Solar Array, Interior LED and Vehicle Exhaust System
Marshall Field Maintenance Shop
Marshall, Missouri

BID DOCUMENTS

CLARK & ENERSEN

OWNER: STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

MISSOURI NATIONAL GUARD

PROJECT MANAGEMENT: OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT, DESIGN AND
CONSTRUCTION

DESIGNER: THE CLARK ENERSEN PARTNERS

PROJECT NUMBER: T2044-01
A/E PROJECT NUMBER: 050-005-20

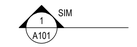
SITE NUMBER: 6265
ASSET NUMBER: 8136265009

SHEET NUMBER:
G-000
03/22/2023

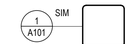
REFERENCE SYMBOLS

DETAIL OR SECTION NUMBER
SHEET ON WHICH IT IS FOUND

1 VIEW NAME
SCALE: 1/8" = 1'-0"
DETAIL REFERENCE NUMBER

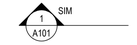


SECTION REFERENCE



DETAIL REFERENCE

ELEVATION REFERENCE



CROSS SECTION REFERENCE

DETAIL SECTION REFERENCE

CLASSROOM
101
ROOM IDENTIFIER

101
DOOR/OPENING IDENTIFIER

1t
WINDOW/OPENING IDENTIFIER

0
GRID LINE

FIN. FLR.
100'-0"
ELEVATION REFERENCE

1D
WALL TYPE REFERENCE

DEMOLITION INDICATOR

REVISION TAG & CLOUD INDICATOR

REVISION TAG INFORMATION:

TOP indicates the instrument type.
- A = Addendum
- B = Bid Package
- D = Construction Change Directive or Change Directive
- F = Field Order
- G= Guaranteed Maximum Price
- I = Architects Supplemental Instructions or Architects Supplemental
- L = Information
- P = Limited Permit
- R = Proposal Request, Proposal Request Order or Change Proposal Request
- BOT = Request For Information Number assigned to instrument type

GENERAL NOTES

1. ALL DISCIPLINES SHALL BE RESPONSIBLE FOR THEIR SCOPE OF WORK. THIS WORK IS TO BE SCHEDULED AND COMPLETED WITH THE GENERAL CONTRACTOR'S FULL KNOWLEDGE.
2. ALL WORK TO BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF CODES AND STANDARDS (INCLUDING THE AMERICANS WITH DISABILITIES ACT (ADAAG), INTERNATIONAL BUILDING CODE (IBC), NATIONAL ELECTRIC CODE (NEC), INTERNATIONAL MECHANICAL CODE (IMC), NATIONAL FIRE PROTECTION AGENCY (NFPA 101), ASHRAE STANDARD 90.1, AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) AND THE SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION (SMACNA)).
3. ALL CEILINGS IN AREAS OF WORK TO REMAIN IN SAME CONFIGURATION AS EXISTING CONDITIONS. SALVAGE AND REINSTALL ANY CEILING GRID AND TILE AS NECESSARY TO INSTALL NEW MECHANICAL AND ELECTRICAL EQUIPMENT. REPLACE ANY TILES DAMAGED BY CONSTRUCTION ACTIVITIES.
4. FINAL CLEANING - REMOVE OR REPAIR DAMAGED OR SOILED SPOTS ON NEWLY PAINTED WALLS AND ON ALL NEWLY INSTALLED WORK. REMOVE DUST AND DEBRIS FROM ALL NEW WORK.

STANDARD ABBREVIATIONS

A/E — ARCHITECT/ENGINEER
AB — ANCHOR BOLT
ABBR — ABBREVIATE
ABV — ABOVE
AC — AIR CONDITIONING
ACID RES — ACID-RESISTANT
ACOUS — ACOUSTICAL
ACOUS INSUL — ACOUSTICAL INSULATION
ACOUS PNL — ACOUSTICAL PANEL
ACOUS PLAS — ACOUSTICAL PLASTER
ACOUS TILE — ACOUSTICAL TILE
ACT — ACTUAL
AD — AREA DRAIN
ADC — AUTOMATIC DOOR CLOSER
ADDL — ADDITIONAL
ADDM — ADDENDUM
ADJ — ADJUSTABLE
ADJC — ADJACENT
AF — ACCESS FLOOR
AFF — ABOVE FINISHED FLOOR
AFG — ABOVE FINISHED GRADE
AFS — ABOVE FINISHED SLAB
AGGR — AGGREGATE
AHR — ANCHOR
AHU — AIR HANDLING UNIT
ALD — ALUMINUM DOOR
ALM — ALARM
ALT — ALTERNATE
ALUM — ALUMINUM
AMB — AMBIENT
AMPL — AMPLIFIER
AMT — AMOUNT
ANN — ANNUNCIATOR
ANOD — ANODIZED
ANT — ANTENNA
AP — ACCESS PANEL
APC — ACOUSTICAL PANEL CEILING
APPX — APPENDIX
ARCH — ARCHITECT (URAL)
ASB — ASBESTOS
ASC — ABOVE SUSPENDED CEILING
ASPH — ASPHALT
ASYM — ASYMMETRICAL
AV — AUDIO VISUAL
AVE — AVENUE
AWC — ACOUSTICAL WALL COVERING
AWP — ACOUSTICAL WALL PANEL
B&B — BALLED AND BURLAPPED
BAF — BAFFLE
BAL — BALANCE
BB — BULLETIN BOARD
BC — BOTTOM OF CURB
BD — BOARD
BEV — BEVEL
BF — BOTH FACES
BFF — BELOW FINISH FLOOR
BFP — BACKFLOW PREVENTER
BITUM — BITUMINOUS
BJT — BED JOINT
BL — BASE LINE
BLDG — BUILDING
BLK — BLOCK
BLKG — BLOCKING
BLKHD — BULKHEAD
BLST — BALLAST
BM — BEAM
BO — BOTTOM OF
BOC — BACK OF CURB
BOW — BOTTOM OF WALL
BP — BASE PLATE
BRCG — BRACING
BRDG JST — BRIDGING JOIST
BRDG — BRIDGING
BRG — BEARING
BRG PL — BEARING PLATE
BRK — BRICK
BRKT — BRACKET
BRS — BRASS
BRZ — BRONZE
BS — BOTH SIDES
BSMT — BASEMENT
BTM — BOTTOM
BUR — BUILT-UP ROOF
BW — BOTH WAYS
C/C — CENTER TO CENTER
C&G — CURB AND GUTTER
CAB — CABINET
CAV — CAVITY
CB — CATCH BASIN
CCTV — CLOSED CIRCUIT TELEVISION
CEM — CEMENT
CEM PLAS — CEMENT PLASTER
CER — CERAMIC
CER TILE — CERAMIC TILE
CFLG — COUNTER FLASHING
CG — CORNER GUARD
CH BD — CHALKBOARD
CHAN — CHANNEL
CHFR — CHAMFER
CHK — CHECK
CI — CAST IRON
CIP — CAST IN PLACE
CIR — CIRCLE
CJ — CONTROL JOINT
CL — CENTER LINE
CLG — CEILING
CLG DIFF — CEILING DIFFUSER
CLG HT — CEILING HEIGHT
CLL — CONTRACT LIMIT LINE
CLOS — CLOSET
CLR — CLEAR
CLSR — CLOSURE
CMPST — COMPOSITE
CMU — CONCRETE MASONRY UNIT
CNR — CORNER
CNTR — COUNTER
CO — CLEANOUT
COL — COLUMN
COMM — COMMERCIAL
COMPL — COMPLETE
CONC — CONCRETE
CONC FL — CONCRETE FLOOR
CONF — CONFERENCE
CONN — CONNECTION
CONSTR — CONSTRUCTION
CONT — CONTINUOUS
CONTR — CONTRACTOR
COORD — COORDINATE
CORR — CORRIDOR
COV PL — COVER PLATE
CPRS — COMPRESSIBLE
CPT — CARPET
CRCMF — CIRCUMFERENCE
CRS — COLD ROLLED STEEL
CSG — CASING
CSK — COUNTERSUNK
CSMT — CASEMENT
CSWK — CASEWORK
CT — CERAMIC TILE
CTV — CABLE TELEVISION
CUB — CUBICLE
CUR — CURRENT
CW — COLD WATER
DBL GLZ — DOUBLE GLAZING
DEPT — DEPARTMENT
DET — DETAIL
DF — DRINKING FOUNTAIN
DF — DRAPERY FABRIC
DFR — DOOR FRAME
DH — DOUBLE HUNG
DIA — DIAMETER
DIM — DIMENSION
DIST — DISTANCE
DIV — DIVIDER
DIW — DEIONIZED WATER
DJ — DOUBLE JOIST
DL — DEAD LOAD
DL — DRAPERY LINER
DMPF — DAMPPROOFING
DN — DOWN
DO — DITTO
DR — DOOR
DR — DRAIN
DRCLSR — DOOR CLOSURE
DS — DOWNSPOUT
DST — DOOR STOP
DT — DRAIN TILE
DUPL — DUPLICATE
DVTL — DOVETAIL
DW — DISHWASHER
DWG — DRAWING
DWL — DOWEL
DWR — DRAWER
DWTR — DUMBWAITER
E — EAST
EA — EACH
EF — EACH FACE
EIFS — EXTERIOR INSULATION FINISH SYSTEM
EJ — EXPANSION JOINT
EL — ELEVATION
ELEC — ELECTRICAL
ELEV — ELEVATOR
EMER — EMERGENCY
EMER SHR — EMERGENCY SHOWER
ENAM — ENAMEL
ENCL — ENCLOSURE
ENGR — ENGINEER
ENTR — ENTRANCE
EO — ELECTRICAL OUTLET
EP — ELECTRICAL PANEL
EPS — EXPANDED POLYSTYRENE
EPX — EPOXY
EQL SP — EQUALLY SPACED
EQ — EQUAL
EQUIP — EQUIPMENT
EQUIV — EQUIVALENT
ERECT — ERECTION
ESCAL — ESCALATOR
ESMT — EASEMENT
EST — ESTIMATE
EW — EACH WAY
EXC — EXCAVATE
EXG — EXISTING
EXH HD — EXHAUST HOOD
EXH FN — EXHAUST FAN
EXP — EXPANSION
EXSP — EXPOSED
EXST — EXISTING
EXST GR — EXISTING GRADE
EXT — EXTERIOR
EXTN — EXTENSION
F BRK — FIRE BRICK
F/F — FACE TO FACE
FBD — FIBERBOARD
FC — FIRE COATED
FD — FLOOR DRAIN
FDN — FOUNDATION
FEC — FIRE EXTINGUISHER CABINET
FF — FACTORY FINISH
FFE — FINISH FLOOR ELEVATION
FGL — FIBERGLASS
FIN GR — FINISH GRADE
FIN FL — FINISH FLOOR
FIN — FINISH
FL — FLASHING
FL — FLOWLINE
FLDG — FOLDING
FLG — FLANGE
FLR — FLOOR
FLR SK — FLOOR SINK
FLR PL — FLOOR PLATE
FLR FIN — FLOOR FINISH
FLT GL — FLOAT GLASS
FLUOR — FLUORESCENT
FOC — FACE OF CONCRETE
FOM — FACE OF MASONRY
FOS — FACE OF STUD
FPL — FIREPLACE
FPRF — FIREPROOFING
FRM — FRAME
FRNT — FRONT
FS — FAR SIDE
FS — FLAT SCREEN
FS — FULL SIZE
FSP — FIRE STANDPIPE
FSTNR — FASTENER
FTG — FOOTING
FURR — FURRING
FUT — FUTURE
FXTR — FIXTURE
GALV — GALVANIZED
GB — GRAB BAR
GDRL — GUARD RAIL
GENL — GENERAL
GENL CONTR — GENERAL CONTRACTOR
GFI — GROUND FAULT INTERRUPTER
GL — GLASS
GL BLK — GLASS BLOCK
GLU LAM — GLUE LAMINATED
GLZ — GLAZING
GLZ CMU — GLAZED CONCRETE MASONRY UNIT
GND — GROUND
GPDW — GYPSUM DRY WALL
GR BM — GRADE BEAM
GR — GRADE
GRTG — GRATING
GUT — GUTTER
GYP — GYPSUM
GYP PLAS — GYPSUM PLASTER
H — HIGH
H&CW — HOT AND COLD WATER
HB — HOSE BIBB
HC — HANDICAP
HC — HOLLOW CORE
HCMU — HOLLOW CONCRETE MASONRY UNIT
HD — HEAVY DUTY
HDJT — HEAD JOINT
HDBD — HARDBOARD
HDR — HEADER
HDWD — HARDWOOD
HGT — HEIGHT
HLB — HORIZONTAL LOUVER BLINDS
HM — HOLLOW METAL
HMD — HOLLOW METAL DOOR
HMF — HOLLOW METAL FRAME
HNDRL — HAND RAIL
HO — HOLD-OPEN
HORIZ — HORIZONTAL
HR — HOUR
HS — HIGH STRENGTH
HSB — HIGH STRENGTH BOLT
HTG — HEATING
HVAC — HEATING, VENTILATION, AIR CONDITIONING
HW — HOT WATER
HYD — HYDRANT
ID — INSIDE DIAMETER
IF — INSIDE FACE
INCAND — INCANDESCENT
INL — INLET
INSTL — INSTALLATION
INSUL — INSULATION
INTR — INTERIOR
INV — INVERT
INV EL — INVERT ELEVATION
JAN — JANITOR
JC — JANITOR'S CLOSET
JST — JOIST
JT — JOINT
KB — KNEE BRACE
KO — KNOCKOUT
KOP — KNOCKOUT PANEL
KPL — KICK PLATE
KWY — KEYWAY
L — LEFT
LAB — LABORATORY
LAV — LAVATORY
LB — POUND
LBR — LUMBER
LCMU — LIGHTWEIGHT CONCRETE MASONRY UNIT
LD BRG — LOAD BEARING
LDG — LANDING
LF — LINEAR FOOT
LG — LENGTH
LH — LEFT HAND
LHR — LEFT HAND REVERSE
LIN — LINEAR
LIN — LINOLEUM
LIQ — LIQUID
LKR — LOCKER
LKR RM — LOCKER ROOM
LL — LIVE LOAD
LNTL — LINTEL
LOC — LOCATION
LONG — LONGITUDINAL
LRG — LARGE
LS — LUMP SUM
LT — LIGHT
LT WT — LIGHTWEIGHT
LTG — LIGHTING
LVL — LEVEL
LVR — LOUVER
LW PLAS — LIGHTWEIGHT PLASTER
LWC — LIGHTWEIGHT CONCRETE
M — METER
MAINT — MAINTENANCE
MARB — MARBLE
MAS — MASONRY
MATL — MATERIAL
MAX — MAXIMUM
MB — MARKERBOARD
MBR — MEMBER
MC — METAL CLAD
MC — MOMENT CONNECTION
MDF — MEDIUM DENSITY FIBERBOARD
MDO — MEDIUM DENSITY OVERLOAD
ME — MATCH EXISTING
ME — MISCELLANEOUS EQUIPMENT
MECH — MECHANICAL
MED — MEDIUM
MEMB — MEMBRANE
MEZZ — MEZZANINE
MFG — MANUFACTURING
MFR — MANUFACTURER
MH — MANHOLE
MIL — MILLIMETER
MIN — MINIMUM
MIR — MIRROR
MISC — MISCELLANEOUS
MK — MARK
ML — MATCH LINE
ML — METAL LATH
MLC — METAL LABORATORY CASEWORK
MLDG — MOLDING
MLWK — MILLWORK
MO — MASONRY OPENING
MOD — MODULE
MTD — MOUNTED
MTG — MEETING
MTL — METAL
MTR — MORTAR
MULL — MULLION
MULT — MULTIPLE
MVBL — MOVABLE
N — NORTH
N/A — NOT APPLICABLE
NEG — NEGATIVE
NF — NEAR FACE
NIC — NOT IN CONTRACT
NO — NUMBER
NOM — NOMINAL
NS — NEAR SIDE
NTS — NOT TO SCALE
O/O — OUT TO OUT
OA — OVERALL
OC — ON CENTER
OD — OUTSIDE DIAMETER
OD — OVERFLOW DRAIN
OF — OUTSIDE FACE
OFCI — OWNER FURNISHED/CONTRACTOR INSTALL
OFF — OFFICE
OFOI — OWNER FURNISHED-OWNER INSTALLED
OHD — OVERHEAD DOOR
OPER — OPERABLE
OPNG — OPENING
OPP — OPPOSITE
OPT — OPTIONAL
ORIG — ORIGINAL
OTA — OPEN TO ABOVE
OTFA — OPEN TO FLOOR ABOVE
OTS — OPEN TO STRUCTURE
OVHD — OVERHEAD
OXY — OXYGEN
OZ — OUNCE
P/C — PRECAST
PAR — PARALLEL
PARG — PARGING
PB — PANIC BAR
PBD — PARTICLE BOARD
PC — PORTLAND CEMENT
PCP — PORTLAND CEMENT PLASTER
PED — PEDESTAL
PERF — PERFORATED
PERIM — PERIMETER
PERM — PERMANENT
PERP — PERPENDICULAR
PF — PANEL FABRIC
PFP — PRE-FINISHED PANEL
PGBD — PEGBOARD
PH — PHASE
PL — PLATE
PL — PLASTIC LAMINATE
PLAM — PLASTIC LAMINATE
PLAS — PLASTER
PLAT — PLATFORM
PLBG — PLUMBING
PLYWD — PLYWOOD
POL — POLISHED
POLY — POLYSTYRENE
POLYISO — POLYISOCYANURATE
POS — POSITIVE
PR — PAIR
PREFAB — PREFABRICATED
PRELIM — PRELIMINARY
PRKG — PARKING
PROJ — PROJECT
PS — PROJECTION SCREEN
PT — PAINT
PCT — PORCELAIN TILE
PTN — PARTITION
PVC — POLYVINYL CHLORIDE
PVG — PAVING
PVMT — PAVEMENT
PWR — POWER
QT — QUARRY TILE
QTY — QUANTITY
QUAL — QUALITY
R — RISER
RAD — RADIUS
RB — RUBBER BASE
RBR — RUBBER
RC — REINFORCED CONCRETE
RCP — REINFORCED CONCRETE PIPE
RD — ROOF DRAIN
REC — RECESSED
RECD — RECEIVED
RECPT — RECEPTACLE
RECT — RECTANGULAR
REF — REFERENCE
REINF — REINFORCEMENT
REM — REMOVABLE
REQD — REQUIRED
RESIL — RESILIENT
RFM — RECESSED FLOOR MAT
RFG — ROOFING
RH — RIGHT HAND
RHR — RIGHT HAND REVERSE
RND — ROUND
RO — ROUGH OPENING
RST — RUBBER STAIR TREAD
RT — RUBBER TILE
RV — ROOF VENT
RVS — REVERSE
S — SOUTH
S — SEATING
SALV — SALVAGE
SB — SPLASH BLOCK
SC — SOLID CORE
SCH — SCHEDULE
SCMU — SOLID CONCRETE MASONRY UNIT
SCRN — SCREEN
SD — STORM DRAIN
SECT — SECTION
SF — SYSTEMS FURNITURE
SGL — SINGLE
SHR — SHOWER
SHTHG — SHEATHING
SHVL — SHELVES
SIM — SIMILAR
SJ — SLIP JOINT
SK — SINK
SLA — SLATE
SLP — SLOPE
SLS — SUB-FLOOR LEVELING SYSTEM
SLV — SLEEVE
SM — SHEET METAL
SMLS — SEAMLESS
SP — SPACING
SPCL — SPECIAL
SPEC — SPECIFICATION
SPKLR — SPRINKLER
SPKR — SPEAKER
SPRT — SUPPORT
SQFT — SQUARE FOOT
SQ — SQUARE
SQIN — SQUARE INCH
SQYD — SQUARE YARD
SSK — SERVICE SINK
SS — STAINLESS STEEL
SSM — SOLID SURFACING MATERIAL
ST — STAIN
ST — STREET
STAG — STAGGERED
STC — SOUND TRANSMISSION CLASS
STD — STANDARD
STIR — STIRRUP
STL JST — STEEL JOIST
STL PL — STEEL PLATE
STL — STEEL
STN — STONE
STOR — STORAGE
STRUCT — STRUCTURAL
STRUCT STL — STRUCTURAL STEEL
SUPPL — SUPPLEMENT
SURF — SURFACE
SUSP — SUSPENDED
SUSP CLG — SUSPENDED CEILING
SVB — SHEET VINYL BASE
SVF — SHEET VINYL FLOOR
SYM — SYMBOL
SYMM — SYMMETERICAL
SYST — SYSTEM
T&B — TOP AND BOTTOM
T&G — TONGUE AND GROOVE
T — TABLE
TB — TACKBOARD
TB-xx — TEST BORING-xx(E.G. TB-1)
TC — TOP OF CURB
TD — TRENCH DRAIN
TE — TRANSITION EDGE
TECH — TECHNICAL
TEMP — TEMPORARY
TER — TERRAZZO
THK — THICK
THRES — THRESHOLD
THRU — THROUGH
TKBD — TACKBOARD
TLT — TOILET
TMPD — TEMPERED
TMPD GL — TEMPERED GLASS
TNL — TUNNEL
TO — TOP OF
TOF — TOP OF FLANGE
TOFF — TOP OF FINISH FLOOR
TOJ — TOP OF JOIST
TOL — TOLERANCE
TOS — TOP OF STEEL
TOT — TOTAL
TOW — TOP OF WALL
TRNBKL — TURNBUCKLE
TS — TENSILE STRENGTH
TS — TUBE STEEL
TV — TELEVISION
TYP — TYPICAL
UDR — UNDER
UDRLMNT — UNDERLAYMENT
UF — UPHOLSTERY FABRIC
UFD — UNDER FLOOR DUCT
UG — UNDERGROUND
UL — UNDERWRITERS LABORATORY
ULT — ULTIMATE
UNEX — UNEXCAVATED
UNFIN — UNFINISHED
UNO — UNLESS NOTED OTHERWISE
UPS — UNINTERRUPTIBLE POWER SUPPLY
UR — URINAL
UTIL — UTILITY
V — VOLT
VAC — VACUUM
VAV — VARIABLE AIR VOLUME
VB — VAPOR BARRIER
VB — VINYL BASE
VCT — VINYL COMPOSITION TILE
VDB — VISUAL DISPLAY BOARD
VERT — VERTICAL
VEST — VESTIBULE
VIB — VIBRATION
VNR — VENEER
VOL — VOLUME
VR — VAPOR RETARDER
VT — VINYL TILE
VWC — VINYL WALL COVERING
W/ — WITH
W/W — WALL TO WALL
W/O — WITHOUT
W — WEST
WC — WATER CLOSET
WC — WALL COVERING
WCPT — WALL CARPET
WD — WOOD
WDD — WOOD DOOR
WDW — WINDOW
WF — WIDE FLANGE
WF — WOOD FLOORING
WGL — WIRE GLASS
WH — WALL HUNG
WH — WATER HEATER
WHSE — WAREHOUSE
WL — WIND LOAD
WLD — WELDED
WR — WATER RESISTANT
WS — WEATHERSTRIPPING
WSCT — WAINSCOT
WT — WEIGHT
WTR — WATER
WTRPRF — WATERPROOFING
WWM — WELDED WIRE MESH
X SECT — CROSS SECTION

