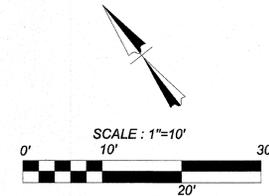


PROJECT DESCRIPTION:

RENOVATION OF PORTION OF PROPERTY (APPROX. 1500sqft) TO INCLUDE NEW KITCHEN, LIVING AREA, BEDROOM, BATHROOMS AND OUTDOOR LANDSCAPED PATIO.

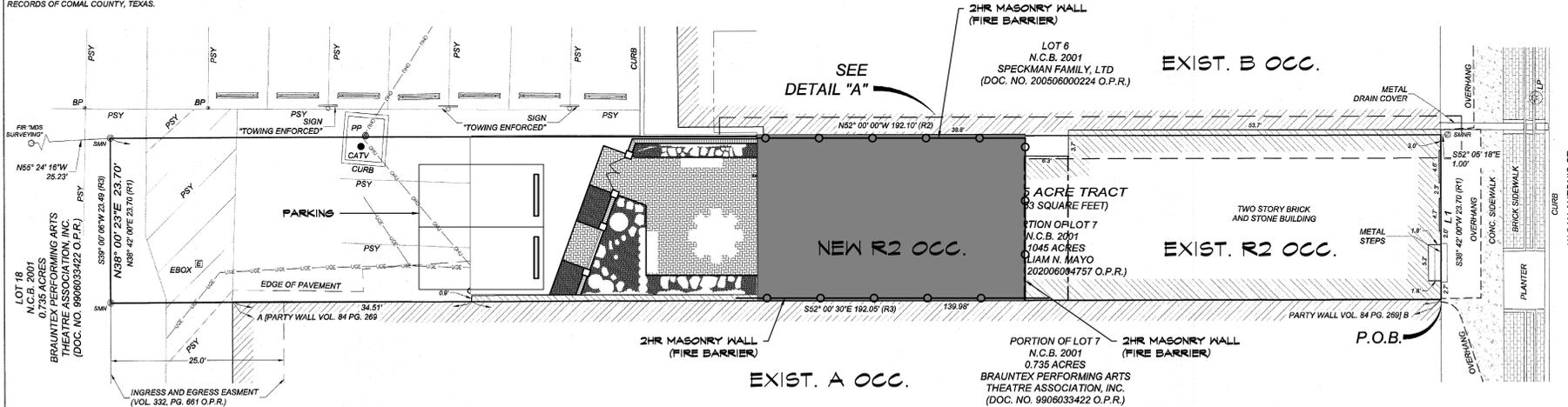
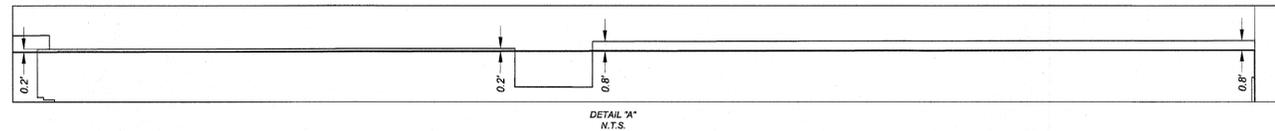
NOTES
1. BEARINGS ARE BASED ON THE STATE PLANE COORDINATE SYSTEM ESTABLISHED FOR THE TEXAS SOUTH CENTRAL ZONE 4204, NORTH AMERICAN DATUM (NAD) OF 1983.
2. TITLE COMMITMENT PROVIDED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, GF NO. 12580NB, EFFECTIVE DATE AUGUST 17, 2021, ISSUED DATE AUGUST 27, 2021.
SCHEDULE B:
10(d) VOLUME 84 PAGE 269 AND FURTHER DESCRIBED IN VOLUME 332 PAGE 661 - APPLIES INGRESS AND EGRESS EASEMENT - SHOWN
10(e) VOLUME 84 PAGE 269 - APPLIES PARTY WALL PROVISIONS - SHOWN A/ JB
10(f) VOLUME W PAGE 311 - MAY APPLY RECIPROCAL EASEMENT - LOCATABLE
10(g) VOLUME 58 PAGE 204 - MAY APPLY SOUTHERN GAS UTILITIES, INC. EASEMENT - NOT SHOWN
10(h) VOLUME 847 PAGE 419 - APPLIES TERMS AND PROVISIONS OF STATEMENT OF HISTORIC INTEREST - NOT SHOWN
3. REFERENCED PROPERTY IS IN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS SCALED FROM FEMA FLOOD MAP 435 OF 505, COMMUNITY PANEL NO. 48029C0435F, DATED SEPTEMBER 2, 2009.
4. THE TRACT SHOWN HEREON IS SUBJECT TO ALL CITY OF NEW BRAUNFELS AND COMAL COUNTY ORDINANCES AND RESTRICTIONS.
5. A METES AND BOUNDS WERE PREPARED FOR THIS SURVEY.
6. ADJOINERS SHOWN HEREON ARE PER CURRENT COMAL COUNTY APPRAISAL DISTRICT RECORDS AND OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS.

LINE #	LENGTH	DIRECTION
L1	23.70'	S38°00'23"W



LOCATION MAP NOT-TO-SCALE

ADDRESS: 278 W SAN ANTONIO ST, NEW BRAUNFELS, TX 78130



SYMBOL LEGEND

○ FIR FOUND 1/2" IRON ROD OR AS NOTED	● BP BOLLARD POST	— O-U — O-U OVERHEAD UTILITY LINE	(N00° 00' 00"E 00.00')(R1) RECORD INFORMATION PER DOCUMENT NO. 202006004757 O.P.R.
○ SMN SET MAG NAIL WITH WASHER STAMPED "KFW SURVEYING"	— SGN SIGN AS NOTED	— U-G — U-G UNDERGROUND ELECTRIC LINE	(N00° 00' 00"E 00.00')(R2) RECORD INFORMATION PER DOCUMENT NO. 202006004757 O.P.R.
○ SMNR SET MAG NAIL WITH WASHER STAMPED "KFW SURVEYING REF #"	● CATV CABLE TELEVISION	— P.O.B. — P.O.B. POINT OF BEGINNING	(N00° 00' 00"E 00.00')(R3) RECORD INFORMATION PER DOCUMENT NO. 9906033422 O.P.R.
○ O.P.R. OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS	● WHEEL STOP	CONCRETE	
○ EBOX ELECTRIC BOX	⊕ EM ELECTRIC METER	BRICK PAVERS	
	⊙ LP LIGHT POLE		
	⊙ PP POWER POLE		

ANY COMPLAINTS REGARDING THE SERVICES YOU HAVE RECEIVED CAN BE DIRECTED TO THE TEXAS BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS (BPELS) 197 S INTERSTATE 36, AUSTIN, TEXAS 78701 PHONE: 512-462-7722 FAX: 512-462-1414 - EMAIL: INFO@PELS.TEXAS.GOV

CATEGORY 1A LAND TITLE SURVEY OF

A 0.1045 ACRE TRACT OF LAND, OUT OF THE A.M. ENSAURIZER ELEVEN LEAGUE GRANT, SITUATED IN COMAL COUNTY, TEXAS, AND ALL OF A PORTION OF LOT 7, NEW CITY BLOCK 2001, CALLED 0.1045 ACRES, AS CONVEYED TO WILLIAM N. MAYO OF RECORD IN DOCUMENT NO. 202006004757 OF THE OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS

KFW SURVEYING
3421 Passmore Pkwy, Suite 101, San Antonio, TX 78231
Phone #: (210) 979-8444 • Fax #: (210) 979-8441
TBPLS Firm #: 10122300

REVISIONS	ISSUE DATE
	JOB NO. 21-168 DATE: 10/09/2021 CHECKED: TAS DRAWN: JSO
	SHEET NUMBER: 1 OF 1



STATE OF TEXAS,
COUNTY OF BEAR:
I, TERESA A. SEIDEL, DO HEREBY CERTIFY THAT THIS TITLE SURVEY WAS PREPARED FROM AN ACTUAL SURVEY MADE ON THE GROUND BY PERSONS WORKING UNDER MY SUPERVISION AND SUBSTANTIALLY COMPLETES WITH THE CURRENT TEXAS SOCIETY OF PROFESSIONAL SURVEYORS STANDARDS AND SPECIFICATIONS FOR CATEGORY 1A LAND TITLE SURVEY. THE FIELDWORK WAS COMPLETED ON 09/21/2021.
TERESA A. SEIDEL
REGISTERED PROFESSIONAL LAND SURVEYOR NO. 5672
EMAIL: TSEIDEL@KFWENGINEERS.COM
DATE OF SURVEY: 10/09/2021
PROJECT NO.: 21-168

DRAWING INDEX:

A1	COVER SHEET
A2	EXISTING FLOOR PLANS
A3	PROPOSED FLOOR PLANS
A4	BUILDING SECTIONS, ELEVATIONS, & DETAILS
M0.0	MECHANICAL LEGEND
M1.0	MECHANICAL SCHEDULES
M2.0	MECHANICAL SCHEDULES & DETAILS
E0.0	ELECT. SYMBOLS, ABBREVIATIONS & GEN. NOTES
E0.1	ELECTRICAL SPECIFICATIONS
E1.0	ELECTRICAL LIGHTING PLAN
E2.0	ELECTRICAL POWER PLAN
E3.0	ELECTRICAL ONE-LINE DIAGRAM
E3.1	ELECTRICAL PANEL SCHEDULES
E4.0	ELECTRICAL DETAILS
P0.0	PLUMBING LEGEND
P1.0	PLUMBING DWV PLANS
P1.1	PLUMBING WATER PLANS
P2.0	PLUMBING RISER DIAGRAMS
P3.0	PLUMBING SCHEDULES & DETAILS

GENERAL NOTES:

- ALL CONSTRUCTION SHALL COMPLY WITH THE BUILDING CODES ADOPTED BY THE TOWN OF SPRING BRANCH, TX, THE COUNTY OF COMAL AND ALL OTHER RECOGNIZED JURISDICTIONS HAVING AUTHORITY OVER THE PROJECT. AT THE TIME OF DESIGN, THESE INCLUDED:
INTERNATIONAL RESIDENTIAL CODE 2018
INTERNATIONAL ENERGY CONSERVATION CODE 2018
NATIONAL ELECTRIC CODE 2017
- THESE DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE ARCHITECT'S DESIGN INTENT AND ARE NOT TO BE SCALED. DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE.
- DETAILS ARE KEYS ONCE ON THE DRAWINGS AND ARE TYPICAL FOR SIMILAR CONDITIONS THROUGHOUT, UNLESS OTHERWISE NOTED. DETAILS INCLUDED HEREIN ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO ADAPT TO JOB CONDITIONS OR SITUATIONS.
- INSTALL BRIDGING, BLOCKING, SHIMS, AND BACKER AS REQUIRED FOR PROPER INSTALLATION OF WALLS, DOORS, WINDOWS, SKYLIGHT, CASEWORK, SHELVING, HVAC & ELECTRICAL FIXTURES.
- THE CONTRACTOR/OWNER SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES & PROCEDURES.
- ALL EASEMENTS AND UTILITIES TO BE MARKED ON SITE PRIOR TO DIGGING AND KEPT VISIBLE THROUGHOUT CONSTRUCTION.
- NEIGHBORING PROPERTIES TO BE PROTECTED FROM DAMAGE, DEBRIS, & AIRBORN PARTICULATES DURING CONSTRUCTION. PROVIDE SILT AND EROSION CONTROL REQUIRED BY THE LOCAL BUILDING JURISDICTION.
- PROVIDE WASTE CONTAINMENT AREA TO PREVENT DEBRIS FROM LITTERING SITE.
- PROVIDE HUMAN WASTE REMOVAL FACILITIES FOR ALL WORKERS.

CODE DETERMINATIONS:

GOVERNING CODE:

INTERNATIONAL RESIDENTIAL CODE 2018
INTERNATIONAL ENERGY CONSERVATION CODE
NEC
COMAL COUNTY AMENDMENTS

BUILDING CONSTRUCTION TYPE:

TYPE VB

OCCUPANCY CLASSIFICATION:

R2 OCCUPANCY - EXIST.
1ST FLR = 1220SF
2ND FLR = 1024SF
TOTAL HTD = 2304SF

R2 OCCUPANCY - NEW
1ST FLR = 795SF
2ND FLR = 795SF
TOTAL HTD = 1590SF

DESIGN LOADS:

ROOF LOAD
30#/SF LIVE LOAD
10#/SF DEAD LOAD



LEGACY ARCHITECTS LLC

NEW BRAUNFELS, TX
903-526-0150
LENTACT@GMAIL.COM

ARCHITECT/ENGINEER



B & B RENOVATION

HEX INDUSTRIES
278 W. SAN ANTONIO ST.
NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:

C22-002

DRAWN BY:

LP

CHECKED BY:

DATE: REVISION:

1-20-23

PRELIMINARY DESIGN

4-1-23

REV'D PRELIM. DESIGN

DATE: ISSUED AS:

8-3-23

FINAL CD REVIEW

8-18-23

FINAL CD SET

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

A1

SCALE: 3/32" = 1'-0"

All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).

MATERIALS LEGEND

- — — EXISTING TO REMAIN
- - - EXISTING TO BE REMOVED



LEGACY ARCHITECTS LLC

NEW BRAUNFELS, TX
803-526-8158
LENTACT@GMAIL.COM

ARCHITECT/ENGINEER



B & B RENOVATION

HEX INDUSTRIES
278 W. SAN ANTONIO ST.
NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:

C22-002

DRAWN BY:

LP

CHECKED BY:

DATE: REVISION:

1-5-23 PRELIM. DESIGN

DATE: ISSUED AS:

8-18-23 FINAL CD SET

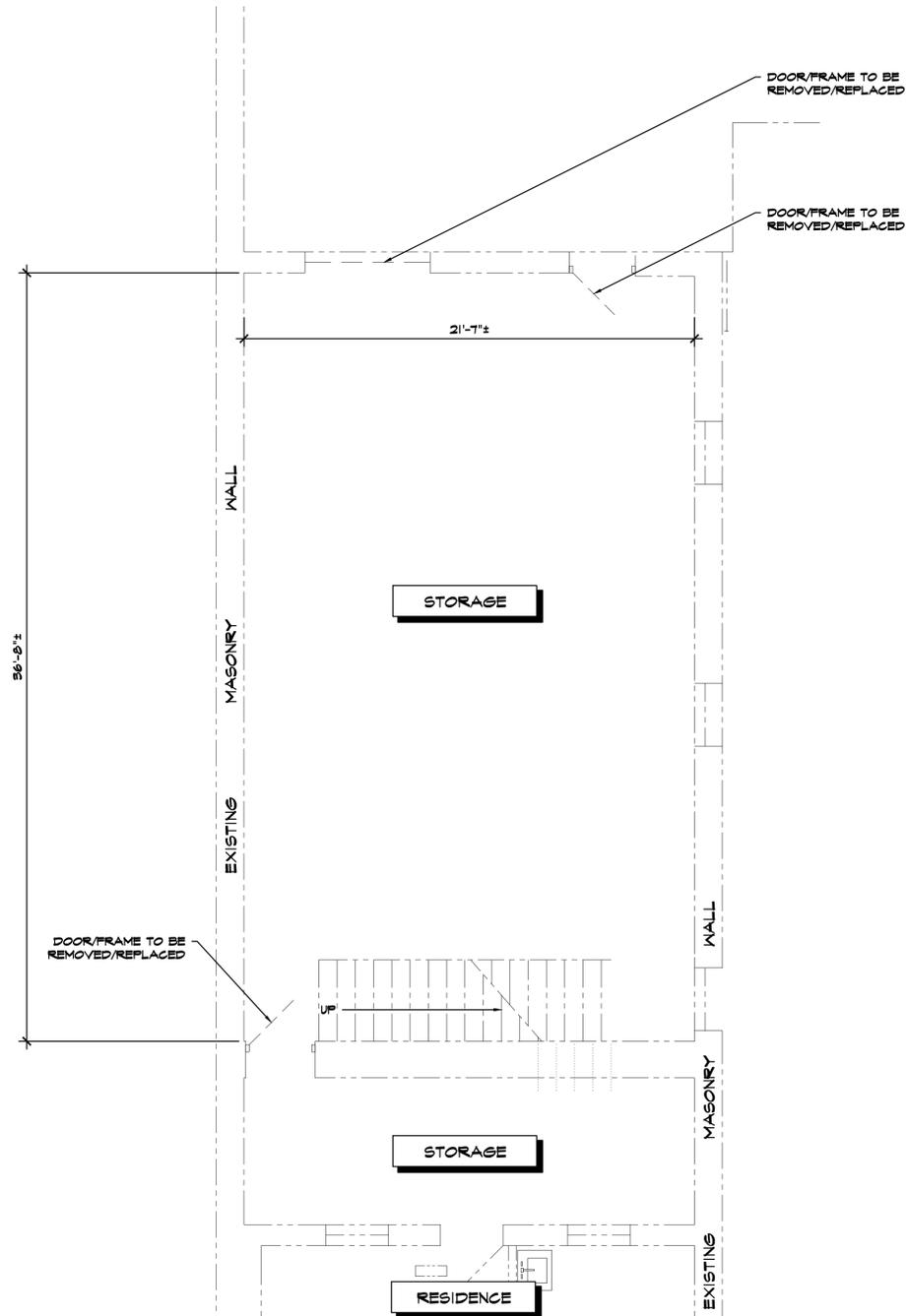
SHEET TITLE:

EXISTING FLOOR PLANS

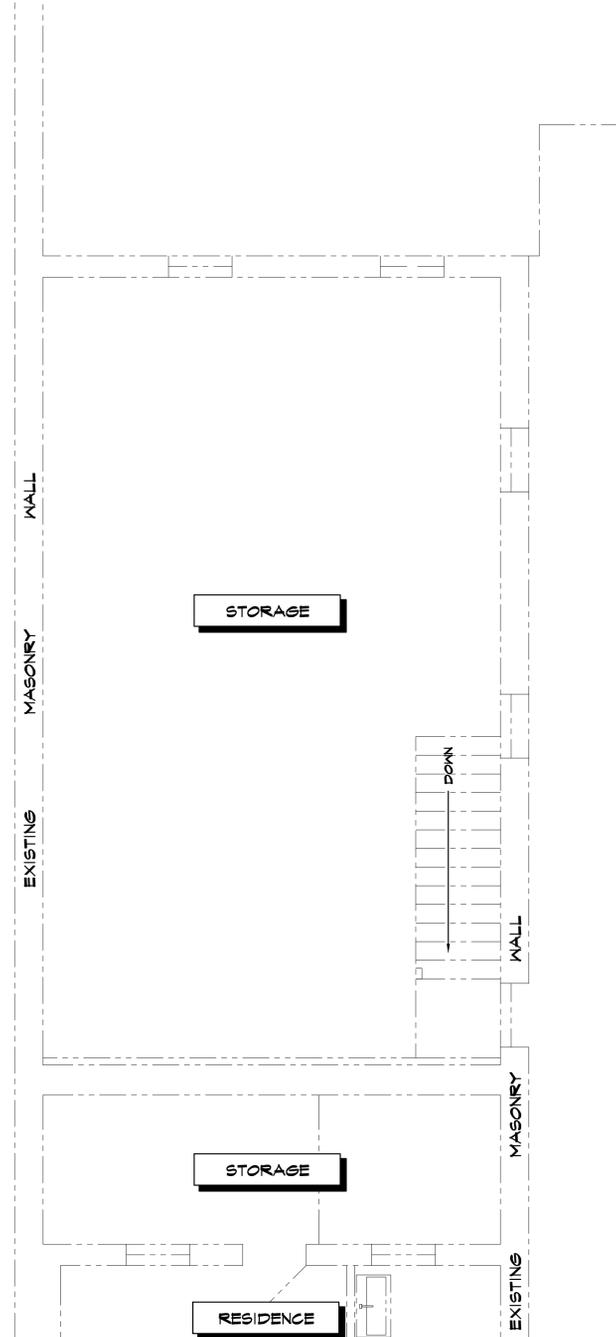
SHEET NUMBER:

A2

© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).



