

PROJECT TEAM DIRECTORY	
OWNER	
COMPANY NAME:	McWHIRTER REALTY PARTNERS, LLC
CONTACT NAME:	MATT McWHIRTER
ADDRESS:	3100 PINEBROOK RD., SUITE 2600A PARK, PARK CITY, UT 84098
PHONE:	(770) 757-0030
FAX:	---
EMAIL:	MDM@MCWREALTY.COM
ARCHITECT	
COMPANY NAME:	LINGLE DESIGN GROUP
CONTACT NAME:	MICHAEL PUCKETT
ADDRESS:	1764 BLAKE ST., DENVER, CO 80202
PHONE:	(303) 974-5873
FAX:	(815) 369-4495
EMAIL:	MPUCKETT@LINGLEDESIGN.COM
MEP ENGINEER	
COMPANY NAME:	CASE ENGINEERING INC
CONTACT NAME:	LUKE WILD
ADDRESS:	796 MERUS COURT, ST. LOUIS, MO 63026
PHONE:	(636) 349-1600
FAX:	(636) 349-1730
EMAIL:	LWILD@CASEENGINEERINGINC.COM
STRUCTURAL ENGINEER	
COMPANY NAME:	CASE ENGINEERING INC.
CONTACT NAME:	ARDIE MANSOURI
ADDRESS:	796 MERUS COURT, ST. LOUIS, MO 63026
PHONE:	(636) 349-1600
FAX:	(636) 349-1730
EMAIL:	AMANSOURI@CASEENGINEERINGINC.COM
CIVIL ENGINEER	
COMPANY NAME:	BURRELL CONSULTING GROUP, INC.
CONTACT NAME:	JERRY APLASS
ADDRESS:	1001 ENTERPRISE WAY, SUITE 100 ROSEVILLE, CA 95678-3002
PHONE:	(916) 783-8898
FAX:	(916) 783-8222
EMAIL:	JAPLASS@BURRELLCG.COM

SHERWIN WILLIAMS

3510 TRUXEL RD,
SACRAMENTO CA

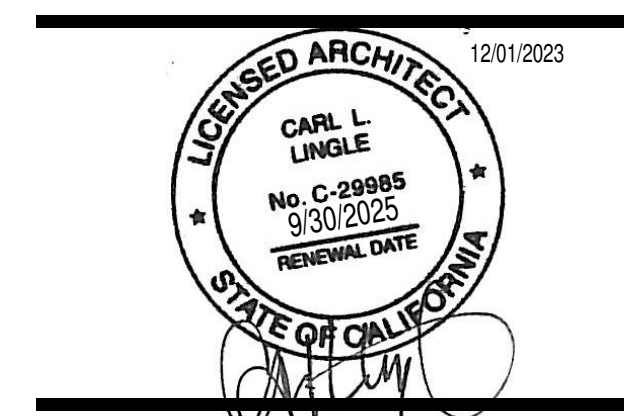


Sheet Number	Sheet Name	Current Revision
GENERAL		
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G004	California GBC Compliance Checklist	
G005	California GBC Compliance Checklist	
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Sheet Number	Sheet Name	Current Revision
STRUCTURAL		
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E101	Electrical Specifications	
E200	Lighting Plan	
E300	Power Plan	
E400	Electrical One Line Diagram	
E500	Comcheck	

LINGLE DESIGN GROUP, INC.
158 WEST MAIN STREET
LENA, IL 61048
815.369.9155
1764 BLAKE ST
DENVER, CO 80202
303.974.5875
WWW.LINGLEDESIGN.COM

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PROJECT #: 23-231
DRAWN BY: MW
CHECKED BY: MP

CONSTRUCTION PHASE NOTE	VICINITY MAP	STATEMENT OF COMPLIANCE	SYMBOL LEGEND	CODE / BUILDING INFORMATION
<p>ARCHITECT'S DESIGN WITHOUT CONSTRUCTION PHASE SERVICES</p> <p>SINCE DIRECT CONSTRUCTION OBSERVATIONS AND REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INCLUDED AS PART OF THE ARCHITECT'S BASIC SERVICES, IT IS UNDERSTOOD THAT SUCH RESPONSIBILITIES WILL BE ASSUMED BY OTHERS. LINGLE DESIGN GROUP, INC. AVAILS ITSELF TO THE CLIENT, THE CONTRACTOR, AND ANY OTHER PARTIES AS NECESSARY (VIA TELEPHONE, FAX, AND EMAIL) IN ORDER TO ASSIST IN PROVIDING CLARIFICATIONS OR RESOLVING ISSUES AND PROBLEMS THAT MAY ARISE. ALTHOUGH MANY ISSUES CAN BE EASILY ADDRESSED WITHOUT THE ARCHITECT'S INVOLVEMENT, THERE ARE TIMES WHEN PARTICIPATION IS ADVISABLE. DETERMINATION OF WHEN INVOLVEMENT IS APPROPRIATE IS LEFT TO THE PROFESSIONAL DISCRETION OF THE CONTRACTOR. IT IS UNDERSTOOD THAT THE CLIENT AND/OR THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR INTERPRETATION OF THE DRAWINGS, AND ANY OTHER SUPPLEMENTAL INFORMATION, AND WHEN THE ARCHITECT IS DENIED THE OPPORTUNITY TO PROVIDE CLARIFICATIONS OR PARTICIPATE IN CHANGES TO THE DESIGN OR THE RESOLUTION OF ISSUES OR PROBLEMS, ALL PARTIES WAIVE ANY CLAIMS AGAINST THE ARCHITECT THAT MAY BE IN ANY WAY CONNECTED THERETO. LINGLE DESIGN GROUP, INC. IS HELD HARMLESS FROM LOSS, CLAIM, OR COSTS ARISING OR RESULTING FROM MODIFICATIONS OR CHANGES MADE TO THE DESIGN (WITHOUT THE KNOWLEDGE OF THE ARCHITECT) DUE TO CONDITIONS OR CIRCUMSTANCES (ANTICIPATED OR NOT) BEYOND THE ARCHITECT'S CONTROL.</p>	<p>PROJECT LOCATION</p> <p>NOTE: CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID, TO CONFIRM FIELD CONDITIONS FOR DUCTWORK RUNS, EXHAUST AND CHASE LOCATIONS.</p>	<p>I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH ALL APPLICABLE LAWS, CODES & ORDINANCES.</p> <p>SIGNATURE: </p> <p>ARCHITECT</p> <p>REGISTRATION NO.: C-29985</p> <p>DATE: 30 SEP 2025</p>	<p>SYMBOL LEGEND</p> <p>WALL SECTION MARKER: # SHEET NUMBER</p> <p>BUILDING SECTION MARKER: # SHEET NUMBER</p> <p>ELEVATION MARKER: # SHEET NUMBER</p> <p>DETAIL MARKER: # SHEET NUMBER</p> <p>FINISH TYPE MARK: XX-X</p> <p>DOOR TYPE: ###</p> <p>WINDOW TYPE: #</p> <p>ELEVATION MARKER: Name Elevation</p>	<p>CODE / BUILDING INFORMATION</p> <p>BUILDING: 2022 CALIFORNIA BUILDING CODE</p> <p>MECHANICAL: 2022 CALIFORNIA MECHANICAL CODE</p> <p>ELECTRICAL: 2022 CALIFORNIA ELECTRICAL CODE</p> <p>PLUMBING: 2022 CALIFORNIA PLUMBING CODE</p> <p>FIRE: 2022 CALIFORNIA FIRE CODE</p> <p>FUEL GAS: 2022 CALIFORNIA FUEL GAS CODE</p> <p>ENERGY: 2022 CALIFORNIA ENERGY CODE</p> <p>2022 CALIFORNIA GREEN BUILDINGS STANDARDS CODE</p> <p>ACCESSIBILITY: 2017 ICC/ANSI A117.1 2022 CBC CHAPTER 11B</p> <p>BUILDING INFORMATION:</p> <p>CONSTRUCTION TYPE: V-B</p> <p>SCOPE OF WORK: NEW CONSTRUCTION</p> <p>GROSS AREA: 4,215 SQ. FT.</p> <p>BUILDING HEIGHT / STORIES: 24'-0" - 1 STORY</p> <p>FIRE PROTECTION: SPRINKLERED & ALARM SYSTEM - DEFERRED SUBMITTAL</p> <p>INTERIOR FINISHES: CLASS A FLAME SPREAD RATING</p> <p>NUMBER OF EMPLOYEES: 4</p> <p>OCCUPANCY: M (MERCANTILE) - OCCUPANT LOAD: 71</p>

PERMIT SET - 12/01/2023

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ABBREVIATIONS

# POUND OR NUMBER	C.M. CONTSTRUCTION MANAGER	DN DOWN	FEC FIRE EXTINGUISHER	HTG. HEATING	M.H. MANHOLE	OFOI OWNER FURNISHED / OWNER INSTALLED	R.A. RETURN AIR	SLP. SLOPE	TINT TINTED
(E) EXISTING	C.M.U. CONCRETE MASONRY UNIT	DW DISHWASHER	CABINET	HVAC HEATING / VENTILATION / AIR CONDITIONING	M.O. MASONRY OPENING	MASONRY OVERHEAD	R.D. ROOF DRAIN	SPEC. SPECIFICATION	TMPD TEMPERED
(N) NEW	C.J. CEILING JOIST	DWG. DRAWING	FIN. FINISH	I.D. INSIDE DIAMETER	M.A.S. MASONRY	OH. OVERHEAD	R.H. RIGHT HAND	SPKR SPEAKER	TOL TOLERANCE
+/- PLUS OR MINUS	CJ CLEANOUT	E. EAST	FIXT. FIXTURE	IN. INCH	MATL. MATERIAL	OPG. OPENING	R.O. ROUGH OPENING	SQ. SQUARE	TYP. TYPICAL
@ AT	CJ CONTROL JOINT	E.P. ELECTRIC PANEL	FLOUR. FLOURESCENT	INSUL. INSULATE / INSULATION	MAX. MAXIMUM	OPP. OPPOSITE	R.O.W. RIGHT OF WAY	SS. STAINLESS STEEL	U.N.O. UNLESS NOTED OTHERWISE
ø DIAMETER	CL CENTER LINE	E.W. EACH WAY	FLR. FLOOR	INT. INTERIOR	MECH. MECHANICAL	OPAQUE	RAD. RADIUS	SS. SERVICE SINK	UBC UNIFORM BUILDING CODE
A.B. ANCHOR BOLT	CLG. CEILING	EA EACH	FND. FOUNDATION	INV. INVERT	MEMB. MEMBRANE	P.L. PROPERTY LINE	RB RUBBER BASE	STD. STANDARD	UNFIN. UNFINISH(ED)
A.C.T. ACOUSTICAL (CLG) TILE	CLR. CLEAR	EJ EXPANSION JOINT	FTG. FOOTING	J-BOX JUNCTION BOX	MFR. MANUFACTURE(ER)(ING)	P.T. PRESSURE TREATED	REF. REFERENCE	STL. STEEL	V.B. VINYL BASE
A.F.F. ABOVE FINISH FLOOR	COL. COLUMN	EL. ELEVATION	FUT. FUTURE	JST. JOIST	MIN. MINIMUM	PARTN PARTITION	REFR. REFRIGERATOR	STOR. STORAGE	V.C.T. VINYL COMPOSITION TILE
A.H.U. AIR HANDLING UNIT	COMP. COMPOSITE	ELEC. ELECTRICAL	G.C. GENERAL CONTRACTOR	JT. JOINT	MISC. MISCELLANEOUS	PCF POUNDS PER CUBIC FOOT	REINF. REINFORCED	STRUC STRUCTURAL	V.T.R. VENT THROUGH ROOF
A.S.S. AUTOMATIC SPRINKLER SYSTEM	CONC. CONCRETE	EMER. EMERGENCY	G.I. GALVANIZED IRON	KO. KNOCKOUT	MOD. MODULAR / MODULE	PERF PERFORATED	REQD. REQUIRED	SYM. SYMETRICAL	VERT. VERTICAL
A/C AIR CONDITIONING	COND. CONDENSING UNIT	EQ. EQUAL	GA. GAUGE	KPL. KICKPLATE	MTD. MOUNTED	PFL POUNDS PER LINEAR FOOT	RESIL. RESILIENT	SY.S SYSTEM	W. WEST
ABV. ABOVE	CONN. CONNECTION	EQUIP. EQUIPMENT	GALV. GALVANIZED	L. LENGTH	MTFR METAL FURRING	PL PLATE	RET. RETURN	T&G TONGUE AND GROOVE	W.B. WEATHER BARRIER
ACOUS. ACOUSTICAL	CONSTR. CONSTRUCTION	EXIS. EXISTING	GL. GLASS / GLAZING	L.B. LAG BOLT	MTL. METAL	PLAM PLASTIC LAMINATE	REV REVISION	T. TREAD	W.C. WATER CLOSET
ALUM. ALUMINUM	CONT. CONTINUOUS / CONTINUE	EXT. EXTERIOR	GND. GROUND	L.H. LEFT HAND	MUL. MULLION	PLBG. PLASTER	RFG. ROOFING	T.B.D. TO BE DETERMINED	W.H. WATER HEATER
APPROX. APPROXIMATE	CONTR. CONTRACTOR	F.F. FINISH FLOOR	GR. GRADE / GRADING	L.L. LIVE LOAD	N. NORTH	PLWD. PLYWOOD	RM. ROOM	T.O.B. TOP OF BEAM	W.M. WIRE MESH
ARCH. ARCHITECT(URAL)	CU FT CUBIC FOOT	F.H. FIRE HYDRANT	GW. GYPSUM WALL BOARD	L.V.L. LAMINATED VENEER LUMBER	N.I.C. NOT IN CONTRACT	PRKG. PARKING	R.VRS. REVERSE	T.O.C. TOP OF CURB / CONCRETE	W.R. WATER RESISTANT
B.M. BENCH MARK	CU YD CUBIC YARD	F.L. FLOW LINE	GYP BD GYPSUM BOARD	H.B. HOSE BIB	N.T.S. NOT TO SCALE	PSF POUNDS PER SQUARE FOOT	S. SOUTH	T.O.P. TOP OF PARAPET	W.T. WALL TILE
B.O.C. BOTTOM OF CURB	D.F. DRINKING FOUNTAIN	F.O.C. FACE OF CONCRETE	GYP GYPSUM	H.C. HOLLOW CORE	NO. NUMBER	PSI POUNDS PER SQUARE INCH	S.A.T. SUSPENDED ACOUSTICAL TILE	T.O.S. TOP OF SHEATHING	W.W.F. WELDED WIRE FABRIC
BD BOARD	D.S. DOWNSPOUT	F.O.F. FACE OF FINISH	H. HOSE	H.M. HOLLOW METAL	NOM. NOMINAL	PTD. PAINT(ED)	S.C. SOLID CORE	T.O.W. TOP OF WALL	W/W WITH
BLDG. BUILDING	DBL. DOUBLE	F.O.M. FACE OF MASONRY	H.C. HOLLOW CORE	H.O.D. HOLLOW OVERHEAD DOOR	O.A. OVERALL	PVC POLYVINYL CHLORIDE	S.D. STORM DRAIN	T.S.T. TOP OF STEEL	W/O WITHOUT
BLK. BLOCK(ING)	DEPT. DEPARTMENT	F.O.S. FACE OF STUD	H.M. HOLLOW METAL	O.FCI OWNER FURNISHED / CONTRACTOR INSTALLED	O.C. ON CENTER	PVMT. PAVEMENT	SCHED. SCHEDULE	T.T. TENANT FURNISHED / CONTRACTOR INSTALLED	W.D. WOOD
BLW. BELOW	DET. DETAIL	F.S.R. FIRE SPRINKLER RISER	H.D.R. HEADER	O.FD. OVERFLOW DRAIN	O.D. OUTSIDE DIAMETER	Q.T. QUARRY TILE	SECT. SECTION	TFTI TENANT FURNISHED / TENANT INSTALLED	WSCT. WAINSCOT
BRG. BEARING	DIA. DIAMETER	FIS FLOOR SINK	HDW. HARDWARE		O.H.D. OVERHEAD DOOR	QTY. QUANTITY	SF SQUARE FEET	THK. THICK(NESS)	
BRG. PL. BEARING PLATE	DIAG. DIAGONAL	FCO FLOOR CLEANOUT	HDWD. HARDWOOD		OFCI OWNER FURNISHED / CONTRACTOR INSTALLED	R. RISER	SHT. SHEET	THRES THRESHOLD	
BS BUILDING SECTION	DISP. DISPENSER / DISPOSAL	FD FLOOR DRAIN	HOR. HORIZONTAL		OFD. OVERFLOW DRAIN		SHTG. SHEATHING		
	DL DEAD LOAD	FE FIRE EXTINGUISHER	HT. HEIGHT				SIM. SIMILAR		

