

MECHANICAL ABBREVIATIONS

Table of mechanical abbreviations including: AMPERE A(AMP), ABOVE FINISHED FLOOR AFF., ADDENDUM ADD., AIR CONDITIONING A/C, etc.

NOTE: NOT ALL ABBREVIATIONS ON THIS LIST ARE APPLICABLE TO THIS PROJECT.

Table of abbreviations including: HOT WATER H.W., INFORMATION INFO., KILOWATT KW, LEAVING AIR TEMPERATURE LAT., etc.

Table of abbreviations including: SQUARE FEET SF, STAINLESS STEEL SS., TEMPERATURE TEMP., UNDERGROUND U.G., etc.

MECHANICAL DEMO SYMBOL LEGEND

Table of demo symbols including: DEMO SUPPLY AIR GRILLE, DEMO RETURN AIR GRILLE, DEMO EXHAUST AIR GRILLE, etc.

PIPING SYMBOL LEGEND

Table of piping symbols including: CHWS - CHILLED WATER SUPPLY, CHWR - CHILLED WATER RETURN, HHWS - HEATING HOT WATER SUPPLY, etc.

NOTE: NOT ALL SYMBOLS ON THIS LIST MAY BE APPLICABLE TO THIS PROJECT.

MECHANICAL CONTROLS SYMBOL LEGEND

Table of mechanical controls symbols including: CO2 - CARBON DIOXIDE SENSOR, CO - CARBON MONOXIDE SENSOR, T - THERMOSTAT, etc.

NOTE: NOT ALL SYMBOLS ON THIS LIST MAY BE APPLICABLE TO THIS PROJECT.

MECHANICAL SYMBOL LEGEND

Table of mechanical symbols including: TYPE/CFM SUPPLY AIR GRILLE, TYPE/CFM RETURN AIR GRILLE, TYPE/CFM EXHAUST AIR GRILLE, etc.

NOTE: NOT ALL SYMBOLS ON THIS LIST MAY BE APPLICABLE TO THIS PROJECT.

MECHANICAL GENERAL NOTES

- A. THE MECHANICAL WORK CONSISTS OF PROVIDING LABOR, MATERIALS, PRODUCTS, AND IN PERFORMING ALL OPERATIONS REQUIRED FOR THE COMPLETE OPERATING INSTALLATION OF ALL MECHANICAL SYSTEMS...

HVAC GENERAL NOTES

- A. COORDINATE DIFFUSER, REGISTER, AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING, AND OTHER CEILING ITEMS...

AND AS INDICATED ON THE DRAWINGS.

MECHANICAL PIPING GENERAL NOTES

- A. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE PIPING SYSTEMS AS INDICATED ON THE DRAWINGS...

SHEET INDEX

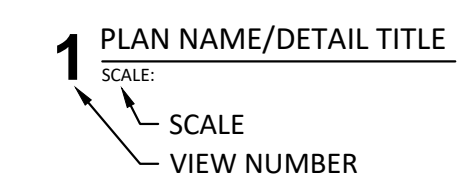
Table listing sheet numbers and titles: 00M-000 MECHANICAL ABBREVIATIONS, SYMBOLS, LEGEND, & GENERAL NOTES, etc.

Table of applicable codes: 2015 UMC, 2015 IBC, 2017 NEC, 2015 IECC, 2012 TAS

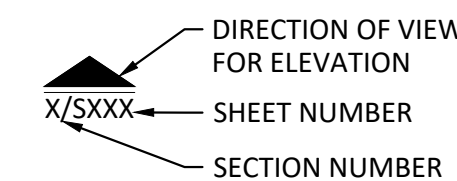
Table of design criteria: DESIGN CRITERIA, SUMMER, WINTER, OUTDOOR CONDITIONS, INDOOR CONDITIONS

DRAFTING SYMBOLS

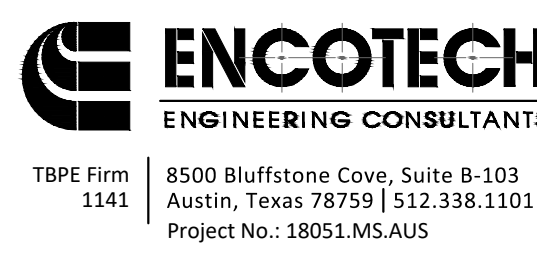
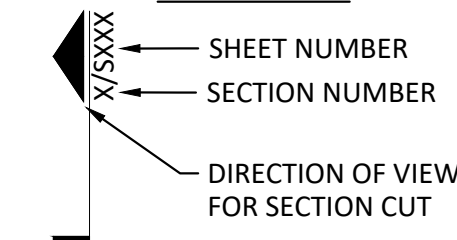
PLAN/DETAIL DESIGNATION



ELEVATION MARK

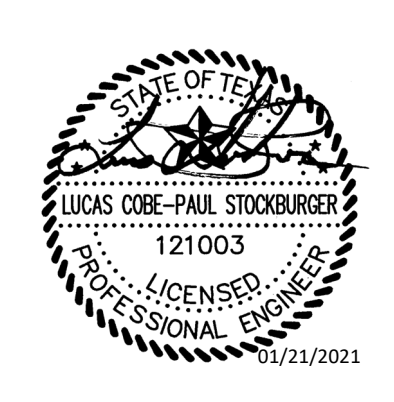


SECTION MARK



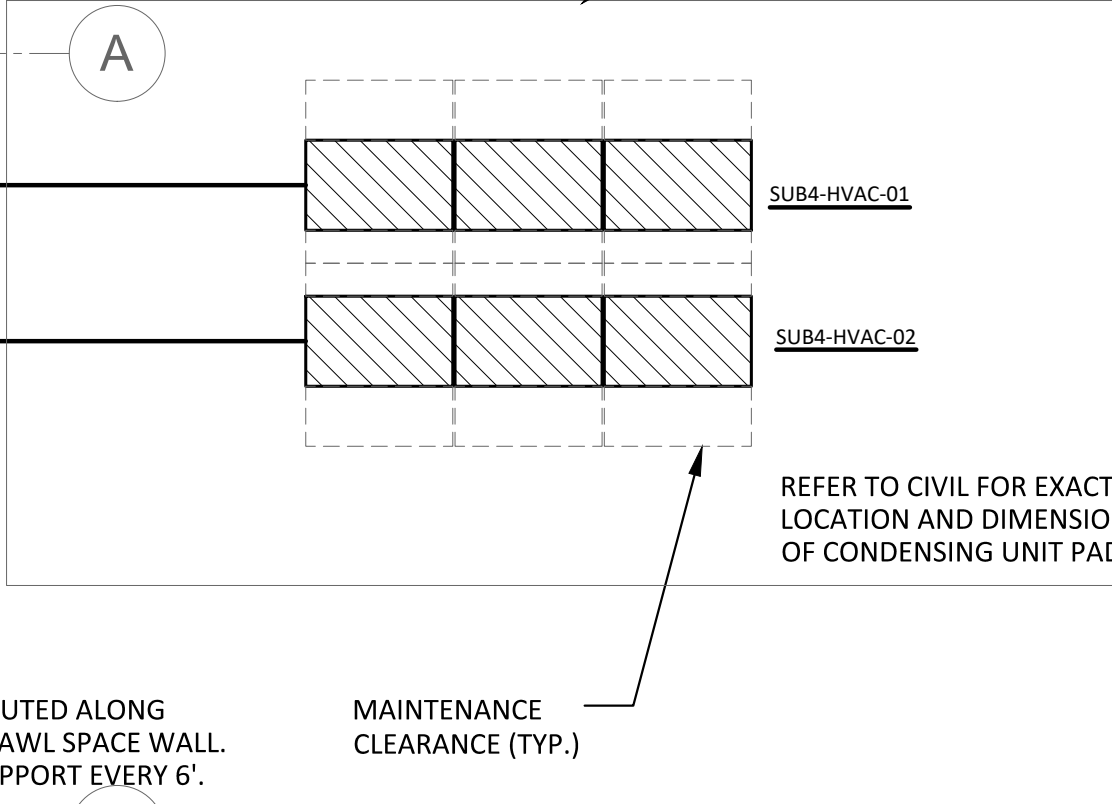
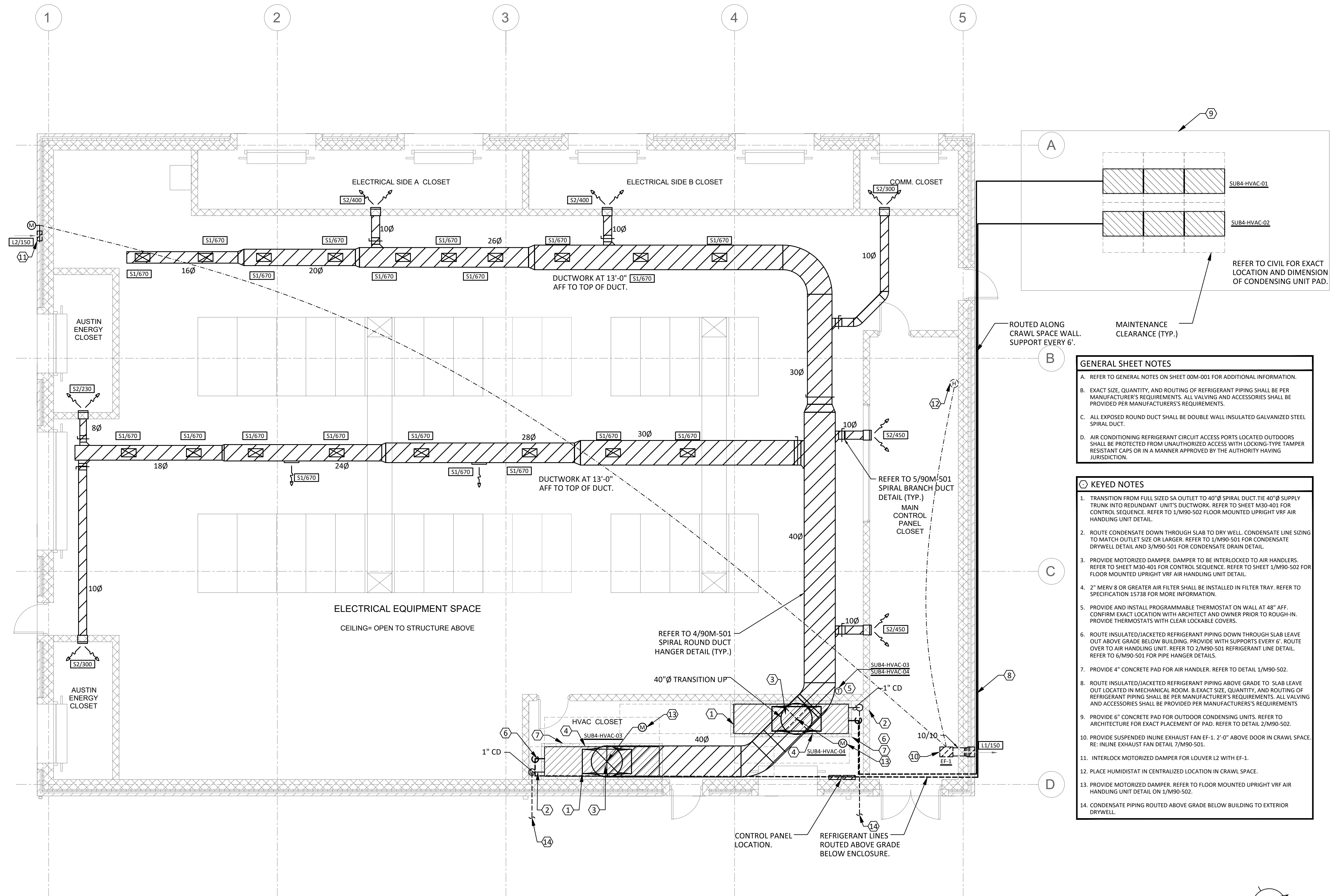
Project information table: PROJECT NUMBER, DATE, DESCRIPTION, PROJECT MANAGER, DESIGNED BY, DRAWN BY, CHECKED BY, DATE

