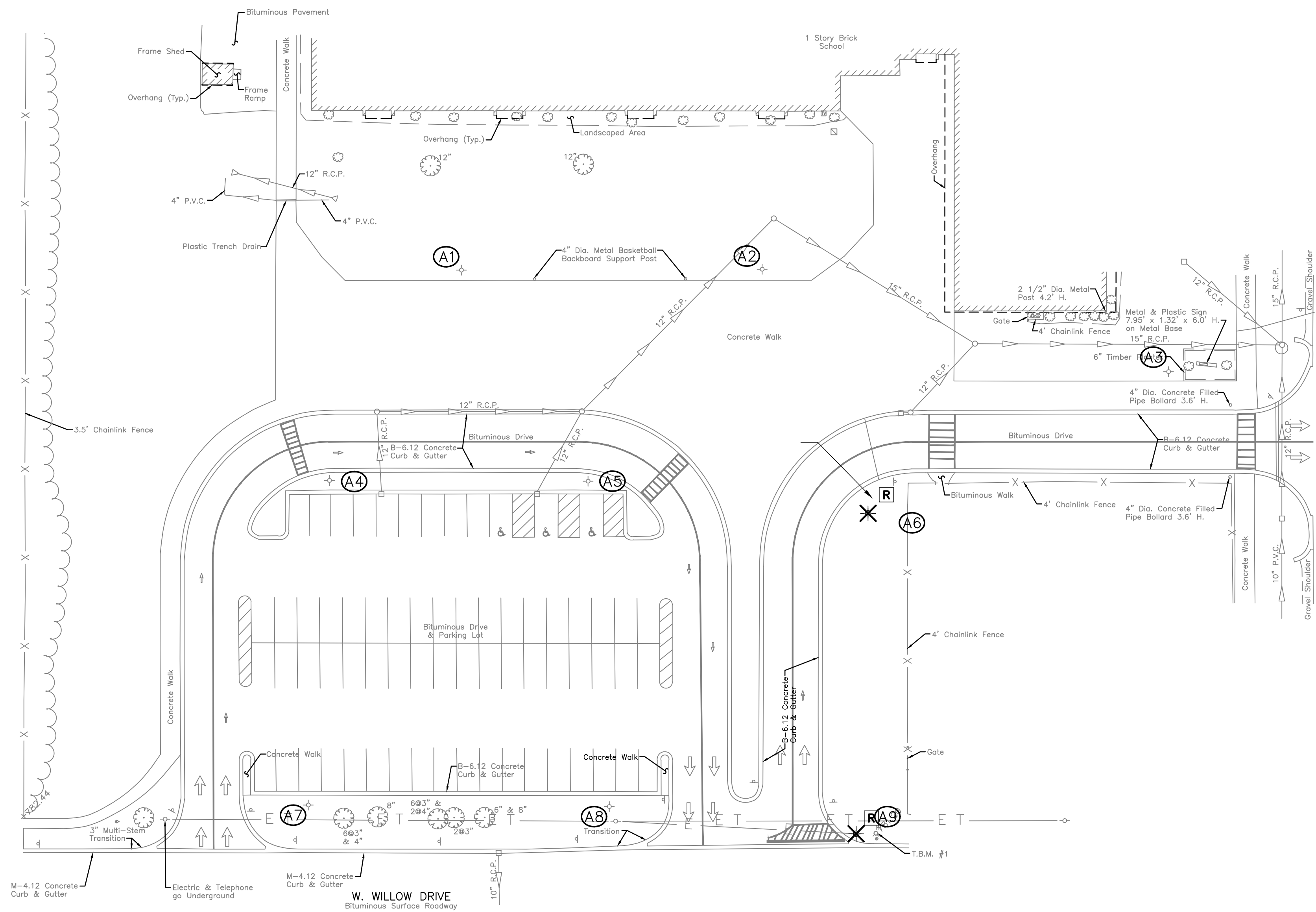
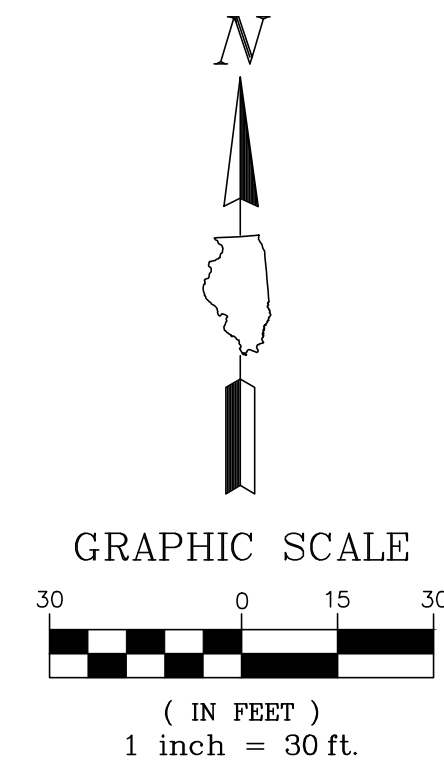


GENERAL LIGHTING NOTES:

