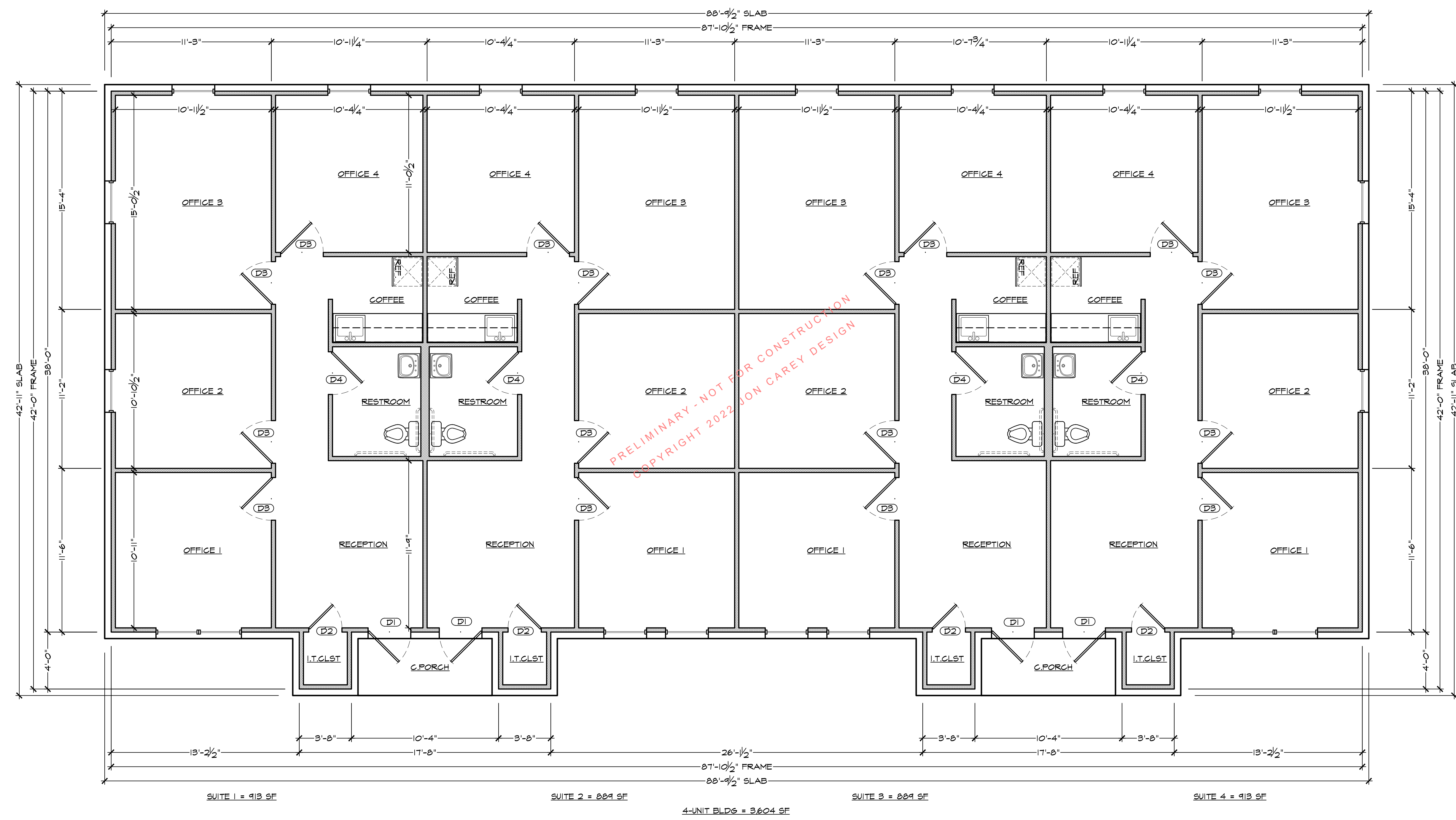


THIS DOCUMENT IS RELEASED UNDER THE AUTHORITY OF JON CAREY, CPBD, FOR THE PURPOSE OF INTERIM REVIEW AND MARK-UP ONLY ON ISSUE DATE SHOWN. IT IS NOT TO BE USED FOR REGULATORY APPROVAL, PERMIT, BIDDING OR CONSTRUCTION PURPOSES. DO NOT REPRODUCE.

JCD PROJECT NO



PRELIMINARY - NOT FOR CONSTRUCTION
 COPYRIGHT 2022 JON CAREY DESIGN

FLOOR PLAN
 A1.2 1/4" = 1'-0"

MAYFIELD OFFICE PARK - TYP. 4-UNIT BLDG.
 3835 COUNTY ROAD 175
 LEANDER, TEXAS 78641
 THP DEVELOPMENT, LLC

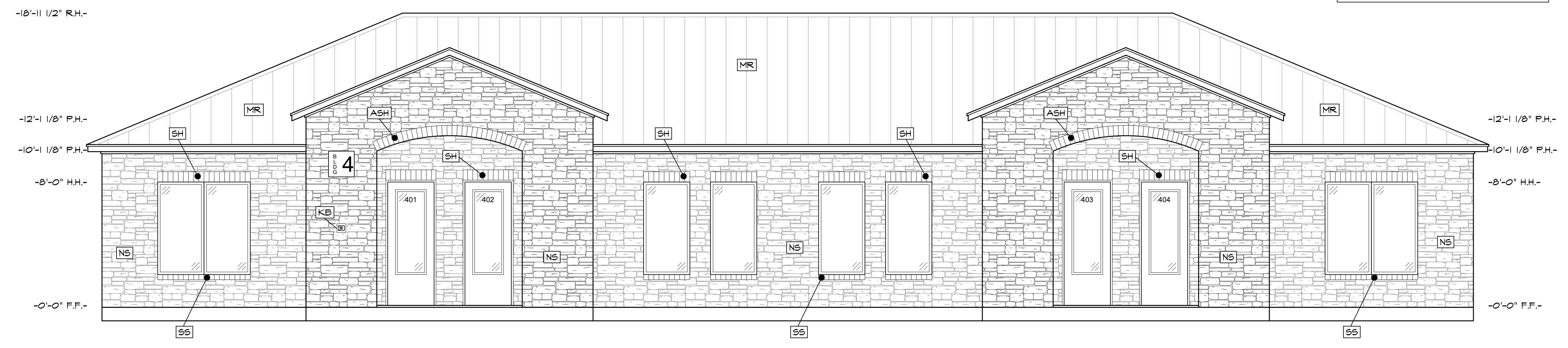
REVISION HISTORY

1	6/3/22	BANK SET
2		
3		
4		
5		

DATE ISSUED
6/3/2022

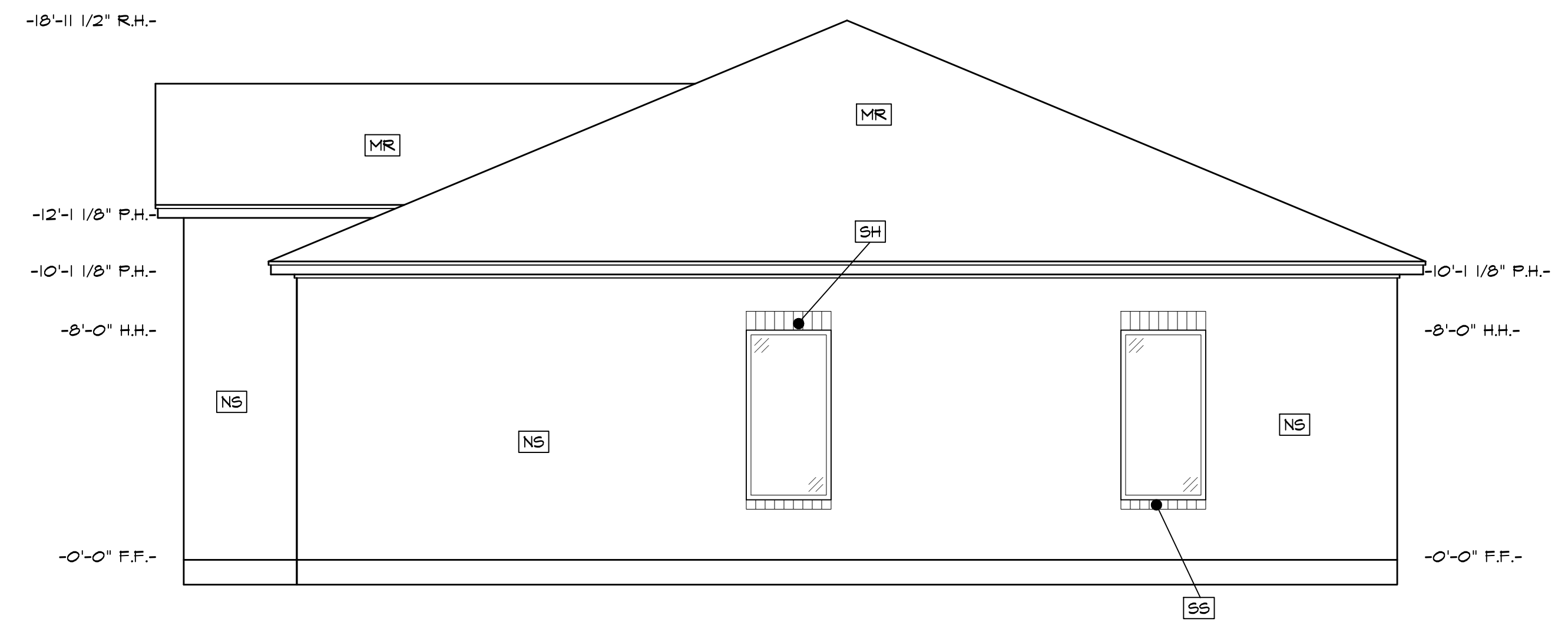
FLOOR PLAN
 -
 -
A1.2

MATERIAL LEGEND
 NS : NATURAL STONE
 SS : PROJECTED STONE SILL
 SH : PROJECTED STONE HEADER
 ASH : ARCHED PROJECTED STONE HEADER
 MR : STANDING SEAM METAL ROOF
 KB : KNOX BOX



1 FRONT ELEVATION
 A2.1 1/4" = 1'-0"

PRELIMINARY - NOT FOR CONSTRUCTION
 COPYRIGHT 2022 JON CAREY DESIGN



2 RIGHT ELEVATION
 A2.1 1/4" = 1'-0"

THIS DOCUMENT IS RELEASED UNDER THE AUTHORITY OF JON CAREY, CPBD, FOR THE PURPOSE OF INTERIM REVIEW AND MARK-UP ONLY ON ISSUE DATE SHOWN. IT IS NOT TO BE USED FOR REGULATORY APPROVAL, PERMIT, BIDDING OR CONSTRUCTION PURPOSES. DO NOT REPRODUCE.

JCD PROJECT NO

MAYFIELD OFFICE PARK - TYP. 4-UNIT BLDG.
 3835 COUNTY ROAD 175
 LEANDER, TEXAS 78641
 THP DEVELOPMENT, LLC

REVISION HISTORY

1	6/3/22	BANK SET
2		
3		
4		
5		

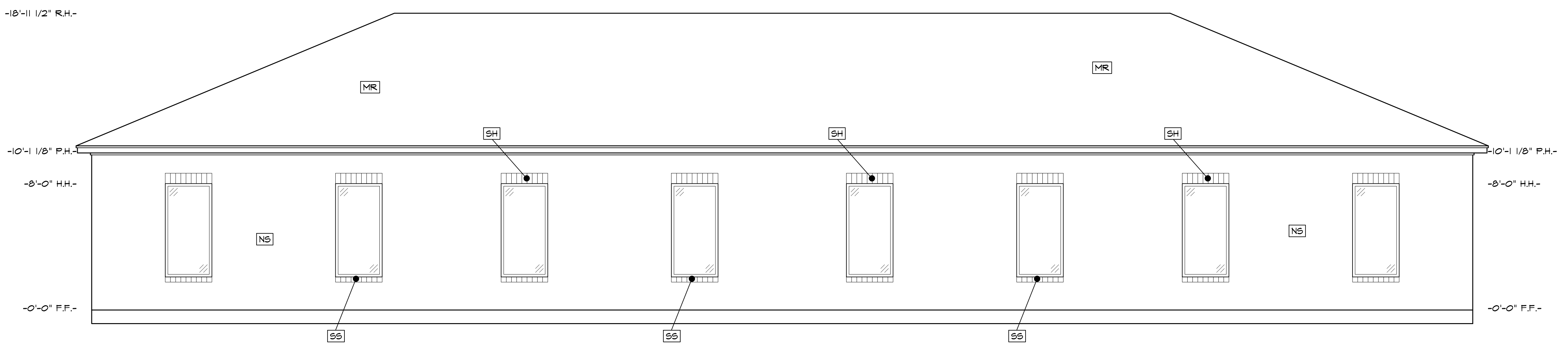
DATE ISSUED
6/3/2022

EXTERIOR ELEVATIONS
 -
 -

A2.1

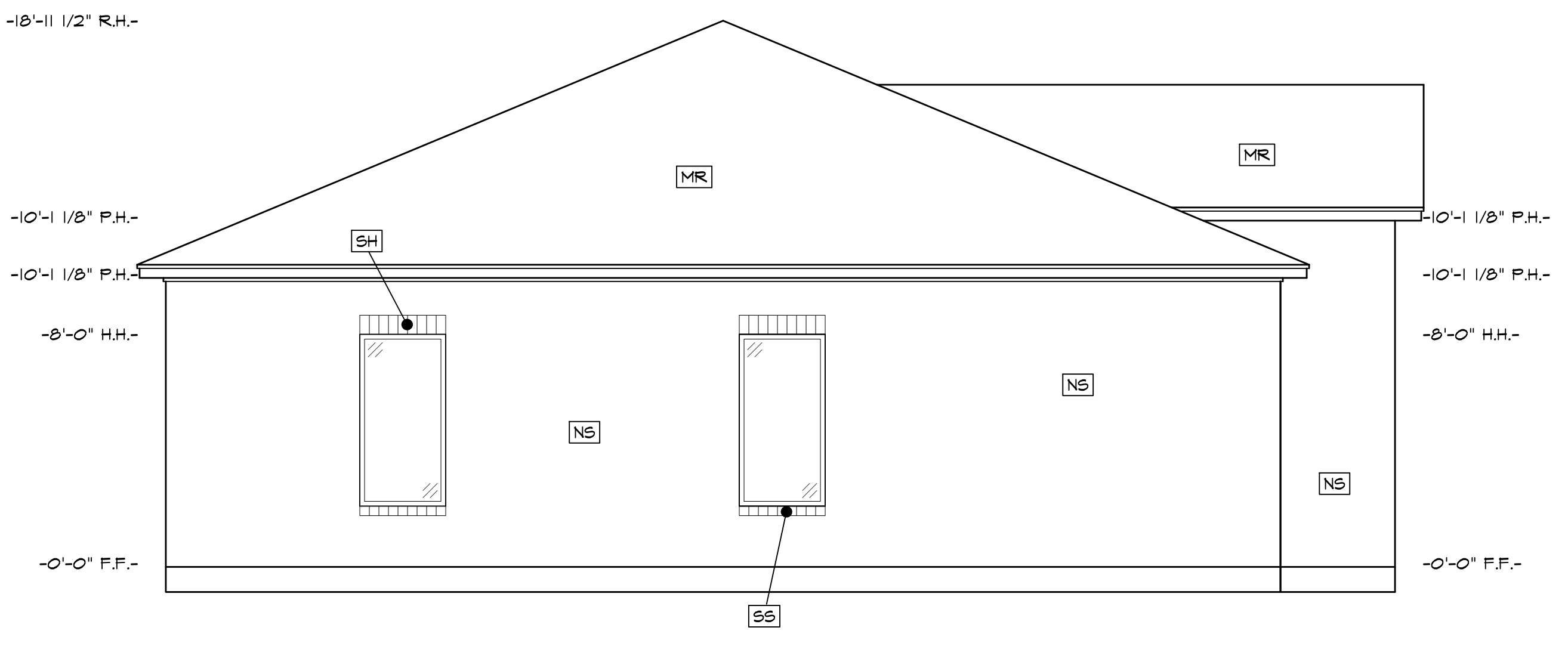
THIS DOCUMENT IS RELEASED UNDER THE AUTHORITY OF JON CAREY, CPBD, FOR THE PURPOSE OF INTERIM REVIEW AND MARK-UP ONLY ON ISSUE DATE SHOWN. IT IS NOT TO BE USED FOR REGULATORY APPROVAL, PERMIT, BIDDING OR CONSTRUCTION PURPOSES. DO NOT REPRODUCE.

JCD PROJECT NO



1 REAR ELEVATION
 A2.2 1/4" = 1'-0"

PRELIMINARY - NOT FOR CONSTRUCTION
 COPYRIGHT 2022 JON CAREY DESIGN



2 LEFT ELEVATION
 A2.2 1/4" = 1'-0"

MAYFIELD OFFICE PARK - TYP. 4-UNIT BLDG.
 3835 COUNTY ROAD 175
 LEANDER, TEXAS 78641
 THP DEVELOPMENT, LLC

REVISION HISTORY

1	6/3/22	BANK SET
2		
3		
4		
5		

DATE ISSUED
6/3/2022

EXTERIOR ELEVATIONS
 -

A2.2

MECHANICAL LEGEND

(NOTE: ALL SYMBOLS SHOWN ARE NOT NECESSARILY USED ON DRAWINGS)

SYMBOL LEGEND	
TWO-LINE	ONE-LINE

SYMBOL LEGEND

DUCTWORK
DUCTWORK SIZE, 1st NO. VISIBLE DIMENSION

DUCTWORK TURNING

BRANCH DUCT TAKEOFF

DUCT TEE

TRANSITION

FLEXIBLE DUCT

FLEXIBLE CONNECTION

VOLUME DAMPER

FIRE DAMPER OR SMOKE DAMPER

SUPPLY DUCT, OUTSIDE AIR DUCT SECTION RECTANGULAR, FLAT, OVAL, ROUND

RETURN/EXHAUST/OUTSIDE AIR DUCT SECTION

SIDEWALL GRILLE OR REGISTER (SUPPLY)

SIDEWALL GRILLE OR REGISTER (RETURN OR EXHAUST)

CEILING GRILLE OR REGISTER (SUPPLY)

CEILING GRILLE OR REGISTER (EXHAUST & RETURN)

SMOKE DETECTOR (DIVISION 26)

THERMOSTAT

CHANGE IN ELEVATION (R), (F)

VALVES
TWO-WAY CONTROL VALVE

THREE-WAY CONTROL VALVE

UNION

BUTTERFLY VALVE

TEMPERATURE/ PRESSURE RELIEF VALVE

BALL VALVE

CIRCUIT SETTER, BALANCING VALVE

PLUG VALVE

VALVE IN VERTICAL

FIRE CONTROL

FIRE SPRINKLER LINE

FIRE SUPPLY MAIN

FIRE DEPARTMENT CONNECTION LINE

FLANGE CONNECTION

DROP AT 45° ANGLE

ELBOW TURNING DOWN

ELBOW TURNING UP

CAPPED PIPE

FLEXIBLE CONNECTION

CONCENTRIC PIPE REDUCER/INCREASER

ECCENTRIC PIPE REDUCER/INCREASER

DIRECTION OF SLOPE (DOWN WARD)

GENERAL NOTES

- THESE GENERAL NOTES APPLY TO ALL SHEETS
- IN ANY CASE WHERE A PIPE OR DUCT SHOWN ON A PLAN SHEET DIFFERS FROM THAT SHOWN IN A SCHEMATIC OR DETAIL, USE THE LARGER OF THE TWO SIZES SHOWN.
- PIPING SHOWN ON EACH PLAN IS RUN ABOVE THE CEILING ON THE FLOOR WHERE IT IS SHOWN UNLESS OTHERWISE NOTED.
- MOUNT THERMOSTATS 48 INCHES ABOVE FINISHED FLOOR AND CENTERED ABOVE THE LIGHT SWITCHES WHERE BOTH OCCUR IN THE SAME LOCATION, UNLESS OTHERWISE NOTED.
- ALL DUCT DIMENSIONS SHOWN ARE CLEAR AIRSTREAM DIMENSIONS.
- DO NOT RUN AIR HANDLERS OR EXHAUST FANS UNTIL ALL INTERIOR CLEANING AND PAINTING IS COMPLETE. THE CLEANING OF FOULED COILS OR FAN ASSEMBLIES DUE TO PAINT OR CONSTRUCTION DEBRIS WILL BE THE RESPONSIBILITY OF THE HVAC CONTRACTOR.
- ALL REFRIGERANT CIRCUIT SERVICE PORTS LOCATED ON THE EXTERIOR OF THE BUILDING SHALL BE PROVIDED WITH LOCKING ACCESS PORT CAPS.
- NORMAL DESIGN CONDITIONS:

	OUTSIDE	INSIDE
SUMMER:	98 °F db, 78 °F wb	75 °F db, 50% RH
WINTER:	20 °F db	72 °F db

ABBREVIATIONS

B. VA. BALL VALVE

BAL. VA. CKT. SETTER BALANCING VALVE

D CONDENSATE DRAIN LINE

EOD EMERGENCY OVERFLOW DRAIN

EXT FCO EXTERIOR FLOOR CLEANOUT

FS FIRE SPRINKLER

F FIRE LINE (BUILDING MAIN)

FD (OR) SD FIRE / SMOKE DAMPER

GT. V GATE VALVE

GL. V GLOBE VALVE

MVD MOTORIZED VOLUME DAMPER

OA, RA, EXH O.A.,R.A. EXH. AIR DUCT

RED. REDUCER

TI TEMP. INDICATOR (THERMOMETER)

T.&P. TEMP. & PRESS. RELIEF VALVE

VD VOLUME DAMPER

DIFFUSER & GRILLE SCHEDULE

MARK	CFM RANGE	SUPPLY	RETURN	EXHAUST	TYPE	DIFFUSER CONNECTION SIZE	PATTERN	REMARKS
A	0-50	●			LOUVER FACE CLG. DIFFUSER	6"	4-WAY	TITUS 250-AA, 6" X 6" NOMINAL DUCT SIZE
B	51-150	●				6"		TITUS 250-AA, 10" X 6" NOMINAL DUCT SIZE
C	151-250	●				8"		TITUS 250-AA, 12" X 8" NOMINAL DUCT SIZE
D	251-350	●				10"		TITUS 250-AA, 14" X 10" NOMINAL DUCT SIZE
E	0-1200		●		ALUMINUM EGG CRATE	18" X 18"	-	TITUS 50F WITH 1" FILTER AND ACCESS DOOR, 20/20 FACE
E1	0-500		●		ALUMINUM EGG CRATE	10" X 10"	-	TITUS 50F WITH 1" FILTER AND ACCESS DOOR, 12/12 FACE

FAN SCHEDULE

MARK	SERVICE	TYPE	CFM	EXT. SP IN. H ₂ O	WATTS/VOLTS/PH/Hz	FAN RPM	INTERLOCK WITH	DRIVE TYPE	REMARKS
EF-3-1, 3-2, EF-3-3, 3-4	TOILET	CEILING MOUNT	83	0.25"	26 / 120/1/60	1100	LIGHT SWITCH	DIRECT	AIR KING AK110PN (1)

(1) PROVIDE WITH BACKDRAFT DAMPER, DISCONNECT SWITCH, MANUAL STARTERS, AND INTEGRAL CEILING GRILL. PROVIDE WEATHERPROOF ROOF DISCHARGE CAP FOR DUCT TERMINATION ON ROOF.

CONDENSING UNIT / INDOOR AIR HANDLING UNIT/COOLING COIL SCHEDULE

CONDENSING UNIT											INDOOR AIR HANDLING UNIT W/ COOLING COIL																
MARK	MIN. CAP. BTUH	REFRIG-ERANT	VOLTS/PH/Hz	MCA	MCB	MIN SEER	COMPRESSOR			REMARKS	MARK	TOTAL AIR CFM	OUTSIDE AIR CFM	EXT. SP. H ₂ O	MOTOR HP. VOLT PHASE & HERTZ	ELECTRICAL		COOLING COIL					HEATING COIL			REMARKS	
							NO.	MAX. SUCT. TEMP °F	MAX. COND. TEMP °F							AMBIENT TEMP °F	MCA	MCB	COIL CFM	MIN. SENS/TOTAL CAPACITY BTUH	REFRIGERANT	EDB °F	EWB °F	KW	CAPACITY BTUH		EDB °F
CU-3-1, CU-3-4	29,400	R-410A	230/1/60	18	25	17.0	1	45	125	105	LENNOX ML17XC1-030	FCU-3-1, FCU-3-4	1000	120	0.5	1/2 /240/1/60	47	50	1000	21,500/24,900	R-410	80	67	8.0	27,300	65	LENNOX CBA27UHE-030
CU-3-2, CU-3-3	23,800	R-410A	230/1/60	15	20	16.5	1	45	125	105	LENNOX ML17XC1-024	FCU-3-2, FCU-3-3	800	120	0.5	1/2 /240/1/60	36	40	800	17,300/20,300	R-410	80	67	6.0	20,500	65	LENNOX CBA27UHE-024

* PROVIDE UNIT WITH SINGLE-POINT ELECTRICAL CONNECTION, LOW AMBIENT CONTROL.
** PROVIDE ALL UNITS WITH FAN AND CONDENSER COIL HAIL GUARDS.

* PROVIDE UNIT WITH SINGLE-POINT ELECTRICAL CONNECTION, ELECTRIC HEAT, 24/7 PROGRAMMABLE THERMOSTAT.

PROFESSIONAL'S SEAL

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF

DAVID K. McDONALD, P.E.
91899 ON 02/22/2023.

IT IS NOT INTENDED FOR CONSTRUCTION, BIDDING, REGULATORY APPROVAL OR PERMITTING PURPOSES.

