

# PROPOSED ALTERATIONS FOR: KWIK TRIP #184

## PEWAUKEE, WI



TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE  
1-800-242-8511

TOLL FREE TELEFAX (414) 259-0947  
TDD (FOR THE HEARING IMPAIRED)  
1-800 542-2289

WISCONSIN STATUTE 182.0175 (1974)  
REQUIRES MINIMUM OF 3 WORK DAYS  
NOTICE BEFORE YOU EXCAVATE

EXISTING CONDITIONS NOTE:  
ALTA/ ACSM DATED FEBURARY 17, 2015 USED AS EXISTING CONDITIONS. ALTA/ACSM BY R.A. SMITH NATIONAL (262)-781-1000. PRIOR TO CONSTRUCTION CONTRACTOR SHALL FIELD VERIFY ALL SITE IMPROVEMENTS, UTILITY LOCATIONS, INVERTS, SEIZES, ETC. NOTIFY ENGINEER OF ANY DISCREPANCIES. FAILURE TO NOTIFY ENGINEER SHALL BE THE CONTRACTOR'S RESPONSIBILITY FOR ANY DAMAGES AS A RESULT OF FAILURE TO FIELD VERIFY.

### PROJECT NOTES

1. ALL SITE IMPROVEMENTS AND CONSTRUCTION SHOWN ON THE PLANS SHALL CONFORM TO THE CITY OF WAUKESHA DEVELOPMENT HANDBOOK & INFRASTRUCTURE SPECIFICATIONS, WHERE PLANS DO NOT COMPLY, IT SHALL BE THE SOLE RESPONSIBILITY AND EXPENSE OF THE DEVELOPER TO MAKE REVISIONS TO THE PLANS AND/ OR CONSTRUCTED INFRASTRUCTURE TO COMPLY.

### PROJECT CONTACTS

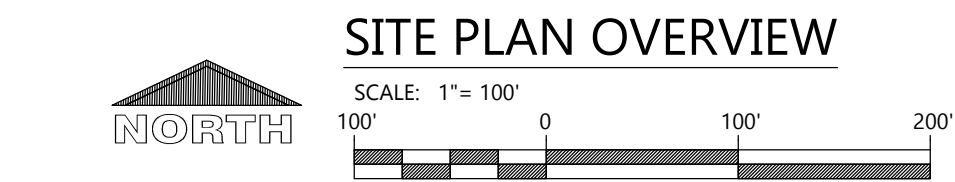
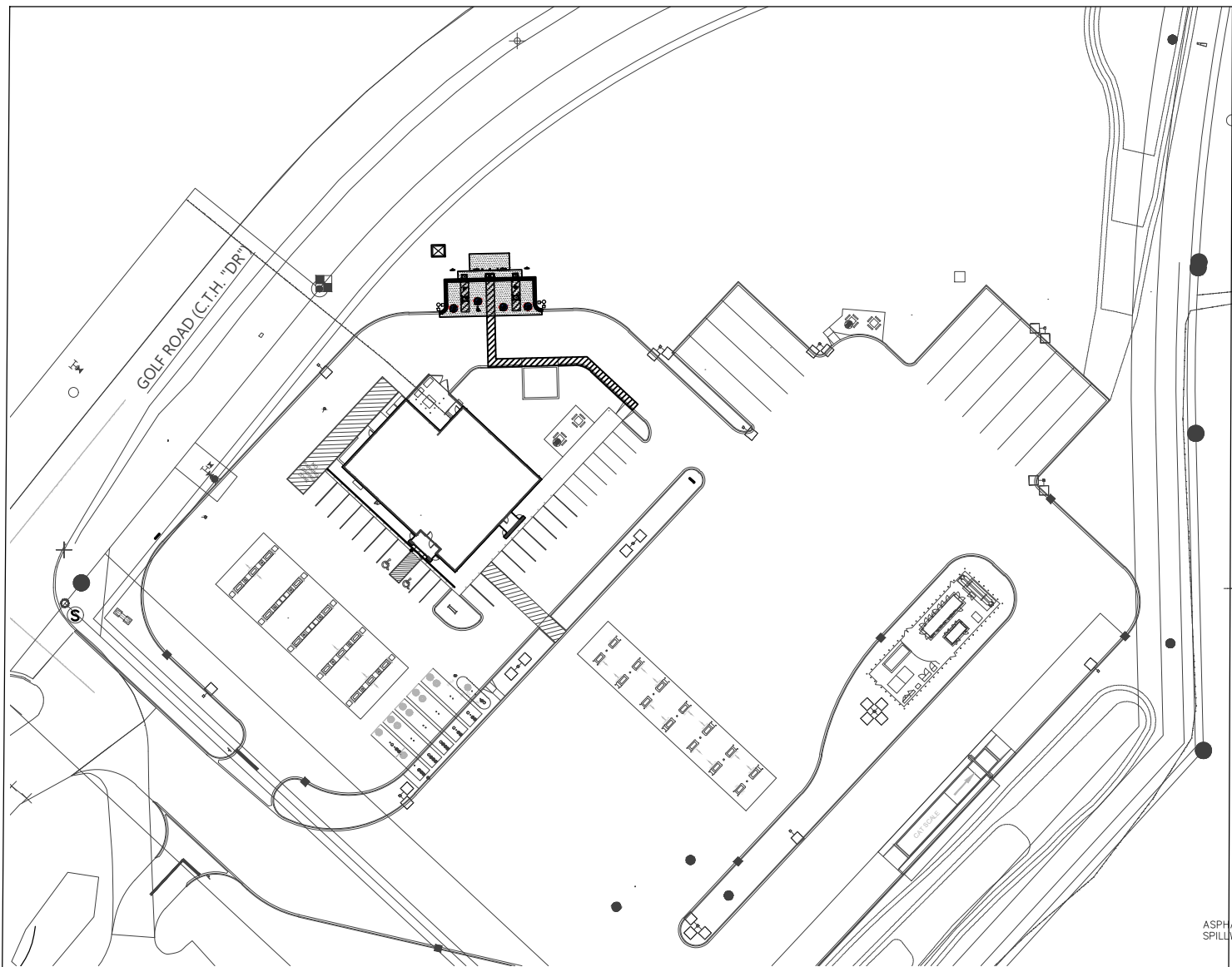
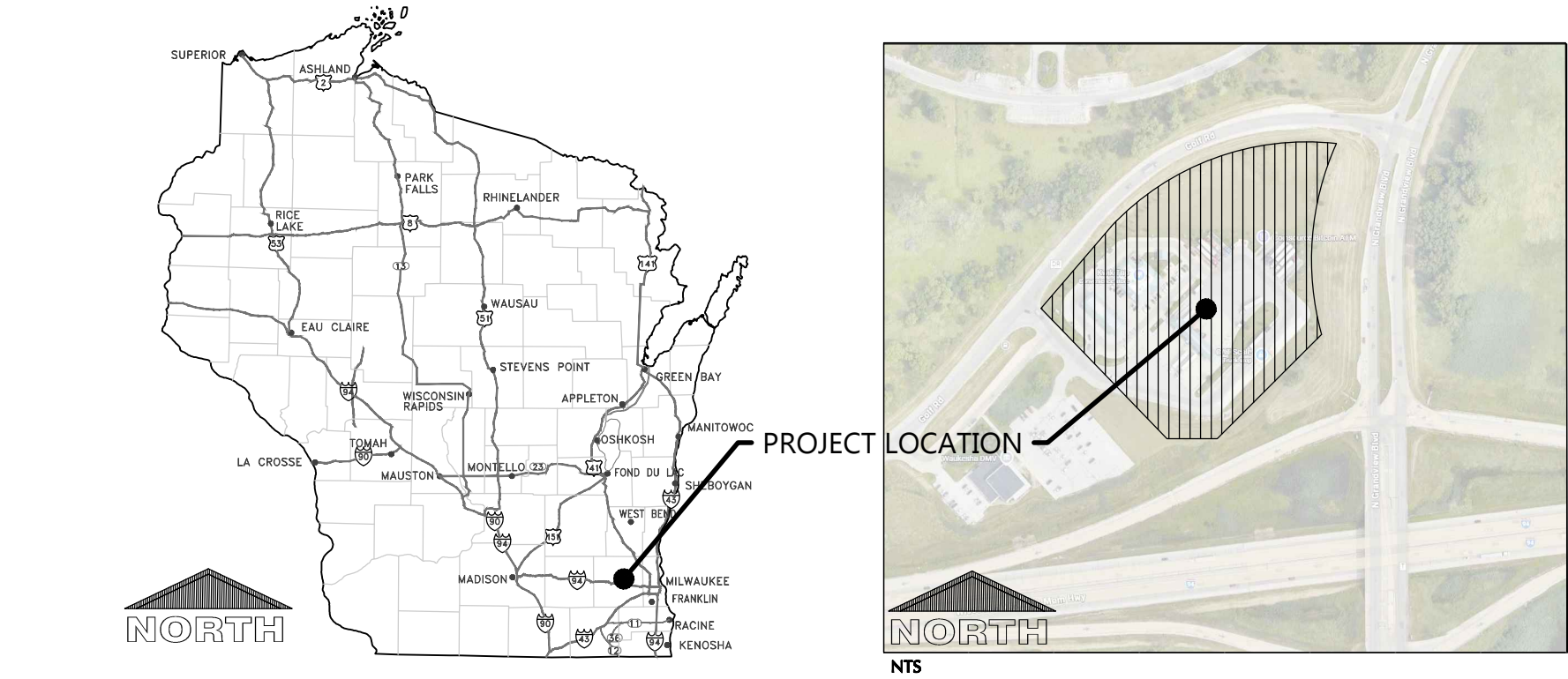
**OWNER INFORMATION:**

Kwik Trip  
Contact: Scott Zietlow  
P.O. Box 2107  
La Crosse, WI 54602-2107  
Phone: (608) 793-5933  
Email: SJZietlow@kwiktrip.com

**CIVIL:**

Eric Drazkowski, P.E.  
Phone: (920) 926-9800  
E-mail: eric.drazkowski@excelengineer.com

### LOCATION MAP



### DATUMS

HORIZONTAL DATUM= NAD 1983/2011

### BENCHMARKS

BENCHMARK #1 (Appx. 25'-44.10, 47.62' LT)  
HYDRANT ALONG GOLF ROAD (C.T.H. "DR")  
NORTHWEST FLANGE BOLT  
ELEV 108.85

BENCHMARK #2 (Appx. 16'-10.94, 128.86' RT)  
HYDRANT AT WEST DMV DRIVEWAY  
NORTHWEST FLANGE BOLT  
ELEV 111.18

BENCHMARK #3 (Appx. 13'-85.36, 38.52' LT)  
HYDRANT ALONG GOLF ROAD (C.T.H. "DR")  
NORTHWEST FLANGE BOLT  
ELEV 116.71

### CIVIL SHEET INDEX

NUMBER	SHEET NAME / DESCRIPTION
C001	CIVIL COVER SHEET
C002	CIVIL SPECIFICATIONS
C020	EXISTING SITE AND DEMOLITION PLAN
C100	OVERALL PLAN
C101	SITE PLAN
C200	GRADING, EROSION CONTROL AND UTILITY PLAN
C201	ADA PLAN
C500	DETAILS
C700	LANDSCAPE AND RESTORATION PLAN
C800	SITE PHOTOMETRIC PLAN & DETAILS

### ELECTRICAL SHEET INDEX

NUMBER	SHEET NAME / DESCRIPTION
E000	TITLE SHEET
E001	GENERAL NOTES
E002	GENERAL NOTES
E100	SITE PLAN
E101	ENLARGED SITE PLAN
E310	DETAILS
E311	DETAILS
E312	DETAILS
E600	POWER ONE LINE DIAGRAM

### EXCEL LEGEND

NOTE: ALL SYMBOLS SHOWN MAY NOT APPEAR ON DRAWINGS.

SYM.	IDENTIFICATION	SYM.	IDENTIFICATION
SPOT ELEVATIONS			
• [000.00]	PROPOSED SPOT ELEVATIONS (FLOW LINE OF CURB UNLESS OTHERWISE SPECIFIED)	• [000.00]TC [000.00]FL	PROPOSED SPOT ELEVATIONS (TOP OF CURB, FLOWLINE OF CURB)
• [000.00]EG	EXISTING GRADE SPOT ELEVATIONS		
• [000.00]BG [000.00]FG	PROPOSED SPOT ELEVATIONS (REFERENCE R-WALL DETAIL) BG-FINISHED SURFACE GRADE AT BACK OF WALL FG-FINISHED SURFACE GRADE AT FRONT OF WALL	• [000.00]TW [000.00]BW	PROPOSED SPOT ELEVATIONS (TOP OF WALK, BOTTOM OF WALK @ FLOWLINE)
PROPOSED SITE SYMBOLS			
→	PROPOSED DRAINAGE FLOW	[CO]	PROPOSED CLEANOUT
⊕	PROPOSED WATER VALVE IN BOX	[DS]	PROPOSED DOWNSPOUT
⊕	PROPOSED WELL	↗	PROPOSED APRON END SECTION
○ □	PROPOSED LIGHT POLE	⊠	SOIL BORING
⊕	PROPOSED STORM CATCH BASIN - ST CB	⊕	CENTER LINE
⊕	PROPOSED STORM FIELD INLET - ST FI	♿	PROPOSED HANDICAP PARKING STALL
⊕	PROPOSED STORM CURB INLET - ST CI	→	PROPOSED SIGN
PROPOSED LINETYPES			
—	PROPOSED PROPERTY LINE	----	INTERIOR PROPERTY LINE
ST — ⊕	PROPOSED STORM SEWER AND MANHOLE - ST MH	—	RAILROAD TRACKS
SA — ⊕	PROPOSED SANITARY SEWER AND MANHOLE - SAN MH	— 800 —	EXISTING GROUND CONTOUR
— ⊕	PROPOSED WATER LINE AND HYDRANT	— 800 —	PROPOSED GROUND CONTOUR
—	PROPOSED CURB AND GUTTER	POL — ⊕	PROPOSED POLISH SEWER AND MANHOLE
—	GRADING/SEEDING LIMITS	P — ⊕	PROPOSED PROCESS SEWER AND MANHOLE
—	RIGHT-OF-WAY LINE	CLW —	PROPOSED CLEAR WATER LINE
T —	PROPOSED UNDERGROUND TELEPHONE CABLE	G —	PROPOSED UNDERGROUND GAS LINE
—	PROPOSED GUARD RAIL	E —	PROPOSED UNDERGROUND ELECTRIC CABLE
FO —	PROPOSED UNDERGROUND FIBER OPTIC LINE		

### R.A. SMITH LEGEND

— — — — — S — — — — —  
PROPOSED SANITARY SEWER LINE

— — — — — STO — — — — —  
PROPOSED STORM SEWER LINE

— — — — — W — — — — —  
PROPOSED STORM CATCH BASIN/ MANHOLE

— — — — — W — — — — —  
PROPOSED WATER MAIN

— — — — — W — — — — —  
PROPOSED HYDRANT

— — — — — ⊕ — — — — —  
PROPOSED VALVE

— — — — — ⊕ — — — — —  
PROPOSED TELEPHONE

— — — — — G — — — — —  
PROPOSED GAS LINE

— — — — — E — — — — —  
PROPOSED ELECTRICAL LINE

— — — — — S — — — — —  
EXISTING SANITARY SEWER

— — — — — STO — — — — —  
EXISTING STORM SEWER

— — — — — W — — — — —  
EXISTING WATER MAIN

— — — — — E — — — — —  
EXISTING ELECTRICAL LINE

— — — — — OHW — — — — —  
EXISTING OVERHEAD WIRING

— — — — — — — — — —  
EXISTING TELEPHONE LINE

— — — — — — — — — —  
EXISTING FIBER OPTIC LINE

— — — — — G — — — — —  
EXISTING GAS LINE

⊕  
EXISTING HYDRANT

⊕  
EXISTING GATE VALVE

⊕  
EXISTING STORM SEWER MANHOLE

⊕  
EXISTING STORM SEWER INLETS

⊕  
EXISTING SANITARY SEWER MANHOLE

⊕  
EXISTING LIGHT POLES

⊕  
EXISTING ELEC. AND TELE. PEDESTALS

⊕  
EXISTING GAS METER AND VALVES

106  
106.22  
106  
106.50  
(111.90)  
X  
STO

EXISTING CONTOURS

EXISTING SPOT GRADE

PROPOSED CONTOURS

PROPOSED SPOT GRADE

PROPOSED TOP OF CURB SPOT GRADE

PROPOSED STORM INLETS / MANHOLES

PROPOSED STORM SEWER

PROPOSED BUILDING

EXISTING CURB

PROPOSED 18" CURB & GUTTER

PROPOSED STORM SEWER LINE

PROPOSED STORM CATCH BASIN/ MANHOLE

EXISTING STORM SEWER MANHOLE

EXISTING STORM SEWER INLETS

PROPOSED BITUMINOUS PAVEMENT — 5 INCH

PROPOSED CONCRETE PAVEMENT — 6 INCH

PROPOSED CONCRETE PAVEMENT — 8 INCH

PROPOSED CONCRETE SIDEWALK — SEE SHEET SP1.1

REJECT GUTTER

PROPOSED PARKING SPACES

STOP SIGN

ACCESSIBLE SIGN

VAN ACCESSIBLE SIGN

PROPOSED LIGHT POLES (SEE PHOTOMETRIC PLAN)


CIVIL COVER SHEET




Always a Better Plan

100 Camelot Drive  
Fond du Lac, WI 54935  
920-926-9800  
excelengineer.com

COLLABORATION





#### PROJECT INFORMATION

PROPOSED ALTERATIONS FOR:  
**KWIK TRIP #184**  
2001 GOLF RD • PEWAUKEE, WI 53072

PROFESSIONAL SEAL



#### PRELIMINARY DATES

JUNE 13, 2025  
JUNE 26, 2025  
JULY 11, 2025  
AUG. 7, 2025

#### JOB NUMBER

250007700

#### SHEET NUMBER

C001

REVIEW SET #1



# CIVIL SPECIFICATIONS

## DIVISION 31 EARTH WORK

### 31 10 00 SITE CLEARING

- A. CONTRACTOR SHALL CALL DIGGER'S HOT LINE AND CONDUCT A PRIVATE UTILITY LOCATE AS REQUIRED TO ENSURE THAT ALL UTILITIES HAVE BEEN LOCATED BEFORE STARTING SITE DEMOLITION. DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN PLAN AND FIELD CONDITIONS PRIOR TO CONSTRUCTION.
- B. DEMOLITION PLANS IS AN OVERVIEW OF DEMOLITION TO TAKE PLACE ON SITE. CONTRACTOR TO FIELD VERIFY EXISTING SITE CONDITIONS PRIOR TO BIDDING. CONTRACTOR SHALL REMOVE, REPLACE, OR DEMOLISH ALL ITEMS AS NEEDED DURING CONSTRUCTION.
- C. CONTRACTOR TO PROTECT EXISTING IMPROVEMENTS THAT ARE SCHEDULED TO REMAIN. ANY DAMAGE TO EXISTING FACILITIES SHALL BE REPLACED AT CONTRACTORS EXPENSE.
- D. ALL CONCRETE NOTED TO BE REMOVED SHALL BE REMOVED TO THE NEAREST CONTROL JOINT.

### 31 20 00 EARTH MOVING

- A. CONTRACTOR SHALL CALL DIGGER'S HOT LINE AND CONDUCT A PRIVATE UTILITY LOCATE AS REQUIRED TO ENSURE THAT ALL UTILITIES HAVE BEEN LOCATED BEFORE STARTING EXCAVATION. DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN PLAN AND FIELD CONDITIONS PRIOR TO CONSTRUCTION.
- B. PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT FOR ALL EXCAVATION, GRADING, FILL AND BACKFILL WORK AS REQUIRED TO COMPLETE THE GENERAL CONSTRUCTION WORK. ALL EXCAVATION AND BACKFILL FOR ELECTRICALS AND MECHANICALS ARE THE RESPONSIBILITY OF THE RESPECTIVE CONTRACTOR UNLESS OTHERWISE SPECIFIED IN THE BID DOCUMENTS.
- C. PLACE AND COMPACT FILL MATERIAL IN LAYERS TO REQUIRED ELEVATIONS, UNIFORMLY MOISTEN OR AERATE SUBGRADE AND EACH SUBSEQUENT FILL OR BACKFILL LAYER BEFORE COMPACTION AS RECOMMENDED TO ACHIEVE SPECIFIED DRY DENSITY. REMOVE AND REPLACE, OR SCARIFY AND AIR DRY, OTHERWISE SATISFACTORY SOIL MATERIAL THAT IS TOO WET TO COMPACT TO SPECIFIED DRY DENSITY.
- D. PLACE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN 8" IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4" IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.
- E. COMPACT THE SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY ACCORDING TO ASTM D 698, STANDARD PROCTOR TEST. FILL MAY NOT BE PLACED ON FROZEN GROUND AND NO FROZEN MATERIALS MAY BE USED FOR BACK FILL. APPLY THE MORE STRINGENT REQUIREMENTS WHEN COMPARING BETWEEN THE FOLLOWING AND THE GEOTECHNICAL REPORT.
1. UNDER FOUNDATIONS - SUBGRADE, AND EACH LAYER OF BACKFILL OR FILL MATERIAL, TO NOT LESS THAN 98 PERCENT.
2. UNDER INTERIOR SLAB-ON-GRADE WHERE GROUNDWATER IS MORE THAN 3 FEET BELOW THE SLAB - PLACE A DRAINAGE COURSE LAYER OF 3/4" CRUSHED STONE, WITH 5% TO 12% FINES, PER THICKNESS INDICATED ON FOUNDATION PLANS ON PREPARED SUBGRADE. COMPACT THE SUBGRADE AND DRAINAGE COURSE TO NOT LESS THAN 95 PERCENT.
3. UNDER INTERIOR SLAB-ON-GRADE WHERE GROUNDWATER IS WITHIN 3 FEET OF THE SLAB SURFACE - PLACE A DRAINAGE COURSE LAYER OF CLEAN 3/4" CRUSHED STONE, WITH NO MORE THAN 5% FINES, PER THICKNESS INDICATED ON FOUNDATION PLANS ON PREPARED SUBGRADE. COMPACT THE SUBGRADE AND DRAINAGE COURSE TO NOT LESS THAN 95 PERCENT.
4. UNDER EXTERIOR CONCRETE AND ASPHALT PAVEMENTS - COMPACT THE SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL TO NOT LESS THAN 95 PERCENT.
5. UNDER WALKWAYS - COMPACT SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL TO NOT LESS THAN 95 PERCENT.
6. UNDER LAWN OR UNPAVED AREAS - COMPACT SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL, TO NOT LESS THAN 85 PERCENT.
- F. CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS. CONTRACTOR SHALL PROVIDE DOCUMENTATION OF PASSING DENSITY TESTING AND PROOF-ROLLING TO ENGINEER UPON COMPLETION. ALLOW THE TESTING AGENCY TO TEST AND INSPECT SUBGRADES AND EACH FILL OR BACKFILL LAYER. PROCEED WITH SUBSEQUENT EARTHWORK ONLY AFTER TEST RESULTS FOR PREVIOUSLY COMPLETED WORK COMPLY WITH REQUIREMENTS. PROVIDE ONE TEST FOR EVERY 2000 SQUARE FEET OF PAVED AREA OR BUILDING SLAB, ONE TEST FOR EACH SPREAD FOOTING, AND ONE TEST FOR EVERY 50 LINEAR FEET OF WALL STRIP FOOTING.
- G. WHEN THE TESTING AGENCY REPORTS THAT SUBGRADES, FILLS, OR BACKFILLS HAVE NOT ACHIEVED DEGREE OF COMPACTION SPECIFIED, SCARIFY AND MOISTEN OR AERATE, OR REMOVE AND REPLACE SOIL TO DEPTH REQUIRED; RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION IS OBTAINED.
- H. THE BUILDING SITE SHALL BE GRADED TO PROVIDE DRAINAGE AWAY FROM THE BUILDING AS INDICATED ON THE PLANS. SITE EARTHWORK SHALL BE GRADED TO WITHIN 0.10' OF REQUIRED EARTHWORK ELEVATIONS ASSUMING POSITIVE DRAINAGE IS MAINTAINED IN ACCORDANCE WITH THE GRADING PLAN.

### 31 30 00 EROSION CONTROL

- A. THE GRADING PLAN REFLECTS LESS THAN 1 ACRE OF DISTURBED AREA. THE SITE IS THEREFORE EXEMPT FROM WISCONSIN DEPARTMENT OF NATURAL RESOURCES NR 216 NOTICE OF INTENT REQUIREMENTS. THE DESIGN ENGINEER SHALL PREPARE AN EROSION CONTROL PLAN TO MEET NR 151.105 CONSTRUCTION SITE PERFORMANCE STANDARDS FOR NON-PERMITTED SITES.
- B. EROSION AND SEDIMENT CONTROL IMPLEMENTED DURING CONSTRUCTION SHALL STRICTLY COMPLY WITH THE GUIDELINES AND REQUIREMENTS SET FORTH IN WISCONSIN ADMINISTRATIVE CODE (W.A.C.) NR 151, THE STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES RUNOFF MANAGEMENT PERFORMANCE STANDARDS. TECHNICAL STANDARDS PUBLISHED BY THE WISCONSIN DNR SHALL ALSO BE UTILIZED TO IMPLEMENT THE REQUIRED PERFORMANCE STANDARDS. THE METHODS AND TYPES OF EROSION CONTROL WILL BE DEPENDENT ON THE LOCATION AND TYPE OF WORK INVOLVED. ALL SEDIMENT CONTROL MEASURES SHALL BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION, AND INSTALLED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL. BELOW IS A LIST OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES TO ACHIEVE THE PERFORMANCE STANDARDS REQUIRED.
1. SILT FENCE SHALL BE PLACED ON SITE AT LOCATIONS SHOWN ON THE EROSION CONTROL PLAN. SILT FENCE SHALL ALSO BE PROVIDED AROUND THE PERIMETER OF ALL SOIL STOCKPILES THAT WILL EXIST FOR MORE THAN 7 DAYS. FOLLOW PROCEDURES FOUND IN WISCONSIN DNR TECHNICAL STANDARD 1056 (CURRENT EDITION).
2. STORM DRAIN INLET PROTECTION SHALL BE PROVIDED FOR ALL NEW AND DOWNSTREAM STORM CATCH BASINS AND CURB INLETS. TYPE B OR C PROTECTION SHOULD BE PROVIDED AND SHALL BE IN CONFORMANCE WITH WISCONSIN DNR TECHNICAL STANDARD 1060 (CURRENT EDITION).
3. DUST CONTROL MEASURES SHALL BE PROVIDED TO REDUCE OR PREVENT THE SURFACE AND AIR TRANSPORT OF DUST DURING CONSTRUCTION. CONTROL MEASURES INCLUDE APPLYING MULCH AND ESTABLISHING VEGETATION, WATER SPRAYING, SURFACE ROUGHENING, APPLYING POLYMERS, SPRAY-ON TACKIFIERS, CHLORIDES, AND BARRIERS. SOME SITES MAY REQUIRE AN APPROACH THAT UTILIZES A COMBINATION OF MEASURES FOR DUST CONTROL. FOLLOW PROCEDURES FOUND IN WISCONSIN DNR TECHNICAL STANDARD 1068 (CURRENT EDITION).
4. THE USE, STORAGE, AND DISPOSAL OF CHEMICALS, CEMENT, AND OTHER COMPOUNDS AND MATERIALS USED ON SITE SHALL BE MANAGED DURING THE CONSTRUCTION PERIOD TO PREVENT THEIR TRANSPORT BY RUNOFF INTO WATERS OF THE STATE.
5. CONTRACTOR SHALL PROVIDE AN OPEN AGGREGATE CONCRETE TRUCK WASHOUT AREA ON SITE. CONTRACTOR TO ENSURE THAT CONCRETE WASHOUT SHALL BE CONTAINED TO THIS DESIGNATED AREA AND NOT BE ALLOWED TO RUN INTO STORM INLETS OR INTO THE OVERLAND STORMWATER DRAINAGE SYSTEM. WASHOUT AREA SHALL BE REMOVED UPON COMPLETION OF CONSTRUCTION.
6. TEMPORARY SITE RESTORATION SHALL TAKE PLACE IN DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE OR ON WHICH LAND DISTURBING ACTIVITIES WILL NOT BE PERFORMED FOR A PERIOD GREATER THAN 14 DAYS AND REQUIRES VEGETATIVE COVER FOR LESS THAN ONE YEAR. THIS TEMPORARY SITE RESTORATION REQUIREMENT ALSO APPLIES TO SOIL STOCKPILES THAT EXIST FOR MORE THAN 7 DAYS. PERMANENT RESTORATION APPLIES TO AREAS WHERE PERENNIAL VEGETATIVE COVER IS NEEDED TO PERMANENTLY STABILIZE AREAS OF EXPOSED SOIL. PERMANENT STABILIZATION SHALL OCCUR WITHIN 3 WORKING DAYS OF FINAL GRADING. TOPSOIL, SEED, AND MULCH SHALL BE IN GENERAL CONFORMANCE WITH TECHNICAL STANDARDS 1058 AND 1059 AND SHALL MEET THE SPECIFICATIONS FOUND IN THE LANDSCAPING AND SITE STABILIZATION SECTION OF THIS CONSTRUCTION DOCUMENT. ANY SOIL EROSION THAT OCCURS AFTER FINAL GRADING AND/OR FINAL STABILIZATION MUST BE REPAIRED AND THE STABILIZATION WORK REDONE.
7. IF SITE DEWATERING IS REQUIRED FOR PROPOSED CONSTRUCTION ACTIVITIES, ALL SEDIMENT LADEN WATER GENERATED DURING THE DEWATERING PROCESS SHALL BE TREATED TO REMOVE SEDIMENT PRIOR TO DISCHARGING OFF-SITE OR TO WATERS OF THE STATE. FOLLOW ALL PROCEDURES FOUND IN TECHNICAL STANDARD 1061.
8. ALL OFF-SITE SEDIMENT DEPOSITS OCCURRING AS A RESULT OF CONSTRUCTION WORK OR A STORM EVENT SHALL BE CLEANED UP BY THE END OF EACH WORKING DAY. DUST CONTROL REQUIREMENTS SHALL BE FOLLOWED PER WI DNR TECHNICAL STANDARD 1068 (CURRENT EDITION). FLUSHING SHALL NOT BE ALLOWED.
- C. ALL EROSION CONTROL DEVICES SHALL AT A MINIMUM BE INSPECTED EVERY 7 CALENDAR DAYS OR EVERY 14 DAYS AND WITHIN 24 HOURS OF THE END OF A RAIN EVENT OF 0.5" OR MORE. MAINTENANCE SHALL BE PERFORMED PER WISCONSIN ADMINISTRATIVE CODE (W.A.C.) NR 151 STORMWATER MANAGEMENT TECHNICAL REQUIREMENTS.
- D. EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL THE AREA(S) SERVED HAVE ESTABLISHED VEGETATIVE COVER.
- E. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL LOCAL EROSION CONTROL PERMITS.

