

SIDEWALKS:

ALL SIDEWALKS SHALL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE, WITH A COMPRESSIVE STRENGTH OF 2500 PSI IN TWENTY-EIGHT DAYS, AND A MINIMUM THICKNESS OF FIVE INCHES.

ALL SIDEWALKS TO HAVE A WIDTH OF FOUR (4) FEET AND SHALL BE CONSTRUCTED AS PER THE LOCATION SHOWN ON THIS PLAN.

ALL SIDEWALKS SHALL BE SCORED TO A DEPTH OF 3/4" AT FOUR FOOT INTERVALS, WITH EXPANSION JOINTS PLACED AT TWENTY FOOT INTERVALS.

EXPANSION JOINTS SHALL BE CONSTRUCTED OF 1/2" THICK PRE-MOLDED EXPANSION MATERIAL WITH ALL CORNERS TO BE FORMED BY EXPANSION JOINTS.

ANY SIDEWALK OR ACCESSIBLE ROUTE THAT IS NOT AT A LEVEL ELEVATION AT ITS INTERSECTION WITH A DRIVEWAY OR STREET WILL BE REQUIRED TO INSTALL A CURB RAMP AT A MAXIMUM SLOPE OF 1:12, WITH A MAXIMUM RISE OF 30" AND A MINIMUM LEVEL STRAIGHT CURB SEGMENT OF 48".

SIDEWALK SHALL BE SLOPED 1 INCH TOWARDS THE STREET

ALL RAMPS LEADING TO HAZARDOUS VEHICULAR AREAS SHALL HAVE DETECTABLE WARNINGS ON WALKING SURFACE AS PER CODE.

DRIVEWAYS:

ALL DRIVEWAYS BETWEEN STREET AND PROPERTY LINE SHALL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE, WITH A COMPRESSIVE STRENGTH OF 3000 PSI IN TWENTY-EIGHT DAYS AND A MINIMUM THICKNESS OF EIGHT INCHES.

ALL DRIVEWAYS BETWEEN STREET AND PROPERTY LINE CONNECTING WITH AN EXISTING ROADWAY TO BE CONSTRUCTED IN ACCORDANCE WITH DETAIL AS SHOWN ON THIS PLAN.

EXACT LOCATIONS OF ROADWAY AND DRIVEWAY CURBING WILL BE DETERMINED IN THE FIELD BY A REPRESENTATIVE OF THE DEPARTMENT OF ENGINEERING.

CONTRACTOR WILL CONTACT THE DEPARTMENT OF ENGINEERING, #736-6743, TWO DAYS PRIOR TO THE FORMING OF THE DRIVEWAYS CONNECTING TO THE ROADWAY.

PARKING LOT:

THE COLOR OF THE PARKING SPACE STRIPING TO BE YELLOW, WITH A STANDARD WIDTH OF FOUR INCHES.

THE COLOR OF THE HANDICAP PARKING SPACE STRIPING TO BE BLUE, WITH A STANDARD WIDTH OF FOUR INCHES.

ALL WHEEL STOPS AND CONCRETE CURBS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS PLAN.

ALL PARKING SPACES TO BE LAID OUT IN ACCORDANCE WITH THE TYPICAL DETAIL AS SHOWN ON THIS PLAN, UNLESS OTHERWISE INDICATED ON THIS PLAN.

DRAINAGE:

CONCRETE STRENGTH TO BE 3000 PSI (MINIMUM) AT 28 DAYS.

WHEN THE DEPTH OF BOX OR MANHOLE IS FOUR FOOT OR GREATER THE INSTALLATION OF STEPS WILL BE REQUIRED IN ACCORDANCE WITH PUBLIC WORKS STANDARDS.

ALL WALLS TO BE PLASTERED 1/2" THICK, INSIDE AND OUTSIDE.

ALL MASONRY TO BE LAID WITH RUNNING BOND AND HEADER COURSE.

12" THICK LIMESTONE BEDDING FOUNDATION SHALL BE REQUIRED UNDER ALL MANHOLES AND DASINS.

WHEN BOX IS 7'-0" OR LESS IN HEIGHT, USE ONE LAYER OF BRICK. WHEN BOX IS 7'-0" BUT LESS THAN 12'-0", USE TWO LAYERS OF BRICK.

TRAFFIC CONTROLS:

ANY WORK IN THE ROADWAY OR ADJACENT TO THE ROADWAY CAUSING AN INTERFERENCE TO VEHICULAR TRAFFIC REQUIRES PRIOR NOTIFICATION TO THE JEFFERSON PARISH TRAFFIC ENGINEERING DIVISION AND CONFORMITY TO THE REQUIREMENTS OF THE UNIFORM MANUAL ON TRAFFIC CONTROL DEVICES OF THE STATE OF LOUISIANA. THE CONTRACTOR MUST FURNISH ALL NECESSARY TRAFFIC SIGNS AND/OR BARRICADES, AND MAINTAIN THEM DURING CONSTRUCTION ACTIVITY. PHONE: 736-6530

BUILDING CONSTRUCTION

THE HURRICANE RESISTANCE CONSTRUCTION FOR THIS BUILDING WAS DESIGNED TO BE IN COMPLIANCE WITH THE REQUIREMENTS OF THE 2015 INTERNATIONAL BUILDING CODE, SECTION R301.2.1.

I HAVE RESEARCHED THE REQUIREMENTS OF THE 2015 INTERNATIONAL BUILDING CODE AND TO THE BEST OF MY KNOWLEDGE AND BELIEF THESE DRAWINGS ARE IN COMPLIANCE THEREWITH. I TAKE FULL RESPONSIBILITY FOR THE CONTENTS OF THESE DRAWINGS.

THE CONSTRUCTION OF THIS STRUCTURE IS TO CONFORM TO THE WIND AND FLOOD MITIGATION REQUIREMENTS OF THE 2015 INTERNATIONAL BUILDING CODE, ASCE 7 WIND LOADS. BUILDINGS LOCATED IN WHOLE OR IN PART IN IDENTIFIED FLOODWAYS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH ASCE 24-14 AND FEMA REQUIREMENTS.

THE STRUCTURE HAS BEEN DESIGNED FOR: THREE SECOND WIND GUST OF 130 MPH - BASED ON EXPOSURE C.

UPLIFT RESISTANCE IS REQUIRED AND SHALL BE CONTINUOUS FROM THE ROOF TO THE FOUNDATION.

DESIGN LOADS

- FLOOR LIVE LOAD (IMPOSED) = 75 PSF
- ROOF LIVE LOAD (IMPOSED) = 20 PSF
- WIND LOADS:
 - WIND LOAD (SPEED) = 130 MPH
 - WINDWARD WALL = 30 PSF HORIZONTAL (INTO)
 - LEEWARD WALL = 20 PSF HORIZONTAL (AWAY)
 - WINDWARD ROOF = 10 PSF NORMAL INTO ROOF (INTO) OR 10 PSF NORMAL UPLIFT (AWAY)
 - LEEWARD ROOF = 24 PSF NORMAL UPLIFT (AWAY)
 - UPLIFT ON ROOF SURFACE = 10 PSF

GENERAL NOTES:

PROVIDE DRAFT STOPS BETWEEN SUSPENDED CEILING AND DECKING AT 50'-0" IN EACH DIRECTION.
PROVIDE FIRE STOPS IN ALL CONCEALED SPACES BOTH HORIZONTAL AND VERTICALLY AT EVERY 10'-0".

PARKING SPACE REQUIREMENTS

NOTE:
PARKING SPACES FOR PHYSICALLY HANDICAPPED PEOPLE SHALL BE AT LEAST 8' WIDE AND SHALL HAVE AN ADJACENT ACCESS AISLE 5' WIDE MINIMUM (SEE FIG. A). PARKING ACCESS AISLE SHALL BE PART OF THE ACCESSIBLE ROUTE TO THE BUILDING OR FACILITY ENTRANCE. TWO ACCESSIBLE PARKING SPACES MAY SHARE A COMMON ACCESS AISLE. PARKED VEHICLE OVERHANGS SHALL NOT REDUCE THE CLEAR WIDTH OF AN ACCESSIBLE CIRCULATION ROUTE. ACCESSIBLE PARKING SPACES SHALL BE DESIGNATED AS RESERVED FOR PHYSICALLY HANDICAPPED PEOPLE BY A SIGN SHOWING THE SYMBOL OF ACCESSIBILITY. SUCH SIGNS SHALL NOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE.

SITE AREA

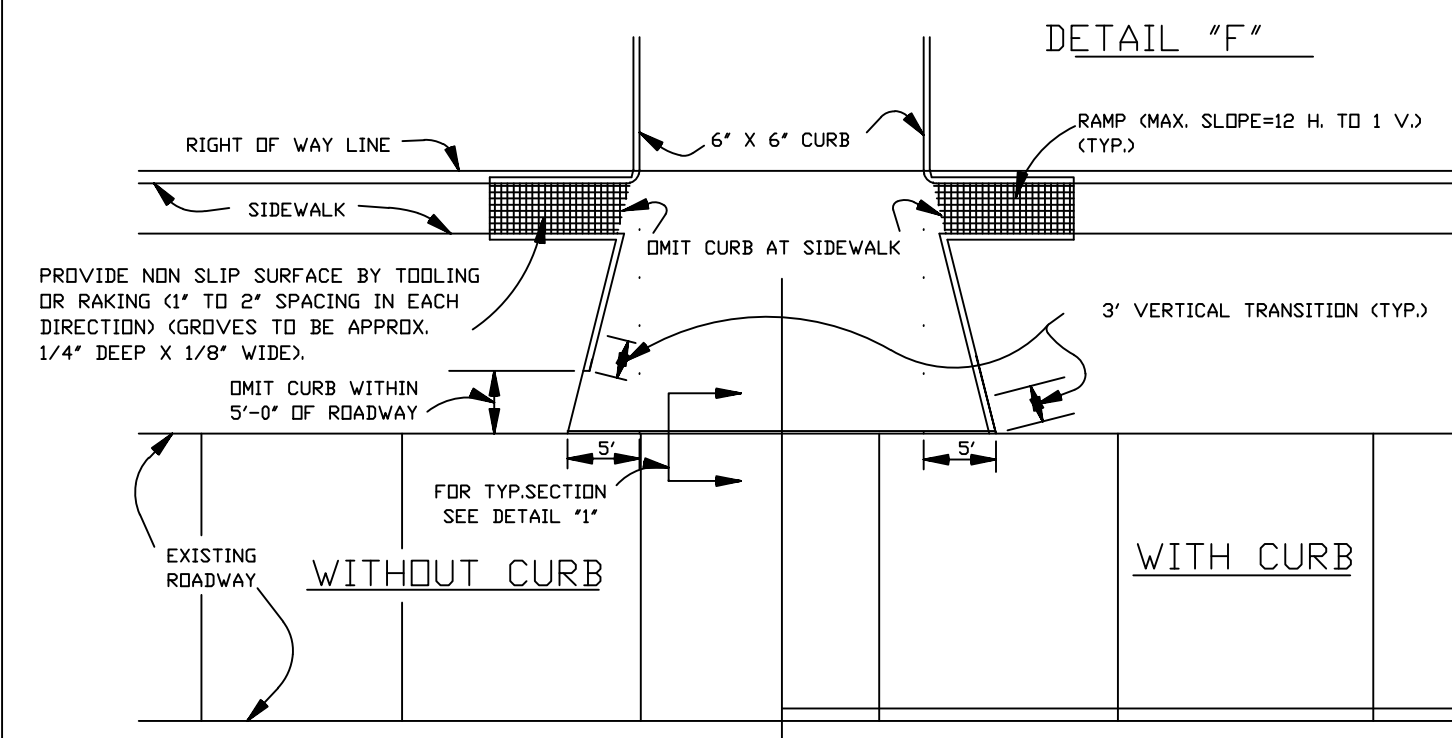
LEASE SPACE - PHASE I	14,381 S.F.
LEASE SPACE - PHASE II	14,381 S.F.
GROSS	28,762 S.F.
PARKING AREA	52,469 S.F.
GREEN AREA	31,432 S.F.
SITE	112,663 S.F.

PARKING:

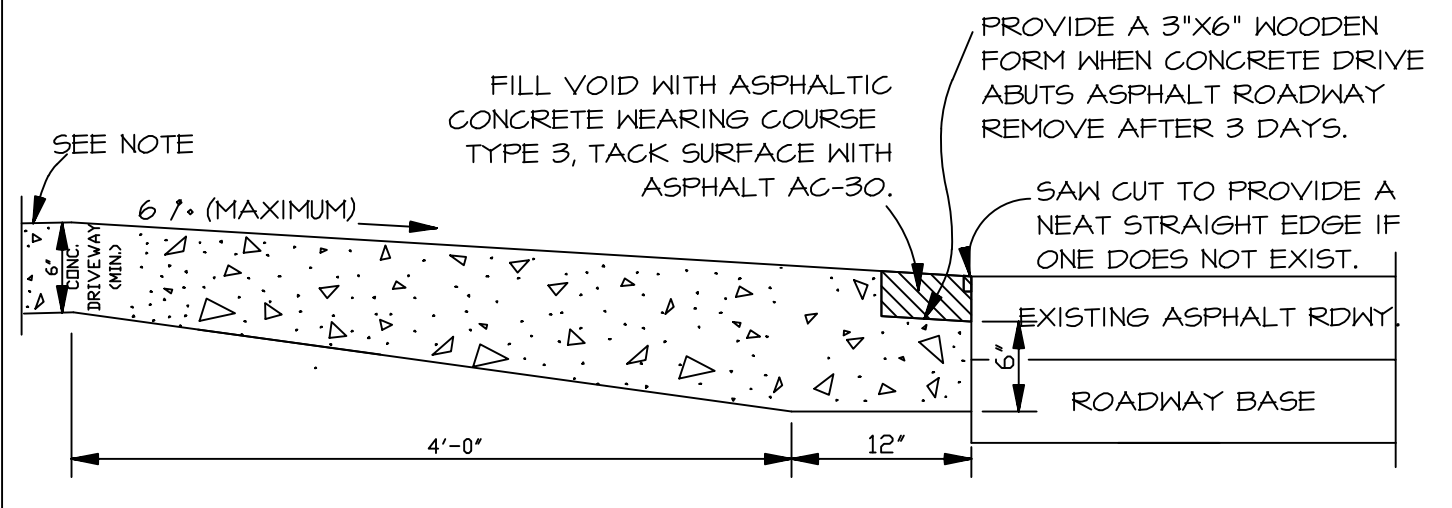
- 1 SPACE PER 500 SF GFA.
- 28,762 S.F./500 S.F. = 58 SPACES
- MAXIMUM VEHICLE PARKING:
- 58 SPACES x 150% = 87 SPACES ALLOWED
- 84 SPACES PROVIDED
- 1 BIKE PER 5000 SF GFA.
- 28,762 S.F./5000 S.F. = 6 SPACES REQUIRED
- 6 SPACES PROVIDED

BUILDING DATA

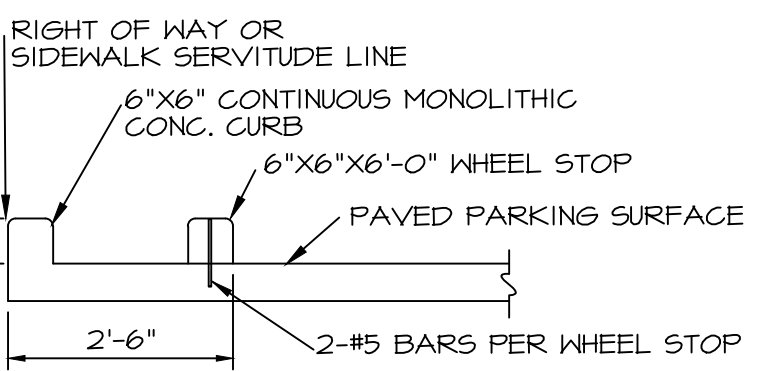
BUILDING CODE: INTERNATIONAL BUILDING CODE 2015 ED.
 OCCUPANCY: MERCANTILE GROUP M
 TYPE OF CONSTRUCTION: V-B (000)
 AUTOMATIC SPRINKLER PROTECTION: NON-SPRINKLERED
 OCCUPANT LOAD: 28,762 S.F./60 GROSS = 480 OCCUPANTS
 BUILDING HEIGHT: 26'-3"



PLAN OF NEW CURBED DRIVEWAY CONNECTING TO ROADWAY WITH OR WITHOUT CURBS.

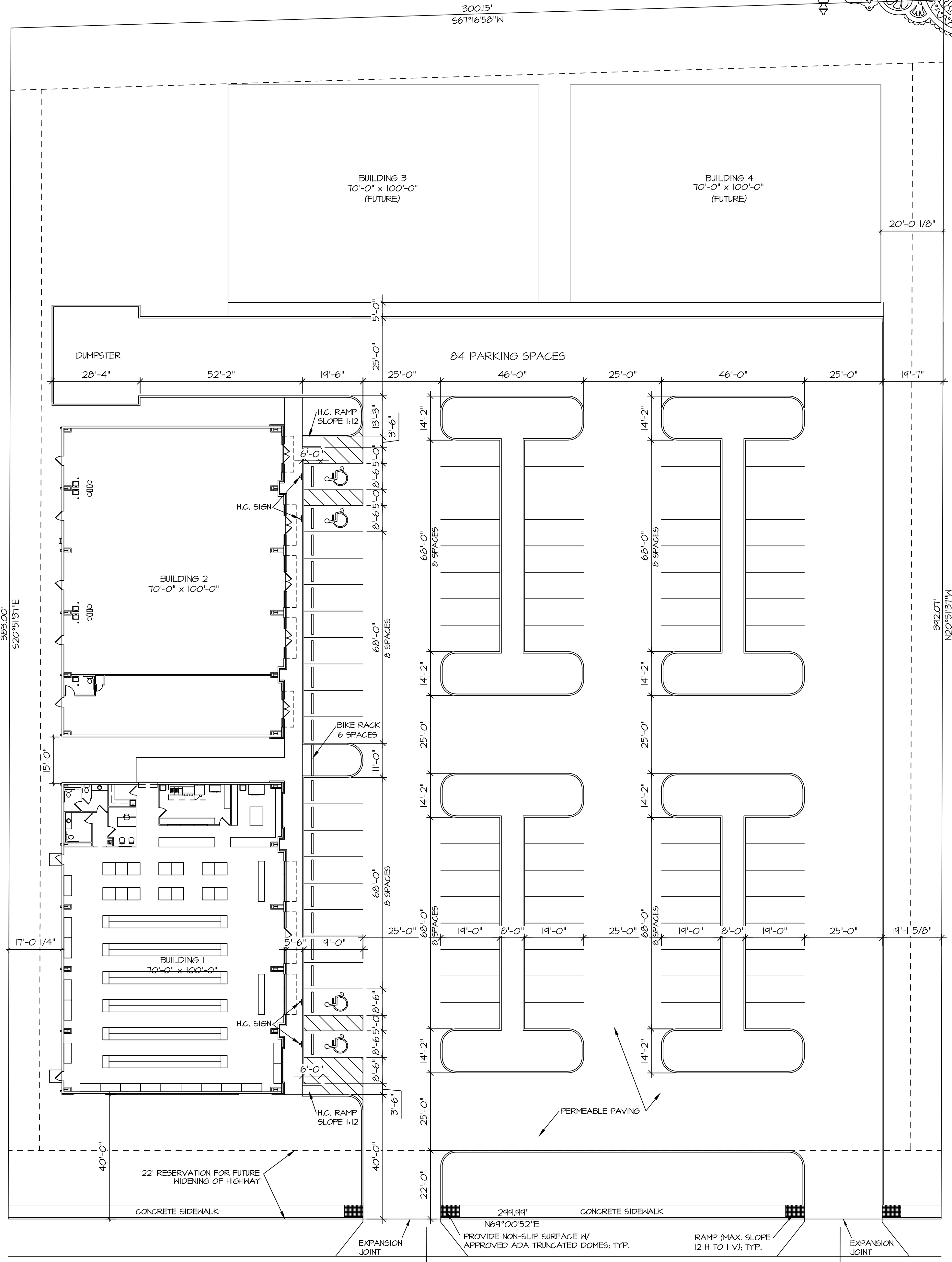


NEW DRIVEWAY CONNECTION TO EXISTING ASPHALT ROADWAY WITHOUT CURB.

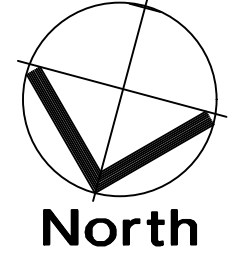


DETAIL 2 SCALE: 1/2" = 1'-0"

DETAIL 1 SCALE: N.T.S.



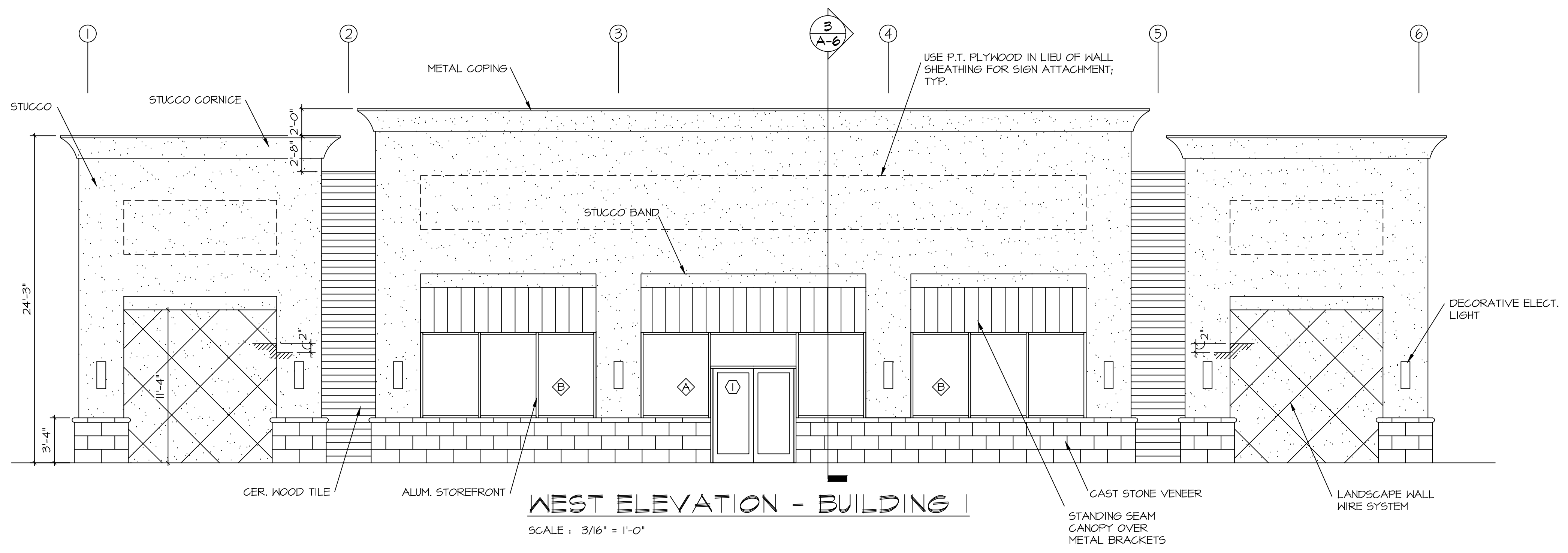
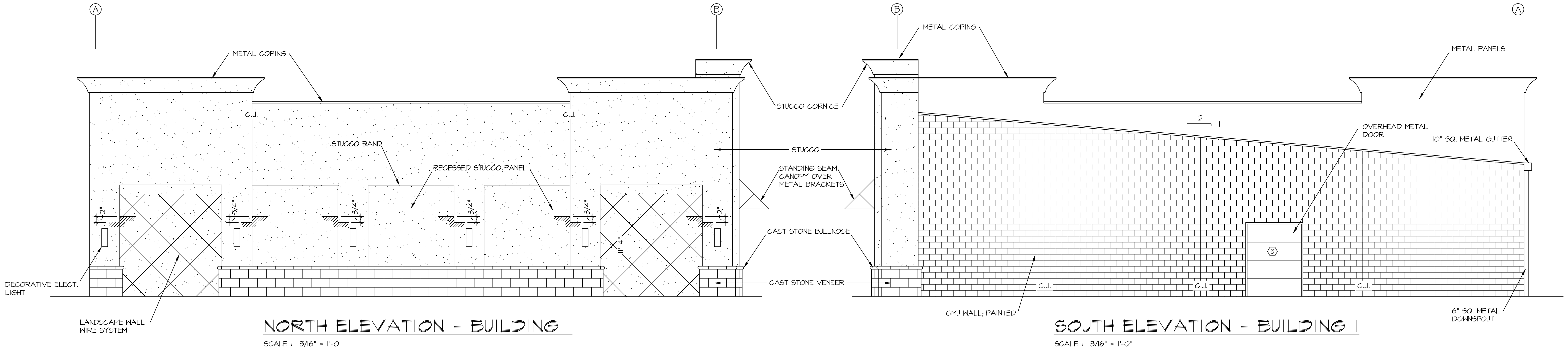
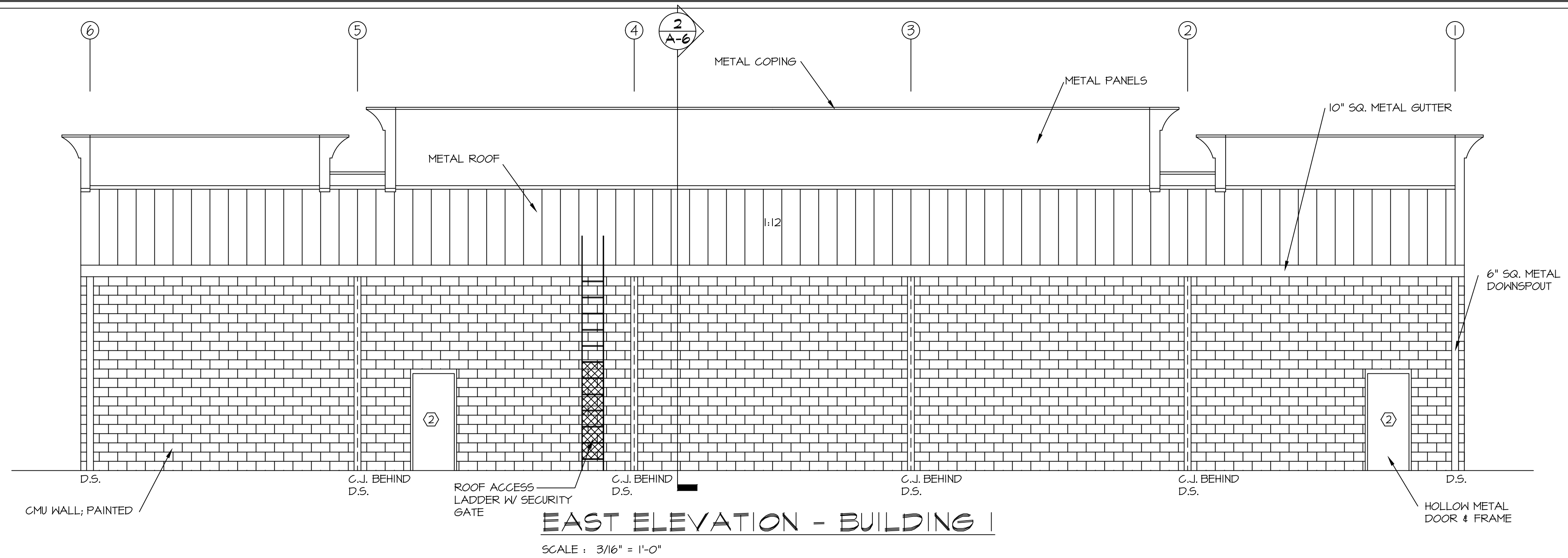
SITE PLAN SCALE: 1" = 20'-0"



LOT #6, T 4 B
SQUARE #F-3
NEW ORLEANS EAST INDUSTRIAL CENTER, THIRD DISTRICT
ORLEANS PARISH, LA

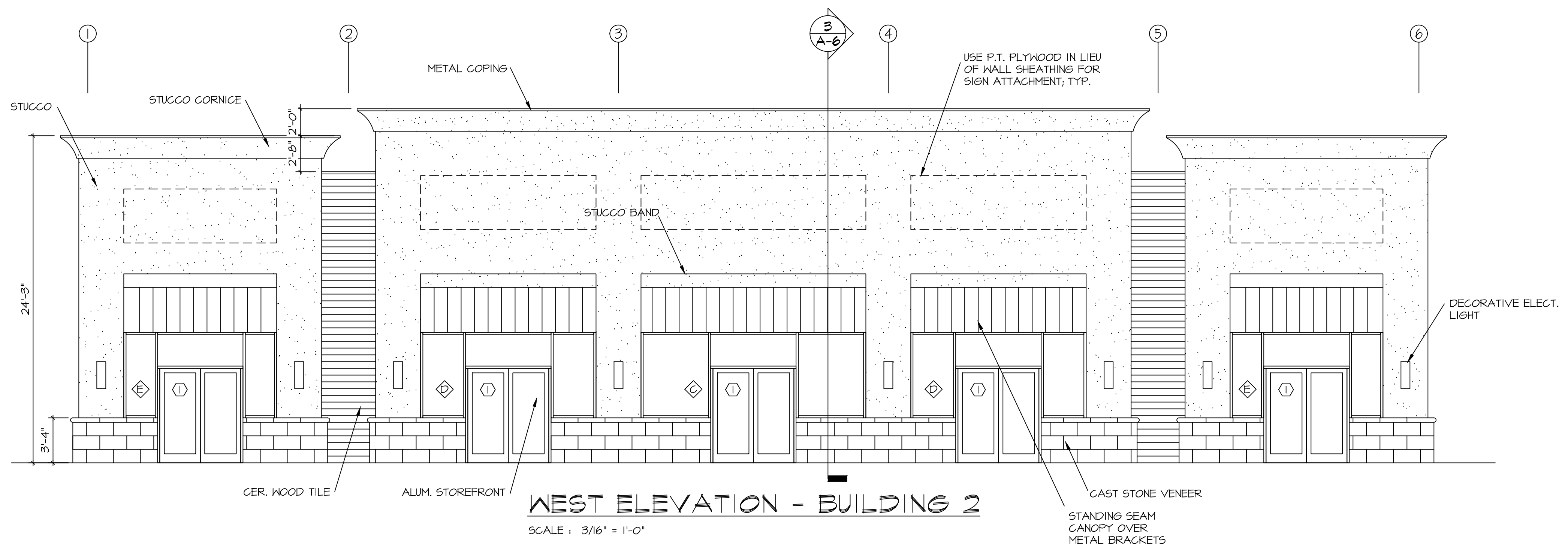
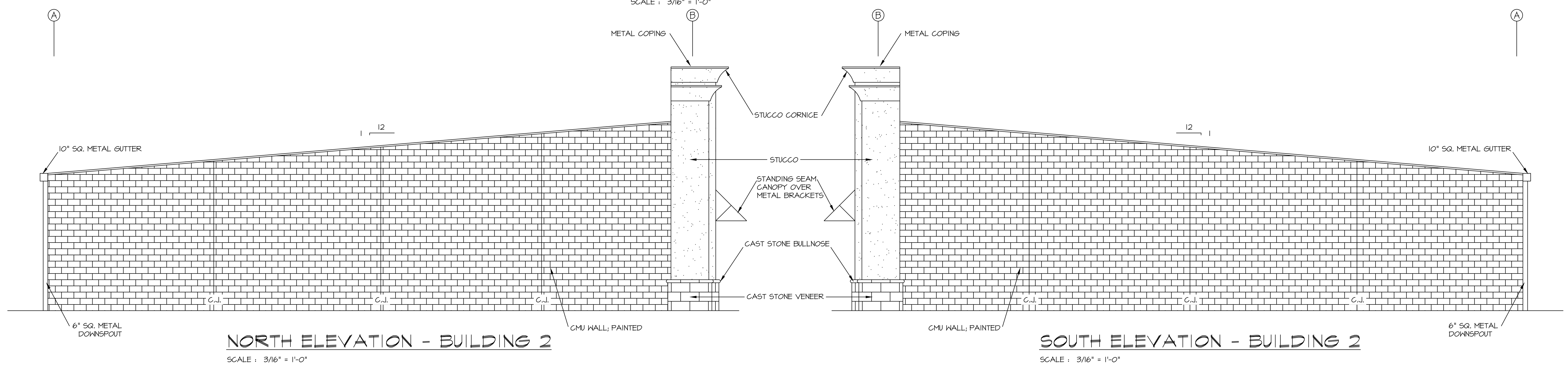
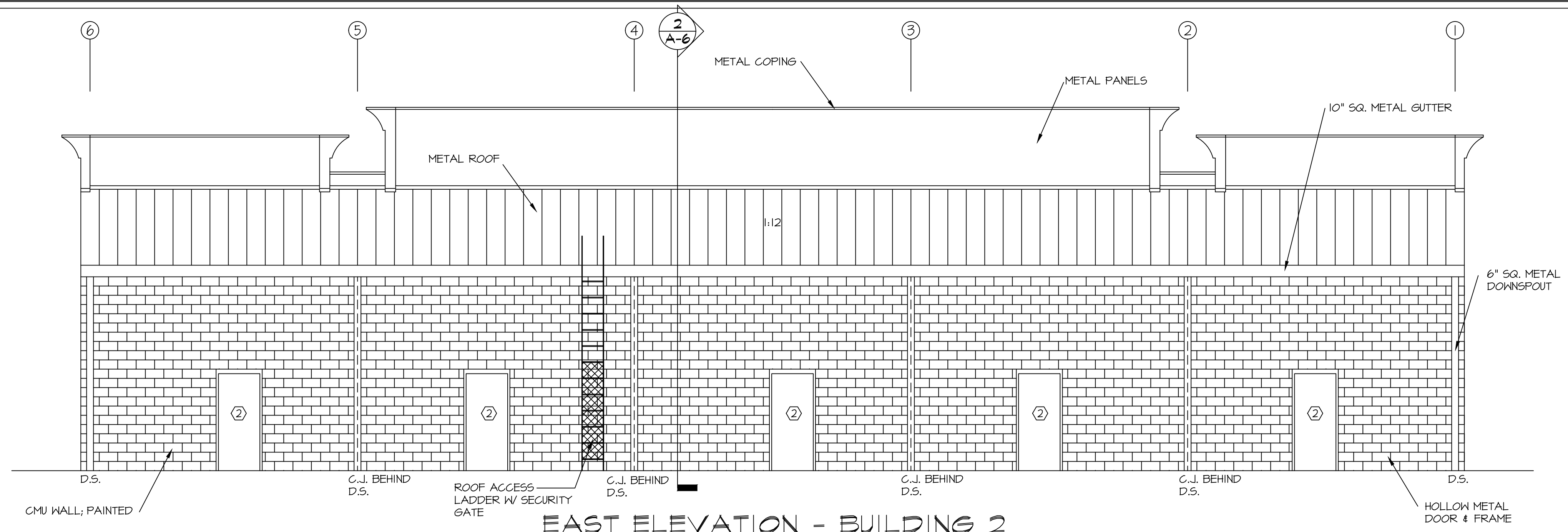


THIS PLAN AND SPECIFICATION HAS BEEN PREPARED BY ME OR UNDER MY CLOSE SUPERVISION. TO THE BEST OF MY KNOWLEDGE AND BELIEF, THEY COMPLY WITH ALL CITY CODE REQUIREMENTS. I AM NOT ADMINISTERING THE WORK.
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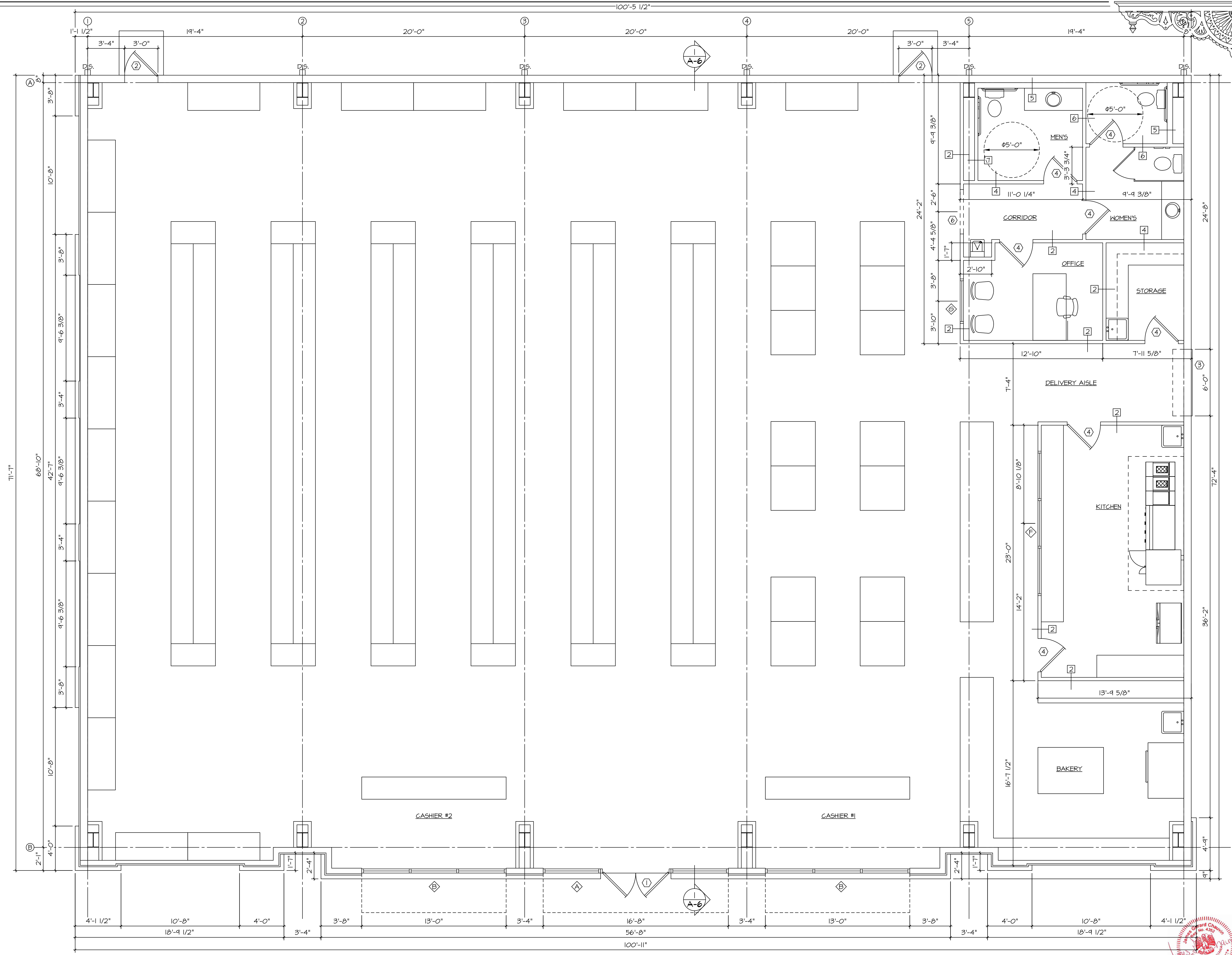


BUILDING NOTES:

- SECTIONAL DOORS AND STOREFRONTS TO BE DESIGNED FOR 30 PSF WIND LOAD.
- ALL BRICKWORK TO BE BUILT PER BIA (BRICK INSTITUTE OF AMERICA) STANDARDS (INCLUDING REQUIRED KEEPHOLES AND REQUIRED BRICK TIES).
- METAL BUILDING MANUFACTURER TO PROVIDE OPENING FOR ONE (1) ROOF TOP UNIT (RTU) FOR EACH LEASE SPACE SHOWN ON PLANS; UNLESS NOTED OTHERWISE.
- ALL EXTERIOR METAL STUDS SHALL BE 18 GA. AND ALL INTERIOR METAL STUDS SHALL BE 20 GA.

