

### GENERAL PROJECT NOTES

- ALL ELECTRICAL INSTALLATIONS TO CONFORM TO THE LATEST NEC AND LOCAL CODES.
- ELECTRICAL CONTRACTOR'S PROJECT MANAGER AND ON-SITE PROJECT FOREMAN SHALL REVIEW VENDOR SUBMITTALS FOR ACCURACY PRIOR TO SUBMITTING TO ENGINEER. INACCURACIES SHALL BE CORRECTED PRIOR TO ENGINEER SUBMITTAL.
- SUBMITTALS FOR EACH SYSTEM WILL BE REVIEWED BY ENGINEER UP TO TWO TIMES - ONE FULL SUBMITTAL FOR OVERALL COMPLIANCE AND ONE RESUBMITTAL. ADDITIONAL REVIEWS WILL BE CHARGED TO CONTRACTOR AT ENGINEER'S STANDARD BILLING RATE.
- THE CLARITY OF RECORD DRAWING CHANGES MADE BY THE CONTRACTOR SHALL BE EQUAL TO THE ORIGINAL DRAWINGS AS JUDGED BY THE ARCHITECT OR THE RECORD SET WILL BE RETURNED TO THE CONTRACTOR FOR CLARIFICATION.
- WHEN THE GENERAL CONTRACT CALLS FOR "RECORD" OR "AS-BUILT" DRAWINGS TO BE FURNISHED BY THE CONTRACTOR AT JOB COMPLETION, THE ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO FURNISH A COMPLETE SET OF "BLUE-PRINT READY" AUTOCAD ELECTRICAL DRAWINGS FOR ALL CONTRACTOR GENERATED CHANGES FROM THE DRAWINGS OF A CLARITY EQUAL TO THE ORIGINAL DRAWINGS AS JUDGED BY THE ENGINEER. CONTACT ARCHITECT FOR DISKS OR REPRODUCIBLE ORIGINAL MEDIA. PROVIDE DRAWINGS ON CD IN AUTOCAD FORMAT.
- DO NOT SCALE ELECTRICAL PLANS. SEE CIVIL DRAWINGS FOR ACCURATE SITE DIMENSIONS. VERIFY BUILDING OTHER DIMENSIONS WITH FIELD CONDITIONS PRIOR TO BID.
- ELECTRICAL DEVICES CANNOT BE SHOWN TO SCALE AND SOMETIMES OVERLAP SITE AND BUILDING ELEMENTS. REFER TO CIVIL DRAWINGS FOR ACCURATE MOUNTING LOCATIONS
- PANEL INDEXES SHALL INCLUDE ALL PERTINENT INFORMATION ON THE PANEL SCHEDULES INCLUDING DISTINCT NAMES FOR EACH CIRCUIT AND INFORMATION ON LIGHTS, OUTLETS, EQUIPMENT, ETC. DO NOT SIMPLY COPY THE CIRCUIT DESCRIPTION COLUMN. INDEXES TO BE TYPEWRITTEN.
- UPDATE PANEL SCHEDULES AND EQUIPMENT LABELS TO REFLECT CHANGES MADE AS PART OF THIS PROJECT.
- COORDINATE MOUNTING AND LOCATION OF ALL SITE ELEMENTS WITH CIVIL DRAWINGS PRIOR TO INSTALLATION.
- EMT IS NOT ALLOWED OUT OF DOORS.
- DO NOT INSTALL IN-GRADE JUCTION BOXES UNLESS SPECIFICALLY SHOWN ON DRAWINGS. CONDUCTORS SHALL BE RUN CONTINUOUS WITHOUT SPLICING FROM SOURCE OR DEVICE TO NEXT DEVICE.
- CIRCUIT WIRE SIZES MUST, AT MINIMUM, MATCH NEC REQUIRED CONDUCTOR SIZES FOR CORRESPONDING OVERCURRENT PROTECTIVE DEVICES. VERIFY WITH PANEL SCHEDULES BEFORE PULLING WIRE.
- THE ELECTRICAL CONTRACTOR SHALL RUN BRANCH CIRCUIT CONDUITS IN ATTIC SPACES IN A NEAT AND WORKMANLIKE MANNER SO AS TO CONSERVE OPEN SPACES AS MUCH AS POSSIBLE. HVAC DUCTWORK AND PLUMBING SHALL HAVE LOCATION PRIORITY OVER BRANCH CIRCUIT CONDUIT RUNS.
- PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR, PULLED INTO THE CONDUIT WITH THE PHASE CONDUCTOR, IN ALL SERVICE, FEEDER, AND BRANCH CIRCUITS.
- PROVIDE A NEUTRAL CONDUCTOR FOR EACH BREAKER TRIP HANDLE. NEUTRALS SHALL NOT BE SHARED BETWEEN BRANCH CIRCUITS.
- ALL SITE CIRCUITS TO BE MINIMUM #6 CU IN MINIMUM 1" CONDUIT UNLESS OTHERWISE NOTED.
- MC CABLE IS NOT AN APPROVED ALTERNATE TO CONDUCTORS IN CONDUIT.
- DO NOT INSTALL MORE THAN THREE PHASE CONDUCTORS IN ANY HOME-RUN CONDUITS UNLESS SPECIFICALLY INDICATED ON DRAWINGS.
- REMOVE ALL OLD AND/OR UNUSED EXISTING CONDUIT AND ELECTRICAL APPARATUS FROM EXTERIOR OR INTERIOR EXPOSED SURFACES.
- WHERE EXISTING ELECTRICAL EQUIPMENT IS TO REMAIN BUT THE SURFACE THAT IT IS MOUNTED ON IS TO BE REWORKED UNDER OTHER CONTRACTS, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND INSTALL OR MODIFY THE EXISTING EQUIPMENT AS REQUIRED TO MEET THE DESIGN INTENT. SEE CIVIL DRAWINGS FOR COMPLETE INFORMATION.
- REMOVE ALL UNUSED CONDUITS AND CIRCUITS IN THE DEMOLITION AREA AS THEY ARE IDENTIFIED AS UNUSED OR ABANDONED.
- REMOVE ALL EXISTING ELECTRICAL DEVICES, EQUIPMENT, AND APPARATUS AS THEY ARE IDENTIFIED AS UNUSED OR ABANDONED.
- RELOCATE EXISTING CONDUITS AND CIRCUITS AS REQUIRED THAT ARE PRESENTLY SERVING EQUIPMENT THAT IS INTENDED TO REMAIN IN SERVICE BUT SAID CONDUITS ARE CURRENTLY RUNNING THROUGH AREAS TO BE DEMOLITIONED.
- WHERE EXISTING CONDUIT RUNS ARE RE-USED BY SPECIAL PERMISSION FROM THE ARCHITECT, A SEPARATE GREEN, INSULATED GROUND WIRE SHALL BE PULLED IN THE CONDUIT AND BONDED AT EACH END AS REQUIRED.
- FIELD VERIFY CONDITIONS FOR NEW WIRING. SURFACE RACEWAYS AND/OR BOXES MUST RECEIVE PRIOR APPROVAL FROM THE ARCHITECT AND OWNER AND WILL BE EVALUATED ON A CASE BY CASE BASIS DURING CONSTRUCTION. APPROVED RACEWAYS MUST BE PAINTED TO MATCH THE SURFACE ON WHICH THEY ARE MOUNTED.
- ALL PATCH, REPAIR, REPAINT AND COVER UP REQUIRED AS A RESULT OF ELECTRICAL REMODEL IS TO BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR, BUT ACTUAL WORK IS TO BE PERFORMED BY QUALIFIED PERSONNEL.
- FIXTURE COUNTS SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY. CONTRACTOR IS RESPONSIBLE TO VERIFY FIXTURE COUNTS AS PART OF BIDDING PROCESS.
- WHERE LIGHT FIXTURES AS SPECIFIED AS COLOR PER ARCHITECT, THIS SHALL BE INTERPRETED AS A NON-STANDARD COLOR.
- INSTALL MANUAL OVERRIDE ON PARKING LIGHTS.
- BEFORE RUNNING CONDUITS, PLACING OUTLETS OR ORDERING EQUIPMENT, THE CONTRACTOR SHALL REVIEW THE SPECIFICATIONS AND DESIGN AND SHOP DRAWINGS OF THE OTHER TRADES SERVED BY THE CONDUIT, OUTLETS, AND/OR EQUIPMENT AND NOTIFY ENGINEER OF CONFLICTS. WHERE NO NOTIFICATION IS GIVEN, THE CONTRACTOR WILL BE RESPONSIBLE TO REVISE INSTALLATIONS WITHOUT COST TO THE OWNER.
- PROVIDE NEUTRAL CONNECTION TO 208/240/480V, SINGLE-PHASE EQUIPMENT. RUN SEPARATE GROUND WIRE TO ALL OUTDOOR UNITS AND BOND TO THE EQUIPMENT GROUND LUG.
- ELECTRICAL CONTRACTOR SHALL INSTALL A PULL STRING IN ALL COMMUNICATIONS, SECURITY, AND OTHER LOW VOLTAGE CONDUITS FOR USE BY LOW VOLTAGE SYSTEM CONTRACTOR.
- ELECTRICAL CONTRACTOR SHALL INSTALL A PULL STRING IN ALL UNUSED POWER AND LIGHTING CONDUITS.
- REVIEW THE STATE DESIGN REQUIREMENTS MANUAL PRIOR TO BID.
- REVIEW THE USU A&E DESIGN MANUAL PRIOR TO BID.
- WHERE THERE ARE CONFLICTS IN THE DRAWINGS AND/OR SPECIFICATIONS THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO BID. WHERE NO NOTIFICATION IS GIVEN THE MORE STRINGENT INTERPRETATION (GENERALLY INTERPRETED TO BE THE MORE COSTLY) WILL BE ENFORCED.

### ELECTRICAL LEGEND

#### ANNOTATIONS

	DETAIL CALL-OUT; TOP "X" REFERS TO DETAIL NUMBER & BOTTOM "XXX" REFERS TO SHEET NUMBER
	KEYED NOTE CALLOUT
	EQUIPMENT CALLOUT

#### LIGHTING FIXTURES

	EMERGENCY LIGHT
	BATTERY PACK
	EMERGENCY FIXTURE
	WALL MOUNT FIXTURE
	POLE LIGHT; ONE HEAD
	POLE LIGHT; TWO HEAD
	DECORATIVE POLE LIGHT

#### BRANCH CIRCUITING

	QUANTITY OF CONDUCTORS: SHORT LINES = PHASE / SWITCH LONG LINES = NEUTRAL
	HOME-RUN

#### POWER AND DISTRIBUTION

	DISTRIBUTION PANEL
	PANELBOARD
	METER METER SOCKET

#### SITE ELECTRICAL

	ABANDONED 3-PHASE UNDERGROUND PRIMARY POWER
	EXISTING 3-PHASE UNDERGROUND PRIMARY POWER
	3-PHASE UNDERGROUND PRIMARY POWER
	3-PHASE UNDERGROUND SECONDARY POWER
	EXISTING UNDERGROUND TELEPHONE
	UNDERGROUND TELEPHONE
	UNDERGROUND TV
	POINT OF DISCONNECTION
	POINT OF CONNECTION
	UTILITY POLE