FLOOR PLAN - 1ST FLR
SCALE: 1/4" = 1'-0"

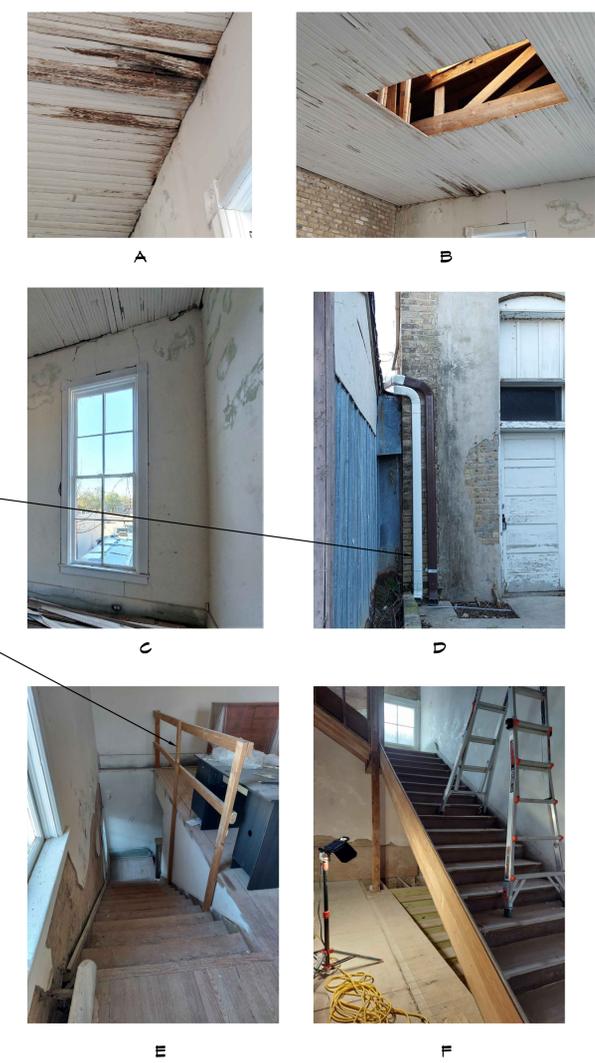


FLOOR PLAN - 2ND FLR
SCALE: 1/4" = 1'-0"

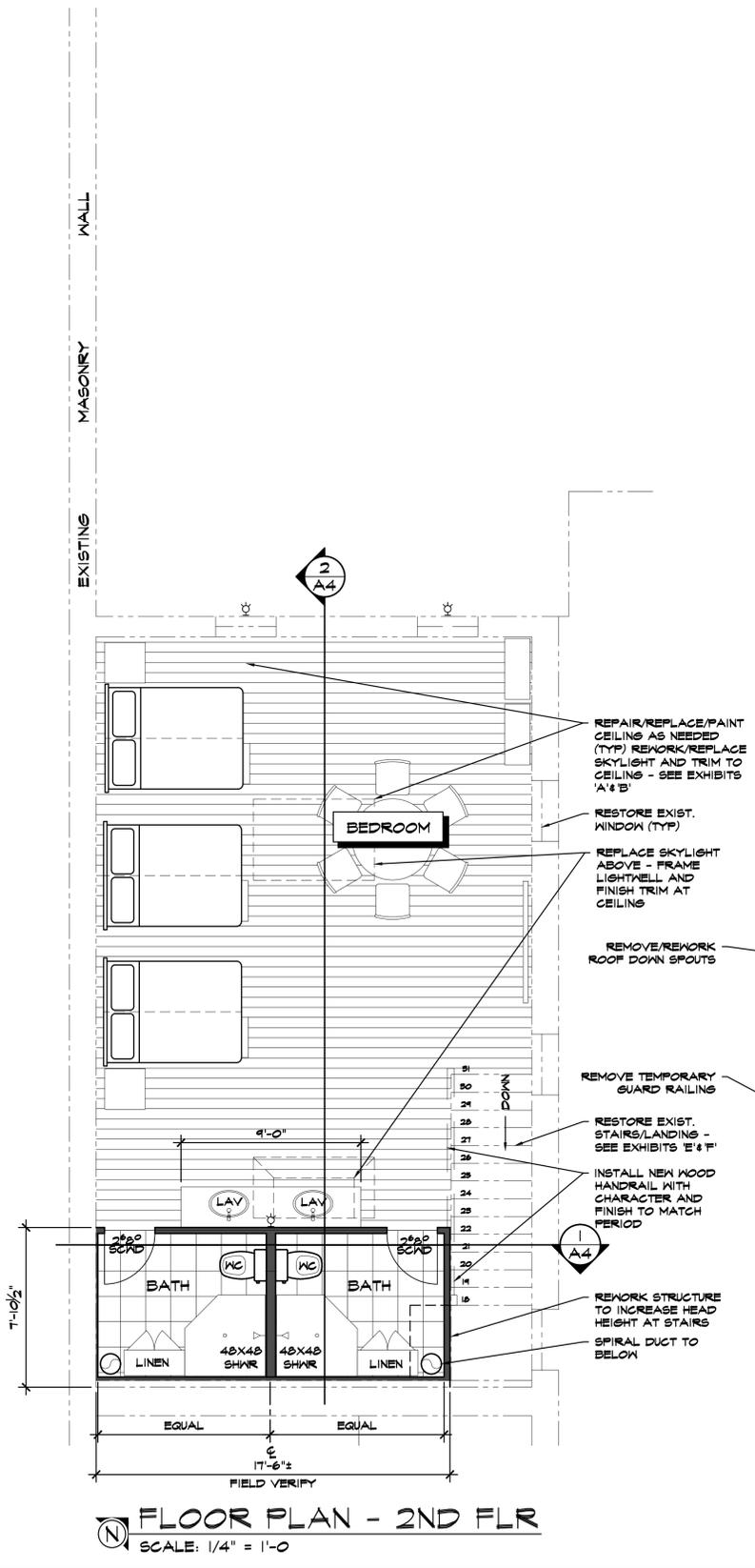
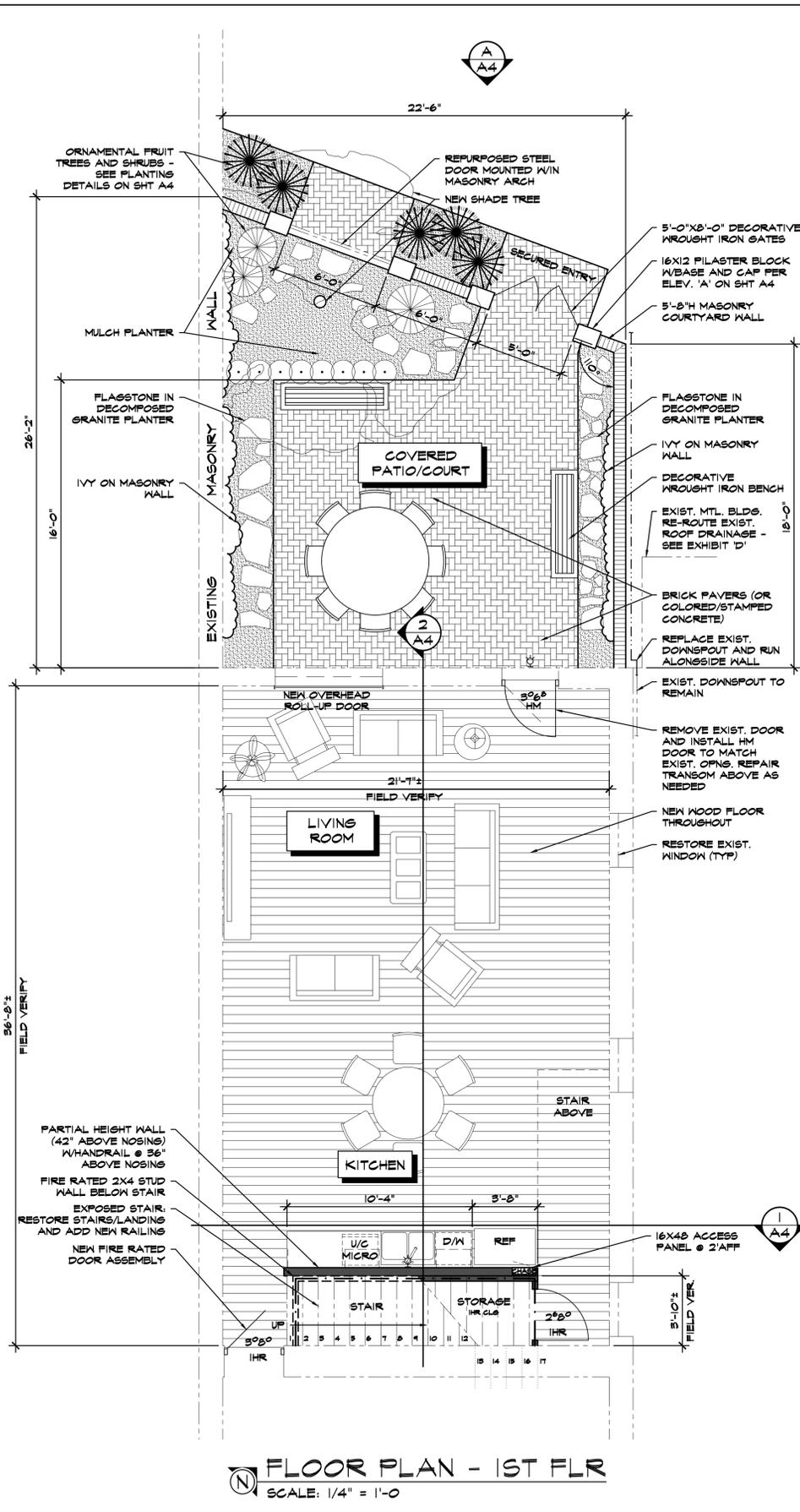
MATERIALS LEGEND

- NEW BUILDING ELEMENTS
- - - EXISTING TO REMAIN
- - - STORM DRAIN LEADER
- - - REFERENCE LINE ABOVE OR BELOW
- - - FIRE RATED ASSEMBLY
- NEW WALLS
- ▨ WOOD FLOORING
- ▩ BRICK PAVERS
- ▧ FLOOR TILE
- ▨ CRUSHED GRANITE/GROUND COVER
- ▧ EXTERIOR CMU WALL

 ELEVATION DESIGNATION SHEET NUMBER
 SECTION DESIGNATION SHEET NUMBER



EXISTING CONDITIONS



LEGACY ARCHITECTS LLC
NEW BRAUNFELS, TX 78130
803-526-8158
LENTACT@GMAIL.COM



B & B RENOVATION
HEX INDUSTRIES
278 W. SAN ANTONIO ST.
NEW BRAUNFELS, TX. 78130

PROJECT NUMBER: C22-002
DRAWN BY: LP
CHECKED BY:

DATE:	REVISION:
1-20-23	PRELIMINARY DESIGN
4-1-23	REV'D PRELIM. DESIGN
5-15-23	REV'D PRELIM. DESIGN
5-22-23	REV'D PRELIM. DESIGN
6-29-23	REV'D DESIGN
6-30-23	REV'D DESIGN

DATE:	ISSUED AS:
8-3-23	FINAL CD REVIEW
8-18-23	FINAL CD SET

SHEET TITLE:

FLOOR PLANS

SHEET NUMBER:

A3

© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).



LEGACY ARCHITECTS LLC
 NEW BRAUNFELS, TX
 303-526-8150
 LEENTOR@GMAIL.COM

ARCHITECT/ENGINEER



B & B RENOVATION

HEX INDUSTRIES
 278 W. SAN ANTONIO ST.
 NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
 022-002

DRAWN BY:
 LP

CHECKED BY:

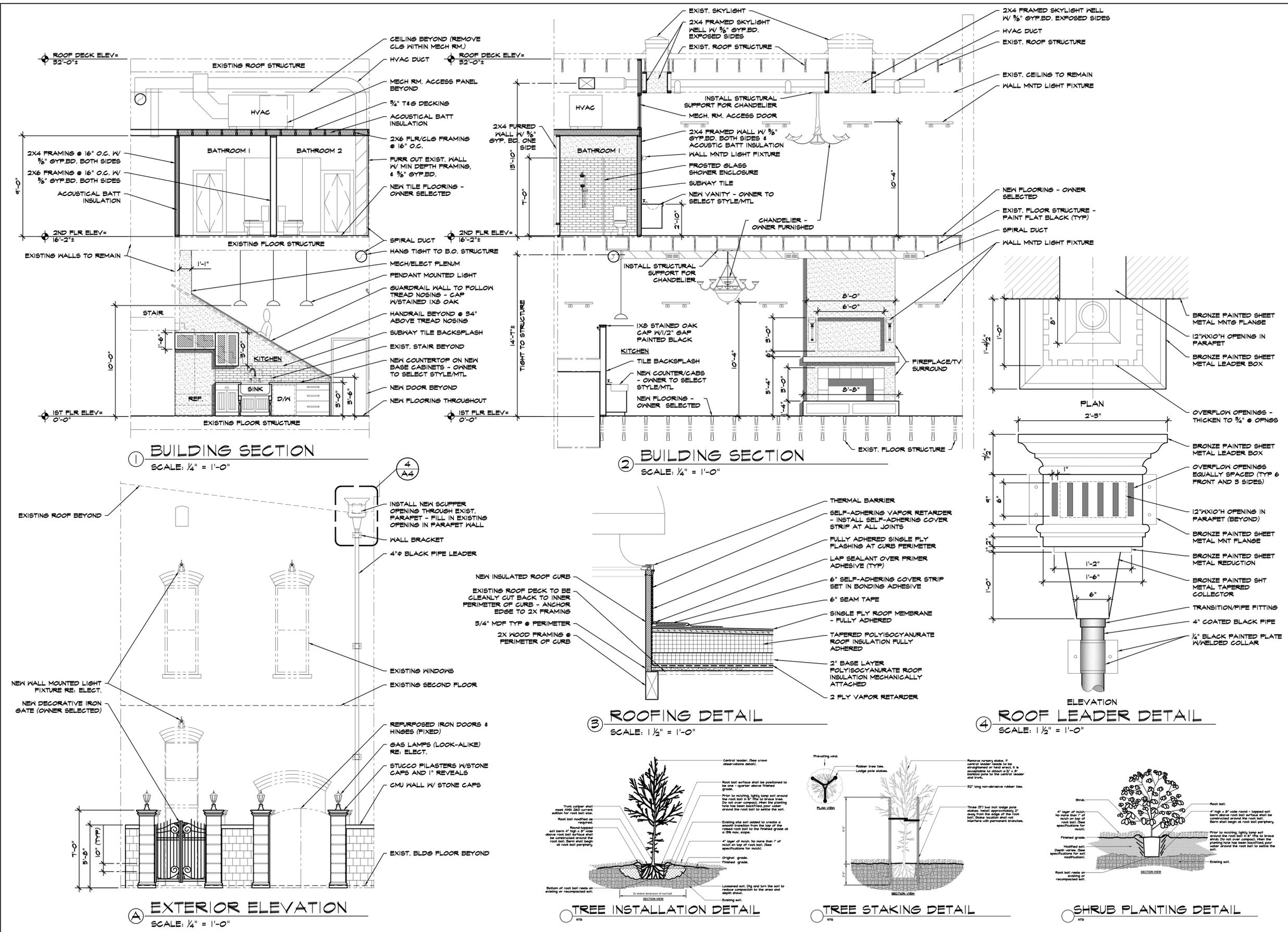
DATE: 7-27-23
 REVISION: PRELIMINARY DESIGN

DATE: 8-3-23
 8-18-23
 ISSUED AS: FINAL CD REVIEW
 FINAL CD SET

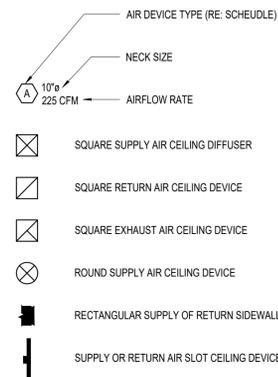
SHEET TITLE:
BLDG SECTIONS ELEVATIONS & DETAILS
 SHEET NUMBER:

A4

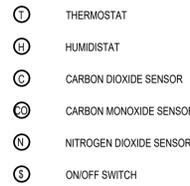
All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).



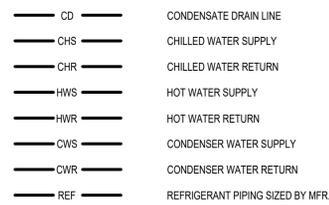
AIR DEVICE TYPES



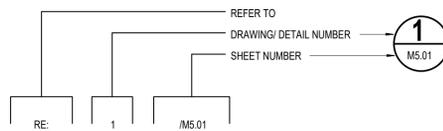
WALL MOUNTED SENSOR TYPES



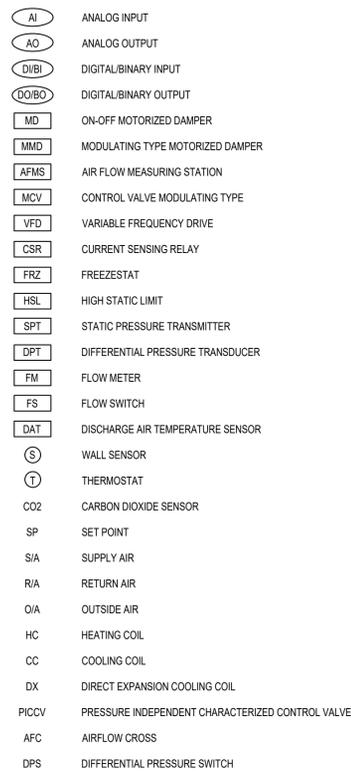
PIPING TYPES



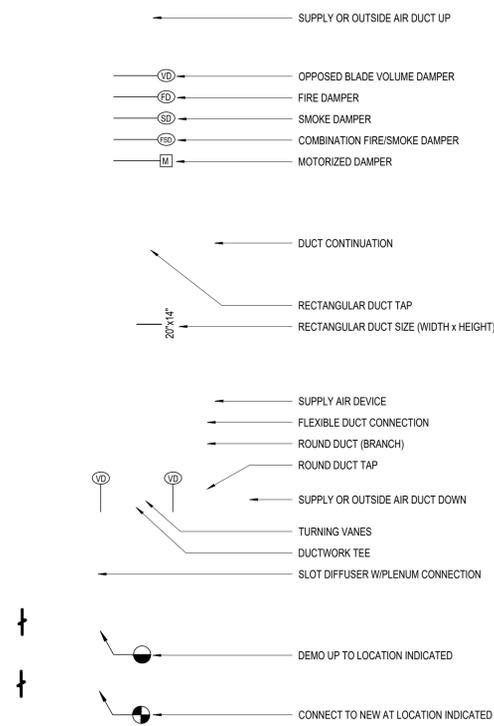
DRAWING/DETAIL REFERENCE KEY



CONTROLS SCHEMATIC SYMBOLS LEGEND



DUCTWORK



MECHANICAL GENERAL NOTES

- PIPING AND DUCTWORK SHOWN ON PLANS ARE SCHEMATIC ONLY. COORDINATE WITH OTHER TRADES FOR PIPING AND DUCTWORK ROUTING. OFFSET AND RUN PIPING DUCTWORK INSIDE THE STRUCTURE IF REQUIRED. PROVIDE ALL NECESSARY PIPING, DUCTWORK, FITTING, INSULATION, AND OTHER ACCESSORIES IN ORDER TO COMPLETE THE INSTALLATIONS.
- EXACT LOCATIONS OF GRILLES AND DAMPERS SHALL BE FIELD COORDINATED WITH OTHER TRADES TO AVOID CONFLICTS AND ALLOW ADEQUATE CLEARANCES.
- EQUIPMENT SIZES, DIMENSIONS, AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE MANUFACTURER DRAWINGS AND CUTSHEETS BEFORE FABRICATING OF DUCTWORK, PIPING, OR POURING OF CONCRETE HOUSEKEEPING PADS.
- CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
- DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE DIMENSIONS.
- PROVIDE RECTANGULAR BRANCH DUCT TAP FOR ALL RECTANGULAR DUCT CONNECTIONS TO RECTANGULAR DUCT TRUNKS.
- ALL MEDIUM AND LOW PRESSURE DUCTWORK AND ASSOCIATED ACCESSORIES SHALL BE CONSTRUCTED TO MEET THE LATEST SMACNA STANDARDS FOR MEDIUM AND LOW PRESSURE DUCTWORK.
- ALL OUTSIDE AIR, SUPPLY AIR, AND RETURN AIR DUCTWORK AND PLENUMS SHALL BE INSULATED WITH A MINIMUM OF R-8 INSULATION WHERE LOCATED IN UNCONDITIONED SPACES AND SHALL BE INSULATED WITH A MINIMUM OF R-8 INSULATION WHERE LOCATED OUTSIDE THE BUILDING. REFER TO SPECIFICATION 23 07 13 DUCT INSULATION FOR FURTHER INFORMATION AND ADDITIONAL REQUIREMENTS.
- ALL DUCTWORK SHALL BE CONSTRUCTED TO SEAL CLASS 'A' AS REFERENCED IN SMACNA STANDARDS. ALL NON-WELDED JOINTS AND SEAMS SHALL BE SEALED. THIS INCLUDES BUT IS NOT LIMITED TO TRANSVERSE JOINTS, LONGITUDINAL SEAMS, DUCT WALL PENETRATIONS, SPININS, TAPS AND OTHER BRANCH CONNECTIONS, ACCESS DOORS, ACCESS PANELS, AND DUCT CONNECTIONS TO EQUIPMENT. OPENINGS FOR ROTATING SHAFTS SHALL ALSO BE SEALED WITH BUSHINGS. REFER TO SPECIFICATION 23 31 13 METAL DUCTWORK FOR FURTHER INFORMATION.
- ALL EXPOSED DUCTWORK AND PIPING WITH ASSOCIATED ACCESSORIES IN AREAS WITH NO CEILING OR PARTIAL CEILING SHALL BE PAINTED. REFER TO ARCHITECT FOR COLOR.
- DIVISION 23 MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR PRIOR TO ACTUAL INSTALLATION OF TEMPERATURE SENSORS AND HUMIDITY SENSORS.
- PROVIDE REMOTE SPIN-IN DAMPER OPERATOR FOR SPIN-IN CONNECTIONS AND VOLUME DAMPERS LOCATED OVER GYPSUM CEILINGS.
- PROVIDE AIRFOIL TYPE TURNING VANES IN ALL 90 DEGREE ELBOWS.
- PROVIDE INSULATED ACCESS DOORS FOR DUCTWORK DOWNSTREAM OF AIR HANDLING UNITS AT EVERY 20'-0" TO FACILITATE DUCT CLEANING. PROVIDE ACCESS DOORS WITHIN 5'-0" OF EACH ELBOW.
- COORDINATE LOCATIONS OF FLOOR AND WALL OPENINGS WITH ARCHITECT AND STRUCTURAL ENGINEER.
- ALL CEILING MOUNTED AND WALL MOUNTED AIR DEVICE FINISHES SHALL MATCH ADJACENT ARCHITECTURAL SURFACE. CONTRACTOR SHALL COORDINATE COLOR WITH ARCHITECT.
- NO PIPE HANGERS SHALL BE SPACED MORE THAN 10'-0" O.C. COMPLY WITH PIPE SPACING AS SPECIFIED IN THE PIPING SUPPORT SPECIFICATIONS.
- MECHANICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF ALL OUTSIDE AIR INTAKES TO MAINTAIN 15 FEET DISTANCE BETWEEN OUTSIDE AIR INTAKES AND ANY EXHAUST AIR OUTLET, FLUES OR PLUMBING VENTS.