## DIVISION 32 EXTERIOR IMPROVEMENTS

### 32 10 00 CONCRETE AND AGGREGATE BASE

- A. CONTRACTOR TO PROVIDE CRUSHED AGGREGATE BASE AND CONCRETE WHERE INDICATED ON THE PLANS.
- B. ALL AGGREGATE PROVIDED MUST COMPLY WITH SECTION 305 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION. ALL AGGREGATE PLACED MUST BE COMPACTED TO AN AVERAGE DENSITY PER WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- C. DESIGN AND CONSTRUCTION OF ALL CAST-IN-PLACE EXTERIOR CONCRETE FLAT WORK SHALL CONFORM TO ACI 308-08 & ACI 318-08.
- D. EXTERIOR CONCRETE FLAT WORK CONSTRUCTION TO BE PROVIDED PER MORE STRINGENT REQUIREMENTS OF THE GEOTECHNICAL REPORT OR THE SPECIFICATION. CONCRETE FLAT WORK CONSTRUCTION IS AS FOLLOWS:
1. SIDEWALK CONCRETE - 4" OF CONCRETE OVER 6" OF 3/4" CRUSHED AGGREGATE BASE.
- a. CONCRETE SHALL BE REINFORCED AS FOLLOWS:
- 1) REINFORCEMENT SHALL MEET THE STANDARDS OF ASTM A-615, "SPECIFICATION FOR DEFORMED AND PLAIN BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT".
- 2) CONCRETE SHALL UTILIZE #3 BAR 3' ON-CENTER FOR DEPTHS UP TO 6" AND #4 BAR 3' ON-CENTER FOR CONCRETE OVER 6" IN DEPTH.
- 3) BAR: DEFORMED, EXCEPT THAT PLAIN BARS MAY BE USED FOR SPIRALS.
- 4) MAIN REINFORCING BARS, OTHER BARS NOT LISTED ABOVE: GRADE 60
- b. CONTRACTION JOINTS SHALL CONSIST OF 1/8" WIDE BY 1" DEEP TOOLED JOINT WHERE INDICATED ON THE PLANS.
2. HEAVY DUTY CONCRETE (TRUCK TRAFFIC) - 8" OF CONCRETE OVER 12" OF 3/4" CRUSHED AGGREGATE.
- a. CONCRETE SHALL BE STEEL REINFORCED AS FOLLOWS:
- 1) REINFORCEMENT SHALL MEET THE STANDARDS OF ASTM A-615, "SPECIFICATION FOR DEFORMED AND PLAIN BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT".
- 2) CONCRETE SHALL UTILIZE #3 BAR 3' ON-CENTER FOR DEPTHS UP TO 6" AND #4 BAR 3' ON-CENTER FOR CONCRETE OVER 6" IN DEPTH.
- 3) BAR: DEFORMED, EXCEPT THAT PLAIN BARS MAY BE USED FOR SPIRALS.
- 4) MAIN REINFORCING BARS, OTHER BARS NOT LISTED ABOVE: GRADE 60
- 5) HEAVY DUTY CONCRETE JOINTING SHALL BE AS FOLLOWS:
- 1) CONTRACTION JOINTS SHALL BE SAWCUT 1.5" IN DEPTH AND BE SPACED A MAXIMUM OF 15' ON CENTER
4. LIGHT DUTY CONCRETE (PASSENGER CAR TRAFFIC) - 6" OF CONCRETE OVER 12" OF 3/4" CRUSHED AGGREGATE.
- a. CONCRETE SHALL BE STEEL REINFORCED AS FOLLOWS:
- 1) REINFORCEMENT SHALL MEET THE STANDARDS OF ASTM A-615, "SPECIFICATION FOR DEFORMED AND PLAIN BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT".
- 2) CONCRETE SHALL UTILIZE #3 BAR 3' ON-CENTER FOR DEPTHS UP TO 6" AND #4 BAR 3' ON-CENTER FOR CONCRETE OVER 6" IN DEPTH.
- 3) BAR: DEFORMED, EXCEPT THAT PLAIN BARS MAY BE USED FOR SPIRALS.
- 4) MAIN REINFORCING BARS, OTHER BARS NOT LISTED ABOVE: GRADE 60
- 5) THE BARS AT OUTERMOST CONTRACTION JOINT, FIRST JOINT FROM EDGE OR AT CURB JOINT) AROUND PERIMETER OF CONCRETE. THE BARS SHALL BE #4 REBAR 24" LONG PLACED AT 30" O.C.
- b. TYPICAL POUR CONTROL JOINT - POUR CONTROL JOINT SHALL BE PROVIDED WITH 1/4" X 4-1/2" X 4-1/4" DIAMOND SHAPED TAPERED PLATE DOWELS MANUFACTURED PER ASTM A36. INSTALL PER MANUFACTURERS SPECIFICATIONS.
- b. LIGHT DUTY CONCRETE JOINTING SHALL BE AS FOLLOWS:
- 7) 1) CONTRACTION JOINTS SHALL BE SAWCUT 1.5" IN DEPTH AND BE SPACED A MAXIMUM OF 12.5' ON CENTER
- E. CONCRETE ACCESSORIES TO BE USED AS FOLLOWS: USE OF ACCESSORIES OTHER THAN LISTED REQUIRES OWNER APPROVAL:
1. EXPANSION JOINT FILLER: NON-EXTRUDIBLE BUTYROMORPHIC TYPE, ASTM D 1751.
2. CURING COMPOUND: ASTM C 309 TYPE 1 (ACCEPTABLE PRODUCTS ARE SPEC. CHEM ECO-CURE OR EUCLID CHEMICAL TAMMCSUREWB)
3. CURING AND SEALING COMPOUND: ASTM C1315, TYPE 1, CLASS B AND C WITH A MAXIMUM OF 700 GRAMS PER LITER OF VOC'S (WATER BASED ACRYLIC). ACCEPTABLE PRODUCTS ARE TK PRODUCTS TRI-COTE 260U/EUCLID CHEMICAL SUPER DIAMOND CLEAR
4. BOND BREAKER: 4 MIL POLYETHYLENE FILM OR 15# BUILDING PAPER.
- F. DESIGN MIXES SHALL BE IN ACCORDANCE WITH ASTM C94
5. STRENGTH TO BE MINIMUM OF 4,500 PSI AT 28 DAYS FOR EXTERIOR CONCRETE.
6. ALL CONCRETE SUBJECT TO FREEZING AND THAWING SHALL HAVE A MAXIMUM WATER/CEMENTITIOUS RATIO OF 0.45 (4,500 PSI AT 28 DAYS OR MORE). ALL STEEL REINFORCED CONCRETE SUBJECTED TO BRACKISH WATER, SALT SPRAY OR DELCERS SHALL HAVE A MAXIMUM WATER/CEMENTITIOUS RATIO OF 0.40 (5000 PSI AT 28 DAYS OR MORE).
7. SLUMP SHALL NOT EXCEED 4" FOR EXTERIOR CONCRETE FLAT WORK
8. SLUMP SHALL BE 2-3" OR LESS FOR SLIP-FORMED CURB AND GUTTER
9. SLUMP SHALL BE BETWEEN 1.5" TO 3" FOR NON SLIP-FORMED CURB AND GUTTER
10. ALL CONCRETE EXPOSED TO FREEZING AND THAWING AND/OR REQUIRED TO BE WATERTIGHT SHALL HAVE AN AIR CONTENT OF 4.5% TO 7.5%. AIR CONTENT SHALL BE MEASURED AT POINT OF PLACEMENT IN ALL MEMBERS AFTER PUMPING IF APPLICABLE, NO OTHER ADMIXTURES SHALL BE USED WITHOUT APPROVAL FROM EXCEL ENGINEERING, INC. & KWIK TRIP'S ENGINEERING TEAM. CALCIUM CHLORIDE SHALL NOT BE USED.
11. READY-MIXED CONCRETE: ASTM C-94, EXCEPT WHERE "CONCRETE MIX DESIGN SCHEDULE TABLE" IS MORE RESTRICTIVE. SEE CONCRETE MIX DESIGN SCHEDULE IN THE PLANSET.
- G. VERIFY EQUIPMENT CONCRETE PAD SIZES WITH CONTRACTOR REQUIRING PAD. PADS SHALL HAVE FIBERMESH 300 FIBERS AT A RATE OF 1.85 LBS/CU. YD. OR 6 X 6-W/1.4 X W/1.4 WELDED WIRE MESH WITH MINIMUM 1 INCH COVER. EQUIPMENT PADS SHALL BE 5.5 INCHES THICK WITH 1 INCH CHAMFER UNLESS SPECIFIED OTHERWISE. COORDINATE ADDITIONAL PAD REQUIREMENTS WITH RESPECTIVE CONTRACTOR.
- H. ALL CONCRETE FLAT WORK SURFACES AND CONCRETE CURB FLOWLINES SHALL BE CONSTRUCTED TO WITHIN 0.05' OF DESIGN SURFACE AND FLOWLINE GRADES ASSUMING POSITIVE DRAINAGE IS MAINTAINED IN ACCORDANCE WITH THE DESIGN PLANS.
- I. CONCRETE FLAT WORK SHALL HAVE CONSTRUCTION JOINTS OR SAW CUT JOINTS PLACED AS INDICATED ON THE PLANS OR PER THIS SPECIFICATION. SAWCUTS SHALL BE DONE AS SOON AS POSSIBLE, BUT NO LATER THAN 24 HOURS AFTER CONCRETE IS PLACED.
- J. ALL REINFORCING BARS SHALL BE ASTM A615 GRADE 60. THICKNESS OF CONCRETE COVER OVER REINFORCEMENT SHALL BE NOT LESS THAN 3" WHERE CONCRETE IS DEPOSITED AGAINST THE GROUND WITHOUT THE USE OF FORMS AND NOT LESS THAN 1.5" FOR UP TO #5 BARS AND 2" FOR #6 TO #10 BARS IN ALL OTHER LOCATIONS. ALL REINFORCING SHALL BE LAPPED 48 DIAMETERS FOR 10 TO #6 BARS, 62 DIAMETERS FOR #7 TO #9 BARS, 68 DIAMETERS FOR #10 BARS OR AS NOTED ON THE DRAWINGS AND EXTENDED AROUND CORNERS WITH CORNER BARS. PLACING AND DETAILING OF STEEL REINFORCING AND REINFORCING SUPPORTS SHALL BE IN ACCORDANCE WITH CRSI AND ACI MANUAL, AND STANDARD PRACTICES. THE REINFORCEMENT SHALL NOT BE PAINTED AND MUST BE FREE OF GREASE/OIL, DIRT OR DEEP RUST WHEN PLACED IN THE WORK. ALL WELDED WIRE FABRIC SHALL MEET THE REQUIREMENTS OF ASTM A 1064. WELDED WIRE FABRIC SHALL BE PLACED 2" FROM TOP OF SLAB, UNLESS INDICATED OTHERWISE.
- K. CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO SAMPLE MATERIALS, PERFORM TESTS, AND SUBMIT TEST REPORTS DURING CONCRETE PLACEMENT. TESTS WILL BE PERFORMED ACCORDING TO ACI 301, CAST AND LABORATORY CURE ONE SET OF FOUR STANDARD CYLINDERS FOR EACH DAY'S POUR OF EACH CONCRETE MIX EXCEEDING 5 CU. YD. BUT LESS THAN 25 CU. YD., PLUS ONE SET FOR EACH ADDITIONAL 50 CU. YD. OR FRACTION THEREOF. PERFORM COMPRESSIVE STRENGTH TESTS ACCORDING TO ASTM C 39; TEST TWO SPECIMENS AT 7 DAYS AND TWO SPECIMENS AT 28 DAYS. PERFORM SLUMP TESTING ACCORDING TO ASTM C 143. PROVIDE ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
- L. PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES. IN HOT, DRY, AND WINDY WEATHER, APPLY AN EVAPORATION-CONTROL COMPOUND ACCORDING TO MANUFACTURER'S INSTRUCTIONS AFTER SCREEDING AND BULL FLOATING, BUT BEFORE POWER FLOATING AND TROWELLING.
- M. TEST RESULTS WILL BE REPORTED IN WRITING TO THE DESIGN ENGINEER, READY-MIX PRODUCER, AND CONTRACTOR WITHIN 24 HOURS AFTER TESTS. REPORTS OF COMPRESSIVE STRENGTH TESTS SHALL CONTAIN THE PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING SERVICE, CONCRETE TYPE AND CLASS, LOCATION OF CONCRETE BATCH ON SITE, DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, CONCRETE MIX PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH, AND TYPE OF BREAK FOR BOTH 7-DAY TESTS AND 28-DAY TESTS.
- N. CONTRACTOR TO PROVIDE 4" WIDE YELLOW PAINTED STRIPING FOR PARKING STALLS, TRAFFIC LANES, AND NO PARKING AREAS. YELLOW PAINT MARKINGS SHALL ALSO BE PROVIDED FOR H.C. ACCESSIBLE SYMBOLS, TRAFFIC ARROWS, AND TRAFFIC MESSAGES.

### 32 30 00 LANDSCAPING AND SITE STABILIZATION

- A. TOPSOIL: CONTRACTOR TO PROVIDE A MINIMUM OF 6" OF TOPSOIL FOR ALL DISTURBED OPEN AREAS, OTHER THAN A LANDSCAPE ISLANDS SHALL BE PROVIDED WITH A MINIMUM OF 10" OF TOPSOIL. REUSE SURFACE SOIL STOCKPILED ON SITE AND SUPPLEMENT WITH IMPORTED OR MANUFACTURED TOPSOIL FROM OFF SITE SOURCES WHEN QUANTITIES ARE INSUFFICIENT. EXCAVATOR SHALL BE RESPONSIBLE FOR ROUGH PLACEMENT OF TOPSOIL TO WITHIN 1" OF FINAL GRADE PRIOR TO LANDSCAPER FINAL GRADING. LANDSCAPER TO PROVIDE PULVERIZING AND FINAL GRADING OF TOPSOIL. PROVIDE SOIL ANALYSIS BY A QUALIFIED SOIL TESTING LABORATORY AS REQUIRED TO VERIFY THE SUITABILITY OF SOIL TO BE USED AS TOPSOIL AND TO DETERMINE THE NECESSARY SOIL AMENDMENTS. TEST SOIL FOR PRESENCE OF ATRAZINE AND INFORM EXCEL ENGINEERING, INC. IF PRESENT PRIOR TO BIDDING PROJECT. TOPSOIL SHALL HAVE A PH RANGE OF 5.5 TO 8, CONTAIN A MINIMUM OF 5 PERCENT ORGANIC MATERIAL CONTENT, AND SHALL BE FREE OF STONES 1 INCH OR LARGER IN DIAMETER. ALL MATERIALS HARMFUL TO PLANT GROWTH SHALL ALSO BE REMOVED.
- TOPSOIL INSTALLATION: LOOSEN SUBGRADE TO A MINIMUM DEPTH OF 6 INCHES AND REMOVE STONES LARGER THAN 1" IN DIAMETER. ALSO REMOVE ANY STICKS, ROOTS, RUBBISH, AND OTHER EXTRANEOUS MATTER AND DISPOSE OF THEM OFF THE PROPERTY. SPREAD TOPSOIL TO A DEPTH OF 6" BUT NOT LESS THAN WHAT IS REQUIRED TO MEET FINISHED GRADES AFTER LIGHT ROLLING AND NATURAL SETTLEMENT. DO NOT SPREAD TOPSOIL IF SUBGRADE IS FROZEN, MUDDY, OR EXCESSIVELY WET. GRADE PLANTING AREAS TO A SMOOTH, UNIFORM SURFACE PLANE WITH LOOSE, UNIFORMLY FINE TEXTURE. GRADE TO WITHIN 0.05 FEET OF FINISHED GRADE ELEVATION.
- B. SEEDED LAWNS:
1. PERMANENT LAWN AREAS SHALL BE SEEDD WITH THE FOLLOWING MIXTURE: 65% KENTUCKY BLUEGRASS BLEND (2.0-2.6 LBS./1,000 S.F.), 20% PERENNIAL RYEGRASS (0.6-0.8 LBS./1,000 S.F.), 15% FINE FESCUE (0.4-0.6 LBS./1,000 S.F.). STRAW AND MULCH SHALL BE LAID AT 100LBS/1,000 S.F. FERTILIZE AS PER SOIL TEST OR APPLY 5-10-10 OR EQUIVALENT AT 5-6 LBS/1,000 S.F. SEE EROSION MATTING SPECIFICATIONS AS REQUIRED. ALL SITE DISTURBED AREAS NOT DESIGNATED FOR OTHER LANDSCAPING AND SITE STABILIZATION METHODS SHALL BE SEEDD AS PERMANENT LAWN. NO BARE TOPSOIL SHALL BE LEFT ONSITE. FOLLOW PROCEDURES FOUND IN WDMR TECHNICAL STANDARDS 1058 & 1059.
2. ALL PERMANENT AND TEMPORARY STORM WATER CONVEYANCE SWALE BOTTOMS AND SIDE SLOPES SHALL BE SEEDD WITH THE FOLLOWING MIXTURE: 45% KENTUCKY BLUEGRASS (0.60 LBS./1,000 S.F.), 40% CREEPING RED FESCUE (0.50 LBS./1,000 S.F.), AND 15% PERENNIAL RYEGRASS (0.20 LBS./1,000 S.F.). FERTILIZE AS PER SOIL TEST OR APPLY 5-10-10 OR EQUIVALENT AT 5-6 LBS./1,000 S.F. SEE EROSION MATTING SPECIFICATIONS AS REQUIRED. FOLLOW PROCEDURES FOUND IN WDMR TECHNICAL STANDARDS 1058 & 1059.
3. ALL TEMPORARY SEEDING SHALL CONSIST OF THE FOLLOWING MIXTURE: 100% RYEGRASS AT 1.9 LBS./1,000 S.F. STRAW AND MULCH SHALL BE LAID AT 100 LBS./1,000 S.F. FERTILIZE AS PER SOIL TEST OR APPLY 5-10-10 OR EQUIVALENT AT 5-6 LBS./1,000 S.F. SEE EROSION MATTING SPECIFICATIONS AS REQUIRED. FOLLOW PROCEDURES FOUND IN WDMR TECHNICAL STANDARDS 1058 & 1059.
- C. SEEDD LAWN MAINTENANCE: CONTRACTOR TO PROVIDE MAINTENANCE OF ALL LANDSCAPING FOR A PERIOD OF 90 DAYS FROM THE DATE OF INSTALLATION. AT THE END OF THE MAINTENANCE PERIOD, A HEALTHY, UNIFORM, CLOSE STAND OF GRASS SHOULD BE ESTABLISHED FREE OF WEEDS AND SURFACE IRREGULARITIES. LAWN COVERAGE SHOULD EXCEED 90% AND BARE SPOTS SHOULD NOT EXCEED 5"X5". CONTRACTOR SHOULD REESTABLISH LAWNS THAT DO NOT COMPLY WITH THESE REQUIREMENTS AND CONTINUE MAINTENANCE UNTIL LAWNS ARE SATISFACTORY.
- D. TREES AND SHRUBS: FURNISH NURSERY-GROWN TREES AND SHRUBS WITH HEALTHY ROOT SYSTEMS DEVELOPED BY TRANSPLANTING OR ROOT PRUNING. PROVIDE WELL-SHAPED, FULLY BRANCHED, AND HEALTHY LOOKING STOCK. STOCK SHOULD ALSO BE FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT. SEE THE LANDSCAPE PLAN FOR SPECIFIC SPECIE TYPE, SIZE, AND LOCATION.
- E. TREE AND SHRUB INSTALLATION: EXCAVATE CIRCULAR PITS WITH SIDES SLOPED INWARD. TRIM BARE LEAVING CENTER AREA RASED SLIGHTLY TO SUPPORT ROOT BALL. EXCAVATE PIT APPROXIMATELY THREE TIMES AS WIDE AS THE ROOT BALL DIAMETER. SET TREES AND SHRUBS PLUMB AND IN CENTER OF PIT WITH TOP OF BALL 1" ABOVE ADJACENT FINISHED GRADES. PLACE PLANTING SOIL MIX AROUND ROOT BALL IN LAYERS AND TAMP TO SETTLE MIX. WATER ALL PLANTS THOROUGHLY. PROVIDE TEMPORARY STAKING FOR TREES AS REQUIRED.
- F. TREE AND SHRUB MAINTENANCE/WARRANTY: CONTRACTOR TO PROVIDE MAINTENANCE OF ALL LANDSCAPING FOR A PERIOD OF 90 DAYS FROM THE DATE OF INSTALLATION. MAINTENANCE TO INCLUDE REGULAR WATERING AS REQUIRED FOR SUCCESSFUL PLANT ESTABLISHMENT. CONTRACTOR TO PROVIDE 1 YEAR WARRANTY ON ALL TREES, SHRUBS, AND PERENNIALS.
- G. ORGANIC MULCH: PROVIDE 3" MINIMUM THICK BLANKET OF SHREDDED HARDWOOD MULCH AT ALL PLANTING AREAS INDICATED ON THE LANDSCAPE PLAN. INSTALL OVER NON-WOVEN WEED BARRIER FABRIC. COLOR BY OWNER.



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COLLABORATION



## PROJECT INFORMATION

PROPOSED ALTERATIONS FOR:  
**KWIK TRIP #184**  
2001 GOLF RD • PEWAUKEE, WI 53072

PROFESSIONAL SEAL



## PRELIMINARY DATES

JUNE 13, 2025  
JUNE 26, 2025  
JULY 11, 2025  
AUG. 7, 2025

REVIEW SET #1

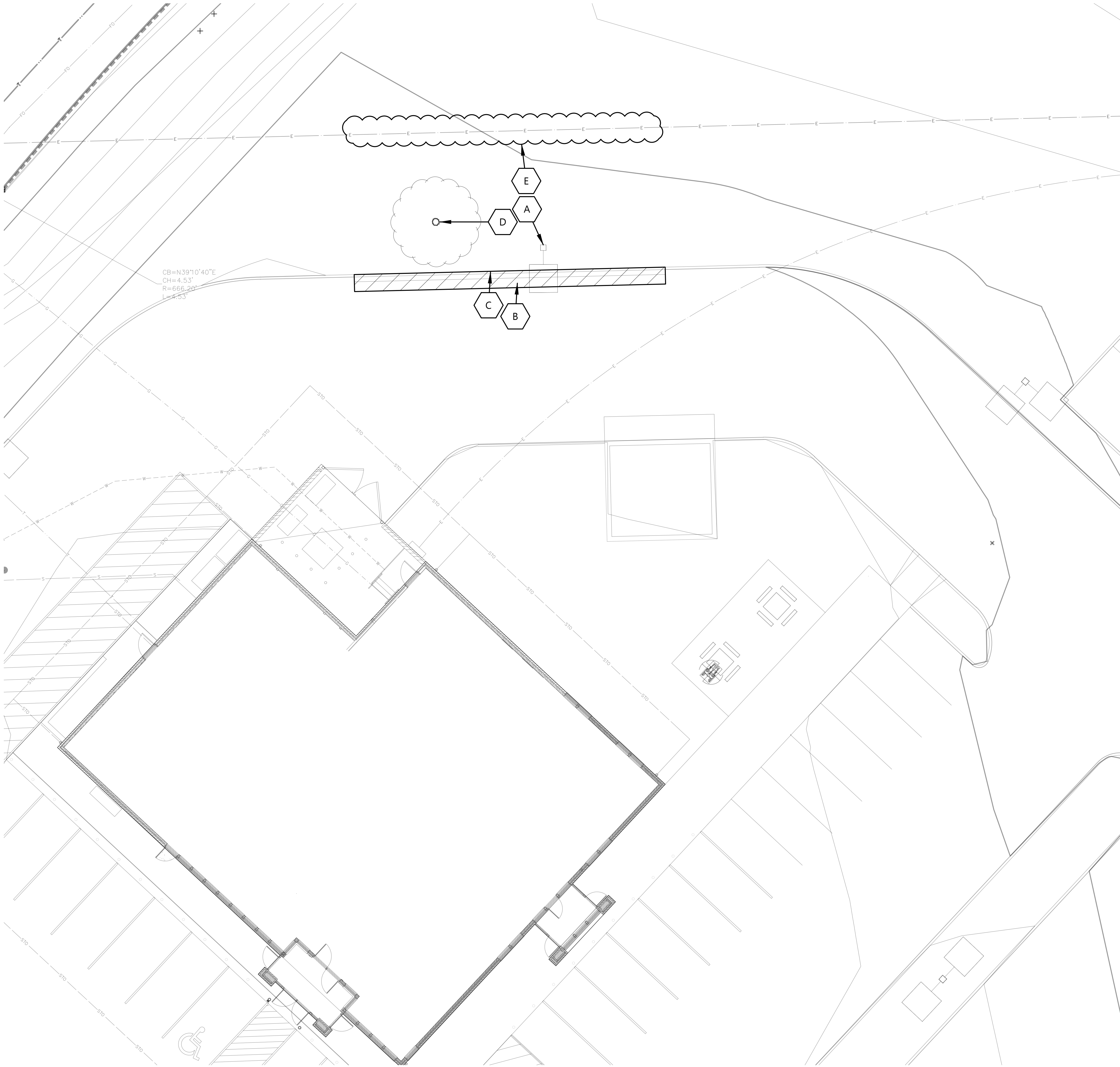
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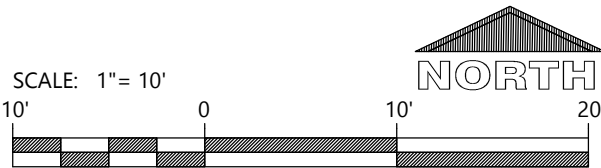
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C002





KEYNOTES	
A	RELOCATE LIGHT POLE
B	SAWCUT AND REMOVE PAVEMENT
C	SAWCUT AND REMOVE CURB
D	REMOVE TREE
E	CONTRACTOR TO FIELD VERIFY LOCATION OF ELECTRIC LINE PRIOR TO CONSTRUCTION. RELOCATE AS NECESSARY



CIVIL EXISTING SITE AND DEMOLITION PLAN



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SHEET NUMBER

**C020**





## LABORATION

**KWIK  
TRIP****Kwik  
STAR**

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JUNE 26, 2025

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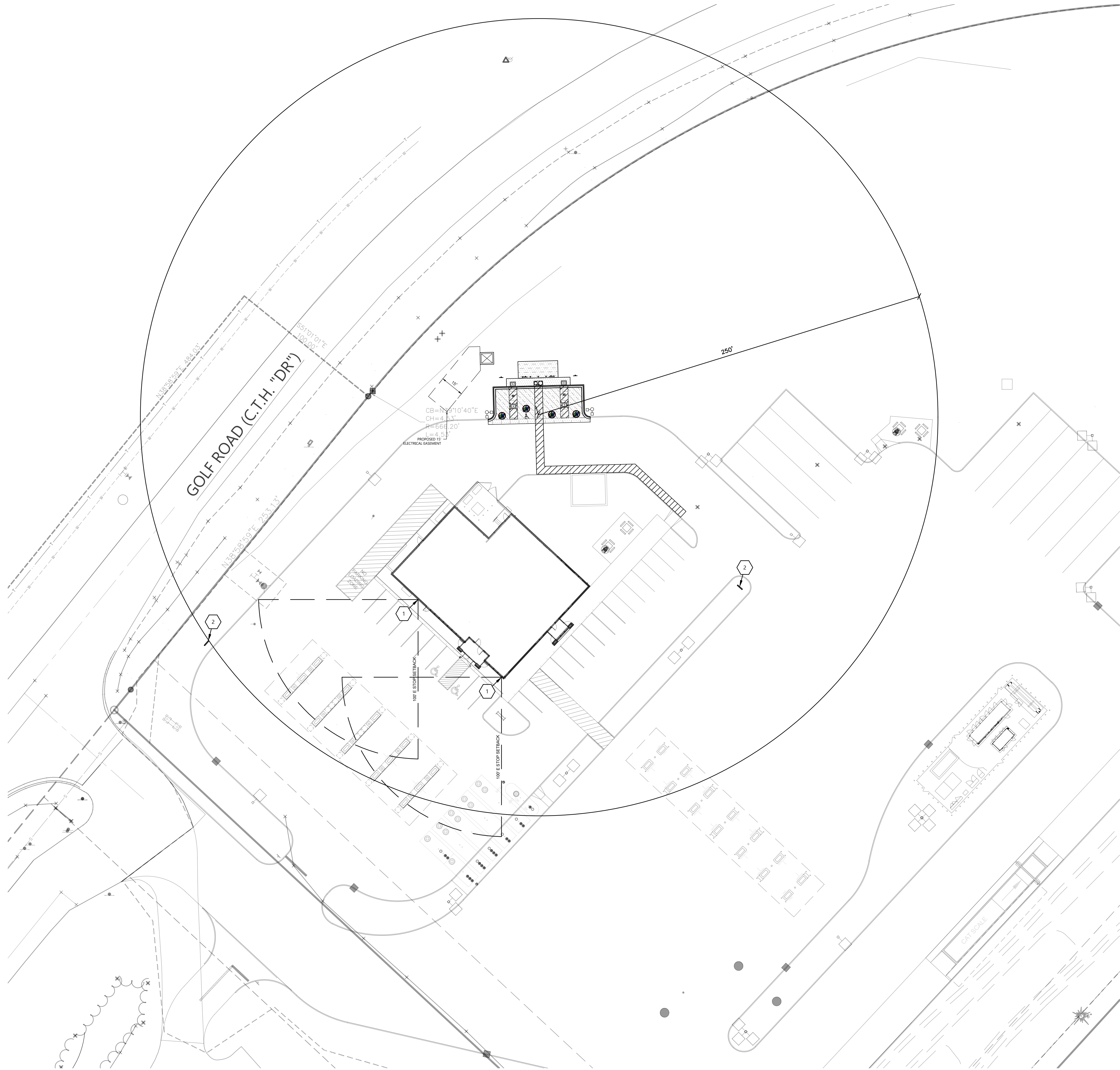
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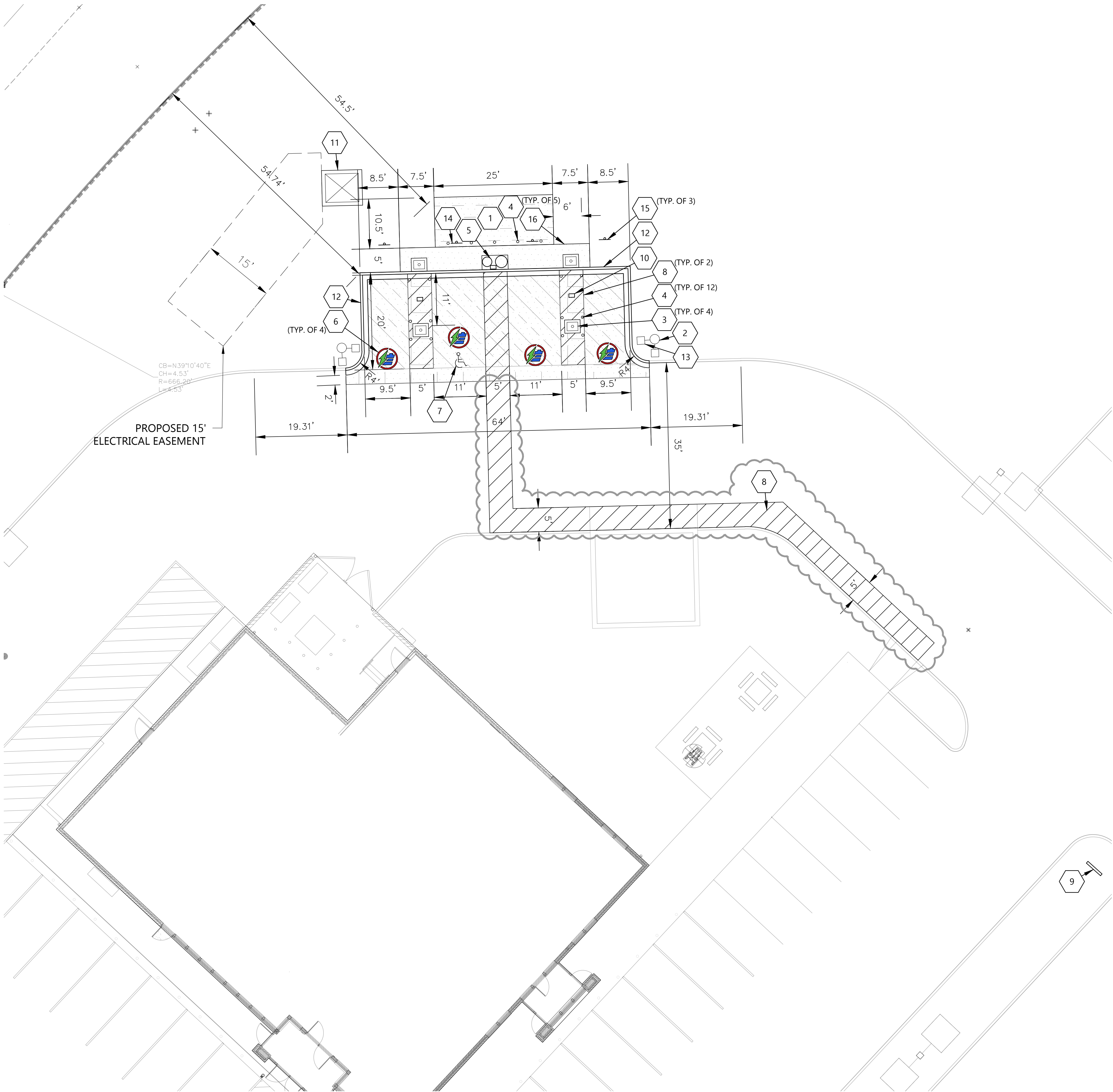
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## CIVIL OVERALL PLAN







PARKING SUMMARY:

STANDARD STALLS= 23  
HANDICAP STALLS= 2  
TRUCK PARKING STALLS= 11  
FUEL CANOPY STALLS= 20  
DIESEL CANOPY STALLS= 6  
EV CHARGING STALLS= 4  
EV CHARGING HANDICAP ACCESSIBLE= 1  
EV CHARGING PORTS= 8  
TOTAL STALLS= 66

KEYNOTES

- |    |   |
|----|---|
| 1  | CAST IN PLACE CONCRETE ELECTRICAL EQUIPMENT PAD (CONTRACTOR TO VERIFY FINAL LOCATION, EQUIPMENT LAYOUT, AND DESIGN PRIOR TO CONSTRUCTION) |
| 2  | MOUNT SECURITY CAMERA TO RELOCATED LIGHT POLE   |
| 3  | EV CHARGER WITH 8" CONCRETE PADS. SEE ELECTRICAL PLANS (CONTRACTOR TO VERIFY FINAL LOCATION & DESIGN PRIOR TO CONSTRUCTION)               |
| 4  | 6" CONCRETE BOLLARDS (TYP.) (SEE DETAIL)  |
| 5  | 66" X 36" CONCRETE PAD W/ TRASH CAN, RECYCLING AND SQUEEGEE STATION   |
| 6  | EV STALL STRIPING   |
| 7  | HANDICAP STALL & STRIPING PER STATE CODES   |
| 8  | PAINT STRIPING (TYP). COLOR TO MATCH PARKING STALL STRIPING   |
| 9  | EV DIRECTIONAL SIGNAGE (FINAL DETAILS, LOCATION, & APPROVAL BY VENDOR)  |
| 10 | FIRE EXTINGUISHER AND CABINET (FINAL DETAILS AND LOCATION BY VENDOR)  |
| 11 | CONCRETE TRANSFORMER PAD BY UTILITY SUPPLIER (CONTRACTOR TO VERIFY FINAL LOCATION & DESIGN PRIOR TO CONSTRUCTION)                         |
| 12 | 18" CURB & GUTTER (SEE DETAIL)  |
| 13 | MOUNT NEW HEAD TO LIGHT POLE (SEE SHEET C800)   |
| 14 | HANDICAP SIGN PER STATE CODE (SEE DETAIL)   |
| 15 | EV STALL SIGNAGE (SEE DETAIL)   |
| 16 | CONCRETE WALK (SEE DETAIL)  |

LEGEND:

HATCH	PAVEMENT SECTION
	SIDEWALK CONCRETE= 4"
	LIGHT DUTY CONCRETE= 6"
	ELECTRICAL EQUIPMENT PAD= 8"
	HEAVY DUTY CONCRETE= 8"



CIVIL SITE PLAN

COLLABORATION

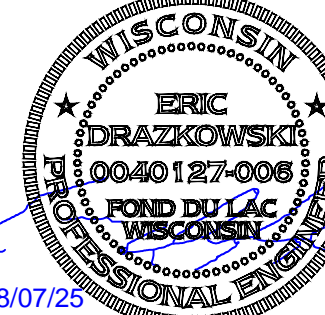
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TRIP**

**KWIK  
STAR**

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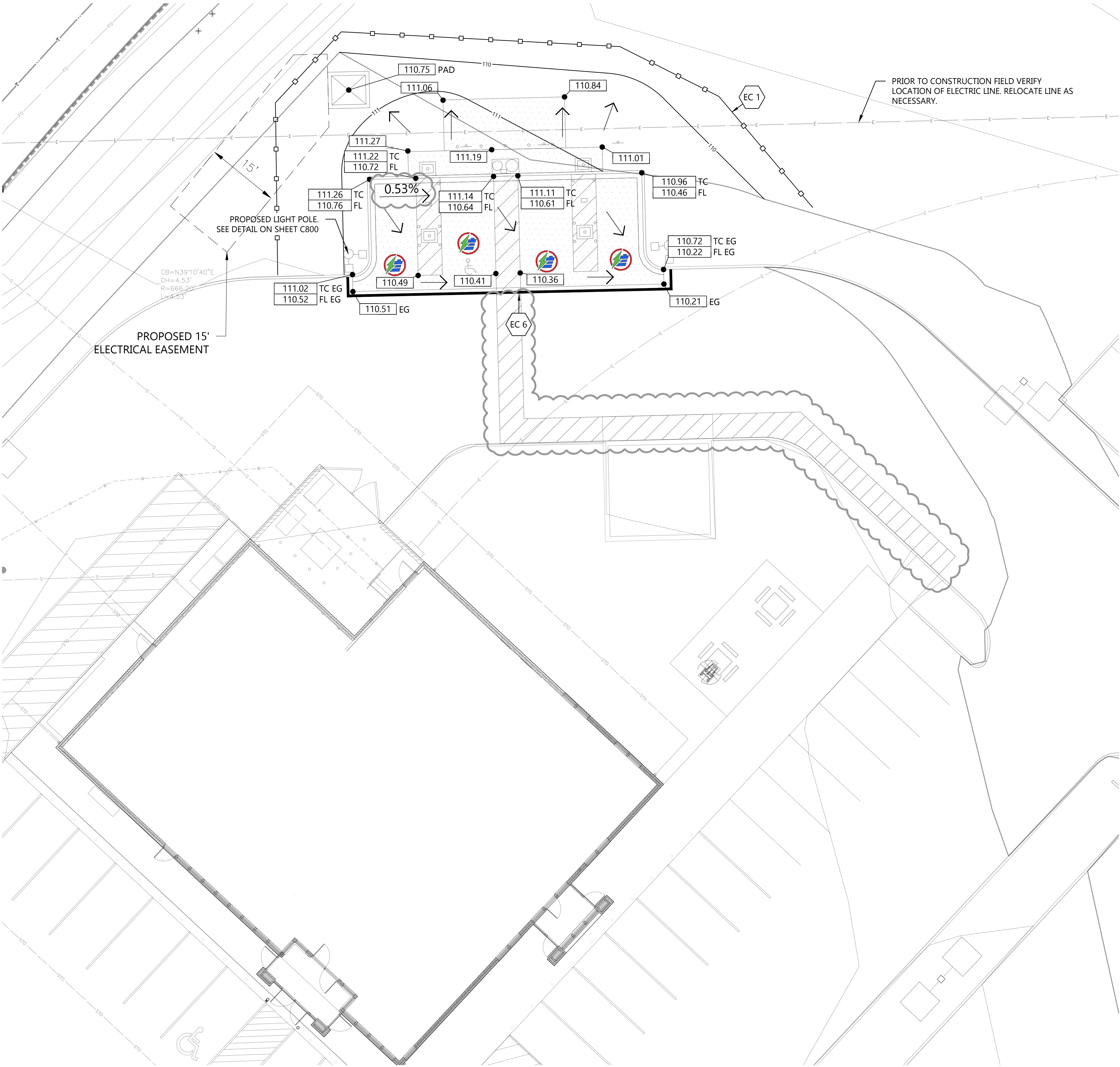
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SHEET NUMBER

**C101**

REVIEW SET #1





GENERAL NOTES:	
• HANDICAP STALL AND ACCESS AISLES SHALL NOT EXCEED A SLOPE OF 1.50% IN ANY DIRECTION. HANDICAP STALL & ACCESS AISLES SHALL CONFORM TO ADA REQUIREMENTS (CURRENT EDITION).	
• ALL SIDEWALKS SHALL NOT EXCEED A MAXIMUM CROSS SLOPE OF 1.50% AND RUNNING SLOPE OF 4.50% UNLESS OTHERWISE SPECIFIED.	
• CONTRACTOR SHALL PROVIDE CONCRETE WASHOUT AS REQUIRED PER CODE. FINAL LOCATION TBD BY CONTRACTOR.	
• CONTRACTOR SHALL PROVIDE TEMPORARY INLET PROTECTION FOR ALL CURB INLETS & CATCH BASINS ONSITE & OFFSITE IMMEDIATELY DOWNSTREAM OF THE PROJECT SITE PER LOCAL CODE.	

