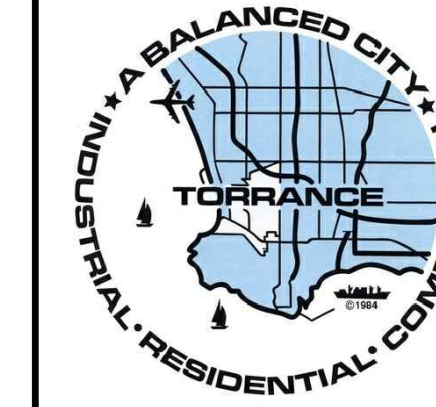


CITY OF TORRANCE
 JIM FUENTES, SUPERVISOR, HVAC AND ELECTRICAL - GENERAL SERVICE DEPARTMENT

BUILDING & SAFETY HVAC SPLIT SYSTEM/ROOF TOP UNIT REPLACEMENT

3031 TORRANCE BOULEVARD
 TORRANCE, CA. 90503

TORRANCE CITY COUNCIL



- PATRICK J. FUREY, MAYOR
- HEIDI ANN ASHCRAFT, COUNCIL MEMBER
- TIM GOODRICH, COUNCIL MEMBER
- MIKE GRIFFITHS, COUNCIL MEMBER
- MILTON S. HERRING, I, COUNCIL MEMBER
- GEOFF RIZZO, COUNCIL MEMBER
- KURT WEIDEMAN, COUNCIL MEMBER

CONTACT INFORMATION

CITY OF TORRANCE
 HVAC AND ELECTRICAL - GENERAL SERVICE DEPARTMENT
 3031 TORRANCE BOULEVARD
 PROJECT SUPERVISOR: JIM FUENTES
 PHONE: (310) 625-7931

CLIENT



CITY OF TORRANCE
 3031 TORRANCE BLVD.
 TORRANCE, CA 90503

PROJECT NAME

BUILDING & SAFETY HVAC
 SPLIT SYSTEM AND ROOF
 TOP UNIT REPLACEMENT

CONSULTANT



IDS GROUP
 1 PETERS CANYON ROAD, SUITE 130
 IRVINE, CA. 92606
 TEL: 949-387-8500, FAX: 949-387-0800

Project # 17X036.00

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NOT FOR CONSTRUCTION

Date

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REV.	DESCRIPTION	DATE
	PLAN CHECK SUBMITTAL	2017-09-13
	CD RE-SUBMITTAL	2017-10-04

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) NOTES

- IN THE CASE OF EMERGENCY, CALL JIM FUENTES AT WORK PHONE #310-625-793.
- SEDIMENT FROM AREAS DISTURBED BY CONSTRUCTION SHALL BE RETAINED ON SITE USING STRUCTURAL CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE.
- STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO MINIMIZE SEDIMENT TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES OR ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TACKING, OR WIND.
- APPROPRIATE BMP'S FOR CONSTRUCTION-RELATED MATERIALS, WASTES, SPILLS SHALL BE IMPLEMENTED TO MINIMIZE TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES, OR ADJOINING PROPERTIES BY WIND OR RUNOFF.
- RUNOFF FROM EQUIPMENT AND VEHICLE WASHING SHALL BE CONTAINED AT CONSTRUCTION SITES UNLESS TREATED TO REDUCE OR REMOVE SEDIMENT AND OTHER POLLUTANTS.
- ALL CONSTRUCTION CONTRACTOR AND SUBCONTRACTOR PERSONNEL ARE TO BE MADE AWARE OF THE REQUIRED BEST MANAGEMENT PRACTICES AND GOOD HOUSEKEEPING MEASURES FOR THE PROJECT SITE AND ANY ASSOCIATED CONSTRUCTION STAGING AREAS.
- AT THE END OF EACH DAY OF CONSTRUCTION ACTIVITY ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND PROPERLY DISPOSED IN TRASH OR RECYCLE BINS.
- CONSTRUCTION SITES SHALL BE MAINTAINED IN SUCH A CONDITION THAT AN ANTICIPATED STORM DOES NOT CARRY WASTES OR POLLUTANTS OFF THE SITE. DISCHARGES OF MATERIAL OTHER THAN STORM WATER ONLY WHEN NECESSARY FOR PERFORMANCE AND COMPLETION OF CONSTRUCTION PRACTICES AND WHERE THEY DO NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF ANY WATER QUALITY STANDARD; CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR NUISANCE; OR CONTAIN A HAZARDOUS SUBSTANCE IN A QUANTITY REPORTABLE UNDER FEDERAL REGULATIONS 40 CFR PARTS 117 AND 302.
- POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SOLID OR LIQUID CHEMICAL SPILLS; WASTES FROM PAINTS, STAINS, SEALANTS, GLUES, LIMES, PESTICIDES, HERBICIDES, WOOD PRESERVATIVES AND SOLVENTS; ASBESTOS FIBERS, PAINT FLAKES OR STUCCO FRAGMENTS; FUELS, OILS, LUBRICANTS, AND HYDRAULIC, RADIATOR OR BATTERY FLUIDS; FERTILIZERS, VEHICLE/EQUIPMENT WASH WATER AND CONCRETE WASH WATER, CONCRETE, DETERGENT OR FLOATABLE WASTES; WASTES FROM ANY ENGINE/EQUIPMENT STEAM CLEANING OR CHEMICAL DEGREASING AND SUPERCHLORINATED POTABLE WATER LINE FLUSHING. DURING CONSTRUCTION, PERMITTEE SHALL DISPOSE OF SUCH MATERIALS IN A SPECIFIED AND CONTROLLED TEMPORARY AREA ON-SITE, PHYSICALLY SEPARATED FROM POTENTIAL STORM WATER RUNOFF, WITH ULTIMATE DISPOSAL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
- DEWATERING OF CONTAMINATED GROUNDWATER, OR DISCHARGING CONTAMINATED SOILS VIA SURFACE EROSION IS PROHIBITED. DEWATERING OF NON-CONTAMINATED GROUNDWATER REQUIRES A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FROM THE RESPECTIVE STATE REGIONAL WATER QUALITY CONTROL BOARD.
- GRADED AREAS ON THE PERMITTED AREA PERIMETER MUST DRAIN AWAY FROM THE FACE OF SLOPES AT THE CONCLUSION OF EACH WORKING DAY. DRAINAGE IS TO BE DIRECTED TOWARD DESILTING FACILITIES.
- THE PERMITTEE AND CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATER CREATES A HAZARDOUS CONDITION.
- THE PERMITTEE AND CONTRACTOR SHALL INSPECT THE EROSION CONTROL WORK AND INSURE THAT THE WORK IS IN ACCORDANCE WITH THE APPROVED PLANS.
- THE PERMITTEE SHALL NOTIFY ALL GENERAL CONTRACTORS, SUBCONTRACTORS, MATERIAL SUPPLIERS, LESSEES, AND PROPERTY OWNERS: THAT DUMPING OF CHEMICALS INTO THE STORM DRAIN SYSTEM OR THE WATERSHED IS PROHIBITED.
- EQUIPMENT AND WORKERS FOR EMERGENCY WORK SHALL BE MADE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON. NECESSARY MATERIALS SHALL BE AVAILABLE ON SITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES WHEN RAIN IS IMMINENT.
- ALL REMOVABLE EROSION PROTECTIVE DEVICES SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN THE 5-DAY RAIN PROBABILITY FORECAST EXCEEDS 40%
- SEDIMENTS FROM AREAS DISTURBED BY CONSTRUCTION SHALL BE RETAINED ON SITE USING AN EFFECTIVE COMBINATION OF EROSION AND SEDIMENT CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE, AND STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO MINIMIZE SEDIMENT TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES OF ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TRACKING, OR WIND.
- APPROPRIATE BMP'S FOR CONSTRUCTION-RELATED MATERIALS, WASTES, SPILLS OR RESIDUES SHALL BE IMPLEMENTED AND RETAINED ON SITE TO MINIMIZE TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES, OR ADJOINING PROPERTY BY WIND OR RUNOFF.

GENERAL NOTES

- PROVIDE SHOP DRAWINGS AND EQUIPMENT SUBMITTALS TO THE OWNER'S REPRESENTATIVE FOR REVIEW PRIOR TO BEING SUBMITTED TO THE PROJECT ENGINEER.
- PROVIDE COMPLETE AND PROPERLY FUNCTIONING CONTROL SYSTEM FOR THIS PROJECT.
- COORDINATE THE INSTALLATION OF THE WORK OF ALL REQUIRED TRADES. IF DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A PROBLEM RELATIVE TO THE DOCUMENTS, THE LOCAL APPLICABLE CODES AND GOVERNING DOCUMENTS, OR THE WORK CANNOT BE INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS FOR ANY REASON, NOTIFY ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. THE CONTRACTOR MAY BE RESPONSIBLE FOR REMOVING, AT NO ADDITIONAL COMPENSATION, ANY WORK INSTALLED, PRIOR TO RECEIVING DIRECTION FROM THE OWNER'S REPRESENTATIVE, IN VIOLATION OF THE CONTRACT DOCUMENTS OR APPLICABLE CODES.
- SYMBOLS SHOWN ON THE DRAWINGS AND IN THE SCHEDULES INDICATE THE TYPE OF EQUIPMENT ONLY. REVIEW DRAWINGS TO DETERMINE THE EXACT QUANTITIES REQUIRED FOR EACH EQUIPMENT TYPE.
- CONTRACTOR SHALL EMPLOY "CLEAN CONSTRUCTION" METHODS TO KEEP THE WORK AREA AND SYSTEMS FREE OF DUST, DIRT AND DEBRIS. DUCT OPENINGS, DIFFUSERS, GRILLES AND REGISTERS SHALL BE SEALED WITH VISQUEE IN ANY AREA OF THE PROJECT WHERE DUST GENERATING CONSTRUCTION ACTIVITIES OCCUR, INCLUDING THE PREPARATION OF WALL BOARD, PREPARATION, GRINDING OR FINISHING OF CONCRETE WORK OR ANY OTHER SIMILAR ACTIVITY. IF SIMILAR REWORK OF A PREVIOUSLY FINISHED AREA IS REQUIRED, AIR HANDLING UNITS AND FAN COILS SERVING THAT AREA SHALL BE SHUT DOWN, AND ALL GRILLES, REGISTERS, DIFFUSERS AND DUCT OPENINGS IN THAT AREA, WHETHER ABOVE OR BELOW THE CEILING, SHALL BE SEALED WITH VISQUEE TO PREVENT INFILTRATION OF DUST, DIRT AND DEBRIS INTO THE AIR DISTRIBUTION SYSTEM.
- PROVIDE ALL CORING, TRENCHING, CUTTING AND PATCHING AS REQUIRED TO PERFORM THE WORK FOR THIS PROJECT.
- COORDINATE LOCATIONS OF SENSORS AND OTHER DEVICES WITH ENGINEER AND OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
- PROVIDE SUPPORT STEEL, HANGERS AND ACCESSORIES REQUIRED TO INSTALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. DO NOT SUPPORT DEVICES FROM DUCTWORK, PIPES, OR ELECTRICAL CONDUIT. UNLESS OTHERWISE NOTED, DO NOT ALLOW PIPES OR CONDUIT TO DIRECTLY CONTACT THE BUILDING STRUCTURE, CEILING SYSTEM, LIGHT FIXTURES, ANY OTHER BUILDING SYSTEM COMPONENT, OR EACH OTHER.
- PERFORM WORK IN ACCORDANCE WITH ALL CURRENT AND APPLICABLE LOCAL CODES AND REGULATIONS AND AS REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ).
- PROVIDE CODE APPROVED FIRE STOPPING AT PENETRATIONS THROUGH BUILDING CONSTRUCTION TO ACHIEVE FIRE, SMOKE, AND SOUND RATINGS AS REQUIRED.
- REPAIR ANY DAMAGE TO FIREPROOFING DUE TO INSTALLATION OF THIS WORK.
- INSTALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE EQUIPMENT SUITABLE FOR THE INTENDED PURPOSE.
- PERFORM SYSTEM COMMISSIONING, CLEANING, SERVICING, BALANCING, TESTING, AND CERTIFICATION REQUIRED BY THE DOCUMENTS, CODE, LOCAL AUTHORITY HAVING JURISDICTION, AND AS RECOMMENDED BY THE EQUIPMENT MANUFACTURERS, PRIOR TO OCCUPANCY.
- UPON COMPLETION OF TESTING, OPERATE EQUIPMENT TO VERIFY THAT ALL SYSTEMS FUNCTION PROPERLY. AFTER VERIFYING THE PROPER OPERATION, DEMONSTRATE THE OPERATION OF SYSTEMS AND EQUIPMENT TO THE OWNERS REPRESENTATIVES. PROVIDE 48 HOURS NOTICE AND SCHEDULE THE DEMONSTRATION WITH THE OWNER.
- PROVIDE O & M MANUALS AS DESCRIBED IN SPECIFICATIONS.
- PROVIDE TRAINING FOR OWNER'S MAINTENANCE AND ENGINEERING STAFF AS DESCRIBED IN SPECIFICATIONS.

