212308 1672 W AVENUE J MEDICAL OFFICES

NPDES FORM:

ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES OR WIND. STOCKPILES OF EARTH AND OTHER CONSTRUCTION RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCED OF WIND OR WATER.

FUELS, OILS, SOLVENTS AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER, SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.

NON-STORM WATER RUNOFF FROM EQUIPMENT AND VEHICLE WASHING AND ANY OTHER ACTIVITY SHALL BE CONTAINED AT THE PROJECT SITE.

EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.

TRASH AND CONSTRUCTION RELATED SOLID WASTE MUST BE DEPOSITED INTO COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.

SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED IN THE PUBLIC WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.

ANY SLOPES WITH DISTURBED SOILS OR DENUDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT EROSION BY WIND AND WATER.

ANY REQUIREMENTS SET FOURTH BY THE INSPECTOR.

AS THE PROJECT OWNER OR AUTHORIZED AGENT OF THE OWNER, I HAVE READ AND UNDERSTAND THE REQUIREMENTS LISTED ABOVE, NECESSARY TO CONTROL STORM WATER POLLUTION FROM SEDIMENTS, EROSION, AND CONSTRUCTION MATERIALS, AND I CERTIFY THAT I WILL COMPLY WITH THESE REQUIREMENTS.

PRINT NAME _____
(OWNER OR AUTHORIZED AGENT OF OWNER)

SIGNATURE _____ DATE _____
(OWNER OR AUTHORIZED AGENT OF OWNER)

FIRE NOTES:

1. FIRE DEPARTMENT VEHICULAR ACCESS ROADS MUST BE INSTALLED AND MAINTAINED IN A SERVICEABLE MANNER PRIOR TO AND DURING THE TIME OF CONSTRUCTION. FIRE CODE 501.4

2. BUILDING ADDRESS NUMBERS SHALL BE PROVIDED AND MAINTAINED SO AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET FRONTING THE PROPERTY. NUMBERS SHALL CONTRAST WITH BACKGROUND, BE ARABIC OR ALPHABETICAL LETTERS, AND BE A MINIMUM OF 4" HIGH WITH A MINIMUM STROKE OF ½", CRC R319.1

4. THE REQUIRED FIRE FLOW FOR HYDRANTS IS 1000 GPM, AT 20 PSI RESIDUAL PRESSURE, FOR DURATION OF 1 HOUR OVER AND ABOVE MAXIMUM DAILY DOMESTIC DEMAND. FIRE CODE 507.3

5. THERE ARE NO OVERHEAD HIGH VOLTAGE TRANSMISSION LINES OR DRIP LINES WITHIN 100 FEET OF THIS PROPERTY.

6. HOUSEHOLD FIRE ALARM SYSTEMS INSTALLED IN ACCORDANCE WITH NFPA 72 THAT INCLUDE SMOKE ALARMS, OR A COMBINATION OF SMOKE DETECTOR AND AUDIBLE NOTIFICATION DEVICE INSTALLED AS REQUIRED BY THIS SECTION FOR SMOKE ALARMS, SHALL BE PERMITTED. THE HOUSEHOLD FIRE ALARM SYSTEM SHALL PROVIDE THE SAME LEVEL OF SMOKE DETECTION AND ALARM AS REQUIRED BY THIS SECTION FOR SMOKE ALARMS. WHERE A HOUSEHOLD FIRE WARNING SYSTEM IS INSTALLED USING A COMBINATION OF SMOKE DETECTOR AND AUDIBLE NOTIFICATION DEVICE, IT SHALL BECOME A PERMANENT FIXTURE OF THE OCCUPANCY AND OWNED BY THE HOMEOWNER. THE SYSTEM SHALL BE MONITORED BY AN APPROVED SUPERVISING STATION AND BE MAINTAINED IN ACCORDANCE WITH NFPA72. RESIDENTIAL CODE R314.2

7. SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING PROVIDED THAT SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND SHALL BE EQUIPPED WITH A BATTERY BACKUP. RESIDENTIAL CODE R314.5

8. WHERE MORE THAN ONE SMOKE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING OR SLEEPING UNIT, THE SMOKE ALARMS SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT. RESIDENTIAL CODE R314.5

9. AN APPROVED CARBON MONOXIDE ALARM SHALL BE INSTALLED IN DWELLING UNITS AND IN SLEEPING UNITS WITHIN WHICH FUEL-BURNING APPLIANCES ARE INSTALLED AND IN DWELLING UNITS THAT HAVE ATTACHED GARAGES. REQUIRED CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND SHALL BE EQUIPPED WITH A BATTERY BACK-UP. WHERE MORE THAN ONE CARBON MONOXIDE ALARM IS REQUIRED TO BE INSTALLED WITHIN THE DWELLING UNIT OR WITHIN A SLEEPING UNIT THE ALARM SHALL BE INTERCONNECTED IN A MANNER THAT ACTIVATION OF ONE ALARM SHALL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT. RESIDENTIAL CODE R314.5.1.2, BUILDING CODE 420.4.1

10. ALL FIRE HYDRANTS SHALL MEASURE 6" X 4" X 2 1/2", BRASS OR BRONZE, CONFORMING TO AMERICAN WATER WORKS ASSOCIATION STANDARD C503, OR APPROVED EQUAL, AND SHALL BE INSTALLED IN ACCORDANCE WITH THE COUNTY OF LOS ANGELES FIRE DEPARTMENT REGULATION 8.

11. WHEN REQUIRED, AN APPROVED KEY BOX, LISTED IN ACCORDANCE WITH UL1037 SHALL BE PROVIDED AT THE LOCATION DETERMINED BY THE FIRE INSPECTOR, FIRE CODE 506.

12. WHEN SECURITY GATES ARE PROVIDED, MAINTAIN A MINIMUM ACCESS WIDTH OF 20 FEET. THE SECURITY GATE SHALL BE PROVIDED WITH AN APPROVED MEANS OF EMERGENCY OPERATION, AND SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES AND REPLACED OR REPAIRED WHEN DEFECTIVE. ELECTRIC GATE OPERATORS, WHERE PROVIDED, SHALL BE LISTED IN ACCORDANCE WITH UL 325. GATES INTENDED FOR AUTOMATIC OPERATION SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED TO COMPLY WITH THE REQUIREMENTS OF ASTM F220. GATES SHALL BE OF THE SWINGING OR SLIDING TYPE. CONSTRUCTION GATES SHALL BE OF MATERIALS THAT ALLOW MANUAL OPERATION BY ONE PERSON.

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A-2.0 GENERAL NOTES
A-2.1 GENERAL NOTES
A-2.2 GREEN BUILDING NOTES
A-2.3 GREEN BUILDING NOTES
A-3.0 FLOOR PLAN
A-3.1 SCHEDULES
A-5.0 ELEVATIONS
A-7.0 ADA DETAILS

STRUCTURAL
S-2.0 FRAMING PLAN AND DETAILS

ELECTRICAL:
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E-3.0 POWER PLAN
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P-0.1 FIXTURE SCHEDULE AND CALCULATIONS
P-3.1 PLUMBING FIRST FLOOR PLAN
P-3.2 PLUMBING ROOF PLAN
P-5.0 PLUMBING DETAILS
P-6.0 RISER DIAGRAMS

DEFERRED SUBMITTALS:

1. NONE

DESIGN TEAM:

OWNER:
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ANDREW LANGROUDI
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OXNARD, CA 93036

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GENERAL CONTRACTOR
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GEORGE ATKINSON LIC 597362
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LANCASTER, CA 93535
661.723.5141

ELECTRICAL
MECHANICAL
PLUMBING ENGINEER:
DS&A CONSULTING ENGINEERS, INC
10811 WASHINGTON BLVD, SUITE 374
CULVER CITY, CA. 90232
310.384.2594
WWW.DSAENGINEERS.NET

APPLICABLE CODES

2019
CALIFORNIA BUILDING CODE
CALIFORNIA MECHANICAL CODE
CALIFORNIA ELECTRICAL CODE
CALIFORNIA PLUMBING CODE
2019 CALIFORNIA ENERGY CODE
2020 LA COUNTY FIRE CODE

JURISDICTIONS

CITY OF LANCASTER
BUILDING DEPARTMENT
PLANNING DEPARTMENT
PUBLIC WORKS

LOS ANGELES COUNTY
FIRE DEPARTMENT

SITE DATA

APN 3123-001-005
1672 WEST AVENUE J
LANCASTER, CA. 93534
1.4219 ACRES 61,937 SF
ZONING COMMERCIAL

SCOPE OF WORK

7,960 SF TENANT IMPROVEMENT CREATING 3 TENANT SPACES OUT OF 5 EXISTING.
DEMOLITION OF 400' INTERIOR DEMISING WALLS, ACOUSTIC CEILING, MISC ELECTRICAL, MECHANICAL, AND PLUMBING. EXISTING FAU'S TO REMAIN, NEW DUCTING TO BE INSTALLED. EXISTING ELECTRICAL PANELS TO BE REPLACED WITH CURRENT CODE COMPLIANT PANELS, EXISTING SWITCH GEAR TO REMAIN.
211 SF RENOVATION OF EXTERIOR RESTROOMS TO COMPLY WITH CURRENT ADA STANDARDS.

BUILDING DESCRIPTION

EXISTING 15,920 SF 2 STORY STRUCTURE
EXISTING 7,960 SF 1ST FLOOR TO BE RENOVATED
FIRE SPRINKLERS NO
EXISTING USE MEDICAL OFFICES
PROPOSED USE MEDICAL OFFICES
OCCUPANCY B PER CHAPTER 3 CBC
CONSTRUCTION TYPE VB PER CHAPTER 6, CBC
ALLOWABLE AREA PER TABLE 506.4 9,000 SF
EXISTING AREA 7,960 SF PER FLOOR, 2 FLOORS
ALLOWED PER TABLE 504.4
OCCUPANCY LOAD FACTOR PER TABLE 1004.1.2
100 FOR OUTPATIENT AREAS

SUITE 104 VASCULAR OUTPATIENT FACILITY
2,500 SF / 100 = 25 OCCUPANTS
NUMBER OF EXITS REQUIRED PER 1006.3.1 AND 1006.3.2 – 1, 1 PROVIDED

SUITE 106 FOOT AND ANKLE OUTPATIENT OFFICE
2,086 SF / 100 = 21 OCCUPANTS
NUMBER OF EXITS REQUIRED PER 1006.3.1 AND 1006.3.2 – 1, 2 PROVIDED

SUITE 110 URGENT CARE OUTPATIENT FACILITY
3374 SF / 100 = 34 OCCUPANTS
NUMBER OF EXITS REQUIRED PER 1006.3.1 AND 1006.3.2 – 1, 2 PROVIDED

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LZ LANCASTER PROPERTIES LLC
1672 WEST AVENUE J
LANCASTER, CA 93534
PHONE

ISSUE DATES No.	Date	Description
1	.	.
2	.	.
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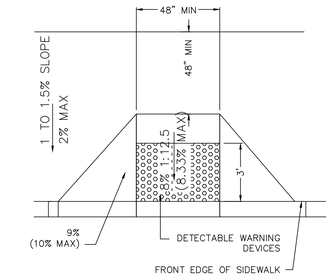
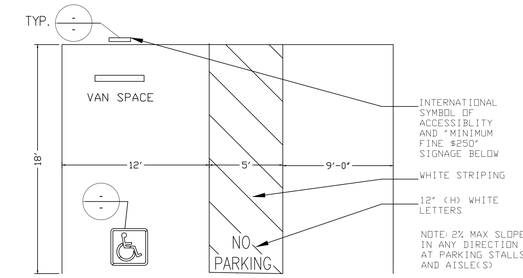
SHEET TITLE
SITE PLAN

Project No. : 212308
Date: 2022 05 12
Drawn: MM

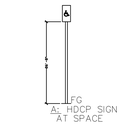
SHEET NO.
A-0.0



CURB RAMP
SCALE: 1/4" = 1"

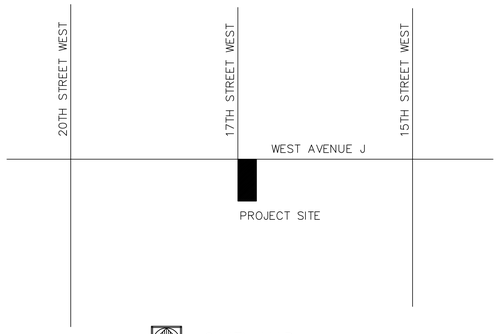


ACCESSIBLE PARKING DETAIL
SCALE: 1/4" = 1'-0"

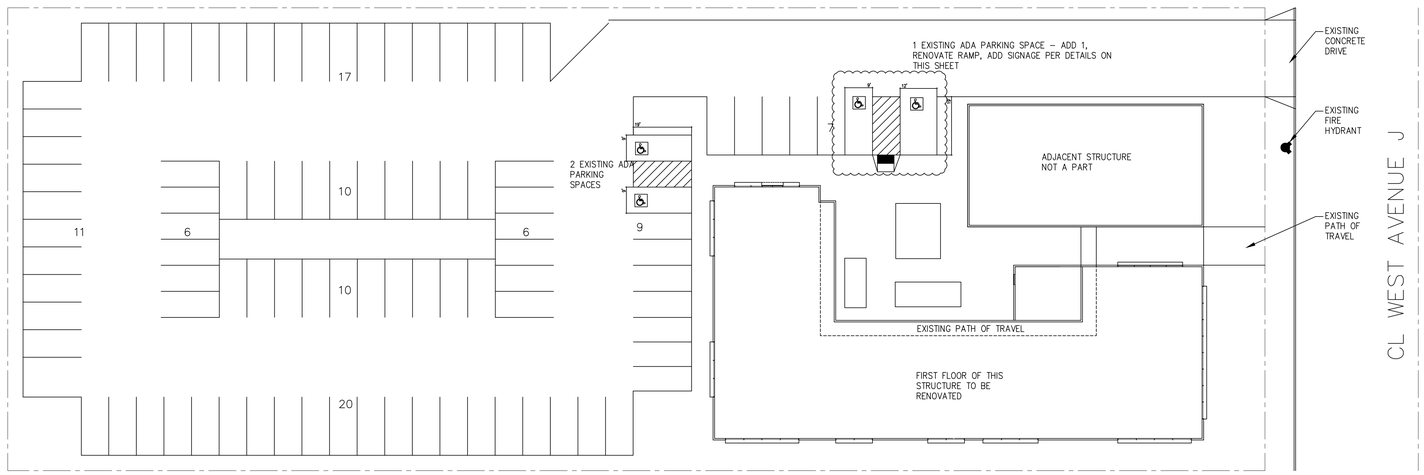


1C ACCESSIBLE SIGN

1B ACCESSIBLE SIGN ON GROUND
SCALE: 1"=1'



VICINITY MAP
SCALE: 1"=0 [illegible]



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

SITE NOTES:

1. 86 PARKING SPACES TOTAL FOR SITE, 4 ACCESSIBLE SPACES REQUIRED, ONE VAN SPACE

"Designing Solutions"
McLernon Architecture Group Inc
759 W. Lancaster Blvd, Lancaster, CA 93534
mclernonmag.com
661-940-3898

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LICENSED ARCHITECT
MARLED. MCLERNON
C-22007
02-23
RENEWAL DATE
STATE OF CALIFORNIA

LZ LANCASTER PROPERTIES LLC
1672 WEST AVENUE J
LANCASTER, CA 93534
PHONE

ISSUE DATES		
No.	Date	Description
1	.	.
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SHEET TITLE
SITE PLAN

Project No. : 212308
Date: 2022 05 12
Drawn: MM

SHEET NO.
A-1.0

UNLESS OTHERWISE NOTED ON PLANS: NAILING FOR FRAMING SHALL BE W/ COMMON NAILS, # & SIZE AS FOLLOWS: NAILS SHALL NOT BE CLOSER THAN 1/2 THEIR LENGTH TO EDGE OF MEMBER. HOLES SHALL BE BORED FOR NAILS AS NECESSARY TO PREVENT SPLIT-TING. PENETRATION SHALL BE 1/2 NAIL LENGTH.
NAILING NOT NOTED SHALL BE A MINIMUM OF 2 NAILS @ EACH CONTACT, 8d FOR 1" MATERIAL & 16d FOR 2" MATERIAL.

RAFTERS TO BEAM	3-16d
TRUSSES TO PLATE	SIMPSON H2.5
TOP PLATE SPLICED TOGETHER	16d @ 16"oc
TOP PLATE SPLICE (4'-0" MIN LAP)	8-16d
1" BRACING TO BEARING (FACE NAIL)	3-8d
2" BRACING TO BEARING (FACE NAIL)	2-16d
2" SOLID BLOCKING (TOE NAIL)	2-16d
1x6 LET-IN BRACE (EACH STUD)	3-16d
JOIST TO SILL GIRDER (TOE NAIL)	3-8d
BRIDGING TO JOIST (TOE NAIL)	2-8d
1x6 SUBFLOOR (FACE NAIL EACH JOIST)	2-8d
1x6+ SUBFLOOR (FACE NAIL EACH JOIST)	3-8d
2" SUBFLOOR TO JOIST (FACE OR BLIND)	2-16d
SOLE PL TO JST/BLKG (FACE NAIL)	16d @ 16"oc
TOP PLATE TO STUD (END NAIL)	2-16d
STUD TO SOLE PLATE (TOE NAIL)	4-8d
OR (END NAIL)	2-16d
DOUBLE STUDS (FACE NAIL)	16d @ 16"oc
TOP PLTS, LAPS & INTER (FACE NAIL)	2-16d
DBL TOP PLATES (FACE NAIL)	16d @ 24"oc
CONT HDR 2-PCS (ALIGN EACH EDGE)	16d @ 16"oc
CEILING JOISTS TO PLATE (TOE NAIL)	3-8d
CONT HEADER TO STUD (TON NAIL)	4-8d
CLG JST, LAPS O/ PARTITION (FACE NAIL)	3-16d
CLG JST TO PARTITION RAFTERS (FACE NAIL)	3-16d
RAFTER TO PLATE (TOE NAIL)	3-8d
1" BRACE @ EACH STUD/PLATE (FACE NAIL)	2-8d
1x8 OR SHTG EACH BEARING (FACE NAIL)	2-8d
1x8 + SHTG EACH BEARING (FACE NAIL)	3-8d
BUILT-UP CORNER STUDS	16d @ 24"oc
BUILT-UP GIRDER & BEAMS T&B STAG	20d @ 32"oc
& STAG 2-20d @ ENDS & EACH SPLICE	
2" PLANKS (EACH BEARING)	2-16d
PARTICLE BOARD WALL TO FRAMING	3/8"-1/2" 6d
	5/8"-3/4" 8d
PLWD SUBFLR/ROOF/WALL TO FRMG	1/2" & LESS 6d
	5/8"-1" 8d
	1 1/8"-1 1/4" 10d
COMB SUBFLOOR 3/4" & LESS DEFORMED SHANK	8d
TO FRAMING 7/8"-1 1/4" DEFORMED SHANK	8d
PNL SIDING TO FRMG 1/2" & LESS GALV/AL SDS	6d
5/8" GALV/AL SDS	8d
FIBERBOARD SHEATHING:	1/2" 6d
	25/32" 8d
1/2" GYP BD	5d CN @ 7"oc
5/8" GYP BD	6d CN @ 7"oc

NAILING SCHEDULE
SCALE: NTS
1/1 MASTER NS1.2

1. INTERIOR ELECTRIC WIRING: ALL INTERIOR ELECTRIC WIRING SHALL BE COPPER.
2. RECEPTACLES AND SWITCHES:
EXCEPT AS INDICATED OTHERWISE, GENERAL PURPOSE RECEPTACLES SHALL BE LOCATED AS FOLLOWS:
16" MINIMUM FROM FINISHED FLOOR TO BOTTOM OF OUTLET
C. SPECIAL & APPLIANCE - LOCATE CONVENIENT TO APPLIANCE SO WIRING IS CONCEALED FROM VIEW.
EXCEPT AS INDICATED OTHERWISE, GENERAL PURPOSE SWITCHES SHALL BE LOCATED 48" TO TOP OF SWITCH BOX
3. OTHER ROOMS - 16" MINIMUM FROM FINISHED FLOOR TO
SHORT-CIRCUIT CURRENT WITH SERVICING POWER UTILITY COMPANY AND PROVIDE CIRCUIT BREAKERS OR COMBINATION CIRCUIT LIMITING FUSES TO PROVIDE ADEQUATE INTERRUPTING CAPACITY.
4. TIME CLOCKS: ELECTRICAL CONTRACTOR SHALL PROVIDE AT PROPER LOCATIONS APPROVED BY THE ARCHITECT TIME CLOCK(S) AND POWER RECEPTACLE(S) FOR SAME FOR ALL SITE LIGHTING, CONTROL MOTORS, AND OTHER DEVICES REQUIRING TIMED SWITCHING.
5. CONDUIT ROUTING: ALL CONDUIT RUNS SHOWN ARE DIAGRAMMATIC. EXACT ROUTING SHALL BE GOVERNED BY THE BUILDING STRUCTURES AND EQUIPMENT SERVED.
6. CONDUIT: ALL CONDUITS SHALL BE RIGID STEEL EXCEPT AS FOLLOWS:
A. SCHEDULE 40 PVC SHALL BE USED UNDERGROUND BURIED 24" BELOW GRADE. NO CONDUIT SHALL BE INSTALLED IN CONCRETE SLABS WITHOUT PRIOR APPROVAL. TRANSITION TO RIGID STEEL SHALL BE MADE PRIOR TO STUBBING IN WALLS.
B. EMT SHALL BE USED IN FURRED SPACES IN DRY LOCATIONS AND WHERE INSTALLED IN CONCEALED STRUCTURES OR TO CEILING TEE BAR WITH APPROVED CADDY CLIPS. EMT SHALL NOT BE LARGER THAN 2".
C. FLEXIBLE CONDUIT SHALL BE USED FOR CONNECTION TO LIGHT FIXTURES IN SUSPENDED CEILINGS. LIQUID TIGHT FLEXIBLE CONDUITS SHALL BE USED FOR CONNECTION OF MOTOR TERMINALS TO CONDUIT STUBS OR OUTLETS.
7. WIRES: ALL WIRES SHALL BE 600 VOLTS, MINIMUM NO. 12 AWG, UNLESS OTHERWISE SPECIFIED.
8. GROUNDING: FURNISH AND INSTALL A COMPLETE GROUNDING AND BONDING INSTALLATION AS REQUIRED BY CODES. CONTINUITY OF EQUIPMENT GROUND SHALL BE MAINTAINED MECHANICALLY CODE SIZED CONDUCTOR SHALL BE CARRIED IN ALL PVC CONDUITS.
9. EQUIPMENT: ALL EQUIPMENT SHALL BE UL LISTED.
10. CONTROL WIRING: FURNISH AND INSTALL ALL TEMPERATURE CONTROL SYSTEM CONDUIT AND WIRING. SEE MECHANICAL DRAWINGS OR REFER TO MECHANICAL CONTRACTOR FOR CONTROL DIAGRAMS. CONTROL DIAGRAMS CONTROL DEVICES. LOCATIONS AND EXACT LOCATIONS.

ELECTRICAL NOTES
SCALE: NTS
1/1 MASTER ELNOTES1

PLUMBING NOTES.
1. CLEANOUTS: CLEANOUTS SHALL BE PROVIDED FOR SEWER AND WASTE LINES IN ACCORDANCE WITH THE CPC AND AS FOLLOWS:
A. ALL CLEANOUTS SHALL BE ACCESSIBLE.
B. PROVIDE ACCESSIBLE WALL CLEANOUTS AT BRANCHES
C. PROVIDE CLEANOUTS ON HORIZONTAL DRAIN LINES OVER 50'-0" IN LENGTH AND AT ALL SINKS.
D. CLEANOUTS AND LAMPOLES AT 6" AND 8" DIAMETER LINES TO BE AT A MAXIMUM OF 100" O.C. AND WHERE CHANGES IN DIRECTION OF LINE(S) OCCUR. CONSTRUCT IN ACCORDANCE WITH STANDARD OF THE LOCAL BUILDING DEPARTMENT.
2. CONCRETE FLOOR BLOCKOUTS: CONCRETE FLOOR BLOCKOUTS TO RECEIVE TRAPS OR FITTINGS SHALL BE SEALED OFF WITH A 1" LAYER OF CONCRETE.
3. CONDENSATE DRAINS: CONDENSATE DRAIN(S) SERVING AC UNIT(S) SHALL TERMINATE AT THE NEAREST VENT OR ROOF DRAIN WITH APPROPRIATE TRAPS.
4. DIS-SIMILAR PLUMBING PIPES: ALL PLUMBING PIPES OF DIS-SIMILAR METALS SHALL BE PROPERLY INSULATED FROM EACH OTHER WITH A DIELECTRIC NONCONDUCTOR.
5. METER LOCATIONS: SEE PLUMBING, SITE PLAN, AND/OR FLOOR PLAN(S) FOR GAS/WATER METER LOCATIONS.
6. PLUMBING SCHEMATICS: PLUMBING SCHEMATICS ARE DIAGRAMMATIC EXCEPT WHERE SPECIFIC ROUTING IS INDICATED TO AVOID CUTTING OF STRUCTURAL MEMBERS.
7. SERVICE SHUT-OFF VALVES: PROVIDE WATER SHUT-OFF VALVES AT EACH FIXTURE, AT EACH BUILDING, AND AT EACH UNIT OF EACH BUILDING AND WHERE SHOWN.
8. STERILIZATIONS OF LINES: ALL WATER SERVICE LINES SHALL BE STERILIZED BY THE CONTRACTOR IN ACCORDANCE WITH THE STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION, PUBLICATION TD_2-1947, "PROCEDURE FOR DISINFECTING WATER MAINS." AFTER CHLORINATION. THE RESIDUAL CHORINE SHALL BE FLUSHED OUT UNTIL IT'S CONCENTRATION IS LESS BY TEST THAN THE WATER FROM THE WATER SUPPLY.
9. GAS SHUT-OFF COCKS: PROVIDE GAS SHUT-OFF COCK(S) AT EACH GAS APPLIANCE.
10. CONSTRUCTION: PROVIDE A COMPLETE WORKING, OPERATIONAL PLUMBING SYSTEM.
11. LAYOUT: SPECIAL CARE MUST BE USED IN LOCATING LINES FOR ALL FIXTURES TO BE SURE THEY WILL BE IN CORRECT POSITION WHEN INTERIOR WALLS ARE COMPLETE.
12. TESTING: PLUMBING CONTRACTOR SHALL PERFORM ALL TESTS REQUIRED BY LOCAL BUILDING AND PLUMBING ORDINANCES. ALL TESTS SHALL BE CARRIED OUT IN THE PRESENCE OF A PLUMBING INSPECTOR WHO SHALL BE NOTIFIED IN ADVANCE. AS A MINIMUM CONDUCT TESTS AS FOLLOWS:
A. ALL DOMESTIC WATER LINES SHALL BE TESTED AT A WATER PRESSURE OF ONE HUNDRED (100) POUNDS PER SQ INCH FOR SIX (6) HOURS.
B. ALL SOIL, WASTE, AND VENT LINES SHALL BE TESTED TO AN AIR PRESSURE OF 15 POUNDS PER SQ. INCH.
C. USE HYDROSTATIC TEST FOR WATER TESTING.
13. EXCAVATION AND BACKFILL:
A. PERFORM ALL EXCAVATING AND SHORING TO INSTALL THE WORK. PLUMBING LINES OUTSIDE DEPTH OF NOT LESS THAN 18" BELOW FINISHED GRADE. AFTER PIPES HAVE BEEN TESTED AND APPROVED, BACKFILL AND COMPACT TRENCHES.
B. PLUMBING EXCAVATIONS ARE NOT TO BE MADE PARALLEL TO FOOTING BELOW ANGLE OF REPOSED CONCRETE (I.E., BELOW A LINE DRAWN 45 DEGREES DOWN FROM EACH CORNER OF THE BOTTOM OF FOOTING OR AS OTHERWISE STATED IN THE SOILS REPORT.)
14. OPENINGS AND CUTTING: HOLES CUT IN STRUCTURAL MEMBERS SHALL HAVE PRIOR APPROVAL FROM ENGINEER OR ARCHITECT OF RECORD.
15. WATER SERVICE: WATER SERVICE LINE(S) SHALL BE SCH 40 PVC OR GALVANIZED PIPE OF SIZE INDICATED WITH A MINIMUM DEPTH OF 18" BELOW FINISHED GRADE.
16. PIPING: RUN ALL PIPING FREE OF TRAPS AND UNNECESSARY BENDS AND ARRANGED TO CONFORM TO THE BUILDING REQUIREMENTS AND TO SUIT THE NECESSITIES OF CLEARANCE FOR OTHER MECHANICAL WORK SUCH AS FLUES, CONDUITS, ETC. NO PIPING SHALL BE INSTALLED SO AS TO CAUSE ANY UNUSUAL NOISE FROM THE FLOW OF WATER OR CONDENSATION.
17. SANITARY PIPING: ALL HORIZONTAL SANITARY PIPING INSIDE OR UNDER BUILDING SHALL BE RUN ON A UNIFORM GRADE OF NOT LESS THAN 1/4" PER FOOT, EXCEPT WHERE NOTED OTHERWISE. GRADE VENT PIPING SO AS TO FREE ITSELF QUICKLY OF WATER OR CONDENSATION.
18. ALL FAUCETS, FIXTURES, WATER HEATERS, ETC. SHALL CONFORM TO THE REQUIREMENTS OF THE CALIFORNIA ENERGY STANDARDS.
19. FURNISH & INSTALL HANGERS, SUPPORTS, ETC. AS REQUIRED TO PROVIDE A VIBRATION FREE INSTALLATION. SLOPE ALL PIPE TO DRAIN. FURNISH & INSTALL SHUT-OFF VALVE AT EACH PIECE OF EQUIPMENT. FLASH & COUNTERFLASH ALL BUILDING PENETRATION TO MAKE WEATHERTIGHT.
20. INSULATE ALL HOT WATER PIPING AS FOLLOWS; 1/2"FOAM FOR 1/2" Ø PIPE, 3/4" FOAM FOR 3/4" Ø PIPE, 1" FOAM FOR 1" Ø PIPE.
21. SHOWER STALL MUST CONFORM TO THE REQUIREMENTS OF UPC410 (1024 SQ. IN.) (THRESHOLD 2'-4" DEEP) WATER CLOSETS SHALL BE CA STATE APPROVED 1.2 GAL/FLUSH. WATER PIPE AND FITTING SHALL BE OF BRASS, COPPER, CAST IRON, GALVANIZED MALLEABLE IRON, GALVANIZED WROUGHT IRON, GALVANIZED STEEL, OR OTHER APPROVED MATERIALS. PE OR PVC WATER PIPE MANUFACTURED TO RECOGNIZED STANDARDS MAY BE USED FOR COLD WATER DISTRIBUTION SYSTEMS OUTSIDE A BUILDING. ALL MATERIALS USED IN THE WATER SUPPLY SYSTEM, EXCEPT VALVES AND SIMILAR DEVICES, SHALL BE OF A LIKE MATERIAL. EXCEPT WHERE OTHERWISE APPROVED BY THE ENFORCEMENT AGENCY.
22. FAUCETS SHALL HAVE A MAXIMUM FLOW PER CURRENT PLUMBING CODE STANDARDS
23. SHOWER HEADS SHALL BE FINISHED PER PLUMBING CODE TO A HEIGHT OF NOT LESS THAN 72" ABOVE DRAIN OUTLET.
24. WATER CLOSETS SHALL HAVE A MAXIMUM FLOW OF 1.28 GALLONS PER FLUSH PER CODE STANDARDS
25. ALL SHOWERS AND TUB-SHOWERS SHALL HAVE EITHER A PRESSURE BALANCE OR A THERMOSTATIC MIXING VALVE

PLUMBING NOTES
SCALE: NTS
1/1 MASTER PLNOTES1

ALL WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION. STRAPPING SHALL BE AT POINTS WITHIN THE UPPER ONE-THIRD (1/3) AND LOWER ONE-THIRD (1/3) OF ITS VERTICAL DIMENSION. AT THE LOWER POINT, A MINIMUM DISTANCE OF FOUR (4) INCHES SHALL BE MAINTAINED ABOVE THE CONTROL WITH THE STRAPPING. CPC 507.2

THE WATER HEATER MUST BE PROVIDED WITH A PRESSURE RELIEF VALVE OR A COMBINATION TEMPERATURE AND PRESSURE RELIEF VALVE SHALL HAVE A FULL-SIZED DRAIN OF GALVANIZED STEEL OR HARD COPPER PIPING AND FITTINGS, CPVE, PB, OR LISTED RELIEF VALVE DRAIN TUBE WITH FITTINGS WHICH WILL NOT REDUCE THE INTERNAL BORE OF THE PIPE OR TUBING (STRAIGHT LENGTHS AS OPPOSED TO COILS) AND SHALL EXTEND FROM THE VALVE TO THE OUTSIDE OF THE BUILDING WITH THE END OF PIPE NOT MORE THAN 2' NOR LESS THAN 6" ABOVE THE GROUND AND POINTING DOWNWARD. NO PART OF SUCH DRAIN PIPE SHALL BE THREADED. CPC 608.5

SIZES OF COMBUSTION AIR OPENINGS FOR GAS FIRED WATER HEATERS SHALL COMPLY WITH CPC CHAPTER 506. PROVIDE TWO OPENINGS INTO ENCLOSURE EACH HAVING ONE SQUARE INCH PER 1000 BTU/HR INPUT FREELY COMMUNICATION WITH OTHER UNCONFINED INTERIOR SPACES. MINIMUM 100 SQ. IN. EACH OPENING. WATER HEATER COMBUSTION AIR OPENINGS SHALL BE SO LOCATED SO THAT ONE OPENING EXTENDS WITHIN THE UPPER 12" OF THE APPLIANCE ENCLOSURE AND ONE EXTENDS WITHIN THE LOWER 12" OF THE ENCLOSURE.

CLOTHES DRYER, IF PRESENT, SHALL BE VENTED DIRECTLY TO THE EXTERIOR OF THE BUILDING UNLESS NOTED OTHERWISE (THE DUCT LENGTH SHALL NOT EXCEED A TOTAL COMBINED VERTICAL & HORIZONTAL LENGTH OF 14' INCLUDING TWO 90 DEGREE ELBOWS. TWO FEET SHALL BE DEDUCTED FOR EACH 90 DEGREE ELBOW IN EXCESS OF TWO.

ALL WET LOCATIONS ARE TO HAVE 1/2" GREEN BOARD WALL FINISH.

THE ONE-HOUR SEPARATION BETWEEN THE R-3 & U OCCUPANCIES MAY BE PENETRATED BY DUCTS OF 0.19" STEEL (#26 GALV. SHEET GAUGE) & HAVE NO OPENINGS INTO THE GARAGE AREA.

NO GAS PIPING SHALL BE INSTALLED IN OR ON THE GROUND, UNDER ANY BUILDING OR STRUCTURE. ALL GAS PIPING SHALL BE KEPT AT LEAST SIX (6) INCHES ABOVE GRADE OR CONCRETE. THE TERM "BUILDING OR STRUCTURE" SHALL INCLUDE STRUCTURES SUCH AS PORCHES AND STEPS, WHETHER COVERED OR UNCOVERED. BREEZEWAYS
ROOF PORTE-COCHERES, ROOFED PATIOS, CARPORTS, COVERED WALKS, COVERED DRIVEWAYS, AND SIMILAR STRUCTURES OR APPURTENANCES

MANUFACTURERS CERTIFICATION OF WOOD STRUCTURAL PANELS, PARTICLE BOARD, STRUCTURAL GLUE-LAM TIMBER SHALL BE PROVIDED PROPERLY IDENTIFIED FOR THE LOCATION AND SPECIFIC JOB SITE AT TIME OF INSPECTION.

ALL EXTERIOR DOORS SHALL BE SOLID-CORE NOT LESS THAN 1 3/8" THICK WITH INTERIOR PANEL THICKNESS NOT LESS THAN 1-1/4". THICK.

FLOOR PLAN NOTES
SCALE: NTS
1/1 MASTER ACNOTES1

1. CODES: ALL WORK, MATERIAL, AND EQUIPMENT SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE APPLICABLE CODES AS INDICATED ON THE COVER SHEET OF THESE PLANS. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT THE INSTALLATION OF WORK, MATERIALS, OR EQUIPMENT NOT CONFORMING TO THESE OR OTHER APPLICABLE CODES AND ORDINANCES APPLICABLE TO THIS PROJECT.
2. ARCHITECT/ENGINEER: ARCHITECT/ENGINEER ASSUMES NO RESPONSIBILITY OF CONSTRUCTION, SUPERVISION, OR DEVIATION FROM THESE PLANS WITHOUT PRIOR WRITTEN APPROVAL.
3. SPECIFICATIONS/NOTES: INCLUDED ARE COMPLIMENTARY TO PLANS AND ARE TO BE CONSIDERED AS PART OF THE PLANS
4. COORDINATION: ALL TRADES/SUB CONTRACTORS SHALL COORDINATE THEIR WORK WITH THE WORK OF ALL OTHER TRADES AT THE START OF THE PROJECT. CONTRACTOR(S) SHALL INFORM ARCHITECT IN WRITING THAT COORDINATION HAS BEEN COMPLETED AND IF THERE ARE ANY UNUSUAL CONDITIONS OR CONFLICTS; THEY SHALL BE ENUMERATED AT THIS TIME. COORDINATION OF ALL EQUIPMENT, SIZE, VOLTAGE, ETC. SHALL BE DONE AT THIS TIME, PRIOR TO ORDERING OF EQUIPMENT.
5. WORKMANSHIP: ALL WORK SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER, ACCORDING TO THE BEST TRADE PRACTICE BY THOSE SKILLED IN THE PARTICULAR TRADE. EQUIPMENT FIXTURES, PIPES, DUCTS, AND ETC. TO GIVE A NEAT AND PLEASING APPEARANCE. ALL EQUIPMENT, FIXTURES, ETC SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. WARRANTY: ALL WORKMANSHIP, MATERIALS, AND EQUIPMENT SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNER'S BENEFICIAL USE OR OCCUPANCY WHICHEVER IS EARLIER. DAMAGE DUE TO VOLTAGE FLUCTUATION, FIRE, ACTS OF ELEMENTS, ACTS OF THE OWNER OR OTHER PARTIES, IMPROPER MAINTENANCE, OR NEGLECT ARE SPECIFICALLY EXCLUDED FROM THE GUARANTEE. ALL REPAIRS SHALL BE PERFORMED DURING NORMAL WORKING HOURS AND SHALL BE MADE PROMPTLY AFTER NOTICE OR FAILURE. IF OWNER REQUESTS THAT WORK BE PREFORMED ON OVERTIME BASIS, OWNER SHALL PAY THE DIFFERENCE BETWEEN REGULAR AN OVERTIME LABOR AT STANDARD BILLING RATES.

GENERAL NOTES
SCALE: NTS
1/1 MASTER GENOTES1

1. THE CONTRACTOR OR BUILDER IS RESPONSIBLE FOR OBTAINING AND PROVIDING ALL COMPACTION AND BEARING VALUES TO THE ARCHITECT ONSITE PRIOR TO PLACEMENT OF CONCRETE. SHOULD THE BEARING VALUES DIFFER FROM THE DESIGN VALUES, ALL WORK MUST STOP UNTIL THE STRUCTURAL SYSTEM IS RE-EVALUATED TO ACCOMMODATE THE ACTUAL VALUES OR THE CALCULATIONS AND CONSTRUCTION DOCUMENTS ARE REVISED.
2. THE CONTRACTOR OR BUILDER IS TO PROVIDE ALL GRADING PLAN CERTIFICATIONS REPORTS, ELEVATION CERTIFICATES, AND OTHER DOCUMENTATION TO THE ARCHITECT OR ENGINEER PRIOR TO STRUCTURAL OBSERVATIONS TAKING PLACE.
3. SHOULD THE PROJECT BE LIMITED IN SCOPE THE OWNER MAY SELECT TO NOT PROVIDE A SOILS ANALYSIS. IF NO SOILS ANALYSIS IS PROVIDED, THE CONTRACTOR SHALL VERIFY THE BEARING VALUES OF THE SOIL BELOW FOOTING TRENCHES MEETS OR EXCEEDS A BEARING VALUE OF 1000 PSF. THE CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF THE BEARING VALUES TO THE ARCHITECT PRIOR TO PLACEMENT OF CONCRETE.
4. THE ARCHITECT RESERVES THE RIGHT TO REQUIRE SOILS ANALYSIS DURING CONSTRUCTION PHASE OF THE PROJECT IF NOT PREVIOUSLY PROVIDED.

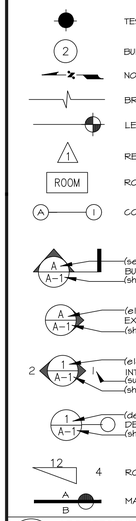
GEOLOGY AND SOILS NOTES
SCALE: NTS
1/1 MASTER GEO

1. DAMAGED OFF-SITE WORK: ALL CONCRETE, PAVING, OR OTHER OFF-SITE FACILITIES DAMAGED BY THE CONTRACTOR DURING THE COURSE OF CONSTRUCTION SHALL BE REPAIRED OR RESTORED TO ITS FORMER CONDITION AT NO COST TO THE OWNER.
2. DIMENSIONS: CONTRACTOR TO VERIFY ALL DIMENSIONS, GRADES, AND OTHER CONDITIONS AT PROJECT SITE BEFORE COMMENCING WORK. IF ANY DISCREPANCY EXISTS NOTIFY ARCHITECT IMMEDIATELY FOR APPROVAL OF CORRECTIVE MEASURE.
3. EXCAVATION/TRENCHING: CONTRACTOR TO OBTAIN CAL-OSHA PERMIT PRIOR TO BEGINNING ANY TRENCH OR EXCAVATION WORK 5'-0" OR MORE IN DEPTH.
4. RAMPS: ANY CHANGE OF ELEVATION MORE THAN 12" ALONG EXIT WAYS SHALL BE BY MEANS OF AN APPROVED RAMP.
5. SIGNS: ALL SIGN PROPOSALS SHALL BE SUBMITTED TO THE LOCAL PLANNING DEPARTMENT FOR VERIFICATION OF COMPLIANCE WITH THE ZONING ORDINANCE.
6. STREET NUMBERS: SHALL BE INSTALLED IN ACCORDANCE WITH STANDARDS PRIOR TO FINAL INSPECTION.
7. SURVEY MONUMENTS: ANY SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR RESET BY A REGISTERED/LICENSED LAND SURVEYOR (OR CIVIL ENGINEER QUALIFIED BY STATE LAW TO PRACTICE LAND SURVEYING.)

SITE NOTES
SCALE: NTS
1/1 MASTER SNOTES1

AB	ANCHOR BOLT
AC	ASPHALT CONCRETE
AFF	ABOVE FINISH FLOOR
ALUM	ALUMINUM
ALT	ALTERNATE
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BOT	BOTTOM
BR	BEDROOM
BRG	BEARING
BV	BALL VALVE
CAB	CABINET
CER	CERAMIC
CFT	CUBIC FOOT
CJ	COLD JOINT
CJT	CONTROL JOINT
CK	CAULK (ING)
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
COMP	COMPOSITION
CONC	CONCRETE
CPR	COPPER
CSMT	CASEMENT
CV	CHECK VALVE
D	DRAIN
DB	DOOR BELL
DBL	DOUBLE
DEPT	DEPARTMENT
DET	DETAIL
DF	DOUGLAS FIR
DH	DOUBLE HUNG
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION(-S)
DL	DEAD LOAD
DN	DOWN
DP	DAMPROOFING
DR	DRIVE
DS	DOWN SPOUT
DW	DISHWASHER
DWG	DRAWING
E	EAST
(E)	EXISTING
EA	EACH
EF	EACH FACE EXHAUST
EG	EXISTING GRADE
EJ	EXPANSION JOINT
ELEC	ELECTRIC (-AL)
ELEV	ELEVATOR
EMER	EMERGENCY
ENC	ENCLOSE (-URE)
ENT	ENTRANCE
EP	ELECTRICAL PANEL
ESMT	EASEMENT
EST	ESTIMATE
EXH	EXHAUST
EXP	EXPOSED, EXPANSION
EXT	EXTERIOR
EQ	EQUAL
F	FLUORSCENT
FD	FLOOR DRAIN, FOUND
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FF	FINISH FLOOR
FH	FIRE HYDRANT
FG	FINISH GRADE
FHMS	FLATHEAD MACHINE SCREW
FIN	FINISH (-ED)
FX	FIXED GLAZING
FLL	FLOW LINE
FLEX	FLEXIBLE
FN	FENCE
FND	FOUNDATION
FOC	FACE OF CONCRETE/CURB
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FP	FIREPLACE
FR	FIRE RATED
FTG	FOOTING
FUR	FURRED (ING)
GA	GAGE/GAUGE
GAL	GALLON
GB	GRAB BAR
GD	GRADE, (-ING)
GL	GLASS, GLAZING
GALV	GALVANIZED
GLB	GLUE LAMINATED BEAM
GR	GRADE
GV	GATE VALVE
GYP	GYPSUM
HB	HOSE BIBB
HC	HOLLOW CORE
HDR	HEADER
HORZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
HTG	HEATING
HVAC	HEATING, VENTILATING, AIR CONDITIONING
HW	HOT WATER
HWH	HOT WATER HEATER
IN	INCHES
INCL	INCLUDE (-D),
INFO	INFORMATION
INT	INTERIOR
JST	JOIST
KIT	KITCHEN
L	ANGLE
LAB	LABORATORY
LAD	LADDER
LAV	LAVATORY
LB	LAG BOLT
LBS	POUNDS
LDR	LEADER
LH	LEFT HAND
LIN	LINEAR
LL	LIVE LOAD
LR	LIVING ROOM
LT	LIGHT
LVR	LOUVER
MAX	MAXIMUM
MB	MACHINE BOLT
MBR	MEMBER
MC	MEDICINE CABINET,
MECH	MECHANIC (-AL)
MED	MEDIUM
MFR	MANUFACTURE (-ER)
MH	HANHOLE
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MTL	MATERIAL (S)
N	NORTH
NAT	NATURAL
NIC	NOT IN CONTRACT,
NO	NUMBER
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
OBS	OBSCURE
OC	ON CENTER (S)
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OPP	OPPOSITE
OZ	OUNCE
PAR	PARALLEL
PB	PANIC BAR
PCF	POUNDS PER CUBIC FOOT
PLF	POUNDS PER LINEAL FOOT
PK	PARKING
PL	PROPERTY LINE
PP	POWER POLE
PR	PAIR
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT
PUE	PUBLIC UTILITIES EASEMENT
PV	PAVE (-D), (-ING)
PVC	POLTYVINYL CHLORIDE
PVMT	PAVEMENT
PLWD	PLYWOOD
QT	QUARRY TILE
R	RADIUS, RISER
RA	RETURN AIR
RB	RUBBER BASE
RD	ROOF DRAIN, FOUND
RECD	RECIEVED
REF	REFERENCE
REFR	REFRIGERATOR
REG	REGISTER
REQD	REQUIRED
REV	REVISION
RFG	ROOFING
RFL	REFLECT (-ED), (-IVE),
RL	RAIL (-ING)
RHWS	ROUND HEAD WOOD SCREW
RM	ROOM
RFH	ROOF HATCH
RND	ROUND
RO	ROUGH OPENING
ROW	RIGHT-OF-WAY
RR	RAILROAD
RWC	RAINWATER COLLECTOR
S	SOUTH
SA	SUPPLY AIR
SAT	SUSPENDED ACCOUSTICAL TILE
SC	SOLID CORE
SCH	SCHEDULE
SEC	SECTION
SG	SHEET GLASS
SH	SINGLE HUNG
SHR	SHOWER
SHT	SHEET
SIM	SIMILAR
SL	SLIDER
SM	SHEET METAL
SMS	SHEET METAL SCREW
SP	SOUNDPROOF
SPEC	SPECIFICATION (-S)
SPK	SPEAKER
SQ	SQUARE
SS	SANITARY SEWER
STL	STEEL
STA	STATION
STD	STANDARD
STG	SEATING
STO	STORAGE
STRL	STRUCTURAL
SUSP	SUSPENDED
SW	SWITCH
SYM	SYMMETRY (-ICAL)
TAN	TANGENT
TC	TOP OF CURB/CONCRETE
T&G	TOUNGE AND GROOVE
TEL	TELEPHONE
TEMP	TEMPERED, TEMPERATURE
THK	THICK (-NESS)
TP	TOP OF PAVING
TRANS	TRANSFORMER
TSL	TOP OF SLAB
TV	TELEVISION
TW	TOP OF WALL
TYP	TYPICAL
U	UTILITY
UL	UNDERWRITERS LABORATORY
UR	URINAL
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VEST	VESTIBULE
VIN	VINYL
VOL	VOLUME
VRT	VENT THRU ROOF
W	WEST
W/	WITH
WC	WATER CLOSET
WD	WOOD
WG	WIRE GLASS
WH	WALL HUNG
WI	WROUGHT IRON
WIN	WINDOW
WM	WIRE MESH
W/O	WITH OUT
WP	WATERPROOFING
WT	WEIGHT
Y	YARD
℄	CENTERLINE
C	CHANNEL
d	PENNY
⊥	PERPENDICULAR
PL	PROPERTY LINE
Ø	ROUND/DIAMETER
@	AT
X	BY
"	INCHES
'	FEET

DRAWING ABBREVIATIONS
SCALE: NTS
1/1 MASTER ABBREVIA



ARCHITECTURAL SYMBOLS
SCALE: NTS
1/1 MASTER ARCHSYMB

1. CABINET ELEVATIONS: SEE INTERIOR ELEVATIONS FOR CABINET PLANS. ELEVATIONS SHOWN ARE SCHEMATIC EXCEPT FOR SPECIFIC NOTES AND DIMENSIONS SHOWN. VERIFY CABINET DIMENSIONS WITH OWNER AND ACTUAL FIELD DIMENSION PRIOR TO FABRICATION.

PLUMBING FIXTURE MAXIMUM WATER USAGE

WATER CLOSETS - 1.28 GPF
URINALS (WALL MOUNTED) - 0.125 GPF
URINALS (ALL OTHERS) - 0.5 GPF
SHOWERHEAD (SINGLE) - 1.8 GPM @ 80 PSI
SHOWERHEAD (MULTIPLE) - 1.8 GPM @ 80 PSI FOR ALL COMBINED SHOWERHEADS
LAVATORY FAUCET - 1.2 GPM @ 60 PSI MAX. 0.8 PGM @ 20 PSI MIN.
LAVATORY FAUCET (PUBLIC) - 0.5 GPM @ 60 PSI
METERING FAUCET - 0.2 GALLONS PER CYCLE
KITCHEN FAUCET - 1.8 PM @ 60 PSI

PLUMBING FIXTURES TABLE

1/1 MASTER PLFIXTURES

SCALE: NTS

GLAZING REQUIREMENTS:
THE FOLLOWING SHALL BE CONSIDERED SPECIFIC HAZARDOUS LOCATIONS FOR THE PURPOSES OF GLAZING. GLAZING IN THESE LOCATIONS MUST BE SAFETY GLAZING MEETING THE REQUIREMENTS OF CALIFORNIA BUILDING CODE

1. GLAZING IN ALL SWINGING AND SLIDING DOORS
2. GLAZING IN FIXED AND SLIDING PANELS OF SLIDING DOOR ASSEMBLIES AND PANELS IN SWINGING DOORS
3. GLAZING IN ALL STORM DOORS
4. GLAZING IN ALL UNFRAMED SWINGING DOORS
5. GLAZING IN DOORS AND ENCLOSURES FOR HOT TUBS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS, AND SHOWERS. GLAZING IN ANY PORTION OF A BUILDING WALL ENCLOSING THESE COMPARTMENTS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE A STANDING SURFACE AND DRAIN INLET.
6. GLAZING IN FIXED OR OPERABLE PANELS ADJACENT TO A DOOR WHERE THE NEAREST EXPOSED EDGE OF THE DOOR IN A CLOSED POSITION IS WITHIN 24-INCH ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION (UNLESS THERE IS AN INTERVENING WALL BETWEEN THE DOOR AND THE GLAZING OR IF THE GLAZING IS 5' OR HIGHER ABOVE THE WALKING SURFACE.)
7. GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL, OTHER THAN THAT MEET ALL OF THE FOLLOWING CONDITIONS:
A. EXPOSED AREA OF AN INDIVIDUAL PANE GREATER THAN 9 SQ. FT.
B. EXPOSED BOTTOM EDGE LESS THAN 18 INCHES ABOVE THE FLOOR
C. EXPOSED TOP EDGE GREATER THAN 36 INCHES ABOVE THE FLOOR
D. ONE OR MORE WALKING SURFACES WITHIN 36 INCHES HORIZONTALLY OF THE PLANE OF THE GLAZING
8. GLAZING IN RAILINGS REGARDLESS OF HEIGHT ABOVE A WALKING SURFACE. INCLUDED ARE STRUCTURAL BLUSTER PANELS AND NONSTRUCTURAL IN-FILL PANELS
9. GLAZING ADJACENT TO STAIRWAYS, LANDINGS, AND RAMPS WITHIN 36" HORIZONTALLY OF A WALKING SURFACE WHEN THE GLAZING IS LESS THAN 60" ABOVE THE PLANE OF THE WALKING SURFACE

GLAZING REQUIREMENTS

1/1 MASTER GLNOTES

SCALE: NTS

1. PUBLIC WALKS:
A. THE SLOPE OF RAMPS SHALL NOT EXCEED 8.33%.
B. SHALL BE AT LEAST 48" IN WIDTH WITH NO STEPS OR ABRUPT CHANGES IN LEVEL.
C. THE SLOPE SHALL NOT EXCEED 5% (1 IN 20) WITH A 5' LONG LEVEL SURFACE AREA EVERY 400'
D. SURFACE TO BE A SLIP RESISTANT FINISH, SUCH AS THAT DESCRIBED AS A MEDIUM SALTED FINISH.
E. PROVIDE A 60" X 60" LEVEL AREA AT ANY DOOR OR GATE SWINGING TOWARDS A WALK OR A 60" WIDE X 60" DEEP LEVEL AREA AT ANY DOOR OR GATE SWINGING AWAY FROM THE WALK.
F. WALKS SHALL EXTEND 24" TO THE SIDE OF THE STRIKE EDGE OF A DOOR OR GATE THAT SWINGS TOWARD THE WALK AND 18" FOR INTERIOR DOORS.
G. THE MAXIMUM CROSS WALK SLOPE SHALL NOT EXCEED ¼" PER FOOT.
2. HAZARDS:
A. PROVIDE 80" HEADROOM FROM THE WALKWAY SURFACE TO ANY OVERHANG OBSTRUCTION.
B. HEADROOM OF 80" SHALL BE MAINTAINED FOR WALKS, CORRIDORS, AISLES, ETC.
C. OBSTRUCTIONS WITHIN THE WALK PATHWAY (I.E. POLES OR FIRE HYDRANTS) SHALL PROVIDE A 36" MINIMUM CLEAR WIDTH TO THE EDGE OF THE WALK.
D. PROTRUDING OBJECTS WITH LEADING EDGES BETWEEN 27" AND 80" ABOVE THE FINISHED FLOOR SHALL NOT PROTRUDE MORE THEN 4" INTO WALKS, CORRIDORS, ETC.
E. OBJECTS WITH PROTRUDING EDGES LESS THAN 27" ABOVE THE FINISHED FLOOR MAY PROTRUDE 12" MAXIMUM.
F. FREE STANDING OBJECTS MOUNTED ON POSTS BETWEEN 27" AND 80" ABOVE THE FINISHED FLOOR MAY PROJECT A MAXIMUM OF 12".
G. ABRUPT CHANGES IN LEVEL OF 4" OR MORE ADJACENT TO STREETS OR DRIVES SHALL BE IDENTIFIED BY A 6" HIGH WARNING CURB ABOVE THE WALK SURFACE.
H. WALKS AND SIDEWALKS SHALL HAVE A CONTINUOUS COMMON SURFACE NOT INTERUPTED BY STEPS OR ABRUPT CHANGES IN LEVEL EXCEEDING ½"
I. ABRUPT CHANGES IN LEVEL ALONG ANY ACCESSIBLE ROUTE EXCEEDING ¼" SHALL COMPLY WITH THE REQUIREMENTS FOR CURB RAMPS.
J. WHEN CHANGES IN LEVEL NOT EXCEEDING ½" OCCUR THE SHALL BE BEVELED WITH A SLOPE NO GREATER THE 1:2 EXCEPT THAT LEVEL CHANGES NOT EXCEEDING ¼" MAY BE VERTICAL.
K. WALKS, SIDEWALKS, AND PEDESTRIAN WAYS SHALL BE FREE OF GRATINGS WHENEVER POSSIBLE. FOR GRATING LOCATED IN THE SURFACE OF ANY OF THESE AREAS, GRID OPENING IN GRATINGS SHALL BE LIMITED TO ½" IN ANY DIRECTION OF TRAFFIC FLOW.
3. ENTRANCES AND EXITS:
A. ALL PRIMARY ENTRANCES TO BUILDING AND FACILITIES SHALL BE MADE ACCESIBLE TO THE PHYSICALLY ANDICAPPED. PATH OF TRAVEL ACCESS MUST BE PROVIDED FROM BOTH HANDICAPPED PARKING SPACES AND THE PUBLIC SIDEWALK.
B. AT LEAST ONE ENTRANCE USEABLE BY INDIVIDUALS IN WHEELCHAIRS SHALL BE ON A LEVEL THAT WILL MAKE THE ELEVATORS ACCESIBLE.
C. ALL REQUIRED EXIT DOORS ARE TO HAVE A 32" CLEAR OPENING AT 90 DEGREES (36" DOOR).
D. AT LEAST ONE OF A PAIR OF DOORS SHALL MEET THE MINIMUM 32" CLEAR ENTRANCE WIDTH REQUIREMENTS.
E. THE THRESHOLD SHALL BE NO HIGHER THAN ½" ABOVE THE FLOOR. THE EDGE SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1 IN 2, IF THICKER THEN ½".
F. DOOR HARDWARE SHALL BE OF THE LEVER OR PUSH TYPE, MOUNTED 34" TO 44" ABOVE THE FLOOR, AND BE OPERABLE WITH A MAXIMUM EFFORT OF 5 LBS OF PRESSURE FOR EXTERIOR DOORS AND 5 LBS FOR INTERIOR DOORS.
G. THE LOWER 10" OF THE DOOR IS TO BE A SMOOTH, PLAIN SURFACE (NO RECESSES OR TRAP) EXCEPT AT AUTOMATIC AND SLIDING DOORS. AN EXTERIOR LEVEL LANDING MAY SLOPE UP TO ¼" PER FOOT IN ANY DIRECTION FOR SURFACE DRAINAGE.
4. GENERAL:
A. IN ALL TOILETS AT ALL WATER CLOSETS THE MAXIMUM FORCE REQUIRED TO ACTIVATE THE FLUSH VALVE SHALL BE LESS THEN 5 LBS (MPC81)
B. ALL FAUCET CONTROLS AND OPERATING MECHANISMS (OPERABLE WITH ONE HAND) SHALL BE OF THE TYPE NOT REQUIRING AN OPPOSING FORCE EXCEEDING 5 LBS OR TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST.
C. ALL PLUMBING FAUCETS WITH SELF-CLOSING VALVES ARE TO REMAIN OPEN FOR AT LEAST 10 SECONDS.
D. ALL ELECTRICAL 15, 20, AND 30 AMP RECEPTACLE OUTLETS SHALL BE INSTALLED NOT LESS THAN 12" ABOVE FINISHED FLOOR.
E. ALL ELECTRICAL SWITCHES SHALL BE LOCATED NOT LESS THAN 36" OR MORE THEN 48" FROM FINISH FLOOR TO THE CENTER LINE OF THE SWITCH.
F. ALL OCCUPANT USE THERMOSTATS CONTROLLING HVAC EQUIPMENT SHALL BE LOCATED NOT LESS THAN 36" OR MORE THAN 48" FROM FINISH FLOOR TO THE CENTERLINE OF SWITCH.
G. THE HIGHEST OPERABLE PART OF ALL CONTROLS, DISPENSERS,
RECEPTACLES, AND OTHER OPERABLE EQUIPMENT SHALL BE PLACED WITHIN 48" OF THE FLOOR BUT NOT LOWER THAN 15"
5. DINING, BANQUET, AND BAR FACILITIES:
A. ACCESS TO DISABLED SEATING SHALL BE PROVIDED WITH MAIN AISLES NOT LESS THAN 48" (CBC)
B. FOOD SERVICE AISLES SHALL BE A MINIMUM OF 48" CLEAR WITH A PREFERRED WIDTH OF 48" WHERE PASSAGE OF STOPPED WHEELCHAIRS BY PEDESTRIANS IS DESIRED. TRAY SLIDES SHALL BE MOUNTED NO HIGHER THAN 34" ABOVE THE FLOOR IF SERVICE SHELVES ARE PROVIDED. A REASONABLE PORTION MUST BE WITHIN 28" TO 34" ABOVE FINISHED FLOOR.
C. TABLEWARE, DISHWARE, CONDIMENTS AND FOOD AND BEVERAGE DISPLAY SHELVES AND DISPENSING DEVICES, WHEN LOCATED ON TABLES OR COUNTERTOPS SHALL BE PLACED 28" TO 34" ABOVE THE ADJACENT FLOOR. THESE ITEMS, WHEN LOCATED ON SHELVES, SHALL BE PLACED NO HIGHER THEN 54" ABOVE THE ADJACENT FLOOR WHERE NOT REQUIRED TO REACH OVER AN OBSTRUCTION AND NO HIGHER THEN 46" ABOVE THE ADJACENT FLOOR WHERE REQUIRED TO REACH OVER AND OBSTRUCTION. AN OBSTRUCTION WHICH A DISABLED PERSON IS REQUIRED TO REACH OVER SHALL BE NO HIGHER THEN 36" ABOVE THE ADJACENT FLOOR WITH A HORIZONTAL REACH OVER THE OBSTRUCTION OF NO MORE THEN 24".
D. ACCESS TO FOOD PREPERATION AREAS SHALL COMPLY WITH THE PROVISIONS FOR ENTRANCE DOORS AND DOORWAYS.
6. FIXED OR BUILT-IN SEATING, TABLES, AND COUNTERS
A. WHERE FIXED OR BUILT-IN SEATING, TABLES, OR COUNTERS ARE PROVIDED FOR THE PUBLIC AND IN GENERAL EMPLOEE AREAS 5% BUT NEVER LESS THEN 1 MUST BE ACCESSIBLE. AS REQUIRED BY 2019 CBC 11B-226, 11B-305, 11B-306 AND 11B-902
B. IF SEATING SPACES FOR PEOPLE IN WHEELCHAIRS ARE PROVIDED FOR AT FIXED TABLES OR COUNTERS CLEAR FLOOR SPACE COMPLYING WITH 2019 CBC 11B-226, 11B-305, 11B-306 AND 11B-902 SHALL BE PROVIDED. SUCH CLEAR FLOOR SPACE SHALL NOT OVERLAP KNEE SPACE OF LESS THAN 19"
C. IF SEATING FOR PEOPLE IN WHEELCHAIRS IS PROVIDED AT FIXED TABLES OR COUNTERS KNEE SPACES AT LEAST 27" HIGH, 30" WIDE, AND 19" DEEP SHALL BE PROVIDED.
D. THE TOPS OF TABLES AND COUNTERS SHALL BE 28" TO 34" FROM THE FLOOR OR GROUND.