SHEET INDEX

ADD ALTERNATE INFORMATION

1. REPLACE (4) EXISTING HOSE REELS WITH NEW (REF: MECH.)

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

PROFESSIONAL SEAL

CLARK & ENERSEN
2020 Baltimore Ave.
Suite 300
Kansas City, MO 64108
p. 816-474-8237

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES, MANAGEMENT, DESIGN AND CONSTRUCTION

MISSOURI NATIONAL GUARD

SOLAR ARRAY, INTERIOR LED LIGHTING AND EXHAUST SYSTEM

MARSHALL FIELD MAINTENANCE SHOP

475 S. DAVIS AVE.
MARSHALL, MO 65340

PROJECT #: T2044-01

SITE #: 6265

ASSET #: 8136265009

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/22/2023

DRAWN BY: EM
CHECKED BY: RW
DESIGNED BY: EM

SHEET TITLE:
General Notes, Symbols, Abbreviations & Sheet Index

SHEET NUMBER:
G-001

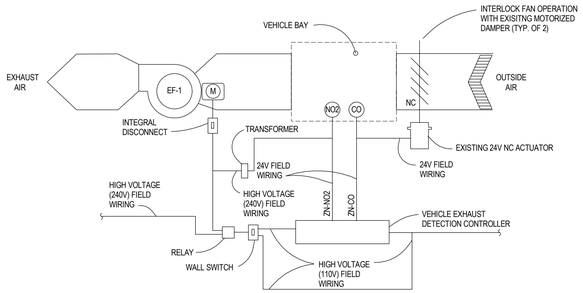
FAN SCHEDULE

MARK:	SERVES:	TYPE:	CFM:	S.P. IN. WG.:	DRIVE:	RPM:	SONES:	HP (W):	ELECTRICAL DATA V:	PH:	HZ:	MANUFACTURER AND MODEL NUMBER:	REMARKS:
EF-1	VEHICLE BAY	MIXED FLOW BELT DRIVE	4,000	4.5	BELT	2,472	23	5	240	1	60	GREENHECK MODEL QEI-15 OR APPROVED EQUIVALENT	1,2,3,4

REMARKS:
1. PROVIDE DISCONNECT SWITCH.
2. PROVIDE WITH GRAVITY BACKDRAFT DAMPER.
3. INTERLOCK OPERATION WITH EXISTING OUTSIDE AIR LOUVERS.
4. MANUFACTURER NOTED IS BASIS-OF-DESIGN. SEE SPEC SECTION 23 34 23 FOR ADDITIONAL MANUFACTURERS.

EXHAUST HOSE REEL SCHEDULE

MARK:	FUNCTION:		MANUFACTURER AND MODEL:
VEHR-1	VEHICLE EXHAUST HOSE REEL	REEL:	CAR-MON TSR-P36 TUBE STORAGE REEL OR EQUIVALENT, 25' HOSE CAPACITY 7" TYPE HTC FLEX HOSE, CTA-7 ADAPTER & FLANGE SET, HANGING PENDANT SWITCH 1/6 HP, 120/1/60 V/P/HZ MANUFACTURER LISTED IS BASIS-OF-DESIGN. SEE SPECIFICATION SECTION 23 37 00 FOR ADDITIONAL MANUFACTURERS.



1 EF-1 CONTROLS SCHEMATIC

NO SCALE

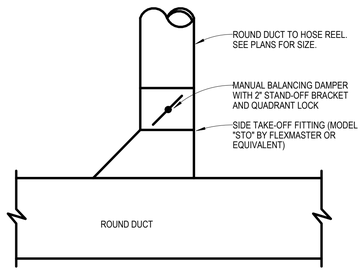
GENERAL NOTES:

1. ALL LOW VOLTAGE WIRING TO BE PROVIDED BY MECHANICAL CONTRACTOR. ROUTE ALL EXPOSED LOW VOLTAGE WIRING IN STEEL CONDUIT.
2. ALL HIGH VOLTAGE WIRING TO BE PROVIDED BY ELECTRICAL CONTRACTOR.
3. PROVIDE ALL TRANSFORMERS AND RELAYS REQUIRED FOR FULLY OPERATIONAL SYSTEM AS DESCRIBED BY SEQUENCE OF OPERATIONS.

EXHAUST FAN EF-1
SEQUENCE OF OPERATIONS

START/STOP: Exhaust fan (EF-1) shall be started and stopped by the vehicle exhaust detection system or manually from a summer switch.

DAMPER CONTROL: On a fan start, the louver isolation dampers shall open. On a fan stop, the isolation dampers shall close.



2 ROUND DUCT TAKE-OFF

NO SCALE

MECHANICAL ABBREVIATIONS AND SYMBOLS LEGEND

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
BTU	BRITISH THERMAL UNIT
CW	DOMESTIC COLD WATER
DW	DOMESTIC WATER
EA	EXHAUST AIR
EC	ELECTRICAL CONTRACTOR
EMCS	ENERGY MANAGEMENT AND CONTROL SYSTEM
ESP	EXTERNAL STATIC PRESSURE
FL	FLOW LINE
G	GAS
GC	GENERAL CONTRACTOR
HP	HORSEPOWER
HR	HOUR
HW	DOMESTIC HOT WATER
HWC	DOMESTIC HOT WATER CIRCULATING
LAT	LAY IN TILE
MC	MECHANICAL CONTRACTOR
MD	MOTORIZED DAMPER
NIC	NOT IN CONTRACT
OBD	MANUAL OPPOSED BLADE BALANCING DAMPER
RA	RETURN AIR
REL A	RELIEF AIR
SA	SUPPLY AIR
SP	STATIC PRESSURE
TAB	TEST, ADJUST AND BALANCE
TOD	TOP OF DUCT
T/P	TEMPERATURE/PRESSURE
TSP	TOTAL STATIC PRESSURE
V	VENT
W	SANITARY WASTE PIPING (INSIDE BUILDING)
WB	WET BULB
X^N	NEW EQUIPMENT, DEVICE, ETC.
X (R)	EXISTING CONDITION TO BE REMOVED OR RELOCATED
XXX-1	EQUIPMENT MARK - SEE MECHANICAL OR PLUMBING EQUIP. SCHEDULES (E.G., AHU-1 - AIR HANDLING UNIT)
X (E)	EXISTING CONDITION, GENERAL

PIPING

	BALL VALVE
	ELBOW DOWN
	ELBOW UP
	TEE DOWN
	TEE UP

SHEET METAL

12/6	RECTANGULAR DUCT - FIRST NUMBER INDICATES SIZE SHOWN
12/0	ROUND DUCT
12/6	OVAL DUCT - FIRST NUMBER INDICATES SIZE SHOWN
	FLEX DUCT
	TURNING VANES
	POSITIVE PRESSURE DUCT UP
	POSITIVE PRESSURE DUCT DOWN
	NEGATIVE PRESSURE DUCT UP
	NEGATIVE PRESSURE DUCT DOWN
D-1 600 300	CEILING DIFFUSER - EQUIPMENT MARK, SIZE, CFM
R-1 1278 300	SIDEWALL REGISTER - EQUIP. MARK, SIZE, CFM, HEIGHT AFF
G-1	CEILING RETURN GRILLE - EQUIP. MARK, SIZE, CFM

GENERAL

	CONNECTION - NEW TO EXISTING
	PIPE OR ROUND DUCT RISER
	PIPE OR ROUND DUCT DROP
	DIRECTION OF FLOW
	DOWNWARD PIPE OR DUCT PITCH
SECTION NUMBER / SHEET NUMBER	SECTION IDENTIFICATION
SECTION NUMBER / SHEET NUMBER	DETAIL IDENTIFICATION
M	ELECTRICAL MOTOR
100'-0"	ARCHITECTURAL ELEVATION
100.00'	ENGINEER ELEVATION
	ELECTRICAL PANEL
VFD-1	VARIABLE FREQUENCY DRIVE PANEL - EQUIP. MARK
(E)	EXISTING PIPING, DUCTWORK, EQUIPMENT, ETC.