BUILDING DATA

SCOPE OF WORK

- THE SCOPE OF WORK OF THIS PROJECT COMPRISES OF THE MECHANICAL, ELECTRICAL, PLUMBING AND STRUCTURAL WORK TO ACCOMPLISH OF THE FOLLOWING:
- DEMOLISH ONE SPLIT SYSTEM HEAT PUMP(3 TON COOLING CAPACITY) AND ONE PACKAGED ROOFTOP HEAT PUMP (5 TON COOLING CAPACITY). THE INDOOR UNIT RETURN PLENUM SHALL REMAIN.
 - REMOVE EXISTING REFRIGERANT PIPING CONNECTING THE OUTDOOR UNIT WITH THE INDOOR UNIT.
 - INSTALL ONE NEW SPLIT SYSTEM HEAT PUMP WITH SAME CAPACITY ON THE ORIGINAL LOCATION. INSTALL NEW REFRIGERANT PIPING CONNECTING THE INDOOR AND OUTDOOR UNITS. OUTDOOR UNIT SHALL BE MOUNTED ON THE ORIGINAL SUPPORT PLATFORM. INDOOR UNIT SHALL BE INSTALLED ON EXISTING RETURN PLENUM.
 - INSTALL ONE NEW PACKAGED HEAT PUMP WITH SAME CAPACITY ON THE ORIGINAL PLATFORM. PROVIDE NEW METAL COVER FOR THE SUPPORT PLATFORM.
 - REPLACE EXISTING THERMOSTATS WITH NEW MODEL AS SPECIFIED BY OWNER.

APPLICABLE CODE

- AS APPLICABLE TO THE SCOPE OF WORK, WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING CODES:
- 2016 CALIFORNIA BUILDING CODE, VOLUMES 1 AND 2
 - 2016 CALIFORNIA ELECTRICAL CODE
 - 2016 CALIFORNIA MECHANICAL CODE
 - 2016 CALIFORNIA PLUMBING CODE
 - 2016 CALIFORNIA EXISTING BUILDING CODE
 - 2016 CALIFORNIA REFERENCED STANDARDS CODE
 - 2016 CALIFORNIA ENERGY CODE
 - 2016 CALIFORNIA FIRE CODE
 - 2016 CALIFORNIA GREEN BUILDING STANDARD CODE (CALGREEN)

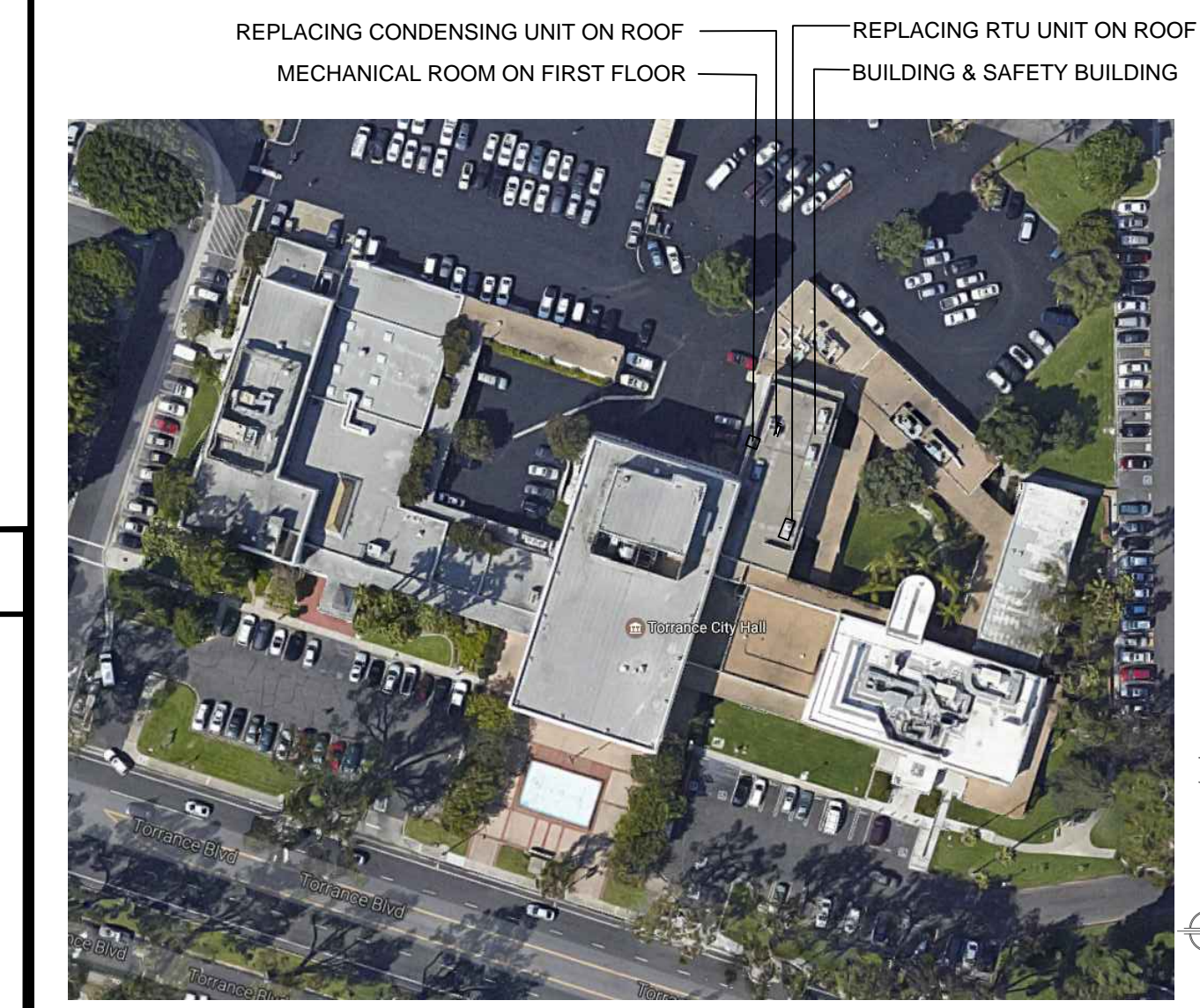
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S3.2	ROOF PLAN
S4.1	SECTIONS AND DETAILS

CONSULTANTS

IDS MECHANICAL ENGINEERS, INC
 1 PETERS CANYON ROAD, STE 150
 IRVINE, CA. 92606
 PHONE: 949-387-8500
 FAX: 949-502-7640
 ENGINEER OF RECORD:
 MECHANICAL: WALTER MACLEAN, P.E. X412
 ELECTRICAL: ROB ONEIL, P.E. X425
 STRUCTURAL: SAID HILMY, S.E. X116
 PROJECT MANAGER: MAYSOON SHEBAAN, P.E. X432

VICINITY MAP



BUILDING AND SAFETY HVAC SYSTEM REPLACEMENT
 3031 TORRANCE BLVD, TORRANCE, CA 90503

ABBREVIATIONS

ABBR. / SYMBOL	DESCRIPTION	ABBR. / SYMBOL	DESCRIPTION
AD	ACCESS DOOR	LVG	LEAVING
AFF	ABOVE FINISHED FLOOR	LWB	LEAVING WB TEMPERATURE
AI	ANALOG INPUT	MA	MAKEUP AIR
AO	ANALOG OUTPUT	MAT	MIXED AIR TEMPERATURE
AMB	AMBIENT	MAX	MAXIMUM
AP	ACCESS PANEL	MCC	MOTOR CONTROL CENTER
ARCH	ARCHITECTURAL	MIN	MINIMUM
BAS	BUILDING AUTOMATION SYSTEM	NC	NORMALLY CLOSED
BDD	BACK DRAFT DAMPER	NO	NORMALLY OPEN
BHP	BRAKE HORSEPOWER	SS	STAINLESS STEEL
BTUH	BTU PER HOUR	CV	CONSTANT VOLUME
CC	COOLING COIL	GV	GRAVITY VENTILATOR
CD	CEILING DIFFUSER	(N)	NEW
CFM	CUBIC FEET PER MINUTE	NO.	NUMBER
CWS/R	COOLING WATER SUPPLY AND RETURN	O & M	OPERATION AND MAINTENANCE
CTWS/R	COOLING TOWER WATER SUPPLY AND RETURN	OAD	OUTSIDE AIR DAMPER
CG	CEILING GRILLE	OPER WT	OPERATING WEIGHT
CNTRL	CONTROL	OPNG	OPENING
CONN	CONNECTION	OSA	OUTSIDE AIR
CONT	CONTINUATION	OV	OUTLET VELOCITY
CR	CEILING REGISTER	PD	PRESSURE DROP
CSF	COMBINATION FIRE/SMOKE DAMPER	POC	POINT OF CONNECTION
DDC	DISTRIBUTED DIGITAL CONTROL	POD	POINT OF DEMOLITION
DI	DIGITAL INPUT	(R)	RELOCATE
DO	DIGITAL OUTPUT	RA	RETURN AIR
DPT	DIFFERENTIAL PRESSURE TRANSMITTER	RAT	RETURN AIR TEMP.
(D)	TO BE DEMOLISHED	RG	RETURN GRILLE
D	CONDENSATE DRAIN, DRAIN	RH	RELATIVE HUMIDITY
(E)	EXISTING TO REMAIN	RM	REFRIGERANT MONITOR SENSING POINT
dP	PRESSURE DROP	RPB	REVERSE PRESSURE BACKFLOW
EA	EXHAUST AIR	RPM	REVOLUTIONS PER MINUTE
EAT	ENTERING AIR TEMPERATURE	SA	SUPPLY AIR
EWT	ENTERING WATER TEMPERATURE	SAT	SUPPLY AIR TEMPERATURE
EDB	ENTERING DB TEMPERATURE	SD	SMOKE DETECTOR
EWB	ENTERING WB TEMPERATURE	SF	SUPPLY FAN
EMS	ENERGY MANAGEMENT SYSTEM	SG	SUPPLY GRILLE
EF	EXHAUST FAN	SP	STATIC PRESSURE
EXH.	EXHAUST	SPEC	SPECIFICATION
FM	FLOW METER	SQ FT	SQUARE FOOT
FS	FLOW SWITCH	S/S	START/ STOP
ENT	ENTERING	ST	SOUND TRAP
ESP	EXTERNAL STATIC PRESSURE	T	THROAT
°F	DEGREES FAHRENHEIT	TS	TEMPERATURE SENSOR
FC	FLEXIBLE CONNECTION	TT	TEMPERATURE TRANSMITTER
FD	FIRE DAMPER	TSP	TOTAL STATIC PRESSURE
FLA	FULL LOAD AMPS	TDH	TOTAL DYNAMIC HEAD
FPM	FEET PER MINUTE	T OR TEMP	TEMPERATURE
GPM	GALLONS PER MINUTE	TYP	TYPICAL
HP	HORSEPOWER	UI	UNIVERSAL INPUT
HWS/R	HEATING HOT WATER SUPPLY AND RETURN	VD	VOLUME DAMPER
HZ	HERTZ	VAV	VARIABLE AIR VOLUME
IN	INCHES	VFD	VARIABLE FREQUENCY DRIVE
ICW	INDUSTRIAL COLD WATER	VRF	VARIABLE REFRIGERANT FLOW
KW	KILOWATT	WB	WET BULB
(L)	LINED DUCTWORK	WC	WATER COLUMN
LB	POUND	WG	WATER GAUGE
LAT	LEAVING AIR TEMPERATURE	WM	WATER METER
LWT	LEAVING WATER TEMPERATURE		