RETAIL PAINT STORE

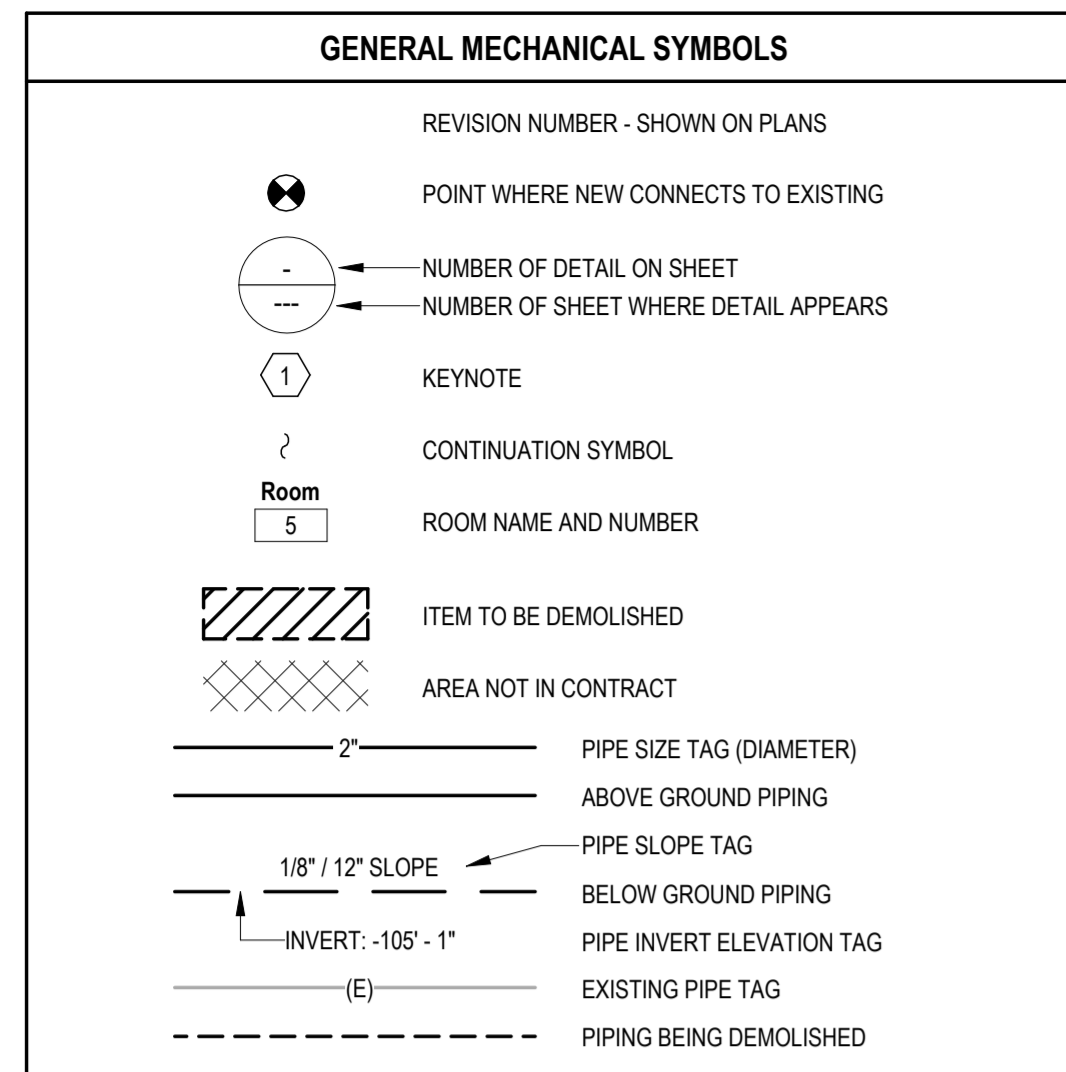
Owner

STORE #: XXXX

ADDRESS: 3510 TRUXEL RD, SACRAMENTO CA

SHEET TITLE: Cover Sheet

SHEET NUMBER: G001



ABBREVIATIONS

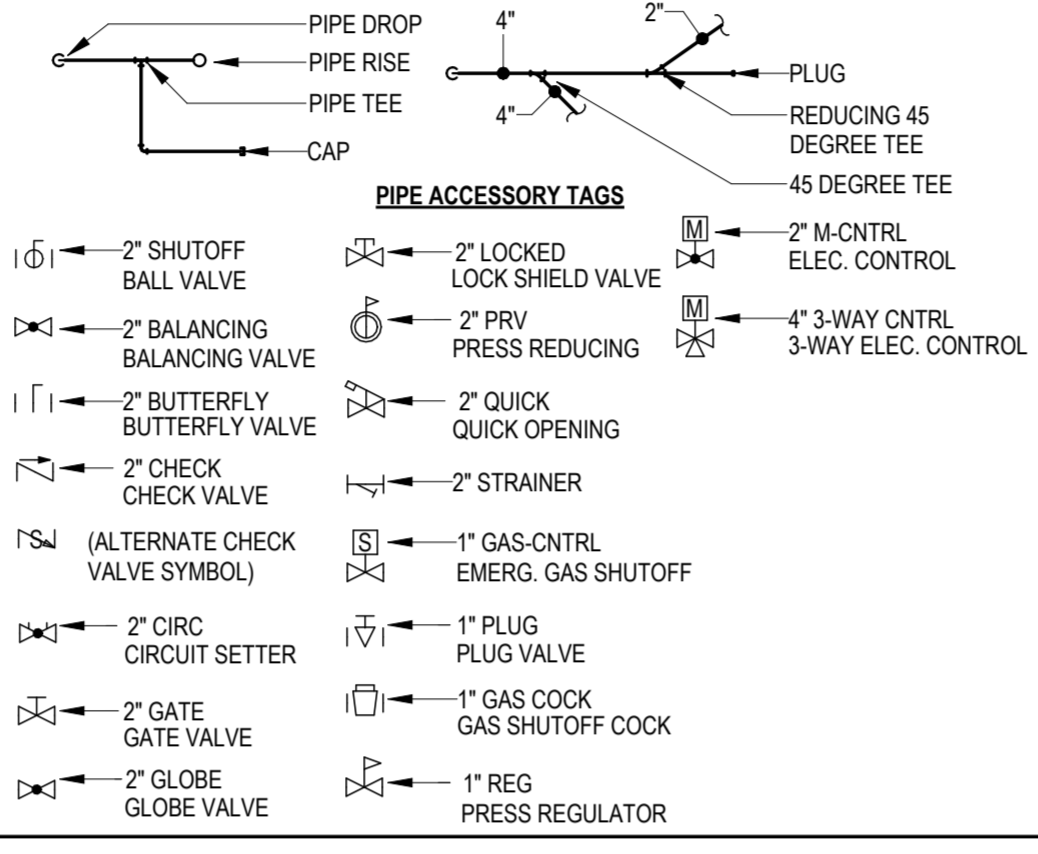
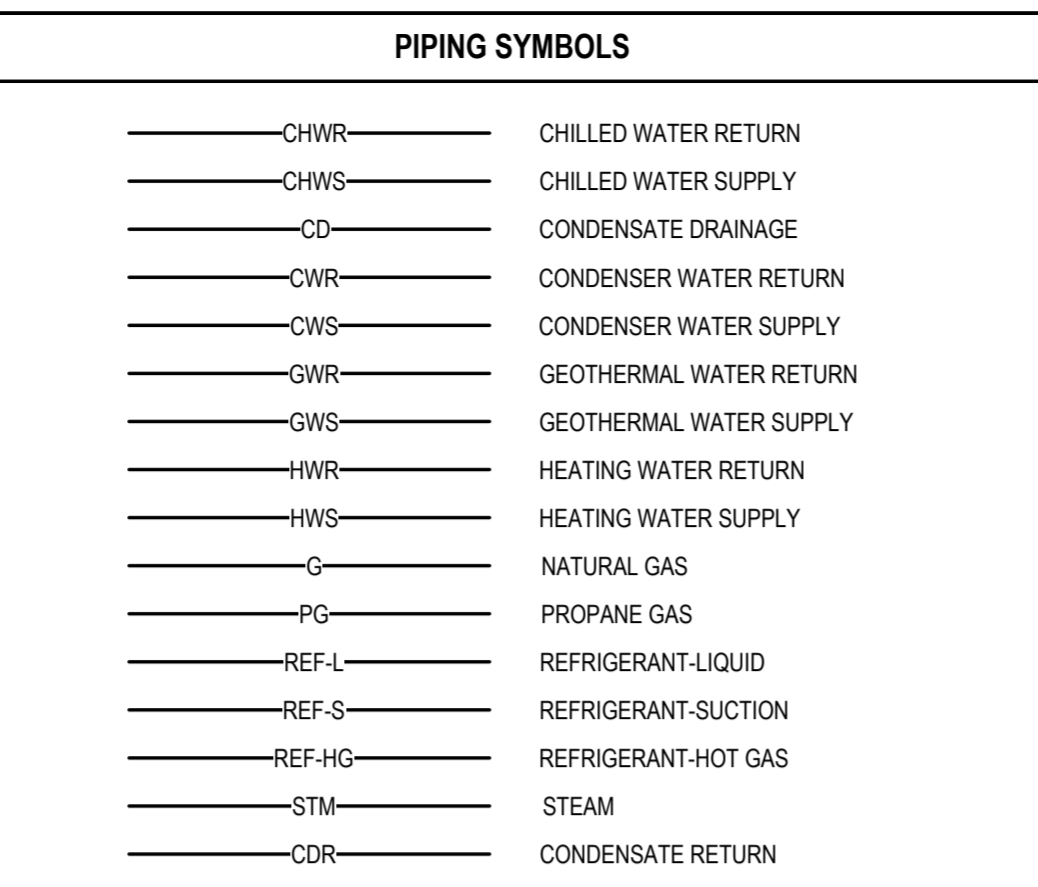
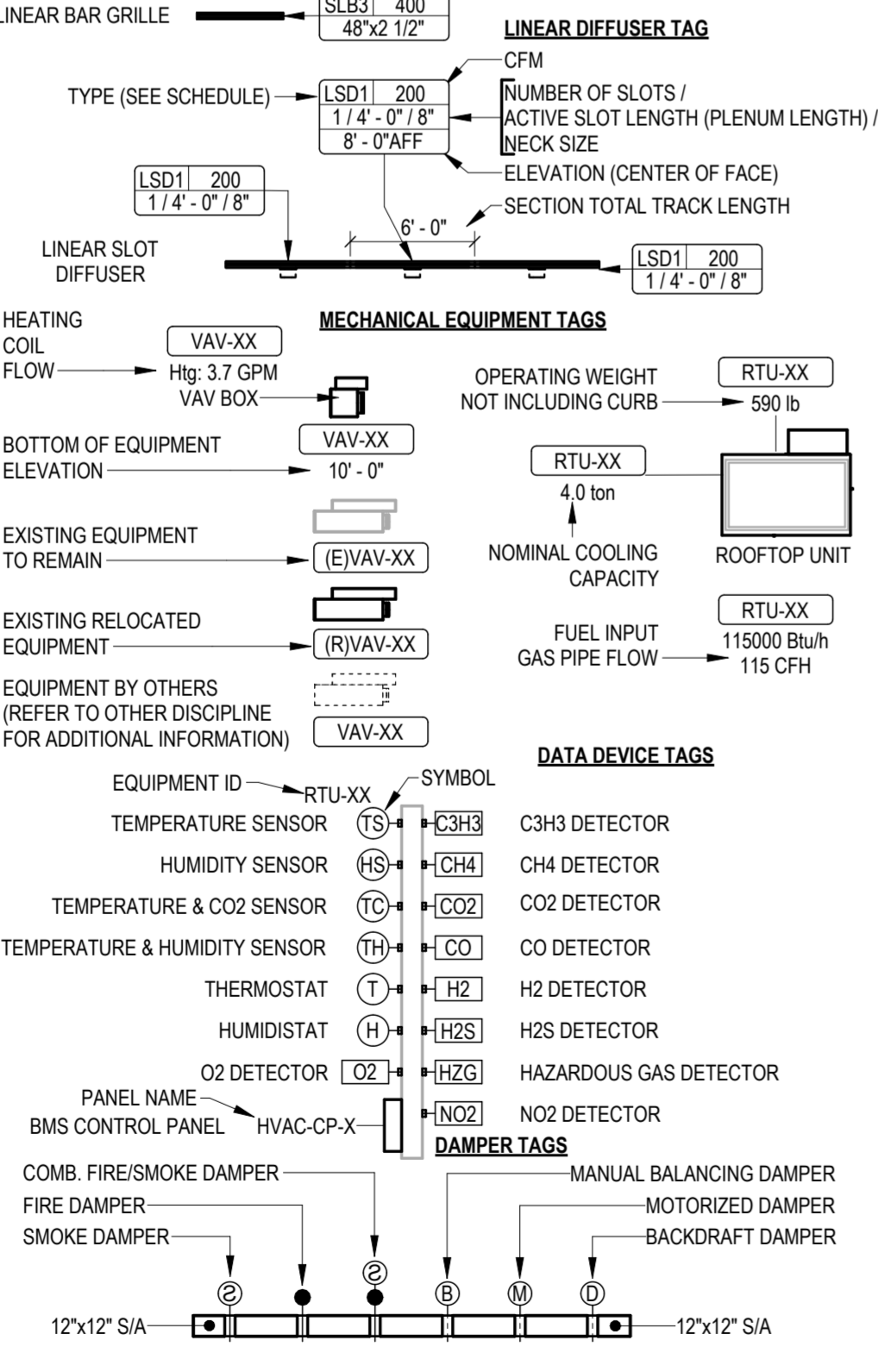
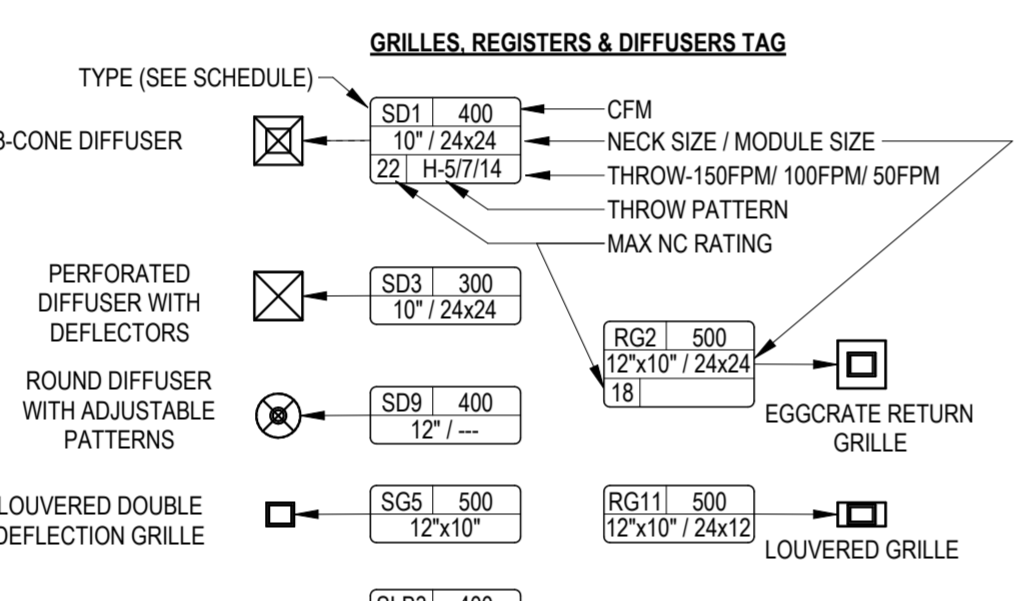
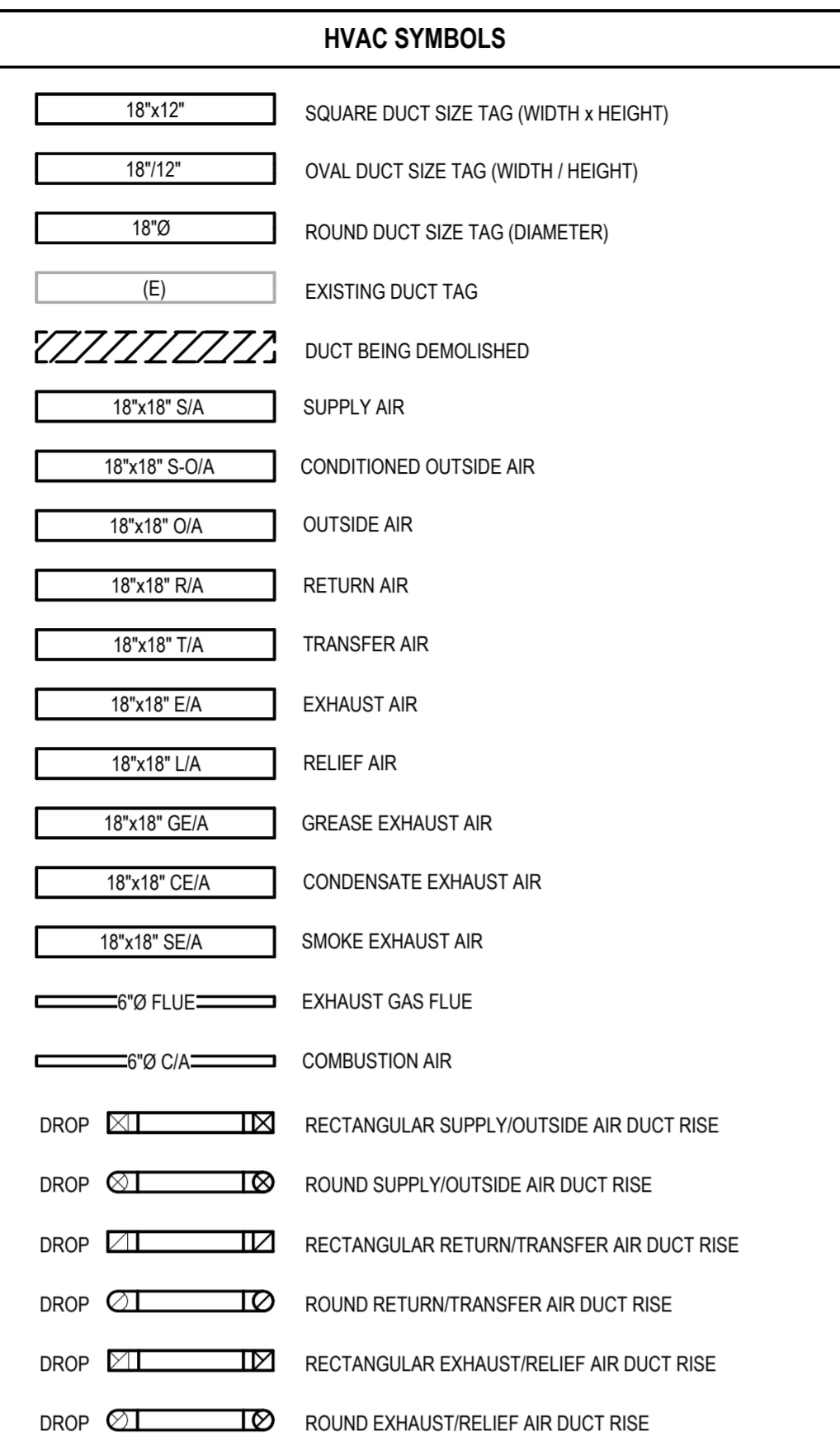
Ø	ROUND	LVR	LOUVER
ABV	ABOVE	LWT	LEAVING WATER TEMPERATURE
AC	AIR CONDITIONING	M/A	MIXED AIR
AD	AREA DRAIN	MAX	MAXIMUM
ADD	ADDENDUM	MBH	ONE THOUSAND BTU PER HOUR
AFF	ABOVE FINISHED FLOOR	MCF	ONE THOUSAND CUBIC FEET
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	MD	MOTORIZED DAMPER
ALT	ALTERNATE	MECH	MECHANICAL
AP	ACCESS PANEL	MFR	MANUFACTURER
ARCH	ARCHITECT/ARCHITECTURAL	MIN	MINIMUM
BFF	BELOW FINISHED FLOOR	MISC	MISCELLANEOUS
BLW	BELOW	MTR	MOTOR
BTU	BRITISH THERMAL UNITS	MUA	MAKE-UP/AIR
BTUH	BRITISH THERMAL UNITS PER HOUR	NC	NOISE CRITERIA
CAP	CAPACITY	NC	NORMALLY CLOSED
CB	CATCH BASIN	NIC	NOT IN CONTRACT
CFM	CUBIC FEET PER MINUTE	NO	NUMBER
CLG	CEILING	NO	NORMALLY OPEN
CO	CLEAN OUT	NTS	NOT TO SCALE
CW	COLD WATER	O	OXYGEN
D	DEGREE	O/A	OUTSIDE AIR
DB	DRY BULB	ORD	OVERFLOW ROOF DRAIN
DIA	DIAMETER	PD	PRESSURE DROP
DN	DOWN	PIV	POST INDICATOR VALVE
DWL	DISTILLED WATER	PLBG	PLUMBING
EA	EACH	PRESS	PRESSURE
EAT	ENTERING AIR TEMPERATURE	PRV	PRESSURE REDUCING VALVE
ELEC	ELECTRICAL	PSI	POUNDS PER SQUARE INCH
EQUIP	EQUIPMENT	PSIG	POUNDS PER SQUARE INCH GAUGE
EWC	ELECTRIC WATER COOLER	PWR	POWER
EWT	ENTERING WATER TEMPERATURE	R	DUCT RISER
E/A	EXHAUST AIR	R/A	RETURN AIR
EXIST	EXISTING	RCP	RADIANT CEILING PANEL
F	DEGREES FAHRENHEIT	RD	ROOF DRAIN
FCO	FLOOR CLEAN OUT	REC	RECESSED
FD	FLOOR DRAIN	RED	REDUCER
FDC	FIRE DEPARTMENT CONNECTION	RH	RELATIVE HUMIDITY
FL	FLOOR	RLA	RELIEF AIR
FO	FUEL OIL	RM	ROOM
FOV	FUEL OIL VENT	RP	REVOLUTIONS PER MINUTE
FOR	FUEL OIL RETURN	RW	RAIN WATER
FOS	FUEL OIL SUPPLY	SF	SQUARE FOOT
FPM	FEET PER MINUTE	S/A	SUPPLY AIR
FS	FLOOR SINK	SAN	SANITARY
FT	FOOT/FEET	SF	SQUARE FOOT
FTR	FIN TUBE RADIATION	SD	SMOKE DAMPER
GAL	GALLON	SM	SURFACE MOUNT
GF	GAS-FIRED	SP	STANDPIPE
GC	GENERAL CONTRACTOR	SP	STATIC PRESSURE
GPM	GALLONS PER MINUTE	STM	STEAM
GW	GREASE WASTE	T	THERMOSTAT
HB	HOSE BIB	TD	TEMPERATURE DROP
HP	HORSE POWER	TDR	TRENCH DRAIN
HTG	HEATING	TEMP	TEMPERATURE
HTR	HEATER	TYP	TYPICAL
HW	HOT WATER	UG	UNDERGROUND
HYD	HYDRANT	VAC	VACUUM
ID	INDIRECT	V	VENT
IN	INCH	VAV	VARIABLE AIR VOLUME
INV	INVERT	VAV	VENTILATION
LB	POUND	VTR	VENT THROUGH ROOF
LBHR	POUNDS PER HOUR	W	WASTE
LAT	LEAVING AIR TEMPERATURE	WB	WET BULB
LP	LOW PRESSURE	WCO	WALL CLEAN OUT
LPG	LIQUEFIED PETROLEUM GAS	WH	WALL HYDRANT