ACCESSIBILITY NOTES

1/1 MASTER ACNOTES

SCALE: NTS

SECURITY REQUIREMENTS:
1. EXTERIOR DOORS: DOORS, WINDOWS AND THEIR HARDWARE SHALL CONFORM TO THE SECURITY PROVISIONS OF THE CALIFORNIA BUILDING CODE. IT IS THE RESPONSIBILITY OF THE BUILDER TO UNDERSTAND AND COMPLY WITH THESE CODES.

A. SINGLE SWINGING DOORS, ACTIVE LEAF OF A PAIR OF DOORS, AND BOTTOM LEAF OF DUTCH DOORS SHALL BE EQUIPPED WITH A DEADBOLT AND A LATCH, IF A KEY-LOCKING FEATURE IS INCORPORATED IN THE LATCHING MECHANISM, A DEAD LATCH SHALL BE USED. DEADBOLTS SHALL CONTAIN HARDENED INSERTS OR EQUIVALENT, SO AS TO REPEL CUTTING TOOL ATTACK. THE DEADBOLT LOCKS SHALL BE KEY OPERATED FROM THE EXTERIOR SIDE OF THE DOOR BY A DEVICE NOT REQUIRING A KEY, TOOL, OR EXCESSIVE FORCE.

B. INACTIVE LEAF OF A PAIR OF DOORS OR UPPER LEAF OF DUTCH DOOR SHALL HAVE DEADBOLT AS PER PARAGRAPH "A" NOT KEY OPERATED, OR HARDENED DEADBOLT TOP AND BOTTOM WITH ½ INCH EMBEDMENT.

C. SWINGING WOOD DOORS SHALL BE SOLID CORE NOT LESS THAN 1 3/8" THICK.

D. PANELS OF WOOD DOORS SHALL BE FABRICATED OF LUMBER NOT LESS THAN 1 3/8 INCHES THICK, PROVIDED SHAPED PORTION OF PANELS ARE NOT LESS THAN 1/4" THICK. INDIVIDUAL PANELS SHALL NOT EXCEED 300 SQ. INCHES IN AREA.

E. HOLLOW CORE DOORS OR DOORS LESS THAN 1 3/8 INCHES THICK, EITHER OF WHICH SHALL BE COVERED ON THE INSIDE FACE WITH 16-GAUGE SHEET METAL ATTACHED WITH SCREWS AT 6" MAXIMUM CENTERS AROUND THE PERIMETER.

F. DOOR HINGE PINS ACCESSIBLE FROM THE OUTSIDE SHALL BE NON-REMOVABLE

G. DOOR STOPS OF WOOD JAMBS OF IN-SWINGING DOORS SHALL BE ONE PIECE CONSTRUCTION OR JOINED BY A RABBET (B.C. 6714)

H. WINDOWS AND DOOR LIGHTS WITHIN 40" OF THE LOCKING DEVICE THE DOOR SHALL BE FULLY TEMPERED/APPROVED BURGLARY RESISTANT/PROTECTED BY BARS, SCREENS, OR GRILLS.

I. OVERHEAD AND SLIDING GARAGE DOORS SHALL BE SECURED WITH A HARDENED STEEL, OR EQUIVALENT WHEN NOT OTHERWISE LOCKED BY ELECTRIC POWER OPERATORS AND LOCKS SHALL BE ON BOTH JAMBS FOR DOORS EXCEEDING 9 FEET IN WIDTH

J. SLIDING GLASS DOORS AND SLIDING GLASS WINDOWS SHALL BE CAPABLE OF WITHSTANDING THE TESTS SET FORTH IN SECTION 6706 AND 6707 OF THE LOS ANGELES COUNTY BUILDING CODE AND SHALL BEAR FORCED ENTRY RESISTANT LABELS

CONSTRUCTION REQUIREMENTS:
2. NOTCHING OF EXTERIOR AND BEARING / NONBEARING WALLS SHALL NOT EXCEED 25% / 40% RESPECTIVELY. BORED HOLES IN BEARING / NONBEARING WALLS NOT EXCEED 40% / 60% RESPECTIVELY. (C.B.C 2308.5.4)
4. PROVIDE FIRE BLOCKING IN CONCEALED SPACED OF STUD WALL AND PARTITIONS, INCLUDING FURRED SPACES AT THE CEILING AND FLOOR LEVEL AND AT 10 FEET INTERVALS, BOTH VERTICAL AND HORIZONTAL. (C.B.C. 718.2.2)
5. PIPES, DUCTS, AND OTHER NONSTRUCTURAL CONSTRUCTION SHALL NOT INTERFERE WITH ACCESSIBILITY TO OR WITHIN UNDERFLOOR AREA. (C.B.C. 1209.1.1 (SPC81)
6. NOTE ON THE PLANS: ROOF DIAPHRASM NAILING TO BE INSPECTED BEFORE COVERING. FACE GRAIN OF PLYWOOD SHALL BE PERPENDICULAR TO SUPPORTS.
7. FLOORS SHALL BE NAILED, HAVE TONGUE AND GROVE OR BLOCKED PANEL EDGES. PLYWOOD SPANS SHALL CONFORM WITH TABLE 23-1-5-1 AND TABLE 23-1-5-2 OF THE BUILDING CODE.

MECHANICAL/PLUMBING/ELECTRICAL CODE REQUIREMENTS:
8. THE FOLLOWING ARE REQUIRED FOR THE FORCED AIR FURNACE IN A COMPARTMENT:
A. COMPARTMENT DIMENSIONS SHALL HAVE 3" MINIMUM CLEARANCE IN SIDES AND BACK, 6" MINIMUM CLEAR FROM FRONT OF EQUIPMENT TO COMBUSTION AIR INTAKE. THE MINIMUM WIDTH PERMITTED IS 12" GREATER THAN THE EQUIPMENT.
B. AREA OF COMBUSTION AIR OPENINGS OF 1 SQ. INCH PER 1,000 BTU (100 SQ. IN. MIN.) IS REQUIRED INTO COMPARTMENT. HALF OF AREA WITHIN 12 INCHES OF CEILING AND HALF WITHIN 12 INCHES OF FLOOR. (CMC 701.5)
C. COMBUSTION AIR FROM OUTSIDE TO COMPARTMENT WITH 1/4" SCREEN MIN. AT OUTSIDE OPENING. (CMC 701.0.1)
D. SEPARATE DUCTS FOR UPPER AND LOWER COMBUSTION AIR SUPPLY OPENINGS. (CMC 701.11 (4))
E. HORIZONTAL UPPER COMBUSTION AIR DUCTS SHALL NOT SLOPE DOWNWARD TOWARD THE SOURCE OF COMBUSTION AIR (CMC 701.11 (1))
9. THE FOLLOWING ARE REQUIRED FOR FURNACE OR COMFORT COOLING EQUIPMENT IN AN ATTIC SPACE:
A. SCUTTLE 22" X 30" OR THE SIZE OF THE LARGEST PIECE OF EQUIPMENT AND LOCATED NOT OVER 20 FEET FROM EQUIPMENT IS REQUIRED. (C.M.C. SCS 4.108)
B. UNOBSTRUCTED PASSAGEWAY 24 INCHES WIDE OF SOLID CONTINUOUS FLOORING FROM SCUTTLE TO EQUIPMENT AND ITS CONTROLS.
C. UNOBSTRUCTED WORK SPACE OF 30 INCH DEPTH IN FRONT OF EQUIPMENT. (C.M.C. 103)
D. LIGHT OVER EQUIPMENT WITH SWITCH AT SCUTTLE. (M.C. 108)
E. VENTS THROUGH ROOF: A MIN. OF 5 FEET ABOVE THE HIGHEST VENT COLLAR WHICH IT SERVES. (M.C. 906-B)
F. FURNACE INSTALLATION SHALL MEET ALL LISTED CLEARANCE. F.A.U. IS NOT ALLOWED IN ATTICS OF TRUSSED ROOF UNLESS REQUIRED CLEARANCES ARE PROVIDED. NO LINE CONTACT IS PERMITTED.
12. THE BUILDING SHALL HAVE WATER CLOSETS (TOILETS) WHICH USE NO MORE THAN 1.28 GALLONS PER FLUSH. (M.C. 413)
13. WHERE NM CABLE (ROMEX) IS RUN ACROSS THE TOP OF CEILING JOISTS AND/OR WHERE THE ATTIC IS NOT ACCESSIBLE BY PERMANENT STAIRS OR LADDERS, PROTECTION WITHIN 6 FEET OF THE NEAREST EDGE OF THE SCUTTLE HOLE OR ATTIC ENTRANCE SHALL BE PROVIDED.

PLAN GENERAL NOTES

1/1 MASTER ACNOTES1

SCALE: NTS

1. PURPOSE: SEC 6701. THE PURPOSE OF THIS CHAPTER IS TO SET FORTH MINIMUM STANDARDS OF CONSTRUCTION FOR RESISTANCE TO UNLAWFUL ENTRY.
2. SCOPE: SEC 6702. THE PROVISIONS OF THE CHAPTER SHALL APPLY TO ENCLOSED GROUP B,B,R, AND S OCCUPANCIES AND ENCLOSED PRIVATE GARAGES.
3. LIMITATIONS: SEC 6703. NO PROVISIONS OF THIS CHAPTER SHALL REQUIRE OR TO BE CONSTRUED TO REQUIRE DEVICES ON EXIT DOORS OR ON SLEEPING ROOM EMERGENCY EXITS CONTRARY TO THE REQUIREMENTS SPECIFIED IN CHAPTER 33 AND SECTION 1204.
4. ALTERNATE SECURITY PROVISIONS: SEC. 6704. THE PROVISIONS OF THIS CHAPTER ARE NOT INTENDED TO PREVENT THE USE OF AN DEVICE OR METHOD OF CONSTRUCTION NOT SPECIFICALLY PRESCRIBED BY THIS CODE WHEN SUCH ALTERNATE PROVIDES EQUIVALENT SECURITY BASED UPON A RECOMMENDATION OF THE COUNTY SHERIFF.
5. DEFINITIONS: SEC. 6075. FOR THE PURPOSE OF THIS CHAPTER CERTAIN TERMS ARE DEFINED AS FOLLOWS: CYLINDER GUARD IS A PROTECTIVE METAL DEVICE OF HARDENED STEEL INSERT THAT COVERS OR SURROUNDS THE EXPOSED PORTION OF THE LOCK CYLINDER FOR THE PURPOSE OF PROTECTING THE CYLINDER FROM WRENCHING, PRYING, CUTTING, DRIVING THROUGH, OR PULLING OUT BY ATTACK TOOLS. DEADLOCKING LATCH IS A LATCH IN WHICH THE LATCH BOLT IS POSITIVELY HELD IN THE PROJECTED POSITION BY A GUARD BOLT, PLUNGER OR AUXILIARY MECHANISM. DEAD BOLT IS A BOLT WHICH IS OPERATED BY A KEY CYLINDER, THUMB TURN OR LEVER, AND IS POSITIVELY HELD FAST WHEN IN THE PROJECTED POSITION. LATCH IS A DEVICE FOR AUTOMATICALLY RETAINING THE DOOR IN A CLOSED POSITION UPON IT'S CLOSING.
6. DOORS - GENERAL: SEC. 6708. A DOOR FORMING A PART OF THE ENCLOSURE OF A DWELLING UNIT OR OF AN AREA OCCUPIED BY ONE TENANT OF A BUILDING SHALL BE CONSTRUCTED INSTALLED AND SECURED AS SET FORTH IN SECTIONS 6709, 6711, AND 6712. WHEN SUCH DOOR IS DIRECTLY REACHABLE OR CAPABLE OF BEING REACHED FROM A STREET, HIGHWAY, YARD, COURT, PASSAGEWAY, CORRIDOR, BALCONY, PATIO, BREEZEWAY, PRIVATE GARAGE, PORTION OF THE BUILDING WHICH IS AVAILABLE FOR USE BY THE PUBLIC OR OTHER TENANTS, OR SIMILAR AREA. A DOOR ENCLOSING A PRIVATE GARAGE WITH AN INTERIOR OPENING LEADING DIRECTLY TO A DWELLING UNIT SHALL ALSO COMPLY WITH SAID SECTIONS, 6709, 6711, AND 6712.
7. DOORS - SWINGING DOORS: HOLLOW-CORE OR DOORS LESS THAN 1 3/8 INCHES IN THICKNESS EITHER OF WHICH ARE COVERED ON THE INSIDE FACE WITH 16 GAUGE SHEET METAL ATTACHED WITH SCREWS AT 6 INCHES MAXIMUM CENTERS AROUND THE PERIMETER.
A. LIGHTS IN ALL DOORS SHALL BE AS SET FORTH IN SECTIONS 6714 AND 6715.
B. A SINGLE SWINGING DOOR, THE ACTIVE LEAF OF A PAIR OF DOORS, AND THE BOTTOM LEAF OF DUTCH DOORS SHALL BE EQUIPPED WITH A DEAD BOLT AND A LATCH. IF A KEY-LOCKING FEATURE IS INCORPORATED IN THE LATCHING MECHANISM, A DEAD LATCH SHALL BE USED. THE DEAD BOLT AND LATCH MAY BE ACTIVATED BY ONE LOCK OR BY INDIVIDUAL LOCKS. DEAD BOLTS SHALL CONTAIN HARDENED INSERTS, OR EQUIVALENT, SO AS TO REPEL CUTTING TOOL ATTACK. THE DEAD BOLT LOCK OR LOCKS SHALL BE KEY OPERATED FROM THE EXTERIOR SIDE OF THE DOOR OR DISENGAGED OR DISENGAGED FROM THE INTERIOR SIDE OF THE DOOR BY A DEVICE NOT REQUIRING A KEY TOOL OR EXCESSIVE FORCE.
EXCEPTIONS
1. A SWINGING DOOR OF WIDTH GREATER THEN 5' MAY BE SECURED AS SET FORTH IN SECTION 6711.
2. A STRAIGHT DEAD BOLT SHALL HAVE A MINIMUM THROW OF ONE INCH AND THE EMBEDMENT SHALL NOT BE LESS THAT 5/8 INCH INTO THE HOLDING DEVICE RECEIVING THE PROJECTED BOLT. A HOOK SHAPE OR EXPANDING LUG DEAD BOLT SHALL HAVE A MINIMUM THROW OF 3/4 INCHES. ALL DEAD BOLTS OR LOCKS WHICH AUTOMATICALLY ACTIVATE. TWO OR MORE DEAD BOLTS SHALL EMBED AT LEAST 1/2 INCH, BUT NEED NOT EXCEED 3/4 INCH, INTO THE HOLDING DEVICES RECEIVING THE PROJECTED BOLTS.
C. THE INACTIVE LEAF OF A PAIR OF DOORS AND THE UPPER LEAF OF DUTCH DOORS SHALL BE EQUIPPED WITH A DEAD BOLT OR DEAD BOLTS AS SET FORTH IN SUBSECTION (B).
EXCEPTIONS:
1. THE BOLT OR BOLTS NEED NOT BE KEY OPERATED, BUT SHALL NOT BE OTHERWISE ACTIVATED FROM THE EXTERIOR SIDE OF THE DOOR.
2. THE BOLT OR BOLTS MAY BE ENGAGED OR DISENGAGED AUTOMATICALLY WITH THE DEAD BOLT OR BY ANOTHER DEVICE ON THE ACTIVE LEAF OR LOWER LEAF.
3. MANUALLY OPERATED HARDENED BOLTS AT THE TOP AND BOTTOM OF LEAF AND WHICH EMBED A MINIMUM OF 1/2 INCH INTO THE DEVICE RECEIVING THE PROJECTED BOLT MAY BE USED WHEN NOT PROHIBITED BY CHAPTER 33 OR OTHER LAWS AND REGULATIONS.
8. LIGHTS - LOCKING DEVICES: SEC 6715 (A) LOCKING DEVICES INSTALLED ON WINDOWS PROVIDING THE EMERGENCY EGRESS REQUIRED BY SECTIONS 1304 AND 1404 SHALL BE RELEASABLE FROM THE INSIDE WITHOUT USE OF A KEY, TOOL, OR EXCESSIVE FORCE.
9. OTHER OPENINGS - GENERAL: SECTION 6716. OPENINGS, OTHER THAN DOORS OR LIGHTS, WHICH FORM A PART OF THE ENCLOSURE OR PORTION THEREOF, HOUSING A SINGLE OCCUPANT AND THE BOTTOM OF WHICH IS NOT MORE THAN 16 FEET ABOVE THE GRADE OF A STREET, HIGHWAY, YARD, COURT, PASSAGEWAY, CORRIDOR, BALCONY, PATIO, BREEZEWAY, OR SIMILAR AREA, OR FROM A PRIVATE GARAGE, OR FROM A PORTION OF THE BUILDING WHICH IS OCCUPIED, USED OR AVAILABLE FOR THE USE BY THE PUBLIC OR OTHER TENANTS, OR AN OPENING ENCLOSING A PRIVATE GARAGE ATTACHED TO A DWELLING UNIT WHICH OPENINGS THEREIN SHALL BE CONSTRUCTED, INSTALLED AND SECURED AS SET FORTH IN SECTION 6717.

SECURITY PROVISIONS NOTES

1/1 MASTER ACNOTES1

SCALE: NTS

2. DOORS IN GROUP A HAVING AN OCCUPANCY OF 300 OR LESS, GROUP B, F, M, AND S, AND IN PLACES OF RELIGIOUS WORSHIP ARE PERMITTED TO BE EQUIPPED WITH KEY-OPERATED LOCKING DEVICES FROM THE EGRESS SIDE PROVIDED THAT THE LOCKING DEVICE IS READILY DISTINGUISHABLE AS LOCKED AND A READILY VISIBLE DURABLE SIGN IS POSTED ON THE EGRESS SIDE ON OR ADJACENT TO THE DOOR STATING: "THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED." THE SIGN SHALL BE IN LETTERS 1 INCH HIGH ON A CONTRASTING BACKGROUND. (1010.1.9.4)
4. MANUALLY OPERATED EGRESS- OR SURFACE- MOUNTED FLUSH BOLTS AND SURFACE BOLTS ARE PROHIBITED. WHERE EXIT DOORS ARE USED IN PAIRS AND APPROVED AUTOMATIC FLUSH BOLTS ARE USED, THE DOOR LEAF HAVING THE AUTOMATIC FLUSH BOLTS SHALL HAVE NO DOORKNOB OR SURFACE MOUNTED HARDWARE. THE UNLATCHING OF ANY LEAF SHALL NOT REQUIRE MORE THAN ONE OPERATION. (1010.1.4.5)
EXCEPTIONS: GROUP R, DIVISION 3 OCCUPANCIES. WHERE A PAIR OF DOORS SERVING A ROOM NOT NORMALLY OCCUPIED IS NEEDED FOR THE MOVEMENT OF EQUIPMENT, MANUALLY OPERATED EDGE- OR SURFACE- MOUNTED BOLTS MAY BE USED AND A DOOR CLOSER NEED NOT BE PROVIDED ON THE INACTIVE LEAF. SLIDING GLASS DOORS SHALL BE EQUIPPED WITH LOCKING DEVICES AND HAVE A FORCED-ENTRY RESISTANCE LABEL PER SECTION 6706.5. SLIDING GLASS DOORS USED FOR EMERGENCY EXITING REQUIRED BY SECTION 310.4 OR EXIT REQUIRED BY SECTION 1003 SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, TOOL, OR EXCESSIVE FORCE. (6710)
5. METAL OR WOODEN OVERHEAD AND SLIDING DOORS SHALL BE SECURED WITH A DEADBOLT LOCK, PADLOCK WITH A HARDENED STEEL SHACKLE, OR EQUIVALENT WHEN NOT OTHERWISE LOCKED BY ELECTRIC POWER OPERATION. WHEN DOOR WIDTH EXCEEDS 4 FEET (2143 mm), BOTH JAMBS SHALL BE SECURED BY LOCKING DEVICE OR RESTRAINED BY A GUIDE/RETAINER. (6711)
6. METAL ACCORDION GRATE OR GRILLE-TYPE DOORS SHALL BE EQUIPPED WITH METAL GUIDES AT TOP AND BOTTOM, AND A CYLINDER LOCK OR PADLOCK AND HARDENED STEEL SHACKLE SHALL BE PROVIDED. (6712)
7. WINDOWS (LITES) WITHIN 40 INCHES (1016 mm) OF A REQUIRED LOCKING DEVICE ON A DOOR WHEN IN THE CLOSED AND LOCKED POSITION AND OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, SHALL BE FULLY TEMPERED GLASS, LAMINATED GLASS OF AT LEAST ¼INCH (6.4 mm) THICK, APPROVED BURGLARY-RESISTANT MATERIAL, OR GUARDED BY METAL BARS, SCREENS, OR GRILLES IN AN APPROVED MANNER. (6714)
8. LOCKING DEVICES INSTALLED ON WINDOWS PROVIDING THE EMERGENCY EGRESS REQUIRED BY SECTION 310.4 SHALL BE RELEASABLE FROM THE INSIDE WITHOUT USE OF A KEY, TOOL OR EXCESSIVE FORCE. (6715.1)
9. SLIDING GLASS WINDOWS SHALL BE PROVIDED WITH LOCKING DEVICES THAT, WHEN SUBJECT TO THE TESTS SPECIFIED IN SECTION 6707, REMAIN INTACT AND ENGAGED. MOVABLE PANELS SHALL NOT BE RENDERED EASILY OPERABLE OR REMOVABLE FROM THE FRAME DURING OR AFTER THE TESTS. (6715.2)
10. OUTSIDE PIN-TYPE HINGES SHALL BE PROVIDED WITH NONREMOVABLE PINS OR A MEANS BY WHICH THE DOOR CANNOT BE OPENED THROUGH REMOVAL OF HINGE PINS WHILE THE DOOR IS IN THE CLOSED POSITION. (6717.3)

ADDITIONAL SECURITY NOTES

1/1 MASTER SEC2

SCALE: NTS

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LICENSED ARCHITECT
MARILEE D. MCLERNON
C-22007
02-21
RENEWAL DATE
STATE OF CALIFORNIA

MCLERNON ARCHITECTURE GROUP, INC.

ISSUE DATES

No.	Date	Description

SHEET TITLE
GENERAL NOTES

Project No.: –
Date: –
Drawn: –

SHEET NO.
A-2.1

Section 5.408 Construction Waste Reduction, Disposal and Recycling

5.408.1 Construction Waste Management

Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent.

5.408.1.1 Construction Waste Management Plan

Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that

Identifies the construction and demolition waste materials to be diverted from disposal by efficient usage, recycling, reuse on the project or salvage for future use or sale.
Determines if construction and demolition waste materials will be sorted on-site (source-separated) or bulk mixed (single stream).
Identifies diversion facilities where construction and demolition waste material collected will be taken.
Specifies that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

5.408.1.2 Waste Management Company

Utilize a waste management company that can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with this section.

Note: The owner or contractor shall make the determination if the construction and demolition waste material will be diverted by a waste management company.

Exceptions to Sections 5.408.1.1 and 5.408.1.2:

Excavated soil and land-clearing debris.
Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.
Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets.

5.408.1.3 Waste Stream Reduction Alternative

The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 65 percent minimum requirement as approved by the enforcing agency.

5.408.1.4 Documentation

Documentation shall be provided to the enforcing agency which demonstrates compliance with Sections 5.408.1.1 through 5.408.1.3. The waste management plan shall be updated as necessary and shall be accessible during construction for examination by the enforcing agency.

Notes:

Sample forms are provided elsewhere in these plans
Mixed construction and demolition debris (C&D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).

5.408.2 Universal Waste. [A]

Additions and alterations to a building or tenant space that meet the scoping provisions in Section 301.3 for nonresidential additions and alterations, shall require verification that Universal Waste items such as fluorescent lamps and ballast and mercury containing thermostats as well as other California prohibited Universal Waste materials are disposed of properly and are diverted from landfills. A list of prohibited Universal Waste materials shall be included in the construction documents.

CONSTRUCTION WASTE MANAGEMENT
SCALE: NTS
1/1 MASTER GLNOTES

5.303.3 Water Conserving Plumbing Fixtures and Fittings

Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:

5.303.3.1 Water Closets

The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-Type Toilets.

Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.

5.303.3.2 Urinals

5.303.3.2.1 Wall-Mounted Urinals

The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush.

5.303.3.2.2 Floor-Mounted Urinals

The effective flush volume of floor-mounted or other urinals shall not exceed 0.5 gallons per flush.

5.303.3.3 Showerheads

5.303.3.3.1 Single Showerhead

Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

5.303.3.3.2 Multiple Showerheads Serving One Shower

When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.

Note: A hand-held shower shall be considered a showerhead.

5.303.3.4 Faucets and Fountains

5.303.3.4.1 Nonresidential Lavatory Faucets

Lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi.

5.303.3.4.2 Kitchen Faucets

Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.

5.303.3.4.3 Wash Fountains

Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute/20 [rim space (inches) at 60 psi].

5.303.3.4.4 Metering Faucets

Metering faucets shall not deliver more than 0.20 gallons per cycle.

5.303.5 Areas of Addition or Alteration

For those occupancies within the authority of the California Building Standards Commission as specified in Section 103, the provisions of Sections 5.303.3 and 5.303.4 shall apply to new fixtures in additions or areas of alteration to the building.

5.303.6 Standards for Plumbing Fixtures and Fittings

Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1701.1 of the California Plumbing Code and in Chapter 6 of this code.

WATER CONSERVATION
SCALE: NTS
1/1 MASTER GLNOTES

5.106.5.3 Electric Vehicle (EV) Charging [N]

Construction shall comply with Section 5.106.5.3.1 or Section 5.106.5.3.2 to facilitate future installation of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the California Building Code, the California Electrical Code and as follows:

5.106.5.3.1 Single Charging Space Requirements [N]

When only a single charging space is required per Table 5.106.5.3.3, a raceway is required to be installed at the time of construction and shall be installed in accordance with the California Electrical Code. Construction plans and specifications shall include, but are not limited to, the following:

The type and location of the EVSE.
A listed raceway capable of accommodating a 208/240-volt dedicated branch circuit.
The raceway shall not be less than trade size 1."
The raceway shall originate at a service panel or a subpanel serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into a listed suitable cabinet, box, enclosure or equivalent.
The service panel or subpanel shall have sufficient capacity to accommodate a minimum 40-ampere dedicated branch circuit for the future installation of the EVSE.

5.106.5.3.2 Multiple Charging Space Requirements [N]

When multiple charging spaces are required per Table 5.106.5.3.3 raceway(s) is/are required to be installed at the time of construction and shall be installed in accordance with the California Electrical Code Construction plans and specifications shall include, but are not limited to, the following:

The type and location of the EVSE.
The raceway(s) shall originate at a service panel or a subpanel(s) serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into listed suitable cabinet(s), box(es), enclosure(s) or equivalent.
Plan design shall be based upon 40-ampere minimum branch circuits.
Electrical calculations shall substantiate the design of the electrical system, to include the rating of equipment and any on-site distribution transformers and have sufficient capacity to simultaneously charge all required EVs at its full rated amperage.
The service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE.

5.106.5.3.3 EV Charging Space Calculation [N]

Table 5.106.5.3.3 shall be used to determine if single or multiple charging space requirements apply for the future installation of EVSE.
Exceptions: On a case-by-case basis where the local enforcing agency has determined EV charging and infrastructure is not feasible based upon one or more of the following conditions:

Where there is insufficient electrical supply.
Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.

TABLE 5.106.5.3.3 TOTAL NUMBER OF ACTUAL PARKING

SPACES	NUMBER OF REQUIRED EV CHARGING SPACES
0-9	0
10-25	2
26-50	4
51-75	7
76-100	9
101-150	13
151-200	18
201 and over	10 percent of total1

Calculation for spaces shall be rounded up to the nearest whole number.

5.106.5.3.4 [N] Identification

The service panel or subpanel(s) circuit directory shall identify the reserved overcurrent protective device space(s) for future EV charging as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE."

5.106.5.3.5 [N] Future Charging Spaces

Future charging spaces qualify as designated parking as described in Section 5.106.5.2 Designated parking for clean air vehicles.
Note: Future electric vehicle charging spaces shall count toward the total parking spaces required by the local enforcing agencies.

ELECTRIC VEHICLE CHARGING
SCALE: NTS
1/1 MASTER GLNOTES

5.106.4 Bicycle Parking

For buildings within the authority of California Building Standards Commission as specified in Section 103, comply with Section 5.106.4.1. For buildings within the authority of the Division of the State Architect pursuant to Section 105, comply with Section 5.106.4.2.

5.106.4.1 Bicycle Parking

[BSC-CG] Comply with Sections 5.106.4.1.1 and 5.106.4.1.2; or meet the applicable local ordinance, whichever is stricter.

5.106.4.1.1 Short-Term Bicycle Parking

If the new project or an addition or alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack.

Exception: Additions or alterations which add nine or less visitor vehicular parking spaces.

5.106.4.1.2 Long-Term Bicycle Parking

For new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility.

5.106.4.1.3

For additions or alterations that add 10 or more tenant-occupant vehicular parking spaces, provide secure bicycle parking for 5 percent of the tenant vehicular parking spaces being added, with a minimum of one bicycle parking facility.

5.106.4.1.4

For new shell buildings in phased projects provide secure bicycle parking for 5 percent of the anticipated tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility.

5.106.4.1.5

Acceptable bicycle parking facility for Sections 5.106.4.1.2, 5.106.4.1.3, and 5.106.4.1.4 shall be convenient from the street and shall meet one of the following:

Covered, lockable enclosures with permanently anchored racks for bicycles;
Lockable bicycle rooms with permanently anchored racks; or
Lockable, permanently anchored bicycle lockers.

BICYCLE PARKING
SCALE: NTS
1/1 MASTER GLNOTES

5.106.5.2 Designated Parking for Clean Air Vehicles

In new projects or additions or alterations that add 10 or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as follows:

TABLE 5.106.5.2
TOTAL NUMBER OF PARKING SPACES = NUMBER OF REQUIRED SPACES

0-9 = 0

10-25 = 3

26-50 = 6

51-75 = 9

76-100 = 12

101-150 = 18

151-200 = 21

201 and over At least 12 percent of total1

Calculation for spaces shall be rounded up to the nearest whole number.

Note: Designated parking for clean air vehicles shall count toward the total parking spaces required by the local enforcing agencies.

5.106.1 Stormwater Pollution Prevention for Projects That Disturb Less Than One Acre of Land

Newly constructed projects and additions which disturb less than one acre of land and are not part of a larger common plan of development or sale shall prevent the pollution of stormwater runoff from the construction activities through one or more of the following measures:

5.106.1.1 Local Ordinance

Comply with a lawfully enacted stormwater management and/or erosion control ordinance.

5.106.1.2 Best Management Practices (BMP's)

Prevent the loss of soil through wind or water erosion by implementing an effective combination of erosion and sediment control and good housekeeping BMP's.

Soil loss BMP's that should be considered for implementation as appropriate for each project include, but are not limited to, the following:
Scheduling construction activity during dry weather, when possible.
Preservation of natural features, vegetation, soil, and buffers around surface waters.
Drainage swales or lined ditches to control stormwater flow.
Mulching or hydroseeding to stabilize disturbed soils.
Erosion control to protect slopes.
Protection of storm drain inlets (gravel bags or catch basin inserts).
Perimeter sediment control (perimeter silt fence, fiber rolls).
Sediment trap or sediment basin to retain sediment on site.
Stabilized construction exits.
Wind erosion control.
Other soil loss BMP's acceptable to the enforcing agency.

Good housekeeping BMP's to manage construction equipment, materials, non-stormwater discharges, and wastes that should be considered for implementation as appropriate for each project include, but are not limited to, the following:
Dewatering activities.
Material handling and waste management.
Building materials stockpile management.
Management of washout areas (concrete, paints, stucco, etc.).
Control of vehicle/equipment fueling to contractor's staging area.
Vehicle and equipment cleaning performed off site.
Spill prevention and control.
Other housekeeping BMP's acceptable to the enforcing agency.

STORMWATER POLLUTION PREVENTION
SCALE: NTS
1/1 MASTER GLNOTES

5.508.2.3 Refrigerated Service Cases

Refrigerated service cases holding food products containing vinegar and salt shall have evaporator coils of corrosion-resistant material, such as stainless steel; or be coated to prevent corrosion from these substances.

5.508.2.3.1 Coil Coating

Consideration shall be given to the heat transfer efficiency of coil coating to maximize energy efficiency.

REFRIGERATED SERVICE CASES
SCALE: NTS
1/1 MASTER GLNOTES

5.106.5.2.1 Parking Stall Marking

Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle:

CLEAN AIR/
VANPOOL/EV

Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces.

CLEAN AIR PARKING SPACES
SCALE: NTS
1/1 MASTER GLNOTES

"Designing Solutions"
McLernon Architecture Group Inc
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LICENSED ARCHITECT
MARILEE MCLERNON
C-22007
02-21
RENEWAL DATE
STATE OF CALIFORNIA

MCLERNON ARCHITECTURE GROUP, INC.

ISSUE DATES

No.	Date	Description

SHEET TITLE
GENERAL GREEN BUILDING NOTES

Project No.: –
Date: –
Drawn: –

SHEET NO.
A-2.2

Construction Waste Management (CWM) Worksheet

Note: This sample form may be used to assist in documenting compliance with the waste management plan.

Project Name: _____

Job Number: _____

Project Manager: _____

Waste Hauling Company: _____

Construction Waste Management (CWM) Plan

WASTE MATERIAL TYPE	DIVERSION METHOD: COMMINGLED AND SORTED OFF SITE	DIVERSION METHOD: SOURCE SEPARATED ON SITE	PROJECTED DIVERSION RATE
Asphalt			
Concrete			
Shotcrete			
Metals			
Wood			
Rigid insulation			
Fiberglass insulation			
Acoustic ceiling tile			
Gypsum drywall			
Carpet/carpet pad			
Plastic pipe			
Plastic buckets			
Plastic			
Hardiplank siding and boards			
Glass			
Cardboard			
Pallets			
Job office trash, paper, glass & plastic bottles, cans, plastic			
Alkaline and rechargeable batteries, toner cartridges, and electronic devices			
Other:			
Other:			
Other:			
Other:			

NOTE: GENERAL CONTRACTOR TO COMPLETE CWM PLAN WORKSHEET AND ACKNOWLEDGEMENT FORMS AS JOB PROGRESSES AND PROVIDE DOCUMENTATION TO BUILDING INSPECTOR UPON DEMAND

Construction Waste Management (CWM) Acknowledgment

Note: This sample form may be used to assist in documenting compliance with the waste management plan.

Project Name: _____

Job Number: _____

Project Manager: _____

Waste Hauling Company: _____

CWM Plan Acknowledgment

The Foreman for each new Subcontractor that comes on site is to receive a copy of the Construction Waste Management Plan and complete this Acknowledgment Form.

I have read the Waste Management Plan for the project; I understand the goals of this plan and agree to follow the procedures described in this plan.

DATE	SUBCONTRACTOR COMPANY NAME	FOREMAN NAME	SIGNATURE

Construction Waste Management (CWM) Plan

Note: This sample form may be used to assist in documenting compliance with the waste management plan.

Project Name: _____
Job #: _____
Project Manager: _____
Waste Hauling Company: _____
Contact Name: _____

All Subcontractors shall comply with the project's Construction Waste Management Plan.
All Subcontractor foremen shall sign the CWM Plan Acknowledgment Sheet.

Subcontractors who fail to comply with the Waste Management Plan will be subject to backcharges or withholding of payment, as deemed appropriate. For instance, Subcontractors who contaminate debris boxes that have been designated for a single material type will be subject to backcharge or withheld payment, as deemed appropriate.

1. The project's overall rate of waste diversion will be _____%.
2. This project shall generate the least amount of waste possible by planning and ordering carefully, following all proper storage and handling procedures to reduce broken and damaged materials and reusing materials whenever possible. The majority of the waste that is generated on this jobsite will be diverted from the landfill and recycled for other use.
3. Spreadsheet 1, enclosed, identifies the waste materials that will be generated on this project, the diversion strategy for each waste type and the anticipated diversion rate.
4. Waste prevention and recycling activities will be discussed at the beginning of weekly subcontractor meetings. As each new subcontractor comes on-site, the WMP Coordinator will present him/her with a copy of the CWM Plan and provide a tour of the jobsite to identify materials to be salvaged and the procedures for handling jobsite debris. All Subcontractor foremen will acknowledge in writing that they have read and will abide by the CWM Plan. Subcontractor Acknowledgment Sheet enclosed. The CWM Plan will be posted at the jobsite trailer.
5. Salvage: Excess materials that cannot be used in the project, nor returned to the vendor, will be offered to site workers, the owner, or donated to charity if feasible.
6. [HAULING COMPANY] will provide a commingled drop box at the jobsite for most of the construction waste. These commingled drop boxes will be taken to [Sorting Facility Name and Location]. The average diversion rate for commingled waste will be _____%. As site conditions permit, additional drop boxes will be used for particular phases of construction (e.g., concrete and wood waste) to ensure the highest waste diversion rate possible.
7. In the event that the waste diversion rate achievable via the strategy described in (6) above, is projected to be lower than what is required, then a strategy of source-separated waste diversion and/or waste stream reduction will be implemented. Source separated waste refers to jobsite waste that is not commingled but is instead allocated to a debris box designated for a single material type, such as clean wood or metal.

   Notes:

   1. Waste stream reduction refers to efforts taken by the builder to reduce the amount of waste generated by the project to below four (4) pounds per square foot of building area.
   2. When using waste stream reduction measures, the gross weight of the product is subtracted from a base weight of four (4) pounds per square foot of building area. This reduction is considered additional diversion and can be used in the waste reduction percentage calculations.
8. [HAULING COMPANY] will track and calculate the quantity (in tons) of all waste leaving the project and calculate the waste diversion rate for the project. [HAULING COMPANY] will provide Project Manager with an updated monthly report on gross weight hauled and the waste diversion rate being achieved on the project. [HAULING COMPANY's] monthly report will track separately the gross weights and diversion rates for commingled debris and for each source-separated waste stream leaving the project. In the event that [HAULING COMPANY] does not service any or all of the debris boxes on the project, the [HAULING COMPANY] will work with the responsible parties to track the material type and weight (in tons) in such debris boxes in order to determine waste diversion rates for these materials.
9. In the event that Subcontractors furnish their own debris boxes as part of their scope of work, such Subcontractors shall not be excluded from complying with the CWM Plan and will provide [HAULING COMPANY] weight and waste diversion data for their debris boxes.
10. In the event that site use constraints (such as limited space) restrict the number of debris boxes that can be used for collection of designated waste the project Superintendent will, as deemed appropriate, allocate specific areas onsite where individual material types are to be consolidated. These collection points are not to be contaminated with non-designated waste types.
11. Debris from jobsite office and meeting rooms will be collected by [DISPOSAL SERVICE COMPANY]. [DISPOSAL SERVICE COMPANY] will, at a minimum, recycle office paper, plastic, metal and cardboard.

5.504.4.4 Carpet Systems

All carpet installed in the building interior shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350).

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

5.504.4.4.1 Carpet Cushion

All carpet cushion installed in the building interior shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350).

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

5.504.4.4.2 Carpet Adhesive

All carpet adhesive shall meet the requirements of Table 5.504.4.1.

5.504.4.5 Composite Wood Products

Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure (ATCM) for Composite Wood (17 CCR 93120 et seq.) Those materials not exempted under the ATCM must meet the specified emission limits, as shown in Table 5.504.4.5.

TABLE 5.504.4.5
FORMALDEHYDE LIMITS
Maximum Formaldehyde Emissions in Parts per Million

PRODUCT	CURRENT LIMIT
Hardwood plywood veneer core	0.05
Hardwood plywood composite core	0.05
Particleboard	0.09
Medium density fiberboard	0.11
Thin medium density fiberboard2	0.13

Values in this table are derived from those specified by the California Air Resources Board, Air Toxics Control Measure for Composite Wood as tested in accordance with ASTM E1333. For additional information, see California Code of Regulations, Title 17, Sections 93120 through 93120.12.

Thin medium density fiberboard has a maximum thickness of 5/16 inch (8 mm).

5.504.4.6 Resilient Flooring Systems

Where resilient flooring is installed, at least 80 percent of floor area receiving resilient flooring shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350).

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

5.504.4.6.1 Verification of Compliance

Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.

MATERIALS
SCALE: NTS
1/1 MASTER GLNOTES

TABLE 5.504.4.2
SEALANT VOC LIMIT
Less Water and Less Exempt Compounds in Grams per Liter

SEALANTS	CURRENT VOC LIMIT
Architectural	250
Marine deck	760
Nonmembrane roof	300
Roadway	250
Single–ply roof membrane	450
Other	420
SEALANT PRIMERS	
Architectural	
Nonporous	250
Porous	775
Modified bituminous	500
Marine deck	760
Other	750

Note: For additional information regarding methods to measure the VOC content specified in these tables, see South Coast Air Quality Management District Rule 1168.

5.504.4.3 Paints and Coatings

Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Coatings Suggested Control Measure, as shown in Table 5.504.4.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 5.504.4.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat–High Gloss coating, based on its gloss, as defined in Subsections 4.21, 4.36 and 4.37 of the 2007 California Air Resources Board Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat–High Gloss VOC limit in Table 5.504.4.3 shall apply.

TABLE 5.504.4.3
VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS, 3
Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds

COATING CATEGORY	CURRENT LIMIT
Flat coatings	50
Nonflat coatings	100
Nonflat–high gloss coatings	150
SPECIALTY COATINGS	
Aluminum roof coatings	400
Basement specialty coatings	400
Bituminous roof coatings	50
Bituminous roof primers	350
Bond breakers	350
Concrete curing compounds	350
Concrete/masonry sealers	100
Driveway sealers	50
Dry fog coatings	150
Faux finishing coatings	350
Fire resistive coatings	350
Floor coatings	100
Form–release compounds	250
Graphic arts coatings (sign paints)	500
High temperature coatings	420
Industrial maintenance coatings	250
Low solids coatings	1120
Magnesite cement coatings	450
Mastic texture coatings	100
Metallic pigmented coatings	500
Multicolor coatings	250
Pretreatment wash primers	420
Primers, sealers, and undercoaters	100
Reactive penetrating sealers	350
Recycled coatings	250
Roof coatings	50
Rust preventative coatings	250
Shellacs	
Clear	730
Opaque	550
Specialty primers, sealers and undercoaters	100
Stains	250
Stone consolidants	450
Swimming pool coatings	340
Traffic marking coatings	100
Tub and tile refinish coatings	420
Waterproofing membranes	250
Wood coatings	275
Wood preservatives	350
Zinc–rich primers	340

Grams of VOC per liter of coating, including water and including exempt compounds.

The specified limits remain in effect unless revised limits are listed in subsequent columns in the table.

Values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 1, 2008. More information is available from the Air Resources Board.

5.504.4.3.1 Aerosol Paints and Coatings
Aerosol paints and coatings shall meet the PWMIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49.

INDOOR AIR QUALITY AND POLLUTANT CONTROL
SCALE: NTS
1/1 MASTER GLNOTES

Section 5.504 Pollutant Control

5.504.1 Temporary Ventilation

The permanent HVAC system shall only be used during construction if necessary to condition the building or areas of addition or alteration within the required temperature range for material and equipment installation. If the HVAC system is used during construction, use return air filters with a Minimum Efficiency Reporting Value (MERV) of 8, based on ASHRAE 52.2–1999, or an average efficiency of 30 percent based on ASHRAE 52.1–1992. Replace all filters immediately prior to occupancy, or, if the building is occupied during alteration, at the conclusion of construction.

5.504.3 Covering of Duct Openings and Protection of Mechanical Equipment During Construction

At the time of rough installation and during storage on the construction site until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system.

5.504.4 Finish Material Pollutant Control

Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6.

5.504.4.1 Adhesives, Sealants and Caulks

Adhesives, sealants, and caulks used on the project shall meet the requirements of the following standards:

Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products as specified in subsection 2, below.

Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507.

TABLE 5.504.4.1
ADHESIVE VOC LIMIT1,2
Less Water and Less Exempt Compounds in Grams Per Liter

ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Drywall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single–ply roof membrane adhesives	250
Other adhesive not specifically listed	50
SPECIALTY APPLICATIONS	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
SUBSTRATE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood30	
Fiberglass	80

If an adhesive is used to bond dissimilar substrates together the adhesive with the highest VOC content shall be allowed.

For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168, http://www.arb.ca.gov/DRDB/SC/CURHTML/R1168.PDF.

INDOOR AIR QUALITY AND POLLUTANT CONTROL
SCALE: NTS
1/1 MASTER GLNOTES

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MCLERNON ARCHITECTURE GROUP, INC.

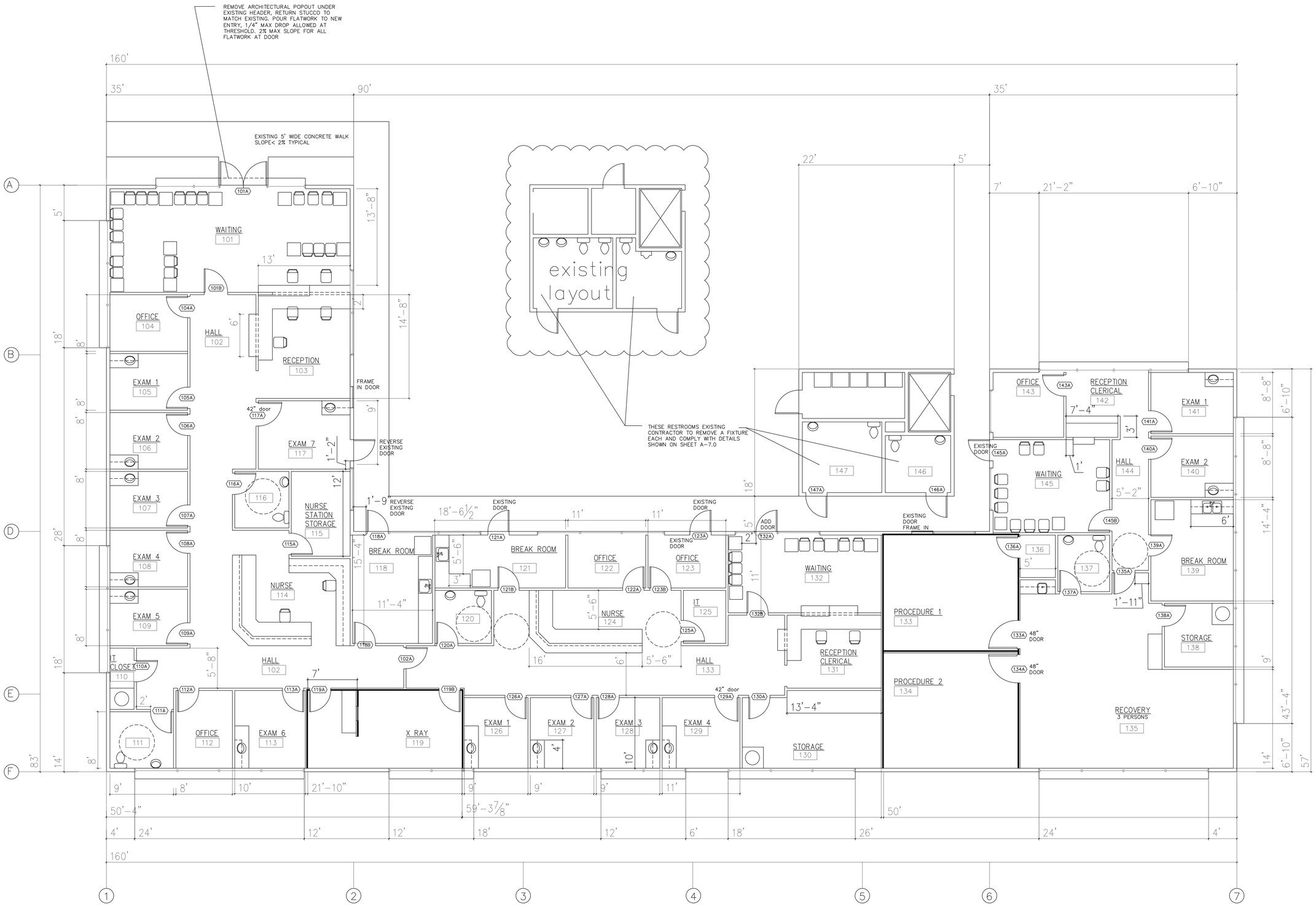
ISSUE DATES

No.	Date	Description

SHEET TITLE
VOC LIMITS
WASTE PLAN FORMS

Project No.: –
Date: –
Drawn: –

SHEET NO.
A–2.3



FLOOR PLAN

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

NOTES:
1. ALL INTERIOR WALLS ARE NEW CONSTRUCTION
2. ALL EXTERIOR WALLS TO REMAIN UNO

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LICENSED ARCHITECT
MYRLE D. MCLENNON
C-22007
02-23
RENEWAL DATE
STATE OF CALIFORNIA

LZ LANCASTER PROPERTIES LLC
1672 WEST AVENUE J
LANCASTER, CA 93534
PHONE

ISSUE DATES No.	Date	Description
1	.	.
2	.	.
.	.	.
.	.	.
.	.	.

SHEET TITLE
FLOOR PLAN

Project No. : 212308
Date: 2022 05 12
Drawn: MM

SHEET NO.
A-3.0

DOOR SCHEDULE

ROOM NO.	DOOR	TYPE	SIZE	THK	MATERIAL	FRAME	HARDWARE	REMARKS
101	101A	A	PR 3'–0"x 6'–8"	1 3/4"	ALUM	ALUM	PUSH/PULL HANDLES	SELF CLOSER
	101B	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
102	102A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	45 MIN RATED DOOR AND JAMB W/SELF CLOSER
104	104A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
105	105A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
106	106A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
107	107A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
108	108A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
109	109A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
110	110A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
111	111A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	PRIVACY LATCHSET	SELF CLOSER
112	112A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
113	113A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
114	114A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
115	115A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
116	116A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	PRIVACY LATCHSET	SELF CLOSER
117	117A	A	3'–0"x 6'–8"	1 3/4"	ALUM	ALUM	PUSH/PULL HANDLES	EXISTING
	117B	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
118	118A	A	3'–0"x 6'–8"	1 3/4"	ALUM	ALUM	PUSH/PULL HANDLES	REPLACE EXISTING, REVERSE SWING
	118B	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
119	119A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	45 MIN RATED DOOR AND JAMB W/SELF CLOSER
	119B	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
120	120A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	PRIVACY LATCHSET	SELF CLOSER
121	121A	A	3'–0"x 6'–8"	1 3/4"	WOOD	ALUM	PUSH/PULL HANDLES	EXISTING
	121B	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
122	122A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
123	123A	A	3'–0"x 6'–8"	1 3/4"	WOOD	ALUM	PUSH/PULL HANDLES	EXISTING
	123B	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
125	125A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
126	126A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
127	127A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
128	128A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
129	129A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
130	130A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
131	131A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
132	132A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
	132B	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
133	133A	B	4'–0"x 6'–8"	1 3/4"	WOOD	STEEL	PUSH PLATE PULL HANDLE	
134	134A	B	4'–0"x 6'–8"	1 3/4"	WOOD	STEEL	PUSH PLATE PULL HANDLE	
135	135A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
136	136A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
137	137A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	PRIVACY LATCHSET	SELF CLOSER
138	138A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
139	139A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
140	140A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
141	141A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
143	143A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
145	145A	A	3'–0"x 6'–8"	1 3/4"	ALUM	ALUM	PUSH/PULL HANDLES	EXISTING
	145B	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
146	146A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	LEVER LATCHSET	
147	147A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	PRIVACY LATCHSET	KEYED HARDWARE W/SELF CLOSER
119	119A	B	3'–0"x 6'–8"	1 3/4"	WOOD	STEEL	PRIVACY LATCHSET	KEYED HARDWARE W/SELF CLOSER

ROOM FINISH SCHEDULE

ROOM TYPE	FLOOR	BASE		SOUTH WALL		EAST WALL		NORTH WALL		WEST WALL		TRIM		CEILING		NOTES
	MAT	MAT	FIN	MAT	FIN	MAT	FIN	MAT	FIN	MAT	FIN	MAT	FIN	MAT	FIN	
WAITING ROOM	C	V	–	G	P	G	P	G	P	G	P	–	–	A	–	
EXAM	C	V	–	G	P	G	P	G	P	G	P	–	–	A	–	
CLERICAL	C	V	–	G	P	G	P	G	P	G	P	–	–	A	–	
STORAGE	C	V	–	G	P	G	P	G	P	G	P	–	–	A	–	
IT	VCT	V	–	G	P	G	P	G	P	G	P	–	–	A	–	
X RAY	VCT	V	–	GX	P	GX	P	GX	P	GX	P	–	–	GX	P	
PROCEDURE	VP	–	–	GX	P	GX	P	GX	P	GX	P	–	–	GX	P	
OFFICE	C	V	–	G	P	G	P	G	P	G	P	–	–	A	–	
RESTROOM	VCT	T	–	G FRP	P	G FRP	P	G FRP	P	G FRP	P	–	–	A	–	

FINISH ABBREVIATIONS

A = 2' X 4' ACOUSTIC TILE

FRP = FRP TO +48" AFF

G = 1/2" GYP BD

G1 = ⅝ TYPE X GYP BD, GREEN BOARD IN RESTROOMS

GX = 2 PSF LEAD LINED GYP BOARD

P = PAINT: ALL TO BE >70% LRV, EGGSHELL ALL SAME COLOR

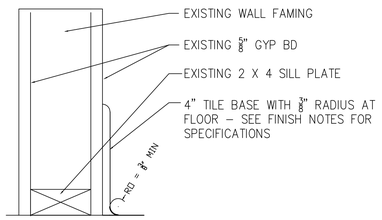
T = TILE BASE WITH COVE SEE DETAIL

C =CARPET TILES

VCT–VINYL TILE

VP = 1 PIECE VINYL FLOORING, ROLLED AND WELDED AT CORNERS

V – 4" VINYL BASE



TILE COVE BASE

RESTROOMS

FINISH NOTES

1. INTERIOR FINISH SHALL BE PROVIDED IN ACCORDANCE WITH TITLE 24 SECTION 804, AS FOLLOWS: CLASS I VERTICAL ENCLOSURES; CLASS II CORRIDORS; CLASS III ROOMS.