KEYNOTES	
EC 1	SILT FENCE
EC 6	SEDIMENT LOG





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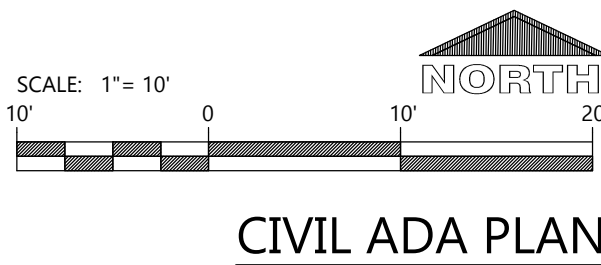
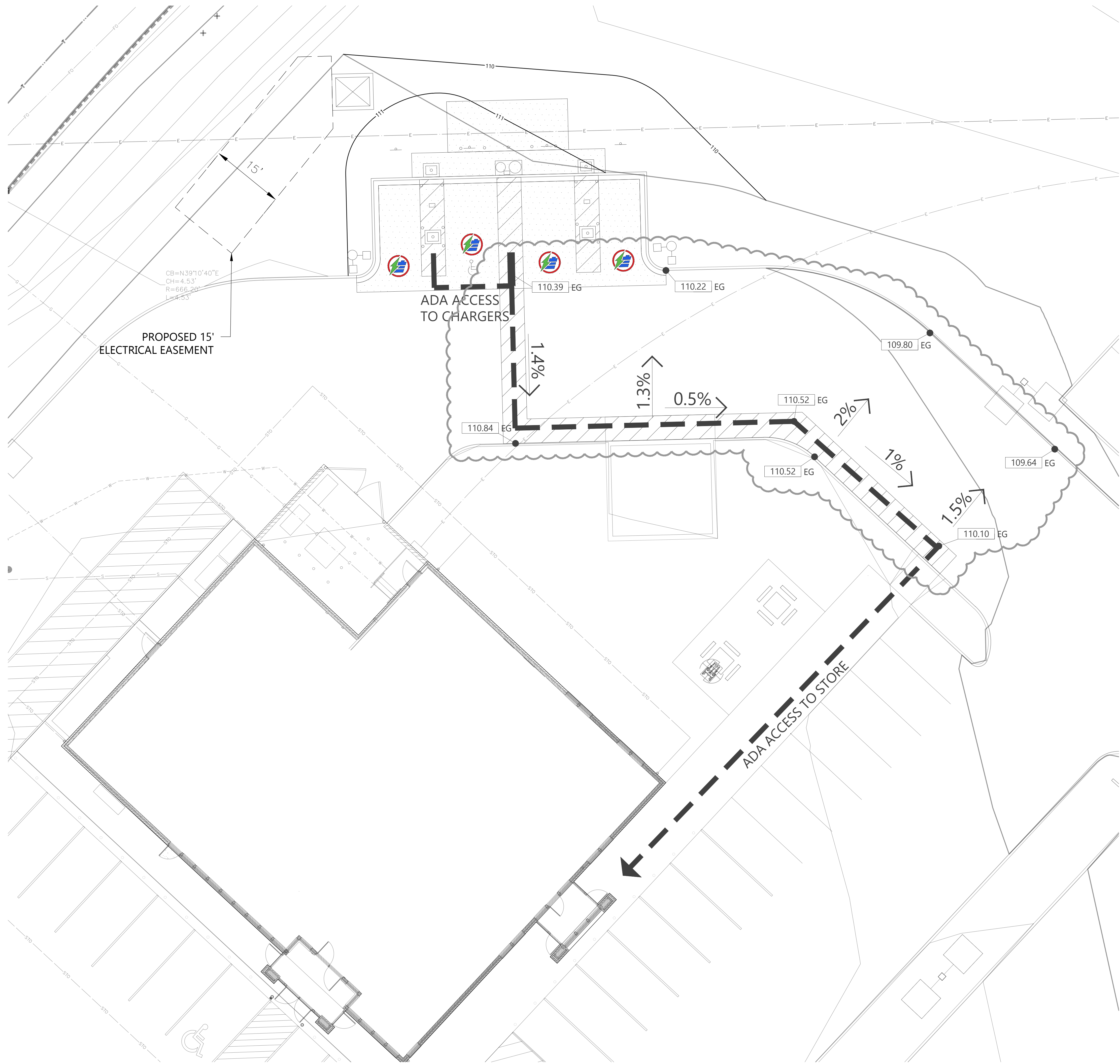
C200

SCALE: 1"= 10'



NORTH





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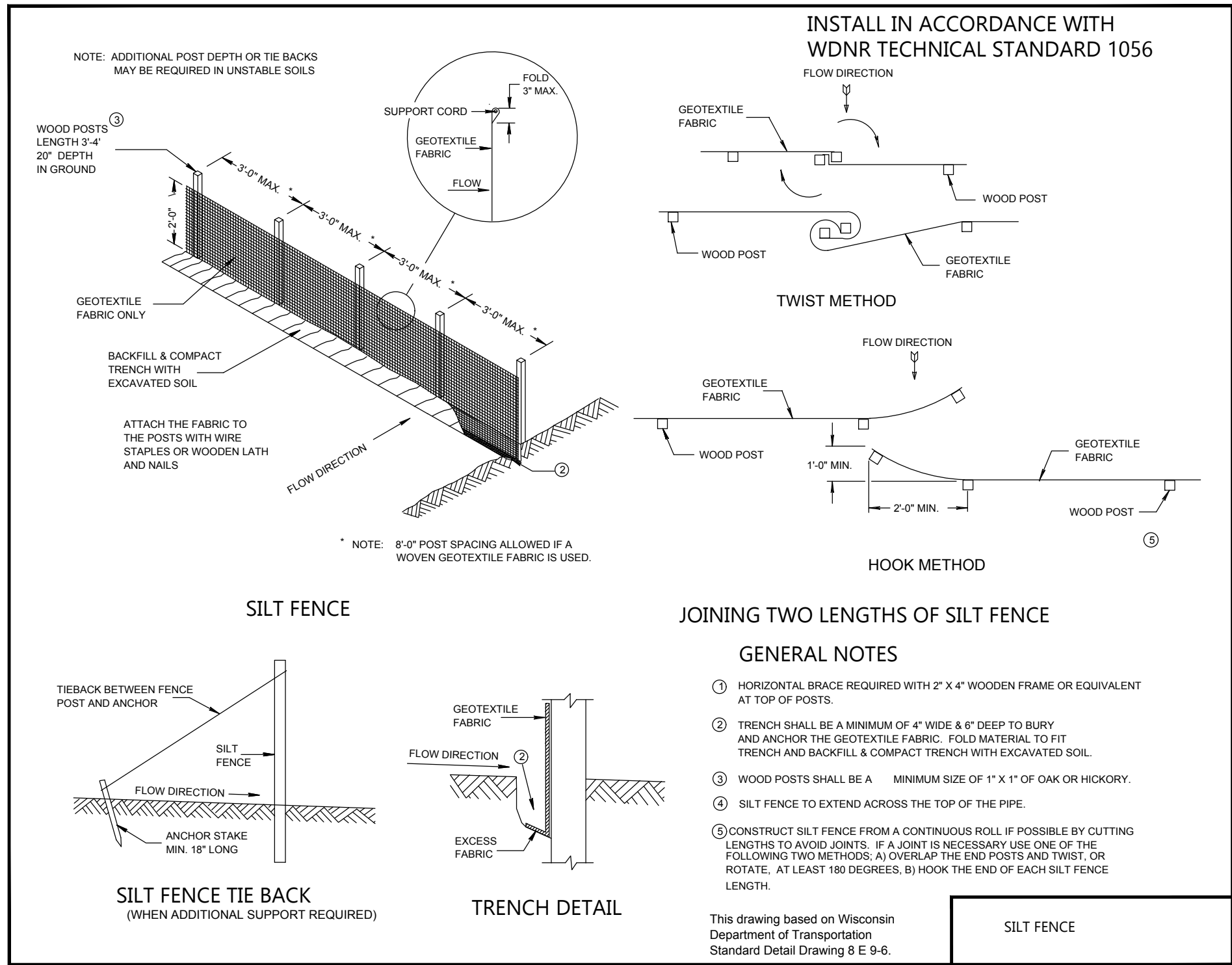
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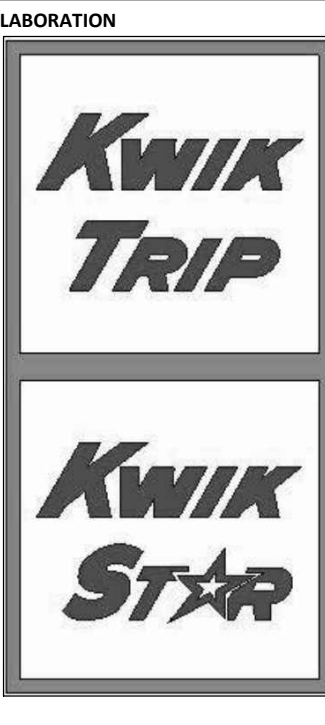
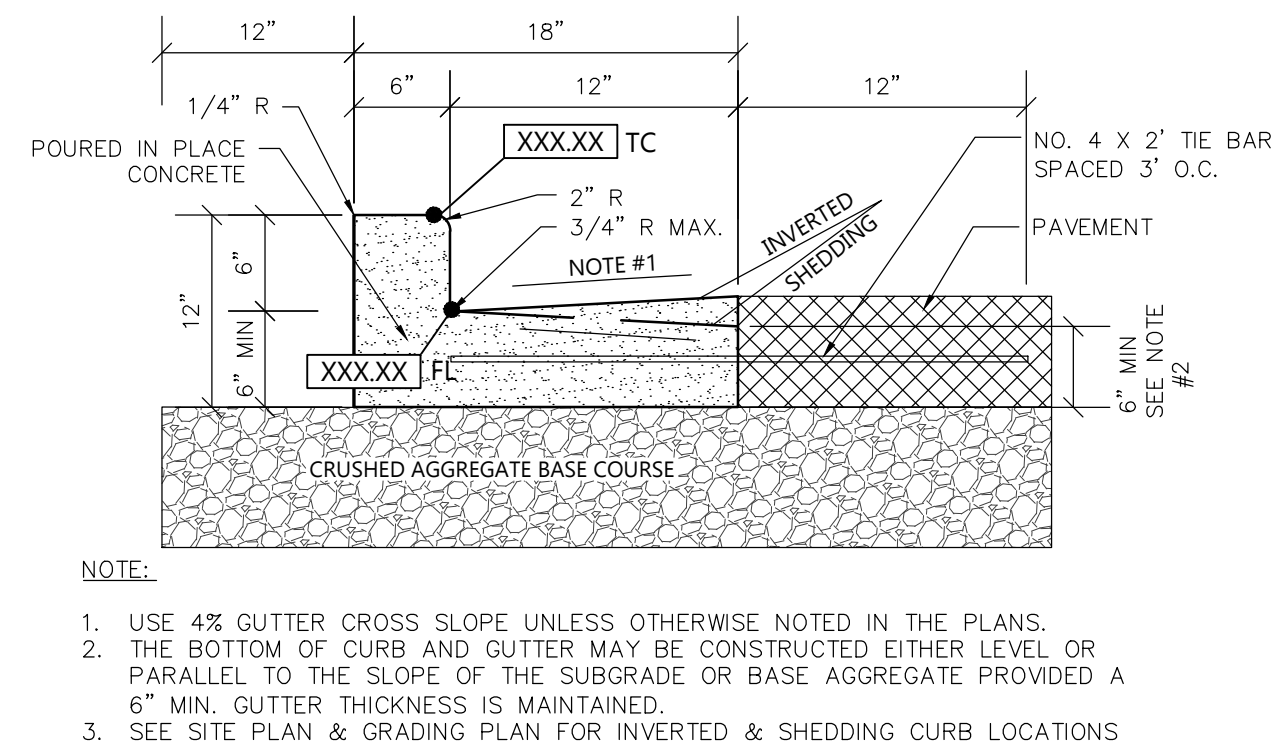
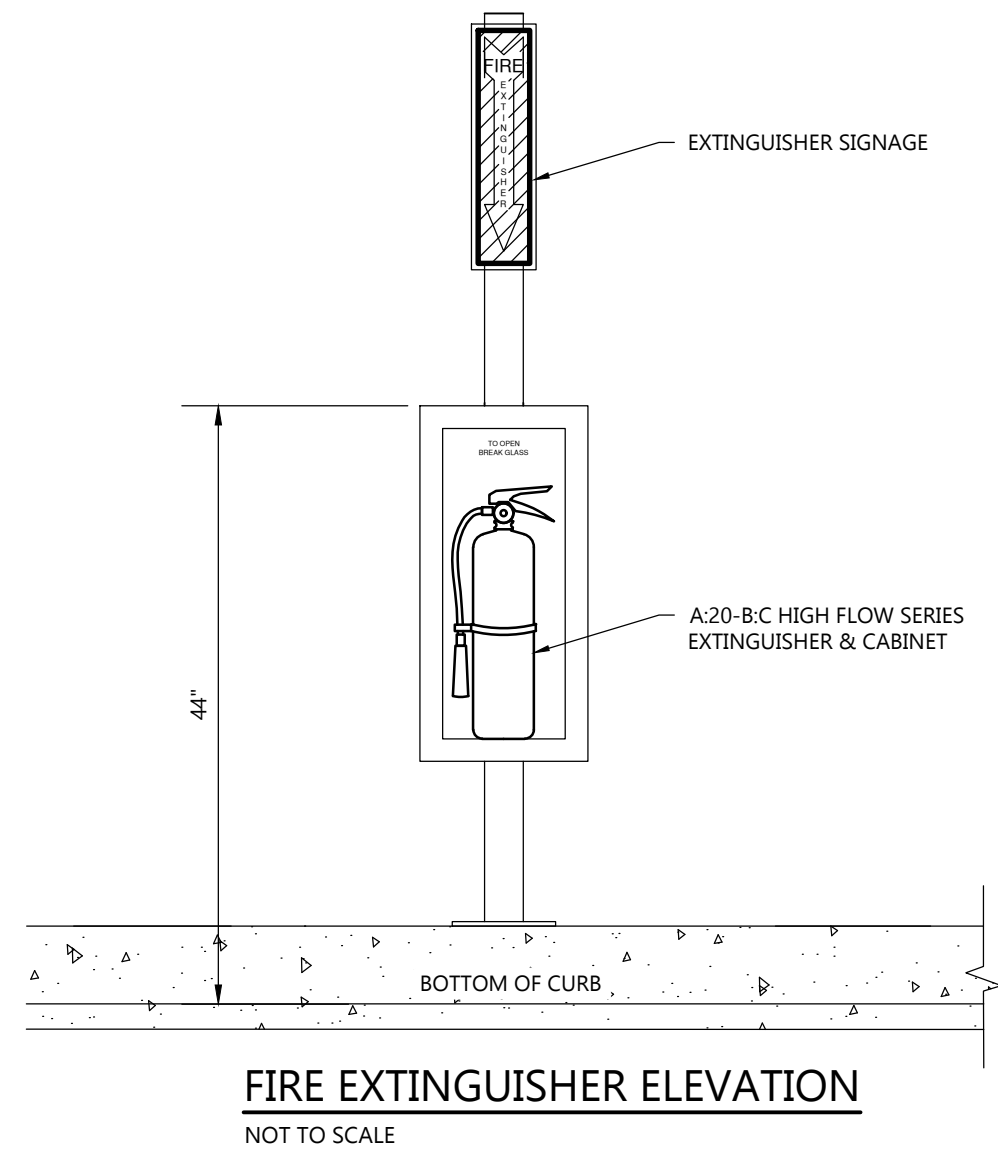
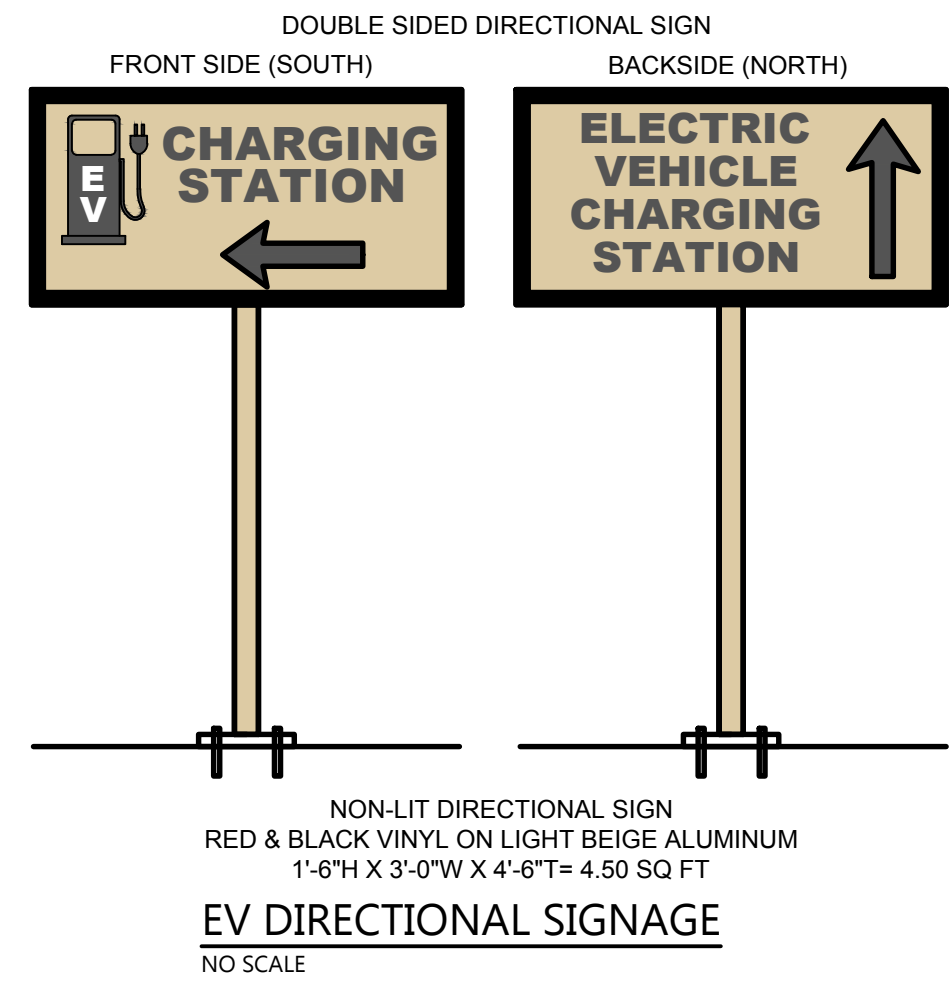
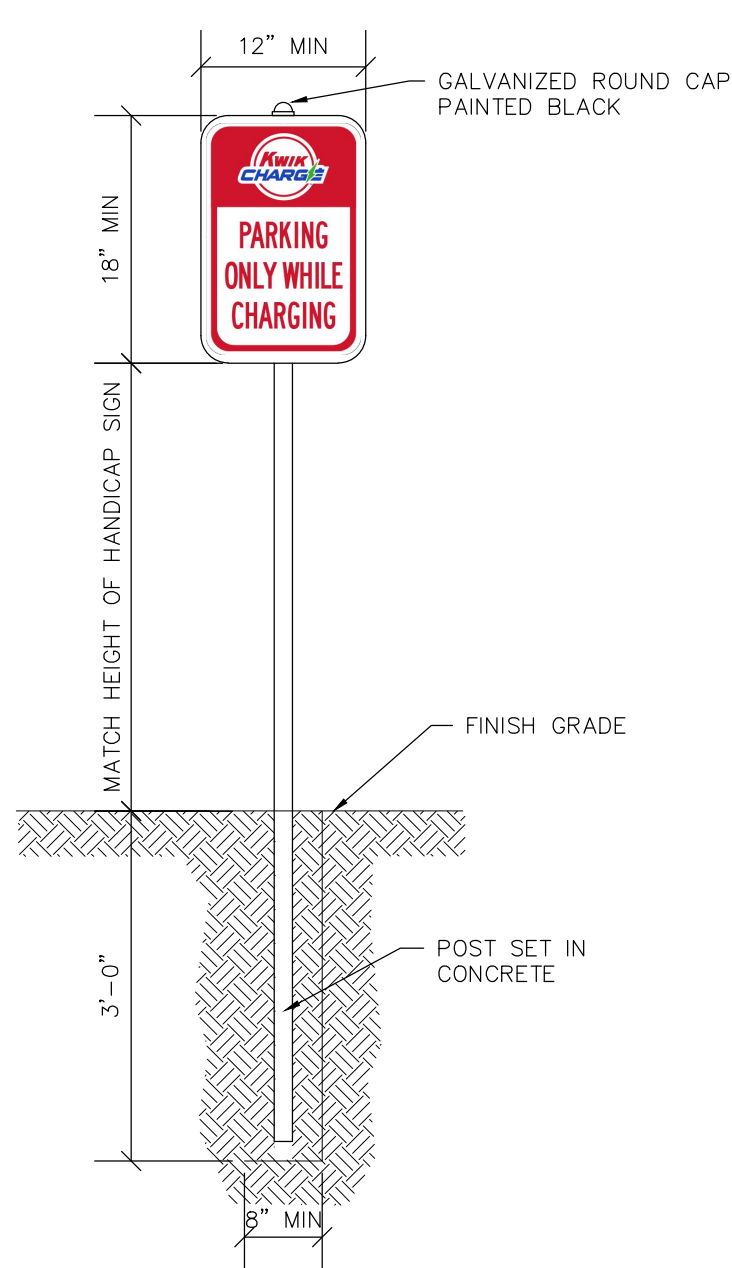
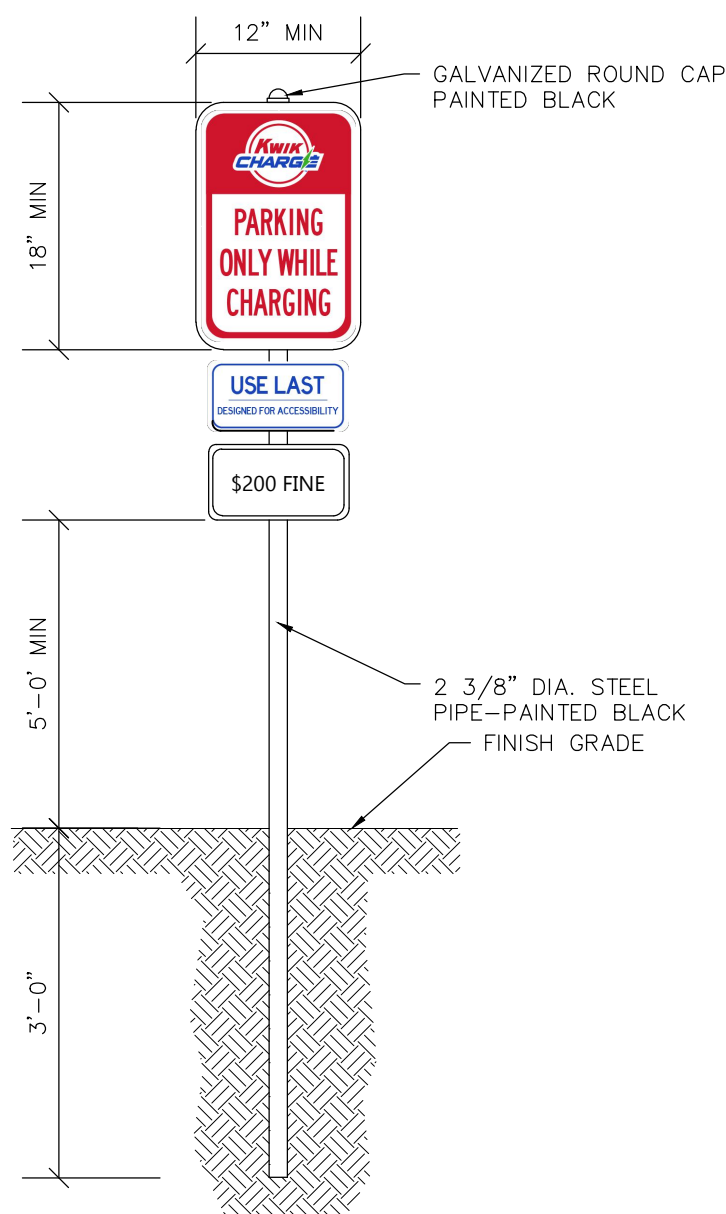
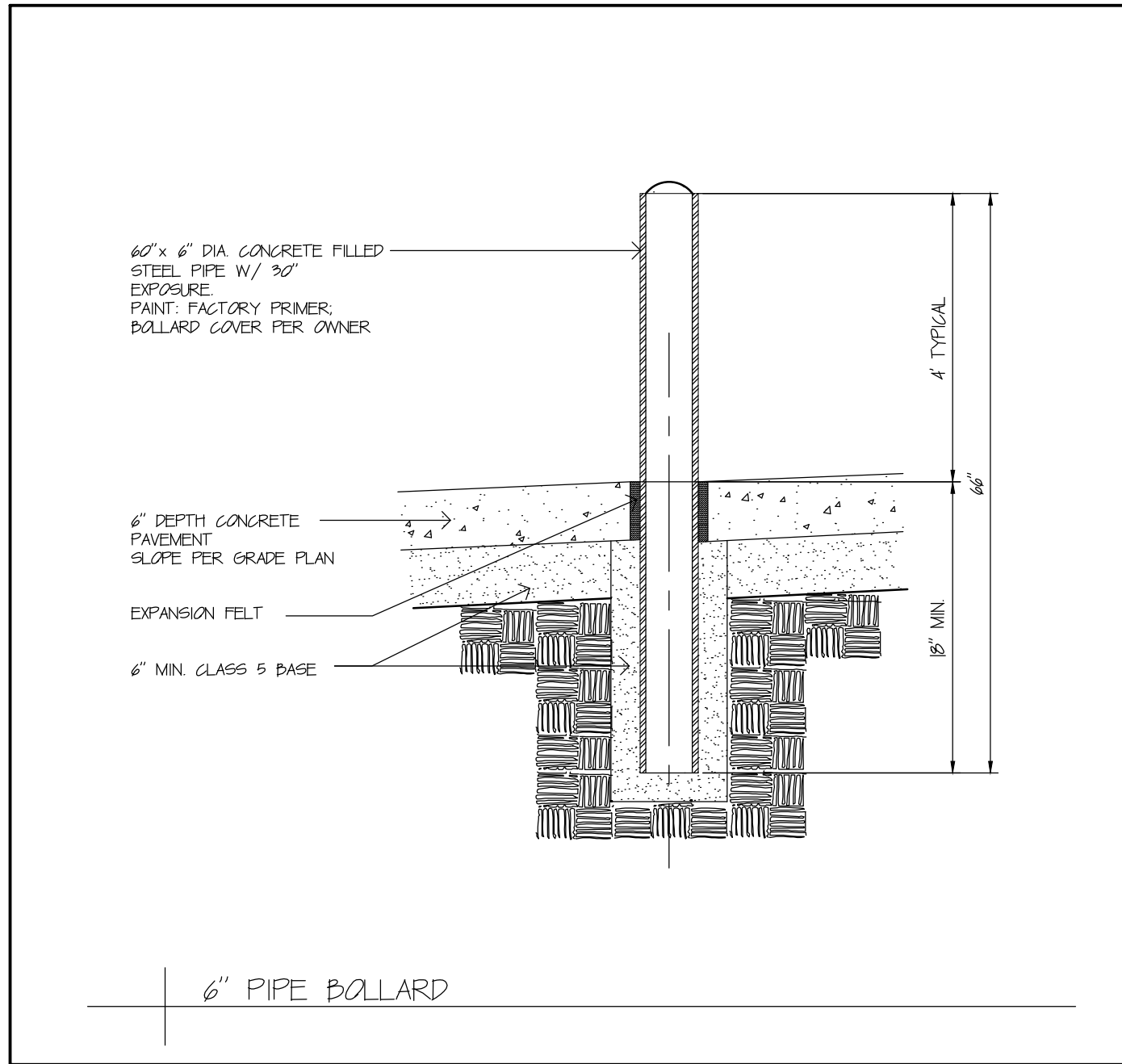
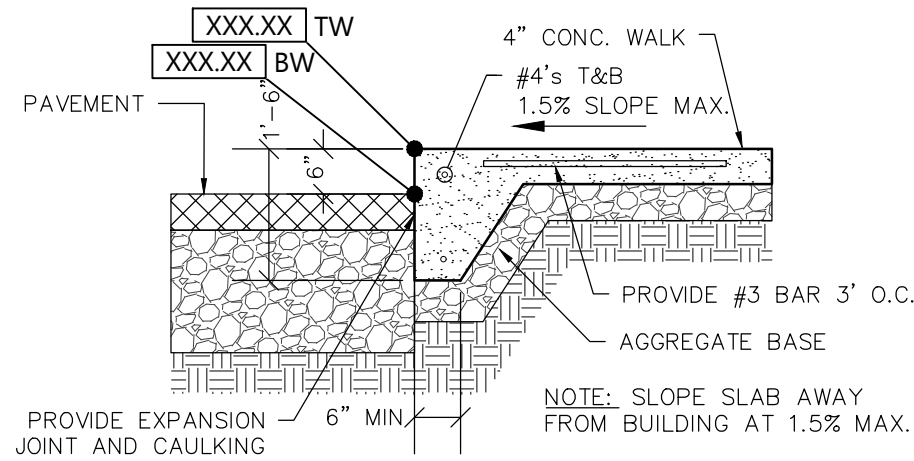
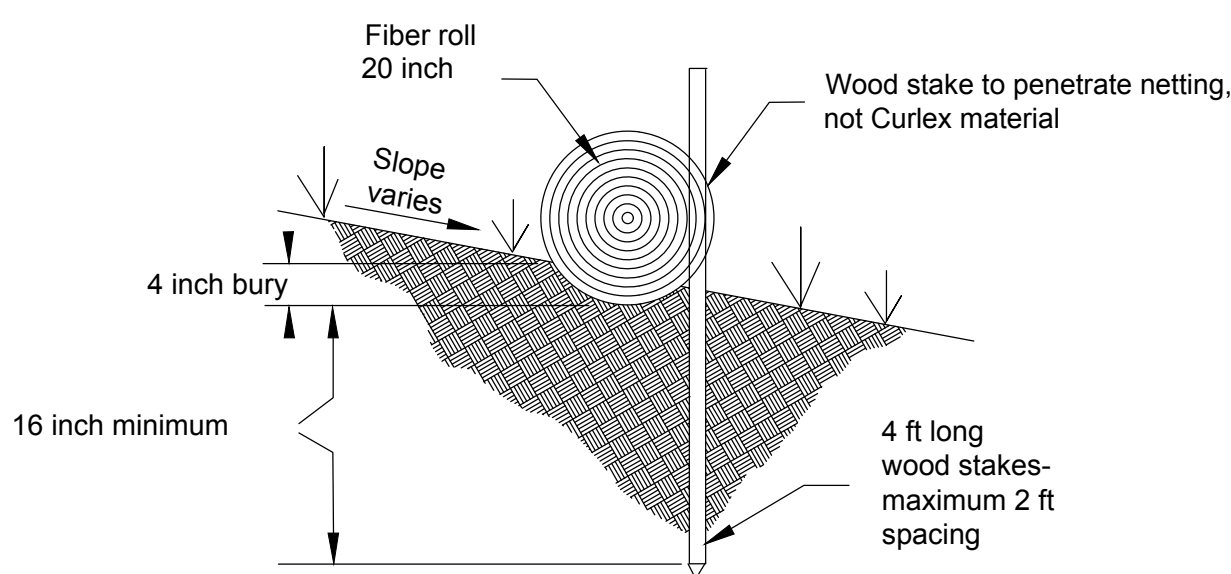
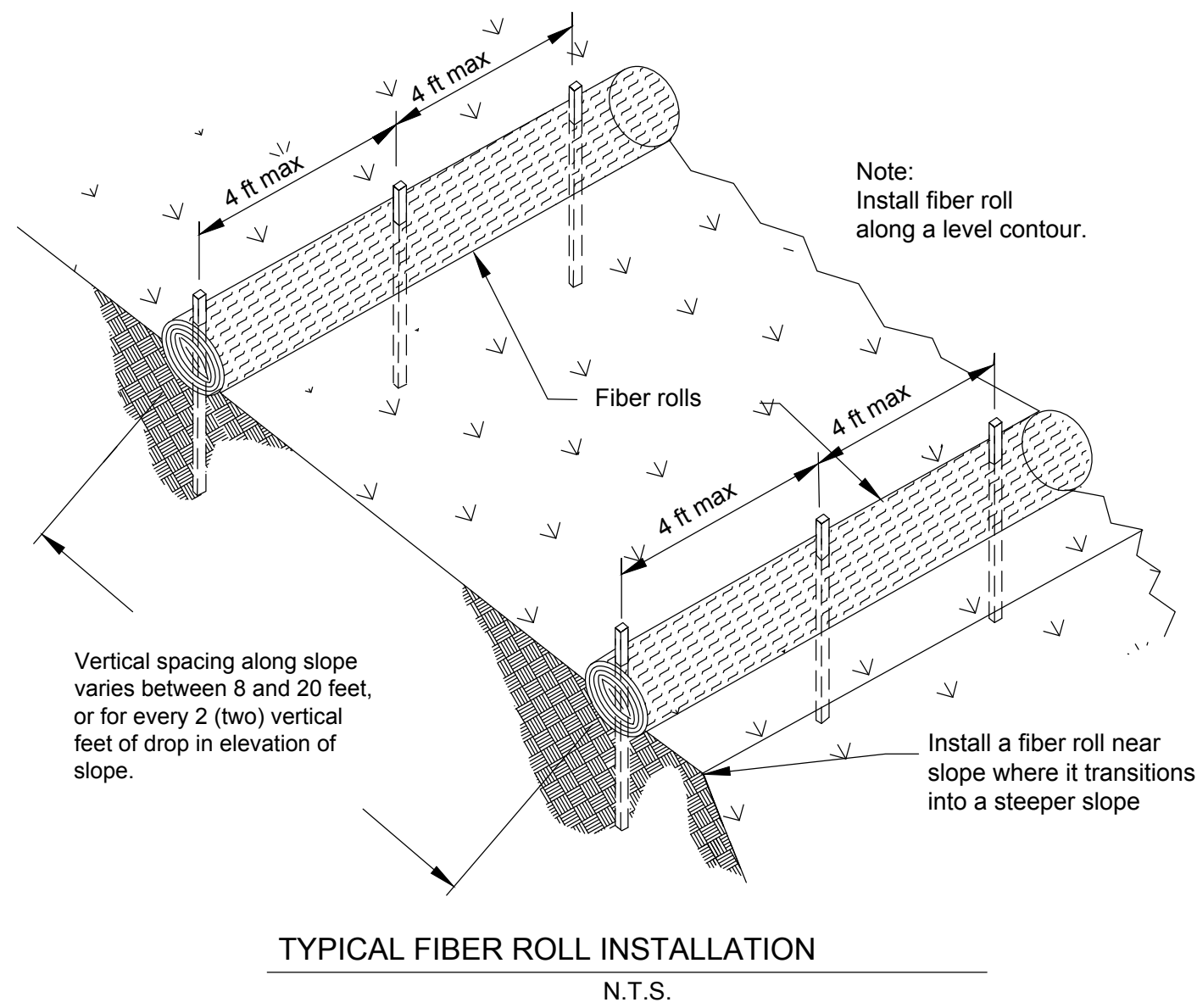
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SILT FENCE - INSTALLATION DETAIL  
NOT TO SCALE



