENANT OF ANY

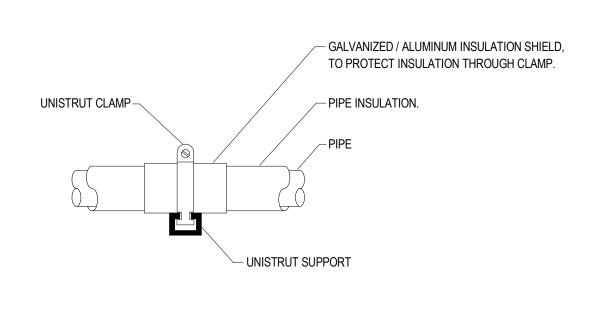
INSULATE ALL PIPING IN ACCORDANCE WITH SPECIFICATIONS. EXPANSION TANK -SHUT-OFF VALVE -BACKFLOW PREVENTER 3/4" T & P RELIEF — WATER TO VALVE BY P.C. WATER HEATER SEE PLUMBING -FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION 30" MAX. WITH DRAIN VALVE BY P.C. GALVANIZED DRAIN PAN -DIRECTION OF ⇒ **FLOW** 3"X3" STEEL ANGLE IRON STRUCTURAL MEMBERS. PROVIDED BY PLUMBING CONTRACTOR. ROUTE DRAIN PIPE FROM DRAIN-PAN, DOWN WALL TO FLOOR DRAIN OR MOP SINK. PROVIDE REQUIRED AIR GAP.

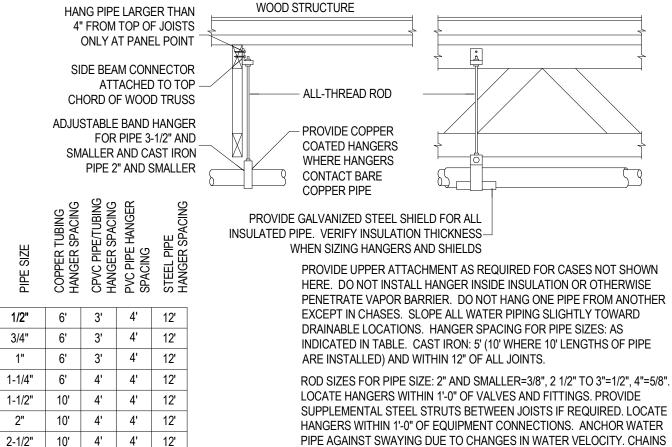
BACKFLOW PREVENTER DETAIL | 6 FREEZEPROOF WALL HYDRANT | 7 NTS | P501

WATER

SERVICE

SHELF MOUNT ELECTRIC WATER HEATER DETAIL | 5 NTS P501





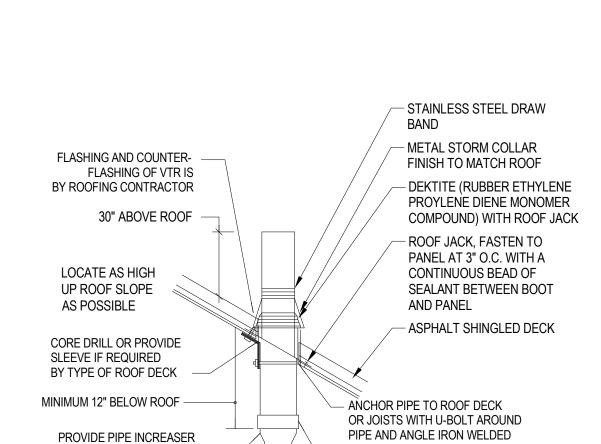
1/2" 6' 3' 4' 12' 3/4" 6' 3' 4' 12' 1" 6' 3' 4' 12' 1-1/4" 6' 4' 4' 12' 1-1/2" 10' 4' 4' 12' 2" | 10' | 4' | 4' | 12' 2-1/2" 10' 4' 4' 12' 3" 10' 4' 4' 12' 4" | 10' | 4' | 4' | 12' |