MECHANICAL LEGEND

ABBR. / SYMBOL	DESCRIPTION	ABBR. / SYMBOL	DESCRIPTION
	SQUARE OR RECTANGULAR DUCT	—CWS—	CONDENSING WATER SUPPLY
	ROUND DUCT	—CWR—	CONDENSING WATER RETURN
	FIRE DAMPER		REDUCER
	COMBINATION FIRE/SMOKE DAMPER		CONDENSATE DRAIN, DRAIN
	DUCT WITH MANUAL VOLUME DAMPER		FLOW INDICATOR, FLOW METER
	DUCT WITH ACOUSTICAL LINER. SIZE IS "X" IS LINER THICKNESS		FLEXIBLE PIPE CONNECTOR
	INCLINE RISE OR DROP IN DIRECTION OF AIR FLOW		GATE VALVE
	FLEXIBLE DUCT - DOUBLE LINE		BALANCING VALVE
	FLEXIBLE DUCT - SINGLE LINE		PLUG VALVE
	DIRECTION OF FLOW		CHECK VALVE
	TRANSITION		PRESSURE RELIEF VALVE, TEMPERATURE & PRESSURE RELIEF VALVE
	VAV (VAV-NO.)		AUTOMATIC AIR VENT
	SIDEWALL REGISTER		BALL VALVE
	DUCT DOWN		BUTTERFLY VALVE
	DUCT UP		PRESSURE GAGE, PRESSURE INDICATOR
	UP AND DOWN		THERMOMETER, TEMPERATURE INDICATOR
	CEILING REGISTER		2-WAY CONTROL VALVE
	EXHAUST REGISTER		3-WAY CONTROL VALVE
	CEILING DIFFUSER		PRESSURE REDUCING VALVE
	SUPPLY DUCT		BLIND FLANGE
	RETURN DUCT		TEMPERATURE/ PRESSURE TEST PORT
	EXHAUST DUCT		OCCUPANCY SENSOR
	CEILING ACCESS PANEL		LIGHTING CONTROL SWITCH
	DUCT WITH TURNING VANES		LIGHTING CONTROLLER
	VOLUME DAMPER		TIME SWITCH
	EQUIPMENT DESIGNATION & NUMBER		DAYLIGHT SENSOR
	ROOM THERMOSTAT		DIMMER
	SMOKE DETECTOR		LIGHTING CONTROL RELAY
	POINT OF CONNECTION		CARBON DIOXIDE SENSOR
	UNDERCUT DOOR		POWER SUPPLY. "X" IS VOLTAGE
	DOOR LOUVER	—CWS—	COOLING WATER SUPPLY
	NEW CONSTRUCTION KEYNOTE DESIGNATION	—CWR—	COOLING WATER RETURN
	DEMOLITION KEYNOTE DESIGNATION	—HHWS—	HEATING WATER SUPPLY
	ROOM HUMIDISTAT	—HHWR—	HEATING WATER RETURN
	INTERLOCK	—CTWS—	COOLING TOWER WATER SUPPLY
	PARALLEL BLADE DAMPER	—CTWR—	COOLING TOWER WATER RETURN
	OPPOSED BLADE DAMPER		
	MOTORIZED DAMPER OR VALVE		
	BACKDRAFT DAMPER		
	PIPE UNION		

ANCHORAGE & BRACING NOTES

THE SEISMIC ANCHORAGE OF MECHANICAL EQUIPMENT SHALL CONFORM TO ASCE 7-10 SECTION 13.3.1 AND TABLE 13.6-1, CCR TITLE 24, 2016 CBC SECTION 1613. ANCHORAGE DETAILS FOR ROOF/FLOOR MOUNTED EQUIPMENT SHALL BE AS SHOWN ON PLANS.

ALL MECHANICAL EQUIPMENT SHALL BE BRACED OR ANCHORED TO RESIST A HORIZONTAL FORCE ACTING IN ANY DIRECTION. REFER TO CCR TITLE 24 PART II, 2016 CBC PART 2 FOR EXACT REQUIREMENTS.

THE ATTACHMENT OF THE FOLLOWING ITEMS SHALL BE DESIGNED TO RESIST THE FORCES PRESCRIBED ABOVE, BUT NEED NOT BE DETAILED ON THE PLANS, AND THE PROJECT INSPECTOR WILL VERIFY THAT THESE ITEMS (EQUIPMENT) HAVE BEEN ANCHORED:

A. EQUIPMENT WEIGHING LESS THAN 400 POUNDS SUPPORTED DIRECTLY ON THE FLOOR OR ROOF.

B. FURNITURE REQUIRED TO BE ATTACHED IN ACCORDANCE WITH ASCE 7-10, SECTION 13.5.

C. TEMPORARY OR MOVABLE EQUIPMENT WITH FLEXIBLE CONNECTION TO POWER OR UTILITIES.

D. EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUPPORTED BY VIBRATION ISOLATORS.

E. EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE MECHANICAL/ELECTRICAL ENGINEER.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO RESIST THE FORCES PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.8, 13.6.7 AND 13.6.5.5, ITEM 6, RESPECTIVELY.

A COPY OF THE LATEST EDITION SMACNA MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF HANGING AND BRACING OF THE PIPE, DUCTWORK, AND ELECT. DISTRIBUTION SYSTEMS.

THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

BRACING OF DUCTS AND PIPING SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA GUIDELINES

WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWINGS OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER

A COPY OF THE GUIDELINES PUBLISHED BY SMACNA SHALL BE PROVIDED BY THE CONTRACTOR AND KEPT AT THE JOB AT ALL TIMES.

GENERAL NOTES

- PROVIDE SHOP DRAWINGS AND EQUIPMENT SUBMITTALS TO THE OWNER'S REPRESENTATIVE FOR REVIEW PRIOR TO BEING SUBMITTED TO THE PROJECT ENGINEER.
- PROVIDE COMPLETE AND PROPERLY FUNCTIONING CONTROL SYSTEM FOR THIS PROJECT.
- COORDINATE THE INSTALLATION OF THE WORK OF ALL REQUIRED TRADES. IF DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A PROBLEM RELATIVE TO THE DOCUMENTS, THE LOCAL APPLICABLE CODES AND GOVERNING DOCUMENTS, OR THE WORK CANNOT BE INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS FOR ANY REASON, NOTIFY ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. THE CONTRACTOR MAY BE RESPONSIBLE FOR REMOVING, AT NO ADDITIONAL COMPENSATION, ANY WORK INSTALLED, PRIOR TO RECEIVING DIRECTION FROM THE OWNER'S REPRESENTATIVE, IN VIOLATION OF THE CONTRACT DOCUMENTS OR APPLICABLE CODES.
- SYMBOLS SHOWN ON THE DRAWINGS AND IN THE SCHEDULES INDICATE THE TYPE OF EQUIPMENT ONLY. REVIEW DRAWINGS TO DETERMINE THE EXACT QUANTITIES REQUIRED FOR EACH EQUIPMENT TYPE.
- CONTRACTOR SHALL EMPLOY "CLEAN CONSTRUCTION" METHODS TO KEEP THE WORK AREA AND SYSTEMS FREE OF DUST, DIRT AND DEBRIS. DUCT OPENINGS, DIFFUSERS, GRILLES AND REGISTERS SHALL BE SEALED WITH VISQUEINE IN ANY AREA OF THE PROJECT WHERE DUST GENERATING CONSTRUCTION ACTIVITIES OCCUR, INCLUDING THE PREPARATION OF WALL BOARD, PREPARATION, GRINDING OR FINISHING OF CONCRETE WORK OR ANY OTHER SIMILAR ACTIVITY. IF SIMILAR REWORK OF A PREVIOUSLY FINISHED AREA IS REQUIRED, AIR HANDLING UNITS AND FAN COILS SERVING THAT AREA SHALL BE SHUT DOWN, AND ALL GRILLES, REGISTERS, DIFFUSERS AND DUCT OPENINGS IN THAT AREA, WHETHER ABOVE OR BELOW THE CEILING, SHALL BE SEALED WITH VISQUEINE TO PREVENT INFILTRATION OF DUST, DIRT AND DEBRIS INTO THE AIR DISTRIBUTION SYSTEM.
- PROVIDE ALL CORING, TRENCHING, CUTTING AND PATCHING AS REQUIRED TO PERFORM THE WORK FOR THIS PROJECT.
- CUTTING, BORING, SAWCUTTING, OR DRILLING THROUGH NEW OR EXISTING STRUCTURAL ELEMENTS TO BE DONE ONLY WHEN SO DETAILED IN THE DRAWINGS OR ACCEPTED BY THE ARCHITECT AND STRUCTURAL ENGINEER.
- COORDINATE LOCATIONS OF SENSORS, THERMOSTATS AND OTHER DEVICES WITH ENGINEER AND OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. TEMPERATURE SENSORS MOUNTED ON EXTERIOR WALLS SHALL HAVE INSULATED BACKS. AVOID LOCATIONS NEAR EXTERIOR DOORS OR IN DIRECT SUNLIGHT. MOUNTING HEIGHT PER ADA. IN FINISHED AREA'S WHERE DEVICES ARE REMOVED, PATCH AND FINISH TO MATCH EXISTING SURROUNDING MATERIALS AND COLORS.
- COORDINATE THE CEILING TYPES AND DO NOT INSTALL WORK THAT REQUIRES ACCESS (JUNCTION BOXES, VALVES, DEVICES, ETC.) ABOVE INACCESSIBLE CEILINGS. IF IT IS NECESSARY TO INSTALL SUCH WORK ABOVE AN INACCESSIBLE CEILING, PROVIDE ACCESS PANELS AS REQUIRED TO PERMIT ACCESS. COORDINATE ACCESS PANEL LOCATIONS WITH THE ASSOCIATED EQUIPMENT LOCATIONS. SHOW ACCESS PANELS ON SHOP DRAWINGS. INSTALL ACCESS PANELS IN WALLS OR CEILINGS AS SHOWN ON ARCHITECTURAL PLANS OR AS DIRECTED BY THE ARCHITECT.
- PROVIDE 1" DIAMETER COLORED STICKER ON CEILINGS TO INDICATE LOCATIONS OF CONTROLLERS, FIRE DAMPERS AND BALANCING DAMPERS ABOVE CEILINGS. SHOP DRAWINGS SHALL INCLUDE A LEGEND FOR COLOR CODE.
- PROVIDE SUPPORT STEEL, HANGERS, VIBRATION ISOLATION, AND ACCESSORIES REQUIRED TO INSTALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. DO NOT SUPPORT CEILINGS, LIGHTING FIXTURES, OR ANY OTHER DEVICES FROM DUCTWORK, PIPES, OR ELECTRICAL CONDUIT. UNLESS OTHERWISE NOTED, DO NOT ALLOW DUCTWORK, PIPES, OR CONDUIT TO DIRECTLY CONTACT THE BUILDING STRUCTURE, CEILING SYSTEM, LIGHT FIXTURES, ANY OTHER BUILDING SYSTEM COMPONENT, OR EACH OTHER. APPLIANCES DESIGNED TO BE FIXED IN POSITION SHALL BE SECURELY FASTENED IN PLACE PER BUILDING CODE REQUIREMENTS.
- PERFORM WORK IN ACCORDANCE WITH ALL CURRENT AND APPLICABLE LOCAL CODES AND REGULATIONS AND AS REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
- VERIFY THAT EQUIPMENT AND MATERIAL TO BE INSTALLED IN THE RETURN AIR PATH IS RATED FOR USE IN THE RETURN AIR PATH AND MEETS REQUIREMENTS OF THE APPLICABLE CODES AND REGULATIONS. SUPPLY AND RETURN AIR PLENUMS SHALL BE OF NON-COMBUSTIBLE CONSTRUCTION, SEALED AIRTIGHT, AND CONFORM TO ALL APPLICABLE CODE REQUIREMENTS. MATERIALS SHALL HAVE A MOLD, HUMIDITY, AND EROSION RESISTANT FACE THAT MEETS THE REQUIREMENTS OF UL181. COMBUSTIBLE MATERIALS EXPOSED WITHIN THE PLENUM MUST HAVE FLAME-SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED RATING OF NOT MORE THAN 50.
- SUPPLY AIR, RETURN AIR, AND OUTSIDE AIR FOR HEATING, COOLING OR EVAPORATIVE COOLING SHALL BE CONDUCTED THROUGH DUCT SYSTEMS CONSTRUCTED OF METAL AS SET FORTH IN THE SMACNA HVAC DUCT CONSTRUCTION STANDARDS. METAL AND FLEXIBLE, OR ANOTHER APPROVED DUCT CONSTRUCTION STANDARD.
- PROVIDE CODE APPROVED FIRE STOPPING AT PENETRATIONS THROUGH BUILDING CONSTRUCTION TO ACHIEVE FIRE, SMOKE, AND SOUND RATINGS AS REQUIRED.
- REPAIR ANY DAMAGE TO FIREPROOFING DUE TO INSTALLATION OF THIS WORK.
- INSTALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS.
- PROVIDE EQUIPMENT SUITABLE FOR THE INTENDED PURPOSE.
- PERFORM SYSTEM COMMISSIONING, CLEANING, SERVICING, BALANCING, TESTING, AND CERTIFICATION REQUIRED BY THE DOCUMENTS, CODE, LOCAL AUTHORITY HAVING JURISDICTION, AND AS RECOMMENDED BY THE EQUIPMENT MANUFACTURERS, PRIOR TO OCCUPANCY.
- UPON COMPLETION OF TESTING, OPERATE EQUIPMENT TO VERIFY THAT ALL SYSTEMS FUNCTION PROPERLY. AFTER VERIFYING THE PROPER OPERATION, DEMONSTRATE THE OPERATION OF SYSTEMS AND EQUIPMENT TO THE OWNERS REPRESENTATIVES. PROVIDE 48 HOURS NOTICE AND SCHEDULE THE DEMONSTRATION WITH THE OWNER.
- PRIOR TO PERMIT BEING FINALIZED, A COMPLETE REPORT OF THE TESTING AND ADJUSTING SHALL BE PROVIDED TO THE OWNER/OWNER'S REPRESENTATIVE AND TO THE INSPECTOR.(CGS.713.10.4)
- PROVIDE O & M MANUALS AS DESCRIBED IN SPECIFICATIONS.
- PROVIDE TRAINING FOR OWNER'S MAINTENANCE AND ENGINEERING STAFF AS DESCRIBED IN SPECIFICATIONS.
- SURFACE MOUNTED CONDUIT NOT PERMITTED IN OCCUPIED AREA'S.
- CONTROL WIRING NOTES
 - PROVIDE CONTROL, SIGNAL AND COMMUNICATION WIRING AND CONDUIT.
 - COORDINATE WITH ELECTRICAL CONTRACTOR FOR 120 VAC POWER REQUIRED FOR CONTROL DEVICES.
 - WIRING DIAGRAMS ARE SHOWN FOR CONTROL SEQUENCE AND FUNCTION ONLY. IT REMAINS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO INSURE THAT THE ELECTRICAL PORTION OF THIS WORK IS INSTALLED PER CODE.
- REGARDLESS INDICATED ON PLAN OR NOT, CONTRACTOR TO PROVIDE BALANCING DAMPER FOR ALL SUPPLY, RETURN AND EXHAUST DUCTWORK AT BRANCH TAKEOFF.
- THE CITY OF TORRANCE HAS A RESPONSIBILITY TO REQUEST A LOCAL AUTHORITY ASBESTOS REMOVAL COMPANY TO REMOVE ALL HEATING HOT WATER SUPPLY AND HEATING HOT WATER RETURN ASBESTOS INSULATION IN THIS BOILER ROOM.

