

THATCHER RECREATION COMPLEX

SOCCKER FIELD LIGHTING



GENERAL ELECTRICAL REQUIREMENTS:

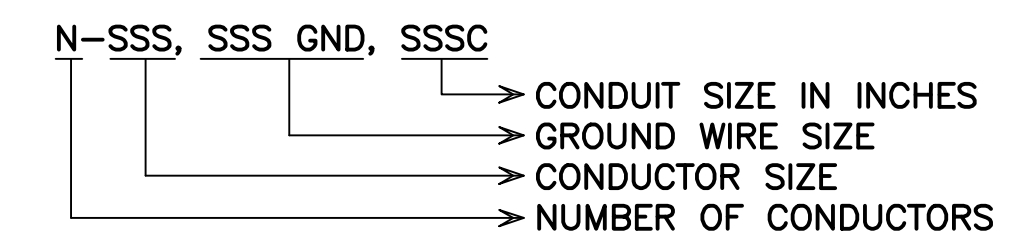
1. THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODE ORDINANCES AND REGULATIONS. CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND INSPECTIONS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. ALL WORK SHALL BE DONE IN A NEAT, WORKMANLIKE, FINISHED AND SAFE MANNER, ACCORDING TO THE LATEST PUBLISHED N.E.C.A. STANDARDS OF INSTALLATION, UNDER COMPETENT SUPERVISION. INSTALL GROUNDING AS REQUIRED BY THE CODE(S).
2. VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND ALL OTHER FACTORS WHICH MAY AFFECT THE EXECUTION OF THIS WORK. INCLUDE ALL RELATED COSTS IN THE INITIAL BID PROPOSAL.
3. ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY, MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, U.L. OR OTHER APPLICABLE STANDARDS. THE USE OF MANUFACTURER'S NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, USEFULNESS AND BID PRICE. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED IN WRITING AND REVIEWED BY THE ENGINEER BEFORE ORDERING.
4. PROTECT ALL ELECTRICAL MATERIAL AND EQUIPMENT INSTALLED UNDER THIS DIVISION AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS OR ANY OTHER CAUSES. EQUIPMENT FOUND DAMAGED OR IN OTHER THAN NEW CONDITION WILL BE REJECTED AS DEFECTIVE.
5. LEAVE THE SITE CLEAN, REMOVE ALL DEBRIS, EMPTY CARTONS, TOOLS, CONDUIT, WIRE SCRAPS AND ALL MISCELLANEOUS SPARE EQUIPMENT AND MATERIALS USED IN THE WORK DURING CONSTRUCTION. ALL COMPONENTS SHALL BE FREE OF DUST, GRIT AND FOREIGN MATERIALS, LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK.
6. CIRCUIT CONDUCTORS #6 AWG OR SMALLER TO BE "XHHW" COPPER. #4 THRU #2 AWG TO BE "XHHW" STRANDED COPPER. #1 AWG OR LARGER SHALL BE "XHHW-2" STRANDED COPPER. MINIMUM CONDUCTOR SIZE TO BE #12 AWG WITH #12 GND.
7. UNDERGROUND CONDUITS TO BE SCHEDULE 40 PVC. MINIMUM DEPTH 24", MINIMUM SIZE 1", UNLESS OTHERWISE SHOWN ON THE PLANS.
8. EXPOSED CONDUITS TO BE GALVANIZED RIGID STEEL, MINIMUM SIZE 3/4", UNLESS OTHERWISE NOTED ON THE PLANS.
9. ALL SAFETY SWITCHES AND OTHER DISTRIBUTION AND CONTROL ELECTRICAL EQUIPMENT SHALL BE U.L. LISTED AND RATED FOR HEAVY DUTY SERVICE.
10. ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE.
11. ALL ELECTRICAL EQUIPMENT, CONDUIT, WIRING, BOXES, ETC. SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO ORDERING. THE SUBMITTALS SHALL BE NEATLY GROUPED AND ORGANIZED. PERTINENT INFORMATION SHALL BE HIGHLIGHTED, AND THE SPECIFIC PRODUCT SHALL BE IDENTIFIED. ALL SUBMITTALS SHALL BE COMPLETE, AND PRESENTED IN ONE PACKAGE. THE SUBMITTAL SHALL INCLUDE A COMPLETE LIST OF THE EQUIPMENT AND MATERIALS, INCLUDING THE MANUFACTURER'S NAME, PRODUCT SPECIFICATION, DESCRIPTIVE DATA, TECHNICAL LITERATURE, PERFORMANCE CHARTS, CATALOG CUTS, INSTALLATION INSTRUCTIONS, AND SPARE PART RECOMMENDATIONS FOR EACH DIFFERENT ITEM OF THE EQUIPMENT SPECIFIED.
12. IT IS THE OBLIGATION OF THE CONTRACTOR TO ORGANIZE HIS WORK, SO THAT A COMPLETE ELECTRICAL, INSTRUMENTATION, AND CONTROL SYSTEM FOR THE FACILITY WILL BE PROVIDED, AND WILL BE SUPPORTED BY ACCURATE SHOP AND RECORD DRAWINGS, AND O & M MANUALS.

13. PRIOR TO PERFORMING UNDERGROUND EXCAVATION, THE CONTRACTOR SHALL CONTACT BLUE STAKE TO OBTAIN FIELD UNDERGROUND UTILITIES LOCATION MARKING. THE CONTRACTOR SHALL UNCOVER AHEAD OF CONSTRUCTION, ALL LINES BEING TIED INTO AND ALL INTERSECTING ELECTRICAL LINES AND UTILITIES AS SHOWN ON THE PLANS OR MARKED BY BLUE STAKE TO VERIFY THEIR LOCATION AND DEPTH. UTILITY SERVICES AND ALL EXISTING ELECTRICAL LINES SHALL BE LOCATED AND PROTECTED BY THE CONTRACTOR. COORDINATE WITH ENGINEER AND/OR APPROPRIATE UTILITY COMPANY. ALL PRECAUTIONS SHALL BE USED WHILE WORKING NEAR ALL UTILITIES, TO AVOID INJURY OR DEATH TO PERSONNEL, PROPERTY DAMAGE AND/OR INTERRUPTION OF SERVICE.
14. THE CONTRACTOR SHALL ALLOW TWO WEEKS FOR REVIEW OF THE SUBMITTALS BY THE ENGINEER. THIS PERIOD SHALL BE CALCULATED FROM THE TIME THE ENGINEER HAS RECEIVED THE SUBMITTALS TO THE TIME THE SUBMITTALS LEAVE THE ENGINEER'S OFFICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DELAYS RESULTING FROM "FURNISH AS NOTED", "REVISE AND RESUBMIT", "NOTE REVIEWED" AND/OR "REJECTED" SUBMITTALS. INCOMPLETE SUBMITTALS WILL BE RETURNED FOR RESUBMITTAL WITH NO CHANGE BEING ALLOWED TO THE CONSTRUCTION SCHEDULE. SUBMITTALS SHALL INCLUDE COMPREHENSIVE INFORMATION AND TECHNICAL DATA, CLEARLY IDENTIFYING AND SUBSTANTIATING THE CHARACTERISTICS REQUIRED BY THE CONSTRUCTION DOCUMENTS.
15. ALL REQUESTS FOR INFORMATION (RFIs) SHALL BE PRESENTED TO THE ENGINEER ALLOWING TWO WEEKS FOR RESPONSE. THIS PROCESS SHALL BE CONSIDERED IN THE SCHEDULING PROCESS AND SHALL NOT CAUSE A DELAY IN THE COMPLETION OF THE PROJECT.
16. ELECTRICAL CONTRACTOR TO LOG SERIAL NUMBER FOR EVERY FIXTURE ANTICIPATED TO BE CONNECTED TO WISCAPE LIGHTING CONTROL SYSTEM. COORDINATE EXACT REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION. PROGRAMMING AND COMMISSIONING SHALL BE PERFORMED BY HUBBELL OR A HUBBELL AUTHORIZED COMPANY AND ONSITE TRAINING TO OWNER'S REPRESENTATIVES SHALL CONSIST OF TWO (2) TRAINING SESSIONS AT TWO (2) HOURS EACH.

SHEET INDEX

DRAWING NAME	DRAWING SERIES NO.	SHEET NO.
ELECTRICAL LEGEND AND NOTES	E0.1	1
ELECTRICAL SPECIFICATIONS	E0.2	2
ELECTRICAL SITE PLAN	E1.1	3
WEST ELECTRICAL BUILDING	E1.2	4
EAST ELECTRICAL BUILDING	E1.3	5
PHOTOMETRIC PLAN	E2.1	6
ELECTRICAL DETAILS	E3.1	7
ELECTRICAL DETAILS	E3.2	8
PANEL SCHEDULES	E4.1	9
SINGLE LINE DIAGRAMS	E5.1	10

CONDUIT AND WIRE KEY

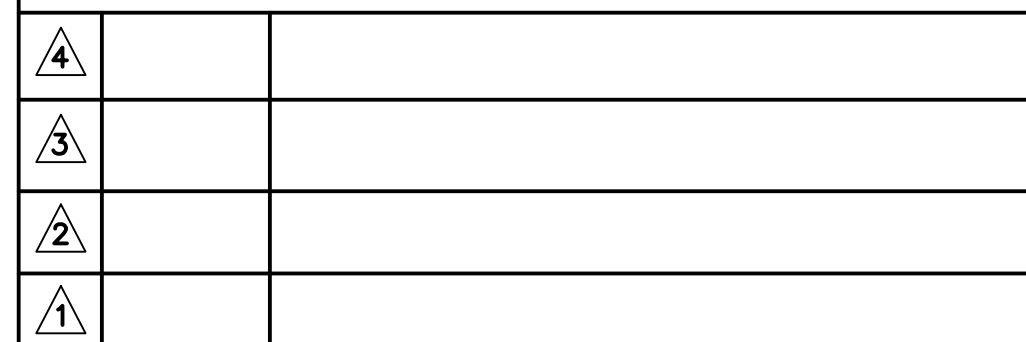


EXAMPLE 1: 3-2/0, #6 GND, 2°C THREE 2/0 CONDUCTORS, ONE No.6 AWG GROUND WIRE IN A 2" CONDUIT

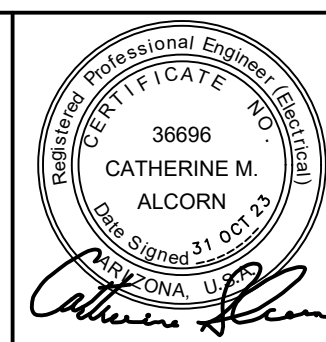
EXAMPLE 2: 4C-1/0, 2°C FOUR CONDUCTOR CABLE WITH 1/0 CONDUCTORS IN A 2" CONDUIT

ELECTRICAL STANDARD LEGEND (NOT ALL SYMBOLS ARE USED)

-----	DENOTES EXISTING
-----	DENOTES FUTURE
-----	DIRECT BURIED CONDUIT
-----	CONDUIT RUN EXPOSED
-----	BARE COPPER GROUND RING CONDUCTOR
=====	CONCRETE ENCASED CONDUIT
-----	CONDUIT HOME RUN
-----	CONDUIT HOME RUN - HASH MARKS INDICATE NUMBER OF #12 CONDUCTORS (UNLESS NOTED OTHERWISE), LONG STROKES INDICATE NEUTRAL CONDUCTOR, SHORT STROKES INDICATE PHASE OR SWITCHED CONDUCTORS, STROKE WITH GROUNDING SYMBOL INDICATES GROUND CONDUCTOR (TYPICAL)
-----	CONDUIT STUB-UP WITH CAP
○ □	EXISTING PATHWAY LIGHTING
⋈ ⋈ OR ⋈ ⋈	NEW SPORTS LIGHTING



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 THATCHER RECREATIONAL COMPLEX - SOCCER FIELD LIGHTING
 ELECTRICAL LEGEND AND NOTES

E0.1

SHEET

1 OF 10

1.0 INTENT

- 1.1 FURNISH AND INSTALL A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.
1.2 ALL DRAWINGS ARE SCHEMATIC IN NATURE AND THE REQUIRED INSTALLATION IS NOT LIMITED TO WHAT IS SHOWN.