EQUIPMENT ABBREVIATIONS

AC	AIR CONDITIONING UNIT	ET	EXPANSION TANK
ACCU	AIR COOLING CONDENSING UNIT	EVH	ELECTRIC WATER HEATER
AHU	AIR HANDLING UNIT	FCU	FAN COIL UNIT
AS	AIR SEPARATOR	FP	FIRE PUMP
B	BOILER	GI	GREASE INTERCEPTOR
CH	CHILLER	GRV	GRAVITY ROOF VENTILATOR
CT	COOLING TOWER	HWP	HEATING WATER PUMP
CUH	CABINET UNIT HEATER	HRU	HEAT RECOVERY UNIT
CHWP	CHILLED WATER PUMP	HRV	POWER ROOF VENTILATOR
DBP	DOMESTIC WATER BOOSTER PUMP	RE	RETURN/EXHAUST FAN
DC	DUCT MOUNTED COIL	RTU	ROOFTOP UNIT
DCP	DOMESTIC WATER CIRCULATING PUMP	SP	SUMP PUMP
DEF	EXHAUST FAN	SH	SUIT HEATER
EDC	ELECTRIC DUCT COIL	WH	WATER HEATER

NOTE

ALL GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET. THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THIS SET OF DRAWINGS.



- ### MECHANICAL GENERAL NOTES
- DO NOT SCALE DRAWINGS.
 - CONTRACTOR SHALL COORDINATE WORK INDICATED HEREON W/ PLUMBING, ELECTRICAL & FIRE PROTECTION SECTIONS. SUBMIT 1/2" SCALE SHOP DRAWINGS FOR DUCT SYSTEMS, DIMENSIONED TO INCORPORATE THE WORK OF OTHER TRADES. INDICATE SPACES RESERVED FOR FIRE SPRINKLER, PIPING & ELECTRICAL CONDUIT MAINS.
 - UNLESS NOTED OTHERWISE, BRANCH DUCTS TO INDIVIDUAL TERMINALS, DIFFUSERS AND GRILLES SHALL BE SAME SIZE AS NECK INLET.
 - PROVIDE EQUIPMENT SCHEDULED OR INDICATED ON THE DRAWINGS BUT NOT INCLUDED WITHIN THE SPECIFICATIONS. INSTALLATION SHALL CONFORM TO MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE CODES. PROVIDE SUBMITTALS.
 - ELECTRICAL CHARACTERISTICS OF MECHANICAL EQUIPMENT SHALL BE VERIFIED WITH ELECTRICAL DRAWINGS PRIOR TO EQUIPMENT ORDER RELEASE. ADDITIONAL ELECTRICAL WORK RESULTING FROM EQUIPMENT SUBSTITUTION IS THE RESPONSIBILITY OF THIS CONTRACTOR.
 - LENGTH OF FLEXIBLE DUCTWORK SHALL BE LIMITED TO 5'-0" MAX. HORIZONTAL RUN WITH ONLY ONE 90 DEG. ELBOW PERMITTED. SECURE FLEXIBLE DUCTWORK WITH SCREWS & DRAW BANDS.
 - DUCT SIZES INDICATED ARE NET INSIDE CLEAR DIMENSIONS.
 - PROVIDE CEILING OPERATIONS FOR INACCESSIBLE M.V.D.'S WHERE INDICATED, EQUAL TO YOUNG REGULATOR, REMOTE FEAR OPERATED, WITH CEILING ESCUTCHEON.
 - ITEM DESIGNATIONS INDICATED HEREON ARE FOR PURPOSES OF THESE DOCUMENTS ONLY. CONTRACTOR SHALL VERIFY W/ OWNERS REPRESENTATIVE ACTUAL "TAGGING" INFORMATION TO BE PROVIDED FOR EACH ITEM OF MECHANICAL EQUIP. PRIOR TO NAMEPLATE ORDER RELEASE.
 - CEILING DIFFUSERS SHALL BE 36" MIN. FORM CEILING MOUNTED SMOKE DETECTORS. COORD. W/ ELECTRICAL DIVISION.
 - SECURE DIFFUSERS & GRILLES TO T-BAR CEILINGS, WHERE APPLICABLE. SUBMIT SHOP DWG. FOR APPROVAL PRIOR TO BEGIN WORK.
 - REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ACTUAL LOCATION OF GRILLES & DIFFUSERS IN CEILING, AS WELL AS ACCESS DOORS.
 - COORDINATE EQUIP. DIMENSIONS AND LAYOUT W/ PLUMBING SECTION WHERE FLOOR SINKS ARE INDICATED.
 - PIPES PASSING THRU FIRE RATED WALLS & FLOORS SHALL BE SEALED WITH U.L. LISTED MATERIAL EQUAL TO 3M FIRE BARRIER, CAULK OR PUTTY. SEALANT'S RATING SHALL MATCH THE RATING OF THE ASSEMBLY.
 - PROVIDE VALVE TAGS AND PIPE IDENTIFICATION BANDS. TAGS SHALL BE BRASS W/ CHAIN. IDENTIFICATION BANDS SHALL BE LOCATED EVERY 25 FEET AND ON EITHER SIDE OF INTERMEDIATE BARRIER.
 - PROVIDE 18" X 18" MIN. ACCESSIBLE CEILINGS AND WALLS FOR EQUIP. REQUIRING ACCESS OR ADJUSTMENT. COORDINATE LOCATIONS AND SUBMIT TO ARCHITECT FOR APPROVAL PRIOR TO BEGINNING WORK.
 - TURNING VANE RUNNERS SHALL HAVE A VANE IN EVERY SLOT IN STRICT CONFORMANCE WITH MFR. 'S INSTRUCTIONS AND SMACNA DUCT CONSTRUCTION STANDARDS.
 - VERIFY FIT DUCTWORK AND PIPING PRIOR TO FABRICATION.
 - INSULATED PIPING EXPOSED TO VIEW (THROUGHOUT THE FACILITY), SHALL BE COVERED FINISHED W/ PVC JACKET EQUAL TO MANVILLE PVC/ PERMA-WELD PIPE JACKETING SYSTEM USING 30 MIL THICK JACKET. FITTINGS, FLANGES VALVES & ACCESSORIES SHALL BE JACKETED. INSTALL PER MFRS. INSTRUCTIONS W/ SEAM ON TOP OF PIPE SO AS NOT TO BE VISIBLE FROM OCCUPIED SPACE.
 - DUCTWORK LOCATED BEL. 7'-6" IN MECHANICAL ROOMS SHALL BE EQUIPPED W/ PADDING MATERIAL ON ALL CORNERS, EDGES & OTHER SURFACES WHICH MAY BE HAZARDOUS.
 - COORDINATE & VERIFY ACTUAL APPROVED EQUIP. DIMENSIONS PRIOR TO POURING EQUIP. PADS
 - DUCT MOUNTED SMOKE DETECTORS SHALL BE ZERO VELOCITY TYPE WHERE INDICATED ON DRAWINGS
 - DRAIN PIPING FROM A/C EQUIPMENT SHALL BE ROUTE SO AS NOT TO CREATE A TRIPPING HAZARD. COORDINATE ACTUAL DRAIN CONNECTIONS WITH PLUMBING SECTIONS. COORDINATE FLOOR SINK LOCATIONS ACCORDINGLY.
 - CONDENSATE DRAIN TRAPS SHALL BE 3" DEEP, MINIMUM.
 - COORDINATE ALL CHASE, SLEEVE AND SLAB BLOCK OUT REQUIREMENTS BEFORE CONCRETE IS POURED OR BLOCK IS SET.
 - PROVIDE ACCESS DOOR IN DUCTWORK UPSTREAM OF EACH REHEAT COIL. DUCTMATE METU ROUND DUCT ACCESS DOOR.
 - DUCTWORK VISIBLE BEHIND DIFFUSERS, RESISTERS, OR GRILLES SHALL BE PAINTED FLAT BLACK.
 - REFER TO EQUIPMENT DRAWINGS, SPECS, & SHOP DRAWINGS FOR CONNECTIONS TO EQUIPMENT.
 - MANUAL VOLUME DAMPERS AND VALES ON INSULATED DUCTWORK AND PIPING SHALL HAVE EXTENDED STEMS TO ALLOW FOR THE INSULATION THICKNESS. PROVIDE MIN. 12" LONG RED RIBBON QUADRANT LOCATOR ON VOLUME DAMPER HANDLES.
 - HVAC EQUIPMENT SHALL BE SEALED OFF, KEPT FREE FROM DEBRIS, AND SHALL REMAIN UNOPERATIONAL DURING CONSTRUCTION FOR ANY REASON. CONTRACTOR SHALL PROVIDE TEMPORARY HEAT AS REQUIRED.
 - THE CONTRACTOR SHALL BRING ERRORS AND OMISSIONS WHICH MAY OCCUR IN THE CONTRACT DOCUMENTS TO THE ATTENTION OF THE ARCHITECT VERBALLY AND IN WRITING. WRITTEN INSTRUCTIONS SHALL BE OBTAINED BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE RESULTS OF ANY ERRORS, DISCREPANCIES OR OMISSIONS IN THE CONTRACT DOCUMENTS, OF WHICH THE CONTRACTOR FAILED TO NOTIFY THE ARCHITECT BEFORE CONSTRUCTION AND/OR FABRICATION OF THE WORK.

HVAC SHEET INDEX

1	M000	HVAC TITLE SHEET	Mechanical
2	M001	MECHANICAL SPECIFICATIONS	Mechanical
3	M002	MECHANICAL FLOOR PLAN	Mechanical
4	M100	MECHANICAL FLOOR PLAN	Mechanical
5	M200	ROOF MECHANICAL PLAN	Mechanical
6	M400	MECHANICAL DETAILS	Mechanical
7	M500	MECHANICAL SCHEDULES	Mechanical
8	M600	TITLE 24	Mechanical
9	M801	TITLE 24	Mechanical
10	M802	TITLE 24	Mechanical
11	M803	TITLE 24	Mechanical

SHEET COUNT: 11

LINGLE DESIGN GROUP, INC.

158 WEST MAIN STREET
LENA, IL 61048
815.369.9155

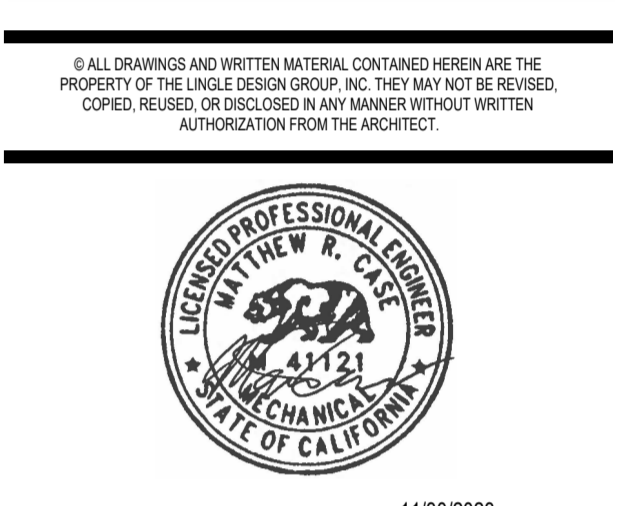
1764 BLAKE ST
DENVER, CO 80202
303.974.5875

WWW.LINGLEDESIGN.COM

CASE Engineering Inc.

