

ELECTRICAL SYMBOLS LEGEND	
SYMBOLS	DESCRIPTION
	FLUORESCENT FIXTURE, WITH FIXTURE DESIGNATED BY LETTER.
NL	NIGHT LIGHT – NOT SWITCHED
	CEILING OR WALL MOUNTED FIXTURE
	JUNCTION BOX
	SINGLE/DOUBLE FACED EXIT SIGN – NOT SWITCHED
	DOUBLE HEAD EMERGENCY LIGHT WITH BATTERY BACK UP.
S	SINGLE POLE SWITCH, +48" A.F.F.
S <sub>3</sub>	THREE WAY SWITCH, +48" A.F.F.
S <sub>a</sub>	OUTLET CONTROL INDICATOR
S <sub>D</sub>	DIMMER SWITCH
S <sub>OS</sub>	OCCUPANCY SENSOR SWITCH
S <sub>T</sub>	THERMAL OVERLOAD SWITCH
	DUPLEX RECEPTACLE, +18" A.F.F.
	DUPLEX RECEPTACLE ABOVE COUNTER, VERIFY HEIGHT
	FOURPLEX RECEPTACLE, +18" A.F.F.
	SR – HALF SWITCHED DUPLEX RECEPTACLE CR – CONTROLLED DUPLEX RECEPTACLE
	POWER/PHONE/DATA FLUSH FLOOR OUTLET
	250 VOLT RECEPTACLE PER UNIT REQUIREMENTS
	600 VOLT RECEPTACLE PER UNIT REQUIREMENTS
	TELEPHONE/DATA SYSTEM OUTLET, 4" SQUARE BOX AND COVERPLATE, 3/4"C. TO CEILING SPACE UNLESS SHOWN WITH HOMERUN, +18" A.F.F.
	TELEVISION OUTLET PLASTER RING AT +18" A.F.F. (U.N.O.) HUBBELL COVERPLATE. 3/4"C. TO CEILING SPACE UNLESS SHOWN WITH HOMERUNS.
	CONDUIT BELOW FLOOR OR UNDERGROUND
	CONDUIT IN WALL OR ABOVE CEILING
LA 1,3	HOMERUN TO PANEL (SEE GROUNDING NOTE)
	MOTOR CONNECTION
	DISCONNECT SWITCH
	DUCT SMOKE DETECTOR
	LIGHTNING ARRESTER
*** ALL SYMBOLS ON LEGEND MAY NOT APPLY TO DRAWING(S). ***	

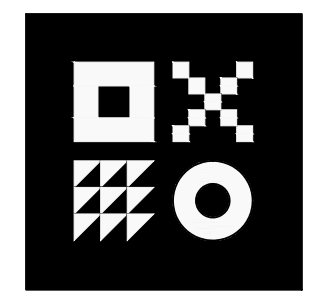
ABBREVIATIONS	
E	EXISTING LIGHT OR DEVICE TO REMAIN
ER	EXISTING LIGHT OR DEVICE TO BE REMOVED OR RELOCATED
R	RELOCATED LIGHT OR DEVICE
N	NEW LIGHT OR DEVICE
A.F.F.	ABOVE FINISHED FLOOR
C	CONDUIT
E.C.	EMPTY CONDUIT WITH PULLWIRE
E.D.F.	ELECTRICAL DRINKING FOUNTAIN.
GND	GROUND
MLO	MAIN LUGS ONLY
MCB	MAIN CIRCUIT BREAKER
S.E.S.	SERVICE ENTRANCE SECTION
WP	WEATHER PROOF
WR	WATER RESISTANT
GFI/GFCI	GROUND–FAULT CIRCUIT INTERRUPTER
U.N.O.	UNLESS NOTED OTHERWISE
	SECURITY CAMERA
	SPEAKER
S.U.S.E	SUITABLE FOR USE AS SERVICE EQUIPMENT

SCOPE OF WORK	
ELECTRICAL ENGINEERING CONSTRUCTION DOCUMENTS FOR 335,715 SQFT SITE TENANT IMPROVEMENT OF AN EXISTING AUTOMOTIVE SITE, EXTERIOR ONLY. ENTIRE SITE IS 78 ACRES.	
DESIGN INCLUDES:	
<ul style="list-style-type: none"> <li>• ELECTRICAL ENERGY COMPLIANCE REPORT</li> <li>• ELECTRICAL SITE LIGHTING PLAN</li> <li>• ELECTRICAL SITE PHOTOMETRIC PLAN</li> <li>• ELECTRICAL SITE POWER PLAN</li> <li>• ELECTRICAL ONE–LINE DIAGRAM</li> <li>• ELECTRICAL PANEL SCHEDULES</li> <li>• ELECTRICAL FAULT CALCULATIONS</li> <li>• ELECTRICAL VOLTAGE DROP CALCULATIONS</li> </ul>	

GENERAL NOTES	
A.	EXAMINE THE CONTRACT DRAWINGS AND ALL AVAILABLE INFORMATION CONCERNING EXISTING INSTALLATION, STRUCTURE, AND LOCAL CONDITIONS. VISIT THE SITE TO UNDERSTAND THE NATURE AND SCOPE OF ALL WORK TO BE PERFORMED AND VERIFY EXISTING CONDITIONS. THE SUBMISSION OF A BID WILL BE TAKEN AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND THAT ALL EXISTING CONDITIONS HAVE BEEN CONSIDERED. NO ALLOWANCES WILL BE MADE AFTER THE PROJECT HAS BEEN AWARDED FOR FAILURE TO VERIFY EXISTING CONDITIONS. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THAT OF THESE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
B.	THE CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF ALL EXISTING SURFACES REQUIRING PATCHING, PLASTERING, PAINTING AND /OR OTHER REPAIR DUE TO THE INSTALLATION OF ELECTRICAL WORK UNDER THE TERMS OF THE CONTRACT. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC., AS REQUIRED.
C.	SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS, ELEVATIONS AND BUILDING DETAILS. VERIFY LOCATION OF ALL OUTLETS, SWITCHES, AND WALL MOUNTED LIGHTING FIXTURES WITH ARCHITECTURAL DRAWINGS AND ACTUAL CONDITIONS. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES. VERIFY ALL CEILING TYPES WITH ARCHITECTURAL DRAWINGS BEFORE ORDERING FIXTURES.
D.	PRIOR TO ROUGH–IN AND FINAL CONNECTION, VERIFY ELECTRICAL CHARACTERISTICS AND EXACT LOCATION OF EQUIPMENT.
E.	GROUT AND SEAL ALL CONDUIT PENETRATIONS OF WALLS AND FLOOR SLABS TO PRESERVE FIRE RATING AND WATERTIGHT INTEGRITY.
F.	ALL WIRING TO BE INSTALLED IN RACEWAYS. TYPE OF RACEWAY SHALL BE AS REQUIRED BY CODE. MINIMUM CONDUIT SIZE SHALL BE 3/4"C. FOR POWER AND 1"C. FOR DATA. RACEWAYS RUN ACROSS ROOF SHALL BE MINIMUM 4" ABOVE ROOF.
G.	BRANCH CIRCUIT WIRING SHALL BE THHN/THWN INSULATION. EXTERIOR WIRING SHALL BE THWN–2. PANEL FEEDERS. SHALL BE TYPE XHHW. ALL WIRE SHALL BE COPPER. MINIMUM WIRE SIZE SHALL BE #12. PER THE LATEST NEC CODE ADOPTED BY THE CITY OF FOUNTAIN, A SEPARATE NEUTRALS ARE TO BE PROVIDED FOR EACH CIRCUIT OR PROVIDE MULTI–POLE HANDLE TIE FOR EACH MULTI–WIRE CIRCUIT
H.	PROVIDE CODE SIZED GROUNDING CONDUCTOR WIRE IN ALL CONDUITS.
I.	ALL ELECTRICAL EQUIPMENT SHALL BE NEW, U.L. APPROVED AND COMMERCIAL GRADE.
J.	ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF FOUNTAIN, LATEST ADOPTED NATIONAL ELECTRICAL CODE (NEC), AND ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES.
K.	IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO PROVIDE ONE (1) SET OF COMPLETE CONSTRUCTION DRAWINGS.
L.	PROVIDE NEW PANEL DIRECTORIES INDICATING SPECIFIC CIRCUIT INFORMATION TO DISTINGUISH EACH CIRCUIT FROM ANY OTHER PER NEC.
M.	ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION OF DEVICES, WIRE & CONDUIT. WHERE THESE ITEMS ARE NO LONGER USED ALL UNUSED WIRE SHALL BE REMOVED BACK TO THE PANEL. ANY DOWNSTREAM EQUIPMENT TO REMAIN IN USE SHALL BE RECONNECTED.

SHEET INDEX	
SHEET	PAGE TITLE
E0.1	ELECTRICAL GENERAL NOTES & LEGEND
E0.2	ELECTRICAL IECC REPORT / LIGHT SCHEDULE
E1.0	OVERALL LIGHTING SITE KEY PLAN
E1.1	ELECTRICAL SITE LIGHTING PLAN
E1.2	ELECTRICAL SITE LIGHTING PLAN
E1.3	OVERALL PHOTOMETRIC SITE KEY PLAN
E1.4	ELECTRICAL SITE PHOTOMETRIC PLAN
E1.5	ELECTRICAL SITE PHOTOMETRIC PLAN
E1.6	ELECTRICAL SITE CUT–SHEETS
E2.0	OVERALL POWER SITE KEY PLAN
E2.1	ELECTRICAL SITE POWER PLAN
E2.2	ELECTRICAL SITE POWER PLAN
E3.0	ELECTRICAL ONE–LINE DIAGRAM
E3.1	ELECTRICAL VOLTAGE DROP SCHEDULE
E4.0	ELECTRICAL DETAILS
E5.0	ELECTRICAL SPECIFICATIONS

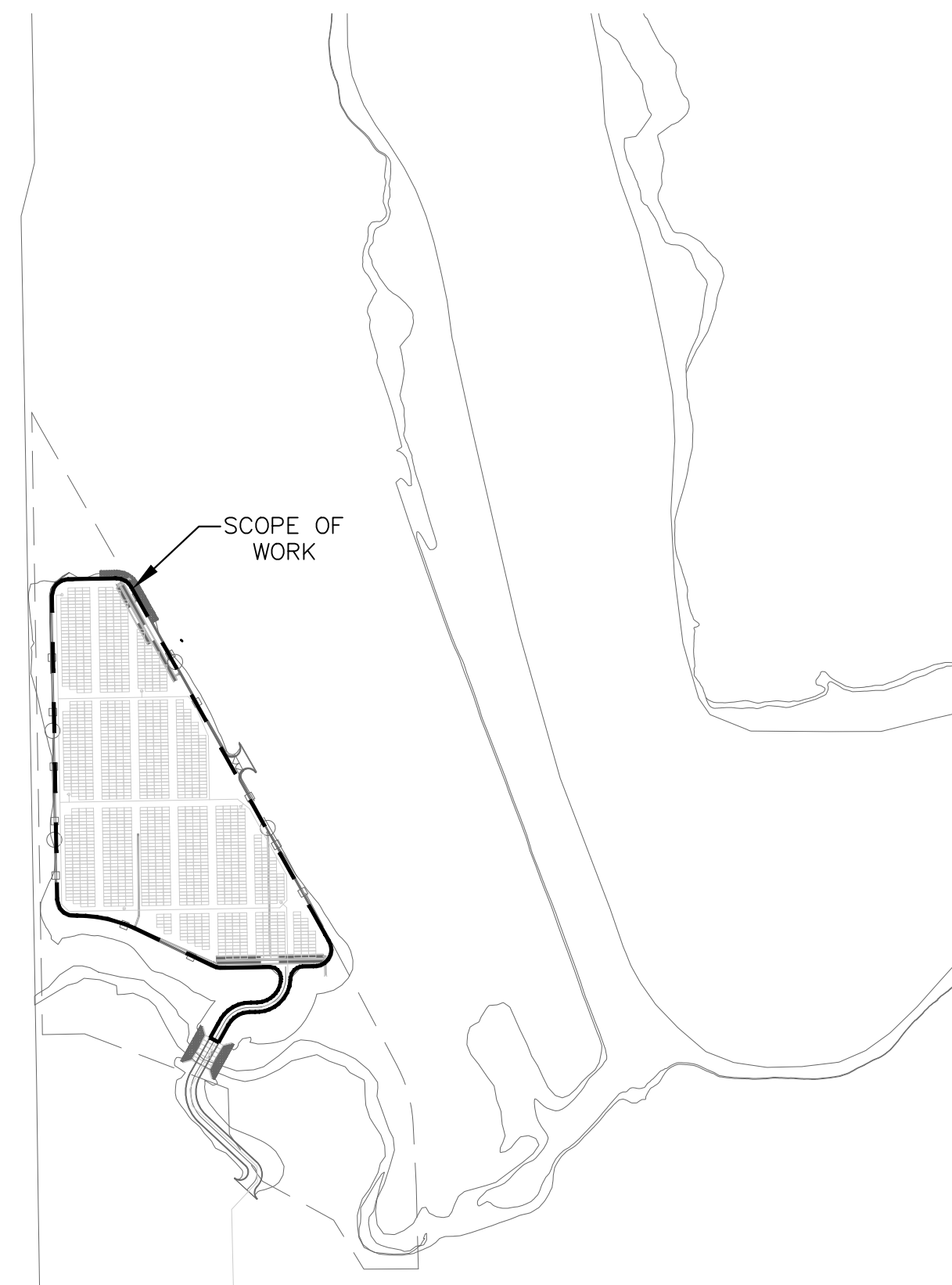
**DIG WARNING**  
CALL 8-1-1 OR AS REQUIRED BY REGION 2-3 DAYS PRIOR TO DIGGING, ITS THE LAW.



**ARDEBILI**  
**Engineering**  
7328 E Stetson Dr.  
Scottsdale, AZ 85261  
P: 480.626.7072 | ardebileng.com  
Project Number: 26181  
Design Engineer: OT

**PROPOSED CARVANA/ADESA EXPANSION LOT**

ADDRESS  
10610 CHARTER OAK RANCH RD  
FOUNTAIN, CO 80817



**1** OVERALL SITE KEY PLAN  
SCALE: N.T.S.

Project No:	26181	
Date:	04/22/2026	
Drawn By:	DL	
Reviewed By:	PC	
No:	Revision	Date

Sheet Title:  
ELECTRICAL  
GENERAL NOTES &  
LEGEND  
Sheet No.:

**EO.1**



### Compliance Certificate

#### Project Information

Energy Code: 2021 IECC  
 Project Title: 26181 - Carvana - Fountain, CO  
 Location: Fountain, Colorado  
 Climate Zone: 5b  
 Project Type: New Construction  
 Project No: 104420  
 All Electric: false  
 Is Renewable: false  
 Has Battery: false  
 Has Charger: false  
 Has Heat Pump: false

Construction Site: Owner/Agent Designer/Contractor:

Notes:

#### Building Area

Description	Floor Area
-------------	------------

Report Title: 26181 - Carvana - Fountain, CO

Report Date: Apr 22, 2026, 03:50 PM

1 of 6

Report Title: 26181 - Carvana - Fountain, CO

Report Date: Apr 22, 2026, 03:50 PM

2 of 6

OMAR THAIBER, D.E.

Omar Thauber

04/22/26

Name - Title

Signature

Date



### Exterior Lighting Compliance Certificate

#### Project Information

Energy Code: 2021 IECC  
 Project Title: 26181 - Carvana - Fountain, CO  
 Location: Fountain, Colorado  
 Climate Zone: 5b  
 Project Type: New Construction  
 Exterior Lighting Zone: Other (L23)

Construction Site: Owner/Agent Designer/Contractor:

#### Allowed Exterior Lighting Power

Area/Surface Category	Quantity	Allowed Watts / ft2	Tradable Wattage	Allowed Watts (B X C)
Ext Area (Parking area)	335715.92	0.06	No	20142.899999999998
Total Tradable Watts (a):				20142.9
Base Site Allowance (b):				500
Total Allowed Watts:				20642.9

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.  
 (b) A base site allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

#### Proposed Exterior Lighting Power

Fixture ID - Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/Fixture	C # of Fixture	D Fixture Watt. (C X D)	E
Ext Area (Parking area, 335715.92) - Tradable Wattage				
S1: S1: LED	0	12	624	7488
S2: S2: LED	0	3	194	582
Total Tradable Proposed Watts:				8070

#### Proposed Exterior Lighting Controls

Fixture	Lighting Control
Ext Area (Parking area, 335715.92)	
S1: S1: LED	Daylight Shutoff, Exterior Timeswitch
S2: S2: LED	Daylight Shutoff, Exterior Timeswitch

Exterior Lighting PASSES: Design 61% better than code

#### Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2021 IECC requirements in COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Report Title: 26181 - Carvana - Fountain, CO

Report Date: Apr 22, 2026, 03:50 PM

1 of 6

Report Title: 26181 - Carvana - Fountain, CO

Report Date: Apr 22, 2026, 03:50 PM

2 of 6

Report Title: 26181 - Carvana - Fountain, CO

Report Date: Apr 22, 2026, 03:50 PM

3 of 6

Report Title: 26181 - Carvana - Fountain, CO

Report Date: Apr 22, 2026, 03:50 PM

4 of 6



### Inspection Checklist

Energy Code: 2021 IECC

Requirements: 0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

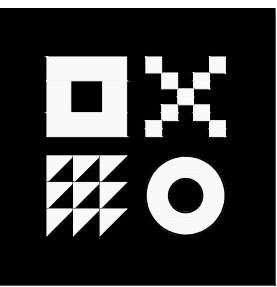
#### Plan Review

Section # & ReqID	Plan Review	Complies?	Comments/Assumptions
C405 (P18)	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C103.2 (P18)	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

#### Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
---	----------------------	---	------------------------	---	---------------------

**DIG WARNING**  
 CALL 8-1-1 OR AS REQUIRED BY  
 REGION 2-3 DAYS PRIOR TO  
 DIGGING, ITS THE LAW.



**ARDEBILI Engineering**  
 7328 E Stetson Dr.  
 Scottsdale, AZ 85261  
 P: 480.626.7072 | ardebilieng.com  
 Project Number: 26181  
 Design Engineer: OT

PROPOSED CARVANA/ADESA EXPANSION LOT

ADDRESS  
 10610 CHARTER OAK RANCH RD  
 FOUNTAIN, CO 80817



Project No: 26181  
 Date: 04/22/2026  
 Drawn By: DL  
 Reviewed By: PC

No	Revision	Date

Sheet Title:  
 ELECTRICAL IECC  
 REPORT/LIGHTING  
 SCHEDULE  
 Sheet No.:

**EO.2**

LUMINAIRE SCHEDULE							
CALLOUT	SYMBOL	LAMP	MODEL	DESCRIPTION	BALLAST	MOUNTING	VOLTS
S1		(2) 312W LED	LITHONIA LIGHTING (2) RSX3 LED P4 40K R5 MVOLT SPA (FINISH) / SSS 32.5' W/2.5' BASE	TWIN-HEAD AREA LUMINAIRE WITH P4 PERFORMANCE PACKAGE AND TYPE 5 OPTICS.	ELECTRONIC	POLE	480V 2P 2W
S2		(1) 194W LED	LITHONIA LIGHTING RSX3 LED P1 40K R2 MVOLT SPA (FINISH) / SSS 32.5' W/2.5' BASE	SINGLE-HEAD AREA LUMINAIRE WITH P1 PERFORMANCE PACKAGE AND TYPE 2 OPTICS	ELECTRONIC	POLE	480V 2P 2W

ELECTRICAL CONTRACTOR SHALL COORDINATE COMPATIBILITY OF LIGHT FIXTURES AND LIGHTING CONTROL DEVICES/SYSTEM WITH CONTROL SYSTEM SUPPLIER PRIOR TO ORDERING/BID/ROUGH-IN.

