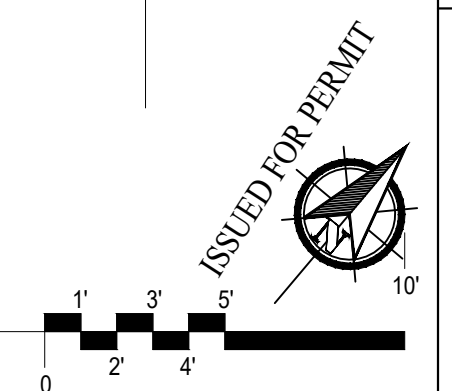




2 SECOND FLOOR PLAN
 SCALE: 3/16" = 1'-0"



LEGEND

	NOT IN SCOPE
	DEMO PARTITION
	EXISTING PARTITION TO REMAIN
	NEW PARTITION
	NEW 2-hr FIRE RATED PARTITION UL DESIGN No. U301

GENERAL NOTES

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- CONTRACTOR SHALL COMPLY WITH ALL HEALTH AND LIFE SAFETY REQUIREMENTS AS DIRECTED BY BALTIMORE COUNTY AND THE STATE OF MARYLAND.
- INTERIOR FINISHES ARE CLIENT'S CHOICE
- INTERIOR LIGHTING SELECTION ARE CLIENT'S CHOICE
- DOOR TYPE SYMBOL **(36)** DENOTES DOOR WIDTH, DOOR STYLE CLIENT'S CHOICE. ALL DOORS ARE 6'-8" IN HEIGHT.

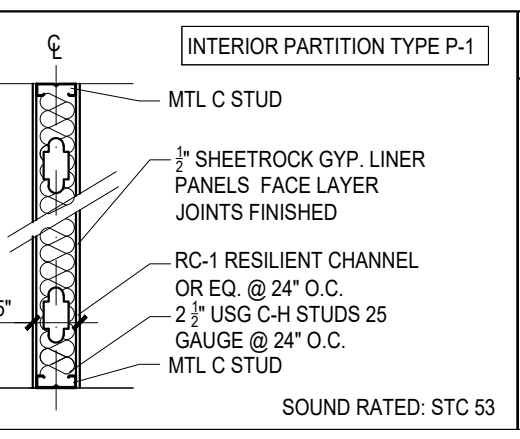
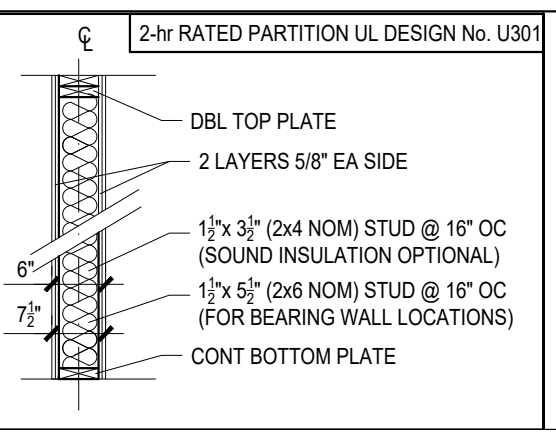
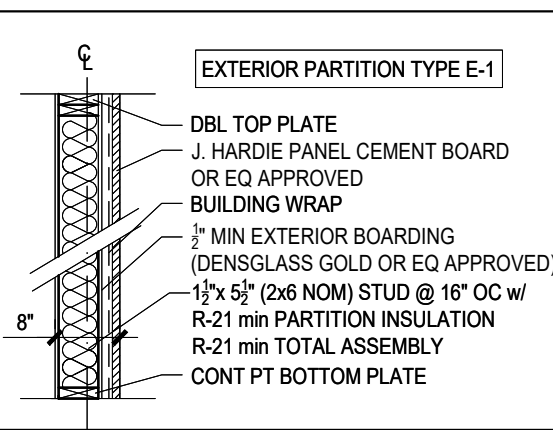
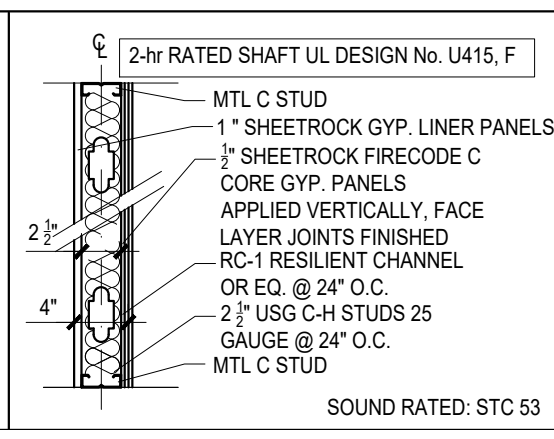


ADAM CARRALLO ARCHITECT
 443-745-1100
 2132 W. NORTH AVE
 BALTIMORE, MD 21201
 5/15/2023

REVISIONS



2 SECOND FLOOR PLAN
 SCALE: 3/16" = 1'-0"



LEGEND

- NOT IN SCOPE
- DEMO PARTITION
- EXISTING PARTITION TO REMAIN
- NEW PARTITION
- NEW 2-hr FIRE RATED PARTITION UL DESIGN No. U301

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- INTERIOR FINISHES ARE CLIENT'S CHOICE
- INTERIOR LIGHTING SELECTION ARE CLIENT'S CHOICE
- DOOR TYPE SYMBOL 36" DENOTES DOOR WIDTH, DOOR STYLE CLIENT'S CHOICE. ALL DOORS ARE 6'-8" IN HEIGHT.

0009-A-2
 SECOND FLOOR PLAN
 2132 W. NORTH AVE
 BALTIMORE, MD 21201
 5/15/2023

ADAM CARRALLO ARCHITECT
 AD L/C# 15709
 443-745-1100

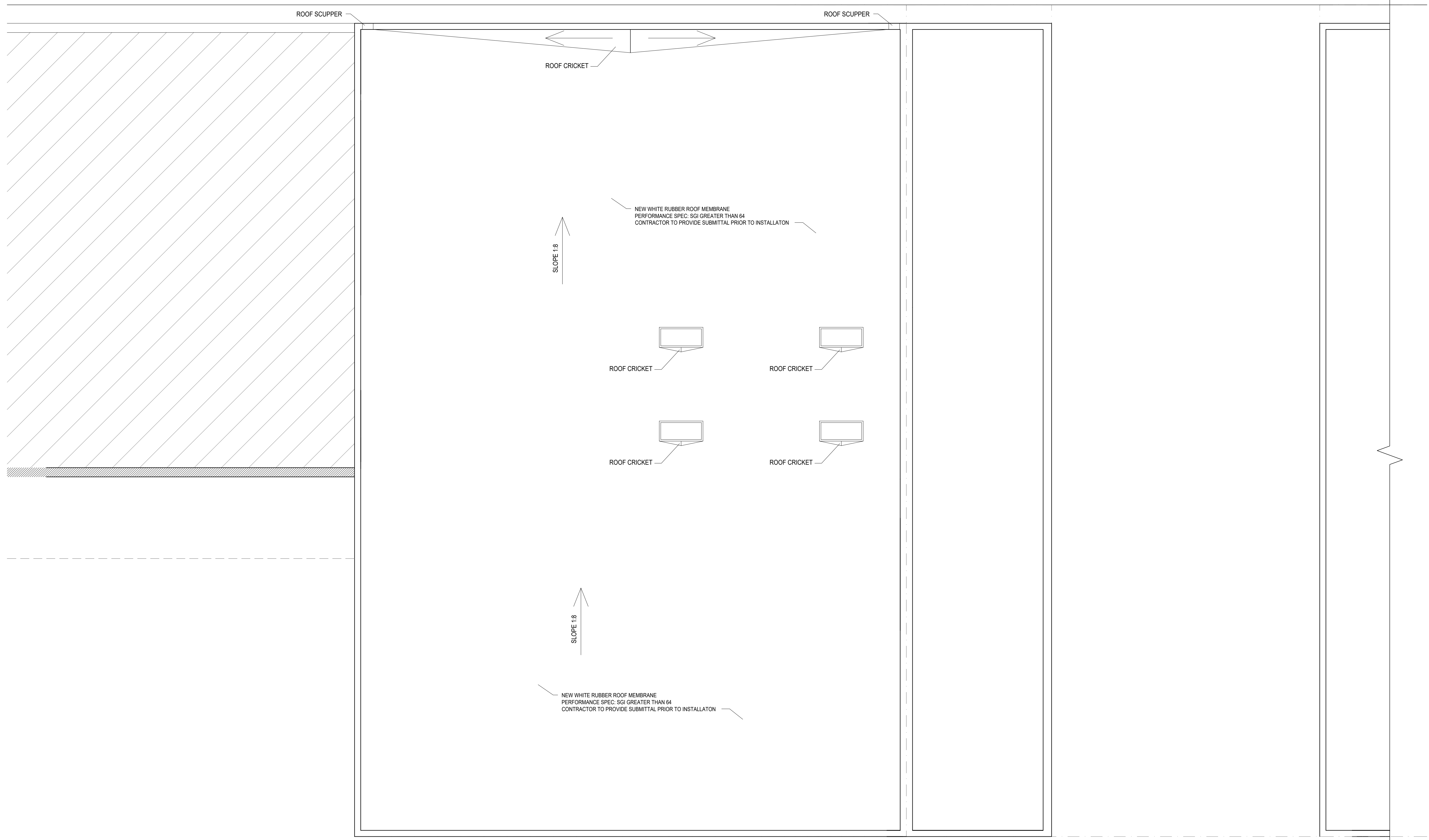
CLIENT
 MR. RASHEED AZIZ

DRAWN BY
 19423 - NMC



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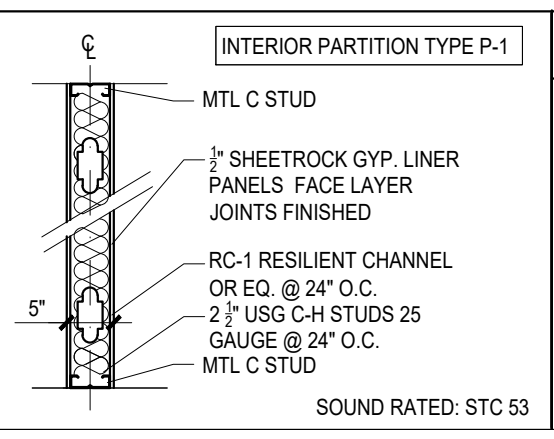
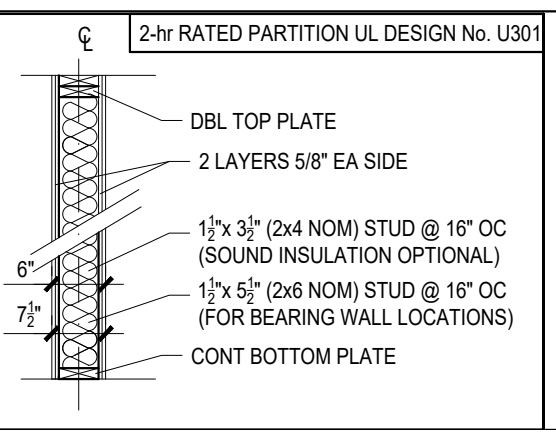
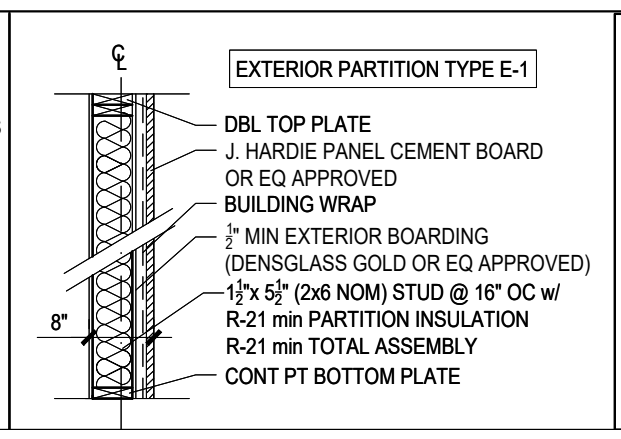
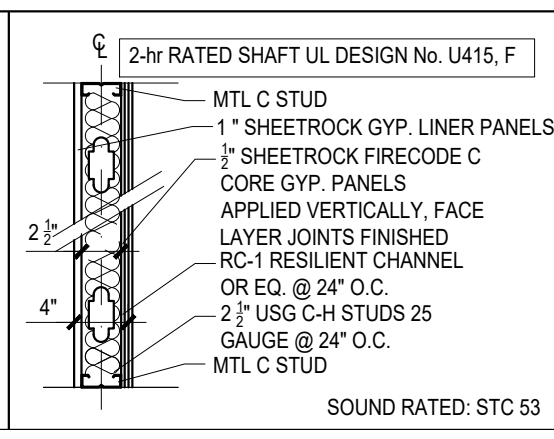
REVISIONS



DRAWN BY
19423 - NMC

CLIENT
MR. RASHEED AZIZ

ADAM CARRALLO, ARCHITECT
AIA LIC# 15709
443-745-1100



LEGEND

- NOT IN SCOPE
- DEMO PARTITION
- EXISTING PARTITION TO REMAIN
- NEW PARTITION
- NEW 2-hr FIRE RATED PARTITION UL DESIGN No. U301

GENERAL NOTES

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- INTERIOR LIGHTING SELECTION ARE CLIENT'S CHOICE
- DOOR TYPE SYMBOL **(36)** DENOTES DOOR WIDTH, DOOR STYLE CLIENT'S CHOICE. ALL DOORS ARE 6'-8" IN HEIGHT.

001-A-A4
ROOF PLAN
2/22/23 W. NORTH AVE
5/11/23
SEPTEMBER 2023



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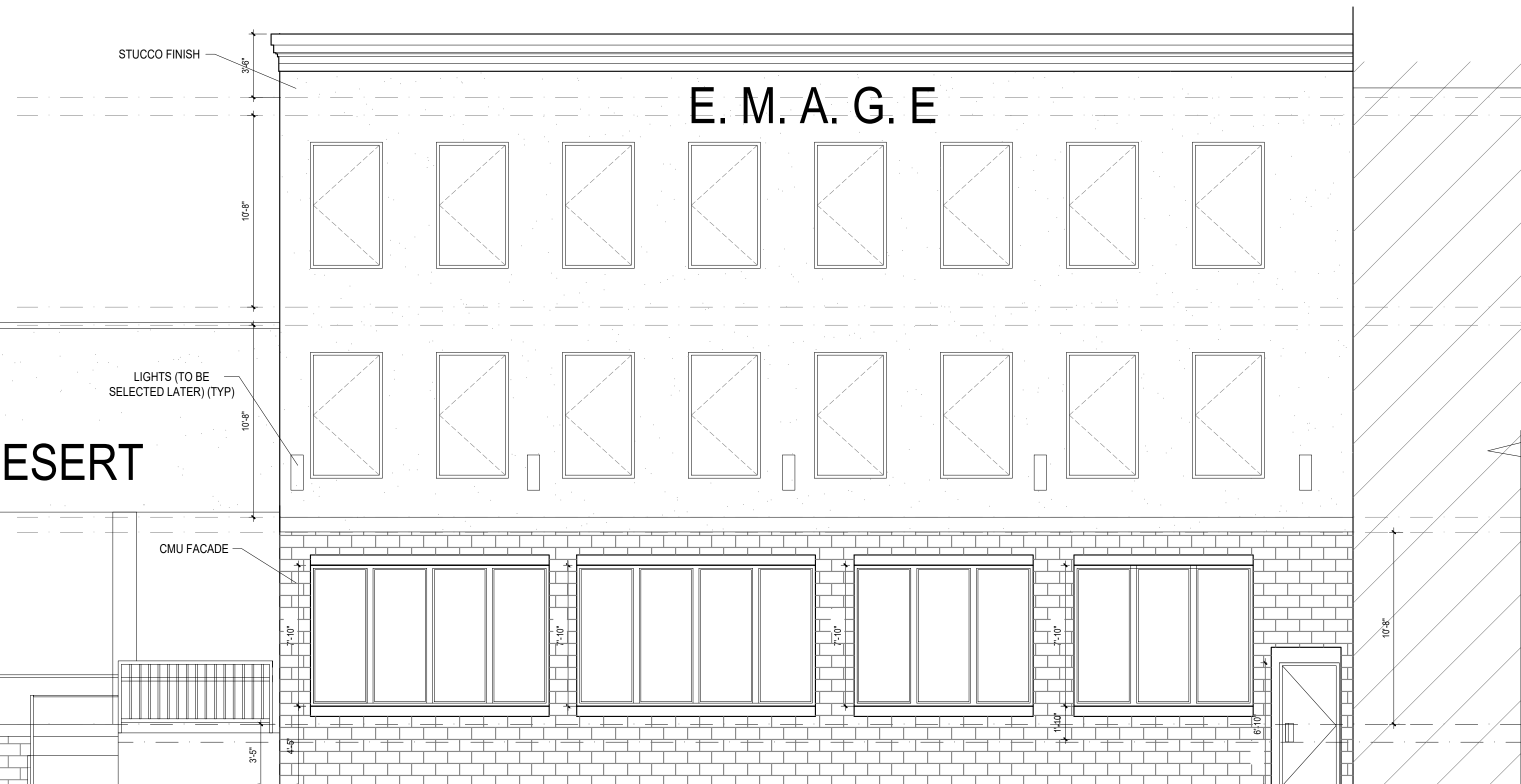
REVISIONS

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191423 - NMC

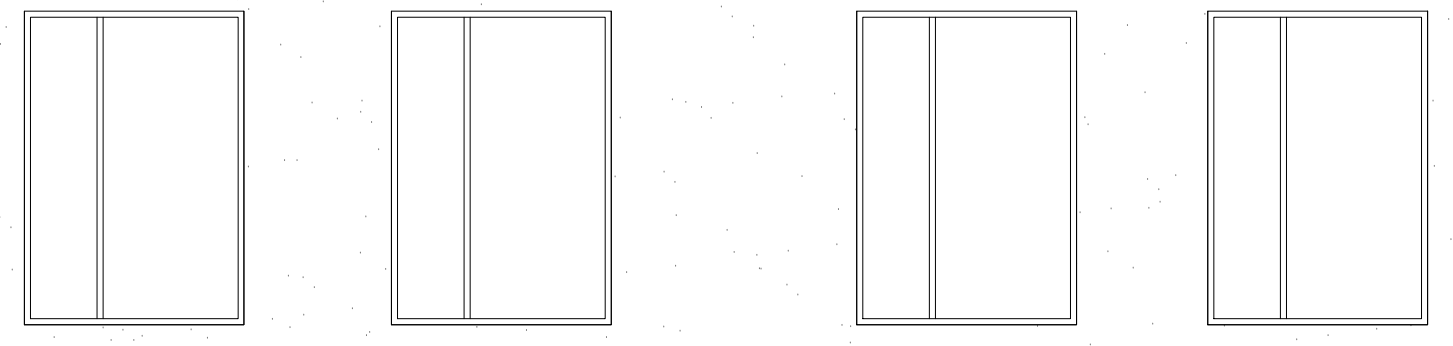
CLIENT
MR. RASHEED AZIZ

ADAM CARRILLO ARCHITECT
NO. LIC# 15709
443-745-1100

0012-A-A5
FRONT ELEVATION
2732 W. NORTH AVE
PHOENIX, AZ 85016
SEPTEMBER 2023



E.M.A.G.E Center



FROZEN ○ DESERT

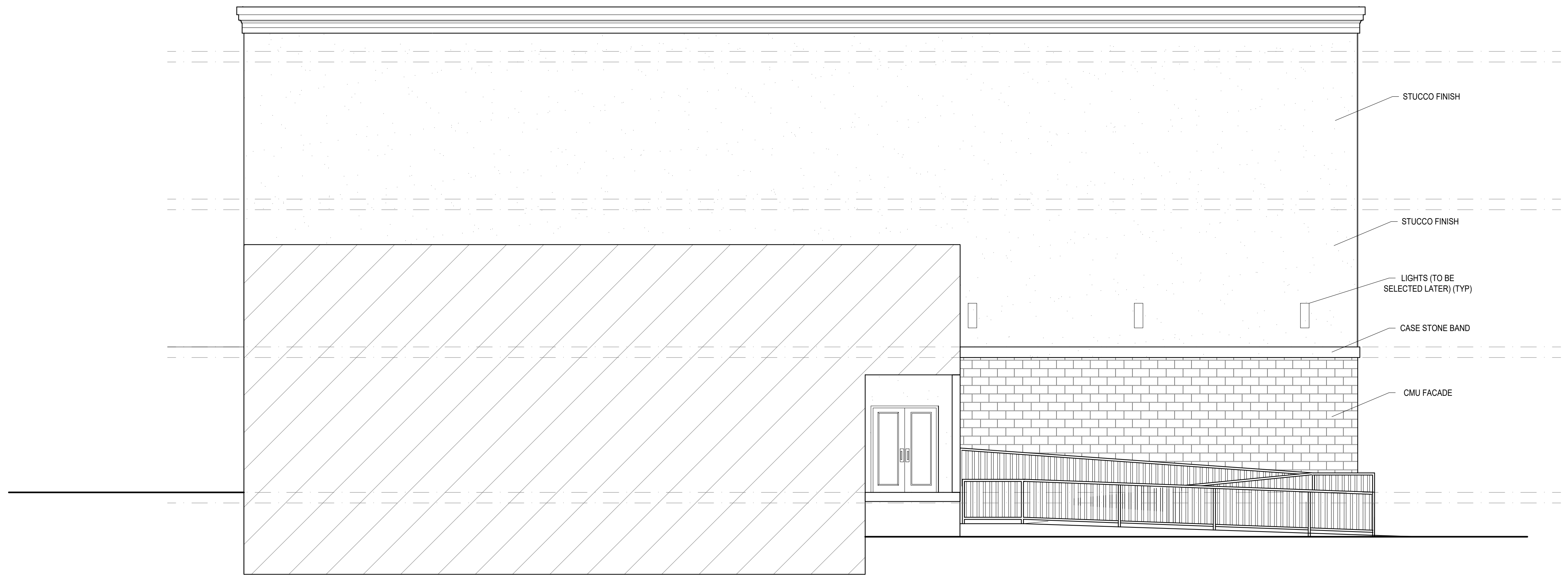


1 FRONT ELEVATION
SCALE: 3/16" = 1'-0"



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REVISIONS



STUCCO FINISH

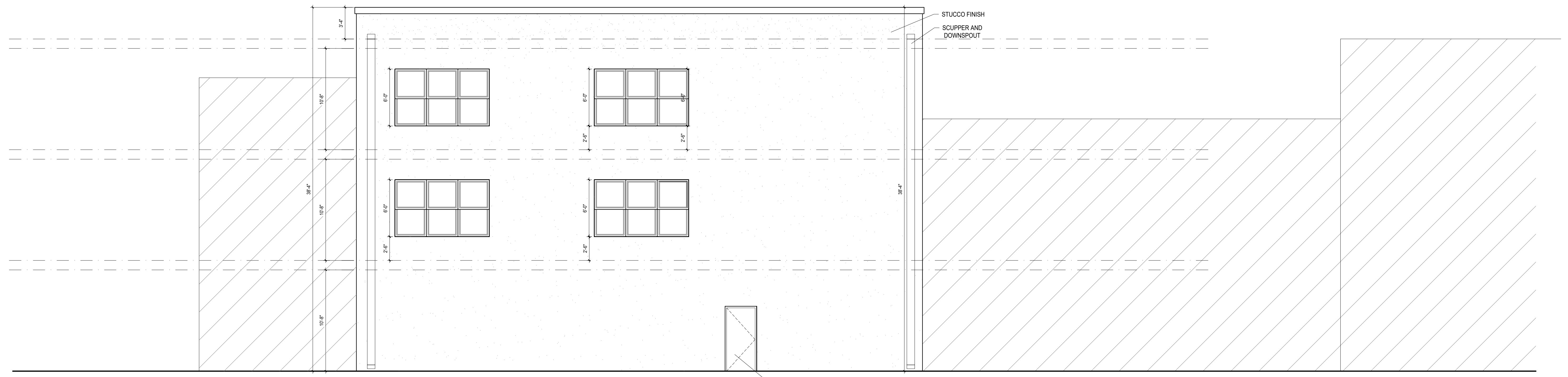
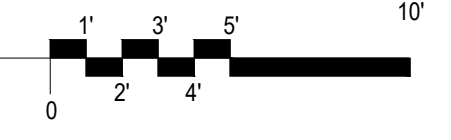
STUCCO FINISH

LIGHTS (TO BE SELECTED LATER) (TYP)

CASE STONE BAND

CMU FACADE

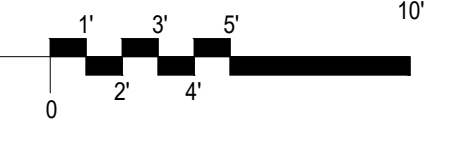
1 LEFT SIDE ELEVATION
SCALE: 3/16" = 1'-0"



STUCCO FINISH
SCUPPER AND
DOWNSPOUT

STEEL EXIT
DOOR

2 REAR ELEVATION
SCALE: 3/16" = 1'-0"



DRAWN BY
191423 - NMC

CLIENT
MR. RASHEED AZIZ

ADAM CARRILLO ARCHITECT
NO. LIC# 15709
443-745-1100

0013-A-A6
INTERIOR AND REAR ELEVATION
2732 W. NORTH AVE
SEPTEMBER 2023

ELECTRICAL SPECIFICATIONS:

- A. GENERAL: THE REQUIREMENTS OF THE GENERAL, SUPPLEMENTARY AND SPECIAL CONDITIONS OF THE CONTRACT SPECIFICATIONS AND DRAWINGS ARE HEREBY MADE A PART OF THIS SECTION OF THE SPECIFICATIONS. IT IS THE INTENT OF THE PLANS AND SPECIFICATIONS TO PROVIDE A COMPLETE AND OPERATING INSTALLATION INCLUDING ALL OBVIOUSLY NECESSARY ITEMS EVEN THOUGH ITEMS ARE NOT INDICATED ON THE DRAWINGS OR SPECIFICATIONS.
 - B. PERMITS, SALES TAX, ETC.: THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, STATE SALES TAX, FEDERAL EXCISE TAX, ROYALTIES AND OTHER TAXES OR FEES AS REQUIRED FOR INSTALLATION OF A COMPLETE SYSTEM AS OUTLINED HEREIN AND AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL SECURE ALL NECESSARY LICENSES AND INSURANCE.
 - C. CODES: THE WORK SHALL COMPLY WITH LATEST APPLICABLE REQUIREMENTS OF THE NFPA AND ALL LOCAL CODES GOVERNING THIS INSTALLATION AS A MINIMUM STANDARD UNLESS SPECIFICATIONS LISTED HEREIN OR SHOWN ON THE PLANS REQUIRE A HIGHER MINIMUM STANDARD.
 - D. BRANDS OF EQUIPMENT: WHERE ONE MANUFACTURER ONLY IS NAMED, THE BIDS SHALL BE BASED ON FURNISHING EQUIPMENT OR MATERIALS BY THIS MANUFACTURER. PRODUCTS OF OTHER MANUFACTURERS WILL BE CONSIDERED FOR USE IF THE ITEM REQUESTED FOR SUBSTITUTION IS EQUAL TO THAT SPECIFIED. WHERE NO MANUFACTURERS ARE NAMED, THE CONTRACTOR SHALL SELECT EQUIPMENT OR MATERIAL WHICH MEETS THE SPECIFICATIONS.
 - E. DEPARTURES FROM DRAWINGS: THE CONTRACT DRAWINGS INDICATE THE EXTENT AND GENERAL ARRANGEMENTS OF EQUIPMENT AND SYSTEMS. IF ANY DEPARTURES FROM THE CONTRACT DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREFORE SHALL BE SUBMITTED FOR APPROVAL. NO SUCH DEPARTURES SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL.
 - F. CHANGES: THE CONTRACTOR SHALL CONFORM TO ALL REASONABLE CHANGES WITHOUT ADDITIONAL COST.
 - G. ERRORS AND OMISSIONS: ALL OBVIOUS ERRORS AND/OR OMISSIONS IN THE ABOVE MENTIONED DOCUMENTS SHALL BE CALLED TO THE ATTENTION OF THE GC AT LEAST FOUR DAYS PRIOR TO THE BID DATE. IF NOTIFICATION IS NOT RECEIVED, NO EXTRAS TO THE ORIGINAL DRAWINGS AND SPECIFICATIONS WILL BE AUTHORIZED.
 - H. GUARANTEE: THE CONTRACTOR SHALL PROVIDE A GUARANTEE AGAINST DEFECTIVE WORKMANSHIP, MATERIALS OR EQUIPMENT FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE. THIS GUARANTEE SHALL INCLUDE ALL COSTS ENCOUNTERED IN THE REPLACING OF DEFECTIVE WORK OR MATERIALS. THE CONTRACTOR SHALL CONVEY TO THE OWNER ANY ADDITIONAL WARRANTIES OR WARRANTIES PROVIDED BY THE MANUFACTURER OF AN INDIVIDUAL ITEM, EQUIPMENT OR MATERIAL.
- RACEWAY**
 - A. EMT: MAY BE USED FOR ALL BRANCH CIRCUIT WIRING IN AREAS ABOVE GRADE AND WITHIN THE BUILDING. ALL EMT SHALL BE GALVANIZED. ALL EMT FITTINGS SHALL BE STEEL WITH SET SCREWS.
 - B. PVC: SHALL BE SCHEDULE 40 HIGH IMPACT, UL APPROVED, AND SHALL BE INSTALLED UNDERGROUND OR IN THE SLAB.
 - C. RIGID CONDUIT: SHALL BE USED FOR ALL EXTERIOR INSTALLATION WHERE MECHANICAL DAMAGE IS POSSIBLE.
 - WIRE AND CABLE**
 - A. CONDUCTORS: SHALL BE COPPER. INSULATION SHALL BE TYPE THHN/THWN FOR ALL SIZES. MINIMUM SIZE WIRE NO. 12, CONDUCTORS NO. 10 AND LARGER ARE TO BE STRANDED. BRANCH CONDUIT OUTLETS SHALL BE CONNECTED AS INDICATED.
 - B. COLOR CODES: CONDUCTORS SHALL BE COLOR CODED THROUGHOUT. SAME COLOR SHALL BE USED FOR BRANCH CIRCUIT WIRING OF A GIVEN PHASE. GROUNDED CONDUCTORS NO. 4 AWG AND LARGER MAY BE BLACK, BUT SHALL BE IDENTIFIED WITH COLORED TAPE IN JUNCTION BOXES, PULL BOXES, PANELS AND SERVICE EQUIPMENT.
 - 120/240V OR 120/208V SYSTEMS
THREE WIRE CIRCUITS - ONE BLACK, ONE RED AND ONE WHITE
FOUR WIRE CIRCUITS - ONE BLACK, ONE RED, ONE WHITE, ONE BLUE
 - 277/480V SYSTEMS - ONE BROWN, ONE ORANGE, ONE YELLOW, ONE GRAY
 - C. CONTINUITY OF NEUTRALS OF MULTI-WIRED BRANCH CIRCUITS SHALL NOT BE MADE ON TERMINALS OF ANY DEVICE. THIS WILL ASSURE NO OPENING OF NEUTRAL IN REPLACEMENT OF DEVICE.
 - C. SPLICES:
 - #10 AND BELOW - SCOTCHLOK OR EQUAL
 - #8 AND LARGER - NOT ALLOWED
 - BOXES**
 - A. OUTLET BOXES: SECTION WELDED GALVANIZED STAMPED STEEL FOR GANG SIZES REQUIRED. SECTIONAL BOXES WILL NOT BE ACCEPTABLE. BOXES LARGER THAN STANDARD SHALL BE PROVIDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE WHERE NECESSARY TO PREVENT CROWDING OF WIRES.
 - B. FLOOR BOXES: TO BE CARLON E971FB WITH E97ABR ADAPTER FOR CAST BRONZE COVER PLATES AS MANUFACTURED BY STEEL CITY.
 - WIRING DEVICES**
 - A. MOUNTING HEIGHTS:
 - SWITCHES AT 4'0" OR AS NOTED
 - RECEPTACLES AT 18" OR AS NOTED, COORD WITH ARCH
 - TELEPHONE OUTLETS AT 18" OR AS NOTED
 - B. WALL SWITCHES: SHALL BE CONTRACTOR GRADE, QUIET-TYPE, HIGH PERFORMANCE SWITCHES RATED AT 15A.277V. COLOR AND SWITCH PLATES AS DIRECTED BY THE OWNER/DECORATOR.
 - C. RECEPTACLES: SEE GENERAL NOTES ON THIS SHEET FOR REQUIREMENTS.
 - D. POWER OUTLETS: LEVITON OR SLATER, TYPE AND SIZE AS NOTED.
 - E. DIMMER SWITCHES: SHALL BE EQUAL TO LUTRON #N - 1500 ML SLIDE DIMMER WITH TOUCH - BUTTON ON/OFF SWITCH WITH LUTRON #N - SML FOR THREE WAY CONTROL. LOW VOLTAGE DIMMERS SHALL BE NOVA SERIES, LOAD COORDINATED AS REQUIRED.
 - DISCONNECT SWITCHES**
 - A. SHALL BE FURNISHED WITH ENCLOSURES AS REQUIRED BY EXPOSURES EITHER NEMA 1 OR 3R AND SHALL BE HORSEPOWER RATED, HEAVY DUTY WITH FUSES AS NOTED.
 - B. NON-FUSIBLE DISCONNECT SWITCHES: SHALL BE PROVIDED FOR ALL MOTORS LOCATED OUT OF SIGHT OF MOTOR CONTROLLER AND WHERE INDICATED ON THE DRAWINGS. DISCONNECT SWITCHES SHALL DISCONNECT ALL UNGROUNDED CONDUCTORS.
 - C. FUSES: TO BE FURNISHED FOR FUSIBLE EQUIPMENT. MOTOR FUSES SHALL BE BUS FUSETRONS RATED BETWEEN 125 AND 150 PERCENT OF MOTOR NAME PLATE RATING. FURNISH EXTRA SET OF SPARE FUSES FOR EACH FUSED DISCONNECT INSTALLED. SPARE FUSES TO BE PLACED WITHIN A FUSE CABINET LOCATED IN THE ELECTRIC ROOM.
 - PANELBOARD, LOADCENTER**
 - A. LOADCENTERS SHALL BE AS NOTED ON PLANS WITH COVER AND TYPEWRITTEN DIRECTORY INSIDE OF COVER. PANELBOARDS SHALL BE THE PRODUCT OF CUTLER-HAMMER OR SQUARE D.
 - LIGHTING FIXTURES**
 - A. UNLESS OTHERWISE NOTED, LIGHT FIXTURES WILL BE FURNISHED AND INSTALLED AS INDICATED ON THE LIGHTING FIXTURE SCHEDULE FOR INSTALLATION BY THE ELECTRICAL CONTRACTOR.
 - IDENTIFICATION**
 - A. TAG ALL CONDUCTORS AND IDENTIFY MAJOR CONDUITS IN OR AT WIRWAYS, PANELS, PULLBOXES, SWITCHBOARDS, MOTOR CONTROLLERS, CABINETS AND SIMILAR ITEMS TO ASSIST IN FUTURE CIRCUIT TRACING. CONDUCTOR TAGS SHALL BE NONCONDUCTIVE.
 - B. IDENTIFY ALL CIRCUITS AND EQUIPMENT TO CORRESPOND WITH THE PLANS AND SPECIFICATIONS.

SCHEDULE OF PANEL 'P1'									
MAIN: 400 AMP MAIN BREAKER PANEL SPEC: SIEMENS TYPE "EQ-LOADCENTER" OR APPROVED EQUIVALENT MOUNTING: SURFACE					VOLTAGE: 277/480V, 3Ø, 4 WIRE FED FROM: NEW METER AIC SYMM: 22,000				
DESCRIPTION	TRIP	CKT.	A PHASE KVA	B PHASE KVA	C PHASE KVA	CKT.	TRIP	DESCRIPTION	
DOAS-1	70	1	15.9	9.7		2	50	VRF-1	
		3		15.9	9.7	4	6		
	3	5			15.9	9.7	6		
PANEL-P2 VIA TRANSFORMER	90	7	21.6	9.7		8	50	VRF-2	
		9		21.6	9.7	10			
	3	11			22.2	9.7	12		
WATER HEATER	20	13	3.3	9.7		14	50	VRF-3	
		15		3.3	9.7	16			
	3	17			3.3	9.7	18		
FIRST FLOOR LIGHTING	20	19	3.0	7.5		20	50	ELEVATOR	
SECOND FLOOR LIGHTING	20	21		3.0	7.5	22			
THIRD FLOOR LIGHTING	20	23			3.0	7.5	24		
SPACE	-	25	-	-	-	-	26	SPACE	
SPACE	-	27	-	-	-	-	28	SPACE	
SPACE	-	29	-	-	-	-	30	SPACE	
SPACE	-	31	-	-	-	-	32	SPACE	
SPACE	-	33	-	-	-	-	34	SPACE	
SPACE	-	35	-	-	-	-	36	SPACE	
SPACE	-	37	-	-	-	-	38	SPACE	
SPACE	-	39	-	-	-	-	40	SPACE	
SPACE	-	41	-	-	-	-	42	SPACE	
			80.4	80.4	81.0	KVA PER PHASE (NON-DIVERSIFIED)			
						241.8	TOTAL LOAD KVA (NON-DIVERSIFIED)		
						291.2	TOTAL AMPS		

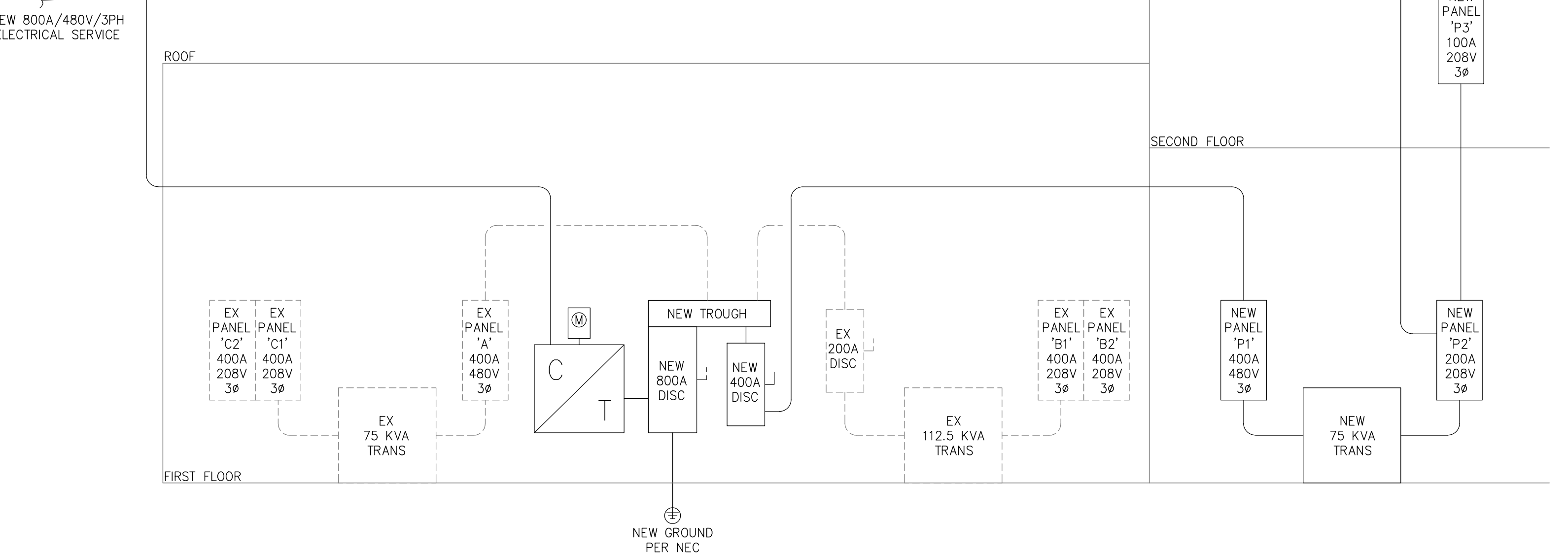
SCHEDULE OF PANEL 'P2'									
MAIN: 200 AMP MAIN BREAKER PANEL SPEC: SIEMENS TYPE "EQ-LOADCENTER" OR APPROVED EQUIVALENT MOUNTING: SURFACE					VOLTAGE: 120/208V, 3Ø, 4 WIRE FED FROM: PANEL 'P1' AIC SYMM: 22,000				
DESCRIPTION	TRIP	CKT.	A PHASE KVA	B PHASE KVA	C PHASE KVA	CKT.	TRIP	DESCRIPTION	
FAN COIL UNITS	2	15	0.4	0.6		2	20	PRIVATE ROOM RECEP	
		3		0.4	0.6	4	20	PRIVATE ROOM RECEP	
FAN COIL UNITS	2	15	5		0.4	1.0	6	20	BOUTIQUE RECEP
		7	0.4	1.2			8	20	STEM ARCADE RECEP
FAN COIL UNITS	2	15	9		0.4	0.4	10	20	BATHROOM RECEP
		11			0.4	0.8	12	20	SECURITY RECEP
BRANCH CONTROLLER BOX	2	20	13	0.1	1.0		14	20	SHOP #1 RECEP
		15			0.1	0.8	16	20	SHOP #2 RECEP
HOT WATER RECIRC PUMP RECEP	20	17			0.4	0.8	18	20	SHOP #3 RECEP
PANEL RECEP	20	19	0.2	1.0			20	20	SHOP #4 RECEP
SPACE	-	21	-	-	0.6		22	20	SHOP #5 RECEP
SPACE	-	23	-	-	0.6		24	20	SHOP #6 RECEP
SPACE	-	25	-	-	1.0		26	20	SHOP #7 RECEP
SPACE	-	27	-	-	0.7		28	20	ELEVATOR SUMP PUMP
SPACE	-	31	-	-	0.7		32	20	UNIT HEATER
SUB-PANEL 'P3'	3	100	5.6	1.5			34	2	UNIT HEATER
		35			5.5	1.5	36	2	UNIT HEATER
SUB-PANEL 'P4'	3	100	37	7.1	1.5		38	2	UNIT HEATER
		39			8.7	1.5	40	2	UNIT HEATER
		41			8.6	1.5	42	2	UNIT HEATER
			21.6	21.6	22.2	KVA PER PHASE (NON-DIVERSIFIED)			
						65.4	TOTAL LOAD KVA (NON-DIVERSIFIED)		
						181.8	TOTAL AMPS		

SCHEDULE OF SUB-PANEL 'P3'									
MAIN: 100 AMP MAIN BREAKER PANEL SPEC: SIEMENS TYPE "EQ-LOADCENTER" OR APPROVED EQUIVALENT MOUNTING: SURFACE					VOLTAGE: 120/208V, 3Ø, 4 WIRE FED FROM: PANEL 'P2' AIC SYMM: 22,000				
DESCRIPTION	TRIP	CKT.	A PHASE KVA	B PHASE KVA	C PHASE KVA	CKT.	TRIP	DESCRIPTION	
FAN COIL UNITS	2	15	0.4	1.4		2	20	VIDEO PRODUCTION RECEP	
		3		0.4	1.4	4	20	AUDITORIUM RECEP	
FAN COIL UNITS	2	15	5		0.4	0.4	6	20	BATHROOM RECEP
		7	0.4	0.8			8	20	CONFERENCE RECEP
FAN COIL UNITS	2	15	9		0.4	0.6	10	20	PODCAST RECEP
		11			0.4	0.6	12	20	PODCAST RECEP
BRANCH CONTROLLER BOX	2	20	13	0.1	0.2		14	20	COPY RECEP
		15			0.1	0.2	16	20	COPY RECEP
PANEL RECEP	20	17			0.2	0.6	18	20	OFFICE RECEP
ROOF RECEP	20	19	0.2	0.6			20	20	OFFICE RECEP
SPACE	-	21	-	-	0.6		22	20	OFFICE RECEP
SPACE	-	23	-	-	0.6		24	20	OFFICE RECEP
SPACE	-	25	-	-			26	-	SPACE
SPACE	-	27	-	-	0.7		28	20	UNIT HEATER
SPACE	-	29	-	-	0.8		30	2	UNIT HEATER
SPACE	-	31	-	-	0.7		32	20	UNIT HEATER
SPACE	-	33	-	-	0.8		34	2	UNIT HEATER
SPACE	-	35	-	-	0.7		36	20	UNIT HEATER
SPACE	-	37	-	-	0.8		38	2	UNIT HEATER
SPACE	-	39	-	-	0.7		40	20	UNIT HEATER
SPACE	-	41	-	-	0.8		42	2	UNIT HEATER
			5.6	5.9	5.5	KVA PER PHASE (NON-DIVERSIFIED)			
						17.0	TOTAL LOAD KVA (NON-DIVERSIFIED)		
						47.3	TOTAL AMPS		

SCHEDULE OF SUB-PANEL 'P4'									
MAIN: 100 AMP MAIN BREAKER PANEL SPEC: SIEMENS TYPE "EQ-LOADCENTER" OR APPROVED EQUIVALENT MOUNTING: SURFACE					VOLTAGE: 120/208V, 3Ø, 4 WIRE FED FROM: PANEL 'P2' AIC SYMM: 22,000				
DESCRIPTION	TRIP	CKT.	A PHASE KVA	B PHASE KVA	C PHASE KVA	CKT.	TRIP	DESCRIPTION	
FAN COIL UNITS	2	15	1	0.4	0.8		2	20	CLASSROOM RECEP
		3		0.4	1.0		4	20	CLASSROOM RECEP
FAN COIL UNITS	2	15	5		0.4	0.4	6	20	BATHROOM RECEP
		7	0.4	1.0			8	20	CLASSROOM RECEP
FAN COIL UNITS	2	15	9		0.4	0.8	10	20	CLASSROOM RECEP
		11			0.4	1.0	12	20	OPEN OFFICE RECEP
BRANCH CONTROLLER BOX	2	20	13	0.1	0.6		14	20	RECEPTION RECEP
		15			0.1	0.6	16	20	ADMIN RECEP
PANEL RECEP	20	17			0.2	0.6	18	20	OFFICE RECEP
IT ROOM RECEP	20	19	0.4	0.6			20	20	OFFICE RECEP
IT ROOM RECEP	20	21			0.4	1.2	22	20	CLASSROOM RECEP
ELEVATOR MINI SPLIT SYSTEM	2	30	23		1.3	0.6	24	20	OFFICE RECEP
		25	1.3	-	-	-	26	-	SPACE
SPACE	-	27	-	-	1.5		28	20	UNIT HEATER
SPACE	-	29	-	-	1.5		30	2	UNIT HEATER
SPACE	-	31	-	-	0.7		32	20	UNIT HEATER
SPACE	-	33	-	-	0.8		34	2	UNIT HEATER
SPACE	-	35	-	-	0.7		36	20	UNIT HEATER
SPACE	-	37	-	-	0.8		38	2	UNIT HEATER
SPACE	-	39	-	-	1.5		40	20	UNIT HEATER
SPACE	-	41	-	-	1.5		42	2	UNIT HEATER
			7.1	8.7	8.6	KVA PER PHASE (NON-DIVERSIFIED)			
						24.4	TOTAL LOAD KVA (NON-DIVERSIFIED)		
						67.9	TOTAL AMPS		

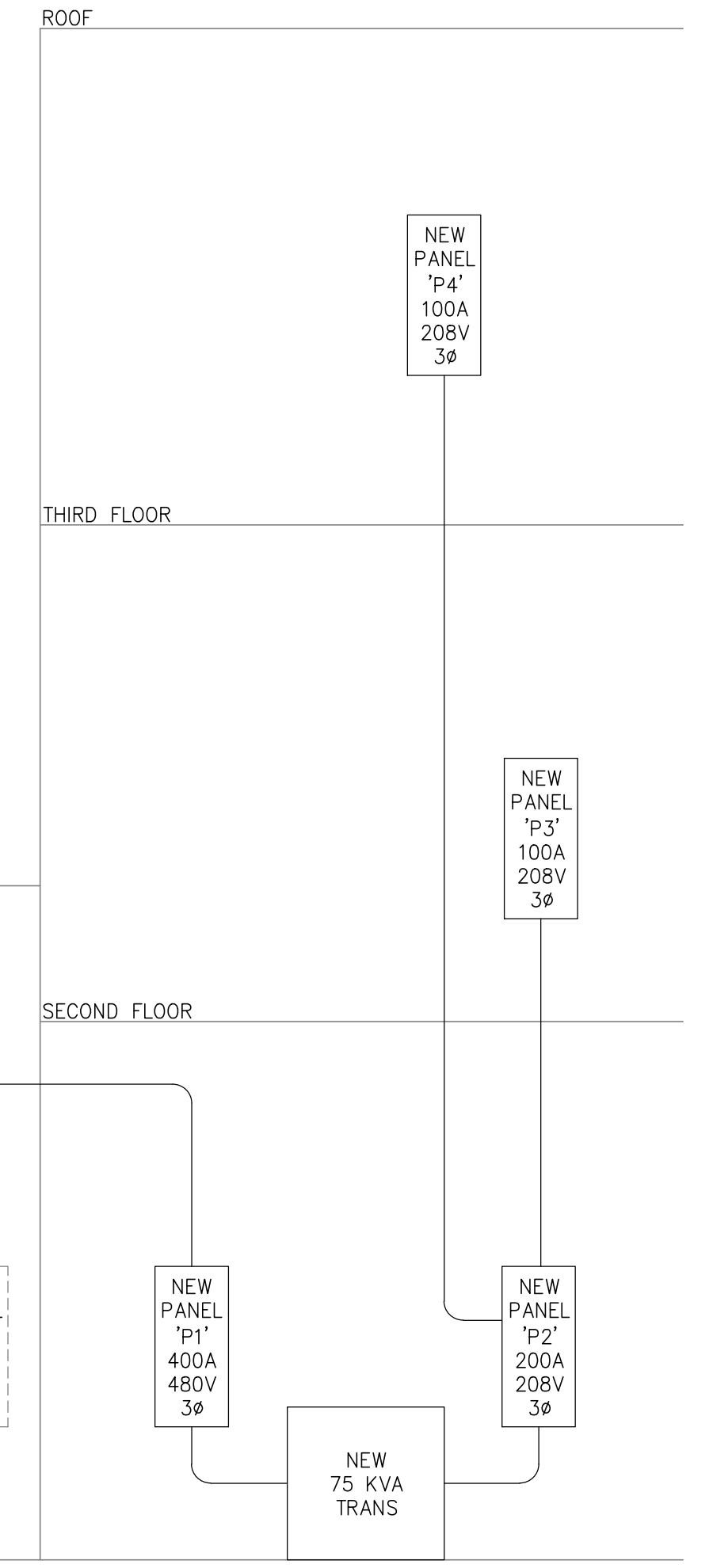
EXISTING LOAD =		225,000 VA
NEW LOADS =		241,800 VA
TOTAL CONNECTED LOAD =		466,800 VA
TOTAL AMPS @ 480V/3PH =		563 AMPS