Project manager information table: PROJECT MANAGER, W. D. WEHNER, DESIGNED BY, DRAWN BY, CHECKED BY, DATE, PROJECT NUMBER



ULLRICH WTP LOW SERVICE PUMP STATION ELECTRICAL FEED RENEWAL

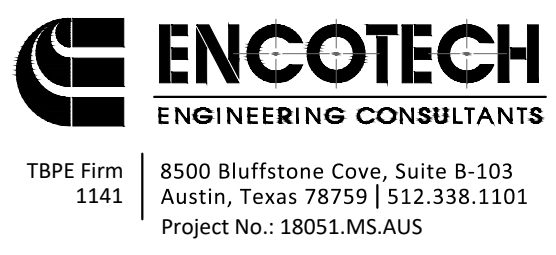
MECHANICAL ABBREVIATIONS, SYMBOLS, LEGENDS & GENERAL NOTES. Includes scale bar (0 to 2 inches) and file name: 18051 Ullrich_LSPS



- GENERAL SHEET NOTES**
- A. REFER TO GENERAL NOTES ON SHEET 00M-001 FOR ADDITIONAL INFORMATION.
 - B. EXACT SIZE, QUANTITY, AND ROUTING OF REFRIGERANT PIPING SHALL BE PER MANUFACTURER'S REQUIREMENTS. ALL VALVING AND ACCESSORIES SHALL BE PROVIDED PER MANUFACTURER'S REQUIREMENTS.
 - C. ALL EXPOSED ROUND DUCT SHALL BE DOUBLE WALL INSULATED GALVANIZED STEEL SPIRAL DUCT.
 - D. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.

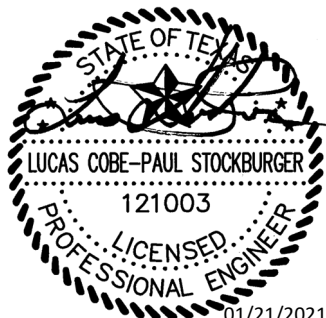
- KEYED NOTES**
1. TRANSITION FROM FULL SIZED SA OUTLET TO 40" SPIRAL DUCT. TIE 40" SUPPLY TRUNK INTO REDUNDANT UNIT'S DUCTWORK. REFER TO SHEET M30-401 FOR CONTROL SEQUENCE. REFER TO 1/M90-502 FLOOR MOUNTED UPRIGHT VRF AIR HANDLING UNIT DETAIL.
 2. ROUTE CONDENSATE DOWN THROUGH SLAB TO DRY WELL. CONDENSATE LINE SIZING TO MATCH OUTLET SIZE OR LARGER. REFER TO 1/M90-501 FOR CONDENSATE DRYWELL DETAIL AND 3/M90-501 FOR CONDENSATE DRAIN DETAIL.
 3. PROVIDE MOTORIZED DAMPER. DAMPER TO BE INTERLOCKED TO AIR HANDLERS. REFER TO SHEET M30-401 FOR CONTROL SEQUENCE. REFER TO SHEET 1/M90-502 FOR FLOOR MOUNTED UPRIGHT VRF AIR HANDLING UNIT DETAIL.
 4. 2" MERV 8 OR GREATER AIR FILTER SHALL BE INSTALLED IN FILTER TRAY. REFER TO SPECIFICATION 15738 FOR MORE INFORMATION.
 5. PROVIDE AND INSTALL PROGRAMMABLE THERMOSTAT ON WALL AT 48" AFF. CONFIRM EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. PROVIDE THERMOSTATS WITH CLEAR LOCKABLE COVERS.
 6. ROUTE INSULATED/JACKETED REFRIGERANT PIPING DOWN THROUGH SLAB LEAVE OUT ABOVE GRADE BELOW BUILDING. PROVIDE WITH SUPPORTS EVERY 6'. ROUTE OVER TO AIR HANDLING UNIT. REFER TO 2/M90-501 REFRIGERANT LINE DETAIL. REFER TO 6/M90-501 FOR PIPE HANGER DETAILS.
 7. PROVIDE 4" CONCRETE PAD FOR AIR HANDLER. REFER TO DETAIL 1/M90-502.
 8. ROUTE INSULATED/JACKETED REFRIGERANT PIPING ABOVE GRADE TO SLAB LEAVE OUT LOCATED IN MECHANICAL ROOM. EXACT SIZE, QUANTITY, AND ROUTING OF REFRIGERANT PIPING SHALL BE PER MANUFACTURER'S REQUIREMENTS. ALL VALVING AND ACCESSORIES SHALL BE PROVIDED PER MANUFACTURER'S REQUIREMENTS.
 9. PROVIDE 6" CONCRETE PAD FOR OUTDOOR CONDENSING UNITS. REFER TO ARCHITECTURE FOR EXACT PLACEMENT OF PAD. REFER TO DETAIL 2/M90-502.
 10. PROVIDE SUSPENDED INLINE EXHAUST FAN EF-1. 2'-0" ABOVE DOOR IN CRAWL SPACE. RE: INLINE EXHAUST FAN DETAIL 7/M90-501.
 11. INTERLOCK MOTORIZED DAMPER FOR LOUVER L2 WITH EF-1.
 12. PLACE HUMIDISTAT IN CENTRALIZED LOCATION IN CRAWL SPACE.
 13. PROVIDE MOTORIZED DAMPER, REFER TO FLOOR MOUNTED UPRIGHT VRF AIR HANDLING UNIT DETAIL ON 1/M90-502.
 14. CONDENSATE PIPING ROUTED ABOVE GRADE BELOW BUILDING TO EXTERIOR DRYWELL.