2.0 GENERAL

- 2.1 THE CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS WHICH MAY AFFECT HIS BID OR WORK.
2.2 IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN CLARIFICATION OF ANY APPARENT CONFLICT OR INCONSISTENCY IN THE DRAWINGS, SPECIFICATION, OR DESIGN.
2.3 ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE MOST RECENT ADOPTED EDITIONS OF THE NFPA, NATIONAL ELECTRIC CODE, IBC, APPLICABLE CITY AND STATE CODES AND ORDINANCES, THE AMERICANS WITH DISABILITIES ACT, E.P.A. REGULATIONS (INCLUDING EPACT 1992), INTERNATIONAL ENERGY CONSERVATION CODE (IECC)/TITLE 24/ASHRAE 90.1 AND UTILITY COMPANY REQUIREMENTS.
2.4 THE CONTRACTOR SHALL COORDINATE AND PROVIDE INFORMATION AS REQUIRED TO ALL SERVING UTILITIES IN A TIMELY MANNER AS NECESSARY TO PROVIDE THE SERVICE REQUIRED AND MEET UTILITY REQUIREMENTS.
2.5 REFER TO ARCHITECTURAL, MECHANICAL, CIVIL, STRUCTURAL, AND/OR EQUIPMENT SUPPLIERS DRAWINGS AND SPECIFICATIONS FOR EXACT EQUIPMENT LOCATIONS, LOADS AND ADDITIONAL REQUIREMENTS.
2.6 THE CONTRACTOR ASSUMES RESPONSIBILITY FOR ALL EQUIPMENT HE SUPPLIES. ALL EQUIPMENT SHALL BE INSTALLED STRICTLY PER MANUFACTURER'S RECOMMENDATIONS.
2.7 ANY VARIANCE OR EXCEPTIONS TO THE DRAWINGS AND SPECIFICATIONS MUST BE REQUESTED AND APPROVED IN WRITING.
2.8 THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL NECESSARY PERMITS, VARIANCES, AND APPROVALS, ETC. (AT HIS COST) WHICH MAY BE REQUIRED FOR COMPLETION OF THIS WORK.
2.9 PRIOR TO ROUGH-IN, THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF ALL LIGHT FIXTURES AND WIRING DEVICES: TO INCLUDE MOUNTING HEIGHT AND LOCATIONS WITH ARCHITECT/OWNER.
2.10 THE ELECTRICAL CONTRACTOR SHALL PROVIDE EQUIPMENT AND SUPPORT FOR PROGRESS AND FINAL INSPECTIONS.

3.0 MATERIALS AND METHODS

- 3.1 CONDUCTORS SHALL BE 600V COPPER (98% CONDUCTIVITY). MINIMUM LINE VOLTAGE WIRE SIZE IS #12 A.W.G. #6 AND SMALLER SHALL HAVE THHN/THHW INSULATION. #4 AND LARGER SHALL HAVE XHHW/XHHW-2 INSULATION.
3.2 WHEN SEPARATE BRANCH CIRCUIT NEUTRAL CONDUCTORS ARE USED WITH EACH PHASE CONDUCTOR OR SYSTEMS FURNITURE IS INDICATED, THE MINIMUM NEUTRAL CONDUCTOR SIZE SHALL BE #10 A.W.G. STRANDED COPPER.
3.3 ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE. (MINIMUM 20 AMPS RATED FOR RECEPTACLES AND SWITCHES).
3.4 COVER PLATES AND DEVICES SHALL BE PHENOLIC PLASTIC (WHITE OR COLOR SELECTED BY ARCHITECT) IN OFFICE/COMMERCIAL/OR LIVING AREAS, AND GALVANIZED STEEL IN WAREHOUSE/INDUSTRIAL/MANUFACTURING AREAS OR AREAS SUBJECT TO PHYSICAL ABUSE.
3.5 ALL CONDUCTORS TO BE CONCEALED EXCEPT TO SURFACE MOUNTED PANELS AND AT THE CEILING OF EXPOSED STRUCTURE AREAS.
3.6 FLEXIBLE METAL CONDUIT (SEAL TITE FOR EXTERIOR APPLICATIONS) SHALL BE USED FOR CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION (E.G. MOTORS) WITH A MAXIMUM OF SIX (6) FEET.
3.7 NON-METALLIC CONDUIT (MIN. SCHEDULE 40) MAY BE USED ONLY IN OR UNDER SLABS & IN CONCRETE OR MASONRY WALLS.
3.8 FUSES SHALL BE BUSSMAN, LITTLEFUSE, OR GOULD SHAWMUT.
3.9 CONDUCTORS WILL BE SOLID AND/OR STRANDED WITH INSULATION CONTINUOUSLY COLOR COATED UP TO AND INCLUDING SIZE #6 A.W.G.
3.10 CONNECTIONS OR SPLICES SHALL BE EXOTHERMIC WELD (CAD WELD OR THOMAS AND BETTS FURSEWELD) FOR GROUNDING/BONDING CONDUCTORS.
3.11 NEW CONDUCTORS SHALL BE CONTINUOUS. HYDRAULIC CRIMP SPLICES OR CONNECTIONS ARE EXCEPTIONS AND REQUIRE SPECIFIC APPROVAL IN WRITING BY CR ENGINEERS.
3.12 ALL CONDUIT SUPPORT SYSTEMS SHALL BE INSTALLED ON THE BUILDING STRUCTURE.
3.13 ACCEPTABLE MANUFACTURES FOR SWITCH GEAR, DISTRIBUTION GEAR, AND RELATED COMPONENTS ARE: DISTRIBUTION GEAR SQUARE D, ACME TRANSFORMERS, GENERAL ELECTRIC, SIEMENS, HPS, AND CUTLER-HAMMER.
3.14 CONDUCTORS SHALL BE COLOR CODED FOR BRANCH CIRCUITS AND PHASE LEGS OF FEEDERS TO PANEL BOARDS, SWITCHBOARDS, ETC.
• 120-V, 2-WIRE CIRCUIT: GROUNDED NEUTRAL-WHITE; UNGROUNDED LEG-BLACK.
• 208Y/120-V, 3-PHASE, 4-WIRE: GROUNDED NEUTRAL-WHITE; PHASE A-BLACK; PHASE B-RED; PHASE C-BLUE.
• 240/120-V, 3 WIRE, SINGLE PHASE CIRCUIT: GROUNDED NEUTRAL-WHITE; PHASE A-BLACK; PHASE B-RED.
• 240-V, DELTA, 3-PHASE, 3-WIRE: PHASE A-BLACK; PHASE B-RED; PHASE C-BLUE.
• 240/120-V, 3-PHASE, 4-WIRE, HIGH-LEG DELTA: GROUNDED NEUTRAL-WHITE; HIGH LEG (208-V TO NEUTRAL)-ORANGE; PHASE A-BLACK; PHASE C-BLUE.

- 3.15 ALL UNDERGROUND CABLE, PIPE AND CONDUITS SHALL BE DETECTABLE (METALLIC) OR HAVE A DETECTABLE UNDERGROUND LOCATION DEVICE INSTALLED WITH IT.
3.16 ALL HORIZONTAL UNDERGROUND CONDUIT RUNS (INCLUDING UNDER CONCRETE SLABS) SHALL BE A MINIMUM OF 24" BELOW GRADE.

4.0 SUBMITTALS

- 4.1 SUBMIT SHOP DRAWINGS AND SAMPLES FOR ALL EQUIPMENT PRIOR TO ORDERING IN A TIMELY MANNER.
4.1.1 SHOP DRAWINGS SHALL INCLUDE LAYOUT DIMENSIONS AND IDENTIFICATION OF SPECIFIC EQUIPMENT FOR INSTALLATION.
4.1.2 THE CONTRACTOR SHALL INCLUDE COMPARISON DATA AND SAMPLES FOR BOTH THE SUBSTITUTE AND SPECIFIED ITEMS WHEN SUBSTITUTIONS ARE PROPOSED.
4.2 THE CONTRACTOR SHALL PROVIDE PROOF OF PERFORMANCE BOND WITH HIS INITIAL SUBMITTALS (E.G. SHOP DRAWINGS) TO INCLUDE WARRANTY FOR THE WARRANTY PERIOD (TWO YEARS).
4.3 THE CONTRACTOR SHALL SUBMIT COMPLETE AND ACCURATE "AS BUILT" DRAWING TO THE OWNER AND ENGINEER WITHIN TWO (2) WEEKS OF OWNER ACCEPTANCE.
4.4 PROVIDE A LETTER TO THE OWNER AND ENGINEER CERTIFYING ALL EQUIPMENT AND TERMINATIONS ARE PROPERLY TORQUED.
4.5 PROVIDE TWO (2) COPIES OF ALL MANUFACTURER/SUPPLIER WARRANTIES AND GUARANTEES TO THE OWNER WITHIN TWO (2) WEEKS OF FINAL ACCEPTANCE BY THE OWNER.

5.0 WARRANTY

- 5.1 THE CONTRACTOR SHALL GUARANTEE ALL MATERIAL AND/OR WORKMANSHIP FURNISHED BY HIM UNDER THIS CONTRACT FOR A PERIOD OF TWO (2) YEARS FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER.
5.2 THE OWNER RETAINS THE RIGHT TO REQUIRE REMOVAL AND INSTALLATION (AT ANY TIME) OF ANY MATERIAL OR EQUIPMENT NOT IN COMPLIANCE WITH THE PROVISIONS AND STANDARDS OF THESE DRAWINGS AND SPECIFICATIONS.
5.3 THE CONTRACTOR AGREES TO TRANSFER ALL MANUFACTURER'S/SUPPLIER'S WARRANTIES AND GUARANTEES TO THE OWNER.

600 VOLT CLASS CABLE

- 1. MINIMUM SIZE #12 AWG EXCEPT FOR CONTROL CIRCUITS WHICH MAY BE #14 OR SIGNAL CIRCUITS WHICH SHALL BE INDICATED.
2. CIRCUIT CONDUCTORS #6 AWG OR SMALLER TO BE "THWN" COPPER. #4 THROUGH #2 AWG TO BE "XHHW" STRANDED COPPER.

- 3. CONDUCTOR INSULATION SHALL BE OF TYPE RECOGNIZED BY THE NATIONAL ELECTRICAL CODE AS APPROVED FOR ITS PARTICULAR APPLICATION AND THE "LOCAL CODES" WHICHEVER IS MORE STRINGENT.
4. SPLICES IN WIRES NO. 10 AWG AND SMALLER SHALL BE MADE WITH AN INSULATED, SOLDERLESS, PRESSURE TYPE CONNECTOR, TYPE I, CLASS 1, GRADE B, STYLE G, OR TYPE II, CLASS 1 OF FS W-S-610 AND CONFORMING TO THE APPLICABLE REQUIREMENTS OF UL 486A.
5. SPLICES IN WIRES NO. 8 AWG AND LARGER SHALL BE MADE WITH NONINSULATED, SOLDERLESS, PRESSURE TYPE CONNECTOR, TYPE II, CLASS 2 OF FS W-S-610, CONFORMING TO THE APPLICABLE REQUIREMENTS OF UL 486A AND UL 486B.
6. ALL CABLES SHALL BE PROPERLY COATED WITH PULLING COMPOUND (AQUA GEL, CRC, OR EQUAL) BEFORE BEING PULLED INTO CONDUITS SO AS TO PREVENT MECHANICAL DAMAGE TO THE CABLES DURING INSTALLATION.
7. ALL CONDUCTORS SHALL BE NUMBERED WITH "TUBE SLEEVE" TYPE TAGS WITH HEAT IMPRESSED LETTERS AND NUMBERS.

