GREEN VALLEY RECREATION - METAL ARTS CLUB ALTERATION

1111 S GVR DR

CONSTRUCTION DOCUMENT SET

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APPLICABLE CODES

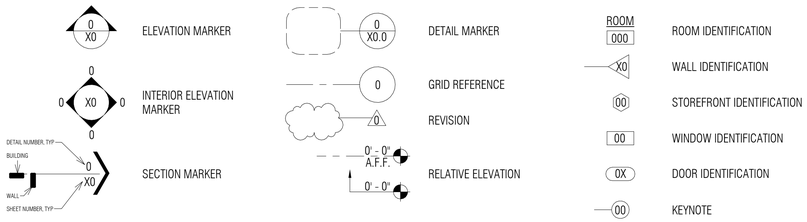
2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL PLUMBING CODE
2018 INTERNATIONAL MECHANICAL CODE
2018 INTERNATIONAL FIRE CODE
2017 NATIONAL ELECTRIC CODE
2009 ICC A117 ACCESSIBLE BUILDINGS
2012 CITY OF TUCSON & PIMA COUNTY
LIGHTING CODE
AND ALL LOCAL AMENDMENTS

DEFERRED SUBMITTALS

- MANUAL J CALCULATIONS

SHEET INDEX

SYMBOLS LEGEND



CODE REVIEW CHECKLIST - BURTON AND ASSOCIATES ARCHITECTS
PROJECT: TENANT IMPROVEMENT - GVR METAL ARTS CLUB

JURISDICTION GOVERNING / ZONE:	PIMA COUNTY, ARIZONA / TR	
LEGAL DESCRIPTION:	GREEN VALLEY COMMUNITY COMPLEX LOTS 8 9 & 7 EXC NLY & ELY PTN ADJ RD .43 AC (MIN VALUE PER SUN CITY VS MARICOPA CO)	
PARCEL:	304-25-142C	
OCCUPANCY & USE: (CHAPTER 3)	F2 - METAL ARTS CLUB WORKSHOP	
TYPE OF CONSTRUCTION: (TABLE 601)	VB	
ALLOWABLE AREA CALCULATIONS: (SECTION 506 & TABLE 506.2)	BASIC: ACTUAL SF: (ENTIRE BUILDING)	13,000 SF 1,203 SF
BUILDING HEIGHT (ZONE):	1 STORY - 40' PERMITTED	1 STORY, 13'4" ACTUAL
OCCUPANT LOAD: (TABLE 1004.5)	INDUSTRIAL - (1203/100)	13 OCC. TOTAL
MINIMUM EXIT WIDTH: (SECTION 1005.3.2)	13 X 0.2 - 2.6" MIN.	216" PROVIDED
MINIMUM EXITS: (TABLE 1006.3.3.(2)	2 EXITS REQUIRED (DUE TO ACCESSIBLE PATH)	3 PROVIDED
CORRIDOR PROTECTION: (TABLE 1018.1)	NOT REQUIRED	NOT PROVIDED
DEADEND CORRIDORS (SECTION 1020.4)	50' MAX WHEN SPRINKLED	COMPLIES
FIRE RESISTIVE REQUIREMENTS: (TABLE 601 & 602)	(TYPE VB) STRUCTURAL FRAME BEARING WALLS - EXTERIOR BEARING WALLS - INTERIOR NON-BEARING WALLS - EXTERIOR NON-BEARING WALLS - INTERIOR FLOOR CONSTRUCTION ROOF CONSTRUCTION SHAFT ENCLOSURES (SECT. 707.4)	0 HR. 0 HR. 0 HR. 0 HR. 0 HR. 0 HR. 0 HR. 0 HR. 1 HR.
FLAME SPREAD CLASS & INDEX: (SECTION 803.9 - TABLE 803.13)	F-2 OCCUPANCY VERTICAL EXITWAYS OTHER EXITWAYS ROOMS OR AREAS	 B (26-75) C (76-200) C (76-200)
SPRINKLERS: (SECTION 903.2)	NOT REQUIRED	PROVIDED
EXIT SIGNS LIGHTED: (SECTION 1013)	NOT REQUIRED	EXISTING TO REMAIN
PANIC HARDWARE: (SECTION 1010.1.10)	NOT REQUIRED	NOT PROVIDED
CHECK FIRE CODE REGULATIONS:	YES	
STRUCTURAL CALCULATIONS SUBMITTED:	NOT REQUIRED (T.I.)	NOT PROVIDED

PLUMBING FIXTURE REQUIREMENTS (SHARED FACILITIES WITH ADJACENT BUILDING (GLASS ARTS) (TABLE 2902.1)

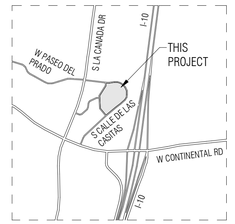
(METAL ARTS)	
WATER CLOSETS 1/100	1 REQUIRED
LAVATORIES 1/100	1 REQUIRED
DRINKING FOUNTAINS (0 FOR <15)	0 REQUIRED
SERVICE SINK REQUIRED	1 REQUIRED
(GLASS ARTS) 800 SF/100 = 8 OCC.	
WATER CLOSETS 1/100	1 REQUIRED
LAVATORIES 1/100	1 REQUIRED
DRINKING FOUNTAINS (0 FOR <15)	0 REQUIRED
SERVICE SINK REQUIRED	1 REQUIRED

PROVIDED FOR BOTH UNITS (WITHIN GLASS ARTS BUILDING, U.N.O.)

WATER CLOSETS	6 EXISTING TO RAMAIN (2 MALE +1 URINAL, 3 FEMALE)
LAVATORIES 1/100	4 EXISTING TO REMAIN (2 MAKE, 2 FEMALE)
DRINKING FOUNTAINS (0 FOR <15)	2 EXISTING TO REMAIN AT GLASS ARTS BUILDING
SERVICE SINK REQUIRED	1 EXISTING TO REMAIN, + NEW SINK AT METAL ARTS BUILDING

LOCATION MAP

SCALE: 3"=1 MI



SECTION: 31
TOWNSHIP: 13.0
RANGE: 13.0E

N

REGISTERED ARCHITECT
CERTIFICATE NO.
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SIGNED
ARIZONA U.S.A.

PIMA COUNTY
DEVELOPMENT SERVICES
APPROVED

P24BP11045 D1
01-06-2025
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REVISIONS

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COVER SHEET

PROJECT NUMBER:2438

C1

11.14.24

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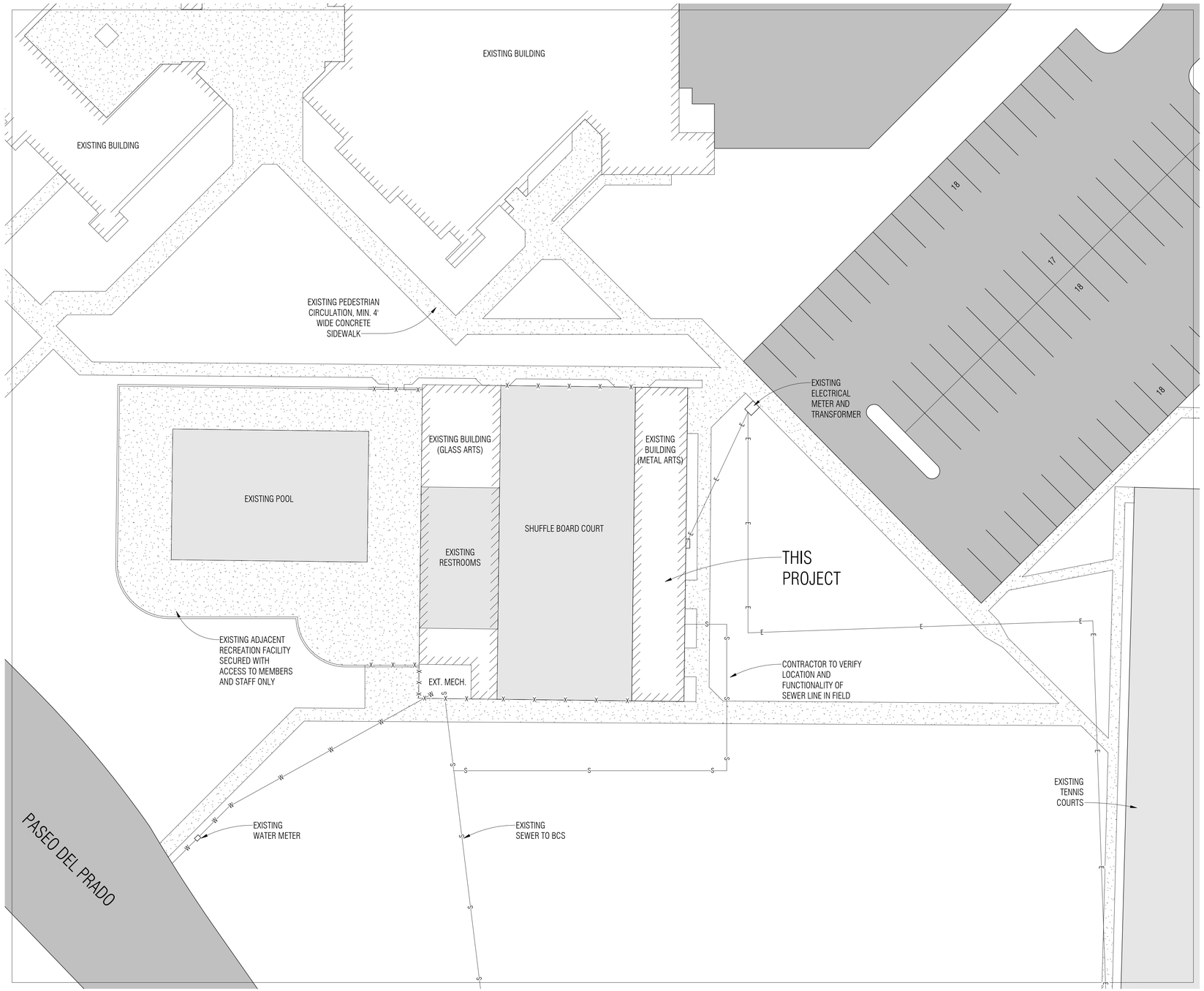
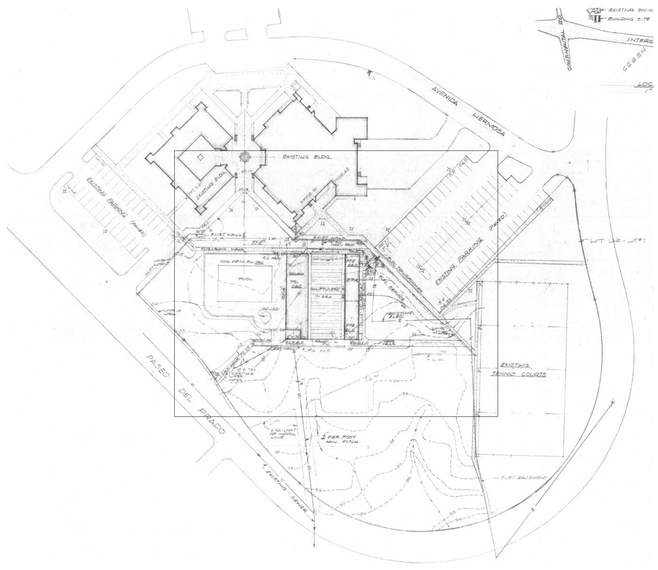


1 SITE PLAN
1" = 20'-0"



2 SITE PLAN REFERENCE
1" = 100'-0"

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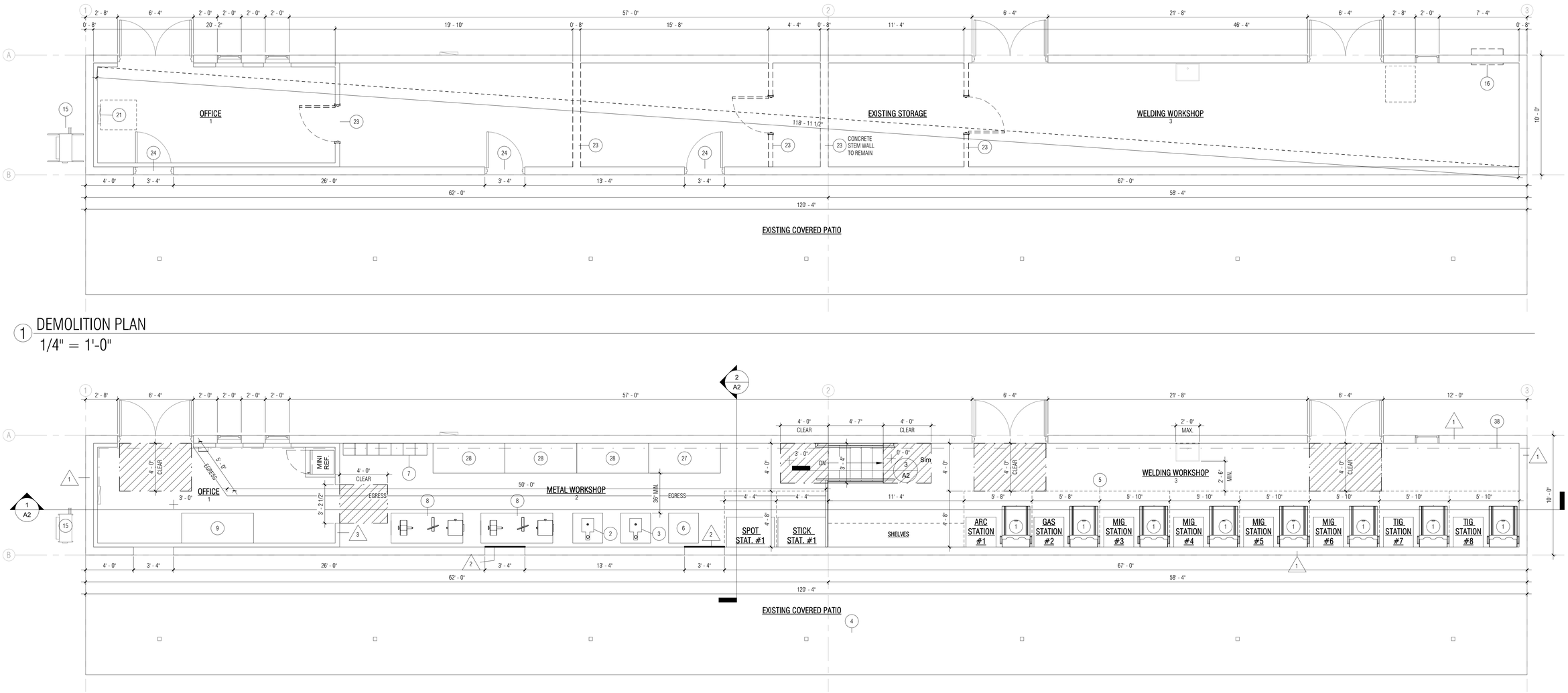