SCOPE OF WORK

THE MECHANICAL SCOPE OF WORK FOR THIS PROJECT IS AS FOLLOWS:

- REMOVE AN EXISTING 5 TON COOLING CAPACITY PACKAGED ROOF TOP HEAT PUMP UNIT (AC-14)
- REMOVE AN EXISTING 3 TON COOLING CAPACITY SPLIT SYSTEM HEATPUMP(C-1) WITH INDOOR FAN COIL UNIT (FC-1) AND ROOF MOUNTED OUTDOOR UNIT AND ASSOCIATED REFRIGERANT PIPING.
- INSTALL A NEW PACKAGED ROOFTOP HEAT PUMP WITH SAME CAPACITY. REUSE THE EXISTING PLATFORM. REPLACE SHEET METAL COVER FOR EXISTING PLATFORM
- INSTALL A NEW SPLIT HEAT PUMP UNIT WITH SAME COOLING CAPACITY. REUSE EXISTING PLATFORM.
- REPLACE THE THERMOSTATS.

TITLE 24 NOTE:

- REPLACE EXISTING PACKAGED ROOFTOP AC UNIT AND SPLIT SYSTEM HEAT PUMP WITH SAME CAPACITY. NO ADDITIONAL COOLING/HEATING CAPACITY IS ADDED.
- PIPING INSULATION PER TITLE 24 REQUIREMENT.

MECHANICAL SHEET INDEX

SHEET NO.	SHEET TITLE
M0.1	MECHANICAL LEGEND, ABBREVIATIONS, AND GENERAL NOTES
M0.2	MECHANICAL SCHEDULES
M2.1	MECHANICAL DEMOLITION & RENOVATION FLOOR PLANS
M3.1	MECHANICAL DEMOLITION ROOF PLAN
M3.2	MECHANICAL RENOVATION ROOF PLAN
M4.1	MECHANICAL DETAILS
M4.2	MECHANICAL DETAILS

APPLICABLE CODES & STANDARD

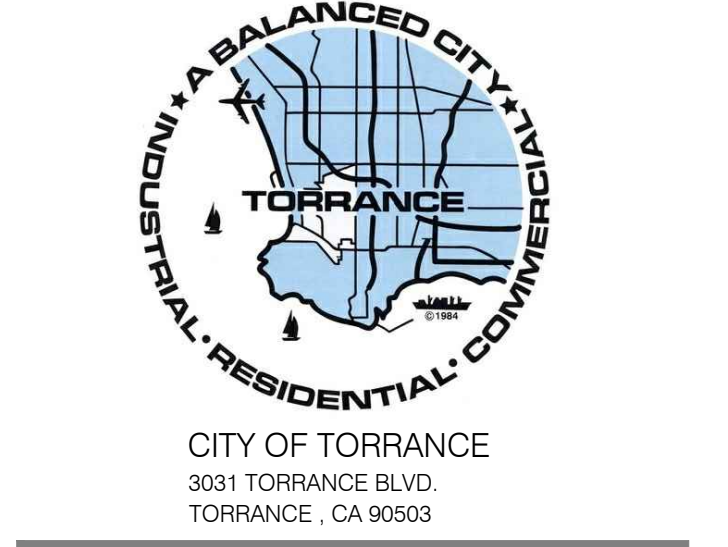
AS APPLICABLE TO THE SCOPE OF WORK, NEW WORK TO BE PERFORMED IN ACCORDANCE WITH THE FOLLOWINGS:

- 2016 CALIFORNIA BUILDING CODE, VOLUMES 1 AND 2
- 2016 CALIFORNIA ELECTRICAL CODE
- 2016 CALIFORNIA MECHANICAL CODE
- 2016 CALIFORNIA PLUMBING CODE
- 2016 CALIFORNIA ENERGY CODE (2013 BUILDING ENERGY EFFICIENCY STANDARDS FOR RESIDENTIAL AND NON-RESIDENTIAL BUILDING)
- 2016 CALIFORNIA REFERENCED STANDARDS CODE
- 2016 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN)

GREEN BUILDING STANDARD NOTES

- MINIMUM OF 50% OF NON HAZARDOUS CONSTRUCTION WASTE TO BE RECYCLED. CGC 5.713.8.1.
- TESTING AND ADJUSTING OF NEW SYSTEMS SHALL COMPLY AS OUTLINED IN CGC SECTION 5.713.10.4.2.
- OPERATIONS AND MAINTENANCE SCHEDULE (O&M) AS LISTED IN CGC SECTION 5.713.10.4.5 SHALL BE DELIVERED TO THE BUILDING OWNER OR REPRESENTATIVE AND THE FACILITIES OPERATOR.
- DURING CONSTRUCTION, ENDS OF DUCT OPENING ARE TO BE SEALED, AND MECHANICAL EQUIPMENT IS TO BE COVERED. CGC 5.714.4.3.
- VOC'S MUST COMPLY WITH THE LIMITATIONS LISTED IN SECTION 5.504.4 AND TABLES 4.504.1, 5.504.4.1, 5.504.4.2, 5.504.4.3 AND 5.504.4.5 FOR: ADHESIVES, SEALANTS, PAINTS, AND COATINGS, CARPET AND COMPOSITION WOOD PRODUCTS. CGC 5.714.4.4.
- PRIOR TO FINAL APPROVAL OF THE BUILDING THE LICENSED CONTRACTOR, ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE OF THE OVERALL CONSTRUCTION MUST COMPLETE AND SIGN THE CITY APPROVED GREEN BUILDING STANDARDS CERTIFICATION FORM OR OTHER DOCUMENTATION REQUIRED BY THE CITY AND GIVEN TO THE BUILDING DEPARTMENT OFFICIAL PRIOR TO BUILDING FINAL APPROVAL TO BE FILED WITH THE APPROVED PLANS.

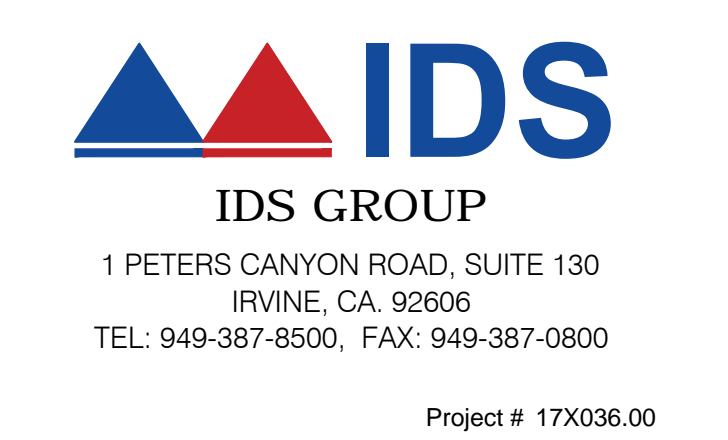
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PROJECT NAME

BUILDING & SAFETY HVAC SPLIT SYSTEM AND ROOF TOP UNIT REPLACEMENT

CONSULTANT



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	PLAN CHECK SUBMITTAL	2017-0913
	CD RE-SUBMITTAL	2017-1004

SHEET TITLE

MECHANICAL ABBREVIATION, LEGEND AND GENERAL NOTES

SHEET NUMBER

M0.1

PACKAGED HEAT PUMP AIR CONDITIONING UNIT(TO BE DEMOLISHED) SCHEDULE

MARK	DESCRIPTION	LOCATION	SERVICE	CFM	OSA CFM	ESP (IN. WG.)	SEER EER	REFRIG.	COOLING CAP. (MBH)				HEATING CAP. (MBH)					ELECTRICAL DATA					AMB. TEMP. (°F)	OPER. WEIGHT (LBS.)	MANUFACTURER	MODEL	REMARKS
									TOTAL	SENSIBLE	EWB	LWB	TOTAL	MCA	MOCP	VOLT	PH	HZ	MCA	MOCP	VOLT	PH					
AC 14 (D)	PACKAGED ROOFTOP UNIT	ROOF	ENVIROMENT	-	-	-	-	22	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DAY & NITE	542GP060	SERIAL NO.: 4387C50821

NOTE:
(D) TO BE DEMOLISHED

FANCOIL UNIT(TO BE DEMOLISHED) SCHEDULE

MARK	DESCRIPTION	LOCATION	SERVICE	CFM	OSA CFM	ESP (IN. WG.)	SEER EER	REFRIG.	COOLING CAP. (MBH)				GAS HEATING CAP. (MBH)					ELECTRICAL DATA					AMB. TEMP. (°F)	OPER. WEIGHT (LBS.)	MANUFACTURER	MODEL	REMARKS
									TOTAL	SENSIBLE	EWB	LWB	TOTAL	HP	VOLT	PH	HZ	MCA	MOCP	VOLT	PH	HZ					
FC 1 (D)	FAN COIL UNIT	MECHANICAL ROOM	FIRST FLOOR COUNTER	-	-	-	-	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CARRIER	FX4DNF037	SERIAL NO.: 0314A86327	

AIR COOLED CONDENSER(TO BE DEMOLISHED) SCHEDULE

MARK	MAKE & MODEL	NO. OF FANS	AMB. TEMP. (°F)	ELECTRICAL DATA					OPER. WEIGHT (LBS.)	REMARK
				MCA	MOCP	VOLT	PH	HZ		
C 1 (D)	CARRIER 8QR036C500	-	-	-	-	-	-	-	-	

NEW PACKAGED HEAT PUMP AIR CONDITIONING UNIT SCHEDULE

MARK	DESCRIPTION	LOCATION	SERVICE	CFM	OSA CFM	ESP (IN. WG.)	SEER EER	REFRIG.	COOLING CAP. (MBH)				HEATING CAP.					ELECTRICAL DATA					OPER. WEIGHT (LBS.)	BASED ON		REMARKS
									TOTAL	SENSIBLE	EWB	LWB	MBH(47F)	COP/HSPF	MCA	MOCP	VOLT	PH	HZ	MCA	MOCP	MANUFACTURER		MODEL		
(N) AC 14	PACKAGED ROOFTOP UNIT, HORIZONTAL DISCHARGED	ROOF	HT. PMP. ENVIROMENT	2000	500	0.5	14	R-410A (12.32 LB)	58.44	42.47	80	67	60.4	57.9	58.23	-/8	28.7	40	208	3	60	490	CARRIER	50VT-C60-5	①②③④⑤⑥⑦	

① TRANE IS APPROVED AS EQUAL. ② PROVIDE OUTSIDE AIR HOOD ③ PROVIDE DUCT MOUNTED SMOKE DETECTOR. SMOKE DETECTOR SHALL BE PROVIDED AND INSTALLED BY DIVISION 23 AND WIRED BY DIVISION 26. UPON SENSING SMOKE IN THE SUPPLY DUCT SYSTEM, THE SUPPLY FAN STOPS OPERATING. ④ PROVIDE NEW PROGRAMMABLE THERMOSTAT VENSTAR MODEL T 2800. ⑤ UNIT SHALL BE COATED WITH EPOXY-PHENOLIC COATING.