GROUNDING

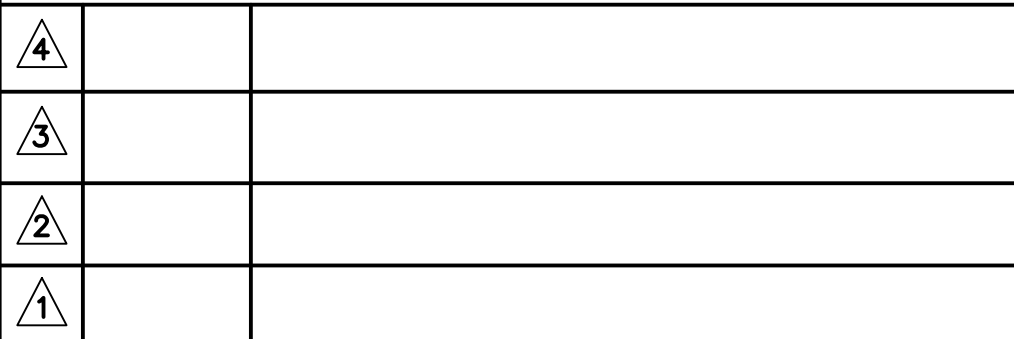
- 1. A RESISTANCE OF NOT GREATER THAN 25 OHMS SHALL BE PROVIDED, UNLESS OTHERWISE SPECIFIED.
2. GROUND RODS SHALL BE COPPER -CLAD STEEL CONFORMING TO UL 467, 3/4 INCH IN DIAMETER BY 10 FEET IN LENGTH.
3. CONNECTIONS ABOVE GRADE SHALL BE MADE WITH BOLTED SOLDERLESS CONNECTORS, AND THOSE BELOW GRADE SHALL BE MADE BY A FUSION -WELDING PROCESS.
4. BASE OF LIGHTING POLES SHALL BE CONNECTED TO AN ADJACENT GROUND ROD AS INDICATED ON PLANS.

LOW VOLTAGE (600V OR BELOW) CIRCUIT BREAKERS

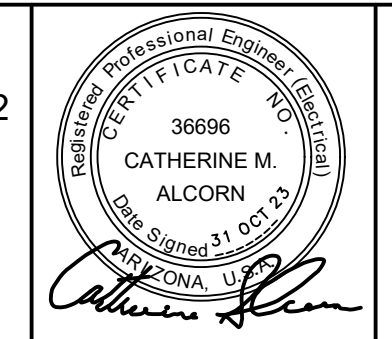
- 1. CIRCUIT BREAKER FRAME, TRIP, SHORT CIRCUIT, AND INTERRUPTION RATINGS SHALL BE AS INDICATED ON THE PLANS.
2. CIRCUIT BREAKERS FOR MOUNTING INSIDE PANELBOARDS SHALL BE BOLT-ON TYPE WITH A SHORT CIRCUIT RATING EQUAL TO OR GREATER THAN THE BRACING OF THE PANELBOARD BUS.

LIGHTING

- 1. LAMPS ARE IDENTIFIED FOR EACH LUMINAIRE IN THE LIGHTING FIXTURE SCHEDULE ON THE PLANS.
2. LIGHTING FIXTURES AND ELECTRICAL COMPONENTS SHALL BE UL LABELED AND RATED FOR AREA CLASSIFICATION AS INDICATED.
3. LOCATION OF LIGHTING FIXTURES ON PLANS IS INTENDED TO BE USED AS A GUIDE.
4. THE QUALITY STANDARD IS ESTABLISHED BY THE FIXTURE LISTED IN THE LIGHTING FIXTURE SCHEDULE.
5. LIGHT POLES SHALL BE AS INDICATED ON THE PLANS.



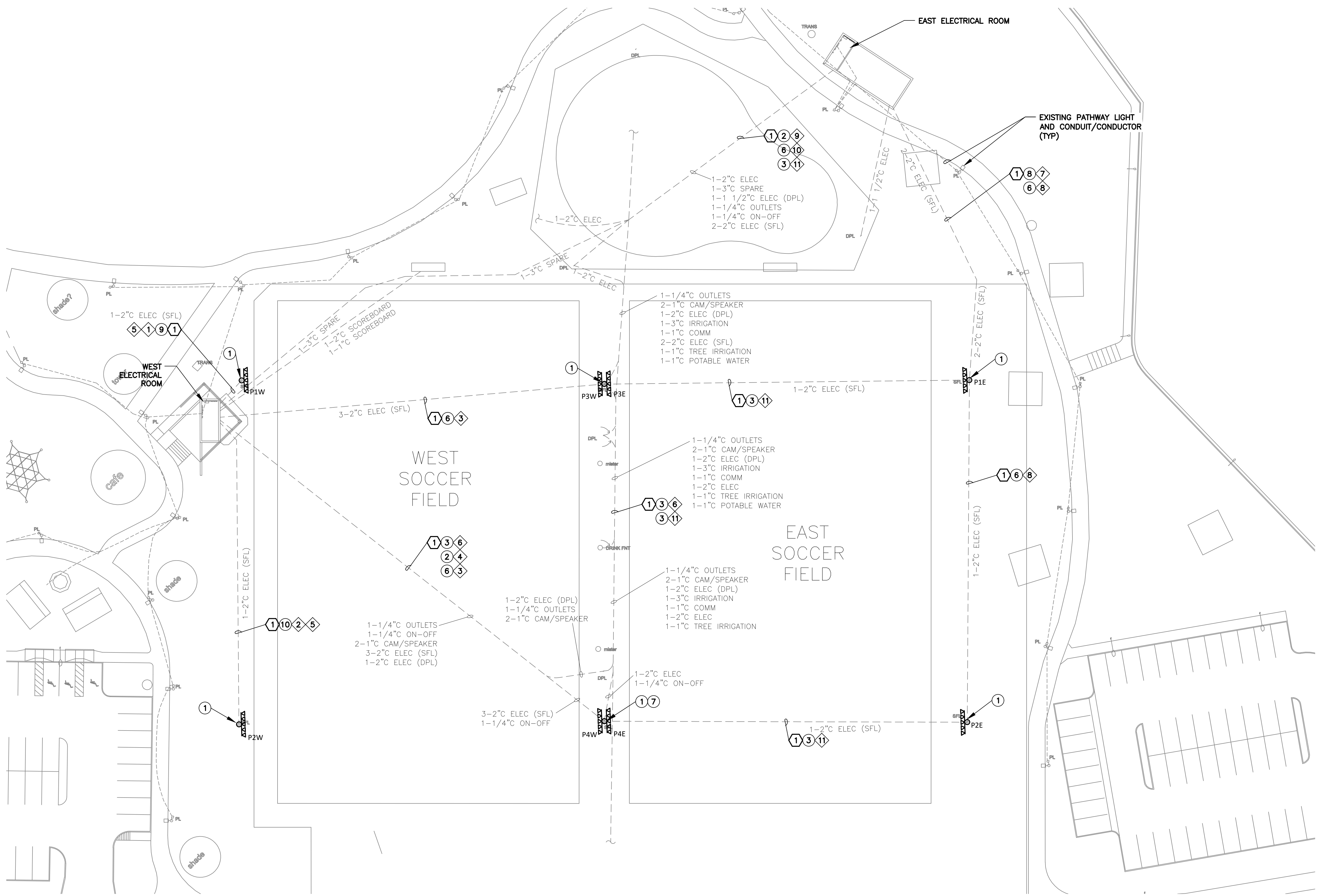
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ELECTRICAL SPECIFICATIONS
E0.2 SHEET 2 OF 10



CONSTRUCTION NOTES

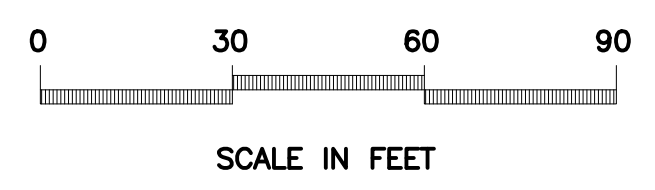
- ① NEW LED SPORTS LIGHTING FIXTURES ON NEW STEEL POLE WITH 20A, 120V GFI DUPLEX RECEPTACLE IN WEATHERPROOF COVER MOUNTED AT 48" AFG.
- ② 3-#4, #4 GND
- ③ 2-#10, #10 GND
- ④ 2-#12, #12 GND
- ⑤ 3-#8, #8 GND
- ⑥ 3-#2, #2 GND
- ⑦ LOCATION OF PUSHBUTTON LIGHTING CONTROLLER WITH TIME OUT FUNCTION (ONE PER FIELD)
- ⑧ 3-#6, #6 GND
- ⑨ 3-#8, 2-#12, #8 GND
- ⑩ 3-#4, 2-#12, #4 GND

REFERENCE NOTES

- ① EXISTING CONDUIT

CIRCUIT IDENTIFICATION

- ① POLE P1W LIGHTING CIRCUIT WB-9,11
- ② POLE P2W LIGHTING CIRCUIT WB-10,12
- ③ POLE P3W LIGHTING CIRCUIT WB-13,15
- ④ POLE P4W LIGHTING CIRCUIT WB-14,16
- ⑤ POLE P1W AND P2W RECEPTACLE CIRCUIT WB-17
- ⑥ POLE P3W AND P4W RECEPTACLE CIRCUIT WB-18
- ⑦ POLE P1E LIGHTING CIRCUIT EB-13,15
- ⑧ POLE P2E LIGHTING CIRCUIT EB-10,12
- ⑨ POLE P3E LIGHTING CIRCUIT EB-14,16
- ⑩ POLE P4E LIGHTING CIRCUIT EB-18,20
- ⑪ POLE P1E AND P2E RECEPTACLE CIRCUIT EB-17



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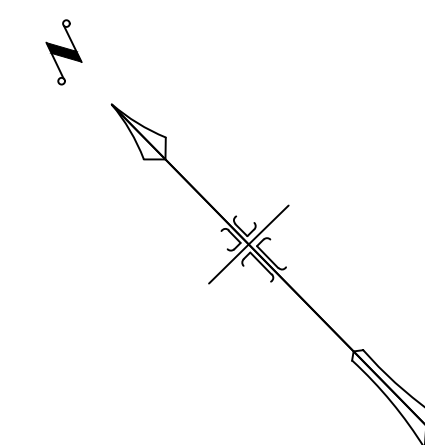
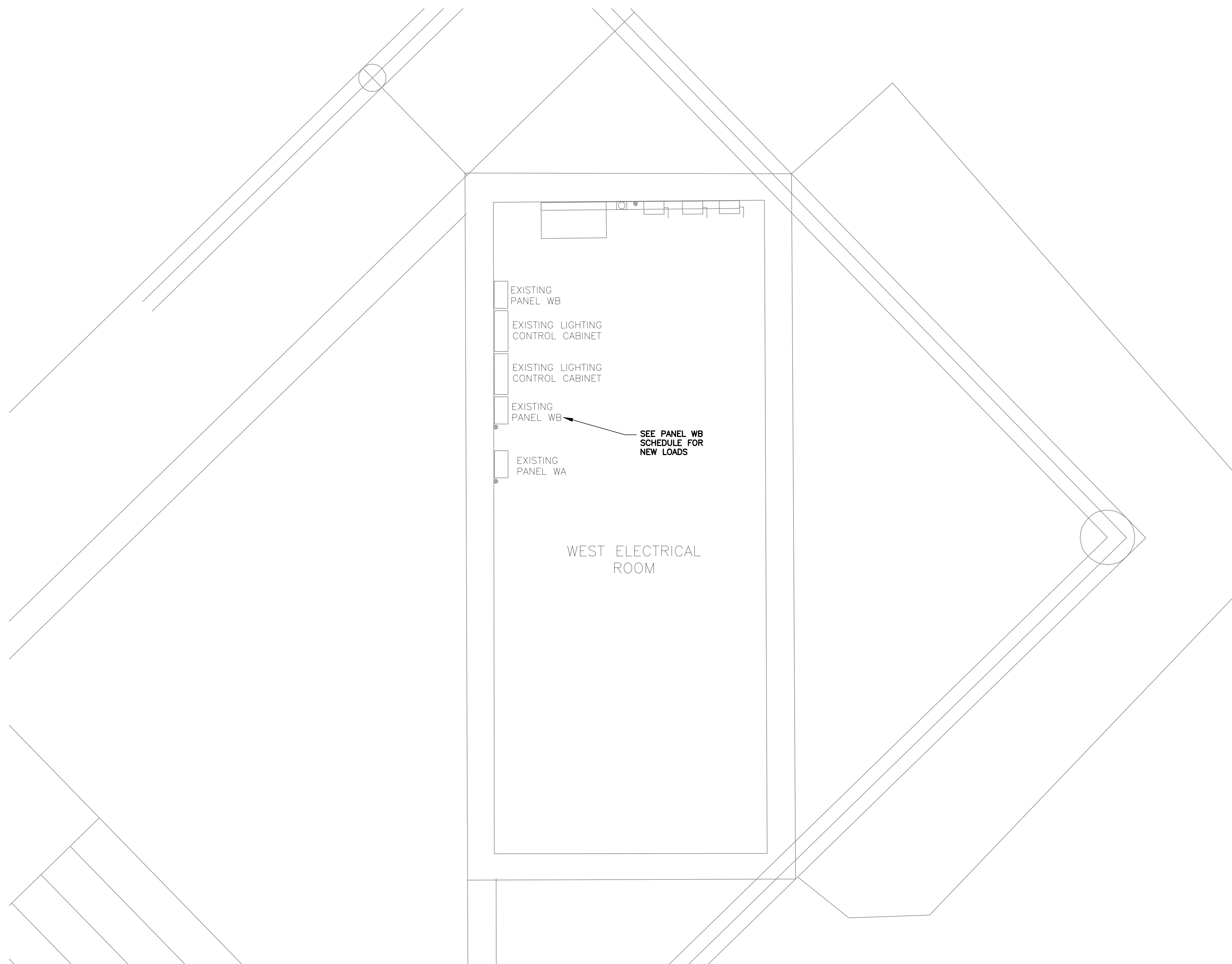