1 DEMOLITION PLAN
1/4" = 1'-0"

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

DOOR NOTES:

1. WHERE NOT SPECIFIED SPECIFICALLY, ALL (NEW) DOOR HARDWARE LEVER TO MEET ADA GUIDELINES.
2. HANDLES, PULLS, LATCHES, LOCKS, AND OTHER OPERATING DEVICES ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY T GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING, OR TWISTING OF THE WRIST TO OPERATE, LEVER OPERATED MECHANISMS, PUSH TYPE MECHANISM, AND U-SHAPE HANDLES ARE ALL ACCEPTABLE DESIGNS, HARDWARE SHALL BE MOUNTED NO HIGHER THAN 48" A.F.F.
3. DOOR CLOSURES SHALL HAVE AT LEAST A 2 SECOND SWEEP TIME CLOSING (IF APPLICABLE)
4. PROVIDE A WALL DOOR STOP FOR EACH DOOR. STOP TO HAVE BACKING PROVIDED IN WALL.
5. PROVIDE 3 SILENCERS FOR EACH DOOR.
6. CONFIRM HARDWARE STYLE AND FINISHES WITH OWNER PRIOR TO INSTALLATION
7. ALL LOCKS TO BE REKEYED PRIOR TO RECEIVING CERTIFICATE OF OCCUPANCY, CONFIRM KEYING OPTIONS WITH OWNER

ROOM SCHEDULE

NUMER	NAME	NET AREA	BASE	FLOOR	WALL	CEILING	NOTES
1	OFFICE	161 SF	EXISTING RUBBER BASE TO REMAIN	EXPOSED CONCRETE	EXISTING PAINTED WALLS TO REMAIN	EXISTING PAINTED GYP. TO REMAIN	TOUCH UP PAINTED SURFACES AS NEEDED
2	METAL WORKSHOP	353 SF	NO BASE	EXPOSED CONCRETE	EXISTING PAINTED WALLS TO REMAIN, NEW STEEL PANEL OVER DOORS	EXISTING GYP CEILING TO REMAIN, EXPOSED AREA TO BE COVERED WITH NEW TYPE 'X' SAG RESISTANT GYPSUM BOARD, TAPE AND TEXTURE TO LEVEL 3 MIN., 2 COATS PAINT	TOUCH UP PAINTED SURFACES AS NEEDED
3	WELDING WORKSHOP	500 SF	NO BASE	EXPOSED CONCRETE	EXISTING PAINTED WALLS TO REMAIN	TYPE 'X' SAG RESISTANT GYPSUM BOARD, TAPE AND TEXTURE TO LEVEL 3 MIN., 2 COATS PAINT	TOUCH UP PAINTED SURFACES AS NEEDED

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WALL TYPE LEGEND

1 — EXISTING EXTERIOR WALL - 8" SLUMP BLOCK

2 — INTERIOR INFILL - 5/8" TYPE 'X' GYPSUM WALL BOARD OR 20GA SHEET METAL ATTACHED TO DOOR FRAME AT INTERIOR, TAPED AND TEXTURED AND PAINTED TO MATCH EXISTING IF APPLICABLE.

3 — INTERIOR WALL - 2X4 OR 3-5/8" 26 GA METAL STUD AT 24" O.C. WITH 5/8" GYPSUM WALL BOARD AT ONE OR BOTH SIDES TAPED AND TEXTURED TO LEVEL 4 FINISH.

NOTE:
- ALL GYPSUM WALL BOARD TO BE PAINTED WITH 1 COAT OF PRIMER AND 2 COATS OF PAINT, FINISH COLORS SHALL BE CONFIRMED WITH OWNER PRIOR APPLICATION.
- ALL WALLS AT WET LOCATIONS SHALL USE WATER RESISTANT GYPSUM BOARD, CEMENT BACKER BOARD, OR EQUIVALENT.
- ALL DIMENSIONS TAKEN FROM EDGE OF FRAMING AT INTERIOR WALLS AND EDGE OF SHEATHING AT EXTERIOR WALLS, UNLESS NOTED OTHERWISE

KEYNOTES

1	WELDER
2	DRILL PRESS
3	MILLING MACHINE
4	EXISTING EXTERIOR PATIO TO REMAIN AS IS
5	WELDING STATION TO BE SEPARATED BY WELDING CURTAINS OR WELDING SHIELDS
6	GRINDER
7	LOCKERS FOR HAND TOOLS AND GENERAL STORAGE
8	LATHE
9	DESK
15	EXISTING MINI SPLIT OUTDOOR CONDESING UNIT TO REMAIN
16	REMOVE AND INFILL EXISTING THROUGH-WALL EVAPORATIVE COOLING UNIT
21	EXISTING ELECTRICAL PANEL AND 30"X36" CLEAR SPACE FOR PANEL MAINTENANCE
23	EXISTING WALL AND/OR DOOR TO BE CAREFULLY DEMOLISHED, REPAIR DRYWALL AS REQUIRED TO MATCH EXISTING
24	EXISTING DOOR SHALL BE LOCKED FROM ACCESSING SPACE AT ALL TIMES
27	BENCH VICE
28	WORK TABLES
38	OVERHEAD CONDUIT FOR FUTURE USE, CAP STUB OUT

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DEMOLITION AND FLOOR PLAN
PROJECT NUMBER:2438

A1
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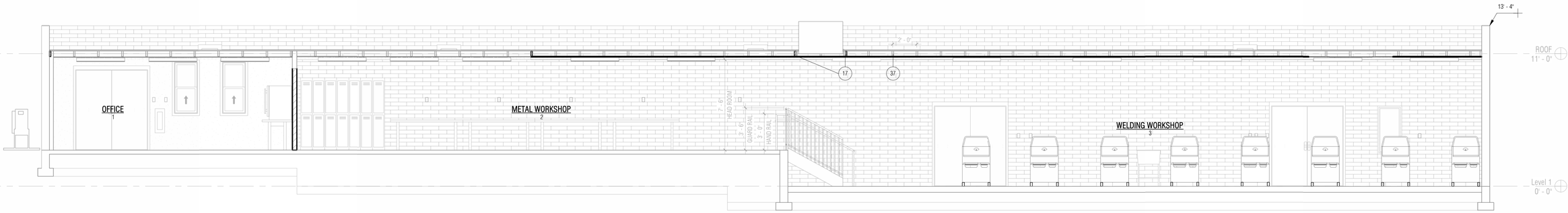
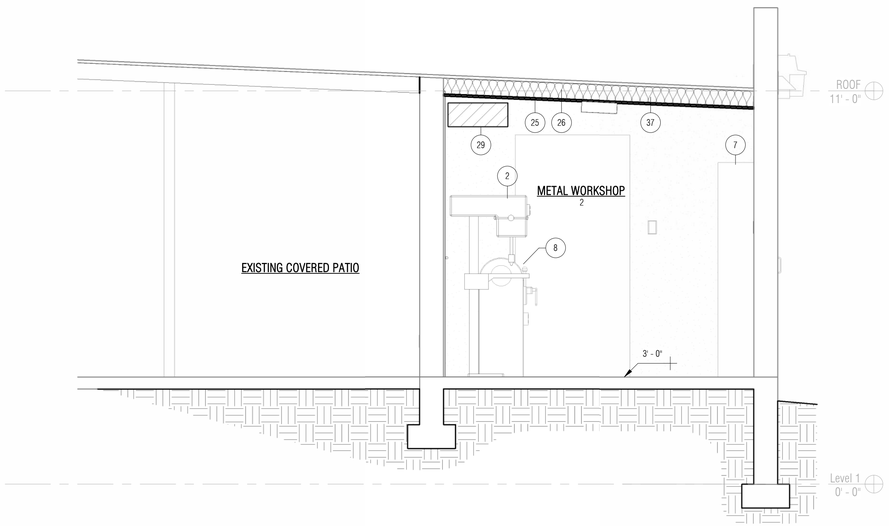


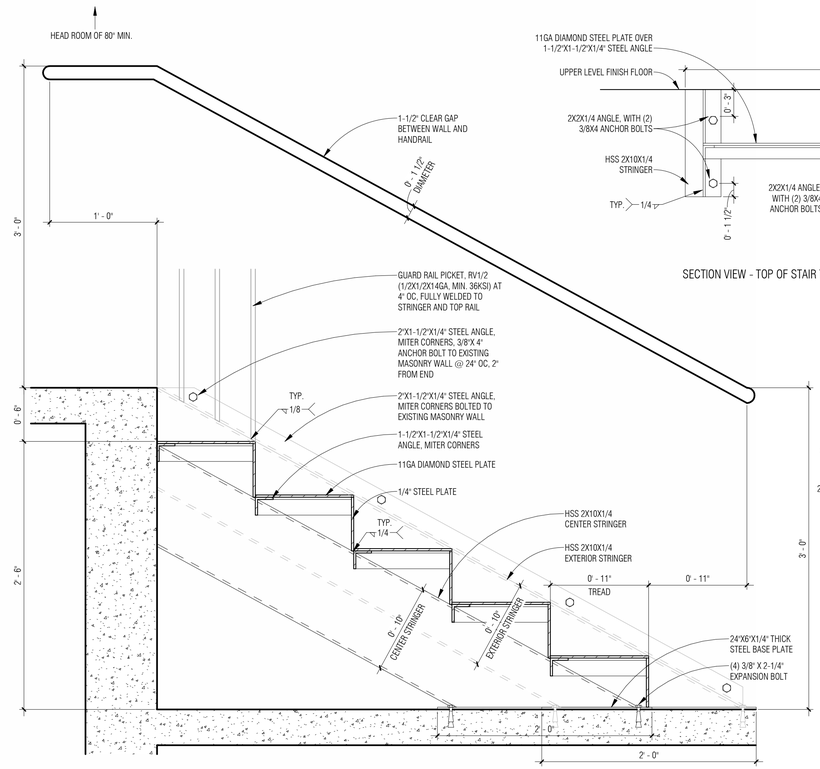
1 BUILDING SECTION 1
1/4" = 1'-0"



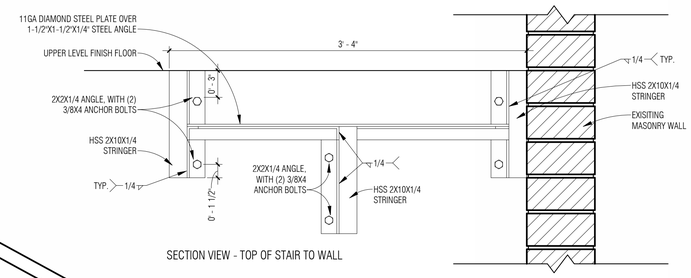
2 BUILDING SECTION 2
1/2" = 1'-0"

KEYNOTES

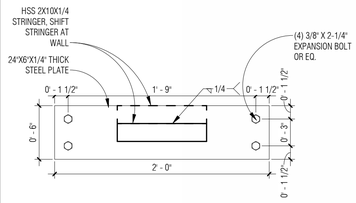
2	DRILL PRESS
7	LOCKERS FOR HAND TOOLS AND GENERAL STORAGE
8	LATHE
17	PROPOSED LOCATION OF NEW ROOF TOP DOAS (DEDICATED OUTDOOR AIR SYSTEM), LOAD BEARING ROOF JOISTS SHALL BE DOUBLED
25	PROVIDE 5/8" TYPE 'X' GYP. BOARD AT CEILING, TAPED, TEXTURED AND PAINTED TO MATCH EXISTING ADJACENT CEILING
26	PROVIDE ALUMINUM BACKED R38 BATT INSULATION BETWEEN ROOF JOISTS, REPLACE PAPER BACKED DAMAGED INSULATION WHERE REQUIRED
29	NEW DUCT WORK
37	EXISTING 2X6 ROOF TRUSSES AT 24" OC



3 METAL STAIR
1 1/2" = 1'-0"



SECTION VIEW - TOP OF STAIR TO WALL



PLAN VIEW - BASE PLATE, TYP.

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SECTIONS
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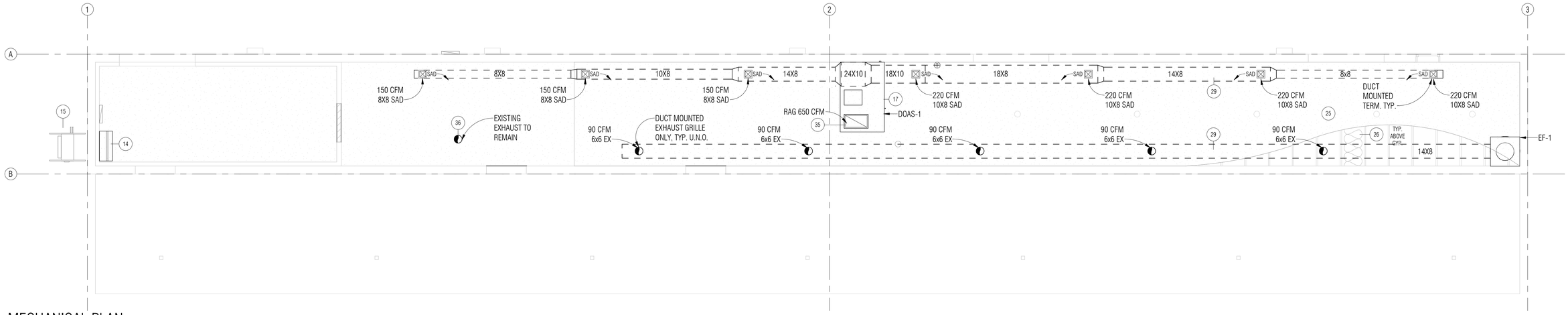
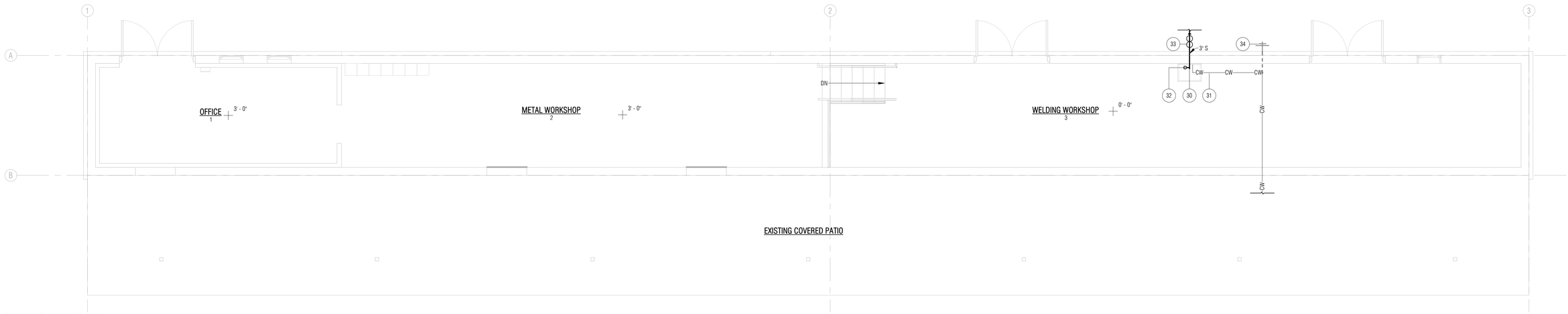