BUILDING TO RECEIVE A NEW 800A/480V/3Ø ELECTRICAL SERVICE



1 ELECTRICAL RISER DIAGRAM NOT TO SCALE

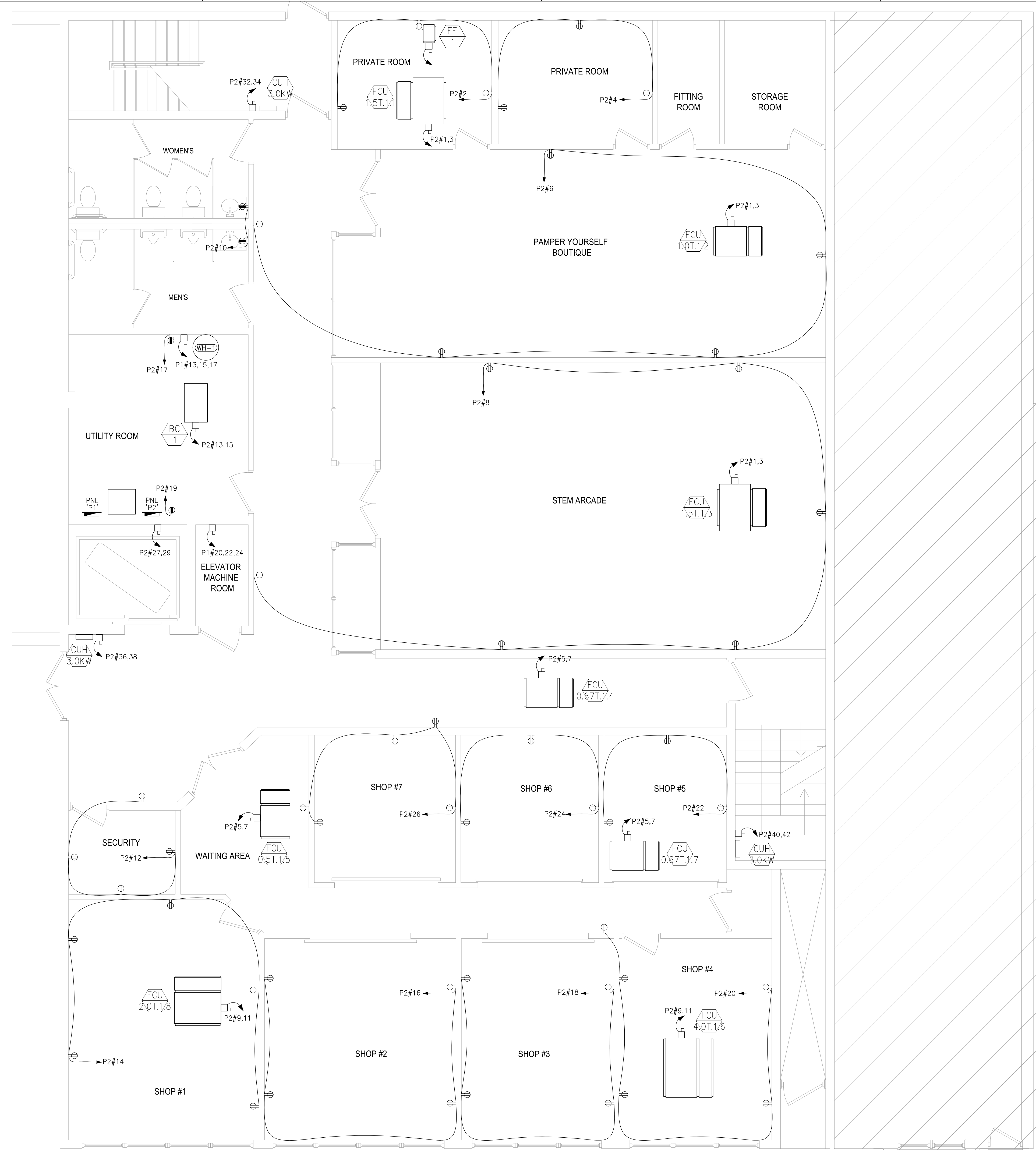
ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
⊞	SINGLE POLE TOGGLE SWITCH MOUNTED 4'-0" AFF
⊞ ₃	THREE WAY TOGGLE SWITCH MOUNTED 4'-0" AFF
⊞ _{OC}	OCCUPANCY SENSOR SWITCH MOUNTED 4'-0" AFF
⊞ _T	PROGRAMMABLE TIMER SWITCH MOUNTED 4'-0" AFF
⊞ _D	DIMMABLE SWITCH MOUNTED 4'-0" AFF
⊞ _{CS}	CEILING MOUNTED OCCUPANCY SENSOR
⊞ _{WP}	DUPLEX RECEPTACLE 120V, 20A, 18" AFF, UON WP= WEATHERPROOF COVER
⊞ _{WP}	DUPLEX GFI RECEPTACLE 120V, 20A, 18" AFF, UON WP= WEATHERPROOF COVER
⊞ _{WP}	DUPLEX RECEPTACLE 120V, 20A, 44" AFF, UON
⊞	SPECIAL OUTLET- COORDINATE OUTLET CONFIGURATION AND REQUIREMENT WITH EQUIPMENT MANUFACTURER.
⊞	JUNCTION BOX
⊞	DISCONNECT, VOLTAGE & SIZE AS NOTED.
⊞	PANEL, SIZE & VOLTAGE - SEE PANEL SCHEDULE.
⊞	CEILING MOUNTED SPEAKER (DESIGN BY OTHERS)
⊞	EXHAUST FAN
⊞	HOME RUN TO PANEL BOARD
⊞	UNSWITCHED LIGHTING CIRCUIT
⊞	INTERNALLY ILLUMINATED EXIT SIGN
⊞	EMERGENCY LIGHT/ EXIT SIGN COMBO FIXTURE
⊞	EMERGENCY LIGHT FIXTURE
⊞	LED 2X4 TROFFER LIGHT FIXTURE
⊞	SURFACE MOUNTED UTILITY LIGHT FIXTURE
⊞	LED RECESSED LIGHT FIXTURE



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NW2engineers.com

DESIGNED BY: KG	DRAWN BY: KG	REVIEWED BY: JN	DATE: 05/23/2024	SCALE: NONE
-----------------	--------------	-----------------	------------------	-------------

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSE



1 ELECTRICAL PLAN - POWER - FIRST FLOOR
SCALE: 1/4" = 1'-0"

GENERAL NOTES

- A. REFER TO MECHANICAL & PLUMBING DRAWINGS FOR LOCATIONS, QUANTITY AND POWER REQUIREMENTS FOR ALL MECHANICAL & PLUMBING EQUIPMENT.
- B. DATA OUTLET LOCATIONS TO BE DETERMINED BY CONTRACTOR IN-FIELD..
- C. FIRE ALARM SYSTEM BY OTHERS.
- D. 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 ARCHITECT/ENGINEER SO THAT NEW AND REVISED BID DRAWINGS OR INFORMATION MAY BE ISSUED. MODIFICATIONS TO SCOPE OF WORK WHICH RESULTS FROM CONTRACTORS NEGLIGENCE TO VISIT WORK SITE PRIOR TO SUBMITTING BID, SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY.
- E. FINAL ELEVATOR ELECTRICAL REQUIREMENTS TO BE COORDINATED IN-FIELD. WHAT IS SHOWN ON PLANS IS A PLACEHOLDER ONLY.

REV	DESCRIPTION	DATE

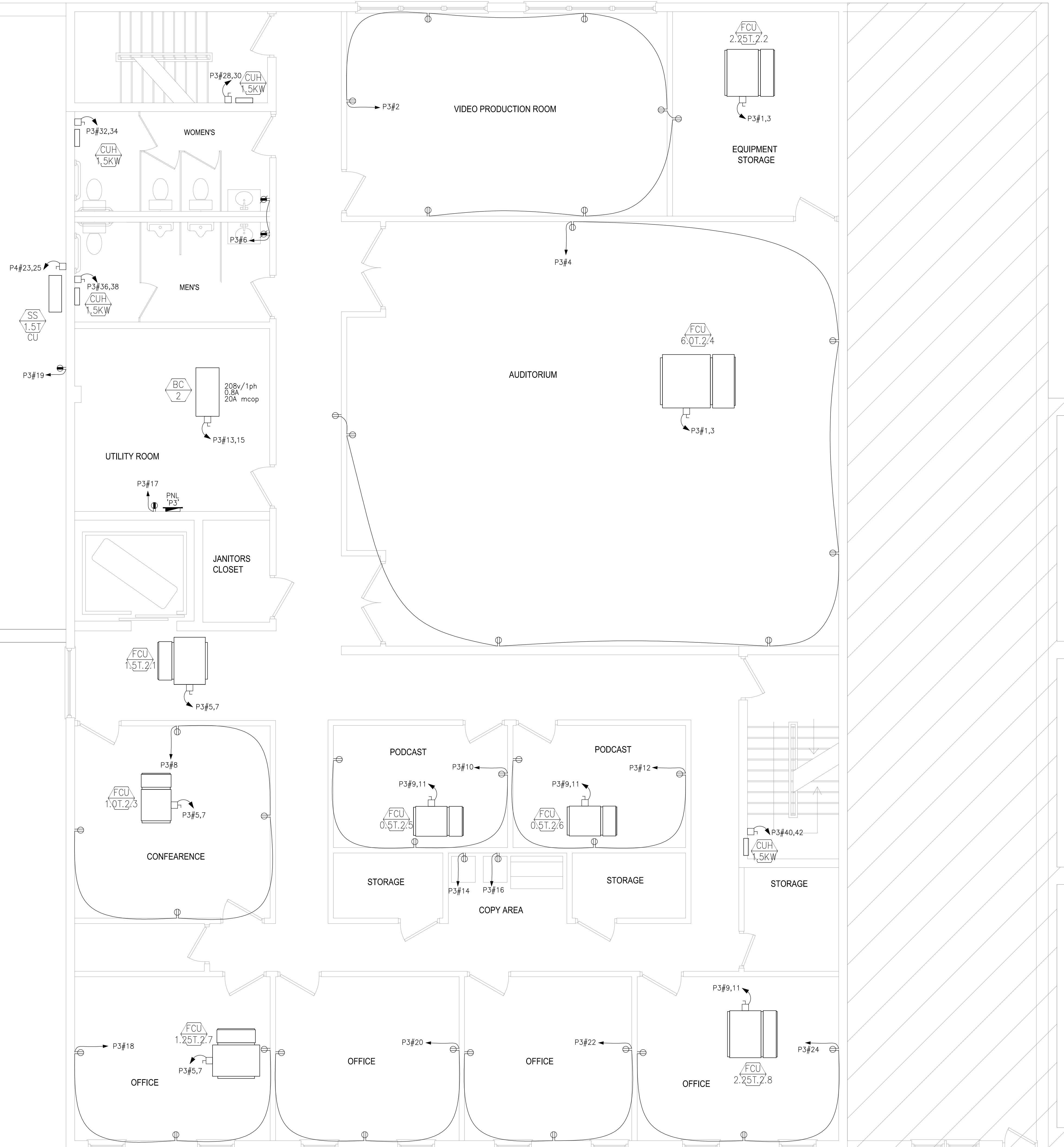
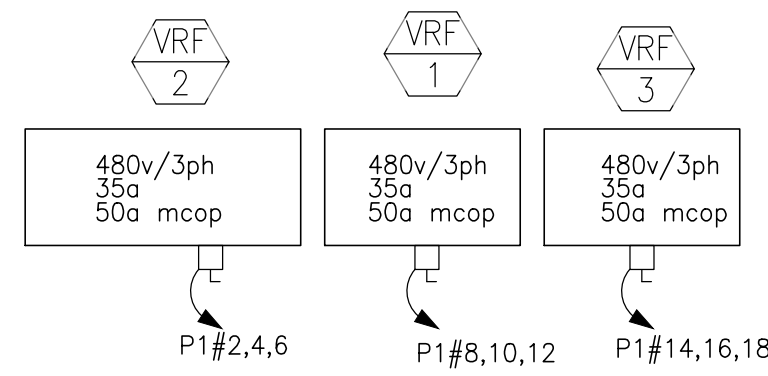
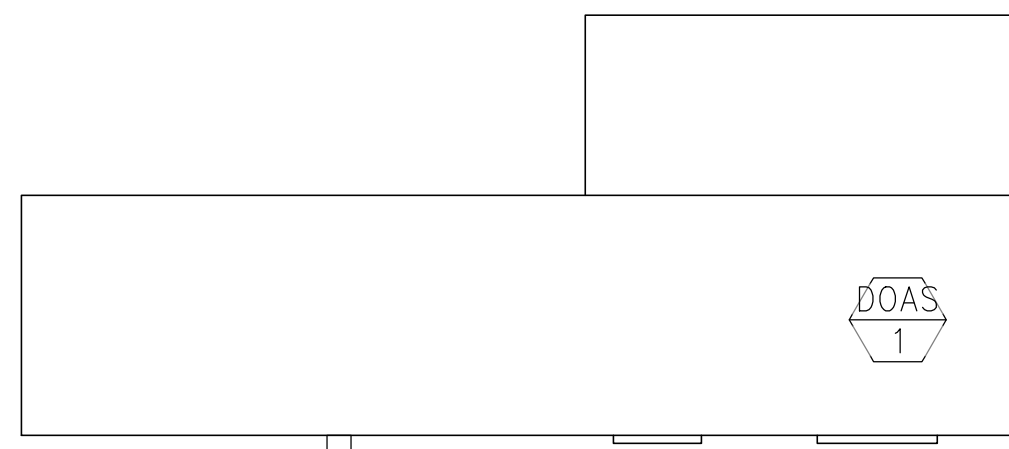
DESIGNED BY: KG	KG
DRAWN BY: KG	KG
REVIEWED BY: JN	JN
DATE: 05/23/2024	05/23/2024
SCALE: 1/4" = 1'-0"	1/4" = 1'-0"

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND
LICENSE NO: 35708
EXP DATE: 06/12/24

PROJECT ADDRESS:
EMAGE PHASE II
2132 W NORTH AVE
BALTIMORE, MD 21217

SHEET TITLE:
**ELECTRICAL
POWER PLAN
FIRST FLOOR**

SHEET NUMBER
E-2



GENERAL NOTES

- A. REFER TO MECHANICAL & PLUMBING DRAWINGS FOR LOCATIONS, QUANTITY AND POWER REQUIREMENTS FOR ALL MECHANICAL & PLUMBING EQUIPMENT.
- B. DATA OUTLET LOCATIONS TO BE DETERMINED BY CONTRACTOR IN-FIELD..
- C. FIRE ALARM SYSTEM BY OTHERS.
- D. 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 ARCHITECT/ENGINEER SO THAT NEW AND REVISED BID DRAWINGS OR INFORMATION MAY BE ISSUED. MODIFICATIONS TO SCOPE OF WORK WHICH RESULTS FROM CONTRACTORS NEGLIGENCE TO VISIT WORK SITE PRIOR TO SUBMITTING BID, SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY.
- E. FINAL ELEVATOR ELECTRICAL REQUIREMENTS TO BE COORDINATED IN-FIELD. WHAT IS SHOWN ON PLANS IS A PLACEHOLDER ONLY.

1 ELECTRICAL PLAN – POWER – SECOND FLOOR
SCALE: 1/4" = 1'-0"

REV	DESCRIPTION	DATE

DESIGNED BY: KG	KG
DRAWN BY: KG	KG
REVIEWED BY: JN	JN
DATE: 05/23/2024	
SCALE: 1/4" = 1'-0"	

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LICENSE NO: 35708
EXP DATE: 06/12/24

PROJECT ADDRESS:
EMAGE PHASE II
2132 W NORTH AVE
BALTIMORE, MD 21217

SHEET TITLE:
**ELECTRICAL
POWER PLAN
SECOND FLOOR**

SHEET NUMBER
F-3

REV	DESCRIPTION	DATE

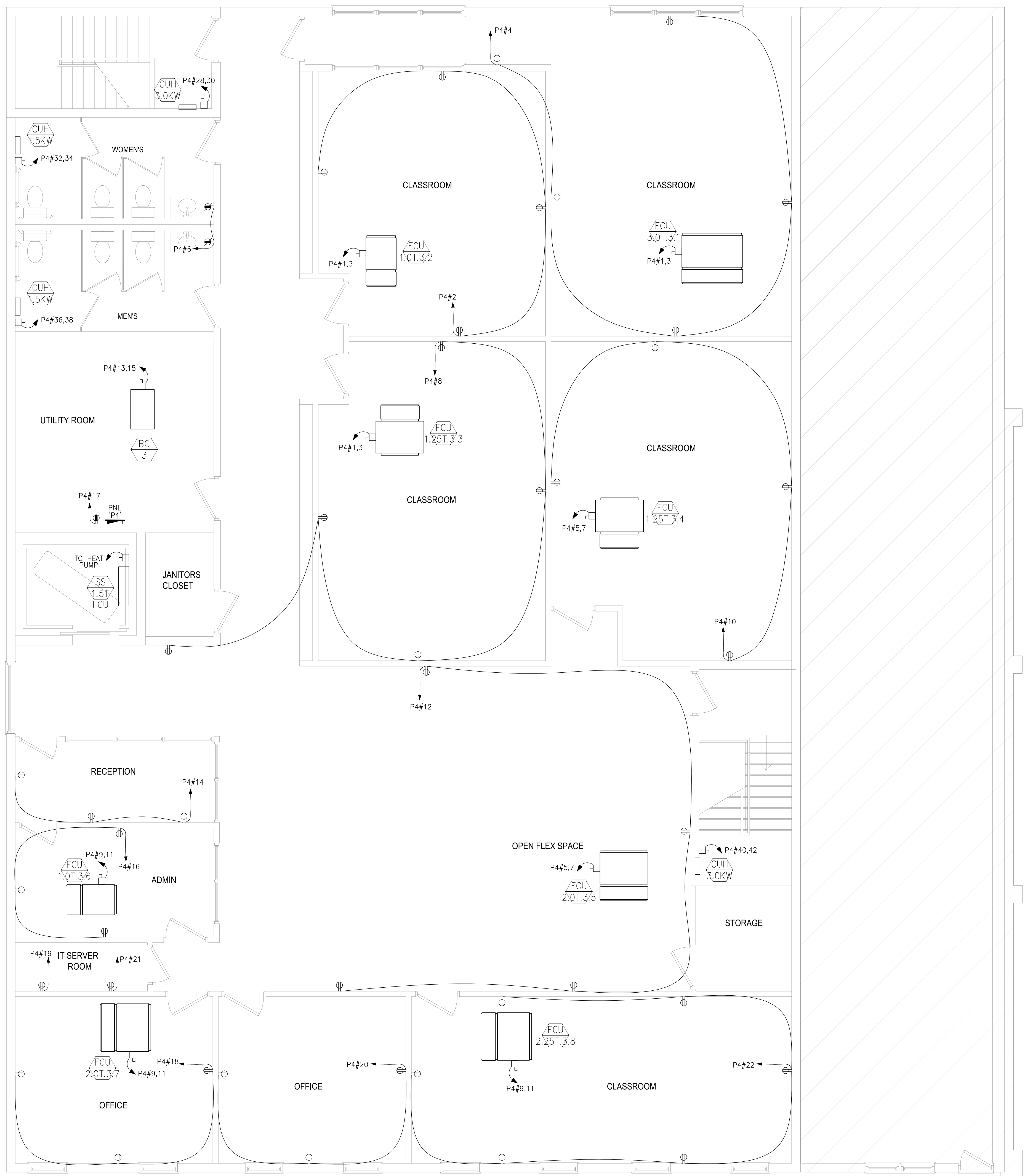
DESIGNED BY: KG	KG
DRAWN BY: KG	KG
REVIEWED BY: JN	JN
DATE: 05/23/2024	
SCALE: 1/4" = 1'-0"	

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 LICENSE NO: 35708
 EXP DATE: 06/12/24

PROJECT ADDRESS:
EMAGE PHASE II
 2132 W NORTH AVE
 BALTIMORE, MD 21217

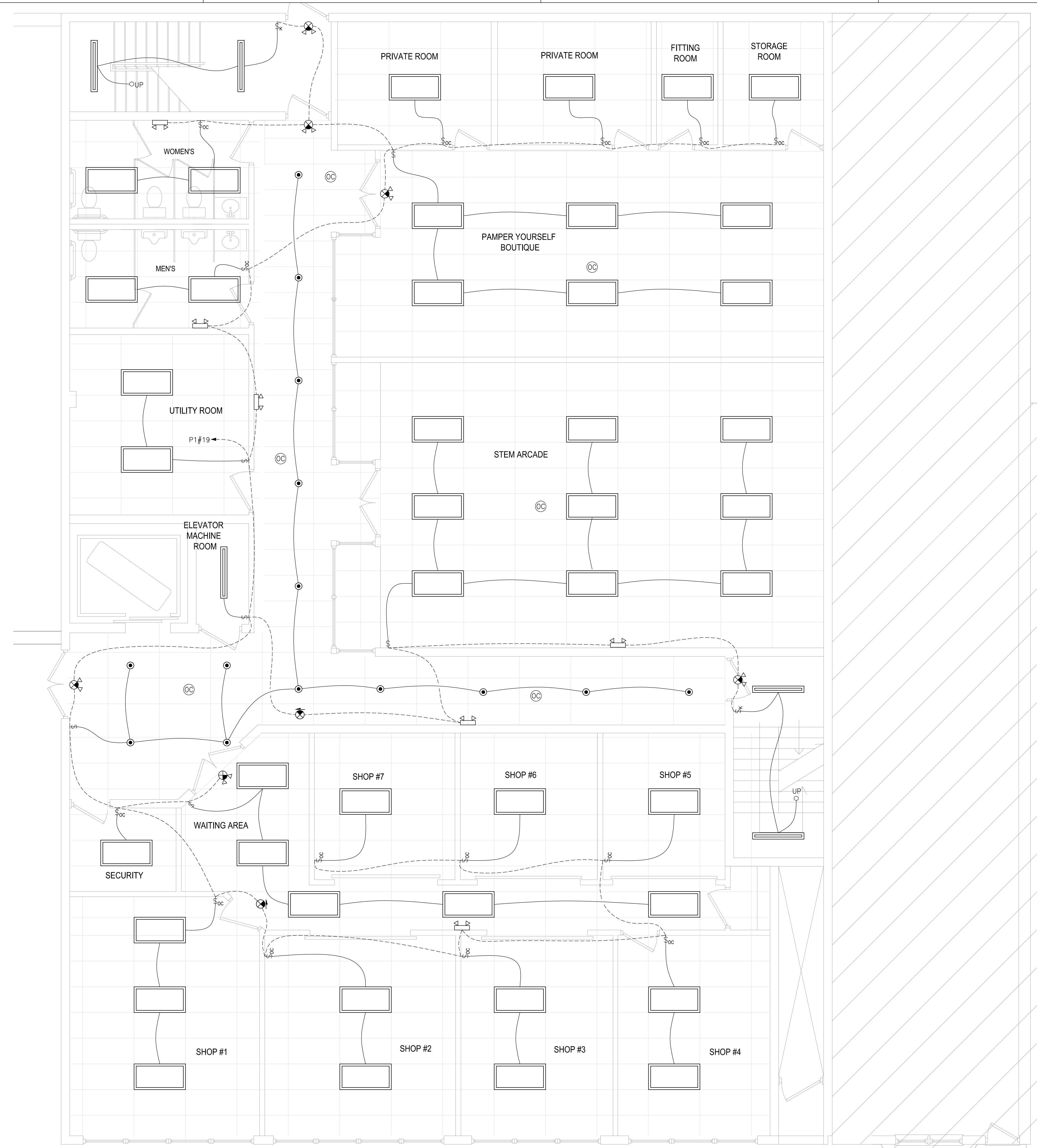
SHEET TITLE:
ELECTRICAL POWER PLAN THIRD FLOOR

SHEET NUMBER
E-4



1 ELECTRICAL PLAN - POWER - THIRD FLOOR
 SCALE: 1/4" = 1'-0"

- GENERAL NOTES**
- REFER TO MECHANICAL & PLUMBING DRAWINGS FOR LOCATIONS, QUANTITY AND POWER REQUIREMENTS FOR ALL MECHANICAL & PLUMBING EQUIPMENT.
 - DATA OUTLET LOCATIONS TO BE DETERMINED BY CONTRACTOR IN-FIELD..
 - FIRE ALARM SYSTEM BY OTHERS.
 - 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 ARCHITECT/ENGINEER SO THAT NEW AND REVISED BID DRAWINGS OR INFORMATION MAY BE ISSUED. MODIFICATIONS TO SCOPE OF WORK WHICH RESULTS FROM CONTRACTORS NEGLIGENCE TO VISIT WORK SITE PRIOR TO SUBMITTING BID, SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY.
 - FINAL ELEVATOR ELECTRICAL REQUIREMENTS TO BE COORDINATED IN-FIELD. WHAT IS SHOWN ON PLANS IS A PLACEHOLDER ONLY.



GENERAL NOTES

- A. 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 ARCHITECT/ENGINEER SO THAT NEW AND REVISED BID DRAWINGS OR INFORMATION MAY BE ISSUED. MODIFICATIONS TO SCOPE OF WORK WHICH RESULTS FROM CONTRACTORS NEGLIGENCE TO VISIT WORK SITE PRIOR TO SUBMITTING BID, SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY.
- B. COORDINATE WITH THE OWNER FOR FINAL LIGHTING AND SWITCH LOCATIONS.
- C. GENERAL LIGHTING TO HAVE BILEVEL LIGHTING CONTROL, PROVIDING 50% DIMMING CONTROLS OF FULL LIGHTING POWER. ADDITIONALLY, GENERAL LIGHTING TO HAVE AUTOMATIC FULL OFF CONTROLS, UTILIZING CEILING MOUNTED OCCUPANCY SENSORS SET TO SHUT OFF LIGHTING WITHIN 20 MINUTES OF ALL OCCUPANTS LEAVING THE SPACE. TASK AND ACCENT LIGHTING TO BE SEPARATELY CONTROLLED BY STANDARD WALL SWITCH.
- D. ENSURE ALL EMERGENCY AND EXIT LIGHTING ARE CONNECTED TO LIGHTING CIRCUIT AHEAD OF ANY LOCAL SWITCH IN ACCORDANCE WITH NEC 700.12(F).

1 ELECTRICAL PLAN - LIGHTING - FIRST FLOOR
 SCALE: 1/4" = 1'-0"

REV	DESCRIPTION	DATE

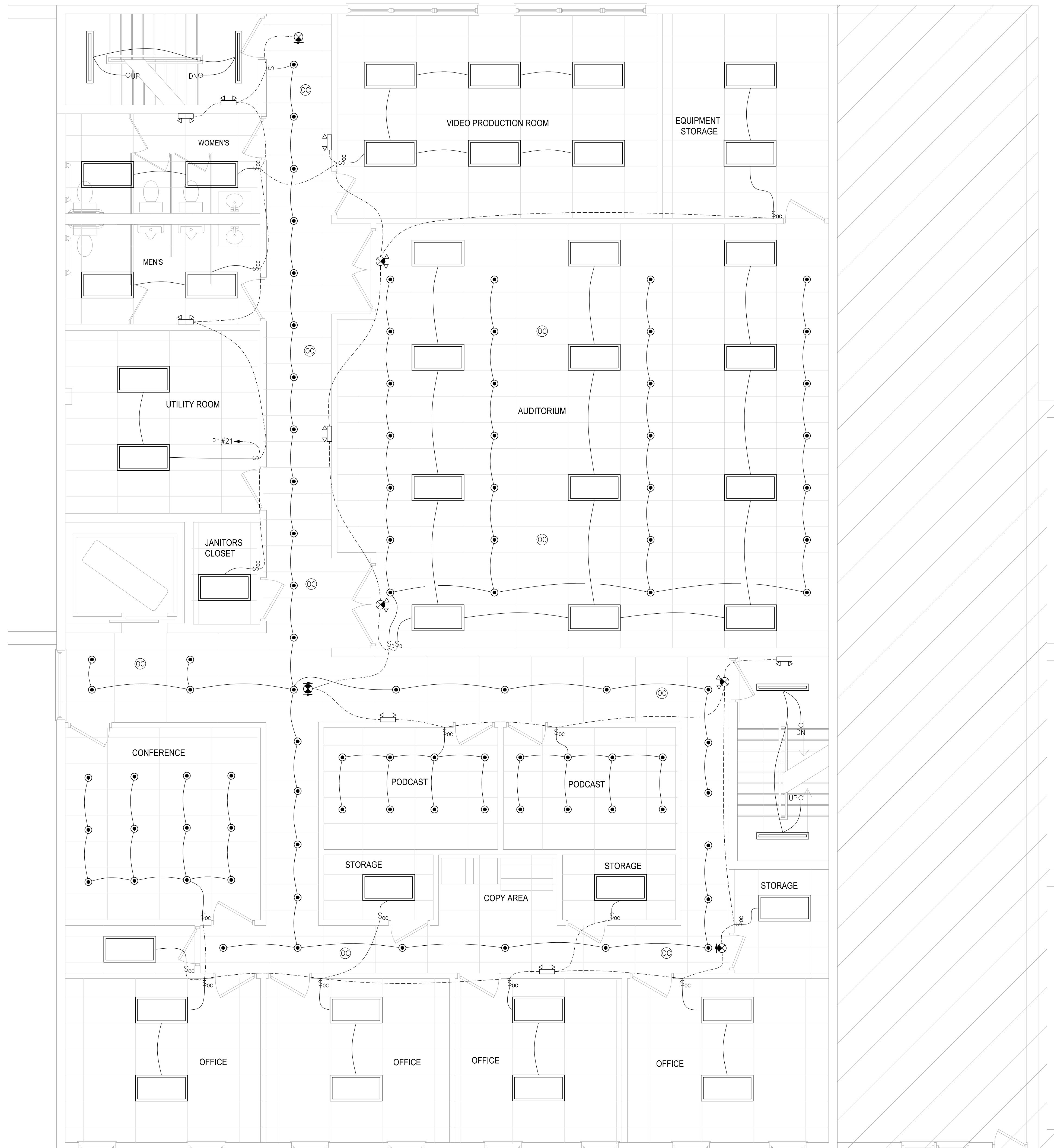
DESIGNED BY: KG	KG
DRAWN BY: KG	KG
REVIEWED BY: JN	JN
DATE: 05/23/2024	05/23/2024
SCALE: 1/4" = 1'-0"	1/4" = 1'-0"

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND
 LICENSE NO: 35708
 EXP DATE: 06/12/24

PROJECT ADDRESS:
EMAGE PHASE II
 2132 W NORTH AVE
 BALTIMORE, MD 21217

SHEET TITLE:
ELECTRICAL LIGHTING PLAN FIRST FLOOR

SHEET NUMBER
F-5



GENERAL NOTES

- A. 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 ARCHITECT/ENGINEER SO THAT NEW AND REVISED BID DRAWINGS OR INFORMATION MAY BE ISSUED. MODIFICATIONS TO SCOPE OF WORK WHICH RESULTS FROM CONTRACTORS NEGLIGENCE TO VISIT WORK SITE PRIOR TO SUBMITTING BID, SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY.
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- D. ENSURE ALL EMERGENCY AND EXIT LIGHTING ARE CONNECTED TO LIGHTING CIRCUIT AHEAD OF ANY LOCAL SWITCH IN ACCORDANCE WITH NEC 700.12(F).

1 ELECTRICAL PLAN – LIGHTING – SECOND FLOOR
SCALE: 1/4" = 1'-0"

REV	DESCRIPTION	DATE

DESIGNED BY: KG	KG
DRAWN BY: KG	JN
REVIEWED BY: JN	05/23/2024
DATE: 05/23/2024	SCALE: 1/4" = 1'-0"

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND
LICENSE NO: 35708
EXP DATE: 06/12/24

PROJECT ADDRESS:
EMAGE PHASE II
2132 W NORTH AVE
BALTIMORE, MD 21217

SHEET TITLE:
ELECTRICAL LIGHTING PLAN
SECOND FLOOR

SHEET NUMBER
E-6

REV	DESCRIPTION	DATE

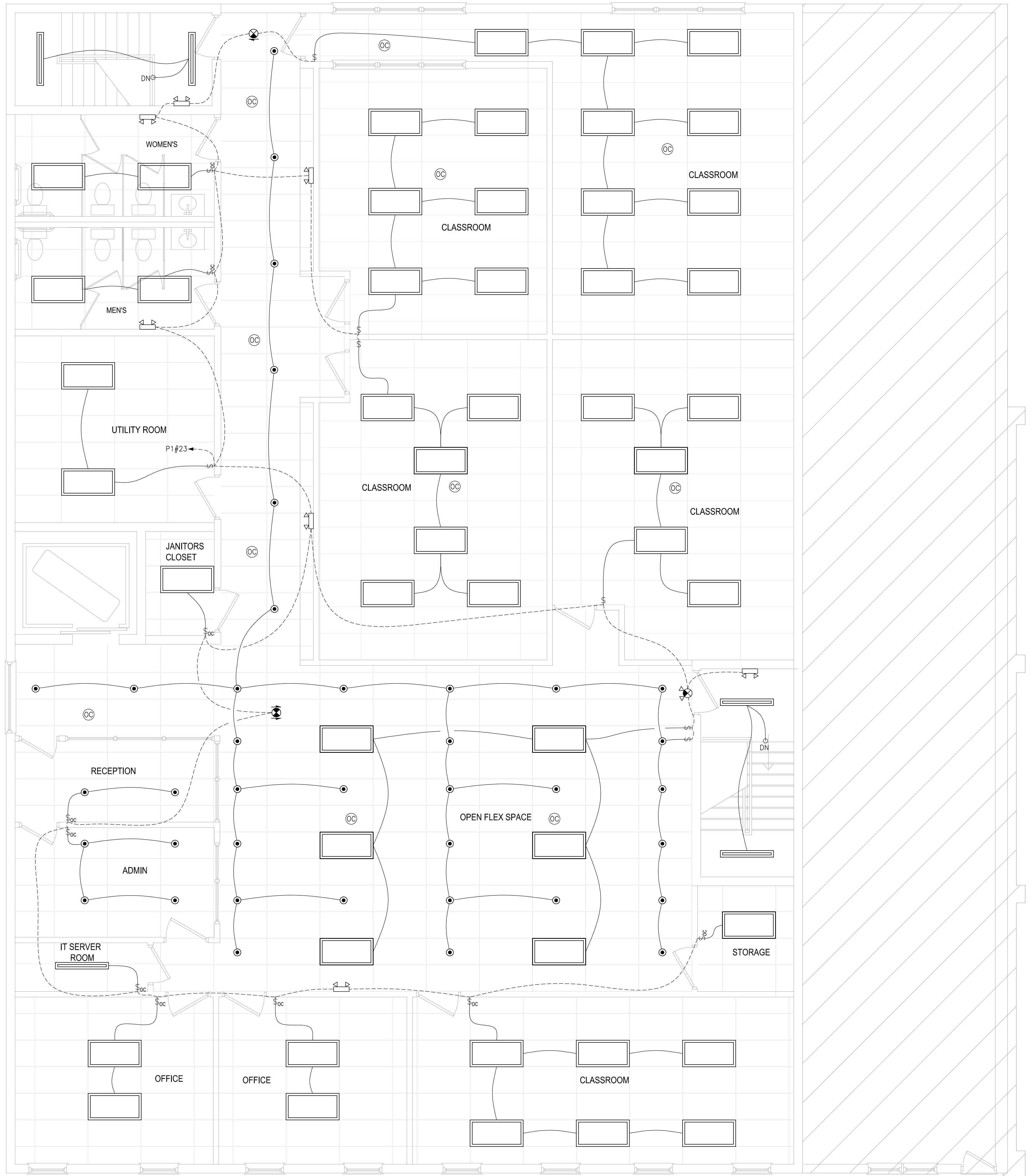
DESIGNED BY: KG	KG
DRAWN BY: KG	KG
REVIEWED BY: JN	JN
DATE: 05/23/2024	05/23/2024
SCALE: 1/4" = 1'-0"	1/4" = 1'-0"

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 LICENSE NO: 35708
 EXP DATE: 06/12/24

PROJECT ADDRESS:
EMAGE PHASE II
 2132 W NORTH AVE
 BALTIMORE, MD 21217

SHEET TITLE:
ELECTRICAL LIGHTING PLAN THIRD FLOOR

SHEET NUMBER
E-7



1 ELECTRICAL PLAN - LIGHTING - THIRD FLOOR
 SCALE: 1/4" = 1'-0"

GENERAL NOTES

- A. 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 ARCHITECT/ENGINEER SO THAT NEW AND REVISED BID DRAWINGS OR INFORMATION MAY BE ISSUED. MODIFICATIONS TO SCOPE OF WORK WHICH RESULTS FROM CONTRACTORS NEGLIGENCE TO VISIT WORK SITE PRIOR TO SUBMITTING BID, SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY.
- B. COORDINATE WITH THE OWNER FOR FINAL LIGHTING AND SWITCH LOCATIONS.
- C. GENERAL LIGHTING TO HAVE BILEVEL LIGHTING CONTROL, PROVIDING 50% DIMMING CONTROLS OF FULL LIGHTING POWER. ADDITIONALLY, GENERAL LIGHTING TO HAVE AUTOMATIC FULL OFF CONTROLS, UTILIZING CEILING MOUNTED OCCUPANCY SENSORS SET TO SHUT OFF LIGHTING WITHIN 20 MINUTES OF ALL OCCUPANTS LEAVING THE SPACE. TASK AND ACCENT LIGHTING TO BE SEPARATELY CONTROLLED BY STANDARD WALL SWITCH.
- D. ENSURE ALL EMERGENCY AND EXIT LIGHTING ARE CONNECTED TO LIGHTING CIRCUIT AHEAD OF ANY LOCAL SWITCH IN ACCORDANCE WITH NEC 700.12(F).

GENERAL NOTES

1. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE STATE CODES, LOCAL CODES, AND OWNER'S STANDARDS INDICATED BY THE CONSTRUCTION DOCUMENTS.
2. MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS. TAKE ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS, CERTIFIED EQUIPMENT DRAWINGS AND FROM THE STRUCTURE ITSELF BEFORE FABRICATING ANY WORK, VERIFY ALL SPACE REQUIREMENTS COORDINATING WITH OTHER TRADES, AND INSTALL THE SYSTEMS IN THE SPACE PROVIDED WITHOUT EXTRA CHARGES TO THE OWNER.
3. CONTRACTOR SHALL COORDINATE WORK INDICATED WITH PLUMBING, ELECTRICAL, FIRE PROTECTION, STRUCTURAL, AND ARCHITECTURAL DIVISIONS. VERIFY FIT OF MECHANICAL SYSTEMS PRIOR TO FABRICATION. COORDINATE ALL CHASE, SLEEVE, AND SLAB BLOCKOUT REQUIREMENTS BEFORE CONCRETE IS POURED OR BLOCK IS SET.
4. PROVIDE ALL EQUIPMENT SCHEDULED OR INDICATED ON THE DRAWINGS BUT NOT INCLUDED WITHIN THE SPECIFICATIONS INCLUDING ANY REQUIRED BUT NOT LISTED MISC ITEMS NEEDED TO PROVIDE COMPLETELY OPERATIONAL SYSTEMS AS INDICATED WHETHER SPECIFICALLY CALLED FOR OR NOT. INSTALLATION SHALL CONFORM TO MANUFACTURERS RECOMMENDATIONS AND APPLICABLE CODES. PROVIDE SUBMITTALS FOR ALL PROPOSED EQUIPMENT AND MATERIALS TO BE UTILIZED. PROVIDE OPERATION AND MAINTENANCE MANUAL FOR ALL SYSTEMS AND EQUIPMENT AT END OF PROJECT.
5. ELECTRICAL CHARACTERISTICS OF MECHANICAL EQUIPMENT SHALL BE VERIFIED WITH ELECTRICAL DRAWINGS AND ELECTRICAL CONTRACTOR PRIOR TO EQUIPMENT ORDER RELEASE. ADDITIONAL ELECTRICAL WORK RESULTING FROM EQUIPMENT SUBSTITUTION IS THE RESPONSIBILITY OF THIS CONTRACTOR.
6. DRAIN PIPING FROM EQUIPMENT SHALL BE ROUTED SO AS NOT TO CREATE A TRIPPING HAZARD. COORDINATE ACTUAL DRAIN CONNECTIONS WITH PLUMBING CONTRACTOR.
7. ITEM DESIGNATIONS INDICATED HEREON ARE FOR PURPOSES OF THESE DOCUMENTS ONLY. CONTRACTOR SHALL VERIFY WITH OWNERS REPRESENTATIVE ACTUAL "TAGGING" INFORMATION TO BE PROVIDED FOR EACH ITEM OF MECHANICAL EQUIPMENT PRIOR TO NAMEPLATE ORDER RELEASE.
8. PROVIDE VALVE TAGS AND PIPE IDENTIFICATION BANDS. TAGS SHALL BE BRASS WITH CHAIN. IDENTIFICATION BANDS SHALL BE LOCATED EVERY 25 FEET AND ON EITHER SIDE OF INTERMEDIATE BARRIER.
9. PROVIDE 18" X 18" MINIMUM ACCESS DOOR IN INACCESSIBLE CEILINGS AND WALLS FOR EQUIPMENT AND VALVES REQUIRING ACCESS OR ADJUSTMENT. COORDINATE LOCATIONS AND SUBMIT TO ARCHITECT FOR APPROVAL PRIOR TO BEGINNING WORK.
10. VALVES SHALL BE LOCATED WITHIN EASY REACH OF CEILING WHERE CEILINGS OCCUR & DROPPED TO WITHIN A MAXIMUM 10'-0" ABOVE FINISHED FLOOR WHERE NO CEILING OCCURS.
11. DUCT SIZES INDICATED ARE OUTSIDE SHEETMETAL DIMENSIONS, BRANCH RUNOUT DUCTS TO DIFFUSERS AND GRILLES TO BE SAME SIZE AS DIFFUSER OR GRILLE CONNECTION SIZE UNLESS OTHERWISE NOTED.
12. CEILING DIFFUSERS SHALL BE 36" MINIMUM FROM CEILING MOUNTED SMOKE DETECTORS, COORDINATE WITH DIVISION 26.
13. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ACTUAL LOCATION OF GRILLES, DIFFUSERS, AND ACCESS DOORS IN CEILING. SECURE DIFFUSERS & GRILLES TO T-BAR CEILINGS WHERE APPLICABLE.
14. DUCTWORK VISIBLE BEHIND DIFFUSERS, REGISTERS, OR GRILLES SHALL BE PAINTED FLAT BLACK.
15. AT THE COMPLETION OF WORK, PROVIDE TESTING AND BALANCING SERVICES FOR MECHANICAL SYSTEM. SUBMIT WRITTEN REPORT TO ARCHITECT LISTING SYSTEM AIRFLOWS, ELECTRIC DATA, TEMPERATURES, AND PRESSURE DROPS.
16. WHERE PIPES PASS THROUGH FIRE-RATED FLOOR OR WALLS, SEAL WITH MATERIALS EQUAL TO 3M FIRE BARRIER, MEETING TESTING PER ASTM-E-814 (UL 1479). USE CAULK OR PUTTY TYPE. ALL EXTERIOR WALL AND ROOF PENETRATIONS SHALL BE SEALED WATERPROOF.
17. AT THE COMPLETION OF THE WORK AND PRIOR TO FINAL ACCEPTANCE, ALL PARTS OF THE WORK INSTALLED UNDER THIS SPECIFICATION SHALL BE THOROUGHLY CLEANED.
18. ALL EQUIPMENT, MATERIALS, AND INSTALLATION IS TO BE WARRANTED FOR ONE YEAR TO BE FREE FROM DEFECT. PROVIDE WRITTEN WARRANTY TO OWNER.
19. THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE CONTRACTOR'S SAFETY PRECAUTIONS OR TO MEANS, METHODS, TECHNIQUES, CONSTRUCTION SEQUENCES, OR PROCEDURES REQUIRED TO PERFORM HIS WORK.
20. PATCH AND REPAIR TO MATCH EXISTING, ANY WALL/CEILINGS TO BE ACCESSED TO ROUTE PIPING AND DUCTWORK.

MECHANICAL LEGEND

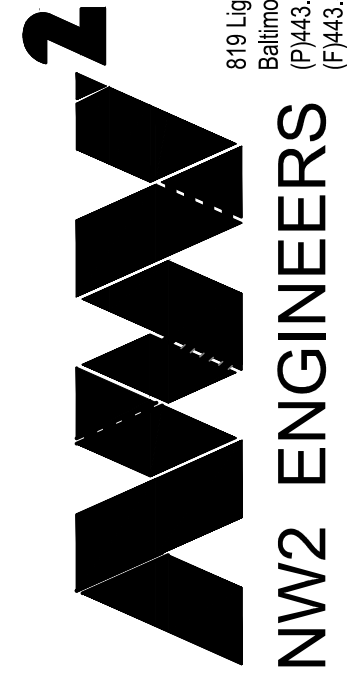
ABBR	SYMBOL	DESCRIPTION
T-STAT	Ⓢ	THERMOSTAT
S	Ⓢ	SPACE SENSOR
FLFD	---F	FUSIBLE LINK FIRE DAMPER
RAD	R	RADIATION DAMPER AT CEILING MEMBRANE
FSD	---FSD	COMBINATION FIRE/SMOKE DAMPER
AUTO D	---M	MOTORIZED DAMPER
MVD	---M	MANUAL VOLUME DAMPER
RE-D	---M	MVD WITH REMOTE CEILING OPERATOR
OBD	---M	OPPOSED BLADE DAMPER
BDD	---BDD	BACKDRAFT DAMPER
SA	⊠	SUPPLY AIR
RA	⊠	RETURN AIR
EA	⊠	EXHAUST AIR
OA	⊠	OUTSIDE AIR
SW	←→	SIDEWALL DIFFUSER
LD	=====	LINED DUCTWORK
GBS	=====	GALVANIZED BIRD SCREEN
ESP	=====	EXTERNAL STATIC PRESSURE
WC	=====	WATER COLUMN
TDH	=====	TOTAL DYNAMIC HEAD
UNO	=====	UNLESS NOTED OTHERWISE
AFF	=====	ABOVE FINISHED FLOOR
E	=====	EXISTING
N	=====	NEW
R	=====	RELOCATED
	⊕	POINT OF CONNECTION NEW TO EXISTING
	-x-x-x-x-x-	ITEMS TO BE DEMOLISHED

SHEET INDEX

ISSUE	SHEET NO.	SHEET DESCRIPTION
	● M01	MECHANICAL COVER SHEET
	● M02	MECHANICAL SPECIFICATIONS
	● M1	LEVEL 1 MECHANICAL FLOOR PLAN
	● M2	LEVEL 2 MECHANICAL FLOOR PLAN
	● M3	LEVEL 3 MECHANICAL FLOOR PLAN
	● M61	MECHANICAL SCHEDULES
	● M62	MECHANICAL SCHEDULES
	● M63	MECHANICAL SCHEDULES
	● M64	MECHANICAL COMCHECK
	● M71	MECHANICAL DETAILS
	● M72	MECHANICAL DETAILS

EMAGE PHASE II OFFICE BUILDING

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Baltimore, MD 21201
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Fax: 410.588.1008
nw2engineers.com

DATE: 05/10/2024
REVISIONS:

PERMIT ISSUE
SHEET TITLE:
MECHANICAL
COVER SHEET

SCALE: N.T.S.
SHEET NUMBER:

M01

MECHANICAL SPECIFICATIONS

SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED STEEL PER SMACNA DUCT CONSTRUCTION STANDARDS. SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR DUCTWORK SHALL BE CONSTRUCTED FOR 2" W.C. STATIC PRESSURE. SPIRAL LOCK-FORMED ROUND DUCT MAY BE UTILIZED WHERE SPACE ALLOWS AND SHALL BE USED WHERE EXPOSED TO OCCUPANT VIEW. TRANSVERSE JOINTS AND LONGITUDINAL SEAMS SHALL BE SEALED AIR-TIGHT WITH MASTIC, MASTIC SHALL BE APPLIED ONLY TO THE INSIDE OF EXPOSED DUCTWORK. RADIUSED ELBOWS (R/D=1.5) OR MITERED ELBOWS WITH SINGLE THICKNESS TURNING VANES SHALL BE UTILIZED WHERE POSSIBLE. TURNING VANES SHALL BE SUPPORTED AT INTERVALS OF 36" MAXIMUM. TURNING VANE RUNNERS SHALL HAVE A VANE IN EVERY SLOT AND SHALL CONFORM TO SMACNA DUCT CONSTRUCTION STANDARDS FOR STANDARD SPACING.