REVISION HISTORY
DATE 02-22-2023

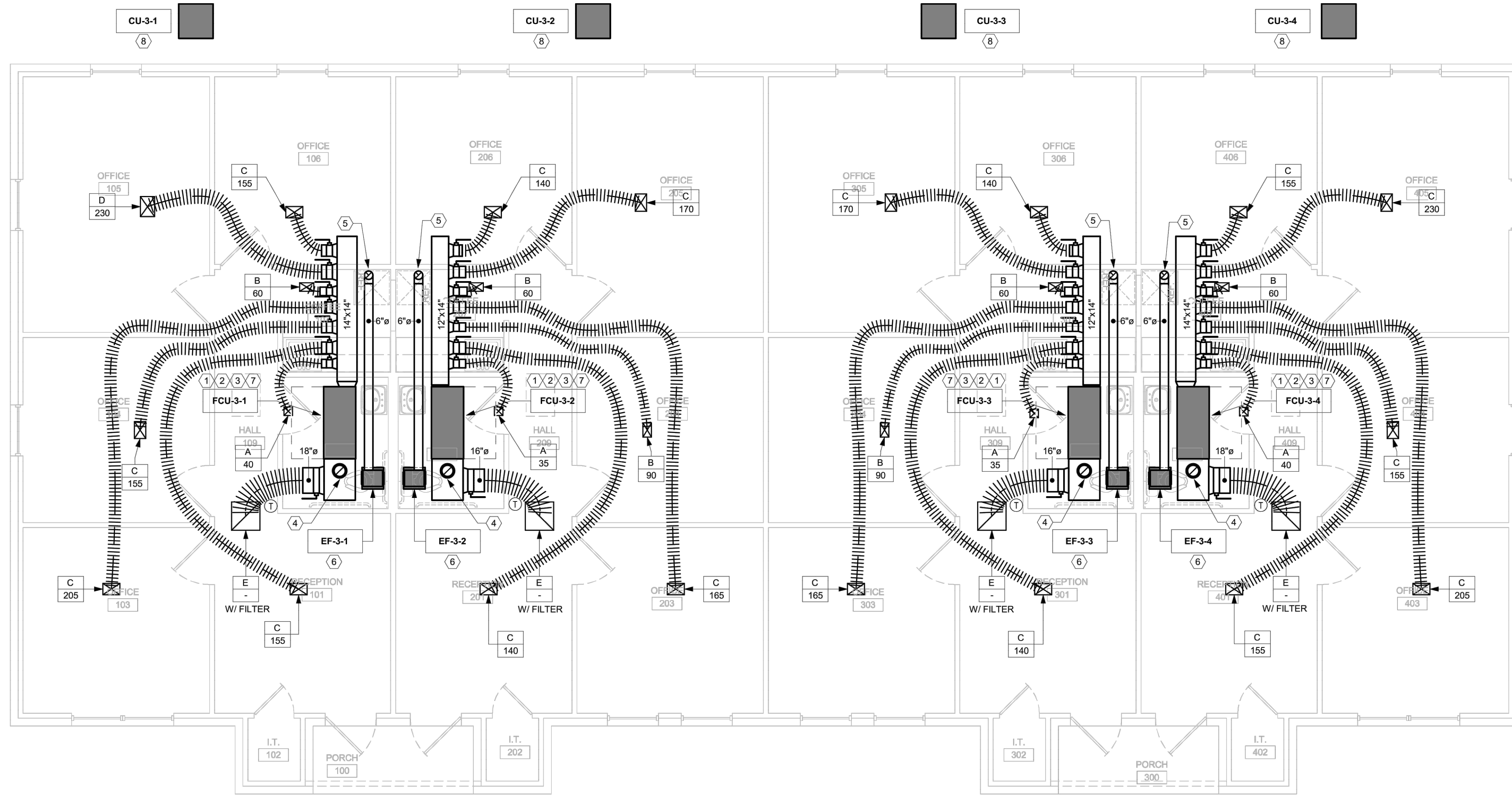
SHEET DESCRIPTION

Mechanical Schedules

SHEET NUMBER

M1-0

MAYFIELD OFFICE PARK
4-UNIT BUILDING
 3835 COUNTY ROAD 175
 LEANDER, TX 78641



GENERAL NOTES:

1. ROUTE ALL FLEX DUCT TIGHT TO ROOF.
2. INSTALL PER MANUFACTURER'S SPECIFICATIONS AND MAINTAIN ALL RECOMMENDED CLEARANCES.
3. ROUTE CONDENSATE TO LAVATORY BRANCH TAIL PIECE IN BREAK ROOM. CONDENSATE LINES SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS.
4. PROVIDE AND INSTALL IAQ AUXILIARY DRAIN PAN UNDER ENTIRE UNIT WITH FLOAT SWITCH IN DRAIN PAN TO SHUT DOWN UNIT UPON HIGH WATER LEVEL DETECTION. ROUTE AUXILIARY DRAIN TO SOFFIT ABOVE EXTERIOR WINDOW.
5. ROUTE 8" DIAMETER OUTSIDE AIR DUCT UP TO ROOF WITH BACKDRAFT DAMPER. PROVIDE WEATHER CAP WITH BIRD SCREEN. INSTALL OA BALANCING DAMPER. OUTSIDE AIR DAMPER SHALL BE MOTORIZED WITH 24-VOLT POWER. PROVIDE DUCT MOUNTED FILTER RACK WITH ACCESS DOOR IN OUTSIDE AIR DUCT.
6. ROUTE 6" ROUND EXH. DUCT UP TO ROOF AND TERMINATE AT ROOF WITH WEATHERPROOF CAP AND BIRD SCREEN.
7. INTERLOCK EXHAUST FAN WITH LIGHT SWITCH. COORDINATE WITH THE ELECTRICAL CONTRACTOR.
8. RETURN AIR PLENUM SHALL MATCH UNIT OPENING SIZE. COORDINATE EXACT SIZE IN THE FIELD BEFORE INSTALLATION.
9. MOUNT CONDENSING UNIT ON CONCRETE HOUSEKEEPING PAD. SEAL ALL PENETRATIONS WATER AND AIR TIGHT. INSULATE REFRIGERANT PIPING BETWEEN FAN COIL AND CONDENSING UNIT PER SPECIFICATIONS. REFRIGERANT PIPING SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS.

PLAN NOTES:

1. (Symbol)

1 Floor Plan - HVAC
 SCALE: 1/4" = 1'-0"
 PLAN NORTH

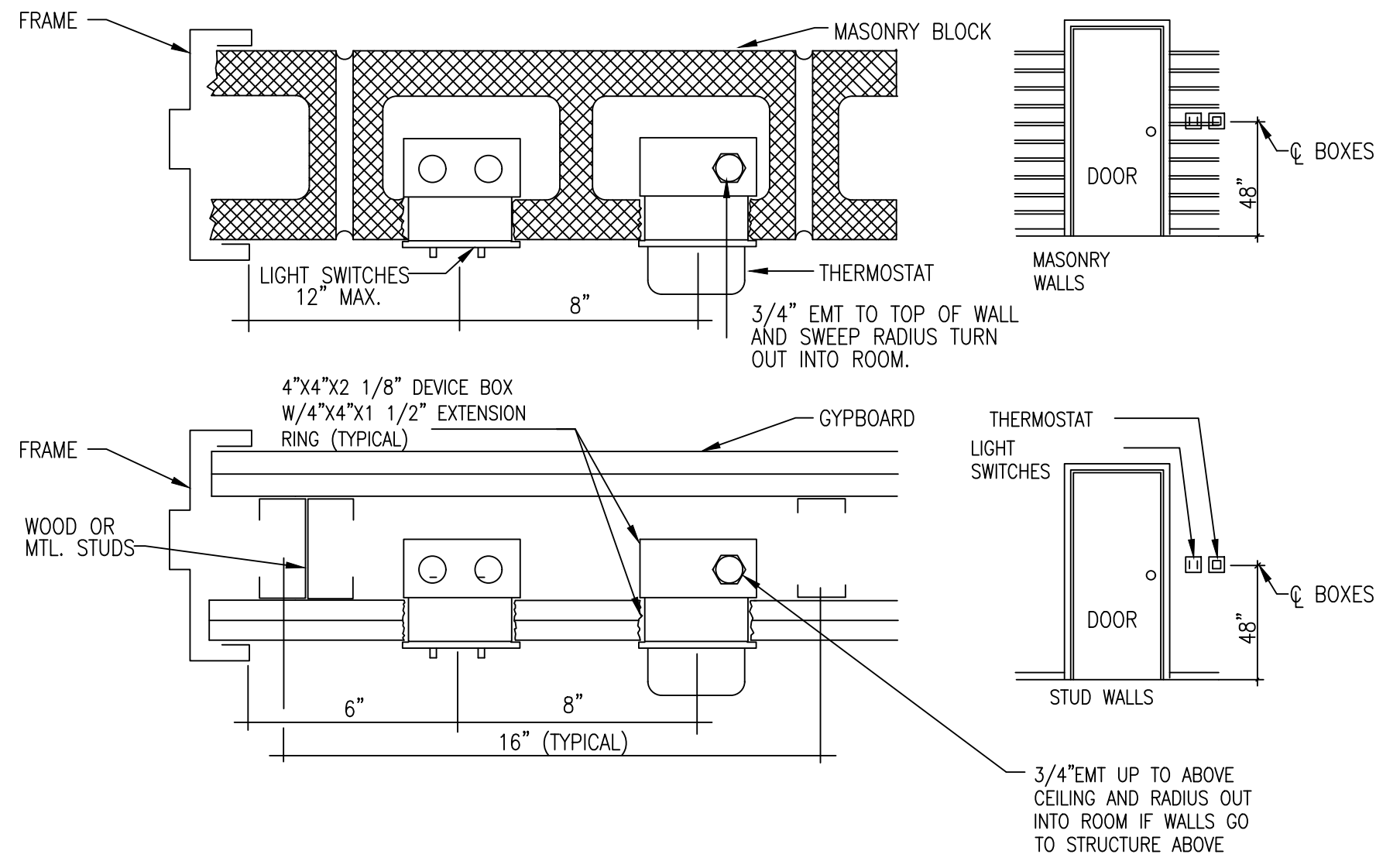
PROFESSIONAL'S SEAL
 THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF
 DAVID K. McDONALD, P.E.
 91899 ON 02/22/2023.
 IT IS NOT INTENDED FOR CONSTRUCTION, BIDDING, REGULATORY APPROVAL OR PERMITTING PURPOSES.

REVISION HISTORY	DATE
DESCRIPTION	02-22-2023
0 REVIEW	

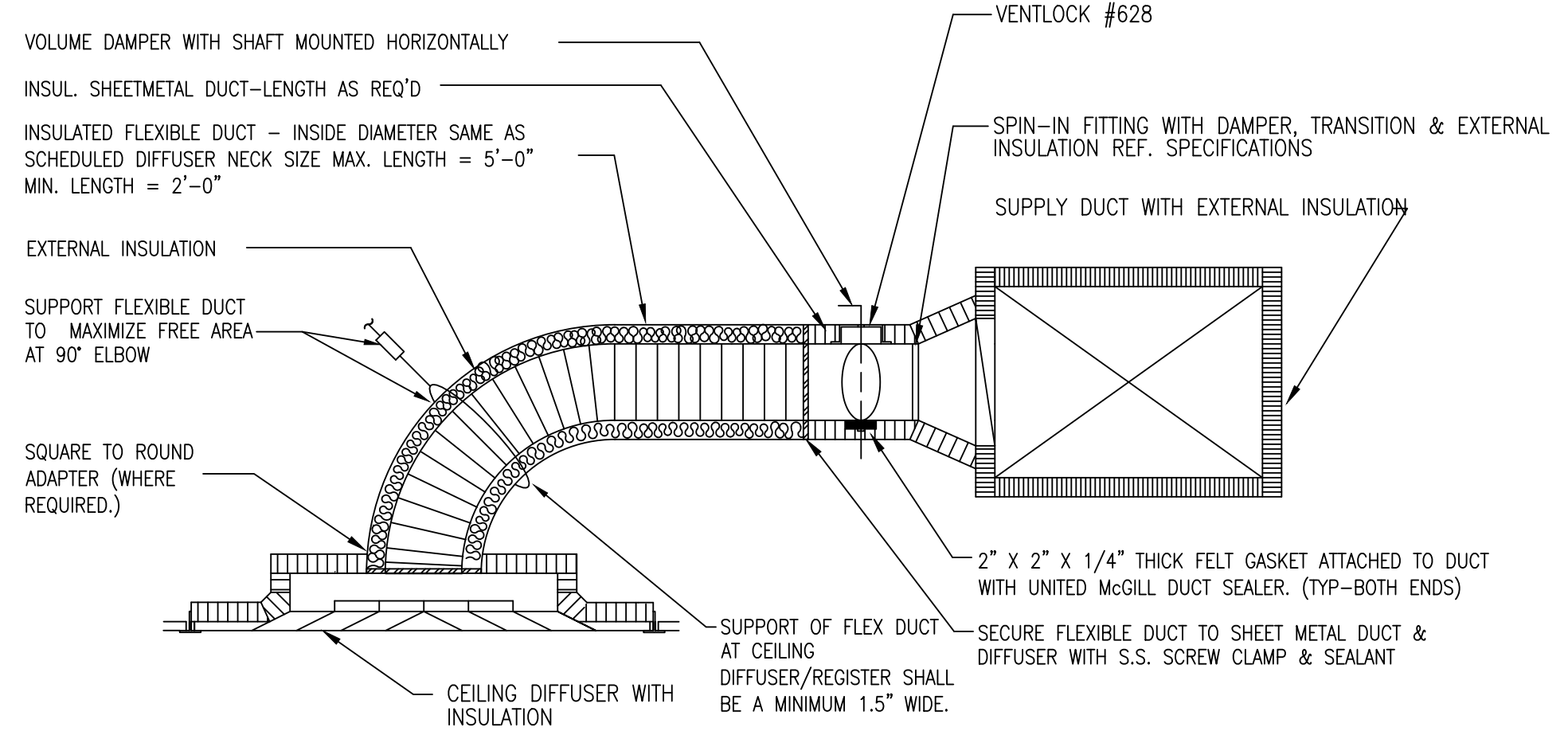
SHEET DESCRIPTION
Floor Plan - HVAC

SHEET NUMBER
M2-1

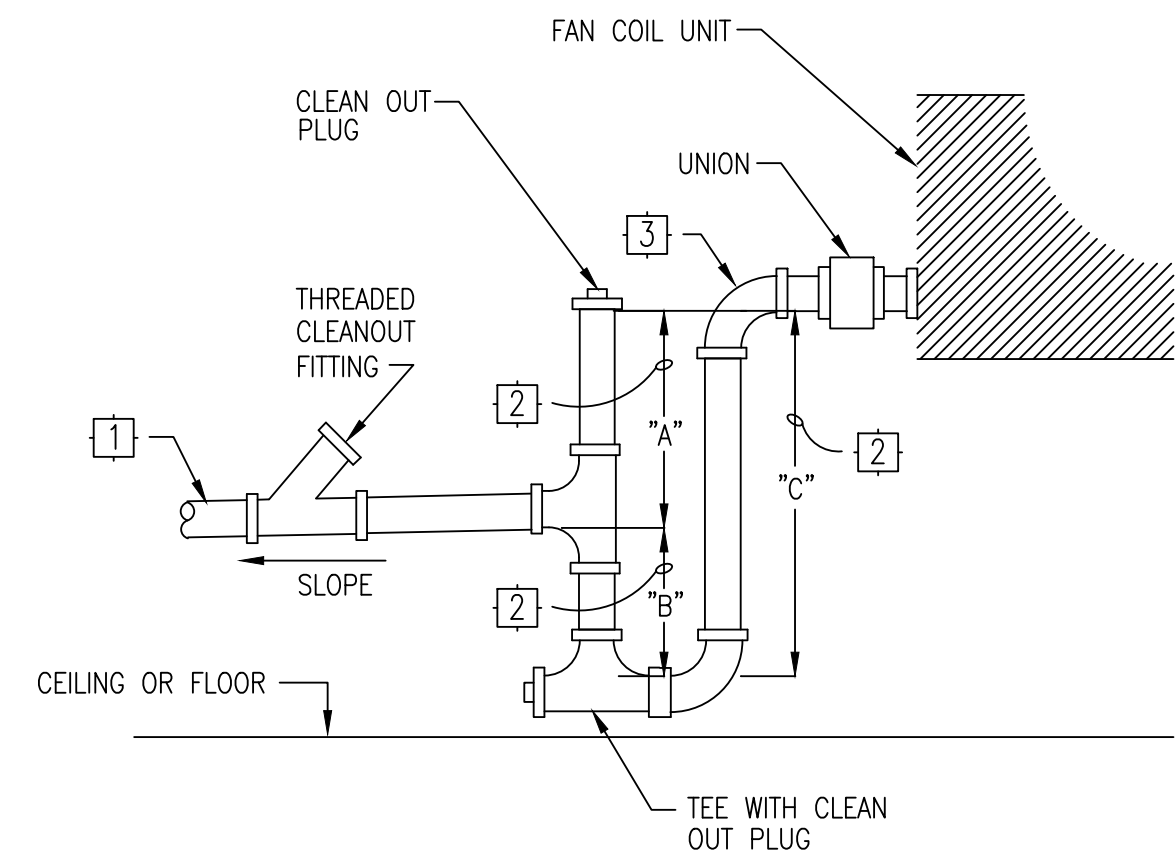
NOTE:
THERMOSTATS LOCATED ADJACENT TO DOORS ON PLANS TO BE INSTALLED PER THIS DETAIL. LOCATE OTHER THERMOSTATS AS SHOWN ON PLANS, 48" A.F.F. UNLESS OTHERWISE NOTED.



1 ROOM THERMOSTAT/ LIGHT SWITCH DETAIL
SCALE: NOT TO SCALE



2 DIFFUSER CONNECTION DETAIL
SCALE: NOT TO SCALE

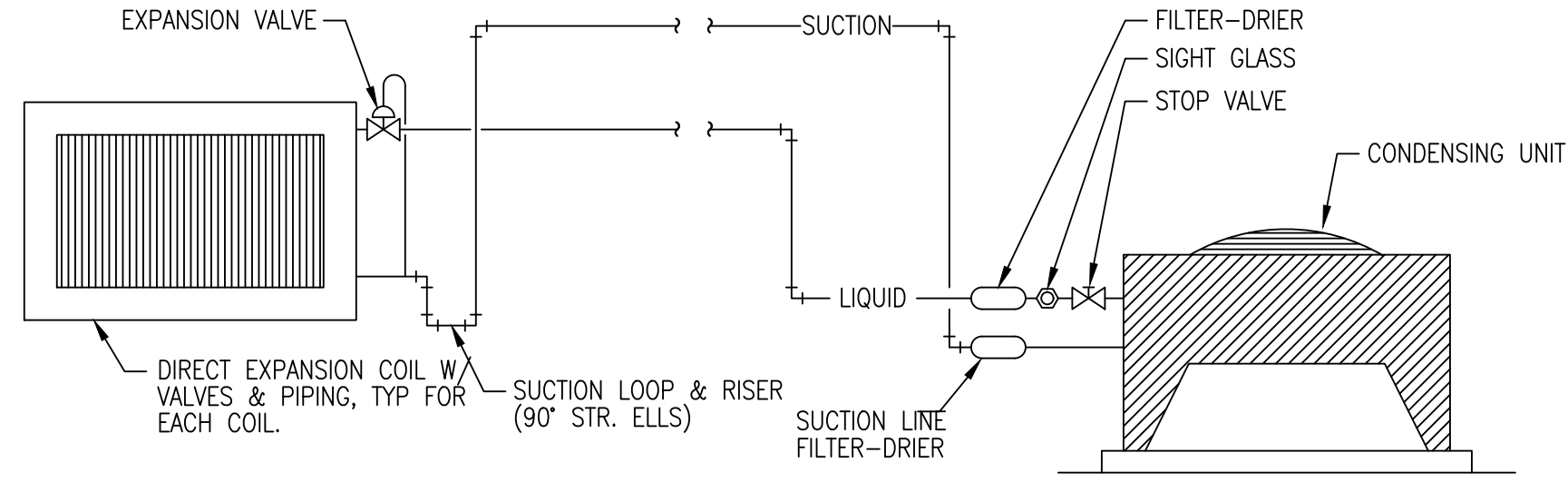


KEYED NOTES:

- 1 ROUTE CONDENSATE DRAIN TO NEAREST FLOOR DRAIN
- 2 "A" = FAN PLENUM NEGATIVE STATIC PRESSURE, IN. W.G.
"B" = A/2 + 1-1/2" (MIN.)
"C" = A + B
- 3 CONDENSATE DRAIN SHALL BE SIZED BY AIR HANDLING UNIT MANUFACTURER.

3 CONDENSATE DRAIN PIPING DETAIL
SCALE: NOT TO SCALE

NOTE:
PROVIDE SOLENOID VALVES AND ASSOCIATED CONTROLS IF REQUIRED BY EQUIPMENT MANUFACTURER. SIZE ALL REFRIGERANT PIPING PER MANUFACTURERS RECOMMENDATIONS.



4 REFRIGERANT PIPING SCHEMATIC
SCALE: NOT TO SCALE

PROFESSIONAL'S SEAL
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF
DAVID K. McDONALD, P.E.
91899 ON 02/22/2023.
IT IS NOT INTENDED FOR CONSTRUCTION, BIDDING, REGULATORY APPROVAL OR PERMITTING PURPOSES.

REVISION HISTORY	DATE
0 REVIEW	02-22-2023

SHEET DESCRIPTION
Mechanical Details

SHEET NUMBER
M3-1

MECHANICAL GENERAL PROVISIONS

IT IS THE INTENT OF THE CONTRACT DOCUMENTS TO PROVIDE AN INSTALLATION COMPLETE IN EVERY RESPECT. IN THE EVENT THAT ADDITIONAL DETAILS OF SPECIAL CONSTRUCTION MAY BE REQUIRED FOR WORK INDICATED OR SPECIFIED IN THIS SECTION OR WORK SPECIFIED IN OTHER SECTIONS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE SAME AS WELL AS TO PROVIDE MATERIAL AND EQUIPMENT USUALLY FURNISHED WITH SUCH SYSTEMS OR REQUIRED TO COMPLETE THE INSTALLATION, WHETHER MENTIONED OR NOT.

CODE REQUIREMENTS AND PERMITS
PERFORM WORK IN ACCORDANCE WITH APPLICABLE STATUTES, ORDINANCES, CODES, AND REGULATIONS OF GOVERNMENTAL AUTHORITIES HAVING JURISDICTION. OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS.

AIR FILTERS
IMMEDIATELY PRIOR TO FINAL ACCEPTANCE OF PROJECT, REPLACE DISPOSABLE TYPE AIR FILTERS. IF AIR HANDLING UNITS ARE OPERATING DURING CONSTRUCTION, INSTALL HIGH EFFICIENCY FILTERS IN UNITS AND REPLACE AT END OF CONSTRUCTION.

GUARANTEE
GUARANTEE WORK FOR 1 YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE PROJECT AND DURING THAT PERIOD MAKE GOOD ANY FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIALS OR WORKMANSHIP.

SUBMITTAL DATA
ENGINEER'S APPROVAL OF SUBMITTED MATERIAL CONSTITUTES AN ACKNOWLEDGMENT ONLY AND IN NO WAY RELIEVES THE CONTRACTOR OF FULL RESPONSIBILITY FOR PROVIDING ALL SYSTEMS COMPLETE IN ACCORDANCE WITH THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING DIMENSIONS AT JOB SITE, FOR INFORMATION WHICH PERTAINS TO FABRICATION PROCESSES OR CONSTRUCTION TECHNIQUES AND FOR COORDINATION OF WORK WITH ALL OTHER TRADES. ANY MATERIALS OR EQUIPMENT PROVIDED BY THIS CONTRACTOR WITHOUT APPROVED SHOP DRAWINGS CONSTITUTES THE CONTRACTOR'S AGREEMENT TO COMPLY WITH THE ENGINEER'S INTENT WHETHER SPECIFIED, SHOWN OR IMPLIED.

CONTROLS
PROVIDE AND INSTALL A 7 DAY/24 HOUR PROGRAMMABLE THERMOSTAT

FIRESTOPPING
ALL PIPING, TUBING, DUCTWORK, CONDUIT, ETC. PASSING THROUGH FIRE RATED FLOORS AND/OR WALLS SHALL HAVE THE VOID AREA^w BETWEEN THE MATERIAL PASSING THROUGH FLOOR AND/OR WALL SEALED WITH AN APPROVED FIRE-STOP MATERIAL TO MAINTAIN THE FIRE RATING OF THE FLOOR AND/OR WALL. DEPENDING ON THE PARTICULAR INSTALLATION, THE CONTRACTOR SHALL USE F500 SERIES FIRE STOP CAULK OR F5500/600 SERIES FIRE-STOP COMPONENTS AS MANUFACTURED BY INTERNATIONAL PROTECTIVE COATINGS OR APPROVED EQUIVALENT. ALL FIRE STOP SYSTEMS SHALL BE INSTALLED AS REQUIRED BY THE MANUFACTURER AND U.L. REQUIREMENTS FOR EACH APPLICATION.