NTS P501

SPECIFICATIONS FOR FURTHER INFORMATION. PROVIDE SEISMIC BRACING IF/AS REQUIRED BY LOCAL AUTHORITIES. PIPE HANGERS DETAIL | 2

AND PERFORATED STRAP IRON AND STEEL ARE NOT ACCEPTABLE. DO NOT

SUSPEND PIPE FROM JOIST BRACING MEMBERS. REFER TO CODES AND



EXTERIOR BUILDING WALL

LENGTH OF SHAFT TO SUIT

WALL HYDRANT, GROUT OR

OTHERWISE REPAIR WALL

CUT WALL AS REQUIRED. INSTALL

NEATLY AROUND FACE OF WALL

HYDRANT, TO SEAL WATERTIGHT

- INSTALL 18"+/- ABOVE GRADE.

REQUIRED TO SUIT MASONRY

ADJUST HEIGHT IF/AS

EXTERIOR GRADE,

PAVEMENT, OR OR

JOINTS

SIDEWALK

THICKNESS OR WALL

CAST IRON PIPE REFER TO PLANS FOR VTR PIPE SIZES AND LOCATIONS. LOCATE VTR MINIMUM THREE FEET FROM PROPERTY LINE, OR TEN FEET HORIZONTAL OR THREE FEET VERTICAL ABOVE ANY BUILDING OPENING OR FRESH AIR INTAKE, OR ONE FOOT FROM ANY VERTICAL SURFACE. LOCATE VTR MINIMUM 18" FROM PARAPET, EXPANSION JOINT, EQUIPMENT CURB, ETC. OFFSET IN CEILING SPACE WHERE REQUIRED TO MEET THESE CONDITIONS.

WHERE REQUIRED TO MAKE

MINIMUM 3" VENT THRU ROOF

VENT THROUGH ROOF DETAIL | 3

OR SCREWED TO DECK OR JOIST

HUBLESS PIPE CONNECTORS ON

WATER HAMMER ARRESTOR

INSULATE COLD WATER PIPE -

INSTALL RISER INSIDE PARTITION WHERE

AVAILABLE; REFER TO

TO WALL, INTERIOR TO

EXPOSED, ANCHOR TIGHT

INTERIOR FLOOR

PLANS. IF RISER IS

WALL INSULATION

ELBOW AS REQUIRED -

VALVE INTERIOR TO WALL

SHUT-OFF VALVE IN 7 ACCESSIBLE LOCATION

ABOVE CEILING

☐ NICKEL BRONZE STRAINER 12 SQ. IN.

CONCRETE SLAB OR

FINISHED FLOOR

PRIMERS

REQUIRED

NTS | P501

16" SQUARE CONCRETE PAD

TROWEL SMOOTH AND

- 1/8 C.I. BEND

NTS | P501

BEVEL EDGES

FLOOR DRAIN DETAIL | 4

BRASS CLEAN-OUT PLUG

WITH COUNTER SUNK HEAD

LENGTH AS REQUIRED

-1/'8" BEND IF CLEAN-OUT

OCCURS AT END OF LINE.

CLEANOUT DETAILS

FLOOR CLEANOUT

FREE AREA

SEALANT

FINISHED

STANDARD

ROUGH C.I. BODY

TO TENANT'S -

SANITARY

SEWER

FINISHED GRADE FCO

FLOOR

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PLUMBING DETAILS SUBMITTAL DATE: SHEET NUMBER: 03/20/2025 ISSUED FOR: PERMIT