Report Title: 26181 - Carvana - Fountain, CO

Report Date: Apr 22, 2026, 03:50 PM

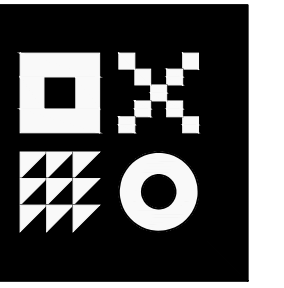
5 of 6

Report Title: 26181 - Carvana - Fountain, CO

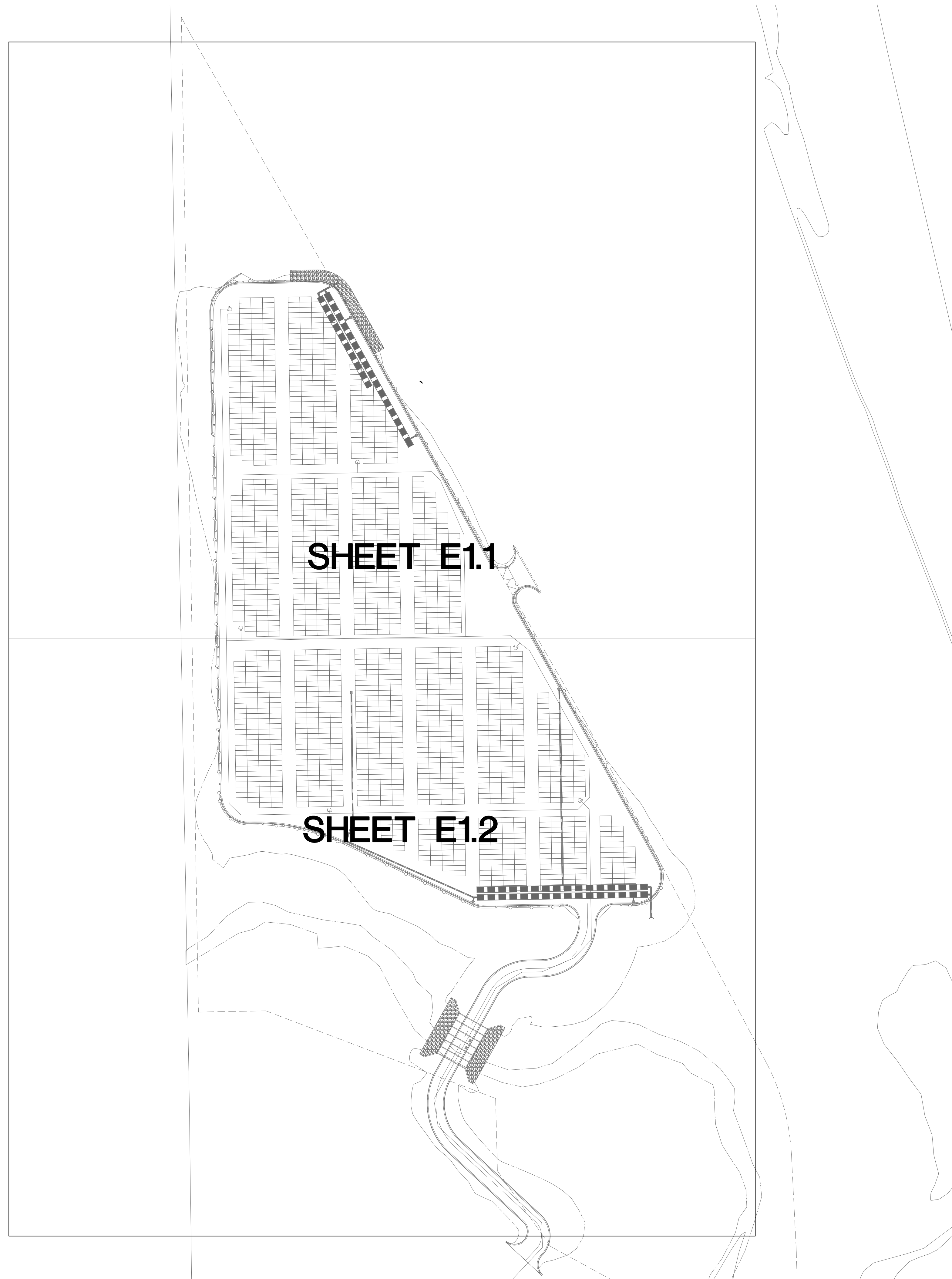
Report Date: Apr 22, 2026, 03:50 PM

6 of 6

DIG WARNING  
CALL 8-1-1 OR AS REQUIRED BY  
REGION 2-3 DAYS PRIOR TO  
DIGGING, ITS THE LAW.



**ARDEBILI**  
Engineering  
7328 E Stetson Dr.  
Scottsdale, AZ 85251  
P: 480.626.7072 | ardebileng.com  
Project Number: 26181  
Design Engineer: OT



SHEET E1.1

SHEET E1.2

1 OVERALL SITE LIGHTING KEY PLAN  
SCALE: 1" = 100'

PROPOSED CARVANA/ADESA EXPANSION LOT

ADDRESS  
10610 CHARTER OAK RANCH RD  
FOUNTAIN, CO 80817

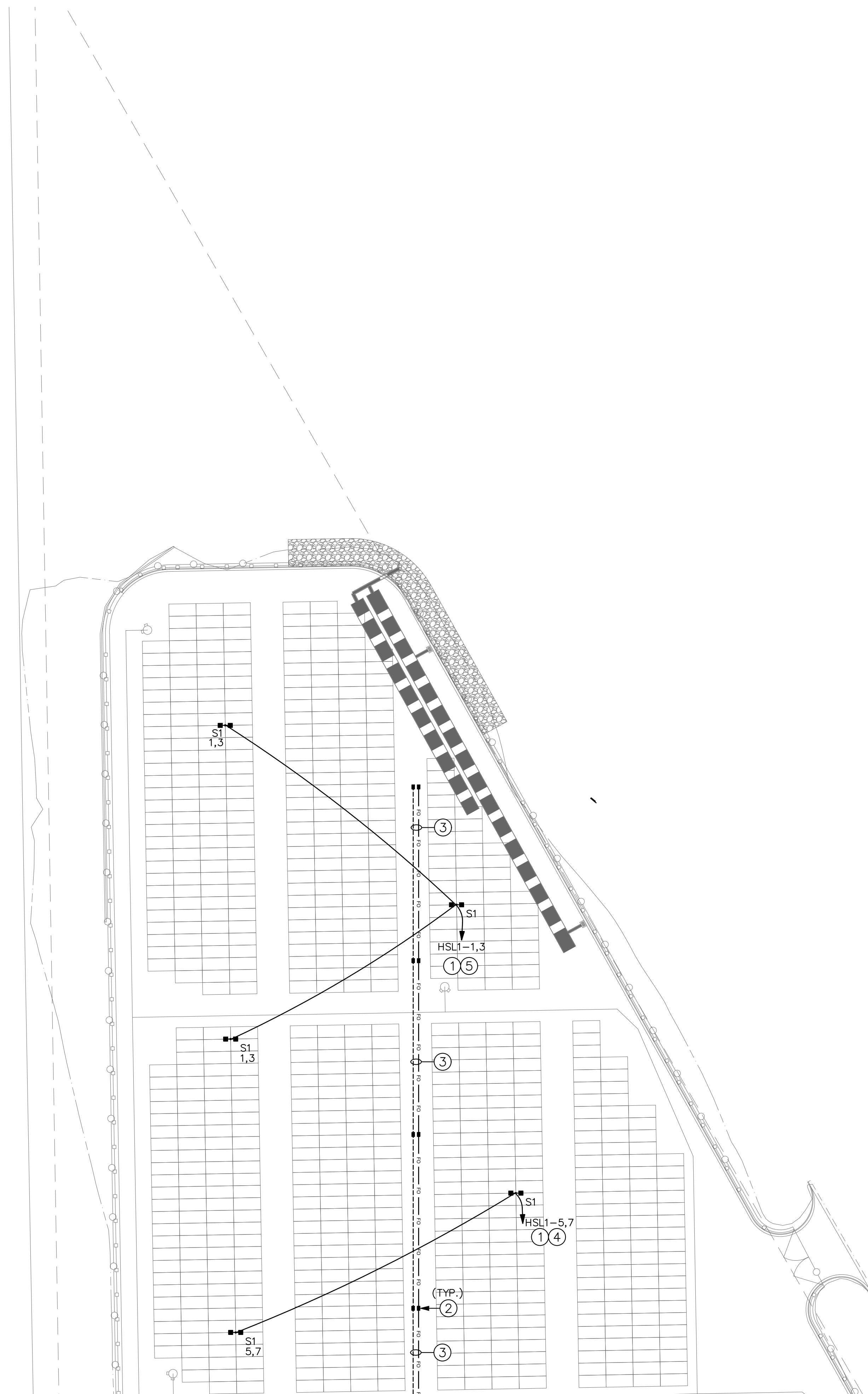


Project No: 26181  
Date: 04/22/2026  
Drawn By: DL  
Reviewed By: PC

No.	Revision	Date

Sheet Title:  
OVERALL SITE  
LIGHTING KEY PLAN

Sheet No.:  
**E1.0**



MATCH LINE - SEE SHEET E1.2 FOR CONTINUATION

1 ELECTRICAL SITE LIGHTING PLAN (PARTIAL)  
SCALE: 1"=50'-0"

**GENERAL NOTES**

- A. ALL EXTERIOR LIGHT FIXTURES TO COMPLY WITH LOCAL NIGHT SKY ORDINANCE.
- B. ALL EXTERIOR LIGHTING AND SIGNAGE TO BE FED WITH #10 CU. U.N.O.
- C. ALL EXTERIOR ELECTRICAL EQUIPMENT TO BE NEMA-3R RATED.
- D. CONTRACTOR TO COORDINATE EXACT SITE LIGHTING FIXTURE LOCATIONS WITH LANDSCAPE DRAWINGS.
- E. ALL FIXTURES INSTALLED OUTDOORS SHALL BE RATED FOR DAMP/WET LOCATIONS AS REQUIRED. THE CONTRACTOR SHALL COORDINATE DAMP/WET LOCATION RATING PER NEC ARTICLE 410-4. ALL INSTALLATIONS SHALL CONFORM TO NEC ARTICLE 410, ALL SUB ARTICLES.
- F. FIRE ALARM EQUIPMENT SHALL BE COORDINATED FOR EXACT LOCATION AND REQUIREMENTS WITH FIRE MARSHALL.
- G. ALL PVC CONDUIT MUST HAVE A MINIMUM OF #12 CU. GROUND CONDUCTOR.
- H. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND SCHEDULING WITH POWER AND TELEPHONE UTILITY COMPANIES INCLUDING PROVIDING (2) COMPLETE SETS OF DRAWINGS TO EACH COMPANY. ALL WORK SHALL BE INSTALLED PER EACH UTILITY COMPANIES FINAL DESIGN DRAWINGS.
- I. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL EXTERIOR LIGHT FIXTURES WITH ARCHITECTURAL DRAWINGS.

**KEYED NOTES**

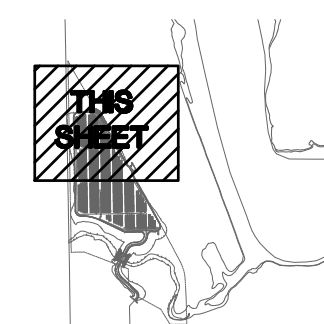
- 1. CONDUIT RUN SHOWN FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER DISCIPLINES/VENDORS AND INTEGRATE INTO NEW MAIN INFRASTRUCTURE PULL BOX LOCATIONS INDICATED ON DRAWING, SEE KEYED NOTE 2. CIRCUIT THROUGH LIGHTING CONTRACTOR. SEE DETAIL "TC" ON SHEET E4.0 FOR ADDITIONAL INFORMATION.
- 2. PROVIDE TRAFFIC RATED PULL BOX. ELECTRICAL CONTRACTOR TO COORDINATE EXACT LOCATION AND SIZE WITH ARCHITECT PRIOR TO INSTALLATION. SEE DETAIL ON SHEET E4.0. BOXES TO INCLUDE SOME LABELING "480V", "208V", "COMM".
- 3. THIS IS A MAIN INFRASTRUCTURE SYSTEM FOR SITE INTEGRATION AND CONDUIT SUPPORT SHOWN FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR WILL PROVIDE (1) PULL BOX FOR 480V CIRCUITS, (1) PULL BOX FOR 120/208V CIRCUITS, AND ONE PULL BOX FOR COMMUNICATIONS PER POWER DRAWINGS. UTILIZE MEANS AND METHODS TO CONFIRM 300' MAX DISTANCE BETWEEN PULL BOX AND FURTHEST CIRCUIT. PROVIDE 4" SCHEDULE 40 PVC CONDUITS AS NEEDED TO PROVIDE INFRASTRUCTURE BACKHAUL ROUTING TO PANEL SYSTEMS. PROVIDE (1) 4" SPARE CONDUIT WITH PULL WIRE FOR EACH INDEPENDENT SYSTEM.
- 4. PROVIDE (4) 1" SCHEDULE 40 PVC: (1) 1"C WITH (2)#10, (1) #10 GND. CONDUCTORS FOR LIGHTING, (1) 1" EMPTY CONDUIT WITH PULL ROPE FOR COMM SYSTEM, (1) 1"C [SEE SHEETS E2.0-E2.2] FOR POWER, AND (1) 1" EMPTY CONDUIT WITH PULL ROPE AS SPARE. VERIFY EXACT ROUTING PRIOR TO INSTALLATION. TRENCH, BACKFILL, AND REPAIR LANDSCAPE/HARDSCAPE AS REQUIRED. ADHERE TO NEC 300.5 FOR BURIAL DEPTHS.
- 5. PROVIDE (4) 1" SCHEDULE 40 PVC: (1) 1"C WITH (2)#8, (1) #8 GND. CONDUCTORS FOR LIGHTING, (1) 1" EMPTY CONDUIT WITH PULL ROPE FOR COMM SYSTEM, (1) 1"C [SEE SHEETS E2.0-E2.2] FOR POWER, AND (1) 1" EMPTY CONDUIT WITH PULL ROPE AS SPARE. VERIFY EXACT ROUTING PRIOR TO INSTALLATION. TRENCH, BACKFILL, AND REPAIR LANDSCAPE/HARDSCAPE AS REQUIRED. ADHERE TO NEC 300.5 FOR BURIAL DEPTHS.

**CONDUIT ROUTING NOTE**

CONDUIT ROUTING IS SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL FIELD COORDINATE EXACT CONDUIT ROUTING WITH ARCHITECT PRIOR TO INSTALLATION. ROUTE FEEDERS CONCEALED BELOW GRADE ONSITE AND CONCEALED FROM PUBLIC VIEW WITHIN SPACE WHEN POSSIBLE.

**NOTE**

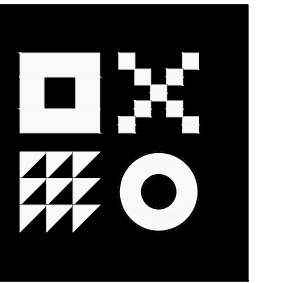
ALL UNDERGROUND CONDUIT FOR BRANCH CIRCUITS SHALL BE A MINIMUM OF 24" BELOW GRADE, OR PER NEC TABLE 300.5.



2 OVERALL SITE KEY PLAN  
SCALE: N.T.S.

**DIG WARNING**

CALL 8-1-1 OR AS REQUIRED BY REGION 2-3 DAYS PRIOR TO DIGGING, ITS THE LAW.



**ARDEBILI**

Engineering  
7328 E Stetson Dr.  
Scottsdale, AZ 85251  
P: 480.626.7072 | ardebiling.com  
Project Number: 26181  
Design Engineer: OT

PROPOSED CARVANA/ADESA EXPANSION LOT

ADDRESS  
10610 CHARTER OAK RANCH RD  
FOUNTAIN, CO 80817



Project No: 26181  
Date: 04/22/2026  
Drawn By: DL  
Reviewed By: PC

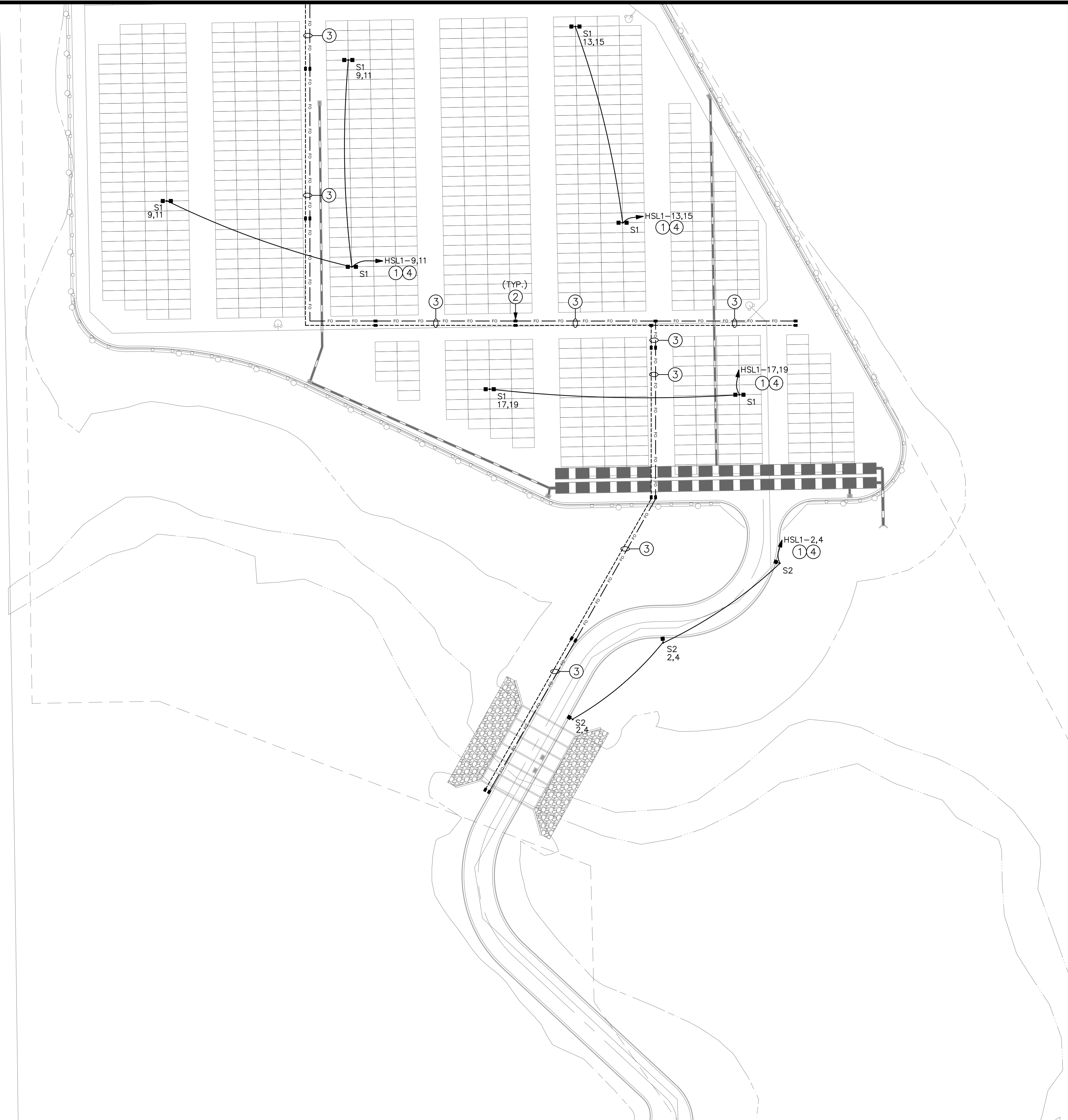
No	Revision	Date

Sheet Title:  
ELECTRICAL SITE LIGHTING PLAN

Sheet No.:

**E1.1**

MATCH LINE - SEE SHEET E1.1 FOR CONTINUATION



**GENERAL NOTES**

- A. ALL EXTERIOR LIGHT FIXTURES TO COMPLY WITH LOCAL NIGHT SKY ORDINANCE.
- B. ALL EXTERIOR LIGHTING AND SIGNAGE TO BE FED WITH #10 CU. U.N.O.
- C. ALL EXTERIOR ELECTRICAL EQUIPMENT TO BE NEMA-3R RATED.
- D. CONTRACTOR TO COORDINATE EXACT SITE LIGHTING FIXTURE LOCATIONS WITH LANDSCAPE DRAWINGS.
- E. ALL FIXTURES INSTALLED OUTDOORS SHALL BE RATED FOR DAMP/WET LOCATIONS AS REQUIRED. THE CONTRACTOR SHALL COORDINATE DAMP/WET LOCATION RATING PER NEC ARTICLE 410-4. ALL INSTALLATIONS SHALL CONFORM TO NEC ARTICLE 410, ALL SUB ARTICLES.
- F. FIRE ALARM EQUIPMENT SHALL BE COORDINATED FOR EXACT LOCATION AND REQUIREMENTS WITH FIRE MARSHALL.
- G. ALL PVC CONDUIT MUST HAVE A MINIMUM OF #12 CU. GROUND CONDUCTOR.
- H. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND SCHEDULING WITH POWER AND TELEPHONE UTILITY COMPANIES INCLUDING PROVIDING (2) COMPLETE SETS OF DRAWINGS TO EACH COMPANY. ALL WORK SHALL BE INSTALLED PER EACH UTILITY COMPANIES FINAL DESIGN DRAWINGS.
- I. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL EXTERIOR LIGHT FIXTURES WITH ARCHITECTURAL DRAWINGS.