GENERAL MECHANICAL NOTES:

1. GENERAL

1.1 THESE NOTES SHALL APPLY TO ALL MECHANICAL/PLUMBING PLANS.

1.2 NOTE THAT THE MECHANICAL PLANS ARE TO A GREAT EXTENT SCHEMATIC IN NATURE AND THAT THE INFORMATION PRESENTED IS EXACT AS COULD BE SECURED. THE CONTRACTOR SHALL OBTAIN EXACT LOCATIONS, MEASUREMENTS, LEVELS, ETC., AT THE SITE AND SHALL SATISFACTORILY ADAPT HIS WORK TO THE ACTUAL CONDITIONS AT THE PROJECT SITE.

1.3 THE CONTRACTOR IS RESPONSIBLE FOR PROPER SUPPORT OF ALL EQUIPMENT, PIPING, DUCTWORK, ETC. COORDINATE INSTALLATION OF ALL EQUIPMENT, PIPING, DUCTWORK, ETC. WITH OTHER BUILDING TRADES.

1.4 SEE SPECIFICATION SECTIONS 22 05 00 AND 23 05 00 FOR OTHER GENERAL MECHANICAL REQUIREMENTS.

1.5 THE LOCATION AND SIZE OF ALL ITEMS SHOWN AS EXISTING WERE OBTAINED FROM PREVIOUS DRAWINGS AND SITE VISITS, AND ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR. ACCURACY OF THE INFORMATION SHOWN IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO SUBMITTING THE PROJECT BID. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR CHANGES WHICH OCCUR AFTER BIDS ARE SUBMITTED WHICH ARE A RESULT OF EXISTING CONDITIONS. SITE VISITS PRIOR TO SUBMISSION OF BIDS MUST BE FULLY COORDINATED WITH THE OWNER.

1.6 ALL EXPOSED MECHANICAL ITEMS WILL BE FIELD-PAINTED. ALL ITEMS SHALL BE PROPERLY ORDERED AND PREPARED TO ACCEPT PAINT. COORDINATE EXACT REQUIREMENTS WITH PAINTING CONTRACTOR. SEE ARCHITECTURAL AND FINISH DRAWINGS AND SPECIFICATIONS FOR AREAS AND ITEMS THAT WILL BE PAINTED.

1.7 ALL ACCESS PANELS LOCATIONS SHALL BE COORDINATED WITH THE OWNER PRIOR TO FINAL INSTALLATION. ENSURE FINAL INSTALLATION LOCATION PROVIDES REQUIRED ACCESS TO ALL MECHANICAL EQUIPMENT AND ASSOCIATED COMPONENTS.

1.8 THE OWNER WILL OCCUPY PORTIONS OF THE BUILDING THROUGHOUT CONSTRUCTION. MECHANICAL SYSTEMS SERVING OCCUPIED PORTIONS OF THE FACILITY MUST REMAIN IN OPERATION. THE CONTRACTOR MUST COORDINATE ALL PHASING REQUIREMENTS WITH THE OWNER AND MUST PROVIDE ALL NECESSARY EQUIPMENT, SYSTEMS, AND CONNECTIONS TO ENSURE PHASING AND OWNER OCCUPANCY REQUIREMENTS ARE SATISFIED. ALL BIDS SHOULD INCORPORATE THIS REQUIREMENT. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ISSUES AND CHANGES WHICH OCCUR AS A RESULT OF PHASING AND OWNER OCCUPANCY REQUIREMENTS.

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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES, MANAGEMENT, DESIGN AND CONSTRUCTION

MISSOURI NATIONAL GUARD

SOLAR ARRAY, INTERIOR LED LIGHTING AND EXHAUST SYSTEM

MARSHALL FIELD MAINTENANCE SHOP

475 S. DAVIS AVE.
MARSHALL, MO 65340

PROJECT #: T2044-01

SITE #: 6265
ASSET #: 8136265009

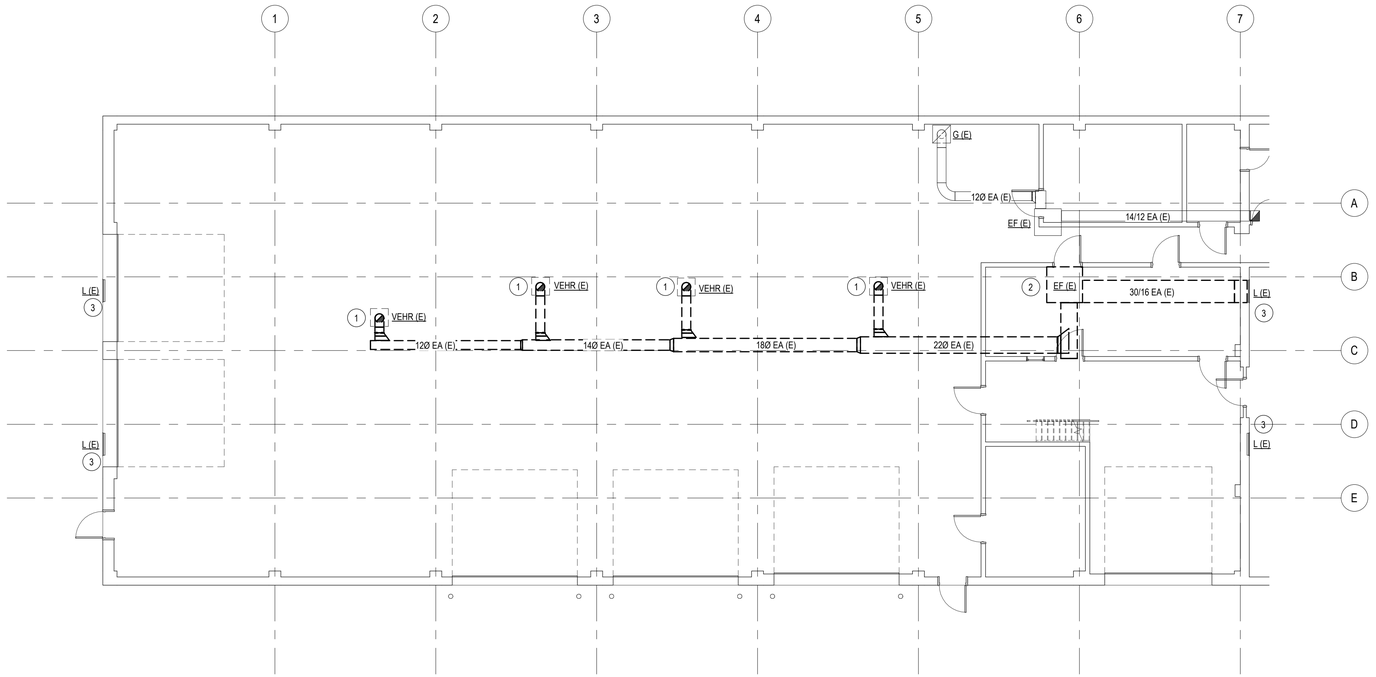
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/22/2023

DRAWN BY: AR
CHECKED BY: JM
DESIGNED BY: AR

SHEET TITLE:
Mechanical Abbreviations, Symbols & Notes

SHEET NUMBER:
M-000



FIRST FLOOR HVAC DEMO PLAN

SCALE: 1/8" = 1'-0"

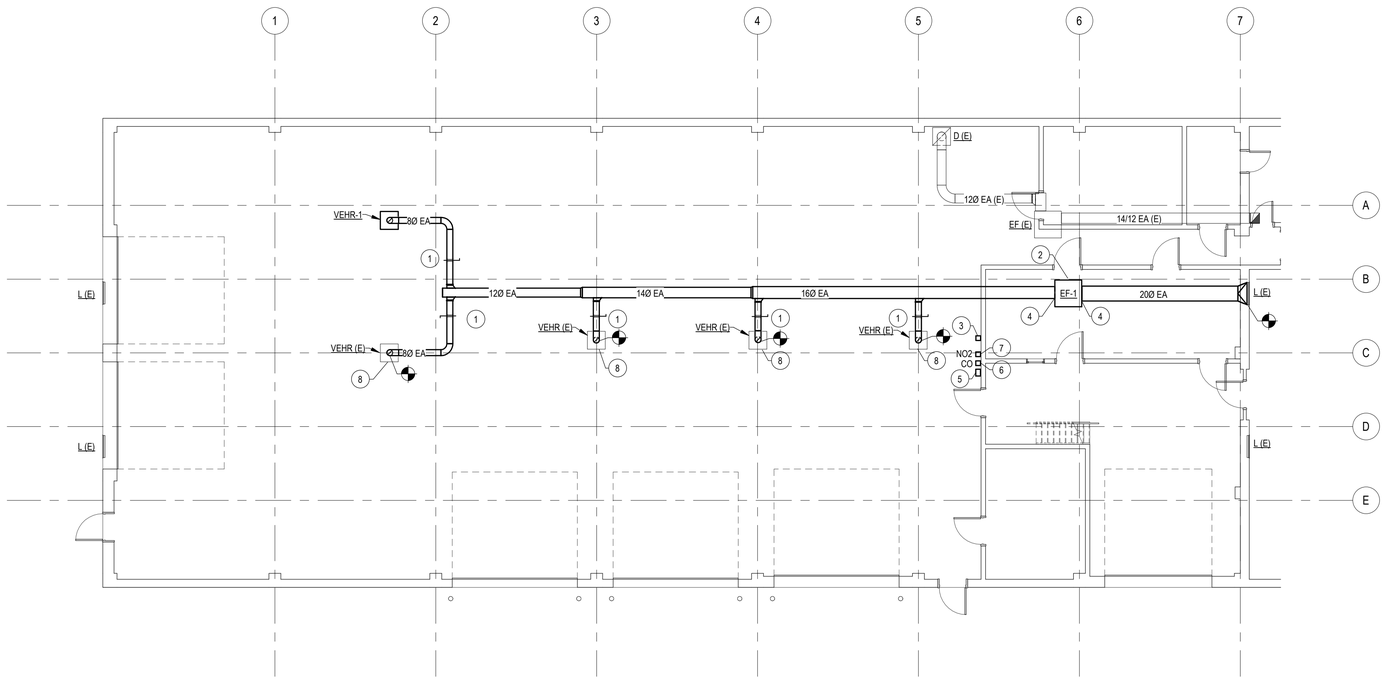
GENERAL NOTES:

1. ALL WORK TO BE DEMOLISHED IS SHOWN IN HEAVY, DASHED LINEWEIGHT. ALL WORK TO REMAIN AS EXISTING IS SHOWN IN LIGHT LINEWEIGHT.

2. REMOVE CEILING TILE AND GRID AS REQUIRED FOR EXHAUST DUCTWORK/HOSE REEL INSTALLATION.

KEY NOTES:

1. CONTRACTOR TO REMOVE EXISTING VEHICLE EXHAUST HOSE REEL. VEHICLE EXHAUST HOSE REELS TO BE SALVAGED IF ALTERNATE #1 IS NOT ACCEPTED. SEE FIRST FLOOR HVAC PLAN FOR NEW LOCATION OF SALVAGED HOSE REELS.
2. EXISTING EXHAUST FAN AND ASSOCIATED CONTROLS TO BE DEMOLISHED.
3. EXISTING LOUVERS TO REMAIN. PREPARE CONTROLS FOR NEW EXHAUST FAN.



FIRST FLOOR HVAC PLAN

SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. ALL NEW WORK IS SHOWN IN HEAVY LINEWEIGHT. ALL WORK TO REMAIN AS EXISTING IS SHOWN IN LIGHT LINEWEIGHT.

2. REMOVE AND SALVAGE EXISTING CEILING GRID AND ACOUSTICAL CEILING TILE AS NECESSARY TO INSTALL NEW OVERHEAD DUCTWORK. CEILING GRID MAIN TEES SHALL BE CUT TO GAIN ACCESS TO ABOVE CEILING AREAS AND SHALL BE SPLICED BACK TO CREATE A LIKE-NEW APPEARANCE. REINSTALL CEILING TILES UPON COMPLETION OF DUCTWORK INSTALLATION. REPLACE ANY CEILING TILES DAMAGED DURING CONSTRUCTION WITH A CEILING TILE PRODUCT THAT MATCHES THE EXISTING IN APPEARANCE AND COORDINATES WITH EXISTING GRID TEE SYSTEM.

KEY NOTES:

1. BALANCE EXHAUST REEL TO 800 CFM.
2. CONTRACTOR SHALL INSTALL EF-1 USING THE EXISTING STRUCTURE THAT PREVIOUSLY SUPPORTED THE DEMOLISHED EXHAUST FAN. FIELD VERIFY FINAL LOCATION AND MAKE MODIFICATIONS TO STRUCTURE/ROUTING AS NEEDED.
3. INSTALL EF-1 START/STOP PUSH BUTTON.
4. CONTRACTOR TO FIELD VERIFY FINAL CONNECTION SIZE INTO EF-1.
5. VEHICLE EXHAUST DETECTION CONTROL UNIT. TOXALERT MODEL #GVU-6 FOR CONTROL OF EF-1. REFER TO EF-1 CONTROL SCHEMATIC.
6. CARBON MONOXIDE SENSOR. TOXALERT MODEL #GVU-CO. MOUNT 46" AFF.
7. NITROGEN DIOXIDE SENSOR. TOXALERT MODEL #GVU-NO2. MOUNT 46" AFF.
8. IF ALTERNATE #1 IS ACCEPTED, CONTRACTOR IS TO PROVIDE AND INSTALL VEHR-1 IN PLACE OF VEHR (E). IF ALTERNATE #1 IS NOT ACCEPTED, CONTRACTOR IS TO REINSTALL SALVAGED HOSE REELS. VEHR (E). AS NOTED ON FIRST FLOOR HVAC DEMO PLAN. COORDINATE FINAL LOCATIONS OF HOSE REEL WITH END USER.