2. INTERIOR OF ALL CABINETRY SHALL BE WHITE MELAMINE IMPERVIOUS SURFACE

3. ALL SERVICE COUNTERTOPS SHALL BE SMOOTH SANITARY SURFACE

4. FLOOR DRAINS ARE REQUIRED WHERE APPROVED SLIP RESISTANT FLOOR SURFACES ARE INSTALLED. SLIP RESISTANT AGENTS OR FLOORING MAY NOT BE ADDED OR INSTALLED IN TRAFFIC AREAS. IT MAY NOT BE ADDED OR INSTALLED UNDER EQUIPMENT OR ON COVED BASES

5. FINISHES IN ALL AREAS, OTHER THAN THE CUSTOMER WAITING OR DINING AREA, MUST BE SMOOTH, NONABSORBENT, EASILY CLEANABLE, AND DURABLE.

6. INTERIOR FINISH MATERIALS APPLIED TO WALL AND CEILINGS SHALL BE TESTED AS SPECIFIED IN SECTION 803. PER TABLE 803.11: NONSPRINKLERED BUILDING: INTERIOR EXIT STAIRWAYS AND RAMPS AND EXIT PASSAGEWAYS: A, CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND RAMPS: B, ROOMS AND ENCLOSED SPACES: C.

7. THE FLAME SPREAD RATING OF PANELING MATERIALS ON THE WALLS OF THE CORRIDOR, LOBBY AND EXIT ENCLOSURE IS CLASS B PER TABLE 803.11

8. THE USE OF RECYCLED OR RECLAIMED MATERIAL FOR DECORATIVE WALL AND/OR CEILING FINISHES REQUIRES TESTING DOCUMENTATION TO ENSURE PROPER FLAME SPREAD AND SMOKE DEVELOPMENT INDEX PURSUANT TO CBC SECTION 803.

9. FIRE RETARDANT TREATED FABRICS USED AS WALL OR CEILING FINISHES SHALL BE REQUIRED TO SUBMIT CERTIFICATION OF COMPLIANCE WITH STATE FIRE MARSHAL CERTIFICATION.

10. FINISHES SHOWN ARE EXISTING, CONTRACTOR TO REPAIR AS NEEDED

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mclernonmag.com 661.940.3968

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C-22007
02-23
RENEWAL DATE
STATE OF CALIFORNIA

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PHONE

ISSUE DATES

No.	Date	Description
1	.	.
2	.	.
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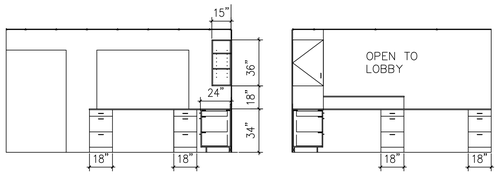
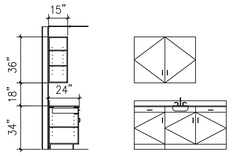
SHEET TITLE
SCHEDULES

Project No. : 212308
Date: 2022 05 12
Drawn: MM

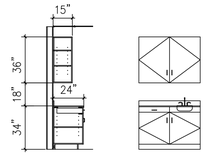
SHEET NO.
A–3.0



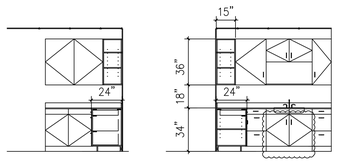
ROOM 103 RECEPTION
SCALE: 1/2" = 1"



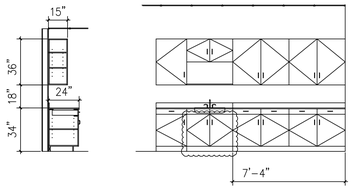
EXAM ROOMS 113, 126, 129
WIDE BASE CABINETS
SCALE: 1/2" = 1"



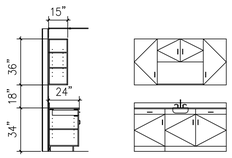
EXAM ROOMS 105,106,107,108,109,117,127
128,140,141 STANDARD CABINETS
SCALE: 1/2" = 1"



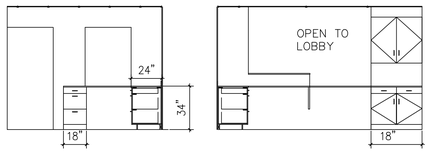
BREAK ROOM 118
SCALE: 1/2" = 1"



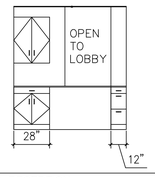
BREAK ROOM 118
SCALE: 1/2" = 1"



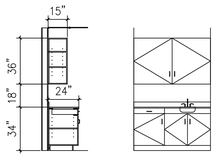
BREAK ROOM 139
SCALE: 1/2" = 1"



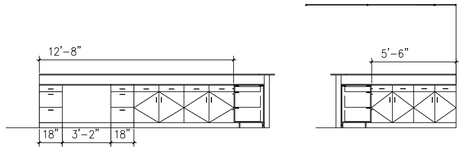
ROOM 131 RECEPTION
SCALE: 1/2" = 1"



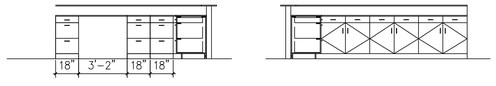
ROOM 142 RECEPTION
SCALE: 1/2" = 1"



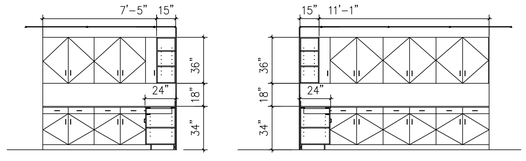
RECOVERY
ROOM 135
SCALE: 1/2" = 1"



NURSE STATION 124
SCALE: 1/2" = 1"



NURSE STATION 114
SCALE: 1/2" = 1"



CASEWORK NOTES:

1. ALL WORK SURFACES FINISHED WITH PLASTIC LAMINATE, COLOR BY OWNER
2. ALL FACES PLASTIC LAMINATE OVER MDF, COLOR PER OWNER
3. ALL INTERIORS WHITE MELAMINE
4. ALL RECEPTION COUNTERS TO HAVE A 34" HIGH MAX SECTION FOR ADA, SEE DRAWINGS
5. ALL SHELVING TO BE ADJUSTABLE WITH SUPPORT SYSTEM HOLES AT 3" OC, ONE SHELF IN LOW CABINETS, 2 SHELVES IN UPPERS
6. ALL EXAM ROOM AND BRAKE ROOM COUNTERS TO HAVE 4" BACK SPLASH
7. BREAK ROOMS SHALL HAVE SHELF OVER SINK CAPABLE OF SUPPORTING A MICROWAVE
8. CONTRACTOR TO BLOCK WALLS TO SUPPORT CABINETRY AS REQUIRED

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LICENSED ARCHITECT
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C-22007
02-23
RENEWAL DATE
STATE OF CALIFORNIA

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1672 WEST AVENUE J
LANCASTER, CA 93534
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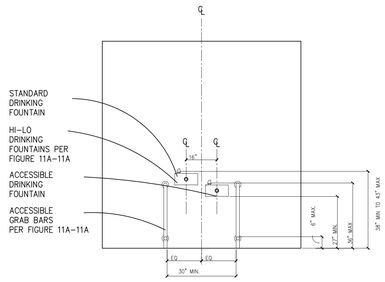
SHEET TITLE
INTERIOR ELEVATIONS

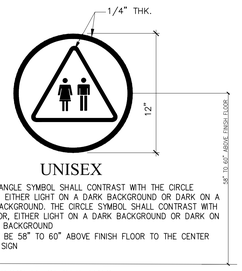
Project No. : 212308
Date: 2022 05 12
Drawn: MM

SHEET NO.
A-5.0



L DRINKING FOUNTAINS ELEVATIONS

SCALE: 3/8" = 1'



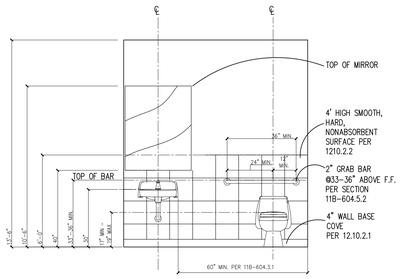
UNISEX

THE TRIANGLE SYMBOL SHALL CONTRAST WITH THE CIRCLE SYMBOL, EITHER LIGHT ON A DARK BACKGROUND OR DARK ON A LIGHT BACKGROUND. THE CIRCLE SYMBOL SHALL CONTRAST WITH THE DOOR, EITHER LIGHT ON A DARK BACKGROUND OR DARK ON A LIGHT BACKGROUND

SIGN TO BE 58" TO 60" ABOVE FINISH FLOOR TO THE CENTER OF THE SIGN

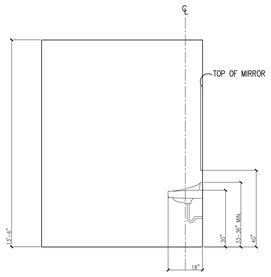
F UNISEX GEOMETRIC TOILET SYMBOL

SCALE: N.T.S.



2B UNISEX BATHROOM – ADA ELEVATION

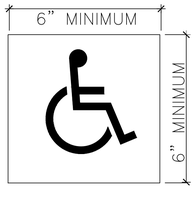
SCALE: 3/8" = 1'



2A UNISEX BATHROOM – ADA ELEVATION

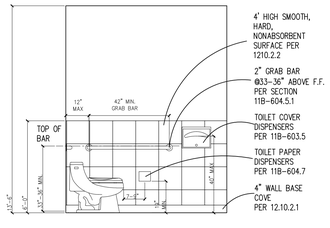
SCALE: 3/8" = 1'

THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL CONTRAST WITH THE BACKGROUND, EITHER LIGHT ON A DARK BACKGROUND OR DARK ON A LIGHT BACKGROUND.ALL WALL SIGNAGE TO HAVE TYPE II BRAILLE WRITING @ +48" MAX AFF



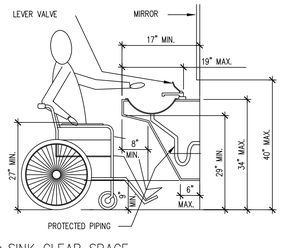
1A ENTRY SIGNAGE @ MAIN ENTRY

SCALE: $\frac{1}{2}$"=1'



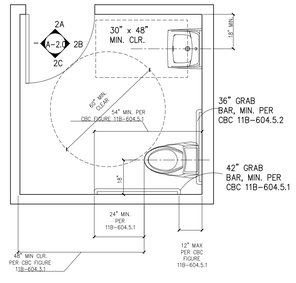
2C UNISEX BATHROOM – ADA ELEVATION

SCALE: 3/8" = 1'



E SINK CLEAR SPACE

SCALE: N.T.S.



UNISEX RESTROOM 2

SCALE: 3/8" = 1'

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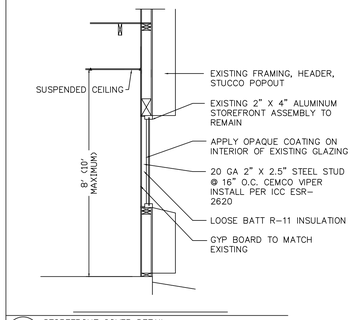
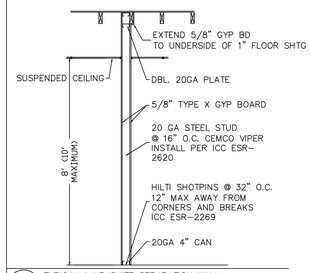
SHEET TITLE
DETAILS

Project No. : 212308
Date: 2022 05 12
Drawn: MM

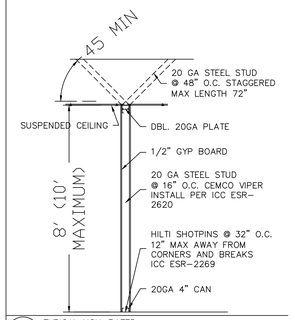
SHEET NO.
A-7.0



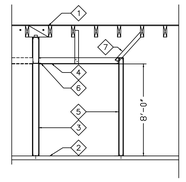
4 STOREFRONT COVER DETAIL
TYPICAL MULTIPLE PLACES
SCALE: 1/2" = 1"



3 TYPICAL 1 HR SUITE SEPARATION WALL
SCALE: 1/2" = 1"



2 TYPICAL NON-RATED
WALL PARTITON
SCALE: 1/2" = 1"



KEY NOTES

1. EXISTING JOISTS
2. EXISTING CONCRETE SLAB
3. 2 X 4 20GA STUDS @ 16" O.C. W/ R-19 INSULATION
4. 6' SPAN OR LESS 2 X 4 20GA CEILING JOISTS @ 16" O.C.
   10' SPAN OR LESS 2 X 6 20GA CEILING JOISTS @ 16" O.C.
   18' SPAN OR LESS 2 X 8 20GA CEILING JOISTS @ 16" O.C.
5. 2 X 4 20GA STUDS @ 16" O.C. W/ R-13 INSULATION
6. 2 X 6 20GA LEDGER W/ 2X #10SMS @ 32" O.C.
7. 2 X 4 20GA BRACING @ 48" O.C. MAX
8. 2 X 4 20GA VERTICAL CENTER BRACING @ EA JOIST @ SPANS GREATER THAN 8'

1 HARD LID WALL & CEILING
TYPICAL – STEEL STUDS
SCALE: 1/4" = 1"

NORTH

FRAMING PLAN
SCALE: 3/16" = 1'-0"

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LANCASTER, CA 93534
PHONE

ISSUE DATES

No.	Date	Description
1	.	.
2	.	.
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SHEET TITLE
FRAMING PLAN

Project No. : 212308
Date: 2022 05 12
Drawn: MM

SHEET NO.
S-2.0

EXISTING CONDITION NOTES

(ONLY THOSE THAT APPEARS ON PLAN APPLY)

1. THE WORK OF THIS PROJECT INCLUDES ALTERATIONS TO EXISTING SPACE TO ACHIEVE THE ARRANGEMENT INDICATED ON THE DRAWINGS. THE CONTRACTORS SHALL VISIT THE JOBSITE TO DETERMINE THE EXTENT OF DEMOLITION WORK REQUIRED BY THE CONSTRUCTION ACTIVITIES. THE ARCHITECTURAL DRAWINGS FOR THESE AREAS SHOW THE CHANGES TO BE MADE. THE CONTRACTOR SHALL REVISE, RE–ARRANGE, RE–ROUTE OR REMOVE EXISTING WIRING AS REQUIRED TO ACCOMMODATE THE CHANGES AND ADDITIONS SHOWN AND TO PROVIDE CONTINUING SERVICE FOR THE AREAS OF THE PROJECT WHICH ARE TO REMAIN IN OPERATION.
2. THESE DRAWINGS INDICATE THE FINISHED REQUIREMENTS FOR THE ELECTRICAL SYSTEMS, EQUIPMENT, LIGHTING FIXTURES, OUTLETS AND DEVICES. DUE TO STRUCTURAL CONDITIONS MECHANICAL OR DUCT PIPING INTERFERENCE, RETAINED EXISTING FACILITIES, OR FOR OTHER REASONS, THE CONTRACTOR MAY DESIRE TO INSTALL THE WORK IN A MANNER DIFFERENT FROM THAT SHOWN. SUCH CHANGES SHALL BE PRESENTED TO THE BUILDING MANAGEMENT FOR APPROVAL BEFORE PROCEEDING, AND THE RECORD DRAWINGS SHALL BE ACCURATELY REVISED THE SHOW THE CHANGES AS COMPLETED.
3. EXISTING ELECTRICAL WIRING MAY BE RE–USED WHERE IT IS IN COMPLIANCE WITH JOB REQUIREMENTS AND CODE PROVISIONS AND DOES NOT INTERFERE WITH ACCOMPLISHMENT OF THE WORK BEING DONE.
4. ALL EXISTING LIGHTING FIXTURES NOT TO BE RE–USED IN THEIR PRESENT LOCATIONS SHALL BE CAREFULLY REMOVED AND STORED IN A SAFE PLACE. THEY SHALL BE MADE AVAILABLE FOR INSPECTION BY THE BUILDING REP. WHO WILL DESIGNATE THOSE TO BE RE–USED, THOSE TO BE STORED, AND THOSE TO BE REMOVED FROM THE PREMISES BY THE CONTRACTOR.
5. IN SOME ROOMS AND AREAS, THE OUTLETS SHOWN ON THE DRAWINGS ARE THOSE THAT NOW EXIST, THE CONTRACTOR SHALL VISIT THE JOBSITE TO DETERMINE WHICH EXISTING OUTLETS AND DEVICES ARE TO REMAIN AND THE CONDUIT AND OTHER MATERIALS WHICH MAY BE RE–USED TO PROVIDE THE DESIRED ARRANGEMENT.
6. IN AREAS WHERE THERE ARE NO ALTERATIONS INDICATED, THE EXISTING FACILITIES SHALL BE RETAINED IN SERVICE. IN CASE OF DOUBT, ASSUME THAT THE ELECTRICAL WIRING IS TO REMAIN IN OPERATION THROUGHOUT THE CONSTRUCTION PERIOD AND THEREAFTER.
7. THE ALTERATION OF EXISTING SPACE IS A WORK OF A COMPLEX NATURE WHICH WILL REQUIRE ACCURATE PLANNING, CAREFUL PREPARATION AND EXECUTION, ATTENTION TO DETAIL AND CLOSE SUPERVISION BY THE CONTRACTOR. HE WILL BE REQUIRED TO DO HIS WORK IN FULL COOPERATION WITH OTHER CONSTRUCTION TRADES AND SUBJECT TO SCHEDULING ARRANGEMENT TO MINIMIZE DISRUPTION OF NORMAL ACTIVITIES OF THE BUILDING WHERE SHUTDOWN OF POWER TO EXISTING PANELS IS REQUIRED DUE TO ALTERATION WORK, IT SHALL BE DONE AT A TIME SPECIFIED AND SCHEDULED BY THE BUILDING MANAGEMENT.
8. WHERE INTERRUPTION OF A CIRCUIT FEEDING EXISTING EQUIPMENT, RECEPTACLES, LIGHTING FIXTURES OR BECAUSE OF NEW WORK, THE CIRCUIT SHALL BE REHABILITATED AND MADE CONTINUOUS FROM PANEL TO LAST EXISTING OUTLET.

SPECIAL NOTES

1. ALL NEW ELECTRICAL WORK SHALL BE INSTALLED WITHOUT INTERRUPTING THE EXISTING ELECTRICAL SYSTEMS AT THE SITE WHILE THE BUILDING IS OCCUPIED. LIGHT AND POWER SERVICES, FEEDERS, SUBFEEDERS, SIGNAL AND FIRE ALARM SYSTEMS, HEATING AND VENTILATING SYSTEMS SHALL NOT BE DISCONNECTED WHILE THE BUILDING IS OCCUPIED.
2. WORK DURING OFFICE HOURS. THE WORK SITE WILL BE USED FOR OFFICE OR BUSINESS PURPOSES WHILE THE WORK OF THIS CONTRACT IS PERFORMED. THE WORK SHALL BE ARRANGED AS TO CAUSE NO UNNECESSARY INCONVENIENCE AND DANGER TO TENANTS AND STAFF IN THEIR ACTIVITIES. THE CONTRACTOR SHALL SCHEDULE HIS WORK IN ADVANCE AND COORDINATE WITH THE BUILDING OWNER/MANAGEMENT.
3. ALL UTILITY SHUT–DOWN SHALL BE SCHEDULED AND COORDINATED IN ADVANCE WITH THE BUILDING MANAGEMENT. PROVIDE CONTINUOUS "FIRE WATCH GUARD" TO ALL AREAS AFFECTED BY THE SHUT–DOWN OF ANY LIFE SAFETY SYSTEM.
4. THE CONSTRUCTION SITE SHALL BE PROPERLY PROTECTED WITH BARRICADES, WARNING SIGNS AND FLAGS, FENCING AND LIGHTS AS REQUIRED BY CODES AND THE BUILDING MANAGEMENT.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, PATCHING AND SEAL PENETRATION TO COMPLETE THE INSTALLATION OF THE WORK. ALL EXPOSED FINISHED AREAS THAT ARE DAMAGED AS A RESULT OF THIS WORK SHALL BE REPLACED AND REPAIRED TO MATCH EXISTING CONDITIONS AT NO ADDITIONAL COST TO THE BUILDING OWNER.
6. EQUIPMENT AND CONDUITS SHALL BE INSTALLED TO RUN PARALLEL OR PERPENDICULAR TO THE BUILDING STRUCTURE AND SHALL BE ARRANGED TO FORM NEAT SYMMETRICAL PATTERNS TO ASSURE THE BEST POSSIBLE APPEARANCE. PROVIDE HANGERS, UNISTRUT AND BRACING TO SUPPORT EQUIPMENT AND CONDUITS FROM THE BUILDING STRUCTURE ONLY.
7. SHOP DRAWINGS AND MATERIAL LISTS SHALL BE SUBMITTED TO THE ARCHITECT AND/OR ENGINEER FOR REVIEW. NO WORK SHALL BE PERFORMED OR EQUIPMENT ORDERED PRIOR TO SHOP DRAWING REVIEW.
8. UPON COMPLETION OF THE WORK AND ADJUSTMENT OF ALL EQUIPMENT, CONDUCT THE TEST IN THE PRESENCE OF AN AUTHORIZED REPRESENTATIVE OF THE BUILDING MANAGEMENT. DEMONSTRATE ALL SYSTEMS AND EQUIPMENT TO OPERATE IN ACCORDANCE WITH ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS AND TO BE FREE FROM ALL ELECTRICAL AND MECHANICAL DEFECTS.

FIRE ALARM NOTES

1. THE CONTRACTOR (LIFE SAFETY VENDOR) SHALL BE RESPONSIBLE FOR SUBMITTING COMPLETE FIRE ALARM PLANS, REQUIRED CONNECTION DIAGRAMS, WIRING DIAGRAMS, BATTERY CALCULATIONS AND WORST CASE VOLTAGE DROP CALCULATIONS TO THE CITY FIRE DEPARTMENT FOR REVIEW AND OBTAIN APPROVAL FROM THE CITY PRIOR TO INSTALLING THE SYSTEM.
2. AN APPROVED MANUAL AND AUTOMATIC FIRE ALARM SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH CFC, SECTION 907 AND CALIFORNIA BUILDING CODE.
3. VARIANCE FOR THE FIRE ALARM SYSTEM SHALL BE SEPARATE. ELECTRICAL CONTRACTOR TO PAY SEPARATE FEE FOR VARIANCE/MODIFICATION UPON PLAN CHECK APPROVAL.

GENERAL NOTES

(ONLY THOSE THAT APPEARS ON PLAN APPLY)

1. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND THOROUGHLY FAMILIARIZE HIMSELF WITH THE WORKING CONDITION AND THE EXACT NATURE AND EXTENT OF THE WORK TO BE PERFORMED. ELECTRICAL CONTRACTOR IS TO TAKE INTO CONSIDERATION SPECIAL OR UNUSUAL FEATURES PECULIAR TO THIS JOB.
2. DO ALL WORK PER GOVERNING CODE REQUIREMENTS AND SUBMIT EVIDENCE OF APPROVAL. ALL WORK SHALL COMPLY WITH 2019 CEnC & CEC 2019.
3. OBTAIN AND PAY FOR ALL ELECTRICAL PERMITS, INSPECTION FEES, ETC.
4. COORDINATE WORK WITH ALL OTHER TRADES AND AS REQUIRED FOR FUTURE INCREMENTS OF CONSTRUCTION.
5. THE ELECTRICAL CONTRACTOR SHALL EXERCISE ALL CONTRACT PLANS IN ORDER TO LOCATE WORK IN COORDINATION WITH THE CONSTRUC–TION OF SUCH ITEMS AS CABINETS, BEAMS, FURRING, DOORS, DUCTS, PIPES AND CEILINGS.
6. EXACT LOCATION AND DIMENSIONS OF ALL EQUIPMENT SHALL BE VERIFIED IN FIELD PRIOR TO ORDERING AND INSTALLATION. AS PER NORMAL INDUSTRY STANDARDS.
7. REFER TO MECHANICAL/PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL/PLUMBING EQUIPMENT RESPECTIVELY.
8. REFER TO MECHANICAL CONTROL WIRING DIAGRAMS FOR ITEMS AND DEVICES TO BE FURNISHED, INSTALLED AND/OR CONNECTED BY ELECTRICAL CONTRACTOR FOR COMPLETE AND OPERABLE "HVAC" SYSTEM.
9. REFER TO PLUMBING DRAWINGS FOR ITEMS AND DEVICES TO BE FURNISHED, INSTALLED AND/OR CONNECTED BY ELECTRICAL CONTRACTOR.
10. CONDUIT STUBS SHALL BE TERMINATED IN ACCESSIBLE LOCATIONS, SECURELY CAPPED AND IDENTIFIED BY VISIBLE MARKER.
11. INSTALL APPROVED GROUNDING BUSHING AT EACH TERMINATION OF RIGID CONDUIT, AND AS OTHERWISE REQUIRED BY CODE.
12. ALL WIRE SHALL BE COPPER MINIMUM OF #12 CU. #12 THRU #1 WIRES SHALL BE RATED 60°C. #1/0 THRU #600 MCM CU WIRES SHALL BE RATED 75° CELSIUS U.O.N.
13. PERMANENTLY AND VISIBLY LABEL ALL J–BOX COVER PLATES WITH CIRCUIT AND VOLTAGE CONTAINED.
14. CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY FOR CIRCUITING PURPOSES ONLY AND MAY BE VARIED IF APPROVED IN WRITING.
15. PROVIDE A MINIMUM OF 12" SEPARATION BETWEEN POWER AND TELEPHONE CONDUITS WHERE THEY ARE INSTALLED IN THE SAME TRENCH OR CROSS, U.O.N.
16. CONDUITS SHALL BE CLEAN OF WATER DEBRIS AND OTHER FOREIGN MATERIAL PRIOR TO PULLING CABLES.
17. ALL CONDUITS FOR FUTURE USE SHALL HAVE PULL ROPE LEFT IN PLACE.
18. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND MARKING THE CORRECT PHASING OF THE BRANCH CIRCUIT OF THE ELECTRICAL PANELS AND BRANCH CIRCUITS.
19. OVERCURRENT PROTECTION AND DISCONNECTING MEANS FOR ALL MOTORS SHALL BE INSTALLED TO COMPLY WITH C.E.C. AND LOCAL JURISDICTION.
20. ALL ELECTRICAL EQUIPMENT SHALL BE UL LISTED AND ALL OUTDOOR OUTLET SHALL BE GFCI, WEATHERPROOF. ALL OUTDOOR EQUIPMENT SHALL BE WEATHERPROOF.
21. IT IS THE INTENT OF THESE DRAWINGS THAT THIS BE A COMPLETE ELECTRICAL JOB. ANY DISCREPANCIES OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BIDDING.
22. ALL CIRCUIT BREAKERS IN PANELS ARE RATED 14,000 A FOR 277V AND 10,000 A FOR 120V. ALL CIRCUIT BREAKERS TO BE RATED AT 75 DEGREES U.O.N.
23. ELECTRICAL CONTRACTOR TO VERIFY IN FIELD THE MOST FEASIBLE WAY OF ROUTING AND COMBINING HOME RUNS AND PERFORM ACCORDINGLY.
24. ALL ELECTRICAL OUTLETS READILY ACCESSIBLE LOCATED IN THE BATHROOMS AND KITCHEN SHALL BE EQUIPPED WITH GROUND FAULT CIRCUIT INTERRUPTIVE DEVICE U.O.N.
25. ALL COLORS AND FINISHES OF ELECTRICAL EQUIPMENT AND LIGHTING FIXTURES TO BE VERIFIED WITH OWNER AND/OR ARCHITECT PRIOR TO ORDERING.
26. ELECTRICAL CONTRACTOR TO SIZE ALL J–BOXES AS PER TABLE 370–16a. ALL J–BOXES TO BE SQUARE 4"x 2–1/8" MINIMUM. ALL J–BOXES TO BE READILY ACCESSIBLE.
27. ALL CIRCUIT BREAKER TRIP SHALL BE OF A TYPE TO BE ADJUSTED BY A QUALIFIED PERSON ONLY.
28. FUSES SPECIFIED FOR MOTORS AND AIR CONDITIONING EQUIPMENT 600A AND UNDER SHALL BE TIME DELAY DUAL ELEMENT TYPE FRN–R (250V) AND FRS–R (600V) CLASS "L" U.O.N.
29. FUSES SPECIFIED IN SWITCHBOARDS 600A AND UNDER SHALL BE FAST ACTING TYPE KTN–R (250V) AND KTS–R (600V) CLASS RKI. FOR 601A AND ABOVE USE TYPE KTU (600V) CLASS "L" U.O.N.
30. TIME CLOCK (RELAY TYPE) SHALL BE 365–DAYS PROGRAMMABLE WITH 10–HOURS BATTERY BACKUP.
31. FIRE ALARM CONSULTANT SHALL SUBMIT FIRE ALARM SYSTEM DESIGN ON A SEPARATE PACKAGE / PERMIT SET. FIRE ALARM IS NOT PART OF THIS CONTRACT AND SHALL BE DONE BY OTHERS.
32. ALL ELECTRICAL MATERIALS SHALL BEAR THE UNDERWRITERS (OR EQUIVALENT TESTING AGENCY) LABEL. ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY OF LANCASTER RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT.
33. UNLESS INFORMED OTHERWISE IN WRITING, THIS PROJECT HAS BEEN DETERMINED TO REQUIRE THE LOCAL CITY AUTHORITIES PLAN CHECK APPROVAL AND VALID PERMIT IN ACCORDANCE WITH THE LAW. ALL DESIGN WORK INDICATED ON PLANS AND SPECIFICATIONS IS SUBJECT TO REVIEW AND CHANGES BY SAID PLAN CHECK AUTHORITIES.
34. DO NOT ORDER ANY EQUIPMENT OR PERFORM ANY WORK OVER $500 IN TOTAL VALUE ON THE JOB UNTIL THE COMPLETION OF THE PLAN CHECK APPROVAL PROCESS AND OBTAINING OF ALL REQUIRED PERMITS. INSTALLATION OF ANY EQUIPMENT WITHOUT VALID PERMITS, WHEN REQUIRED, IS A VIOLATION OF THE CODE.
35. UNDER THE STATE OF CALIFORNIA CONTRACTORS STATE LICENSE BOARD REGULATIONS, ALL CONTRACTORS ARE REQUIRED TO ADHERE TO THE LOCAL CODES AND LAWS WITHOUT EXCEPTION.
36. ELECTRICAL CONTRACTOR TO OBTAIN ENGINEER'S APPROVAL OF LIGHTING ALL LIGHTING FIXTURES SPECIFIED FOR THE PROJECT PRIOR TO ORDERING.
37. ELECTRICAL CONTRACTOR SHALL PROVIDE CLEARANCES FOR ALL ELECTRICAL EQUIPMENT PER TABLE 110.26 (A) (1) CEC 2019.
38. PROVIDE GROUND FAULT CIRCUIT INTERRUPTER (GFCI) PROTECTION ON RECEPTACLE(S) LOCATED IN THE FOLLOWING AREAS:
    - A. KITCHEN, BATHROOM, GARAGES, OUTDOORS, CRAWL SPACES, AND UNFINISHED BASEMENTS OF DWELLING UNITS.
    - B. WITHIN 6 FEET OF LAUNDRY, UTILITY AND WET BAR SINK IN DWELLING UNITS.
    - C. OUTDOOR SPACES.
39. THESE ELECTRICAL PLANS ARE FINAL CONSTRUCTION PLAN ONCE APPROVED BY CITY OF LANCASTER DEPARTMENT OF BUILDING AND SAFETY. ANY REVISIONS ON PLAN SHALL BE ISSUED AS BULLETIN CHANGES.
40. PLAN CHECK REVISIONS (IF ANY) WILL BE ISSUED AT A LATER DATE AS AN ADDENDUM.
41. THE WORK SHALL COMPLY WITH AND BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING LEGALLY CONSTITUTED AUTHORITIES AND CODES HAVING JURISDICTION.
    - A. 2019 CALIFORNIA ELECTRICAL CODE (CEC).
    - B. 2019 CALIFORNIA BUILDING CODE (CBC).
    - C. 2019 CALIFORNIA ENERGY CODE (CEnC).
    - D. 2019 CALIFORNIA MECHANICAL CODE (CMC).
    - E. 2019 CALIFORNIA PLUMBING CODE (CPC).
42. CONTRACTOR TO PROVIDE TYPED CIRCUIT DIRECTORY SHOWING CIRCUIT ARRANGEMENT OF ELECTRICAL LOADS IN THE PANEL BOARD.
43. (a). ALL UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40. (b). ALL EXPOSED CONDUITS (NOT SUBJECT TO THE MOISTURE) SHALL BE ELECTRICAL METALLIC TUBING (EMT). (c). ALL VIBRATING MOTORIZED EQUIPMENT FINAL CONNECTION SHALL BE PROVIDED WITH LIQUID TIGHT FLEXIBLE CONDUIT. (d) MINIMUM CONDUIT SIZE SHALL BE 3/4"C U.O.N.
44. COORDINATE ALL SWITCHING LOCATIONS WITH THE ARCHITECT PRIOR TO ROUGH IN CONSTRUCTION. OCCUPANCY SENSOR CONTROLS (i.e., WALL MOUNTED SINGLE AND DOUBLE POLE, CEILING MOUNTED SENSORS) SHALL BE WATTSTOPPER BRAND OR AS PER BUILDING STANDARD.
45. ELECTRICAL APPLIANCES PROVIDED AND INSTALLED SHALL MEET THE ENERGY STAR IF AN ENERGY STAR DESIGNATION IS APPLICABLE, SUBJECT TO FIELD VERIFICATIONS.

SHEET INDEX

SHEET NO.	DESCRIPTION	SCALE
E–1.0	GENERAL NOTES, SHEET INDEX AND SYMBOL LISTS	NO SCALE
E–1.1	LIGHTING SCHEDULE	NO SCALE
E–2.0	LIGHTING PLAN	3/16"=1'–0"
E–3.0	POWER PLAN	3/16"=1'–0"
E–3.1	HVAC POWER PLAN	3/16"=1'–0"
E–4.0	PANEL SCHEDULE	NO SCALE
E–5.0	SINGLE LINE DIAGRAM	NO SCALE
E–6.0	TITLE 24 COMPLIANCE FORMS	NO SCALE
E–7.0	EMERGENCY EGRESS PHOTOMETRICS PLAN	3/16"=1'–0"

SCOPE OF WORK

NEW TENANT IMPROVEMENT PROJECT FOR THE EXISTING COMMERCIAL BUILDING. PROVIDE NEW PANEL. ELECTRICAL PLAN SUBMITTAL IS FOR THE ENERGY TITLE 24 ENERGY COMPLIANCE AND POWER REQUIREMENTS.

SYMBOLS AND LEGEND

(ONLY THOSE THAT APPEARS ON PLAN APPLY)

A–1,3 / #10 — CONDUIT HOMERUN TO PANEL. NUMERALS DENOTE CIRCUITS. HASH MARKS DENOTE QUANTITY OF #12 AWG. (OR #10 AWG. AS NOTED ON PLANS). NO HASHES DENOTE 2#12 AWG.

CONDUIT CONCEALED IN WALLS OR CEILING.

CONDUIT RUN IN CONCRETE SLAB, BELOW GRADE, OR IN CEILING SPACE OF FLOOR BELOW.

MAXIMUM CONDUIT WIRE FILL CHART THHN–THWN		
WIRE SIZE	1/2"C.	3/4"
#12	9	16
#10	5	10

LA — PANELBOARD. FLUSH OR SURFACE MOUNTED AS SHOWN ON PLANS AND PANEL SCHEDULE ADJACENT BALLOON INDICATES PANEL DESIGNATION.

CIRCUIT BREAKER. SIZE AND NUMBER OF POLES AS SHOWN ON PLANS.

OUTLETS

- DUPLEX RECEPTACLE OUTLET (WALL MOUNT) 125 VOLT, NEMA 5–20R
- DUPLEX OUTLET, WALL MOUNTED (120V, NEMA 5–20R) PROVIDE GROUND FAULT CIRCUIT INTERRUPTER
- QUAD RECEPTACLE OUTLET (WALL MOUNT) 125 VOLT, NEMA 5–20R
- SEPARATE/DEDICATED CIRCUIT, DUPLEX OUTLET 125 VOLT, 20A, NEMA 5–20R
- 208V OR 240V RECEPTACLE OUTLET PER PLAN
- RECEPTACLE OUTLET, HALF–SWITCH (WALL MOUNT) 125 VOLT, NEMA 5–20R
- DUPLEX RECEPTACLE OUTLET, (120V, NEMA 5–20R) (FLOOR MOUNT)
- QUAD RECEPTACLE OUTLET, (120V, NEMA 5–20R) (FLOOR MOUNT)
- DUPLEX RECEPTACLE OUTLET, (120V, NEMA 5–20R) (CEILING MOUNT)
- (2) DATA OUTLET (FLOOR MOUNTED)
- COMBINATION TELEPHONE AND DATA OUTLET (INTERNET) (1) TELEPHONE & (1) DATA OUTLET (FLOOR OR FURNITURE MOUNT)
- COMBINATION TELEPHONE AND DATA OUTLET (INTERNET) (1) TELEPHONE & (1) DATA OUTLET – WALL MOUNT
- DATA OUTLET ONLY (PRINTER, FAX, INTERNET)
- TELEPHONE OUTLET
- TV — CABLE TELEVISION. PROVIDE CABLE OUTLET
- J — JUNCTION BOX (4S BOX MINIMUM)
- J — JUNCTION BOX FOR FURNITURE POWER SYSTEM (OPEN OFFICE WORKSTATION), OUTLET LOCATION TO BE DETERMINE WITH THE FURNITURE VENDOR.
- JUNCTION BOX FOR FURNITURE DATA SYSTEM (OPEN OFFICE WORKSTATION), OUTLET LOCATION TO BE DETERMINE WITH THE FURNITURE VENDOR.
- J — WALL JUNCTION BOX CIRCUITS AND VOLTAGE AS PER PLAN.
- AV — JUNCTION BOX FOR CONNECTION TO AUDIO/VIDEO PROVIDE LV CONNECTION AND PROVIDE 120V POWER

SWITCHES

- $ — SINGLE–POLE SWITCH
- $3 — THREE–WAY SWITCH
- $ab — LOWER CASE SUBSCRIPT LETTER INDICATES FIXTURE CONTROLLED
- $DIM — DIMMER SWITCH
- $DMS — COMBINATION OF WALL MOUNTED DIMMER SWITCH AND OCCUPANCY SENSOR IN A SINGLE–GANG BOX.
- OS — CEILING MOUNTED OCCUPANCY SENSOR
- DL — DAYLIGHTS SENSOR
- Sm — SINGLE POLE MOTOR RATED TOGGLE SWITCH. (125V., 20A.)
- 2 Sm — TWO POLE MOTOR RATED TOGGLE SWITCH. (250V., 20A.)
- CEILING EXHAUST FAN (1/X HP U.O.N.)
- DISCONNECT SWITCH SIZE SHOWN ON PLAN
- KP — KEY PAD
- CR — CARD READER
- C — DOOR CONTACT

CIRCUITRY and RACEWAYS

- CIRCUIT UP
- CIRCUIT DOWN
- 2 – 12CU 1/2"C U.O.N.
- 3 – 12CU 1/2"C U.O.N.
- 4 – 12CU 1/2"C U.O.N.
- #10 2 – 10CU 1/2"C U.O.N.
- #10 3 – 10CU 1/2"C U.O.N.
- #10 4 – 10CU 1/2"C U.O.N.
- "RUN CONTINUES" INDICATION
- 1,3 HOME RUN (with circuit numbers)
- CONDUIT INSTALLED UNDERGROUND OR UNDERFLOOR (POWER)
- CONDUIT, FEEDER OR ROMEX WIRING RUN FOR THE LIGHTING FIXTURE SPECIFICALLY FOR UNIT PLAN AREA
- T — 3/4"C.O. FOR TELEPHONE/DATA LINE
- T1 — 1"C.O. FOR TELEPHONE/DATA LINE
- T2 — 1" 1/2"C.O. FOR TELEPHONE/DATA

SERVICE AND EQUIPMENT

- T — TRANSFORMER, DRY (KVA shown)
- PANELBOARD
- TELEPHONE TERMINAL BOARD
- TELECOM/SECURITY PANEL
- GROUND CONNECTION PER N.E.C.

ABBREVIATIONS

I.G.	ISOLATED GROUND.
TYP.	TYPICAL
W.P.	WEATHERPROOF
N.T.S.	NOT TO SCALE
C.O.	CONDUIT ONLY WITH PULL WIRE
U.O.N.	UNLESS OTHERWISE NOTED
LV	LOW VOLTAGE
E.C.	ELECTRICAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
(E)	EXISTING TO REMAIN
(N)	NEW
EM	EMERGENCY LIGHT
SC	SEPARATE CIRCUIT
FC	FAN COIL UNIT
FSD	FIRE SMOKE DAMPER
HP	HEAT PUMP or HORSEPOWER
CU	CONDENSING UNIT
TC	TIMECLOCK
LCP	LIGHTING CONTROL PANEL
EOR	ENGINEER ON RECORD
PP	POWER PACK, 120/24V
(ER)	EXISTING TO BE RELOCATED
WAP	WIRELESS APPLICATION PROTOCOL

CONTROL

- T — THERMOSTAT (line voltage U.O.N. furnished by M/C U.O.N.)

DESIGNATIONS

- # — REFERENCE/KEY NOTE
- HP — INDICATES EQUIPMENT TYPE
- 201 — INDICATES UNIT NUMBER

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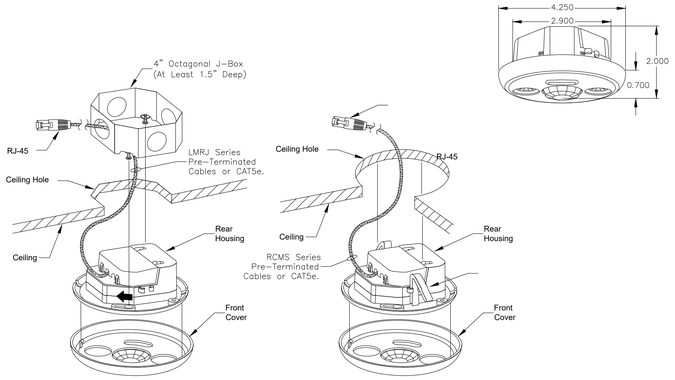
ISSUE DATES No.	Date	Description
1	5/11/22	PLAN CHECK

SHEET TITLE
GENERAL NOTES
SHEET INDEX &
SYMBOL LISTS

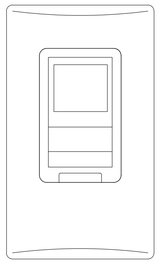
Project No. : 212308
Date: 5/11/2022
Drawn: DSA
Scale: NO SCALE

SHEET NO.
E-1.0



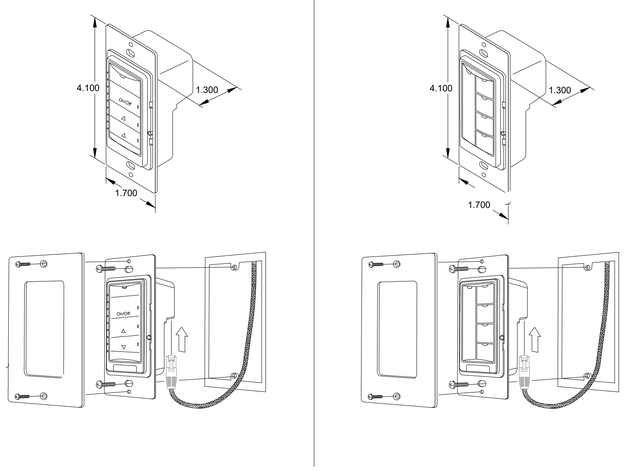
Ceiling Mounted Occupancy Sensor: RCMS

Occupancy Sensor
Switch WSX
wall occupancy sensor



Wall Mounted Occupancy Sensor: WSX

nPODMA DX
1-Button Switch



Wall Mounted Dimmer Switch: nLight Wired nPODMA DX

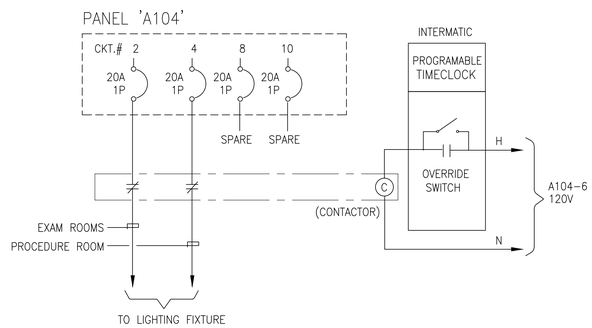
LIGHTING FIXTURE SCHEDULE

TYPE	SYMBOL	MANUFACTURER	CATALOG NUMBER	MOUNTING SURF	MOUNTING REC	MOUNTING WALL	MOUNTING PEND	LAMP TYPE	LAMP WATTS	NO. LAMPS	TOTAL WATTS	VOLT.	DESCRIPTION	LOCATION
F1		LITHONIA LIGHTING OR APPROVED EQUAL	2BLT4-85LHE-MVOLT-GZ1-LP940		✓			LED	63.25W	–	63.25W	120/277V	2'x4' RECESSED MOUNTED FIXTURE. 8500 LUMENS, 4000K, 90+ CRI. DIMMABLE 0-10V.	EXAM ROOM, HALLWAYS, STORAGE, OFFICE, WAITING ROOM, NURSE STATION, RECOVERY AREA
F1E		LITHONIA LIGHTING OR APPROVED EQUAL	2BLT4-85LHE-MVOLT-GZ1-LP940 -E10WLCP		✓			LED	63.25W	–	63.25W	120/277V	2'x4' RECESSED MOUNTED FIXTURE. 8500 LUMENS, 4000K, 90+ CRI. DIMMABLE 0-10V. PROVIDE 90-MINUTES BATTERY PACK.	HALLWAYS, WAITING ROOM, RECOVERY AREA
F2		LITHONIA LIGHTING OR APPROVED EQUAL	BLT4-60LHE-MVOLT-GZ1-LP940		✓			LED	45.17W	–	45.17W	120/277V	1'x4' RECESSED MOUNTED FIXTURE. 6000 LUMENS, 4000K, 90+ CRI. DIMMABLE 0-10V.	XRAY ROOM, RESTROOM, PROCEDURE ROOM
F2		LITHONIA LIGHTING OR APPROVED EQUAL	BLT4-60LHE-MVOLT-GZ1-LP940 -E10WLCP		✓			LED	45.17W	–	45.17W	120/277V	1'x4' RECESSED MOUNTED FIXTURE. 6000 LUMENS, 4000K, 90+ CRI. DIMMABLE 0-10V.	XRAY ROOM, RESTROOM, PROCEDURE ROOM
EX		LITHONIA LIGHTING	EDGR-1-EL	✓				LED	3W	–	3W	120V	SURFACE MOUNTED ILLUMINATED EXIT SIGN WITH BATTERY PACK. DIRECTION SHOWN ON PLAN.	DOOR EXITS

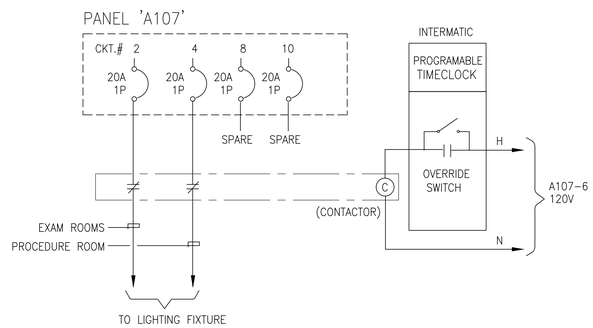
NOTE:
1. COORDINATE AND VERIFY EXACT FIXTURE SPECIFICATIONS WITH THE ARCHITECT PRIOR TO ORDERING. SEEK WRITTEN APPROVAL PRIOR TO PURCHASING.
2. ALL FIXTURE TYPE, FINISH SHALL BE COORDINATED WITH THE ARCHITECT AND WITH THE OWNER PRIOR TO PURCHASING.
3. ALL LIGHTING FIXTURE SHALL BE LED AND DIMMABLE.
4. ALL FIXTURE SHALL BE UL LISTED AND/OR ETL LISTED.

LIGHTING SPECIFICATIONS

LIGHTING CONTROL DIAGRAM: Vascular Suite



LIGHTING CONTROL DIAGRAM: Urgent Care



NOTE:

1. TIMECLOCK SHALL BE CEC CERTIFIED AND UL LISTED AS REQUIRED BY 2019 BUILDING ENERGY STANDARD SECTION 119
2. REFER TO MANUFACTURER'S MANUAL FOR EXACT WIRING REQUIREMENTS.
3. TIMECLOCK SHALL BE 365-DAY PROGRAMMABLE WITH 10 HOUR BATTERY BACK-UP.
4. COORDINATE EXACT FEASIBLE LOCATION OF THE OVERRIDE SWITCH.

LIGHTING CONTROL DIAGRAM

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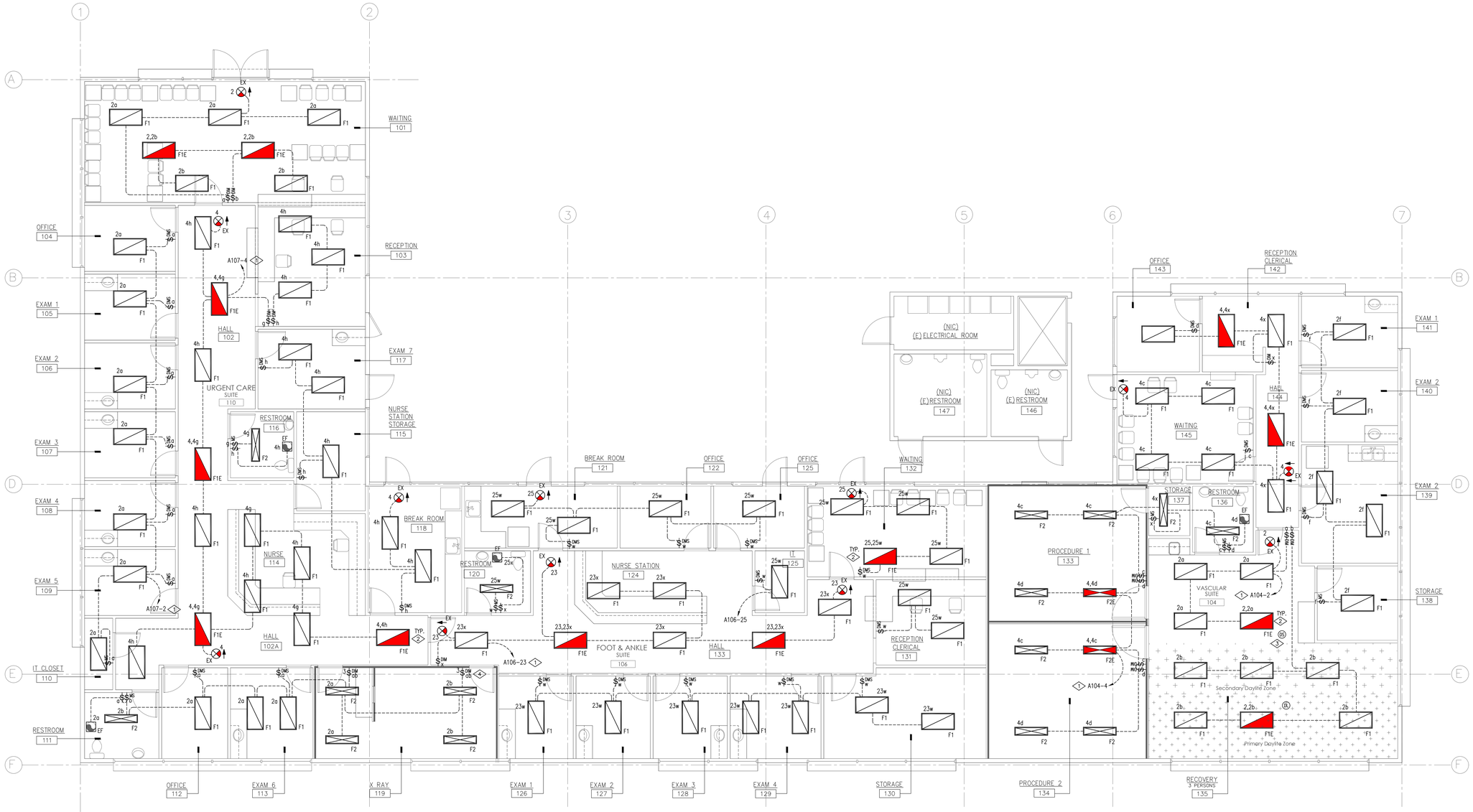
ISSUE DATES No.	Date	Description
1	5/11/22	PLAN CHECK

SHEET TITLE
LIGHTING SCHEDULE

Project No. : 212308
Date: 5/11/2022
Drawn: DSA
Scale: NO SCALE

SHEET NO.
E-1.1



Lighting Plan — Scale 3/16"=1'-0" — 1

GENERAL NOTES

1. ALL LIGHTING CIRCUITS SHALL BE CONTROLLED BY PROGRAMMABLE TIMECLOCK. ENCLOSED PRIVATE OFFICE AND SMALL CONFERENCE ROOM AREA SHALL BE CONTROLLED BY COMBINATION OF DIMMER SWITCH AND OCCUPANCY SENSOR.
2. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF LIGHTING FIXTURES.
3. FIXTURES TO BE VERIFIED WITH THE ARCHITECT PRIOR TO ORDERING. LIGHTING SUBMITTAL SHALL BE PROVIDED FOR REVIEW AND APPROVAL BY THE ENGINEER, LIGHTING CONSULTANT AND ARCHITECT.
4. COORDINATE AND VERIFY EXACT SWITCH LOCATION WITH THE ARCHITECT AND/OR WITH THE BUILDING REPRESENTATIVE PRIOR TO INSTALLATION.
5. REFER TO LIGHTING FIXTURE SCHEDULE ON SHEET E1.01 FOR LIGHTING SPECIFICATIONS.
6. LOWER CASE LETTER INDICATES THE SWITCHING DESIGNATION.
7. LIGHT SWITCHES TO BE MOUNTED @ +48" AFF., U.O.N.
8. ALL LIGHTING FIXTURES SHOWN ON PLAN ARE NEW UNLESS OTHERWISE NOTED.
9. ALL EMERGENCY LIGHTING FIXTURES SHALL BE PROVIDED WITH EMERGENCY BATTERY PACK MINIMUM OF 90-MINUTES.
10. ALL EXIT SIGN SHALL BE PROVIDED WITH 90-MINUTES BATTERY PACK.
11. CONDUIT RUNS ARE DIAGRAMMATIC ONLY. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY IN THE FIELD WITH MOST FEASIBLE WAY OF ROUTING AND COMBINING HOMERUNS.
12. ALL LIGHTING PRODUCTS SHALL BE UL LISTED AND SUITABLE FOR THE APPLICATION.
13. ALL EXPOSE CONDUIT SHALL BE ELECTRIC METALLIC TUBING (EMT) TYPE OF CONDUIT. NO EXCEPTION. CONDUIT SHALL BE MINIMUM OF 3/4"C UNLESS NOTED ON PLAN.
14. OBSERVE CLEAN ELECTRICAL INSTALLATION ALL THROUGHOUT THE SPACE.