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SHEET NUMBER

C500

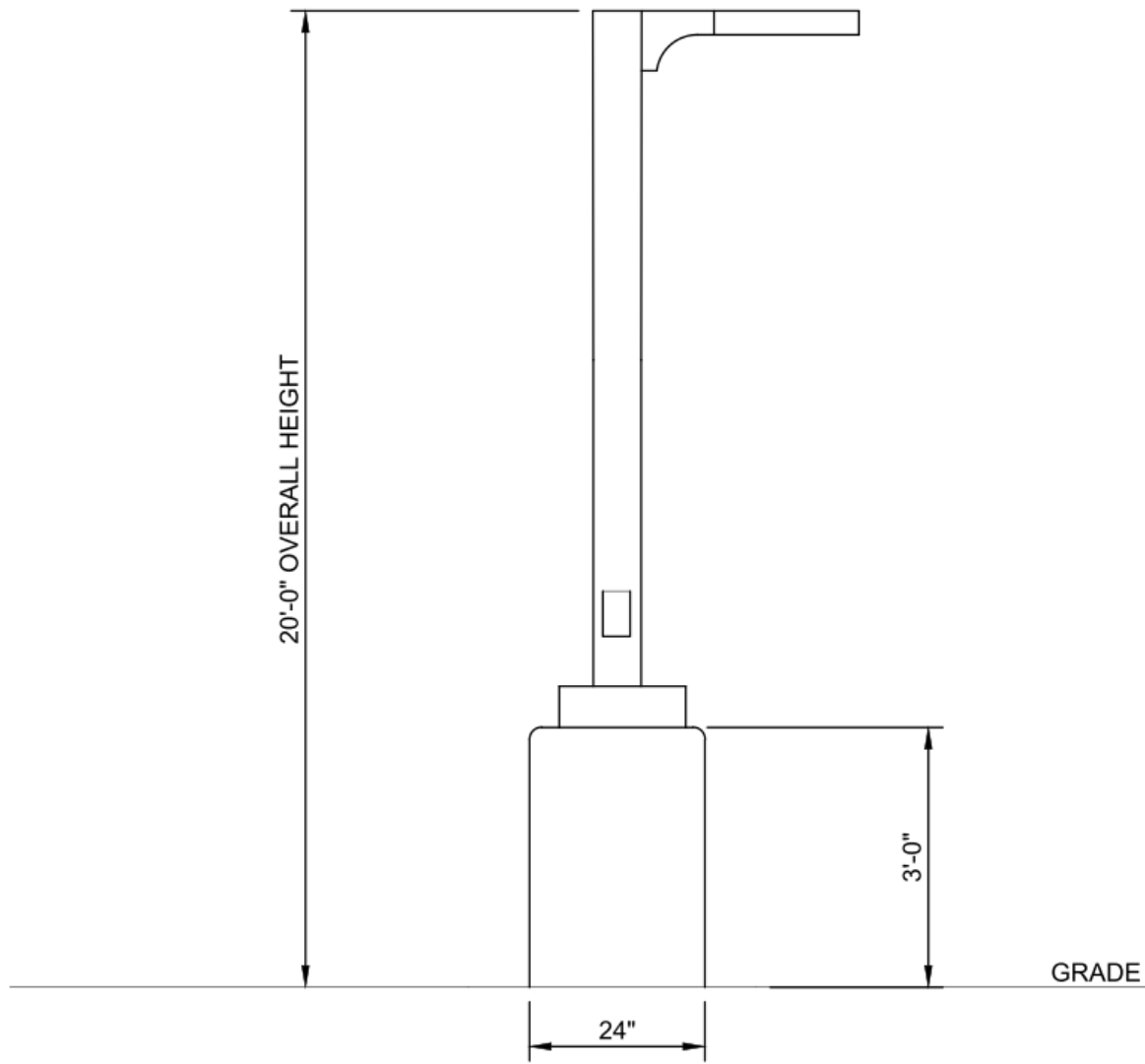


CIVIL LANDSCAPE AND RESTORATION PLAN



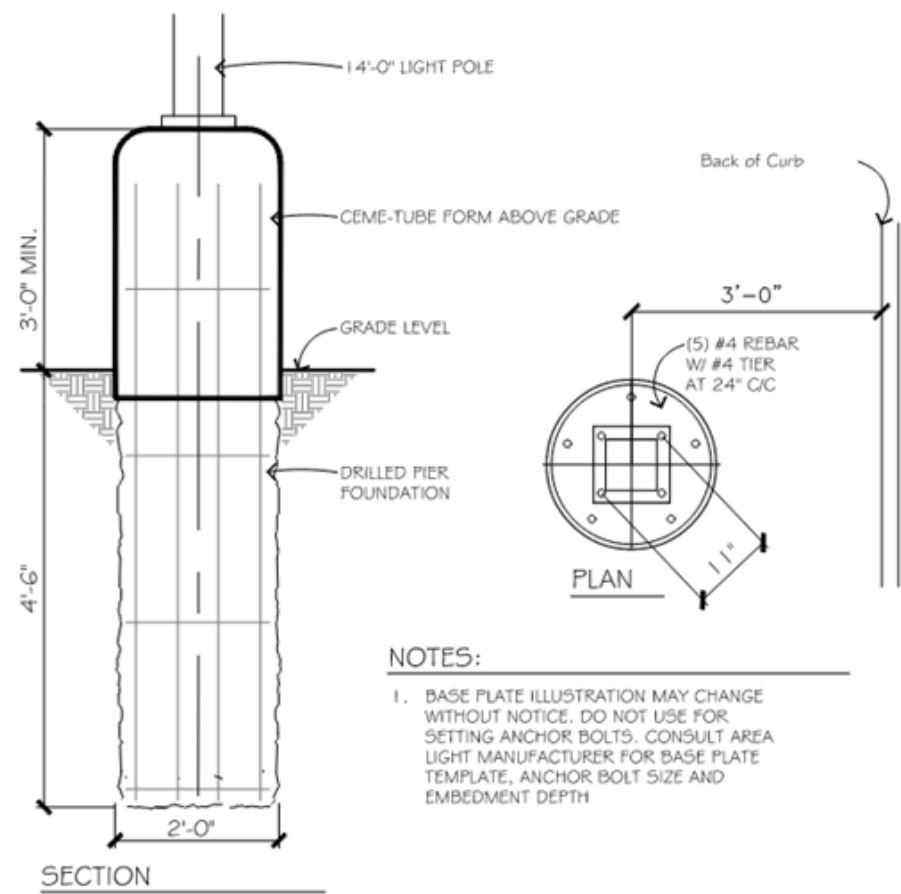
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Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lumens Per Lamp    Wattage
	EX.	20	LSI INDUSTRIES, INC.	SCV-LED-15L-SC-50	EXISTING GAS CANOPY LIGHT	14960    102
	EX.	1	LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	19077    135
	EX.	1	LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	18909    135
	EX.	1	LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	12045    135
	EX.	2	LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	18909    270
			LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	18909    135
	EX.	3	LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	18909    270
			LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	18909    135
	EX.	1	LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	18909    540
			LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	18909    135
			LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	18909    135
			LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	18909    135
			LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	18909    135
	EX.	1	LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	18909    405
			LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	18909    135
			LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	18909    135
			LSI INDUSTRIES, INC.	EXISTING	EXISTING TO REMAIN	18909    135
	REL.	1	LSI INDUSTRIES, INC.	EXISTING	EXISTING POLE LIGHT TO BE RELOCATED	19077    135
	P1F	1	LSI INDUSTRIES, INC.	SLM-LED-18L-SIL-FT-50-70CRI	LED OUTDOOR AREA LIGHT, FORWARD THROW DISTRIBUTION, INSTALL ON 16' POLE AND	18909    270
			LSI INDUSTRIES, INC.	SLM-LED-18L-SIL-FT-50-70CRI	LED OUTDOOR AREA LIGHT, FORWARD THROW DISTRIBUTION, INSTALL ON 16' POLE AND	18909    135
			LSI INDUSTRIES, INC.	SLM-LED-18L-SIL-FT-50-70CRI	LED OUTDOOR AREA LIGHT, FORWARD THROW DISTRIBUTION, INSTALL ON 16' POLE AND	18909    135
	P1F	1	LSI INDUSTRIES, INC.	SLM-LED-18L-SIL-FT-50-70CRI	LED OUTDOOR AREA LIGHT, FORWARD THROW DISTRIBUTION, INSTALL ON RELOCATED 16' POLE AND POLE ON BASE	18909    135

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
#184 KT SITE	+	4.4 fc	48.3 fc	0.0 fc	N/A	N/A
EV APPROACH	X	10.4 fc	15.2 fc	6.7 fc	2.3:1	1.6:1
EV PARKING	X	12.3 fc	14.1 fc	9.5 fc	1.5:1	1.3:1
GAS CANOPY	X	41.1 fc	48.3 fc	28.0 fc	1.7:1	1.5:1
PARKING LOTS & DRIVEWAYS	X	7.6 fc	35.6 fc	0.6 fc	59.3:1	12.7:1



## LIGHT POLE DETAIL

NO SCALE



### NOTES:

1. BASE PLATE ILLUSTRATION MAY CHANGE WITHOUT NOTICE. DO NOT USE FOR SETTING ANCHOR BOLTS. CONSULT AREA LIGHT MANUFACTURER FOR BASE PLATE TEMPLATE, ANCHOR BOLT SIZE AND EMBEDMENT DEPTH

Category: Project: Type: Prepared By: Date:

## Slice Medium (SLM) Outdoor LED Area Light

IN THE US

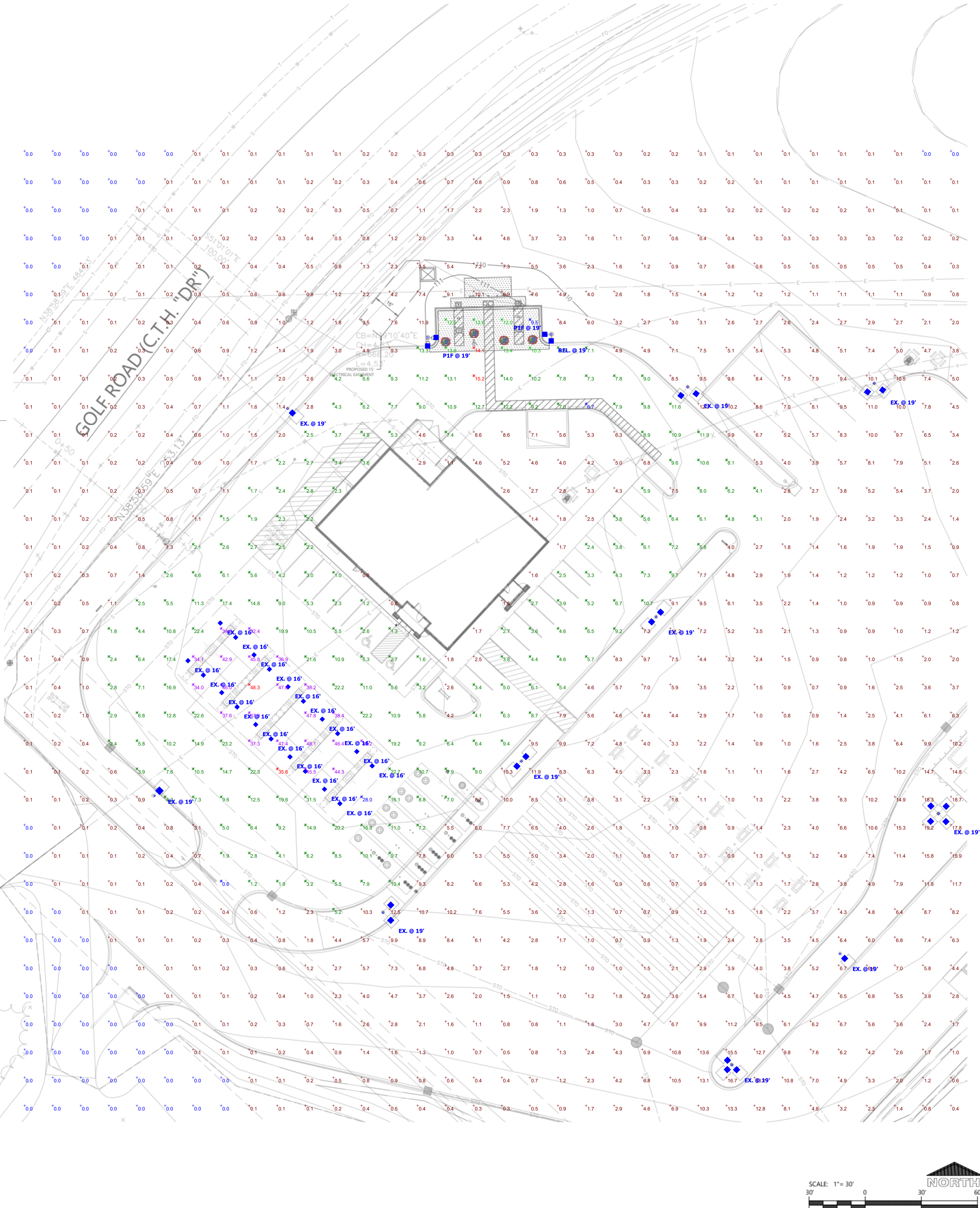
OVERVIEW	
Lumen Package	9,000 - 56,000
Wattage Range	62 - 456
Efficiency (Power LPMW)	94 - 103
Weight (Shipping)	27 (2.2)
Control Options	PHOT, ALB, ALA, 7 Pin, POC

### QUICK LINKS

Ordering Guide Performance Photometrics Dimensions

### FEATURES & SPECIFICATIONS

- Construction**
  - Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
  - Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
  - Shipping weight: 33 lbs in carton.
- Optical System**
  - State-of-the-art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated seal.
  - Proprietary silicone refractor optics provide exceptional coverage and uniformity in distribution types 2, 3, 4, 5W, PT, TTA, SHL and LCHC.
  - Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 95-99%.
  - Zero uplight.
  - Available in 5000K, 4000K, 3500K, 3000K and 2700K color temperatures per ANSI C78.377. Also Available in Phosphor Coated Amber with Peak Intensity at 630nm.
  - 70 or 80CRI Minimum.
  - Integral lower (LS) and integral half lower (RH) options available for enhanced backlight control.
- Electrical**
  - High-performance driver features overvoltage, undervoltage, short-circuit and over temperature protection.
  - 0-10V dimming (0% - 100%) standard.
  - Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (241-480 VAC).
  - L80 Calculated Life: >100K hours (See Lumen Maintenance chart).
  - Total harmonic distortion: <20%.
  - Operating temperature: -40°C to +50°C (-40°F to +122°F). 42L and 44L lumen packages rated to +40°C. 55L lumen package rate to +35°C.
  - Power factor: >90.
  - Input power stays constant over life.
  - Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
  - High-efficiency LEDs mounted to metal-core circuit board to maximize heat dissipation.
  - Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.
- Controls**
  - Optional integral passive infrared (BlastoIR™) motion sensor. Features operate independently and can be commissioned via iOS or Android configuration app.
  - LSI's Auralink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7.
- Installations**
  - A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment.
  - Included terminal block accepts up to 12 ga. wire.
  - Utilizes LSI's traditional B3 drill pattern. (See drawing in poles section)
- Warranty**
  - LSI luminaires carry a 5-year limited warranty. Refer to <https://www.lsi.com/content/resources/terms-conditions-warranty> for more information.
- Listings**
  - Listed to UL 1598 and UL 8750.
  - Meets Buy American Act requirements.
  - Dark Sky compliant: with 3000K color temperature selection.
  - Title 24 Compliant: see local ordinance for qualification information.
  - Suitable for wet locations.
  - IP66 rated Luminaire per IEC 60598-1.
  - 3G rated for ANSI C136.31 high vibration applications (applications are qualified).
  - IK08 rated luminaire per IEC 60622 mechanical impact code.
  - DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at [www.designlights.org/DLP](http://www.designlights.org/DLP) to confirm which versions are qualified.
  - Patented Silicone Optics (US Patent NO. 10,386,952 B2).



## CIVIL SITE PHOTOMETRIC PLAN & DETAILS

**EXCEL**  
Always a Better Plan  
100 Camelot Drive  
Fond du Lac, WI 54935  
920-926-9800  
[excelengineer.com](http://excelengineer.com)

### COLLABORATION



### PROJECT INFORMATION

PROPOSED ALTERATIONS FOR:  
**KWIK TRIP #184**  
2001 GOLF RD • PEWAUKEE, WI 53072

### PROFESSIONAL SEAL



### PRELIMINARY DATES

JUNE 13, 2025  
JUNE 26, 2025  
JULY 11, 2025  
AUG. 7, 2025

### JOB NUMBER

250007700

### SHEET NUMBER

**C800**

REVIEW SET #1

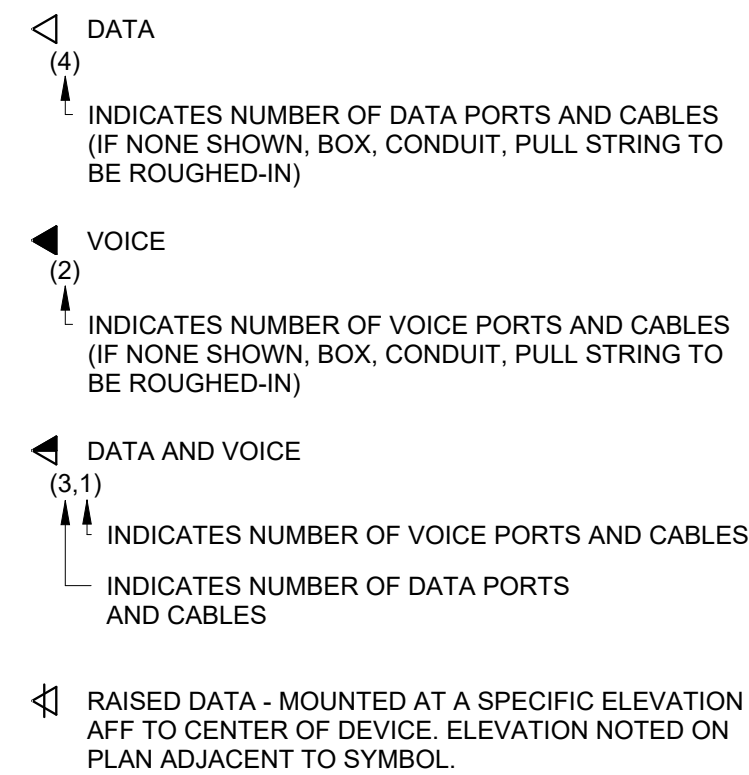


ELECTRICAL SYMBOLS AND ANNOTATIONS:

(ALL SYMBOLS, DESIGNATIONS, ANNOTATIONS & ABBREVIATIONS SHOWN MAY NOT APPEAR ON DRAWINGS)

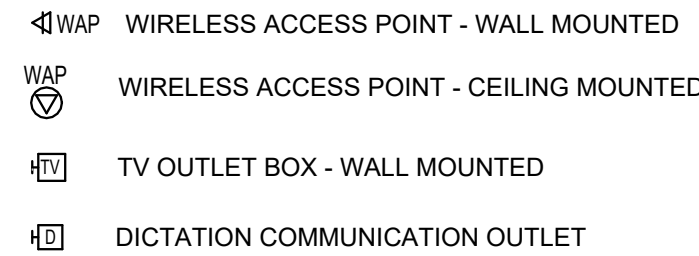
SYSTEMS

SYSTEMS NOTATIONS

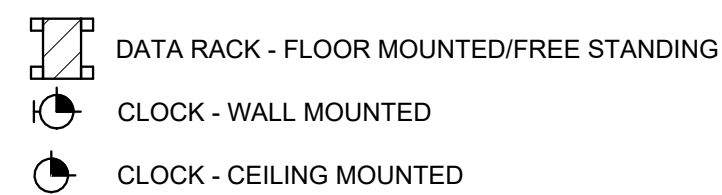


DATA AND VOICE DEVICES

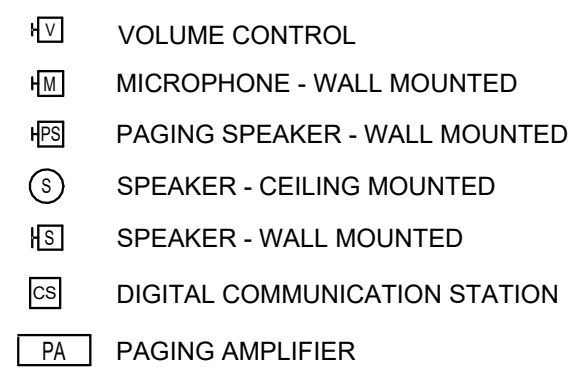
ALL DEVICES WALL MOUNTED AT 18" AFF TO CENTER OF DEVICE UNLESS NOTED OTHERWISE



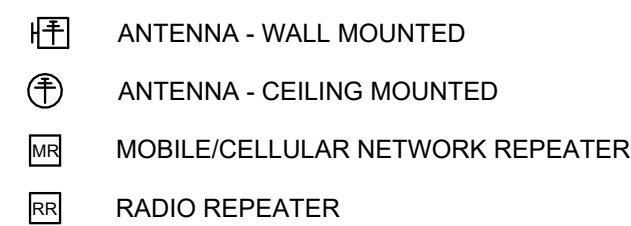
DATA EQUIPMENT



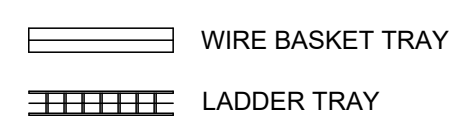
PAGING AND PUBLIC ADDRESS



RADIO AND CELLULAR PHONE

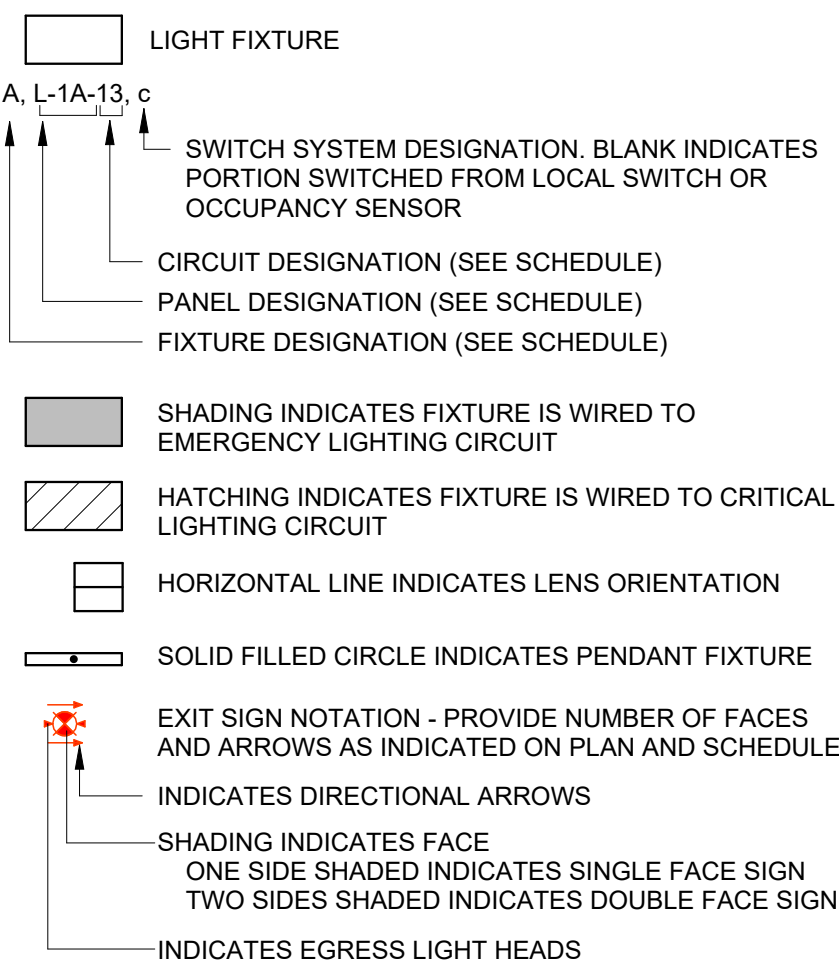


CABLE TRAY

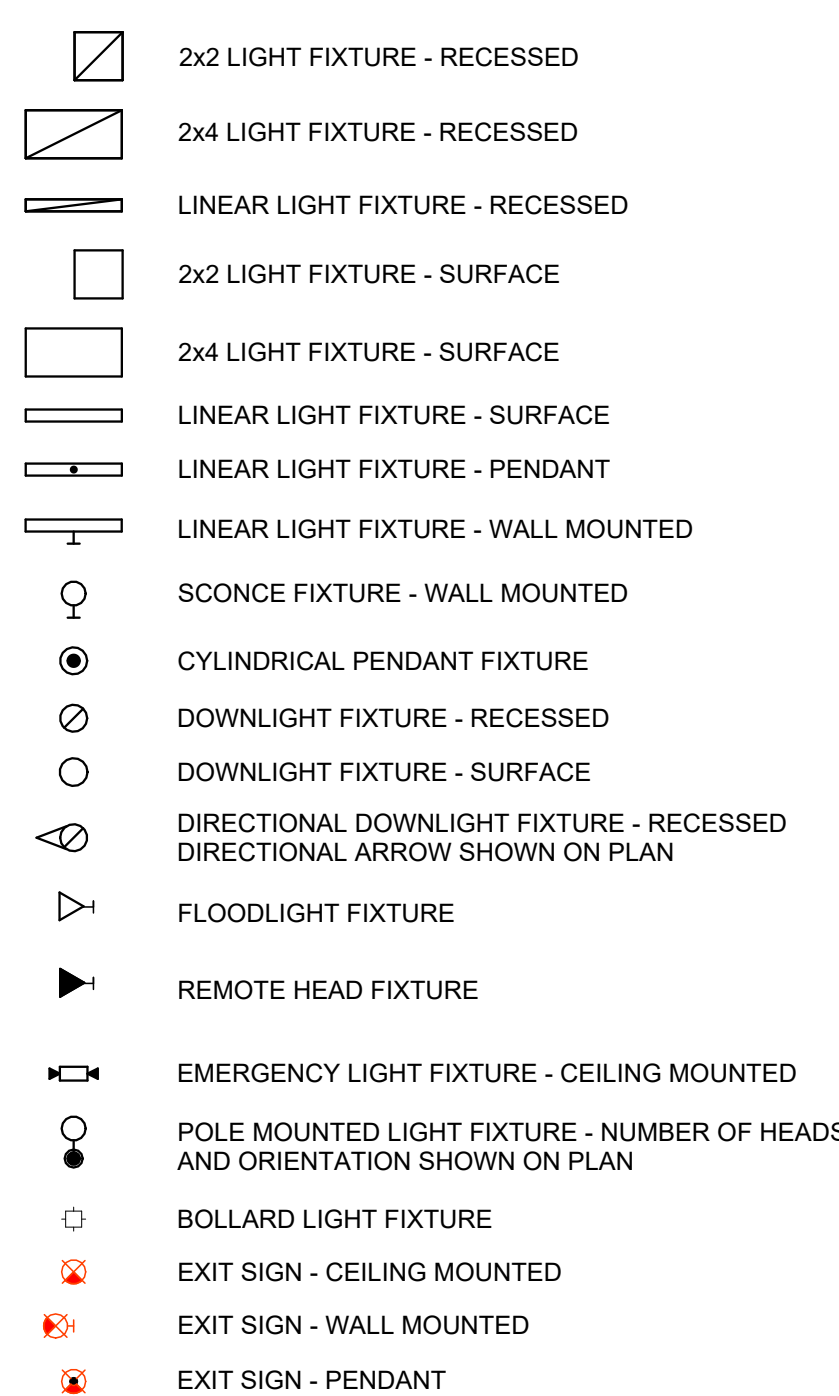


LIGHTING FIXTURES

FIXTURE NOTATIONS

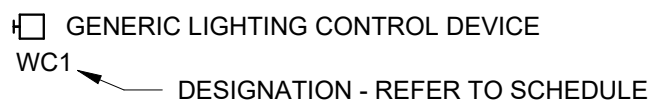
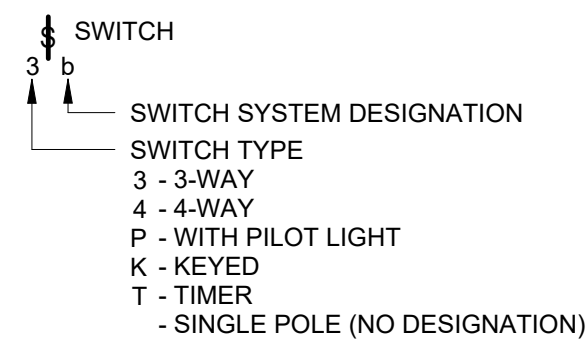