1 MECHANICAL PLAN
1/4" = 1'-0"



2 PLUMBING PLAN
1/4" = 1'-0"

MECHANICAL EQUIPMENT SCHEDULE
PER TABLE 403.3 IMC 2018

MARK	DESCRIPTION	AREA SERVED	MANUFACTURER	MODEL	CFM	DUCTING	ESP IN WG	HEATING	COOLING	ELECTRIC	DISCONNECT
DOAS-1	DED. OUT. AIR SYS.	WORKSHOP	GREENHECK	RV OR EQ.	1330	SEE PLAN	4" MAX.	ELECTRIC	DIRECT EXP.	115/1/60	YES
EF-1	EXHAUST FAN	WORKSHOP	GREENHECK	CUE90 OR EQ.	450	SEE PLAN	.375	-	-	115/1/60	YES

NOTES:
ONLY 10% OF SUPPLY AIR MAY BE RETURN AIR

Vbz = (Rp x Pz) + (Ra x Az)
Voz = (Vbz / Ez)

Az =NET OCCUPIABLE FLOOR AREA OF THE SPACE OR SPACES IN THE ZONE
Pz = NUMBER OF PEOPLE IN THE SPACE OR SPACES IN THE ZONE
Rp = OUTDOOR AIRE FLOW RATE REQUIRED PER PERSON (TABLE 403.3.1.1)
Ra = OUTDOOR AIRFLOW RATE REQUIRED PER UNIT AREA (TABLE 403.3.1.1)
Vbz = OUTDOOR AIRFLOW RATE REQURED IN THE BREATHING ZONE

OUTSIDE AIR VENTILATION SCHEDULE
PER TABLE 403.3 IMC 2018

ROOM NAME	NUMBER	AREA (SF) (Az)	PEOPLE PER 1000 SF	TOTAL PEOPLE (Pz)	O.A. CFM/PER PERSON (Rp)	O.A. CFM/SF (Ra)	TOTAL OA CFM REQ. (Vbz)	EA CFM/SF	TOTAL EA CFM REQ.	ZONE AIR DIST. EFFECT. (Ez)	ZONE OUTDOOR AIRFLOW (Voz)
OFFICE	1	173 SF	5	.87	5	.06	14.73 CFM				15 CFM
METAL WS	2	353 SF	20	7.06	10	.18	134.14 CFM	.5	176.5 CFM	.8	168 CFM
WELDING WS	3	500 SF	20	10	10	.18	190 CFM	.5	250 CFM	.8	240 CFM
TOTAL		1,026 SF							427 CFM		423 CFM

MECHANICAL SYMBOLS LEGEND

- SUPPLY AIR DIFFUSER
- RETURN AIR GRILLE
- CEILING HEIGHT (BASED ON LOWER LEVEL FLOOR LINE AT 0")
- EXHAUST FAN
- THERMOSTAT

PLUMBING SYMBOLS LEGEND

- CLEAN OUT
- TWO WAY CLEAN OUT
- PLUMBING FIXTURE DRAIN
- FLOOR DRAIN
- AIR ADMITTANCE VENT
- PLUMBING FIXTURE VENT
- WASTE PIPE
- VENT PIPE
- CW — COLD WATER
- HW — HOT WATER
- HWR — HOT WATER RETURN
- HOSE BIB
- RELIEF VALVE
- GATE VALVE

KEYNOTES

14	EXISTING MINI SPLIT INDOOR UNIT TO REMAIN
15	EXISTING MINI SPLIT OUTDOOR CONDESING UNIT TO REMAIN
17	PROPOSED LOCATION OF NEW ROOF TOP DOAS (DEDICATED OUTDOOR AIR SYSTEM), LOAD BEARING ROOF JOISTS SHALL BE DOUBLED
25	PROVIDE 5/8" TYPE 'X' GYP. BOARD AT CEILING, TAPED, TEXTURED AND PAINTED TO MATCH EXISTING ADJACENT CEILING
26	PROVIDE ALUMINUM BACKED R38 BATT INSULATION BETWEEN ROOF JOISTS, REPLACE PAPER BACKED DAMAGED INSULATION WHERE REQUIRED
29	NEW DUCT WORK
30	EXISTING 3" SEWER LINE TO BE USED FOR UTILITY SINK
31	EXISTING 1/2" CAPPED WATER LINE TO BE REUSED FOR NEW UTILITY SINK
32	PROVIDE AIR ADMITTANCE VALVE TO VENT UTILITY SINK
33	LOCATE CLEANOUT IN FIELD OR PROVIDE NEW 2-WAY CLEAN OUT AT NEW 3" SEWER LINE
34	EXISTING HOSE BIB TO REMAIN
35	MAXIMUM 10% OF SUPPLY AIR MAY BE RETURN AIR, EXAUST REMAINING RETURN AIR
36	EXISTING ROOF MOUNTED EXHAUST FAN TO REMAIN

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PLUMBING AND MECHANICAL PLANS
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ELECTRICAL SYMBOL LEGEND

SYMBOL		DESCRIPTION	HT AFF
48"	$	SWITCH SINGLE/TWO POLE	
48"	$3	SWITCH 3-WAY	
48"	$4	SWITCH 4-WAY	
48"	$K	SWITCH KEYED	72"***
48"	$OS	SWITCH OCCUPANCY SENSOR	48"****
48"	$SP	SWITCH SPEED CONTROL	84"**
48"	$M	SWITCH HORSEPOWER RATED	
48"	$T	SWITCH TIMER	
48"	$D	SWITCH DIMMER	
48"	$PL	SWITCH WITH PILOT	
48"		SWITCH PUSH BUTTON	84"**
18"		RECEPTACLE SIMPLEX	
18"		RECEPTACLE DUPLEX	AS NOTED
18"		RECEPTACLE DUPLEX GFCI	AS NOTED
18"		RECEPTACLE ABOVE COUNTER	48"****
18"		RECEPTACLE 240/208V	84"
18"		RECEPTACLE FOURPLEX	84"
18"		RECEPTACLE FOURPLEX GFCI	144"
18"		RECEPTACLE DUPLEX HALF SWITCHED	
18"		RECEPTACLE DUPLEX SWITCHED	
18"		RECEPTACLE ISOLATED GROUND	
18"		RECEPTACLE DUPLEX FLOOR MOUNTED	
AS NOTED		RECEPTACLE ON DROP CORD	
		RECEPTACLE DUPLEX EXISTING	
		RECEPTACLE FOURPLEX EXISTING	
		DATA/TELEPHONE PLAIN	

SYMBOL	DESCRIPTION	HT AFF
(2)	SMOKE DETECTOR CEILING MOUNTED	AS NOTED
SD (3) RR	SMOKE DETECTOR CEILING MOUNTED RELAY BASE	AS NOTED
SC (3) CO	SMOKE/CARBON MONOXIDE DETECTOR CEILING MOUNTED SELF CONTAINED	
FA ANNUN	FIRE ALARM ANNUNCIATOR	
F	FIRE ALARM MANUAL PULL STATION	
F	FIRE ALARM HORN STROBE	
	HEAT DETECTOR	96"
CO	CARBON MONOXIDE DETECTOR	96"
F	FIRE ALARM BELL & STROBE	96"
A	FIRE FLAME DETECTOR	12"*
N	NURSE CALL WALL MOUNT	
N_4	NURSE CALL CEILING MOUNT	
	CAMERA	
	CAMERA PAN/TILT DRIVE	
CR	CARD READER	
	DOOR BUZZER	
	DOOR CHIME	
MD	MOTION DETECTOR	
	DISCONNECT	
	DISCONNECT FUSED	
	MAG MOTOR STARTER OR CONTACTOR	
	COMBINATION MOTOR STARTER NON-FUSED	
	COMBINATION MOTOR STARTER FUSED	
	VARIABLE FREQUENCY DRIVE	
M-1	MOTOR (SEE SCHEDULE)	

SYMBOL	DESCRIPTION
A	SURFACE OR WALL MOUNTED LIGHT (TYPE DENOTED)
A	WALL MOUNTED EXTERIOR LIGHT (TYPE DENOTED)
A	2X4 LIGHT FIXTURE RECESSED OR SURFACE MOUNTED AS SCHEDULED
A	2X2 LIGHT FIXTURE RECESSED OR SURFACE MOUNTED AS SCHEDULED
A	STRIP LIGHT (TYPE DENOTED)
A	SUSPENDED OR PENDANT LIGHT FIXTURE (TYPE DENOTED)
T1 T2 T3 TR1	TRACK & TRACK LIGHTS (TYPE DENOTED)
EM	EMERGENCY BATTERY LIGHT (TYPE DENOTED)
EMX	COMBINED BATTERY EMERGENCY & EXIT LIGHT (TYPE DENOTED)
E EX	EXIT LIGHT (TYPE DENOTED)
1	KEYED NOTE (SEE SCHEDULE)
	RECEPTACLE DUPLEX EXISTING

ALL DISTANCES ARE TO CENTER OF DEVICE OR EQUIPMENT UNLESS OTHERWISE NOTED. DEVICES INDICATED AT 48" MAY NOT BE INSTALLED WITH ANY OPERABLE PART HIGHER THAN 48". DEVICES MAY BE INSTALLED IN CONCRETE MASONRY UNITS WITH THE TOP OF THE DEVICE AT 48".

* DISTANCE ABOVE TOP OF DOOR FRAME

** DISTANCE TO TOP OF EQUIPMENT OR DEVICE

*** DISTANCE TO HIGHEST OPERABLE PART OF EQUIPMENT

**** DISTANCE BELOW CEILING

***** DISTANCE TO BOTTOM OF DEVICE

ELECTRICAL SYMBOL NOTES

THE LIGHTING FIXTURE TYPE IS INDICATED BY AN UPPER CASE LETTER.
THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER.
THE SWITCH DESIGNATION IS INDICATED BY A LOWER CASE LETTER.

A2 / 12b — EXAMPLE 1: LIGHTING FIXTURE TYPE "A" IS CONNECTED TO CIRCUIT 12 AND CONTROLLED BY SWITCH "b".

* P2D/I * / 2aba — EXAMPLE 2: THE FIXTURE TYPE SHOWN AS A NUMERATOR INDICATES ALL LIGHTING FIXTURES IN THE ROOM OR SPACE ARE THE SAME TYPE. THE CIRCUIT NUMBER AND SWITCH DESIGNATION SHOWN AS A DENOMINATOR INDICATES ALL LIGHTING FIXTURES IN THE ROOM OR SPACE ARE CONNECTED TO THE SAME CIRCUIT, CONTROLLED BY THE SAME SWITCHES, CENTER/OUTBOARD MULTILEVEL SWITCHING.

E / 14 — EXIT LIGHTS. STEM INDICATES WALL MOUNTING. NO STEM INDICATES CEILING MOUNTING. SHADED AREA INDICATES ILLUMINATED FACE(S). ARROW INDICATES DIRECTIONAL ARROW ON ILLUMINATED FACE(S). THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER. EXAMPLE: THE WALL MOUNTED EXIT LIGHT TYPE "E" WITH SINGLE FACE AND DIRECTIONAL ARROW IS CONNECTED TO CIRCUIT 14.

16c — DEVICES. THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER. THE SWITCH DESIGNATION IS INDICATED BY A LOWER CASE LETTER. EXAMPLE: SPLIT DUPLEX RECEPTACLE IS CONNECTED TO CIRCUIT 16 AND ONE RECEPTACLE OUTLET IS CONTROLLED BY SWITCH "c".

D600 / e — THE CONTROL DEVICE DESIGNATION IS INDICATED BY A LOWER CASE LETTER. EXAMPLE: SINGLE POLE SWITCH "d" TO CONTROL LIGHTING FIXTURES INDICATED BY "d".

d — WALL BOX DIMMER WITH SIZE AS INDICATED AT DEVICE. EXAMPLE: 600 WATT WALL BOX DIMMER TO CONTROL LIGHTING FIXTURES INDICATED BY "e". SEE SPECIFICATIONS FOR WATTAGE IF NOT INDICATED.

1 / 1,3,5 — SPECIAL CONNECTIONS. THE EQUIPMENT IS INDICATED BY A NUMBER IN A CIRCLE. SEE THE MOTOR AND EQUIPMENT SCHEDULE FOR THE LOAD DESCRIPTION AND TYPE OF CONNECTION. THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER(S) ADJACENT TO THE SYMBOL. EXAMPLE: EQUIPMENT NO. 1; 3 PHASE CONNECTION TO CIRCUITS 1, 3, 5.

SF-1 / 2,4,6 — MOTOR CONNECTIONS. THE MOTOR IS INDICATED BY A NUMBER WITHIN OR CHARACTERS ADJACENT TO THE MOTOR SYMBOL. SEE THE MOTOR AND EQUIPMENT SCHEDULE FOR THE MOTOR DESCRIPTION AND ELECTRICAL REQUIREMENTS. THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER(S) ADJACENT TO THE SYMBOL. EXAMPLE: MOTOR SF-1; 3 PHASE CONNECTION TO CIRCUITS 2, 4, 6.

7,9 / H1 — ELECTRIC HEATER CONNECTIONS. THE HEATER TYPE IS INDICATED BY A NUMBER FOLLOWING THE UPPER CASE LETTER "H". SEE THE HEATER SCHEDULE FOR ELECTRICAL REQUIREMENTS. THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER(S) ADJACENT TO THE HEATER. EXAMPLE: ELECTRIC BASEBOARD HEATER TYPE "H1" CONNECTED TO CIRCUITS 7, 9.

T1 — TRANSFORMERS. THE TRANSFORMER TYPE IS INDICATED BY A NUMBER FOLLOWING THE UPPER CASE LETTER "T". SEE THE TRANSFORMER SCHEDULE OR THE SINGLE LINE DIAGRAM FOR THE TRANSFORMER DESCRIPTION AND REQUIREMENTS. EXAMPLE: TRANSFORMER TYPE "T1".

LPN-102 — PANELBOARDS. PANELBOARD DOORS MAY BE SHOWN TO INDICATE OPENING SIDE OF RECESSED PANELBOARDS. SEE PANELBOARD IDENTIFICATION FOR DESIGNATION CODES.