LEGACY
ARCHITECTS
LLC

NEW BRAUNFELS, TX
303-526-8158
LEX@LEGACYARCH.COM

ARCHITECT/ENGINEER



B & B
RENOVATION

HEX INDUSTRIES
278 W. SAN ANTONIO ST.
NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
0007-23

DRAWN BY:
CSW

CHECKED BY:
MLW

DATE: REVISION:

DATE: ISSUED AS:
8-8-23 PERMIT SET

SHEET TITLE:

MECHANICAL
LEGEND

SHEET NUMBER:

MO.0



MEP Design, Planning & Commissioning
123 Vargas Aly, San Antonio, TX. 78203
(210) 899-9908 | TBP# F-15042
www.mackengineers.com

© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).

#	MECHANICAL KEYED NOTES
1	INSTALL DUCTWORK AS HIGH AS POSSIBLE.
2	ALL EXPOSED DUCTWORK SHALL BE INTERNALLY INSULATED SPIRAL DUCT INSTALLED IN A CLEAN, WORKMAN LIKE, EYE APPEALING MANNER.
3	12" SUPPLY DOWN FROM ABOVE.
4	12" SUPPLY AIR DOWN TO LEVEL ONE.
5	8" FRESH AIR INTAKE UP TO WEATHERPROOF INTAKE HOOD AT ROOF. ROUTE TO LOCATE MINIMUM 10'-0" FROM ANY EXHAUST TERMINATION.
6	CONNECT CONDENSATE TO THE LAVATORY TAILPIECE IN THE RESTROOM BELOW. ROUTE REFRIGERANT PIPING TO AIR COOLED CONDENSING UNIT LOCATED ON ROOF. REFRIGERANT PIPING AND ACCESSORIES SHALL BE SIZED AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
7	6X6 EXHAUST UP TO ROOF MOUNTED EXHAUST FAN. FAN SHALL OPERATE WITH SEPARATE SWITCH LOCATED WITH LIGHT SWITCH. ROUTE SO THE EXHAUST TERMINATION IS LOCATED MINIMUM 10'-0" FROM ANY FRESH AIR INTAKE.
8	24/7 DIGITAL PROGRAMMABLE HEAT PUMP THERMOSTAT AND HUMIDISTAT.



LEGACY ARCHITECTS LLC
 NEW BRAUNFELS, TX
 303-526-8198
 LEGACYARCHITECTS.COM

ARCHITECT/ENGINEER



MACK ENGINEERS
 REG. NO. F-15042

B & B RENOVATION

HEX INDUSTRIES
 278 W. SAN ANTONIO ST.
 NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
 0007-23

DRAWN BY:
 CSW

CHECKED BY:
 MLW

DATE: REVISION:

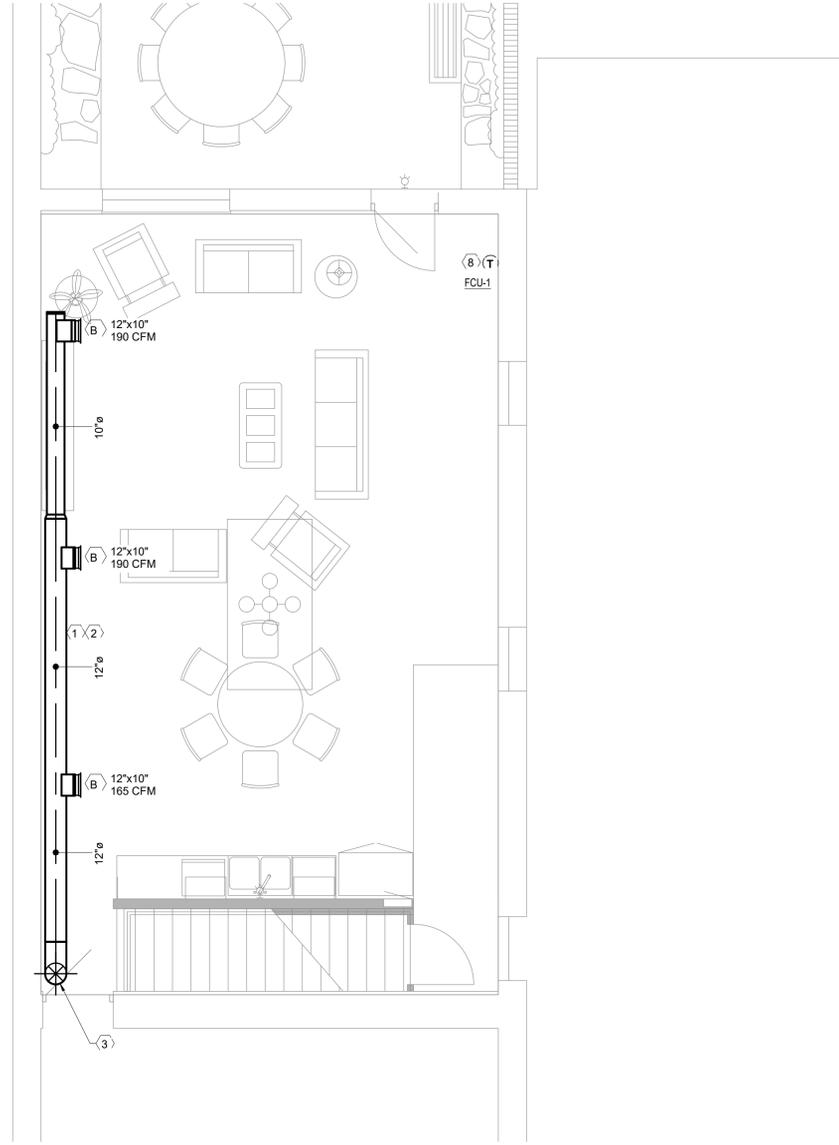
DATE: ISSUED AS:
 8-8-23 PERMIT SET

SHEET TITLE:

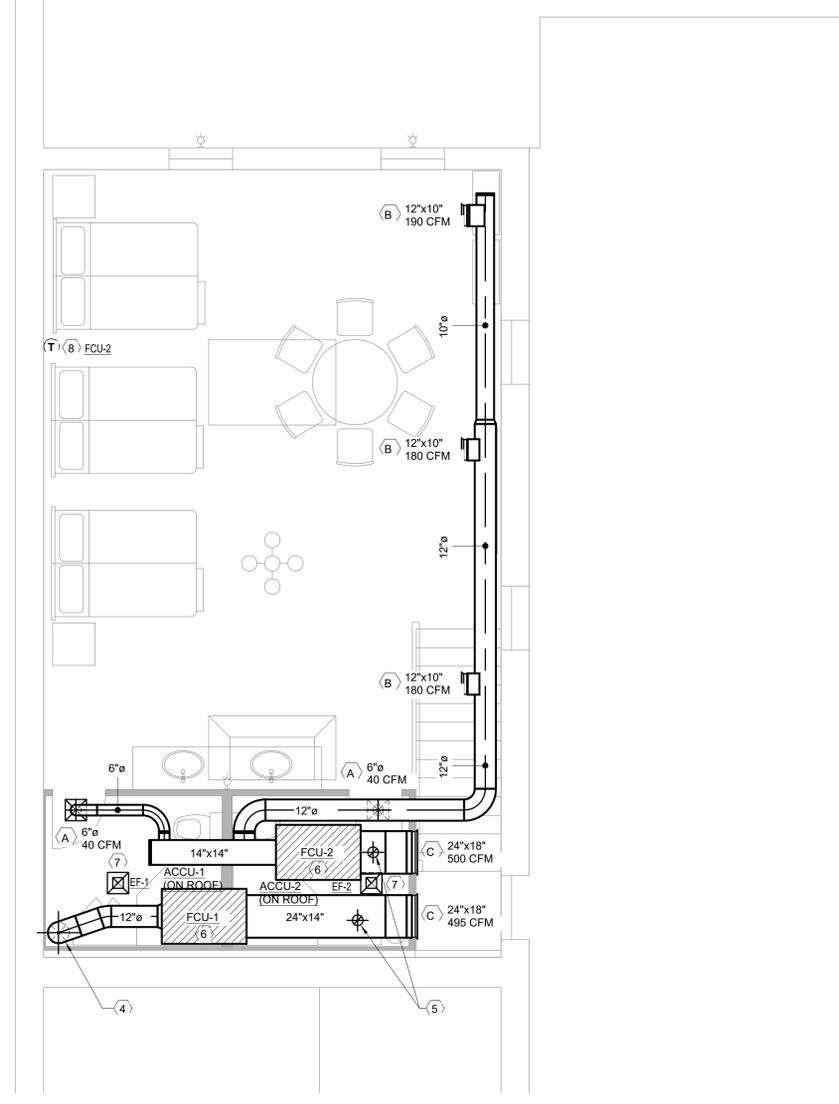
MECHANICAL PLANS

SHEET NUMBER:

M1.0



1 MECHANICAL PLAN - 1ST FLOOR
 M1.0 SCALE: 1/4" = 1'-0"



2 MECHANICAL PLAN - 2ND FLOOR
 M1.0 SCALE: 1/4" = 1'-0"



MEP Design, Planning & Commissioning
 123 Vargas Aly, San Antonio, TX. 78203
 (210) 899-9908 | TBP# F-15042
 www.mackengineers.com

© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).

DX SPLIT SYSTEM SCHEDULE

EQUIPMENT			MANUFACTURER MODEL NUMBER		INDOOR UNIT										OUTDOOR UNIT							NOTES						
TYPE	NUMBER	SERVICE	INDOOR UNIT	OUTDOOR UNIT	SUPPLY CFM	OA CFM	FACE VELOCITY (ft/min)	COOLING COIL				MCA / MOCP	REFRIGERANT	HEATING		OPERATING WEIGHT (LBS)	TYPE	NUMBER	AMBIENT TEMP DB (F)	EER	ELECTRICAL INFORMATION			OPERATING WEIGHT (LBS)				
								EAT	LAT	CAPACITY				TOTAL MBH	TOTAL MBH						TOTAL MBH		TOTAL MBH		VOLTAGE	PHASE	MCA	MFA
FCU	1	LEVEL 1	FDMQ18RVJU	RXL18RMVJUA	545	50	500	80	67	55	54	-	17.6	-	R-410A	21.6	Y	82	ACCU	1	105	12.5	208	1	12.8	15	97	ALL
FCU	2	LEVEL 2	FDMQ24RVJU	RXL24RMVJUA	630	50	500	80	67	55	54	-	21.4	-	R-410A	24.0	Y	82	ACCU	2	105	12.5	208	1	16.9	20	108	ALL

- NOTES:
 1. PROVIDE WITH 7 DAY DIGITAL PROGRAMMABLE HEAT PUMP THERMOSTAT/HUMIDISTAT.
 2. ROUTE AND SIZE REFRIGERANT PIPING PER MANUFACTURERS RECOMMENDATIONS.
 3. POWER FOR INDOOR AND OUTDOOR UNITS FED THRU OUTDOOR UNIT.

AIR DEVICE SCHEDULE

DESIGNATION	MANUFACTURER	MODEL	SERVICE	FACE DIMENSIONS	NECK DIMENSIONS	DESCRIPTION	NOTES
A	TITUS	TMS-AA	SUPPLY	12x12	SEE PLANS	LOUVER FACED	ALL
B	TITUS	272FL	SUPPLY	SEE PLANS	SEE PLANS	SIDEWALL	ALL
C	TITUS	350FL	RETURN / EXH	SEE PLANS	SEE PLANS	SIDEWALL	ALL

- NOTES:
 1. REFER TO PLANS AND NECK SIZE SCHEDULE FOR NECK SIZES.
 2. PROVIDE VOLUME DAMPER AT EACH BRANCH TAP.

DIFFUSER NECK SIZES

CFM (MIN - MAX)	RECTANGULAR SIZE (IN)	ROUND SIZE (in)
0-100	6x6	6"
101-200	8x8	8"
201-400	10x10	10"
401-600	12x12	12"
601-900	14x14	14"

- NOTES:
 1. WHERE PLANS DIFFER FROM SCHEDULE, THE LARGER SIZE BETWEEN THE SCHEDULE AND THE NECK SIZE ON THE PLANS SHALL BE USED.

FAN SCHEDULE

EQUIPMENT		SERVICE	LOCATION	UNIT		MOTOR							OPERATIONAL WEIGHT (LBS)	NOTES		
TYPE	NUMBER			MANUFACTURER	MODEL	CFM	EXTERNAL S.P. (IN. W.G.)	RPM	BHP	FLA	VOLTAGE	PHASE			EMERGENCY POWER	VARIABLE SPEED
EF	1	EXHAUST	CEILING	GREENHECK	CSP-110	100	0.17	950	0.01	0.19	115	1	N	N	17	ALL
EF	2	EXHAUST	CEILING	GREENHECK	CSP-110	100	0.17	950	0.01	0.19	115	1	N	N	17	ALL

- NOTES:
 1. PROVIDE WALL SWITCH AT RESTROOM WITH LIGHT SWITCH.
 2. INSTALL PER MANUFACTURERS RECOMMENDATIONS.
 3. PROVIDE WITH WEATHER PROOF WALL HOOD AND BACKDRAFT DAMPER.

1 FAN COIL UNIT MOUNTING (DX)
NOT TO SCALE

2 OUTSIDE AIR INTAKE HOOD
NOT TO SCALE

3 CONDENSING UNIT ROOF MOUNTED
NOT TO SCALE

4 CEILING MOUNTED EXHAUST FAN
NOT TO SCALE

5 EXPOSED SIDEWALL SUPPLY REGISTER DETAIL
NOT TO SCALE



LEGACY ARCHITECTS LLC

NEW BRAUNFELS, TX
303-526-8198
LEX@LEGACYARCH.COM

ARCHITECT/ENGINEER



MACK ENGINEERS
REG. NO. F-15042

B & B RENOVATION

HEX INDUSTRIES
278 W. SAN ANTONIO ST.
NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
0007-23

DRAWN BY:
CSW

CHECKED BY:
MLW

DATE: REVISION:

DATE: ISSUED AS:
8-8-23 PERMIT SET

SHEET TITLE:
MECHANICAL SCHEDULES AND DETAILS

SHEET NUMBER:

M2.0



MEP Design, Planning & Commissioning
123 Vargas Aly, San Antonio, TX. 78203
(210) 899-9908 | TBP# F-15042
www.mackengineers.com

© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).

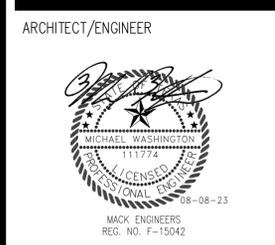
ELECTRICAL SYMBOLS & ABBREVIATIONS

[SOME SYMBOLS MAY NOT BE USED ON THIS PROJECT]