796 Merus Court
St. Louis, MO 63026
CERTIFICATE OF AUTHORITY NO. 10975461-0143

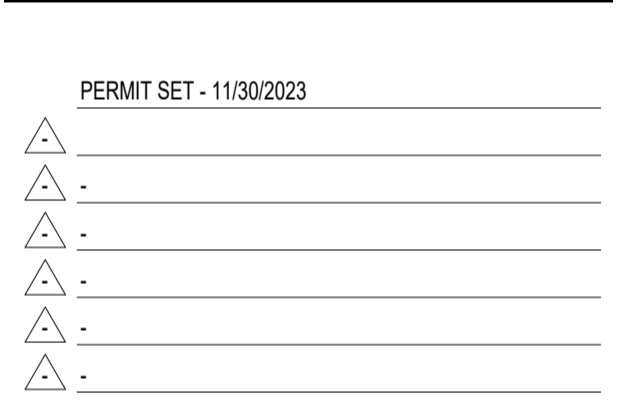
T 636.349.1600
F 636.349.1730



11/30/2023

PROJECT#: LDG-CA-07-23

DRAWN BY: EC CHECKED BY: LW



SHERWIN WILLIAMS

STORE #
XXXX

ADDRESS:
3510 TRUXEL RD,
SACRAMENTO CA

SHEET TITLE:
HVAC TITLE SHEET

SHEET NUMBER:
M000

GENERAL SPECIFICATIONS

1. SCOPE:

PROVIDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO INSTALL AND MAKE READY FOR OWNER'S USE COMPLETE SYSTEMS OF HEATING, VENTILATION, AIR CONDITIONING (HVAC), PLUMBING, FOR THE PROPOSED WORK AND BUILDING RENOVATIONS AS SHOWN ON THE DRAWINGS AND CALLED FOR IN THESE SPECIFICATIONS.

VISIT THE SITE TO OBTAIN DIMENSIONS, EXISTING LAYOUTS AND LOCATIONS AND EXISTING CONSTRUCTION DETAILS NOT SHOWN ON THESE DRAWINGS.

THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION WITH OTHER DIVISIONS OF WORK FOR THE FULL EXTENT OF THE SCOPE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL ASPECTS, COMPONENTS, SYSTEMS, ETC. AND ACCOMMODATE THE PERFORMANCE INTENT OF THE CONSTRUCTION DOCUMENTS THROUGHOUT THE PROJECT SCOPE.

2. BIDDERS RESPONSIBILITY:

EXAMINE THE DRAWINGS AND SPECIFICATIONS AND VISIT THE WORK SITE. BECOME FAMILIAR WITH THE CHARACTER OF THE WORK, THE COORDINATION WITH OTHER TRADES REQUIRED, AND ANY OTHER CONDITIONS THAT AFFECT THE COMPLETION OF THIS WORK.

3. PERMITS, CODES AND LAWS:

APPLY FOR ALL PERMITS AND PAY ALL FEES.

ALL WORK SHALL BE IN ACCORDANCE WITH LATEST EDITIONS OF THE FOLLOWING RULES AND REGULATIONS, HEREIN REFERRED TO AS "CODES":

THE LATEST OR ADOPTED EDITION OF THE APPLICABLE LOCAL, STATE, AND FEDERAL BUILDING, MECHANICAL, SANITATION, PLUMBING, ETC. CODES.
UNDERWRITERS LABORATORIES, INC. (U.L.)
NATIONAL FIRE PROTECTION ASSOCIATION (N.F.P.A.)
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A)

WHERE ANY OF THESE CODES ARE AT VARIANCE WITH THE DRAWINGS AND SPECIFICATIONS, THEIR REQUIREMENTS SHALL TAKE PRECEDENCE, UNLESS THE DRAWINGS AND SPECIFICATIONS REQUIREMENTS EXCEED THESE CODES. INCLUDE ANY COST NECESSARY TO MEET THESE CODES IN THE BID PRICE.

4. MECHANICAL PLANS:

THE MECHANICAL PLANS ARE DIAGRAMMATIC AND BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT. VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO BE USED.

INSTALLATION SHALL BE WITHIN THE LIMITATIONS IMPOSED BY THE ARCHITECTURAL, STRUCTURAL, HVAC, ELECTRICAL, AND PLUMBING REQUIREMENTS WITH ADEQUATE SPACE FOR MAINTENANCE.

5. QUESTIONS AND CLARIFICATIONS OF BID DOCUMENTS:

BIDDERS SHALL NOT RELY ON ANY ORAL CLARIFICATION OF THE DRAWINGS OR SPECIFICATIONS. ANY QUESTIONS OR CLARIFICATIONS SHALL BE REFERRED IN WRITING TO THE ARCHITECT.

6. GUARANTEES:

ALL EQUIPMENT, MATERIALS, AND WORKMANSHIP SHALL BE GUARANTEED IN WRITING. WARRANTIES SHALL INCLUDE FACTORY WARRANTIES FOR EACH PIECE OF EQUIPMENT. PROVIDE A CERTIFICATE FOR EACH PIECE OF EQUIPMENT. CLEARLY INDICATE ON EACH WARRANTY CERTIFICATE THE MODEL NO., SERIAL NO., LOCATION, AND OWNER'S NAME UNLESS OTHERWISE REQUIRED BY THE OWNER.

ALL WARRANTIES SHALL BE FULLY TRANSFERABLE TO ANY AND ALL SUBSEQUENT BUILDING AND/OR CONDOMINIUM OWNERS, AND THEIR AGENTS, FOR THE LIFE OF EACH WARRANTY.

BIND THE ORIGINAL COPIES OF WARRANTIES FOR EACH PIECE OF EQUIPMENT IN A RING BINDERS, FOR THE BUILDING AND CONDOMINIUM UNIT, AND TURN OVER TO THE BUILDING OWNER AT FINAL ACCEPTANCE OF THE PROJECT, FOR DISTRIBUTION TO THE CONDOMINIUM OWNERS. ORGANIZE THE WARRANTIES WITHIN THE BINDER USING INDEX AND TABS, AS TO LOCATION WITHIN THE BUILDING.

INCLUDE COPIES OF THESE WARRANTIES IN THE MAINTENANCE MANUALS, SEE OPERATION AND MAINTENANCE MANUAL SPECIFICATION SECTION.

7. COMPLETE SYSTEM:

ALL PRODUCTS, MATERIALS AND ACCESSORIES SHALL BE FURNISHED AND INSTALLED AS REQUIRED FOR A COMPLETE SYSTEM READY FOR OWNER'S BENEFICIAL USE.

8. WORKMANSHIP:

ALL WORK SHALL BE PERFORMED BY COMPETENT MECHANICS USING PROPER TOOLS AND EQUIPMENT TO PRODUCE FIRST QUALITY WORK. ALL WORK SHALL BE NEATLY INSTALLED, ACCESSIBLE FOR MAINTENANCE, AND COMPLETE WITH ALL ACCESSORIES REQUIRED.

9. ACCESSIBILITY:

INSTALL ALL EQUIPMENT AND THEIR APPURTENANCES SUCH AS, BUT NOT LIMITED TO, VALVES, COILS, DRAIN PANS, DRAINS, DAMPERS, CONTROLS, MOTORS, CONTROLLERS, ETC., SO THAT THEY CAN BE SERVICED, RESET, RECALIBRATED, ETC. INSTALL ALL NECESSARY ACCESS PANELS AND BUILDING ACCESS DOORS, AS BELOW, WHERE REQUIRED TO ACCOMPLISH THIS. IF ANY EQUIPMENT OR COMPONENTS DO NOT FIT WHERE INTENDED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING, REQUESTING FURTHER GUIDANCE.

PROVIDE BUILDING ACCESS DOORS FOR ALL MECHANICAL EQUIPMENT REQUIRING SERVICE, INCLUDING BUT NOT LIMITED TO, AHU'S, FANS, DAMPERS, DUCT ACCESS PANELS, CONTROLS, PIPING, VALVES, REGULATORS, TRAPS, ETC., INSTALLED ABOVE HARD CEILINGS, BEHIND WALLS, AND BELOW FLOORS, FOR INSTALLATION BY OTHER DIVISIONS OF THE WORK. BUILDING ACCESS DOORS ARE NOT REQUIRED WHERE THE MECHANICAL EQUIPMENT IS INSTALLED ABOVE LAY-IN AND ACCESSIBLE SPLINE CEILINGS. OTHER TYPES OF SPLINE CEILINGS REQUIRE BUILDING ACCESS DOORS.

SIZE THE BUILDING ACCESS DOORS FOR THE USE INTENDED, BUT NOT LESS THAN 12 INCHES BY 12 INCHES. WHERE HUMAN ACCESS IS REQUIRED, PROVIDE 24 INCHES BY 24 INCHES, OR LARGER.

WHERE BUILDING ACCESS DOORS CANNOT BE INSTALLED FOR STRUCTURAL OR ARCHITECTURAL REASONS, NOTIFY THE ARCHITECT.

PRIME COAT BUILDING ACCESS DOORS IN PAINTED AREAS WITH FINISH PAINTING AS SPECIFIED IN OTHER DIVISIONS.

IN WET AREAS, TOILET ROOMS, OR AREAS WITH CERAMIC TILE FLOORS OR WALLS, PROVIDE STAINLESS STEEL BUILDING ACCESS DOORS.

PROVIDE BUILDING ACCESS DOORS WITH A CONCEALED KEY OPERATED LOCK AND CONCEALED HINGES. ALL LOCKS SHALL BE KEYED ALIKE.

PROVIDE BUILDING ACCESS DOORS AS SPECIFIED IN OTHER DIVISIONS OF THE WORK OR PROVIDE MILCOR DOORS, OR EQUIVALENT, SUITABLE FOR THE INSTALLATION INTENDED. PROVIDE FIRE RATED DOORS FOR ALL FIRE RATED WALLS, PARTITIONS, AND CEILINGS.

10. WORK BY OTHER TRADES:

FURNISH ALL SLEEVE FRAMES, BUILDING ACCESS DOORS, PREFABRICATED EQUIPMENT CURBS, ROOF CURBS, ETC. FOR INSTALLATION BY OTHER TRADES.

INSTALL ALL MOTORS AND FURNISH THE STARTING EQUIPMENT AND DISCONNECTS TO THE ELECTRICAL SUBCONTRACTOR FOR INSTALLATION. CONTROL WIRING, INCLUDING SWITCHES, THERMOSTATS, INTERLOCKS, ETC. SHALL BE FURNISHED BY MECHANICAL SUBCONTRACTOR. ENSURE THAT THE ELECTRICAL EQUIPMENT MOUNTED NEAR THE MECHANICAL EQUIPMENT DOES NOT BLOCK ACCESS TO SERVICE AREAS OF THE MECHANICAL EQUIPMENT. DO NOT ALLOW ANY EQUIPMENT TO BE INSTALLED ON THE HVAC EQUIPMENT ENCLOSURES.

11. FIRE STOPPING

ALL PENETRATIONS OF FLOORS AND OTHER FIRE-RATED ASSEMBLIES SHALL BE FIRE AND SMOKE-STOPPED IN STRICT ACCORDANCE WITH THE APPLICABLE CODES.

12. FOUNDATIONS AND SPECIAL SUPPORTS:

FURNISH AND INSTALL ALL SPECIAL FOUNDATIONS AND SUPPORTS REQUIRED FOR EQUIPMENT INSTALLED UNDER THIS SECTION, UNLESS THEY ARE A PART OF THE BUILDING STRUCTURE AND ARE SHOWN IN OTHER SECTIONS.

13. CLEANING AND PAINTING:

THOROUGHLY CLEAN ALL EQUIPMENT AND REMOVE ALL TRASH, CARTONS, ETC. MAKE ANY NECESSARY CORRECTIONS OR REPAIR/REPLACE ANY DAMAGED MATERIALS OR EQUIPMENT. LEAVE THE ENTIRE SYSTEM IN A THOROUGHLY CLEAN AND ORDERLY MANNER.

ANY FINISHED SURFACES THAT HAVE BEEN SCRATCHED OR DISCOLORED SHALL BE TOUCHED-UP OR REPAINTED BREAK TO BREAK WITH PAINT TO MATCH THE ORIGINAL COLOR. TOUCH UP PAINTED SURFACES OR REPAINT THE ENTIRE PAINTED SURFACE IF TOUCH UP IS UNACCEPTABLE. SEE ARCHITECTURAL PAINTING SPECIFICATIONS.

ALL METAL ITEMS SUBJECT TO RUSTING, INSIDE OR EXPOSED TO WEATHER SHALL BE GIVEN ONE COAT OF PROPER TYPE RUST PREVENTATIVE PRIMER AS SOON AS INSTALLED. APPLY TWO FINISH COATS WITH COLOR TO BE SELECTED BY THE ARCHITECT.

FOR ALL INTERIOR OR EXTERIOR STRUCTURAL GALVANIZED STEEL, COLD GALVANIZED ALL EXPOSED METAL CUT ENDS, HOLES, WELDS, SCRATCHES, ETC., OR HOT DIP GALVANIZE THE ENTIRE STRUCTURE OR FRAME AFTER FABRICATION AND MOUNTING HOLES ARE CUT.

UPON COMPLETION OF THE INSTALLATION, BUT NOT BEFORE, AND BEFORE ACCEPTANCE, THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, PIPING, DUCTWORK, INSULATION JACKETS, ETC., REMOVING ALL STICKERS, LABELS, MARKING, WRITING, FABRICATION MARKINGS, IDENTIFICATION, ADHESIVE, SEALER, GLUE, RUST, CORROSION, ETC., FROM THEIR EXTERIOR SURFACES.

THE CLEANLINESS AND PAINTING ACCEPTABILITY IS AT THE SOLE DISCRETION OF THE ARCHITECT AND MAY REQUIRE ADDITIONAL CLEANING AND COATS OF PAINT BEFORE ANY SURFACE IS ACCEPTED.

14. SUBMITTALS:

SUBMITTAL AND SHOP DRAWINGS:

SUBMIT MANUFACTURER'S CERTIFIED DATA RELATIVE TO ALL EQUIPMENT, PIPING, DUCTWORK, CONTROLS, ETC. REQUIRED FOR THE INSTALLATION OF THE HVAC, PLUMBING AND FIRE PROTECTION SYSTEMS. SUBMIT FOR REVIEW ALL NECESSARY ENGINEERING, PRODUCT AND INSTALLATION DATA, SHOP DRAWINGS, SAMPLES ETC. FOR ALL EQUIPMENT, MATERIAL, AND SYSTEMS TO ASCERTAIN COMPLIANCE WITH THE TECHNICAL REQUIREMENTS OF THE CONTRACT DOCUMENTS.

SUBMIT ELECTRONIC (PDF) COPIES OF ALL NECESSARY DATA, CUTS, MANUFACTURER'S SELECTIONS, CATALOGS, BULLETINS, INSTALLATION INSTRUCTIONS, DRAWINGS, DIAGRAMS, CURVES, ETC. CLEARLY INDICATE ON THE SUBMITTED DATA, THE MANUFACTURER'S NAME, PRODUCT NUMBER(S), OPTIONS, EQUIPMENT CAPACITY, DIMENSIONAL DATA, WEIGHTS, AND OTHER APPLICABLE TECHNICAL DATA FOR THE PROJECT.

TRADE NAMES, MANUFACTURERS, AND CATALOGUE NUMBERS ARE MENTIONED HEREIN AND ON THE DRAWINGS SOLELY IN ORDER TO ESTABLISH A STANDARD FOR THE TYPE, GENERAL DESIGN, AND QUALITY OF PRODUCT REQUIRED. OTHER PRODUCTS SIMILAR IN DESIGN OF EQUIVALENT QUALITY CAPABLE OF FITTING WITHIN THE SPACES ALLOCATED AND COMPLYING WITH THE DRAWINGS AND SPECIFICATIONS WILL BE CONSIDERED AFTER THE CONTRACT IS LET UNLESS "PRIOR APPROVAL" REQUIREMENTS ARE SET FORTH IN THESE DOCUMENTS.

WHERE TWO OR MORE MANUFACTURERS OR MATERIALS ARE NAMED, THE CONTRACTOR MAY SUBMIT ANY OF THOSE NAMES, PROVIDED THEY CONFORM TO THE SPECIFICATIONS AND DESIGN INTENT. CONTRACTOR SHALL INCLUDE WITH THE SUBMITTAL A LIST OF ALL COMPARATIVE FEATURES INDICATING COMPLIANCE WITH THE SPECIFICATIONS.

THE ARCHITECT AND/OR ENGINEER MAY REQUIRE THE SUBMISSION OF SAMPLES, PARTICULARLY WHEREVER EQUIPMENT OR APPLIANCES ARE VISIBLE IN FINISHED AREAS, SUCH AS CEILINGS, INTERIOR AND EXTERIOR WALLS. THE CONTRACTOR AND SUPPLIER SHALL ARRANGE FOR DEMONSTRATIONS OF THE INSTALLATION OF ANY OF THESE PRODUCTS AND THEIR ABILITY TO PERFORM AS SPECIFIED, IF REQUIRED.

