

ELECTRICAL SYMBOLS

THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED.

STANDARD MOUNTING HEIGHTS	
AUDIBLE APPLIANCES (CENTERLINE)	84"
ALARMS	48"
ANNUNCIATOR PANELS (DISPLAY)	48"
CONTROLS (TOP OF DEVICE)	48"
EXIT SIGNS (WALL MOUNTED)	60"
FIRE ALARM ANNUNCIATOR PANEL (DISPLAY)	60"
FIRE ALARM BELL (EXTERIOR) (CENTERLINE)	120"
FIRE ALARM CONTROL PANEL/UNIT (DISPLAY)	60"
INTERCOM (AREA ONLY)	36"
INTERCOMS (TOP OF DEVICE)	48"
PULL STATIONS (TOP OF DEVICE)	48"
PHOTOCELLS	144"
RECEPTACLES	15"
RECEPTACLES (EXTERIOR)	24"
RECEPTACLES (GARAGES)	48"
RECEPTACLES (POOLS)	27"
RECEPTACLES (ABOVE COUNTER)	+6" ABOVE BACKSPLASH/COUNTER, 40" MAX
RECEPTACLES IN EQUIPMENT ROOMS	44"
REMOTE INDICATING LIGHT (EQUIPMENT ROOMS)	48"
REMOTE INDICATING LIGHT (FINISHED AREAS)	CEILING
SAFETY SWITCHES (TOP OF DEVICE)	48"
STARTERS (TOP OF DEVICE)	44"
SWITCHES (TOP OF DEVICE)	SAME AS ADJACENT DEVICE, UNO
TELEPHONE, DATA OUTLETS	6"
TELEPHONE TERMINAL BOARD (BOTTOM)	REFER TO ARCH DRAWINGS
TELEVISION OUTLETS	84"
VISIBLE APPLIANCES (CENTERLINE)	

USE THE DEFAULT MOUNTING HEIGHTS SHOWN ABOVE UNO IN THE CONSTRUCTION DOCUMENTS. MOUNTING HEIGHTS LISTED ARE ABOVE FINISHED FLOOR (AFF) OR ABOVE FINISHED GRADE (AFG) TO BOTTOM OF OUTLET BOX. ALL DEVICES SHALL BE INSTALLED IN COMPLIANCE WITH CURRENT ADA AND LOCAL REQUIREMENTS.

ABBREVIATIONS	
AF	AMPERE FRAME SIZE
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AS	AMPERE SWITCH
AT	AMPERE TRIP SETTING
AT	AUTOMATIC TRANSFER SWITCH
AV	AUDIO VISUAL
BA	BUILDING AUTOMATION SYSTEM
BKR	BREAKER
C	CONDUIT
CAT	CATEGORY
CATV	CABLE TELEVISION SYSTEM
CCTV	CLOSED CIRCUIT TELEVISION
CD	CANDELA
CKT	CIRCUIT
CODE	APPLICABLE CODE ADOPTED BY JURISDICTION
CT	CURRENT TRANSFORMER
CTR	CENTER
CVD	CUMULATIVE VOLTAGE DROP
DEM	DEMOLITION
DPTST	DOUBLE-THROW DOUBLE-POLE
(E)	EXISTING
EF	ELECTRICAL CONTRACTOR
EM	EXHAUST FAN
EMS	EMERGENCY ENERGY MANAGEMENT SYSTEM
EW	ELECTRIC WATER COOLER
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FCA	FAULT CURRENT AMPS AVAILABLE
FCU	FAN COIL UNIT
FL	FLOOR
FLR	FLOOR
FLC	FULL LOAD AMPS
FLR	FLOOR
GA	GENERAL CONTRACTOR
GEC	GROUNDING ELECTRODE CONDUCTOR
GES	GROUNDING ELECTRODE SYSTEM
GFR	GROUND FAULT RELAY
G	GROUND
IG	ISOLATED GROUND
ISC	SHORT CIRCUIT CURRENT
JBX/BOX	JUNCTION BOX
LF	LINEAR FEET
LRA	LOCKED ROTOR AMPS
LTGLTS	LIGHTING/LIGHTS
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MFR	MANUFACTURER
MN	MINIMUM
MLO	MAIN LUGS ONLY
MOCPP	MAXIMUM OVERCURRENT PROTECTION
MTD	MOUNTED
N/A	NOT APPLICABLE
NF	NON-FUSED
NL	NIGHT LIGHT (24HR ON)
NRTL	NATIONALLY RECOGNIZED TESTING LABORATORY (CSA, ETL, NSF, UL)
OS	OCCUPANCY SENSOR
P	POLE
PART	PARTIAL CIRCUIT
PHD	PHASE
PNL	PANEL
PNLBD	PANELBOARD
PROVIDE	FURNISH AND INSTALL
PT	POTENTIAL TRANSFORMER
QTY	QUANTITY
RCPT	RECEPTACLE
RELO	RELOCATE
RLA	RUNNING LOAD AMPS
RTU	ROOFTOP UNIT
SCCR	SHORT-CIRCUIT CURRENT RATING
SD	SMOKE DUCT DETECTOR
SF	SQUARE FEET
SPDT	SINGLE-POLE DOUBLE-THROW
SPST	SINGLE-POLE SINGLE-THROW
ST	SHUNT TRIP
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TBD	TO BE DETERMINED
TGB	TELECOMMUNICATIONS GROUND BUS BAR
TL	TWISTLOCK
TMBG	TELECOMMUNICATIONS MAIN GROUND BUS BAR
TX	TRANSFORMER
TYP	TYPICAL
UF	UNDERFLOOR
UG	UNDERGROUND
US	UNDERSLAB
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE
W	WITH
WP	WEATHER PROOF
WR	WEATHER RESISTANT
WT	WATERTIGHT
XP	EXPLOSION-PROOF

ANNOTATION	
	MECHANICAL OR FIRE PROTECTION PLAN NOTE CALLOUT
	PLUMBING PLAN NOTE CALLOUT
	ELECTRICAL OR FIRE ALARM PLAN NOTE CALLOUT
	TECHNOLOGY PLAN CALLOUT
	PLUMBING EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED); REFER TO PLUMBING FIXTURE OR EQUIPMENT SCHEDULES
	EQUIPMENT DESIGNATION (OWNER FURNISHED, CONTRACTOR INSTALLED)
	MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE)
	CONNECTION POINT OF NEW WORK TO EXISTING
	DETAIL REFERENCE UPPER NUMBER INDICATES DETAIL NUMBER
	LOWER NUMBER INDICATES SHEET NUMBER
	SECTION CUT DESIGNATION

CIRCUITING & WIRING	
	HOME RUN TO PANELBOARD. INFORMATION AT ARROWS ARE CIRCUIT NUMBERS AND PANELBOARD FOR TERMINATION. REFER TO PANELBOARD SCHEDULES FOR BRANCH CIRCUIT CONDUCTOR SIZES.
	CONDUIT CONCEALED
	CONDUIT IN UNDER FLOOR/GROUND CONSTRUCTION
	EXPOSED CONDUIT
	FLEXIBLE CONDUIT
	LOW VOLTAGE CABLE (NOT ROUTED IN CONDUIT)
	CONDUIT TURNING DOWN
	CONDUIT TURNING UP
	CONNECTION POINT OR EQUIPMENT TERMINATION
	EQUIPMENT TERMINATION

CONDUCTOR TICK MARK LEGEND	
WHERE TICK MARKS ARE SHOWN, THE FOLLOWING SHALL GOVERN:	
	SWITCHED HOT (PHASE) CONDUCTORS (SHOWN TRAILING NEUTRAL)
	NEUTRAL (GROUNDED) CONDUCTOR
	UNSWITCHED HOT (PHASE) CONDUCTORS (SHOWN LEADING NEUTRAL)
NOTE: HASH MARKS INDICATE QUANTITY OF CONDUCTORS	
	EQUIPMENT GROUNDING CONDUCTOR IN CONDUIT (GREEN INSULATION OR BARE)
	ISOLATED GROUNDING CONDUCTOR IN CONDUIT (GREEN INSULATION WITH YELLOW TRACER)

BRANCH CIRCUIT CONDUCTOR TABLE			
WHERE TICK MARKS ARE NOT SHOWN, THE FOLLOWING SHALL GOVERN:			
# OF POLES	HOT (PHASE)*	NEUTRAL (GROUNDED)**	GROUNDING***
1P	(1)	(1) UNO	(1)
2P	(2)	(1) UNO	(1)
3P	(3)	(1) UNO	(1)

* PROVIDE ADDITIONAL CONDUCTORS THROUGH ENTIRE CIRCUIT (SWITCHED, UNSWITCHED, ETC.) AS INDICATED THROUGHOUT CONSTRUCTION DOCUMENTS AND AS REQUIRED FOR A COMPLETE AND WORKING SYSTEM.

** REFER TO SPECIFICATIONS FOR LIMITATIONS ON SHARING NEUTRAL (GROUNDED) CONDUCTORS. DO NOT CIRCUIT AS A MULTI-WIRE BRANCH CIRCUIT, UNO.

*** PROVIDE ADDITIONAL ISOLATED GROUNDING CONDUCTORS WHERE INDICATED.

REFER TO SPECIFICATIONS, PLANS, NOTES, WIRING AND CONTROL DIAGRAMS FOR ADDITIONAL CIRCUITING REQUIREMENTS.

THROUGHOUT THE DRAWINGS DIFFERENT LINETYPES ARE USED IN COMBINATION WITH THE SYMBOLS TO INDICATE THE STATUS OF ITEMS AS EXISTING, TO BE DEMOLISHED, TO BE INCLUDED AS PART OF NEW WORK AND/OR ITEMS WHICH ARE ANTICIPATED TO BE PROVIDED IN THE FUTURE. THE STATUS OF ITEMS USING THESE LINETYPES ARE RELATIVE TO THE VIEW IN WHICH THEY APPEAR. PHASING SHOWN IN DRAWINGS IS NOT INTENDED TO FULLY DESCRIBE ALL NECESSARY CONSTRUCTION PHASING, WHICH IS DETERMINED BY THE CONTRACTOR AS PART OF THEIR RESPONSIBILITIES. ANY SUCH PHASING DESCRIBED IN THE CONSTRUCTION DOCUMENTS ARE GENERAL AND ONLY INTENDED TO INDICATE A BROAD ORDER FOR THE SAME OF DESCRIBING THE PROJECT. THE FOLLOWING LINETYPES MAY BE USED ON ANY DEVICE, EQUIPMENT, NOTE, LINE, SHAPE, ETC.

EXISTING	NEW
DEMOLISH	FUTURE

LIGHTING (REFER TO LIGHT FIXTURE SCHEDULE FOR MORE INFO)	
	LIGHT FIXTURE
	a = SWITCHED BY SWITCH "a"
	A = LIGHT FIXTURE TYPE "A"
	± = WALL MOUNT
	> = ARROW INDICATES AIMING DIRECTION
	LIGHT FIXTURE CIRCUITED AS A NIGHT LIGHT (NL)
	EMERGENCY LIGHT FIXTURE WITH EMERGENCY LIGHTING BATTERY PACK OR CONNECTED TO EMERGENCY SOURCE
	NIGHT LIGHT/EMERGENCY LIGHT FIXTURE WITH EMERGENCY BATTERY PACK OR CONNECTED TO EMERGENCY SOURCE
	LIGHTING TRACK WITH LIGHT FIXTURE TYPES AS INDICATED
	MIRROR LIGHTS
	EXTERIOR SITE PARKING LOT LIGHT FIXTURE
	EXTERIOR PEDESTRIAN POST TOP LIGHT FIXTURE
	EXTERIOR LIT BOLLARD LIGHT FIXTURE
	EXIT SIGN - CEILING / WALL MOUNTED, ARROWS AS INDICATED, FACE HATCHED
	EMERGENCY LIGHTING UNIT EQUIPMENT WITH BATTERY PACK - CEILING/WALL MOUNTED
	AFEA (AREA FOR EVACUATION ASSISTANCE) SIGN - CEILING/WALL MOUNTED, ARROWS AS INDICATED

POWER EQUIPMENT & DEVICES	
	ELECTRICAL PANELBOARD (SURFACE OR FLUSH MOUNT)
	TERMINAL CABINET (SURFACE OR FLUSH MOUNT), TYPE AS NOTED
	PLYWOOD TERMINAL BOARD FOR TELEPHONE SYSTEM, UNO, SIZE AS NOTED
	SWITCHBOARD OR MOTOR CONTROL CENTER ON HOUSEKEEPING PAD
	ELECTRICAL DISTRIBUTION PANELBOARD
	TRANSFORMER
	MOTOR
	DISCONNECT SWITCH - 200/3/150/3R* DENOTES AMPERES/POLES/VOLTS/NEMA ENCLOSURE RATING, NF= NON-FUSED, CB= CIRCUIT BREAKER, 200/3/CB, NO VALUE (200/3/150) FOR NEMA ENCLOSURE MEANS STANDARD NEMA 1 RATING
	COMBINATION DISCONNECT (SAFETY) SWITCH AND MOTOR STARTER 300/3/15/1/3R* DENOTES AMPERES/POLES/VOLTS/NEMA STARTER SIZE/NEMA ENCLOSURE RATING, NF= NON-FUSED, CB= CIRCUIT BREAKER, 300/3/CB, NO VALUE (200/3/150/1) FOR NEMA ENCLOSURE MEANS STANDARD NEMA 1 ENCLOSURE RATING
	MAGNETIC MOTOR STARTER, NEMA SIZE AS NOTED, 3-POLE, UNO
	MANUAL MOTOR STARTER DISCONNECT
	FRACTIONAL HORSEPOWER MANUAL CONTROLLER
	INTEGRAL HORSEPOWER MANUAL CONTROLLER
	VARIABLE FREQUENCY DRIVE
	RELAY OR CONTACTOR (IN SCHEMATICS)
	CONTACTOR (SIZE, COIL VOLTAGE AND NUMBER OF POLES AS INDICATED)
	TIME SWITCH
	PHOTOCELL
	INDICATING LIGHT
	EMERGENCY POWER OFF BUTTON
	STOP-START PUSH BUTTON CONTROL STATION
	HAND-OFF-AUTO PUSH BUTTON CONTROL STATION
	MUSHROOM-TYPE PUSH BUTTON
	OVERHEAD PADDLE FAN