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

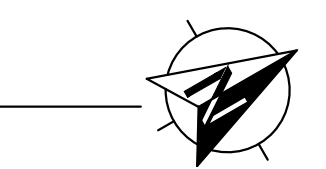


ISSUE	DATE	DESCRIPTION
0	01/21/2021	CONFORMED CONTRACT DRAWINGS

PROJECT MANAGER	W. D. WEHNER
DESIGNED BY	AJS/LCS
DRAWN BY	AJS
CHECKED BY	LCS
DATE	OCTOBER 2020
PROJECT NUMBER	10123906



**ULLRICH WTP
LOW SERVICE PUMP
STATION
ELECTRICAL FEED RENEWAL**



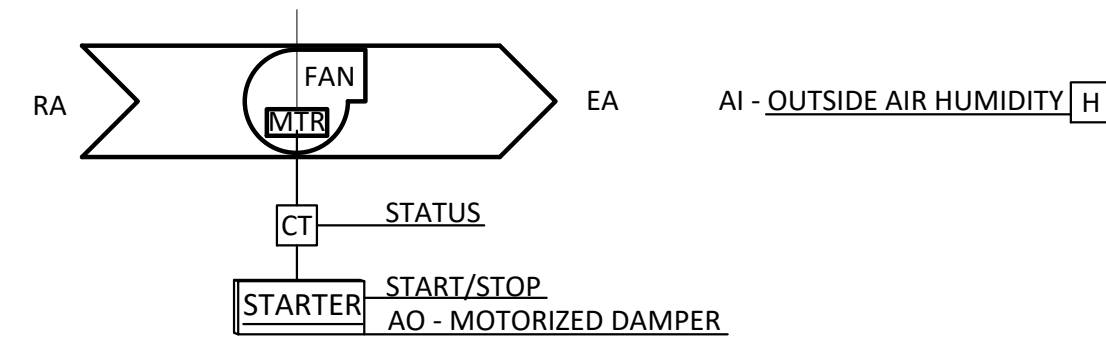
MECHANICAL FLOOR PLAN

0 1" 2"

FILENAME	18051 Ullrich_LSPS
SCALE	3/16" = 1'-0"

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SEQUENCE OF OPERATION	
SYSTEM DESCRIPTION	
SUSPENDED CONSTANT VOLUME EXHAUST FAN.	
EXHAUST FAN CONTROL - EF-1	
FAN MOTOR - ON/OFF CONTROL:	
1.	THE EXHAUST FAN SHALL BE INTERLOCKED WITH HUMIDISTAT AND ENERGIZE WHEN RELATIVE HUMIDITY IS IN EXCESS OF 60%.
2.	EF-1 TO BE INTERLOCKED WITH MOTORIZED DAMPER ATTACHED TO LOUVER L2. DAMPER TO OPEN WHEN EF-1 IS ENERGIZED.



1 EF-1 CONTROL DIAGRAM
N.T.S.

AIR HANDLER SCHEDULE																											
MARK	AREA SERVED	AIR DATA						COOLING DATA				HTG.- Heat Pump			ELECTRICAL DATA		UNIT DATA		NOTES								
		TOT. CFM	OA CFM	E.S.P.	HP	CONFIGURATION	AMBIENT D.B.	ENTERING W.B.	DESIGN W.B.	SCHEDULE SENS.	SCHEDULE TOT.	AMBIENT D.B.	DESIGN W.B.	SCHEDULED TOT.	ENT	LAT	HSPF	MCA		MOC	VOLT/PH	MAKE	MODEL				
SUB4-HVAC-03	ELECTRICAL ROOM	15930	0	2.5	15	VERTICAL	105	69	77	58	376.8	376.8	380.0	380.0	47	43	396.5	424.0	61.0	80.0	10.9	12.5	20.0	460V/3PH	DAIKIN	VISION	1, 2, 3, 4, 5
SUB4-HVAC-04	ELECTRICAL ROOM	15930	0	2.5	15	VERTICAL	105	69	77	58	376.8	376.8	380.0	380.0	47	43	396.5	424.0	61.0	80.0	10.9	12.5	20.0	460V/3PH	DAIKIN	VISION	1, 2, 3, 4, 5

NOTES:

- PROVIDE WITH MANUFACTURER RECOMMENDED 24 HOUR/7-DAY PROGRAMMABLE THERMOSTAT. REFER TO CONTROL SEQUENCE FOR MORE INFORMATION.
- PROVIDE DISCONNECT, TO BE FIELD MOUNTED BY ELECTRICAL CONTRACTOR.
- UNIT TO INCLUDE STANDARD DISPOSABLE FILTER. MERV 8 OR GREATER.
- PROVIDE CONDENSATE PUMP.
- PROVIDE AIR HANDLER WITH VFD.

CONDENSING UNIT SCHEDULE											
MARK	CLG. DATA		AMBIENT TEMP (°F)	ELECTRICAL DATA			UNIT DATA			NOTES	
	TONS	IEER		MCA	MOC	VOLT/PH	MAKE	COMPRESSORS	MODEL		LBS.
SUB4-HVAC-01	34	18.5	105	20.6+25.9+25.9	25+35+35	408V/3φ	DAIKIN	3	RXYQ168TAYDU	710	1, 2, 3, 4, 5
SUB4-HVAC-02	34	18.5	105	20.6+25.9+25.9	25+35+35	408V/3φ	DAIKIN	3	RXYQ168TAYDU	710	1, 2, 3, 4, 5

NOTES:

- PROVIDE DISCONNECT, TO BE FIELD MOUNTED BY ELECTRICAL CONTRACTOR.
- LOW AMBIENT CONTROL STANDARD TO 0 DEGREES
- COMPRESSOR SHALL BE PROVIDED WITH 5 YEAR WARRANTY.
- PROVIDE FIELD INSTALLED COIL GUARD.
- INVERTER DUTY VARIABLE SPEED COMPRESSOR.

DIFFUSER AND GRILLE SCHEDULE						
MARK	NOMINAL SIZE	MOUNTING	DESCRIPTION	MAKE	MODEL	NOTES
S1	18" x 12"	DUCT	SINGLE DEFLECTION SIDEWALL SUPPLY WITH ASD- AIR SCOOP DAMPER/EXTRACTOR	TITUS	S301FL	1,2,3,5
S2	12" x 10"	DUCT	STEEL DOUBLE DEFLECTION SUPPLY GRILLE	TITUS	300RS	1,2,3,4

NOTES:

- COORDINATE EXACT LOCATION OF DIFFUSERS WITH ARCHITECTURAL REFLECTED CEILING PLAN.
- NECK SIZES SHALL BE SAME AS GRILLE SIZE UNLESS NOTED OTHERWISE.
- AIRFLOW QUANTITIES AS NOTED ON MECHANICAL DRAWINGS.
- PROVIDE MANUAL BALANCING DAMPER WITH LOCKING QUADRANT AT TAKE-OFF TO DIFFUSER. COORDINATE EXACT LOCATION WITH FLOOR PLAN.
- PROVIDE INTEGRAL BALANCING DAMPER.

FAN SCHEDULE								
MARK	LOCATION	INTERLOCK	AIR DATA			UNIT DATA		
			CFM	S.P.	HP	MAKE	MODEL	NOTES
EF-1	CRAWL SPACE	HUMIDISTAT	150	0.35	1/15	GREENHECK	SQ-70-VG	SUSPENDED IN-LINE FAN, INTERLOCK WITH L2 MOTORIZED DAMPER, PROVIDE WITH INTEGRAL BACKDRAFT DAMPER, PROVIDE

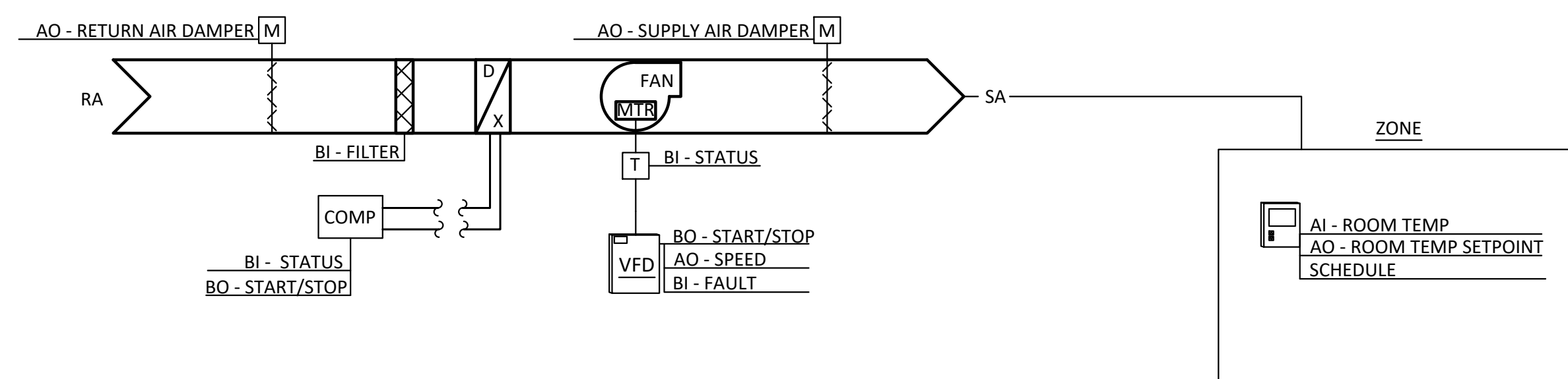
LOUVER SCHEDULE					
MARK	NOMINAL SIZE	FREE AREA (FT2)	AIRFLOW (CFM)	MAKE/MODEL	NOTES
L1	12x12	0.2	150	GREENHECK/ESD-635	1, 2
L2	12x12	0.2	150	GREENHECK/ESD-635	1, 2, 3

NOTES:

- COORDINATE FINISH WITH ARCHITECT.
- PROVIDE AND INSTALL TRANSITION AS REQUIRED TO CONNECT DUCT TO LOUVER.
- PROVIDE WITH MOTORIZED DAMPER. INTERLOCK WITH EF-1.