1. WORK SHALL MEAN THE FURNISHING OF ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND OTHER INCIDENTALS NECESSARY OR CONVENIENT TO THE SUCCESSFUL COMPLETION OF THE PROJECT AND CONDUCTING ALL DUTIES AND OBLIGATIONS IMPOSED BY THE CONTRACT. WORK MAY ALSO BE USED IN CONTEXT TO DESCRIBE, IN WHOLE OR IN PART, THE COMPLETED FACILITIES TO BE CONSTRUCTED, ALTERED OR REMOVED, AS DETAILED IN THE CONTRACT. THE ENGINEER WILL HAVE EXCLUSIVE AUTHORITY TO DETERMINE THE INTENT AND MEANING OF THE USAGE OF THIS TERM WHEREVER IT APPEARS IN THE CONTRACT.
2. ALL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE, THE ILLINOIS DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" LATEST EDITION, AND ANY APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, CODES, REGULATIONS, AND ORDINANCES HAVING JURISDICTION OVER THIS WORK. IF DISCREPANCIES EXIST THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER TO DETERMINE THE PROPER COURSE OF ACTION.
3. ALL NECESSARY PERMITS, LICENSES, INSPECTIONS, TAXES, AND TESTING COSTS ASSOCIATED WITH THE ELECTRICAL WORK SPECIFIED IN THE CONTRACT DOCUMENTS, SHALL BE INCIDENTAL TO THE CONTRACT AND INCLUDED IN THE BASE BID OR UNIT PRICES OF THE ELECTRICAL PAY ITEMS.
4. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL WORK REQUIRED TO INSTALL A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM. ALL REQUIRED MATERIALS, EQUIPMENT, TOOLS, LABOR, AND INCIDENTALS, UNLESS OTHERWISE PROVIDED IN THE CONTRACT, SHALL BE INCLUDED IN THE BASE BID OR UNIT PRICES OF THE ELECTRICAL PAY ITEMS FOR THE CONTRACT WORK.
5. ALL WORK REQUIRED TO INSTALL THE PROPOSED LIGHTING SYSTEM SHALL BE INCLUDED IN THE BASE BID OR APPLICABLE PAY ITEMS.
6. IF THE CONTRACT INCLUDES PAY ITEMS THE QUANTITIES APPEARING IN THE BID SUMMARY/SCHEDULE OF QUANTITIES ARE ESTIMATES PREPARED FOR THE ESTABLISHMENT OF PAY ITEM UNIT PRICES AND THE COMPARISON OF BIDS. PAYMENT TO THE CONTRACTOR WILL BE MADE FOR THE ACTUAL MEASURED QUANTITIES PERFORMED AND ACCEPTED OR MATERIAL FURNISHED AND ACCEPTED ACCORDING TO THE CONTRACT, AND THE SCHEDULED QUANTITIES MAY BE INCREASED, DECREASED, OR OMITTED. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR EXCEED ANY ESTABLISHED PAY ITEM QUANTITY WITHOUT NOTIFICATION TO THE ENGINEER AND RECEIPT OF WRITTEN AUTHORIZATION.
7. ALL PAY ITEMS REFER TO IDOT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
8. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL BE GUARANTEED BY THE CONTRACTOR AND HIS SURETY FOR A PERIOD OF 12 MONTHS FROM THE DATE OF INITIAL ACCEPTANCE OF THE COMPLETED WORK BY THE OWNER AGAINST ALL DEFECTS IN MATERIALS AND WORKMANSHIP OF WHATEVER NATURE.
9. THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AMBIGUITY, OMISSIONS, OR CONFLICTS IN THE PLANS, SPECIFICATIONS, OR OTHER CONTRACT DOCUMENTS PRIOR TO BIDDING. ABSENCE OF ANY NOTIFICATIONS SHALL BE INTERPRETED TO INDICATE THAT THE CONTRACTOR HAS REVIEWED THE CONSTRUCTION DOCUMENTS AND NO DISCREPANCIES OR CONFLICTS EXIST. THEREFORE, AFTER AWARD OF THE ELECTRICAL CONTRACT, NO ADDITIONAL COMPENSATION WILL BE GRANTED FOR ANY WORK INCLUDED IN THE SCOPE OF WORK.
10. ANY DEVICES, FIXTURES, ETC. SHOWN ON THE DRAWINGS TO REMAIN, BE REMOVED, OR BE RELOCATED IS ONLY FOR THE CONVENIENCE OF THE BIDDER, AND THE ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING A BID.
11. IF THE ELECTRICAL CONTRACTOR PROPOSES ALTERNATE EQUIPMENT SELECTIONS, THEY MUST BE LISTED ON THE BID PROPOSAL AS A DEDUCTIVE ALTERNATE. CATALOG CUTS FOR THE PROPOSED ALTERNATE EQUIPMENT SELECTIONS SHALL BE SUBMITTED WITH THE BID PROPOSAL. ALTERNATE EQUIPMENT SELECTIONS WILL NOT BE PERMITTED AFTER AWARD OF CONTRACT.
12. UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS, ALL MATERIALS PERMANENTLY INCORPORATED IN THE WORK SHALL BE NEW.
13. UNLESS OTHERWISE INDICATED, ALL MATERIALS AND EQUIPMENT SHALL BEAR THE UL LABEL, OR AN APPROVED EQUIVALENT, WHENEVER SUCH LABELING IS AVAILABLE FOR THE TYPE OF MATERIAL OR EQUIPMENT BEING FURNISHED.
14. THE ELECTRICAL CONTRACTOR SHALL VERIFY CONFORMANCE OF THE EQUIPMENT PRIOR TO ORDERING. ANY CHANGES REQUIRED TO ACCOMMODATE THE LOAD OR VOLTAGE OF THE ELECTRICAL SYSTEM SHALL BE SPECIFICALLY IDENTIFIED IN THE SHOP DRAWING SUBMITTAL.
15. PRIOR TO ORDERING ANY ELECTRICAL EQUIPMENT (CONTROL PANELS, POLES, LUMINAIRES, ETC.), THE ELECTRICAL CONTRACTOR SHALL SUBMIT A COMPLETE SET OF SHOP DRAWINGS FOR ENGINEER REVIEW. SHOP DRAWINGS SHALL CONSIST OF MANUFACTURER'S CATALOG CUTS AND DESCRIPTIVE DATA SHEETS FOR ALL SPECIFIED EQUIPMENT.
16. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE ELECTRICAL WORK WITH ALL OTHER TRADES AND MAKE FIELD ADJUSTMENTS AS NECESSARY TO ACCOMMODATE THE PROPOSED INSTALLATION.
17. THE EXACT LOCATIONS OF ALL UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR BEFORE INSTALLATION OF ANY COMPONENT OF THE LIGHTING SYSTEM.
18. TEST HOLES REQUIRED TO CONFIRM THE DEPTH AND LOCATION OF EXISTING UTILITIES ARE TO BE MADE BY THE CONTRACTOR AT THEIR OWN EXPENSE. RESTORATION AND BACKFILL RELATED TO THESE TEST HOLES SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
19. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AFFECTING THEIR WORK WITH THE ACTUAL CONDITIONS AT THE JOB SITE. IF THERE ARE ANY DISCREPANCIES FROM WHAT IS SHOWN ON THE CONSTRUCTION PLANS, STANDARD SPECIFICATIONS AND/OR SPECIAL DETAILS, THE CONTRACTOR SHALL SECURE WRITTEN INSTRUCTION FROM THE ENGINEER PRIOR TO PROCEEDING.
20. THE CONTRACTOR IS RESPONSIBLE FOR METHODS OF CONSTRUCTION, JOB SITE SAFETY, AND THE SAFETY OF THE GENERAL PUBLIC IN AND NEAR THE PROJECT SITE.
21. ALL WORK, WHETHER OR NOT IT WAS INSPECTED BY THE VILLAGE, OWNER, OR ENGINEER IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR COMPLETING THE WORK, AND THE CONTRACTOR IS IN NO WAY RELIEVED OF ANY SAFETY, CONTRACTUAL, OR LEGAL OBLIGATIONS.
22. ACCESS TO WORK AREAS, INCLUDING SCHEDULED WORK, MUST HAVE PRIOR APPROVAL OF THE OWNER/LANDLORD AND TENANT.
23. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE ELECTRICAL CONTROLLER OPERATIONS RELATED TO DEMOLITION AND INSTALLATION WITH THE OWNER OR FACILITY MANAGER, AS NECESSARY.
24. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE SCHEDULING OF DELIVERY, RECEIVING, UNLOADING, STORING, UNPACKING, STACKING, AND PROTECTING FROM DAMAGE, VANDALISM, THEFT OR WEATHER DURING CONSTRUCTION OF ALL EQUIPMENT FURNISHED BY OR TO THE ELECTRICAL CONTRACTOR FOR THIS CONTRACT.
25. NO MATERIALS SHALL BE DELIVERED TO THE JOB SITE UNTIL A STORAGE LOCATION AND ALL PERTINENT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.
26. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL SUBMITTALS, DELIVERIES, AND SCHEDULING TO MEET THE PROJECT COMPLETION DATES.
27. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING CLEAN AND ORDERLY WORK AREAS. UPON COMPLETION OF THE WORK DAY THE ELECTRICAL CONTRACTOR SHALL REVIEW AND CHECK THE DAYS WORK, CLEANUP DEBRIS, PUT EQUIPMENT AND UNUSED MATERIAL BACK IN APPROVED STAGING AREA, AND REMOVE SURPLUS MATERIALS FROM THE JOB SITE.
28. THE CONTRACTOR SHALL MARK THE PROPOSED LOCATIONS OF ALL LIGHT POLES, HANDHOLES, AND RECEPTACLES FOR VERIFICATION AND APPROVAL BY THE ENGINEER, PRIOR TO STARTING WORK.
29. IF LIGHTS ARE POSITIONED NEAR OVERHEAD UTILITIES, THE CONTRACTOR SHALL CONTACT THE LOCAL UTILITY FOR LOCATION APPROVAL.
30. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT OF FINISHED GRADE AND COORDINATING THE FINISHED GRADE ELEVATION WITH THE TOP OF THE FOUNDATION.
31. NO POLES SHALL BE ERECTED UNTIL THE RESPECTIVE FOUNDATIONS HAVE CURED, AS APPROVED BY THE ENGINEER.
32. POLES SHALL NOT BE ERECTED AND LEFT TO STAND WITHOUT LUMINAIRES, AND THE PROPOSED LIGHT POLES WILL NOT BE CONSIDERED COMPLETE WITHOUT THE LUMINAIRES INSTALLED.
33. THE PROPOSED ELECTRICAL PLAN SHALL BE A PROPERLY GROUNDED AC SYSTEM.
34. ALL CONDUCTORS AND EQUIPMENT SHALL HAVE PROPER OVERCURRENT PROTECTION. OVERCURRENT PROTECTION SHALL BE PROVIDED FOR EACH LUMINAIRE AND ITS ASSOCIATED BRANCH CIRCUIT THROUGH THE USE OF POLE BASE FUSING. ALL POLE BASE FUSES SHALL BE COPPER BUSSMANN, SIZED FOR ASSOCIATED LINE/LOAD TERMINAL CONNECTIONS.
35. BRANCH CIRCUIT AND EQUIPMENT IDENTIFICATION: FURNISH AND INSTALL ENGRAVED PLASTIC NAMEPLATES (BLACK FACE WITH MINIMUM OF 1/2" HIGH WHITE LETTERS) SCREWED OR RIVETED TO THE COVER OF ALL CONTROL EQUIPMENT (DISCONNECT SWITCHES, CONTROL CABINETS, STARTERS, ETC.) INDICATING THE IDENTIFICATION TAG OF THE EQUIPMENT SERVED. ON THE INSIDE COVER OF THE CONTROL EQUIPMENT INDICATE THE PANEL AND BRANCH CIRCUIT NUMBER SERVING THE EQUIPMENT. PROVIDE PERMANENT IDENTIFICATION ON ALL DEVICES (RECEPTACLES, SWITCHES, LIGHT POLES, ETC.) INDICATING THE PANEL AND BRANCH CIRCUIT NUMBER SERVING THE DEVICE, THE BRANCH CIRCUIT NUMBER SHALL BE INDICATED ON THE INSIDE OF THE DEVICE COVER PLATE.
36. CONCRETE FOUNDATIONS SHALL BE REMOVED TO A MINIMUM OF 2 FT BELOW GRADE, AND SHALL EXTEND DEEPER WHERE REQUIRED TO FACILITATE PROPOSED CONSTRUCTION. THE UNDERGROUND CONDUIT AND CABLES SHALL BE SEPARATED FROM THE FOUNDATION AT 2.5 FT BELOW GRADE AND ABANDONED, REMOVED, OR RE-USED AS SPECIFIED IN THE CONTRACT DOCUMENTS.
37. ALL SUSPENDED CONDUITS SHALL BE RIGIDLY SUPPORTED FROM THE BUILDING STRUCTURE BY MEANS OF APPROVED CONDUIT FASTENERS, HANGERS, STRAPS, SUPPORTS, CLAMPS, ETC., FIRMLY ANCHORED IN PLACE AND SPACED AT INTERVALS NOT TO EXCEED 10 FT. ELECTRICAL RACEWAYS ARE NOT TO BE SUPPORTED OR ATTACHED TO CEILING. THE SUPPORT EQUIPMENT SHALL BE "BOLT-ON" TYPE GALVANIZED STEEL FOR EXPOSED CONSTRUCTION AND IN WET AREAS. SNAP-ON METAL CLIPS IN METAL PARTITION WALLS AND INDEPENDENTLY SUPPORTED ABOVE THE SUSPENDED CEILING WILL BE PERMITTED. ALL DEVICES/EQUIPMENT UTILIZED FOR THE SUPPORT OF CONDUIT SHALL BE UL LISTED FOR THE USE.