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 ELECTRICAL SITE PLAN

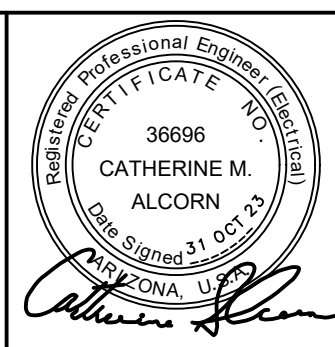
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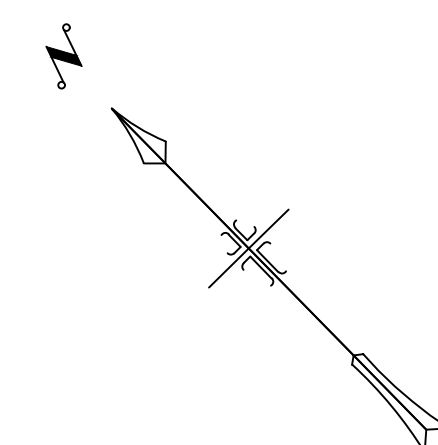
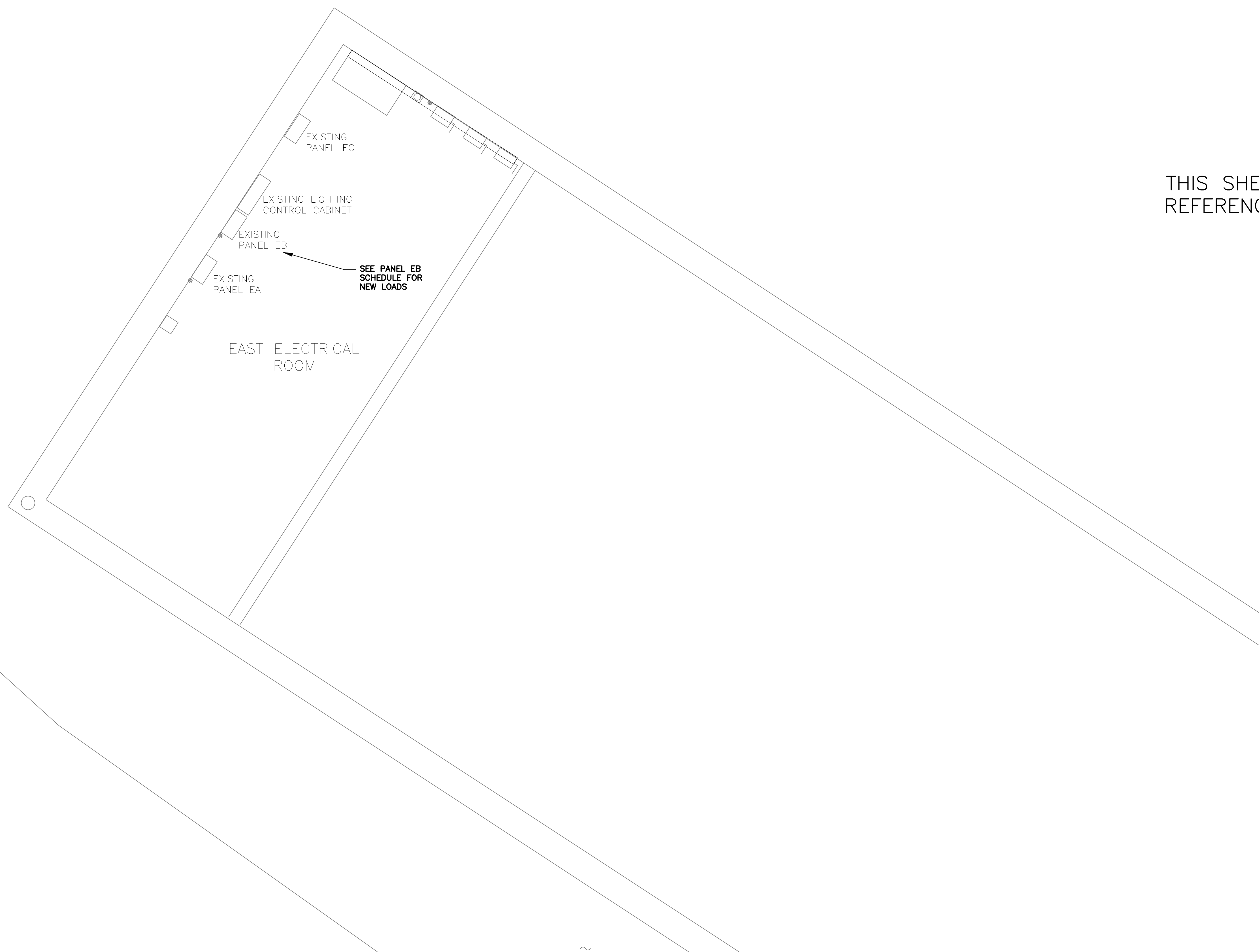
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TOWN OF THATCHER
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WEST ELECTRICAL BUILDING

E1.2
SHEET
4 OF 10

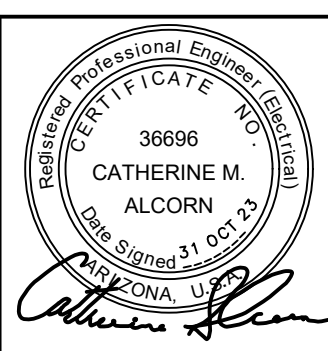
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DESIGNED CA
 DRAWN JBW
 CHECKED RD
 DATE 10/23
 PROJECT NO. 23028

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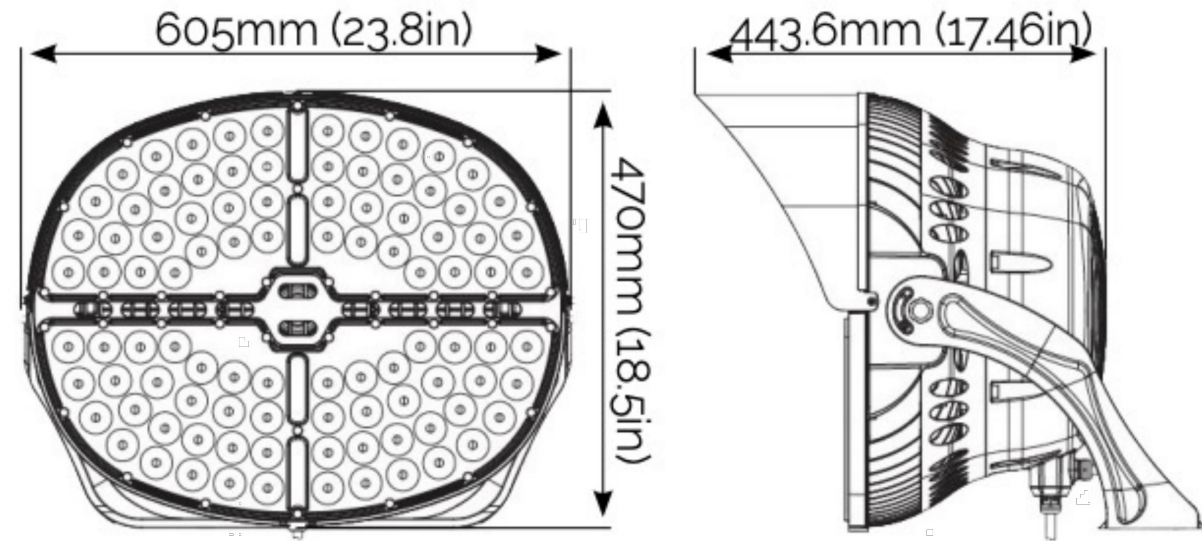
TOWN OF THATCHER
THATCHER RECREATIONAL COMPLEX – SOCCER FIELD LIGHTING
EAST ELECTRICAL BUILDING

E1.3
 SHEET
5 OF 10



ProDIODE III LED Sports Lighting Fixture Specifications

- Wattage: 850W
- Efficiency: 132lm/w
- Ambient Temp Range: -40 to 50C
- Beam Spread: Medium, Narrow
- Driver: Inventronics
- Fixture EPA: 3.0
- Voltage: 120-277V, 277-480V
- CR: ≥70
- Standard Warranty: Five Years
- Driver Location: Integral or Remote
- Color Temperature: 3000-5700k
- Weight: 62 lbs



Part # Information

Fixture Series (PDIII) - Wattage (850) - Aiming Angle (M, N) - Voltage (120, 208, 240, 277, 347, 480) - Driver Location (R for Remote, I for Integral)

Complete Part # Example: PDIII - 850 - M - 480 - R

NOTE

SPORTS LIGHTING SHALL BE MANUFACTURED BY PRO SPORTS LIGHTING (OR EQUAL) AND SHALL BE CAPABLE OF INTEGRATING WITH EXISTING LIGHTGRID LIGHTING CONTROL SYSTEM. THE FOLLOWING SHALL BE SUBMITTED TO ENGINEER FOR REVIEW:

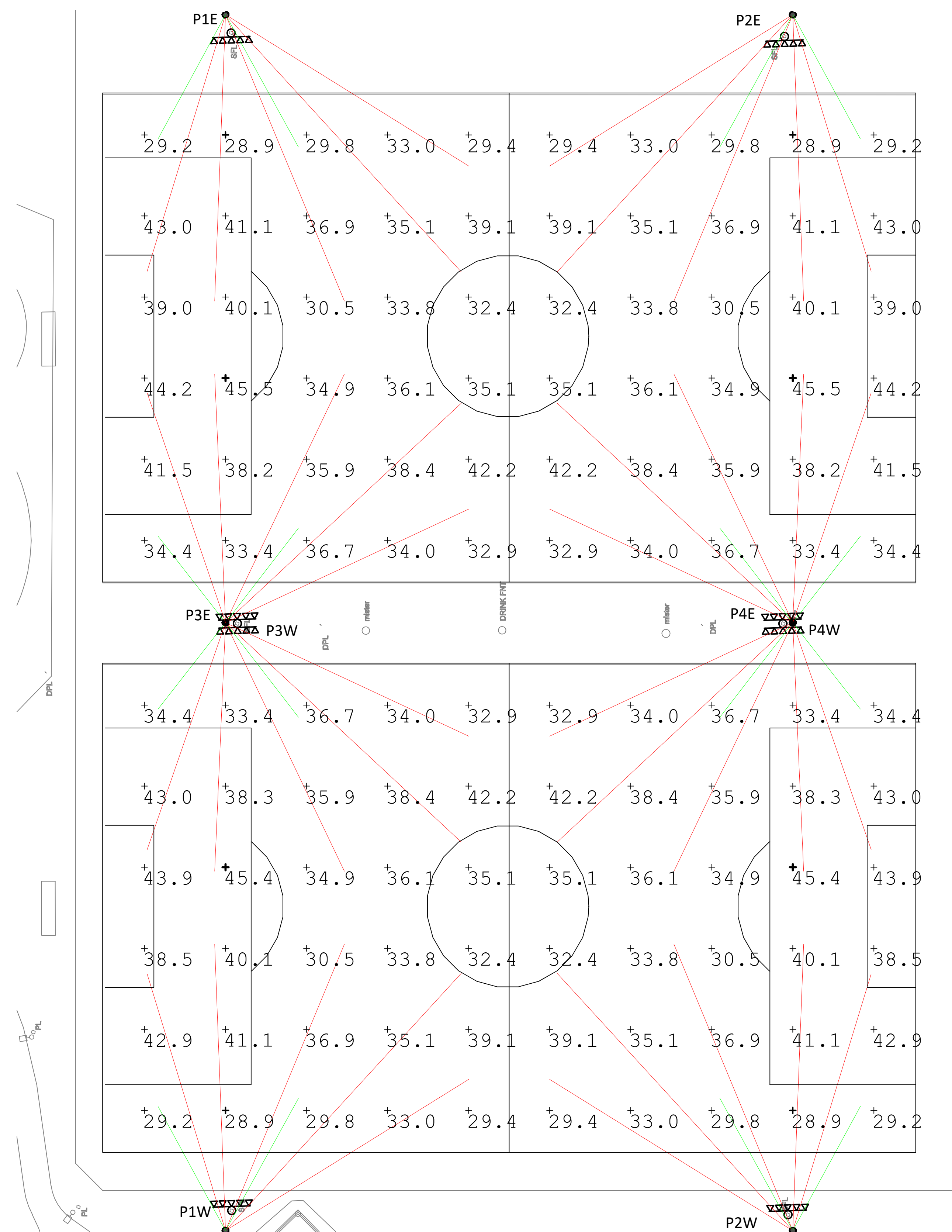
1. INFORMATION AND CALCULATIONS TO SUBSTANTIATE THE PRODUCTS SUBMITTED MEET REQUIREMENTS OF STANDARDS REFERENCED.
2. MANUFACTURER'S TECHNICAL INFORMATION ON PRODUCTS TO BE USED INCLUDING PHOTOMETRIC PERFORMANCE CURVES FOR THE FIXTURE AND BALLAST DATA.
3. ACKNOWLEDGEMENT THAT PRODUCTS SUBMITTED ARE UL OR ETL LISTED.
4. WHEN GENERAL DATA SHEETS CONSTITUTE PART OF THE SUBMITTAL SPECIFICALLY IDENTIFY THE PRODUCTS TO BE USED ON THIS PROJECT.
5. MANUFACTURER'S INSTALLATION INSTRUCTIONS.
6. UL NAMEPLATE DATA (VOLTAGE, WATTAGE, ETC..).
7. FINISHES, COLORS, AND MOUNTING TYPE.
8. POLE, FIXTURE, AND ACCESSORIES.
9. POLE WIND LOADING (INCLUDING GUSTS).

Luminaire Schedule

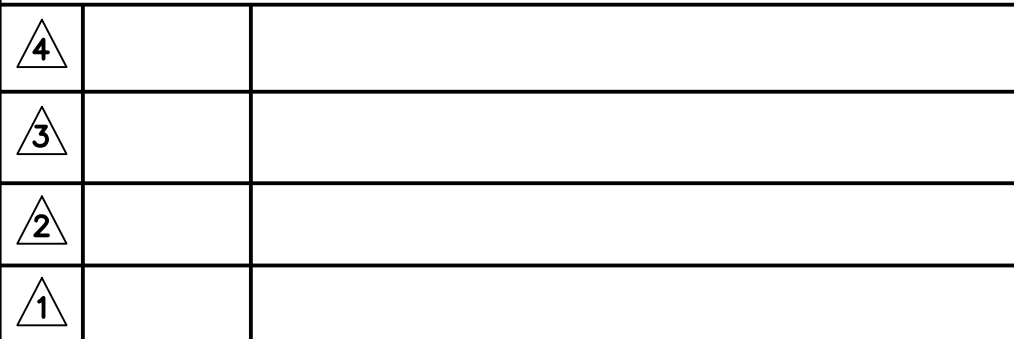
Symbol	Qty	Label
⊕	16	ProDIODE III - W
⊙	40	ProDIODE III - M

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Max/Min	# Pts	CV	UG
Soccer Field - Field One	Illuminance	Fc	36.16	45.5	28.9	1.57	60	0.12	1.47
Soccer Field - Field Two	Illuminance	Fc	36.18	45.4	28.9	1.57	60	0.13	1.47



NOT TO SCALE



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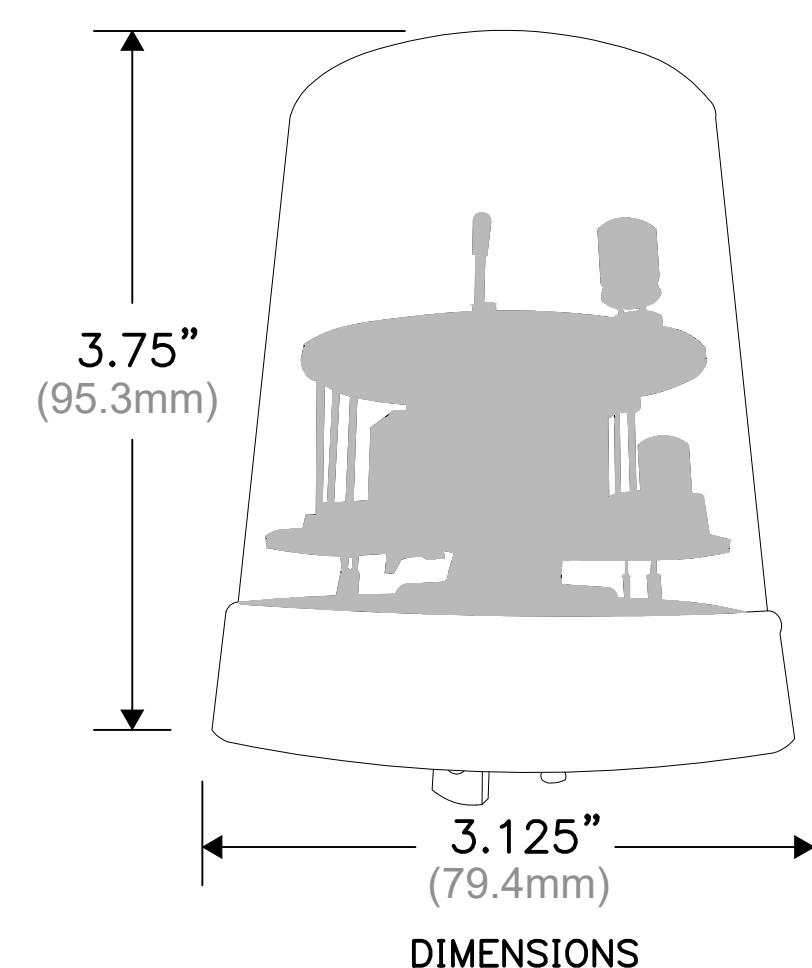
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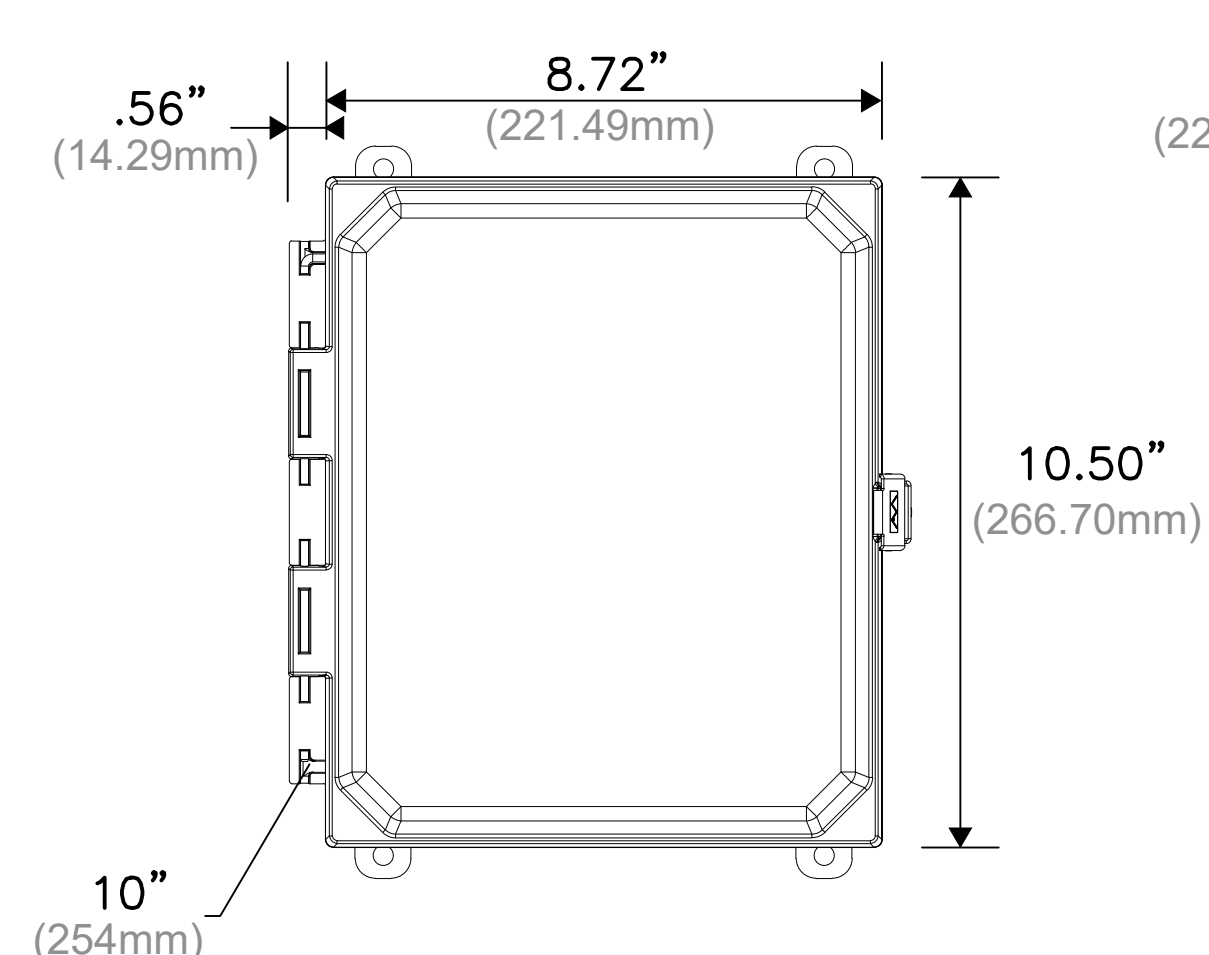
TOWN OF THATCHER
THATCHER RECREATIONAL COMPLEX – SOCCER FIELD LIGHTING
PHOTOMETRICS