DX SPLIT SYSTEM SEQUENCE OF OPERATION	
SYSTEM DESCRIPTION	
VRF SYSTEM CONSISTING OF OUTDOOR CONDENSING UNIT WITH VARIABLE SPEED COMPRESSOR AND INDOOR UNIT WITH ROOM THERMOSTAT. VRF SYSTEM SHALL OPERATE PER MANUFACTURER CONTROLS. OPERATION ROOM TEMPERATURE SET POINTS, OPERATION STATUS, AND ALARMS SHALL BE AVAILABLE VIA MANUFACTURER CONTROLLER.	
SET POINTS	
ROOM TEMPERATURE SETPOINT / COOLING: 75°F (ADJ.)	
SUPPLY FAN	
1.	THE FAN SHALL OPERATE CONTINUOUSLY.
2.	UPON START THE FAN SHALL RAMP UP TO THE SUPPLY AIR FLOW PER SCHEDULE, AND AIR BALANCE REPORT.
OUTDOOR UNIT	
1.	EXTERIOR UNIT SHALL OPERATE IN TANDEM WITH INDOOR UNITS VARYING COMPRESSOR SPEED TO MAINTAIN THE REFRIGERANT SUCTION AND LIQUID LINE TEMPERATURES IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS AND SET POINTS.
2.	OUTDOOR UNIT SHALL BE CAPABLE OF OPERATING IN A HEATING AND COOLING MODE AND SHALL BE EQUIPPED WITH REVERSING VALVE. HEATING PUMP MODE SHALL ONLY BE ACTIVE IF UNIT CALLS FOR HEATING.
3.	OUTDOOR UNIT SHALL BE ACTIVE WHEN UNIT IS SCHEDULED ON. OUTDOOR UNIT SHALL DEACTIVATE IF UNIT IS SET TO "OFF".
4.	COMPRESSOR SHALL AVOID SHORT CYCLING IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS.
INDOOR UNIT	
SUPPLY FAN	
1.	THE SUPPLY FAN SHALL OPERATE CONTINUOUSLY.
2.	FAN START/STOP SHALL BE OVERRIDABLE AT THE ROOM THERMOSTAT.
3.	FAN SHALL VARY SPEED IN COORDINATION WITH THE SOLENOID VALVE TO MAINTAIN THE SUPPLY AIR TEMPERATURE AND SUCTION LINE TEMPERATURE IN ACCORDANCE WITH THE MANUFACTURER CONTROLS AND REQUIREMENTS.
4.	ONLY ONE UNIT SHALL OPERATE AT A TIME. THE MOTORIZED DAMPER FOR THE UNIT NOT IN OPERATION SHALL BE CLOSED. UNITS TO ALTERNATE OPERATION ON A TWO WEEK BASIS.
COOLING MODE	
1.	COOLING MODE SHALL BE ACTIVE WHEN THE SPACE TEMPERATURE RISES ABOVE THE COOLING SET POINT.
2.	UPON A CALL FOR COOLING, THE UNIT SOLENOID SHALL OPERATE IN CONJUNCTION WITH THE OUTDOOR UNIT TO MAINTAIN THE ROOM TEMPERATURE COOLING SET POINT.
HEATING MODE	
1.	HEATING MODE SHALL BE ACTIVE WHEN THE SPACE TEMPERATURE FALLS BELOW THE HEATING SET POINT.
2.	UPON A CALL FOR HEATING, THE UNIT SOLENOID SHALL OPERATE IN CONJUNCTION WITH THE OUTDOOR UNIT TO MAINTAIN THE ROOM TEMPERATURE HEATING SET POINT.
ALARMS	
AN ALARM SHALL BE MADE AT THE BAS ANYTIME ANY OF THE FOLLOWING IS TRUE	
1.	PRESSURE ACROSS AIR FILTER RISES ABOVE MANUFACTURER RECOMMENDED SET POINT.
2.	ROOM TEMPERATURE RISES 5 DEGREES OR MORE ABOVE THE SET POINT.
SAFETIES AND SHUTDOWN	
DUAL UNITS ARE INTENDED TO FUNCTION AS REDUNDANT BACKUPS. IF ONE UNIT SHUTS DOWN DUE TO SAFETY THE SECOND UNIT SHALL START. UNITS SHALL NOT OPERATE SIMULTANEOUSLY. WHEN A SAFETY IS ACTIVATED THE FOLLOWING SHALL OCCUR FOR THE ASSOCIATED UNIT: FAN SHALL DE-ENERGIZE, RETURN DAMPER SHALL OPEN, THE CONDENSING UNIT SHALL DEACTIVATE, AND THE VALVES SHALL CLOSE IF ANY OF THE FOLLOWING OCCURS.	
1.	LAT REACHES 65°F.
2.	SUPPLY AIR MOTORIZED DAMPER CLOSES.
3.	RETURN AIR MOTORIZED DAMPER CLOSES.

SPLIT SYSTEM POINT SCHEDULE							
POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCULATED	NOTES
ROOM TEMPERATURE	TEMPERATURE			●			
TEMPERATURE SET POINT	TEMPERATURE				●		
SCHEDULE	SCHEDULE					●	
FILTER	STATUS	●					
COMPRESSOR START/STOP			●				
COMPRESSOR SPEED	STATUS				●		
COMPRESSOR	STATUS	●					
FAN STATUS		●					
RETURN AIR DAMPER					●		
SUPPLY AIR DAMPER					●		
VFD START/STOP			●				
VFD FAULT		●					
VFD SPEED					●		

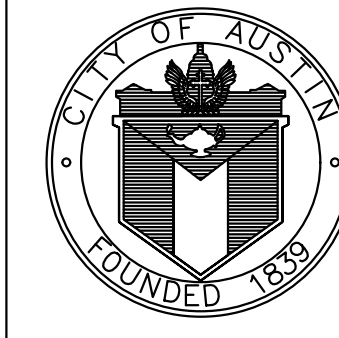
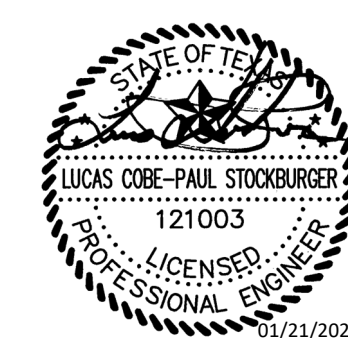


2 SPLIT SYSTEM CONTROL DIAGRAM
N.T.S.



ISSUE	DATE	DESCRIPTION
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PROJECT MANAGER		W. D. WEHNER
DESIGNED BY	AJS/LCS	
DRAWN BY	AJS	
CHECKED BY	LCS	
DATE	OCTOBER 2020	
PROJECT NUMBER	10123906	