ALL SUPPLY AND RETURN RECTANGULAR DUCTWORK SHALL BE PROVIDED WITH DUCT LINER (INSIDE THE DUCT): ONE INCH THICK, RESIN BONDED GLASS FIBER, IMMOBILIZED, EPA-REGISTERED ANTIMICROBIAL AGENT COATING ON AIR STREAM SURFACE, RATED BY MANUFACTURER FOR AT LEAST 4000 FPM AND MEETING THE REQUIREMENTS OF ASTM C1071 TYPE I. FIRE RESISTANCE SHALL MEET REQUIREMENTS OF NFPA 90A. FLAME SPREAD RATING NOT TO EXCEED 25. FUEL CONTRIBUTION AND SMOKE DEVELOPMENT NOT TO EXCEED 50. NOISE REDUCTION COEFFICIENT (NRC) OF NOT LESS THAN 0.60 WHEN TESTED IN ACCORDANCE WITH ASTM C423 USING AN "A" MOUNTING OR A MINIMUM OF 0.70 USING AN "F" MOUNTING. K VALUE NOT MORE THAN 0.26 BTUH PER SQUARE FOOT PER DEG. F AT 75 DEG. F OR AN "R" VALUE OF 4. MAXIMUM ABSOLUTE ROUGHNESS FACTOR PER FOOT OF .004

SUPPLY, DOAS INLET DUCTWORK, AND RETURN AIR DUCTWORK SHALL BE INSULATED WITH R-6 EXTERNAL WRAP INSULATION WHEN LOCATED INSIDE THE BUILDING (IN UNCONDITIONED SPACES) AND R-12 WHEN LOCATED OUTSIDE OF THE BUILDING THERMAL ENVELOPE. DUCT INSULATION TO BE FLEXIBLE FIBERGLASS WITH FOIL SCRIM FACING. INSULATION SHALL HAVE A MAXIMUM CONDUCTIVITY, K-VALUE, OF 0.29 AT 75F AND HAVE FLAME SPREAD/SMOKE DEVELOPED RATING OF 25/50 OR LESS. INSULATION SHALL BE SECURED WITH WIRE TIES AT 12" ON CENTER OR WITH SELF-SEALING LAP AND TAPE JOINTS 3" ON CENTER AT FITTINGS. JOINTS SHALL BE COVERED WITH 3" WIDE FOIL REINFORCED KRAFT TAPE. ADHESIVE OR MECHANICAL FASTENERS SHALL BE USED WHERE NECESSARY TO PREVENT SAGGING. VAPOR BARRIER PENETRATIONS BY MECHANICAL FASTENERS SHALL BE SEALED WITH VAPOR BARRIER ADHESIVE. INSULATION SHALL STOP AND POINT AROUND ACCESS DOORS AND DAMPER OPERATORS TO ALLOW OPERATION WITHOUT DISTURBING WRAPPING.

DUCT HANGERS SHALL BE CONSTRUCTED OF GALVANIZED STEEL. DUCTS SHALL BE SUPPORTED AND CONNECTED TO THE STRUCTURE PER SMACNA DUCT CONSTRUCTION STANDARDS. HANGERS AND SUPPORTS FOR GREASE DUCT SHALL BE OF NONCOMBUSTIBLE MATERIALS. FLEXIBLE DUCTS SHALL BE SUPPORTED WITH GALVANIZED STRAPS.

HEAVY FLEXIBLE CONNECTIONS SHALL BE FURNISHED AND INSTALLED AT DUCT CONNECTIONS TO FANS AND MECHANICAL UNITS 1/2 HP OR LARGER EXCEPT HIGH TEMPERATURE KITCHEN HOOD EXHAUST FANS. FLEXIBLE CONNECTIONS SHALL BE 6" MINIMUM AND 10" MAXIMUM IN LENGTH. MATERIAL FOR INTERIOR INSTALLATIONS SHALL BE VENTFLEX MANUFACTURED BY VENTFABRICS, EXCELON MANUFACTURED BY DURO-DYNE OR APPROVED EQUAL. MATERIAL FOR EXTERIOR INSTALLATIONS SHALL BE VENTLON MANUFACTURED BY VENTFABRICS, DUROLON MANUFACTURED BY DURO-DYNE OR APPROVED EQUAL.

MANUAL VOLUME DAMPERS SHALL BE FURNISHED AND INSTALLED WHERE INDICATED AT SUPPLY AIR DUCT RUNOUTS TO AIR DIFFUSERS AND GRILLES AS NEAR AS POSSIBLE TO THE TRUNK DUCT. MANUAL VOLUME DAMPERS FOR RECTANGULAR DUCT SHALL BE CONSTRUCTED OF 16 GAUGE GALVANIZED STEEL AND BE THE OPPOSED BLADE TYPE. MANUAL VOLUME DAMPERS FOR ROUND DUCT SHALL BE CONSTRUCTED OF 16 GAUGE GALVANIZED STEEL AND BE THE SINGLE BLADE TYPE. DAMPER BEARINGS SHALL BE NYLON. STAND-OFFS TO OUTSIDE OF INSULATION SHALL BE PROVIDED FOR MANUAL VOLUME DAMPERS IN INSULATED DUCT. LOCKING AND INDICATING QUADRANTS SHALL BE PROVIDED WHERE DAMPER IS ACCESSIBLE. REMOTE CEILING OPERATORS SHALL BE FURNISHED AND INSTALLED FOR DAMPERS ABOVE INACCESSIBLE CEILINGS. OPERATORS SHALL BE GEAR AND LINKAGE TYPE EQUAL TO YOUNG REGULATOR WITH CHROME PLATED CEILING ESCUTCHEON AND COVER PLATE.

FIRE, SMOKE, COMBINATION FIRE SMOKE, AND CEILING RADIATION DAMPERS LISTED AND BEARING THE LABEL OF AN APPROVED TESTING AGENCY INDICATING COMPLIANCE WITH UL 555, UL 555S, AND UL 555C AS REQUIRED FOR THE ASSEMBLY BEING PENETRATED SHALL BE FURNISHED AND INSTALLED IN COMPLIANCE WITH IBC, IMC, AND NFPA WHERE SHOWN ON PLANS AND/OR AS DESCRIBED IN SCHEDULES. DAMPERS ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S LISTING AND INSTALLATION INSTRUCTIONS. DAMPERS IN STALLED IN FAN SYSTEMS WHERE THE FANS ARE NOT PROVIDED WITH EMERGENCY FAN SHUT-DOWN UPON DETECTION OF FIRE ARE REQUIRED TO BE LABELED FOR OPERATION IN DYNAMIC SYSTEMS.

SMOKE OR COMBINATION FIRE/SMOKE DAMPER: RATED FOR NOT LESS THAN UL 555S LEAKAGE CLASS II IN VERTICAL OR HORIZONTAL CONFIGURATION AT MAXIMUM DESIGN AIRFLOW IN EITHER DIRECTION AND PRESSURE FOR ITS INSTALLED LOCATION. PROVIDE ELECTRIC 120 VOLT ACTUATORS. SMOKE AND COMBINATION FIRE/SMOKE DAMPERS SHALL CLOSE UPON ACTUATION OF A LISTED SMOKE DETECTOR OR DETECTORS INSTALLED IN ACCORDANCE WITH SECTION 907.3 OF THE INTERNATIONAL BUILDING CODE AND ONE OF THE FOLLOWING METHODS, AS APPLICABLE:

- WHERE A SMOKE DAMPER IS INSTALLED WITHIN A DUCT, A SMOKE DETECTOR SHALL BE INSTALLED IN THE DUCT WITHIN 5 FEET OF THE DAMPER WITH NO AIR OUTLETS OR INLETS BETWEEN THE DETECTOR AND THE DAMPER. THE DETECTOR SHALL BE LISTED FOR THE AIR VELOCITY, TEMPERATURE AND HUMIDITY ANTICIPATED AT THE POINT WHERE IT IS INSTALLED. OTHER THAN IN MECHANICAL SMOKE CONTROL SYSTEMS, DAMPERS SHALL BE CLOSED UPON FAN SHUTDOWN WHERE LOCAL SMOKE DETECTORS REQUIRE A MINIMUM VELOCITY TO OPERATE.
- WHERE A SMOKE DAMPER IS INSTALLED ABOVE SMOKE BARRIER DOORS IN A SMOKE

BARRIER, A SPOT-TYPE DETECTOR LISTED FOR RELEASING SERVICE SHALL BE INSTALLED ON EITHER SIDE OF THE SMOKE BARRIER DOOR OPENING.

- WHERE A SMOKE DAMPER IS INSTALLED WITHIN AN UNDUCTED OPENING IN A WALL, A SPOT-TYPE DETECTOR LISTED FOR RELEASING SERVICE SHALL BE INSTALLED WITHIN 5 FEET HORIZONTALLY OF THE DAMPER.
- WHERE A SMOKE DAMPER IS INSTALLED IN A CORRIDOR WALL OR CEILING, THE DAMPER SHALL BE PERMITTED TO BE CONTROLLED BY A SMOKE DETECTION SYSTEM INSTALLED IN THE CORRIDOR.
- WHERE A TOTAL-COVERAGE SMOKE DETECTOR SYSTEM IS PROVIDED WITHIN AREAS SERVED BY A HEATING, VENTILATION AND AIR-CONDITIONING (HVAC) SYSTEM, SMOKE DAMPERS SHALL BE PERMITTED TO BE CONTROLLED BY THE SMOKE DETECTION SYSTEM
- SMOKE DETECTORS TO BE PROVIDED AND WIRED BY DIVISION 16 ELECTRICAL OR FIRE ALARM CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR.

DAMPERS SHALL BE PROVIDED WITH AN APPROVED MEANS OF ACCESS, LARGE ENOUGH TO PERMIT INSPECTION AND MAINTENANCE OF THE DAMPER AND ITS OPERATING PARTS. THE ACCESS SHALL NOT AFFECT THE INTEGRITY OF FIRE-RESISTANCE-RATED ASSEMBLIES. THE ACCESS OPENINGS SHALL NOT REDUCE THE FIRE-RESISTANCE RATING OF THE ASSEMBLY. ACCESS POINTS SHALL BE PERMANENTLY IDENTIFIED ON THE EXTERIOR BY A LABEL HAVING LETTERS NOT LESS THAN 0.5 INCH IN HEIGHT READING: FIRE/SMOKE DAMPER, SMOKE DAMPER OR FIRE DAMPER. ACCESS DOORS IN DUCTS SHALL BE TIGHT FITTING AND SUITABLE FOR THE REQUIRED DUCT CONSTRUCTION.

AIR DEVICES SHALL BE AS SCHEDULED. EXPOSED SCREWS SHALL BE THE FINISHING TYPE AND PAINTED TO MATCH THE AIR DEVICE. SQUARE TO ROUND ADAPTORS SHALL BE PROVIDED WHERE REQUIRED FOR AIR DEVICES IN CEILINGS. AIR DEVICES SHALL BE FINISHED WITH WHITE BAKED ENAMEL UNLESS NOTED OTHERWISE. AIR DEVICES SHALL BE SECURED TO T-BAR CEILINGS WHERE APPLICABLE.

PIPING SHALL BE IDENTIFIED WITH PLASTIC PIPE MARKERS IN CLEAR VIEW AND ALIGNED WITH AXIS OF PIPING. MARKERS SHALL BE PREPRINTED WITH PRESSURE SENSITIVE PERMANENT ADHESIVE AND COLOR CODED IN COMPLIANCE WITH ANSI A13.1. SERVICE AND FLOW DIRECTION SHALL BE INDICATED. DISTANCE BETWEEN IDENTIFICATION LOCATIONS SHALL NOT EXCEED 20'. IDENTIFICATION SHALL BE LOCATED AT EACH VALVE, RUNOUT, EQUIPMENT CONNECTION AND ON BOTH SIDES OF AN OBSTRUCTION. VALVE TAGS SHALL BE BRASS AND 1.5" DIAMETER WITH SOLID BRASS CHAIN. TAGS FOR FLOW CONTROLS SHALL INCLUDE FLOW AND PRESSURE DROP SET POINTS.

PIPE HANGERS FOR INSULATED PIPE SIZES 1/2" TO 1-1/2" SHALL BE ADJUSTABLE, STEEL, BAND TYPE. PIPE HANGERS FOR INSULATED PIPE SIZES 2" AND OVER SHALL BE ADJUSTABLE, STEEL CLEVIS TYPE. SHIELDS SHALL BE USED WHERE HANGER SUPPORTS INSULATED PIPE. SHIELDS SHALL BE 18 GAGE GALVANIZED STEEL OVER INSULATION 180 DEGREES AND A MINIMUM OF 12 INCHES LONG. PIPE HANGERS FOR BARE PIPE SHALL BE ADJUSTABLE, MALLEABLE STEEL, SPLIT RING TYPE. BARE COPPER PIPE SHALL BE PROTECTED FROM CORROSION BY TRISOLATOR OR SIMILAR PRODUCT. HANGERS SHALL LOCATED 12" MAXIMUM FROM ANY CHANGE IN DIRECTION AND SPACED AS FOLLOWS FOR STRAIGHT RUNS.

PIPE SIZE MAX.	HANGER SPACING	HANGER ROD DIAMETER
1/2" TO 1-1/4"	6'	3/8"
1-1/2" TO 2"	8'	3/8"

REFRIGERANT PIPING SHALL BE ASTM B 280 TYPE ACR COPPER TUBING WITH B16.22 WROUGHT COPPER FITTINGS. COPPER TUBING SHALL BE BRAZED WITH AWS A5.8 BCUP SILVER BASED FILLER METAL. REFRIGERANT PIPING SYSTEM, INCLUDING FITTINGS, VALVES AND APPURTENANCES SHALL BE TESTED FOR LEAKAGE AT 200 PSI WORKING PRESSURE WITH DRY NITROGEN.

INSULATE ALL REFRIGERANT SUCTION GAS AND LIQUID DISCHARGE TUBING WITH 1/2" MINIMUM THICKNESS FLEXIBLE CLOSED CELL ELASTOMERIC INSULATION. PROVIDE TYPE R-374 PROTECTIVE COATING (2 COATS MINIMUM) TO INSULATION INSTALLED OUTSIDE OF BUILDING WHERE EXPOSED TO ATMOSPHERE.

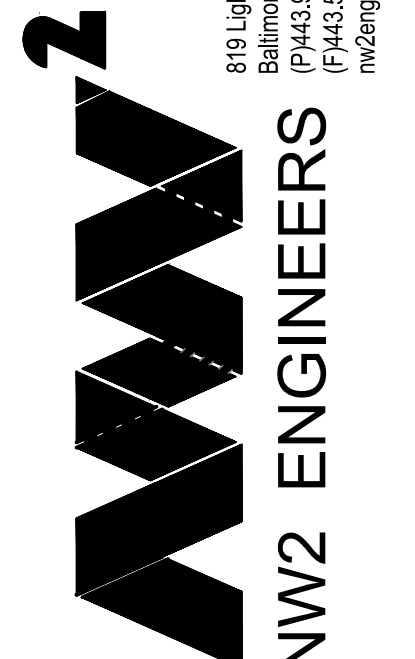
PENETRATIONS OF FIRE RATED WALLS OR FLOORS BY PIPE OR DUCT SHALL BE SEALED BY A FIRESTOPPING SYSTEM UL LISTED FOR THE APPLICATION. INSTALL PENETRATION SEAL MATERIALS IN ACCORDANCE WITH PRINTED INSTRUCTIONS OF THE UL FIRE RESISTANCE DIRECTORY AND MANUFACTURERS INSTRUCTIONS. FIRESTOPPING SYSTEM SHALL BE EQUAL TO 3M FIRE BARRIER. FIRESTOPPING MATERIAL SHALL BE CAULK OR PUTTY TYPE.

MECHANICAL EQUIPMENT SHALL BE SECURED AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND APPLICABLE SECTIONS OF THE JURISDICTIONAL BUILDING AND MECHANICAL CODES.

MECHANICAL EQUIPMENT SHALL BE IDENTIFIED WITH BAKELITE NAMEPLATES. COLOR CODING OF NAMEPLATES AND IDENTIFICATION INFORMATION SHALL BE COORDINATED WITH THE OWNER.

AUTOMATIC TEMPERATURE CONTROLS SHALL BE ELECTRONIC/ELECTRIC AND SHALL BE DESIGNED, FURNISHED AND INSTALLED BY A QUALIFIED TEMPERATURE CONTROL FIRM.

AN INDEPENDENT TEST AND BALANCE FIRM WHICH IS AABC OR NEBB CERTIFIED SHALL BE RETAINED FOR CHECK/TEST-START-UP AND TESTING AND BALANCING OF AIR AND WATER SYSTEMS. THE TEST REPORT SHALL BE IN A FORMAT APPROVED BY AABC FOR SYSTEMS OF THIS TYPE AND COMPLEXITY. QUALIFICATIONS OF INDEPENDENT TEST AND BALANCE FIRM SHALL BE SUBMITTED FOR REVIEW.



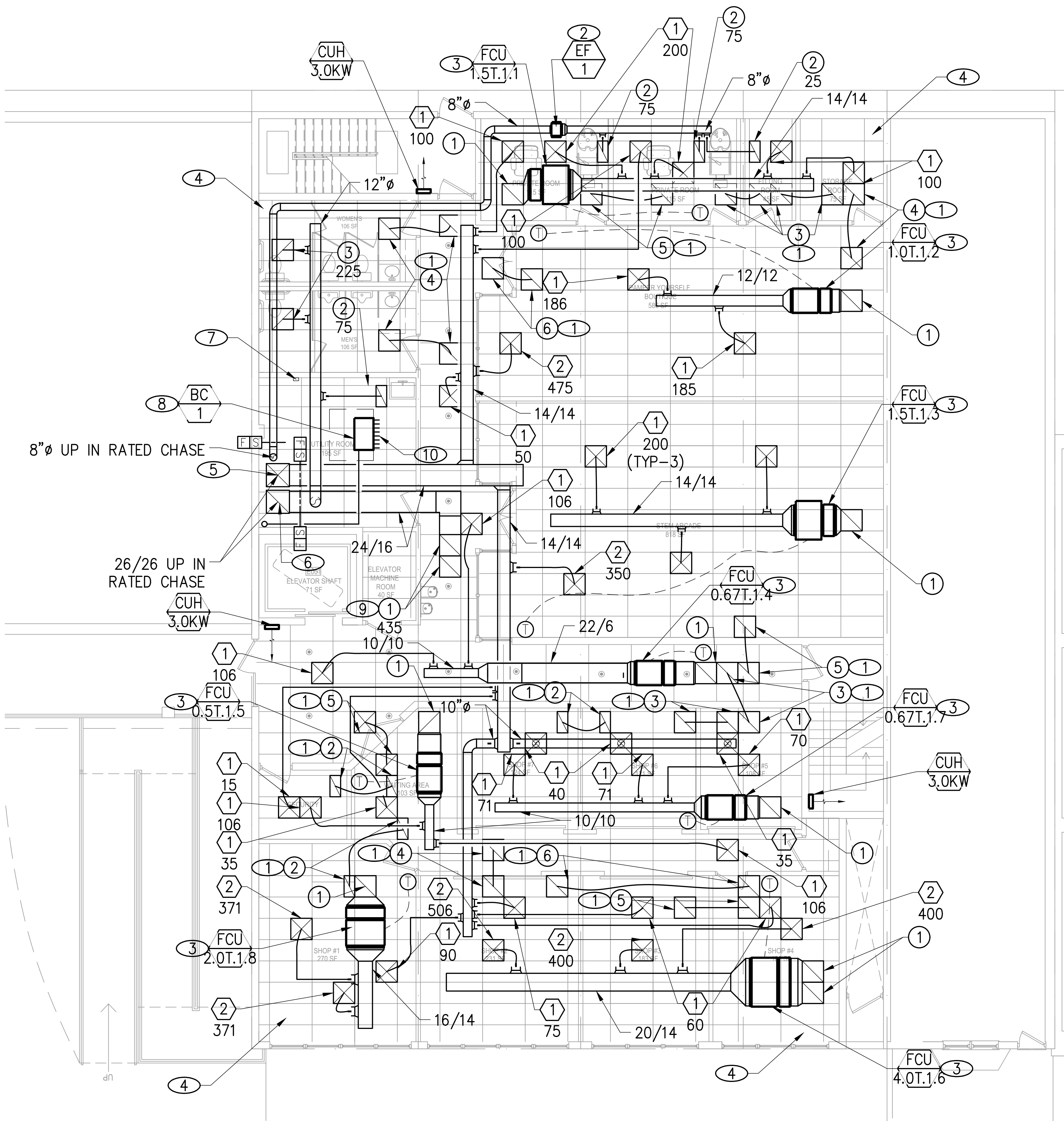
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DATE: 05/10/2024
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SHEET TITLE:
MECHANICAL
SPECIFICATIONS

SCALE: N.T.S.
SHEET NUMBER:

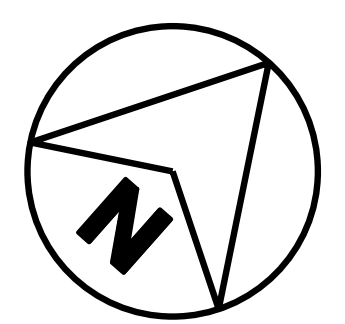
M02



KEYNOTES

- ① PROVIDE AND INSTALL TRANSFER BOOT PER 1/M72.
- ② PROVIDE AND INSTALL INLINE FAN MOUNTED ABOVE CEILING WITH DUCTWORK ROUTED AS SHOWN.
- ③ PROVIDE AND INSTALL NEW HORIZONTALLY DUCTED FAN COIL UNIT WITH RETURN AIR DUCTED TO CEILING GRILLE(S) AS SHOWN (CUSTOM SHEET METAL FITTING MAY BE REQUIRED). EXTEND REFRIGERANT PIPING FROM FAN COIL UNIT TO BRANCH SELECTOR BOX INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- ④ PROVIDE AND INSTALL 2.5 KW UNIT HEATER (UH/2.5KW) IN LEVEL BELOW IN UNOCCUPIED CRAWLSPACE.
- ⑤ PROVIDE 8"Ø SA DUCT STUB DOWN FROM MAIN RISER AND PROVIDE FSD AT PENETRATION THROUGH RATED CHASE. LEAVE DUCT OPEN TO CRAWLSPACE AND PROVIDE WITH BALANCING DAMPER SET TO 150 CFM FOR CRAWLSPACE VENTILATION. PROVIDE DUCT OPENING WITH INSECT SCREEN.
- ⑥ PROVIDE 8"Ø EA DUCT STUB DOWN FROM MAIN RISER AND PROVIDE FSD AT PENETRATION THROUGH RATED CHASE. RUN DUCT OUT TO FAR SOUTHEAST CORNER OF THE CRAWLSPACE AND LEAVE DUCT OPEN TO CRAWLSPACE AND PROVIDE WITH BALANCING DAMPER SET TO 150 CFM FOR CRAWLSPACE EXHAUST. PROVIDE DUCT OPENING WITH INSECT SCREEN.
- ⑦ PROVIDE AND INSTALL VRF SYSTEM MAIN CONTROLLER WITH 120 VOLT POWER SUPPLY.
- ⑧ INSULATE BRANCH CONTROLLER IN THE FIELD WITH 1" FIBERGLASS INSULATION WITH ALL SERVICE JACKETING. MAINTAIN 4" CLEAR ABOVE AND 8" CLEAR BELOW UNIT.
- ⑨ DOAS RA DUCTED TO CEILING GRILLE(S) AS SHOWN (CUSTOM SHEET METAL FITTING MAY BE REQUIRED).
- ⑩ SETS OF REFRIGERANT PIPING TO ASSOCIATED FAN COIL UNITS AS RECOMMENDED BY MANUFACTURER. EACH BRANCH CONTROLLER BOX SERVES (1) FLOOR OF THE PHASE II BUILDING. REFRIGERANT PIPING NOT SHOWN FOR OVERALL DRAWING CLARITY. EXACT ROUTING TO BE DETERMINED IN FIELD BY THE CONTRACTOR.

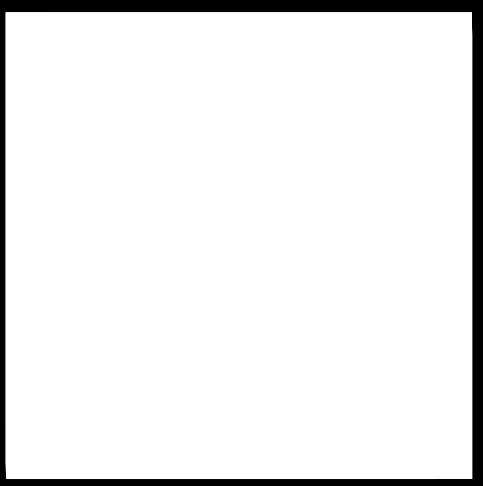
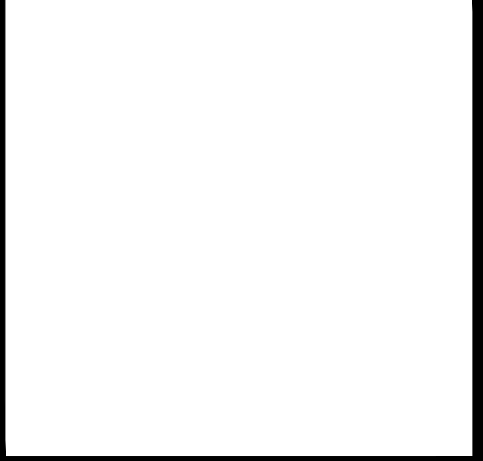
GENERAL NOTES:
 1. ALL EXISTING MECHANICAL IN THIS BUILDING IS TO BE DEMOLISHED.



LEVEL 1 MECHANICAL FLOOR PLAN

3/16" = 1'-0"

1
M1



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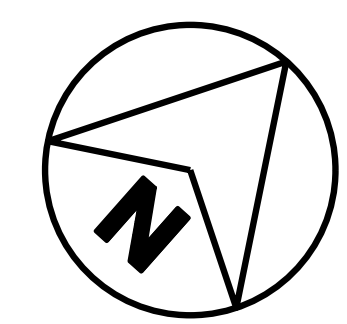
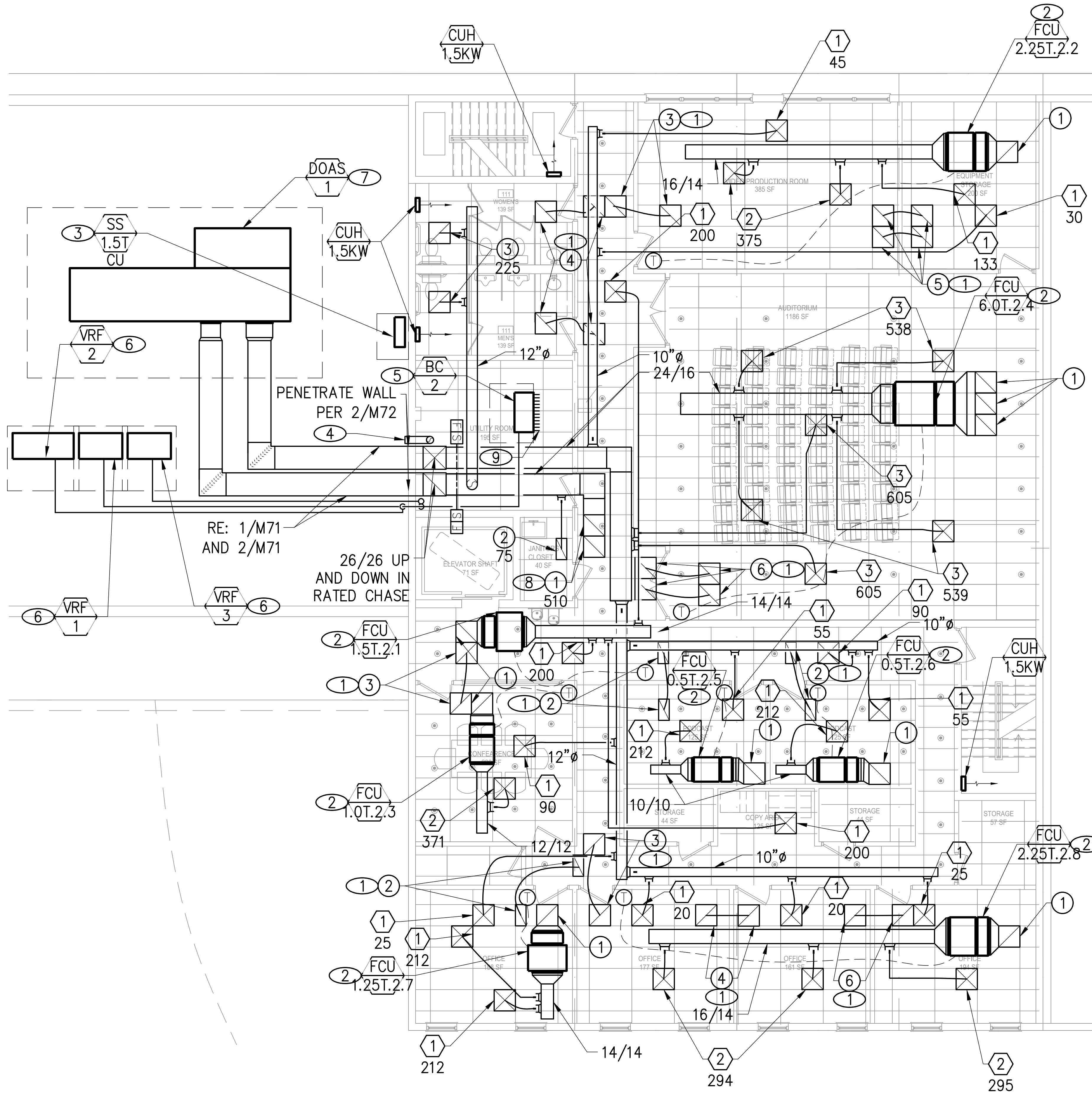
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SHEET TITLE: LEVEL 1 MECHANICAL FLOOR PLAN
SCALE: 3/16" = 1'-0" SHEET NUMBER: M1

KEYNOTES

- ① PROVIDE AND INSTALL TRANSFER BOOT PER 1/M72.
- ② PROVIDE AND INSTALL NEW HORIZONTALLY DUCTED FAN COIL UNIT WITH RETURN AIR DUCTED TO CEILING GRILLE(S) AS SHOWN (CUSTOM SHEET METAL FITTING MAY BE REQUIRED). EXTEND REFRIGERANT PIPING FROM FAN COIL UNIT TO BRANCH SELECTOR BOX INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- ③ PROVIDE AND INSTALL CONDENSING UNIT ON ROOF PER 6/M71. ROUTE REFRIGERANT PIPING LINE SET FROM CONDENSING UNIT TO FAN COIL UNIT IN ELEVATOR SHAFT AS RECOMMENDED BY MANUFACTURER. PROVIDE AND INSTALL UNIT ON PHASE I ROOF. CONTRACTOR TO ENSURE NO CONFLICT WITH EXISTING MECHANICAL EQUIPMENT ON PHASE 1 ROOF. ENSURE 10' CLEAR FROM UNIT TO ROOF EDGE
- ④ 8"Ø EA TO DISCHARGE HIGH ON EXTERIOR WALL AND TERMINATE WITH SHEET METAL HOOD (FAMCO #WVEB8 WITH SCREEN, WITH DAMPER OR EQUAL, CONFIRM FINISH COLOR WITH ARCHITECT).
- ⑤ INSULATE BRANCH CONTROLLER IN THE FIELD WITH 1" FIBERGLASS INSULATION WITH ALL SERVICE JACKETING. MAINTAIN 4" CLEAR ABOVE AND 8" CLEAR BELOW UNIT.
- ⑥ VRF UNIT WITH 8" REAR CLEARANCE, 6" CLEARANCE BETWEEN THE MODULES, 18" SIDE CLEARANCE, AND 36" FRONT CLEARANCE. PROVIDE AND INSTALL UNIT ON PHASE I ROOF. CONTRACTOR TO ENSURE NO CONFLICT WITH EXISTING MECHANICAL EQUIPMENT ON PHASE 1 ROOF. ENSURE 10' CLEAR FROM UNIT TO ROOF EDGE
- ⑦ PROVIDE AND INSTALL UNIT ON PHASE I ROOF. CONTRACTOR TO ENSURE NO CONFLICT WITH EXISTING MECHANICAL EQUIPMENT ON PHASE 1 ROOF. ENSURE 10' CLEAR FROM UNIT TO ROOF EDGE AND FROM UNIT OA INTAKE TO ANY SOURCE OF EXHAUST.
- ⑧ DOAS RA DUCTED TO CEILING GRILLE(S) AS SHOWN (CUSTOM SHEET METAL FITTING MAY BE REQUIRED).
- ⑨ SETS OF REFRIGERANT PIPING TO ASSOCIATED FAN COIL UNITS AS RECOMMENDED BY MANUFACTURER. EACH BRANCH CONTROLLER BOX SERVES (1) FLOOR OF THE PHASE II BUILDING. REFRIGERANT PIPING NOT SHOWN FOR OVERALL DRAWING CLARITY. EXACT ROUTING TO BE DETERMINED IN FIELD BY THE CONTRACTOR.

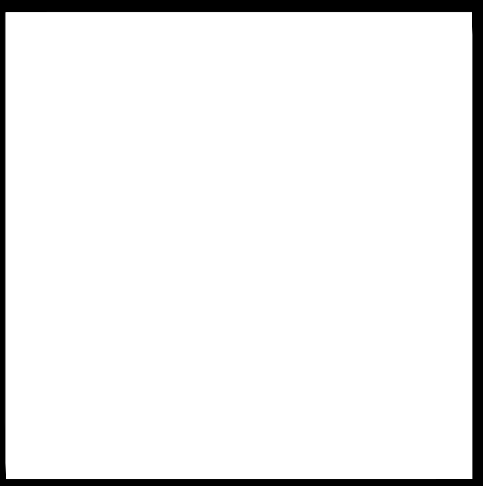
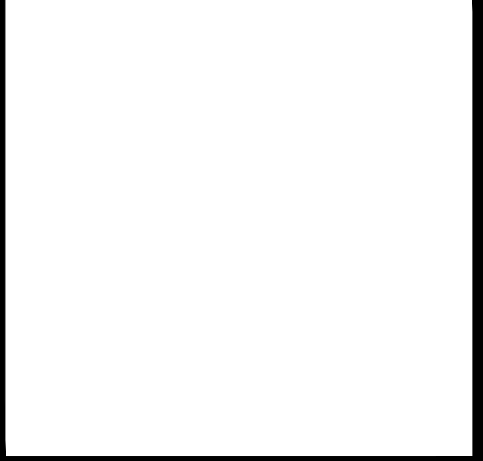
GENERAL NOTES:
 1. ALL EXISTING MECHANICAL IN THIS BUILDING IS TO BE DEMOLISHED.



LEVEL 2 MECHANICAL FLOOR PLAN

3/16" = 1'-0"

1
M2



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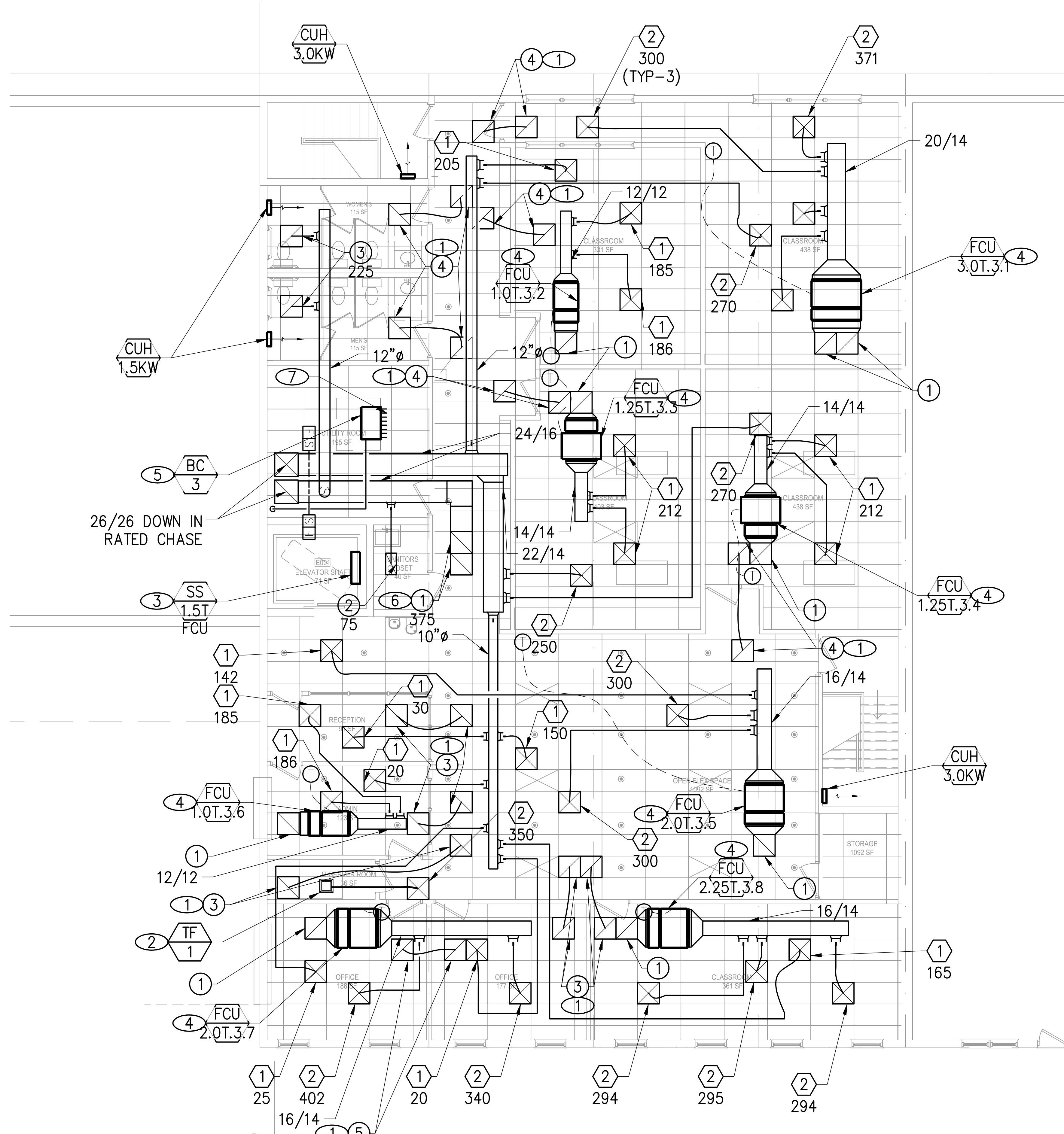
SHEET TITLE:
LEVEL 2 MECHANICAL
FLOOR PLAN

SCALE: 3/16" = 1'-0"
SHEET NUMBER:
M2

KEYNOTES

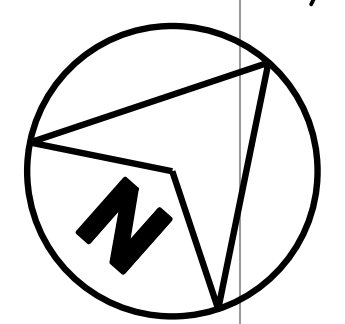
- ① PROVIDE AND INSTALL TRANSFER BOOT PER 1/M72.
- ② PROVIDE AND INSTALL CEILING MOUNTED FAN DUCTED TO SIDEWALL GRILLE. TRANSFER FROM FAN OUTLET SIZE TO GRILLE SIZE AS NEEDED.
- ③ PROVIDE AND INSTALL NEW FAN COIL UNIT MOUNTED HIGH ON WALL IN ELEVATOR SHAFT PER MANUFACTURER'S INSTRUCTIONS.
- ④ PROVIDE AND INSTALL NEW HORIZONTALLY DUCTED FAN COIL UNIT WITH RETURN AIR DUCTED TO CEILING GRILLE(S) AS SHOWN (CUSTOM SHEET METAL FITTING MAY BE REQUIRED). EXTEND REFRIGERANT PIPING FROM FAN COIL UNIT TO BRANCH SELECTOR BOX INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- ⑤ INSULATE BRANCH CONTROLLER IN THE FIELD WITH 1" FIBERGLASS INSULATION WITH ALL SERVICE JACKETING. MAINTAIN 4" CLEAR ABOVE AND 8" CLEAR BELOW UNIT.
- ⑥ DOAS RA DUCTED TO CEILING GRILLE(S) AS SHOWN (CUSTOM SHEET METAL FITTING MAY BE REQUIRED).
- ⑦ SETS OF REFRIGERANT PIPING TO ASSOCIATED FAN COIL UNITS AS RECOMMENDED BY MANUFACTURER. EACH BRANCH CONTROLLER BOX SERVES (1) FLOOR OF THE PHASE II BUILDING. REFRIGERANT PIPING NOT SHOWN FOR OVERALL DRAWING CLARITY. EXACT ROUTING TO BE DETERMINED IN FIELD BY THE CONTRACTOR.

GENERAL NOTES:
 1. ALL EXISTING MECHANICAL IN THIS BUILDING IS TO BE DEMOLISHED.

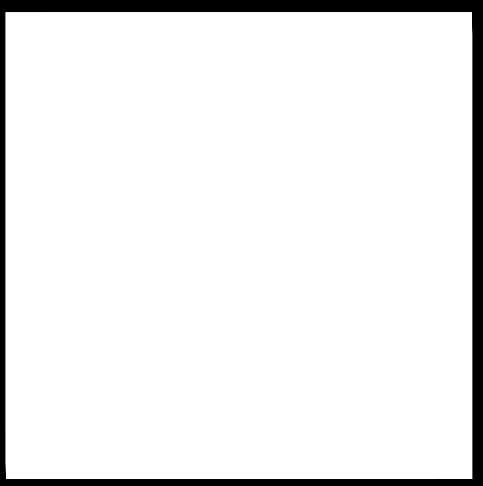
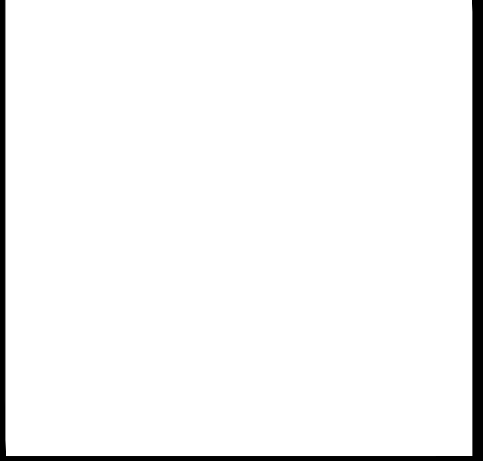


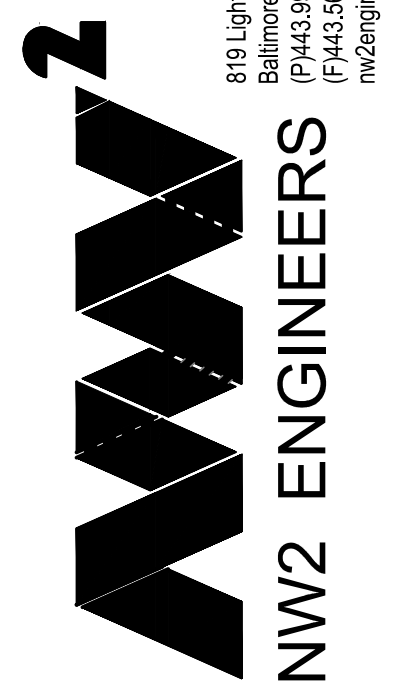
LEVEL 3 MECHANICAL FLOOR PLAN

3/16" = 1'-0"



1
M3




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**EMAGE PHASE II
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 SHEET TITLE:
 LEVEL 3 MECHANICAL
 FLOOR PLAN
 SCALE: 3/16" = 1'-0"
 SHEET NUMBER:
M3

AIR HANDLING UNIT SCHEDULE (HEAT PUMP HEAT - DX COOLING - ENERGY RECOVERY UNIT)

ITEM	LOCATION/SERVICE	MAKE/MODEL	ENERGY RECOVERY						HEAT PUMP HTG				DX COOLING				SUPPLY FAN			EXHAUST FAN			ELECTRICAL			OVERALL DIMENSIONS	MAX. OPER. WT. (LBS.)	NOTES		
			HEATING OA EAT (DB/WB)	HEATING RA EAT (DB/WB)	HEATING SA LAT (DB/WB)	COOLING OA EAT (DB/WB)	COOLING RA EAT (DB/WB)	COOLING SA LAT (DB/WB)	EAT (DEG F)	LAT (DEG F)	OUTPUT (MBH @ 47 F AMBIENT)	OUTPUT (MBH @ 12 F AMBIENT)	MINIMUM COP @ 12 F AMBIENT	MIN NET TOTAL CAP (MBH)	MAX EVAPORATOR EAT (DB/WB)	MAX EVAPORATOR LAT (DB/WB)	CONDENSER AMBIENT TEMP (DEGREES F)	MIN. EFFICIENCY (EER)	CFM	SUPPLY ESP (IN. WC)	MOTOR BHP	CFM	EXHAUST ESP (IN. WC)	MOTOR BHP	MIN CIRCUIT AMP				MOCP (AMP)	VOLTS/PH
DOAS-1	ROOF/VENTILATION	TRANE/OAKE264D4-C1C400JN	12	70/63	55/53	94/75	75/63	80/67	55	84	262	158	2.6	217	80/67	51/50	94	14	4,745	1.00	2.4	4,365	1.00	2.2	57.4	70	480/3	245"LONG X 95" WIDE X 81" TALL	6,000	①②③④⑤⑥ ⑦⑧⑨⑩⑪⑫

NOTES:

- ① PACKAGED DEDICATED OUTSIDE AIR SUPPLY UNIT WITH DX COOLING AND HEAT PUMP HEATING IN WEATHER RESISTANT INSULATED CABINET. PROVIDE WITH 18" TALL ROOF CURB.
- ② FURNISH WITH MOTORIZED LOW LEAKAGE OUTDOOR AIR DAMPER WITH AN AIR LEAKAGE RATE NOT GREATER THAN 3 CFM/FT2 OF DAMPER SURFACE AREA AT 1.0 INCH WATER GAUGE FOR SUCH PURPOSE.
- ③ FURNISH WITH HORIZONTAL SUPPLY AND RETURN DUCT CONNECTIONS AS INDICATED ON FLOORPLANS.
- ④ FURNISH WITH ALUMINUM MESH MERV 8 FILTERS ON OUTSIDE AIR INTAKE. PROVIDE 2" MERV 8 DISPOSABLE FILTER UPSTREAM OF EVAPORATOR COIL.
- ⑤ FURNISH DISCHARGE AIR TEMPERATURE CONTROL SET AT 72 DEG F WITH ROOM OVERRIDE THERMOSTAT (LOCATED IN LEVEL 3 CORRIDOR). PROVIDE PHASE AND BROWNOUT PROTECTION MONITOR, FREEZE STAT SET TO DISABLE UNIT UPON SUPPLY AIR TEMP BELOW 40 DEG F, NON-FUSED UNIT MOUNTED DISCONNECT.
- ⑥ FURNISH WITH VARIABLE SPEED SUPPLY FAN WITH SPRING VIBRATION ISOLATORS, CONTROL SET TO MAINTAIN DUCT STATIC PRESSURE SETPOINT WITH HIGH LIMIT TO SHUT DOWN FAN IF DUCT PRESSURE EXCEEDS 130% OF SCHEDULED VALUE.
- ⑦ FURNISH WITH VARIABLE VOLUME EXHAUST FAN WITH SPRING VIBRATION ISOLATORS, CONTROL SET TO MAINTAIN DUCT STATIC PRESSURE SETPOINT WITH HIGH LIMIT TO SHUT DOWN FAN IF DUCT PRESSURE EXCEEDS 130% OF SCHEDULED VALUE.
- ⑧ FURNISH WITH VARIABLE CAPACITY MODULATING PACKAGED DX COOLING SYSTEM UTILIZING R410 AND VARIABLE CAPACITY LEAD COMPRESSOR WITH MINIMUM 5:1 TURNDOWN.
- ⑨ PROVIDE SMOKE DETECTOR IN RETURN AIR SET TO SHUT DOWN UNIT UPON ACTIVATION.
- ⑩ PROVIDE WITH DES CHAMPS P-SERIES WATERLESS TRAP ON THE CONDENSATE DRAIN AND DISCHARGE CONDENSATE TO ROOF.
- ⑪ 80% MINIMUM SENSIBLE EFFECTIVENESS POLYMER ENERGY WHEEL RECOVERY SYSTEM WITH FROST PROTECTION, AND BY-PASS WITH ENTHALPY CONTROL. ALL MATERIALS UTILIZED IN UNIT CONSTRUCTION TO BE UL LISTED WITH MAXIMUM FLAME SPREAD INDEX = 25 AND SMOKE DEVELOPED INDEX = 50.
- ⑫ PROVIDE MODULATING HOT GAS REHEAT FOR CAPACITY/DISCHARGE AIR TEMPERATURE CONTROL AND DEHUMIDIFICATION CONTROL (CONTROL BASED ON OA DEWPOINT SETPOINT).