1 — SPECIAL NOTE. SEE THE SPECIAL NOTES ON THAT SHEET FOR THE NOTE NUMBER INDICATED IN THE HEXAGON.

CONDUIT SHOWN WITHOUT SLASH MARKS SHALL CONTAIN 2 # 12 CONDUCTORS IN 3/4" CONDUIT UNLESS SPECIFIC EQUIPMENT REQUIRES A DIFFERENT SIZE.

#10 — CONDUIT SHOWN WITH SLASH MARKS SHALL CONTAIN 1 # 12 CONDUCTOR PER SLASH MARK IN 3/4" CONDUIT UNLESS A CONDUCTOR AND CONDUIT SIZE IS SHOWN ADJACENT TO THE SLASH MARKS. SLASH MARK INDICATORS ARE: SHORT STRAIGHT=PHASE CONDUCTOR, LONG STRAIGHT=NEUTRAL CONDUCTOR, SHORT BENT ENDED=SWITCH LEGS, LONG STRAIGHT WITH A DOT=GROUND CONDUCTOR, CHEVRON=CATEGORY 6, HALF CHEVRON=CATEGORY 3, TWIST=SHIELDED TWISTED PAIR, CONCENTRIC CIRCLE AND DOT=COAX CABLE.

HOME RUN TO BRANCH CIRCUIT PANELBOARD. THE PANELBOARD DESIGNATION IS SHOWN ADJACENT TO THE HOME RUN ARROW AS A NUMERATOR AND THE CIRCUIT DESIGNATION IS SHOWN AS THE DENOMINATOR. CIRCUIT BREAKER SIZES (AMPS/NUMBER OF POLES) ARE SHOWN IN THE PANELBOARD SCHEDULE WITH THE CORRESPONDING PANELBOARD AND CIRCUIT DESIGNATION. EXAMPLE: HOME RUN TO PANELBOARD LPN-102; CIRCUITS 1, 3, 5.

LPN-102 / 1,3,5 — SYMBOL NOTATIONS: UPPER CASE LETTERS ADJACENT TO SYMBOLS INDICATE A UNIT TYPE. SEE APPROPRIATE SCHEDULE OR SPECIFICATIONS.

ELECTRICAL ABBREVIATIONS LIST

1P	1 POLE (2P, 3P, 4P, ETC.)
A	AMPERE
AC	ABOVE COUNTER OR AIR CONDITIONER
ACLG	ABOVE CEILING
ADO	AUTOMATIC DOOR OPENER
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFI	ARC FAULT CIRCUIT INTERRUPTER
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ALT	ALTERNATE
AMP	AMPERE
AMPL	AMPLIFIER
ANNUN	ANNUNCIATOR
APPROX	APPROXIMATELY
AQ-STAT	AQUASTAT
ARCH	ARCHITECT, ARCHITECTURAL
AS	AMP SWITCH
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AV	AUDIO VISUAL
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BD	BOARD
BLDG	BUILDING
BMS	BUILDING MANAGEMENT SYSTEM
C	CONDUIT
CAB	CABINET
CAT	CATALOG
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CLG	CEILING
COMB	COMBINATION
CMPR	COMPRESSOR
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUATION OR CONTINUOUS
CONTR	CONTRACTOR
CONV	CONVECTOR
CP	CIRCULATING PUMP
CRT	CATHODE-RAY TUBE
CT	CURRENT TRANSFORMER
CTR	CENTER
CU	COPPER
DCP	DOMESTIC WATER CIRCULATING PUMP
DEPT	DEPARTMENT
DET	DETAIL
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
DN	DOWN
DPR	DAMPER
DS	SAFETY DISCONNECT SWITCH
DT	DOUBLE THROW
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
ELEC	ELECTRIC, ELECTRICAL
ELEV	ELEVATOR
EM	EMERGENCY
EMS	ENERGY MANAGEMENT SYSTEM
EMT	ELECTRICAL METALLIC TUBING
EP	ELECTRIC PNEUMATIC
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXH	EXHAUST
EXP	EXPLOSION PROOF
FA	FIRE ALARM
FABP	FIRE ALARM BOOSTER POWER SUPPLY PANEL
FACP	FIRE ALARM CONTROL PANEL
FCU	FAN COIL UNIT
FIXT	FIXTURE
FLR	FLOOR
FLUOR	FLUORESCENT
FU	FUSE
FUDS	FUSED SAFETY DISCONNECT SWITCH
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTOR
GND	GROUND
GRS	GALVANIZED RIGID STEEL (CONDUIT)
GYP BD	GYPSUM BOARD
HOA	HANDS-OFF-AUTOMATIC SWITCH
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPF	HIGH POWER FACTOR
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HV	HIGH VOLTAGE
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HWP	HYDRONIC WATER PUMP
IC	INTERRUPTING CAPACITY
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
INCAND	INCANDESCENT
IR	INFRARED
I/W	INTERLOCK WITH
J-BOX	JUNCTION BOX
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KVAR	KILOVOLT-AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT HOUR
LOC	LOCATE OR LOCATION
LT	LIGHT
LTG	LIGHTING
LTNG	LIGHTNING
LV	LOW VOLTAGE
MAX.	MAXIMUM
MAG.S	MAGNETIC STARTER
M/C	MOMENTARY CONTACT
MC	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDC	MAIN DISTRIBUTION CENTER
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MFS	MAIN FUSED DISCONNECT SWITCH
MH	MANHOLE
MIC	MICROPHONE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MMS	MANUAL MOTOR STARTER
MOA	MULTIOUTLET ASSEMBLY
MSP	MOTOR STARTER PANELBOARD
MSBD	MAIN SWITCHBOARD
MT	MOUNT
MT.C	EMPTY CONDUIT
MTS	MANUAL TRANSFER SWITCH
MTR	MOTOR; MOTORIZED
N.C.	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NFDS	NON-FUSED SAFETY DISCONNECT SWITCH
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
N.O.	NORMALLY OPEN
NPF	NORMAL POWER FACTOR
NTS	NOT TO SCALE
OH	OVERHEAD
OL	OVERLOADS
PA	PUBLIC ADDRESS
PB	PULL BOX OR PUSHBUTTON
PE	PNEUMATIC ELECTRIC
PED	PEDESTAL
PF	POWER FACTOR
PH	PHASE
PIV	POST INDICATING VALVE
PNL	PANEL
PP	POWER POLE
PR	PAIR
PRI	PRIMARY
PROJ	PROJECTION
PRV	POWER ROOF VENTILATOR
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE (CONDUIT)
PWR	POWER
QUAN	QUANTITY
RCPT	RECEPTACLE
REQD	REQUIRED
RM	ROOM
RSC	RIGID STEEL CONDUIT
RTU	ROOF TOP UNIT
SC	SURFACE CONDUIT
SEC	SECONDARY
SHT	SHEET
SIM	SIMILAR
S/N	SOLID NEUTRAL
SPEC	SPECIFICATION
SPKR	SPEAKER
SP	SPARE
SR	SURFACE RACEWAY
SS	STAINLESS STEEL
SSW	SELECTOR SWITCH
S/S	STOP/START PUSHBUTTONS
STA	STATION
STD	STANDARD
SURF	SURFACE MOUNTED
SW	SWITCH
SWBD	SWITCHBOARD
SYM	SYMMETRICAL
SYS	SYSTEM
TEL	TELEPHONE
TEL/DATA	TELEPHONE/DATA
TERM	TERMINAL
TL	TWIST LOCK
TR	TAMPER RESISTANT
T-STAT	THERMOSTAT
TTC	TELEPHONE TERMINAL CABINET
TV	TELEVISION
TVTC	TELEVISION TERMINAL CABINET
TYP	TYPICAL
UC	UNDER COUNTER
UE	UNDERGROUND ELECTRICAL
UG	UNDERGROUND
UH	UNIT HEATER
UT	UNDERGROUND TELEPHONE
UTIL	UTILITY
UV	UNIT VENTILATOR OR ULTRAVIOLET
V	VOLT
VA	VOLT-AMPERES
VDT	VIDEO DISPLAY TERMINAL
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
W	WATT
W/	WITH
WG	WIRE GUARD
WH	WATER HEATER
W/O	WITHOUT
WP	WEATHERPROOF
XFMR	TRANSFORMER
XFR	TRANSFER

	ANGLE	∠
@	AT	
	DELTA	△
'	FEET	
"	INCHES	
#	NUMBER	
Ø	PHASE	
C	CENTER LINE	℄
P	PLATE	L L

SPECIFIC CODE NOTES

FIRE PROTECTION REQUIREMENTS

A. PENETRATIONS IN WALLS REQUIRING PROTECTED OPENINGS MUST BE FIRESTOPPED WITH AN APPROVED MATERIAL.

1. CONDUITS MAY PENETRATE WALLS OR PARTITIONS, PROVIDED THEY ARE FIRE-STOPPED.
2. OPENINGS FOR STEEL ELECTRICAL BOXES NOT EXCEEDING 16 SQUARE INCHES ARE PERMITTED PROVIDED OPENINGS DO NOT AGGREGATE MORE THAN 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL OR PARTITION.
3. OUTLET BOXES ON OPPOSITE SIDES OF WALLS OR PARTITIONS MUST BE SEPARATED BY A HORIZONTAL DISTANCE OF 24 INCHES.

B. LIGHT FIXTURES AND OTHER APPARATUS SUPPORTED BY THE ACOUSTICAL CEILING GRID MUST MEET THE REQUIREMENTS OF NEC SECTION 410.16, MEANS OF SUPPORT.

C. RECESSED LIGHTING FIXTURES INSTALLED IN FIRE RATED CEILING ASSEMBLIES SHALL BE FIRE RATED FIXTURES BEARING THE UL FIRE RATED LABEL. FIXTURES SHALL BE INSTALLED IN ACCORDANCE WITH THE UL FIRE RESISTANCE DIRECTORY, AND SHALL INCLUDE A FIRE RATED ENCLOSURE INSTALLED OVER THE FIXTURE THAT MEETS THE REQUIREMENTS OF THE UL FIRE RESISTANCE DIRECTORY.

GENERAL ELECTRICAL NOTES

A. N/A
B. FIRE ALARM SYSTEM TO BE DESIGN-BUILD BY THE ELECTRICAL CONTRACTOR.
C. THE ELECTRICAL CONTRACTOR SHALL REMOVE ALL EXISTING ELECTRICAL DEVICES AS REQUIRED FOR REMODELING. NO ATTEMPT HAS BEEN MADE TO VERIFY ELECTRICAL DEVICES THAT HAVE TO BE REMOVED, ELECTRICAL CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS/ELECTRICAL ITEMS TO BE REMOVED.

ELECTRICAL DRAWING INDEX

PIMA COUNTY DEVELOPMENT SERVICES
APPROVED
P24BP11045 D1
01-06-2025
CC

Professional Engineer — Electrical — CERTIFICATE NO. 65185 — DAVID A. EXE — 23 DEC, 2024 — DATE SIGNED: — ARIZONA, U.S.A.

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REVISIONS

GREEN VALLEY RECREATION - METAL ARTS CLUB ALTERATION
1111 S GVR DR
GREEN VALLEY, AZ 85614

ABBREVIATIONS, SYMBOLS & NOTES
PROJECT NUMBER:59811

E-1.01
23 DEC, 2024

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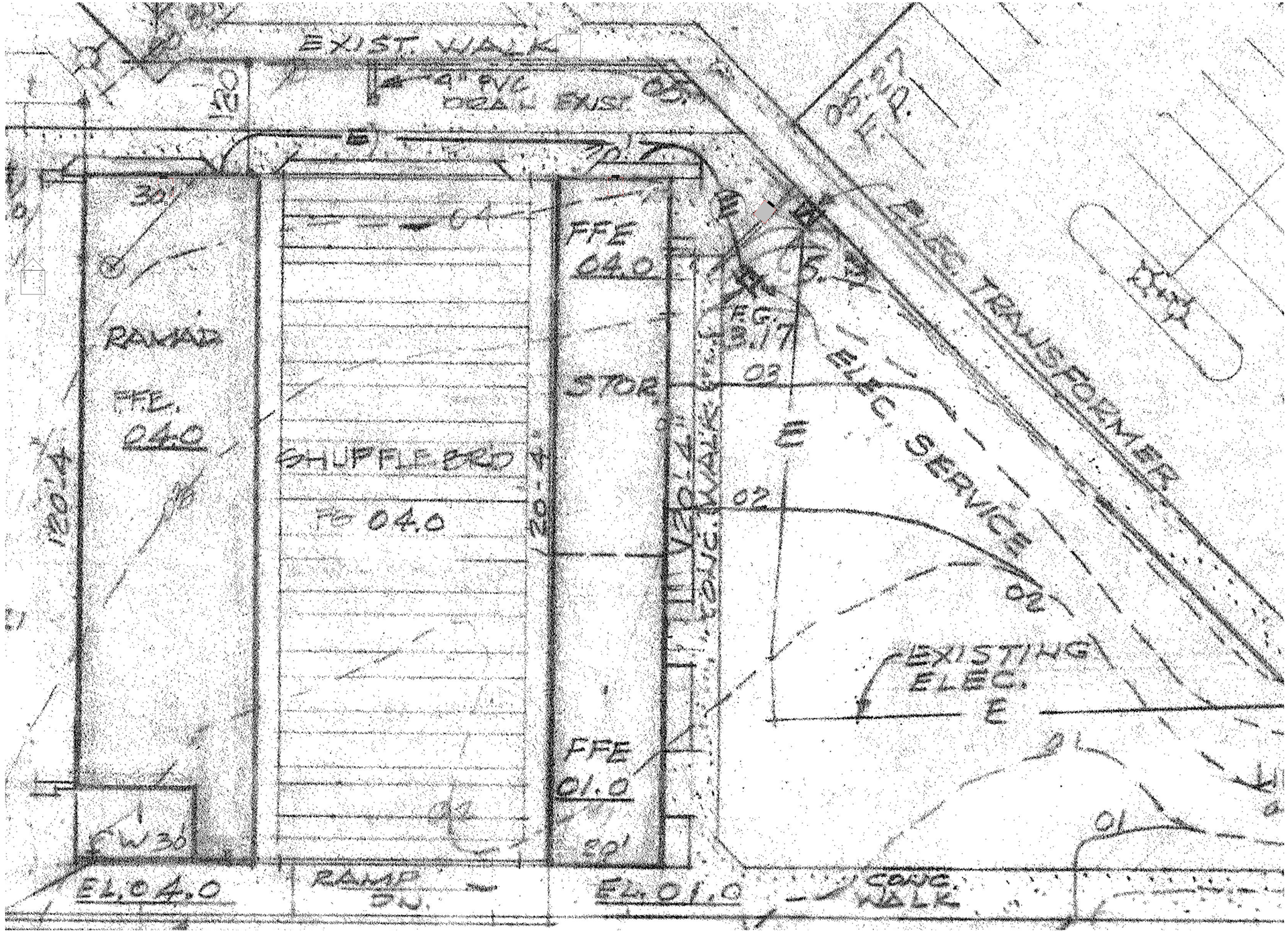

