BID SET

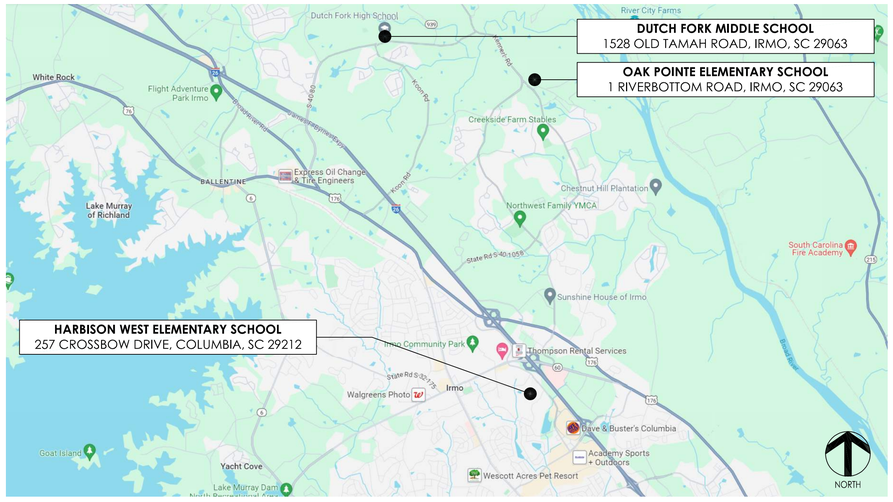
SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES
MARQUEE SIGN REPLACEMENT

1020 DUTCH FORK ROAD, IRMO, SC 29063

RENDERINGS

IMAGES ARE CONCEPTUAL

LOCATION MAP



DRAWING LIST

SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES	
Sheet Number	Sheet Title
LR5 T000	TITLESHEET
CIVIL	
LR5 C-001	**SPECIFICATIONS**
LR5 C-201	CIVIL SITE PLAN - DUTCH FORK
LR5 C-202	CIVIL SITE PLAN - OAK POINT
LR5 C-203	CIVIL SITE PLAN - HARBISON WEST
ARCHITECTURAL	
LR5 A-001	**SPECIFICATIONS**
LR5 A-002	**SPECIFICATIONS**
LR5 A-201	DUTCH FORK MS MONUMENT SIGN ELEVATIONS, SECTION & DETAIL
LR5 A-202	OAK POINTE ES MONUMENT SIGN ELEVATIONS, SECTION & DETAIL
LR5 A-203	HARBISON WEST ES MONUMENT SIGN ELEVATIONS, SECTION & DETAIL
ELECTRICAL	
LR5 E-001	ELECTRICAL S**PECIFICATIONS**
LR5 E-002	ELECTRICAL SITE - DUTCH FORK MIDDLE SCHOOL
LR5 E-003	ELECTRICAL SITE - OAK POINTE ELEMENTARY SCHOOL
LR5 E-004	ELECTRICAL SITE - HARBISON WEST ELEMENTARY SCHOOL

CLIENT

SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES
1020 DUTCH FORK ROAD
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PROJECT INFORMATION

Project Number
R23.15123.00

Client Name
SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES

Project Name
MARQUEE SIGN REPLACEMENT

Project Address
1020 DUTCH FORK ROAD, IRMO, SC 29063

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

STATE OF SOUTH CAROLINA
CPL Architects, Engineers, Landscape Architects, Surveyors, DPC
Greenville, South Carolina
No. 00069
REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA
LESLIE TYLER HARRIS
COLUMBIA, SC
9533
REGISTERED ARCHITECT
12/16/2024

SHEET INFORMATION

Issued	Scale
12/16/2024	AS NOTED
Project Status	
BID SET	
Drawn By	Checked By
CPL	**LTH**
Drawing Title	
TITLESHEET	

Drawing Number: LR5 T000
Revision Number:

Plotted By: Perry Crosson
Date last plotted: 3/18/2024 4:00 PM
Date last accessed: 3/18/2024 3:22 PM
Drawing Name: S:\Projects\Lex Rich 5\Marquee Signs\D Design\06 CAD\ACAD\ARCH\A2\LR5_R23.15123.00.dwg
Sheet size: 24x36

DIVISION 31 - EARTHWORK
SECTION 31 10 00
SITE CLEARING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Maintain on site one set of the following record documents; record actual revisions to the Work:

B. Ensure entries are complete and accurate, enabling future reference by Owner.

1.02 RELATED REQUIREMENTS

A. Section 02 41 00 - Demolition: Removal of built elements and utilities.

B. Section 32 93 00 - Plants: Pruning of existing trees to remain.

1.03 SUBMITTALS

A. Site Plan: Showing:

1. Vegetation removal limits.

PART 3 EXECUTION

3.01 SITE CLEARING

A. Minimize production of dust due to clearing operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

3.02 VEGETATION

A. Do not remove or damage vegetation beyond the limits indicated on drawings.

1. Exception: Specific trees and vegetation indication on drawings to be removed.
2. Exception: Selective thinning of undergrowth specified elsewhere.

B. Install substantial, highly visible fences at least 3 feet high to prevent inadvertent damage to vegetation to remain:

1. At vegetation removal limits.

C. In areas where vegetation must be removed but no construction will occur than pervious paving, remove vegetation with minimum disturbance of the subsoil.

D. Vegetation Removed: Do not burn, bury, landfill, or leave on site, except as indicated.

1. Chip, grind, crush, or shred vegetation for mulching, composting, or other purposes; preference should be given to on-site uses.
2. Trees: Sell if marketable; if not, treat as specified for other vegetation removed; remove stumps and roots to depth of 18 inches.
3. Sod: Re-use on site if possible; otherwise sell if marketable, and if not, treat as specified for other vegetation removed.

E. Restoration: If vegetation outside removal limits or within specified protective fences is damaged or destroyed due to subsequent construction operations, replace at no cost to Owner.

3.02 DEBRIS

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

DIVISION 32 - EXTERIOR IMPROVEMENTS
SECTION 32 11 23
AGGREGATE BASE COURSES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aggregate base course.

1.03 REFERENCE STANDARDS

A. AASHTO M 147 - Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base, and Surface Courses; 2017 (Reapproved 2021).

B. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2019.

C. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)); 2012 (Reapproved 2021).

D. ASTM D1556/D1556M - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method; 2015, with Editorial Revision (2016).

E. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by Rubber Balloon Method; 2015.

F. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); 2017, with Editorial Revision (2020).

G. ASTM D4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils; 2017, with Editorial Revision (2018).

H. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth); 2023.

1.04 SUBMITTALS

A. Materials Sources: Submit name of imported materials source.

B. Aggregate Composition Test Reports: Results of laboratory tests on proposed and actual materials used.'

C. Compaction Density Test Reports.

1.05 DELIVERY, STORAGE, AND HANDLING

A. When aggregate materials need to be stored on site, locate where directed by Owner.

B. Aggregate Storage, General:

1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
2. Prevent contamination.
3. Protect stockpiles from erosion and deterioration of materials.

PART 2 PRODUCTS

2.01 MATERIALS

A. Coarse Aggregate Type Aggregate Base Course: Course aggregate, complying with State of South Carolina Highway Department standard.

2.02 SOURCE QUALITY CONTROL

A. Where aggregate materials are specified using ASTM D2487 classification, testing of samples for compliance will be provided before delivery to site.

B. If tests indicate materials do not meet specified requirements, change material and retest.

C. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that survey bench marks and intended elevations for the work are as indicated.

B. Verify substrate has been inspected, gradients and elevations are correct, and is dry.

3.02 PREPARATION

A. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.

B. Do not place aggregate on soft, muddy, or frozen surfaces.

3.03 INSTALLATION

A. Place aggregate in maximum 4 inch layers and roller compact to specified density.

B. Level and contour surfaces to elevations and gradients indicated.

C. Add small quantities of fine aggregate to coarse aggregate as appropriate to assist compaction.

D. Add water to assist in compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.

E. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

3.04 FIELD QUALITY CONTROL

A. Copmpaction density testing will be performed on compacted aggregate base course in accordance with ASTM D1556, ASTM D2167, or ASTM D6938.

B. If tests indicate work does no meet specified requirements, remove work, replace and retest.

3.05 CLEANING

A. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

END OF SECTION

SECTION 32 12 16
ASPHALT PAVING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aggregate base course.

B. Single course bituminous concrete paving.

1.02 RELATED REQUIREMENTS

A. Section 32 11 23 - Aggregate Base Courses: Aggregate base course.

1.04 REFERENCE STANDARDS

A. AASHTO M 147 - Standard Specification for Materials for Aggregate and Soil Subbase, Base, and Surface Courses; 2017 (Reapproved 2021).

B. AI MS-2 - Asphalt Mix Design Methods; 2015.

C. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2019.

D. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); 2017, with Editorial Revision (2020).

E. ASTM D4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils; 2017, with Editorial Revision (2018).

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with State of South Carolina Department of Transportation standards.

B. Mixing Plant: Complying with State of South Carolina Department of Transportation standards.

C. Obtain materials from same source throughout.

1.06 FIELD CONDITIONS

A. Do not place asphalt when ambient air or base surface temperature is less than 40 degrees F, or surface is wet or frozen.

B. Place bitumen mixture when temperature is not more than 15 F degrees below bitumen supplier's bill of lading and note more than maximum specified temperature.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

A. Comply with applicable code for paving work on public property.

2.02 MATERIALS

A. Aggregate for Base Course: In accordance with State of South Carolina Department of Transportation standards.

B. Aggregate for Binder Course: In accordance with State of South Carolina Department of Transportation standards.

C. Aggregate for Wearing Course: In accordance with State of South Carolina Department of Transportation standards.

D. Fine Aggregate: In accordance with State of South Carolina Department of Transportation standards.

2.03 ASPHALT PAVING MIXES AND MIX DESIGN

A. Asphalt Base Course: 3.0 to 6 percent of asphalt cement by weight in mixture accordance with AI MS-2.

B. Asphalt Binder Course: 4.5 to 6 percent of asphalt cement by weight in mixture accordance with AI MS-2.

C. Asphalt Wearing Course: 5 to 7 percent of asphalt cement by weight in mixture accordance with AI MS-2.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that compacted subgrade is dry and ready to support paving and imposed load.

B. Verify gradients and elevations of base are correct.

3.02 AGGREGATE BASE COURSE

A. Place and compact aggregate base course.

3.03 PREPARATION - PRIMER

A. Apply primer in accordance with manufacturer's instructions.

B. Apply primer on aggregate base or subbase at uniform rate of 1/3 gal/sq yd.

C. Use clean sand to blot excess primer.

3.04 PREPARATION - TACK COAT

A. Apply tack coat in accordance with manufacturer's instructions.

B. Apply tack coat on asphalt or concrete surfaces over subgrade surface at uniform rate of $\frac{1}{3}$ gal/sq yd.

3.05 PLACING ASPHALT PAVEMENT - SINGLE COURSE

A. Install Work in accordance with State of South Carolina Department of Transportation standards.

B. Place asphalt within 24 hours of applying primer or tack coat.

C. Compact pavement by rolling to specified density. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.

D. Perform rolling with consecutive passes to achieve even and smooth finish without roller marks.

3.06 FIELD QUALITY CONTROL

A. Provide field inspection and testing. Take samples and perform tests in accordance with AI MS-2.

3.07 PROTECTION

A. Immediately after placement, protect pavement from mechanical injury for 1 days or until surface temperature is less than 140 degrees F.

3.08 SCHEDULE

A. Match existing pavement course and related thickness.

END OF SECTION

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PROJECT INFORMATION

Project Number
R23.15123.00

Client Name
SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES

Project Name
MARQUEE SIGN REPLACEMENT

Project Address
1020 DUTCH FORK ROAD, IRMO, SC 29063

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

STATE OF SOUTH CAROLINA
CPL Architects, Engineers, Landscape Architects, Surveyors, DPC
Greenville, South Carolina
No. 00069
REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA
LESLIE TYLER HARRIS
COLUMBIA, SC
9533
REGISTERED ARCHITECT

12/16/2024

SHEET INFORMATION

Issued: 12/16/2024
Scale: AS NOTED
Project Status: BID SET
Drawn By: PC
Checked By: LTH
Drawing Title: SPECIFICATIONS

Drawing Number: LR5
Revision Number:
C-001

Plotted By: Perry Crosson
Date last plotted: 5/29/2024 3:27 PM |
Date last accessed: 5/29/2024 1:18 PM
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LOCATION PLAN
SCALE: 1"=200'

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GRAPHIC SCALE
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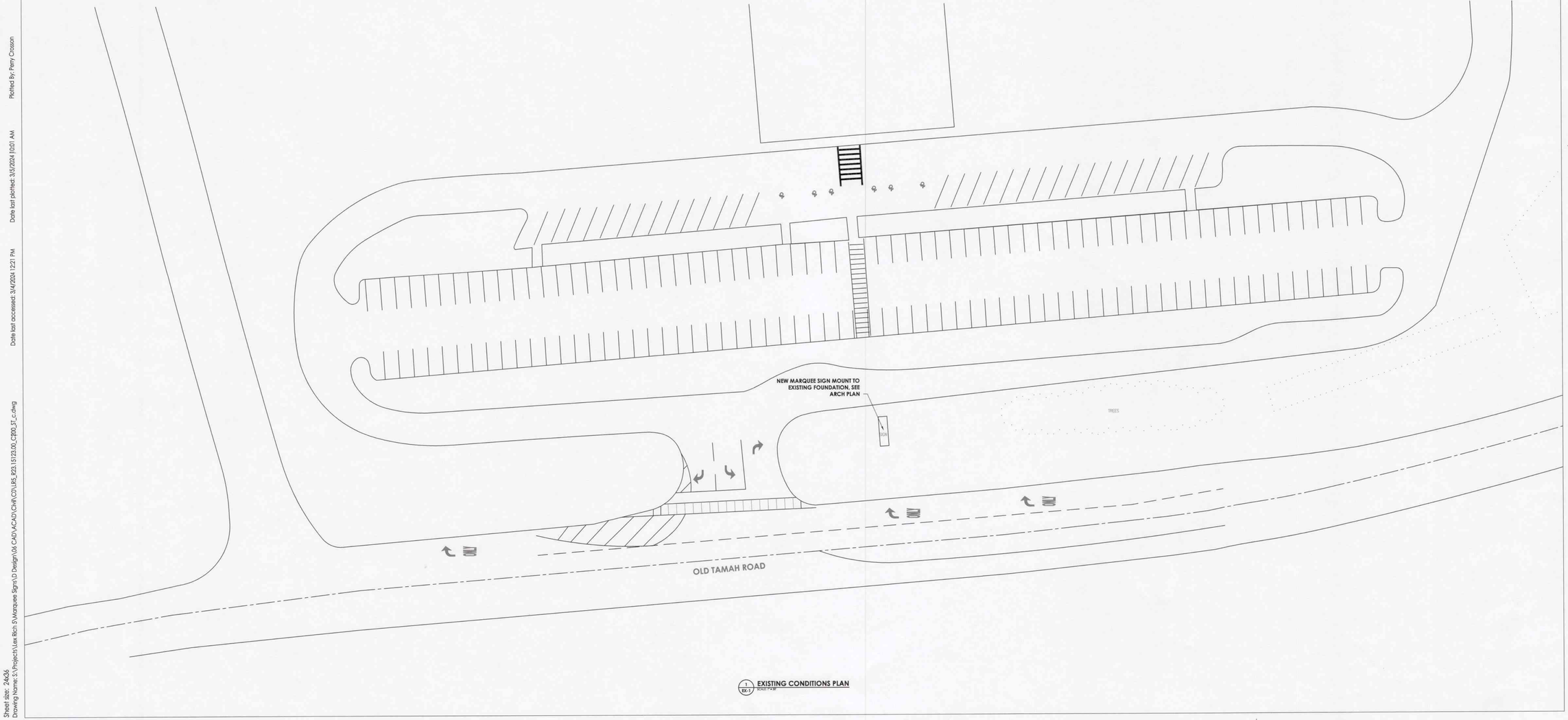
1 inch = 30 ft.