OUTSIDE AIR VENTILATION CALCULATIONS									
PROJECT: EMAGE PHASE II	AREA (SQFT)	OCCUPANCY				SYSTEM: DOAS-1			
		#/1000 SQFT	#PEOPLE	OSA PER (CFM)	CFM/SQFT	Ez	TOTAL REQD OSA (CFM)	SUPPLY AIR (CFM)	% OSA
CRAWLSPACE	5,080	0	0	0.0	0.02	0.80	127	150	100%
FITTING ROOM	46	0	0	0.0	0.00	0.80	0	0	100%
PRIVATE ROOM	115	25	3	20.0	0.12	0.80	92	100	92%
PRIVATE ROOM	115	25	3	20.0	0.12	0.80	92	100	92%
LEVEL 1 CORRIDOR	658	0	0	0.0	0.06	0.80	49	50	99%
PAMPER YOURSELF BOUTIQUE	586	25	15	20.0	0.12	0.80	463	475	97%
STEM ARCADE	818	20	17	7.5	0.18	0.80	343	350	98%
LEVEL 1 WAITING AREA	103	30	4	5.0	0.06	0.80	33	35	94%
SECURITY	54	5	1	5.0	0.06	0.80	10	15	69%
SHOP #1	270	15	5	7.5	0.12	0.80	87	90	97%
SHOP #2	231	15	4	7.5	0.12	0.80	72	75	96%
SHOP #3	183	15	3	7.5	0.12	0.80	56	60	93%
SHOP #4	183	15	3	7.5	0.12	0.80	56	60	93%
SHOP #5	108	15	2	7.5	0.12	0.80	35	35	100%
SHOP #6	121	15	2	7.5	0.12	0.80	37	40	92%
SHOP #7	124	15	2	7.5	0.12	0.80	37	40	93%
EQUIPMENT STORAGE	200	0	0	0.0	0.12	0.80	30	30	100%
VIDEO PRODUCTION ROOM	385	5	2	5.0	0.06	0.80	41	45	92%
AUDITORIUM	1,186	150	178	5.0	0.06	0.80	1,201	1,210	99%
LEVEL 2 CORRIDOR	841	0	0	0.0	0.06	0.80	63	70	90%
CONFERENCE	220	50	11	5.0	0.06	0.80	85	90	95%
LEVEL 2 OFFICE SW	188	5	1	5.0	0.06	0.80	20	25	81%
LEVEL 2 OFFICE SW MID	177	5	1	5.0	0.06	0.80	20	20	98%
LEVEL 2 OFFICE SE MID	161	5	1	5.0	0.06	0.80	18	20	92%
LEVEL 2 OFFICE SE	194	5	1	5.0	0.06	0.80	21	25	83%
COPY AREA	125	5	1	5.0	0.06	0.80	16	20	78%
PODCAST INTERIOR W	125	50	7	5.0	0.06	0.80	53	55	97%
PODCAST INTERIOR E	125	50	7	5.0	0.06	0.80	53	55	97%
CLASSROOM NE	438	35	16	10.0	0.12	0.80	266	270	98%
CLASSROOM NW	331	35	12	10.0	0.12	0.80	200	205	97%
CLASSROOM MID W	403	35	15	10.0	0.12	0.80	248	250	99%
CLASSROOM MID E	438	35	16	10.0	0.12	0.80	266	270	98%
LEVEL 3 OPEN FLEX SPACE	1,376	5	7	5.0	0.06	0.80	147	150	98%
LEVEL 3 RECEPTION	91	30	3	5.0	0.06	0.80	26	30	85%
LEVEL 3 ADMIN	123	5	1	5.0	0.06	0.80	15	20	77%
LEVEL 3 OFFICE SW	188	5	1	5.0	0.06	0.80	20	25	81%
LEVEL 3 OFFICE S	177	5	1	5.0	0.06	0.80	20	20	98%
CLASSROOM SE	261	35	10	10.0	0.12	0.80	164	165	99%
TOTALS	16,548		356				4,583	4,745	
SYSTEM CALCULATIONS									
SUPPLY AIR	4,745 CFM	VENTILATION SYSTEM EFFICIENCY				97%			
TOTAL UNCORRECTED OSA REQD	4,583 CFM	SYSTEM OCCUPANT DIVERSITY				100%			
AVERAGE OUTDOOR AIR %	97%	CORRECTED SYSTEM MIN OUTDOOR AIR				4,745 CFM			

VRF SCHEDULE

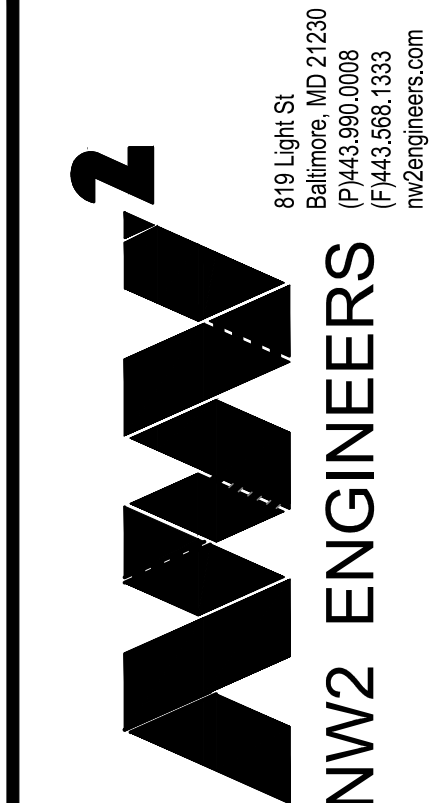
ITEM	MANUFACTURER/MODEL	LOCATION/SERVICE	NOMINAL COOLING CAPACITY (MBH)	NOMINAL HEATING CAPACITY (MBH)	EAT DB (°F)	MAXIMUM OF CONNECTED ID FCU'S	MCA	MOP	POWER (VOLT/PH)	MAX WEIGHT (LBS)	OVERALL DIMENSIONS	NOTES
VRF 1	TRANE/TURYE1444	PHASE I ROOF/FCUs	144.0	160.0	95	150% ODU CAP.	34	50	460/3	750	29-3/16" X 48-7/8" X 71-5/8" TALL	①②③
VRF 2	TRANE/TURYE1684	PHASE I ROOF/FCUs	168.0	188.0	95	150% ODU CAP.	35	50	460/3	850	29-3/16" X 68-5/16" X 71-5/8" TALL	①②③
VRF 3	TRANE/TURYE1444	PHASE I ROOF/FCUs	144.0	160.0	95	150% ODU CAP.	34	50	460/3	750	29-3/16" X 48-7/8" X 71-5/8" TALL	①②③

NOTES:

- ① AIR SOURCE HEAT PUMP VRF CONDENSING UNIT CONFIGURED FOR HEATING OPERATION DOWN TO 0 DEG F AT 0' ELEVATION. REFRIGERANT PIPING SIZED PER MANUFACTURERS RECOMMENDATIONS, SNOW AND HAIL GUARD KIT, INTEGRALLY HEATED BASE PAN (NO NEED FOR AUX BASE PAN HEATER), CRANK CASE HEATER, 12" TRANE SUPER STAND, AND EC PROVIDED DISCONNECT.
- ② PROVIDE ARI MATCHED EVAPORATOR COIL WITH LEV AND EVAPORATOR FREEZESTAT AT FAN COIL UNIT (ALL REFRIGERANT TO BE R-410A)
- ③ PROVIDE BUILDING WITH A SINGLE BUILDING LEVEL VRF CONTROLS SYSTEM (TRANE MODEL TE-200 POWERED VIA 120 VOLT POWER, LESS THAN 1 AMP) WITH THE CONTROLLER LOCATED AS INDICATED ON THE FLOOR PLANS. THIS ITEMS IS TO CONTROL THE WHOLE BUILDING VRF SYSTEM.

MECHANICAL EQUIPMENT SCHEDULE

ITEM	DESCRIPTION
BC 1	TRANE #TCMBM0108JA11N4 (8) BRANCH CONTROLLER BOX. SEE VRF SYSTEM DIAGRAM TO PIPING CONNECTION INFORMATION. PROVIDE SHUT OFF VALVE FOR EACH PORT. MOUNT BOX FROM STRUCTURE. PROVIDE WITH CONDENSATE PUMP POWERED OFF OF UNIT. PROVIDE CONDENSATE OVERFLOW SWITCH SET TO SHUT-DOWN UNIT IN EVENT OF CONDENSATE OVERFLOW. ELECTRICAL: 208/1 VAC, 0.8 MCA, 20 MOCP. DIMENSIONS: 9-7/8" x 35-7/8" x 21-1/2", 150 LBS.
BC 2	TRANE #TCMBM01012JA11N4 (12) BRANCH CONTROLLER BOX. SEE VRF SYSTEM DIAGRAM TO PIPING CONNECTION INFORMATION. PROVIDE SHUT OFF VALVE FOR EACH PORT. MOUNT BOX FROM STRUCTURE. PROVIDE WITH CONDENSATE PUMP POWERED OFF OF UNIT. PROVIDE CONDENSATE OVERFLOW SWITCH SET TO SHUT-DOWN UNIT IN EVENT OF CONDENSATE OVERFLOW. ELECTRICAL: 208/1 VAC, 0.8 MCA, 20 MOCP. DIMENSIONS: 9-7/8" x 44-11/16" x 21-1/2", 150 LBS.
BC 3	TRANE #TCMBM0108JA11N4 (8) BRANCH CONTROLLER BOX. SEE VRF SYSTEM DIAGRAM TO PIPING CONNECTION INFORMATION. PROVIDE SHUT OFF VALVE FOR EACH PORT. MOUNT BOX FROM STRUCTURE. PROVIDE WITH CONDENSATE PUMP POWERED OFF OF UNIT. PROVIDE CONDENSATE OVERFLOW SWITCH SET TO SHUT-DOWN UNIT IN EVENT OF CONDENSATE OVERFLOW. ELECTRICAL: 208/1 VAC, 0.8 MCA, 20 MOCP. DIMENSIONS: 9-7/8" x 35-7/8" x 21-1/2", 150 LBS.



EMAGE PHASE II OFFICE BUILDING
 2132 W. NORTH AVE., BALTIMORE, MD

DATE: 05/10/2024
REVISIONS:

PERMIT ISSUE
SHEET TITLE:
MECHANICAL SCHEDULES

SCALE: N.T.S.
SHEET NUMBER:

M61

FAN COIL SCHEDULE (DX COOLING - HEAT PUMP HEAT)

ITEM	MANUFACTURER/ MODEL	DX COOLING COIL							HEATING PERFORMANCE					SUPPLY FAN			ELECTRICAL			MIN. OA (CFM)	MAX OPER. WT. (LBS.)	OVERALL DIMENSIONS	NOTES
		CFM	CLG CAP (MBH) @ 95°F AMBIENT	EAT (°F)		LAT (°F)		MINIMUM EFFICIENCY (EER)	CFM	HTG CAP (MBH) @ 9°F AMBIENT	EAT (°F)	LAT (°F)	MINIMUM EFFICIENCY (COP @ 47°F AMBIENT)	CFM	SUPPLY ESP (IN. WC)	MIN. MOTOR KW	MCA	MOP	VOLTS/PH				
				DB	WB	DB	WB																
FC 0.5T	TRANE/TPEFYP006	212	5.9	75	67	61.7	-	-	212	4.1	70	82.8	-	212	0.2	.09	1.75	15	208/1	-	50	27-9/16"WIDE X 28-7/8"LONG X 9-7/8"TALL	①②③④⑤
FC 0.67T	TRANE/TPEFYP008	212	7.8	75	67	59.6	-	13.7	212	5.6	70	87.2	4.0	212	0.2	.09	1.75	15	208/1	-	50	27-9/16"WIDE X 28-7/8"LONG X 9-7/8"TALL	①②③④⑤
FC 1.0T	TRANE/TPEFYP012	371	11.7	75	67	58.2	-	13.7	371	8.4	70	90.9	4.0	371	0.2	.09	2.1	15	208/1	-	50	27-9/16"WIDE X 28-7/8"LONG X 9-7/8"TALL	①②③④⑤
FC 1.25T	TRANE/TPEFYP015	424	13.3	75	67	59.2	-	13.7	424	10.5	70	89.6	4.0	424	0.2	.12	2.9	15	208/1	-	60	35-7/16"WIDE X 28-7/8"LONG X 9-7/8"TALL	①②③④⑤
FC 1.5T	TRANE/TPEFYP018	600	16.0	75	67	62.3	-	13.7	600	12.3	70	82.9	4.0	600	0.2	.12	2.9	15	208/1	-	60	35-7/16"WIDE X 28-7/8"LONG X 9-7/8"TALL	①②③④⑤
FC 2.0T	TRANE/TPEFYP024	742	23.4	75	67	59.3	-	13.7	742	16.7	70	87.5	4.0	742	0.2	.12	2.9	15	208/1	-	70	43-5/16"WIDE X 28-7/8"LONG X 9-7/8"TALL	①②③④⑤
FC 2.25T	TRANE/TPEFYP027	883	24.0	75	67	59.1	-	13.7	883	18.5	70	89.4	4.0	883	0.2	.12	2.9	15	208/1	-	70	43-5/16"WIDE X 28-7/8"LONG X 9-7/8"TALL	①②③④⑤
FC 3.0T	TRANE/TPEFYP036	1271	31.2	75	67	60	-	13.7	1271	24.5	70	85.6	4.0	1271	0.2	.3	4.3	15	208/1	-	90	55-1/8"WIDE X 28-7/8"LONG X 9-7/8"TALL	①②③④⑤
FC 4.0T	TRANE/TPEFYP048	1306	46.9	75	67	55.8	-	13.7	1306	33.4	70	93.7	4.0	1306	0.2	.3	4.4	15	208/1	-	90	55-1/8"WIDE X 28-7/8"LONG X 9-7/8"TALL	①②③④⑤
FC 6.0T	TRANE/TPEFYP072	2154	63.9	75	67	59.8	-	13.7	2154	49.3	70	88.0	4.0	2154	0.4	.63	7.7	15	208/1	-	225	44-1/8"LONG X 49-1/4"WIDE X 18-9/16"TALL	①②③④⑥⑦

NOTES:

- ① WALL-HUNG CASED FAN COIL WITH DX COOLING COIL, HEAT PUMP OPERATION, LEV, REVERSING VALVE, AND 7 DAY PROGRAMMABLE THERMOSTAT WITH AUTOMATIC CHANGE-OVER FROM HEATING TO COOLING, AND REMOTE WALL MOUNTED THERMOSTAT (TRANE #TAR-CT01MAU-SB). THERMOSTAT TO INDICATE WHEN FAN IS RUNNING. LABEL THERMOSTAT AND REMOTE TEMPERATURE SENSOR WITH ASSOCIATED FCU TAG. INSTALL WITH ALL MANUFACTURER'S RECOMMENDED CLEARANCES.
- ② PROVIDE RUBBER VIBRATION ISOLATORS FOR SUSPENDED INSTALLATION.
- ③ PROVIDE WITH CONDENSATE PUMP (TRANE #PAC-KE05DM-F FOR FC/6.0T AND TRANE #X87-712 FOR ALL OTHER FAN COIL UNIT SIZES) POWERED OFF OF UNIT. PROVIDE CONDENSATE OVERFLOW SWITCH SET TO SHUT-DOWN UNIT IN EVENT OF CONDENSATE OVERFLOW.
- ④ NAMING ON OVERALL PLANS WILL SHOW UNIT SIZE TAG (SEE "ITEM" COLUMN IN ABOVE SCHEDULE) . VRF NUMBER . NUMBER OF FAN COIL UNIT CONNECTED TO ASSOCIATED VRF UNIT.
- ⑤ PROVIDE MERV 13 FILTER BOX ON UNIT INLET (TRANE #FBM2 OR EQUAL)
- ⑥ PROVIDE MERV 13 FILTER BOX ON UNIT INLET (TRANE #FBH4-4 OR EQUAL)
- ⑦ PROVIDE WITH DUCT SMOKE DETECTOR, PROVIDED BY MC, INSTALLED BY EC.

UNIT HEATER (ELECTRIC)

ITEM	MANUFACTURER/ MODEL	LOCATION/ SERVICE	HEATING CAP. (KW)	MAX. CFM	VOLTS/PHASE	MCA	MAX. OPER. WT. (LBS.)	OVERALL DIMENSIONS	NOTES
UH 2.5KW	INDEECO/ UHIR	CEILING/ HEAT	2.5	350	208/1	12.3	25	7.625" DEEP X 12.875" WIDE X 17.75" TALL	①

NOTES:

- ① FURNISH FACTORY INSTALLED DISCONNECT AND REMOTE THERMOSTAT SET AT 65 DEG F

CABINET UNIT HEATER (ELECTRIC)

ITEM	MANUFACTURER/ MODEL	LOCATION/ SERVICE	HEATING CAP. (KW)	MAX. CFM	VOLTS/PHASE	MCA	MAX. OPER. WT. (LBS.)	OVERALL DIMENSIONS	NOTES
CUH 1.5KW	INDEECO/ 933I	WALL/ HEAT	1.5	160	208/1	7.2	50	4-1/2" DEEP X 15-3/4" WIDE X 19-5/16" TALL	①②③
CUH 3.0KW	INDEECO/ 933I	WALL/ HEAT	3.0	160	208/1	14.4	50	4-1/2" DEEP X 15-3/4" WIDE X 19-5/16" TALL	①②③

NOTES:

- ① FURNISH FACTORY INSTALLED DISCONNECT, FRONT INTAKE, FRONT DISCHARGE, AND INTEGRAL TAMPER-PROOF THERMOSTAT SET AT 60 DEG F IN STAIRWELLS, 70 DEG F IN RESTROOMS AND CORRIDORS.
- ② FURNISH WITH ARCHITECTURAL WALL LOUVER - COLOR PER ARCHITECT
- ③ FURNISH WITH SURFACE MOUNT BOX.

EMAGE PHASE II
OFFICE BUILDING

NW2 ENGINEERS
 2132 W. NORTH AVE., BALTIMORE, MD

DATE: 05/10/2024
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SHEET TITLE:
MECHANICAL
SCHEDULES

SCALE: N.T.S.
SHEET NUMBER:

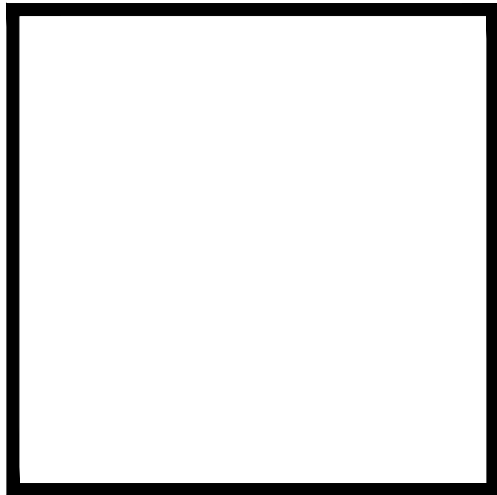
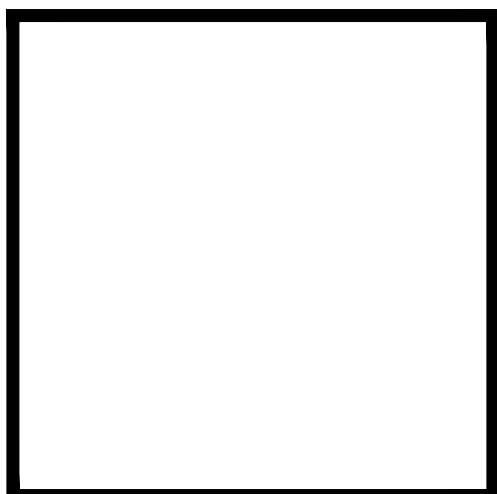
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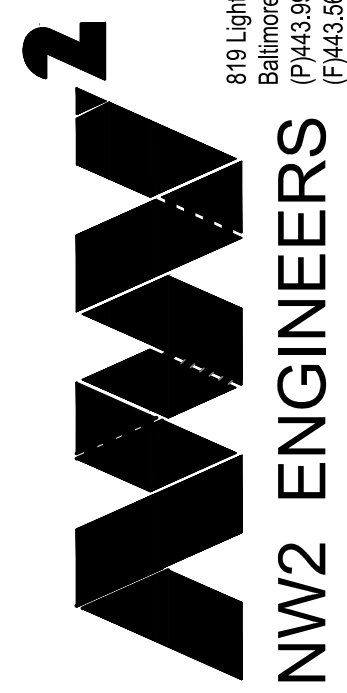
FAN SCHEDULE												
ITEM	MANUFACTURER/ MODEL	LOCATION/ SERVICE	CFM	ESP	MAX FAN RPM	MAX SONES	ELEC. DATA			MAXIMUM OPERATING WEIGHT (LBS)	OVERALL DIMENSIONS	NOTES
							POWER	VOLT	PH			
TF 1	PANASONIC/ FV-40VQ4	PLAN/ IT COOLING	350	.25	-	2.0	111 WATTS	115	1	30	15"W X 15"L X 10"TALL	① ②
EF 1	GREENHECK/ CSP-A200	PLAN/ SALON	175	0.4	-	2.0	132 WATTS	115	1	30	14"W X 11.875"L X 11.25"TALL	③ ④ ⑤
<p>NOTES:</p> <p>① SINGLE-SPEED ENERGY STAR EXHAUST FAN, WHITE PLASTIC GRILLE, AND BACKDRAFT DAMPER.</p> <p>② PROVIDE REVERSE ACTING THERMOSTAT SET AT 80 DEG F.</p> <p>③ INLINE FAN, PROVIDE RUBBER IN SHEAR VIBRATION ISOLATORS FOR SUSPENDED INSTALLATION.</p> <p>④ PROVIDE WITH GRAVITY BACKDRAFT DAMPER.</p> <p>⑤ CONTROL VIA TIMECLOCK. FAN TO RUN CONTINUOUSLY WHEN SPACE IS OCCUPIED.</p>												

MECHANICAL EQUIPMENT SCHEDULE	
ITEM	DESCRIPTION
SS 1.5I	TRANE #TPKAA01811LA10A INDOOR WALL MOUNTED DUCTLESS STYLE FAN COIL WITH #TRUYA0181KA70NA OUTDOOR COOLING ONLY CONDENSING UNIT PROVIDING 18,000 BTU/H OF COOLING CAPACITY AT 80/67 DB/WB EVAPORATOR EAT & 95 DB CONDENSER EAT AT 10.7 EER2 EFFICIENCY. LOW AMBIENT COOLING TO -40 DB AMBIENT (PROVIDE WITH LOW AMBIENT COOLING KIT). PROVIDE CONDENSATE PUMP AND WIRED PROGRAMMABLE THERMOSTAT. PROVIDE 12" TALL CONDENSING UNIT STAND AND ALL REQUIRED FAN COIL UNIT MOUNTING ACCESSORIES. FAN COIL UNIT PHYSICAL DATA: 35-23/64"W X 9-11/32"D X 11-25/32" TALL AND 50LB MAX OPERATING WEIGHT. CONDENSING UNIT PHYSICAL DATA: 31-13/16"W X 11-13/16"D X 24-13/16" TALL AND 125LB MAX OPERATING WEIGHT. ELECTRICAL: OUTDOOR UNIT = 208/60/1 VAC, 11 MC1A, 28 MOC.P. POWER FOR INDOOR FAN COIL UNIT TO BE EXTENDED FROM OUTDOOR CONDENSING UNIT.

DIFFUSER & REGISTER SCHEDULE							
SUPPLY AIR				RETURN/EXHAUST AIR			
ITEM	NECK SIZE	CFM RANGE	TYPE	ITEM	MODULE-NECK SIZE	CFM RANGE	TYPE
①	12/12 - 8"φ	0 - 410	S1	①	24/24 - 22/22	0 - 1,000	R1
②	12/12 - 10"φ	0 - 600		②	24/12 - 6"	0 - 225	R2
③	12/12 - 12"φ	0 - 860		③	24/24 - 8"	0 - 225	
				④	24/24 - 10"	0 - 350	
				⑤	24/24 - 12"	0 - 500	
				⑥	24/24 - 14"	0 - 700	

DIFFUSER & REGISTER SPECIFICATIONS	
<u>SUPPLY AIR</u>	
<p><u>TYPE S1:</u> KRUEGER MODEL SHR 24"x24" STEEL LOUVERED PANEL DIFFUSER, NON-ADJUSTABLE 4-WAY HORIZONTAL THROW, WHITE FINISH. FRAME 23 FOR LAY-IN CEILINGS. FRAME 21 FOR GYP. BOARD CEILINGS.</p>	
<u>RETURN/EXHAUST AIR</u>	
<p><u>TYPE R1:</u> KRUEGER MODEL 6490 STEEL PERFORATED FACE RETURN WITH SQUARE NECK FOR DUCTED APPLICATIONS, FRAME 23 FOR LAY-IN CEILINGS, FRAME 20 FOR GYP. BOARD CEILINGS, WHITE FINISH.</p>	
<p><u>TYPE R2:</u> KRUEGER MODEL 6690 STEEL PERFORATED FACE RETURN WITH ROUND NECK FOR DUCTED APPLICATIONS, FRAME 23 FOR LAY-IN CEILINGS, FRAME 22 FOR GYP. BOARD CEILINGS, WHITE FINISH.</p>	




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EMAGE PHASE II
 OFFICE BUILDING

DATE:	05/10/2024
REVISIONS:	

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SHEET TITLE:
MECHANICAL
SCHEDULES

SCALE: N.T.S.
SHEET NUMBER:
M63

COMcheck Software Version COMcheckWeb
Mechanical Compliance Certificate

Project Information

Energy Code: 2015 IECC
 Project Title: Emage II
 Location: Baltimore, Maryland
 Climate Zone: 4a
 Project Type: Alteration

Construction Site: 2132 W. North Ave
 Baltimore, Maryland 21217
 Owner/Agent: Colorado
 Designer/Contractor: Joseph Wittenberg
 981 Lyden Street
 Denver, Colorado 80220
 914665657
 jwitten@jwittenberg.com

Mechanical Systems List

- QuantitySystem Type & Description**
- DDMS-1 (Single Zone):
 Single Package Heat Pump
 Heating Mode: Capacity = 262 kBtu/h.
 Proposed Efficiency = 3.60 COP. Required Efficiency = 3.20 COP
 Cooling Mode: Capacity = 217 kBtu/h. Air Economizer
 Proposed Efficiency = 14.00 EER. Required Efficiency = 10.60 EER
 Proposed Part Load Efficiency = 11.60 IEER. Required Part Load Efficiency = 11.60 IEER
 Fan System: FAN SYSTEM 1 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes
 Fans:
 FAN 1 Supply, Constant Volume, 140 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade, 0.0 total fan efficiency, 0.0 design fan efficiency, fan exception: Single fan <= SHP
 - VRF 1 AND 3 (Unknown):
 VRF Condensing Unit, Air Cooled Heat Pump
 Heating Mode: Capacity = 180 kBtu/h.
 No minimum efficiency requirement applies
 Cooling Mode: Capacity = 144 kBtu/h.
 No minimum efficiency requirement applies
 Fan System: None
 - VRF 2 (Unknown):
 VRF Condensing Unit, Air Cooled Heat Pump
 Heating Mode: Capacity = 180 kBtu/h.
 No minimum efficiency requirement applies
 Cooling Mode: Capacity = 144 kBtu/h.
 No minimum efficiency requirement applies
 Fan System: None
 - LH-2,SKW (Unknown w/ PerimeterSystem):
 Heating: 1 each - Unit Heater, Electric, Capacity = 9 kBtu/h
 No minimum efficiency requirement applies
 Fan System: FAN SYSTEM 2 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes
 Fans:
 FAN 3 Supply, Constant Volume, 350 CFM, 0.5 motor nameplate hp, 0.0 fan efficiency grade, 0.0 total fan efficiency, 0.0 design fan efficiency, fan exception: Part of code listed equipment
 - CUH-1,SKV (Unknown w/ PerimeterSystem):
 Heating: 1 each - Unit Heater, Electric, Capacity = 5 kBtu/h
 No minimum efficiency requirement applies

Project Title: Emage II
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QuantitySystem Type & Description

Fan System: FAN SYSTEM 3 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes
 Fans:
 FAN 4 Supply, Constant Volume, 140 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade, 0.0 total fan efficiency, 0.0 design fan efficiency, fan exception: Single fan <= SHP

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2015 IECC requirements in COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.
Joe Wittenberg - Project Manager 5/7/2024
 Name: Title Signature Date

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COMcheck Software Version COMcheckWeb
Inspection Checklist
 Energy Code: 2015 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 noted in a separate table, a reference to that table is provided.

Section # & Req-ID	Plan Review	Complies?	Comments/Assumptions
C103.2 (P12)	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document units except those the standard are claimed. Load calculations per applicable engineering standards and conditions.	Complies Does Not Not Observable Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

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

Project Title: Emage II
 Data Filename: Report date: 05/07/24
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Section # & Req-ID	Footing / Foundation Inspection	Complies?	Comments/Assumptions
C403.2.4 (P10)	Snow/melt system sensors for future connection to controls. Freeze protection systems have automatic controls installed.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:

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

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 Data Filename: Report date: 05/07/24
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Section # & Req-ID	Plumbing Rough-In Inspection	Complies?	Comments/Assumptions
C404.5, C404.5.2 (P10)	Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C404.6.3 (P17)	Pumps that circulate water between a heater and storage tank have controls that limit operation from start to <= 5 minutes after end of heating cycle.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C404.7 (P18)	Water distribution system that pumps water from a heated-water supply pipe back to the heated-water source through a cool-water supply pipe is a demand recirculation water system. Pumps within the system have controls that start the pump upon receiving a signal from a user or a user of a future or appliance and limits the temperature of the water entering the cold-water piping to 105°F.	Complies Does Not Not Observable Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

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

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Section # & Req-ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.2.6 (ME11)	Thermally ineffective panel surfaces or sensible heating panels have insulation >= R-3.5.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.12 (ME55)	HVAC fan systems at design conditions do not exceed allowable fan system motor nameplate hp or fan system bhp.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.13 (ME117)	Fans have efficiency grade (IEG) >= 07. The total efficiency of the fan at the design point of operation <= 15% of maximum total efficiency of the fan.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.13 (ME11)	Unenclosed spaces that are heated use only radiant heat.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.4 (ME113)	Fault detection and diagnostics installed with air-cooled unitary DX units having economizers.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.6 (ME59)	Demand control ventilation provided for spaces >500 ft ² and >15 people/1000 ft ² occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3.000 cfm.	Complies Does Not Not Observable Not Applicable	Exception: Multiple-zone systems without DDC.
C403.2.6 (ME115)	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to SO ₂ .	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
C403.2.7 (ME57)	Exhaust air energy recovery on systems meeting Table C403.2.7(1) and C403.2.7(2).	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.8 (ME110)	Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and safety hood rating requirements and maximum exhaust rate criteria.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
C403.2.9 (ME60)	HVAC ducts and plenums insulated. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.9 (ME10)	Ducts and plenums sealed based on static pressure and location.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.9.1.3 (ME11)	Ductwork operating >3 in. water column requires air leakage testing.	Complies Does Not Not Observable Not Applicable	Requirement will be met.

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

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Section # & Req-ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.3 (ME42)	Air economizers provided where required, meet the requirements for design capacity, control signal, ventilation controls, high-limit shut-off, integrated economizer control, and provide a means to relieve excess outside air during operation.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.4.2 (ME112)	Closed-circuit cooling tower within heat pump loop have either automatic bypass valve or lower leakage positive closure dampers. Open-circuit tower within heat pump loop have automatic valve to bypass all heat pump water flow around the tower. Open or closed-circuit cooling towers used in conjunction with a separate heat exchanger have heat loss by shutting down the circulation pump on the cooling tower loop.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
C403.4.4 (ME119)	Multiple zone VAV systems with DDC of individual zone boxes have static pressure reset/reat control.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply. See the Mechanical Systems list for values.
C408.2.2 (ME53)	Air outlets and zone terminal devices have means for air balancing.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.5 (ME123)	Refrigerated display cases, walk-in coolers or walk-in freezers served by remote compressors and remote condensers not located in a condensing unit, have fan-powered condensers that comply with Sections C403.5.1 and refrigeration compressor systems that comply with C403.5.2.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:

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

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Section # & Req-ID	Final Inspection	Complies?	Comments/Assumptions
C403.3 (F132)	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.4 (F127)	HVAC systems and equipment capacity does not exceed calculated loads.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.4 (F147)	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.4 (F142)	Heat pump controls prevent supplemental electric resistance heat from coming on when not needed.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.4 (F138)	Thermostatic controls have a 5°F deadband.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.4 (F120)	Temperature controls have setback overlap restrictions.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.4 (F139)	Each zone equipped with setback controls using automatic time clock or programmable control system.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.4 (F140)	Automatic Controls: Setback to 55°F (heat) and 65°F (cool). 7-day clock, 2-hour occupant override, 10-hour backup.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.4 (F141)	Systems include optimum start controls.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
C408.2.1 (F108)	Commissioning plan developed by registered design professional or approved agency.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C408.2.3 (F111)	HVAC equipment has been tested to ensure proper operation.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C408.2.3 (F110)	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	Complies Does Not Not Observable Not Applicable	Requirement will be met.

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

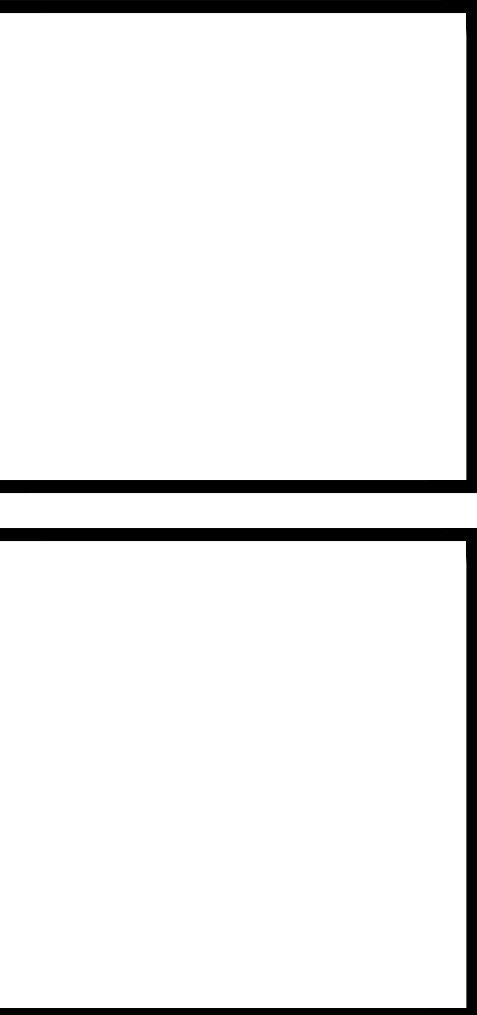
Project Title: Emage II
 Data Filename: Report date: 05/07/24
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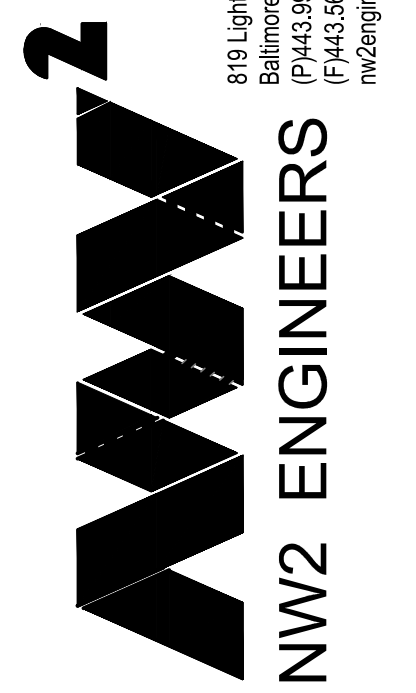
Section # & Req-ID	Final Inspection	Complies?	Comments/Assumptions
C408.2.3 (F130)	Economizers have been tested to ensure proper operation.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C408.2.4 (F129)	Preliminary commissioning report completed and certified by registered design professional or approved agency.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C408.2.5 (F17)	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C408.2.5 (F143)	An air and/or hydronic system balancing report is provided for HVAC systems.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C408.2.5 (F130)	Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy.	Complies Does Not Not Observable Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

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

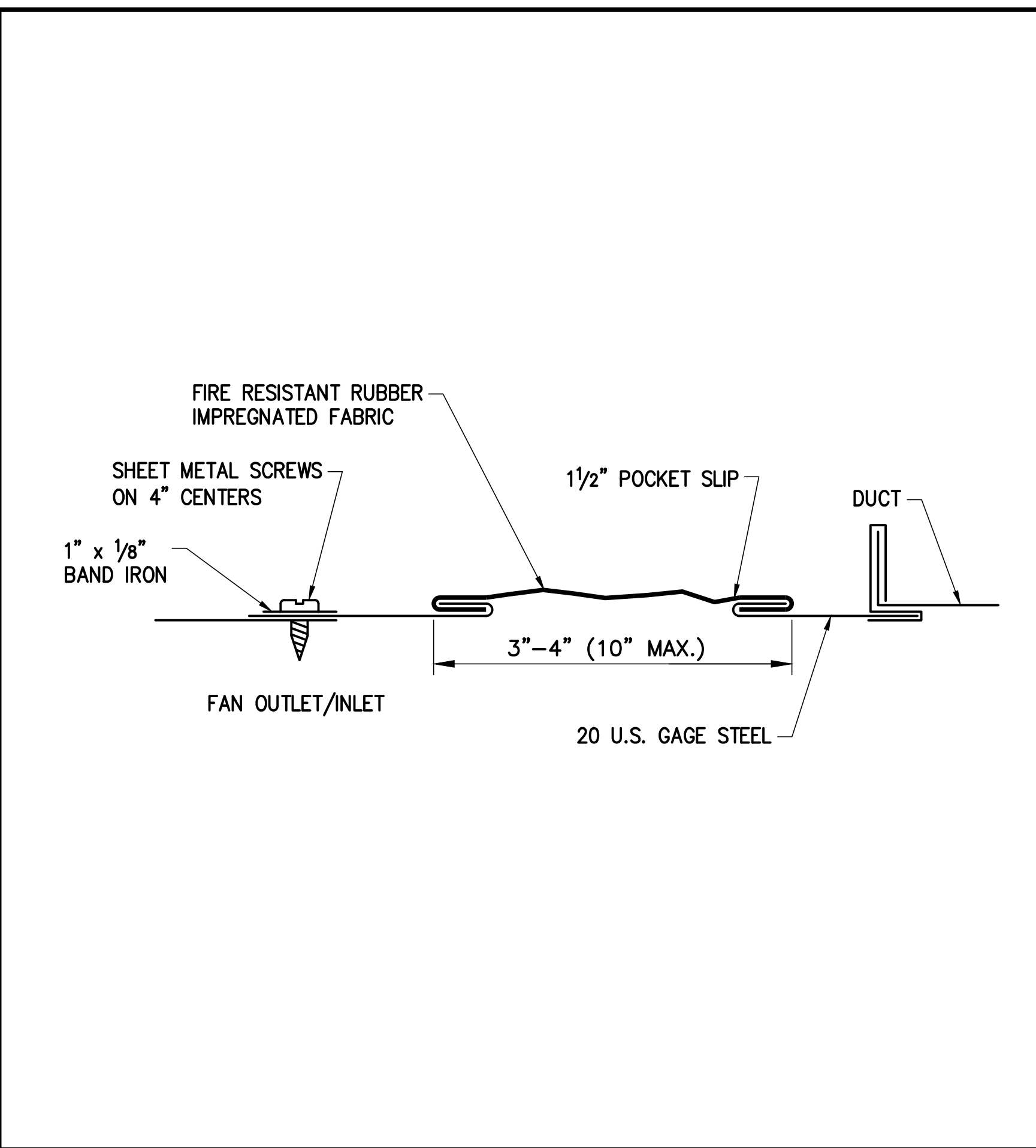
Project Title: Emage II
 Data Filename: Report date: 05/07/24
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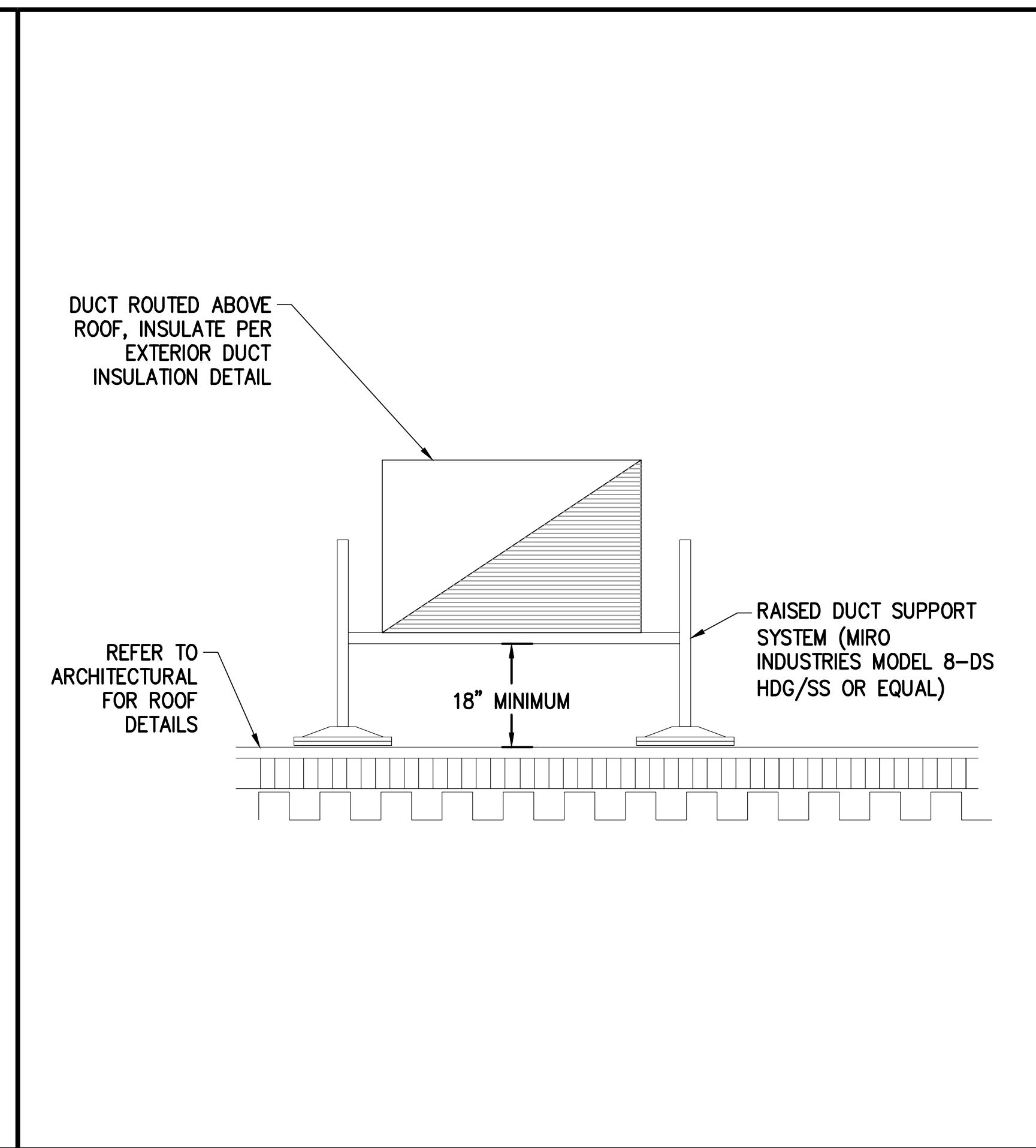

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DATE: 05/10/2024
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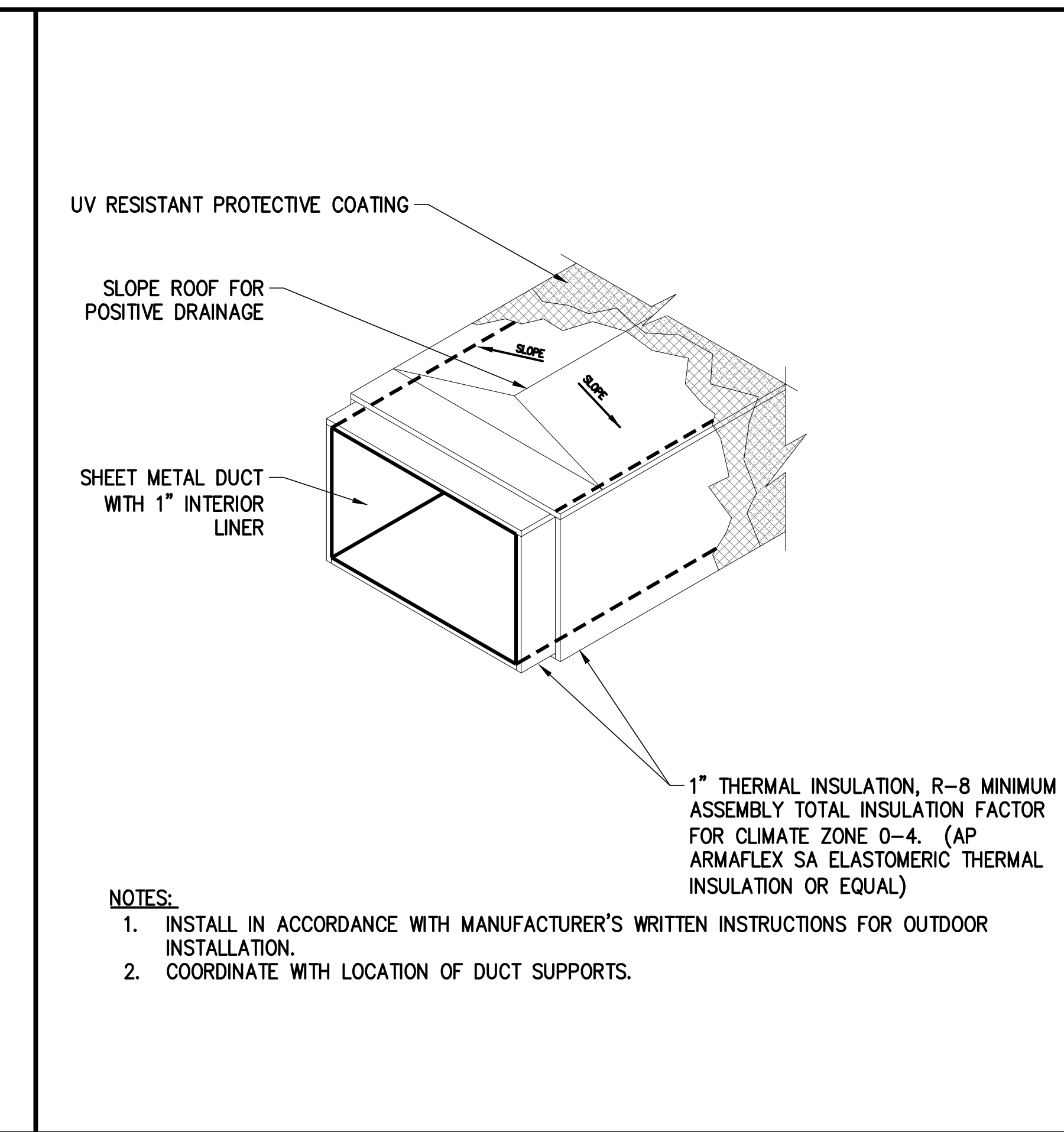
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 MECHANICAL
 COMCHECK
 SCALE: N.T.S.
 SHEET NUMBER:
M64