**KEYED NOTES**

- 1. CONDUIT RUN SHOWN FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER DISCIPLINES/VENDORS AND INTEGRATE INTO NEW MAIN INFRASTRUCTURE PULL BOX LOCATIONS INDICATED ON DRAWING, SEE KEYED NOTE 2. CIRCUIT THROUGH LIGHTING CONTRACTOR. SEE DETAIL "TC" ON SHEET E4.0 FOR ADDITIONAL INFORMATION.
- 2. PROVIDE TRAFFIC RATED PULL BOX. ELECTRICAL CONTRACTOR TO COORDINATE EXACT LOCATION AND SIZE WITH ARCHITECT PRIOR TO INSTALLATION. SEE DETAIL ON SHEET E4.0. BOXES TO INCLUDE SOME LABELING "480V", "208V", "COMM".
- 3. THIS IS A MAIN INFRASTRUCTURE SYSTEM FOR SITE INTEGRATION AND CONDUIT SUPPORT SHOWN FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR WILL PROVIDE (1) PULL BOX FOR 480V CIRCUITS, (1) PULL BOX FOR 120/208V CIRCUITS, AND ONE PULL BOX FOR COMMUNICATIONS PER POWER DRAWINGS. UTILIZE MEANS AND METHODS TO CONFIRM 300' MAX DISTANCE BETWEEN PULL BOX AND FURTHEST CIRCUIT. PROVIDE 4" SCHEDULE 40 PVC CONDUITS AS NEEDED TO PROVIDE INFRASTRUCTURE BACKHAUL ROUTING TO PANEL SYSTEMS. PROVIDE (1) 4" SPARE CONDUIT WITH PULL WIRE FOR EACH INDEPENDENT SYSTEM.
- 4. PROVIDE (4) 1" SCHEDULE 40 PVC: (1) 1" C WITH (2)#10, (1) #10 GND. CONDUCTORS FOR LIGHTING, (1) 1" EMPTY CONDUIT WITH PULL ROPE FOR COMM SYSTEM, (1) 1" C [SEE SHEETS E2.0-E2.2] FOR POWER, AND (1) 1" EMPTY CONDUIT WITH PULL ROPE AS SPARE. VERIFY EXACT ROUTING PRIOR TO INSTALLATION. TRENCH, BACKFILL, AND REPAIR LANDSCAPE/HARDSCAPE AS REQUIRED. ADHERE TO NEC 300.5 FOR BURIAL DEPTHS.
- 5. PROVIDE (4) 1" SCHEDULE 40 PVC: (1) 1" C WITH (2)#8, (1) #8 GND. CONDUCTORS FOR LIGHTING, (1) 1" EMPTY CONDUIT WITH PULL ROPE FOR COMM SYSTEM, (1) 1" C [SEE SHEETS E2.0-E2.2] FOR POWER, AND (1) 1" EMPTY CONDUIT WITH PULL ROPE AS SPARE. VERIFY EXACT ROUTING PRIOR TO INSTALLATION. TRENCH, BACKFILL, AND REPAIR LANDSCAPE/HARDSCAPE AS REQUIRED. ADHERE TO NEC 300.5 FOR BURIAL DEPTHS.

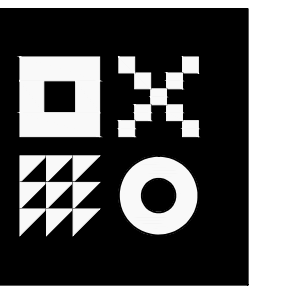
**CONDUIT ROUTING NOTE**

CONDUIT ROUTING IS SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL FIELD COORDINATE EXACT CONDUIT ROUTING WITH ARCHITECT PRIOR TO INSTALLATION. ROUTE FEEDERS CONCEALED BELOW GRADE ONSITE AND CONCEALED FROM PUBLIC VIEW WITHIN SPACE WHEN POSSIBLE.

**NOTE**

ALL UNDERGROUND CONDUIT FOR BRANCH CIRCUITS SHALL BE A MINIMUM OF 24" BELOW GRADE, OR PER NEC TABLE 300.5.

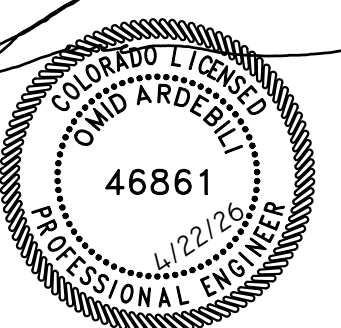
**DIG WARNING**  
CALL 8-1-1 OR AS REQUIRED BY REGION 2-3 DAYS PRIOR TO DIGGING, ITS THE LAW.



**ARDEBILI**  
Engineering  
7328 E Stetson Dr.  
Scottsdale, AZ 85251  
P: 480.626.7072 | ardebiling.com  
Project Number: 26181  
Design Engineer: OT

**PROPOSED CARVARNA/ADESA EXPANSION LOT**

ADDRESS  
10610 CHARTER OAK RANCH RD  
FOUNTAIN, CO 80817



Project No: 26181  
Date: 04/22/2026  
Drawn By: DL  
Reviewed By: PC

No.	Revision	Date

Sheet Title:  
ELECTRICAL SITE LIGHTING PLAN

Sheet No.:

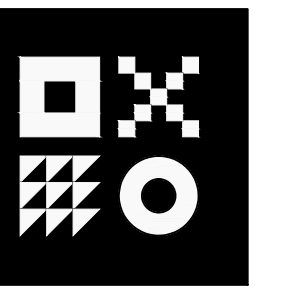
**E1.2**

**1** ELECTRICAL SITE LIGHTING PLAN (PARTIAL)  
SCALE: 1"=50'-0"

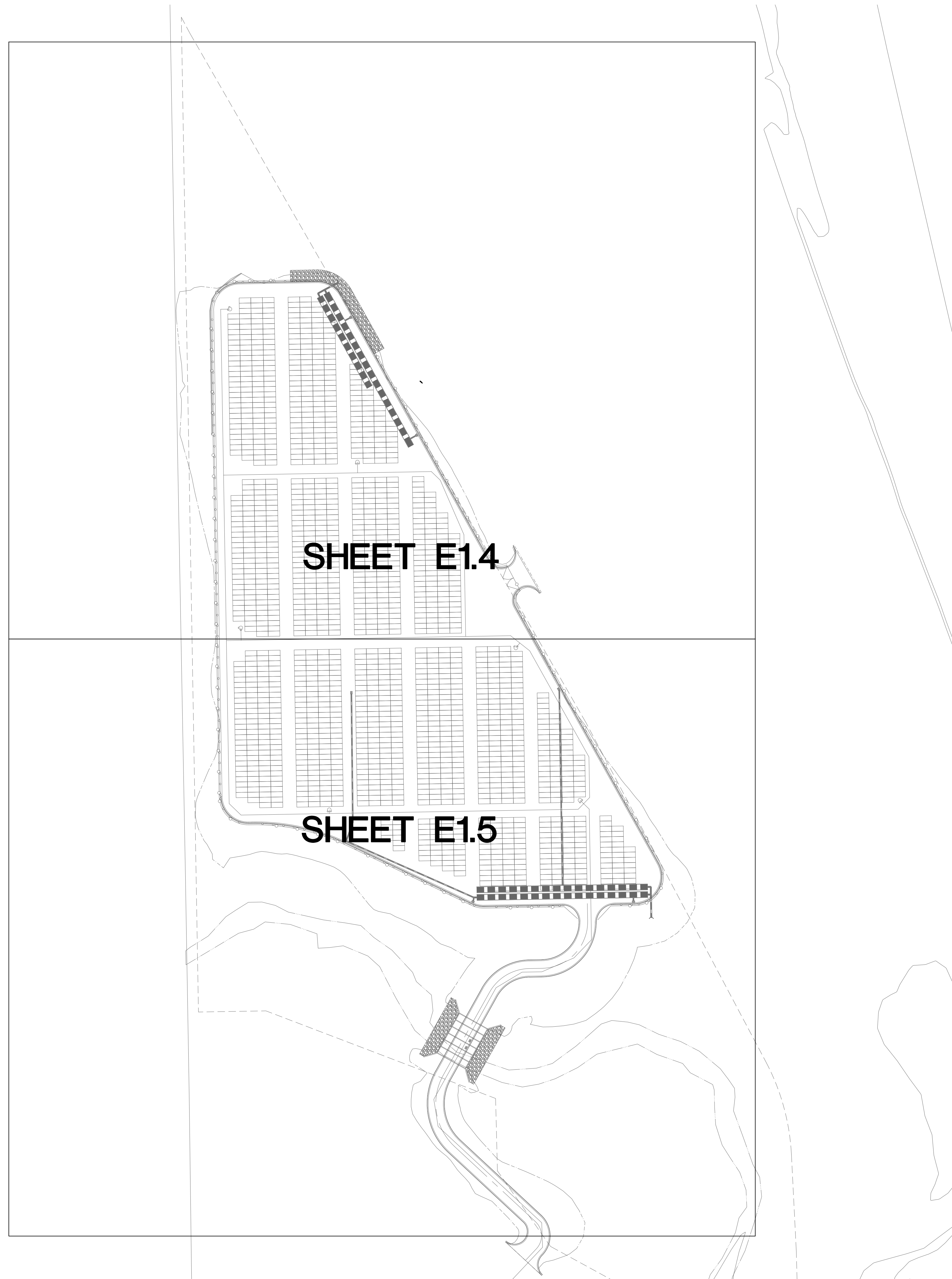
**2** OVERALL SITE KEY PLAN  
SCALE: N.T.S.



**DIG WARNING**  
 CALL 8-1-1 OR AS REQUIRED BY  
 REGION 2-3 DAYS PRIOR TO  
 DIGGING, ITS THE LAW.



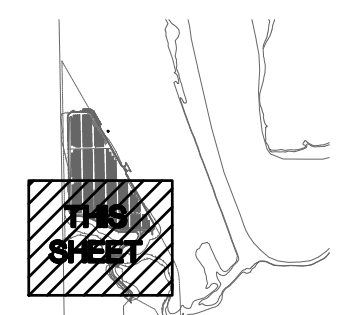
**ARDEBILI**  
**Engineering**  
 7328 E Stetson Dr.  
 Scottsdale, AZ 85251  
 P: 480.626.7072 | ardebiling.com  
 Project Number: 26181  
 Design Engineer: OT



**SHEET E1.4**

**SHEET E1.5**

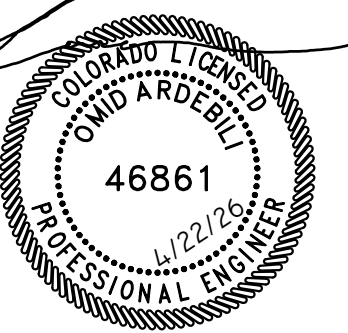
**1** OVERALL SITE PHOTOMETRIC KEY PLAN  
 SCALE: 1" = 100'



**2** OVERALL SITE KEY PLAN  
 SCALE: N.T.S.

**PROPOSED CARVANA/ADESA EXPANSION LOT**

ADDRESS  
 10610 CHARTER OAK RANCH RD  
 FOUNTAIN, CO 80817



Project No: 26181  
 Date: 04/22/2026  
 Drawn By: DL  
 Reviewed By: PC

No.	Revision	Date

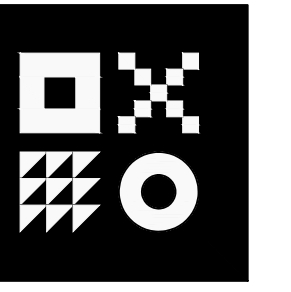
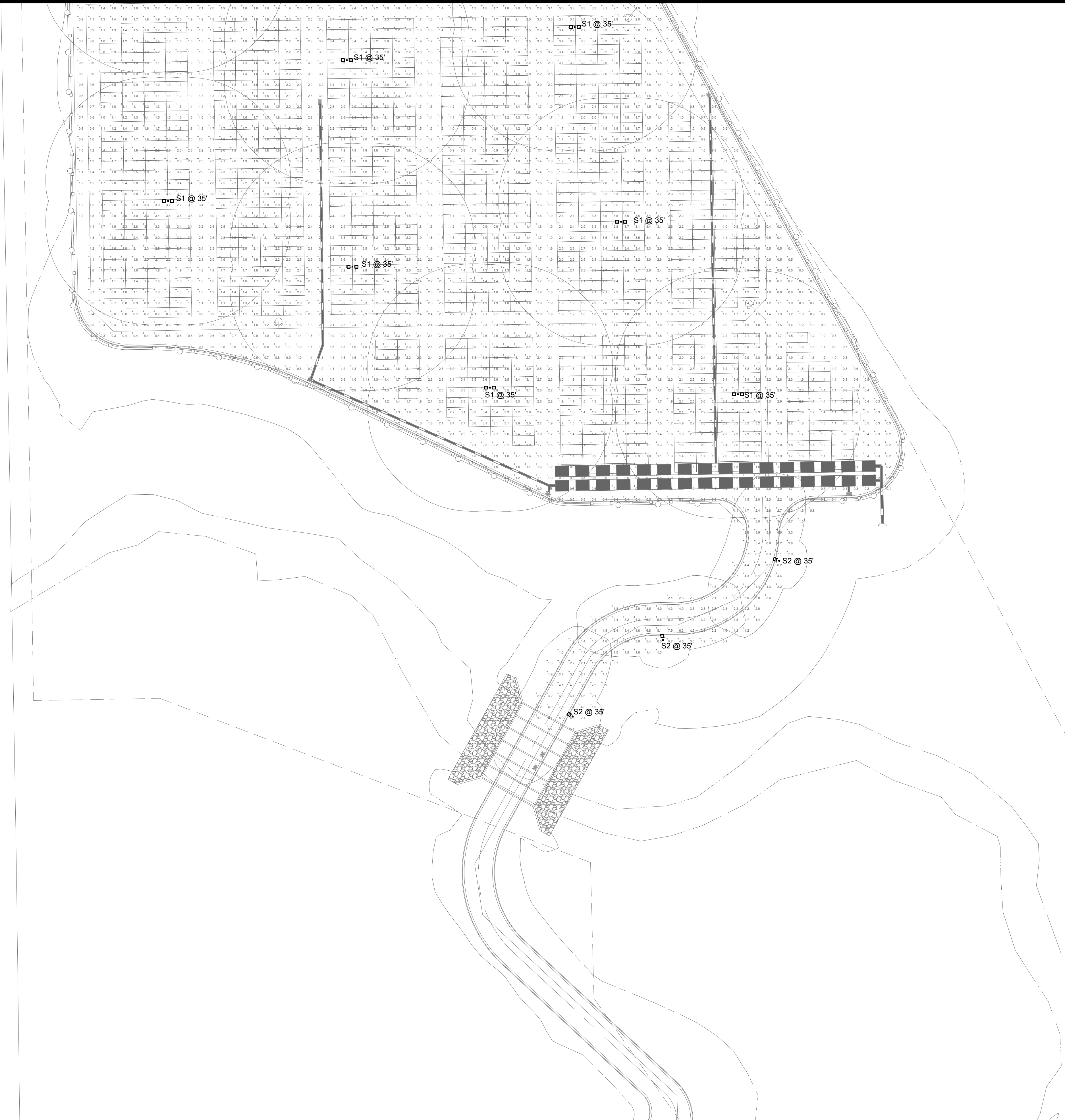
Sheet Title:  
 OVERALL SITE  
 PHOTOMETRIC KEY  
 PLAN  
 Sheet No.:

**E1.3**



MATCH LINE - SEE SHEET E1.4 FOR CONTINUATION

DIG WARNING  
CALL 8-1-1 OR AS REQUIRED BY  
REGION 2-3 DAYS PRIOR TO  
DIGGING, ITS THE LAW.



**ARDEBILI**  
Engineering  
7328 E Stetson Dr.  
Scottsdale, AZ 85251  
P: 480.626.7072 | ardebiling.com  
Project Number: 26181  
Design Engineer: OT

**PROPOSED CARVARNA/ADESA EXPANSION LOT**

ADDRESS  
10610 CHARTER OAK RANCH RD  
FOUNTAIN, CO 80817



Project No: 26181  
Date: 04/22/2026  
Drawn By: DL  
Reviewed By: PC

No	Revision	Date

Sheet Title:  
ELECTRICAL SITE  
PHOTOMETRIC PLAN

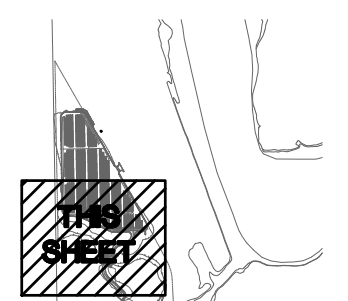
Sheet No.:

**E1.5**

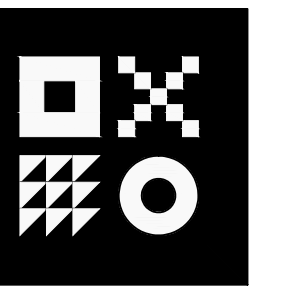
1 ELECTRICAL SITE PHOTOMETRIC PLAN (PARTIAL)  
SCALE: 1"=50'-0"



2 OVERALL  
SITE KEY PLAN  
SCALE: N.T.S.







**ARDEBILI**  
**Engineering**  
 7328 E Stetson Dr.  
 Scottsdale, AZ 85251  
 P: 480.626.7072 | ardebiling.com  
 Project Number: 26181  
 Design Engineer: OT