1 EX-1 **EXISTING CONDITIONS PLAN**
SCALE: 1" = 30'

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Columbia, SC 29201
CPLteam.com

PROJECT INFORMATION

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12/16/2024

SHEET INFORMATION

Issued
12/16/2024

Scale
AS NOTED

Project Status
BID SET

Drawn By
ND

Checked By
ND

Drawing Title
CIVIL SITE PLAN - DUTCH FORK MIDDLE

Drawing Number
LR5
C-201

Revision Number

Plotted By: Perry Crosson
Date last accessed: 3/4/2024 12:21 PM
Date last plotted: 3/5/2024 10:01 AM
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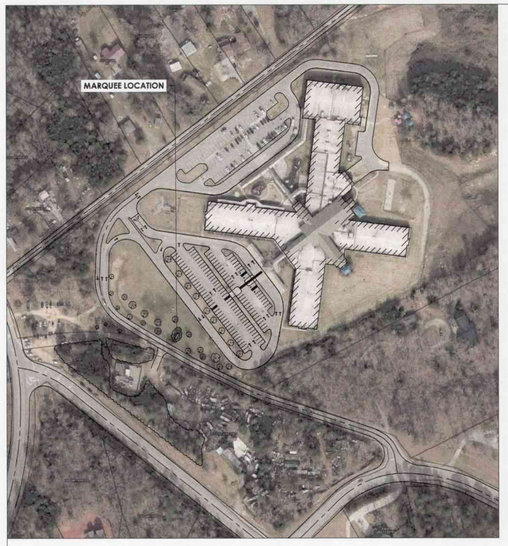

LOCATION PLAN
SCALE: 1"=200'

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GRAPHIC SCALE
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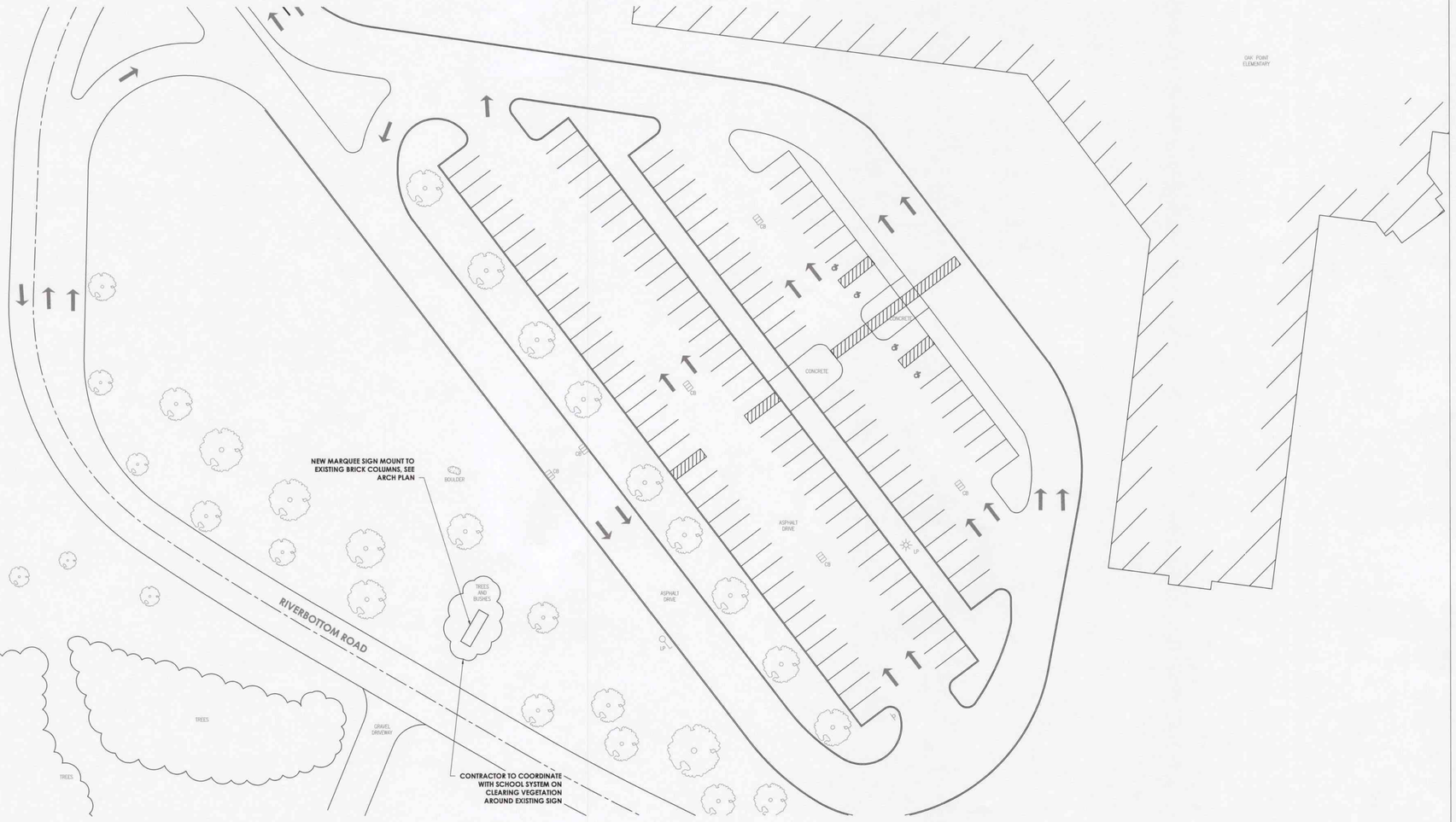
1 inch = 30 ft.



1 EX-1 **CIVIL SITE PLAN**
SCALE: 1" = 30'

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Columbia, SC 29201
CPLteam.com

PROJECT INFORMATION

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R23.15123.00

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SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES

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1020 DUTCH FORK ROAD, IRMO, SC 29063

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LESLIE TYLER HARRIS
COLUMBIA, SC
9533
REGISTERED ARCHITECT

12/16/2024

SHEET INFORMATION

Issued	Scale
12/16/2024	AS NOTED
Project Status	
BID SET	
Drawn By	Checked By
ND	ND

Drawing Title
CIVIL SITE PLAN - OAK POINT ELEMENTARY

Drawing Number: LR5
Revision Number:
C-202

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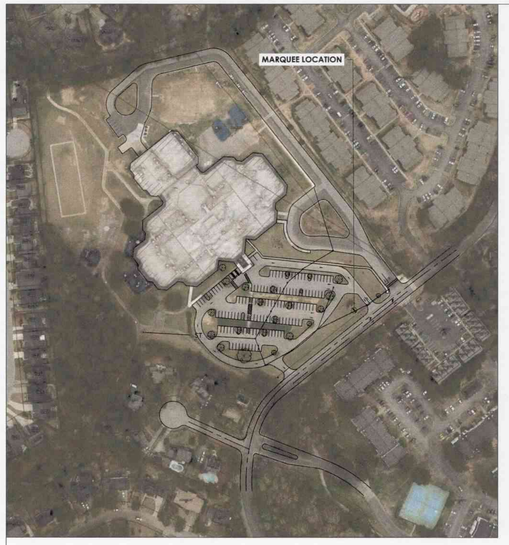

LOCATION PLAN
SCALE: 1"=200'

1 EX-1 **CIVIL SITE PLAN**
SCALE: 1" = 30'

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GRAPHIC SCALE
0 15 30 60
1 inch = 30 ft.

CPL | Architecture Engineering Planning
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Columbia, SC 29201
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1020 DUTCH FORK ROAD, IRMO, SC 29063

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PROFESSIONAL STAMPS

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CPL, Architects, Engineers, Landscape Architects, Surveyors, DPC
Greenville, South Carolina
No. 00069
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STATE OF SOUTH CAROLINA
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REGISTERED ARCHITECT

12/16/2024

SHEET INFORMATION

Issued	Scale
12/16/2024	AS NOTED
Project Status	
BID SET	
Drawn By	Checked By
ND	ND

Drawing Title
CIVIL SITE PLAN - HARBISON WEST ELEMENTARY

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Revision Number:
C-203

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Plotted By: Perry Crosson

DIVISION 02 - EXISTING CONDITIONS

SECTION 02 41 00
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of built site elements.

1.02 DEFINITIONS

A. Demolition: Dismantle, raze, destroy or wreck any building or structure or any part thereof.

B. Remove: Detach or dismantle items from existing construction and dispose of them off site, unless items are indicated to be salvaged or reinstalled.

C. Remove and Salvage: Detach or dismantle items from existing construction in a manner to prevent damage. Clean, package, label and deliver salvaged items to Owner in ready-for-reuse condition.

D. Remove and Reinstall: Detach or dismantle items from existing construction in a manner to prevent damage. Clean and prepare for reuse and reinstall where indicated.

E. Existing to Remain: Designation for existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

1.03 REFERENCE STANDARDS

A. 29 CFR 1926 - Safety and Health Regulations for Construction; Current Edition.

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).

1.04 SUBMITTALS

A. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.05 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Company specializing in the type of work required.

PART 3 EXECUTION

2.01 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
1. Obtain required permits.
2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
3. Provide, erect, and maintain temporary barriers and security devices.
4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
5. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
6. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.

B. Do not begin removal until receipt of notification to proceed from Owner.

C. Protect existing structures and other elements to remain in place and not removed.
1. Provide bracing and shoring.
2. Prevent movement or settlement of adjacent structures.
3. Stop work immediately if adjacent structures appear to be in danger.

2.02 EXISTING UTILITIES

A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

2.03 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Remove materials not to be reused on site; comply with requirements of Section 01 74 19 - Waste Management.

C. Leave site in clean condition, ready for subsequent work.

D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

DIVISION 03 - CONCRETE

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete formwork.

B. Concrete foundations.

C. Concrete reinforcement.

D. Joint devices associated with concrete work.

E. Concrete curing.

F. Concrete repair materials.

1.02 REFERENCE STANDARDS

A. ACI 117 - Specification for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).

B. ACI 211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide; 2022.

C. ACI 301 - Specifications for Concrete Construction; 2020.

D. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).

E. ACI 305R - Guide to Hot Weather Concreting; 2020.

F. ACI 306R - Guide to Cold Weather Concreting; 2016.

G. ACI 308R - Guide to External Curing of Concrete; 2016.

H. ACI 318 - Building Code Requirements for Structural Concrete; 2019 (Reapproved 2022).

I. ACI 347R - Guide to Formwork for Concrete; 2014 (Reapproved 2021).

J. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2022.

K. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2023.

L. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2023.

M. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2024.

N. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens); 2021.

O. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.

P. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete; 2020.

Q. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2023.

R. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2019.

S. ASTM C330/C330M - Standard Specification for Lightweight Aggregates for Structural Concrete; 2023.

T. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019, with Editorial Revision (2022).

U. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2023, with Editorial Revision.

V. ASTM C827/C827M - Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures; 2023.

W. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 2020a.

X. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 2021.

Y. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2020.

Z. ASTM C1202 - Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration; 2019.

AA. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures; 2020.

BB. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete; 2019.

CC. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2022.

DD. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Asphalt Types); 2023.

EE. ASTM D1752 - Standard Specification for Preformed Sponge Rubber, Cork, and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction; 2018 (Reapproved 2023).

FF. ASTM D8139 - Standard Specification for Semi-Rigid, Closed-Cell Polypropylene Foam, Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction; 2023.

GG. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017 (Reapproved 2023).

HH. COE CRD-C 572 - Handbook for Concrete and Cement Corps of Engineers Specifications for Polyvinylchloride Waterstop; 1974.

II. ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair; 2013.

JJ. NSF 61 - Drinking Water System Components - Health Effects; 2023, with Errata.

KK. NSF 372 - Drinking Water System Components - Lead Content; 2022.

1.03 SUBMITTALS

A. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.

B. Mix Design: Submit proposed concrete mix design.
1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.
2. Indicate proposed mix design complies with requirements of ACI 318, Chapter 5 - Concrete Quality, Mixing and Placing.

C. Samples: Submit samples of underslab vapor retarder to be used.

D. Test Reports: Submit report for each test or series of tests specified.

E. Reinforcement Shop Drawings: Comply with requirements of ACI SP-66. Include bar schedules, shapes of bent bars, spacing of bars, and location of splices

F. Reports: Submit certified copies of mill test report of reinforcement materials analysis.

1.04 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.

B. Follow recommendations of ACI 305R when concreting during hot weather.

C. Follow recommendations of ACI 306R when concreting during cold weather.

PART 2 PRODUCTS

2.01 FORMWORK

A. Formwork Design and Construction: Comply with guidelines of ACI 347R to provide formwork that will produce concrete complying with tolerances of ACI 117.

B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
1. Form Facing for Exposed Finish Concrete: Steel.
2. Earth Cuts: Do not use earth cuts as forms for vertical surfaces. Natural rock formations that maintain a stable vertical edge may be used as side forms.
3. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
4. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.

2.02 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).

B. Reinforcement Accessories:
1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.
2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
1. Acquire cement for entire project from same source.

B. Fine and Coarse Aggregates: ASTM C33/C33M.
1. Acquire aggregates for entire project from same source.

C. Lightweight Aggregate: ASTM C330/C330M.

D. Fly Ash: ASTM C618, Class C or F.

E. Calcined Pozzolan: ASTM C618, Class N.

F. Silica Fume: ASTM C1240, proportioned in accordance with ACI 211.1.

G. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

2.04 ADMIXTURES

A. General: Concrete supplier(s) permitted to select and use chemical admixtures indicated in this Section in concrete mix designs to enhance the placement, workability, and other characteristics of the wet concrete properties. Concrete supplier(s) shall review project schedule and coordinate the use of accelerators, retarders, etc. as necessary to facilitate concrete placement in accordance with Hot Weather and/or Cold Weather concreting practice guidelines. Concrete contractor shall also review compatability of all admixtures selected for use in each individual mix design submitted.

B. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.

D. High Range Water Reducing Admixture: ASTM C494/C494M Type F.

E. Water Reducing and Accelerating Admixture: ASTM C494/C494M Type E.

F. Water Reducing and Retarding Admixture: ASTM C494/C494M Type D.

G. Accelerating Admixture: ASTM C494/C494M Type C.

2.05 ACCESSORY MATERIALS

A. Underslab Vapor Retarder:
1. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations.
2. Products:
   a. Fortifiber Building Systems Group ; Moistop Ultra 10: www.fortifiber.com/#sle.
   b. ISI Building Products; Viper VaporCheck II 10-mil (Class A): www.isibp.com/#sle.
   c. Stego Industries, LLC10-mil: www.stegoindustries.com/#sle.
   d. W. R. Meadows, Inc; PERMINATOR Class A - 10 mils (0.25 mm): www.wrmeadows.com/#sle.

B. Non-Shrink Cementitious Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
1. Grout: Comply with ASTM C1107/C1107M.
2. Height Change, Plastic State; when tested in accordance with ASTM C827/C827M:
   a. Maximum: Plus 4 percent.
   b. Minimum: Plus 1 percent.
3. Minimum Compressive Strength at 28 Days, ASTM C109/C109M: 7,000 pounds per square inch.

2.06 BONDING AND JOINTING PRODUCTS

A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.
1. Products:
   a. Euclid Chemical Company; AKKRO-7T: www.euclidchemical.com/#sle.
   b. Kaufman Products Inc; SureBond: www.kaufmanproducts.net/#sle.
   c. Kaufman Products Inc; SureWeld: www.kaufmanproducts.net/#sle.
   d. SpecChem, LLC; Strong Bond Acrylic Bonder: www.specchemllc.com/#sle.
   e. W. R. Meadows, Inc; ACRY-LOK-: www.wrmeadows.com/#sle.

B. Epoxy Bonding System:
1. Complying with ASTM C881/C881M and of Type required for specific application.
2. Products:
   a. Adhesives Technology Corporation; Crackbond SLV-302, Crackbond LR-321, Crackbond LR-321 LPL, Ultrabond 2100 LPL, Ultrabond 2100, Ultrabond 1, Ultrabond 2, or Ultrabond HS200: www.atcepoxy.com/#sle.
   b. Euclid Chemical Company; DURAL FAST SET LV: www.euclidchemical.com/#sle.
   c. Euclid Chemical Company; DURALFLEX GEL: www.euclidchemical.com/#sle.
   d. Euclid Chemical Company; DURALFLEX LV: www.euclidchemical.com/#sle.
   e. Euclid Chemical Company; DURAL 452 GEL, DURAL 452 LV, or DURAL 452 MV: www.euclidchemical.com/#sle.
   f. SpecChem, LLC; SpecPoxy 1000, SpecPoxy 2000, SpecPoxy 3000, or SpecPoxy 3000FS: www.specchemllc.com/#sle.
   g. W. R. Meadows, Inc; Rezi-Weld Gel Paste, Rezi-Weld Gel Paste State, Rezi-Weld 1000: www.wrmeadows.com/#sle.

C. Waterstops: PVC, complying with COE CRD-C 572.

D. Waterstops: Bentonite and butyl rubber, complying with NSF 61 and NSF 372.
1. Products:

E. Reglets: Formed steel sheet, galvanized, with temporary filler to prevent concrete intrusion during placement.

F. Slab Isolation Joint Filler: 1/2 inch thick, height equal to slab thickness, with removable top section that will form 1/2 inch deep sealant pocket after removal.
1. Material: ASTM D1751, cellulose fiber.
2. Material: ASTM D1752, sponge rubber (Type I).
3. Material: ASTM D8139, semi-rigid, closed-cell polypropylene foam.
4. Material: Closed-cell, non-absorbent, compressible polymer foam in sheet form.
5. Products:
   a. Nomaco, Inc; Nomaflex Expansion Joint Filler with Void Cap Option: www.nomaco.com/#sle.
   b. Nomaco, Inc; Fastflex Slab Isolation Joint Filler with Tear-Off Strip: www.nomaco.com/#sle.
   c. W. R. Meadows, Inc; Fiber Expansion Joint Filler with Snap-Cap: www.wrmeadows.com/#sle.

2.07 CURING MATERIALS

A. Resin Curing Compound: Solvent-based liquid, membrane-forming.
1. Comply with ASTM C309, Types 1 and 1D, Classes A and B.
2. VOC Content: Less than 350 g/L.
3. Products:
   a. Euclid Chemical Company: KUREZ DR-100: www.euclidchemical.com/#sle.
   b. Euclid Chemical Company: KUREZ DR-VOX: www.euclidchemical.com/#sle.
   c. Euclid Chemical Company: Tammscure WB: www.euclidchemical.com/#sle..