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	ABBREVIATION	DESCRIPTION	GENERAL NOTES
GENERAL		RACEWAYS		FIRE ALARM (CON'T)				<p>A. CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS AND REVIEW ALL RELATED DRAWINGS AND SPECIFICATIONS PRIOR TO BID.</p> <p>B. THE DRAWINGS ARE DIAGRAMMATICAL. CONTRACTOR SHALL VERIFY FIELD CONDITIONS AND DETERMINE CONDUIT ROUTING AND EXACT LOCATIONS OF EQUIPMENT AND DEVICES. NOTIFY THE ARCHITECT/ENGINEER IF THE APPROXIMATE CONDUIT ROUTING SHOWN ON PLANS IS NOT FEASIBLE. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY CONFLICTS PRIOR TO ROUGH-IN.</p> <p>C. LOCATIONS OF DEVICES ARE DIAGRAMMATICAL. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY CONFLICTS PRIOR TO ROUGH-IN.</p> <p>D. PROVIDE LISTED FIRE-STOP CAULKING TO MAINTAIN INTEGRITY OF RATED WALLS AT ALL RACEWAY AND CABLE TRAY PENETRATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF RATED WALLS.</p> <p>E. REFERENCE EQUIPMENT CONNECTION SCHEDULE FOR REQUIREMENTS AND ADDITIONAL INFORMATION OF TAGGED EQUIPMENT SHOWN ON PLAN.</p> <p>F. LOCATIONS OF MECHANICAL EQUIPMENT TO BE COORDINATED WITH MECHANICAL DRAWINGS FOR EXACT LOCATIONS AND QUANTITY.</p> <p>G. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE CURRENT ISSUE OF THE NATIONAL ELECTRIC CODE AND ALL APPLICABLE LOCAL CODES. ALL WORK SHALL MATCH THE EXISTING BUILDING'S ELECTRICAL INSTALLATION. ALL SYSTEMS SHALL BE INSTALLED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH APPLICABLE STANDARDS AND SPECIFICATIONS APPROVED BY ALL AUTHORITIES HAVING JURISDICTION.</p> <p>H. ALL NEW DUPLEX RECEPTACLES TO BE MOUNTED HORIZONTAL AT 18" AFF TO BOTTOM OF BOX AND LIGHT SWITCHES TO BE MOUNTED AT 48" AFF UNLESS NOTED OTHERWISE, AND IN FULL COMPLIANCE WITH A.D.A.</p> <p>I. PROVIDE A TYPED PANEL DIRECTORY FOR EACH NEW OR MODIFIED ELECTRICAL PANEL. DIRECTORY SHALL IDENTIFY THE CIRCUIT NUMBER, DEVICES SERVED, AND LOCATION OF DEVICES BY ROOM NUMBER. FILE COPY OF DIRECTORIES WITH THE OWNER'S REPRESENTATIVE WHEN WORK IS COMPLETED, AND PROVIDE COPIES WITH THE OWNER'S MANUALS.</p> <p>J. ALL FUSES/CIRCUIT BREAKERS IN PANELS, DISCONNECT SWITCHES, MOTOR STARTERS, ETC. SERVING MOTORS AND EQUIPMENT SHALL BE SIZED AS RECOMMENDED BY THE MANUFACTURER OF THE PARTICULAR LOAD DEVICE SERVED. COORDINATE WITH OTHER TRADES AS REQUIRED.</p> <p>K. INDICATED SPARE AND/OR SPACES IN ALL EQUIPMENT ON THE ELECTRICAL ONE-LINE DIAGRAM AND IN THE PANEL SCHEDULES ARE THE MINIMUM NUMBER REQUIRED FOR THIS PROJECT.</p> <p>L. ALL CONNECTIONS TO MOTORS, OR OTHER DEVICES SUBJECT TO VIBRATION SHALL BE MADE USING A MINIMUM OF 12" LENGTH OF LIQUID TIGHT FLEXIBLE METALLIC CONDUIT. PROVIDE CONTINUOUS SEPARATE GROUND WIRE THROUGH ALL FLEXIBLE METALLIC CONDUIT CONNECTIONS.</p> <p>M. PROVIDE UL CLASS A GROUND FAULT INTERRUPTER CIRCUIT PROTECTIVE DEVICES ON ALL CONSTRUCTION RECEPTACLE CIRCUITS, OUTSIDE RECEPTACLE CIRCUITS, BATH OR TOILET ROOM RECEPTACLE CIRCUITS AND ON ALL OTHER CIRCUITS REQUIRED OR RECOMMENDED IN THE NATIONAL ELECTRIC CODE.</p>
	MOTOR, HP AS INDICATED		PLYWOOD TELEPHONE BACKBOARD		HEAT DETECTOR	IMC	INTERMEDIATE STEEL CONDUIT	
	DISCONNECT SWITCH		CONDUIT CONCEALED IN WALL OR CEILING WITH ONE PHASE, NEUTRAL AND GROUND CONDUCTOR U.N.O.		FLOW SWITCH	IN	INCHES	
	MOTOR CONTROLLER		CONDUIT UNDER FLOOR OR CAST IN STRUCTURE WITH ONE PHASE, NEUTRAL AND GROUND CONDUCTOR U.N.O.		TAMPER SWITCH	INC	INCANDESCENT	
	COMBINATION MOTOR CONTROLLER/DISCONNECT UNIT		SWITCH LEG		FIRE ALARM HORN AND LIGHT	IG	ISOLATED GROUND	
	VARIABLE FREQUENCY DRIVE		BRANCH CIRCUIT HOMERUN, WITH PANEL AND BREAKER POSITION INDICATED.		FIRE ALARM MINI-HORN AND LIGHT	JB	JUNCTION BOX	
	CONTACTOR		MULTI-OUTLET ASSEMBLY		FIRE ALARM HORN, WEATHERPROOF	KV	KILOVOLT	
	INTERCOM J BOX WALL MOUNTED AT HEIGHT INDICATED ON DRAWINGS		TELEPHONE		FIRE ALARM HORN, VISUAL ONLY	KVA	KILOVOLT AMPERE	
	JUNCTION BOX, CEILING MOUNTED		BUS DUCT WITH TAKE OFF DEVICE		MAGNETIC DOOR HOLDER	KVAC	KILOVOLT AMPERE CAPACITIVE	
	JUNCTION BOX, WALL MOUNTED		POWER/DATA POWER POLE.		RELAY	KVAR	KILOVOLT AMPERE REACTIVE	
	PHOTOCELL				FIRE FIGHTERS PHONE JACK	KW	KILOWATT	
	MICROPHONE OUTLET, C - CEILING MOUNTED				FIRE FIGHTERS TELEPHONE	KWH	KILOWATT HOUR	
	SPEAKER, CEILING MOUNTED				DOOR CONTACT	LB	POUND	
	SPEAKER, WALL MOUNTED				MAGNETIC LOCK	LPS	LOW PRESSURE SODIUM	
	SPEAKER WITH WALL MOUNTED VOLUME CONTROL			ABBREVIATION DESCRIPTION		M	MANHOLE	
	TIME CLOCK			A	AMPERE(S)	MAX	MAXIMUM	
	VOLUME CONTROL			ABV	ABOVE	MCC	MOTOR CONTROL CENTER	
	BELL			AC	ABOVE COUNTER	MECH	MECHANICAL	
	BUZZER			A/C	AIR CONDITIONING	MEP	MECHANICAL, ELECTRICAL, & PLUMBING	
	PUSHBUTTON			AIC	AMPERE INTERRUPTING CAPACITY	MH	MOUNTING HEIGHT	
	CEILING MOUNTED CLOCK			AFF	ABOVE FINISHED FLOOR	MIN	MINIMUM	
	WALL MOUNTED CLOCK - SINGLE OR D.F.=DOUBLE FACE			AFG	ABOVE FINISHED GRADE	MLO	MAIN LUGS ONLY	
	PROGRAM HORN, WEATHERPROOF			AHU	AIR HANDLING UNIT	M.S.	MOTOR STARTER	
	TRANSFORMER			ATS	AUTOMATIC TRANSFER SWITCH	MTG	MOUNTING	
	AUTOMATIC TRANSFER SWITCH			B.F.	BELOW FLOOR	MV	MERCURY VAPOR	
	EQUIPMENT CONNECTION, HARD WIRED			BFF	BELOW FINISHED FLOOR	NA	NOT APPLICABLE	
	DURESS ALARM BUTTON			BFG	BELOW FINISHED GRADE	NC	NORMALLY CLOSED	
	CARD READER			BLDG	BUILDING	NF	NON FUSED	
	DOOR RELEASE			C	CONDUIT	NL	NIGHT LIGHT (CONNECTED TO UNSWITCHED CIRCUIT)	
	MOTION DETECTOR (SECURITY SYSTEM)			CB	CIRCUIT BREAKER	NO	NORMALLY OPEN	
	MOTION SENSOR (LIGHTING CONTROL SYSTEM)			CCTV	CLOSE CIRCUIT TELEVISION	N.T.S.	NOT-TO-SCALE	
	FIXED VIEW CAMERA			CCT	CIRCUIT	OC	ON CENTER	
	PAN, TILT, ZOOM CAPABLE CAMERA.			COND	CONDUCTOR	OCFI	OWNER FURNISHED CONTRACTOR INSTALLED	
LIGHTING				CPU	CENTRAL PROCESSING UNIT	OH	OVERHEAD	
	INCANDESCENT OR HID FIXTURE, CEILING MOUNTED			DIA	DIAMETER	P	POLE	
	HID FIXTURE EQUIPED WITH QUARTZ RESTRIKE			DIST	DISTRIBUTION	PA	PUBLIC ADDRESS	
	INCANDESCENT OR HID FIXTURE, WALL MOUNTED			DN	DOWN	PB	PUSHBUTTON	
	INCANDESCENT OR HID WALL WASH FIXTURE, CEILING MOUNTED CLEAR SIDE INDICATES DIRECTION OF WASH			DWGS	DRAWINGS	PBX	PRIVATE BUILDING EXCHANGE	
	FLUORESCENT FIXTURE, CEILING OR WALL MOUNTED, SUBSCRIPT INDICATES ASSOCIATED SWITCHING			EC	EMPTY CONDUIT	PC	PULL CHAIN	
	FIXTURE CONNECTED TO EMERGENCY SYSTEM			EDF	ELECTRIC DRINKING FOUNTAIN	PEC	PHOTO CELL	
	FIXTURE WITH ONE BALLAST CONNECTED TO EMERGENCY SYSTEM OR TO BATTERY BACK UP			EF	EXHAUST FAN	PNL	PANELBOARD	
	FLUORESCENT PENDANT FIXTURES.			EMT	ELEC. METALLIC TUBING	PSI	POUNDS PER SQUARE INCH	
	EXIT LIGHT, SINGLE/DOUBLE FACE CEILING MOUNTED WITH ARROWS AS INDICATED IN DRAWINGS			EQMT	EQUIPMENT	PVC	POLY VINYL CHLORIDE CONDUIT	
	EXIT LIGHT, WALL MOUNTED, SINGLE/DOUBLE FACE WITH ARROWS AS INDICATED IN DRAWINGS			EWC	ELECTRIC WATER COOLER	PWR	POWER	
	EMERGENCY LIGHT, BATTERY TYPE WITH CHARGER			ELEC	ELECTRICAL	RG	RIGID GALVANIZED STEEL CONDUIT	
	SYMBOL IDENTIFYING FIXTURE TYPE. ALL FIXTURES THIS ROOM ARE FIXTURE TYPE INDICATED UNLESS INDIVIDUALLY MARKED			EXH	EXHAUST	RMC	RIGID METAL CONDUIT	
	POLE MOUNTED LUMINAIRE, QUANTITY AS INDICATED			EXP	EXPLOSION PROOF	SC	SPLIT CIRCUIT	
	EXTERIOR FLOOD LIGHT			EXIST	EXISTING	SN	SOLID NEUTRAL	
	TRACK LIGHT - TYPE, LENGTH AND QUANTITY OF FIXTURES AS SCHEDULED.			F/A	FIRE ALARM	S.J.B.	SOUND JUNCTION BOX	
	OCCUPANCY SENSOR - WALL AND CEILING MOUNT RESPECTIVELY			FC	FOOTCANDLES	SPEC.	SPECIFICATION	
PANELS AND RELATED ITEMS				FCU	FAN COIL UNIT	SQFT, \square	SQUARE FOOT	
	PANELBOARD, 120/208 VOLT			FLEX	FLEXIBLE METAL CONDUIT	SW	SWITCH	
	PANELBOARD, POWER OR 277/480V			FLUOR	FLUORESCENT	SWBD	SWITCHBOARD	
	SWITCHBOARD OR DISTRIBUTION BOARD			FN	FULL NEUTRAL	TC	TIME CLOCK	
	MOTOR CONTROL CENTER			FT	FEET, FOOT	TELE	TELEPHONE	
	PULL BOX			F.F.	FINISHED FLOOR	TSTAT	THERMOSTAT	
				GALV	GALVANIZED	TV	TELEVISION	
				GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TYP.	TYPICAL	
				GFI	GROUND FAULT INTERRUPTER	U.G.	UNDERGROUND	
				GND	GROUND	UH	UNIT HEATER	
				HID	HIGH INTENSITY DISCHARGE	U.N.O.	UNLESS NOTED OTHERWISE	
				HP	HORSEPOWER	V	VOLT(S)	
				HOA	HAND OFF AUTOMATIC	VP	VAPOR PROOF	
				HPS	HIGH PRESSURE SODIUM	W	WIRE	
				HVAC	HEATING/VENTILATING/AIR CONDITIONING	W/	WITH	
				HZ	HERTZ	WP	WEATHERPROOF	
				IC	INTERCOM	XFMR	TRANSFORMER	
				ID	INSIDE DIAMETER	XPD	TRANSPONDER	



LEGACY ARCHITECTS LLC
 NEW BRAUNFELS, TX
 303-526-8158
 LEGACYARCHITECTS.COM



ARCHITECT/ENGINEER
 B & B RENOVATION
 HEX INDUSTRIES
 278 W. SAN ANTONIO ST.
 NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
0007-23

DRAWN BY:
CSW

CHECKED BY:
MLW

DATE: REVISION:

DATE: ISSUED AS:
8-8-23 PERMIT SET

SHEET TITLE:
ELEC. SYMBOLS, ABBREVIATIONS & GENERAL NOTES

SHEET NUMBER:
E0.0



MEP Design, Planning & Commissioning
 123 Vargas Aly, San Antonio, TX. 78203
 (210) 899-9908 | TBPE# F-15042
 www.mackengineers.com

All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).

DIVISION 26 - ELECTRICAL SPECIFICATIONS

SECTION 260510 - BASIC REQUIREMENTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Drawings and Specifications

1. Division 26 specifications are written in imperative and streamlined format. This imperative language is directed to the Contractor. The word "shall" shall be included by inference where a colon (:) is used within sentences and phrases.

C. Codes and Standards

1. Work shall comply with the local city codes and ordinances, the regulations of state authorities having lawful jurisdiction and the codes, statutes and reference standards identified within these Specifications. These Specifications shall not be construed as negating the regulations or requirements of lawful jurisdictions.

2. Where Specifications require materials or equipment exceeding the minimum requirements of applicable codes and ordinances, the requirements of these Specifications shall take precedence.

1.2 DEFINITIONS & ABBREVIATIONS

A. DEFINITIONS

1. Contract Documents - Drawings and the project manual, including Specifications.

2. Install-to set in place in position for service.

3. Furnish-to supply.

4. Provide-to install and furnish.

5. City - When used in an otherwise non-specific reference anywhere in the Contract documents, City is defined to refer to the local municipal authority governing the project address or the City whose EIU includes the project address.

B. UTILITIES: The Contract Documents reflect the general location and routing of utilities required for this project. Visit the site, and coordinate and confirm the exact requirements for electrical and telephone services.

1. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:

a. Notify the Owner's representative no fewer than fourteen (14) days in advance of proposed interruption of electric service.

b. Indicate method of providing temporary electric service.

c. Do not proceed with interruption of electric service without the Owner's representative's written permission.

2. Temporary Services:

a. Provide temporary electrical service and electric power distribution and temporary lighting throughout the construction site. Install and maintain in accordance with National Electrical Code and OSHA requirements. Make arrangements with the serving utility for point of service for temporary electric service and pay costs for delivery to and use at the site.

b. Existing electrical distributions systems at the site may be utilized for temporary construction power. Submit to the Owner in writing, documents identifying the locations and anticipated maximum demand at which power will be utilized, and obtain the Owner's approval, in writing, prior to connection and utilization.

1.3 SUBMITTAL REQUIREMENTS

A. Provide all electrical submittals at the same time. Submittals are required for new electrical distribution equipment and lighting. Submittal requirements are waived for other sections if specified materials are used.

B. Submittals shall be provided in binders and arranged in sequence by Specification section number. Provide submittals only for specification sections that list this requirement.

C. Submittals may be provided in PDF form.

PART 2 - PRODUCTS

2.1 GENERAL MATERIALS AND EQUIPMENT REQUIREMENTS

A. Materials and equipment shall conform to National Electrical Code requirements and shall be listed by Underwriters Laboratories, Inc. (UL). UL listing will be accepted as evidence that the material or equipment conform to the standards listed in lieu of this listing. Include a statement from a nationally recognized testing agency, indicating that products have been tested in accordance with UL criteria and that the materials and equipment comply with Contract requirements.

2.2 CONCRETE BASES

A. Construct concrete bases of dimensions indicated but not less than 4 inches larger in both directions than supported unit.

B. Use minimum, 3000-psi, 28-day compressive-strength concrete.

C. Anchor equipment to concrete base.

2.3 APPLICATION

A. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.

B. Multiple Raceways, or Cables: Install trough-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

2.4 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

2.5 CONCRETE BASES

A. Construct concrete bases of dimensions indicated but not less than 4 inches larger in both directions than supported unit.

B. Use minimum, 3000-psi, 28-day compressive-strength concrete.

C. Anchor equipment to concrete base.

PART 3 - EXECUTION

3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

A. Coordinate location of access panels and doors for electrical items that are behind finished surfaces or otherwise concealed. Coordinate location of access panels and doors with Architect prior to the associated equipment rough-in.

B. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly.

3.2 VIBRATION ISOLATION

A. Provide vibration isolation means for equipment and materials to prevent the transmission of perceptible vibration, structure borne or air borne noise. Items requiring vibration isolation include:

1. Switchgear, motor control centers, motor starter panelboards, motors, transformers and rotating and reciprocating equipment shall be mounted on cork, rubber or steel spring isolator units properly sized, spaced and loaded as recommended by manufacturer.

2. Electrical Conduit: Isolate from dry type transformers, rotating and reciprocating machinery using flexible conduit, 18" minimum length or 12" of flexible conduit per 1" of conduit diameter with maximum of 36".

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUITS AND CABLES

PART 1 - GENERAL

1.1 MANUFACTURERS

A. **Manufacturers:** Subject to compliance with requirements, provide one of the following:

- Allied Wire & Cable
- American Insulated Wire Corp.; a Leviton Company
- General Cable Corporation
- Sensar Wire & Cable Company
- Southern Company

1.2 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

1.3 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. Service Entrance: Type THHN-THWN, single conductors in raceway or type XHHW, single conductors in raceway.

B. All other applications: Type THHN-THWN, single conductors in raceway.

1.4 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.

B. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

C. Provide support for conductors in vertical raceways in accordance with NEC 300.19. Refer to Table 300.19(A) for support spacing distance requirements of specific cable sizes.

1.5 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings.

C. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches of slack.

1.6 MANUFACTURERS

A. **Manufacturers:** Subject to compliance with requirements, provide one of the following:

- AFC Cable Systems, Inc.
- Hubbell Power Systems, Inc.
- Q-Z/Redney; EGS Electrical Group LLC
- 3M Electrical Products Division
- TE Connectivity

B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

1.7 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 280544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

1.8 FIRESTOPPING

A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating.

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

1.1 CONDUCTORS

A. Insulated Conductors: Copper or tinned-copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

1.2 CONNECTORS

A. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, pressure type with at least two bolts.

B. Bus-bar Connectors: Mechanical type, cast silicon bronze, solderless, compression type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

1.3 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel 3/4 inch by 10 feet (19 mm by 3 m) in diameter.

PART 2 - EXECUTION

2.1 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 PERFORMANCE REQUIREMENTS

A. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.

B. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

1.2 COORDINATION

A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases.

B. Coordinate installation of rod curbs, equipment supports, and roof penetrations.

PART 2 - PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems:

1. For exterior applications, provide hot-dipped galvanized supports and hardware. Stainless steel may be used in lieu of Hot dipped galvanized.

2. For interior applications, provide electro-galvanized supports and hardware.

3. Channel Dimensions: Selected for applicable load criteria.

B. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

C. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.

D. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates.

E. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated or stainless steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.

3. Concrete Inserts: Steel or malleable-iron, slotted support system units.

4. Clamps for Attachment to Steel Structural Elements.

5. Through Bolts: Structural type, hex head, and high strength.

6. Toggle Bolts: All-steel, springhead type.

7. Hanger Rods: Threaded steel.

2.2 MANUFACTURERS

A. **Manufacturers:** Subject to compliance with requirements, provide one of the following:

- Allied Tube & Conduit
- Cooper B-Line Inc.; a division of Cooper Industries
- ERICO International Corporation
- Thomas & Betts Corporation
- Unistrut; Typc International Ltd.

PART 3 - EXECUTION

3.1 APPLICATION

A. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.

B. Multiple Raceways, or Cables: Install trough-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

3.2 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

3.3 CONCRETE BASES

A. Construct concrete bases of dimensions indicated but not less than 4 inches larger in both directions than supported unit.

B. Use minimum, 3000-psi, 28-day compressive-strength concrete.

C. Anchor equipment to concrete base.

SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 DEFINITIONS

A. EMT: Electrical Metallic Tubing.

B. GRC, RGS: Galvanized rigid steel conduit.

C. IMC: Intermediate metal conduit.

D. LFMC: Flexible steel conduit with PVC jacket.

1.2 METAL CONDUITS, TUBING, AND FITTINGS

A. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.

1. Fittings for EMT:

a. Material: Steel.

b. Type: Compression.

1.3 MANUFACTURERS

A. **Manufacturers:** Subject to compliance with requirements, provide one of the following:

- Allied Tube & Conduit; a Typc International Ltd. Co
- Acme Electrical, Inc.
- Electric-Flite Company
- Q-Z/Redney; a brand of EGS Electrical Group
- Republic Conduit
- Thomas & Betts Corporation
- Western Tube and Conduit Company
- Wheland Tube Company; a division of John Manesty Company

PART 2 - EXECUTION

2.1 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed Conduit: GRC (GRS) or IMC or RNC, Type EPC-80-PVC. RNC conduit is not allowed on or above roofs.

2. Concealed Conduit, Aboveground: EMT.

3. Underground Conduit (Service entrance and feeders): concrete encased RNC, Type EPC-40-PVC or Type EPC-80-PVC.

4. Underground Conduit (Branch Circuits): Type EPC-80-PVC, direct buried.

5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.

6. Boxes and Enclosures: NEMA 250, Type 3R.

B. Indoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed, Not Subject to Physical Damage: EMT.

2. Exposed, Not Subject to Severe Physical Damage: EMT.

3. Exposed and Subject to Severe Physical Damage (below 20 feet in elevation): GRC (GRS) or IMC.

4. Concealed in Ceilings and Interior Walls and Partitions: EMT.

5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): RMC, except use LFMC in damp or wet locations.

6. Damp or Wet Locations: GRC (GRS) or IMC.

7. Boxes and Enclosures: Type 1, except use Type 3R stainless steel in institutional and commercial kitchens and damp or wet locations.

C. Minimum Raceway Size: 3/4-inch trade size.

D. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated.

2. EMT: Use compression, steel fittings. Comply with NEMA FB 2.10.

3. Flexible Conduit: Use only fittings listed for use with flexible conduit.

E. Install surface raceways only where indicated on Drawings.

F. Do not install nonmetallic conduit at roof applications or where ambient temperature exceeds 120 deg F.

2.2 INSTALLATION

A. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

B. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction.

C. Conceal raceways within finished walls, ceilings, and floors unless otherwise indicated.

D. Install above grade conduits parallel or perpendicular to building lines.

E. Support conduit within 12 inches of enclosures to which attached.

F. Use EMT for raceways for stub-ups to above recessed ceilings. Provide insulated conduit bushing terminate stub-ups.

G. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat, metal grounding bushings on service conduits.

H. Install pull wires in empty raceways. Cap underground raceways designated as spare above grade alongside raceways in use.

END OF SECTION 260533

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

1.1 IDENTIFICATION SCHEDULE

A. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.

1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded service, feeder, and branch-circuit conductors.

a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if authorities having jurisdiction permit.

b. Colors for 240/120-V Circuits:

1) Phase A: Red.

2) Phase B: Black.

c. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Locate bands to avoid obscuring factory cable markings.

B. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, control wiring, and optical fiber cable.

1.2 WARNING LABELS AND SIGNS

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.

C. Warning label and sign shall include, but are not limited to, the following legends:

1. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES."

2. ARC FLASH.

1.3 EQUIPMENT IDENTIFICATION LABELS

A. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. White letters on a dark-gray background. Minimum letter height shall be 3/8 inch.

B. Stenciled Legend: In non-fading, waterproof, black ink or paint. Minimum letter height shall be 1 inch.

END OF SECTION 260553

SECTION 262416 - PANELBOARDS

PART 1 - GENERAL

1.1 SUBMITTALS

A. Product Data: For each type of panelboard, switching and overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each panelboard and related equipment.

1. Include dimensional plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.

2. Detail enclosure types and details for types other than NEMA 250, Type 1.

3. Detail bus configuration, current, and voltage ratings.

4. Short-circuit current rating of panelboards and overcurrent protective devices.

5. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.

6. Include wiring diagrams for power, signal, and control wiring.

1.2 QUALITY ASSURANCE

A. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.

B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.

1.3 COORDINATION

A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

END OF SECTION 262416

SECTION 262813 - ENCLOSED SWITCHES

PART 1 - GENERAL

1.1 MANUFACTURERS

A. **Manufacturers:** Subject to compliance with requirements, provide one of the following:

- Cooper Busmann, Inc.
- Edison Fuse, Inc.
- Ferraz Shawmut, Inc.
- Littlefuse, Inc.