LIGHTING CONTROL DEVICES, WIRING DEVICES & BOXES	
	SINGLE POLE SWITCH (NO LETTER DESIGNATION)
	SINGLE LETTER DESIGNATIONS AS FOLLOWS: 2 = TWO POLE 3 = THREE-WAY 4 = FOUR-WAY D = DIMMER F = FAN SPEED CONTROL K = KEYS LV = LOW VOLTAGE OB = OCCUPANCY SENSOR P = SPST PILOT LIGHT VS = VACUANCY SENSOR WP = WEATHER PROOF
	AUTOMATIC LOAD CONTROL RELAY
	BRANCH CIRCUIT TRANSFER SWITCH
	SIMPLEX RECEPTACLE - NEMA 5-20R, UNO
	DUPLEX RECEPTACLE - NEMA 5-20R, UNO
	DOUBLE DUPLEX RECEPTACLE - NEMA 5-20R, UNO
	SPECIAL RECEPTACLE - NEMA TYPE AS NOTED
	TWIST-LOCK TYPE RECEPTACLE
	GFCI TYPE RECEPTACLE*
	ISOLATED GROUND TYPE RECEPTACLE*
	EMERGENCY RECEPTACLE*
	RECEPTACLE INSTALLED ABOVE COUNTER OR BACKSPLASH*
	RECEPTACLE INSTALLED IN CEILING*
	RECEPTACLE INSTALLED IN FLOOR*
	RECEPTACLE INSTALLED VIA DROP CORD*
	RECEPTACLE LETTER DESIGNATIONS AS FOLLOWS: C = AUTOMATICALLY CONTROLLED CH = CLOCK HANGER TYPE D = DEMOLISHED E = EXISTING EM = EMERGENCY POWER GFCI = GROUND-Fault CIRCUIT INTERRUPTER H = HORIZONTALLY MOUNTED IG = ISOLATED GROUND R = RELOCATED S = MANUALLY SWITCHED TR = TAMPER RESISTANT TV = TELEVISION USB = USB/DUPLEX WP = WEATHER PROOF COVER WR = WEATHER RESISTANT
	MULTI-OUTLET ASSEMBLY
	TELEPHONE OUTLET
	DATA OUTLET
	MULTI-SERVICE OUTLET: TELEPHONE AND DATA
	ABOVE COUNTER, TYP
	WALL, TYP
	FLOOR, TYP
	MULTI-SERVICE POWER POLE WITH TELEPHONE, DATA AND POWER OUTLETS A = TYPE, REFER TO PLANS, SCHEDULES AND SPECIFICATIONS
	MULTI-SERVICE FLOOR BOX WITH TELEPHONE, DATA AND POWER OUTLETS A = TYPE, REFER TO PLANS, SCHEDULES AND SPECIFICATIONS
	POKE THROUGH, A = TYPE, REFER TO PLANS, SCHEDULES AND SPECIFICATIONS
	THERMOSTAT
	JUNCTION BOX/OUTLET BOX
	BLANK FACE GFCI FEED THROUGH DEVICE

REFER TO LIGHTING CONTROL DEVICE SCHEDULE FOR ADDITIONAL DEVICE SYMBOLS AND DEFINITIONS SPECIFIC TO THIS PROJECT.

*SYMBOL DEMONSTRATED WITH DUPLEX RECEPTACLE, WHEN USED IN COMBINATION WITH OTHER DEVICES MEANING IS SIMILAR FOR THOSE DEVICE TYPES.

SIGNALING	
	SIGNALING BELL
	SIGNALING BUZZER
	LV TRANSFORMER

ELECTRICAL ONE-LINE & RISER DIAGRAM	
	SWITCH (RATING AS INDICATED)
	DRAWOUT CIRCUIT BREAKER (RATINGS AS INDICATED)
	FUSED SWITCH (RATING, POLES AND FUSE TYPE AS INDICATED)
	COMBINATION FUSED SWITCH/STARTER AND STARTER SIZE
	CIRCUIT BREAKER (RATINGS AS INDICATED)
	COMBINATION CIRCUIT BREAKER/STARTER AND STARTER SIZE
	PANELBOARD, SINGLE OR MULTI-SECTION (REFER TO SCHEDULES)
	ISOLATED POWER PANELBOARD W/ INTEGRAL TRANSFORMER (REFER TO SCHEDULES)
	TRANSFORMER (TYPE AND RATINGS AS INDICATED)
	SHIELDED TRANSFORMER (TYPE AND RATINGS AS INDICATED)
	AUTOMATIC TRANSFER SWITCH (RATINGS AS INDICATED)
	AUTOMATIC TRANSFER SWITCH WITH BYPASS (RATINGS AS INDICATED)
	GENERATOR (RATINGS AS INDICATED)
	NON-SEPARATELY DERIVED SOURCE OR SEPARATELY DERIVED SOURCE
	SWITCHGEAR, SWITCHBOARD AND/OR DISTRIBUTION PANELBOARD (TYPE, RATING, DEVICES AND ACCESSORIES AS INDICATED)
	COMBINATION DIGITAL VOLT METER/AMMETER
	CIRCUIT IDENTIFICATION (REFER TO CIRCUIT SCHEDULE)
	GROUND FAULT RELAY
	PHASE FAILURE RELAY
	KIRK-KEY INTERLOCK (# INDICATES KEY PAIR)
	SHUNT TRIP
	AMMETER (RANGE AS SPECIFIED OR REQUIRED)
	VOLTMETER (RANGE AS SPECIFIED OR REQUIRED)
	UTILITY METER (AS REQUIRED BY UTILITY)
	AMMETER SWITCH
	VOLTMETER SWITCH
	WATT-HOUR METER, "D" DENOTES DEMAND REGISTER, "15" DENOTES MINUTES OF DEMAND INTERVAL
	CURRENT TRANSFORMER RATING AS SPECIFIED OR REQUIRED
	POTENTIAL TRANSFORMER RATING AS SPECIFIED OR REQUIRED
	SURGE-PROTECTIVE DEVICE
	GROUND CONNECTION
	GROUND CONNECTION WITH TEST WELL
	GROUND ROD
	LIGHTNING ARRESTER
	CONTACT (OPEN OR CLOSED)
	HEATER
	MOTOR
	BLOCK LOAD KW OR KVA
	FAULT POINT REFERENCED IN SHORT CIRCUIT CURRENT AND VOLTAGE DROP SPREADSHEET

APPLICABLE ELECTRICAL CODES:

NOTE: THIS PROJECT IS DESIGNED IN COMPLIANCE WITH THE FOLLOWING CODES. THIS IS NOT AN EXHAUSTIVE LIST. PROJECT SHALL COMPLY WITH ALL APPLICABLE CODES, STANDARDS AND LOCAL REQUIREMENTS. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE, (NFPA 70)

BUILDING CODE: 2018 INTERNATIONAL BUILDING CODE

ENERGY CODE: 2018 INTERNATIONAL ENERGY CONSERVATION CODE

ELECTRICAL SUPPLEMENTAL SPECIFICATIONS:

1. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS. AS APPLICABLE, REVIEW THE LANDLORD CRITERIA, GENERAL NOTES, OTHER TRADE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT AND ENGINEER OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO SUBMITTING BID.

2. ALL WORK SHALL CONFORM TO ALL LOCAL CODES AND ORDINANCES AS WELL AS APPLICABLE INDUSTRY STANDARDS. ALL EQUIPMENT SHALL BEAR LABELS FOR THE USE INTENDED BY AN AHJ. ACCEPTED NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL), SUCH AS UL OR ETL. THE FINAL ELECTRICAL INSTALLATION OF THE FACILITY OCCUPIED BY OWNER SHALL BE FREE FROM ELECTRICAL DEFECTS TO THE SATISFACTION OF THE AHJ, OWNER, ARCHITECT AND ENGINEER.

3. COORDINATE EXACT LOCATION AND REQUIREMENTS OF ALL LIGHT FIXTURES, ELECTRICAL EQUIPMENT AND ELECTRICAL DEVICES WITH CIVIL DRAWINGS, EXISTING CONDITIONS AND OTHER TRADES PRIOR TO ROUGH-IN. PROVIDE ALL NECESSARY DEVICES, CORDS, PLUGS, DISCONNECTS AND FINAL CONNECTIONS TO ELECTRICAL EQUIPMENT FOR PROPER OPERATION IN ACCORDANCE WITH CODE, OWNER AND MANUFACTURER REQUIREMENTS.

4. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC/SCHEMATIC IN NATURE AND REPRESENT THE GENERAL SCOPE OF WORK. IT IS NOT WITHIN THE SCOPE OF THE ELECTRICAL DRAWINGS TO SHOW ALL NECESSARY RACEWAY ROUTING, BENDS, OFFSETS, PULL BOXES AND OBSTRUCTIONS. CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF EQUIPMENT AND WIRING DEVICES WITH OTHER TRADES PRIOR TO INSTALLATION AND INSTALL ALL WORK TO CONFORM TO THE OWNER REQUIREMENTS.

5. ALL CONDUCTOR AND CONDUIT LENGTHS SHOWN IN THESE DESIGN DOCUMENTS ARE INTENDED SOLELY FOR USE IN THE DESIGN CALCULATIONS BY THE DESIGN PROFESSIONAL, UNLESS NOTED OTHERWISE. LENGTHS SHOWN SHALL NOT BE USED TO ASSIST IN THE BIDDING TAKEOFF PROCESS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MATERIAL QUANTITIES REQUIRED TO BID AND CONSTRUCT THE COMPLETE PROJECT.

6. ALL APPLICABLE SWITCHES, RECEPTACLES, OUTLETS, AND CONTROLS SHALL BE PLACED AT HEIGHTS THAT ARE IN ACCORDANCE WITH ADA ACCESSIBILITY GUIDELINES.

7. ALL WP OUTLET BOX HOODS SHALL BE "EXTRA-DUTY" AND "WHILE-IN-USE COVER" TYPE. OUTLET BOX HOODS SHALL BE LOW PROFILE WHEREVER PRACTICABLE, UNLESS NOTED OTHERWISE. THE USE OF LARGE BUBBLE COVERS SHALL BE AVOIDED ON THE EXTERIOR OF THE BUILDING OR BEHIND EQUIPMENT IN ORDER TO PREVENT DAMAGE TO THE COVER AND TO ALLOW THE EQUIPMENT TO BE LOCATED CLOSE TO THE WALL.

8. FLEXIBLE CONDUIT IS ONLY PERMITTED WHERE SPECIFICALLY ALLOWED IN THE CONSTRUCTION DOCUMENTS; GENERALLY WHERE CONCEALED FROM VIEW OR EXPOSED FINAL CONNECTIONS TO LIGHT FIXTURES AND EQUIPMENT IN LENGTHS OF 6'-0" OR LESS.

9. ALL EMPTY CONDUIT/RACEWAY SHALL BE INSTALLED WITH PULL STRINGS. TERMINATE CONDUIT STUB-UP WITH A NYLON BUSHING.

10. WHERE PRACTICABLE, ALL UNDER-FLOOR/UNDER-GROUND CONDUITS/RACEWAY SHALL BE INSTALLED A MINIMUM OF 24" BELOW BOTTOM OF SLAB/PAVING/GRADE, UNLESS NOTED OTHERWISE. NOTE: THE DESIGN INTENT FOR INSTALLING ELECTRICAL CIRCUITRY AT THIS DEPTH IS TO PROTECT THE ELECTRICAL CIRCUITRY FROM DAMAGE DUE TO FUTURE WORK.

11. PROVIDE LABEL AT EACH RECEPTACLE COVER PLATE WITH THE RESPECTIVE "PNLBD-CKT#" DESIGNATION. COORDINATE EXACT LABEL REQUIREMENTS WITH THE OWNER PRIOR TO INSTALLATION. REFER TO THE SPECIFICATIONS FOR MORE INFORMATION.

12. MULTIWIRE BRANCH CIRCUITS ARE NOT ALLOWED, UNLESS NOTED OTHERWISE.

13. PROVIDE INSULATED EQUIPMENT GROUNDING CONDUCTOR FOR ALL CIRCUITS, UNLESS NOTED OTHERWISE.

SITE ELECTRICAL GENERAL NOTES:

1. REFER TO CIVIL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION. COORDINATE THE EXACT LOCATION OF ALL SITE LIGHTING POLES, SIGNAGE, UNDERGROUND UTILITIES, CONDUITS, CIRCUITRY, TRANSFORMERS AND OTHER EQUIPMENT WITH CIVIL DRAWINGS, LANDSCAPING DRAWINGS AND OWNER PRIOR TO INSTALLATION.

2. COORDINATE ALL SITE ELECTRICAL REQUIREMENTS WITH EQUIPMENT MANUFACTURER INFORMATION AND OTHER TRADES AND ADJUST ELECTRICAL PROVISIONS AS REQUIRED TO MEET REQUIREMENTS.