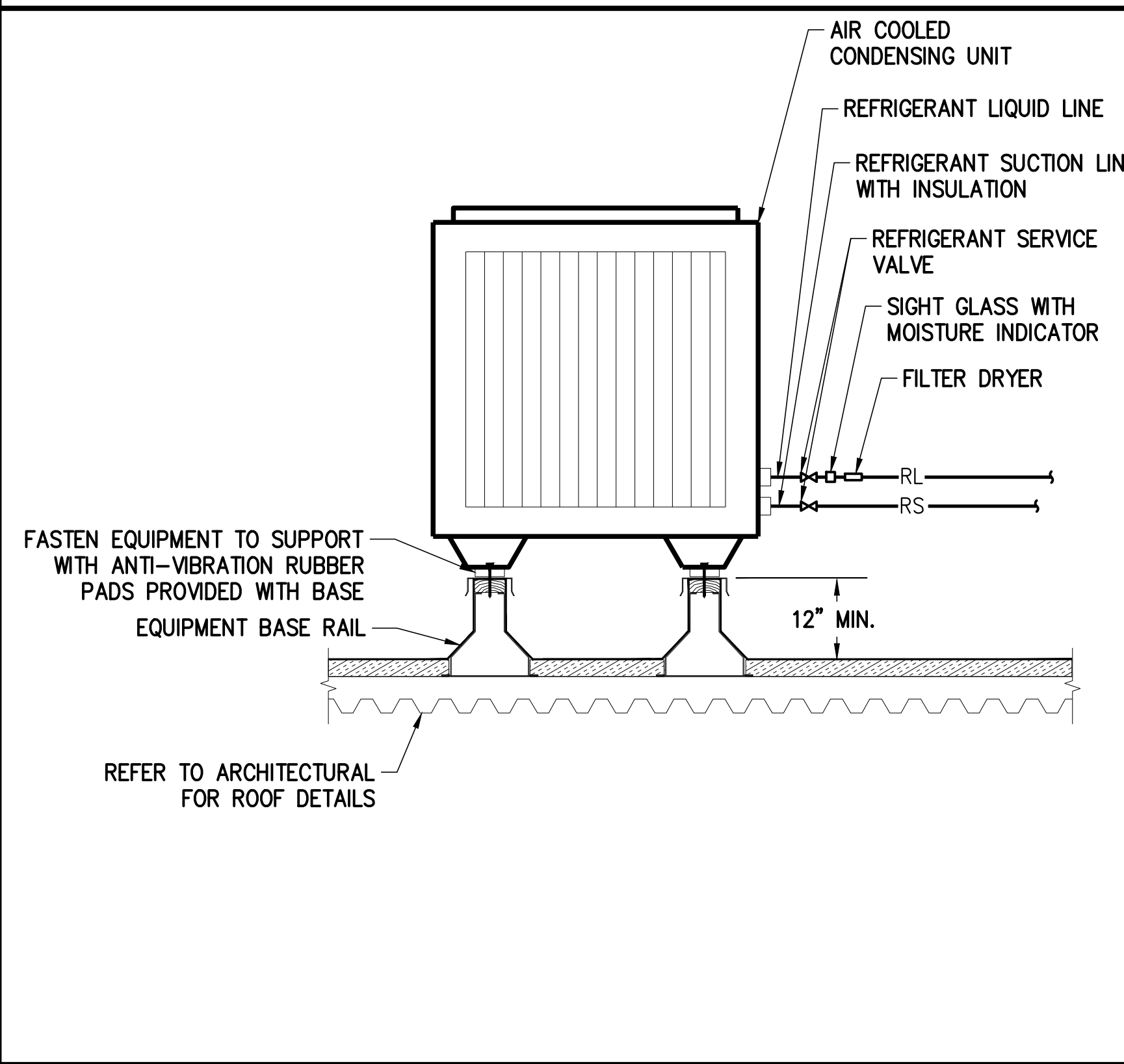
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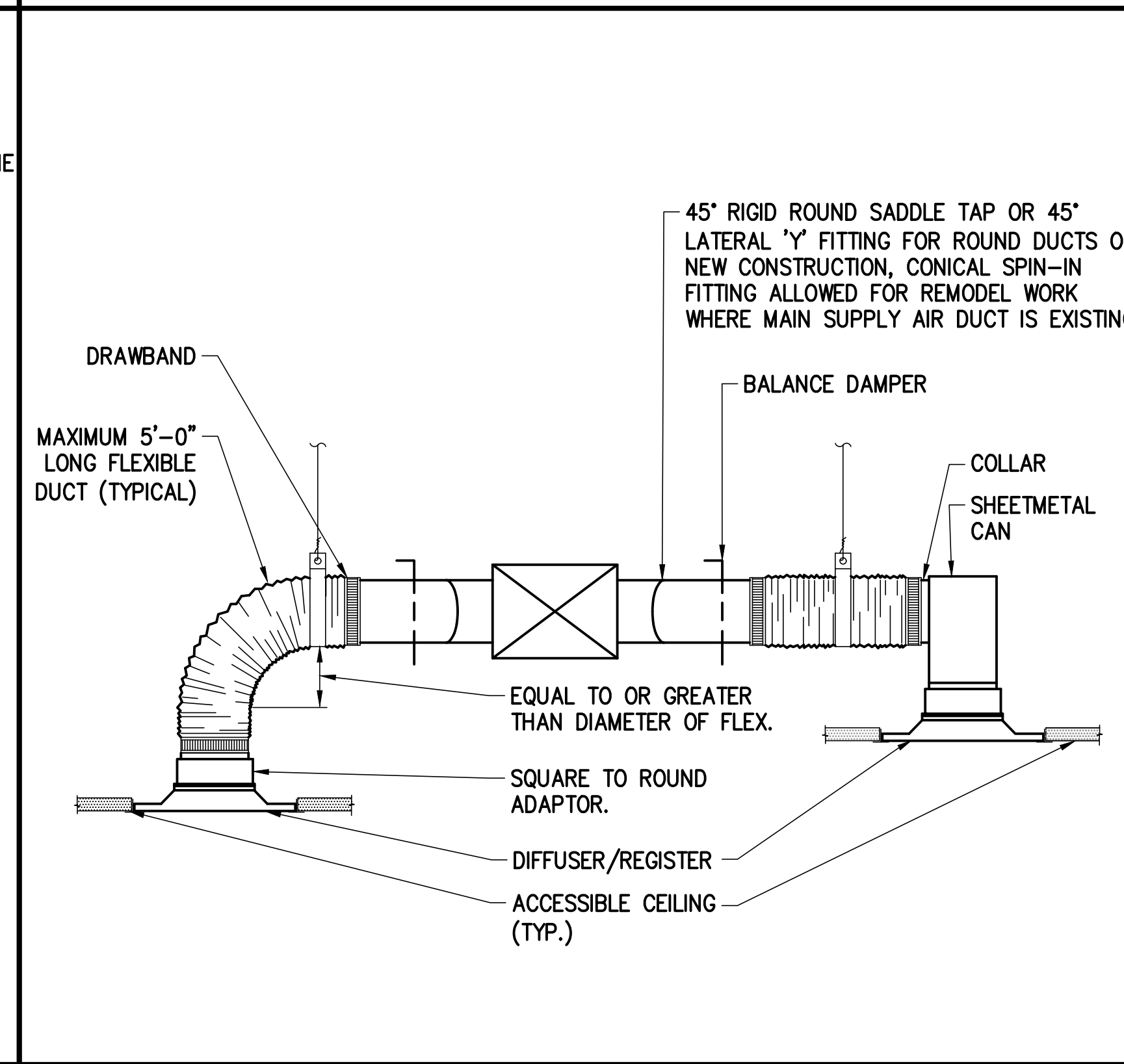
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NO SCALE



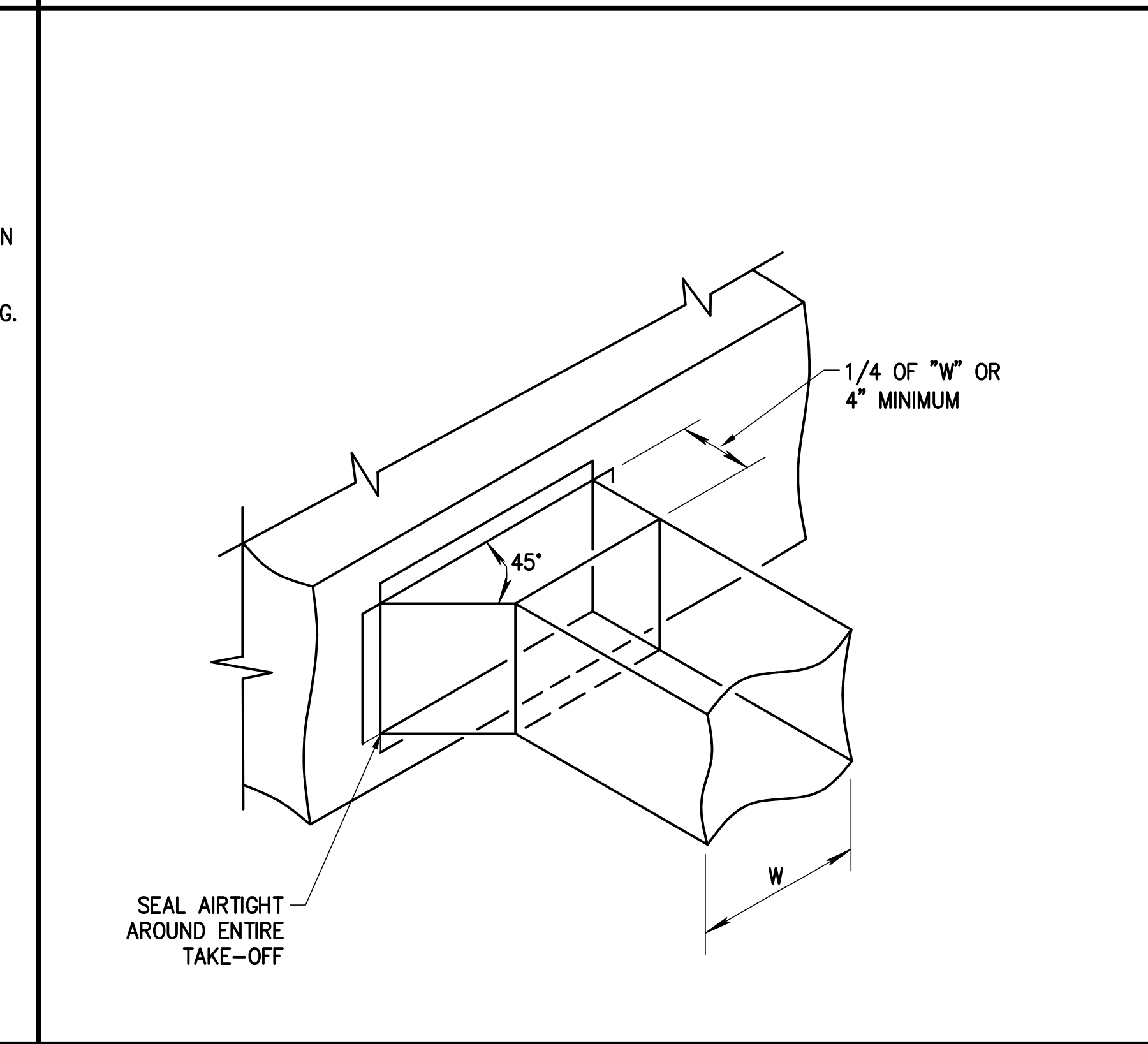
EXTERIOR DUCT INSULATION DETAIL
NO SCALE



ROOF MOUNTED CONDENSING UNIT DETAIL
NO SCALE



DIFFUSER MOUNTING DETAIL
NO SCALE



45 DEGREE TAKE-OFF DETAIL
NO SCALE

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EMAGE PHASE II OFFICE BUILDING

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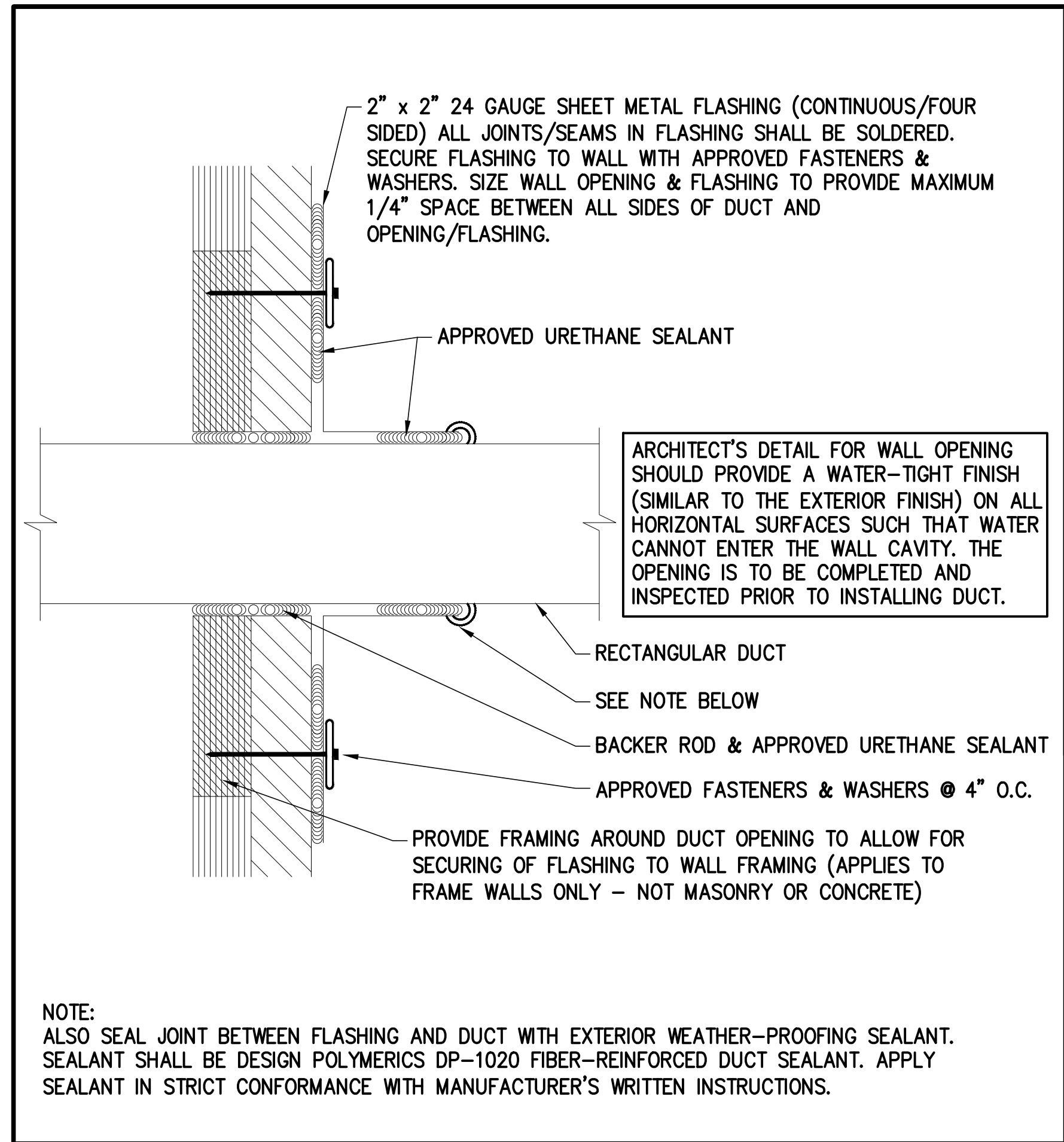
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PERMIT ISSUE

SHEET TITLE:
MECHANICAL
DETAILS

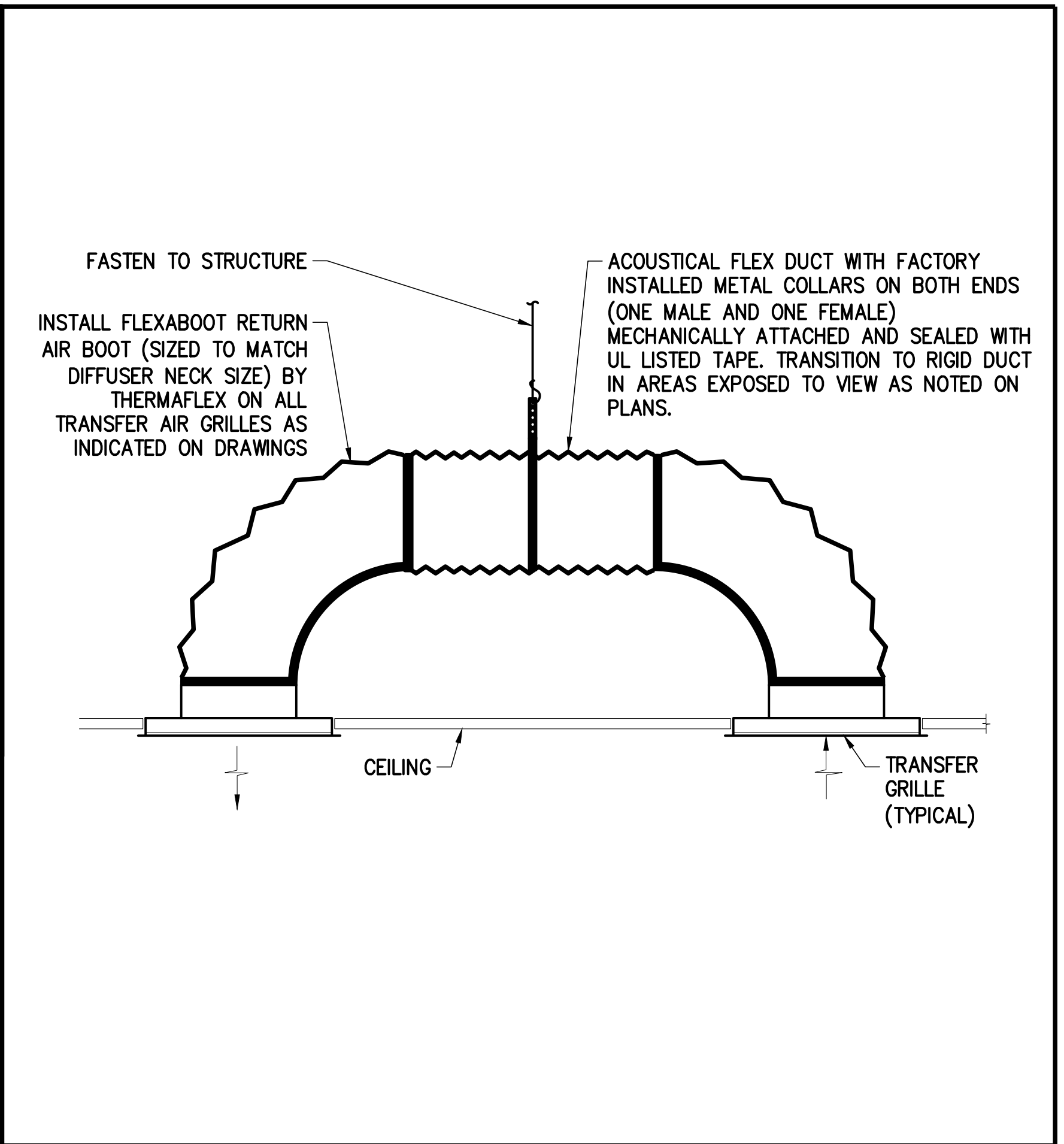
SCALE: N.T.S.
SHEET NUMBER:
M71



EXTERIOR DUCT THROUGH WALL DETAIL

NO SCALE

2
M72



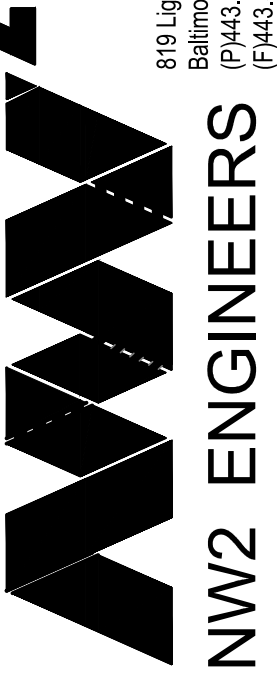
TRANSFER AIR ASSEMBLY

NO SCALE

1
M72

**EMAGE PHASE II
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MECHANICAL
DETAILS

SCALE: N.T.S.
SHEET NUMBER:

M72

GENERAL NOTES

1. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE STATE CODES, LOCAL CODES, AND OWNER'S STANDARDS INDICATED BY THE CONSTRUCTION DOCUMENTS.
2. PLUMBING DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS. TAKE ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS, CERTIFIED EQUIPMENT DRAWINGS AND FROM THE STRUCTURE ITSELF BEFORE FABRICATING ANY WORK, VERIFY ALL SPACE REQUIREMENTS COORDINATING WITH OTHER TRADES, AND INSTALL THE SYSTEMS IN THE SPACE PROVIDED WITHOUT EXTRA CHARGES TO THE OWNER.
3. CONTRACTOR SHALL COORDINATE WORK INDICATED WITH MECHANICAL, ELECTRICAL, FIRE PROTECTION, STRUCTURAL, CIVIL, AND ARCHITECTURAL DIVISIONS. CONTRACTOR SHALL VERIFY SIZE & LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCING WORK, COORDINATE WITH OTHER TRADES AND MAKE FINAL CONNECTION. VERIFY FIT OF PLUMBING SYSTEMS PRIOR TO FABRICATION. COORDINATE ALL CHASE, SLEEVE, AND SLAB BLOCK-OUT REQUIREMENTS BEFORE CONCRETE IS POURED OR BLOCK IS SET.
4. PROVIDE ALL EQUIPMENT SCHEDULED OR INDICATED ON THE DRAWINGS BUT NOT INCLUDED WITHIN THE SPECIFICATIONS INCLUDING ANY REQUIRED BUT NOT LISTED MISC ITEMS REQUIRED TO PROVIDE COMPLETE OPERATIONAL SYSTEMS AS INDICATED WHETHER SPECIFICALLY CALLED FOR OR NOT. INSTALLATION SHALL CONFORM TO MANUFACTURERS RECOMMENDATIONS AND APPLICABLE CODES. PROVIDE SUBMITTALS FOR ALL PROPOSED FIXTURES, EQUIPMENT AND MATERIALS TO BE UTILIZED. PROVIDE OPERATION AND MAINTENANCE MANUAL FOR ALL SYSTEMS AND EQUIPMENT AT END OF PROJECT.
5. ELECTRICAL CHARACTERISTICS OF PLUMBING EQUIPMENT SHALL BE VERIFIED WITH ELECTRICAL DRAWINGS AND ELECTRICAL CONTRACTOR PRIOR TO EQUIPMENT ORDER RELEASE. ADDITIONAL ELECTRICAL WORK RESULTING FROM EQUIPMENT SUBSTITUTION IS THE RESPONSIBILITY OF THIS CONTRACTOR.
6. DRAIN PIPING FROM EQUIPMENT SHALL BE ROUTED SO AS NOT TO CREATE A TRIPPING HAZARD.
7. ITEM DESIGNATIONS INDICATED HEREON ARE FOR PURPOSES OF THESE DOCUMENTS ONLY. CONTRACTOR SHALL VERIFY WITH OWNERS REPRESENTATIVE ACTUAL "TAGGING" INFORMATION TO BE PROVIDED FOR EACH ITEM OF MECHANICAL EQUIPMENT PRIOR TO NAMEPLATE ORDER RELEASE.
8. PROVIDE VALVE TAGS AND PIPE IDENTIFICATION BANDS. TAGS SHALL BE BRASS WITH CHAIN. IDENTIFICATION BANDS SHALL BE LOCATED EVERY 25 FEET AND ON EITHER SIDE OF INTERMEDIATE BARRIER.
9. PROVIDE 18" X 18" MINIMUM ACCESS DOOR IN INACCESSIBLE CEILINGS AND WALLS FOR EQUIPMENT AND VALVES REQUIRING ACCESS OR ADJUSTMENT. COORDINATE LOCATIONS AND SUBMIT TO ARCHITECT FOR APPROVAL PRIOR TO BEGINNING WORK.
10. VALVES SHALL BE LOCATED WITHIN EASY REACH OF CEILING WHERE CEILINGS OCCUR & DROPPED TO WITHIN A MAXIMUM 10'-0" ABOVE FINISHED FLOOR WHERE NO CEILING OCCURS.
11. PROVIDE CLEANOUTS WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY JURISDICTIONAL PLUMBING CODE.
12. VTR'S SHALL BE 10'-0" MINIMUM FROM BUILDING AIR INTAKES AND OPENINGS INTO BUILDING. COORDINATE WITH MECHANICAL DRAWINGS AND CONTRACTOR.
13. ALL WORK UNDER THIS CONTRACT IS TO FIVE (5) FEET OUTSIDE THE BUILDING.
14. CLEAN, TEST, AND SANITIZE ALL PLUMBING IN ACCORDANCE WITH REQUIREMENTS OF JURISDICTIONAL PLUMBING AND HEALTH CODES.
15. WHERE PIPES PASS THROUGH FIRE-RATED FLOOR OR WALLS, SEAL WITH MATERIALS EQUAL TO 3M FIRE BARRIER, MEETING TESTING PER ASTM-E-814 (UL 1479). USE CAULK OR PUTTY TYPE. ALL EXTERIOR WALL AND ROOF PENETRATIONS SHALL BE SEALED WATERPROOF.
16. AT THE COMPLETION OF THE WORK AND PRIOR TO FINAL ACCEPTANCE, ALL PARTS OF THE WORK INSTALLED UNDER THIS SPECIFICATION SHALL BE THOROUGHLY CLEANED.
17. ALL EQUIPMENT, MATERIALS, AND INSTALLATION IS TO BE WARRANTED FOR ONE YEAR TO BE FREE FROM DEFECT. PROVIDE WRITTEN WARRANTY TO OWNER.
18. THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE CONTRACTOR'S SAFETY PRECAUTIONS OR TO MEANS, METHODS, TECHNIQUES, CONSTRUCTION SEQUENCES, OR PROCEDURES REQUIRED TO PERFORM HIS WORK.
19. PATCH AND REPAIR TO MATCH EXISTING, ANY WALL/CEILINGS TO BE ACCESSED TO ROUTE PIPING.

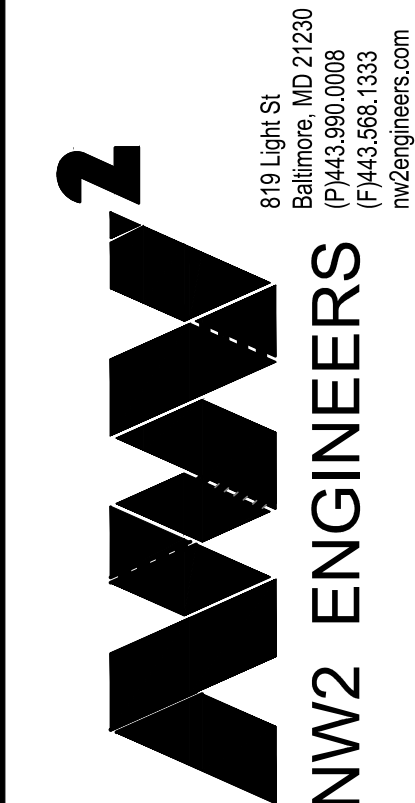
PLUMBING LEGEND

ABBR.	SYMBOL	DESCRIPTION
S OR W	---	SOIL, WASTE OR SEWER BELOW GRADE OR FLOOR
S OR W	---	SOIL, WASTE OR SEWER ABOVE GRADE OR FLOOR
FCO/GCO	---○---	FLOOR OR GRADE CLEANOUT
CO	---	CLEANOUT
V	- - - - -	VENT
CW	---	COLD WATER
HW	---	HOT WATER
HWR	---	HOT WATER RETURN
WHA	■	WATER HAMMER ARRESTOR
D	-○-	DRAIN
OD	-○○-	OVERFLOW DRAIN
SOV	---X---	SHUT-OFF VALVE
TV	---K---	THROTTLING VALVE
STR	---S---	STRAINER
U	---#---	UNION
REL V	---F---	RELIEF VALVE
HB	---+---	HOSE BIBB
F	---f---	FIRE LINE
TH	□ (0'-100" RANGE)	THERMOMETER
FD	⊖	FLOOR DRAIN
FS	⊖	FLOOR SINK
RD	⊖	ROOF DRAIN
ORD	⊖	OVERFLOW ROOF DRAIN
VTR	⊖	VENT THRU ROOF
POC	---	POINT OF CONNECTION
PC	←	PIPE CAP
AFF	---	ABOVE FINISHED FLOOR
AFG	---	ABOVE FINISHED GRADE
UNO	---	UNLESS NOTED OTHERWISE
AAV	---	AIR ADMITTANCE VALVE
E	---	EXISTING
N	---	NEW
R	---	RELOCATED

SHEET INDEX

ISSUE	SHEET NO.	SHEET DESCRIPTION
	● P01	PLUMBING COVER SHEET
	● P02	PLUMBING SPECIFICATIONS
	● P1	LEVEL 1 PLUMBING FLOOR PLAN
	● P2	LEVEL 2 PLUMBING FLOOR PLAN
	● P3	LEVEL 3 PLUMBING FLOOR PLAN
	● P61	PLUMBING SCHEDULES
	● P71	PLUMBING DETAILS

EMAGE PHASE II
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DATE: 05/10/2024
REVISIONS:

PERMIT ISSUE

SHEET TITLE:
PLUMBING COVER SHEET

SCALE: N.T.S.
SHEET NUMBER:

P01

FIRE PROTECTION SPECIFICATIONS

WORK SHALL COMPLY WITH LOCAL CODES AND ORDINANCES AND NATIONAL FIRE PROTECTION ASSOCIATION (HEREAFTER NFPA) STANDARD 13 – STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS. MATERIALS AND EQUIPMENT SHALL BE NEW AND GUARANTEED FOR ONE YEAR FROM THE DATE OF ACCEPTANCE. MATERIALS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE SPECIFICATION. A COMPLETE SYSTEM OF FIRE SPRINKLERS COMPLYING WITH THE REFERENCED STANDARDS AND REGULATIONS AND AUTHORITIES HAVING JURISDICTION SHALL BE PROVIDED FOR COVERAGE OF ENTIRE BUILDING. INCIDENTAL ITEMS NOT INDICATED OR MENTIONED IN THESE SPECIFICATIONS THAT ARE REQUIRED TO PROVIDE A COMPLETE AND OPERABLE SYSTEM SHALL BE PROVIDED.

FIRE SPRINKLER PIPING ABOVE GRADE SHALL BE SCHEDULE 40 BLACK STEEL WITH APPROVED MALLEABLE IRON THREADED FITTINGS. WHERE APPROVED BY AUTHORITIES HAVING JURISDICTION THIN-WALLED STEEL PIPE MEETING THE REQUIREMENTS SET FORTH IN NFPA 13 MAY BE USED. WHERE APPROVED BY AUTHORITIES HAVING JURISDICTION WELDED FITTINGS OF THE SAME CLASS AS THE PIPE OR GROOVE JOINT COUPLINGS AND FITTINGS MAY BE USED AS DIRECTED BY THE MANUFACTURER FOR FIRE SPRINKLER SERVICE. PIPE HANGERS SHALL CONFORM TO NFPA 13.

FIRE SPRINKLER PIPE BELOW GRADE SHALL BE SCHEDULE 40 BLACK STEEL WITH WROUGHT STEEL WELDED FITTINGS. FLANGED STEEL FITTINGS OR FLANGED CAST IRON FITTINGS MAY BE USED. PIPE AND FITTINGS SHALL BE WRAPPED WITH A DOUBLE LAYER OF POLYETHYLENE TAPE AND ENCASED WITH POLYURETHANE INSULATION WITH HIGH DENSITY POLYETHYLENE JACKET AND HEAT SHRINK SLEEVES. SLEEVES SHALL BE PROVIDED FOR FLOOR AND FOOTING PENETRATIONS.

FIRE SPRINKLER PIPING FOR DRY SPRINKLER SYSTEMS SHALL BE SCHEDULE 40 BLACK STEEL WITH APPROVED MALLEABLE IRON THREADED FITTINGS. WHERE APPROVED BY AUTHORITIES HAVING JURISDICTION WELDED FITTINGS OF THE SAME CLASS AS THE PIPE OR CUT GROOVE JOINT COUPLINGS AND FITTINGS MAY BE USED AS DIRECTED BY THE MANUFACTURER FOR FIRE SPRINKLER SERVICE. PIPE HANGERS SHALL CONFORM TO NFPA 13. ROLL GROOVED PIPE AND GALVANIZED COATINGS ARE NOT ALLOWED.

VALVES SHALL BE UNDERWRITERS APPROVED AND FM LISTED AND SHALL BE SELECTED FOR APPROPRIATE SYSTEM OPERATING PRESSURES.

SPRINKLERS IN EXPOSED AREAS SHALL BE STANDARD UPRIGHT TYPE WITH GUARD. SPRINKLERS IN AREAS WITH SUSPENDED CEILING SHALL BE SEMI-RECESSED PENDANT TYPE WITH MATCHING CHROME PLATED, ESCUTCHEON PLATE. FUSIBLE LINKS SHALL BE FUSIBLE-SOLDER LINK TYPE TEMPERATURE RATED FOR SPECIFIC AREA HAZARD. SPRINKLER HEADS INSTALLED IN LAY-IN CEILING TILES SHALL BE INSTALLED IN A UNIFORM MANNER WITH A 2" TOLERANCE TO CENTER OF THE CEILING TILE AND ALIGNED WITH OTHER CEILING DEVICES.

ENGINEERING DRAWINGS AND CALCULATIONS, APPROVED BY AUTHORITIES HAVING JURISDICTION SHALL BE PREPARED AND SUBMITTED TO THE ARCHITECT. REVIEW AND APPROVAL BY AUTHORITIES HAVING JURISDICTION SHALL BE COMPLETED PRIOR TO SUBMITTING TO THE ARCHITECT. DESIGN SHALL BE BASED ON OCCUPANCY HAZARD CLASSIFICATION VERIFIED AND CONFIRMED WITH AUTHORITIES HAVING JURISDICTION AND THE OWNERS INSURANCE CARRIER. THE MANUFACTURERS DATA SHALL BE SUBMITTED TO THE ARCHITECT FOR SPRINKLERS, VALVES AND SPECIALTIES. THE SUBMITTED DATA SHALL INCLUDE PERFORMANCE RATINGS, ROUGH-IN DETAILS, WEIGHTS, SUPPORT REQUIREMENTS, AND PIPING CONNECTIONS.

EXISTING CONDITIONS SHALL BE VERIFIED IN THE FIELD. VOLUME AND PRESSURE OF INCOMING WATER SUPPLY SHALL BE VERIFIED BY WATER FLOW TEST. WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES. MAINS AND BRANCHES SHALL BE ROUTED TO AVOID INTERFERENCES WITH DUCTWORK, PLUMBING, ELECTRICAL CONDUITS AND STRUCTURAL MEMBERS. THE ARCHITECT SHALL BE NOTIFIED IN THE EVENT OF A DISCREPANCY. THE INSTALLATION SHALL NOT PROCEED IN THE AREAS OF DISCREPANCY UNTIL SUCH DISCREPANCIES HAVE BEEN FULLY RESOLVED.

CUTTING OF EXISTING OR COMPLETED CONSTRUCTION SHALL BE APPROVED BY THE ARCHITECT PRIOR TO SUCH CUTTING. STRUCTURAL MEMBERS SHALL NOT BE CUT EXCEPT UNDER THE SPECIFIC INSTRUCTION AND SUPERVISION OF THE ARCHITECT. SLEEVES, CAPS, PLATES, ESCUTCHEONS, FLASHING, ETC. SHALL BE PROVIDED TO CLOSE OPENINGS MADE FOR THE SPRINKLER SYSTEM.

SPRINKLER SYSTEMS SHALL BE TESTED IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF NFPA 13 AND ANY ADDITIONAL REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. ALL TESTS AND INSPECTIONS REQUIRED BY THE REFERENCED STANDARDS AND REGULATIONS AND AUTHORITIES HAVING JURISDICTION SHALL BE PERFORMED AND SHALL BE WITNESSED AND APPROVED BY THE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL BEAR THE COST OF ALL REQUIRED TESTING OF WORK, FURNISHING ALL LABOR, POWER AND EQUIPMENT.

THE OWNER, BUILDING DEPARTMENT AND THE FIRE DEPARTMENT SHALL HAVE THE OPTION OF WITNESSING ALL TESTS. AT LEAST THREE WORKING DAYS NOTICE SHALL BE PROVIDED PRIOR TO TESTING.

EXPOSED PORTIONS OF THE FIRE SPRINKLER SYSTEM SHALL BE THOROUGHLY CLEANED, REMOVING LABELS AND TRACES OF FOREIGN SUBSTANCE. ONLY CLEANING SOLUTIONS APPROVED BY THE MANUFACTURER OF THE ITEM TO BE CLEANED SHALL BE USED. DAMAGE TO FINISHED SURFACES SHALL BE AVOIDED.

CONTRACTOR SHALL SUBMIT RECORD DRAWINGS, OPERATION MANUALS AND MAINTENANCE MANUALS AS REQUIRED BY ARCHITECT UPON COMPLETION.

CONTROL VALVES, DRAIN VALVES AND GAUGES SHALL BE INSPECTED AND CHECKED FOR CORRECT OPERATION BY THE CONTRACTOR PRIOR TO ACCEPTANCE OF WORK.

PLUMBING SPECIFICATIONS

ALL WETTED PARTS USED TO CONVEY WATER ANTICIPATED FOR HUMAN CONSUMPTION SHALL BE CERTIFIED LEAD-FREE IN COMPLIANCE WITH NSF/ANSI-372 OR NSF/ANSI 61G.

WATER PIPING ABOVE GRADE SHALL BE TYPE L, HARD DRAWN COPPER WITH WROUGHT COPPER FITTINGS SOLDERED WITH 95-5 TIN-ANTIMONY SOLDER OR BRAZED WITH SILVER BASED FILLER METAL. SDR9 CROSSLINKED POLYETHYLENE "PEX-A OR PEX-B" TUBING MANUFACTURED IN ACCORDANCE WITH ANSI/NSF 61, ANSI/NSF 372, ANSI/NSF 14, ASTM F876 AND ASTM F877 WITH COMPRESSION FITTINGS BY SAME MANUFACTURER AS TUBING MAY BE USED FOR RUN-OUTS TO INDIVIDUAL FIXTURES.

WATER PIPING BELOW GRADE 3/4" THROUGH 2" SHALL BE TYPE K, SOFT DRAWN COPPER WITH WROUGHT COPPER FITTINGS. WATER PIPING BELOW GRADE 3" AND UP SHALL BE AWWA C151 AND AWWA C104 CEMENT LINED DUCTILE IRON WITH AWWA C111 PUSH-ON SINGLE GASKET FITTINGS, PROVIDE A SEAL COAT OF ASPHALTIC MATERIAL AROUND ALL BURIED DUCTILE IRON PIPING. DOMESTIC WATER SERVICES EXTENDED UP TO BUILDING ARE TO BE INSTALLED ACCORDING TO JURISDICTIONAL WATER DEPARTMENT STANDARDS AND CIVIL ENGINEERING UTILITY DRAWINGS.

SHUT-OFF VALVES ARE TO BE BRONZE BALL VALVES, TWO PIECE OR UNI-BODY FULL PORT WITH CHROME PLATED BALL, REINFORCED TFE SEATS AND STUFFING BOX, LEVER HANDLE AND SCREWED OR SOLDER ENDS. 400 PSI W.O.G., 150 PSI SATURATED STEAM.

WATER PIPING SHALL BE TESTED WITH WATER AT 125 PSIG. TEST PRESSURE SHALL BE MAINTAINED FOR A MINIMUM OF 30 MINUTES WITH NO LOSS. DOMESTIC WATER PIPING SHALL BE DISINFECTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE JURISDICTIONAL HEALTH AND PLUMBING CODES.

ABOVE GRADE SOIL, WASTE, VENT AND STORM DRAIN PIPING SHALL BE NO-HUB, CAST IRON. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

BELOW GRADE SOIL, WASTE, VENT AND STORM DRAIN TO BE SCHEDULE 40 SOLID CORE DWV PVC OR ABS PIPE AND FITTINGS MANUFACTURED FROM VIRGIN RIGID PVC (POLYVINYL CHLORIDE) VINYL COMPOUNDS WITH A CELL CLASS OF 12454 AS IDENTIFIED IN ASTM D 1784 WITH SOLVENT WELDED JOINTS CONFORMING TO ASTM D-2665. INSTALLATION SHALL BE IN ACCORDANCE WITH THE JURISDICTIONAL PLUMBING CODE AND MANUFACTURER'S RECOMMENDATIONS. SOIL AND WASTE PIPING 2-1/2" AND SMALLER SHALL BE SLOPED 1/4" PER FOOT AND PIPING 3" AND LARGER SHALL BE SLOPED 1/8" PER FOOT UNLESS NOTED OTHERWISE ON DRAWINGS. STORM DRAIN PIPING SHALL BE SLOPED 1/8" PER FOOT UNLESS NOTED OTHERWISE ON DRAWINGS.

WALL CLEANOUTS FOR WASTE PIPING SHALL BE FURNISHED AND INSTALLED BELOW SINKS, LAVATORIES AND URINALS IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE JURISDICTIONAL PLUMBING CODE. FLOOR/GRADE CLEANOUTS FOR WASTE PIPING SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE JURISDICTIONAL PLUMBING CODE.

SOIL, WASTE, VENT AND STORM DRAIN PIPING SHALL BE TESTED WITH WATER UNDER PRESSURE EQUIVALENT TO THE HIGHEST POINT AND 10' MINIMUM. THE SYSTEM OR PORTION THEREOF SHALL BE UNDER PRESSURE FOR A MINIMUM OF 15 MINUTES BEFORE INSPECTION.

EQUIPMENT AND CONDENSATE DRAINS SHALL BE TYPE M HARD DRAWN COPPER TUBING WITH WROUGHT COPPER FITTINGS. COPPER TUBING SHALL BE SOLDERED WITH 95-5 TIN-ANTIMONY SOLDER OR BRAZED WITH SILVER BASED FILLER MATERIAL.

DOMESTIC WATER AND STORM PIPING SHALL BE INSULATED WITH NONCOMBUSTIBLE, PREFORMED, FIBERGLASS, PIPE INSULATION WITH A CONDUCTIVITY K-VALUE OF 0.21-0.28 AT 100°F MEAN RATING TEMP AND A FLAME SPREAD/ SMOKE DEVELOPED RATING OF 25/50 OR LESS. INSULATION SHALL HAVE A KRAFT REINFORCED FOIL VAPOR BARRIER WITH SELF-SEALING ADHESIVE JOINTS. INSULATION AT HANGERS AND CLAMPS SHALL BE OF HIGH DENSITY INSULATING MATERIAL. INSULATED PIPING EXPOSED TO VIEW SHALL BE COVERED AND FINISHED WITH A 30 MIL. THICK PVC JACKET.

PIPE INSULATION SCHEDULE
DOMESTIC COLD WATER COPPER PIPING = 1/2" THICK INSULATION
DOMESTIC HOT WATER SUPPLY PIPING (SMALLER THAN 1-1/2") = 1" THICK INSULATION
DOMESTIC HOT WATER RECIRC PIPING (SMALLER THAN 1-1/2") = 1" THICK INSULATION
DOMESTIC HOT WATER SUPPLY PIPING (1-1/2" AND LARGER) = 1-1/2" THICK INSULATION
DOMESTIC HOT WATER RECIRC PIPING (1-1/2" AND LARGER) = 1-1/2" THICK INSULATION

- * RUN-OUTS TO INDIVIDUAL FIXTURES DO NOT NEED TO BE INSULATED UNLESS PROVIDED WITH HEAT TRACE HOT WATER TEMPERATURE MAINTENANCE SYSTEM
- ** INSULATE FIRST 8 FEET OF HOT AND COLD WATER PIPING BETWEEN WATER HEATER AND HEAT TRAPS ON NON-RECIRCULATING SYSTEMS WITH 1" THICK INSULATION
- *** INSULATE ALL HEAT TRACED PIPING WITH 1/2" MINIMUM THICKNESS INSULATION
- **** PLASTIC PEX COLD WATER PIPING IS NOT REQUIRED TO BE INSULATED

WATER HAMMER ARRESTERS EQUAL TO SIOUX CHIEF HYDRA-RESTER SHALL BE FURNISHED AND INSTALLED ON HOT AND COLD WATER PIPING SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS. WATER HAMMER ARRESTERS SHALL BE PDI CERTIFIED AND ANSI APPROVED.

PIPING SHALL BE IDENTIFIED WITH PLASTIC PIPE MARKERS IN CLEAR VIEW AND ALIGNED WITH AXIS OF PIPING. SERVICE AND FLOW DIRECTION SHALL BE INDICATED. DISTANCE BETWEEN IDENTIFICATION LOCATIONS SHALL NOT EXCEED 20 FEET. IDENTIFICATION SHALL BE LOCATED AT EACH VALVE, RUNOUT AND ON BOTH SIDES OF AN OBSTRUCTION.

PIPE HANGERS FOR INSULATED PIPE SIZES 1/2" TO 1-1/2" SHALL BE ADJUSTABLE, STEEL, BAND TYPE. PIPE HANGERS FOR INSULATED PIPE SIZES 2" AND OVER SHALL BE ADJUSTABLE, STEEL CLEVIS TYPE. SHIELDS SHALL BE USED WHERE HANGER SUPPORTS INSULATED PIPE. SHIELDS SHALL BE 18 GAGE GALVANIZED STEEL OVER INSULATION 180 DEGREES AND A MINIMUM OF 12 INCHES LONG. PIPE HANGERS FOR BARE PIPE SHALL BE ADJUSTABLE, MALLEABLE STEEL, SPLIT RING TYPE. BARE COPPER PIPE SHALL BE PROTECTED FROM CORROSION BY TRISOLATOR OR SIMILAR PRODUCT. HANGERS SHALL BE PROVIDED AT INTERVALS IN ACCORDANCE WITH THE JURISDICTIONAL PLUMBING CODE. PIPING SHALL BE PROVIDED WITH SEISMIC RESTRAINTS IN ACCORDANCE WITH THE SMACNA SEISMIC RESTRAINT MANUAL – GUIDELINES FOR MECHANICAL SYSTEMS.

PENETRATIONS OF FIRE RATED WALLS OR FLOORS BY PIPE SHALL BE SEALED BY A FIRESTOPPING SYSTEM UL LISTED FOR THE APPLICATION. PENETRATION SEAL MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH PRINTED INSTRUCTIONS OF THE UL FIRE RESISTANCE DIRECTORY AND MANUFACTURERS INSTRUCTIONS. FIRESTOPPING SYSTEM SHALL BE EQUAL TO 3M FIRE BARRIER. FIRESTOPPING MATERIAL SHALL BE CAULK OR PUTTY TYPE.

CHROME PLATED ESCUTCHEONS SHALL BE PROVIDED AT PIPE SLEEVES FOR EXPOSED BARE PIPE.