PARTITION TYPES:

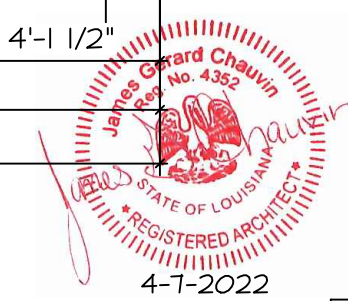
- 3 5/8" 20 GA STUDS AT 16" O.C. (FULL HEIGHT) BOTH SIDES TYPE "X" GYP. BOARD (BOTH SIDES UP TO STRUCTURE) ACOUSTIC INSULATION (FULL HEIGHT)
- 3 5/8" 20 GA STUDS AT 16" O.C. (10'-0" AFF) BOTH SIDES TYPE "X" GYP. BOARD (BOTH SIDES TERMINATE AT 10'-0" AFF)
- 3 5/8" 20 GA STUDS AT 16" O.C. (10'-0" AFF) ONE SIDE TYPE "X" GYP BOARD (TERMINATE AT 10'-0" AFF)
- 3 5/8" 20 GA STUDS AT 16" O.C. (FULL HEIGHT) ONE SIDE 5/8" MOISTURE RESISTIVE GYP. BOARD (TERMINATE 6" ABOVE CEILING) AND OTHER SIDE TYPE "X" GYP. BOARD (UP TO STRUCTURE) ACOUSTIC INSULATION (FULL HEIGHT)
- 6" 20 GA STUDS AT 16" O.C. (TERMINATE 6" ABOVE CEILING). PROVIDE 45 DEGREE METAL STUD BRACING AT 48" O.C. FROM STUD WALL TO STRUCTURE ABOVE. ONE SIDE 5/8" MOISTURE RESISTIVE GYP. BOARD (TERMINATE 6" ABOVE CEILING)
- 3 5/8" 20 GA STUDS AT 16" O.C. (10'-0" AFF) BOTH SIDES 5/8" MOISTURE RESISTIVE GYP. BOARD (BOTH SIDES TERMINATE AT 10'-0" AFF)
- 3 5/8" 20 GA STUDS AT 16" O.C. (10'-0" AFF) ONE SIDE 5/8" MOISTURE RESISTIVE GYP. BOARD (TERMINATE AT 10'-0" AFF)



FIRST FLOOR PLAN - BUILDING 1

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

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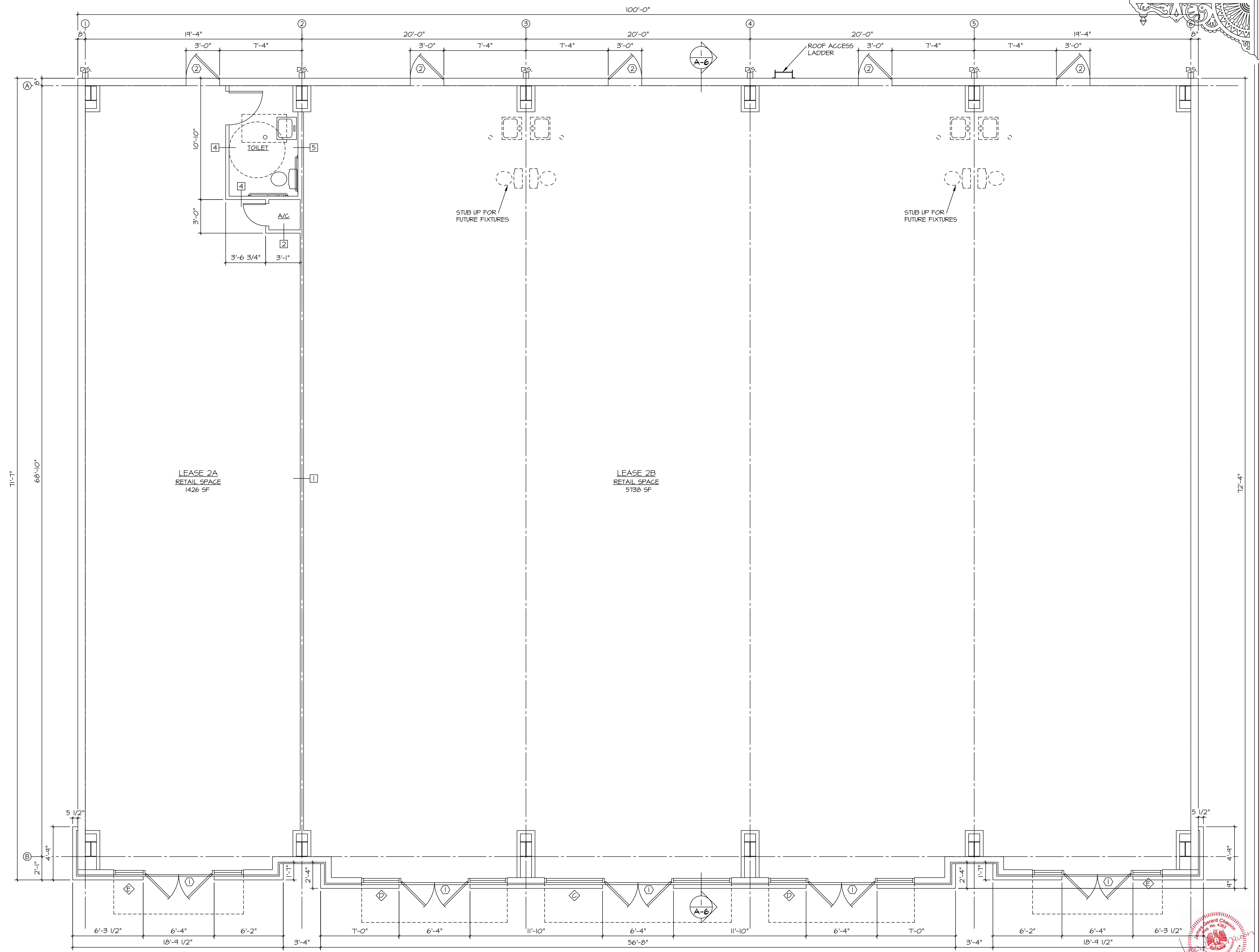


BUILDING NOTES:

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- ALL BRICKWORK TO BE BUILT PER BIA (BRICK INSTITUTE OF AMERICA) STANDARDS (INCLUDING REQUIRED KEEPHOLES AND REQUIRED BRICK TIES).
- METAL BUILDING MANUFACTURER TO PROVIDE OPENING FOR ONE (1) ROOF TOP UNIT (RTU) FOR EACH LEASE SPACE SHOWN ON PLANS; UNLESS NOTED OTHERWISE.
- ALL EXTERIOR METAL STUDS SHALL BE 18 GA. AND ALL INTERIOR METAL STUDS SHALL BE 20 GA.

PARTITION TYPES:

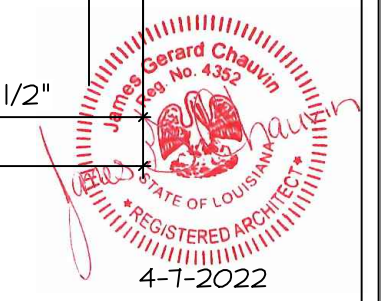
- 3 5/8" 20 GA STUDS AT 16" O.C. (FULL HEIGHT) BOTH SIDES TYPE "X" GYP. BOARD (BOTH SIDES UP TO STRUCTURE) ACOUSTIC INSULATION (FULL HEIGHT)
- 3 5/8" 20 GA STUDS AT 16" O.C. (10'-0" AFF) BOTH SIDES TYPE "X" GYP. BOARD (BOTH SIDES TERMINATE AT 10'-0" AFF)
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- 3 5/8" 20 GA STUDS AT 16" O.C. (10'-0" AFF) ONE SIDE 5/8" MOISTURE RESISTIVE GYP. BOARD (TERMINATE AT 10'-0" AFF)



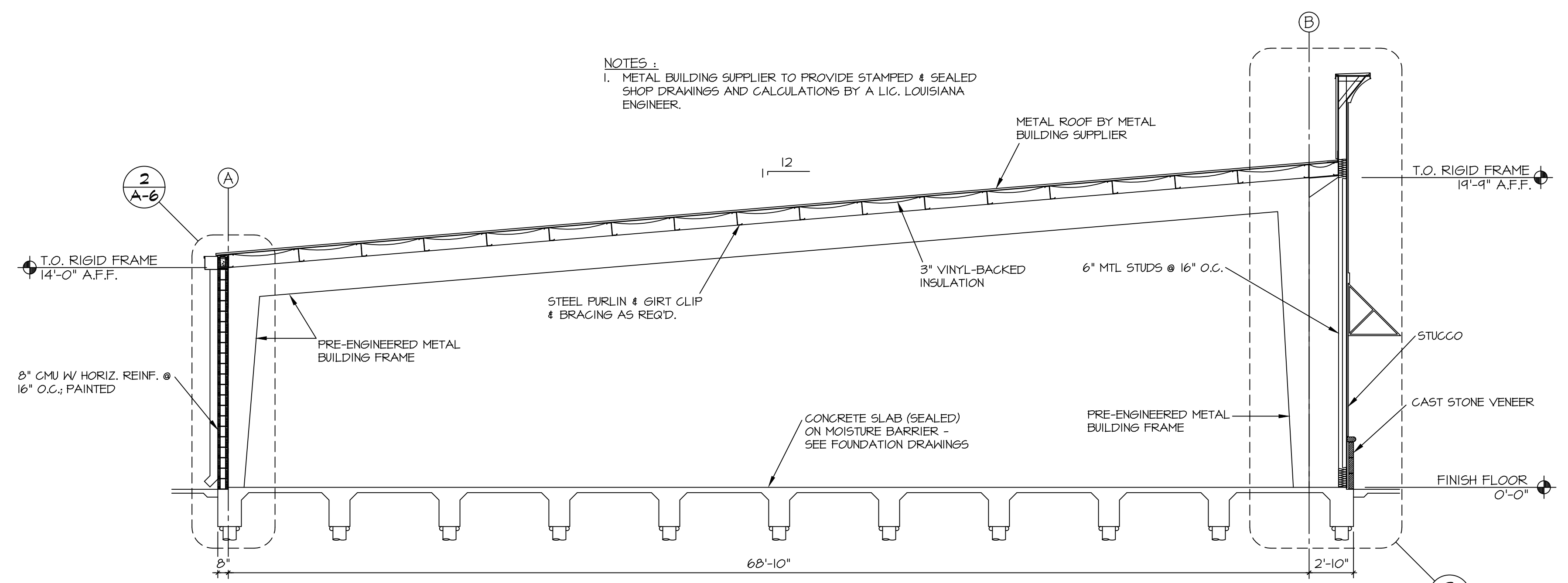
FIRST FLOOR PLAN - BUILDING 2

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

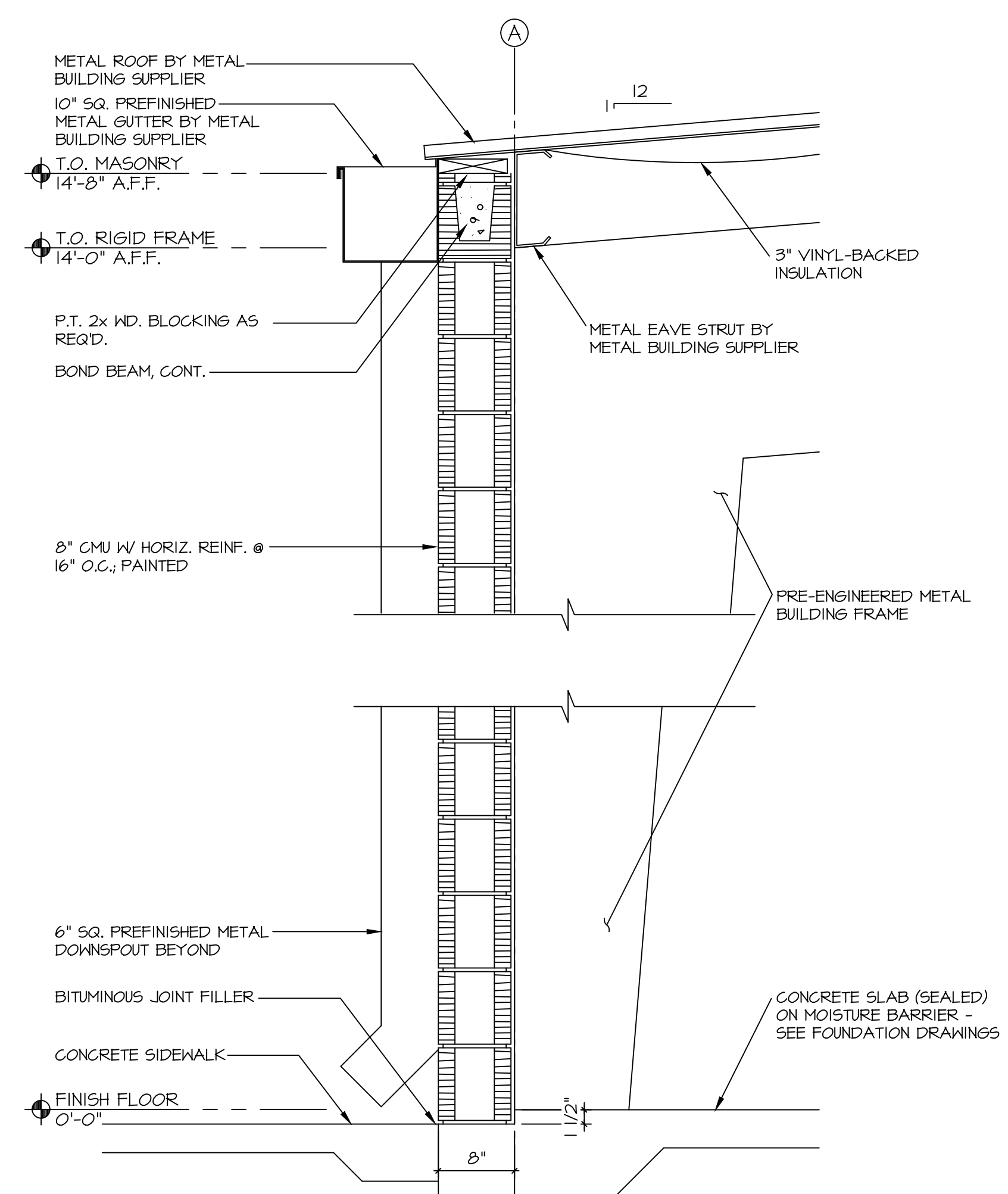
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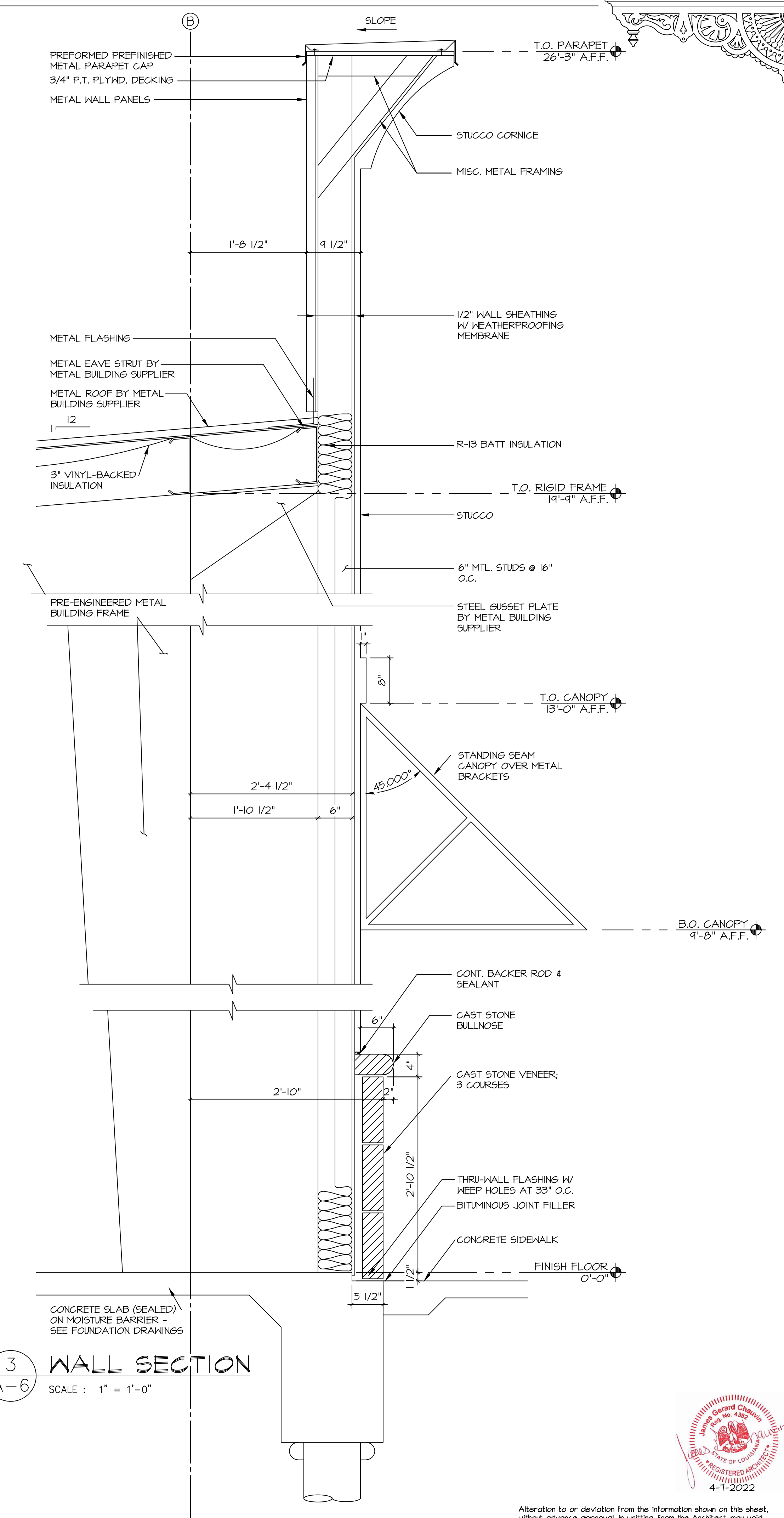
NOTES:
1. METAL BUILDING SUPPLIER TO PROVIDE STAMPED & SEALED SHOP DRAWINGS AND CALCULATIONS BY A LIC. LOUISIANA ENGINEER.



1 BUILDING SECTION
SCALE : 3/16" = 1'-0"



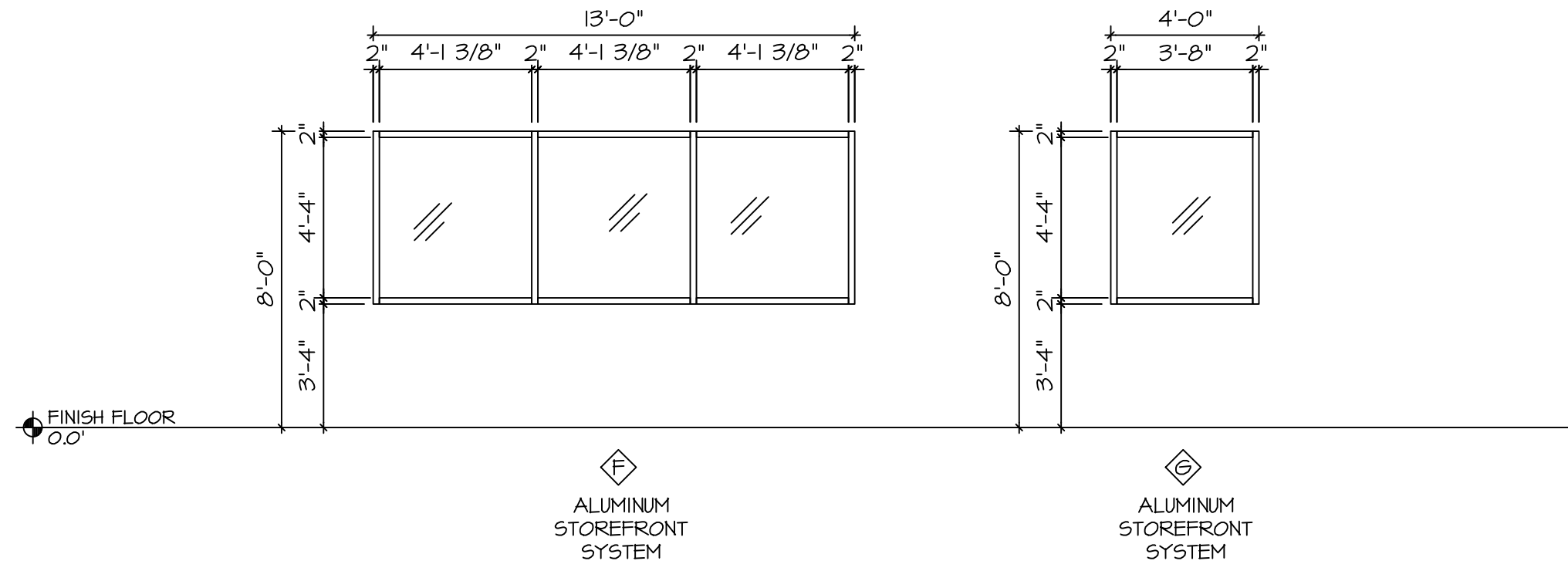
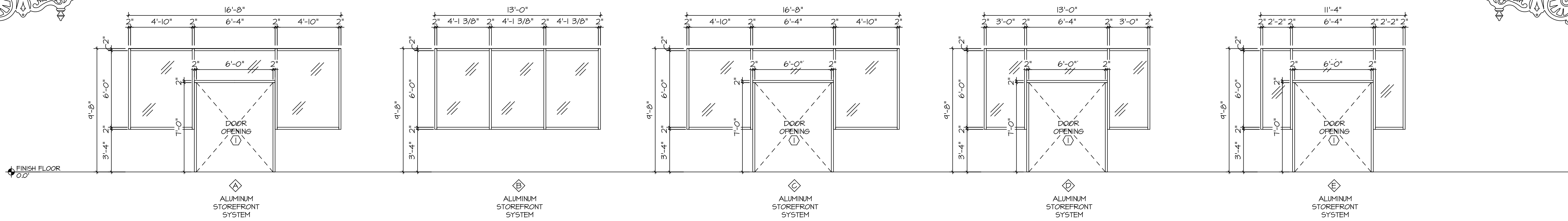
2 WALL SECTION
SCALE : 1" = 1'-0"



3 WALL SECTION
SCALE : 1" = 1'-0"



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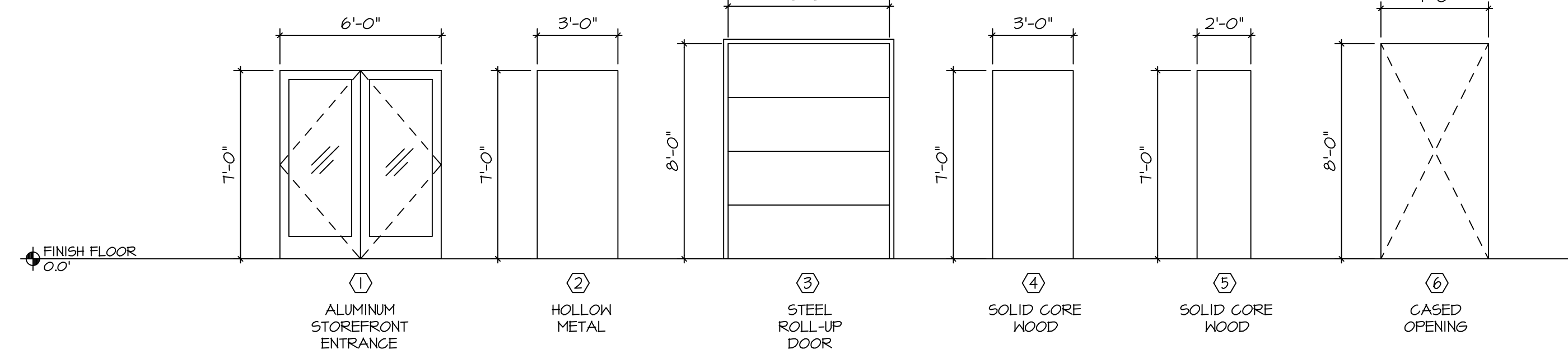


WINDOW ELEVATIONS

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

WINDOW NOTES :

- I. ALL WINDOW GLAZING SHALL BE TEMPERED.

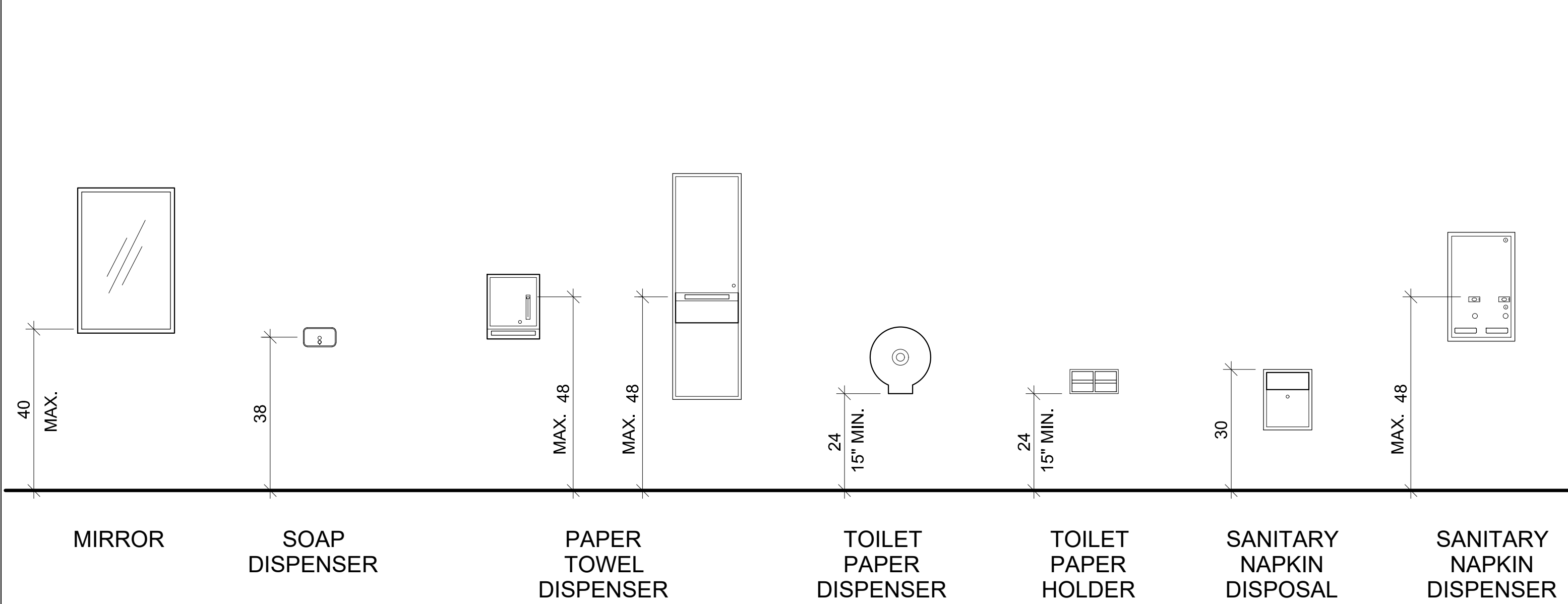


DOOR ELEVATIONS

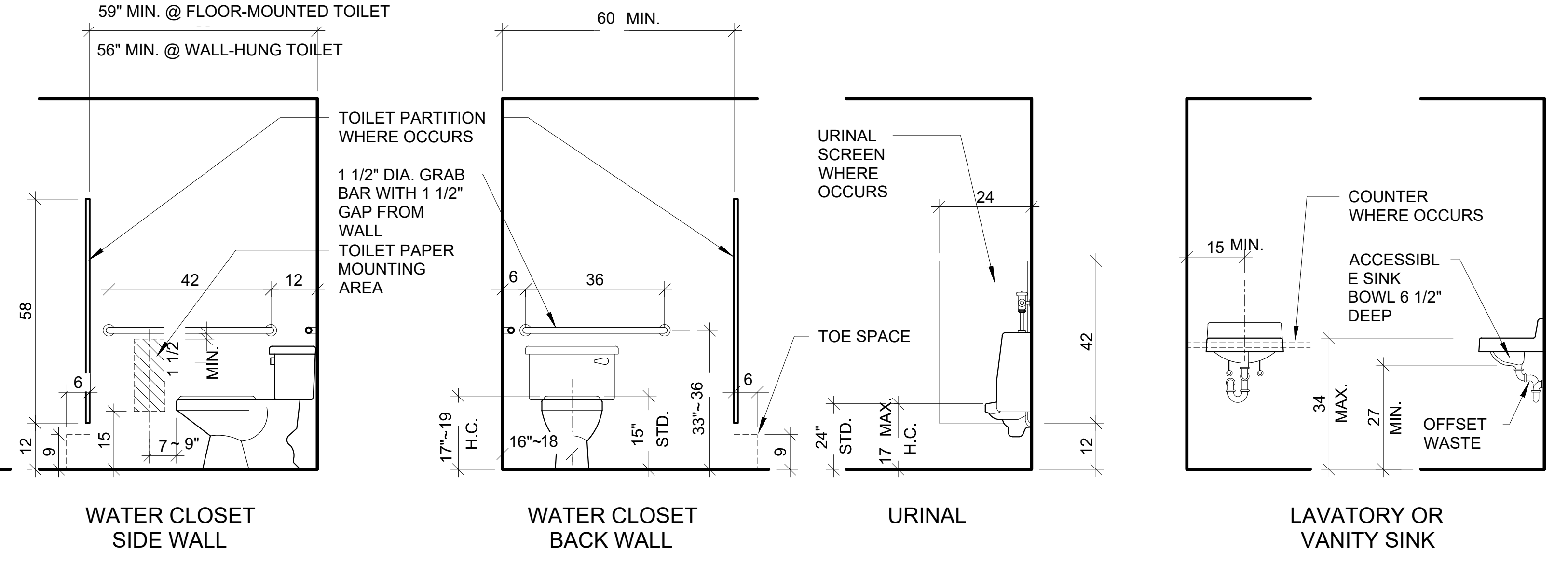
SCALE : 1/4" = 1'-0"

DOOR NOTES :

- I. ALL DOOR GLAZING SHALL BE TEMPERED.



TYPICAL TOILET ACCESSORIES MOUNTING HEIGHTS

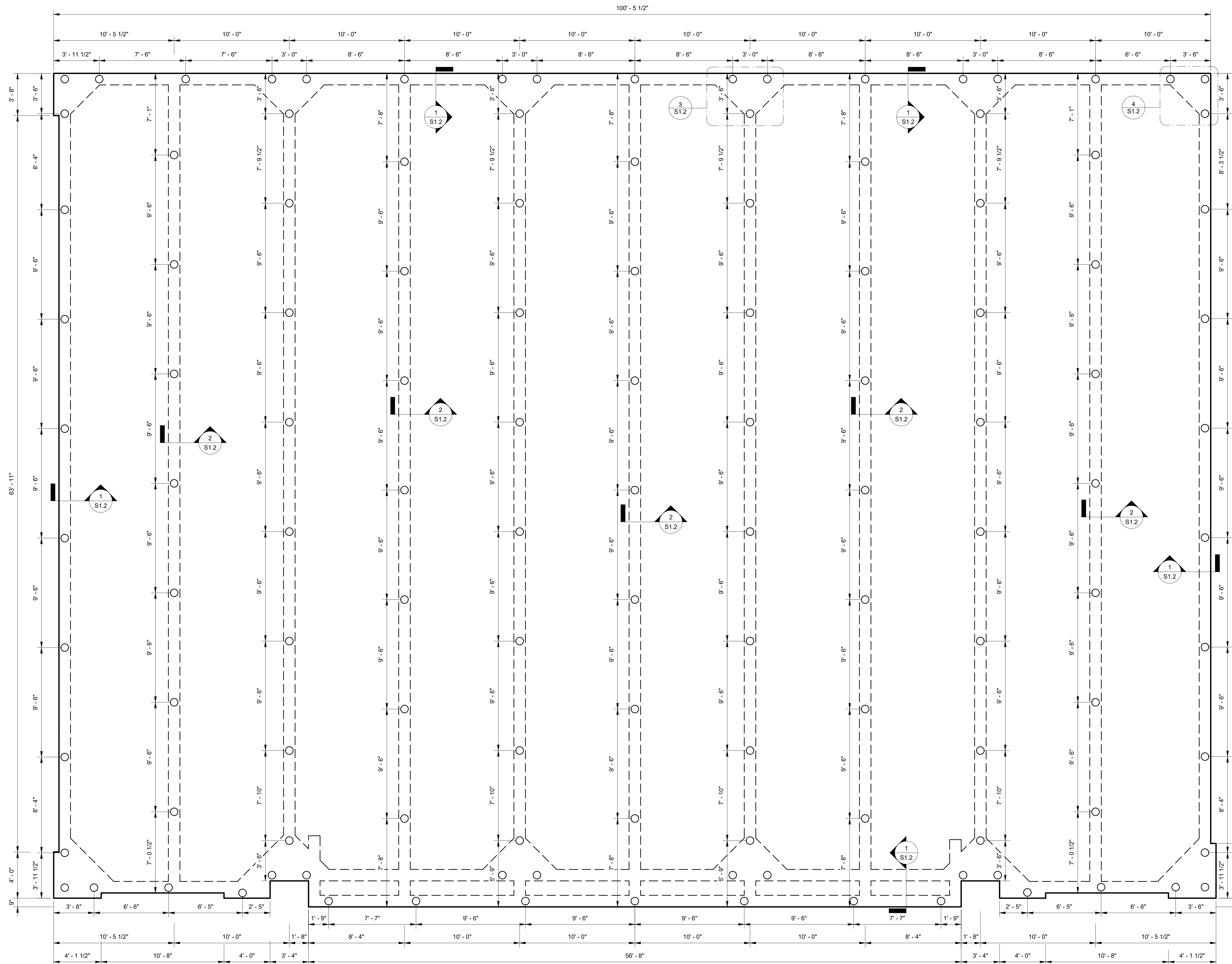


TYPICAL PLUMBING FIXTURES AND ACCESSORIES MOUNTING HEIGHTS

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CHEF MENTEUR SHOPPING CENTER

13618 CHEF MENTEUR HWY
ORLEANS PARISH, LOUISIANA



COMPOSITE PILE NOTES:

PILES ARE CLASS #5 WITH A MINIMUM 25.0' TIP EMBEDMENT INTO NATURAL SOIL.

DESIGN LOAD = 6.5 TONS/PILE

NO FIELD SUPERVISION OR INSPECTION RELATED TO PILE DRIVING PROCEDURES UNDER THIS PLAN UNLESS NOTED OTHERWISE.

PILE LAYOUT MAY BE MODIFIED DUE TO ACTUAL DRIVING OR FIELD CONDITIONS.

TREATED PILES MUST MEET AWPA STANDARDS C3-92 FOR PRESERVATIVE RETENTION.

PILES TO BE DRIVEN WITH DROP HAMMER. DO NOT VIBRATE PILES UNLESS APPROVED BY ENGINEER OF RECORD.

ALL PILE LOCATIONS SHALL BE STAKED PRIOR TO DRIVING.

123 PILES REQUIRED.

DIMENSION NOTE:

DIMENSIONS TO FACE OF SLAB AND CENTER OF GRADE BEAMS. REFER TO OTHER DRAWINGS FOR STRUCTURAL INFORMATION NOT SHOWN.

TOTAL P.T. SLAB AREA:
7,186.75 SQUARE FEET

No.	Description	Date

SEAL

CHEF MENTEUR SHOPPING CENTER

PILE PLAN

Project number **SE-22-126**

Date **2.7.2022**

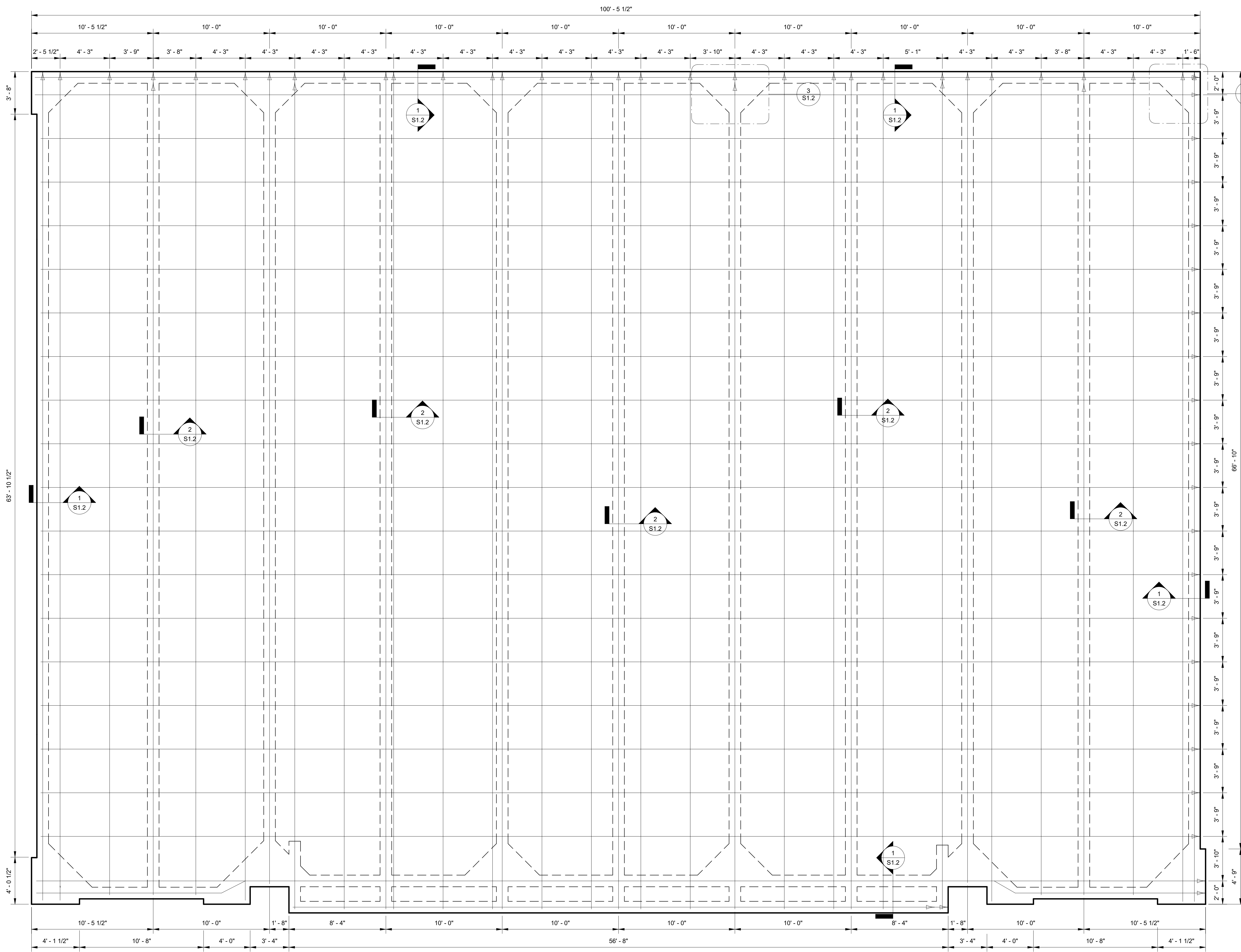
Drawn by **TM**

Checked by **RL**

S1.0

1 PILE PLAN
1/4" = 1'-0"

2/7/2022 1:14:31 PM



1 PT FOUNDATION PLAN
1/4" = 1'-0"

POST-TENSION GRADE BEAM SCHEDULE			
MARK	WIDTH	DEPTH	NO. OF BOTTOM TENDONS
PT-1	12"	24"	1
PT-2	12"	20"	1

ALL EXTERIOR GRADE BEAMS TO BE PT-1 AND ALL INTERIOR GRADE BEAMS TO BE PT-2 UNLESS NOTED OTHERWISE

SLAB: 4" THICK POST-TENSIONED SLAB WITH TENDON REINFORCEMENT IN ACCORDANCE WITH THE PLAN, UNLESS NOTED OTHERWISE.