FIXTURE TYPES

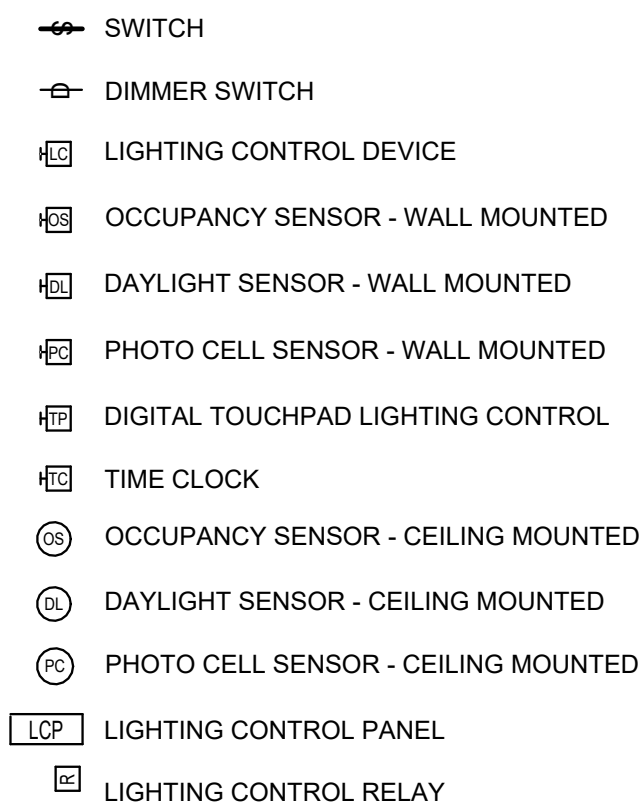


LIGHTING CONTROLS

CONTROLS NOTATIONS

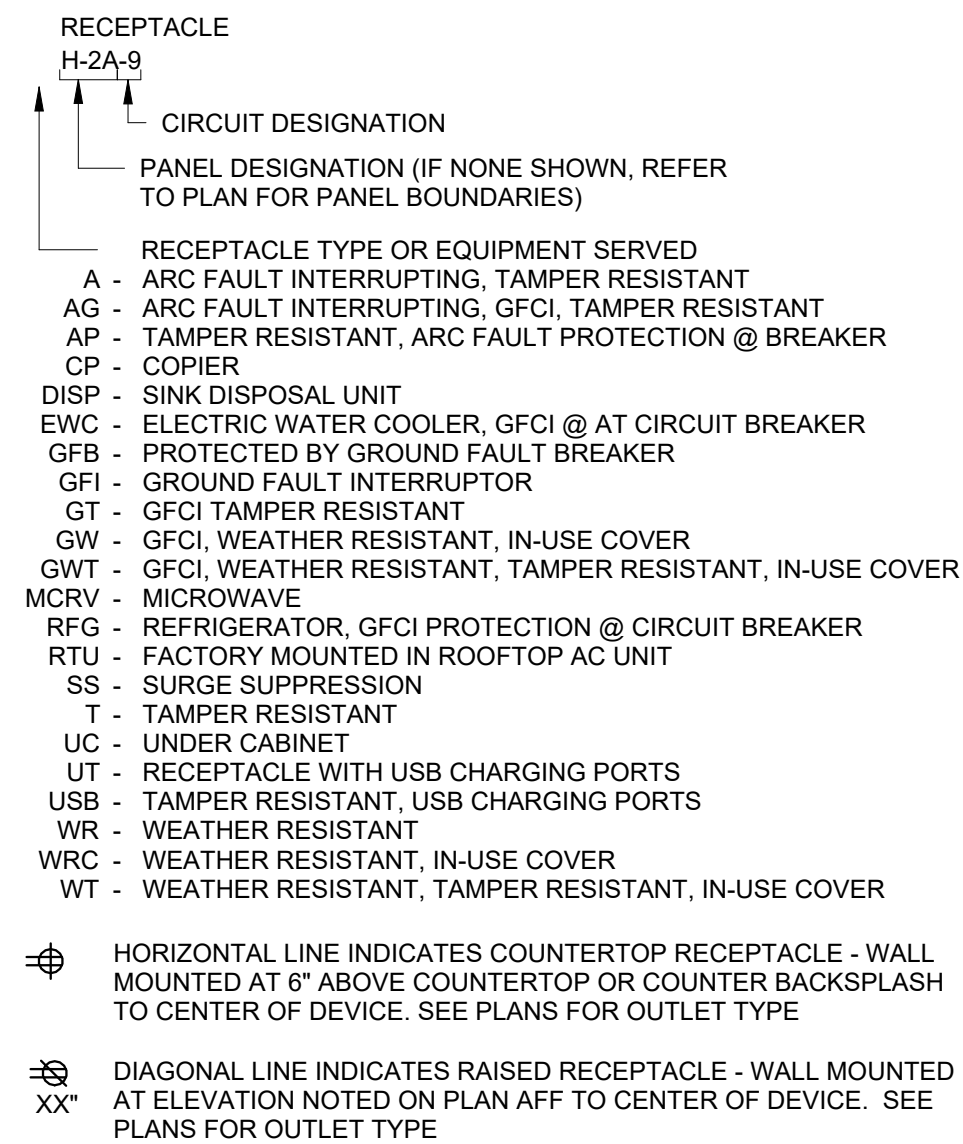


CONTROL TYPES



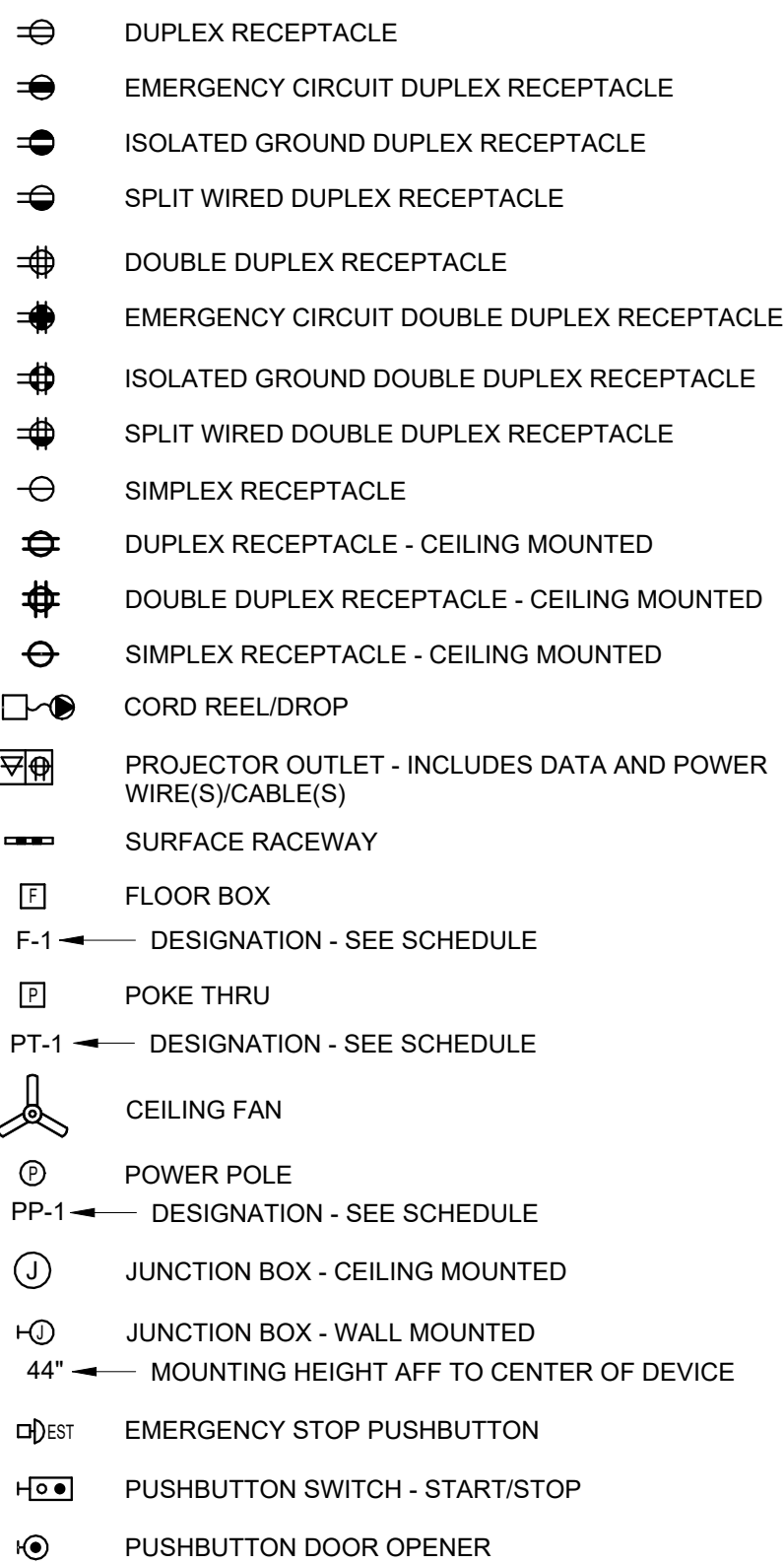
POWER

RECEPTACLE NOTATIONS



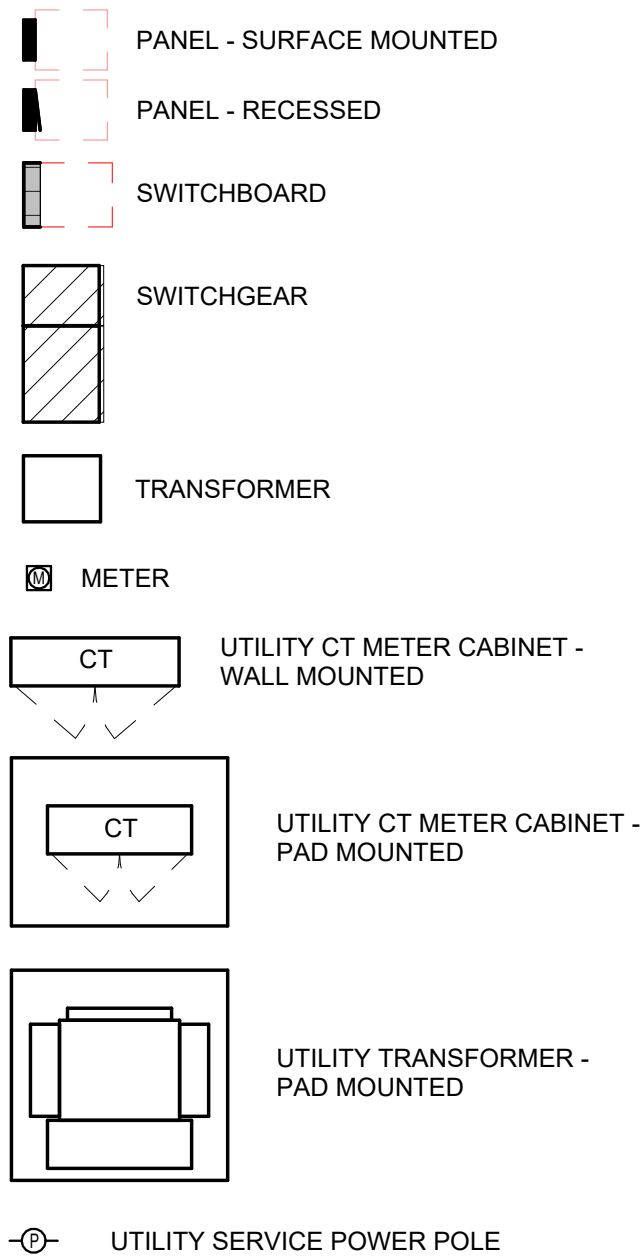
POWER CONNECTION TYPES

ALL RECEPTACLES WALL MOUNTED AT 18" AFF TO CENTER OF DEVICE UNLESS NOTED OTHERWISE

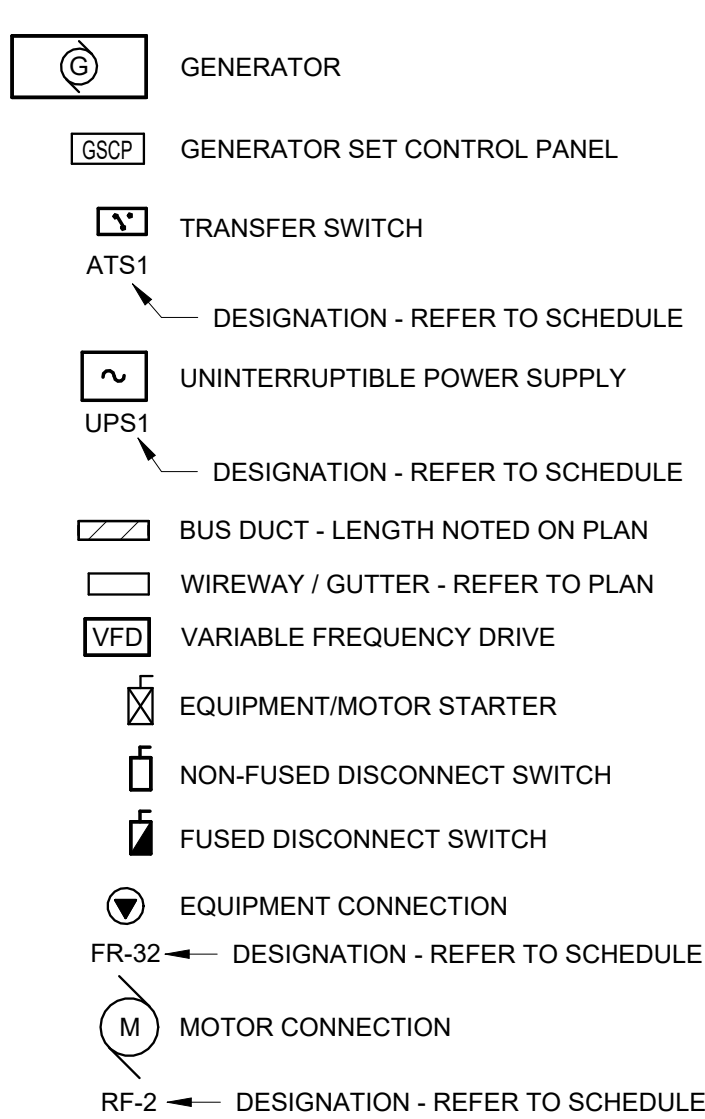


EQUIPMENT

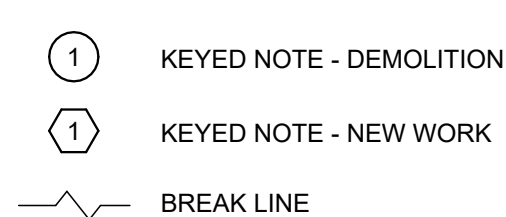
POWER DISTRIBUTION



OTHER EQUIPMENT



GENERIC SYMBOLS AND ANNOTATIONS



UNDERGROUND RACEWAY ABBREVIATIONS:	
XY.000.0	
X	Y
B = BUILDING C = CARWASH F = FUEL DISPENSING S = SITE	P = POWER AND CONTROL - LINE VOLTAGE L = LOW VOLTAGE AND CONTROL D = DATA T = TANK MONITORING M = MISC.

SHEET INDEX

E000	TITLE SHEET
E001	GENERAL NOTES
E002	GENERAL NOTES
E100	SITE PLAN
E101	ENLARGED SITE PLAN
E310	DETAILS
E311	DETAILS
E312	DETAILS
E600	POWER ONE-LINE DIAGRAM



Always a Better Plan

100 Camelot Drive  
Fond du Lac, WI 54935  
920-926-9800  
excelengineer.com

COLLABORATION



PROJECT INFORMATION

PROPOSED ALTERATIONS FOR:  
**KWIK TRIP #184**  
2001 GOLF ROAD • PEWAUKEE, WI 53072

PROFESSIONAL SEAL



PRELIMINARY DATES

JUNE 13, 2025  
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JOB NUMBER

250007700

SHEET NUMBER

E000

ELECTRICAL TITLE SHEET



1. **GENERAL**

1.1. REFERENCES TO KWIK TRIP (KT) ALSO APPLIES TO KWIK STARS, KWIK SPIRITS, STOP N GOES, AND TOBACCO OUTLETS.

1.2. THE CONSTRUCTION SCHEDULE ON TITLE SHEET E000 SHALL BE STRICTLY ADHERED TO. FAILURE TO DO SO MAY RESULT IN MONETARY COMPENSATION FROM THE ELECTRICAL CONTRACTOR (EC) OR ELECTRICAL FUEL CONTRACTOR (EFC) AS SPECIFIED ELSEWHERE.

1.3. THESE GENERAL NOTES SHALL APPLY PROJECT WIDE UNLESS SPECIFICALLY NOTED OTHERWISE. FOLLOW SPECIFIC NOTES WHERE THEY APPLY.

1.4. KWIK TRIP INC. (OWNER) SHALL FURNISH ALL MATERIALS UNLESS SPECIFICALLY NOTED OTHERWISE. THIS IS DONE THROUGH A PO ISSUED TO EITHER GEXPRO OR VIKING ELECTRIC. THIS INCLUDES PANELS, DISCONNECTS, CONDUIT, WIRE, SPEAKERS AND AMPLIFIERS ETC. CONTRACTOR SHALL ORDER MATERIAL AS NEEDED FROM THE ELECTRICAL SUPPLY HOUSE. SOME EQUIPMENT IS FURNISHED DIRECTLY BY KWIK TRIP AND WILL BE DELIVERED AS NOTED ON THE PROJECT SCHEDULE.

1.5. KWIK TRIP WILL PROVIDE TWO STORAGE PODS PER SITE IF SPACE IS AVAILABLE.

1.6. THE CONTRACTOR SHALL SUPPLY ALL LABOR REQUIRED FOR A COMPLETE CODE AND **CONSTRUCTION DOCUMENT COMPLIANCE** INSTALLATION USING BEST PRACTICES. SEE "BEST PRACTICE" DEFINITION BELOW.

1.7. PRIORITY OF CONSTRUCTION DOCUMENTS IS PLANS OVER SPECIFICATIONS. IF CONFLICTS ARE SHOWN ON PLANS CONTACT THE PROJECT MANAGER.

1.8. USE CIVIL PLANS TO DETERMINE ALL EXTERIOR ELEVATIONS NOT BASED ON THE ARCHITECT'S FINISHED FLOOR ELEVATION (FFE) STARTING AT 100. NOTE THE ARCHITECTS USE OF 100 FOR FFE IS FOR REFERENCE. THE ACTUAL ELEVATION FOR FFE IS NOTED ON THE CIVIL PLANS.

1.9. SOME OF THESE NOTES WILL NOT APPLY TO REMODELING/ADDITION WORK.

2. **CODES**

2.1. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL APPLICABLE CODES.

2.2. THE CONTRACTOR SHALL FOLLOW THE LATEST VERSION OF NFPA CHAPTER 70 (2023 NEC) UNLESS THE DIRECTION GIVEN IN THE LATEST VERSION IS IN DIRECT CONFLICT WITH THE ADOPTED VERSION.

2.3. **IT IS RECOMMENDED THAT THE ELECTRICAL CONTRACTOR(S) MEET WITH THE AUTHORITY HAVING JURISDICTION (AHJ), ELECTRICAL INSPECTOR PRIOR TO THE PROJECT START-UP.**

2.3.1. REVIEW INSPECTIONS THAT ARE REQUIRED.

2.3.2. REVIEW ANY/ALL LOCAL REQUIREMENTS.

2.3.2.1. VERIFY ANY RESTRICTIONS FOR MC CABLE USES THAT DIFFER FROM NEC.

2.4. EC SHALL PROVIDE PRIVATE UTILITY LOCATES PRIOR TO ANY SITE EXCAVATION.

3. **Demolition (where applicable)**

3.1. EC shall provide labor to de-energize all electrical involved in all demolition that is part of this project.

3.2. Where **GE Spectra gear is removed all circuit breaker rating plugs shall be salvaged to Kwik Trip!** Check with Erik Culver as to salvaging of three-pole Spectra circuit breakers.

3.3. Prior to bidding, the EC shall survey the existing conditions to define the scope.

3.4. The EC shall include the demolition of equipment typically installed by the EC, such as air curtains. Coordinate with Kwik Trip for the list of equipment.

4. **DEFINITIONS**

4.1. AFF: ABOVE FINISHED FLOOR

4.2. AHJ: AUTHORITY HAVING JURISDICTION.

4.3. AWG: AMERICAN WIRE GAUGE

4.4. BEST PRACTICE: AN INSTALLATION THAT IS COMPLIANT WITH THE LATEST CODES WHETHER ADOPTED OR NOT (AS LONG AS THERE ARE NO CONFLICTS WITH ADOPTED CODE), THAT ALSO IS COMPLIANT WITH ALL MANUFACTURE 'S' INSTRUCTION WITH CONSIDERATION FOR EASE OF MAINTENANCE IN THE FUTURE. IN MANY CASES, KT WILL DEFINE BEST PRACTICE. THERE IS A NEED TO STANDARDIZE INSTALLATIONS TO ALLOW FOR SUPPORT FROM A REMOTE LOCATION FOR A LONG PERIOD OF TIME. ASK IF IN DOUBT.

4.5. C: CONDUIT

4.6. CB: CIRCUIT BREAKER

4.7. DE-ENERGIZE (WHERE APPLICABLE):

4.7.1. REMOVE ALL VOLTAGE FROM EQUIPMENT TO BE DE-ENERGIZED.

4.7.2. IF EQUIPMENT IS TO BE REPLACED, FOLLOW PROPER LOCKOUT TAGOUT PROCEDURE.

4.7.3. IF THE EQUIPMENT OR DEVICE WILL BE REMOVED AND NOT REPLACED, REMOVE CONDUCTORS AND ACCESSIBLE CONDUIT BACK TO THE NEAREST DEVICE TO REMAIN ENERGIZED.

4.7.4. CAP ANY/ALL REMAINING CONDUIT(S).

4.7.5. TURN-OFF OVERCURRENT DEVICE AND LABEL AS "SPARE".

4.8. DEMO OR DEMOLITION: SEE REMOVAL BELOW.

4.9. EC: ELECTRICAL CONTRACTOR CHARGED WITH DOING ALL ELECTRICAL WORK EXCEPT THAT DEFINED ON OTHER DRAWINGS.

4.10. EFC: ELECTRICAL CONTRACTOR CHARGED WITH ENERGIZING MOTOR FUEL DISPENSING FACILITIES AND E/F ITEMS IN DIVISION 1 AREAS. WORK DEFINED IN "E/F" DRAWINGS SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR.

4.11. ENT: ELECTRIC METALLIC TUBING (NEC ARTICLE 358)

4.12. ENT: ELECTRIC RIGID NONMETALLIC TUBING (NEC ARTICLE 362) ONLY ALLOWED USE IS INSIDE LIGHT POLES.

4.13. ENERGIZE:

4.13.1. APPLY PROPER VOLTAGE TO THE DEVICE LISTED.

4.13.2. INSTALL ALL CONDUIT, JUNCTION BOXES, WIRE, DISCONNECT, OVERCURRENT DEVICE AND ANY MISCELLANEOUS MATERIAL NECESSARY FOR A COMPLETE BEST PRACTICE INSTALLATION.

4.14. EQ: ABBREVIATION FOR EQUIPMENT. USED WHERE CIRCUIT NUMBERS AND EQUIPMENT TAGS ARE SIMILAR.

4.15. EX: EXISTING

4.16. FAC: FIRE ALARM CONTRACTOR.

4.17. FMC: FLEXIBLE METAL CONDUIT (NEC ARTICLE 348)

4.18. FURNISH: PURCHASE EQUIPMENT AND DELIVER TO JOB SITE.

4.19. GC: GENERAL CONTRACTOR

4.20. GD: GROUND

4.21. GFB: GROUND FAULT CIRCUIT INTERRUPTER CIRCUIT BREAKER.

4.22. GFI: GROUND FAULT CIRCUIT INTERRUPTER

4.23. HC: HEATING VENTILATION AIR CONDITIONING CONTRACTOR

4.24. IMC: INTERMEDIATE METAL CONDUIT (NEC ARTICLE 342)

4.25. INSTALL:

4.25.1. MOVE EQUIPMENT FROM DELIVERY/STORAGE AREA OF THE JOB SITE TO ITS LOCATION OF OPERATION AND SECURE PER CONSTRUCTION DOCUMENTS AND OR MANUFACTURER'S RECOMMENDATIONS.

4.25.2. ENERGIZE PER BEST PRACTICES.

4.26. KT- KWIK TRIP, INC. (OWNER)

4.27. LFMIC: LIQUID-TIGHT FLEXIBLE METAL CONDUIT (NEC ARTICLE 350 LFMIC).

4.28. MC: METAL-CLAD CABLE (NEC ARTICLE 330)

4.29. OAS: OVERALL SHIELDED CABLE.

4.30. PC: PLUMBING CONTRACTOR.

4.31. PROVIDE: FURNISH AND INSTALL.

4.32. PVC: RIGID POLYVINYL CHLORIDE CONDUIT (NEC ARTICLE 352)

4.33. RACEWAY: GENERIC TERM FOR ALL TYPES OF CONFINED, PROTECTIVE ROUTING OF ELECTRICAL WIRING TO INCLUDE ALL BOXES AND FASTENERS FOR A COMPLETE SYSTEM.

4.34. REMOVE (WHERE APPLICABLE):

4.34.1. DE-ENERGIZE EQUIPMENT OR DEVICE AND REMOVE SUCH EQUIPMENT FROM SITE UNLESS KWIK TRIP INC. HAS REQUESTED IT TO BE REUSED OR SALVAGED. IF IN DOUBT, CHECK WITH SITE SUPERINTENDENT.

4.34.2. REFER TO SECTION 01 74 19 FOR ITEMS TO BE DISPOSED.

4.35. RC: REFRIGERATION CONTRACTOR

4.36. RMC: RIGID METAL CONDUIT (NEC ARTICLE 344)

4.37. SHALL: DO EXACTLY AS STATED

4.38. TC: TEMPERATURE CONTROL CONTRACTOR

4.39. UNO: UNLESS NOTED OTHERWISE

4.40. VFC/VSC: VARIABLE FREQUENCY (SPEED) CONTROLLER

4.41. WR: WEATHER RESISTANT

5. **PROTECTION AND SAFETY**

5.1. THE ELECTRICAL CONTRACTOR(S) (EC, EFC) AND ANY SUBCONTRACTOR OF THE EC OR EFC SHALL BE RESPONSIBLE FOR THE JOB SAFETY OF THEIR EMPLOYEES AND SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, LOCAL AND SITE-SPECIFIC REQUIREMENTS.

5.2. BUILDING AND SITE OCCUPANTS SHALL NOT BE EXPOSED TO ANY UNDUE HAZARDS OR OBSTRUCTIONS DURING CONSTRUCTION.

5.3. NOTE THAT ALL FOOD SAFETY REQUIREMENTS MUST BE ADHERED TO WHEN STORES ARE OPEN.

5.4. TRASH AND CLUTTER SHALL BE KEPT TO A MINIMUM. DISPOSE OF TRASH NO LESS THAN ONCE A DAY WHILE WORKING.

5.5. ALERT KWIK TRIP INC. IF SAFETY ISSUES ARISE THAT ARE BEYOND EC'S CONTROL.

5.6. REFERENCE FRONT-END DOCUMENTS FOR ANY ADDITIONAL REQUIREMENTS.

6. **STORAGE**

6.1. STORE ALL MATERIAL IN A SAFE MANNER, MINIMIZING TRIP HAZARDS AND OTHER OPPORTUNITIES FOR PERSONAL INJURY.

6.2. STORE MATERIAL IN A MANNER THAT OFFERS PROTECTION FROM DAMAGE, THEFT, AND WEATHER. LOCK THE UNITS WHEN GONE!

6.3. MATERIAL SHALL REMAIN IN ITS ORIGINAL CLEAN PACKAGING UNTIL USED SO THAT IT MAY BE RETURNED FOR CREDIT IF NOT NEEDED.

7. **EF (ELECTRICAL FUEL) DRAWINGS.** THESE DRAWINGS SHALL INDICATE ALL ELECTRICAL WORK FOR PETROLEUM EQUIPMENT.

7.1. ALL WIRING OF FUELING EQUIPMENT SHALL BE DONE BY AN ELECTRICAL CONTRACTOR EXPERIENCED WITH WIRING MOTOR FUEL DISPENSING FACILITIES. THIS WIRING IS FROM THE CIRCUIT BREAKER TO THE FINAL TERMINATION.

7.2. EF (ELECTRICAL FUEL) DRAWINGS SHALL ONLY APPLY TO THE ELECTRICAL CONTRACTOR ENERGIZING FUEL RELATED WORK.

7.3. FUEL RELATED WORK INSIDE THE BUILDING WILL BE FOUND ON THE BASE DRAWINGS.

7.4. COORDINATE ALL INTERIOR ELECTRICAL FUELING WORK WITH THE BUILDING EC.

7.5. THE BASE ELECTRICAL CONTRACTOR SHALL REFERENCE THE EF FUEL DRAWINGS FOR COORDINATION PURPOSES ONLY.

8. **UTILITIES**

8.1. **EC TO COORDINATE PRIVATE UTILITY LOCATES PRIOR TO ANY SITE EXCAVATION.**

8.2. THE AMOUNT OF WORK REQUIRED BY THE EC FOR UTILITY TRANSFORMER INSTALLATION VARIES GREATLY.

8.2.1. COORDINATE WITH THE UTILITY AND VERIFY THEIR STANDARDS.

8.2.2. NOTIFY KWIK TRIP INC. IF THERE IS CONFLICTING INFORMATION BETWEEN THE DOCUMENTS AND UTILITY REQUIREMENTS.

8.2.3. TRANSFORMER PAD, CONDUIT, AND C/T CABINET SHOWN MAY BE BY THE UTILITY, VERIFY.

8.3. VERIFY POSSIBLE TIMING/DELIVERY ISSUES EARLY IN THE JOB TO MINIMIZE PROBLEMS LATER.

9. **ELECTRICAL SERVICE**

9.1. VERIFY ACCEPTABLE C/T CABINETS AND CONFIGURATION

9.2. SCHNEIDER ELECTRIC (SQUARE D) COMPLETE PANEL WALL DRAWINGS ARE:

9.2.1. AVAILABLE ON KWIK TRIP'S SHAREPOINT SERVER.

9.2.2. SHIPPED WITH THE POWER WALL EQUIPMENT.

9.2.3. CAN BE FOUND VIA QR CODE ON THE INSIDE OF THE FRONT PANEL.

9.3. TWISTED PAIR CONTROL WIRES WITHIN THE PANEL WALL SHALL BE KEPT AS FAR AS POSSIBLE AWAY FROM THE VFC CONTROL WIRES TO MINIMIZE LINE INTERFERENCE.

10. **ARC FLASH (TO BE CONDUCTED WHEN NEW ELECTRICAL SERVICES ARE INSTALLED)**

10.1. THE ELECTRICAL DESIGNER FOR THIS PROJECT WILL BE CONDUCTING AN ARC FLASH HAZARD ANALYSIS. TO DO THIS THE DESIGNER NEEDS THE FOLLOWING INFORMATION FROM THE EC. NOTE LENGTHS SHOULD BE TO THE NEAREST FOOT OR BETTER

10.1.1. ALL ELECTRICAL SERVICE ENTRANCE CONDUCTOR LENGTHS. THIS MEANS FROM THE TRANSFORMER TO THE CT CABINET, THE CT CABINET TO THE DISCONNECT, THE DISCONNECT TO THE MOP.

10.1.2. CONDUCTOR LENGTHS TO ALL LOADS 30 AMPS AND GREATER.

10.1.3. VERIFY THE INSTALLED CONDUCTOR SIZES MATCH THE SIZE CALLED FOR ON PLANS.

- |                       |  |
|-----------------------|--|
| <b>WIRING METHODS</b> |  |
| 11.1.                 | CONDUCTORS   |
| 11.1.1.               | ALL POWER CONDUCTORS SHALL BE:   |
| 11.1.1.1.             | THIN FOR DRY LOCATIONS   |
| 11.1.1.2.             | THWN FOR WET LOCATIONS UNO.  |
| 11.1.2.               | WHERE ALUMINUM IS NOTED, USE IT.   |
| 11.1.3.               | POWER CONDUCTORS:  |
| 11.1.3.1.             | POWER CONDUCTOR SHALL NOT BE LESS THAN 12 AWG COPPER.  |
| 11.1.3.2.             | ALL CONDUCTORS #8 AND LARGER SHALL BE SIZED AT THEIR 75°C RATING.  |
| 11.1.3.3.             | VOLTAGE DROP MAY REQUIRE A SUBSTANTIAL INCREASE IN CONDUCTOR SIZING.   |
| 11.1.3.4.             | ALL SINGLE-PHASE LOADS SHALL HAVE A SEPARATE NEUTRAL.  |
| 11.1.4.               | CONTROL CONDUCTORS:  |
| 11.1.4.1.             | RUNS OUTSIDE OF THE BUILDING SHALL NOT BE SMALLER THAN 18 AWG.   |
| 11.1.4.2.             | 16 AWG AND SMALLER USE TYPE TF/N UNLESS NOTED OTHERWISE  |
| 11.2.                 | CONDUIT:   |
| 11.2.1.               | MINIMUM CONDUIT SIZE SHALL BE 0.5" DIAMETER UNO.   |
| 11.2.2.               | UNDERGROUND, AND IN MASONRY USE SHALL BE:  |
| 11.2.2.1.             | RIGID POLYVINYL CHLORIDE CONDUIT (NEC ARTICLE 352 PVC).  |
| 11.2.2.2.             | WHERE PVC COMES UP INTO THE STORE TRANSITION TO EMT AT THE FIRST FITTING, BUT NOT HIGHER THAN 48" AFF. EXCEPTION IS IN CAR WASH BAY. USE PVC THROUGHOUT FOR CAR WASH.  |
| 11.2.2.3.             | NOTE: TRANSITION FROM PVC TO RMC BELOW 24" FROM GRADE FOR THREADED METAL STUB UPS TO COMPLY WITH EXCEPTION #2 OF 514.8 (TYPICALLY 5' OF METAL PIPE). THIS APPLIES TO:  |
| 11.2.2.3.1.           | FUELING DISPENSERS BOTH GAS AND DIESEL.  |
| 11.2.2.3.2.           | OTHER POWER WIRING IN WITHIN 20' OF A FUEL DISPENSER (DIVISION 1 AREAS).   |
| 11.2.3.               | THE FIRST 10' OF CONDUIT FROM ALL TANK CONNECTIONS (EXCEPT DEF) SHALL BE THREADED RMC.   |
| 11.2.3.1.             | FIRST 10' OF CONDUIT FROM THE DEF TANK SHALL BE PLASTI-BOND PVC COATED (ROB ROY)   |
| 11.2.4.               | A SEAL-OFF SHALL BE THE FIRST FITTING WHERE CONDUIT ENTERS OR LAST BEFORE A CONDUIT LEAVES A DISPENSER OR CAVITY WITHIN DIVISION 1 AREAS.  |
| 11.2.5.               | ABOVE GROUND USE SHALL BE:   |
| 11.2.5.1.             | ELECTRICAL METALLIC TUBING (NEC ARTICLE 358 EMT).  |
| 11.2.5.1.1.           | IN DRY LOCATIONS BOTH SET SCREW AND COMPRESSION FITTING ALLOWED.   |
| 11.2.5.1.2.           | IN WET LOCATIONS USE COMPRESSION FITTINGS ONLY.  |
| 11.2.5.2.             | WHERE SUBJECT TO DAMAGE RIGID METAL CONDUIT (NEC ARTICLE 344 RMC).   |
| 11.2.5.3.             | WITHIN THE CAR WASH BAY PVC (NEC ARTICLE 352 PVC)  |
| 11.2.6.               | REFER TO NEC ARTICLE 514 FOR CONDUIT FOR USE IN CLASS 1, ZONE 1 AND 2 AREAS.   |
| 11.2.6.1.             | THESE AREAS ARE WITHIN 20' OF FUELING DISPENSERS. IN CAVITIES BELOW GRADE WITHIN THE 20' LISTED, AND IN MANHOLES FOR TANK ACCESS AND WITHIN 18" OF GRADE OR THE DISPENSER. FOR TANK VENTS THE DISTANCE IS 10' IN ALL DIRECTIONS. |
| 11.2.6.2.             | ALL PIPE WITHIN 24" OF GRADE SHALL BE THREADED STEEL.  |
| 11.2.7.               | METAL-CABLE CLAD (NEC ARTICLE 330 MC) MAY BE USED IN LIEU OF CONDUIT WHERE NOTED, OR ACCESSIBLE, AND ACCEPTABLE TO THE AHJ. CONCEALED MC ONLY ALLOWED FOR SFFIT LIGHTS, MOTOR/EQUIPMENT CONNECTIONS AND AS OTHERWISE NOTED.      |
| 11.2.8.               | MOTOR AND OTHER EQUIPMENT SUBJECT TO VIBRATION, USE:   |
| 11.2.8.1.             | INDOORS: FLEXIBLE METAL TUBING (NEC ARTICLE 360 FMT).  |
| 11.2.8.2.             | OUTDOORS: LIQUID-TIGHT FLEXIBLE METAL CONDUIT (NEC ARTICLE 350 LFMC).  |
| 11.2.8.3.             | LENGTH: MINIMUM OF 12" MAX OF 36".   |
| 11.2.9.               | IF CONDUCTORS CANNOT BE PUSHED INTO PLACE, USE RATED PULLING TAPE AND LUBRICANT AS APPROPRIATE.  |
| 11.2.10.              | ALL SPARE CONDUITS SHALL HAVE PULL TAPE INSTALLED AND BE DOCUMENTED ON AS-BUILT DRAWINGS.  |
| 11.2.11.              | WITHIN LIGHT POLES ENT IS ALLOWED.   |
| 11.3.                 | JUNCTION BOXES   |
| 11.3.1.               | USE 4" X 4" X 2-1/8" JUNCTION BOX UNO.   |
| 11.3.1.1.             | PROVIDE PLASTER RINGS WHERE APPROPRIATE. VERIFY SINGLE OR DOUBLE GANG, AND ACTUAL DEPTH OF RINGS.  |
| 11.3.2.               | FOR LARGE JUNCTION BOXES CONTRACTOR SHALL SIZE PER CODE REQUIREMENTS, NOT AS BIG AS POSSIBLE.  |
| 11.3.3.               | GROUND BOXES FOR POWER AND COMMUNICATION SHALL BE:   |
| 11.3.3.1.             | PLACED IN GREEN SPACES. RATED FOR PEDESTRIAN TRAFFIC. NOMINAL 9"-10"φ X 9"-12" DEEP.   |
| 11.3.3.2.             | MANUFACTURED BY: CARSON, HUBBELL POWER SYSTEMS, OR APPROVED MANUFACTURER.  |
| 11.4.                 | PROVIDE A GROUNDING CONDUCTOR FOR ALL FEEDER AND BRANCH CIRCUITS.  |
| 11.5.                 | ISOLATED GROUNDS: THE FEEDER BACK TO THE MAIN SERVICE GROUND. REFER TO GROUNDING AND BONDING DIAGRAM FOR ISOLATED GROUNDS TO PANELS.   |
| 11.6.                 | COLOR CODING CONDUCTORS (USE COLORED WIRE):  |
| 11.6.1.               | 208Y/120-VOLT, 3 PHASE, 4 WIRE SYSTEMS:  |
| 11.6.1.1.             | PHASE A: BLACK   |
| 11.6.1.2.             | PHASE B: RED (DO NOT USE RED FOR SINGLE PHASE PANELS)  |
| 11.6.1.3.             | PHASE C: BLUE  |
| 11.6.1.4.             | NEUTRAL CONDUCTOR  |
| 11.6.1.4.1.           | SINGLE PHASE: WHITE WITH A STRIPE THAT MATCHES THE COLOR OF THE PHASE CONDUCTOR.   |
| 11.6.1.4.2.           | THREE PHASE NEUTRAL: WHITE.  |
| 11.6.2.               | ALL GROUNDING CONDUCTORS SHALL BE GREEN.   |
| 11.6.3.               | ISOLATED GROUNDING CONDUCTORS SHALL BE GREEN WITH A YELLOW STRIPE OR MULTIPLE YELLOW STRIPES.  |
| 11.7.                 | VOLTAGE DROP: FOR 120 VOLT, 20-AMP CIRCUITS EXCEEDING 60' MINIMUM WIRE SIZE IS 10 AWG UNO.   |
| 11.7.1.               | BRANCH CIRCUIT VOLTAGE DROP TARGET IS GENERALLY 3%. FOR A SOME LOADS THE 3% MAY BE EXCEEDED WHERE NOTED TO DO SO. FOR EXAMPLE: THE FREE AIR COMPRESSORS CAN TOLERATE A 10% VOLTAGE DROP.   |
| 11.8.                 | PETROLEUM ITEMS:   |
| 11.8.1.               | DISPENSERS   |
| 11.8.1.1.             | THE #1 DISPENSER IS ON THE FAR LEFT, NEAREST THE BUILDING WHEN LOOKING OUT FROM THE FRONT DOOR FOR GAS. THE #1 DIESEL DISPENSER IS ALWAYS THE ONE CLOSEST TO THE STORE.  |
| 11.8.1.2.             | ALL CONTROL WIRING TO DISPENSERS SHALL NOT BE LESS THAN 18 AWG.  |
| 11.8.2.               | TANKS: THE ONLY CONDUIT ALLOWED WITHIN 15' OF THE EDGE OF ANY PETROLEUM TANK ARE THOSE THAT SERVE THE TANKS. THE 15' MAY INCREASE BASED ON SOIL CONDITIONS. CHECK PLANS.   |
| 11.8.3.               | REFER TO EF DRAWING DETAILS FOR CONDUIT ENTRY LOCATIONS FOR ALL PETROLEUM EQUIPMENT.   |
| 11.8.4.               | WITHIN ALL DIVISION 1 ZONES CONDUIT SHALL TRANSITION TO THREADED METAL MORE THAN 24" BELOW GRADE.  |
| 11.8.5.               | PANEL WALL   |
| 11.8.5.1.             | ROUTE TWISTED PAIR COMMUNICATION WIRES WITHIN POWER WALL TO KEEP THE SEPARATION DISTANCE FROM VFCS THE GREATEST POSSIBLE DISTANCE TO PREVENT LINE NOISE PROBLEMS.  |
| 11.9.                 | CAR WASH:  |
| 11.9.1.               | ALL JUNCTION BOXES WITHIN THE CAR WASH AREA SUBJECT TO OVERSPRAY (CARWASH BAY) SHALL BE <b>FIBERGLASS</b> .  |
| 11.9.2.               | ALL FASTENERS AND HARDWARE SHALL BE <b>STAINLESS STEEL</b> .   |
| 11.9.3.               | RECEPTACLES FOR CAR WASH EQUIPMENT SERVICING SHALL BE PLACED OUT OF ALL DIRECT SPRAY AREAS.  |
| 11.10.                | COMMUNICATION CONDUITS:  |
| 11.10.1.              | INSTALL A PULL TAPE IN THE CONDUIT.  |
| 11.10.2.              | INSTALL A TRACER WIRE.   |
| 11.11.                | SPARE UNDERGROUND CONDUIT THAT GOES TO GREEN SPACE:  |
| 11.11.1.              | PROVIDE TRACER WIRE ABOVE THE CONDUIT.   |
| 11.11.2.              | PROVIDE PULL TAPE IN CONDUIT.  |
| 11.11.3.              | TERMINATE END OF CONDUIT IN A GROUND BOX IF IT ORIGINATES IN THE STORE.  |
| 11.11.4.              | IDENTIFY ACTUAL LOCATION ON RED-LINED PLANS  |
| 11.12.                | TRACER WIRE  |
| 11.12.1.              | SHALL BE INSULATED 14 AWG SOLID COPPER, RATED FOR 600V AND DIRECT BURIAL.  |
| 11.12.2.              | ZIP TIE TRACER WIRE TO THE TOP OF THE CONDUIT TO BE TRACED.  |
| 12.                   | WIRING DEVICES:  |
| 12.1.                 | RECEPTACLES  |
| 12.1.1.               | SHALL BE 20 AMP, SPECIFICATION GRADE UNLESS IT IS DEDICATED FOR EQUIPMENT THAT REQUIRES 15-AMP PROTECTION.   |
| 12.1.2.               | WHERE GFI IS NOTED ADJACENT TO THE RECEPTACLE: INSTALL A GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE WHERE THIS IS NOTED ADJACENT TO THE RECEPTACLE THAT IS READILY ACCESSIBLE.  |
| 12.1.3.               | WHERE GFI IS NOTED ADJACENT TO A RECEPTACLE THE RECEPTACLE SHALL BE PROTECTED BY A GROUND FAULT CIRCUIT INTERRUPTER BREAKER. USE THIS WHERE NOTED AND WHERE THE RECEPTACLE HAS GFI REQUIREMENTS BUT IS NOT READILY ACCESSIBLE.   |
| 12.1.3.1.             | WHERE NORMAL RECEPTACLES ARE PROTECTED BY GFI, LABEL RECEPTACLES "GFI PROTECTED"   |
|                       |  |

- 12.2. "CLEAN SWITCH": THIS IS A DOUBLE POLE, SINGLE THROW SWITCH WHICH SERVES AS A DISCONNECT FOR THE EVAPORATOR UNIT FROM ONE POLE AND SENDS A SIGNAL BACK TO THE CPC CONTROL INDICATING THE EVAPORATOR UNIT IS OFFLINE WITH THE OTHER POLE. THE CPC CONTROL CAN THEN MAKE APPROPRIATE ADJUSTMENTS FOR THE REFRIGERATION RACK. ONE SWITCH PER UNIT WITH INDIVIDUAL CONTROL.