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DRAWN BY: AR
CHECKED BY: JM
DESIGNED BY: AR

SHEET TITLE:
First Floor HVAC Plan

SHEET NUMBER:
M-101

ELECTRICAL ABBREVIATIONS AND SYMBOLS LEGEND

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISH GRADE
C	SUBSCRIPT 'C' ADJACENT TO ANY DEVICE INDICATES CEILING.
CATV	CABLE TELEVISION
CCTV	CLOSED CIRCUIT TELEVISION
DAS	DISTRIBUTED ANTENNA SYSTEM
(E)	SUBSCRIPT 'E' ADJACENT TO ANY DEVICE INDICATES EXISTING.
EPO	EMERGENCY POWER OFF
(ER)	SUBSCRIPT 'ER' ADJACENT TO ANY DEVICE INDICATES EXISTING TO BE RELOCATED.
EWC	ELECTRIC WATER COOLER
F	SUBSCRIPT 'F' ADJACENT TO ANY DEVICE INDICATES FLOOR.
GFI	GROUND FAULT INTERRUPTER
H	SUBSCRIPT 'H' DENOTES HOSPITAL GRADE
HOA	HAND-OFF-AUTO
NF	NON-FUSED
NIC	NOT IN CONTRACT
OHE	OVERHEAD ELECTRICAL
OHT	OVERHEAD TELEPHONE
PVC	POLYVINYL CHLORIDE
(R)	SUBSCRIPT 'R' ADJACENT TO ANY DEVICE INDICATES THE RELOCATED POSITION OF AN EXISTING DEVICE.
RGS	RIGID GALVANIZED STEEL
(S)	SUBSCRIPT 'S' ADJACENT TO ANY DEVICE INDICATES THE DEVICE IS TO BE SURFACE MOUNTED.
TR	TAMPER RESISTANT
UGE	UNDERGROUND ELECTRICAL
USB	UNIVERSAL SERIAL BUS
HVE	UNDERGROUND MEDIUM OR HIGH VOLTAGE ELECTRICAL
UGT	UNDERGROUND TELEPHONE
WAP	WIRELESS ACCESS POINT
WG	WIRE GUARD
WP	WEATHERPROOF
WPU	WEATHERPROOF IN-USE TYPE
////	CROSS-HATCHING INDICATES REMOVAL

LIGHTING

(-)	POLE MOUNTED EXTERIOR LIGHT FIXTURE. LETTER INDICATES FIXTURE AND POLE TYPE.
(-)	LINEAR FIXTURE. LETTER/NUMBER DENOTES FIXTURE TYPE.
(-)	LINEAR FIXTURE WITH EMERGENCY BATTERY BACKUP AND/OR ON EM CIRCUIT. LETTER/NUMBER DENOTES FIXTURE TYPE.
(-)	2' X 4' TROFFER. LETTER/NUMBER DENOTES FIXTURE TYPE.
(-)	2' X 4' TROFFER WITH EMERGENCY BATTERY BACKUP AND/OR ON EM CIRCUIT. LETTER/NUMBER DENOTES FIXTURE TYPE.
(-)	1' X 4' TROFFER. LETTER/NUMBER DENOTES FIXTURE TYPE.
(-)	1' X 4' TROFFER WITH EMERGENCY BATTERY BACKUP AND/OR ON EM CIRCUIT. LETTER/NUMBER DENOTES FIXTURE TYPE.
(-)	2' X 2' TROFFER. LETTER/NUMBER DENOTES FIXTURE TYPE.
(-)	2' X 2' TROFFER WITH EMERGENCY BATTERY BACKUP AND/OR ON EM CIRCUIT. LETTER/NUMBER DENOTES FIXTURE TYPE.
(-) J	2' X 4' SURFACE OR PENDANT MOUNTED FIXTURE. LETTER/NUMBER DENOTES FIXTURE TYPE. REFER TO DRAWINGS FOR FIXTURE MOUNTING HEIGHT.
(-) J	2' X 4' SURFACE OR PENDANT MOUNTED FIXTURE WITH EMERGENCY BATTERY BACKUP AND/OR ON EM CIRCUIT. LETTER/NUMBER DENOTES FIXTURE TYPE. REFER TO DRAWINGS FOR FIXTURE MOUNTING HEIGHT.
(-) J	2' X 4' TROFFER RECESSED IN GWBD OR PLASTER CEILING LETTER DENOTES FIXTURE TYPE.
(-) J	2' X 4' TROFFER WITH EMERGENCY BATTERY BACKUP AND/OR ON EM CIRCUIT, RECESSED IN GWBD OR PLASTER CEILING. LETTER DENOTES FIXTURE TYPE.
(-) J	SURFACE OR PENDANT MOUNTED FIXTURE. LETTER/NUMBER DENOTES FIXTURE TYPE. REFER TO DRAWINGS FOR FIXTURE MOUNTING HEIGHT.
(-) J	SURFACE OR PENDANT MOUNTED FIXTURE WITH EMERGENCY BATTERY BACKUP AND/OR ON EM CIRCUIT. LETTER/NUMBER DENOTES FIXTURE TYPE. REFER TO DRAWINGS FOR FIXTURE MOUNTING HEIGHT.
(-) J	2' X 2' SURFACE OR PENDANT MOUNTED FIXTURE. LETTER/NUMBER DENOTES FIXTURE TYPE. REFER TO DRAWINGS FOR FIXTURE MOUNTING HEIGHT.
(-) J	2' X 2' SURFACE OR PENDANT MOUNTED FIXTURE WITH EMERGENCY BATTERY BACKUP AND/OR ON EM CIRCUIT. LETTER/NUMBER DENOTES FIXTURE TYPE. REFER TO DRAWINGS FOR FIXTURE MOUNTING HEIGHT.
(-) J	WALL MOUNTED FIXTURE. LETTER/NUMBER DENOTES FIXTURE TYPE. REFER TO DRAWINGS FOR FIXTURE MOUNTING HEIGHT.
(-) J	WALL MOUNTED FIXTURE WITH EMERGENCY BATTERY BACKUP AND/OR ON EM CIRCUIT. LETTER/NUMBER DENOTES FIXTURE TYPE. REFER TO DRAWINGS FOR FIXTURE MOUNTING HEIGHT.
(-) J	1' X 4' TROFFER RECESSED IN GWBD OR PLASTER CEILING. LETTER DENOTES FIXTURE TYPE.
(-) J	1' X 4' TROFFER WITH EMERGENCY BATTERY BACKUP AND/OR ON EM CIRCUIT, RECESSED IN GWBD OR PLASTER CEILING. LETTER DENOTES FIXTURE TYPE.
(-) J	STRIP FIXTURE. LETTER DENOTES FIXTURE TYPE. REFER TO DRAWINGS FOR FIXTURE MOUNTING HEIGHT.
(-) J	STRIP FIXTURE WITH EMERGENCY BATTERY BACKUP AND/OR ON EM CIRCUIT. LETTER DENOTES FIXTURE TYPE. REFER TO DRAWINGS FOR FIXTURE MOUNTING HEIGHT.
(-)	RECESSED, SURFACE OR PENDANT MOUNTED FIXTURE. LETTER DENOTES FIXTURE TYPE. REFER TO DRAWINGS FOR MOUNTING DETAILS AND MOUNTING HEIGHT.
(-)	RECESSED, SURFACE OR PENDANT MOUNTED FIXTURE WITH EMERGENCY BATTERY BACKUP AND/OR ON EM CIRCUIT. LETTER DENOTES FIXTURE TYPE. REFER TO DRAWINGS FOR MOUNTING DETAILS AND HEIGHT.
(-)	WALL MOUNTED FIXTURE. LETTER DENOTES FIXTURE TYPE. REFER TO DRAWINGS FOR MOUNTING HEIGHT.
	BATTERY POWERED EMERGENCY LIGHT FIXTURE. REFER TO FIXTURE SCHEDULE ON DRAWINGS FOR FIXTURE TYPE. REFER TO DRAWINGS FOR FIXTURE MOUNTING HEIGHT.
	WALL MOUNTED EXIT SIGN. PROVIDE DIRECTIONAL ARROWS AS SHOWN ON DRAWINGS. REFER TO FIXTURE SCHEDULE FOR FIXTURE TYPE. REFER TO DRAWINGS FOR MOUNTING HEIGHT. (DARKENED PORTION OF FIXTURE INDICATES ILLUMINATED FACES.)
	CEILING MOUNTED EXIT SIGN. PROVIDE DIRECTIONAL ARROWS AS SHOWN ON DRAWINGS. REFER TO FIXTURE SCHEDULE FOR FIXTURE TYPE. (DARKENED PORTION OF FIXTURE INDICATES ILLUMINATED FACES.)

REFERENCE LIGHTING SHEETS FOR ADDITIONAL LIGHTING CONTROL SYSTEM SYMBOLS

ELECTRICAL DISTRIBUTION

S	SINGLE POLE SWITCH
S_2	TWO POLE SWITCH
S_3	THREE WAY SWITCH
S_4	FOUR WAY SWITCH
S_P	SINGLE POLE SWITCH WITH PILOT LIGHT
S_D	DIMMER SWITCH
S_{MC}	MOMENTARY CONTACT SWITCH
S_{TE}	THERMAL ELEMENT SWITCH
S_K	KEYED SWITCH
S_O	OCCUPANCY SENSING SWITCH, WATTSTOPPER #DW-100-G
S_T	LINE VOLTAGE DIGITAL TIMER SWITCH, WATTSTOPPER #TS-400
S_{3T}	LINE VOLTAGE 3-WAY DIGITAL TIMER SWITCH, WATTSTOPPER #TS-400
S_X	SPST EXPLOSION PROOF SWITCH
S_2X	DPST EXPLOSION PROOF SWITCH
	PIGTAIL DENOTES CONNECTION TO EQUIPMENT
	BRANCH CIRCUIT HOMERUN TO PANEL (NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. NUMBER OF TICK MARKS INDICATES NUMBER OF WIRES) (NUMBER 12AWG, MINIMUM, UNLESS OTHERWISE NOTED). IF NO TICK MARKS ARE SHOWN, ASSUME 3- NUMBER 12 AWG IN 3/4" CONDUIT.
	CONDUIT AND WIRE CONCEALED. NUMBER OF TICK MARKS INDICATES NUMBER OF WIRES (NUMBER 12AWG MINIMUM, UNLESS OTHERWISE NOTED) IF NO TICK MARKS ARE SHOWN, ASSUME 3-NUMBER 12 IN 3/4" CONDUIT.
	PARTIAL CIRCUIT
	CONDUIT RISER UP
	CONDUIT RISER DOWN
	INDICATES BUSH AND CAP
	CONDUIT SEAL FITTING FOR HAZARDOUS AREAS
	CONDUIT STUBBED UP 6" AFF AND CAPPED
J J J	JUNCTION BOX - CEILING, FLOOR, AND WALL MOUNTING. WALL MOUNTED DEVICES SHALL BE FLUSH MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED.

ELECTRICAL DISTRIBUTION EQUIPMENT

	LIGHTING AND APPLIANCE PANEL
	(LIGHTING) RELAY PANEL
	MOTOR CONTROL CENTER OR SWITCHBOARD
	POWER PANEL (DISTRIBUTION)
T	TRANSFORMER
	CIRCUIT BREAKER
	FUSIBLE SWITCH
	AUTOMATIC TRANSFER SWITCH
	POTENTIAL TRANSFORMER
	CURRENT TRANSFORMER
	GROUND
G	ENGINE GENERATOR
RGA	REMOTE GENERATOR ANNUNCIATOR
M	METER
PNL #	PANELBOARD TAG. SEE THE CORRESPONDING PANELBOARD SCHEDULE AND/OR ONE LINE DIAGRAM FOR ADDITIONAL INFORMATION.

MOTOR CONTROL & MOTOR CONTROL EQUIPMENT

M	MOTOR - HORSEPOWER AS INDICATED ON DRAWINGS
	NON-FUSED DISCONNECT SWITCH, ASSUME 30A/3P UNLESS OTHERWISE NOTED.
	FUSED DISCONNECT SWITCH, FUSE SIZE AS NOTED ON DRAWINGS, ASSUME 30A/3P UNLESS OTHERWISE NOTED.
	COMBINATION FVNR MAGNETIC MOTOR STARTER WITH HOA SELECTOR SWITCH AND NON-FUSED DISCONNECT SWITCH. ASSUME NEMA SIZE 1 STARTER AND 30A/3P SWITCH UNLESS OTHERWISE NOTED.
	COMBINATION FVNR MAGNETIC MOTOR STARTER WITH HOA SELECTOR SWITCH AND FUSED DISCONNECT SWITCH. ASSUME NEMA SIZE 1 STARTER AND 30A/3P SWITCH UNLESS OTHERWISE NOTED.
	MECHANICAL EQUIPMENT STARTER/DISCONNECT PROVIDED BY OTHERS, INSTALLED AND CONNECTED BY THE ELECTRICAL CONTRACTOR. FULLY COORDINATE ALL INSTALLATION AND CONNECTION DETAILS WITH THE MECHANICAL CONTRACTOR.
	FVNR MAGNETIC MOTOR STARTER WITH HOA SELECTOR SWITCH, ASSUME NEMA SIZE 1 STARTER UNLESS OTHERWISE NOTED.
	START/STOP PUSH BUTTON
	3 POSITION PUSH BUTTON
	PUSH BUTTON
VFD	VARIABLE FREQUENCY DRIVE PROVIDED BY OTHERS. INSTALLED AND CONNECTED BY THE ELECTRICAL CONTRACTOR. FULLY COORDINATE ALL INSTALLATION AND CONNECTION DETAILS WITH THE MECHANICAL CONTRACTOR.