RECOMMENDED: IN ALL AREAS OF EXPOSED CONCRETE, PLACE 6x6x10/10 WWF ON TOP OF AND TIE SECURELY TO ALL P.T. TENDONS.

TOTAL P.T. SLAB AREA: 7,186.75 SQUARE FEET

GENERAL NOTES FOR POST-TENSIONED FOUNDATIONS

MEET THE CONCRETE MIX SHOULD YIELD A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS. CONCRETE DESIGN MIX SHALL BE IN ACCORDANCE WITH ACI 318 (LATEST VERSION), NO CALCIUM CHLORIDES SHALL BE ALLOWED. CONCRETE SHOULD BE CURED ACCORDING TO ACI 308 (LATEST REVISION) BY CONTRACTOR OR OWNER.

CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1,500 PSI AT TIME OF STRESSING. IF A PARTIAL STRESSING IS SPECIFIED, CONCRETE TEST CYLINDERS MUST BE MADE AND TESTED BY A CERTIFIED LAB. RESULTS MUST BE SUBMITTED TO ENGINEER OF RECORD 24 HOURS PRIOR TO EARLY STRESSING.

ALL CONVENTIONAL REINFORCEMENT STEEL SHALL MEET ASTM-A615 (GRADE 60). REINFORCING STEEL SHALL BE DETAILED AND ACCESSORIES PROVIDED IN ACCORDANCE WITH THE LATEST "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".

ALL PRESTRESSING STEEL SHALL CONSIST OF SEVEN WIRE LOW RELAXATION STRAND CONFORMING TO ASTM-A416. MINIMUM ULTIMATE TENSILE STRENGTH SHALL BE 270 KSI. STRANDS SHALL BE COATED WITH A PERMANENT RUST PREVENTATIVE LUBRICANT AND A PLASTIC SHEATH OF AT LEAST 0.025 INCHES THICK. IF CABLE MATERIALS OTHER THEN TECH-CON SYSTEMS, INC. IS USED, CERTIFIED MILL REPORTS MUST BE FURNISHED TO THE ENGINEER 24 HOURS PRIOR TO THE INSTALLATION.

REINFORCEMENT SHALL HAVE 3" COVER IN THE GRADE BEAM BOTTOMS, 2" COVER IN THE BEAM SIDES AND TOP, 1-1/2" COVER ON THE SLAB TOP AND BOTTOMS, UNLESS NOTED OTHERWISE.

1 LAYER OF 10 MIL POLYETHYLENE VAPOR BARRIER SHALL BE PROVIDED UNDER ALL SLAB CONCRETE.

NO TENDON SHALL BE UNSUPPORTED FOR MORE THAN 5 FEET.

IF TENDON SHEATHING IS DAMAGED OR REMOVED FOR APPROXIMATELY 6" OR MORE IT SHOULD BE REPAIRED.

CONCRETE CONTRACTOR SHALL CONSOLIDATED THE CONCRETE VERY WELL IN THE VICINITY OF THE TENDON ANCHORS. ALL CONCRETE TO BE MONOLITHICALLY PLACED. NO CONCRETE SHALL BE PLACED ON TOP OF ALREADY HARDENED CONCRETE. CONCRETE TO BE PLACED WITH NO COLD JOINTS OR POUR LINES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE STRUCTURAL DRAWINGS WITH ALL OTHER DRAWINGS. ENGINEER OF RECORD TO BE NOTIFIED 24 HOURS PRIOR TO INSTALLATION AND MINIMUM OF 48 HOURS PRIOR TO STRESSING. NO CABLES ARE TO BE CUT AFTER STRESSING UNTIL ENGINEER APPROVAL IS GIVEN.

THE TENDON LOCATION AT THE END OF THE GRADE BEAM IS TO BE A MINIMUM OF 6" FROM THE TOP OF THE SLAB TO THE CGS OF THE TENDON.

TENDONS ARE TO BE STRESSED NO EARLIER THAN 6 DAYS AND NO LATER THAN 14 DAYS AFTER CONCRETE PLACEMENT UNLESS EARLY STRESSING IS APPROVED BY THE ENGINEER. CONTRACTOR TO REMOVE ALL FORMWORK PRIOR TO STRESSING OF THE TENDONS.

LOADING OF THE SLAB PRIOR TO THE TENSIONING SHALL NOT BE DONE WITHOUT THE APPROVAL AND DIRECTION OF THE DESIGN ENGINEER.

GRADE BEAM SIZES MAY VARY BY +20%.

ALTERATION OR DEVIATION FROM THE INFORMATION SHOWN ON THIS SHEET WITHOUT THE WRITTEN ADVANCE APPROVAL FROM THE ENGINEER OF RECORD WILL VOID THE DESIGNERS RESPONSIBILITY.

ALL TENDONS TO BE 1/2" INCH DIAMETER.

STRESSING SHALL BE AT A: FOR 1/2" CABLE - STRESS TO 33.0 KIPS - ANCHOR AT 28.9 KIPS. STRESSING RAMS SHALL BE ACCOMPANIED BY CALIBRATION SHEETS AND COPIES SENT TO THE ENGINEER OF RECORD PRIOR TO THE STRESSING OF CABLE TENDONS (MINIMUM OF 48 HOURS PRIOR TO STRESSING)

THIS PLAN IS FOR GRADE BEAM AND TENDON LAYOUT ONLY. DO NOT USE THIS PLAN FOR FORMING UP OF FOUNDATION.

CONTRACTOR AND OWNER TO PROVIDE PROPER DRAINAGE AWAY FROM THE FOUNDATION DURING AND THROUGHOUT THE STRUCTURE LIFE.

A MINIMUM OF 4" OF CONCRETE WILL BE MAINTAINED THROUGHOUT THE ENTIRE SLAB UNLESS OTHERWISE NOTED.

ALL RUNOFF WATER MUST BE CARRIED AWAY FROM THE SLAB TO PREVENT SATURATION OF THE SUB-BASE.

ALL TREES WITHIN CLOSE PROXIMITY SHALL BE REMOVED TO PREVENT THE ROOTS FROM EXTENDING UNDER THE SLAB.

REMOVE A MINIMUM OF 6" OF EXISTING SOIL AND ALL UNSTABLE SILT PRIOR TO PLACING ANY FILL.

MAXIMUM OF 2.0 FEET OF FILL MAY BE PLACED ON THE SITE. MAXIMUM DIFFERENTIAL FILL SHALL NOT EXCEED 20%.

ALL FILL SHALL BE LOW PLASTICITY CLAY SOIL COMPACTED TO 95% STANDARD PROCTOR DENSITY IN A MAXIMUM OF 8" LIFTS.

TENDONS, POCKET FORMERS, PLASTIC CHAIRS, ANCHORS, WEDGES TO BE SUPPLIED BY TECH-CON SYSTEMS, INC. SLIDELL, LOUISIANA OR APPROVED EQUAL BY THE ENGINEER.

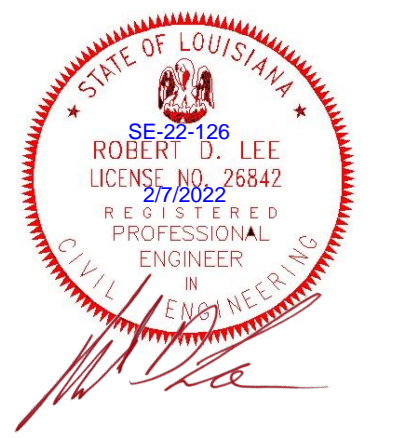
NO FIELD SUPERVISION PROVIDED UNDER THIS SEAL UNLESS OTHERWISE NOTED.

ONLY AN APPROVED INSTALLER IS AUTHORIZED TO INSTALL THE CABLE PORTION OF THIS DESIGN, AND MUST HAVE AT LEAST 3 YEARS OF EXPERIENCE IN THE FIELD IN THEIR OWN NAME. INSTALLERS MUST BE APPROVED 24 HOURS PRIOR TO THE INSTALLATION OF THE CABLE PORTION BY THE ENGINEER OF RECORD.

FOUNDATION DESIGN IS IN ACCORDANCE WITH THE NEW ORLEANS PILE ZONE INFORMATION. THE PROJECT WAS DETERMINED TO BE LOCATED WITHIN ZONE GM-10

No.	Description	Date

SEAL



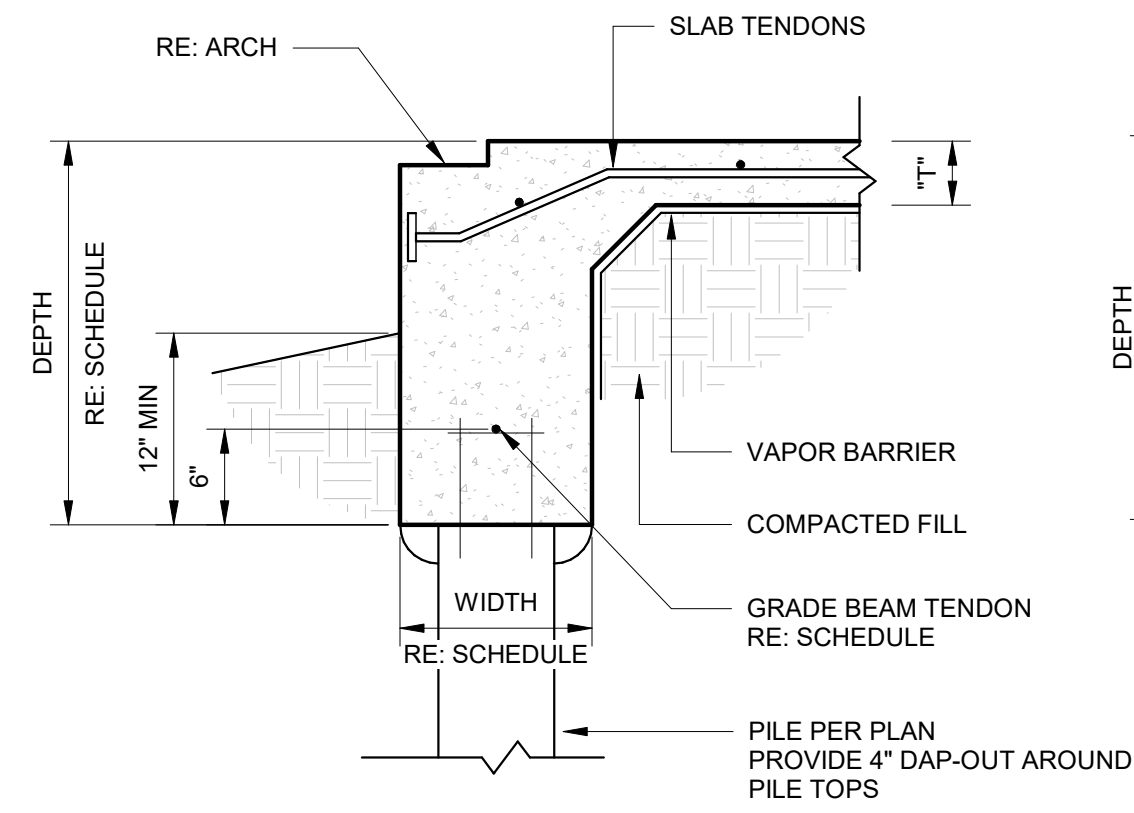
CHEF MENTEUR SHOPPING CENTER

PT FOUNDATION PLAN

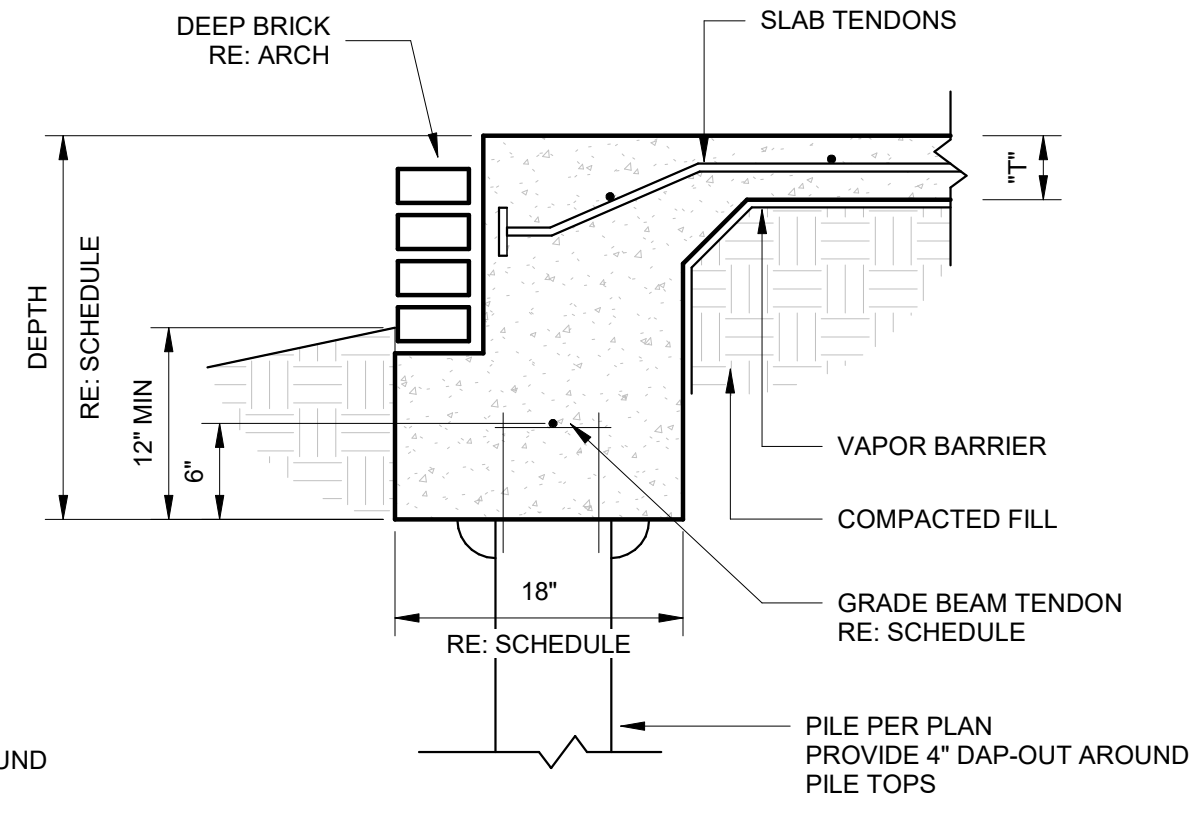
Project number SE-22-126
Date 2.7.2022
Drawn by BW
Checked by RL

CHEF MENTEUR SHOPPING CENTER

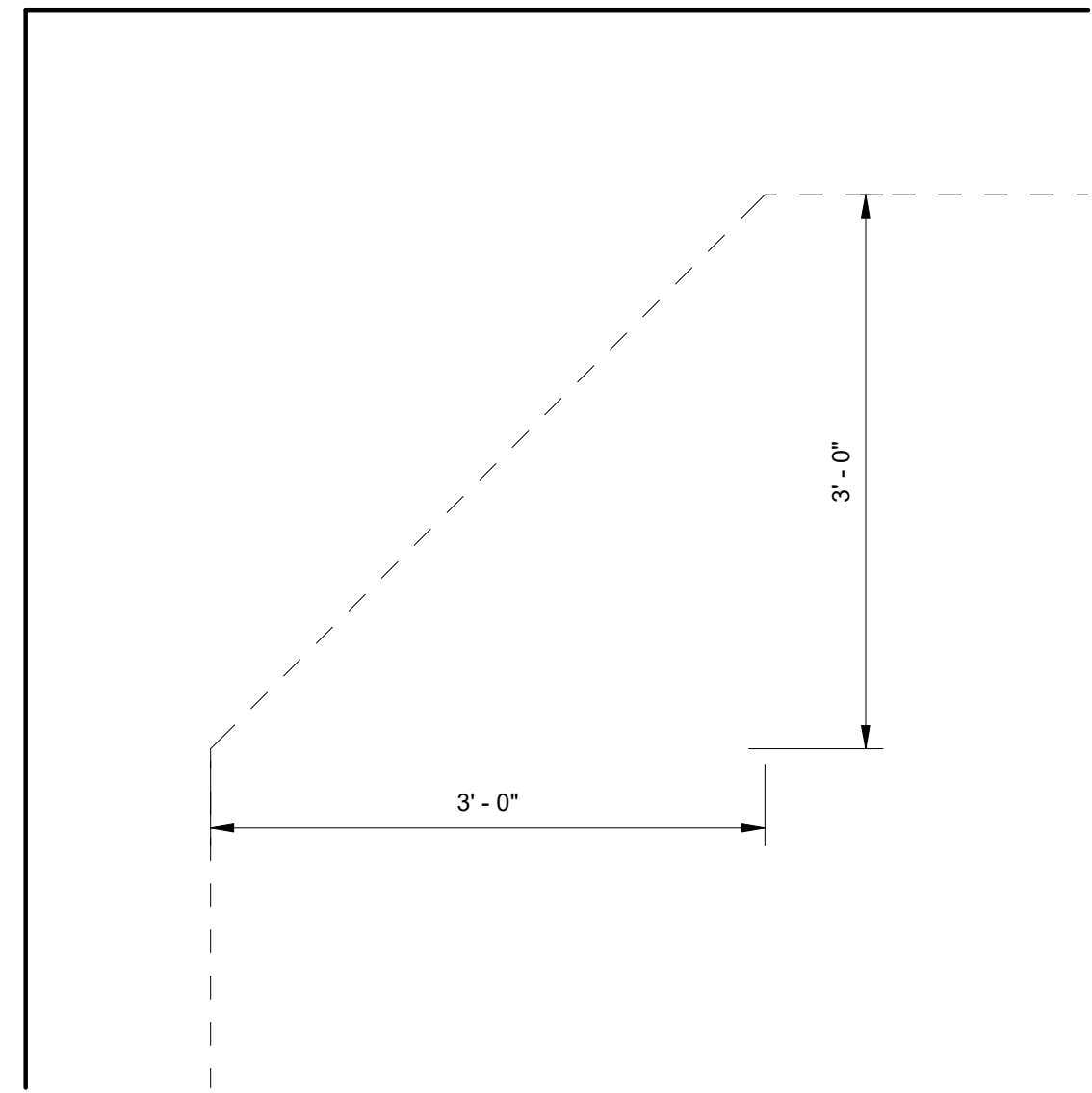
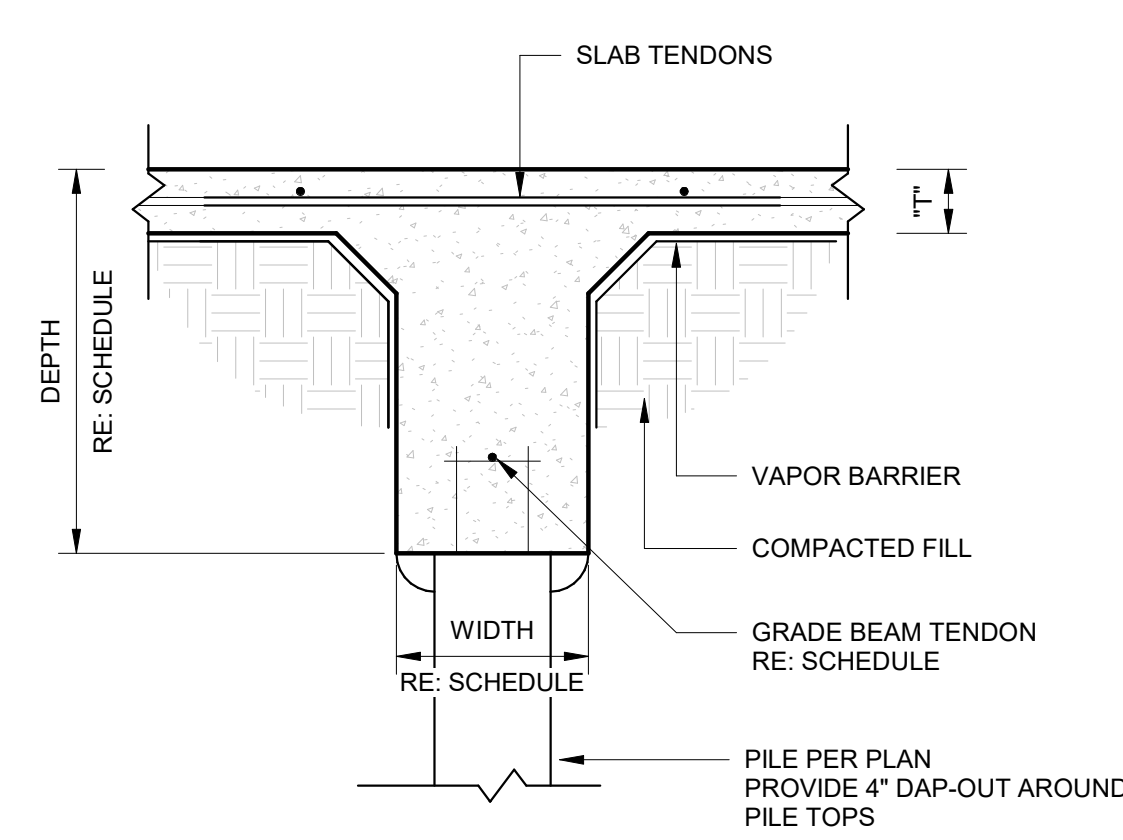
13618 CHEF MENTEUR HWY
ORLEANS PARISH, LOUISIANA



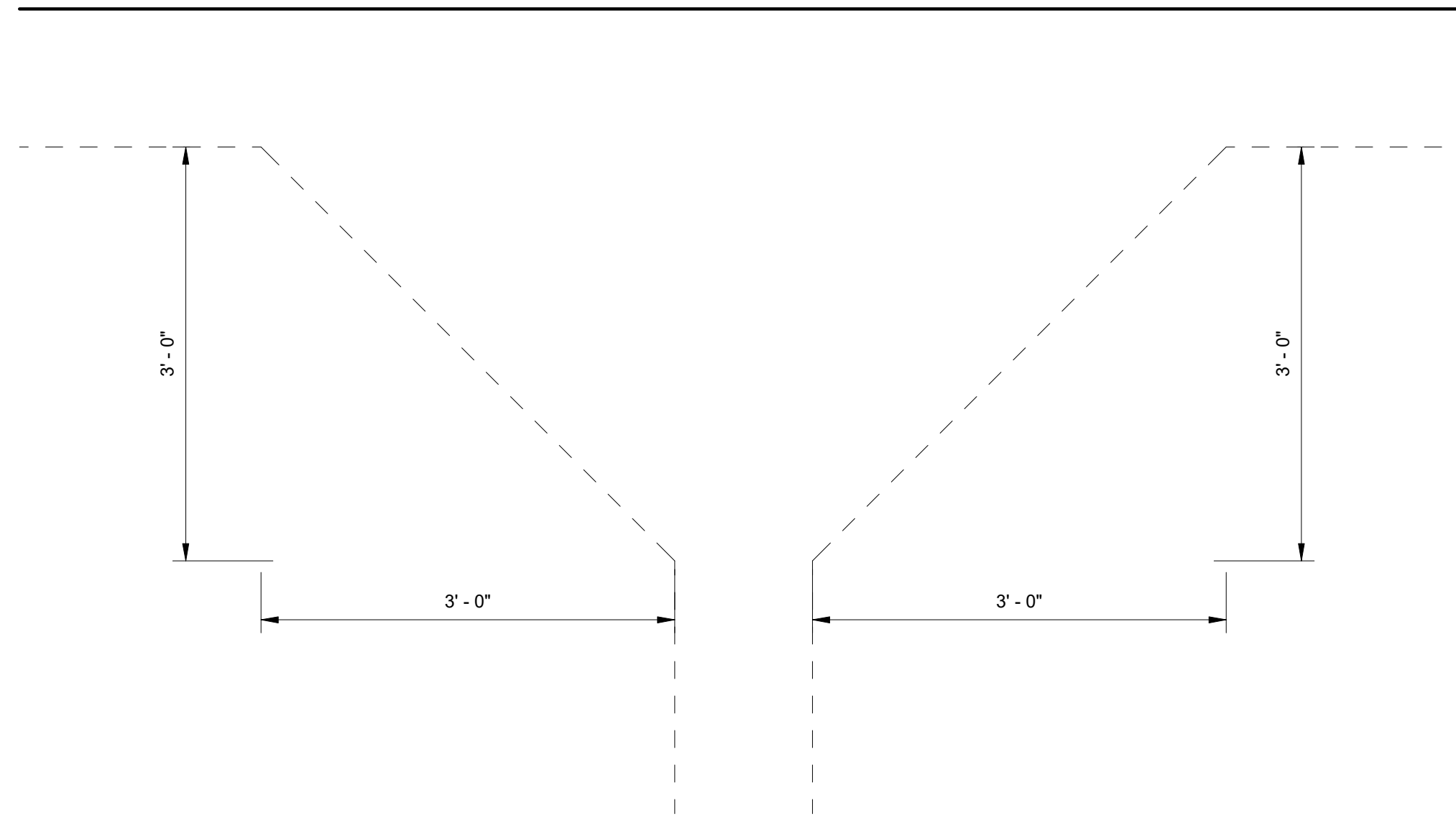
1 TYPICAL EXTERIOR GRADE BEAM W/ OPTIONAL DEEP BRICK
1" = 1'-0"



2 TYPICAL INTERIOR GRADE BEAM
1" = 1'-0"



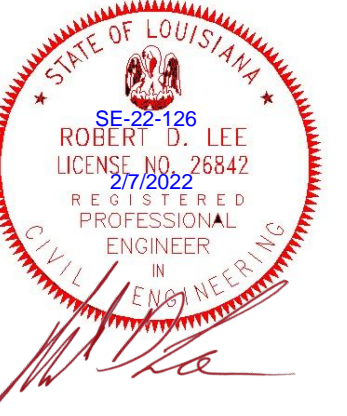
4 TYPICAL CORNER COLUMN PAD
1" = 1'-0"



3 TYPICAL COLUMN PAD
1" = 1'-0"

No.	Description	Date

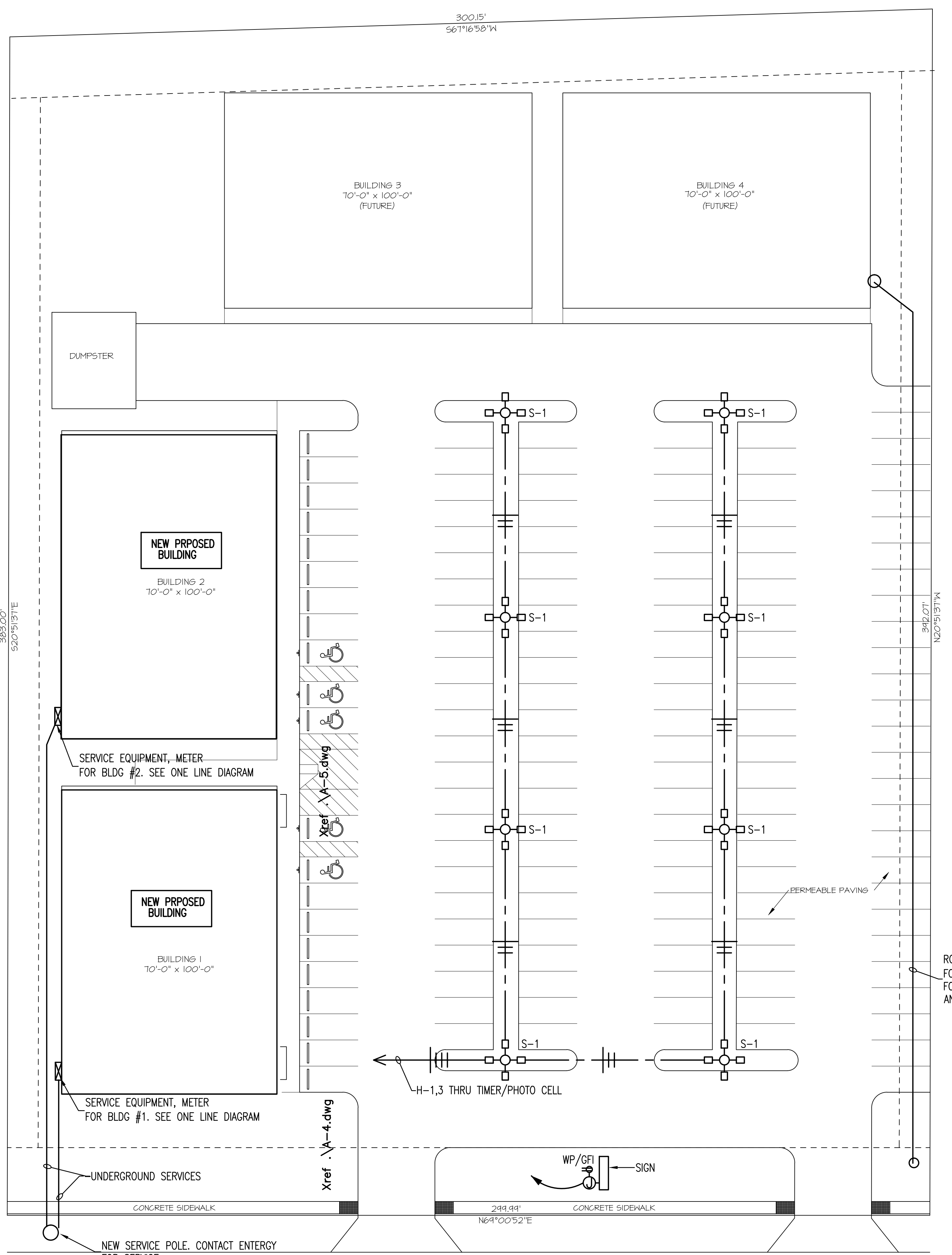
SEAL



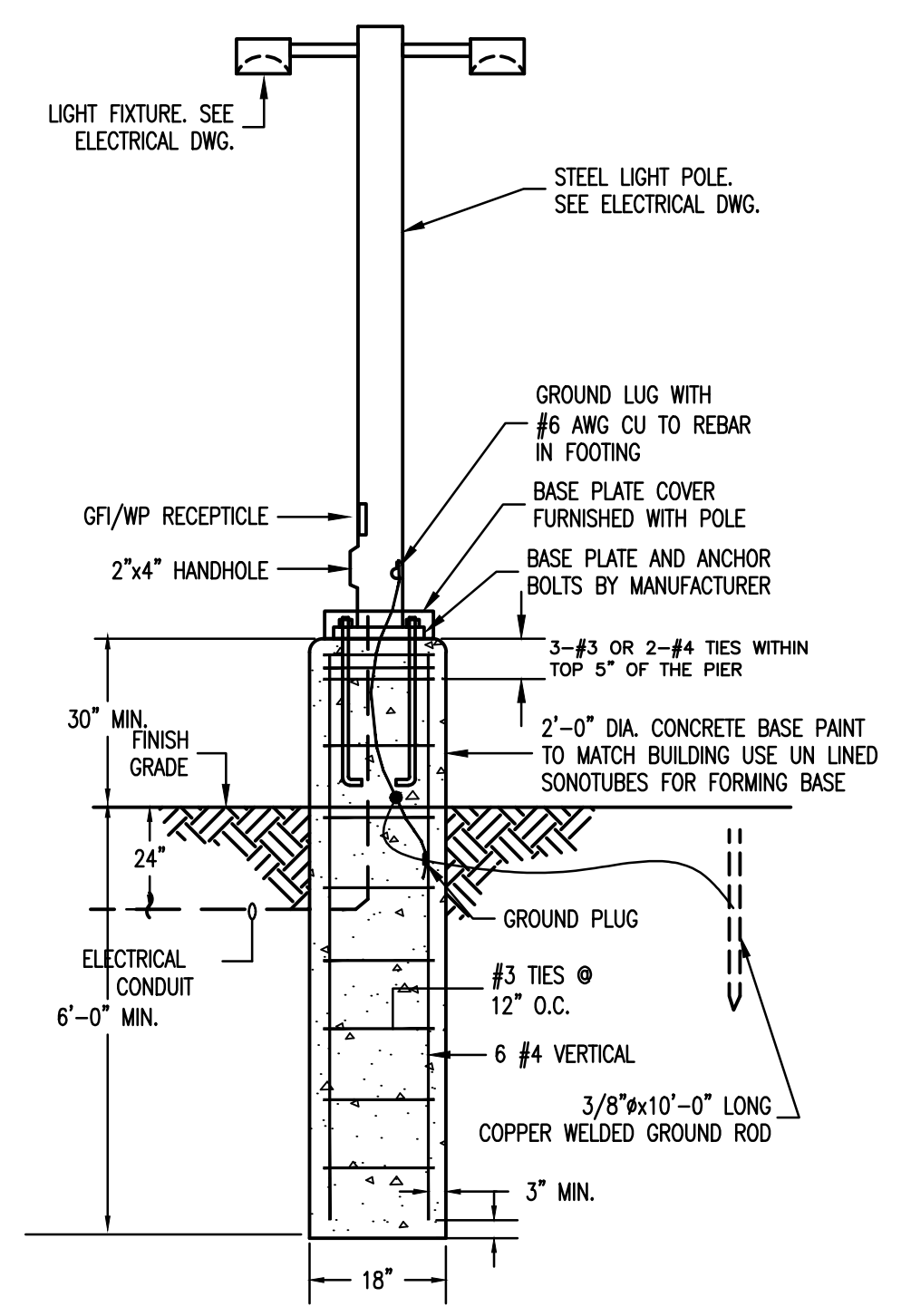
CHEF MENTEUR SHOPPING CENTER

FOUNDATION DETAILS

Project number SE-22-126
Date 2.7.2022
Drawn by BW
Checked by RL



1 SITE PLAN - ELECTRICAL
E-1 SCALE: 1" = 20'-0"



2 TYPICAL LIGHT POLE DETAIL
E-1 SCALE: N.T.S.

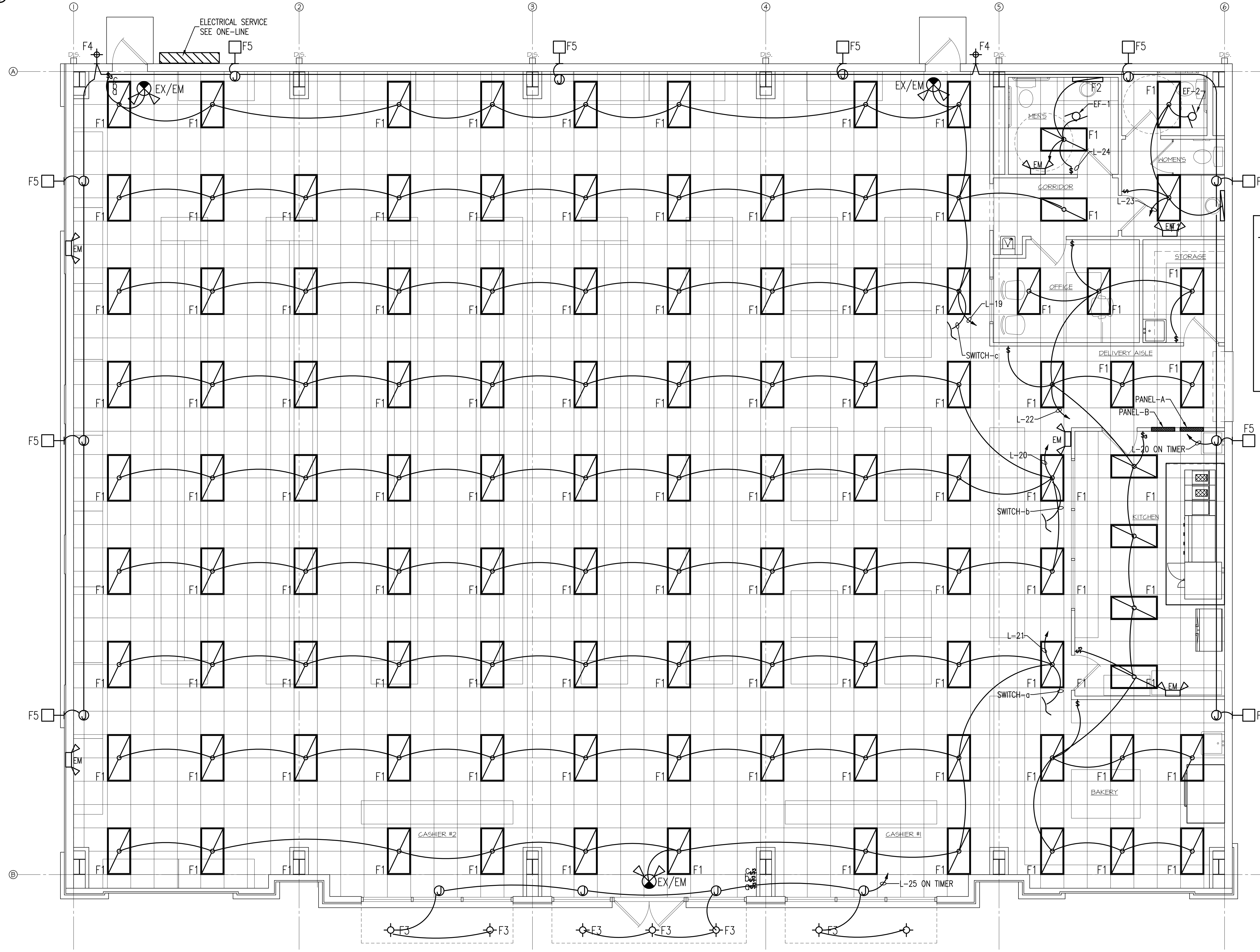
- LIGHT POLE NOTES:**
1. LIGHT POLE SUPPLIER OR SUBCONTRACTOR TO SUPPLY LIGHT POLE INFORMATION TO STRUCTURAL ENGINEER.
 2. POLE BASE SHALL BE IN NATURAL UNDISTURBED SOIL OR APPROVED COMPACTED FILL.
 3. SEE SITE PLAN FOR LIGHT POLE LOCATIONS AND NUMBER OF HEADS.
 4. LP-1 - ONE HEAD POLE, LP-2 TWO HEADS POL, LP-3 THREE HEADS, LP-4 HEADS

- GENERAL NOTES:**
1. CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION OF POWER COMPANY SERVICE POLE.
 2. PROVIDE SITE POLES AND LIGHTING FIXTURES WITH REQUIRED LIGHTING FOOT CANDLE IN PARKING LOT. SUBMIT PHOTOMETRIC WITH SUBMITTAL.
 3. REFER TO OTHER DRAWINGS FOR ONE -LINE DIAGRAM, SCHEDULES.
 4. CONTRACTOR AND LIGHT FIXTURES SUPPLY SHALL PROVIDE PROPOSED LIGHT FIXTURE CUT SHEET AND PHOTOMETRIC AND FOOT CANDLE . FOR OUTDOOR AND INDOOR LIGHTING FIXTURES FOR OWNER/ARCHITECT APPROVAL..
 5. PROVIDE CIRCUIT FOR SIGN AS REQUIRED.
 6. PROVIDE CONDUIT TO BUILDING FOR TELEPHONE AND CABLE AND OR INTERNET AS DIRECTED BY OWNER.