**PROPOSED CARVANA/ADESA EXPANSION LOT**

ADDRESS  
 10610 CHARTER OAK RANCH RD  
 FOUNTAIN, CO 80817

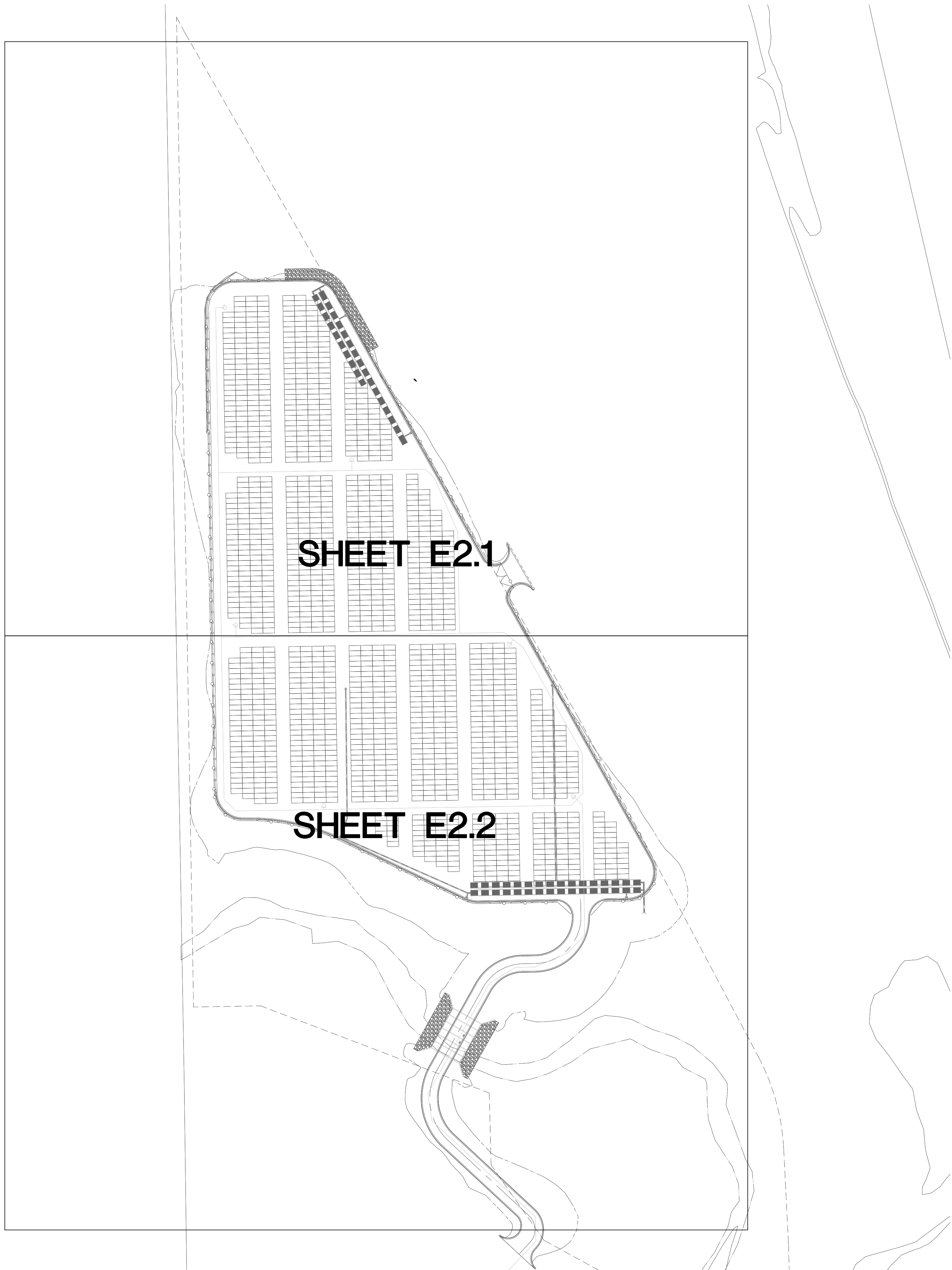


Project No: 26181  
 Date: 04/22/2026  
 Drawn By: DL  
 Reviewed By: PC

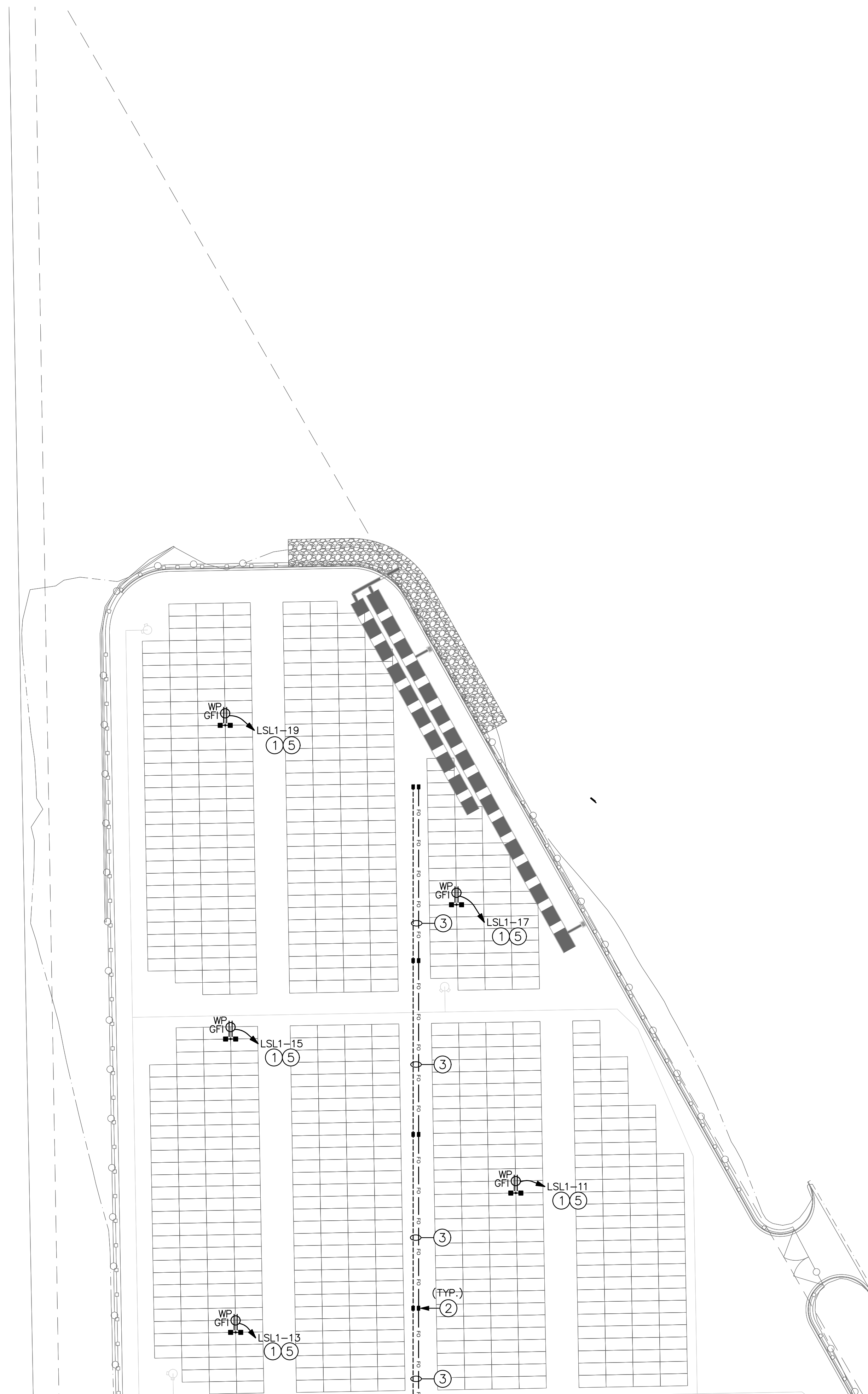
No.	Revision	Date

Sheet Title:  
**OVERALL SITE  
 POWER KEY PLAN**

Sheet No.:  
**E2.0**



**1 OVERALL SITE POWER KEY PLAN**  
 SCALE: 1" = 100'



MATCH LINE - SEE SHEET E2.2 FOR CONTINUATION

1 ELECTRICAL SITE POWER PLAN (PARTIAL)   
SCALE: 1"=50'-0"

**GENERAL NOTES**

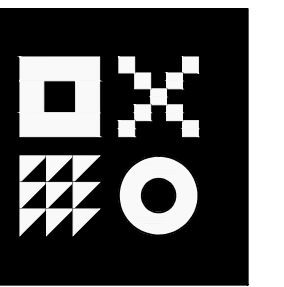
- A. ALL EXTERIOR LIGHT FIXTURES TO COMPLY WITH LOCAL NIGHT SKY ORDINANCE.
- B. ALL EXTERIOR LIGHTING AND SIGNAGE TO BE FED WITH #10 CU. U.N.O.
- C. ALL EXTERIOR ELECTRICAL EQUIPMENT TO BE NEMA-3R RATED.
- D. CONTRACTOR TO COORDINATE EXACT SITE LIGHTING FIXTURE LOCATIONS WITH LANDSCAPE DRAWINGS.
- E. ALL FIXTURES INSTALLED OUTDOORS SHALL BE RATED FOR DAMP/WET LOCATIONS AS REQUIRED. THE CONTRACTOR SHALL COORDINATE DAMP/WET LOCATION RATING PER NEC ARTICLE 410-4. ALL INSTALLATIONS SHALL CONFORM TO NEC ARTICLE 410, ALL SUB ARTICLES.
- F. FIRE ALARM EQUIPMENT SHALL BE COORDINATED FOR EXACT LOCATION AND REQUIREMENTS WITH FIRE MARSHALL.
- G. ALL PVC CONDUIT MUST HAVE A MINIMUM OF #12 CU. GROUND CONDUCTOR.
- H. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND SCHEDULING WITH POWER AND TELEPHONE UTILITY COMPANIES INCLUDING PROVIDING (2) COMPLETE SETS OF DRAWINGS TO EACH COMPANY. ALL WORK SHALL BE INSTALLED PER EACH UTILITY COMPANIES FINAL DESIGN DRAWINGS.
- I. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL EXTERIOR LIGHT FIXTURES WITH ARCHITECTURAL DRAWINGS.

**KEYED NOTES**

- 1. CONDUIT RUN SHOWN FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER DISCIPLINES/VENDORS AND INTEGRATE INTO NEW MAIN INFRASTRUCTURE PULL BOX LOCATIONS INDICATED ON DRAWING, SEE KEYED NOTE 2.
- 2. PROVIDE TRAFFIC RATED PULL BOX. ELECTRICAL CONTRACTOR TO COORDINATE EXACT LOCATION AND SIZE WITH ARCHITECT PRIOR TO INSTALLATION. SEE DETAIL ON SHEET E4.0. BOXES TO INCLUDE SOME LABELING "480V", "208V", "COMM".
- 3. THIS IS A MAIN INFRASTRUCTURE SYSTEM FOR SITE INTEGRATION AND CONDUIT SUPPORT SHOWN FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR WILL PROVIDE (1) PULL BOX FOR 480V CIRCUITS, (1) PULL BOX FOR 120/208V CIRCUITS, AND ONE PULL BOX FOR COMMUNICATIONS PER POWER DRAWINGS. UTILIZE MEANS AND METHODS TO CONFIRM 300' MAX DISTANCE BETWEEN PULL BOX AND FURTHEST CIRCUIT.
- 4. NOT USED.
- 5. PROVIDE (1) 1" SCHEDULE 40 PVC W/(2)#8, (1) #8 GND. FOR POWER. VERIFY EXACT ROUTING PRIOR TO INSTALLATION. TRENCH, BACKFILL, AND REPAIR LANDSCAPE/HARDSCAPE AS REQUIRED. ADHERE TO NEC 300.5 FOR BURIAL DEPTHS.

**DIG WARNING**

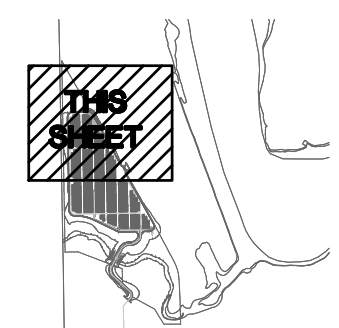
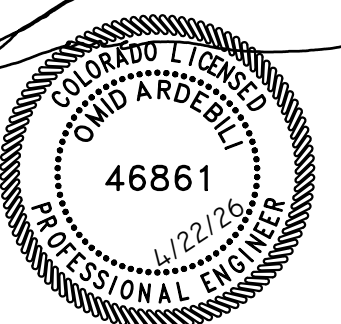
CALL 8-1-1 OR AS REQUIRED BY REGION 2-3 DAYS PRIOR TO DIGGING, ITS THE LAW.



**ARDEBILI**  
Engineering  
7328 E Stetson Dr.  
Scottsdale, AZ 85251  
P: 480.626.7072 | ardebiling.com  
Project Number: 26181  
Design Engineer: OT

**PROPOSED CARVANA/ADESA EXPANSION LOT**

ADDRESS  
10610 CHARTER OAK RANCH RD  
FOUNTAIN, CO 80817



2 OVERALL SITE KEY PLAN  
SCALE: N.T.S. 

Project No: 26181  
Date: 04/22/2026  
Drawn By: DL  
Reviewed By: PC

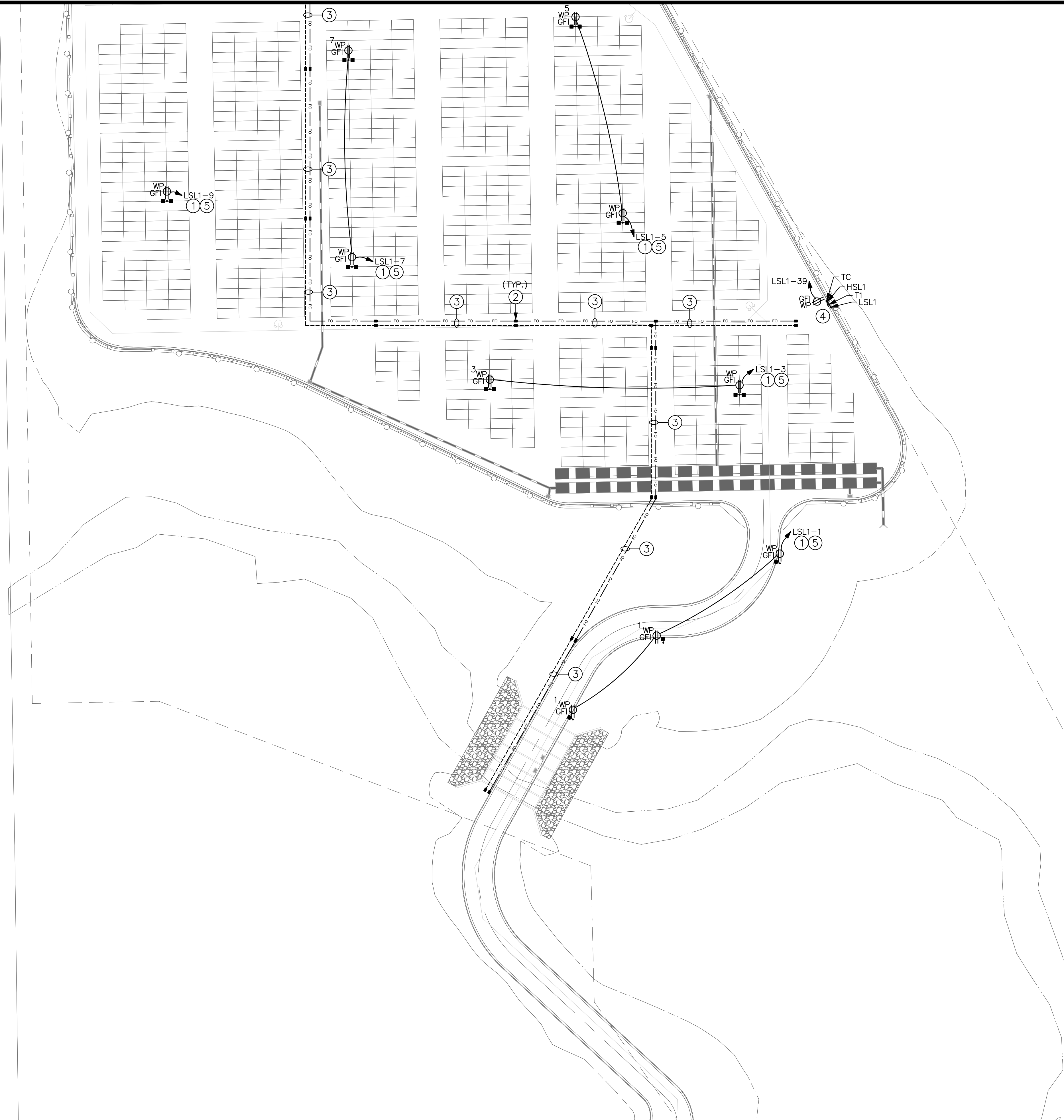
No.	Revision	Date

Sheet Title:  
ELECTRICAL SITE  
POWER PLAN

Sheet No.:

**E2.1**

MATCH LINE - SEE SHEET E2.1 FOR CONTINUATION



1 ELECTRICAL SITE POWER PLAN (PARTIAL)  
SCALE: 1"=50'-0"

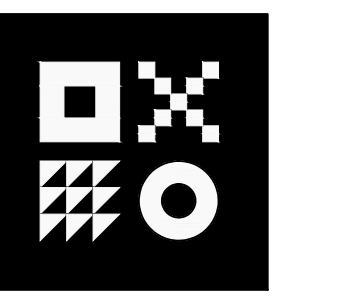
**GENERAL NOTES**

- A. ALL EXTERIOR LIGHT FIXTURES TO COMPLY WITH LOCAL NIGHT SKY ORDINANCE.
- B. ALL EXTERIOR LIGHTING AND SIGNAGE TO BE FED WITH #10 CU. U.N.O.
- C. ALL EXTERIOR ELECTRICAL EQUIPMENT TO BE NEMA-3R RATED.
- D. CONTRACTOR TO COORDINATE EXACT SITE LIGHTING FIXTURE LOCATIONS WITH LANDSCAPE DRAWINGS.
- E. ALL FIXTURES INSTALLED OUTDOORS SHALL BE RATED FOR DAMP/WET LOCATIONS AS REQUIRED. THE CONTRACTOR SHALL COORDINATE DAMP/WET LOCATION RATING PER NEC ARTICLE 410-4. ALL INSTALLATIONS SHALL CONFORM TO NEC ARTICLE 410, ALL SUB ARTICLES.
- F. FIRE ALARM EQUIPMENT SHALL BE COORDINATED FOR EXACT LOCATION AND REQUIREMENTS WITH FIRE MARSHALL.
- G. ALL PVC CONDUIT MUST HAVE A MINIMUM OF #12 CU. GROUND CONDUCTOR.
- H. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND SCHEDULING WITH POWER AND TELEPHONE UTILITY COMPANIES INCLUDING PROVIDING (2) COMPLETE SETS OF DRAWINGS TO EACH COMPANY. ALL WORK SHALL BE INSTALLED PER EACH UTILITY COMPANIES FINAL DESIGN DRAWINGS.
- I. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL EXTERIOR LIGHT FIXTURES WITH ARCHITECTURAL DRAWINGS.

**KEYED NOTES**

- 1. CONDUIT RUN SHOWN FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER DISCIPLINES/VENDORS AND INTEGRATE INTO NEW MAIN INFRASTRUCTURE PULL BOX LOCATIONS INDICATED ON DRAWING, SEE KEYED NOTE 2.
- 2. PROVIDE TRAFFIC RATED PULL BOX. ELECTRICAL CONTRACTOR TO COORDINATE EXACT LOCATION AND SIZE WITH ARCHITECT PRIOR TO INSTALLATION. SEE DETAIL ON SHEET E4.0. BOXES TO INCLUDE SOME LABELING "480V", "208V", "COMM".
- 3. THIS IS A MAIN INFRASTRUCTURE SYSTEM FOR SITE INTEGRATION AND CONDUIT SUPPORT SHOWN FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR WILL PROVIDE (1) PULL BOX FOR 480V CIRCUITS, (1) PULL BOX FOR 120/208V CIRCUITS, AND ONE PULL BOX FOR COMMUNICATIONS PER POWER DRAWINGS. UTILIZE MEANS AND METHODS TO CONFIRM 300' MAX DISTANCE BETWEEN PULL BOX AND FURTHEST CIRCUIT.
- 4. SEE SHEET E4.0 FOR UNISTRUT DETAIL, GUARD POSTS, UNDERGROUND CONCRETE PULL BOXES, AND COMMON UTILITY TRENCHING DETAIL.
- 5. PROVIDE (1) 1" SCHEDULE 40 PVC W/(2)#8, (1) #8 GND. FOR POWER. VERIFY EXACT ROUTING PRIOR TO INSTALLATION. TRENCH, BACKFILL, AND REPAIR LANDSCAPE/HARDSCAPE AS REQUIRED. ADHERE TO NEC 300.5 FOR BURIAL DEPTHS.

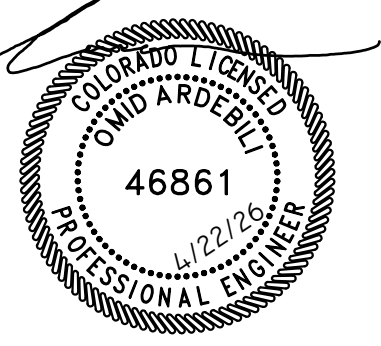
**DIG WARNING**  
CALL 8-1-1 OR AS REQUIRED BY REGION 2-3 DAYS PRIOR TO DIGGING, ITS THE LAW.



**ARDEBILI Engineering**  
7328 E Stetson Dr.  
Scottsdale, AZ 85251  
P: 480.626.7072 | ardebiling.com  
Project Number: 26181  
Design Engineer: OT

**PROPOSED CARVANA/ADESA EXPANSION LOT**

ADDRESS  
10610 CHARTER OAK RANCH RD  
FOUNTAIN, CO 80817



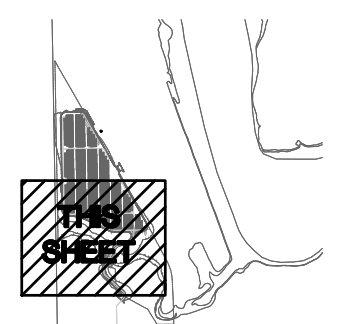
Project No: 26181  
Date: 04/22/2026  
Drawn By: DL  
Reviewed By: PC

No	Revision	Date

Sheet Title:  
**ELECTRICAL SITE POWER PLAN**

Sheet No.:  
**E2.2**

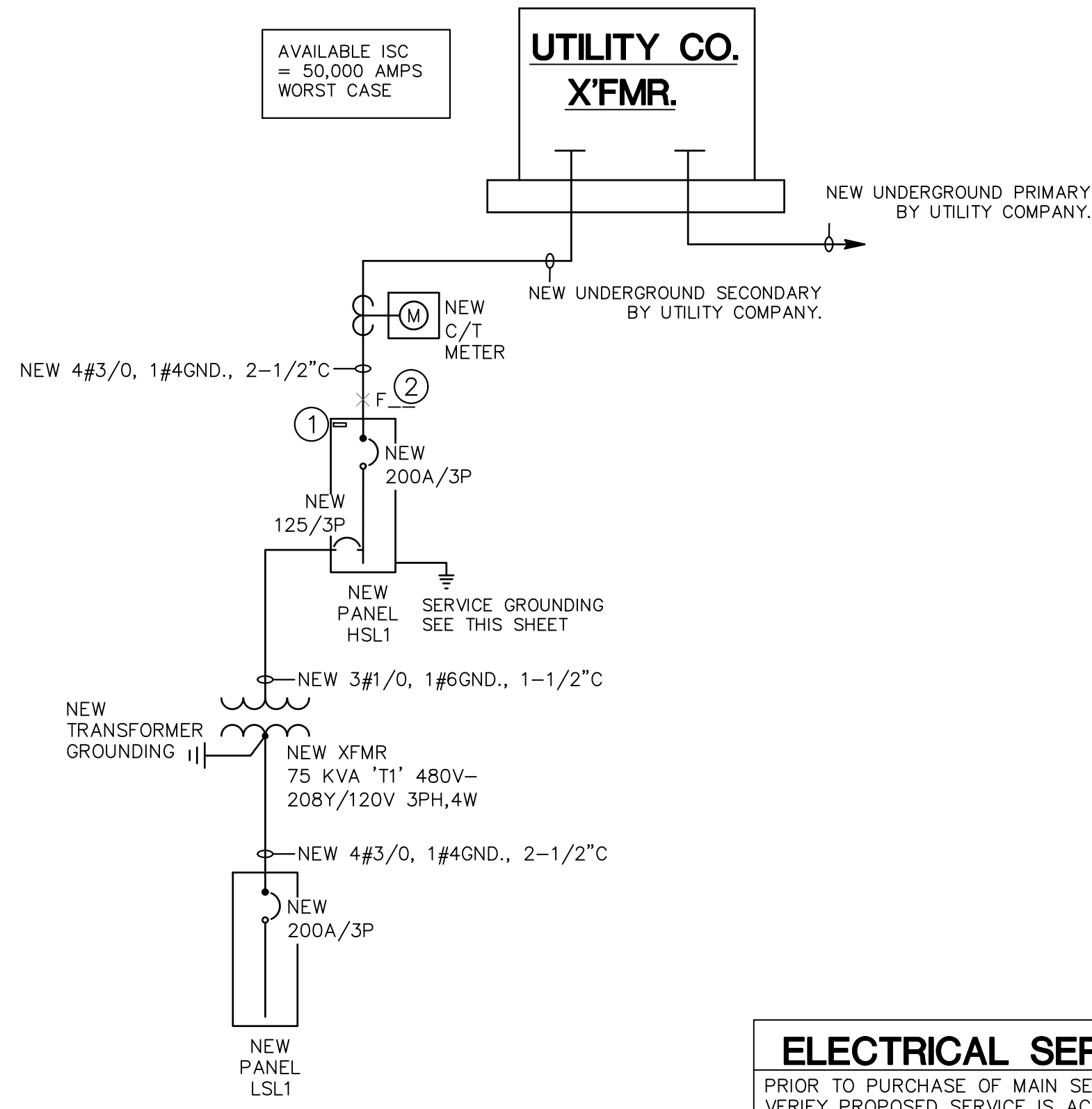
2 OVERALL SITE KEY PLAN  
SCALE: N.T.S.