38. ALL INTERIOR CONDUIT RACEWAYS SHALL BE CONCEALED IN OR WITHIN THE: WALL, CEILING CAVITY, SLAB, GRADE, ETC., UNLESS NOTED OTHERWISE ON THE PLANS. ALL INTERIOR RACEWAYS ARE TO BE ROUTED OVERHEAD UNLESS INDICATED OTHERWISE ON THE PLANS. RACEWAYS ARE TO BE INSTALLED IN THE METHOD INDICATED ON THE ELECTRICAL PLANS, ANY DEVIATION TO THE PLAN OR FOR A PROPOSED RACEWAY TO BE ROUTED EXPOSED THROUGH A FINISHED AREA SHALL BE APPROVED IN WRITING BY THE ENGINEER PRIOR TO THE INSTALLATION. ALL CONDUIT SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO WALLS AND STRUCTURAL MEMBERS, EVEN WHERE INSTALLED ABOVE A CONCEALED CEILING, WITH 90-DEGREE BENDS WHERE REQUIRED, AND SHALL BE RACKED.
39. NO INTERIOR CONDUITS SHALL BE ROUTED THROUGH OR IN H.V.A.C. DUCTS.
40. ALL JUNCTION OR PULL BOXES LOCATED ABOVE SUSPENDED CEILING SHALL BE MOUNTED A MINIMUM OF 12" ABOVE THE CEILING IN AN ACCESSIBLE LOCATION. ALL JUNCTION OR PULL BOXES EXPOSED TO WET, DAMP, OR OUTDOOR CONDITIONS SHALL BE CAST METAL TYPE WITH GASKETED COVERS.
41. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL SLEEVES FOR ALL INTERIOR CONDUIT PENETRATIONS THRU BLOCK OR CONCRETE WALLS, FOUNDATION WALLS OR CONCRETE FLOORS. FIREPROOF ALL OPENINGS AND PENETRATIONS CREATED BETWEEN FLOORS AND/OR ANY INTERIOR FIRE SEPARATION BLOCK WALLS FOR ELECTRICAL EQUIPMENT USE WITH AN ENGINEER APPROVED UL LISTED FIRE RETARDANT MATERIAL.
42. NO HOLES OR RECESSIONS MAY BE CUT IN WALLS, FLOORS, CEILING, OR ANY PART OF THE BUILDING FOR WORK UNDER THIS CONTRACT WITHOUT PRIOR APPROVAL BY THE OWNER. WORK SHALL BE PERFORMED BY A COMPETENT MECHANIC SKILLED IN THIS FIELD. ALL CUTTING SHALL BE DONE WET TO MINIMIZE THE SPREAD OF DUST, AND THE CONTRACTOR SHALL PROVIDE DUST PROTECTION AS REQUIRED BY THE OWNER. THE PORTIONS CUT FOR ACCESS MUST BE RESTORED TO THEIR ORIGINAL CONDITION AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR.
43. THE ELECTRICAL CONTRACTOR SHALL WATERPROOF ALL OPENINGS AND PENETRATIONS CREATED THROUGH FOUNDATION AND EXTERIOR WALLS WITH AN ENGINEER APPROVED WATERPROOF MATERIAL.
44. UPON COMPLETION OF THE PERMANENT LIGHTING SYSTEM, THE ELECTRICAL CONTRACTOR SHALL REQUEST IN WRITING A PREFINAL INSPECTION TO GENERATE A PUNCH LIST. THE ELECTRICAL CONTRACTOR SHALL MAKE CORRECTIONS, AS REQUIRED, AND A FINAL INSPECTION SHALL BE PERFORMED. IF ANY PUNCH LIST ITEMS ARE FOUND NOT TO BE CORRECTED TO THE SATISFACTION OF THE OWNER AND ENGINEER, A REVISED PUNCH LIST WILL BE GENERATED AND ANOTHER FINAL INSPECTION WILL BE PERFORMED UPON COMPLETION OF THE PUNCH LIST ITEMS. IF PUNCH LIST ITEMS ARE STILL NOT COMPLETED AND ADDITIONAL INSPECTIONS ARE REQUIRED BY THE ENGINEER, THE ELECTRICAL CONTRACTOR WILL BE INVOICED ON A TIME AND MATERIALS BASIS UNTIL ALL PUNCH LIST ITEMS ARE CORRECTED TO THE SATISFACTION OF THE OWNER.
45. THE PROPOSED LIGHTING SYSTEM SHALL BE TESTED ACCORDING TO ART. 801.13 OF THE STANDARD SPECIFICATIONS, PRIOR TO THE FINAL INSPECTION. THE ELECTRICAL CABLES SHALL BE MEG TESTED PRIOR TO CONNECTING THE LED LUMINAIRES.
46. THE ELECTRICAL CONTRACTOR SHALL FURNISH THREE (3) SETS OF CONTRACT RECORD PORTFOLIOS TO THE ENGINEER BEFORE FINAL PAYMENT WILL BE ISSUED. THE CONTRACT RECORD PORTFOLIO SHALL CONTAIN: CONTRACT RECORD DRAWINGS; SHOP DRAWINGS; COMPLETE OPERATING INSTRUCTIONS; ANY EQUIPMENT DRAWINGS INDICATING PART NUMBERS; MAINTENANCE MANUALS; WIRING DIAGRAMS; TESTING DATA; ETC., FOR ALL ITEMS OF EQUIPMENT AND DEVICES FURNISHED UNDER THIS CONTRACT.
47. EXISTING ITEMS (CURBS, LANDSCAPING, SIDEWALKS, FENCING, ETC.) DISTURBED BY THE ELECTRICAL INSTALLATION BEYOND THE LIMITS OF THE SITE CONSTRUCTION, SHALL BE RESTORED TO THEIR LIKE NEW CONDITION BY THE ELECTRICAL CONTRACTOR TO THE SATISFACTION OF THE OWNER, AT THE EXPENSE OF THE CONTRACTOR.
48. ALL RACEWAYS WHICH EXTEND OUTSIDE OF A STRUCTURE OR DUCT BANK BUT ARE NOT TERMINATED IN A CABINET, JUNCTION BOX, PULL BOX, HANDHOLE, POST, POLE, OR PEDESTAL SHALL EXTEND A MINIMUM OF 12"(OR THE LENGTH SHOWN ON THE PLANS) BEYOND THE STRUCTURE OR DUCT BANK. THE END OF THIS EXTENSION SHALL BE CAPPED AND SEALED WITH A CAP DESIGNED FOR THE CONDUIT TO BE CAPPED. THE ENDS OF RIGID METAL CONDUIT TO BE CAPPED SHALL BE THREADED, THE THREADS PROTECTED WITH FULL GALVANIZING, AND CAPPED WITH A THREADED GALVANIZED STEEL CAP. THE ENDS OF RIGID NONMETALLIC CONDUIT AND COILABLE NONMETALLIC CONDUIT SHALL BE CAPPED WITH A RIGID PVC CAP OF NOT LESS THAN 3 MM (0.125") THICK. THE CAP SHALL BE SEALED TO THE CONDUIT USING A ROOM-TEMPERATURE-VULCANIZING (RTV) SEALANT COMPATIBLE WITH THE MATERIAL OF BOTH THE CAP AND THE CONDUIT. A WASHER OR SIMILAR METAL RING SHALL BE GLUED TO THE INSIDE CENTER OF THE CAP WITH EPOXY, AND THE PULL CORD SHALL BE TIED TO THIS RING.
49. CONDUIT REQUIREMENTS:
49.1. ALL CONDUIT PROVIDED BY THIS CONTRACT SHALL CONFORM TO SECTION 1088.01 OF IDOT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
49.2. ALL UNDERGROUND CONDUIT SHALL BE INSTALLED AT A MINIMUM DEPTH OF 30 INCHES UNLESS OTHERWISE INDICATED.
49.3. CONDUIT SHALL BE POSITIONED IN THE FIELD TO AVOID CONFLICT WITH TREES, BUSHES, DRAINS AND OTHER UTILITIES.
49.4. CHANGES IN DIRECTION SHALL BE ACCOMPLISHED BY UNIFORMLY BENDING THE CONDUIT TO FIT THE RADIUS, OR STANDARD FITTINGS MAY BE USED.
- 49.5. ALL BENDS MUST BE MADE WITH A STANDARD PIPE BENDER.
- 49.6. IF THE CONDUIT IS CUT, IT SHALL BE CUT SQUARE, REAMED, AND CLEANED TO REMOVE ALL BURRS AND CUTTINGS. WHEN NECESSARY THE PIPE SHALL BE RE-THREADED.
- 49.7. ALL CONDUIT AND FITTINGS SHALL HAVE THE BURRS AND ROUGH PLACES SMOOTHED AND ALL CONDUIT RUNS SHALL BE CLEANED AND SWABBED BEFORE CABLES OR DUCT ARE INSTALLED.
50. CABLE REQUIREMENTS:
50.1. THE UNDERGROUND CABLE SIZED NO. 2 AWG AND SMALLER SHALL BE U.L. LISTED TYPE RHH/RHW AND MAY BE TYPE RHH/RHW/USE. CABLE SIZED LARGER THAN NO. 2 AWG SHALL BE U.L. LISTED TYPE RHH/RHW/USE
50.2. THE ABOVE GROUND CABLE, LOCATED INSIDE BUILDINGS AND NOT SUBJECT TO MOISTURE, SHALL BE UL LISTED TYPE THHN.
50.3. THE CABLE SHALL BE RATED 600 VOLTS.
50.4. THE CABLE SHALL BE RATED AT A MINIMUM OF 90 C DRY AND 75 C WET AND SHALL BE SUITABLE FOR INSTALLATION IN WET AND DRY LOCATIONS, AND SHALL BE RESISTANT TO OILS AND CHEMICALS.
50.5. COATED CONDUCTORS SHALL BE ACCORDING TO ASTM B 33, ASTM B 8, ICEA S-95-658/NEMA WC70 AND UL STANDARD 44.
50.6. CABLE INSULATION DESIGNATED AS XLP SHALL INCORPORATE CROSS-LINKED POLYETHYLENE (XLP) INSULATION AS SPECIFIED AND SHALL MEET OR EXCEED THE REQUIREMENTS OF ICEA S-95-658, NEMA WC70, AND U.L. STANDARD 44
50.7. THE UL LISTING MARK, CABLE VOLTAGE, INSULATION TYPE AND RATINGS, AS WELL AS THE CABLE SIZE SHALL ALL BE CLEARLY PRINTED ON THE CABLE IN A COLOR CONTRASTING WITH THE INSULATION COLOR.
50.8. ALL ELECTRIC CABLES INSTALLED SHALL BE COLOR CODED.
50.9. EACH WIRE INSTALLED SHALL BE IDENTIFIED WITH ITS COMPLETE CIRCUIT NUMBER AT EACH TERMINATION, SPLICE, JUNCTION BOX OR OTHER LOCATION WHERE THE WIRE IS ACCESSIBLE.
50.10. THE CABLE IDENTIFICATION LABELS SHALL BE WEATHER AND UV RESISTANT.
50.11. WIRING IDENTIFICATION MARKERS SHALL BE EITHER CLOTH TAPE OR CLIP-ON. CLOTH TAPE WIRE MARKERS IDENTIFICATION SHALL BE MADE USING SELF-STICKING WIRE MARKERS, WRAPPED AROUND THE WIRE. THE MARKERS SHALL HAVE BLACK CHARACTERS NOT LESS THAN 5/16 IN. HIGH ON A WHITE OR YELLOW BACKGROUND. MARKERS SHALL BE IN STRIPS NOT LESS THAN 1 1/2 IN. LONG AND SHALL BE MADE OF A HIGH-TACK CLOTH TAPE WITH PRINTING PROTECTED BY A CLEAR, PERMANENT OVERCOATING. CLIP-ON WIRE MARKERS SHALL BE WHITE WITH BLACK LETTERING. THE PROPER SIZE OF WIRE MARKERS SHALL BE USED TO PREVENT SLIPPING OF THE MARKERS ON THE CABLE.
50.12. POLE WIRE SHALL RUN FROM HANDHOLE TO LUMINAIRE.
50.13. POLE WIRE SHALL BE SIZED NO. 10, RATED 600 V, RHW/USE-2, AND HAVE COPPER CONDUCTORS, STRANDED IN CONFORMANCE WITH ASTM B 8. POLE WIRE SHALL BE INSULATED WITH CROSS-LINKED POLYETHYLENE (XLP) INSULATION.
50.14. ALL CABLE RUNS SHALL BE INSTALLED WITHOUT UNDERGROUND SPLICES OR JUNCTION BOX, UNLESS OTHERWISE INDICATED ON THE PLANS. UNDERGROUND SPLICING OF CABLES WILL NOT BE PERMITTED.
51. GROUNDING REQUIREMENTS:
51.1. ALL FOUNDATIONS SHALL BE EQUIPPED WITH A GROUNDING ROD.
51.2. GROUNDING CONNECTIONS AT THE FOUNDATIONS SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO BACKFILLING.
51.3. THE EQUIPMENT GROUNDING CONDUCTOR (GREEN WIRE) SHALL BE INSULATED.
51.4. THE GROUNDING CONDUCTOR SHALL EXTEND CONTINUOUSLY WITH ALL CIRCUIT CONDUCTORS, AND SHALL BE BONDED TO THE SYSTEM GROUND AT THE CONTROL PANEL.
51.5. THE GROUNDING CONDUCTOR SHALL BE SPLICED AND BONDED AT EACH POLE.
52. RECEPTACLE REQUIREMENTS:
52.1. GROUND FAULT DUPLEX, 125 VOLT, 20 AMP, 3 WIRE GROUNDING TYPE, IMPACT RESISTANT THERMOPLASTIC FACE, STRAIGHT BLADE, N.E.M.A. TYPE 5-20R, TEST AND RESET BUTTONS IN FACE, AND UL LISTED.
52.2. THE COVER SHALL MEET THE FOLLOWING SPECIFICATIONS: WEATHERPROOF, NEMA 3R RATED WHILE IN USE, NON-LOCKING, STANDARD DEPTH, VERTICAL MOUNT, FEDERAL SPECIFICATION AND U.L. LISTED, AND 2003 U.L. 943 COMPLIANT, COLOR TO MATCH POLE.
52.3. RECEPTACLES THAT ARE INDICATED FOR G.F.I. PROTECTION SHALL PROTECT THE RECEPTACLE INDICATED ONLY.
53. ELECTRICAL TAPE SHALL BE ALL WEATHER VINYL PLASTIC TAPE RESISTANT TO ABRASION, PUNCTURE, FLAME, OIL, ACIDS, ALKALIS, AND WEATHERING, CONFORMING TO FEDERAL SPECIFICATION MIL-I-24391, ASTM D1000 AND SHALL BE LISTED UNDER UL 510 STANDARD. THICKNESS SHALL NOT BE LESS THAN 0.215 MM (8.5 MILS) AND WIDTH SHALL NOT BE LESS THAN 20 MM (3/4-INCH)."