REVIEW OF SUBMITTALS AND SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR FITTING THE EQUIPMENT IN THE SPACE ALLOTTED WITH SPACE FOR ALL CONNECTIONS AND SERVICING AND FOR THE COORDINATION OF THE WORK WITH WORK OF OTHER TRADES.

THE CONTRACTOR SHALL REVIEW ALL SUBMITTALS AND SHOP DRAWINGS AND INDICATE BY STAMP OR LETTER THAT HE HAS REVIEWED THEM, BEFORE FORWARDING THEM TO THE ARCHITECT AND/OR ENGINEER. SUBMITTALS AND DRAWINGS WILL BE RETURNED AFTER REVIEW INDICATING WHETHER EXCEPTIONS ARE TAKEN, THE SUBMITTAL RETURNED WITH CORRECTIONS, OR IS COMPLETELY REJECTED. RESUBMISSION OF REVISED SUBMITTALS AND SHOP DRAWINGS, IF REQUIRED, SHALL BE DONE BEFORE INSTALLATION AND CONSTRUCTION IS BEGUN.

CORRECTIONS OR COMMENTS MADE ON THE SUBMITTALS AND DRAWINGS DURING THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THIS REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FABRICATION PROCESSES, TECHNIQUES OF CONSTRUCTION, COORDINATING THE WORK WITH THAT OF ALL OTHER TRADES, AND PERFORMING WORK IN A SAFE AND SATISFACTORY MANNER. REVIEW OF THE SUBMITTALS SHALL NOT PERMIT ANY DEVIATION FROM PLANS AND SPECIFICATIONS.

SUBMITTALS FOR A SPECIFIC CLASS OF PRODUCTS, SYSTEMS, INSTALLATION PROCEDURES, SHOP DRAWINGS, ETC. WILL BE REVIEWED BY THE ENGINEER ONE TIME AND ITS RESUBMITTAL ONE TIME; IF NECESSARY, AS ABOVE, AT NO COST TO THE CONTRACTOR. THE CONTRACTOR WILL BEAR THE FULL COST FOR ALL SUBSEQUENT RESUBMITTAL REVIEWS AT THE ENGINEER'S STANDARD HOURLY RATES. PAYMENT WILL BE REQUIRED AT COMPLETION OF RESPECTIVE REVIEW.

REQUIRED SHOP DRAWINGS:

SUBMIT THE FOLLOWING SHOP DRAWINGS BEFORE ANY MECHANICAL DUCTWORK, PIPING, EQUIPMENT, ETC. IS FABRICATED AND INSTALLED. SUBMIT THESE SHOP DRAWINGS IN 1/4 INCH PER FOOT MINIMUM SCALE WITH NECESSARY PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ISOMETRICS. SUBMIT SIX (6) PAPER COPIES AND ONE (1) CD-ROM WITH ALL THESE DRAWINGS IN AUTOCAD DRAWING DWG FILES, LATEST AUTOCAD FORMAT.

SOON AFTER AWARD OF THE CONTRACT, DETERMINE WHERE THERE MAY BE INSTALLATION, SPACE CONCERNS, AND/OR WHERE OTHER CONFLICTS MAY OCCUR. SUBMIT COORDINATION DRAWINGS, RELATING TO THESE CONFLICTS WITH THE MECHANICAL EQUIPMENT, DUCT, PIPING, ELECTRICAL, STRUCTURAL AND ARCHITECTURAL SYSTEMS ETC., SHOWING CLEARANCES AND RELATIONSHIP TO STRUCTURAL MEMBERS, PIPING, LIGHTS, CONDUITS, ELECTRICAL EQUIPMENT, AND BUILDING COMPONENTS. IN PREPARING THESE SHOP DRAWINGS, ESTABLISH LINES AND LEVELS FOR ALL DIVISIONS OF THE WORK IN THE AFFECTED AREA. IMMEDIATELY CALL TO THE ATTENTION OF THE ARCHITECT ANY INTERFERENCE OR CONFLICT FOR CLARIFICATION IN WRITING.

SUBMIT SHOP DRAWINGS FOR ALL DUCTWORK.

SUBMIT LAYOUT DRAWINGS OF EACH MECHANICAL SYSTEM SHOWING THE LOCATION, ARRANGEMENT, ETC. OF ALL EQUIPMENT, ALL TRADES, ETC. TO BE INSTALLED RELATED TO THE RESPECTIVE SYSTEM.

MAINTAIN DAILY UPDATED DRAWINGS SHOWING DEVIATIONS FROM CONSTRUCTION DOCUMENTS. AT THE END OF THE PROJECT, PROFESSIONALLY PREPARE AS-BUILT DRAWINGS AND SUBMIT THREE COPIES, ONE REPRODUCIBLE.

15. AS-BUILT DRAWINGS:

MAINTAIN DAILY UPDATED DRAWINGS SHOWING DEVIATIONS FROM CONSTRUCTION DOCUMENTS. AT THE END OF THE PROJECT, PROFESSIONALLY PREPARE AS-BUILT DRAWINGS AND SUBMIT THREE COPIES, ONE REPRODUCIBLE.

16. OPERATION AND MAINTENANCE MANUALS:

UPON COMPLETION OF THE PROJECT, SUBMIT THREE COPIES OF ALL OPERATION AND MAINTENANCE MANUALS, WARRANTIES, SPARE PARTS LIST, AS-BUILT DRAWINGS, TEST AND BALANCE REPORTS, AND LETTER OF GUARANTEE ALL BOUND IN THREE RING BINDERS, CLEARLY SHOWING WHICH EQUIPMENT WAS SUPPLIED TO THE JOB.

17. PROJECT COMPLETION:

BEFORE STARTING AND TESTING ANY SYSTEM, HVAC, OR PLUMBING, TO PREVENT INADVERTENT OPERATION OF THE MECHANICAL EQUIPMENT BEFORE THE MANUFACTURER'S INSPECTION AND TESTING, THE CONTRACTOR SHALL:

VERIFY THAT ALL ELECTRICAL POWER IS OFF TO ALL MECHANICAL EQUIPMENT, INCLUDING THE AHU'S, ACCU'S, BOOSTER PUMPS, FIRE PUMPS, ETC.

LOCK OUT EACH SYSTEM USING SETON MODEL NUMBER 70329; "DO NOT OPERATE" LOCK ON LOCKOUT TAGS, OR EQUIVALENT. INSTALL LOCKOUT TAGS AT EACH PIECE OF EQUIPMENT, ELECTRICAL DISCONNECTS, STARTERS, SWITCHES, ETC.

REMOVE THESE TAGS ONLY WHEN THE MANUFACTURER APPROVES OF THE EQUIPMENT INSTALLATION IN WRITING.

EACH MANUFACTURER OR THEIR REPRESENTATIVE SHALL INSPECT THEIR EQUIPMENT FOR COMPLIANCE TO THEIR INSTALLATION REQUIREMENTS AND RECOMMENDATIONS.

IN ADDITION, THE COMPRESSOR MANUFACTURER SHALL INSPECT EACH REFRIGERANT PIPING INSTALLATION FOR ADHERENCE TO THE APPROVED REFRIGERANT PIPING DIAGRAMS, ROUTING.

EACH MANUFACTURER SHALL PREPARE A PUNCH LIST OF ALL DEFICIENCIES, IN WRITING WITH COPIES TO THE ARCHITECT AND CONTRACTOR.

EACH MANUFACTURER SHALL REINSPECT THE EQUIPMENT AFTER THE CONTRACTOR HAS CORRECTED ALL DEFICIENCIES.

WHEN THE MANUFACTURER HAS GIVEN THEIR WRITTEN APPROVAL WITH COPIES TO THE ARCHITECT AND CONTRACTOR, THE CONTRACTOR MAY REMOVE THE LOCKOUT TAGS, SAFELY START, AND TEST THE EQUIPMENT, AS REQUIRED HEREIN.

CONTRACTOR SHALL PROVIDE FOR ALL NECESSARY DRILLING OF WALL STUDS, CEILING JOISTS, PLATES, FINISHES, ETC. TO ACCOMMODATE ROUTING AND INSTALLATION OF ALL PIPING, DUCT, ETC.

18. VALVE ENGINEERING

IF THE OWNER, ARCHITECT, OR CONTRACTOR RETAINS THE SERVICES OF A VALVE ENGINEER (VE) TO REVIEW THESE PLANS PREPARED BY THE CONSULTANT, THESE SERVICES SHALL BE AT THEIR SOLE EXPENSE AND SHALL BE PERFORMED IN A TIMELY MANNER SO AS NOT TO DELAY THE ORDERLY PROGRESS OF THE CONSULTANT 'S SERVICES. THE CONSULTANT SHALL BE NOTIFIED IN WRITING OF THE VE AND THE VE SCOPE OF SERVICES. ALL RECOMMENDATIONS OF THE VE SHALL BE GIVEN TO THE CONSULTANT FOR REVIEW, AND ADEQUATE TIME WILL BE PROVIDED FOR THE CONSULTANT TO RESPOND TO THESE RECOMMENDATIONS.

IF THE CONSULTANT OBJECTS TO ANY RECOMMENDATIONS MADE BY THE VE, IS SHALL SO STATE IN WRITING, ALONG WITH THE REASONS FOR OBJECTING. IF, IN SPITE OF THE CONSULTANT 'S OBJECTIONS, CHANGES IN THE CONSTRUCTION DOCUMENTS ARE ORDERED BY THE OWNER, ARCHITECT, OR CONTRACTOR, THEY AGREE, TO THE FULLEST EXTENT PERMITTED BY LAW, TO WAIVE ALL CLAIMS AGAINST THE CONSULTANT AND TO INDEMNIFY AND HOLD HARMLESS THE CONSULTANT FROM ANY DAMAGES, LIABILITIES OR INCORPORATION OF SUCH DESIGN CHANGES ORDERED.

IN ADDITION, THE CONSULTANT SHALL BE COMPENSATED FOR SERVICES NECESSARY TO INCORPORATE RECOMMENDED VALUE ENGINEERING CHANGES INTO REPORTS, DRAWINGS, SPECIFICATIONS, BIDDING OR OTHER DOCUMENTS. THE CONSULTANT SHALL BE COMPENSATED AS ADDITIONAL SERVICE FOR ALL TIME SPENT TO PREPARE FOR, REVIEW AND RESPOND TO THE RECOMMENDATIONS OF THE VE. THE CONSULTANTS TIME PERFORMANCE OF ITS SERVICES SHALL BE EQUITABLY ADJUSTED.

DIVISION 23 SPECIFICATIONS:

HVAC EQUIPMENT, METHODS AND MATERIALS

19. DUCTWORK GENERAL:

DUCT SIZES SHOWN ON THE DRAWINGS ARE INSIDE DIMENSIONS AND DO NOT TAKE INTO ACCOUNT LINING THICKNESS. DUCTWORK SHALL BE GALVANIZED SHEET METAL WITH GAUGES, CONSTRUCTION DETAILS AND INSTALLATION ACCORDING TO N.F.P.A. STANDARD 90A, ASHRAE, AND SMACNA DUCT CONSTRUCTION MANUALS AND REQUIREMENTS.

PROVIDE FLEXIBLE CONNECTIONS AT AIR HANDLING UNITS AND FANS.

PROVIDE SINGLE THICKNESS TURNING VANES IN ELBOWS.

ALL DUCTS 18" AND OVER SHALL BE CROSSBROKEN.

PAINT DUCTS, SLEEVES, PLENUMS, ETC., INTERIORS VISIBLE THROUGH AIR DEVICES WITH A MINIMUM OF ONE COAT OF PROPER TYPE RUST PREVENTATIVE PRIMER, SUITABLE FOR GALVANIZED STEEL, AND TWO FINISH COATS OF FLAT BLACK PAINT.

20. DUCT CONSTRUCTION MATERIALS:

RECTANGULAR SUPPLY, RETURN, OUTSIDE AIR, AND EXHAUST: LINED GALVANIZED SHEET METAL. ROUND DUCT AND RUN-OUTS: EXTERNALLY INSULATED GALVANIZED SHEET METAL DUCTS WITH SPIRAL LOCK SEAMS. FLEXIBLE DUCT: PRE-INSULATED FLEXIBLE DUCT. NO FLEXIBLE DUCT RUNS LONGER THAN 5 FEET.

PROVIDE DRYER VENT PIPING INSTALLED AS REQUIRED BY THE MANUFACTURER AND PER CODE USING 4 INCH ROUND GALVANIZED STEEL, SEALED AND SUPPORTED. THE USE OF FLEXIBLE DRYER VENT PIPE IS PROHIBITED.

21. FABRICATION, ERECTION, AND SUPPORT:

ALL DUCTWORK SHALL BE FABRICATED, ERECTED, BRACED, AND SUPPORTED IN STRICT ACCORDANCE WITH THE LATEST EDITIONS OF SMACNA AND ASHRAE REQUIREMENTS.

22. ACOUSTIC LINED DUCTWORK:

ACOUSTICALLY AND THERMALLY LINE 10' OF RECTANGULAR SUPPLY, RETURN, OUTSIDE AIR, AND EXHAUST DUCT AND PLENUMS WITH 1-1/2" THICK, 1-1/2" PCF FIBERGLASS DUCT LINER (R-6 MIN.), APPLIED PER THE MANUFACTURER'S AND NAIMA REQUIREMENTS. DUCT LINER SHALL MEET OR EXCEED ASHRAE'S I.A.Q. STANDARD 62 AND IECC. USE WELDED STICK CLIPS, IN LIEU OF ADHESIVE TYPE FASTENERS AND FULL COVERAGE ADHESIVE. PROVIDE EDGE NOSINGS WERE REQUIRED. COAT ALL EXPOSED FIBERGLASS WITH HARDCAST "LAG-GRIP 671".

23. JOINT SEALING:

SEAL ALL DUCT JOINTS AND SEAMS (LONGITUDINAL AND TRANSVERSE) WITH HIGH PRESSURE DUCT SEALER, HARDCAST "IRON-GRIP 601" OR APPROVED EQUIVALENT. REINFORCED FOIL BACKED TAPES, CLOTH OR PLASTIC BACKED TAPES (DUCT TAPE) ARE NOT ACCEPTABLE.

24. FLEXIBLE AIR DUCT:

DUCT SHALL BE UL LISTED UL-181, CLASS I AIR DUCT MATERIAL AND SHALL COMPLY WITH N.F.P.A 90A AND 90B AND ALL LOCAL REQUIREMENTS DUCT SHALL HAVE AN OPERATING AIR PRESSURE OF 6 INCHES WG POSITIVE AND 4 INCHES WG NEGATIVE, ACOUSTICAL DOUBLE LAMINATED INNER FABRIC BONDED TO A STEEL, HELIX WIRE. OUTER JACKET FIRE RETARDANT REINFORCED ALUMINUM MYLAR WITH FIBER GLASS INSULATION. FLEXMASTER TYPE "8M" ACOUSTICAL INSULATED OR EQUIVALENT.

MAKE ALL FLEXIBLE DUCT CONNECTIONS TO HARD DUCT USING STAINLESS STEEL SCREW CLAMPING BANDS AND SEALED AIR TIGHT WITH HIGH PRESSURE DUCT SEALER. PLASTIC BANDS ARE NOT ACCEPTABLE.

SEAL FLEXIBLE DUCT VAPOR BARRIER TO HARD DUCT AND/OR ADJACENT INSULATION. NO EXPOSED FIBERGLASS SHALL BE VISIBLE.

25. AIR DISTRIBUTION DEVICES:

COORDINATE THE EXACT LOCATIONS OF ALL AIR DEVICE NEEDS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION. COORDINATE THE EXACT LOCATION OF EACH OUTLET WITH THE ARCHITECT WITH REGARD TO CEILING AND WALL SPACING, CENTERING ALONG SOFFITS, WALLS, ETC.

FURNISH AND INSTALL WHERE SHOWN ON THE DRAWINGS ALL DIFFUSERS, GRILLES, AND REGISTERS OF THE SIZE, TYPE, AND CAPACITY AS INDICATED IN THE AIR DEVICE SCHEDULE.

ELBOWS:

26. TURNING VANES AND SMOOTH RADIUS ELBOW (WITHOUT VANES):

AT ALL DUCT TURNS OF 45 DEGREES OR MORE, PROVIDE SINGLE THICKNESS TURNING VANES PER SMACNA REQUIREMENTS. ALTERNATIVELY, USE SMOOTH RADIUS ELBOW (R/W = 1.5).

27. BRANCH TAKEOFF FITTINGS:

AT ALL MAIN TO BRANCH DUCT TAPS, TAKEOFFS, OR RUN-OUTS PROVIDE 45 DEGREE ENTRANCE TAPS, AS DETAILED BY SMACNA STANDARDS.

28. DUCT MOUNTED ACCESS PANELS:

INSTALL ACCESS PANELS AS FOLLOWS:

AT INLET OF EACH DUCT MOUNTED FIRE AND MOTORIZED DAMPER.

FOR DUCT MOUNTED CONTROLS.

AS REQUIRED AND DIRECTED BY THE TEST AND BALANCE CONTRACTOR.

WHERE REQUIRED FOR DUCT INSPECTION, MAINTENANCE, AND CLEANING.