### ELECTRICAL ABBREVIATIONS

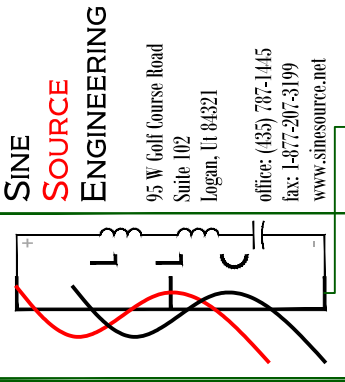
A	AMPERE	LTG	LIGHTING
AF	AMP FUSE	MAX	MAXIMUM
AFF	ABOVE FINISHED FLOOR	MCB	MAIN CIRCUIT BREAKER
AFG	ABOVE FINISHED GRADE	MECH	MECHANICAL
AFI	ARC-FAULT CIRCUIT-INTERRUPTER	MFR	MANUFACTURER
AIC	AMPERE INTERRUPTING CAPACITY	MIN	MINIMUM
AL	ALUMINUM	MLO	MAIN LUGS ONLY
ARCH	ARCHITECTURAL	MTD	MOUNTED
AS	AMP SWITCH	NEC	NATIONAL ELECTRICAL CODE
AWG	AMERICAN WIRE GAUGE	NECA	NATIONAL ELECTRICAL CONTRACTOR'S ASSOCIATION
BLDG	BUILDING	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
BKBD	BACKBOARD	NEUT	NEUTRAL
C	CONDUIT	NFC	NATIONAL FIRE CODE
CAB	CABINET	NC	NORMALLY CLOSED
CAT	CATALOG/CATEGORY	NIC	NOT IN CONTRACT
CB	CIRCUIT BREAKER	NL	NIGHT LITE
CKT	CIRCUIT	NO	NORMALLY OPEN
CLG	CEILING	NTS	NOT TO SCALE
CO	CONDUIT ONLY	OC	OVERCURRENT PROTECTION
COMM	COMMUNICATION	P	POLE
CONN	CONNECTION	PH	PHASE
CU	COPPER	PNL	PANEL
DEMO	DEMOLITION/DEMOLISH	PWR	POWER
DISC	DISCONNECT	QTY	QUANTITY
DN	DOWN	RECEP	RECEPTACLE
DWG	DRAWING	REQD	REQUIRED
EA	EACH	RGSC	RIGID GALVANIZED STEEL CONDUIT
ELEC	ELECTRICAL	RM	ROOM
ELEV	ELEVATOR	SCHED	SCHEDULE
EMER, EM	EMERGENCY	SECT	SECTION
EMT	ELECTRICAL METALLIC TUBING	SP	SINGLE POLE
EOLR	END OF LINE RESISTOR	SN	SOLID NEUTRAL
EQUIP	EQUIPMENT	SPEC	SPECIFICATION
EX, EXIST	EXISTING	SW	SWITCH
FBO	FURNISHED BY OTHERS	SWBD	SWITCHBOARD
FCU	FAN COIL UNIT	SWGR	SWITCH GEAR
FF	FINISHED FLOOR	SYS	SYSTEM
FIXT	FIXTURE	TEMP	TEMPORARY
FLEX	FLEXIBLE METALLIC CONDUIT (STEEL)	TELE	TELEPHONE
FLUOR	FLUORESCENT	XFMR	TRANSFORMER
FT	FEET OR FOOT	T-STAT	THERMOSTAT
GFI	GROUND FAULT INTERRUPTER	TWP	TWISTED PAIR
GND	GROUND	TWSP	TWISTED SHIELDED PAIR
HP	HORSEPOWER	TYP	TYPICAL
HVAC	HEATING, VENTILATING & AIR CONDITIONING	UBC	UNIFORM BUILDING CODE
IG	ISOLATED GROUND	UL	UNDERWRITERS LABORATORY
IMC	INTERMEDIATE METAL CONDUIT	UMC	UNIFORM MECHANICAL CODE
IN	INCH(ES)	UNO	UNLESS NOTED OTHERWISE
ISC	SHORT CIRCUIT AMPERES, KA	V	VOLT OR VOLTAGE
JB, J-BOX	JUNCTION BOX	VA	VOLT AMPERE
KCML	THOUSAND CIRCULAR MILS	W	WATT
KVA	KILOVOLT AMPERE	WG	WITH
KW	KILOWATT	WG	WIRE GUARD
		WP	UL LISTED WEATHERPROOF, NEMA 3R or 4

### SHEET INDEX

#	Sheet Title
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EE002	ELECTRICAL SPECIFICATIONS
ES100	ELECTRICAL SITE PLAN - DEMOLITION
ES101	ELECTRICAL SITE PLAN - LIGHTING
ES102	PHOTOMETRIC SITE PLAN
ES103	ELECTRICAL SITE PLAN - SECURITY
ESS01	ELECTRICAL SITE DETAILS
ESS02	ELECTRICAL SITE DETAILS
ES601	ELECTRICAL SCHEDULES

**Horrocks.**

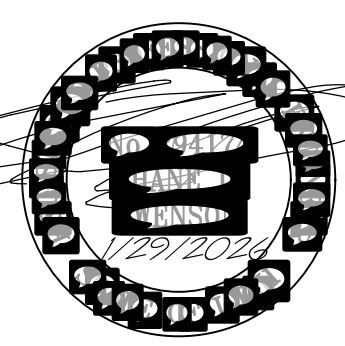
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REVISIONS	REV #	DATE

DRAWING INFO	DATE	DESIGNED	DRAWN	CHECKED	PROJECT
	01.29.26	S.SWENSON	D.PATTON	S.SWENSON	SSE#2025076



**USU GUNSHED PARKING IMPROVEMENTS**  
UTAH STATE UNIVERSITY, LOGAN, UTAH  
**ABBREVIATIONS, G.P.N., LEGEND & SHEET INDEX**

**EE001**

PAGE

ELECTRICAL SPECIFICATIONS

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL
1.1 PERFORMANCE REQUIREMENTS
A. Seismic Performance: Electrical equipment shall withstand the effects of earthquake motions determined according to SEI/ASCE 7.
1.2 QUALITY ASSURANCE
A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
1.3 SLEEVES FOR RACEWAYS AND CABLES
A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.
1.4 SLEEVE SEALS
A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
1.5 ELECTRICAL ENCLOSURES
A. Flush- and surface-mounted cabinets.
1.6 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION
A. Comply with NECA 1.
1.7 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS
A. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used.
1.8 FIRESTOPPING
A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly.

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
1.1 CONDUCTORS AND CABLES
A. Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for Type THHN-2-THWN-2 or Type XHHW-2.
1.2 CONNECTORS AND SPLICES
A. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.
1.3 CONDUCTOR MATERIAL APPLICATIONS
A. Feeders: Copper for feeders smaller than No. 4 AWG; copper or aluminum for feeders No. 4 AWG and larger.
1.4 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS
A. Feeders: Type THHN-2-THWN-2 or Type XHHW-2, single conductors in raceway.
1.5 INSTALLATION OF CONDUCTORS AND CABLES
A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.
1.6 CONNECTIONS
A. Make splices, terminations, and taps that are compatible with conductor material.
1.7 IDENTIFICATION
A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
1.1 PERFORMANCE REQUIREMENTS
A. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
1.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS
A. Steel Slotted Support Systems with galvanized metallic coatings and channel dimensions selected for applicable load criteria.
1.3 EQUIPMENT GROUNDING
A. Install insulated equipment grounding conductors with all service, feeder, and branch circuits, in addition to those required by NFPA 70.

in which used.
Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18, complying with MFMA-4 or MSS SP-58.
Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
Togglie Bolts: All-steel springhead type.
Hanger Rods: Threaded steel.
1.3 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES
A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.
1.4 APPLICATION
A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
1.5 SUPPORT INSTALLATION
A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
B. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
1. To Wood: Fasten with lag screws or through bolts.
2. To New Concrete: Bolt to concrete inserts.
3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
4. To Existing Concrete: Expansion anchor fasteners.
5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for where equipment or equipment enclosures are attached to wall.
6. To Steel: Welded threaded studs complying with AWS D 1.101.1M, with lock washers and nuts or Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.
7. To Light Steel: Sheet metal screws.
8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that meet seismic-restraint strength and anchorage requirements.

SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS
1.1 METAL CONDUITS, TUBING, AND FITTINGS
A. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
B. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 5148.
1.2 NONMETALLIC CONDUITS, TUBING, AND FITTINGS
A. Listing and Labeling: Nonmetallic conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
1.3 METAL WIREWAYS AND AUXILIARY GUTTERS
A. Description: Sheet metal, complying with UL 870 and NEMA 250, unless otherwise indicated, and sized according to NFPA 70.
B. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, and caps, and other fittings to match and mate with wireways as required for complete system.
1.4 BOXES, ENCLOSURES, AND CABINETS
A. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.
B. Sheet Metal Outlet, Device, Pull, and Junction Boxes: Comply with NEMA OS 1 and UL 514A.
C. Cast-Metal Outlet, Device, Pull, and Junction Boxes: Comply with NEMA FB 1, ferrous alloy or aluminum, Type FD, with gasketed cover.
D. Metal Floor Boxes:
1. Material: sheet metal.
2. Type: Fully adjustable.
3. Shape: Rectangular.
4. Listing and Labeling: Metal floor boxes shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
E. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, with continuous-hinge cover with flush latch unless otherwise indicated.

1.5 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING
A. General Requirements for Handholes and Boxes:
1. Boxes and handholes for use in underground systems shall be designed and identified as defined in NFPA 70, for intended location and application.
2. Boxes installed in wet areas shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
B. Polymer-Concrete Handholes and Boxes with Polymer-Concrete Cover: Combination of sand and aggregate, bound together with polymer resin, and reinforced with steel, fiberglass, or a combination of the two.
1. Cover Legend: Molded lettering, "ELECTRIC."
1.6 RACEWAY APPLICATION
A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
1. Above-grade: GRC.
2. Underground Conduit: RNC, Type EPC-40-PVC or Type EPC-80-PVC where required by utility.
3. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
B. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.
C. Indoors: Apply raceway products as specified below unless otherwise indicated.
1. Exposed, Not Subject to Physical Damage: EMT.
2. Exposed and Subject to Physical Damage: GRC.
3. Concealed in Ceilings and Interior Walls and Partitions: EMT.
4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
5. Damp or Wet Locations: GRC.
6. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4 stainless steel in institutional and commercial kitchens and damp or wet locations.
C. Minimum Raceway Size: 3/4-inch trade size.
D. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.
1.7 INSTALLATION
A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
B. Raceways Embedded in Slabs: Change from RNC to wrapped, GRC before rising above floor.
C. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways where required by NFPA 70.
D. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Mount boxes with height measured to top of box unless otherwise indicated.
E. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
F. Locate boxes so that cover or plate will not span different building finishes.
G. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.
H. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.
I. Set metal floor boxes level and flush with finished floor surface.

1.8 INSTALLATION OF UNDERGROUND CONDUIT
A. Direct-Buried Conduit:
1. Excavate trench bottom to provide firm and uniform support for conduit.
2. Install backfill.
3. Install manufactured rigid steel conduit elbows for sub-ups at poles and equipment and at building entrances through floor.
a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete for a minimum of 12 inches on each side of the coupling.
b. For sub-ups at equipment mounted on outdoor concrete bases and where conduits penetrate building foundations, extend steel conduit horizontally a minimum of 60 inches from edge of foundation or equipment base. Install insulated grounding bushings on terminations at equipment.
4. Underground Warning Tape: Comply with requirements in Section 260553 "Identification for Electrical Systems."
1.9 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES
A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.
B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.
C. Elevation: In paved areas, set so cover surface will be flush with finished grade. Set covers of other enclosures 1 inch above finished grade.

SECTION 260548 - VIBRATION AND SEISMIC CONTROLS FOR ELECTRICAL SYSTEMS
1.1 PERFORMANCE REQUIREMENTS
A. Seismic-Restraint Loading:
1. Site Class as Defined in the IBC: D.
2. Assigned Seismic Use Group or Building Category as Defined in the IBC: III.
a. Component Importance Factor:
1) General: 1.0.
2) Life Safety (EM): 1.5
b. Component Response Modification Factor:
1) Fixtures: 1.0

2) Equipment: 2.5
3) Conduit and Cables: 5.0.
c. Component Amplification Factor: 2.5.
3. Design Spectral Response Acceleration at Short Periods (0.2 Second): 173%.
4. Design Spectral Response Acceleration at 1.0-Second Period: 76%.
1.2 SEISMIC-RESTRAINT DEVICES
A. General Requirements for Restraint Components: Rated strengths, features, and application requirements shall be as defined in reports by an agency acceptable to authorities having jurisdiction.
1. Structural Safety Factor: Allowable strength in tension, shear, and pullout force of components shall be at least four times the maximum seismic force to which they will be subjected.
B. Restraint Cables: ASTM A 603 galvanized-steel cables with end connections made of steel assemblies with thimbles, brackets, swivels, and bolts designed for restraining cable service; and with a minimum of two clamping bolts for cable engagement.
C. Mechanical Anchor: Drilled-in and stud-wedge or female-wedge type in zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.
D. Adhesive Anchor: Drilled-in and capsule anchor system containing polyvinyl or urethane methacrylate-based resin and accelerator, or injected polymer or hybrid mortar adhesive. Provide anchor bolts and hardware with zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.
1.3 APPLICATIONS
A. Strength of Support and Seismic-Restraint Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static and seismic loads within specified loading limits.
1.4 SEISMIC-RESTRAINT DEVICE INSTALLATION
A. Install bushing assemblies for mounting bolts for wall-mounted equipment, arranged to provide resilient media where equipment or equipment enclosures are encountered during drilling. Locate and avoid prestressed tendons, electrical and telecommunications conduit, and gas lines.
B. Attachment to Structure: If specific attachment is not indicated, anchor bracing to structure at flanges of beams, at upper truss chords or bar joists, or at concrete members.
C. Drilled-in Anchors:
1. Identify position of reinforcing steel and other embedded items prior to drilling holes for anchors. Do not damage existing reinforcing or embedded items during coring or drilling. Notify the structural engineer if reinforcing steel or other embedded items are encountered during drilling. Locate and avoid prestressed tendons, electrical and telecommunications conduit, and gas lines.
2. Do not drill holes in concrete or masonry until concrete, mortar, or grout has achieved full design strength.
3. Wedge Anchors: Protect threads from damage during anchor installation. Heavy-duty sleeve anchors shall be installed with sleeve fully engaged in the structural element to which anchor is to be fastened.
4. Adhesive Anchors: Clean holes to remove loose material and drilling dust prior to installation of adhesive. Place adhesive in holes proceeding from the bottom of the hole and progressing toward the surface in such a manner as to avoid introducing air pockets in the adhesive.
5. Set anchors to manufacturer's recommended torque, using a torque wrench.
6. Install zinc-coated steel anchors for interior and stainless-steel anchors for exterior applications.
1.5 ADJUSTING
A. Adjust isolators after isolated equipment is at operating weight.
B. Adjust limit stops on restrained spring isolators to mount equipment at normal operating height. After equipment installation is complete, adjust limit stops so they are out of contact during normal operation.
C. Adjust active height of spring isolators.
D. Adjust restraints to permit free movement of equipment within normal mode of operation.