REFERENCE NOTES

1. LIGHTING CIRCUIT SHALL BE CONTROLLED BY PROGRAMMABLE TIMECLOCK.
2. EMERGENCY LIGHTING FIXTURE. PROVIDE 90-MINUTES BATTERY PACK. TYPICAL ALL THROUGHOUT THE SPACE.
3. PROVIDE CEILING MOUNTED OCCUPANCY SENSOR.
4. PROVIDE 3-WAY CONTROL SWITCHING.

SYMBOL LISTS

- $DIM a — WALL MOUNTED DIMMER SWITCH SUBSCRIPT DENOTES CONTROL SWITCH "a".
- $DMS a — COMBINATION OF DIMMER SWITCH AND OCCUPANCY SENSOR IN A SINGLE GANG BOX. WALL MOUNTED.
- $MS — WALL MOUNTED OCCUPANCY SENSOR
- $3 — 3-WAY DIMMING SWITCH
- OS — CEILING MOUNTED OCCUPANCY SENSOR
- DL — CEILING MOUNTED DAYLITE SENSOR

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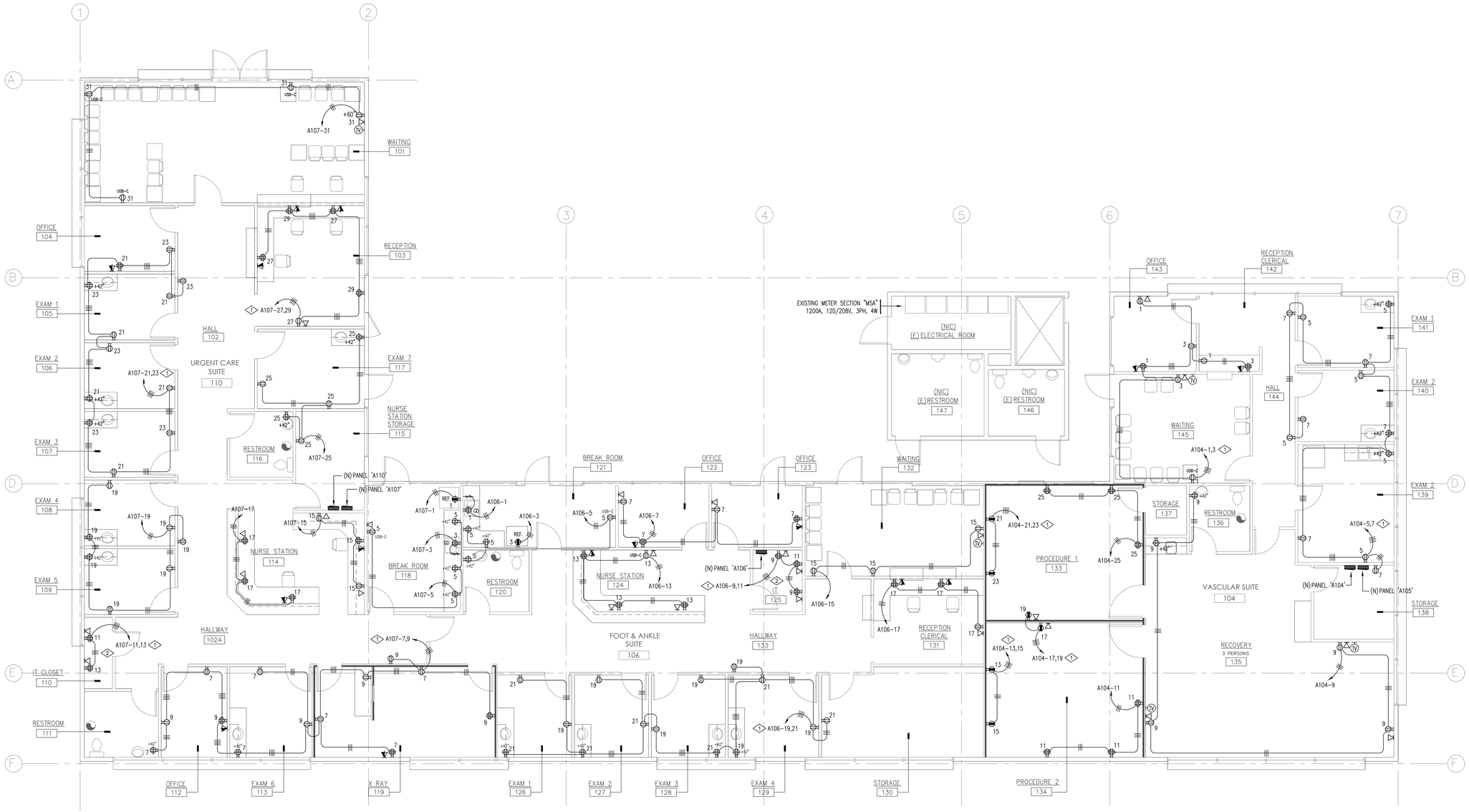
ISSUE DATES No.	Date	Description
1	5/11/22	PLAN CHECK

SHEET TITLE
LIGHTING PLAN

Project No. : 212308
Date: 5/11/2022
Drawn: DSA
Scale: 3/16"=1'-0"

SHEET NO.
E-2.0



Power Plan | 3/16"=1'-0" Scale | 1

GENERAL NOTES

1. ALL CONDUIT AND WIRES SHALL BE NEW. REMOVE ANY CONDUIT AND DEVICES THAT ARE NOT UTILIZED.
2. REFER TO SHEET E-4.0 FOR THE PANEL SCHEDULE.
3. ALL DEDICATED OUTLET SHALL HAVE SEPARATE CIRCUIT.
4. ALL ELECTRICAL OUTLETS LOCATED ABOVE COUNTERTOP WITHIN 6'-0" OF SINK AREA SHALL BE GFCI DUPLEX OUTLET. GFCI OUTLETS SHALL BE SELF-TEST, SELF-DIAGNOSTIC TYPE, HUBBELL AUTOGUARD SERIES OR APPROVED EQUAL.
5. ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY OF LANCASTER RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT.
6. INSTALL SEPARATE CONDUITS WITH PULL STRINGS FOR TEL/DATA 6" ABOVE THE CEILING SPACE.
7. ALARM AND SECURITY EQUIPMENT SHALL BE PROVIDED BY THE TENANT. CONTRACTOR TO PROVIDE ALL CONDUIT RUNS, SUPPORT AND ASSOCIATED ELECTRICAL CONNECTION AS REQUIRED.
8. CONDUIT RUNS ARE DIAGRAMMATIC ONLY. ELECTRICAL CONTRACTOR TO VERIFY IN THE FIELD THE MOST FEASIBLE WAY OF ROUTING AND COMBINING HOMERUNS.
9. ALL RECEPTACLE OUTLET SHALL BE LABELLED WITH PANEL AND CIRCUIT NUMBER.
10. FIRE ALARM SYSTEM SHALL BE DESIGN-BUILD AND ON A SEPARATE PERMIT SET. COORDINATE WITH THE FIRE ALARM CONTRACTOR/DRAWINGS FOR DETAILED INFORMATION.
11. ALL PRINTING MACHINES INCLUDING SCANNERS, PRINTERS, PHOTOCOPYING MACHINES – ELECTRICAL REQUIREMENTS SHALL BE VERIFIED AND COORDINATED ACCORDINGLY PRIOR TO OUTLET/CIRCUIT PROVISIONS.
12. TEL/DATA, SECURITY SYSTEM SPECIFIC REQUIREMENTS SHALL BE COORDINATED WITH THE LOW-VOLTAGE CONSULTANT.
13. MULTI-POLE CIRCUIT BREAKERS. PROVIDE AND INSTALL APPROVED HANDLE-TIES THAT WILL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS FOR THE MULTIWIRE BRANCH CIRCUITS AS PER CEC 210.4 (B).

REFERENCE NOTES

1. PROVIDE HANDLE-TIE CIRCUIT BREAKER PER CEC 210.4 (B).
2. PROVIDE TWO (2) DEDICATED 120V AT THE I.T. ROOM.

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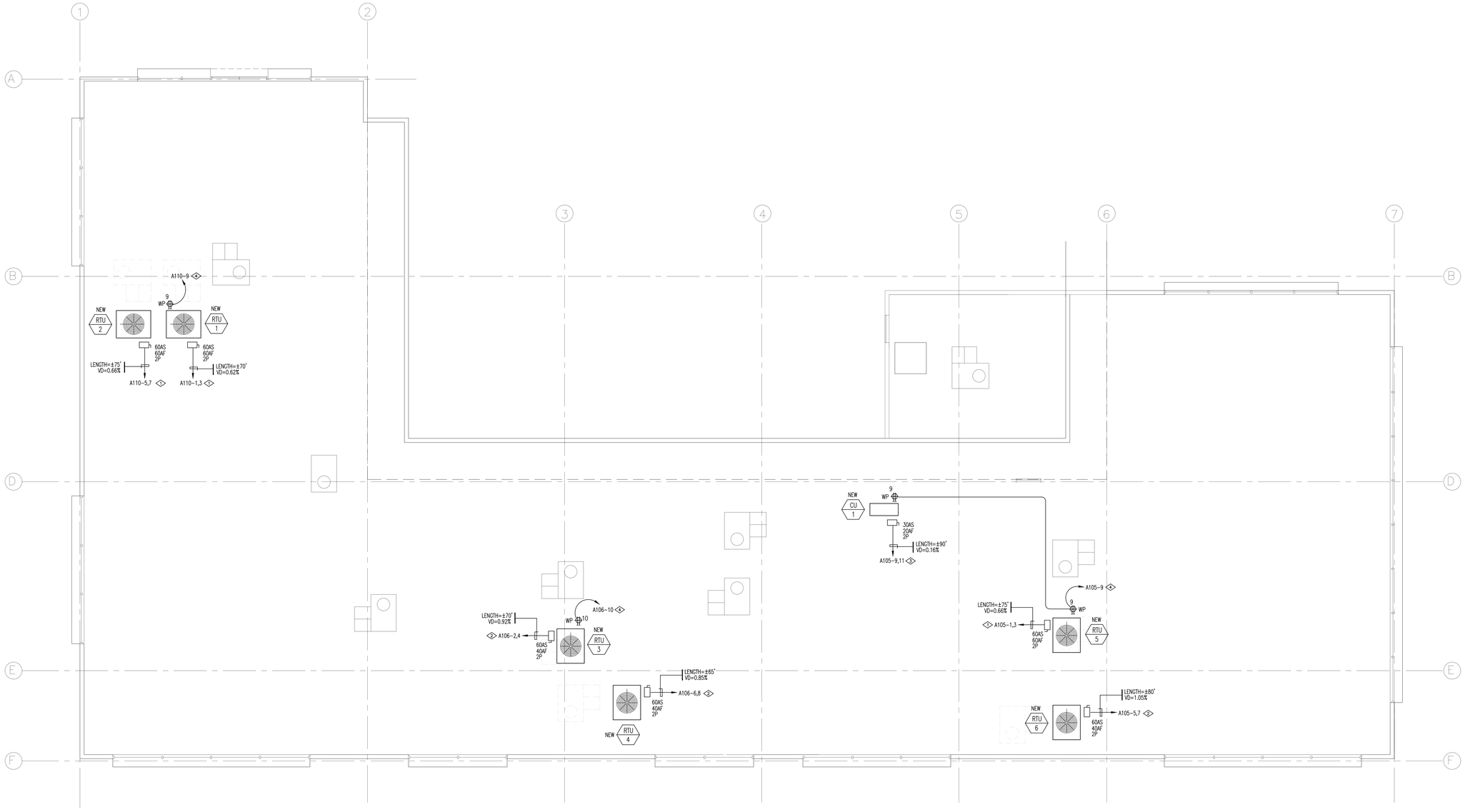
ISSUE DATES

No.	Date	Description
1	5/11/22	PLAN CHECK

SHEET TITLE
POWER PLAN

Project No. : 212308
Date: 5/11/2022
Drawn: DSA
Scale: 3/16"=1'-0"

SHEET NO.
E-3.0



Power Plan | 3/16"=1'-0" Scale | 1

GENERAL NOTES

1. ALL MECHANICAL UNIT SHALL BE NEW. PROVIDE ALL REQUIRED DISCONNECT SWITCHES AND COMPLETE FEEDER REQUIREMENTS.
2. FUSES SHALL BE PROVIDED WITH REJECTION TYPE FUSE HOLDERS. USE THE HVAC NAME PLATE RATING FOR THE EXACT FUSE SIZE.
3. REFER TO MECHANICAL DRAWINGS FOR THE EXACT LOCATION OF THE HVAC EQUIPMENT.
4. ALL OUTDOOR ELECTRICAL EQUIPMENT SHALL BE WEATHERPROOF RATED NEMA 3R OR BETTER.
5. PROVIDE ALL REQUIRED ELECTRICAL CLEARANCES FOR MAINTENANCE.
6. FIRE ALARM IS NOT ON THE SCOPE OF WORK AND SHALL BE ON A SEPARATE DRAWINGS/PERMIT.
7. CONDUIT RUNS ARE DIAGRAMMATIC ONLY. ELECTRICAL CONTRACTOR SHALL VERIFY FEASIBLE CONDUIT ROUTING.
8. OBSERVE CLEAN ELECTRICAL INSTALLATION ALL THROUGHOUT THE SPACE.
9. ALL HVAC CONTROLS SHALL BE PROVIDED AND PROGRAMMED BY THE MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE ALL REQUIRED CONDUIT AND WIRES UP TO THE CONTROL BOX.

REFERENCE NOTES

1. PROVIDE NEW WEATHERPROOF DISCONNECT SWITCH AS SHOWN. PROVIDE 1"C., 2#4 CU + 1#8 EQUIPMENT GROUND.
2. PROVIDE NEW WEATHERPROOF DISCONNECT SWITCH AS SHOWN. PROVIDE 3/4"C., 2#8 CU + 1#10 EQUIPMENT GROUND.
3. PROVIDE NEW WEATHERPROOF DISCONNECT SWITCH AS SHOWN. PROVIDE 3/4"C., 2#10 CU + 1#10 EQUIPMENT GROUND.
4. ALL RECEPTACLE ON ROOF AND INSTALLED IN WET LOCATION SHALL HAVE AN ENCLOSURE THAT IS WEATHERPROOF (WP) AND LISTED/IDENTIFIED AS "EXTRA-DUTY". THE RECEPTACLES SHALL BE LISTED AS THE WEATHER-RESISTANT (WR) TYPE AND SHALL BE GFI PROTECTED PER 210.8(B)(4).

EQUIPMENT SCHEDULE

RTU 1 / RTU 2 / RTU 5
PACKAGE ROOFTOP UNIT
MODEL: TRANE 4YCZ6060C1115A
5-TON, 208/230V, 1PH, FLA=35.52A, MCA=44.4A, MOCP=60A

RTU 3 / RTU 4 / RTU 6
PACKAGE ROOFTOP UNIT
MODEL: TRANE 4YCZ6036C1070A
3-TON, 208/230V, 1PH, FLA=20.8A, MCA=26A, MOCP=40A

CU 1
CONDENSING UNIT
MODEL: MITSUBISHI TRUZA0181KA70NA
208/230V, 1PH, FLA=8.8A, MCA=11A, MOCP=20A

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ISSUE DATES No.	Date	Description
1	5/11/22	PLAN CHECK

SHEET TITLE
HVAC POWER PLAN

Project No. : 212308
Date: 5/11/2022
Drawn: DSA
Scale: 3/16"=1'-0"

SHEET NO.
E-3.1

NEW PANELBOARD

VOLTAGE 120/208V, 3ø, 4W
LOCATION ROOM 138
AIC RATING 10,000 AIC

PANEL "A104"

MOUNTING SURFACE
MAIN C.B. 100A/3P
BUS SIZE 125A

NOTE	DESCRIPTION	OUTLETS LTS	OUTLETS REC	OUTLETS OTHERS	WATTAGE øA	WATTAGE øB	WATTAGE øC	BKR	POLE	CIRC. NO	CIRC. NO	BKR	POLE	WATTAGE øA	WATTAGE øB	WATTAGE øC	OUTLETS LTS	OUTLETS REC	OUTLETS OTHERS	DESCRIPTION	NOTE
1	RM. 143, 145 OFFICE & WAITING RM.	4			900			20	1	1	2	20	1	949			15			RM. 135, 138-141 LIGHTING	1
	RM. 143, 145 OFFICE & WAITING RM.	3				720		20	1	3	4	20	1		1070		19		1-EF	RM. 136-137, 133-134 LIGHTING	
1	RM. 139-141, EXAM ROOMS	6					1080	20	1	5	6	20	1			200			JBOX	PROGRAMMABLE TIMECLOCK	3
	RM. 139-141, EXAM ROOMS	6			1080			20	1	7	8	–	–	.						SPACE	
	RM. 135, RECOVERY AREA	5				900		20	1	9	10	–	–		.					SPACE	
	RM. 134, PROCEDURE RM. QUAD	3					1080	20	1	11	12	–	–			.				SPACE	
	RM. 134, PROCEDURE RM. DED. 1	1			1000			20	1	13	14	–	–	.						SPACE	
	RM. 134, PROCEDURE RM. DED. 2	1				1000		20	1	15	16	–	–		.					SPACE	
	RM. 134, PROCEDURE RM. DED. 3	1					1000	20	1	17	18	–	–			.				SPACE	
	RM. 133, PROCEDURE, DED. OXT. 1	1			1000			20	1	19	20	–	–	.						SPACE	
	RM. 133, PROCEDURE, DED. OXT. 2	1				1000		20	1	21	22	–	–		.					SPACE	
	RM. 133, PROCEDURE, DED. OXT. 3	1					1000	20	1	23	24	–	–			.				SPACE	
	RM. 133, PROCEDURE RM. QUAD	3			1080			20	1	25	26	–	–	.						SPACE	
	SPACE						.	–	–	27	28	–	–		.					SPACE	
	SPACE						.	–	–	29	30	–	–			.				SPACE	
	SPACE					.		–	–	31	32	–	–	.						SPACE	
	SPACE					.		–	–	33	34	–	–		.					SPACE	
	SPACE						.	–	–	35	36	–	–			.				SPACE	
	SPACE				.			–	–	37	38	–	–	.						SPACE	
	SPACE					.		–	–	39	40	–	–		.					SPACE	
	SPACE						.	–	–	41	42	–	–			.				SPACE	
TOTAL THIS SIDE					5060	3620	4160							949	1070	200				TOTAL THIS SIDE	
TOTAL BOTH SIDES					6009	4690	4360	TOTAL CONNECTED LOAD							15,059 VA						

DEMAND LOAD CALCULATION

	CONNECTED LOAD		FACTOR		MAXIMUM DEMAND LOAD
FIRST 10KVA RECEPTACLE LOAD	10,000 VA	X	100%	=	10,000 VA
50% REMAINDER OF 10KVA RECEPTACLE LOAD	2,840 VA	X	50%	=	1,420 VA
LIGHTING LOAD	2,019 VA	X	125%	=	2,524 VA
OTHER LOAD	200 VA	X	100%	=	200 VA
TOTAL: (Sum of Max. Demand Load)					14,144 VA
Full Load Amps: (Total/(208Vx1.73)					39.3 AMPS

NOTES: (1) PROVIDE HANDLE-TIE CIRCUIT BREAKER. (2) LIGHTING LOAD (3) OTHER LOAD

NEW PANELBOARD

VOLTAGE 120/208V, 3ø, 4W
LOCATION ROOM 138
AIC RATING 10,000 AIC

PANEL "A105"

MOUNTING SURFACE
MAIN C.B. 100A/3P
BUS SIZE 125A

NOTE	DESCRIPTION	OUTLETS LTS	OUTLETS REC	OUTLETS OTHERS	WATTAGE øA	WATTAGE øB	WATTAGE øC	BKR	POLE	CIRC. NO	CIRC. NO	BKR	POLE	WATTAGE øA	WATTAGE øB	WATTAGE øC	OUTLETS LTS	OUTLETS REC	OUTLETS OTHERS	DESCRIPTION	NOTE
1	ROOF, RTU-5			5-TON	3694			60		1	2	–	–	.						SPACE	
	WITH CIRCUIT #1					3694			2	3	4	–	–		.					SPACE	
1	ROOF, RTU-6			3-TON			2163	40		5	6	–	–			.				SPACE	
	WITH CIRCUIT #5				2163				2	7	8	–	–	.						SPACE	
1	ROOF, CU-1			1		915		20		9	10	–	–		.					SPACE	
	WITH CIRCUIT #9						915		2	11	12	–	–			.				SPACE	
2	ROOF, RECEPTACLE		2		360			20	1	13	14	–	–	.						SPACE	
	SPACE					.		–	–	15	16	–	–		.					SPACE	
	SPACE						.	–	–	17	18	–	–			.				SPACE	
	SPACE				.			–	–	19	20	–	–	.						SPACE	
	SPACE						.	–	–	21	22	–	–		.					SPACE	
	SPACE						.	–	–	23	24	–	–			.				SPACE	
	SPACE				.			–	–	25	26	–	–	.						SPACE	
	SPACE					.		–	–	27	28	–	–		.					SPACE	
	SPACE						.	–	–	29	30	–	–			.				SPACE	
	SPACE				.			–	–	31	32	–	–	.						SPACE	
	SPACE					.		–	–	33	34	–	–		.					SPACE	
	SPACE						.	–	–	35	36	–	–			.				SPACE	
	SPACE				.			–	–	37	38	–	–	.						SPACE	
	SPACE					.		–	–	39	40	–	–		.					SPACE	
	SPACE						.	–	–	41	42	–	–			.				SPACE	
TOTAL THIS SIDE					6217	4609	3078							0	0	0				TOTAL THIS SIDE	
TOTAL BOTH SIDES					48420	47077	47378	TOTAL CONNECTED LOAD							13,904 VA						

DEMAND LOAD CALCULATION

	CONNECTED LOAD		FACTOR		MAXIMUM DEMAND LOAD
FIRST 10KVA RECEPTACLE LOAD	180 VA	X	100%	=	180 VA
50% REMAINDER OF 10KVA RECEPTACLE LOAD	0 VA	X	50%	=	0 VA
MOTOR LOAD	13,724 VA	X	100%	=	13,724 VA
+ LARGEST MOTOR LOAD	7,388 VA	X	25%	=	1,847 VA
TOTAL: (Sum of Max. Demand Load)					15,751 VA
Full Load Amps: (Total/(208Vx1.73)					43.8 AMPS

NOTES: (1) PROVIDE HACR TYPE OF CIRCUIT BREAKER. (2) PROVIDE WEATHERPROOF, GFCI OUTLET.

NEW PANELBOARD

VOLTAGE 120/208V, 3ø, 4W
LOCATION ROOM 128
AIC RATING 10,000 AIC

PANEL "A106"

MOUNTING SURFACE
MAIN C.B. 100A/3P
BUS SIZE 125A

NOTE	DESCRIPTION	OUTLETS LTS	OUTLETS REC	OUTLETS OTHERS	WATTAGE øA	WATTAGE øB	WATTAGE øC	BKR	POLE	CIRC. NO	CIRC. NO	BKR	POLE	WATTAGE øA	WATTAGE øB	WATTAGE øC	OUTLETS LTS	OUTLETS REC	OUTLETS OTHERS	DESCRIPTION	NOTE
	RM. 121, GARBAGE DISPOSER			1176				20	1	1	2	40		2163					3-TON	ROOF, RTU-3	1
	RM. 121, REFRIGERATOR		1			1000		20	1	3	4		2		2163					WITH CIRCUIT #2	
	RM. 121, COUNTERTOP OUTLET		4				720	20	1	5	6	40				2163			3-TON	ROOF, RTU-4	1
	RM. 122-123, PRIVATE OFFICE		4		1080			20	1	7	8		2	2163						WITH CIRCUIT #6	
3	RM. 125, IT SERVER		2			1000		20	1	9	10	20	1		180			1		ROOF, RECEPTACLE	2
	RM. 125, IT SERVER		1				500	20	1	11	12	–	–			.				SPACE	
	RM. 124, NURSING STATION		4		1260			20	1	13	14	–	–	.						SPACE	
	RM. 132, WAITING ROOM		3			540		20	1	15	16	–	–			.				SPACE	
	RM. 131, RECEPTION CLERICAL		3				900	20	1	17	18	–	–			.				SPACE	
3	RM. 126-129 EXAM ROOM		7		1260			20	1	19	20	–	–	.						SPACE	
	RM. 126-129 EXAM ROOM		7			1260		20	1	21	22	–	–		.					SPACE	
	RM. 124, 126-130, 133 LIGHTING	14					886	20	1	23	24	–	–			.				SPACE	
	RM. 126-129 EXAM ROOM LIGHTING	12		1-EF	793			20	1	25	26	–	–	.						SPACE	
	SPACE						.	–	–	27	28	–	–		.					SPACE	
	SPACE						.	–	–	29	30	–	–			.				SPACE	
	SPACE					.		–	–	31	32	–	–	.						SPACE	
	SPACE						.	–	–	33	34	–	–		.					SPACE	
	SPACE						.	–	–	35	36	–	–			.				SPACE	
	SPACE				.			–	–	37	38	–	–	.						SPACE	
	SPACE					.		–	–	39	40	–	–		.					SPACE	
	SPACE						.	–	–	41	42	–	–			.				SPACE	
TOTAL THIS SIDE					5569	3800	3006							4326	2343	2163				TOTAL THIS SIDE	
TOTAL BOTH SIDES					9895	6143	5169	TOTAL CONNECTED LOAD							21,207 VA						

DEMAND LOAD CALCULATION

	CONNECTED LOAD		FACTOR		MAXIMUM DEMAND LOAD
FIRST 10KVA RECEPTACLE LOAD	10,000 VA	X	100%	=	10,000 VA
50% REMAINDER OF 10KVA RECEPTACLE LOAD	876 VA	X	50%	=	438 VA
MOTOR LOAD	8,652 VA	X	100%	=	8,652 VA
+ LARGEST MOTOR LOAD	4,326 VA	X	25%	=	1,082 VA
LIGHTING LOAD	1,679 VA	X	125%	=	2,099 VA
TOTAL: (Sum of Max. Demand Load)					22,271 VA
Full Load Amps: (Total/(208Vx1.73)					61.9 AMPS

NOTES: (1) PROVIDE HACR TYPE OF CIRCUIT BREAKER. (2) PROVIDE WEATHERPROOF, GFCI OUTLET. (3) PROVIDE HANDLE-TIE CIRCUIT BREAKER.

NEW PANELBOARD

VOLTAGE 120/208V, 3ø, 4W
LOCATION ROOM 138
AIC RATING 10,000 AIC

PANEL "A107"

MOUNTING SURFACE
MAIN C.B. 100A/3P
BUS SIZE 125A

NOTE	DESCRIPTION	OUTLETS LTS	OUTLETS REC	OUTLETS OTHERS	WATTAGE øA	WATTAGE øB	WATTAGE øC	BKR	POLE	CIRC. NO	CIRC. NO	BKR	POLE	WATTAGE øA	WATTAGE øB	WATTAGE øC	OUTLETS LTS	OUTLETS REC	OUTLETS OTHERS	DESCRIPTION	NOTE
	RM. 118, REFRIGERATOR		1		1000			20	1	1	2	20	1	1351			22		1-EF	RM. 101, 104-113, 119 LIGHTING	2
	RM. 118, GARBAGE DISPOSER		1			1176		20	1	3	4	20	1		1360		22		1-EF	RM. 102-103, 1114-117 LIGHTING	
	RM. 118, COUNTERTOP OUTLET		4				720	20	1	5	6	20	1			200			JBOX	PROGRAMMABLE TIMECLOCK	3
1	RM. 111-113, 119 XRAY & EXAM RM.		7		1260			20	1	7	8	–	–	.						SPACE	
	RM. 111-113, 119 XRAY & EXAM RM.		5			1260		20	1	9	10	–	–		.					SPACE	
	RM. 110, I.T. SERVER		1				500	20	1	11	12	–	–			.				SPACE	
	RM. 110, I.T. SERVER		1		500			20	1	13	14	–	–	.						SPACE	
	RM. 114, NURSE STATION		3			720		20	1	15	16	–	–		.					SPACE	
	RM. 114, NURSE STATION		3				1080	20	1	17	18	–	–			.				SPACE	
	RM. 108-109, EXAM ROOM		7		1260			20	1	19	20	–	–	.						SPACE	
1	RM. 104-107, EXAM ROOM		6			1260		20	1	21	22	–	–		.					SPACE	
	RM. 104-107, EXAM ROOM		6				1080	20	1	23	24	–	–			.				SPACE	
	RM. 115-117, EXAM ROOM		5		900			20	1	25	26	–	–	.						SPACE	
1	RM. 103, RECEPTION AREA		3			900		20	1	27	28	–	–		.					SPACE	
	RM. 103, RECEPTION AREA		2				720	20	1	29	30	–	–			.				SPACE	
	RM. 101, WAITING ROOM		4		720			20	1	31	32	–	–	.						SPACE	
	SPACE					.		–	–	33	34	–	–		.					SPACE	
	SPACE						.	–	–	35	36	–	–			.				SPACE	
	SPACE				.			–	–	37	38	–	–	.						SPACE	
	SPACE					.		–	–	39	40	–	–		.					SPACE	
	SPACE						.	–	–	41	42	–	–			.				SPACE	
TOTAL THIS SIDE					5640	5316	4100							1351	1360	200				TOTAL THIS SIDE	
TOTAL BOTH SIDES					6991	6676	4300	TOTAL CONNECTED LOAD							17,967 VA						

DEMAND LOAD CALCULATION

	CONNECTED LOAD		FACTOR		MAXIMUM DEMAND LOAD
FIRST 10KVA RECEPTACLE LOAD	10,000 VA	X	100%	=	10,000 VA
50% REMAINDER OF 10KVA RECEPTACLE LOAD	5,056 VA	X	50%	=	2,528 VA
LIGHTING LOAD	2,711 VA	X	125%	=	3,389 VA
OTHER LOAD	200 VA	X	100%	=	200 VA
TOTAL: (Sum of Max. Demand Load)					16,117 VA
Full Load Amps: (Total/(208Vx1.73)					44.8 AMPS

NOTES: (1) PROVIDE HANDLE-TIE CIRCUIT BREAKER. (2) LIGHTING LOAD (3) OTHER LOAD

NEW PANELBOARD

VOLTAGE 120/208V, 3ø, 4W
LOCATION ROOM 138
AIC RATING 10,000 AIC

PANEL "A110"

MOUNTING SURFACE
MAIN C.B. 100A/3P
BUS SIZE 125A

NOTE	DESCRIPTION	OUTLETS LTS	OUTLETS REC	OUTLETS OTHERS	WATTAGE øA	WATTAGE øB	WATTAGE øC	BKR	POLE	CIRC. NO	CIRC. NO	BKR	POLE	WATTAGE øA	WATTAGE øB	WATTAGE øC	OUTLETS LTS	OUTLETS REC	OUTLETS OTHERS	DESCRIPTION	NOTE
1	ROOF, RTU-1			5-TON	3694			60		1	2	–	–	.						SPACE	
	WITH CIRCUIT #1					3694			2	3	4	–	–		.					SPACE	
1	ROOF, RTU-2			5-TON			3694	40		5	6	–	–			.				SPACE	
	WITH CIRCUIT #5				3694				2	7	8	–	–	.						SPACE	
2	ROOF, RECEPTACLE		1			180		20	1	9	10	–	–		.					SPACE	
	SPACE						.	–	–	11	12	–	–			.				SPACE	
	SPACE				.			–	–	13	14	–	–	.						SPACE	
	SPACE						.	–	–	15	16	–	–		.					SPACE	
	SPACE						.	–	–	17	18	–	–			.				SPACE	
	SPACE				.			–	–	19	20	–	–	.						SPACE	
	SPACE						.	–	–	21	22	–	–		.					SPACE	
	SPACE						.	–	–	23	24	–	–			.				SPACE	
	SPACE				.			–	–	25	26	–	–	.						SPACE	
	SPACE						.	–	–	27	28	–	–		.					SPACE	
	SPACE						.	–	–	29	30	–	–			.				SPACE	
	SPACE				.			–	–	31	32	–	–	.						SPACE	
	SPACE						.	–	–	33	34	–	–		.					SPACE	
	SPACE						.	–	–	35	36	–	–			.				SPACE	
	SPACE				.			–	–	37	38	–	–	.						SPACE	
	SPACE						.	–	–	39	40	–	–		.					SPACE	
	SPACE						.	–	–	41	42	–	–			.				SPACE	
TOTAL THIS SIDE					7388	3874	3694							0	0	0				TOTAL THIS SIDE	
TOTAL BOTH SIDES					7388	3874	3694	TOTAL CONNECTED LOAD							14,956 VA						

DEMAND LOAD CALCULATION

	CONNECTED LOAD		FACTOR		MAXIMUM DEMAND LOAD
FIRST 10KVA RECEPTACLE LOAD	180 VA	X	100%	=	180 VA
50% REMAINDER OF 10KVA RECEPTACLE LOAD	0 VA	X	50%	=	0 VA
MOTOR LOAD	14,776 VA	X	100%	=	14,776 VA
+ LARGEST MOTOR LOAD	7,388 VA	X	25%	=	1,847 VA
TOTAL: (Sum of Max. Demand Load)					16,803 VA
Full Load Amps: (Total/(208Vx1.73)					46.7 AMPS

NOTES: (1) PROVIDE HACR TYPE OF CIRCUIT BREAKER. (2) PROVIDE WEATHERPROOF, GFCI OUTLET.

PANEL SCHEDULE		
A104	A105	A106
A107	A110	

"Designing Solutions"
MAG
McLennon Architecture Group Inc
759 W. Lancaster Blvd, Lancaster, CA 93534
mclennonarch.com 661.940.3688

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LANCSATER, CA 93534

ISSUE DATES

No.	Date	Description
1	5/11/22	PLAN CHECK

SHEET TITLE
PANEL SCHEDULE

Project No. : 212308
Date: 5/11/2022
Drawn: DSA
Scale: NO SCALE

SHEET NO.
E-4.0

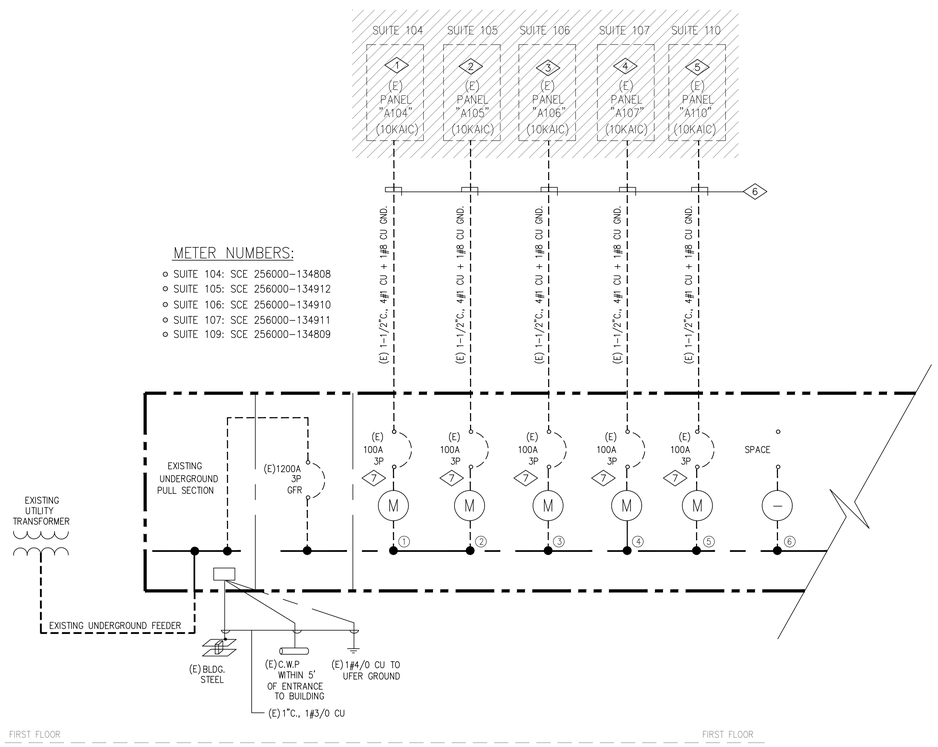
EXISTING SINGLE LINE DIAGRAM

GENERAL NOTES:

1. ALL PANELBOARD SERVING THE AREA ARE TO BE REMOVED.
2. ELECTRICAL WIRES INCLUDING ALL UNDERGROUND CONDUIT FROM THE METER SECTION UP TO
3. ALL NEW WIRES SHALL BE COPPER THWN/THHN.
4. ALL EXISTING PANELBOARD SHALL BE CHECK AND CLEAN.

REFERENCE NOTES:

1. EXISTING PANEL "A104" TO BE REMOVED.
2. EXISTING PANEL "A105" TO BE REMOVED.
3. EXISTING PANEL "A106" TO BE REMOVED.
4. EXISTING PANEL "A107" TO BE REMOVED.
5. EXISTING PANEL "A110" TO BE REMOVED.
6. ALL ELECTRICAL FEEDERS FROM THE METER SECTION UP TO THE PANEL LOCATION TO REMAIN.
7. EXISTING CIRCUIT BREAKER TO REMAIN.



METER NUMBERS:

- SUITE 104: SCE 256000-134808
- SUITE 105: SCE 256000-134912
- SUITE 106: SCE 256000-134910
- SUITE 107: SCE 256000-134911
- SUITE 109: SCE 256000-134809

EXISTING METER SECTION 'MSA',
1200A,120/208V, 3Ø, 4W BUS @ 65KAIC

SINGLE LINE DIAGRAM: DEMO PLAN

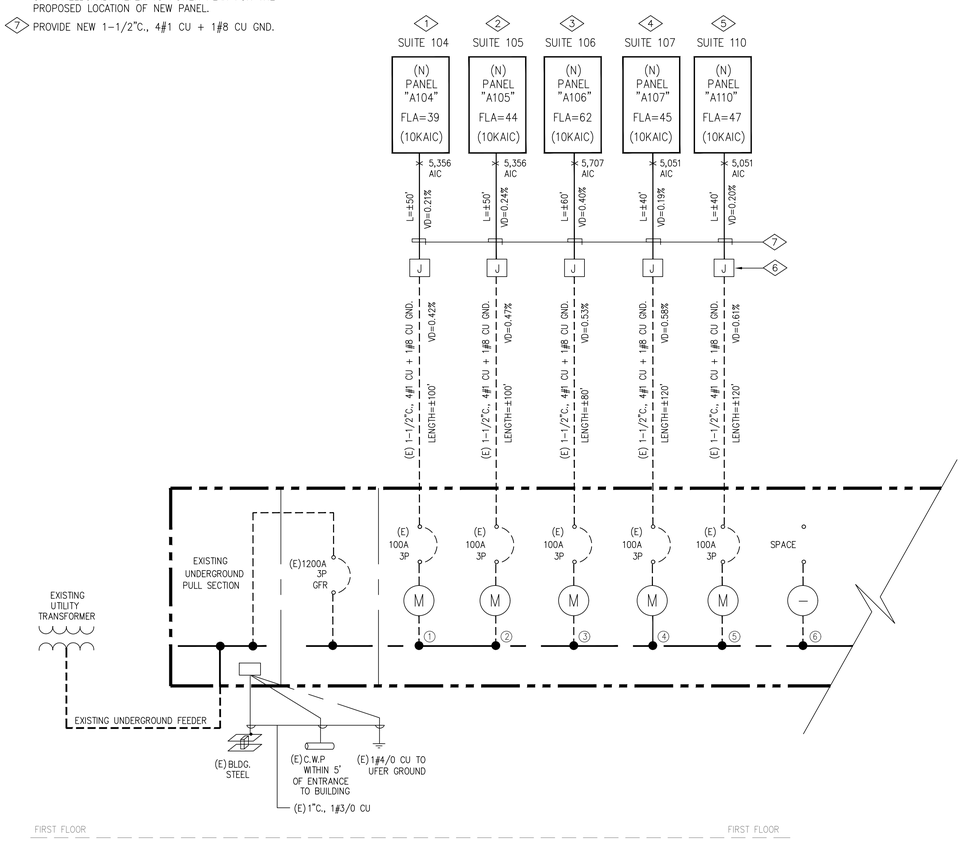
EXISTING SINGLE LINE DIAGRAM

GENERAL NOTES:

1. ALL EQUIPMENT SHOWN IN THIS SINGLE LINE DIAGRAM ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
2. ALL FUSES SHALL BE PROVIDED WITH REJECTION TYPE FUSE HOLDERS.
3. ALL NEW WIRES SHALL BE COPPER THWN/THHN.
4. ALL EXISTING PANELBOARD SHALL BE CHECK AND CLEAN.

REFERENCE NOTES:

1. PROVIDE NEW PANEL "A104".
2. PROVIDE NEW PANEL "A105".
3. PROVIDE NEW PANEL "A106".
4. PROVIDE NEW PANEL "A107".
5. PROVIDE NEW PANEL "A110".
6. PROVIDE JUNCTION BOX TO EXTEND ELECTRICAL FEEDER FROM PREVIOUS LOCATION OF PANEL TO NEW LOCATION OF PANELBOARD. REFER TO POWER PLAN FOR THE PROPOSED LOCATION OF NEW PANEL.
7. PROVIDE NEW 1-1/2"C., 4#1 CU + 1#8 CU GND.



EXISTING METER SECTION 'MSA',
1200A,120/208V, 3Ø, 4W BUS @ 65KAIC

SINGLE LINE DIAGRAM: CONSTRUCTION PLAN

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1672 WEST AVENUE J
LANCSATER, CA 93534

ISSUE DATES

No.	Date	Description
1	5/11/22	PLAN CHECK

SHEET TITLE
SINGLE LINE DIAGRAM

Project No. : 212308
Date: 5/11/2022
Drawn: DSA
Scale: NO SCALE

SHEET NO.
E-5.0

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 04/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E

This document is used to demonstrate compliance with requirements in §110.9, §110.12(c), §130.0, §130.1, §140.6, and §141.0(b)2 for indoor lighting scopes using the prescriptive path.

Project Name:	LZ LANCASTER MEDICAL OFFICE - TENANT IMPROVEMENT	Report Page:	Page 1 of 7
Project Address:	1672 WEST AVENUE J, LANCASTER, CA 93534	Date Prepared:	5/10/2022

A. GENERAL INFORMATION

01	Project Location (city)	LANCASTER	04	Total Conditioned Floor Area (ft²)	7,564
02	Climate Zone		05	Total Unconditioned Floor Area (ft²)	
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	

☑ Office ☐ Retail ☐ Warehouse ☐ Hotel/Motel ☐ School ☐ Support Areas
☐ Parking Garage ☐ High-Rise Residential ☐ Relocatable ☑ Healthcare ☐ Other (write in):

B. PROJECT SCOPE

Table Instructions: Include any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations. WARNING: Changing the Calculation Method in this table will result in the deletion of data previously input. If you need to change the calculation method, please open a new form or use "Save As".

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
	01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☑ New Lighting System	Area Category	7,564		
☐ Altered Lighting System				
Total Area of Work (ft²)	**7,564**			

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b)1.	Allowed Lighting Power per §140.6(b) (Watts)						Adjusted Lighting Power per §140.6(a) (Watts)				Compliance Results
	01	02	03	04		05	06	07		08	09
	Complete Building §140.6(c)1	Area Category §140.6(c)2	Area Category Additional §140.6(c)2G (+)	Tailored §140.6(c)3 (+)	=	**Total Allowed** (Watts)	≥ Total Designed (Watts)	Adjustments: PAF Control Credits §140.6(a)2 (-)	=	**Total Adjusted** (Watts) *Includes Adjustments	**05 Must be ≥ 08** §140.6
	(See Table I)	(See Table I)	(See Table J)	(See Table K)			(See Table F)	(See Table P)			
Conditioned:		6,802.5			=	**6,802.5**	≥ 6,144.14		=	**6,144.14**	**COMPLIES**
Unconditioned:					=		=		=		

Table Continued

Controls Compliance (See Table H for Details)	**COMPLIES**
Rated Power Reduction Compliance (See Table Q for Details)	**Not Applicable**

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

No exceptional conditions apply to this project.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. INDOOR LIGHTING FIXTURE SCHEDULE

Table Instructions: Include all permanent designed lighting and all portable lighting in offices.

Designed Wattage: Conditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspector: Pass	Fail
F1/F1E	LED, 2x4 Fixture, Dimmable	☐	☐	63.25	Mfr. Spec[2]	85	☐	5,376.25	☐	☐
F2/F2E	LED, 1x4 Fixture, Dimmable	☐	☐	45.17	Mfr. Spec[2]	17	☐	767.89	☐	☐
							Total Designed Watts CONDITIONED SPACES:	**6,144.14**		

[1] FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)4B is adjusted to be 75% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.
[2] Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c) Wattage used must be the maximum rated for the luminaire, not the lamp.

G. MODULAR LIGHTING SYSTEMS

This Section Does Not Apply

H. INDOOR LIGHTING CONTROLS (Not Including PAFs)

*Table Instructions: Please include lighting controls for conditioned and unconditioned spaces in this table. When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Building Level Controls

01	02	03	
Mandatory Demand Response §110.12(c)	Shut-Off Controls §130.1(c)	Field Inspector: Pass	Fail
		☐	☐

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Area Controls §130.1(a)	Multi-Level Controls §130.1(b)	Shut-Off Controls §130.1(c)	Primary/Skylit Daylighting §130.1(d)	Secondary Daylighting §140.6(d)	Interlocked Systems §140.6(a)1	Field Inspector: Pass	Fail
Private Office	Office (≤ 250 square feet)	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
Restroom Area	Restroom	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
Breakroom Area	Kitchen, Food Preparation	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
Hallway	Corridor	Manual ON/ OFF	Dimmer	Auto Timeswitch	NA	NA	☐	☐	☐
Waiting / Lounge	Lounge	Manual ON/ OFF	Dimmer	Auto Timeswitch	Included	Included	☐	☐	☐
Storage Area	Commercial and Industrial Storage	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
Exam Rooms	Hospital - Exam/Treatment	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
Procedure Rooms	Hospital - Operating Rm	Manual ON/ OFF	Dimmer	Auto Timeswitch	NA	Included	☐	☐	☐
Nurse Station	Hospital - Nurse Station	Manual ON/ OFF	Dimmer	Auto Timeswitch	NA	NA	☐	☐	☐
Recovery Area	Hospital - Recovery	Manual ON/ OFF	Dimmer	Auto Timeswitch	Included	Included	☐	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved. *EX: Conference 1: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting; EXCEPTION 1 to §130.1(d)2*	13
	Plan Sheet Showing Daylit Zones:

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Table Instructions: Complete the table for each area complying using the Complete Building or Area Category Methods per §140.6(b). Indicate if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used.

Conditioned Spaces

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustment: Area Category	PAF
Private Office	Office (≤ 250 square feet)	0.7	948	663.6	☐	☐
Nurse Station Area	Hospital - Nurse Station	0.75	424	318	☐	☐
Recovery Area	Hospital - Recovery	0.9	672	604.8	☐	☐
Exam Rooms	Hospital - Exam/Treatment	1.15	1,467	1,687.05	☐	☐
Procedure Rooms	Hospital - Operating Rm	1.9	634	1,204.6	☐	☐
X-Ray Area	Hospital - Imaging	1	245	245	☐	☐
Waiting/Lounge	Lounge	0.65	974	633.1	☐	☐
Breakroom, Pantry Area	Kitchen, Food Preparation	0.95	323	306.85	☐	☐
Restroom Area	Restroom	0.65	266	172.9	☐	☐
Hallway	Corridor	0.6	1,165	699	☐	☐
StorageArea	Commercial and Industrial Storage	0.6	446	267.6	☐	☐
		TOTAL:	**7,564**	**6,802.5**	See Tables J or P for detail	

J. ADDITIONAL LIGHTING ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

This Section Does Not Apply

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This Section Does Not Apply

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This Section Does Not Apply

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This Section Does Not Apply

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS

This Section Does Not Apply

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This Section Does Not Apply

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

This Section Does Not Apply

Q. RATED POWER REDUCTION COMPLIANCE FOR ALTERATIONS

This Section Does Not Apply

R. 80% LIGHTING POWER FOR ALTERATIONS - CONTROLS EXCEPTIONS

This Section Does Not Apply

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)

This Section Does Not Apply

T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://ww2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector: Pass	Fail
◉	○	NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐

○	◉	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐	☐

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

YES	NO	Form/Title	Field Inspector: Pass	Fail
◉	○	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐
◉	○	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐	☐
○	◉	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐	☐
○	◉	NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF).	☐	☐
○	◉	NRCA-ENV-03-F - Must be submitted for daylighting design power adjustment factors (PAF).	☐	☐

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete

Documentation Author Name:	GUILLERMO PECSON JR. PE	Documentation Author Signature:	
Company:	DS&A CONSULTING ENGINEERS, INC.	Signature Date:	5/10/2022
Address:	10811 WASHINGTON BLVD., SUITE #374	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	CULVER CITY, CA 90232	Phone:	(310) 384-2594

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	GUILLERMO PECSON JR. PE	Responsible Designer Signature:	
Company :	DS&A CONSULTING ENGINEERS, INC.	Date Signed:	5/10/2022
Address:	10811 WASHINGTON BLVD., SUITE #374	License:	E-18048
City/State/Zip:	CULVER CITY, CA 90232	Phone:	(310) 384-2594

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CONSULTANT:

REGISTERED PROFESSIONAL ENGINEER — GUILLERMO C. PECSON JR. — E18048 — EXP. 6-30-23 — ELECTRICAL — STATE OF CALIFORNIA

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LZ LANCASTER PROPERTIES, LLC
1672 WEST AVENUE J
LANCSATER, CA 93534

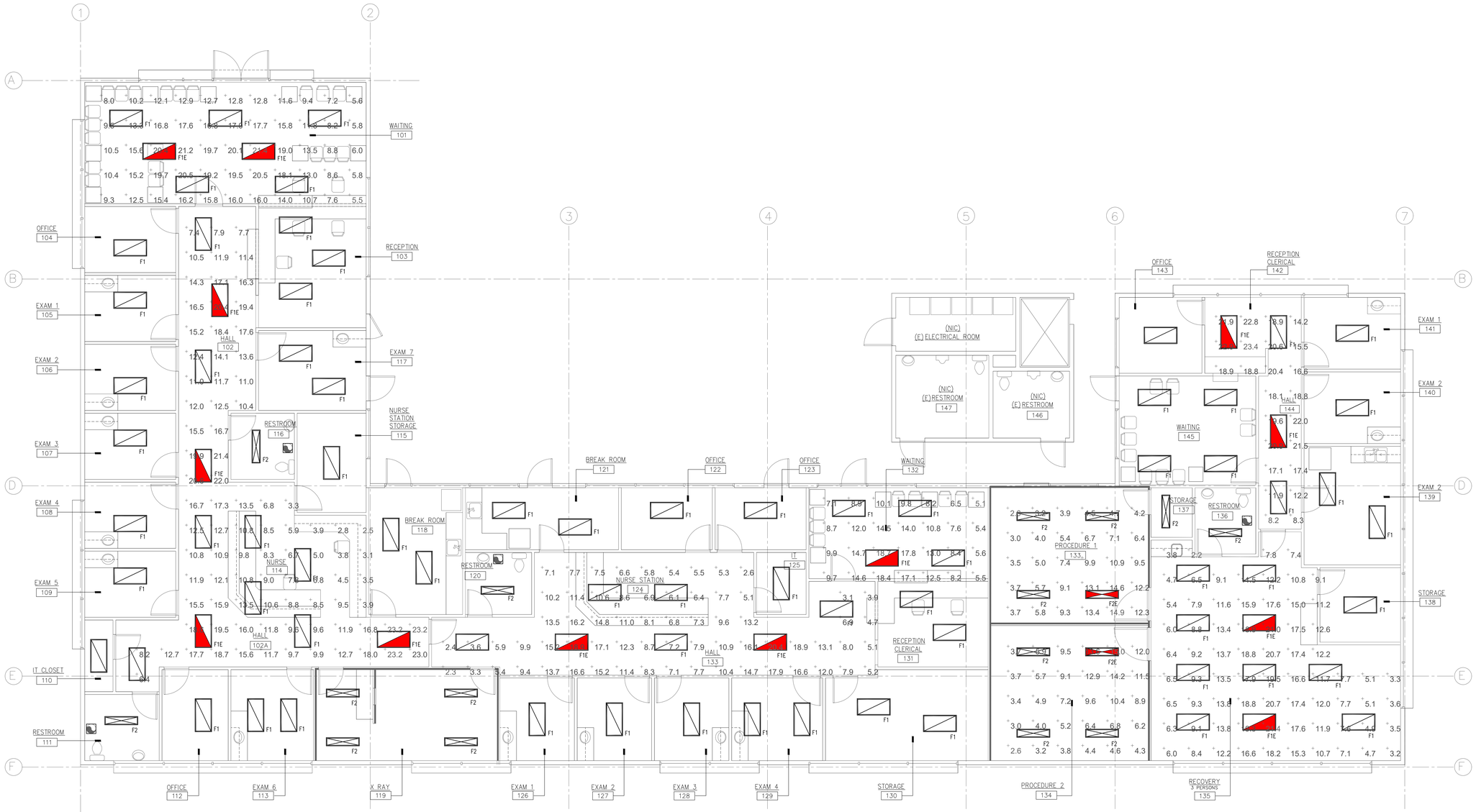
ISSUE DATES

No.	Date	Description
1	5/11/22	PLAN CHECK

SHEET TITLE
TITLE 24
COMPLIANCE FORMS

Project No. : 212308
Date: 5/11/2022
Drawn: DSA
Scale: NO SCALE

SHEET NO.
E-6.0



Emergency Egress Photometrics Plan — Scale 3/16"=1'-0" — 1

Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	F1E	13	Lithonia Lighting	2BLT4 85LHE MVOLT LP940	BLT 2X4, 8500 Nominal Lumens, Square Smooth lens with trim rings, 4000K CCT	LED	1	2BLT4_85LHE_SDSMT_LP940.ies	8500	0.7	63.25
	F2E	2	Lithonia Lighting	BLT4 60LHE MVOLT LP940	BLT 1X4, 6000 Nominal Lumens, Square Prismatic lens, 4000K CCT	LED	1	BLT4_60LHE_SDP_LP940.ies	6000	0.7	45.17

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Location
Calc Zone #1	+	13.7 fc	21.4 fc	5.5 fc	3.9:1	2.5:1	Waiting 101
Calc Zone #2	+	12.4 fc	23.2 fc	2.5 fc	9.3:1	5.0:1	Hallway 102 & 102A
Calc Zone #3	+	9.4 fc	20.4 fc	2.3 fc	8.9:1	4.1:1	Hallway 133
Calc Zone #4	+	10.8 fc	18.7 fc	5.1 fc	3.7:1	2.1:1	Waiting 132
Calc Zone #5	+	7.3 fc	14.9 fc	2.6 fc	5.7:1	2.8:1	Procedure 133
Calc Zone #6	+	7.2 fc	15.0 fc	2.6 fc	5.8:1	2.8:1	Procedure 134
Calc Zone #7	+	11.3 fc	21.4 fc	2.2 fc	9.7:1	5.1:1	Recovery 135
Calc Zone #8	+	18.0 fc	23.4 fc	8.2 fc	2.9:1	2.2:1	Hallway 144

"Designing Solutions"
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LANCSATER, CA 93534

ISSUE DATES No.	Date	Description
1	5/11/22	PLAN CHECK

SHEET TITLE
EMERGENCY EGRESS PHOTOMETRICS PLAN

Project No. : 212308
Date: 5/11/2022
Drawn: DSA
Scale: 3/16"=1'-0"

SHEET NO.
E-7.0

SYMBOLS

- SINGLE LINE DUCTWORK (NEW)
- DOUBLE LINE DUCTWORK (NEW)
- DUCTWORK WITH ACOUSTIC LINING
- DUCT UNDER POSITIVE PRESSURE SUPPLY DUCT OR FAN DISCHAGE
- DUCT UNDER NEGATIVE PRESSURE RETURN DUCT
- EXHAUST DUCT
- DUCT TRANSITION
- VANED ELBOW
- W / R — RADIUS ELBOW , R=W
- BDD — BACK DRAFT DAMPER
- FD — FIRE DAMPER AND ACCESS DOOR
- DFD — DYNAMIC FIRE DAMPER AND ACCESS DOOR
- SD — AUTOMATIC SMOKE DAMPER
- CFSD — COMBINATION FIRE AND SMOKE DAMPER
- MD — MOTORIZED DAMPER
- CD-1 — CEILING SUPPLY, TYPE 1, THROW PATTERN 4-WAY, 100 CFM
- CR-1 — CEILING RETURN, TYPE 1, 100 CFM
- EG-1 — CEILING EXHAUST, TYPE 1, 100 CFM
- LD-1 — LINEAR DIFFUSER, TYPE 1, 100 CFM
- LR-1 — LINEAR RETURN, TYPE 1, 100 CFM
- T — NEW THERMOSTAT
- SD — SMOKE DETECTOR
- COND — CONDENSATE