PROJECT GENERAL ELECTRICAL NOTES

GENERAL DEMOLITION NOTES:

1. ALL OF THE DEVICES SHOWN ON THE DEMOLITION PLANS ARE EXISTING. THE LOCATIONS OF EXISTING EQUIPMENT AND DEVICES WERE OBTAINED FROM PREVIOUS DRAWINGS AND SITE VISITS. THE LOCATIONS OF EXISTING EQUIPMENT AND DEVICES ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR. ACCURACY OF THE INFORMATION SHOWN IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO SUBMITTING THE PROJECT BID. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR CHANGES WHICH OCCUR AFTER BIDS ARE SUBMITTED WHICH ARE A RESULT OF EXISTING CONDITIONS. SITE VISITS PRIOR TO SUBMISSION OF BIDS MUST BE FULLY COORDINATED WITH THE OWNER.
2. THE CONTRACTOR MUST FIELD VERIFY EXISTING CIRCUITING PRIOR TO COMMENCING ANY WORK. ALL BIDS MUST INCORPORATE THIS REQUIREMENT.
3. DEVICES SHOWN WITH CROSS HATCHING, DASHED AND/OR SO NOTED SHALL BE REMOVED. ALL OTHER DEVICES SHALL BE RELOCATED, SHALL REMAIN, OR SHALL BE ABANDONED AS SHOWN, OR AS FOLLOWS:
   DEVICES SHALL BE COMPLETELY REMOVED FROM WALLS THAT ARE ALSO SHOWN TO BE REMOVED. DEVICES SHOWN TO BE REMOVED ON DRYWALL OR PLASTER TYPE WALLS THAT ARE TO REMAIN SHALL HAVE THE WALL SURFACE PATCHED TO MATCH THE EXISTING FINISH. FLUSH TYPE DEVICES SHOWN TO BE REMOVED ON CONCRETE OR BRICK TYPE WALLS THAT ARE TO REMAIN SHALL HAVE THE DEVICES REMOVED AND BOXES PROVIDED WITH BLANK COVER PLATES.
4. CONDUITS SHALL BE COMPLETELY REMOVED FROM WALLS THAT ARE ALSO SHOWN TO BE REMOVED. CONCEALED CONDUITS MAY BE ABANDONED IN WALLS THAT ARE TO REMAIN. ALL CONDUITS AND BOXES THAT ARE SURFACE MOUNTED AND NO LONGER REQUIRE ACTIVE CIRCUITS SHALL BE REMOVED.
5. THE CONDUCTORS FOR DEVICES SHOWN TO BE REMOVED SHALL BE DISCONNECTED AND REMOVED BACK TO THE PANEL OR BACK TO THE NEXT DEVICE SHOWN TO REMAIN OR AS REQUIRED BY ACTUAL CIRCUITING. ACTUAL CIRCUITING MUST BE DETERMINED IN THE FIELD. ALL BIDS SHOULD INCORPORATE THIS REQUIREMENT. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR CHANGES WHICH OCCUR AS A RESULT OF EXISTING CIRCUITING. CONTINUITY OF CIRCUITING SHALL BE MAINTAINED FOR ALL EXISTING CIRCUITS AS REQUIRED. CONTRACTOR SHALL PROVIDE ALL NECESSARY WIRE, CONDUIT, DEVICES AND CONNECTIONS TO ENSURE CIRCUIT CONTINUITY TO ALL NEW AND EXISTING EQUIPMENT.
6. THE OWNER HAS THE RIGHT TO RETAIN ALL SALVAGEABLE MATERIAL. ANY MATERIAL THE OWNER CHOOSES NOT TO ACCEPT SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR.
7. THE OWNER WILL OCCUPY PORTIONS OF THE FACILITY THROUGHOUT CONSTRUCTION. ELECTRICAL SYSTEMS TO OCCUPIED PORTIONS OF THE FACILITY MUST REMAIN IN OPERATION. THE ELECTRICAL CONTRACTOR MUST COORDINATE ALL PHASING REQUIREMENTS WITH THE GENERAL CONTRACTOR AND THE OWNER, AND MUST PROVIDE ALL NECESSARY DEVICES, EQUIPMENT, WIRE, CONDUIT, AND CONNECTIONS TO ENSURE PHASING AND OWNER OCCUPANCY REQUIREMENTS ARE SATISFIED. ALL BIDS SHOULD INCORPORATE THIS REQUIREMENT. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ISSUES AND CHANGES WHICH OCCUR AS A RESULT OF PHASING AND OWNER OCCUPANCY REQUIREMENTS.

GENERAL LIGHTING NOTES:

1. COORDINATE THE INSTALLATION OF LIGHTING FIXTURES WITH ALL OTHER TRADES.
2. COORDINATE THE INSTALLATION OF ALL RECESSED LIGHTING FIXTURES WITH ACTUAL CEILING TYPES. REFER TO ARCHITECTURAL FINISH SCHEDULES FOR ADDITIONAL DETAILS.
3. SUPPORT ALL RECESSED AND PENDANT MOUNTED FIXTURES FROM STRUCTURE IN ACCORDANCE WITH APPLICABLE BUILDING CODE REQUIREMENTS. SUSPENDED CEILING MOUNTING SYSTEMS SHALL NOT BE USED TO SUPPORT FIXTURES OR RACEWAYS.
4. ROUTE ALL WIRE AND CONDUIT CONCEALED UNLESS OTHERWISE NOTED. PATCH ALL EXISTING SURFACES AFTER WIRE AND CONDUIT INSTALLATION, AS REQUIRED. REFER TO THE SPECIFICATION FOR CUTTING AND PATCHING REQUIREMENTS. ALL COSTS ASSOCIATED WITH ABOVE REQUIREMENTS MUST BE INCLUDED IN THE PROJECT BID.
5. FLUSH MOUNT ALL NEW WIRING DEVICES IN NEW OR EXISTING SURFACES, THE OWNER HAS THE RIGHT TO RETAIN ALL SALVAGEABLE MATERIAL. ANY MATERIAL THE OWNER CHOOSES NOT TO ACCEPT SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR.
6. IN ROOMS WHERE NO FIXTURES ARE SHOWN, THE EXISTING LIGHTING LAYOUT AND CIRCUITING TO REMAIN.
7. A DEDICATED NEUTRAL CONDUCTOR IS REQUIRED FOR ALL DIMMABLE CIRCUITS.
8. BOX AROUND RECESSED LIGHTING FIXTURES AS REQUIRED SO THAT ALL CODE REQUIRED CLEARANCES BETWEEN COMBUSTIBLE MATERIALS, THERMAL INSULATION, ETC AND LIGHTING FIXTURES ARE MAINTAINED. FULLY COORDINATE ALL REQUIREMENTS WITH THE GENERAL CONTRACTOR.
9. PROVIDE ENCLOSURES OVER RECESSED LIGHTING FIXTURES INSTALLED IN RATED CEILINGS SO ALL CODE REQUIRED RATINGS ARE MAINTAINED. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES AND RATINGS. FULLY COORDINATE ALL REQUIREMENTS WITH THE GENERAL CONTRACTOR.
10. SEAL AROUND ALL CONDUIT AND CABLE PENETRATIONS THROUGH WALLS, CEILINGS, AND FLOORS TO MAINTAIN CODE REQUIRED RATINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
11. REFER TO THE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.

UNLESS OTHERWISE INDICATED PROVIDE DEDICATED NEUTRAL CONDUCTORS FOR ALL BRANCH CIRCUITS. NEUTRAL CONDUCTORS SHALL NOT BE SHARED BETWEEN CIRCUITS. WHERE THE DRAWINGS INDICATE SHARED NEUTRAL CONDUCTORS FOR A MULTIWIRE BRANCH CIRCUIT, GROUP BREAKERS TOGETHER IN ACCORDANCE WITH CODE.

GENERAL POWER & AUXILIARY SYSTEMS NOTES:

1. FULLY COORDINATE THE INSTALLATION OF ALL ELECTRICAL DEVICES WITH THE WORK OF OTHER TRADES.
2. UNLESS OTHERWISE NOTED, ELECTRICAL DEVICES ARE TO BE FLUSH MOUNTED AND ALL WIRE AND CONDUIT IS TO BE ROUTED CONCEALED. FULLY COORDINATE INSTALLATION WITH EXISTING CONDITIONS, AND INCLUDE PATCHING AND REFINISHING OF EXISTING SURFACES TO ACCOMMODATE THIS REQUIREMENT.
3. SEAL AROUND ALL CONDUIT AND CABLE PENETRATIONS THROUGH WALLS, CEILINGS AND FLOORS TO MAINTAIN CODE REQUIRED RATINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
4. FULLY COORDINATE THE LOCATION OF ALL HVAC EQUIPMENT WITH THE MECHANICAL AND CONTROLS CONTRACTORS. PROVIDE ALL DEVICES (I.E. STARTERS, SWITCHES, CONTACTS, ETC.) REQUIRED TO ENSURE SATISFACTORY OPERATION OF ALL SYSTEMS AND EQUIPMENT. (CONTROL WIRING TO BE PROVIDED BY MECHANICAL CONTRACTOR.) COORDINATE DEVICE REQUIREMENTS WITH ACTUAL EQUIPMENT.
5. FOR ALL HVAC CONTROL DEVICES PROVIDED BY THE ELECTRICAL CONTRACTOR, PROVIDE ALL NECESSARY AUXILIARY COMPONENTS AND CONTACTS TO ENSURE PROPER SYSTEM CONTROL FUNCTIONS. FULLY COORDINATE ALL REQUIREMENTS WITH THE MECHANICAL AND CONTROLS CONTRACTORS.

GENERAL PHOTOVOLTAIC SYSTEM NOTES:

1. THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC) ARTICLE 690, ALL MANUFACTURERS LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTIONS (AHJ) APPLICALE CODES.
2. GROUND FAULT DETECTION AND INTERRUPTION DEVICE IS INTEGRATED WITH THE INVERTER IN ACCORDANCE WITH NEC 690.5(A).
3. UTILITY INTERCONNECTION MUST BE REVIEWED AND APPROVED. CONTRACTOR TO COORDINATE PV SYSTEM INSPECTION WITH UTILITY PROVIDER PRIOR TO PARALLEL OPERATION.
4. LOAD-SIDE INTERCONNECTION SHALL BE IN ACCORDANCE WITH NEC 90.64(B)
5. ALL PV SYSTEM COMPONENTS, MODULES, UTILITY-INTERACTIVE INVERTERS, AND SOUCE CIRCUIT COMBINER BOXES ARE IDENTIFIED AND LISTED FOR USE IN PV SYSTEM AS REQUIRED BY NEC 690.4 & NEC 690.90.

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MISSOURI NATIONAL GUARD

SOLAR ARRAY, INTERIOR LED LIGHITNG AND EXHAUST SYSTEM

MARSHALL FIELD MAINTENANCE SHOP

475 S. DAVIS AVE.
MARSHALL, MO 65340

PROJECT #: T2044-01

SITE #: 6265
ASSET #: 8136265009

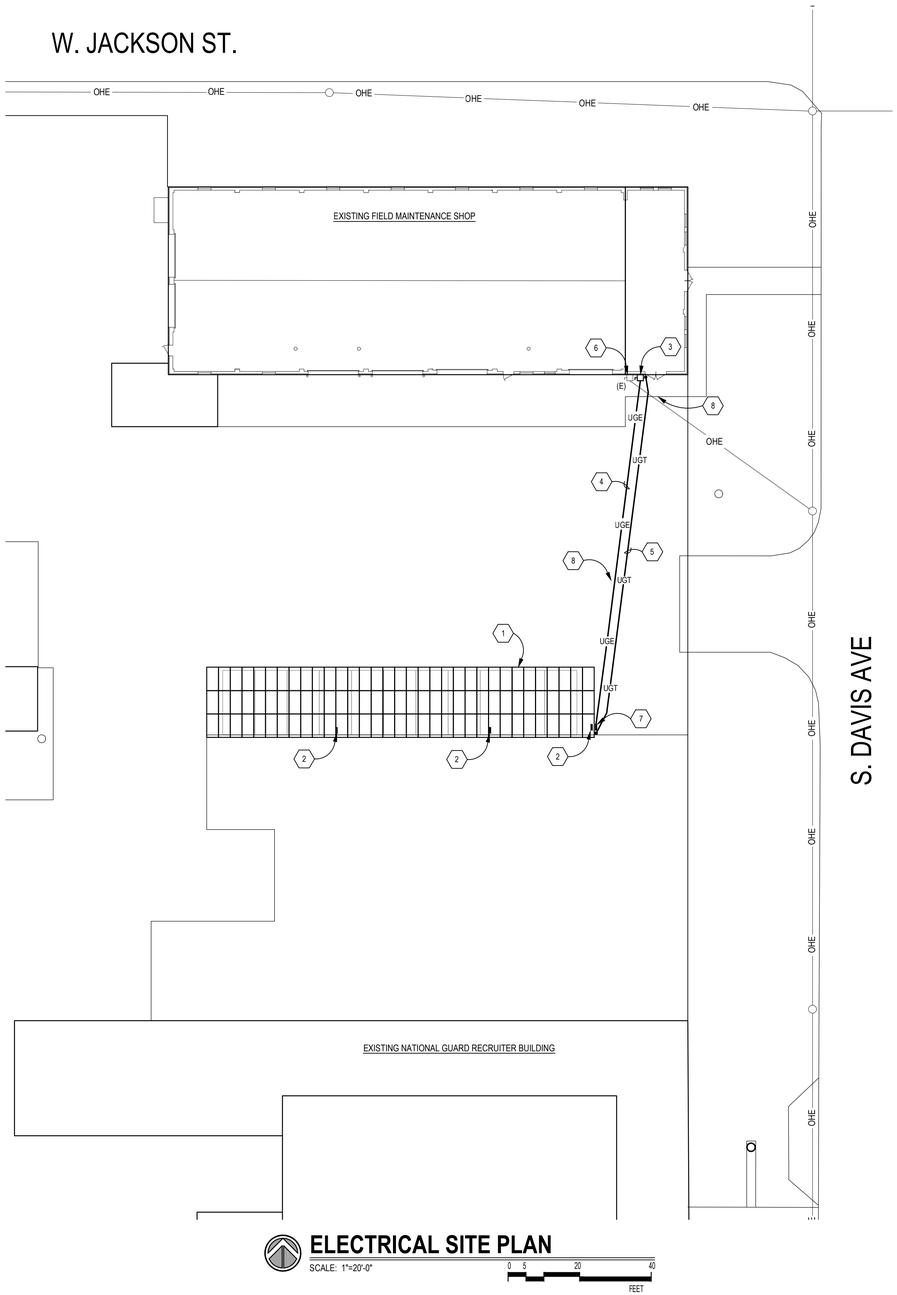
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 03/22/2023

DRAWN BY: AS
CHECKED BY: DW
DESIGNED BY: AS

SHEET TITLE:
Electrical Abbreviations, Symbols Legend & General Notes

SHEET NUMBER:
E-000



ELECTRICAL SITE PLAN

SCALE: 1"=20'-0"

0 5 20 40

FEET

ELECTRICAL SITE PLAN NOTES	
KEY NOTE	DESCRIPTION
1	LOCATION OF 37.1 KW CANOPY MOUNT PV SYSTEM. CANOPY TO ACCOMODATE 10' WIDE VEHICLE PARKING STALLS WITH COLUMNS 20'-0" ON CENTER. COORDINATE EXACT LOCATION WITH OWNER. SEE THE ELECTRICAL ONE-LINE DIAGRAM AND SPECIFICATIONS FOR MORE INFORMATION.
2	LOCATION OF SURFACE MOUNT PV SYSTEM INVERTER. SEE CANOPY PV MOUNTING DETAIL, ELECTRICAL ONE-LINE DIAGRAM, AND SPECIFICATIONS FOR MORE INFORMATION.
3	LOCATION OF PV SYSTEM SAFETY DISCONNECT MOUNTED ADJACENT TO EXISTING ELECTRICAL SERVICE TRANSFER SWITCH. COORDINATE EXACT LOCATION, SEE THE ELECTRICAL ONE-LINE DIAGRAM AND SPECIFICATIONS FOR MORE INFORMATION.
4	PV SYSTEM SERVICE FEEDERS. BURY A MINIMUM OF 36" BELOW GRADE. PROVIDE WARNING TAPE 12" ABOVE. COORDINATE ROUTING WITH OWNER. SEE THE ELECTRICAL ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.
5	1" SCH 40 PVC CONDUIT FOR ROUTING OF COMMUNICATION CABLING. STUB CONDUIT 6" ABOVE FINISHED GRADE AND PROVIDE WITH PULL STRING. COORDINATE ROUTING WITH OWNER.
6	LOCATION OF EXISTING ELECTRICAL UTILITY SERVICE TRANSFER SWITCH. SEE ELECTRICAL ONE-LINE DIAGRAM FOR EXTENT OF WORK AND MORE INFORMATION.
7	LOCATION OF AGGREGATION PANEL. PROVIDE UNISTRUT MOUNTING AS APPLICABLE. SEE ELECTRICAL ONE-LINE DIAGRAM FOR MORE INFORMATION.
8	DEMOLISH EXISTING CONCRETE (APPROX. 45 SQFT) AND ASPHALT (APPROX. 200 SQ.FT) AS REQUIRED FOR INSTALLATION OF NEW UNDERGROUND CONDUITS AND PV STRUCTURAL SYSTEM. PROVIDE WITH NEW PAVING TO MATCH EXISTING.