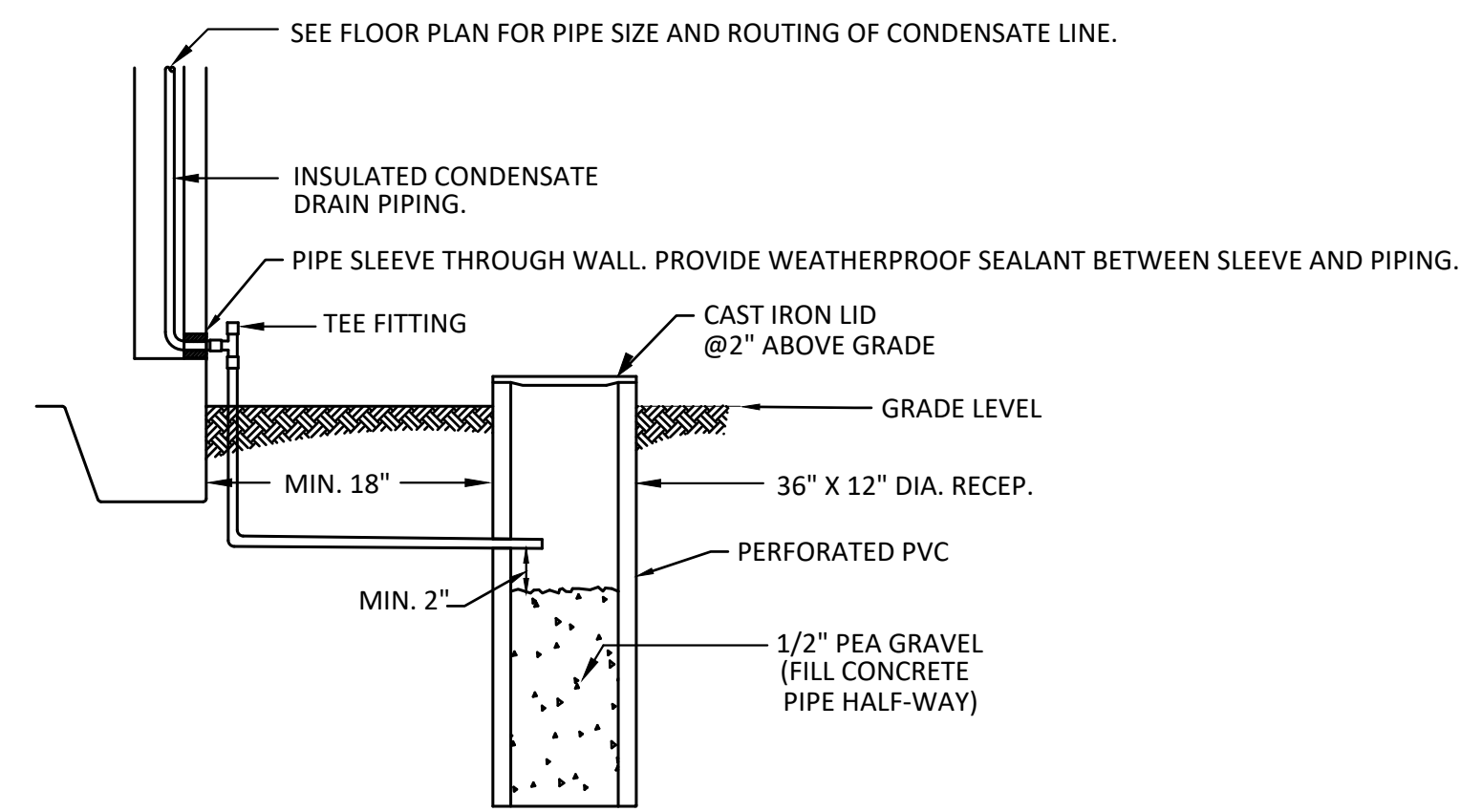
ULLRICH WTP
LOW SERVICE PUMP
STATION
ELECTRICAL FEED RENEWAL

MECHANICAL SCHEDULES AND
CONTROLS

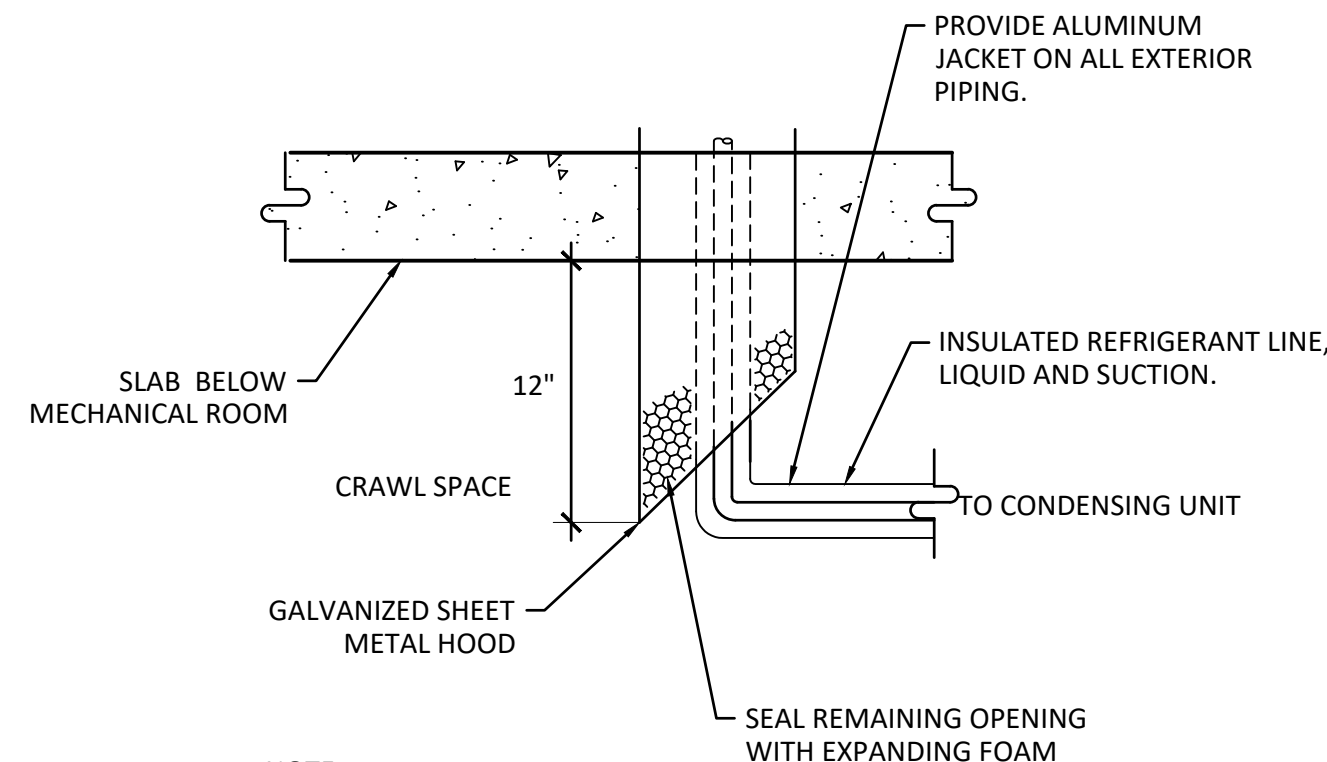


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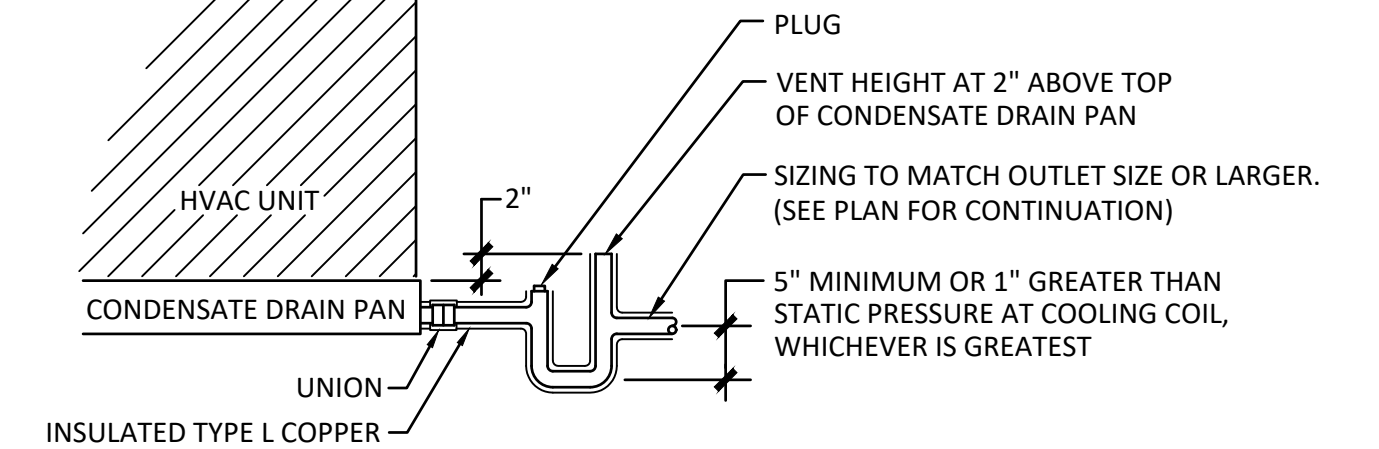
SHEET 111 of 350
M30-401



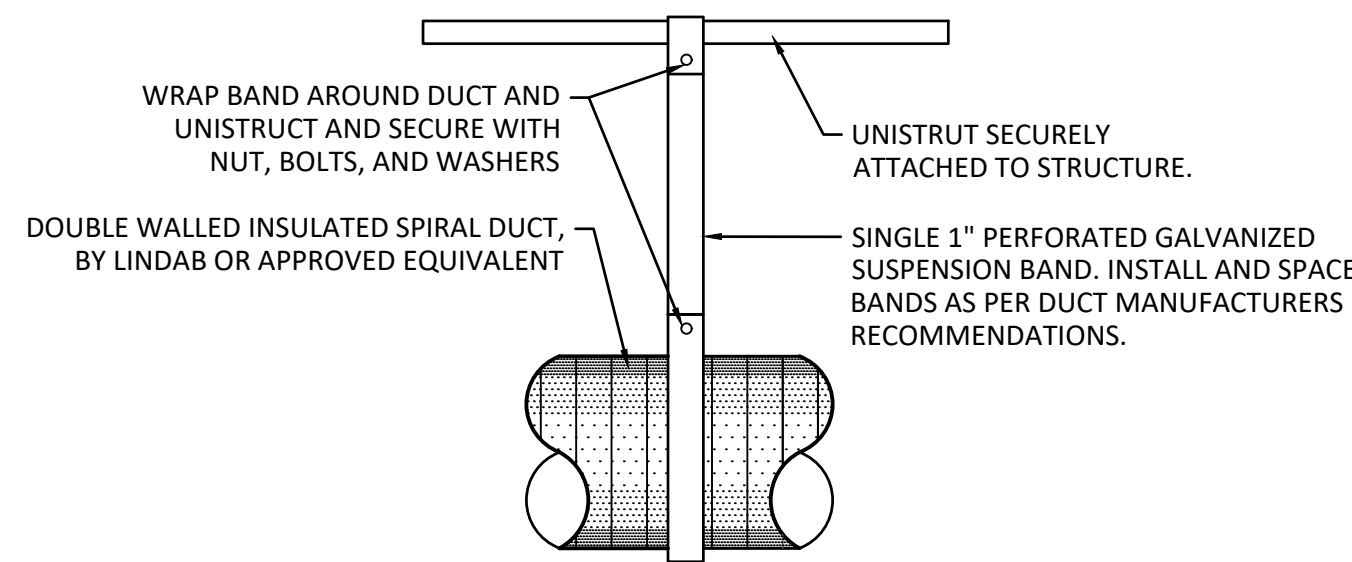
1 CONDENSATE DRYWELL DETAIL
N.T.S.