ABBREVIATIONS

– A –	
ACD	AUTOMATIC CONTROL DAMPER
ACU	AIR CONDITIONING UNIT
ACV	AUTOMATIC CONTROL VALVE
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ARCH	ARCHITECTURAL
– B –	
B	BTU MEASURING PANEL
BDD	BACKDRAFT DAMPER
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
– C –	
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CFSD	COMBINATION FIRE/SMOKE DAMPER
COND	CONDENSATE
CONN	CONNECTION
CONT	CONTINUATION
– D –	
D	DROP
DN	DOWN
DR	DRAIN
DWG	DRAWING
– E –	
EA	EXHAUST AIR
EF	EXHAUST FAN
– F –	
°F	DEGREES FAHRENHEIT
FA	FREE AREA (SQ.FT.)
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FPB	FAN POWERED BOX
– G –	
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
– H –	
HP	HORSEPOWER
HR	HOUR
HX	HEAT EXCHANGER
– K –	
KW	KILOWATT
– L –	
L	LENGTH
(L)	LINED DUCTWORK
LD-1	LINEAR DIFFUSER TYPE 1
LDB	LEAVING DRY BULB TEMPERATURE

– M –	
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MER	MECHANICAL EQUIPMENT ROOM
MIN	MINIMUM
– N –	
(N)	NEW
NC	NOISE CRITERIA
NIC	NOT IN CONTRACT
NK	NECK
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
– O –	
OSA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
– P –	
POC	POINT OF CONNECTION
PSI	POUNDS PER SQUARE INCH
– R –	
RA	RETURN AIR
RAR	RETURN AIR REGISTER
RAG	RETURN AIR GRILLE
RG	RETURN AIR GRILLE
RTU	ROOF TOP UNIT
– S –	
SA	SUPPLY AIR
SF	SUPPLY FAN
LD–	LINEAR SLOT DIFFUSER
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ.FT.	SQUARE FOOT
SWR	SIDEWALL SUPPLY REGISTER
– T –	
TAB	TRANSFER AIR BOOT
TAU	TERMINAL AIR UNIT
TD	AIR TROFFER DIFFUSER
TRD	TRANSFER DUCT
T'STAT	THERMOSTAT
TX	TOILET EXHAUST
TYP	TYPICAL
– U –	
U.O.N.	UNLESS OTHERWISE NOTED
– V –	
VD	VOLUME DAMPER
– W –	
W	WIDTH
W/	WITH
W/O	WITHOUT
WMS	WIRE MESH SCREEN

MECHANICAL NOTES

1. RUN ALL DUCTS IN BEAM PENETRATIONS AS SHOWN ON STRUCTURAL DRAWINGS AND AS TIGHT AS POSSIBLE TO THE STRUCTURE ABOVE. MAINTAIN CEILING HEIGHT AS REQUIRED BY ARCHITECT.
2. PLATFORMS, PADS, AND CURBS FOR MECHANICAL EQUIPMENT SHALL BE COORDINATED WITH THE STRUCTURAL AND ARCHITECTURAL PLANS. COORDINATE EXACT SIZES OF REQUIRED OPENINGS AND SUPPORTS FOR FURNISHED EQUIPMENT. SEE ARCHITECTURAL PLANS FOR ROOFING AND FLASHING.
3. VOLUME DAMPERS TO BE PROVIDED IN EACH BRANCH DUCT TO OUTLET WHETHER INDICATED ON DRAWINGS OR NOT. ADD VOLUME DAMPERS TO ANY EXISTING BRANCH DUCTS MISSING VOLUME DAMPERS. PROVIDE YOUNG REGULATOR TYPE VOLUME DAMPER FOR INACCESIBLE AREAS.
4. EXACT LOCATION OF ALL ROOF OPENINGS TO BE COORDINATED WITH ARCHITECTURAL AND STRUCTURAL PLANS AND CONSTRUCTION WORK.
5. ALL DUCTWORK SHALL BE GALVANIZED STEEL AND GAUGE 26 MINIMUM. DUCTWORKS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH CHAPTER 6 OF 2020 THE LOS ANGELES MECHANICAL CODE. DUCT GAUGES SHALL BE PER TABLE 6–A, 6–B AND 6–C.
6. WHERE CONNECTION FLEXIBLE DUCTWORK TO CEILING DIFFUSERS AND CEILING REGISTERS, SIZE OF FLEXIBLE DUCT SHALL BE SAME SIZE AS NECK OF CEILING DIFFUSER OR CEILING REGISTER. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL NOT EXCEED 7 FEET.
7. CEILING SUPPLY AND RETURN DEVICES SHALL BE PROVIDED WITH 24"X24" FACE PANELS COMPATIBLE WITH THE CEILING SYSTEM, UNLESS OTHERWISE NOTED.
8. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH CHAPTER 6 OF 2020 THE CALIFORNIA MECHANICAL CODE (601.1) DUCT GAGES SHALL BE PER TABLE 6–A, 6–B AND 6–C (601.1).
9. DUCTWORK SHALL BE INSULATED IN ACCORDANCE WITH THE SPECIFICATIONS AND TITLE 24.
10. DUCT DIMENSIONS SHOWN ARE NET INSIDE CLEAR DIMENSIONS. ALL PIPE SIZES SHOWN ARE NOMINAL PIPE DIAMETERS.
11. ROOM THERMOSTATS SHALL BE DDC AND COMPATIBLE WITH TERMINAL AIR UNIT OPERATORS. UNLESS NOTED OTHERWISE, ALL AREAS + SHALL BE DESIGNED TO MAINTAIN A ROOM TEMPERATURE SETPOINT OF 72'F WITHIN A CONTROL RANGE OF 2'F.
12. THERMOSTATS SHALL BE MOUNTED ADJACENTS TO LIGHT SWITCHES, UNLESS NOTED OTHERWISE.
13. CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO ORDERING.
14. CONTRACTOR SHALL PROVIDE WRITTEN WARRANTY TO REPLACE ALL FAULTY MATERIALS AND/OR LABOR AT NO COST TO OWNER FOR A PERIOD OF ONE YEAR FROM DATE OF OWNER ACCEPTANCE.
15. UPON COMPLETION OF WORK, CONTRACTOR SHALL CLEAN AND REMOVE ALL DEBRIS ASSOCIATED WITH HIS/HER WORK AND DISPOSE OF IT. AREA SHALL BE LEFT IN A CONDITION ACCEPTABLE TO OWNER.
16. PROVIDE ACCESS PANELS FOR ALL NEW EQUIPMENT LOCATED ABOVE HARD LID CEILING.
17. THERMOSTAT LOCATION SHALL BE APPROVED BY BOTH THE ARCHITECT AND ENGINEER. EACH THERMOSTAT SHALL BE CONNECTED TO THE BUILDING CONTROL SYSTEM FOR MONITORING AND ON/OFF CONTROL.
18. MATERIALS EXPOSED WITHIN DUCTS OR PLENUMS SHALL HAVE A FLAME–SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH UNIFORM BUILDING CODE.
19. CEILING SPACES USED AS RETURN AIR PLENUMS SHALL FULLY COMPLY WITH ALL THE PROVISIONS OF SECTIONS 601.1–601.2.
20. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL CEILING DIFFUSERS, RETURN GRILLES AND EQUIPMENT ACCESS PANELS. COORDINATE ALL DIFFUSERS, LIGHT FIXTURES AND OBTAIN APPROVAL FROM ENGINEER / ARCHITECT FOR ANY DEVIATIONS.
21. CONTRACTOR SHALL LAYOUT THE DRAWING PER CONTRACT DOCUMENT AS MUCH AS POSSIBLE. ANY SIGNIFICANT DEVIATION IN LAYOUT SHALL BE APPROVED BY THE ARCHITECT PRIOR TO CONSTRUCTION.
22. CONTRACTOR SHALL SUBMIT THREE (3) SETS OF HARD COPIES AND ELECTRONIC CAD FILES OF AS–BUILTS TO THE BUILDING OWNER AND ONE (1) SET OF HARD COPY TO ARC ENGINEERING. IN ADDITION TO THIS REQUIREMENTS, CONTRACTOR SHALL COMPLY WITH CLOSE–OUT REQUIREMENTS AS SPECIFIED UNDER GENERAL PROVISION FOR MECHANICAL WORK AND SECTION 230100.
23. ALL THERMOSTATS INSTALLED ON EXTERIOR WALLS OR COLUMNS SHALL HAVE AN INSULATED BACKING INSTALLED BEHIND THE THERMOSTAT.
24. INSTALL CFSD & FIRE DAMPER ON ALL DUCTS PENETRATING FIRE RATED ENCLOSURES, PARTITIONS, AND TUNNEL CEILINGS. PROVIDE ACCESS PANELS FOR ALL CSFD AND FD ABOVE IN ACCESSIBLE CEILING. PROVIDE SMOKE DETECTOR DEVICE CONNECTED TO CSFD. INSTALLED DUCT SMOKE DETECTORS PER MANUFACTURER'S APPROVED LISTING AND INSTALLATION INSTRUCTIONS.
25. RETURN AIR SHALL BE THROUGH RETURN GRILLES UNLESS OTHERWISE NOTED ON ARCHITECTURAL DRAWINGS.ALL DUCTWORK THAT RUNS ABOVE RETURN GRILLES SHALL BE PAINTED BLACK OR SHALL BE PROVIDED WITH LINED HOOD WITH BLACK INTERIOR.
26. ALL SUPPLY CEILING DIFFUSERS AND RETURN GRILLES SHALL BE CLEARED OF MAIN HVAC DUCT LOOP.
27. ALL PENETRATIONS THROUGH NON–RATED CONSTRUCTION SHALL BE PROPERLY AND GENEROUSLY CAULKED WITH NON–SHRINKING TYPE SOUND RESISTANT MATERIAL SUCH AS SILICONE. USE ACOUSTICAL SEALANT AROUND DUCTS INSTALLED INTO ACOUSTICAL PARTITIONS.
28. RUN ALL DUCTS AS TIGHT AS POSSIBLE TO STEEL BEAMS. ALL PIPING OTHER THAN FOR CONDENSATE SHALL BE ROUTED ABOVE THE DUCTWORK UNLESS APPROVED OTHERWISE.
29. SEAL ALL DUCTS AND JOINTS WITH HIGH VELOCITY, WATER BASED, UL–FIRE RATED DUCT SEALER.
30. CONTRACTOR TO PROVIDE LINED TRANSFER DUCTS, SIZED PER OUR DETAIL, FOR ALL ROOMS ENCLOSED BY FULL HEIGHT WALL ON ALL SIDES. ALL EXISTING INSULATION ON THE MAIN DUCTWORK THAT IS LOOSE OR DAMAGED SHALL BE REPLACED BY THE CONTRACTOR.
31. CONTRACTOR SHALL REPAIR OR REPLACE ALL DAMAGED DUCT SUPPORTS FOR THE MAIN DUCTWORK.
32. ALL COMBINATION FIRE/SMOKE DAMPERS SHALL BE CALIFORNIA FIRE MARSHALL LISTING AND SHALL BE PROVIDED WITH DUCT SMOKE DETECTOR WITHIN 5 FEET OF CSFD. TIE INTO THE BASE BUILDING FIRE ALARM SYSTEM. COMBINATION FIRE/SMOKE DAMPERS SHALL MATCH BASE BUILDING STANDARDS.. EQUIVALENT MANUFACTURER'S PRODUCT WITH LISTING SHALL BE SUBMITTED FOR APPROVAL.

TYPE	MODEL	STATE FIRE MARSHALL LISTING
COMB.	FSD–40	FIRE 03225–0368:008
FIRE/SMOKE	SERIES	SMOKE 03230–0388–0388:105

33. ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED AND INSTALLED IN ACCORDANCE WITH CHAPTER 6 OF THE L.A. MECHANICAL CODE.
34. ALL EQUIPMENT INCLUDING AC'S, FAN's, FTU's, TAU'S ETC., DUCTWORK SHALL BE SUPPORTED & SEISMICALLY RESTRAINED TO MEET THE CALIFORNIA BUILDING CODE.
35. CONTRACTOR TO COORDINATE LOCATIONS OF EQUIPMENT ABOVE CEILING WITH THE FURNITURE PLAN. EQUIPMENT NEEDS TO BE LOCATED WHERE IT CAN BE EASILY ACCESSIBLE WITHOUT MOVING ANY FURNITURE.
36. ALL FLEXIBLE AIR DUCTS SHALL MEET THE REQUIREMENTS OF NFPA 90A, 2–3.2 IN CONSTRUCTION AND INSTALLATION.
37. NO WATER PIPING IS ALLOWED ABOVE THE ELEC. ROOM, TELEPHONE SWITCH ROOM AND DATA/COMMUNICATION ROOM.
38. PROVIDE REMOTED REGULATOR FOR ALL DIFFUSERS & VD's IN HARD LID CEILING AREA FOR REMOTE OPERATION. COORDINATE LOCATION OF REGULATOR WITH ARCHITECT.
39. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS, FEES AND LICENSED AS REQUIRED.
40. CONTRACTOR SHALL PROVIDE A SCHEDULE OF MATERIAL AS–BUILT. SAID AS–BUILT SHALL BE PROVIDED PRIOR TO, AND AS A CONDITION OF FINAL PAYMENT BEING RELEASED.
41. ALL EQUIPMENT AND WIRING (COMMUNICATION, POWER, FIRE ALARM, ETC.) INSTALLED IN A PLENUM SHALL BE LISTED FOR INSTALLATION IN SUCH AREAS.
42. PROVIDE DUCT FLEX CONNECTORS ON ALL SUPPLY AND RETURN DUCT CONNECTIONS TO A/C UNITS OR EXHAUST FANS.
43. PROVIDE PIPE FLEX CONNECTORS ON ALL SUPPLY AND RETURN PIPE CONNECTIONS TO A/C UNITS.
44. PROVIDE SMOKE OR DUCT DETECTORS IN ANY AIR MOVING SYSTEMS SUPPLYING OR EXHAUSTING AIR IN EXCESS OF 2000 CFM. SMOKE DETECTOR SHALL BE INTERFACE WITH THE BUILDING FIRE ALARM TO SHUT DOWN THE UNIT UPON ACTIVATION. 50. DO NOT INSTALL ANY DUCTWORK DIRECTLY ABOVE ELECTRICAL EQUIPMENT IN ELECTRICAL ROOMS.
45. THERE SHALL BE NO PIPING AND OR DUCTWORK RUN THROUGH ELECTRICAL ROOMS UNLESS THAT DUCTWORK AND OR PIPINGS IS SERVING THAT ELECTRICAL SPACE.
46. GENERAL CONTRACTOR SHALL COORDINATE EQUIPMENT INSTALLATION IN THE VICINITY OF GRID LINES H–19 WITH LANDLORD. DUCT MAIN BELOW THIS AREA SHALL BE INSTALLED AFTER BASE BUILDING STRUCTURAL WORK IS COMPLETED.

SHEET INDEX

SHEET	DESCRIPTION	SCALE
M1.1	MECHANICAL COVER SHEET	NONE
M1.2	MECHANICAL SCHEDULES	NONE
M1.3	MECHANICAL DETAILS	NONE
M2.1	MECHANICAL ZONING PLAN	3/16"=1'–0"
M2.2	MECHANICAL FLOOR PLAN	3/16"=1'–0"
M2.3	MECHANICAL ROOF PLAN	3/16"=1'–0"

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH, BUT NOT LIMITED TO, THE STATE OF CALIFORNIA, CITY OF LANCASTER, TITLE 24, 2019 CALIFORNIIA MECHANICAL & PLUMBING CODES, LOCAL MECHANICAL CODE AMENDMENTS AND ALL OTHER GOVERNING CODES AND ORDINANCES.
2. LOCATION OF DUCTWORK IS APPROXIMATE. ALL DRAWINGS AND LAYOUTS ARE DIAGRAMMATIC TO SHOW DESIGN INTENT ONLY. CONTRACTOR SHALL PREPARE FULLY COORDINATED SHOP DRAWINGS SHOWING ALL DUCTWORK, PIPING, CABLE TRAY, BEAMS AND BUILDING STRUCTURE. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM THOSE SHOWN ON THE DRAWINGS AND AFFECT MECHANICAL WORK, INFORM ARCHITECT IMMEDIATELY BEFORE PROCEEDING WITH THAT AREA.
3. CONTRACTOR SHALL NOTE THE CRITICAL SPACE AVAILABLE ABOVE CEILINGS. PROVIDE TRANSITION PIECES AND BEAM BOXES AT CROSSOVERS, UNDER BEAMS, OVER/UNDER PIPES AS REQUIRED TO ACCOMMODATE TO ACCOMMODATE DUCTS WITHIN SPACE AVAILABLE. PROVIDE EQUIVALENT DUCT SIZE TO THE DIAMETER SHOWN COORDINATE CLOSELY WITH OTHER SECTIONS TO REDUCE NECESSITY OF TRANSITION TO A MINIMUM. NO ADDITIONAL COSTS WILL BE PAID FOR ANY REQUIRED TRANSITIONS, BEAM BOXES OR OTHER SPECIAL CHANGE SHAPE PIECES.
4. CONTRACTOR SHALL PROVIDE MATERIAL AND LABOR TO PHYSICALLY TEST ALL FIRE AND COMBINATION FIRE / SMOKE DAMPERS AND RESET THEM FOR ITS DESIGN FUNCTION. TESTING PROCEDURES AND TEST RESULTS SHALL BE WITNESSED AND APPROVED BY THE AUTHORITIES HAVING JURISDICTION.
5. IN CASES WHERE SHEET METAL DUCTS INTERSECT FIRE–RATED WALLS AT OTHER THAN RIGHT ANGLES, CONTRACTORS SHALL OFFSET THE RATED WALL ABOVE CEILING SUCH THAT THE OFFSET WALL WILL BE PERPENDICULAR TO THE DUCT. FIRE DAMPER SHALL BE PROVIDED AT THE WALL ACCORDINGLY.
6. ALL NON–RATED DOORS REQUIRING UNDERCUT SHALL BE 3/4 INCH MINIMUM, UNLESS NOTED OTHERWISE. ALL FIRE–RATED DOORS REQUIRING UNDERCUT SHALL BE: DOUBLE DOORS NOT TO EXCEED 1/4" AND SINGLE DOORS NOT TO EXCEED 3/8". ALL UNDER CUTS TO BE COORDINATED WITH THE ARCHITECTURAL DOOR SCHEDULE AND SPECIFICATIONS.
7. FIRE DAMPERS, COMBINATION FIRE / SMOKE DAMPERS AND THE NECESSARY ACCESS PANELS SHALL BE PROVIDED FOR ALL DUCTS PENETRATING FIRE AND/OR SMOKE PARTITIONS AS REQUIRED BY CODE. SEE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION OF FIRE AND/OR SMOKE RATED PARTITIONS.
8. COMBINATION FIRE/SMOKE DAMPERS SHALL BE PROVIDED FOR SUPPLY AND RETURN AIR DUCTS PENETRATING RATED WALLS/CORRIDORS PER UBC AND UMC. EACH COMBINATION FIRE/SMOKE DAMPER SHALL BE PROVIDED WITH DUCT SMOKE DETECTORS THAT ARE INSTALLED WITHIN 5'–0" OF THE DAMPER.
9. DUCT SMOKE DETECTORS SHALL BE INSTALLED PER MANUFACTURER'S WRITTEN RECOMMENDATIONS AND SHALL BE TIED–IN TO THE BUILDING FIRE ALARM SYSTEM.
10. ALL DUCTWORK SHALL BE SUPPORTED AND SEISMICALLY RESTRAINED PER THE CALIFORNIA BUILDING CODE, UNIFORM MECHANICAL CODE AND SMACNA STANDARD. ALL HANGER STRAPS SHOT TO THE SLAB ABOVE ARE TO BE DONE ONE PIECE CONSTRUCTION FORMING A TRAPEZE TO SUPPORT THE DUCT, SCREWED TO THE DUCT AND SEALED. ALL DUCTWORK IS TO BE SUPPORTED INDEPENDENTLY WITH HANGERS SHOT TO THE SLAB ABOVE, AND NO DUCTWORK IS TO BE SUPPORTED FROM ANOTHER DUCT, CONDUIT, PIPE OR OTHER HANDY PIECE OF EQUIPMENT.
11. ALL SYMBOLS SHOWN ON SYMBOL LIST ARE NOT NECESSARILY USED ON THIS PROJECT.
12. IF ANY EQUIPMENT SUBMITTED BY THE CONTRACTOR IS DIFFERENT FROM THAT SPECIFIED, OR REQUIRE CHANGES IN MATERIAL OR LABOR FROM THAT REQUIRED IN THE CONTRACT DOCUMENTS AFFECTING THIS AND/OR OTHER TRADES, SUCH CHANGES SHALL BE SUBMITTED AS SHOP DRAWINGS. SUBMITTALS SHALL INDICATE CREDIT DUE TO OWNER, IF ANY, BECAUSE OF THE CHANGES. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PAYMENT CHARGES RESULTING FROM THE REVIEW OF SUBSTITUTED EQUIPMENT AND ADDITIONS OR CHANGES IN THE WORK OF OTHER TRADES NECESSARY TO ACCOMMODATE THE REQUESTED MODIFICATION. ALL CHANGES SHALL BE SHOWN ON RECORD AND ASBUILT DRAWINGS.
13. THESE DRAWINGS INDICATE THE FINISHED REQUIREMENTS FOR THE MECAHNICAL AND PLUMBING SYSTEMS. DUE TO THE STRUCTURAL CONDITIONS, MECHANICAL DUCT OR PIPING INTERFERENCE, RETAINED EXISTING FACILITIES OR OTHER REASONS, THE CONTRACTOR MAY DESIRE TO INSTALL WORK IN A MANNER DIFFERENT FROM THAT SHOWN. SUCH CHANGES SHALL BE PRESENTED TO THE OWNER/ENGINEER FOR APPROVAL BEFORE PROCEEDING, AND THE RECORD DRAWINGS SHALL BE ACCURATELY REVISED TO SHOW THE CHANGES AS COMPLETED.
14. THERE SHALL BE NO PLUMBING PIPING THROUGH ELECTRICAL AND OR COMMUNICATION ROOMS.
15. PRIOR TO BIDDING, CONTRACTOR TO VISIT SITE AND VERIFY FIELD CONDITIONS, DIMENSIONS, SPACING AND ROUTING OF ALL PIPING. ANY DISCREPANCIES WITH FIELD CONDITIONS AND THESE DOCUMENTS ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR IMMEDIATE RESOLUTION. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR CLEARANCES AND TIMELY FINISH.
16. BEFORE STARTING ANY WORK, CONTRACTOR SHALL EXAMINE THE COMPLETE SET OF DRAWINGS FOR ALL TRADES, INCLUDING ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL. VERIFY ALL DIMENSIONS, SPACE REQUIREMENTS, AND POINTS OF CONNECTION TO ALL EQUIPMENT. MAKE ANY ADJUSTMENTS NECESSARY TO AVOID CONFLICTS WITH THE BUILDING STRUCTURE AND THE WORK OF OTHER TRADES.
17. CONTRACTOR SHALL OBTAIN AND FOLLOW ALL LANDLORD REQUIREMENTS, GUIDELINES, RULES, AND PROCEDURES FOR CONSTRUCTION. CONTRACTOR SHALL PROVIDE INSURANCE IN ACCORDANCE WITH THE BUILDING'S CERTIFICATE OF INSURANCE REQUIREMENTS.
18. ANY VARIANCE FROM THE PLANS IS TO BE CLEARLY AND ACCURATELY NOTED ON A PLAN TO BE GIVEN TO THE CHIEF ENGINEER UPON JOB COMPLETION.

AIR BALANCE NOTES

1. THE AIR BALANCE WORK AS DESCRIBED IN SPECIFICATION SHALL BE CONTRACTED DIRECTLY BY THE GENERAL CONTRACTOR AND COORDINATED BY THIS CONTRACTOR. AIR BALANCE SHALL BE PERFORMED FOR ENTIRE CORE AND CORE SPACE UNDER THIS CONTRACT, TERMINAL.
2. AIR UNITS, AIR HANDLING UNITS, ALL EXHAUST SYSTEM, AC UNITS, DIFFUSERS AND GRILLES. BALANCING SHALL BE PERFORMED BY AN "AABC" CERTIFIED CONTRACTOR ACCORDING TO THE CURRENT "AABC" NATIONAL STANDARDS.
3. REFER TO THE SPECIFICATION "START–UP, TESTING AND BALANCING FOR THE WORK TO BE PERFORMED BY THE AIR AND WATER BALANCE CONTRACTOR." IN ADDITION, THE AIR & WATER BALANCE WORK SHALL ALSO CONSIST OF THE FOLLOWING:
4. CHECK THE HEAT PUMP UNITS FOR CORRECT OPERATION.
5. BALANCE THE INDIVIDUAL AIR OUTLETS TO DESIGN QUANTITIES. MEASURE & DOCUMENT THE ACTUAL COOLING SUPPLY AIR TEMPERATURE DURING AIR BALANCING & THE OUTSIDE AIR TEMPERATURE.
   - A. CHECK THE OPERATION OF THE FIRE DAMPERS.
   - B. MAKE INSPECTION FOR INSTALLATION DURING CONSTRUCTION DEFICIENCIES SHALL BE NOTED AND REPORTED TO THE MECHANICAL CONTRACTOR.
   - C. VERIFY & DOCUMENT ACTUAL MOTOR AMPERAGES, RPM, AS WELL AS AIR PRESSURE ON ALL
   - D. SUPPLY AND EXHAUST FANS.

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LANCSATER, CA 93534

ISSUE DATES

No.	Date	Description
1	4/7/22	PLAN CHECK

SHEET TITLE
MECHANICAL COVER SHEET

Project No. : 212308
Date: 4/7/2022
Drawn: DSA
Scale: 3/16"=1'-0"

SHEET NO.
M1.1

DIFFUSER SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	TYPE	MAX. CFM (@ NC 20)	OVERALL DIMENSION IN. X IN.	NECK SIZE IN. X IN.	MOUNTING	MAX. S.P. IN. WC	MAX. N.C.	NOTES
CD-1	TITUS PMC	PERFORATED MODULAR CORE	0 – 450	24X24	14X14	HARD LID LAY IN, T-BAR	0.08	1	2 3 4 5 6 7
CD-2	TITUS PMC	PERFORATED MODULAR CORE	0 – 200	12X12	8X8	HARD LID LAY IN, T-BAR	0.08	1	2 3 4 5 6 7
CR-1	TITUS PAR	RETURN PERFORATED	0 – 1000	24X24	22X22	HARD LID LAY IN, T-BAR	0.08	1	2 3 4 5 6 7
CR-2	TITUS PAR	RETURN PERFORATED	0 – 500	12X12	10X10	HARD LID LAY IN, T-BAR	0.08	1	2 3 4 5 6 7

1. NC-20 MAX.
2. TRANSITION DUCT SIZE TO NECK SIZE AS REQUIRED TO COMPLETE INSTALLATION.
3. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4. FINAL DIFFUSER LOOK, LOCATION, AND COLOR SCHEME SHALL BE COORDINATED AND APPROVED WITH / BY ARCHITECT.
5. PROVIDE YOUNG REGULATOR DAMPER CONTROLS MODEL NO. 5020CC FOR ACCESS TO VOLUME DAMPERS ABOVE A HARD LID CEILING. VERIFY PULLEY SWIVEL MOUNT LOCATION IN THE CEILING WITH ARCHITECT BEFORE INSTALLATION.
6. COORDINATE DIFFUSER BORDER TYPE WITH REFLECTED CEILING PLAN.
7. PROVIDE WITH BLACK BACKING FOR ALL DIFFUSERS.
8. SINGLE SLOT
9. DUCTED RETURN/EXHAUST

CONDENSATE DRAIN
PIPE SIZING SCHEDULE

TONS OF REFRIGRATION	SIZE (IN.)
THROUGH 20	3/4"
21 THROUGH 40	1"
41 THROUGH 90	1 1/4"
91 THROUGH 125	1 1/2"
126 THROUGH 250	2"

REMARKS:
THE CAPACITY OF WASTE PIPES ASSUMES A ONE-EIGHT (1/8) INCH PER FOOT OR ONE PERCENT SLOPE.

DUCT SIZING SCHEDULE
FOR LOW VELOCITY SUPPLY, RETURN AND EXHAUST

CFM RANGE	ROUND DUCT DIAMETER OR EQUIVALENT RECTANGULAR DUCT	CFM RANGE	ROUND DUCT DIAMETER OR EQUIVALENT RECTANGULAR DUCT
0–110	6" OR 8"X4"	1400–1900	18" OR 24"X12"
101–180	8" OR 10"X6"	1900–2500	20" OR 24"X14"
181–270	10" OR 10"X8"	2500–3300	22" OR 32"X14"
271–400	10" OR 12"X8"	3300–4100	24" OR 36"X14"
401–600	12" OR 12"X10"	4100–5000	26" OR 40"X16"
601–900	14" OR 16"X10	5000–6200	28" OR 48"X16"
901–1400	16" OR 18"X12"	6200–7500	30" OR 48"X18"

REMARKS: DUCT SIZES INDICATED ARE INSIDE DIMENSIONS WHICH MAY BE ALTERED BY CONTRACTOR TO OTHER DIMENSIONS TO AVOID INTERFERENCES AND CLEARANCE REQUIREMENTS. USE EQUAL FRICTION METHOD, 0.1"WG PER 100 FT. OF DUCT TO DETERMINE DUCT SIZES.

VERIFY ALL DIMENSIONS AT THE SITE, MAKE ALL FIELD MEASUREMENTS AND SHOP DRAWINGS NECESSARY FOR FABRICATION AND ERECTION OF SHEET METAL WORK. MAKE ALLOWANCES FOR BEAMS, PIPE OR OTHER OBSTRUCTION AND FOR WORK BY OTHER TRADES AND NOTIFY THE ARCHITECT IN THE EVENT OF ANY POTENTIAL INTERFERENCE. MAKE AN INITIAL VERIFICATION OF BEAM PENETRATIONS SHOWN ON STRUCTURAL DRAWINGS AND ADVISE OF ANY POTENTIAL INTERFERENCES.

EXHAUST FAN SCHEDULE

MARK NO.	MANUFACTURER AND MODEL NO.	AREA SERVED	LOCATION	FAN TYPE	ESP (IN. WG.)	CFM	MAX. FAN RPM	ACOUSTIC	ELECTRICAL DATA				ISOLATOR DATA		OPERATING WEIGHT (LBS)	QUANTITY	REMARKS
								SONES	HP	VOLTS	PHASE	HZ	MANUFACTURER AND MODEL	STATIC DEFLECTION			
EF 1	LOREN COOK GC-164	RESTROOMS	SEE PLANS	CEILING	0.3	100	1100	4	33 WATTS	115	1	60	– –	–	50	5	1 2 4 5 6

1. PROVIDE MOUNTING SUPPORTS/FRAMES, FASTENERS, BACKDRAFT DAMPER
2. WIRING AND INSTALLATION SHALL BE MANUFACTURER'S RECOMMENDATION
3. INTERLOCK FAN WITH LIGHT SWITCH.
4. PROVIDE ROOF CURB
5. INTERLOCK WITH WORKING AREA HOOD
6. INTERLOCK WITH MAKE UP AIR UNIT MUA-1.

PACKAGED ROOFTOP GAS/ELECTRIC UNIT SCHEDULE

MARK NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	NOMINAL CAPACITY (TONS)	SUPPLY FAN				COMPRESSOR DATA			COOLING CAPACITIES		HEATING	AIR SIDE					ELECTRICAL DATA				MIN. OSA (CFM)	SEER	ISOLATOR DATA		UNIT DIMENSIONS (L X W X H)	OPERATING WEIGHT (LBS.)	REMARKS
					ESP (IN.)	CFM	HP	RPM	NO.	SIZE	TYPE	TOTAL (BTUH)	SENSIBLE (BTUH)	TOTAL (BTUH)	EAT (F)		LAT (F)		OSA AMB.(F)	V/PH/HZ	FLA	MCA	MCOP			MANUF. AND MODEL NO.	STATIC DEFLECTION (IN.)			
															DB	WB	DB	WB												
RTU 1	TRANE 4YCZ6060C1115A	ROOF	ZONE 1.1	5	1	2000	1	VARIABLE	1	–	SCROLL	60,000	45,000	115,000	80	67	58.7	57.7	95	208–230/1/60	–	44.4	60	–	15.10	– –	2	–	676	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
RTU 2	TRANE 4YCZ6060C1115A	ROOF	ZONE 1.2	5	1	2000	1	VARIABLE	1	–	SCROLL	60,000	45,000	115,000	80	67	58.7	57.7	95	208–230/1/60	–	44.4	60	–	15.10	– –	2	–	676	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
RTU 3	TRANE 4YCZ6036C1070A	ROOF	ZONE 2.1	3	1	1200	0.5	VARIABLE	1	–	SCROLL	36,000	27,000	70,000	80	67	58.7	57.7	95	208–230/1/60	–	26	40	–	16.60	– –	2	–	488	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
RTU 4	TRANE 4YCZ6036C1070A	ROOF	ZONE 2.2	3	1	1200	0.5	VARIABLE	1	–	SCROLL	36,000	27,000	70,000	80	67	58.7	57.7	95	208–230/1/60	–	26	40	–	16.60	– –	2	–	488	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
RTU 5	TRANE 4YCZ6060C1115A	ROOF	ZONE 3.2	5	1	2000	1	VARIABLE	1	–	SCROLL	60,000	45,000	115,000	80	67	58.7	57.7	95	208–230/1/60	–	44.4	60	–	15.10	– –	2	–	676	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
RTU 6	TRANE 4YCZ6036C1070A	ROOF	ZONE 3.1	3	1	1200	0.5	VARIABLE	1	–	SCROLL	36,000	27,000	70,000	80	67	58.7	57.7	95	208–230/1/60	–	26	40	–	16.60	– –	2	–	488	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

1. CONTRACTOR SHALL PROVIDE DUCT SMOKE DETECTOR AND INTERFACE WITH THE BUILDING FIRE ALARM TO SHUT DOWN THE UNIT UPON ACTIVATION. SMOKE DETECTOR'S SHALL BE INSTALLED PER MANUFACTURE'S RECOMMENDATIONS
2. INSTALLATION AND WIRING SHALL BE PER MANUFACTURER'S RECOMMENDATIONS
3. PROVIDE AC UNITS WITH ROOF CURB
4. UNIT SHALL HAVE SINGLE POINT NON-FUSED DISCONNECT SWITCH
5. FACTORY-MOUNTED SUPPLY FAN VFD'S W/NEMA 3R ENCLOSURES AND BYPASS.
6. UNIT MUST COMPLY WITH CALIFORNIA ENERGY COMMISSION MINIMUM EER OF 10
7. PROVIDE WITH FILTER AT MERV-13 85% EFFICIENCY.
8. HOT GAS BYPASS ON CIRCUITS #1
9. TEAO CONDENSER FAN MOTORS
10. STAINLESS STEEL DRAIN PAN
11. 2" DOUBLE WALL CONSTRUCTION WITH 1.5 LB. INSULATION
12. UNIT SHALL BE PROVIDED WITH 100% OUTSIDE AIR INTEGRATED & DIFFERENTIAL ENTHALPY ECONOMIZER CAPABILITY.
13. PLUMBING CONTRACTOR TO ROUTE CONDENSATE DRAIN TO NEAREST APPROVED PLUMBING RECEPTOR
14. ALL NEW HVAC UNITS SHALL BE EQUIPPED WITH R410A REFRIGERANT AND TXV VALVE(S).
15. UNIT MANUFACTURER WILL PER LANDLORD FINAL DECISION AND ANY ALTERNATE SHALL EQUAL DRAWINGS SCHEDULES.
16. UNIT TO SIT ON EXISTING ROOF CURB, LANLORD TO PROVIDE AN ADAPTOR TO MATCH NEW UNIT DIMENSIONS.
17. ACTIVATION OF ANY SMOKE DETECTOR TO SHUT-OFF ALL UNITS WITHIN THE SAME AREA, IF THERE IS NO FIRE ALARM SYSTEM FOR THE BUILDING.

HEAT PUMP SPLIT SYSTEM FAN COIL / CONDENSING UNIT SCHEDULE

FAN COIL UNIT NO.	FC MFR. MODEL #	LOCATION	AREA SERVED	NOMINAL CAPACITY (TONS)	FAN DATA			FC WEIGHT (LBS)	MOTOR DATA					COOLING COIL DATA						HEATING COIL DATA			VIBRATION ISOLATION		REMARKS	CONDENSING UNIT NO.	CU MFR. MODEL #	LOCATION	CONDENSER FAN		UNIT ELECTRICAL		CONDENSING UNIT POWER SUPPLY				SEER	VIBRATION ISOLATION		CU OPERATING WEIGHT (LBS)	REMARKS
					CFM	MIN OSA (CFM)	ESP (IN)		HP/W	V	PH	MCA	MOP	EDB (F)	EWB (F)	LDB (F)	LWB (F)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	EDB (F)	LDB (F)	TOTAL CAPACITY (MBH)	TYPE	MINIMUM STATIC DEFL. INCHES					NO FANS	HP	V	PH	HP	FLA	MCA	MOCP		TYPE	MINIMUM STATIC DEFL. INCHES		
FC 1	MITSUBISHI TPKA0A0181HA70A	SEE PLANS	IT ROOM	1.5	400	–	0.6	29	–	208/230	1	–	–	79	65	56	55	18000	13500	50	95	–	SPRING	2"	1 THRU 13	CU 1	MITSUBISHI TRUZA0181KA70NA	PARKING GARAGE	1	–	208/230	1	–	–	11	28	18.5	SPRING	2"	–	1 2 3 4 5 6

NOTES: FC –

1. PROVIDE UNIT WITH STAINLESS STEEL PRIMARY AND SECONDARY DRAIN PANS.
2. INSTALLATION AND MINIMUM CLEARANCES SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
3. ALL ELECTRICAL DISCONNECTS FOR UNIT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.
4. PROVIDE VIBRATION ISOLATION HANGERS & SEISMIC RESTRAINT WITH MIN. 1" DEFLECTION
5. PROVIDE TXV FOR 410A REFRIGERANT.
6. PROVIDE A 120-V FACTORY MOUNTED CONDENSATE PUMP FOR EACH UNIT.
7. PROVIDE ALL REFRIGERANT PIPING, VALVES AND FITTINGS.
8. PROVIDE WITH WATER SWITCH/OVERFLOW SENSOR AND SET TO SHUT DOWN UNIT UPON DETECTION OF WATER.
9. PROVIDE WITH MERV 13 FILTER.
10. AIR MOVING SYSTEMS SUPPLYING AIR IN EXCESS OF 2000 CFM MUST BE EQUIPPED WITH AN AUTOMATIC SHUTOFF.
11. SHUT OFF FOR SMOKE CONTROL ACTIVATED BY A SMOKE DETECTOR IN THE MAIN SUPPLY-AIR IS REQUIRED (CMC SECTION 609)
12. THE SMOKE DETECTOR SHUT OFF SHALL ACTIVATE THE FIRE ALARM SYSTEM (CMC SECTION 609).
13. OVERFLOW DRAINS FROM FAN COIL UNITS LOCATED IN CEILING SPACE SHALL DISCHARGE AT A POINT WHICH CAN BE READILY OBSERVED AS REQUIRED BY THE CALIFORNIA MECHANICAL CODE.

CU –

NOTES:

1. WIRING & REFRIGERANT PIPING SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE VIBRATION ISOLATION (2" MIN DEFLECTION) AND SEISMIC RESTRAINTS FOR UNIT.
3. ALL ELECTRICAL DISCONNECTS FOR UNIT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.
4. ALL CONDENSER COILS SHALL BE COATED WITH ENERGY GUARD DCC. ANTI CORROSIVE COATING.
5. SINGLE POINT OF CONNECTION FOR INDOOR AND OUTDOOR UNITS.
6. COOLING ONLY UNIT.

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ISSUE DATES

No.	Date	Description
1	4/7/22	PLAN CHECK

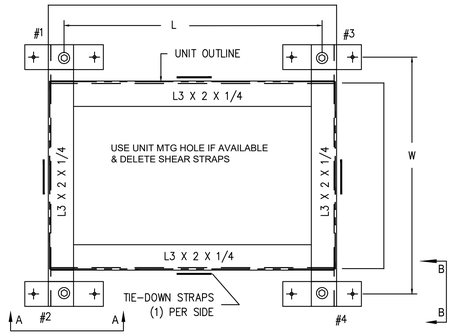
SHEET TITLE
MECHANICAL SCHEDULES

Project No. : 212308
Date: 4/7/2022
Drawn: DSA
Scale: 3/16"=1'-0"

SHEET NO.
M1.2

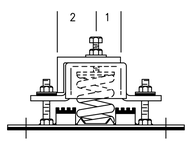
MAKE	MAKE	TYPE	SIZE	A	B	L	W
3T	TRANE	4YCZ60	60	50–5/8	43	48–5/8	49
5T	TRANE	4YCZ60	36	60–5/16	46	56–5/16	52

DETAIL-1

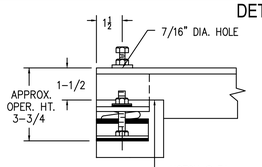


NOTES:
1. APPROX. STEEL WEIGHT INCLUDING ISOLATORS.: 120 LBS.
2. ISOLATORS, SEE DETAIL 2.
3. INDICATES TIE-DOWN STRAP. SEE DETAIL 3.
4. MW SAUSSE & CO. IS NOT RESPONSIBLE FOR THE INTEGRITY OF THE UNIT WHEN ANCHORED AS SHOWN.
5. NOT FOR CONSTRUCTION, ALL DIMENSIONS REQUIRE FINAL REVIEW AT COMMENCEMENT OF PROJECT.

DETAIL-2



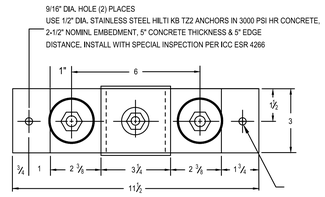
VIEW A-A



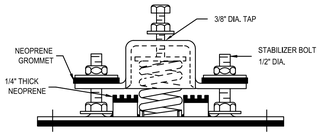
VIEW B-B

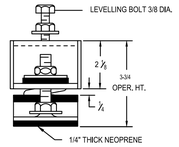
DETAIL-3

MTG	SPRING O..D.	DEFL
1-4	2.0"	1"

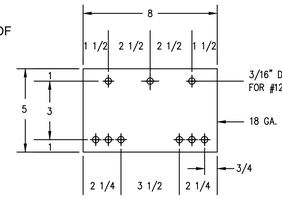


RMU-EQ-SH-1

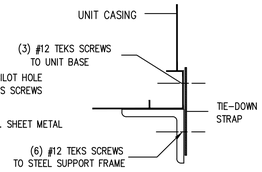




MAX. ALLOW. LOADS: *HORIZ.* 1100 lbs. *VERT. (UP)* 1400 lbs.



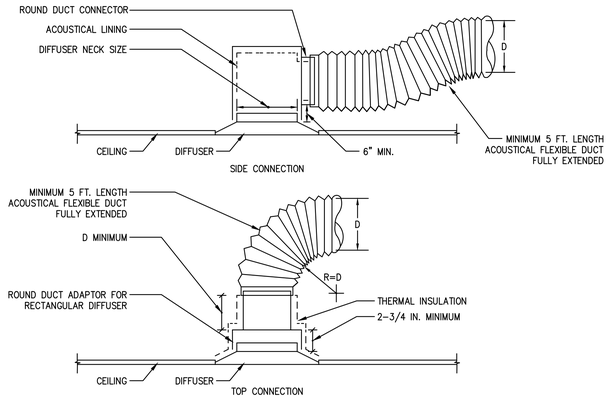
TIE DOWN STRAP DETAIL



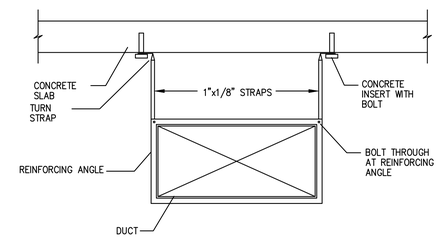
CONNECTION DETAIL

M.W. SAUSSE' & CO., INC. VALENCIA, CALIFORNIA 91355 Vibrex vibration & seismic control products RMUAB	*JOB NAME:* LANCASTER MEDICAL OFFICE	*REVISIONS:*	*DRN:* TDT
	CUST.:	*A:*	*DATE:* 5-4-22
	CUST. P.O.:	*B:*	*DRAWING NO.:*
	MECH. ENGR .: CEG	*C:*	-1
	MARK: 3T, 5T	*D:*	

RTU SPRING ISOLATORS 5

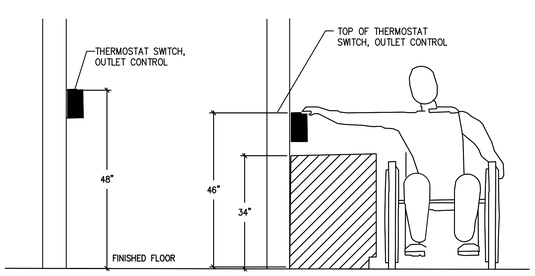


DIFFUSER CONNECTION DETAIL 3

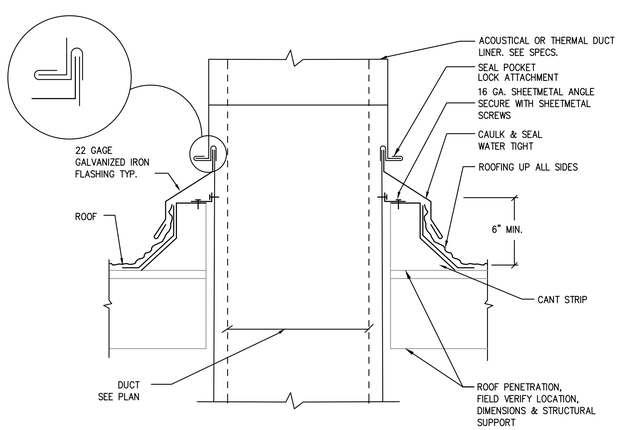


NOTE:
1. DUCT BRACING SHALL BE PROVIDED IN ACCORDANCE WITH SMACNA REQUIREMENTS.

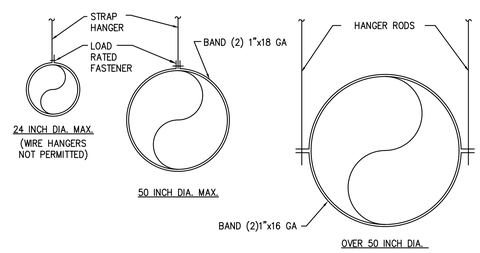
RECTANGULAR DUCT SUPPORT 2



MOUNTING HEIGHT OVER OBSTRUCTION 6



DUCTWORK ROOF PENETRATION DETAIL 4



NOTES:
1. FOR HANGER SIZE AND SPACING, SEE SMACNA HVAC DUCT CONSTRUCTION STANDARDS TABLE 4.2
2. FOR UPPER ATTACHMENT TO BUILDING SEE SMACNA HVAC DUCT CONSTRUCTION STANDARDS FIG. 4–1 AND FIG. 4–2, WITH SPECIFIC BUILDING STRUCTURAL ENGINEER APPROVAL.
3. FOR BRACING AND OTHER SEISMIC REQUIREMENTS SEE GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS PUBLISHED BY SMACNA.

TYPICAL HORIZONTAL ROUND DUCT SUPPORTS 1

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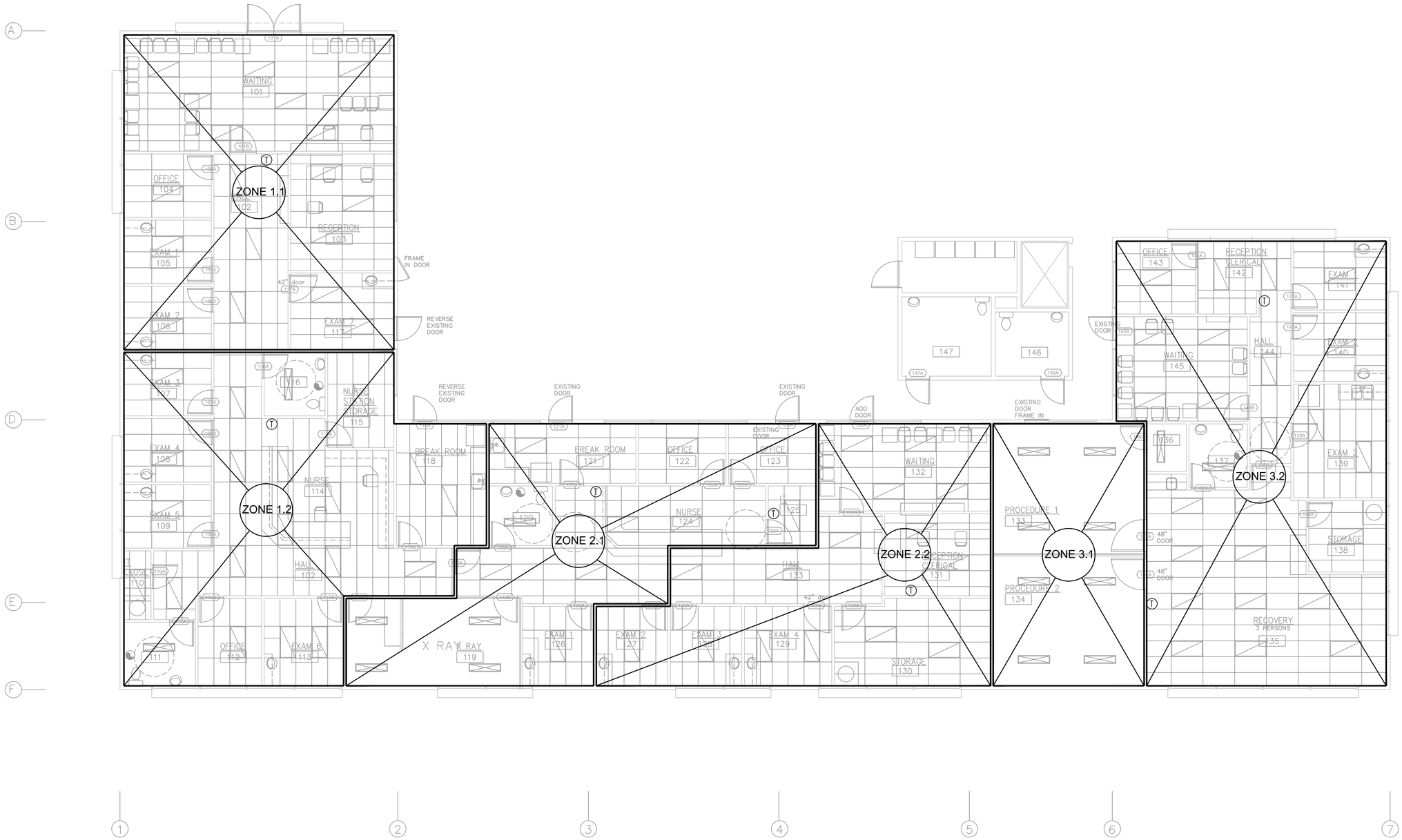
ISSUE DATES No.	Date	Description
1	4/7/22	PLAN CHECK

SHEET TITLE
MECHANICAL DETAILS

Project No. : 212308
Date: 4/7/2022
Drawn: DSA
Scale: 3/16"=1'-0"

SHEET NO.
M1.3



FLOOR PLAN

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

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SHEET TITLE
MECHANICAL ZONING PLAN

Project No. : 212308
Date: 4/7/2022
Drawn: DSA
Scale: 3/16"=1'-0"

SHEET NO.
M2.1

FLOOR PLAN

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

DEMOLITION NOTES

1. EXISTING CONDITIONS ARE PER AS-BUILT DRAWING. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITION PRIOR TO INSTALLATION OF ANY WORK.
2. THE DRAWING SHOWS THE SCOPE INTENT AS IT RELATES TO DEMOLITION. NOT ALL RELATED BITS AND PARTS ARE SHOWN. CONTRACTOR SHALL VISIT THE JOB SITE, EXAMINE THE DESIGN DRAWINGS AND ENSURE THAT THE PRICE INCLUDES ALL ITEMS THAT NEED TO BE DEMOLISHED.
3. CONTRACTOR SHALL REMOVED ALL DUCTWORK AND EQUIPMENT NOT BEING USED FROM THE PLENUM.
4. CAP AIR TIGHT AND WATER TIGHT ALL EXISTING UNUSED DUCTS, PIPES AND WALL OPENINGS.
5. ALL EXISTING INSULATION ON THE MAIN DUCTWORK AND PIPES THAT IS LOOSE OR DAMAGED SHALL BE REPLACED BY THE CONTRACTOR.

GENERAL NOTES

1. THERMOSTATS SHALL BE INSTALLED 48" ABOVE FINISHED FLOOR. FINAL THERMOSTAT LOCATION(S) SHALL BE COORDINATED WITH FURNITURE LAYOUT AND APPROVED BY THE ARCHITECT.
2. CONTRACTOR SHALL VERIFY ALL WALL PARTITIONS TYPES/CEILING TYPES AND RATING IN ORDER TO PROVIDE COMBINATION SMOKE FIRE DAMPERS / FIRE STOPPING AT PENETRATIONS TO FIRE RATED AREAS (IN ACCORDANCE WITH MECHANICAL CODE).
3. FINAL DIFFUSER TYPES AND LOCATIONS SHALL BE COORDINATED AND APPROVED BY ARCHITECT.
4. CONTRACTOR SHALL COORDINATE FINAL MECHANICAL DISTRIBUTION AND NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CLEARANCE ISSUES.
5. CONTRACTOR SHALL PROVIDE AND INSTALL RETURN AIR OPENINGS/GRILLES ON ALL FULL HEIGHT WALLS AS REQUIRED FOR PROPER RETURN AIR FLOW/PATH BACK TO THE AC UNITS MAIN RETURN.
6. PROVIDE A VOLUME DAMPER IN EACH BRANCH DUCT TO OUTLET, WHETHER SHOWN ON DRAWING OR NOT. DAMPERS SHALL BE AS FAR AWAY FROM DIFFUSER AS POSSIBLE, PREFERABLY AT THE BRANCH TAKEOFF. CONTRACTOR SHALL TAG ALL VOLUME DAMPERS WITH RED OR YELLOW RIBBONS.
7. CONTRACTOR SHALL PROVIDE REMOTE REGULATOR CONTROLS FOR ACCESS TO VOLUME DAMPERS ABOVE HARD LID CEILING. REMOTE REGULATOR SHALL BE REMOTE CONTROLLED CABLE OPERATED SOLID ROD BALANCING DAMPER.
8. ALL ACCESS PANELS INCLUDING THOSE IN ACCESSIBLE CEILING SHALL BE DESIGNATED AND PROPERLY FRAMED TO ALLOW PROPER ACCESS WITHOUT DRAGGING THE CEILING TILE OR GRID. AVOID LOCATING ANY CONDUITS DIRECTLY ABOVE ACCESS TO EQUIPMENTS.
9. ALL DUCT AND PIPE PENETRATIONS THROUGH FULL HEIGHT WALLS SHALL BE ACOUSTICALLY SEALED.
10. ALL THERMOSTATS INSTALLED ON EXTERIOR WALLS OR COLUMNS SHALL HAVE AN INSULATED BACKING INSTALLED BEHIND THE THERMOSTAT.
11. CONTRACTOR SHALL PROVIDE ACCESS PANELS FOR ALL NEW EQUIPMENT, VALVES AND DAMPERS LOCATED ABOVE HARD LID CEILING.

KEY NOTES

1. 14X14 EA LOUVER, FIELD COORDINATE EXACT LOCATION.
2. EXISTING SUPPLY AND RETURN AIR DUCT UP THRU SECOND FLOOR AND TO ROOF TO CONNECT TO NEW ROOFTOP UNIT. AND IN FIRST FLOOR TO CONNECT TO NEW DUCTWORK AS SHOWN. FIELD VERIFY EXACT LOCATION.