12.3. DISCONNECTS FOR DISHWASHER & BOOSTER HEATER: SQUARE D D3304X OR PASS AND SEYMOUR P530S, NEMA 4X.

13. **LIGHTING**

13.1. SEE LIGHTING FIXTURE SCHEDULE FOR FIXTURE REQUIREMENTS.

13.2. **RESTROOM OCCUPANCY SENSORS** SHALL BE CEILING MOUNTED ULTRASONIC ONLY OR DUAL TECH SET FOR EITHER, NOT BOTH TECH SETS TO TURN ON LIGHTS.

13.3. **AIM ALL EGRESS LIGHTING** AS SHOWN ON PHOTOMETRIC PLAN EMI AFTER INSTALLATION.

13.4. **CANOPY LIGHTING:**

13.4.1. GAS CANOPY:

13.4.1.1. FIXTURES ON THE STORE SIDE OF THE GAS CANOPY SHALL BE FORWARD THROW FIXTURES AIMED TOWARD THE STORE.

13.4.1.2. IN SOME CASE THERE MAY BE SELECTED FIXTURES AIMING AWAY FROM THE STORE AS WELL.

13.4.1.3. THESE FIXTURES ARE WHITE IN COLOR.

13.4.2. **DIESEL CANOPY:**

13.4.2.1. THE FORWARD THROW FIXTURES ON BOTH SIDES ARE AIMED AWAY FROM THE CENTER OF THE CANOPY.

13.4.2.2. THESE FIXTURES ARE TYPICALLY BLACK IN COLOR.

13.5. DIMMING WHERE CALLED FOR, SHALL BE 0-10VDC. COORDINATE WITH HC.

13.6. **EXTERIOR LIGHTING POLE LOCATION/SETBACKS** (UNLESS SPECIFICALLY NOTED OTHERWISE):

13.6.1. FROM A CURB WARE TRAFFIC RUNNING PARALLEL TO THE CURB, 3' TO EDGE OF POLE BASE.

13.6.2. AT CORNERS WHERE CORNERS CAN EASILY BE CUT, 6' TO EDGE OF POLE BASE.

13.6.3. TRUCK PARKING WHERE TRAILERS ARE BACKED INTO SPACES:

13.6.3.1. TYPEL SETBACK 11' TO THE EDGE OF POLE BASE.

13.6.3.2. POLE SHALL BE LINED UP WITH LOT STRIPPING FOR VISIBILITY IN MIRRORS.

13.6.3.3. PROTECTION BOLLARDS SHALL BE LIKE THOSE IN PLACES WHERE 11' SET BACK IS NOT POSSIBLE. PROVIDE TWO PROTECTION BOLLARDS FOR EACH LIGHT POLE. LOCATE EACH PROTECTION BOLLARD 12" IN FRONT OF POLE BASE AND 18" OFF TO EACH SIDE OF THE POLE BASE.

13.6.3.3.1. SHOWN ON THE CIVIL DETAIL DRAWINGS. IF BOLLARD IS INSTALLED IN AN AREA THAT DOES NOT HAVE CONCRETE AT THE SURFACE, INCREASE BOLLARD PIPE LENGTH TO 10' OVERALL WITH 4" EXPOSED.

13.6.4. SHALL NOT BE CLOSER THAN 15' FROM THE EDGE OF AN UNDERGROUND FUEL TANK.

13.6.5. CHECK WITH KWIK TRIP (OWNER) IF POLE(S) ARE LOCATED WITHIN THESE DISTANCES BEFORE INSTALLATION.

13.7. EXTERIOR LIGHT POLE DESIGN SHALL BE BASED ON 4 FIXTURES ON THE POLE WITH A 115 MPH WIND SPEED UNO.

14. **MOTOR AND EQUIPMENT CONNECTIONS**

14.1. VERIFY ACTUAL LOCATION BEFORE ROUGH-IN.

14.2. REFER TO ELECTRICAL SCHEDULES AND ELEVATIONS.

14.3. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS. IF THESE DIFFER FROM THE DIRECTION GIVEN ON PLANS CHECK WITH AUTHORIZED KWIK TRIP PERSONNEL BEFORE PROCEEDING.

14.4. **CONTROL:**

14.4.1. REFER TO MECHANICAL AND TEMPERATURE CONTROL DRAWINGS (TCC) FOR POINTS LIST AND CONTRACTOR RESPONSIBILITIES.

14.4.2. REFER THE SCHNEIDER ELECTRIC DRAWINGS FOR ADDITIONAL INFORMATION.

15. **CONDUIT AND CONDUIT SLEEVES FOR OTHERS:**

15.1. PROVIDE PVC CONDUIT FOR TEMPERATURE SENSORS AND IN FLOOR HEAT. SEE CONDUIT SCHEDULES.

15.2. PROVIDE CONDUIT FOR THE TYPE 1 KITCHEN HOOD FIRE PROTECTIONS SYSTEM (ANSUL).

15.3. 20' OF 4" PVC FOR SODA TOWER PO LINES. SEE 1/E200A

16. **LABELING**

16.1. LABEL ALL ELECTRICAL EQUIPMENT ON THE FRONT AND DEVICES ON THE COVER PLATE WITH TYPED FONT.

16.2. ALL OVERCURRENT DEVICES SHALL BE CLEARLY LABELED AS TO WHAT THEY CONTROL ON AN INDEX CARD SECURELY ATTACHED TO THE PANEL.

16.3. ALL BRANCH CIRCUIT WIRING SHALL BE LABELED AT EACH TERMINATION POINT AS WELL AS IN EVERY JUNCTION/PULL BOX.

17. **LOW VOLTAGE SYSTEM WIRING**

17.1. EC INSTALLS ALL CONDUIT AND WIRE WITH THE FOLLOWING EXCEPTIONS:

17.1.1. EC IS CONDUIT ONLY FOR ALL CPC/TEMPERATURE CONTROLS EQUIPMENT. WIRE AND TERMINATIONS FOR THIS EQUIPMENT IS THE RESPONSIBILITY OF THE HEATING (MECHANICAL) CONTRACTOR (HC). ALL ELECTRICAL WORK SPECIFIED UNDER HEATING (MECHANICAL) IS THE RESPONSIBILITY OF THE HC AND SHALL BE ACCOUNTED FOR BY THE HC.

17.1.2. WHERE THERE IS A CAT SCALE EC INSTALLS CONDUIT ONLY. WIRE AND TERMINATIONS BY CAT.

17.2. **TERMINATIONS:**

17.2.1. EC TERMINATES:

17.2.1.1. SECURITY AS NOTED AS WELL AS DOOR BUZZER SYSTEM.

17.2.1.2. ACCESS POINTS AND MONITORS/TVS. TVS ARE PRESENT IN TRUCK STOPS ONLY.

17.2.1.3. ALL INTERCOM SYSTEMS, CAR WASH, IN STORE AND DIESEL CANOPY.

17.2.1.4. FIRE ALARM SYSTEM WHEN PRESENT.

17.2.1.5. RESTROOM CALL SWITCHES.

17.2.1.6. LTE CABINET WHEN PRESENT AT TRUCK STOPS UNLESS IT REQUIRES FIBER. FIBER TERMINATION IS OWNER RESPONSIBILITY.

17.2.1.7. LIGHTING CONTROL.

17.2.2. EFC TERMINATES ALL OF FUEL CONTROL EQUIPMENT.

17.2.3. OWNER TERMINATES CAT6 FOR DATA UNLESS NOTED OTHERWISE AND THE CELL BOOSTER IN THE IT CLOSET ONLY.

17.2.4. CAMERA INSTALLER TERMINATES ALL CAMERAS, INSIDE AND OUTSIDE.

17.2.4.1. EXTERIOR CAMERAS: CAT6 CABLE WITH A YELLOW JACKET.

17.2.4.2. INTERIOR CAMERAS: CAT6 CABLE WITH A GRAY JACKET.

17.2.5. CARWASH INSTALLER SHALL TERMINATE ALL LOW VOLTAGE EXCEPT FOR THE PORTAL STAND WHICH IS BY EC.

17.2.6. TERMINATIONS OF ALL SIGN DATA/CONTROL WIRING IS THE RESPONSIBILITY OF THE SIGN CONTRACTOR.

17.2.7. SMART BREAKER CONTROL: WHOEVER'S EQUIPMENT IS CONTROLLED BY THE SMART BREAKER SHALL TERMINATE THE WIRE. EFC OR FUEL. HC FOR CPC/TEMPERATURE CONTROLS. EC FOR OTHER.

17.3. ALL SPARE CONDUITS SHALL HAVE A PULL TAP INSTALLED. CLEARLY IDENTIFY ALL SPARES ON AS-BUILT DRAWINGS IF THEY ARE NOT ALREADY DRAWN.

17.4. **MOUNT THE DOOR CONTACTS RECESSED IN THE DOOR FRAME AND RUN THE WIRE WITHIN THE FRAME.** THIS REQUIRES COORDINATION WITH THE HOLLOW METAL FRAME PROVIDERS.

17.5. **CAMERA WIRING:**

17.5.1. STANDARD CAT6 CABLE SHALL BE USED FOR CAMERA INSTALLATIONS UP TO 1,000 WIRE FEET. DIRECT BURIAL NOT REQUIRED.

17.5.2. NOTE ALL INSTALLED CABLE LENGTHS THAT EXCEED 300'. THESE REQUIRE BOOSTERS THAT KWIK TRIP WILL PROVIDE.

17.6. **DISPLAYS/TVS:**

17.6.1. KWIK TRIP FURNISHES DISPLAYS AND TVS.

17.6.2. BASTLER INSTALLS DISPLAYS AND TVS AND MAKES FINAL CONNECTIONS.

17.6.3. EC INSTALLS POWER AND COMMUNICATIONS WIRING.

18. **FIRE ALARM SYSTEMS (WHEN REQUIRED)**

18.1. BANK-KOE SYSTEMS, INC. IS THE FIRE ALARM CONTRACTOR (FAC). THE FAC SHALL:

18.1.1. PROVIDE COMPLETE FIRE ALARM DESIGN DRAWINGS, OBTAIN APPROVALS, AND PERMITS.

18.1.2. FURNISH FIRE ALARM EQUIPMENT AND DEVICES.

18.1.3. PROVIDE COMMISSIONING/TESTING AND GET ACCEPTANCE OF THE FIRE ALARM SYSTEM FROM THE AHJ.

18.1.4. CONTACT INFO: SCOTT DANIELSON, 952 278 6772, SCOTT.DANIELSON@BANKKOE.COM OR DAN DALEY, 612 888 9992, DANDALEY@BANKKOE.COM.

18.2. THE EC SHALL INSTALL:

18.2.1. INSTALL EQUIPMENT FURNISHED BY THE FAC.

18.2.2. INSTALL RACEWAY FURNISHED BY KWIK TRIP PER PLANS PROVIDED BY THE FAC.

19. **EC SHALL COORDINATE IN A TIMELY MANNER WITH:**

19.1. KWIK TRIP OR: GENERAL CONSTRUCTION, CAMERA INSTALLATION, SECURITY INSTALLATION, IT INSTALLATION, QUESTIONS.

19.2. THE ELECTRICAL FUEL CONTRACTOR WHEN DIFFERENT THAN BUILDING EC.

19.3. THE LOCAL ELECTRICAL UTILITY.

19.4. FUEL CONTRACTOR.

19.5. MECHANICAL CONTRACTOR, REVIEW MECHANICAL DRAWINGS FOR WIRING RESPONSIBILITY.

19.6. REFRIGERATION CONTRACTOR, REVIEW REFRIGERATION DRAWINGS FOR WIRING RESPONSIBILITIES.

19.7. TEMPERATURE CONTROL CONTRACTOR, REVIEW TEMPERATURE CONTROL DRAWINGS FOR WIRING RESPONSIBILITY.

19.8. FIRE ALARM CONTRACTOR WHERE APPLICABLE.

20. **STRUCTURAL FOR ELECTRICAL (NEW)**

20.1. FOUNDATION OPENINGS FOR CONDUIT PASS THROUGH SHALL BE COORDINATED WITH STRUCTURAL:

20.1.1. INDIVIDUAL OPENINGS SHALL NOT EXCEED 24" WIDE AND MUST HAVE A MINIMUM OF (2) #4 REBAR IN A MINIMUM OF 12" OF CONCRETE ABOVE THE OPENING. BOX OUT MATERIAL BY CONTRACTOR.

20.1.2. MINIMUM SPACING BETWEEN OPENINGS SHALL BE 12".

20.1.3. REFER TO THE STRUCTURAL DRAWINGS FOR ALL STRUCTURAL REQUIREMENTS.

20.2. **IN NO CASE SHALL AN EC CUT ANY STRUCTURAL MEMBER** WITHOUT WRITTEN AUTHORIZATION FROM THE INDIVIDUAL IN RESPONSIBLE CHARGE OF THE STRUCTURAL DESIGN.

20.3. WHERE DRILLING IS ALLOWED FOR CONCEALED CIRCUIT PASS-THROUGH ONLY DRILL IN THE MIDDLE THIRD OF THE FRAMING MEMBER UNLESS SPECIFICALLY NOTED OTHERWISE.

21. **EXPECTATIONS:**

21.1. THE ELECTRICAL CONTRACTOR SHALL USE MATERIAL FURNISHED IN A COST-EFFECTIVE WAY ELIMINATING WASTE TO THE GREATEST EXTENT PRACTICAL.

21.2. EXCESS MATERIAL MUST BE RETURNED TO THE SUPPLY HOUSE IN ORIGINAL PACKAGE FOR PROPER CREDITS TO HAPPEN.

21.3. EC SHALL FOLLOW ALL PLANS AS SHOWN AND NOTED.

21.3.1. EC SHALL KEEP A RED-LINE SET OF RECORD DRAWINGS INDICATING ACTUAL WIRING METHODS USED. THE PURPOSE SHALL BE TO MONITOR MINOR CHANGES IN CONDUIT ROUTING ETC. SIGNIFICANT CHANGES REQUIRE WRITTEN DIRECTION. THESE DRAWINGS SHALL BE:


21.3.1.1. UPDATED DRAWINGS WEEKLY, AT A MINIMUM, IN A NEAT AND CONCISE MANNER. IF NO VARIATIONS ARE NOTED ON THE PLANS, INITIAL AND DATE THE RECORD SET OF PLANS THAT INDICATES INSTALLATION IS PER PLANS FOR THE NOTED TIME PERIOD.

21.3.1.2. BE MADE AVAILABLE FOR REVIEW UPON REQUEST BY A KWIK TRIP CONSTRUCTION REP.

21.3.1.3. SHALL BE TRUE "AS-BUILT" DRAWINGS AT PROJECT COMPLETION.

21.3.1.4. SHALL BE TURNED OVER TO KWIK TRIP AT PROJECT COMPLETION. NOTE: DELIVERY OF THESE COMPLETED DOCUMENTS MAY BE REQUIRED FOR FINAL PAYMENT.

21.4. CONSULT BUILDING SCHEDULE AND PLAN AHEAD. CALLING THE NIGHT BEFORE MATERIAL IS NEEDED IS NOT REASONABLE.



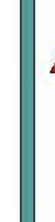

# EXCEL

**Always a Better Plan**

100 Camelot Drive  
Fond du Lac, WI 54935  
920-926-9800  
excelengineer.com

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COLLABORATION

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**PROJECT INFORMATION**


PROPOSED ALTERATIONS FOR:

## KWIK TRIP #184

2001 GOLF ROAD • PEWAUKEE, WI 53072

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PROFESSIONAL SEAL



*Adam Gronert*

08/07/25

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**PRELIMINARY DATES**

JUNE 13, 2025 \_\_\_\_\_

JUNE 26, 2025 \_\_\_\_\_

JULY 11, 2025 \_\_\_\_\_

AUG. 7, 2025 \_\_\_\_\_

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**JOB NUMBER**

250007700

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**SHEET NUMBER**

# E001



23.

Record Documents

23.1.

The EC shall keep a current red-line set of as-built record drawings indicating actual wiring methods used

These shall document all changes in conduit routing, circuit number, panel changes, etc. These drawings shall be made available for review upon request by a Kwik Trip construction rep. The complete marked up "As-Built" drawings shall be turned over to Kwik Trip at project completion. Note: delivery of these completed documents may be required for final payment.

23.2.

Panel schedules shall be forwarded to the project manager with detailed descriptions of all changes.
24.

Expectations:

24.1.

The Electrical contractor shall have an electrician on site for all working days throughout the project

24.2.

The Electrical Contractor shall use material furnished in a cost-effective way, eliminating waste to the greatest extent practical. Failure to do this could result in removal from our bidders list.

24.3.

Excess material must be returned to the supply house in the original package for proper credits to happen.

24.4.

The EC shall follow all plans as shown and noted.

24.5.

Consult building schedule and plan ahead. Calling the night before material is needed is not reasonable.

ELECTRICAL RESPONSIBILITY MATRIX					
DESIGNER	KWIK TRIP	KWIK TRIP (KT)	ELECTRICAL SUPPLY HOUSE (SH)		
		ELECTRICAL CONTRACTOR (EC)	REFRIGERATION CONTRACTOR (RC)		
		CONCRETE CONTRACTOR (CC)	SIGN CONTRACTOR (SC)		
		HVAC CONTRACTOR (HC)			
DESIGNED BY	TASK DESCRIPTION		FURNISH	INSTALL	TERMINATE
General					
X		Electrical fixtures and devices	SH	EC	EC
X		Light fixtures and devices	SH	EC	EC
X	X	Electrical panels by Schneider (1)	KT	EC	EC
X		Electrical Equipment	SH	EC	EC
X		Raceway and wires	SH	EC	EC
Site					
X		Sight lighting pole bases	CC	CC	
	X	Anchor bolts	KT	CC	
X		Site lighting pole, fixture, wiring	SH	EC	EC
	X	CAT scale HV raceway and wiring	SH	EC	EC
	X	Exterior Trash compactor	KT	EC	EC
Gas & Diesel Canopy					
X		Gas & Diesel Canopy General Lighting	SH	EC	EC
X		Gas and Diesel Canopy sign lighting raceway to J-box	SH	EC	EC
	X	Gas and Diesel Canopy sign lighting installation and final connection to J-box	SC	SC	SC
X		Conduit & wire to fuel dispensers and tanks	SH	EC	EC
Store					
X		Telecom stub out conduits (2)	SH	EC	OTHERS
	X	Interior sign lighting	KT	EC	EC
X		PVC pipe chase for soda line and fryer oil line	SH	EC	
X		Kitchen equipment	KT	KT	EC
X		UPS	KT	EC	EC
X		Line voltage between RTU	SH	EC	EC
X		Conduit in vestibule slab for heat	SH	EC	RC
X	X	CPC temperature controls - Line voltage	SH	EC	EC
Carwash					
X		Carwash slab heat system conduit	SH	EC	
	X	Carwash door raceway and wiring	SH	EC	OTHERS
	X	Carwash slab socket	KT	HC	HC
	X	Carwash slab socket sensors and wiring	HC	HC	HC
X		Carwash controls conduits in bays and mechanical room	SH	EC	RC
Arc Flash (when new services are installed)					
X		Arc Flash Study			
X		Arc Flash - Field verification (3)		EC	
	X	Arc Flash Labels printed by KT, installed by EC		EC	

General Notes:

- Programming of lighting control by Kwik Trip.

Key Notes:

(1) EC may need to add or swap circuit breakers in panels supplied by Schneider.

(2) Provide pull string for service wiring and coordinate with telecom company for final location.

(3) Reference arc flash section in general notes for scope of work.

LOW VOLTAGE RESPONSIBILITY MATRIX					
DESIGNER	KWIK TRIP	KWIK TRIP - STORE ENGINEERING (SE)	ELECTRICAL SUPPLY HOUSE (SH)		
		KWIK TRIP - IT (IT)	REFRIGERATION CONTRACTOR (RC)		
		ELECTRICAL CONTRACTOR (EC)	SECURITY CONTRACTOR (SC)		
		FIRE ALARM CONTRACTOR (FA)	TRANE HVAC CONTROLS CONTRACTOR (THC)		
		BASTLER TV CONTRACTOR (BTV)	REFRIGERATION MANUFACTURER (RM)		
		3RD PARTY VENDOR (OTHERS)			
DESIGNED BY		TASK DESCRIPTION	FURNISH	INSTALL	TERMINATE
General					
X		Raceway	SH	EC	EC
X		Data wiring - CAT6 (CAT5 at E2&E3 Only)	SH	EC	EC (1)
X		Fiber optic pre-terminated cabling to fiber J-box	SH	EC	
	X	Fiber optic cabling from fiber J-box to IT rack	SH	IT	IT
Site					
X		LV Cabinet (Large and Small) - Fiber optic pre-terminated cabling to fiber J-box (3)	SH	EC	EC
	X	LV Cabinet - Fiber optic cabling from fiber J-box to IT rack (3)	SH	IT	IT
	X	CAT scale LV conduit	SH	EC	
	X	CAT scale LV wiring	OTHERS	EC	OTHERS
Gas & Diesel Canopy					
X		Exterior intercom at canopies	SE	EC	EC
Store					
	X	IT rack install	SE	OTHERS	IT
	X	Telephone raceway and wiring (4)	SH	EC	EC
	X	Starlink, wiring, WAP	SE	EC	IT
	X	Termination of WAP at IT Rack			IT
	X	CPC temperature controls Low voltage raceway (2)	SH	EC	
X		Kitchen Hood Fan data wiring - CAT6	SH	EC	EC (1)
X	X	CPC temperature controls Low voltage	SE/RC	RC	RC
X		Rooftop units control wiring raceway	SH	EC	
	X	Rooftop units control wiring	THC	THC	THC
	X	TVs & monitors	IT	BTV	BTV
X		Refrigeration rack control wiring raceway	SH	EC	
	X	Refrigeration rack control wiring	RM	RM	RM
Camera					
	X	Control panel, keypad, devices	KT	EC	Others
	X	Data wiring - CAT6	SH	EC	
	X	J-box, raceway, and wiring for extenders at poles	SH	EC	EC
	X	Programing and commissioning			Others
Fire Alarm					
	X	J-box, raceway, and wiring	SH	EC	FA
	X	Control panel, keypad, devices	FA	EC	FA
	X	Programing and commissioning			FA
Security System					
	X	Control panel, keypad, devices	SC	EC	EC
	X	Programing and commissioning			SC

General Notes:

- EC is responsible to test continuity of all data wires.

Key Notes:

(1) EC installs RJ45 at the end and tests data wires.

(2) Reference TC sheets for raceway location

(3) LV cabinet includes both LTE cabinet and WIFI NEMA Enclosure

(4) EC punches down telephone wiring at the telephone board and installs RJ 45 at the end.



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COLLABORATION

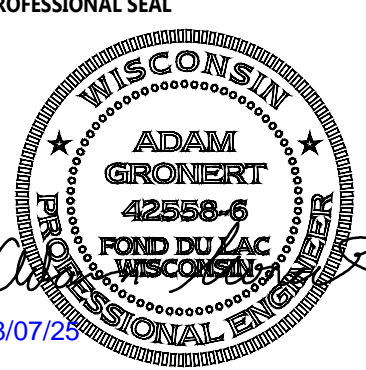


PROPOSED ALTERATIONS FOR:

KWIK TRIP #184

2001 GOLF ROAD • PEWAUKEE, WI 53072

PROFESSIONAL SEAL



PRELIMINARY DATES

JUNE 13, 2025  
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AUG. 7, 2025

JOB NUMBER

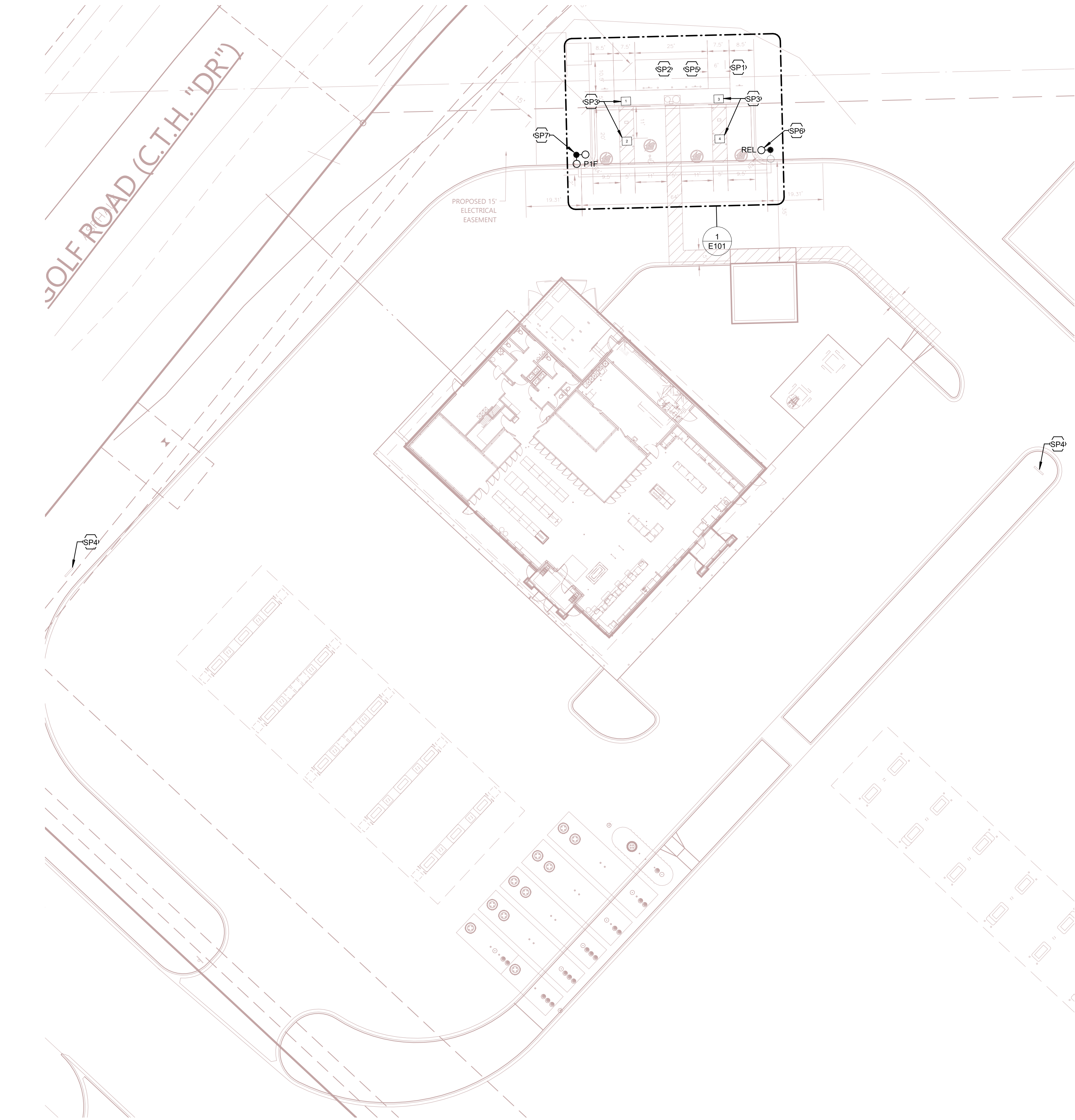
250007700

SHEET NUMBER

E002



EXTERIOR POLE LUMINAIRE SCHEDULE											
TAG	DESCRIPTION	MOUNTING	NORMAL OPERATION		VOLTAGE	COLOR TEMP. (K)	C.R.I. (Min)	DIMMING	FINISH	MANUFACTURER	MODEL SERIES
P1F	LED OUTDOOR AREA LIGHT, FORWARD THROW DISTRIBUTION, INSTALL ON 16' POLE ON 3' BASE	16' POLE	LUMENS	WATTS	120/277	5000	70	0-10V 10%	WHITE	LSI	SLM LED 9L SIL FT UNV 50-70CRI WHT
REL	LED OUTDOOR AREA LIGHT, FORWARD THROW DISTRIBUTION, INSTALL ON RELOCATED 16' POLE ON 3' BASE	16' POLE	9,769	68.0	120/277	5000	70	0-10V 10%	WHITE	LSI	SLM LED 9L SIL FT UNV 50-70CRI WHT



NORTH

ELECTRICAL SITE PLAN

SCALE: 1" = 20'-0"

0'

20'

40'

ELECTRICAL GENERAL NOTES - E100

METALLIC STRUCTURES MUST BE PROPERLY GROUNDED. ANY METALLIC STRUCTURE, POLE, WIRE, OR ITEM PLACED IN THE VICINITY OF A HIGH-VOLTAGE TRANSMISSION LINE WILL HAVE THE POTENTIAL TO BECOME ELECTRICALLY CHARGED DUE TO ELECTRIC INDUCTION. THE DEVELOPMENT OF AN ELECTRIC CHARGE RESULTS IN POTENTIAL DIFFERENCE BETWEEN THE METAL INSTALLATION AND THE GROUND, WHICH CAN RESULT IN ELECTRICAL SHOCKS WHEN THE ITEM IS TOUCHED. PLACEMENT OF SUCH METALLIC INSTALLATION SHOULD TAKE INTO CONSIDERATION THE SHOCK POTENTIAL DURING THE CONSTRUCTION, INTENDED USE, AND FUTURE MAINTENANCE ACTIVITIES. ITEMS WHICH BECOME CHARGED MUST BE CONNECTED TO A GROUND ROD OR GROUNDING SYSTEM TO PREVENT ELECTRICAL SHOCKS.

ELECTRICAL KEY NOTES - E100

- SP1

PROPOSED LOCATION FOR PAD MOUNTED ELECTRICAL UTILITY TRANSFORMER PER UTILITY SPECIFICATIONS.
- SP2

PROPOSED LOCATION FOR EV POWER BOX. SEE SPECIFICATION SHEETS ON E311 & E312 FOR MANUFACTURER REQUIREMENTS.
- SP3

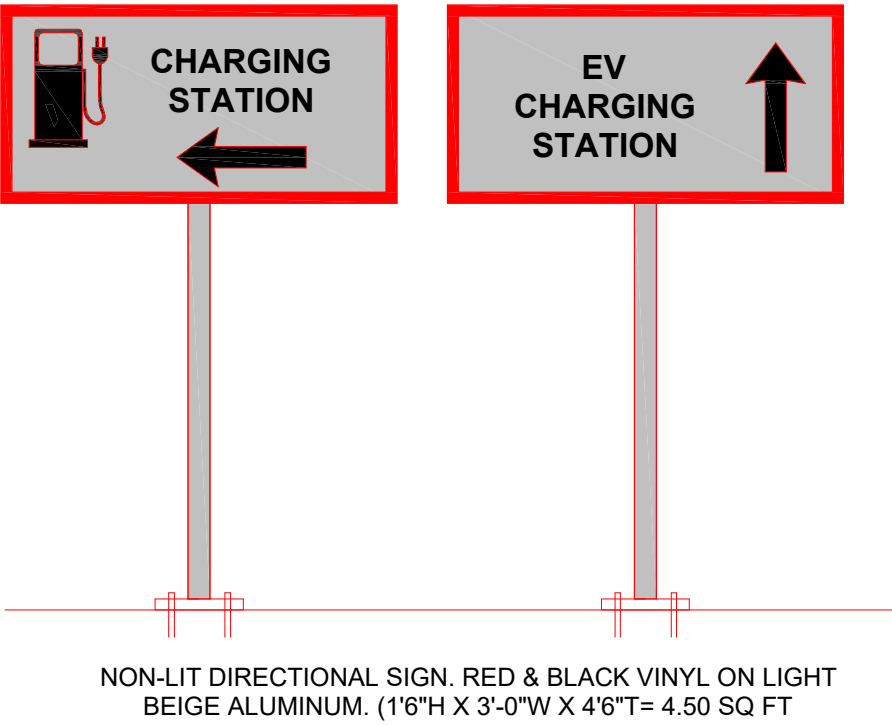
PROPOSED GILBARCO KONECT DISPENSER LOCATION. SEE GILBARCO KONECT SPECIFICATION SHEETS ON E311 & E312 FOR MORE INFORMATION.
- SP4

COORDINATE AND PROVIDE EV DIRECTIONAL SIGNAGE. SEE DETAIL 1/E100.
- SP5

PROPOSED FRANKLIN ELECTRIC 1000A SERVICE WITH CT/METER CABINET, PRIMARY SIDE CT/METER (BY UTILITY). SEE SHEET E312 QR CODE FOR ALL UTILITY INFORMATION AND FRANKLIN SWITCHGEAR SPEC SHEETS.
- SP6

EC TO INSTALL NEW LIGHT FIXTURE (REL) ONTO POLE THAT SHALL BE RELOCATED TO THIS APPROXIMATE LOCATION TO AVOID EV PARKING STALL CONSTRUCTION (MOVED APPROX. 25'-0" PLAN WEST). EC SHALL UTILIZE EXISTING CIRCUIT / CONTROLS FOR POWER AND MODIFY CONDUIT RUN AS NECESSARY.
- SP7

INSTALL NEW LED POLE LIGHT SUPPLIED BY KWIK TRIP STORES, INC. EC SHALL INSTALL CONDUIT(S) INSIDE CONCRETE BASE AS REQUIRED AND SHALL INSTALL #6 THWN GROUND WIRE TO BOND BETWEEN CONCRETE BASE REBAR AND LIGHT POLE GROUNDING LUG. EC SHALL VERIFY AND MATCH EXISTING POLE & BASE HEIGHTS PRIOR TO INTSALLATION.



