

# USCA Pedestrian Bridge

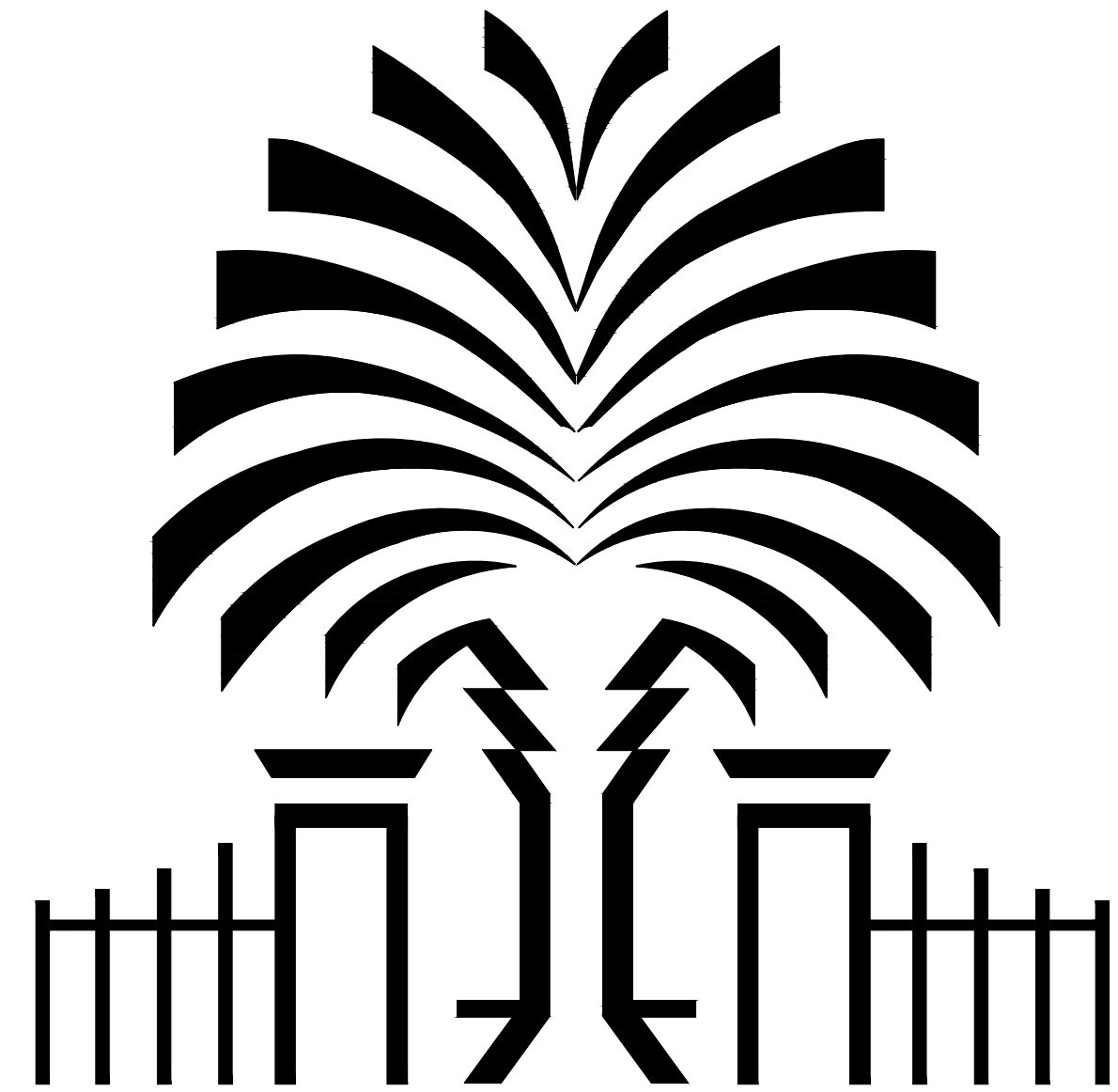
Project No.: H29-9545-PG  
In Aiken County, SC

Prepared For  
**University of South Carolina Aiken**

by:  
**Chao & Associates, Inc.**  
Consulting Engineers

C & A #: 391402F-15

August 10, 2015



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### OWNER:

UNIVERSITY OF SOUTH CAROLINA AIKEN  
FACILITIES MANAGEMENT  
471 UNIVERSITY PARKWAY  
AIKEN, SC 29801

### PROJECT MANAGER

CIVIL, SURVEYING, AND STRUCTURAL ENGINEER:  
CHAO & ASSOCIATES, INC  
7 CLUSTERS COURT  
COLUMBIA, SC 29210  
TEL: 803-772-8420

### ARCHITECT:

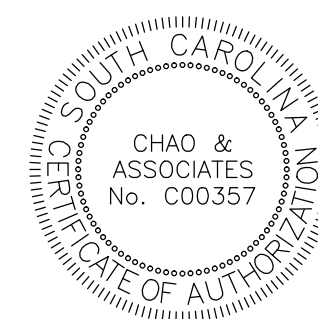
McCREARY/SNOW ARCHITECTS, PA  
PO BOX 11143  
COLUMBIA, SC 29211  
TEL: 803-771-6267

### ELECTRICAL ENGINEER:

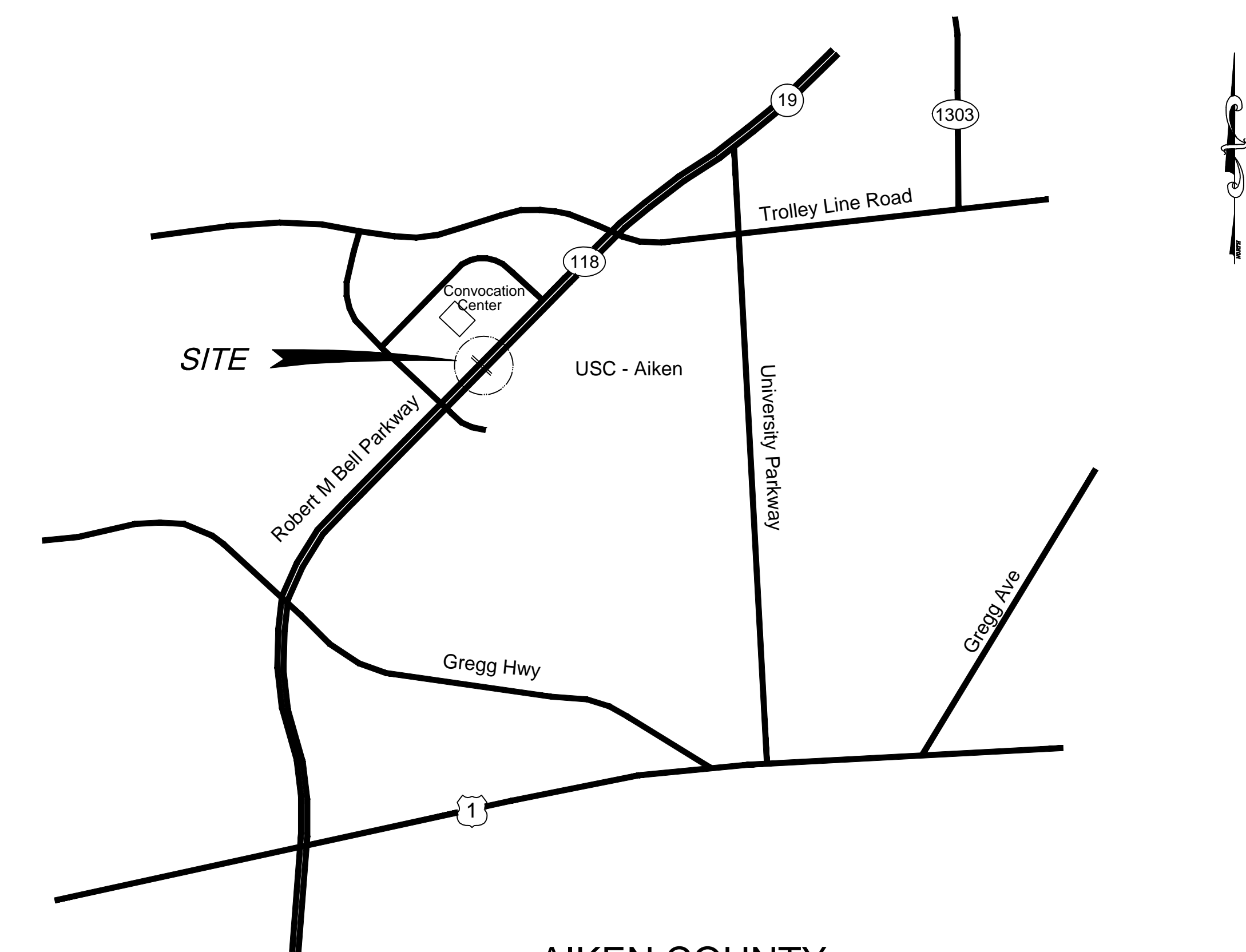
GWA, INC  
168 LAURELHURST AVENUE  
COLUMBIA, SC 29210  
TEL: 803-252-6919

### GEOTECHNICAL ENGINEER:

GEOSTELLAR ENGINEERING, LLC  
1077 RODNEY DRIVE  
BATON ROUGE, LA 70808  
TEL: 803-997-0554



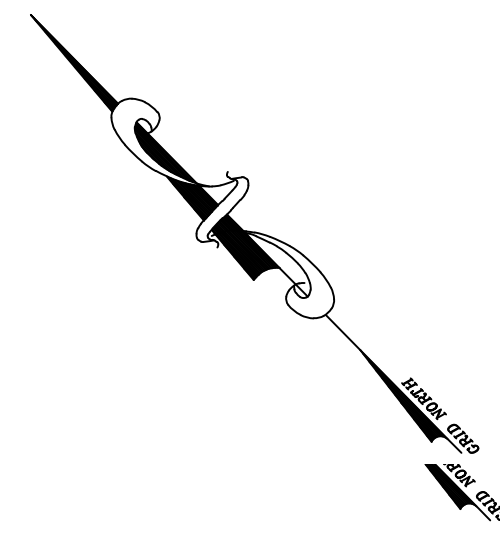
## LOCATION MAP



AIKEN COUNTY  
APPROX. SCALE: 1" = 1000'



LEGEND	
	FIRE HYDRANT
	WATER VALVE
	WATER METER
	GAS VALVE
	SANITARY SEWER MANHOLE
	CLEANOUT (CO)
	NATURAL GAS LINE
	SANITARY SEWER LINE (MATERIAL UNKNOWN)
	WATER LINE
	FENCE
	OVERHEAD ELECTRIC
	UNDERGROUND TELEPHONE
	UNDERGROUND FIBER OPTIC LINE
	UNDERGROUND CABLE TV
	CONC. CURB & GUTTER
	YARD INLET (YI)
	JUNCTION BOX (JB)
	DROP INLET (DI)
	CURB INLET (CI)
	STORM DRAIN PIPE
	CONCRETE SIDEWALK
	POWER POLE & GUY
	LIGHT POLE
	ELEC BOX
	TELEPHONE PED
	A/C 1/2 X 2 PAD



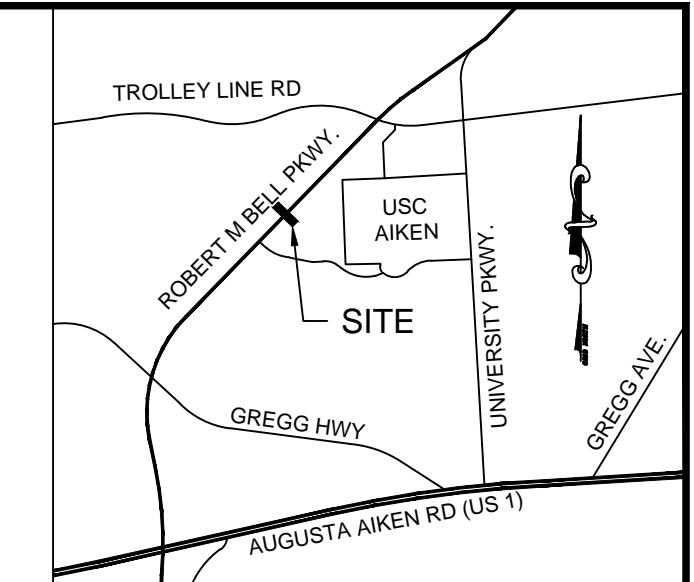
**GENERAL NOTES FOR ALL WORK WITHIN UTILITY RIGHTS-OF-WAY**

- CONTRACTOR MUST CONTACT CAROLINA GAS TRANSMISSION AND OTHER LISTED UTILITY COMPANIES PRIOR TO START OF CONSTRUCTION TO SCHEDULE AN ON-SITE PRE-CONSTRUCTION MEETING. A LIST OF ALL UTILITIES AND CONTACT INFORMATION APPEARS ON THIS SHEET.
- THE USE OF CONSTRUCTION MATTS WILL BE REQUIRED ACROSS ENTIRE WIDTH OF THE GAS RIGHT-OF-WAY WHEREVER CONSTRUCTION TRAFFIC WILL BE WITHIN THE RIGHT-OF-WAY. ALL CONSTRUCTION TRAFFIC MUST STAY ON THE MATTS.
- A REPRESENTATIVE FROM CAROLINA GAS TRANSMISSION AND OTHER LISTED UTILITY COMPANIES MUST BE ON-SITE WHENEVER THERE IS CONSTRUCTION ACTIVITY SCHEDULED WITHIN THE GAS LINE RIGHTS-OF-WAY.
- CONTRACTOR SHOULD TRY TO WORK FROM WITHIN THE SCDOT RIGHT-OF-WAY WHENEVER FEASIBLE TO MINIMIZE THE ACTIVITY OVER THE GAS MAINS. ANY CONSTRUCTION ACTIVITY WITHIN THE SCDOT RIGHT-OF-WAY WILL REQUIRE PRIOR APPROVAL FROM SCDOT.
- AT NO TIME WILL CONSTRUCTION EQUIPMENT BE ALLOWED TO BE PARKED IN PIPELINE RIGHT-OF-WAY WHEN NOT IN USE.
- AT NO TIME WILL CONSTRUCTION MATERIALS BE STAGED OR STORED WITHIN THE UTILITY RIGHT-OF-WAY.
- THE USE OF TEMPORARY SHORING OR OTHER METHODS OF EMBANKMENT STABILIZATION MAY BE NECESSARY DURING CONSTRUCTION. ANY INSTALLATIONS MUST HAVE PRIOR APPROVAL FROM CAROLINA GAS TRANSMISSION AND OTHER LISTED UTILITY COMPANIES PRIOR TO INSTALLATION.
- ANY TEMPORARY STABILIZATION MEASURES MUST BE COMPLETELY REMOVED PRIOR TO COMPLETION OF THE WORK.

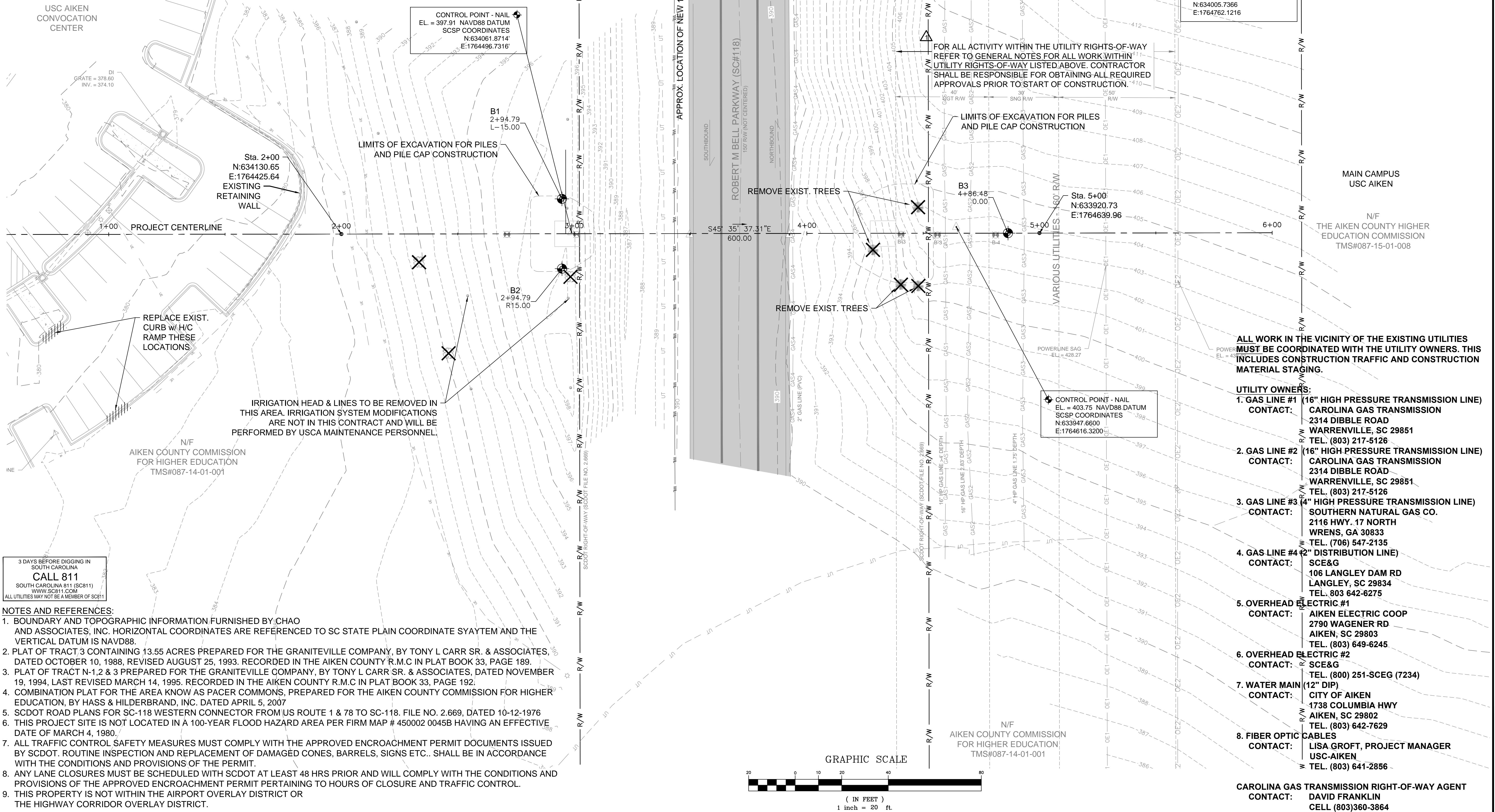
\*\*\*REFER TO EACH UTILITY'S APPROVED ENCROACHMENT PERMIT FOR ADDITIONAL RESTRICTIONS AND REQUIREMENTS\*\*\*

**DEMOLITION NOTES**

- NO WORK SHALL BE PERFORMED UNTIL ALL PERMITS HAVE BEEN RECEIVED.
- ALL EROSION CONTROL MEASURES MUST BE INSTALLED PRIOR TO START OF LAND DISTURBANCE ACTIVITIES. CLEARING WILL BE ALLOWED ONLY TO FACILITATE INSTALLATION OF PERIMETER CONTROL MEASURES.
- ALL EXCESS AND DELETERIOUS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL AND APPROVED MANNER.
- ALL FEES ASSOCIATED WITH THE DISPOSAL OF EXCESS AND DELETERIOUS MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- EXCAVATION IS DEFINED AS UNCLASSIFIED EXCAVATION OF EVERY DESCRIPTION REGARDLESS OF MATERIALS ENCOUNTERED.