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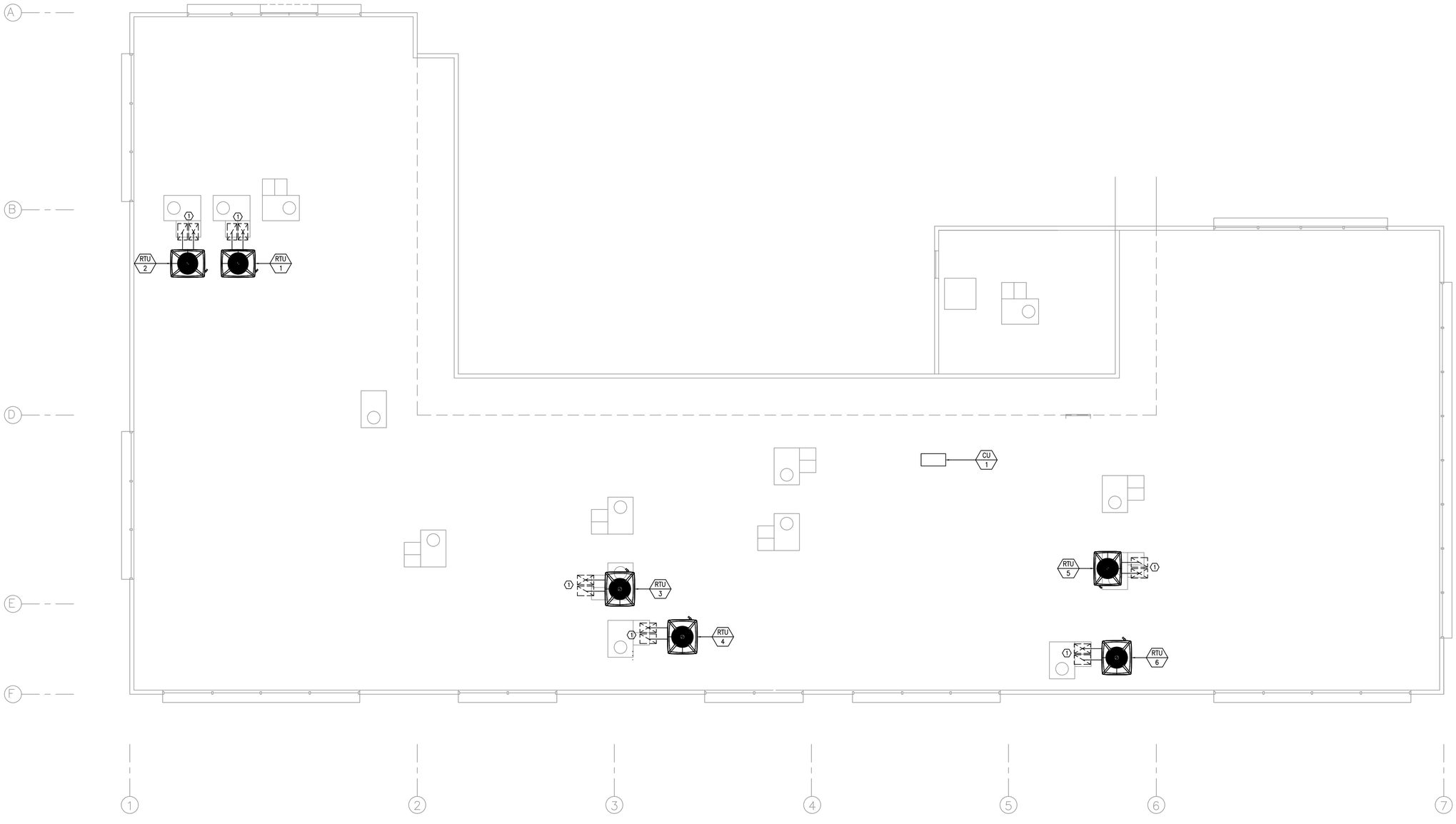
SHEET TITLE
MECHANICAL FLOOR PLAN

Project No. : 212308
Date: 4/7/2022
Drawn: DSA
Scale: 3/16"=1'-0"

SHEET NO.
M2.2

KEY NOTES

1. EXISTING SUPPLY AND RETURN AIR DUCT DOWN THRU SECOND FLOOR AND TO FIRST TO CONNECT TO NEW DUCTWORK LAYOUT (REFER TO 1ST FLOOR PLAN). AND ON ROOF TO CONNECT TO NEW DUCTWORK AND NEW ROOFTOP UNIT AS SHOWN. FIELD VERIFY EXACT LOCATION.



MECHANICAL ROOF PLAN

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

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SHEET TITLE
MECHANICAL ROOF PLAN

Project No. : 212308
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Scale: 3/16"=1'-0"

SHEET NO.
M2.3

SYMBOLS

W	WASTE (W)
SAN	SANITARY PIPING (SAN)
SED	SEWAGE EJECTOR DISCHARGE
SD	STORM DRAIN (SD)
OD	OVERFLOW DRAIN (OD)
CD	CONDENSATE DRAIN (CD)
NPW	NON-POTABLE WATER
MPG	MEDIUM PRASSURE GAS(14"W.C.-5PSIG)
G	NATURAL GAS (LOW PRESSURE)
SPD	SUMP PUMP DISCHARGE (SPD)
	UNDERGROUND DRAINAGE
V	VENT (V)
CW	DOMESTIC COLD WATER (CW)
HW	DOMESTIC HOT WATER (HW)
HWR	DOMESTIC HOT WATER RETURN (HWR)
RW	RECLAIMED WATER
F	FIRE LINE
CSP	COMBINATION STANDPIPE SYSTEM (CSP)
SPR	SPRINKLER (WET-PIPE)
DR	SPRINKLER DRAIN
PA	PREACTION SPRINKLER PIPING (PA)
	OUSIDE SCREW & YOKE VALVE (OS&Y)
	PRESSURE REDUCING VALVE (PRV)
	FLOOR CONTROL ASSEMBLY
	SHUTOFF VALVE (SOV)
	PRESSURE REDUCING VALVE (PRV)
	CHECK VALVE
	BALANCING VALVE (BV)
S	SOLENOID VALVE (SV)
	TEMPERATURE AND PRESSURE RELIEF VALVE (T&P)
	GAS PRESSURE REGULATING VALVE (GRV)
	GAS COCK (GC)
RPBFP	REDUCED PRESSURE BACKFLOW PREVENTER (RPBFP)
	PIPE-UP UNLESS OTHERWISE NOTED
	PIPE DROP UNLESS OTHERWISE NOTED

LOW HIGH	DROP OR RISE
	TOP CONNECTION
	BOTTOM CONNECTION
	CLEANOUT (PIPING AT CLG) (CO)
	CLEANOUT (BURIED PIPING) (CO)
	TRAP
	FLOOR DRAIN, ROOF DRAIN, OVERFLOW DRAIN (FD, RD, OD)
	FLOOR SINK (FS)
	HOSE BIBB (HB)
	VALVE AND CAPPED OUTLET
	TRAP PRIMER (TP)
Y	STRAINER
L	VENT THROUGH ROOF (VTR)
	UNION
	WATER FLOW SWITCH (WFS)
	DIAMETER (DIA)
	SQUARE FEET (SQ FT)
	POINT OF CONNECTION (P.O.C.)
	FIRE RISER
SYSTEM / RISER NUMBER	SYSTEM RISER DESIGNATION
DETAIL NUMBER / SHEET NUMBER	DETAIL DESIGNATION
EQUIPMENT DESCRIPTION / ??-? / EQUIPMENT NUMBER	EQUIPMENT DESIGNATION

ABBREVIATIONS

	-- A --
ABV	ABOVE
ACC DR	ACCESS DOOR
AD	AREA DRAIN
ADA	AMERICAN DISABILITY ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AS	AUTOMATIC FIRE SPRINKLER
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AP	ALARM PANEL
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
	-- B --
BD	BALCONY DRAIN
BLW	BELOW
BTUH	BRITISH THERMAL UNITS PER HOUR
	-- C --
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CLG	CEILING
CP	CIRCULATING PUMP
CV	CHECK VALVE
CONN	CONNECT, CONNECTION
COORD	COORDINATE
CW	COLD WATER
CU FT	CUBIC FEET
	-- D --
DCV	DETECTOR CHECK VALVE
DEPT	DEPARTMENT
DF	DRINKING FOUNTAIN
DN	DOWN
DPX	DUPLEX
DR	DRAIN
DWG	DRAWING
	-- E --
EFF	EFFICIENCY
EL	ELEVATION
ELEC	ELECTRICAL
EQUIP	EQUIPMENT
ESH	EMERGENCY SHOWER
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
EWH	ELECTRIC WATER HEATER
	-- F --
FS	FLOOR SINK
FD	FLOOR DRAIN
FF EL	FINISHED FLOOR ELEVATION
FLR	FLOOR
FM	FACTORY MUTUAL
FT	FOOT, FEET
FU	FIXTURE UNIT
FUD	FUNNEL DRAIN
FR	FROM
F.P.	FIRE PROTECTION
F.W.	FIRE WATER

	-- G --
G	GAS
GAL	GALLON
G.C.	GENERAL CONTRACTOR
GI	GREASE INTERCEPTOR
GT	GREASE TRAP
GPM	GALLONS PER MINUTE
GPH	GALLONS PER HOUR
GUH	GAS UNIT HEATER
GWH	GAS WATER HEATER
GW	GREASE WASTE
	-- H --
HDC	HANDICAPPED
HDR	HEADER
HLA	HIGH LEVEL ALARM
HP	HORSEPOWER
HTR	HEATER
HVAC	HEATING VENTILATING AND AIR CONDITIONING
HW	HOT WATER
HWR	HOT WATER RETURN
	-- I --
IE	INVERT ELEVATION
IN	INCH
ICW	INDUSTRIAL COLD WATER
	-- K --
KW	KILOWATT
	-- L --
L	LAVATORY
LD	LEAK DETECTION
	-- M --
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MTD	MOUNTED
MPG	MEDIUM PRESSURE GAS
	-- N --
NC	NORMALLY CLOSED
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN PLUMBING CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
	-- O --
OC	ON CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ACT
OD	OVER FLOW DRAIN

	-- P --
PA	PRE-ACTION
PD	PLANTER DRAIN
PFP	PLUMBING & FIRE PROTECTION
PH	PHASE
PLBG	PLUMBING
PO	PLUGGED OUTLET
PSI	POUNDS PER SQUARE INCH
PRES	PRESSURE
	-- R --
RPBP	REDUCED PRESSURE BACK FLOW PREVENTER
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RO	REVERSE OSMOSIS
ROOF	ROOF DRAIN
RR	ROOF RECEPTOR
	-- S --
SED	SEWAGE EJECTOR DISCHARGE
SH	SHOWER
SK	SINK
SPEC	SPECIFICATION
SQ.FT	SQUARE FEET
SD	STORM DRAIN
SPD	SUMP PUMP DISCHARGE
SS	SERVICE SINK
SW	SANITARY WASTE
SV	SANITARY VENT
	-- T --
TEMP	TEMPERATURE
TD	TERRACE DRAIN
TRD	TRENCH DRAIN
TP	TRAP PRIMER
TS	TAMPER SWITCH
TYP	TYPICAL
	-- U --
UL	UNDERWRITER'S LABORATORY
UR	URINAL
USSG	UNITED STATES STANDARD GAUGE
	-- V --
V	VENT
VERT	VERTICAL
VTR	VENT THRU ROOF
VO	VALVED OUTLET
	-- W --
WHA	WATER HAMMER ARRESTOR
W	WASTE
WC	WATER CLOSET/WATER COLUMN
WH	WALL HYDRANT
WM	WATER METER
WT	WEIGHT
WP	WORKING PRESSURE

SHEET INDEX

SHEET	DESCRIPTION
P0.0	PLUMBING GENERAL NOTES, ABBREVIATIONS AND LEGEND
P0.1	PLUMBING FIXTURE SCHEDULE AND CALCULATIONS
P3.1	PLUMBING FIRST FLOOR PLAN
P3.2	PLUMBING ROOF PLAN
P5.0	PLUMBING DETAILS
P6.0	RISER DIAGRAMS

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE CALIFORNIA PLUMBING CODE (CPC 2019), ENERGY CODE(CEC) AND ALL OTHER GOVERNING CODES AND ORDINANCES.
2. ALL SYMBOLS SHOWN ON THE SYMBOL LIST ARE NOT NECESSARILY USED IN THIS PROJECT.
3. WHERE THERE IS A DISCREPANCY BETWEEN THE DRAWINGS AND THE PROJECT MANUAL, BUILDING STANDARDS OR SPECIFICATIONS, NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
4. THE WORK OF THIS PROJECT INVOLVES ALTERATION OF THE BASE BUILDING (PFP) SYSTEMS TO ACHIEVE THE ARRANGEMENT INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL VISIT THE JOB SITE TO DETERMINE THE EXTENT OF WORK REQUIRED BY THE CONSTRUCTION ACTIVITIES. THE ARCHITECTURAL DRAWINGS SHOW THE CHANGES TO BE MADE. THE CONTRACTOR SHALL REVISE, REARRANGE, REROUTE OR REMOVE EXISTING PLUMBING COMPONENTS AS REQUIRED TO ACCOMMODATE THE CHANGES.
5. THESE DRAWINGS INDICATE THE DESIGN INTENT REQUIREMENTS FOR THE (PFP) SYSTEMS, AND EQUIPMENT. DUE TO STRUCTURAL CONDITIONS, ELECTRICAL WIRING OR PIPING INTERFERENCE, OR FOR OTHER REASONS, THE CONTRACTOR MAY DESIRE TO INSTALL THE WORK IN A MANNER DIFFERENT FROM THAT SHOWN TO ACCOMMODATE EXISTING FIELD CONDITIONS.
6. DURING BID, THE CONTRACTOR SHALL EXAMINE THE COMPLETE SET OF DRAWINGS FOR ALL TRADES, AS ISSUED BY THE ARCHITECT AND REVIEW DIMENSIONS SPACE REQUIREMENTS AND POINT OF CONNECTIONS TO ALL EQUIPMENT. MAKE ANY MINOR ADJUSTMENTS NECESSARY TO AVOID CONFLICTS WITH THE BUILDING STRUCTURE AND THE WORK OF OTHER TRADES.
7. UNLESS INSTRUCTED OTHERWISE, THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES, AND FEES REQUIRED FOR INSTALLATION OF THE (PFP) WORK, INCLUDING THE CITY OF LANCASTER BUILDING DEPARTMENT OF WATER AND POWER, SOUTHERN CALIFORNIA GAS COMPANY AND ALL OTHER AGENCIES HAVING JURISDICTION OVER SERVICES TO THIS BUILDING. FURNISH FINAL CERTIFICATE OF INSPECTION OR WRITTEN EVIDENCE OF ACCEPTANCE BY INSPECTION AUTHORITIES FOR ALL WORK INSTALLED.
8. SEE ARCHITECTURAL DRAWINGS FOR EXTENT OF TENANT IMPROVEMENT WORK, AND EXACT LOCATION OF FIXTURES, EQUIPMENT, DEVICES , ETC.
9. CONTRACTOR SHALL COORDINATE WITH ALL TRADES TO ENSURE AN UNDERSTANDING OF THE COMPLETE SCOPE OF PROJECT PRIOR TO START OF WORK.
10. THE ALTERATION OF THE BASE BUILDING (PFP) SYSTEMS IS A COMPLEX WORK IN NATURE WHICH WILL REQUIRE ACCURATE PLANNING, CAREFUL PREPARATION AND EXECUTION, ATTENTION TO DETAIL AND CLOSE SUPERVISION BY THE CONTRACTOR. THE CONTRACTOR WILL BE REQUIRED TO DO HIS WORK IN FULL COOPERATION WITH THE OTHER CONSTRUCTION TRADES.
11. BEFORE SUBMITTING PROPOSALS FOR THIS WORK, EACH BIDDER SHALL BECOME FAMILIAR WITH DRAWINGS AND SHALL HAVE EXAMINED THE PREMISES AND BE AWARE OF ALL EXISTING CONDITIONS UNDER WHICH HE SHALL BE OBLIGATED TO OPERATE IN PERFORMING HIS CONTRACT. THE CONTRACTOR SHALL NOT BE ENTITLED TO ANY EXTRA COMPENSATION FOR FAILURE TO ALLOW FOR ALL EXISTING CONDITIONS. SUBMITTING OF A BID OR PROPOSAL WILL BE CONSIDERED EVIDENCE OF THE FACT THAT CONTRACTOR IS FULLY AWARE OF THESE CONDITIONS AND IS ABLE TO COMPLETE ALL WORK REQUIRED BY THE DRAWINGS.
12. CONTRACTOR SHALL PROVIDE COMPLETE AS-BUILT DRAWINGS PRIOR TO COMPLETION OF PROJECT FOR REVIEW BY THE ARCHITECT/ENGINEER.
13. IF ANY EQUIPMENT SUBMITTED BY THE CONTRACTOR IS DIFFERENT FROM THAT SPECIFIED, OR REQUIRES CHANGES IN MATERIAL OR LABOR FROM THAT REQUIRED IN THE CONTRACT DOCUMENTS AFFECTING HIS AND/OR OTHER TRADES, SUCH CHANGES SHALL BE SUBMITTED AS SHOP DRAWINGS. SUBMITTAL SHALL INDICATE CREDIT DUE TO OWNER, IF ANY, BECAUSE OF THE CHANGES. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PAYMENT OF ALL CHARGES RESULTING FROM ADDITIONS OR CHANGES IN THE WORK OF OTHER TRADES NECESSARY TO ACCOMMODATE THE REQUESTED MODIFICATION. ALL CHANGES SHALL BE SHOWN ON RECORD AS-BUILT DRAWINGS.
14. SUBMIT SHOP DRAWINGS AND PRODUCT DATA ACCORDING TO SPECIFICATIONS.

FIRE PROTECTION NOTES

1. ALL FIRE PROTECTION WORK SHALL BE "DESIGN-BUILT" BY THE CONTRACTOR AND HYDRAULICALLY CALCULATED IN ACCORDANCE WITH THE CITY OF LANCASTER, THE CALIFORNIA BUILDING CODE, UBC, FIRE CODES, NFPA 13, 24, 101 AND ALL AUTHORITIES HAVING JURISDICTION. MODIFICATION OF THE EXISTING FIRE SPRINKLER SYSTEM SHALL BE ON SEPARATE PERMIT BY A LICENSED CONTRACTOR. INSTALLATION OF THE NEW FIRE ALARM SYSTEM OR MODIFICATION OF THE EXISTING SHALL BE ON A SEPARATE PERMIT BY A LICENSED CONTRACTOR. PROVIDE CERTIFICATION TO OWNER AND AUTHORITIES HAVING JURISDICTION. COORDINATE WITH DIVISION 16.
2. REWORK EXISTING SPRINKLERS IN THE AREA OF THIS SCOPE OF WORK. INSTALL NEW SPRINKLERS IN NEW CEILINGS AS REQUIRED. INSTALL NEW SPRINKLER PIPING FOR NEW SPRINKLER HEADS AND CONNECT TO EXISTING SPRINKLER MAINS IF REQUIRED. FOR CEILING TYPES AND EXACT LOCATION OF SPRINKLER HEADS REFER TO ARCHITECTURAL REFLECTED CEILING PLANS. COORDINATE WORK WITH OTHER TRADES. PROVIDE AND INSTALL NEW SPRINKLERS ONLY.
3. ALL EXISTING SPRINKLERS IN AREAS AFFECTED BY THE NEW SPRINKLER SCOPE OF WORK SHALL BE TURNED UP DURING CONSTRUCTION, IF REQUIRED BY THE CITY AND SHALL BE TURNED BACK TO THE ORIGINAL POSITION AT THE END OF CONSTRUCTION.
4. THE INSTALLATION OF SEISMIC BRACING FOR THE FIRE SPRINKLER SYSTEM SHALL BE SUBJECT TO THE APPROVAL OF THE FIRE MARSHALL FIELD INSPECTOR.
5. CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER TRADES AND COORDINATE FIRE SPRINKLER LOCATIONS AND PIPING WITH LIGHTING FIXTURES, SPEAKERS AND DIFFUSERS, HVAC DUCTWORK, ETC. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF PARTITIONS, SUSPENDED CEILINGS, SOFFITS AND ILLUMINOUS CEILINGS. FIRE SPRINKLERS SHALL BE INSTALLED AS INDICATED ON ARCHITECTURAL REFLECTED CEILING PLANS.
6. SPRINKLER HEADS SHALL BE UL LISTED AND FM APPROVED. PROVIDE QUICK-RESPONSE TYPE WHERE REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.
   - (A) GYPSUM BOARD CEILING AREAS: SUPPLY AND INSTALL BUILDING STANDARD CONCEALED SPRINKLERS, STANDARD RESPONSE SPRINKLERS, WITH FACTORY FINISHED COVER PLATE TO MATCH ADJACENT CEILING SURFACE FINISH PAINT, ARCHITECT TO SELECT FINISH.
   - (B) ACOUSTICAL TILE CEILING AREAS: SUPPLY AND INSTALL BUILDING STANDARD CONCEALED SPRINKLERS, STANDARD RESPONSE SPRINKLERS, WITH FACTORY FINISHED COVER PLATE TO MATCH ADJACENT CEILING SURFACE FINISH PAINT, ARCHITECT TO SELECT FINISH.
   - (C) EXPOSED AREAS WITHOUT CEILINGS: SUPPLY AND INSTALL BUILDING STANDARD SPRINKLERS, UPRIGHT AND/OR PENDANT SPRINKLERS; ARCHITECT TO SELECT FINISH.
   - (D) CONTRACTOR SHALL PROVIDE INTERMEDIATE TEMPERATURE FIRE SPRINKLERS (175°F TO 225°F) IN ALL MACHINE ROOMS, DATA ROOMS AND MECHANICAL ROOMS.
7. PROVIDE SPRINKLER PROTECTION UNDER STAIRS AND DISPLAY WINDOWS.
8. SPRINKLER SPACING SHALL ACCOUNT FOR MOVABLE PARTITION. SPRINKLER SHALL BE SPACED TO PROVIDE ADEQUATE COVERAGE WHILE MAINTAINING THE MINIMUM DISTANCE BETWEEN SPRINKLERS WHEN THE PARTITION IS OPEN OR CLOSE.
9. PROVIDE SPRINKLER PARTITION IN EACH FITTING ROOM AND SPACE SPRINKLER ACCORDINGLY, SO THAT THE SPRINKLERS MAINTAIN THE MINIMUM SPACING REQUIREMENTS PER NFPA 13 WHEN THE FITTING ROOM IS OPEN.
10. CONTRACTOR SHALL SUBMIT FULL HYDRAULIC CALCULATIONS AND DRAWINGS TO THE ARCHITECT FOR REVIEW. CALCULATION AND DRAWINGS SHALL HAVE STAMP OF APPROVAL OF THE FIRE DEPARTMENT AND AUTHORITIES HAVING JURISDICTION.
11. FIRE PROTECTION PIPING PENETRATING FIRE RATED AND ACOUSTICAL WALLS SHALL BE PROVIDED WITH STEEL SLEEVES AND CAULKED WITH SEALANT MATERIAL OF THE SAME FIRE RATING OF THE WALL, 3M FIRE BARRIER CALIFORNIA STATE FIRE MARSHALL.
12. FIRE PROTECTION SYSTEMS TO MATCH BUILDING STANDARDS.

CALIFORNIA GREEN NOTES

1. CONTRACTOR SHALL PROVIDE TESTING AND BALANCING REQUIREMENTS PER SECTION 5.410.4 OF THE CALIFORNIA GREEN BUILDING CODE.
2. MATERIALS USED SHALL HAVE VOC LIMITS IN COMPLIANCE WITH TABLE 5.504.4.1 OF THE CALIFORNIA GREEN BUILDING CODE.
3. DESIGN SHALL ADOPT MANDATORY MEASURES FOR WATER EFFICIENCY AND CONSERVATION PER CHAPTER 5 DIVISION 5.3 OF THE CALIFORNIA GREEN BUILDING CODE.
4. FLOW RATES ARE TO COMPLY WITH TABLE 5.303.2.3 TO OBTAIN 20% REDUCTION IN THE BASELINE FLOW RATE.
5. MULTIPLE SHOWERS HEADS ARE TO COMPLY WITH THE FLOW RATE FOUND IN TABLE 5.303.2.3. (CGB 5.303.2.1)
6. PROVIDE SEPARATE SUB METERS OR METERING DEVICES IF THE BUILDING IS IN EXCESS OF 50,000 SQ. FT.
   a) SPECIFIC REQUIREMENTS ARE TO BE FOUND IN SECTION 5.303.1.1
7. SEPARATE SUB-METERS SHALL BE INSTALLED IN ANY BUILDING OR NEW SPACE WITHIN A BUILDING THAT IS PROJECTED TO CONSUME MORE THAN 1,000 GAS/DAY. (CAL GREEN 5.303.1.2; CAL GREEN 5.712.3.1.2)
8. FIELD QUAULTY CONTROL FOR SERVICE WATER HEATERS:
   - A. MANUFACTURER'S FIELD SERVICE: ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT, TEST, AND ADJUST FIELD-ASSEMBLED COMPONENTS AND EQUIPMENT INSTALLATION, INCLUDING CONNECTIONS, AND TO ASSIST IN FIELD TESTING. REPORT RESULTS IN WRITING.
   - B. PERFORM THE FOLLOWING FIELD TESTS AND INSPECTIONS AND PREPARE TEST REPORTS:
     1. LEAK TEST: AFTER INSTALLATION, TEST FOR LEAKS. REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST.
     2. OPERATIONAL TEST: AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, CONFIRM PROPER OPERATION.
     3. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS AND EQUIPMENT.
   - C. REMOVE AND REPLACE WATER HEATERS THAT DO NOT PASS TESTS AND INSPECTIONS AND RETEST AS SPECIFIED ABOVE.
9. DEMONSTRATION FOR ELECTRIC WATER HEATERS
   - A. ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO TRAIN OWNER'S MAINTENANCE PERSONNEL TO ADJUST, OPERATE, AND MAINTAIN INSTANTANEOUS ELECTRIC WATER HEATERS.
10. NEW PLUMBING FIXTURES AND FITTINGS SHALL NOT EXCEED THE MAXIMUM ALLOWABLE FLOW RATE SPECIFIED IN TABLE 5.303.2.3/10.303.2.3.

ENERGY COMMISSION NOTES (CALIFORNIA)

1. DOMESTIC WATER HEATERS SHALL BE CERTIFIED AND LISTED BY THE CALIFORNIA ENERGY COMMISSION.
2. ALL HOT WATER SUPPLY PIPING SHALL BE INSULATED PER ENERGY CODE. INSULATE ALL FITTINGS, VALVES, STRAINERS, ETC., BY EITHER PREFABRICATION OR BY FABRICATING FITTINGS FROM METERED SEGMENTS OF PIPE INSULATION TO AN EQUAL THICKNESS OF ADJOINING PIPE INSULATION.
3. SERVICE WATER HEATING SYSTEM SHALL BE EQUIPPED WITH AUTOMATIC TEMPERATURE CONTROLS CAPABLE OF ADJUSTMENT FROM THE LOWEST TO THE HIGHEST ACCEPTABLE TEMPERATURE SETTING.
4. LAVATORY FAUCETS AND SINKS (NOT INCLUDING SERVICE SINK FAUCETS) SHALL MEET THE FLOW REQUIREMENTS OUTLINED IN THE APPLIANCE EFFICIENCY STANDARD.
5. LAVATORIES IN RESTROOM OF PUBLIC FACILITIES SHALL BE EQUIPPED WITH OUTLET DEVICES THAT LIMIT THE FLOW OF HOT WATER TO A MAXIMUM OF 0.5 GALLONS PER MINUTE OR WITH SELF CLOSING FAUCETS THAT LIMIT DELIVERY TO A MINIMUM OF 0.25 GALLONS PER MINUTE OF HOT WATER FOR RECIRCULATING SYSTEMS AND TO A MAXIMUM OF 0.5 GALLONS FOR NON-RECIRCULATING SYSTEMS AND SHALL BE EQUIPPED WITH DEVICES THAT LIMIT THE OUTLET TEMPERATURE TO A MAXIMUM OF 110°F.
6. ALL PLUMBING FIXTURES SHALL BE LOW FLOW TYPE AND APPROVED BY THE ENERGY CONSERVATION STANDARDS.

PLUMBING NOTES

1. ALL WORK SHALL COMPLY WITH THE 2019 CALIFORNIA PLUMBING CODE AND THE 2019 CITY OF LANCASTER AMENDMENTS.
2. ALL CLEANOUTS SHALL BE ACCESSIBLE AND INSTALLED PER CURRENT CALIFORNIA PLUMBING CODE SECTION 707 & 719.
3. ALL WATER FAUCETS SHALL BE PROVIDED WITH CODE-APPROVED FLOW RESTRICTORS.
4. SLOPE OF SANITARY SEWER PIPES SHALL NOT BE LESS THAN 2% UNLESS OTHERWISE INDICATED AND APPROVED BY THE AUTHORITY HAVING JURISDICTION.
5. ALL DOMESTIC HOT WATER PIPING SHALL BE INSULATED AS REQUIRED BY THE ENERGY CODE.
6. ALL PIPING TO BE SEISMICALLY BRACED TO PREVENT SWAYING PER CITY OF LANCASTER BUILDING CODE.
7. PROVIDE SNAP-ON TYPE CITY OF LANCASTER APPROVED INSULATION ON TRAPS AND HOT WATER PIPING FOR SINKS, LAVATORIES AND OTHER A.D.A. ACCESSIBLE FIXTURES.
8. DURING CONSTRUCTION, PROVIDE MECHANICAL PLUGS IN OPEN DRAINS TO PREVENT DAMAGE TO LOWER FLOORS. ALL WATER PIPING LOCATED ABOVE CEILING, REQUIRING TEMPORARY OR PERMANENT CAPPED CONNECTIONS, SHALL BE PROVIDED WITH LINE-SIZE SHUTOFF VALVES.
9. ROUGH-INS, CONNECTIONS AND TERMINATION OF PLUMBING WORK SHALL BE SEQUENCED IN COORDINATION WITH THE PROJECT SCHEDULE THE ARCHITECT, AND THE OWNERS OTHER CONTRACTORS AND VENDORS. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF FIXTURES AND APPLIANCES.
10. A MINIMUM 1/2" CLEARANCE SHALL BE PROVIDED AROUND PIPES AT ALL PENETRATIONS THROUGH WALLS AND ROOF. THE GAP SHALL BE PACKED TIGHTLY WITH LOOSE, LIGHTWEIGHT INSULATION THROUGH NON RATED WALLS, AND APPROVED U.L. LISTED FIRE SAFING MATERIAL RATED WALLS TO MATCH WALL RATING.
11. PROVIDE ACCESS PANELS IN WALLS FOR SHUTOFF VALVES, TRAP PRIMERS AND WATER HAMMER ARRESTERS. CONTRACTOR IS ADVISED THAT ITEMS REQUIRING ACCESS SHALL NOT BE LOCATED ABOVE THE AREAS OF GYPSUM BOARD CEILING WITHOUT CONSENT OF ARCHITECT. SUBMIT PROPOSED ACCESS PANEL LOCATIONS TO ARCHITECT FOR APPROVAL.
12. FOR ALL REQUIRED CORING OF FLOOR, CONTRACTOR SHALL X-RAY THE FLOOR SLAB PRIOR TO CORING.
13. PROVIDE AND INSTALL CHROME PLATED ANGLE STOPS AT ALL FIXTURES.
14. ALL WATER SHUT-OFF VALVES SHALL BE BALL TYPE VALVES.
15. ALL WATER CONNECTION TO KITCHEN/PANTRY EQUIPMENT SUCH AS: ICE MAKERS, COFFEE MAKERS, SODA MACHINES, WATER DISPENSERS, ETC.; SHALL BE EQUIPPED WITH CITY OF LANCASTER APPROVED DOUBLE CHECK VALVE.
16. ALL PIPE PENETRATIONS THROUGH STRUCTURAL MEMBERS AND WALLS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER.
17. ALL PLUMBING COMPONENTS THAT CONVEY DRINKING WATER, PIPES, FITTINGS AND FAUCETS TO BE USED SHALL BE IN COMPLIANCE WITH STATE ASSEMBLY BILL AB1953 (LEAD FREE).
18. ALL FIXTURES, EQUIPMENT, PIPING AND MATERIALS SHALL BE LISTED
19. ALL PLUMBING FIXTURES SHALL MEET THE FLOW REQUIREMENTS SPECIFIED IN LANCASTER PLUMBING CODE,
20. ALL FAUCETS IN PUBLIC RESTROOM SHALL BE SELF-CLOSING METERING FAUCETS,
21. PUBLIC LAVATORIES SHALL HAVE CONTROLS TO LIMIT THE WATER TEMPERATURE TO 105 DEGREE F,
22. WATER PIPES AND FITTINGS WITH A LEAD CONTENT WHICH EXCEEDS 8% SHALL BE PROHIBITED IN THE SYSTEM CONVEYING POTABLE WATER.

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ISSUE DATES

No.	Date	Description
1	4/7/22	PLAN CHECK

SHEET TITLE

PLUMBING GENERAL NOTES, ABBREVIATION AND LEGEND

Project No. : 212308

Date: 4/7/2022

Drawn: DSA

Scale:

SHEET NO.

P0.0

PLUMBING FIXTURE SCHEDULE

TAG NUMBER	DESCRIPTION	ACCEPTABLE MANUFACTURERS
BFP-1	BACK FLOW PREVENTER – REDUCED PRESSURE ZONE, LEAD FREE BRONZE CONSTRUCTION, SIZE SAME AS PIPE 2", NON-CORROSIVE INTERNAL PARTS, STAINLESS STEEL SPRINGS, DIFFERENTIAL PRESSURE RELIEF VALVE BETWEEN SPRING-LOADED CHECK VALVES, BALL STYLE SHUT-OFF VALVES ON INLET AND OUTLET OF UNIT, AIR GAP DRAIN FITTING, TEST PORTS WITH SHUT-OFF VALVES, RATED FOR 175 PSI AT 33°F TO 140°F, 15 PSI (MAXIMUM) PRESSURE DROP AT 10 FPS, FACTORY TESTED, ALL PARTS TO BE SERVICEABLE WITHOUT REMOVING UNIT FROM LINE, APPROVED BY USC FCCC & HR, AWWA C511-92, ASSE 1013, IAPMO AND SBCCI LISTED. MOUNT WITHIN 60" OF FINISHED FLOOR. PROVIDE AND INSTALL BRONZE OR EPOXY COATED STRAINER UPSTREAM OF EACH UNIT AND ADDITIONAL VALVE UPSTREAM OF EACH STRAINER. FLOW PRESSURE DROP CURVES SHALL BE SUBMITTED.	WATTS (LF919)
WH-1 WH-2 WH-3	WATER HEATER – ELECTRIC, VERTICAL, METAL CABINET, BAKED ENAMEL FINISH, GLASS-LINED ASME STAMPED WELDED STEEL TANK, 150 PSI WORKING PRESSURE, FIBERGLASS OR FOAM INSULATION, BRASS WATER CONNECTIONS AND DRAIN VALVE, ASME APPROVED T&P RELIEF VALVE, MAGNESIUM ANODE ROD, INDIVIDUAL FLANGE-MOUNTED IMMERSION HEATING ELEMENTS SHEATHED WITH CORROSION-RESISTANT METAL ALLOY, EXTERNALLY ADJUSTABLE AUTOMATIC IMMERSION WATER THERMOSTAT, MANUAL RESET HIGH TEMPERATURE CUTOFF SWITCH, ENCLOSED CONTROLS, VENTILATED CONTROL CABINET, PILOT LIGHTS INDICATING MAIN POWER AND HEATING STEPS, CONTROL CIRCUIT TOGGLE SWITCH, SEQUENCING STEP CONTROLLER, CONTROL TRANSFORMER, POWER CIRCUIT FUSES, MAGNETIC CONTACTORS, CERAMIC TERMINAL BLOCK, FACTORY ASSEMBLED AND WIRED, 3-YEAR WARRANTY, UL LISTED, NEC COMPLIANT ELECTRICAL COMPONENTS, COMPLIANT TO NAECA, ASHRAE 90.1 AND ASHRAE 90A. 20 GALLON CAPACITY, (2) 5500 KW ELEMENT(S), 76 GPH RECOVERY RATE AT 38°F TEMPERATURE RISE. HEATING ELEMENTS RATED FOR LESS THAN 75 WATTS PER SQUARE INCH. ELECTRICAL REQUIREMENTS – 240V-1 PHASE HEATING CIRCUIT, 120V CONTROL CIRCUIT. SET WATER TEMPERATURE AT 120°F.	BRADFORD WHITE (LE120L3-E)
WH-4 WH-5	WATER HEATER – ELECTRIC, VERTICAL, METAL CABINET, BAKED ENAMEL FINISH, GLASS-LINED ASME STAMPED WELDED STEEL TANK, 150 PSI WORKING PRESSURE, FIBERGLASS OR FOAM INSULATION, BRASS WATER CONNECTIONS AND DRAIN VALVE, ASME APPROVED T&P RELIEF VALVE, MAGNESIUM ANODE ROD, INDIVIDUAL FLANGE-MOUNTED IMMERSION HEATING ELEMENTS SHEATHED WITH CORROSION-RESISTANT METAL ALLOY, EXTERNALLY ADJUSTABLE AUTOMATIC IMMERSION WATER THERMOSTAT, MANUAL RESET HIGH TEMPERATURE CUTOFF SWITCH, ENCLOSED CONTROLS, VENTILATED CONTROL CABINET, PILOT LIGHTS INDICATING MAIN POWER AND HEATING STEPS, CONTROL CIRCUIT TOGGLE SWITCH, SEQUENCING STEP CONTROLLER, CONTROL TRANSFORMER, POWER CIRCUIT FUSES, MAGNETIC CONTACTORS, CERAMIC TERMINAL BLOCK, FACTORY ASSEMBLED AND WIRED, 3-YEAR WARRANTY, UL LISTED, NEC COMPLIANT ELECTRICAL COMPONENTS, COMPLIANT TO NAECA, ASHRAE 90.1 AND ASHRAE 90A. 20 GALLON CAPACITY, (2) 5500 KW ELEMENT(S), 76 GPH RECOVERY RATE AT 38°F TEMPERATURE RISE. HEATING ELEMENTS RATED FOR LESS THAN 75 WATTS PER SQUARE INCH. ELECTRICAL REQUIREMENTS – 240V-1 PHASE HEATING CIRCUIT, 120V CONTROL CIRCUIT. SET WATER TEMPERATURE AT 120°F.	BRADFORD WHITE (LE120L3-E)
FCO-1	FLOOR CLEANOUT – ADJUSTABLE, CAST IRON HOUSING, ANCHOR FLANGE, TAPERED THREAD PLUG, SECURED NICKEL BRONZE TOP. TOP STYLE SHALL MATCH FLOOR FINISH AS FOLLOWS: UNFINISHED FLOOR – SQUARE SOLID SCORIATED TOP TILE OR TERRAZZO – SQUARE RECESSED TOP	ZURN (Z1400), JOSAM (55000), SMITH (4000),
WCO-1	WALL CLEANOUT – END CAP, CAST IRON ACCESS BODY, GAS AND WATERTIGHT BRONZE OR BRASS THREADED PLUG, ROUND STAINLESS STEEL ACCESS COVER, EXTENDED MACHINE SCREW.	ZURN (Z-1441), SMITH (4422),
SK-1	SINK – ACCESSIBLE UNDERMOUNT, SINGLE COMPARTMENT, 18 GAUGE TYPE 316 STAINLESS STEEL, OVERALL SIZE, 25" x 22" x 6" DEEP BOWL, 3-1/2" DIAMETER DRAIN OUTLET LOCATION OFF-CENTERED REAR IN BOWL. REMOVABLE TYPE 304 STAINLESS STEEL BASKET STRAINER WITH NEOPRENE STOPPER. FURNISH DISPOSAL FLANGE WITH STOPPER. SINK TRIM – SINGLE HANDLE MIXING FAUCET, BRASS CONSTRUCTION, POLISHED CHROME FINISH, NOMINAL 10" HIGH-RISE SWING SPOUT, CERAMIC CARTRIDGE, NOMINAL 8" REACH, PULL DOWN SPRAY HOSE WITH AERATOR STREAM SPRAY SELECTOR, LEVER HANDLE. MAXIMUM FLOW TO BE 1.5 GPM IN GPM IN COMPLIANCE WITH CAL GREEN CODE. FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. PROVIDE ESCUTCHEON PLATE AS REQUIRED. ACCESSORIES – OFFSET 1-1/2" 17 GAUGE CHROME-PLATED BRASS TAILPIECE AND P-TRAP, QUARTER-TURN BALL VALVE TYPE 3/8" CHROME-PLATED BRASS ANGLE SUPPLIES WITH STOPS, CHROME-PLATED SOFT COPPER SUPPLY LINES. INSULATION KIT – PRE-MANUFACTURED FOR P-TRAP, STOP VALVES AND SUPPLY LINES.	SINK – KOHLER VAULT K-3894-4 SINK TRIM – KOHLER CRUE K-22972-CP INSULATION KIT – MCGUIRE (PROWRAP)
L-1	LAVATORY – ACCESSIBLE – UNDER-COUNTER MOUNTED, CEFIONTECT CERAMIC GLAZE, WHITE VITREOUS CHINA, 20"x12-3/8" O.D. RECTANGULAR, REAR OVERFLOW. LAVATORY TRIM – 4" TRIM PLATE SENSOR ACTIVATED MIXING FAUCET, BATTERY POWERED, BRASS CONSTRUCTION, POLISHED CHROME FINISH, MULTI-LAMINAR SPRAY, SINGLE HOLE INSTALLATION, INTEGRAL CHECK VALVES, PERFORATED GRID STRAINER WITH 1-1/4" 17 GAUGE TAILPIECE, EXTERNAL ADJUSTABLE TEMPERATURE, FAUCET MOUNTED CONTROLS AND BATTERIES. MAXIMUM FLOW TO BE 0.35 GPM IN COMPLIANCE WITH ENERGY POLICY ACT OF 2005 AND ASME/ANSI STANDARD A112.18.1M. MIXING VALVE – FURNISH ZURN MODEL ZW3870XLT, FURNISH UNDER LAVATORY COMPARTMENT CONCEALED. ELECTRONIC SENSOR FAUCETS SHALL HAVE PROGRAMMABLE AUTOMATIC FLUSH SET FOR 30 SECONDS ONCE PER DAY ACCESSORIES – QUARTER-TURN 3/8" CHROME PLATED HEAVY BRASS ANGLE SUPPLY STOPS, CHROME PLATED SOFT COPPER SUPPLY LINES, 1-1/4" 17 GAUGE CAST BRASS P-TRAP. COORDINATE OPENINGS REQUIRED IN COUNTERTOP WITH GENERAL CONTRACTOR. FIELD CUT OPENINGS WILL NOT BE ACCEPTABLE. INSULATION KIT – PRE-MANUFACTURED FOR P-TRAP, STOP VALVES AND SUPPLY LINES.	LAVATORY – TOTO LT191G # 01 COTTON LAVATORY TRIM – SLOAN (ETF-770-4-PLG-TEE-CP-0.35GPM-MLM-IR-FCT) INSULATION KIT – MCGUIRE (PROWRAP)
WC-1	WATER CLOSET – ACCESSIBLE, WALL HUNG, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET, HIGH EFFICIENCY RATED FOR 1.28 GPF, ELONGATED BOWL, 1-1/2" TOP SPUD. FLUSH VALVE – EXPOSED, SENSOR OPERATED, BATTERY POWERED, 1.28 GALLONS PER FLUSH, CHROME PLATED 1" I.P.S. SCREWDRIVER STOP-CHECK VALVE, CHEMICAL RESISTANT MATERIAL, VACUUM BREAKER, SPUD COUPLING AND FLANGE, WALL FLANGE WITH SET SCREW, MECHANICAL OVER-RIDE BUTTON, LOW BATTERY INDICATOR LIGHT, RANGE ADJUSTMENT SCREW, 3 YEAR WARRANTY. ELECTRONIC SENSOR FLUSH VALVES SHALL HAVE PROGRAMMABLE AUTOMATIC FLUSH SET FOR 1 FLUSH PER DAY SEAT – WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC, SELF-SUSTAINING HINGE, STAINLESS STEEL OR PLATED STEEL POSTS AND NUTS. CONTRACTOR OPTION: COMBINATION WATER CLOSET/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD,SLOAN ACCESSORIES – WATER CLOSET SUPPORT CARRIER RATED FOR 500 LBS. MOUNT WATER CLOSET WITH CARRIER BOLTED SECURELY TO FLOOR. TOP OF SEAT SHALL BE AT17"-19" ABOVE FINISHED FLOOR (VERIFY EXACT MOUNTING HEIGHT WITH MANUFACTURER). FLUSH HANDLE SHALL BE LOCATED ON THE WIDE SIDE OF THE TOILET STALL AND BE AT 12" (MAXIMUM) ABOVE BOWL RIM AND OPERATE WITH NO GREATER THAN 5 LB FORCE IN COMPLIANCE WITH LATEST ADA STANDARDS. VERIFY EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS.	WATER CLOSET – SLOAN (ST-2459-STG), FLUSH VALVE – SLOAN (111-1.28SFSM), SEAT – BEMIS (3155SSCT), CHURCH (3155C), OLSONITE (95),

PLUMBING FIXTURE SCHEDULE

TAG NUMBER	DESCRIPTION	ACCEPTABLE MANUFACTURERS
HB-1	HOSE BIBB – FOR EXTERIOR USE, BRASS CONSTRUCTION, STANDARD FINISH, VACUUM BREAKER, 3/4" MALE HOSE THREAD, METAL WHEEL HANDLE, ASSE 1011 LISTED AND APPROVED. MOUNT AT 18" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE ON DRAWINGS.	JR SMITH 5673 OR APPROVED EQUAL
MS-1	MOP BASIN – PRECAST TERRAZZO, 24"x24"x12", STAINLESS STEEL INTEGRAL DRAIN WITH REMOVABLE STRAINER, 3" OUTLET, CONTINUOUS STAINLESS STEEL CAP ON ALL EDGES. TRIM – EXPOSED TWO HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, SINGLE WING HANDLES, 1/4 TURN CERAMIC DISC CARTRIDGE, 3/4" HOSE THREAD SPOUT WITH ASSE 1053 RATED INTEGRAL VACUUM BREAKER, WALL BRACE, PAIL HOOK, CHECK STOPS OR INLINE CHECK VALVES TO PREVENT THERMAL CROSSOVER. FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. ACCESSORIES – MOP HANGER, HOSE AND HOSE BRACKET, TRAP TWO 24" WIDE STAINLESS STEEL WALL GUARD	MOP BASIN – FIAT (TSB), ACORN (TSH), TRIM – CHICAGO FAUCETS (897-CP), MOEN (8124), S VACUUM BREAKER – WATTS (8A), OR APPROVED EQUAL
FD-1	FLOOR DRAIN – CAST IRON BODY, NICKEL BRONZE ADJUSTABLE TOP, 6" SQUARE, 2" OTTOM OUTLET, FLASHING COLLAR, SURFACE MEMBRANE CLAMP. FURNISH WITH DEEP SEAL TRAP, HEEL PROOF GRATE AND TRAP PRIMER OPTION.	FLOOR DRAIN – ZURN (Z-415), SMITH (2005), WADE (1100),
FS-1	FLOOR SINK – 14 GAUGE TYPE 304 STAINLESS STEEL RECEPTOR, 12"x12"x6" DEEP, 4" OUTLET, TRAP, STAINLESS STEEL RIM AND SECURED HALF GRATE WITH 1/2" SQUARE OPENINGS, STAINLESS STEEL SEDIMENT BUCKET.	ZURN (Z1750), SMITH (9690), WADE (9100),
TP-1	TRAP PRIMER – PRESSURE DROP ACTIVATED, 1/2" MALE NPT INLET AND 1/2" FEMALE NPT OUTLET, BUILT-IN AIRGAP, REMOVABLE FILTER SCREEN, ASSE 1018 LISTED. REQUIRES NO ADJUSTMENTS OR PRE-CHARGE.	TRAP PRIMER – MIFAB (M-500), PPP (PR-500), WATTS (LFTP300T),
WHA-1	WATER HAMMER ARRESTOR –PISTON TYPE, PRE-CHARGED WITH 60 PSIG AIR, LEAD FREE, COPPER BODY, BRASS OR HIGH HEAT POLY-PROPYLENE PISTON WITH DUAL EPDM O-RING SEALS LUBRICATED WITH FDA APPROVED SILICONE LUBRICANT. PDI CERTIFIED, A.S.S.E. 1010 APPROVED FOR SEALED WALL INSTALLATION. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.	WATTS (LF15M2-DR), SIOUX CHIEF (650 SERIES

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ISSUE DATES

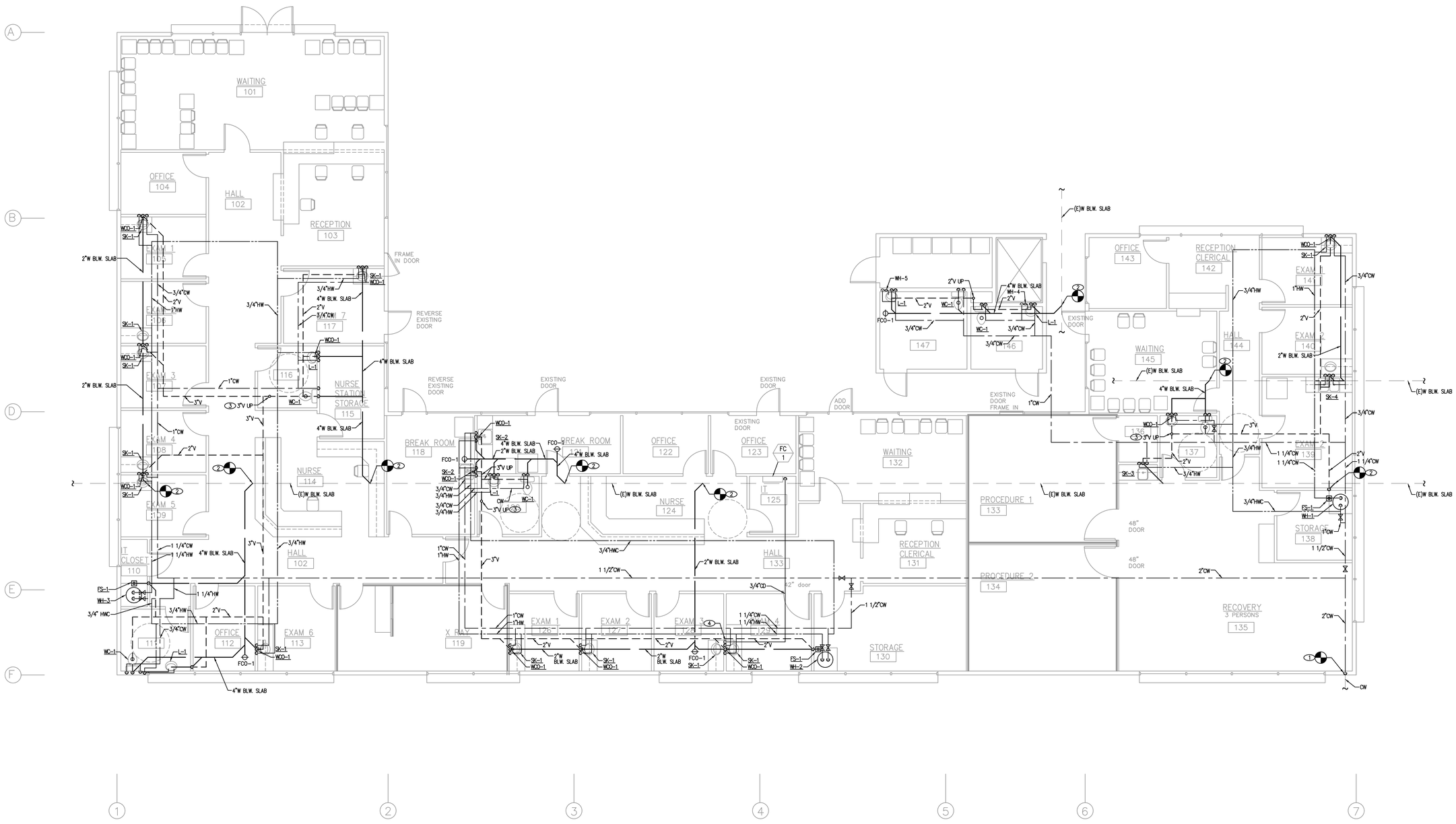
No.	Date	Description
1	4/7/22	PLAN CHECK

SHEET TITLE

PLUMBING FIXTURE SCHEDULE

Project No. : 212308
Date: 4/7/2022
Drawn: DSA
Scale:

SHEET NO.
P0.1



NORTH

FLOOR PLAN

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

KEY NOTES

1. NEW 2" CW TO EXISTING CW REMAIN. FIELD VERIFY IN FIELD EXACT POINT OF CONNECTION.
2. NEW 4" WASTE PIPE CONNECT TO EXISTING 4" SANITARY BELOW SLAB. CONTRACTOR TO FIELD VERIFY LOCATION AND SIZE OF THE SANITARY OUTLET.
3. 3" VENT UP AND CONNECT TO EXISTING VENT AT ABOVE FLOOR CONTRACTOR TO FIELD VERIFY LOCATION AND SIZE OF THE VENT.
4. CONNECT 3/4" CD TO LAV TAIL PIECE(SEE DETAIL SHEET NO: P5.0/2)

SHEET NOTES

1. NEATLY SAWCUT EXISTING SLAB/CONCRETE AS REQUIRED TO REMOVE EXISTING BELOW GRADE WASTE. PREPARE FOR INSTALLATION OF NEW BELOW GRADE WASTE REMODEL PHASE.

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ISSUE DATES

No.	Date	Description
1	4/7/22	PLAN CHECK

SHEET TITLE
PLUMBING FLOOR PLAN

Project No. : 212308
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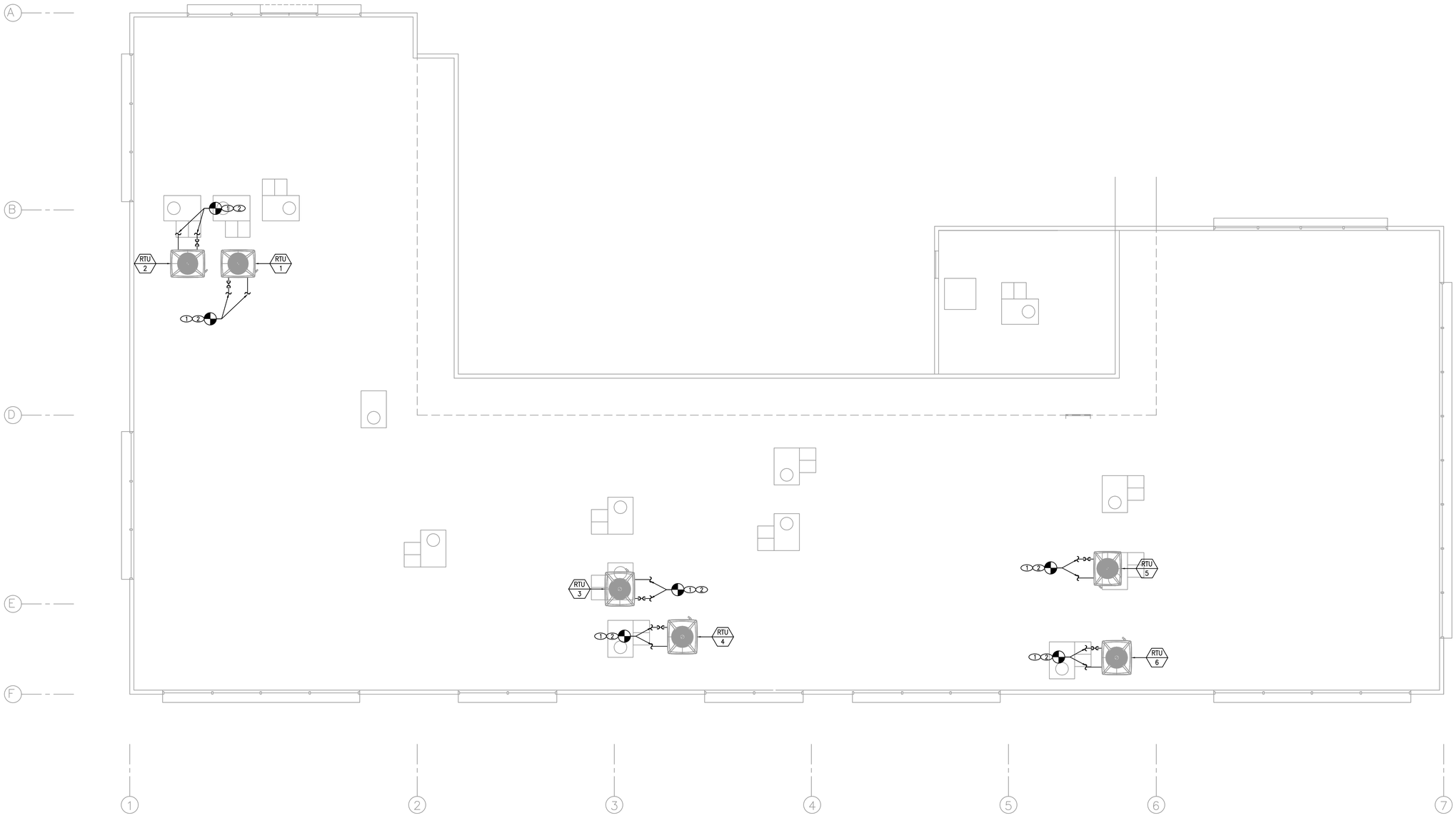
Drawn: DSA
Scale:

SHEET NO.
P3.1



NORTH

PLUMBING ROOF PLAN

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

KEY NOTES

1. CONTRACTOR SHALL DISCONNECT EXISTING NATURAL GAS/ CONDENSATE PIPING TO RTU. CAP AT ROOF LEVEL PREPARE UTILITIES FOR RECONNECTION TO NEW RTU PER MECH DRAWINGS.
2. CONTRACTOR SHALL PROVIDE NEW FULL LINE SIZE GAS PIPE WITH BRAIDED HOSE/ SOV CSA CERTIFIED. CONDENSATE PIPING SHALL BE 3/4"WITH TRAP AND VENT. CONTRACTOR TO VERIFY IN FIELD EXACT LOCATION.

SHEET NOTES

1. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF NATURAL GAS PIPING AND CONDENSATE PIPING.