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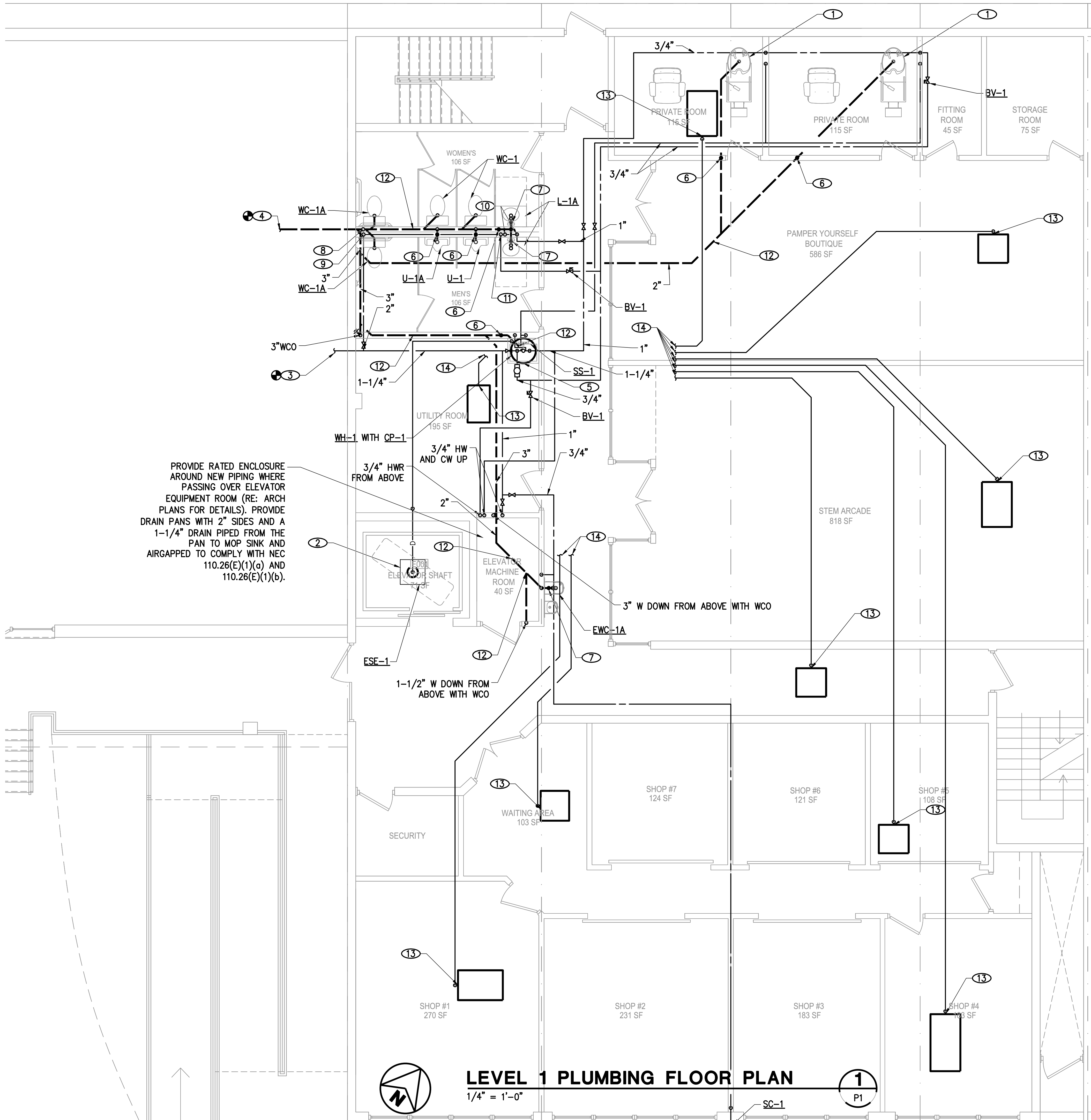
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PLUMBING COVER
SHEET

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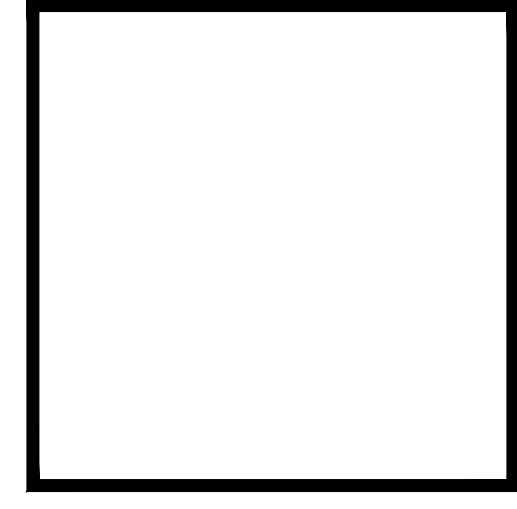
KEYNOTES

- ① PROVIDE AND INSTALL 1/2" CW AND 1/2" HW STUBS INTO CRAWLSPACE BELOW AND 2" W STUB UP FROM CRAWLSPACE BELOW TO FUTURE HAIR WASHING SINK.
- ② EXTEND 2" INDIRECT DRAIN FROM ELEVATOR SUMP PUMP LOCATED IN 24"x24"x24" PIT AT BOTTOM OF ELEVATOR SHAFT TO MOP SINK WITH 1" AIR BREAK. REFER TO ELEVATOR SUMP PUMP DETAIL 1/P71.
- ③ 2" CW FROM PHASE I BUILDING WATER ENTRY ROOM. ROUTE APPROXIMATELY 100' WEST THROUGH PHASE I SPACE AND 50' SOUTH THROUGH PHASE I SPACE TO GET TO EXISTING WATER ENTRY ROOM. UPSIZE EXISTING WATER SERVICE, TAP, METER AND REDUCED PRESSURE BACKFLOW PREVENTER. NEW DOMESTIC TAP AND METER TO BE 1-1/2", SERVICE TO BUILDING TO BE 2", AND NEW REDUCED BACKFLOW PREVENTER TO BE A 2" BFP-1. ALL SCOPE BEYOND 5'-0" OUTSIDE OF THE BUILDING IS CIVIL SCOPE AND SHALL BE COORDINATED WITH THE CIVIL PLANS. TIE NEW 2" MAIN, DOWNSTREAM OF NEW REDUCED PRESSURED BACKFLOW PREVENTER, INTO EXISTING 1-1/2" MAIN SERVING PHASE I SPACE PLUMBING FIXTURES. ROUTE NEW 2" MAIN TO PHASE II SPACE AS DESCRIBED ABOVE. PROVIDE A MAIN SHUT-OFF VALVE ON THE 1-1/2" PHASE I MAIN AND 2" PHASE II MAIN TO ALLOW FOR BUILDING ISOLATION. ALL WORK IN THE PHASE I SPACE TO BE COORDINATED IN THE FIELD BY THE CONTRACTOR TO AVOID CONFLICTS.
- ④ CONNECT NEW 4" WASTE LINE TO EXISTING WASTE MAIN IN PHASE I SPACE (APPROXIMATELY 45' WEST OF SHARED BUILDING WALL). EXACT INVERT ELEVATION AND ROUTING TO BE VERIFIED IN FIELD. IT IS RECOMMENDED THAT THE CONTRACTOR COORDINATE WITH THE BUILDING OWNER TO SCOPE THE EXISTING WASTE MAIN PRIOR TO START OF WORK TO CONFIRM MAIN LOCATION AND CONDITION. ALL WORK IN THE PHASE I SPACE TO BE COORDINATED IN THE FIELD BY THE CONTRACTOR TO AVOID CONFLICTS.
- ⑤ CONNECT 1-1/4" CW, 1-1/4" HW TO ELECTRIC TANK TYPE WATER HEATER HUNG FROM CEILING. PROVIDE CP-1 WITH 3/4" INLET AND OUTLET CONNECTIONS. RE: CEILING MOUNTED WATER HEATER DETAIL 3/P71.
- ⑥ PROVIDE 2" AIR ADMITTANCE VALVE HIGH IN WALL (8' AFF) WITH WALL GRILLE OF RESTROOM/JANITOR'S CLOSET/PRIVATE ROOM WALL.
- ⑦ PROVIDE AIR ADMITTANCE VALVE INSTALLED ON TRAP ARM BELOW EWC/SINK/LAVATORY.
- ⑧ 4" WASTE STACK FROM ABOVE.
- ⑨ 1-1/4" CW DOWN AND OFFSET FULLSIZE TO SERVE (4) WATER CLOSETS, (2) URINALS, AND (2) LAVATORIES. 1-1/2" CW UP TO SERVE RESTROOM FIXTURES ON LEVEL 2 AND 3.
- ⑩ 1" HW DOWN IN WALL TO (2) LAVATORIES. LOOP 3/4" HW UP TO LEVEL ABOVE AS SHOWN. UNCIRCULATED HW BRANCH TO LAVATORY 6" MAXIMUM LENGTH IN COMPLIANCE WITH 2015 IECC.
- ⑪ 3/4" HWR DOWN FROM LEVEL 3.
- ⑫ WASTE PIPING ROUTED IN CRAWLSPACE.
- ⑬ 3/4" CONDENSATE DRAIN FROM FAN COIL UNIT/BRANCH CONTROLLER BOX TO MOP SINK AND AIRGAP.
- ⑭ ROUTE 3/4" CONDENSATE DRAIN TO MOP SINK AND AIRGAP. CONTINUATION NOT SHOWN FOR OVERALL DRAWING CLARITY.

PROVIDE RATED ENCLOSURE AROUND NEW PIPING WHERE PASSING OVER ELEVATOR EQUIPMENT ROOM (RE: ARCH PLANS FOR DETAILS). PROVIDE DRAIN PANS WITH 2" SIDES AND A 1-1/4" DRAIN PIPED FROM THE PAN TO MOP SINK AND AIRGAPPED TO COMPLY WITH NEC 110.26(E)(1)(a) AND 110.26(E)(1)(b).

GENERAL NOTES:
 1. ALL EXISTING PLUMBING IN THIS BUILDING IS TO BE DEMOLISHED.
 2. ROOF DRAINAGE VIA SHEET FLOW. REFER TO ARCHITECTURAL PLANS.

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



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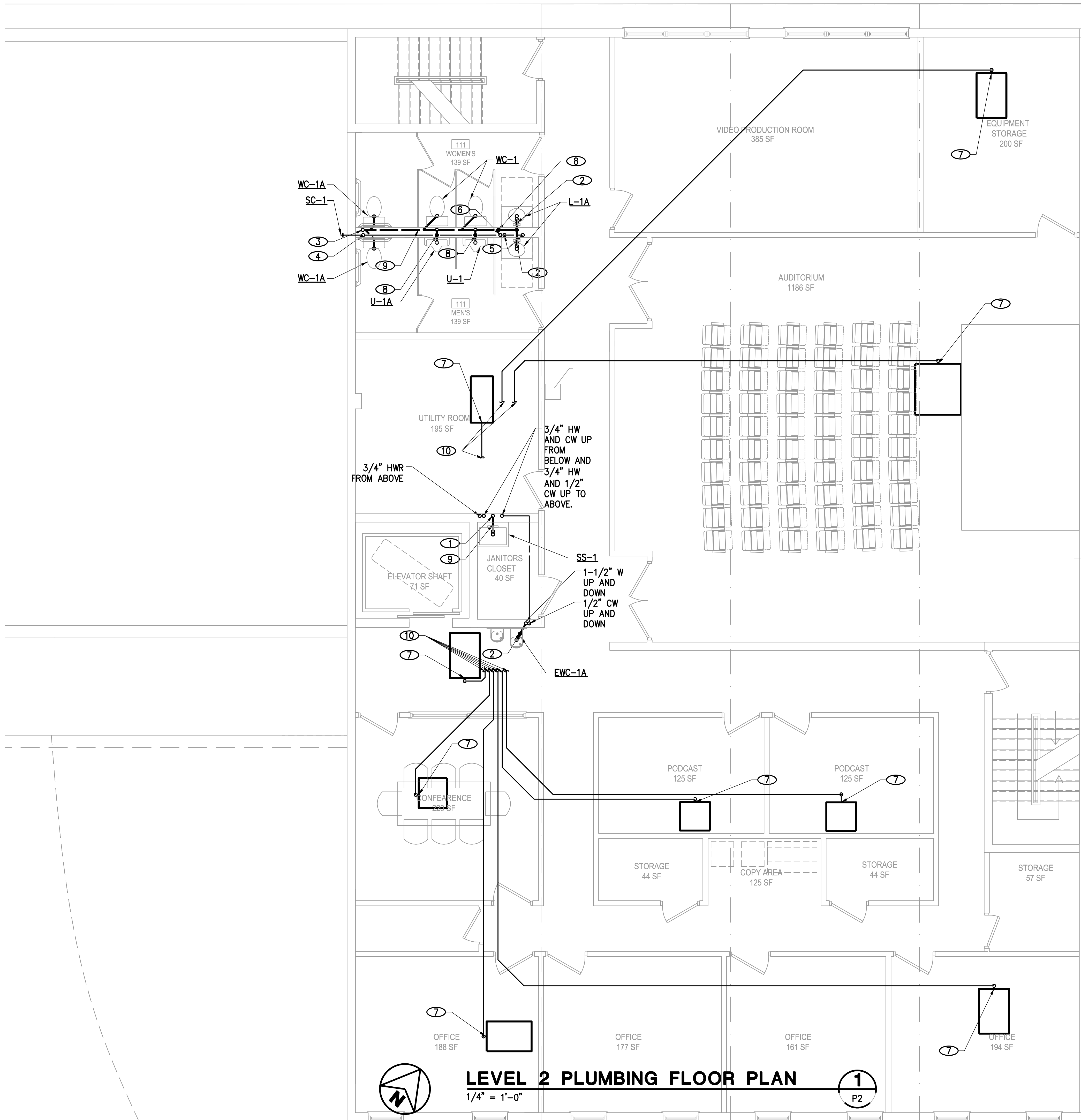
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LEVEL 1 PLUMBING FLOOR PLAN

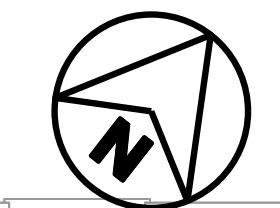
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KEYNOTES

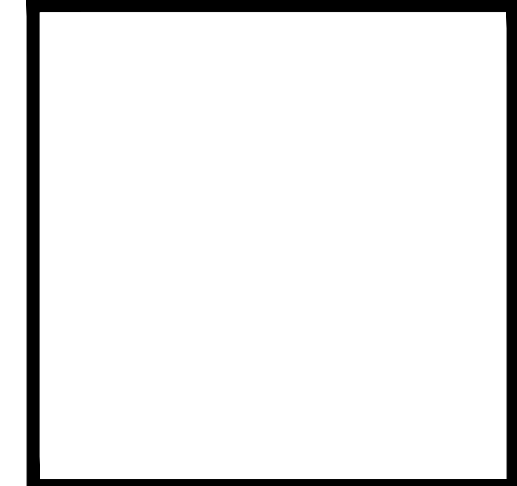
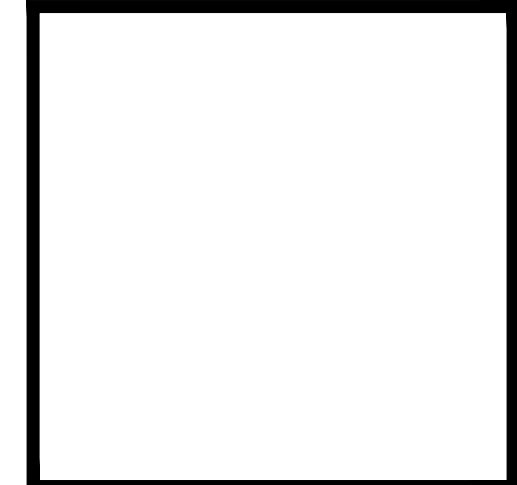
- ① 3" WASTE STACK VENT SERVING (2) SERVICE SINKS.
- ② PROVIDE AIR ADMITTANCE VALVE INSTALLED ON TRAP ARM BELOW EWC/SINK/LAVATORY.
- ③ 4" WASTE STACK UP AND DOWN.
- ④ 1-1/2" CW UP FROM BELOW. 1-1/4" OFFSET FULLSIZE TO SERVE (4) WATER CLOSETS, (2) URINALS, AND (2) LAVATORIES. 1-1/4" CW UP TO SERVE RESTROOM FIXTURES ON LEVEL 3. BRANCH 3/4" OFF TO SERVE SC-1 ACCESSIBLE FROM PHASE I ROOF.
- ⑤ 3/4" HW UP FROM BELOW AND OFFSET IN WALL TO (2) LAVATORIES. LOOP 3/4"HW UP TO LEVEL ABOVE AS SHOWN. UNCIRCULATED HW BRANCH TO LAVATORY 6" MAXIMUM LENGTH IN COMPLIANCE WITH 2015 IECC.
- ⑥ 3/4" HWR UP AND DOWN.
- ⑦ 3/4" CONDENSATE DRAIN FROM FAN COIL UNIT/BRANCH CONTROLLER BOX TO MOP SINK AND AIRGAP.
- ⑧ PROVIDE 2" AIR ADMITTANCE VALVE HIGH IN WALL (8' AFF) WITH WALL GRILLE OF RESTROOM WALL.
- ⑨ WASTE PIPING ROUTED IN CEILING SPACE OF LEVEL 1.
- ⑩ ROUTE 3/4" CONDENSATE DRAIN TO MOP SINK AND AIRGAP. CONTINUATION NOT SHOWN FOR OVERALL DRAWING CLARITY.

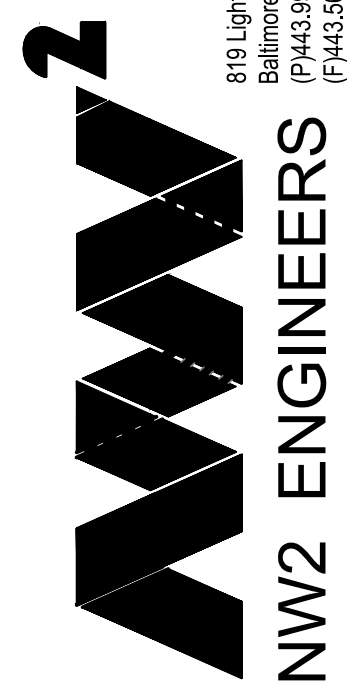
GENERAL NOTES:
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 2. ROOF DRAINAGE VIA SHEET FLOW. REFER TO ARCHITECTURAL PLANS.



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

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P2



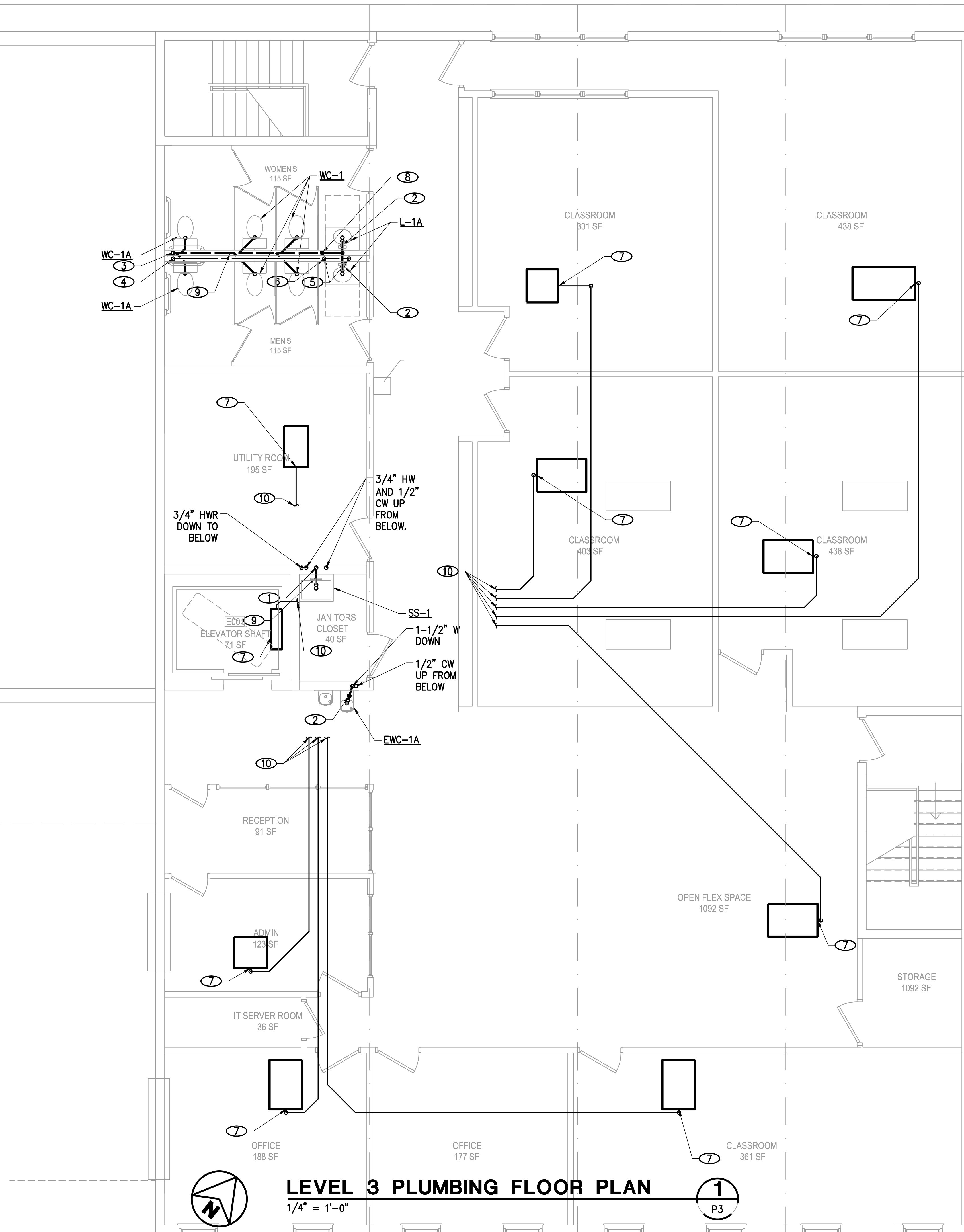

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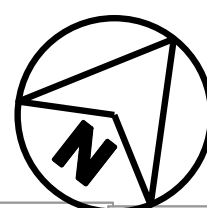
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 LEVEL 2 PLUMBING FLOOR PLAN
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LEVEL 3 PLUMBING FLOOR PLAN

1/4" = 1'-0"



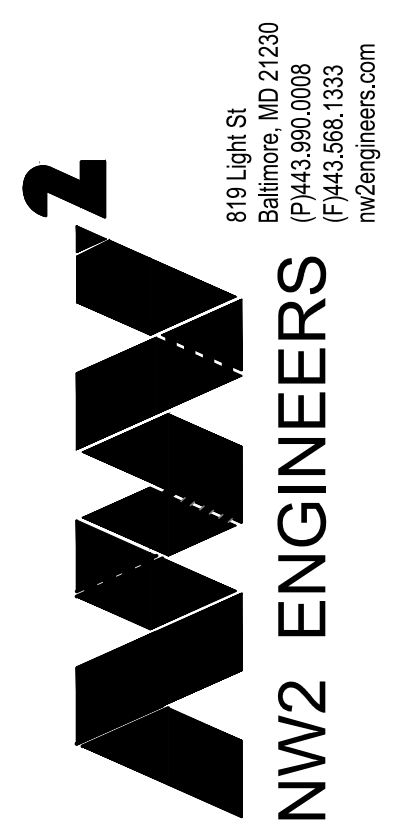
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P3

KEYNOTES

- ① 3" WASTE STACK VENT SERVING (2) SERVICE SINKS. 3" VENT UP THROUGH ROOF.
- ② PROVIDE AIR ADMITTANCE VALVE INSTALLED ON TRAP ARM BELOW EWC/SINK/LAVATORY.
- ③ 4" WASTE STACK DOWN. 3" VENT UP THROUGH ROOF.
- ④ 1-1/4" CW UP FROM BELOW AND OFFSET FULLSIZE TO SERVE (6) WATER CLOSETS, AND (2) LAVATORIES.
- ⑤ 3/4" HW UP FROM BELOW AND OFFSET IN WALL TO (2) LAVATORIES. LOOP 3/4"HW DOWN TO LEVEL 1 AS SHOWN. UNCIRCULATED HW BRANCH TO LAVATORY 6" MAXIMUM LENGTH IN COMPLIANCE WITH 2015 IECC.
- ⑥ 3/4" HWR DOWN.
- ⑦ 3/4" CONDENSATE DRAIN FROM FAN COIL UNIT/BRANCH CONTROLLER BOX TO MOP SINK AND AIRGAP.
- ⑧ PROVIDE 2" AIR ADMITTANCE VALVE HIGH IN WALL (8' AFF) WITH WALL GRILLE OF RESTROOM WALL.
- ⑨ WASTE PIPING ROUTED IN CEILING SPACE OF LEVEL 2.
- ⑩ ROUTE 3/4" CONDENSATE DRAIN TO MOP SINK AND AIRGAP. CONTINUATION NOT SHOWN FOR OVERALL DRAWING CLARITY.

GENERAL NOTES:
 1. ALL EXISTING PLUMBING IN THIS BUILDING IS TO BE DEMOLISHED.
 2. ROOF DRAINAGE VIA SHEET FLOW. REFER TO ARCHITECTURAL PLANS.

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 LEVEL 3 PLUMBING FLOOR
 PLAN

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

P3

PLUMBING EQUIPMENT SCHEDULE	
ITEM	DESCRIPTION
WH-1	AO SMITH DEL-40 OR EQUAL 40 GALLON ELECTRIC WATER HEATER WITH (2) SIMULTANEOUS 5.0 KW 480VAC/3-PHASE IMMERSION ELEMENTS (10.0 KW TOTAL POWER), 41 GAL/HR RECOVERY @ 100°F RISE. FURNISH WITH ASME TEMPERATURE & PRESSURE RELIEF VALVE. DIMENSIONS = 24" DIA X 32" TALL OPERATING WEIGHT=450LB
ESE-1	ZOELLER #161 SUBMERSIBLE SINGLE SEAL CAST IRON SUMP PUMP PACKAGE WITH (1) 1/2 HP PUMP FOR 50 GPM @ 35' T.D.H., PREPACKAGED CONTROLS TO INCLUDE NEMA 4X SIMPLEX CONTROL PANEL WITH STARTER DISCONNECT SWITCH, HAND-OFF-AUTO SWITCH, MECHANICAL FLOAT SWITCH, OIL SMART SWITCH, HIGH WATER ALARM WITH AUDIBLE & VISUAL ALARM & SILENCE SWITCH, & WIRING PACKAGE. SET PUMP ON AT 12" AFF AND OFF AT 6" AFF. ELECTRICAL = 208VAC/1PH 1/2HP
BFP-1	WILKINS #975XL2 1-1/4"-2" REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY. ASSE LISTED 1013 AND APPROVED BY THE FOUNDATION FOR CROSS CONNECTION CONTROL AND HYDRAULIC RESEARCH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA. SUPPLIED WITH FULL PORT BALL VALVES. THE MAIN BODY AND ACCESS COVER SHALL BE CAST BRONZE (ASTM B 584). THE SEAT DISC ELASTOMERS SHALL BE EPDM.
BV-1	CALEFFI THERMOSETTER SERIES #116150AC DOMESTIC HOT WATER BALANCING VALVE CONSISTING OF LEAD FREE NSF 61 CERTIFIED CONSTRUCTION FOR POTABLE WATER INSTALLATION. VALVE TO BE SELF-ACTING THERMOSTATIC TYPE VALVE WITH ADJUSTABLE (95 TO 140 DEG F) TEMPERATURE SETPOINT SET TO MAINTAIN SYSTEM WATER TEMPERATURE AT 120 DEG F. PROVIDED WITH INTEGRAL CHECK VALVE. CAPACITY = 2.1 GPM @ 2.31' TDH FULL OPEN POSITION AND .23 GPM @ 2.31' FULL CLOSED POSITION. PROVIDE FULL PORT BALL TYPE SHUT-OFF VALVES AND UNIONS ON INLET AND OUTLET OF VALVE.
CP-1	BELL & GOSSETT NBF-22U/LW DOMESTIC WATER RECIRCULATING PUMP CONSISTING OF LEAD FREE BRONZE OR STAINLESS STEEL BODY WITH PLASTIC OR STAINLESS STEEL IMPELLER RATED FOR POTABLE WATER OPERATION. CAPACITY = 2 GPM @ 14 FT TDH. PROVIDE WITH AQUASTAT CONTROL SET TO TURN PUMP ON AT 100 DEGREES F AND OFF AT 115 DEGREES F AND TIMER SET TO TURN PUMP ON AT 6:00 AM AND OFF AT 6:00 PM. ELECTRICAL = 92 WATTS, 115V/1Ø.
DET-1	AMTROL ST-5 DOMESTIC WATER BLADDER TYPE PRESSURE TANK FOR 2.0 GALLONS TANK VOLUME AND 0.9 GALLON ACCEPTANCE VOLUME, RATED FOR 150 PSI WORKING PRESSURE, PRECHARGED TO SYSTEM PRESSURE AT CONNECTION LOCATION. SYSTEM CONNECTION SIZE = 3/4" NPTF. DIMENSIONS = 8" DIA X 13" TALL. WEIGHT WITH RUPTURED BLADDER = 22 LB

PLUMBING FIXTURE SCHEDULE								
MARK	DESCRIPTION	MFR/MODEL	ROUGH-IN (INCHES)					NOTES
			HW	CW	V	TRAP	S/W	
WC-1	FLOOR SET FLUSH TANK TYPE CLOSE COUPLED TOILET WITH LOW CONSUMPTION 1.28 GPF WATERSENSE CERTIFIED SIPHON JET FLUSHING ACTION, ELONGATED BOWL, BOLT DOWN LOCKING TANK LID, GLAZED TRAPWAY. PROVIDE CHROME PLATED 1/2" NOM. COMP. X 3/8" NOM. COMP. ANGLE STOP AND SEAMLESS CHROME PLATED COPPER TUBE WATER SUPPLY WITH CHROME PLATED (1) PIECE SET SCREW TYPE CHROME PLATED BRASS ESCUTCHEON AT WALL PENETRATION. PROVIDE OPEN FRONT WHITE SEAT LESS COVER WITH SELF SUSTAINING CHECK HINGE. ALL TRIM TO BE CHROME PLATED COPPER OR BRASS.	TOILET = TOTO #CST744EB OR EQUAL BY AMER. STD., KOHLER, CRANE SEAT = TOTO #SC534 OR EQUAL BY OLSONITE, BENEKE, CHURCH, BEMIS, CENTOCO	--	1/2	2	--	4	FLOOR MOUNTED WITH WAX OR NEOPRENE CLOSET RING. SET WITH PLASTER OF PARIS AND WHITE NON-HARDENING ADHESIVE SEALANT BETWEEN THE FLOOR AND THE FIXTURE BASE WITH "COVED" FINISHING.
WC-1A	ADA COMPLIANT FLOOR SET FLUSH TANK TYPE CLOSE COUPLED TOILET WITH LOW CONSUMPTION 1.28 GPF WATERSENSE CERTIFIED SIPHON JET FLUSHING ACTION, ELONGATED BOWL, BOLT DOWN LOCKING TANK LID, GLAZED TRAPWAY. PROVIDE CHROME PLATED 1/2" NOM. COMP. X 3/8" NOM. COMP. ANGLE STOP AND SEAMLESS CHROME PLATED COPPER TUBE WATER SUPPLY WITH CHROME PLATED (1) PIECE SET SCREW TYPE CHROME PLATED BRASS ESCUTCHEON AT WALL PENETRATION. PROVIDE OPEN FRONT WHITE SEAT LESS COVER WITH SELF SUSTAINING CHECK HINGE. ALL TRIM TO BE CHROME PLATED COPPER OR BRASS.	TOILET = TOTO #CST744ELB OR EQUAL BY AMER. STD., KOHLER, CRANE SEAT = TOTO #SC534-01 OR EQUAL BY OLSONITE, BENEKE, CHURCH, BEMIS, CENTOCO	--	1/2	2	--	4	FLOOR MOUNTED WITH WAX OR NEOPRENE CLOSET RING. SET WITH PLASTER OF PARIS AND WHITE NON-HARDENING ADHESIVE SEALANT BETWEEN THE FLOOR AND THE FIXTURE BASE WITH "COVED" FINISHING. ADA WATER CLOSET TANKS ARE TO BE PROVIDED WITH LEFT OR RIGHT HAND TRIP LEVERS AS REQUIRED TO ALLOW FOR TRIP LEVERS ARE TO BE INSTALLED TO WIDE SIDE OF ADA TOILET STALL.
U-1	WALL HUNG FLUSH VALVE OPERATED URINAL WITH LOW CONSUMPTION .125 GPF WATERSENSE CERTIFIED SIPHON JET FLUSHING ACTION, GLAZED TRAPWAY. PROVIDE 3/4" TOP SPUD FOR TOP MOUNTED FLUSH VALVE. FLUSH VALVE TO INCLUDE SET SCREW TYPE CAST BRASS ESCUTCHEON AT WALL PENETRATION, VANDAL RESISTANT STOP CAP, VACUUM BREAKER, AND ALL RED BRASS CONSTRUCTION. ADDITIONAL OPTIONS MAY BE SELECTED BY THE CONTRACTOR. ALL TRIM TO BE CHROME PLATED COPPER OR BRASS.	URINAL = ZURN #Z5755-U OR EQUAL BY TOTO, KOHLER, CRANE, ZURN, ELJER FLUSH VALVE = ZURN #Z6003AV-ULF OR EQUAL BY SLOAN, DELANY, TOTO CARRIER = ZURN #Z1222 OR EQUAL BY JOSAM, J.R. SMITH, WADE, MIFAB	--	3/4	1 1/2	--	2	SET WITH WHITE NON-HARDENING ADHESIVE SEALANT BETWEEN THE WALL AND THE BACK OF FIXTURE WITH "COVED" FINISHING. RIM OF URINAL TO BE INSTALLED AT 24" AFF.
U-1A	ADA COMPLIANT WALL HUNG FLUSH VALVE OPERATED URINAL WITH LOW CONSUMPTION .125 GPF WATERSENSE CERTIFIED SIPHON JET FLUSHING ACTION, GLAZED TRAPWAY. PROVIDE 3/4" TOP SPUD FOR TOP MOUNTED FLUSH VALVE. FLUSH VALVE TO INCLUDE SET SCREW TYPE CAST BRASS ESCUTCHEON AT WALL PENETRATION, VANDAL RESISTANT STOP CAP, VACUUM BREAKER, AND ALL RED BRASS CONSTRUCTION. ADDITIONAL OPTIONS MAY BE SELECTED BY THE CONTRACTOR. ALL TRIM TO BE CHROME PLATED COPPER OR BRASS.	URINAL = ZURN #Z5755-U OR EQUAL BY TOTO, KOHLER, CRANE, ZURN, ELJER FLUSH VALVE = ZURN #Z6003AV-ULF OR EQUAL BY SLOAN, DELANY, TOTO CARRIER = ZURN #Z1222 OR EQUAL BY JOSAM, J.R. SMITH, WADE, MIFAB	--	3/4	1 1/2	--	2	SET WITH WHITE NON-HARDENING ADHESIVE SEALANT BETWEEN THE WALL AND THE BACK OF FIXTURE WITH "COVED" FINISHING. RIM OF URINAL TO BE INSTALLED AT 17" AFF.
L-1A	ADA COMPLIANT 20"x17" VITREOUS CHINA SELF RIMMING COUNTERTOP LAVATORY SINK WITH HOLE DRILLINGS TO MEET FAUCET SPECIFICATIONS. PROVIDE CHROME PLATED BRASS PERFORATED GRID DRAIN WITH ADA WHEELCHAIR OFFSET DRAIN, CHROME PLATED BRASS P-TRAP AND WASTE ARM, 1/2" NOM. COMP. X 3/8" NOM. COMP. CHROME PLATED ANGLE STOPS WITH WHEEL HANDLES, CHROME PLATED FLEXIBLE SEAMLESS COPPER TUBE SUPPLIES, AND (1) PIECE SET SCREW TYPE CHROME PLATED CAST BRASS ESCUTCHEONS AT WALL PENETRATIONS. FAUCET TO BE OF CHROME PLATED CAST BRASS CONSTRUCTION WITH 0.50 GPM VANDAL RESISTANT AERATOR AND CERAMIC DISK CARTRIDGE TYPE VALVE. PROVIDE ASSE 1070 MIXING VALVE BELOW LAVATORY SET AT 105 DEG F DISCHARGE TEMP. ALL TRIM TO BE CHROME PLATED COPPER OR BRASS.	LAVATORY = ZURN #Z5110 OR EQUAL BY TOTO, KOHLER, CRANE, AMER. STD. FAUCET = ZURN #Z81000-3M OR EQUAL BY AMERICAN STANDARD, KOHLER, DELTA, SYMMONS, CHICAGO MIXING VALVE = LEONARD #170-LF OR EQUAL BY WATTS, SYMMONS, POWERS, WILKINS, ZURN DRAIN = DEARBORN BRASS #760W-1 OR EQUAL BY BRASSCRAFT, KOHLER, AMER. STD., DELTA, CHICAGO, T&S BRASS, PROFLO TRAP AND SUPPLY INSULATION = TRUEBRO #103 E-Z OR EQUAL BY BROCAR, PROFLO	1/2	1/2	1 1/2	1 1/4	1 1/2	INSTALL MIXING VALVE ON WALL BELOW LAVATORY. CONNECT 3/8"HW AND 3/8"CW TO MIXING VALVE, EXTEND 3/8" TEMPERED WATER FROM MIXING VALVE TO FAUCET HOT WATER INLET.
EWC-1A	ADA COMPLIANT DUAL HEIGHT WALL HUNG ELECTRIC WATER COOLER WITH BAKED ENAMEL OR VINYL COVERED STEEL BODY AND STAINLESS STEEL TOP/TRIM AND BOTTLE FILLER INSTALLED IN WALL ABOVE MAIN UNIT. PROVIDE WITH AUTOMATIC STREAM REGULATOR, FILTER, SCREWDRIVER STOP, AND FAN COOLED REFRIGERATED CONDENSING UNIT. MANUFACTURER TO CERTIFY UNIT TO BE LEAD FREE AS DEFINED BY THE SAFE DRINKING WATER ACT. PROVIDE CHROME PLATED BRASS P-TRAP AND WASTE ARM, 1/2" NOM. COMP. X 3/8" NOM. COMP. CHROME PLATED ANGLE STOP WITH WHEEL HANDLE, AND CHROME PLATED FLEXIBLE SEAMLESS COPPER TUBE SUPPLY. PROVIDE WALL SUPPORT SYSTEM WITH TOP AND BOTTOM SUPPORT PLATES, WELDED FEET, RECTANGULAR STEEL UPRIGHTS, AND MOUNTING FASTENERS.	ELECTRIC WATER COOLER = ELKAY #AZSTL8WS(VR)LK OR EQUAL BY OASIS, HAWS, SUNROC, HALSEY TAYLOR CARRIER = ZURN #Z1225 OR EQUAL BY JOSAM, J.R. SMITH, WADE, MIFAB	--	1/2	1 1/2	1 1/2	1 1/2	INSTALL SPOUT HEIGHTS AS REQUIRED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS TO MEET ADA REQUIREMENTS. ELECTRICAL LOAD = 115VAC, 60HZ 370 WATTS, 4.0 FLA
SS-1	ONE PIECE MOLDED STONE STAIN AND CHEMICAL RESISTANT SERVICE SINK BASIN WITH 10" HIGH SIDES, STAINLESS STEEL WALL GUARDS, 3"IPS INTEGRAL STAINLESS STEEL DRAIN, AND REMOVABLE STRAINER. PROVIDE FAUCET MOUNTED AT 40" ABOVE FINISHED FLOOR WITH INTEGRAL VACUUM BREAKER, BUCKET HOOK, AND WALL BRACE. PROVIDE 5 FT. 5/8" HOSE WITH WALL CLAMPS AND MOP HANGER MOUNTED OVER SINK	SERVICE SINK = FIAT #MSB-2424 WITH #832-AA AND #889-CC OR EQUAL BY STERN WILLIAMS, FLORESTONE FAUCET = FIAT #830-AA OR EQUAL BY AMER. STD., T&S BRASS, KOHLER, DELTA, CHICAGO	1/2	1/2	2	3	3	UNIT TO BE INSTALLED ON A MORTAR BED
SC-1	FROST PROOF ANTI-FREEZE RECESSED HOSE BIBB OF CAST BRASS CONSTRUCTION WITH 3/4" HOSE END WALL HYDRANT, RENEWABLE SEAT WASHER, DOUBLE CHECK BACKFLOW PREVENTOR, AND LOOSE T HANDLE KEY. PROVIDE OWNER 1 KEY FOR EACH HYDRANT INSTALLED.	HOSE BIBB = WOODFORD #B67 OR EQUAL BY JOSAM, ZURN, J.R. SMITH, WADE	--	1/2	--	--	--	

EMAGE PHASE II
OFFICE BUILDING

NW2 ENGINEERS
 2132 W. NORTH AVE., BALTIMORE, MD

DATE: 05/10/2024
REVISIONS:

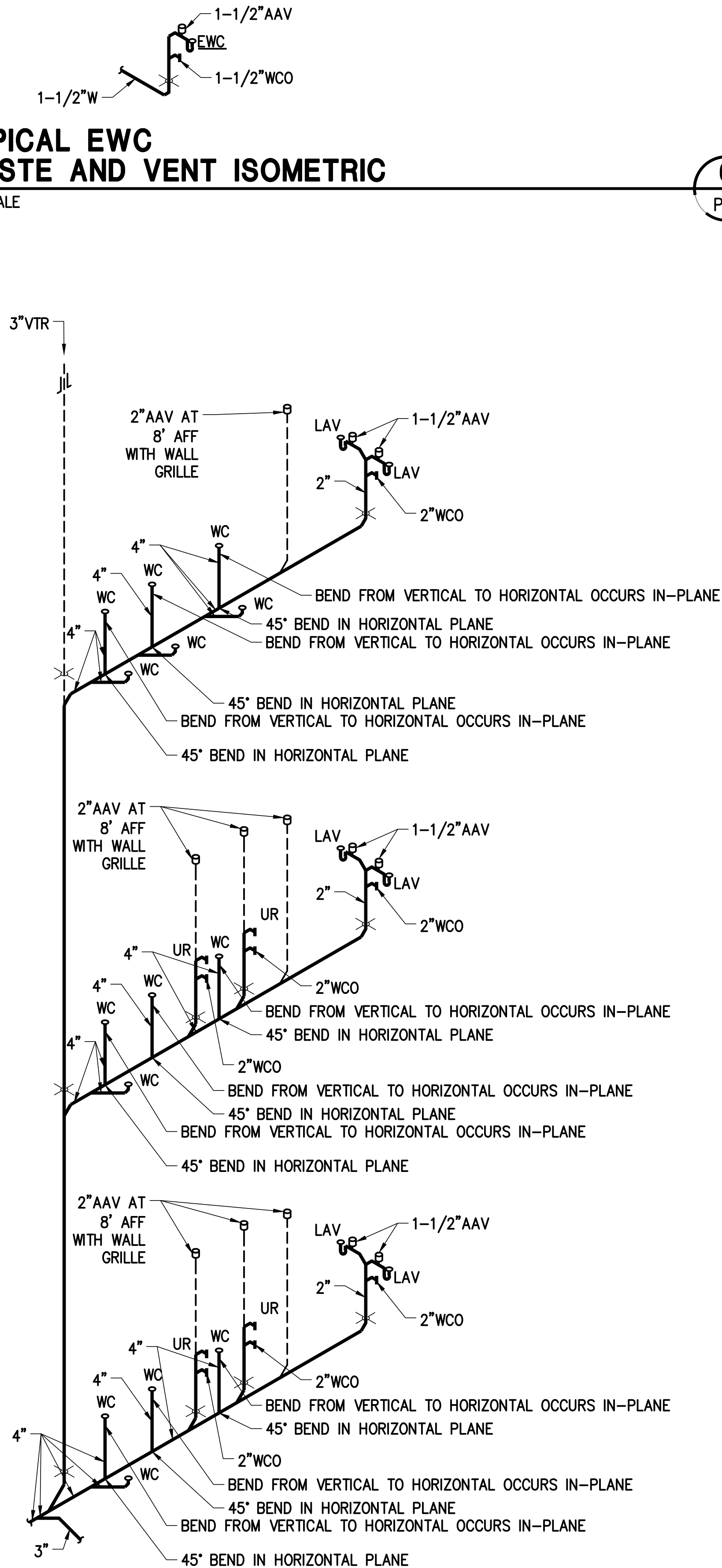
PERMIT ISSUE
SHEET TITLE:
PLUMBING
SCHEDULES

SCALE: N.T.S.
SHEET NUMBER:

P61

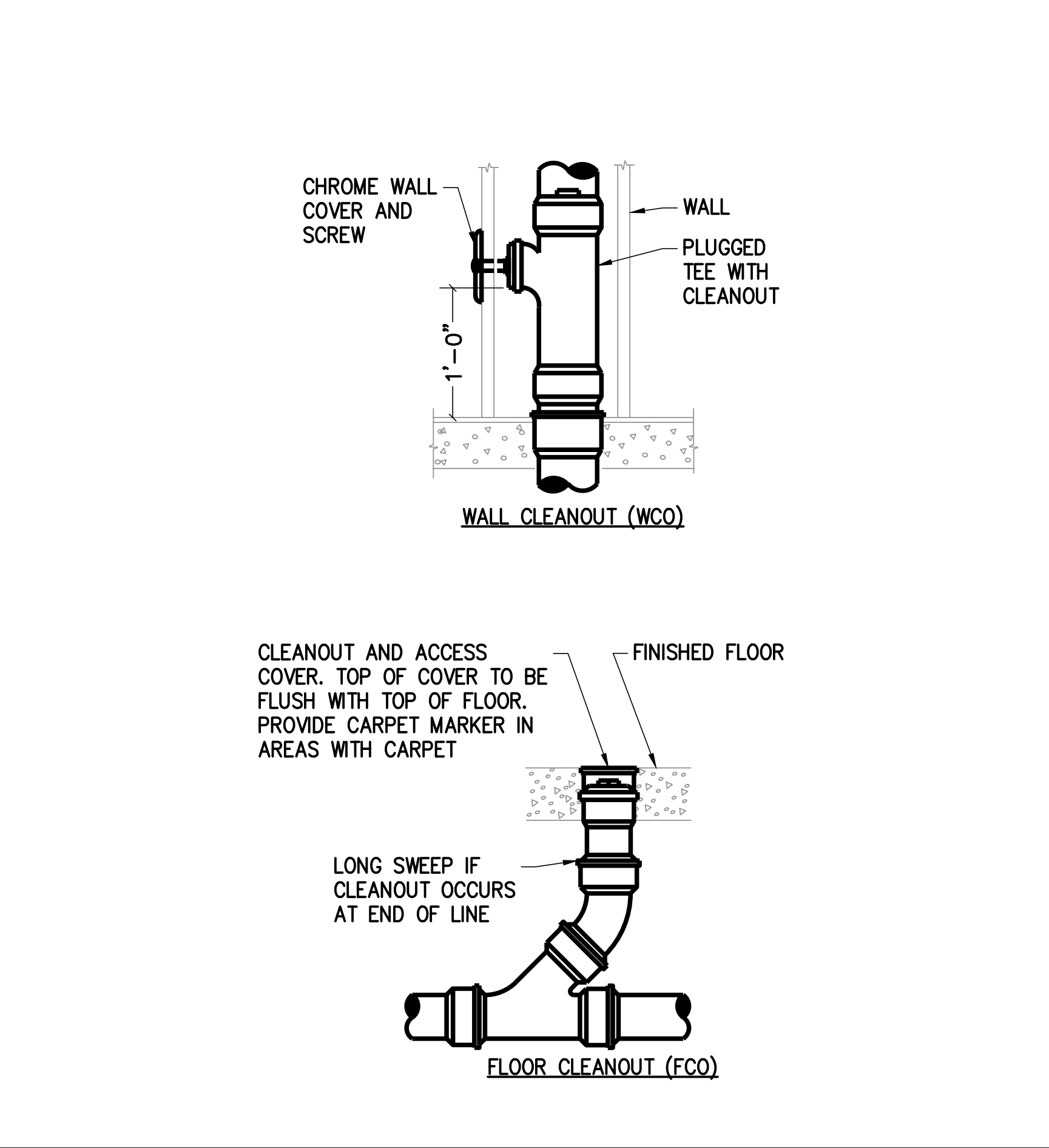
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6
P71



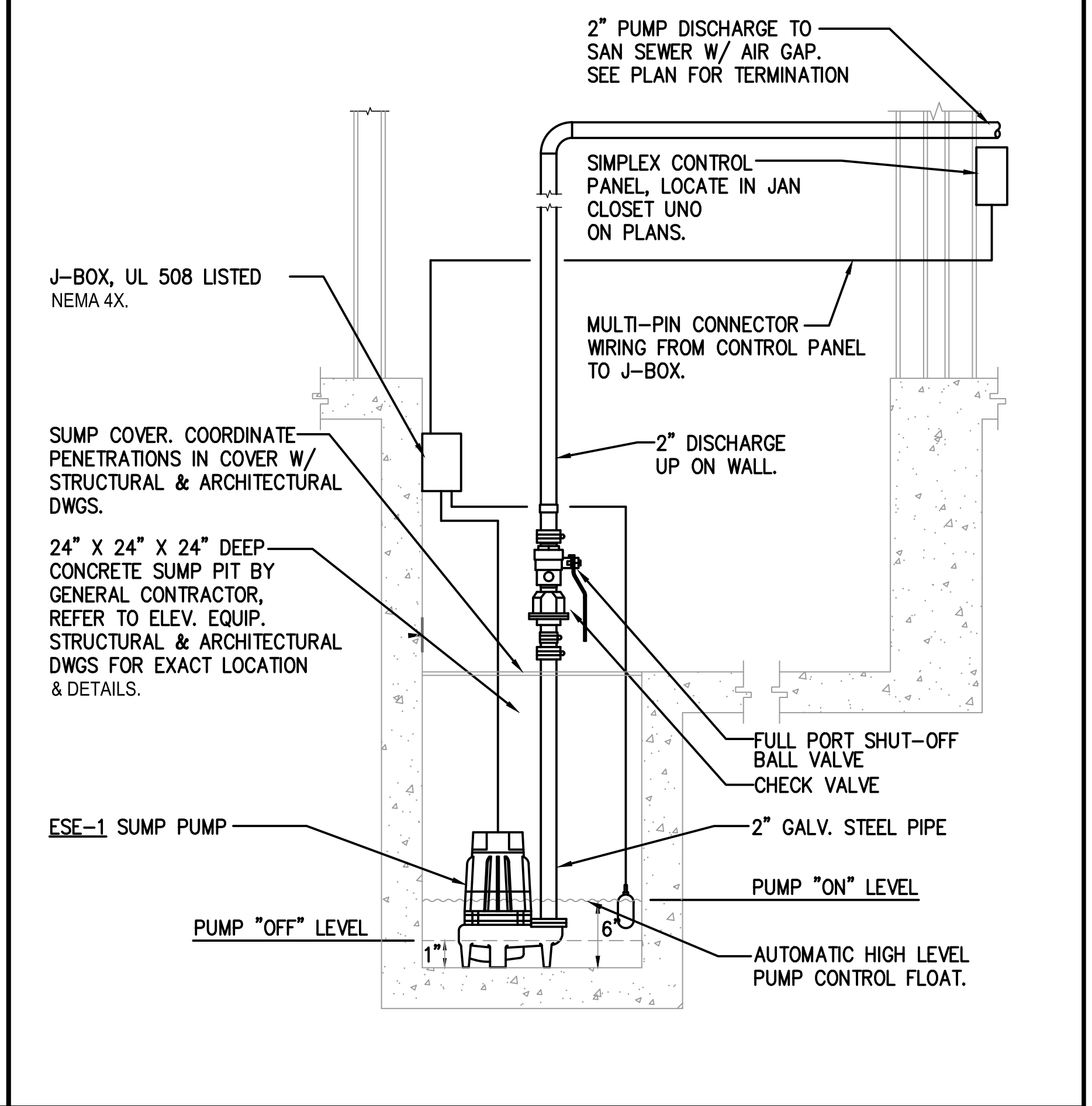
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7
P71