HSL1		NEW PANEL, S.U.S.E. RATED									
ROOM EXTERIOR SITE	VOLTS 480Y/277V 3P 4W	AIC 65,000									
MOUNTING FLOOR	BUS AMPS 200	MAIN BKR 200									
FED FROM UTILITY	NEUTRAL 100%	LUGS STANDARD									
NOTE: NEMA-3R, PROVIDE UNISTRUT STRUCTURE											
CKT #	CKT BKR	CIRCUIT DESCRIPTION	KVA LOAD			CKT #	CKT BKR	CIRCUIT DESCRIPTION	KVA LOAD		
			A	B	C				A	B	C
1	20/2	LIGHTING	1.87			2	20/2	LIGHTING	0.292	0.292	
3						4					
5	20/2	LIGHTING	1.87			6	-/1	SPACE			
7						8	-/1	SPACE			
9	20/2	LIGHTING	1.25			10	-/1	SPACE			
11						12	-/1	SPACE			
13	20/2	LIGHTING	1.87			14	-/1	SPACE			
15						16	-/1	SPACE			
17	20/2	LIGHTING	1.25			18	-/1	SPACE			
19						20	-/1	SPACE			
21	-/1	SPACE				22	-/1	SPACE			
23	-/1	SPACE				24	-/1	SPACE			
25	-/1	SPACE				26	-/1	SPACE			
27	-/1	SPACE				28	-/1	SPACE			
29	-/1	SPACE				30	-/1	SPACE			
31	-/1	SPACE				32	-/1	SPACE			
33	-/1	SPACE				34	-/1	SPACE			
35	-/1	SPACE				36	-/1	SPACE			
37	-/1	SPACE				38	125/3	XFMR T1	1.24	1.08	
39	-/1	SPACE				40					
41	-/1	SPACE				42					
TOTAL CONNECTED KVA BY PHASE			7.15	6.36	5.43	TOTAL CONNECTED AMPS BY PHASE			25.9	23.2	19.7
CONN KVA			15.6	19.4	(125%)	RECEPTACLES			2.88	2.88	(50%>10)
CALC KVA						CONTINUOUS			0.5	0.625	(125%)
TOTAL LOAD						BALANCED 3-PHASE LOAD			23	27.6	A

LSL1		NEW PANEL									
ROOM EXTERIOR SITE	VOLTS 208Y/120V 3P 4W	AIC 10,000									
MOUNTING FLOOR	BUS AMPS 200	MAIN BKR 200									
FED FROM T1	NEUTRAL 100%	LUGS STANDARD									
NOTE: NEMA-3R, UNISTRUT MOUNTED											
CKT #	CKT BKR	CIRCUIT DESCRIPTION	KVA LOAD			CKT #	CKT BKR	CIRCUIT DESCRIPTION	KVA LOAD		
			A	B	C				A	B	C
1	20/1	01 RECEPTACLE	0.54			2	-/1	SPACE			
3	20/1	02 RECEPTACLE	0.36	0.36		4	-/1	SPACE			
5	20/1	03 RECEPTACLE			0.36	6	-/1	SPACE			
7	20/1	04 RECEPTACLE	0.36	0.18		8	-/1	SPACE			
9	20/1	05 RECEPTACLE			0.18	10	-/1	SPACE			
11	20/1	06 RECEPTACLE			0.18	12	-/1	SPACE			
13	20/1	07 RECEPTACLE	0.18	0.18		14	-/1	SPACE			
15	20/1	08 RECEPTACLE			0.18	16	-/1	SPACE			
17	20/1	09 RECEPTACLE			0.18	18	-/1	SPACE			
19	20/1	10 RECEPTACLE	0.18	0		20	-/1	SPACE			
21	-/1	SPACE				22	-/1	SPACE			
23	-/1	SPACE				24	-/1	SPACE			
25	-/1	SPACE				26	-/1	SPACE			
27	-/1	SPACE				28	-/1	SPACE			
29	-/1	SPACE				30	-/1	SPACE			
31	-/1	SPACE				32	-/1	SPACE			
33	-/1	SPACE				34	-/1	SPACE			
35	-/1	SPACE				36	-/1	SPACE			
37	-/1	SPACE				38	-/3	SPACE			
39	20/1	MAINTENANCE RECEPTACLE			0.18	40					
41	20/1	TIME CLOCK			0.5	42					
TOTAL CONNECTED KVA BY PHASE			1.26	0.9	1.22	TOTAL CONNECTED AMPS BY PHASE			10.5	7.5	10.2
CONN KVA			2.88	2.88	(50%>10)	TOTAL LOAD			3.51		
CALC KVA					(125%)	BALANCED 3-PHASE LOAD			9.73	A	

FAULT CURRENT SCHEDULE																	
DEVICE	FAULT	AIC RATING	L-N VOLTS	UTILITY	FED FROM		FEEDER					TRANSFORMER			TOTAL MOTOR FAULT	DIRECTLY CONNECTED MOTOR LOAD	
					DEVICE	FAULT	SIZE	X / 100'	R / 100'	LENGTH	X	R	KVA	Z%		XR RATIO	FAULT AT PRIMARY
HSL1	65,000	65,000	277V	65,000			#3/0	0.042	0.077		0	0					
T1	10,902	22,000	120V	10,902	HSL1	65,000	#1/0	0.044	0.12	10'	0.0004	0.0012	75	1.75	5	54,878	
LSL1	9,633	10,000	120V	9,633	T1	10,902	#3/0	0.042	0.077	24'	0.001	0.0018					
TC	3,900	5,000	120V	3,900	LSL1	9,633	#12	0.054	2	12'	0.0006	0.024					



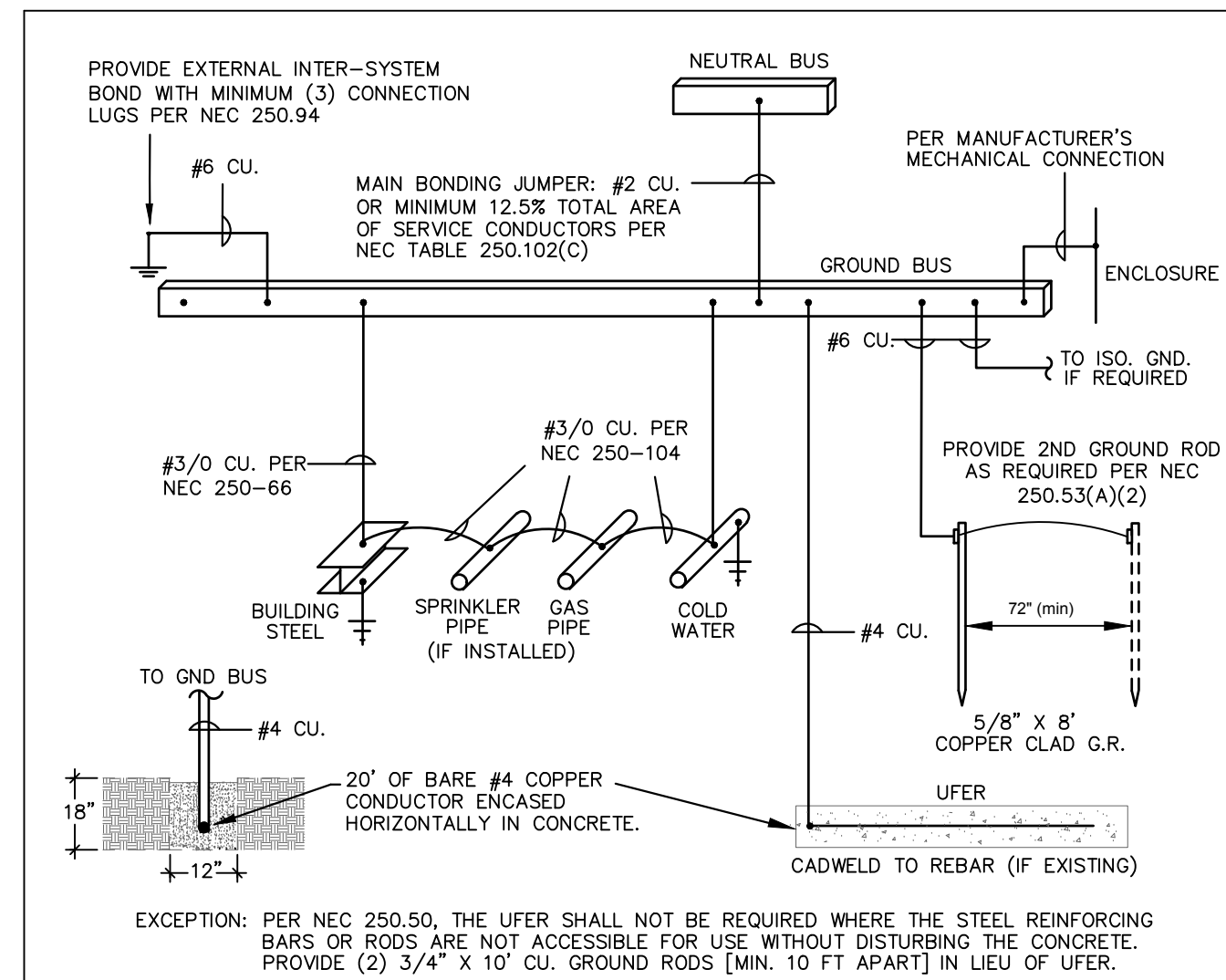
**ELECTRICAL SERVICE NOTE**

PRIOR TO PURCHASE OF MAIN SERVICE ENTRANCE EQUIPMENT, VERIFY PROPOSED SERVICE IS ACCEPTABLE TO BOTH UTILITY COMPANY AND A.H.J. NOTIFY THE ENGINEER OF REJECTIONS AND COMMENTS PERTINENT TO THE MAIN SERVICE ENTRANCE EQUIPMENT.

**S.U.S.E.**

SUITABLE FOR USE AS SERVICE EQUIPMENT (FOR SERVICES ON THE LOAD SIDE OF THE MAIN SERVICE ENTRANCE DISCONNECT PER NEC 230.66)

**ONE-LINE DIAGRAM SERVICES**



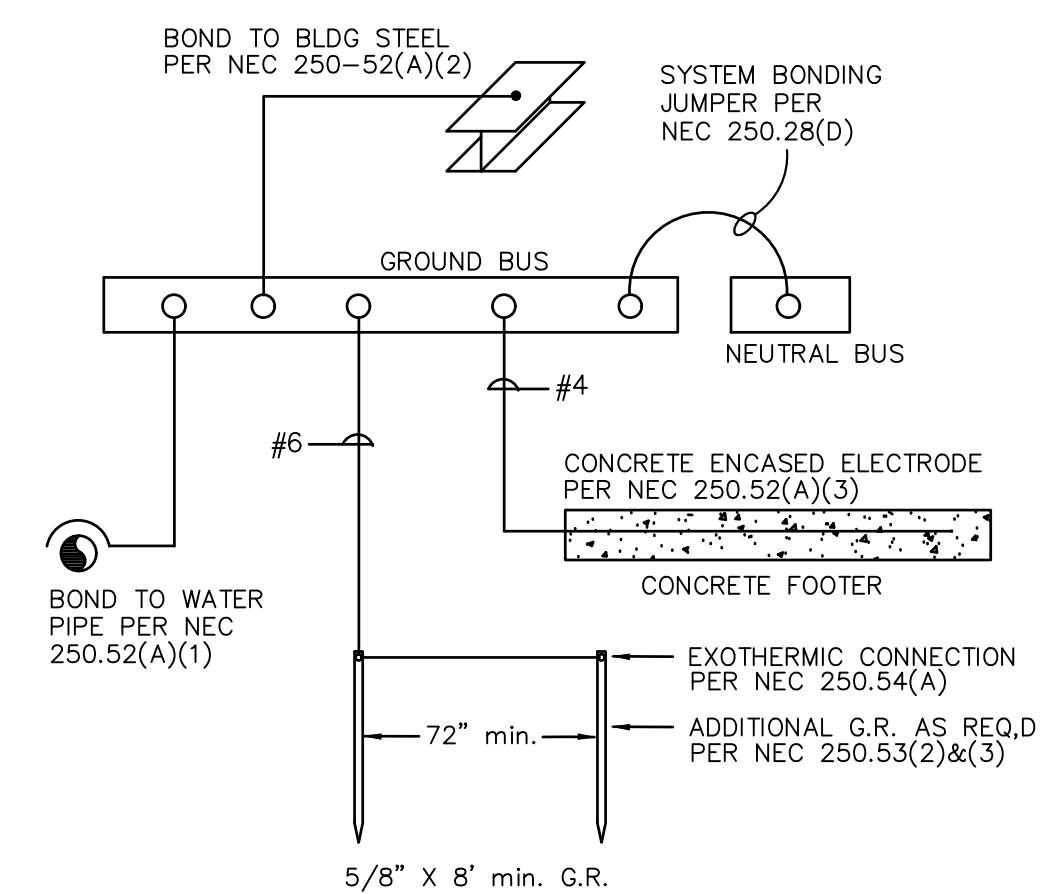
**GENERAL NOTES**

- THESE REQUIREMENTS ARE PROVIDED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE, ARTICLE 250 PERTAINING TO "GROUNDING ELECTRODE SYSTEMS".
- THE METALLIC PIPING BOND, BUILDING STEEL BOND, AND THE 2ND SERVICE BONDING MUST BE BONDED TOGETHER AND TO THE GROUNDING ELECTRODE SYSTEM IF PRESENT.
- ALL SPlicing SHALL BE EXOTHERMIC WELDS (CAD WELDS).
- ALL INSTALLATIONS SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF NEC ARTICLE 250 AND ANY STATE AND/OR LOCAL REQUIREMENTS.
- THE GROUNDING SYSTEM SHALL PROVIDE LESS THAN 25 OHMS RESISTANCE TO GROUND AT THE SERVICE CONNECTION. INSTALL ADDITIONAL GROUND RODS IF GROUND RESISTANCE EXCEEDS 25 OHMS PER NEC 250.56

**TRANSFORMER GROUNDING DETAIL**

XFMR KVA	BONDING JUMPER	TYPE 1	TYPE 2	TYPE 3	TYPE 4
		GEC BLDG STEEL	GEC COLD WATER	GEC UFER	GEC G.R.'s
3	#8	#8	#8	#4	#6
6	#8	#8	#8	#4	#6
9	#8	#8	#8	#4	#6
15	#8	#8	#8	#4	#6
30	#6	#6	#6	#4	#6
45	#4	#4	#4	#4	#6
75	#2	#2	#2	#4	#6
112.5	#1/0	#1/0	#1/0	#4	#6
150	#2/0	#2/0	#2/0	#4	#6
225	#3/0	#3/0	#3/0	#4	#6
300	#4/0	#3/0	#3/0	#4	#6
500	#350	#3/0	#3/0	#4	#6
750	#500	#3/0	#3/0	#4	#6
1000	#500	#3/0	#3/0	#4	#6
1500	#750	#3/0	#3/0	#4	#6

XFMR SHALL BE GROUNDED BY ONE OF THE FOLLOWING METHODS. TYPE 1 SHALL BE USED FIRST. IF TYPE 1 IS UNAVAILABLE, THEN TYPE 2 SHALL BE USED. IF TYPE 1 & 2 IS UNAVAILABLE, THEN TYPE 3 OR 4 SHALL BE USED. ALL CONDUCTORS ARE COPPER.



HSL1	-	-
LSL2	-	-
-	-	-

**PANEL SCHEDULE LEGEND**

**ONE-LINE GENERAL NOTES**

- SWITCHBOARD COMPONENTS, INCLUDING OVERCURRENT PROTECTIVE DEVICES SHALL BE FULLY RATED FOR THE AVAILABLE FAULT CURRENT SHOWN.
- PROVIDE ARC FLASH AND SHOCK HAZARD WARNING IDENTIFICATION PER NEC ARTICLE 110.16
- "NO DESIGN CHANGES MAY BE MADE TO THE SYSTEM WITHOUT THE PRIOR APPROVAL OF THE DESIGN ENGINEER AND THE ELECTRICAL INSPECTOR."
- THE FEEDER LENGTHS SHOWN IN THE INPUT DATA IS FOR CALCULATIONS ONLY. IT IS NOT THE INTENT TO USE THESE ENTERED LENGTHS FOR USAGE OF ACTUAL FIELD FEEDER LENGTH MEASUREMENTS.
- PER NEC 240.2 CURRENT LIMITING OVERCURRENT A DEVICE THAT, WHEN INTERRUPTING CURRENTS IN ITS CURRENT-LIMITING RANGE, REDUCES THE CURRENT FLOWING IN THE FAULTED CIRCUIT TO A MAGNITUDE SUBSTANTIALLY LESS THAN THAT OBTAINABLE IN THE SAME CIRCUIT IF THE DEVICE WERE REPLACED WITH A SOLID CONDUCTOR HAVING COMPARABLE IMPEDANCE.
- ALL SWITCHBOARDS, SWITCHGEAR, AND PANELBOARDS SUPPLIED BY FEEDERS SHALL BE PERMANENTLY MARKED TO INDICATE EACH DEVICE OR EQUIPMENT WHERE THE POWER ORIGINATES. THE LABEL SHALL BE PERMANENTLY AFFIXED, OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED, AND NOT HANDWRITTEN PER NEC 408.4(B)

**PANEL SCHEDULES GENERAL NOTES**

- A.I.C. RATING SHOWN ON PANEL SCHEDULES ARE THE MINIMUM RATING FOR NEW AND REPLACEMENT OVERCURRENT PROTECTIVE DEVICES. EACH DEVICE SHALL BE FULLY RATED AT AFC AS SHOWN ON ONE-LINE DIAGRAM.
- ALL PANEL BOARDS SHALL HAVE A TYPE WRITTEN DIRECTORY IDENTIFYING EACH NUMBERED CIRCUIT PLACED IN A DIRECTORY HOLDER INSIDE THE DOOR.
- THE CONTRACTOR SHALL PERMANENTLY MARK WITH PERMANENT MARKER THE CIRCUIT IDENTIFICATIONS ON THE COVERPLATES OF RECEPTACLES, EQUIPMENT, AND LIGHTING JUNCTION BOXES. (STICK ON LABELS NOT ACCEPTABLE)
- PER NEC 210.4(B) ALL MULTIWIRE BRANCH CIRCUITS ARE TO BE PROVIDED WITH A DEVICE THAT WILL DISCONNECT POWER TO ALL UNGROUNDED CONDUCTORS SIMULTANEOUSLY AT THE POINT OF ORIGIN.
- ALL LIFE SAFETY CIRCUITS SHALL REQUIRE A LOCK ON DEVICE. FIRE ALARM CIRCUITS SHALL HAVE RED IDENTIFICATION AND BE IDENTIFIED AS FIRE ALARM CIRCUIT.
- PER NEC 408.4(A) EVERY CIRCUIT AND CIRCUIT MODIFICATION SHALL BE LEGIBLY IDENTIFIED AS TO ITS CLEAR, EVIDENT AND SPECIFIC PURPOSE OR USE.
- PER NEC 700.12(F)2 INSTALLATION OF UNIT EQUIPMENT, EMERGENCY LIGHTS, EXIT SIGNS & OTHER UNIT EQUIPMENT SHALL BE CLEARLY IDENTIFIED WITHIN & AT THE DISTRIBUTION PANEL.

**KEYED NOTES**

- PROVIDE WEATHERPROOF PLACARD STATING AVAILABLE FAULT CURRENT AND DATE CALCULATED PER NEC 110.24.
- SEE FAULT CURRENT CALCULATION TABLE (REFERENCE THIS SHEET) FOR AVAILABLE FAULT AT EQUIPMENT, TYPICAL.

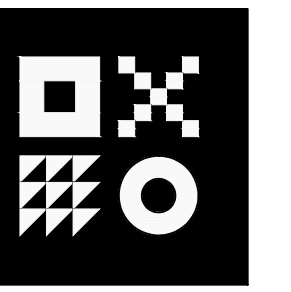
**VOLTAGE DROP NOTE**

PER NEC INFORMATIONAL NOTE 210.19(A) & 215.2(A)(1): SIZED TO PREVENT A TOTAL VOLTAGE DROP ON BOTH FEEDERS AND BRANCH CIRCUITS TO THE FARTHEST OUTLET DOES NOT EXCEED 5 PERCENT.

PER NEC 250.122(B) INCREASED IN WIRE SIZE: WHERE UNGROUNDED CONDUCTORS (PHASE CONDUCTORS) ARE INCREASED IN SIZE DUE TO VOLTAGE DROP, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE INCREASED IN SIZE PROPORTIONAL, ACCORDING TO THE CIRCULAR MIL AREA OF THE UNGROUNDED CONDUCTORS (PHASE CONDUCTORS).

ELECTRICAL CONDUCTOR HAS BEEN UPDATED DUE TO VOLTAGE DROP. ELECTRICAL CONTRACTOR TO VERIFY WIRE SIZE COMPLIES WITH EQUIPMENT TERMINATION SPECIFICATIONS, OTHERWISE E.C. SHALL PROVIDE ALTERNATIVE METHOD(S) PER NEC TO REDUCE CONDUCTOR SIZE TO COMPLY WITH EQUIPMENT SPECIFICATION.