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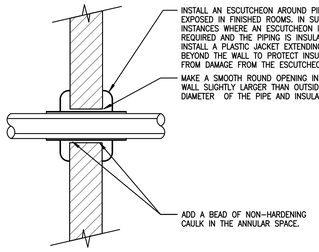
ISSUE DATES

No.	Date	Description
1	4/7/22	PLAN CHECK

SHEET TITLE
PLUMBING ROOF PLAN

Project No. : 212308
Date: 4/7/2022
Drawn: DSA
Scale:

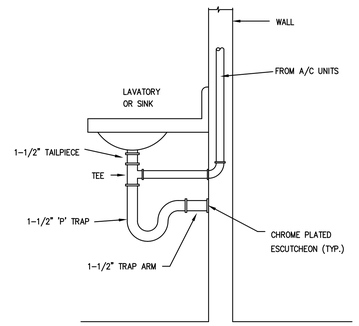
SHEET NO.
P3.2



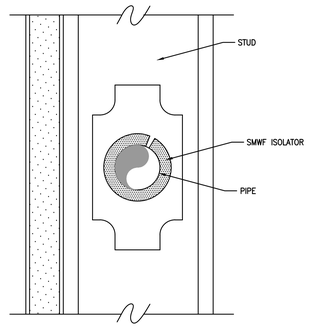
NOTES:

1. THIS DETAIL APPLIES TO ALL PIPES. THE INTENTION IS TO CONTINUE THE INSULATION AND VAPOR BARRIER THROUGH ALL PENETRATIONS. PERMIT THERMAL EXPANSION WITHOUT DAMAGING INSULATION, AND TO SEAL AIRTIGHT AROUND INSULATED AND UNINSULATED PIPES FOR NOISE TRANSMISSION CONTROL.
2. FLOOR OPENINGS ARE SIMILAR SEE SPECIFICATION SECTION (SECTION 22 05 29 – PLUMBING, SECTION 23 05 29 – HVAC) FOR DIFFERENCES BETWEEN FLOOR AND WALL PENETRATIONS.
3. SEE SPECIFICATION SECTIONS (SECTION 21 05 03 – FIRE PROTECTION, SECTION 22 05 03 – PLUMBING, SECTION 23 05 03 – HVAC) AND (SECTION 22 05 29 – PLUMBING, SECTION 23 05 29 – HVAC) FOR ADDITIONAL INFORMATION.

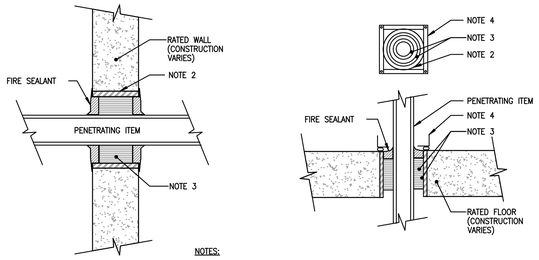
PIPE THROUGH NON-FIRE RATED WALL | SCALE: NONE | 1



SINK/LAV TAILPIECE DETAIL | SCALE: NONE | 2



ISOL. OF PIPING PENET. THRU STUDS/PLATES | SCALE: NONE | 3



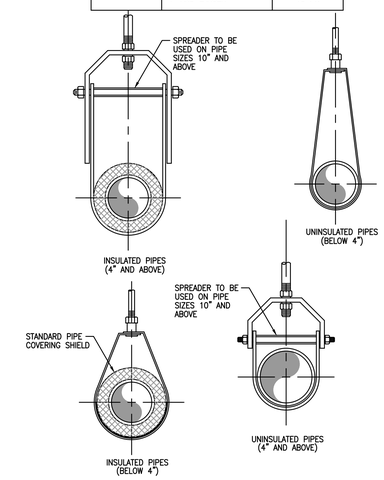
NOTES:

1. THIS GENERAL DETAIL APPLIES TO ALL ITEMS PENETRATING FIRE RATED WALLS OR FLOORS. THE INTENT IS TO MAINTAIN THE FIRE RATING AND TO ALLOW LONGITUDINAL MOVEMENT. REFER TO SPECIFICATION SECTION 07840 (07 84 00) (SECTION 21 05 03 – FIRE PROTECTION, SECTION 22 05 03 – PLUMBING , SECTION 23 05 03 – HVAC) FOR SELECTION OF THROUGH PENETRATION FIRE STOPPING.
2. SCHEDULE 5 PIPE SLEEVE EMBEDDED IN WALL OR FLOOR, OR SMOOTH CORE DRILL. EACH CONTRACTOR FURNISHES SLEEVE TO G.C., COORDINATES SLEEVE LOCATIONS AND DEBURS SLEEVE. G.C. BUILDS SLEEVE INTO WALL OR FLOOR ALLOWING NO GAP AROUND SLEEVE. IF SLEEVE IS NOT PROVIDED WHEN WALL OR FLOOR IS BUILT, CONTRACTOR SHALL INSTALL SLEEVE. SLEEVE SIZE SHALL ALLOW ANNULAR SPACE REQUIRED BY THE SELECTED FIRE STOP SYSTEM.
3. INSTALL BACKING MATERIAL, SUCH AS MINERAL WOOL SAFING, AS REQUIRED FOR FIRE STOP SYSTEM. INSTALL IN ACCORDANCE WITH FIRE STOP SYSTEM APPLICATION LISTING. SECURE TO WALL OR FLOOR TO ALLOW LONGITUDINAL MOVEMENT OF PENETRATING ITEM WITHOUT MOVEMENT OF FIRE BARRIER.
4. WATERTIGHT WELDED 1"x1" 20 GAUGE MINIMUM GALVANIZED SHEET METAL ANGLE FRAME, BY CONTRACTOR IN EQUIPMENT ROOMS FOR WATER STOP. PLACE A BEAD OF WATERPROOF SEALANT BETWEEN FLOOR AND BOTTOM OF ANGLE FRAME. SECURE TO FLOOR WITH MASONRY ANCHORS IN CORNERS AND ON 12" MAXIMUM CENTERS. MULTIPLE PENETRATING ITEMS MAY BE ENCLOSED IN ONE FRAME.

RATED FIRE BARRIER PENETRATION | SCALE: NONE | 4

SCHEDULE FOR SINGLE PIPE HANGERS 3/4" THRU 6"			
TYPE NO.	PIPE SIZE	ROD SIZE	* MAXIMUM LOAD
1	3/4" THRU 2"	3/8"	500#
2	2 1/2" THRU 3 1/2"	1/2"	1000#
3	4" & 5"	5/8"	1500#
4	6"	3/4"	2000#

PIPE SUPPORT SPACING SCHEDULE		
TYPE OF PIPE	SIZE	MAX. SPACING
STEEL	1 1/2" AND SMALLER 2" AND LARGER	7 FT. 10 FT.
BRASS OR COPPER	3/4" AND SMALLER 1" TO 1-1/4" 1-1/2" TO 3" 4" AND LARGER	5 FT. 6 FT. 7 FT. 10 FT.

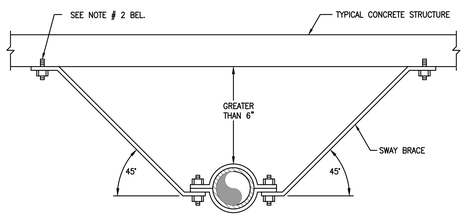


NOTES:

1. SUPPORT PIPE HANGERS FROM STRUCTURAL BEAMS ONLY.
2. STRUCTURAL STEEL PENETRATIONS SHALL BE FIRST REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER. (IF APPLICABLE).
3. HANGER AND ROD SHALL BE DIPPED IN ZINC CHROMATE PRIMER PRIOR TO INSTALLATION.
4. SCHEDULED DATA MAY ALSO BE USED FOR TRAPEZE HANGER SELECTION WITH EACH ROD NOT TO EXCEED THE LOADS SHOWN IN THE MAXIMUM LOAD COLUMN.

* FOR THE MAXIMUM HANGING ALLOWED ON THE STRUCTURE REFER TO STRUCTURAL DETAILS

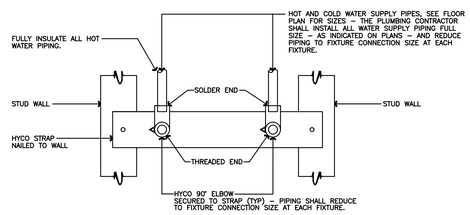
TYPICAL PIPE HANGER DETAIL | SCALE: NONE | 8



NOTES:

1. WHEN HUBLESS PIPING IS SUSPENDED IN EXCESS OF 6" BELOW STRUCTURE, SWAY BRACING SHALL BE PROVIDED TO PREVENT HORIZONTAL MOVEMENT. LOCATE BRACE EVERY 30 FT. ON STRAIGHT RUNS WITH AT LEAST ONE BRACE ON OFFSETS IN EXCESS OF 10 FEET. SUBMIT DETAILS IF VARIATION IS REQUIRED.
2. CONSULT STRUCTURAL ENGINEER AND RECEIVE APPROVAL FOR METHOD OF SUPPORTING PIPING FROM EXISTING SLAB OR STRUCTURE.

NO-HUB PIPE SWAY BRACING FOR HORIZONTAL PIPING | SCALE: NONE | 5



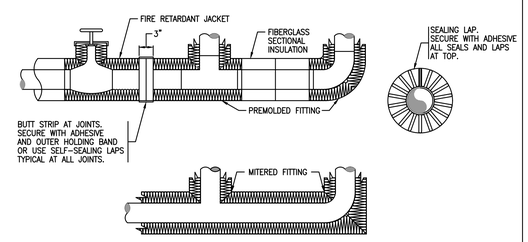
PIPE SUPPORT DETAIL | SCALE: NONE | 6

CONCEALED VALVES AND FITTINGS

- WRAP WITH 1 INCH THICK, 1 POUND DENSITY TO REQUIRED PIPE INSULATION THICKNESS.
- SECURE WITH WIRE OR TAPE.
- VAPOR SEAL COLD WATER, CHILLED WATER AND STORM WATER PIPING.

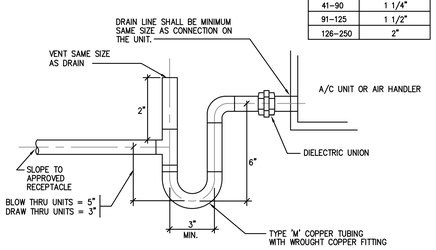
EXPOSED VALVES AND FITTINGS

- PREMOLDED FIBERGLASS OR RADIAL MITERED PIPE INSULATION.
- SKIM COAT OF INSULATION CEMENT.
- COAT OF MASTIC
- WRAP WITH FIBERGLASS REINFORCING CLOTH.
- FINISH COAT OF MASTIC
- OVERLAP 2 INCHES ON PIPE INSULATION.



INSULATION OF PIPING, VALVES & FITTING | SCALE: NONE | 7

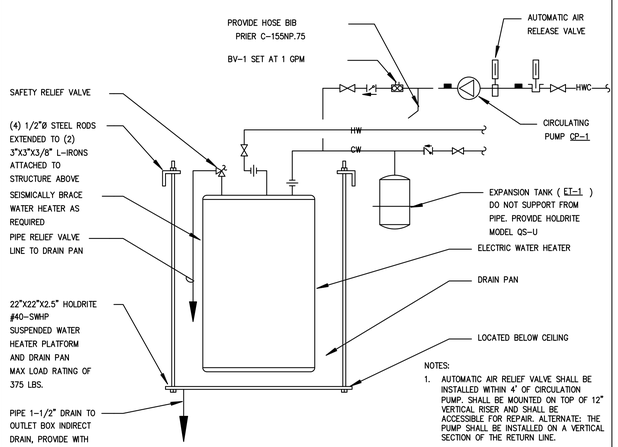
TONS	DRAIN SIZE
0–20	3/4"
21–40	1"
41–90	1 1/4"
91–125	1 1/2"
126–250	2"



NOTES:

1. ALL INTERIOR CONDENSATE DRAINS ABOVE CEILING SHALL BE INSULATED .

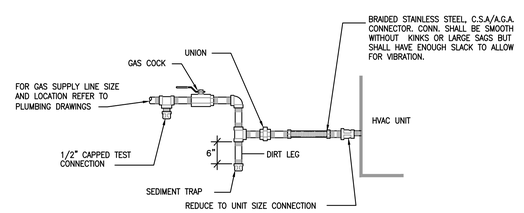
CONDENSATE TRAP AND DRAIN DETAIL | SCALE: NONE | 9



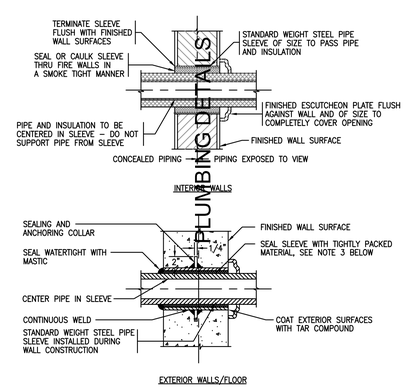
NOTES:

1. AUTOMATIC AIR RELIEF VALVE SHALL BE INSTALLED WITHIN 4' OF CIRCULATION PUMP. SHALL BE MOUNTED ON TOP OF 12" VERTICAL RISER AND SHALL BE ACCESSIBLE FOR REPAIR. ALTERNATE: THE PUMP SHALL BE INSTALLED ON A VERTICAL SECTION OF THE RETURN LINE.
2. THE CW & HWR SHALL NOT BE CONNECTED TO THE WATER STORAGE TANK DRAIN.

WATER HEATER MOUNTING DETAIL | SCALE: NONE | 10



HVAC GAS CONNECTION | SCALE: NONE | 11



NOTE:

1. PIPE SLEEVE FOR EXTERIOR WALL ABOVE OR BELOW GRADE.
2. FOR GAS SERVICE EXTEND SLEEVE 1" PAST INSIDE FACE OF WALL & 4" PAST OUTSIDE FACE OF WALL.
3. PLUMBING PIPING PENETRATING FIRE RATED WALLS SHALL BE SEALED IN A SMOKE TIGHT MANNER WITH SEALANT MATERIAL OF THE SAME RATING OF THE WALL. FIRE BARRIER 3M MODEL PSS7904 CAL. STATE FIRE MARSHALL LISTING NO. 4485-0941:100.

PIPE SLEEVES THROUGH WALLS/FLOORS | SCALE: NONE | 12

PLUMBING DETAILS

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ISSUE DATES		
No.	Date	Description
1	4/7/22	PLAN CHECK

SHEET TITLE

Project No. : 212308
Date: 4/7/2022
Drawn: DSA
Scale:

SHEET NO.
P5.0

22 05 00 BASIC PLUMBING REQUIREMENTS

SCOPE OF WORK
THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NEW MATERIALS AS INDICATED ON THE DRAWINGS, AND/OR IN THESE SPECIFICATIONS, AND ALL ITEMS REQUIRED TO MAKE ASSOCIATED PORTION OF THE MECHANICAL WORK A FINISHED AND WORKING SYSTEM.

ALL WORK THAT WILL PRODUCE EXCESSIVE NOISE OR INTERFERENCE WITH NORMAL BUILDING OPERATIONS, AS DETERMINED BY THE OWNER/LANDLORD, SHALL BE SCHEDULED WITH THE OWNER/LANDLORD. IT MAY BE NECESSARY TO SCHEDULE SUCH WORK DURING UNOCCUPIED HOURS. THE OWNER/LANDLORD RESERVES THE RIGHT TO DETERMINE WHEN RESTRICTED CONSTRUCTION HOURS WILL BE REQUIRED. CONTRACTOR SHALL COORDINATE WITH THE LANDLORD DURING THE BIDDING PROCESS.

ALL CONTRACTORS SHALL ESTABLISH UTILITY ELEVATIONS PRIOR TO FABRICATION AND SHALL COORDINATE THEIR MATERIAL AND EQUIPMENT WITH OTHER TRADES.

THE MECHANICAL CONTRACTOR (FIRE PROTECTION/PLUMBING SHALL:

BE RESPONSIBLE FOR ALL WIRING NOT SHOWN ON ELECTRICAL DRAWINGS BUT REQUIRED FOR MECHANICAL SYSTEMS.

VERIFY ALL EXISTING EQUIPMENT SIZES AND CAPACITIES WHERE UNITS ARE TO BE MODIFIED, MOVED, OR REPLACED. CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING NEW UNITS OR REPLACEMENT UNITS.

QUALITY ASSURANCE
THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING COMPLETE AND OPERATING SYSTEMS. THE CONTRACTOR ACKNOWLEDGES AND UNDERSTANDS THAT THE CONTRACT DOCUMENTS ARE A TWO-DIMENSIONAL REPRESENTATION OF A THREE-DIMENSIONAL OBJECT, SUBJECT TO HUMAN INTERPRETATION. THIS REPRESENTATION MAY INCLUDE IMPERFECT DATA, INTERPRETED CODES, UTILITY GUIDELINES, THREE-DIMENSIONAL CONFLICTS, AND REQUIRED FIELD COORDINATION ITEMS. SUCH DEFICIENCIES CAN BE CORRECTED WHEN IDENTIFIED PRIOR TO ORDERING MATERIAL AND STARTING INSTALLATION. THE CONTRACTOR AGREES TO CAREFULLY STUDY AND COMPARE THE INDIVIDUAL CONTRACT DOCUMENTS AND REPORT AT ONCE IN WRITING TO THE DESIGN TEAM ANY DEFICIENCIES THE CONTRACTOR MAY DISCOVER. THE CONTRACTOR FURTHER AGREES TO REQUIRE EACH SUBCONTRACTOR TO LIKEWISE STUDY THE DOCUMENTS AND REPORT AT ONCE ANY DEFICIENCIES DISCOVERED.

THE CONTRACTOR SHALL RESOLVE ALL REPORTED DEFICIENCIES WITH THE ARCHITECT/ENGINEER PRIOR TO AWARDING ANY SUBCONTRACTS, ORDERING MATERIAL, OR STARTING ANY WORK WITH THE CONTRACTOR'S OWN EMPLOYEES. ANY WORK PERFORMED PRIOR TO RECEIPT OF INSTRUCTIONS FROM THE DESIGN TEAM WILL BE DONE AT THE CONTRACTOR'S RISK.

ONLY PRODUCTS OF REPUTABLE MANUFACTURERS ARE ACCEPTABLE.

ALL CONTRACTORS AND SUBCONTRACTORS SHALL EMPLOY ONLY WORKERS SKILLED IN THEIR TRADES.

CONSTRUCTION DRAWINGS FOR THIS PROJECT HAVE BEEN PREPARED UTILIZING AUTOCAD MEP. CONTRACTORS AND SUBCONTRACTORS MAY REQUEST ELECTRONIC MEDIA FILES OF THE CONTRACT DRAWINGS. THE ELECTRONIC CONTRACT DOCUMENTS CAN BE USED FOR PREPARATION OF SHOP DRAWINGS AND AS-BUILT DRAWINGS ONLY. THE INFORMATION MAY NOT BE USED IN WHOLE OR IN PART FOR ANY OTHER PROJECT.

CODES AND STANDARDS
CONFORM TO ALL REQUIREMENTS OF THE CITY OF BEVERLY HILLS CODES, LAWS, ORDINANCES AND OTHER REGULATIONS HAVING JURISDICTION.

CONFORM TO ALL STATE CODES.

IF THE CONTRACTOR NOTES, AT THE TIME OF BIDDING, THAT ANY PARTS OF THE DRAWINGS OR SPECIFICATIONS DO NOT COMPLY WITH THE CODES OR REGULATIONS, CONTRACTOR SHALL INFORM THE ARCHITECT/ENGINEER IN WRITING, REQUESTING A CLARIFICATION. IF THERE IS INSUFFICIENT TIME FOR THIS PROCEDURE, CONTRACTOR SHALL SUBMIT WITH THE PROPOSAL A SEPARATE PRICE MAKE THE SYSTEM COMPLY WITH THE CODES AND REGULATIONS.

ALL CHANGES TO THE SYSTEM MADE AFTER LETTING OF THE CONTRACT, TO COMPLY WITH CODES OR REQUIREMENTS OF INSPECTORS, SHALL BE MADE BY THE CONTRACTOR WITHOUT COST TO THE OWNER.

IF THERE IS A DISCREPANCY BETWEEN MANUFACTURER'S RECOMMENDATIONS AND THESE SPECIFICATIONS, THE MANUFACTURER'S RECOMMENDATIONS SHALL GOVERN.

ALL ROTATING SHAFTS AND/OR EQUIPMENT SHALL BE COMPLETELY GUARDED FROM ALL CONTACT. PARTIAL GUARDS AND/OR GUARDS THAT DO NOT MEET ALL APPLICABLE OSHA STANDARDS ARE NOT ACCEPTABLE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING THIS GUARDING IF IT IS NOT PROVIDED WITH THE EQUIPMENT SUPPLIED.

PERMITS AND FEES
PROCURE ALL APPLICABLE PERMITS AND LICENSES. ABIDE BY LOCAL AND STATE LAWS, REGULATIONS, AND ORDINANCES. PAY ALL CHARGES FOR PERMITS OR LICENSES. PAY ALL FEES AND TAXES IMPOSED BY STATE, MUNICIPAL, AND OTHER REGULATORY BODIES. PAY ALL CHARGES ARISING OUT OF REQUIRED INSPECTIONS BY AN AUTHORIZED BODY. PAY ALL CHARGES ARISING OUT OF REQUIRED CONTRACT DOCUMENT REVIEWS ASSOCIATED WITH THE PROJECT AND AS INITIATED BY THE OWNER OR AUTHORIZED AGENCY/CONSULTANT.

WHERE APPLICABLE, ALL FIXTURES, EQUIPMENT AND MATERIALS SHALL BE LISTED BY UNDERWRITER'S LABORATORIES, INC. AND APPROVED BY FM GLOBAL. [SPECIFIER TO CONFIRM IF REQUIRED]

UTILITY COMPANY REQUIREMENTS [SPECIFIER TO CONFIRM IF REQUIRED]
SECURE FROM THE APPROPRIATE PRIVATE OR PUBLIC UTILITY COMPANY ALL APPLICABLE REQUIREMENTS. COMPLY WITH ALL UTILITY COMPANY REQUIREMENTS. MAKE APPLICATION FOR AND PAY FOR SERVICE CONNECTIONS, SUCH AS GAS. MAKE APPLICATION FOR AND PAY FOR ALL METERS AND METERING SYSTEMS REQUIRED BY THE UTILITY COMPANY.

SUBMITTALS
SUBMITTALS SHALL BE REQUIRED WHERE REQUIRED IN THE SPECIFICATIONS OR ON THE DRAWINGS. THE CONTRACTOR SHALL SUBMIT ELECTRONIC COPIES OF EACH SHOP DRAWING FOR REVIEW BY THE ARCHITECT/ENGINEER BEFORE RELEASING ANY EQUIPMENT FOR MANUFACTURE OR SHIPMENT.

THE CONTRACTOR SHALL THOROUGHLY REVIEW AND APPROVE ALL SHOP DRAWINGS BEFORE SUBMITTING THEM TO THE ARCHITECT/ENGINEER. CONTRACTOR SHALL CLEARLY MARK ALL DEVIATIONS FROM THE CONTRACT DOCUMENTS ON ALL SUBMITTALS. ASSEMBLE ALL SUBMITTALS IN SETS BASED ON APPLICABLE SPECIFICATION SECTION. ALL SETS SHALL BE IDENTICAL AND CONTAIN AN INDEX OF THE ITEMS ENCLOSED WITH A GENERAL TOPIC DESCRIPTION ON THE COVER. WHERE MORE THAN ONE MODEL IS SHOWN ON A MANUFACTURER'S SHEET, CLEARLY INDICATE EXACTLY WHICH ITEM AND WHICH DATA IS RELEVANT TO THE WORK. REFER TO SUBSECTIONS FOR SPECIFIC SUBMITTAL REQUIREMENTS.

PRODUCT DELIVERY, STORAGE, AND HANDLING
EXERCISE CARE IN TRANSPORTING AND HANDLING TO AVOID DAMAGE TO MATERIALS. STORE MATERIALS ON THE SITE TO PREVENT DAMAGE. KEEP MATERIALS CLEAN, DRY AND FREE FROM HARMFUL CONDITIONS. IMMEDIATELY REMOVE ANY MATERIALS THAT BECOME WET OR THAT ARE SUSPECTED OF BECOMING CONTAMINATED WITH MOLD OR OTHER ORGANISMS.

KEEP ALL BEARINGS PROPERLY LUBRICATED AND ALL BELTS PROPERLY TENSIONED AND ALIGNED.

COORDINATE THE INSTALLATION OF HEAVY AND LARGE EQUIPMENT WITH THE GENERAL CONTRACTOR AND/OR OWNER. IF THE MECHANICAL CONTRACTOR DOES NOT HAVE EQUIPMENT, MATERIALS, AND WORKMANSHIP. WARRANTY REQUIREMENTS SHALL EXTEND TO CORRECTION, WITHOUT COST TO OWNER, OF ALL WORK FOUND TO BE DEFECTIVE OR NONCONFORMING TO THE CONTRACT DOCUMENTS. REFER TO SUBSECTIONS FOR ADDITIONAL WARRANTY REQUIREMENTS.

MATERIAL SUBSTITUTION
WHERE SEVERAL MANUFACTURERS' NAMES ARE GIVEN, THE MANUFACTURER FOR WHICH A CATALOG NUMBER IS GIVEN IS THE BASIS OF DESIGN AND ESTABLISHES THE QUALITY REQUIRED. EQUIVALENT EQUIPMENT MANUFACTURED BY THE OTHER NAMED MANUFACTURERS MAY BE USED. CONTRACTOR SHALL ENSURE THAT ALL ITEMS SUBMITTED BY THESE OTHER MANUFACTURERS MEET ALL REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS, AND FIT IN THE ALLOCATED SPACE. THE ARCHITECT/ENGINEER SHALL MAKE THE FINAL DETERMINATION OF WHETHER A PRODUCT IS EQUIVALENT.

ANY MATERIAL, ARTICLE OR EQUIPMENT OF OTHER UNNAMED MANUFACTURERS WHICH WILL ADEQUATELY PERFORM THE SERVICES AND DUTIES IMPOSED BY THE DESIGN AND IS OF A QUALITY EQUAL TO OR BETTER THAN THE EQUIPMENT IDENTIFIED BY THE DRAWINGS MAY BE USED IF APPROVAL IS SECURED IN WRITING FROM THE ARCHITECT/ENGINEER VIA ADDENDUM.

EXCAVATION, FILL, BACKFILL, COMPACTION
UNDERGROUND PIPE SHALL BE LAID IN DRY TRENCHES MAINTAINED FREE OF ACCUMULATED WATER ON A BED OF CA6 FILL. PROVIDE AND OPERATE SUFFICIENT PUMPING EQUIPMENT TO MAINTAIN EXCAVATIONS, TRENCHES AND PITS FREE OF WATER. DISPOSE OF PUMPED WATER SO OPERATION AREAS AND OTHER FACILITIES ARE NOT FLOODED. PIPE LAYING SHALL FOLLOW EXCAVATING AS CLOSELY AS POSSIBLE.

OBSERVATION OF WORK
THE CONTRACTOR SHALL PROVIDE SEVEN (7) CALENDAR DAYS' NOTICE TO THE ARCHITECT/ENGINEER PRIOR TO COVERING INTERIOR PARTITIONS AND CHASES AND INSTALLING HARD OR SUSPENDED CEILINGS AND SOFFITS. [SPECIFIER: EDIT AS NECESSARY]

ALL WORK ABOVE THE CEILINGS MUST BE COMPLETE PRIOR TO THE ARCHITECT/ENGINEER'S REVIEW. THIS INCLUDES, BUT IS NOT LIMITED TO: [SPECIFIER: EDIT AS NECESSARY]

IN ORDER TO PREVENT THE FINAL JOBSITE OBSERVATION FROM OCCURRING TOO EARLY, THE CONTRACTOR SHALL REVIEW THE COMPLETION STATUS OF THE PROJECT AND CERTIFY IN WRITING THAT THE JOB IS READY FOR THE FINAL JOBSITE OBSERVATION.

PROJECT CLOSEOUT
SUBMIT THE FOLLOWING: OPERATION AND MAINTENANCE MANUALS INCLUDING BOUND COPIES OF APPROVED SHOP DRAWINGS, RECORD DOCUMENTS INCLUDING REPRODUCIBLE DRAWINGS COMPLETED IN AUTOCAD, [SPECIFIER: EDIT AS NECESSARY] SPARE PARTS AND EXTRA MATERIALS IN QUANTITIES SPECIFIED IN THESE SPECIFICATIONS, AND INSPECTION BY STATE BOILER INSPECTOR.[SPECIFIER: EDIT AS NECESSARY]

OPERATION AND MAINTENANCE MANUALS
SUBMIT AN ELECTRONIC COPY OF THE O&M MANUALS TO THE OWNER. OPERATION AND MAINTENANCE DATA SHALL CONSIST OF WRITTEN INSTRUCTIONS FOR THE CARE, MAINTENANCE, AND OPERATION OF THE EQUIPMENT AND SYSTEMS. INSTRUCTION BOOKS, CARDS, MANUALS FURNISHED WITH THE EQUIPMENT SHALL BE INCLUDED.

ALL TEXT SHALL BE SEARCHABLE AND BOOKMARKS SHALL BE USED, DIVIDING INFORMATION BY SPECIFICATION SECTION.

RECORD DOCUMENTS
MAINTAIN AT THE JOB SITE A SEPARATE AND COMPLETE SET OF MECHANICAL DRAWINGS AND SPECIFICATIONS WITH ALL CHANGES MADE TO THE SYSTEMS CLEARLY AND PERMANENTLY MARKED IN COMPLETE DETAIL. MARK DRAWINGS TO INDICATE APPROVED SUBSTITUTIONS; CHANGE ORDERS, AND ACTUAL EQUIPMENT AND MATERIALS USED. ALL CHANGE ORDERS, RFI RESPONSES, CLARIFICATIONS AND OTHER SUPPLEMENTAL INSTRUCTIONS SHALL BE MARKED ON THE DOCUMENTS. RECORD DOCUMENTS THAT MERELY REFERENCE THE EXISTENCE OF THE ABOVE ITEMS ARE NOT ACCEPTABLE. RECORD CHANGES DAILY AND KEEP THE MARKED DRAWINGS AVAILABLE FOR THE ARCHITECT/ENGINEER'S EXAMINATION AT ANY NORMAL WORK TIME.

UPON COMPLETING THE JOB, AND BEFORE FINAL PAYMENT IS MADE, PROVIDE REPRODUCIBLE DRAWINGS COMPLETED IN AUTOCAD TO THE ARCHITECT/ENGINEER.

CLEANING
THOROUGHLY CLEAN ALL EQUIPMENT AND SYSTEMS PRIOR TO THE OWNER'S FINAL ACCEPTANCE OF THE PROJECT. CLEAN ALL FOREIGN PAINT, GREASE, OIL, DIRT, LABELS, STICKERS, ETC. FROM ALL EQUIPMENT. REMOVE ALL RUBBISH, DEBRIS, ETC., ACCUMULATED DURING CONSTRUCTION FROM THE PREMISES.

21/22 05 03 THROUGH PENETRATION FIRESTOPPING

INSTALLER QUALITY ASSURANCE
INDIVIDUALS PERFORMING WORK SHALL BE CERTIFIED BY THE MANUFACTURER OF THE SYSTEM SELECTED FOR INSTALLATION. FOR RENOVATION PROJECTS, INSTALLER SHALL COORDINATE WITH BUILDING ENGINEER AND BUILDING STANDARDS TO MATCH MAKE/MODEL OF FIRESTOPPING USED THROUGHOUT BUILDING.

WARRANTY
PROVIDE ONE YEAR WARRANTY ON PARTS AND LABOR.

WARRANTY SHALL COVER REPAIR OR REPLACEMENT OF FIRESTOP SYSTEMS WHICH FAIL IN JOINT ADHESION, COHESION, ABRASION RESISTANCE, WEATHER RESISTANCE, EXTRUSION RESISTANCE, MIGRATION RESISTANCE, STAIN RESISTANCE, GENERAL DURABILITY, OR APPEAR TO DETERIORATE IN ANY MANNER NOT CLEARLY SPECIFIED BY THE MANUFACTURER AS AN INHERENT QUALITY OF THE MATERIAL.

DELIVERY, STORAGE, AND HANDLING
STORE, PROTECT AND HANDLE PRODUCTS ON SITE. ACCEPT MATERIAL ON SITE IN FACTORY CONTAINERS AND PACKING. INSPECT FOR DAMAGE. PROTECT FROM DETERIORATION OR DAMAGE DUE TO MOISTURE, TEMPERATURE CHANGES, CONTAMINANTS, OR OTHER CAUSES. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR STORAGE.

INSTALL MATERIAL PRIOR TO EXPIRATION OF PRODUCT SHELF LIFE.

PERFORMANCE REQUIREMENTS
FOR PENETRATIONS THROUGH THE FOLLOWING FIRE-RESISTANCE-RATED CONSTRUCTIONS, INCLUDING BOTH EMPTY OPENINGS AND OPENINGS CONTAINING PENETRATING ITEMS, PROVIDE THROUGH-PENETRATION FIRESTOP SYSTEMS THAT ARE PRODUCED AND INSTALLED TO RESIST SPREAD OF FIRE ACCORDING TO REQUIREMENTS INDICATED, RESIST PASSAGE OF SMOKE AND OTHER GASES, AND MAINTAIN ORIGINAL FIRE-RESISTANCE RATING OF CONSTRUCTION PENETRATED.
1. FIRE-RESISTANCE-RATED WALLS INCLUDING FIRE PARTITIONS, FIRE BARRIERS, AND SMOKE BARRIERS.
2. FIRE-RESISTANCE-RATED HORIZONTAL ASSEMBLIES INCLUDING FLOORS, FLOOR/CEILING ASSEMBLIES, AND CEILING MEMBRANES OF ROOF/CEILING ASSEMBLIES.

RATED SYSTEMS: PROVIDE THROUGH-PENETRATION FIRESTOP SYSTEMS WITH THE FOLLOWING RATINGS DETERMINED PER UL 1479:
1. F-RATED SYSTEMS: PROVIDE THROUGH-PENETRATION FIRESTOP SYSTEMS WITH F-RATINGS INDICATED, BUT NOT LESS THAN THAT EQUALING OR EXCEEDING FIRE-RESISTANCE RATING OF CONSTRUCTIONS PENETRATED.
2. T-RATED SYSTEMS: FOR THE FOLLOWING CONDITIONS, PROVIDE THROUGH-PENETRATION FIRESTOP SYSTEMS WITH T-RATINGS INDICATED, AS WELL AS F-RATINGS:
a. FLOOR PENETRATIONS LOCATED OUTSIDE WALL CAVITIES.
b. FLOOR PENETRATIONS LOCATED OUTSIDE FIRE-RESISTANCE-RATED SHAFT ENCLOSURES.
[SPECIFIER: T-RATINGS FOR WALLS ARE ONLY REQUIRED BY 1994 UBC. DELETE C. AND D. FOR OTHER CODES.]
c. WALL PENETRATIONS ABOVE CORRIDOR CEILINGS WHICH ARE NOT PART OF A FIRE-RESISTIVE ASSEMBLY.
d. WALL PENETRATIONS BELOW ANY CEILING THAT ARE LARGER THAN 4" DIAMETER OR 16 SQUARE INCHES.
[SPECIFIER: L-RATED SYSTEMS ARE NOT REQUIRED BY MODEL CODES IN EFFECT WHEN THIS SECTION WAS

TO VIEW, PROVIDE PRODUCTS WITH FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF LESS THAN 25 AND 450, RESPECTIVELY, AS DETERMINED PER ASTM E 84.

FOR THROUGH-PENETRATION FIRESTOP SYSTEMS IN AIR PLENUMS, PROVIDE PRODUCTS WITH FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF LESS THAN 25 AND 50, RESPECTIVELY, AS DETERMINED PER ASTM E 84.

4. ADHESIVES AND SEALANTS: ALL SEALERS, ADHESIVES, AND SEALANTS SHALL COMPLY WITH THE LOW EMITTING MATERIAL LIMITS OF THE FOLLOWING STANDARDS:
5. LEED [V4] – LOW EMITTING MATERIALS – ADHESIVES AND SEALANTS.
6. CDPH STANDARD METHOD V1.1-2010 – STANDARD METHOD FOR THE TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS VOC FROM INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS VERSION 1.1.
7. SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168 – ADHESIVE AND SEALANT APPLICATIONS. ALL ADHESIVES AND SEALANTS WET-APPLIED ON SITE SHALL COMPLY WITH THE APPLICABLE CHEMICAL CONTENT REQUIREMENTS OF SCAQMD RULE 1168.
8. SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE SCAQMD 1113 – WET APPLIED PAINTS AND COATINGS. ALL PAINTS AND COATINGS WET-APPLIED ON SITE MUST MEET THE APPLICABLE VOC LIMITS OF SCAQMD RULE 1113.

MANUFACTURERS
PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE THROUGH-PENETRATION FIRESTOP SYSTEMS INDICATED FOR EACH APPLICATION THAT ARE PRODUCED BY ONE OF THE FOLLOWING MANUFACTURERS. ALL FIRESTOPPING SYSTEMS INSTALLED SHALL BE PROVIDED BY A SINGLE MANUFACTURER.
1. 3M; FIRE PROTECTION PRODUCTS DIVISION.
2. HILTI, INC.
3. RECTORSEAL CORPORATION, METACAULK.
4. TREMCO; SEALANT/WEATHERPROOFING DIVISION.
5. JOHNS-MANVILLE.
6. SPECIFIED TECHNOLOGIES INC. (S.T.I.)
7. SPEC SEAL FIRESTOP PRODUCTS
8. AD FIREBARRIER PROTECTION SYSTEMS

THROUGH PENETRATION FIRESTOP SYSTEMS
PROVIDE MATERIALS AND SYSTEMS CLASSIFIED BY OR LISTED BY WARNOCK HERSEY TO PROVIDE FIRESTOPPING EQUAL TO TIME RATING OF CONSTRUCTION BEING PENETRATED.

ALL FIRESTOPPING MATERIALS SHALL BE FREE OF ASBESTOS, LEAD, PCB'S, AND OTHER MATERIALS THAT WOULD REQUIRE HAZARDOUS WASTE REMOVAL.

FIRESTOPPING SHALL BE FLEXIBLE TO ALLOW FOR NORMAL PENETRATING ITEM MOVEMENT DUE TO EXPANSION AND CONTRACTION.

FIRESTOPPING SYSTEMS FOR PLUMBING AND WET PIPE SPRINKLER PIPING SHALL BE MOISTURE RESISTANT.

PROVIDE FIRESTOPPING SYSTEMS CAPABLE OF SUPPORTING FLOOR LOADS WHERE SYSTEMS ARE EXPOSED TO POSSIBLE FLOOR LOADING OR TRAFFIC.

PROVIDE FIRESTOPPING SYSTEMS ALLOWING CONTINUOUS INSULATION FOR ALL INSULATED PIPES.

PROVIDE FIRESTOPPING SYSTEMS CLASSIFIED BY UL OR LISTED BY WARNOCK HERSEY FOR PENETRATIONS THROUGH ALL FIRE RATED CONSTRUCTION. FIRESTOPPING SYSTEMS SHALL BE SELECTED FROM THE UL OR LISTED BY WARNOCK HERSEY FIRE RESISTANCE DIRECTORY CATEGORY XHEZ BASED ON SUBSTRATE CONSTRUCTION AND PENETRATING ITEM SIZE AND MATERIAL AND SHALL FALL WITHIN THE RANGE OF NUMBERS LISTED:
1. COMBUSTIBLE FRAMED FLOORS AND CHASE WALLS – 1 OR 2 HOUR RATED
F RATING = FLOOR/WALL RATING
T RATING = FLOOR/WALL RATING
L RATING =

PENETRATING ITEM	UL SYSTEM NO.
NO PENETRATING ITEM	FC 0000-0999*
METALLIC PIPE OR CONDUIT	FC 1000-1999
NON-METALLIC PIPE OR CONDUIT	FC 2000-2999
ELECTRICAL CABLES	FC 3000-3999
CABLE TRAYS	FC 4000-4999
INSULATED PIPES	FC 5000-5999
BUS DUCT AND MISC. ELECTRICAL DUCT WITHOUT DAMPER AND MISC. 7000-7999	MECHANICAL FC 6000-6999
MULTIPLE PENETRATIONS	FC 8000-8999

2. NON-COMBUSTIBLE FRAMED WALLS – 1 OR 2 HOUR RATED
F RATING = WALL RATING
T RATING = 0
L RATING =

PENETRATING ITEM	UL SYSTEM NO.
NO PENETRATING ITEM	WL 0000-0999*
METALLIC PIPE OR CONDUIT	WL 1000-1999
NON-METALLIC PIPE OR CONDUIT	WL 2000-2999
ELECTRICAL CABLES	WL 3000-3999
CABLE TRAYS	WL 4000-4999
INSULATED PIPES	WL 5000-5999
BUS DUCT AND MISC. ELECTRICAL DUCT WITHOUT DAMPER AND MISC. 7000-7999	WL 6000-6999 MECHANICAL
MULTIPLE PENETRATIONS	WL 8000-8999

3. CONCRETE OR MASONRY FLOORS AND WALLS – 1 OR 2 HOUR RATED
F RATING = WALL/FLOOR RATING
T RATING (WALLS) = 0 OR WALL RATING
T RATING (FLOORS) = FLOOR RATING
L RATING =

PENETRATING ITEM	UL SYSTEM NO.
NO PENETRATING ITEM	CAJ 0000-0999*
METALLIC PIPE OR CONDUIT	CAJ 1000-1999
NON-METALLIC PIPE OR CONDUIT	CAJ 2000-2999
ELECTRICAL CABLES	CAJ 3000-3999
CABLE TRAYS	CAJ 4000-4999
INSULATED PIPES	CAJ 5000-5999
BUS DUCT AND MISC. ELECTRICAL DUCT WITHOUT DAMPER AND MISC. 7000-7999	CAJ 6000-6999 MECHANICAL
MULTIPLE PENETRATIONS	CAJ 8000-8999

*ALTERNATE METHOD OF FIRESTOPPING IS PATCHING OPENING TO MATCH ORIGINAL RATED CONSTRUCTION.

ANY OPENING IN WALLS OR FLOORS NOT COVERED BY THE LISTED SERIES OF NUMBERS SHALL BE COORDINATED WITH THE FIRESTOPPING MANUFACTURER.

ANY OPENINGS IN FLOORS OR WALLS NOT DESCRIBED IN THE UL OR LISTED BY WARNOCK HERSEY FIRE RESISTANCE DIRECTORY, OR OUTLINED IN MANUFACTURER'S INFORMATION SHALL BE SEALED IN A MANNER AGREED UPON BY THE FIRESTOPPING MANUFACTURER, OWNER, AND THE AUTHORITY HAVING JURISDICTION.

EXECUTION – EXAMINATION
ENSURE ALL SURFACES THAT CONTACT SEAL MATERIALS ARE FREE OF DIRT, DUST, GREASE, OIL, RUST, OR LOOSE MATERIALS. CLEAN AND REPAIR SURFACES AS REQUIRED. REMOVE LAITANCE AND FORM-RELEASE AGENTS FROM CONCRETE.

ENSURE SUBSTRATE AND PENETRATING ITEMS HAVE BEEN PERMANENTLY INSTALLED PRIOR TO INSTALLING FIRESTOPPING SYSTEMS. ENSURE PENETRATING ITEMS HAVE BEEN PROPERLY SPACED AND HAVE PROPER CLEARANCE PRIOR TO INSTALLING FIRESTOPPING SYSTEMS.

SURFACES TO WHICH SEALING MATERIALS ARE TO BE INSTALLED MUST MEET THE SELECTED UL OR WARNOCK HERSEY SYSTEM SUBSTRATE CRITERIA.

PRIME SUBSTRATES WHERE RECOMMENDED IN WRITING BY THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER. CONFINE PRIMER TO AREA OF BOND.

INSTALLATION
IN EXISTING CONSTRUCTION, PROVIDE FIRESTOPPING OF OPENINGS PRIOR TO AND AFTER INSTALLATION OF PENETRATING ITEMS. REMOVE ANY EXISTING COATINGS ON SURFACES PRIOR TO FIRESTOPPING INSTALLATION. TEMPORARY FIRESTOPPING SHALL CONSIST OF PACKING OPENINGS WITH FIRE RESISTANT MINERAL WOOL FOR THE FULL THICKNESS OF SUBSTRATE, OR AN ALTERNATE METHOD APPROVED BY THE AUTHORITY HAVING JURISDICTION. ALL OPENINGS SHALL BE TEMPORARILY FIRESTOPPED IMMEDIATELY UPON THEIR INSTALLATION AND SHALL REMAIN SO UNTIL THE PERMANENT UL OR LISTED BY WARNOCK HERSEY LISTED FIRESTOPPING SYSTEM IS INSTALLED.

INSTALL PENETRATION SEAL MATERIALS IN ACCORDANCE WITH PRINTED INSTRUCTIONS OF THE UL OR WARNOCK HERSEY FIRE RESISTANCE DIRECTORY AND WITH THE

DAMAGE OR DETERIORATION AT TIME OF SUBSTANTIAL COMPLETION. IF, DESPITE SUCH PROTECTION, DAMAGE OR DETERIORATION OCCURS, REMOVE DAMAGED OR DETERIORATED THROUGH-PENETRATION FIRESTOP SYSTEMS IMMEDIATELY AND INSTALL NEW MATERIALS TO PRODUCE SYSTEMS COMPLYING WITH SPECIFIED REQUIREMENTS.

IDENTIFICATION
PROVIDE AND INSTALL LABELS ADJACENT TO EACH FIRESTOPPING LOCATION. LABEL SHALL BE PROVIDED BY THE FIRESTOP SYSTEM SUPPLIER AND CONTAIN THE FOLLOWING INFORMATION IN A CONTRASTING COLOR:
1. THE WORDS "WARNING – THROUGH PENETRATION FIRESTOP SYSTEM – DO NOT DISTURB. NOTIFY BUILDING MANAGEMENT OF ANY DAMAGE."
2. FIRESTOP SYSTEM SUPPLIER; UL OR LISTED BY WARNOCK HERSEY SYSTEM NUMBER; DATE INSTALLED; CONTRACTOR NAME AND PHONE NUMBER; MANUFACTURER'S REPRESENTATIVE NAME, ADDRESS, AND PHONE NUMBER.

INSPECTION
ALL PENETRATIONS SHALL BE INSPECTED BY THE MANUFACTURER'S REPRESENTATIVE TO ENSURE PROPER INSTALLATION.

ACCESS TO FIRESTOP SYSTEMS SHALL BE MAINTAINED FOR EXAMINATION BY THE AUTHORITY HAVING JURISDICTION AT THEIR REQUEST.

PROCEED WITH ENCLOSING THROUGH-PENETRATION FIRESTOP SYSTEM WITH OTHER CONSTRUCTION ONLY AFTER INSPECTION REPORTS ARE ISSUED AND FIRESTOP INSTALLATIONS COMPLY WITH REQUIREMENTS.

THE CONTRACTOR SHALL ALLOW FOR VISUAL DESTRUCTIVE REVIEW OF 5% OF INSTALLED FIRESTOP SYSTEMS (MINIMUM OF ONE) TO PROVE COMPLIANCE WITH SPECIFICATIONS AND MANUFACTURER'S INSTRUCTIONS AND DETAILS. DESTRUCTIVE SYSTEM REMOVAL SHALL BE PERFORMED BY THE CONTRACTOR AND WITNESSED BY THE ARCHITECT/ENGINEER AND MANUFACTURER'S FACTORY REPRESENTATIVE. THE ARCHITECT/ENGINEER SHALL HAVE SOLE DISCRETION OF WHICH FIRESTOP SYSTEM INSTALLATIONS WILL BE REVIEWED. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THIS REQUIREMENT INCLUDING LABOR AND MATERIAL FOR REMOVING AND REPLACING THE INSTALLED FIRESTOP SYSTEM. IF ANY FIRESTOP SYSTEM IS FOUND TO NOT BE INSTALLED PER MANUFACTURER'S SPECIFIC INSTRUCTIONS AND DETAILS, ALL FIRESTOP SYSTEMS ARE SUBJECT TO DESTRUCTIVE REVIEW AND REPLACEMENT AT THE ARCHITECT/ENGINEER'S DISCRETION AND THE CONTRACTOR'S EXPENSE.

22 05 05 MECHANICAL DEMOLITION FOR REMODELING

THE DRAWINGS ARE INTENDED TO INDICATE THE GENERAL SCOPE OF WORK AND DO NOT SHOW EVERY PIPE, DUCT, OR PIECE OF EQUIPMENT THAT MUST BE REMOVED. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY CONDITIONS PRIOR TO SUBMITTING A BID.

WHERE WALLS, CEILINGS, ETC., ARE SHOWN AS BEING REMOVED ON THESE DRAWINGS, THE CONTRACTOR SHALL REMOVE ALL MECHANICAL EQUIPMENT, DEVICES, FIXTURES, PIPING, DUCTS, SYSTEMS, ETC., FROM THE REMOVED AREA.

WHERE CEILINGS, WALLS, PARTITIONS, ETC., ARE TEMPORARILY REMOVED AND REPLACED BY OTHERS, THIS CONTRACTOR SHALL REMOVE, STORE, AND REPLACE EQUIPMENT, DEVICES, FIXTURES, PIPES, DUCTS, SYSTEMS, ETC.

VERIFY THAT ABANDONED UTILITIES SERVE ONLY ABANDONED EQUIPMENT OR FACILITIES. EXTEND SERVICES TO FACILITIES OR EQUIPMENT THAT SHALL REMAIN IN OPERATION FOLLOWING DEMOLITION.

COORDINATE WORK WITH ALL OTHER CONTRACTORS AND THE LANDLORD/OWNER. COORDINATE REMOVAL OF EQUIPMENT TO AVOID CONFLICTS.

THIS CONTRACTOR SHALL VERIFY ALL EXISTING EQUIPMENT SIZES AND CAPACITIES WHERE EQUIPMENT IS SCHEDULED TO BE REPLACED OR MODIFIED, PRIOR TO ORDERING NEW EQUIPMENT.

BID SUBMITTAL SHALL MEAN THE CONTRACTOR HAS VISITED THE PROJECT SITE AND VERIFIED EXISTING CONDITIONS AND SCOPE OF WORK.

PREPARATION
DISCONNECT MECHANICAL SYSTEMS IN WALLS, FLOORS, AND CEILINGS SCHEDULED FOR REMOVAL.

PROVIDE TEMPORARY CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. WHEN WORK MUST BE PERFORMED ON OPERATING EQUIPMENT, USE PERSONNEL EXPERIENCED IN SUCH OPERATIONS.

DEMOLITION AND EXTENSION OF EXISTING MECHANICAL WORK
DEMOLISH AND EXTEND EXISTING MECHANICAL WORK UNDER PROVISIONS OF DIVISION 2 AND THIS SECTION. REMOVE, RELOCATE, AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION. REMOVE ABANDONED DUCTS AND PIPING TO SOURCE OF SUPPLY AND/OR MAIN LINES.

REMOVE EXPOSED ABANDONED PIPES , INCLUDING ABANDONED PIPES ABOVE ACCESSIBLE CEILINGS. CUT PIPES ABOVE CEILINGS, BELOW FLOORS AND BEHIND

22 05 29 SUPPORTS AND ANCHORS

SECTION INCLUDES: HANGERS, SUPPORTS, AND ASSOCIATED ANCHORS
EQUIPMENT BASES AND SUPPORTS
SLEEVES AND SEALS
FLASHING AND SEALING OF EQUIPMENT AND PIPE STACKS
CUTTING OF OPENINGS
ESCUTCHEON PLATES AND TRIM

SEISMIC RESTRAINTS
REFER TO SECTION 21/22/23 05 50 FOR ADDITIONAL REQUIREMENTS FOR SEISMIC RESTRAINTS.

HANGER RODS
HANGER RODS FOR SINGLE ROD HANGERS SHALL CONFORM TO THE FOLLOWING:

PIPE SIZE	HANGER ROD	DIAMETER
	COLUMN #1	COLUMN #2
2" AND SMALLER	3/8"	3/8"
2-1/2" THROUGH 3-5/8"	1/2"	1/2"
4" AND 5"	5/8"	1/2"
6"	3/4"	5/8"
8" THROUGH 12"	7/8"	3/4"
14"	1"	7/8"
16" AND 18"	1"	N/A
20" AND 24"	1_1/4"	N/A

COLUMN #1: STEEL PIPE.
COLUMN #2: COPPER, PLASTIC AND FIBERGLASS REINFORCED PIPE.

RODS FOR DOUBLE ROD HANGERS MAY BE REDUCED ONE SIZE. MINIMUM ROD DIAMETER IS 3/8 INCHES.

HANGER RODS AND ACCESSORIES USED IN MECHANICAL SPACES OR OTHERWISE DRY AREAS SHALL HAVE ASTM B633 ELECTRO-PLATED ZINC FINISH.

ALL HANGER RODS, NUTS, WASHERS, CLEVISES, ETC., IN DAMP AREAS SHALL HAVE ASTM A123 HOT-DIP GALVANIZED FINISH APPLIED AFTER FABRICATION. THIS APPLIES TO THE FOLLOWING AREAS:
1. OUTDOOR

PIPE HANGERS AND SUPPORTS
ALL PIPE HANGERS, CLAMPS, AND SUPPORTS SHALL CONFORM TO MANUFACTURERS STANDARDIZATION SOCIETY MSS_SP_58 AND 127 (WHERE APPLICABLE).

OVERSIZE ALL HANGERS, CLAMPS, AND SUPPORTS ON INSULATED PIPING TO ALLOW INSULATION AND JACKET TO PASS THROUGH UNBROKEN. THIS APPLIES TO BOTH HOT AND COLD PIPES.

FERROUS HOT PIPING 2-1/2 INCHES AND LARGER SHALL HAVE STEEL SADDLES TACK WELDED TO THE PIPE AT EAH SUPPORT AT A DEPTH NOT LESS THAN THE SPECIFIED INSULATION. FACTORY FABRICATED INSERTS MAY BE USED.

ACCEPTABLE PRODUCTS:
ANVIL – FIG. 160, 161, 162, 163, 164, 165
COOPER/B-LINE – FIG. 3160, 3161, 3162, 3163, 3164, 3165
ERICO – MODEL 630, 631, 632, 633, 634, 635
NIBCO/TOLCO – FIG. 260-1, 261-1 1/2, 262-2, 263-2 1/2, 264-3, 265-4

ON ALL INSULATED PIPING, PROVIDE A SEMI-CYLINDRICAL METALLIC SHIELD AND FIRE RESISTANT VAPOR BARRIER JACKET.

AS AN ALTERNATIVE TO SEPARATE PIPE INSULATION INSERT AND SADDLE, PROPERLY SIZED INTEGRAL RIGID INSULATION SECTIONS MAY BE USED FOR THIS APPLICATION.

ACCEPTABLE PRODUCTS:
COOPER/B-LINE – FIG. B3380 THROUGH B3384
PIPE SHIELDS – A1000, A2000
ERICO – MODEL 124, 127

SUPPORT AND LATERALLY BRACE VERTICAL PIPES AT EVERY FLOOR LEVEL IN MULTI_STORY STRUCTURES, AND MORE FREQUENTLY WHEN REQUIRED BY APPLICABLE CODES , BUT NEVER AT INTERVALS OVER 15 FEET. SUPPORT VERTICAL PIPES WITH RISER CLAMPS INSTALLED BELOW HUBS, COUPLINGS OR LUGS. PROVIDE SUFFICIENT FLEXIBILITY TO ACCOMMODATE EXPANSION AND CONTRACTION WITHOUT COMPROMISING FIRE BARRIER PENETRATIONS AND OTHER FIXED TAKE-OFF LOCATIONS.

ACCEPTABLE PRODUCTS:
ANVIL – FIG. CT121
COOPER/B-LINE – FIG. B3373CT
ERICO – MODEL 510NIBCO/TOLCO – FIG. 82

PLACE RESTRAINED NEOPRENE MOUNTS BENEATH VERTICAL PIPE RISER CLAMPS TO PREVENT SWEATING OF COLD PIPES. INSULATE OVER MOUNTS.

ACCEPTABLE PRODUCTS: MASON RBA, RCA, OR BR.

HANGERS IN DIRECT CONTACT WITH COPPER PIPE SHALL BE COATED WITH PLASTIC WITH APPROPRIATE TEMPERATURE RANGE. HYDRA-ZORB CLAMPS ARE PERMITTED FOR THIS APPLICATION FOR BARE PIPES WITHIN THEIR TEMPERATURE LIMITS OF -65F TO +275F.

UNLESS OTHERWISE INDICATED, HANGERS SHALL BE AS FOLLOWS:

CLEVIS TYPE:
SERVICE: BARE METAL PIPE, RIGID PLASTIC PIPE, INSULATED COLD PIPE, INSULATED HOT PIPE – 3 INCHES & SMALLER

ACCEPTABLE PRODUCTS		BARE STEEL, PLASTIC, INSULATED PIPE COPPER PIPE	BARE
ANVIL	FIG. 260		
COOPER/B-LINE	FIG. 3100		FIG. B3100C
ERICO	MODEL 400		
NIBCO/TOLCO	FIG. 1		FIG. 81PVC2.

ROLLER TYPE:
SERVICE: INSULATED HOT PIPE – 4 INCHES AND LARGER

ACCEPTABLE PRODUCTS		4" THROUGH 6" 8" AND ABOVE
ANVIL	FIG. 181, 271	FIG. 171, 271
COOPER/B-LINE	FIG. 3110, 3117	FIG. 3114, 3117
ERICO	MODEL 610	MODEL 605
NIBCO/TOLCO	FIG. 324, 327	FIG. 322, 327

PADDED CLEVIS TYPE:
SERVICE: GLASS PIPE

ACCEPTABLE PRODUCTS		HANGERS PADS
ANVIL	FIG. 260	FIG. 3195
COOPER/B-LINE	FIG. 3100	
ERICO	MODEL 400	
NIBCO/TOLCO	FIG 1	

NOTE: PADS MUST BE USED WITH ALL HANGERS LISTED ABOVE.