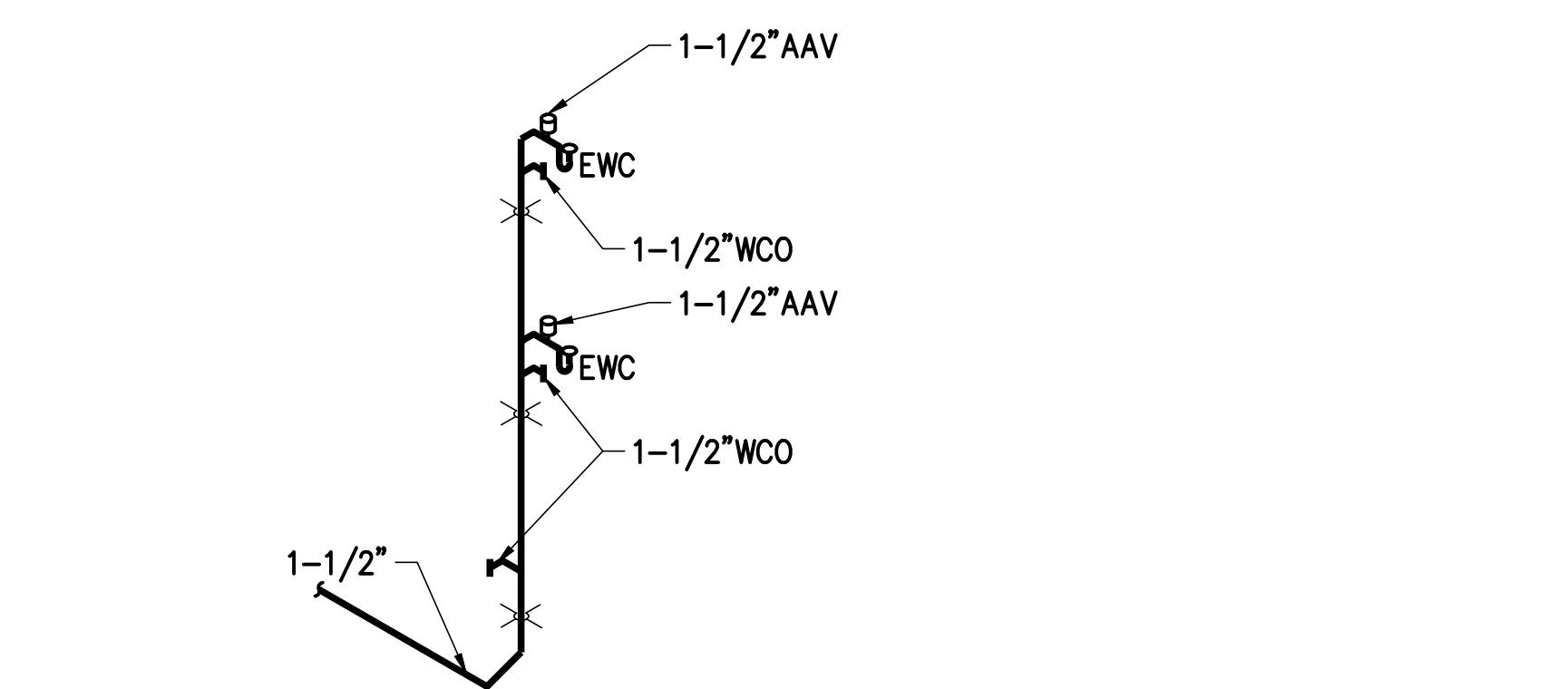
CLEANOUT DETAILS
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2
P71



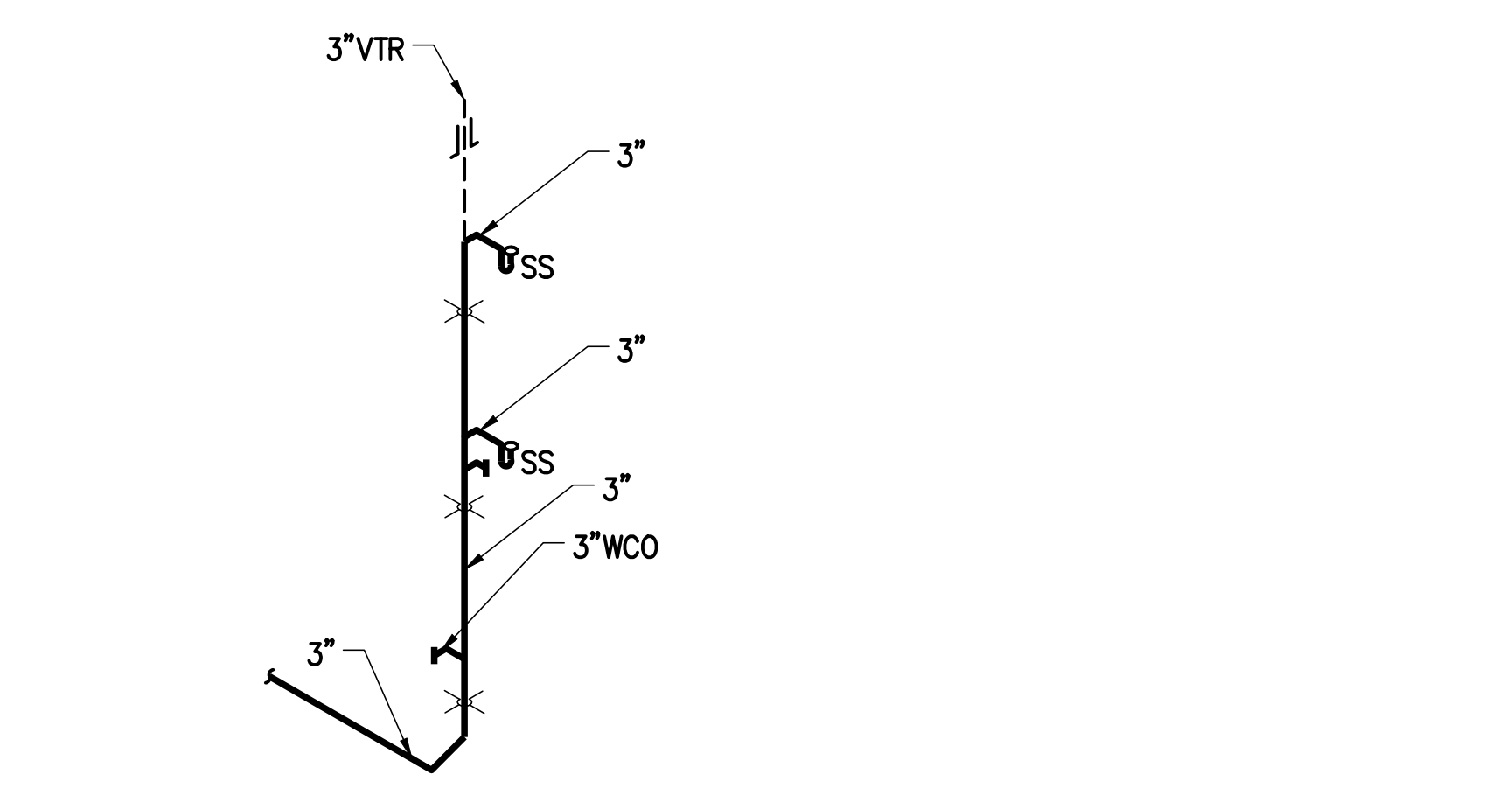
ELEVATOR SUMP PUMP DETAIL
NO SCALE

1
P71



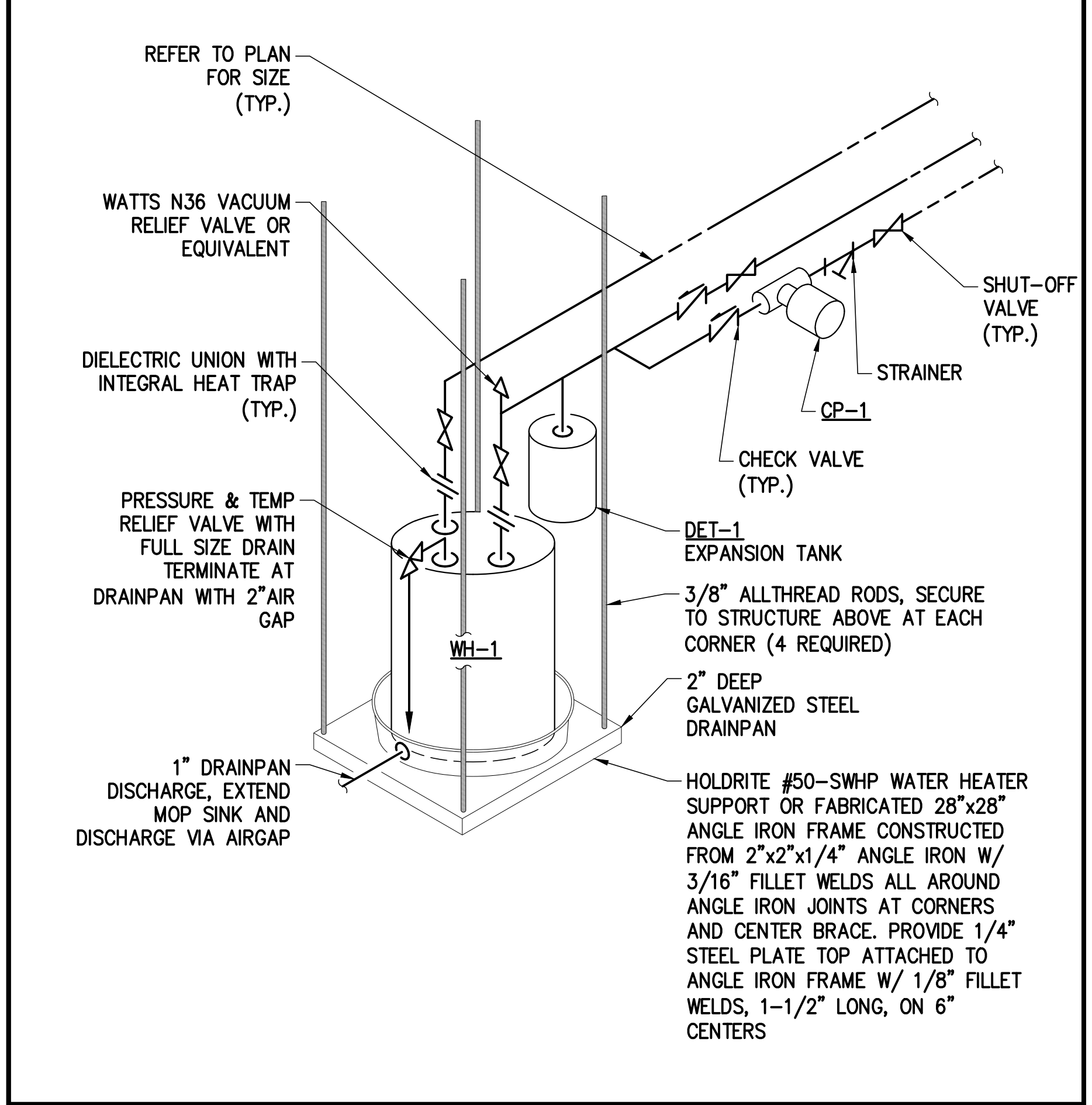
STACKED EWC WASTE AND VENT ISOMETRIC
NO SCALE

4
P71



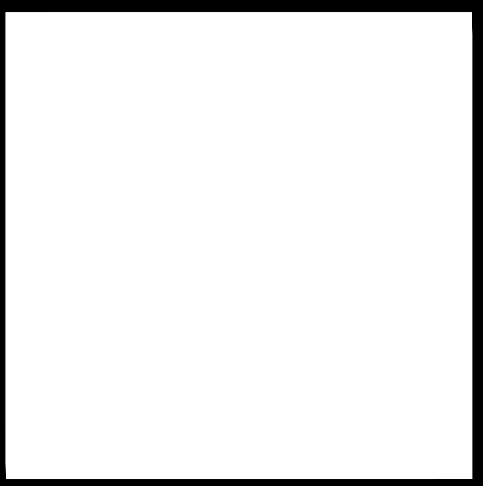
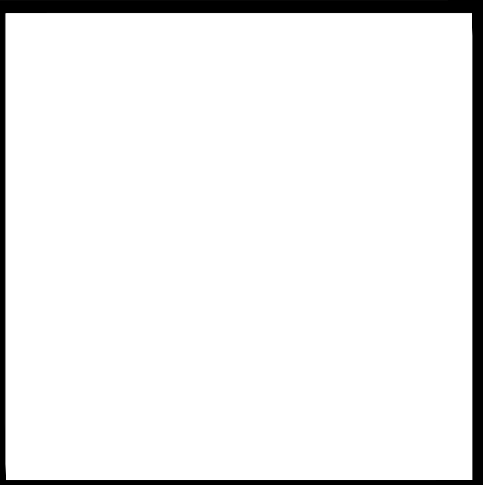
STACKED SS WASTE AND VENT ISOMETRIC
NO SCALE

5
P71



ELEC. WATER HEATER DETAIL
NO SCALE

3
P71



EMAGE PHASE II OFFICE BUILDING
2132 W. NORTH AVE., BALTIMORE, MD

NW2 ENGINEERS
819 Light St.
Baltimore, MD 21201
Tel: 410-588-1038
Fax: 410-588-1039
info@nw2engineers.com

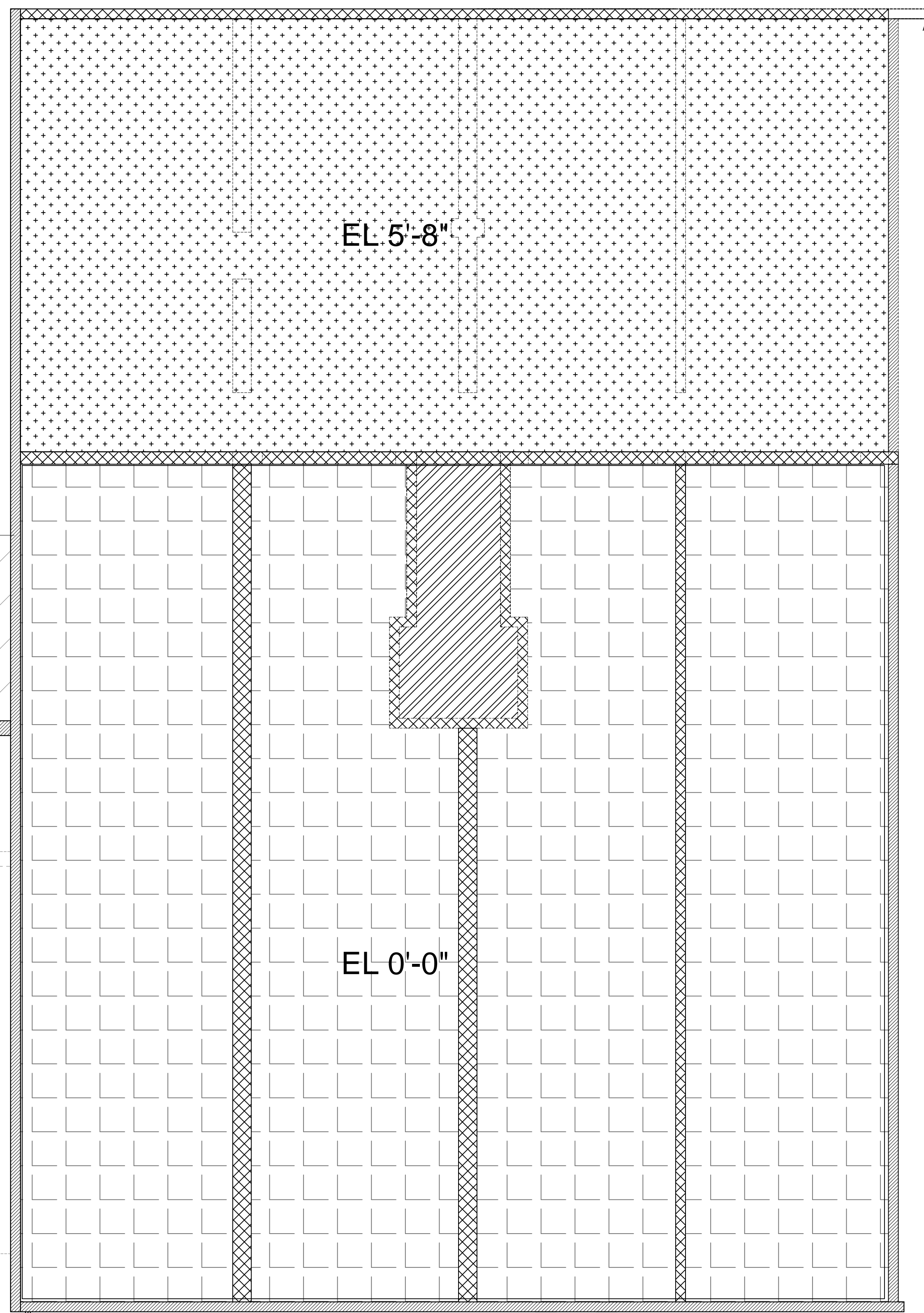
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REVISIONS:

PERMIT ISSUE

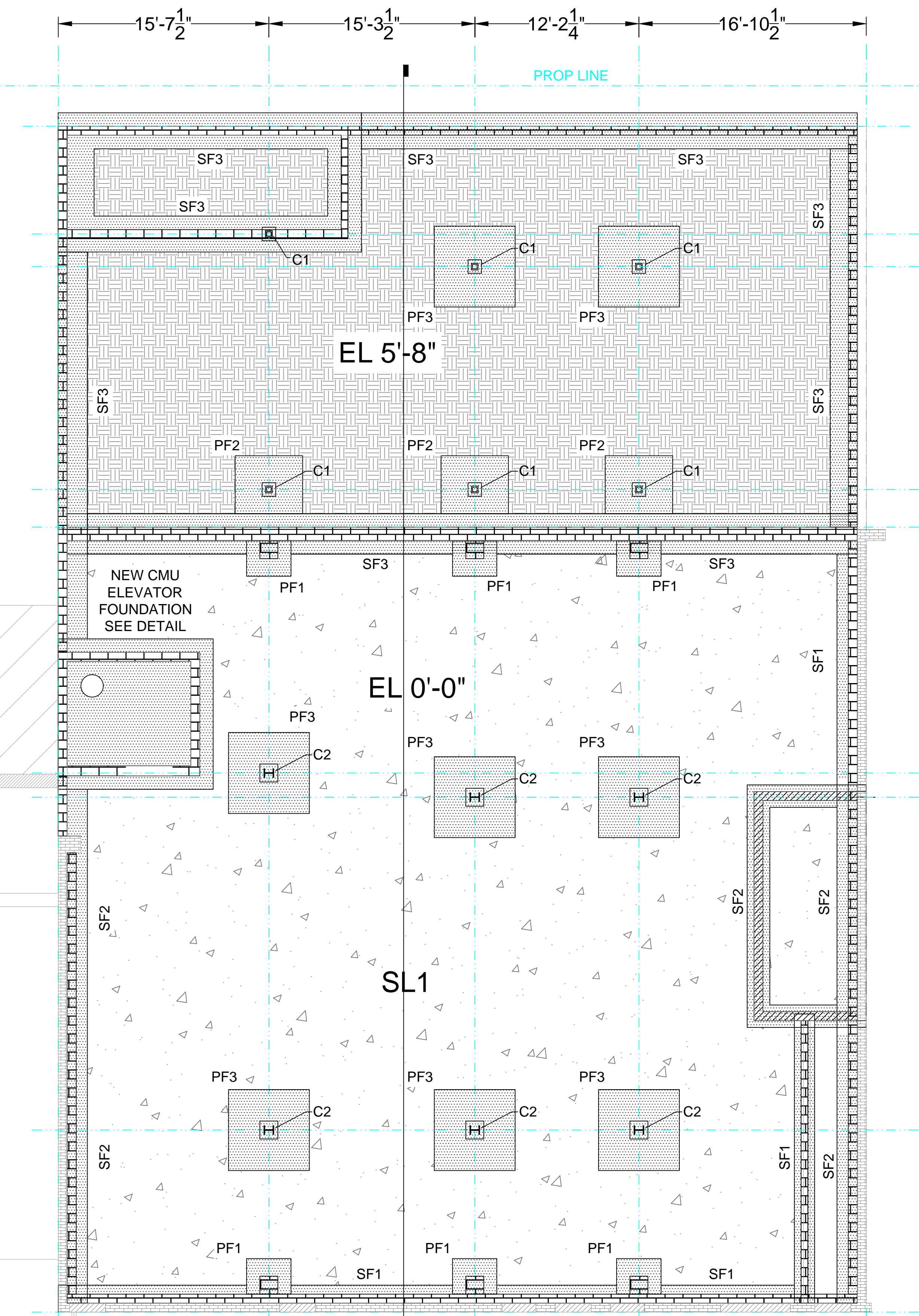
SHEET TITLE:
PLUMBING DETAILS

SCALE: N.T.S.
SHEET NUMBER:
P71



BASEMENT DEMOLITION PLAN

SCALE: 1/8"=1'-0"



FOUNDATION / BASEMENT PLAN

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

STRUCTURAL SCHEDULE & LEGEND

- NEW FOOTING (SEE SCHEDULE)
- NEW CONCRETE SLAB
- CMU BLOCK FOUNDATION WALL (SIZE VARIES)
- EXTERIOR WALL ASSEMBLY
- NEW MASONRY LINTEL
- DASHED LINES INDICATE NEW STEEL BEAM

FOOTING & SLAB LEGEND

FOOTINGS

- SF1 - 16"x12"D SPREAD FOOTING w/ 2-#4 REBAR CONT.
- SF2 - 24"x12"D SPREAD FOOTING w/ 2-#4 REBAR CONT.
- SF3 - 32"x12"D SPREAD FOOTING w/ 2-#4 REBAR CONT.
- PF1 - CMU PIER FOOTING - 32"x32"x16"D PIER FOOTING w/ 2-#4 REBAR WEB
- PF2 - 60"x60"x16"D PIER FOOTING w/ 2-#4 REBAR E.W.
- PF3 - 72"x72"x16"D PIER FOOTING w/ 2-#4 REBAR E.W.

* ALL EXT. FOOTINGS TO HAVE 3,500 PSI CONCRETE & SET 30" MIN. BELOW GRADE TO FROST DEPTH

SLAB

- SL1 - 4" CONCRETE ON 4" GRAVEL W/ DRAIN TILE
- SL2 - 4" CONCRETE ON 4" GRAVEL

STRUCTURAL DEMOLITION LEGEND

- EXISTING WALL / STRUCTURE TO REMAIN
- EXISTING WALL / STRUCTURE TO BE DEMOLISHED
- AREA TO BE EXCAVATED DN TO BASEMENT SLAB
- EXISTING SLAB TO BE DEMOLISHED. PREP FOR NEW FOOTINGS AND CONCRETE SLAB (FOR NEW SLAB)
- EXISTING MISC SLAB, YARD, ETC TO BE CLEARED / DEMOLISHED AND PREP FOR NEW CONCRETE

REV	DESCRIPTION	DATE

DESIGNED BY: WS	DRAWN BY: JN	REVIEWED BY: WS	DATE: 05/15/2024	SCALE: 3/16" = 1'-0"
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CERTIFICATION

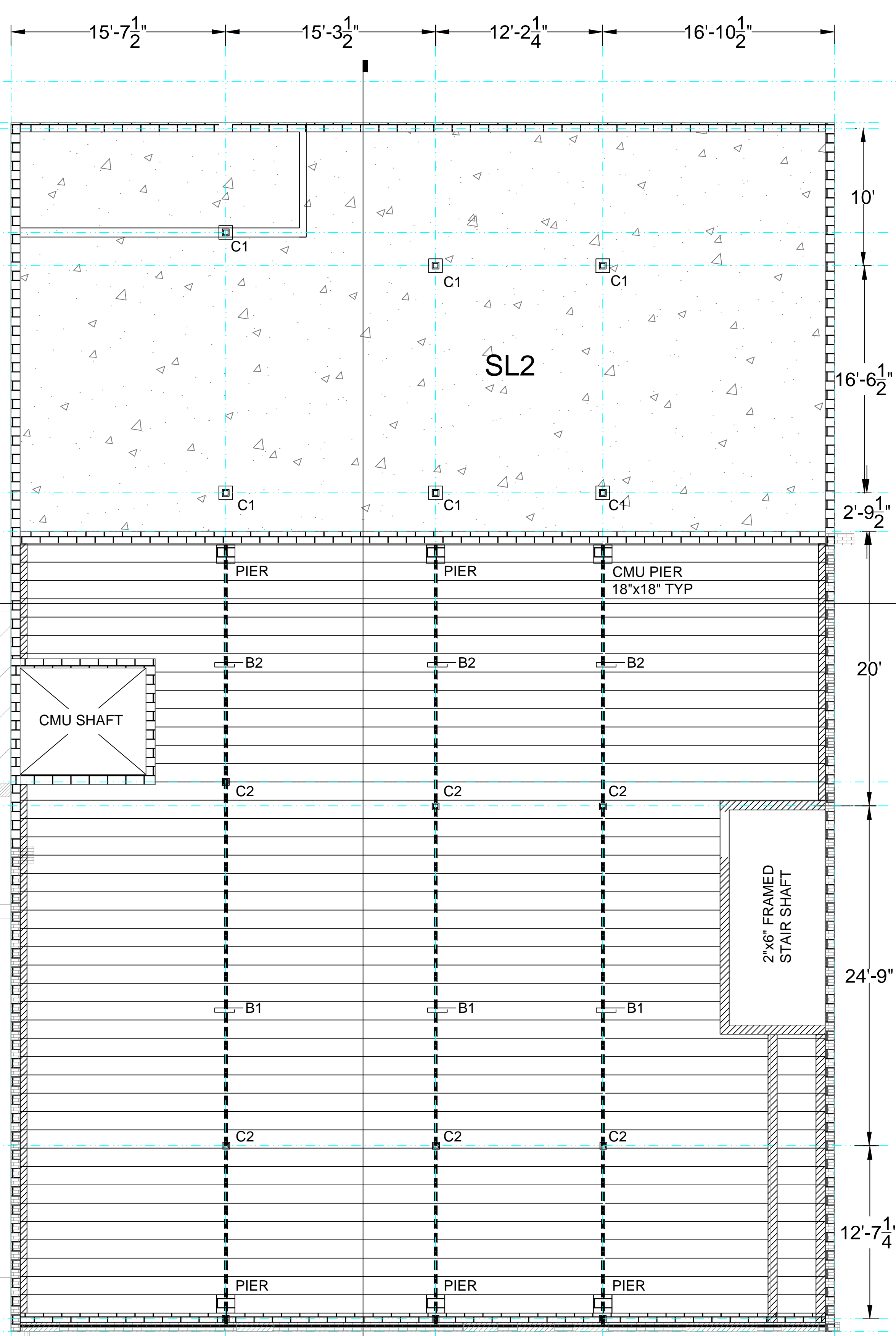
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND

LICENSE NO: 32899
EXP DATE: 05.14.24

PROJECT ADDRESS: **EMAGE II**
2132 NORTH AVE
DESCRIPTION: **STRUCTURAL PLAN**

SHEET NUMBER

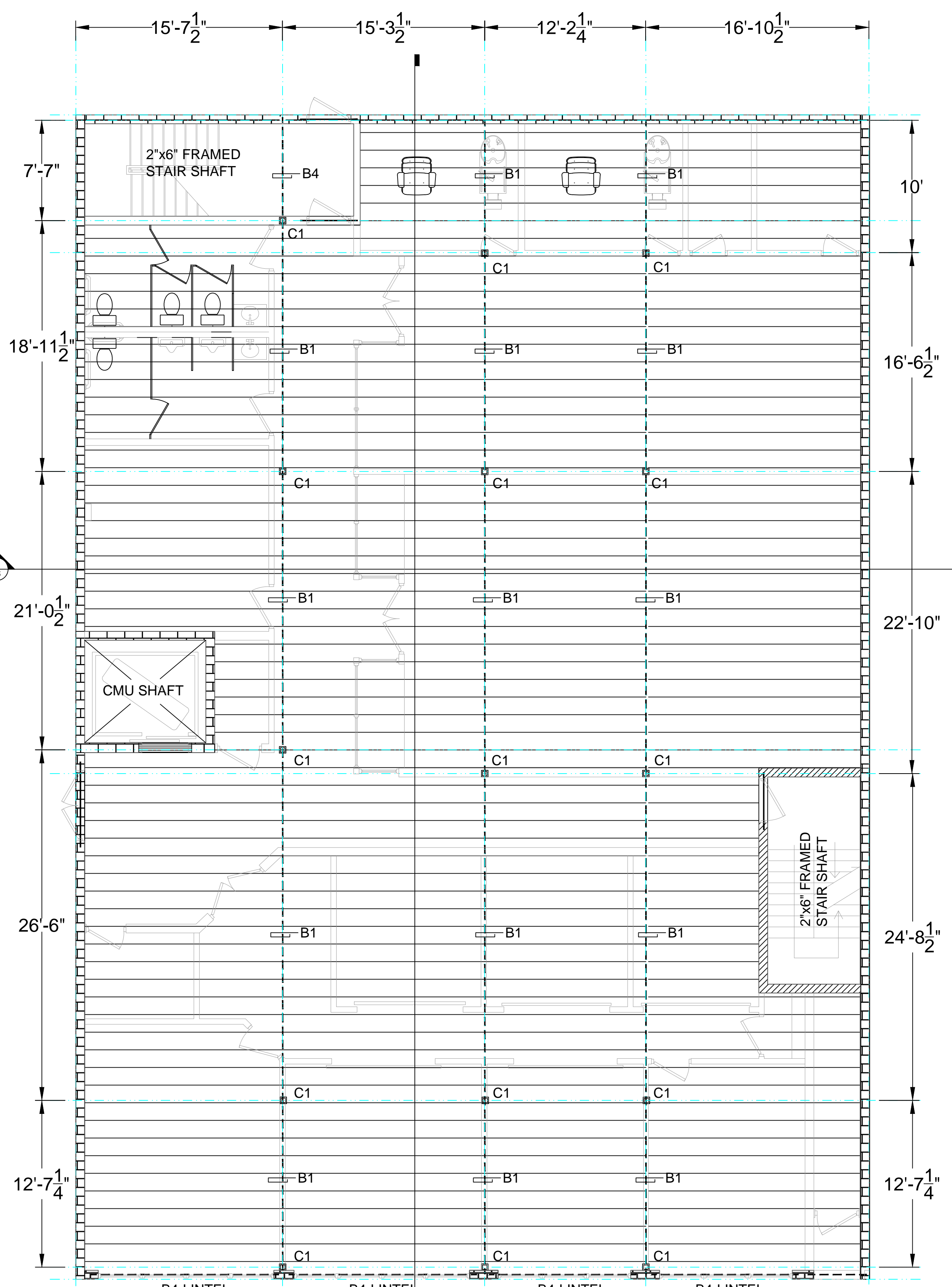
S-1



NOTE: ALL FLOOR JOISTS ARE J1 FLR JOISTS @ 16" O.C. UNLESS OTHERWISE NOTED

FIRST FLOOR LEVEL PLAN

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



NOTE: ALL FLOOR JOISTS ARE J1 FLR JOISTS @ 16" O.C. UNLESS OTHERWISE NOTED

SECOND FLOOR LEVEL PLAN

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

STRUCTURAL SCHEDULE & LEGEND	
	- NEW FOOTING (SEE SCHEDULE)
	- NEW CONCRETE SLAB
	- CMU BLOCK FOUNDATION WALL (SIZE VARIES)
	- EXTERIOR WALL ASSEMBLY
	- NEW MASONRY LINTEL
	- DASHED LINES INDICATE NEW STEEL BEAM

FOOTING & SLAB LEGEND	
FOOTINGS	
SF1	- 16"x12"D SPREAD FOOTING w/ 2-#4 REBAR CONT.
SF2	- 24"x12"D SPREAD FOOTING w/ 2-#4 REBAR CONT.
SF3	- 32"x12"D SPREAD FOOTING w/ 2-#4 REBAR CONT.
PF1	- CMU PIER FOOTING - 32"x32"x16"D PIER FOOTING w/ 2-#4 REBAR WEB
PF2	- 60"x60"x16"D PIER FOOTING w/ 2-#4 REBAR E.W.
PF3	- 72"x72"x16"D PIER FOOTING w/ 2-#4 REBAR E.W.
* ALL EXT. FOOTINGS TO HAVE 3,500 psi CONCRETE & SET 30" MIN. BELOW GRADE TO FROST DEPTH	
SLAB	
SL1	- 4" CONCRETE ON 4" GRAVEL W/ DRAIN TILE
SL2	- 4" CONCRETE ON 4" GRAVEL

FRAMING LEGEND - WOOD & STEEL	
COLUMNS & POSTS	
C1	- HSS 6"x6"x5/8" TUBE
C2	- W8 x 31 I-BEAM
C3	- HSS 4"x4"x1/2" TUBE
WOOD JOISTS & HEADERS	
J1	- 2"x12" TJI JOIST, SERIES 560
J2	- 2"x12" JOIST (NOMINAL LUMBER)
J3	- SPACE
STEEL BEAMS & LINTELS	
B1	- W16 x 57 I-BEAM
B2	- W16 x 26 I-BEAM
B3	- W16 x 88 I-BEAM
B4	- W8 x 31 I-BEAM LINTEL

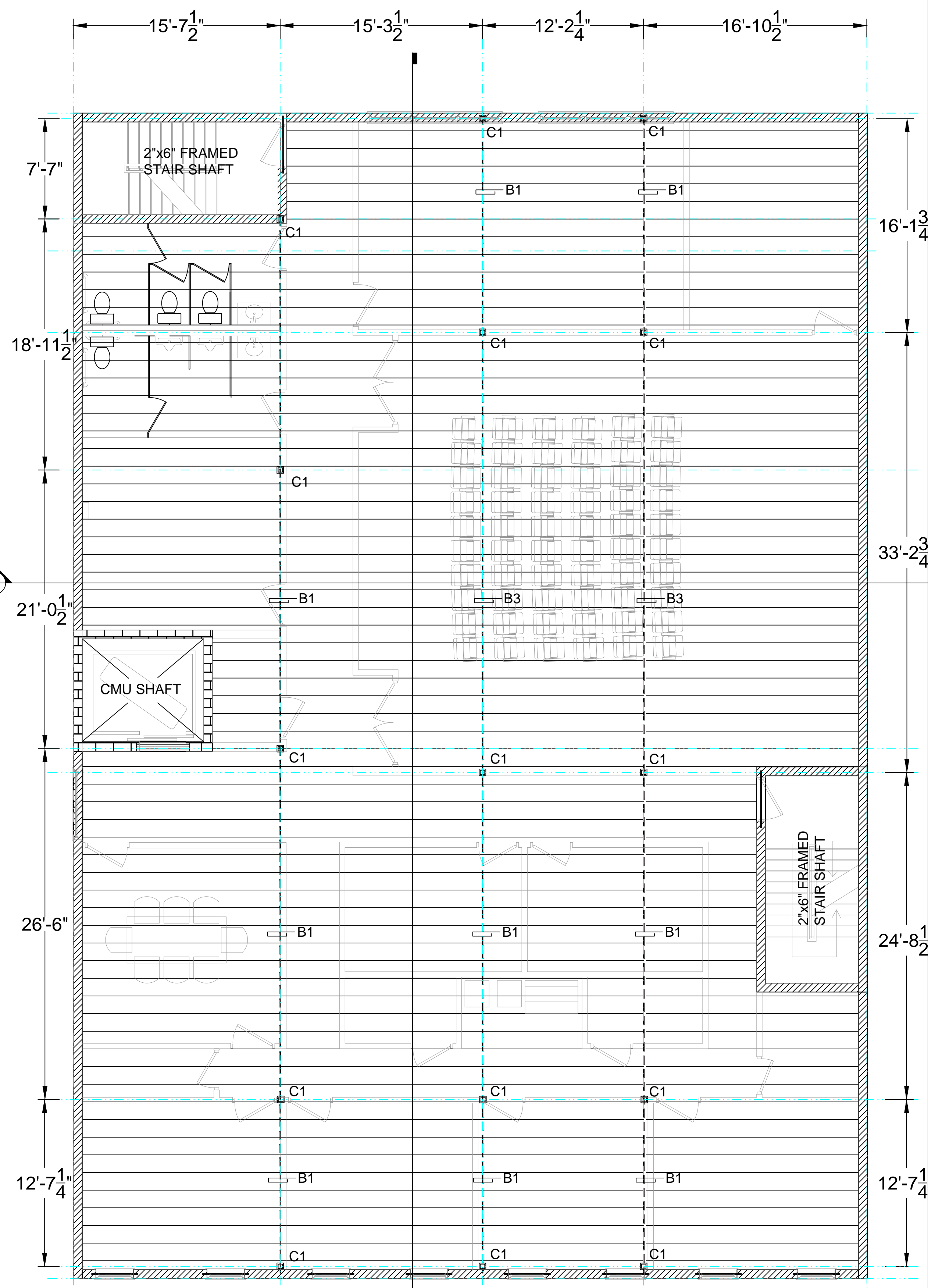
REV	DESCRIPTION	DATE

DESIGNED BY: WS	DRAWN BY: CD	REVIEWED BY: WS	DATE: 05/15/2024	SCALE: 3/16" = 1'-0"
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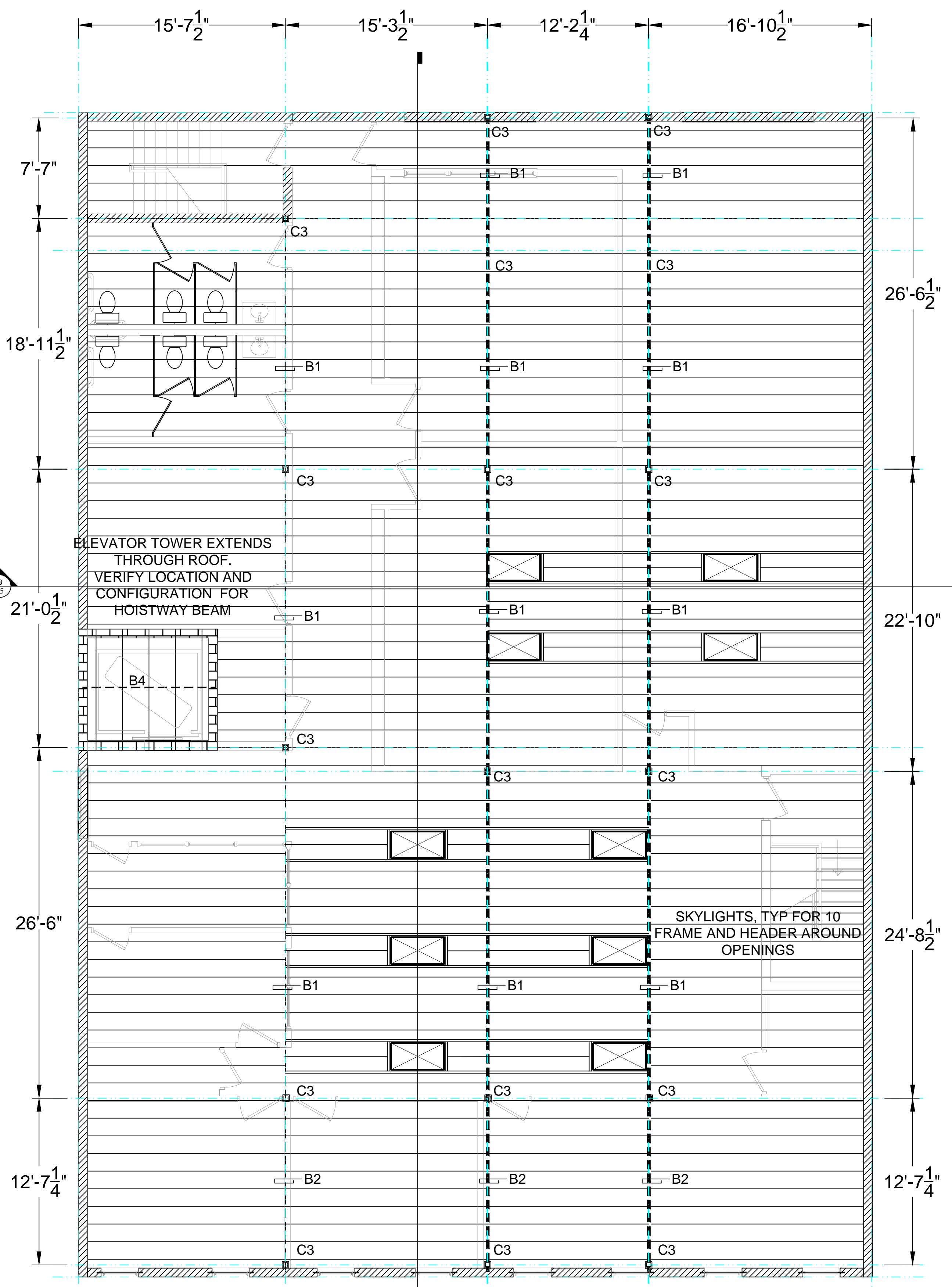
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 LICENSE NO: 32899
 EXP DATE: 05.14.24

PROJECT ADDRESS: **EMAGE II**
2132 NORTH AVE
 DESCRIPTION: **STRUCTURAL PLAN**

SHEET NUMBER
S-2



NOTE: ALL FLOOR JOISTS ARE J1 FLR JOISTS @ 16" O.C. UNLESS OTHERWISE NOTED



NOTE: ALL ROOF JOISTS ARE J2 JOISTS @ 16" O.C. UNLESS OTHERWISE NOTED

STRUCTURAL SCHEDULE & LEGEND	
	- NEW FOOTING (SEE SCHEDULE)
	- NEW CONCRETE SLAB
	- CMU BLOCK FOUNDATION WALL (SIZE VARIES)
	- EXTERIOR WALL ASSEMBLY
	- NEW MASONRY LINTEL
	- DASHED LINES INDICATE NEW STEEL BEAM

FOOTING & SLAB LEGEND	
FOOTINGS	
SF1	- 16"x12"D SPREAD FOOTING w/ 2-#4 REBAR CONT.
SF2	- 24"x12"D SPREAD FOOTING w/ 2-#4 REBAR CONT.
SF3	- 32"x12"D SPREAD FOOTING w/ 2-#4 REBAR CONT.
PF1	- CMU PIER FOOTING - 32"x32"x16"D PIER FOOTING w/ 2-#4 REBAR WEB
PF2	- 60"x60"x16"D PIER FOOTING w/ 2 - #4 REBAR E.W.
PF3	- 72"x72"x16"D PIER FOOTING w/ 2-#4 REBAR E.W
* ALL EXT. FOOTINGS TO HAVE 3,500 psi CONCRETE & SET 30" MIN. BELOW GRADE TO FROST DEPTH	
SLAB	
SL1	- 4" CONCRETE ON 4" GRAVEL W/ DRAIN TILE
SL2	- 4" CONCRETE ON 4" GRAVEL

FRAMING LEGEND - WOOD & STEEL	
COLUMNS & POSTS	
C1	- HSS 6"x6"x5/8" TUBE
C2	- W8 x 31 I-BEAM
C3	- HSS 4"x4"x1/2" TUBE
WOOD JOISTS & HEADERS	
J1	- 2"x12" TJI JOIST, SERIES 560
J2	- 2"x12" JOIST (NOMINAL LUMBER)
J3	- SPACE
STEEL BEAMS & LINTELS	
B1	- W16 x 57 I-BEAM
B2	- W16 x 26 I-BEAM
B3	- W16 x 88 I-BEAM
B4	- W8 x 31 I-BEAM LINTEL

REV	DESCRIPTION	DATE

DESIGNED BY: WS	DRAWN BY: CD	REVIEWED BY: WS	DATE: 05/15/2024	SCALE: 3/16" = 1'-0"
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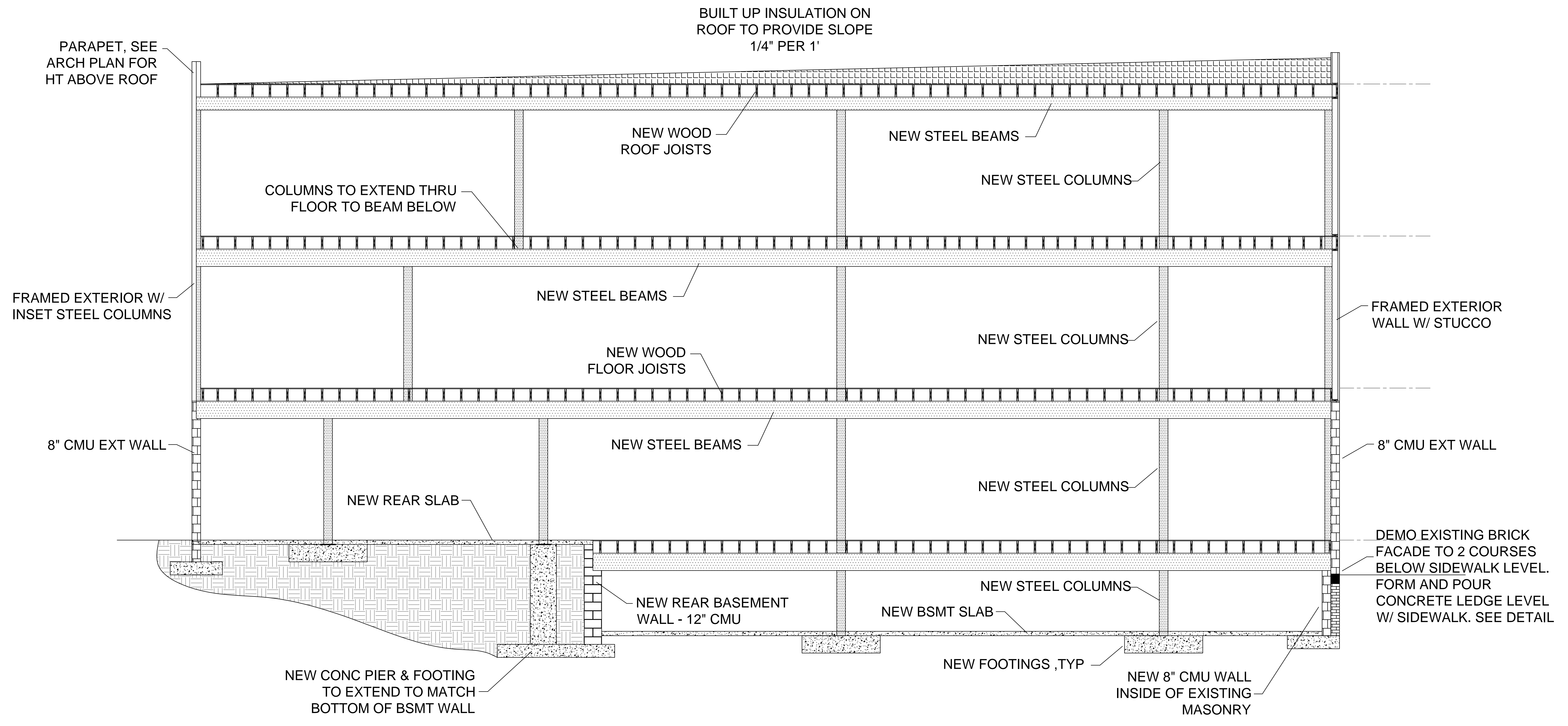
CERTIFICATION
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 LICENSE NO: 32899
 EXP DATE: 05.14.24

THIRD FLOOR LEVEL PLAN
 SCALE: 1/4"=1'-0"

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

PROJECT ADDRESS: **EMAGE II**
2132 NORTH AVE
 DESCRIPTION: **STRUCTURAL PLAN**

SHEET NUMBER
S-3



SECTION PLAN 'A'
 SCALE: 1/4"=1'-0"

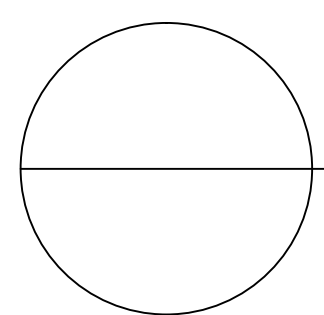
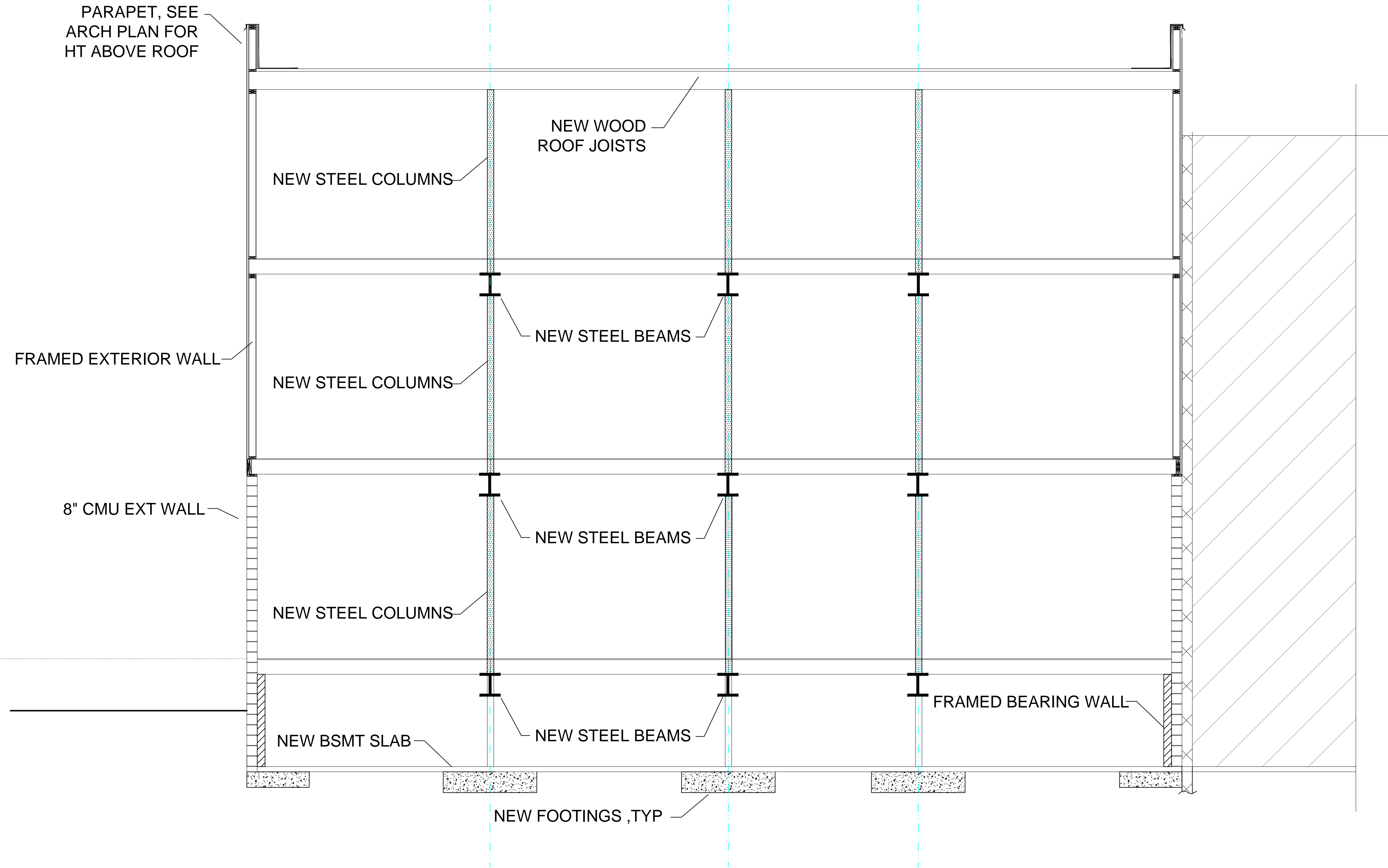
REV	DESCRIPTION	DATE

DESIGNED BY: WS	DRAWN BY: JN	REVIEWED BY: WS	DATE: 05/15/2024	SCALE: 1/4" = 1'-0"
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CERTIFICATION
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 LICENSE NO: 32899
 EXP DATE: 05.14.24

PROJECT ADDRESS: **EMAGE II**
2132 W NORTH AVE
 DESCRIPTION: **SECTION & DETAIL PLAN**

SHEET NUMBER
S-4



SECTION PLAN 'B'

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

STRUCTURAL SCHEDULE & LEGEND

- NEW FOOTING (SEE SCHEDULE)
- NEW CONCRETE SLAB
- CMU BLOCK FOUNDATION WALL (SIZE VARIES)
- EXTERIOR WALL ASSEMBLY
- NEW MASONRY LINTEL
- DASHED LINES INDICATE NEW STEEL BEAM

FOOTING & SLAB LEGEND

FOOTINGS

- SF1 - 16"x12"D SPREAD FOOTING w/ 2-#4 REBAR CONT.
- SF2 - 24"x12"D SPREAD FOOTING w/ 2-#4 REBAR CONT.
- SF3 - 32"x12"D SPREAD FOOTING w/ 2-#4 REBAR CONT.
- PF1 - CMU PIER FOOTING - 32"x32"x16"D PIER FOOTING w/ 2-#4 REBAR WEB
- PF2 - 60"x60"x16"D PIER FOOTING w/2 - #4 REBAR E.W.
- PF3 - 72"x72"x16"D PIER FOOTING w/ 2-#4 REBAR E.W.