1

E100

SITE DRIVEWAY DIRECTIONAL SIGN

SCALE: NONE



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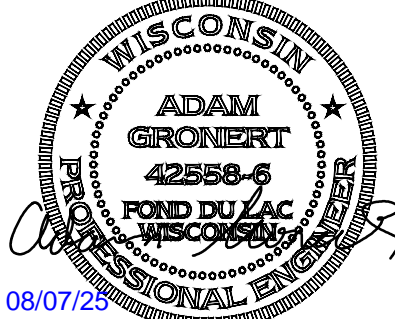
COLLABORATION



PROJECT INFORMATION

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2001 GOLF ROAD • PEWAUKEE, WI 53072

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SHEET NUMBER

E100

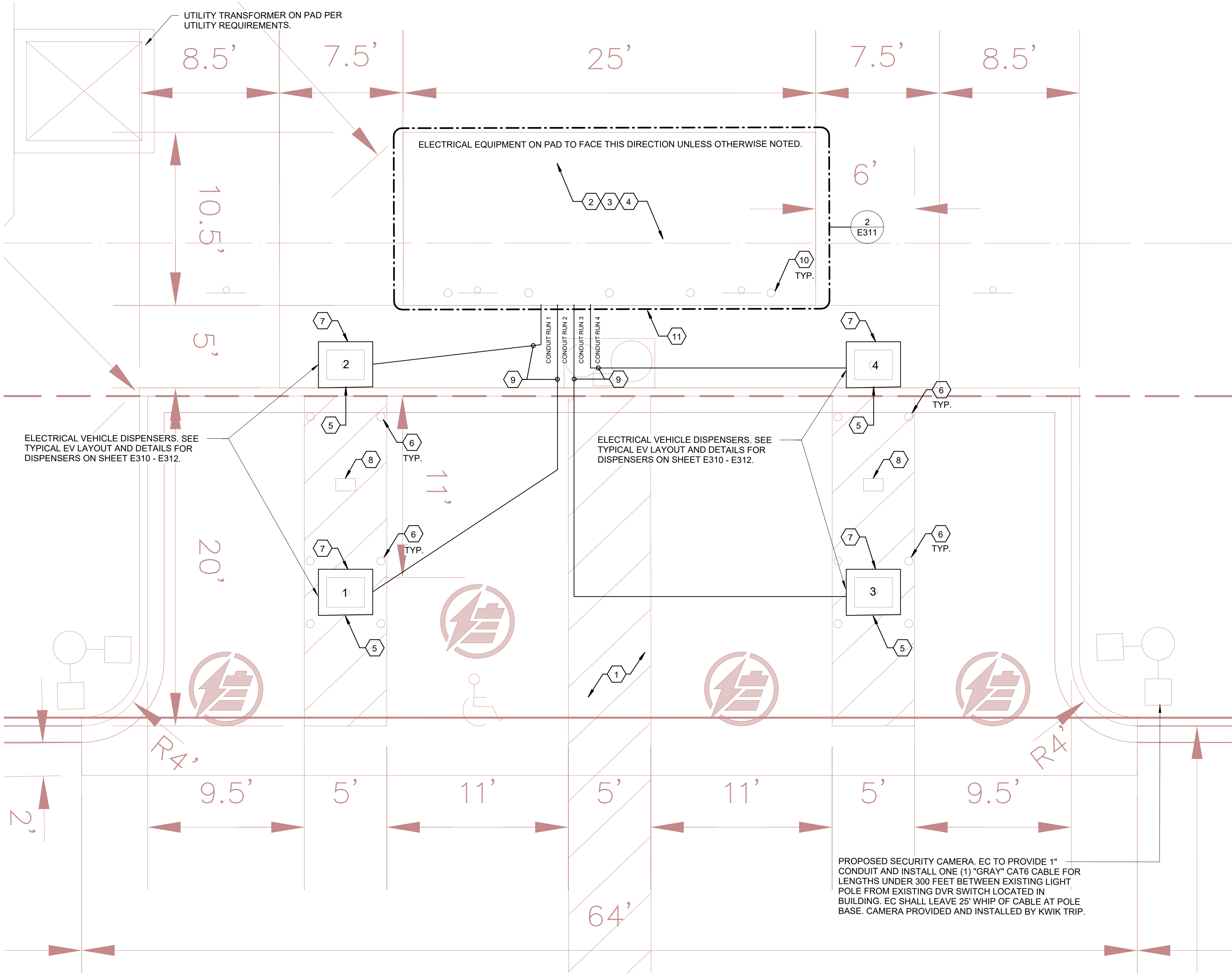


ELECTRICAL GENERAL NOTES - E101

METALLIC STRUCTURES MUST BE PROPERLY GROUNDED. ANY METALLIC STRUCTURE, POLE, WIRE, OR ITEM PLACED IN THE VICINITY OF A HIGH-VOLTAGE TRANSMISSION LINE WILL HAVE THE POTENTIAL TO BECOME ELECTRICALLY CHARGED DUE TO ELECTRIC INDUCTION. THE DEVELOPMENT OF AN ELECTRIC CHARGE RESULTS IN POTENTIAL DIFFERENCE BETWEEN THE METAL INSTALLATION AND THE GROUND, WHICH CAN RESULT IN ELECTRICAL SHOCKS WHEN THE ITEM IS TOUCHED. PLACEMENT OF SUCH METALLIC INSTALLATION SHOULD TAKE INTO CONSIDERATION THE SHOCK POTENTIAL DURING THE CONSTRUCTION, INTENDED USE, AND FUTURE MAINTENANCE ACTIVITIES. ITEMS WHICH BECOME CHARGED MUST BE CONNECTED TO A GROUND ROD OR GROUNDING SYSTEM TO PREVENT ELECTRICAL SHOCKS.

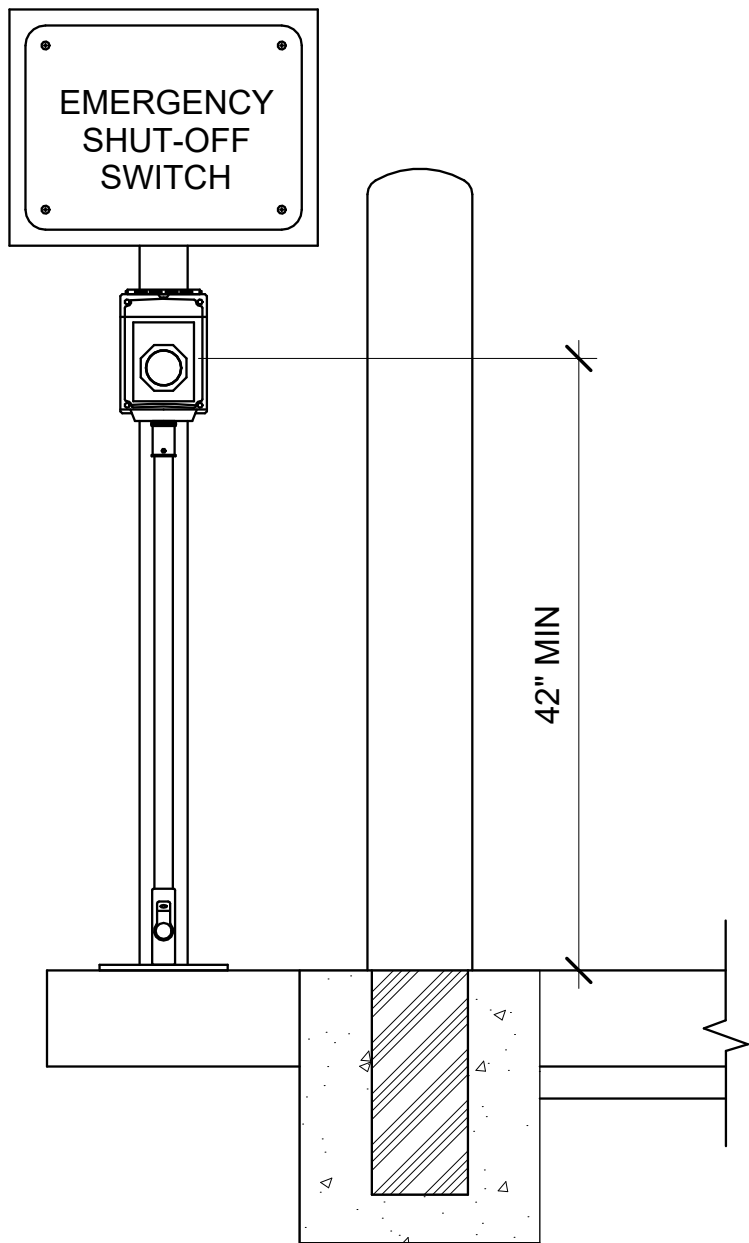
ELECTRICAL KEY NOTES - E101

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11



1 ELECTRICAL EV PLAN - ENLARGED

SCALE: 1/4" = 1'-0"



2 TYPICAL EMERGENCY SHUTDOWN BUTTON POLE DETAIL

SCALE: NONE



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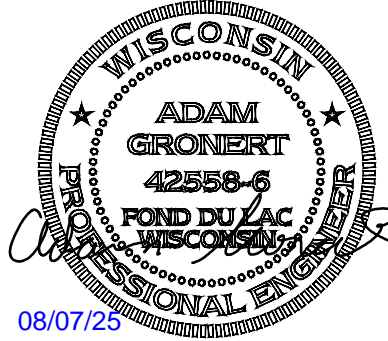
KWIK  
TRIP

KWIK  
STAR

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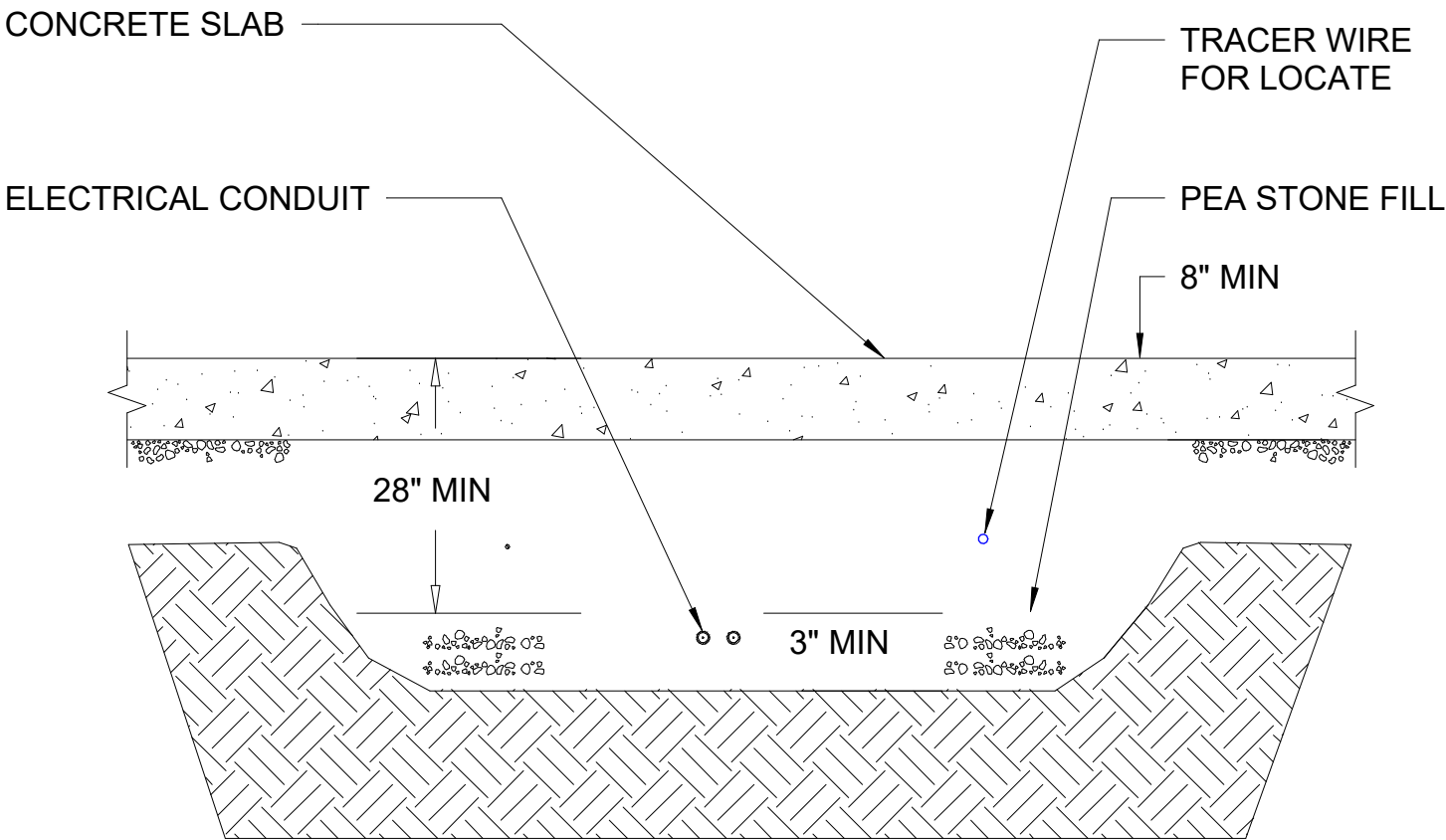
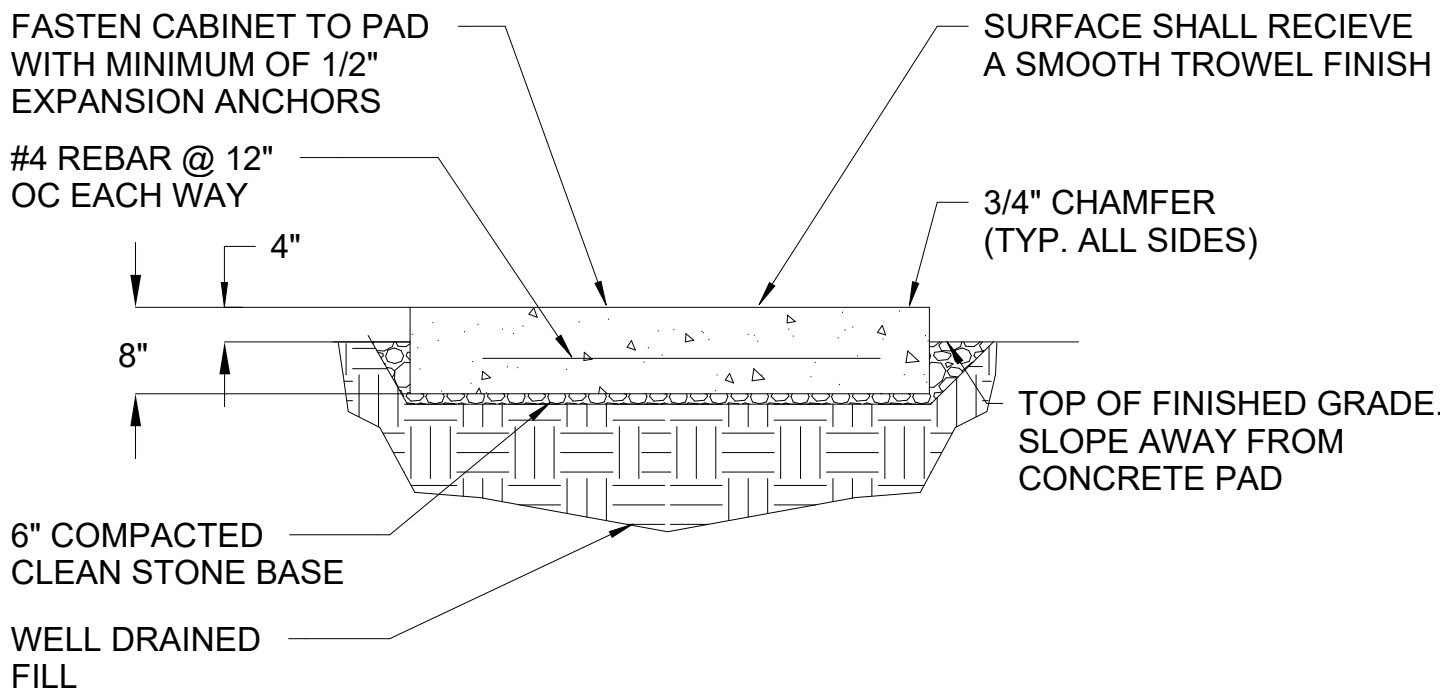
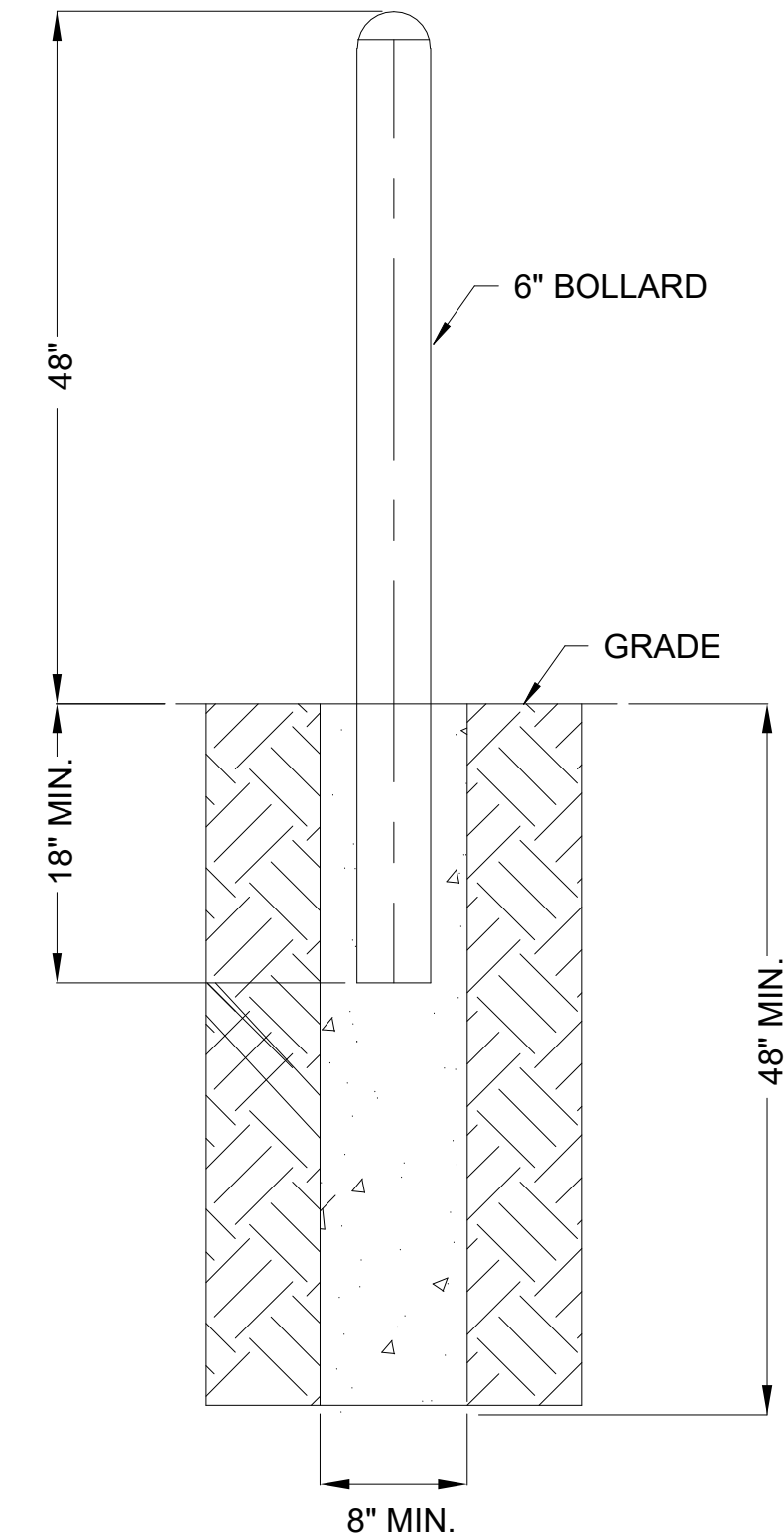
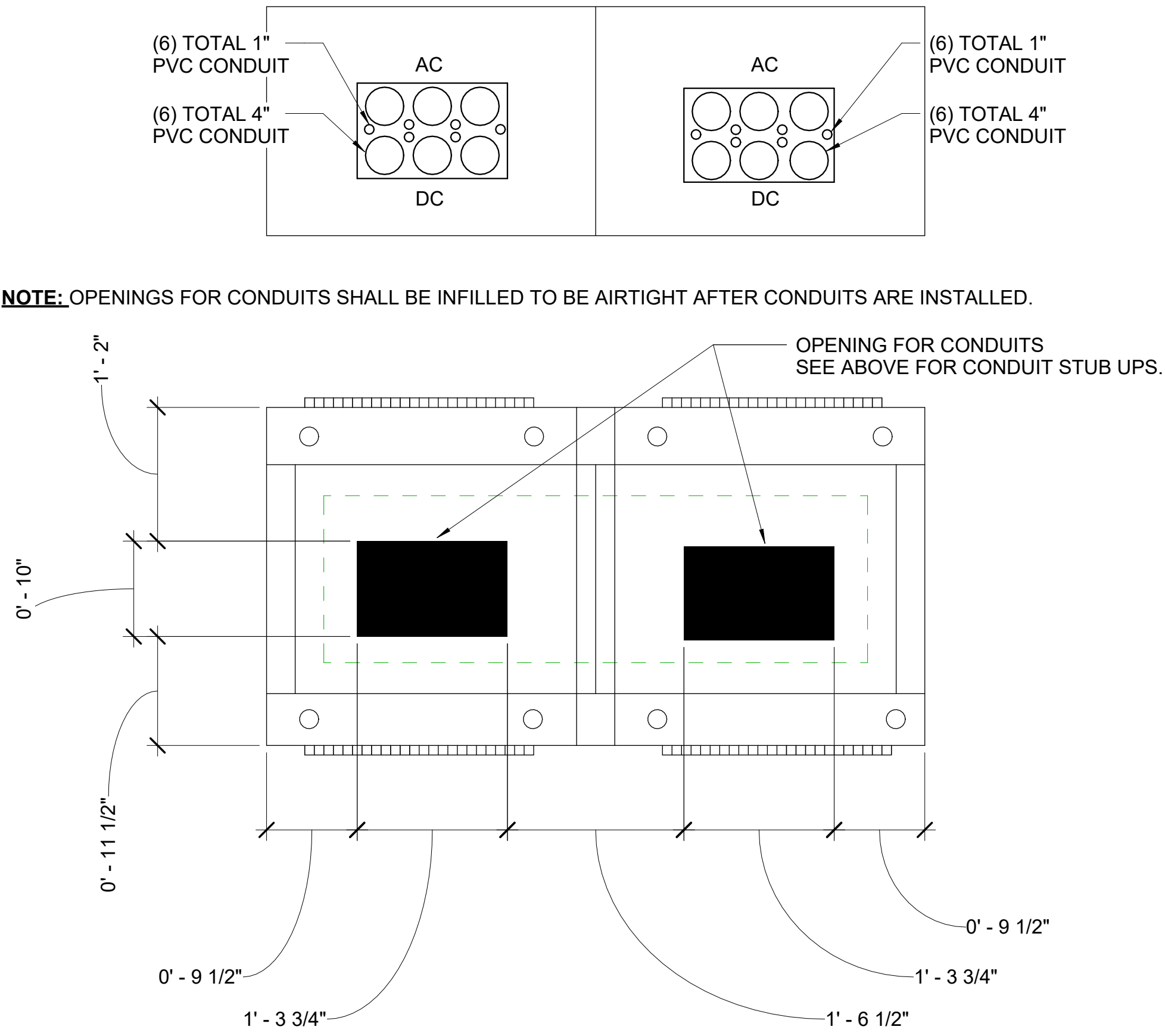
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SHEET NUMBER

E101



SIZE OF CONDUITS IN EV POWER CABINET CONDUIT OPENING SHOWN BELOW. SEE 2/E600 SINGLE LINE DIAGRAM.

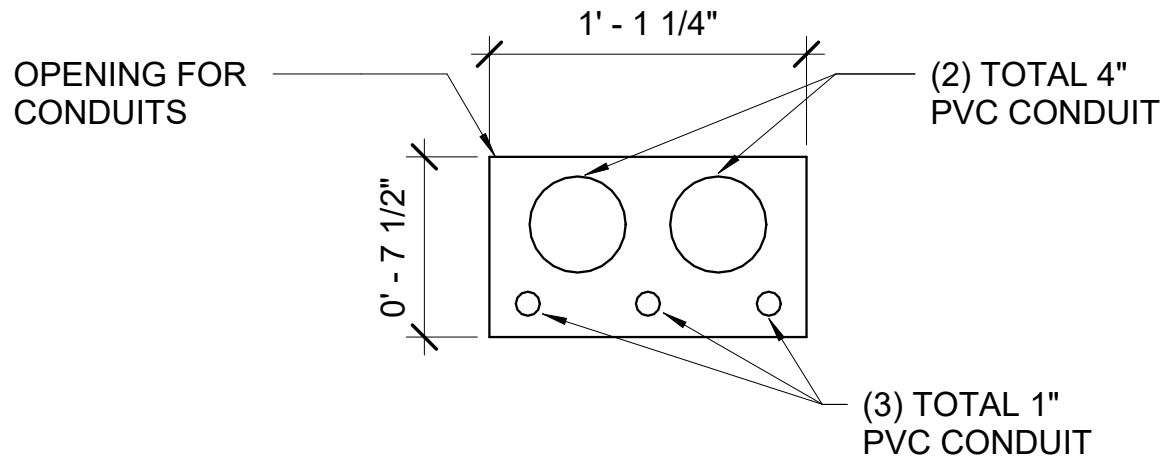


3 EV POWER CABINET CONDUIT OPENINGS  
SCALE: NONE

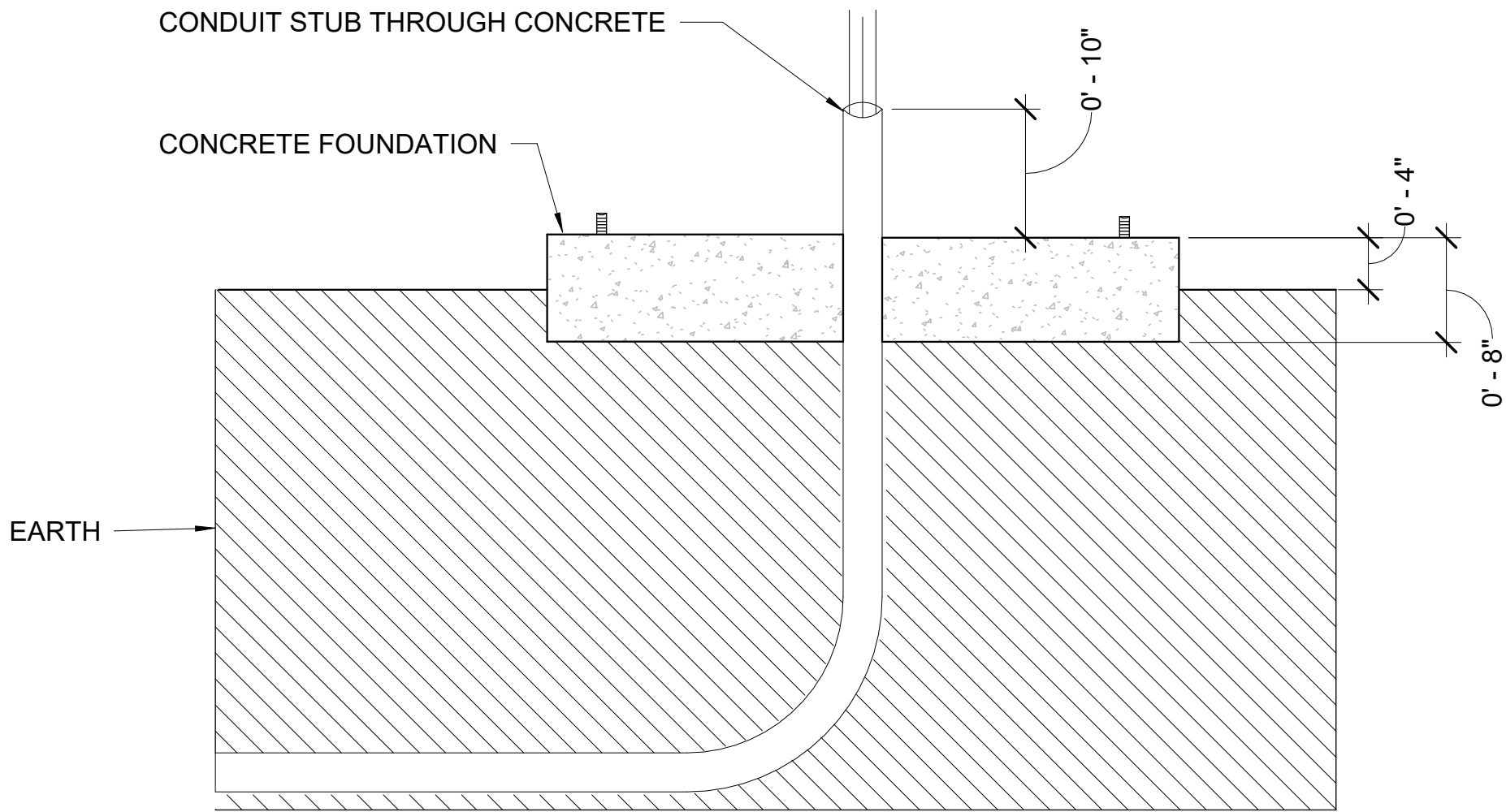
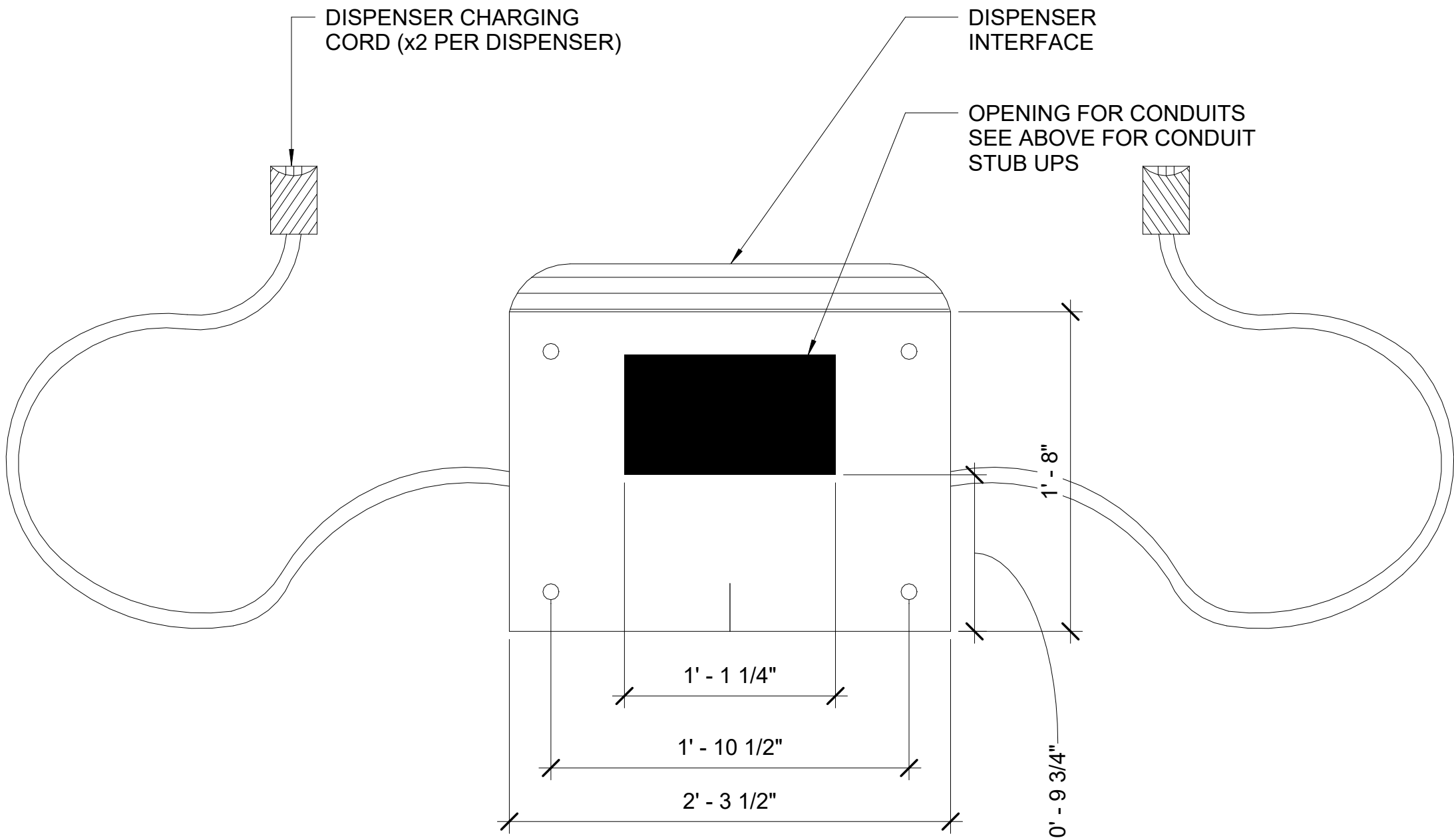
2 EV - PLAN DETAILS  
SCALE: NONE

1 ELECTRICAL TRENCH DETAIL  
SCALE: NONE

SIZE OF CONDUITS IN EV DISPENSER OPENING SHOWN BELOW



NOTE: OPENINGS FOR CONDUITS SHALL BE INFILLED TO BE AIRTIGHT AFTER CONDUITS ARE INSTALLED.



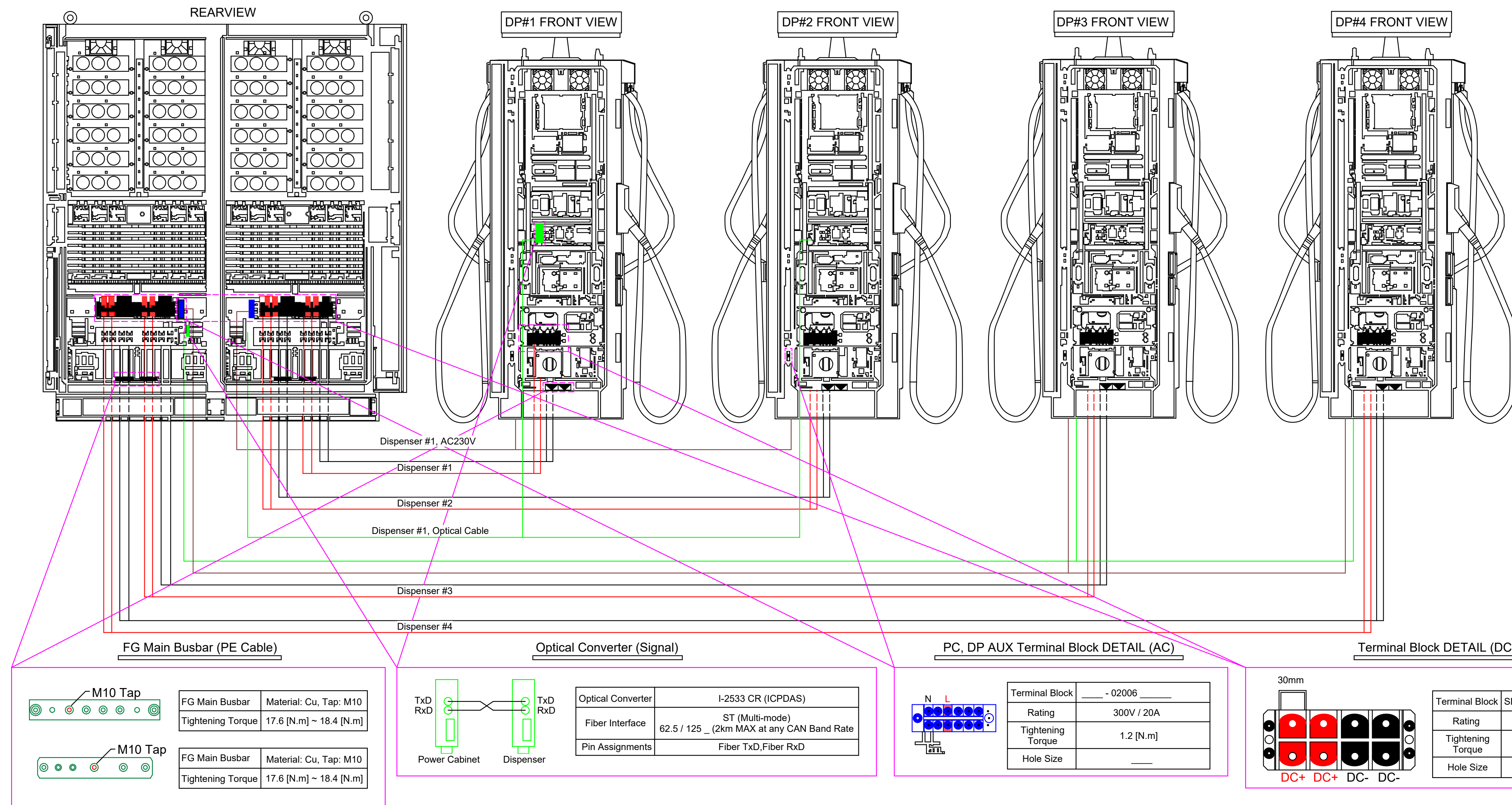
5 DISPENSER CONDUIT OPENINGS  
SCALE: NONE

4 TYPICAL EV CONDUIT STUB UP  
SCALE: NONE



## V2 600kW PC - 400kW DP Connect

FOR REFERENCE ONLY. NOT TO BE USED FOR ENGINEER PERMIT DRAWINGS



### KEY NOTES:

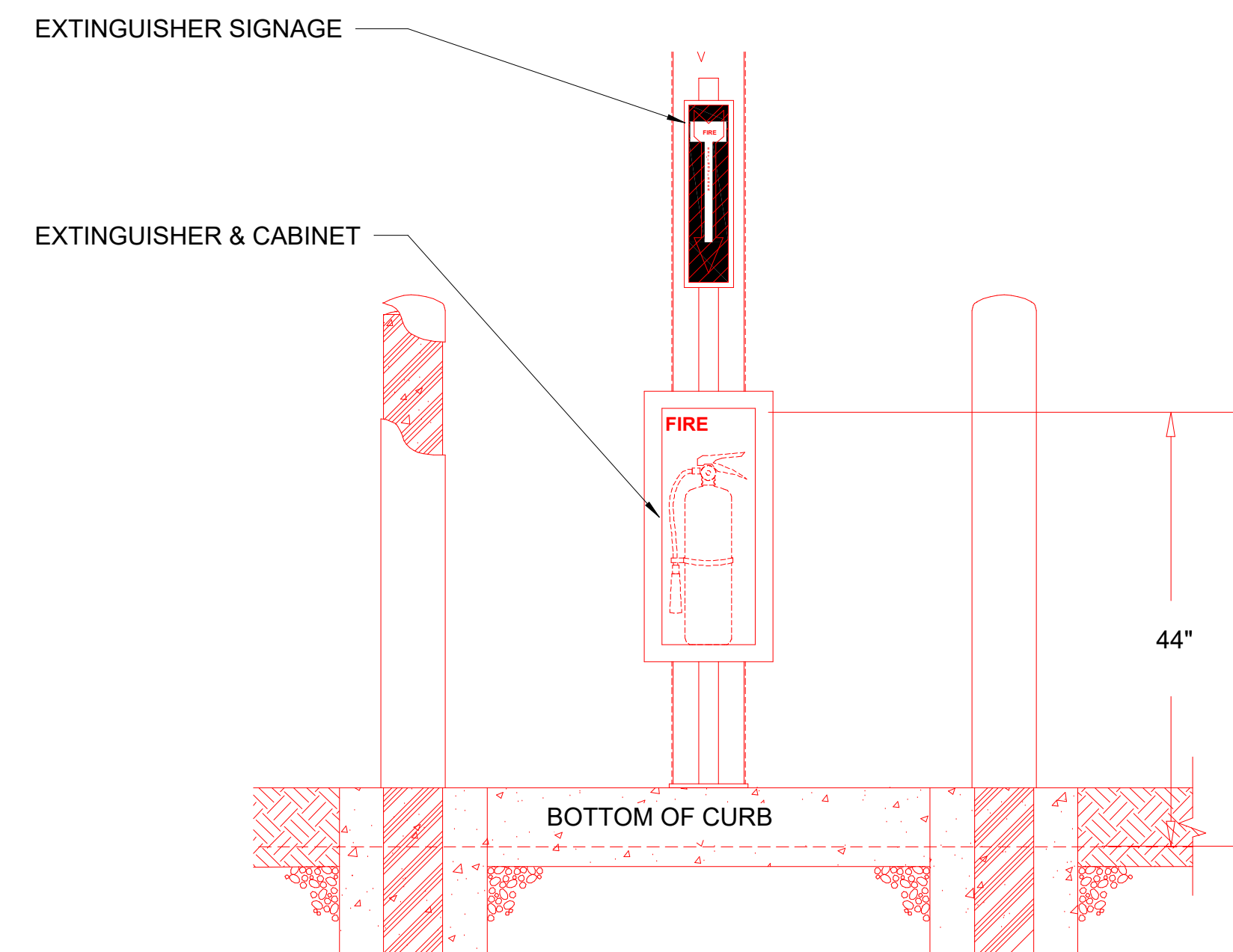
- After installing the EV charger, connect the ground cable and AC cables.
  - Make sure that 5 cable strands (3-phase 4-wire cable, ground wire) are prepared at the installation site according to the wiring specifications. If the cable does not meet the specifications or is damaged, contact the installation site's superior immediately.
  - If the cable specifications are met and there is no problem, after stripping the cable sheath to connect to the lug into the cable.