B. Curing and Sealing Compound, Moisture Emission-Reducing, Penetrating: Clear, water-based, non-film-forming curing agent; capable of providing adequate bond for flooring adhesives, initially and over the long term; with sufficient moisture vapor impermeability to prevent deterioration of flooring adhesives due to moisture emission, moisture vapor emission, and alkalinity.
1. Use this product to cure and seal all slabs to receive adhesively applied flooring or roofing.
2. Compressive Strength of Treated Concrete: Equal to or greater than strength after 28-day water cure when tested according to ASTM C39/C39M.
3. Chloride Ion Resistance of Treated Concrete: Equal to or greater than strength after 28-day water cure when tested according to ASTM C1202.
4. Comply with ASTM C309 and ASTM C1315 Type I Class A.
5. Products:
   a. Green Umbrella Architectural Concrete Systems, Inc. 20 Jetview Dr. Rochester, NY 14624, basis of design manufacturer. Technical and Architectural Support:(844) 200- 7336, info@greenumbrellasystems.com.

C. Moisture-Retaining Sheet: ASTM C171.
1. Polyethylene film, white opaque, minimum nominal thickness of 4 mil, 0.004 inch.

2.08 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4100 psi at 28 days when tested according to ASTM C 109.

B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109.

2.09 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.

B. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.

C. Normal Weight Concrete: Exterior concrete sidewalks (Exposure Category F3).
1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,000 pounds per square inch.
2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
3. Cement Content: Minimum 540 pounds per cubic yard.
4. Water-Cement Ratio: Maximum 50 percent by weight.
5. Maximum Slump: 4 inches (+/- one inch.)
6. Maximum Aggregate Size: 1 inch.

2.10 MIXING

A. Transit Mixers: Comply with ASTM C94/C94M.

B. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

C. Do not use shrinkage-reducing admixture (SRA) in same concrete batch with MVRA or PIA.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.

B. Verify that forms are clean and free of rust before applying release agent. Coat contact surfaces of forms with form-release agent before placing reinforcement.

C. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

F. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
1. Class A, 1/8 inch for smooth-formed finished surfaces.
2. Class C, 1/2 inch for rough-formed finished surfaces.

G. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
1. Install keyways, reglets, recesses, and the like, for easy removal.
2. Do not use rust-stained steel form-facing material.

H. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

I. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

J. Chamfer exterior corners and edges of permanently exposed concrete.

K. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

L. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

M. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

N. Prepare existing concrete surfaces to be repaired according to ICRI 310.2R.

O. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.
1. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications, and where curing under humid conditions is required.
2. Use latex bonding agent only for non-load-bearing applications.

CPL | Architecture Engineering Planning
808 Lady Street, Suite D
Columbia, SC 29201
CPLteam.com

PROJECT INFORMATION

Project Number
R23.15123.00

Client Name
SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES

Project Name
MARQUEE SIGN REPLACEMENT

Project Address
1020 DUTCH FORK ROAD, IRMO, SC 29063

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

STATE OF SOUTH CAROLINA — CPL Architects, Engineers, Landscape Architects, Surveyors, DPC — Greenville, South Carolina — No. 00069 — REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA — LESLIE TYLER HARRIS — COLUMBIA, SC — 9533 — REGISTERED ARCHITECT

12/16/2024

SHEET INFORMATION

Issued	Scale
12/16/2024	AS NOTED
Project Status	
BID SET	
Drawn By	Checked By
PC	LTH

Drawing Title
SPECIFICATIONS

Drawing Number: LR5 A-001
Revision Number:

Plotted By: Perry Croxton
Date last plotted: 5/29/2024 3:27 PM |
Date last accessed: 5/29/2024 1:18 PM
Sheet size: 24x36
Drawing Name: S:\Projects\Lex Rich 5\Marquee Signs\D Design\04 CAD\ACAD\ARCH\A2\LR5_R23.15123.00.dwg

3.03 INSTALLING REINFORCEMENT, ANCHOR RODS, AND OTHER EMBEDDED ITEMS

A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.
   1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
   2. Allow six hours between completion of reinforcement installation and placement of concrete for special inspection.

B. Bend steel reinforcement in accordance with ACI 318.
   1. Do not heat steel reinforcement for bending. Bend or straighten bars cold.
   2. Do not bend partially embedded steel reinforcement, except as approved.

C. Clean reinforcement of dirt, grease, scale, loose rust, oil, paint and other foreign matter prior to installation.

D. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

E. Splicing of Reinforcement: Conform to ACI 318 Chapter 25 for wired lap splices and embedment lengths.

F. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

G. "Wet Sticking", "Hooking-up" or "Walking-in" of any reinforcement will not be permitted.

H. Maintain required concrete cover dimensions indicated. Coordinate placement of conduit and inserts with reinforcement. Protect installed reinforcement from damage or displacement prior to and during concrete placement.

I. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

J. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
   1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303. Misplaced or damaged anchor rods shall be subject to re-engineering fees.
   2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
   3. Install dovetail anchors in concrete structures as indicated.

3.04 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.
   1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
   2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.05 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R. Verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed and corrections made.

B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.

C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
   1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
   2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
      a. Supplement mechanical consolidation by hand, spading, rodding, or tamping.
   3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

D. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

E. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.

F. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.

3.06 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.

B. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
   1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.

3.07 CURING AND PROTECTION

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

3.08 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests.

B. Provide free access to concrete operations at project site and cooperate with appointed firm.

C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.

D. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cubic yards or less of each class of concrete placed.

E. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

F. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

3.09 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.

B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.

C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

3.10 PROTECTION

A. Protect concrete surfaces from damage until fully cured.

END OF SECTION

SECTION 10 15 00
VIDEO DISPLAY SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Panelized LED video display systems.

B. Control Software

1.02 RELATED REQUIREMENTS

A. Sheet E001, Electrical Requirements.

B. Standard for Electric Signs, UL and CUL Listed.

C. Standard for Control Centers for Changing Message Type Signs.

D. Federal Communications Commission Regulation Part 15.

E. National Electric Code.

F. Designed to current UBC or IBC standards.

G. FCC Class A Compliant.

1.03 REFERENCE STANDARDS

A. ANSI/Infocomm 10 - Audiovisual Systems Performance Verification; 2013.

B. UL 879 - Electric Sign Components; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Conduct a preinstallation meeting two weeks prior to the start of the work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

A. Product Data: Provide manufacturer's data sheets on panelized LED display systems including recommendations for preparation, storage and handling, and installation.

B. Shop Drawings: Indicate cable routing, connections between equipment, anchor and support details, and adjacent construction.

C. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

D. Project Record Documents: Provide quantities, type, and location for components, cabling and accessories.

E. Operation and Maintenance Data.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

B. Authorized Manufacturer Representative: System shall be configured and commissioned by an authorized manufacturer representative.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in compliance with manufacturer instructions.

1.08 WARRANTY

A. Provide manufacturer's 5-year limited warranty on factory materials, parts, and workmanship.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis-of-Design Manufacturer: Subject to compliance with requirements, provide products manufactured by:
   1. Golden Rule Signs, 1083 Brooks Industrial Road, Shelbyville, KY 40065
      800-732-9886 www.goldenrulesigns.com/

   or comparable products by one of the following:
   2. Daktronics, Inc.: www.daktronic.com/
   3. Mega LED Technology: www.megasigninc.com/
   4. Stewart Signs: www.stewartsigns.com/

2.02 LED DISPLAY

A. Cabinet Construction
   1. Cabinet display configuration is:
      a. Two-View (2V), two one sided displays typically installed back-to-back and show same content on both sides.
   2. The distance from the center of one line or column of pixels to the center of all adjacent lines or columns shall be 10.16 mm (0.4") both horizontally and vertically.
   3. Display shall operate from the following power sources: 120/240 VAC, 60 Hz single-phase, including neutral and earth ground.
   4. Display shall operate in a minimum ambient temperature range of -40° to +120°F (-40 to +50°C) and to a 95% humidity.
   5. Internal display component hardware (nuts, bolts, screws, standoffs, rivets, fasteners, etc.) shall be fabricated from stainless steel, aluminum, nylon, or other durable corrosion-resistant materials suitable for the signage application.
   6. Electrical display components shall be 100% solid-state.
   7. The presence of ambient radio signals and magnetic or electromagnetic interference, including those from power lines, transformers, and motors, shall not impair performance of the display system.

B. External Extruded Aluminum Cabinet
   1. Cabinet Dimensions: As indicated on drawings.
   2. Forced Air Ventilation (heating and cooling protection).
   3. Hinged Sign Face(s) allows access to internal lamps and ballast(s) without removing face(s).
   4. Concealed extruded aluminum hinges.
   5. Cover supported with integrated gas springs when open
   6. DuPont TGIC Powder Coat Finish (Colors as selected by Architect).
   7. Internally Illuminated.
      a. Illumination package type:LED.
      b. Power Requirements:13.16 Amps @ 120 VAC.

C. Sign Face:
   1. Matte Finish Clear polycarbonate Sign Grade Sheet.
   2. Thermoformed Sign Face.
   3. Decorated with second surface (inside), 3M High-Performance Translucent vinyl for all name/logo graphics. Text/logos/graphics etc. to be provided by Owner.
   4. Signs to be double-sided.

D. Exterior Finish
   1. The LED display border pieces shall be coated with an automotive-grade acrylic urethane paint.

E. Front Face Construction
   1. To meet the display readability requirements, the front face must be constructed in such a manner that it provides high contrast, low sunlight reflection and durability in all weather and site conditions.
   2. Minimum features of front face shall:
      a. Include horizontal louvers for contrast enhancement.
      b. Include vertical ribbing for contrast enhancement
      c. Use surface materials in the active LED area, such as metal, plastic, or other face materials, designed for low sunlight reflectivity.

F. Serviceability
   1. The display housing shall provide safe and convenient front service access for all modular assemblies, components, wiring, and other materials located within the housing.
   2. All internal components shall be removable and replaceable by a single technician with basic hand tools.
   3. Service access shall be easily obtained by removal of one or more modules in front of the associated internal component.
   4. Each module should allow simple removal with a single latch system.
   5. Displays shall be designed with service features that minimize potential bodily harm.

2.03 DISPLAY COMPONENTS

A. LED display modules shall be constructed for good readability, long life, and ease of service. Each display module shall be constructed as follows:
   1. Each module within the product family shall be designed with the same physical footprint of 14.4" x 14.4".
   2. All modules and their components shall be fully encapsulated and sealed to meet IP-67 standards.
   3. An LED module shall consist of LEDs with all drive electronics mounted on a single Printed Circuit Board (PCB).
   4. LEDs shall be auto-inserted in order to maintain quality and uniformity of the LEDs within each LED module.
   5. All PCBs shall be wave-soldered to ensure uniformity, quality, and durability of all solder joints.
   6. All PCBs shall be cleaned in a manner so as not to contain more than 2 parts per million contaminants.
   7. Module signal and electrical connections shall be of the positive locking and removable type. Removal of a module from the display shall not require a de-soldering operation.
   8. Data to the modules shall be redundant in that the signal can reach the module from multiple directions in the event of a loss in signal path from either direction.
   9. All LED display modules in a single display shall be identical in construction and interchangeable throughout the display with the ability to be field calibrated.
   10. All module rows shall include continuous louvers over the LEDs for sunlight shading and enhanced contrast.
   11. Modules shall be individually attached to the cabinet frame.
   12. Removal of one or more modules shall not affect the display's structural integrity.
   13. The distance from the center of one line or column of pixels to the center of all adjacent lines or columns shall be 10.16 mm (0.4") both horizontally and vertically.
   14. The failure of a single pixel, module or power supply shall not cause the failure of any other pixel, module or power supply in the display.
   15. All modules shall have no less than a 140° horizontal half-intensity viewing angle and a readability angle of 160° horizontal.
   16. The transition of viewing intensity shall be consistent throughout the viewing cone.

B. Pixels shall conform to the following specifications:
   1. Surface mount device LEDs shall be mounted to the surface of the circuit board.
   2. LEDs shall be non-diffused, ultra-bright, solid-state light emitting diodes.
   3. The red LEDs shall be constructed of AlInGaP technology and the green and blue LEDs shall be constructed of InGaN technology.
   4. Each color of LEDs used in all LED displays provided for this contract shall be from the same bin.
   5. LED half-life shall be an estimated minimum of 100,000 hours.
   6. Display shall have a minimum intensity of 6,000 cd/m2 for RGB maximum light output.

C. Power Supply
   1. All power supplies shall be regulated, auto-ranging AC to DC power, with protection for the LED pixel, LED display and driver circuitry in the event of power spikes or surges.
   2. Each power supply and their connectors shall be fully sealed to protect from corrosive environmental factors meeting IP-67 standards.

D. Internal Wiring
   1. Wiring for LED display modules and other internal components shall be installed in the housing in a neat and professional manner.
   2. Wiring shall not impede the removal of display modules, power supplies or other display components.
   3. Wires shall not make contact with or be bent around sharp metal edges.
   4. All wiring shall conform to the National Electric Code.

E. The display shall be protected from electrical spikes and transients.

F. The manufacturer shall provide an earth-ground lug on the display.

2.04 DISPLAY PERFORMANCE

A. Display Capability
   1. The LED display shall present messages that are continuous, uniform, and unbroken in appearance.
   2. The LED display shall be capable of producing 281 trillion colors for RGB at all dimming levels.
   3. Each display pixel shall be composed of one surface mount LED containing one each – red, green, and blue LED within a single package.
   4. The LED display shall be capable of displaying all true type fonts.
   5. The display shall be able to display messages composed of any combination of alphanumeric text, punctuation symbols, graphic images, and pre-canned video files.
   6. Video and message files shall have up to a 30 frame per second playback capability.

B. Controller
   1. The display's controller shall be able to run independently from a controlling computing device allowing the display to operate even when the controlling device is unhooked or turned off.
   2. Communication protocol shall support other matrix products from the vendor such as other outdoor or indoor displays of varying sizes and/or colors.
   3. Each controller shall be connected to a light sensor allowing each LED display to automatically adjust brightness according to display direction and lighting conditions.
   4. The controller shall allow connection to a temperature sensor that provides accurate site temperatures.
   5. Active presentations, stored presentations, schedules, display configuration, time and date shall be stored in non-volatile memory. No external power or battery backup will be required to maintain this data.

C. Control and Communications
   1. The display controller should be DHCP-enabled and allow for static IP addressing.
   2. Each single face display shall be controller and monitored by its own embedded LED controller. Each 2V display shall be controlled and monitored by one sign controller in the primary face, and the secondary face must show the same mirrored content.
   3. The LED controller shall be able to receive instructions from and provide information by accessing the control software using the following communication modes:
      Ethernet Cellular Modem. Provide a lifetime Verizon Cellular Data Plan.

2.05 CONTROL SOFTWARE

A. Control Software: Display content and scheduling shall be via manufacturer's standard cloud-based solution. Software to be hosted on manufacturer's servers at no cost to the customer. Web browser access to the solution to support iOS Safari, Android Chrome, Internet Explorer v11+, Microsoft Edge, Google Chrome and Mozilla Firefox.

B. Basic content creation to be performed via browser-based online editor.

C. Expanded content creation tools available via PC-compatible Content Studio download.

D. Supports import of images (PNG, BMP, GIF, JPG, PSD) and video files (AVI, MPG, MP4, MOV) in both browser-based and downloadable content utilities.

PART 3 EXECUTION

3.01 EXAMINATION

A. Mounting structure to be installed by contractor to support desired displays in all locations. Verify that separate conduit is in place for power and data to display, unless fiber is being used. Verify that all control equipment has access to 120 VAC.

B. Verify that substrates and support structure is in place and properly prepared.

C. Verify that required power and data sources are provided.

D. Verify that space is available for centrally located components.

E. Notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Prepare substrates using the methods recommended by the manufacturer for achieving the best result under the project conditions.

B. Do not proceed with installation until support structure and substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.

3.03 INSTALLATION

A. Coordinate sign installation with concrete footing, setting plates, and anchors.

B. Install sign components in accordance with manufacturer's shop drawings and installation instructions.

C. Possible power and signal entrances are designated by etched markings. Separate conduit must be used to route the power, signal in wires, and signal out wires.

D. Displays must be grounded according to the provisions outlined in Article 250 of the National Electrical Code. The display must be connected to earth-ground. Proper grounding is necessary for reliable equipment operation and protects the equipment from damaging electrical disturbances and lightning.

3.04 INSTALLATION – CONTROL CENTER

A. Provide boxes, cover plates and jacks in locations per plans.

B. Test connect control unit to all jacks and check for proper operation of control unit, electronic sign, and all features. Leave control unit in carrying case and other loose accessories with owner's designated representative.