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M-K Project No.: 21-109

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LIGHT FIXTURES SCHEDULE

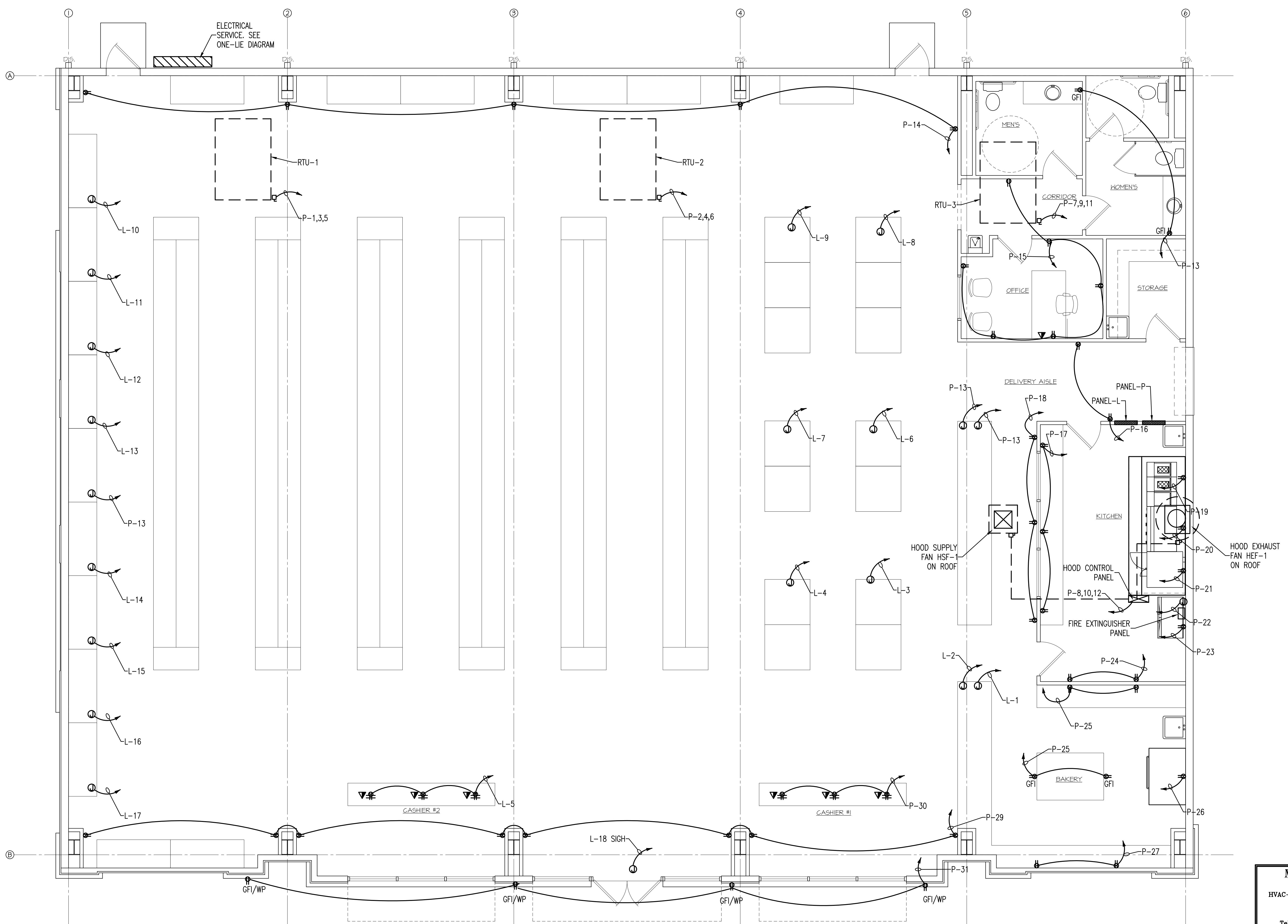
- F1 - 2X4 LAY-IN LED FLAT PANLE 2-18W LAMP, 4000 METALUX 24FP6435C
- F2 - VANITY WALL LIGHT FIXTURE
- F3 - RECESSED DOWN LIGHT LED 18W LED HELD HC420D010
- F4 - WALL MOUNTED AT EXIT DOOR WITH BATTERY AND PHOTOCELL LED
- F5 - WALL PACK EXTERIOR BLDG MOUNTED 40 WATTS LED
- PL - POLE LIGHT 25FT LED UNIVERSAL PRV4PRV-XL WITH SSP25/5.0-7
- EX -EXIT LIGHT 5 WATTS LED APEX7R SURE-LITE-LITE
- EM -EMERGENCY LIGHT 5 WATTS, LED APEL
- EX/EM COMBINATION OF EXIT/EMERGENCY LIGHT

1 FLOOR PLAN - LIGHTING
E-2 SCALE: 1/4" = 1' - 0"



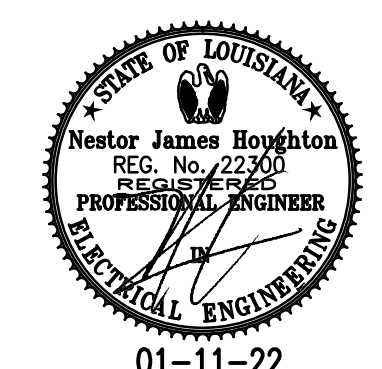
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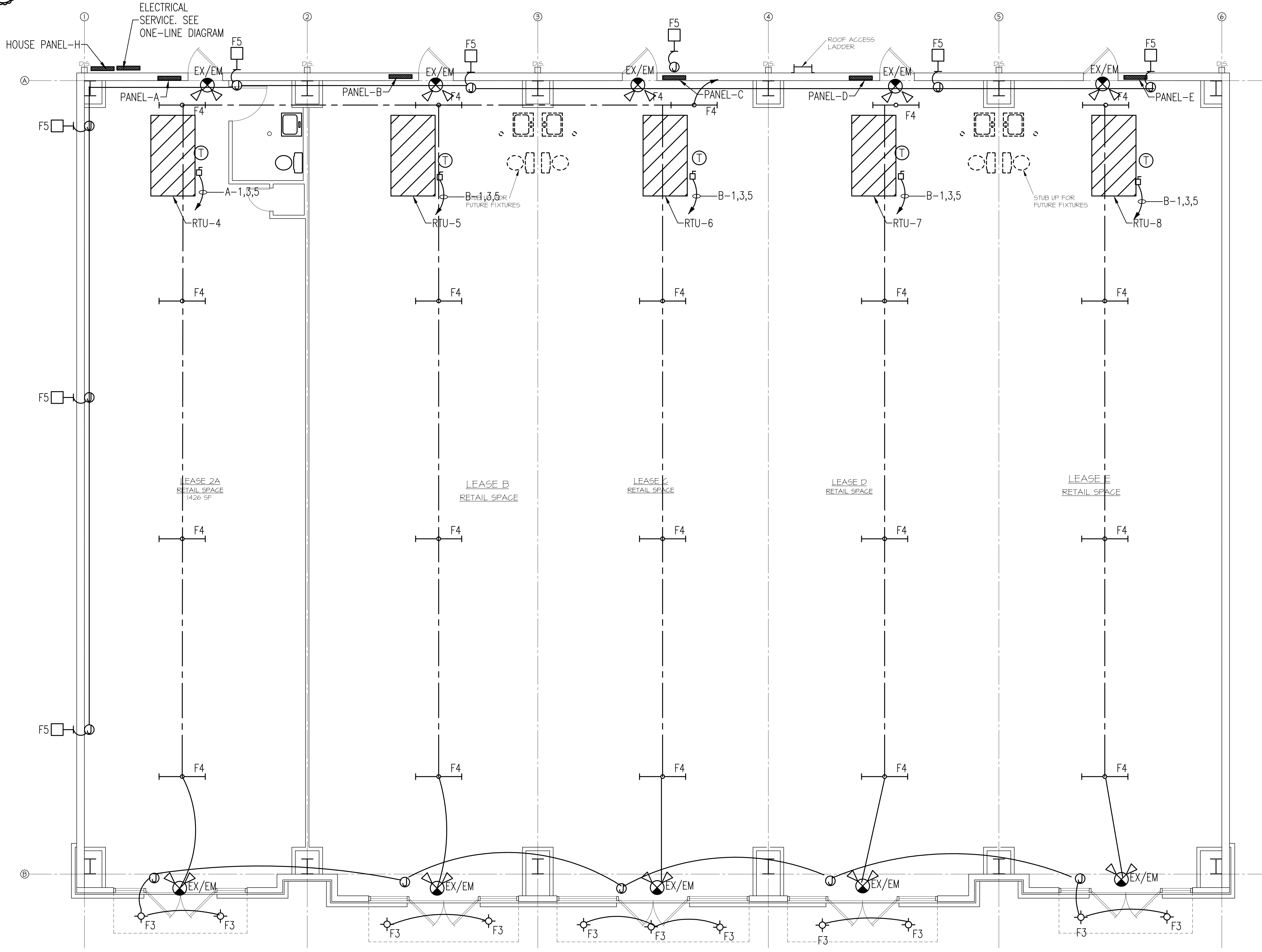
ELECTRICAL SERVICE. SEE ONE-LINE DIAGRAM

1 FLOOR PLAN - POWER
E-3 SCALE: 1/4" = 1' - 0"



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1 SHELL FLOOR PLAN - ELECTRICAL
E-4 SCALE: 1/4" = 1' - 0"



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PANEL -P BUILDING-I		VOLT: 120/208V, 3P, 4W			MAN: 400 AMP MLO							
		ISC: 22 KAC			ENCLOSURE: SEMIRECESSED							
No.	DESCRIPTION	CONDWIRE	PHA		PHB		PHC		CB	CONDWIRE	DESCRIPTION	No.
			KVA	KVA	KVA	KVA	KVA	KVA				
1	RTU-1	1-1/4"C, 3#4, #6(G)	9.0	9.0					3P60	1-1/4"C, 3#4, #6(G)	RTU-3	2
3					9.0	9.0						4
5							9.0	9.0				6
7	RTU-3	1-1/4"C, 3#4, #6(G)	9.0	1.0					3P20	3/4"C, 3#10, #12(G)	HOODCONTROL	8
9					9.0	1.0						10
11							9.0	1.0				12
13	RECEPT	1/2"C, 2#12, #12(G)	1.0	1.0					1P20	1/2"C, 2#12, #12(G)	RECEPT	14
15	RECEPT	1/2"C, 2#12, #12(G)			1.0	1.0			1P20	1/2"C, 2#12, #12(G)	RECEPT	16
17	RECEPT	1/2"C, 2#12, #12(G)					1.0	1.0	1P20	1/2"C, 2#12, #12(G)	RECEPT	18
19	RECEPT	1/2"C, 2#12, #12(G)	1.0	1.0					1P20	1/2"C, 2#12, #12(G)	RECEPT	20
21	RECEPT	1/2"C, 2#12, #12(G)			1.0	1.0			1P20	1/2"C, 2#12, #12(G)	RECEPT	22
23	RECEPT	1/2"C, 2#12, #12(G)					1.0	1.0	1P20	1/2"C, 2#12, #12(G)	RECEPT	24
25	RECEPT	1/2"C, 2#12, #12(G)	1.0	1.0					1P20	1/2"C, 2#12, #12(G)	RECEPT	26
27	RECEPT	1/2"C, 2#12, #12(G)			1.0	1.0			1P20	1/2"C, 2#12, #12(G)	RECEPT	28
29	RECEPT	1/2"C, 2#12, #12(G)					1.0	1.0	1P20	1/2"C, 2#12, #12(G)	RECEPT	30
31	RECEPT	1/2"C, 2#12, #12(G)	1.0	1.0	1.0	1.0			1P20	1/2"C, 2#12, #12(G)	RECEPT	32
33	RECEPT	1/2"C, 2#12, #12(G)					1.0	1.0	1P20	1/2"C, 2#12, #12(G)	RECEPT	34
35	SPACE								1P20	1/2"C, 2#12, #12(G)	RECEPT	36
37									1P20		SPACE	38
39									1P20		SPACE	40
41	SPARE		1.0	1.0					1P20		SPACE	42
SUBTOTAL KVA			38.0		36.0		36.0					
TOTAL KVA			110.0		AMPS=	306.7						

PANEL -L BUILDING-I		VOLT: 120/208V, 3P, 4W			MAN: 150 AMP MLO							
		ISC: 22 KAC			ENCLOSURE: SEMIRECESSED							
No.	DESCRIPTION	CONDWIRE	PHA		PHB		PHC		CB	CONDWIRE	DESCRIPTION	No.
			KVA	KVA	KVA	KVA	KVA	KVA				
1	RECEPT	1/2"C, 2#12, #12(G)	1.0	1.0					1P20	1/2"C, 2#12, #12(G)	RECEPT	2
3	RECEPT	1/2"C, 2#12, #12(G)			1.0	1.0			1P20	1/2"C, 2#12, #12(G)	RECEPT	4
5	RECEPT	1/2"C, 2#12, #12(G)					1.0	1.0	1P20	1/2"C, 2#12, #12(G)	RECEPT	6
7	RECEPT	1/2"C, 2#12, #12(G)	1.0	1.0					1P20	1/2"C, 2#12, #12(G)	RECEPT	8
9	RECEPT	1/2"C, 2#12, #12(G)			1.0	1.0			1P20	1/2"C, 2#12, #12(G)	RECEPT	10
11	RECEPT	1/2"C, 2#12, #12(G)					1.0	1.0	1P20	1/2"C, 2#12, #12(G)	RECEPT	12
13	RECEPT	1/2"C, 2#12, #12(G)	1.0	1.0					1P20	1/2"C, 2#12, #12(G)	RECEPT	14
15	RECEPT	1/2"C, 2#12, #12(G)			1.0	1.0			1P20	1/2"C, 2#12, #12(G)	RECEPT	16
17	RECEPT	1/2"C, 2#12, #12(G)					1.0	1.0	1P20	1/2"C, 2#12, #12(G)	RECEPT	18
19	LIGHT	1/2"C, 2#12, #12(G)	1.5	1.5					1P20	1/2"C, 2#12, #12(G)	LIGHT	20
21	LIGHT	1/2"C, 2#12, #12(G)			1.5	1.5			1P20	1/2"C, 2#12, #12(G)	LIGHT	22
23	LIGHT	1/2"C, 2#12, #12(G)					1.5	1.5	1P20	1/2"C, 2#12, #12(G)	LIGHT	24
25	LIGHT	1/2"C, 2#12, #12(G)	1.5	1.5					1P20		SPARE	26
27	SPARE				1.0	1.0			1P20		SPARE	28
29	SPARE						1.0	1.0	1P20		SPARE	30
31	SPARE		1.0	1.0	1.0	1.0			1P20		SPARE	32
33	SPARE						1.0	1.0	1P20		SPARE	34
35	SPARE		1.0	1.0					1P20		SPARE	36
37	SPARE				1.0	1.0			1P20		SPARE	38
39	SPARE						1.0	1.0	1P20		SPARE	40
41	SPARE		1.0	1.0					1P20		SPARE	42
SUBTOTAL KVA			18.0		15.0		15.0					
TOTAL KVA			45.0		AMPS=	133.4						

PANEL A, B, C, D, E BLDG-II		VOLT: 120/208V, 3P, 4W			MAN: 225 AMP MLO BOLTED							
		ISC: 22 KAC			ENCLOSURE: SURFACE							
No.	DESCRIPTION	CONDWIRE	PHA		PHB		PHC		CB	CONDWIRE	DESCRIPTION	No.
			KVA	KVA	KVA	KVA	KVA	KVA				
1	17P, RTU	1-1/4"C, 3#4, #6(G)	6.0						3P60			2
3					6.0							4
5						6.0						6
7							6.0					8
9								6.0				10
11												12
13												14
15												16
17												18
19												20
21												22
23												24
25												26
27												28
29												30
31												32
33												34
35												36
37												38
39												40
41												42
SUBTOTAL KVA			6.0		6.0		6.0					
TOTAL KVA			18.0		AMPS=	50.0						

PANEL HP		VOLT: 120/208V, 1P, 3W			MAN: 125 AMP MLO							
		ISC: 22 KAC			ENCLOSURE: SURFACE							
No.	DESCRIPTION	CONDWIRE	PHA		PHB		CB	CONDWIRE	DESCRIPTION	No.		
			KVA	KVA	KVA	KVA						
1	POLE LIGHTS	1/2"C, 2#12, #12(G)	1P20		2.0	2.0		1P20	1/2"C, 2#12, #12(G)	BUILDING LIGHT	2	
3	POLE LIGHTS	1/2"C, 2#12, #12(G)	1P20	1.0	1.0			1P20	1/2"C, 2#12, #12(G)	SIGN LIGHT RECEPT	4	
5	BLDG LIGHT	1/2"C, 2#12, #12(G)	1P20					1P20		SPARE	6	
7	SPARE		1P20		1.0	1.0				SPARE	8	
9	SPARE		1P20	1.0	1.0			1P20		SPARE	10	
11	SPACE									SPACE	12	
13	SPACE									SPACE	14	
15	SPACE									SPACE	16	
17	SPACE									SPACE	18	
19	SPACE									SPACE	20	
SUBTOTAL KVA					4.0		6.0					
TOTAL KVA					10.0		AMPS=	41.7				

- NOTES: 1. GAS VALVE CONTROL, FIRE EXTINGUISHER, RECEPT, FAN CONTROL FOR HOOD SHALL HAVE SHUNT TRIP BREAKER.
2. VERIFY EQUIPMENT VOLTAGE AND AMP PRIOR TO ROUGH-IN
3. ALL RECEPT MATCH WITH KITCHEN EQUIPMENT. VERIFY PRIOR TO ROUGH-IN
4. PROVIDE GFI RECEPT AS REQUIRED BY NEC. IN KITCHEN, BATHROOMS, ETC.

POWER COMPANY LOAD SHEET

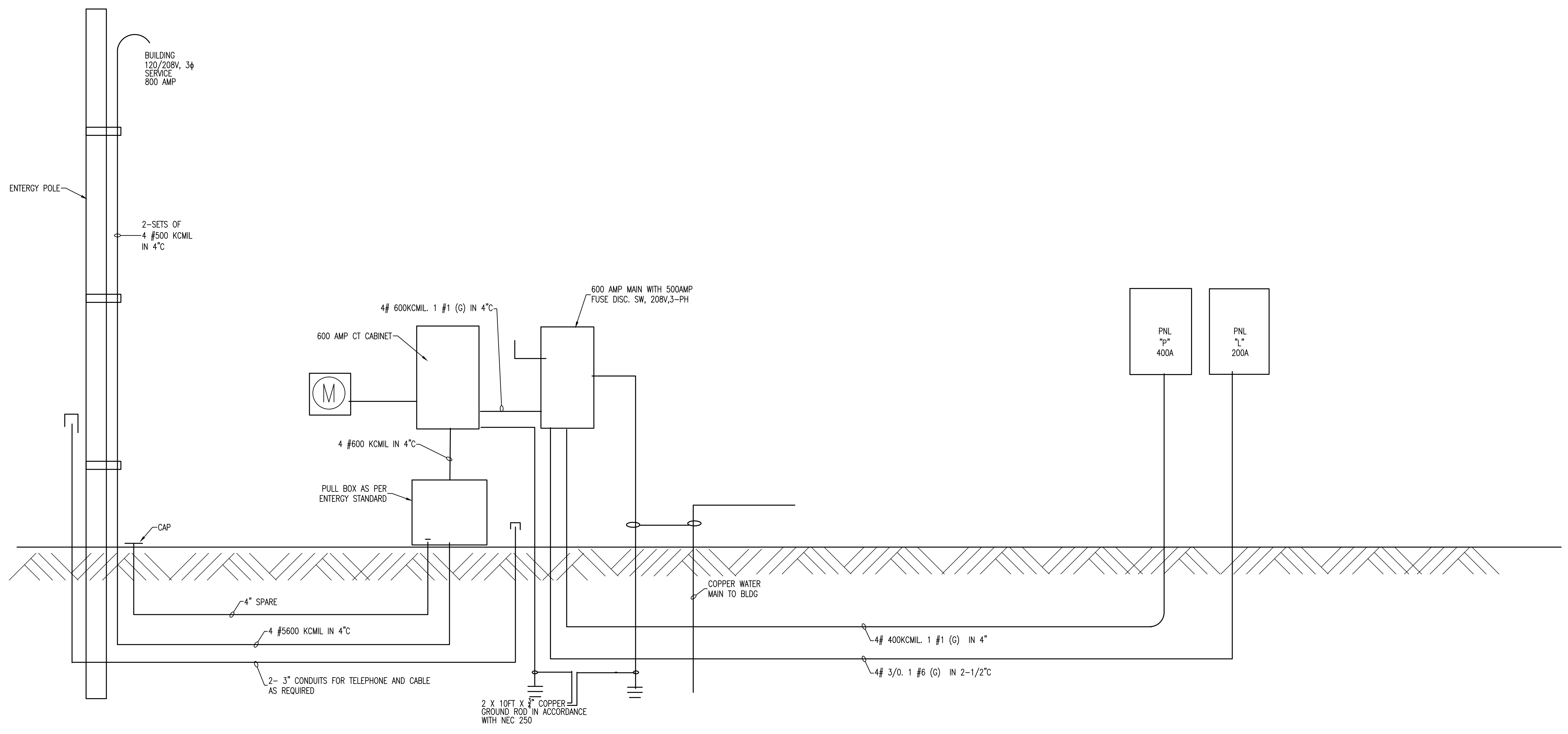
TOTAL SQUARE FEET =7,000 SQ.FT.
LIGHTING = 14,000 WATTS
COOKING = 20,000 WATTS
HVAC =81,000 WATTS
REFRIGERATION= 5,000 WATT
WATER HEATER= 5,000 WATTS
MOTORS = 6,000 WATTS
RECEPTACLES =12,000 WATTS
MISC. LOAD =12,000 WATTS
TOTAL CONNECTED LOAD =143,000 WATTS
DEMAND LOAD =143,000 WATTS
AMP = 143,000 / 208 X1.73 =397 AMP
SELECT 400 AMP SERVICE AT 208 VOLT, 3-PH



01-11-22

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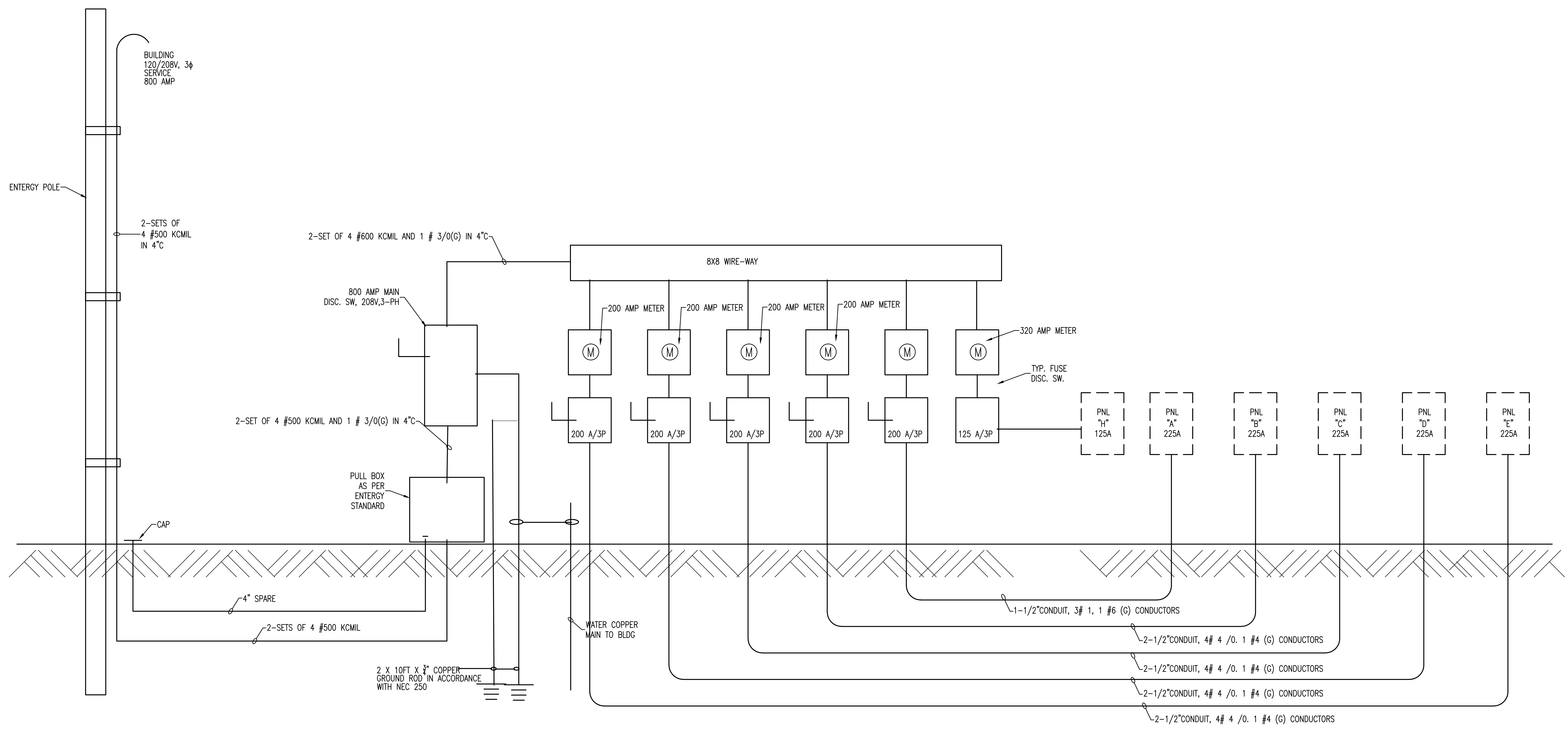
1 ELECTRICAL ONE-LINE RISER DIAGRAM- BUILDING-I
E-6 SCALE: N.T.S.



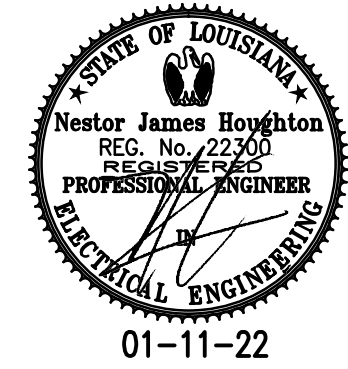
01-11-22

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1 ELECTRICAL ONE-LINE RISER DIAGRAM- BUILDING-II
E-7 SCALE: N.T.S.



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ELECTRICAL SYMBOLES OR LEGEND		
SYMBOL	DESCRIPTION	SOME SYMBOLS MAY NOT APPLY
	2x4 LED SURFACE MTD.LIGHT FIXTURE. LETTER DENOTES	
	2X2 LED LAY-IN LIGHT FIXTURE	
	1X4 LED SURFACE MTD LIGHT FIXTURE	
	SURFACE MOUNTED DOWN LIGHT	
	SANDELIER LED LIGHT FIXTURE	
	HANGING LED LIGHT FIXTURE	
	LED STRIP-SURFACE MOUNTED OR HANGING WITH CHAIN	
	WALL MOUNTED WALLPACK LIGHT AT EXIT DOOR	
	RECESSED LED DOWN LIGHT	
	WALL MOUNTED EXTERIOR LIGHT FIXTURE	
	UNDERGROUND LIGHT FIXTURES	
	UNDER CABINET LIGHT FIXTURE	
	TV OUTLET FOR CABLE AND TELEPHONE CABLE	
F1	DENOTED FIXTURE TYPE. SEE LIGHT FIXTURE SCHEDULE	
F1E	DENOTED FIXTURE TYPE WITH EMERGENCY BATTERY PACK. SEE LIGHT FIXTURE SCHEDULE	
F1EN	DENOTED FIXTURE TYPE WITH EMERGENCY BATTERY PACK W/NIGHT	
	EXIT LIGHT FIXTURE, WITH DIRECTIONAL ARROWS ON FACE (SHADED AS INDICATED)	
	EMERGENCY BATTERY PACK FIXTURE	
	WALL MOUNTED EMERGENCY EXTERIOR LIGHT FIXTURE AT EXIT DOOR	
S	SINGLE POLE TOGGLE SWITCH, MTD. 48" AFF. UON	
S ₃	THREE WAY TOGGLE SWITCH (KEY OPERATED)	
S ³	THREE WAY TOGGLE SWITCH	
S _{MS}	MANUAL STARTER WITH (O/L) OVER LOAD ELEMENT.	
S _D	DIMMER SWITCH/ SLIDER TYP. 120/277V	
	SPLIT FED DUPLEX RECEPTACLE, 125V, 20 AMP, NEMA 5-20R	
	DUPLEX RECEPTACLE MTD. 18" AFF, UON, 120V, 20A, NEMA 5-20R	
	2-POLE RECEPTACLE MTD. 18" AFF, UON, 208/230V,1-PH	
	DUPLEX RECEPTACLE W/GND FAULT CIRCUIT INTERRUPTER, HORIZONTAL 44" ABOVE COUNTER BACKSPASH, UON, 120V, 20A, NEMA 5-20R	
	DUPLEX RECEPTACLE W/GND FAULT CIRCUIT INTERRUPTER AND WEATHER PROOF, 120V,20A,NEMA3R.	
	WEATHER PROOF RECEPTACLE,120V,20A,NEMA 5-20R	
	FLOOR RECEPTACLE, 120V, 20A, NEMA 5-20R	
	QUADRUPLEX RECEPTACLE, 125V, 20 AMP, NEMA 5-20R	
	DUPLEX RECEPTACLE, 125V, 20 AMP, NEMA 5-20R, INSTALLED HORIZONTAL	
	WALL MOUNTED DATA OUTLET, MTD. 18" AFF. SINGLE GANG 3/4"C UP TO CEILING SPACE FOR COMPUTERS WITH PULL STRING	
	WALL MTD. COMPUTER OUTLET BOX SINGLE GANG 3/4" CONDUIT UP TO CEILING SPACE FOR COMPUTERS WITH PULL STRING	
	COMBINATION OF DATA AND TEL OUTLET BOX TWO-GANG OUTLET PROVIDE 1" CONDUIT UP TO CEILING AND PULL STRING.	
	JUNCTION BOX 4"x4"x2" W/BLANK COVER RECESSED	
	CEILING MOUNTED SPEAKERS PART OF INTERCOM SYSTEM.	
	SURFACE OR RECESSED PANEL BOARD. VERIFY IN FIELD	
	MOTOR RATED TOGGLE SWITCH	
	DISCONNECT SWITCH	
	MAGNETIC STARTER OR CONTROL PANEL WITH LIGHT AND DISCONN	
	CIRCUIT HOMERUN, NO. AS INDICATED BY ARROW HEADS	
	CIRCUIT WIRING IN CONDUIT, SHORT TICKMARKS INDICATE PHASE CONDUCTORS, LONG TICKMARKS INDICATE NEUTRAL CONDUCTORS, NO MARKS SHALL INDICATE 2#12, 1#12 GND IN 1/2" C.	
	CIRCUIT CONCEALED IN CELING OR WALL	
	UNDER FLOOR OR UNDERGROUND CONDUIT	
	ELECTRIC HEATING ELEMENT	
	TELEPHONE BACKBOARD	
	ELECTRICAL SERVICE	

NOTE: ALL SYMBOLS MAY NOT APPLICABLE

GENERAL NOTED NOTES

1. FIXTURE TYPE INDICATED BY UPPER CASE CHARACTERS, SWITCHING AND GROUPING DESIGNATED BY LOWER CASE LETTER AND CIRCUIT BY NUMBER (WHERE APPLICABLE)
2. REFER TO THE ARCHITECTURAL/INTERIORS REFLECTED CEILING PLANS FOR EXACT FIXTURE PLACEMENT AND DIMENSIONS.
3. REFER TO THE ARCHITECTURAL/INTERIORS REFLECTED CEILING PLANS FOR
4. REFER TO THE ARCHITECTURAL/INTERIORS REFLECTED CEILING PLANS FOR
5. ALL MOUNTING OF EQUIPMENT IS AS SHOWN UNLESS OTHERWISE NOTED. COORDINATE WITH ARCHITECT. THE COLOR/FINISHES OF ALL ELECTRICAL DEVICES, OUTLETS, COVERPLATES AND TRIM.
6. CAPITOL LETTER BESIDE LIGHTING SYMBOL INDICATES FIXTURE TYPE.
7. REFER TO MECHANICAL DRAWINGS FOR DUCT SMOKE DETECTOR LOCATIONS AND QUANTIES OPERATION SHALL INCLUDE DUAL CONTACT BASE WITH LOCAL EQUIPMENT SHUTDOWN.
8. WHEN CONDUCTOR OR CONDUIT SIZE IS INDICATED FOR BRANCH CIRCUIT HOME RUN, THE CONDUCTOR AND CONDUIT SIZE INDICATED SHALL BE USED FOR THE COMPLETE CIRCUIT.
9. MAKE ELECTRICAL CONNECTIONS TO ELECTRIC WATER COOLERS FROM JUNCTION BOX FLUSH-MOUNTED IN WALL BEHIND COOLER HOUSING. LOCATE THE JUNCTION BOX FOR ACCESSIBILITY FROM WITHIN COOLER HOUSING, IF APPLICABLE.
10. REFER TO THE APPROPRIATE DRAWINGS FOR THE EXACT LOCATION OF EQUIPMENT INSTALLED UNDER OTHER DIVISIONS OF THE DOCUMENTS, WHICH REQUIRE ELECTRICAL SERVICE.
11. EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSTALLED IN ALL RACEWAYS.
12. WALL SWITCHES CONTROLLING 120V VAC CIRCUITS OF OPPOSITE PHASES 277 VOLT SHALL NOT BE INSTALLED IN COMMON BOX UNLESS PERMANENT BARRIER IS PROVIDED.
13. ALL RACEWAY AND EQUIPMENT SUPPORTS AND HANGERS SHALL BE FULLY COORDINATED WITH STRUCTURAL DRAWINGS TO INSURE LOCATION OF SAME OCCURS WITHIN FOUR (4) INCHES OF PANEL POINT ON BAR JOISTS.
14. COORDINATE LOCATION OF ALL FLOOR MOUNTED MECHANICAL EQUIPMENT IN ORDER TO VERIFY POWER & CONTROL RACEWAY CONCEALED IN SLABS TERMINATED AT PROPER LOCATION.
15. DISCONNECT SWITCHES, MOTOR STARTERS AND OTHER ELECTRICAL EQUIPMENT INSTALLED ABOVE ACCESSIBLE CEILINGS, AND REQUIRING ACCESS FOR MAINTENANCE, SHALL BE INSTALLED WITH BOTTOM OF DEVICE ONE (1) FOOT ABOVE CEILING TO PROVIDE READY ACCESSIBILITY.
16. MECHANICAL, PLUMBING, FIRE PROTECTION AND OTHER EQUIPMENT ARE SHOWN ON FLOOR PLAN IN APPROXIMATE LOCATION. COORDINATE WITH M, P, FP AND CONTRACT DRAWINGS/SUBMITTALS FOR EXACT LOCATION OF EQUIPMENT.
17. GENERAL DIAGRAMATIC RACEWAY INTERCONNECTIONS OF EQUIPMENT, FIXTURES AND DEVICES ARE INDICATED ON FLOOR AND REFLECTED CEILING PLANS, REFER TO STRUCTURAL AND ARCHITECTURAL PLANS FOR ELEVATION CHANGES AND RACEWAY ROUTES.
18. RACEWAY FOR EXTERIOR LIGHTING MAY BE INDICATED OUTSIDE OF BUILDING FOOTPRINT FOR CLARITY. ROUTE ALL EXTERIOR LIGHTING RACEWAY WITHIN BUILDING STRUCTURE.
19. POWER AND COMMUNICATIONS/DATA CONDUITS CAN CROSS AT 90°, BUT WHERE PARALLEL, SHALL BE A MINIMUM OF 8" APART.
20. CONTRACTOR SHALL VISIT ON SITE ON PRIOR TO BIDDING THE JOB TO EXISTING UNDERSTAND CONDITION AND ROUTING ALL CONDUITS AND CONDUCTORS. ALL CIRCUITS SHALL BE FIELD COORDINATED WITH EQUIPMENT AND EQUIPMENT LOCATIONS
21. PROVIDE GFI RECEPTICLE IN BATHROOM, KITCHEN COUNTER PER NEC ARTICLE 210-8.
22. PROVIDE GFCI RECEPTICLE AT EACH HVAC EQUIPMENT SUPPLYING 115 VOLT, 15 OR 20 AMP CIRCUIT AS PER NEC-2002, ARTICLE 210-63 AND 210-8-B BY AN ARC FAULT CIRCUIT INTERRUPTER LISTED TO PROVIDE PROTECTION OF ENTIRE BRANCH CIRCUIT AS PER NEC 2012 ARTICLE 210-12-B.
23. PROVIDE GROUNDING, BONDED IN ACCORDANCE WITH NEC, ARTICLE 250
24. LIGHT FIXTURES SHALL BE SELECTED BY ARCHITECT/OWNER.

ABBREVIATIONS

AC	6" ABOVE COUNTER SPACE OR 42" AFF
AFF	ABOVE FINISHED FLOOR
BFC	BELOW FINISHED CEILING
BKBD	BACKBOARD
BKR	BREAKER
CONN	CONNECTED OR CONNECTION
DN	DOWN
EC	EMPTY CONDUIT
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FWU	FURNISHED WITH UNIT
G OR GRND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
IG	ISOLATED GROUND
LTG	LIGHTING
MTD	MOUNTED
NEC	NATIONAL ELECTRICAL CODE
PNL	PANEL
RECEPT.	RECEPTACLE
TEL	TELEPHONE
TTB	TELEPHONE TERMINAL BACKBOARD
TV	TELEVISION
XFMR	TRANSFORMER
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
WP	WEATHERPROOF

ELECTRICAL OULINE SPEC.:

1. **SCOPE:** THE SCOPE OF THE WORK COVERED HEREIN CONSISTS OF FURNISHING ALL LABOR, MATERIALS, NECESSARY EQUIPMENT AND SERVICES TO COMPLETE THE ELECTRICAL WORK AND RELATED WORK IN FULL ACCORDANCE AS INDICATED ON THE DRAWINGS, AS SPECIFIED HEREIN OR BOTH AND SUBJECT TO THE TERMS AND CONDITIONS OF THE COMPLETE THE ELECTRICAL SYSTEM SHALL BE PROVIDED AND INSTALLED UNDER THE WORK OF THIS SECTION, WHETHER SAME ARE SPECIFICALLY MENTIONED OR NOT.
2. **CODES:** ALL WORK SHALL CONFORM TO THE LATEST EDITION OF NFPA 70, NATIONAL ELECTRICAL CODE, THE LOCAL CITY ELECTRICAL CODE AND ALL OTHER INSPECTION DEPARTMENTS HAVING JURISDICTION, AND FROM WHOM PROPER CERTIFICATES OR APPROVAL SHALL BE OBTAINED.
3. **MATERIALS:** ALL MATERIALS FURNISHED SHALL BE NEW AND SHALL BE U.L.
4. **DRAWINGS:** THE DRAWINGS INDICATE SIZE AND GENERAL LOCATION OF WORK SCOPE. VERIFY THE EXACT LOCATION AND ELEVATION OF ALL RECEPTACLES, AND TELEPHONE OUTLETS,
5. **COOPERATION WITH OTHER TRADES:** ELECTRICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES AND WITH OTHER CONTRACTORS WHOSE WORK MIGHT AFFECT HIS INSTALLATION.
6. **ELECTRICAL:** ALL ELECTRICAL ROUGH-IN SHOWN ON THIS PLAN SHALL:
 - A. INCLUDE AND INSULATED COPPER GROUNDING CONDUCTOR CONTAINED WITHIN THE SAME CONDUIT AS THE CIRCUIT CONDUCTORS. THE INSULATED EQUIPMENT GROUNDING CONDUCTORS SHALL BE PROPERLY TERMINATED ON ONE END AT THE EQUIPMENT GROUND BUSS IN THE CORRESPONDING CIRCUIT BREAKER PANEL, AND ON THE OTHER END AT THE GROUNDING CONTACT OF A GROUNDING RECEPTACLE OR TO AN EQUIPMENT CABINET AS APPLICABLE.
 - B. ALL WIRING SHALL BE COPPER (THWN) NO. 12 MINIMUM AND SHALL BE INSTALLED IN FLEX.CONDUIT.
 - C. CONDUIT SHALL BE RGC OR SCHEDULE 80 PVC ABOVE GROUND EXTERIOR, SCHEDULE 40 PVC UNDERGROUND, EMT INSIDE BUILDING EXPOSED LOCATION AND MC CABLE FOR BRANCH CIRCUITS CONCEALED LOCATION. LIGHTING FIXTURES SHALL HAVE 6" MAXIMUM LENGTH OF FLEXIBLE MC CABLE BUSHINGS WITH DOUBLE LOCK-NUTS SHALL BE USED FOR ENTRANCE OF 1-1/4" C. OR LARGER INTO ENCLOSURES. SIZES INDICATED ARE MINIMUMS, LARGER SIZES MAY BE USED TO FACILITATE WIRE PULLS, ETC.
7. **SWITCHES-** ALL GENERAL USE
 - A. MISCELLANEOUS EQUIPMENT: LIGHTING SWITCHES BE RATED 20A, 120-277V MANUFACTURER BY LEVITON LUTRON, P&S, OR EQUIV. COORDINATE COLOR W/ ARCHITECT.
 - B. RECEPTACLES: ALL GENERAL USE DUPLEX RECEPTACLES TO BE RATED 20A, 120V OR MANUF. BY LETON, LUTRON, P&S OR EQUIV. COORDINATE COLOR W/ OWNER/ARCHITECT.
 - C. POWER/LIGHTING CIRCUITS-ALL POWER/LIGHTING CIRCUITS 100A OR LESS SHALL BE AS INDICATED ON THE WIRE AND CONDUIT SCHEDULE. OTHER CIRCUITS SHALL BE SHOWN ON PLANS.
 - D. HOMERUNS- ALL HOMERUNS SHALL BE MIN. OF 1/2" CONDUIT.
 - E. CONDUCTORS- ALL CONDUCTORS SHALL BE RATED 600V, TYPE THW, THHN, XHHW/THHN. WIRE/CONDUIT SIZING BASED UPON TYPE THW CONDUCTORS MAX. 40% FILL.
 - F. TIMERS- A TORK T920L SHALL BE USED FOR LIGHTING CONTROL. MULTIPLE UNITS MAY BE REQ'D FOR ALL CONTROLLED CIRCUITS SHOWN ON THE PLAN.
 - G. PHOTO CONTROL- A TORK 2100 SHALL BE MOUNTED ON EXTERIOR WALL.
 - H. LIGHTING FIXTURES- SHALL BE AS INDICATED ON FIXTURE SCHEDULE OR APPROVED BY OWNER/ARCHITECT.
8. **COORDINATION OF WORK:** THE CONTRACTOR, BEFORE INSTALLING ANY OF THE WORK SHALL SEE THAT IT DOES NO INTERFERE WITH CLEARANCES REQUIRED FOR FINISHED COLUMNS, HUNG CEILING, PLASTER, PARTITIONS, WALLS, ETC. IF ANY WORK IS SO INSTALLED AND IT LATER DEVELOPS THAT SUCH DETAIL OR DESIGN CANNOT BE FOLLOWED. THIS CONTRACTOR AT HIS OWN EXPENSE SHALL MAKE SUCH CHANGES IN THE WORK AS DIRECTED BY THE ARCHITECT, AS WELL AS TO PERMIT THE INSTALLATION OF THE ARCHITECTURAL WORK AS SHOWN ON THE PLANS AND DETAILS.
9. **TESTS:** MAKE TESTS WHICH MAY BE REQUIRED BY THE OWNER OR THE ARCHITECT IN CONNECTION WITH THE OPERATION OF THE ELECTRICAL SYSTEM IN THE BUILDING. ALL TESTS SHALL BE MADE IN ACCORDANCE WITH THE LATEST STANDARD OR THE IEEE AND THE NATIONAL ELECTRICAL CODE. THE TESTS SHALL BE MAKE IN THE PRESENCE OF THE ARCHITECT OR HIS REPRESENTATIVE. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ARCHITECT AT LEAST TWENTY-FOUR HOURS IN ADVANCE OF THE TEST. THE CONTRACTOR SHALL ALSO PROVIDE ALL TESTING EQUIPMENT AND ALL COST SHALL BE BORN BY HIM. WRITTEN REPORTS SHALL BE MADE OF ALL TESTS. ALL FAULTS SHALL BE CORRECTED IMMEDIATELY.
10. **ACCEPTANCE:** THE OPERATION OF THE ELECTRICAL INSTALLATIONS DOES NOT CONSTITUTE AN ACCEPTANCE OF THE WORK BY THE OWNER. FINAL ACCEPTANCE IS TO BE MADE AFTER THE CONTRACTOR HAS DEMONSTRATED THAT THE WORK FULFILLS THE REQUIREMENTS OF PLANS AND SPECIFICATIONS AND HAS FURNISHED ALL REQUIRED CERTIFICATES OF APPROVAL FROM STATE AUTHORITIES, MUNICIPAL AUTHORITIES AND UNDERWRITERS.
11. PROVIDE A 125-VOLT, SINGLE PHASE, 15 OR 20 AMP. RATED RECEPTACLE OUTLET WILL BE INSTALLED AT AN ACCESSIBLE LOCATION FOR THE SERVICING OF HEATING, AIR-CONDITIONING, AND REFRIGERATION EQUIPMENT AS PER NEC-2002 ARTICLE 210.63 AND SHALL HAVE GFCI PROTECTION AS PER NEC ARTICLE 210.8 [B].