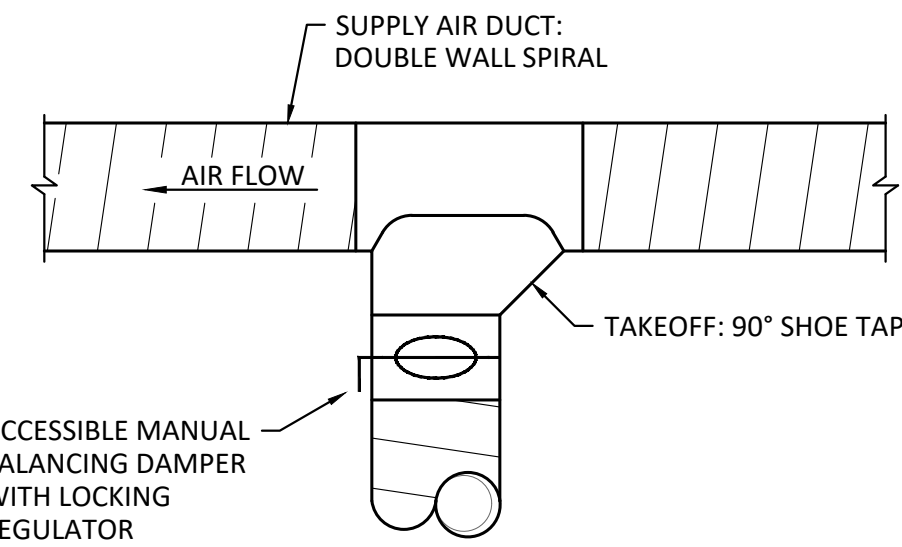
2 REFRIGERANT LINE DETAIL
N.T.S.



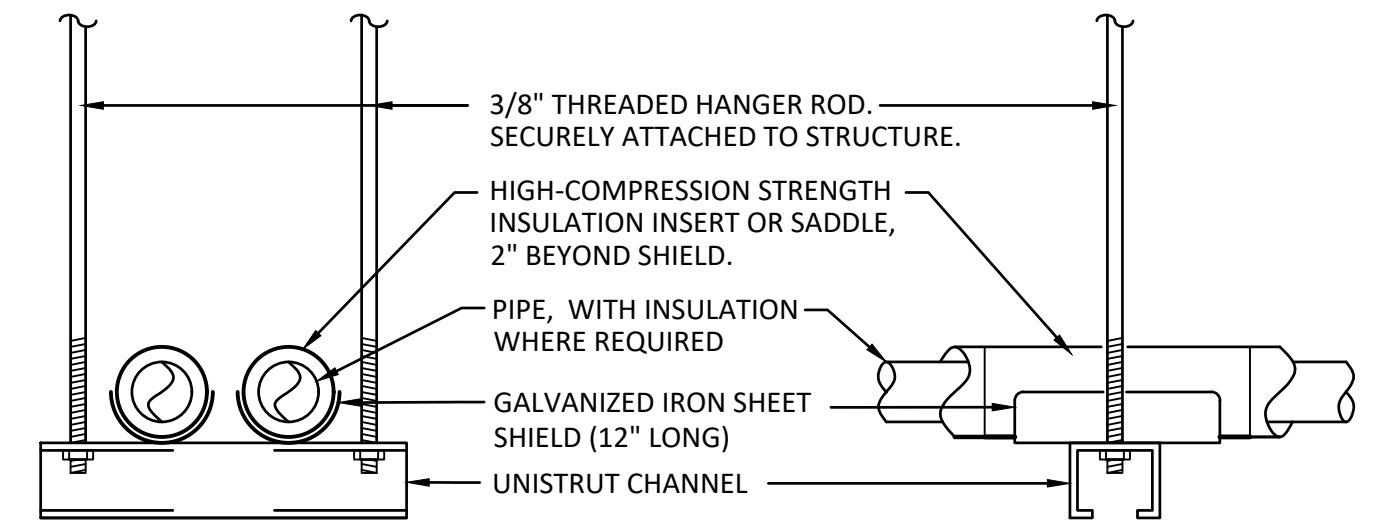
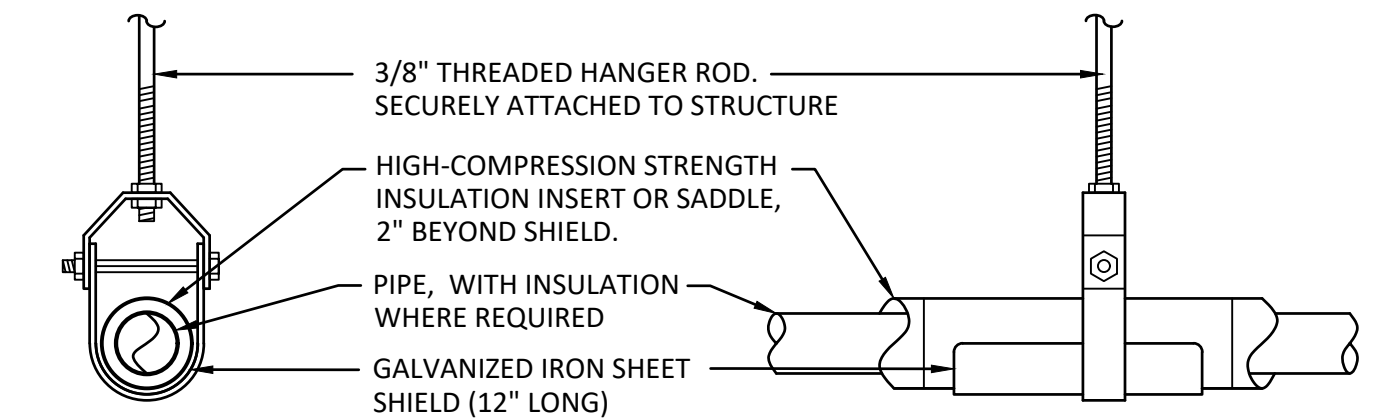
3 CONDENSATE DRAIN DETAIL
N.T.S.



4 SPIRAL ROUND DUCT HANGER DETAIL
N.T.S.



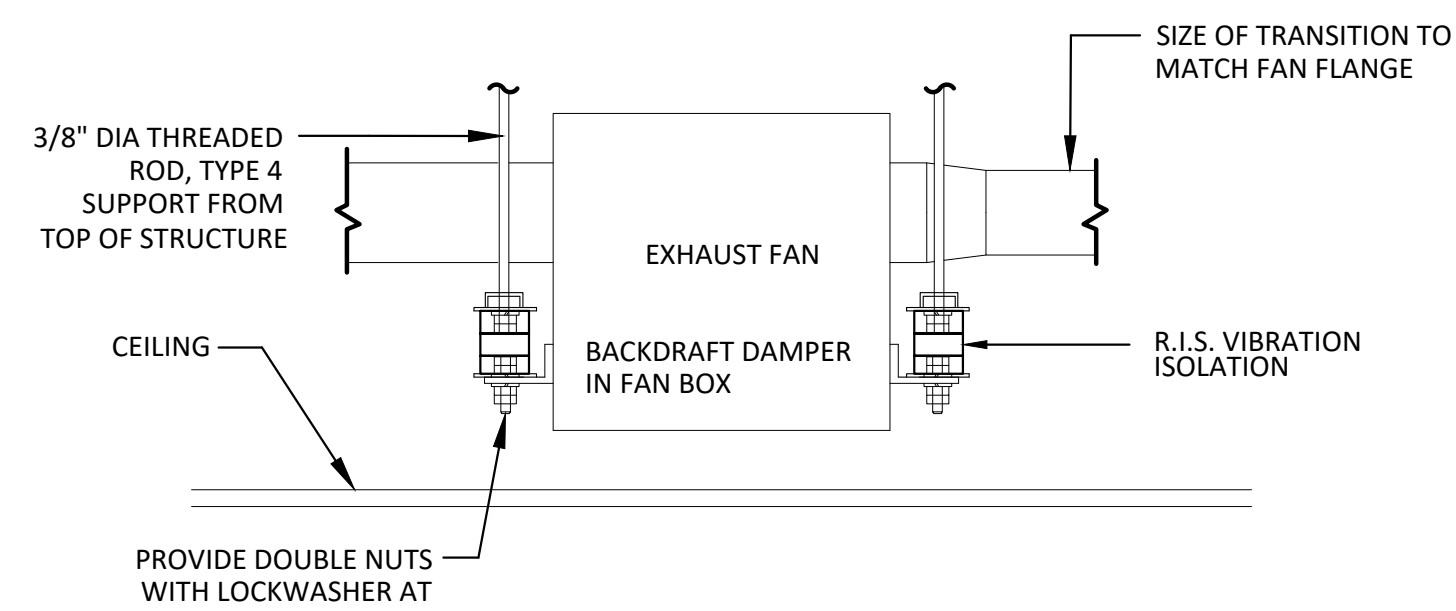
5 SPIRAL BRANCH DUCT DETAIL
N.T.S.