⑥ PROVIDE WITH UNIT BAROMETRIC EXHAUST ECONOMIZER. ⑦ PROVIDE CONDENSER COIL WITH EPOXY-PHENOLIC COATING.

NEW HEAT PUMP FANCOIL UNIT SCHEDULE

MARK	DESCRIPTION	LOCATION	SERVICE	CFM	OSA CFM	ESP (IN. WG.)	SEER EER	REFRIG.	COOLING CAP. (MBH)				HEATING CAP.					ELECTRICAL DATA					OPER. WEIGHT (LBS.)	BASED ON		REMARKS
									TOTAL	SENSIBLE	EWB	LWB	MBH	COP/HSPF	MCA	MOCP	VOLT	PH	HZ	MCA	MOCP	MANUFACTURER		MODEL		
(N) FC 1	FAN COIL UNIT VERTICAL	MECHANICAL ROOM	FIRST FLOOR COUNTER	1200	300	0.5	14	PURON	34.2	25.92	80	67	60	58.11	36	3.68@47 /8.2	5.1	15	208	1	60	-	160	CARRIER	FX4DNF037L00	①②③

① TRANE IS APPROVED AS EQUAL. ② PROVIDE WITH UNIT NEW PROGRAMMABLE THERMOSTAT VENSTAR MODEL T2800. ③ PROVIDE WITH ALL REQUIRED REFRIGERANT PIPING, FILTER DRYER , ACCESSORIES AND REFRIGERANT TO FORM A COMPLETE WORKING SYSTEM. REFRIGERANT PIPING SHALL BE SIZED PER MANUFACTURER'S REQUIREMENT.

NEW HEAT PUMP CONDENSER SCHEDULE

MARK	DESCRIPTION	SERVICE	NO. OF FANS	ELECTRICAL DATA					OPER. WEIGHT (LBS.)	BASED ON		REMARK
				MCA	MOCP	VOLT	PH	HZ		MANUFACTURER	MODEL	
C 1 (N)	-----	FC 1 (N)	1	12.8	20	208	3	60	230	CARRIER	25HH4436A00T5	TRANE IS APPROVED AS EQUAL. UNIT SHALL BE COATED WITH EPOXY-PHENOLIC COATING.

CLIENT



CITY OF TORRANCE
3031 TORRANCE BLVD.
TORRANCE, CA 90503

PROJECT NAME

**BUILDING & SAFETY HVAC
SPLIT SYSTEM AND ROOF
TOP UNIT REPLACEMENT**

CONSULTANT



IDS GROUP
1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA. 92606
TEL: 949-387-8500, FAX: 949-387-0800

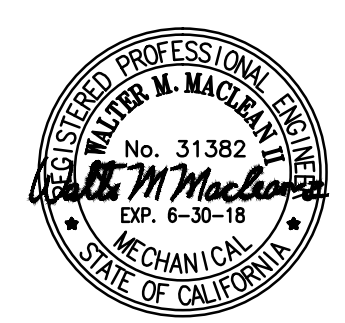
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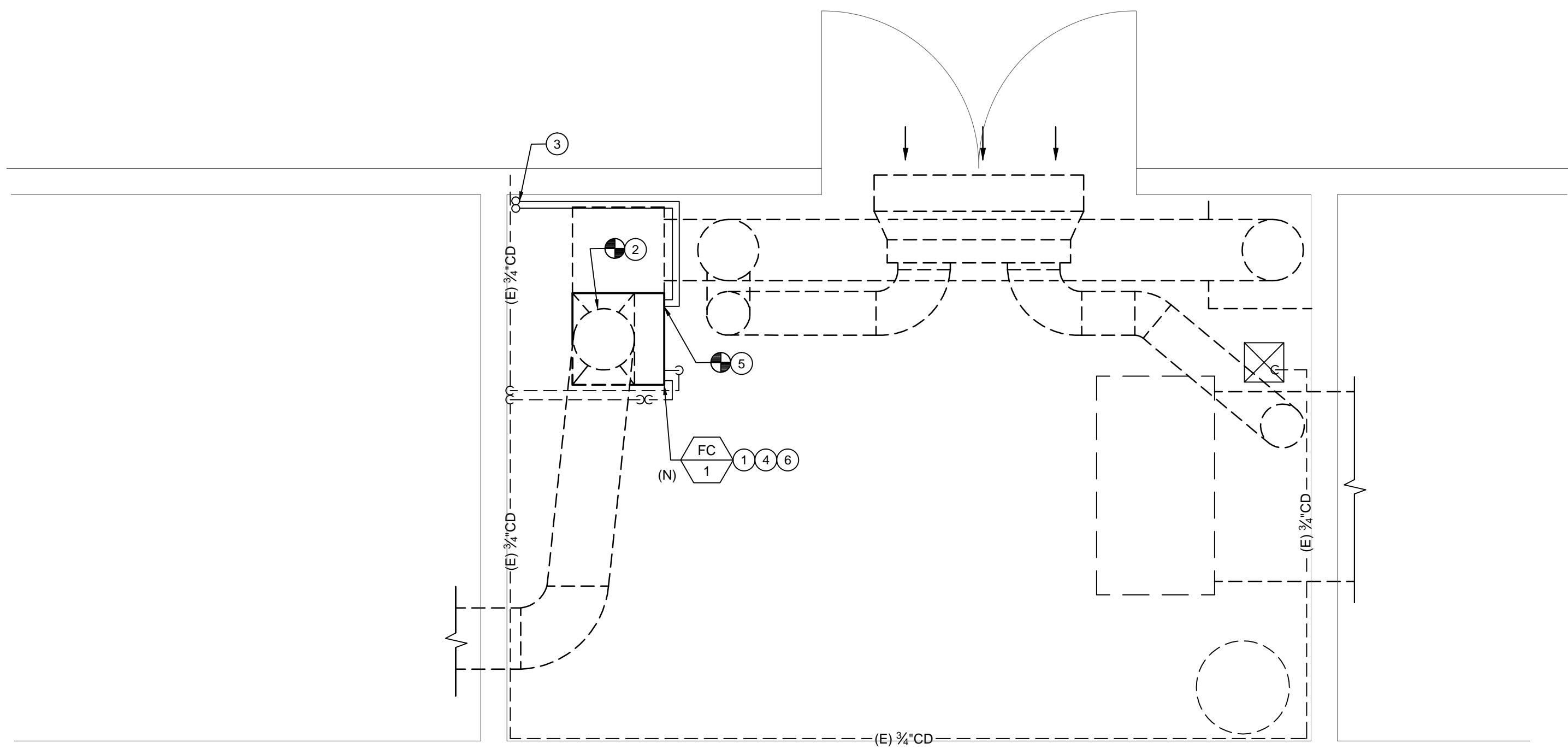
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SHEET TITLE

**MECHANICAL
SCHEDULES**

SHEET NUMBER

M0.2



RENOVATION KEY NOTES

- 1 INSTALL (N)FAN COIL UNIT ON (E)RETURN PLENUM.
- 2 RECONNECT EXISTING SUPPLY AIR DUCT TO (N)FAN COIL HEAT PUMP UNIT. PROVIDE FLEXIBLE CONNECTOR AT DUCT CONNECTION TO FAN COIL. REFER TO DETAIL S3M4.1.
- 3 RECONNECT (E) 3/4" PRIMARY AND 3/4" SECONDARY CONDENSATE DRAIN BACK TO THE NEW UNIT. PROVIDE UNION AT PIPING CONNECTION TO FAN COIL OUTLET. VERIFY EXACT P.O.C. IN FIELD.
- 4 REPLACE EXISTING PROGRAMMABLE THERMOSTAT. REUSE EXISTING WIRING AND CONNECT TO NEW FAN COIL (FC-1). VERIFY WITH OWNER FOR EXACT LOCATION OF THERMOSTAT PRIOR TO START OF WORK.
- 5 RECONNECT NEW REFRIGERANT PIPING TO NEW FAN COIL UNIT. FOR PIPING ROUTING ABOVE ROOF, SEE SHEET M3.2.
- 6 BALANCING THE FAN COIL UNIT TO PROVIDE THE SPECIFIED CFM AND OUTSIDE AIR AS INDICATED ON SCHEDULE. PROVIDE BALANCING REPORT.

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BUILDING & SAFETY HVAC SPLIT SYSTEM AND ROOF TOP UNIT REPLACEMENT

CONSULTANT

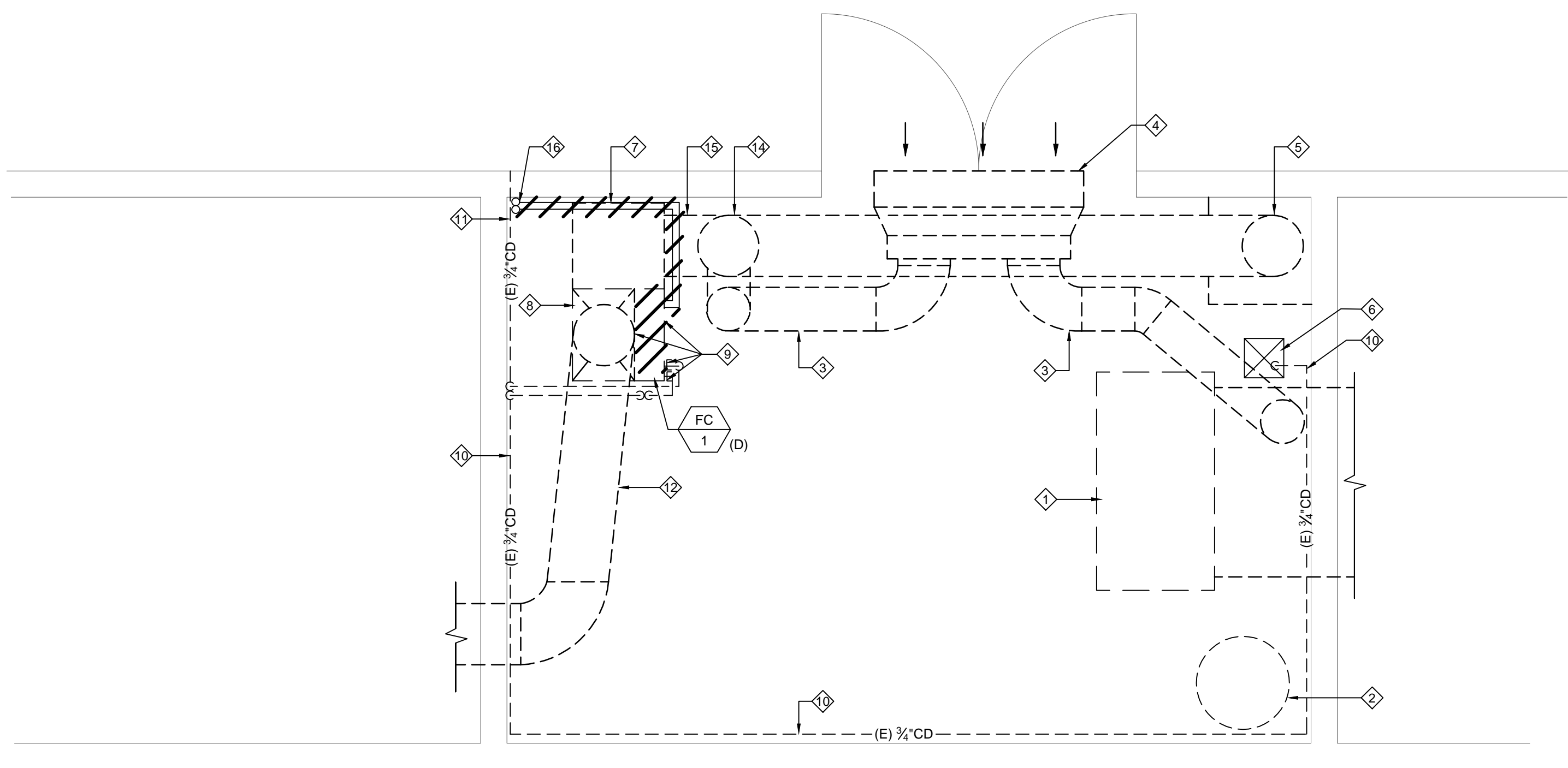


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MECHANICAL ROOM RENOVATION PLAN 1/2" = 1'-0" **2**