3. SITE ELECTRICAL CONDUITS SHALL BE 1" MINIMUM, UNLESS NOTED OTHERWISE. WHERE PRACTICABLE, ALL SITE ELECTRICAL CONDUITS SHALL BE INSTALLED A MINIMUM OF 24" BELOW GRADE, UNLESS NOTED OTHERWISE. COORDINATE EXACT CONDUIT ROUTING WITH EXISTING OBSTRUCTIONS AND OTHER TRADES AND ADJUST AS NECESSARY.

4. CAP AND MARK ALL UNDERGROUND CONDUITS PROVIDED FOR FUTURE USE AND INCLUDE PULL STRINGS. PROVIDE DIMENSIONED LOCATIONS OF TERMINATION POINTS ON AS-BUILT DRAWINGS AND SUBMIT TO OWNER.

5. MINIMUM WIRE SIZE FOR SITE ELECTRICAL CIRCUITS SHALL BE #10 AWG CU, UNLESS NOTED OTHERWISE. ALL SITE ELECTRICAL BRANCH CIRCUIT WIRING SHALL BE SIZED SUCH THAT THE MAXIMUM BRANCH CIRCUIT VOLTAGE DROP IS LESS THAN 3 PERCENT. FEEDER CIRCUITS TO SPORTS LIGHTING POLES SHALL BE SIZED SUCH THAT THE MAXIMUM VOLTAGE DROP IS LESS THAN 5 PERCENT.

6. PROVIDE SPLICE AND PULL BOXES FOR SITE LIGHTING AND SITE ELECTRICAL POWER TO LIMIT MAXIMUM CONDUIT RUN TO 300'. PLACE BOXES IN A PLANTER AREA CLEAR OF VEGETATION WHEREVER PRACTICABLE AND CO-LOCATE WITH LOW VOLTAGE BOXES. COORDINATE EXACT LOCATION WITH CIVIL, LANDSCAPE CONTRACTOR AND OWNER. BOXES SHALL BE SUITABLE FOR LOCATION AND PROPERLY SIZED FOR QUANTITY AND SIZE OF CONDUITS IN AND OUT AND SHALL BE MARKED "ELECTRICAL". NOT ALL OF THESE BOXES ARE SHOWN ON SITE ELECTRICAL DRAWINGS; CONTRACTOR SHALL PROVIDE LOCATION ON AS-BUILT DRAWINGS AND SUBMIT TO OWNER. SPLICE BOX SHALL BE APPROPRIATE FOR LOCATION AND SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. SPLICE BOX SHALL HAVE A MINIMUM NOMINAL SIZE OF 12"x12"x12", SHALL BE AN OPEN BOTTOM NRTL LISTED UNDERGROUND ENCLOSURE, AND SHALL AT A MINIMUM BE TIER 15 TRAFFIC RATED.

7. PROVIDE PULL BOXES FOR SITE DATA, TELECOM, SECURITY CABLEING TO LIMIT MAXIMUM CONDUIT RUNS TO 175'. PLACE BOXES IN A PLANTER AREA CLEAR OF VEGETATION WHEREVER PRACTICABLE. BOXES SHALL BE SUITABLE FOR LOCATION AND PROPERLY SIZED FOR QUANTITY AND SIZE OF CONDUITS IN AND OUT AND SHALL BE MARKED "LOW VOLTAGE". GENERAL ROUTING OF MAIN LOW VOLTAGE CONDUIT RUNS HAVE BEEN DOCUMENTED ON SITE ELECTRICAL DRAWINGS, BUT FINAL ROUTING AND EXACT QUANTITY, SIZE, AND LOCATION OF PULL BOXES IS SUBJECT TO CHANGE BASED ON COORDINATION WITH OTHER DISCIPLINES AND TRADES. CONTRACTOR SHALL PROVIDE LOCATION ON AS-BUILT DRAWINGS AND SUBMIT TO OWNER. PULL BOX SHALL BE APPROPRIATE FOR LOCATION AND SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

CIVIL ENGINEERING
G8A
9801 Renner Boulevard
Lenexa, KS 66219
913.492.0400
www.g8ateam.com
MO Certificate of Authority # 000133
LANDSCAPE ARCHITECTURE
LAND3 Studio, LLC
317 SE Main
Lee's Summit, MO 64663
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MO Certificate of Authority # 2008001860
LANDSCAPE ARCHITECTURE
Hoerr Schaudt Landscape Architects
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MEP ENGINEERING
HENDERSON ENGINEERS, Inc.
8345 Lenexa Drive
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Missouri Certificate of Authority # 000556
ARCHITECTURE
FINKLE + WILLIAMS Architecture
8787 Renner Boulevard, Suite 100
Lenexa, KS 66219
913.498.1550
www.finklewilliams.com
Missouri Certificate of Authority #F004S3304

PROJECT:

Paragon Star Soccer Complex

Soccer Complex & Associated Improvements
1401 NW View High Dr, Lee's Summit, MO 64081

PLAYING FIELD CONSTRUCTION - ISSUE FOR BID

ISSUE:

PROFESSIONAL
SEAL:



ANDREA C. MULVANEY
LICENSE # PE-2013039892 08/11/2022

DRAWING
TITLE:

ELECTRICAL SITE PLAN

JOB NO: 1197 SCALE: 1:100

DATE: 02.16.2022 DRAWN BY: MAP

SHEET NO:

E-100

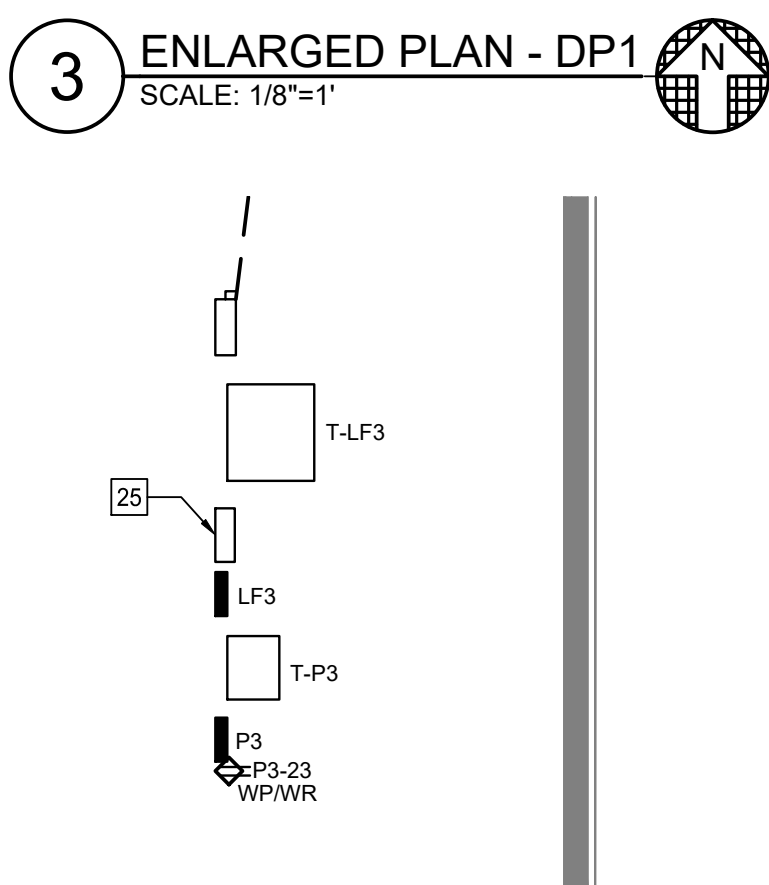
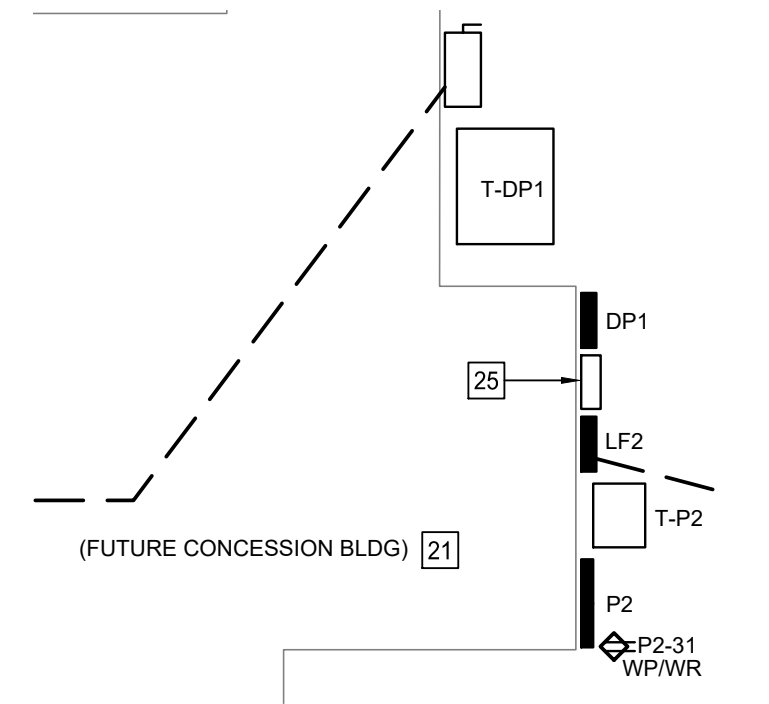
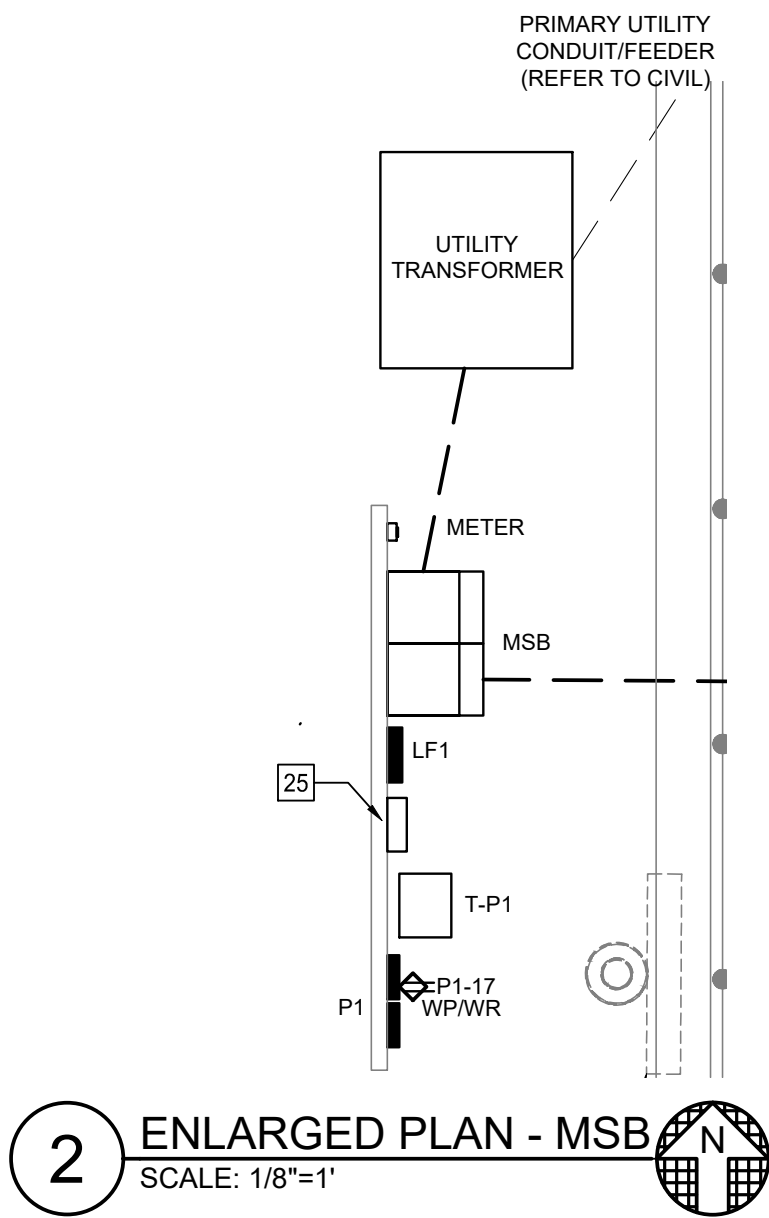
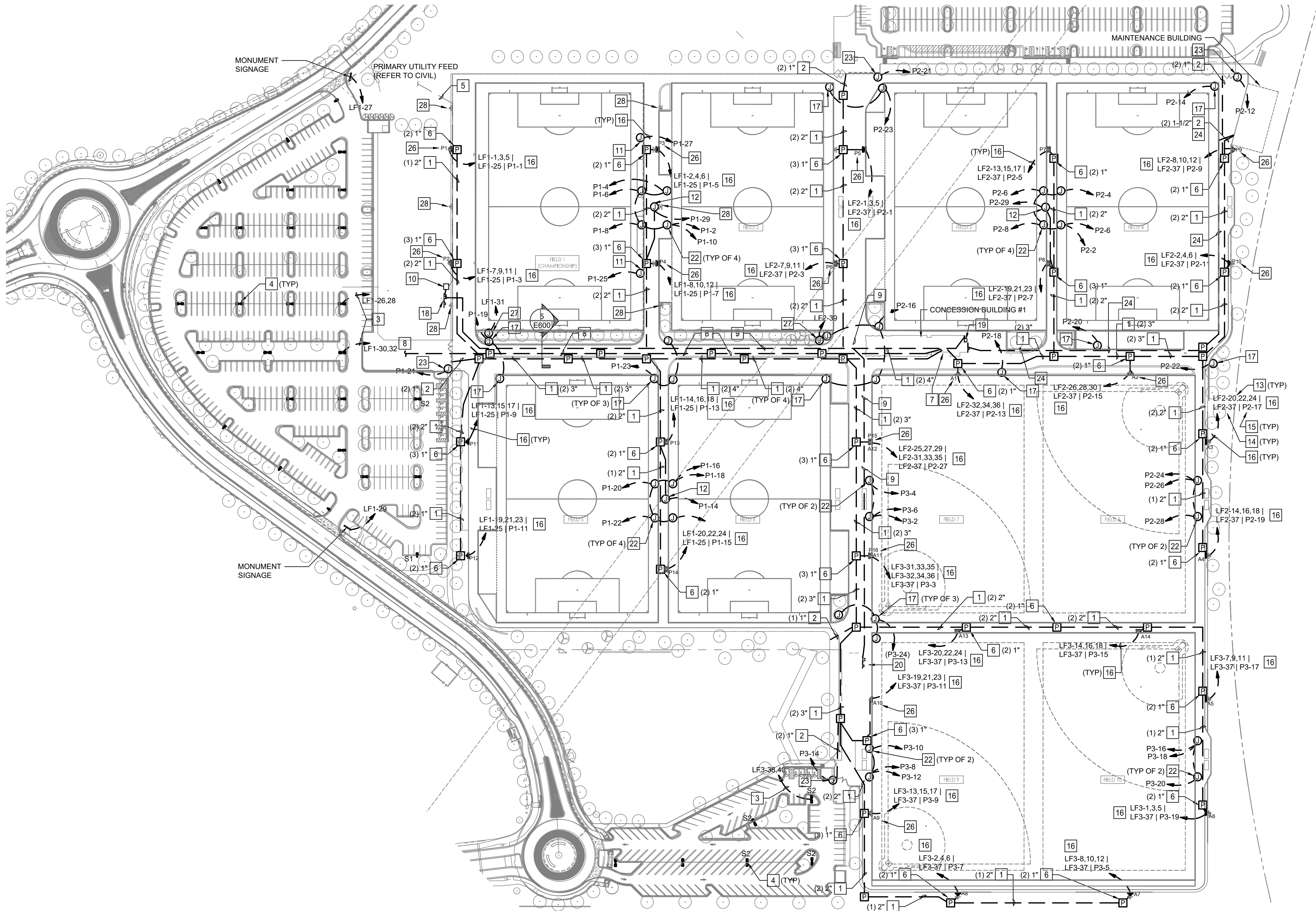
GENERAL NOTES:

- REFER TO SHEET E000 FOR GENERAL NOTES.
- SPORTS LIGHTING VENDOR SHALL BE RESPONSIBLE FOR ALL CONDUIT AND WIRING FOR POLE LIGHTING, POLE SIGNAGE, AND POLE RECEPTACLE CIRCUITS AND ALL POLE LIGHTING CONTROL EQUIPMENT AND CABLEING. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAIN FEEDERS, ELECTRICAL EQUIPMENT, LOW VOLTAGE CONDUITS, AND ALL CONDUIT AND WIRING FOR SITE AREA LIGHTING AND LOCAL POWER CIRCUITS. REFER TO NOTE 16 ON THIS SHEET AND 6/E-600.
- PROVIDE CONCRETE PAD FOR MOUNTING OF ALL ELECTRICAL EQUIPMENT SHOWN IN 2/E100, 3/E100 AND 4/E100, INCLUDING BUT NOT LIMITED TO MSB, DISCONNECTS, PANELBOARDS, TRANSFORMERS T-P1, T-P2, T-P3, T-DP1 AND T-LF3. ALL ELECTRICAL EQUIPMENT NOT GROUND MOUNTED SHALL BE MOUNTED TO UNISTRUT FRAMING SET WITHIN CONCRETE PAD.

CONTRACTOR(S) SHALL REFER TO DETAIL 6/E600 FOR SCOPE RESPONSIBILITIES BY ELECTRICAL CONTRACTOR UNDER THE SPORTS COMPLEX MAIN ELECTRICAL DISTRIBUTION INSTALLATION AND THE SCOPE RESPONSIBILITIES OF THE "TURN-KEY" SPORTS LIGHTING INSTALLATION BY THE SPORTS LIGHTING VENDOR.

KEYNOTES:

- PROVIDE INDICATED QUANTITY AND SIZE OF UNDERGROUND CONDUITS FOR TELECOM/DATA/SECURITY CABLING. PROVIDE PULL STRING IN ALL CONDUITS. ENSURE MAXIMUM SEPARATION BETWEEN PULL BOXES DOES NOT EXCEED 175'.
- PROVIDE INDICATED QUANTITY AND SIZE OF UNDERGROUND CONDUITS WITH PULL STRINGS FROM NEAREST PULL BOX ROUTED TO INDICATED LOCATION FOR FUTURE USE. CAP AND STAKE BELOW GRADE.
- EXTEND EXISTING PARKING LOT LIGHTING CIRCUIT FROM PREVIOUS PHASE TO INDICATED PANEL. FIELD VERIFY EXACT LOCATION. PARKING LOT LIGHTING CIRCUITS SHALL BE RAN THROUGH LIGHTING RELAY PANEL WITH PHOTOCELL ON AND DIGITAL TIMER OFF CONTROL.
- PARKING LOT POLES, CONDUIT, AND CIRCUITING BETWEEN POLES INSTALLED IN PREVIOUS PHASE. TYPICAL.
- INSTALL A MINIMUM 41" DEPTH FROM FINAL GRADE TO TOP OF CONDUIT WITH BURIED ELECTRIC LINE PLASTIC CAUTION TAPE AT A DEPTH OF 12" PER UTILITY STANDARDS.
- PROVIDE INDICATED QUANTITY AND SIZE OF CONDUITS WITH PULL STRINGS FROM INDICATED PULL BOX LOCATION TO ADJACENT SPORTS LIGHTING POLE FOR TELECOM/DATA/AV.
- PROPOSED TELECOM DEMARC LOCATION.
- TELECOM ENTRANCE CONDUITS. PROVIDE (2) 4" CONDUITS WITH PULL STRINGS TO DEMARC LOCATION. CONFIRM ENTRANCE LOCATION INTO SITE. ENSURE MAXIMUM DISTANCE BETWEEN PULL BOXES DOES NOT EXCEED 175'.
- PROPOSED ROUTING FOR UNDERGROUND FEEDER FROM MSB TO REMOTE DISTRIBUTION PANEL. REFER TO E-300 FOR FEEDER SIZES TO DP1 AND LF3 FROM BASE BID AND ALTERNATE 1. PROVIDE INTERMEDIATE PULL BOXES ALONG LENGTH AS REQUIRED. LOCATE NEAR LOW VOLTAGE PULL BOXES.
- PROPOSED LOCATION FOR PAD MOUNT UTILITY TRANSFORMER. SEE 4/E600 FOR ADDITIONAL INFORMATION.
- PROPOSED SCOREBOARD LOCATION. PROVIDE POWER ON INDICATED CIRCUIT AND (1) 1" CONDUIT WITH PULL STRING TO NEAREST TELECOM/DATA PULL BOX.
- PROPOSED FIELD CAMERA LOCATION. PROVIDE POWER ON INDICATED CIRCUIT AND (1) 1" CONDUIT WITH PULL STRING TO NEAREST TELECOM/DATA PULL BOX. TERMINATE POWER AND DATA CONDUITS IN 12"x12" IN-GRADE TRAFFIC RATED BOXES.
- SPORTS LIGHTING CIRCUIT (TYPICAL).
- POLE ACCESSORY CIRCUIT (TYPICAL).
- POLE RECEPTACLE CIRCUIT (TYPICAL). WHERE INDICATED IN PARENTHESES, PROVIDE WIRING UP TO PANEL LOCATION. PANEL WILL BE INSTALLED IN FUTURE PHASE.
- CONDUITS SHALL BE ROUTED PARALLEL TO LOW VOLTAGE CONDUITS. PULL BOX LOCATIONS SHALL BE LOCATED NEAR LOW VOLTAGE PULL BOXES WHERE POSSIBLE. TYPICAL FOR ALL CONDUITS FOR LINE VOLTAGE CIRCUITS. RE: 6/E600 FOR SCOPE RESPONSIBILITY.
- PROPOSED LOCATION(S) FOR DIGITAL SIGNAGE / WAYFINDING. PROVIDE POWER ON INDICATED CIRCUIT AND (1) 1" CONDUIT TO NEAREST TELECOM/DATA PULL BOX WITH PULL STRING FROM EACH LOCATION. TERMINATE POWER AND DATA CONDUITS IN 12"x12" IN-GRADE BOXES.
- SEE 2/E100 FOR ENLARGED PLAN OF THIS AREA.
- SEE 3/E100 FOR ENLARGED PLAN OF THIS AREA.
- SEE 4/E100 FOR ENLARGED PLAN OF THIS AREA.
- EXACT EQUIPMENT LOCATION TO BE FINALIZED WITH ARCHITECT AND OWNER PENDING FUTURE CONCESSION BUILDING CONSTRUCTION PROJECT.
- PROVIDE 18" LOCKABLE POWER PEDESTAL WITH (2) GFCI RECEPTACLES, PEDOC #SP18HT-1. AT PATHWAY EDGE. ONE RECEPTACLE SHALL BE WIRED ON DEDICATED CIRCUIT. OTHER SHALL BE WIRED ON SHARED CIRCUIT.
- COORDINATE EXACT LOCATION AND CONNECTION REQUIREMENTS AT GATE. OTHERWISE PROVIDE WP JUNCTION BOX WIRED ON INDICATED CIRCUIT AT GATE FOR FUTURE USE.
- PROVIDE (1) 1-1/2" CONDUIT WITH PULL STRING FROM DP1 TO FUTURE MAINTENANCE BUILDING FOR FUTURE FEEDER. PROVIDE INTERMEDIATE PULL BOX AT LOCATION SHOWN.
- PROPOSED LOCATION FOR SPORTS LIGHTING CONTROL PANEL.
- PROVIDE (2) LED AREA FLOOD LIGHTS AT INDICATED POLE LOCATED APPROXIMATELY 30" ABOVE GRADE. FIXTURES SHALL BE CIRCUITED ON THE 277V ACCESSORY CIRCUIT INDICATED (REF NOTE 14 ON THIS SHEET). FIXTURES SHALL BE 277V, TYPE 4 DISTRIBUTION, FULL CUTOFF, CAPABLE OF DELIVERING 20,000 LUMENS WITH A MAXIMUM WATTAGE OF 200W. SPORTS COMPLEX ELECTRICAL SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR PROCUREMENT AND INSTALLATION OF FIXTURES, CONDUIT, AND CIRCUITING FOR FLOOD LIGHTS, AND WILL COORDINATE WITH SPORTS LIGHTING ELECTRICAL SUB-CONTRACTOR FOR FINAL INSTALLATION.
- PROVIDE JUNCTION BOX WIRED ON INDICATED CIRCUIT AT LANDSCAPING BED AND CONNECTION TO (13) DIRECT BURIAL PEDESTRIAN LIGHTS ALONG LENGTH OF LANDSCAPING BED. PROVIDE AN ALLOWANCE OF \$1000 PER FIXTURE, FIXTURE TO BE SELECTED BY LANDSCAPE ARCHITECT AND OWNER. TYPICAL OF LANDSCAPING BEDS ON SOUTH SIDE OF FIELDS 1 AND 2.
- ALTERNATE #2: 6-POLE SPORTS LIGHTING CONFIGURATION FOR CHAMPIONSHIP FIELD (FIELD 1). CIRCUITING CONFIGURATION SHALL BE UPDATED IN ADDENDUM PER SPORTS LIGHTING LOAD REQUIREMENTS IF ALTERNATE IS ACCEPTED.