**DIG WARNING**  
CALL 8-1-1 OR AS REQUIRED BY REGION 2-3 DAYS PRIOR TO DIGGING, ITS THE LAW.



**ARDEBILI Engineering**  
7328 E Stetson Dr.  
Scottsdale, AZ 85261  
P: 480.626.7072 | ardebilieng.com  
Project Number: 26181  
Design Engineer: OT

**PROPOSED CARVANA/ADESA EXPANSION LOT**

ADDRESS  
10610 CHARTER OAK RANCH RD  
FOUNTAIN, CO 80817



Project No: 26181  
Date: 04/22/2026  
Drawn By: DL  
Reviewed By: PC

No	Revision	Date

Sheet Title:  
ELECTRICAL  
ONE-LINE DIAGRAM

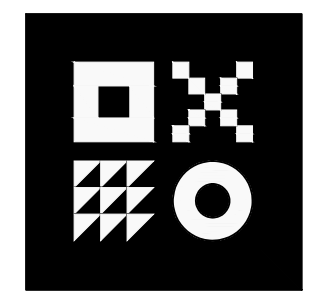
Sheet No.:

**E3.0**

VOLTAGE DROP SCHEDULE					
DEVICE	FEEDER		BRANCH CIRCUIT		TOTAL VOLTAGE DROP
	VOLTAGE DROP	WIRE SIZE	MAX VOLTAGE DROP	WIRE SIZE	
HSL1	0%	#3/0	2.29% (CKT 1,3)	#8	2.29%
			HSL1-1,3: 2.29%	#8	
			HSL1-5,7: 1.89%	#10	
			HSL1-9,11: 1.61%	#10	
			HSL1-13,15: 0.72%	#10	
			HSL1-17,19: 0.57%	#10	
			HSL1-21: 0%	-	
			HSL1-23: 0%	-	
			HSL1-25: 0%	-	
			HSL1-27: 0%	-	
			HSL1-29: 0%	-	
			HSL1-31: 0%	-	
			HSL1-33: 0%	-	
			HSL1-35: 0%	-	
			HSL1-37: 0%	-	
			HSL1-39: 0%	-	
			HSL1-41: 0%	-	
			HSL1-2,4: 0.36%	#10	
			HSL1-6: 0%	-	
			HSL1-8: 0%	-	
			HSL1-10: 0%	-	
			HSL1-12: 0%	-	
			HSL1-14: 0%	-	
			HSL1-16: 0%	-	
			HSL1-18: 0%	-	
			HSL1-20: 0%	-	
			HSL1-22: 0%	-	
			HSL1-24: 0%	-	
			HSL1-26: 0%	-	
			HSL1-28: 0%	-	
			HSL1-30: 0%	-	
			HSL1-32: 0%	-	
			HSL1-34: 0%	-	
			HSL1-36: 0%	-	
			HSL1-38,40,42: FEEDER	#1/0	
T1	0%	#1/0	-	-	0%
			T1-1: FEEDER	#3/0	
LSL1	0.02%	#3/0	2.43% (CKT 19)	#8	2.45%
			LSL1-1: 2.14%	#8	
			LSL1-3: 0.99%	#8	
			LSL1-5: 1.29%	#8	
			LSL1-7: 2.01%	#8	
			LSL1-9: 1.24%	#8	
			LSL1-11: 1.46%	#8	
			LSL1-13: 1.64%	#8	
			LSL1-15: 2.02%	#8	
			LSL1-17: 1.9%	#8	
			LSL1-19: 2.43%	#8	
			LSL1-21: 0%	-	
			LSL1-23: 0%	-	
			LSL1-25: 0%	-	
			LSL1-27: 0%	-	
			LSL1-29: 0%	-	
			LSL1-31: 0%	-	
			LSL1-33: 0%	-	
			LSL1-35: 0%	-	
			LSL1-37: 0%	#12	
			LSL1-39: 0.11%	#12	
			LSL1-41: FEEDER	#12	
			LSL1-2: 0%	-	
			LSL1-4: 0%	-	
			LSL1-6: 0%	-	
			LSL1-8: 0%	-	
			LSL1-10: 0%	-	
			LSL1-12: 0%	-	

CONTRACTOR TO VERIFY IN FIELD WITH ACTUAL ROUTING OF CONDUIT AND CONDUCTOR. PROVIDED AS BASIS OF DESIGN.

VOLTAGE DROP SCHEDULE (CONT.)					
DEVICE	FEEDER		BRANCH CIRCUIT		TOTAL VOLTAGE DROP
	VOLTAGE DROP	WIRE SIZE	MAX VOLTAGE DROP	WIRE SIZE	
			LSL1-14: 0%	-	
			LSL1-16: 0%	-	
			LSL1-18: 0%	-	
			LSL1-20: 0%	-	
			LSL1-22: 0%	-	
			LSL1-24: 0%	-	
			LSL1-26: 0%	-	
			LSL1-28: 0%	-	
			LSL1-30: 0%	-	
			LSL1-32: 0%	-	
			LSL1-34: 0%	-	
			LSL1-36: 0%	-	
			LSL1-38,40,42: 0%	#1	
TC	0.2%	#12	-	-	0.2%
			TC-1: 0%	#12	



**ARDEBILI**  
**Engineering**  
 7328 E Stetson Dr.  
 Scottsdale, AZ 85251  
 P: 480.626.7072 | ardebiling.com  
 Project Number: 26181  
 Design Engineer: OT

**PROPOSED CARVANA/ADESA EXPANSION LOT**

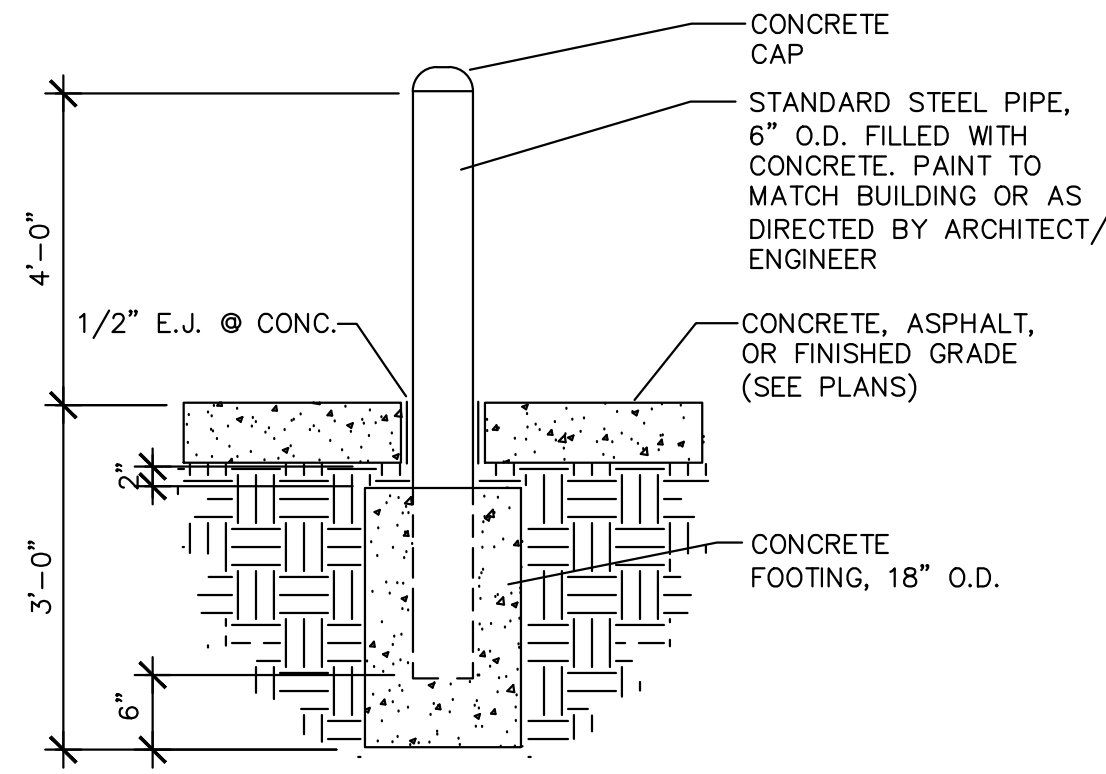
ADDRESS  
 10610 CHARTER OAK RANCH RD  
 FOUNTAIN, CO 80817



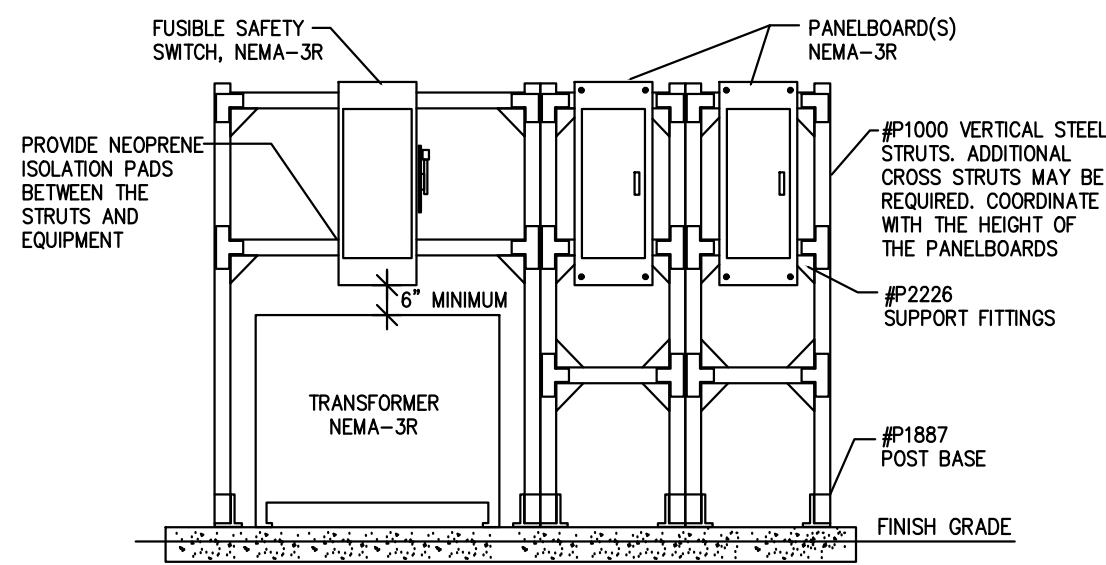
Project No: 26181  
 Date: 04/22/2026  
 Drawn By: DL  
 Reviewed By: PC

No	Revision	Date

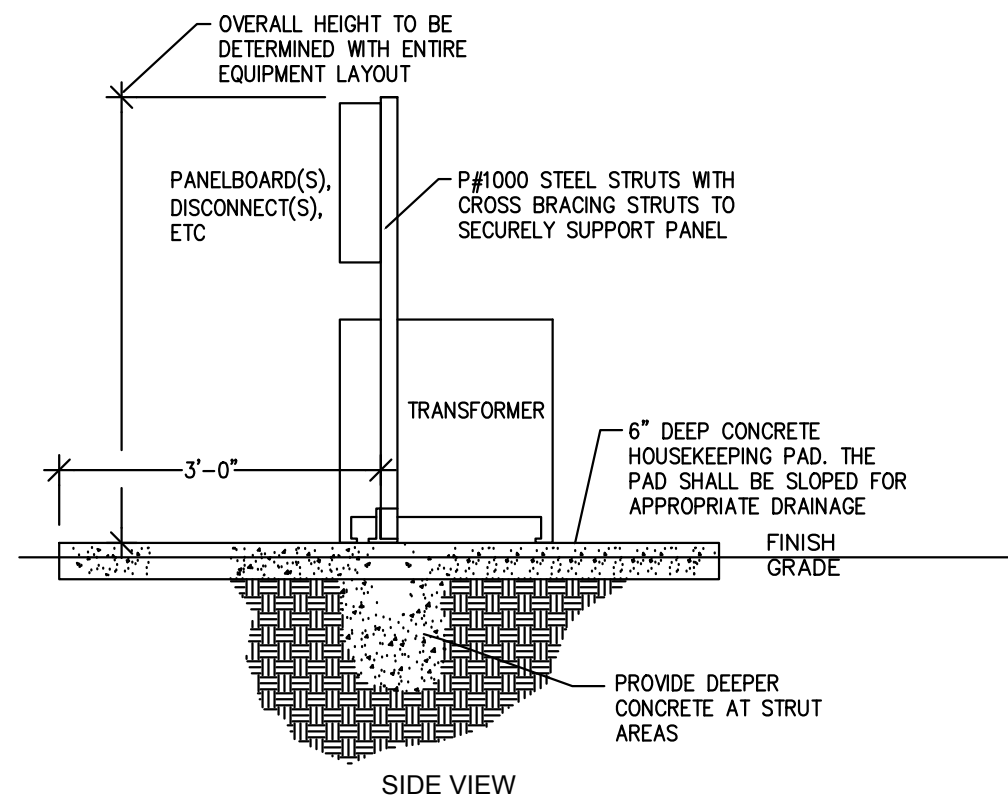
Sheet Title:  
**ELECTRICAL  
 VOLTAGE DROP  
 SCHEDULE**  
 Sheet No.:



**GUARD POST**  
NOT TO SCALE



FRONT VIEW

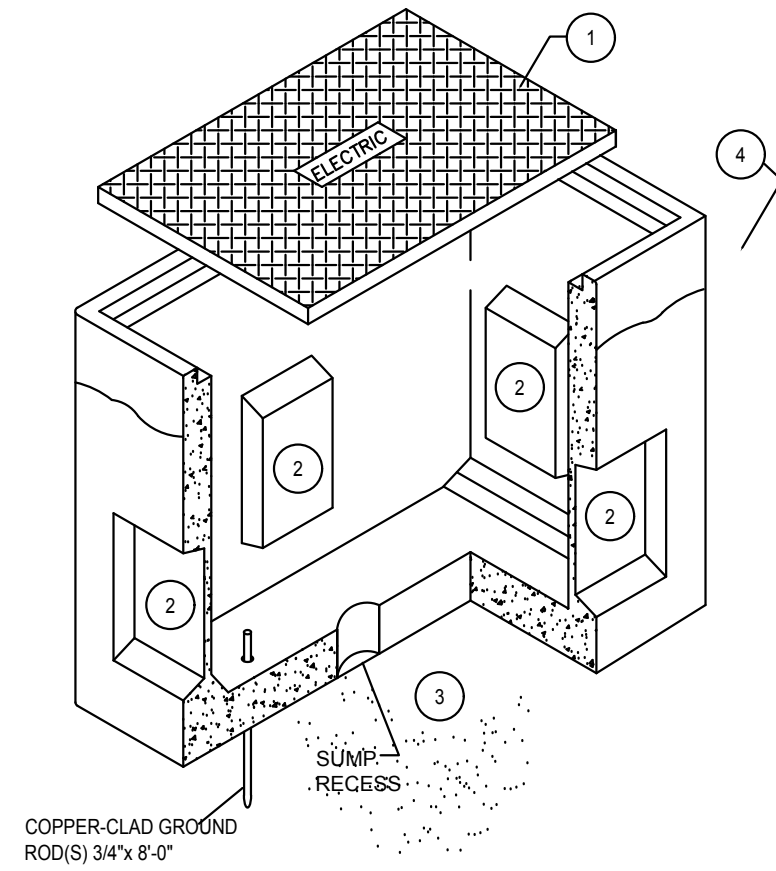


SIDE VIEW

- NOTES:**
- FOR BASIS-OF-DESIGN, THE STRUT NUMBERS INDICATED ARE AS MANUFACTURED BY "UNISTRUT". PROVIDE ALL MOUNTING HARDWARE AND COMPONENTS REQUIRED FOR A COMPLETE SUPPORT FRAMING SYSTEM (OTHER COMPARABLE MANUFACTURERS ARE "B-LINE AND POWER-STRUT")
  - ALL THE STEEL STRUTS, POST BASE AND HARDWARE ARE TO BE HOT-DIPPED GALVANIZED
  - REFER TO SHEET EXXXX FOR ADDITIONAL INFORMATION

**UNI-STRUT DETAIL**

NOT TO SCALE



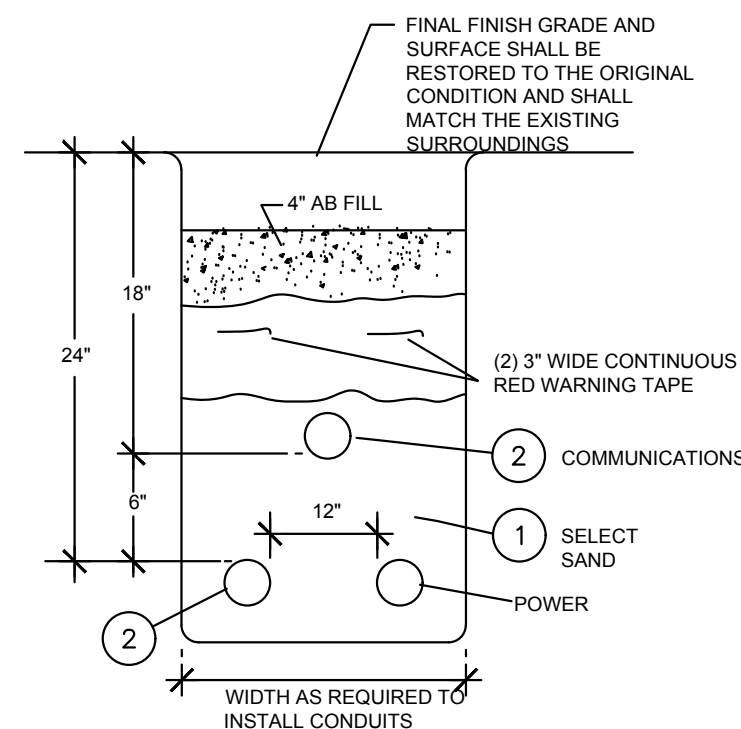
**NOTES:**

SUBMIT SHOP DRAWINGS FOR THE PULLBOX AS PART OF 26 0533

- TRAFFIC RATED GALVANIZED STEEL COVER WITH PERMANENT LETTERING TO READ "ELECTRIC OR COMM" AS APPROPRIATE. THE COVER SHALL BE PROVIDED WITH PULL HANDLE AND PENTAHEAD LOCKING BOLTS
- CONDUIT KNOCKOUTS FOR VARIOUS QUANTITIES AND CONDUIT SIZES. EACH CONDUIT INTO THE PULLBOX SHALL HAVE BELL ENDS AND SHALL ANGLE DOWNWARDS TO PREVENT WATER SEEPAGE BACK INTO THE CONDUITS
- BEFORE INSTALLATION OF THE PULLBOX, PROVIDE BEDDING MATERIAL AT BOTTOM OF EXCAVATION CONSISTING OF 6" COMPACTED GRAVEL BASE
- THE TOP PORTION OF THE PULLBOX SHALL PROTRUDE APPROXIMATELY 6" ABOVE FINISHED GRADE. FOUR MINIMUM 4" THICK BY 12" WIDE CONCRETE PAVEMENT AROUND PERIMETER OF BOX.

**UNDERGROUND CONCRETE PULLBOX DETAIL**

NOT TO SCALE



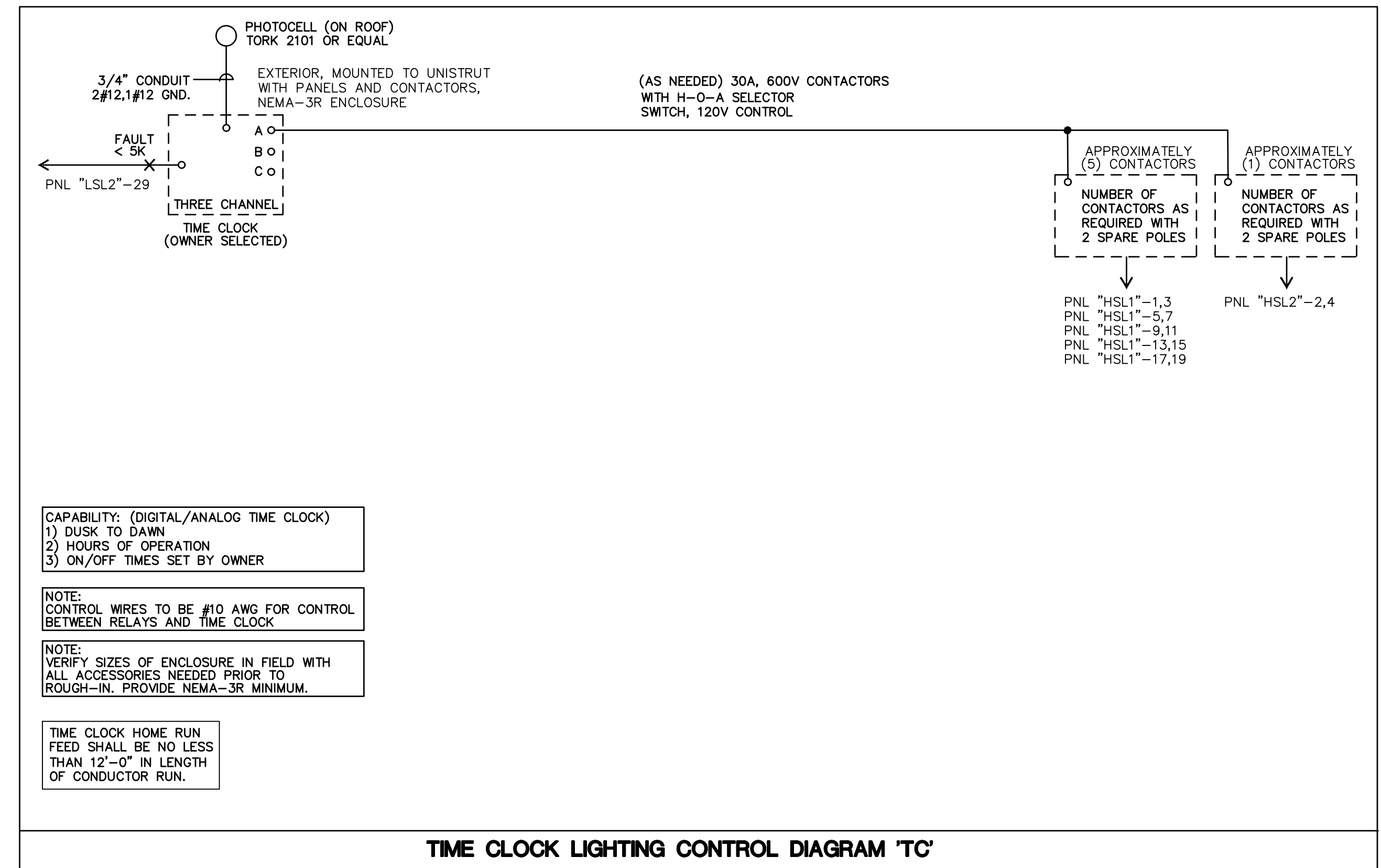
**NOTES:**

REFER TO SPECIFICATIONS SECTION 260500, PARA 3.3 EXCAVATION AND BACKFILL.