EXISTING FACILITIES
THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOSS OR DAMAGE TO THE EXISTING FACILITIES AS USED BY HIS WORKMEN, AND SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING SUCH LOSS OR DAMAGE. THE CONTRACTOR SHALL SEND PROPER NOTICES AND RECEIVE WRITTEN PERMISSION FROM THE OWNER TO ENTER EXISTING AREAS. BEFORE BEGINNING WORK IN EXISTING AREAS, MAKE THE NECESSARY ARRANGEMENTS AND PERFORM OTHER SERVICES REQUIRED FOR THE CARE, PROTECTION, AND IN SERVICE MAINTENANCE OF ALL ELECTRICAL, COMMUNICATION, PLUMBING, HEATING, AIR CONDITIONING, AND VENTILATING SERVICES FOR EXISTING FACILITIES. THE CONTRACTOR SHALL ERECT TEMPORARY BARRICADES WITH NECESSARY SAFETY DEVICES, AS REQUIRED TO PROTECT PERSONNEL FROM INJURY, REMOVING ALL SUCH TEMPORARY PROTECTION UPON COMPLETION OF THE WORK. THE CONTRACTOR SHALL PROVIDE TEMPORARY OR NEW SERVICES TO ALL EXISTING FACILITIES AS REQUIRED TO MAINTAIN THEIR PROPER OPERATION WHEN NORMAL SERVICES ARE DISRUPTED AS A RESULT OF THE WORK BEING ACCOMPLISHED UNDER THIS PROJECT.

WHERE EXISTING CONSTRUCTION IS REMOVED TO PROVIDE WORKING AND EXTENSION ACCESS TO EXISTING UTILITIES, THE CONTRACTOR SHALL REMOVE DOORS, PIPING, CONDUIT, OUTLET BOXES, WIRING, LIGHT FIXTURES, AIR CONDITIONING DUCTWORK, AND EQUIPMENT, ETC., TO PROVIDE THIS ACCESS AND SHALL REINSTALL SAME UPON COMPLETION OF WORK IN THE AREAS AFFECTED. WHERE PARTITIONS, WALLS, FLOORS, OR CEILINGS OF EXISTING CONSTRUCTION ARE INDICATED TO BE REMOVED AND EQUIPMENT LOCATED IN THESE AREAS IS REQUIRED TO REMAIN IN OPERATION, THE CONTRACTOR SHALL REMOVE AND REINSTALL ALL EQUIPMENT REQUIRED FOR THE OPERATION OF THE REMAINING ELECTRICAL SYSTEMS. THIS IS TO INCLUDE BUT IS NOT LIMITED TO ELECTRICAL SWITCHES, RELAYS, FIXTURES, CONDUIT, ETC.

OUTAGES
OUTAGES OF SERVICES AS REQUIRED BY THE PROJECT WILL BE PERMITTED BUT ONLY AT TIME APPROVED BY THE OWNER. THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING TWO WEEKS IN ADVANCE OF THE REQUESTED OUTAGE IN ORDER TO SCHEDULE REQUIRED OUTAGES. NO OUTAGES SHALL BE TAKEN UNLESS WRITTEN APPROVAL HAS FIRST BEEN RECEIVED FROM THE OWNER. THE TIME ALLOWED FOR OUTAGES WILL NOT BE DURING NORMAL WORKING HOURS UNLESS OTHERWISE APPROVED BY THE OWNER. ALL COSTS OF OUTAGES, INCLUDING OVERTIME CHARGES, SHALL BE INCLUDED IN THE CONTRACT AMOUNT.

ACCESS DOORS
SCOPE
THIS SECTION PROVIDES FOR FURNISHING AND INSTALLING ACCESS DOORS IN ALL WALL OR CEILING LOCATIONS AS REQUIRED OR SHOWN FOR ACCESS TO VALVES, CONTROLS, WATER HAMMER ARRESTORS, TRAP PRIMERS, AND OTHER EQUIPMENT REQUIRING MAINTENANCE, ADJUSTMENT OR OPERATION. PROVIDE ACCESS DOORS TO PROVIDE ACCESS TO ALL MECHANICAL ITEMS REQUIRING SERVICE OR MAINTENANCE, WHETHER SHOWN ON DRAWINGS OR NOT.

LOW TEMPERATURE PIPING INSULATION

SCOPE
THIS SECTION PROVIDES FOR INSTALLING AND FURNISHING LOW TEMPERATURE PIPING INSULATION AS NOTED BELOW.

CONDENSATE DRAINS LINES
1/2" - ARMAFLEX AP

REFRIGERANT SUCTION LINE
1 - ARMAFLEX AP

CHILLED WATER PIPING, 6" AND SMALLER
1-1/2" - KOOLPHEN-K

FLANGE, VALVE AND FITTING INSULATION

A. PROVIDE MOLDED OR MITERED COVERS FOR FLANGES, VALVES AND FITTINGS.

INSULATION SHIELD

A. FIELD FABRICATED. USE SECTIONS OF HIGH DENSITY FIBERGLASS OR FOAMGLASS INSULATION THAT WILL SUPPORT THE BEARING AREA AT HANGERS AND SUPPORTS. FURTHER SUPPORT INSULATION AT HANGERS AND SUPPORTS WITH A SHIELD OF GALVANIZED METAL EXTENDING NOT LESS THAN 4 INCHES ON EITHER SIDE OF THE SUPPORT BEARING AREA, COVERING AT LEAST HALF OF THE PIPE CIRCUMFERENCE, AND CONFORMING TO THE SCHEDULE BELOW. ADHERE METAL SHIELD TO INSULATION SO THAT METAL WILL NOT SLIDE WITH RESPECT TO INSULATION.

PIPE DIAMETER	INSULATED SECTION LENGTH IN INCHES	MINIMUM U.S. STANDARD GAGE OF METAL SHIELD
3" AND SMALLER	12	18
4" TO 6"	12	16
8" TO 18"	18	14

SEALANT, ADHESIVE AND FINISH

A. SEALANT. BENJAMIN FOSTER 30-45 TO BE USED AT VALVE COVERS.
B. ADHESIVE. FURNISH BENJAMIN FOSTER 85-20 TO SEAL LONGITUDINAL LAPS OF THE VAPOR BARRIER JACKET AND TO ADHERE BUTT JOINT COVERS. SELF-SEALING LAPS AND BUTT STRIPS ARE NOT ALLOWED.

C. FINISH. USE BENJAMIN FOSTER 30-65, 30-80 OR 30-90 WITH GLASS FABRIC REINFORCEMENT.

D. FINISH ARMAFLEX AP INSULATION WITH MINIMUM 2-COATS OF ARMSTRONG FINISH PER MANUFACTURER'S RECOMMENDATIONS FOR OUTDOOR INSULATION ONLY. DO NOT USE ARMSTRONG FINISH FOR INDOOR APPLICATIONS. ARMAFLEX AP INSULATION SHALL BE APPLIED WITH A LOW-VOC ADHESIVE, ARMAFLEX 520 BLV.

EXECUTION

PIPE

A. APPLY INSULATION TO CLEAN, DRY PIPES. BUTT INSULATION JOINTS FIRMLY TOGETHER. SEAL LONGITUDINAL LAPS AND BUTT STRIPS WITH SEALANT.

EXTERNAL DUCT INSULATION
WORK INCLUDED
THIS SECTION PROVIDES FOR THE FURNISHING AND INSTALLATION OF EXTERNAL INSULATION ON LOW-VELOCITY SUPPLY AIR DUCTS. EXTERNAL INSULATION OF CONCEALED AND EXPOSED DUCTS IS INCLUDED IN THIS SECTION. INTERNAL ACOUSTIC DUCT LININGS ARE SPECIFIED UNDER DUCTWORK AND NOT INCLUDED IN THIS SECTION.

RELATED WORK
DIVISION 15 - MECHANICAL. INSULATION - GENERAL.

PRODUCTS
INSULATION
DUCT, ROUND, FLAT OVAL, OR RECTANGULAR. PROVIDE FLEXIBLE GLASS FIBER INSULATION WITH FACTORY-APPLIED, REINFORCED FOIL-KRAFT FACING. A MINIMUM THERMAL RESISTANCE OF 6.0 (SOFT. X DEGREES F X HRS. PER BTU) AT 750F IS REQUIRED, AFTER INSTALLATION (NOT IN BAG). PROVIDE MINIMUM 1-POUND DENSITY INSULATION, WHICH COMPLIES WITH SPECIFICATION H-B-100B.

COATING AND ADHESIVE
COATING. PROVIDE BENJAMIN FOSTER 30-35 VAPOR BARRIER COATING. ADHESIVE. PROVIDE BENJAMIN FOSTER 85-20 VAPOR BARRIER ADHESIVE.

EXECUTION
DUCT, ROUND, OR RECTANGULAR
INSULATION SHALL BE WRAPPED TIGHTLY ON THE DUCTWORK WITH ALL CIRCUMFERENTIAL JOINTS BUTTED AND LONGITUDINAL JOINTS OVERLAPPED A MINIMUM OF 2 INCHES. IN ADDITION, SECURE INSULATION TO THE BOTTOM OF RECTANGULAR DUCTWORK OVER 24 INCHES WIDE BY THE USE OF MECHANICAL FASTENERS AT NO MORE THAN 18 INCHES ON CENTER.

INSTALLATION OF GREASE DUCT AND 1- AND 2-HOUR AIR DUCT WRAP

A. INSTALLATION TO BE PER UL LISTING AND MANUFACTURER'S RECOMMENDATIONS. WHEN DUCT WIDTH OR HEIGHT IS 18" OR WIDER, USE PINS AND CLIPS ON BOTTOM OF DUCT EVENLY SPACED 8-TO-12" APART FROM EACH OTHER ON ALL VERTICAL DUCT SECTIONS, SIDES AND BOTTOMS. AT OVERLAPS, INSTALL PINS AND CLIPS PER MANUFACTURER. ACCESS DOORS TO BE INSTALLED WITH TWO METAL ACCESS DOOR PLATES, THREADED STUDS WELDED AROUND PERIMETER AND SEALED CLK FIRESTOP SEALANT, THREE LAYERS OF PYROSCAT FP- DUCT WRAP AND 2-MIL ALUMINUM FOIL TAPE. ALL PER MANUFACTURER'S RECOMMENDATIONS. FLOOR AND WALL PENETRATIONS TO BE PER MANUFACTURER'S RECOMMENDATIONS. REPAIR DAMAGED DUCT WRAP, ROD PENETRATIONS, ETC., PER MANUFACTURER'S RECOMMENDATIONS.

PIPING FOR EQUIPMENT DRAINS

SCOPE
THIS SECTION PROVIDES FOR FURNISHING AND INSTALLING PIPING AND PIPING APPURTENANCES TO DRAIN AIR HANDLERS AND OTHER EQUIPMENT REQUIRING DRAINS.

PIPE AND FITTINGS
PROVIDE SEAMLESS, HARD-DRAWN, TYPE L COPPER WATER TUBE CONFORMING TO ASTM B 88, AND WROUGHT COPPER FITTINGS.

REFRIGERANT PIPING AND APPURTENANCES

GENERAL

WORK INCLUDED

A. THIS SECTION SPECIFIES THE FURNISHING AND INSTALLATION OF COPPER TUBING, VALVES, STRAINERS AND SIGHT GLASS FOR REFRIGERANT PIPING.

RELATED WORK

A. DIVISION 15 - MECHANICAL.

- (1) PIPE AND PIPE FITTINGS.
- (2) VALVES, STRAINERS, AND VENTS.
- (3) LOW TEMPERATURE PIPING INSULATION.

PRODUCTS

PIPE AND FITTINGS

A. FURNISH REFRIGERANT PIPING OF TYPE L-ACR, HARD-DRAWN COPPER TUBING WITH SWEAT-TYPE, WROUGHT COPPER FITTINGS. CAST FITTINGS ARE NOT PERMITTED.

SERVICE VALVES

A. PROVIDE ANGLE OR GLOBE SERVICE VALVES, WITH SWEAT CONNECTIONS. USE PACKED-TYPE VALVES WITH GASKETED SEAL CAP AND BACK SEAT FEATURE. VALVES MUST BE WRENCH OPERATED. FURNISH VALVES ESPECIALLY DESIGNED FOR REFRIGERANT SERVICE, IN CONFORMANCE WITH THE ARI CODE.

B. PLACE SERVICE VALVES AT THE INLET AND OUTLET OF EACH COMPRESSOR, ON BOTH SIDES OF EACH STRAINER AND SOLENOID VALVE, AND AS OTHERWISE SHOWN AND SPECIFIED.

SIGHT GLASSES

A. PROVIDE SUITABLE DOUBLE-WINDOW SIGHT GLASS IN THE LIQUID LINE LEAVING THE CONDENSER.

SOLENOID VALVES

A. FURNISH PILOT-OPERATED, FLOATING PISTON SOLENOID VALVES SUITABLE FOR OPERATION WITH REFRIGERANT.
B. USE VALVES WITH A BRONZE BODY AND SWEAT-TYPE CONNECTIONS.
C. PROVIDE STAINLESS STEEL STEM AND PLUNGER ASSEMBLY, AND A STAINLESS STEEL PISTON.
D. FURNISH SOLENOID COILS WHICH ARE SEALED AND MOISTURE PROOF.
E. USE ELECTRICAL CHARACTERISTICS OF 115-VOLT, 60 HERTZ.

EXECUTION

PRESSURE TEST
AFTER ALL REFRIGERANT EQUIPMENT AND PIPING ARE INSTALLED, CHARGE THE SYSTEM WITH THE PROPER REFRIGERANT AND DRY NITROGEN TO 300 PSIG.

A. TEST ALL JOINTS WITH A HALIDE TORCH OR AN ELECTRONIC LEAK DETECTOR.
B. REPAIR ALL LEAKS AND RETEST EACH SYSTEM UNTIL PROVED ABSOLUTELY TIGHT.

EVACUATION AND DRYING

AFTER REFRIGERANT SYSTEM HAS BEEN PRESSURE TESTED, CONNECT A SUITABLE VACUUM PUMP, AND EVACUATE PIPING SYSTEM, INCLUDING ALL LINES AND EQUIPMENT. VERIFY ALL EQUIPMENT, GAUGES, HOSES, HOSE GASKETS, ETC., ARE AIR TIGHT AND LEAK FREE. USING A CALIBRATED MICRON GAUGE (BACHARACH, J.B., RONNAIRE) TRIPLE EVACUATE REFRIGERANT SYSTEM AS FOLLOWS:
A. EVACUATE REFRIGERANT TO 1500 MICRONS, BREAK VACUUM USING DRY NITROGEN. DO NOT ALLOW ANY AIR TO ENTER SYSTEM.
B. EVACUATE REFRIGERANT SYSTEM FOR THE 2ND TIME TO 1500 MICRONS, BREAK VACUUM USING DRY NITROGEN. DO NOT ALLOW ANY AIR TO ENTER SYSTEM.
C. EVACUATE REFRIGERANT SYSTEM FOR THE 3RD TIME TO 500 MICRONS. MAINTAIN VACUUM FOR A MINIMUM OF FOUR HOURS AT 500 MICRONS.
D. DOCUMENT ALL STAGES OF EVACUATION AND SUBMIT A BRIEF WRITTEN REPORT TO THE ENGINEER.
E. CHARGE REFRIGERANT SYSTEM WITH THE PROPER REFRIGERANT. DO NOT ALLOW ANY AIR OR NITROGEN TO ENTER THE SYSTEM.

DUCTWORK (SHEETMETAL)

DUCT WORK TO BE FABRICATED AND INSTALLED PER LATEST EDITION OF SMACNA. GUARANTEE ALL DUCTWORK FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. THE GUARANTEE WILL COVER WORKMANSHIP, NOISE, CHATTER, WHISTLING, OR VIBRATION. DUCTWORK MUST BE FREE FROM PULSATION UNDER ALL CONDITIONS OF OPERATION.

CONTRACTOR COORDINATION
ERECT ALL DUCTS IN THE GENERAL LOCATIONS SHOWN, BUT CONFORM TO ALL STRUCTURAL AND FINISH CONDITIONS OF THE BUILDING. BEFORE FABRICATING ANY DUCTWORK, CHECK THE PHYSICAL CONDITIONS AT THE JOB SITE AND MAKE ALL NECESSARY CHANGES IN CROSS SECTIONS, OFFSETS, AND SIMILAR ITEMS, WHETHER THEY ARE SPECIFICALLY INDICATED OR NOT.

STANDARD AND CODES
EXCEPT AS OTHERWISE INDICATED, SHEET METAL DUCTWORK MATERIAL AND INSTALLATION SHALL COMPLY WITH THE FIFTH EDITION OF SMACNA LOW PRESSURE DUCT CONSTRUCTION STANDARDS.

SEALING OF SEAMS AND JOINTS (NOT FOR EXPOSED DUCTWORK)
THE ENTIRE DUCT SYSTEM SHALL BE SEALED. THE SEAMS AND JOINTS SHALL BE SEALED BY USE OF HARDCAST DT TAPE WITH FTA-20 (INDOOR) ADHESIVE. DUCT SHALL BE THOROUGHLY CLEANED PRIOR TO APPLICATION.

INSTALLATION
CONSTRUCTION STANDARDS. USE CONSTRUCTION METHODS WHICH FOLLOW THE REQUIREMENTS OUTLINED IN PARAGRAPH 1.5, AS WELL AS SMACNA BALANCING AND ADJUSTING PUBLICATIONS, UNLESS OTHERWISE INDICATED IN THESE SPECIFICATIONS OR ACCOMPANYING DRAWINGS.

REINFORCEMENT.
REINFORCE DUCTS HAVING ONE SIDE EQUAL TO 25 INCHES OR MORE IN ACCORDANCE WITH RECOMMENDED CONSTRUCTION PRACTICE OF SMACNA. CROSS BREAKING OR BEADING, CROSS BREAK OR BEAD SHEET METAL FOR RIGIDITY, EXCEPT DUCTS WHICH ARE 12 INCHES OR LESS IN THE LONGEST DIMENSION.

WALL PENETRATIONS. WHERE DUCTS PASS THROUGH WALLS IN EXPOSED AREAS, INSTALL SUITABLE ESCUTCHEONS MADE OF SHEET METAL ANGLES AS CLOSERS. AT ALL LOCATIONS WHERE DUCTWORK PASSES THROUGH FLOORS, PROVIDE WATERTIGHT SLEEVES PROJECTING 3 INCHES ABOVE FINISHED FLOOR AND FLUSH WITH BOTTOM OF FLOOR SLAB. FABRICATE SLEEVES OF 1/8-INCH THICK STEEL, GALVANIZED AFTER FABRICATION. ANCHOR INTO ADJACENT FLOOR SLAB AS REQUIRED. SLEEVES ARE REQUIRED INSIDE AS WELL AS OUTSIDE CHASES. SUPPORT DUCTS WHERE PASSING THROUGH FLOORS WITH STEEL STRUCTURAL ANGLES OF ADEQUATE BEARING SURFACE, GALVANIZED AFTER FABRICATION AND RESTING ON TOP OF THE SLEEVE. ELBOWS.

RECTANGULAR.
WHERE SQUARE ELBOWS ARE SHOWN, OR ARE REQUIRED FOR GOOD AIR FLOW, PROVIDE AND INSTALL BARBER-COLMAN OR EQUAL DOUBLE-WALL AIR FOIL TURNING VANES. USE RADIUS ELBOWS WITH A CENTER LINE RADIUS OF NOT LESS THAN 1-1/2 TIMES THE DUCT WIDTH. RADIUS ELBOWS MAY BE PROVIDED IN LIEU OF VANED ELBOWS WHERE SPACE AND AIR FLOW REQUIREMENTS PERMIT. ROUND DUCT. PROVIDE ELBOWS WITH A CENTERLINE RADIUS OF 1-1/2 TIMES THE DUCT DIAMETER OR DUCT WIDTH. FOR ROUND DUCTS, FURNISH SMOOTH ELBOWS OR 5-PIECE, 90° ELBOWS AND 3-PIECE, 45° ELBOWS.
LOW PRESSURE INSULATED FLEXIBLE DUCT. DO NOT EXCEED 6 FEET IN LENGTH WITH ANY FLEXIBLE DUCT. SUPPORT DUCT INDEPENDENTLY OF LIGHTS, CEILING AND PIPING.

FLEXIBLE CONNECTIONS
WHERE DUCTS CONNECT TO FANS, MAKE FLEXIBLE AIRTIGHT CONNECTIONS USING "VENTGLAS" FABRIC. THE FABRIC MUST BE FIRE-RESISTANT, WATERPROOF AND MILDEW RESISTANT WITH A WEIGHT OF APPROXIMATELY 30 OUNCES PER SQUARE YARD. PROVIDE A MINIMUM OF 1/2-INCH SLACK IN THE CONNECTIONS, AND A MINIMUM OF 2-1/2-INCHES DISTANCE BETWEEN THE EDGES OF THE DUCTS. ALSO PROVIDE A MINIMUM OF 1-INCH SLACK FOR EACH INCH OF STATIC PRESSURE ON THE FAN SYSTEM. SECURELY FASTEN FABRIC TO APPARATUS AND TO ADJACENT DUCTWORK BY MEANS OF GALVANIZED FLATS OR DRAW BANDS.
ACCESS DOORS
INSTALL DUCTWORK ACCESS DOORS IN STRUCTURAL ANGLE FRAMES AND PROVIDE WITH SASH LOCKS AND HINGES ARRANGED FOR CONVENIENT ACCESS. CONSTRUCT DOORS WHICH OCCUR IN INSULATED DUCTS WITH AN INSULATION FILLER.

DUCTWORK FOR REMOVAL OF GREASE-LADEN VAPORS
A. DUCTWORK REMOVING GREASE-LADEN VAPORS SUCH AS THOSE FROM COOKING EQUIPMENT SHOULD BE:

- 1. LISTED GREASE DUCTS ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION, OR 16-GAGE BLACK STEEL, WITH LIQUID-TIGHT CONTINUOUS EXTERNAL WELD ON ALL SEAMS AND JOINTS, COMPLYING WITH NFPA 96 AND UMC.

DUCT LEAKAGE
ALLOWABLE LEAKAGE. MAXIMUM ALLOWABLE LEAKAGE IS 5% OF TOTAL FLOW.

FIBROUS-GLASS DUCTS AND FITTINGS
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

- 1. CERTANTINED CORPORATION; INSULATION GROUP.
- 2. JOHNS MANVILLE.
- 3. KNAUF INSULATION.
- 4. OWENS CORNING.

A. FIBROUS-GLASS DUCT MATERIALS: RESIN-BONDED FIBERGLASS, FACED ON THE OUTSIDE SURFACE WITH FIRE-RESISTIVE FSK VAPOR RETARDER AND WITH A SMOOTH FIBERGLASS MAT FINISH ON THE AIR-SIDE SURFACE.

1. DUCT BOARD: FACTORY MOLDED INTO RECTANGULAR BOARDS.
2. ROUND DUCT: FACTORY MOLDED INTO STRAIGHT ROUND DUCT AND SMOOTH FITTINGS.

3. TEMPERATURE LIMITS: 40 TO 250 DEG F (5 TO 121 DEG C) INSIDE DUCTS; 150 DEG F (66 DEG C) AMBIENT TEMPERATURE SURROUNDING DUCTS.

4. MAXIMUM THERMAL CONDUCTIVITY: 0.24 BTU X IN./H X SQ. FT. X DEG F AT 75 DEG F MEAN TEMPERATURE.

5. MOISTURE ABSORPTION: NOT EXCEEDING 5 PERCENT BY WEIGHT AT 120 DEG F (49 DEG C) AND 95 PERCENT RELATIVE HUMIDITY FOR 96 HOURS WHEN TESTED ACCORDING TO ASTM C 1104/C 1104M.

6. PERMEABILITY: 0.02 PERMS (1.15 NG/PA X S X SQ. M) MAXIMUM WHEN TESTED ACCORDING TO ASTM E 96/E 96M, PROCEDURE A.

7. ANTIMICROBIAL AGENT: COMPOUND SHALL BE TESTED FOR EFFICACY BY AN NRL, AND REGISTERED BY THE EPA FOR USE IN HVAC SYSTEMS.

8. NOISE-REDUCTION COEFFICIENT: 0.65 MINIMUM WHEN TESTED ACCORDING TO ASTM C 423, MOUNTING A.

9. REQUIRED MARKINGS: EI RATING, UL LABEL, AND OTHER MARKINGS REQUIRED BY UL 181 ON EACH FULL SHEET OF DUCT BOARD.

B. CLOSURE MATERIALS:
PRESSURE-SENSITIVE TAPE: COMPLY WITH UL 181A, IMPRINTED BY THE MANUFACTURER WITH THE CODING "181A-P," THE MANUFACTURER'S NAME, AND A DATE CODE.

a. TAPE: ALUMINUM FOIL-SCRIM TAPE IMPRINTED WITH LISTING INFORMATION.

b. MINIMUM TAPE WIDTH: 2-1/2 INCHES (64 MM); 3 INCHES (76 MM) FOR DUCT BOARD THICKER THAN 1 INCH (25 MM).

c. STAPLES: 1/2-INCH (13-MM) OUTWARD CLINCHING, 2 INCHES (51 MM) O.C. IN TABS, ONE TAB PER JOINT.

d. WATER RESISTANT.
e. MOLD AND MILDEW RESISTANT.

C. FABRICATION:

a. SELECT JOINTS, SEAMS, TRANSITIONS, ELBOWS, AND BRANCH CONNECTIONS AND FABRICATE ACCORDING TO SMACNA'S "FIBROUS GLASS DUCT CONSTRUCTION STANDARDS," CHAPTER 2, "SPECIFICATIONS AND CLOSURE," AND CHAPTER 4, "FITTINGS AND CONNECTIONS."