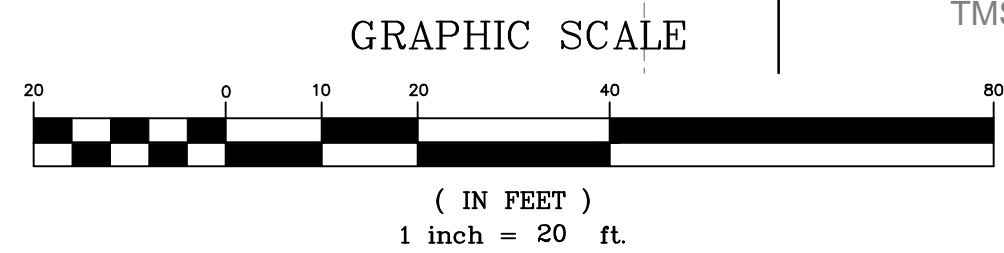
LOCATION MAP  
NOT TO SCALE



3 DAYS BEFORE DIGGING IN SOUTH CAROLINA  
**CALL 811**  
SOUTH CAROLINA 811 (SC811)  
WWW.SC811.COM  
ALL UTILITIES MAY NOT BE A MEMBER OF SC811

**NOTES AND REFERENCES:**

- BOUNDARY AND TOPOGRAPHIC INFORMATION FURNISHED BY CHAO AND ASSOCIATES, INC. HORIZONTAL COORDINATES ARE REFERENCED TO SC STATE PLAIN COORDINATE SYSTEM AND THE VERTICAL DATUM IS NAVD88.
- PLAT OF TRACT 3 CONTAINING 13.55 ACRES PREPARED FOR THE GRANITEVILLE COMPANY, BY TONY L CARR SR. & ASSOCIATES, DATED OCTOBER 10, 1988, REVISED AUGUST 25, 1993. RECORDED IN THE AIKEN COUNTY R.M.C IN PLAT BOOK 33, PAGE 189.
- PLAT OF TRACT N-1,2 & 3 PREPARED FOR THE GRANITEVILLE COMPANY, BY TONY L CARR SR. & ASSOCIATES, DATED NOVEMBER 19, 1994, LAST REVISED MARCH 14, 1995. RECORDED IN THE AIKEN COUNTY R.M.C IN PLAT BOOK 33, PAGE 192.
- COMBINATION PLAT FOR THE AREA KNOWN AS PACER COMMONS, PREPARED FOR THE AIKEN COUNTY COMMISSION FOR HIGHER EDUCATION, BY HASS & HILDBRAND, INC. DATED APRIL 5, 2007
- SCDOT ROAD PLANS FOR SC-118 WESTERN CONNECTOR FROM US ROUTE 1 & 78 TO SC-118. FILE NO. 2.669, DATED 10-12-1976
- THIS PROJECT SITE IS NOT LOCATED IN A 100-YEAR FLOOD HAZARD AREA PER FIRM MAP # 450002 0045B HAVING AN EFFECTIVE DATE OF MARCH 4, 1980.
- ALL TRAFFIC CONTROL SAFETY MEASURES MUST COMPLY WITH THE APPROVED ENCROACHMENT PERMIT DOCUMENTS ISSUED BY SCDOT. ROUTINE INSPECTION AND REPLACEMENT OF DAMAGED CONES, BARRELS, SIGNS ETC.. SHALL BE IN ACCORDANCE WITH THE CONDITIONS AND PROVISIONS OF THE PERMIT.
- ANY LANE CLOSURES MUST BE SCHEDULED WITH SCDOT AT LEAST 48 HRS PRIOR AND WILL COMPLY WITH THE CONDITIONS AND PROVISIONS OF THE APPROVED ENCROACHMENT PERMIT PERTAINING TO HOURS OF CLOSURE AND TRAFFIC CONTROL.
- THIS PROPERTY IS NOT WITHIN THE AIRPORT OVERLAY DISTRICT OR THE HIGHWAY CORRIDOR OVERLAY DISTRICT.

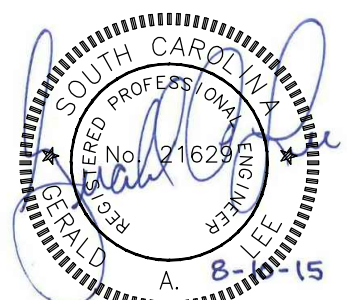


**ALL WORK IN THE VICINITY OF THE EXISTING UTILITIES MUST BE COORDINATED WITH THE UTILITY OWNERS. THIS INCLUDES CONSTRUCTION TRAFFIC AND CONSTRUCTION MATERIAL STAGING.**

- UTILITY OWNERS:**
- GAS LINE #1 (16" HIGH PRESSURE TRANSMISSION LINE)**  
CONTACT: CAROLINA GAS TRANSMISSION  
2314 DIBBLE ROAD  
WARRENVILLE, SC 29851  
TEL. (803) 217-5126
  - GAS LINE #2 (16" HIGH PRESSURE TRANSMISSION LINE)**  
CONTACT: CAROLINA GAS TRANSMISSION  
2314 DIBBLE ROAD  
WARRENVILLE, SC 29851  
TEL. (803) 217-5126
  - GAS LINE #3 (4" HIGH PRESSURE TRANSMISSION LINE)**  
CONTACT: SOUTHERN NATURAL GAS CO.  
2116 HWY. 17 NORTH  
WRENS, GA 30833  
TEL. (706) 547-2135
  - GAS LINE #4 (2" DISTRIBUTION LINE)**  
CONTACT: SCE&G  
106 LANGLEY DAM RD  
LANGLEY, SC 29834  
TEL. 803 642-6275
  - OVERHEAD ELECTRIC #1**  
CONTACT: AIKEN ELECTRIC COOP  
2790 WAGENER RD  
AIKEN, SC 29803  
TEL. (803) 649-6245
  - OVERHEAD ELECTRIC #2**  
CONTACT: SCE&G  
TEL. (800) 251-SCEG (7234)
  - WATER MAIN (12" DIP)**  
CONTACT: CITY OF AIKEN  
1738 COLUMBIA HWY  
AIKEN, SC 29802  
TEL. (803) 642-7629
  - FIBER OPTIC CABLES**  
CONTACT: LISA GROFT, PROJECT MANAGER  
USC-AIKEN  
TEL. (803) 641-2856
- CAROLINA GAS TRANSMISSION RIGHT-OF-WAY AGENT**  
CONTACT: DAVID FRANKLIN  
CELL (803)360-3864



**Chao & Associates, Inc.**  
Civil - Structural - Survey  
7 Clusters Court  
Columbia, SC 29210  
Voice: (803) 772-8420  
Fax: (803) 772-9120  
Email: consult@chaoinc.com



**Existing Conditions**  
**USCA Pedestrian Bridge**  
Project No.: H29-9545-PG  
University of South Carolina  
Aiken County, SC

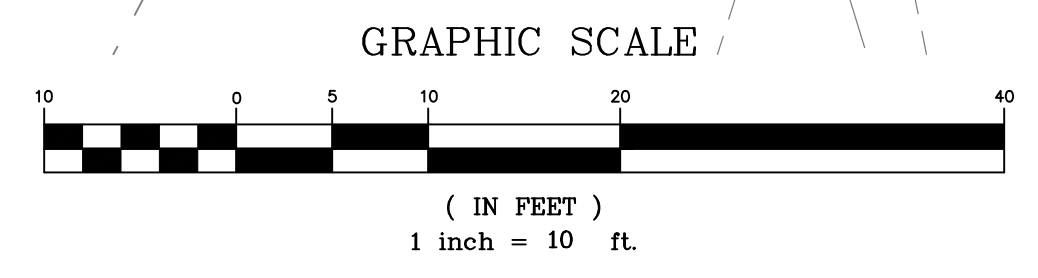
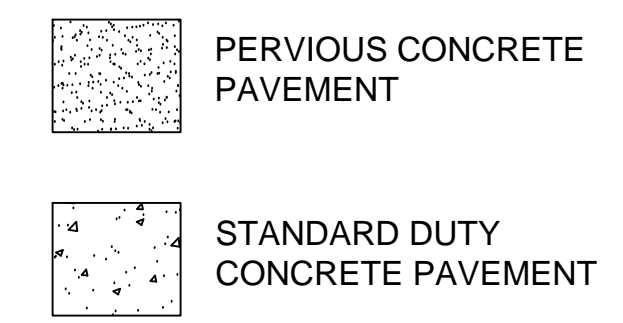
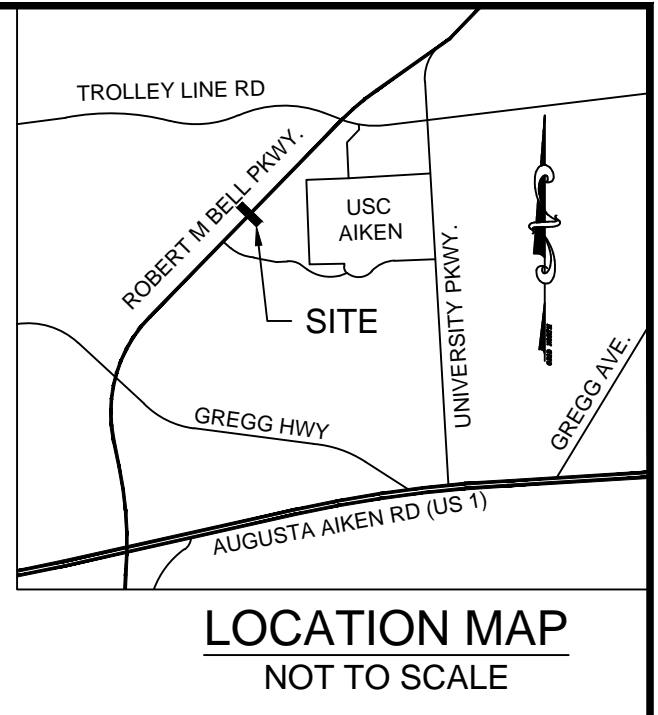
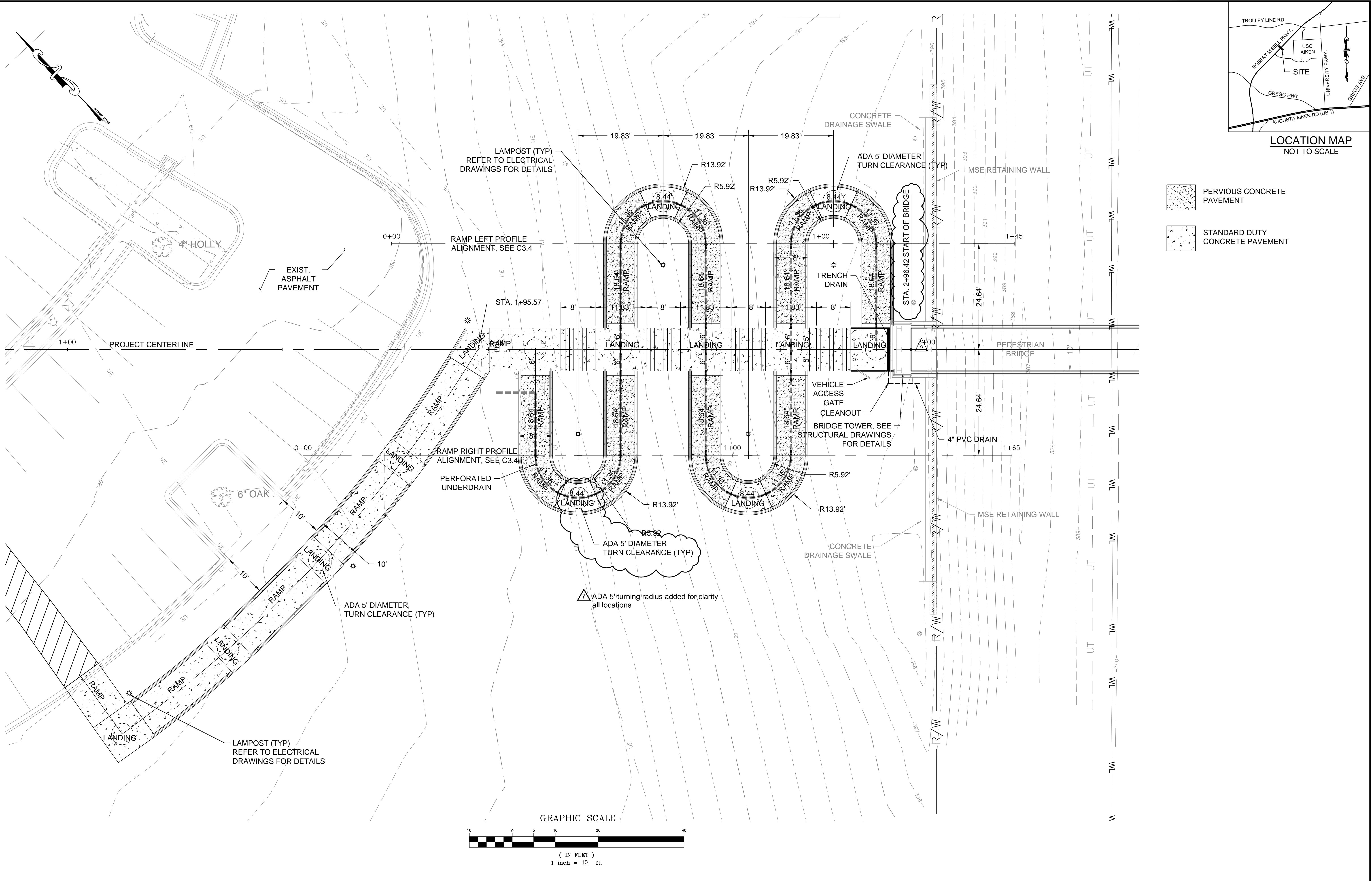
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Checked: LEE  
Revised:  
Project No.: 391402F  
File: 391402F-C.dwg

**C1.0**  
Sheet Number  
August 10, 2015  
Date









- NOTES:**
- BOUNDARY & TOPOGRAPHIC INFORMATION FURNISHED BY CHAO & ASSOCIATES, INC.
  - BENCHMARK IS BASED ON MEAN NAVD88 DATUM.
  - PROPOSED CONTOURS & PROPOSED SPOT ELEVATIONS REPRESENT FINISHED GRADE.
  - THIS PROPERTY IS NOT LOCATED IN THE AIRPORT OVERLAY DISTRICT OR HIGHWAY CORRIDOR OVERLAY DISTRICT.

3 DAYS BEFORE DIGGING IN  
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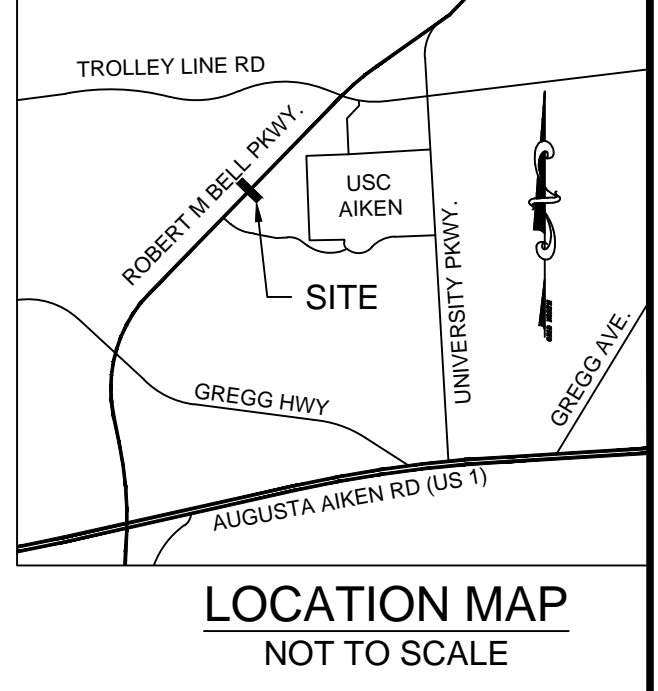
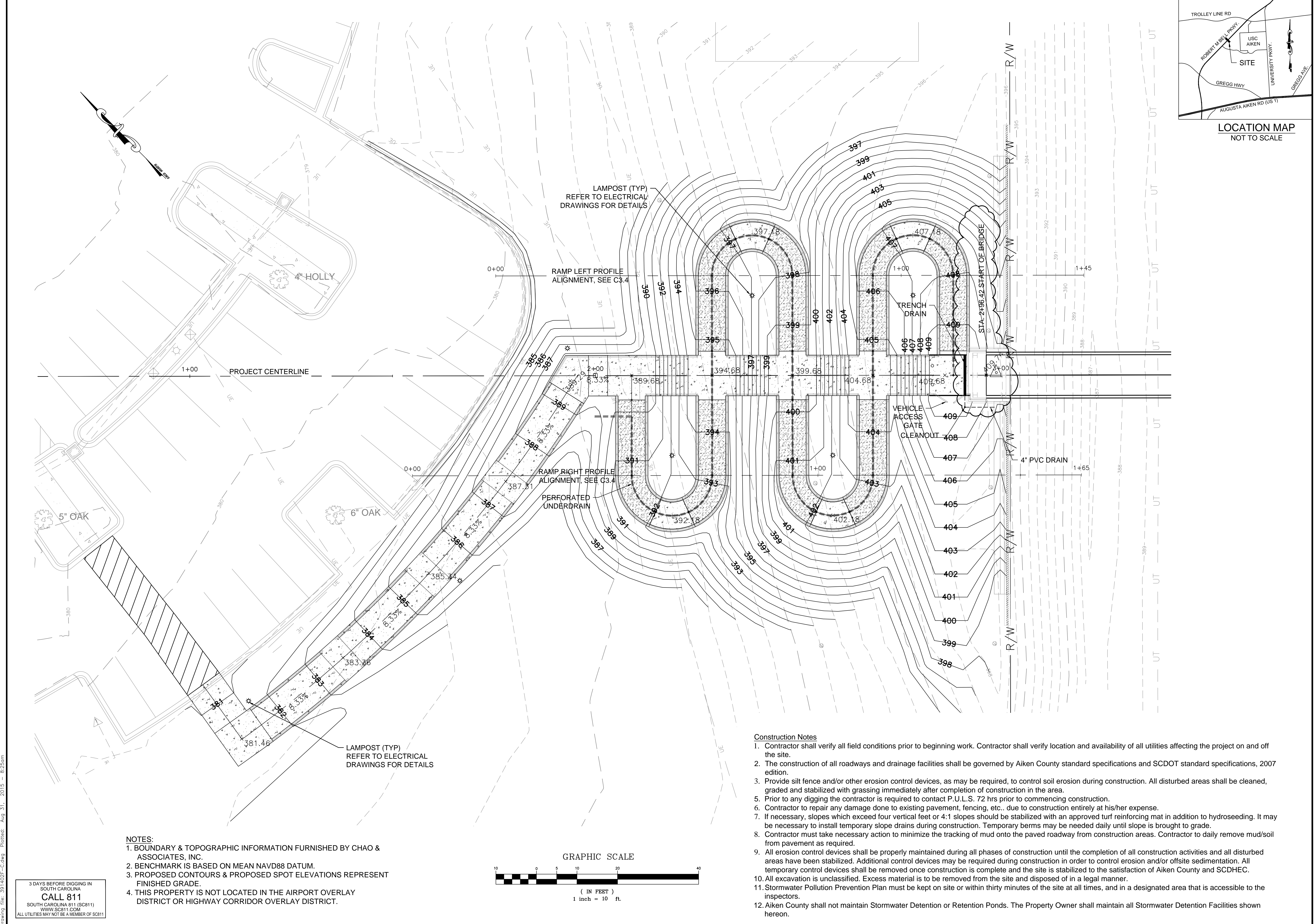


**Layout Plan - North Ramp**  
**USCA Pedestrian Bridge**  
Project No.: H29-9545-PG  
University of South Carolina  
Aiken County, SC

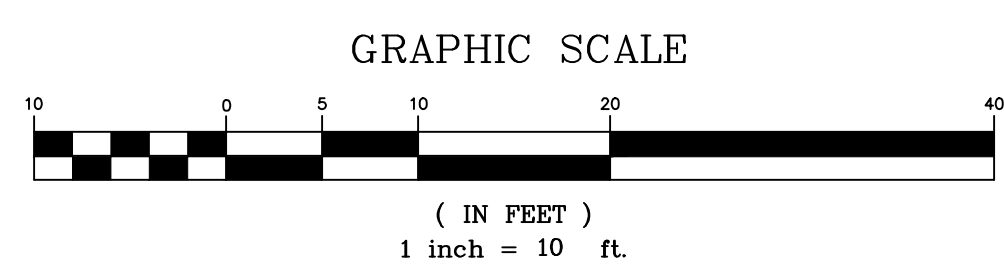
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**C3.0**  
Sheet Number  
August 10, 2015  
Date





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- Construction Notes**
- Contractor shall verify all field conditions prior to beginning work. Contractor shall verify location and availability of all utilities affecting the project on and off the site.
  - The construction of all roadways and drainage facilities shall be governed by Aiken County standard specifications and SCDOT standard specifications, 2007 edition.
  - Provide silt fence and/or other erosion control devices, as may be required, to control soil erosion during construction. All disturbed areas shall be cleaned, graded and stabilized with grassing immediately after completion of construction in the area.
  - Prior to any digging the contractor is required to contact P.U.L.S. 72 hrs prior to commencing construction.
  - Contractor to repair any damage done to existing pavement, fencing, etc.. due to construction entirely at his/her expense.
  - If necessary, slopes which exceed four vertical feet or 4:1 slopes should be stabilized with an approved turf reinforcing mat in addition to hydroseeding. It may be necessary to install temporary slope drains during construction. Temporary berms may be needed daily until slope is brought to grade.
  - Contractor must take necessary action to minimize the tracking of mud onto the paved roadway from construction areas. Contractor to daily remove mud/soil from pavement as required.
  - All erosion control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been stabilized. Additional control devices may be required during construction in order to control erosion and/or offsite sedimentation. All temporary control devices shall be removed once construction is complete and the site is stabilized to the satisfaction of Aiken County and SCDHEC.
  - All excavation is unclassified. Excess material is to be removed from the site and disposed of in a legal manner.
  - Stormwater Pollution Prevention Plan must be kept on site or within thirty minutes of the site at all times, and in a designated area that is accessible to the inspectors.
  - Aiken County shall not maintain Stormwater Detention or Retention Ponds. The Property Owner shall maintain all Stormwater Detention Facilities shown hereon.