E2.1

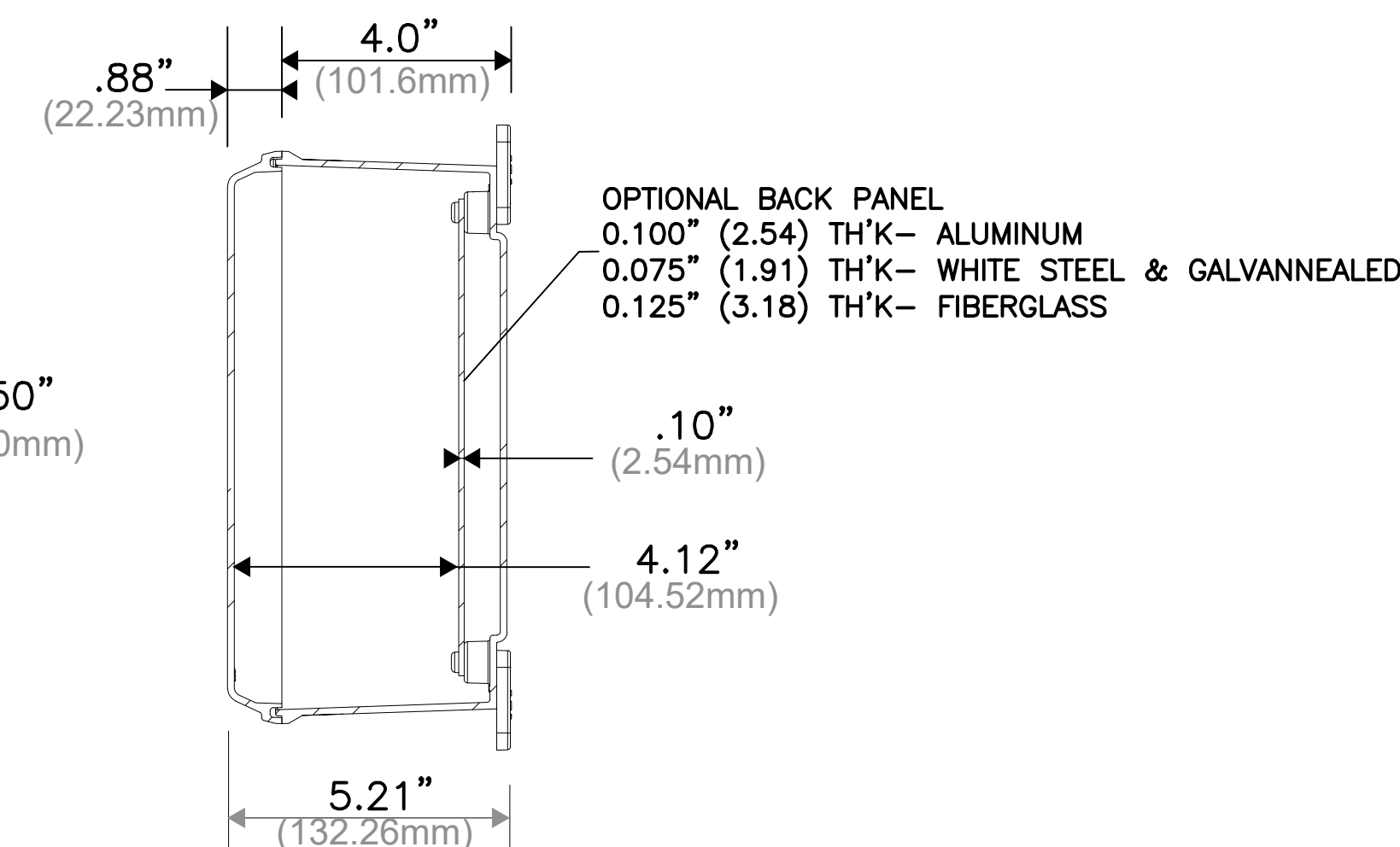
SHEET
6 OF 10



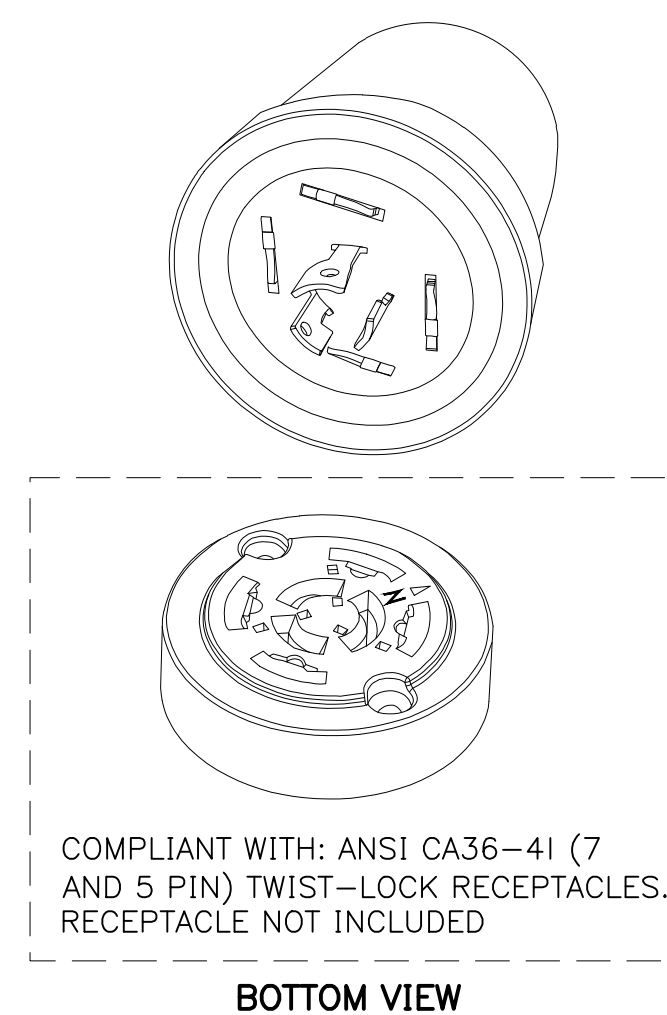
DIMENSIONS



DIMENSIONS

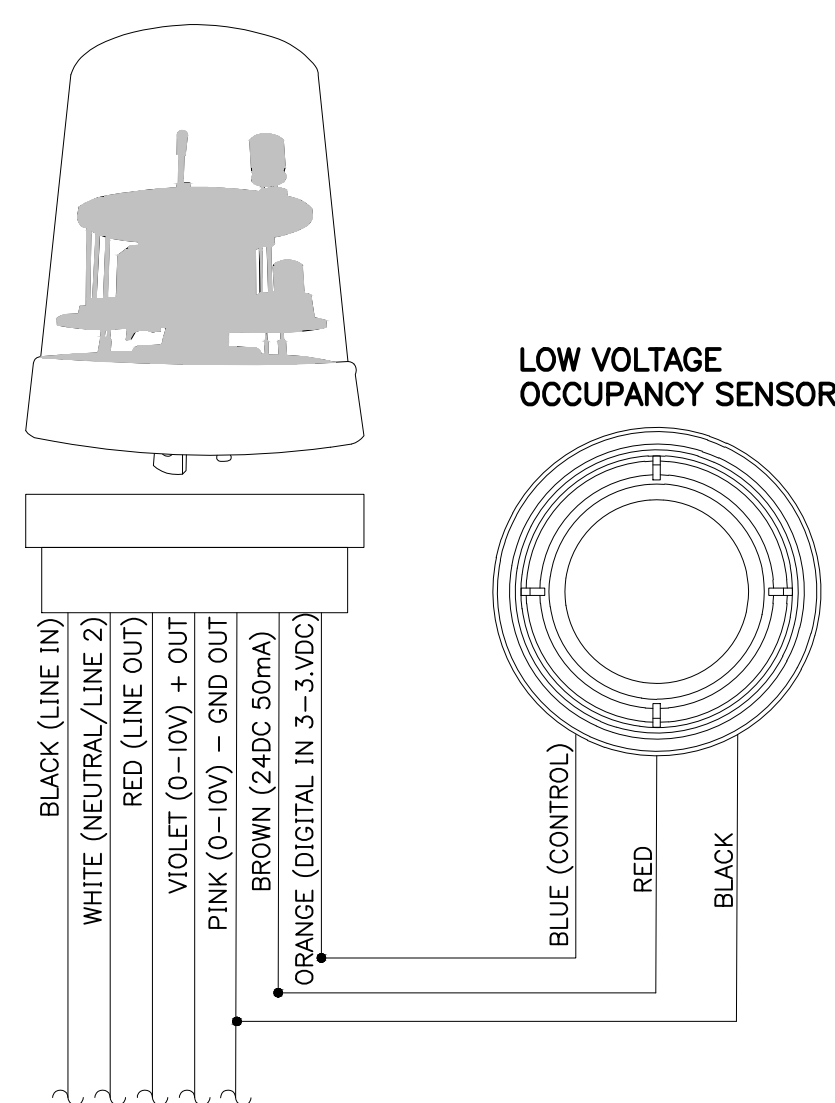


OPTIONAL BACK PANEL
 0.100" (2.54) TH'K- ALUMINUM
 0.075" (1.91) TH'K- WHITE STEEL & GALVANNEALED
 0.125" (3.18) TH'K- FIBERGLASS



COMPLIANT WITH: ANSI CA36-41 (7 AND 5 PIN) TWIST-LOCK RECEPTACLES. RECEPTACLE NOT INCLUDED

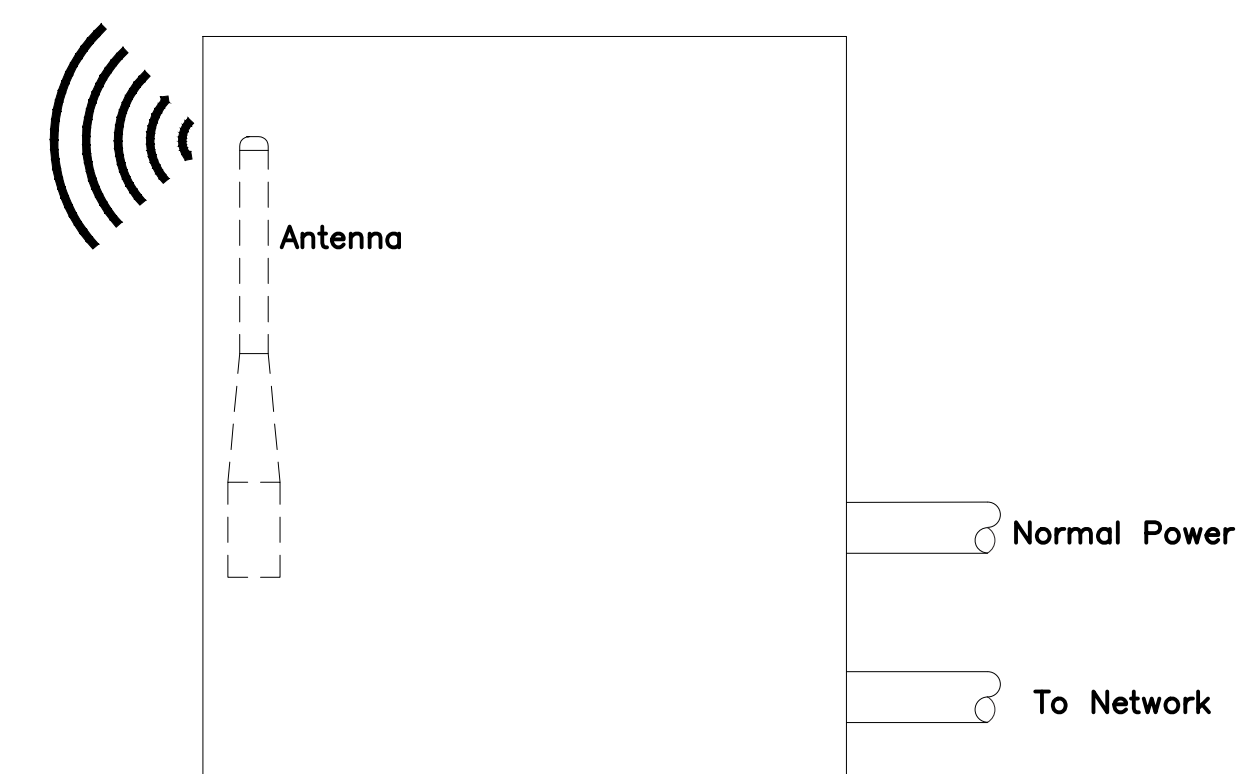
BOTTOM VIEW



WIRING DIAGRAM

A LIGHTGRID WIRELESS EXTERNAL MODULE DETAIL
 NTS

- NOTES:
1. LIGHTGRID MODULE TO BE INSTALLED ON EACH LIGHT POLE BALLOT ENCLOSURE.
 2. ELECTRICAL CONTRACTOR TO LOG SERIAL NUMBER FOR EVERY FIXTURE ANTICIPATED TO BE CONNECTED TO LIGHTGRID LIGHTING CONTROL SYSTEM. COORDINATE EXACT REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION. PROGRAMMING AND COMMISSIONING SHALL BE PERFORMED BY HUBBELL OR A HUBBELL AUTHORIZED COMPANY AND ONSITE TRAINING TO OWNER'S REPRESENTATIVES SHALL CONSIST OF ONE (1) DAY OF COMMISSIONING AND ONE (1) DAY OF TRAINING.