CONTINUOUS CHANNEL WITH CLEVIS TYPE:
SERVICE: PLASTIC TUBING, FLEXIBLE HOSE, SOFT COPPER TUBING
ACCEPTABLE PRODUCTS:
COOPER/B-LINE – FIG. B3106, WITH FIG. B3106V
ERICO – MODEL 104, WITH MODEL 104V
NIBCO/TOLCO – FIG. 1V

ADJUSTABLE SWIVEL RING TYPE:
SERVICE: BARE METAL PIPE – 4 INCHES AND SMALLER

ACCEPTABLE PRODUCTS		BARE STEEL PIPE BARE COPPER PIPE
ANVIL	FIG. 69	
COOPER/B-LINE	FIG. B3170NFFIG. B3170CTC	
ERICO	MODEL FCN	102AD SERIES
NIBCO/TOLCO	FIG. 200	FIG. 203

SUPPORT MAY BE FABRICATED FROM U-CHANNEL STRUT OR SIMILAR SHAPES. PIPING LESS THAN 4' IN DIAMETER SHALL BE SECURED TO STRUT WITH CLAMPS OF PROPER DESIGN AND CAPACITY AS REQUIRED TO MAINTAIN SPACING AND ALIGNMENT. STRUT SHALL BE INDEPENDENTLY SUPPORTED FROM HANGER DROPS OR BUILDING STRUCTURE. SIZE AND SUPPORT SHALL BE PER MANUFACTURER'S INSTALLATION REQUIREMENTS FOR STRUCTURAL SUPPORT OF PIPING. CLAMPS SHALL NOT INTERRUPT PIPING INSULATION.

1. STRUT USED IN MECHANICAL SPACES OR OTHERWISE DRY AREAS SHALL HAVE ASTM B633 ELECTRO-PLATED ZINC FINISH.
2. STRUT USED IN DAMP AREAS LISTED IN HANGER RODS SHALL HAVE ASTM A123 HOT-DIP GALVANIZED FINISH APPLIED AFTER FABRICATION.

UNLESS OTHERWISE INDICATED, PIPE SUPPORTS FOR USE WITH STRUTS SHALL BE AS FOLLOWS:

CLAMP TYPE:
SERVICE: BARE METAL PIPE, RIGID PLASTIC PIPE, INSULATED COLD PIPE, INSULATED HOT PIPE – 3 INCHES AND SMALLER
a. CLAMPS IN DIRECT CONTACT WITH COPPER PIPE SHALL BE PLASTIC COATED.
b. PIPES SUBJECT TO EXPANSION AND CONTRACTION SHALL HAVE CLAMPS SLIGHTLY OVERSIZED TO ALLOW LIMITED PIPE MOVEMENT.

ACCEPTABLE PRODUCTS			BARE STEEL, PLASTIC, INSULATED PIPE	BARE COPPER PIPE
UNISTRUT	FIG. P1100	OR P2500		
COOPER/B-LINE	FIG. B2000	OR B2400	FIG. BVT	
NIBCO/TOLCO	FIG. A-14	OR ZSTR		

ROLLER TYPE:
SERVICE: INSULATED HOT PIPE – 4 INCHES AND LARGER.

ACCEPTABLE PRODUCTS		4" THROUGH 6" 8" AND ABOVE
UNISTRUT	FIG. P2474	FIG. P2474-1
COOPER/B-LINE	FIG. B218	FIG. B219
NIBCO/TOLCO	FIG. ROL-12	FIG. ROL-13

UNLESS OTHERWISE SHOWN, UPPER ATTACHMENTS FOR HANGER RODS OR SUPPORT STRUTS SHALL BE AS FOLLOWS:

BEAM CLAMPS:
ACCEPTABLE PRODUCTS
ANVIL – FIG. 228, 292
COOPER/B-LINE – FIG. B3054
ERICO – MODEL 360
NIBCO/TOLCO – FIG. 329

CONCRETE INSERTS, SINGLE ROD GALVANIZED:
ACCEPTABLE PRODUCTS:
ANVIL – FIG. 282
COOPER/B-LINE – FIG. B3014
ERICO – MODEL 355
NIBCO/TOLCO – FIG. 310

CONCRETE INSERTS, CONTINUOUS STRIP GALVANIZED:
ACCEPTABLE PRODUCTS:
UNISTRUT CORP – P3200 SERIES
COOPER/B_LINE – FIG. B22-J
ERICO – CONCT

CONCRETE ANCHORS: FASTEN TO CONCRETE USING CAST-IN OR POST-INSTALLED ANCHORS DESIGNED PER THE REQUIREMENTS OF APPENDIX D OF ACI 318-05. POST-INSTALLED ANCHORS SHALL BE QUALIFIED FOR USE IN CRACKED CONCRETE BY ACI-355.2.

MASONRY ANCHORS: FASTEN TO CONCRETE MASONRY UNITS WITH EXPANSION ANCHORS OR SELF_TAPPING MASONRY SCREWS. FOR EXPANSION ANCHORS INTO HOLLOW CONCRETE BLOCK, USE SLEEVE-TYPE ANCHORS DESIGNED FOR THE SPECIFIC APPLICATION. DO NOT FASTEN IN MASONRY JOINTS. DO NOT USE POWDER ACTUATED FASTENERS, WOODEN PLUGS, OR PLASTIC INSERTS.

WALL SUPPORTS SHALL BE USED WHERE VERTICAL HEIGHT OF STRUCTURE EXCEEDS MINIMUM SPACING REQUIREMENTS. INSTALL WALL SUPPORTS AT SAME SPACING AS HANGERS OR STRUT SUPPORTS ALONG VERTICAL LENGTH OF PIPE RUNS.

WELDING
UNLESS OTHERWISE NOTED, HANGERS, CLIPS, AND AUXILIARY SUPPORT STEEL MAY BE WELDED IN LIEU OF BOLTING, CLAMPING, OR RIVETING TO THE BUILDING STRUCTURAL FRAME. TAKE ADEQUATE PRECAUTIONS DURING ALL WELDING OPERATIONS FOR FIRE PREVENTION AND FOR PROTECTING WALLS AND CEILINGS FROM BEING DAMAGED BY SMOKE.

FOUNDATIONS, BASES, AND SUPPORTS
FURNISH AND INSTALL FOUNDATIONS, BASES, AND SUPPORTS (NOT SPECIFICALLY INDICATED ON THE DRAWINGS OR IN THE SPECIFICATIONS OF EITHER THE GENERAL CONSTRUCTION OR MECHANICAL WORK AS PROVIDED BY ANOTHER CONTRACTOR) FOR MECHANICAL EQUIPMENT.

ALL CONCRETE FOUNDATIONS, BASES AND SUPPORTS, SHALL BE REINFORCED. ALL STEEL BASES AND SUPPORTS SHALL RECEIVE A PRIME COAT OF ZINC CHROMATE OR RED METAL PRIMER. AFTER COMPLETION OF WORK, GIVE STEEL SUPPORTS A FINAL COAT OF GRAY ENAMEL.

EQUIPMENT ROOF SUPPORT (CURBS AND RAILS)
ROOFTOP EQUIPMENT SUCH AS PACKAGED AIR HANDLING UNITS, ROOF HOODS AND ROOFTOP EXHAUST FANS SHALL BE PROVIDED WITH CURBS BY THE UNIT MANUFACTURER.

WHERE NOT FURNISHED WITH ROOFTOP EQUIPMENT, PROVIDE PREFABRICATED CURBS OR RAILS AS FOLLOWS:
a. 12" HIGH ABOVE THE TOP SURFACE OF THE ROOF (NOT THE ROOF STRUCTURE).
b. 14 OR 18 GAUGE GALVANIZED SHEET METAL, AS REQUIRED FOR THE QUIPMENT WEIGHT.
c. INTERNAL REINFORCING.
d. PRESSURE TREATED WOOD NAILER.
e. 18 GAUGE COUNTER FLASHING COMPLETELY COVERING NAILER.
f. FACTORY INSULATED WITH RIGID FIBERGLASS.

MATCH UNITS TO THE BUILDING ROOF WITH EITHER A RAISED CANT TO MATCH ROOF INSULATION (FOR BUILT_UP ROOFS), OR WITH NO CANT (FOR SINGLE_PLY ROOFS).

WHERE LEGS OF EQUIPMENT REST ON RAILS, PROVIDE 1/4" BENT PLATES 18' LONG.

ACCEPTABLE MANUFACTURERS: THY, PATE, UNITED, ROOF PRODUCTS SYSTEMS OR PORTALS PLUS.

EQUIPMENT REQUIRING CURBS OR RAILS IS AS FOLLOWS:
a. CONDENSING UNITS

ROOF PIPE SUPPORTS
PROVIDE PRE-FABRICATED ROOF PIPE SUPPORTS FOR ALL PIPING INSTALLED ON THE ROOF.

SUPPORT SHALL GUIDE AND ALIGN PIPE WHILE PERMITTING LONGITUDINAL EXPANSION.

THE BASE SHALL BE ROUNDED TO PREVENT DAMAGE TO THE ROOF, AND DRAINAGE HOLES SHALL PREVENT PONDING OF WATER IN THE SUPPORT.

SUPPORT SHALL BE UV, CORROSION AND FREEZE/THAW RESISTANT.

SUPPORT SHALL INCLUDE ORANGE PAINT, REFLECTIVE SAFETY ORANGE ACCENTS OR SIMILAR MARKINGS FOR INCREASED VISIBILITY.

THE STRUT SYSTEM SHALL HAVE GALVANIZED ALUMINUM 302 STAINLESS STEEL 316 STAINLESS STEEL PVC COATED POWDER COATED ZINC TRIVALENT CHROMIUM FINISH.

ACCEPTABLE PRODUCTS: ANVIL INTERNATIONAL HBS-BASE SERIES, COOPER B-LINE DURA_BLOK, ERICO CADDY PYRAMID 50, 150, 300, OR 600 (TO MATCH LOAD), MIRO INDUSTRIES 1.5, 3-R, 4-R OR 5-R (TO MATCH PIPE).

SUPPORTS
PROVIDE SUFFICIENT CLIPS, INSERTS, HANGERS, RACKS, RODS, AND AUXILIARY STEEL TO SECURELY SUPPORT ALL SUSPENDED MATERIAL, EQUIPMENT AND CONDUIT WITHOUT SAG.

HANG HEAVY EQUIPMENT FROM CONCRETE FLOORS OR CEILINGS WITH ARCHITECT/ENGINEER_APPROVED CONCRETE INSERTS, FURNISHED AND INSTALLED BY THE CONTRACTOR WHOSE WORK REQUIRES THEM, EXCEPT WHERE INDICATED OTHERWISE.

GROUT
GROUT SHALL BE NON_SHRINKING PREMIXED (MASTER BUILDERS COMPANY "EMBECCO"), UNLESS OTHERWISE INDICATED ON THE DRAWINGS OR APPROVED BY THE ARCHITECT/ENGINEER.

USE MIX NO. 1 FOR CLEARANCES OF 1" OR LESS, AND MIX NO. 2 FOR ALL LARGER CLEARANCES.

GROUT UNDER EQUIPMENT BASES, AROUND PIPES, AT PIPE SLEEVES, ETC., AND WHERE SHOWN ON THE DRAWINGS.

OPENINGS IN FLOORS, WALLS AND CEILINGS
EXACT LOCATIONS OF ALL OPENINGS FOR THE INSTALLATION OF MATERIALS SHALL BE DETERMINED BY THE CONTRACTOR AND GIVEN TO THE GENERAL CONTRACTOR FOR INSTALLATION OR CONSTRUCTION AS THE STRUCTURE IS BUILT.

COORDINATE ALL OPENINGS WITH OTHER CONTRACTORS.

HIRE THE PROPER TRADESMAN AND FURNISH ALL LABOR, MATERIAL AND EQUIPMENT TO CUT OPENINGS IN OR THROUGH EXISTING STRUCTURES, OR OPENINGS IN NEW STRUCTURES THAT WERE NOT INSTALLED, OR ADDITIONAL OPENINGS. REPAIR ALL SPALLING AND DAMAGE TO THE SATISFACTION OF THE ARCHITECT/ENGINEER. MAKE SAW CUTS BEFORE BREAKING OUT CONCRETE TO ENSURE EVEN AND UNIFORM OPENING EDGES.

SAID CUTTING SHALL BE AT THE COMPLETE EXPENSE OF EACH CONTRACTOR. FAILURE TO COORDINATE OPENINGS WITH OTHER CONTRACTORS SHALL NOT EXCUSE THE CONTRACTOR FROM PROVIDING OPENINGS AT CONTRACTORS EXPENSE.

DO NOT CUT STRUCTURAL MEMBERS WITHOUT WRITTEN APPROVAL OF THE ARCHITECT OR STRUCTURAL ENGINEER.

ROOF PENETRATIONS
SEAL PIPES WITH SURFACE TEMPERATURE BELOW 150F PENETRATING SINGLE-PLY ROOFS WITH CONICAL STEPPED PIPE FLASHINGS AND STAINLESS STEEL CLAMPS EQUAL TO PORTALS PLUS PIPE BOOTS. MATERIAL SHALL MATCH ROOFING MEMBRANE.

BREAK INSULATION ONLY AT THE CLAMP FOR PIPES BETWEEN 60F AND 150F. SEAL OUTDOOR INSULATION EDGES WATERTIGHT.

SLEEVES AND LINTELS
EACH CONTRACTOR SHALL PROVIDE SLEEVES AND LINTELS FOR ALL DUCT AND PIPE OPENINGS REQUIRED FOR THE CONTRACTOR'S WORK IN MASONRY WALLS AND FLOORS, UNLESS SPECIFICALLY SHOWN AS BEING BY OTHERS.

FABRICATE ALL SLEEVES FROM STANDARD WEIGHT BLACK STEEL PIPE OR AS INDICATED ON THE DRAWINGS. PROVIDE CONTINUOUS SLEEVE. CUT OR SPLIT SLEEVES ARE NOT ACCEPTABLE.

FABRICATE ALL LINTELS FOR MASONRY WALLS FROM STRUCTURAL STEEL SHAPES OR AS INDICATED ON THE DRAWINGS. HAVE ALL LINTELS APPROVED BY THE ARCHITECT OR STRUCTURAL ENGINEER.

SLEEVES THROUGH THE FLOORS ON EXPOSED RISERS SHALL BE FLUSH WITH THE CEILING, WITH PLANES SQUARED ENDS EXTENDING 1" ABOVE THE FLOOR IN UNFINISHED AREAS, AND FLUSH WITH THE FLOOR IN FINISHED AREAS, TO ACCEPT SPRING CLOSING FLOOR PLATES.

SLEEVES SHALL NOT PENETRATE STRUCTURAL MEMBERS OR MASONRY WALLS WITHOUT APPROVAL FROM THE STRUCTURAL ENGINEER. SLEEVES SHALL THEN COMPLY WITH THE ARCHITECT/ENGINEER'S DESIGN.

OPENINGS THROUGH UNEXCAVATED FLOORS AND/OR FOUNDATION WALLS BELOW THE FLOOR SHALL HAVE A SMOOTH FINISH WITH SUFFICIENT ANNULAR SPACE AROUND MATERIAL PASSING THROUGH OPENING SO THAT SETTLING WILL NOT PLACE STRESS ON THE MATERIAL OR BUILDING STRUCTURE.

INSTALL ALL SLEEVES CONCENTRIC WITH PIPES. SECURE SLEEVES IN CONCRETE TO WOOD FORMS. THIS CONTRACTOR IS RESPONSIBLE FOR SLEEVES DISLODGED OR MOVED WHEN POURING CONCRETE.

WHERE PIPES RISE THROUGH CONCRETE FLOORS THAT ARE ON EARTHEN GRADE, PROVIDE 3/4" RESILIENT EXPANSION JOINT MATERIAL (ASPHALT AND CORK) WRAPPED AROUND THE PIPE, THE FULL DEPTH OF CONCRETE, AT THE POINT OF PENETRATION. SECURE TO PREVENT SHIFTING DURING CONCRETE PLACEMENT AND FINISHING.

SIZE SLEEVES LARGE ENOUGH TO ALLOW EXPANSION AND CONTRACTION MOVEMENT. PROVIDE CONTINUOUS INSULATION WRAPPING.

WALL SEALS ("LINK-SEALS")
WHERE SHOWN ON THE DRAWINGS, PIPES PASSING THROUGH WALLS, CEILINGS, OR FLOORS SHALL HAVE THEIR ANNULAR SPACE (SLEEVE OR DRILLED HOLE _ NOT TAPERED HOLE MADE WITH KNOCKOUT PLUG) SEALED BY PROPERLY SIZED SEALING ELEMENTS CONSISTING OF A SYNTHETIC RUBBER MATERIAL COMPOUNDED TO RESIST AGING, OZONE, SUNLIGHT, WATER AND CHEMICAL ACTION.

SLEEVES, IF USED, SHALL BE STANDARD WEIGHT STEEL WITH PRIMED FINISH AND WATERSTOP/ANCHOR CONTINUOUSLY WELDED TO SLEEVE. IF PIPING CARRIES ONLY FLUIDS BELOW 120F, SLEEVES MAY BE THERMOPLASTIC WITH INTEGRAL WATER SEAL AND TEXTURED SURFACE.

SLEEVES SHALL BE AT LEAST 2 PIPE SIZES LARGER THAN THE PIPES.

PRESSURE SHALL BE MAINTAINED BY STAINLESS STEEL BOLTS AND OTHER PARTS. PRESSURE PLATES MAY BE OF COMPOSITE MATERIAL FOR MODELS S AND OS.

SEALING ELEMENT SHALL BE AS FOLLOWS:

MODEL SERVICE	TEMPERATURE RANGE	ELEMENT MATERIAL
S	STANDARD (STAINLESS)EPDM	-40F TO 250F
T	HIGH/LOW TEMPERATURE [STEAM] -67F TO 400F	SILICONE
T	FIRE SEALS (1 HOUR) SILICONE	-67F TO 400F
FS	FIRE SEALS (3 HOURS) -67F TO 400F	SILICONE
OS	OIL RESISTANT/STAINLESS -40F TO 210F	NITRILE

ACCEPTABLE MANUFACTURERS: THUNDERLINE CORPORATION "LINK_SEALS", O_Z/GEDNEY COMPANY, CALPICO, INC., INNERLYNX, OR METRAFLEX COMPANY (COLD SERVICE ONLY).

ESCUTCHEON PLATES AND TRIM
FIT ESCUTCHEONS TO ALL INSULATED OR UNINSULATED EXPOSED PIPES PASSING THROUGH WALLS, FLOORS, OR CEILINGS OF FINISHED ROOMS.

ESCUTCHEONS SHALL BE HEAVY GAUGE, COLD ROLLED STEEL, COPPER COATED UNDER A CHROMIUM PLATED FINISH, HEAVY SPRING CLIP, RIGID HINGE AND LATCH.

INSTALL GALVANIZED STEEL (UNLESS OTHERWISE INDICATED) TRIM STRIP TO COVER VACANT SPACE AND RAW CONSTRUCTION EDGES OF ALL RECTANGULAR OPENINGS IN FINISHED ROOMS. THIS INCLUDES PIPE OPENINGS.

PIPE PENETRATIONS
SEAL ALL PIPE PENETRATIONS. SEAL NON-RATED WALLS AND FLOOR PENETRATIONS WITH GROUT OR CAULK. BACKING MATERIAL MAY BE USED.

SEAL FIRE RATED WALL AND FLOOR PENETRATIONS WITH FIRE SEAL SYSTEM AS SPECIFIED.

PIPE ANCHORS
PROVIDE ALL ITEMS NEEDED TO ALLOW ADEQUATE EXPANSION AND CONTRACTION OF ALL PIPING. ALL PIPING SHALL BE SUPPORTED, GUIDED, ALIGNED, AND ANCHORED AS REQUIRED.

REPAIR ALL PIPING LEAKS AND ASSOCIATED DAMAGE. PIPES SHALL NOT RUB ON ANY PART OF THE BUILDING.

FINISH
PRIME COAT EXPOSED STEEL HANGERS AND SUPPORTS. HANGERS AND SUPPORTS IN CRAWL SPACES, PIPE SHAFTS, AND SUSPENDED CEILING SPACES ARE NOT CONSIDERED EXPOSED.

SUPPORT REQUIREMENTS
INSTALL ROOF PIPE SUPPORTS TO RESIST WIND MOVEMENT PER MANUFACTURER'S RECOMMENDATIONS. METHOD OF SECURING BASE TO ROOF SHALL BE COMPATIBLE WITH ROOFING MATERIALS.

WHERE BUILDING STRUCTURAL STEEL IS FIREPROOFED, ALL HANGERS, CLAMPS, AUXILIARY STEEL, ETC., WHICH ATTACH TO IT SHALL BE INSTALLED PRIOR TO APPLICATION OF FIREPROOFING. REPAIR ALL FIREPROOFING DAMAGED DURING PIPE INSTALLATION.

SET ALL CONCRETE INSERTS IN PLACE BEFORE POURING CONCRETE.

FURNISH, INSTALL AND PRIME ALL AUXILIARY STRUCTURAL STEEL FOR SUPPORT OF PIPING SYSTEMS THAT ARE NOT SHOWN ON THE DRAWINGS AS BEING BY OTHERS.

INSTALL HANGERS AND SUPPORTS COMPLETE WITH LOCK NUTS, CLAMPS, RODS, BOLTS, COUPLINGS, SWIVELS, INSERTS AND REQUIRED ACCESSORIES.

HANGERS FOR HORIZONTAL PIPING SHALL HAVE ADEQUATE MEANS OF VERTICAL ADJUSTMENT FOR ALIGNMENT.

PIPE REQUIREMENTS
SUPPORT ALL PIPING AND EQUIPMENT, INCLUDING VALVES, STRAINERS, TRAPS AND OTHER SPECIALTIES AND ACCESSORIES TO AVOID OBJECTIONABLE OR EXCESSIVE STRESS, DEFLECTION, SWAYING, SAGGING OR VIBRATION IN THE PIPING OR BUILDING STRUCTURE DURING ERECTION, CLEANING, TESTING AND NORMAL OPERATION OF THE SYSTEMS.

DO NOT, HOWEVER, RESTRAIN PIPING TO CAUSE IT TO SNAKE OR BUCKLE BETWEEN SUPPORTS OR TO PREVENT PROPER MOVEMENT DUE TO EXPANSION AND CONTRACTION.

SUPPORT PIPING AT EQUIPMENT AND VALVES SO THEY CAN BE DISCONNECTED AND REMOVED WITHOUT FURTHER SUPPORTING THE PIPING.

PIPING SHALL NOT INTRODUCE STRAINS OR DISTORTION TO CONNECTED EQUIPMENT.

PARALLEL HORIZONTAL PIPES MAY BE SUPPORTED ON TRAPEZE HANGERS MADE OF STRUCTURAL SHAPES AND HANGER RODS; OTHERWISE, PIPES SHALL BE SUPPORTED WITH INDIVIDUAL HANGERS.

TRAPEZE HANGERS MAY BE USED WHERE DUCTS INTERFERE WITH NORMAL PIPE HANGING.

PROVIDE ADDITIONAL SUPPORTS WHERE PIPE CHANGES DIRECTION, ADJACENT TO FLANGED VALVES AND STRAINERS, AT EQUIPMENT CONNECTIONS AND HEAVY FITTINGS.

PROVIDE AT LEAST ONE HANGER ADJACENT TO EACH JOINT IN GROOVED END STEEL PIPE WITH MECHANICAL COUPLINGS.

PROVIDED THE INSTALLATION COMPLIES WITH ALL LOADING REQUIREMENTS OF TRUSS AND JOIST MANUFACTURERS, THE FOLLOWING PRACTICES ARE ACCEPTABLE:
1. LOADS OF 100 LBS. OR LESS MAY BE ATTACHED ANYWHERE ALONG THE BOTTOM CHORDS OF TRUSSES OR JOISTS WITH A MINIMUM 3' SPACING BETWEEN LOADS.
2. LOADS GREATER THAN 100 LBS. MUST BE HUNG CONCENTRICALLY AND MAY BE HUNG FROM TOP OR BOTTOM CHORD, PROVIDED ONE OF THE FOLLOWING CONDITIONS IS MET:
a. THE HANGER IS ATTACHED WITHIN 6" FROM A WEB/CHORD JOINT.
b. ADDITIONAL L2X2X1/4 WEB REINFORCEMENT IS INSTALLED PER MANUFACTURER'S REQUIREMENTS.
3. IT IS PROHIBITED TO CANTILEVER A LOAD USING AN ANGLE OR OTHER STRUCTURAL COMPONENT THAT IS ATTACHED TO A TRUSS OR JOIST IN SUCH A FASHION THAT A TORSIONAL FORCE IS APPLIED TO THAT STRUCTURAL MEMBER.
4. IF CONDITIONS CANNOT BE MET, COORDINATE INSTALLATION WITH TRUSS OR JOIST MANUFACTURER AND CONTACT ARCHITECT/ENGINEER.

DO NOT EXCEED 25 LBS. PER HANGER AND A MINIMUM SPACING OF 2'-0" ON CENTER WHEN ATTACHING TO METAL ROOF DECKING (LIMITATION NOT REQUIRED WITH CONCRETE ON METAL DECK). THIS 25 LBS. LOAD AND 2'-0" SPACING INCLUDE ADJACENT ELECTRICAL AND ARCHITECTURAL ITEMS HANGING FROM DECK. IF THE HANGER RESTRICTIONS CANNOT BE ACHIEVED, SUPPLEMENTAL FRAMING OFF STEEL FRAMING WILL NEED TO BE ADDED.

DO NOT EXCEED THE MANUFACTURER'S RECOMMENDED MAXIMUM LOAD FOR ANY HANGER OR SUPPORT.

SPACING OF HANGERS SHALL NOT EXCEED THE COMPRESSIVE STRENGTH OF THE INSULATION INSERTS, AND IN NO CASE SHALL EXCEED THE FOLLOWING:

STEEL AND FIBERGLASS (STD. WEIGHT OR HEAVIER – LIQUID SERVICE):

PIPE MATERIAL	MAXIMUM SPACING
1_1/4" AND UNDER	7'_0"
1_1/2"	9'_0"
2"	10"_0"
2_1/2"	11"_0"
3"	12"_0"
4" & LARGER	12"_0"

STEEL (STD. WEIGHT OR HEAVIER – VAPOR SERVICE):

PIPE MATERIAL	MAXIMUM SPACING
1_1/4" AND UNDER	9'_0"
1_1/2"	12"_0"
2" & LARGER	12"_0"

HARD DRAWN COPPER & BRASS (LIQUID SERVICE):

PIPE MATERIAL	MAXIMUM SPACING
3/4" AND UNDER	5'_0"
1"	6'_0"
1_1/4"	7'_0"
1_1/2"	8'_0"
2"	8"_0"
2_1/2"	9'_0"
3"	10"_0"
4"	12"_0"
6"	12"_0"

HARD DRAWN COPPER & BRASS (VAPOR SERVICE):

PIPE MATERIAL	MAXIMUM SPACING
3/4" & UNDER	7'_0"
1"	8'_0"
1_1/4"	9'_0"
1_1/2"	10"_0"
2"	11"_0"
2_1/2" & LARGER	12'_0"

FLEXIBLE PLASTIC PIPE, FLEXIBLE HOSE, AND SOFT COPPER TUBING:
a. CONTINUOUS CHANNEL WITH HANGERS MAXIMUM 8'-0" O.C.
6. INSTALLATION OF HANGERS SHALL CONFORM TO MSS SP-58 AND THE APPLICABLE PLUMBING CODE.

22 10 00 PLUMBING PIPING

SECTION INCLUDES
PIPE AND PIPE FITTINGS
VALVES
DOMESTIC WATER PIPING SYSTEM
SANITARY DRAINAGE AND VENT PIPING SYSTEM

QUALITY ASSURANCE
VALVES: MANUFACTURER'S NAME AND PRESSURE RATING MARKED ON VALVE BODY. REMANUFACTURED VALVES ARE NOT ACCEPTABLE.

WELDING MATERIALS AND PROCEDURES: CONFORM TO ASME CODE AND APPLICABLE STATE LABOR REGULATIONS.

WELDERS CERTIFICATION: IN ACCORDANCE WITH ANSI/ASME SEC 9 OR ANSI/AWS D1.1.

PIPING, FITTINGS, VALVES, AND FLUX FOR POTABLE WATER SYSTEMS: ALL COMPONENTS SHALL BE LEAD FREE PER FEDERAL ACT S.3874, REDUCTION OF LEAD IN DRINKING WATER ACT.

SUBMITTALS
SUBMIT PRODUCT DATA UNDER PROVISIONS OF SECTION 21/22/ 05 00.

COLD WATER – POTABLE AND NON-POTABLE
HOT WATER – POTABLE AND NON-POTABLE
TEMPERED WATER – POTABLE AND NON-POTABLE
DESIGN PRESSURE: 175 PSI.
MAXIMUM DESIGN TEMPERATURE: 200F.

PIPING: ALL SIZES:
1. TUBING: TYPE L HARD DRAWN SEAMLESS COPPER TUBE, ASTM B88.
2. JOINTS: SOLDER WITH 100% LEAD-FREE SOLDER AND FLUX, ASTM B32.
3. FITTINGS: WROUGHT COPPER SOLDER JOINT, ANSI B16.22.

DOMESTIC WATER BALL VALVES:
3" AND UNDER, 150 PSI SATURATED STEAM, 600 PSI CWP, FULL PORT, SCREWED OR SOLDER ENDS (ACCEPTABLE ONLY IF RATED FOR SOLDERING IN LINE WITH 470F MELTING POINT OF LEAD-FREE SOLDER), BRONZE BODY OR A COPPER ALLOY CONTAINING LESS THAN 15% ZINC, STAINLESS STEEL BALL AND TRIM, TEFLON SEATS AND SEALS. APOLLO #77C_140, STOCKHAM #S_255-FB-P-UL BR1_R, MILWAUKEE #BA-400, WATTS, NIBCO #585-70-66, NATIONAL UTILITIES CO., RUB.
NOTES: PROVIDE EXTENDED SHAFT FOR ALL VALVES IN INSULATED PIPING. PROVIDE LOCK OUT TRIM FOR ALL VALVES OPENING TO ATMOSPHERE INSTALLED IN DOMESTIC WATER PIPING OVER 120F, HEATING WATER PIPING OVER 120F, STEAM, CONDENSATE, BOILER FEED WATER PIPING, COMPRESSED AIR PIPING AND GASOLINE/KEROSENE PIPING, AND AS INDICATED ON THE DRAWINGS. SOLID EXTENDED SHAFT IS NOT REQUIRED ON VALVES WITH LOCK OUT TRIM.

DOMESTIC WATER CHECK VALVES:
2" AND UNDER, 125# STEAM @ 406F, 200# CWP @ 150F, SCREWED, BRONZE, HORIZONTAL SWING. CRANE #37, HAMMOND #I0904, STOCKHAM #B319-Y, WALWORTH #3406, MILWAUKEE #509, WATTS #C-5000, NIBCO T-413B.

2-1/2" THR

22 01 23 NATURAL GAS
GENERAL SECTION INCLUDES
PIPE AND PIPE FITTINGS.
VALVES.
NATURAL GAS PIPING SYSTEM.

QUALITY ASSURANCE
VALVES: MANUFACTURER'S NAME AND PRESSURE RATING MARKED ON VALVE BODY.
REMANUFACTURED VALVES ARE NOT ACCEPTABLE.
WELDING MATERIALS, PROCEDURES, AND OPERATORS: CONFORM TO ASME SECTION 9, ANSI/AWS D1.1, AND APPLICABLE STATE LABOR REGULATIONS.
WELDERS CERTIFICATION: IN ACCORDANCE WITH ANSI/ASME SEC 9 OR ANSI/AWS D1.1.
ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CPC.
DESIGN HANGERS AND SUPPORTS UNDER DIRECT SUPERVISION OF PROFESSIONAL ENGINEER EXPERIENCED IN DESIGN OF THIS WORK AND LICENSED IN STATE OF CALIFORNIA.

SUBMITTALS
SUBMIT PRODUCT DATA UNDER PROVISIONS OF SECTION 22 05 00 . INCLUDE DATA ON PIPE MATERIALS, FITTINGS, VALVES, AND ACCESSORIES.
TEST REPORTS: PROVIDE RESULTS OF PIPING SYSTEM PRESSURE TEST.
WELDERS CERTIFICATES: CERTIFY WELDERS EMPLOYED ON THE WORK, VERIFYING AWS QUALIFICATION WITHIN PREVIOUS 12 MONTHS.

PRODUCTS
NATURAL GAS (0 TO 125 PSI)
DESIGN PRESSURE: 125 PSI.
MAXIMUM DESIGN TEMPERATURE: 350°F

PIPING 2" AND UNDER:
PIPE: STANDARD WEIGHT STEEL, THREADED AND COUPLED, ASTM A53.
JOINTS: SCREWED. (NOTE: FOR BELOW GROUND, ALL SIZES TO HAVE WELDED JOINTS.)
FITTINGS: 150# STEAM _ 300# CWP, BLACK MALLEABLE IRON, BANDED, ASTM A197, ANSI B16.3.
UNIONS: 250# _ 500# CWP, BLACK MALLEABLE IRON, ANSI B16.39, GROUND JOINT WITH BRASS SEAT.

PIPING 2 1/2" AND OVER:
PIPE: STANDARD WEIGHT STEEL, BEVELED ENDS, ASTM A53.
JOINTS: BUTT WELDED AND FLANGED.
FITTINGS: STANDARD WEIGHT SEAMLESS STEEL, BUTT WELD TYPE, ASTM A234, GRADE I, ANSI B16.9.
FLANGES: 150# FORGED STEEL, WELD NECK OR SLIP_ON, ASTM A181, GRADE I, ANSI B16.5.
FLANGE FACE SEAL WELD (BACKWELD) IS REQUIRED FOR SLIP-ON FLANGES.

PIPING - ALL SIZES:
PIPE: POLYETHYLENE PIPE, ASTM D2513, SDR 11.5.
JOINTS: FUSION WELDED
FITTINGS: SOCKET TYPE, ASTM D2683 OR ASTM D2513.
LIMITS: USE ONLY BELOW GROUND OUTSIDE OF BUILDINGS.
FOR UNDERGROUND GAS PIPING _ REFER TO PARAGRAPH 'UNDERGROUND PIPING PROTECTION."

SHUTOFF VALVES/THROTTLING VALVES:
FOR PIPE SYSTEMS WHERE MECHANICAL PRESS CONNECTIONS ARE ALLOWED, SHUTOFF VALVES WITH MECHANICAL PRESS CONNECTIONS ARE ACCEPTABLE SUBJECT TO THE REQUIREMENTS IN THE PARAGRAPHS BELOW.

BA-13: 2' AND UNDER, THREADED 600 PSI CWP; UL LISTED FOR 250# LP, FLAMMABLE LIQUID, HEATING OIL, NATURAL AND MANUFACTURED GASES, 150 PSI STEAM, BRONZE BODY AND CHROME PLATED BRASS BALL, TEFLON SEATS AND PACKING. APOLLO #80-100, NIBCO #T580-70-UL OR #T585-70-UL, WATTS #B-6000.
PL_1: 2" AND UNDER, 125# STEAM @ 450°F, 175# CWP @ 180°F, CAST IRON BODY, SCREWED, FULL PORT. WALWORTH #1700, DEZURIK #425, S-RS49.
PL_2: 2_1/2" THRU 4", 125# STEAM @ 450°F, 175# CWP @ 180°F, FLANGED, CAST IRON BODY, FULL PORT. WALWORTH #1700F, DEZURIK #425, F-RS49.
PL_3: 6"1 AND LARGER, 125# STEAM @ 450°F, 175# CWP, CAST IRON BODY, FLANGED, RESILIENT FACED PLUG, GEAR AND HANDWHEEL OPERATOR, FULL PORT. WALWORTH #1707F, DEZURIK #118, F-RS24.

CHECK VALVES:
FOR PIPE SYSTEMS WHERE MECHANICAL PRESS CONNECTIONS ARE ALLOWED, CHECK VALVES WITH MECHANICAL PRESS CONNECTIONS ARE ACCEPTABLE SUBJECT TO THE REQUIREMENTS IN THE PARAGRAPHS BELOW.
CK_1: 2" AND UNDER, 125# STEAM @ 406°F, 200# CWP @ 150°F, SCREWED, BRONZE, HORIZONTAL SWING. CRANE #37, HAMMOND #IB904, STOCKHAM #B319-Y, WALWORTH #3406, MILWAUKEE #509, WATTS #B-5000, NIBCO Y-413B.
CK_13: 2-1/2" THRU 12", 200# CWP, DOUBLE DISC WAFER TYPE, IRON BODY, BRONZE OR ALUMINUM-BRONZE DISCS, 316SS SHAFT AND SPRING, VITON, EPDM OR BUNA-N, CVKY OF AT

LEAST 700603 IN 6"1 SIZE. MUELLER STEAM SPECIALTY CO. #71-AHB-6-H, STOCKHAM #WG-961 EPDM OR #WG970 BUNA, NIBCO W-920-W, CRANE.

STRAINERS:
FOR PIPE SYSTEMS WHERE MECHANICAL PRESS CONNECTIONS ARE ALLOWED, STRAINERS WITH MECHANICAL PRESS CONNECTIONS ARE ACCEPTABLE SUBJECT TO THE REQUIREMENTS IN THE PARAGRAPHS BELOW.
ST_2: CAST IRON BODY, 125 LB.CLASS 125 FLANGED ENDS, BOLTED COVER, 125 PSI S @ 350°F, 175 PSI CWP @ 150°F. ARMSTRONG #A1FL, METRAFLEX #TF, MUELLER STEAM SPECIALTY CO.#751, SARCO #CI-125, WATTS #77F-D.
ST_4: CAST IRON BODY, SCREWED ENDS, SCREWED COVER, 250# STEAM @ 406°F, 300# CWP @ 150°F. ARMSTRONG #A1SC, METRAFLEX #SM, MUELLER STEAM SPECIALTY CO. #11, SARCO #IT.

GENERAL INSTALLATION REQUIREMENTS:

PREPARATION
REAM PIPE AND TUBE ENDS, REMOVE BURRS, BEVEL PLAIN END FERROUS PIPE.
REMOVE SCALE AND DIRT ON INSIDE AND OUTSIDE BEFORE ASSEMBLY.
REMOVE ALL SCALE, RUST, DIRT, OILS, STICKERS AND THOROUGHLY CLEAN EXTERIOR OF ALL BARE METAL EXPOSED PIPING, HANGERS, AND ACCESSORIES IN PREPARATION TO BE PAINTED.
CONNECT TO ALL EQUIPMENT WITH FLANGES OR UNIONS.
AFTER COMPLETION, FILL, CLEAN, AND TREAT SYSTEMS. REFER TO SECTION 23 25 00 FOR TREATMENT.

TESTING PIPING
LOW PRESSURE _ UP TO 1 PSI:
TEST PIPING WITH 20 PSI AIR PRESSURE. SYSTEM MUST HOLD THIS PRESSURE WITHOUT ADDING AIR FOR TWO HOURS.
HIGH PRESSURE _ ABOVE 1 PSI:
TEST PIPING WITH COMPRESSED AIR AT TWICE THE OPERATING GAS PRESSURE, BUT AT LEAST 20 PSI. SYSTEM MUST HOLD THIS PRESSURE WITHOUT ADDING AIR FOR TWO HOURS.
A NON-COMBUSTIBLE ODORANT, SUCH AS OIL OF WINTERGREEN, MAY BE ADDED TO HELP LOCATE LEAKS.

CLEANING PIPING & ASSEMBLY:
PRIOR TO ASSEMBLY OF PIPE AND PIPING COMPONENTS, REMOVE ALL LOOSE DIRT, SCALE, OIL AND OTHER FOREIGN MATTER ON INTERNAL OR EXTERNAL SURFACES BY MEANS CONSISTENT WITH GOOD PIPING PRACTICE SUBJECT TO APPROVAL OF THE ARCHITECT/ENGINEER. BLOW CHIPS AND BURRS OUT OF PIPE BEFORE ASSEMBLY. WIPE CUTTING OIL FROM INTERNAL AND EXTERNAL SURFACES.
DURING FABRICATION AND ASSEMBLY, REMOVE SLAG AND WELD SPATTER FROM BOTH INTERNAL AND EXTERNAL JOINTS BY PEENING, CHIPPING AND WIRE BRUSHING TO THE DEGREE CONSISTENT WITH GOOD PIPING PRACTICES.
NOTIFY THE ARCHITECT/ENGINEER PRIOR TO STARTING ANY POST ERECTION CLEANING OPERATION IN TIME TO ALLOW WITNESSING THE OPERATION. PROPERLY DISPOSE OF CLEANING AND FLUSHING FLUIDS.
PRIOR TO BLOWING OR FLUSHING ERECTED PIPING SYSTEMS, DISCONNECT ALL INSTRUMENTATION AND EQUIPMENT, OPEN WIDE ALL VALVES, CONTROL VALVES, AND BALANCE VALVES, AND VERIFY ALL STRAINER SCREENS ARE IN PLACE.

INSTALLATION
ROUTE PIPING IN ORDERLY MANNER, STRAIGHT, PLUMB, WITH CONSISTENT PITCH, PARALLEL TO BUILDING STRUCTURE, WITH MINIMUM USE OF OFFSETS AND COUPLINGS. PROVIDE ONLY OFFSETS REQUIRED FOR NEEDED HEADROOM OR CLEARANCE AND NEEDED FLEXIBILITY IN PIPE SYSTEM.
INSTALL PIPING TO CONSERVE BUILDING SPACE, AND NOT INTERFERE WITH OTHER WORK.
DO NOT INSTALL PIPING OR OTHER EQUIPMENT ABOVE ELECTRICAL SWITCHBOARDS OR PANELBOARDS. THIS INCLUDES A DEDICATED SPACE EXTENDING 25 FEET FROM THE FLOOR TO THE STRUCTURAL CEILING WITH WIDTH AND DEPTH EQUAL TO THE EQUIPMENT.
GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.
INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.
INSTALL THRUST BLOCKING AND RESTRAINTS ON ALL BURIED PIPING AT ELBOWS AND OTHER CHANGES IN PIPE DIRECTION.
PROVIDE CHAIN OPERATORS FOR ALL VALVES OVER 2" SIZE THAT ARE OVER 10'-0" ABOVE FINISHED FLOOR. EXTEND TO 7'-0" ABOVE FINISHED FLOOR.
PROVIDE VALVE POSITION INDICATOR ON ALL VALVES 10'-0' OR GREATER ABOVE FINISH FLOOR AND NOT LOCATED ABOVE CEILING.
PROVIDE CLEARANCE FOR ACCESS TO VALVES AND FITTINGS.
PROVIDE ACCESS DOORS WHERE VALVES ARE NOT EXPOSED.
PREPARE PIPE, FITTINGS, SUPPORTS, AND ACCESSORIES FOR FINISH PAINTING.
INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED.
PROVIDE SHUTOFF VALVES AND FLANGES OR UNIONS AT ALL CONNECTIONS TO EQUIPMENT, TRAPS, AND ITEMS THAT REQUIRE SERVICING.
PROVIDE SHUTOFF VALVES TO ISOLATE PART OF SYSTEMS AND VERTICAL RISERS.
ARRANGE PIPING AND PIPING CONNECTIONS SO EQUIPMENT MAY BE SERVICED OR TOTALLY REMOVED WITHOUT DISTURBING PIPING BEYOND FINAL CONNECTIONS AND ASSOCIATED SHUTOFF VALVES.
REDUCERS ARE GENERALLY NOT SHOWN. WHERE PIPE SIZES ARE NOT SHOWN, THE LARGER SIZE IN EITHER DIRECTION SHALL CONTINUE THROUGH THE FITTING NEAREST TO THE INDICATION OF A SMALLER PIPE SIZE.
LAY ALL UNDERGROUND PIPING IN TRENCHES. PROVIDE AND OPERATE PUMPING EQUIPMENT TO KEEP TRENCHES FREE OF WATER.
SEAL PIPES PASSING THROUGH EXTERIOR WALLS WITH A WALL SEAL PER SECTION 23 05 29.
PROVIDE SCHEDULE 40 GALVANIZED SLEEVE AT LEAST 2 PIPE SIZES LARGER THAN THE PIPE.
REFER TO SECTION 23 05 00 FOR EXCAVATION, FILL, BACKFILL AND COMPACTION REQUIREMENTS.

UNDERGROUND PIPING PROTECTION
DIRECT BURIED, UNINSULATED STEEL PIPE SHALL HAVE A FACTORY APPLIED EXTERNAL PROTECTIVE COATING CONSISTING OF TWO COATS WITH AN INTERMEDIATE LAYER OF 18 MIL458 MM FIBROUS GLASS MAT. COATING THICKNESS SHALL TOTAL NOT LESS THAN 3/32". THE OUTER COATING SHALL BE FURTHER PROTECTED BY A WRAPPING OF HEAVY K6947 PAPER. THIS EXTERNAL PROTECTION SHALL EXTEND AND BE EXPOSED FOR A MINIMUM OF 1 FOOT BEYOND THE BURIED OR CONCEALED PORTION OF THE PIPE.
ACCEPTABLE MANUFACTURERS: PIPE LINE SERVICE CO., FRANKLIN PARK, ILLINOIS, LITHCOTE CORP., MELROSE PARK, ILLINOIS
AS AN OPTION, THE CONTRACTOR MAY PROVIDE FACTORY APPLIED PROTECTIVE COATINGS CONSISTING OF A POLYETHYLENE PLASTIC FILM BONDED TO THE PIPE SURFACE BY A HOT APPLIED THERMO_PLASTIC ADHESIVE.
ACCEPTABLE MANUFACTURER: REPUBLIC STEEL CORP. "X_TRU_COAT"
EXERCISE CARE IN HANDLING, STORING AND LAYING PIPE TO AVOID DAMAGING FACTORY APPLIED COATINGS. IF ANY DAMAGE OCCURS, REPAIR THE COATING TO A CONDITION EQUAL TO THE ORIGINAL.
FIELD APPLICATION OF PROTECTIVE COATINGS TO JOINTS, FITTINGS AND TO ANY DAMAGED FACTORY APPLIED COATINGS SHALL BE SIMILAR TO FACTORY APPLIED COATINGS SPECIFIED ABOVE AND SHALL BE DONE IN STRICT ACCORDANCE WITH RECOMMENDATIONS OF THE SUPPLIER OF PIPE COATINGS.
AFTER COMPLETION OF THE FABRICATION, LAYING AND FIELD COATING OF THE JOINTS AND FITTINGS, BUT PRIOR TO BACKFILLING, INSPECT THE ENTIRE LINE IN THE PRESENCE OF THE ARCHITECT/ENGINEER'S REPRESENTATIVE WITH AN ELECTRONIC HOLIDAY DETECTOR. ANY DEFECTS IN THE PROTECTIVE COATINGS SHALL BE REPAIRED IN ACCORDANCE WITH REQUIREMENTS FOR ORIGINAL COATINGS.
COAT FLANGE BOLTS AND NUTS IN PITS AND BELOW GROUND AT THE TIME OF INSTALLATION WITH A CORROSION PROTECTIVE COATING.
ALL VERTICAL PIPE DROPS TO EQUIPMENT INSTALLED BELOW THE CEILING SHALL BE ROUTED WITHIN A WALL CAVITY, UNLESS SPECIFICALLY NOTED OTHERWISE TO BE SURFACE MOUNTED.
FOR RENOVATION PROJECTS, THIS CONTRACTOR IS RESPONSIBLE FOR OPENING AND PATCHING EXISTING WALLS FOR INSTALLATION OF PIPING. WALL PATCHING SHALL MATCH EXISTING CONDITION.
INSTALL UNDERGROUND PLASTIC PIPE WITH AN ELECTRICALLY CONTINUOUS CORROSION-RESISTANT TRACER WIRE (MINIMUM AWG 14) OR TAPE PER SECTION 22 05 53 23 05 53 TO FACILITATE LOCATING. ONE END OF THE TRACER WIRE OR TAPE SHALL BE BROUGHT ABOVEGROUND AT A BUILDING WALL OR RISER.
INSTALL CORRUGATED, STAINLESS STEEL TUBING SYSTEM ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. INCLUDE STRIKER PLATES TO PROTECT TUBING FROM PUNCTURE WHERE TUBING IS RESTRAINED AND CANNOT MOVE.
INSTALL UNDERGROUND, SLEEVED, CORRUGATED, STAINLESS STEEL TUBING SYSTEM ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. EXTEND VENT FROM SLEEVE TO EXTERIOR OF BUILDING AND TERMINATE WITH SCREENED ELBOW.
ESTABLISH MINIMUM SEPARATION OF ONE (1) FOOT FROM OTHER SERVICES' PIPING IN ACCORDANCE WITH CPC CODE. [SPECIFIER: CALIFORNIA PROJECTS]

PIPE ERECTION AND LAYING
CAREFULLY INSPECT ALL PIPE, FITTINGS, VALVES, EQUIPMENT AND ACCESSORIES PRIOR TO INSTALLATION. IMMEDIATELY REJECT AND REMOVE FROM THE JOB ANY ITEMS WHICH ARE UNSUITABLE, CRACKED OR OTHERWISE DEFECTIVE.
ALL PIPE, FITTINGS, VALVES, EQUIPMENT AND ACCESSORIES SHALL HAVE FACTORY-APPLIED MARKINGS, STAMPINGS, OR NAMEPLATES SUFFICIENT TO DETERMINE THEIR CONFORMANCE WITH SPECIFIED REQUIREMENTS.
EXERCISE CARE AT EVERY STAGE OF STORAGE, HANDLING, LAYING AND ERECTING TO PREVENT ENTRY OF FOREIGN MATTER INTO PIPING, FITTINGS, VALVES, EQUIPMENT AND ACCESSORIES. DO NOT ERECT OR INSTALL ANY UNCLEAN ITEM.
DURING CONSTRUCTION, UNTIL SYSTEM IS FULLY OPERATIONAL, KEEP ALL OPENINGS IN PIPING AND EQUIPMENT CLOSED AT ALL TIMES EXCEPT WHEN ACTUAL WORK IS BEING PERFORMED ON THAT ITEM. CLOSURES SHALL BE PLUGS, CAPS, BLIND FLANGES OR OTHER ITEMS DESIGNED FOR THIS PURPOSE.
CHANGE DIRECTION OF PIPES ONLY WITH FITTINGS OR PIPE BENDS. CHANGE SIZE ONLY WITH FITTINGS. DO NOT USE MITER FITTINGS, FACE OR FLUSH BUSHINGS, OR STREET ELBOWS. ALL FITTINGS SHALL BE LONG RADIUS TYPE, UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR SPECIFIED. CONSTRUCT WELDED ELBOWS OF ANGLES NOT AVAILABLE AS STANDARD FITTINGS BY CUTTING AND WELDING STANDARD ELBOWS TO FORM SMOOTH, LONG RADIUS FITTINGS.
USE FULL AND DOUBLE LENGTHS OF PIPE WHEREVER POSSIBLE.
CUT ALL PIPE TO EXACT MEASUREMENT AND INSTALL WITHOUT SPRINGING OR FORCING.
DO NOT CREATE, EVEN TEMPORARILY, UNDUE LOADS, FORCES OR STRAINS ON VALVES, EQUIPMENT OR BUILDING ELEMENTS.
UNDERGROUND PIPE SHALL BE LAID IN DRY TRENCHES MAINTAINED FREE OF ACCUMULATED WATER. PROVIDE AND OPERATE SUFFICIENT PUMPING EQUIPMENT TO MAINTAIN EXCAVATIONS, TRENCHES AND PITS FREE OF WATER. DISPOSE OF PUMPED WATER SO OPERATION AREAS AND OTHER FACILITIES ARE NOT FLOODED. PIPE LAYING SHALL FOLLOW EXCAVATING AS CLOSELY AS POSSIBLE.

DRAINING AND VENTING
UNLESS OTHERWISE INDICATED ON THE DRAWINGS,
PROVIDE DRIP LEGS AT LOW POINTS AND AT THE BASE OF ALL RISERS IN GAS PIPES. DRIP LEGS SHALL BE FULL LINE SIZE ON PIPES THROUGH 4" AND AT LEAST 4", BUT NOT LESS THAN HALF LINE SIZE OVER 4". DRIP LEGS SHALL BE 12" MINIMUM LENGTH, CAPPED WITH A REDUCER TO A DRAIN VALVE.

BRANCH CONNECTIONS
MAKE BRANCH CONNECTIONS WITH STANDARD TEE OR CROSS FITTINGS OF THE TYPE REQUIRED FOR THE SERVICE UNLESS OTHERWISE SPECIFIED HEREIN OR DETAILED ON THE DRAWINGS.
AT THE OPTION OF THE CONTRACTOR, BRANCH CONNECTIONS FROM HEADERS AND MAINS MAY BE CUT INTO BLACK STEEL PIPE USING FORGED WELD_ON FITTINGS.
USE OF FORGED WELD_ON FITTINGS IS ALSO LIMITED AS FOLLOWS:
MUST HAVE AT LEAST SAME PRESSURE RATING AS THE MAIN.
HEADER OR MAIN MUST BE 2_1/2" OR OVER.
BRANCH LINE IS AT LEAST TWO PIPE SIZES UNDER HEADER OR MAIN SIZE.
REDUCERS ARE GENERALLY NOT SHOWN. WHERE PIPE SIZES CHANGE AT TEE, THE TEE SHALL BE THE SIZE OF THE LARGEST PIPE SHOWN CONNECTING TO IT.
ALL BRANCH PIPING CONNECTIONS FOR NATURAL GAS SHALL TAKE OFF ON THE TOP OR ON THE SIDE OF THE MAIN.

JOINING OF PIPE
THREADED JOINTS:
REAM PIPE ENDS AND REMOVE ALL BURRS AND CHIPS.
PROTECT PLATED PIPE AND VALVE BODIES FROM WRENCH MARKS WHEN MAKING UP JOINTS.
APPLY TEFLON TAPE TO MALE THREADS.

FLANGED JOINTS:
STEEL FLANGES SHALL BE RAISED FACE.
BOLTING FOR SERVICES UP TO 500°F SHALL BE ASTM A307 GRADE B WITH SQUARE HEAD BOLTS AND HEAVY HEXAGONAL NUTS CONFORMING TO ANSI B18.2.1 "SQUARE AND HEX BOLTS" AND B18.2.2 "SQUARE AND HEX NUTS".
TORQUE BOLTS IN AT LEAST THREE PASSES, TIGHTENING TO 1/3, 2/3, AND FINAL TORQUE IN A CROSS PATTERN WITH AN INDICATING TORQUE WRENCH FOR EQUAL TENSION IN ALL BOLTS.
GASKETS FOR FLAT FACE FLANGES SHALL BE FULL FACE TYPE. GASKETS FOR RAISED FACED FLANGES SHALL CONFORM TO REQUIREMENTS FOR "GROUP I GASKETS" IN ANSI B16.5.
UNLESS OTHERWISE SPECIFIED GASKETS SHALL MEET THE FOLLOWING REQUIREMENTS:
GASKET MATERIAL AND THICKNESS APPROVED BY MANUFACTURER FOR INTENDED SERVICE, CHEMICAL COMPATIBILITY, PIPE SYSTEM TEST PRESSURE, AND OPERATING TEMPERATURE RANGE.
MAXIMUM PRESSURE RATING OF AT LEAST 250 PSIG.
MINIMUM TEMPERATURE RATING: -10°F-.
MAXIMUM TEMPERATURE RATING OF AT LEAST 170°F FOR WATER SYSTEMS OPERATING 140°F AND LESS

WELDED JOINTS:
WELDING OF ALL PIPE JOINTS, BOTH AS TO PROCEDURES AND QUALIFICATION OF WELDERS, SHALL BE IN ACCORDANCE WITH SECTION IX, ASME "BOILER & PRESSURE VESSEL CODE" UNLESS LOCAL CODES TAKE PRECEDENCE.
FURNISH CERTIFICATES QUALIFYING EACH WELDER TO THE OWNER'S REPRESENTATIVE PRIOR TO START OF WORK.
THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REQUIRE QUALIFYING DEMONSTRATION, AT THE CONTRACTOR'S EXPENSE, OF ANY WELDERS ASSIGNED TO THE JOB.
ENDS OF PIPE AND FITTINGS TO BE JOINED BY BUTT-WELDING SHALL BE BEVELED, CLEANED TO BARE METAL AND INTERNAL DIAMETERS ALIGNED BEFORE TACK WELDING.

FUSION WELD
MAKE ALL FIELD CUTS OF PIPE SQUARE AND TRUE USING A PIPE CUTTER DESIGNED FOR PLASTIC PIPE.
MAKE SURE PROPER HEATING HEADS ARE USED FOR MALE AND FEMALE SITUATIONS.
BEVEL THE LEADING EDGE OF PIPE SECTION WITH A 45° CHAMFER.
UTILIZE A FUSION WELDING TOOL RECOMMENDED AND/OR PROVIDED BY THE PIPE AND FITTING MANUFACTURER.
NOT RECOMMENDED FOR TEMPERATURES BELOW 40°F.
FOLLOW THE MANUFACTURER'S COLD WEATHER INSTALLATION PROCEDURES.
ALL INSTALLERS SHALL UNDERGO TRAINING PROVIDED BY THE MANUFACTURER OR MANUFACTURER'S REPRESENTATIVE.
FOLLOW ALL MANUFACTURERS' INSTALLATION INSTRUCTIONS.

PAINTING EXPOSED PIPE
PAINT ALL OUTDOOR EXPOSED NATURAL GAS PROPANE PIPING THE COLOR SELECTED BY OWNER OR ARCHITECT/ENGINEER.

SERVICE CONNECTIONS
PROVIDE NEW GAS SERVICE COMPLETE WITH GAS METER AND REGULATORS. VERIFY GAS SERVICE PRESSURE WITH THE UTILITY COMPANY.

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ISSUE DATES

No.	Date	Description
1	4/7/22	PLAN CHECK

SHEET TITLE
PLUMBING SPECIFICATIONS

Project No. : 212308
Date: 4/7/2022
Drawn: DSA
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