EQUALS BRADFORD-WHITE RHEEM STATE

ACCEPTABLE

EQUALS

ARMSTRONG

LITTLE GIANT

TACO

REFERENCE

PRODUCT

ARMSTRONG

ASTRO SERIES 30B

LOCATION

JANITORS

ELECTRIC WATER HEATER SCHEDULE ELECTRICAL RECOVERY ACCEPTABLE REFERENCE CAPACITY CAPACITY (GPH) CONNECTIONS REQUIREMENTS LOCATION PRODUCT CW HW KW VOLT PH HZ GALLONS GALLONS TEMP GLASS LINED TANK, FOAM INSULATED, ZINC PLATED COPPER SHEATHS WITH MEDIUM WATT DENSITY, DUAL HEATING ELEMENTS, SINGLE PHASE, ADJUSTABLE TEMPERATURE CONTROL 110-170 DEG F, CABINET AO SMITH 3/4" 3/4" 90 DEG 4.5 240 **JANITORS** DEL-50

1/25

60

FLOW

GPM

TDH

RPM

2800

FEET

	BACKFLOW PREVENTER SCHEDULE									
		DESCRIPTION	PIPING		SERVICE	PRESSURE LOSS (PSI)	DEVICE LOCATION	REFERENCE PRODUCT	ACCEPTABLE EQUALS	
TAG	FIXTURE		CONNECTIONS							FLOW
			IN	OUT	DRAIN	(GPM)	(F31)		PRODUCT	EQUALS
BFP-1	REDUCED PRESSURE BACKFLOW PREVENTER	ASSE LISTED 1013, 304 STAINLESS STEEL MAIN BODY, TWO INDEPENDENTLY OPERATING SPRING LOADED CHECK VALVES, STAINLESS STEEL SPRINGS, DIAPHRAGM TYPE DIFFERENTIAL PRESSURE RELIEF VALVE, AIR GAP FITTING, SIZE RANGE - 1/4" - 2"	1-1/2"	1-1/2"	-	22	10	JANITOR	WATTS LF909	GRINNEL JOSAM WILKINS