- PROVIDE SELECT SAND, 3" MINIMUM COVERAGE ON ALL SIDES OF EACH CONDUIT SYSTEM. (TOP, SIDES AND BOTTOM).
- COMMUNICATIONS CONDUIT(S) MAY BE INSTALLED ABOVE POWER CONDUIT(S) WITH 6" SEPARATION OR SIDE-BY-SIDE TO POWER CONDUITS WITH 12" SEPARATION. PROVIDE MANUFACTURED NON-METALLIC SPACER RACK FOR EACH CONDUIT SYSTEM (CARLON OR EQUAL) 4" MINIMUM SEPARATION FOR SPECIAL SYSTEMS AND 2" MINIMUM FOR POWER.

**COMMON UTILITY TRENCH DETAIL**

NOT TO SCALE



**PROPOSED CARVANA/ADESA EXPANSION LOT**

ADDRESS  
10610 CHARTER OAK RANCH RD  
FOUNTAIN, CO 80817



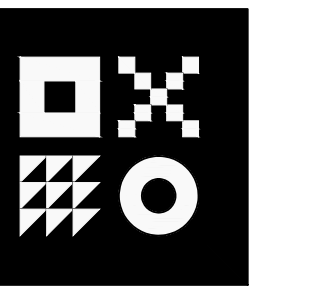
Project No: 26181  
Date: 04/22/2026  
Drawn By: DL  
Reviewed By: PC

No.	Revision	Date

Sheet Title:  
ELECTRICAL DETAILS

Sheet No.:

**E4.0**



**ARDEBILI**  
Engineering  
7328 E Stetson Dr.  
Scottsdale, AZ 85251  
P: 480.626.7072 | ardebiling.com  
Project Number: 26181  
Design Engineer: OT

ELECTRICAL SPECIFICATIONS

16001 SCOPE OF WORK

THE WORK DESCRIBED UNDER THIS SECTION OF THE SPECIFICATIONS INCLUDES FURNISHING ALL MATERIAL LABOR AND EQUIPMENT, EXCEPT AS FURNISHED UNDER OTHER SECTIONS OF THE SPECIFICATIONS, TO INSTALL ALL ELECTRICAL WORK AS SHOWN IN THE DRAWINGS AND AS SPECIFIED AND REFERRED TO HEREIN.

.01 EXAMINATION OF THE PREMISES

THE CONTRACTOR WILL BE HELD TO HAVE EXAMINED THE PREMISES AND SATISFIED HIMSELF AS TO EXISTING CONDITIONS UNDER WHICH HE WILL BE OBLIGATED TO OPERATE IN PERFORMING HIS PART OF THE WORK OR THAT WHICH WILL IN ANY MANNER AFFECT THE WORK UNDER HIS CONTRACT.

PRIOR TO ORDERING ANY MATERIALS OR DOING ANY WORK , VERIFY THE DIMENSIONS AT THE SITE; CORRECTNESS OF DIMENSIONS WILL BE THIS CONTRACTORS RESPONSIBILITY. NO EXTRA CHARGES OR COMPENSATION WILL BE ALLOWED FOR DIFFERENCES BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE DRAWINGS. IMMEDIATELY REPORT DIFFERENCES TO THE ARCHITECT AND DO NOT PROCEED WITH WORK UNTL ARCHITECT RENDERS HIS DECISION.

.02 REGULATIONS, PERMITS, AND INSPECTIONS

REGULATIONS: COMPLY WITH ALL APPLICABLE CODES, RULES , AND REGULATIONS. ALL MATERIALS, EQUIPMENT, AND WORK MUST COMPLY WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE AND THE APPLICABLE MUNICIPAL AND LIFE SAFER CODES.

PERMITS: OBTAIN AND PAY FOR ALL PERMITS, FEES , AND LICENSES REQUIRED TO PERFORM WORK DESCRIBED HEREIN.

INSPECTIONS: ALL WORK MUST BE INSPECTED AND APPROVED BY LOCAL AUTHORITIES. PRIOR TO FINAL APPROVAL, FURNISH THE ARCHITECT WITH CERTIFICATES OF INSPECTION AND APPROVALS BY THE LOCAL AUTHORITIES.

.03 WORK LISTED ELSEWHERE

FURNISHING AND INSTALLING MOTOR CONTROLS UNLESS IN MOTOR CONTROL CENTER. FURNISHING HOLE CUTTING IN PRE CAST STRUCTURAL CONCRETE.

.04 EXISTING SERVICES AND REMODEL AREAS

MAINTAIN ALL SERVICES, POWER, SOUND, TELEPHONE, ETC. TO EXISTING BUILDINGS OR AREAS. INTERRUPTIONS OF SERVICES REQUIRED FOR "CUT-OVER" OR CONNECTIONS OF NEW CABLES, ETC. SHALL BE DONE AT THE CONVENIENCE OF THE TENANT AND BE APPROVED IN WRITING BY THE TENANT PRIOR TO THE INTERRUPTION.

.05 TEMPORARY POWER

PROVIDE TEMPORARY POWER AS REQUIRED BY THE GENERAL CONTRACTOR. THIS SERVICE SHALL BE MAINTAINED THROUGHOUT THE ENTIRE JOB AS THE WORK PROGRESSES.

PROVIDE OUTLETS AT CONVENIENT POINTS AND IN SUFFICIENT NUMBERS SO THAT NO EXTENSION CORD IS OVER 50 FEET IN LENGTH IS REQUIRED TO REACH ANY WORK POINT. MAINTAIN GENERAL LIGHTING IN CORRIDORS, STAIRS, BASEMENT AND OTHER AREAS NOT RECEIVING DAYLIGHT REQUIRED FOR SAFETY. REMOVE TEMPORARY WORK AS RAPIDLY AS REQUIRED FOR OR ALLOWED BY INSTALLATION OF PERMANENT WORK.

16420 SERVICE ENTRANCE EQUIPMENT

SERVICE ENTRANCE EQUIPMENT TO HAVE SHORT CIRCUIT CURRENT RATING EQUAL TO OR GREATER THAN AVAILABLE FAULT CURRENT, AND MEET ALL THE REQUIREMENTS OF U.L. STANDARD NO. 891. OUTDOOR GEAR TO BE NEMA 3R. ALL SWITCHGEAR TO BE FREE STANDING, UNLESS OTHERWISE INDICATED, MOUNTED ON 4" CONCRETE PAD EXTENDING A MINIMUM OF 6 INCHES IN FRONT OF EQUIPMENT.

END SECTION SHALL BE PROVIDED WITH FULL CAPACITY THROUGH BUS FOR FUTURE EXTENSION TO FUTURE SECTIONS.

16425 SWITCHBOARDS

SWITCHBOARDS TO BE SQUARED D TYPE QMB OR EQUAL, FREE STANDING, 90" HIGH, MIN. 14" DEEP WITH TYPE QMB SWITCHES. END SECTION WITH FULL CAPACITY THRU - BUS FOR FUTURE SECTION. MOUNT ON 4" CONCRETE PAD EXTENDING A MINIMUM OF 6 INCHES IN FRONT OF SWITCHBOARDS.

16440 SAFETY SWITCHES

SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE. WHERE OUTSIDE THE BUILDING, THE SWITCHES SHALL BE RAINIGHT TYPE NEMA 3R. ALL SWITCHES SHALL BE LOCKABLE.

16471 PANELS

PANEL TYPE AS INDICATED ON THE DRAWINGS. NEW FLUSH PANELS TO HAVE (3) 3/4" EMPTY CONDUITS STUBBED INTO ACCESSIBLE CEILING SPACE.

PROVIDED A GROUND BUS IN ALL PANELS INCLUDING EXISTING PANELS WHEREIN WORK IS DONE OR LOADS ADDED. CHECK ALL BREAKERS. REPLACE DEFECTIVE BREAKERS IN AFOREMENTIONED PANELS.

VERIFY THE INTERRUPTING CAPACITY OF ALL BREAKERS WITH REQUIREMENT INDICATED ON THE DRAWINGS. REPLACE EXISTING BREAKERS NOT MEETING REQUIRED A.I.C. RATING.

16461 DRY TYPE TRANSFORMERS (IF ANY)

SHALL BE EQUAL TO SQUARE D, 150 DEGREE TEMPERATURE RISE; SERIES 7410/7411. CLEARANCE ALL AROUND PER MANUFACTURES RECOMMENDATION. PROVIDE ISOLATION PADS.

16510 LIGHTING FIXTURES

FLOURESCENT FIXTURES SHALL BE FURNISHED WITH UL LISTED HIGH POWER-FACTOR BALLASTS. CONTRACTOR SHALL VERIFY CEILING CONSTRUCTION BEFORE ORDERING RECESSED UNITS AND SHALL PROVIDE PLASTER OR DRY WALL FRAMES AS REQUIRED.

RECESSED INCANDESCENT FIXTURES AND FLOURESCENT DOWN LIGHTS SHALL BE LISTED FOR USE IN INSULATED CEILING SPACES, AND SHALL HAVE ANY REQUIRED FEED-THRU BOXES. LAMPS FOR INCANDESCENT FIXTURES SHALL BE 1000 HOUR INSIDE FROSTED 130 VOLT, NOT EXCEEDING THE WATTAGE FOR WHICH THE FIXTURE IS LABELED AND SHALL BE OF THE TYPE RECOMMENDED BY THE FIXTURE MANUFACTURE. LAMPS SHALL BE OF THE SAME MANUFACTURE AS FLOURESCENT.

ALL FIXTURES SHALL BE PROPERLY SUPPORTED FROM CEILING STRUCTURE, NOT FROM GYPBOARD OR PLASTER. SURFACE OR PENDANT MOUNT FLOURESCENT FIXTURES SHALL BE BOLTED TOGETHER FOR PROPER ALIGNMENT AND BONDING.

ALL FLOURESCENT FIXTURES RECESSED IN THE CEILING OR IN A GRID CEILING SHALL BE PROVIDED WITH EARTHQUAKE CLIPS AS REQUIRED BY CODE.

16195 NAME PLATES

PROVIDE CONTRAST PLASTIC EMBOSSING TAPE, ADHESIVE BAKED NAMEPLATES FOR ALL STARTERS AND DISCONNECT SWITCHES.

PROVIDE LAMICOD NAMEPLATES FOR ALL DISTRIBUTION SWITCHES, BREAKERS, LIGHTING AND POWER PANELS INDICATING ITEMS SERVED. SIZE OF LETTERS SHALL BE MINIMUM OF 3/16" HIGH.

16120 WIRE

ALL WIRE AND CABLE SHALL BE NEW, 600 VOLT INSULATED, OF TYPES SPECIFIED BELOW. ALL WIRE AND CABLE SHALL BEAR THE UNDERWRITERS' LABEL AND SHALL BE BROUGHT TO THE JOB IN UNBROKEN PACKAGES. WIRE SHALL BE COLOR CODED PER NEC.

BRANCH CIRCUIT WIRING SHALL BE A MINIMUM #12 AWG COPPER

WIRE AND CABLE NO. 4 AWG AND SMALLER SHALL BE TYPE THW OR THHN/THWN

WIRE AND CABLE LARGER THAN NO. 4 AWG SHALL BE TYPE XHHW. ALL AIR CONDITIONING FEEDERS SHALL BE TYPE XHHW.

ALL WRING IN PANELBOARDS, SWITCHBOARDS, AND GUTTERS SHALL BE NEATLY ARRANGED. WIRE SHALL BE HELD BUNDLED BY TY-RAPS. WIRES SHALL BE CONNECTED TO CIRCUIT BREAKERS, SWITCHES AND OTHER DEVICES PERPENDICULAR TO TERMINAL LUGS.

ALL WRING IN MANHOLES, PULL BOXES OR JUNCTION BOXES OVER 12 INCHES IN LENGTH SHALL BE BUNDLED IN A NEAT AND ORDERLY MANNER.

AFTER COMPLETION OF UNDERGROUND SPICES AND EQUALS IN MANHOLES, SEAL SPICES WITH SCOTCHCOAT #82 COATING OR SPIQUE TO MOISTURE PROOF CABLES.

LEAVE NO LESS THAN 6 INCHES OF WIRE AT EACH OUTLET FOR CONNECTION TO LIGHTING FIXTURES, SWITCHES, RECEPTABLES AND OTHER PIECES OF EQUIPMENT. WHERE WIRES FEED THROUGH AN OUTLET OR JUNCTION BOX, NEATLY TUCK 6 INCH LOOP IN BOTTOM OF BOX.

LIGHTING AND POWER CIRCUITS SHALL BE IDENTIFIED BY PANEL LETTER AND CIRCUIT NUMBER WITH BRADY WRAPAROUND CLOTH WIRE MARKERS AT ALL TERMINATIONS AND JUNCTIONS.

ALL BRANCH CIRCUIT AND FEEDER CONDUCTORS SHALL BE COLOR-CODED AS FOLLOWS:

FOR ALL 120 V TO GROUND CIRCUITS; PHASE CONDUCTORS - BLACK, RED, BLUE NEUTRAL CONDUCTOR - WHITE

FOR ALL 277 V TO GROUND CIRCUITS; PHASE CONDUCTORS - BROWN, ORANGE, YELLOW NEUTRAL CONDUCTORS - GRAY

LARGE FEEDER CONDUCTORS SHALL BE CODED BY COLORED TAPE WRAPPED AROUND THE CONDUCTOR AT EACH PULLBOX, TERMINATION POINT AND SPIQUE.

ALL CONNECTIONS TO CIRCUIT BREAKERS AND SWITCHES AND ALL JOINTS IN WIRES SHALL BE MADE AS NOTED BELOW:

CONNECTIONS TO CIRCUIT BREAKERS AND SWITCHES: NO. 12 WIRE SHALL BE FORMED AROUND BINDING POST OR SCREW. NO. 10 AND 8 WIRE - BUCHANAN, "TERMDEN" OR APPROVED EQUAL, LOCKING TONGUE LUG. NO. 6 WIRE AND LARGER - BURNDY "QUICK-LUG" TYPE ODA, OR APPROVED EQUAL, ROUND FLANGE SOLDERLESS LUG.

FIXTURE CONNECTIONS: CIRCUIT WIRING CONNECTIONS TO FIXTURE WIRE SHALL BE MADE WITH PRESSURE-TYPE SOLDER-LESS CONNECTORS - BUCHANAN, SCOTCHLOC OR WING NUT OR APPROVED EQUAL, COMPLETE WITH INSULATOR AND SECURITY RING.

JOINTS IN WIRES: NO. 6 WIRE AND LARGER - BURNDY OR APPROVED EQUAL, NO. 8 WIRE AND SMALLER - BUCHANAN, SCOTCHLOC, WNG NUT, OR EQUAL, PRESSURE-TYPE SOLDERLESS CONNECTORS COMPLETE WITH INSULATOR AND SECURITY RING.

CONTROL WIRING AND ALL OTHER STANDARD WIRING TO SCREW CONNECTIONS SHALL BE PROVIDED WITH T AND B STA-KON TERMINALS.

SOLID CONDUCTORS SHALL LOOP TIGHTLY AND COMPLETELY AROUND TERMINAL SCREWS ON ALL WIRING DEVICES.

UNINSULATED SOLDERLESS CONNECTORS TO BE INSULATED AS FOLLOWS: TAPE WITH A COVERING OF RUBBER TAPE, EQUAL IN THICKNESS TO THE INSULATION. THIS SHALL BE FOLLOWED WITH AN OUTER COVERING OF FRICTION TAPE IN TWO LAYERS. ONE COAT OF WATERPROOF PAINT SHALL BE APPLIED WHEN SUBJECT TO MOISTURE.

WIRE AND CABLE TO BE PULLED INTO CONDUITS WITHOUT STRAIN, USE POWDERED SOAPSTONE, MINERALAC, OR OTHER APPROVED LUBRICANT.

WIRE SHALL NOT BE RE-PULLED IF SAME HAS BEEN PULLED OUT OF A CONDUIT RUN. NO CONDUCTOR SHALL BE PULLED INTO CONDUIT UNTIL CONDUIT SYSTEM IS COMPLETE, INCLUDING JUNCTION BOXES, PULL BOXES, ETC., WITHOUT PERMISSION OF ARCHITECT.

16110 CONDUIT

IN GENERAL, ELECTRICAL METALLIC TUBING SHALL BE USED FOR ALL WIRING EXCEPT IN OR UNDER CONCRETE, EARTH, OR FILL. ELECTRICAL METALLIC TUBING MAY BE USED IN FURRED SPACES, WOOD FRAME WALLS WHERE CONDUITS DO NOT EXCEED 2 1/2" IN SIZE, BRICK, BLOCK, TILE, AND CONCRETE WALLS ARE NOT CONSIDERED HOLLOW AND RIGID CONDUIT SHALL BE PROVIDED FOR THESE AREAS.

.01 RIGID STEEL CONDUITS OR INTERMEDIATE METAL CONDUITS SHALL BE USED IN CONCRETE SLABS, IN SOLID CONDUIT CELLS OR CONCRETE MASONRY WALLS, BRICK, OR TILE WALLS, FOR ALL EXPOSED CONDUIT OUTSIDE OF THE BUILDING, AND FOR CONDUITS EXCEEDING 2 1/2" IN SIZE. IN ADDITION ALL WRING IN OR UNDER CONCRETE, EARTH, OR FILL SHALL BE RIGID GALVANIZED OR SHERARDIZED STEEL. RIGID CONDUIT UNDER CONCRETE, IN EARTH, OR FILL SHALL BE COATED WITH POLYETHYLENE TAPE, SCOTCH NO. 50 OR APPROVED EQUAL, SPIRAL WRAPPED 1/2" LAPPED TO AN OVERALL THICKNESS OF NOT LESS THAN 15 MILS.

.02 USE FLEXIBLE METAL CONDUITS FOR RECESSED FIXTURES, MOTOR, TRANSFORMER AND OTHER EQUIPMENT SUBJECT TO MOVEMENT. USE LIQUID TIGHT TYPE WHERE EXTERIOR OR SUBJECT TO LIQUID SPRAY OR DRIPPING.

.03 UL LISTED SCHEDULE 40 PVC CONDUIT MAY BE USED FOR UNDERGROUND RUNS. EXPANSION JOINTS AT 75 FEET ON CENTER OR AS REQUIRED BY MFR. ALL BENDS SHALL BE MANUFACTURED.

.04 NON-METALLIC CONDUIT INSTALLED BELOW CONCRETE FLOORS MAY BE INSTALLED IN THE FILL, HOWEVER, A PORTION OF THE CONCRETE FILL MATERIAL MUST BE PLACED AROUND THE CONDUIT FOR RIGID SUPPORT. NON-METALLIC CONDUIT OUTSIDE THE FILL SHALL BE BURIED A MINIMUM OF 18" BELOW GRADE. NON-METALLIC CONDUIT SHALL BE PROVIDED WITH CODE SIZE COPPER BOND WIRE INSIDE THE CONDUIT FOR ELECTRICAL CONTINUITY, AND SHALL BE INSTALLED IN ACCORDANCE TO NEC ARTICLE NO. 250. WRAPPED RIGID STEEL ELBOWS SHALL BE USED FOR RISERS ON PVC CONDUIT RUNS AND SHALL BE GROUNDED.