01-11-22

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SECTION 16000 - ELECTRICAL

PART 1 - GENERAL PROVISIONS

1.0 SCOPE OF WORK

1.01 The work required under this section of the specifications shall include all labor, materials, equipment, tools, etc., necessary for the work hereinafter described, all in accordance with these specifications and accompanying drawings. The plans and specifications are intended to show and describe the complete electrical system with all specified equipment and fixtures properly installed in a workmanlike manner and left in proper operating condition.

1.02 The electrical contractor is to furnish and install the following:

- (1) Lighting system including fixtures and lamps
(2) Wiring and conduit devices
(3) Power supply
(4) indoor and Outdoor lighting
(5) Electrical service
(6) Telephone and cable

1.1 GENERAL CONDITIONS

The General Conditions of the Contract as set forth in the Architectural Specifications shall be applicable to this section of the specifications.

1.2 GENERAL

1.2.1 All work shall be done in strict conformity with the latest Edition of the National Electrical Code, City Building Code and all other inspection departments having jurisdiction, and from whom proper certificates of approval shall be furnished before final payment shall be made to the Contractor. These certificate requirements shall be satisfied by this Contractor at no additional cost to the Owner.

1.2.2 Contractor shall study all other specifications and drawings relating to this installation and arrange his work in proper regard thereto. Failure to do so shall not relieve the Contractor or responsibilities arising from conditions where his work is affected by that of other trades or by specified design conditions.

1.2.3 Failure to herein mention any specific appurtenances necessary for a complete system within the true meaning and intent of the specifications shall not excuse the contractor from furnishing same. Sizes specified are minimum required.

1.2.4 Contractor shall remove all debris and waste material created during the construction of the job as soon as practical after work is done. All fixtures, equipment and exposed work shall be left clean.

1.3 TEST

The entire installation shall have an insulation resistance between conductors and between ground based on maximum load not less than the value recommended in the National Electric Code. The maximum load means the current carrying capacity of the feeder conductors. Tests for grounds, short circuits and operation shall be made.

1.4 GUARANTEE

Contractor shall guarantee all material and workmanship for a period of one year from the date of acceptance of the work for the whole project. Any defects due to faulty materials, method of installation or workmanship within that period shall be repaired or replaced promptly upon notice and without expense to the Owner.

1.5 APPROVALS AND SUBSTITUTION OF EQUIPMENT

1.5.1 Name of manufacturers or catalog numbers are mentioned herein in order to establish a standard for the type, general design and quality of the product required. Other products similar in design, of equal quality and complying with the plans and specifications will be approved if found acceptable by the Engineer.

1.6 SHOP DRAWINGS

1.6.1 Before proceeding with the work, this contractor shall provide shop drawings of all equipment, furnished by him. These drawings shall show construction details, materials and dimensions of each piece of equipment.

1.6.2 Shop drawings shall be submitted to the Engineer for approval, sufficiently in advance of fabrication and/or purchasing of all materials and equipment, so as not to delay construction of the project. After making corrections, the Engineer will return drawings and the Contractor shall resubmit until approval by the Architect is obtained. On approval, he shall supply the Engineer six (6) complete sets.

1.6.3 Contractor shall submit shop drawings on lighting fixtures, wiring devices, and electrical service switches.

1.6.4 Failure to comply with submittal requirements shall be deemed just cause to withhold final payment until requirements are met.

1.7 AS-BUILT DRAWINGS

Contractor shall prepare up-to-date drawings, during course of job construction. Upon completion of the project and prior to final acceptance, Contractor shall turn over to the Architect for approval, one scanned sets of "As-Built" drawings showing exact locations of all equipment, conduit, etc., installed by him.

1.8 DRAWINGS

1.8.1 The drawings and these specifications are complimentary to each other. What is called for by one shall be as binding as if called for by both.

1.8.2 The electrical drawings, except where specifically dimensioned, are diagrammatic only. For all accurate dimensional determinations see the Architectural, Structural and Equipment Manufacturer's drawings.

1.9 CUTTING AND PATCHING

1.9.1 The Electrical Contractor shall do all cutting required, in a manner approved by the Engineer and General Contractor, for the installation of the electrical work. The Electrical Contractor shall do all patching required.

1.9.2 The physical structure and appearance of any part or parts of the building affected by work done under these specifications and drawings shall be returned to original conditions by trades experienced in the type of work required, at no extra cost to the Owner and to the complete satisfaction of the Architect.

1.10 MATERIAL AND WORKMANSHIP

1.10.1 Unless otherwise specified herein, all materials furnished shall be new and shall be listed by Underwriter's Laboratories, Inc. in every case where a standard has been established for the particular type of material in question.

1.10.2 Methods of installation shall be in full accord with the latest and best electrical and mechanical engineering practices.

1.10.3 Bids shall be based on the use of material and equipment specified or approved as equal in the opinion of the Engineer.

1.11 GROUNDING

1.11.1 Except where specifically indicated otherwise, all exposed non-current carrying metallic parts of electrical equipment, raceway systems, grounding conductor of non-metallic sheathed cables and neutral conductor of the wiring system shall be grounded. The ground connection shall be made at the main service equipment. Connection to water pipe shall be made by O.Z. Manufacturing Co., type "CC" solderless fitting or approved equal supplemented by an additional electrode as specified in Section 250-83 of the N.E.C. If flanged pipes are encountered, connections shall be made with the lug bolted to the street side of the flange connection. If there is no accessible metallic water service to the building, ground connection shall be made to driven rods on the exterior of the building as specified in Section 250-83 of the N.E.C.

1.11.2 All grounding, for any purpose, shall be done in strict compliance with Article #250 of the National Electrical Code.

1.12 MOUNTING HEIGHTS

1.12.1 Wall Toggle Switches: Unless specified, herein or indicated on the drawings, shall be mounted 48" up from finished floor to center line of outlet. Switch boxes shall be set with long dimension vertical. Handicap unit switch mounted as required in ADA height

1.12.2 Panelboards: Unless otherwise indicated or specified, panelboards shall be set so that height of center line to topmost operating handles of switches or circuit breakers will not exceed 6 feet 6 inches from floor.

1.12.3 Safety Switches: Fused safety switches shall be set so that center of fuses will not exceed 5 feet 6 inches from finished floor. Unfused safety switches shall not have the operating axis more than six feet six inches from finished floor.

PART 2 - PRODUCTS

2.01 BASIC MATERIALS AND METHODS:

2.01.1 All materials and equipment shall be new and undamaged, and shall bear the approval label of Underwriters' Laboratories, Inc. and shall be listed for use in each specific location.

2.02 RACEWAYS FROM POLE TO SERVICE METER:

2.02.1 Conduit systems shall be installed where indicated. Conduit shall be Electrical Metallic Tubing (EMT) except service conduit shall be Rigid Steel Conduit (RSC) OR Schedule 80 pvc.

2.02.2 Conduit fittings shall be cast aluminum alloy or cast ferrous alloy, galvanized and shall be U.L. approved.

2.02.3 Special conduit fittings shall be T&B, O.Z., or approved equal style shall be appropriate for each application.

2.02.4 Conduit system shall be installed to provide a continuous band throughout the entire raceway system.

2.02.5 Junction boxes and pull boxes shall be furnished and installed where indicated on the Drawings or where required by the NEC or where necessary to facilitate pulling wire and cable without damage.

2.03 CONDUCTORS AND CABLES:

2.03.1 Branch-circuit conductors where installed in conduit shall be THWN. Minimum conductor size shall be #12 AWG. All conductors shall be copper unless indicated otherwise. Service entrance conductors shall be XHHW ALUMINUM.

2.03.2 Branch circuit cables shall be service rated cable. All cables shall have a separate conductor for equipment grounding. The cables shall comply with all requirements per Article 336 of N.E.C. where necessary, cables shall be protected from physical damage by conduit, metallic tubing, pipe, guard strips or other means. NM wire can be used for wood construction bldg.

2.04 OUTLET BOXES:

2.04.1 Outlet boxes for switch and receptacle outlets used with concealed wiring shall be metal, sheet steel, galvanized or cadmium plated, as manufactured by Steel City, or equal for metal stud. plastic box can be used for wood construction.

2.04.2 Masonry boxes shall be used in all exposed masonry walls.

2.04.3 Boxes for switch and receptacle outlets used with exposed wiring shall be a typed approved for surface mounting. "Utility" or "Handy" boxes may be used for single-gang switches and receptacles on masonry walls.

2.04.4 Exposed outlet boxes for outside wiring shall be solid cast aluminum and shall be approved for weatherproof use.

2.04.5 Throughout the entire installation, all metal boxes shall be grounded in accordance with the methods set forth in the NEC.

2.05 PANELBOARDS AND LOAD CENTERS:

2.05.1 Panelboards and load centers shall be the dead-front safety type, with thermal magnetic quick-break, trip-free, bolt-on-type molded-case circuit breakers as indicated on the Drawings and in the Panelboard Schedule. Circuit breakers shall be Square D type manufactured by General Electric or Square D.

2.05.2 Single Pole Circuit Breakers shall be listed for switching duty.

2.05.3 All panel directories shall be typed, and the terminology approved by the Owners.

2.06 SAFETY SWITCHES:

2.06.1 Safety Switches shall be provided as indicated on drawings. Switches shall be the quick-break quick-break visible blade-knife switch type.

2.06.2 Switches shall be horsepower rated, capable of breaking stalled-rotor motor current at these ratings.

2.06.3 Outdoor locations shall have NEMA type 3R enclosures, indoor locations shall have NEMA Type 1 enclosures.

2.06.4 All 600 amperes or smaller switches shall be complete with rejection feature to insure rejection of all fuses other than Class R.

2.06.5 Safety switches shall be square D or General Electric General Duty for 208-240 volt non-fused switches and Heavy Duty for 208-240 volt fused switches.

2.06.6 Disconnect switches for single phase motors may be Leviton (or equal by Hubbel) No.12211 20A/1P for 115 V motors and No.12221 20A/2P for 208-240 V motors.

2.07 FUSES:

2.07.1 Fuses 600-A and below shall be Buss Low Peak Type LPN-RK (U.L. Class RK-1) current limiting, dual element, time delay, rejection type unless noted otherwise.

2.07.2 A full set of fuses shall be supplied plus 33% spares.

2.08 SWITCHES AND RECEPTACLES:

2.08.1 All flush switches shall be the quiet ac-rated toggle type and shall be Leviton (or equal by and be mounted 48" A.F.F. unless otherwise indicated.

2.08.2 Receptacles shall be Heavy Duty Leviton (or equal by Hubbel) No. 5262i and shall be mounted 18" A.F.F. unless otherwise indicated.

2.08.3 All wiring devices shall be trimmed with white wall plates and as approved by architect..

2.08.4 Special wiring devices shall be as indicated on the Drawings and in the Electrical Symbol

2.08.5 Special wiring devices shall be as indicated on the Drawings and in the Electrical Symbol List.

2.09 MOTORS AND MOTOR CONTROLS:

2.09.1 Verify Motor Controllers or starters furnished as part of the equipment on which they are used. Line Voltage Controls not furnished by the respective subcontractors shall be mounted and connected by this Contractor.

2.10 ELECTRIC SERVICE:

2.10.1 The Contractor shall furnish and install service-entrance conductors, panelboard, and all necessary fittings and equipment to complete the service entrance including the meter enclosure. The local utility company will furnish the meter unless otherwise indicated on the Drawings. Equipment shall be General Electric or Square D.

2.10.2 The service entrance shall be installed as indicated on the Drawings and as shown in the Power-Riser Diagram.

2.10.3 The Contractor shall pay all costs incurred in the installation of the electric service, including connection fees of the local utility company. Type and location of service shall be coordinated with the Utility.

2.10.4 It shall be the responsibility of the Contractor to connect the various loads in such a way that there is minimum phase unbalance throughout the building. The Contractor shall operate the building under full heating and other load conditions, including full lighting and shall provide a record of the amperes per phase of each feeder installed to the main distribution center.

2.11 LIGHTING EQUIPMENT:

2.11.1 Lighting fixtures are shown on the Drawings and indicated in the Lighting-Fixture Schedule and shall be those manufacturers as listed in the Fixture Schedule, Substitutions shall be acceptable only if approved by the Engineer.

2.11.2 Before installation of lighting fixtures, the Electrical Contractor shall verify all mounting heights and the exact location of each fixture with the Engineer.

2.11.3 All lighting fixtures shall be lamped as indicated in the Lighting-Fixture Schedule.

2.11.4 Where the finish of a lighting fixture is damaged during installation, all such damage shall be touched up with a matching finish before acceptance of the building.

2.11.5 At the time of acceptance of the building, all lamps shall be operating.

PART 3 - EXECUTION

3.01 COORDINATION:

3.01.1 The Drawings are diagrammatic and indicate generally the location of material and equipment. These drawings shall be followed as closely as possible. The Contractor shall coordinate the work under this Section with the architectural, structural, heating, ventilation, air conditioning and plumbing drawings, and the drawings of other trades, for exact dimensions, clearances and roughing-in locations. This Contractor shall cooperate with other trades in order to make minor field adjustments to accommodate the work of others.

3.02 INSPECTION:

3.02.1 Upon completion of the project, the Contractor shall provide the Owners with a certificate of final inspection and approval of all work in this Section, by the Electrical Inspector having jurisdiction, if applicable.

3.02.2 The Contractor shall be responsible for notifying the Electrical Inspector at each inspection stage, and no work shall progress until the inspection has been completed and the work approved.

3.03 PERFORMANCE:

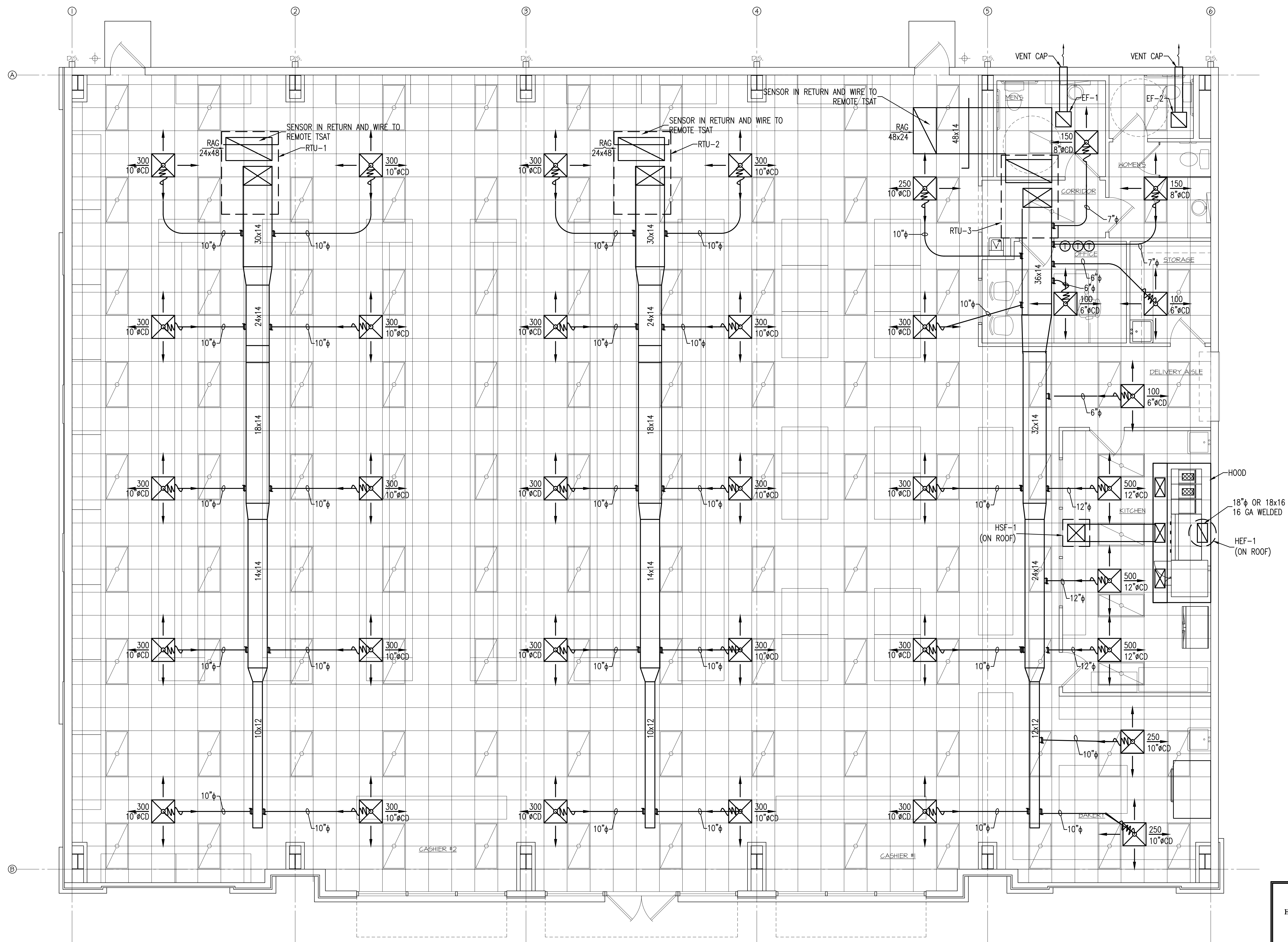
3.03.1 Should the Contractor perform any work that does not comply with the requirements of the applicable building codes, state laws, company regulations, he shall bear the cost of correcting any such deficiency.

END OF SECTION




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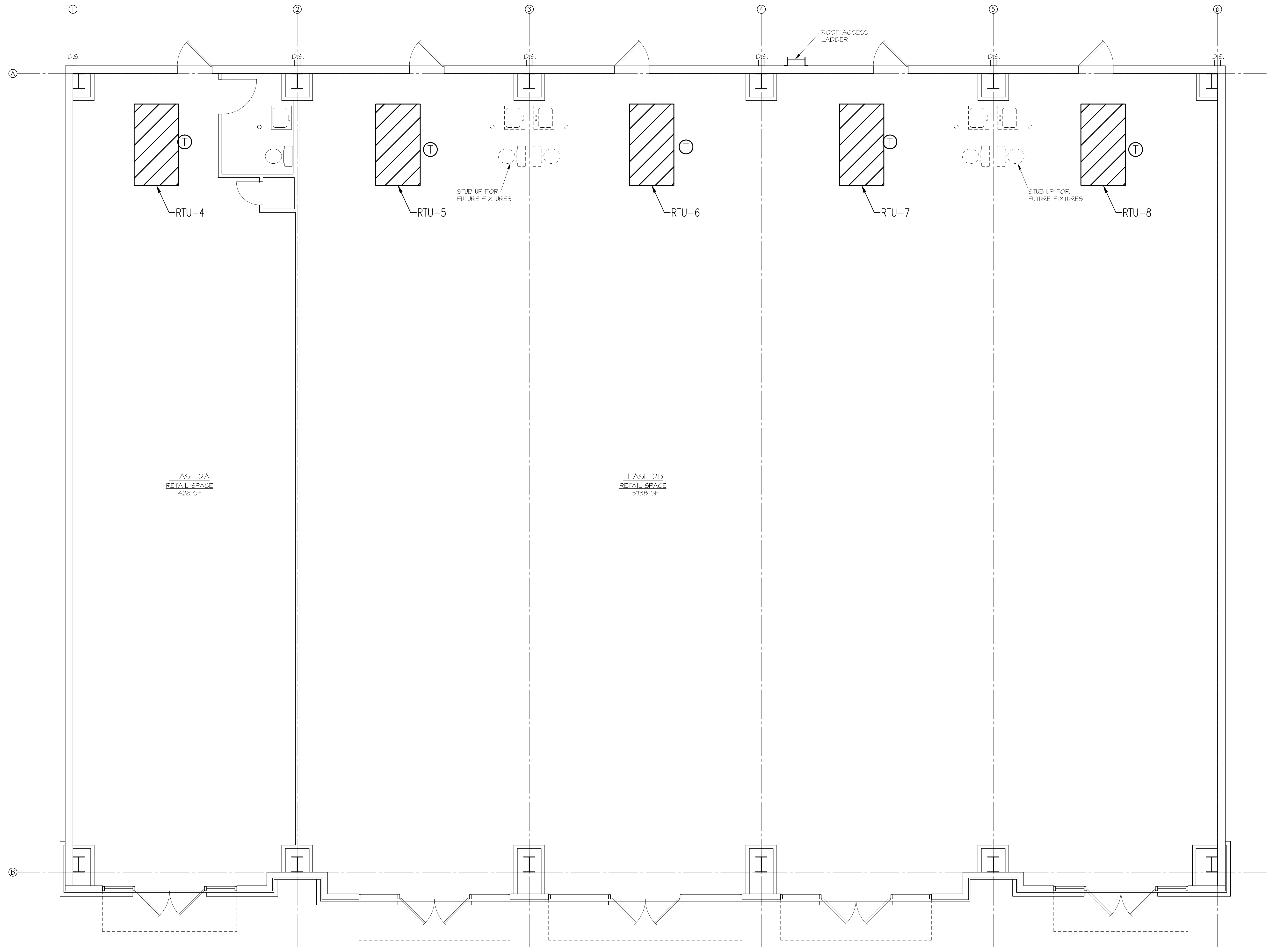
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1 FLOOR PLAN - HVAC
M-1 SCALE: 1/4" = 1' - 0"


 01-11-22
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 M-K Project No.: 21-109

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1 SHELL FLOOR PLAN - HVAC
M-2 SCALE: 1/4" = 1' - 0"



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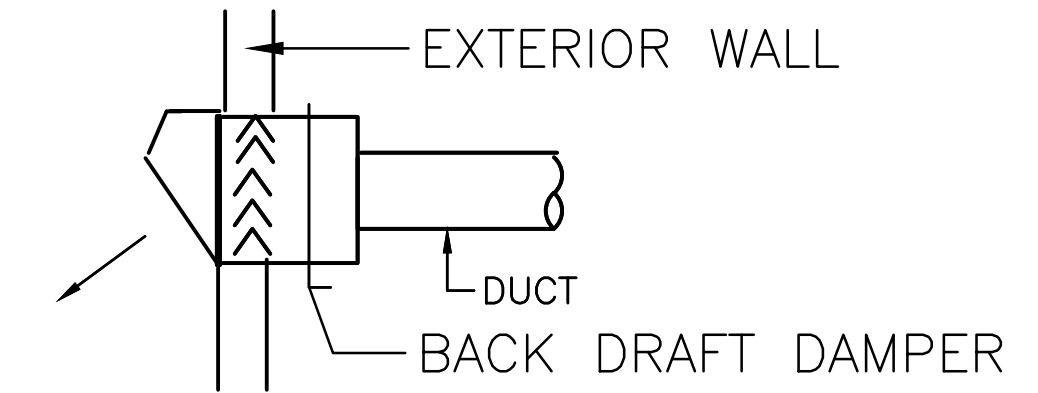
HVAC GENERAL NOTES (ALL NOTES MAY NOT APPLY. SEE PLAN)

- CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR AND EQUIPMENT FOR A COMPLETE AND OPERATING SYSTEM. COORDINATE WITH ALL TRADES.
- ALL WORK AND MATERIALS SHALL COMPLY WITH ALL APPLICABLE STATE, CITY, AND LOCAL CODES, AND THE REQUIREMENT OF NFPA 90A AND IBC CODE.
- ALL CUTTING AND PATCHING SHALL BE DONE AS REQUIRED. CONTRACTOR SHALL PAY ALL APPLICABLE FEES FOR THE PERMIT AND INSPECTION.
- TEST AND BALANCE HVAC SYSTEM PER ASHRAE APPLICATION SECTION 36.2 AND PER THE RELATED SMACNA SECTION FOR HVAC SYSTEMS AND DUCT DESIGN TO BE IN COMPLIANCE WITH IBC SECTION 106.1.3. PROVIDE WRITTEN REPORT. NOT REQUIRED AT THIS TIME
- ALL CONCEALED RECTANGULAR AND ROUND SUPPLY, RETURN, OUTSIDE AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH 2.2" THICK AND VAPOR BARRIER FIBERGLASS EXTERNAL WRAP 0.75# DENSITY. THE RECTANGULAR DUCT DIMENSIONS INDICATED ARE SHEET METAL SIZES. INSTALL MINIMUM R=6 INSULATION WITH ALUMINUM FOIL.
- INSULATE ALL ROUND RIGID DUCT WITH 2.2" THICK FIBERGLASS, 0.75LB DENSITY WITH ALUMINUM VAPOR BARRIER. R=6 INSTALLED.
- LOW VELOCITY AND PRESSURE FLEXIBLE DUCT SHALL BE FACTORY FABRICATED AND MUST BE INNER LINED INSULATION AND OUTER JACKETED, U.L. LISTED AT FLAME SPREAD RATE NOT OVER 25 AND SMOKE DEVELOPER RATE OVER 50 AND COMPLYING WITH NFPA 90A. INSTALL MINIMUM R=8 INSULATION.
- DUCT MATERIAL SHALL CONFORM WITH NFPA 90A AND GAUGES SHALL CONFORM TO SMACNA STANDARD.
- REFRIGERANT PIPING SHALL BE ASTM B-280 SEAMLESS COPPER TUBING (ACR) TYPE L, SOFT DRAWN WITH SOLDER JOINT FITTINGS. ALL REFRIGERANT PIPING SHALL BE SIZED AND INSTALLED AS PER EQUIPMENT MANUFACTURERS. PROVIDE FILTER DRYER IN REF. LINES IF APPLICABLE.
- REFRIGERANT SUCTION LINES SHALL BE INSULATED WITH 3/4" ARMAFLEX. FORMED TUBULAR ELASTOMERIC AND CONFORM WITH NFPA90A.
- PROVIDE DUCT TYPE SMOKE DETECTOR IN SUPPLY AIR OF AIR HANDLING UNITS WITH 2000 CFM AND OVER CAPACITY (OR UNITS WITH 5 TON NOMINAL CAPACITY OR HIGHER) AND INTERLOCK WITH UNIT CONTROL SYSTEM TO STOP THE FAN IN THE EVENT OF DETECTING SMOKE IN THE SYSTEM.
- PROVIDE DUCT SMOKE DETECTOR AND HAVE AUDIO/VISUAL ON THE WALL IN OCCUPIED AREA AS PER NFPA90A IF NO FIRE ALARM IN BLDG. OR INTERLOCK WITH FIRE ALARM SYSTEM IF FIRE ALARM SYSTEM IN BUILDING
- PROVIDE LOW VOLTAGE CONTROL INCLUDING THERMOSTAT, TRANSFORMER, WIRES, RELAYS, SENSORS, THERMOSTAT LOCKING COVER ETC. TO COMPLETE THE WORKING CONTROL AS RECOMMENDED BY MANUFACTURER.
- PROVIDE CONDENSATE DRAIN LINE FROM UNIT TO NEAREST PLUMBING. INSULATE DRAIN LINE WITH 3/4" ARMA FLEX AS REQUIRED AT TRAP AND METAL DRAIN PIPE. DRAIN SHALL BE INSTALLED AS PER MANUFACTURER RECOMMENDATION.
- PROVIDE BACK DRAFT DAMPER FOR EXHAUST FANS AND DUCTS TO THE OUTSIDE.
- ROOFTOP UNITS SHALL BE INSTALLED ON ROOF CURB. PROVIDE CLEARANCE AROUND THE UNIT AS RECOMMEND BY UNIT MFG.
- PROVIDE FIRE DAMPER AT EACH OUTSIDE AIR INTAKE AND AT EACH DUCT THAT PENETRATES RATED WALL OR PARTITION. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATED WALLS AND PARTITIONS.
- DISTANCE BETWEEN AN EXHAUST VENT AND A FRESH AIR INTAKE MUST NOT BE LESS THAN 10'-0" MINIMUM.
- VERIFY EQUIPMENT VOLTAGE AND PHASE WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING.
- COORDINATE ROUTING OF DUCTWORK WITH STRUCTURE, LIGHTING, PIPING, ETC. REFER TO ARCHITECTURAL, STRUCTURAL, PLUMBING, ELECTRICAL DRAWINGS. OFFSET DUCTS AS REQUIRED.
- SEAL ALL DUCT JOINTS WITH HARD CAST AND SEAL AROUND WHERE DUCT PENETRATE WALL OR CEILING.
- ALL EXPOSED RECTANGULAR SHEETMETAL DUCT SHALL BE PAINTED AND INTERNALLY LINED WITH 1.5" THICK BLACK NEOPRENE COATED GLASS FIBER DUCT LINER. MINIMUM 1.5LB DENSITY. ALL EXPOSED DUCT SHALL PAINTED TO MATCH EXPOSED STRUCTURE. ARCHITECT SHALL SELECT THE COLOR.

PACKAGED ROOFTOP UNIT SCHEDULE

RTU NO.	TONS	EVAPORATOR			BLOWER(S)			COMPRESSOR(S)			CONDENSER FAN(S)			EVAPORATOR COIL(S) (BTUH)			ELECTRIC HEAT			UNIT(S)				NOTES		
		CFM	EXT. S.P.	HP	FLA	VOLTS	No	RLA	LRA	No	FLA	LRA	SENSIBLE	TOTAL	ENT. AIR	KW@208V	OUTPUT BTUH	STAGE	MCA (208)	MAX FUSE	MODEL	WEIGHT	VOLTS		MIN.O.A.CFM	
RTU-1	7.5	3000	0.75	1	4.6	208/230V/3Ø	2	20.5/13.5	123/77	1	3.5	9.3	72,000	90,000	80.00	67.00	27.0	92,251	2	104.5	110	THC90	1450	208/230V/3Ø	400	1,2,3,4,5
RTU-2	7.5	3000	0.75	1	4.6	208/230V/3Ø	2	20.5/13.5	123/77	1	3.5	9.3	72,000	90,000	80.00	67.00	27.0	92,251	2	104.5	110	THC90	1450		400	1,2,3,4,5
RTU-3	7.5	3000	0.75	1	4.6	208/230V/3Ø	2	20.5/13.5	123/77	1	3.5	9.3	72,000	90,000	80.00	67.00	27.0	92,251	2	104.5	110	THC90	1450		400	1,2,3,4,5
RTU-4	10.0	4000	0.75	1	4.6	208/230V/3Ø	2	20.5/13.5	123/77	1	3.5	9.3	93,100	119,100	80.00	67.00	27.0	92,251	2	104.5	110	THC120	1450	208/230V/3Ø	400	1,2,3,4,5
RTU-5,6	6.0	2400	0.75	1	4.6	208/230V/3Ø	1	19.2	136	1	3.3	9.5	52,900	72,400	80.00	67.00	20.3	69,283	2	76.6	80	THC072	850LBS	208/230V/3Ø	250	1,2,3,4,5
RTU-7,8	6.0	2400	0.75	1	4.6	208/230V/3Ø	1	19.2	136	1	3.3	9.5	52,900	61,000	80.00	67.00	20.3	69,283	2	76.6	80	THC072	850LBS	208/230V/3Ø	250	1,2,3,4,5
RTU-9	6.0	2400	0.75	1	4.6	208/230V/3Ø	1	19.2	136	1	3.3	9.5	52,900	61,000	80.00	67.00	20.3	69,283	2	76.6	80	THC072	850LBS	208/230V/3Ø	250	1,2,3,4,5
	5.0	2000	0.75	1	4.6	208/230V/3Ø	1	15.9	110	1	2.5	6.6	45,800	61,000	80.00	67.00	13.1	44,710	2	54.9	60	THC060	750LBS	208/230V/3Ø	200	

- SELECTION BASED ON TRANE HIGH EFFICIENCY VFD DRIVE UNIT. HINGED ACCESS DOOR. CARRIER, YORK OR EQUAL. OPTION TO GET QUOTE FOR REGULAR UNIT IF OWNER DIRECTED.
- HEAT-COOL AUTOMATIC THERMOSTAT WITH FILTER LIGHT, CONTROL, CONTROL WIRES AND LOCKING SEE THRU COVER
- FURNISH ROOF CURB WITH VIBRATION ISOLATOR. PROVIDE SUPPORT UNDER CURB AND WITH ELECTRICAL OUTLET BUILT-IN WITH UNIT. CURB SHALL BE ANCHOR TO ROOF STRUCTURE.
- FURNISH POWERED CONVENIENCE OUTLET.
- UNIT SHALL FURNISHED WITH FACTORY MOUNTED THRU THE CURB DISCONNECT AND CONDUIT WITHIN CURB AND ALSO CONDENSATE DRAIN WITHIN CURB. NO CONDUIT AND COND. DRAIN PIPE PENETRATE OUTSIDE ROOF CURB.