1 E-1.02 ELECTRICAL SITE PLAN
1/8" = 1'-0"

PIMA COUNTY
DEVELOPMENT SERVICES
APPROVED
P24BP11045 D1
01-06-2025
CC

Registered Professional Engineer (Electrical)
CERTIFICATE NO
65185
DAVID A. EXE
23 DEC, 2024
DATE SIGNED:
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REVISIONS

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GREEN VALLEY, AZ 85614

ELECTRICAL SITE PLAN
PROJECT NUMBER 59811

E-1.02
23 DEC, 2024

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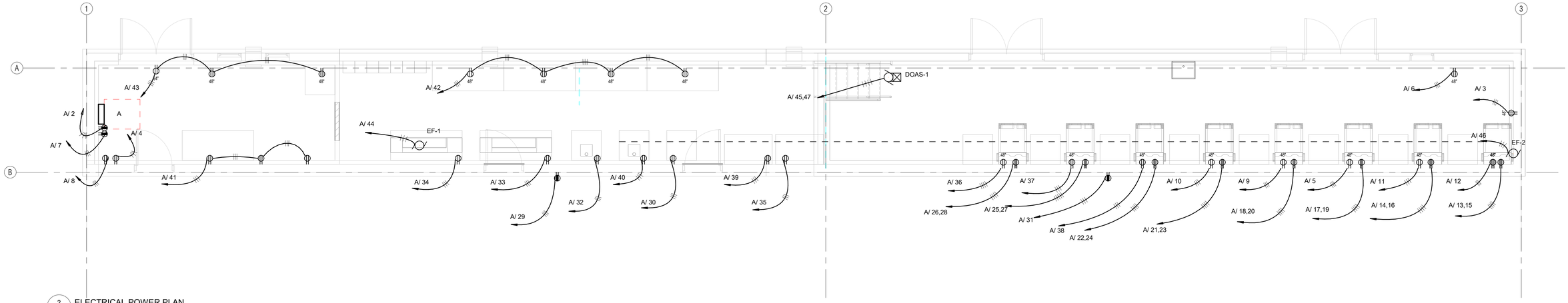
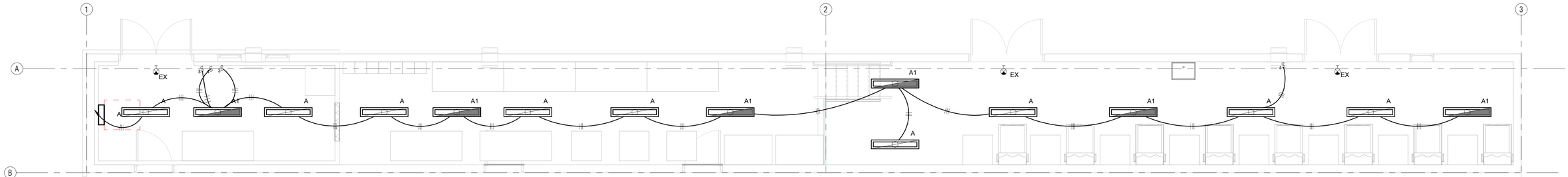


2 E-2.01 ELECTRICAL POWER PLAN
1/4" = 1'-0"



1 E-2.01 ELECTRICAL LIGHTING PLAN
1/4" = 1'-0"

LIGHTING FIXTURE SCHEDULE

ID	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LAMP	VOLTAGE	Apparent Load	COMMENTS	QTY	Wattage
A	COLUMBIA	SBL4	1X4 LED STRIP LIGHT	LED	120 V	36 VA		9	37 W
A1	COLUMBIA	SBL4	1X4 LED STRIP LIGHT	LED	120 V	36 VA		6	37 W
EX	COMPASS	CELS	EDGE LIT LED EXIT SIGN RED	LED	120 V	2 VA		3	

ELECTRICAL/MECHANICAL EQUIPMENT SCHEDULE

ID	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	VOLTAGE	PANEL	CURRENT	CIRCUIT	# POLES	BKR	WIRE	DISCONNECT	COMMENTS
DOAS-1			ROOFTOP UNIT	240 V	A	5 A	45,47	2	20 A		30 A	
EF-1			EXHAUST FAN	120 V	A	3 A	44	1	20 A		30 A	
EF-2			EXHAUST FAN	120 V	A	3 A	46	1	20 A		30 A	

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PIMA COUNTY
DEVELOPMENT SERVICES
APPROVED
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REVISIONS

GREEN VALLEY RECREATION - METAL ARTS CLUB ALTERATION
1111 S GVR DR
GREEN VALLEY, AZ 85614

ELECTRICAL LIGHTING & POWER PLAN
PROJECT NUMBER 59811

E-2.01
23 DEC, 2024

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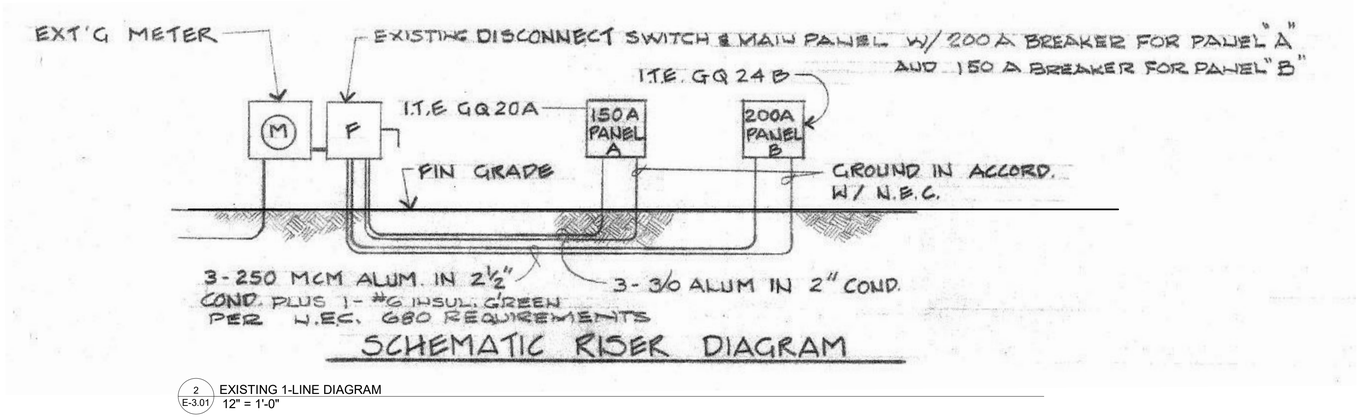


2 E-3.01 EXISTING 1-LINE DIAGRAM
12" = 1'-0"

Branch Panel: A

Location: OFFICE 1
Supply From: MMP
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/240 Single
Phases: 1
Wires: 3

A.I.C. Rating: 22,000 AMPS SYMMETRICAL
Mains Type: MAIN CB
Mains Rating: 400 A
MCB Rating: 400 A

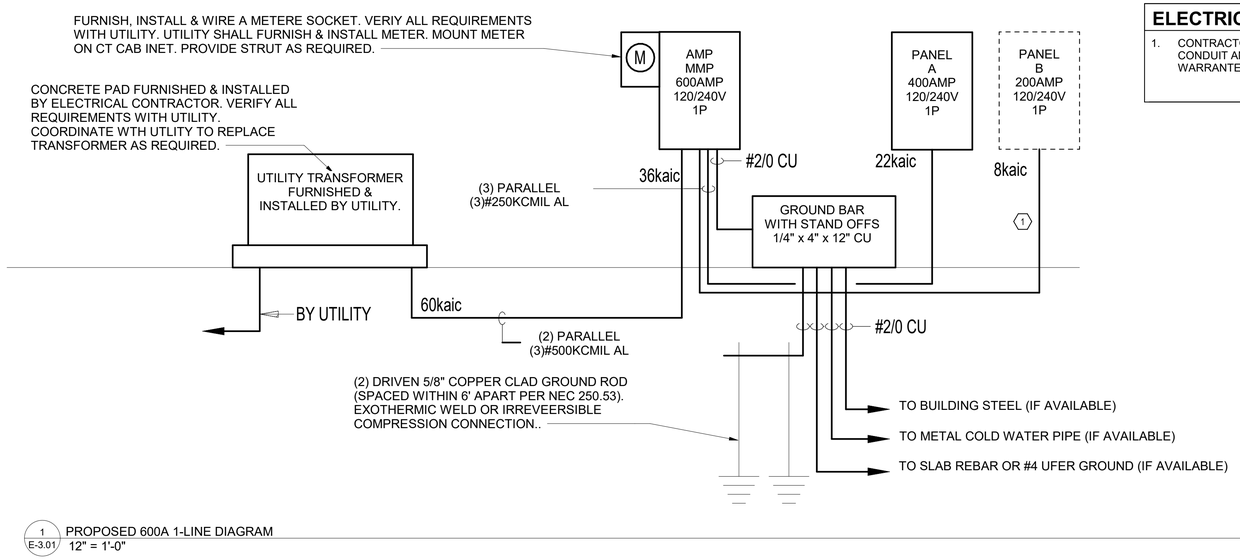
Notes:

CKT	Circuit Description	Trip	Poles	A		B		Poles	Trip	Circuit Description	CKT
1	Lighting	20 A	1	551 VA	180 VA			1	20 A	Receptacle	2
3	Receptacle	20 A	1			840 VA	600 VA	1	20 A	Receptacle	4
5	Receptacle	20 A	1	840 VA	840 VA			1	20 A	Receptacle	6
7	Receptacle	20 A	1			180 VA	600 VA	1	20 A	Receptacle	8
9	Receptacle	20 A	1	840 VA	840 VA			1	20 A	Receptacle	10
11	Receptacle	25 A	1			840 VA	840 VA	1	20 A	Receptacle	12
13	Receptacle	50 A	2	1440 VA	1440 VA			2	50 A	Receptacle	14
15						1440 VA	1440 VA				16
17	Receptacle	50 A	2	1440 VA	1440 VA			2	50 A	Receptacle	18
19						1440 VA	1440 VA				20
21	Receptacle	50 A	2	1440 VA	1440 VA			2	50 A	Receptacle	22
23						1440 VA	1440 VA				24
25	Receptacle	50 A	2	1440 VA	1440 VA			2	50 A	Receptacle	26
27						1440 VA	1440 VA				28
29	Receptacle	20 A	1	180 VA	600 VA			1	20 A	Receptacle	30
31	Receptacle	20 A	1			180 VA	600 VA	1	20 A	Receptacle	32
33	Receptacle	20 A	1	600 VA	600 VA			1	20 A	Receptacle	34
35	Receptacle	20 A	1			600 VA	840 VA	1	20 A	Receptacle	36
37	Receptacle	20 A	1	840 VA	840 VA			1	20 A	Receptacle	38
39	Receptacle	20 A	1			600 VA	600 VA	1	20 A	Receptacle	40
41	Receptacle	20 A	1	1800 VA	3360 VA			1	20 A	Receptacle	42
43	Receptacle	20 A	1			1860 VA	360 VA	1	20 A	Exhaust Fan Ef-1	44
45	DOAS-1 HVAC	20 A	2	600 VA	360 VA			1	20 A	Exhaust Fan Ef-2	46
47						600 VA	0 VA	1	20 A	Spare	48
49	Spare	20 A	1	0 VA	0 VA			1	20 A	Spare	50
51	Spare	20 A	1			0 VA	0 VA	1	20 A	Spare	52
53	Spare	20 A	1	0 VA	0 VA			1	20 A	Spare	54
			Total Load:	25391 VA		21660 VA					
			Total Amps:	212 A		181 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	1200 VA	100.00%	1200 VA		
Motor	720 VA	112.50%	810 VA	**Total Conn. Load:**	47051 VA
Other	0 VA	0.00%	0 VA	**Total Est. Demand:**	29851 VA
Receptacle	44580 VA	61.22%	27290 VA	**Total Conn.:**	196 A
Lighting	551 VA	100.00%	551 VA	**Total Est. Demand:**	124 A

Notes:



1 E-3.01 PROPOSED 600A 1-LINE DIAGRAM
12" = 1'-0"

ELECTRICAL KEYED NOTES (#)

1. CONTRACTOR TO REFEED PANEL "B". CONTRACTOR MAY REUSE EXISTING CONDUIT AND/OR CONDUCTORS BUT SYSTEM, WHEN COMPLETED, SHALL BE WARRANTEED AS NEW.