1 ELECTRICAL SITE PLAN SCALE: 1:100

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PROJECT:

Paragon Star Soccer Complex

Soccer Complex & Associated Improvements
1401 NW View High Dr, Lee's Summit, MO 64081

PLAYING FIELD CONSTRUCTION - ISSUE FOR BID

ISSUE:

PROFESSIONAL
SEAL:



ANDREA C. MULVANY
LICENSE # PE-2013039892 08/11/2022

DRAWING
TITLE:

ELECTRICAL ONE-LINE DIAGRAM

JOB NO: 1197 SCALE: N/A
DATE: 02.16.2022 DRAWN BY: MAP

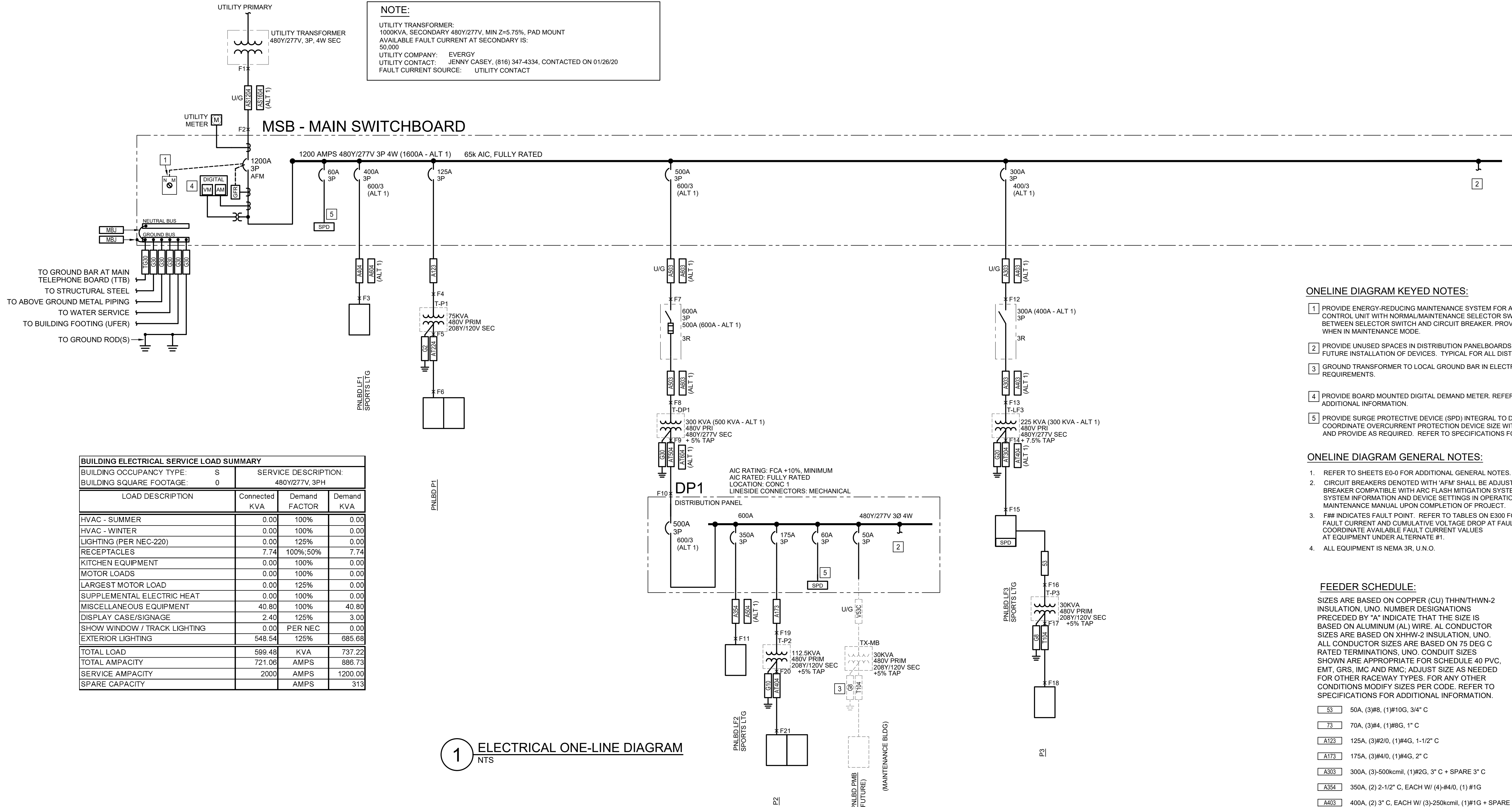
SHEET NO:

E-300

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1850004412
MO. CORPORATE NUMBER: E-556D
12/31/22

NOTE:

UTILITY TRANSFORMER:
1000KVA, SECONDARY 480Y/277V, MIN Z=5.75%, PAD MOUNT
AVAILABLE FAULT CURRENT AT SECONDARY IS:
50,000
UTILITY COMPANY: EVERGY
UTILITY CONTACT: JENNY CASEY, (816) 347-4334, CONTACTED ON 01/26/20
FAULT CURRENT SOURCE: UTILITY CONTACT



1 ELECTRICAL ONE-LINE DIAGRAM NTS

Short-Circuit and Voltage Drop Calculations

Distances are for calculation purposes only and shall not be used for contractor takeoffs nor bidding - Contractor shall notify Engineer of any field condition that results in a change of 10% or greater circuit distance

The following calculations are based on the "Point-by-Point" method where:

$$ISC_{(2)} = ISC_{(1)} \times M_{(1)}$$

$$M = 1/(1+f)$$

ISC₍₁₎ = short circuit current at fault point 1

ISC₍₂₎ = short circuit current at fault point 2

IP = Primary short circuit current

Vp = Primary voltage

IS = Secondary short circuit current

Vs = Secondary voltage

L = Length of circuit

E = Line to line volts

C = "C" Factor from Bussman table where "C" = 1 / impedance per linear foot

Feeder Types =

NM - Non Magnetic Conduit, M - Magnetic Conduit, FB - Feeder Busway, PB - Plug-in Busway, TX - Transformer

Fault Point (F#)	Bus/Feeder Description	Source (Fault Point)	Phase	Source Isc (amps)	Feeder			Conductor C' Value	Busway C' Value	L-L Voltage (E)	Circuit Length (L)	Load Power Factor (pf)	Circuit Load (Amperage)	Conductor			Transformer					f	M	Fault Current (amps)	Voltage Drop (%VD)	Cumulative Voltage Drop (%VD)	Fault Point (F#)			
					Conduit Type/TX	Material	Quantity of Parallel Sets and Bus Phase & Neutral Size							Resistance (R)	Reactance (X)	Arccos (pf) (Radians)	Type	Degree Rise	kVA	New Xfmr Z	Existing Xfmr Z							Secondary Voltage	Tap Setting	
1	Utility Service Point			50,000	Pick a location										Source Isc + 6X Motor Contribution = 50030															
2	Motor Contribution				5 The connected full load motor amps (includes compressors) on the system																									
2	MSB	1	3	50030	NM	AL	4 Set(s) of 500 kcmil	21391	--	480	60	0.9	882	0.000043	0.000039	0.451027									0.127	0.89	44408	-0.27%	-0.27%	2
3	LF1	2	3	44408	M	AL	2 Set(s) of 3/0 AWG	8826	--	480	5	0.95	300	0.000130	0.000052	0.317560									0.045	0.96	42480	-0.04%	-0.30%	3
4	T-P1 (PRIMARY)	2	3	44408	M	AL	2 Set(s) of 2/0 AWG	7187	--	480	5	0.8	78	0.000160	0.000054	0.643501									0.056	0.95	42064	-0.01%	-0.28%	4
5	T-P1 (SECONDARY)	4	3	42064	TX					480							DOE	150	75	3.61			208		16.832	0.06	5444	-0.28%		5
6	P1	5	3	5444	NM	AL	1 Set(s) of 300 kcmil	14923	--	208	10	0.8	180	0.000071	0.000041	0.643501									0.030	0.97	5283	-0.12%	-0.40%	6
7	DISC T-DP1	2	3	44408	NM	AL	2 Set(s) of 300 kcmil	14923	--	480	950	0.9	400	0.000071	0.000041	0.451027									5.101	0.16	7279	-5.61%	-5.87%	7
8	T-DP1 (PRIMARY)	7	3	7279	M	AL	2 Set(s) of 300 kcmil	13910	--	480	5	0.9	400	0.000072	0.000051	0.451027									0.005	1.00	7245	-0.03%	-5.90%	8
9	T-DP1 (SECONDARY)	8	3	7245	TX					480							DOE	150	300	4.45			480	0.05	0.893	0.53	3826	-0.90%		9
10	DP1	9	3	3826	M	AL	2 Set(s) of 300 kcmil	13910	--	480	5	0.9	400	0.000072	0.000051	0.451027									0.002	1.00	3817	-0.03%	-0.93%	10
11	LP2	10	3	3817	M	AL	2 Set(s) of 4/0 AWG	10741	--	480	5	0.95	313	0.000100	0.000051	0.317560									0.003	1.00	3805	-0.03%	-0.97%	11
12	DISC T-LF3	2	3	44408	NM	AL	2 Set(s) of 500 kcmil	21391	--	480	1250	0.9	250	0.000043	0.000039	0.451027									9.364	0.10	4285	-6.28%	-6.55%	12
13	T-LF3 (PRIMARY)	12	3	4285	M	AL	1 Set(s) of 500 kcmil	18756	--	480	5	0.9	250	0.000045	0.000048	0.451027									0.004	1.00	4267	-0.03%	-6.57%	13
14	T-LF3 (SECONDARY)	13	3	4267	TX					480							DOE	150	225	4.29			480	0.075	0.676	0.60	2545	-0.93%		14
15	LP3	14	3	2545	M	AL	1 Set(s) of 500 kcmil	18756	--	480	5	0.9	250	0.000045	0.000048	0.451027									0.002	1.00	2539	-0.03%	0.90%	15
16	T-P3 (PRIMARY)	15	3	2539	M	CU	1 Set(s) of 8 AWG	1557	--	480	10	0.8	35	0.000780	0.000065	0.643501									0.059	0.94	2398	-0.08%	0.81%	16
17	T-P3 (SECONDARY)	16	3	2398	TX					480							DOE	150	30	2.44			208		1.622	0.38	2111	-0.81%		17
18	P3	17	3	2111	M	AL	1 Set(s) of 1 AWG	4645	--	208	5	0.8	80	0.000250	0.000057	0.643501									0.019	0.98	2072	-0.08%	0.74%	18
19	T-P2 (PRIMARY)	10	3	3817	M	AL	1 Set(s) of 4/0 AWG	10741	--	480	5	0.8	130	0.000100	0.000051	0.643501									0.006	0.99	3793	-0.03%	-0.98%	19
20	T-P2 (SECONDARY)	19	3	3793	TX					480							DOE	150	112.5	4.37			208	0.05	1.225	0.45	3934	4.04%		20
21	P2	20	3	3934	M	AL	2 Set(s) of 250 kcmil	12122	--	208	5	0.8	300	0.000086	0.000052	0.643501									0.007	0.99	3908	-0.06%	3.98%	21

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PROJECT:

Paragon Star Soccer Complex

Soccer Complex & Associated Improvements
1401 NW View High Dr, Lee's Summit, MO 64081

PLAYING FIELD CONSTRUCTION - ISSUE FOR BID

ISSUE:

PROFE
SEAL:

ANDREA C. MULVANY
LICENSE # PE-2013039892

DRAWING
TITLE:

ELECTRICAL SCHEDULES

JOB NO: 1197

SCALE: N/A

DATE: 02.16.2

DRAWN BY: MAF

SHEET NO:

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WWW.HENDERSONENGINEERS.COM
1850004412
MO. CORPORATE NUMBER: E-556D
12/31/22

E-500

PANELBOARD: LF1 (NEW)

BUS BMPS: 400A(ALT 1 - 600A)

MAIN SIZE/TYPE: MLO

VOLTS/PHASE: 480Y/277V, 3PH, 4W

SECTION: 1

FED FROM: MSB

AIC RATING: FCA +10% MINIMUM FULLY RATED

SERVES:

MOUNTING: SURFACE

LOCATION: MSB

LINE-SIDE LUGS: MECHANICAL

EQUIPMENT GROUND BUS

NEMA 3R

CKT NO.	DESCRIPTION	VOLTAMPS/PHASE			WIRE NO.	BKR AMP	P	BKR AMP	WIRE NO.	VOLTAMPS/PHASE			DESCRIPTION	CKT NO.
		A	B	C						A	B	C		
1		6,943								11,203				2
3	POLE P1 (FIELD 1)		6,943		8	40	3	3	60	3		11,203	POLE P3 (FIELD 1/2)	4
5	(ALT 1 - 50A/#6)			6,943								11,203	(ALT 1 - 90A/#1)	6
7		6,943									11,203			8
9	POLE P2 (FIELD 1)		6,943		8	40	3	3	60	4		11,203	POLE P4 (FIELD 1/2)	10
11	(ALT 1 - 50A/#6)			6,943								11,203	(ALT 1 - 90A/#2)	12
13		4,562									9,123			14
15	POLE P11 (FIELD 5)		4,562		10	25	3	3	50	4		9,123	POLE P13 (FIELD 5/6)	16
17	(ALT 1 - 40A/#8)			4,562								9,123	(ALT 1 - 70A/#3)	18
19		4,562									9,123			20
21	POLE P12 (FIELD 5)		4,562		10	25	3	3	50	4		9,123	POLE P14 (FIELD 5/6)	22
23	(ALT 1 - 40A/#8)			4,562								9,123	(ALT 1 - 70A/#2)	24
25	POLE SIGNS ACCESSORY	800			10	20	1	2	20	10		1,300	PARKING LOT LTG - NW	26
27	MONUMENT SIGN - NW		1,200		10	20	1					1,300		28
29	MONUMENT SIGN - W			1,200	10	20	1	2	20	10		1,400	PARKING LOT LTG - W	30
31	PEDESTRIAN LIGHTS	1,000			10	20	1				1,400			32
33	SPARE				20	1	1						EQUIPPED SPACE	34
35	SPARE				20	1	1						EQUIPPED SPACE	36
37	SPARE				20	1	1						EQUIPPED SPACE	38
39	EQUIPPED SPACE				1	1	1						EQUIPPED SPACE	40
41	EQUIPPED SPACE				1	1	1						EQUIPPED SPACE	42
SUBTOTAL		24,810	24,210	24,210						43,352	41,952	42,052	SUBTOTAL	
TOTAL PHASE A - VA		68,162	LOAD	CONN. VA	DF	LOAD		CONN. VA	DF					
AMPS		246	COOLING (C)		1.00	REFRIG (F)			1.00					
TOTAL PHASE B - VA		68,162	HEATING (H)		1.00	SIGNDISP (D)		2,400	1.25					
AMPS		239	LIGHTING (L)	198,186	1.25	KITCHEN (K)			1.00					
TOTAL PHASE C - VA		66,262	RECEPTACLES (R)		1.0/5	EXISTING (E)			1.00					
AMPS		239	MOTORS (M)		1.00	LRG MOTOR			1.25	TOTAL DEMAND				
TOTAL PNLD - VA		200,586	SUPP/HEAT (U)		1.00	SHOW WIND (W)			1.25	250,733 VA				
AMPS		241	MISC EQUIP (Z)		1.00	LTG TRACK			1.00	302 A				