C. Verify earth ground does not exceed 15 ohms.

3.05 INSTALLATION

3.06 CLOSEOUT ACTIVITIES

A. Demonstrate proper operation and maintenance of equipment to Owner's designated representative.

3.07 PROTECTION

A. Protect installed products from subsequent construction operations.

END OF SECTION

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PROJECT INFORMATION

Project Number
R23.15123.00

Client Name
SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES

Project Name
MARQUEE SIGN REPLACEMENT

Project Address
1020 DUTCH FORK ROAD, IRMO, SC 29063

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

STATE OF SOUTH CAROLINA
CPL Architects, Engineers, Landscape Architects, Surveyors, DPC
Greenville, South Carolina
No. 00069
REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA
LESLIE TYLER HARRIS
COLUMBIA, SC
9533
REGISTERED ARCHITECT

12/16/2024

SHEET INFORMATION

Issued	Scale
12/16/2024	AS NOTED
Project Status	
BID SET	
Drawn By	Checked By
PC	**LTH**

Drawing Title
SPECIFICATIONS

Drawing Number: LR5
Revision Number: **A-002**

Plotted By: Perry Croxton
Date last plotted: 5/29/2024 3:27 PM
Date last accessed: 5/29/2024 1:18 PM
Sheet size: 24x36
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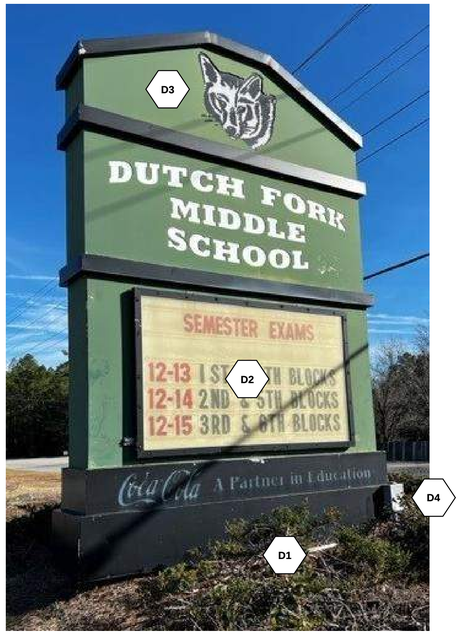


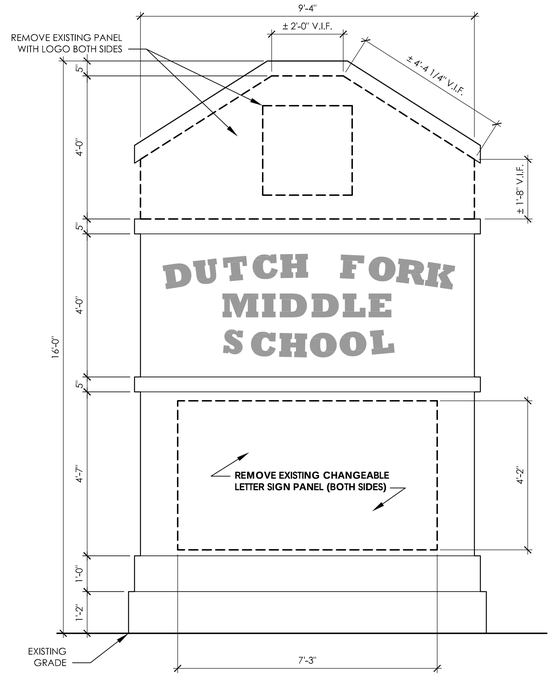
6 A-201 **VIEW OF SIGN EXISTING CONDITIONS**

KEYED NOTES - EXISTING CONDITIONS

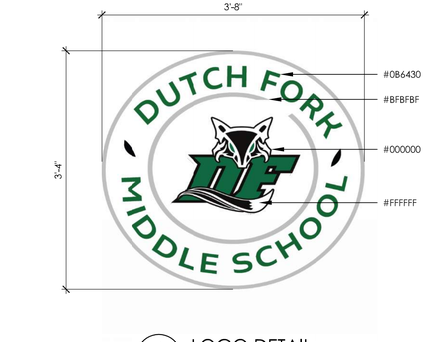
D1 TRIM SHRUBS TO THE EXTENT NECESSARY TO PERFORM THE WORK, COORDINATE EXTENT WITH OWNER
D2 REMOVE CHANGEABLE LETTER SIGN PANEL IN ITS ENTIRETY (BOTH SIDES)
D3 REMOVE SIGN PANEL WITH LOGO
D4 EXISTING ELECTRICAL

SIGN DELEGATED-DESIGN NOTES:

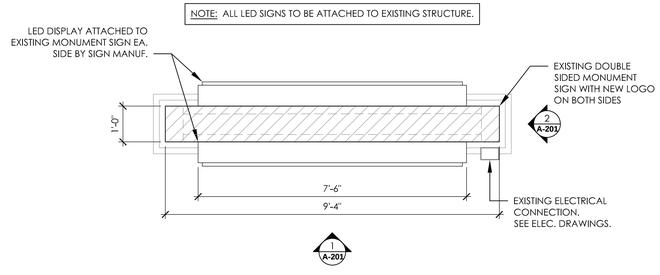
1. SIGN DRAWINGS ILLUSTRATE THE DESIGN INTENT TO REFURBISH OR REPLACE EXISTING SIGNAGE COMPONENTS WHERE INDICATED, AND INSTALL NEW LED DISPLAY CABINET, CONTROLS, AND COMMUNICATION SYSTEMS.
2. SIGN MANUFACTURER TO PROVIDE DELEGATED-DESIGN SERVICE FOR THE NEW SIGN ASSEMBLY INCLUDING METHOD OF ANCHORING AND ATTACHMENT TO THE EXISTING SIGN ASSEMBLY, STRUCTURE, AND SUPPORTS.
3. PROVIDE SUPPLEMENTAL FRAMING, ANCHORS, FASTENERS, OR OTHER MEANS OF STRUCTURAL SUPPORT TO SECURE NEW CABINET HOUSING, SIGN PANELS, LETTERS, AND OTHER NEW MATERIALS AND SIGN COMPONENTS ATTACHED TO THE EXISTING SIGN.
4. SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A SOUTH CAROLINA LICENSED ENGINEER TO CERTIFY THE SIGN INSTALLATION IS DESIGNED TO COMPLY WITH APPLICABLE PORTIONS OF THE INTERNATIONAL BUILDING CODES, ELECTRICAL CODES, STANDARDS AND REGULATIONS.
5. PRIOR TO BEGINNING THE WORK, OBTAIN SIGN PERMIT FROM LOCAL AUTHORITIES HAVING JURISDICTION WHERE REQUIRED IN ACCORDANCE WITH LOCAL COUNTY AND/OR MUNICIPAL ZONING AND DEVELOPMENT REGULATIONS.



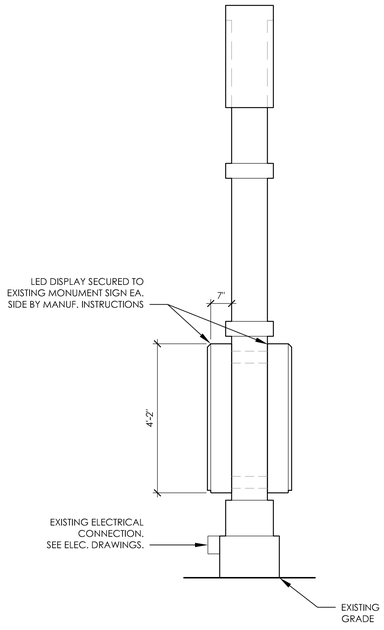
5 A-201 DUTCH FORK MIDDLE SCHOOL MONUMENT SIGN ELEVATION - DEMOLITION
SCALE: 1/2" = 1'-0"



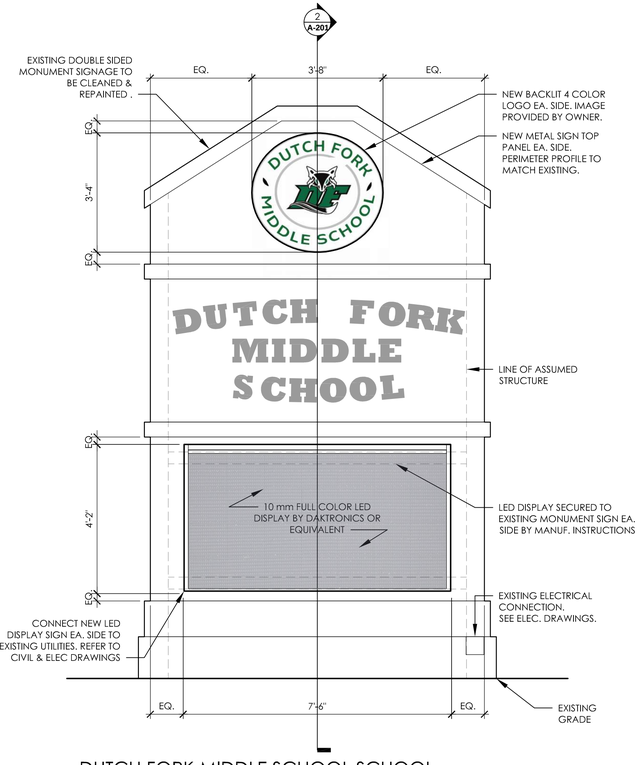
4 A-201 LOGO DETAIL
SCALE: 1" = 1'-0"



3 A-201 DUTCH FORK MIDDLE SCHOOL SCHOOL MONUMENT SIGN PLAN SECTION - NEW WORK
SCALE: 1/2" = 1'-0"
TRUE NORTH



2 A-201 DUTCH FORK MIDDLE SCHOOL SCHOOL MONUMENT SIGN SIDE ELEVATION - NEW WORK
SCALE: 1/2" = 1'-0"



1 A-201 DUTCH FORK MIDDLE SCHOOL SCHOOL MONUMENT SIGN FRONT ELEVATION - NEW WORK
SCALE: 1/2" = 1'-0"

REMOVE EXISTING CHANGEABLE LETTER SIGN PANEL (ONE SIDE)

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PROJECT INFORMATION

Project Number
R23.15123.00

Client Name
SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES

Project Name
MARQUEE SIGN REPLACEMENT

Project Address
1020 DUTCH FORK ROAD, IRMO, SC 29063

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

STATE OF SOUTH CAROLINA — CPL Architects, Engineers, Landscape Architects, Surveyors, DPC, Greenville, South Carolina, No. 00069 — REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA — LESLIE TYLER HARRIS, COLUMBIA, SC, 9533 — REGISTERED ARCHITECT

12/16/2024

SHEET INFORMATION

Issued	Scale
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BID SET	
Drawn By	Checked By
PC	LTH

Drawing Title
DUTCH FORK MS SIGN ELEVATION & SECTION

Drawing Number: LR5 A-201
Revision Number:

Sheet size: 24x36
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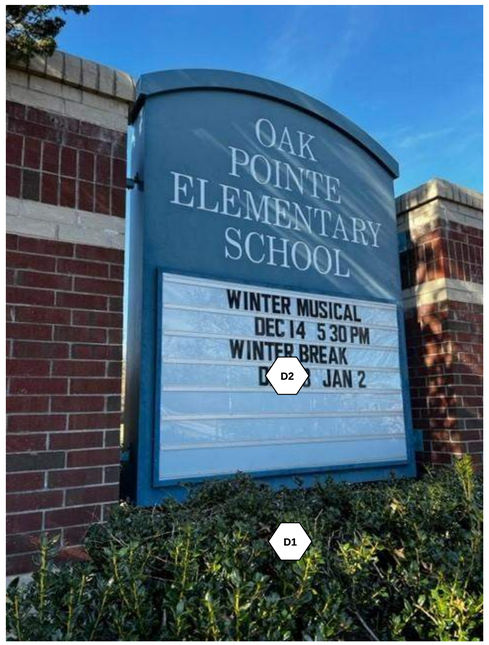


5 A-202 VIEW OF SIGN EXISTING CONDITIONS

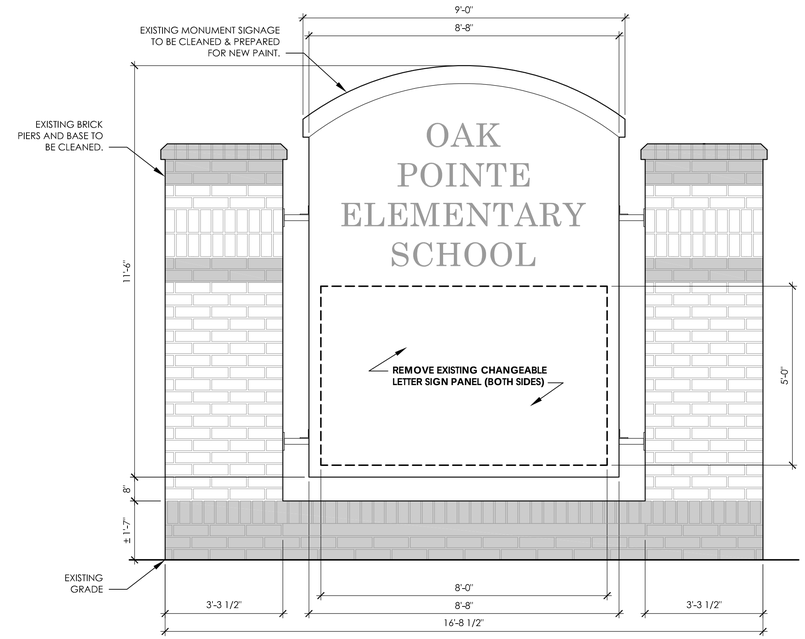
KEYED NOTES - EXISTING CONDITIONS

D1 TRIM SHRUBS TO THE EXTENT NECESSARY TO PERFORM THE WORK, COORDINATE EXTENT WITH OWNER

D2 REMOVE CHANGEABLE LETTER SIGN PANEL IN ITS ENTIRETY (BOTH SIDES)

SIGN DELEGATED-DESIGN NOTES:

1. SIGN DRAWINGS ILLUSTRATE THE DESIGN INTENT TO REFURBISH OR REPLACE EXISTING SIGNAGE COMPONENTS WHERE INDICATED, AND INSTALL NEW LED DISPLAY CABINET, CONTROLS, AND COMMUNICATION SYSTEMS.
2. SIGN MANUFACTURER TO PROVIDE DELEGATED-DESIGN SERVICE FOR THE NEW SIGN ASSEMBLY INCLUDING METHOD OF ANCHORING AND ATTACHMENT TO THE EXISTING SIGN ASSEMBLY, STRUCTURE, AND SUPPORTS.
3. PROVIDE SUPPLEMENTAL FRAMING, ANCHORS, FASTENERS, OR OTHER MEANS OF STRUCTURAL SUPPORT TO SECURE NEW CABINET HOUSING, SIGN PANELS, LETTERS, AND OTHER NEW MATERIALS AND SIGN COMPONENTS ATTACHED TO THE EXISTING SIGN.
4. SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A SOUTH CAROLINA LICENSED ENGINEER TO CERTIFY THE SIGN INSTALLATION IS DESIGNED TO COMPLY WITH APPLICABLE PORTIONS OF THE INTERNATIONAL BUILDING CODES, ELECTRICAL CODES, STANDARDS AND REGULATIONS.
5. PRIOR TO BEGINNING THE WORK, OBTAIN SIGN PERMIT FROM LOCAL AUTHORITIES HAVING JURISDICTION WHERE REQUIRED IN ACCORDANCE WITH LOCAL COUNTY AND/OR MUNICIPAL ZONING AND DEVELOPMENT REGULATIONS.