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Electrical Site Plan

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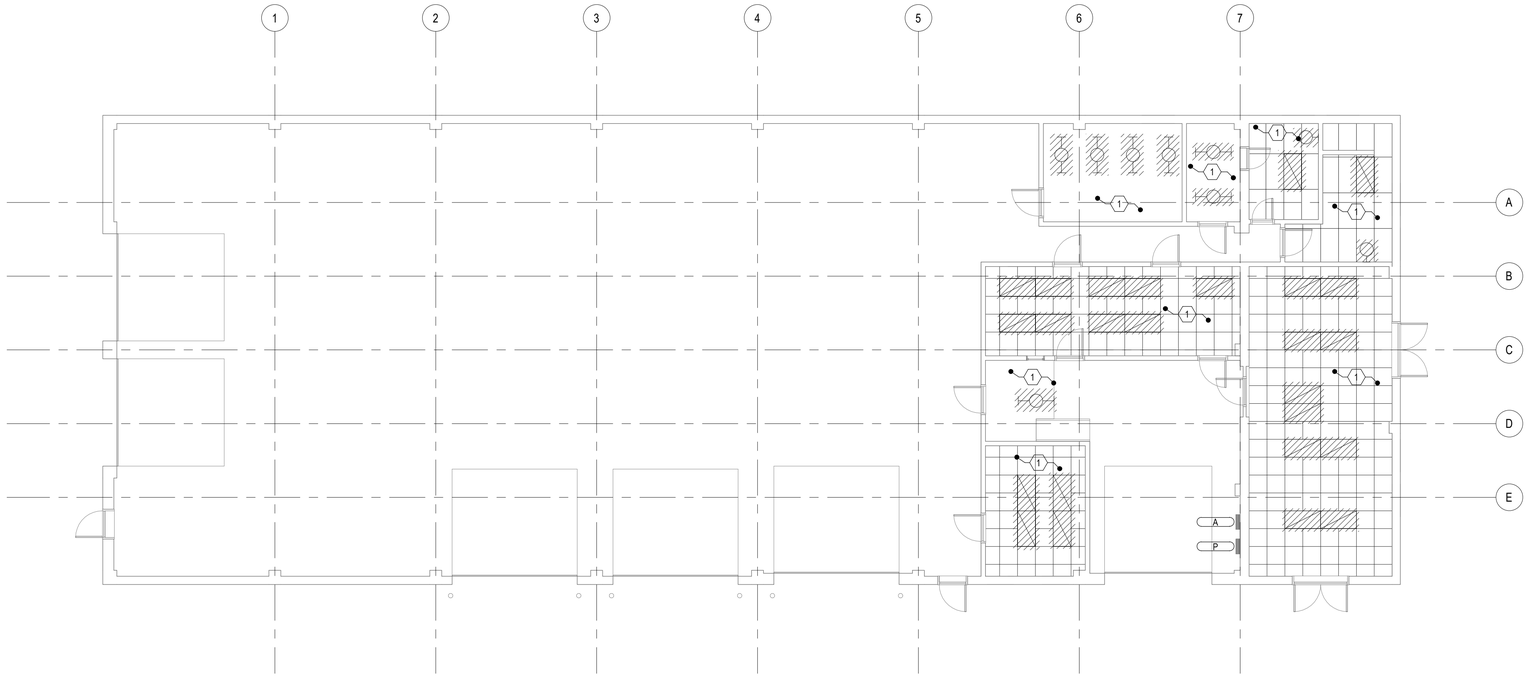


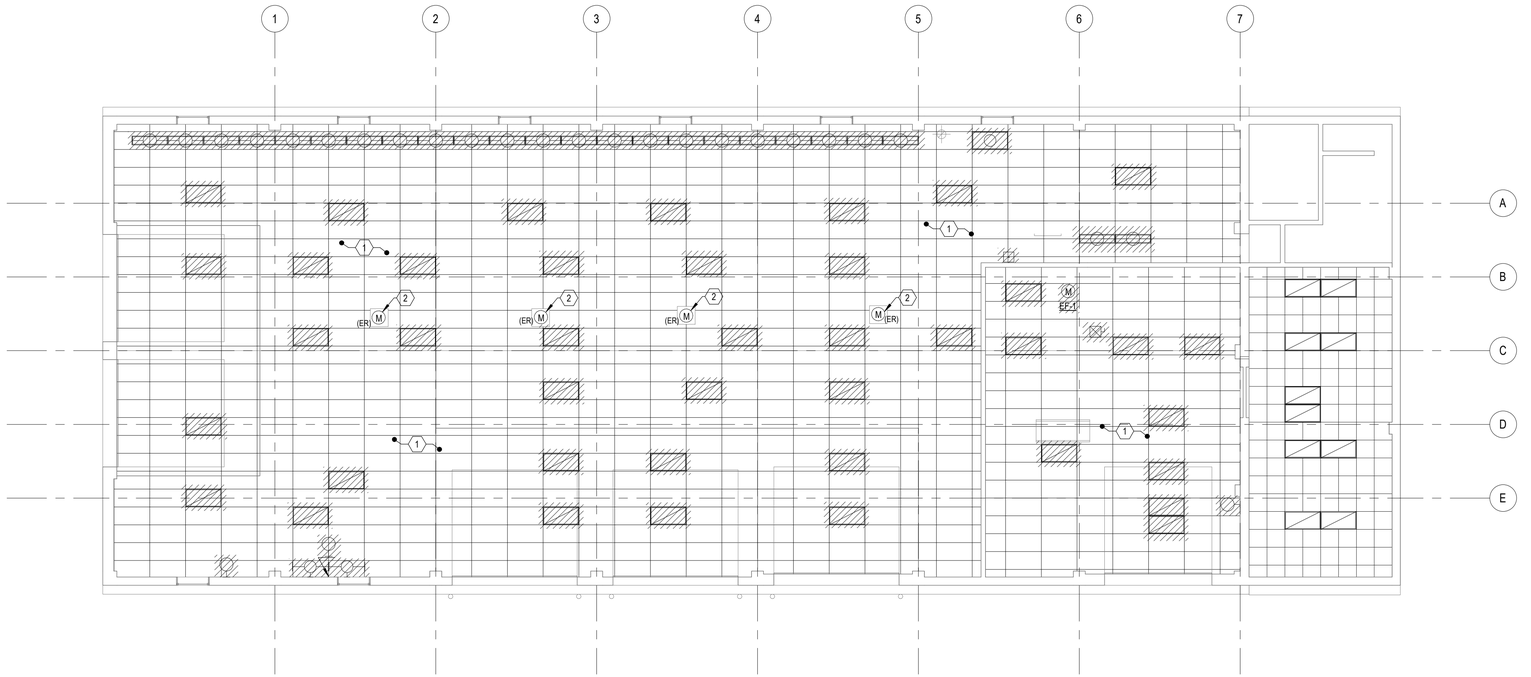
FIRST FLOOR ELECTRICAL DEMOLITION PLAN NOTES	
KEY NOTE	DESCRIPTION
1	EXISTING LIGHT FIXTURES TO BE DEMOLISHED ONLY. EXISTING LIGHTING CONTROLS AND CIRCUITRY TO REMAIN FOR RE-UTILIZIATION. REFER TO GENERAL DEMOLITION NOTES FOR FURTHER INFORMATION.

FIRST FLOOR LIGHTING DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

0 4' 8' 16'

ALL DEVICES SHOWN 'DARK' AND HATCHED ARE TO BE DEMOLISHED. ALL DEVICES SHOWN 'LIGHT' ARE EXISTING TO REMAIN.



SECOND FLOOR ELECTRICAL DEMOLITION PLAN NOTES	
KEY NOTE	DESCRIPTION
1	EXISTING LIGHT FIXTURES TO BE DEMOLISHED ONLY. EXISTING LIGHTING CONTROLS AND CIRCUITRY TO REMAIN FOR RE-UTILIZIATION. REFER TO GENERAL DEMOLITION NOTES FOR FURTHER INFORMATION.
2	REMOVE ELECTRICAL CONNECTIONS TO HOSE REEL. SALVAGE CIRCUIT FOR RECONNECTION AT NEW HOSE REEL LOCATION. REFERENCE SECOND FLOOR POWER & AUXILIARY SYSTEMS PLAN FOR ADDITIONAL INFORMATION. EXISTING HOSE REEL TO BE SALVAGED AND RELOCATION; SHALL BE BID AS BASE BID. EXISTING HOSE REEL TO BE DEMOLISHED AND REPLACED; SHALL BE BID AS PART OF ALTERNATE #1.

SECOND FLOOR ELECTRICAL DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

0 4' 8' 16'

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475 S. DAVIS AVE.
MARSHALL, MO 65340

PROJECT #: T2044-01

SITE #: 6265
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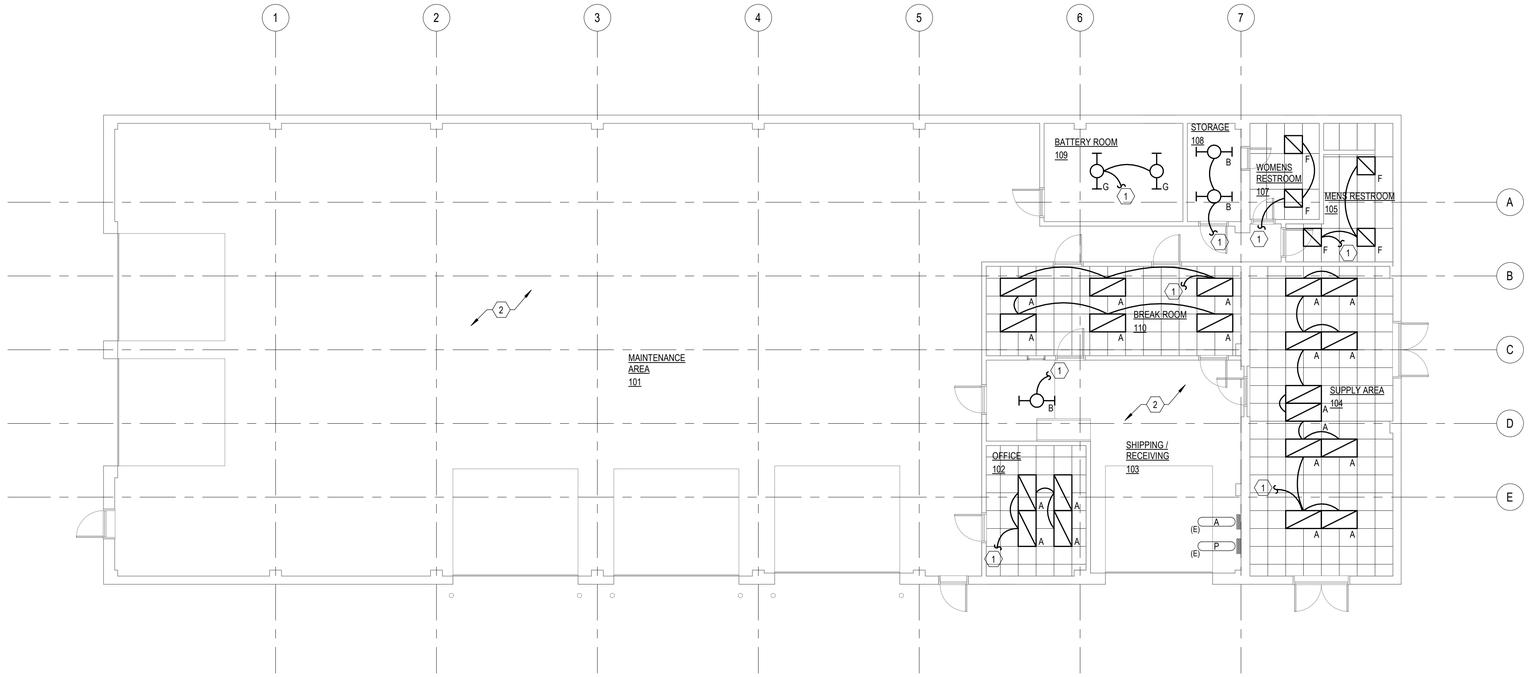


FIRST FLOOR LIGHTING PLAN

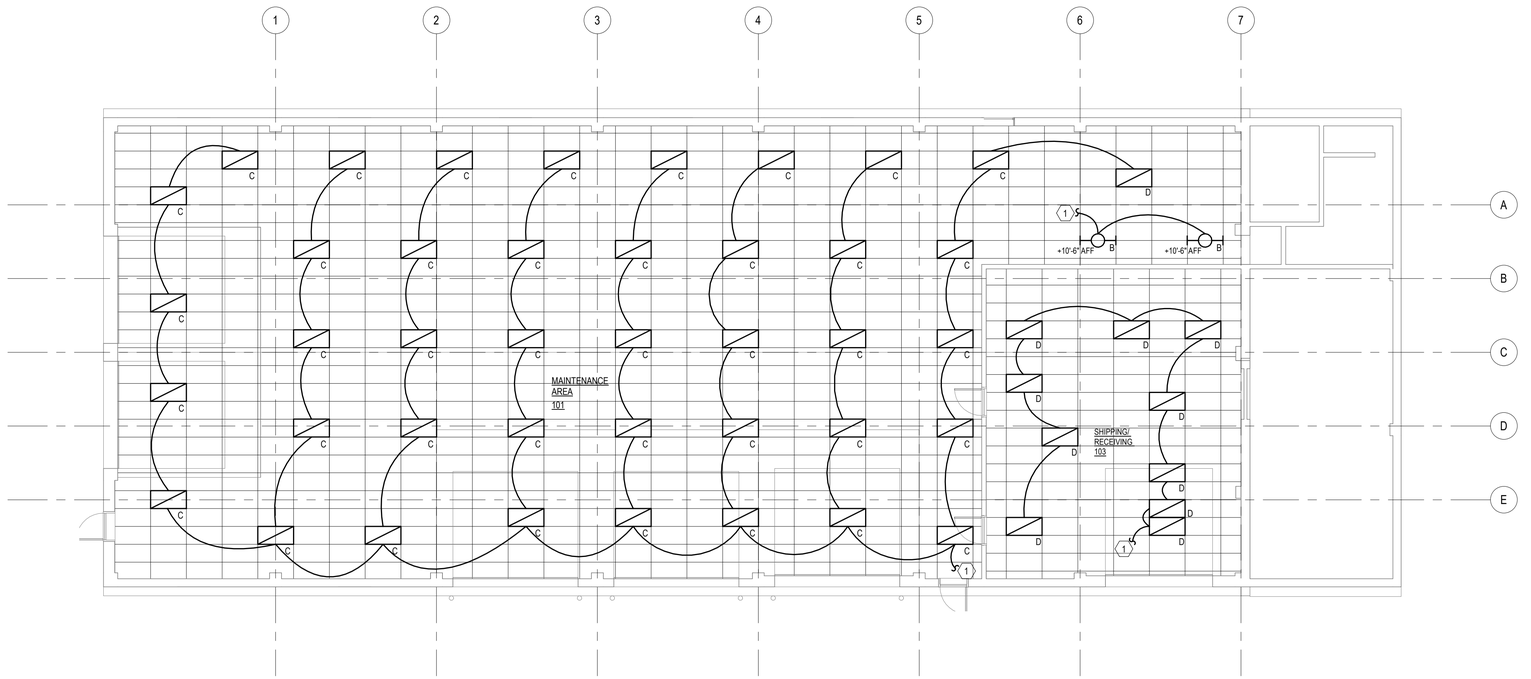
SCALE: 1/8" = 1'-0"

0 4' 8' 16'

FIRST FLOOR LIGHTING PLAN NOTES	
KEY NOTE	DESCRIPTION
1	CONNECT NEW LIGHT FIXTURES TO EXISTING SWITCHED LIGHTING CIRCUIT PREVIOUSLY SERVING THE AREA. RECONNECT SWITCHES/CONTROLS AS REQUIRED FOR COMPLETE FUNCTIONALITY. INTERCEPT, EXTEND, AND RECONNECT EXISTING CIRCUITRY AS REQUIRED.
2	FIXTURES AND/OR DEVICES IN THIS AREA ARE LOCATED ABOVE. REFER TO SECOND FLOOR LIGHTING PLAN, THIS SHEET, FOR MORE INFORMATION.