CONDUIT PLACED IN A CONCRETE SLAB SHALL BE LARGER THAN 3/4" TRADE SIZE DIAMETER AND CONDUIT SMALLER THAN 3/4" SHALL BE USED FOR UNDERGROUND CIRCUITS. CONDUIT SHALL HAVE MINIMUM 1" CONCRETE COVER. NO CONDUIT SHALL BE IMBEDDED IN A SLAB THAT IS LESS THAN 3-1/2" THICK, EXCEPT FOR LOCAL OFFSETS. NO CONDUIT SHALL BE PLACED BETWEEN THE REINFORCING STEEL AND THE BOTTOM OF THE SLAB.

ALL CONDUIT UNDER CONCRETE DRIVES OR ANY LOCATION WHERE SUBJECT TO DAMAGE BY HEAVY EQUIPMENT SHALL BE INSTALLED A MINIMUM OF 24" BELOW GRADE OR 18" BELOW GRADE ENCASED IN A 3" THICK CONCRETE ENVELOPE.

TRENCHING, BACKFILLING, AND CONCRETE WORK FOR ELECTRICAL WORK SHALL BE DONE UNDER THIS SECTION AND AS REQUIRED BY LOCAL AND/OR RULING AUTHORITIES AND REGULATING AGENCIES.

THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SLEEVES AND CHARGES REQUIRED WHERE CONDUITS PASS THROUGH FLOORS OR WALLS, AND SHALL SEAL ALL OPENING AND FINISH TO MATCH ADJACENT SURFACES. WHERE EXPOSED CONDUITS PASS THROUGH WALLS, FLOORS, OR CEILINGS, ESCUTCHEON PLATES SHALL BE PROVIDED.

ALL NECESSARY SERVICES AND BLOCKOUTS SHALL BE PROVIDED.

ALL EMPTY CONDUITS SHALL BE PROVIDED WITH PULL WIRE.

.05 RIGID CONDUIT FITTINGS

PROVIDE DOUBLE LOCKNUTS AND BUSHINGS EXCEPT AT THREADED HUBS.

.06 EMT OR FLEX FITTINGS

FOR EMT, OR MALLEABLE IRON, COMPRESSION TYPE ONLY. FOR FLEXIBLE CONDUIT, COMPRESSION OR CLAMP TYPE CONNECTORS SHALL HAVE INSULATED THREADS.

.07 MC CABLE

METAL CLAD CABLE MAY BE USED IN LIEU OF EMT CONDUIT AND WIRE FOR BRANCH CIRCUIT WIRING IF ACCEPTABLE TO AUTHORITIES.

16140 WIRING DEVICES

RECEPTABLES SHALL BE FURNISHED AS INDICATED BELOW:

Table with 3 columns: Symbol, Description, and Manufacturer/Model. Includes items like 20 AMP 120 VOLT DUPLEX, 20 AMP 120 VOLT DUPLEX WEATHERPROOF, 20 AMP 120 VOLT DUPLEX GROUND FAULT, 20 AMP 120 VOLT FOURPLEX, 20 AMP 120 VOLT DUPLEX ISOLATED GROUND.

WHEN SURFACE WEATHERPROOF MOUNTING IS REQUIRED, RECEPTABLES SHALL BE MOUNTED IN AN FS CONDUIT BOX.

ELEVATION OF EACH RECEPTACLE SHALL BE AT THE FLOOR PLUS 18" TO CENTER UNLESS OTHERWISE NOTED.

ALL SWITCHES SHALL BE FURNISHED IN ACCORDANCE WITH THE FOLLOWING TABLE. SWITCHES SHALL BE OF THE SAME MANUFACTURER AS THE RECEPTABLES FURNISHED.

Table with 3 columns: Symbol, Description, and Manufacturer/Model. Includes items like 20 AMP 1 POLE, 20 AMP 3 POLE.

COVERPLATES FOR RECEPTABLES, SWITCHES AND OUTLETS SHALL GENERALLY BE PLASTIC, WITH COLOR AS SELECTED BY THE ARCHITECT.

16130 BOXES

BOXES IN EXPOSED OR WET LOCATIONS SHALL BE CAST STEEL CONDUIT BODIES. IN CONCEALED LOCATIONS, THEY SHALL BE SHEET STEEL BOXES WITH GALVANIZED OR SHERARDIZED FINISH, NEOPRENE GASKETED, SREWED COVERS.

SHEET STEEL BOXES SHALL BE STANDARD ONE-PIECE KNOCKOUT BOXES. WHERE OUTLETS ARE INSTALLED IN CONCRETE SLABS, BOXES SHALL BE CONCRETE CAST TYPE BOXES. BOXES SHALL NOT BE LESS THAN 4" IN DIAMETER AND 1-1/2" DEEP. OUTLET BOXES SET IN CONCRETE SHALL BE SET TO HAVE FINAL OPENING FLUSH WITH FINISH SURFACE.

CAST-METAL CONDUIT BODIES SHALL BE CROUSE-HINDS CONDUITS, APPLETON UNILETS, OR APPROVED EQUIVALENT. BOXES SHALL BE ARRANGED WITH THREADED CONNECTORS FOR RIGID CONDUIT. ALL CONDUIT BODIES SHALL HAVE SUITABLE COVERS, WHICH SHALL BE PROVIDED WITH GASKET FOR EXTERIOR AND MOST LOCATIONS.

POWER / PHONE FLOOR OUTLETS SHALL BE STEEL CITY #664 WITH # 664CST COVER (VERIFY COLOR), #664-BP PHONE PLATE, #664RP RECEPTACLE PLATE AND 20A DUPLEX RECEPTACLE. PHONE COMPARTMENT TO HAVE 3/4" E.C. TO CEILING SPACE VIA FLOOR / WALL.

OUTLETS SET IN FURRED CEILING AND STUD WALLS SHALL BE ANCHORED TO THE CEILING OR WALL STRUCTURE WITH SUITABLE STEEL STRAPS.

OUTLET BOXES SHALL BE USED AS PULL AND JUNCTION BOXES WHEREVER POSSIBLE AND WHERE REQUIRED. BOXES IN PLASTERED WALLS OR CONCRETE BLOCK WALLS IN FINISHED AREAS AND CEILINGS SHALL HAVE TWO GANG RAISED PLASTER RINGS AND BLANK WALL PLATE. OTHER BOXES SHALL HAVE BLANK COVERS.

WHERE OTHER THAN OUTLET BOXES ARE REQUIRED, PULL AND JUNCTION BOXES SHALL BE CONSTRUCTED OF GALVANIZED STEEL CONFIRMING TO CODE REQUIREMENTS. EXTERIOR BOXES SHALL BE OF WEATHERPROOF CONSTRUCTION AND SHALL BE PROVIDED WITH NEOPRENE COVER GASKETS. BOXES SHALL BE RIGIDLY ATTACHED TO THE STRUCTURE, INDEPENDENT OF ANY CONDUIT SUPPORT.

HANGERS / INSERTS

FURNISH AND INSTALL ALL UNISTRUT, HANGERS, SUPPORTS, ETC. REQUIRED FOR WORK UNDER THIS DIVISION. SUPPORT CONDUIT FROM BUILDING STRUCTURE, NOT FROM CEILING SUPPORTS. BRANCH CIRCUIT CONDUIT 3/4" AND SMALLER MAY BE RUN FROM CEILING SUPPORTS USING SPRING STEEL CLIPS.

CONCRETE, EXCAVATION, FILL, BACKFILL

FURNISH ALL CONCRETE, EXCAVATION, FILL, BACKFILL AND STEEL REQUIRED FOR THIS WORK UNLESS SPECIFICALLY NOTED OTHERWISE.

ALL CONCRETE, FILL, BACKFILL, STEEL, ETC., WHERE REQUIRED SHALL BE IN STRICT ACCORDANCE WITH SPECIFICATIONS SET UP IN OTHER DIVISIONS

OF THE SPECIFICATIONS.

FINAL LOCATION OF SURFACE FEATURES

SHALL BE ACCOMPLISHED IN THE FIELD, SUBJECT TO THE APPROVAL OF THE ARCHITECT. THE LOCATION OF ALL SWITCHES, FIXTURES, PANELS, ETC. AND THEIR PROXIMITY AND RELATIONSHIP TO ALL VISIBLE FEATURES OF EQUIPMENT FURNISHED BY OTHER TRADES, SHALL BE MADE KNOWN TO THE ARCHITECT. IN CASE OF CONFLICT BETWEEN TRADES, OR BETWEEN A TRADE AND THE ARCHITECT, THE DECISION OF THE ARCHITECT SHALL BE FINAL AND HIS INSTRUCTIONS IN THESE MATTERS SHALL BE FOLLOWED BY ALL CONCERNED.

PAINTING

ALL EXPOSED ELECTRICAL EQUIPMENT, CONDUIT, FLUSH PANEL FRONT, TRANSFORMER, SWITCHES, SWITCHBOARDS, PANELS AND SIMILAR ITEMS SHALL BE PAINTED AS SPECIFIED UNDER THE PAINTING SECTION OF THESE SPECIFICATIONS.

CLEANING UP PREMISES

AT ALL TIMES KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIAL OR RUBBISH CAUSED BY EMPLOYEES. METAL FLOOR PANS SHALL BE PROVIDED PIPE THREADING MACHINES AND BENCHES AND SHALL BE USED AT ALL TIME TO PREVENT CONCRETE FLOORS BECOMING OIL SOAKED. UPON COMPLETION OF THE JOB, REMOVE ALL DEBRIS, CLEAN ALL SWITCHPLATES, FIXTURES, PANEL TRIMS AND IN GENERAL, LEAVE THE PREMISES IN A CLEAN AND TIDY CONDITION.

ACCEPTABLE MANUFACTURERS

THE FOLLOWING IS A LIST OF MANUFACTURERS WHOSE SPECIFICATION GRADE EQUIPMENT IS ACCEPTABLE AS TO MANUFACTURER. SUBSTITUTIONS SHALL NOT CAUSE OR CONTRIBUTE TO CHANGES UNLESS THESE CHANGES ARE APPROVED BY THE ARCHITECT PRIOR TO SUBSTITUTION.

ITEMS: CAREFUL CHECKING MUST BE MADE TO VERIFY THAT THE EQUIPMENT WILL MEET ALL CAPACITIES, REQUIREMENTS, SPACE ALLOCATIONS, AND THAT THE WEIGHTS ARE NOT EXCESSIVE.

POWER DISTRIBUTION EQUIPMENT: SQUARE D, SIEMENS, CHALLENGER, SUN VALLEY ELECTRIC

WIRE AND CABLES: GENERAL CABLE, ANACONDA, CAPITOL, CIRCLE AW, GENERAL ELECTRIC, OKONITE, ROME, SIMPLEX, KAISER.

LOCAL WALL SWITCHES, RECEPTABLES, PILOT LIGHTS: PASS AND SEYMOUR, SIERRA, BRYANT, GIRCLE F, GENERAL ELECTRIC, HUBBELL, RUSSELL & STOLL, ARROW-HART.

DEVICE PLATES: HUBBELL, SLATER, PASS AND SEYMOUR, SIERRA, BRYANT, ARROW-HART, LEVITON.

LAMPS: GENERAL ELECTRIC, PHILLIPS, SYLVANIA.

CONDUIT: TRIANGLE, NATIONAL ELECTRIC CO., JONES-MCLAUGHLIN REPUBLIC.

FITTINGS: THOMAS AND BETTS, APPLETON, CROUSE-HINDS.

CAST OUTLET BOXES: CROUSE-HINDS, APPLETON.

BALLASTS: ADVANCE, GENERAL ELECTRIC, JEFFERSON, WESTINGHOUSE, SYLVANIA, UNIVERSAL.

FLOOR BOXES: HUBBELL, LEW STEEL CITY.

OUTLET BOXES: RACO, STEEL CITY, SLATER.

SHOP DRAWINGS

ALL DATA SHALL BE SUBMITTED AT ONE TIME, BOUND AND INDEXED IN AN ORDERLY MANNER. PRIOR TO STARTING THE WORK, SUBMIT TO THE ARCHITECT FOR APPROVAL, SIX (6) SETS OF SHOP DRAWINGS OF SERVICE ENTRANCE SECTION, SWITCHBOARDS, PANELBOARDS, LIGHTING FIXTURES, TRANSFORMERS AND ALL EQUIPMENT TO BE FABRICATED.

FINAL INSPECTION AND TEST

FURNISH ALL METERS, CABLES, CONNECTIONS AND APPARATUS NECESSARY FOR MAKING TESTS.

TEST SYSTEM FOR SHORTS AND GROUNDS. FAULTY WIRING SHALL BE REMOVED AND REPLACED. ANY DEVICE, APPARATUS OR FIXTURE INSTALLED SHOWING SUBSTANDARD PERFORMANCE SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ARCHITECT.

MEGGER ALL SYSTEM NEUTRALS IN THE PRESENCE OF THE ENGINEER TO INSURE THE NEUTRAL IS NOT GROUNDED WITHIN THE SYSTEM. TEST SHALL BE MADE AFTER ALL BRANCH CIRCUIT WIRING IS INSTALLED AND CONNECTED.

TEST ALL GROUND FAULT RELAYS IN THE PRESENCE OF THE ENGINEER. SET RELAY FOR TIME AND CURRENT RATING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.

ALL EQUIPMENT RATED AT 1,000 AMPS OR MORE, OR 480 VOLTS SHALL BE TESTED FOR INSULATION BREAKDOWN PRIOR TO ITS BEING ENERGIZED. SUCH EQUIPMENT SHALL WITHSTAND FOR A PERIOD OF ONE MINUTE WITHOUT BREAKDOWN, THE APPLICATIONS OF A 60HZ ALTERNATING POTENTIAL OF 1,000V PLUS TWICE THE RATED VOLTAGE OF THE DEVICE. TEST SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER.

HIGH POTENTIAL TESTING

THE HIGH-POTENTIAL TESTS SHALL BE MADE BY AN INDEPENDENT COMPANY HIRED BY THE ELECTRICAL CONTRACTOR. COPIES OF THE REPORT CERTIFIED BY A REGISTERED ENGINEER, SHALL BE FORWARDED TO THE ARCHITECT WITHIN TWO (2) WEEKS AFTER THE TESTS ARE PERFORMED.

TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. "HI-POT" TEST VOLTAGES AND TIMES SHALL BE COORDINATED WITH AND DETERMINED BY THE OWNER'S REPRESENTATIVE WHEN ANY OTHER CABLE OR DEVICES, OTHER THAN THAT INSTALLED NEW BY ELECTRICAL CONTRACTOR UNDER HIS CONTRACT, IS TO BE INCLUDED IN THE TEST PROCEDURES. CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE, IN WRITING, HIS INTENTIONS TO PERFORM THE HI-POTTING TEST, INCLUDING TIME AND DATE AND THE TESTING AGENCY.

IN GENERAL TESTS SHALL BE CONDUCTED AS FOLLOWS:

- MAXIMUM D.C. VOLTAGES 52.8 KV.
BUILD-UP TIME TO TEST VOLTAGE - ONE (1) MINUTE IN 10 KV DC STEPS WITH RECORDED MILLI-AMP READINGS AT 156, 30 AND 45 SECONDS.
HOLDING TIME AT TEST VOLTAGE - FIVE (5) MINUTES, WITH RECORDED MILLI-AMP READING AT THE END OF EACH MINUTE.
"DECAY TIME" SHALL BE RECORDED WITH SHUT-OFF AT APPROXIMATELY 1-3 KV.

THE "HI-POT" TEST SHALL NOT BE MADE UNTO ANY PORTION OF AN

ENERGIZED DEVICE. SUFFICIENT TIME LAG SHALL BE ALLOWED IN THE ORIGINAL REQUEST FOR THE OWNER TO SET UP A DEFINITE PERIOD OF TESTING IF ANY PORTION OF THE OWNER'S DISTRIBUTION SYSTEM IS INVOLVED.

GROUNDING

THE NEUTRAL CONDUCTORS AND ALL OTHER EXPOSED NON-CURRENT CARRYING METAL PARTS AS REQUIRED BY CODE SHALL BE GROUNDED. GROUNDING BUSHING SHALL BE USED AS REQUIRED AND SHALL BE O.Z. INSULATED TYPE BL OR APPROVED EQUAL. NO GROUNDING SHALL BE MADE TO GAS PIPING. WHERE EQUIPMENT OR DEVICES ARE SERVED BY NON-METALLIC DUCTS, ENCLOSURES SHALL BE GROUNDED BY MEANS OF A CODE SIZE BARE OR GREEN INSULATED EQUIPMENT GROUND WIRE INSTALLED IN THE DUCT WITH THE CURRENT CARRYING CONDUCTORS AND BE BONDED SECURELY IN EACH CABINET TERMINATING THE GROUND WIRE. COPPER JUMPERS SHALL BRIDGE FLEXIBLE CONDUIT AND BE INSTALLED IN THE CONDUIT. ALL SERVICE GROUNDS SHALL BE IN ACCORDANCE WITH THE UFER GROUND.

ALL EMT, FLEXIBLE CONDUIT, MC CABLE, OR PVC CONDUIT SHALL BE PROVIDED WITH AN INSULATED GREEN GROUND WIRE.

16700 COMMUNICATIONS

16740 TELEPHONE

PROVIDE EMPTY CONDUIT OR DUCT WITH "JET-LINE" OR EQUAL POLYPROPYLENE PULL LINE AND TERMINAL MOUNTING BOARD AS SHOWN ON DRAWINGS.

USE LARGE RADIUS RIGID GALVANIZED STEEL CONDUIT FOR BENDS AND OFFSETS IN DUCT RUNS.

ALL CONDUIT RUNS TO TELEPHONE OUTLET BOXES SHALL BE A MINIMUM OF 3/4" AND HAVE A MAXIMUM OF TWO 90 DEGREE BENDS.

TELEPHONE TERMINAL BOARDS SHALL BE 3/4" FIR PLYWOOD, GRADE CC PLUS SIZE AS INDICATED ON DRAWINGS. TELEPHONE TERMINAL CABINETS SHALL HAVE THE DOOR FASTENED TO THE TRIM WITH CONCEALED HINGES AND BE PROVIDED WITH FLUSH TYPE COMBINATION LATCH AND LOCK, KEYS TO MATCH LIGHTING PANELS, CABINETS AND TRIM SHALL BE FACTORY PAINTED WITH TWO FINISH COATS.

PROVIDE ALL NECESSARY MATERIAL AND LABOR REQUIRED BY THE TELEPHONE COMPANY FOR DELIVERING SERVICE TO THE TELEPHONE TERMINAL BOARD. ALL CONDUIT, TRENCHING AND BACKFILL SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR IN ACCORDANCE WITH THE TELEPHONE COMPANY STANDARDS.

16800 DATA

ALL CONDUIT RUNS TO DATA OUTLET BOXED SHALL BE A MINIMUM OF 3/4" AND HAVE A MAXIMUM OF TWO 90 DEGREE BENDS.

ALL DATA OUTLETS ARE TO HAVE WALL PLATES TO MATCH THE DEVICE PLATE.

GUARANTEE

GUARANTEE ALL MATERIAL, EQUIPMENT, AND WORKMANSHIP FOR ALL SECTIONS UNDER THIS DIVISION IN WRITING TO BE FREE FROM DEFECT OF MATERIAL AND WORKMANSHIP FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. REPLACE WITHOUT CHARGE, ANY MATERIAL OR EQUIPMENT PROVIDING DEFECTIVE DURING THIS PERIOD. THE GUARANTEE SHALL INCLUDE PERFORMANCE OF THE EQUIPMENT UNDER ALL CONDITIONS OF LOAD, INSTALLING ANY ADDITIONAL ITEMS OF CONTROL AND/OR PROTECTIVE DEVICES AS REQUIRED.

GENERAL ELECTRICAL NOTES (NOTES APPLY WHETHER KEYED TO PLAN OR NOT)

1 LIGHTING

- 1a SEE ARCHITECTURAL PLANS AND REFLECTED CEILING PLAN FOR LOCATION OF ALL LIGHT FIXTURES, INCLUDING COVE AND MILLWORK LIGHTING. WHERE FIXTURE LOCATIONS NEED TO BE CHANGED, COORDINATE WITH ARCHITECT. AVOID ROLL-UP DOORS.
1b BEFORE ORDERING FIXTURES, FIELD VERIFY THAT FIXTURES WILL FIT IN AVAILABLE SPACE.
1c VERIFY LAMP TYPE / COLOR, NUMBER OF LAMPS PER FIXTURE, LENS TYPE, AND VOLTAGE BEFORE ORDERING NEW FIXTURES TO MATCH EXISTING.

2 EMERGENCY LIGHTING

- 2a UNLESS INDICATED OTHERWISE, FLOURESCENT FIXTURES INDICATED AS EMERGENCY LIGHTS SHALL HAVE A 1 LAMP EMERGENCY LIGHTING FLOURESCENT BALLAST PACK (6 VOLT)
FURNISHED WITH FIXTURE. EMERGENCY LIGHTS/EXIT LIGHTS SHALL BE CIRCUITED TO AN UNSWITCHED LIGHTING CIRCUIT WHEN A NIGHT LIGHT CIRCUIT IS NOT PROVIDED.
2b EXIT SIGNS SHALL HAVE AN INTEGRAL EMERGENCY BATTERY. THEY SHALL BE SURE-LITES PLX 60 RP SERIES, UNIVERSAL EXIT, UNLESS OTHERWISE SPECIFIED. VERIFY THAT NO EXIT SIGN OBSTRUCTS A DOOR SWING OR HEADROOM PRIOR TO INSTALLATION. VERIFY WALL OR CEILING M