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EXISTING LIGHTING NOTES:

1. THE PANELBOARD POWERING THE SITE LIGHTING AND OUTLETS IS A 42 SPACE SIEMENS (S1C42ML250CTS), 208Y/120V, 3-PHASE, 4-WIRE, WITH A 150AMP MAIN. LABELED 'B/A' WITHIN THE ELECTRICAL ROOM.
2. THE LIGHTING CIRCUITS ARE CONNECTED TO ONE OF THREE SIEMENS 6-POLE CONTACTORS (A, B, & C) OPERATED BY A TIME CLOCK.
3. PARKING LOT LIGHTING ARE CONTROLLED BY A TORK T930L TIME CLOCK.
4. LIGHTING CONTROLS AND PANELBOARD ARE LOCATED INSIDE BUILDINGS ELECTRICAL EQUIPMENT ROOM.
5. THE EXISTING PARKING LOT LIGHT FIXTURES ARE SHOEBOX STYLE AREA LUMINAIRES, 175W METAL HALIDE, TYPE 3 DISTRIBUTION, WITH MULTI-TAP BALLASTS (208V SYSTEM). (LUMARK: MHR-R3-175-MT-OA1062-LL)
6. THE EXISTING PARKING LOT LIGHT POLES ARE 15-FT SQUARE STRAIGHT STEEL (SSS). THE WALL THICKNESS IS 0.12, 4" POLE WIDTH, WITH A 10.5" SQUARE BASE COVER. (LUMARK: SSS4A15SF)
7. EXISTING CONCRETE FOUNDATIONS ARE 24" DIA. X 80" DEEP, WITH A DESIGNED EXPOSURE HEIGHT OF 7". THEY INCLUDE 4-5/8" DIA. VERTICAL REINFORCING BARS, A 5/8" X 10' COPPER CLAD GROUNDING ROD, 4 ANCHOR BOLTS (PER THE MANUFACTURERS SPECIFICATIONS FOR THE EXISTING LIGHT POLES), AND PVC RACEWAYS (SIZED TO MATCH THE UNDERGROUND CONDUIT).
8. THE PANELBOARD POWERING THE SITE LIGHTING AND OUTLETS IS A 42 SPACE SIEMENS (S1C42ML250CTS), 208Y/120V, 3-PHASE, 4-WIRE, WITH A 225AMP MAIN. LABELED 'B/A' WITHIN THE ELECTRICAL ROOM.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS, CONNECTIVITY OF THE EXISTING LIGHTS, AND LOCATE EXISTING UTILITIES PRIOR TO ORDERING ANY MATERIAL OR STARTING WORK. IF ANY CONFLICTS EXIST WITH THE PROPOSED IMPROVEMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER, AND ANY ADJUSTMENT MADE TO THE PROPOSED LIGHT POLE LOCATIONS AS A RESULT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
 2. THE CONTRACTOR SHALL COORDINATE WITH THE FACILITY MANAGER FOR THE EXACT LOCATIONS OF THE ELECTRICAL EQUIPMENT ROOM, ELECTRICAL PANELS, AND THE SITE LIGHTING CONTROLS.
 3. THE EXISTING UNDERGROUND CONDUIT ARE APPROXIMATIONS BASED ON ORIGINAL CONSTRUCTION PLANS. THE EXACT ROUTING, LOCATIONS, AND SPECIFICATIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING WORK
 4. TO COMPLETE THE DEMOLITION WORK, THE CONTRACTOR SHALL REMOVE, MODIFY, OR ABANDON THE EXISTING LIGHTING SYSTEM AS REQUIRED TO COMPLETE THE PROPOSED LIGHTING IMPROVEMENTS.
5. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO DETERMINE WHAT EQUIPMENT SHALL BE SALVAGED. ANY EQUIPMENT THAT ISN'T SALVAGED, SHALL BECOME PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE JOBSITE WITHIN THREE (3) WORKING DAYS.
6. THE CONTRACTOR SHALL MAINTAIN THE EXISTING LIGHTING SYSTEM AND ALL LIGHTS SHALL REMAIN OPERATIONAL UNTIL THEY INTERFERE WITH THE PROPOSED IMPROVEMENTS. ONCE A CONFLICT EXISTS, THE CONTRACTOR SHALL DISCONNECT AND REMOVE THE LIGHTING AS IDENTIFIED ON THE PLAN SHEETS.
7. THE REMOVAL OF ELECTRICAL CABLE AND CONDUIT, NECESSARY TO REESTABLISH CONNECTIONS, SHALL NOT BE PAID FOR SEPARATELY, AND SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE OF THE APPLICABLE PAY ITEMS.