DEMOLITION KEY NOTES

- 1 (E) AIR HANDLING UNIT TO REMAIN IN PLACE. VERIFY EXACT AIR HANDLING UNIT LOCATION IN FIELD AND IT SHALL BE PROTECTED DURING CONSTRUCTION PHASE AS REQUIRED.
- 2 (E) ELECTRICAL WATER HEATER TO REMAIN IN PLACE. VERIFY EXACT ELECTRICAL WATER HEATER IN FIELD AND IT SHOULD BE PROTECTED IN CONSTRUCTION PHASE AS REQUIRED.
- 3 (E) OUTSIDE AIR DUCT TO REMAIN IN PLACE. VERIFY EXACT EXISTING OUTSIDE AIR DUCT LOCATION IN FIELD AND IT SHOULD BE PROTECTED DURING CONSTRUCTION PHASE AS REQUIRED.
- 4 (E) 48"x24" OUTSIDE AIR INTAKE LOUVER ABOVE THE DOOR TO REMAIN IN PLACE. VERIFY EXACT LOCATION OF EXISTING OUTSIDE AIR LOUVER IN FIELD AND IT SHOULD BE PROTECT DURING CONSTRUCTION AS REQUIRED.
- 5 (E) 14"Ø RETURN AIR DUCT UP TO CEILING SPACE TO REMAIN IN PLACE. VERIFY EXACT (E) 14"Ø RETURN AIR DUCT IN FIELD AND IT SHOULD BE PROTECTED DURING IN CONSTRUCTION PHASE AS REQUIRED.
- 6 (E) FLOOR SINK TO REMAIN IN PLACE. VERIFY EXACT FLOOR SINK LOCATION IN FIELD AND IT SHOULD BE PROTECTED AS REQUIRED.
- 7 (E) MIXING AIR PLENUM TO REMAIN IN PLACE. VERIFY EXACT MIXING PLENUM IN FIELD AND IT SHOULD BE PROTECTED DURING CONSTRUCTION PHASE AS REQUIRED.
- 8 (E) 21" x 21" x 48"H RETURN PLENUM BELOW THE (D) FAN COIL HEAT PUMP UNIT TO REMAIN.
- 9 (D) FAN COIL UNIT TO BE DEMOLISHED AND REPLACED WITH NEW. PROVIDE TEMPORARY CAP FOR ALL EXISTING CONDENSATE PIPES FOR RECONNECTION. FIX OR REPAIR EXISTING RETURN AIR PLENUM AND EXISTING SUPPLY AIR DUCT FOR RECONNECTION BACK TO (N)FAN COIL UNIT.
- 10 (E) 3/4" PRIMARY CONDENSATE PIPE EXPOSED ON WALL & RUN HORIZONTAL ON WALL TOWARD (E) FLOOR SINK TO REMAIN IN PLACE. VERIFY EXACT PIPE LOCATION IN FIELD AND PROTECTED DURING CONSTRUCTION PHASE.
- 11 (E) 3/4" SECONDARY CONDENSATE PIPE EXPOSED AND RUN HORIZONTAL ON WALL TOWARD THE EXTERIOR WALL TO REMAIN IN PLACE. VERIFY EXACT PIPE LOCATION IN FIELD AND PROTECTED DURING CONSTRUCTION PHASE.
- 12 (E) DUCTWORK TO REMAIN IN PLACE AND PROTECTED DURING CONSTRUCTION PHASE.
- 13 DEMOLISH EXISTING REFRIGERANT PIPING COMPLETELY.
- 14 (E) OUTSIDE AIR DUCT AND (E)RETURN AIR DUCT CONNECT AS MIXING AIR DUCT AND DOWN.
- 15 (E)MIXING AIR DUCT CONNECT TO (E)MIXING AIR PLENUM.
- 16 REMOVE EXISTING REFRIGERANT PIPING COMPLETELY. PROTECT ROOF OPENING FOR FUTURE INSTALLATION OF NEW REFRIGERANT PIPING. FOR CONT., SEE SHEET M3.1

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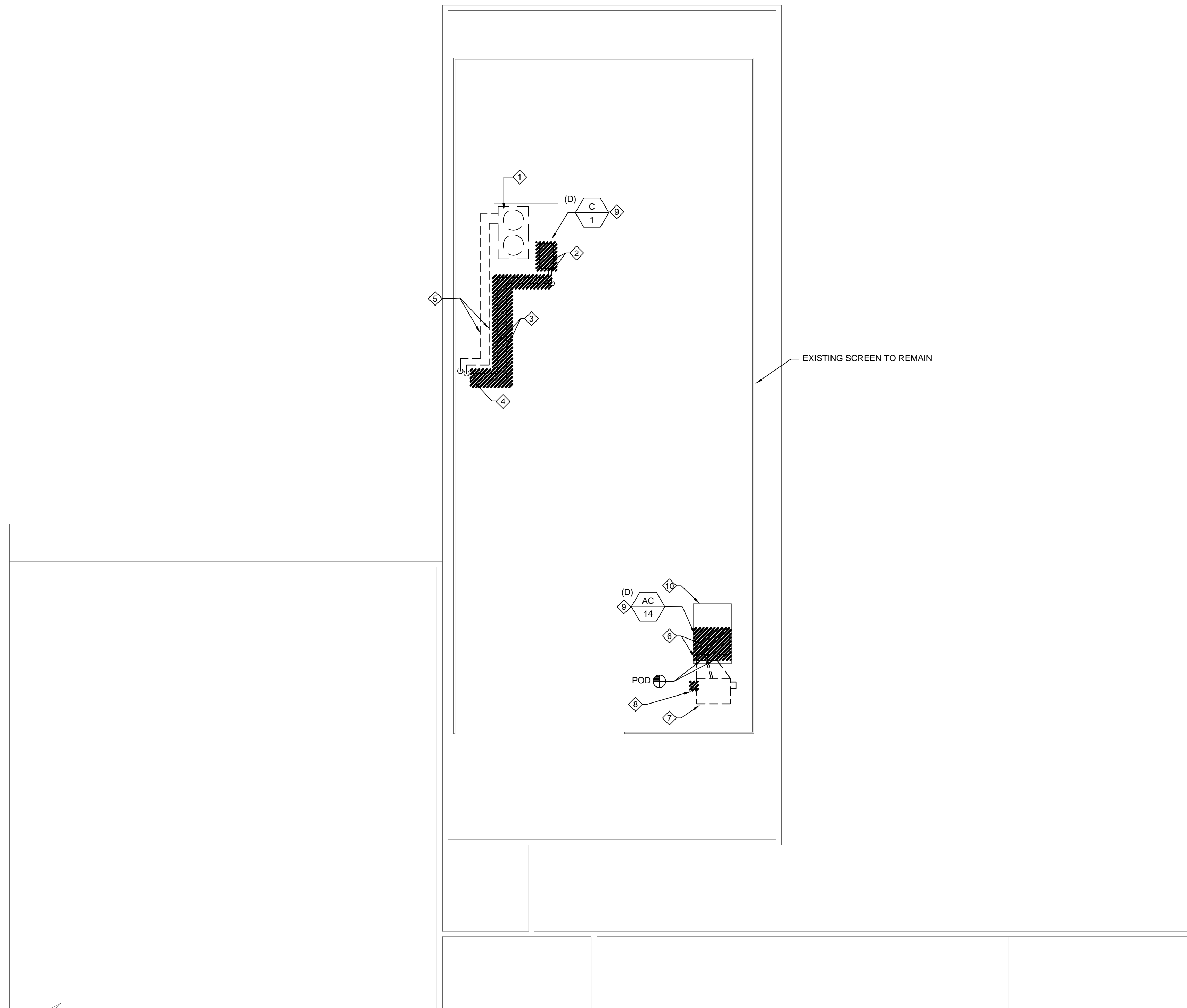
SHEET TITLE

MECHANICAL DEMO & RENO FLOOR PLANS

SHEET NUMBER

M2.1

MECHANICAL ROOM DEMOLITION PLAN 1/2" = 1'-0" **1**



DEMOLITION KEY NOTES

- 1 (E) CONDENSER UNIT TO REMAIN IN PLACE. VERIFY EXACT LOCATION IN FIELD.
- 2 DEMOLISH EXISTING CONDENSER. VERIFY EXACT LOCATION OF (E) CONDENSER UNIT IN FIELD. REPAIR SUPPORT PLATFORM AS NEEDED TO MATCH EXISTING.
- 3 DEMOLISH REFRIGERATION PIPES ON ROOF INCLUDING SUPPORT AND ALL ACCESSORIES. VERIFY EXACT LOCATION OF REFRIGERATION PIPES IN FIELD.
- 4 CAP ROOF OPENING WEATHER PROOF AFTER REMOVAL OF REFRIGERANT PIPING. ROOF OPENING IS TO BE REUSED FOR NEW REFRIGERANT PIPING.
- 5 EXISTING REFRIGERANT PIPING TO REMAIN.
- 6 DEMOLISH EXISTING ROOF TOP HEAT PUMP UNIT. PROVIDE TEMPORARY CAPPED ALL (E) DUCTWORK. FIX AND REPAIR ALL EXISTING DUCTWORK FOR RECONNECTION TO NEW ROOF TOP UNIT. VERIFY EXACT (E) DUCTWORK IN FIELD.
- 7 (E) DUCTWORK ON ROOF TO REMAIN IN PLACE. VERIFY EXACT LOCATION OF EXISTING DUCTWORK IN FIELD.
- 8 DEMOLISH EXISTING DUCT MOUNTED SMOKE DETECTOR.
- 9 DEMOLISH EXISTING THERMOSTAT AT CONDITIONED SPACE. VERIFY WITH OWNER FOR LOCATION OF THERMOSTAT TO BE REMOVED. CAP WIRING AT WALL PENETRATION. WIRING IS TO BE REUSED FOR NEW THERMOSTAT.
- 10 REMOVE EXISTING SHEET METAL COVER FOR PLATFORM COMPLETELY.

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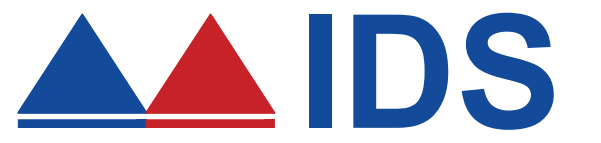


CITY OF TORRANCE
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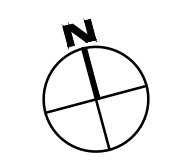
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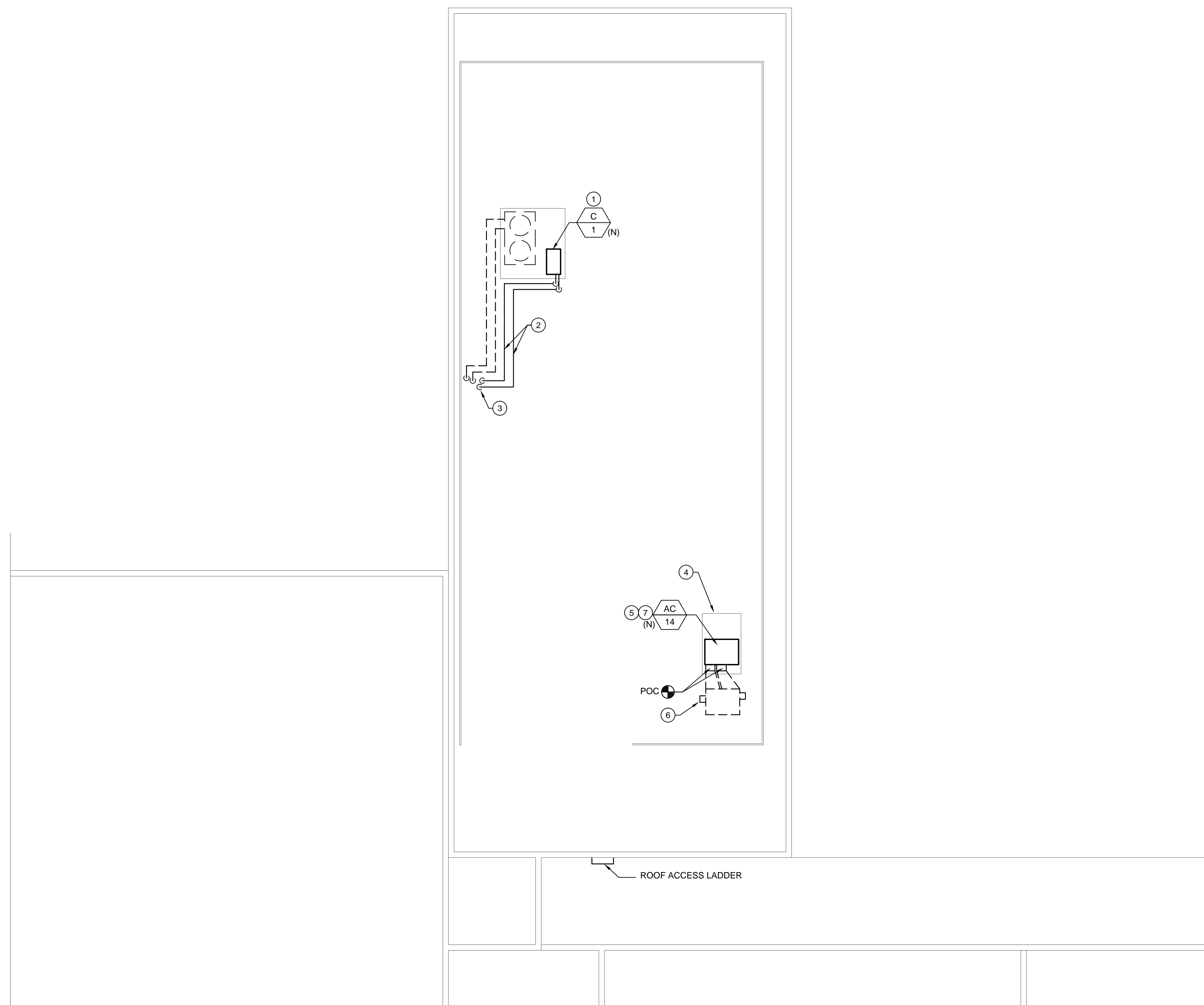
SHEET TITLE