WIRING DIAGRAM

B LIGHTGRID GATEWAY DETAIL
 NTS

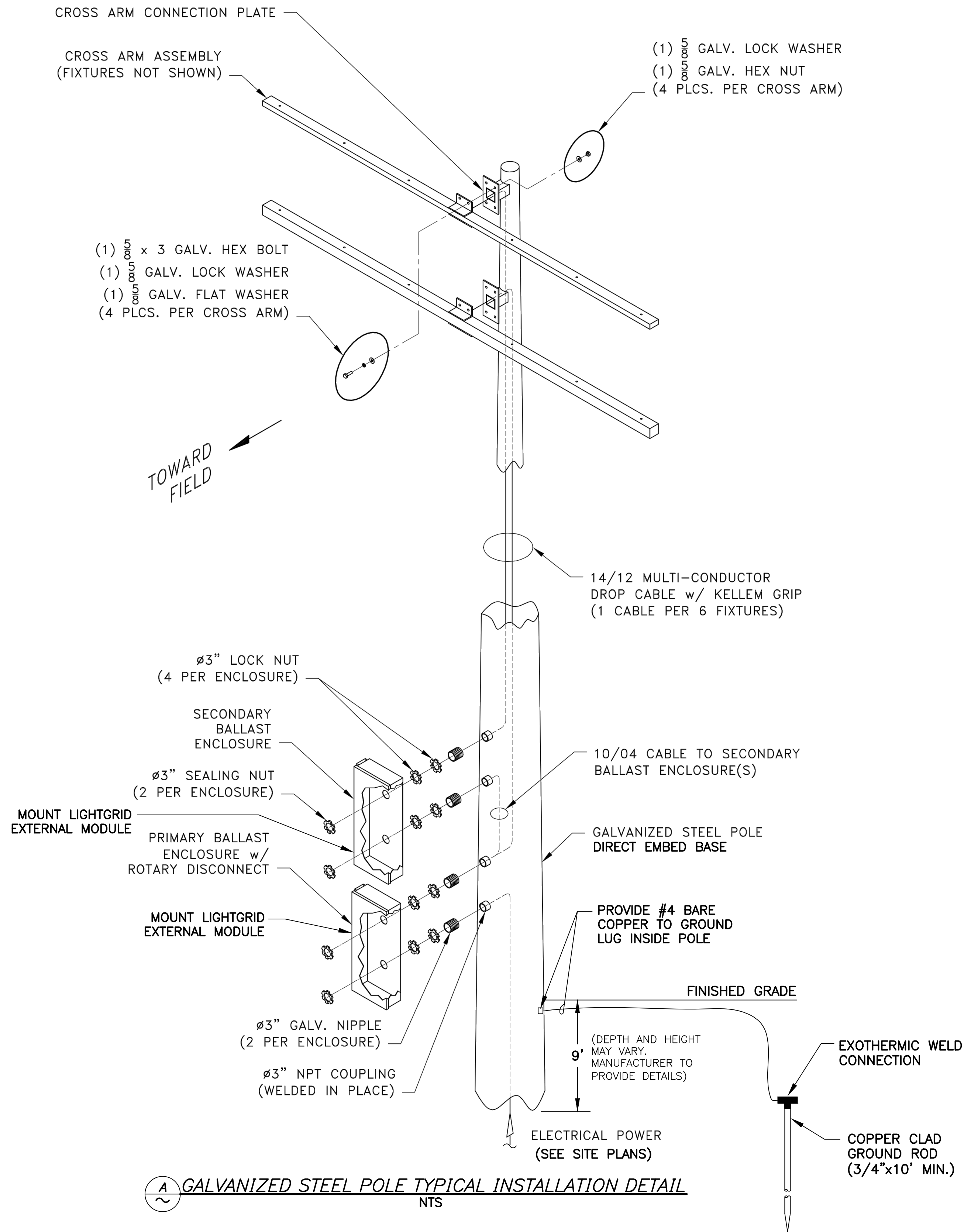
- NOTES:
1. LIGHTGRID GATEWAY TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
 2. IN ORDER TO GET ACCESS INTO THE GATEWAY, THE GATEWAY MUST BE CONNECTED TO POWER AT ALL TIMES AND CONNECTED TO THE CLIENTS NETWORK. LOGGING INTO THE GATEWAY IS DONE BY USING THE WISCAPE SOFTWARE SUITE VIA THE CLIENT'S NETWORK.
 3. PROVIDE 120V CONNECTION TO EACH GATEWAY AND A NETWORK CONNECTION. GATEWAY MUST BE LOCATED WITHIN 1000' OF THE FIRST LIGHT FIXTURE.

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TOWN OF THATCHER
 THATCHER RECREATIONAL COMPLEX – SOCCER FIELD LIGHTING
 ELECTRICAL DETAILS

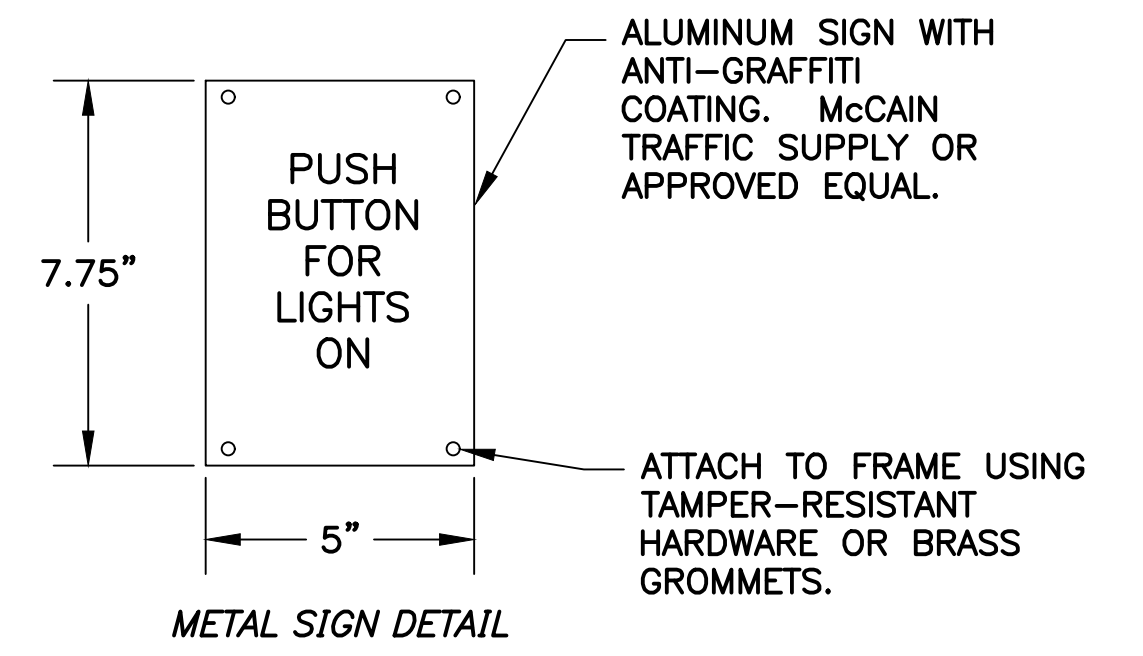


LIGHTING CONTROL DESCRIPTION

SOCCER FIELD LIGHTING SHALL BE CONTROLLED BY EXISTING LIGHTGRID SYSTEM. A PUSHBUTTON (ONE PER FIELD) SHALL BE PROVIDED FOR PUBLIC USE TO TURN ON THE FIELD LIGHTS (WEST AND EAST FIELD INDIVIDUALLY CONTROLLER) (LOCATED AT POLE P4E/P4W). THIS MANUAL FUNCTION SHALL TIME-OUT AFTER A PRESCRIBED AMOUNT OF HOURS (TO BE DETERMINED BY TOWN OF THATCHER) AND SHALL BE ABLE TO BE OVERRIDDEN BY THE LIGHTGRID SYSTEM REMOTELY.

NOTES

1. PROVIDE 20A, 120V GFI DUPLEX RECEPTACLE IN WEATHERPROOF COVER MOUNTED AT 36" ABOVE FINISHED GRADE AT EACH POLE.
2. 70' LIGHT FIXTURE MOUNTING HEIGHT.
3. FOR POLE P4E/P4W ONLY: MOUNT LIGHTGRID+ WIRELESS INTERNAL FIXTURE MODULE IN NEMA 4 ENCLOSURE BELOW CONTACTOR CABINET AND MAKE REQUIRED CONNECTION. MOUNT LOW VOLTAGE PUSHBUTTON FOR FIELD LIGHTS BELOW AT 48" AFG (APPROXIMATE) AND PROVIDED REQUIRED LOW VOLTAGE WIRING TO INTERNAL FIXTURE MODULE. SEE DETAIL B FOR SIGN DETAIL.



B PUSH-BUTTON SIGN DETAIL
NTS

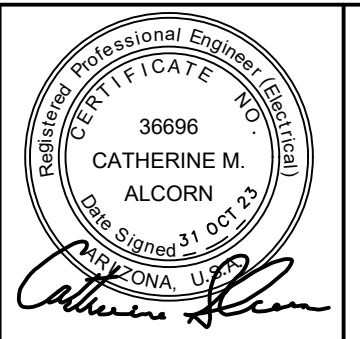
NOTES

1. TWO (2) SIGNS ON POLE P4E/P4W ONLY (ONE PER FIELD). MOUNT AT 72" ABOVE FINISHED GRADE.

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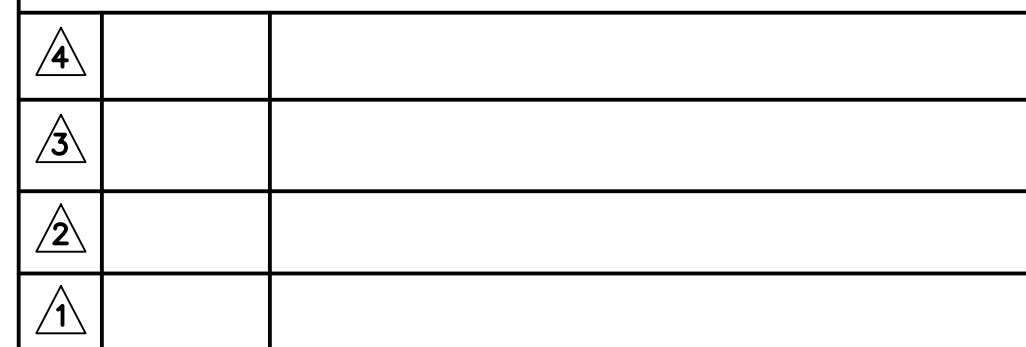
TOWN OF THATCHER
THATCHER RECREATIONAL COMPLEX – SOCCER FIELD LIGHTING
ELECTRICAL DETAILS

PANEL: WB		VOLTAGE: 120/240		MAIN CB: MLO		BUS AMPS: 225A	
CB TYPE: BOLT-ON		MOUNTING: SURFACE		BRACING: 22KAIC		BKR AIC: 22KAIC	
CIRCUIT DESCRIPTION	BKR	CIRCUIT	LINE 1	LINE 2	CIRCUIT	BKR	CIRCUIT DESCRIPTION
PATHWAY LIGHTING N	20	1	177		2	20	SPARE
	/					/	
	2	3		177	4	2	
PATHWAY LIGHTINGS	20	5	202		6	20	PATHWAY LIGHTING E
	/		177			/	
	2	7		202	8	2	
				177			
SOCCER FIELD POLE P1W	30	9	2975		10	30	SOCCER FIELD POLE P2W
	/		2975			/	
	2	11		2975	12	2	
				2975			
SOCCER FIELD POLE P3W	30	13	2975		14	30	SOCCER FIELD POLE P4W
	/		2975			/	
	2	15		2975	16	2	
				2975			
RECEPTACLE SOCCER FIELD POLE P1W, P2W	20/1	17	360		18	20/1	RECEPTACLE SOCCER FIELD POLE P3W, P4W
			360				
SPACE		19			20		SPACE
SPACE		21			22		SPACE
SPACE		23			24		SPACE
SPACE		25			26		SPACE
NO NAME	20/1	27			28		SPACE
NO NAME	20/1	29			30		SPACE
NO NAME	20/1	31			32		SPACE
NO NAME	20/1	33			34		SPACE
NO NAME	20/1	35			36		SPACE
NO NAME	20/1	37			38		SPACE
NO NAME	20/1	39			40		SPACE
NO NAME	20/1	41			42		SPACE
CONNECTED KVA PER PHASE			13.2	12.5	NOTES:		
CONNECTED AMPS PER PHASE			109.8	103.8	NEW BREAKERS TO MATCH EXISTING IN BRACING AND TYPE		
25% OF CONTINUOUS & LIGHTING LOAD (KVA)			3.1	3.1			
LARGEST MOTOR (25%)			0.0	0.0			
CODE KVA PER PHASE			16.3	15.6			
CODE AMPS PER PHASE AT 120V			135.7	129.8			