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS
1.1 INSTALLATION
A. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
B. Apply identification devices to surfaces that require finish after completing finish work.
C. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
D. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
E. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches (150 to 200 mm) below finished grade. Use multiple tapes where width of multiple lines installed in a common trench exceeds 16 inches (400 mm) overall.
1.2 IDENTIFICATION SCHEDULE
A. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding/conductor tape to identify the phase.
1. Color-Coding for Phases and Voltage Level Identification: 600 V or Less: Use colors listed below for underground service, feeder, and branch-circuit conductors.
a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if authorities having jurisdiction permit.
b. Colors for 208/120-V Circuits:
1) Phase A: Black.
2) Phase B: Red.
3) Phase C: Blue.
4) Neutral: White with colored stripe to match associated phase
5) Ground: Green
c. Colors for 480/277-V Circuits:
1) Phase A: Brown.
2) Phase B: Yellow.
3) Phase C: Violet.
4) Neutral: Gray with colored stripe to match associated phase
5) Ground: Green with gray stripe
B. Conductors to Be Extended in the Future: Attach write-on tags to conductors and list source.
C. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual.
D. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.
E. Workspace Indication: Install floor marking tape to show working clearances in the direction of access to live parts. Workspace shall be as required by NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.
F. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive warning labels.
1. Comply with 29 CFR 1910.145.
2. Identify system voltage with black letters on an orange background.
3. Apply to exterior of door, cover, or other access.
G. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
1. Labeling Instructions:
a. Indoor Equipment: Self-adhesive, engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on 1-1/2-inch- (38-mm-) high label; where two lines of text are required, use labels 2 inches (50 mm) high.
b. Outdoor Equipment: Engraved, laminated acrylic or melamine label.
c. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
d. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.

SECTION 270528 - PATHWAYS FOR COMMUNICATIONS SYSTEMS
1.1 ACTION SUBMITTALS
A. Product Data: For each type of product.
B. Shop Drawings: For each type of cable tray.
C. Delegated-Design Submittal: For seismic restraints.
1.2 METAL CONDUITS AND FITTINGS
A. See Section 260533 "Raceways and boxes for Electrical Systems".
1.3 BOXES, ENCLOSURES, AND CABINETS
A. See Section 260533 "Raceways and boxes for Electrical Systems" unless otherwise indicated below.
B. Device Box Dimensions: 4 inches square by 2-1/2 inches deep.
1.4 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND CABLING
A. See Section 260533 "Raceways and boxes for Electrical Systems".
1.5 WIRE-BASKET CABLE TRAYS
A. Description:
1. Configuration: Wires are formed into a standard 2-by-4-inch wire mesh pattern with intersecting wires welded together. Mesh sections must have at least one bottom longitudinal wire along entire length of section.
2. Materials: High-strength-steel longitudinal wires with no bends.
3. Safety Provisions: Wire ends along wire-basket sides (flanges) rounded during manufacturing to maintain integrity of cables and installer safety.
4. Sizes:
a. Straight sections shall be furnished in standard 118-inch lengths.
b. Wire-Basket Depth: 4-inch usable loading depth by 12 inches wide.
5. Connector Assemblies: Bolt welded to plate shaped to fit around adjoining tray wires and mating plate. Mechanically joins adjacent tray wires to splice sections together or to create horizontal fittings.
6. Connector Assembly Capacity: Splices located within support span shall not diminish rated loading

capacity of cable tray.
7. Hardware and Fasteners: ASTM F 593 and ASTM F 594 stainless steel, Type 316.
1.6 PATHWAY APPLICATION
A. See Section 260533 "Raceways and boxes for Electrical Systems" unless otherwise indicated below.
B. Indoors: Apply pathway applications as specified below unless otherwise indicated.
C. Minimum Pathway Size: 1 inch.
1.7 INSTALLATION
A. See Section 260533 "Raceways and boxes for Electrical Systems" unless otherwise indicated below.
B. Install no more than the equivalent of two 90-degree bends in any pathway run. Support within 12 inches of changes in direction. Utilize long radius elbows for all optical-fiber cables.
C. Stub-ups to Above Recessed Ceilings:
1. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.
D. Cast field-cut threads on PVC-coated pathway with a corrosion-preventing conductive compound prior to assembly.
E. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install insulated bushings on conduits terminated with locknuts.
F. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.
G. Spare Pathways: Install pull wires in empty pathways. Cap underground pathways designated as spare above grade alongside pathways in use.
H. Pathways for Communications Cable: Install pathways as follows:
1. 1-inch Trade Size and Larger: Install pathways in maximum lengths of 75 feet.
2. Install a maximum of two 90-degree bends or equivalent for each length of pathway unless Drawings show stricter requirements.
1.8 INSTALLATION OF UNDERGROUND CONDUIT
A. See Section 260533 "Raceways and boxes for Electrical Systems" unless otherwise indicated below.
1.9 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES
A. See Section 260533 "Raceways and boxes for Electrical Systems" unless otherwise indicated below.

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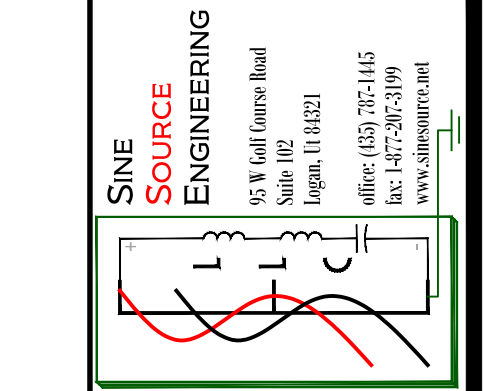
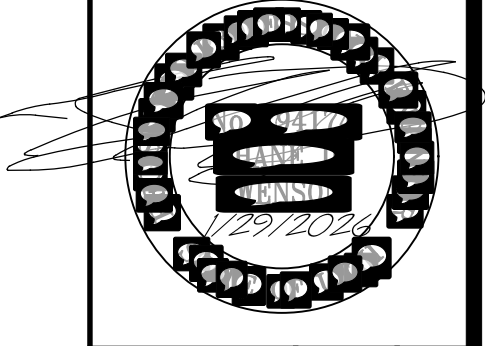
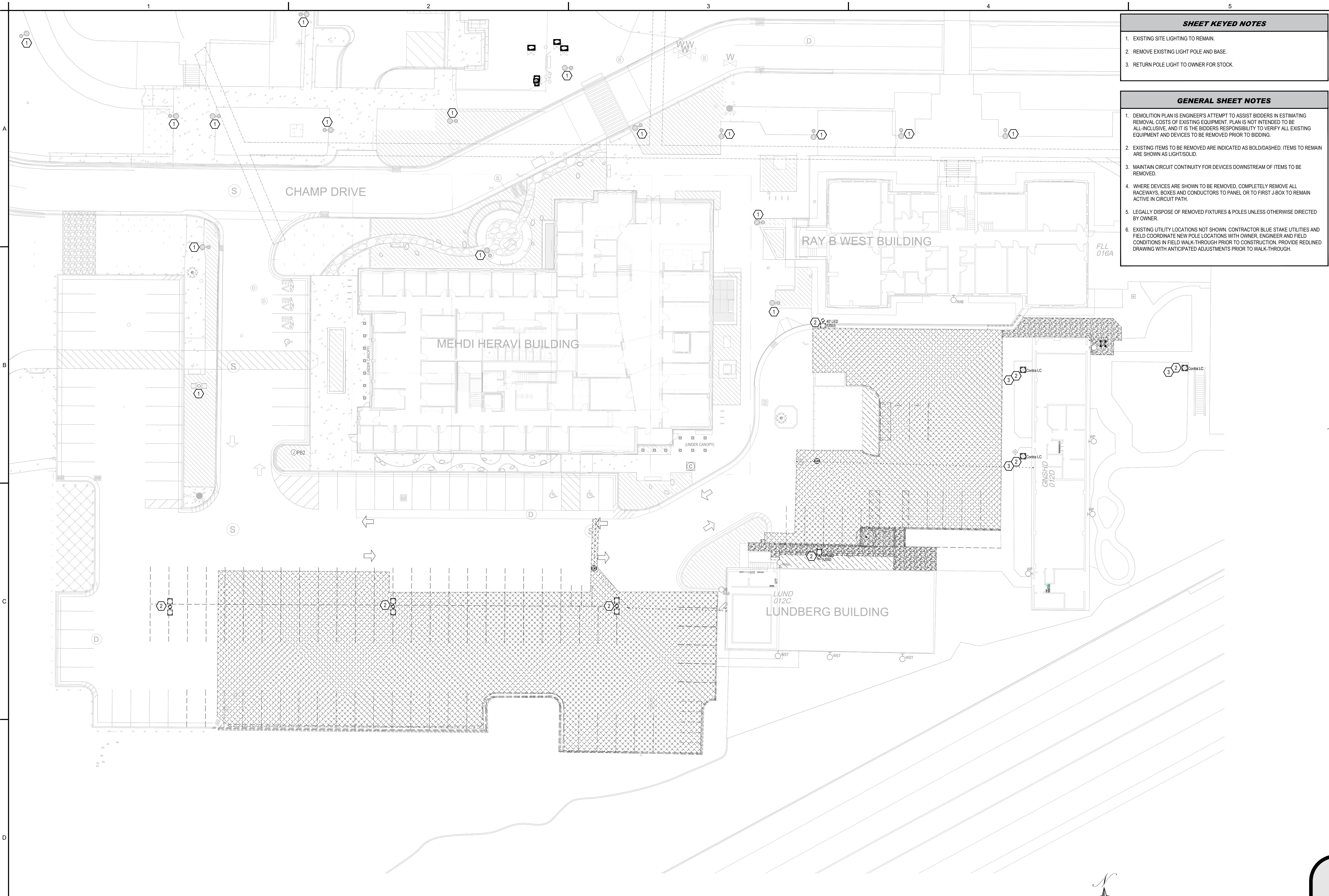


Table with columns: REVISIONS, REV #, DATE, DRAWING INFO, DATE, DESIGNED, DRAWN, CHECKED, PROJECT.



USU GUNSHED PARKING IMPROVEMENTS
UTAH STATE UNIVERSITY, LOGAN, UTAH
ELECTRICAL SPECIFICATIONS
EE002

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**SHEET KEYED NOTES**

- EXISTING SITE LIGHTING TO REMAIN.
- REMOVE EXISTING LIGHT POLE AND BASE.
- RETURN POLE LIGHT TO OWNER FOR STOCK.

**GENERAL SHEET NOTES**

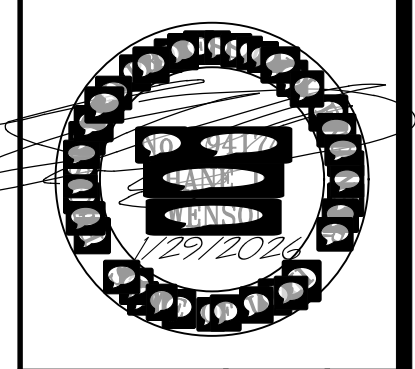
- DEMOLITION PLAN IS ENGINEER'S ATTEMPT TO ASSIST BIDDERS IN ESTIMATING REMOVAL COSTS OF EXISTING EQUIPMENT. PLAN IS NOT INTENDED TO BE ALL-INCLUSIVE, AND IT IS THE BIDDERS RESPONSIBILITY TO VERIFY ALL EXISTING EQUIPMENT AND DEVICES TO BE REMOVED PRIOR TO BIDDING.
- EXISTING ITEMS TO BE REMOVED ARE INDICATED AS BOLD DASHED. ITEMS TO REMAIN ARE SHOWN AS LIGHT/SOLID.
- MAINTAIN CIRCUIT CONTINUITY FOR DEVICES DOWNSTREAM OF ITEMS TO BE REMOVED.
- WHERE DEVICES ARE SHOWN TO BE REMOVED, COMPLETELY REMOVE ALL RACEWAYS, BOXES AND CONDUCTORS TO PANEL OR TO FIRST J-BOX TO REMAIN ACTIVE IN CIRCUIT PATH.
- LEGALLY DISPOSE OF REMOVED FIXTURES & POLES UNLESS OTHERWISE DIRECTED BY OWNER.
- EXISTING UTILITY LOCATIONS NOT SHOWN. CONTRACTOR BLUE STAKE UTILITIES AND FIELD COORDINATE NEW POLE LOCATIONS WITH OWNER, ENGINEER AND FIELD CONDITIONS IN FIELD WALK-THROUGH PRIOR TO CONSTRUCTION. PROVIDE REDLINED DRAWING WITH ANTICIPATED ADJUSTMENTS PRIOR TO WALK-THROUGH.