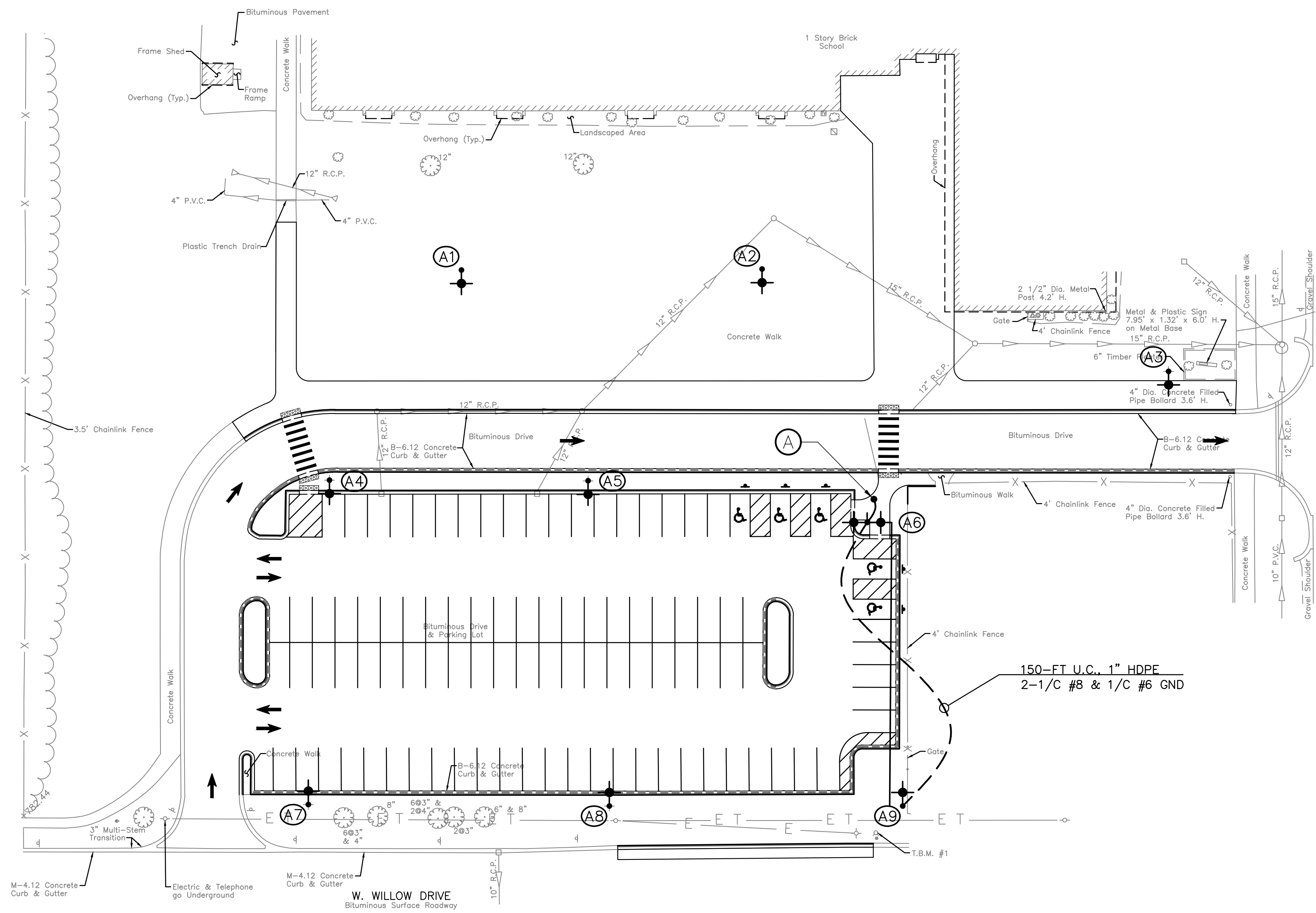
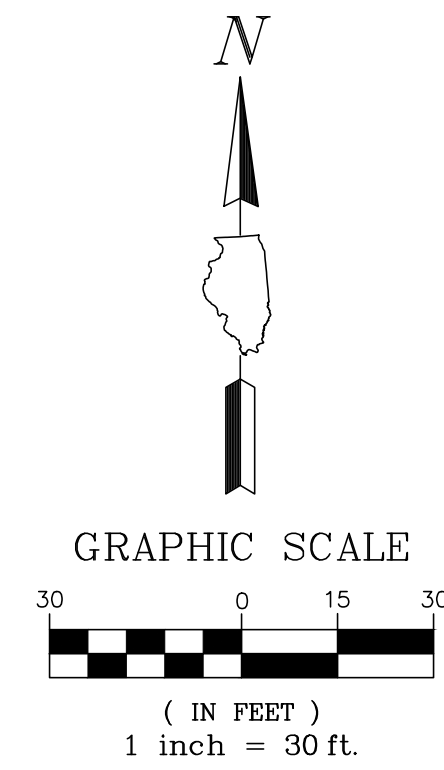
LEGEND

- EXISTING LIGHTING UNIT, TO REMOVE
- EXISTING STREET LIGHT CONDUIT, TO ABANDON IN PLACE
- EXISTING HANDHOLE, REMOVE AND RELOCATE
- CKT B/A-# - DENOTES ELECTRICAL PANEL AND CIRCUIT BREAKER
CONTACTOR 'A' - DENOTES LIGHTING CONTACTOR ID
EXISTING 'A# - DENOTES EXISTING/PROPOSED & FIXTURE NUMBER ON GIVEN CIRCUIT
- EXISTING FLOOD LIGHT, TO REMAIN
- EXISTING BOLLARD, TO REMAIN
- EXISTING STREET LIGHT CONDUIT, TO REMAIN

NO.	BY	DATE	REVISION	NO.	BY	DATE	REVISION

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DATE: 01-13-23		

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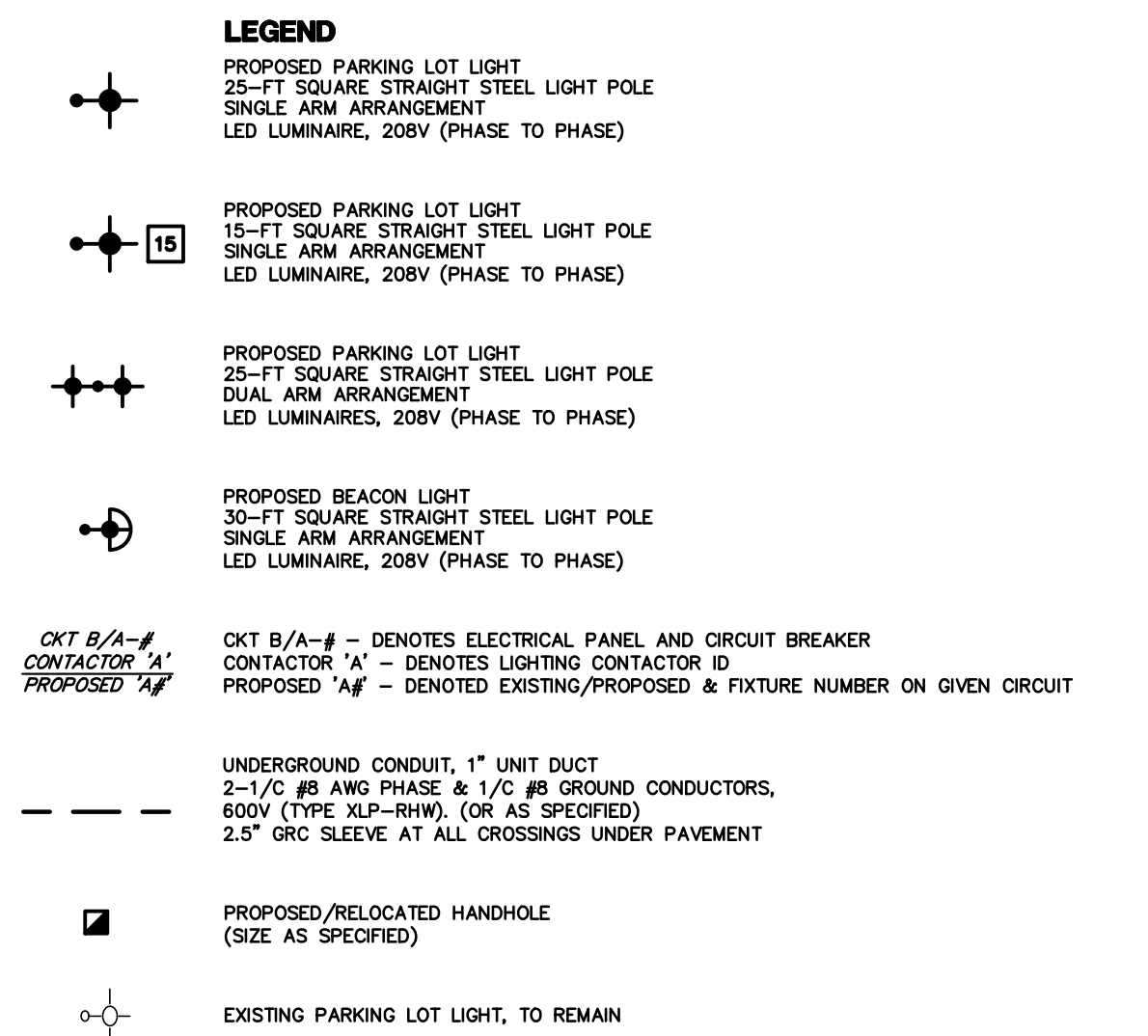


PLAN NOTES:

1. THE CONTRACTOR SHALL MODIFY THE EXISTING LIGHTING SYSTEM AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE EXISTING LIGHTING UNITS, BOLLARDS, FLOOD LIGHTS, AND ASSOCIATED CONDUIT/CABLE SHALL BE MODIFIED, RELOCATED, OR REPLACED AS SHOWN. ALL COSTS ASSOCIATED WITH THE ELECTRICAL WORK SHALL BE INCLUDED IN THE BASE BID OR CONTRACT PAY ITEMS.
2. THE CONTRACTOR SHALL COORDINATE WITH THE FACILITY MANAGER FOR THE EXACT LOCATIONS OF THE ELECTRICAL EQUIPMENT ROOM, ELECTRICAL PANELS, AND THE SITE LIGHTING CONTROLS.
3. ALL CABLE SPLICES SHALL BE MADE IN HANDHOLES, JUNCTION BOXES OR POLES. UNDERGROUND SPLICING OF CABLES SHALL NOT BE PERMITTED. ALL SPLICES SHALL BE WATER TIGHT.
4. CONDUIT SLEEVES SHALL BE INSTALLED A MINIMUM OF 2-FT BEYOND THE BACK OF CURB.
5. THE PROPOSED LIGHT POLES SHALL BE INSTALLED WITH A 4-FT SETBACK FROM THE EDGE OF PAVEMENT OR BACK OF CURB, AS APPLICABLE, TO THE CENTER OF THE LIGHT POLE FOUNDATION. THE LIGHT POLES WITHIN THE MEDIAN SHALL BE ENTERED BETWEEN THE CURBS.
6. THE CONTRACTOR SHALL VERIFY FOUNDATION EXPOSURE HEIGHTS PRIOR TO FRAMING THE LIGHT POLE FOUNDATIONS.
7. THE CONTRACTOR SHALL MAINTAIN THE PARKING LOT SITE LIGHTING THROUGHOUT THE DURATION OF CONSTRUCTION.
8. LIGHT POLES SHALL BE LABELED (#)(VOLTAGE)(WATTAGE)(PANEL-CIRCUIT).
9. LABELS SHALL BE PLACED ON THE BACKSIDE OF THE ACCESS PANEL OF THE LIGHT POLE.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL INSTALL A NEW RECEPTACLE ON LIGHT POLE 'B3'. THE POLE SHALL INCLUDE AN INTEGRATED FESTOON BOX, MANUFACTURED WITH THE POLE AND PAINTED BLACK TO MATCH. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE PROPOSED LIGHTING UNIT. (REFER TO RECEPTACLE REQUIREMENTS IN GENERAL LIGHTING NOTES FOR MORE DETAILS)
2. TO RECONNECT THE PROPOSED LIGHT POLES TO THE EXISTING ELECTRICAL SYSTEM (INCLUDING THE EXISTING BOLLARDS AND FLOOD LIGHTS), THE CONTRACTOR SHALL SPLICE A NEW SECTION OF CONDUIT TO THE EXISTING UNDERGROUND CONDUIT (MATCH SIZE AND MATERIAL), AND REMOVE AND REPLACE THE EXISTING ELECTRICAL CABLE WITHIN THE CONDUIT TO THE NEAREST JUNCTION POINT. (IF THERE IS ADEQUATE SLACK THE CONTRACTOR CAN REUSE THE EXISTING CABLE WITH THE APPROVAL OF THE ENGINEER). ALL COSTS TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE CONTRACT UNIT PRICES OF THE APPLICABLE PAY ITEMS.



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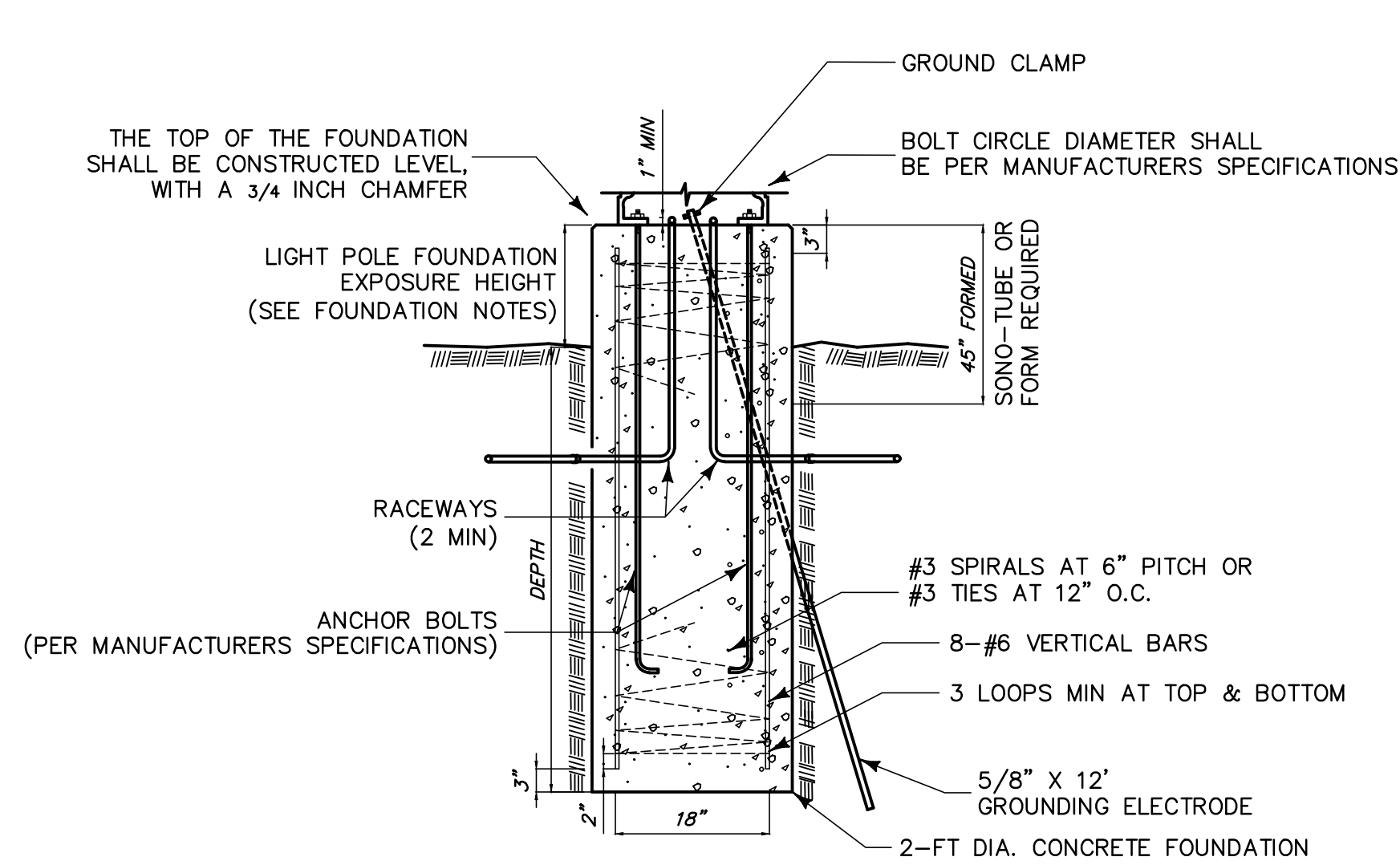
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PROPOSED LIGHTING PLAN
WJ MURPHY ELEMENTARY SCHOOL
2023 SITE IMPROVEMENTS
ROUND LAKE PARK, ILLINOIS

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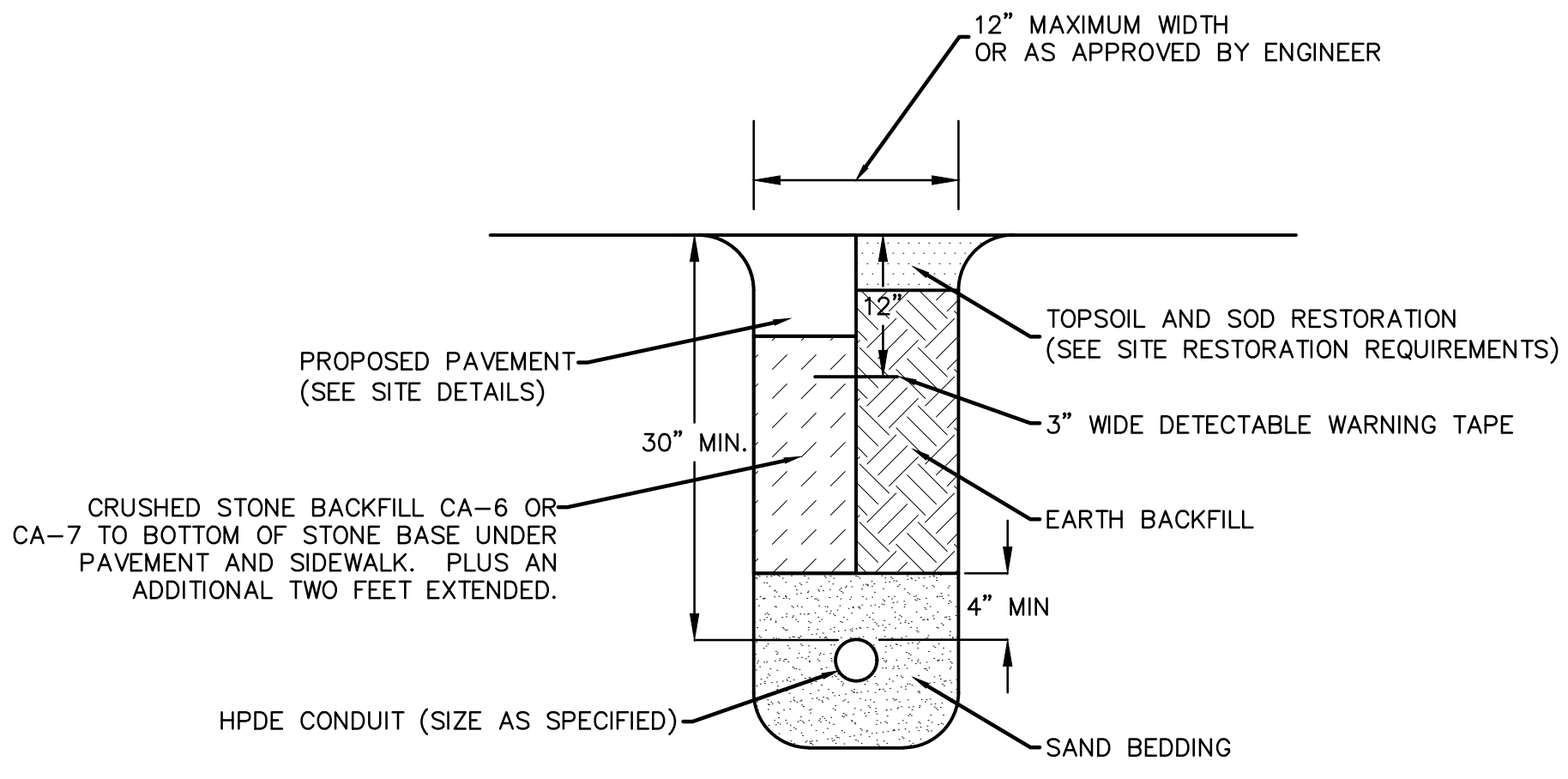
SHEET NUMBER:
E3
OF E4 SHEETS