4 A-202 OAK POINTE ELEMENTARY SCHOOL MONUMENT SIGN ELEVATION - DEMOLITION
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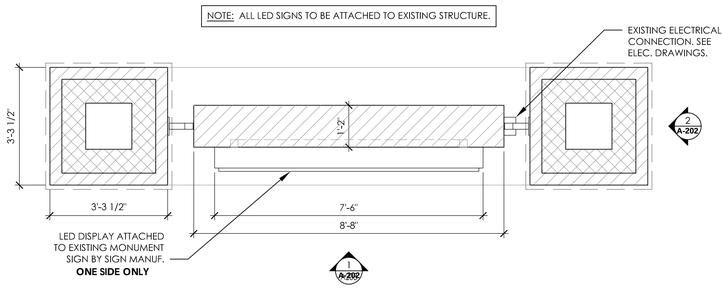
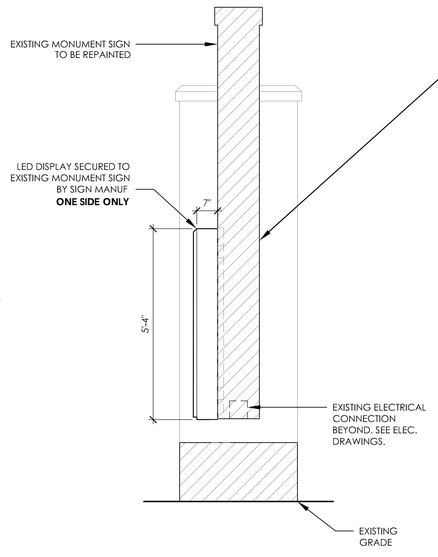


TRUE NORTH

3 A-202 OAK POINTE ELEMENTARY SCHOOL MONUMENT SIGN PLAN SECTION - NEW WORK
SCALE: 1/2" = 1'-0"



2 A-202 OAK POINTE ELEMENTARY SCHOOL MONUMENT SIGN SECTION - NEW WORK
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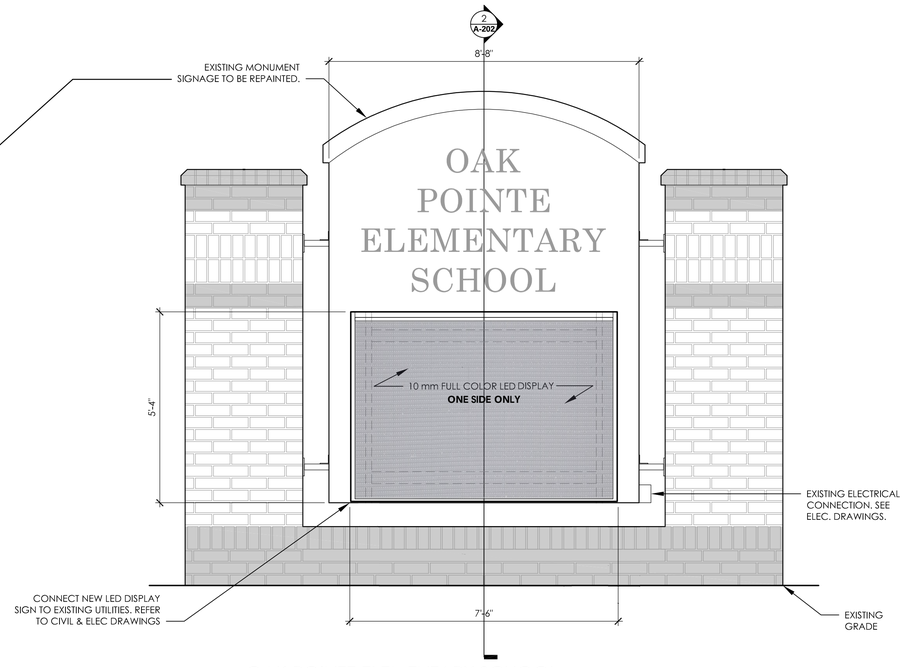

1 A-202 OAK POINTE ELEMENTARY SCHOOL MONUMENT SIGN ELEVATION - NEW WORK
SCALE: 1/2" = 1'-0"

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PROJECT INFORMATION

Project Number
R23.15123.00

Client Name
SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES

Project Name
MARQUEE SIGN REPLACEMENT

Project Address
1020 DUTCH FORK ROAD, IRMO, SC 29063

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

STATE OF SOUTH CAROLINA — CPL Architects, Engineers, Landscape Architects, Surveyors, DPC, Greenville, South Carolina, No. 00069 — REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA — LESLIE TYLER HARRIS, COLUMBIA, SC, 9533 — REGISTERED ARCHITECT

12/16/2024

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PC	LTH

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OAK POINTE ES MONUMENT SIGN ELEVATIONS, SECTION & DETAIL

Drawing Number: LR5
Revision Number: A-202

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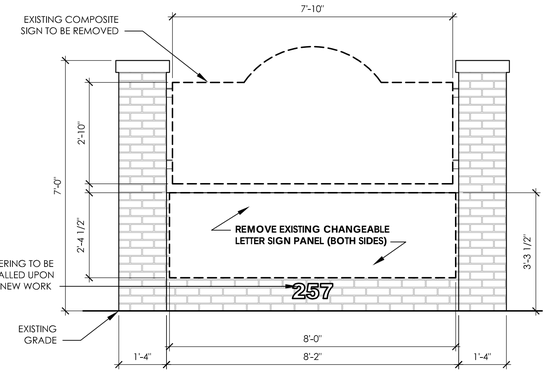
Drawing Name: S:\Projects\Lex Rich 5\Marquee Signs\D Design\06 CAD\ACAD\ ARCH\ A21LR5_R23.15123.00.dwg
Date last accessed: 5/29/2024 1:18 PM
Date last plotted: 5/29/2024 3:26 PM
Plotted By: Perry Croxton

6 A-203 **VIEW OF SIGN EXISTING CONDITIONS**

KEYED NOTES - EXISTING CONDITIONS

D1 SALVAGE EXISTING METAL LETTERS AND REINSTALL WHERE INDICATED (BOTH SIDES)
D2 REMOVE CHANGEABLE LETTER SIGN PANEL IN ITS ENTIRETY (BOTH SIDES)
D3 REMOVE SIGN PANEL WITH LOGO



5 A-203 **HARBISON ELEMENTARY SCHOOL MONUMENT SIGN ELEVATION - DEMOLITION**
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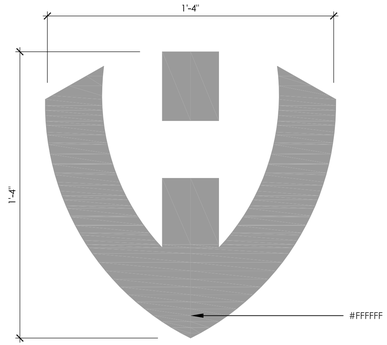

4 A-203 **LOGO DETAIL**
SCALE: 3" = 1'-0"

SIGN DELEGATED-DESIGN NOTES:

1. SIGN DRAWINGS ILLUSTRATE THE DESIGN INTENT TO REFURBISH OR REPLACE EXISTING SIGNAGE COMPONENTS WHERE INDICATED, AND INSTALL NEW LED DISPLAY CABINET, CONTROLS, AND COMMUNICATION SYSTEMS.
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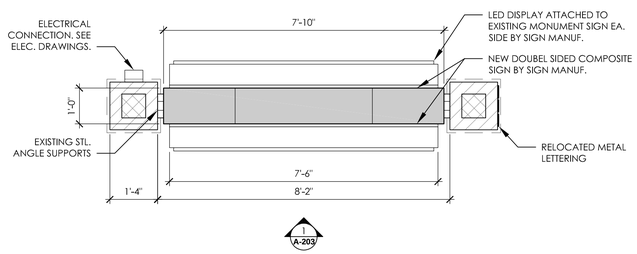
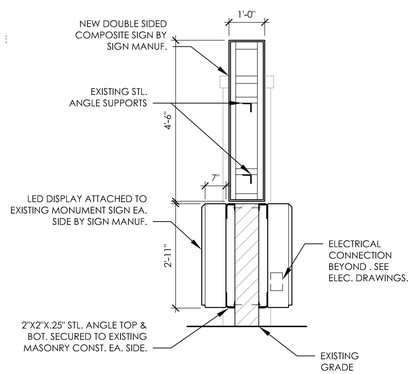
5. PRIOR TO BEGINNING THE WORK, OBTAIN SIGN PERMIT FROM LOCAL AUTHORITIES HAVING JURISDICTION WHERE REQUIRED IN ACCORDANCE WITH LOCAL COUNTY AND/OR MUNICIPAL ZONING AND DEVELOPMENT REGULATIONS.

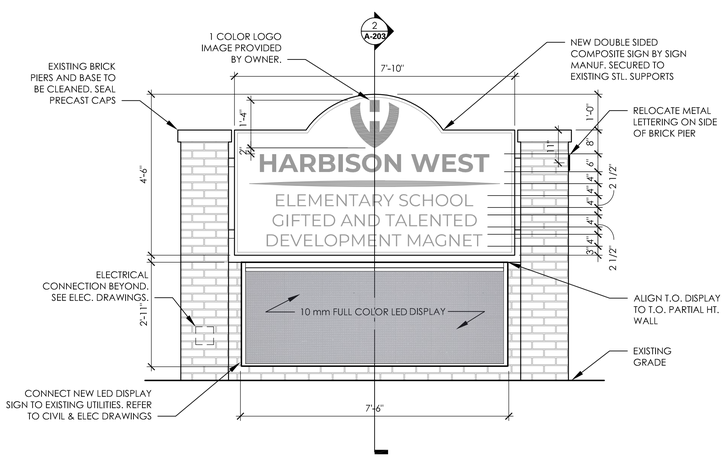


3 A-203 **HARBISON ELEMENTARY SCHOOL MONUMENT SIGN PLAN SECTION - NEW WORK**
SCALE: 1/2" = 1'-0"

TRUE NORTH



2 A-203 **HARBISON ELEMENTARY SCHOOL MONUMENT SIGN SECTION - NEW WORK**
SCALE: 1/2" = 1'-0"



1 A-203 **HARBISON ELEMENTARY SCHOOL MONUMENT SIGN ELEVATION - NEW WORK**
SCALE: 1/2" = 1'-0"

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808 Lady Street, Suite D
Columbia, SC 29201
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PROJECT INFORMATION

Project Number
R23.15123.00

Client Name
SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES

Project Name
MARQUEE SIGN REPLACEMENT

Project Address
1020 DUTCH FORK ROAD, IRMO, SC 29063

PROJECT ISSUE & REVISION SCHEDULE

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No. 00069
REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA
LESLIE TYLER HARRIS
COLUMBIA, SC
9533
REGISTERED ARCHITECT

12/16/2024

SHEET INFORMATION

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12/16/2024	AS NOTED
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Drawn By	Checked By
PC	**LTH**

Drawing Title
HARBISON WEST ES MONUMENT SIGN ELEVATIONS, SECTION & DETAIL

Drawing Number: LR5 A-**203**
Revision Number:

Plotted By: Perry Crosson
Date last plotted: 3/18/2024 4:28 PM |
Date last accessed: 3/18/2024 4:28 PM
Sheet size: 24x36
Drawing Name: S:\Projects\Lex Rich 5\Marquee Signs\D Design\06 CAD\ACAD\ARCH\A2\LR5_R23.15123.00.dwg

ELECTRICAL SPECIFICATIONS:

GENERAL:

THE INSTALLATION SHALL COMPLY WITH ALL REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70), WITH THE SOUTH CAROLINA STATE BUILDING CODE AND LOCAL ORDINANCES.

CONTRACTOR IS RESPONSIBLE TO REVIEW AND UNDERSTAND ALL DRAWINGS AND ALL WORK OF ALL TRADES TO ENSURE A COMPLETE AND THOROUGH PROJECT. CONTRACTOR SHALL COOPERATE AND COORDINATE ALL PHASES OF WORK WITH OTHER DISCIPLINES AND GENERAL CONTRACTOR.

IT IS RECOMMENDED FOR THE CONTRACTOR TO VISIT THE SITE PRIOR TO SUBMITTING A BID TO BECOME THOROUGHLY FAMILIAR WITH EXISTING CONDITIONS, VERIFY LOCATIONS, CONDUIT ROUTES, ETC., TO DETERMINE THE EXACT EXTENT OF ELECTRICAL WORK REQUIRED TO COMPLETE THE PROJECT. EXISTING CONDITIONS SHOWN ARE TAKEN FROM NON-INVASIVE FIELD OBSERVATION AND / OR EXISTING BUILDING DOCUMENTS. OTHER ELECTRICAL ITEMS MAY EXIST FOR WHICH THE ELECTRICAL IS RESPONSIBLE. REPORT DISCREPANCIES TO THE DISTRICT FOR CLARIFICATION NOT LESS THAN 3 DAYS PRIOR TO THE BID DATE.

CONTRACTOR IS RESPONSIBLE TO PROVIDE POWER FOR ALL DISCIPLINES THROUGHOUT ALL PHASES OF CONSTRUCTION.

FURNISH ALL MATERIALS, EQUIPMENT, SERVICES, AND LABOR FOR A COMPLETE OPERABLE ELECTRICAL INSTALLATION AS INDICATED ON THE DRAWINGS. ALL MATERIAL SHALL BE NEW AND BEAR THE UNDERWRITERS LABORATORIES, INC. (UL) LABEL WHERE AVAILABLE. INCIDENTAL ITEMS NOT INDICATED ON THE DRAWINGS NOR MENTIONED IN THE SPECIFICATIONS THAT CAN LEGITIMATELY AND REASONABLY BE INFERRED TO BELONG TO THE WORK DESCRIBED OR BE NECESSARY IN GOOD PRACTICE TO PROVIDE A COMPLETE SYSTEM, SHALL BE FURNISHED AND INSTALLED AS THOUGH ITEMIZED HERE IN EVERY DETAIL.

SUBMIT PRODUCT DATA FOR ARCHITECT/ENGINEER REVIEW AND APPROVAL FOR THE FOLLOWING ITEMS:

1. SAFETY DISCONNECT SWITCHES
2. WIRING DEVICES AND WEATHERPROOF COVERS
3. TRANSFORMERS
4. HANDHOLES AND JUNCTION BOXES
5. CONDUCTORS AND CABLES

ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES AND EQUIPMENT SHALL BE LABEL-LISTED BY A SOUTH CAROLINA APPROVED THIRD PARTY TESTING AGENCY.

ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH RECOGNIZED STANDARDS OF WORKMANSHIP. ALL WORK SHALL BE INSTALLED IN A NEAT AND ORDERLY MANNER.

ALL WORK SHALL BE LABELED WITH PERMANENT TYPEWRITTEN OR ENGRAVED LABEL. HANDWRITING IS NOT ACCEPTABLE. COLORS OF ALL LABELS SHALL BE COORDINATED WITH THE OWNER. LABEL ANY DISCONNECT SWITCHES WITH ENGRAVED PHENOLIC LABEL INDICATING EQUIPMENT SERVED BY THE DISCONNECT AND PANEL CIRCUIT NUMBER. LABEL SPARE CONDUITS AND JUNCTION BOXES WITH PANEL CIRCUIT NUMBER. LABEL JUNCTION BOXES WITH PANEL CIRCUIT NUMBER. PROVIDE UPDATED TYPEWRITTEN DIRECTORY IN ALL AFFECTED PANELBOARDS INDICATING LOADS SERVED BY EACH CIRCUIT.

EXISTING CONDITIONS, EQUIPMENT, DEVICES, AND CIRCUITING AS SHOWN IS TAKEN FROM EXISTING FACILITY DOCUMENTATION AND/OR NON-INVASIVE FIELD OBSERVATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS, QUANTITIES, AND EXISTING CIRCUITING.

LOCATE AND PROTECT EXISTING UTILITIES AND OTHER UNDERGROUND WORK IN MANNER WHICH WILL ENSURE THAT NO DAMAGE OR SERVICE INTERRUPTION WILL RESULT FROM EXCAVATING AND BACKFILLING.

GROUNDING:

PROVIDE A GROUNDING SYSTEM IN ACCORDANCE WITH THESE DOCUMENTS AND NEC ARTICLE 250. GROUNDING SYSTEM SHALL BE TESTED TO ENSURE A MAXIMUM GROUND RESISTANCE OF 10 OHMS.

CONTRACTOR SHALL FURNISH, INSTALL, AND CONNECT A COMPLETE SYSTEM OF GROUNDING FOR ALL EQUIPMENT AND STRUCTURES. A GOOD MECHANICAL AND ELECTRICAL CONNECTION SHALL BE MADE WITH APPROVED GROUNDING CONNECTORS.

ALL METAL RACEWAYS, INCLUDING CONDUIT, WIRE TROUGHS, WIREMOLD, ETC., SHALL BE GROUNDED. ALL CONNECTIONS IN METAL RACEWAYS SHALL BE COMPLETED IN SUCH A MANNER AS TO MAINTAIN A CONTINUOUS PATH TO GROUND THROUGHOUT THE ENTIRE LENGTH OF THE RACEWAY.

THE METALLIC CONDUIT SYSTEM SHALL BE USED AS PERMITTED BY THE ELECTRICAL CODE FOR EQUIPMENT AND ENCLOSURE GROUNDING SYSTEM. PROVIDE, AS DEFINED BY THE ELECTRICAL CODE, GROUNDING LUGS, STRAPS AND GREEN INSULATED COPPER GROUNDING CONDUCTORS, SIZED ACCORDING TO THE ELECTRICAL CODE.

IN ADDITION, PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR FOR ALL CIRCUITS PER NEC.

GROUNDING CONDUCTORS SHALL BE COPPER. USE EXOTHERMIC WELDED CONNECTIONS TO STRUCTURAL STEEL AND FOR UNDERGROUND CONNECTIONS. USE BOLTED PRESSURE CLAMPS FOR ALL OTHER CONNECTIONS.

MAKE ALL JOINTS AND CONNECTIONS OF THE CONDUIT SYSTEM TIGHT TO MAINTAIN CONTINUITY OF MECHANICAL AND ELECTRICAL GROUND THROUGHOUT ENTIRE SYSTEM.

COORDINATION:

THE ELECTRICAL CONTRACTOR SHALL COORDINATE SEQUENCE OF WORK WITH ALL OTHER TRADES. CONTRACTOR SHALL VERIFY VOLTAGE OF SIGN EQUIPMENT, PRIOR TO COMMENCING ANY WORK.

NOTIFY ARCHITECT IMMEDIATELY OF POSSIBLE CONFLICTS WITH STRUCTURE, SITE, OR OTHER FEATURES. WHERE JOB CONDITIONS REQUIRE REASONABLE CHANGES IN LOCATIONS AND ARRANGEMENT OF INDICATED EQUIPMENT, CONDUIT, OUTLETS, OR WIRING, CONTRACTOR SHALL MAKE SUCH CHANGES WITHOUT COST TO OWNER.

IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY, PRIOR TO ANY INDIVIDUAL CIRCUIT'S INSTALLATION, TO VERIFY WITH ALL OTHER TRADES CONCERNED THAT THE CIRCUIT WITH DEVICES AS DRAWN IS ADEQUATE FOR THE EQUIPMENT TO BE INSTALLED. IF ANY CONFLICT IN VOLTAGE, PHASE OR LOAD IS ENCOUNTERED WHICH WOULD ALTER THE CIRCUIT SIZE, THIS CONTRACTOR SHALL NOTIFY THE ENGINEER OR OWNER IMMEDIATELY. FAILURE TO DO SO SHALL PLACE THE RESPONSIBILITY FOR ANY SUBSEQUENT CIRCUIT CHANGE DIRECTLY UPON THE CONTRACTOR.

REFER TO THE ARCHITECTURAL DRAWINGS FOR GENERAL LIMITS OF CONSTRUCTION. ELECTRICAL WORK WILL BE REQUIRED OUTSIDE THESE NOTED LIMITS FOR RUNNING OF CONDUITS AND POWER SOURCES AS WELL AS COORDINATED WORK WITH OTHER TRADES. FOR AREAS OUTSIDE THE LIMITS OF CONSTRUCTION SUPPORT OF EXISTING EQUIPMENT AND CONDUIT IS NOT REQUIRED TO BE BROUGHT UP TO THESE SPECIFICATIONS UNLESS THE EXISTING EQUIPMENT AND CONDUITS HAVE BEEN AFFECTED BY THIS WORK. THIS INCLUDES SEISMIC SUPPORTING OF ELECTRICAL EQUIPMENT.

CIRCUIT BREAKERS ADDED TO EXISTING PANELS SHALL MATCH EXISTING BREAKERS TYPE, MANUFACTURER AND AIC RATING. UPDATE DIRECTORIES IN EXISTING PANELS TO REFLECT CHANGES BY THIS RENOVATION.

CONSTRUCTION SEQUENCE NOTES:

THE OWNER WILL MAINTAIN AND OPERATE EXISTING FACILITY AT CURRENT LEVEL UP TO AND UNTIL THAT TIME AT WHICH THE CONTRACTOR REQUIRES ACCESS FOR DEMOLITION AND RENOVATION PURPOSES.

COORDINATE ALL CONSTRUCTION WITH ALL OTHER TRADES AS REQUIRED.

THE OWNER WILL PAY ALL NECESSARY UTILITY CHARGES RELATED TO THE OPERATION OF THE EXISTING FACILITY AND THOSE NEWLY-CONSTRUCTED FACILITIES DEEMED OPERATIONAL BY THE ENGINEER. THESE SHALL INCLUDE BUT NOT BE LIMITED TO ANY TEMPORARY ELECTRIC AND TELEPHONE SERVICE REQUIRED.

THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL TEMPORARY FACILITIES REQUIRED TO PERFORM HIS WORK.

WARRANTY/COMPLETION OF WORK:

CONTRACTOR SHALL GUARANTEE WORK INSTALLED UNDER THE CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP & MATERIALS, USUAL WEAR EXCEPTED. SHOULD ANY SUCH DEFECTS DEVELOP WITHIN A PERIOD OF ONE YEAR FROM ACCEPTANCE OF THE PROJECT, THIS CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DEFECTIVE ITEMS & DAMAGE RESULTING FROM FAILURE OF THESE ITEMS, AT NO EXPENSE TO THE OWNER.

PERTINENT CERTIFICATES, WARRANTIES, AND O&M MANUALS SHALL BE DELIVERED TO THE OWNER'S REPRESENTATIVE, PRIOR TO FINAL BILLING.

BEFORE FINAL ACCEPTANCE BY THE OWNER WILL BE GRANTED, THE CONTRACTOR SHALL CLEAN ALL DEVICE PLATES, SERVICE FITTINGS AND OTHER ITEMS FURNISHED UNDER THIS CONTRACT.

AT COMPLETION OF WORK, ELECTRICAL CONTRACTOR SHALL DELIVER TO OWNER (3) SETS OF AS-BUILT DRAWINGS SHOWING LOCATION AND SIZE OF ALL ELECTRICAL WORK.

EVERY PART OF THE INSTALLATION SHALL BE TESTED, OPERATED, AND LEFT IN PERFECT WORKING ORDER.

SITE RELATED WORK:

DO NOT EXCAVATE FOR ELECTRICAL WORK UNTIL NECESSARY MATERIALS AND SUPPLIES ARE ON SITE AND THE WORK IS READY TO PROCEED WITHOUT DELAY, SO THAT TOTAL TIME LAPSE FROM EXCAVATION TO COMPLETION OF BACKFILLING WILL BE MINIMIZED.

ESTABLISH REQUIREMENTS FOR TRENCH SHORING AND BRACING TO COMPLY WITH LOCAL CODES AND AUTHORITIES HAVING JURISDICTION.

EXCAVATE TRENCHES TO DEPTH INDICATED OR REQUIRED. DO NOT EXCAVATE BEYOND INDICATED DEPTHS FOR 4" OR LESS IN NOMINAL SIZE CONDUIT. HAND EXCAVATE BOTTOM CUT TO ACCURATE ELEVATIONS AND SUPPORT CONDUIT ON UNDISTURBED SOIL. GRADE BOTTOMS OF TRENCHES AS INDICATED, NOTCHING UNDER CONDUIT COUPLINGS TO PROVIDE SOLID BEARING FOR ENTIRE BODY OF CONDUIT.

WHERE ROCK IS ENCOUNTERED, CARRY EXCAVATION 6" BELOW REQUIRED ELEVATION AND BACKFILL WITH A 6" LAYER OF CRUSHED STONE OR GRAVEL PRIOR TO INSTALLATION OF PIPE.

PROVIDE SOIL (BACKFILL) MATERIALS AS DEFINED IN ASTM D 2487. STORE EXCAVATED MATERIAL TEMPORARILY NEAR EXCAVATION, IN MANNER WHICH WILL NOT INTERFERE WITH OR DAMAGE EXCAVATION OR OTHER WORK. DO NOT STORE UNDER TREES (WITHIN DRIP LINE). RETAIN EXCAVATED MATERIAL WHICH COMPLIES WITH REQUIREMENTS FOR BACKFILL MATERIAL AND DISPOSE OF EXCAVATED MATERIAL WHICH IS EITHER IN EXCESS OF QUANTITY NEEDED FOR BACKFILLING OR DOES NOT COMPLY WITH REQUIREMENTS FOR BACKFILL MATERIAL.

UNLESS NOTED OTHERWISE, USE BACKFILL WITH PROPERLY QUALIFIED BACKFILL MATERIAL. BACKFILL WITH FINELY-GRADED SUB-BASE MATERIAL TO 6" ABOVE PLASTIC CONDUITS. CONDITION MATERIAL BY EITHER DRYING OR ADDING WATER UNIFORMLY, TO WHATEVER EXTENT MAY BE NECESSARY TO FACILITATE COMPACTION TO REQUIRED DENSITIES (% OF MAXIMUM DENSITY, ASTM D 1557). DO NOT BACKFILL WITH FROZEN SOIL MATERIALS. BACKFILL SIMULTANEOUSLY ON OPPOSITE SIDES OF ELECTRICAL WORK AND COMPACT SIMULTANEOUSLY; DO NOT DISLOCATE THE WORK FROM INSTALLED POSITIONS. COMPACT BACKFILL MATERIAL USING POWER-DRIVEN HAND-OPERATED COMPACTION EQUIPMENT. BACKFILL TO ELEVATIONS MATCHING ADJACENT GRADES.

GROUT OPENINGS AND RECESSED AS INDICATED, IN AND AROUND ELECTRICAL WORK AND OTHER WORK WHICH PENETRATES OR ADJOINS ELECTRICAL CONCRETE WORK, USING ROUGH GROUTING CLASS OF CONCRETE MIX. PROVIDE FORMWORK WHERE REQUIRED, AND TAMP, SCREED AND TROWEL SURFACES. CURE GROUT AS REQUIRED FOR CONCRETE WORK.

WHERE ELECTRICAL WORK REQUIRES PATCHING OF EXPOSED CONCRETE WORK WHICH HAS BEEN CUT TO ACCOMMODATE ELECTRICAL WORK, PROVIDE CONCRETE PATCHING MIX WHICH IS IDENTICAL WITH MIX OF WORK BEING PATCHED (SAME CEMENT, AGGREGATES, ADMIXTURES AND PROPORTIONING).

EQUIPMENT, RACEWAYS, & WIRING:

DISTRIBUTION EQUIPMENT (DISCONNECT SWITCHES, ETC.) SHALL BE BY GENERAL ELECTRIC, SQUARE D, SIEMENS, OR CUTLER HAMMER. CIRCUIT BREAKERS SHOULD MATCH EXISTING BREAKER TYPE, MANUFACTURER AND AIC RATING.

SAFETY DISCONNECT SWITCHES SHALL BE SINGLE-THROW, HEAVY-DUTY TYPE, WITH SOLID NEUTRAL. VOLTAGE RATING SHALL BE 240VAC OR 600VAC AS REQUIRED BY THE UTILIZATION VOLTAGE OF THE EQUIPMENT SERVED. PROVIDE FUSIBLE OR NON-FUSIBLE AS INDICATED. PROVIDE FUSES WHERE INDICATED; FUSES SHALL BE DUAL-ELEMENT, TIME-DELAY, REJECTION TYPE. SWITCHES SHALL HAVE HORSEPOWER RATINGS EQUAL TO OR GREATER THAN THE CONNECTED MOTOR LOADS. ACCEPTABLE MANUFACTURERS: SQUARE D CLASS 3110 OR EQUAL BY SIEMENS, GENERAL ELECTRIC, OR CUTLER HAMMER.

ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE, GRAY COLOR FOR NORMAL POWER AND RED COLOR FOR EMERGENCY POWER, WITH STAINLESS STEEL COVERPLATE AND MATCHING SCREWS, BY LEVITON, HUBBELL, PASS & SEYMOUR, OR COOPER. ALL RECEPTACLES SHALL BE HOSPITAL GRADE. VERIFY DEVICE COLOR/FINISH WITH OWNER.

WEATHERPROOF COVERS FOR WIRING DEVICES SHALL BE CAST ALUMINUM, WHILE-IN-USE TYPE, RED-DOT CODEKEEPER OR EQUAL BY TAYMAC, COOPER, OR HUBBELL. NON-METALLIC COVERS ARE NOT ACCEPTABLE.

CONDUIT RUNS SHOWN ARE SCHEMATIC AND DO NOT INDICATE THE NECESSARY FITTINGS AND JUNCTION BOXES THAT ARE INCLUDED IN THE SCOPE OF THE WORK.

ALL CONDUIT ROUTES SHOWN ARE APPROXIMATE ONLY. CONTRACTOR SHALL FIELD VERIFY FINAL ROUTE.

JUNCTION, PULL AND OUTLET BOXES SHALL BE INSTALLED SUCH THAT THE WIRING CONTAINED IN BOX MAY BE RENDERED ACCESSIBLE.

CONDUCTORS SHALL BE COPPER, 600 VOLTS, THHN-THWN OR THHN/THWN-2, 75°C INSULATION, SOLID FOR #10 AWG AND SMALLER, STRANDED FOR #8 AWG AND LARGER. WHERE INSTALLED UNDERGROUND PROVIDE XHHW-2. MINIMUM SIZE SHALL BE #12 AWG. COPPER BUILDING WIRE SHALL BE BY CERRO WIRE LLC, SERVICE WIRE CO, SOUTHWIRE COMPANY OR APPROVED EQUAL.

ALL CONDUCTORS SHALL BE IN CONDUIT. WHERE ABOVE ACCESSIBLE CEILINGS OR EXPOSED, INTERIOR, NOT SUBJECT TO PHYSICAL DAMAGE USE GALVANIZED ELECTRICAL METALLIC TUBING (EMT). EXPOSED, EXTERIOR CONDUIT AND WHERE SUBJECT TO PHYSICAL DAMAGE SHALL BE GALVANIZED STEEL RIGID METAL CONDUIT (RMC). USE FLEXIBLE METALLIC CONDUIT FOR FINAL CONNECTION TO VIBRATING EQUIPMENT; LIQUIDTIGHT IN WET LOCATIONS. UNDERGROUND RIGID POLYVINYL CHLORIDE (PVC) CONDUIT WHERE UNDERGROUND. TRANSITION TO GALVANIZED STEEL RIGID METAL CONDUIT (RMC) WHERE EMERGING FROM UNDERGROUND.

MC CABLE, NONMETALLIC-SHEATHED CABLE, UNDERGROUND FEEDER AND BRANCH-CIRCUIT CABLE, AND SERVICE ENTRANCE CABLE IS NOT PERMITTED.

WIRING CONNECTORS FOR SPLICES AND TAPS USE TWIST-ON INSULATED SPRING CONNECTORS FOR #8 AWG OR SMALL AND MECHANICAL CONNECTORS OR COMPRESSION CONNECTORS FOR #6 AWG OR LARGER.

MAKE SPLICES AND TAPS THAT ARE COMPATIBLE WITH CONDUCTOR MATERIAL AND THAT POSSESS EQUIVALENT OR BETTER MECHANICAL STRENGTH AND INSULATION RATINGS THAN UNSPLICED CONDUCTORS. SPLICES AND TAPS SHOULD BE MADE ONLY IN ACCESSIBLE BOXES.

TWIST-ON INSULATED SPRING WIRING CONNECTORS SHALL BE RATED 600V, 221°F FOR STANDARD APPLICATIONS AND 302°F FOR HIGH TEMPERATURE APPLICATIONS; PRE-FILLED WITH SEALANT AND LISTED AS COMPLYING WITH UL 486D FOR DAMP AND WET LOCATIONS. MECHANICAL WIRING CONNECTORS SHALL BE BOLTED TYPE OR SET-SCREW TYPE. COMPRESSION WIRING CONNECTORS SHALL BE CIRCUMFERENTIAL TYPE OR HEX TYPE CRIMP CONFIGURATION.

FOR ELECTRICAL TAPE PROVIDE:

- VINYL COLOR CODING ELECTRICAL TAPE SHALL BE COLORED TO MATCH COLOR CODE INDICATED, BE LISTED AS COMPLYING WITH UL 510, HAVE A MINIMUM THICKNESS OF 7 mil, BE RESISTANT TO ABRASION, CORROSION AND SUNLIGHT AND SUITABLE FOR CONTINUOUS TEMPERATURE ENVIRONMENT UP TO 221°F.
- VINYL INSULATING TAPE SHALL BE LISTED AS COMPLYING WITH ASTM D3005 AND UL 510, HAVE A MINIMUM THICKNESS OF 7 mil, BE RESISTANT TO ABRASION, CORROSION AND SUNLIGHT, AND SUITABLE FOR TEMPERATURE ENVIRONMENT DOWN TO 0°F AND UP TO 221°F .
- RUBBER SPLICING ELECTRICAL TAPE SHALL BE ETHYLENE PROPYLENE RUBBER (EPR) TAPE, BE LISTED AS COMPLYING WITH ASTM D4388, HAVE A MINIMUM THICKNESS OF 30 mil AND BE SUITABLE FOR CONTINUOUS TEMPERATURE ENVIRONMENT UP TO 194°F AND SHORT-TERM 266°F OVERLOAD SERVICE.

WIRE PULLING LUBRICANT SHALL BE LISTED AS COMPLYING WITH UL 267, BE SUITABLE FOR USE WITH CONDUCTORS/CABLES AND ASSOCIATED INSULATION/JACKETS TO BE INSTALLED, AND SUITABLE FOR USE AT INSTALLATION TEMPERATURE.

PROVIDE CABLE TIES WITH MATERIAL AND TENSILE STRENGTH RATING SUITABLE FOR APPLICATION.

USE COLOR CODED ADHESIVE MARKING TAPE FOR RACEWAYS, WIRES AND CABLES. COLOR CODE THE WIRING SYSTEM TO MATCH EXISTING CONDITIONS. IF NO CODING EXISTS ON PROPERTY, CODE WIRING AS FOLLOWS:

480Y/277V	208Y/120V
PHASE A: BROWN	PHASE A: BLACK
PHASE B: ORANGE	PHASE B: RED
PHASE C: YELLOW	PHASE C: BLUE
NEUTRAL: GRAY	NEUTRAL: WHITE
GROUND: GREEN	GROUND: GREEN

CONDUIT PENETRATIONS OF ROOF, WALLS, FLOORS, AND CEILINGS SHALL BE SEALED TO PRESERVE THE INTEGRITY OF WATERPROOFING, FIRE RATING, AND SOUNDPROOFING FOR WHICH THE ROOF, WALL, FLOOR, OR CEILING IS DESIGNED. MATERIALS AND METHODS USED SHALL COMPLY WITH STATE AND LOCAL BUILDING AND FIRE CODES. COORDINATE WITH GENERAL CONTRACTOR TO ENSURE THAT SEALING/FIRESTOPPING IS DONE.

PROVIDE STRAPS AND CLAMPS FOR CONDUIT AND CABLE SUPPORTS SUITABLE FOR CONDUIT OR CABLE BEING SUPPORTED. CONDUIT STRAPS SHALL BE ONE-HOLE OR TWO-HOLE TYPE; STEEL OR MALLEABLE IRON AND CONDUIT CLAMPS SHALL BE BOLTED TYPE UNLESS OTHERWISE INDICATED.

PROVIDE HANGERS AND BRACKETS FOR OUTLET BOX SUPPORTS SUITABLE FOR BOXES BEING SUPPORTED.