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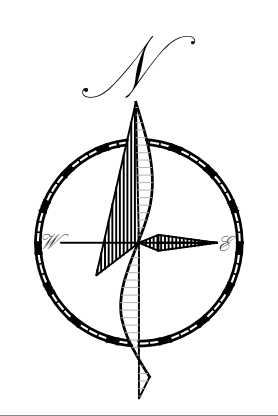
REVISIONS	REV #	DATE

DRAWING INFO	DATE	DESIGNED	DRAWN	CHECKED	PROJECT
	01.29.26	S.SWENSON	D.PATTON	S.SWENSON	SSE#2025076



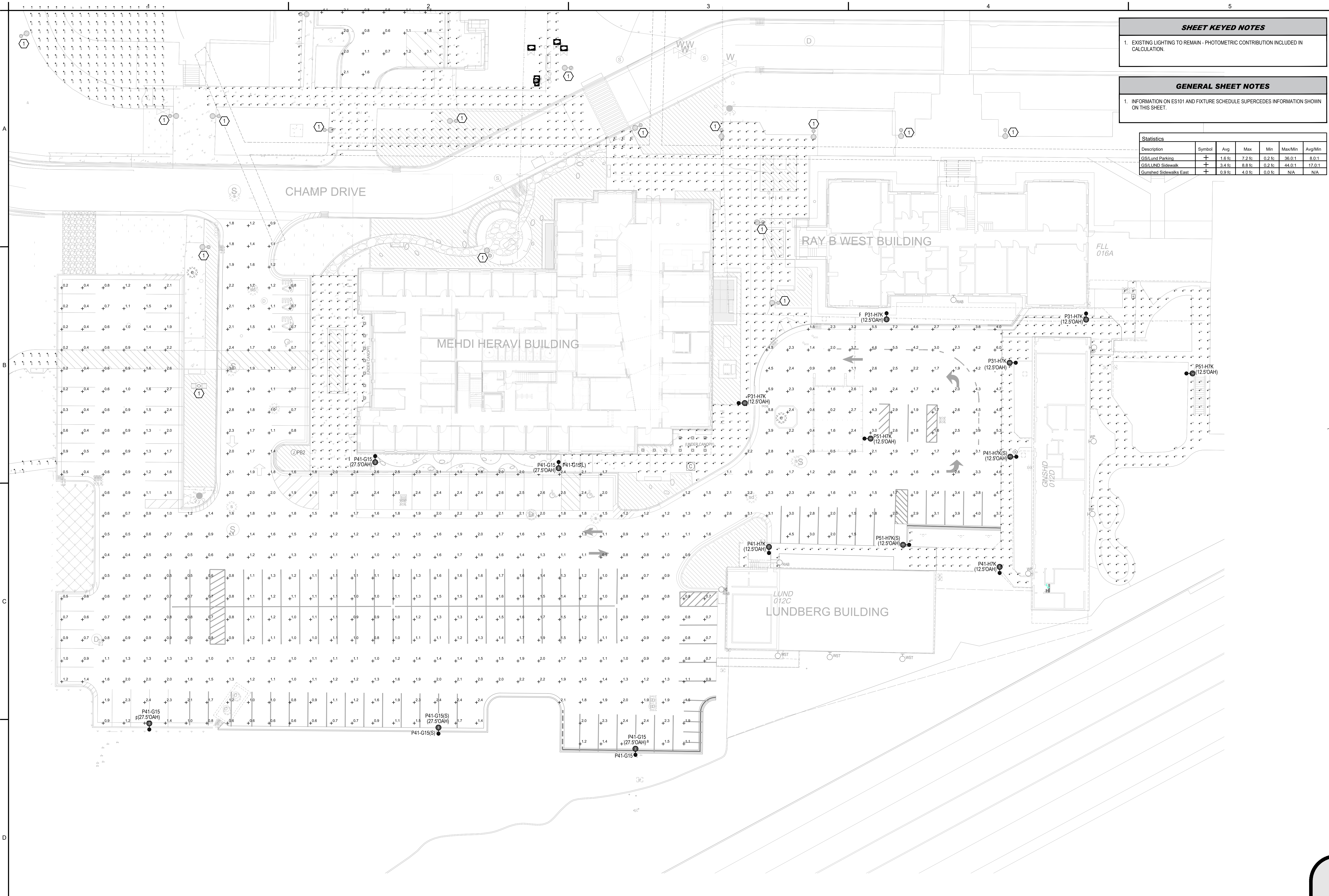
**USU GUNSHED PARKING IMPROVEMENTS**  
 UTAH STATE UNIVERSITY, LOGAN, UTAH  
**ELECTRICAL SITE PLAN - DEMOLITION**

**1 ELECTRICAL SITE PLAN - DEMOLITION**  
 SCALE: 1" = 20'-0"



**ES100**  
 PAGE





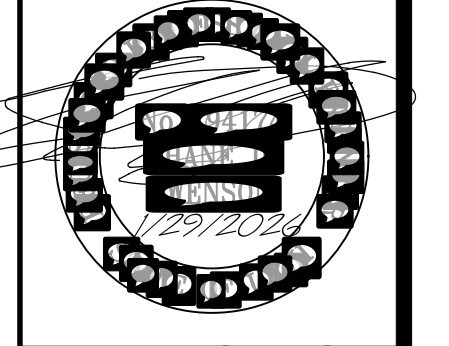
- SHEET KEYED NOTES**
- EXISTING LIGHTING TO REMAIN - PHOTOMETRIC CONTRIBUTION INCLUDED IN CALCULATION.
- GENERAL SHEET NOTES**
- INFORMATION ON ES101 AND FIXTURE SCHEDULE SUPERCEDES INFORMATION SHOWN ON THIS SHEET.

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
GS/Lund Parking	+	1.6 fc	7.2 fc	0.2 fc	36.0:1	8.0:1
GS/Lund Sidewalk	+	3.4 fc	8.8 fc	0.2 fc	44.0:1	17.0:1
Gunshed Sidewalk East	+	0.9 fc	4.0 fc	0.0 fc	N/A	N/A

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DRAWING INFO		REVISIONS	
DATE	REV #	DATE	DESCRIPTION
01.23.26			
DESIGNED: S.SWENSON			
DRAWN: D.PATTON			
CHECKED: S.SWENSON			
PROJECT: SSE#2025076			

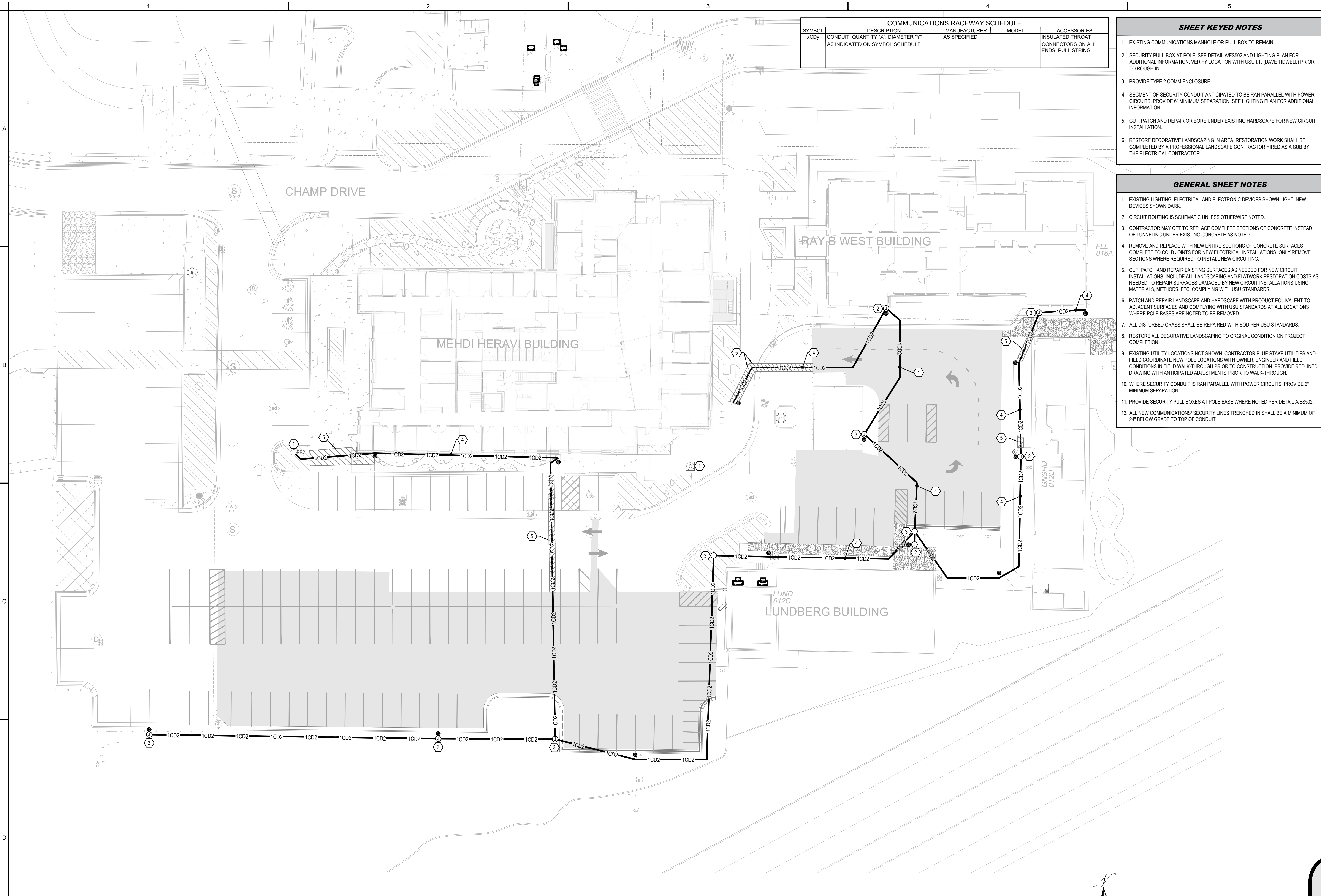


**USU GUNSHED PARKING IMPROVEMENTS**  
 UTAH STATE UNIVERSITY, LOGAN, UTAH  
**PHOTOMETRIC SITE PLAN**

**1 PHOTOMETRIC SITE PLAN**  
 SCALE: 1" = 20'-0"

**ES102**  
 PAGE

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COMMUNICATIONS RACEWAY SCHEDULE			
SYMBOL	DESCRIPTION	MANUFACTURER	ACCESSORIES
xCDy	CONDUIT, QUANTITY "X", DIAMETER "Y" AS INDICATED ON SYMBOL SCHEDULE	AS SPECIFIED	INSULATED THROAT CONNECTORS ON ALL ENDS; PULL STRING

- SHEET KEYED NOTES**
- EXISTING COMMUNICATIONS MANHOLE OR PULL-BOX TO REMAIN.
  - SECURITY PULL-BOX AT POLE. SEE DETAIL A/E5502 AND LIGHTING PLAN FOR ADDITIONAL INFORMATION. VERIFY LOCATION WITH USU I.T. (DAVE TIDWELL) PRIOR TO ROUGH-IN.
  - PROVIDE TYPE 2 COMM ENCLOSURE.
  - SEGMENT OF SECURITY CONDUIT ANTICIPATED TO BE RAN PARALLEL WITH POWER CIRCUITS. PROVIDE 6" MINIMUM SEPARATION. SEE LIGHTING PLAN FOR ADDITIONAL INFORMATION.
  - CUT, PATCH AND REPAIR OR BORE UNDER EXISTING HARDSCAPE FOR NEW CIRCUIT INSTALLATION.
  - RESTORE DECORATIVE LANDSCAPING IN AREA. RESTORATION WORK SHALL BE COMPLETED BY A PROFESSIONAL LANDSCAPE CONTRACTOR HIRED AS A SUB BY THE ELECTRICAL CONTRACTOR.

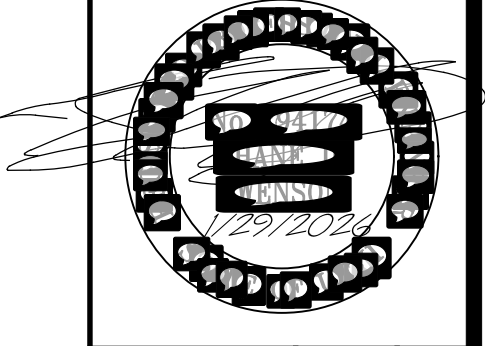
- GENERAL SHEET NOTES**
- EXISTING LIGHTING, ELECTRICAL AND ELECTRONIC DEVICES SHOWN LIGHT. NEW DEVICES SHOWN DARK.
  - CIRCUIT ROUTING IS SCHEMATIC UNLESS OTHERWISE NOTED.
  - CONTRACTOR MAY OPT TO REPLACE COMPLETE SECTIONS OF CONCRETE INSTEAD OF TUNNELING UNDER EXISTING CONCRETE AS NOTED.
  - REMOVE AND REPLACE WITH NEW ENTIRE SECTIONS OF CONCRETE SURFACES COMPLETE TO COLD JOINTS FOR NEW ELECTRICAL INSTALLATIONS. ONLY REMOVE SECTIONS WHERE REQUIRED TO INSTALL NEW CIRCUITING.
  - CUT, PATCH AND REPAIR EXISTING SURFACES AS NEEDED FOR NEW CIRCUIT INSTALLATIONS. INCLUDE ALL LANDSCAPING AND FLATWORK RESTORATION COSTS AS NEEDED TO REPAIR SURFACES DAMAGED BY NEW CIRCUIT INSTALLATIONS USING MATERIALS, METHODS, ETC. COMPLYING WITH USU STANDARDS.
  - PATCH AND REPAIR LANDSCAPE AND HARDSCAPE WITH PRODUCT EQUIVALENT TO ADJACENT SURFACES AND COMPLYING WITH USU STANDARDS AT ALL LOCATIONS WHERE POLE BASES ARE NOTED TO BE REMOVED.
  - ALL DISTURBED GRASS SHALL BE REPAIRED WITH SOD PER USU STANDARDS.
  - RESTORE ALL DECORATIVE LANDSCAPING TO ORIGINAL CONDITION ON PROJECT COMPLETION.
  - EXISTING UTILITY LOCATIONS NOT SHOWN. CONTRACTOR BLUE STAKE UTILITIES AND FIELD COORDINATE NEW POLE LOCATIONS WITH OWNER, ENGINEER AND FIELD CONDITIONS IN FIELD WALK-THROUGH PRIOR TO CONSTRUCTION. PROVIDE REDLINED DRAWING WITH ANTICIPATED ADJUSTMENTS PRIOR TO WALK-THROUGH.
  - WHERE SECURITY CONDUIT IS RAN PARALLEL WITH POWER CIRCUITS, PROVIDE 6" MINIMUM SEPARATION.
  - PROVIDE SECURITY PULL BOXES AT POLE BASE WHERE NOTED PER DETAIL A/E5502.
  - ALL NEW COMMUNICATIONS/ SECURITY LINES TRENCHED IN SHALL BE A MINIMUM OF 24" BELOW GRADE TO TOP OF CONDUIT.