1 LIGHT POLE FOUNDATION DETAIL
NO SCALE

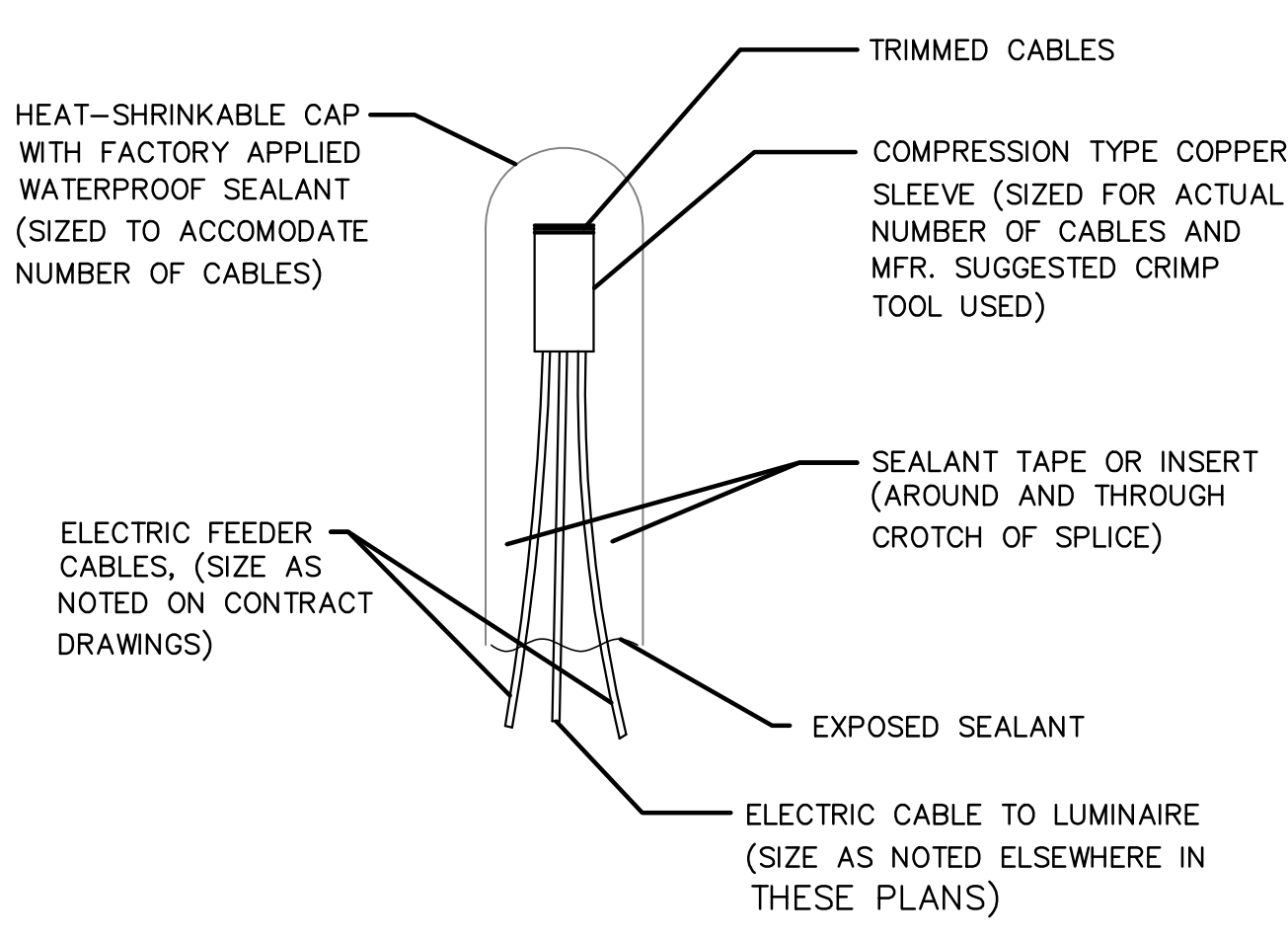
FOUNDATION NOTES:

1. THE BOLT CIRCLE DIAMETER SHALL BE SIZED PER LIGHT POLE MANUFACTURER'S SPECIFICATIONS (4 EA).
2. THE ANCHOR RODS AND RACEWAYS SHALL BE PROPERLY SECURED IN PLACE BEFORE THE CONCRETE IS PLACED.
3. THE LIGHT POLE FOUNDATIONS SHALL BE EXPOSED 30-INCHES ABOVE FINISHED GRADE WITHIN THE PARKING LOT (OR AS SPECIFIED BY THE ENGINEER). IF THE FOUNDATION HEIGHT DOES NOT MEET THE SPECIFICATIONS, THE FOUNDATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
4. THE FOUNDATION DEPTH SHALL BE 6-FT FOR THE 15-FT LIGHT POLES, 9-FT FOR THE SINGLE ARM 25-FT LIGHT POLES, 10-FT FOR THE DUAL ARM 25-FT LIGHT POLES, AND 10-FT FOR THE 30-FT BEACON LIGHT POLES.
5. THE HOLE FOR THE FOUNDATION SHALL BE MADE BY DRILLING WITH AN AUGER, OF THE SAME DIAMETER AS THE FOUNDATION. IF SOIL CONDITIONS REQUIRE THE USE OF A LINER TO FORM THE HOLE, THE LINER SHALL BE WITHDRAWN AS THE CONCRETE IS DEPOSITED.
6. THE TOP OF THE FOUNDATION SHALL BE CONSTRUCTED LEVEL. A LINER OR FORM SHALL BE USED TO PRODUCE A UNIFORM SMOOTH SIDE TO THE TOP OF THE FOUNDATION A MIN. OF 45 IN. FROM THE TOP AND A MAX. OF 50% OF THE TOTAL DEPTH. FOUNDATION TOP SHALL BE CHAMFERED 3/4 -IN.
7. THE EXPOSED PORTION OF THE FOUNDATION SHALL BE HAND FINISHED SMOOTH TO REMOVE ANY LINER FORM MARKS.
8. THE CONCRETE SHALL BE CLASS SI. CONCRETE SHALL CURE FOR A MINIMUM OF 3-7 DAYS ACCORDING TO ARTICLE 1020.13 BEFORE LIGHT POLES ARE INSTALLED.
9. THE ANCHOR ROD SHALL BE A HOOK ROD TYPE. COLD BENDING OF THE ANCHOR ROD WILL NOT BE ALLOWED. THE RADIUS OF THE HOOK BEND SHALL NOT BE LESS THAN 4 TIMES THE NOMINAL DIAMETER OF THE ANCHOR ROD.
10. THE ANCHOR RODS SHALL BE ACCORDING TO ASTM F1554 GRADE 725 (GRADE 105). NUTS SHALL BE HEXAGON NUTS ACCORDING TO ASTM A 194 2H OR ASTM A 563 DH, AND WASHERS SHALL BE ACCORDING TO ASTM F 436.
11. ANCHOR RODS, NUTS AND WASHERS SHALL BE COMPLETELY GALVANIZED BY EITHER THE HOT-DIPPED PROCESS CONFORMING WITH AASHTO M 232, THE MECHANICAL PLATING METHOD CONFORMING TO AASHTO M 298, CLASS 50 WITH A MAXIMUM COATING THICKNESS OF 150 UM OR THE ELECTROLYTIC PROCESS ACCORDING TO ASTM F 1136.
12. THE ANCHOR RODS SHALL BE THREADED A MINIMUM OF 6 INCHES WITH A MINIMUM OF 3 INCHES OF THREADED ANCHOR ROD EMBEDDED IN THE FOUNDATION.
13. ANCHOR RODS SHALL PROJECT 2-3/4 IN. ABOVE THE TOP OF THE FOUNDATION (OR AS SPECIFIED BY THE LIGHT POLE MANUFACTURER).
14. THE CONTRACTOR SHALL USE A #3 SPIRAL AT 6 IN. PITCH OR MAY SUBSTITUTE #3 TIES AT 12 IN. O.C. WITH THE APPROVAL OF THE ENGINEER.
15. THE CABLE TRENCHES AND FOUNDATION SHALL BE BACK FILLED AND COMPACTED, AS SPECIFIED, BEFORE THE LIGHT POLE IS ERECTED.
16. THE RACEWAYS SHALL PROJECT 1 IN. ABOVE THE TOP OF THE FOUNDATION AND SHALL TERMINATE WITH A GROUNDING BUSHING (AS APPLICABLE).
17. RACEWAYS SHALL BE 2.5" PVC FOR UNIT DUCT AND RIGID GALVANIZED STEEL (OF THE SAME SIZE) WHEN STEEL IS UTILIZED FOR UNDERGROUND CONDUIT SPANS. EXTRA RACEWAYS SHALL EXTEND 12 IN. BEYOND THE FOUNDATION AND BE CAPPED. RIGID GALVANIZED STEEL RACEWAYS SHALL BE INSTALLED WITH A GROUNDING BUSHING.