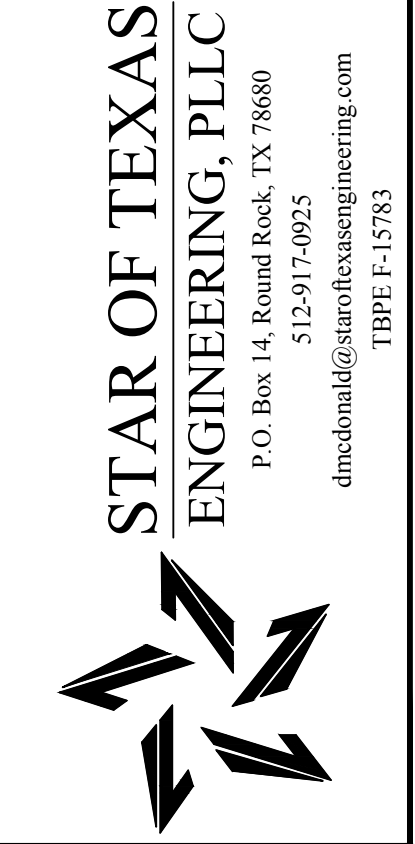
b. FABRICATE 90-DEGREE MITERED ELBOWS TO INCLUDE TURNING VANES.

c. REINFORCEMENTS: COMPLY WITH REQUIREMENTS IN SMACNA'S "FIBROUS GLASS DUCT CONSTRUCTION STANDARDS," CHAPTER 5, "REINFORCEMENT" FOR CHANNEL- AND TIE-ROD REINFORCEMENT MATERIALS, SPACING, AND FABRICATION.

d. PREFORMED ROUND DUCT: COMPLY WITH NAMA AH116, "FIBROUS GLASS DUCT CONSTRUCTION STANDARDS," SECTION VII, "PREFORMED ROUND DUCT."

AIR BALANCE

SCOPE
CONTRACTOR SHALL PROVIDE AN AIR BALANCE OF ALL DUCTED SYSTEMS. ADJUST SHEAVES, BELTS, DRIVES, DAMPERS, ETC., TO OBTAIN AIR QUANTITIES SHOWN. VERIFY PROPER OPERATION OF ALL SYSTEMS. VERIFY ALL VOLUME DAMPERS ARE INSTALLED. PERFORM TAB OPERATIONS AS REQUIRED BY THE NEBB TEST AND BALANCE PROCEDURES MANUAL AND RECORD TESTS RESULTS FOR THE OWNER'S REVIEW.



MAYFIELD OFFICE PARK
4-UNIT BUILDING
3835 COUNTY ROAD 175
LEANDER, TX 78641

PROFESSIONAL'S SEAL

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF

DAVID K. McDONALD, P.E.
91899 ON 02/22/2023.

IT IS NOT INTENDED FOR CONSTRUCTION, BIDDING, REGULATORY APPROVAL, OR PERMITTING PURPOSES.

REVISION/REVIEW	DATE								
0	02-22-2023								

SHEET DESCRIPTION

Mechanical Specifications

SHEET NUMBER

M4-1

THE COMPLETE INSTALLATION SHALL COMPLY WITH ALL REQUIREMENTS OF THE CITY OF GEORGETOWN EXTERIOR LIGHTING ORDINANCE.

ONLY INCANDESCENT, FLUORESCENT, LIGHT-EMITTING DIODE (LED), COLOR-CORRECTED HIGH-PRESSURE SODIUM OR METAL HALIDE LIGHT SOURCES MAY BE USED. THE SAME TYPE MUST BE USED FOR THE SAME OR SIMILAR TYPES OF LIGHTING ON ANY ONE SITE THROUGHOUT ANY MASTER-PLANNED DEVELOPMENT.

LIGHTING FIXTURES MUST BE DESIGNED AND MOUNTED IN SUCH A MANNER THAT THE CONE OF LIGHT DOES NOT CROSS ANY ADJACENT PROPERTY LINES OF NEIGHBORING SITES.

LIGHTING SHALL NOT BE ORIENTED SO AS TO DIRECT GLARE OR EXCESSIVE ILLUMINATION ONTO STREETS IN A MANNER THAT MAY DISTRACT OR INTERFERE WITH THE VISION OF DRIVERS ON SUCH STREETS.

ALL SITE LIGHTING MUST BE DESIGNED AND INSTALLED SO THAT THE LEVEL OF ILLUMINATION AS MEASURED IN FOOT CANDLES AT A HEIGHT OF THREE FEET AT THE PROPERTY LINE DOES NOT EXCEED TWO FOOT CANDLES.

REFER TO SHEET E5.1 FOR THE LIGHTING FIXTURE SCHEDULE FOR THE SITE LIGHTING FIXTURES.

ALL LIGHTING FIXTURES SHALL BE DESIGNED SO THAT THE LIGHT SOURCE IS COMPLETELY CONCEALED, FULLY SHIELDED WITHIN OPAQUE HOUSING AND NOT VISIBLE FROM ANY STREET RIGHT-OF-WAY. THE CONE OF LIGHT SHALL NOT CROSS ANY ADJACENT PROPERTY LINE. THE ILLUMINATION SHALL NOT EXCEED 2-FOOT CANDLES AT A HEIGHT OF THREE (3) FEET AT THE PROPERTY LINE. ONLY INCANDESCENT, FLUORESCENT, LIGHT-EMITTING DIODE (LED), COLOR-CORRECTED HIGH-PRESSURE SODIUM OR METAL HALIDE MAY BE USED.

ROOF LIGHTING MAY NOT INCLUDE NAKED BULBS OR TUBING OR RUN ALONG THE HIGHEST PEAK OF THE ROOFLINE. ROOF LIGHTING THAT QUALIFIES AS SIGNAGE PER THE UDC IS PROHIBITED.

THE ELECTRIC UTILITY (PERDENALES ELECTRIC DELIVERY) WILL PROVIDE THE DESIGN OF THE PRIMARY SIDE INFRASTRUCTURE NECESSARY FOR THIS PROJECT. DUE TO THE COMPLEXITY OF THIS PROJECT AND QUANTITY OF UTILITY TRANSFORMERS, THE PRIMARY SIDE CONDUITS AND OTHER INFRASTRUCTURE THAT MAY BE NECESSARY ARE NOT SHOWN ON THIS PLAN. THE ELECTRICAL SITE PLAN WILL BE REVISED AS THE PRIMARY SIDE DESIGN DEVELOPS AND IS AVAILABLE.

THE UNDERGROUND ELECTRICAL INSTALLATION SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND AHJ, ESPECIALLY NEC SECTION 300.5 (INCLUDING NEC 300.5 (D)(3)).

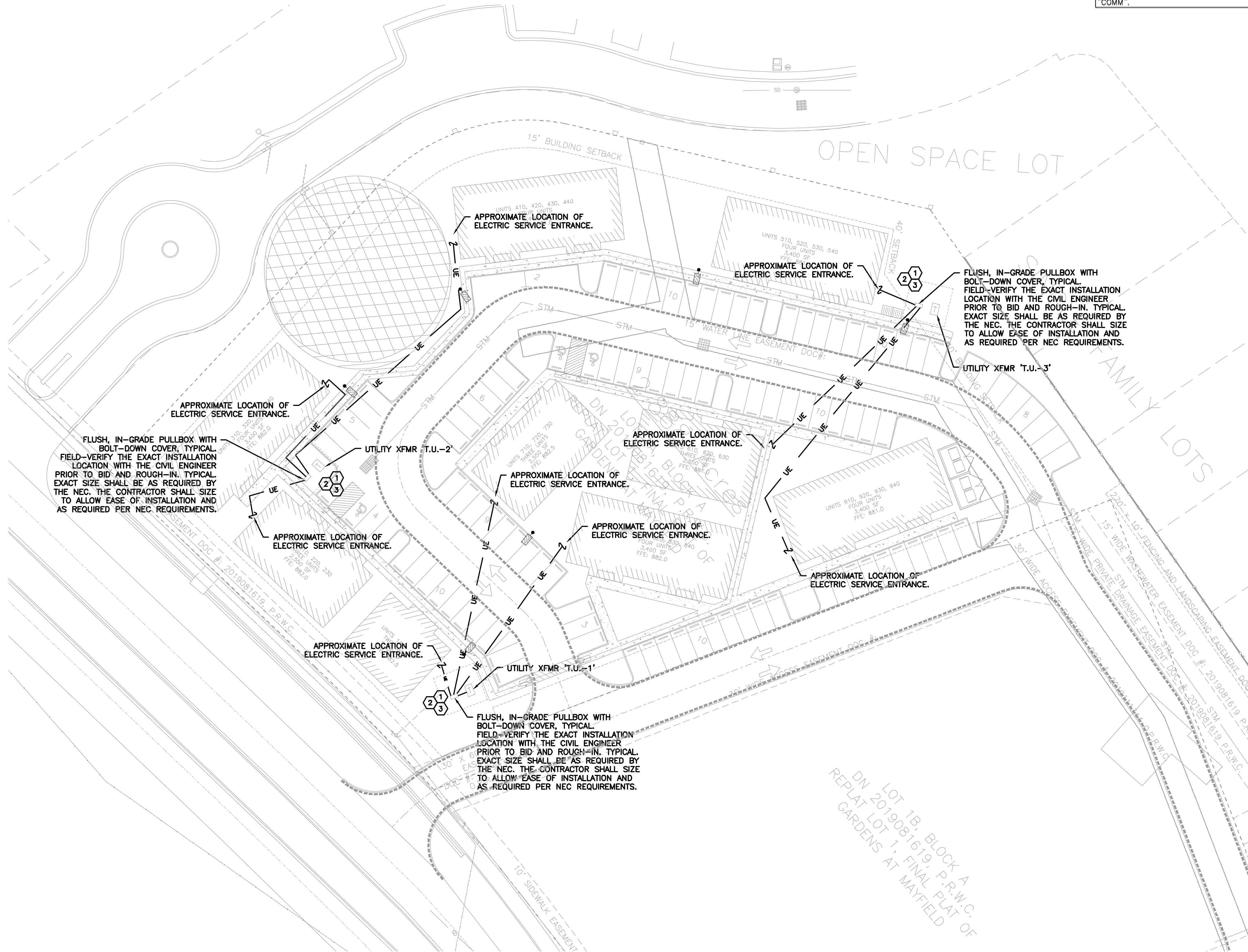
PROVIDE (1)-4" SCHEDULE 40 PVC CONDUIT FROM THE COMMUNICATIONS SERVICE ENTRANCE ON THE BUILDING TO THE COMMUNICATIONS SERVICE PEDESTAL, IN-GRADE PULLBOX, OR LOCATION SPECIFIED BY THE INDIVIDUAL SERVICE PROVIDER(S). TYPICALLY, THE COMMUNICATIONS SERVICE ENTRANCE ENCLOSURE AT THE BUILDING SHALL BE LOCATED ADJACENT TO THE ELECTRICAL SERVICE ENTRANCE, BUT THE CONTRACTOR SHALL FIELD-COORDINATE THE TERMINATION LOCATIONS OF THE CONDUIT(S) WITH THE INDIVIDUAL SERVICE PROVIDER(S) PRIOR TO BID AND ROUGH-IN. PROVIDE PULL ROPE IN EACH CONDUIT. THE MINIMUM DEPTH OF BURIAL FOR ALL COMMUNICATIONS CONDUITS SHALL BE 24" BELOW FINISHED GRADE TO THE TOP OF THE CONDUIT(S). THE CONTRACTOR SHALL FIELD-VERIFY THE EXACT PATHWAY, QUANTITIES OF CONDUITS, INNERDUCTS, PULLBOXES, ETC. REQUIRED WITH THE COMMUNICATIONS SERVICE PROVIDER(S) PRIOR TO BID AND ROUGH-IN. THE PATHWAY SHALL ALSO BE FIELD-COORDINATED WITH THE PROJECT CIVIL ENGINEER AND ALL OTHER UTILITIES PRIOR TO ROUGH-IN. THE COMMUNICATIONS CONDUITS MAY SHARE A TRENCH WITH OTHER UTILITIES IF ALLOWED BY EACH UTILITY WITHIN THE TRENCH, AND IF SO INSTALLED, SHALL BE INSTALLED TO MEET EACH UTILITY'S REQUIREMENTS FOR INSTALLATION. MAINTAIN SEPARATION OF UTILITIES AS REQUIRED BY EACH UTILITY/SERVICE PROVIDER. LABEL THE CONDUITS AT THE STUB-UP LOCATION AT THE BUILDING AS "COMM".

GENERAL NOTES:

- ALL JUNCTION BOXES USED FOR TERMINATING OR SPLICING WIRE THAT ARE IN-GRADE, EXTERIOR TO THE BUILDING SHALL BE FILLED WITH A RE-ENTERABLE ELECTRICAL INSULATING RESIN POTTING COMPOUND SIMILAR OR APPROVED EQUAL TO 3M SCOTCHCAST # 2123. RESIN SHALL NOT BE INSTALLED UNTIL AFTER ALL WIRE TERMINATIONS HAVE BEEN MADE INSULATED AND TESTED. DO NOT ENERGIZE ANY CIRCUIT UNTIL RESIN HAS COMPLETELY SET. COMPOUND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- DO NOT ROUTE UNDERGROUND ELECTRICAL CONDUITS BENEATH OR THROUGH DETENTION POND(S) NOR UNDERNEATH BUILDING FOOTPRINTS, EXCEPT WHERE NOTED. FIELD-COORDINATE THE EXACT ROUTING WITH CIVIL ENGINEERING PLANS AND ALL SITE WORK PRIOR TO ROUGH IN.
- DRAWING IS DIAGRAMMATIC ONLY. EXACT ROUTING OF CIRCUITING TO BE BY CONTRACTOR. FIELD-COORDINATE THE EXACT ROUTING OF ALL CONDUITS & CIRCUITS WITH THE WORK OF OTHER TRADES ON SITE AND THE ELECTRICAL UTILITY.
- REFER TO THE CIVIL ENGINEERING DRAWINGS AND THE ARCHITECTURAL DRAWINGS FOR MORE DETAILED INFORMATION.
- THE COMPLETE EXTERIOR LIGHTING INSTALLATION SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS OF THE AHJ. NOTHING IN THESE DOCUMENTS SHALL BE CONSTRUED AS RELIEVING THE CONTRACTOR FROM THESE REQUIREMENTS.
- COORDINATE WITH THE COMPLETE SET OF CONTRACT DOCUMENTS AND ALL OTHER TRADES FOR THE EXACT LOCATION OF EQUIPMENT AND COMPLETE SCOPE OF WORK.
- ADDITIONAL WORK WILL BE REQUIRED TO PROVIDE NECESSARY INFRASTRUCTURE FOR OTHER BUILDING SYSTEMS NOT SHOWN ON THIS PLAN. REFER TO ALL DRAWINGS AND SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD-COORDINATING ALL CIRCUIT REQUIREMENTS AND SHALL PROVIDE ALL INFRASTRUCTURE REQUIRED (CIRCUIT BREAKERS, SWITCHES, FUSES, TERMINATIONS, CONDUIT SYSTEM, BACKBOX(ES), ETC.) FOR A COMPLETE AND OPERABLE SYSTEM. CONNECT ADDITIONAL CIRCUITS NOT SHOWN ON THIS PLAN TO THE NEAREST SUITABLE PANELBOARD WITH SUFFICIENT AMPACITY. DENOTE ADDITIONAL CIRCUITS ON AS-BUILT FLOOR PLANS AND PANEL SCHEDULES.
- WHEN UTILITY SERVICES CROSS ONE ANOTHER, MAINTAIN THE MINIMUM CLEARANCES AS REQUIRED BY ALL UTILITY PROVIDERS, INCLUDING, BUT NOT LIMITED TO: ELECTRICITY, WATER, GAS, SEWER, ETC. FIELD-VERIFY ALL REQUIRED CLEARANCES AND OBTAIN APPROVAL OF PROPOSED ROUTINGS PRIOR TO ROUGH-IN. OBTAIN INSPECTION/OBSERVATION AND WRITTEN APPROVAL OF ALL CONDUIT DUCT BANKS FROM THE AHJ PRIOR TO BACKFILLING.
- REFER TO E2.1 FOR ALL BUILDING-MOUNTED LIGHTING FIXTURES.
- "PROVIDE" SHALL BE UNDERSTOOD TO MEAN "FURNISH AND INSTALL".

KEYED NOTES: (INDICATED BY "#")

- BOLLARDS PROTECTING ELECTRICAL UTILITY TRANSFORMER SHALL BE AS REQUIRED BY ELECTRICAL UTILITY; FIELD-COORDINATE PRIOR TO BID.
- THE EXACT ROUTING OF THE ELECTRICAL SERVICE ENTRANCE SHALL BE FIELD-COORDINATED PRIOR TO ROUGH-IN.
- APPROXIMATE LOCATION OF ELECTRICAL UTILITY PAD-MOUNTED TRANSFORMER "T.U.-1". FIELD-COORDINATE WITH THE ELECTRICAL UTILITY FOR THE EXACT LOCATION AND ALL REQUIREMENTS PRIOR TO ROUGH-IN. FURNISH AND INSTALL CONCRETE PAD AS WELL AS ADDITIONAL PROVISIONS REQUIRED, INCLUDING, BUT NOT LIMITED TO GROUNDING ROD(S) AND CONDUCTORS, LUGS, PROTECTIVE BOLLARDS, ETC.



01 OVERALL ELECTRICAL SITE PLAN
SCALE: 1" = 30'-0"



MAYFIELD OFFICE PARK - BUILDING THREE
3835 COUNTY ROAD 175
LEANDER, TX 78641

PROFESSIONAL SEAL
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF
NICHOLAS E. RABROKER, P.E.
104767 ON 10/28/2022
IT IS NOT INTENDED FOR CONSTRUCTION, BIDDING, REGULATORY APPROVAL OR PERMITTING PURPOSES.

REVISION HISTORY	DATE
0	10-28-2022

SHEET DESCRIPTION
OVERALL ELEC. SITE PLAN

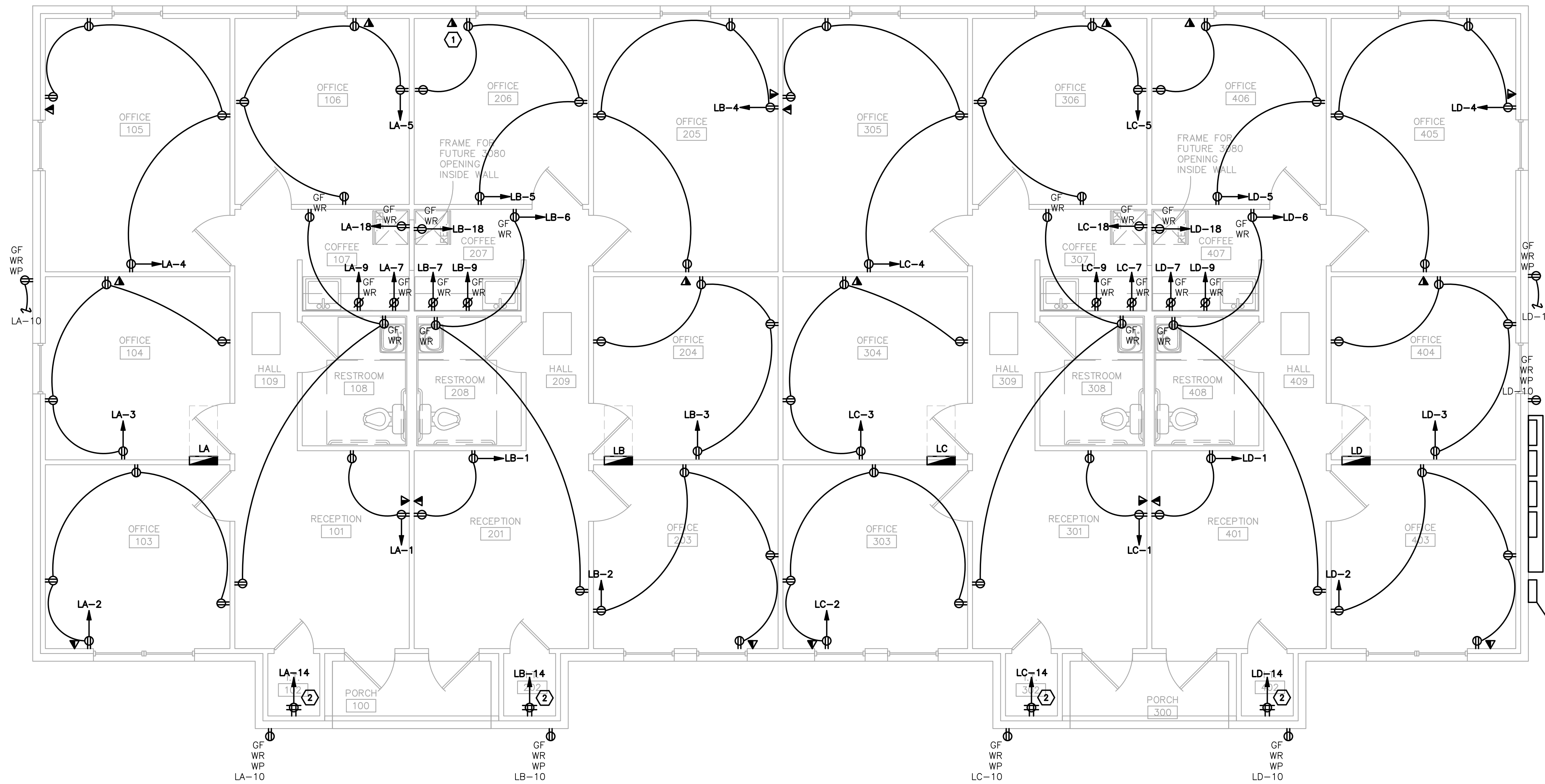
SHEET NUMBER
E1.1



RE: GENERAL ELECTRICAL NOTES ON SHEET E0.1.
 REFER TO THE ARCHITECTURAL PLANS FOR THE EXTENTS OF CONSTRUCTION.
 NOTE: ALL POWER RECEPTACLES SPECIFIED TO BE INSTALLED IN EXTERIOR AND/OR WET LOCATIONS SHALL BE WEATHER-RESISTANT (WR), GFCI-TYPE DUPLEX POWER RECEPTACLES WITH A WEATHERPROOF WHILE-IN-USE COVER. BACKBOX SHALL BE RECESSED, TYP. U.N.O.

KEYED NOTES: (INDICATED BY "Ⓢ")

- REFER TO DETAIL #04/E4.1. TYPICAL.
- THE CONTRACTOR SHALL FURNISH AND INSTALL METALLIC CONDUITS FROM THE COMMUNICATIONS SERVICE ENTRANCE TO THE LOCATION SPECIFIED BY THE ARCHITECT AND OWNER. FURNISH AND INSTALL MULE TAPE IN EACH AND LABEL EACH AS "COMMUNICATIONS CONDUIT" WITH A PERMANENT PEN AT EACH END. IF CONDUIT IS NOT USED, FURNISH AND INSTALL A VAPOR-AND WATER-TIGHT CONDUIT CAP WITH PULL ROPE TIE-OFF PROVISIONS. RE: DETAIL #01/E4.2.



RE: EQUIPMENT CONNECTION SCHEDULE ON SHEET E5-1. TYP. U.N.O.

01 ELECTRICAL POWER PLAN
 SCALE: 1/4" = 1'-0"

PROFESSIONAL'S SEAL
 THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF
 NICHOLAS E. RABROKER, P.E.
 104767 ON 10/28/2022
 IT IS NOT INTENDED FOR CONSTRUCTION, BIDDING, REGULATORY APPROVAL OR PERMITTING PURPOSES.

REVISION HISTORY	DATE
DESCRIPTION	10-28-2022
ISSUED FOR REVIEW	
0	

SHEET DESCRIPTION
ELECTRICAL POWER & LIGHTING PLANS

SHEET NUMBER
E2.1

LIGHTING FIXTURE SCHEDULE						
MARK	MANUFACTURER AND CATALOG NUMBER	MOUNTING	VOLTAGE	INPUT WATTAGE	GENERIC DESCRIPTION	NOTE
A	EATON HALO SMDR-12-940-WH	RECESSED	MVOLT	15.3	6" DOWNLIGHT	
AZE	ATLANTIC LIGHTING LED6-DLM15-35-U-LEM-4LED10-CL	RECESSED	MVOLT	13.2	6" DOWNLIGHT WITH EMERGENCY BATTERY AND U.L. LISTED FOR WET LOCATIONS	
SL	EATON METALUX 45NLED-LDS-30SL-LN-LN-1L-835	SURFACE	MVOLT	22.1	4" LED STRIPLIGHT MOUNTED IN ATTIC SPACE	
E1	EATON SURELITE LEM-SD	SURFACE	MVOLT	5	EMERGENCY LIGHTING UNIT WITH HIGH-OUTPUT LITHIUM IRON PHOSPHATE BATTERY FOR REMOTE CAPACITY, UL LISTED.	ORIENT LAMPS TO ILLUMINATE PATH OF EGRESS.
V1	OXYGEN 3-571-FINISH	SURFACE	MVOLT	15	ARCHITECTURAL LED VANITY LIGHT	ORIENT LAMP TO ILLUMINATE PATH OF EGRESS.
X1	LITHONIA LHOM LED R-HO SD OR APPROVED EQUAL	UNIVERSAL	MVOLT	5	THERMOPLASTIC EXIT SIGN, SELF-DIAGNOSTICS, CAPABLE OF POWERING REMOTE	ORIENT LAMPS TO ILLUMINATE PATH OF EGRESS. CHEVRON DIRECTIONAL ARROWS PER DWGS.
	RESERVED					

RE: GENERAL ELECTRICAL NOTES ON SHEET E0.1.
 RE: LIGHTING FIXTURE SCHEDULE ON SHEET E6.1
 REFER TO THE ARCHITECTURAL PLANS FOR THE EXTENTS OF CONSTRUCTION.
 NON-SWITCHED (NIGHT LIGHTS 'NL') AND EMERGENCY FIXTURES (EXIT SIGNS AND BUG EYES) SHALL NOT BE CONNECTED TO LIGHTING CONTROL MEANS. CONNECT THE EMERGENCY LIGHTING FIXTURES AND TO CIRCUIT AHEAD OF ANY CONTROL DEVICE. BATTERY PACKS WITHIN LIGHTING FIXTURES SHALL ALSO BE CONNECTED TO THE SAME CIRCUIT SUPPLYING THE LIGHTING FIXTURE, AHEAD OF ANY LOCAL CONTROL DEVICE. TYPICAL.
 EXCEPT WHERE LINE-VOLTAGE WALLBOX TYPE INTEGRATED SENSOR SWITCHES OR FIXTURE-MOUNTED / ON-BOARD SENSORS ARE SPECIFIED, THE INTERIOR LIGHTING CONTROL SYSTEM SHALL BE A LOW-VOLTAGE SYSTEM CONSISTING OF CEILING- AND WALL-MOUNTED SENSORS, 'WALLPOD' WALL SWITCHES, AND LINE-VOLTAGE POWER PACKS. CONNECT THE WALLPODS TO THE POWER PACKS AND SENSORS AS DIRECTED BY THE MANUFACTURER. WHERE DIMMING IS SPECIFIED, PROVIDE A MAXIMUM OF TWO (2) SWITCHLEGS PLUS RAISE/LOWER FUNCTIONALITY FOR EACH, ON A SINGLE WALLPOD STATION. WHERE ON/OFF ONLY FUNCTIONALITY IS SPECIFIED, PROVIDE A MAXIMUM OF FOUR (4) SWITCHLEGS PER WALLPOD. REFER TO DETAIL #06 AND #07 ON SHEET E4.1. THE EXACT WALL- AND CEILING-MOUNTED SENSOR LOCATIONS, QUANTITIES, SPECIFIC TYPES (COVERAGE PATTERNS) SHALL BE AS RECOMMENDED BY THE SELECTED SENSOR MANUFACTURER. FIELD-COORDINATE PRIOR TO BID. TYPICAL. THE BASIS OF DESIGN SHALL BE ACUITY BRANDS "nLIGHT" SYSTEM OR EQUAL.