1.2 FUSE APPLICATIONS

A. Cartridge Fuses:

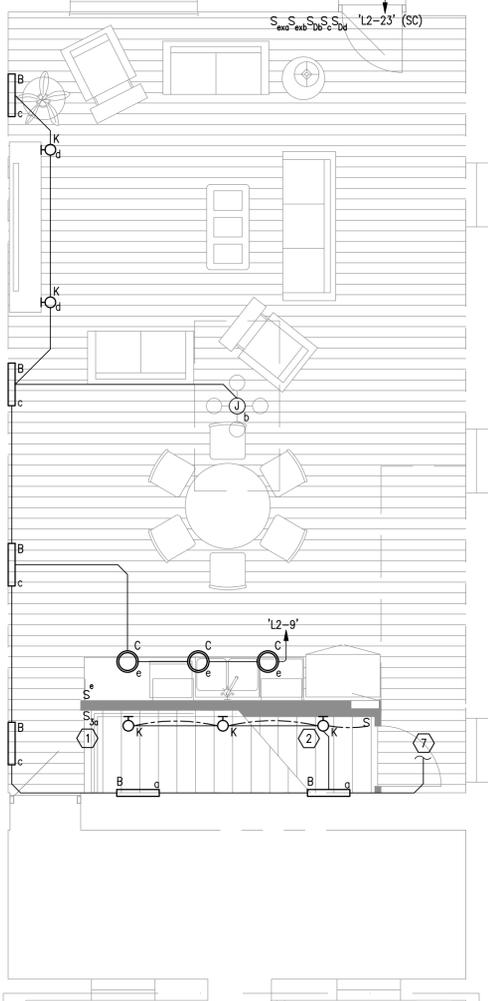
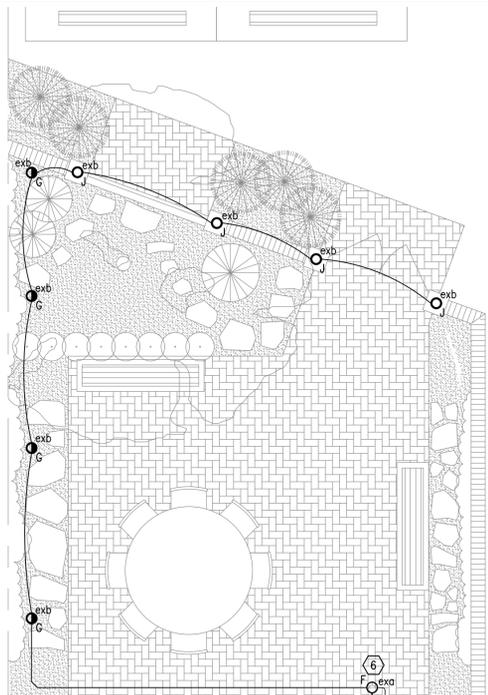
1. Service Entrance: Class RK1, time delay

2. Feeders: Class RK5, time delay

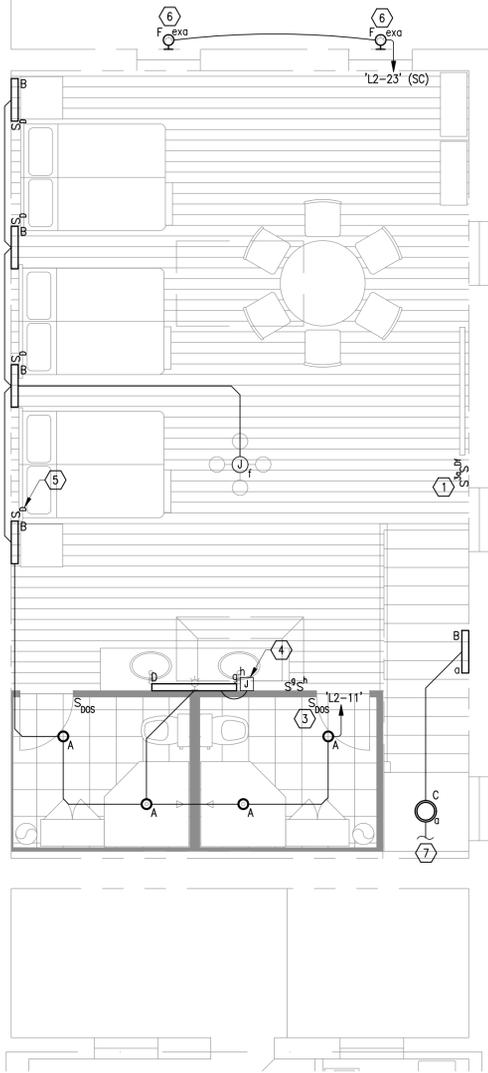
3. Motor Branch Circuits: Class RK5, time delay.

END OF SECTION 262813

SECTION 262816 - ENCLOSED SWITCH



1
E1.0
ELECTRICAL LIGHTING PLAN - 1ST FLOOR
SCALE: 1/4" = 1'-0"



2
E1.0
ELECTRICAL LIGHTING PLAN - 2ND FLOOR
SCALE: 1/4" = 1'-0"

LIGHTING FUNCTIONAL TESTING AND COMMISSIONING PLAN:

1. CONTRACTOR SHALL ENGAGE A 3RD PARTY CERTIFIED COMMISSIONING AGENT TO COMPLETE THE TASKS BELOW TO VERIFY THE LIGHTING CONTROLS ARE OPERATING AS PRESCRIBED BY THE PROJECT DOCUMENTS AND APPLICABLE CODES. WRITTEN DOCUMENTATION SHALL BE PROVIDED TO THE ARCHITECT UPON COMPLETION AND SHALL INCLUDE THE FOLLOWING INFORMATION FOR EACH TASK: DATE PERFORMED, PERSON COMPLETING THE TASK, INITIAL SETTINGS OBSERVED, AND FINAL SETTING UPON COMPLETION.
2. CONTRACTOR SHALL COMPLETE AND DOCUMENT THE FOLLOWING TASKS:
 - 2.A. ENSURE LIGHT FIXTURES ARE INSTALLED AND OPERATIONAL.
 - 2.B. PERFORM OPERATIONAL TESTING OF EMERGENCY EXIT AND EGRESS LIGHTING COMPONENTS AS REQUIRED BY NFPA 101 FOR ANNUAL TESTING.
 - 2.C. ENSURE OCCUPANCY SENSORS ARE INSTALLED AND OPERATIONAL.
 - 2.D. ENSURE DAYLIGHT PHOTOSENSORS ARE INSTALLED AND OPERATIONAL.
3. TEST OF OCCUPANCY SENSOR DEVICES SHALL ENSURE THE FOLLOWING:
 - 3.A. LOCATION AND AIMING ARE SET PER MANUFACTURER'S INSTRUCTIONS.
 - 3.B. DEVICE STATUS INDICATORS ARE FUNCTIONING.
 - 3.C. FIXTURES ARE SWITCHED OR DIMMED AS INDICATED IN THE DRAWINGS.
 - 3.D. TIME DELAYS ARE SET APPROPRIATELY, AND
 - 3.E. MOVEMENT OUTSIDE OF THE SPACE DOES NOT CAUSE THE SENSOR TO OPERATE.
4. TEST ON/OFF SYSTEM WHERE APPLICABLE FOR CORRECT OPERATION.
5. CONTRACTOR SHALL ENSURE THE STEPS ABOVE ARE COMPLETED PRIOR TO SUBSTANTIAL COMPLETION TO AVOID POTENTIAL DELAYS IN OBTAINING CERTIFICATE OF OCCUPANCY. CONTRACTOR SHALL PROVIDE ALL DOCUMENTATION AS REQUIRED BY THE AHJ TO SATISFY ALL PERMITTING OBLIGATIONS.

GENERAL NOTES: (THIS SHEET ONLY)

- A. PROVIDE UNSWITCHED CONDUCTORS IN CIRCUITS SERVING BATTERY POWERED EGRESS LIGHTS AND EXIT SIGNS.
- B. ELECTRICAL DRAWINGS SHOW GENERAL LOCATIONS OF LIGHTING FIXTURES ONLY. FOR EXACT LOCATIONS AND SPACING, SEE ARCHITECTURAL DRAWINGS/ELEVATIONS. IF CONTRACTOR DETERMINES THAT THERE IS A DIFFERENCE IN QUANTITY OF FIXTURES SHOWN ON THE ARCHITECTURAL AND ELECTRICAL DRAWINGS, HE SHALL USE THE HIGHER NUMBER OF THE TWO QUANTITIES FOR BIDDING, THEN CONTACT THE DESIGN TEAM FOR FINAL RESOLUTION.
- C. COORDINATE LIGHTING FIXTURE LOCATIONS IN MECHANICAL AND TELECOM EQUIPMENT ROOMS BASED ON ACTUAL EQUIPMENT LAYOUT. REVIEW LAYOUT WITH MECHANICAL AND LOW VOLTAGE CABLING CONTRACTORS PRIOR TO ROUGH-IN.
- D. PROVIDE LIGHTING CONTROL SYSTEM WITH ALL NECESSARY ACCESSORIES FOR A COMPLETE INSTALLATION. LIGHTING CONTROL SYSTEM SHALL INCLUDE ASTRONOMICAL TIMECLOCK SYSTEM, HOUSEKEEPING OVERRIDE "ON" SWITCH CONTROL. PROVIDE THE FOLLOWING LIGHTING CONTROL SCHEME:
 - E.A. EXTERIOR LIGHTING:
 - E.A. TO BE CONTROLLED BY BY 2-CHANNEL TIME CLOCK WITH OVERRIDE TOGGLE SWITCH FOR LOCAL CONTROL OF BUILDING WALL MOUNTED FIXTURE FOR CHANNEL 1 AND ALL OTHER EXTERIOR FIXTURES ON CHANNEL 2.
 - F. ALL SENSORS TO HAVE 30-MINUTE TIME DELAY FOR OPERATION.
- G. PROVIDE FIRE-RATED MATERIAL AROUND ALL PENETRATIONS CREATED BY CONDUITS, ETC. IN FIRE RATED PARTITIONS. REFER TO ARCHITECTURAL DRAWINGS FOR DESIGNATED AREAS.
- H. REFERENCE LIGHT FIXTURE SCHEDULE FOR ADDITIONAL FIXTURE INFORMATION.

KEYED NOTES: (THIS SHEET ONLY)

1. PROVIDE THREE-WAY SWITCH FOR CONTROL OF STAIRWAY LIGHTING DENOTED BY LETTER 'o'.
2. LIGHTING TO BE MOUNTED UNDER STAIRS IN CLOSET/STAIRWAY AREA.
3. PROVIDE WALL MOUNTED, DUAL TECHNOLOGY, DUAL CIRCUIT, OCCUPANCY SENSOR FOR LIGHTING AND EXHAUST FAN CONTROL. REFERENCE LIGHTING CONTROL DETAILS, SHEET E4.1, FOR ADDITIONAL INFORMATION. (TYPICAL)
4. PROVIDE RECESSED JUNCTION BOX FOR POWER CONNECTION TO LIGHTED MIRROR. CONNECT TO SWITCH FOR CONTROL AS NOTED.
5. PROVIDE DIMMER SWITCH FOR CONTROL OF WALL SCONCE. (TYPICAL)
6. LIGHT FIXTURE TO BE MOUNTED AT THE FOLLOWING HEIGHTS: 1ST FLOOR AT 12" ABOVE WINDOW BRICK ARCH. 2ND FLOOR AT 6" ABOVE WINDOW BRICK ARCH.
7. CONTINUE CIRCUIT TO POWER STAIR FIXTURES FROM 1ST FLOOR LIGHTING POWER CIRCUIT.



LEGACY ARCHITECTS LLC
NEW BRAUNFELS, TX
303-526-8198
LEXARCHIT@GMAIL.COM

ARCHITECT/ENGINEER



B & B RENOVATION

HEX INDUSTRIES
278 W. SAN ANTONIO ST.
NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
0007-23

DRAWN BY:
CSW

CHECKED BY:
MLW

DATE: REVISION:

DATE: ISSUED AS:
8-8-23 PERMIT SET

SHEET TITLE:

ELECTRICAL LIGHTING PLAN

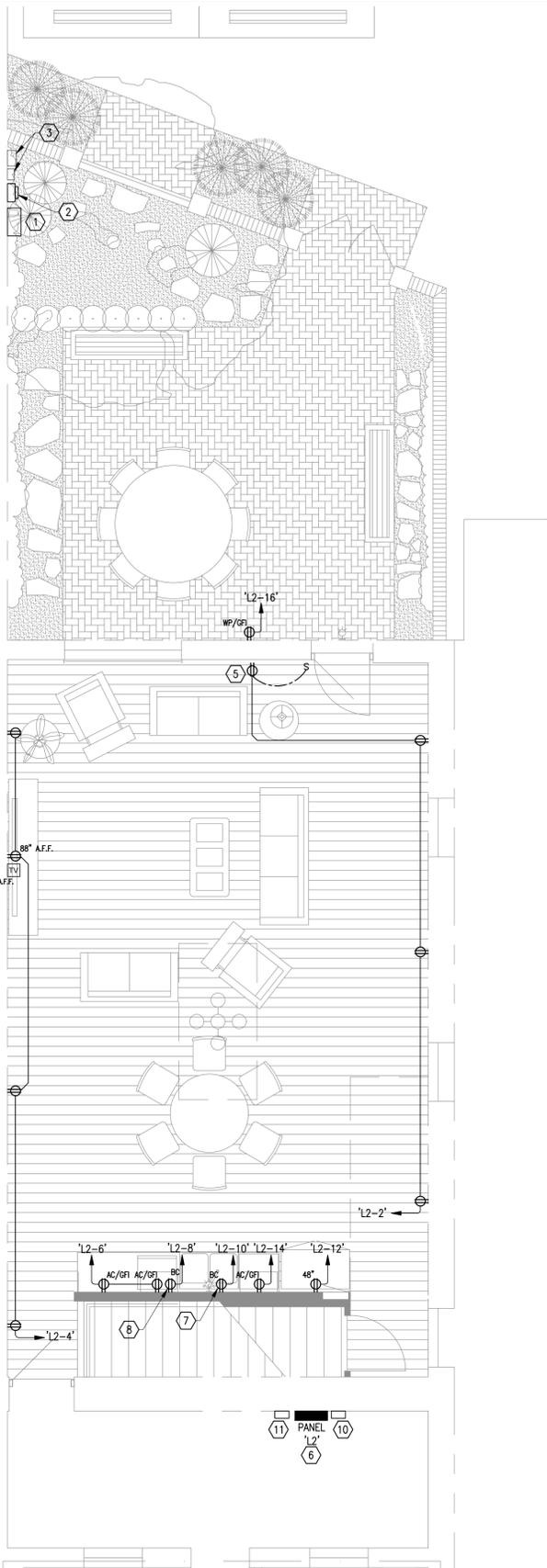
SHEET NUMBER:

E1.0

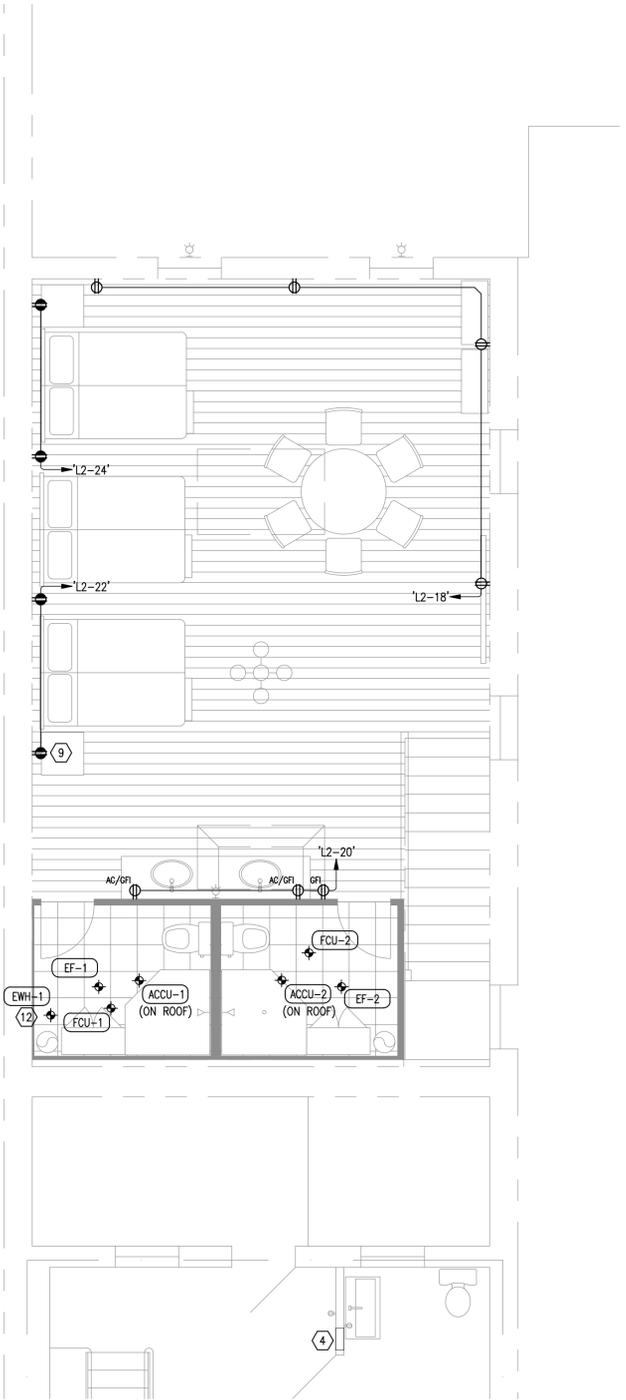


MEP Design, Planning & Commissioning
123 Vargas Aly, San Antonio, TX. 78203
(210) 899-9908 | TBPE# F-15042
www.mackengineers.com

© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).



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



2 ELECTRICAL POWER PLAN - 2ND FLOOR
 SCALE: 1/4" = 1'-0"

GENERAL NOTES: (THIS SHEET ONLY)

- A. REFERENCE EQUIPMENT CONNECTION SCHEDULE FOR REQUIREMENTS AND ADDITIONAL INFORMATION OF TAGGED EQUIPMENT SHOWN ON PLAN.
- B. COORDINATE EXACT LOCATIONS OF MECHANICAL/PLUMBING EQUIPMENT WITH OTHER DISCIPLINES.
- C. COORDINATE ALL RECEPTACLES LOCATIONS WITH ARCHITECTURAL INTERIOR ELEVATIONS.
- D. RECEPTACLES LOCATED WITHIN 6" OF ANY PLUMBING FIXTURE, AT BREAK ROOM COUNTERTOPS, AT THE EXTERIOR OR OTHERWISE EXPOSED TO WATER SHALL BE TYPE GFCI. PROVIDE "WHILE-IN-USE", CAST ALUMINUM COVERS FOR EXTERIOR RECEPTACLES.
- E. ALL RECEPTACLES SHALL BE COMMERCIAL SPECIFICATION GRADE UNLESS NOTED OTHERWISE.
- F. PROVIDE 120V POWER TO EACH HVAC DDC CONTROL PANEL. COORDINATE EXACT LOCATIONS AND QUANTITIES WITH MECHANICAL DRAWINGS.
- G. COORDINATE DISCONNECT SWITCHES, VFDS AND STARTER LOCATIONS WITH EQUIPMENT INSTALLERS TO MAINTAIN PROPER MAINTENANCE AND CODE CLEARANCES.
- H. RECEPTACLES LOCATED IN ROOMS ACCESSIBLE TO VISITORS SHALL BE TAMPER RESISTANT.

KEYED NOTES: (THIS SHEET ONLY)

- 1. NEW MAIN SERVICE PANEL. REFERENCE ONE-LINE DIAGRAM, SHEET E3.0, FOR ADDITIONAL INFORMATION.
- 2. UTILITY METER. REFERENCE ONE-LINE DIAGRAM, SHEET E3.0, FOR ADDITIONAL INFORMATION.
- 3. EXISTING WALL MOUNTED COMMUNICATIONS EQUIPMENT TO REMAIN.
- 4. EXISTING ELECTRICAL PANEL 'L1' TO REMAIN. REFERENCE ELECTRICAL ONE-LINE DIAGRAM, SHEET E3.0, FOR ADDITIONAL INFORMATION.
- 5. DUPLEX RECEPTACLE TO BE CONTROL BY LIGHT SWITCH.
- 6. NEW LOAD CENTER 'L2' LOCATION. REFERENCE ONE-LINE DIAGRAM, SHEET E3.0, FOR ADDITIONAL INFORMATION.
- 7. BELOW COUNTER RECEPTACLE FOR GARBAGE DISPOSAL. PROVIDE MOMENTARY SWITCH ABOVE COUNTER FOR CONTROL.
- 8. BELOW COUNTER RECEPTACLE FOR DISHWASHER.
- 9. DUPLEX RECEPTACLE WITH TWO 5A-USB PORTS. (TYPICAL FOR SHADED RECEPTACLE)
- 10. TIME CLOCK FOR EXTERIOR LIGHTING CONTROL. REFERENCE ONE-LINE DIAGRAM, SHEET E3.0, FOR ADDITIONAL INFORMATION.
- 11. COMMUNICATIONS BOX FOR INTERNET AND CABLE TV. COORDINATE INSTALLATION WITH SERVICE PROVIDER.
- 12. PROVIDE ELECTRICAL CONNECTION FOR HEAT TRACE AS REQUIRED BY PLUMBING EQUIPMENT SCHEDULE. CONNECT TO CIRCUIT IN PANEL SCHEDULE 'L2'. COORDINATE FINAL POWER REQUIREMENTS WITH EQUIPMENT MANUFACTURER BEFORE ROUGH-IN.