DISCHARGE SUCTION AMPS VOLT PH HZ

115

0.70

ELECTRICAL

REQUIREMENTS

CIRCULATING PUMP SCHEDULE

CONNECTIONS

DESCRIPTION

BRONZE BODY, CERAMIC THRUST BEARINGS, PLASTIC IMPELLAR, STAINLESS STEEL ROTOR AND SHAFT,

SELF-LUBRICATED GRAPHITE BEARINGS, EPDM DIAPHRAGM, 230 F MAX WATER TEMPERATURE, 140 PSI MAX

DESCRIPTION

BONDERIZED UNDERCOAT WITH BAKED ENAMEL FINISH

WORKING PRESSURE

TAG

CP-1

FIXTURE

DOMESTIC HOT WATER

CIRCULATING PUMP

IN-LINE

FIXTURE

ELECTRIC WATER HEATER

TANK TYPE

COMMERCIAL

		PLUMBING FIXTURE SCHEDULE					
TAG	FIXTURE	DESCRIPTION	FAUCETS/ FITTINGS	TRIM	ACCESSORIES	REFERENCE PRODUCT	ACCEPTABLE EQUALS
FCO	FLOOR CLEANOUT	ADJUSTABLE LEVELING FLOOR CLEANOUT, DURA-COATED CAST IRON BODY WITH GAS AND WATER TIGHT ABS TAPERED THREAD PLUG, ROUND SCORIATED SECURED TOP, NO HUB CONNECTION				ZURN Z1400-BZ-NH	JR SMITH WADE WATTS
FD-1	FLOOR DRAIN FINISHED AREAS	DURA-COATED CAST IRON BODY WITH BOTTOM OUTLET, NICKEL BRONZE TOP, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS AND TOP ASSEMBLY, EZ1 DRAINAGE SERIES COMPRISED OF CONCRETE SHIELD UP TO 1" OF VERTICAL POST POUR ADJUSTMENT, 1 3/4" TO 3 1/4" EXTENSION ADAPTER AVAILABLE				ZURN Z415-BZ1	JR SMITH WADE WATTS
FD-2	FLOOR DRAIN UTILITY AREAS	DURA-COATED CAST IRON BODY WITH BOTTOM OUTLET, SEEPAGE PAN, MEMBRANE FLASHING CLAMP WITH SEEPAGE SLOTS, ADJUSTABLE EXTENSION FRAME WITH HEAVY-DUTY CAST IRON DEEP FLANGE SLOTTED GRATE				ZURN Z520-NH	JR SMITH WADE WATTS
FWH-1	FREEZEPROOF WALL HYDRANT ENCASED	ENCASED ECOLOTROL "ANTI-SIPHON" AUTOMATIC DRAINING WALL HYDRANT FOR FLUSH INSTALLATION, NON-FREEZE TYPE INTEGRAL BACKFLOW PREVENTER, BRONZE CASING, ALL BRONZE INTERIOR PARTS				ZURN Z1300	JR SMITH WADE WATTS
LV-1	LAVATORY UNDERMOUNT ADA	VITREOUS CHINA, UNDERMOUNT, RECTANGULAR BASIN WITH OVERFLOW DRAIN, WHITE, GLAZED UNDERSIDE	SYMMONS SLW6712PP	McGUIRE 165		TOTO LT191G	AMERICAN STANDARD ELJER
MS-1	MOP SINK CORNER	CORNER MOP SINK, MOLDED STONE IN MATCHED METAL DIES UNDER HEAT AND PRESSURE, ONE PIECE BASIN, 24" X 24" X 12" DEEP, 3-1/2" DRAIN OPENING STAINLESS STEEL FLAT GRID STRAINER	FIAT 830AA			FIAT TSBC6010	AMERICAN STANDARD FLORESTONE
SH-1	SHOWER STALL ADA 36" x 36"	PRESSURE BALANCING MIXING VALVE, ADJUSTABLE STOP SCREW, SINGLE BRONZE STEM, STAINLESS STEEL HOUSING, COPPER NICKEL CHROME PLATED TRIM HAND HELD SPRAYER, IN-LINE VACUUM BREAKER, STAINLESS STEEL HOSE, SLIDE BAR				AQUATIC 1363BFSD	AMERICAN STANDARD FLORESTONE
SK-1	SINK SINGLE BOWL UNDERMOUNT 30"x18"x9" DP	18 GAUGE, 304 STAINLESS STEEL SINGLE COMPARTMENT UNDERMOUNT SINK, ROUNDED BOWL, 3-1/2" DRAIN OPENING, UNIQUE SOUND-DEADENING SYSTEM, UPC CERTIFIED	KOHLER K-596	McGUIRE 165		ABSOLUTE STONE CORP. LC3018	JUST ELKAY AMERICAN STANDARD
TMV-1	THERMOSTATIC MIXING VALVE POINT-OF-USE	HOT WATER INLET TEMPERATURE: 120 DEG F TO 180 DEG F, MINIMUM INLET TEMPERATURE DIFFERENTIAL: 5 DEG F, TEMPERATURE RANGE: 80 DEG F TO 120 DEG F, MINIMUM FLOW: 0.25 GPM,CHECK VALVE ON INLETS, STRAINER STOP CHECKS ON INLETS. ASSE 1070 RATED				WATTS LFUSG-B M3	LAWLER POWERS LEONARD
TS-1	TRAP SEAL	WATERLESS INLINE 3" DRAIN TRAP SEAL, HDPE (HIGH DENSITY POLYETHYLENE) HOUSING WITH PROPRIETARY HEAVY DUTY SILICONE DIAPHRAGM AND SOFT EPDM RUBBER SEALING GASKET. FLOOR RATING ASSE 1072 AF GW				RECTORSEAL SS3009V	JR SMITH MIFAB ZURN
WB-1	WALL BOX	PLASTIC WASHER WALL BOX, WITH SINGLE LEVER VALVE AND INTEGRAL HAMMER ARRESTERS, FIRE RATED, BOX IS PVC RESIN & INTUMESCENT PAD ATTACHED, 1/2" MIP / SWEAT CONNECTION, VALVES COMPLY WITH ASME A112.18.1, HAMMER ARRESTERS COMPLY WITH ASSE 1010				GUY GRAY FR12SS	OATEY CO. SIOUX CHIEF
WC-1	WATER CLOSET FLOOR MOUNT TANK TYPE - ADA	VITREOUS CHINA, TWO-PIECE, FLOOR MOUNT, TANK TYPE, 16 1/2" HIGH ELONGATED BOWL, CLOSE COUPLED TANK, FULLY GLAZED 2 1/8" TRAPWAY, 1.28 GAL PER FLUSH, POLISHED CHROME TRIP LEVER, 12" ROUGH IN		AMERICAN STANDARD 5325.010	AMERICAN STANDARD 4225A.164	AMERICAN STANDARD 3195C.101	PROFLO STERLING
WCO	WALL CLEANOUT	DURA-COATED CAST IRON BODY WITH GAS AND WATER TIGHT ABS TAPERED THREAD PLUG, ROUND SMOOTH, STAINLESS STEEL ACCESS COVER WITH SECURING VANDAL PROOF SCREW, NO HUB CONNECTION				ZURN Z1441-VP	JR SMITH WADE