KEYED NOTES: (INDICATED BY "E")

- REFER TO DETAIL #04/E4.1. TYPICAL.
- THE CONTRACTOR SHALL FURNISH AND INSTALL METALLIC CONDUITS FROM THE COMMUNICATIONS SERVICE ENTRANCE TO THE LOCATION SPECIFIED BY THE ARCHITECT AND OWNER. FURNISH AND INSTALL MULE TAPE IN EACH AND LABEL EACH AS "COMMUNICATIONS CONDUIT" WITH A PERMANENT PEN AT EACH END. IF CONDUIT IS NOT USED, FURNISH AND INSTALL A VAPOR- AND WATER-TIGHT CONDUIT CAP WITH PULL ROPE TIE-OFF PROVISIONS. RE: DETAIL #01/E4.2.
- REFER TO DETAIL #01/E4.1. TYPICAL.
- PHOTOCELL FOR CONTROL OF EXTERIOR LIGHTING FIXTURES. FIELD-COORDINATE THE EXACT SETTING OF THE PHOTOCELL ADJUSTMENT SLIDER WITH THE OWNER PRIOR TO SUBSTANTIAL COMPLETION. ORIENT TO FACE THE NORTHERN SKY.
- PROVIDE PILOT LIGHT "LOCATOR" TYPE SWITCH IN ATTIC SPACE IMMEDIATELY AT ATTIC ACCESS. LIGHT INTEGRAL TO SWITCH SHALL BE 'ON' WHEN LOAD (LIGHTS) ARE 'OFF'.
- PROVIDE (1) TYPE 'SL' LED STRIP LIGHT PER ATTIC. INSTALL IN ATTIC FOR BEST LIGHTING AROUND FAN COIL UNITS.
- CONNECT EXHAUST FAN IN THIS ROOM TO SAME CIRCUIT SERVING LTG FIXTURES. IF DUAL-RELAY SWITCH IS SPECIFIED, CONNECT LTG FIXTURES TO RELAY #1. FAN TO RELAY #2. OTHERWISE, CONNECT BOTH FAN AND LTG TO SAME SWITCH AND RELAY.
- PROVIDE A 2-BUTTON PUSHBUTTON LOW-VOLTAGE DECORATOR TYPE SWITCH WITH RAISE/LOWER DIMMING FUNCTIONALITY. THE BASIS OF DESIGN SHALL BE THE ACUITY BRANDS NLIGHT NP0DMA 2P DX WH WITH WALL PLATE WX XPODA 1 GNG WH OR INSTALL NEAREST TO ENTRY DOOR. TYP. U.N.O. FURNISH AND INSTALL (2)-#10, #10G. IN 3/4" C. FOR ALL 120VAC POWER CIRCUITS IN THIS ROOM. TYPICAL UNLESS NOTED OTHERWISE.

EXCEPT WHERE LINE-VOLTAGE WALLBOX TYPE INTEGRATED SENSOR SWITCHES ARE SPECIFIED, THE INTERIOR LIGHTING CONTROL SYSTEM SHALL BE A LOW-VOLTAGE SYSTEM CONSISTING OF CEILING- AND WALL-MOUNTED SENSORS, 'WALLPOD' WALL SWITCHES, AND LINE-VOLTAGE POWER PACKS. CONNECT THE WALLPODS TO THE POWER PACKS AND SENSORS AS DIRECTED BY THE MANUFACTURER. WHERE DIMMING IS SPECIFIED, PROVIDE A MAXIMUM OF TWO (2) SWITCHLEGS PLUS RAISE/LOWER FUNCTIONALITY FOR EACH, ON A SINGLE WALLPOD STATION. WHERE ON/OFF FUNCTIONALITY IS SPECIFIED, PROVIDE A MAXIMUM OF FOUR (4) SWITCHLEGS PER WALLPOD. REFER TO DETAIL(S) #05 & #06 ON SHEET E4.2. THE EXACT WALL- AND CEILING-MOUNTED SENSOR LOCATIONS, QUANTITIES, SPECIFIC TYPES (COVERAGE PATTERNS) SHALL BE AS RECOMMENDED BY THE SELECTED SENSOR MANUFACTURER. FIELD-COORDINATE PRIOR TO BID. THE BASIS OF DESIGN SHALL BE ACUITY BRANDS "nLIGHT" SYSTEM OR EQUAL. TYP.

THE EXACT TYPE OF SENSOR (COVERAGE PATTERN), PLACEMENT, AND QUANTITY SHALL BE AS RECOMMENDED BY THE SELECTED SENSOR MANUFACTURER TO ACCOMPLISH THE INTENDED SWITCHING SCHEMES. TYPICAL.

ELECTRICAL COMMISSIONING

THE CONTRACTOR SHALL ENGAGE A THIRD-PARTY COMMISSIONING AGENT OR COMMISSIONING PROVIDER MEETING THE REQUIREMENTS SPECIFIED IN ASHRAE 90.1 SECTION 4.2.5.2. THE COMMISSIONING AGENT/PROVIDER SHALL PROVIDE A COMMISSIONING PLAN PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL PROVIDE THE DOCUMENTS REQUIRED BY ASHRAE 90.1 SECTION 4.2.5.2.2. THE COMMISSIONING AGENT/PROVIDER SHALL COMPLETE THE ACTIVITIES SPECIFIED IN ASHRAE 90.1 SECTION 4.2.5.3. THE COMMISSIONING AGENT/PROVIDER SHALL PROVIDE ALL VERIFICATION, TESTING, AND COMMISSIONING REQUIREMENTS SPECIFIED IN ASHRAE 90.1 SECTION 9.9 FOR THE LIGHTING SYSTEMS.

TENANT EXTERIOR LIGHTING CONTROL:

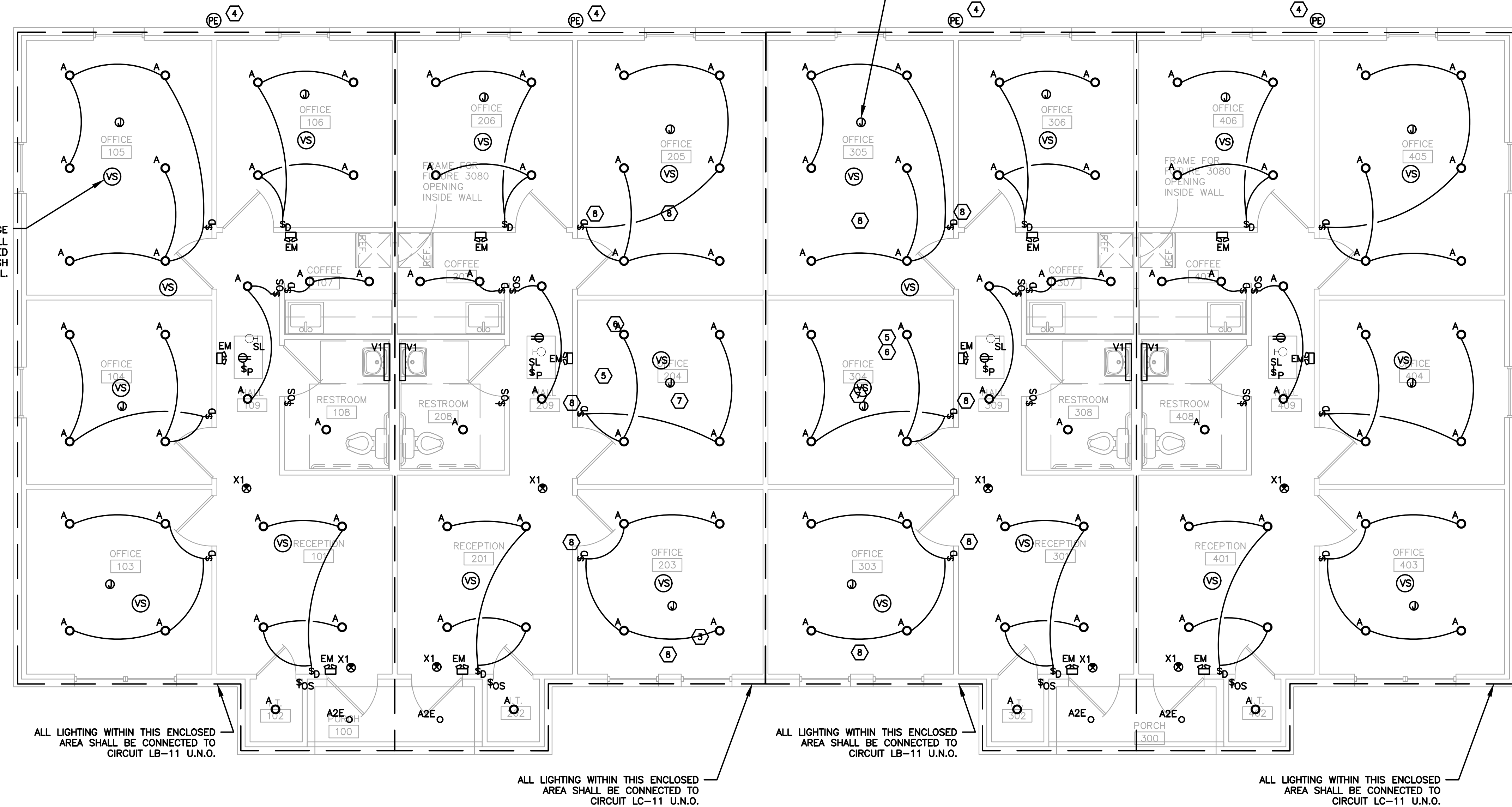
-PROVIDE SINGLE CHANNEL ASTRONOMIC TIME CLOCK IN LOCKABLE ENCLOSURE FOR EACH SUITE. TIME CLOCK SHALL BE PROVIDED WITH COMPATIBLE EXTERIOR-RATED PHOTOCELL. BASIS OF DESIGN SHALL BE NSI TORK 'DGLC100A-NC WITH EPC-A PHOTOCELL. ROUTE PORTION OF CIRCUIT SERVING EXTERIOR CANOPY DOWNLIGHTS THRU TIMECLOCK.

TIME CLOCK SETTINGS:

EXTERIOR CANOPY DOWNLIGHT(S) SHALL BE ON CHANNEL 1.

-PROVIDE PHOTOCELL ON, TIME CLOCK OFF CONTROL
 -CHANNEL 1 'OFF' TIMES SHALL BE MIDNIGHT TO 6 A.M.

ON/OFF TIMES MAY BE MODIFIED BY THE AHJ. FIELD-VERIFY EXACT TIMES PRIOR TO SUBSTANTIAL COMPLETION.



PROVIDE CEILING MOUNTED JUNCTION BOX WITH BLANK COVER FOR FUTURE CEILING FAN (NO LIGHT KIT). PROVIDE RACEWAY FROM CEILING JUNCTION BOX TO BACK BOX WITH BLANK COVER LOCATED ADJACENT TO LOCAL SWITCH WITHIN ROOM. WHEN INSTALLED, CONNECT TO LIGHTING CIRCUIT SERVING THIS INDIVIDUAL TENANT. FIELD-COORDINATE EXACT LOCATION OF CEILING BOX. TYP. U.N.O.

ALL LIGHTING WITHIN THIS ENCLOSED AREA SHALL BE CONNECTED TO CIRCUIT LB-11 U.N.O.

ALL LIGHTING WITHIN THIS ENCLOSED AREA SHALL BE CONNECTED TO CIRCUIT LB-11 U.N.O.

ALL LIGHTING WITHIN THIS ENCLOSED AREA SHALL BE CONNECTED TO CIRCUIT LC-11 U.N.O.

ALL LIGHTING WITHIN THIS ENCLOSED AREA SHALL BE CONNECTED TO CIRCUIT LC-11 U.N.O.

PROFESSIONAL'S SEAL

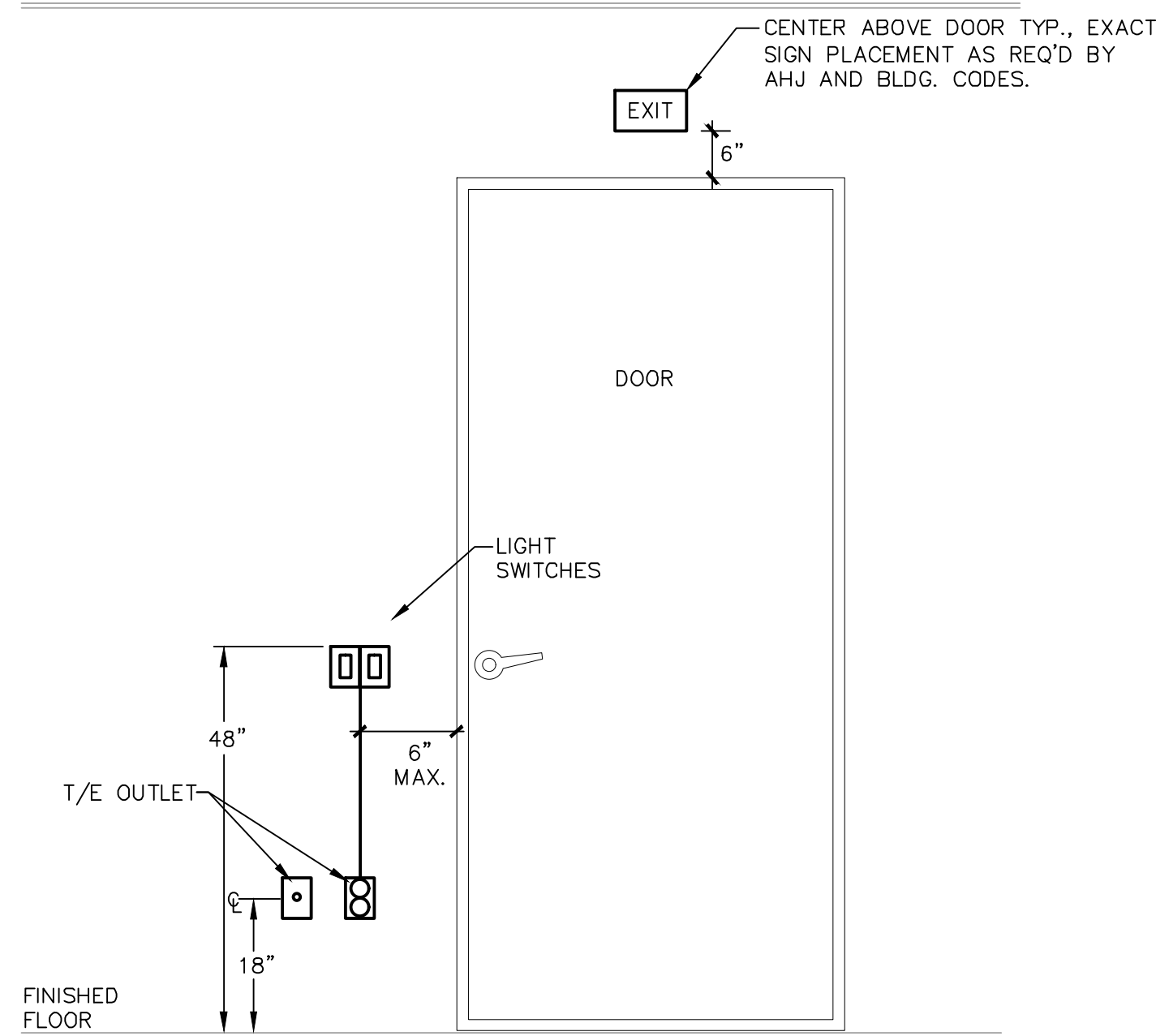
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF

NICHOLAS E. RABROKER, P.E.
 104767 ON 10/28/2022

IT IS NOT INTENDED FOR CONSTRUCTION, BIDDING, REGULATORY APPROVAL OR PERMITTING PURPOSES.

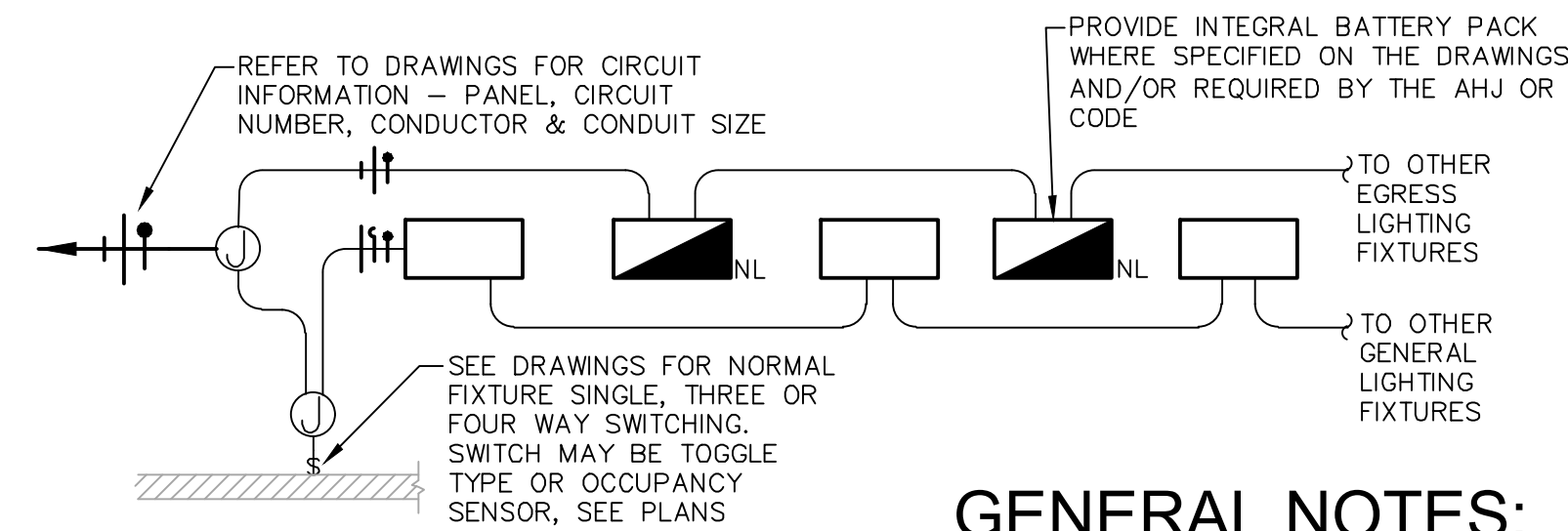
REVISION HISTORY	DATE
ISSUED FOR REVIEW	10-28-2022

SHEET DESCRIPTION
ELECTRICAL LIGHTING PLAN



GENERAL NOTES:

- COORDINATE FINAL LOCATION OF ALL DEVICES WITH THE ARCHITECT AND THE ENGINEER PRIOR TO INSTALLATION. WHERE DEVICES ARE SHOWN IN APPROXIMATELY THE SAME LOCATION ON THE DRAWINGS, IT SHALL BE ALIGNED AS INDICATED.

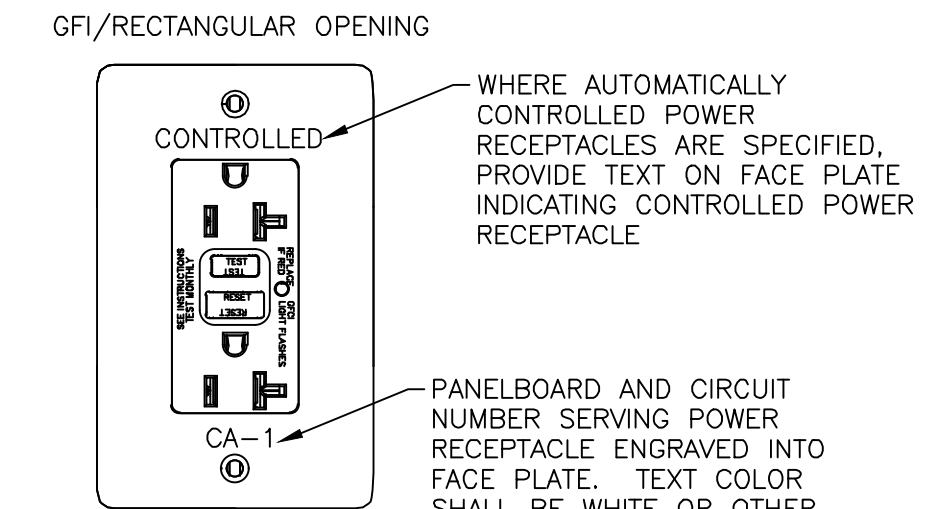
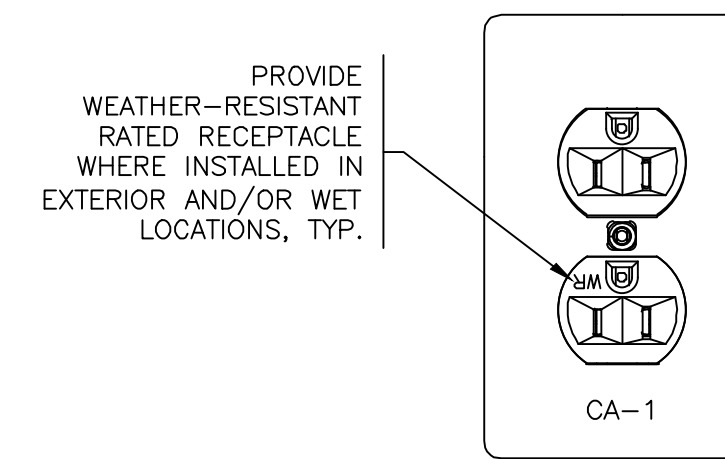


GENERAL NOTES:

- CONNECTIONS ARE SHOWN SCHEMATICALLY. DAISY-CHAINING OF FIXTURES IS NOT ALLOWED.
- REFER TO LIGHTING FIXTURE SCHEDULE FOR FIXTURE TYPES, TYPICAL.

GENERAL NOTES:

- ALL DEVICES SHALL BE U.L. LISTED.
- MINIMUM POWER RECEPTACLE RATING ALLOWED SHALL BE 125VAC, 20-AMPERE, NEMA '5-20R'.
- ALL POWER RECEPTACLES CONNECTED TO BRANCH CIRCUITS DERIVED FROM AN EMERGENCY POWER PANELBOARD SHALL BE CLEARLY, DISTINCTLY, AND PERMANENTLY IDENTIFIED. DUPLEX RECEPTACLE



01 TYPICAL DEVICE COORDINATION DETAIL

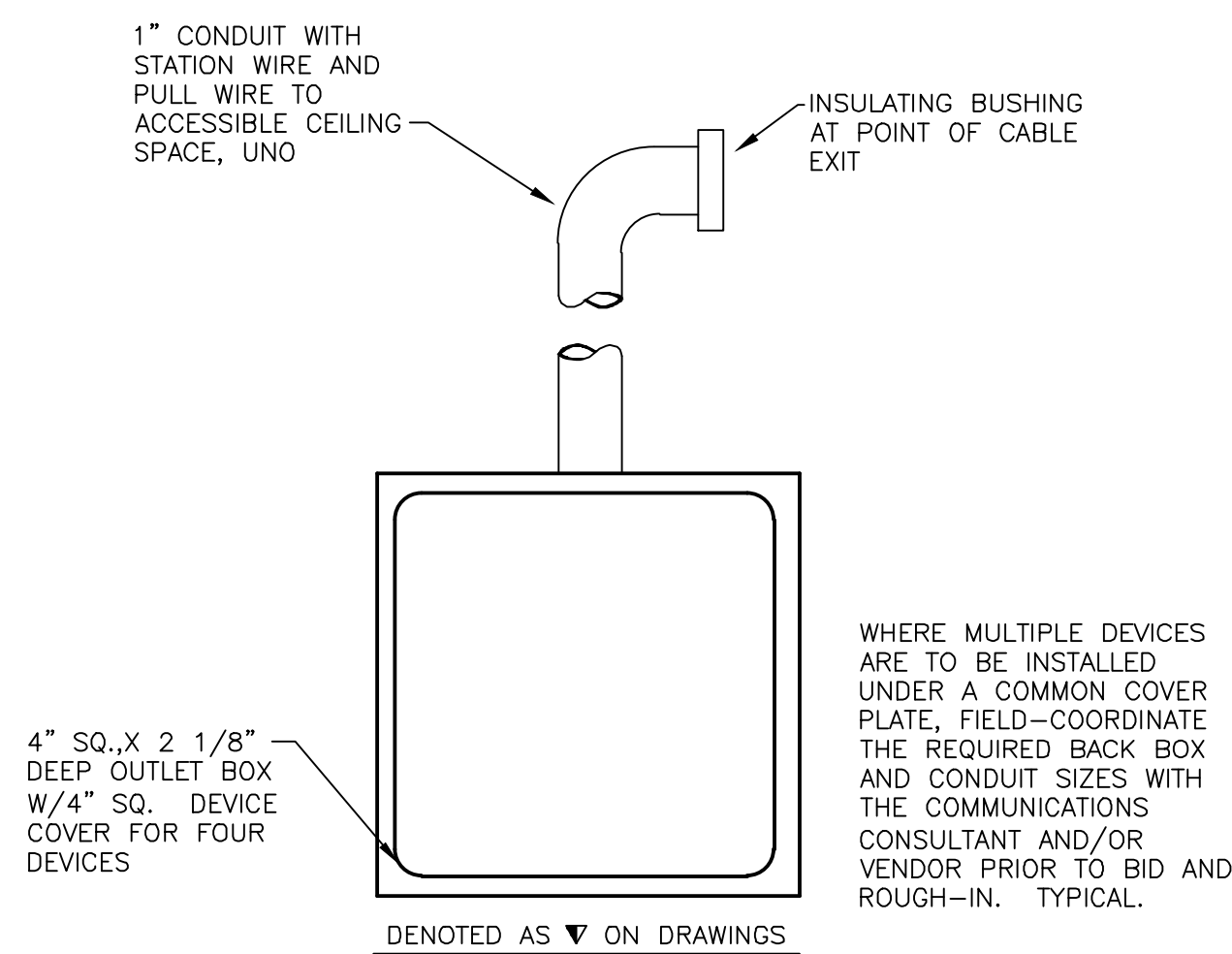
SCALE: N.T.S.