* ALL EXT. FOOTINGS TO HAVE 3,500 psi CONCRETE & SET 30" MIN. BELOW GRADE TO FROST DEPTH

SLAB

- SL1 - 4" CONCRETE ON 4" GRAVEL W/ DRAIN TILE
- SL2 - 4" CONCRETE ON 4" GRAVEL

FRAMING LEGEND - WOOD & STEEL

COLUMNS & POSTS

- C1 - HSS 6"x6"x5/8" TUBE
- C2 - W8 x 31 I-BEAM
- C3 - HSS 4"x4"x1/2" TUBE

WOOD JOISTS & HEADERS

- J1 - 2"x12" TJI JOIST, SERIES 560
- J2 - 2"x12" JOIST (NOMINAL LUMBER)
- J3 - SPACE

STEEL BEAMS & LINTELS

- B1 - W16 x 57 I-BEAM
- B2 - W16 x 26 I-BEAM
- B3 - W16 x 88 I-BEAM
- B4 - W8 x 31 I-BEAM LINTEL

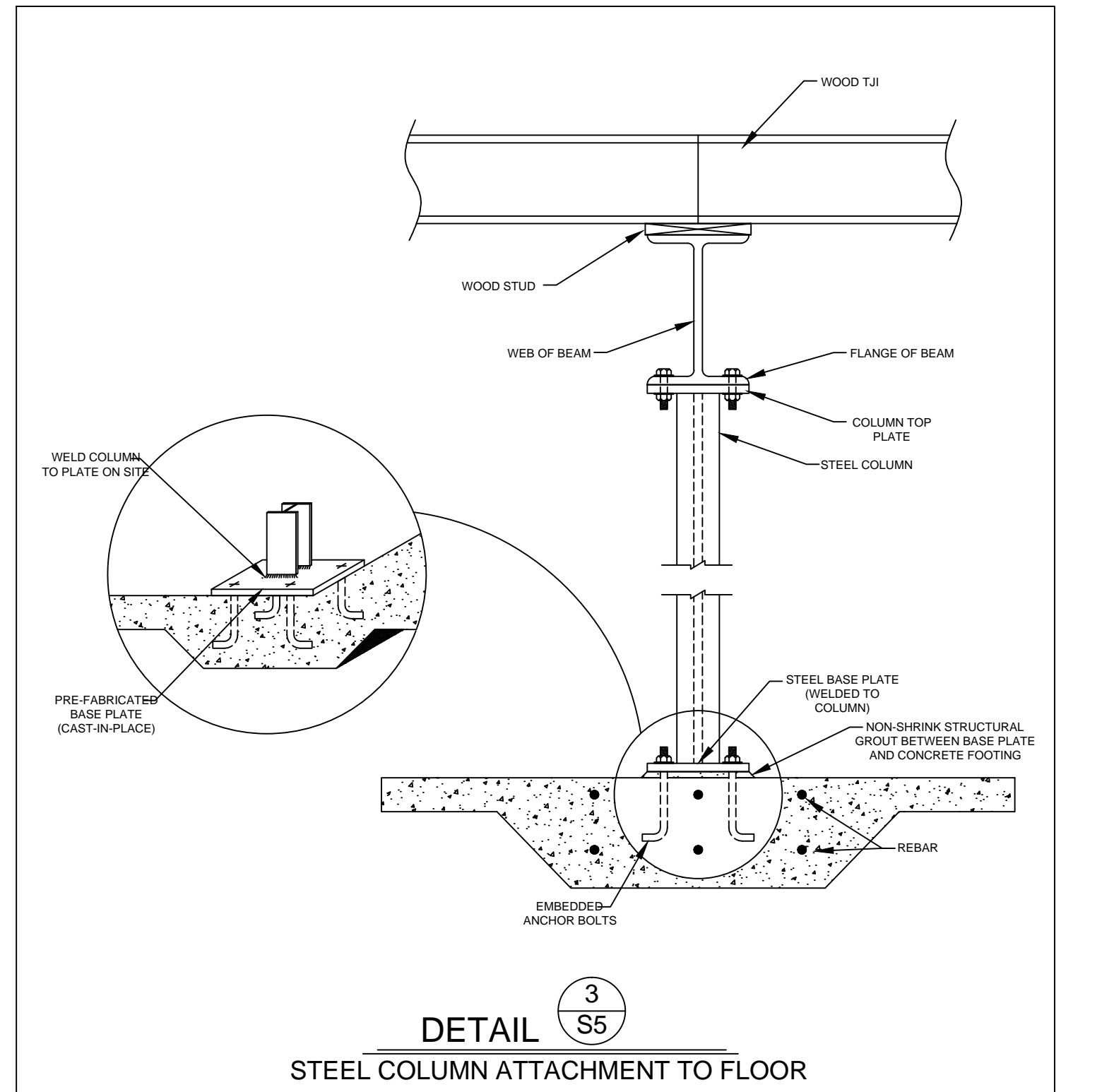
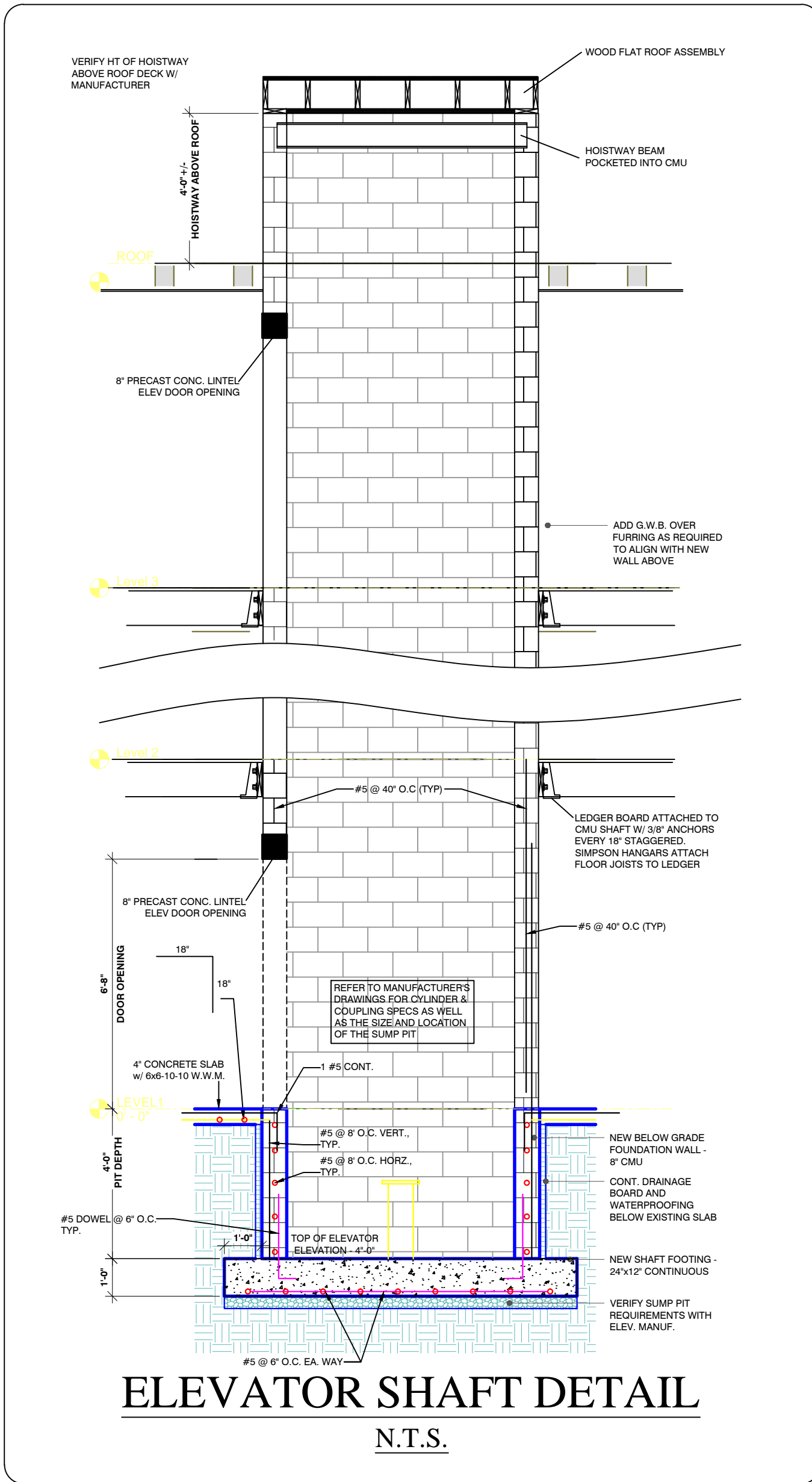
REV	DESCRIPTION	DATE

DESIGNED BY: WS	DRAWN BY: JN	REVIEWED BY: WS	DATE: 05/15/2024	SCALE: 1/4" = 1'-0"
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CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND
 LICENSE NO: 32899
 EXP DATE: 05.14.24

PROJECT ADDRESS: **EMAGE II**
2132 W NORTH AVE
 DESCRIPTION: **SECTION & DETAIL PLAN**

SHEET NUMBER
S-5



REV	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
REVIEWED BY: WS
DATE: 05/15/2024
SCALE: NONE

CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND
LICENSE NO: 32899
EXP DATE: 05.14.24

PROJECT ADDRESS:
IMAGE II
2132 W NORTH AVE
DESCRIPTION:
SPECIFICATIONS

SHEET NUMBER
S-6

GENERAL NOTES

GENERAL REQUIREMENTS

- 1. VERIFICATION: VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS BEFORE STARTING WORK. NOTIFY THE [ENGINEER] IMMEDIATELY OF ANY DISCREPANCIES.
2. CONFLICTS: NOTES AND DETAILS ON THE DRAWINGS TAKE PRECEDENCE OVER THE GENERAL NOTES AND TYPICAL DETAILS IN CASE OF CONFLICT.
3. CODES: ALL MATERIALS AND WORK SHALL CONFORM TO THE REQUIREMENTS OF THE [2015 INTERNATIONAL BUILDING CODE (IBC)].
4. SUBSTITUTIONS: PROVIDE MANUFACTURER'S APPROVED PRODUCT EVALUATION REPORTS (ICBO REPORTS) AND A LIST OF ALL PROPOSED SUBSTITUTIONS TO THE [ENGINEER] FOR REVIEW AND WRITTEN APPROVAL BEFORE FABRICATION.
5. SIMILAR WORK: WHERE CONSTRUCTION DETAILS ARE NOT SHOWN OR NOTED FOR ANY PART OF THE WORK, SUCH DETAILS SHALL BE THE SAME AS FOR SIMILAR WORK SHOWN ON THE DRAWINGS.
6. PIPES, DUCTS, SLEEVES, CHASES, ETC.: SHALL NOT BE PLACED IN SLABS, BEAMS, OR WALLS UNLESS SPECIFICALLY SHOWN OR NOTED NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR PIPES, DUCTS, ETC., UNLESS SPECIFICALLY SHOWN. OBTAIN PRIOR WRITTEN APPROVAL FOR INSTALLATION OF ANY ADDITIONAL PIPES, DUCTS, ETC.
7. EXCAVATIONS: LOCATE AND PROTECT UNDERGROUND OR CONCEALED CONDUIT, PLUMBING OR OTHER UTILITIES WHERE NEW WORK IS BEING PERFORMED.
8. CONSTRUCTION LOADS: MATERIALS SHALL BE EVENLY DISTRIBUTED IF PLACED ON FRAMED FLOORS OR ROOFS. LOADS SHALL NOT EXCEED THE ALLOWABLE LOADING FOR THE SUPPORTING MEMBERS AND THEIR CONNECTIONS.
9. CONSTRUCTION METHODS AND PROJECT SAFETY: THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE METHODS, PROCEDURES OR SEQUENCE OF CONSTRUCTION. TAKE NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE DURING CONSTRUCTION. NEITHER THE OWNER NOR ARCHITECT/ENGINEER WILL ENFORCE SAFETY MEASURES OR REGULATIONS. CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING AND BRACING, AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.
10. CHANGES TO THE DRAWINGS: OBTAIN PRIOR WRITTEN APPROVAL.

DESIGN CRITERIA-----REFER TO THE STRUCTURAL CALCULATIONS

- 1. DEAD LOADS: FLAT ROOF..... 00 PSF, FLAT ROOF AT EXTERIOR..... 00 PSF, PITCHED ROOF..... 14.5 PSF, PITCHED ROOF AT EXTERIOR..... 00 PSF, FLOOR AT INTERIOR..... 15 PSF, FLOOR AT EXTERIOR..... 15 PSF
2. LIVE LOADS: ROOF (BASIC LIVE LOAD).....40 PSF, FLOORS[*]..... 50 PSF, EXITS AND CORRIDORS..... 100 PSF, LIGHT STORAGE..... n/g, BALCONIES..... 100 PSF

- 3. LATERAL LOADS: SEISMIC: RISK CAT= II, IMPORTANCE FACTOR = 1.0, SITE CLASS : D, SEIS DESIGN CAT = B, Ss = .13g, S1 = .052g, Sds = .139g, Sd1 = .083g
WIND: 115 MPH, IMPORTANCE FACTOR = 1.0, EXPOSURE [B]

FOUNDATION

- 1. GEOTECHNICAL INVESTIGATION:
2. FOUNDATION MATERIAL:
3. MINIMUM FOUNDED DEPTH & WIDTH OF FOOTINGS: BELOW ROUGH PAD GRADE.....00", BELOW LOWEST ADJACENT FINISHED GRADE.....12"
4. FOUNDED OF FOOTINGS & SLABS: ON FIRM UNDISTURBED NATURAL SOILS OR APPROVED COMPACTED SOILS.
5. SOIL PRESSURES: SOIL BEARING.....3,500 PSF, COEFFICIENT OF FRICTION.....0.00, PASSIVE PRESSURE.....000 PCF, CANTILEVER ACTIVE (LEVEL).....00 PCF, CANTILEVER ACTIVE (2:1 SLOPE).....00 PCF, RESTRAINED ACTIVE (LEVEL).....00 PCF, RESTRAINED ACTIVE (2:1 SLOPE).....00 PCF
6. SOIL REMOVAL AND RECOMPACTION: PER GEOTECHNICAL INVESTIGATION AND THE CONTRACT DOCUMENTS. SOILS WORK SHALL BE OBSERVED AND TESTED BY THE GEOTECHNICAL ENGINEER.
7. GEOTECHNICAL ENGINEER: SHALL OBSERVE FOOTING EXCAVATIONS BEFORE PLACEMENT OF REINFORCING OR CONCRETE. FOOTING OBSERVATION AND COMPACTION REPORTS SHALL BE SENT TO THE [ENGINEER] AND BUILDING OFFICIAL.
8. ROOF AND AREA DRAINAGE: SHALL BE DIRECTED AWAY FROM THE FOUNDATIONS.
9. BACKFILL: EXCAVATIONS SHALL BE PROPERLY BACKFILLED. BACKFILL FOR WALLS SHALL BE PERVIOUS MATERIAL ACCEPTABLE TO THE GEOTECHNICAL ENGINEER. DO NOT PLACE BACKFILL BEHIND WALLS BEFORE THEY HAVE ATTAINED THEIR DESIGN STRENGTH. SHORE AND PROTECT WALLS FROM LATERAL LOADS UNTIL THE SUPPORTING MEMBERS ARE IN PLACE AND HAVE DEVELOPED SPECIFIED STRENGTHS.

REINFORCED CONCRETE

- 1. MATERIALS: CEMENT.....ASTM C-150 TYPE [II], AGGREGATE.....[ASTM C-33] [STANDARD WEIGHT] REINFORCEMENT.....ASTM A-615 GRADE [60] TYPICAL, ANCHOR BOLTS.....ASTM A-36 HOOKED ANCHOR BOLTS, ANCHOR BOLTS.....ASTM A-307 HEADED MACHINE BOLTS
2. CONCRETE STRENGTHS: THE CONCRETE STRENGTHS SHOWN IN THE FOLLOWING TABLE ARE THE MINIMUM COMPRESSIVE STRENGTHS AT 28 DAYS; AND THE AGGREGATE (AGG) SHOWN IS THE MAXIMUM SIZE. CONCRETE SHALL BE STANDARD WEIGHT CONCRETE (145 PCF).
ITEM OF CONSTRUCTION STRENGTH (PSI) AGG (IN) SLUMP (IN)
FOUNDATIONS.....[2,500 1-1/2 4], SLABS-ON-GRADE.....[2,500 1 4]

- 3. REINFORCEMENT:
A) DETAILING, FABRICATION AND PLACING: SHALL CONFORM TO ACI 315 AND ACI 318.
B) MINIMUM CONCRETE COVER: CAST AGAINST & EXPOSED TO EARTH3", EXPOSED TO EARTH OR WEATHER2", NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND: SLABS, WALLS, JOISTS3", BEAMS, COLUMNS (TIES, STIRRUPS, SPIRALS).....1-1/2"
C) CHAIRS, SPACERS AND SAND PLATES: AS REQUIRED TO MAINTAIN CONCRETE COVER.
D) VERTICAL REINFORCEMENT: SHALL BE DOWELED TO SUPPORTING MEMBERS WITH THE SAME SIZE AND SPACING OF REINFORCEMENT AS SHOWN IN THE DRAWINGS AND GENERAL NOTES.
E) SPACING: CLEAR DISTANCE BETWEEN PARALLEL REINFORCEMENT IN A LAYER SHALL NOT BE LESS THAN 1-1/2 TIMES THE NOMINAL DIAMETER OF THE REINFORCEMENT, OR 1-1/3 TIMES MAXIMUM SIZE AGGREGATE, NOR LESS THAN 1-1/2".
F) TACK WELDING, WELDING, HEATING OR CUTTING OF BARS: NOT PERMITTED UNON.
G) SLAB CORNERS: PROVIDE 2-#4 X 4'-0" AT RE-ENTRANT CORNERS AND EACH CORNER OF RECTANGULAR HOLES IN SLABS. PLACE BARS DIAGONALLY.
H) SPLICES (STANDARD LAPS): [40] DIAMETERS OR 24 INCHES WHICHEVER IS GREATER UNON ON DRAWINGS. STAGGER BOTTOM SPLICES AT LEAST 5'-0" FROM SPLICES IN OTHER BOTTOM REINFORCEMENT. STAGGER SPLICES FOR TOP REINFORCEMENT SIMILARLY.
4. ANCHOR BOLTS, DOWELS AND HOLD DOWN ANCHORS: SECURELY HELD IN PLACE PRIOR TO FOUNDATION INSPECTION BY THE BUILDING OFFICIAL AND OBSERVATION BY THE [ENGINEER].
5. PIPES, SLEEVES AND DUCTS: NOT TO BE PLACED IN WALLS, BEAMS, SLABS, FOOTINGS OR COLUMNS UNLESS SPECIFICALLY DETAILED.
6. CHAMFER: [3/4] INCH ON EXPOSED CORNERS.
7. ADMIXTURES: REVIEWED BY THE [ENGINEER]. CALCIUM CHLORIDE OR ADDED CHLORIDES ARE NOT PERMITTED.
8. CONSTRUCTION JOINTS: [ACI 117.9 & 6.4, 1/4 INCH AMPLITUDE MINIMUM OR KEVED JOINTS PER PLAN.] LOCATION OF JOINTS TO BE REVIEWED BY THE [ENGINEER]. WAIT [48] HOURS BETWEEN POURS.
9. SLAB-ON-GRADE JOINTS: LOCATION OF ALL CONSTRUCTION, CONTROL AND WEAKENED PLANE JOINTS NOT SPECIFICALLY INDICATED ON THE DRAWINGS SHALL BE REVIEWED BY THE [ENGINEER] PRIOR TO THE PLACING OF REINFORCEMENT. MAXIMUM SPACING [15] FEET ON CENTER.
10. ACTUAL DIMENSIONS: SLAB, WALL, BEAM AND COLUMN DIMENSIONS SHOWN ARE ACTUAL DIMENSIONS NOT NOMINAL DIMENSIONS (i.e. A 4 INCH SLAB IS 4 INCHES THICK, NOT 3-1/2 INCHES.)
11. CONCRETE CURING: ACI 318
12. VIBRATION: ALL CONCRETE SHALL BE CONSOLIDATED WITH MECHANICAL VIBRATORS.

REINFORCED HOLLOW UNIT MASONRY

- 1. MATERIALS: CONCRETE BLOCK.....ASTM C-90 TYPE I, [MEDIUM WEIGHT (105-125 PCF)] [OPEN END, [DEEP CUT BOND BEAMS AT HORIZONTAL REINFORCING], [DRY UNITS], [YARD CURED 28 DAYS], [F'm = 1,900 PSI]
MORTAR.....UBC STD 21-15 TYPE [S], UBC STD 21-16 UBC STD 21-19 [8-10] INCH SLUMP [GROUT ADDITIVE]
REINFORCEMENT.....ASTM A-615 GRADE [60] TYPICAL, ANCHOR BOLTS.....ASTM A-36 HOOKED ANCHOR BOLTS, ANCHOR BOLTS.....ASTM A-307 HEADED MACHINE BOLTS, DRILLED ANCHORS []
2. SPECIFIED COMPRESSIVE STRENGTH: F'm = [1,500] PSI FOR SOLID GROUTED, F'm = [1,350] PSI FOR PARTIALLY GROUTED.
3. BLOCK LAYUP: [RUNNING BOND,] [CONCAVE COMPRESSED JOINTS,] [INVERTED BOND BEAM UNITS FOR STARTING COURSES].
4. REINFORCEMENT:
A) VERTICAL: ONE PIECE, NO SPLICES, [CENTERED] IN THE WALL UNLESS SPECIFICALLY DETAILED OTHERWISE. VERTICAL SPACERS 200 REINFORCEMENT DIAMETERS MAXIMUM. DOWEL REINFORCEMENT TO SUPPORTING MEMBERS WITH SAME SIZE AND SPACING OF REINFORCEMENT AS SHOWN ON THE DRAWINGS.
B) SPLICES (LAPS): [50] BAR DIAMETERS OR 24 INCHES, WHICHEVER IS GREATER.
5. GROUTING:
A) [CELLS AND SPACES FILLED WITH GROUT (SOLID GROUTED).]
B) CONSOLIDATED: AT TIME OF PLACEMENT BY MECHANICAL VIBRATION AND THEN RECONSOLIDATED BEFORE PLASTICITY IS LOST.
C) POURS OVER 5 FEET: PROVIDE CLEANOUTS IN BOTTOM COURSE AT REINFORCEMENT (32 INCHES MAX).
D) HORIZONTAL CONSTRUCTION JOINTS: FORMED BY STOPPING THE GROUT POUR 1-1/2 INCHES BELOW THE TOP OF A MORTAR JOINT AND A MINIMUM OF 1/2 INCH BELOW THE TOP OF BOND BEAMS.
E) LIFTS LESS THAN 6 FEET: PLACED IN A CONTINUOUS POUR.
6. REINFORCEMENT CONGESTION: DOUBLE OPEN END BLOCKS OR U BLOCKS TO BE USED TO FACILITATE CONSTRUCTION.

WOOD

- 1. GRADE STAMPED [DOUGLAS FIR/LARCH] (SEE LUMBER GRADES).
2. NAILS: [COMMON WIRE] UNLESS OTHERWISE NOTED. EDGE OR END DISTANCES IN THE DIRECTION OF STRESS SHALL NOT BE LESS THAN ONE HALF OF THE REQUIRED PENETRATION (TABLE 23-1-G). THE SPACING CENTER TO CENTER OF NAILS IN THE DIRECTION OF STRESS SHALL NOT BE LESS THAN THE REQUIRED PENETRATION. HOLES FOR NAILS, WHERE NECESSARY TO PREVENT SPLITTING, SHALL BE BORED TO A DIAMETER SMALLER THAN THAT OF THE NAIL.
3. ANCHOR BOLTS (FOUNDATION ANCHOR BOLTS): PROVIDE [5/8] INCH DIAMETER ANCHOR OR MACHINE BOLTS WITH A MINIMUM OF [7] INCHES EMBEDMENT INTO THE CONCRETE AND WITHIN [12] INCHES OF EACH END OF EACH PLATE. SPACE ANCHORS AT [48] INCHES ON CENTER UNON. [ANCHORS SHALL BE LOCATED A MAXIMUM OF 2 INCHES FROM THE FACE OF STUD RECEIVING WOOD STRUCTURAL PANELS.] [ANCHOR BOLT HOLES 1/32 TO 1/16 INCH LARGER THAN THE ANCHOR BOLT DIAMETER.] [HOLES MORE THAN 1/16 INCH LARGER THAN THE ANCHOR BOLT SHALL BE EPOXY FILLED UNDER THE CONTINUOUS SUPERVISION OF A LICENSED SPECIAL INSPECTOR.]

- 4. BOLTS: NOT LESS THAN 7 BOLT DIAMETERS FROM THE END AND 4 DIAMETERS FROM THE EDGE OF THE MEMBER. BOLT HOLES 1/32 TO 1/16 INCH LARGER THAN THE BOLT DIAMETER. ALL NUTS SHALL BE TIGHTENED WHEN INSTALLED AND RE-TIGHTENED AT THE COMPLETION OF WORK OR BEFORE CLOSING IN. THREAD PROTECTION SHALL BE 1/16 INCH MINIMUM BEYOND THE NUT. [BOLTS IN SPECIFIED SLOTTED HOLES SHALL BE CENTERED IN THE SLOT UN.]
5. LAG SCREW CLEARANCE & LEAD HOLES SHALL BE BORED AS FOLLOWS: THE CLEARANCE HOLE FOR THE SHANK SHALL HAVE THE SAME DIAMETER AS THE SHANK, AND THE SAME DEPTH OF PENETRATION AS THE LENGTH OF UNTHREADED SHANK. THE LEAD HOLE FOR THE THREADED PORTION SHALL HAVE A DIAMETER EQUAL TO [60% TO 75%] OF THE SHANK DIAMETER AND A LENGTH EQUAL TO AT LEAST THE LENGTH OF THE THREADED PORTION.
6. [SQUARE STEEL PLATE WASHERS (PW): ANCHOR BOLTS, BOLTS, LAGS AND NUTS, NOTED PW, SHALL BE SQUARE STEEL PLATE WASHERS:
BOLT DIAM (IN) THICKNESS (IN) SIZE (IN)
1/2 3/16 2 X 2
5/8 1/4 2 1/2 X 2 1/2
3/4 5/16 2 3/4 X 2 3/4
7/8 5/16 3 X 3
1 3/8 3 1/2 X 3 1/2]

- 7. CUT STEEL WASHERS: FOR BOLTS, LAGS AND NUTS, UNON.
8. FRAMING CONNECTORS: PER MANUFACTURER'S APPROVED PRODUCT EVALUATION REPORTS [ICBO APPROVED] AND INSTALLED ACCORDINGLY. SIZE AND NUMBER OF NAILS TO BE MAXIMUM SPECIFIED BY THE MANUFACTURER UNON.
9. [NAILED/SCREWED HOLD DOWN ANCHORS: INSTALL PER MANUFACTURER'S APPROVED [ICBO] PRODUCT EVALUATION REPORT. INSTALL HOLD DOWNS 1/2 INCH MINIMUM ABOVE THE PLATE TO ALLOW FOR TIGHTENING ANCHOR BOLT. THE HOLD DOWN SHALL BE INSTALLED TIGHT TO THE HOLD DOWN POST WITHOUT FILLERS OR DAPPING. DO NOT BEND HOLD DOWN ANCHORS.]
10. [BOLTED HOLD DOWN ANCHORS: INSTALL PER MANUFACTURER'S APPROVED [ICBO] PRODUCT EVALUATION REPORT. INSTALL HOLD DOWNS 1/2 INCH MINIMUM ABOVE THE PLATE TO ALLOW FOR TIGHTENING ANCHOR BOLT. TIGHTEN HOLD DOWN ANCHOR BEFORE TIGHTENING POST BOLTS. USE EXTRA CARE IN BORING THE POST BOLT HOLES (1/32 TO 1/16 LARGER THAN THE BOLT DIAMETER).] THE HOLD DOWN SHALL BE INSTALLED TIGHT TO THE HOLD DOWN POST WITHOUT FILLERS OR DAPPING. THE POST BOLTS SHALL NOT BE COUNTERSUNK INTO THE HOLD DOWN POST UNON. DO NOT BEND HOLD DOWN ANCHORS.]
11. PRESERVATIVE TREATED WOOD: WOOD EXPOSED TO THE WEATHER. FOUNDATION PLATES ON CONCRETE SLABS, FOUNDATIONS WHICH ARE IN DIRECT CONTACT WITH EARTH SHALL BE TREATED WOOD WITH PRESERVATIVE RETENTION AS REQUIRED FOR USE. NEWLY EXPOSED SURFACES RESULTING FROM FIELD CUTTING, BORING OR HANDLING SHALL BE FIELD TREATED IN ACCORDANCE WITH AWPA M-4.
12. TOP PLATES: TWO PIECES, SAME SIZE AS STUDS, STAGGER SPLICES 4'-0" MINIMUM. CENTER SPLICES OVER STUDS. SPLICE WITH [8-16d] MINIMUM UNON.
13. FULL-DEPTH SOLID BLOCKING OR CROSS BRACING: INSTALLED AT INTERVALS NOT EXCEEDING 8 FEET FOR ALL JOISTS AND RAFTERS 2x12 AND DEEPER.
14. SOLID BLOCKING: TWO INCH FULL WIDTH BLOCKING (FIRE STOPS) IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES, AT THE CEILING AND FLOOR LEVELS AND AT 10-FOOT INTERVALS BOTH VERTICAL AND HORIZONTAL.
15. [CUTTING AND NOTCHING: DO NOT CUT, BORE, COUNTERSINK OR NOTCH WOOD MEMBERS EXCEPT WHERE SHOWN IN THE DETAILS. HOLES THROUGH PLATES, STUDS AND DOUBLE PLATES IN WALLS SHALL NOT EXCEED 40% THE MEMBER WIDTH AND SHALL BE LOCATED IN THE CENTER OF THE MEMBER.]
16. PARTITIONS: DOUBLE JOISTS UNDER PARTITIONS PARALLEL TO JOISTS.
17. END SUPPORT: ROOF AND FLOOR JOISTS OVER 4 INCHES DEEP SHALL HAVE THEIR ENDS HELD IN POSITION WITH EITHER:
FULL DEPTH SOLID BLOCKING;
NAILED BRIDGING;
NAILING OR BOLTING TO OTHER FRAMING MEMBERS; OR
APPROVED JOIST HANGERS.
18. GALVANIZING: ALL EXPOSED STEEL TIMBER HARDWARE, FASTENERS AND CONNECTORS.

LUMBER GRADES [DOUGLAS FIR/LARCH]

- COMPLY WITH PS 20, AMERICAN SOFTWOOD LUMBER STANDARD AND STANDARD GRADING RULES FOR WESTERN LUMBER. [19% MAXIMUM MOISTURE CONTENT AT TIME OF PLACEMENT.]
1. DIMENSION LUMBER: BLOCKING ..[2" TO 4" THICK, 2" TO 4" & STUDS (10' MAXIMUM) WIDE]; [STANDARD]
2. DIMENSION LUMBER: STUDS,[2" TO 4" THICK, 2" TO 4" JOISTS & RAFTERS WIDE]; [NO. 1]
3. DIMENSION LUMBER:.....[2" TO 4" THICK, 5" AND STUDS, BLOCKING WIDER]; [NO. 2]
4. BEAMS AND STRINGERS:.....[5" AND THICKER, WIDTH MORE THAN 2" GREATER THAN THICKNESS]; [NO. 1]
5. POSTS AND TIMBERS:.....[5" BY 5" AND LARGER, WIDTH NOT MORE THAN 2" GREATER THAN THICKNESS]; [NO.1]
6. HOLD DOWN POSTS:[NO. 1]

WOOD STRUCTURAL PANELS (PANEL) APA RATED

- 1. REFERENCES: PS1, PS2, APA STANDARD PRP-108, NATIONAL EVALUATION SERVICE REPORT NER-108 AND ICBO ES REPORT 1952.
2. WALL PANELS [PLYWOOD].....[STRUCTURAL I, 5 PLY] [15/32 INCH 32/16]
3. ROOF PANELS.....[STRUCTURAL I] [15/32 INCH 32/16 OR 24/0] EXPOSURE 1 OR EXTERIOR WITH 8d NAILS AT 6"O.C. AT EDGES AND BOUNDARIES AND 12"O.C. AT FIELD PANEL EDGES.
4. FLOOR PANELS:.....[STURD-I-FLOOR, SANDED] [23/32] INCH, T&G- PI 40/20] EXPOSURE 1 OR EXTERIOR WITH 100 COMMON NAILS (DEFORMED SHANK) AT 6"O.C. AT EDGES AND BOUNDARIES AND 12"O.C. AT FIELD, PANEL EDGES UNBLOCKED
5. BLOCKING:
A) WALLS: ALL UNSUPPORTED PANEL JOINTS SHALL BE BLOCKED SOLID WITH [3x] BLOCKING
B) FLOORS & ROOFS: WHERE NOTED ON THE DRAWINGS, ALL UNSUPPORTED PANEL JOINTS SHALL BE BLOCKED SOLID WITH [3x4 FLAT] BLOCKING.

- 6. NAILING: COMMON WIRE NAILS. PANEL NAILS SHALL BE DRIVEN SO THAT THE HEADS ARE FLUSH WITH THE SURFACE OF THE PANEL. FIELD NAILING (FN) SHALL BE 12 INCHES ON CENTER AND THE MINIMUM PANEL EDGE DISTANCES SHALL BE MAINTAINED.
7. MACHINE NAILING: SUBJECT TO A SATISFACTORY JOB SITE DEMONSTRATION FOR THIS PROJECT AND REVIEW BY THE [ENGINEER]. THE USE OF MACHINE NAILING IS SUBJECT TO CONTINUED SATISFACTORY PERFORMANCE. PANEL NAILS SHALL BE DRIVEN SO THAT THE HEADS ARE FLUSH WITH THE SURFACE OF THE PANEL AND THE MINIMUM PANEL EDGE DISTANCES ARE MAINTAINED.
8. GLUED FLOORS: FIELD GLUE TO ALL SUPPORTS AND T&G EDGES PER APA, AFG-01. FRAMING SHALL BE FREE OF SURFACE MOISTURE & DEBRIS PRIOR TO GLUING.
9. WOOD STRUCTURAL PANELS (PANELS): WHERE ADJACENT WALLS ARE PANELED, PANELS SHALL BE INSTALLED OVER AND UNDER OPENINGS.

Table with 4 columns: COMMON WIRE NAILS, DIAMETER INCHES, WIRE GAGE, PENETRATION INCHES. Rows include 8d, 10d, 16d, 30d.

PENETRATION IS MEASURED INTO THE PIECE RECEIVING THE NAIL POINT. 1-1/2 INCHES OF PENETRATION FOR 10d AND 16d NAILS IS ACCEPTABLE FOR TOP PLATES AND DOUBLED 2X MEMBERS. WHERE THE NAIL PENETRATION WILL BE LESS THAN SPECIFIED, INCREASE NAIL LENGTH (SIZE) TO OBTAIN THE PENETRATION REQUIRED FOR THE NAIL SPECIFIED.

NAILING SCHEDULE - TABLE 23-1-Q, (UBC CHAPTER 23) THE CONNECTIONS LISTED ARE THE MINIMUM PERMISSIBLE. [USE COMMON WIRE NAILS FOR ALL NAILED CONNECTIONS]. WHERE POSSIBLE, NAILS DRIVEN PERPENDICULAR TO THE GRAIN SHALL BE USED INSTEAD OF TOE NAILS. SEE THE DRAWINGS FOR ADDITIONAL NAILING REQUIREMENTS.

JOIST TO SILL (PLATE) OR GIRDER, TOENAIL.....3-8d BRIDGING TO JOIST, TOENAIL EACH END.....2-8d 1" X 6" SUBFLOOR OR LESS TO EACH JOIST, FACE NAIL.....2-8d WIDE JOIST 1" X 6" SUBFLOOR TO EACH JOIST, FACE NAIL.....3-8d 2" SUBFLOOR TO JOIST OR GIRDER, BLIND AND FACE NAIL.....2-16d SOLE PLATE TO JOIST OR BLOCKING: FACE NAIL.....16d AT 16" BRACED WALL PANELS.....3-16d PER 16" STUD TO SOLE PLATE; TOENAIL.....2-16d END NAIL.....2-16d DOUBLE STUDS, TYPICAL FACE NAIL.....16d AT 24" DOUBLED TOP PLATES: FACE NAIL.....16d AT 24"

TOP PLATE TO STUD, END NAIL.....16d AT 24" LAP SPLICES.....8-16d END NAIL.....2-16d DOUBLED TOP PLATES: FACE NAIL.....16d AT 24" BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE.....3-8d RIM JOIST TO TOP PLATE, TOENAIL.....8d AT 6" TOP PLATES, LAPS AND INTERSECTIONS, FACE NAIL.....2-16d CONTINUOUS HEADER, TWO PIECES (ALONG EACH EDGE).....16d AT 16" NAILING JOISTS TO PLATE, TOENAIL.....3-8d CONTINUOUS HEADER TO STUD, TOENAIL.....4-8d CEILING JOISTS, LAPS OVER PARTITIONS, FACE NAIL.....3-16d CEILING JOISTS TO PARALLEL RAFTERS, FACE NAIL.....3-16d RAFTER TO PLATE, TOENAIL.....3-8d 1" BRACE TO EACH STUD AND PLATE, FACE NAIL.....2-8d 1" X 8" SHEATHING OR LESS TO EACH BEARING, FACE NAIL.....2-8d WIDER THAN 1" X 8" SHEATHING TO EACH BEARING, FACE NAIL.....3-8d BUILT-UP CORNER STUDS.....16d AT 24" BUILT-UP GIRDERS AND BEAMS.....20d AT 32" AT TOP AND BOTTOM STAGGERED 2" PLANKS, EACH END AND EACH BEARING.....2-16d

- 3. DEFLECTION: FLOOR LIVE LOAD DEFLECTION SHALL NOT EXCEED [L/480] AND TOTAL LOAD DEFLECTION SHALL NOT EXCEED [L/240]. ROOF TOTAL LOAD DEFLECTION SHALL NOT EXCEED [L/180].
4. CALCULATIONS & SHOP DRAWINGS: SUBMIT FOR REVIEW, SHOP DRAWINGS AND CALCULATIONS BY A [CALIFORNIA] [CIVIL] ENGINEER, FOR THE DESIGN LOADS, INCLUDING MAXIMUM REACTION, SHEAR, MOMENT, AND DEFLECTION IN COMPARISON TO THE ALLOWABLES. SIZE THE TOP CHORD FOR THE DIAPHRAGM NAILING AND A [2X] MINIMUM NOMINAL WIDTH. [THE I-JOISTS SHOWN ON THE DRAWINGS ARE PRELIMINARY AND MAY REQUIRE SIZE, DEPTH OR SPACING MODIFICATIONS.]
5. NAILING: USE A STAGGERED NAILING PATTERN, WHEN POSSIBLE. BASED ON THE MANUFACTURER'S MINIMUM NAIL SPACINGS. SUBMIT FOR REVIEW THE RECOMMENDED NAILING PATTERNS FOR ALL I-JOIST PRODUCTS.
6. BLOCKING, WEB STIFFENERS AND BRIDGING: AS REQUIRED BY THE MANUFACTURER'S APPROVED PRODUCT EVALUATION REPORTS, THE UBC, [ICBO APPROVALS], THE CALCULATIONS AND THE DRAWINGS.
7. JOIST CHANGES: OBTAIN WRITTEN CONSENT FROM THE [ENGINEER] TO CHANGE THE JOIST TYPE, DEPTH OR SPACING.

PREFABRICATED WOOD TRUSSES

- 1. CODES AND FABRICATION: MANUFACTURER'S APPROVED [ICBO] PRODUCT EVALUATION REPORTS.
2. GRADE STAMPED [DOUGLAS FIR/LARCH NO. 2 OR BETTER].
3. DESIGN REQUIREMENTS:
A) ROOF: FLAT (LESS THAN 4:12) DEAD LOAD TOP CHORD.....00 PSF DEAD LOAD BOTTOM CHORD.....00 PSF LIVE LOAD TOP CHORD.....00 PSF LIVE LOAD BOTTOM CHORD.....00 PSF
B) ROOF LOADS: SLOPED (4:12 OR GREATER) DEAD LOAD TOP CHORD.....00 PSF DEAD LOAD BOTTOM CHORD.....00 PSF LIVE LOAD TOP CHORD.....00 PSF LIVE LOAD BOTTOM CHORD.....00 PSF
C) DEFLECTION: ROOF TOTAL LOAD DEFLECTION SHALL NOT EXCEED [L/180].
4. CALCULATIONS & SHOP DRAWINGS: SUBMIT FOR REVIEW, SHOP DRAWINGS AND CALCULATIONS BY A [CALIFORNIA] [CIVIL] ENGINEER, FOR THE DESIGN LOADS, INCLUDING MAXIMUM REACTION, SHEAR, MOMENT, AND DEFLECTION IN COMPARISON TO THE ALLOWABLES. SIZE THE TOP CHORD FOR THE DIAPHRAGM NAILING AND A [2X] MINIMUM NOMINAL WIDTH. [THE TRUSSES SHOWN ON THE DRAWINGS ARE PRELIMINARY AND MAY REQUIRE SIZE OR SPACING MODIFICATIONS.]
5. BLOCKING, BRACING AND BRIDGING: AS REQUIRED BY THE MANUFACTURER'S APPROVED PRODUCT EVALUATION REPORTS, THE UBC, [ICBO APPROVALS], THE CALCULATIONS AND THE DRAWINGS.
6. TRUSS CHANGES: OBTAIN WRITTEN CONSENT FROM THE [ENGINEER] TO CHANGE THE TRUSS TYPE, WIDTH, CHORD DEPTH, TRUSS SHAPE OR SPACING.

STRUCTURAL STEEL

- 1. MATERIALS: ANGLES, CHANNELS, & MISC SHAPES : ASTM A-36 WF SHAPES : ASTM A-992 TUBES : ASTM A-500, GRADE B PIPES : ASTM A-501, TYPE E, GRADE B COLUMN BASE ANCHOR RODS : ASTM F-1554, GRADE 36 HOOKED OR THREADED ANCHOR RODS : ASTM A-307, GRADE A NUTS : A-563 WASHERS : F-436-1 PLATE WASHERS : ASTM A-36 CONNECTION BOLTS (HIGH STRENGTH) : A-325 STAINLESS STEEL : PLATES - ASTM A276; BOLTS - F593; NUTS - F594
2. GROUT BELOW BEARING AND BASE PLATES : ASTM C-1107, 5,000 PSI
3. WELDING, WELDING ELECTRODES, AND FLUXES SHALL CONFORM TO AWS D.11 ELECTRODES SHALL HAVE MIN TENSILE STRENGTH OF 70 KSI FILLET WELDS SHALL BE MIN 3/16"
4. STEEL SHALL BE HOT DIP GALVANIZED IN ACCORDANCE W/ ASTM A123 AS NOTE:
A) EXTERIOR AND/OR EXPOSED TO ANY WEATHER CONDITIONS
B) LINTELS IN EXTERIOR WALL CAVITIES
C) BRICK RELIEF / SHELF ANGLES

- 5. SUBMIT COMPLETE SHOP AND ERECTION DRAWINGS FOR REVIEW PRIOR TO FABRICATION.

PREFABRICATED WOOD I-JOISTS

- 1. CODES AND FABRICATION: MANUFACTURER'S APPROVED PRODUCT EVALUATION REPORTS.
2. DESIGN REQUIREMENTS:
A) ROOF: FLAT (LESS THAN 4:12) DEAD LOAD00 PSF LIVE LOAD40 PSF
B) ROOF: SLOPED (4:12 OR GREATER) DEAD LOAD00 PSF LIVE LOAD00 PSF
C) FLOOR LOADS: RESIDENTIAL DEAD LOAD15 PSF LIVE LOAD40 PSF PARTITIONS00 PSF
D) FLOOR LOADS: BALCONIES DEAD LOAD15 PSF LIVE LOAD40PSF PARTITIONS00 PSF
E) FLOOR LOADS: EXITS DEAD LOAD00 PSF LIVE LOAD100 PSF

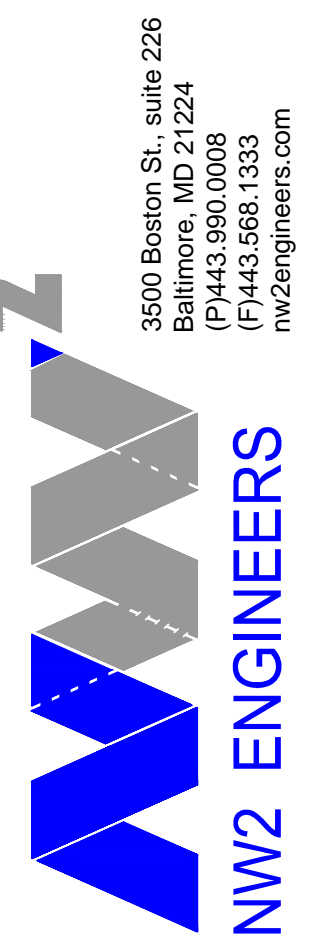


Table with 3 columns: REV, DESCRIPTION, DATE. Includes rows for DESIGN REQUIREMENTS and CALCULATIONS & SHOP DRAWINGS.

Table with 2 columns: DESIGNED BY, DRAWN BY, REVIEWED BY, DATE, SCALE. Values include WS, 05/15/2024, NONE.

CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO: 32899 EXP DATE: 05.14.24

PROJECT ADDRESS: IMAGE II 2132 W NORTH AVE SPECIFICATIONS

SHEET NUMBER