ACCESS PANELS SHALL BE 18 INCHES X 18 INCHES OR LARGEST DUCT WILL ALLOW. NORMALLY CENTER THE ACCESS PANEL IN THE BOTTOM OF THE DUCT AS CLOSE AS POSSIBLE TO THE DUCT MOUNTED DEVICE. ACCESS PANELS MAY BE INSTALLED ON THE SIDE OF THE DUCT, WHERE NECESSARY.

ACCESS PANELS SHALL BE DOUBLE WALL INSULATED HINGED WITH NEOPRENE GASKETS AND CAM LOCKS ON EACH UNHINGED SIDE. WHERE REQUIRED BECAUSE OF PANEL OPENING CLEARANCE, SUBSTITUTE UNHINGED ACCESS PANELS WITH CAM LOCKS ON EACH SIDE AND CAPTIVE CHAIN. ACCESS PANELS SHALL BE FLEXMASTER "TBSM-TAB DOOR" GREENHECK MODEL "HAD-10", OR EQUIVALENT.

REFRIGERANT PIPING

29. GENERAL

REFRIGERANT PIPING SHALL CONFORM TO THE REQUIREMENTS OF THE SAFETY CODES FOR MECHANICAL REFRIGERATION AND REFRIGERANT PIPING AND THE MANUFACTURER REQUIREMENTS.

RUN ALL PIPING SQUARE TO BUILDING LINES WHEREVER POSSIBLE. FIELD ROUTE PIPING IN ORDER TO PROVIDE FOR EASE OF ACCESS TO VALVES AND OTHER APPURTENANCES.

SUPPORT INTERIOR PIPING FROM THE BUILDING STRUCTURE USING COPPER OR PVC COATED HANGERS. SUPPORT REFRIGERANT PIPING 4 FOOT ON CENTER AND AT EACH CHANGE OF DIRECTION. PROVIDE 4" WIDE INSULATION SADDLES.

SUBMIT REFRIGERANT PIPING LAYOUT SHOP DRAWINGS FOR EACH UNIQUE SYSTEM, REVIEWED AND APPROVED BY THE MANUFACTURER, IN WRITING. SHOW ALL FILTERS, DRIERS, SIGHT-GLASSES, VALVES, ETC. AS REQUIRED BY THE MANUFACTURER.

30. MATERIAL AND INSTALLATION

USE REFRIGERANT GRADE, TYPE "K" HARD DRAWN COPPER PIPE WITH LONG RADIUS ELBOWS. NO CAST FITTINGS ARE ACCEPTABLE.

INSTALL FILTER DRIER EQUIVALENT TO SPORLAN CATCH-ALL.

INSTALL SIGHT GLASSES WITH MOISTURE INDICATORS COVERED BY A PROTECTIVE CAP. LOCATE THE SIGHT GLASSES INSIDE THE BUILDINGS, CLOSE TO THE FAN COIL IN THEIR RESPECTIVE MECHANICAL CLOSETS.

PROVIDE EXTERNAL FRONT SEATED BRASS SERVICE VALVES WITH SWEAT CONNECTIONS, WITH SERVICE PORTS FOR CHECKING OPERATING REFRIGERANT PRESSURES.

COPPER SHALL BE CLEANED AND SHINED BEFORE BRAZING. BRAZE USING J.W. HARRIS "DYNAFLOW" 6% SILVER BRAZING ALLOY.

31. PURGING

PIPING SHALL BE PURGED WITH DRY NITROGEN WHILE BRAZING TO PREVENT OXIDATION. UPON COMPLETION OF A WELD, THE WELD SHALL BE WIPED WITH A DAMP RAG TO REMOVE FLUX WHILE STILL HOT.

32. TESTING

ALL PIPING SHALL BE TESTED FOR 24 HOURS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE AND PROVEN TIGHT:

DISCHARGE AND LIQUID REFRIGERANT PIPING--300 PSIG, NITROGEN.

SUCTION REFRIGERANT PIPING--150 PSIG NITROGEN.

REFRIGERANT PIPING, AFTER PROVEN TIGHT, SHALL BE EVACUATED BY MEANS OF AN APPROVED VACUUM PUMP TO A VACUUM OF 2.5 MM HG ABSOLUTE. SYSTEMS SHALL STAND UNDER VACUUM WITH VACUUM PUMP OFF FOR A MINIMUM OF 12 HOURS. SYSTEMS MAY BE CHARGED WITH PROPER REFRIGERANT AFTER ARCHITECT'S APPROVAL OF VACUUM TEST. A DEHYDRATOR SHALL BE USED IN CHARGING HOSSE DURING CHARGING OF SYSTEMS WITH REFRIGERANT.

INSULATION:

33. GENERAL

THIS SECTION APPLIES TO ALL MECHANICAL WORK.

ALL INSULATION SHALL BE IN STRICT ACCORDANCE WITH ASHRAE STANDARDS AND ALL LOCAL AND STATE ENERGY CODES.

THE INSULATION WORK SHALL BE PERFORMED BY A FIRM REGULARLY ENGAGED IN THIS TYPE WORK USING MECHANICS SKILLED IN THE TRADE.

INSTALL ALL MATERIALS AS RECOMMENDED BY THE MANUFACTURER FOR THE SERVICE INTENDED. ALL INSULATION MATERIAL, INCLUDING SEALER MATERIAL, ADHESIVES, COVERING MATERIAL, FINISH, ETC. SHALL HAVE A U.L. LISTED FLAME SPREAD RATING NOT OVER 24 WITHOUT EVIDENCE OF CONTINUED PROGRESSIVE COMBUSTION AND WITH A SMOKE DEVELOPED RATING NOT HIGHER THAN 50. ALL COATINGS AND COVERINGS FOR HOT SERVICE SHALL BE BREATHER TYPE AND VAPOR BARRIER TYPE FOR COLD SERVICE.

34. HVAC PIPING

INSULATE REFRIGERANT SUCTION LINES AND ALL CONDENSATE DRAIN LINES WITH (CODE REQUIRED THICKNESS) CLOSE CELLED ELASTOMERIC INSULATION INSTALLED PER THE MANUFACTURERS REQUIREMENTS. PAINT EXTERIOR INSULATION WITH TWO COATS PAINT AS REQUIRED BY THE INSULATION MANUFACTURER.

35. EXTERNALLY INSULATED DUCTS:

EXTERNALLY INSULATE ALL SUPPLY AND RETURN DUCTWORK WITH 1-1/2" THICK (R-6 MIN.) DUCT WRAP FOR DUCTS LOCATED IN UNCONDITIONED SPACES AND A 2" THICK (R-8 MIN.) DUCT WRAP FOR DUCTS LOCATED OUTSIDE THE BUILDING, EXCEPT PRE-INSULATED FLEXIBLE DUCT. EXTERNALLY INSULATE ALL OUTSIDE AIR DUCTWORK WITH 2" THICK (R-8) DUCT WRAP WITH ALUMINUM ALL SERVICE JACKET, VAPOR BARRIER. ALL DUCT WRAPS SHALL MEET OR EXCEED ASHRAE'S I.A.Q. STANDARD 62 AND IECC.

36. CHILLED WATER PIPING

INSULATE INDOOR CHILLED WATER PIPING WITH 1" THINK HEAVY DENSITY FIBERGLASS PIPE INSULATION WITH FLAME SAFE, ALL-PURPOSE BARRIER JACKET. INSULATE EXTERIOR CHILLED WATER PIPING AS SPECIFIED ABOVE, BUT DOUBLE THICKNESS WITH ALUMINUM JACKET BANDED IN PLACE. INSULATE INDOOR, SMALL RUN OUT, CHILLED WATER PIPING WITH P THICK FIRE RETARDANT INSULATION.

37. EQUIPMENT:

GENERAL SPECIFICATIONS (CONTINUED)

40. AGENCY QUALIFICATIONS:

TEST & BALANCE AGENCY (TBA) SHALL BE PERFORMED BY AN INDEPENDENT AGENCY ENGAGED SOLELY IN TEST AND BALANCE WORK. AGENCY SHALL BE MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU, (NEBB).

SUBMIT A WRITTEN REPORT WITHIN 30 DAYS OF COMMENCING WORK, WITH ANY RECOMMENDED CHANGES TO INSURE BALANCING CAPABILITY.

SUBMIT A DETAILED TEST PLAN TO THE ARCHITECT ILLUSTRATING ALL FORMATS, DRAWINGS, AND TEST PROCEDURE TO BE USED FOR TESTING THE COMPLETED SYSTEM. THE APPROVED PLAN WILL BE USED FOR TESTING THE SYSTEMS. PROCEDURES SHALL INCLUDE REQUIREMENTS LISTED IN AABC / NEBB STANDARDS, LATEST EDITION AND ANY SPECIAL REQUIREMENTS FOR THIS PROJECT.

MAKE PROJECT VISITS AS REQUIRED DURING CONSTRUCTION PERIOD INSPECTING FOR PROPER INSTALLATION OF THE SYSTEM AND RELATED BALANCING DEVICES. PROJECT VISIT REPORTS SHALL BE MADE TO THE ARCHITECT IN WRITING.

41. CONTRACTORS REQUIREMENTS PRIOR TO TEST & BALANCE:

THE CONTRACTOR SHALL PERFORM ALL REQUIRED PRELIMINARY TESTS AND OTHER PREPARATORY WORK, INCLUDING BUT NOT LIMITED TO:

- MAKE SURE ALL FANS ARE OPERATING, CHECK ROTATION, RPM, AND AMPS. CHECK ALL DAMPERS FOR OPERATION.
- PUT ALL HVAC EQUIPMENT IN FULL OPERATION INCLUDING AIR UNITS, ACCU'S AND FANS.
- MAKE SURE ALL HVAC CONTROLS ARE INSTALLED AND FULLY OPERATIONAL. CLEAN/REPLACE FILTERS JUST PRIOR TO TESTING.
- PROVIDE ALL BALANCING DEVICES AND DRIVE CHANGES THAT ARE DEEMED NECESSARY BY T & B AGENCY FOR BALANCE AT NO ADDITIONAL COST TO THE OWNER.

42. TEST AND BALANCE:

TEST & BALANCE AGENCY SHALL BALANCE ALL AIR SYSTEMS FOR OPERATION WITHIN DESIGN CRITERIA. PRIME MOVERS SHALL BE WITHIN 5% OF DESIGN AND TERMINALS WITHIN 10% OF DESIGN.

AIR SYSTEMS SHALL BE BALANCED AS DESCRIBED HEREIN.

43. TEST REPORT:

THE TBA SHALL PROVIDE AN ELECTRONIC (PDF) COPY OF A FINAL COMPREHENSIVE TEST REPORT IN THE FOLLOWING FORMAT.

REPORT SHALL BE BOUND 8-1/2 X 11" WITH SUBSTANTIAL COVERS USING APPROVED FORMS, TYPED OR COMPUTER GENERATED REPORTS ARE ACCEPTABLE.

REPORT SHALL BE INDEXED.

TABLE OF CONTENTS SHALL LIST ALL REPORTS.

ALL AIR OUTLETS SHALL BE LOCATED ON CODED DRAWINGS PREPARED BY THE T&B AGENCY. AIR OUTLETS FORMS SHALL BE PREPARED AND CORRELATED TO THE CODED DRAWINGS.

TEST SUMMARY SHALL DESCRIBE FINAL TEST PROCEDURES AND SPECIAL CONDITIONS DURING TESTS (SUCH AS THERMOSTAT OUTSIDE/RETURN AIR RELATIONSHIP, AND DUCT STATIC PRESSURE.

DESCRIBE OTHER DATA THAT MAY ASSIST OPERATING PERSONNEL IN THE CONTINUING OPERATION OF THE SYSTEM.

T&B CONTRACTOR SHALL TAKE AND RECORD ALL NECESSARY READINGS AT THE FINAL BALANCE POINTS, SUCH AS BUT NOT LIMITED TO: AIR QUANTITIES, PRESSURES, SETPOINTS, ENTERING AND LEAVING COIL TEMPERATURES, SPACE INDOOR AND OUTSIDE WET AND DRY BULB TEMPERATURES, OUTDOOR WEATHER CONDITIONS, ELECTRICAL READINGS OF ALL NEW AND EXISTING MOTORS, COMPRESSORS, ETC.

TEST REPORT SHALL CONTAIN TBA CERTIFICATION OF TEST DATA AND SYSTEM CONDITIONS.

SUBMIT THE TEST REPORTS, FOR REVIEW, BEFORE SUBSTANTIAL COMPLETION.

CALIFORNIA CALGREEN NOTES	
1	DEVELOP A WRITTEN PLAN OF PROCEDURES FOR TESTING & ADJUSTING SYSTEMS. SYSTEMS TO BE INCLUDED FOR TESTING & ADJUSTING SHALL INCLUDE, AS APPLICABLE TO THE PROJECT:
1.1	HVAC SYSTEM & CONTROLS
1.2	INDOOR & OUTDOOR LIGHTING & CONTROLS
1.3	WATER HEATING SYSTEMS
1.4	RENEWABLE ENERGY SYSTEMS
1.5	LANDSCAPE IRRIGATION SYSTEMS
1.6	WATER REUSE SYSTEMS
2	PERFORM TESTING & ADJUSTING PROCEDURES IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS & APPLICABLE STANDARDS ON EACH SYSTEM.
3	BEFORE A NEW SPACE CONDITIONING SYSTEM SERVING A BUILDING OR SPACE IS OPERATED FOR NORMAL USE, THE SYSTEM SHOULD BE BALANCED IN ACCORDANCE WITH THE PROCEDURES DEFINED BY THE TESTING ADJUSTING AND BALANCING BUREAU NATIONAL STANDARDS, ETC.
4	AFTER COMPLETION OF TESTING, ADJUST, & BALANCING, PROVIDE A FINAL REPORT OF TESTING SIGNED BY THE INDIVIDUAL RESPONSIBLE FOR PERFORMING THESE SERVICES.
5	PROVIDE THE BUILDING OWNER OR REPRESENTATIVE WITH DETAILED OPERATING & MAINTENANCE INSTRUCTIONS & COPIES OF GUARANTEES/WARRANTIES FOR EACH SYSTEM.
6	INCLUDE A COPY OF ALL INSPECTION VERIFICATIONS AND REPORTS REQUIRED BY THE ENFORCING AGENCY.
7	THE PERMANENT HVAC SYSTEM SHALL ONLY BE USED DURING CONSTRUCTION IF NECESSARY TO CONDITION THE BUILDING 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 AT CONCLUSION OF CONSTRUCTION.
8	IN MECHANICALLY VENTILATED BUILDINGS, PROVIDE REGULARLY OCCUPIED AREAS OF THE BUILDING WITH AIR FILTRATION MEDIA FOR OUTSIDE AND RETURN AIR PRIOR TO OCCUPANCY THAT PROVIDES AT LEAST A MERV OF 8.
9	FOR BUILDINGS EQUIPPED WITH DEMAND CONTROL VENTILATION, CO2 SENSORS & VENTILATION CONTROLS SHALL BE SPECIFIED & INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE 2019 CALIFORNIA ENERGY CODE, SEC. 121(c).
10	INSTALLATION OF HVAC, REFRIGERATION, & FIRE SUPPRESSION EQUIPMENT SHALL COMPLY WITH SEC. 5.508.1.1 AND 5.508.1.1 AND 5.508.1.2 OF THE 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE.
11	INSTALL HVAC, REFRIGERATION, & FIRE SUPPRESSION EQUIPMENT THAT DO NOT CONTAIN CFC'S.
12	INSTALL HVAC, REFRIGERATION, & FIRE SUPPRESSION EQUIPMENT THAT DO NOT CONTAIN HALONS.

LINGLE DESIGN GROUP, INC.



LINGLEDESIGNGROUP,INC
 158 WEST MAIN STREET
 LENA, IL 61048
 815.369.9155

1764 BLAKE ST
 DENVER, CO 80202
 303.974.5875

WWW.LINGLEDESIGN.COM

CASE
 Engineering Inc.