02 TYP. WIRING FOR EGRESS LIGHTING FIXTURES

SCALE: N.T.S.

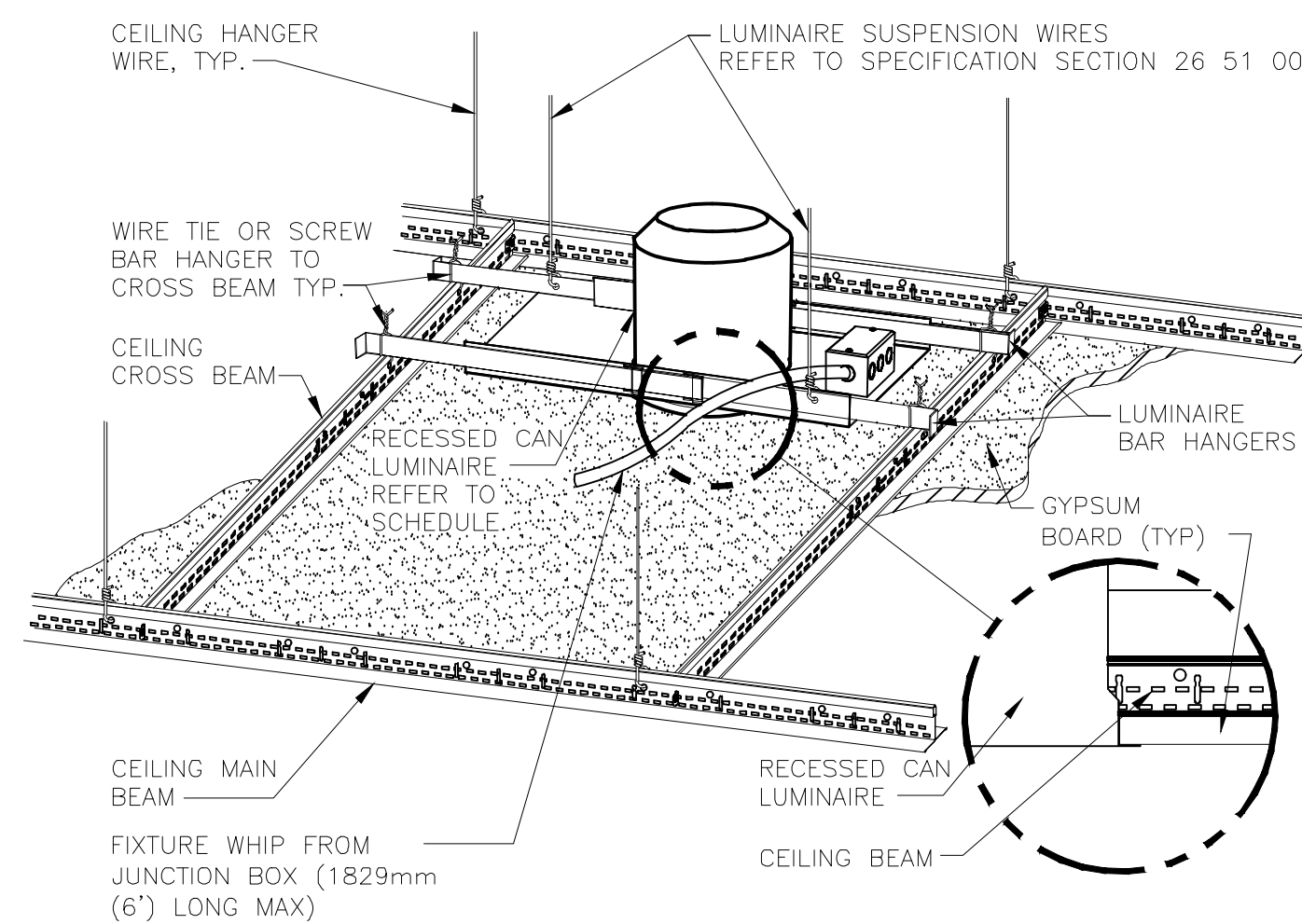
03 TYPICAL POWER RECEPTACLE LABELING REQUIREMENTS

NOT TO SCALE



04 TYPICAL VOICE/DATA COMBINATION DEVICE

SCALE: N.T.S.



GENERAL NOTE:

- INSTALL IN ACCORDANCE WITH MANUFACTURER'S MOUNTING INSTRUCTIONS AND USING THE RECOMMENDED MOUNTING HARDWARE.

05 DOWNLIGHT MOUNTING - GYPBOARD CEILING

SCALE: N.T.S.

PROFESSIONAL'S SEAL

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF

NICHOLAS E. RABROKER, P.E.
104767 ON 10/28/2022

IT IS NOT INTENDED FOR CONSTRUCTION, BIDDING, REGULATORY APPROVAL OR PERMITTING PURPOSES.

REVISION HISTORY	DATE	DESCRIPTION
0	10-28-2022	ISSUED FOR REVIEW

SHEET DESCRIPTION
**ELECTRICAL
DETAILS**

SHEET NUMBER

E4.1


TRENCH SPECIFICATIONS:
 Installation of conduit:
 1. Minimum cover to be 30" from the top of primary conduit to sub-grade.
 2. Bottom of trench shall be sanded to provide smooth, even support for conduits.
 3. Sand to be placed directly around conduits for initial backfill.
 4. There is to be a minimum of 12" separation between electrical conduits and all other utilities' conduits.
 5. Warning tape to be a minimum of 12" above electrical conduits.
 6. Concrete or flowable fill to be poured around all conduit crossings and 90-degree bends. On conduit bends of other angles, concrete or flowable fill may be required upon inspection.
 7. Trench may be used jointly if adequate separation is provided. (See drawings 510-014, 510-022, 510-023, 510-024 and 510-025).
 8. Conduit may be under pavement if a depth of 30" cover to sub-grade is maintained.
 9. Trench may be on property if adequate depth is maintained. "Adequate depth" is defined as 30" below the lowest point between the edge of pavement and property line.

Inspection schedule:
 1. After primary conduit installation.
 2. After initial backfill.
 3. After secondary conduit installation.
 4. After remainder of initial backfill and warning tape.
 5. After secondary backfill (rock-free dirt).
Failure to receive inspection will require removal of the backfill to allow inspection.

DEVELOPER/CONTRACTOR CONTRIBUTION:
 1. Payment to PEC for materials per the Line Extension Policy.
 2. Trench.
 3. Conduit:
 a. 3" conduit Schedule 40, conduit bends Schedule 80 with 3", 36" minimum radius and accessories.
 b. 4" conduit Schedule 40, conduit bends Schedule 80 with 4", 48" minimum radius and accessories.
 c. Conduit for service will be sized as needed.
 d. 2" conduit for controls or temporary service only.
 e. Conduit bends with a 24" radius may be used only for secondary.
NOTE: Contractor may be required to pull a mandrel, of a diameter not less than 80% of the inside diameter of the conduit through all conduits, under the supervision of a PEC representative.
 4. Conduit spacers.
 5. Transformer pads.
 6. Meter pedestal pads.
 7. Underground secondary enclosures and extensions.
 8. Ground rods and clamps.
 9. Polyester pulling tape (2,500-pound tensile strength) in all conduit. No knots to be tied in the mule tape. It must be a continuous run.
 10. Sand for initial backfill.
 11. Rock-free dirt over initial backfill.
 12. 1/2" to 3/4" gravel for the bottom of vaults and secondary enclosures.
 13. Concrete or flowable fill where required. Flowable fill is NOT allowed as a substitute for concrete for PEC equipment pads. Flowable fill may be used as backfill in situations where trench setting may be an issue or anywhere that does not require structural strength. The 28-day compressive strength range when tested must be a minimum of 300-psi. Flowable fill is NOT a substitute for concrete except where explicitly listed in the Underground Installation Specifications.
 14. Install meter socket when metering on building.
 15. Furnish and install any gang-type meter sockets.
 16. Primary enclosures and extensions (if applicable).
 17. Meter sockets (PEC will provide pedestal-mounted sockets only).
 18. Switchgear (if applicable).
 19. Bollards, if deemed necessary by PEC to protect electrical equipment. Design must be approved by PEC prior to installation.

MEMBER'S RESPONSIBILITY:
 Meter pedestals are approved by PEC. In situations where meter pedestals are used, the following conditions will apply:
 1. Purchase and install circuit breaker in box. Circuit breakers are the bolt-in type. The box will accommodate 150 and 200 amp breakers. The breaker must have an interrupting capacity of 10,000 amps rated at 240 volts. GE Cat. No. TQD22 (amp needed) WL and Eaton Cutler-Hammer FD2200 or equal (old Westinghouse # CA2200W).
 2. Install insulated jumpers from bottom of meter socket to top of breakers.
 3. Install galvanized rigid conduit, Schedule 40 PVC or an approved equal from pedestal pad to bottom of box.
 4. Member will be responsible for the installation of underground cable from the meter pedestal to the house and the connections to the bottom of the circuit breakers. The underground cable used from the meter pedestal to the house shall be an approved type for underground installation (USE or UF type). Conductor size will be based on member load, location of meter and National Electrical Code for size of conduit.
Refer to applicable drawings within these specifications.

REV | B | DATE | 07/09/2020 | REVISION | ADD 2" CONDUIT AND FLOWABLE FILL NOTES | BY | RWC | CHK | SSS | APR | MMG

 UNDERGROUND INSTALLATION SPECIFICATIONS	DEVELOPER/MEMBER/PEC SUPPLIED MATERIAL		
	drawn: RWC	approved: MMG	date: 07/09/2020


MEMBER'S RESPONSIBILITY CONTINUED:
 5. Underground conductor from secondary enclosure/transformer to meter shall have 24" of cover. This depth may be reduced to 18" when a 2" supplemental protective covering of concrete or flowable fill is provided. If rigid conduit is used, the depth can be reduced by 6". Red electric warning tape is also required in the ditch.
 6. Apply and receive all applicable inspections.
 7. When all work is completed according to specifications, notify PEC you are ready for electric service. PEC will make the connect and set the meter on a routine connect order.
 8. For commercial and residential applications, the member shall supply the CT enclosure (if needed) and all secondary cable in accordance with the National Electrical Code.

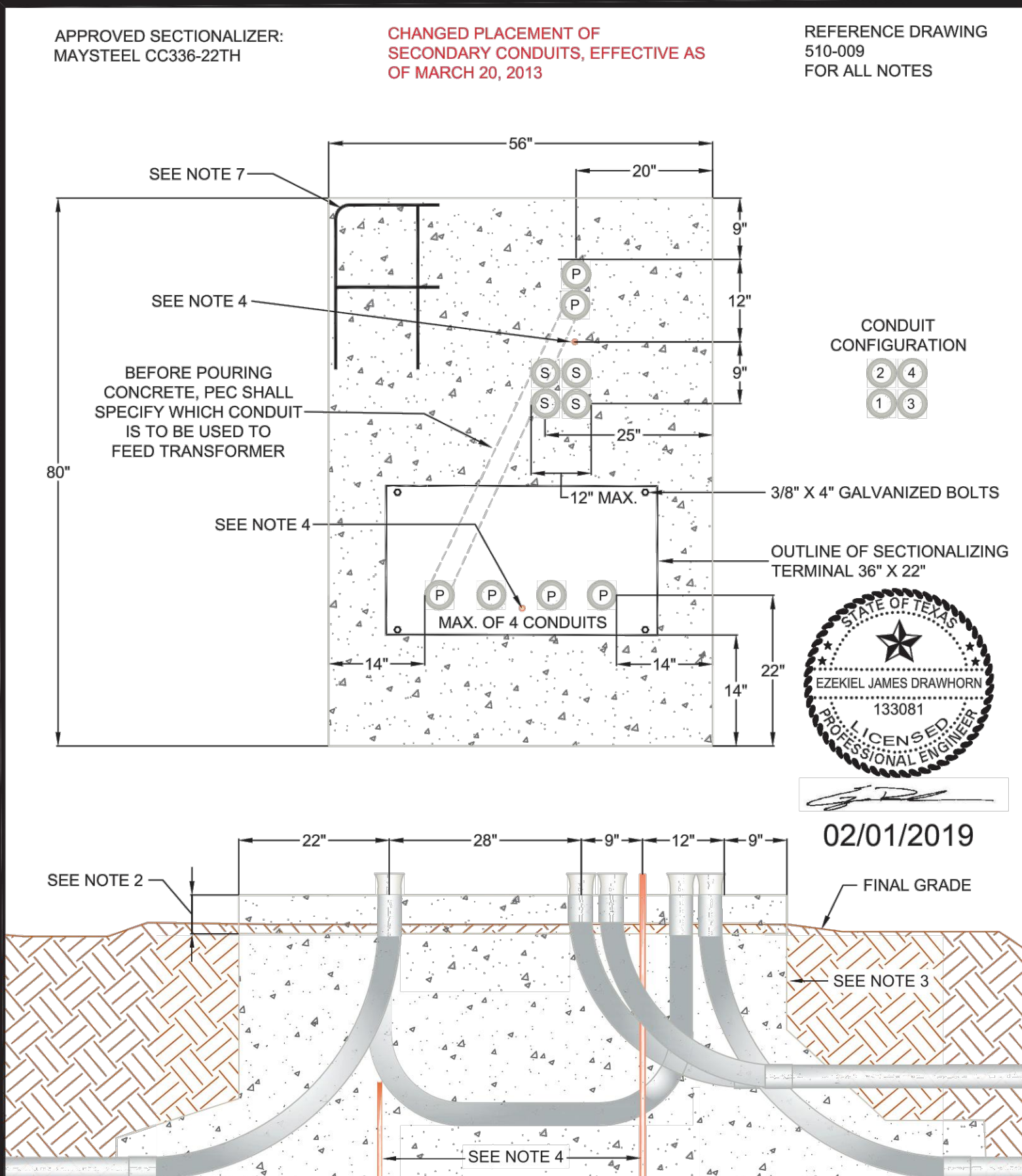
PEC CONTRIBUTION PAID FOR BY DEVELOPER/MEMBER AS INDICATED ON THE LINE EXTENSION POLICY:
 1. Primary conductors.
 2. Secondary conductors.
 3. Cable terminations.
 4. Transformers.
 5. Meter pedestals.
 6. Switchgear.
 7. Secondary GelPort connectors.
 8. Meter socket combo.

PEC RESPONSIBILITY:
 1. Furnish and install meter pedestal.
 2. Furnish and install combination meter socket and breaker box.
 3. Install jumper wires from top of meter socket to pedestal connector and set meter on connect order after all work has been completed.


Refer to applicable drawings within these specifications.

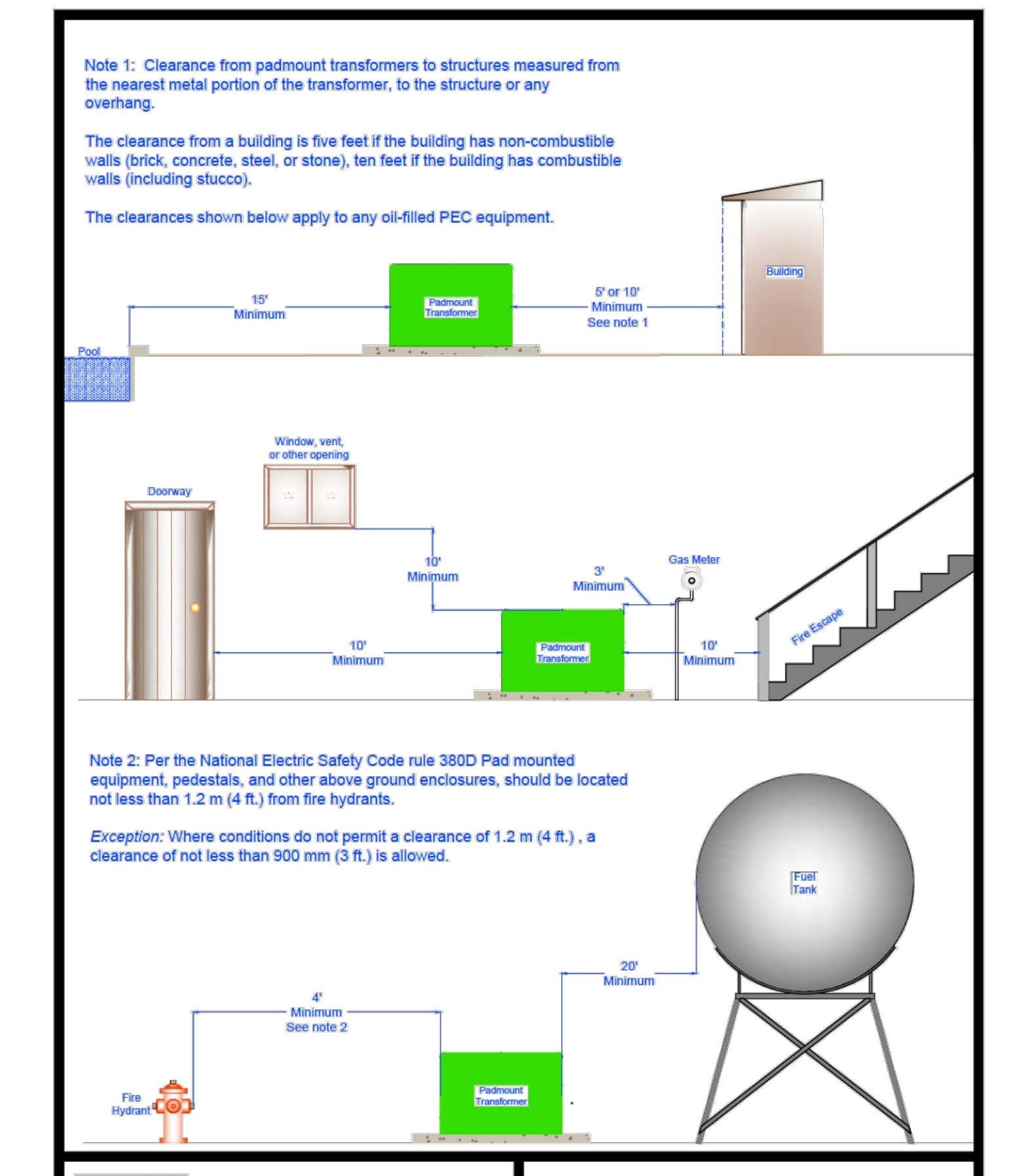
REV | B | DATE | 07/09/2020 | REVISION | ADD 2" CONDUIT AND FLOWABLE FILL NOTES | BY | RWC | CHK | SSS | APR | SSS

 UNDERGROUND INSTALLATION SPECIFICATIONS	DEVELOPER/MEMBER/PEC SUPPLIED MATERIAL		
	drawn: RWC	approved: MMG	date: 07/09/2020




REV | A | DATE | 12/26/2018 | REVISION | ISSUE FOR CONSTRUCTION | BY | RWC | CHK | EJD | APR | MMG

 UNDERGROUND INSTALLATION SPECIFICATIONS	1Ø COMBINATION SECTIONALIZING ENCLOSURE AND TRANSFORMER PAD		
	drawn: RWC	approved: MMG	date: 12/26/2018



REV | B | DATE | 02/01/2019 | REVISION | ISSUE FOR CONSTRUCTION | BY | RWC | CHK | EJD | APR | MMG

 PEDERNALES ELECTRIC COOPERATIVE, INC. URD DEVELOPER'S SPECIFICATIONS	Safety Clearances around Padmount Transformers		
	drawn: JBS	approved: MJB	date: March 11, 2015


Typical All Pads
 1. Require 3" conduit (unless otherwise specified by PEC) with bell-end fittings to extend 1 1/2" to 2" above pad.
 2. Pads must extend a minimum of 4" above final grade and 1 1/2" below final grade. All pads must be placed on a slope less than or equal to 3:1. If greater than 3:1, contractor must bring slope to required grade.
 3. All disturbed soil underneath pad must be replaced by concrete.
 4. All ground rods shall be 3/4" X 10' copper-clad with clamp and must extend 3" above top of pad.
 5. Wood float finish leaving pad square and level with no dips or crown.
 6. **Contact PEC before pouring concrete and comply with the following instructions:**
 • Pre-pour inspection: Check framing and layout of pad and conduit components.
 • Final inspection: Overall review of pad and conduits. Ensure bell ends are on conduit.

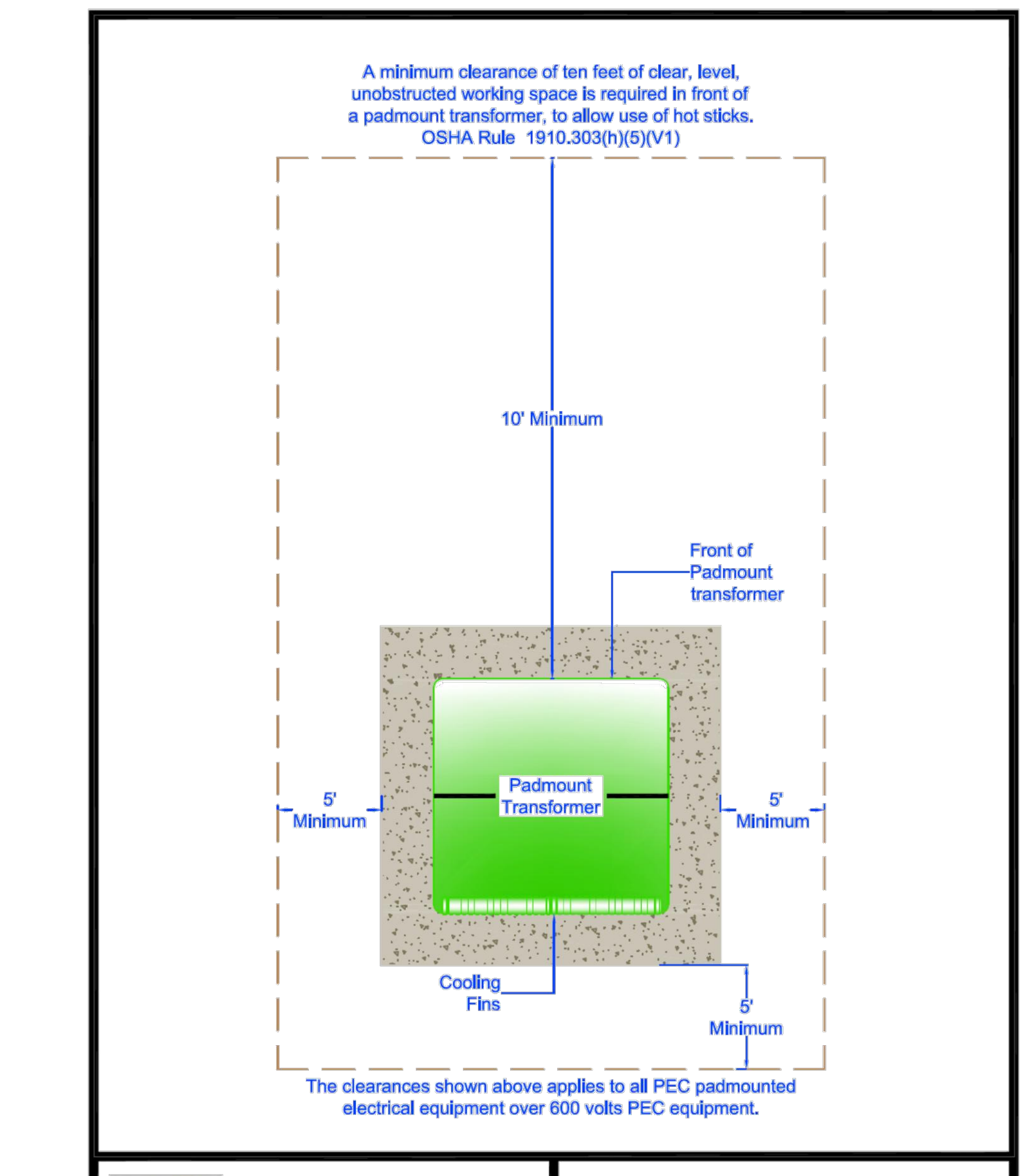
Typical For Single-Phase Transformer, Combination, Sectionalizer, and Secondary Pads
 7. Concrete to have minimum strength of 3,000 PSI.
 8. Steel reinforcing shall be 6" X 6" No. 10 wire mesh or 3/8" re-bar on 12" center to stop 1" from the sides.