LEGACY ARCHITECTS LLC
 NEW BRAUNFELS, TX
 303-526-8198
 LEGARCHITECTS.COM

ARCHITECT/ENGINEER



B & B RENOVATION

HEX INDUSTRIES
 278 W. SAN ANTONIO ST.
 NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
 0007-23

DRAWN BY:
 CSW

CHECKED BY:
 MLW

DATE: REVISION:

DATE: ISSUED AS:
 8-8-23 PERMIT SET

SHEET TITLE:

ELECTRICAL POWER PLAN

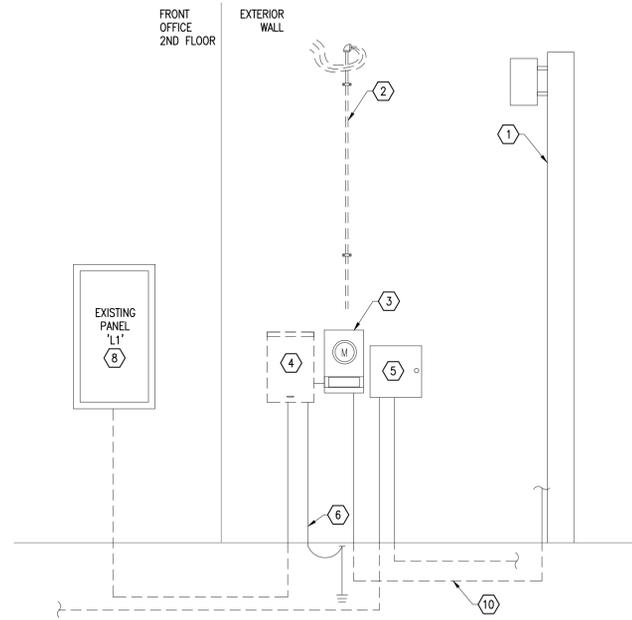
SHEET NUMBER:

E2.0



MEP Design, Planning & Commissioning
 123 Vargas Aly, San Antonio, TX. 78203
 (210) 899-9908 | TBP# F-15042
 www.mackengineers.com

© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).



1 EXISTING ELECTRICAL ONE-LINE DIAGRAM
E3.0 SCALE: NOT-TO-SCALE

LOW VOLTAGE SHORT CIRCUIT CALCULATIONS

$$\text{TRANSFORMER AMP (208V)} = \frac{75 \text{ KVA} \times 1000}{(208V)(\sqrt{3})} = 208 \text{ AMPS}$$

$$I = \frac{\text{TRANSFORMER AMPS}}{Z \%} = \frac{208}{5\%} = 4160 \text{ AMPS}$$
 MINIMUM AIC RATING = 10000

ANALYSIS OF PROJECTED ELECTRICAL LOAD
Hex B&B Reno

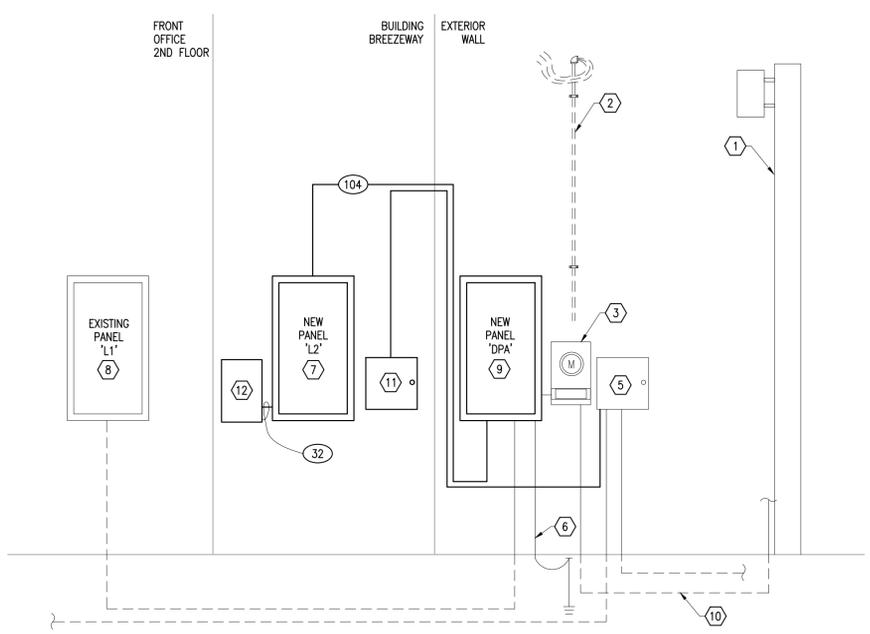
8/8/2023
BUILDING AREA: - SF
SERVICE VOLTAGE: 208/120V, 3Ph., 4W

LOAD DESCRIPTION	CONNECTED LOAD, VA	NEC LOAD	
		KVA	AMPERES
EXISTING LOADS (FROM UTILITY DEMAND):			
PRIOR 12 MONTH PEAK DEMAND (DEC 2022)	16.54 kW @ 0.9 PF	18.378	18.4
		7.6	21
		0.9	1.1
		-	-
		1.5	1.5
		-	-
		-	-
		-	-
		5.7	5.7
		-	-
		-	-
		4.5	4.5
		3.2	0.8
		2.2	6.0
		4.0	11.1
		6	17
		46	127
		75	200

NOTES:
 1 EXISTING DEMAND LOAD DETERMINED IN ACCORDANCE WITH NEC 220.87
 2 DIVERSIFIED PER NEC 220.14
 3 UNIT LOADS ARE PER NEC TABLE 220.12
 4 THE GREATER OF TOTAL HEATING AND COOLING IS USED
 5 TEMPERATURE CONTROLLED AND INTERMITTENT USE EQPT, DIVERSIFIED PER NEC 220.56
 6 INCLUDES DOMESTIC WATER HEATING EQPT AND ASSOCIATED PUMPS, ETC

WIRE SCHEDULE

(32) 2#10, 1 #10GND, IN 3/4" C.
 (104) 4#1, 1 #8GND, IN 2" C.



2 NEW ELECTRICAL ONE-LINE DIAGRAM
E3.0 SCALE: NOT-TO-SCALE

KEYED NOTES: (THIS SHEET ONLY)

- EXISTING UTILITY SERVICE RISER POLE WITH TRANSFORMERS TO REMAIN. POSSIBLE SERVICE TRANSFORMER UPGRADE. COORDINATE UPGRADE WITH LOCAL UTILITY PROVIDER.
- EXISTING ABANDONED OVERHEAD SECONDARY FEED CONDUIT TO BE REMOVED.
- EXISTING UTILITY ENERGY METER TO BE REMAIN.
- EXISTING MAIN DISCONNECTING MEANS ENCLOSED CIRCUIT BREAKER TO BE REPLACED. SALVAGE FEED TO EXISTING PANEL 'L1' FOR RECONNECTION TO NEW MAIN EXTERIOR PANEL 'DPA'.
- EXISTING COMMUNICATIONS EQUIPMENT TO REMAIN. PROVIDE NEW FEED INTO RENOVATED SPACE FOR INTERNET AND CABLE TO TV LOCATION. REFERENCE POWER PLANS, SHEET E2.0, FOR LOCATIONS AND ADDITIONAL INFORMATION.
- EXISTING GEC AND GROUND ROD TO BE SALVAGED FOR RECONNECTION TO NEW EXTERIOR MAIN PANEL 'DPA'. CONTRACTOR TO VERIFY SIZE OF EXISTING GEC IS AT LEAST A #6 COPPER CONDUCTOR OR PROVIDE APPROPRIATE SIZE PER NEC TABLE 250.66.
- NEW LOAD CENTER PANEL 'L2'. REFERENCE PANEL SCHEDULE, SHEET E3.1, FOR ADDITIONAL INFORMATION.
- EXISTING 2ND FLOOR PANEL 'L1' TO REMAIN.
- NEW MAIN PANEL 'DPA'. REFERENCE PANEL SCHEDULE, SHEET E3.1, FOR ADDITIONAL INFORMATION. PROVIDE NEUTRAL AND GROUND BOND AT THIS LOCATION ONLY.
- EXISTING UNDERGROUND SECONDARY FEED FROM POLE MOUNTED TRANSFORMERS TO REMAIN.
- NEW COMMUNICATIONS CABINET FOR INTERNET/CABLE TV PROVIDER. COORDINATE INSTALLATION WITH SERVICE PROVIDER. ROUTE CABLE FROM EXISTING EXTERIOR COMMUNICATIONS DEVICE AS REQUIRED BY SERVICE PROVIDER.
- NEW TWO CHANNEL ASTRONOMIC DIGITAL TIME CLOCK FOR CONTROL OF EXTERIOR LIGHTING. ONE CHANNEL TO CONTROL BUILDING MOUNTED FIXTURES AND THE OTHER CHANNEL TO CONTROL ALL OTHER EXTERIOR FIXTURES. PROVIDE TOGGLE SWITCH FOR MANUAL OVERRIDE CONTROL. TIMECLOCK TO PROVIDE POWER TO TOGGLE SWITCHES PER SCHEDULE PROVIDED BY OWNER. HOURS OF OPERATION FOR EXTERIOR FIXTURES WILL BE MINIMUM FROM DUSK TO DAWN. CONNECT POWER FOR TIME CLOCK TO CIRCUIT AS NOTED ON PANEL SCHEDULE 'L2'. TORK MODEL #DGLC200A-NC OR APPROVED EQUAL.

GENERAL NOTES: (THIS SHEET ONLY)

- LOCATIONS OF DEVICES ARE DIAGRAMMATICAL. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY CONFLICTS PRIOR TO ROUGH-IN.
- INSTALLATION OF NEW SERVICE ENTRANCE EQUIPMENT TO BE COORDINATED WITH THE LOCAL UTILITY PROVIDER AND COMPLY WITH THE LATEST VERSION OF THEIR ELECTRICAL SERVICE INSTALLATION STANDARDS.
- COORDINATE DISCONNECT SWITCHES, VFDS AND STARTER LOCATIONS WITH EQUIPMENT INSTALLERS TO MAINTAIN PROPER MAINTENANCE AND CODE CLEARANCES.
- REFERENCE ELECTRICAL PANEL SCHEDULES, SHEET E3.1, FOR PANELS NOTED ON SHEET.
- ALL WIRING SHOWN ON WIRE SCHEDULE IS COPPER CONDUCTORS. IF ALUMINUM IS USED CONTRACTOR WILL NEED TO UPSIZE ACCORDINGLY.



LEGACY ARCHITECTS LLC
 NEW BRAUNFELS, TX
 303-526-8198
 LEGARCHIT@GMAIL.COM

ARCHITECT/ENGINEER

MICHAEL WASHINGTON
 LICENSED PROFESSIONAL ENGINEER
 08-08-23
 MACK ENGINEERS
 REG. NO. F-15042

B & B RENOVATION
 HEX INDUSTRIES
 278 W. SAN ANTONIO ST.
 NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
0007-23

DRAWN BY:
CSW

CHECKED BY:
MLW

DATE:	REVISION:

DATE: 8-8-23 ISSUED AS: PERMIT SET

SHEET TITLE:
ELECTRICAL ONE-LINE DIAGRAM
SHEET NUMBER:

E3.0



MEP Design, Planning & Commissioning
 123 Vargas Aly, San Antonio, TX. 78203
 (210) 899-9908 | TBP# F-15042
 www.mackengineers.com

© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).

EQUIPMENT CONNECTION SCHEDULE												
EQUIPMENT TAG	VOLTAGE / PHASE	KW HEAT	VOLTAGE / PHASE	MOTOR (HP)	EQUIPMENT (FLA)	EQUIPMENT (MCA)	OCP	DISCONNECTING MEANS	ENCLOSURE NEMA RATING	WIRE & CONDUIT	CIRCUIT NUMBER	NOTES
DX SPLIT SYSTEM	HEATER DATA		FAN DATA									
'ACCU-1'			208/1		10.2	12.8	15.0	240V, 30A, NF, HD	N3R	2#10, 1#10GND, IN 1" C.		3,5,6,8
'FCU-1'			208/1		--	--	--	--	N1	--		3,5,6,8
'ACCU-2'			208/1		13.5	16.9	20.0	240V, 30A, NF, HD	N3R	2#10, 1#10GND, IN 1" C.		3,5,6,8
'FCU-2'			208/1		--	--	--	--	N1	--		3,5,6,8
EXHAUST FAN			FAN DATA									
'EF-1'			120/1	FRAC	0.19	0.23	15.0	20A MOTOR RATED SWITCH	N3R	2#10, 1#10GND, IN 3/4" C.		7
'EF-2'			120/1	FRAC	0.19	0.23	15.0	20A MOTOR RATED SWITCH	N3R	2#10, 1#10GND, IN 3/4" C.		7
ELECTRIC WATER HEATER	HEATER DATA											
'EWH-1'	208/3	4.5			12.5	15.6	30	240V, 60A, NF, HD	N1	3#4, 1#10GND, IN 1-1/2" C.		7

NOTES:
1. STARTER PROVIDED BY DIVISION 23. INSTALL AND WIRE THROUGH DIVISION 26.
2. VFD PROVIDED BY DIVISION 23. INSTALL AND WIRE THROUGH DIVISION 26.
3. DISCONNECT SWITCH PROVIDED, INSTALLED, AND WIRED THROUGH DIVISION 26.
4. DUAL PUMP CONTROLLER PROVIDED BY DIVISION 23. INSTALL AND WIRE THROUGH DIVISION 26.
5. CONTROL PANEL PROVIDED BY DIVISION 23. INSTALL AND WIRE THROUGH DIVISION 26.
6. POWER CONNECTION BETWEEN INDOOR AND OUTDOOR UNITS BY DIVISION 23.
7. CONTROLS PROVIDED BY DIVISION 23. INSTALL AND WIRE THROUGH DIVISION 26.
8. PROVIDE POWER CONNECTION BETWEEN INDOOR AND OUTDOOR UNIT PER MECHANICAL DRAWINGS/EQUIPMENT CONNECTION SCHEDULE.
9. INSTALL SMOKE DETECTORS AS REQUIRED BY MECHANICAL. COORDINATE CONTROLS WITH FIRE ALARM FOR FUNCTIONALITY.

GENERAL NOTES:
1. VERIFY ELECTRICAL REQUIREMENTS WITH MECHANICAL / PLUMBING EQUIPMENT SUBMITTALS PRIOR TO ELECTRICAL ROUGH-IN.

LIGHTING FIXTURE SCHEDULE							
TYPE	LAMPS	MOUNTING	MOUNT HEIGHT	VOLTS	WATTS	DESCRIPTION	MANUFACTURER AND CATALOG NO.
A	3500K LED 1500 LUMENS	RECESSED	CEILING	UNV	13.6	6" WET LOCATION RATED LED DOWNLIGHT	LIGHTOLIER # 6RN-P6RDL15835COPZ10U
B	3500K LED 534 LUMENS	WALL	10' A.F.F.	UNV	50	DECORATIVE PAWLING 17" TALL WALL SCONCE WITH 3 LIGHTS.	HUDSON VALLEY LIGHTING # 7213
C	3000K LED 1100 LUMENS	PENDANT	CEILING	120	10	PENDANT FIXTURE	ARKANSAS LIGHTING # 4084P (LED BULB NOT INCLUDED)
D	3500K LED 1989 LUMENS	WALL	ABOVE MIRROR	UNV	21	LINEAR VANITY FIXTURE	BROWNLEE # 5172-25-XX-H21-35K
F	3500K LED 1250 LUMENS	WALL	UNV	17.5	17.5	GOOSENECK TYPE FIXTURE	BARN LIGHT # BLE-G-WHS12-NA-G26-NA-NA-NA-LED16-3500K-DL
G	3000K LED 1734 LUMENS	RECESSED	GRADE	120	19	IN-GRADE UPLIGHT WALL GRAZING FIXTURE	HADCO # SL43-XX-W-LS-X-X-SP1
H	3500K LED 3987 LUMENS	SURFACE	CEILING	UNV	30	4' LED STRIP LIGHT	DAYBRITE # FSS440L835-UNV-DIM
J	3000K LED 2379 LUMENS	SURFACE	TOP OF COLUMN	UNV	35	DECORATIVE BRONZE LIGHT FIXTURE WITH FLAME EFFECT LIGHT BULB.	HADCO # 6134-XX-B-G-35L740-X-N
K	3000K LED	WALL	9' A.F.F.	120	5	DECORATIVE VERTICLE LINEAR LIGHT FIXTURE	ARKANSAS LIGHTING # 4179C-BK
X1	LED INCLUDED	UNIVERSAL		120/277	0.92	SINGLE FACE EXIT LIGHT FIXTURE, UNIVERSAL MOUNTING, WHITE HOUSING FINISH, RED LETTER COLOR, NICKEL-CADMIUM BATTERY, STENCIL FACE TYPE WITH UNIVERSAL CHEVRON INSERTS WITH 2 HEAD LED EMERGENCY LIGHTS. DUAL VOLTAGE.	EELP # XCS2RW

1. COORDINATE FINAL FIXTURE FINISH WITH ARCHITECT/OWNER PRIOR TO PURCHASE.

NEW PANEL 'DPA'												
PROJECT :	Hex B&B Reno	MAIN CIRCUIT BREAKER :	200A	ENCLOSURE :	NEMA 1	0	RCPT	5	HEAT			
PROJECT # :	0007-23	MAIN LUGS ONLY :		MOUNTING :	SURFACE	1	INT LGT	6	A/C			
LOCATION :	ELECTRICAL RM	BUSSING :	225A	CB TYPE :	BOLT-ON	2	EXT LGT	7	KITCH			
NOTES :		VOLTAGE :	208/120V, 3PH, 4W	PROVIDE :	NEUTRAL BUS	3	EQPT	8	ELEV			
		INTERRUPTING :	10kAIC	GROUND BUS		4	FANS	9	EVH			
CKT	AMPS	POLE	CIRCUIT DESCRIPTION	LOAD	TYPE	PH	TYPE	LOAD	CIRCUIT DESCRIPTION	AMPS	POLE	CKT
1						A		7,190				2
3	200	3	EXISTING PANEL 'L1'			B		6,598	NEW PANEL 'L2'	100	3	4
5						C		6,645				6
7	20	1	SPARE			A			SPARE	20	1	8
9	20	1	SPARE			B			SPARE	20	1	10
11	20	1	SPARE			C			SPARE	20	1	12
13	20	1	BUSSED SPACE			A			BUSSED SPACE	20	1	14
15	20	1	BUSSED SPACE			B			BUSSED SPACE	20	1	16
17	20	1	BUSSED SPACE			C			BUSSED SPACE	20	1	18
19	20	1	BUSSED SPACE			A			BUSSED SPACE	20	1	20
21	20	1	BUSSED SPACE			B			BUSSED SPACE	20	1	22
23	20	1	BUSSED SPACE			C			BUSSED SPACE	20	1	24
			PANEL VA	SUB FEED	FEED THRU	TOTAL CONN	TOTAL DEMAND	VA	AMPS			NOTES :
			7,190			7,190	7,689	64				
			6,598			6,598	7,055	59				
			6,645			6,645	7,106	59				
			20,433			20,433	21,851	61				REVISIONS:

MaCK Engineers v2.0 - April-15

EXISTING PANEL 'L1'												
PROJECT :	Hex B&B Reno	MAIN CIRCUIT BREAKER :		ENCLOSURE :	NEMA 1	0	RCPT	5	HEAT			
PROJECT # :	0007-23	MAIN LUGS ONLY :	225A	MOUNTING :	RECESSED	1	INT LGT	6	A/C			
LOCATION :	ELECTRICAL RM	BUSSING :	225A	CB TYPE :	BOLT-ON	2	EXT LGT	7	KITCH			
NOTES :		VOLTAGE :	208/120V, 3PH, 4W	PROVIDE :	NEUTRAL BUS	3	EQPT	8	ELEV			
		INTERRUPTING :	10kAIC	GROUND BUS		4	FANS	9	EVH			
CKT	AMPS	POLE	CIRCUIT DESCRIPTION	LOAD	TYPE	PH	TYPE	LOAD	CIRCUIT DESCRIPTION	AMPS	POLE	CKT
1	20	1	BATH GFI			A						2
3	20	1	BATH LIGHTING			B			AIR HANDLER	50	3	4
5	20	1	BUSSED SPACE			C						6
7	20	1	KITCHEN LIGHTS			A			RR LIGHTS	20	1	8
9	20	1	PLUG MOLD			B			WASHER	20	1	10
11	20	1	PLUG MOLD			C			RR GFCI	20	1	12
13	30	2	DRYER 220V			A			WATER HEATER 220V	30	2	14
15						B						16
17	20	1	BUSSED SPACE			C			BUSSED SPACE	20	1	18
19	20	1	BUSSED SPACE			A			BUSSED SPACE	20	1	20
			PANEL VA	SUB FEED	FEED THRU	TOTAL CONN	TOTAL DEMAND	VA	AMPS			NOTES :
												REVISIONS:

MaCK Engineers v2.0 - April-15

NEW PANEL 'L2'												
PROJECT :	Hex B&B Reno	MAIN CIRCUIT BREAKER :	100A	ENCLOSURE :	NEMA 1	0	RCPT	5	HEAT			
PROJECT # :	0007-23	MAIN LUGS ONLY :		MOUNTING :	SURFACE	1	INT LGT	6	A/C			
LOCATION :	ELECTRICAL RM	BUSSING :	225A	CB TYPE :	BOLT-ON	2	EXT LGT	7	KITCH			
NOTES :		VOLTAGE :	208/120V, 3PH, 4W	PROVIDE :	NEUTRAL BUS	3	EQPT	8	ELEV			
		INTERRUPTING :	10kAIC	GROUND BUS		4	FANS	9	EVH			
CKT	AMPS	POLE	CIRCUIT DESCRIPTION	LOAD	TYPE	PH	TYPE	LOAD	CIRCUIT DESCRIPTION	AMPS	POLE	CKT
1				1,228	6	A	0	720	1ST FLR - EAST WALL RECPT	20	1	2
3	15	3	'ACCU-1'	1,228	6	B	0	720	1ST FLR - WEST WALL RECPT	20	1	4
5				1,622	6	C	0	900	1ST FLR - CNTR GFCI RECPT	20	1	6
7	20	3	'ACCU-2'	1,622	6	A	0	900	1ST FLR - DISHWASHER	20	1	8
9	20	1	1ST FLOOR LIGHTING	530	1	B	0	1,080	1ST FLR - GARBAGE DISPOSAL	20	1	10
11	20	1	2ND FLOOR LIGHTING	375	1	C	0	1,440	1ST FLR - FRIDGE	20	1	12
13				1,499	9	A	0	180	1ST FLR - CNTR GFCI RECPT	20	1	14
15	30	3	'EWH-1'	1,499	9	B	0	180	1ST FLR - EXTERIOR GFCI RECPT	20	1	16
17				1,499	9	C	0	720	2ND FLR - WINDOW RECPT	20	1	18
19	20	1	TIME CLOCK POWER	500	3	A	0	540	2ND FLR - CNTR RECPT	20	1	20
21	20	1	EWH-1 HEAT TRACE POWER	1,000	3	B	0	360	2ND FLR - SOUTH BED RECPT	20	1	22
23	20	1	EXTERIOR LIGHTING	269	2	C	0	360	2ND FLR - NORTH BED RECPT	20	1	24
25	20	1	SPARE			A			SPARE	20	1	26
27	20	1	SPARE			B			SPARE	20	1	28
29	20	1	SPARE			C			SPARE	20	1	30
31	20	1	BUSSED SPACE			A			BUSSED SPACE	20	1	32
33	20	1	BUSSED SPACE			B			BUSSED SPACE	20	1	34
35	20	1	BUSSED SPACE			C			BUSSED SPACE	20	1	36
37	20	1	BUSSED SPACE			A			BUSSED SPACE	20	1	38
39	20	1	BUSSED SPACE			B			BUSSED SPACE	20	1	40
41	20	1	BUSSED SPACE			C			BUSSED SPACE	20	1	42
			PANEL VA	SUB FEED	FEED THRU	TOTAL CONN	TOTAL DEMAND	VA	AMPS			NOTES :
			7,190			7,190	7,689	64				
			6,598			6,598	7,055	59				
			6,645			6,645	7,106	59				
			20,433			20,433	21,851	61				REVISIONS:

MaCK Engineers v2.0 - April-15



LEGACY ARCHITECTS LLC
NEW BRAUNFELS, TX
303-526-8158
LENT@LEGACYARCH.COM

ARCHITECT/ENGINEER

B & B RENOVATION
HEX INDUSTRIES
278 W. SAN ANTONIO ST.
NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
0007-23

DRAWN BY:
CSW

CHECKED BY:
MLW

DATE: _____ REVISION: _____

DATE: 8-8-23 ISSUED AS:
PERMIT SET

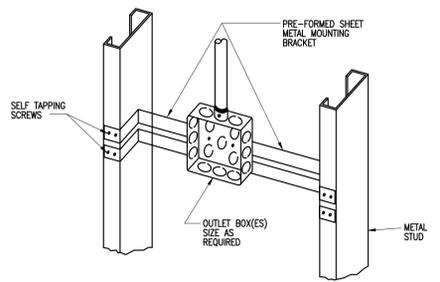
SHEET TITLE:
ELECTRICAL PANEL SCHEDULES

SHEET NUMBER:
E3.1



MEP Design, Planning & Commissioning
123 Vargas Aly, San Antonio, TX. 78203
(210) 899-9908 | TBPE# F-15042
www.mackengineers.com

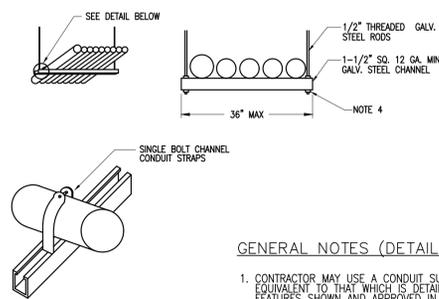
© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).



GENERAL NOTES (DETAIL NO. 1 ONLY)

1. CONDUITS SHALL BE SUPPORTED PER NEC 358.30(A).
2. THIS DETAIL TO BE USED FOR ALL OUTLET AND DEVICE BOX INSTALLATIONS NOT INCLUDED IN OTHER DETAILS. IF DEPTH OF BOX EXCEEDS 2-1/2", PROVIDE SUPPORT BRACKET SIMILAR TO AND EQUAL IN STRENGTH TO THE ONE SPECIFIED.

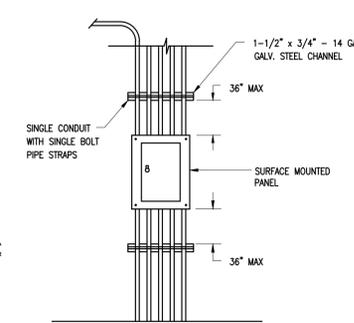
1 BOX MOUNTING DETAIL
E-4.0 SCALE: NOT-TO-SCALE



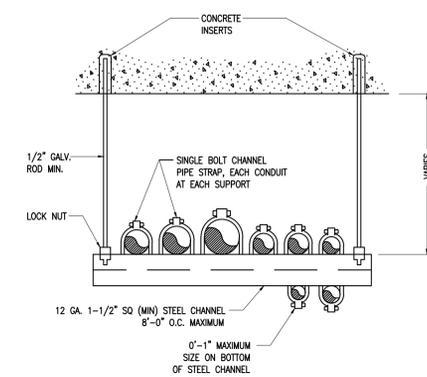
GENERAL NOTES (DETAIL NO. 2 ONLY)

1. CONTRACTOR MAY USE A CONDUIT SUSPENSION SYSTEM EQUIVALENT TO THAT WHICH IS DETAILED, HAVING THE FEATURES SHOWN AND APPROVED IN ADVANCED BY THE RESIDENT ENGINEER.
2. PROVIDED A SAMPLE SUPPORT SYSTEM TO KEEP ON JOB SITE FOR CONSTRUCTION GUIDE PURPOSES.
3. CONDUIT SUSPENSION SYSTEM SHALL BE INDEPENDENT OF ANY OTHER SUSPENSION SYSTEM.
4. PROVIDE NUT, LOCKWIT AND CUT ROD 1" FROM LOCKWIT, PROVIDE CAPWIT ON END OF ROD.

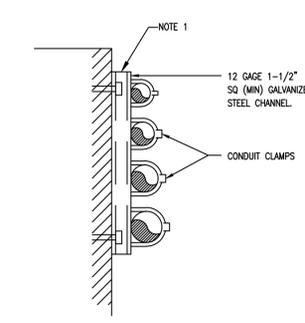
2 CONDUIT HANGER DETAIL
E-4.0 SCALE: NOT-TO-SCALE



3 CONDUIT SUPPORT DETAIL
E-4.0 SCALE: NOT-TO-SCALE



4 MULTIPLE CONDUIT SUPPORT DETAIL
E-4.0 SCALE: NOT-TO-SCALE



GENERAL NOTES (DETAIL NO. 5 ONLY)

1. SECURE TO WALL WITH PLATED BOLTS USING METHODS DESCRIBED IN SPECIFICATION SECTION 16111. (CONDUIT SYSTEMS)

5 WALL MOUNTED CONDUIT DETAIL
E-4.0 SCALE: NOT-TO-SCALE

ELECTRICAL EQUIPMENT LABELING

LABELS TO BE PROVIDED:

1. PHENOLIC TAG INDICATING PANEL NAME, SOURCE PANEL, VOLTAGE/PHASE, AND ELECTRICAL BRANCH OF THE ELECTRICAL SYSTEM.
2. PHENOLIC TAG INDICATING AVAILABLE FAULT CURRENT AT PANEL, EQUIPMENT BRACING RATING, AND DATE SHORT CIRCUIT CALCULATION PERFORMED.
3. PHENOLIC TAG OR STICKER PROVIDING ARC FLASH HAZARD INFORMATION, INCLUDING FLASH HAZARD BOUNDARY, INCIDENT ENERGY AT INDICATED DISTANCE, PPE CATEGORY PER NFPA 70E, VOLTAGE OF PANEL TO INDICATE SHOCK HAZARD, AND LIMITED, RESTRICTED, AND PROHIBITED APPROACH DISTANCES PER NFPA 70E.

PANEL "L2"
FED FROM
DIST. PANEL
"DPA"
120V/208Y, 3Ø, 4W
NORMAL BRANCH

AVAILABLE FAULT CURRENT:
4,160A SYMMETRICAL
EQUIPMENT BRACED AT:
10,000A SYMMETRICAL
DATE: 08/08/23

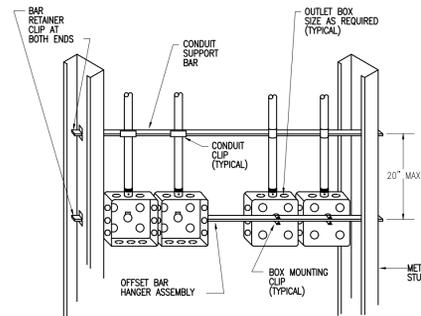
WARNING
ARC FLASH AND SHOCK HAZARD
18 INCHES FLASH HAZARD BOUNDARY
1.2 CAL/CM² FLASH HAZARD AT 18"
CATEGORY 0 PPE CATEGORY PER NFPA 70E
208 VAC SHOCK HAZARD WHEN COVER IS OPEN
42 INCHES LIMITED APPROACH
12 INCHES RESTRICTED APPROACH } PER NFPA 70E
1 INCH PROHIBITED APPROACH }
CATEGORY 0
PANEL: NH01 DATE: 10/18/11
NOTE: CHANGES IN EQUIPMENT SETTINGS OR SYSTEM CONFIGURATION WILL INVALIDATE THE CALCULATED VALUES AND PPE REQUIREMENTS LISTED ABOVE.

VOLTAGE		VOLTAGE	
120Y/208V		480Y/277V	
PHASE A	BLACK	PHASE A	PURPLE
PHASE B	RED	PHASE B	BROWN
PHASE C	BLUE	PHASE C	YELLOW
NEUTRAL	WHITE	NEUTRAL	GRAY

NOTES:

1. ARC FLASH HAZARD INFORMATION AND FAULT CURRENT VALUES SHALL BE DETERMINED BY MANUFACTURER'S ARC FLASH STUDY, SHORT CIRCUIT ANALYSIS, AND COORDINATION STUDY.
2. IF ARC FLASH STUDY DETERMINES THAT THE INCIDENT ENERGY AT THE EQUIPMENT IS >40 CAL/CM², THE ARC FLASH STICKER OR PHENOLIC TAG SHALL BE PROVIDED WITH A RED BACKGROUND AND HAVE THE WORD "DANGER" INCLUDED ON THE TAG.
3. REFER TO SPECIFICATIONS FOR BACKGROUND AND TEXT COLORS, FONT SIZE, AND ANY ADDITIONAL INFORMATION.
4. DISTRIBUTION EQUIPMENT SHALL BE LABELED IN ACCORDANCE WITH 2017 NEC SECTIONS 110.16, 110.24 AND 210.5.

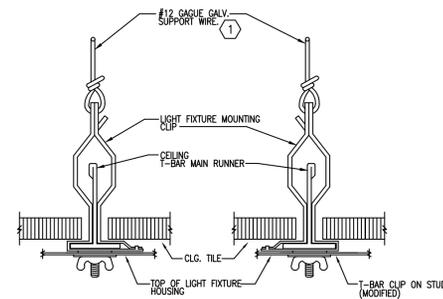
6 TYPICAL ELECTRICAL EQUIPMENT LABELING
E-4.0 SCALE: NOT-TO-SCALE



GENERAL NOTES (DETAIL NO. 6 ONLY)

1. CONDUITS SHALL BE SUPPORTED PER NEC 358.30(A).
2. THIS DETAIL TO BE USED ONLY WHERE SWITCHES, RECEPTACLES OR OUTLETS ARE SHOWN IN THE SAME LOCATION ON BOTH SIDES OF A WALL OR PARTITION. DO NOT USE WHERE SWITCHES, RECEPTACLES OR OUTLETS ARE SHOWN ONLY ON ONE SIDE OF WALL OR PARTITION.

10 BOX MOUNTING DETAIL
E-4.0 SCALE: NOT-TO-SCALE

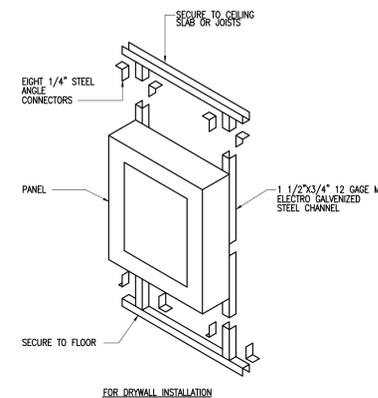


FOR SURFACE MOUNTING OF LIGHT FIXTURES BELOW SUSPENDED T-BAR CEILINGS.

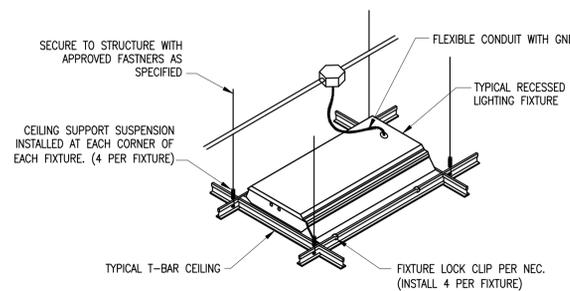
KEYED NOTES - ELECTRICAL: (DETAIL #11 ONLY)

1. FIXTURE SUPPORT WIRES SHALL BE IN ADDITION TO AND INDEPENDENT FROM CEILING SUPPORT WIRES.

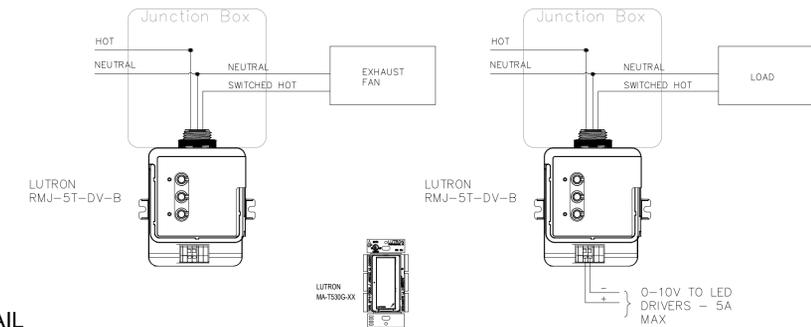
11 SURFACE FIXTURE MOUNTING DETAIL
E-4.0 SCALE: NOT-TO-SCALE



7 PANELBOARD SURFACE MOUNTING DETAIL
E-4.0 SCALE: NOT-TO-SCALE



8 RECESSED FIXTURE MOUNTING DETAIL
E-4.0 SCALE: NOT-TO-SCALE

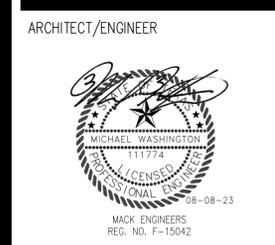


TYPICAL RESTROOM

9 TYPICAL RESTROOM LIGHTING CONTROL DETAIL
E-4.0 SCALE: NOT-TO-SCALE



LEGACY ARCHITECTS LLC
NEW BRAUNFELS, TX
303-526-8198
LEX@LEGACYARCH.COM



B & B RENOVATION
HEX INDUSTRIES
278 W. SAN ANTONIO ST.
NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
0007-23

DRAWN BY:
CSW

CHECKED BY:
MLW

DATE: REVISION:

DATE: ISSUED AS:
8-8-23 PERMIT SET

SHEET TITLE:

ELECTRICAL DETAILS

SHEET NUMBER: 1

E4.0



MEP Design, Planning & Commissioning
123 Vargas Aly, San Antonio, TX. 78203
(210) 899-9908 | TBP# F-15042
www.mackengineers.com

© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).

PLUMBING SYMBOLS AND ABBREVIATIONS

(NOT ALL ITEMS INDICATED APPLY TO THIS PROJECT)

PIPING FITTINGS	SYMBOLS	MISCELLANEOUS
	PLUMBING SYSTEMS	
	— — — — — SANITARY DRAIN BELOW FLOOR	
	— — — — — EXISTING SOIL OR WASTE PIPING B.G.	
	— — — — — SANITARY DRAIN ABOVE FLOOR	
	— — — — — EXISTING SOIL OR WASTE PIPING A.G.	
	X X X X X PIPE DEMO	
	— — — — — SANITARY VENT	
	— — — — — EXISTING VENT PIPING	
	— GW — GREASE WASTE(ABOVE CEILING)	
	— GW — GREASE WASTE(BELOW FLOOR)	
	— SD — STORM DRAIN(ABOVE CEILING)	
	— SD — STORM DRAIN(BELOW FLOOR)	
	— OD — OVERFLOW DRAIN(ABOVE CEILING)	
	— OD — OVERFLOW DRAIN(BELOW FLOOR)	
	— AW — ACID WASTE(ABOVE CEILING)	
	— AW — EXISTING ACID WASTE PIPING A.G.	
	— AW — ACID WASTE(BELOW FLOOR)	
	— AW — EXISTING ACID WASTE PIPING B.G.	
	— AV — ACID VENT(ABOVE CEILING OR BELOW FLOOR)	
	— AV — EXISTING ACID VENT PIPING AV	
	— — — — — COLD WATER CW	
	— — — — — EXISTING DOMESTIC COLD WATER	
	— — — — — HOT WATER HW	
	— — — — — EXISTING DOMESTIC HOT WATER	
	— — — — — HOT WATER RECIRCULATION	
	— — — — — EXISTING DOMESTIC HOT WATER RETURN HWR	
	— G — NATURAL GAS	
	— T — TEMPERED WATER	
	— CA — COMPRESSED AIR	
	— A — MEDICAL AIR	
	— O — MEDICAL OXYGEN	
	— V — MEDICAL VACUUM	
	— F — FIRE STANDPIPE, FIRE LINE	
	— FS — WET AUTOMATIC FIRE SPRINKLER	
	— TP — TRAP PRIMER	
	— D — DRAIN LINE	
	— SW — SOFT WATER	
	— LT — LINT WASTE	



LEGACY ARCHITECTS LLC
NEW BRAUNFELS, TX
303-526-8198
LEXTECT@GMAIL.COM

ARCHITECT/ENGINEER



B & B RENOVATION

HEX INDUSTRIES
278 W. SAN ANTONIO ST.
NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
0007-23

DRAWN BY:
CSW

CHECKED BY:
MLW

DATE:	REVISION:

DATE: 8-8-23 ISSUED AS: PERMIT SET

SHEET TITLE:

PLUMBING LEGEND

SHEET NUMBER:

P0.0



MEP Design, Planning & Commissioning
123 Vargas Aly, San Antonio, TX. 78203
(210) 899-9908 | TBP# F-15042
www.mackengineers.com

© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).

#	PLUMBING KEYED NOTES
1	2" WASTE UP FROM BELOW, 2" VENT DOWN.
2	4" WASTE UP FROM BELOW.
3	3" VENT UP FROM BELOW AND UP THRU ROOF.
4	2" VENT UP FROM BELOW.
5	3" VENT UP.
6	2" WASTE UP.
7	4" WASTE UP.
8	2" VENT UP.
9	CONNECT TO EXISTING 4" SANITARY SEWER IN THIS VICINITY. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION AND SAW CUT AS REQUIRED TO ACCOMMODATE THE NEW PIPING ROUTING BELOW SLAB.