NOTES:

1. ATTACH SUPPORTS FOR ALL PIPING SUSPENDED FROM THE STEEL STRUCTURE TO THE TOP CORD OF JOISTS OR BEAM.
2. PROVIDE COPPER OR PLASTIC COATED HANGERS FOR NON-INSULATED COPPER PIPE

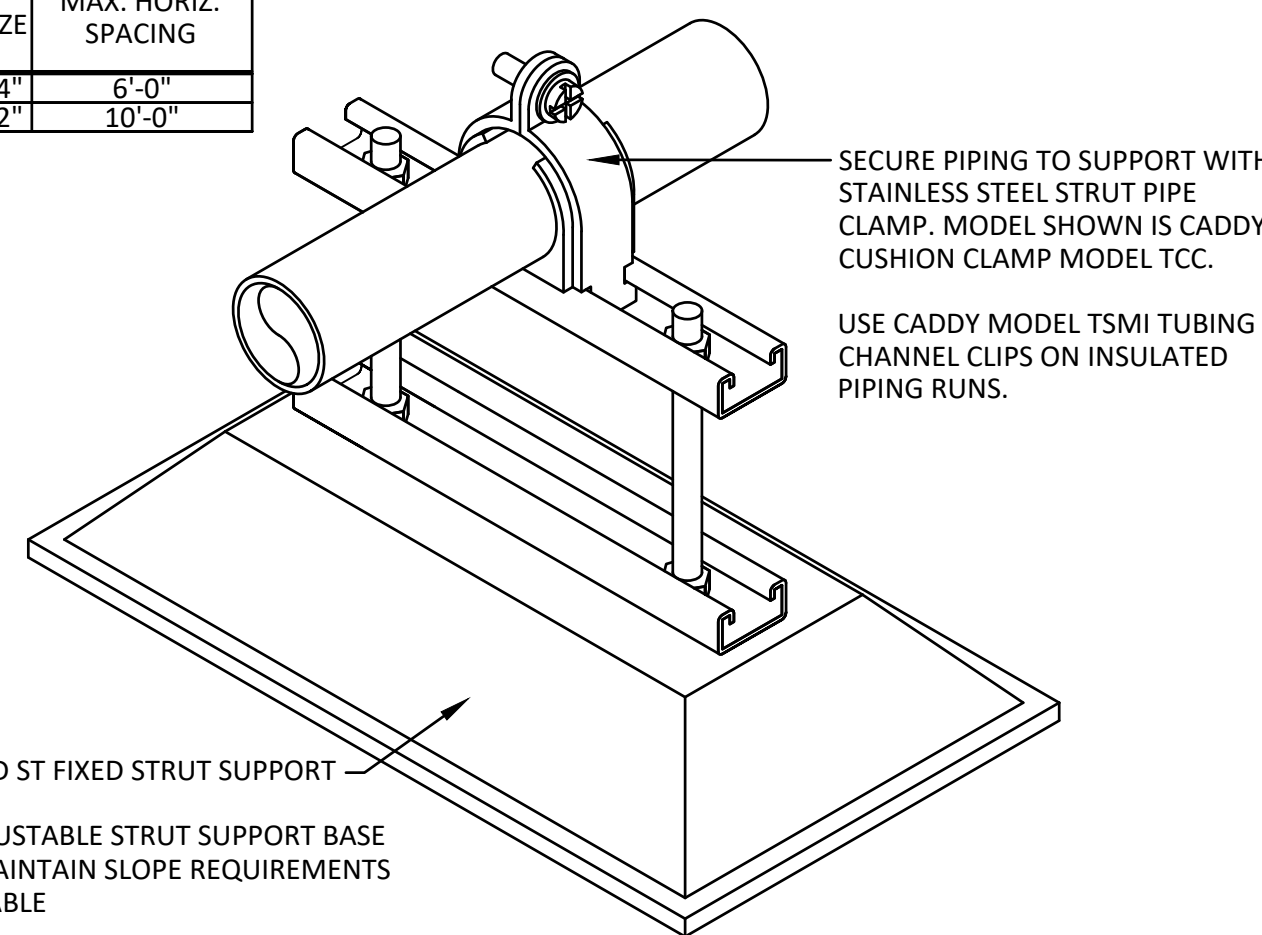
6 PIPE HANGER DETAILS
N.T.S.



7 INLINE EXHAUST FAN DETAIL
N.T.S.

THIS SYSTEM FOR USE WITH ELECTRICAL CONDUIT, CPVC CONDENSATE PIPING, AND JACKETED/INSULATED REFRIGERANT PIPING. BASE MAY DIFFER AS NOTED. CLIPS AND CLAMPS MAY DIFFER AS NOTED. CONTACT ERICO/CADDY REP FOR SPECIFIC USAGE AND REQUIREMENTS DEPENDING ON EXTERIOR AND/OR INTERIOR USAGES.

MINIMUM PIPE SUPPORT SPACING		
TYPE	PIPE SIZE	MAX. HORIZ. SPACING
COPPER	≤ 1-1/4"	6'-0"
COPPER	≥ 1-1/2"	10'-0"

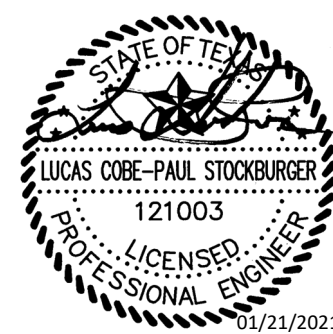


8 TYPICAL PIPING SUPPORT DETAIL
N.T.S.



ISSUE	DATE	DESCRIPTION
0	01/21/2021	CONFORMED CONTRACT DRAWINGS

PROJECT MANAGER		W. D. WEHNER
DESIGNED BY	AJS/LCS	
DRAWN BY	AJS	
CHECKED BY	LCS	
DATE	OCTOBER 2020	
PROJECT NUMBER	10123906	