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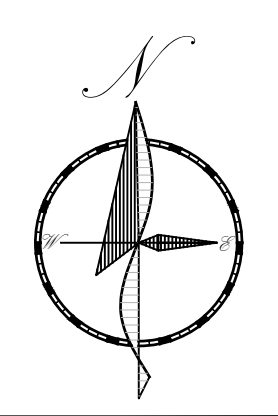
REVISIONS	REV #	DATE

DRAWING INFO	DATE	DESIGNED	DRAWN	CHECKED	PROJECT
	01.29.26	S.SWENSON	D.PATTON	S.SWENSON	SSE2025076



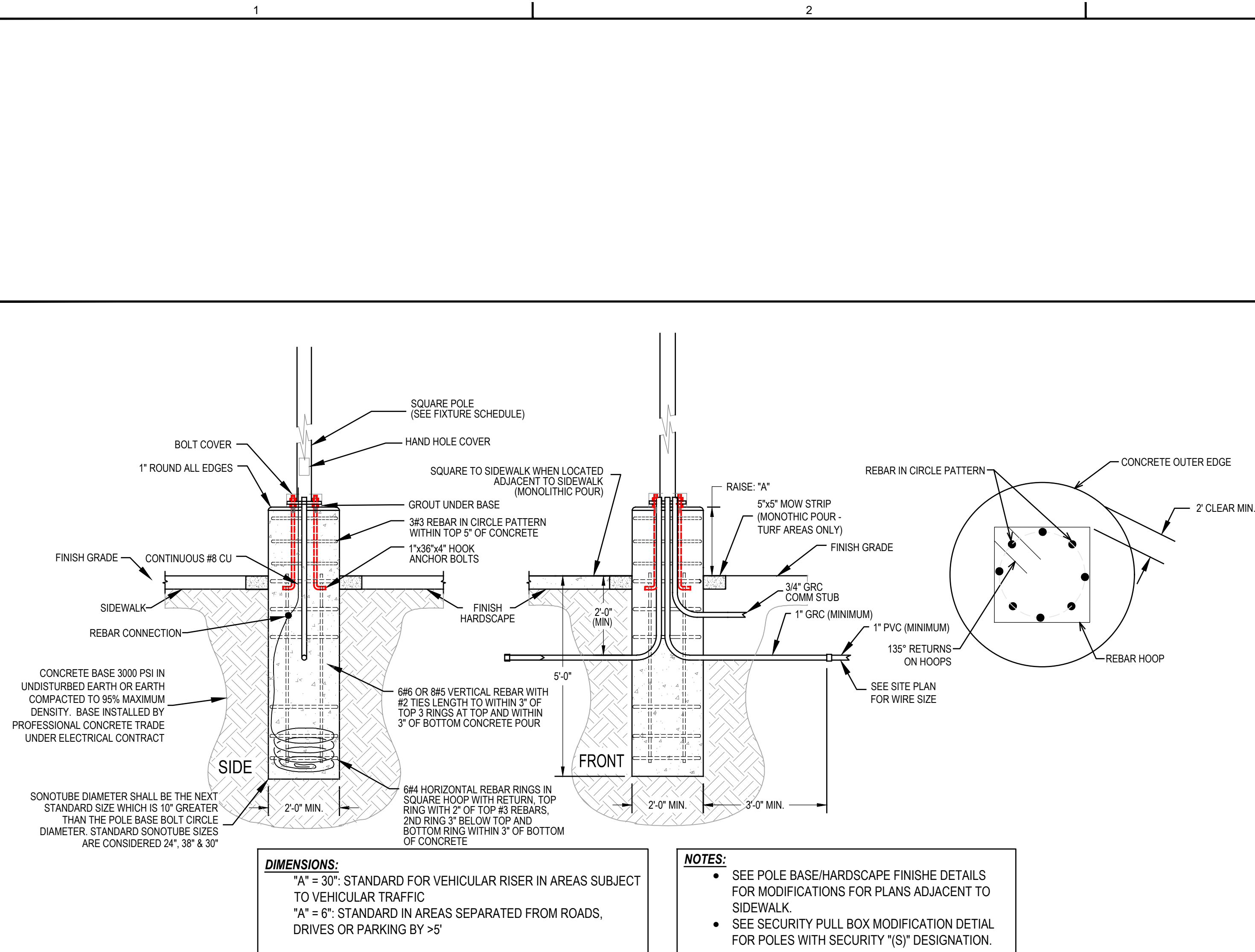
**USU GUNSHED PARKING IMPROVEMENTS**  
 UTAH STATE UNIVERSITY, LOGAN, UTAH  
**ELECTRICAL SITE PLAN - SECURITY**