796 Merus Court St. Louis, MO 63026 | T 636.349.1600 F 636.349.1730
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11/30/2023

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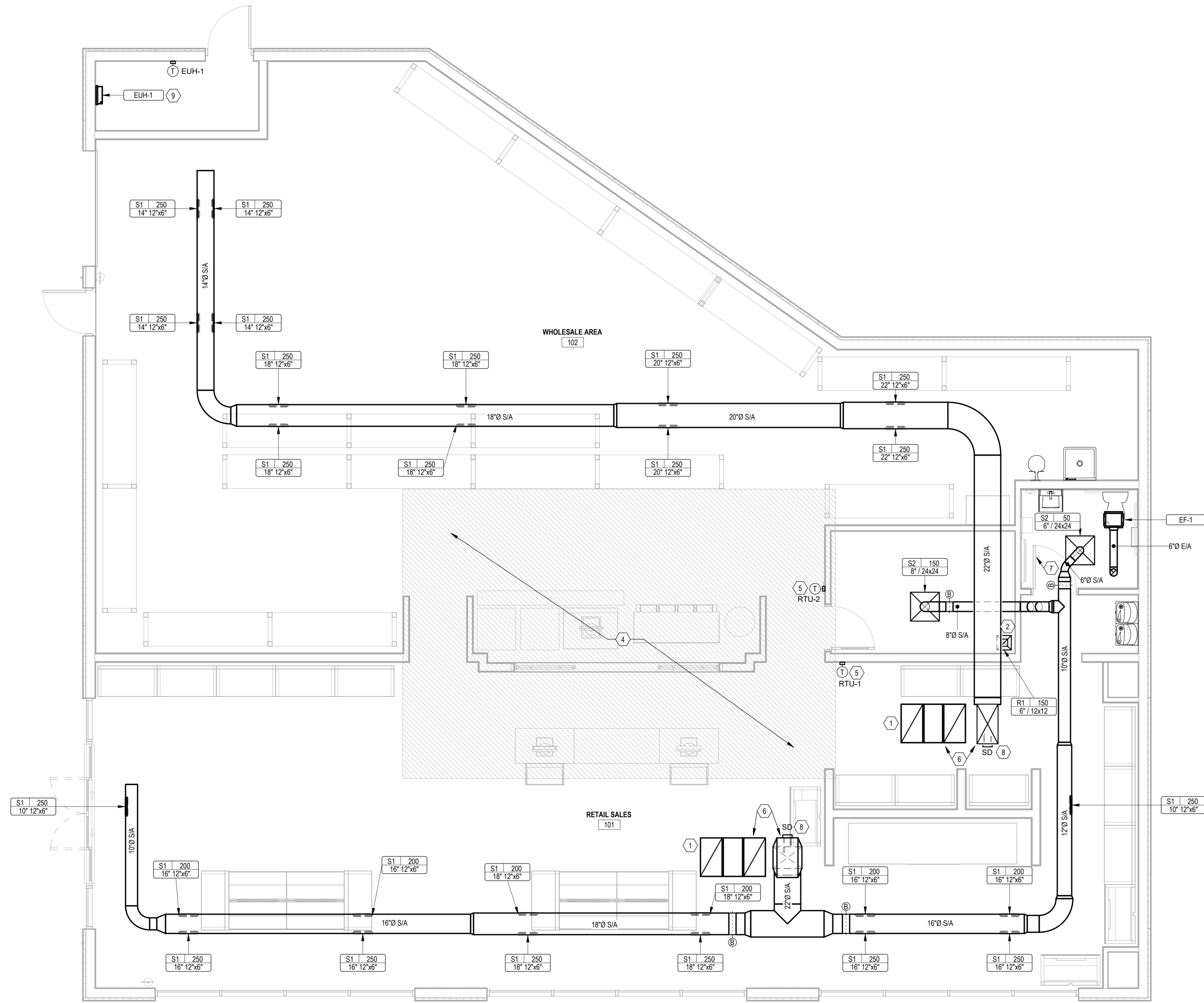
SHERWIN WILLIAMS

STORE #:
 XXXX

ADDRESS:
 3510 TRUXEL RD,
 SACRAMENTO CA

SHEET TITLE:
 MECHANICAL
 SPECIFICATIONS

SHEET NUMBER:
 M002



GENERAL NOTES

- MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS. TAKE ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS, CERTIFIED EQUIPMENT DRAWINGS AND FROM THE STRUCTURE ITSELF BEFORE FABRICATING ANY WORK. VERIFY ALL SPACE REQUIREMENTS COORDINATING WITH OTHER TRADES, AND INSTALL THE SYSTEMS IN THE SPACE PROVIDED WITHOUT EXTRA CHARGES TO THE OWNER.
- CONTRACTOR SHALL COORDINATE WORK INDICATED WITH PLUMBING, ELECTRICAL, FIRE PROTECTION, STRUCTURAL, AND ARCHITECTURAL DIVISIONS. SUBMIT 1/4" SCALE SHOP DRAWINGS FOR MECHANICAL SYSTEMS, DIMENSIONED TO INCORPORATE THE WORK OF OTHER TRADES. INDICATE SPACES RESERVED FOR PLUMBING PIPING, MECHANICAL PIPING, MECHANICAL DUCTWORK, & ELECTRICAL CONDUIT MAINS. VERIFY FIT OF MECHANICAL SYSTEMS PRIOR TO FABRICATION. COORDINATE ALL CHASE, SLEEVE, AND SLAB BLOCKOUT REQUIREMENTS BEFORE CONCRETE IS POURED OR BLOCK IS SET.
- BOTTOM OF ALL DUCTWORK SHALL NOT BE LOWER THAN 12'-0" AFF.
- FURNISH AND INSTALL GALVANIZED STEEL DUCTWORK, SIZES AS NOTED ON DRAWINGS. SIZES SHOWN ARE CLEAR, INSIDE DIMENSIONS. SEE ARCHITECTURAL DRAWINGS FOR EXTERNAL FINISH. SUSPEND WITH AIRCRAFT CABLE.

MECHANICAL KEYNOTES

- INSTALL TWO 90° ELBOWS TO TURN DUCT UP TOWARDS STRUCTURE. TERMINATE RA DUCT WITH 1/2" WIRE MESH APPROX. 18" BELOW STRUCTURE.
- INSTALL RETURN GRILLE IN OFFICE CEILING AS SHOWN. LEAVE OPEN TO SPACE ABOVE CEILING.
- INSTALL EF-1 IN BATHROOM CEILING AS SHOWN. ROUTE 6" DUCT FROM FAN UP THROUGH ROOF ABOVE. TERMINATE WITH RAIRCAP AND BIRDSCREEN. VERIFY LOCATION IN FIELD.
- DO NOT INSTALL ANY DUCTWORK, PLENUMS, ETC. IN THIS AREA.
- FURNISH AND INSTALL 247 PROGRAMABLE THERMOSTAT WITH AUTO CHANGEOVER AND RELATED WIRING TO CONTROL ROOFTOP UNIT. MOUNT AT 42" AFF IN LOCATION SHOWN. THERMOSTAT TO BE HONEYWELL VISIONPRO 8000 WITH REDLINK OR APPROVED EQUAL. VERIFY FINAL MOUNTING LOCATION WITH OWNER/ARCH. VERIFY PROPER OPERATION IN FIELD. PROVIDE 100 T-STAT WIRE.
- 33"x18" SA AND 32"x18" RA DOWN FROM RTU ON ROOF. SEE ROOF PLAN ON SHEET M200.
- GENERAL CONTRACTOR TO UNDERCUT DOOR 3/4" ABOVE THRESHOLD FOR TRANSFER AIR.
- FURNISH AND INSTALL SUPPLY DUCT MOUNTED DETECTOR. UPON DETECTION OF SMOKE, DETECTOR SHALL SHUT DOWN UNIT. COORDINATE WIRING REQUIREMENTS WITH ELECTRICAL CONTRACTOR. PROVIDE WITH VISUAL OR AUDIBLE SIGNAL AT AN APPROVED LOCATION. SMOKE DETECTOR SHALL ACTIVATE VISIBLE OR AUDIBLE SIGNAL AT REMOTE ANNUNCIATOR WITHIN 5' OF THE MAIN SERVICE ENTRANCE. INSTALLED BETWEEN 42 AND 48" AFF THAT IDENTIFIES THE ACTIVATION OF THE DUCT SMOKE DETECTOR SUPERVISORY ALARM. SMOKE DETECTOR TROUBLE CONDITIONS (EG ELECTRICAL FAILURE, DISCONNECTED DEVICE, GROUND FAULT) SHALL ACTIVATE AUDIBLE AND VISIBLE ALARM AND SHALL BE IDENTIFIED AS "AIR DUCT DETECTOR TROUBLE".
- FURNISH AND INSTALL UNIT HEATER AT LOCATION SHOWN. MOUNT UNIT HEATER AT 9'-0" AFF TO BOTTOM OF UH. PROVIDE WITH WALL MOUNTED THERMOSTAT.

1 MECHANICAL FLOOR PLAN
M100 1/4" = 1'-0"

LINGLE DESIGN GROUP, INC.
158 WEST MAIN STREET
LENA, IL 61048
815.369.9155

1764 BLAKE ST
DENVER, CO 80202
303.974.5875
WWW.LINGLEDESIGN.COM

CASE Engineering Inc.
796 Menus Court
St. Louis, MO 63026
T 636.349.1600
F 636.349.1730
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LICENSED PROFESSIONAL ENGINEER
MATTHEW P. CEBER
MECHANICAL
STATE OF CALIFORNIA

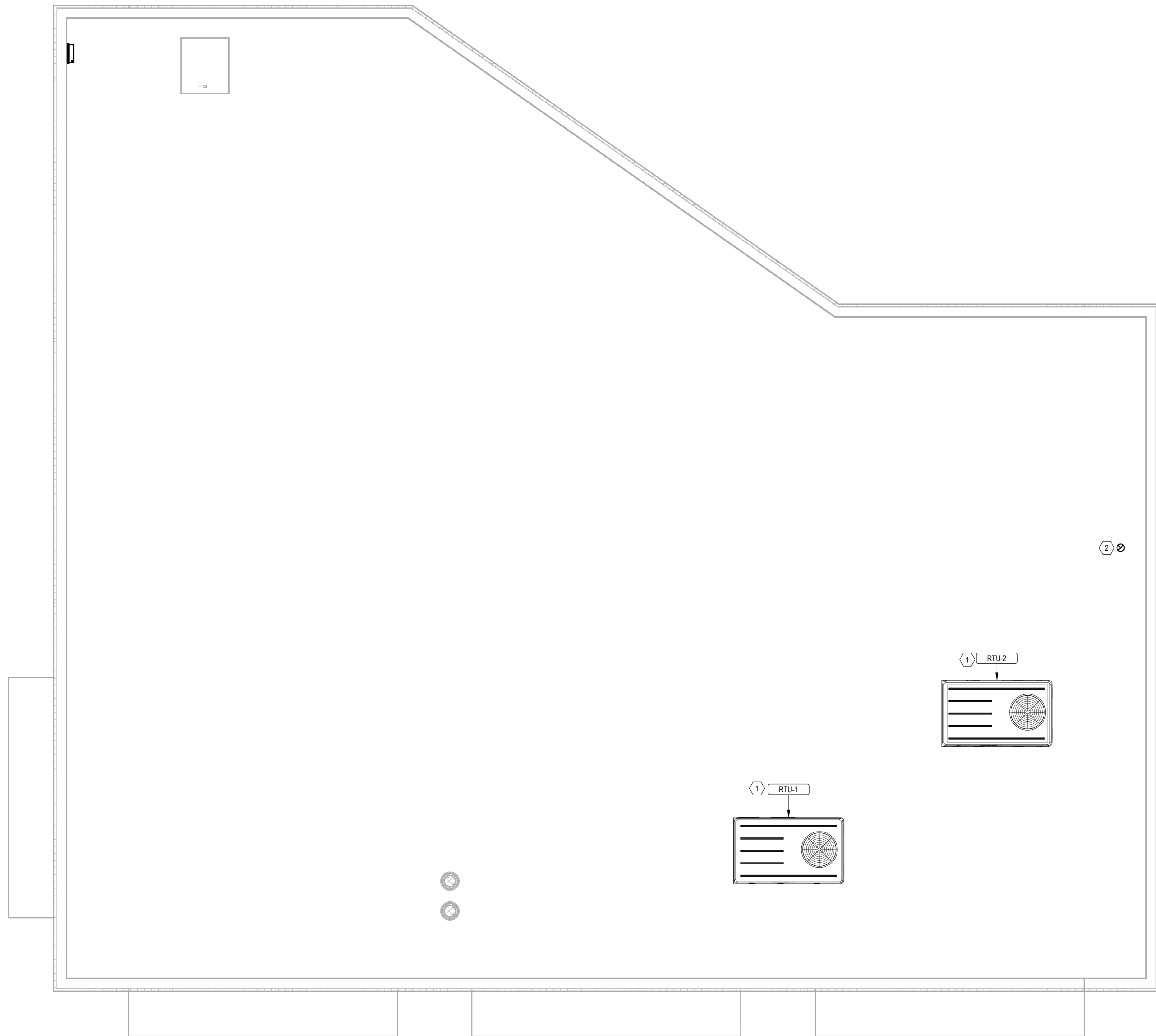
SHERWIN WILLIAMS

STORE #:
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ADDRESS:
3510 TRUXEL RD,
SACRAMENTO CA

SHEET TITLE:
MECHANICAL FLOOR PLAN

SHEET NUMBER:
M100



GENERAL NOTES

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#	MECHANICAL KEYNOTES
1	INSTALL RTU IN LOCATION SHOWN PER MANUFACTURER'S SPECIFICATIONS. RTU LOCATIONS ARE APPROXIMATE. ACTUAL LOCATIONS ARE TO BE VERIFIED WITH STRUCTURAL ENGINEER PRIOR TO INSTALLATION.
2	EXHAUST FAN DUCT UP THROUGH ROOF TO APPROVED VENT CAP & BIRDSCREEN.

LINGLE DESIGN GROUP, INC.

LINGLEDESIGNGROUP,INC
158 WEST MAIN STREET
LENA, IL 61048
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1764 BLAKE ST
DENVER, CO 80202
303.974.5875

WWW.LINGLEDESIGN.COM

CASE
Engineering Inc.

796 Merus Court | T 636.349.1600
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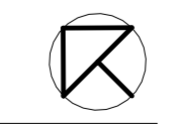
STORE #:
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ADDRESS:
3510 TRUXEL RD,
SACRAMENTO CA