MECHANICAL MECHANICAL ROOF PLAN

SHEET NUMBER

M3.1

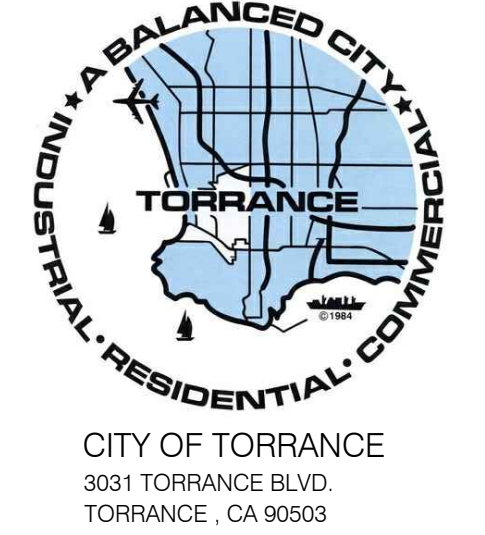




RENOVATION KEY NOTES

- ① FURNISH AND INSTALL (N) CONDENSER UNIT. FOR INSTALLATION, SEE STRUCTURAL DWG.
- ② PROVIDE NEW REFRIGERATION PIPE FROM NEW CONDENSER UNIT TO NEW INDOOR FAN COIL. SIZING PER MANUFACTURER REQUIREMENT. FOR PIPE SUPPORT ON ROOF, SEE DETAIL 2/M4.1. INSULATE PIPING WITH ARMAFLEX PER TITLE 24 THICKNESS REQUIREMENT.
- ③ FOR REFRIGERANT PIPING PENETRATION THRU ROOF, SEE DETAIL 3/M4.1.
- ④ PROVIDE NEW 18 GAGE GALVANIZED STEEL COVER EXISTING PLATFORM.
- ⑤ FURNISH AND INSTALL (N) AC UNIT. RECONNECT ALL (E) DUCT WORK TO NEW ROOF TOP UNIT. PROVIDE DUCTWORK TRANSITION AS NEEDED. PROVIDE FLEXIBLE CONNECTOR AT DUCT CONNECTION TO UNIT. REFER TO DETAIL 5/M4.1.
- ⑥ PROVIDE NEW DUCT MOUNTED SMOKE DETECTOR AT SUPPLY DUCT. PROVIDE WEATHER COVER FOR THE NEW DUCT SMOKE DETECTOR. UPON SENSING SMOKE IN THE DUCT SYSTEM, THE ASSOCIATED SUPPLY FAN STOPS RUNNING.
- ⑦ PROVIDE NEW PROGRAMMABLE THERMOSTAT AT ORIGINAL LOCATION OF THE DEMOLISHED THERMOSTAT. RECONNECT THERMOSTAT TO NEW AC UNIT BY REUSE EXISTING WIRING. VERIFY WITH OWNER FOR EXACT LOCATION OF THERMOSTAT TO BE MOUNTED

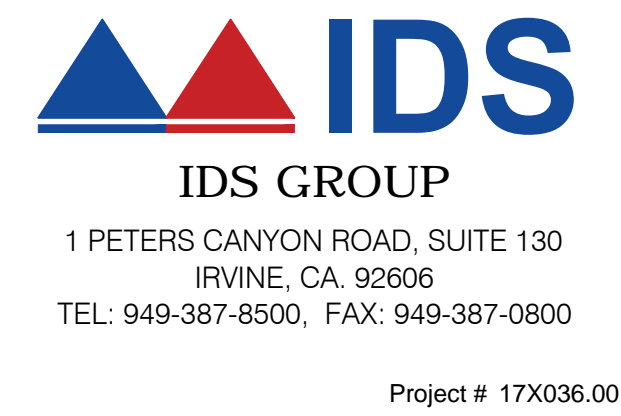
CLIENT



PROJECT NAME

BUILDING & SAFETY HVAC SPLIT SYSTEM AND ROOF TOP UNIT REPLACEMENT

CONSULTANT



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Date

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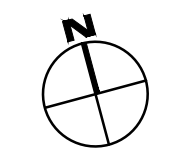
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SHEET TITLE

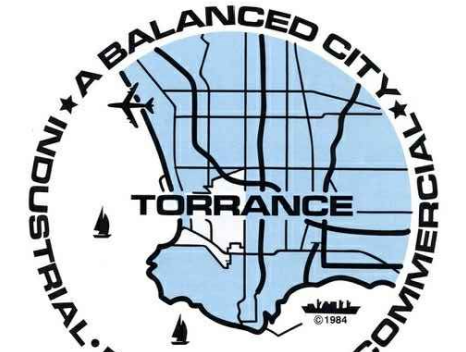
MECHANICAL RENOVATION ROOF PLAN

SHEET NUMBER

M3.2



CLIENT



CITY OF TORRANCE
3031 TORRANCE BLVD.
TORRANCE, CA 90503

PROJECT NAME

BUILDING & SAFETY HVAC SPLIT SYSTEM AND ROOF TOP UNIT REPLACEMENT

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TEL: 949-387-8500, FAX: 949-387-0800

Project # 17X036.00

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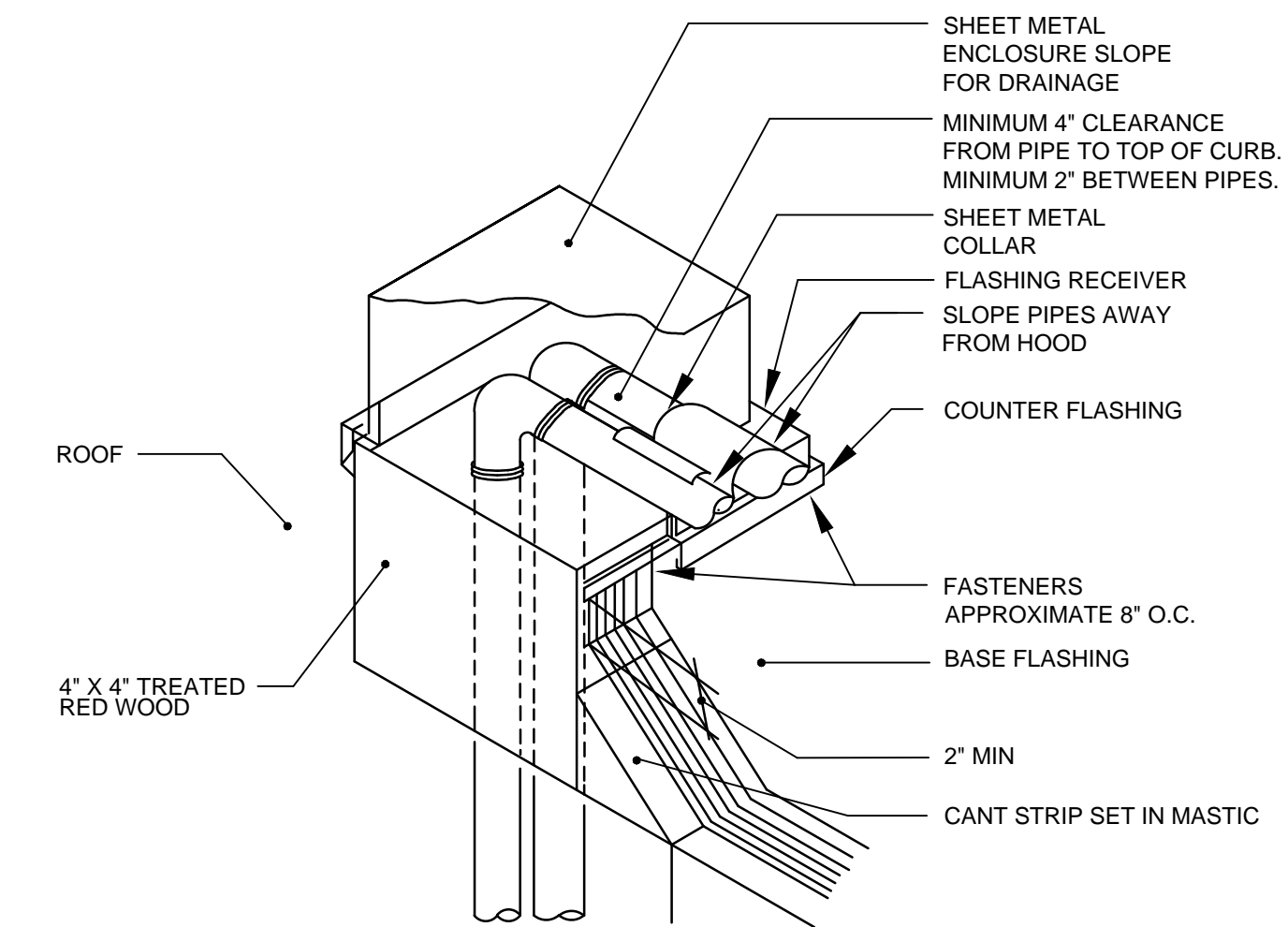
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	PLAN CHECK SUBMITTAL	2017-0913
	CD RE-SUBMITTAL	2017-1004

SHEET TITLE

MECHANICAL DETAILS

SHEET NUMBER

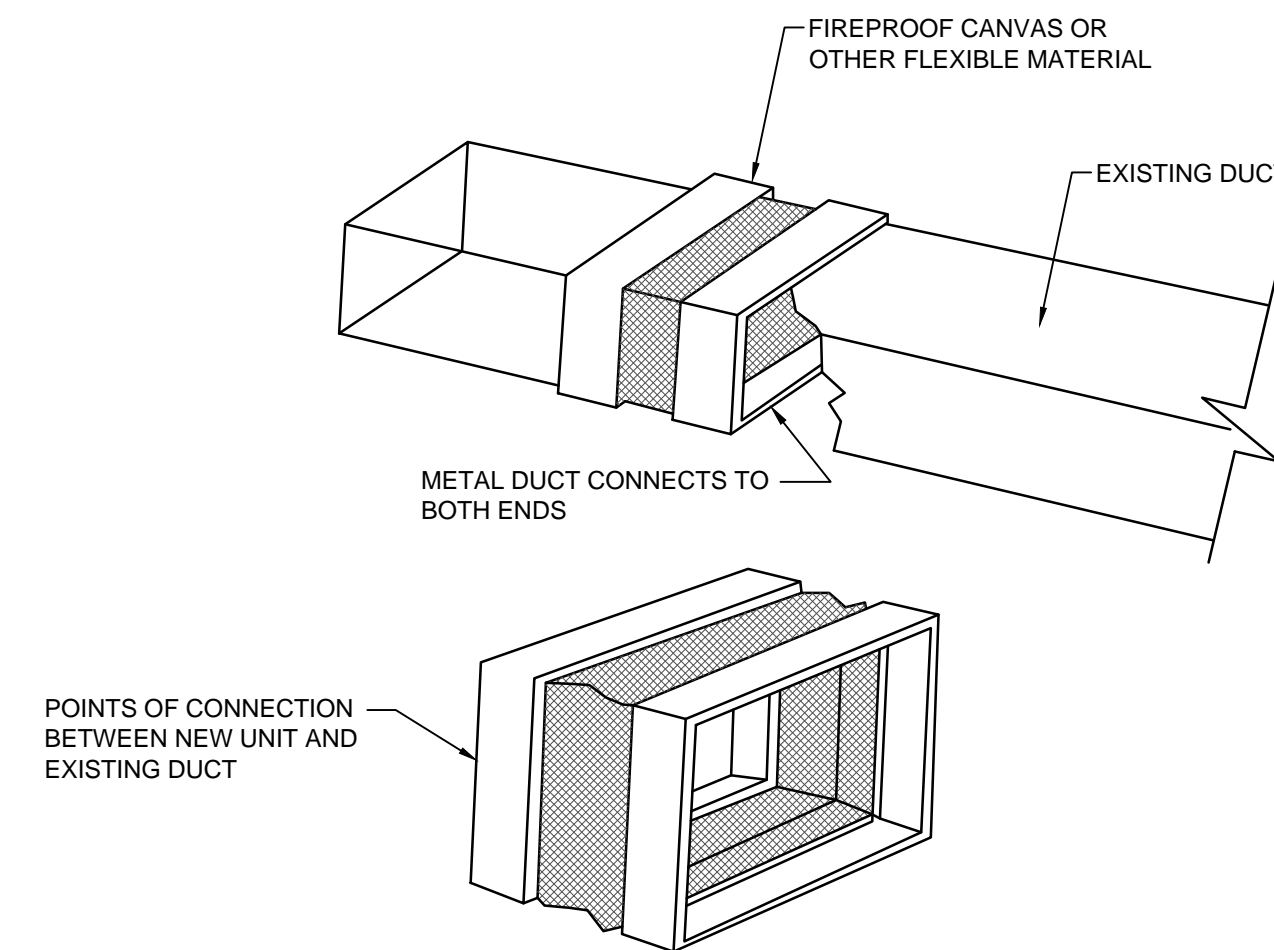
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- NO SCALE 6