LEGACY ARCHITECTS LLC
 NEW BRAUNFELS, TX
 303-526-8198
 LEX@LEGACYARCH.COM

ARCHITECT/ENGINEER



B & B RENOVATION
 HEX INDUSTRIES
 278 W. SAN ANTONIO ST.
 NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
 0007-23

DRAWN BY:
 CSW

CHECKED BY:
 MLW

DATE:	REVISION:

DATE: 8-8-23
 ISSUED AS: PERMIT SET

SHEET TITLE:

PLUMBING DMV PLANS

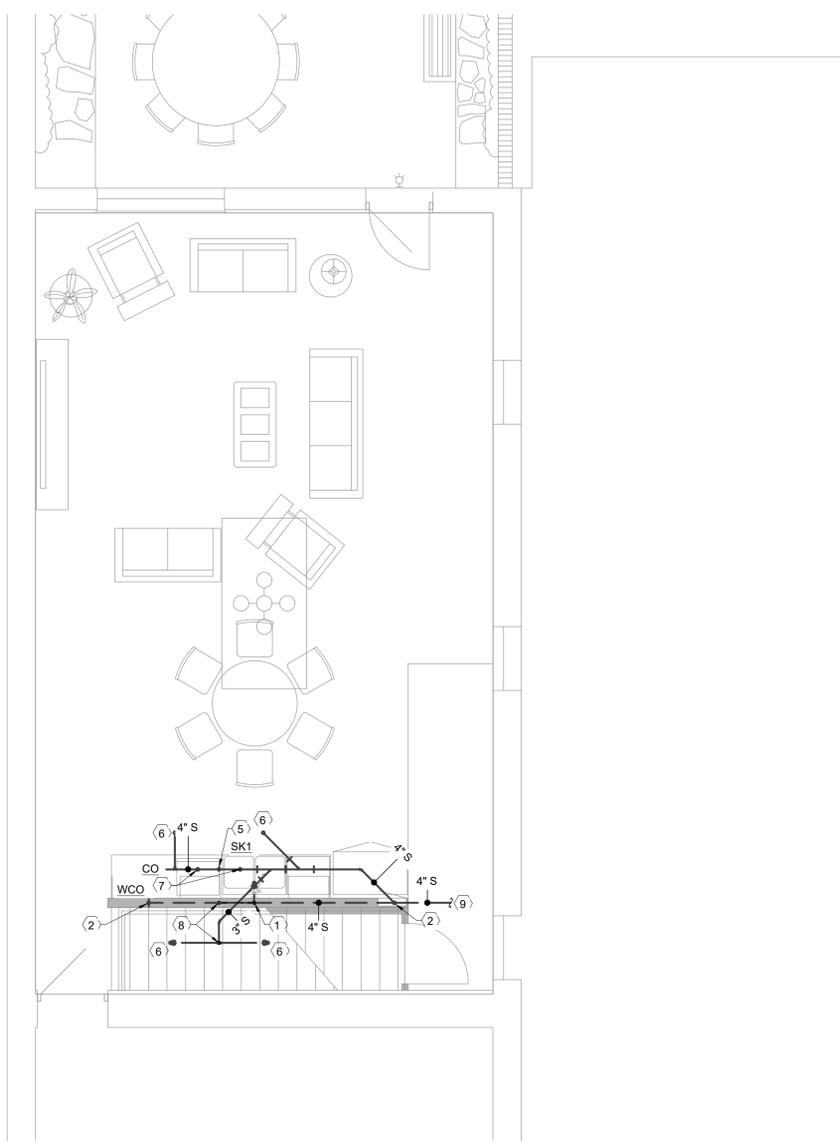
SHEET NUMBER:

P1.0

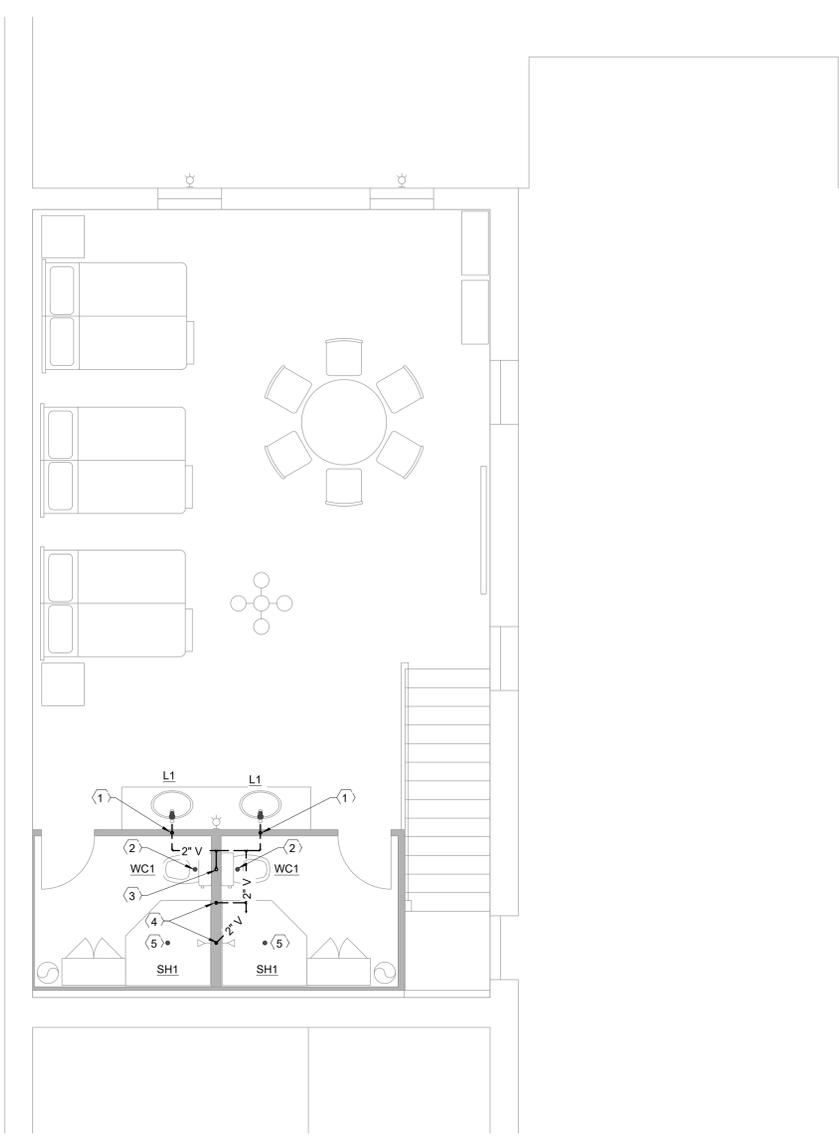


MEP Design, Planning & Commissioning
 123 Vargas Aly, San Antonio, TX. 78203
 (210) 899-9908 | TBP# F-15042
 www.mackengineers.com

© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).



1 PLUMBING DMV PLAN - 1ST FLOOR
 SCALE: 1/4" = 1'-0"



2 PLUMBING DMV PLAN - 2ND FLOOR
 SCALE: 1/4" = 1'-0"

#	PLUMBING KEYED NOTES
1	1/2" CW/HW UP.
2	1/2" CW DOWN.
3	CONNECT TO EXISTING 1" CW IN THIS VICINITY. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION AND SAW CUT AS REQUIRED TO ACCOMMODATE THE NEW PIPING ROUTING BELOW SLAB.
4	3/4" CW UP.
5	3/4" HW DOWN FROM ABOVE.
6	1" CW UP.
7	1/2" CW/HW DOWN.
8	1" CW UP FROM BELOW.
9	1/2" CW/HW UP FROM BELOW.
10	3/4" CW UP FROM BELOW.
11	3/4" HW DOWN.
12	1" CW REDUCES TO 3/4" CW AFTER SERVING THE SHOWERS AND CONTINUES UP TO SERVE WATER HEATER.
13	3/4" CW/HW DOWN TO WATER HEATER. WATER HEATER IS LOCATED ON PLATFORM ABOVE THE RESTROOMS. ROUTE DRAIN TO TAILPIECE OF LAVATORY.



LEGACY ARCHITECTS LLC
 NEW BRAUNFELS, TX
 303-526-8198
 LEX@LEGACYARCH.COM

ARCHITECT/ENGINEER



B & B RENOVATION
 HEX INDUSTRIES
 278 W. SAN ANTONIO ST.
 NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
 0007-23

DRAWN BY:
 CSW

CHECKED BY:
 MLW

DATE:	REVISION:

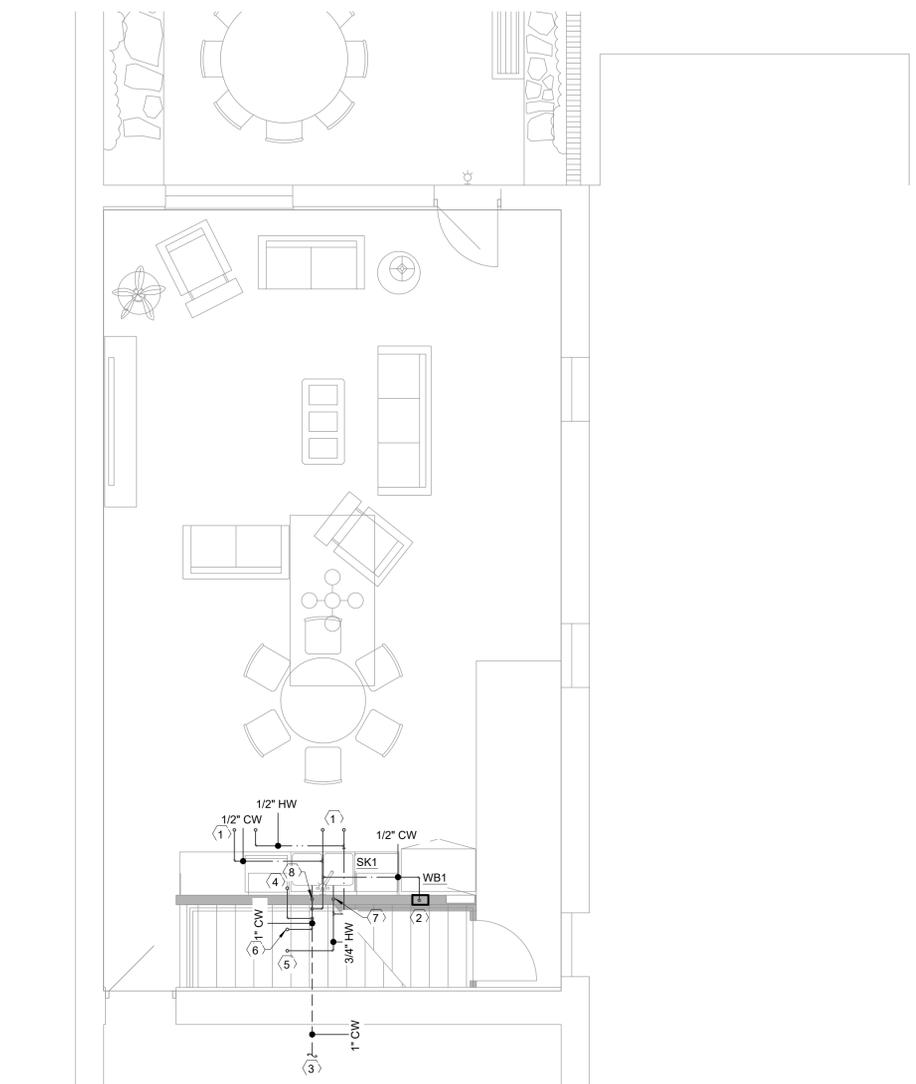
DATE: 8-8-23 ISSUED AS:
 PERMIT SET

SHEET TITLE:

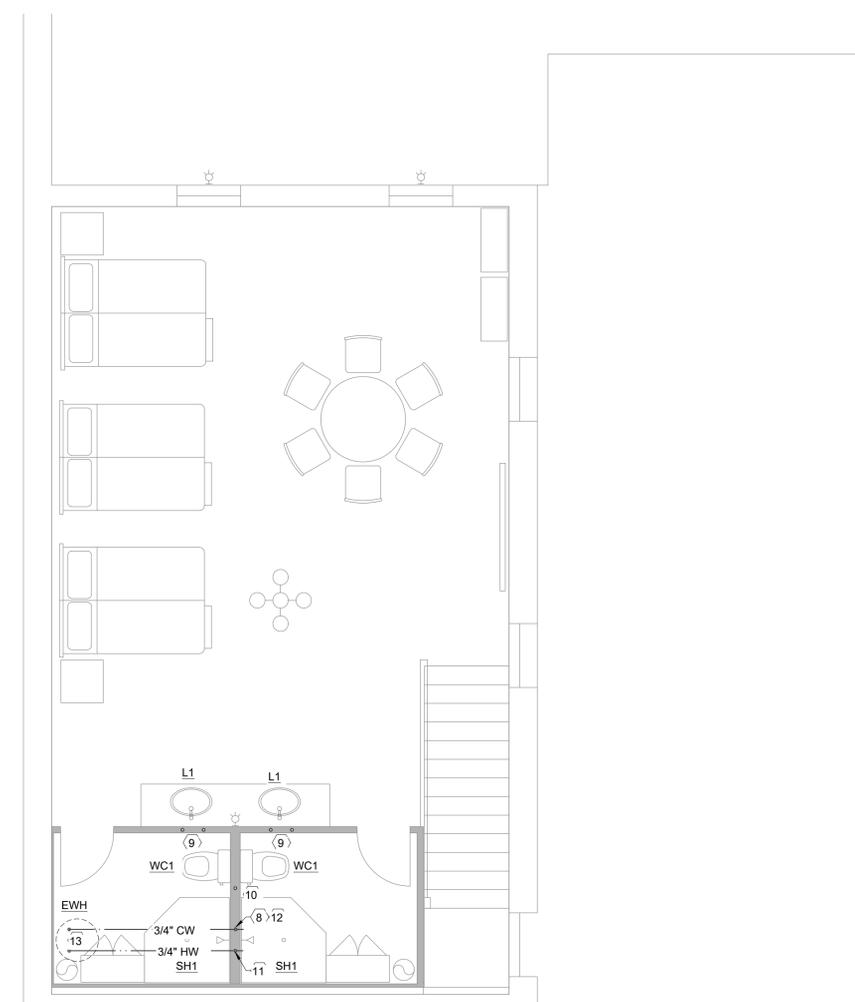
PLUMBING WATER PLANS

SHEET NUMBER:

P1.1



1 PLUMBING WATER PLAN - 1ST FLOOR
 P1.1 SCALE: 1/4" = 1'-0"

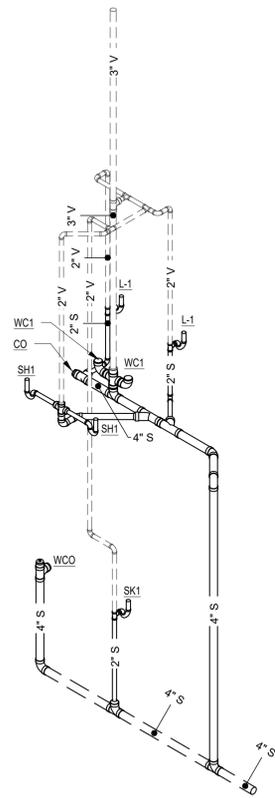


2 PLUMBING WATER PLAN - 2ND FLOOR
 P1.1 SCALE: 1/4" = 1'-0"

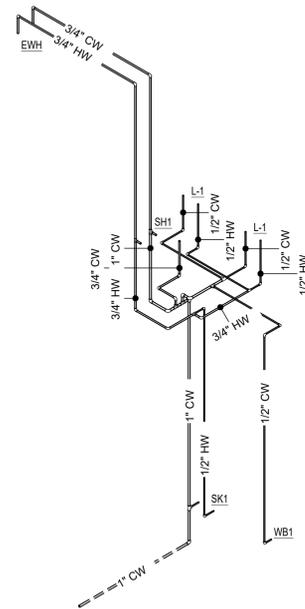


MEP Design, Planning & Commissioning
 123 Vargas Aly, San Antonio, TX. 78203
 (210) 899-9908 | TBP# F-15042
 www.mackengineers.com

© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).



1 DMV RISER DIAGRAM
 P2.0 SCALE: 1/4" = 1'-0"



2 WATER RISER DIAGRAM
 P2.0 SCALE: 1/4" = 1'-0"



LEGACY ARCHITECTS LLC
 NEW BRAUNFELS, TX
 303-526-8198
 LEXRECTORIAL.COM

ARCHITECT/ENGINEER



B & B RENOVATION

HEX INDUSTRIES
 278 W. SAN ANTONIO ST.
 NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
 0007-23

DRAWN BY:
 CSW

CHECKED BY:
 MLW

DATE: REVISION:

DATE	REVISION

DATE: ISSUED AS:
 8-8-23 PERMIT SET

SHEET TITLE:

PLUMBING RISER DIAGRAMS

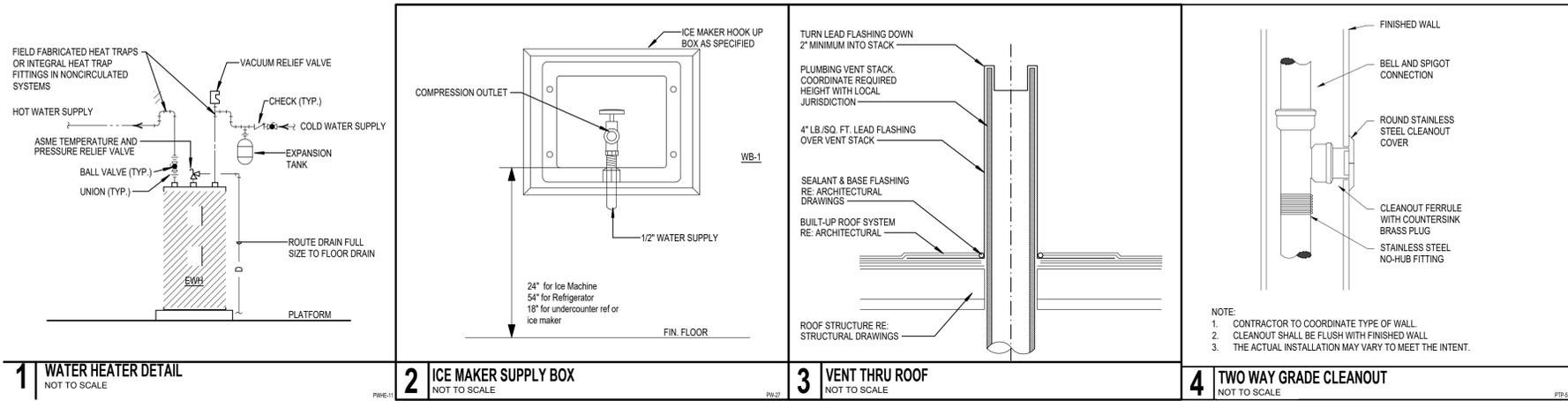
SHEET NUMBER:

P2.0



ENGINEERS
 MEP Design, Planning & Commissioning
 123 Vargas Aly, San Antonio, TX. 78203
 (210) 899-9908 | TBPE# F-15042
 www.mackengineers.com

© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).



1 WATER HEATER DETAIL
NOT TO SCALE

2 ICE MAKER SUPPLY BOX
NOT TO SCALE

3 VENT THRU ROOF
NOT TO SCALE

4 TWO WAY GRADE CLEANOUT
NOT TO SCALE

EQUIPMENT SCHEDULE

TYPE	MANUFACTURER	DESCRIPTION	NOTES
ELECTRIC WATER HEATER EWH-1	AO SMITH ENS-40	4.5 KW, 40 GALLON. ALL HOT WATER PIPING SHALL BE HEAT TRACED AND INSULATED. COORDINATE HEAT TRACE REQUIREMENT WITH ELECTRICAL CONTRACTOR.	

PLUMBING FIXTURE SCHEDULE

PLAN MARK	MINIMUM ROUGH-IN SIZES					DESCRIPTION
	WST & VENT	DRAIN	CW	HW		
WATER CLOSET WC1	4"	2"	4"	1"	---	TOTO DRAKE, TWO PIECE, COMFORT HEIGHT, ELONGATED BOWL, 1.6 GPF, WHITE, SOFT CLOSE SEAT, WITH ALL NECESSARY ACCESSORIES INCLUDING (BUT NOT LIMITED TO) BRAIDED SUPPLY AND WASTE FLANGE.
LAVATORY L1	2"	2"	2"	1/2"	1/2"	TOTO ATHERTON UNDERCOUNTER MOUNTED, WHITE PORCELAIN LAVATORY WITH FRONT OVERFLOW, AND ALL NECESSARY ACCESSORIES INCLUDING (BUT NOT LIMITED TO) BRAIDED SUPPLY LINES, DRAIN, TRAP, ETC... PROVIDE WITH OBERON R SINGLE HANDLE FAUCET
SHOWER SH1	2"	2"	2"	1/2"	1/2"	TOTO CLASSIC SERIES 4.5" MULTI-SPRAY HEAD (2.0 GPM) IN POLISHED CHROME WITH MATCHING SILAS THERMOSTATIC MIXING SHOWER VALVE. PROVIDE POLISHED CHROME CENTER DRAIN WITH STRAINER.
SINK SK1	2"	2"	2"	1/2"	1/2"	ELKAY LWFD332292 WITH ALL NECESSARY ACCESSORIES INCLUDING (BUT NOT LIMITED TO) BRAIDED SUPPLIES, WASTE, TRAP, ETC... PROVIDE 1/3 HP INSINKERATOR DISPOSER WITH DISHWASHER CONNECTED. PROVIDE WITH AMERICAN STANDARD SYCAMORE PULL OUT SPRAY FAUCET DECK MOUNTED FAUCET.
WALL BOX (ICE) WB1	---	---	---	1/2"	---	GUY GRAY M1B1HA WITH 1/2x1/4" O.D. TUBE, CHROME PLATED SUPPLY STOP, AND INTEGRAL ARRESTOR. LEAVE 48" COIL OF 1/4" TYPE "K" SOFT COPPER TUBING FOR EQUIPMENT CONNECTION.
WALL CLEANOUT WC0	---	---	---	---	---	ZURN No. ZN-1440 DURO-COATED CAST IRON CLEANOUT TEE WITH COUNTER-SUNK GASKET, WATERTIGHT THREADED PLUG AND ZURN No. ZANB-1460 SQUARE SMOOTH ACCESS COVER.



LEGACY ARCHITECTS LLC
NEW BRAUNFELS, TX
303-526-8198
LEXARCH@GMAIL.COM

ARCHITECT/ENGINEER



B & B RENOVATION

HEX INDUSTRIES
278 W. SAN ANTONIO ST.
NEW BRAUNFELS, TX. 78130

PROJECT NUMBER:
0007-23

DRAWN BY:
CSW

CHECKED BY:
MLW

DATE: REVISION:

DATE: ISSUED AS:
8-8-23 PERMIT SET

SHEET TITLE:

PLUMBING SCHEDULES AND DETAILS

SHEET NUMBER:

P3.0



MEP Design, Planning & Commissioning
123 Vargas Aly, San Antonio, TX. 78203
(210) 899-9908 | TBP# F-15042
www.mackengineers.com

© All drawings and written material contained herein may not be duplicated, used or disclosed without the written consent of the architect(s).