### V2 600kW PC - 400kW DP Wiring

- DC Power Line
  - PC T/B1 - DP#1 CH1: 1,000 Vdc, MAX 500 A
  - PC T/B2 - DP#2 CH1: 1,000 Vdc, MAX 500 A
  - PC T/B3 - DP#3 CH1: 1,000 Vdc, MAX 500 A
  - PC T/B4 - DP#4 CH1: 1,000 Vdc, MAX 500 A
- AC Power Line
  - PC Aux T/B1 - DP#1 Aux T/B
  - PC Aux T/B2 - DP#2 Aux T/B
- Optical Fiber Cable Line
  - PC Optical Converter 1 - DP#1 Optical Converter
  - PC Optical Converter 2 - DP#2 Optical Converter
  - PC Optical Converter 3 - DP#3 Optical Converter
  - PC Optical Converter 4 - DP#4 Optical Converter
- FG Cable
  - PC FG Busbar 1 - DP#1, DP#2 FG Busbar
  - PC FG Busbar 2 - DP#3, DP#4 FG Busbar

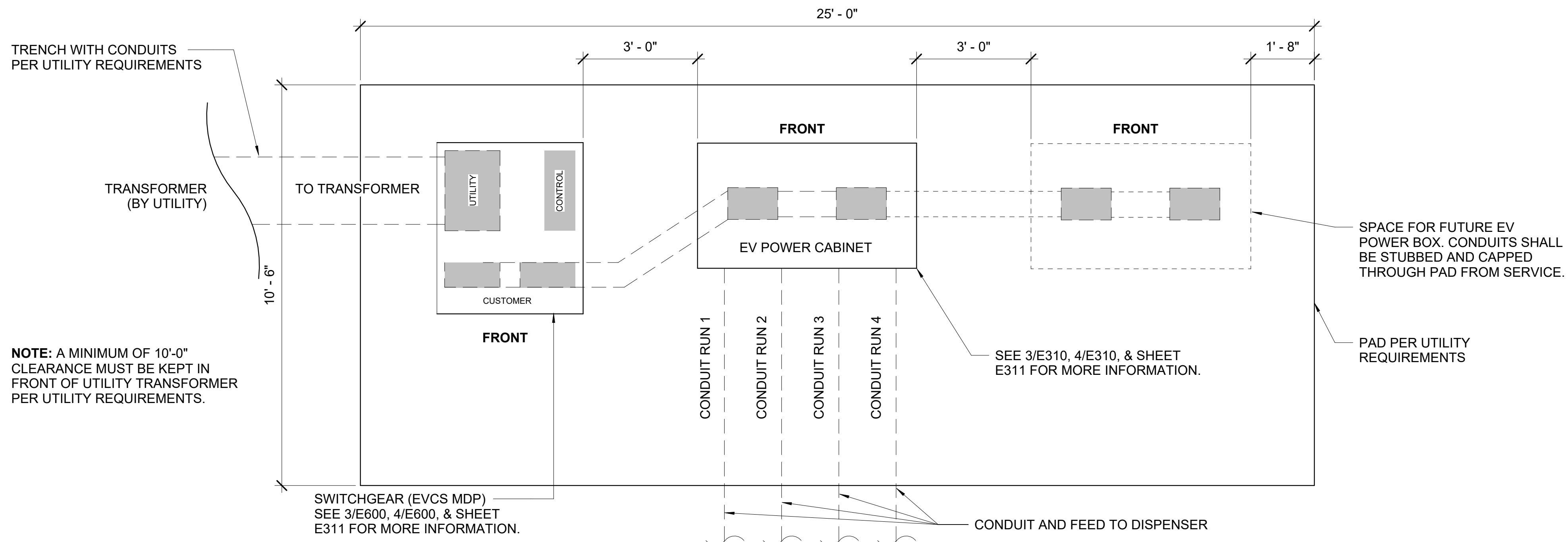
### 1 DISPENSER WIRING DIAGRAM

E311 SCALE: NONE



### 3 EXTINGUISHER DETAIL

E311 SCALE: NONE



### 2 TYPICAL EV LAYOUT

E311 SCALE: 1/2" = 1'-0"



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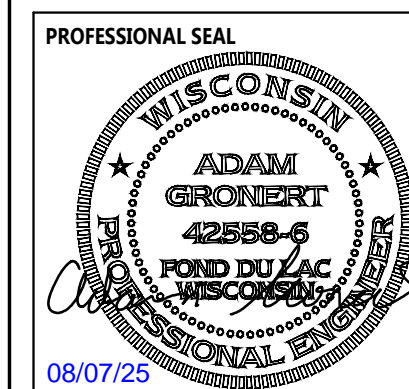
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### PROJECT INFORMATION

PROPOSED ALTERATIONS FOR:  
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2001 GOLF ROAD • PEWAUKEE, WI 53072



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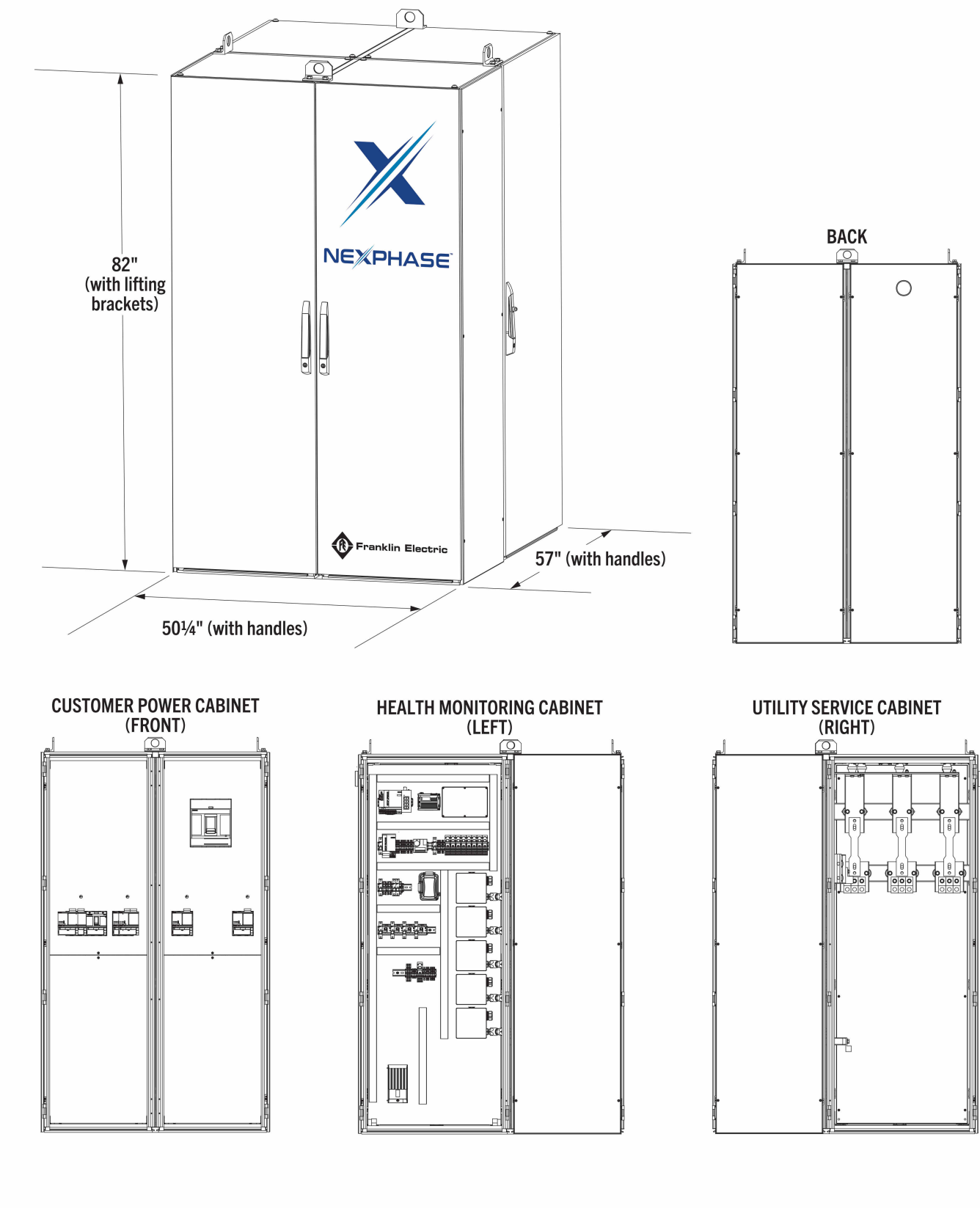
### SHEET NUMBER

**E311**

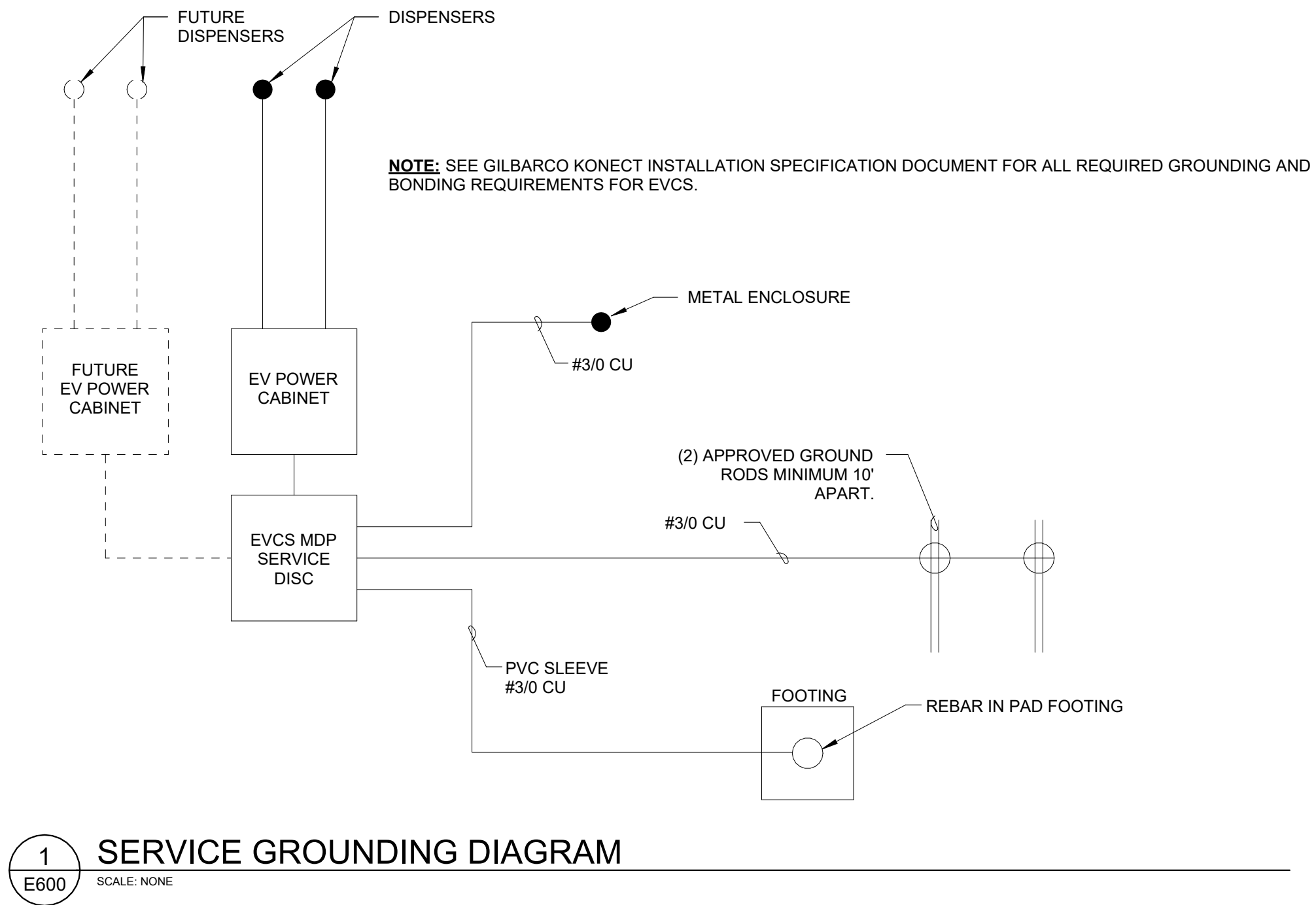
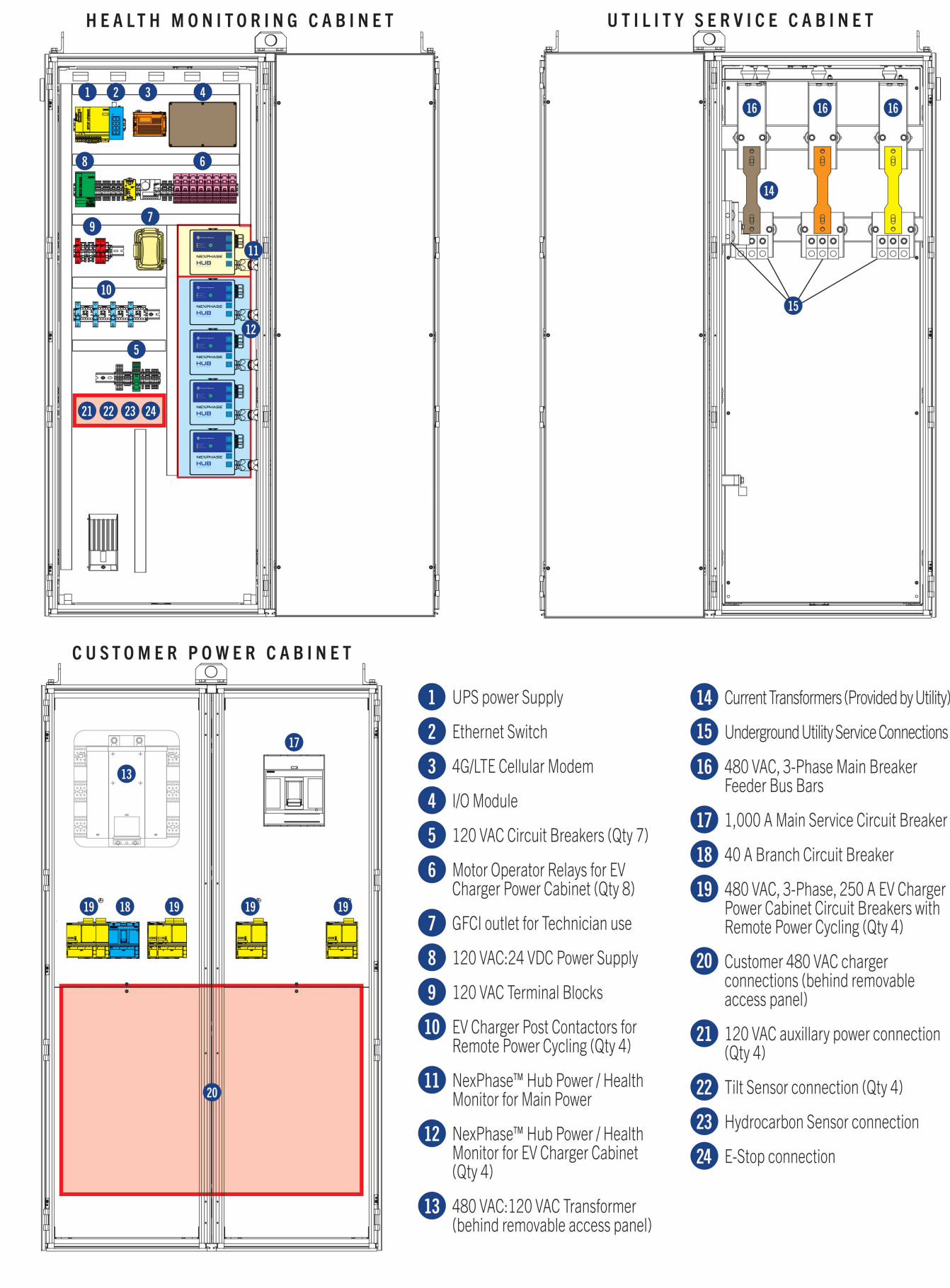


### 3 Technical Overview

#### 3.1 Orientation and Dimensions (Overall)

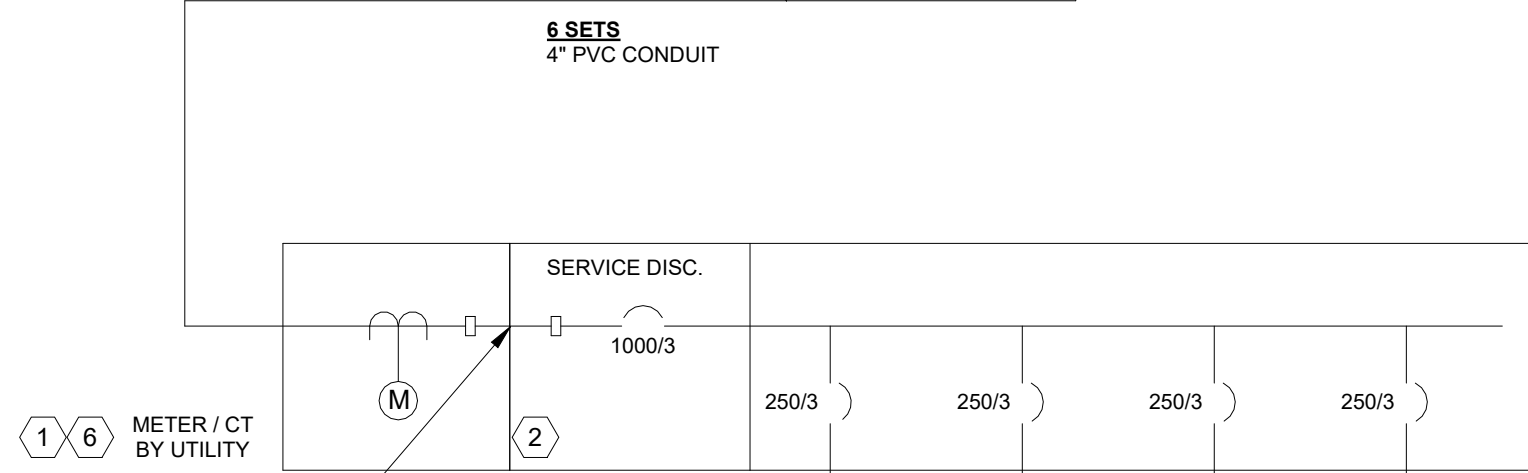
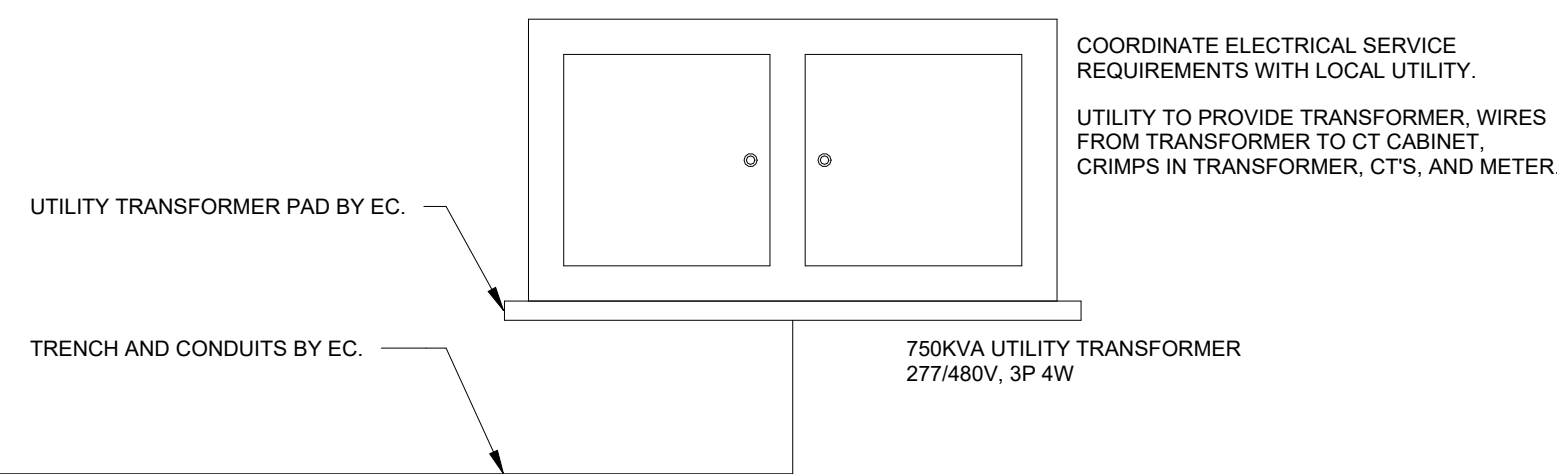


#### 3.2 Components

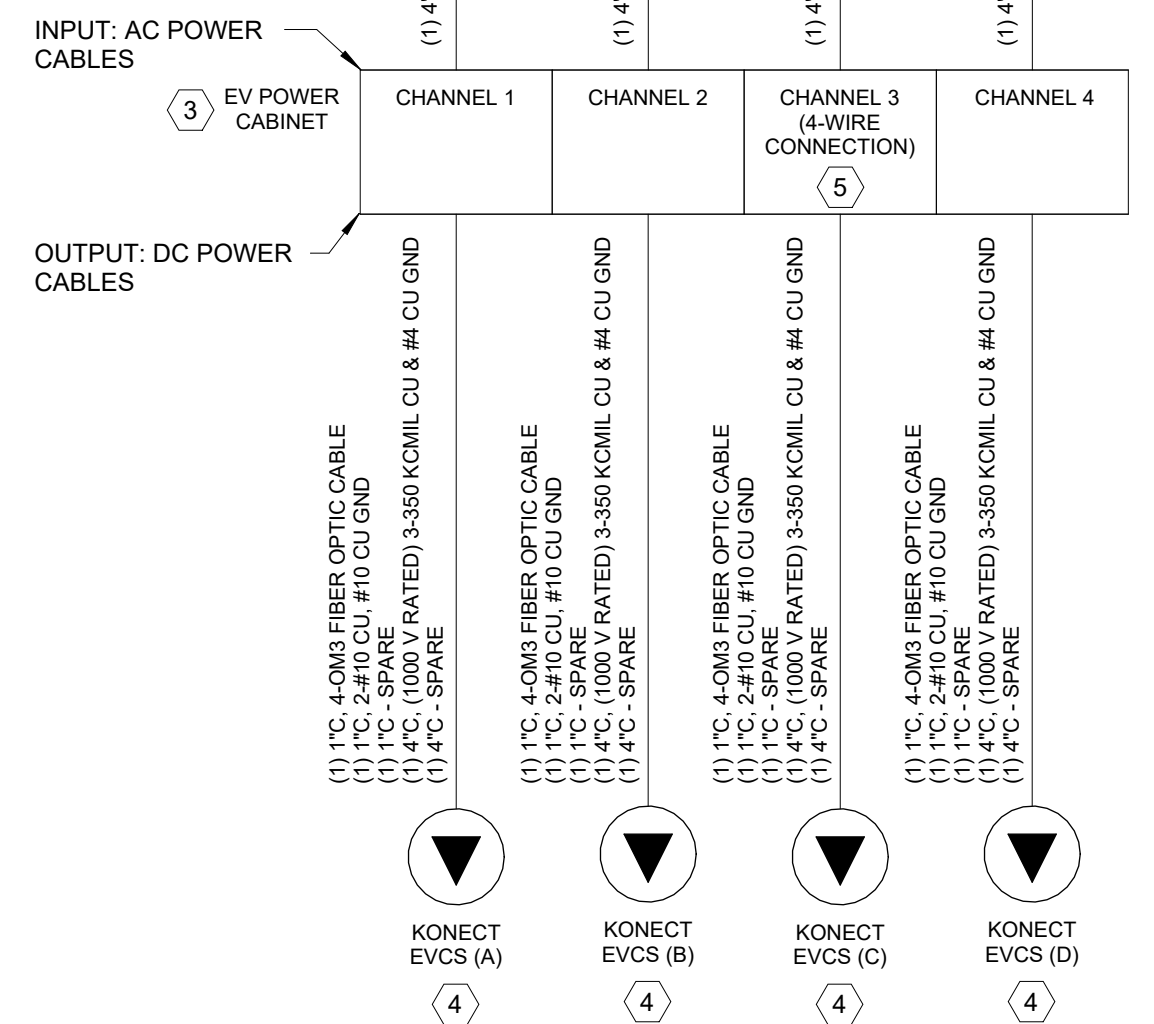


#### 1 SERVICE GROUNDING DIAGRAM

SCALE: NONE



- 3 SETS**  
4" PVC CONDUIT  
(3) #400 KCMIL CU  
(1) #400 KCMIL CU N  
(FROM LOAD SIDE OF UTILITY CABINET TO CUSTOMER SERVICE DISCONNECT)
- 3 SETS**  
4" PVC CONDUIT SPARES FOR FUTURE UPGRADE



#### ONE LINE KEYED NOTES:

- 1000 AMP, 277/480VAC, 3-PHASE, 4-WIRE CT/METER SUPPLIED AND PRIMARY INSTALLED BY LOCAL UTILITY COMPANY. COORDINATE WITH LOCAL UTILITY COMPANY PRIOR TO SUBMITTING BID.
- INSTALL A 1000 AMP, 277/480VAC, 3-PHASE, 4-WIRE, NEMA 3R, EVCS MAIN DISTRIBUTION PANELBOARD (EVCS MDP) PROVIDED BY OTHERS. SEE 3/E600 & 4/E600.
- INSTALL GILBARCO KONECT EV POWER CABINET PROVIDED BY OTHERS. WIRE 4 CHANNELS INSIDE POWER BOX ACCORDING TO INSTALLATION MANUAL. SEE SITE PLAN FOR EXACT LOCATION.
- GILBARCO KONECT EVCS PROVIDED BY OTHERS. SEE GILBARCO KONECT INSTALLATION SPECIFICATION DOCUMENT FOR ALL EVCS REQUIREMENTS DURING INSTALLATION. SEE SITE PLAN FOR EXACT LOCATION.
- CHANNEL 3 INSIDE EV POWER CABINET TO HAVE 4-WIRE FEED PER GILBARCO INSTALLATION MANUAL.
- EC SHALL PROVIDE TERMINATION LUGS ON SECONDARY SIDE OF METER CABINET. EVERYTHING DOWNSTREAM OF THIS CABINET WILL BE THE RESPONSIBILITY OF EC UNLESS OTHERWISE NOTED.

#### 2 SINGLE LINE DIAGRAM

SCALE: NONE

#### 3 SWITCHGEAR (EVCS MDP) OVERVIEW & COMPONENTS

SCALE: NONE

#### 3.3 General Specifications

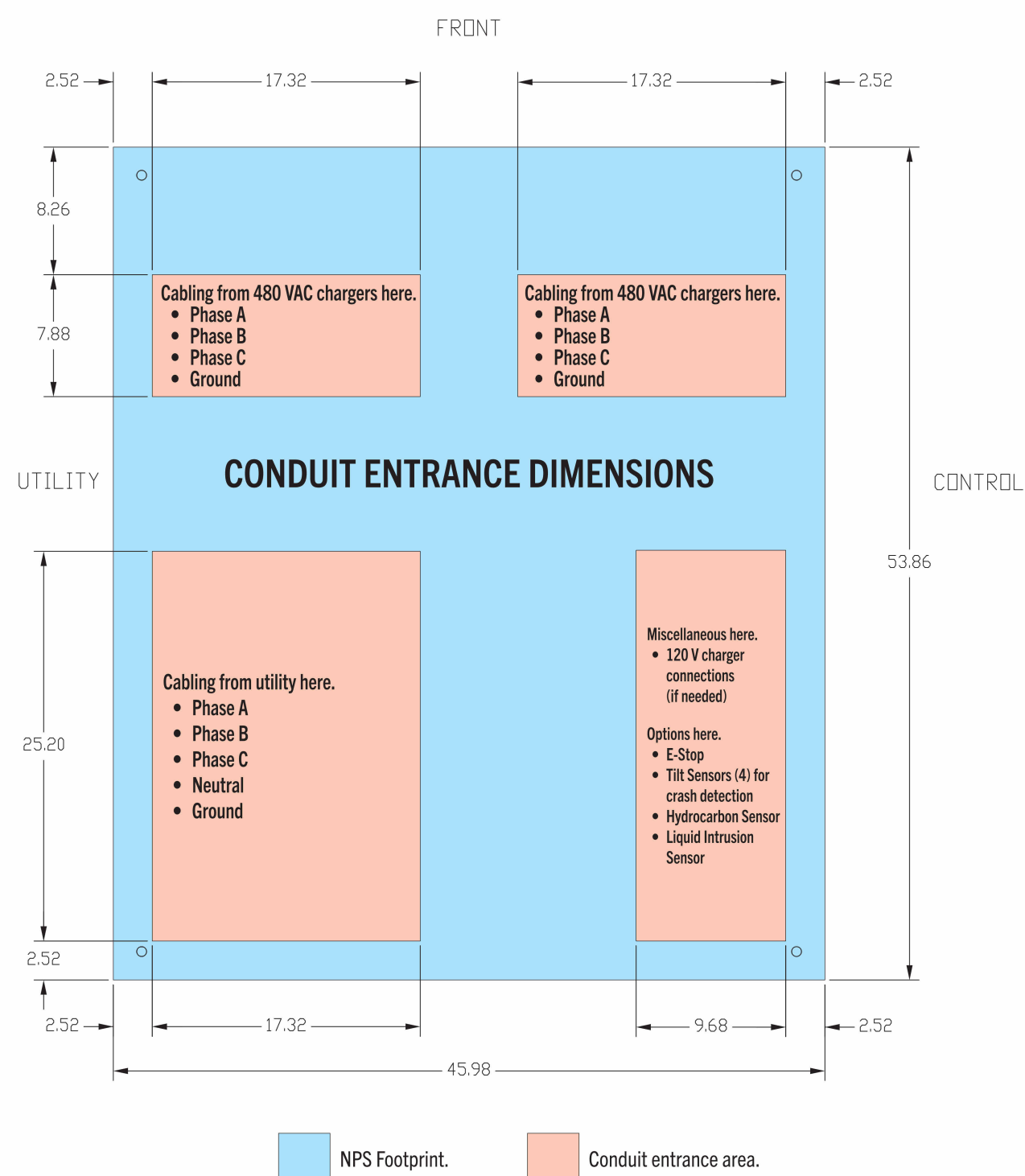
Table 3.1 – Electrical	
Item	Value
Incoming Feeder Circuit	480 VAC, 3-Phase Wye, 1,000 A
AC Input Connection	3-Phase: L1, L2, L3, Neutral & GND
Utility Connections	Lug Cable Size 3 x 600 MCM, Copper or Aluminum
Current Transformer (CT)	Bar Type Mounting Plate
CT Mounting Pattern	Built to utility specification
Main Service Circuit Breaker	480 VAC, 3-Phase, 1,000 A
Short-Circuit Current Rating (SCCR)	50 kA
Number of Branch Breakers	5
Rated at 480 VAC, 3-Phase, 250 A	4
Rated at 480 VAC, 3-Phase, 40 A	1
Number of 150 kW Chargers to supply	4
Current (Max) Each Charger	200 A
480 VAC, 120 VAC Transformer	1
Power Supply	120 VAC/24 VDC
Power Supply	Class 2 24 VDC
Number of 120 VAC Breakers	7
Number Remote Resettable Contactors	4
Technician-Ready GFCI Outlet	1

Table 3.2 – Monitoring	
Item	Description
Transaction Summary	Average Power, Voltage, Current, Accumulated Energy each Post
Daily/Weekly Summary	Average Power, Voltage, Current, Accumulated Energy each Post

Table 3.3 – Interface	
Item	Connectivity
Remote Connectivity	Cellular Modem
Cloud Based Data	Acquisition MQTTS Protocol
User Interface	UNITE™ web-based, remote user interface
Web Browser Compatible	Microsoft Edge®, Google Chrome OS®, Mozilla Firefox®

Table 3.4 – Environment, Safety & Compliance	
Item	Rating
Enclosure	NEMA 3R Indoor/Outdoor Electrical Cabinet
Temperature Rating	-25°C to +50°C / -13°F to 122°F
Safety Compliance	Designed to NFPA 70; NEC 2020; UL 891 Listed

Table 3.5 – Physical Dimensions	
Item	Rating
Dimension (HxWxD) including handles	82"x 50 1/4" x 57"
Weight	1500 Pounds / 680 Kilograms



NPS Footprint. Conduit entrance area.

#### 4 SWITCHGEAR (EVCS MDP) GENERAL SPECIFICATIONS & CONDUIT ENTRANCE

SCALE: NONE



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SHEET NUMBER

**E600**

ELECTRICAL POWER ONE-LINE DIAGRAM