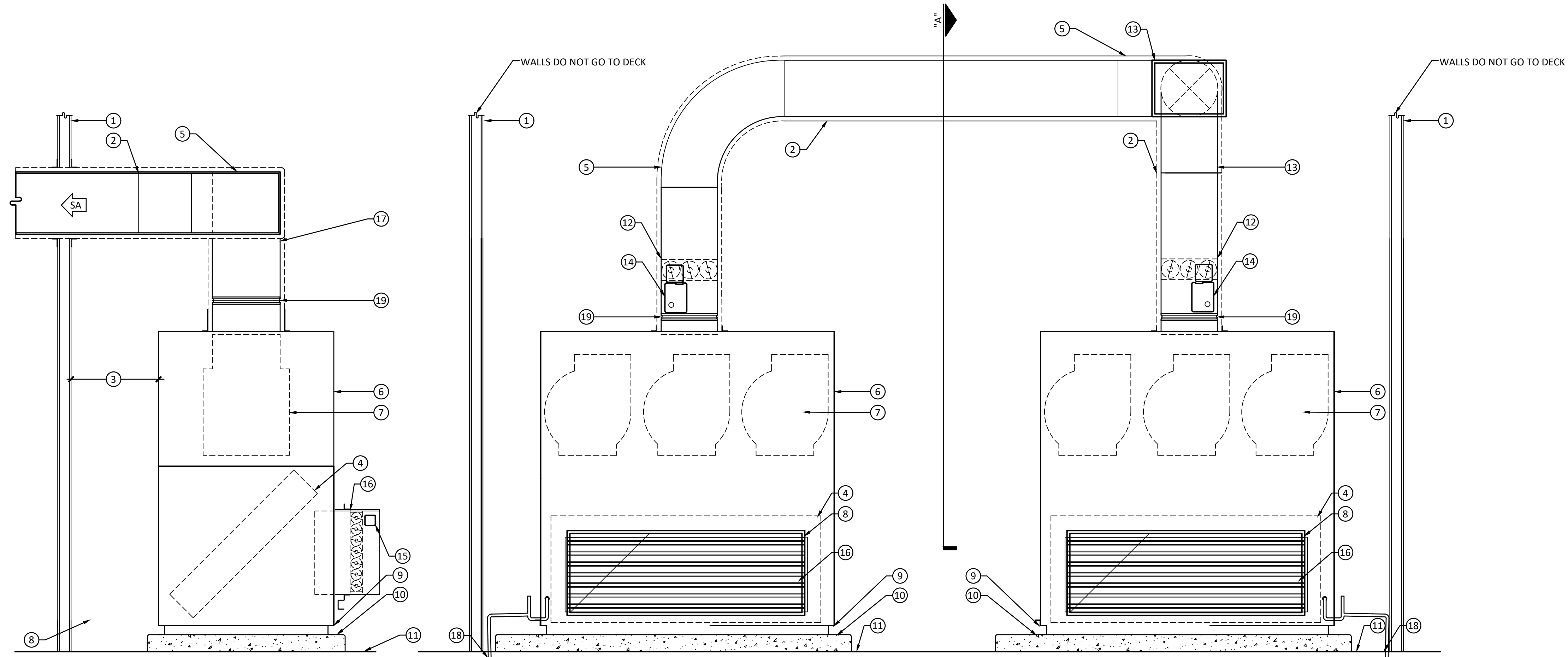


ULLRICH WTP
LOW SERVICE PUMP
STATION
ELECTRICAL FEED RENEWAL

MECHANICAL DETAILS



FILENAME | 18051 Ullrich_LSPS
SCALE | NOT TO SCALE



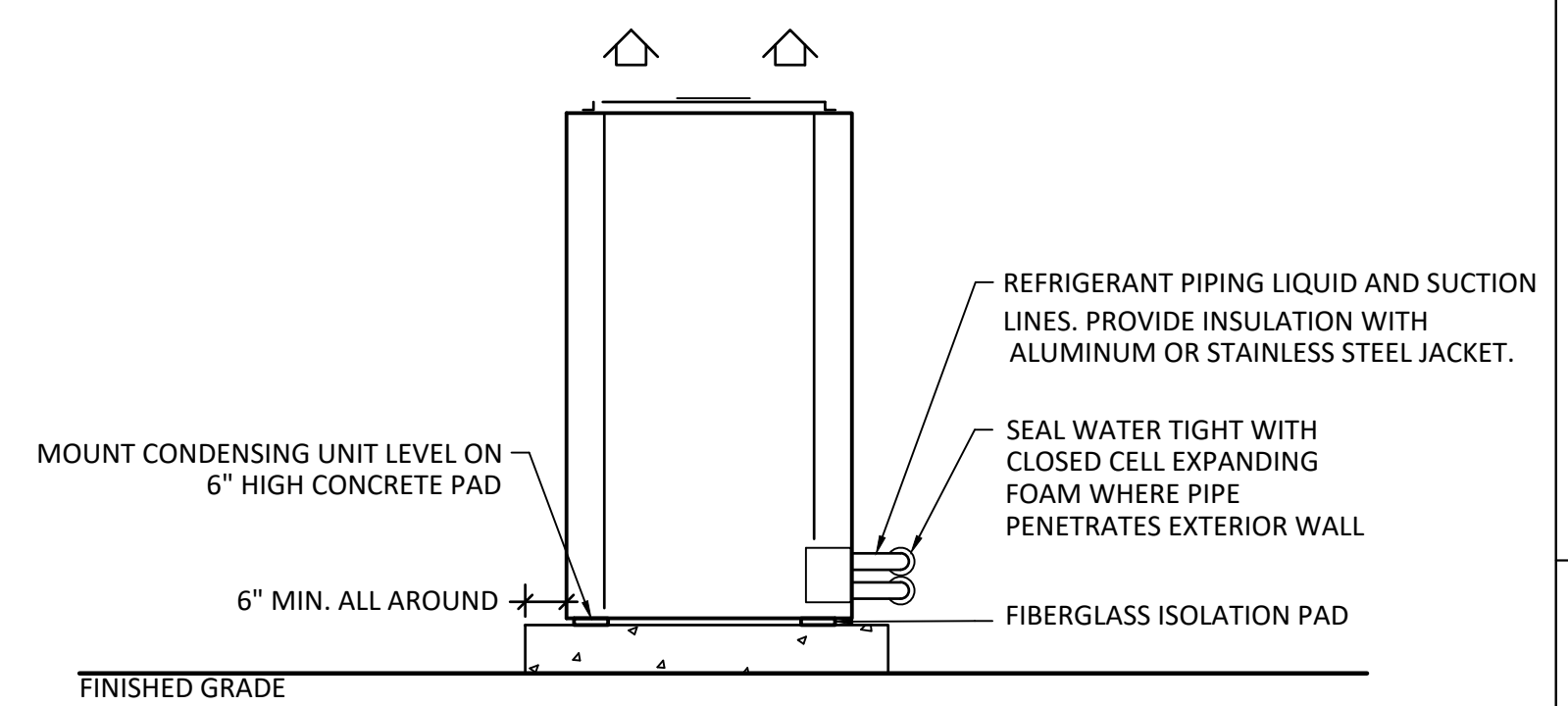
SECTION "A"

KEYED NOTES:

1. 8" CMU WALL BETWEEN MECHANICAL ROOM AND ELECTRICAL ROOM. REFER TO ARCHITECTURAL FOR WALL CONSTRUCTION TYPE.
2. DOUBLE WALL, SUPPLY DUCTWORK TRANSITION TO SIZE SHOWN ON PLANS BEFORE PENETRATING WALL. MAINTAIN MANUFACTURERS RECOMMENDED CLEARANCES.
3. COOLING COIL INSIDE UNIT. REFER TO SCHEDULE FOR MORE UNIT INFORMATION.
4. EXTERNALLY INSULATED ELBOW.
5. UPRIGHT FLOOR-MOUNTED VRF AIR HANDLING UNIT.
6. INTERNAL UNIT FAN SHOWN FOR PURPOSE OF ORIENTATION.
7. MECHANICAL ROOM TO BE USED AS RETURN AIR PLENUM.
8. FACTORY-INSTALLED MOUNTING RAILS WITH SPRING ISOLATION DEVICES AT EACH CORNER.
9. 4 INCH HIGH CONCRETE PAD WITH A MINIMUM OF FOUR INCHES OF OVERLAP ON EACH SIDE OF UNIT.
10. MECHANICAL ROOM FINISHED FLOOR.
11. MOTORIZED SUPPLY AIR DAMPER INTERLOCKED WITH UNIT TO BE OPEN WHEN UNIT IS OPERATING AND CLOSED WHEN UNIT IS OFF.
12. ROUND TEE CONNECTION BETWEEN UNIT SUPPLY DUCTS. REFER TO MECHANICAL PLANS FOR SIZING.
13. INSTALL SMOKE DETECTOR ON SUPPLY DUCTWORK BEFORE MOTORIZED VOLUME DAMPER.
14. INSTALL SMOKE DETECTOR ON RETURN DUCTWORK BEFORE MOTORIZED VOLUME DAMPER.

GENERAL NOTES

16. MOTORIZED RETURN AIR DAMPER INTERLOCKED WITH UNIT TO BE OPEN WHEN UNIT IS OPERATING AND CLOSED WHEN UNIT IS OFF.
 17. PROVIDE A LONG STRAIGHT RUN PRIOR TO TRANSITION AS POSSIBLE.
 18. ROUTE INSULATED TYPE "L" COPPER CONDENSATE PIPE FROM PRIMARY AND SECONDARY DRAIN DOWN THROUGH SLAB LEAVE OUT TO DRY WELL. COORDINATE EXACT LOCATION OF DRY WELL PRIOR TO INSTALLATION. ROUTE PRIMARY AND SECONDARY DRAIN SEPARATELY. SEE FLOOR PLAN.
 19. COORDINATE EXACT MOUNTING HEIGHT WITH ARCHITECT PRIOR TO INSTALLATION.
- GENERAL NOTES
1. SEE MECHANICAL PLANS FOR SIZES AND ROUTINGS OF SUPPLY AIR, RETURN AIR, AND OUTSIDE AIR.
 2. EXACT SIZE, QUANTITY, AND ROUTING OF REFRIGERANT PIPING SHALL BE PER MANUFACTURER'S REQUIREMENTS. ALL VALVING AND ACCESSORIES SHALL BE PROVIDED PER MANUFACTURER'S REQUIREMENTS.

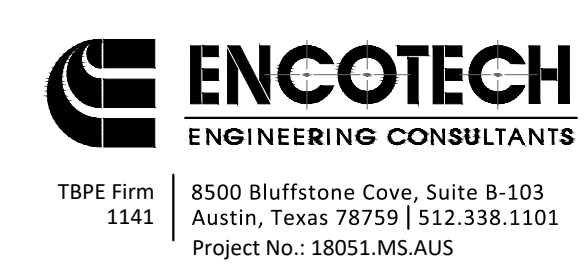


REFRIGERANT PIPING INSULATION NOTES

1. ALL CLOSED CELL POLYMER INSULATION SHALL HAVE GLUED JOINTS WITH COMPLETE COVERAGE OF ALL METAL SURFACES. ALL INSULATION EXPOSED TO EXTERIOR SHALL BE PROVIDED WITH ALUMINUM OR STAINLESS STEEL JACKET.
2. PROVIDE INSULATION SHIELD AT ALL SUPPORTS.

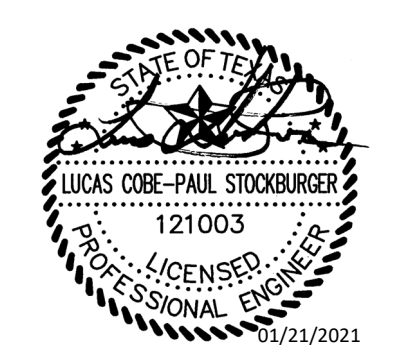
1 FLOOR MOUNTED UPRIGHT VRF AIR HANDLING UNIT DETAIL
N.T.S.

2 OUTSIDE AIR CONDENSING UNIT DETAIL
N.T.S.



ISSUE	DATE	DESCRIPTION
0	01/21/2021	CONFORMED CONTRACT DRAWINGS

PROJECT MANAGER	W. D. WEHNER
DESIGNED BY	AJS/LCS
DRAWN BY	AJS
CHECKED BY	LCS
DATE	OCTOBER 2020
PROJECT NUMBER	10123906



ULLRICH WTP
LOW SERVICE PUMP
STATION
ELECTRICAL FEED RENEWAL

MECHANICAL DETAILS



FILENAME | 18051 Ullrich_LSPS
SCALE | NOT TO SCALE

SHEET 113 of 350
M90-502