WALL CAP WITH ROUND COLLAR, BUILT IN BACK DRAFT DAMPER, AND BIRD SCREEN, ALUMINUM, NATURAL FINISH

2 TYPICAL WALL VENT CAP DETAIL
M-3.0 SCALE: N.T.S.

HVAC SYMBOL SCHEDULE

- (S) SWITCH
- (T) THERMOSTAT
- (SD) DUCT SMOKE DETECTOR
- (FD) FIRE DAMPER
- (BD) BACK DRAFT DAMPER
- (F) FIRESTAT
- CD CEILING DIFFUSER (NECK SIZE)
- O.A. OUTSIDE AIR
- SR SUPPLY REGISTER
- SD SPLITTER DAMPER
- UTR UP THRU ROOF
- U/C UNDER CUT DOOR
- DG DOOR GRILLE
- TG TRANSFER GRILLE
- RAG RETURN AIR GRILLE
- (M) MOTORIZED DAMPER
- (X) SUPPLY AIR
- (□) RETURN AIR
- (X with arrow) SUPPLY AIR WITH DIRECTION OF FLOW
- (H with damper) SPIN-IN FITTING W/DAMPER
- (Wavy line) FLEXIBLE DUCT
- (Rectangular) RIGID SHEET METAL DUCT
- (Round) RIGID ROUND SHEETMETAL DUCT
- (Rectangular with damper) MANUAL VOLUME DAMPER (MVD)

DIFFUSER, REGISTER AND GRILLE SCHEDULE

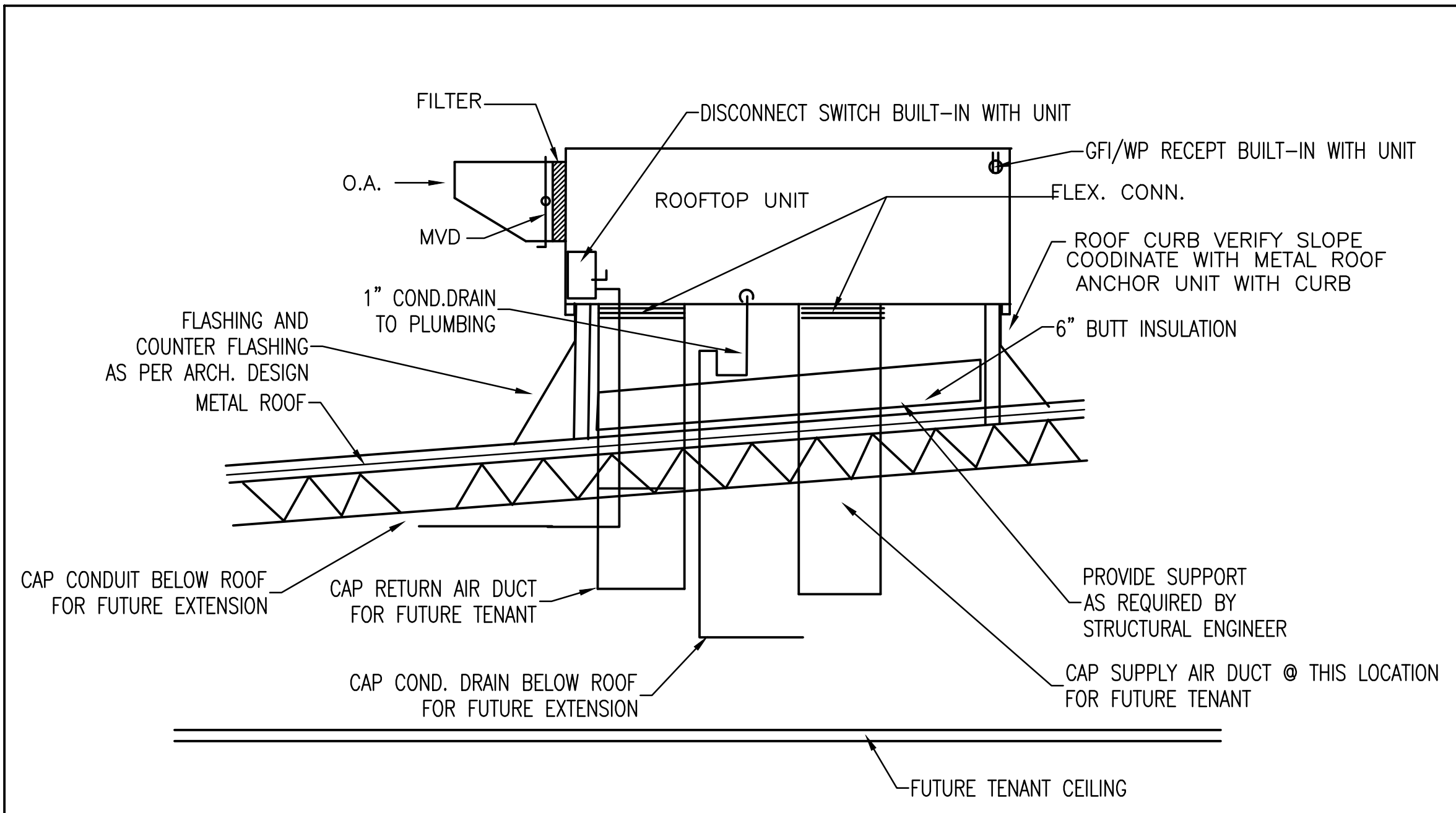
PLAN MARK	DESCRIPTION	TITUS MODEL	MATERIAL	OPPOSED BLADE DAMPER	NOTES
CD	CEILING DIFFUSER-24X24 LAY-IN CEILING	TMS-AA	ALUMINUM	YES	1,2
RAG	WALL OR CEILING RETURN AIR FILTER GRILLE	350FF1	ALUMINUM	0 DEFLECTOR	1

- SELECTION BASED ON TITUS. METALAIRE, KRUEGER, NAILER, PRICE OR EQUAL
- DISCHARGE PATTERN AND VOLUME ADJUSTABLE FROM FACE OF DIFFUSER

FAN SCHEDULE

MARK	SERVICE	LOCATION	CFM	EXT. S.P. IN.W.G.	TYPE	DRIVE	SOUND DATA SONES	ELECT. DATA		RPM	MODEL NO.	CONTROLS	WEIGHT (LBS.)	SIZE WALL OPEN.	REMARKS
								H.P. / WATTS	VOLTAGE						
EF-1	TOILET ROOM	CEILING	150	0.15	CENTRIFUGAL	DIRECT	4	50WATTS	115V/1Ø	1000	676	WALL SWITCH	90	6"-VENT CAP	1,2,3,4
EF-2	TOILET ROOM	CEILING	150	0.15	CENTRIFUGAL	DIRECT	4	50WATTS	115V/1Ø	1000	676	WALL SWITCH	90	6"-VENT CAP	1,2,3,4

- SELECTIONS ARE BASED ON BROWN OR APPROVED EQUAL.
- PROVIDE THERMAL OVERLOAD PROTECTION, DISCONNECT SWITCH AND BACK DRAFT DAMPER
- PROVIDE ADJUSTIBLE SPEED SWITCH FOR DIRECT DRIVE FAN AND RELAY FOR SPEED CONTROL

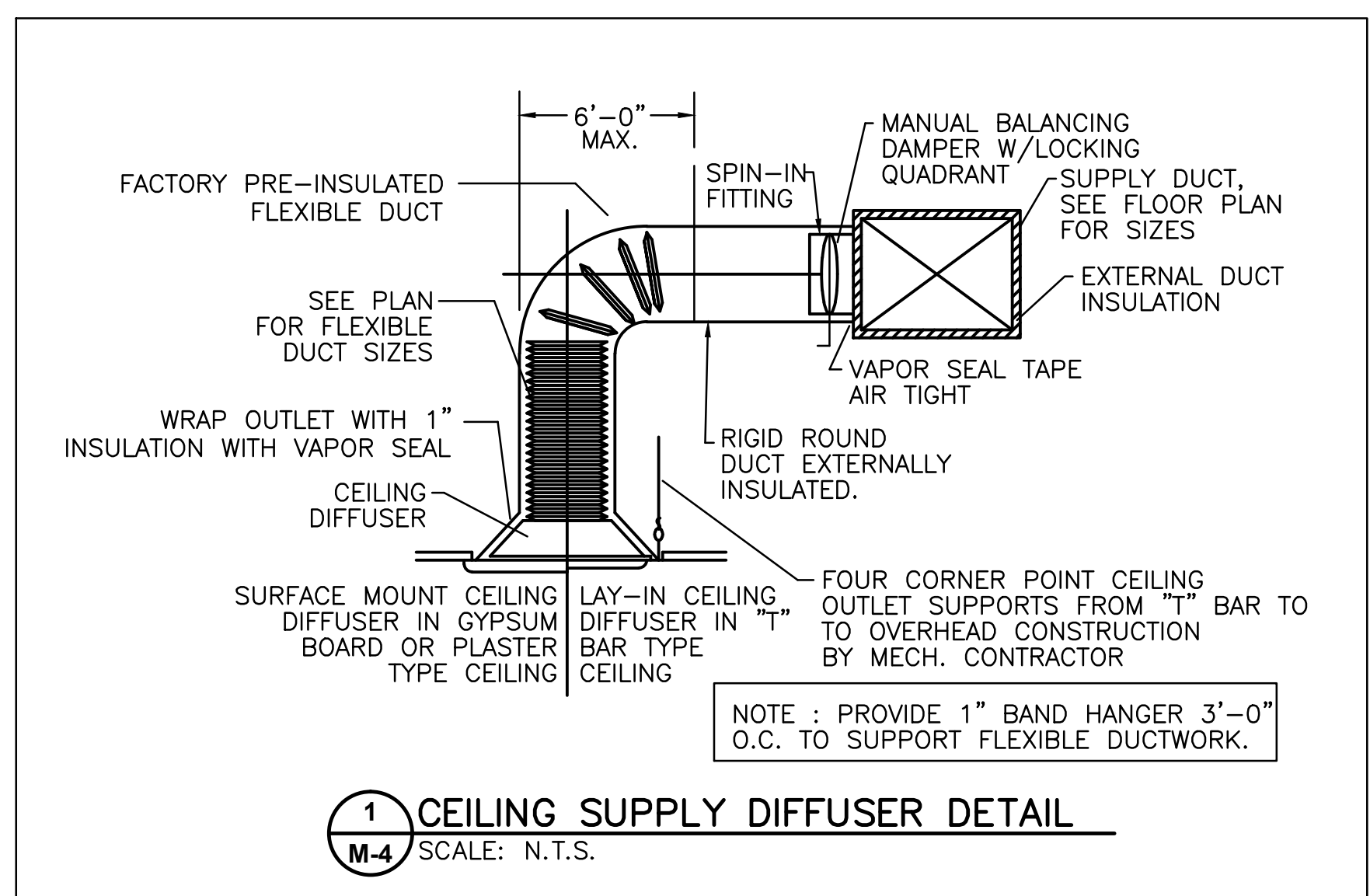


1 TYPICAL ROOF TOP UNIT 4,5,6,7,8 DETAIL
M-3 SCALE: N.T.S.

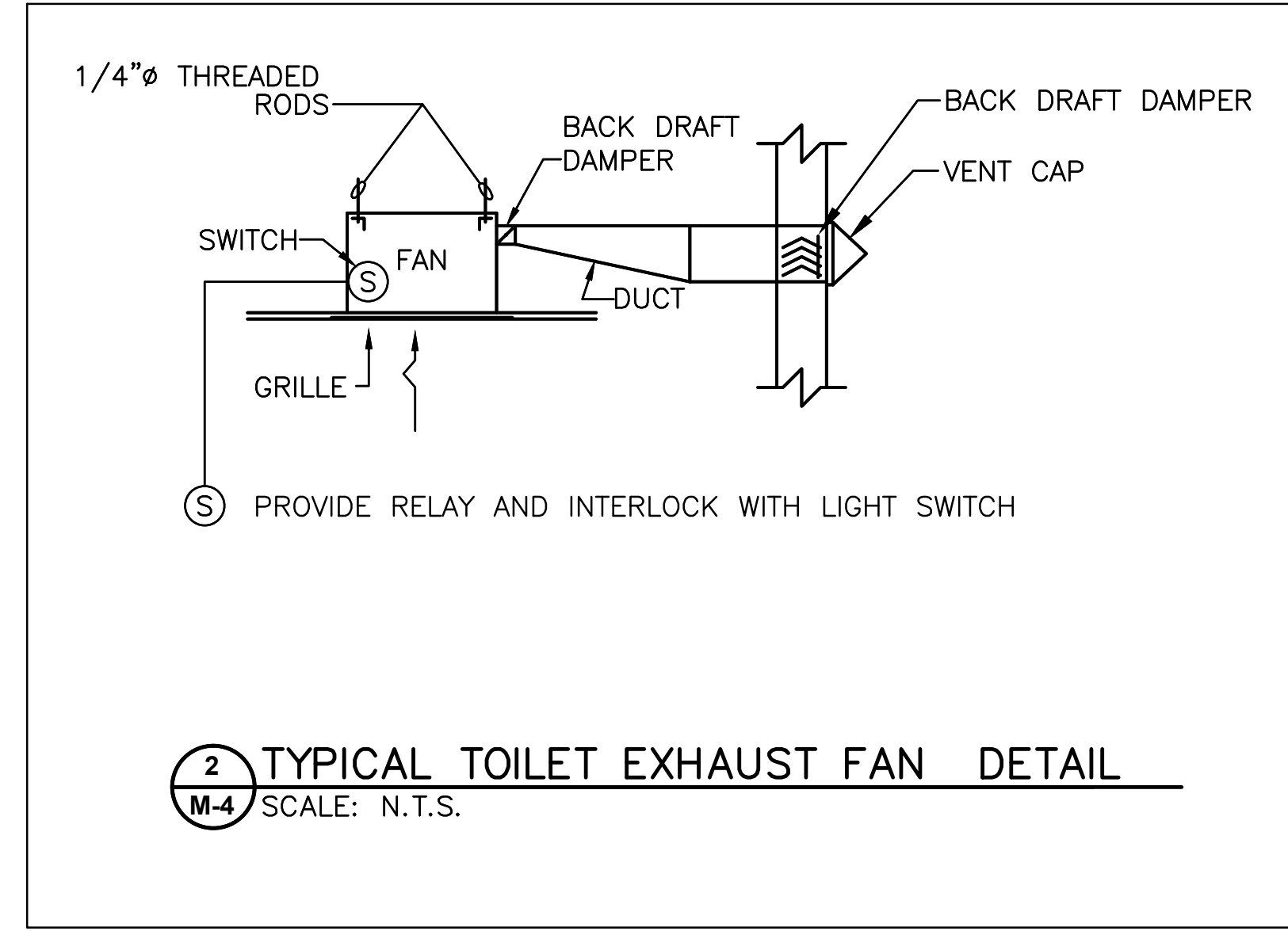


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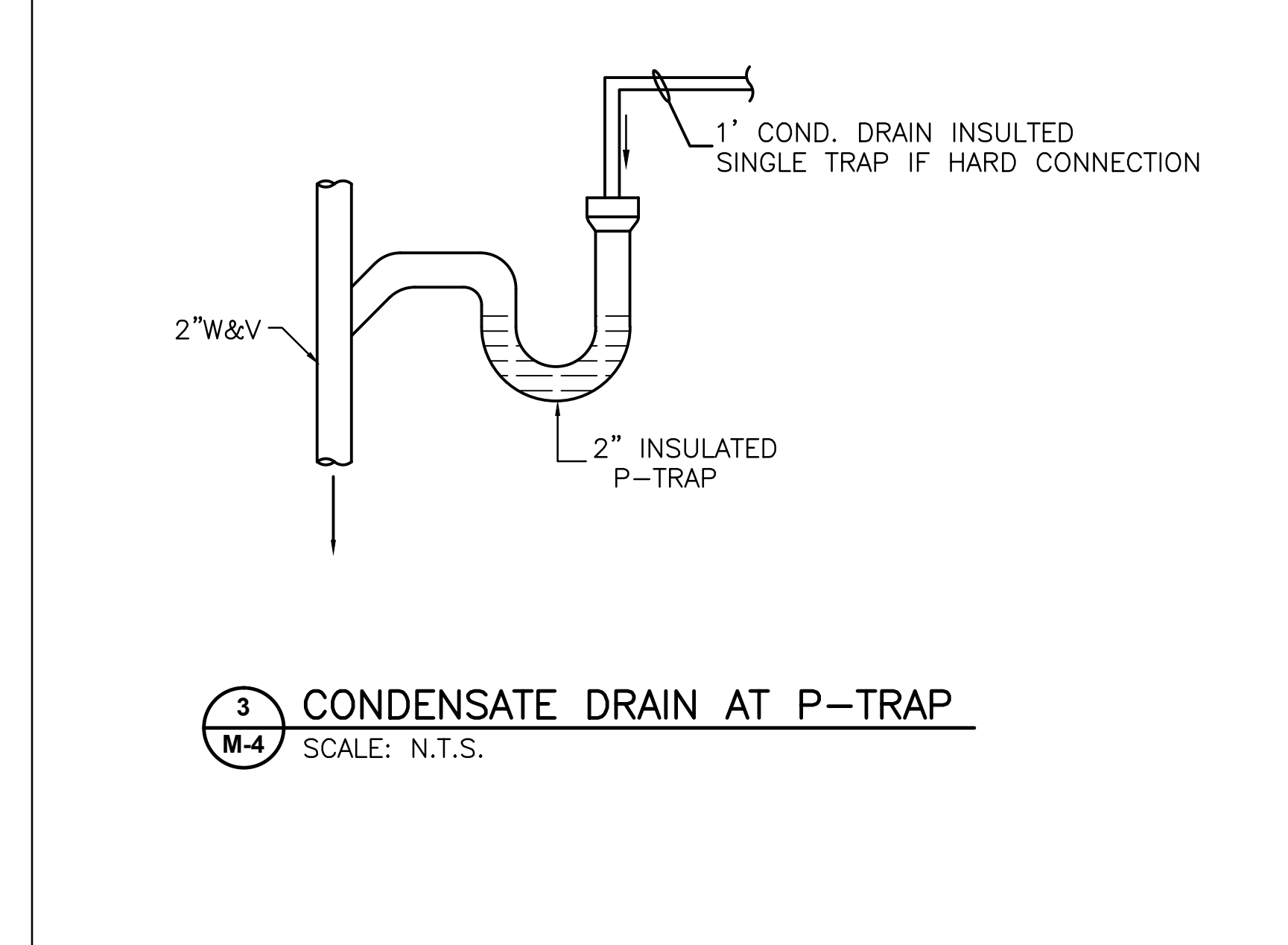
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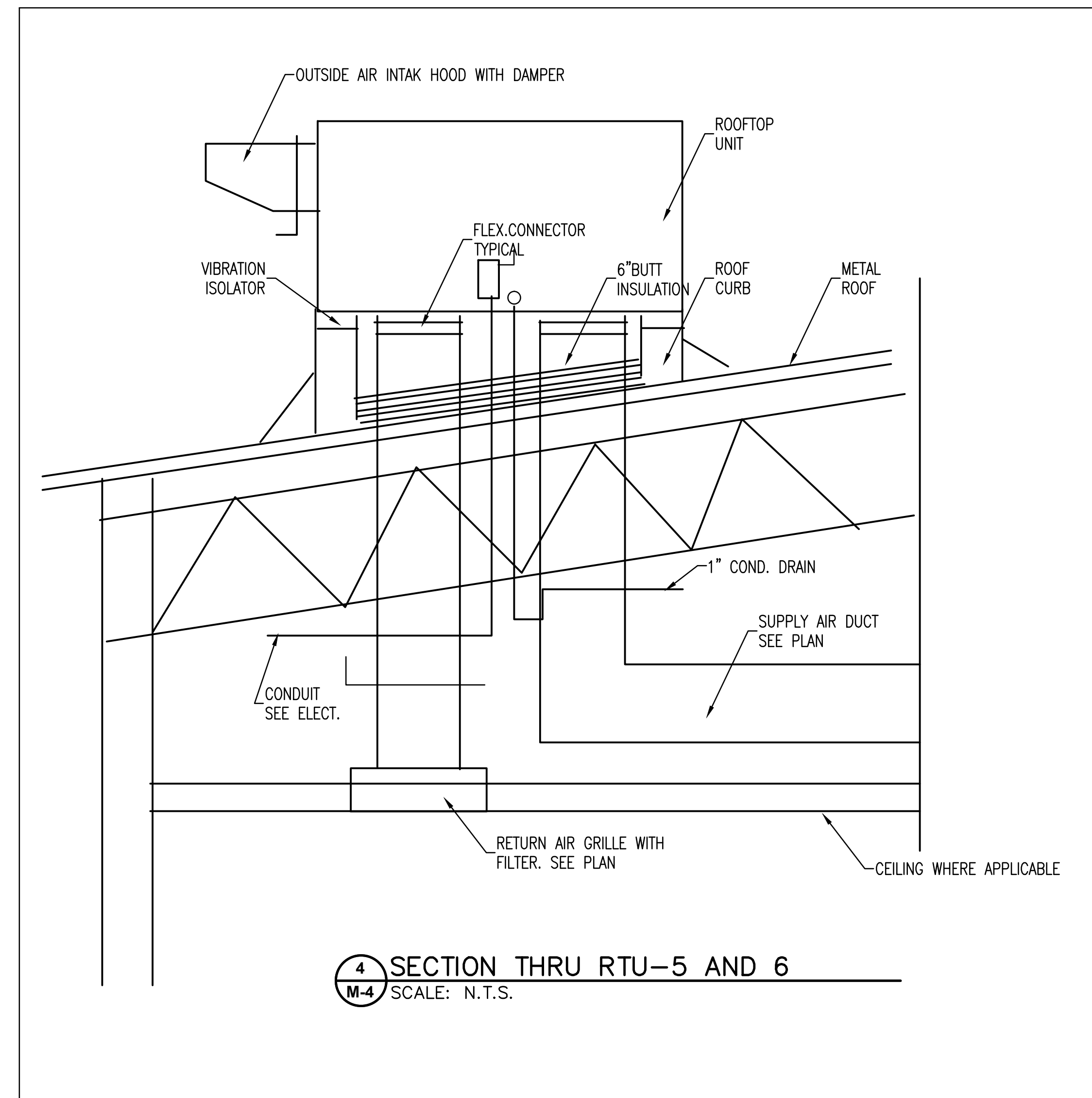
1 CEILING SUPPLY DIFFUSER DETAIL
M-4 SCALE: N.T.S.



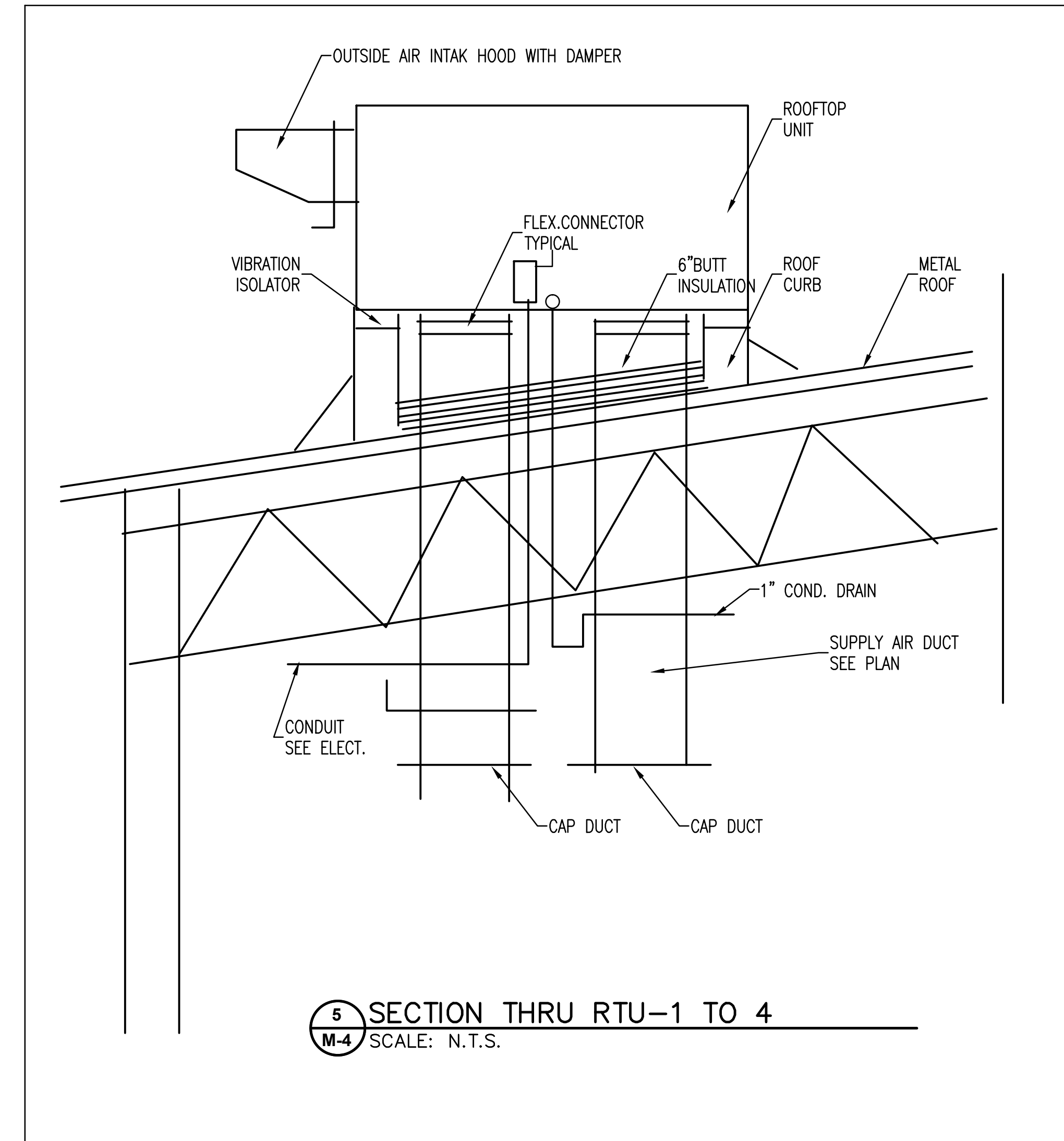
2 TYPICAL TOILET EXHAUST FAN DETAIL
M-4 SCALE: N.T.S.



3 CONDENSATE DRAIN AT P-TRAP
M-4 SCALE: N.T.S.



4 SECTION THRU RTU-5 AND 6
M-4 SCALE: N.T.S.

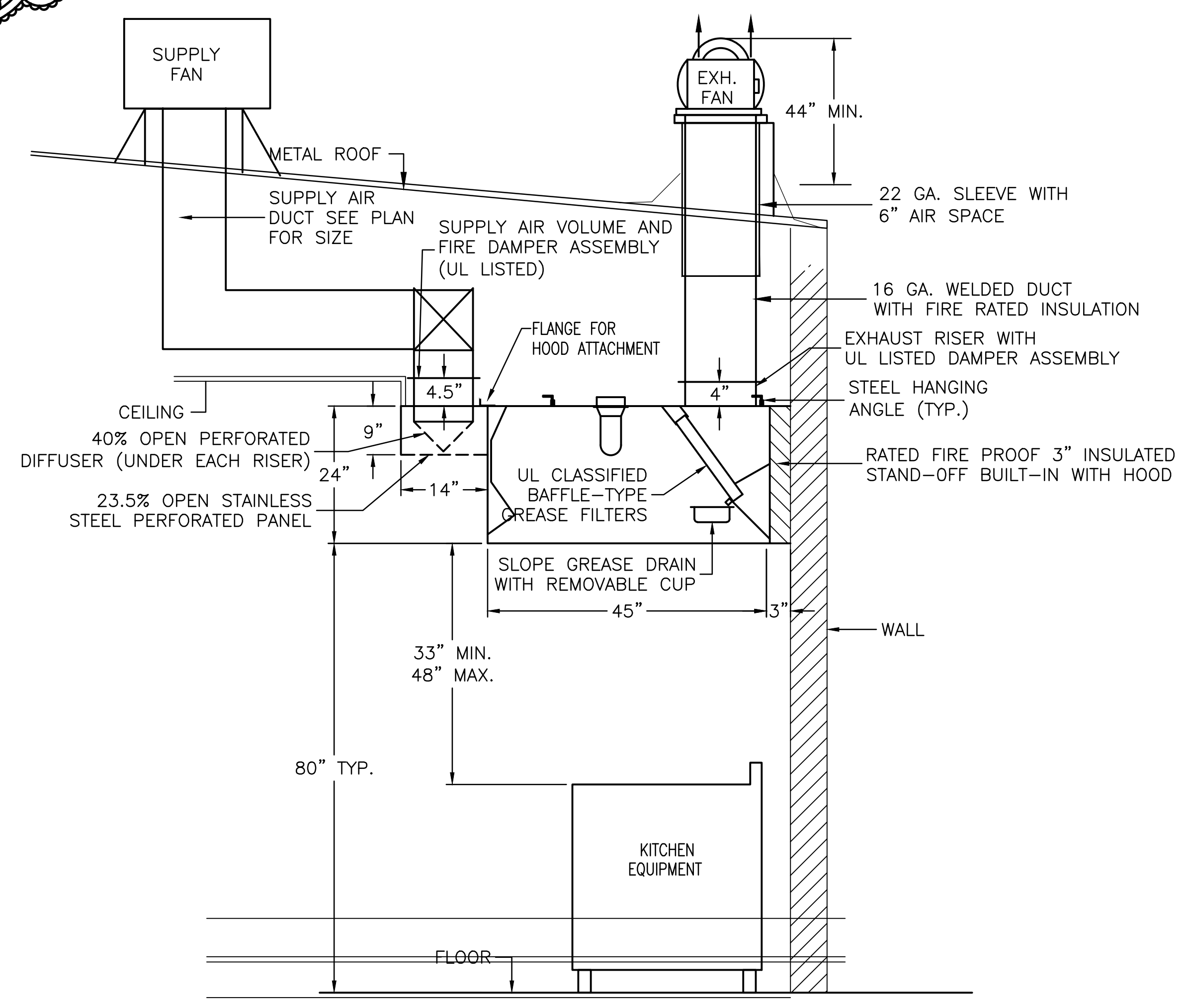


5 SECTION THRU RTU-1 TO 4
M-4 SCALE: N.T.S.

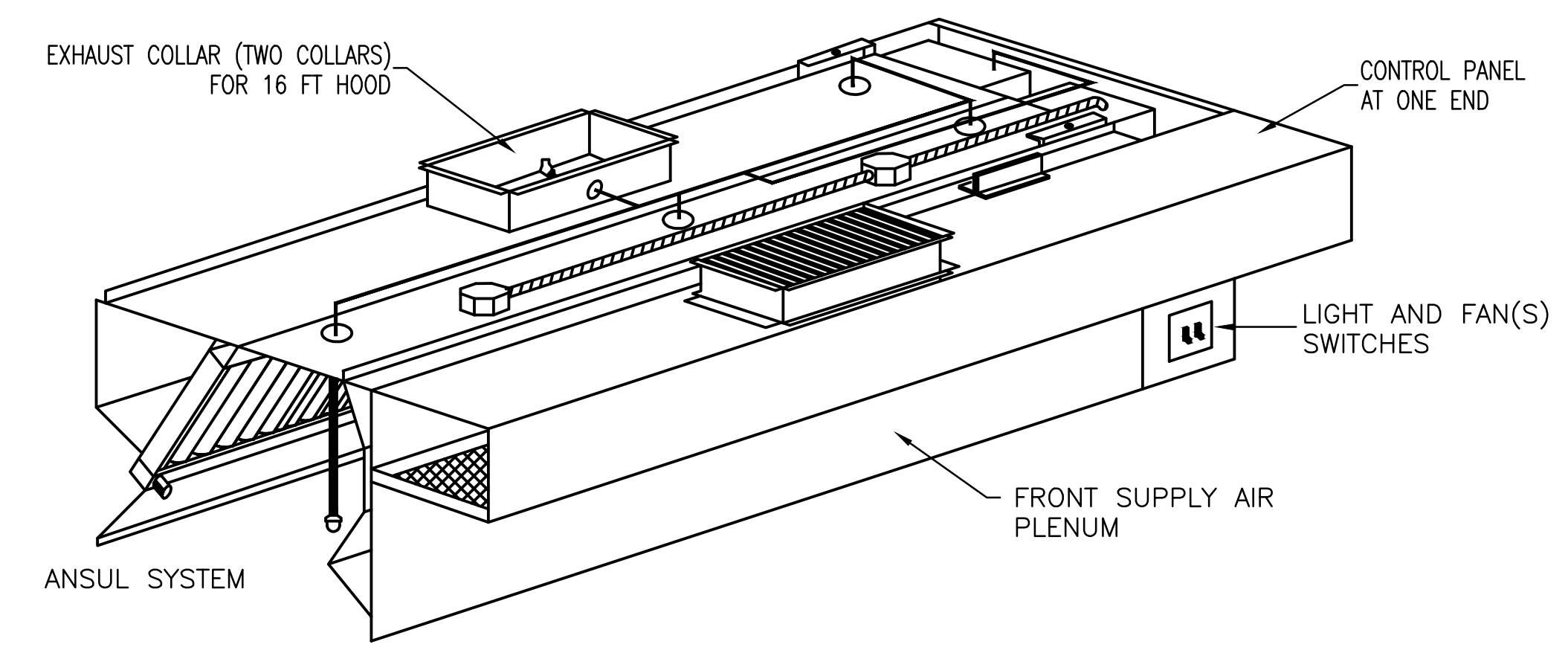


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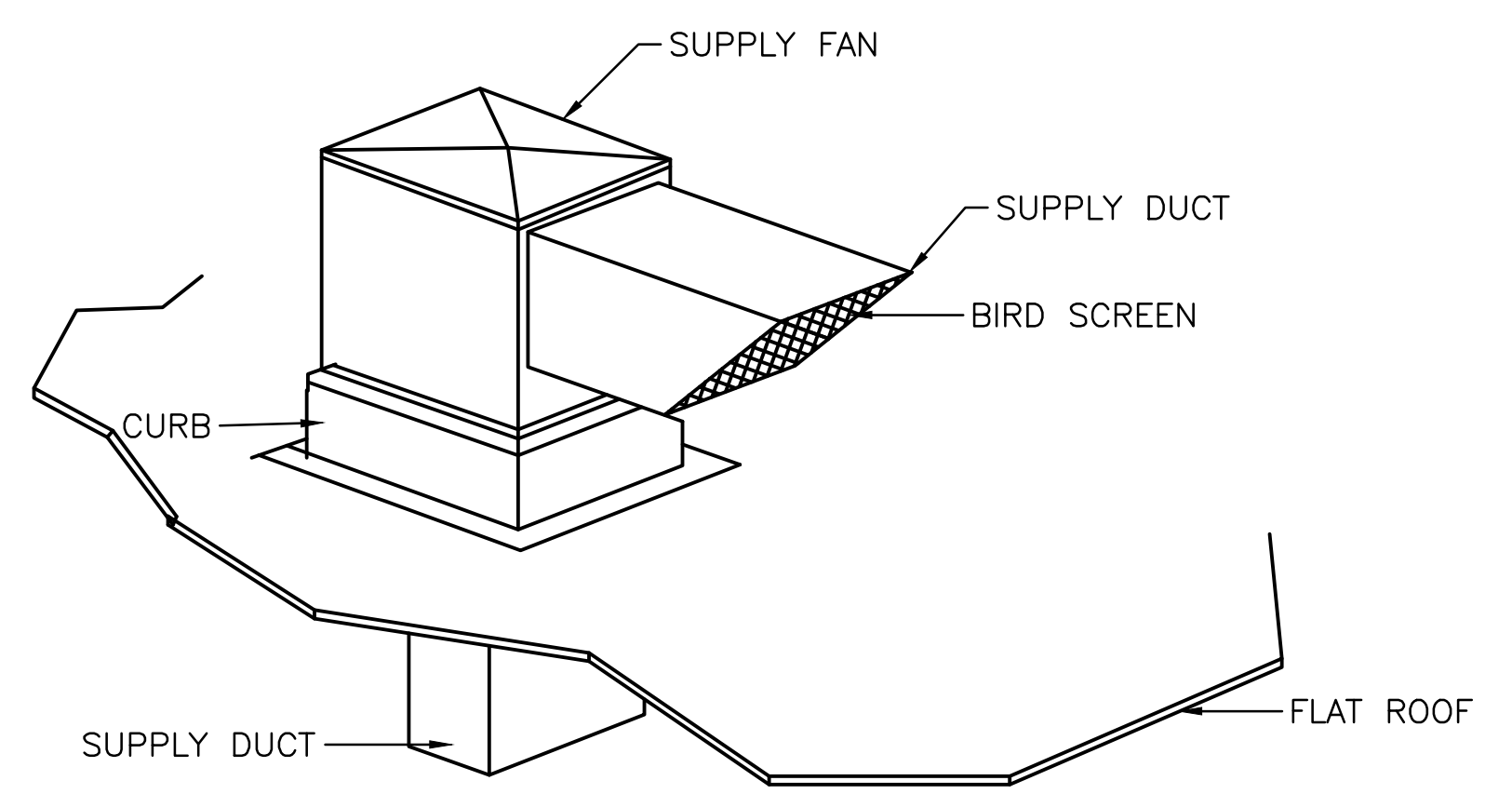
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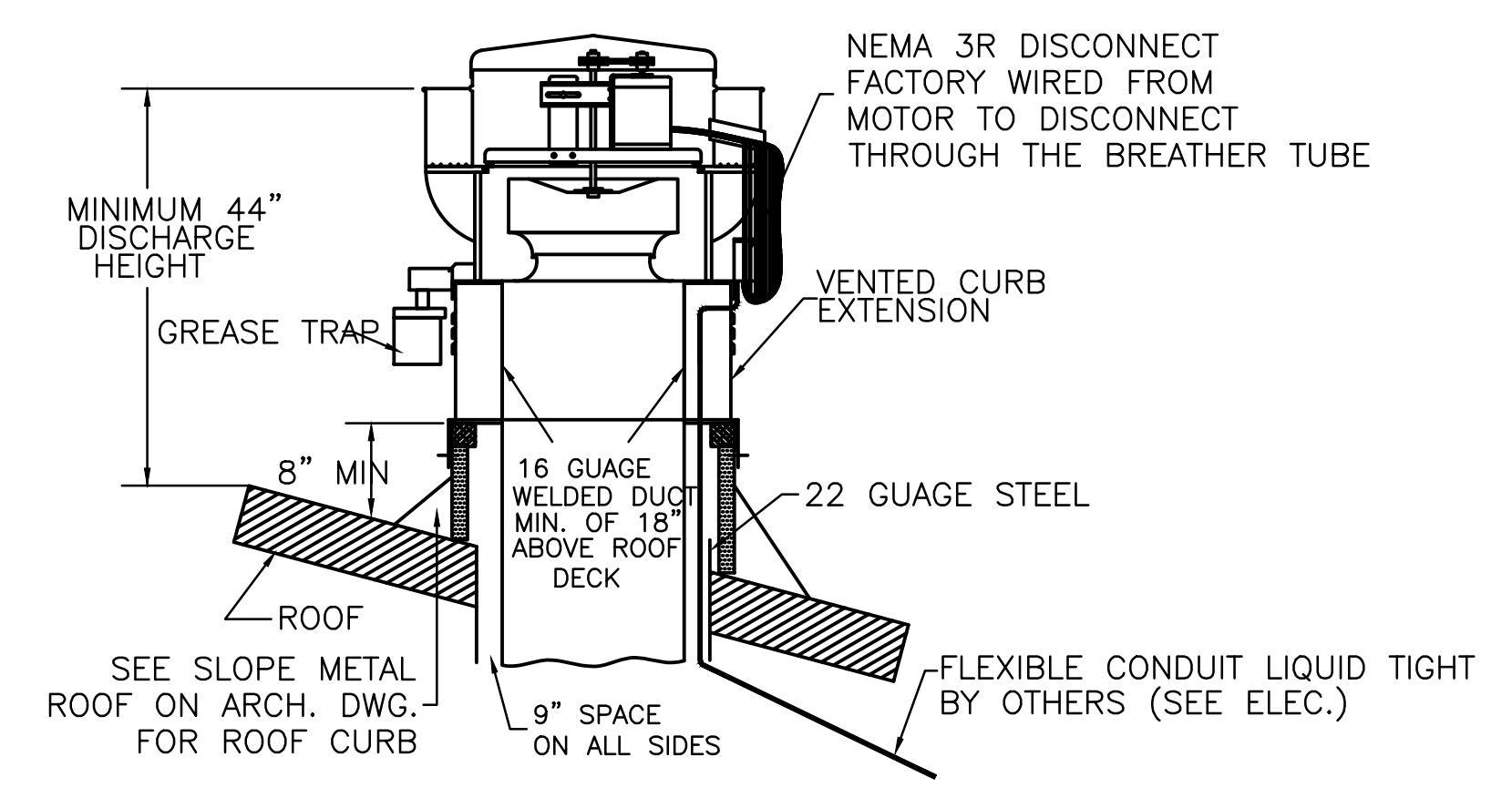
1 SECTION VIEW KITCHEN HOOD
M-5 SCALE: N.T.S.



2 HOOD WITH FRONT SUPPLY PLENUM
M-5 SCALE: N.T.S.



4 ROOF MOUNTED SUPPLY FAN DETAIL
M-5 SCALE: N.T.S.



3 TYPICAL HOOD EXHAUST FAN DETAIL
M-5 SCALE: N.T.S.

FAN SCHEDULE

MARK	SERVICE	LOCATION	CFM	S.P. IN.W.G.	TYPE	DRIVE	SOUND DATA SONES	ELECT. DATA		RPM	MODEL NO.	CONTROLS	WEIGHT, LBS	ROOF OPENING	REMARKS
								H.P. / WATTS	VOLTAGE						
EF-1	HOOD H-1	ROOF	3,000	1.50	CENTRIFUGAL	BELT	10	2.0HP	3/1PH	1490	NCA14FA	HOOD SWITCH	150	20 X 20	1,2,4,5
SF-1	HOOD H-1	ROOF	2,400	0.50	CENTRIFUGAL	BELT	10	1.0HP	208V/3PH	600	NSAUL-610	HOOD SWITCH	275	23 X 23	1,2,3,4,5

- SELECTIONS BASED ON CAPTIVE AIRE. GREENHECK CO. OR EQUAL.
- INTERLOCK FAN THRU CONTROL PANEL IN HOOD.
- PROVIDE BACK DRAFT DAMPER.
- PROVIDE SLOPE ROOF CURB AND DUCT EXTENSION .
- PROVIDE DISCONNECT SWITCH.

KITCHEN HOOD SCHEDULE

NO.	SIZE	EXHAUST CFM	SUPPLY CFM	S.P. LOSS	EXHAUST DUCT	SUPPLY DUCT
H-2	144"X54"X24"	3,000	2,400	0.75	2-16X10	4-16X10

- HOOD SHALL BE CONSTRUCTED WITH 18GA. STAINLESS STEEL ALL WELDED WITH GREASE GUTTER FILTER, LIGHTS AND CUP IN ACCORDANCE WITH NFPA-96. PROVIDE FIRE EXTINGUISHER SYSTEM IN ACCORDANCE WITH NFPA-96 AND 17.
- PROVIDE FAN AND LIGHT CONTROL PANEL WITH STARTER AND RELAY BUILT-IN.
- HOOD SYSTEM CFM, STATIC PRESSURE (S.P.) AND DUCT SIZES TO BE VERIFIED AND MAKE ADJUSTMENT AS REQUIRED TO MEET THE CODE NFPA96.
- SELECTION BASED ON CAPTIVE AIRE, ALL STAINLESS STEEL.
- HOOD SUPPLIER MUST VERIFY THE EXHAUST AND MAKE UP AIR CFM REQUIREMENT FOR TYPE OF APPLIANCES UNDER HOODS PRIOR TO ORDERING.