PANELBOARD NOTES

GR - PROVIDE GROUND SIZE IN ACCORDANCE WITH NEC 250.122(B)

PANELBOARD: P1 (NEW)

BUS AMPS: 225A

MAIN SIZE/TYPE: 225A MCB

VOLTS/PHASE: 208Y120V, 3PH, 4W

SECTION: 1

FED FROM: T-P1

ARC RATING: 10000 FULLY RATED

SERVES:

MOUNTING: SURFACE

LOCATION: MSB

LINE-SIDE LUGS: MECHANICAL

EQUIPMENT GROUND BUS

NEMA3R

CKT NO.	DESCRIPTION	VOLT/AMPS/PHASE			WIRE NO.	BKR AMP	P	BKR AMP	WIRE NO.	VOLT/AMPS/PHASE			DESCRIPTION	CKT NO.
		A	B	C						A	B	C		
GR 1	RCPT - POLE P1	1,000			6	20	1	1	20	6	720		PED - BREEZE F1/2	2
GR 3	RCPT - POLE P2		1,000		10	20	1	1	20	6		180	PED - RCPT F1/2 NE	4
GR 5	RCPT - POLE P3			1,000	3	20	1	1	20	6		180	PED - RCPT F1/2 NW	6
GR 7	RCPT - POLE P4	1,000			4	20	1	1	20	6	180		PED - RCPT F1/2 SW	8
GR 9	RCPT - POLE P11		1,000		6	20	1	1	20	6		180	PED - RCPT F1/2 SE	10
GR 11	RCPT - POLE P12			1,000	4	20	1	1	20	6		500	PWR - FIELD CAM 56	12
GR 13	RCPT - POLE P13	1,000			4	20	1	1	20	4	720		PED - BREEZE F56	14
GR 15	RCPT - POLE P14		1,000		3	20	1	1	20	4	180		PED - RCPT F56 NE	16
GR 17	RCPT - MSB			180	12	20	1	1	20	4		180	PED - RCPT F56 NW	18
LCK 19	PWR - SINAGE W/ENTRY	600			12	20	1	1	20	4	180		PED - RCPT F56 SW	20
LCK 21	PWR - W/GATE		500		12	20	1	1	20	4		180	PED - RCPT F56 SE	22
GR 23	PWR - SINAGE W/CROSSING			1,200	6	20	1	1	20	12		500	PWR - LTG CTRLS	24
GR 25	PWR - SCRBOARD FLD 1 S	500			8	20	1	1	20				SPARE	26
GR 27	PWR - SCRBOARD FLD 1 N		500		6	20	1	1	20				SPARE	28
GR 29	PWR - FIELD CAM 1/2			500	6	20	1	1	20				SPARE	30
GR 31	SPARE				20	1	1	1	20				SPARE	32
GR 33	SPARE				20	1	1	1	20				SPARE	34
GR 35	SPARE				20	1	1	1	20				SPARE	36
GR 37	SPARE				20	1	1	1	20				SPARE	38
GR 39	SPARE				20	1	1	1	20				SPARE	40
GR 41	SPARE				20	1	1	1	20				SPARE	42
SECTION 2														
43	EQUIPPED SPACE						1	1					EQUIPPED SPACE	44
45	EQUIPPED SPACE						1	1					EQUIPPED SPACE	46
47	EQUIPPED SPACE						1	1					EQUIPPED SPACE	48
49	EQUIPPED SPACE						1	1					EQUIPPED SPACE	50
51	EQUIPPED SPACE						1	1					EQUIPPED SPACE	52
53	EQUIPPED SPACE						1	1					EQUIPPED SPACE	54
55	EQUIPPED SPACE						1	1					EQUIPPED SPACE	56
57	EQUIPPED SPACE						1	1					EQUIPPED SPACE	58
59	EQUIPPED SPACE						1	1					EQUIPPED SPACE	60
61	EQUIPPED SPACE						1	1					EQUIPPED SPACE	62
63	EQUIPPED SPACE						1	1					EQUIPPED SPACE	64
65	EQUIPPED SPACE						1	1					EQUIPPED SPACE	66
67	EQUIPPED SPACE						1	1					EQUIPPED SPACE	68
69	EQUIPPED SPACE						1	1					EQUIPPED SPACE	70
71	EQUIPPED SPACE						1	1					EQUIPPED SPACE	72
73	EQUIPPED SPACE						1	1					EQUIPPED SPACE	74
75	EQUIPPED SPACE						1	1					EQUIPPED SPACE	76
77	EQUIPPED SPACE						1	1					EQUIPPED SPACE	78
79	EQUIPPED SPACE						1	1					EQUIPPED SPACE	80
81	EQUIPPED SPACE						1	1					EQUIPPED SPACE	82
83	EQUIPPED SPACE						1	1					EQUIPPED SPACE	84
SUBTOTAL			4,100	4,000	3,880					1,800	720	1,360	SUBTOTAL	
TOTAL PHASE A - VA		5,900	LOAD		CONN VA		DF	LOAD		CONN VA		DF		
AMPS		49	COOLING (C)				1.00	REFRIG (F)				1.00		
TOTAL PHASE B - VA		4,720	HEATING (H)				0	SIGN/DSP (D)				1.25		
AMPS		39	LIGHTING (L)				1.25	KITCHEN (K)				1.00		
TOTAL PHASE C - VA		5,240	RECEP/ACLES (R)		3,060		1.0/5	EXISTING (E)				1.00		
AMPS		44	MOTORS (M)				1.00	LBS MOTOR				1.25		
TOTAL PNLBD - VA		15,860	SURF HEAT (U)				1.00	SHOW WIND (W)				1.25		
AMPS		44	MSC EQUIP (Z)		12,800		1.00	LTG TRACK				1.00	TOTAL DEMAND 15,860 VA 44 A	

PANELBOARD NOTES

GR - PROVIDE GROUND SIZE IN ACCORDANCE WITH NEC 250.122(B)

LCK - HANDLE PADLOCKABLE-OFF DEVICE

FED THRU CONNECTION: #4/0

ANDREA C. MULVANY

PANELBOARD: LF2 (NEW)

BUS AMPS: 400A (ALT 1 - 600A)

MAIN SIZE/TYPE: MLO

VOLTS/PHASE: 480Y/277V, 3PH, 4W

SECTION: 1

FED FROM: D1

A/C RATING: FCA +10% MINIMUM FULLY RATED

SERVES:

MOUNTING: SURFACE

LOCATION: CONC 1

LINE-SIDE LUGS: MECHANICAL EQUIPMENT GROUND BUS

NEMA 3R

CKT NO.	DESCRIPTION	VOLTAMPS/PHASE			M/R	BKR NO.	AMP	P	BKR AMP	W/R	NO.	VOLTAMPS/PHASE			DESCRIPTION	CKT NO.
		A	B	C								A	B	C		
1		9,123										4,562				2
3	POLE P5 (FIELD 2/3)		9,123		6	50	3	3	25	8		4,562		POLE P10 (FIELD 4)	4	
5	(ALT 1 - 80A/#4)			9,123								4,562	4,562	(ALT 1 - 40A/#6)	6	
7		9,123										4,562			8	
9	POLE P6 (FIELD 2/3)		9,123		6	50	3	3	25	6		4,562		POLE P9 (FIELD 4)	10	
11	(ALT 1 - 80A/#3)			9,123								4,562	4,562	(ALT 1 - 40A/#4)	12	
13		9,123										3,757			14	
15	POLE P7 (FIELD 3/4)		9,123		4	50	3	3	20	8		3,757		POLE A4 (FIELD 8)	16	
17	(ALT 1 - 70A/#4)			9,123								3,757	3,757	(ALT 1 - 30A/#6)	18	
19		9,123										3,757			20	
21	POLE P8 (FIELD 3/4)		9,123		4	50	3	3	20	8		3,757		POLE A3 (FIELD 8)	22	
23	(ALT 1 - 70A/#4)			9,123								3,757	3,757	(ALT 1 - 30A/#6)	24	
25		4,562										3,757			26	
27	POLE P15 (FIELD 6)		4,562		10	25	3	3	20	12		3,757		POLE A2 (FIELD 8)	28	
29	(ALT 1 - 40A/#8)			4,562								3,757	3,757	(ALT 1 - 30A/#10)	30	
31		3,757										3,757			32	
33	POLE A12 (FIELD 7)		3,757		12	20	3	3	20	12		3,757		POLE A1 (FIELD 7)	34	
35	(ALT 1 - 30A/#10)			3,757								3,757	3,757	(ALT 1 - 30A/#10)	36	
37	POLE SIGNS ACCESSORY	1,200			10	20	1	1						EQUIPPED SPACE	38	
39	PEDESTRIAN LIGHTS		1,000		10	20	1	1						EQUIPPED SPACE	40	
41	SPARE					20	1	1						EQUIPPED SPACE	42	
	SUBTOTAL	46,011	45,811	44,811								24,152	24,152	24,152	SUBTOTAL	
TOTAL PHASE A - VA		70,163	LOAD		CONN. VA		DF	LOAD		CONN. VA		DF				
AMPS		253	COOLING (C)				1.00	REFRIG (F)				1.00				
TOTAL PHASE B - VA		69,963	HEATING (H)				1.00	SGN/DSP (D)				1.25				
AMPS		253	LIGHTING (L)		209,089		0.25	KITCHEN (K)				1.25				
TOTAL PHASE C - VA		68,963	RECEPTACLES (R)				1.0/5	EXISTING (E)				1.00				
AMPS		249	MOTORS (M)				1.00	LRG MOTOR				1.25	TOTAL DEMAND			
TOTAL PNLBD - VA		209,089	SUPP HEAT (U)				1.00	SHOW WIND (W)				1.25	261,361 VA			
AMPS		251	MSC EQUIP (Z)				1.00	LTG TRACK				1.00	314 A			

PANELBOARD NOTES

GR - PROVIDE GROUND SIZE IN ACCORDANCE WITH NEC 250.122(B)

PANELBOARD: P2 (NEW)

BUS AMPS: 400A

MAIN SIZE/TYPE: 400A MCB

VOLTS/PHASE: 208Y/120V, 3PH, 4W

SECTION: 1

FED FROM: T-P2

A/C RATING: 10000 FULLY RATED

SERVES:

MOUNTING: SURFACE

LOCATION: CONC 1

LINE-SIDE LUGS: MECHANICAL

EQUIPMENT GROUND BUS

NEMA 3R

CKT NO.	DESCRIPTION	VOLTAMPS/PHASE			WIRE NO.	BKR AMP	P	BKR AMP	WIRE NO.	VOLTAMPS/PHASE			DESCRIPTION	CKT NO.
		A	B	C						A	B	C		
1	RCPT - POLE P5	1,000			6	20	1	1	20	8			PED - BREEZE F3/4	2
3	RCPT - POLE P6		1,000		4	20	1	1	20		180		PED - RCPT F 3/4 NE	4
5	RCPT - POLE P7			1,000	6	20	1	1	20	8		180	PED - RCPT F 3/4 NW	6
7	RCPT - POLE P8	1,000			4	20	1	1	20	8	180		PED - RCPT F 3/4 SW	8
9	RCPT - POLE P9		1,000		3	20	1	1	20	8		180	PED - RCPT F 3/4 SE	10
11	RCPT - POLE P10			1,000	4	20	1	1	20	3		1,000	PWR - NE GATE	12
13	RCPT - POLE A1	1,000			12	20	1	1	20	6	500		PWR - SIGNAGE NE GATE	14
15	RCPT - POLE A2		1,000		6	20	1	1	20	12		1,000	PWR - SIGNAGE C CROSSING	16
17	RCPT - POLE A3			1,000	4	20	1	1	20	12		250	PWR - SIGNAGE CONC 1	18
19	RCPT - POLE A4	1,000			3	20	1	1	20	12	250		PWR - SIGNAGE FILED 4	20
21	PWR - N GATE		1,000		3	20	1	1	20	10		250	PWR - SIGNAGE E PATH	22
23	PWR - SIGNAGE N GATE			500	6	20	1	1	20	6		360	PED - BREEZE F8	24
25	PWR - LTG CIRCLS	500			12	20	1	1	20	6	180		PED - RCPT F8 N	26
27	RCPT - POLE P15/A2		1,000		6	20	1	1	20	6		180	PED - RCPT F8 S	28
29	PWR - FIELD 3/4 CAMERA			500	8	20	1	1	20				SPARE	30
31	RCPT - P2	180			12	20	1	1	20				SPARE	32
33	SPARE				20	1	1	1	20				SPARE	34
35	SPARE				20	1	1	1	20				SPARE	36
37	SPARE				20	1	1	1	20				SPARE	38
39	SPARE				20	1	1	1	20				SPARE	40
41	SPARE				20	1	1	1	20				SPARE	42
SECTION 2														
43	SPARE				20	1	1	1	20				SPARE	44
45	SPARE				20	1	1	1	20				SPARE	46
47	SPARE				20	1	1	1	20				SPARE	48
49	SPARE				20	1	1	1	20				SPARE	50
51	SPARE				20	1	1	1	20				SPARE	52
53	SPARE				20	1	1	1	20				SPARE	54
55	SPARE				20	1	1	1	20				SPARE	56
57	SPARE				20	1	1	1	20				SPARE	58
59	SPARE				20	1	1	1	20				SPARE	60
61	SPARE				20	1	1	1	20				SPARE	62
63	SPARE				20	1	1	1	20				SPARE	64
65	SPARE				20	1	1	1	20				SPARE	66
67	SPARE				20	1	1	1	20				SPARE	68
69	SPARE				20	1	1	1	20				SPARE	70
71	EQUIPPED SPACE						1	1					EQUIPPED SPACE	72
73	EQUIPPED SPACE						1	1					EQUIPPED SPACE	74
75	EQUIPPED SPACE						1	1					EQUIPPED SPACE	76
77	EQUIPPED SPACE						1	1					EQUIPPED SPACE	78
79	EQUIPPED SPACE						1	1					EQUIPPED SPACE	80
81	EQUIPPED SPACE						1	1					EQUIPPED SPACE	82
83	EQUIPPED SPACE						1	1					EQUIPPED SPACE	84
SUBTOTAL		4,680	5,000	4,000						1,830	1,790	1,790	SUBTOTAL	
TOTAL PHASE A - VA		6,510			CONN. VA		DF	LOAD		CONN. VA		DF		
AMPS 54							1.00	REFRIG (F)						
TOTAL PHASE B - VA		6,790						SIGN/DISP (D)				1.25		
AMPS 57							1.25	KITCHEN (K)				1.00		
TOTAL PHASE C - VA		5,790			2,340		1.0/5	EXISTING (E)						
AMPS 48							1.00	LUG MOTOR				1.25		
TOTAL PNLBD - VA		19,080					1.00	SHOW WIND (W)				1.25		
AMPS 53					16,750		1.00	LTG TRACK				1.00	TOTAL DEMAND 19,090 VA 53 A	
MISC EQUIP (Z)														

PANELBOARD NOTES

LCK - HANDLE PADLOCKABLE-OFF DEVICE

GR - PROVIDE GROUND SIZE IN ACCORD.