Typical For Three-Phase Transformer Pads
 9. Concrete testing, 4,000 PSI; 4%-6% entrained air, 3/4" maximum-size aggregate.
 10. Steel reinforcement shall be 3/8" re-bar on 12" center to stop 1" from sides.
 11. Minimum concrete cover over reinforcing steel 2" unless noted.

Typical Trench Details
 12. Schedule 40 electrical grade PVC conduit. Schedule 80 electrical-grade conduit can be used in place of sand in secondary-only trenches.
 13. Initial backfill shall be manufactured or commercial sand. Minimum 3/8" pea gravel may be used for initial backfill in flood-prone areas.
 14. With PEC approval, minimum cover requirements may be reduced by six inches with every two inches of 3,000 PSI concrete poured directly onto conduit. **"Contact PEC before pouring concrete"**
 15. If any type of vault or pedestal for the underground electric is planned, then all other utilities should be routed around these facilities.
 16. For 2" and smaller waterlines, special permission must be granted by PEC. Water lines larger than 2" will not be allowed in PEC trench.
 17. Refer to drawings 510-023 and 510-025 for PEC specifications and trench details on gas joint trench installations.

REV | B | DATE | 07/23/2020 | REVISION | NOTE 4: 3/4" X 10" GROUND ROD WAS 5/8" X 8" | BY | RWC | CHK | SSS | APR | MMG

 UNDERGROUND INSTALLATION SPECIFICATIONS	TYPICAL NOTES REFERENCE PAGE		
	drawn: RWC	approved: MMG	date: 07/23/2020



REV | B | DATE | 02/01/2019 | REVISION | ISSUE FOR CONSTRUCTION | BY | RWC | CHK | EJD | APR | MMG

 PEDERNALES ELECTRIC COOPERATIVE, INC. URD DEVELOPER'S SPECIFICATIONS	Working Clearances around Padmount Transformers		
	drawn: JBS	approved: MJB	date: February 28, 2013

STAR OF TEXAS ENGINEERING, PLLC
 128 North Main, Suite B, Belton, TX 76513
 254-613-1711
 rabroker@starofTEXASengineering.com
 TXBE 1-15783

MAYFIELD OFFICE PARK - BUILDING THREE
 3835 COUNTY ROAD 175
 LEANDER, TX 78641

PROFESSIONAL'S SEAL
 THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF
 NICHOLAS E. RABROKER, P.E.
 104767 ON 10/28/2022
 IT IS NOT INTENDED FOR CONSTRUCTION, BIDDING, REGULATORY APPROVAL OR PERMITTING PURPOSES.

REVISION	DATE	DESCRIPTION
0	10-28-2022	ISSUED FOR REVIEW

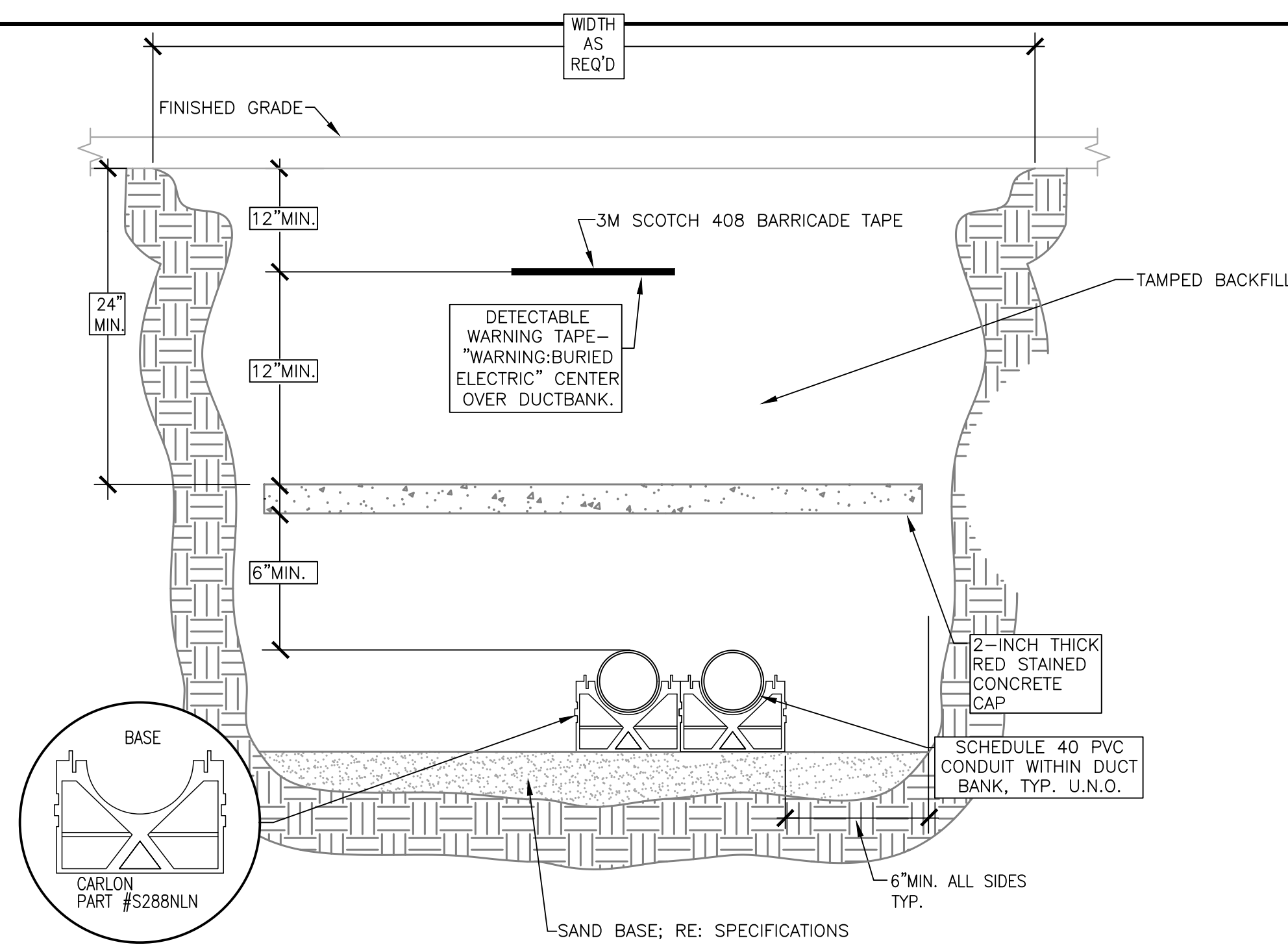
SHEET DESCRIPTION
ELECTRICAL DETAILS
 SHEET NUMBER
E4.2

PANELBOARD LA (1-SECTION PANELBOARD)																				
PROJECT :		Mayfield Office		MAIN CKT BRKR RATING :				ENCLOSURE :				NEMA 1								
PROJECT # :		202346		MAIN LUGS ONLY RATING :				MOUNTING :				RECESSED								
LOCATION :		RE-PLANS		BUS RATING :				CB TYPE :				BOLT-ON								
				VOLTAGE :				100% NEUTRAL BUS												
				INTERRUPTING CAPACITY :				22,000A RMS SYM. MIN. (FULLY-RATED)												
FEEDER SIZE		SETS		Φ_CTY		Φ_SIZE		NEUTRAL		EGC.		- °C		NOTE: ALUMINUM CONDUCTORS		SECTION 1 CKT QTY: 42		SECTION 2 CKT QTY: 0		
CKT	AMPS	POLE	1	2	30	4	4	PH	TYPE	LOAD	LOAD DESCRIPTION	AMPS	POLE	CKT						
1	20	1						A	0	791	REC - RECEPTION COMP	500	4	A	0	791	REC - OFFICE 103	20	1	2
3	20	1						B	0	791	REC - OFFICE 104	791	4	A	0	791	REC - OFFICE 105	20	1	4
5	20	1						A	0	540	REC - OFFICE 106	791	4	A	0	540	REC - HALL 109 COFFEE 107 & RR 108	20	1	6
7	20	1						B	0		REC - COFFEE 107 COUNTERTOP	1,800	2	B	0		SPARE	20	1	8
9	20	1						A	0	360	REC - COFFEE 107 COUNTERTOP	1,800	2	A	0	360	REC - EXTERIOR	20	1	10
11	20	1						B	2	2,500	LTG - SUITE 100	616	1	B	2	2,500	EW-1	25	1	12
13	50	2						A	2	1,800	FCU-2	5,820	6	A	2	1,800	REC - COMMUNICATIONS EQUIPMENT	20	1	14
15	-	-						B	2		FCU-2	5,820	6	B	2		SPARE	20	1	16
17	30	2						A	2	1,200	CU-2			A	2	1,200	REC - COFFEE 107 REFRIGERATOR	20	1	18
19	-	-						B	2					B	2		SPARE	20	1	20
21	20	1						A	0		SPARE			A	0		SPARE	20	1	22
23	20	1						B	0		SPARE			B	0		SPARE	20	1	24
25								A	0		BUSSED SPACE			A	0		BUSSED SPACE	26		
27								B	0		BUSSED SPACE			B	0		BUSSED SPACE	28		
29								A	0		BUSSED SPACE			A	0		BUSSED SPACE	30		
31								B	0		BUSSED SPACE			B	0		BUSSED SPACE	32		
33								A	0		BUSSED SPACE			A	0		BUSSED SPACE	34		
35								B	0		BUSSED SPACE			B	0		BUSSED SPACE	36		
37								A	0		BUSSED SPACE			A	0		BUSSED SPACE	38		
39								B	0		BUSSED SPACE			B	0		BUSSED SPACE	40		
41								A	0		BUSSED SPACE			A	0		BUSSED SPACE	42		
PANEL VA		SUB FEED		FEED THRU		CONN. LOAD		DEMAND LOAD		NOTES: (THESE NOTES APPLY TO THIS PANELBOARD ONLY, UNLESS NOTED OTHERWISE)										
PHASE A		13,602		0		0		13,602		13,683		114								
PHASE B		12,318		0		0		12,318		12,391		103								
TOTAL		25,920		0		0		25,920		26,073		109								

PANELBOARD LB (1-SECTION PANELBOARD)																				
PROJECT :		Mayfield Office		MAIN CKT BRKR RATING :				ENCLOSURE :				NEMA 1								
PROJECT # :		202346		MAIN LUGS ONLY RATING :				MOUNTING :				RECESSED								
LOCATION :		RE-PLANS		BUS RATING :				CB TYPE :				BOLT-ON								
				VOLTAGE :				100% NEUTRAL BUS												
				INTERRUPTING CAPACITY :				22,000A RMS SYM. MIN. (FULLY-RATED)												
FEEDER SIZE		SETS		Φ_CTY		Φ_SIZE		NEUTRAL		EGC.		- °C		NOTE: ALUMINUM CONDUCTORS		SECTION 1 CKT QTY: 42		SECTION 2 CKT QTY: 0		
CKT	AMPS	POLE	1	2	30	4	4	PH	TYPE	LOAD	LOAD DESCRIPTION	AMPS	POLE	CKT						
1	20	1						A	0	791	REC - RECEPTION COMP	500	4	A	0	791	REC - OFFICE 203	20	1	2
3	20	1						B	0	791	REC - OFFICE 204	791	4	A	0	791	REC - OFFICE 205	20	1	4
5	20	1						A	0	540	REC - OFFICE 206	791	4	A	0	540	REC - HALL 208 COFFEE 207 & RR 208	20	1	6
7	20	1						B	0		REC - COFFEE 208 COUNTERTOP	1,800	2	B	0		SPARE	20	1	8
9	20	1						A	0	360	REC - COFFEE 208 COUNTERTOP	1,800	2	A	0	360	REC - EXTERIOR	20	1	10
11	20	1						B	2	2,500	LTG - SUITE 200	616	1	B	2	2,500	EW-1	25	1	12
13	50	2						A	2	1,800	FCU-1	5,820	6	A	2	1,800	REC - COMMUNICATIONS EQUIPMENT	20	1	14
15	-	-						B	2		FCU-1	5,820	6	B	2		SPARE	20	1	16
17	30	2						A	2	1,200	CU-2			A	2	1,200	REC - COFFEE 208 REFRIGERATOR	20	1	18
19	-	-						B	2					B	2		SPARE	20	1	20
21	20	1						A	0		SPARE			A	0		SPARE	20	1	22
23	20	1						B	0		SPARE			B	0		SPARE	20	1	24
25								A	0		BUSSED SPACE			A	0		BUSSED SPACE	26		
27								B	0		BUSSED SPACE			B	0		BUSSED SPACE	28		
29								A	0		BUSSED SPACE			A	0		BUSSED SPACE	30		
31								B	0		BUSSED SPACE			B	0		BUSSED SPACE	32		
33								A	0		BUSSED SPACE			A	0		BUSSED SPACE	34		
35								B	0		BUSSED SPACE			B	0		BUSSED SPACE	36		
37								A	0		BUSSED SPACE			A	0		BUSSED SPACE	38		
39								B	0		BUSSED SPACE			B	0		BUSSED SPACE	40		
41								A	0		BUSSED SPACE			A	0		BUSSED SPACE	42		
PANEL VA		SUB FEED		FEED THRU		CONN. LOAD		DEMAND LOAD		NOTES: (THESE NOTES APPLY TO THIS PANELBOARD ONLY, UNLESS NOTED OTHERWISE)										
PHASE A		13,602		0		0		13,602		13,683		114								
PHASE B		12,318		0		0		12,318		12,391		103								
TOTAL		25,920		0		0		25,920		26,073		109								

PANELBOARD LC (1-SECTION PANELBOARD)																				
PROJECT :		Mayfield Office		MAIN CKT BRKR RATING :				ENCLOSURE :				NEMA 1								
PROJECT # :		202346		MAIN LUGS ONLY RATING :				MOUNTING :				RECESSED								
LOCATION :		RE-PLANS		BUS RATING :				CB TYPE :				BOLT-ON								
				VOLTAGE :				100% NEUTRAL BUS												
				INTERRUPTING CAPACITY :				22,000A RMS SYM. MIN. (FULLY-RATED)												
FEEDER SIZE		SETS		Φ_CTY		Φ_SIZE		NEUTRAL		EGC.		- °C		NOTE: ALUMINUM CONDUCTORS		SECTION 1 CKT QTY: 42		SECTION 2 CKT QTY: 0		
CKT	AMPS	POLE	1	2	30	4	4	PH	TYPE	LOAD	LOAD DESCRIPTION	AMPS	POLE	CKT						
1	20	1						A	0	791	REC - RECEPTION COMP	500	4	A	0	791	REC - OFFICE 303	20	1	2
3	20	1						B	0	791	REC - OFFICE 304	791	4	A	0	791	REC - OFFICE 305	20	1	4
5	20	1						A	0	540	REC - OFFICE 306	791	4	A	0	540	REC - HALL 309 COFFEE 307 & RR 308	20	1	6
7	20	1						B	0		REC - COFFEE 308 COUNTERTOP	1,800	2	B	0		SPARE	20	1	8
9	20	1						A	0	360	REC - COFFEE 308 COUNTERTOP	1,800	2	A	0	360	REC - EXTERIOR	20	1	10
11	20	1						B	2	2,500	LTG - SUITE 300	616	1	B	2	2,500	EW-1	25	1	12
13	50	2						A	2	1,800	FCU-3	5,820	6	A	2	1,800	REC - COMMUNICATIONS EQUIPMENT	20	1	14
15	-	-						B	2		FCU-3	5,820	6	B	2		SPARE	20	1	16
17	30	2						A	2	1,200	CU-3			A	2	1,200	REC - COFFEE 308 REFRIGERATOR	20	1	18
19	-	-						B	2					B	2		SPARE	20	1	20
21	20	1						A	0		SPARE			A	0		SPARE	20	1	22
23	20	1						B	0		SPARE			B	0		SPARE	20	1	24
25								A	0		BUSSED SPACE			A	0		BUSSED SPACE	26		
27								B	0		BUSSED SPACE			B	0		BUSSED SPACE	28		
29								A	0		BUSSED SPACE			A	0		BUSSED SPACE	30		
31								B	0		BUSSED SPACE			B	0		BUSSED SPACE	32		
33								A	0		BUSSED SPACE			A	0		BUSSED SPACE	34		
35								B	0		BUSSED SPACE			B	0		BUSSED SPACE	36		
37								A	0		BUSSED SPACE			A	0		BUSSED SPACE	38		
39								B	0		BUSSED SPACE			B	0		BUSSED SPACE	40		
41								A	0		BUSSED SPACE			A	0		BUSSED SPACE	42		
PANEL VA		SUB FEED		FEED THRU		CONN. LOAD		DEMAND LOAD		NOTES: (THESE NOTES APPLY TO THIS PANELBOARD ONLY, UNLESS NOTED OTHERWISE)										
PHASE A		13,602		0		0		13,602		13,683		114								
PHASE B		12,318		0		0		12,318		12,391		103								
TOTAL		25,920		0		0		25,920		26,073		109								

PANELBOARD LD (1-SECTION PANELBOARD)																				
PROJECT :		Mayfield Office		MAIN CKT BRKR RATING :				ENCLOSURE :				NEMA 1								
PROJECT # :		202346		MAIN LUGS ONLY RATING :				MOUNTING :				RECESSED								
LOCATION :		RE-PLANS		BUS RATING :				CB TYPE :				BOLT-ON								
				VOLTAGE :				100% NEUTRAL BUS												
				INTERRUPTING CAPACITY :				22,000A RMS SYM. MIN. (FULLY-RATED)												
FEEDER SIZE		SETS		Φ_CTY		Φ_SIZE		NEUTRAL		EGC.		- °C		NOTE: ALUMINUM CONDUCTORS		SECTION 1 CKT QTY: 42		SECTION 2 CKT QTY: 0		
CKT	AMPS	POLE	1	2	30	4	4	PH	TYPE	LOAD	LOAD DESCRIPTION	AMPS	POLE	CKT						
1	20	1						A	0	791	REC - RECEPTION COMP	500	4	A	0	791	REC - OFFICE 403	20	1	2
3	20	1						B	0	791	REC - OFFICE 404	791	4	A	0	791	REC - OFFICE 405	20	1	4
5	20	1						A	0	540	REC - OFFICE 406	791	4	A	0	540	REC - HALL 409 COFFEE 407 & RR 408	20	1	6
7	20	1						B	0		REC - COFFEE 408 COUNTERTOP	1,800	2	B	0		SPARE	20	1	8
9	20	1						A	0	360	REC - COFFEE 408 COUNTERTOP	1,800	2	A	0	360	REC - EXTERIOR	20	1	10
11	20	1						B	2	2,500	LTG - SUITE 400									



02 CONDUIT DUCT BANK ELEVATION
SCALE: N.T.S.

KEYED NOTES: (INDICATED BY "Ⓜ")

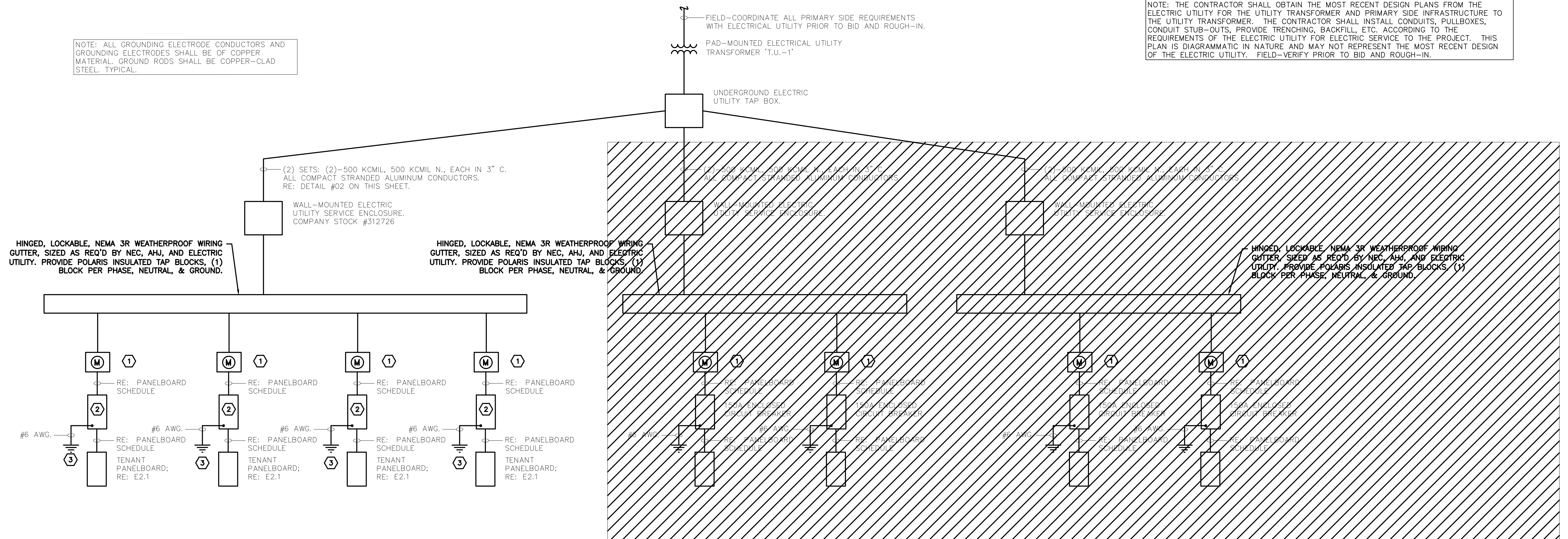
- UTILITY COMPANY ELECTRIC METER. COORDINATE WITH ELECTRIC DELIVERY COMPANY FOR EXACT REQUIREMENTS. COORDINATE EXACT LOCATION WITH THE ELECTRIC DELIVERY COMPANY, OWNER, AND ARCHITECT PRIOR TO ROUGH-IN. PROVIDE ALL INFRASTRUCTURE REQUIRED BY OWNER AND ELECTRIC DELIVERY COMPANY, INCLUDING, BUT NOT LIMITED TO: ALL CONDUCTORS, CONDUIT, ENCLOSURES, METER BASE, TERMINATIONS, BOXES, LUGS, ETC.
- ENCLOSED CIRCUIT BREAKER. 240VAC/150A/2P/NEMA 3R, UL LISTED AS SERVICE EQUIPMENT. RATED AND BRACED FOR A MINIMUM 65,000 AMPERES. TYPICAL U.N.O.
- CONNECT TO GROUNDING ELECTRODE SYSTEM. PROVIDE (2)-5/8" X 10" COPPER-CLAD STEEL GROUND RODS AND DRIVE A MINIMUM OF EIGHT-FEET (8') INTO THE EARTH. PROVIDE A CONNECTION TO THE CONCRETE REINFORCING STEEL (UPPER GROUND) IF CONCRETE IS INSTALLED IN CONTACT WITH THE EARTH AS REQUIRED BY THE NATIONAL ELECTRICAL CODE. PROVIDE A CONNECTION TO THE MAIN INCOMING WATER PIPE IF METALLIC AND IN CONTACT WITH THE EARTH FOR A MINIMUM OF TEN-FEET (10') AS REQUIRED BY CODE. BOND ALL SYSTEMS AS REQUIRED BY THE NATIONAL ELECTRICAL CODE. REFER TO ELECTRICAL SPECIFICATIONS FOR MORE INFORMATION.

02

CONDUIT DUCT BANK ELEVATION
SCALE: N.T.S.

NOTE: ALL GROUNDING ELECTRODE CONDUCTORS AND GROUNDING ELECTRODES SHALL BE OF COPPER MATERIAL. GROUND RODS SHALL BE COPPER-CLAD STEEL, TYPICAL.

NOTE: THE CONTRACTOR SHALL OBTAIN THE MOST RECENT DESIGN PLANS FROM THE ELECTRIC UTILITY FOR THE UTILITY TRANSFORMER AND PRIMARY SIDE INFRASTRUCTURE TO THE UTILITY TRANSFORMER. THE CONTRACTOR SHALL INSTALL CONDUITS, PULLBOXES, CONDUIT STUB-OUTS, PROVIDE TRENCHING, BACKFILL, ETC. ACCORDING TO THE REQUIREMENTS OF THE ELECTRIC UTILITY FOR ELECTRIC SERVICE TO THE PROJECT. THIS PLAN IS DIAGRAMMATIC IN NATURE AND MAY NOT REPRESENT THE MOST RECENT DESIGN OF THE ELECTRIC UTILITY. FIELD-VERIFY PRIOR TO BID AND ROUGH-IN.



01 ELECTRICAL ONE-LINE DIAGRAM - TRANSFORMER 'T.U.-1'
SCALE: NO SCALE

MAYFIELD OFFICE PARK - BUILDING THREE
3835 COUNTY ROAD 175
LEANDER, TX 78641

STAR OF TEXAS ENGINEERING, PLLC
128 North Main, Suite B, Belton, TX 76513
254-613-4741
rabroker@starofTEXASengineering.com
TBBE P-15783

PROFESSIONAL'S SEAL
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF
NICHOLAS E. RABROKER, P.E.
104767 ON 10/28/2022
IT IS NOT INTENDED FOR CONSTRUCTION, BIDDING, REGULATORY APPROVAL OR PERMITTING PURPOSES.