CONTRACTOR TO FIELD VERIFY AND COORDINATE NEW LIGHT FIXTURES WITH EXISTING OVERHEAD EQUIPMENT AS NECESSARY. COORDINATE ALL FIXTURE RELOCATIONS WITH OWNER AND ENGINEER.

REMOVE, SALVAGE AND REINSTALL CEILING TILE AS REQUIRED FOR INSTALLATION OF NEW LIGHTING. REPLACE ANY CEILING TILES DAMAGED DURING CONSTRUCTION WITH A CEILING TILE PRODUCT THAT MATCHES THE EXISTING IN APPEARANCE AND COORDINATES WITH EXISTING GRID TEE SYSTEM.



SECOND FLOOR LIGHTING PLAN

SCALE: 1/8" = 1'-0"

0 4' 8' 16'

SECOND FLOOR LIGHTING PLAN NOTES	
KEY NOTE	DESCRIPTION
1	CONNECT NEW LIGHT FIXTURES TO EXISTING SWITCHED LIGHTING CIRCUIT PREVIOUSLY SERVING THE AREA. RECONNECT SWITCHES/CONTROLS AS REQUIRED FOR COMPLETE FUNCTIONALITY. INTERCEPT, EXTEND, AND RECONNECT EXISTING CIRCUITRY AS REQUIRED.

CONTRACTOR TO FIELD VERIFY AND COORDINATE NEW LIGHT FIXTURES WITH EXISTING OVERHEAD EQUIPMENT AS NECESSARY. COORDINATE ALL FIXTURE RELOCATIONS WITH OWNER AND ENGINEER.

REMOVE, SALVAGE AND REINSTALL CEILING TILE AS REQUIRED FOR INSTALLATION OF NEW LIGHTING. REPLACE ANY CEILING TILES DAMAGED DURING CONSTRUCTION WITH A CEILING TILE PRODUCT THAT MATCHES THE EXISTING IN APPEARANCE AND COORDINATES WITH EXISTING GRID TEE SYSTEM.

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SHEET TITLE:
Lighting Plans

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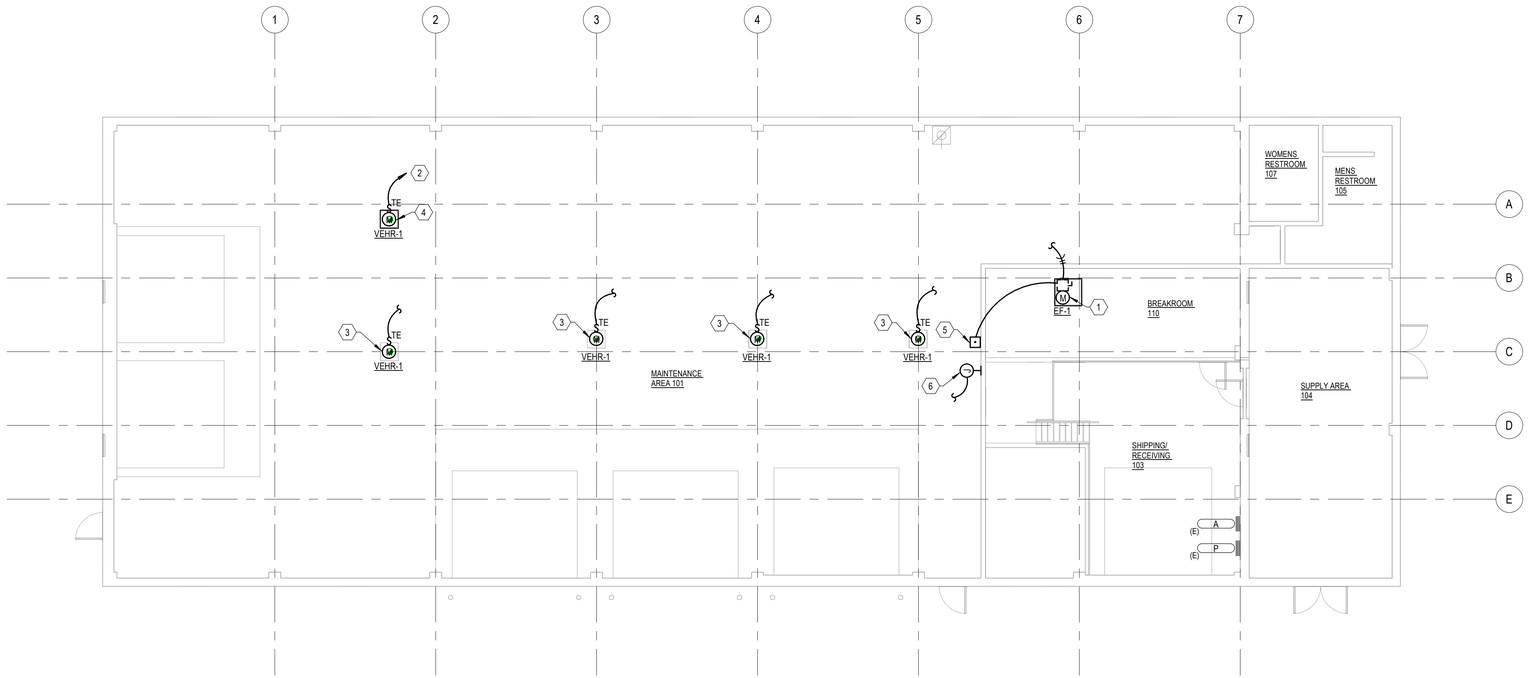
E-101



SECOND FLOOR POWER & AUXILIARY SYSTEMS PLAN

SCALE: 1/8" = 1'-0"

0 4' 8' 16'

SECOND FLOOR POWER & AUXILIARY SYSTEMS PLAN NOTES	
KEY NOTE	DESCRIPTION
1	ELECTRICAL CONNECTION TO EF-1. COORDINATE INSTALLATION AND REQUIREMENTS WITH THE MECHANICAL CONTRACTOR. SEE THE MECHANICAL PLANS AND SCHEMATICS FOR ADDITIONAL INFORMATION. DISCONNECT PROVIDED BY MECHANICAL. CONNECT EXHAUST FAN TO EXISTING CIRCUIT PREVIOUSLY SERVING THE DEMOLISHED EXHAUST FAN. INTERCEPT, EXTEND, AND RECONNECT EXISTING CIRCUITRY AS REQUIRED.
2	PROVIDE NEW 20A/1P BREAKER IN EXISTING PANELBOARD A. NEW CIRCUIT BREAKER SHALL BE FULLY COMPATIBLE WITH EXISTING PANELBOARD AND SHALL MAINTAIN THE INTERRUP RATING AND UL LISTING.
3	PROVIDE ELECTRICAL CONNECTION TO NEW MOTORIZED HOSE REEL. COORDINATE EXACT LOCATION AND OTHER REQUIREMENTS WITH THE MECHANICAL CONTRACTOR. SEE THE MECHANICAL PLANS FOR ADDITIONAL INFORMATION. CONNECT MOTORIZED HOSE REEL TO EXISTING CIRCUIT PREVIOUSLY SERVING THE DEMOLISHED MOTORIZED HOSE REEL. INTERCEPT, EXTEND, AND RECONNECT EXISTING CIRCUITRY AS REQUIRED.
4	PROVIDE ELECTRICAL CONNECTION TO NEW MOTORIZED HOSE REEL. COORDINATE EXACT LOCATION AND OTHER REQUIREMENTS WITH THE MECHANICAL CONTRACTOR. SEE THE MECHANICAL PLANS FOR ADDITIONAL INFORMATION.
5	EXHAUST FAN START/STOP PUSHBUTTON TO BE PROVIDED BY MECHANICAL. VERIFY EXACT LOCATION WITH OWNER AND ARCHITECT. PROVIDE SINGLE GANG JUNCTION BOX AND ALL NECESSARY CONNECTIONS REQUIRED. SEE THE MECHANICAL PLANS AND SCHEMATICS FOR ADDITIONAL INFORMATION.
6	ELECTRICAL CONNECTION TO VEHICLE EXHAUST DETECTION CONTROLLER. COORDINATE THE EXACT LOCATION AND REQUIREMENTS WITH THE MECHANICAL CONTRACTOR. PROVIDE INTERCONNECTIONS BETWEEN THE CONTROLLER AND SENSORS AS REQUIRED. SEE THE MECHANICAL PLANS AND SCHEMATICS FOR ADDITIONAL INFORMATION. PROVIDE 120V POWER FROM THE CLOSEST GENERAL PURPOSE RECEPTACLE CIRCUIT IN THE AREA, CONTRACTOR TO FIELD VERIFY CIRCUITS LOAD PRIOR TO CONSTRUCTION.

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MARSHALL, MO 65340

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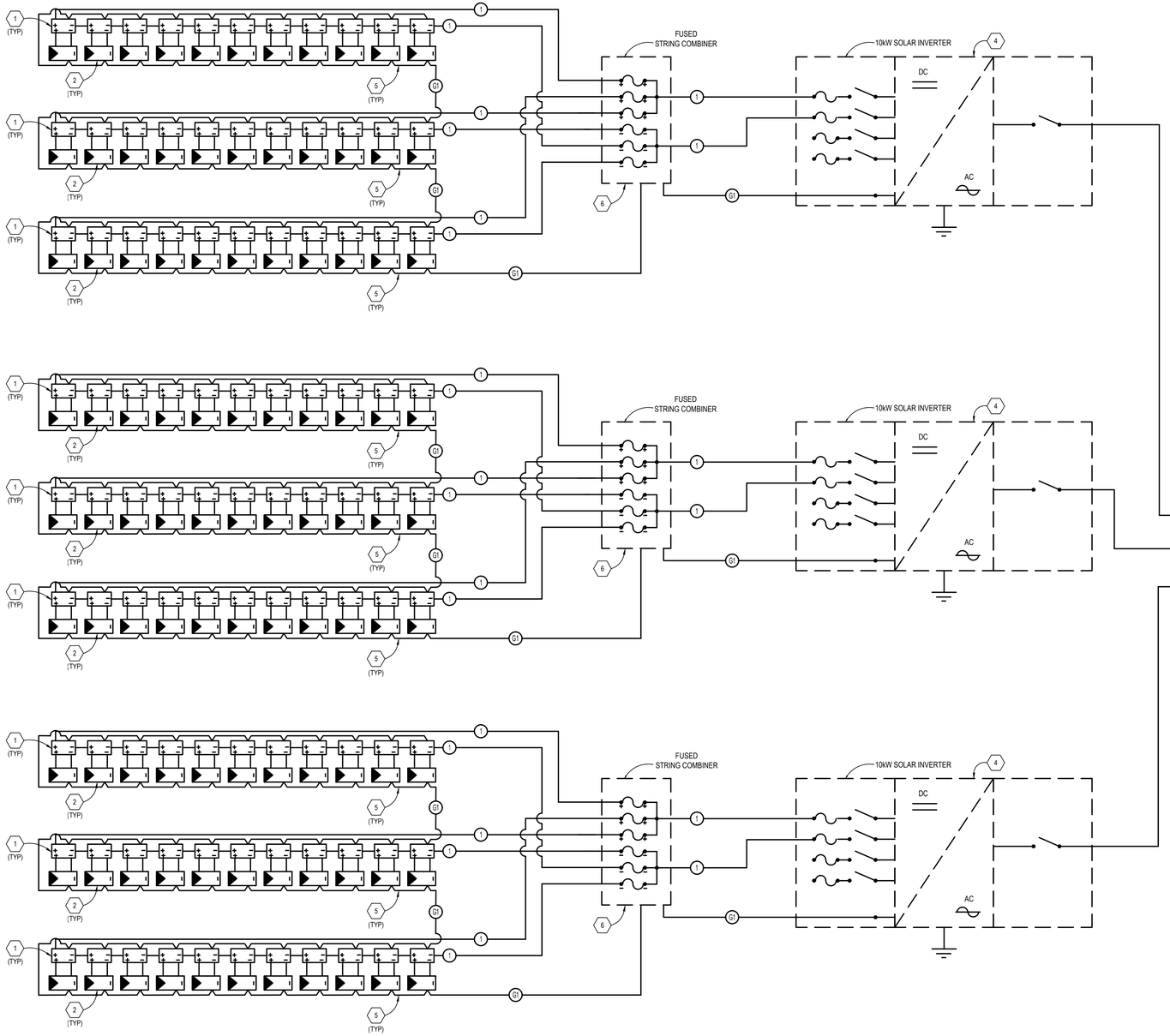
SHEET TITLE:
Second Floor Power & Auxiliary Systems Plan

SHEET NUMBER:
E-102



FEEDER SCHEDULE	
MARK	FEEDER DESCRIPTION
1	(1) #10 PV WIRE 600V FREE AIR
2	(2) #6 & (1) #10 GRND IN 1" CONDUIT
3	(2) 3/0 & (1) #6 GRND IN 1-1/2" CONDUIT
G1	(1) #6 BARE COPPER

ALL CONDUIT SIZES SHOWN ON FEEDER SIZING TABLE HAVE BEEN SIZED FOR EMT CONDUIT. ADJUST SIZE AS NECESSARY FOR OTHER RACEWAY TYPES. CONDUIT SIZE SHALL NOT EXCEED NEC MANDATED FILL CAPACITIES. CONTRACTOR TO FIELD VERIFY VOLTAGE DROP AND CONDUCTOR DERATING AS APPLICABLE.