REFRIGERANT PIPING PENETRATING ROOF DETAIL

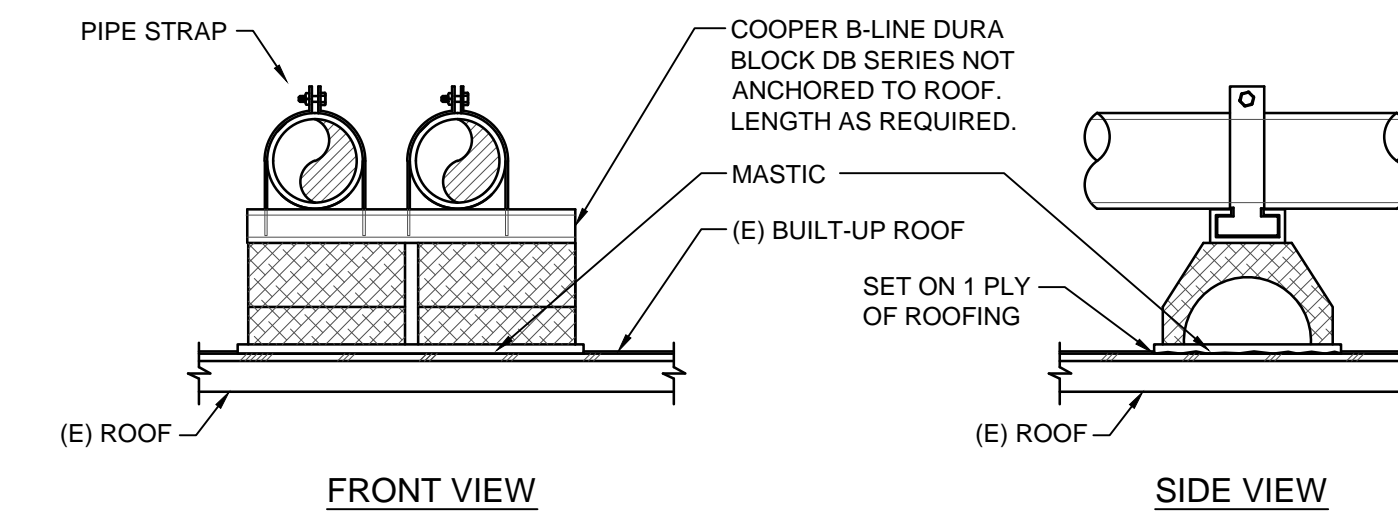
NO SCALE 3



- NO SCALE 8

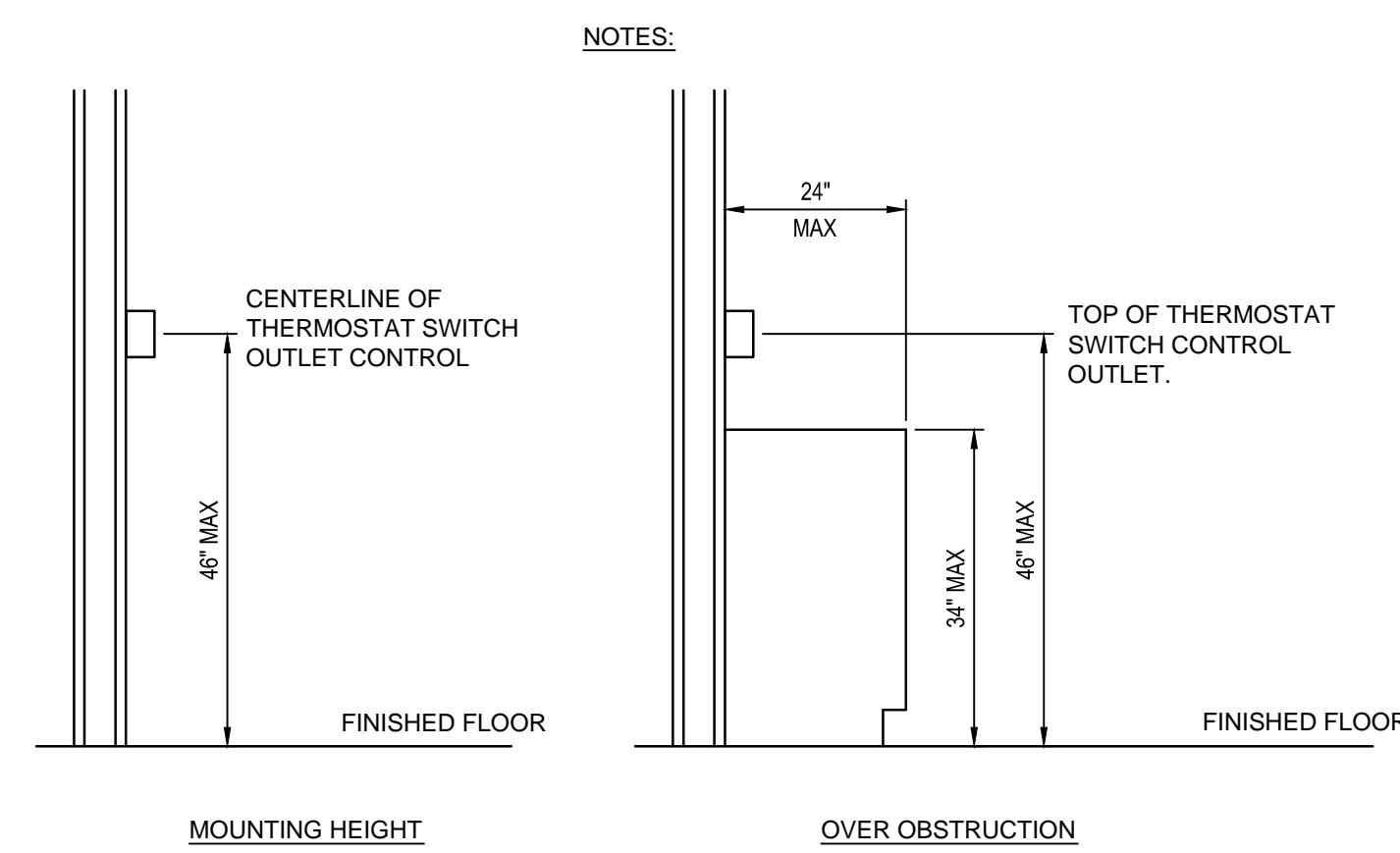
FLEXIBLE DUCT CONNECTION DETAIL

NO SCALE 5



REFRIGERANT MOUNTING ON ROOF DETAIL

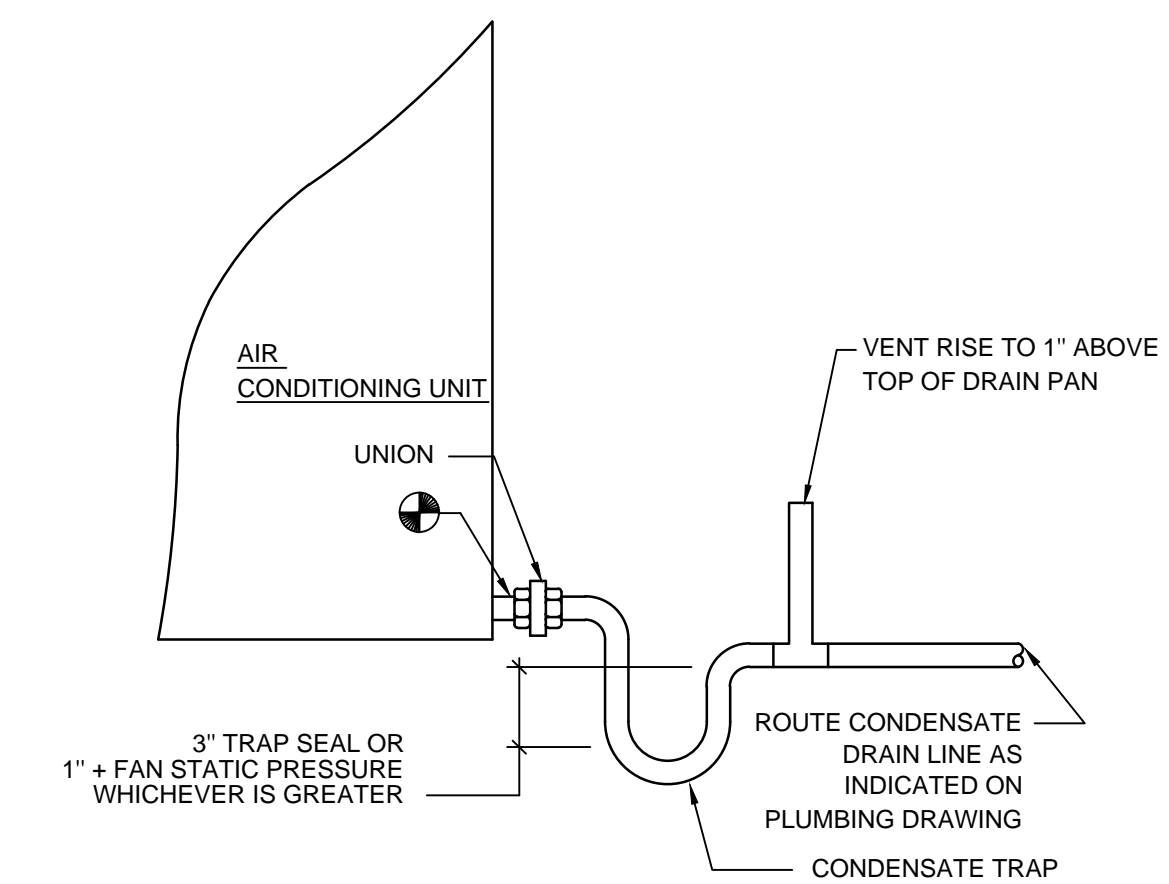
NO SCALE 2



- NO SCALE 7

THERMOSTAT MOUNTING DETAIL

NO SCALE 4



CONDENSATE DRAIN DETAIL

NO SCALE 1



EXISTING UNITS ON ROOF NO SCALE 3



CONDENSER UNIT (TO BE DEMOLISHED) NO SCALE 5



EXISTING OUTSIDE AIR INTAKE NO SCALE 2

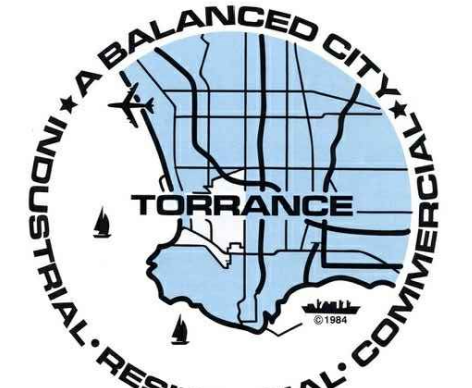


AC-14 (TO BE DEMOLISHED) NO SCALE 4



FAN COIL UNIT (TO BE DEMOLISHED) NO SCALE 1

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**MECHANICAL
DETAILS**

SHEET NUMBER

M4.2