METAL CHANNEL/STRUT FRAMING SYSTEMS SHALL BE FACTORY-FABRICATED, CONTINUOUS-SLOT, METAL CHANNEL/STRUT AND ASSOCIATED FITTINGS, ACCESSORIES AND HARDWARE REQUIRED FOR FIELD ASSEMBLY OF SUPPORTS, LISTED AS COMPLYING WITH MRMA-4. FOR INDOOR DRY LOCATIONS USE GALVANIZED STEEL.

WHERE OTHERWISE INDICATED, PROVIDE ANCHORS AND FASTENER TYPES INDICATED FOR SPECIFIED APPLICATIONS.

MULTI-WIRE BRANCH CIRCUITS (SHARED NEUTRALS) ARE NOT PERMITTED UNLESS SPECIFICALLY NOTED.

UNLESS NOTED OTHERWISE ON THE DRAWINGS, EACH BRANCH CIRCUIT SHALL BE 2#12, 1#12G IN 1/2" CONDUIT. PROVIDE #10 AWG FOR 120V BRANCH CIRCUITS LONGER THAN 100 FEET UNLESS NOTED OTHERWISE. COMBINED NEUTRALS ARE NOT PERMITTED.

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808 Lady Street, Suite D
Columbia, SC 29201
CPLteam.com

PROJECT INFORMATION

Project Number
R23.15123.00

Client Name
SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES

Project Name
MARQUEE SIGN UPGRADES

Project Address
1020 DUTCH FORK ROAD, IRMO, SC 29063

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

STATE OF SOUTH CAROLINA
CPL Architects, Engineers, Landscape Architects, Surveyors, DPC
Greenville, South Carolina
No. 00069
REGISTERED ARCHITECTS

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 20444
09/24/2024
MICHAEL S PARKER

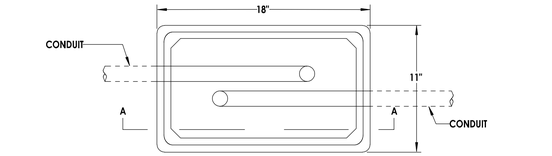
SHEET INFORMATION

Issued	Scale
12/16/2024	AS INDICATED
Project Status	
BID SET	
Drawn By	Checked By
CPL	CPL

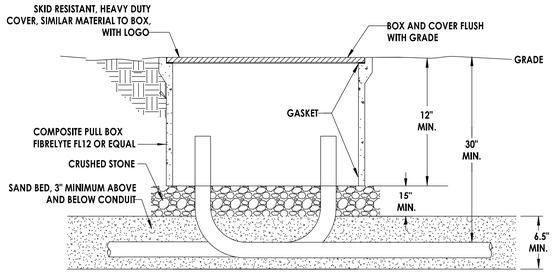
Drawing Title
ELECTRICAL SPECIFICATIONS

Drawing Number: LR5 E-001
Revision Number:

Sheet size: 24x36
Drawing Name: S:\Projects\Lex Rich 5\Marquee Signs\D Design\06 CAD\ACAD\ELEC\EDI\IRMO REBID\Irmo ES Elec_v4.dwg
Date last accessed: 8/5/2024 11:15 PM
Date last plotted: 9/25/2024 5:06 PM
Plotted By: Justice Harris



PLAN VIEW



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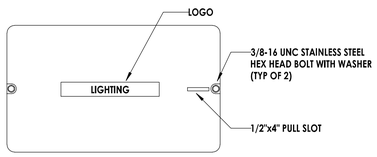
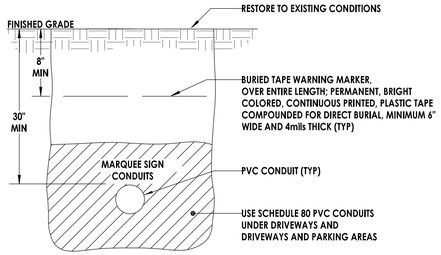
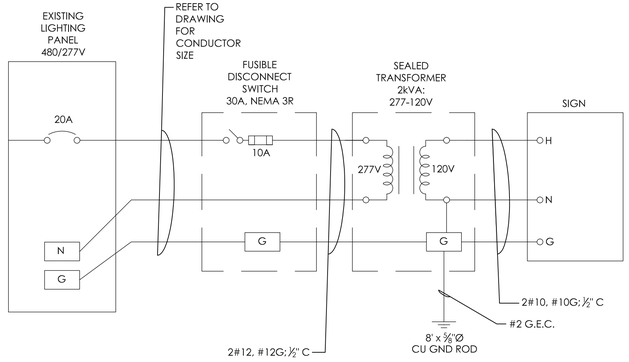


COVER DETAIL

2 E-002 **HANDHOLE DETAIL**
NOT TO SCALE



3 E-002 **CONDUIT TRENCH DETAIL**
NOT TO SCALE



4 E-002 **ELECTRICAL WIRING DETAIL**
NOT TO SCALE **NOTE: REQUIRED FOR BASE BID ONLY.**

GENERAL ELECTRICAL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70).
2. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS AND COORDINATE WITH EXISTING EQUIPMENT PRIOR TO BIDDING.
3. ALL METAL RACEWAYS SHALL BE GROUNDED. ALL CONNECTIONS IN METAL RACEWAYS SHALL BE COMPLETED IN SUCH A MANNER AS TO MAINTAIN A CONTINUOUS PATH TO GROUND THROUGHOUT THE ENTIRE LENGTH OF THE RACEWAY.

SYMBOL LIST:

OVERHEAD LINE

UNDERGROUND LINE

HH HANDHOLE

BASE BID - ELECTRICAL KEY NOTES:

B1 DISCONNECT EXISTING SIGN. REMOVE EXISTING DISCONNECT SWITCH WITH OBSOLETE CONDUIT AND WIRING.

B2 PROVIDE 1P-20A CIRCUIT BREAKER IN EXISTING PANEL HB.

B3 ROUTE SIGN CIRCUIT IN EMT CONDUIT ABOVE CORRIDOR CEILING.

B4 DROP TO BELOW GRADE IN RIGID STEEL CONDUIT. PAINT EXPOSED CONDUIT TO MATCH EXISTING SURFACE.

B5 ROUTE SIGN CIRCUIT IN SCHEDULE 80 PVC CONDUIT UNDER DRIVEWAY.

B6 PROVIDE DISCONNECT SWITCH AND TRANSFORMER (2 kVA, 277 : 120V, 1Ø) AND MAKE CONNECTIONS TO NEW SIGN. REFER TO DETAIL 4/E-002.

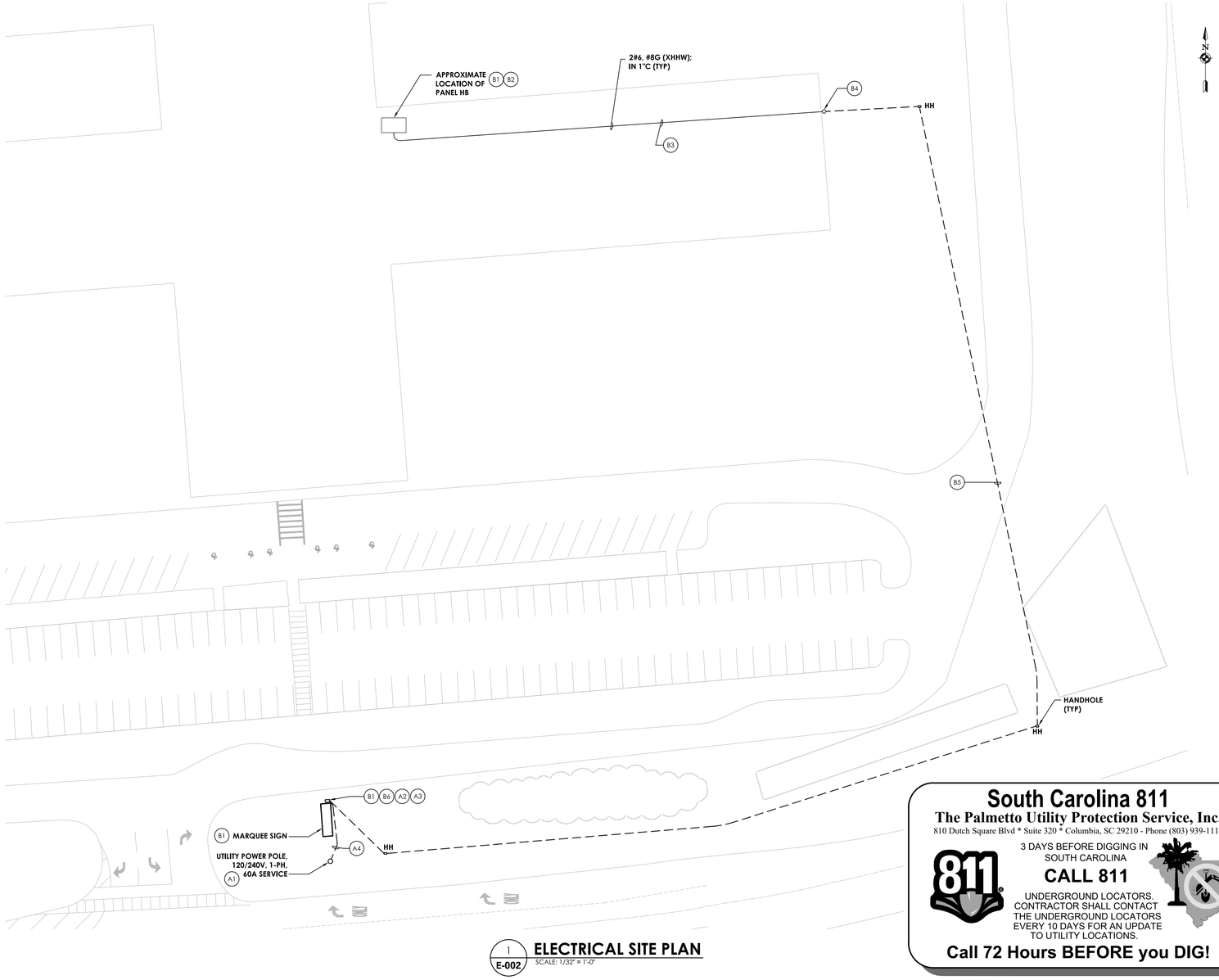
ADD ALTERNATE NO. 1:
DUTCH FORK MIDDLE SCHOOL ELECTRICAL

A1 COORDINATE NEW UTILITY POWER POLE WITH UTILITY COMPANY. PROVIDE POWER FROM UTILITY POWER POLE TO MARQUEE SIGN.

A2 PROVIDE 30A FUSIBLE DISCONNECT SWITCH IN NEMA 3R ENCLOSURE.

A3 PROVIDE 7-DAY ELECTRONIC PROGRAMMABLE TIME CLOCK, 100-HOUR SUPERCAPACITOR BACKUP, 277V, 20A BALLAST-RATED CONTACTS, NEMA 3R ENCLOSURE BY INTERMATIC MODEL #ET2705 OR EQUAL. PROVIDE ENGRAVED NAMEPLATE ON ENCLOSURE DOOR.

A4 PROVIDE 2#12, #12G IN 1/2" CONDUIT FROM UTILITY POWER POLE TO MARQUEE SIGN.



1 E-002 **ELECTRICAL SITE PLAN**
SCALE: 1/32" = 1'-0"

South Carolina 811
The Palmetto Utility Protection Service, Inc.
810 Dutch Square Blvd * Suite 320 * Columbia, SC 29210 - Phone (803) 939-1117

811

3 DAYS BEFORE DIGGING IN SOUTH CAROLINA
CALL 811
UNDERGROUND LOCATORS. CONTRACTOR SHALL CONTACT THE UNDERGROUND LOCATORS EVERY 10 DAYS FOR AN UPDATE TO UTILITY LOCATIONS.
Call 72 Hours BEFORE you DIG!

CPL | Architecture Engineering Planning
808 Lady Street, Suite D
Columbia, SC 29201
CPLteam.com

PROJECT INFORMATION

Project Number
R23.15123.00

Client Name
SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES

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MARQUEE SIGN UPGRADES

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1020 DUTCH FORK ROAD, IRMO, SC 29063

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

STATE OF SOUTH CAROLINA — CPL Architects, Engineers, Landscape Architects, Surveyors, DPC, Greenville, South Carolina No. 00069 — REGISTERED ARCHITECTS

SOUTH CAROLINA — REGISTERED — NO. 28614 — ARCHITECT — THOMAS G. BUCHANAN

SHEET INFORMATION

Issued	Scale
12/16/2024	DRAWING SCALE
Project Status	
BID SET	
Drawn By	Checked By
CMS	TGB

Drawing Title
ELECTRICAL SITE - DUTCH FORK MIDDLE SCHOOL

Drawing Number: LR5 E-002
Revision Number:

Plotted By: Justice Harris
Date last plotted: 3/28/2024 9:41 AM
Date last accessed: 3/27/2024 4:23 PM
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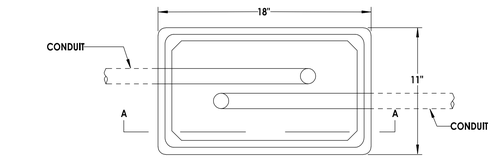
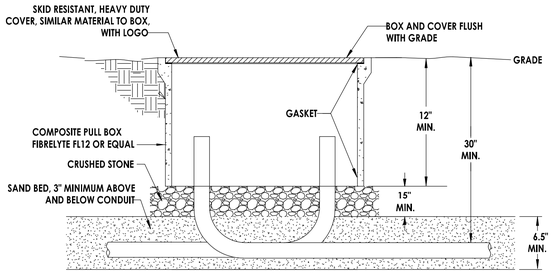
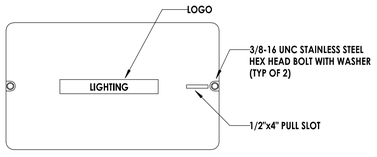


PLAN VIEW

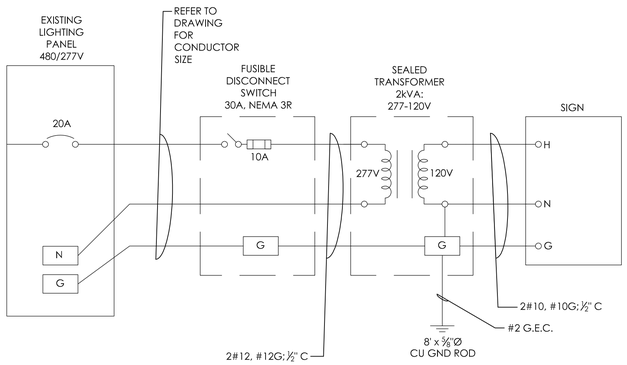


SECTION A-A

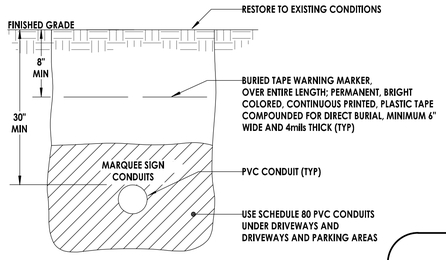


COVER DETAIL

2 E-003 **HANDHOLE DETAIL**
NOT TO SCALE



4 E-003 **ELECTRICAL WIRING DETAIL**
NOT TO SCALE **NOTE: REQUIRED FOR BASE BID ONLY.**



3 E-003 **CONDUIT TRENCH DETAIL**
NOT TO SCALE

GENERAL ELECTRICAL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70).
2. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS AND COORDINATE WITH EXISTING EQUIPMENT PRIOR TO BIDDING.
3. ALL METAL RACEWAYS SHALL BE GROUNDED. ALL CONNECTIONS IN METAL RACEWAYS SHALL BE COMPLETED IN SUCH A MANNER AS TO MAINTAIN A CONTINUOUS PATH TO GROUND THROUGHOUT THE ENTIRE LENGTH OF THE RACEWAY.

SYMBOL LIST:

OVERHEAD LINE

UNDERGROUND LINE

HH HANDHOLE

South Carolina 811
The Palmetto Utility Protection Service, Inc.
810 Dutch Square Blvd * Suite 320 * Columbia, SC 29210 - Phone (803) 939-1117
3 DAYS BEFORE DIGGING IN SOUTH CAROLINA
CALL 811
UNDERGROUND LOCATORS. CONTRACTOR SHALL CONTACT THE UNDERGROUND LOCATORS EVERY 10 DAYS FOR AN UPDATE TO UTILITY LOCATIONS.
Call 72 Hours BEFORE you DIG!

BASE BID - ELECTRICAL KEY NOTES:

B1 DISCONNECT EXISTING SIGN FROM EXISTING CIRCUIT AH1-16. FIELD VERIFY CIRCUIT. RETAIN CONDUIT FOR REUSE.

B2 COORDINATE EXACT LOCATION OF SIGN CONNECTION, CONDUIT ROUTING, AND HANDHOLES.

B3 REUSE EXISTING CIRCUIT BREAKER IF 1P-20A AND IN GOOD CONDITION, OTHERWISE, PROVIDE NEW 1P-20A CIRCUIT BREAKER IN PANEL.

B4 PROVIDE DISCONNECT SWITCH AND TRANSFORMER (2 kVA, 277 : 120V, 1Ø) AND MAKE CONNECTIONS TO NEW SIGN PER MANUFACTURER'S INSTRUCTIONS. REFER TO DETAIL 4/E-003.