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**Grading Detail - North Ramp**  
 USCA Pedestrian Bridge  
 Project No.: H29-9545-PG  
 University of South Carolina  
 Aiken County, SC

Drawn: TKS Checked: LEE  
 Revised:  
 Project No.: 391402F  
 File: 391402F-C.dwg

**C3.1**  
 Sheet Number  
 August 10, 2015  
 Date



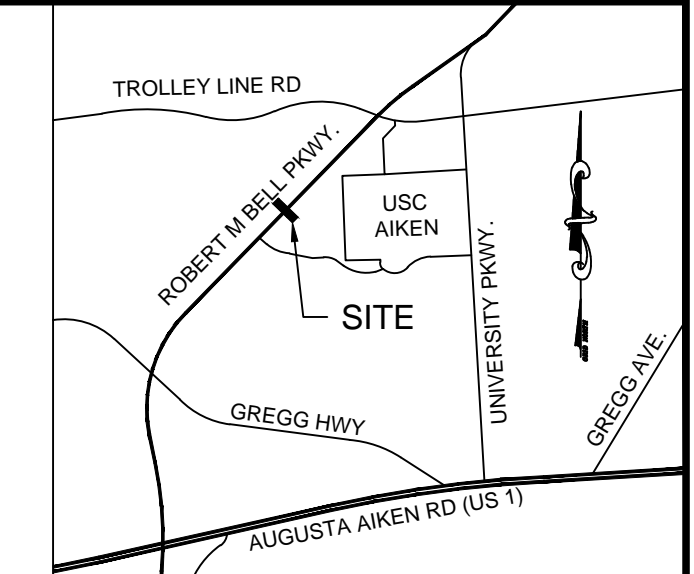
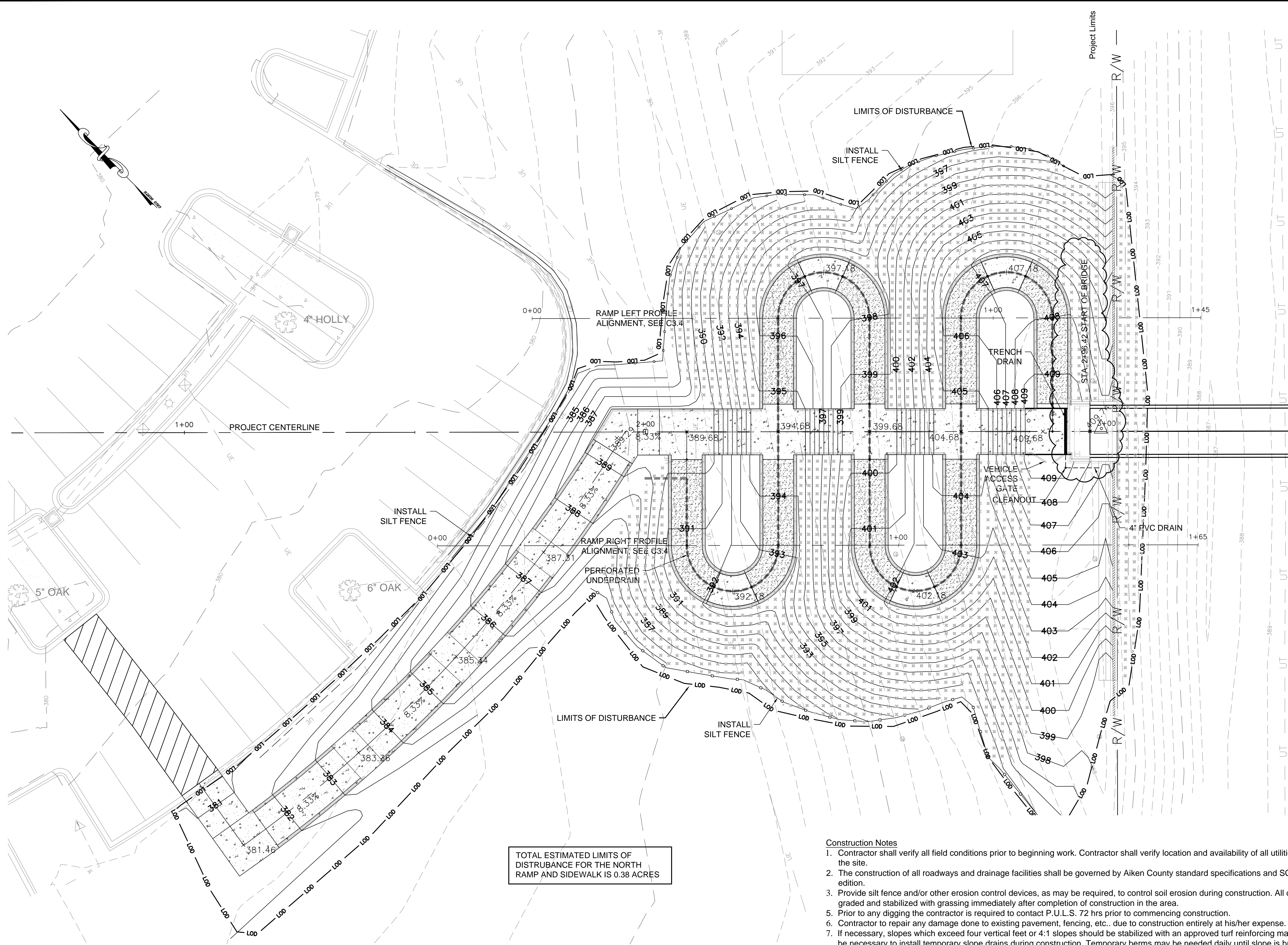
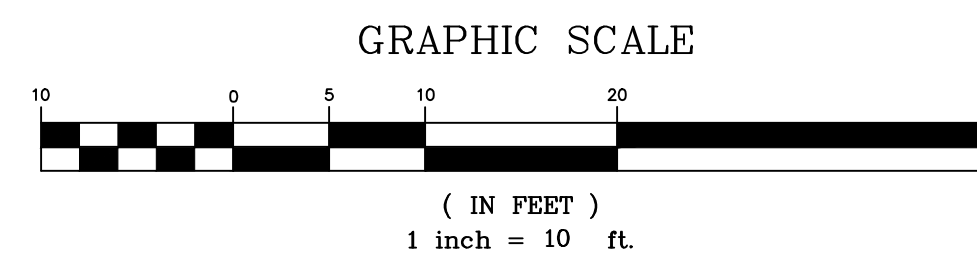
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TOTAL ESTIMATED LIMITS OF DISTURBANCE FOR THE NORTH RAMP AND SIDEWALK IS 0.38 ACRES



LOCATION MAP  
NOT TO SCALE

- SILT FENCE
- LIMITS OF DISTURBANCE
- TURF MATTING



**Sediment and Erosion Control - North Ramp**  
**USCA Pedestrian Bridge**  
 Project No.: H29-9545-PG  
 University of South Carolina  
 Aiken County, SC

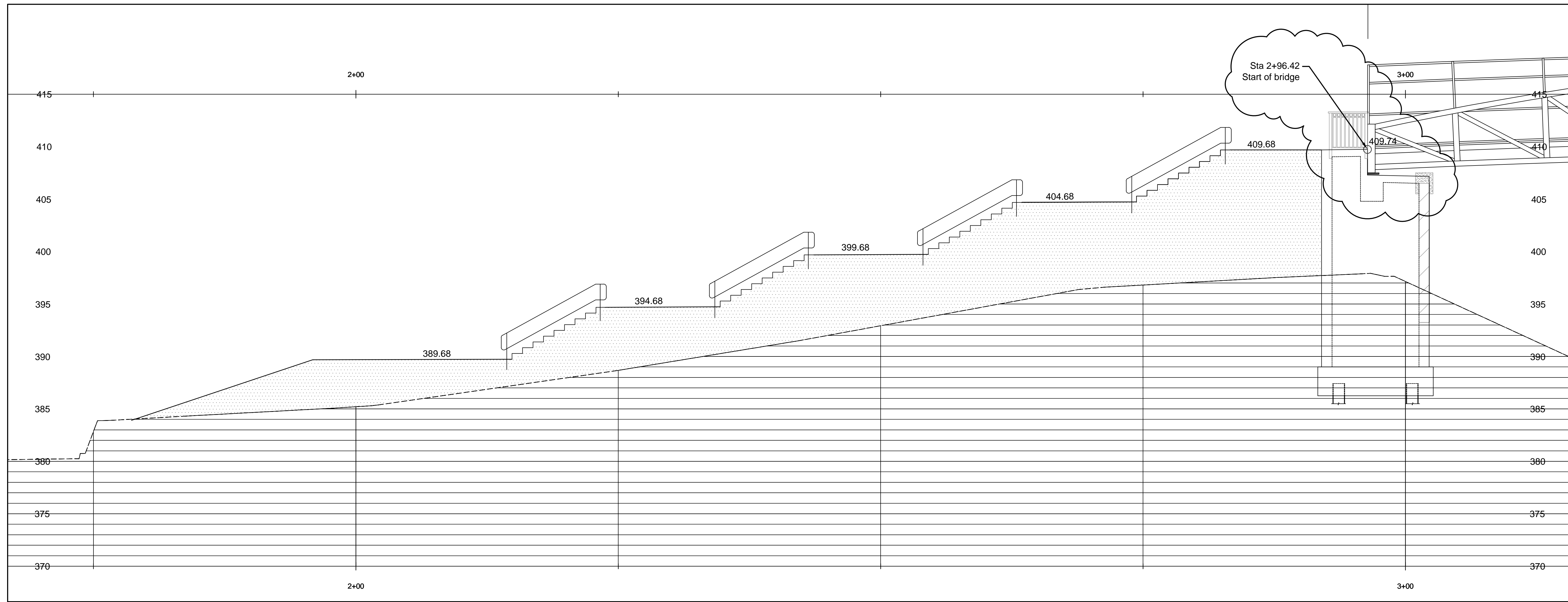
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 Date

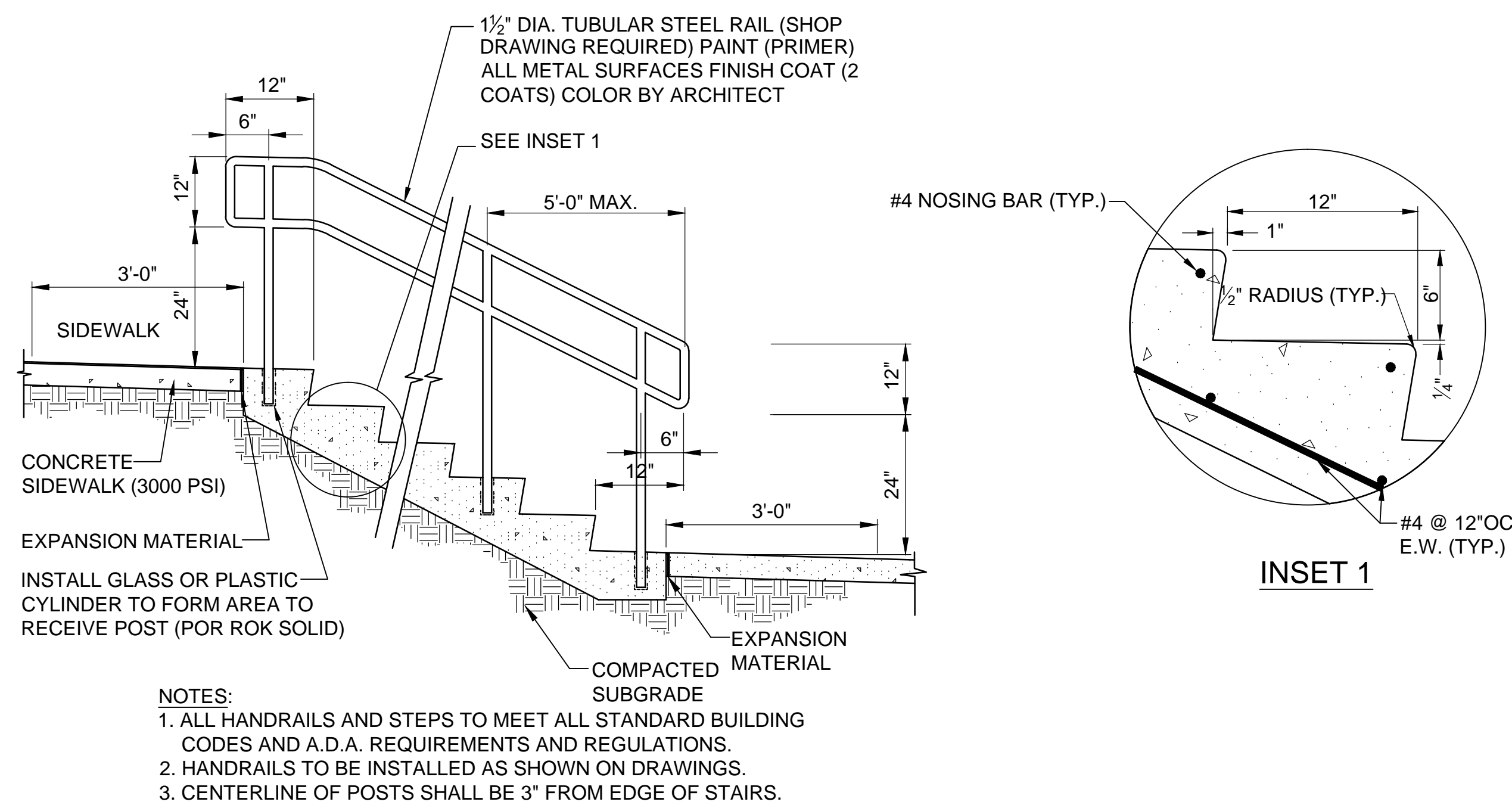
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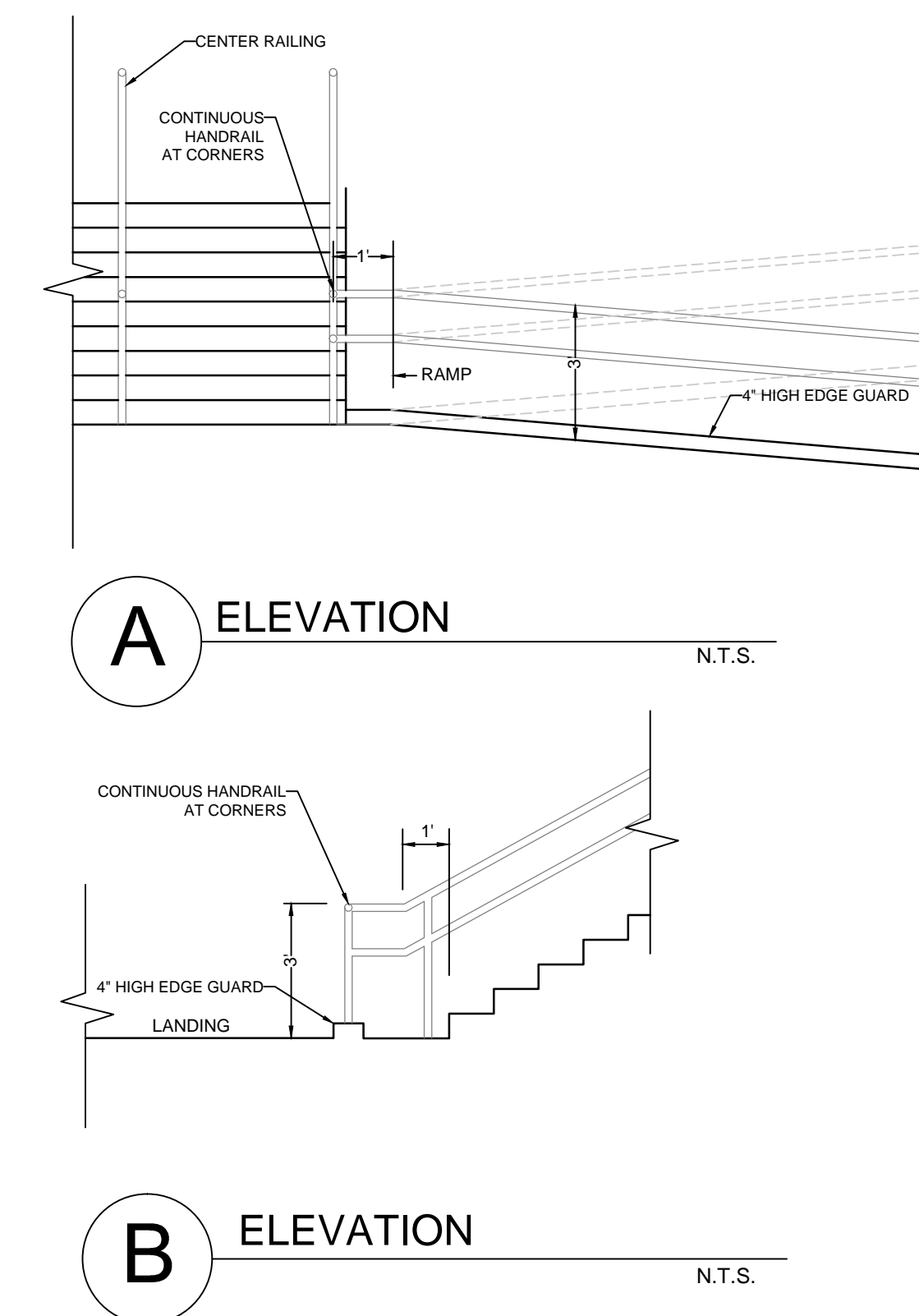
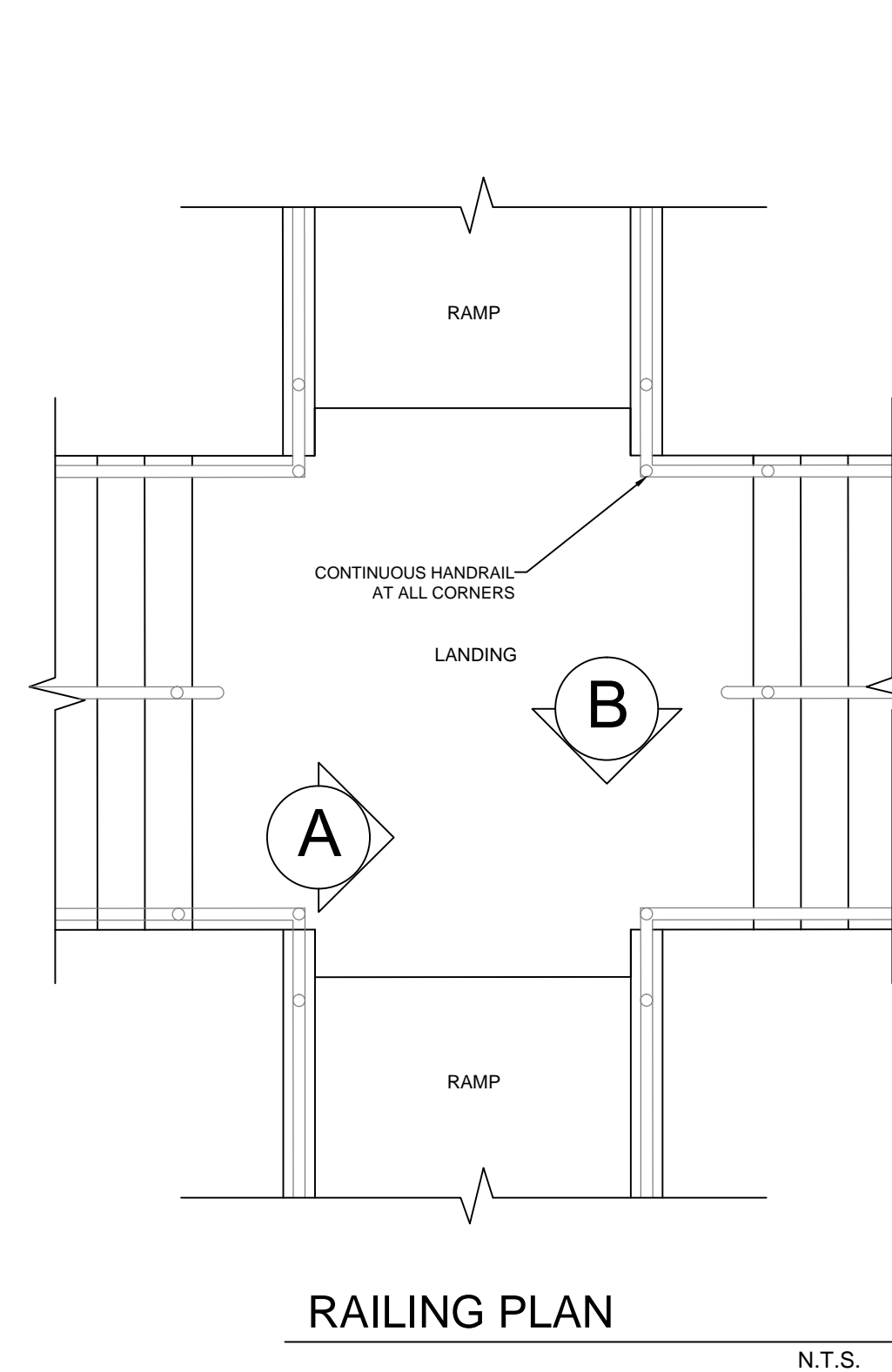