KITCHEN HOOD NOTES

- HOOD SHALL BE CONSTRUCTED WITH 18GA. STAINLESS STEEL ALL WELDED WITH GREASE GUTTER FILTER, LIGHTS AND CUP IN ACCORDANCE WITH NFPA-96. PROVIDE FIRE EXTINGUISHER SYSTEM IN ACCORDANCE WITH NFPA-96 AND 17.
- PROVIDE FANS AND LIGHT CONTROL PANEL WITH STARTERS AND RELAYS BUILT-IN.
- HOOD SYSTEM CFM STATIC PRESSURE (S.P.), DUCT SIZES TO BE VERIFIED AND MAKE ADJUSTMENT AS REQUIRED TO MEET THE CODE.
- SELECTION BASED ON CAPTIVE AIRE HOOD, ALL STAINLESS STEEL.
- HOOD SUPPLIER MUST VERIFY THE EXHAUST AND MAKE UP AIR CFM REQUIREMENT PRIOR TO ORDERING.
- REFER TO SCHEDULE FOR HOOD SIZE, CONSTRUCTION, TYPE-I AND SUPPLY AND EXHAUST FANS SCHEDULE
- PROVIDE HIGH TEMPERATURE FIRE RATED INSULATION-DUCT WRAP-FIRE MASTER FAST WRAP XL BY THERMAL CERAMIC
- PROVIDE CLEARANCE AROUND DUCT AS PER IBC CODE SECTION 507-COMMERCIAL KITCHEN HOOD, TABLE 510.8.2 LESS THAN 100 DEGREE-1" CLEARANCE, 100-600 DEGREE F-12" CLEARANCE AND FLAMBLE VAPOR 6" CLEARANCE
- HOOD EXHAUST DUCT SHALL BE 16 GAUGE BLACK STEEL ALL WELDED CONSTRUCTION.
- HOOD SUPPLY DUCT SHALL BE 20 GAUGE GALVANIZED STEEL CONSTRUCTION IN ACCORDANCE WITH SMACNA.
- HOOD CONTROL: SUPPLY FAN SHALL STOP, EXHAUST FAN SHALL RUN CONTINUE IN CASE OF FIRE.

KITCHEN CFM BALANCING SCHEDULE

EQUIPMENT	SUPPLY	RETURN	EXHAUST	OUTSIDE AIR
RTU-1	3000	1700		450
RTU-2	3000	1700		450
RTU-3	4000	1700		600
HEF-1			3000	
HSF-1				2400
EF-1			150	
EF-1			150	
TOTAL	6000	5100	3300	3900

POSITIVE IN BUILDING=3900-3300=600 CFM
NEGATIVE IN KITCHEN AREA=-600-450 = 150CFM



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SECTION 15600 - HEATING, VENTILATING AND AIR CONDITIONING

1.0 SCOPE OF WORK

- 1.0.1 The work provided under this section of the specifications shall include all labor, materials, equipment, etc. necessary for the work hereinafter described, all in accordance with these specifications and accompanying drawings. The plans and specifications are intended to show and describe the complete heating, ventilating and air conditioning system with all specified equipment and materials properly installed in a workmanlike manner and left in proper operating condition.
- 1.0.2 The heating, ventilating and air conditioning contractor shall furnish and install the following:
- (1) Equipment
 - (2) Sheet metal ductwork
 - (3) Insulation
 - (4) Registers and grilles. Not applicable
 - (5) Control system. Terminate control wires below roof
 - (6) Piping. Terminate piping

1.1 GENERAL CONDITIONS

The General Conditions of the Contract as set forth in the Architectural Specifications shall be applied to this section of this specification.

1.2 GENERAL

- 1.2.1 All work shall be done in strict conformity with the National Board of Fire Underwriters' Code, City Building Code and all other inspection departments having jurisdiction, and from whom proper certificate of approval shall be furnished before final payment shall be made to the Contractor. These certificate requirements shall be satisfied by this Contractor at no additional cost to the Owner.
- 1.2.2 All work shall be done in a workmanlike manner, in accordance with established practice and as approved by the Architect.
- 1.2.3 The drawings and these specifications are intended to explain and define the requirements of the work and the manner of erection. Structural conditions may require certain changes, but in all cases, these modifications shall be approved by the Architect. If the Contractor requires any further details of construction, other than those as shown on plans, these will be furnished by the Architect upon proper application for same.
- 1.2.4 Wherever "Approved" devices are specified, the word "Approved" shall mean the written approval of the Architect.
- 1.2.5 Before submitting bids, the Contractor must ask for a decision on any portion of the plans and specifications that may conflict or may not be clearly understood. If he fails to do so, he must abide by the decision of the Architect should a discussion arise after the award of contract.
- 1.2.6 Final completion of the work shall mean the full and exact compliance and conformity with provisions expressed and implied in the plans and the specifications.

1.3 PERMIT AND FEES

The cost of all permits, inspections, royalties or other required fees shall be included in this contract and paid by this Contractor. Written certificates of inspection and approval by all such authorities must be furnished to the Architect upon completion and before final acceptance and payment by the Owner.

1.4 VISITING SITE

The Contractor shall visit the site of the proposed work and familiarize himself with the existing conditions or other conditions which may be encountered during the progress of the work, and be governed by and base his bid accordingly. The Contractor will not be allowed any additional compensation for failure to be so informed.

1.5 GUARANTEE

The Contractor shall guarantee all materials and workmanship for a period of one year from the date of acceptance of the work for the whole project. Any defects due to faulty materials, methods of installation or workmanship discovered within that period shall be repaired or replaced promptly upon notice and without expense to the Owner.

1.6 TESTING AND ADJUSTING SYSTEM (NOT APPLICABLE AT THIS TIME)

- 1.6.1 System shall be balanced after completion and tested for proper operation. The Contractor shall make all adjustments and repairs revealed necessary during the tests. All lubricating oil, grease, etc. and labor for testing shall be furnished by the Contractor. If work is completed out of season, the Contractor shall return in season and perform tests, adjustments, etc. to insure the balance and satisfactory operation of entire system.
- 1.6.2 Necessary damper and other adjustments shall be made so that the required air will be distributed to each air outlet or inlet.
- 1.6.3 The Contractor shall provide typewritten data sheets showing each air inlet or outlet, size of same and final CFM reading recorded. The contractor shall also provide the operating current and voltage reading along with nameplate full load current readings of all motors on these data sheets.
- 1.6.4 Equipment that does not perform satisfactorily when tested shall be removed and replaced with proper equipment.
- 1.6.5 After the system has been balanced to obtain specified air quantities, the Contractor shall make such further adjustments for temperature, as may be reasonably expected or as directed by the Architect.

1.7 OPERATING AND MAINTENANCE INSTRUCTIONS

Upon completion of the job and prior to acceptance, Contractor shall prepare a binder of instructions to be given to the Owner. This binder shall include:

- (1) Operating Instructions
- (2) Complete control diagram and description of sequence of control operation.
- (3) Wiring Diagrams
- (4) One set of "As-Built" Drawings
- (5) Lubrication Instructions
- (6) Shop Drawings of each piece of equipment installed
- (7) Lists of replacement parts for all equipment, together with drawings showing location of parts.
- (8) Record of air quantity tests and temperatures taken while balancing system.

1.8 APPROVALS AND SUBSTITUTION OF EQUIPMENT

- 1.8.1 Names of manufacturers or catalog numbers are mentioned to establish a standard for the type, general design and quality of the product required. Other products similar in design, of equal quality and complying with the plans and specifications will be approved, if found acceptable by the Architect.
- 1.8.2 In order to receive consideration, request for substitution must be submitted five (5) days prior to opening of bids and must be accompanied by Contractor's letter certifying or stamped to the effect that the item submitted has been checked by the Contractor as to specified or shown requirements. In all cases, the burden of proof that the equipment offered for substitution is equal or superior in construction and efficiency to that named in the contract shall rest on the Contractor and unless the proof is satisfactory to the Architect, the substitution will not be approved.
- 1.8.3 Costs of extra materials, equipment and labor necessary to utilize substituted equipment, or costs incurred by other subcontractors because of substitution shall be borne by the subcontractor which substituted the equipment. The subcontractor substituting equipment shall also pay costs of re-engineering system if deemed necessary by the Architect.

1.9 SHOP DRAWINGS

- 1.9.1 Before proceeding with the work, the Contractor shall make complete shop drawings of all equipment furnished by him, including detail drawings of piping or ductwork connections or other drawings as the Architect may require and shall submit same to the Architect for approval. These drawings shall show construction details and dimensions of each piece of equipment so drawn.
- 1.9.2 Shop drawings shall be submitted to the Architect for approval, sufficiently in advance of fabrication and/or purchasing of all materials and equipment, so as not to delay construction of the project. After making corrections, the Architect will return drawings and the Contractor shall resubmit until approval by Architect is obtained. On approval, he shall supply the Architect with six complete sets.
- 1.9.3 Contractor shall submit drawings on ductwork, registers and grilles, controls with wiring diagram.
- 1.9.4 Failure to comply with submittal requirements shall be deemed just cause to withhold final payment until requirements are met.

1.10 AS-BUILT DRAWINGS

This Contractor shall prepare up-to-date drawings, during the course of job construction. Upon completion of the project and prior to final acceptance, the Contractor shall turn over to the Architect three complete sets of "As-Built" drawings showing exact location of all equipment, ductwork, conduit, etc., installed by him.

1.11 DRAWINGS

- 1.11.1 Plans and details are shown to limit and explain structural conditions, requirements, ductwork sizes, and manner of erecting work. Structural, or other conditions, may require certain modifications from the plans, and such deviations are permissible, but all such changes must be referred to the Architect for approval. HVAC work is shown on Sheet M1.
- 1.11.2 The Contractor shall verify all measurements and shall be responsible for their correctness before ordering any materials or doing any work. No extra charge or compensation will be allowed because of any difference between the actual measurements and those indicated on the drawings. Any difference discovered by the Contractor shall be submitted to the Architect for consideration before proceeding with the work.

1.12 COORDINATION OF WORK

It is essential that cooperation between contractors and coordination of the various trades take place in order to insure proper finish of work with minimum amount of interference. Elevations of ceiling, lighting and ductwork must be laid out accurately and lack of interference assured before proceeding with fabrication and installation.

1.13 CLEANING

The Contractor shall continuously keep the job free from debris, and upon completion of his work shall remove all tools, equipment, debris, etc., from the premises, leaving all areas free from all obstructions, waste material, etc. All equipment, ductwork, piping, insulation and exposed work shall be left clean. Factory applied finishes scratched and/or damaged during the construction shall be refinished by this Contractor.

1.14 PAINTING

All exposed ductwork and piping in building is specified to be painted under Section 9 of the General Specifications.

1.15 CUTTING AND PATCHING

- 1.15.1 The HVAC Contractor shall do all cutting required in a manner approved by the Architect and General Contractor required for the installation of the heating, ventilating and air conditioning system.
- 1.15.2 The physical structure and appearance of any part or parts of the building affected by work done under these specifications and accompanying drawings shall be returned to original condition by trades experienced in the type of work required, at no extra cost to the Owner and to the complete satisfaction of the Architect.

1.16 TOOLS, EQUIPMENT AND SCAFFOLDING

The Contractor shall furnish all tools, equipment, scaffolding and/or facilities required or necessary to properly and expeditiously perform the work under this contract.

1.17 LABOR

- 1.17.1 Only skilled labor shall be employed by the Contractor in connection with this installation. He shall maintain at all times a sufficient force to carry on the work as expeditiously as possible, and as directed by the Architect. The Contractor shall place a competent foreman in charge of all work under this section of the specification who is thoroughly skilled in his profession and of proven ability, who shall act for the Contractor, receive and execute with full authority all instructions of the Architect.
- 1.17.2 Any employees of the Contractor, who in the opinion of the Architect is unskilled, or in any way detrimental to the work shall be removed from the premises at the direction of the Architect.

1.18 STORAGE OF MATERIALS

This Contractor shall store his material and use only such areas for his tools and work as are designated by the Building Superintendent, all at such times as will not interfere with normal operation of facilities.

1.19 GROUNDS AND CHASES

As work progresses, this Contractor shall see that all required chases, holes, etc., necessary for the proper installation of his work are built into the job. All bucks required for grilles and louvers shall be installed by the General Contractor. This Contractor shall be held responsible for any such omissions.

1.20 REFRIGERANT AND OILS

A complete charge of refrigerant and oil shall be furnished with the system, and a full charge shall be maintained throughout the guarantee period. Refrigerant shall be Freon-Type as manufactured by Kinetic Chemicals, Inc. Oils shall be of the type recommended by the manufacturer of the refrigeration equipment.

1.21 ELECTRICAL

- 1.21.1 The Electrical Contractor is to furnish and install all power wiring to the equipment along with the furnishing and installation of necessary disconnect switches. The Mechanical Contractor shall furnish motor starters, when required for the mechanical equipment.
- 1.21.2 All control wiring, controls, firestats, etc., are to be furnished and installed by the HVAC Contractor. Wiring is to be installed in E.M.T. conduit, in accordance with the Electrical Section of the General Specifications.

1.22 SHEET METAL WORK

- 1.22.1 All work must meet the requirements to the N.B.F.U. and governing codes. Sheetmetal gauges shall be not lighter than specified by N.F.P.A. Pamphlet #90-A, and the "Duct Manual" as defined below.
- 1.22.2 In general, and except where otherwise noted, all sheet metal work shall be constructed of galvanized, first quality materials in accordance with "Low Velocity and Duct Construction Standards" published by Sheet Metal and Air Conditioning Contractors National Association, Inc. Where the specifications refer to "Duct Manual", this shall mean the above-mentioned publication.

- 1.22.3 Reinforce all ducts to prevent buckling, breathing vibrations or unnecessary noise, as recommended in "Duct Manual" plus any additional reinforcing as may be required to meet job conditions.

- 1.22.4 Longitudinal and cross-joints, elbows, transitions, etc., shall be furnished as specified in "Duct Manual".

- 1.22.5 All laps shall be made in direction of airflow. Joints shall be made tight in a neat and workmanlike manner. Edges and slips shall be hammered down to leave a smooth finished surface inside the ducts.

- 1.22.6 No piping shall pass through ducts except upon approval of the Architect.

- 1.22.7 Support ducts with hangers and/or supports to suit construction as shown in "Duct Manual".

- 1.22.8 Collars of flanges shall be provided on duct openings for attachment of grilles or registers.

- 1.22.9 All openings through roof, walls or other construction necessary for the installation of the piping and ducts shall be provided by others. All holes shall be laid out by this Contractor of proper sizes to give clearance between ducts and walls, etc., as required by the National Board of Fire Underwriters.

- 1.22.10 Flexible connection shall be installed at connections to fans where shown on the drawings. Material shall be Durodyne Corporation (Route 110, Farmingdale, New York) Metal-Fab Duroton MFD-4-100 for outdoor usage and Neoprene Specification MFN-4-100 for indoor usage. Material shall meet the requirements of the N.B.F.U., state and local codes.

- 1.22.11 Duct openings at grilles and diffusers are to have dampers, ducts and/or insulation painted a flat black where same is visible from floor.

- 1.22.12 This Contractor shall provide galvanized sheet metal flashing around curbs where duct passes through roof and around duct where duct passes through exterior wall so as to make opening watertight. Curb and base flashing are to be provided by the General Contractor.

- 1.22.13 Provide sheetmetal louver, of size shown on plans, on side or return air cut for outside air intake. Louver is to be fabricated in accordance with Duct Manual Plate No. 40 and is to be complete with 1/4" mesh galvanized bird screen installed on outside of louver. Provide manual damper for adjusting air quality.

- 1.22.14 Air Control Devices shall be provided as follows:

- (1) Air extractors shall be installed at each take-off to a supply register or grille. The extractor shall be Young Regulate Co., Type No. 890, with No. 895-E angle bracket, and No. 401 locking regulator.
- (2) Volume Dampers shall be installed in ducts where indicated on the plans, or where required by job conditions. In cases where neither dimension of the damper exceeds 18 inches, Volume Dampers may be of the Butterfly type, consisting of a blade constructed of 20 gauge galvanized iron securely fastened with "u" bolts or welded to a square cold rolled steel operating rod. Install End Bearings with rubber gaskets, Type No. 666, or No. 419, as manufactured by the Young Regulator Company, or approved equal, on the outside of ducts to prevent air leakage around the damper shaft and for smooth operation. In cases where either dimension of the damper exceeds 18 inches, Volume Control Dampers shall be of the multi-louver type, Model No. 817 or No. 817A, as manufactured by the Young Regulator Co., or approved equal, with opposed acting blades and controlled from a single point with an adjusting device as described below.
- (3) Each Splitter Extractor or Volume Damper shall be fitted with an adjusting device having a locking mechanism. For all Volume Dampers, and for Splitter Dampers of 18" length or less, the adjusting devices shall be Type No. 1, No. 400, No. 301, No. 315, No. 927, No. 927A, No. 895, or No. 896, as manufactured by the Young Regulator Company, or approved equal. For Splitter Dampers greater than 18 inches in length, the adjustment device shall be Type No. 900, No. 192, No. 914, or No. 896 as manufactured by the Young Regulator Company, or approved equal. For Volume and Splitter Dampers located above furred ceilings, the adjustable device shall be Type No. 912, 914, 927, 927A, 896 or 896B.

- 1.22.15 Ducts, where indicated, shall be insulated by lining on the inside with Manville "Linacoustic" duct insulation, or approved equal, of 1-1/2" P.C.F. density with neoprene coating meeting requirements of N.B.F.U., Pamphlet #90-A, on the inside surface. Lining shall be set in mastic, as recommended by insulation manufacturer, applied over entire surface of the duct before lining is put in place. Lining shall be further secured using electrically welded pins and speed nuts on not more than 12" centers with first row of pins not more than 4 inches from edges of joint insulation. Core must be taken to prevent speed nut from cutting coating or insulation. A heavy coating of Minnesota Mining Company Sm-EC-1129 sealer shall be applied between and over all joints in insulation and all exposed edges. Insulation at branch takeoffs shall be lapped in such a manner as to keep end cut out of airflow. Ductwork is to be lined and thickness of lining is called for on drawings.

1.23 DIFFUSERS AND GRILLES

- 1.23.1 Diffusers and grilles shall be of the size, capacities, and blow shown on plans. Diffusers and grilles as made by Airguide, Kreuger, Titus or Tuttle & Bailey equal to specified items will also be acceptable.
- 1.23.2 Provide sponge rubber gasket on backside of mounting frames.
- 1.23.3 Ceiling supply diffusers shall be Titus model TDC-AA-3 aluminum complete with aluminum opposed blade damper and baked white enamel finish. Provide fire damper where indicated on drawings. Provide flow control pattern.
- 1.23.4 Wall return grille shall be Titus Model 4F aluminum type with finish to be selected by the Architect.
- 1.23.5 Ceiling return grills shall be Titus model 4F or equal.

1.24 TEMPERATURE CONTROL SYSTEM

- 1.24.1 The Control System as herein specified shall be based upon an electric system of controls as made by Honeywell, Barber Colman, Johnson Service Company and/or packaged controls furnished with the HVAC equipment.
- 1.24.2 Three (3) complete sets of operating instructions with control sequence and wiring diagrams shall be turned over to the Architect before final acceptance of the work. Data shall be complete and stamped, "As Installed".
- 1.24.3 Provide room thermostat to control each HVAC unit. Room thermostat complete with sub-base, with Cool-Off-Heat system and Auto-on Fan Switch, pickup temperature control complete with sub-base with integral filter light, Cool-Off-Heat system switch and Auto-On Fan Switch.
- 1.24.4 Provide fire stat in return air stream of each HVAC unit which de-energizes evaporator fan upon detection of heat. If unit less than 2000 cfm capacity.
- 1.24.5 Provide duct smoke detector in supply air duct if unit with 2000 and more capacity

1.25 PIPING

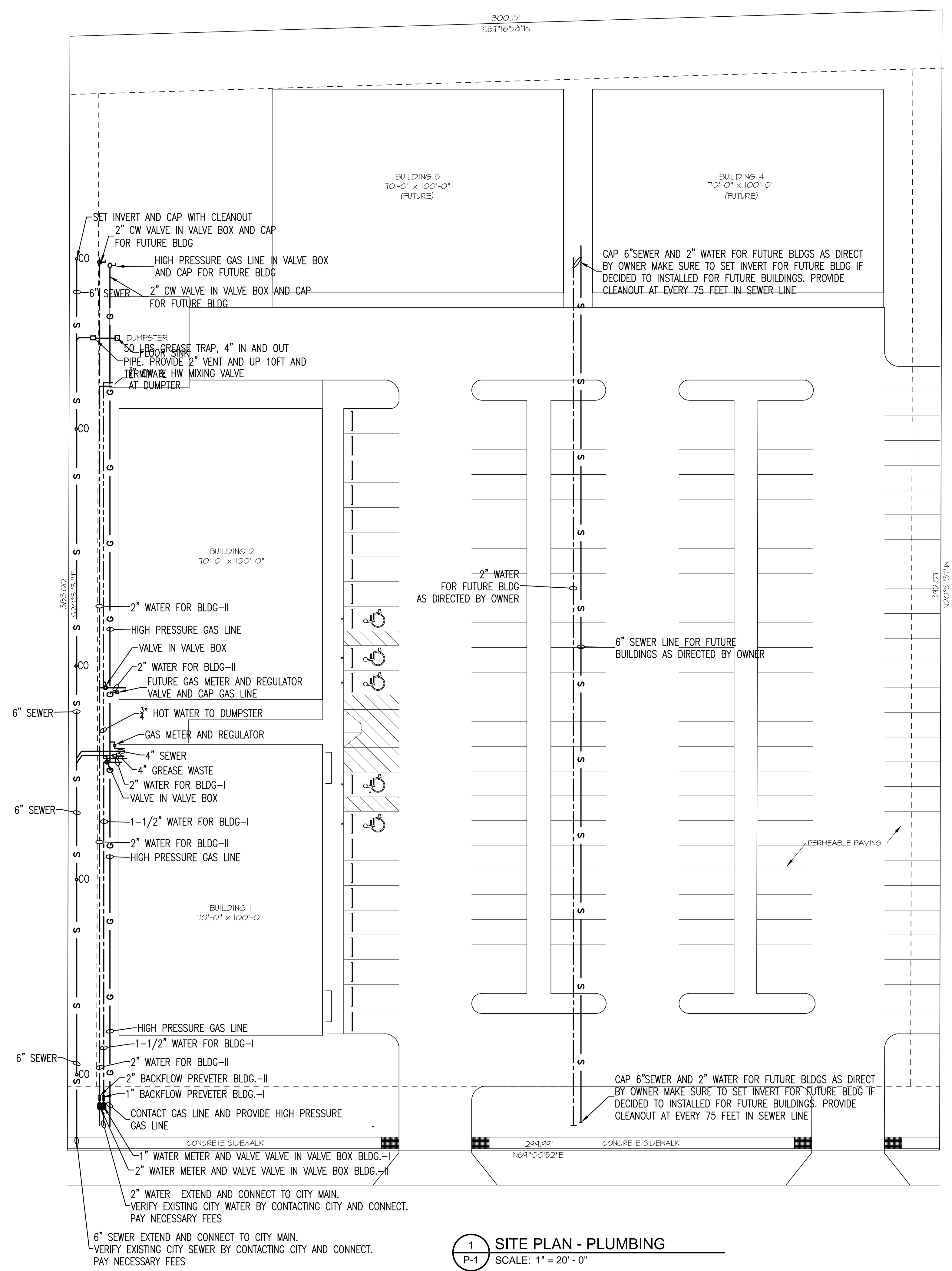
- 1.25.1 The HVAC Contractor is to provide the following piping:
- (1) Drain Piping terminate below roof.
 - (2) insulation drain pipe
- 1.25.2 Piping shall be installed as shown in general on plans, allowing for the necessary off sets or rearrangements due to conditions found on the job.
- 1.25.3 Drain piping shall be copper pipe with wrought copper solder fittings or P.V.C. pipe and fittings.



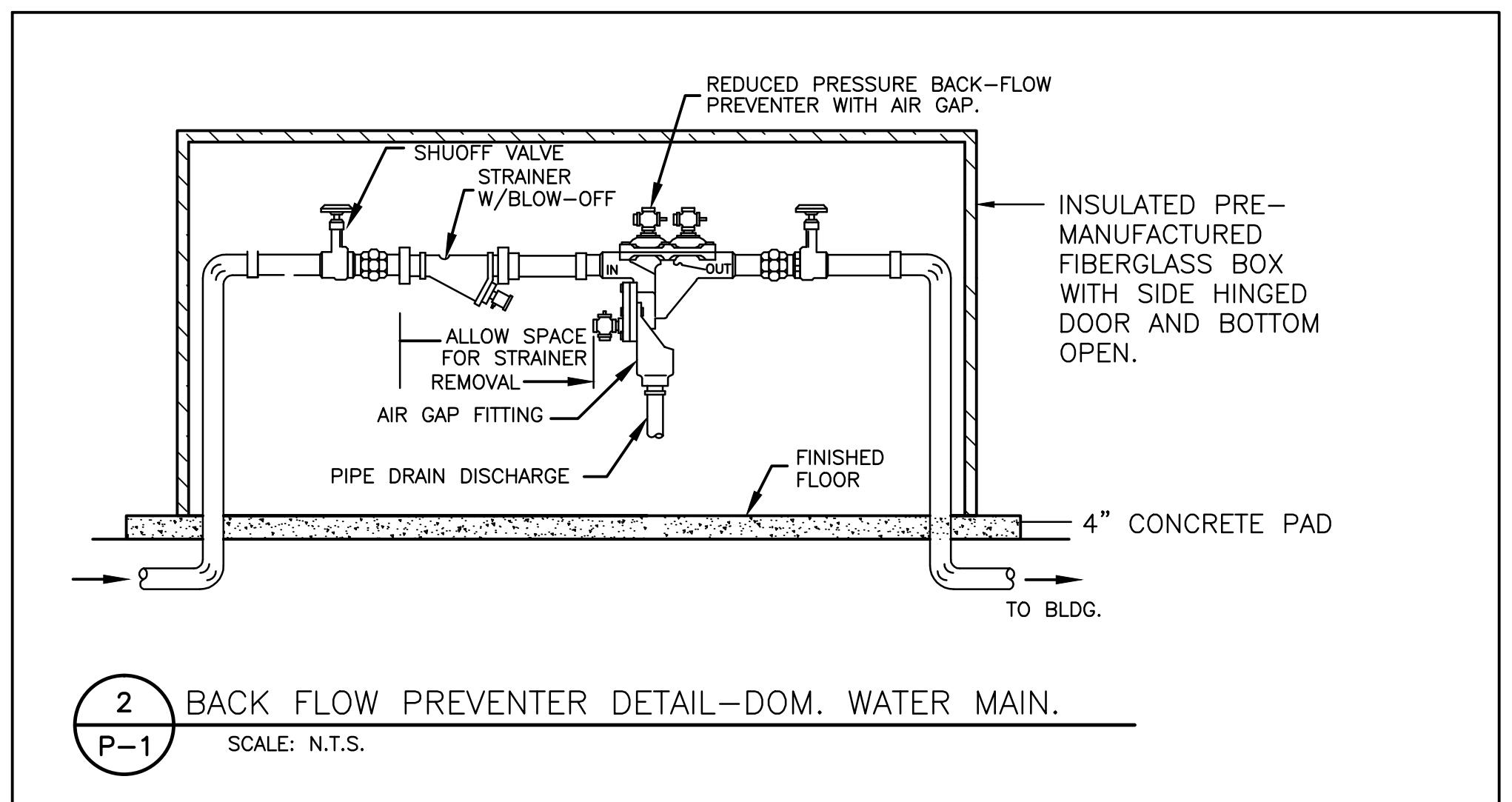
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M-K Project No.: 21-109

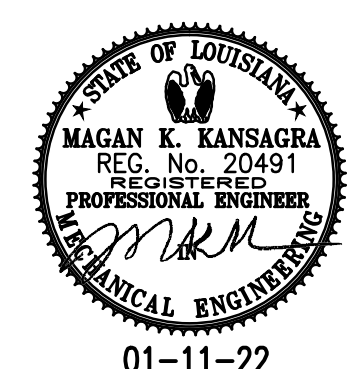
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1 SITE PLAN - PLUMBING
P-1 SCALE: 1" = 20' - 0"

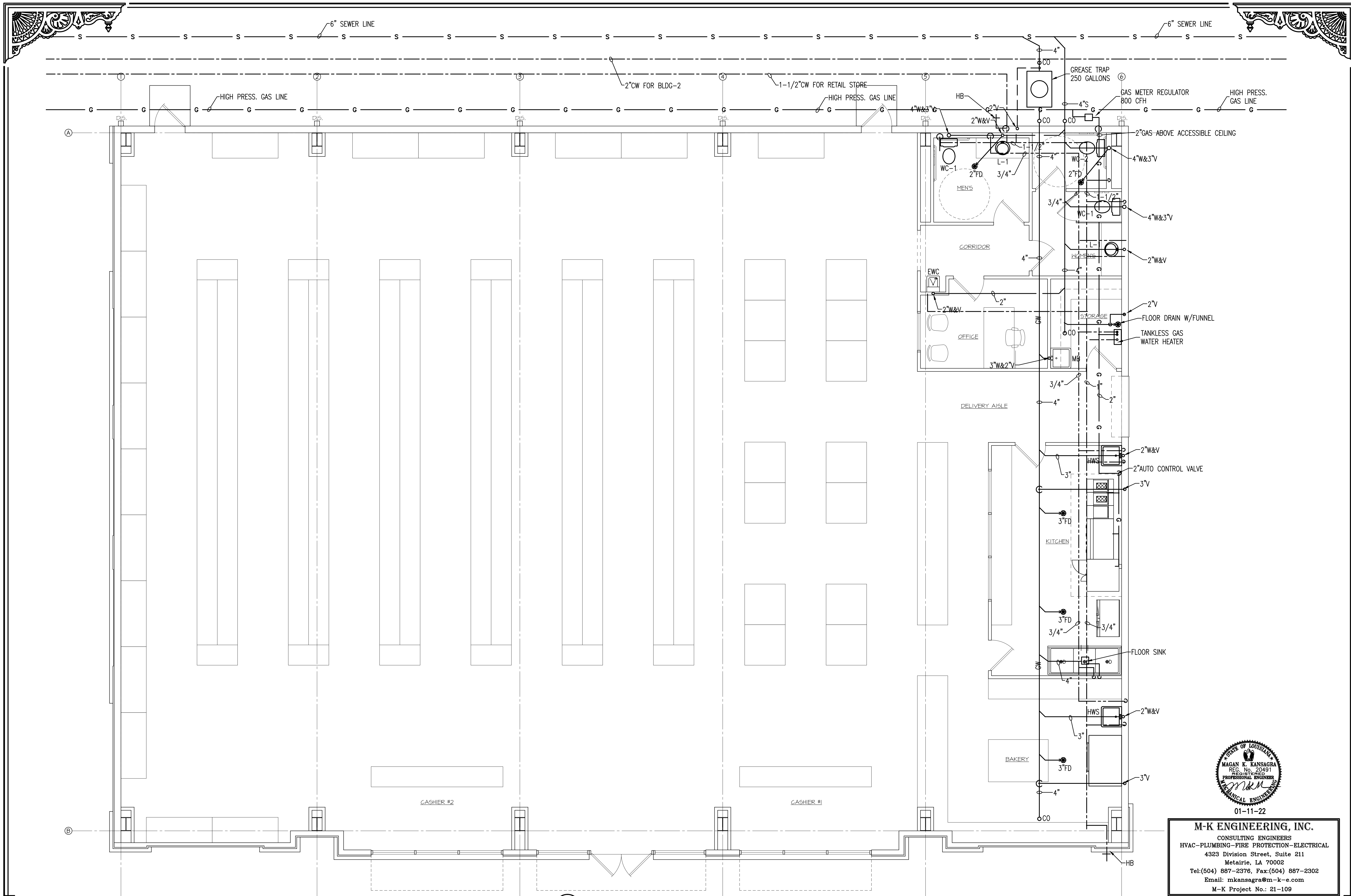


2 BACK FLOW PREVENTER DETAIL-DOM. WATER MAIN.
P-1 SCALE: N.T.S.



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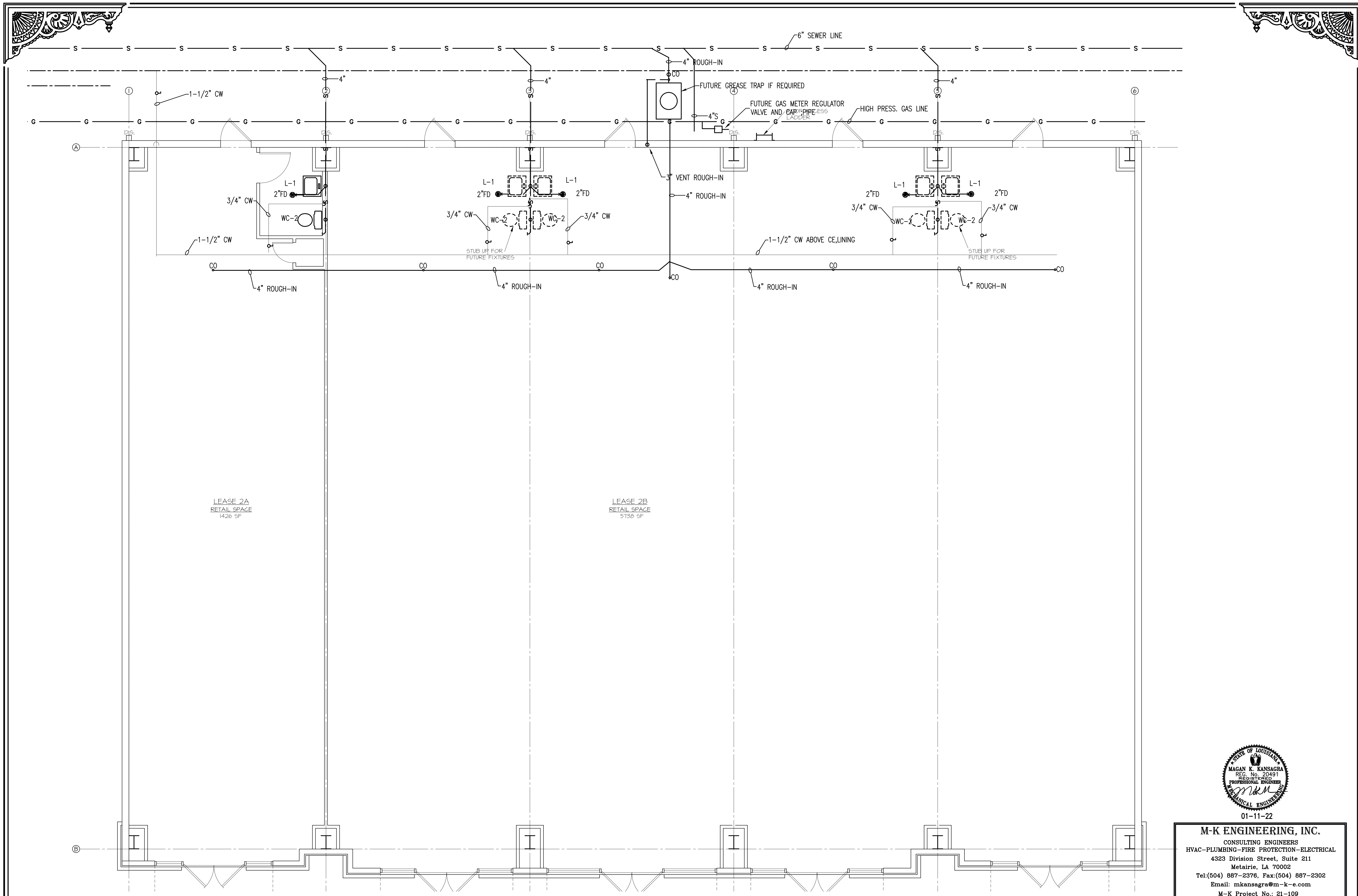


1 FLOOR PLAN - PLUMBING
 P-2 SCALE: 1/4" = 1' - 0"



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LEASE 2A
RETAIL SPACE
1426 SF

LEASE 2B
RETAIL SPACE
5738 SF

1 SHELL FLOOR PLAN - PLUMBING
P-3 SCALE: 1/4" = 1' - 0"



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PLUMBING FIXTURE SCHEDULE

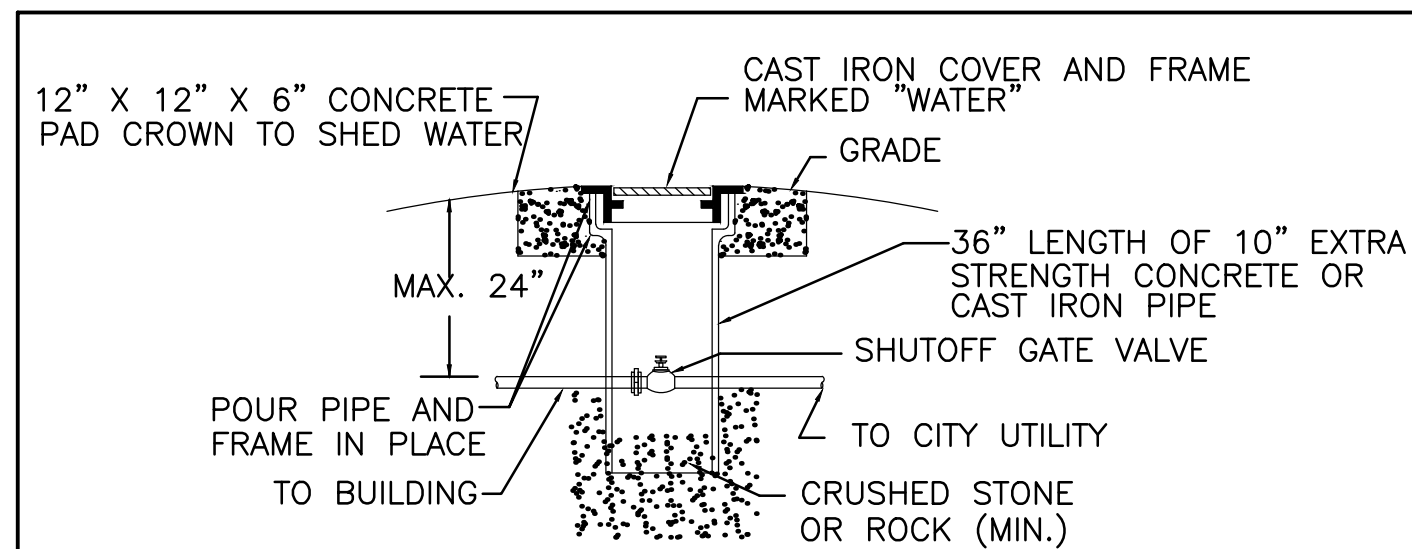
SYMBOL	DESCRIPTION	TYPE	WASTE	VENT	CW	HW	NOTES
WC-1	REGULAR WATER CLOSET, FLOOR MOUNTED	FLUSH TANK	4"	3"	1/2"		2,3
WC-2	HANDICAP WATER CLOSET, FLOOR MOUNTED	FLUSH TANK	4"	3"	1/2"		2,3
L-1	HANDICAP COUNTER TOP LAVATORY, SENSOR	SEE PLAN	2"	2"	1/2"	1/2"	1,2,3
FWC-1	ELECTRIC WATER COOLER	WALL HUNG	2"	2"	1/2"	1/2"	2
MB-1	MOP BASIN	FLOOR	3"	2"	1/2"	1/2"	2
HWS	HANDWASH SINK	WALL	2"	2"	1/2"	1/2"	2
S-1	3-COMP. S.S. SINK	LEG	2"	2"	1/2"	1/2"	2

- INSULATE PIPING WITH TRUBRO INSULATING KIT OF FIXTURE
- REFER TO ARCHITECTURAL AND PLUMBING FLOOR PLANS FOR PLUMBING FIXTURES, SUBMIT SUBMITTAL FOR APPROVAL
- FIXTURE AND FAUCET SUBMITTAL REQUIRED FOR APPROVAL. SENSOR OPERATED VALVE AND FAUCET. PROVIDE POWER.