2 TYPICAL CONDUIT IN TRENCH DETAIL
NO SCALE

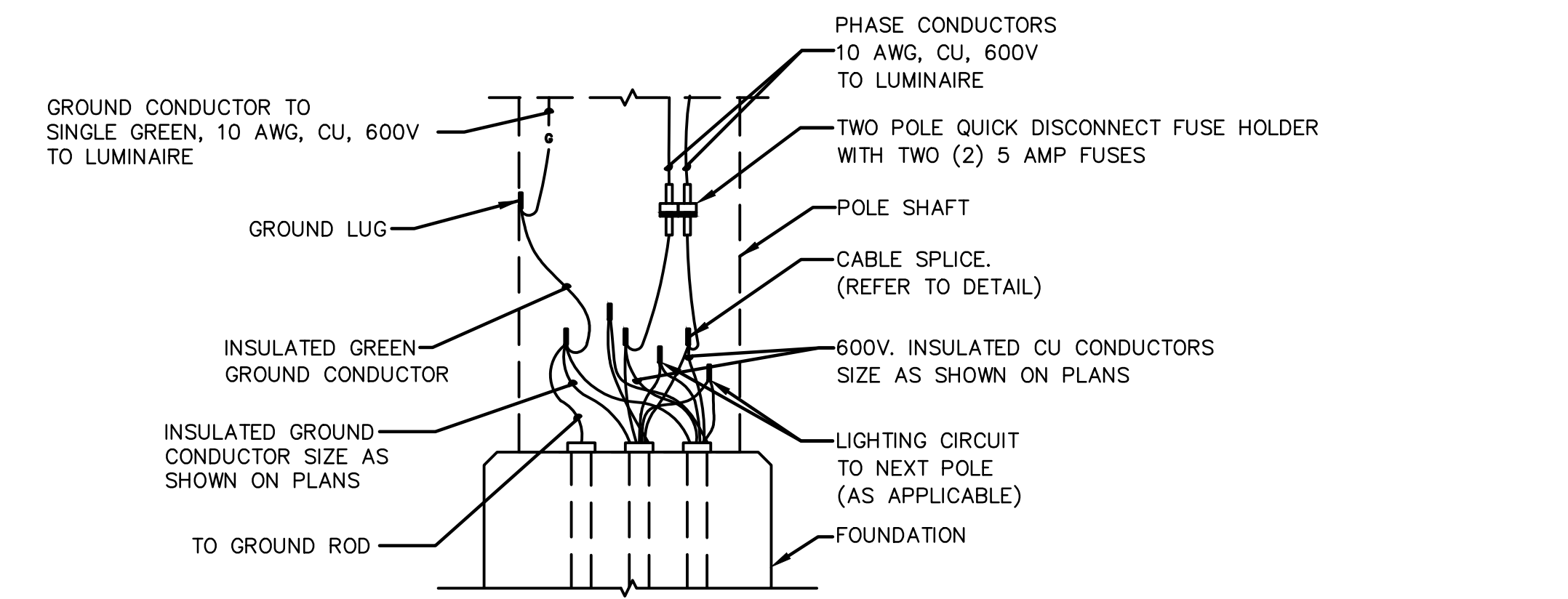
- NOTES:**
1. CONDUIT SHALL BE SURROUNDED BY 4" OF COMPACTED SAND.
 2. BACKFILL SHALL BE PLACED AND COMPACTED IN 8" LIFTS
 3. EARTH BACKFILL SHALL BE COMPACTED TO 95% OF THE DENSITY OF SURROUNDING UNDISTURBED SOIL.



4 SPLICING ELECTRIC CABLES BASIC MATERIALS AND METHODS
NO SCALE

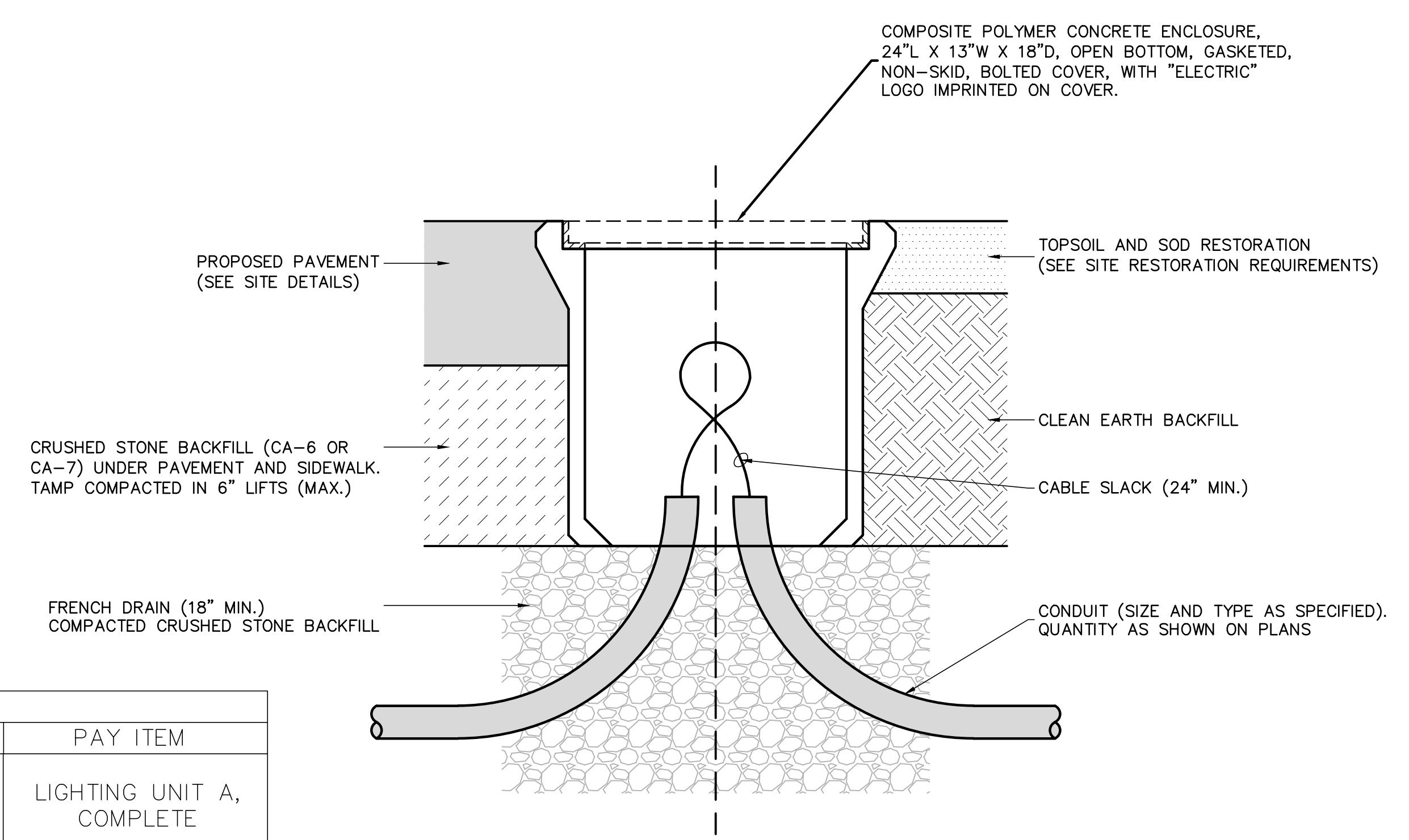
- NOTES:**
1. THE NUMBER OF CABLES IN SPLICE MAY VARY

LIGHTING SCHEDULE (EXISTING & PROPOSED)		
SYMBOL	MANUFACTURER & CATALOG No.	PAY ITEM
	LUMINAIRE: LED SHOEBOX STYLE LUMINAIRE. 175W EQUIVALENT (14,000 LUMENS), 4000K CCT, MULTI-VOLT, TYPE 3 DISTRIBUTION, FIXED HORIZONTAL MOUNT, BLACK FINISH (MATCH POLE).	LIGHTING UNIT A, COMPLETE
	POLE: SQUARE STRAIGHT ALUMINUM (SSA) LIGHT POLE WITH FULL BASE COVER, VIBRATION DAMPER, AND BLACK FINISH (MATCH LUMINAIRE). WALL THICKNESS AS REQUIRED FOR LUMINAIRES. POLE LENGTH AND ARM QUANTITY AS SPECIFIED ON PLANS.	LIGHTING UNIT B, COMPLETE
	LUMINAIRE: LED COBRAHEAD STYLE LUMINAIRE. 9,5000 LUMENS, 4000K CCT, MULTI-VOLT, TYPE 3 DISTRIBUTION, BLACK FINISH.	LIGHTING UNIT C, COMPLETE
	POLE: 30-FT SQUARE STRAIGHT ALUMINUM LIGHT POLE WITH FULL BASE COVER, VIBRATION DAMPER, AND BLACK FINISH (MATCH LUMINAIRE). 6-FT MAST ARM. WALL THICKNESS AS REQUIRED FOR LUMINAIRES.	LIGHTING UNIT D, COMPLETE



3 POLE BASE WIRING DIAGRAM
NO SCALE

- NOTES:**
1. ALL FUSE HOLDERS SHALL INCLUDE BOOTS



5 COMPOSITE HANDHOLE DETAIL
NO SCALE

- NOTES:**
1. HANDHOLE SHALL BE UL LISTED (OR EQUIVALENT)
 2. EARTH BACKFILL SHALL BE COMPACTED TO 95% OF THE DENSITY OF SURROUNDING UNDISTURBED SOIL.
 3. HANDHOLE SHALL BE RATED BASED ON APPLICATION AND LOCATION:
 - A. GRASS OR PARKWAY WITH NO VEHICULAR TRAFFIC - TIER 5
 - B. SIDEWALK WITH NO VEHICULAR TRAFFIC - TIER 8
 - C. DRIVEWAY OR PARKING LOT WITH OCCASIONAL VEHICULAR TRAFFIC - TIER 22
 - D. DELIBERATE VEHICULAR TRAFFIC - AASHTO H-20

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