**CONCRETE STAIR DETAIL**  
SCALE: 1" = 5'



**CONCRETE STEP AND HANDRAIL DETAIL**  
NOT TO SCALE



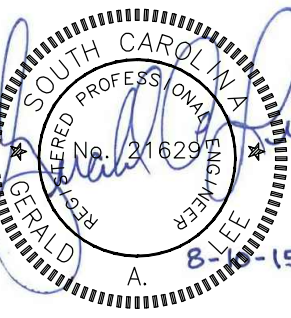
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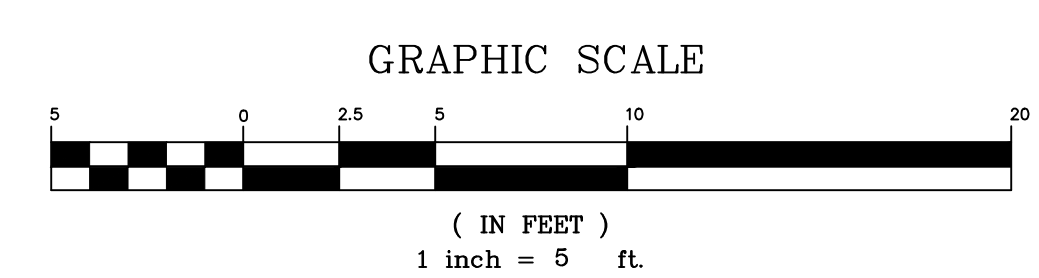
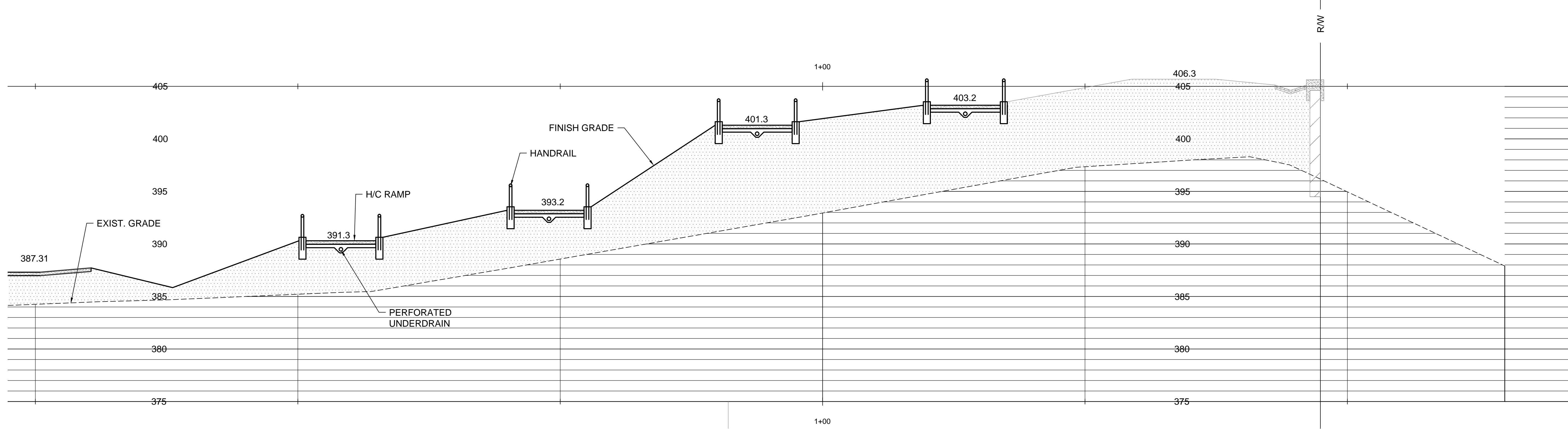
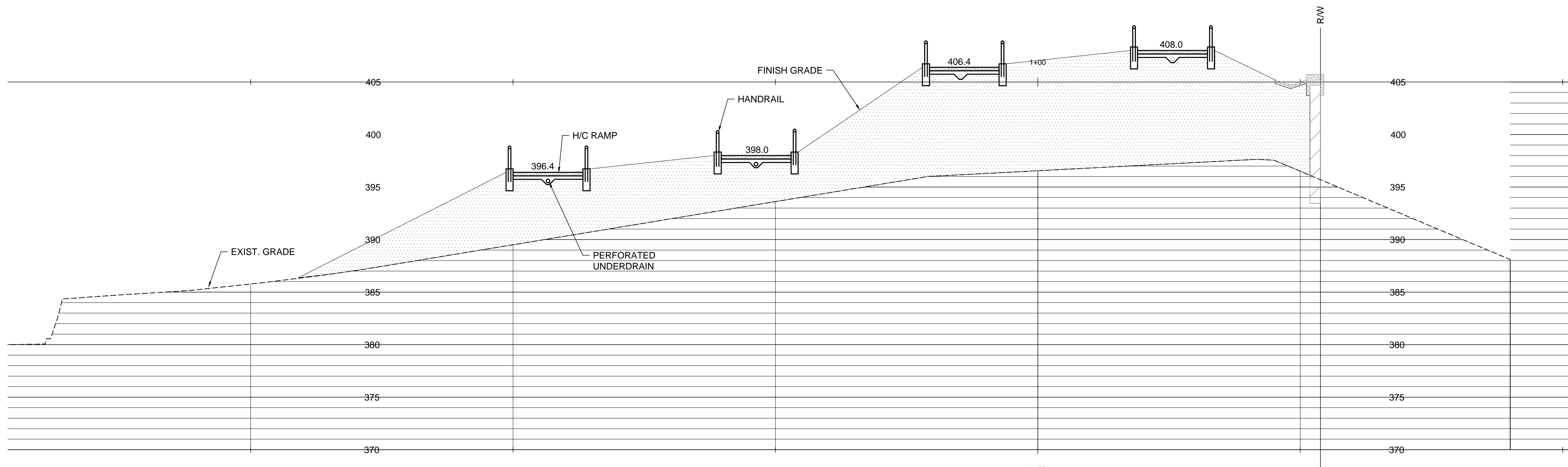
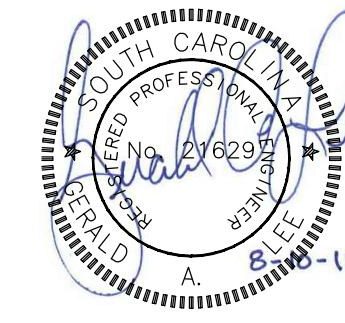
**Centerline Stair Section - North Ramp**  
USCA Pedestrian Bridge  
Project No.: H29-9545-PG  
University of South Carolina  
Aiken County, SC

Drawn: TKS Checked: LEE  
Revised:

File: 391402F-C.dwg Project No.: 391402F

**C3.3**

Sheet Number  
August 10, 2015  
Date

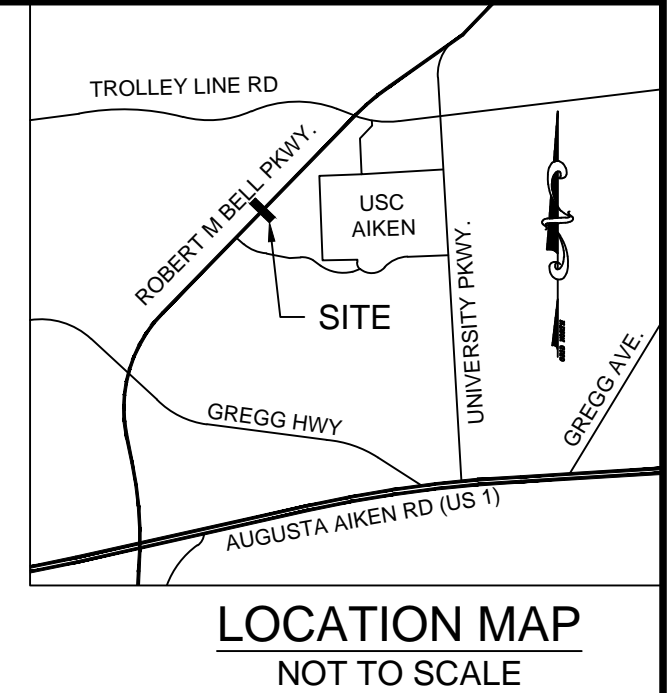
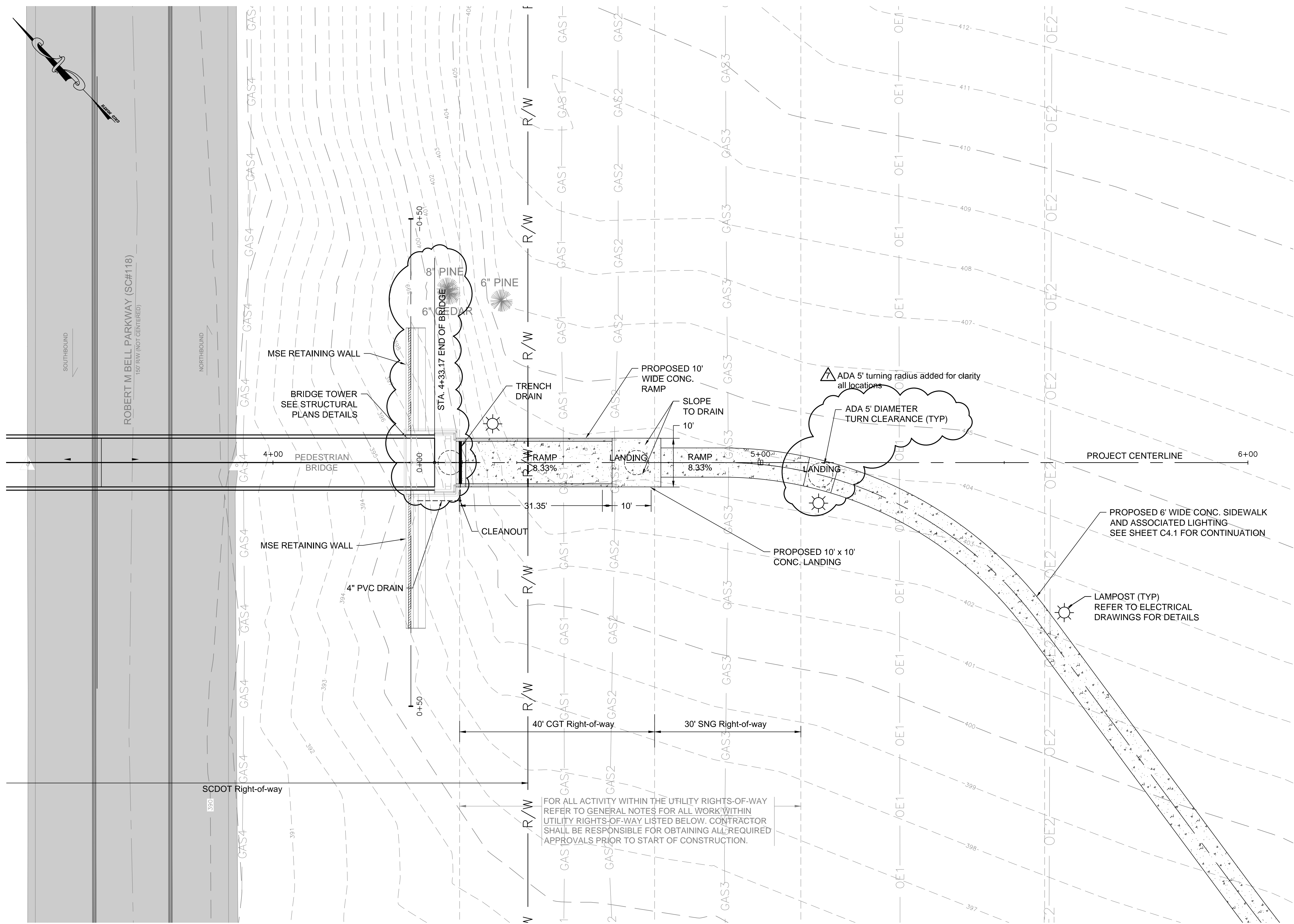


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Drawing file: 391402F-C.dwg    Plotted: Aug 31, 2015 - 8:25am



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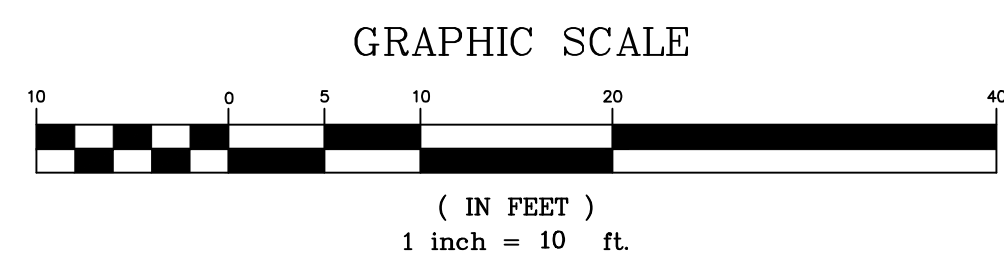


STANDARD DUTY CONCRETE PAVEMENT



Layout Plan - South Ramp  
USCA Pedestrian Bridge  
Project No.: H29-9545-PG  
University of South Carolina  
Aiken County, SC

- NOTES:**
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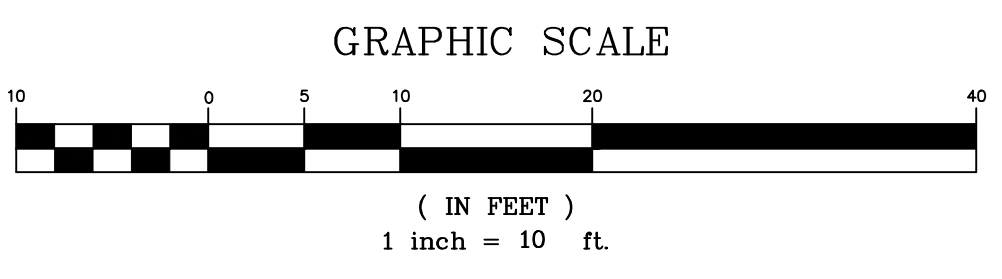
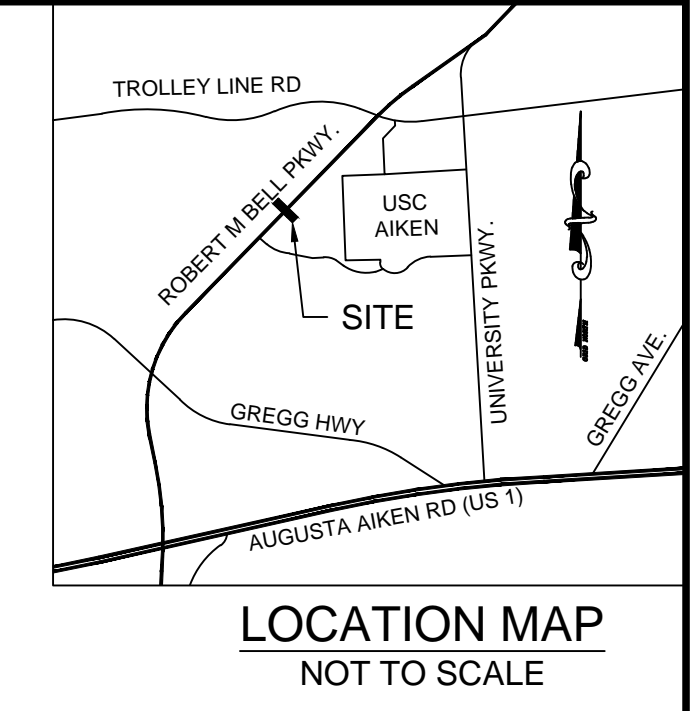
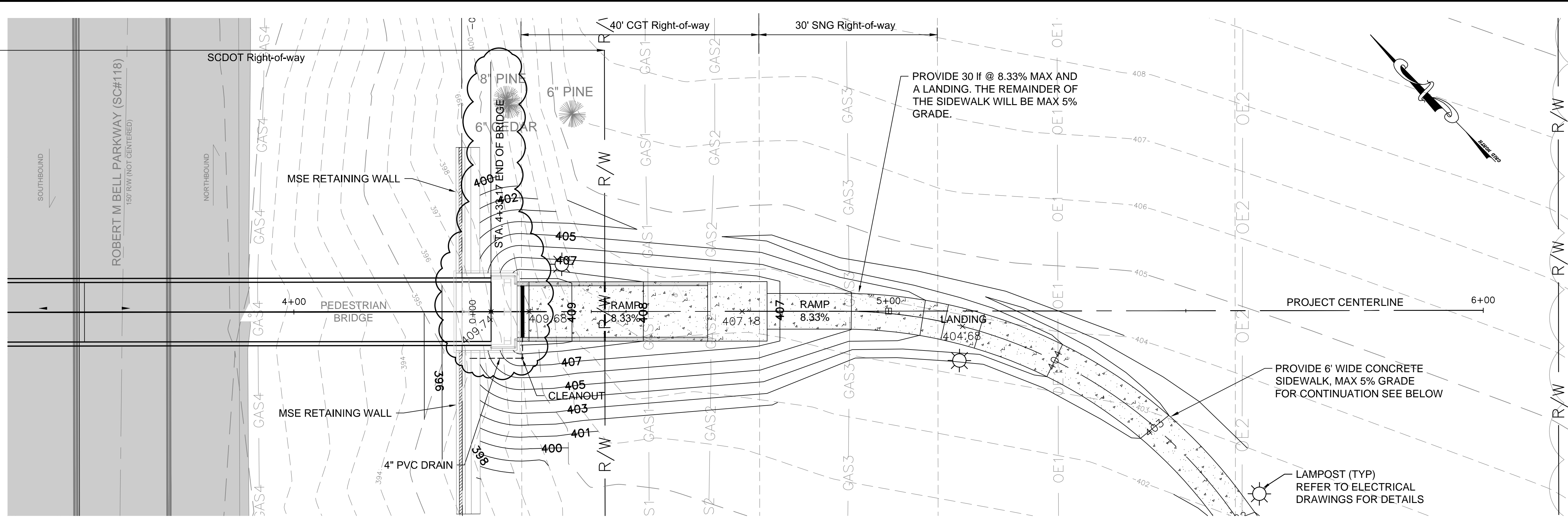
Drawn: TKS  
Checked: LEE  
Revised:

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Columbia, SC 29210  
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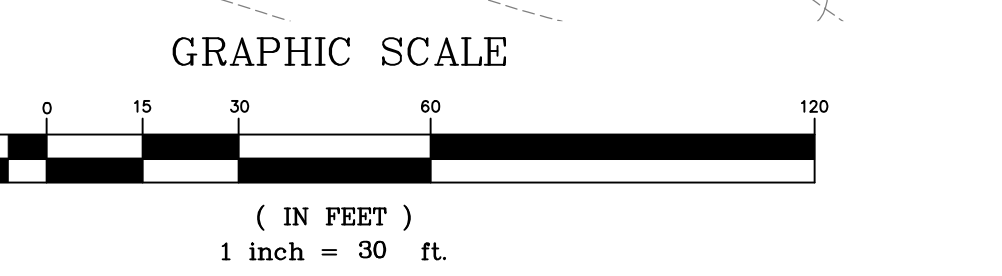
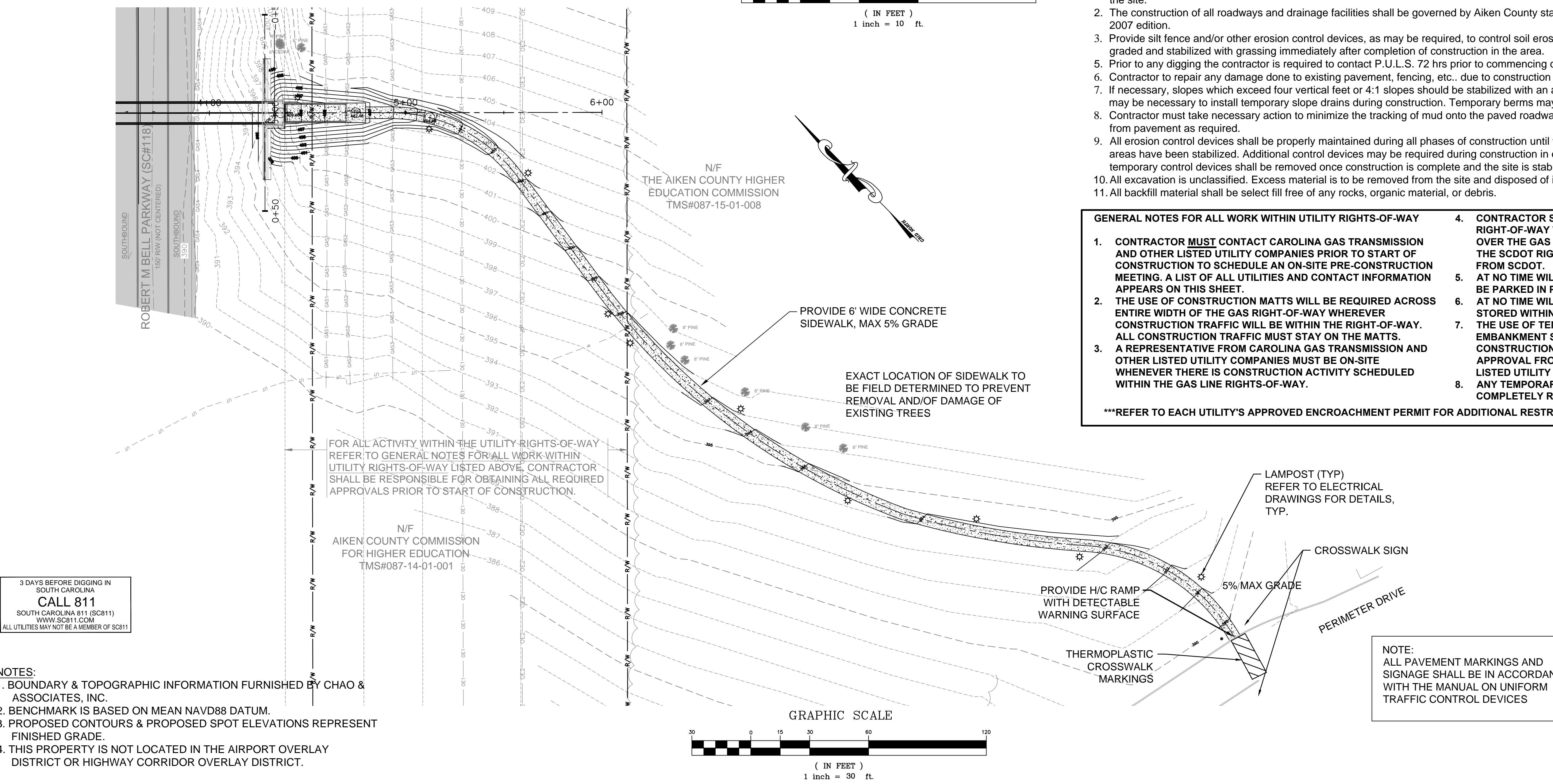






- Construction Notes**
- Contractor shall verify all field conditions prior to beginning work. Contractor shall verify location and availability of all utilities affecting the project on and off the site.
  - The construction of all roadways and drainage facilities shall be governed by Aiken County standard specifications and SCDOT standard specifications, 2007 edition.
  - Provide silt fence and/or other erosion control devices, as may be required, to control soil erosion during construction. All disturbed areas shall be cleaned, graded and stabilized with grassing immediately after completion of construction in the area.
  - Prior to any digging the contractor is required to contact P.U.L.S. 72 hrs prior to commencing construction.
  - Contractor to repair any damage done to existing pavement, fencing, etc., due to construction entirely at his/her expense.
  - If necessary, slopes which exceed four vertical feet or 4:1 slopes should be stabilized with an approved turf reinforcing mat in addition to hydroseeding. It may be necessary to install temporary slope drains during construction. Temporary berms may be needed daily until slope is brought to grade.
  - Contractor must take necessary action to minimize the tracking of mud onto the paved roadway from construction areas. Contractor to daily remove mud/soil from pavement as required.
  - All erosion control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been stabilized. Additional control devices may be required during construction in order to control erosion and/or offsite sedimentation. All temporary control devices shall be removed once construction is complete and the site is stabilized to the satisfaction of Aiken County and SCDHEC.
  - All excavation is unclassified. Excess material is to be removed from the site and disposed of in a legal manner.
  - All backfill material shall be select fill free of any rocks, organic material, or debris.

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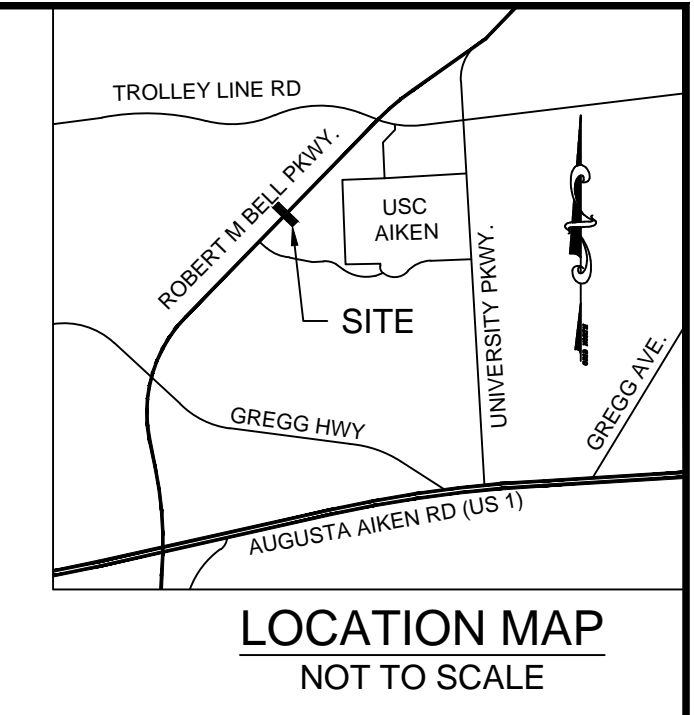
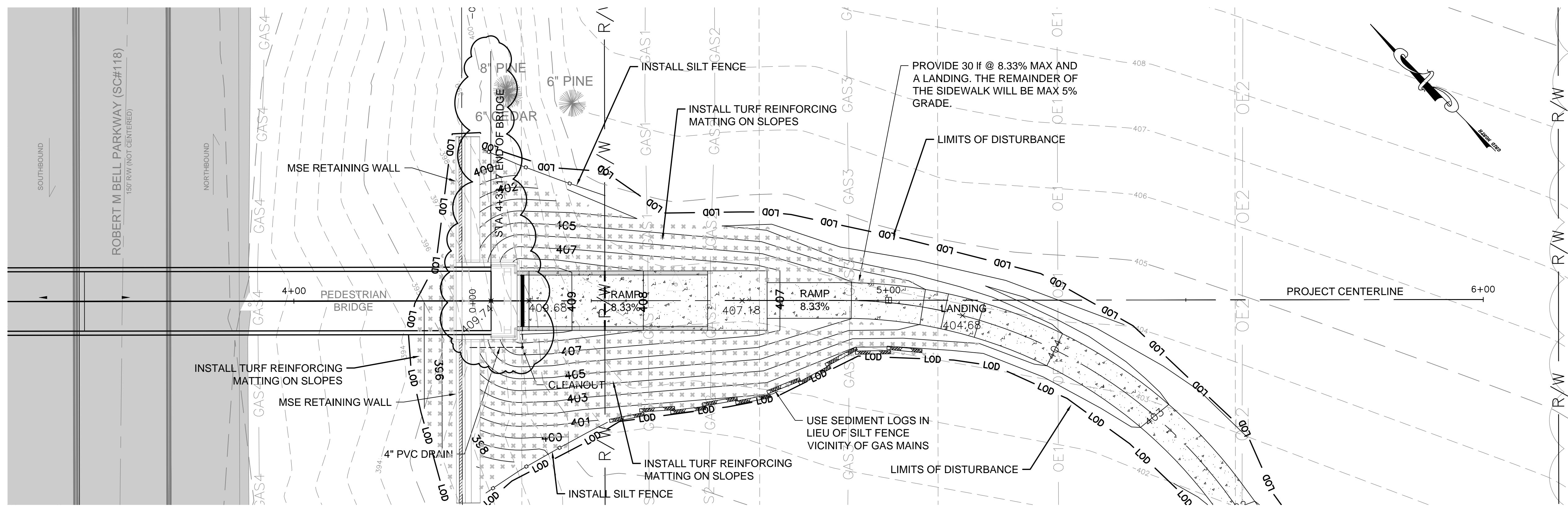


**Grading Detail - South Ramp**  
**USCA Pedestrian Bridge**  
 Project No.: H29-9545-PG  
 University of South Carolina  
 Aiken County, SC

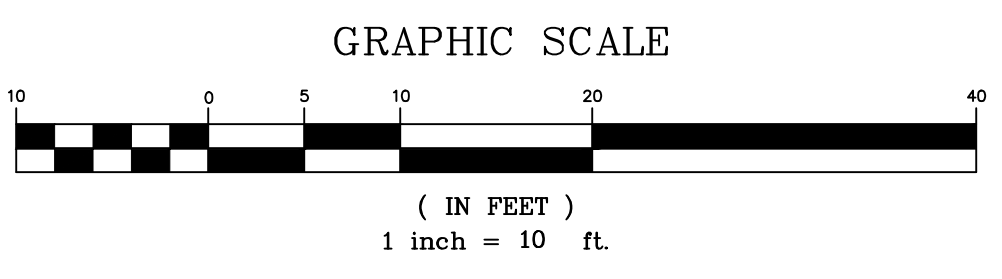
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 Revised:  
 Checked: LEE  
 Project No.: 391402F

**C4.1**  
 Sheet Number  
 August 10, 2015  
 Date





- SILT FENCE
- LIMITS OF DISTURBANCE
- TURF MATTING
- SEDIMENT LOG



TOTAL ESTIMATED LIMITS OF DISTURBANCE FOR THE SOUTH RAMP AND SIDEWALK IS 0.25 ACRES

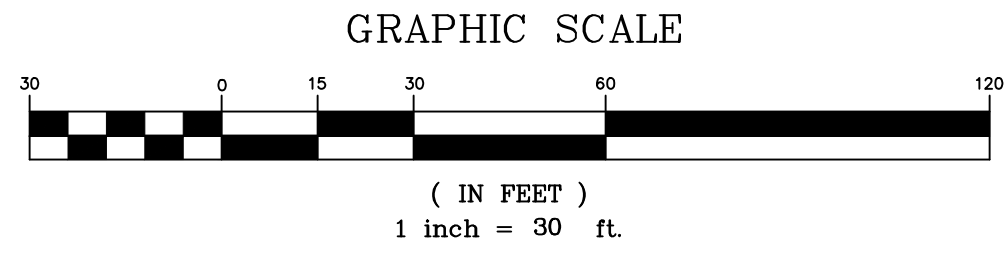
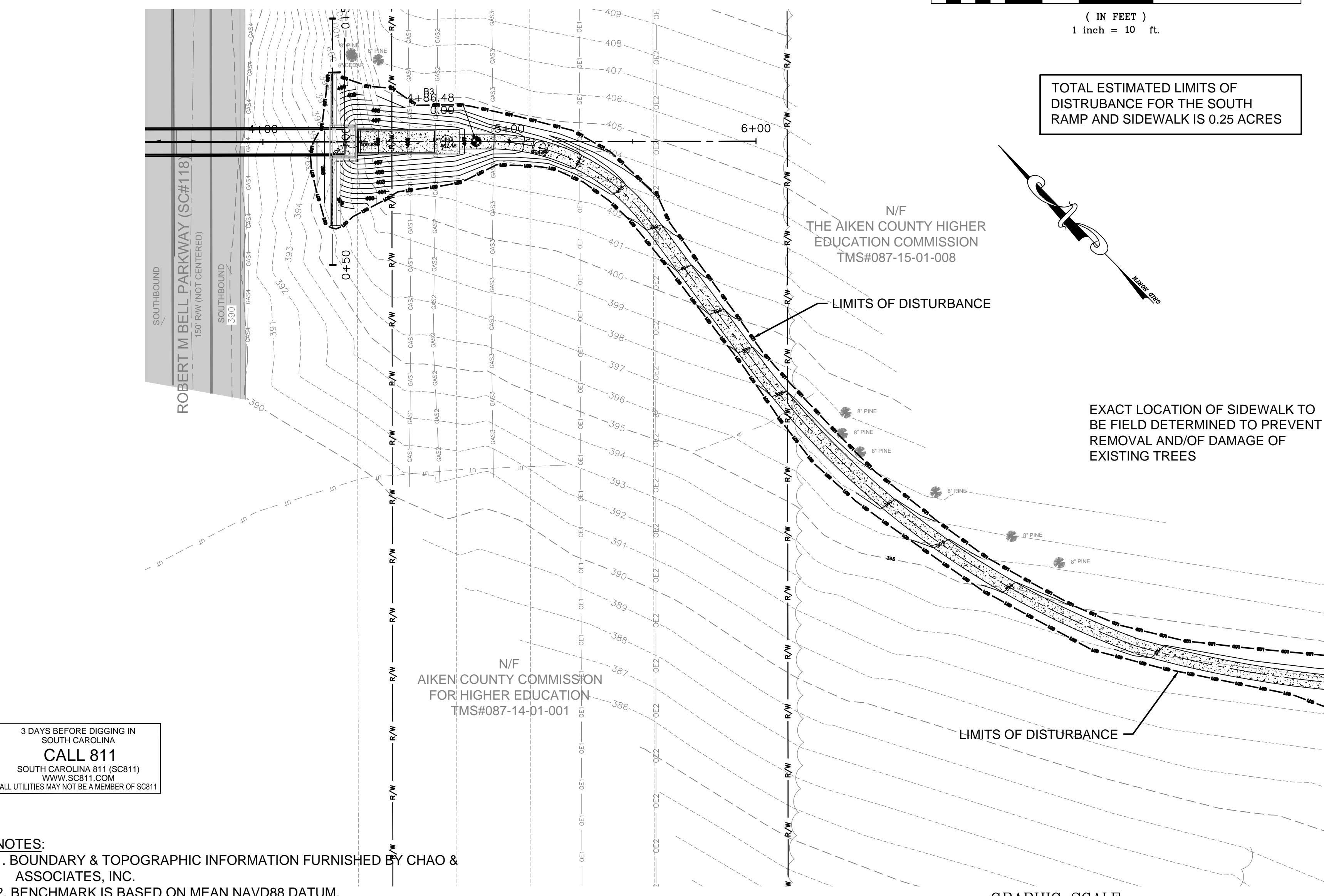
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9. All excavation is unclassified. Excess material is to be removed from the site and disposed of in a legal manner.
10. Stormwater Pollution Prevention Plan must be kept on site or within thirty minutes of the site at all times, and in a designated area that is accessible to the inspectors.
11. Aiken County shall not maintain Stormwater Detention or Retention Ponds. The Property Owner shall maintain all Stormwater Detention Facilities shown hereon.

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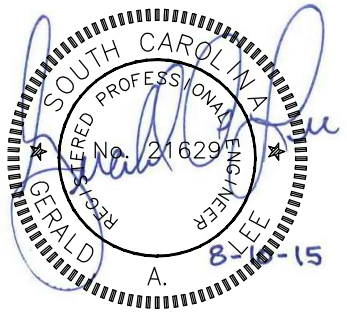
NOTE:  
ALL PAVEMENT MARKINGS AND SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

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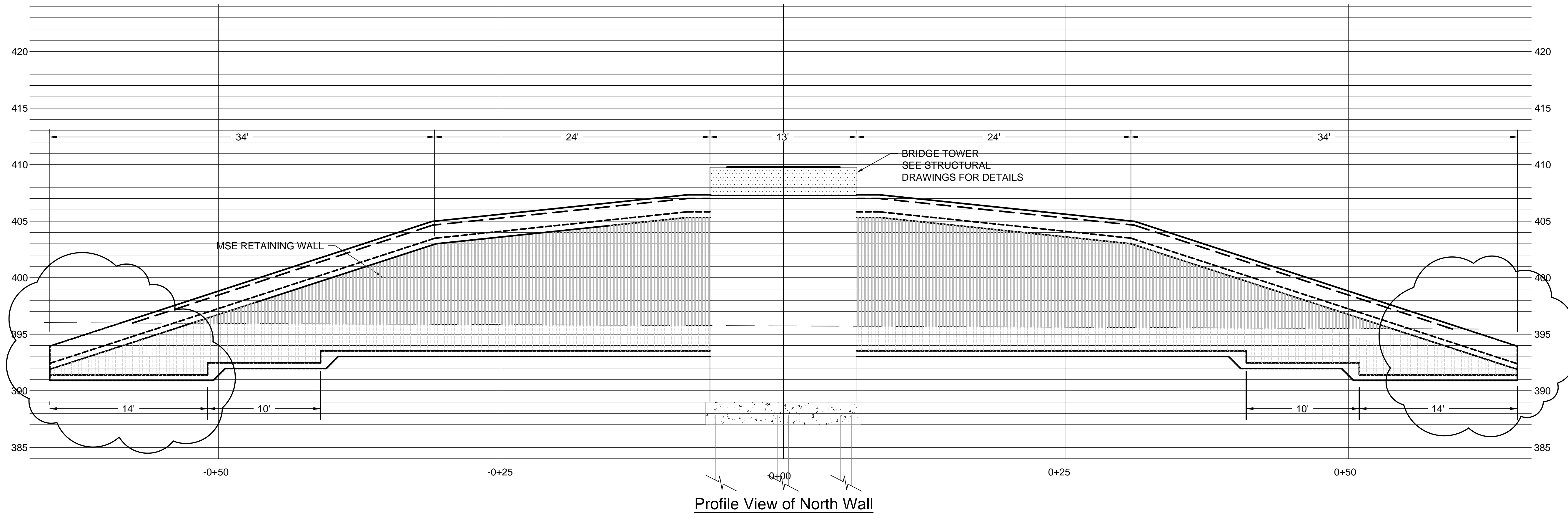


**Sediment and Erosion Control - South Ramp**  
USCA Pedestrian Bridge  
Project No.: H29-9545-PG  
University of South Carolina  
Aiken County, SC

Drawn: TKS  
Checked: LEE  
Revised:  
Project No.: 391402F  
File: 391402F-C.dwg

**C4.2**  
Sheet Number  
August 10, 2015  
Date





Profile View of North Wall

MSE Wall Notes:

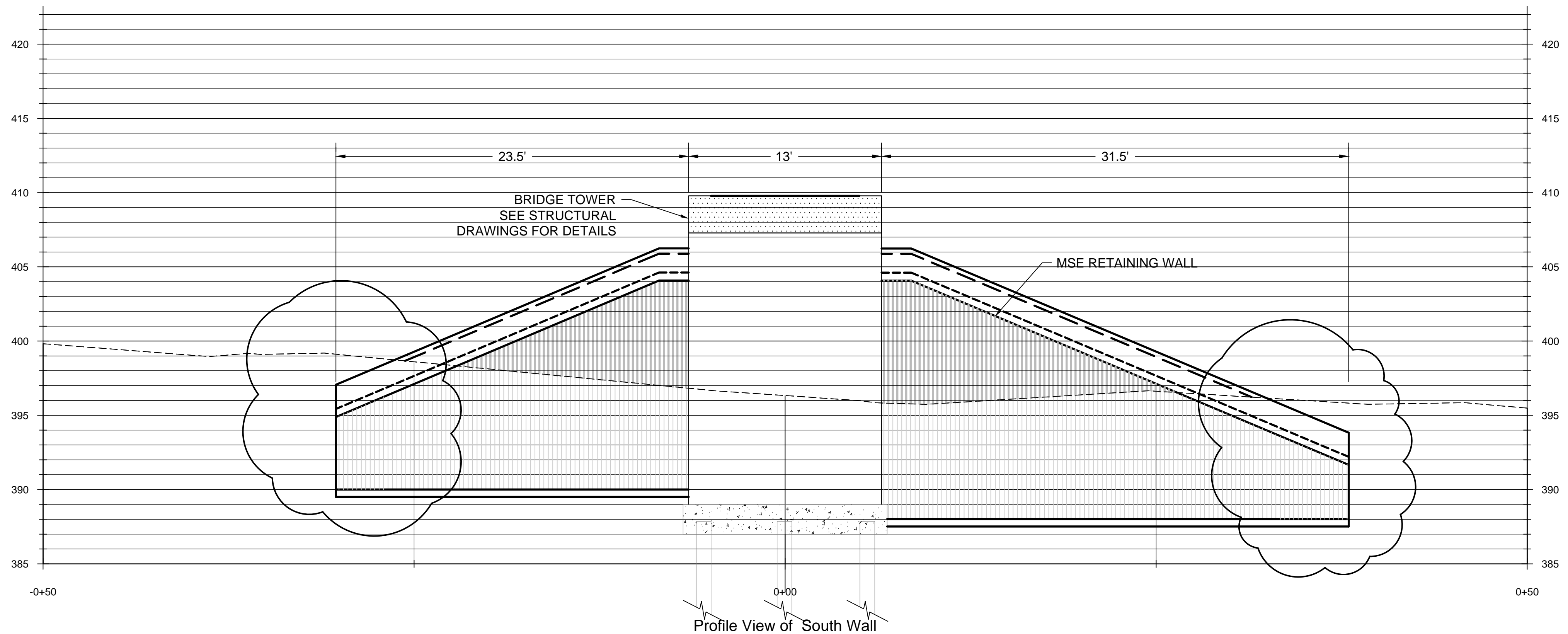
△ Added notes

This drawing is conceptual.