PIMA COUNTY DEVELOPMENT SERVICES
APPROVED
P24BP11045 D1
01-06-2025
CC

65185
DAVID A. EXE
23 DEC, 2024
DATE SIGNED:
ARIZONA U.S.A.
Registered Professional Engineer (Retired) CERTIFICATE NO.

INDUSTRIAL ENGINEERING, INC.
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REVISIONS

GREEN VALLEY RECREATION - METAL ARTS CLUB ALTERATION
1111 S GVR DR
GREEN VALLEY, AZ 85614

ELECTRICAL SCHEDULES & DETAILS
PROJECT NUMBER:59811

E-3.01
23 DEC, 2024

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COMcheck Software Version 4.1.5.5

Interior Lighting Compliance Certificate

Project Information

Energy Code:	2018 IECC
Project Title:	West Center Metal Shop
Project Type:	Alteration

Construction Site:
1111 S GVR DR
Green Valley, AZ 85614

Owner/Agent:

Designer/Contractor:

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Metal Shop (Workshop)	1197	0.90	1077
		Total Allowed Watts =	1077

Proposed Interior Lighting Power

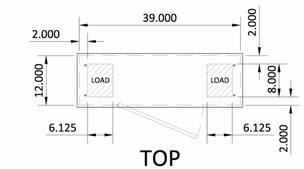
A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Metal Shop (Workshop 1197 sq.ft.)				
LED 1: LED Panel 36W:	1	15	37	555
		Total Proposed Watts =		555

Interior Lighting PASSES

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COM*check* Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

David A. Exe, PE — Name - Title
Signature
Dec 21, 2024 — Date



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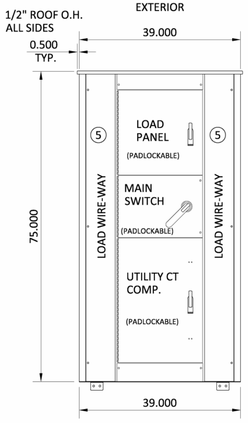

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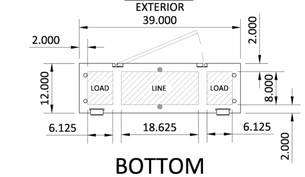

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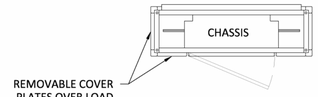

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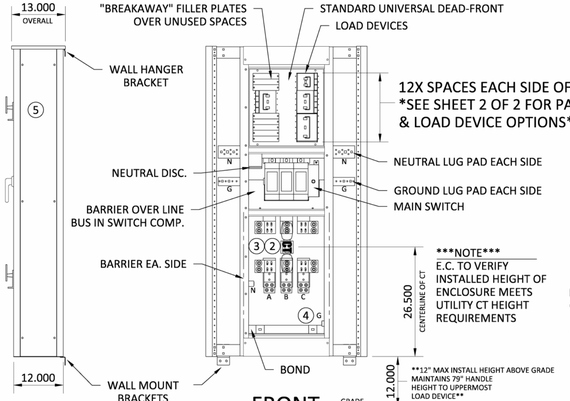

FRONT
INTERIOR
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SIDE
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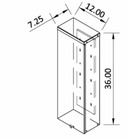

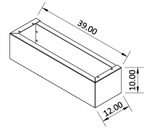

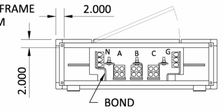

BOTTOM
INTERIOR
(3PH 4W SHOWN)

NOTES:

1. UNIT IS RATED 600V MAXIMUM. ACTUAL INSTALLED RATING IS DETERMINED BY THE LOWEST VOLTAGE RATING OF ANY INSTALLED DEVICE
2. CT COMPARTMENT ACCEPTS TWO HOLE BAR TYPE 11 7/8" CT's ONLY. VERIFY CT COMPARTMENT IS IN COMPLIANCE WITH SERVING UTILITIES REQUIREMENTS.
3. LINE NEUTRAL PROVIDED WITH (1) #6-14 MECHANICAL LUG FOR UTILITY NEUTRAL TAP
4. GROUND LINE LUGS TO MATCH PHASE & N
5. REMOVABLE COVERS OVER LOAD WIRE-WAY SECURED WITH TAMPER RESISTANT TORX HEAD SCREWS

DATE	BY	DESCRIPTION
03/09/21	SD	PRELIMINARY DRAWING, DO NOT USE
05/03/21	SD	SEPARATED DRAWINGS (TOP AND BOT FED)

TYPE MMP SWITCHBOARD SPECIFICATION

SYSTEM	AMPACITY	400-600-800	VOLTAGE	600 MAX. (1)
	PHASE	1PH or 3PH	WIRE	3W or 4W
	FREQUENCY	60HZ	SCCR	85KA
	BUS MAT.	ALUMINUM	MAIN	FUSED SWITCH
ENCL	TYPE	NEMA 1/3R, DUAL RATED		
	FINISH	ASA 61 GRAY		
STANDARDS	CERTIFICATION	U.L. LISTED 891		
	SE	SUSE	SUITABLE FOR USE AS SERVICE ENTRANCE	
	CODE	NEC 2020 COMPLIANT		
GENERAL	WALL MOUNT, FRONT ACCESSIBLE CLASS 1, DEADFRONT, FORMED 12 GA. STEEL FRAMING WITH 14 GA. STEEL PAN FORMED COVER PLATES POWDER PAINTED, TIN PLATED ALUMINUM AND/OR SILVER PLATED COPPER BUS			

- SEALED LINE / CT COMPARTMENT
- BAR TYPE 11 7/8" CT's ONLY
- MAIN SWITCH (FUSED)
- 24 CIRCUIT PANEL
- DIMENSIONS = 39"W 75"T 12"D
- WALL OR PAD MOUNTABLE

FEATURES

MMP BOTTOM FED CATALOG NUMBERS

VOLTS	AMPS	WIRE	CATALOG NUMBER	LINE LUGS	FUSE
240	400	3W	MMP2043B	(1)750 or (2)300	J
		4W	MMP2044B		
	600	3W	MMP2063B	(2)600 or (4)300	J
		4W	MMP2064B		
	800	3W	MMP2083B	(3)500 or (4)300	L
		4W	MMP2084B		
600	400	3W	MMP6043B	(1)750 or (2)300	J
		4W	MMP6044B		
	600	3W	MMP6063B	(2)600 or (4)300	J
		4W	MMP6064B		
	800	3W	MMP6083B	(3)500 or (4)300	L
		4W	MMP6084B		

AMERICAN MIDWEST POWER
3131 VICKSBURG LANE
MINNEAPOLIS, MN 55447
PH (763)551-1555
FAX (763)551-9275

1:20 SCALE

PRODUCT METERED MAIN w/ PANEL BOTTOM FED

CATALOG# MMP****B — SHEET 1 OF 2

1 E-3.02 PROPOSED MAIN CT/DISTRIBUTION PANEL "MMP"
12" = 1'-0"

Branch Panel: MMP

Location:
Supply From:
Mounting: SURFACE
Enclosure: NEMA 3R

Volts: 120/240 Single
Phases: 1
Wires: 3

A.I.C. Rating: 10,000 AMPS SYMMETRICAL
Mains Type: MCB
Mains Rating: 600 A
MCB Rating: 600 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		Poles	Trip	Circuit Description	CKT
1	PANEL "A" 240V/ 400A	400 A	2	25391...	0 VA			2	200 A	PANEL "B" 240V/200A	2
3						21660...	0 VA				4
5											6
7											8
9											10
11											12
			Total Load:	25391 VA		21660 VA					
			Total Amps:	212 A		181 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	1200 VA	100.00%	1200 VA		
Motor	720 VA	112.50%	810 VA	**Total Conn. Load:**	47051 VA
Other	0 VA	0.00%	0 VA	**Total Est. Demand:**	29851 VA
Receptacle	44580 VA	61.22%	27290 VA	**Total Conn.:**	196 A
Lighting	551 VA	100.00%	551 VA	**Total Est. Demand:**	124 A

Notes:

PIMA COUNTY DEVELOPMENT SERVICES
P24BP11045 D1
01-06-2025
CC
APPROVED

Professional Engineer CERTIFICATE NO. 65185 DAVID A. EXE 23 DEC, 2024 DATE SIGNED: ARIZONA, U.S.A.

INDUSTRIAL ENGINEERING, INC.
3210 23rd Ave Se
Rio Rancho, NM 87124
Phone (505) 246-4331
email: dexe@ieinm.com

REVISIONS

GREEN VALLEY RECREATION - METAL ARTS CLUB ALTERATION
1111 S GVR DR
GREEN VALLEY, AZ 85614

ELECTRICAL SCHEDULES & DETAILS
PROJECT NUMBER:59811

E-3.02
23 DEC, 2024

BURTON and Associates ARCHITECTS
4572 E. CAMP LOWELL DR.
TUCSON, ARIZONA 85712
(520) 471-8072
IG: BURTON.ARCH
BURTONASSOCIATESARCH.COM

12/23/2024 11:14:59 AM

ELECTRICAL SPECIFICATION

GENERAL REQUIRMENTS

1. GENERAL:

A. BEFORE SUBMITTING A PROPOSAL FOR THE WORK FOR THESE SPECIFICATIONS AND DRAWINGS, EACH BIDDER SHALL EXAMINE THE SITE AND FAMILIARIZE THEMSELVES WITH ALL CONDITIONS INCLUDING BUT NOT LIMITED TO UTILITY SERVICE, LOCATIONS, MATERIALS, AND DEMOLITION THAT AFFECT THE WORK AND COST THEREOF. NO EXTRA COMPENSATION WILL BE ALLOWED BECAUSE OF A MISUNDERSTANDING AS TO THE AMOUNT OF WORK INVOLVED OR LACK OF KNOWLEDGE OF EXISTING CONDITIONS.

B. UNDER THIS DIVISION OF THE SPECIFICATIONS, THE CONTRACTOR SHALL FURNISH AND INSTALL THE ELECTRICAL SYSTEM FOR THIS PROJECT, ALL IN ACCORDANCE WITH THESE SPECIFICATIONS AND THE CORRESPONDING DRAWINGS. THE OMISSION OF EXPRESS REFERENCE TO ANY PARTS NECESSARY FOR, OR REASONABLY INCIDENTAL TO, THE COMPLETE INSTALLATION SHALL NOT BE CONSTRUED AS RELEASING THE CONTRACTOR FROM RESPONSIBILITY FOR FURNISHING SUCH PARTS.

2. DRAWINGS AND SPECIFICATIONS:

A. THESE SPECIFICATIONS AND THE CORRESPONDING DRAWINGS FORM A SET OF PLANS FOR THE ELECTRICAL WORK OF THIS PROJECT AND NEITHER SHALL BE COMPLETE WITHOUT THE OTHER. WHERE AN ITEM IS MENTIONED IN ONE AND NOT THE OTHER, IT SHALL BE CONSIDERED AS BINDING IN THE CONTRACT AS THOUGH MENTIONED IN BOTH.

B. THE DRAWINGS ACCOMPANYING THE SPECIFICATIONS ARE DIAGRAMMATIC AND ARE INTENDED TO INDICATE THE APPROXIMATE AND RELATIVE LOCATIONS OF SERVICES AND EQUIPMENT. THE DRAWINGS SHALL NOT BE SCALED. VERIFY BUILDING DIMENSIONS WITH DIMENSIONS ON THE ARCHITECTURAL DRAWINGS. INSTALL ALL SYSTEMS AND INDIVIDUAL EQUIPMENT ACCORDING TO THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS.

C. IN SPECIFYING MATERIALS AND/OR METHODS, THE INTENT IS TO INDICATE THE MINIMUM STANDARD OF QUALITY ACCEPTABLE TO THE OWNER. IN ALL CASES THE MINIMUM STANDARDS OF THE EXISTING FEDERAL, STATE AND LOCAL CODES AND LOCAL REGULATION SHALL PREVAIL.

D. THE TERM "CIRCUIT" AS USED IN THESE SPECIFICATIONS SHALL BE UNDERSTOOD TO INCLUDE ALL DEVICES AS WELL AS THE INTERCONNECTING CONDUCTORS NECESSARY TO PROVIDE A COMPLETE ELECTRICAL CIRCUIT FROM SOURCE TO LOAD HAVING THE REQUIRED CONTROL FUNCTION.

3. APPROVAL OF MATERIAL:

A. WHERE ONE MANUFACTURER, MODEL OR BRAND NAME IS SPECIFIED ALONE, NO SUBSTITUTION WILL BE ALLOWED, UNLESS SPECIFICALLY STATED. WHERE MORE THAN ONE MANUFACTURER, MODEL OR BRAND NAME IS SPECIFIED FOR THE SAME ITEM, THE CONTRACTOR MAY CHOOSE BETWEEN THEM. WHEN ONE OR MORE MANUFACTURERS, MODELS OR BRAND NAMES ARE MENTIONED AND FOLLOWED BY THE PHRASE (OR APPROVED EQUAL), IT SHALL BE UNDERSTOOD THAT THE NAMES MENTIONED ARE TO SET A STANDARD, AND ANOTHER MANUFACTURER, MODEL OR BRAND NAME MAY BE USED IF FULLY EQUAL OR SUPERIOR.

B. SHOULD EQUIPMENT FURNISHED BE DIFFERENT FROM THE MODEL NUMBERS IN THE SPECIFICATIONS, SCHEDULES OR DRAWINGS, THE CONTRACTOR INITIATING SUCH CHANGE SHALL BE RESPONSIBLE FOR ALL EXTRA COSTS.

C. ACCEPTANCE OF SUBSTITUTIONS SHALL IN NO WAY RELIEVE THE SUBCONTRACTOR FROM THE RESPONSIBILITY FOR ANY DEFICIENCY WHICH MAY EXIST IN THE SUBSTITUTE PRODUCT OR FROM PERFORMING THE WORK IN ACCORDANCE WITH REQUIREMENTS OF THE CONTRACT DOCUMENTS. IF THE ACCEPTED SUBSTITUTION REQUIRES CHANGES OR MODIFICATIONS TO THE WORK OF ANY OTHER TRADES, SUCH CHANGES SHALL BE CONSIDERED PART OF THE SUBSTITUTION AND SHALL BE COORDINATED AND PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

4. PERMITS, FEES, LICENSES AND SERVICES:

A. ALL PERMITS, LICENSES, FEES AND SERVICE CHARGES REQUIRED IN CONNECTION WITH THE WORK OF THIS DIVISION SHALL BE SECURED AND PAID FOR BY THIS CONTRACTOR.

B. UTILITY COMPANY CHARGES ASSOCIATED WITH PROVIDING PERMANENT SERVICE TO BE PAID BY THIS CONTRACTOR. PROVIDE SEPARATE LINE ITEM PRICING FOR UTILITY CHARGES/FEES. THE ELECTRICAL CONTRACTOR SHALL INCLUDE PRICING AS PART OF THE ELECTRICAL SCOPE/BID. IF NO CHARGES, INDICATE AS SUCH. IF UTILITY CHARGES ARE NOT AVAILABLE AT TIME OF BID INDICATE AS SUCH.

C. SCHEDULE AND COORDINATE ALL WORK WITH GOVERNMENT AGENCIES AND UTILITY COMPANIES. ARRANGE FOR ALL INSPECTIONS AND FURNISH CERTIFICATION OF FINAL INSPECTION AND ANY OTHER APPROVALS AS REQUIRED BY ENFORCEMENT AUTHORITIES.

D. INSTALL EQUIPMENT ACCORDING TO UTILITY COMPANY'S WRITTEN REQUIREMENTS. PROVIDE GROUNDING AND EMPTY CONDUITS AS REQUIRED BY THE UTILITY COMPANY.

5. MAINTENANCE AND OPERATING INSTRUCTIONS:

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTRUCTING THE OWNER'S DESIGNATED PERSONNEL IN THE MAINTENANCE OF ALL EQUIPMENT AND SPECIAL SYSTEMS INSTALLED AS A PART OF THIS PROJECT. AT THE TIME THAT INSTRUCTIONS ARE BEING GIVEN, THE CONTRACTOR SHALL PRESENT THE OWNERS DESIGNATED PERSONNEL WITH (2) TWO COMPLETE MANUFACTURER'S OPERATING AND MAINTENANCE MANUALS.

6. COORDINATION:

A. CORRELATE WORK WITH THAT OF OTHER CONTRACTORS. ORGANIZE WORK SO THAT IT WILL NOT INTERFERE WITH OR DELAY THE WORK OF OTHER CONTRACTORS.

B. FIELD VERIFY SCALED DIMENSIONS OF PLANS SINCE ACTUAL LOCATIONS, DISTANCES AND LEVELS WILL BE GOVERNED BY ACTUAL FIELD CONDITIONS.