**1 ELECTRICAL SITE PLAN - SECURITY**  
 SCALE: 1" = 20'-0"

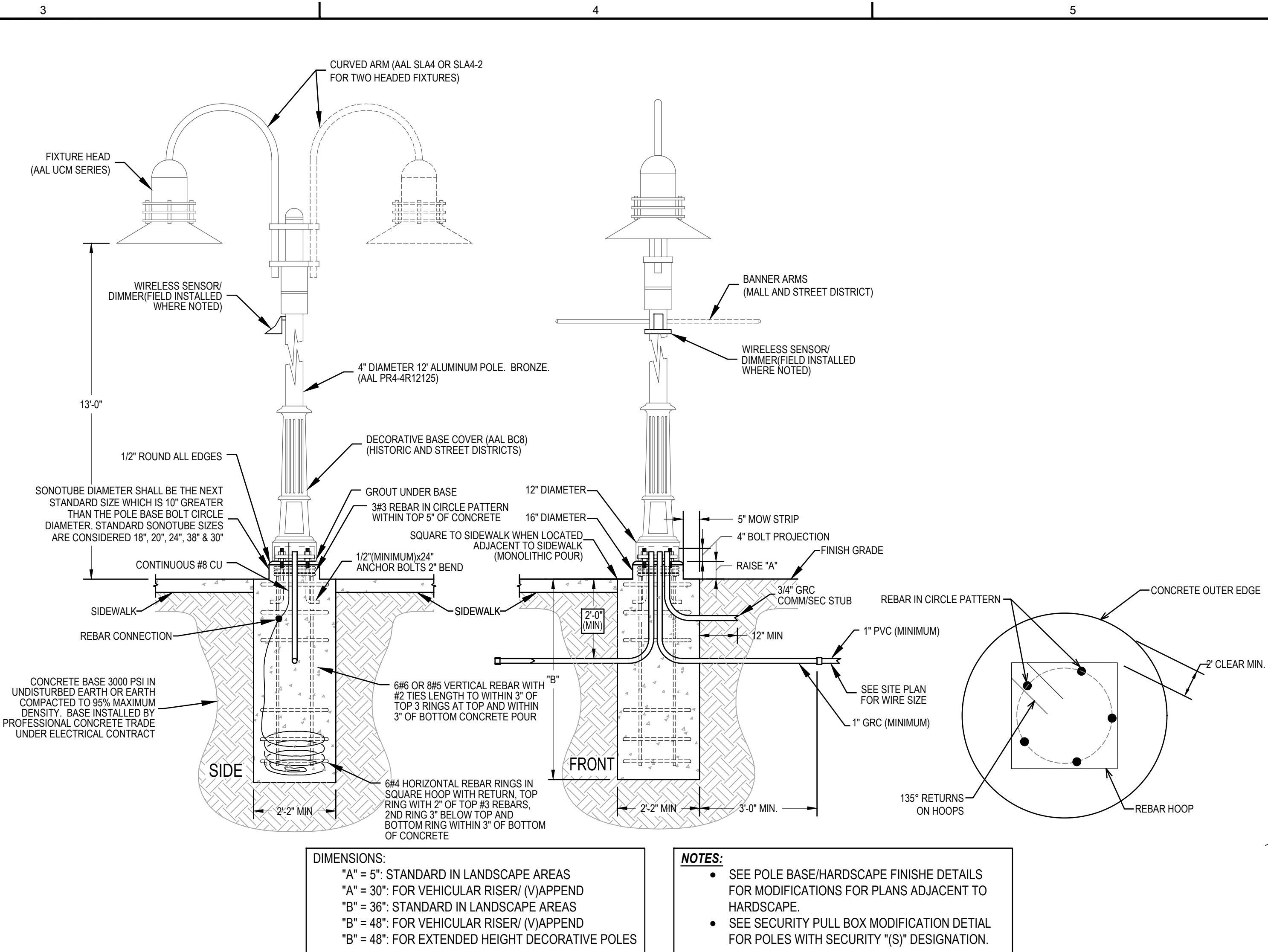


**ES103**  
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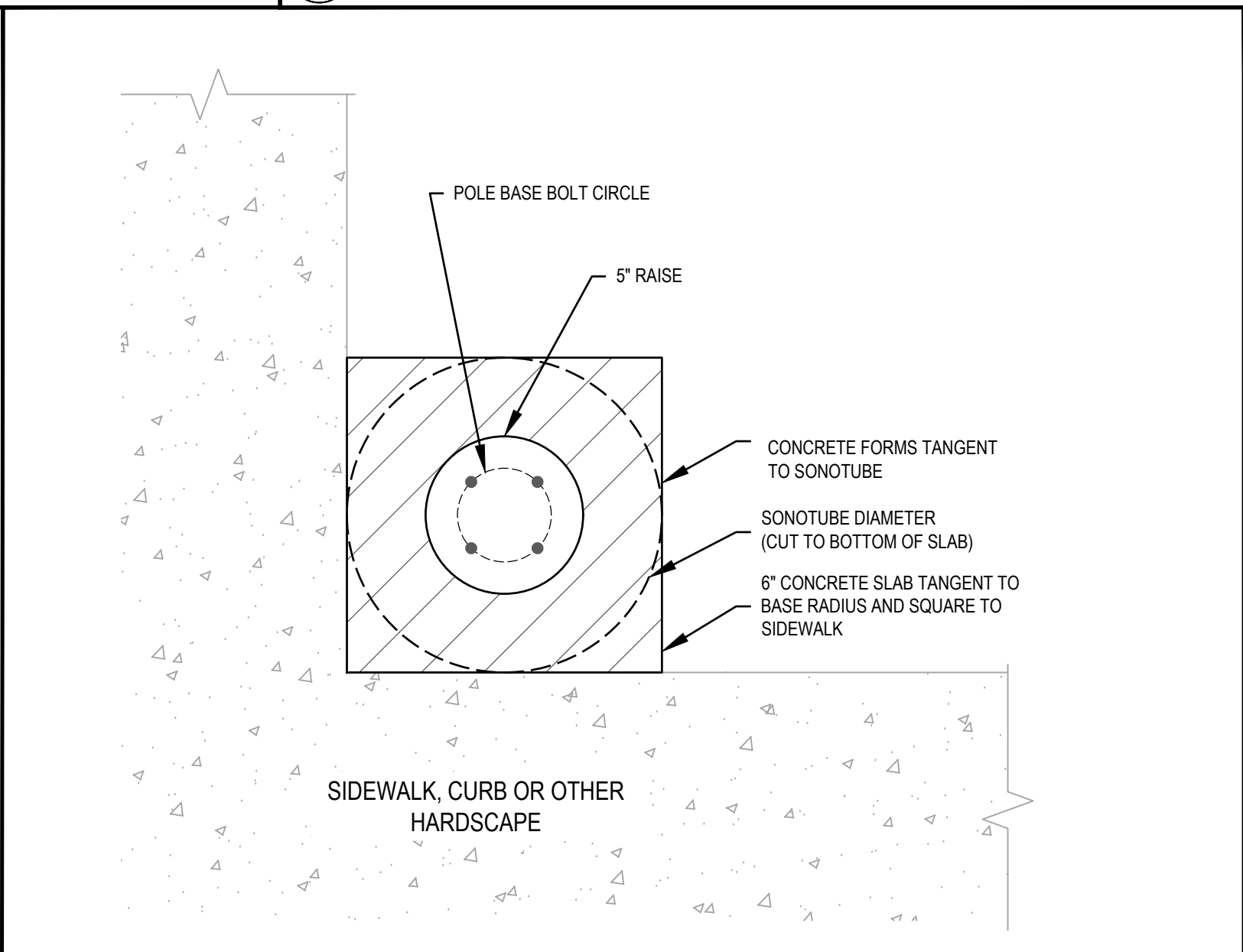
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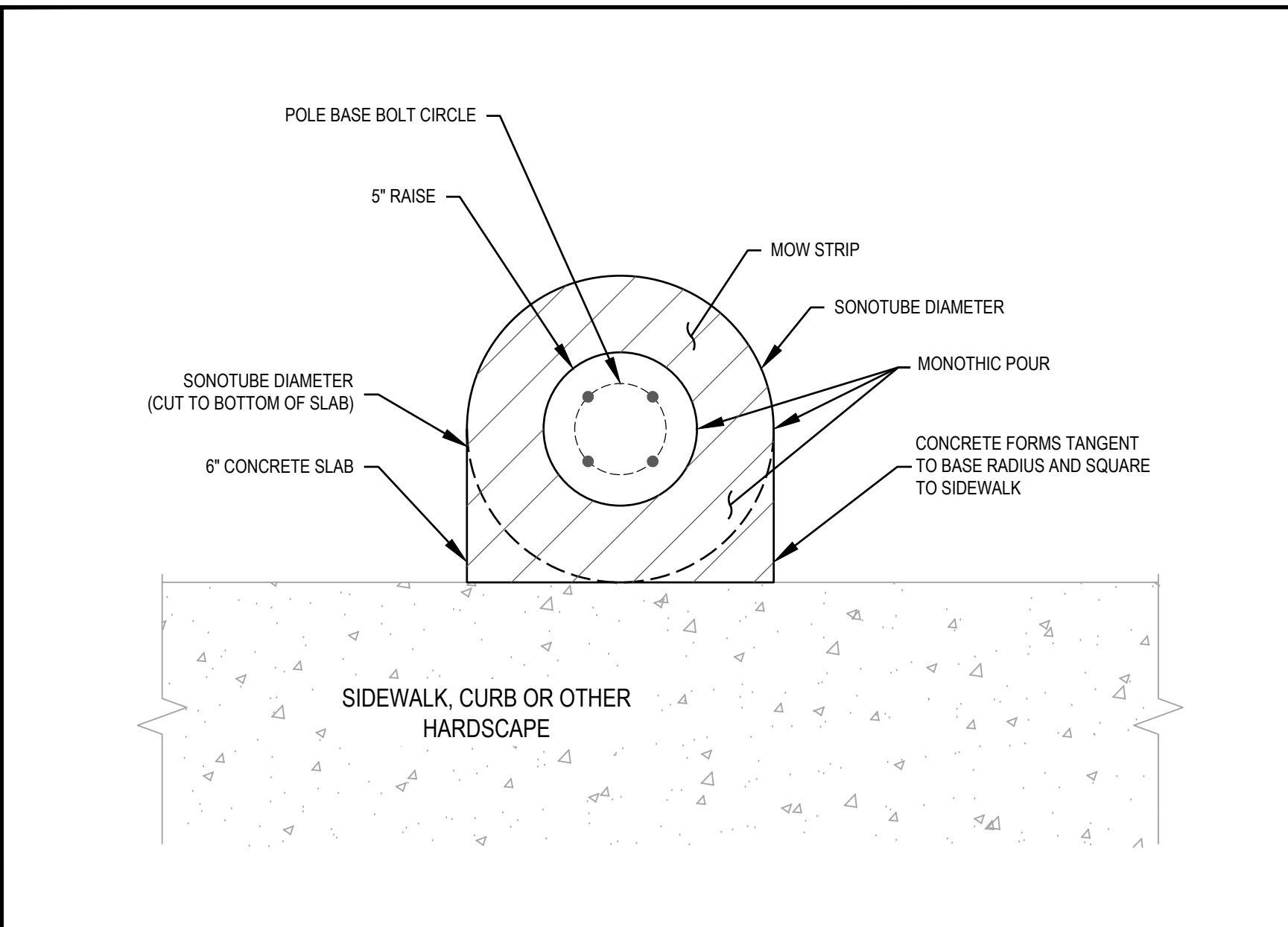
**D** USU POLE BASE DETAIL: PARKING  
SCALE: NO SCALE