Contractor to provide design and construction in accordance with SCDOT standard drawings 713-01 and the SCDOT Supplemental Technical Specification for Mechanically Stabilized Earth (MSE) Walls. Design must be signed and sealed by a South Carolina Registered Engineer.

Design Methodology:  
LRFD Design

Design Life:  
Permanent structures = 100 years.  
Temporary structures in service for 5 years or longer = 100 years.  
Temporary structures in service for less than 5 year = 5 years.



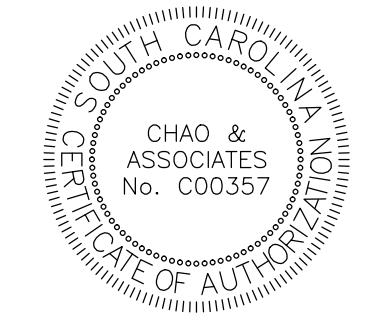
Profile View of South Wall

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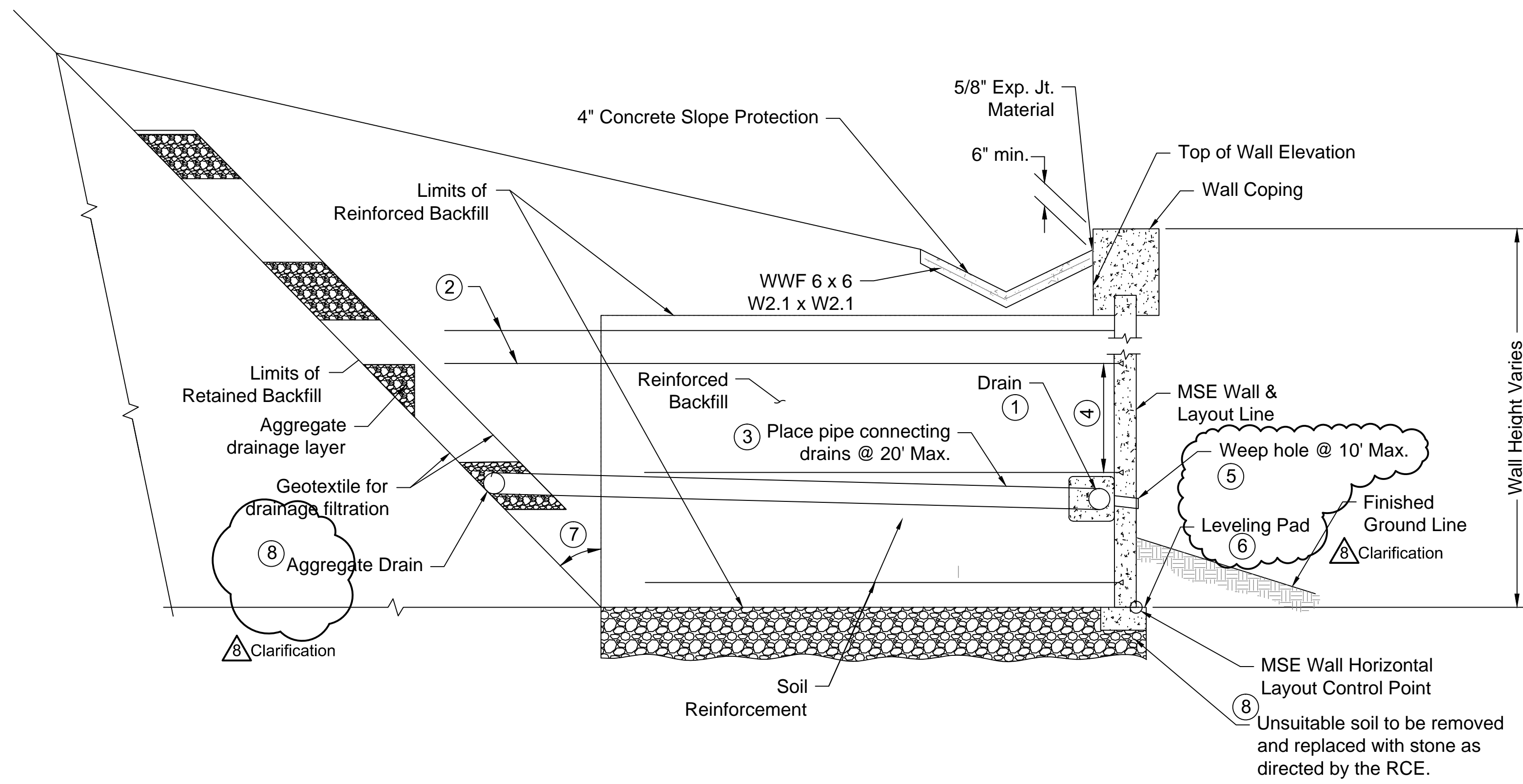


**MSE Wall Elevations**  
USCA Pedestrian Bridge  
Project No.: H29-9545-PG  
University of South Carolina  
Aiken County, SC

Drawn: TKS	Checked: LEE
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**C5.0**  
Sheet Number  
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Typical Section  
N.T.S.

- ① Construct 1'-0" x 1'-0" aggregate drain using 6" dia. perforated pipe. Provide aggregate, other than Macadam, that meets the requirements for stone backfill in Supplemental Technical Specification SC-M-713. Wrap geotextile for drainage filtration (see Supplemental Technical Specification SC-M-713) completely around aggregate drain and overlap 1'-0". Design MSE wall drainage system to drain the aggregate drain.
- ② Extend top two layers of soil reinforcement 5 feet beyond the end of the lower layers of soil reinforcement.
- ③ Slope 2% min. Provide unperforated pipe connecting aggregate drain to drain at wall facing.
- ④ Maximum vertical spacing of soil reinforcement is 36".
- ⑤ Provide rodent screen manufactured from T304 stainless steel or galvanized steel with a minimum wire diameter of 0.050". Provide rodent screen with minimum of 2 openings per inch and a maximum of 4 openings per inch.
- ⑥ Limit step height for panel facing to 1/2 of the full panel height. Separate adjacent steps in leveling pad by a minimum of 2 full panels.
- ⑦ Angle to be determined by the Contractor based on site conditions and the method of construction used. Excavation and/or shoring of retained backfill to permit construction of the MSE wall is considered incidental to the MSE wall construction and is not paid for as a separate item.
- ⑧ Provide aggregate, other than Macadam, that meets the requirements for stone backfill in the Supplemental Technical Specification SC-M-713.

③ Added notes

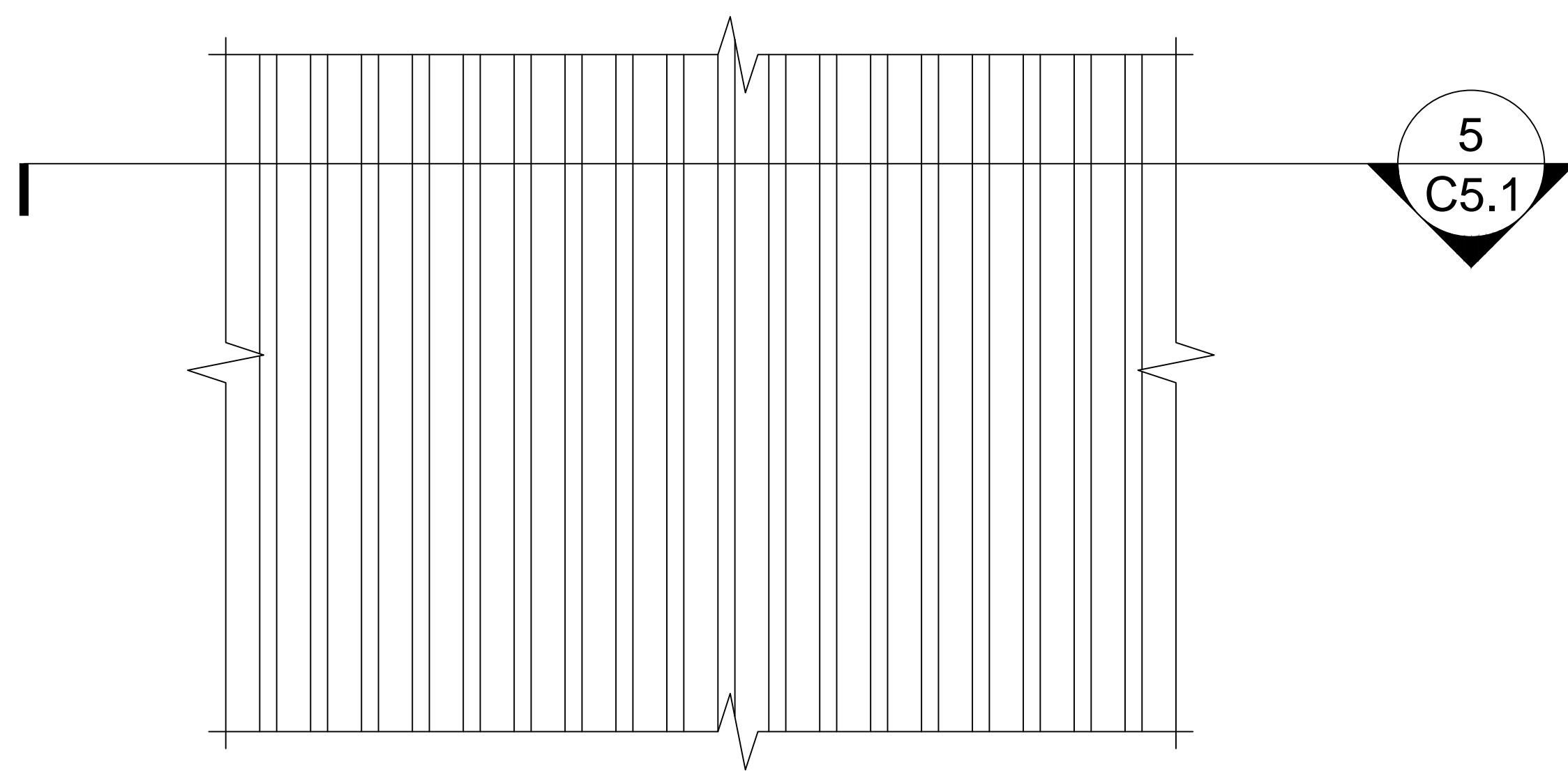
**MSE Wall Notes:**

This drawing is conceptual.

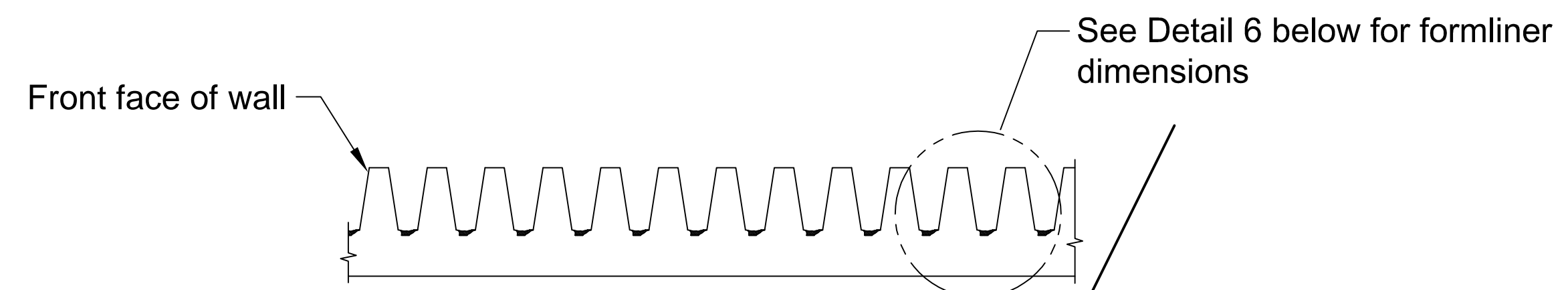
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Design Methodology:  
LRFD Design

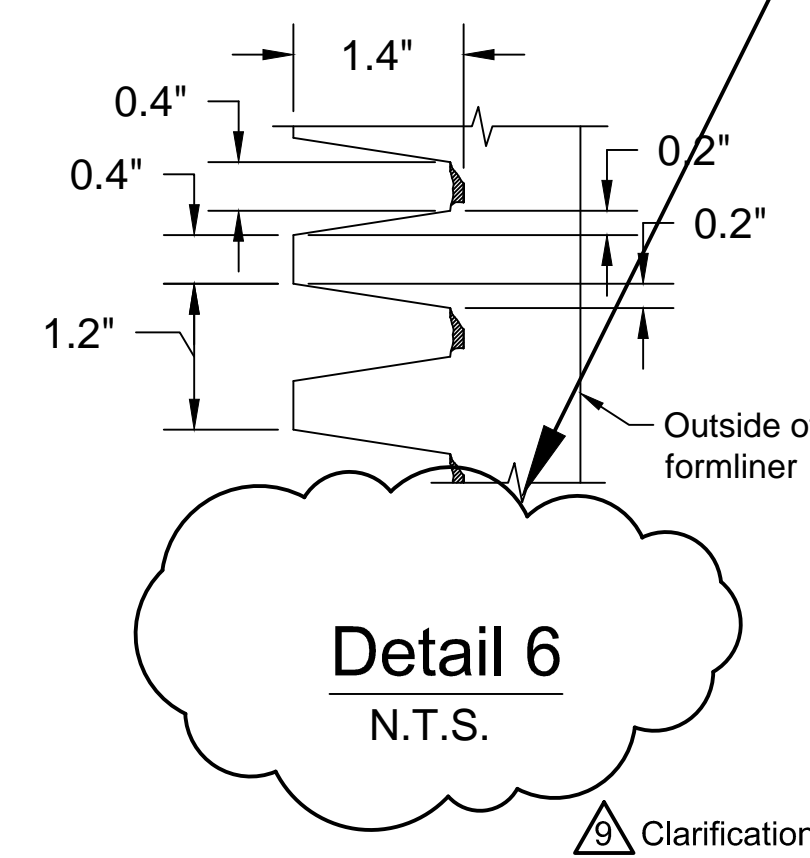
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MSE Wall Panel  
N.T.S.



5  
C5.1  
Section  
N.T.S.

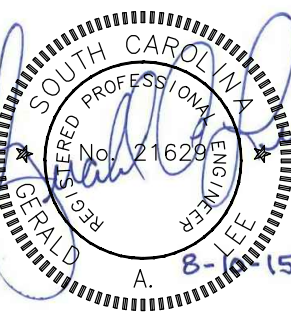


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USCA Pedestrian Bridge  
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Drawn: TKS  
Revised:  
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**C5.1**  
Sheet Number  
August 10, 2015  
Date



**STANDARD NOTES**

- If necessary, slopes, which exceed eight (8) vertical feet should be stabilized with synthetic or vegetative mats, in addition to hydroseeding. It may be necessary to install temporary slope drains during construction. Temporary berms may be needed until the slope is brought to grade.
- Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than fourteen (14) days after work has ceased, except as stated below.
  - Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions stabilization measures must be initiated as soon as practicable.
  - Where construction activity on a portion of the Site is temporarily ceased, and earth-disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the Site.
- All sediment and erosion control devices shall be inspected every seven (7) days. If site inspections identify BMPs that are damaged or are not operating effectively, maintenance must be performed as soon as practical or as reasonably possible and before the next storm event whenever practicable.
- Provide silt fence and/or other control devices, as may be required, to control soil erosion during utility construction. All disturbed areas shall be cleaned, graded, and stabilized with grassing immediately after the utility installation. Fill, cover, and temporary seeding at the end of each day are recommended. If water is encountered while trenching, the water should be filtered to remove any sediments before being pumped back into any waters of the State.
- All erosion control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been stabilized. Additional control devices may be required during construction in order to control erosion and/or offsite sedimentation. All temporary control devices shall be removed once construction is complete and the site is stabilized.
- The contractor must take necessary action to minimize the tracking of mud onto paved roadway(s) from construction areas and the generation of dust. The contractor shall daily remove mud/soil from pavement, as may be required.
- Residential subdivisions require erosion control features for infrastructure as well as for individual lot construction. Individual property owners shall follow these plans during construction or obtain approval of an individual plan in accordance with S.C Reg. 72-300 et seq. and SCR100000.
- Temporary diversion berms and/or ditches will be provided as needed during construction to protect work areas from upslope runoff and/or to divert sediment-laden water to appropriate traps or stable outlets.
- All waters of the State (WoS), including wetlands, are to be flagged or otherwise clearly marked in the field. A double row of silt fence is to be installed in all areas where a 50-foot buffer can't be maintained between the disturbed area and all WoS. A 10-foot buffer should be maintained between the last row of silt fence and all WoS.
- Litter, construction debris, oils, fuels, and building products with significant potential for impact (such as stockpiles of freshly treated lumber) and construction chemicals that could be exposed to storm water must be prevented from becoming a pollutant source in storm water discharges.

**Seeding Schedule:**

Actual types and application rates may vary depending on soil type. Contractor should consult with the local conservation district office for specific recommendations.

The following rates are per 1000 S.F.

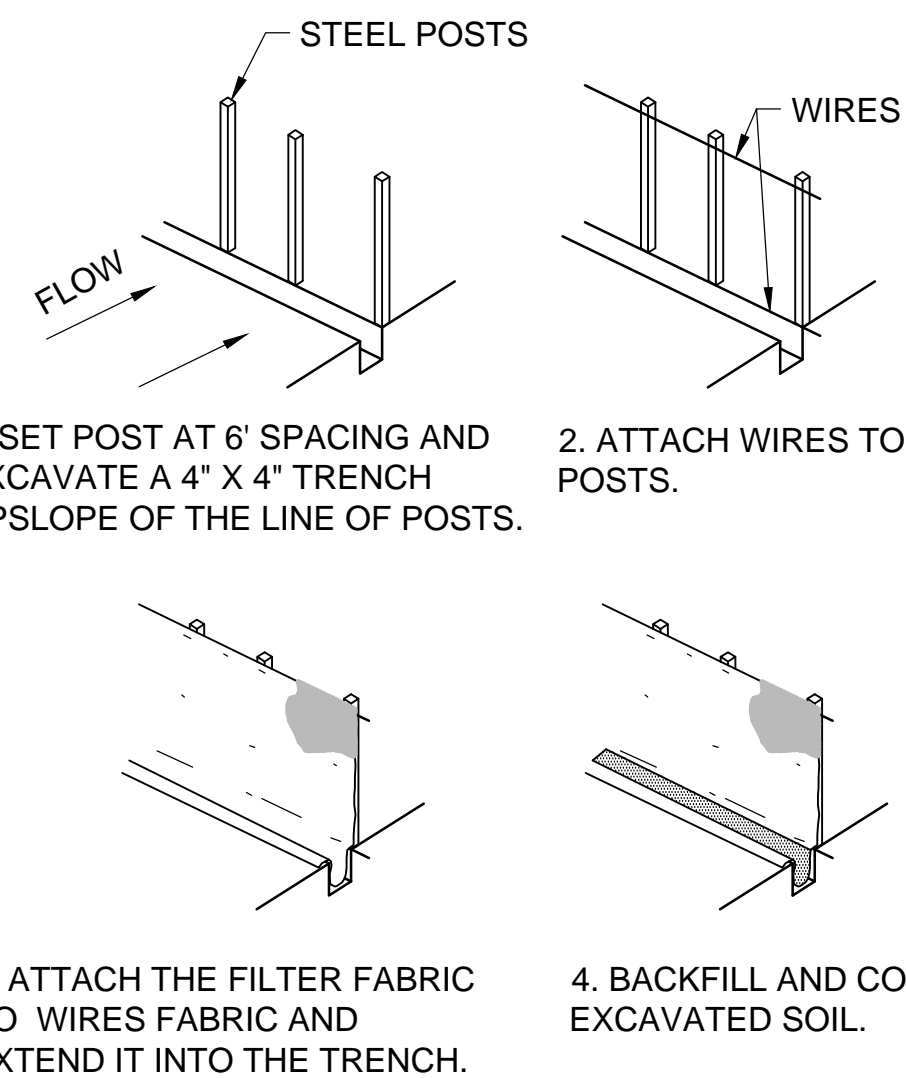
MAY 1. - AUG. 31	SEPT. 1 - APR. 30
1 Pound Browntopmillet	2 Pounds Annual Rye Grass
2 Pounds Hulled Bermuda	0.5 Pound Hulled Bermuda
25 Pounds 10-10-10 Fertilizer	1.5 Pounds Unhulled Bermuda
75 Pounds Limestone	25 Pounds 10-10-10 Fertilizer
	75 Pounds Limestone
Or	Or
1 Pound Browntopmillet	2 Pounds Annual Rye Grass
1 Pound Hulled Bermuda	0.5 Pound Hulled Bermuda
*2 Pounds Bahia Grass	1 Pound Unhulled Bermuda
25 Pounds 10-10-10 Fertilizer	*2 Pounds Bahia Grass
75 Pounds Limestone	25 Pounds 10-10-10 Fertilizer
	75 Pounds Limestone
Or	Or
DEEP SANDY SOILS	1 Pound Annual Rye Grass
2 Pounds Browntopmillet	**3 Pounds Fescue Grass
*3 Pounds Bahia Grass	25 Pounds 10-10-10 Fertilizer
25 Pounds 10-10-10 Fertilizer	75 Pounds Limestone
75 Pounds Limestone	
	Or
	DEEP SANDY SOILS
	1 Pound Unhulled Bermuda
	2 Pounds Rye Grass or 2 lbs Grain Rye
	*2 Pounds Bahai Grass
	25 Pounds 10-10-10 Fertilizer
	75 Pounds Limestone

\* Bahia grass is a good erosion control grass; however, it produces many seed heads which scatter to other areas. Bahia Grass is hard to mow, but it does not require the care that many other grasses require. Around office buildings and within subdivisions, use 4 to 6 ounces of Centipede Grass on lieu of Bahia Grass or in combination with Bermuda Grass.