C. THE CONTRACTOR SHALL VERIFY EXACT LOCATION, SIZE AND EXTENT OF ALL EXISTING UTILITIES, OBSTRUCTIONS AND/OR OTHER CONDITIONS WHICH MAY AFFECT THE PROPOSED WORK UNDER THE PROJECT. THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO PREVENT DAMAGE TO EXISTING WORK AND SHALL REPAIR ANY DAMAGE AS A RESULT OF THIS WORK.

D. COORDINATE ELECTRICAL SERVICE CONNECTIONS TO COMPONENTS FURNISHED BY UTILITY COMPANIES. COORDINATE INSTALLATION AND CONNECTION OF EXTERIOR UNDERGROUND AND OVERHEAD UTILITIES AND SERVICES, INCLUDING PROVISION FOR ELECTRICITY-METERING COMPONENTS. COMPLY WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION AND OF UTILITY COMPANY PROVIDING ELECTRICAL POWER AND OTHER SERVICES.

E. THE CONTRACTOR SHALL VERIFY EXACT LOCATION, SIZE AND EXTENT OF ALL EXISTING UTILITIES, OBSTRUCTIONS AND/OR OTHER CONDITIONS WHICH MAY AFFECT THE PROPOSED WORK UNDER THE PROJECT. THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO PREVENT DAMAGE TO EXISTING WORK AND SHALL REPAIR ANY DAMAGE AS A RESULT OF THIS WORK.

F. THE CONTRACTOR SHALL VERIFY ALL DOOR SWINGS IN THE FIELD AND MOUNT SWITCHES ON LATCH SIDE OF DOORS OR AS APPROVED BY THE ENGINEER.

7. FIRESTOPPING:

A. APPLY FIRESTOPPING TO CABLE AND RACEWAY PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES TO ACHIEVE FIRE-RESISTANCE RATING OF THE ASSEMBLY.

8. ELECTRICAL REQUIREMENTS:

A. ELECTRICAL CHARACTERISTICS, SUCH AS VOLTAGE AND PHASE, SHALL BE AS GIVEN IN THE CONTRACT DOCUMENTS. WHERE THIS INFORMATION IS NOT GIVEN, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO BIDDING. NO EXTRA COMPENSATION WILL BE ALLOWED BECAUSE OF FAILURE TO CONTACT THE ENGINEER TO OBTAIN ELECTRICAL CHARACTERISTICS NOT GIVEN.

B. IF A CONFLICT OF VOLTAGE/PHASE BETWEEN DISTRIBUTION EQUIPMENT/PANELS IS GIVEN IN THE CONTRACT DOCUMENTS, THE CONTRACTORS AND OR SUPPLIER SHALL CONTRACT THE ENGINEER PRIOR TO BIDDING (EXAMPLE: A SINGLE PHASE BREAKER FEEDING A THREE PHASE PANEL) NO EXTRA COMPENSATION WILL BE ALLOWED BECAUSE OF FAILURE TO CONTACT THE ENGINEER TO OBTAIN ELECTRICAL CHARACTERISTICS IN CONFLICT.

C. DISCONNECTS, MAGNETIC MOTOR STARTER AND/OR OVERLOAD PROTECTION AND CONTROLS SHALL BE FURNISHED, INSTALLED AND WIRED BY THIS CONTRACTOR UNLESS OTHERWISE NOTED. ALL MOTOR STARTERS SHALL BE EQUIPPED WITH OVERLOAD PROTECTION. MECHANICAL CONTRACTOR SHALL FURNISH ALL SINGLE-PHASE MOTORS WITH BUILT-IN OVERLOAD PROTECTION. THIS CONTRACTOR SHALL WIRE ALL MECHANICAL EQUIPMENT WHICH IS NOT FACTORY WIRED (POWER AND CONTROL WIRING), UNLESS OTHERWISE NOTED.

9. EQUIPMENT CONNECTIONS:

A. VERIFY CONNECTION REQUIREMENTS BEFORE INSTALLATION FOR ALL EQUIPMENT FURNISHED AND INSTALLED BY OTHERS. ACTUAL EQUIPMENT FURNISHED MAY DIFFER AND SHALL BE VERIFIED FROM EQUIPMENT SHOP DRAWINGS OR OTHER PROPER INFORMATION TO ASSURE CORRECT ELECTRICAL PROVISIONS.

B. NO ADDITIONAL COSTS TO THE OWNER SHALL BE INCURRED FOR MODIFICATIONS TO ADJUST EQUIPMENT PROVISIONS INSTALLED INCORRECTLY DUE TO INATTENTION TO READILY AVAILABLE SHOP DRAWINGS OR OTHER EQUIPMENT INFORMATION.

10. CUTTING AND PATCHING:

A. CUT, CHANNEL, CHASE, AND DRILL FLOORS, WALLS, PARTITIONS, CEILINGS, AND OTHER SURFACES REQUIRED TO PERMIT ELECTRICAL INSTALLATIONS. PERFORM CUTTING BY SKILLED MECHANICS OF TRADES INVOLVED.

B. REPAIR AND REFINISH DISTURBED FINISH MATERIALS AND OTHER SURFACES TO MATCH ADJACENT UNDISTURBED SURFACES. INSTALL NEW FIREPROOFING WHERE EXISTING FIRESTOPPING HAS BEEN DISTURBED. REPAIR AND REFINISH MATERIALS AND OTHER SURFACES BY SKILLED MECHANICS OF TRADES INVOLVED.

11. CLEANING AND PROTECTION:

A. ON COMPLETION OF INSTALLATION, INCLUDING OUTLETS, FITTINGS, AND DEVICES, INSPECT EXPOSED FINISH. REMOVE BURRS, DIRT, PAINT SPOTS, AND CONSTRUCTION DEBRIS.

B. PROTECT EQUIPMENT AND INSTALLATIONS AND MAINTAIN CONDITIONS TO ENSURE THAT COATINGS, FINISHES, AND CABINETS ARE WITHOUT DAMAGE OR DETERIORATION AT TIME OF SUBSTANTIAL COMPLETION.

12. RELATED WORK:

A. CONCRETE FOUNDATION AND PITS: THE ELECTRICAL CONTRACTOR SHALL PROVIDE SUITABLE CONCRETE FOUNDATIONS, PADS, PITS, AND NECESSARY ANCHOR BOLTS, TIE PLATES, ETC. FOR HIS SYSTEMS UNLESS OTHERWISE NOTED OR SPECIFIED.

13. GUARANTEE:

A. THE ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL MATERIALS, WORKMANSHIP AND THE SUCCESSFUL OPERATION OF ALL APPARATUS FURNISHED AND INSTALLED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF THE FINAL ACCEPTANCE.

14. EXISTING SYSTEMS

A. THIS CONTRACTOR SHALL MAKE ALL CHANGES TO THE EXISTING SYSTEMS AS REQUIRED TO COMPLETE THE INSTALLATION. THIS CONTRACTOR SHALL RELOCATE, REPLACE OR REMOVE EXISTING ELECTRICAL SYSTEM COMPONENTS AS REQUIRED.

B. WHERE CLOSE OBSERVATION OF THE SITE INDICATES THE NECESSITY OF MODIFYING THE EXISTING ELECTRICAL INSTALLATIONS TO FACILITATE THE WORK OF OTHER CONTRACTORS, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THESE MODIFICATIONS.

C. WHERE EXISTING COMPONENTS ARE TO BE REMOVED, THEY SHALL REMAIN THE PROPERTY OF THE OWNER, AND SHALL BE STORED AT THE JOB SITE AS DIRECTED BY THE OWNERS REPRESENTATIVE. ALL EXISTING CONDUCTORS WHICH ARE ABANDONED SHALL BE REMOVED TO THE NEAREST ACCESSIBLE BOX. WHERE REMOVAL IS NOT PRACTICAL, ABANDONED CONDUCTORS SHALL BE DISCONNECTED AT BOTH ENDS, WITHIN JUNCTION BOXES, AND TAPED AND IDENTIFIED WITH SUITABLE NAME TAGS.

D. THIS CONTRACTOR SHALL PERFORM ALL CUTTING, PATCHING AND REFINISHING REQUIRED AS A RESULT OF ELECTRICAL WORK DONE IN AREAS NOT OTHERWISE REMODELED.

E. IT MAY BE FOUND NECESSARY TO INTERRUPT SERVICES TO EXISTING BUILDING OR PORTIONS THEREOF DURING THE PROGRESS OF THIS WORK. WHEN SUCH INTERRUPTIONS ARE LIKELY TO OCCUR, MAKE PREVIOUS ARRANGEMENTS WITH THE OWNER AS TO THE MOST CONVENIENT TIME FOR SUCH INTERRUPTIONS. TEMPORARY SERVICE CONNECTIONS SHALL BE PROVIDED WHERE THE OWNER CANNOT PERMIT SERVICE INTERRUPTIONS. THE EXISTING OR TEMPORARY SERVICES SHALL BE MAINTAINED IN OPERATION UNTIL SUCH TIME THAT THE NEW SERVICES HAVE BEEN INSTALLED AND ARE READY FOR PERMANENT OPERATION.

15. DEMOLITION WORK IN EXISTING BUILDING

A. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AS REQUIRED. NO ADDITIONAL COMPENSATION SHALL BE GRANTED FOR MISINTERPRETATION OR OVERSIGHT ON BEHALF OF THE CONTRACTOR.

B. ALL FIXTURES AND ELECTRICAL DEVICES REMOVED DURING THE COURSE OF CONSTRUCTION SHALL REMAIN THE PROPERTY OF THE OWNER AND THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

C. DUST, NOISE, VIBRATION AND TRAFFIC SHALL BE CONTROLLED TO A PRE-AGREED MINIMUM.

D. DEVICES, BOXES, CONDUIT AND EQUIPMENT WHICH HAVE SUFFERED PARTIAL REMOVAL OR ABANDONMENT SHALL BE COVERED, CAPPED OR MODIFIED SO AS TO CONFORM WITH ALL CODES AND SHALL PRESENT NO HAZARD FOR THE PRESENT OR THE FUTURE.

E. WHERE THIS PROJECT WILL CONSIST OF ALTERATION WORK WITHIN, AND CONSTRUCTION OF BUILDING ADDITIONS TO AN OPERATING FACILITY. DEMOLITION WORK SHALL BE COORDINATED AND CONDUCTED IN A MANNER THAT WILL NOT INTERFERE WITH NORMAL OPERATION OF THE BUILDING. ALL WORK SHALL BE PLANNED IN ADVANCE WITH THE OWNER AND ARCHITECT.

F. MATERIALS AND EQUIPMENT NOTED TO BE REUSED SHALL BE EXAMINED AND REPAIRED AS REQUIRED SO THAT MATERIALS AND EQUIPMENT WILL BE PRESENTABLE AND IN GOOD WORKING CONDITION.

G. IT MAY BE FOUND NECESSARY TO INTERRUPT SERVICE TO EXISTING BUILDING OR PORTIONS THEREOF DURING THE PROGRESS OF THIS WORK. WHEN SUCH INTERRUPTIONS ARE LIKELY TO OCCUR, MAKE PREVIOUS ARRANGEMENTS WITH THE OWNER AS TO THE MOST CONVENIENT TIMES FOR SUCH INTERRUPTIONS. TEMPORARY SERVICE CONNECTIONS SHALL BE PROVIDED WHERE THE OWNER CANNOT PERMIT SERVICE INTERRUPTIONS. THE EXISTING OR TEMPORARY SERVICES SHALL BE MAINTAINED IN OPERATION UNTIL SUCH TIME THAT THE NEW SERVICES HAVE BEEN INSTALLED AND ARE READY FOR PERMANENT OPERATION.

BASIC MATERIALS AND METHODS

1. CONDUCTORS AND CABLES:

A. PROVIDE COPPER CONDUCTORS EXCEPT WHERE ALUMINUM CONDUCTORS ARE SPECIFICALLY INDICATED OR PERMITTED FOR SUBSTITUTION. ALUMINUM CONDUCTORS MAY BE SUBSTITUTED FOR CONDUCTORS #6 AND LARGER. CONDUCTOR SIZES INDICATED ARE BASED ON COPPER UNLESS SPECIFICALLY INDICATED AS ALUMINUM. WHERE ALUMINUM CONDUCTORS ARE SUBSTITUTED FOR COPPER, COMPLY WITH THE FOLLOWING:

1) SIZE ALUMINUM CONDUCTORS TO PROVIDE, COMPARABLE TO COPPER SIZES INDICATED, EQUIVALENT OR GREATER AMPACITY AND EQUIVALENT OR LESS VOLTAGE DROP.

2) INCREASE SIZE OF RACEWAYS, BOXES, WIRING GUTTERS, ENCLOSURES, ETC. AS REQUIRED TO ACCOMMODATE ALUMINUM CONDUCTORS.

3) PROVIDE ALUMINUM EQUIPMENT GROUND CONDUCTOR SIZED ACCORDING TO NFPA 70. ALUMINUM CONDUCTORS.

B. CONDUCTORS AND CABLES INSTALLED EXPOSED IN SPACES USED FOR ENVIRONMENTAL AIR SHALL BE PLENUM RATED, LISTED AND LABELED AS SUITABLE FOR USE IN RETURN AIR PLENUMS.

C. UNLESS SPECIFICALLY INDICATED TO BE EXCLUDED, PROVIDE ALL REQUIRED CONDUIT, BOXES, WIRING, CONNECTORS, ETC. AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.

D. UNLESS DIMENSIONED, CIRCUIT ROUTING INDICATED IS DIAGRAMMATIC. WHEN CIRCUIT DESTINATION IS INDICATED WITHOUT SPECIFIC ROUTING, DETERMINE EXACT ROUTING REQUIRED.

E. NONMETALLIC-SHEATHED CABLE MAY BE SUBSTITUTED FOR WIRE IN CONDUIT IF ALLOWED BY CODE. INSTALL NONMETALLIC-SHEATHED CABLE (TYPE NM-B) IN ACCORDANCE WITH NECA 121.

F. MC CABLE MAY BE SUBSTITUTED FOR WIRE IN CONDUIT IF ALLOWED BY CODE. INSTALL METAL-CLAD CABLE (TYPE MC) IN ACCORDANCE WITH NECA 120.

G. UNLESS SPECIFICALLY INDICATED TO BE EXCLUDED, PROVIDE FINAL CONNECTIONS TO ALL EQUIPMENT AND DEVICES, INCLUDING THOSE FURNISHED BY OTHERS, AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.

2. GROUNDING AND BONDING:

A. PROVIDE ALL REQUIRED COMPONENTS, CONDUCTORS, CONNECTORS, CONDUIT, BOXES, FITTINGS, SUPPORTS, ACCESSORIES, ETC. AS NECESSARY FOR A COMPLETE GROUNDING AND BONDING SYSTEM. WHERE CONDUCTOR SIZE IS NOT INDICATED, SIZE TO COMPLY WITH NFPA 70.