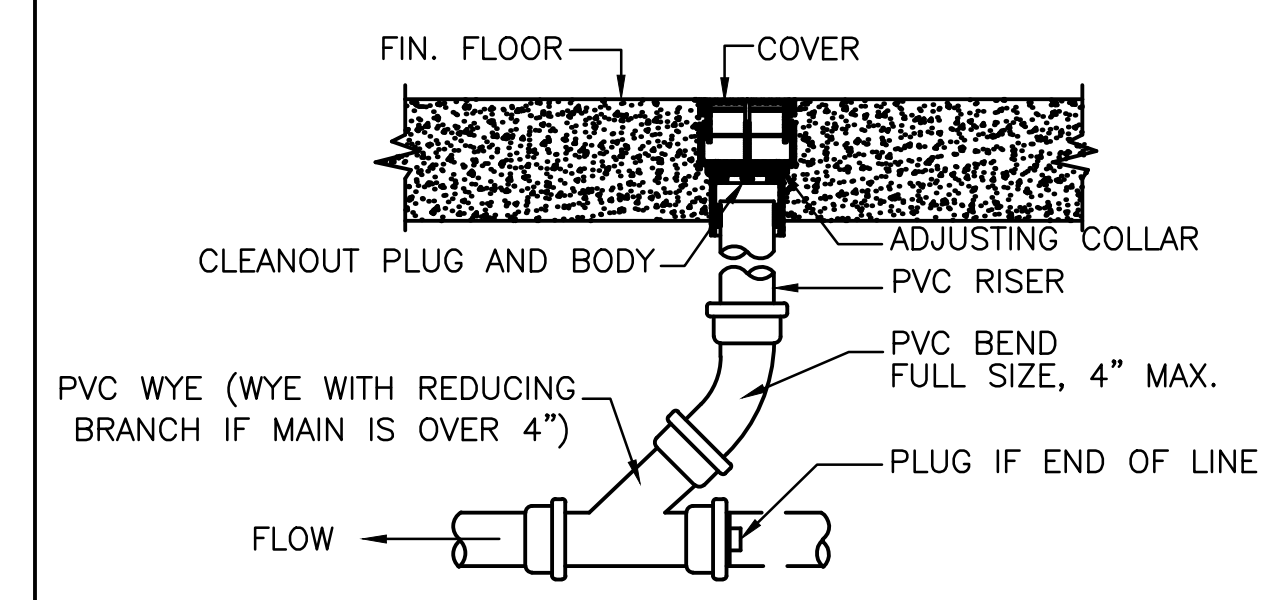
TANKLESS GAS WATER HEATER SCHEDULE

PLAN MARK	STORAGE GALLONS	WATER FLOW @77° RISE	INPUT BTUH	WEIGHT LBS	MODEL RHEEM
GWH-1	-	4.3	199,000	54	RTG-95DVN

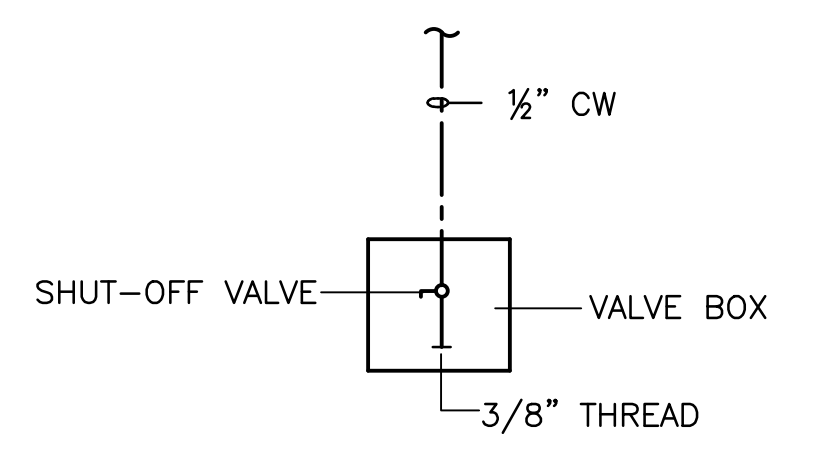
PROVIDE W/ PRESSURE AND TEMP. RELIEF VALVE AND HOSE BIBB
 PROVIDE 3" LIP DRAIN PAN AND DRAIN EXTEND TO OUTSIDE.
 PROVIDE HOT WATER CIRCULATING PUMP AND EXPANSION TANK WITH TANKLESS WATER SELECTION BASED ON RHEEM, A.O.SMITH, STATE, RAINE OR EQUAL.



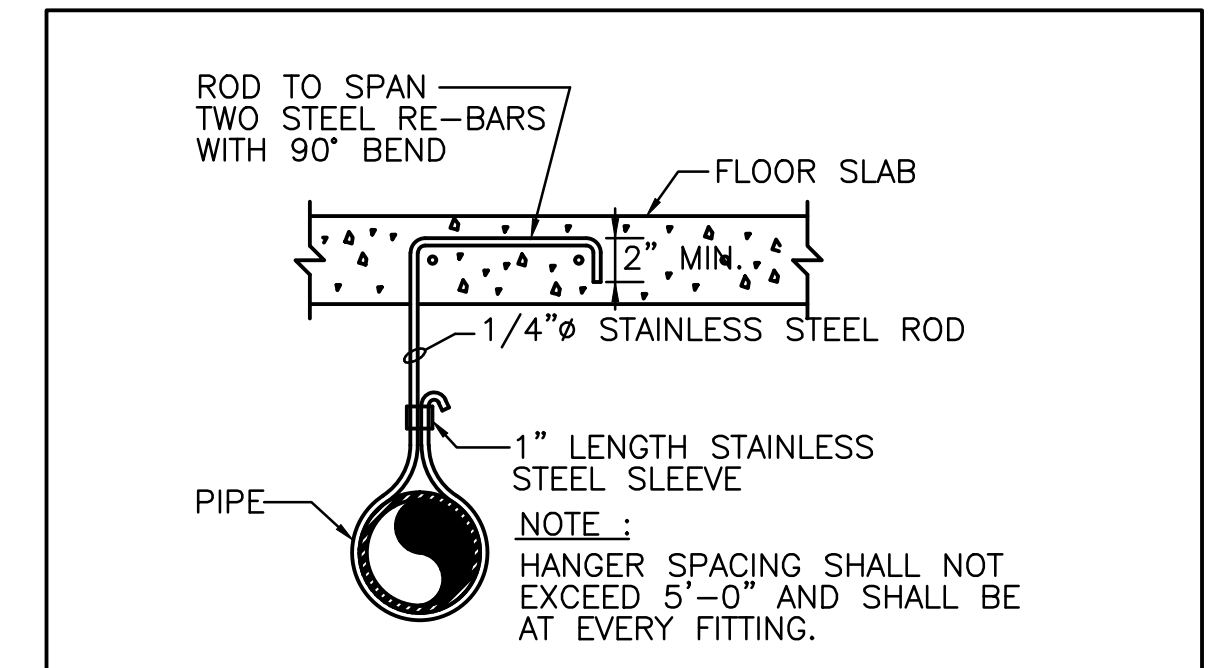
3 VALVE BOX DETAIL
SCALE: N.T.S.



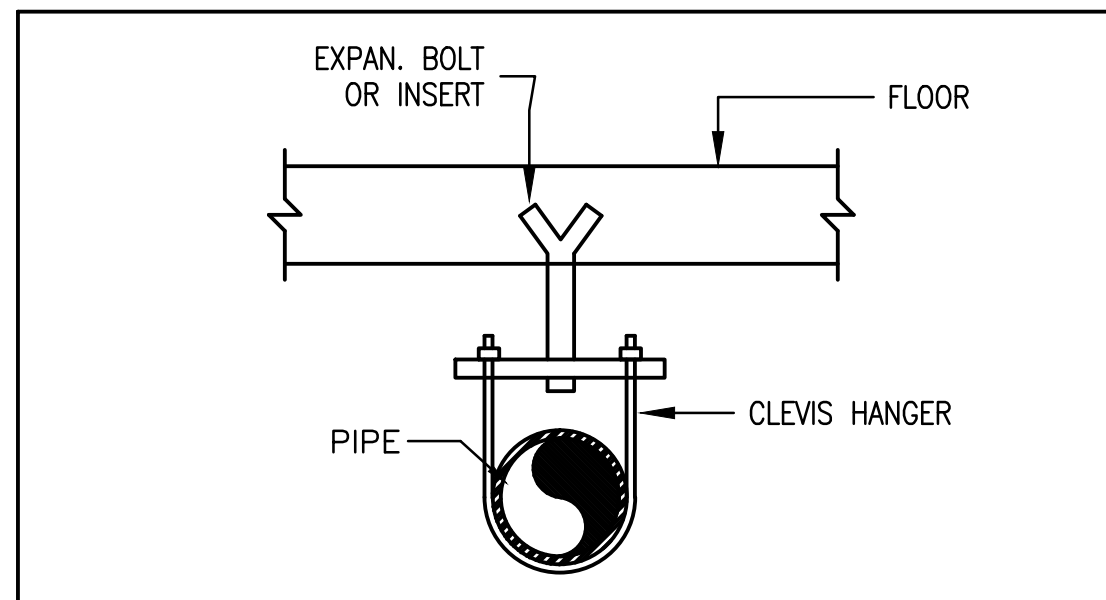
1 TYPICAL FLOOR CLEAN OUT DETAIL
SCALE: N.T.S.



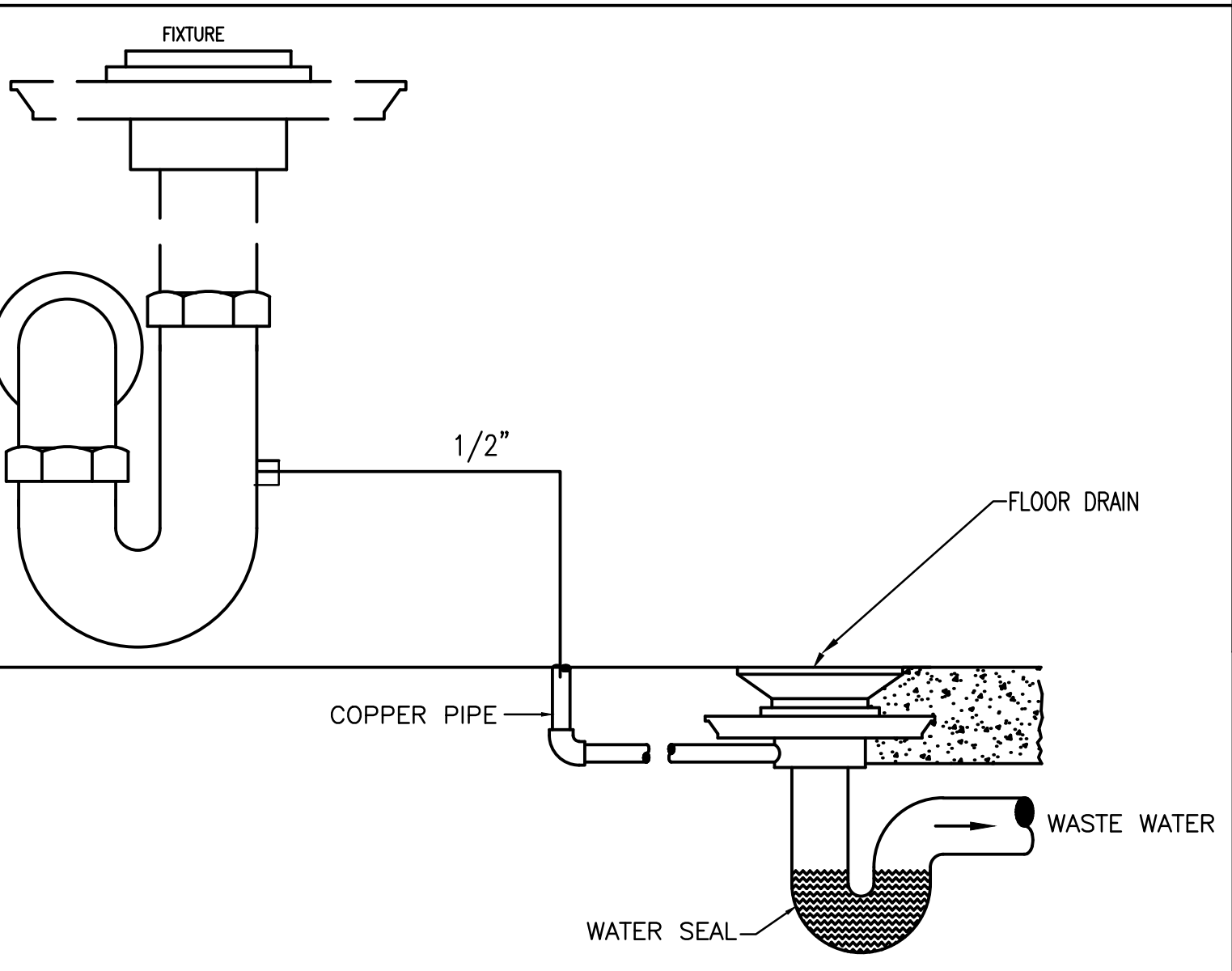
2 TYPICAL ICE MAKER
SCALE: N.T.S.



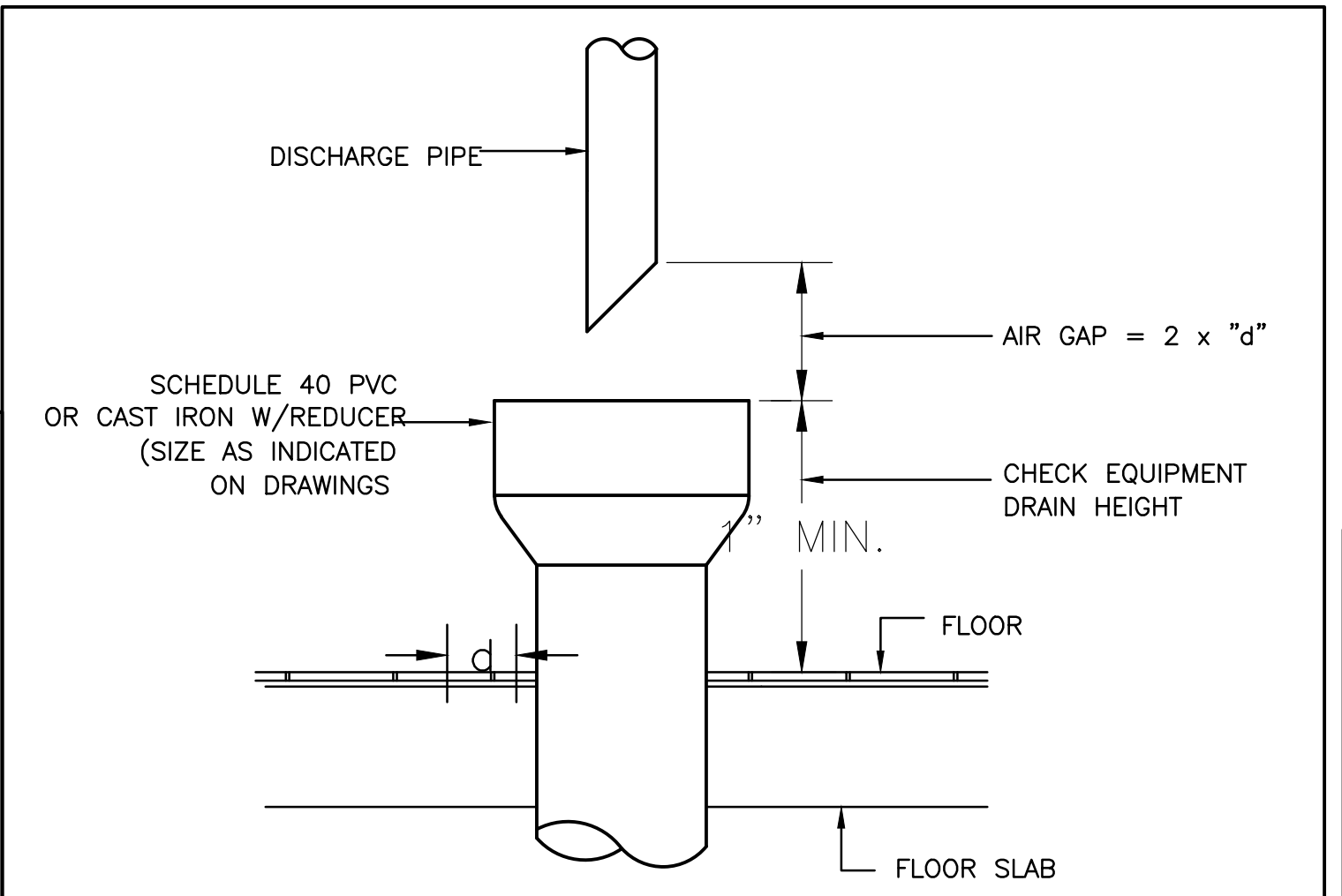
4 TYPICAL PIPE HANGER UNDER SLAB
SCALE: N.T.S.



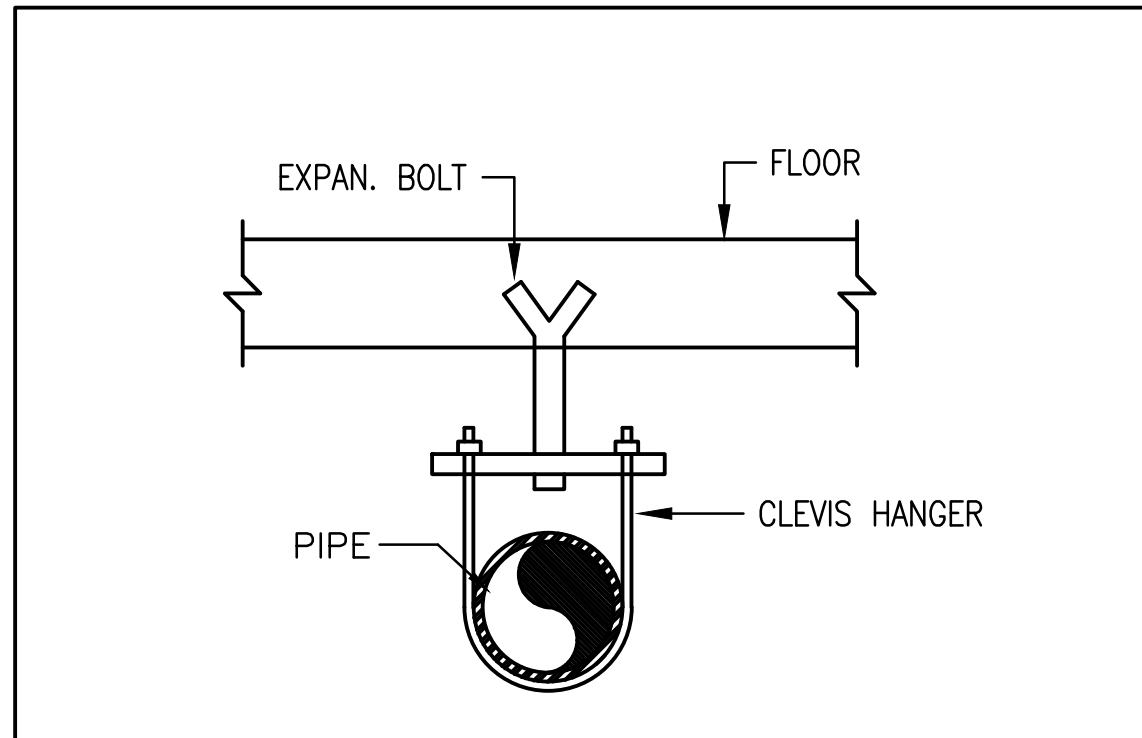
5 TYPICAL PIPE HANGER DETAIL
SCALE: N.T.S.



7 TRAP PRIMER DETAIL
SCALE: N.T.S.



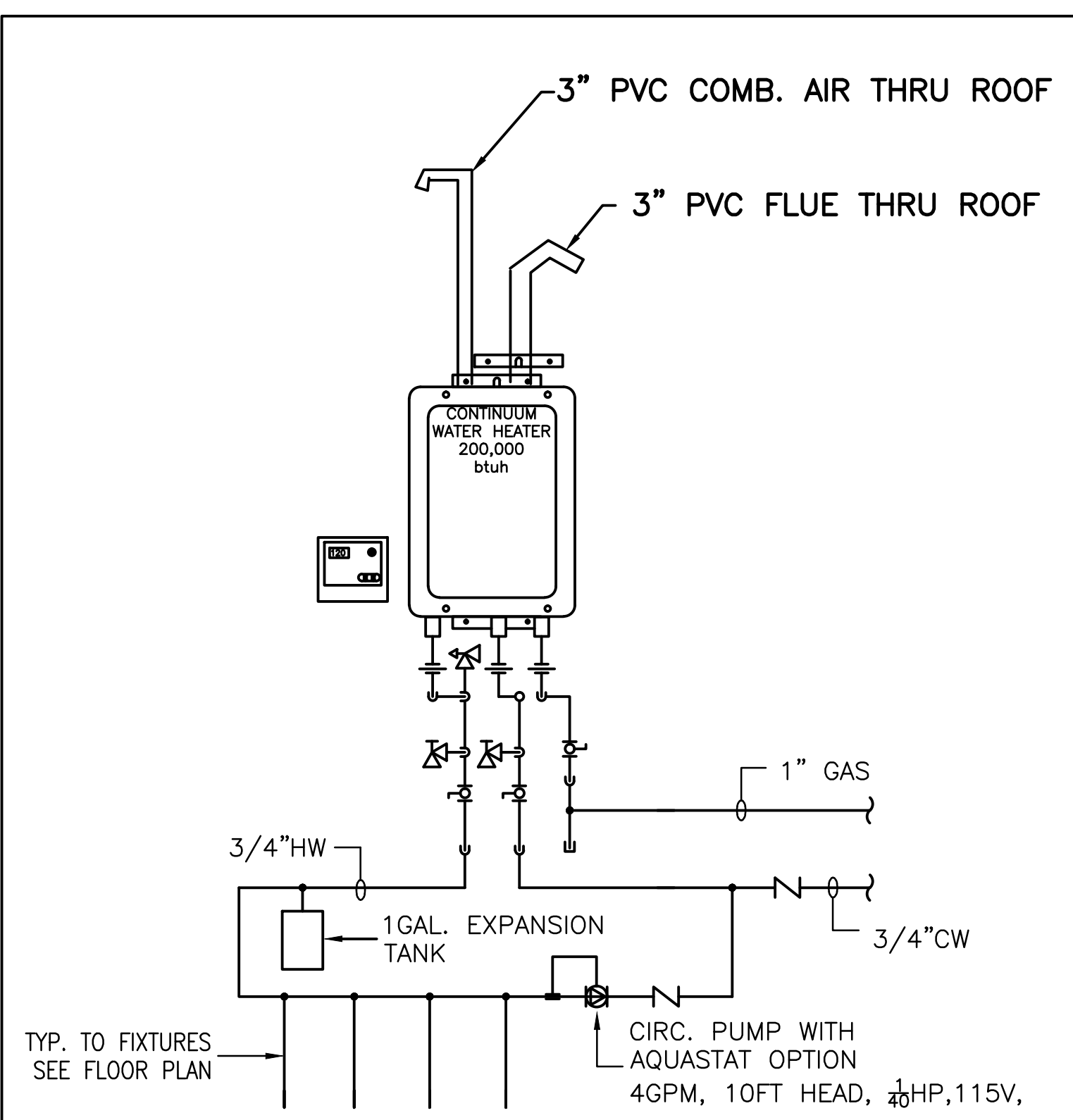
6 HUB DRAIN DETAIL
SCALE: N.T.S.



8 PIPE HANGER BELOW FLOOR
SCALE: N.T.S.

PLAN MARK	STORAGE GALLONS	WATER FLOW @77° RISE	INPUT BTUH	WEIGHT LBS	MODEL RHEEM
GWH-1,2,3	-	4.3	199,000	54	RTG-95DVN

PROVIDE W/ PRESSURE AND TEMP. RELIEF VALVE AND HOSE BIBB
 PROVIDE 3" LIP DRAIN PAN AND DRAIN TO OUT SIDE.



9 GAS WATER HEATER DETAIL
SCALE: N.T.S.

PLUMBING NOTES

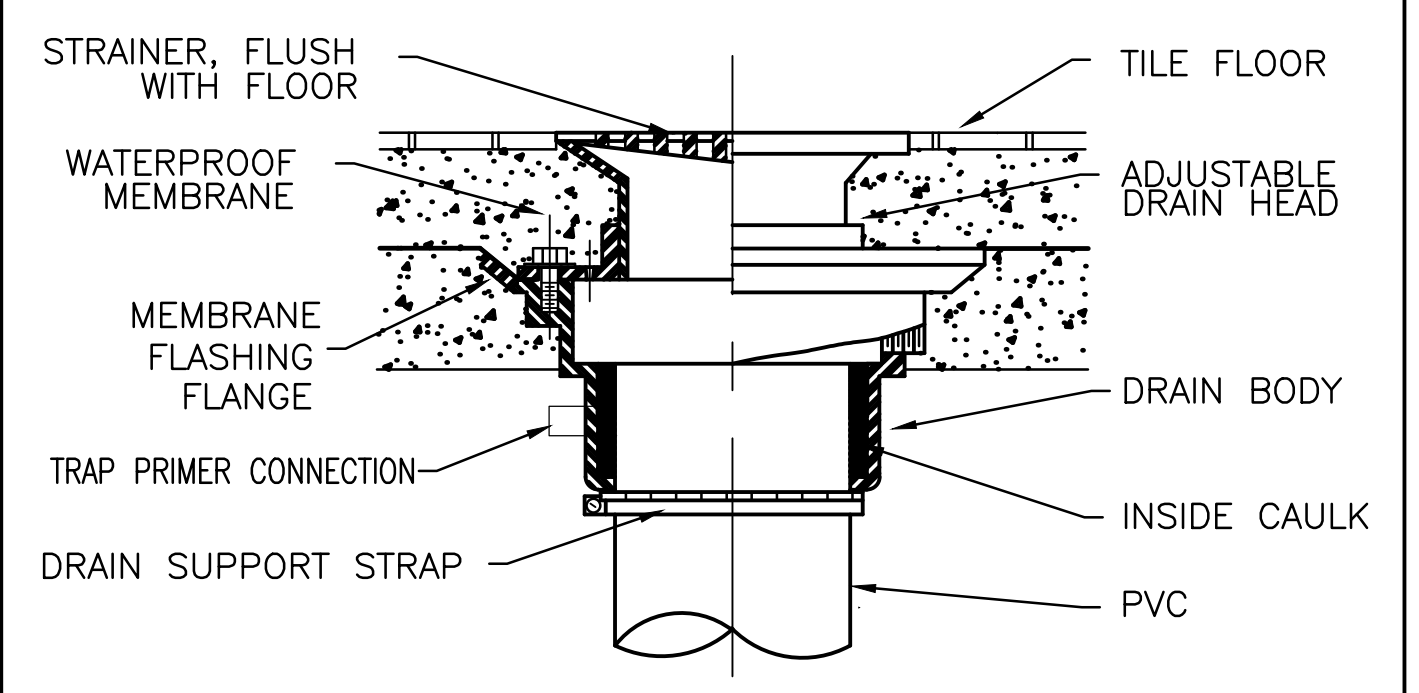
- #### A.SCOPE
- PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT FOR A COMPLETE OPERATING SYSTEM. THE SYSTEM SHALL INCLUDE SEWERAGE, HOT AND COLD WATER PIPING, INSULATION, WATER HEATER, HANGERS, VALVES, SUPPORTS AND PLUMBING FIXTURES WITHOUT ANY RESTRICTING VOLUME, CUT AND PATCH CONCRETE AS REQUIRED TO INSTALL PIPES.
 - ALL WORK AND MATERIAL SHALL CONFORM STRICTLY TO THE LATEST, LOCAL CITY, PARISH, STATE AND NATIONAL GOVERNING CODES.
 - CONTRACTOR IS TO FIELD VERIFY ALL EXISTING UTILITIES LOCATIONS, ELEVATIONS AND SIZES PRIOR TO COMMENCING ANY WORK, CONTRACTOR SHALL PAY ALL NECESSARY FEES FOR THE UTILITIES CONNECTIONS IF REQUIRED.
 - CONTRACTOR IS RESPONSIBLE TO VERIFY THE EXISTING INVERTS AND SET NEW INVERTS OF SEWERAGE PIPE BASE ON AVAILABLE INVERT OF EXISTING PIPE AFTER VERIFICATION.
 - SEWERAGE LINES 3-INCH AND SMALLER SHALL BE SLOPED 1/4" PER FOOT AND LINES 4-INCH AND LARGER SHALL BE SLOPED 1/8" PER FOOT.
 - TEST WATER PIPING AT 2 TIMES CITY PRESSURE FOR FOUR HOURS MINIMUM.
 - TEST SEWER PIPE 10 FEET HEAD AND CHECK ANY LEAK BEFORE CLOSING TRENCH
- #### B.PIPING MATERIALS
- DOMESTIC HOT AND COLD WATER PIPING AND FITTINGS UNDER BLDG. SLAB SHALL BE ASTM B88 COPPER WATER TUBE, TYPE K, SOFT ANNEALED, NO JOINTS SHALL BE ALLOWED UNDER THE SLAB.
 - DOMESTIC WATER PIPING AND FITTINGS ABOVE THE BLDG. SLAB SHALL BE PEX PIPE
 - DOMESTIC WATER PIPING AND FITTINGS ON SITE FROM BACKFLOW PREVENTER TO BUILDING SHALL BE C-900 PIPE UNDERGROUND
 - SOIL, WASTE, VENT PIPING AND FITTINGS UNDER THE SLAB SHALL BE PVC SCHEDULE 40 DWV PIPES AND FITTINGS WHERE PERMITTED BY THE CODE.
 - SOIL, WASTE, VENT PIPING AND FITTINGS ABOVE THE SLAB SHALL BE PVC SCHEDULE 40 DWV PIPES AND FITTINGS WHERE PERMITTED BY THE CODE.
 - PROVIDE BACKFLOW PREVENTOR IN WATER MAIN AND SHALL MEET PERISH CODE.

C.INSULATION

- ALL WATER PIPING AND FITTINGS ABOVE THE FLOOR SHALL BE INSULATED WITH 1/2" THICK FIBERGLASS OR ARAMFLEX INSULATION.
- PROVIDE ALUMINUM WEATHER PROOF JACKET ON ALL EXTERIOR SUBJECT TO FREEZING
- PROVIDE HOT AND COLD WATER TO AS PER FIXTURES SCHEDULE AND AS SPECIFIED.

D.GENERAL

- COORDINATE WITH OTHER TRADES.
- COORDINATE LOCATION OF CLEAN-OUT, FLOOR DRAINS, ETC. WITH ARCHITECTURAL FOR PROPER ACCESS. PROVIDE ACCESS PANEL WHERE REQUIRED.
- CUT AND PATCH EXIST. CONCRETE WALKWAY,ETC.AS REQUIRED TO INSTALL UNDERGROUND PIPING.
- CONTACT CITY SEWER & WATER BOARD FOR NEW METER IF REQUIRED AND METER INSTALLATION AND PAY NECESSARY FEES. PROVIDE BACKFLOW AS PER CITY



10 TYPICAL FLOOR DRAIN DETAIL
SCALE: N.T.S.



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GREASE TRAP CALCULATIONS

1 3-COMP. SINK	1 X 3 =3 FU
3 HWS	3 X 2 =6 FU
1 MB	1 X 3 =3 FU
3 FLOOR DRAINS	3 X 1 =3 FU

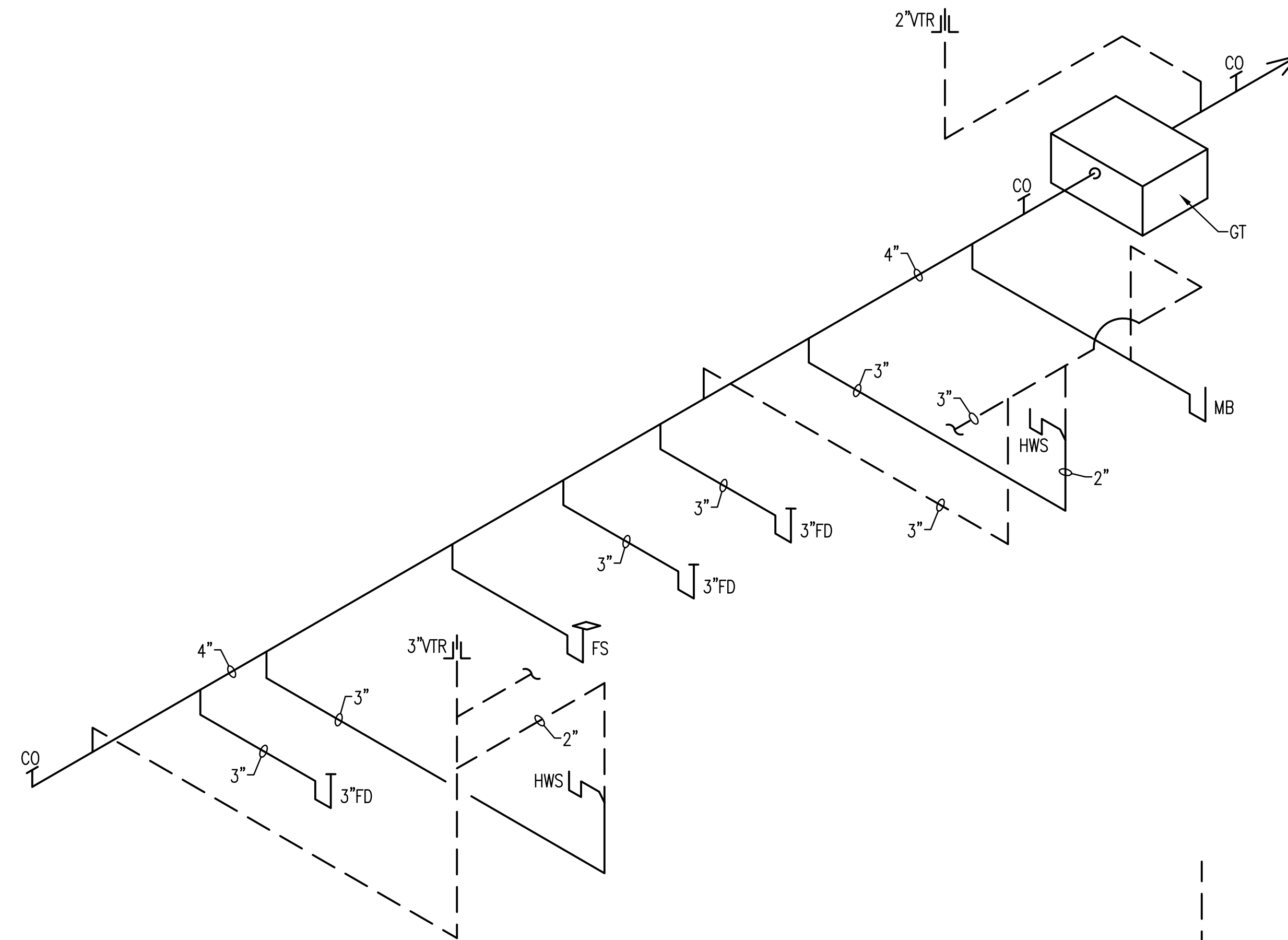
TOTAL FU = 13

GALLONS =13 FU X 2 X 7.5 GALS = 195 GALLONS

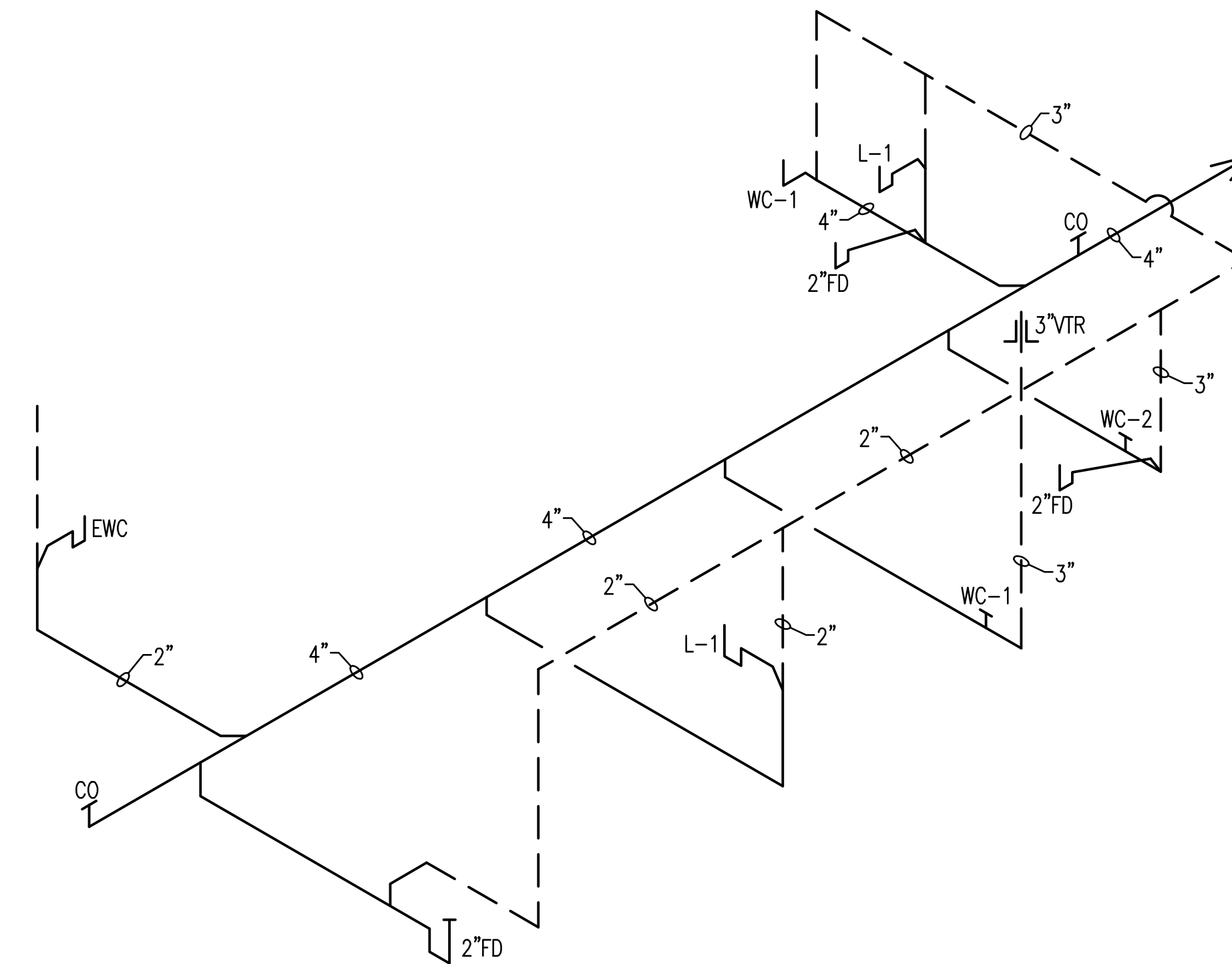
USE 250 GALLONS

LEGEND

- WC -WATER CLOSET
- L - LAVATORY
- FD - FLOOR DRAIN
- CO - CLEANOUT
- FS - FLOOR SINK
- HWS -HANDWASH SINK
- HD - HUB DRAIN
- V -VENT
- VTR -VENT THRU ROOF
- WASTE LINE
- - - VENT LINE



2 GREASE WASTE & VENT RISER DIAGRAM
P-5 SCALE: N.T.S.



1 WASTE & VENT RISER DIAGRAM
P-5 SCALE: N.T.S.



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