ELECTRICAL ONE LINE DIAGRAM

NO SCALE

ELECTRICAL ONE-LINE DIAGRAM NOTES	
KEY NOTE	DESCRIPTION
1	(11) POWER OPTIMIZERS. MODULES TO BE UL LISTED.
2	(11) 375W PHOTOVOLTAIC MODULES. 1 STRING OF 11 MODULES WITH A TOTAL SUB-ARRAY WATTAGE OF 4,125W. PHOTOVOLTAIC MODULES SHALL BE UL LISTED.
3	ALL PV BREAKERS SHALL BE UL LISTED AND SUITABLE FOR BACK / REVERSE FEED USE.
4	ARC FAULT AND GROUND FAULT PROTECTION SHALL BE INTEGRAL TO INVERTER.
5	ALL SOLAR COMPONENTS TO BE GROUNDED.
6	PROVIDE FUSED 600VDC 3 STRING COMBINER BOX WITH NEMA 3R ENCLOSURE. COORDINATE EXACT MOUNTING LOCATION WITH PV CAR CANOPY STRUCTURE.

ELECTRICAL ONE-LINE DIAGRAM NOTES: CONTINUED	
KEY NOTE	DESCRIPTION
7	CONTRACTOR TO PROVIDE CONNECTION TO LOAD SIDE OF UTILITY METER, AHEAD OF TRANSFER SWITCH. CONNECTIONS TO BE MADE WITHIN EXISTING TRANSFER SWITCH.

PV INVERTER SCHEDULE (MODULE RATINGS @ STC)												
			INPUT PARAMETERS (DC)					OUTPUT PARAMETERS (AC)				
MANUFACTURER	MODEL	QUANTITY	P_{MAX} (W)	V_{MAX} (Voc)	V_{DCM} (V_{DC})	$I_{DC MAX}$ (A)	I_{MAX} (A)	P_{ACM} (W)	V_{ACM} (V_{AC})	I_{MAX} (A)	F_{ACM} (Hz)	
SOLAR EDGE	SE10000H-US	3	15,500	480	400	45.0	27	10,000	120/240	42	60	

PV POWER OPTIMIZER SCHEDULE (MODULE RATINGS @ STC)									
			INPUT PARAMETERS (DC)					OUTPUT PARAMETERS (DC)	
MANUFACTURER	MODEL	QUANTITY	P_{MAX} (W)	V_{MAX} (Voc)	$V_{OPP\ RANGE}$ (V_{DC})	I_{SCMAX} (A)	I_{MAX} (A)	V_{MAX} (V_{DC})	I_{MAX} (A)
SOLAR EDGE	P400	99	400	80	8-80	10.1	12.65	60	15

PV MODULE SCHEDULE (MODULE RATINGS @ STC)							
MANUFACTURER	MODEL	QUANTITY	P_{MAX} (W)	V_{MP} (V_{MP})	I_{MP}(A)	V_{OC} (V_{DC})	I_{SC}(A)
LG SOLAR	LG375Q1C-V5	99	375	37.1	7.61	42.8	10.83

PHOTOVOLTAIC SYSTEM COMPONENTS ARE TO SERVE AS BASIS OF DESIGN. SEE SPECIFICATIONS FOR MORE INFORMATION.

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SOLAR ARRAY, INTERIOR LED LIGHITNG AND EXHAUST SYSTEM

MARSHALL FIELD MAINTENANCE SHOP

475 S. DAVIS AVE.
MARSHALL, MO 65340

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Electrical One-line Diagram

SHEET NUMBER:

E-201

AT INTERVALS OF NO MORE THAN TEN FEET AND WITHIN ONE FOOT OF TURNS, BENDS OR PENETRATIONS, IDENTIFY ALL INTERIOR AND EXTERIOR DC PV WIRING SYSTEM COMPONENTS (CONDUIT, RACEWAYS, ENCLOSURES, OTHER WIRING METHODS, COVERS, OR ENCLOSURES OF PULL BOXES AND JUNCTION BOXES, CONDUIT BODIES IN WHICH ANY OF THE AVAILABLE CONDUIT OPENINGS ARE UNUSED) WITH THE FOLLOWING REFLECTIVE LABEL:

WARNING: PHOTOVOLTAIC POWER SOURCE

LABEL INVERTER WITH THE FOLLOWING 3 PLACARDS:

INVERTER

OPERATING CURRENT: 27 A
OPERATING VOLTAGE: 400 VDC
MAXIMUM SYSTEM VOLTAGE: 480 VDC
SHORT CIRCUIT CURRENT: 45 A

WARNING!

ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS.
TERMINALS ON BOTH THE
LINE AND LOAD SIDES MAY BE
ENERGIZED IN THE OPEN POSITION

WARNING!

ELECTRIC SHOCK HAZARD
IF A GROUND FAULT IS INDICATED,
NORMALLY GROUND CONDUCTORS MAY
BE UNGROUNDED AND ENERGIZED

LABEL PV AGGREGATION PANEL WITH THE FOLLOWING 4 PLACARDS:

WARNING!

DUAL POWER SOURCE PANEL
MAIN BREAKER AND PV BREAKER
SHALL BE DISCONNECTED
FOR POWER DISCONNECT

SOLAR PHOTOVOLTAIC SOURCE
NOMINAL AC VOLTAGE: 240V
MAXIMUM AC CURRENT: 135A

WARNING!

ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS.
TERMINALS ON BOTH THE
LINE AND LOAD SIDES MAY BE
ENERGIZED IN THE OPEN POSITION

WARNING!

ELECTRIC SHOCK HAZARD
IF A GROUND FAULT IS INDICATED,
NORMALLY GROUND CONDUCTORS MAY
BE UNGROUNDED AND ENERGIZED

LABEL MAIN SERVICE METER WITH THE FOLLOWING 3 PLACARDS:

WARNING!

THIS SERVICE METER IS ALSO
SERVED BY A PHOTOVOLTAIC SYSTEM

WARNING!

ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS.
TERMINALS ON BOTH THE LINE AND LOAD SIDES
MAY BE ENERGIZED IN THE OPEN POSITION

SOLAR PHOTOVOLTAIC SOURCE
NOMINAL AC VOLTAGE: 240V
MAXIMUM AC CURRENT: 135A

PHOTOVOLTAIC SYSTEM EQUIPPED
WITH RAPID SHUTDOWN

LABEL SOLAR SERVICE DISCONNECTING MEANS WITH THE FOLLOWING 2 PLACARDS:

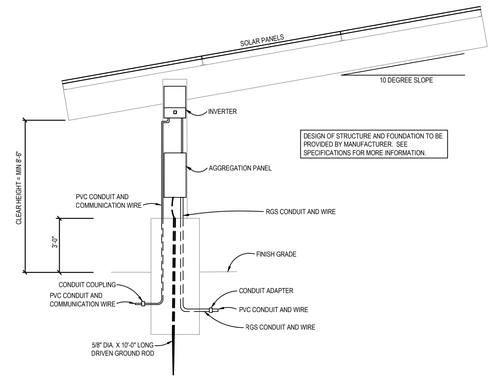
SOLAR POWER DISCONNECT
FOR UTILITY OPERATION.

MARKING AND LABELING GENERAL NOTES:

A. MARKING AND LABELING SHALL COMPLY WITH NEC 690 AND IFC 605.
B. ALL PLACARDS, SIGNAGE AND LABELS SHALL BE PERMANENTLY ATTACHED.
C. ALL PLACARDS AND SIGNAGE SHALL BE MADE OF RIGID LAMINATE MATERIAL WITH ENGRAVED LETTERS.
D. ALL PLACARDS, SIGNAGE AND LABLES SHALL BE RED WITH WHITE LETTERING.
E. ALL LETERRING SHALL BE A MINIMUM OF 3/8" IN HEIGHT.
F. ALL LETTERING SHALL BE CAPITAL LETTERS, ARIAL OR SIMILAR FONT, NON-BOLD.
G. ALL FIELD-INSTALLED PLACARDS, SIGNAGE AND LABELS SHALL BE VISIBLE AFTER INSTALLATION.
H. ALL PLACARDS, SIGNAGE, AND LABELS SHALL BE SUITABLE FOR THE ENVIRONMENT WHERE THEY ARE INSTALLED.
I. PROVIDE A PLACARD, SIGN OR LABEL SHOWING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE LOCATION OF THE PHOTOVOLTAIC DISCONNECTIONS MEANS.
J. A PERMANENT PLACARD OR DIRECTORY, DENOTING ALL ELECTRIC POWER SOURCES ON OR IN THE PREMISES, SHALL BE INSTALLED AT EACH SERVICE EQUIPMENT LOCATION AND AT LOCATIONS OF ALL ELECTRIC POWER PRODUCTION SOURCES CAPABLE OF BEING INTERCONNECTED.
K. THE SITE DIRECTORY SHALL INCLUDE WORDING SIMILAR TO THE FOLLOWING: "CAUTION - THE POWER TO THIS SITE IS ALSO SUPPLIED FROM THE FOLLOWING SOLAR PV AND UTILITY SOURCES WITH DISCONNECTS LOCATED AS SHOWN."

LIGHTING FIXTURE SCHEDULE

Fixture Type	Manufacturers	Catalog Numbers	Description	No. of Lamps	Lamp Type	Volt	VA	Mounting	Remarks
A	HE WILLIAMS LITHONIA AXIS LTG	AT1-24-L40-835-DMA-EM/10WLP-DIM-UNV 2ALL4 40L MVOLT EZ1 LP835 DIALED 24 4500 80 35 W UNV DP 1 'XX'	2' X 4' LED TROFFER	N/A	LED 3500K	UNV	48	RECESSED	PROVIDE ALL NECESSARY COMPONENTS FOR FIXTURE MOUNTING. COORDINATE MOUNTING WITH ALL OTHER TRADES IN THE SPACE. FIXTURE IS TO BE MOUNTED IN A NEAT AND TIDY FASHION. SEE THE LIGHTING PLANS FOR ADDITIONAL INFORMATION. SEE LIGHTING PLANS FOR ADDITIONAL INFORMATION.
B	HE WILLIAMS LITHONIA COLUMBIA LTG	75L-4-L38-835-DMA-DIM-UNV CSS L48 4000LM MVOLT 35K 80CRI CSL4-4035	4' LED LINEAR STRIP	N/A	LED 3500K	UNV	31	SURFACE	PROVIDE ALL NECESSARY COMPONENTS FOR FIXTURE MOUNTING. COORDINATE MOUNTING WITH ALL OTHER TRADES IN THE SPACE. FIXTURE IS TO BE MOUNTED IN A NEAT AND TIDY FASHION. UNLESS OTHERWISE INDICATED, SEE THE LIGHTING PLANS FOR ADDITIONAL INFORMATION.
C	HE WILLIAMS LITHONIA METALUX	50 G S 2 4 L130 8 35 S AF12125 2GTL 4 140L GZ10 LP835 24GR-LD5-130-F1-UNV-L835-CD	2' X 4' LED TROFFER	N/A	LED 3500K	UNV	101	RECESSED	PROVIDE ALL NECESSARY COMPONENTS FOR FIXTURE MOUNTING. COORDINATE MOUNTING WITH ALL OTHER TRADES IN THE SPACE. FIXTURE IS TO BE MOUNTED IN A NEAT AND TIDY FASHION. SEE THE LIGHTING PLANS FOR ADDITIONAL INFORMATION. SEE LIGHTING PLANS FOR ADDITIONAL INFORMATION.
D	HE WILLIAMS LITHONIA METALUX	50 G S 2 4 L33 8 35 S AF12125 2GTL 4 40L GZ10 LP835 24GR-LD5-34-F1-UNV-L835-CD	2' X 4' LED TROFFER	N/A	LED 3500K	UNV	25	RECESSED	PROVIDE ALL NECESSARY COMPONENTS FOR FIXTURE MOUNTING. COORDINATE MOUNTING WITH ALL OTHER TRADES IN THE SPACE. FIXTURE IS TO BE MOUNTED IN A NEAT AND TIDY FASHION. SEE THE LIGHTING PLANS FOR ADDITIONAL INFORMATION. SEE LIGHTING PLANS FOR ADDITIONAL INFORMATION.
F	HE WILLIAMS LITHONIA METALUX	50 G S 2 2 L26 8 35 S AF12125 2GTL 2 33L GZ10 LP835 22GR-LD5-28-F1-UNV-L835-CD	2' X 2' LED TROFFER	N/A	LED 3500K	UNV	21	RECESSED	PROVIDE ALL NECESSARY COMPONENTS FOR FIXTURE MOUNTING. COORDINATE MOUNTING WITH ALL OTHER TRADES IN THE SPACE. FIXTURE IS TO BE MOUNTED IN A NEAT AND TIDY FASHION. SEE THE LIGHTING PLANS FOR ADDITIONAL INFORMATION. SEE LIGHTING PLANS FOR ADDITIONAL INFORMATION.
G	LDPI SONARAY RED SKY LIGHTING	LEXS L2 V1 5 V110 D EX4 060M WW 7 50 LG U LNT 40 100-277 5000K 110 DIFF GREY YOKE	4' LED LINEAR STRIP	N/A	LED 4000K	UNV	80	SURFACE	PROVIDE ALL NECESSARY COMPONENTS FOR FIXTURE MOUNTING. COORDINATE MOUNTING WITH ALL OTHER TRADES IN THE SPACE. FIXTURE IS TO BE MOUNTED IN A NEAT AND TIDY FASHION. UNLESS OTHERWISE INDICATED, SEE THE LIGHTING PLANS FOR ADDITIONAL INFORMATION.



1 **PV CANOPY MOUNTING DETAIL**
NO SCALE

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

MICHAEL A. WROBLEWSKI
LICENSED
2516
MISSOURI
PROFESSIONAL ENGINEER
3/22/23

PROFESSIONAL SEAL

CLARK & ENERSEN
2020 Baltimore Ave.
Suite 300
Kansas City, MO 64108
p. 816-474-8237

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES, MANAGEMENT, DESIGN AND CONSTRUCTION

MISSOURI NATIONAL GUARD

SOLAR ARRAY, INTERIOR LED LIGHITNG AND EXHAUST SYSTEM

MARSHALL FIELD MAINTENANCE SHOP

475 S. DAVIS AVE.
MARSHALL, MO 65340

PROJECT #: T2044-01

SITE #: 6265
ASSET #: 8136265009

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:

ISSUE DATE: 03/22/2023

DRAWN BY: AS
CHECKED BY: DW
DESIGNED BY: AS

SHEET TITLE:
Electrical Details and Schedules

SHEET NUMBER:

E-301