REVISION HISTORY	DATE
0	10-28-2022

SHEET DESCRIPTION
ELECTRICAL ONE-LINE DIAGRAM

SHEET NUMBER
E6.1

PLUMBING LEGEND

(NOTE: ALL SYMBOLS SHOWN ARE NOT NECESSARILY USED ON DRAWINGS)

SYMBOL LEGEND	
	<p>VALVES</p> <p>UNION</p> <p>BUTTERFLY VALVE</p> <p>TEMPERATURE/ PRESSURE RELIEF VALVE</p> <p>GLOBE VALVE</p> <p>CHECK VALVE</p> <p>GATE VALVE</p> <p>GATE VALVE WITH C.I. VALVE BOX</p> <p>PRESSURE REDUCING VALVE</p> <p>STRAINER W/ BLOWDOWN GATE VALVE</p> <p>THERMOWELL W/ THERMOMETER (TI)</p> <p>PRESSURE GAUGE W/ GAUGE COCK (PI)</p> <p>BALL VALVE</p> <p>CIRCUIT SETTER, BALANCING VALVE (B&G CB-SERIES)</p> <p>PLUG VALVE</p> <p>NEEDLE VALVE</p> <p>VALVE IN VERTICAL</p> <p>DIRT LEG (6" LONG)</p> <p>PIPING</p> <p>DOMESTIC COLD WATER (DOMESTIC/POTABLE)</p> <p>DOMESTIC HOT WATER SUPPLY (120°F)</p> <p>DOMESTIC HOT WATER RETURN (120°F)</p> <p>SANITARY SEWER</p> <p>HVAC CONDENSATE DRAIN (UNDERGROUND)</p> <p>HVAC CONDENSATE DRAIN (ABOVE GROUND)</p> <p>SANITARY VENT</p> <p>STORM DRAIN</p> <p>EMERGENCY OVERFLOW DRAIN</p> <p>DIRECTION OF FLOW</p> <p>NATURAL GAS</p> <p>HIGH PRESSURE GAS</p> <p>WATER HAMMER ARRESTOR (PLAN)</p> <p>WATER HAMMER ARRESTOR (ISOMETRIC)</p> <p>FLOOR CLEANOUT</p> <p>WALL CLEANOUT</p> <p>P - TRAP</p> <p>ELBOW TURNING DOWN</p> <p>ELBOW TURNING UP</p> <p>CAPPED PIPE</p> <p>FLEXIBLE CONNECTION</p> <p>CONCENTRIC PIPE REDUCER/INCRASER</p> <p>ECCENTRIC PIPE REDUCER/INCRASER</p> <p>PIPE SLEEVE</p> <p>DIRECTION OF SLOPE (DNWARD)</p> <p>FLOOR DRAIN</p> <p>VENT THRU ROOF (RISER)</p> <p>VENT THRU ROOF (PLAN)</p> <p>SANITARY WASTE OR VENT STACK WASTE OR VENT NO.</p> <p>STORM DRAIN DOWNSPOUT</p> <p>STORM DRAIN DOWNSPOUT NO.</p>

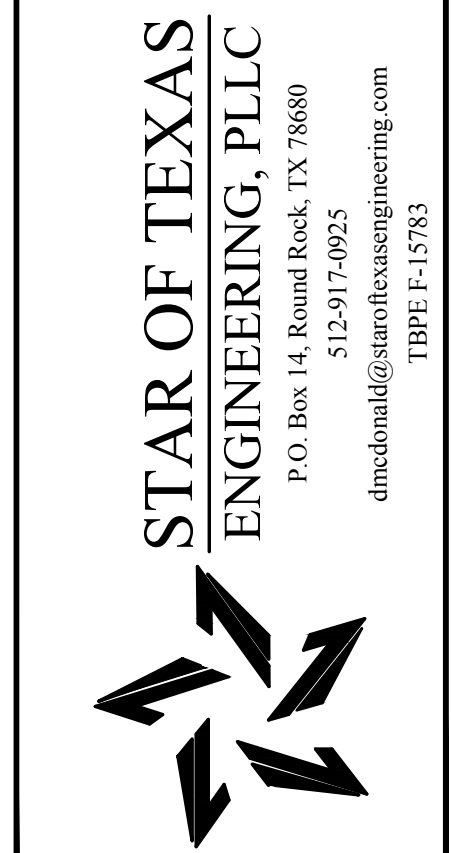
ABBREVIATIONS		
B	B. VA.	BALL VALVE
BAL	BAL. VA.	OKT. SETTER BALANCING VALVE
C	CO	CLEANOUT
CW	CW	DOM. COLD WTR. (POTABLE)
D	D	CONDENSATE DRAIN LINE
EOD	EOD	EMERGENCY OVERFLOW DRAIN
EXT FCO	EXT FCO	EXTERIOR FLOOR CLEANOUT
FCO	FCO	FLOOR CLEANOUT
FD (OR) SD	FD (OR) SD	FIRE / SMOKE DAMPER
GT. V	GT. V	GATE VALVE
GL. V	GL. V	GLOBE VALVE
G	G	NATURAL GAS
HPG	HPG	HIGH PRESSURE NATURAL GAS
HW	HW	DOMESTIC HOT WATER 140°F
NPW	NPW	NON-POTABLE WATER (COLD)
PW	PW	DOMESTIC COLD WATER
PI	PI	PRESSURE INDICATOR (GAUGE)
RED.	RED.	REDUCER
SAN	SAN	SOIL & WASTE (ABOVE GRADE)
SD	SD	STORM DRAIN
TI	TI	TEMP. INDICATOR (THERMOMETER)
T.&P.	T.&P.	TEMP. & PRESS. RELIEF VALVE
VD	VD	VOLUME DAMPER
VIR	VIR	VENT THRU ROOF
V	V	SANITARY VENT
WHA	WHA	WATER HAMMER ARRESTOR
WCO	WCO	WALL CLEANOUT

PLUMBING FIXTURE SCHEDULE				
MARK	FIXTURE	TRIM & ACCESSORIES	SUPPORT	REMARKS
WC-1	WATER CLOSET, FLOOR MOUNTED FLUSH TANK, ADA, VORTEN NO. 3140-V-02	STOP: MCGUIRE NO. 2169-YK SEAT: PROFLO NO. PFTSW2000WH FLOOR FLANGE: JONES NO. CF4-SERIES	FLOOR MOUNTED	ADA COMPLIANT, 1.28-GPF
L-1	LAVATORY, WALL HUNG, ADA KOHLER NO. K-1728	FAUCET: MOEN COMMERCIAL NO. 8800 MIXING VALVE: SYMMONS NO. 4-10(B) OFFSET STRAINER: MCGUIRE NO. 155WC STOPS: CHICAGO FAUCET NO. 1006 TRAP: MCGUIRE NO. 8872-C-F STOP & TRAP COVERS: PLUMBEREX 'HANDY SHIELD'	ROUGH-IN BRACKET - SIOUX CHIEF "PIPE TITAN" NUMBER 572-2X SERIES ZURN NO. ZR-1224/-SERIES LAVATORY CARRIER	ADA COMPLIANT, 0.5 GPM AERATOR
SK-1	UTILITY SINK, KINGSFORD 25"x22" STAINLESS STEEL 6" DEEP	FAUCET: MOEN COMMERCIAL NO. 67430 OFFSET STRAINER-MCGUIRE NO. 1151AWC STOPS: CHICAGO FAUCET NO. 1006 TRAP: MCGUIRE NO. 8812-C-F STOP & TRAP COVERS: PLUMBEREX	ROUGH-IN BRACKET - SIOUX CHIEF "PIPE TITAN" NUMBER 572-2X SERIES	ADA COMPLIANT, 2.2 GPM AERATOR
HB-1	HOSE BIBB, WATTS MODEL NO. SCB-4	EXPOSED, CAST BRASS HOSE BIDD WITH TAMPER-PROOF VACUUM BREAKER	SET IN WALL	
FCO	FLOOR CLEANOUT J.R. SMITH NO. 4053-F-C-U-NB (OR WATTS APPROVED EQUAL)	HEAVY DUTY TOP, TAPER THREAD BRONZE PLUG, NICKLE BRONZE TOP	SET IN CONCRETE FLOOR	TOP FLUSH WITH FINISHED FLOOR
WCO	WALL CLEANOUT J.R. SMITH NO. 4532-U-Y (OR WATTS APPROVED EQUAL)	NO-HUB CONNECTIONS, TAPER THREAD BRONZE PLUG, STAINLESS STEEL ACCESS COVER VANDAL PROOF SCREW	SET IN WALL	COVER FLUSH WITH FINISHED WALL
WHA	WATER HAMMER ARRESTORS J.R. SMITH NO. 5000-SERIES	STAINLESS STEEL BELOWS TYPE	IN LINE	
WATER SUPPLY BALL VALVES (ABV. GRD.)	APOLLO 70-100	600 PSI, TEFLON SEAT, CAST BRASS, BLOMENT PROOF STEM, FULL PORT, CHROME BALL, THREADED END	IN LINE	

PLUMBING FIXTURE CONNECTION SCHEDULE					
MARK	FIXTURE	COLD WATER	HOT WATER	WASTE (SANITARY)	VENT (SANITARY)
WC-1	WATER CLOSET, FLOOR MOUNTED FLUSH TANK, VITREOUS CHINA, ADA	1/2"	-	4"	2"
L-1	LAVATORY, WALL HUNG, VITREOUS CHINA, ADA	1/2"	1/2"	2"	2"
SK-1	UTILITY SINK, DOUBLE COMPARTMENT, COUNTER TOP, STAINLESS STEEL, ADA	1/2"	1/2"	2" W/ 2"WCO	-
HB-1	HOSE BIBB	1/2"	-	-	-

PIPING SCHEDULE					
SYMBOL	SERVICE	PIPE MATERIAL	TYPE JOINT	FITTINGS	TEST
—————	SANITARY WASTE	SCHEDULE 40 PVC DWV	PRIME AND SOLVENT WELD	SCHEDULE 40 PVC FITTINGS (DWV)	PER LOCAL JURISDICTION
-----	SANITARY VENT	SCHEDULE 40 PVC DWV	PRIME AND SOLVENT WELD	SCHEDULE 40 PVC FITTINGS (DWV)	PER LOCAL JURISDICTION
----- -D-----	DOMESTIC WATER BELOW GRADE	VEGA PEX PIPING	VEGA PEX SOLUTIONS	VEGA PEX FITTINGS	PER LOCAL JURISDICTION
----- -D-----	DOMESTIC WATER ABOVE GRADE	VEGA PEX PIPING	VEGA PEX SOLUTIONS	VEGA PEX FITTINGS	PER LOCAL JURISDICTION

NOTE:
ALL DOMESTIC WATER PIPING - BOTH HOT AND COLD SHALL BE INSULATED WITH PRE-FORMED FIBERGLASS PIPE INSULATION (MIN. THICKNESS=1", DOMESTIC HOT WATER 1-1/2" AND LARGER SHALL BE MIN. 1-1/2" THICKNESS) AS MANUFACTURED BY OWENS-CORNING SSL-11 OR EQUAL. INSTALLATION WILL INCLUDE "ALL SERVICE JACKET" WITH SELF-SEALING LAP JOINTS. PROPER SEALANTS AND ACCESSORIES SHALL BE USED TO ACHIEVE MANUFACTURER COMPLETE RECOMMENDED INSTALLATION. FLAME SPREAD RATING SHALL BE 25 OR LESS. SMOKE DEVELOPMENT RATING WILL BE 50 OR LESS. INSULATED PIPE SHALL BE INSTALLED SUCH THAT INSULATION REMAINS FULL THICKNESS AND WATER VAPOR BARRIER REMAINS INTACT.



STAR OF TEXAS
ENGINEERING, PLLC
P.O. Box 14, Round Rock, TX 78680
512-917-0925
dmc@mail@starofTEXASengineering.com
TDBE F-15783

MAYFIELD OFFICE PARK
4-UNIT BUILDING
3835 COUNTY ROAD 175
LEANDER, TX 78641

PROFESSIONAL'S SEAL
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF
DAVID K. McDONALD, P.E.
91899 ON 02/22/2023.
IT IS NOT INTENDED FOR CONSTRUCTION, BIDDING, REGULATORY APPROVAL OR PERMITTING PURPOSES.

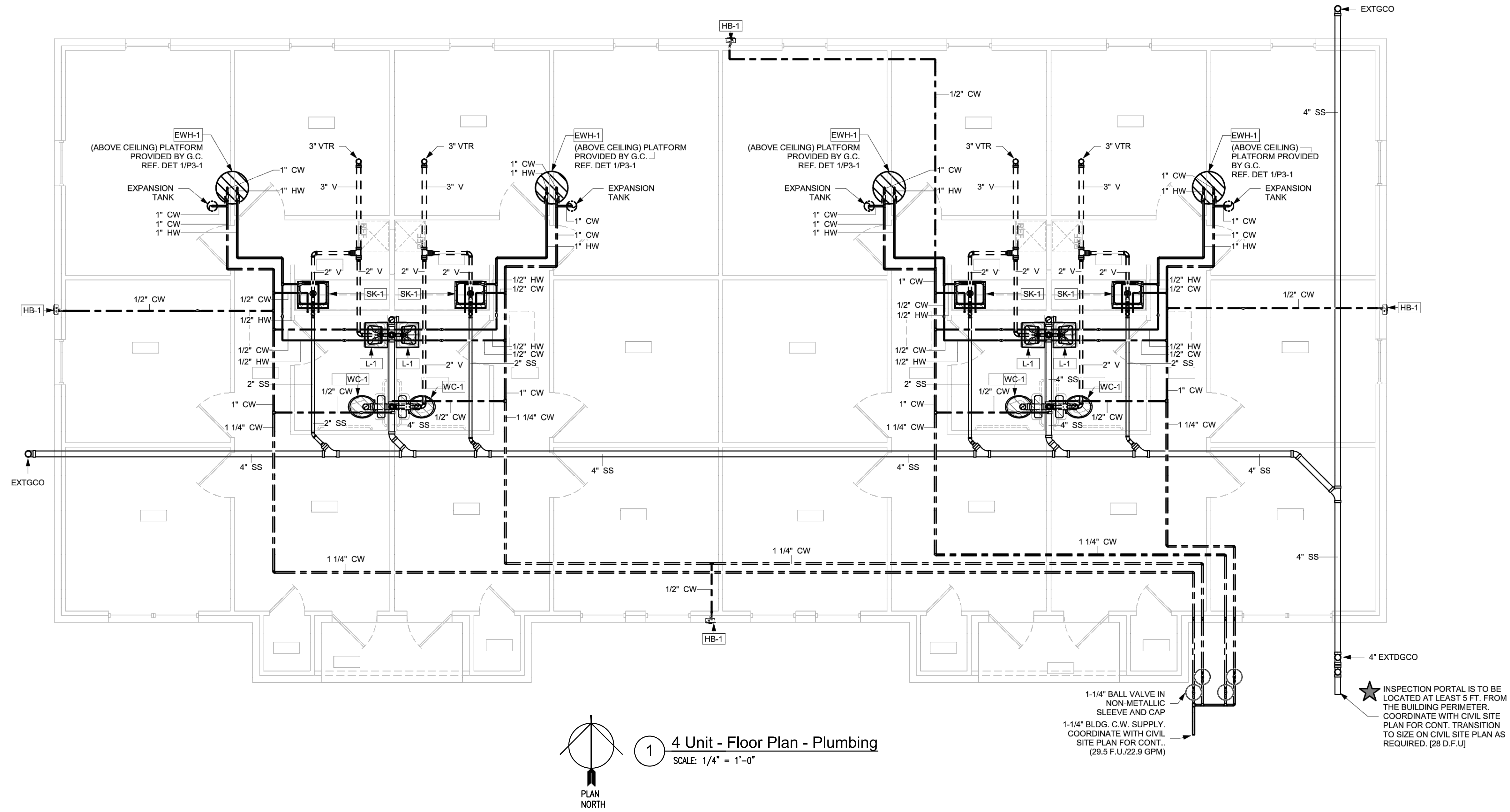
REVISION HISTORY	DATE
DESCRIPTION	02-22-2023
BY	
REVIEW	

SHEET DESCRIPTION
Symbols/Legend & Abbr. - PLBG

SHEET NUMBER
P1-0

**MAYFIELD OFFICE PARK
4-UNIT BUILDING**

3835 COUNTY ROAD 175
LEANDER, TX 78641



1 4 Unit - Floor Plan - Plumbing
SCALE: 1/4" = 1'-0"

1-1/4" BALL VALVE IN
NON-METALLIC
SLEEVE AND CAP
1-1/4" BLDG. C.W. SUPPLY.
COORDINATE WITH CIVIL
SITE PLAN FOR CONT.
(29.5 F.U./22.9 GPM)

★ INSPECTION PORTAL IS TO BE
LOCATED AT LEAST 5 FT. FROM
THE BUILDING PERIMETER.
COORDINATE WITH CIVIL SITE
PLAN FOR CONT. TRANSITION
TO SIZE ON CIVIL SITE PLAN AS
REQUIRED. [28 D.F.U.]

PROFESSIONAL'S SEAL

THIS DOCUMENT IS
RELEASED FOR THE PURPOSE
OF INTERIM REVIEW UNDER
THE AUTHORITY OF

DAVID K. McDONALD, P.E.
91899 ON 02/22/2023.

IT IS NOT INTENDED FOR
CONSTRUCTION, BIDDING,
REGULATORY APPROVAL
OR PERMITTING PURPOSES.

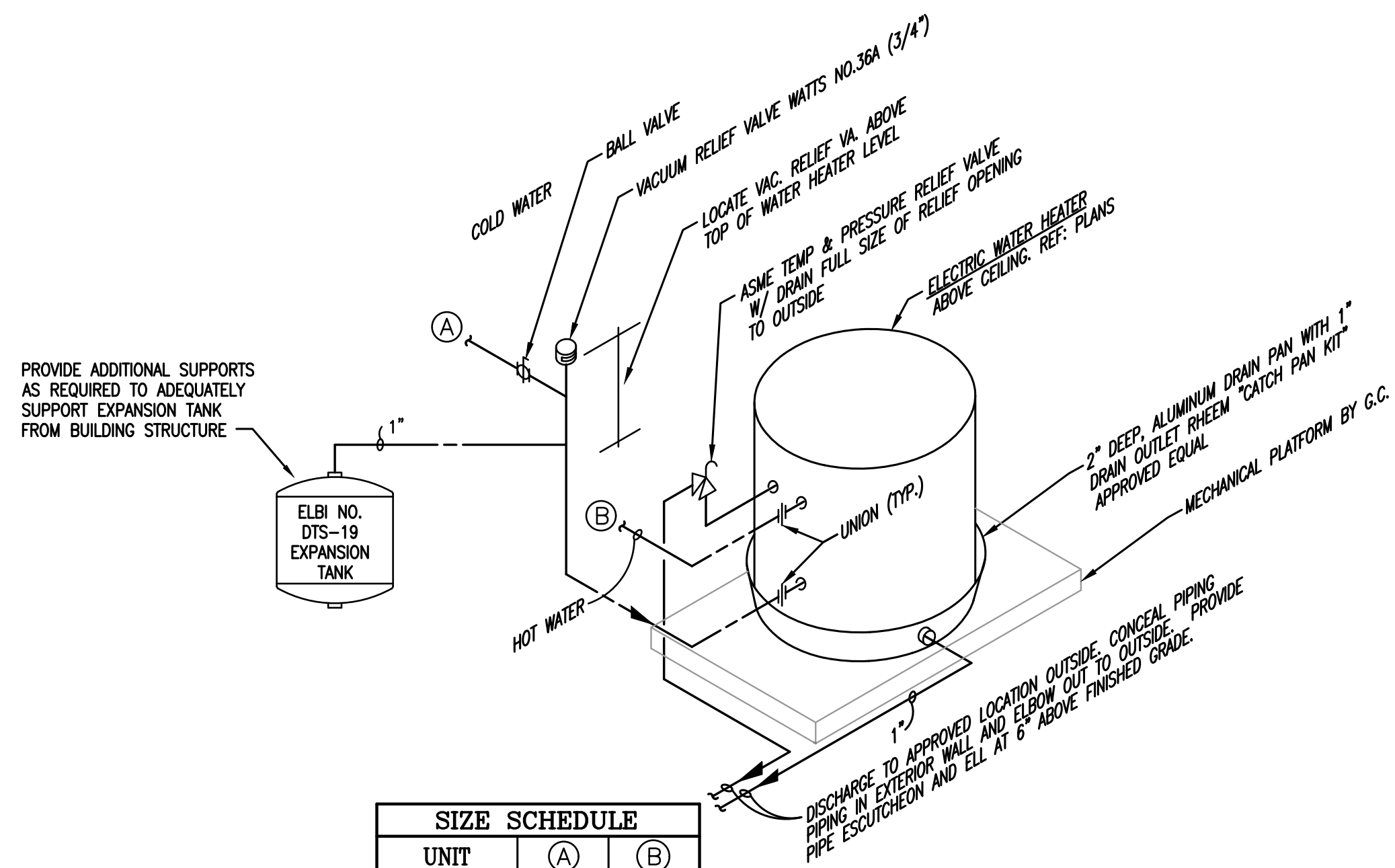
REVISION HISTORY	DATE
0 REVIEW	02-22-2023

SHEET DESCRIPTION

**Floor Plan -
Plumbing**

SHEET NUMBER

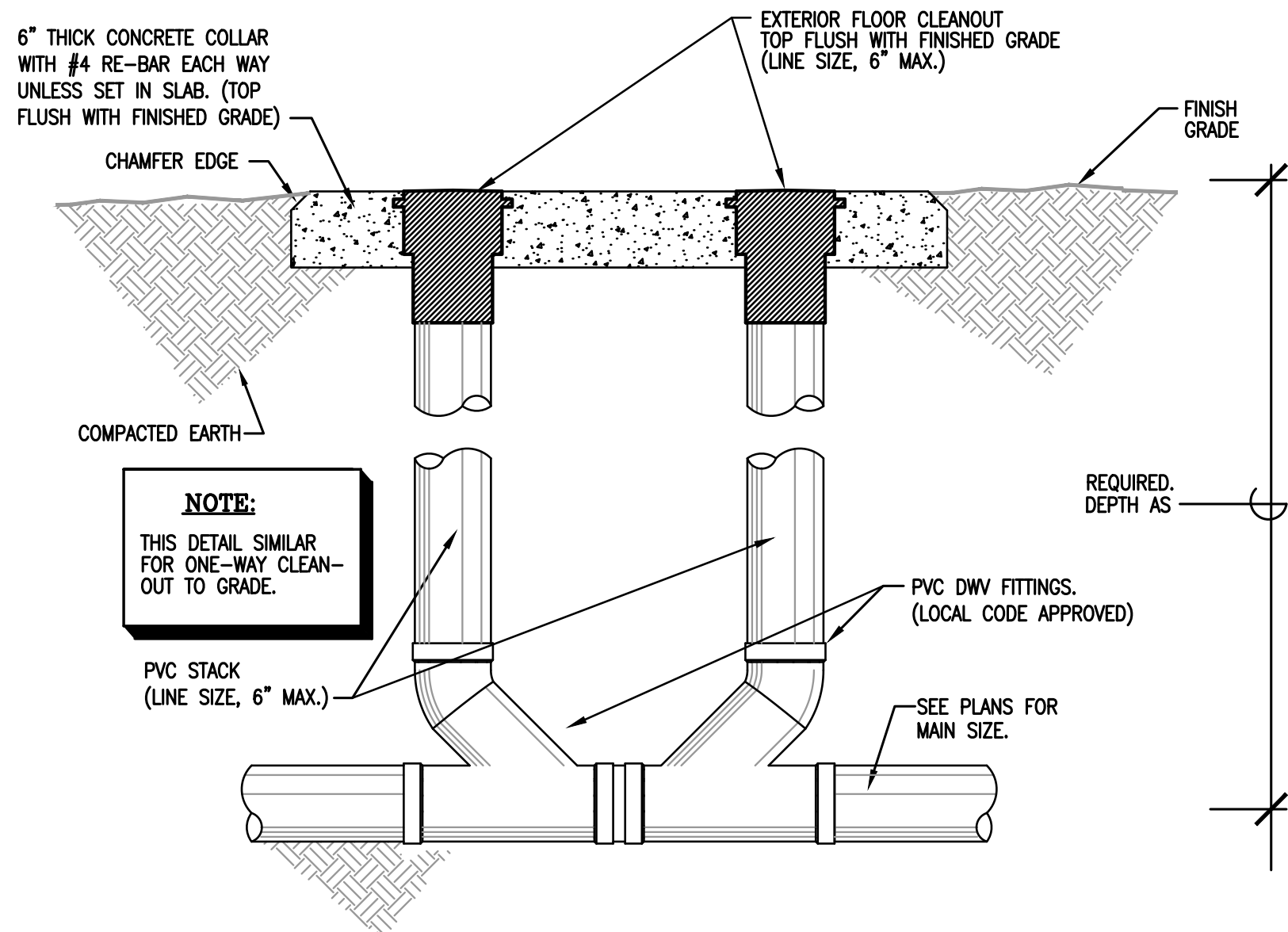
P2-1



SIZE SCHEDULE		
UNIT	(A)	(B)
EWH-1	1"	1"

ELECTRIC WATER HEATER SCHEDULE					
MARK	RECOVERY GPH AT 100°F RISE	KW	VOLTS, PHASE CYCLES	STORAGE CAPACITY (GALLONS)	REMARKS
EWH-1	24	2	120/1/60	6	RHEEM NO. 81VP-6S

1 WATER HEATER DETAIL
SCALE: NOT TO SCALE



2 TYPICAL DOUBLE TWO-WAY EXTERIOR FLOOR CLEANOUT DETAIL
SCALE: NOT TO SCALE

PROFESSIONAL'S SEAL
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF
DAVID K. McDONALD, P.E.
91899 ON 02/22/2023.
IT IS NOT INTENDED FOR CONSTRUCTION, BIDDING, REGULATORY APPROVAL OR PERMITTING PURPOSES.

REVISION HISTORY	DATE
0 REVIEW	02-22-2023

SHEET DESCRIPTION
Plumbing
Details

SHEET NUMBER
P3-1