B. PROVIDE CONNECTION TO GROUNDING ELECTRODES FROM THE FOLLOWING METHODS BELOW TO FORM A GROUNDING ELECTRODE SYSTEM.

1) METAL UNDERGROUND WATER PIPES: PROVIDE CONNECTION TO UNDERGROUND METAL DOMESTIC WATER SERVICE PIPE(S) THAT ARE IN DIRECT CONTACT WITH EARTH FOR A LEAST 10 FEET AT AN ACCESSIBLE LOCATION NOT MORE THAN 5 FEET FROM THE POINT OF ENTRANCE TO THE BUILDING.

2) CONCRETE-ENCASED ELECTRODE: PROVIDE CONNECTION TO CONCRETE-ENCASED ELECTRODE CONSISTING OF NOT LESS THAN 20 FEET OF EITHER STEEL REINFORCING BARS OR BARE COPPER CONDUCTOR NOT SMALLER THAN 4 AWG EMBEDDED WITHIN CONCRETE FOUNDATION OR FOOTING THAT IS IN DIRECT CONTACT WITH EARTH IN ACCORDANCE WITH NFPA 70.

3) GROUND ROD ELECTRODE(S): PROVIDE THREE ELECTRODES IN AN EQUILATERAL TRIANGLE CONFIGURATION NOT LESS THAN 10 FEET FROM EACH OTHER.

C. PROVIDE 1/4"x4"x12" GROUND BAR, SEPARATE FROM SERVICE EQUIPMENT ENCLOSURE, FOR COMMON CONNECTION POINT OF GROUND ELECTRODE SYSTEM BONDING JUMPERS AS PERMITTED IN NFPA 70.

D. FOR EACH SERVICE DISCONNECT, PROVIDE GROUNDING ELECTRODE CONDUCTOR TO CONNECT NEUTRAL (GROUNDED) SERVICE CONDUCTOR TO THE GROUNDING ELECTRODE SYSTEM. PROVIDE A MAIN BONDING JUMPER TO CONNECT THE NEUTRAL (GROUNDED) BUS TO THE EQUIPMENT GROUND BUS WHERE NOT FACTORY-INSTALLED.

E. PROVIDE BONDING FOR EQUIPMENT GROUNDING CONDUCTORS, EQUIPMENT GROUND BUSSES, METALLIC EQUIPMENT ENCLOSURES, METALLIC RACEWAYS AND BOXES, AND OTHER NORMALLY NON-CURRENT CONDUCTIVE MATERIALS LIKELY TO BECOME ENERGIZED.

F. PROVIDE INSULATED GREEN GROUNDING CONDUCTOR IN EACH FEEDER AND BRANCH CIRCUIT RACEWAY. DO NOT USE RACEWAYS AS SOLE EQUIPMENT GROUNDING CONDUCTOR. WHERE CIRCUIT SIZE ARE INCREASED FOR VOLTAGE DROP, INCREASE SIZE OF EQUIPMENT GROUNDING CONDUCTOR PROPORTIONALLY IN ACCORDANCE WITH NFPA 70.

G. COMMUNICATIONS SYSTEMS GROUNDING AND BONDING: PROVIDE SIZE 6 AWG BONDING JUMPER IN RACEWAY FROM INTERSYSTEM BONDING TERMINATION TO EACH COMMUNICATIONS ROOM OR BACKBOARD AND PROVIDE GROUND BAR FOR TERMINATION.

H. MAKE GROUNDING AND BONDING CONNECTIONS USING THE FOLLOWING METHODS BELOW:

1) EXOTHERMIC WELDS; MAKE CONNECTIONS USING MOLDS AND WELD MATERIALS SUITABLE FOR THE INSTALLATION.
2) MECHANICAL CONNECTORS: SECURE CONNECTIONS ACCORDING TO MANUFACTURER'S TORQUE SETTINGS.
3) COMPRESSION CONNECTORS: SECURE CONNECTIONS USING MANUFACTURER'S TOOLS AND DIES.

3. LIGHTING AND POWER PANELBOARDS:

A. NEMA PB1 AS SCHEDULED, 20" WIDE SECTION, 225 AMP BUS (100A BUS PERMITTED IF LESS THAN 30 BRANCH POLES). PROVIDE A GROUND BUS FOR ISOLATED GROUND CIRCUITS. BUS MATERIAL ALUMINUM OR COPPER INSTALL PER NEMA PB1.1 BALANCE PHASE CURRENTS TO 10% MAXIMUM VARIATION. PROVIDE TYPEWRITTEN BRANCH CIRCUIT DIRECTORY. LOCKABLE DOORS, KEYED ALIKE UNLESS NOTED OTHERWISE. SURFACE MOUNTED OR FLUSH MOUNTED ENCLOSURES AS INDICATED.

B. CIRCUIT BREAKERS: NEMA AB1 AS SCHEDULED, PLUG-IN OR BOLT-ON. MULTIPLE POLE BREAKERS SHALL HAVE A COMMON TRIP HANDLE. PROVIDE CIRCUIT BREAKERS WITH INTERRUPTING CAPACITY NOT LESS THAN THE AVAILABLE FAULT CURRENT AT THE INSTALLED LOCATION AS INDICATED ON THE DRAWINGS.

C. LOAD CENTERS: CIRCUIT BREAKER TYPE, THERMAL MAGNETIC PLUG-IN, FLUSH MOUNTED ENCLOSURE UNLESS OTHERWISE INDICATED.

4. WIRING DEVICES:

A. ALL WIRING DEVICES INSTALLED SHALL BE "SPECIFICATION GRADE" AND MANUFACTURED BY ARROW HART, LEVITON, HUBBEL OR EQUAL.

B. LOCAL SWITCHES SHALL BE TOGGLE TYPE. AC, RATED 20A, 125V. QUIET TYPE WITH SILENT OPERATING MECHANISM, TOTALLY ENCLOSED IN A MOLDED COMPOSITION BASE. ALL RECEPTACLES SHALL BE GROUNDING TYPE. UNLESS OTHERWISE INDICATED, LOCAL SWITCHES AND DIMMERS SHALL BE INSTALLED 48 INCHES ABOVE FINISHED FLOOR, RECEPTACLES SHALL BE INSTALLED 18 INCHES ABOVE FINISHED FLOOR OR 6 INCHES ABOVE COUNTER.

C. NEUTRAL CONDUCTORS SHALL NOT BE SHARED ON BRANCH CIRCUITS UTILIZING WALL DIMMERS.

D. GFI DUPLEX RECEPTACLES: NEMA 5-20R CONFIGURATION AND RATING, SELF CONTAINED GROUND FAULT CURRENT INTERRUPTING DUPLEX RECEPTACLE, LISTED AND LABELED AS TAMPER RESISTANT TYPE AND AS WEATHER RESISTANT TYPE COMPLYING WITH UL 498 SUPPLEMENT SE SUITABLE FOR INSTALLATION IN DAMP OR WET LOCATIONS, GRAY COLOR. PROVIDE WITH WEATHERPROOF BOX AND COVER WHERE INDICATED.

E. TAMPER RESISTANT CONVENIENCE RECEPTACLES: COMMERCIAL SPECIFICATION GRADE, 20A, 125V, NEMA 5-20R, LISTED AND LABELED AS TAMPER RESISTANT TYPE.

F. WALL DEVICE AND PLATE COLOR BY ARCHITECT.

5. LIGHTING FIXTURES:

A. SEE LIGHTING FIXTURE SCHEDULE ON THE ELECTRICAL DRAWINGS FOR TYPE AND DESCRIPTION OF LUMINARIES.

B. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROCUREMENT, UNLOADING, STORAGE AND PROTECTION OF LIGHTING FIXTURES. PROVIDE ALL NECESSARY LABOR AND MATERIALS FOR A COMPLETE OPERATING SYSTEM.

C. UPON INTERRUPTION OF NORMAL POWER SOURCE, SOLID-STATE CONTROL WILL AUTOMATICALLY SWITCH TO BATTERY POWER WITH CONNECTED LED LAMPS FOR MINIMUM 90 MINUTES OF RATED EMERGENCY ILLUMINATION, AND AUTOMATICALLY RECHARGES BATTERY UPON RESTORATION OF NORMAL POWER SOURCE. UNLESS OTHERWISE INDICATED, CONNECT UNIT TO UN-SWITCHED POWER FROM SAME CIRCUIT FEEDING NORMAL LIGHTING IN SAME ROOM OR AREA. BYPASS LOCAL SWITCHES, CONTACTOR, OR OTHER LIGHTING CONTROLS.

D. EXIT SIGNS SHALL BE INTERNALLY ILLUMINATED WITH LED'S, SINGLE OR DOUBLE FACE AS INDICATED ON THE DRAWING, DIRECTIONAL ARROWS AS INDICATED OR REQUIRED FOR THE INSTALLED LOCATION. UNLESS OTHERWISE INDICATED, CONNECT UNIT TO UN-SWITCHED POWER FROM SAME CIRCUIT FEEDING NORMAL LIGHTING IN SAME ROOM OR AREA. BYPASS LOCAL SWITCHES, CONTACTOR, OR OTHER LIGHTING CONTROLS.

E. LEAVE PROTECTIVE FILM IN PLACE ON FIXTURES UNTIL FINAL CLEAN-UP.

6. LIGHTING CONTROL DEVICES:

A. PROVIDE FACTORY-ASSEMBLED COMMERCIAL SPECIFICATION GRADE OCCUPANCY SENSOR FOR INDOOR USE CAPABLE OF SENSING BOTH MAJOR AND MINOR MOTIONS, ACCORDING TO PUBLISHED COVERAGE AREAS, FOR AUTOMATIC LIGHTING CONTROL. PASSIVE INFRARED OR PASSIVE INFRARED/ULTRASONIC SENSOR TECHNOLOGY.

B. UNLESS OTHERWISE INDICATED, OCCUPANCY SENSORS SHALL BE MANUAL ON/AUTO OFF. WALL SWITCH OCCUPANCY SENSOR SHALL BE DESIGNED FOR INSTALLATION IN A STANDARD WALL BOX WITH A FIELD OF VIEW OF 180 DEGREES, INTEGRATED MANUAL CONTROL CAPABILITY.

C. WHERE INDICATED, INSTALL SEPARATE COMPATIBLE WALL SWITCHES FOR MANUAL CONTROL INTERFACE WITH DIRECTIONAL OR CEILING MOUNTED OCCUPANCY SENSORS.

7. STRUCTURED CABLING FOR VOICE AND DATA:

A. PROVIDE A COMPLETE PERMANENT SYSTEM OF PATHWAYS FOR VOICE/DATA AND COMMUNICATIONS, INCLUDING CONDUITS AND PULL WIRE, SUPPORT STRUCTURES, ENCLOSURES, CABINETS, AND BACK BOXES.

B. COORDINATE REQUIREMENTS FOR SERVICE ENTRANCE AND ENTRANCE FACILITIES WITH COMMUNICATIONS SERVICE PROVIDER.

8. FIRE DETECTION AND ALARM:

A. FIRE ALARM SYSTEM SHALL BE DESIGN BUILD BY THE ELECTRICAL CONTRACTOR. PRICING SHALL BE INCLUDED IN THE BID.

B. THE SYSTEM SHALL BE ADDRESSABLE BY APPROVED MANUFACTURERS AS FOLLOWS:

1) SIMPLEX
2) EDWARDS
3) NOTIFIER
4) PRYROTRONICS
5) FARADAY
6) FIKE
7) GAMEWELL FCI
8) SILENT KNIGHT

9. ENCLOSED SAFETY SWITCHES:

A. QUICK-MAKE, QUICK-BREAK, FUSIBLE OR NON-FUSIBLE, ENCLOSED SAFETY SWITCH LISTED AND LABELED AS COMPLYING WITH UL 98; GENERAL DUTY; RATINGS, AND CONFIGURATION AS INDICATED ON THE DRAWINGS. PROVIDE SAFETY INTERLOCK TO PREVENT OPENING THE COVER WITH THE SWITCH IN THE "ON" POSITION WITH CAPABILITY OF OVERRIDING INTERLOCK FOR TESTING PURPOSES. PROVIDE EXTERNALLY OPERABLE HANDLE WITH MEANS FOR LOCKING IN THE "OFF" POSITION, CAPABLE OF ACCEPTING TWO PADLOCKS.

B. PROVIDE FUSES FOR FUSIBLE SWITCHES AS INDICATED OR AS REQUIRED BY THE EQUIPMENT MANUFACTURER'S RECOMMENDATION.

10. FUSES:

A. UNLESS SPECIFICALLY INDICATED TO BE EXCLUDED, PROVIDE FUSES FOR ALL FUSIBLE EQUIPMENT AS REQUIRED FOR A COMPLETE OPERATING SYSTEM. PROVIDE FUSES OF THE SAME TYPE, RATING, AND MANUFACTURER WITH THE SAME SWITCH.

1) FUSIBLE SWITCHES LARGER THAN 600 AMPS: CLASS L, TIME-DELAY.
2) FUSIBLE SWITCHES UP TO 600 AMPS: CLASS RK1, TIME-DELAY.

11. IDENTIFICATION OF ELECTRICAL SYSTEMS:

A. PROVIDE IDENTIFICATION NAMEPLATE TO IDENTIFY EACH PIECE OF ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT. USE SELF-ADHESIVE LAMINATED PLASTIC LABELS; UV, CHEMICAL, WATER, HEAT, AND ABRASIVE RESISTANT. USE FACTORY PRE-PRINTED OR MACHINE-PRINTED TEXT. DON NOT USE HANDWRITTEN TEXT UNLESS OTHERWISE INDICATED.

B. ARC-FLASH HAZARD WARNING: ELECTRICAL EQUIPMENT THAT IS LIKELY TO REQUIRE SERVICING OR MAINTENANCE WHILE ENERGIZED SHALL BE PROVIDED WITH A WARNING SIGN LOCATED CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE SERVICING OR MAINTENANCE OF THE EQUIPMENT. USE FACTORY PRE-PRINTED OR MACHINE-PRINTED SELF-ADHESIVE POLYESTER OR SELF-ADHESIVE VINYL LABELS PRODUCED USING MATERIALS RECOGNIZED TO UL 96.

PIMA COUNTY
DEVELOPMENT SERVICES
APPROVED

P24BP11045 D1
01-06-2025
CC

Registered Professional Engineer (Electrical)
CERTIFICATE NO.
65185
DAVID A. EXE
23 DEC, 2024
DATE SIGNED
ARIZONA, U.S.A.

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ELECTRICAL SPECIFICATIONS
PROJECT NUMBER:59811

E-4.01
23 DEC, 2024

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