FED THRU CONNECTION: (2) Sets of #3/0

PANELBOARD: LF3 (NEW)

BUS AMPS: 400A

MAIN SIZE/TYPE: 300A MCB (ALT 1 - 400A MCB)

VOLTS/PHASE: 480Y/277V, 3PH, 4W

SECTION: 1

FED FROM: MSB

A/C RATING: FCA +10% MINIMUM/FULLY RATED

SERVES:

MOUNTING: SURFACE

LOCATION: CONC 2

LINE-SIDE LUGS: MECHANICAL

EQUIPMENT GROUND BUS

NEMA 3R

CKT NO.	DESCRIPTION	VOLTAMPS/PHASE			MRE NO.	BKR AMP	P	BKR WIRE AMP	MRE NO.	VOLTAMPS/PHASE			DESCRIPTION	CKT NO.
		A	B	C						A	B	C		
1		3,757								3,757				2
3	POLE A6 (FIELD 10)		3,757		6	20	3	20	8		3,757		POLE A6 (FIELD 9)	4
5	(ALT 1 - 30A/#4)			3,757								3,757	(ALT 1 - 30A/#6)	6
7		3,757								3,757				8
9	POLE A5 (FIELD 10)		3,757		8	20	3	20	6		3,757		POLE A7 (FIELD 10)	10
11	(ALT 1 - 30A/#5)			3,757								3,757	(ALT 1 - 30A/#6)	12
13		3,757								7,514				14
15	POLE A9 (FIELD 9)		3,757		12	20	3	40	6		7,514		POLE A14 (FIELD 8/10)	16
17	(ALT 1 - 30A/#10)			3,757							7,514	7,514	(ALT 1 - 60A/#4)	18
19		3,757								7,514				20
21	POLE A10 (FIELD 9)		3,757		12	20	3	40	8		7,514		POLE A13 (FIELD 7/9)	22
23	(ALT 1 - 30A/#10)			3,757								7,514	(ALT 1 - 30A/#6)	24
25														26
27	SPARE					30	3	30					SPARE	28
29														30
31		4,562								3,757				32
33	POLE P16 (FIELD 6)		4,562		10	25	3	20	10		3,757		POLE A11 (FIELD 7)	34
35	(ALT 1 - 40A/#8)			4,562								3,757	(ALT 1 - 30A/#10)	36
37	POLE SIGNS ACCESSORY	1,200			50	20	1	2	20	1,200			PARKING LOT LTG - SOUTH	38
39	SPARE					20	1				1,200			40
41	SPARE					20	1	1					EQUIPPED SPACE	42
43	SPARE					20	1	1					EQUIPPED SPACE	44
45	EQUIPPED SPACE						1	1					EQUIPPED SPACE	46
47	EQUIPPED SPACE						1	1					EQUIPPED SPACE	48
49														50
51	T-P3 / L3				OL	50	3	60	6				SPD	52
53														54
SUBTOTAL		20,790	19,590	19,590						27,499	27,499	26,299	SUBTOTAL	

TOTAL PHASE A - VA		48,289	LOAD	CONN. VA		DF	LOAD	CONN. VA		DF	
AMPS		174	COOLING (C)			1.00	REFRIG (F)			1.00	
TOTAL PHASE B - VA		47,089	HEATING (H)			0	SIGN/DISP (D)			1.25	
AMPS		170	LIGHTING (L)	141,267		1.25	KITCHEN (K)			1.00	
TOTAL PHASE C - VA		45,889	RECEP/CLBS (R)			1.0/5	EXISTING (E)			1.00	
AMPS		168	MOTORS (M)			1.00	LRG MOTOR			1.25	
TOTAL PNLBD - VA		141,267	SUPP HEAT (U)			1.00	SHOW WND (W)			1.25	
AMPS		170	MSC EQUIP (Z)			1.00	LTG TRCK			1.00	
										TOTAL DEMAND	176,584 VA
											212 A

PANELBOARD NOTES

GR - PROVIDE GROUND SIZE IN ACCORDANCE WITH NEC 250.122(B)

OL - REFER TO ONELINE

PANELBOARD: P3 (NEW)

BUS AMPS: 225A

MAIN SIZE/TYPE: 100A MCB

VOLTS/PHASE: 208Y120V, 3PH, 4W

FED FROM: T-P3

A/C RATING: 10000 FULLY RATED

SERVES:

MOUNTING: SURFACE

LOCATION: CONC 2

LINE-SIDE LUGS: MECHANICAL

EQUIPMENT GROUND BUS

NEMA 3R

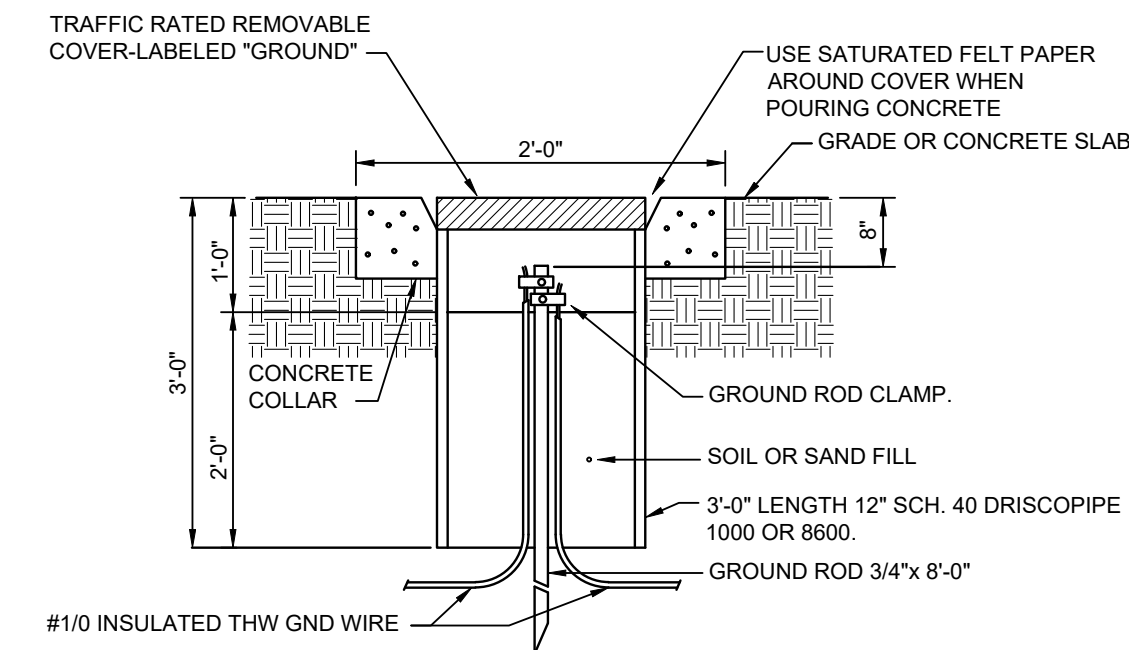
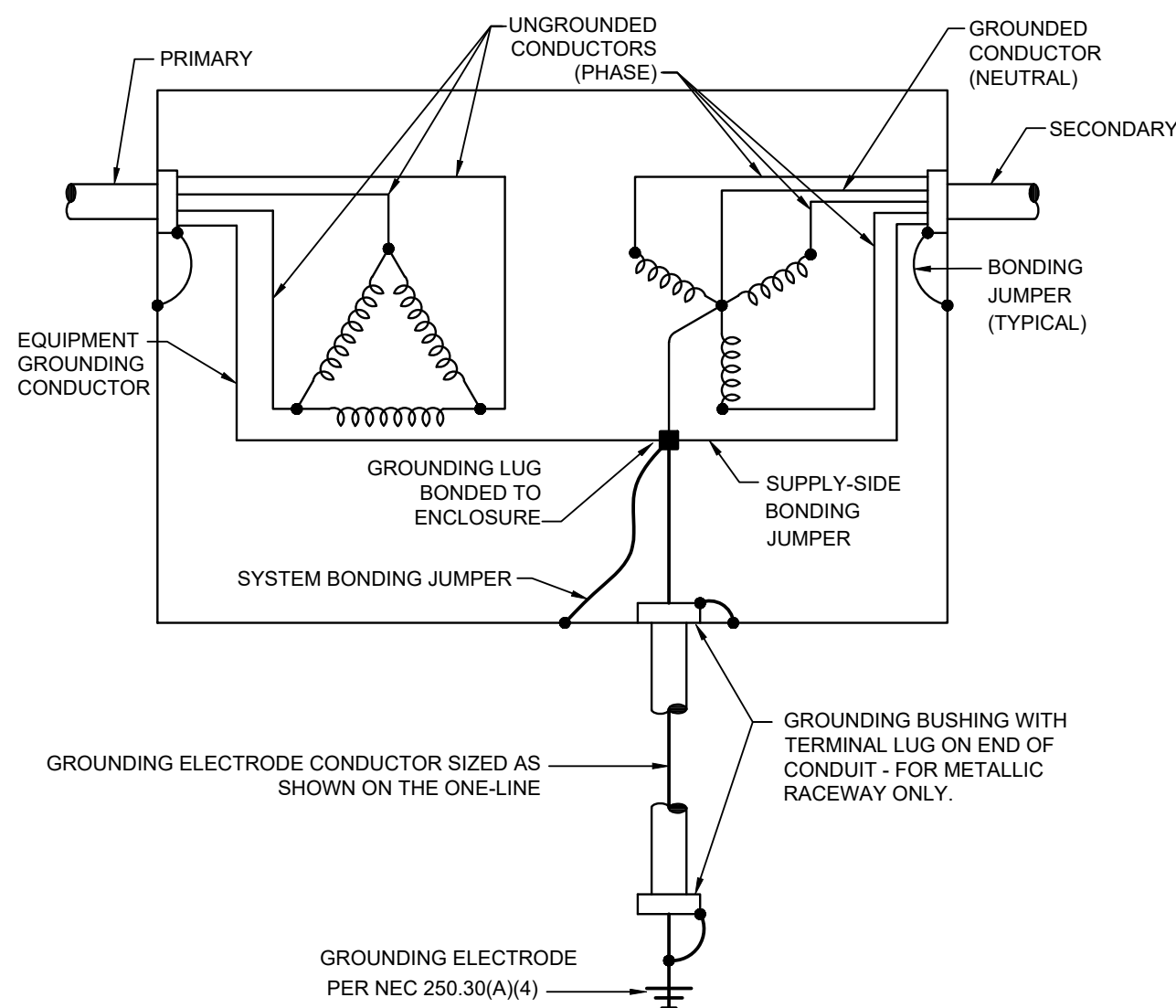
SECTION: 1