B5 PROVIDE NEW CONDUCTORS AS INDICATED TO SIGN.

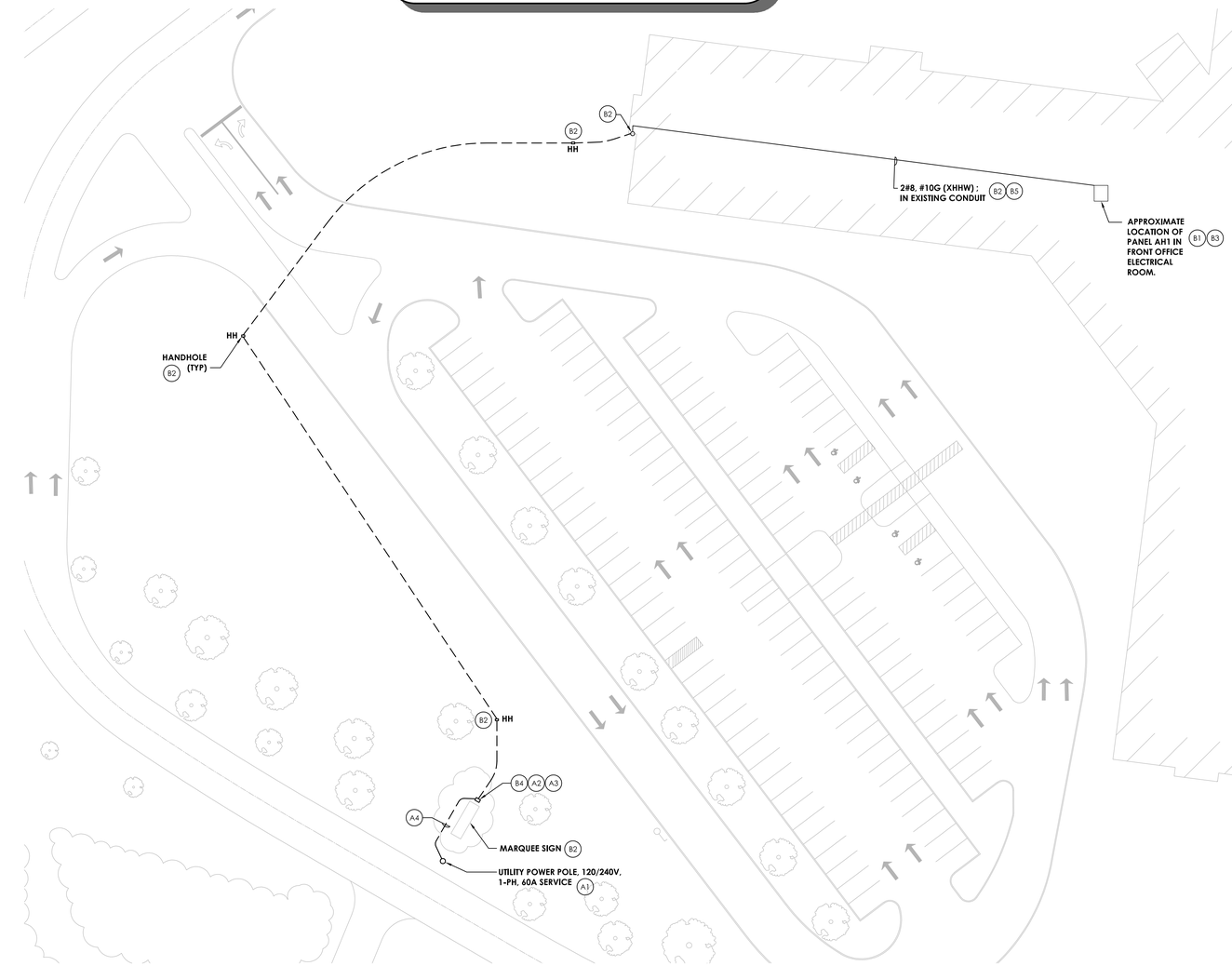
ADD ALTERNATE NO. 2:
OAK POINTE ELEMENTARY SCHOOL ELECTRICAL

A1 COORDINATE NEW UTILITY POWER POLE WITH UTILITY COMPANY. PROVIDE POWER FROM UTILITY POWER POLE TO MARQUEE SIGN.

A2 PROVIDE 30A FUSIBLE DISCONNECT SWITCH IN NEMA 3R ENCLOSURE.

A3 PROVIDE 7-DAY ELECTRONIC PROGRAMMABLE TIME CLOCK, 100-HOUR SUPERCAPACITOR BACKUP, 277V, 20A BALLAST-RATED CONTACTS, NEMA 3R ENCLOSURE BY INTERMATIC MODEL #ET2705 OR EQUAL. PROVIDE ENGRAVED NAMEPLATE ON ENCLOSURE DOOR.

A4 PROVIDE 2#12, #12G IN 1/2" CONDUIT FROM UTILITY POWER POLE TO MARQUEE SIGN.



1 E-003 **ELECTRICAL SITE PLAN**
SCALE: 1/32" = 1'-0"

CPL | Architecture Engineering Planning
808 Lady Street, Suite D
Columbia, SC 29201
CPLteam.com

PROJECT INFORMATION

Project Number
R23.15123.00

Client Name
SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES

Project Name
MARQUEE SIGN REPLACEMENT

Project Address
1020 DUTCH FORK ROAD, IRMO, SC 29063

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

STATE OF SOUTH CAROLINA — REGISTERED ARCHITECTS
CPL Architects, Engineers, Landscape Architects, Surveyors, DPC
Greenville, South Carolina
No. 00069

SOUTH CAROLINA PROFESSIONAL ENGINEER
NO. 28195
Licensed
THOMAS G. BUDDIN

SHEET INFORMATION

Issued	Scale
12/16/2024	DRAWING SCALE
Project Status	
BID SET	
Drawn By	Checked By
CMS	TGB

Drawing Title
ELECTRICAL SITE - OAK POINTE ELEMENTARY SCHOOL

Drawing Number: E-003
Revision Number: LR5

Sheet size: 24x36
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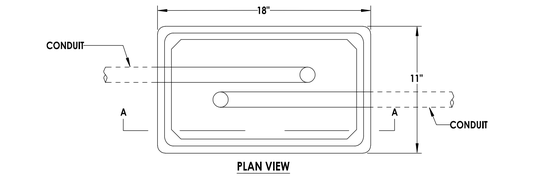
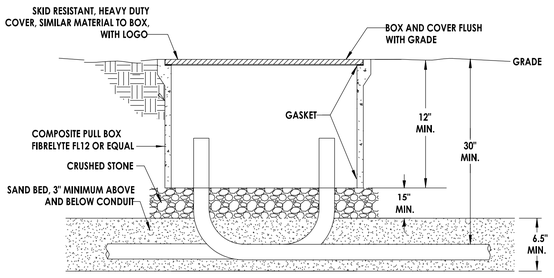
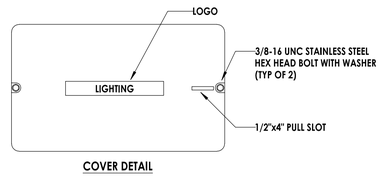
Date last accessed: 3/14/2024 11:53 AM
Date last plotted: 3/28/2024 11:04 AM
Plotted By: Justice Harris



PLAN VIEW

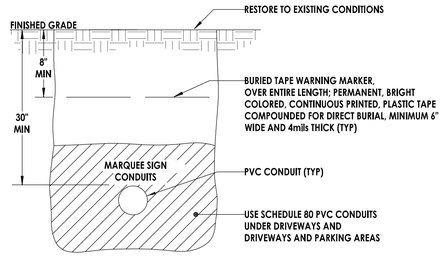


SECTION A-A

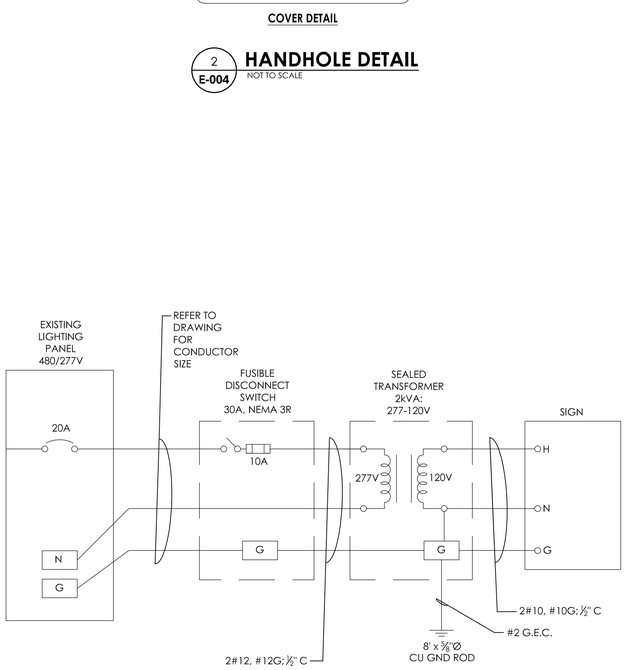


COVER DETAIL

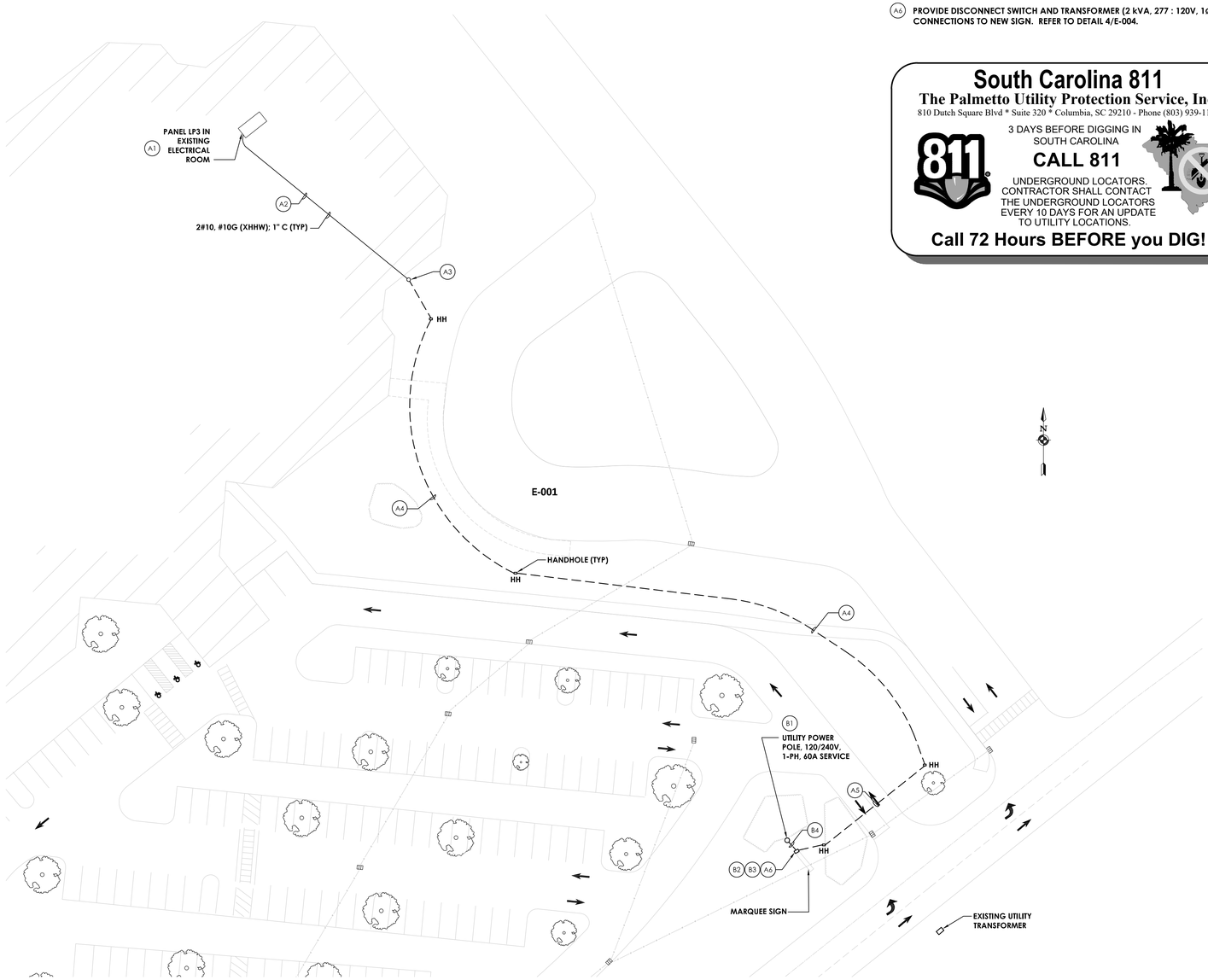
2 E-004 **HANDHOLE DETAIL**
NOT TO SCALE



3 E-004 **CONDUIT TRENCH DETAIL**
NOT TO SCALE



4 E-004 **ELECTRICAL WIRING DETAIL**
NOT TO SCALE **NOTE: REQUIRED FOR ADD ALTERNATE ONLY.**



1 E-004 **ELECTRICAL SITE PLAN**
SCALE: 1/32" = 1'-0"

GENERAL ELECTRICAL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70).
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3. ALL METAL RACEWAYS SHALL BE GROUNDED. ALL CONNECTIONS IN METAL RACEWAYS SHALL BE COMPLETED IN SUCH A MANNER AS TO MAINTAIN A CONTINUOUS PATH TO GROUND THROUGHOUT THE ENTIRE LENGTH OF THE RACEWAY.

SYMBOL LIST:

OVERHEAD LINE

UNDERGROUND LINE

HH HANDHOLE

BASE BID - ELECTRICAL KEY NOTES:

B1 COORDINATE NEW UTILITY POWER POLE WITH UTILITY COMPANY. PROVIDE POWER FROM UTILITY POWER POLE TO MARQUEE SIGN.

B2 PROVIDE 30A FUSIBLE DISCONNECT SWITCH IN NEMA 3R ENCLOSURE.

B3 PROVIDE 7-DAY ELECTRONIC PROGRAMMABLE TIME CLOCK, 100-HOUR SUPERCAPACITOR BACKUP, 277V, 20A BALLAST-RATED CONTACTS, NEMA 3R ENCLOSURE BY INTERMATIC MODEL #ET2705 OR EQUAL. PROVIDE ENGRAVED NAMEPLATE ON ENCLOSURE DOOR.

B4 PROVIDE 2#12, #12G IN 1/2" CONDUIT FROM UTILITY POWER POLE TO MARQUEE SIGN.

ADD ALTERNATE NO. 3:
HARBISON WEST ELEMENTARY SCHOOL ELECTRICAL

A1 PROVIDE 1P-20A CIRCUIT BREAKER IN EXISTING PANEL LP3.

A2 ROUTE SIGN CIRCUIT IN EMT CONDUIT ABOVE CORRIDOR CEILING.

A3 DROP TO BELOW GRADE IN RIGID STEEL CONDUIT. PAINT EXPOSED CONDUIT TO MATCH EXISTING SURFACE.

A4 ROUTE SIGN CIRCUIT IN SCHEDULE 40 PVC CONDUIT. SAW CUT AND REPAIR SIDEWALKS AS REQUIRED FOR CONDUIT INSTALLATION.

A5 ROUTE SIGN CIRCUIT IN SCHEDULE 80 PVC CONDUIT UNDER DRIVEWAY.

A6 PROVIDE DISCONNECT SWITCH AND TRANSFORMER (2 kVA, 277 : 120V, 1Ø) AND MAKE CONNECTIONS TO NEW SIGN. REFER TO DETAIL 4/E-004.

South Carolina 811
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810 Dutch Square Blvd * Suite 320 * Columbia, SC 29210 - Phone (803) 939-1117

811

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CPL | Architecture Engineering Planning
808 Lady Street, Suite D
Columbia, SC 29201
CPLteam.com

District Five of Lexington & Richland Counties

PROJECT INFORMATION

Project Number
R23.15123.00

Client Name
SCHOOL DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES
MARQUEE SIGN REPLACEMENT

Project Address
1020 DUTCH FORK ROAD, IRMO, SC 29063

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

STATE OF SOUTH CAROLINA — CPL Architects, Engineers, Landscape Architects, Surveyors, DPC, Greenville, South Carolina, No. 00069 — REGISTERED ARCHITECTS

SOUTH CAROLINA — REGISTERED LANDSCAPE ARCHITECT — NO. 2648 — THOMAS G. BUCHER

SHEET INFORMATION

Issued	Scale
12/16/2024	DRAWING SCALE
Project Status	
BID SET	
Drawn By	Checked By
CMS	TGB

Drawing Title
ELECTRICAL SITE PLAN - HARBISON ELEMENTARY SCHOOL

Drawing Number: LR5 E-004
Revision Number:

Sheet size: 24x36
Drawing Name: S:\Projects\Lex Rich 5\Marquee Signs\D Design\06 CAD\ACAD\ELEC\E0\Harbison ES Elec_v3.dwg
Date last accessed: 3/28/2024 10:45 AM
Date last plotted: 3/28/2024 10:59 AM
Plotted By: Justice Harris