**B** USU POLE DETAIL: HISTORIC, STREET AND MALL DISTRICT WALKWAYS  
SCALE: NO SCALE

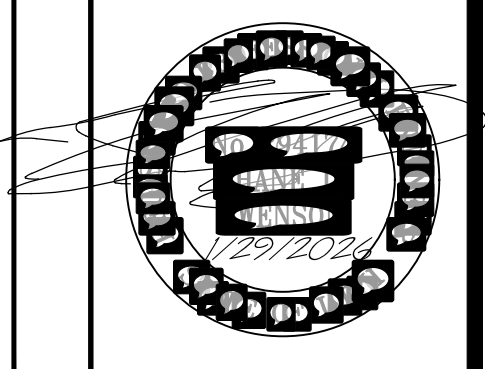


**C** POLE BASE/HARDSCAPE FINISH DETAIL: CORNER POLE  
SCALE: NO SCALE

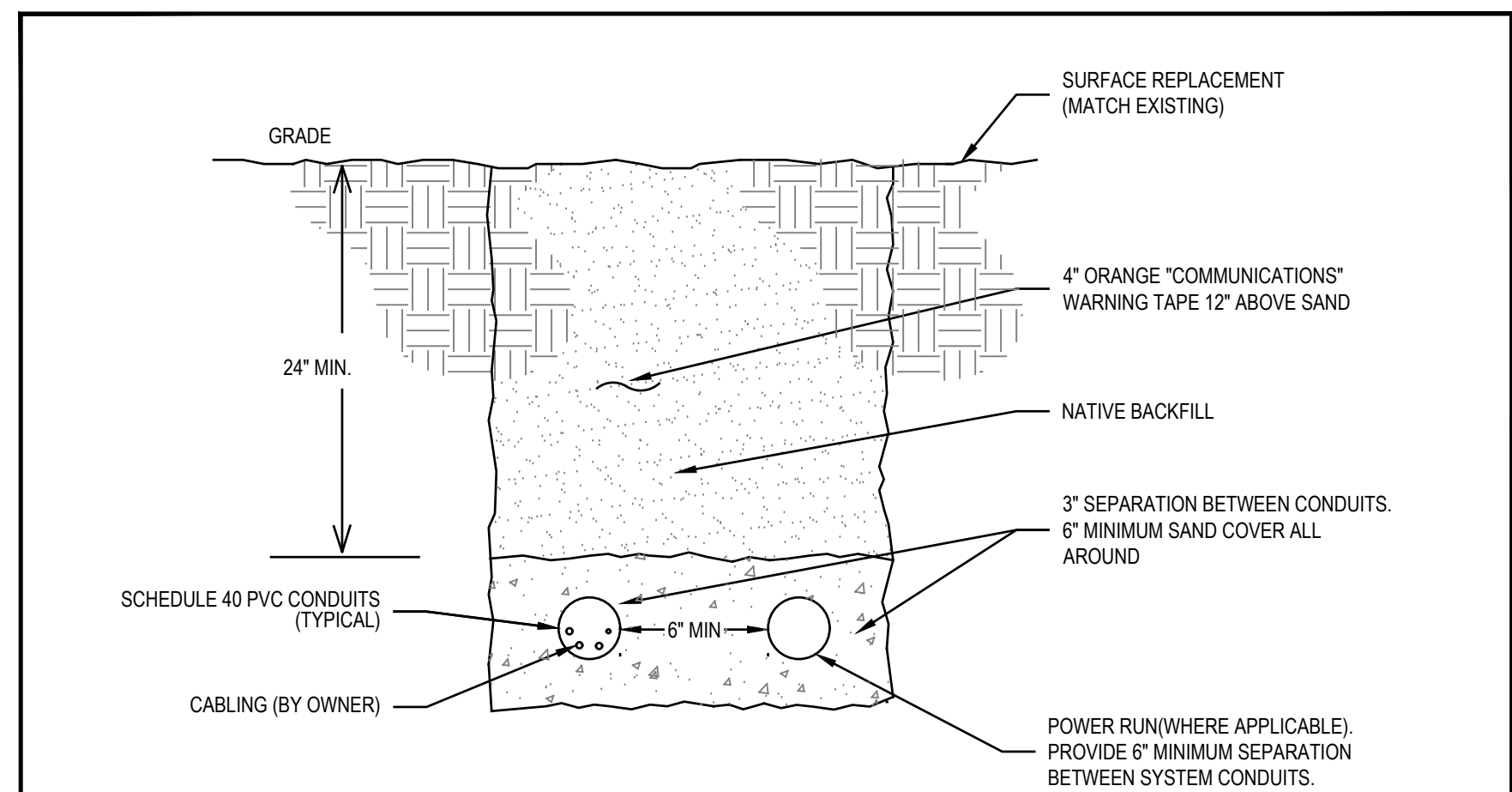


**A** POLE BASE/HARDSCAPE FINISH DETAIL: INTERIOR SECTION  
SCALE: NO SCALE

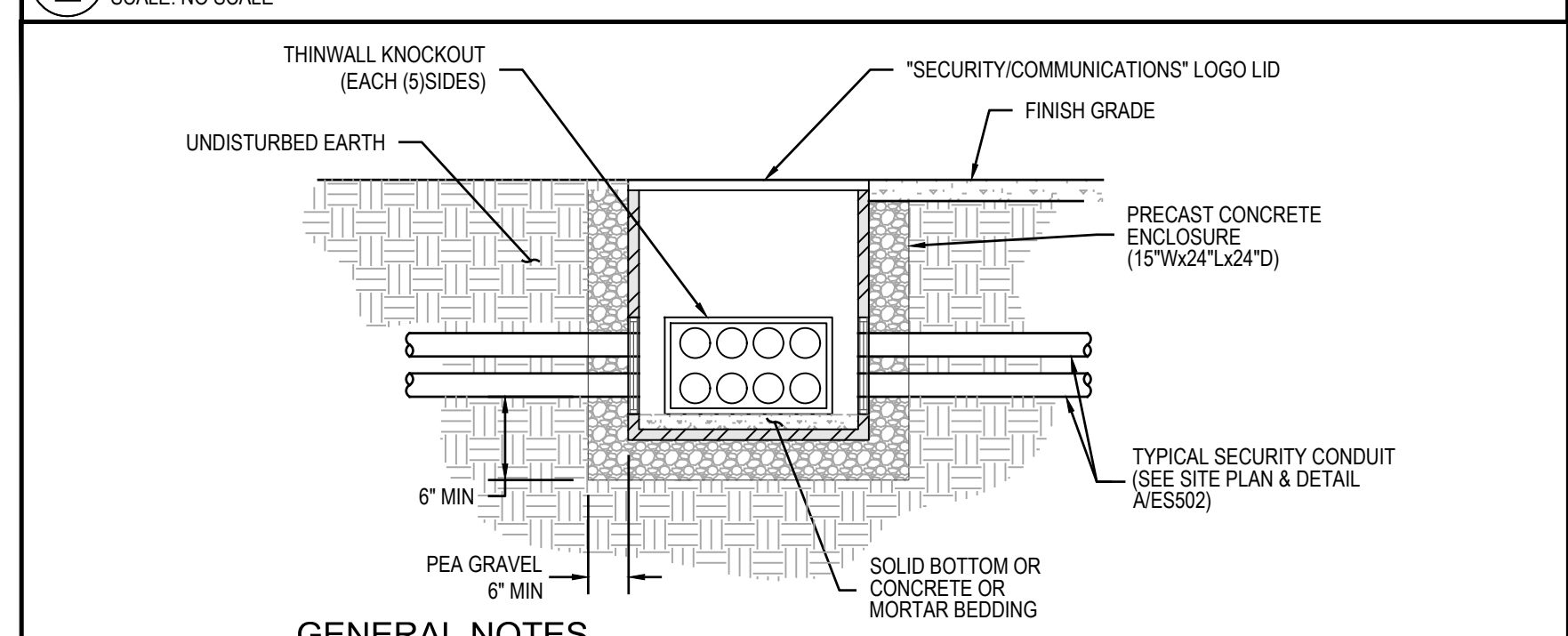
REVISIONS	DATE	REV #	DESCRIPTION



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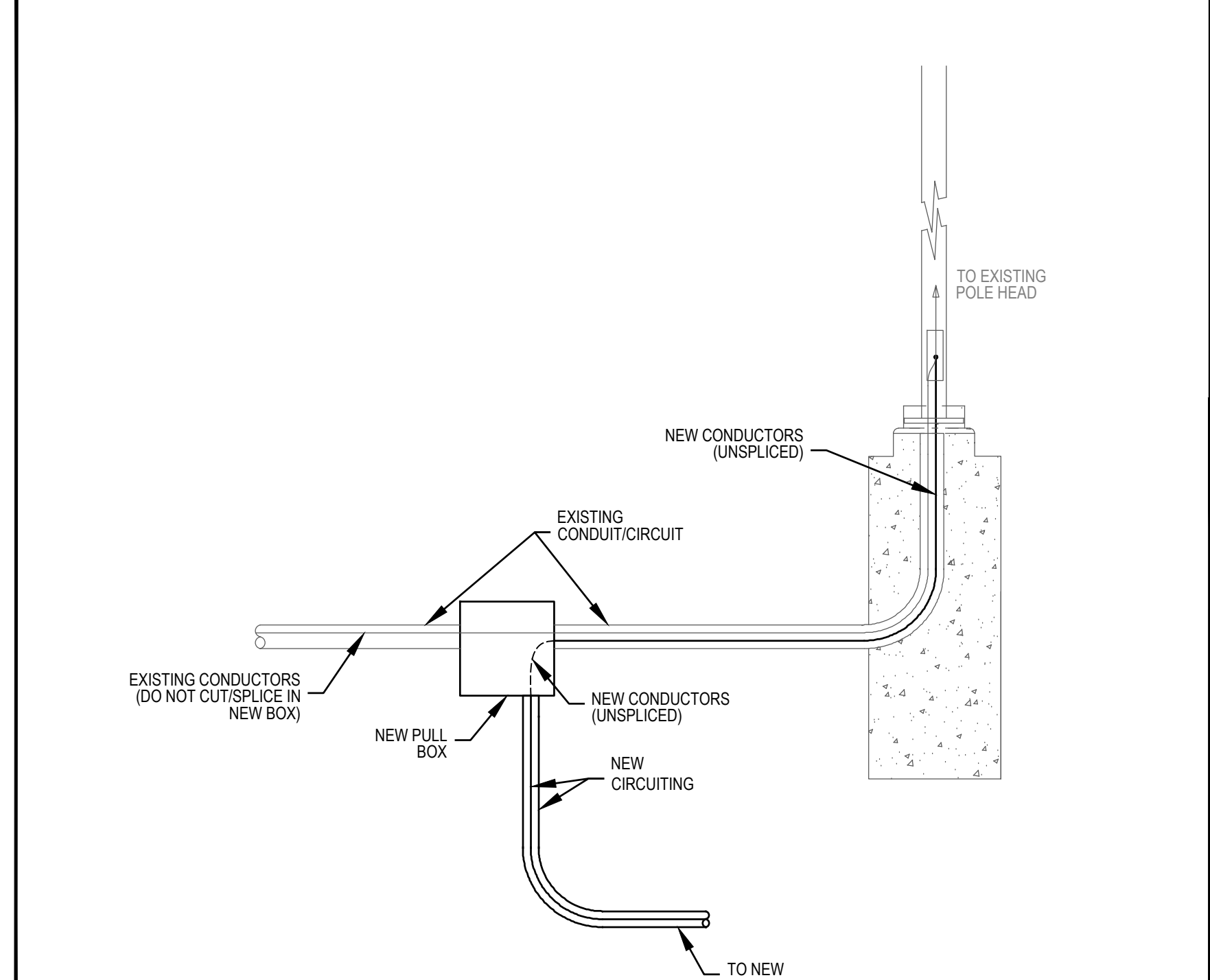


**E USU-COMMUNICATIONS CONDUIT INSTALLATION (TRENCH)-SPECIFIED DEPTH**  
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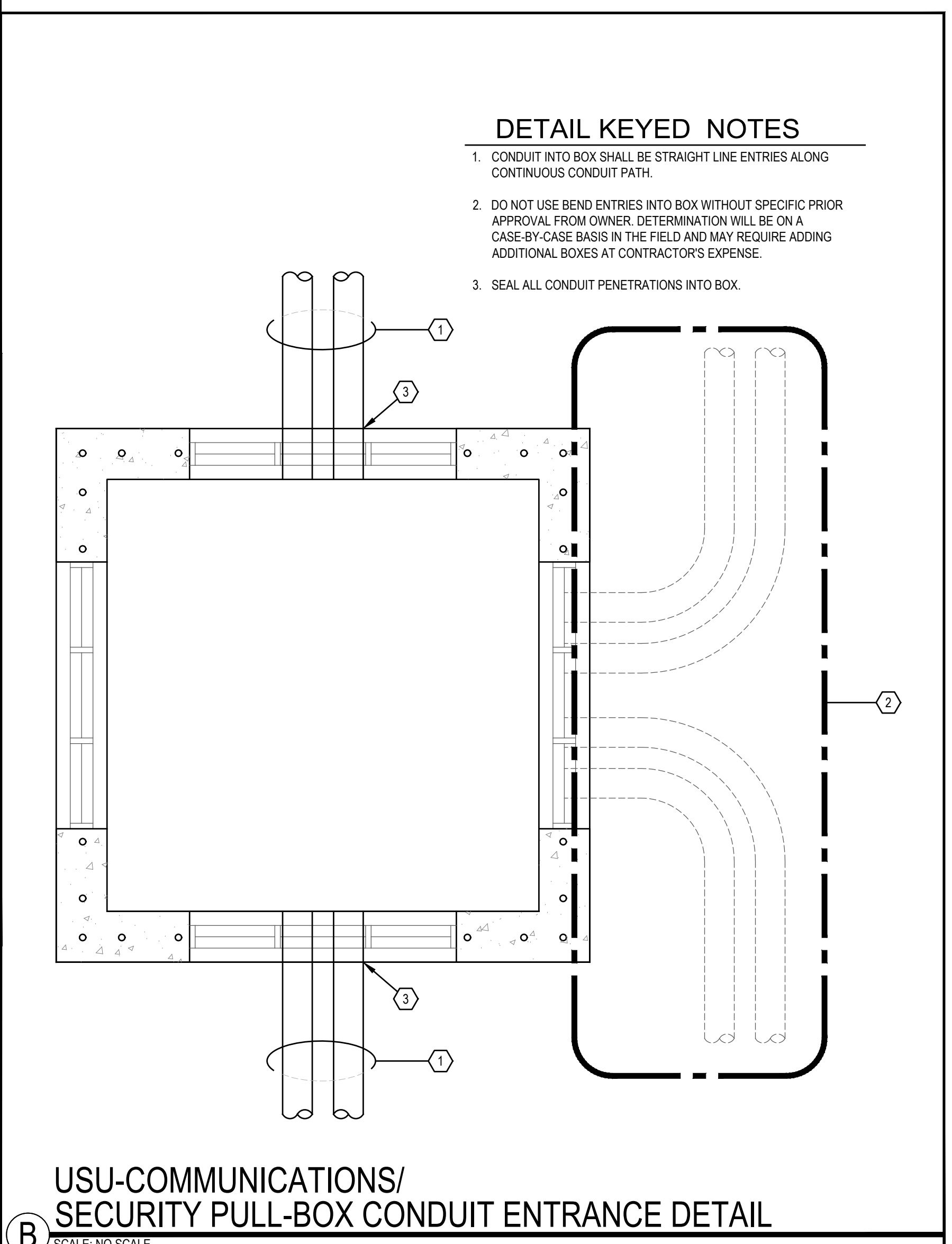


- GENERAL NOTES**
1. PROVIDE PRE-CAST PULL BOXES.
  2. PULL BOX & COVER TO MEET TIER 8 LOADING REQUIREMENTS IN LANDSCAPE AREAS AND TIER 15 MINIMUM IN PARKING/DRIVE AREAS.
  3. BOND ALL METAL (IF APPLICABLE) WITH #6 CU TO GROUND ROD INSTALLED ADJACENT TO BOX.
  4. PROVIDE SEGMENTED, THINWALL KNOCKOUTS ON ALL SIDES OF BOX (MINIMUM 8 PER SIDE)
  5. SEAL ALL CONDUIT PENETRATIONS INTO BOX

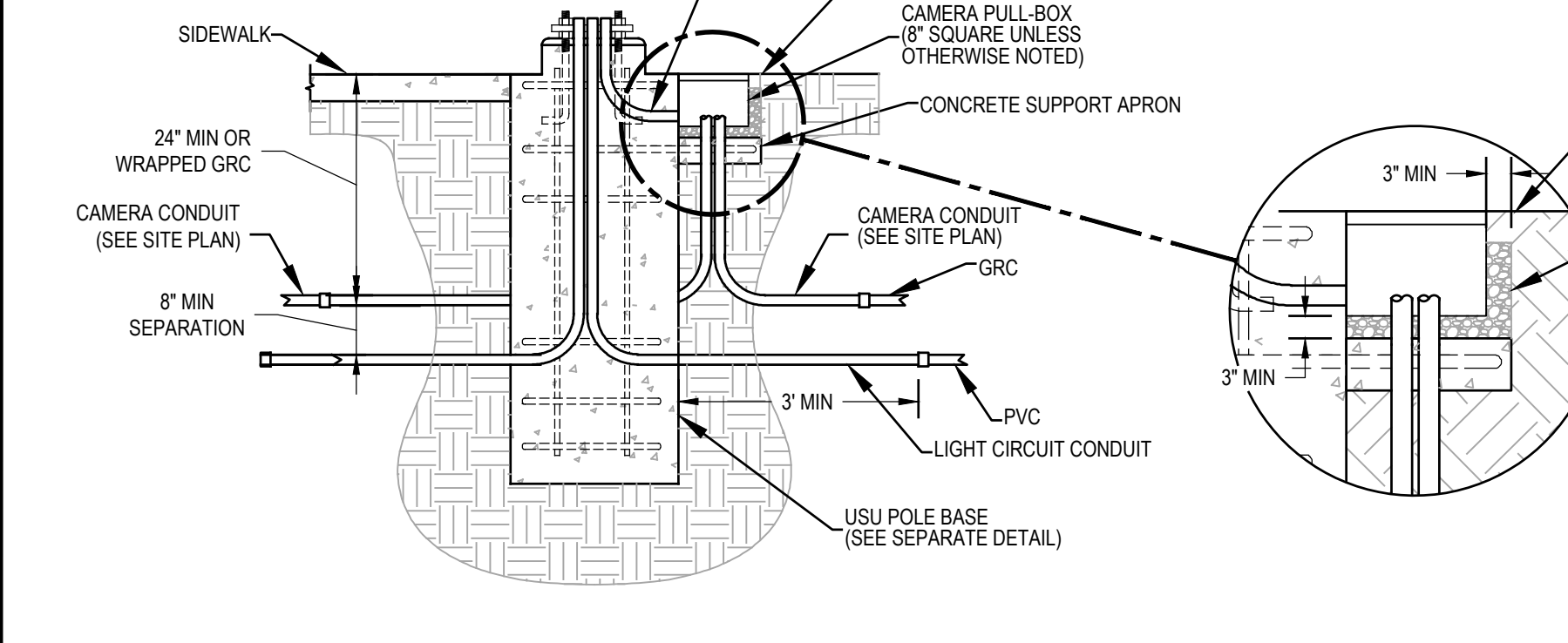
**D USU TYPE 2 COMMUNICATIONS ENCLOSURE DETAIL**  
SCALE: NO SCALE



**C EXISTING CIRCUIT TIE-IN DETAIL**  
SCALE: NO SCALE



**B USU-COMMUNICATIONS/ SECURITY PULL-BOX CONDUIT ENTRANCE DETAIL**  
SCALE: NO SCALE



**A USU POLE BASE DETAIL- SECURITY PULL-BOX MODIFICATION**  
SCALE: NO SCALE

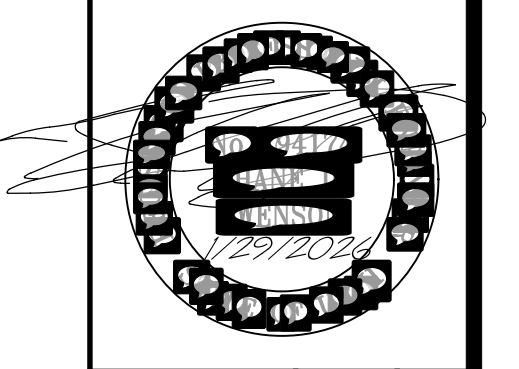
- DETAIL KEYED NOTES**
1. CONDUIT INTO BOX SHALL BE STRAIGHT LINE ENTRIES ALONG CONTINUOUS CONDUIT PATH.
  2. DO NOT USE BEND ENTRIES INTO BOX WITHOUT SPECIFIC PRIOR APPROVAL FROM OWNER. DETERMINATION WILL BE ON A CASE-BY-CASE BASIS IN THE FIELD AND MAY REQUIRE ADDING ADDITIONAL BOXES AT CONTRACTOR'S EXPENSE.
  3. SEAL ALL CONDUIT PENETRATIONS INTO BOX.