CKT NO.	DESCRIPTION	VOLT/AMPS/PHASE			WIRE NO.	AMP	P	BKR AMP	WIRE NO.	VOLT/AMPS/PHASE			DESCRIPTION	CKT NO.
		A	B	C						A	B	C		
1	SPARE				2	1	1	20	10	360			PED - BREEZE F7	2
GR 3	RCPT - POLE P16/A11	1,000			8	2	1	1	20	10			PED - RCPT F7 N	4
GR 5	RCPT - POLE A7		1,000		3	2	1	1	20	10		180	PED - RCPT F7 S	6
GR 7	RCPT - POLE A8	1,000			4	2	1	1	20	12	360		PED - BREEZE F9	8
GR 9	RCPT - POLE A9		1,000		6	2	1	1	20	12		180	PED - RCPT F9 N	10
GR 11	RCPT - POLE A10			1,000	10	2	1	1	20	12			PED - RCPT F9 S	12
GR 13	RCPT - POLE A13	1,000			10	2	1	1	20	12	1,000		PWR - S GATE	14
GR 15	RCPT - POLE A14		1,000		4	2	1	1	20	3		360	PED - BREEZE F10	16
GR 17	RCPT - POLE A5			1,000	3	2	1	1	20	3		180	PED - RCPT F10 N	18
GR 19	RCPT - POLE A6	1,000			2	2	1	1	20	3	180		PED - RCPT10 S	20
21	SPARE				20	1	1	20	12		500		PWR - LTG CTRLS	22
23	RCPT - P3		180	12	20	1	1	20	12			750	PWR - SIGNAGE	24
25	SPARE				20	1	1	20					SPARE	26
27	SPARE				20	1	1	20					SPARE	28
29	SPARE				20	1	1	20					SPARE	30
31	SPARE				20	1	1	20					SPARE	32
33	SPARE				20	1	1	20					SPARE	34
35	SPARE				20	1	1	20					SPARE	36
37	SPARE				20	1	1	20					SPARE	38
39	SPARE				20	1	1	20					SPARE	40
41	SPARE				20	1	1	20					SPARE	42
SUBTOTAL		3,000	3,000	3,180						1,900	1,220	1,290	SUBTOTAL	
TOTAL PHASE A - VA		4,900	LOAD		CONN VA		DF	LOAD		CONN VA		DF		
AMPS 41			COOLING (C)				1.00	REFRIG (F)				1.00		
TOTAL PHASE B - VA		4,220	HEATING (H)					SIGN/ODS (D)				1.25		
AMPS 35			LIGHTING (L)				1.25	KITCHEN (K)				1.00		
TOTAL PHASE C - VA		4,470	RECEPTACLES (R)		2,340		1.0/5	EXISTING (E)				1.00		
AMPS 37			MOTORS (M)				1.00	LUG MOTOR				1.25	TOTAL DEMAND	
TOTAL PNLEB - VA		13,580	SURF HEAT (U)				1.00	SHOW WAND (W)				1.25	13,590 VA	
AMPS 38			MSC EQUIP (Z)		11,250		1.00	LTG TRACK				1.00	38 A	

PANELBOARD NOTES

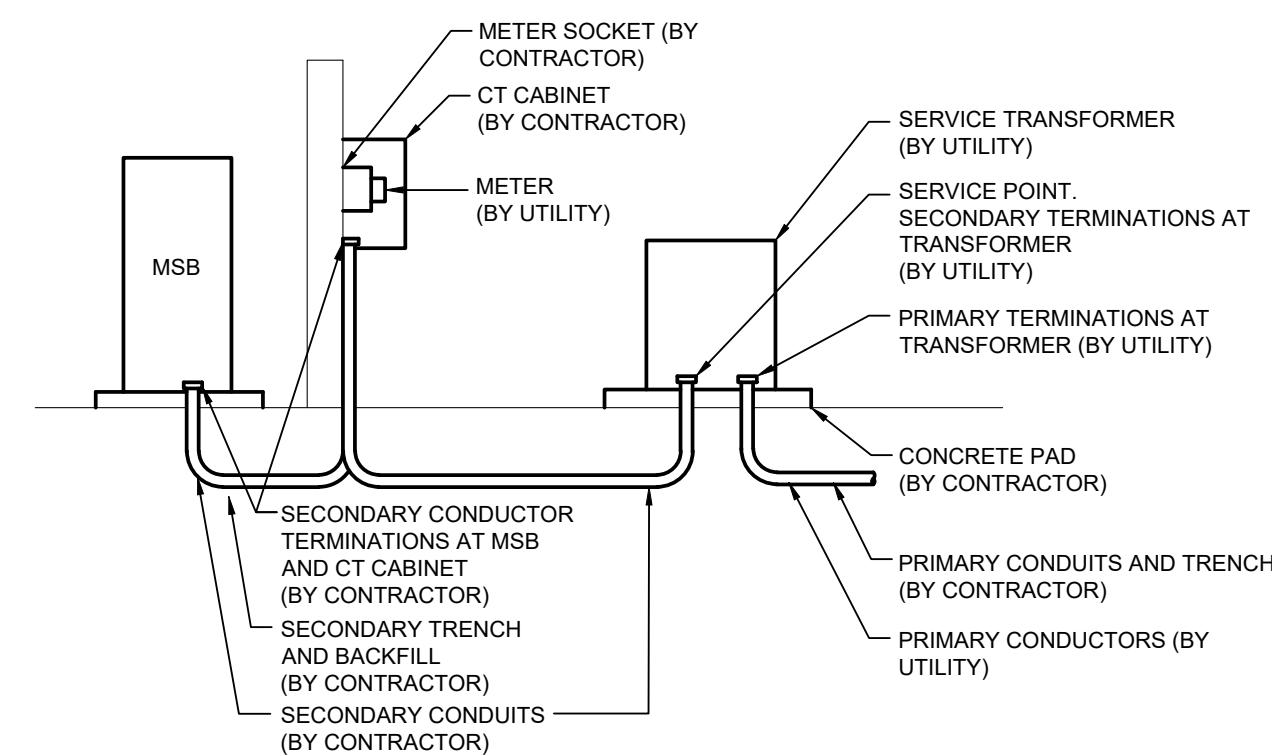
LCK - HANDLE PADLOCKABLE-OFF DEVICE

GR - PROVIDE GROUND SIZE IN ACCORD.

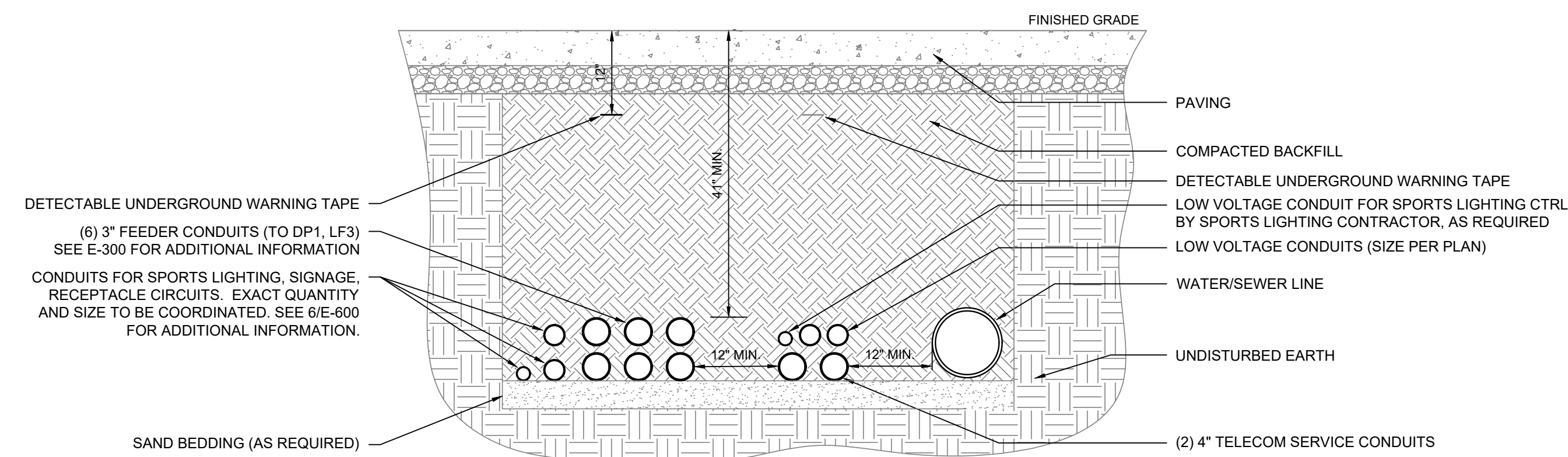


2 DRY TYPE TRANSFORMER GROUNDING (TYP)
NO SCALE

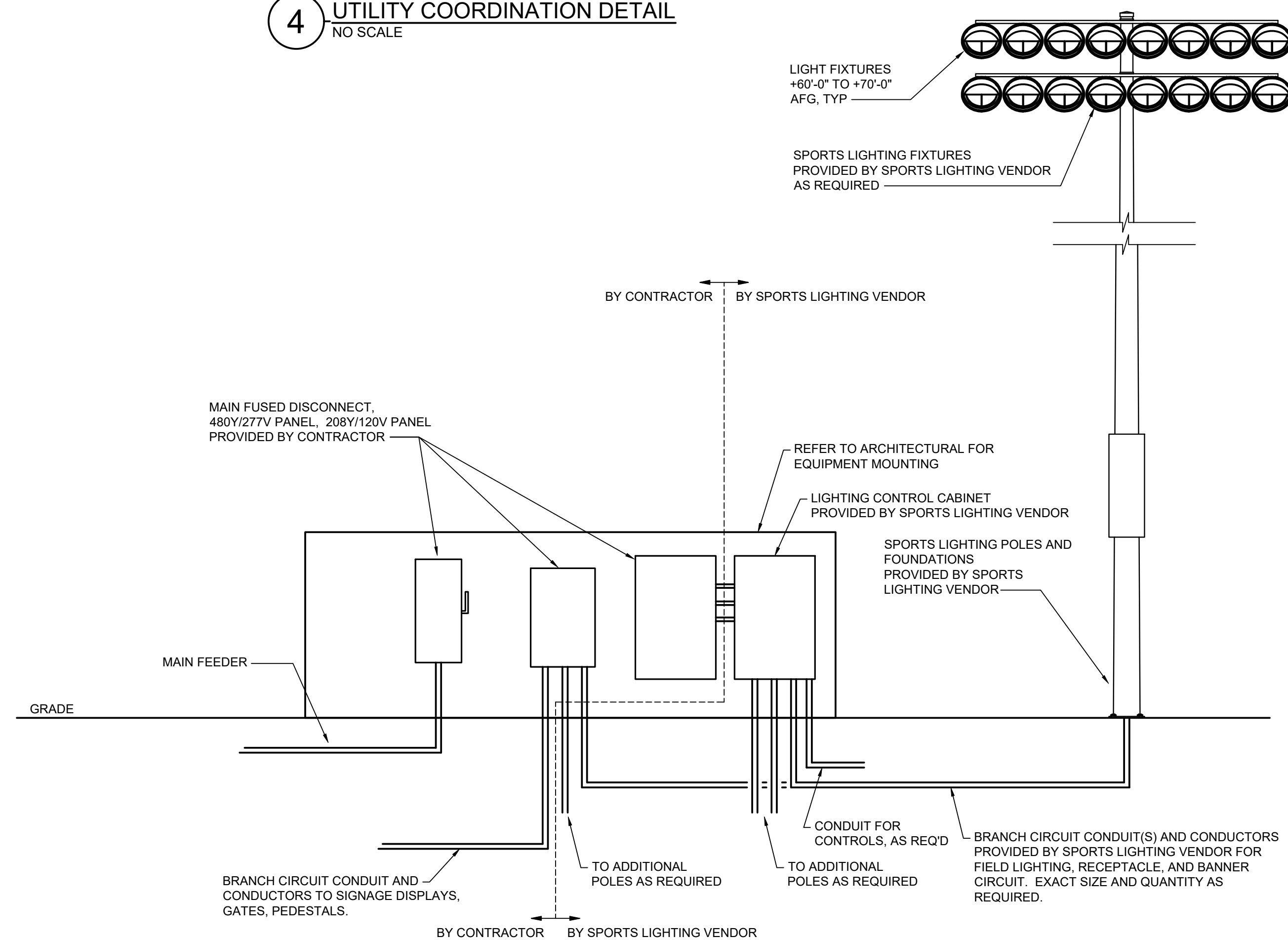
3 GROUNDING AND TEST WELL INSTALLATION



4 UTILITY COORDINATION DETAIL



5 TYPICAL CONDUIT INSTALLATION



6 INSTALLATION RESPONSIBILITY DIAGRAM
N.T.S.

CIVIL ENGINEERING
GBA
9801 Renner Boulevard
St. Louis, MO 63219
913.672.0400
www.gbaonline.com
MO Certificate of Authority #: 000133

LANDSCAPE ARCHITECTURE
Lands Studio, LLC
3175 SE Mo
Leeds Summit, MO 64063
www.landsstudio.com
MO Certificate of Authority #: 2008001860

LANDSCAPE ARCHITECTURE
Hoer Schauf Landscapes Architect
2100 Central Street, Suite C
Kansas City, MO 64108
616.510.4488
www.hoerschauf.com
MO Certificate of Authority #: 2019004088

MEP ENGINEERING
HENDERSON ENGINEERS, INC.
8345 Louisiana Street
St. Louis, MO 63214
913.742.5000
www.hendeng.com
Missouri Certificate of Authority #: 000556

LANDSCAPE ARCHITECTURE
FINKE + WILLIAMS ARCHITECTS
8787 Renner Boulevard, Suite 100
Leads, MO 63219
913.496.1350
www.fhw.com
Missouri Certificate of Authority #: 00453034

PROJECT:

Paragon Star Soccer Complex
Soccer Complex & Associated Improvements
1401 NW View High Dr, Lee's Summit, MO 64081

ISSUE:

PROFE:
SEAL:

ANDREA C. MULVANY 08/11/2022

**DRAWING
TITLE:**

ELECTRICAL DETAILS

JOB NO: 1197 SCALE: N/A

DATE: 02.16.2022 DRAWN BY: MAF

SHEET NO:

HENDERSON
ENGINEERS
1801 MAIN STREET, SUITE 300
KANSAS CITY, MO 64108
TEL 816.663.8700 FAX 816.663.8701
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1850004412
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12/31/12

E-600