		SPECIALTIES SCHEDULE				
TAG	FIXTURE	DESCRIPTION		PING ECTIONS OUTLET	REFERENCE PRODUCT	ACCEPTABLE EQUALS
EXT-1	EXPANSION TANK 2.0 GALLON	FABRICATED STEEL SHELL, DIAPHRAGM BLADDER, MAXIMUM WORKING PRESSURE IS 150 PSIG, MAXIMUM ALLOWABLE WORKING TEMPERATURE IS 200 F MAX	3/4"	-	AMTROL ST-5	JR SMITH TACO WATTS

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		BALANCING VALVE SCHEDUL	.E			
				PING		REFERENCE
TAG	FIXTURE	DESCRIPTION	CONNE	CTIONS	SET TEMP.	PRODUCT
			INLET	OUTLET		
BV-1	HOT WATER RETURN BALANCING VALVE	SELF-ACTING THERMOSTATIC RECIRCULATION VALVE WHICH AUTOMATICALLY AND CONTINUOUSLY MAINTAINS THE END OF EACH DOMESTIC HOT WATER SUPPLY LINE AT THE SPECIFIED WATER TEMPERATURE	1/2"	1/2"	140 DEGREES	CIRCUITSOLVER CSUA-1/2-140-CV1
BV-2	HOT WATER RETURN BALANCING VALVE	SELF-ACTING THERMOSTATIC RECIRCULATION VALVE WHICH AUTOMATICALLY AND CONTINUOUSLY MAINTAINS THE END OF EACH DOMESTIC HOT WATER SUPPLY LINE AT THE SPECIFIED WATER TEMPERATURE	3/4"	3/4"	140 DEGREES	CIRCUITSOLVER CSUA-3/4-140-CV1



CONTRACTOR NOTE IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ARCHITECT, LANDLORD AND TENANT OF ANY DISCREPANCIES ENCOUNTERED ON THE PLANS OR IN EXISTING SITE CONDITIONS PRIOR TO SUBMISSION OF

BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF THE WORK. THE BASE BID SHALL REFLECT MODIFICATIONS TO SYSTEMS AND DEVICES AS REQUIRED BY STATE, LOCAL AND FEDERAL CODES WHETHER INDICATED OR NOT ON CONTRACT DOCUMENTS. THE SUBMISSIONS OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION AND COMPLIANCE WITH GOVERNING CODES/REQUIREMENTS HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION AND CODE/REQUIREMENTS REVIEW BEEN MADE, WILL NOT BE ALLOWED.

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SCHEDULES SUBMITTAL DATE: SHEET NUMBER: 4 03/20/2025 P601

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ENGINEERING FOR YOUR SUCCESS CONTRACTOR NOTE IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ARCHITECT, LANDLORD AND TENANT OF ANY DISCREPANCIES ENCOUNTERED ON THE PLANS OR IN

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PE-SERVICES F-10841 EXP: 09/30/25

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ISOMETRICS SUBMITTAL DATE: SHEET NUMBER: ■ 03/20/2025 P701 PERMIT