SHEET TITLE:
ROOF MECHANICAL PLAN

SHEET NUMBER:
M200

1 MECHANICAL ROOF PLAN
M200 1/4" = 1'-0"



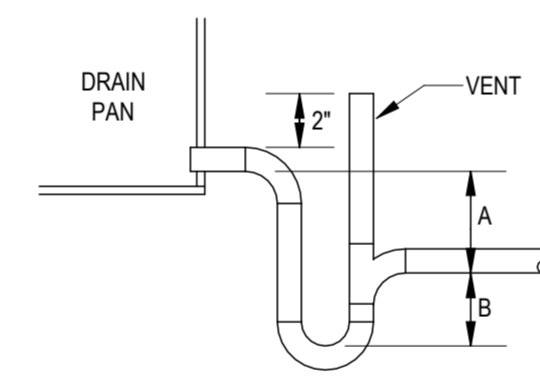


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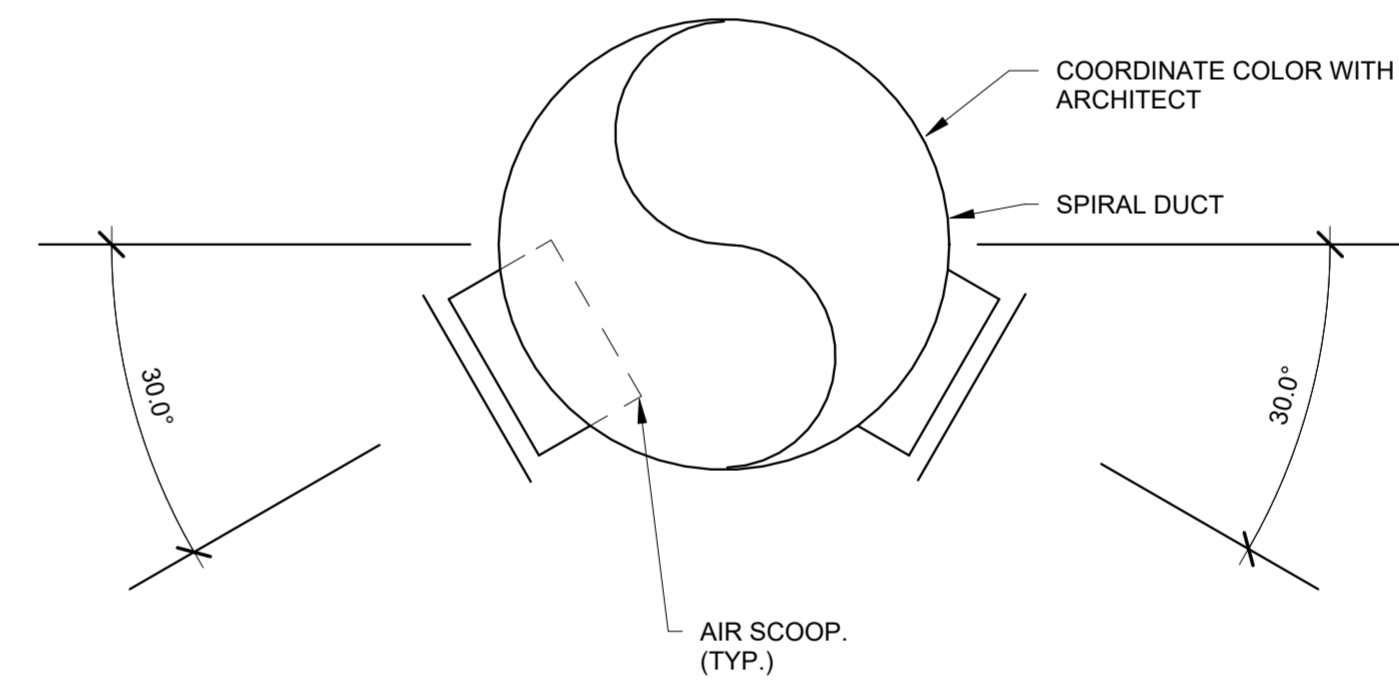
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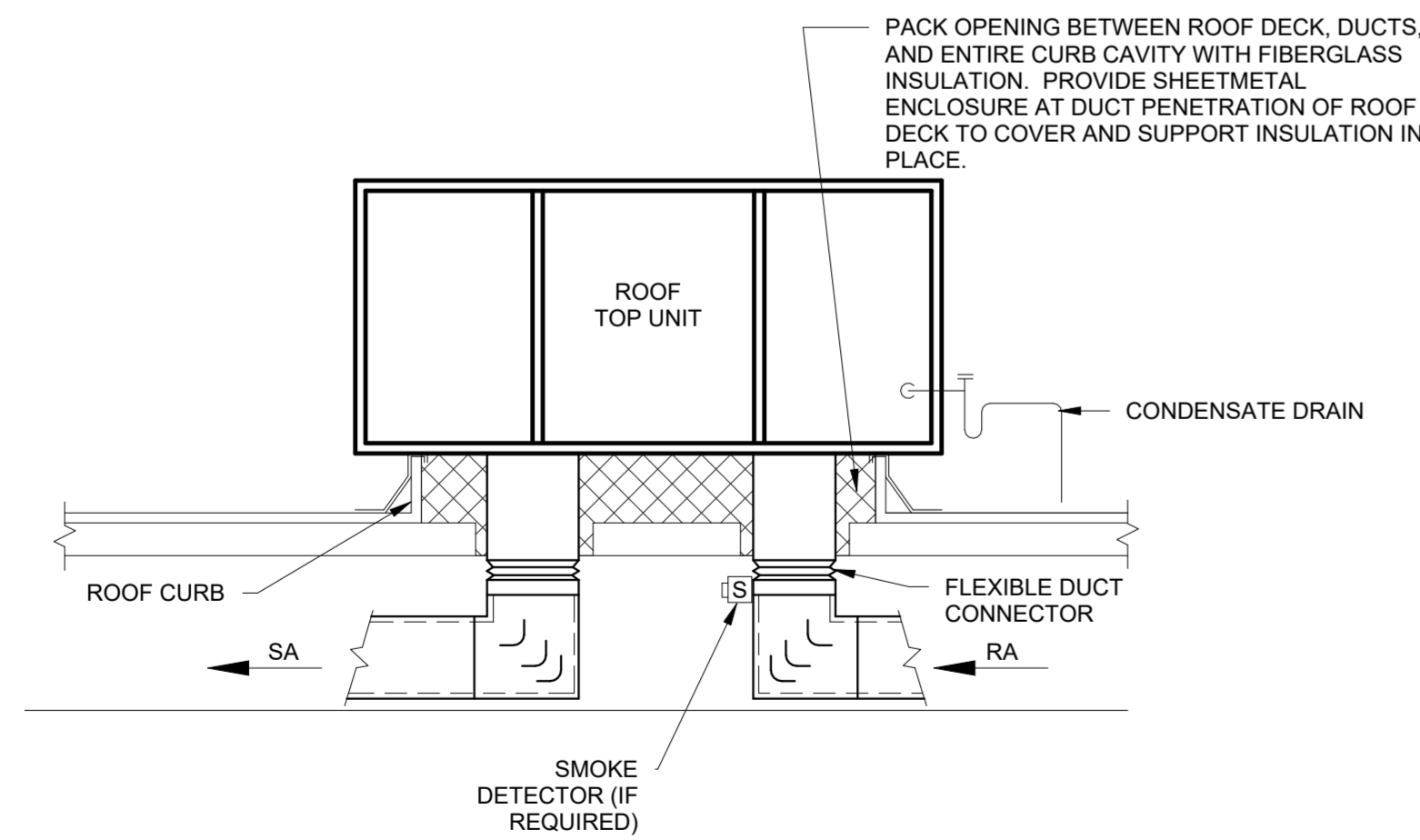


A= SCHEDULED FAN STATIC PLUS ONE INCH
 B= 1/2 OF SCHEDULED FAN STATIC

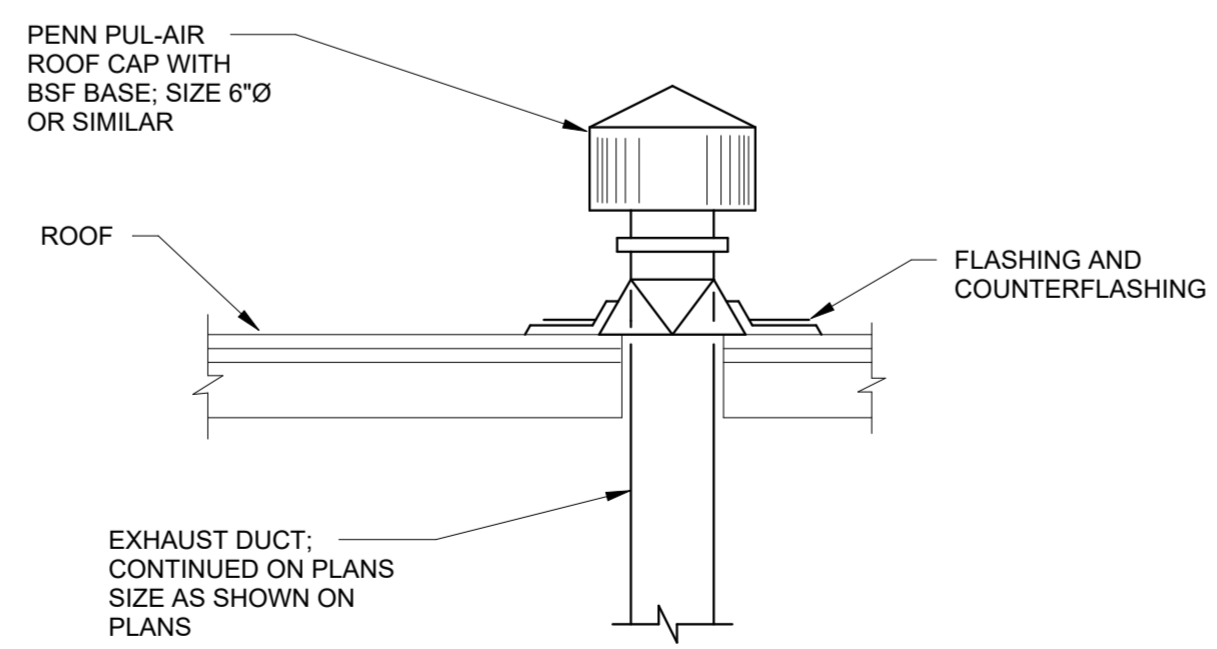
5 CONDENSATE DRAIN DETAIL
 M400 NO SCALE



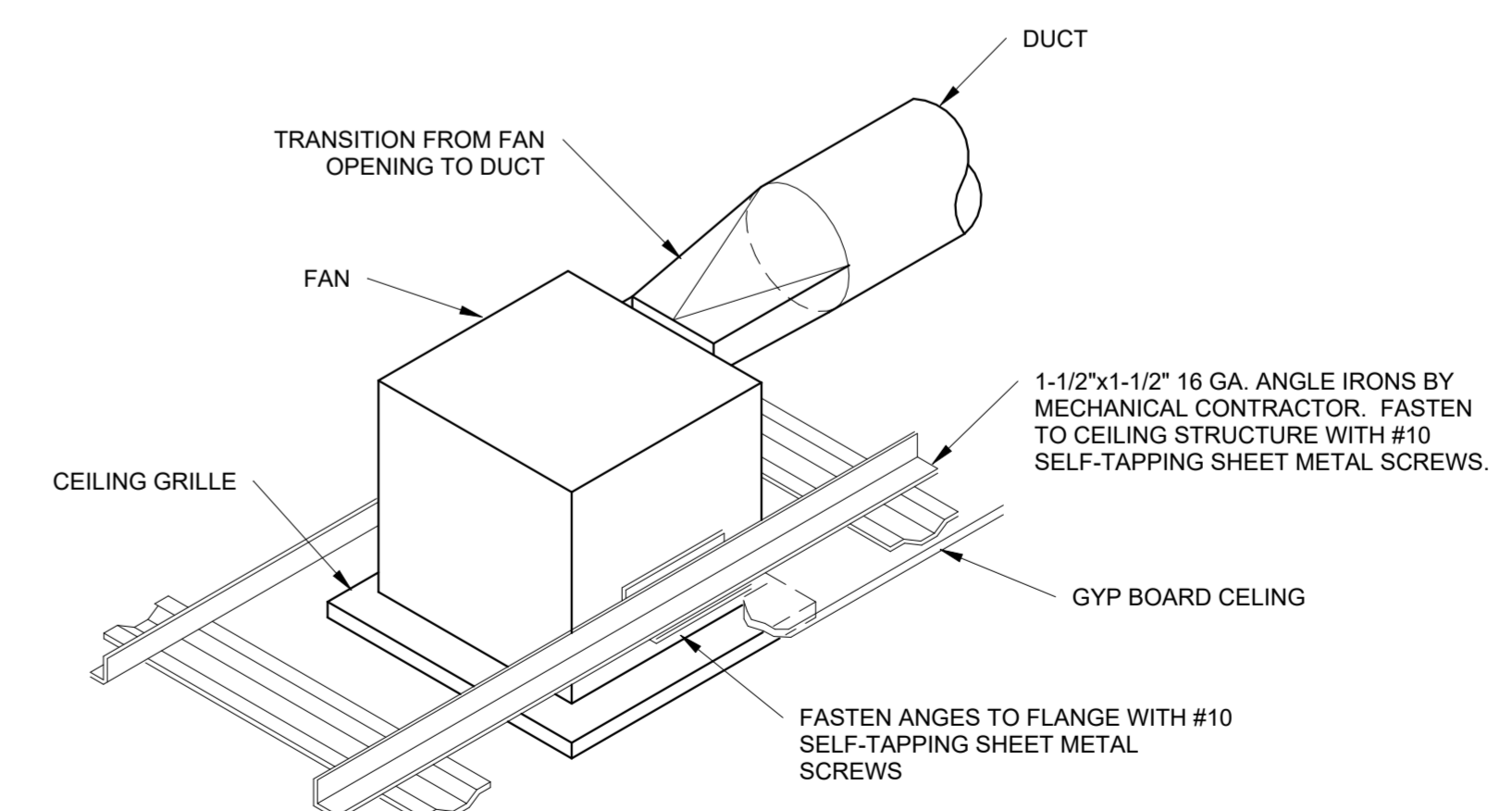
4 SPIRAL DUCT DIFFUSER TAKE OFF DETAIL
 M400 NOT TO SCALE



3 ROOFTOP UNIT DETAIL
 M400 NOT TO SCALE



2 EXHAUST THROUGH ROOF DETAIL
 M400 NOT TO SCALE



1 CEILING EXHAUST FAN DETAIL
 M400 NOT TO SCALE

SHERWIN WILLIAMS

STORE #:
 XXXX
 ADDRESS:
 3510 TRUXEL RD,
 SACRAMENTO CA

SHEET TITLE:
**MECHANICAL
 DETAILS**

SHEET NUMBER:
M400

ROOFTOP UNIT SCHEDULE (ELECTRIC HEATING - DX COOLING)

TAG	MANUFACTURER/ MODEL	LOCATION/ SERVICE	UNIT TON	SUPPLY FAN					ELECTRIC HEATING CAPACITY				COOLING CAPACITY				EFFICIENCY (IEER/COP)	MCA	MOCP	VOLT/PH/Hz	WEIGHT* (LBS)	OVERALL DIMENSIONS	NOTES	
				TOTAL CFM	OUTDOOR AIR CFM	SUPPLY ESP (IN W.C.)	DRIVE	MAX FAN MOTOR RPM	HEATING KW	OUTPUT (MBH)	EAT	LAT	TOTAL MBH	SENSIBLE MBH	EER	EAT (DB/WB)								LAT (DB/WB)
RTU-1	TRANE/ WSC102H3RKB	ROOF/ SALES AREA	8.5	3400	550	1.0	DIRECT	949	27	92.21	58.8	91.3	99.97	81.66	11.0	78.1/62.7	53.6/52.4	14.1/2.25	115	125	208/3/60	1218	SEE MANUF.	1-8
RTU-2	TRANE/ WSC092H3RKB	ROOF/ WHOLESALE AREA	7.5	3000	525	1.0	DIRECT	903	27	92.21	53.3	90.2	92.96	73.97	11.0	79.6/62.5	53.2/52.4	14.1/2.25	116	125	208/3/60	1185	SEE MANUF.	1-8

OR EQUIVALENT BY OTHERS

NOTES:

1. FURNISH AND INSTALL ROOFTOP UNIT. PROVIDE WITH 100% OA ECONOMIZER WITH FAULT DETECTORS AND DIAGNOSTICS TO MEET TITLE 24, 2" MERV 8 FILTERS, MODULATING OA DAMPER, STANDARD EFFICIENCY UNIT, TWO STAGE HEATING, BAROMETRIC RELIEF, COIL HAIL GUARD, AND MANUF. RECOMMENDED SEISMIC ROOF CURB. VERIFY LOCATION IN FIELD WITH STRUCTURAL ENGINEER.
2. VERIFY ELECTRICAL VOLTAGE WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING EQUIPMENT.
3. PROVIDE WITH 24/7 PROGRAMMABLE THERMOSTAT. THERMOSTAT TO BE HONEYWELL VISIONPRO 8000 WITH REDLINK OR APPROVED EQUAL. SEE FLOOR PLAN FOR MORE INFORMATION.
4. PROVIDE WITH SA MOUNTED SMOKE DETECTOR WITH UNIT CONTROLS AND WIRE TEST STATION INSTALLED PER LOCAL CODE.
5. PROVIDE WITH ETL OR UL LISTED NON-FUSED DISCONNECT SWITCH.
6. PROVIDE UN-POWERED CONVENIENCE OUTLET TO BE WIRED ON SEPERATE CIRCUIT BY ELECTRICAL CONTRACTOR.
7. FAN MOTORS ARE TO BE PROVIDED WITH NEMA PREMIUM EFFICIENCY MOTORS RATED.
8. UNIT SHALL SEQUENCE ELECTRIC HEATER AND HEAT PUMP HEAT TO MEET TITLE 24 REQUIREMENTS.

*WEIGHT INCLUDES WEIGHT OF ADDED ACCESSORIES

FAN SCHEDULE

TAG	MANUFACTURER/ MODEL	LOCATION/ SERVICE	CFM	ESP (IN. W.C.)	AMPS	VOLT/Hz/ PHASE	WEIGHT (LBS)	OVERALL DIMENSIONS	METHOD OF CONTROL	NOTES
EF-1	GREENHECK/ SP-A125	CEILING/ RESTROOM	100	0.25	0.62	115/60/1	17	SEE MANUF.	LIGHT SWITCH	1-2

OR EQUIVALENT BY COOK, ACME, AND S&P

NOTES:

1. PROVIDE WITH BACKDRAFT DAMPER, ROOF PORTAL, TALL FLASHING CONE, STORM COLLAR, RAINCAP AND BIRDSCREEN.
2. INTERLOCK OPERATION WITH LIGHT SWITCH.

GRILLE, DIFFUSER, AND REGISTER SCHEDULE

TAG	USE	PATTERN	ACCESSORIES	FINISH	MAKE & MODEL	REMARKS
S1	SPIRAL DUCT DIFFUSER	AS SHOWN	AIR SCOOP	BY ARCH	PRICE SDG	NOMINAL SIZE VARIES, SEE DRAWINGS
S2	CEILING DIFFUSER	4-WAY	O.B.D.	BY ARCH	PRICE SCD	24"x24" FACE NECK SIZE VARIES, SEE DRAWINGS
R1	CEILING RETURN GRILLE	N/A	RA BOOT	BY ARCH	PRICE PDDR	12"x12" FACE NECK SIZE VARIES, SEE DRAWINGS

OR EQUIVALENT BY TITUS, KRUEGER, METAL-AIRE, OR NAILOR

NOTES:

1. UNLESS SPECIFICALLY INDICATED ON PLANS, GRILLE, REGISTER AND DIFFUSER RUN-OUT SIZES ARE AS FOLLOWS:

RUN-OUT	CFM
4"Ø	<40
6"Ø	41-100
8"Ø	101-210
10"Ø	211-375
12"Ø	376-600
14"Ø	601-910

ELECTRIC UNIT HEATER SCHEDULE

MARK	MFR	MODEL NO.	HTG KW	UNIT HP	ELECTRICAL		WEIGHT	REMARKS
					TOTAL AMPS	V / PH		
EUH-1	INDEECO	UCI	5	1/30	14.6	208/3	45	1,2,3

1. PROVIDE ALL NECESSARY MOUNTING HARDWARE.
2. VERIFY ELECTRICAL VOLTAGE PRIOR TO ORDERING UNIT.
3. PROVIDE WITH WALL MOUNTED THERMOSTAT.

LINGLE DESIGN GROUP, INC.

LINGLEDESIGNGROUP,INC
158 WEST MAIN STREET
LENA, IL 61048
815.369.9155

1764 BLAKE ST
DENVER, CO 80202
303.974.5875

WWW.LINGLEDESIGN.COM

CASE

Engineering Inc.

796 Merus Court | T 636.349.1600
St. Louis, MO 63026 | F 636.349.1730
CERTIFICATE OF AUTHORITY NO. 10975461-0143

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11/30/2023

PROJECT#: LDG-CA-07-23
DRAWN BY: EC CHECKED BY: LW

PERMIT SET - 11/30/2023

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SHERWIN WILLIAMS

STORE #:
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M500