\*\* For soils with clay subsoil. Do not plant in sandy soils.

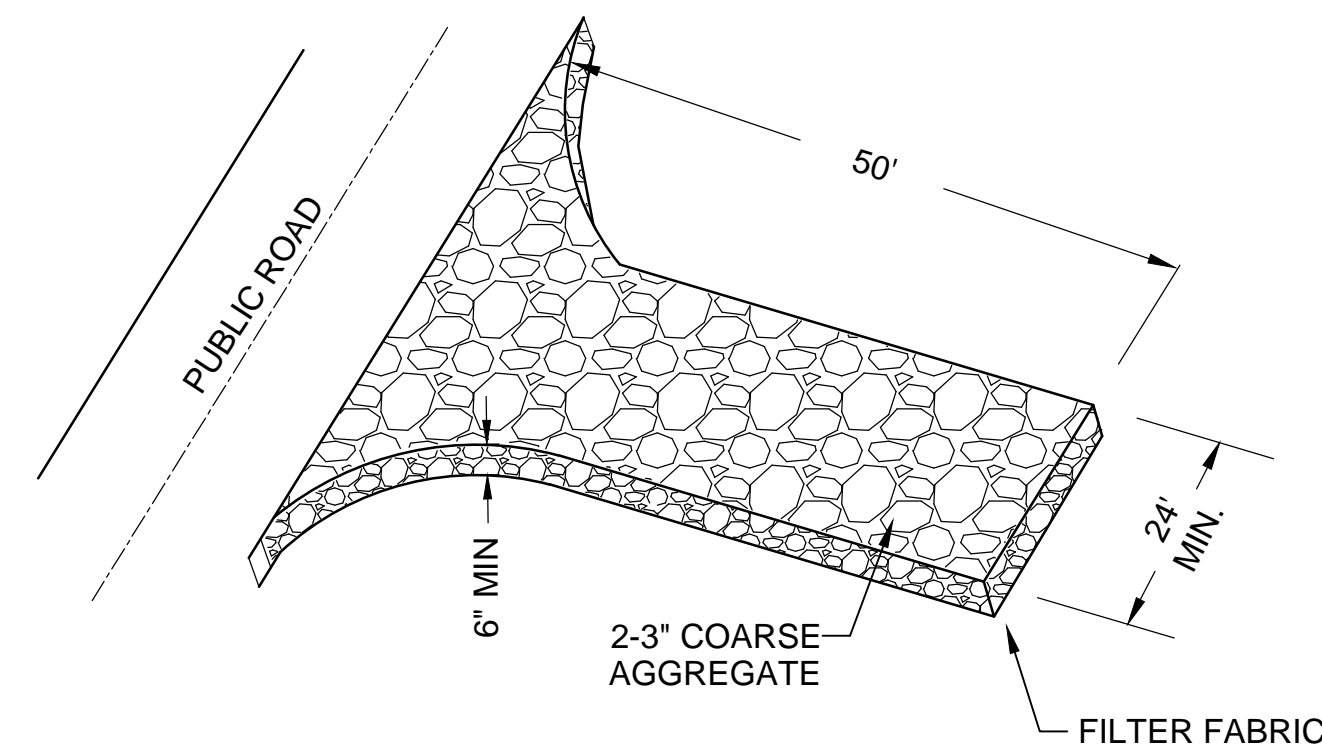
**NOTES:**

- On all vegetated swales or ditches with side slopes (cut or fill) steeper than 2:1, add 4 to 6 ounces per 1,000 square feet of Weeping Love Grass Seed to any of the above mixtures.
- Swale and ditch bottoms should be double seeded.
- All slopes steeper than 2:1 shall be hydroseeded.
- Growth of Rye Grass in the early spring must be suppressed to prevent Rye from choking out permanent grass such as Bermuda, Bahia or Fescue.



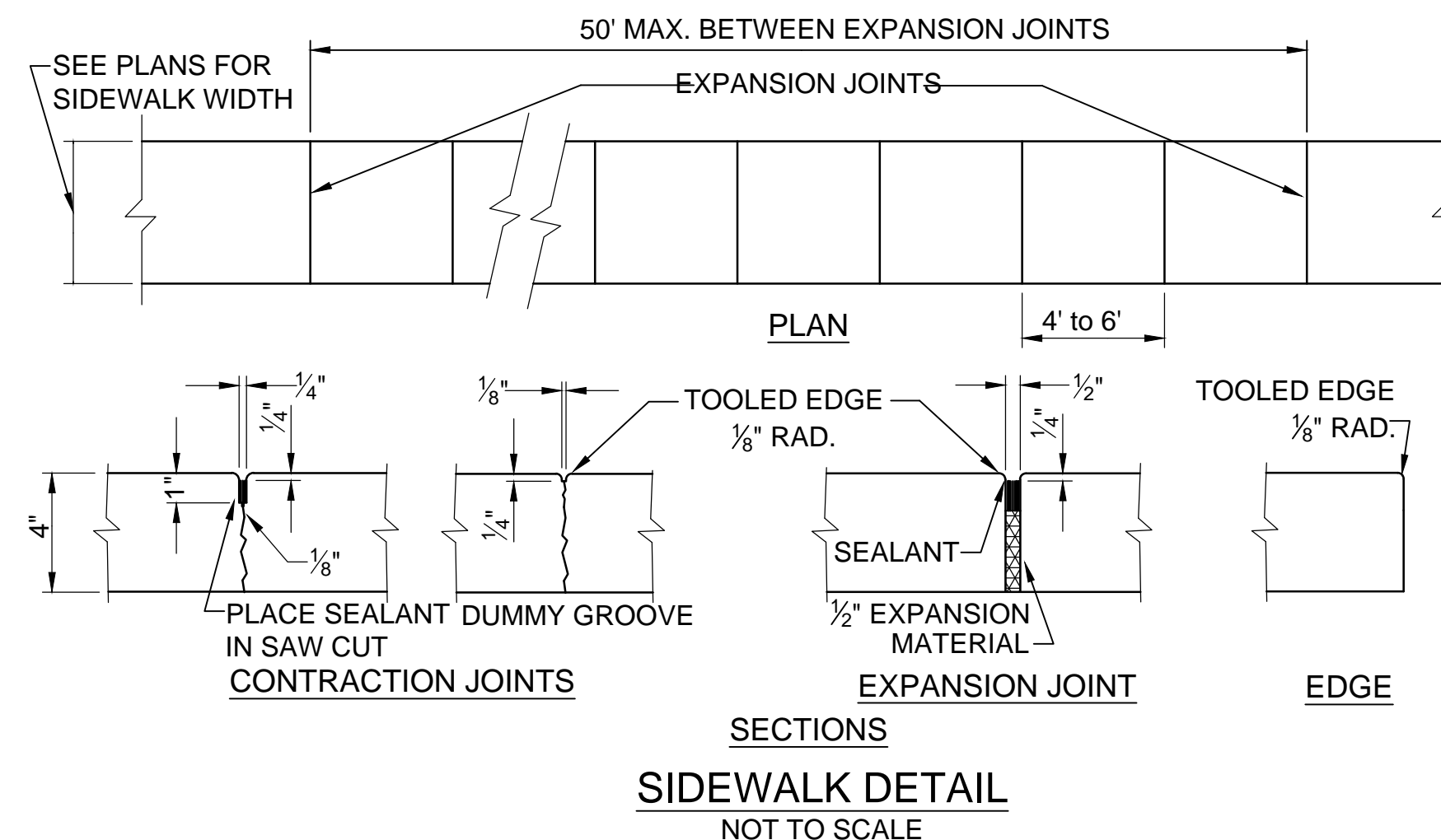
- MAINTENANCE NOTES:**
- INSPECT SILT FENCE WEEKLY AND AFTER EACH RAINFALL.
  - REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES 1/2 THE HEIGHT OF THE SILT FENCE.
  - REPAIR OR REPLACE FABRIC WHEN TORN OR WEATHERED.

**SILT FENCE CONSTRUCTION**  
NOT TO SCALE

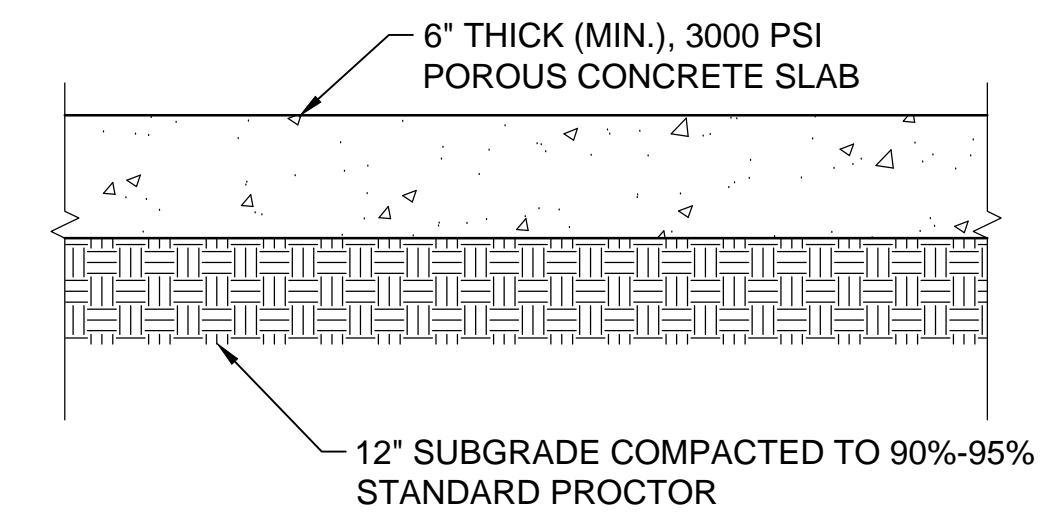


**NOTE:**  
GRAVEL MAT SHALL BE INSTALLED AT ALL CONSTRUCTION TRAFFIC ACCESS POINTS

**TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT**  
NOT TO SCALE



**SIDEWALK DETAIL**  
NOT TO SCALE



**NOTE:**

**MANUFACTUREE'S INSTALLATION:**

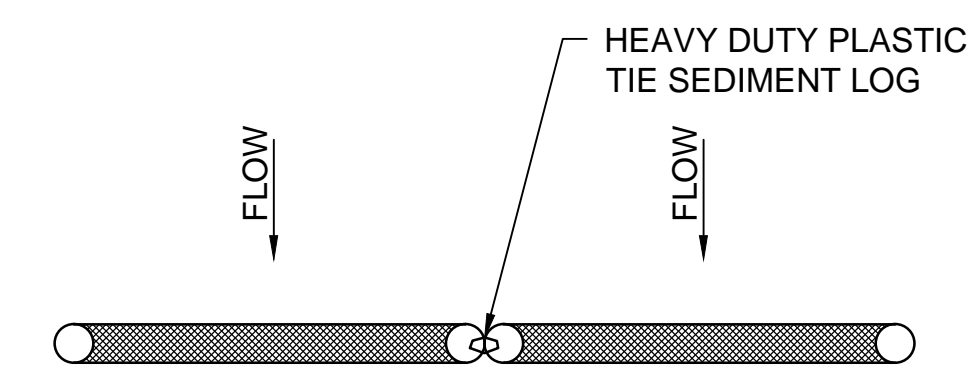
- FORMWORK MATERIALS ARE PERMITTED TO BE OF WOOD OR STEEL AND SHALL BE THE FULL DEPTH OF THE PAVEMENT.
- PERVIOUS CONCRETE SHALL BE MANUFACTURED AND DELIVERED IN ACCORDANCE WITH ASTM C 94.
- THE BASE SHALL BE IN A DAMP OR SEMI-FLOODED CONDITION AT TIME OF PLACEMENT.
- PLACING, FINISHING, AND TOOLED JOINTING MUST BE COMPLETED WITHIN 20 MINUTES FROM THE TIME THE PERVIOUS CONCRETE IS DISCHARGED FROM THE TRUCK.
- THE PERVIOUS CONCRETE PAVEMENT SHALL BE COMPACTED TO THE REQUIRED CROSS-SECTION.
- CURING PROCEDURES SHALL BEGIN IMMEDIATELY BUT NO LATER THAN 20 MINUTES FROM THE TIME THE PERVIOUS CONCRETE IS DISCHARGED FROM THE TRUCK.

**MAINTENANCE SPECIFICATIONS**

- THE PAVEMENT SURFACE SHOULD BE VACUUMED BIANNUALLY WITH A COMMERCIAL CLEANING UNIT.
- PLANTED AREAS ADJACENT TO POROUS PAVEMENT SHALL BE WELL MAINTAINED TO PREVENT SOIL WASHOUT ONTO THE PAVEMENT AND SHALL BE INSPECTED ON A SEMI-ANNUAL BASIS.
- ALL TRASH AND OTHER LITTER THAT IS OBSERVED DURING THESE INSPECTIONS SHOULD BE REMOVED.
- ALL CONSTRUCTION OR HAZARDOUS MATERIALS CARRIERS SHOULD BE PROHIBITED FROM ENTERING A POROUS PAVEMENT LOT IN ORDER TO PREVENT FROM TRACKING OR SPILLING DIRT ONTO THE PAVEMENT.

**TYPICAL PERVIOUS CONCRETE PAVEMENT SECTION**  
NOT TO SCALE

SEDIMENT LOGS SHALL BE USED IN LIEU OF SILT FENCE IN VICINITY OF EXISTING GAS MAINS. STAKES TO KEEP LOGS IN PLACE SHALL BE WOOD AND DRIVEN NO DEEPER THAN 12". NO STAKE SHALL BE DRIVEN DIRECTLY OVER CENTERLINE OF PIPELINE.



**TOP VIEW**

**NOTES:**

- SEDIMENT TUBE MAY BE TEMPORARILY MOVED DURING CONSTRUCTION AS NEEDED.
- DIAMETER OF SEDIMENT TUBE SHALL BE 20 INCHES FOR DITCH APPLICATIONS.
- SEDIMENT TUBES SHALL BE TIED TOGETHER WITH PLASTIC TIES.

**SEDIMENT LOG DETAIL**

NOT TO SCALE

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**Miscellaneous Details**

**USCA Pedestrian Bridge**  
Project No.: H29-9545-PG  
University of South Carolina  
Aiken County, SC

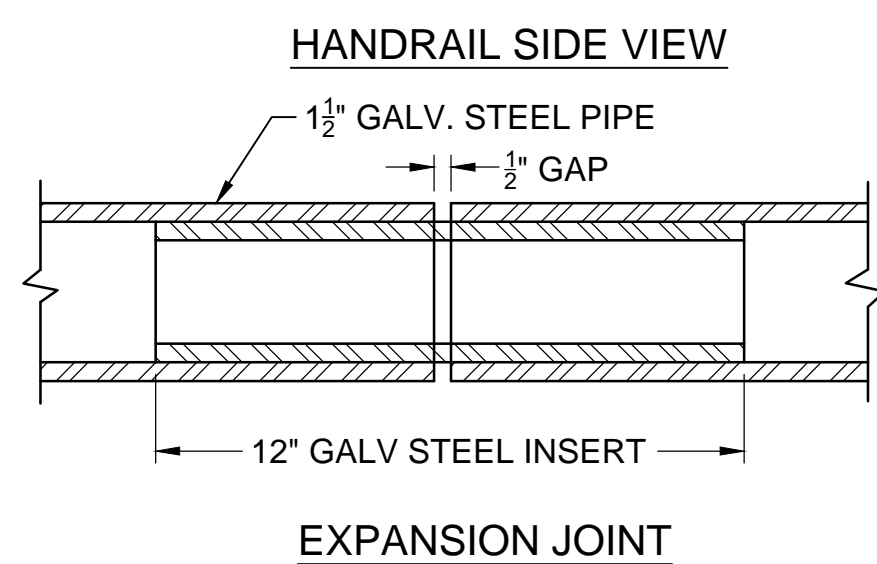
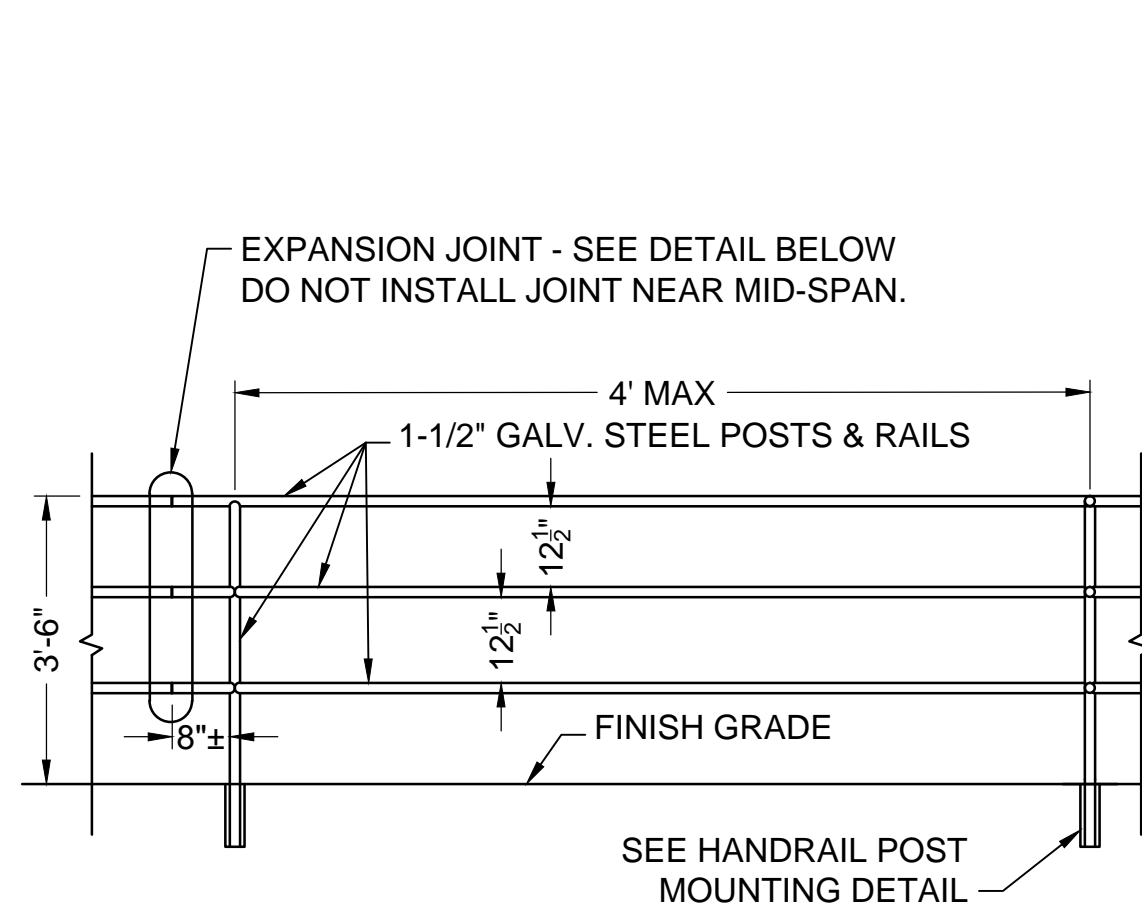
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Checked: LEE