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REVISIONS	REV #	DATE

DRAWING INFO	DATE	DESIGNED	DRAWN	CHECKED	PROJECT
	01.29.26	S. SWENSON	D. PATTON	S. SWENSON	SSE#2025076



**USU GUNSHED PARKING IMPROVEMENTS**  
UTAH STATE UNIVERSITY, LOGAN, UTAH  
**ELECTRICAL SITE DETAILS**

**ES502**  
PAGE

TYPE		MANUFACTURER/CATALOG NO.	DESCRIPTION	MOUNTING	POWER	LAMPS
P31- H7K P31- H7K(S)	AAL UCM2-SR-STR-36L-615-4K7-3-CL-(H)-DBT-SLC-TR/SLA4/PR4-4R12226/BC8 VISIONAIRE PD-L-T3-84LC-3-4K--AM-BZ-C1-H2-DIM/WA103-L-S1-4 RNTA-4R-250-12-AKB-343-BZ/DCB12-BZ-4 UNIVERSITY STANDARD. NO EQUIVALENTS	DECORATIVE POLE: USU HISTORIC DISTRICT; SOLID CYLINDER WITH RINGS; STRAIGHT SHADE; FLAT-GLASS LENS; VOLTAGE PER FIELD CONDITIONS; ELECTRONIC, DIMMABLE, DRIVER; TOOLED LENS REMOVAL; DARK-BRONZE FINISH; OFFSET SHEPARD'S CROOK ARM, SMOOTH, ROUND, ALUMINUM POLE; DECORATIVE BASE COVER; TYPE 3 DISTRIBUTION; HOUSE SIDE SHIELD WHERE (H) OPTION SHOWN ON DRAWINGS, VEHICLE BASE/RISER WHERE (V) OPTION INDICATED	POLE: WALKWAY POLE BASE SEE DETAIL B/ESS01	78 W	7000 LUMEN NOMINAL LED 4000K	
P41- G15 P41- G15(L) P41- G15(S)	BEACON VP-1-160L-115-4K8-4W-UNV-ASQU-DBT/SSAB-25-60C-1--DBT-VM1 NO EQUIVALENTS--MATCH EXISTING LOT	POLE FIXTURE/HEAD; 25" SQUARE, ALUMINUM POLE; LED HEAD, MULTI-VOLT, DIMMABLE, DRIVER; FULL BASE COVER, LM-79 AND/OR DESIGN LIGHTS CONSORTIUM RATED; TYPE 4 OPTICAL DISTRIBUTION; HOUSE SIDE SHIELD WHERE (H) OPTION SHOWN ON PLANS; LANDSCAPE RISER AND POLE WHERE (L) OPTION SHOWN ON PLANS; SECURITY PULL BOX WHERE (S) OPTION SHOWN ON PLANS	POLE: PARKING POLE BASE SEE DETAIL D/ESS01	102 W	(1) 15000 LUMEN NOMINAL LED 4000K	
P41- G1A P41- G1A(H)	LITHONIA DSX1-LED-60C-700-40K-T4M-MVOLT-SPA-PER/DMG-DOBX/SSA-30-6J-DM19-FBC-VD-DOB KIM ALT-4-P-35-120L-4K-MVOLT-OB-PSA30-6400-A-DB-BC-VD EQUIVALENT WITH PRIOR APPROVAL	POLE FIXTURE/HEAD; 30" SQUARE, ALUMINUM POLE; LED HEAD, MULTI-VOLT, DIMMABLE, DRIVER; FULL BASE COVER, VIBRATION DAMPER, LM-79 AND/OR DESIGN LIGHTS CONSORTIUM RATED; TYPE 4 OPTICAL DISTRIBUTION	POLE: PARKING POLE BASE SEE DETAIL H/ESS01		(1) 11000 LUMEN NOMINAL LED 4000K	
P41- H7K P41- H7K(S)	AAL UCM2-SR-STR-36L-615-4K7-4W-CL-(H)-DBT-SLC-TR/SLA4/PR4-4R12226/BC8 VISIONAIRE PD-L-T4-84LC-3-4K--AM-BZ-C1-H2-DIM/WA103-L-S1-4 RNTA-4R-250-12-AKB-343-BZ/DCB12-BZ-4 UNIVERSITY STANDARD. NO EQUIVALENTS	DECORATIVE POLE: USU HISTORIC DISTRICT; SOLID CYLINDER WITH RINGS; STRAIGHT SHADE; FLAT-GLASS LENS; VOLTAGE PER FIELD CONDITIONS; ELECTRONIC, DIMMABLE, DRIVER; TOOLED LENS REMOVAL; DARK-BRONZE FINISH; OFFSET SHEPARD'S CROOK ARM, SMOOTH, ROUND, ALUMINUM POLE; DECORATIVE BASE COVER; TYPE 4 DISTRIBUTION; VEHICLE BASE/POLE WHERE (V) OPTION INDICATED	POLE: WALKWAY POLE BASE SEE DETAIL B/ESS01	78 W	7000 LUMEN NOMINAL LED 4000K	
P51- H7K P51- H7K(S)	AAL UCM2-SR-STR-36L-615-4K7-5W-CL-(H)-DBT-SLC-TR/SLA4/PR4-4R12226/BC8 VISIONAIRE PD-L-T5-84LC-3-4K--AM-BZ-C1-H2-DIM/WA103-L-S1-4 RNTA-4R-250-12-AKB-343-BZ/DCB12-BZ-4 UNIVERSITY STANDARD. NO EQUIVALENTS	DECORATIVE POLE: USU HISTORIC DISTRICT; SOLID CYLINDER WITH RINGS; STRAIGHT SHADE; FLAT-GLASS LENS; VOLTAGE PER FIELD CONDITIONS; ELECTRONIC, DIMMABLE, DRIVER; TOOLED LENS REMOVAL; DARK-BRONZE FINISH; OFFSET SHEPARD'S CROOK ARM, SMOOTH, ROUND, ALUMINUM POLE; DECORATIVE BASE COVER; TYPE 5 DISTRIBUTION	POLE: WALKWAY POLE BASE SEE DETAIL B/ESS01	78 W	7000 LUMEN NOMINAL LED 4000K	

NOTES  
-BID PRICING SHALL INCLUDE ALLOWANCES FOR FIXTURES TO BE SERVED AT ALL AVAILABLE CAMPUS VOLTAGES--120/1, 208/1, 240/1, 277/1, AND 480/1

L		LANDSCAPE POLE BASE RISER AND TALLER POLE FOR PARKING POLE BASE	APPENDED TO FIXTURE TYPE; PARKING POLE LIGHT MOUNTED IN LANDSCAPE AREA MORE THAN 3' FROM VEHICULAR TRAFFIC; POLE BASE RISER DECREASE TO 6" PER DETAIL; POLE HEIGHT INCREASE 2' FROM THAT SPECIFIED IN CATALOG NUMBER WHILE RETAINING EPA RATINGS AND DIAMETER OR CROSS-SECTIONAL AREA	D/ESS01 OR B/ESS01 LANDSCAPE RISER;	N/A	N/A
S		SECURITY PULL BOX	APPENDED TO FIXTURE TYPE; POLE BASE MODIFICATION FOR SECURITY PULL BOX SUPPORT APRON	CONCRETE SUPPORT TIED TO POLE BASE AND PULL BOX PER DETAIL A/ESS02	N/A	N/A

NOTES  
-FIXTURE ACCESSORIES ARE ADDED TO STANDARD FIXTURE TYPES THROUGH (X) APPENDS WHERE SELECT FIXTURES REQUIRE THE ACCESSORY, OR IN FIXTURE DESCRIPTIONS WHERE ACCESSORY IS STANDARD FOR ALL FIXTURES OF THAT TYPE.  
-APPENDS ARE INTENDED TO MODIFY FIXTURE CATALOG NUMBERS GIVEN ABOVE AS NOTED IN APPEND DESCRIPTION; MULTIPLE ACCESSORIES MAY BE LISTED IN A SINGLE APPEND (XY), (XZ), ETC

PANEL		TYPE	ABB RQ	3	Ø	4	WIRE	120/208	VOLTS	LOCATION	MOUNTING								
NEW		REMARKS -ALL CIRCUITS CONSIDERED EXISTING UNLESS OTHERWISE INDICATED IN THESE DRAWINGS -+=PROVIDE NEW BREAKER IN EXISTING PANEL								BASEMENT	FLUSH								
EXISTING										MECH ROOM	X SURFACE								
1 NEMA RATING											225 AMP MAIN								
X BOLT ON BREAKERS											X LUGS								
ISOLATED GROUND BUS										BREAKER									
SURGE PROTECT (SPD)																			
No.	BRKR	CIRCUIT DESCRIPTION	L	O	M	WIRE/CND	CIRCL LOAD	A	B	C	CIRCL LOAD	WIRE/CND	L	O	M	CIRCUIT DESCRIPTION	BRKR	No.	
1	30H 3	PUMP: P-3				1 EX EX EX EX	2004	3204			1200	EX EX EX EX				1 HEAT EXCHANGER	20	1 2	
3	- - -					1 EX	2004		3204		1200	EX EX EX EX				1 A/C PANEL	20	1 4	
5	- - -					1 EX	2004			2592	588	EX EX EX EX				1 GLYCOL FEED SYSTEM	20	1 6	
7	20H 3	PUMP: P-2				1 EX EX EX EX	900	900								SPARE	20	1 8	
9	- - -					1 EX	900		900							SPARE	20	1 10	
11	- - -					1 EX	900		900							SPARE	20	1 12	
13	20H 3	PUMP: P-1				1 EX EX EX EX	900	900								SPARE	20	1 14	
15	- - -					1 EX	900		900							SPARE	20	1 16	
17	- - -					1 EX	900		900							SPARE	20	1 18	
19	20 1	SPARE						0								SPARE	20	1 20	
21	20 1	SPARE						0								SPARE	20	1 22	
23	20 1	SPARE						0								SPARE	20	1 24	
25	20 1	SPARE						0				EX EX EX EX				EX: ??	20	1 26	
27	+20 2	SITE LIGHT POLES				12S 12S 12S 3/4S	320		320		680	EX EX EX EX				EX: ??	20	1 28	
29	- - -					12S	320				360	EX EX EX EX			2	PLUGS: BASEMENT MECH	20	1 30	
TOTALS										5004	5324	5072							
FEEDER										SEE ONE-LINE	AMPS/PHASE	42	44	42	PARALLEL RUNS				SEE ONE-LINE
BREAKER CODES										A=ARC-FAULT; G=GROUND FAULT; H=HACR; L=LOCKING HANDLE; S=SHUNT TRIP; R=RED PAINTED HANDLE									
WIRE CODES										I=ADDL ISO GROUND TO MATCH SAFETY GROUND; S=UNLESS OTHERWISE SPECIFIED									
GENERAL CODES										1LN=SEE ONE-LINE DIAGRAM									

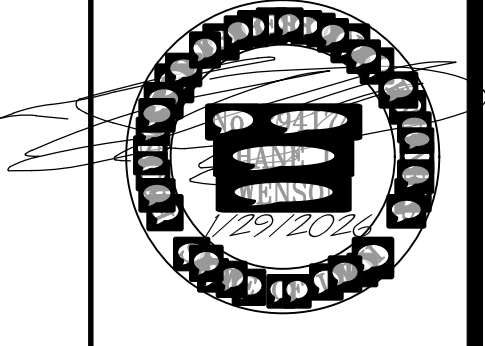
RELAY PANEL		FEEDS	REMARKS	LOCATION	MOUNTING							
ØLC1		X INDIVIDUAL MAIN LUGS	-+=PROVIDE DIMMING CONTROL WIRING PER LOAD TYPE THROUGHOUT CIRCUIT -ACUITY N-LIGHT ARP (NO EQUIVALENTS)	BASEMENT MECH ROOM	FLUSH X SURFACE							
X NEW EXISTING		MAX VOLTAGE MAX PHASE										
		208 1										
No.	RELAY	CONTROLLED CKT	CONTROL ZONE	CONTROL TYPE (SEE SCHEDULE)	No.	No.	CONTROL TYPE (SEE SCHEDULE)	DIMMING* (SEE SCHEDULE)	CONTROL ZONE	CONTROLLED CKT	RELAY	No.
1	20	2	ØP1- 27	SITE POLES	CLK: PH	1	2	CLK: PH	N/A	BLDG EXTERIOR	1P1- 20	20 1 2
3	-	-	-	-	-	3	4	-	-	SPA RE	20 1 4	
5	20	1	SPA RE	-	-	5	6	-	-	SPA RE	20 1 6	
7	20	1	SPA RE	-	-	7	8	-	-	SPA RE	20 1 8	

CLK = TIMECLOCK  
SW = SWITCH (1, 3, OR 4)  
OVER = 2-HOUR TIMED OVERRIDE ON  
PH = PHOTOCCELL

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REVISIONS	DATE	REV #	DATE
DESIGNED	01.29.26	S.SWENSON	
DRAWN		D.PATTON	
CHECKED		S.SWENSON	
PROJECT		SSE#2025076	



**USU GUNSHED PARKING IMPROVEMENTS**  
UTAH STATE UNIVERSITY, LOGAN, UTAH  
**ELECTRICAL SCHEDULES**

**ES601**

T:\Jobs\2025076 USU Gunshed Parking\01 Drawings\05 Electrical\Sine Source Project\Sheets\ES601 ELECTRICAL SCHEDULES.dwg - ES601 ELECTRICAL SCHEDULES - 1/29/2026 03:13pm, chet