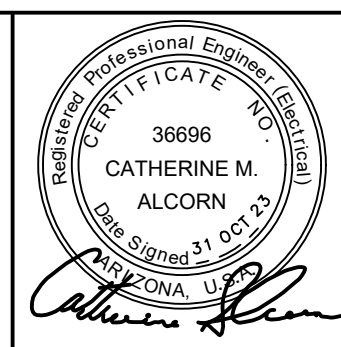
A WEST SES – EXISTING PANEL WB SCHEDULE

PANEL: EB		VOLTAGE: 120/240		MAIN CB: MLO		BUS AMPS: 225A	
CB TYPE: BOLT-ON		MOUNTING: SURFACE		BRACING: 22KAIC		BKR AIC: 22KAIC	
CIRCUIT DESCRIPTION	BKR	CIRCUIT	LINE 1	LINE 2	CIRCUIT	BKR	CIRCUIT DESCRIPTION
PATHWAY LIGHTING N	20	1	152		2	20	PATHWAY LIGHTINGS
	/		177			/	
	2	3		152	4	2	
				177			
wiSCAPE EXTERNAL GATEWAY	15/1	5	10		6	20/1	120V QUAD RECEPTACLE
			720				
wiSCAPE ENTERPRISE SERVER	20/1	7		180	8	20/1	120V QUAD RECEPTACLE
				720			
SPARE	20/1	9			10	30	SOCCER FIELD POLE P2E
				2975		/	
SPARE	20/1	11			12	2	
				2975		/	
SOCCER FIELD POLE P1E	30	13	2975		14	30	SOCCER FIELD POLE P3E
	/		2975			/	
	2	15		2975	16	2	
				2975			
RECEPTACLE SOCCER FIELD POLE P1E, P2E	20/1	17	360		18	30	SOCCER FIELD POLE P4E
			2975			/	
SPACE		19			20	2	
SPACE		21			22		SPACE
SPACE		23			24		SPACE
SPACE		25			26		SPACE
SPACE		27			28		SPACE
SPACE		29			30		SPACE
SPACE		31			32		SPACE
SPACE		33			34		SPACE
SPACE		35			36		SPACE
SPACE		37			38		SPACE
SPACE		39			40		SPACE
SPACE		41			42		SPACE
CONNECTED KVA PER PHASE			13.3	13.1	NOTES:		
CONNECTED AMPS PER PHASE			111.0	109.4			
25% OF CONTINUOUS & LIGHTING LOAD (KVA)			3.1	3.1			
LARGEST MOTOR (25%)			0.0	0.0			
CODE KVA PER PHASE			16.4	16.2			
CODE AMPS PER PHASE AT 120V			136.5	134.9			

B EAST SES – PANEL EB SCHEDULE



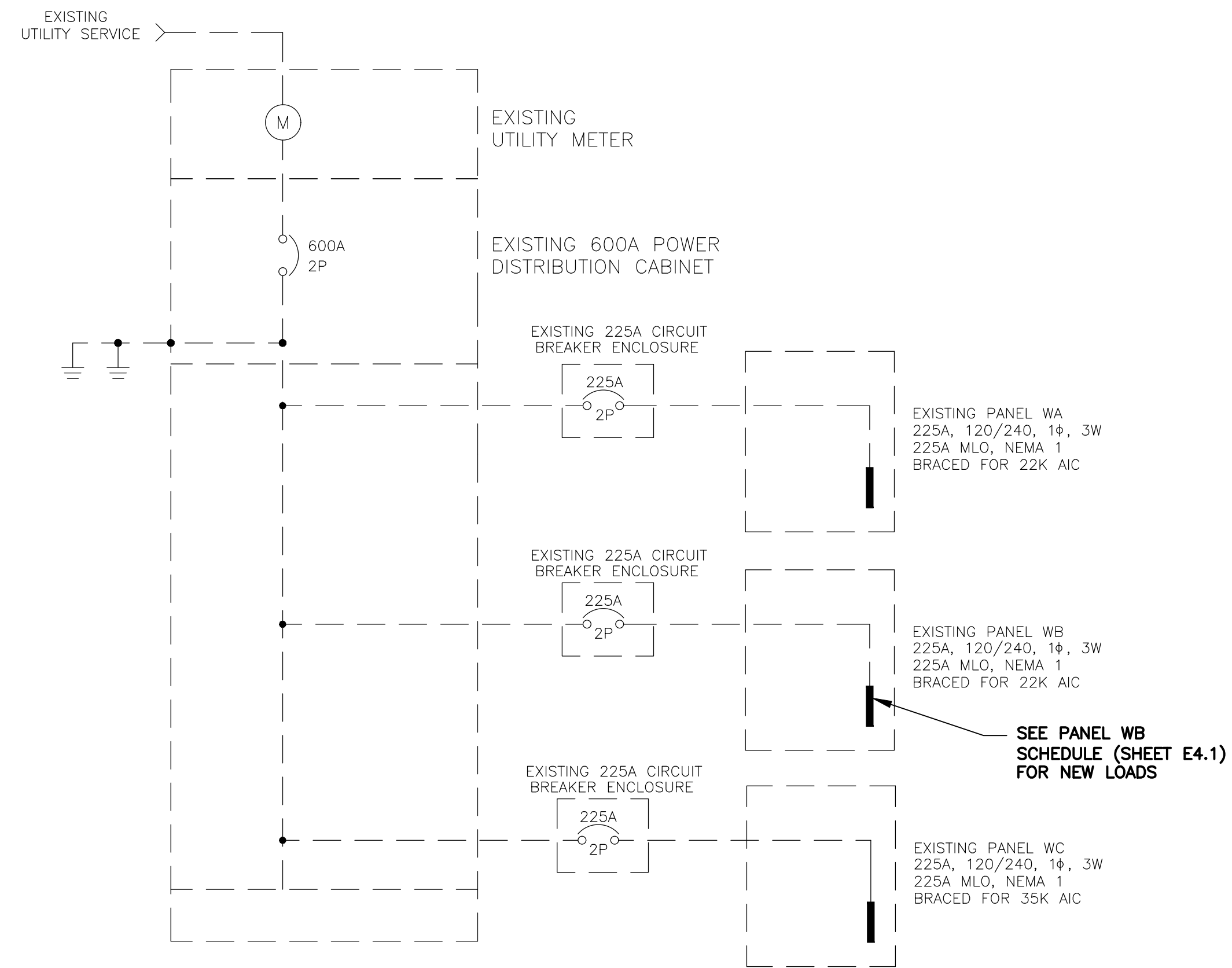
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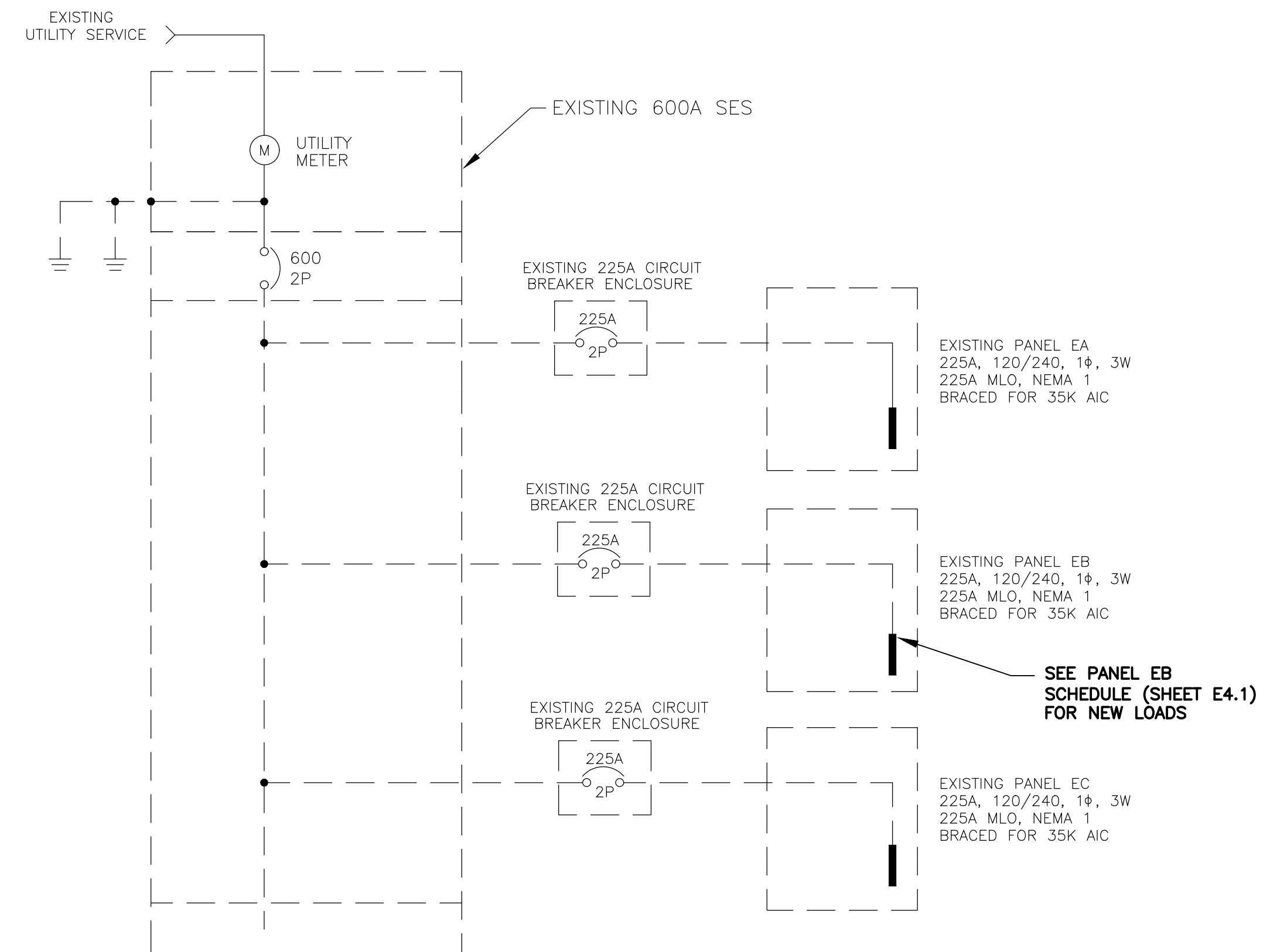
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TOWN OF THATCHER
 THATCHER RECREATIONAL COMPLEX – SOCCER FIELD LIGHTING
 PANEL SCHEDULES



A SINGLE LINE DIAGRAM – WEST SES
(FOR REFERENCE ONLY)

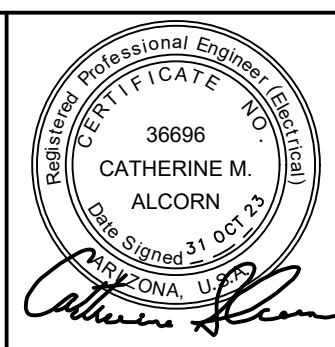


B SINGLE LINE DIAGRAM – EAST SES
(FOR REFERENCE ONLY)

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SINGLE LINE DIAGRAM