Revised:  
Project No.: 391402F  
File: 391402F-C.dwg

**C6.0**

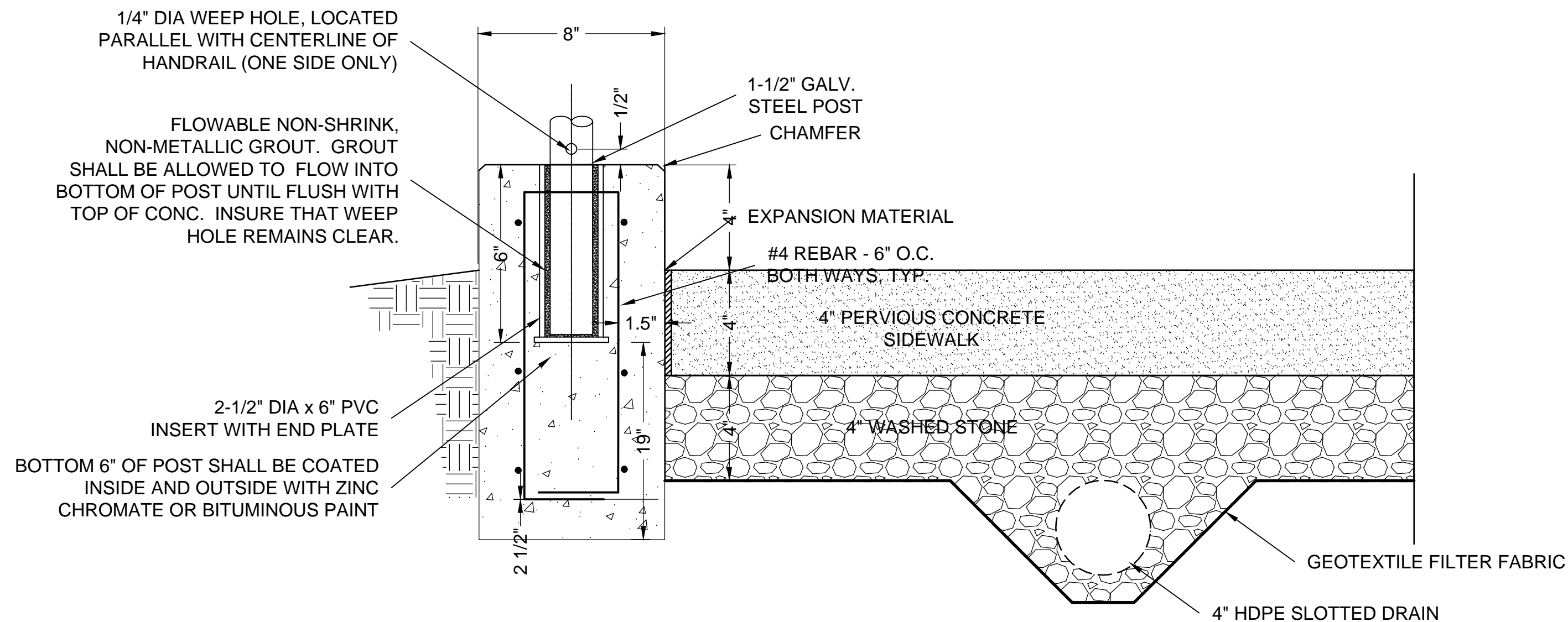
Sheet Number  
August 10, 2015  
Date



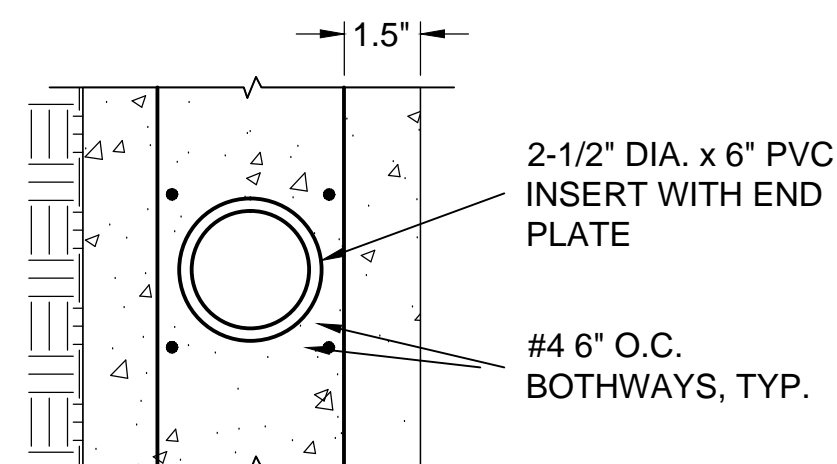


NOTE:  
 PROVIDE THREE SETS OF EXPANSION JOINTS. ONE AT EACH END (ONE SPAN FROM CORNERS), AND ONE MIDPOINT ALONG LENGTH OF GUARD RAIL. FASTEN ONE SIDE TO RAIL AND ALLOW THE OTHER SIDE TO SLIDE DURING EXPANSION & CONTRACTION.

HANDRAILS TO BE PAINTED. COLOR TO BE COORDINATED WITH OWNER.



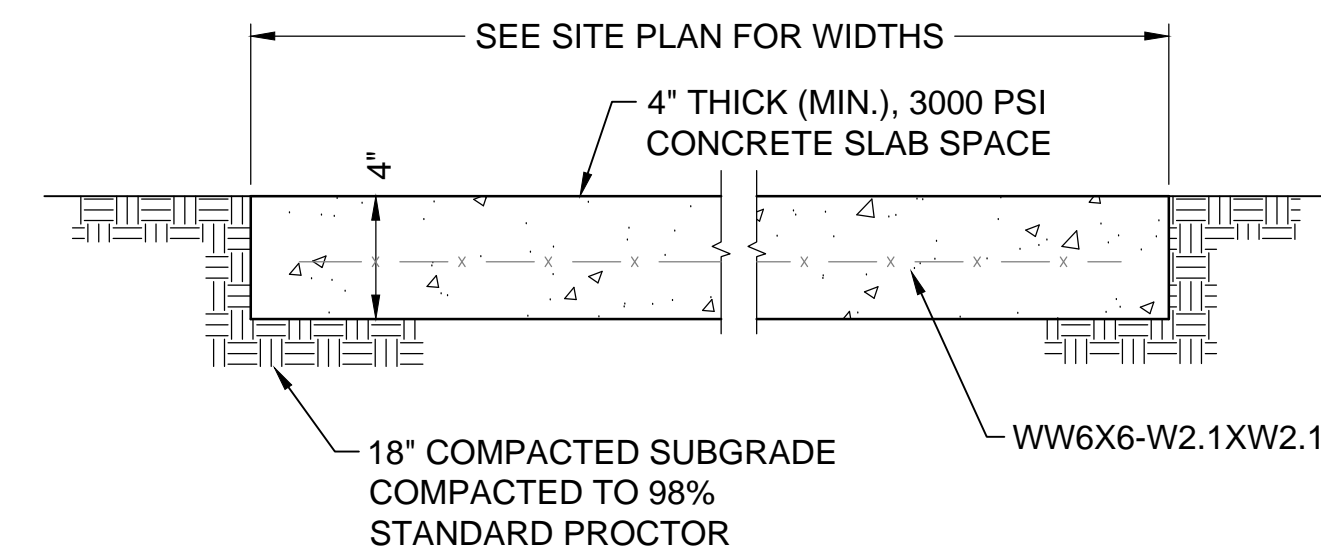
SIDE VIEW



PLAN VIEW

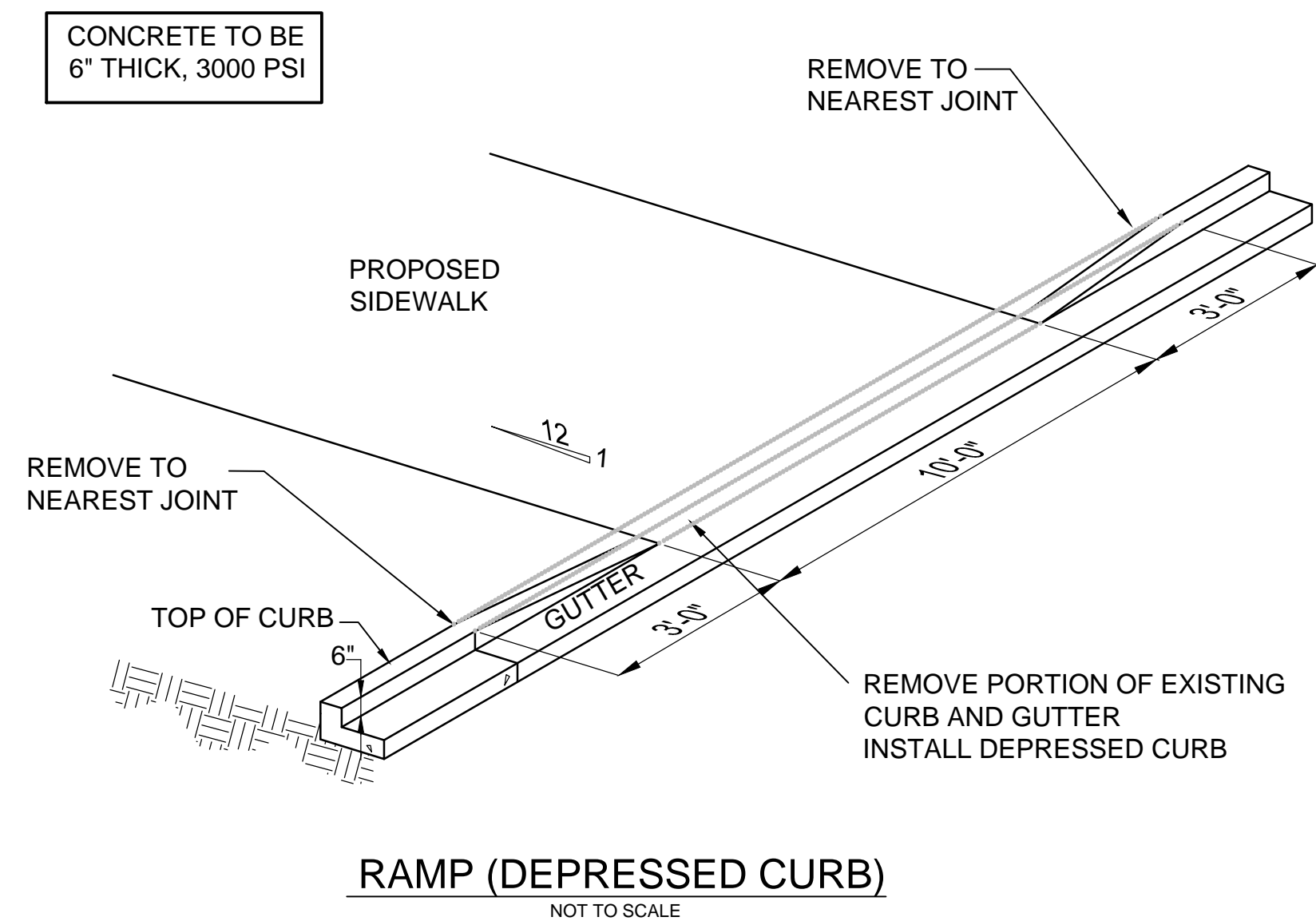
HANDRAIL POST MOUNTING

RAMPED SIDEWALK DETAIL  
 NOT TO SCALE

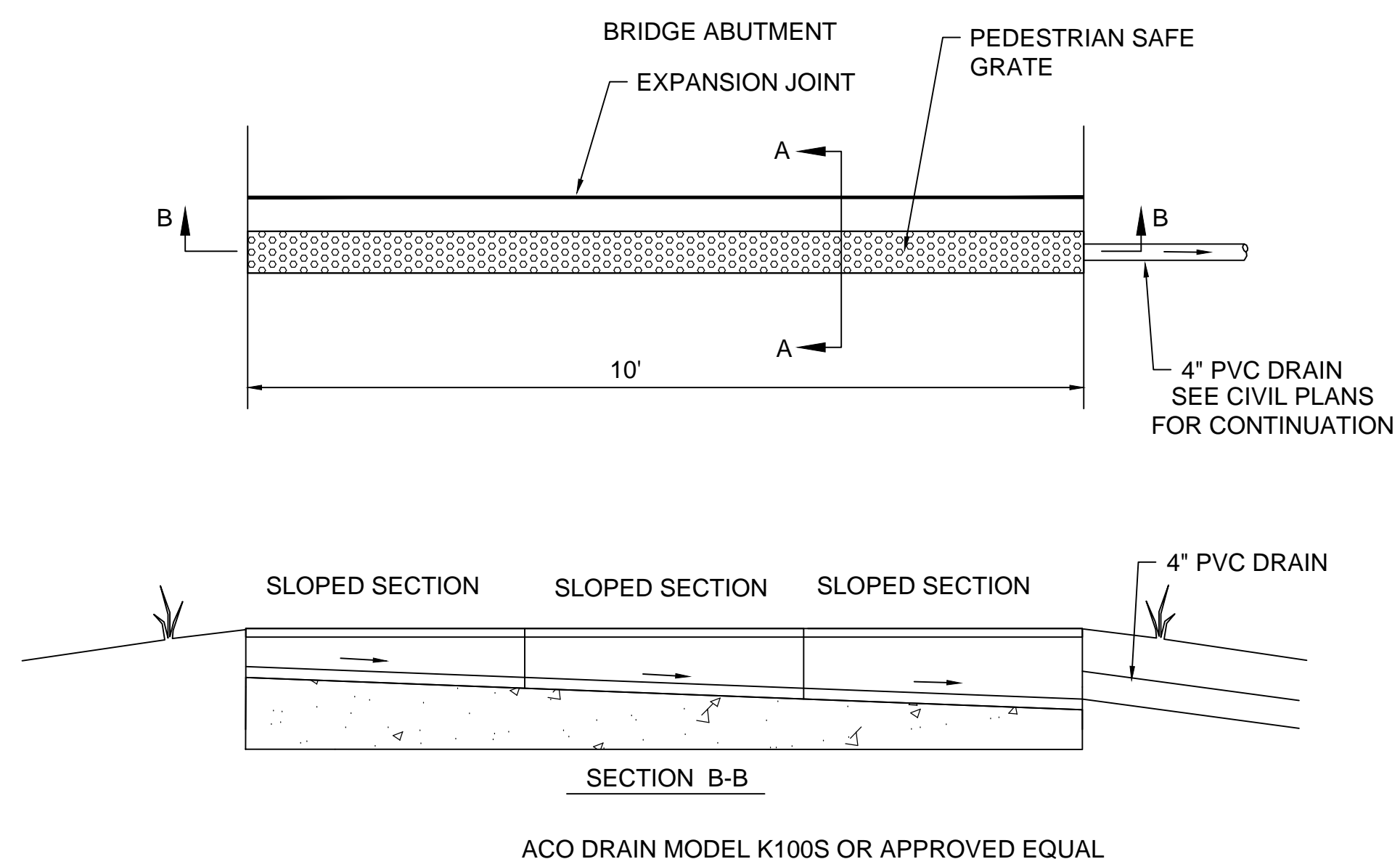


TYPICAL CONCRETE SIDEWALK SECTION  
 NOT TO SCALE

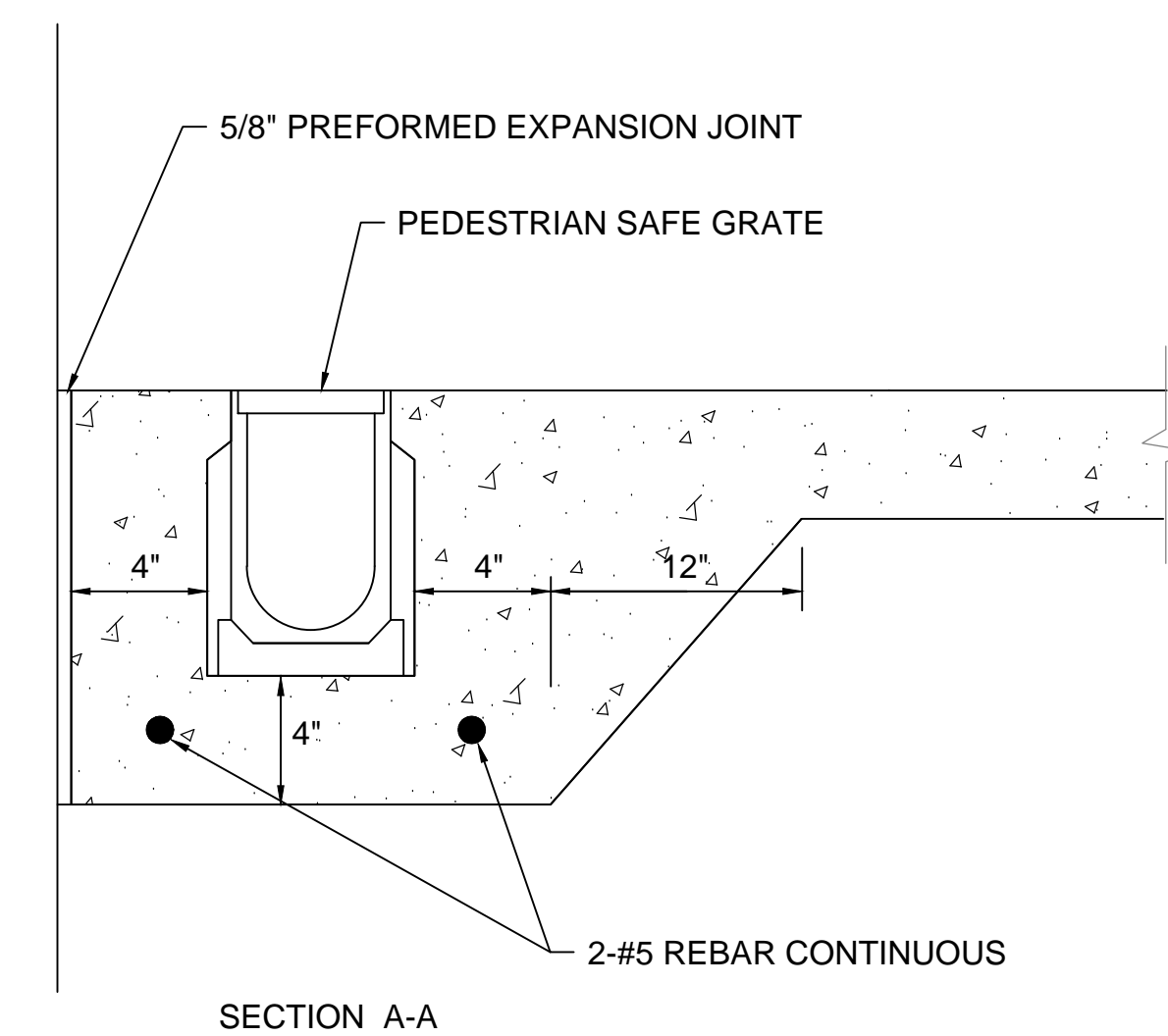
GENERAL NOTE:  
 CONCRETE TESTING WILL BE PERFORMED BY USC AIKEN 3rd PARTY CONTRACTOR



RAMP (DEPRESSED CURB)  
 NOT TO SCALE



TRENCH DRAIN DETAIL  
 NOT TO SCALE



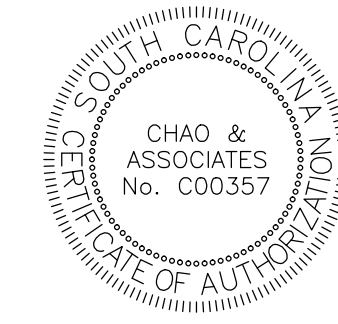
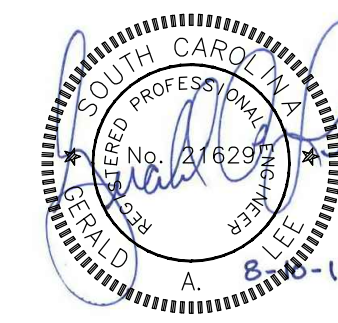
SECTION A-A

Drawing File: 391402F-C.dwg Printed: Aug 31, 2015 - 8:26am

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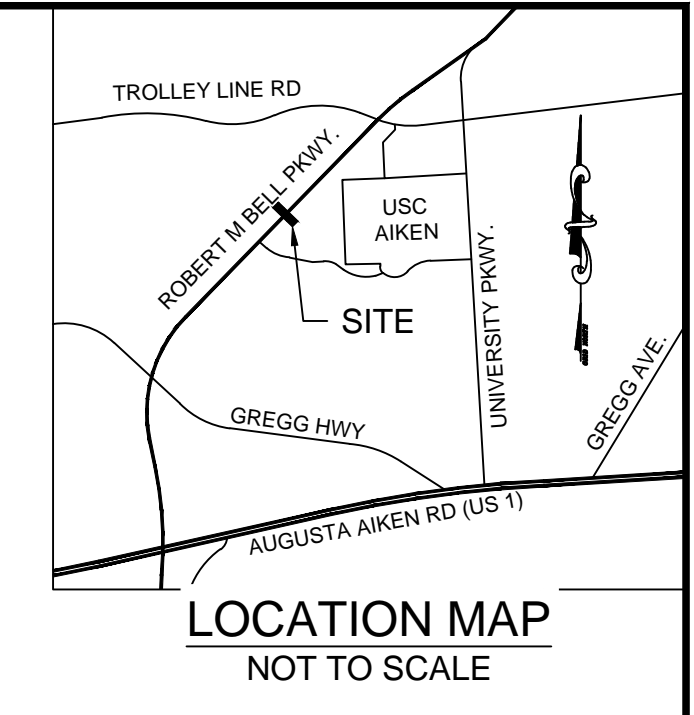
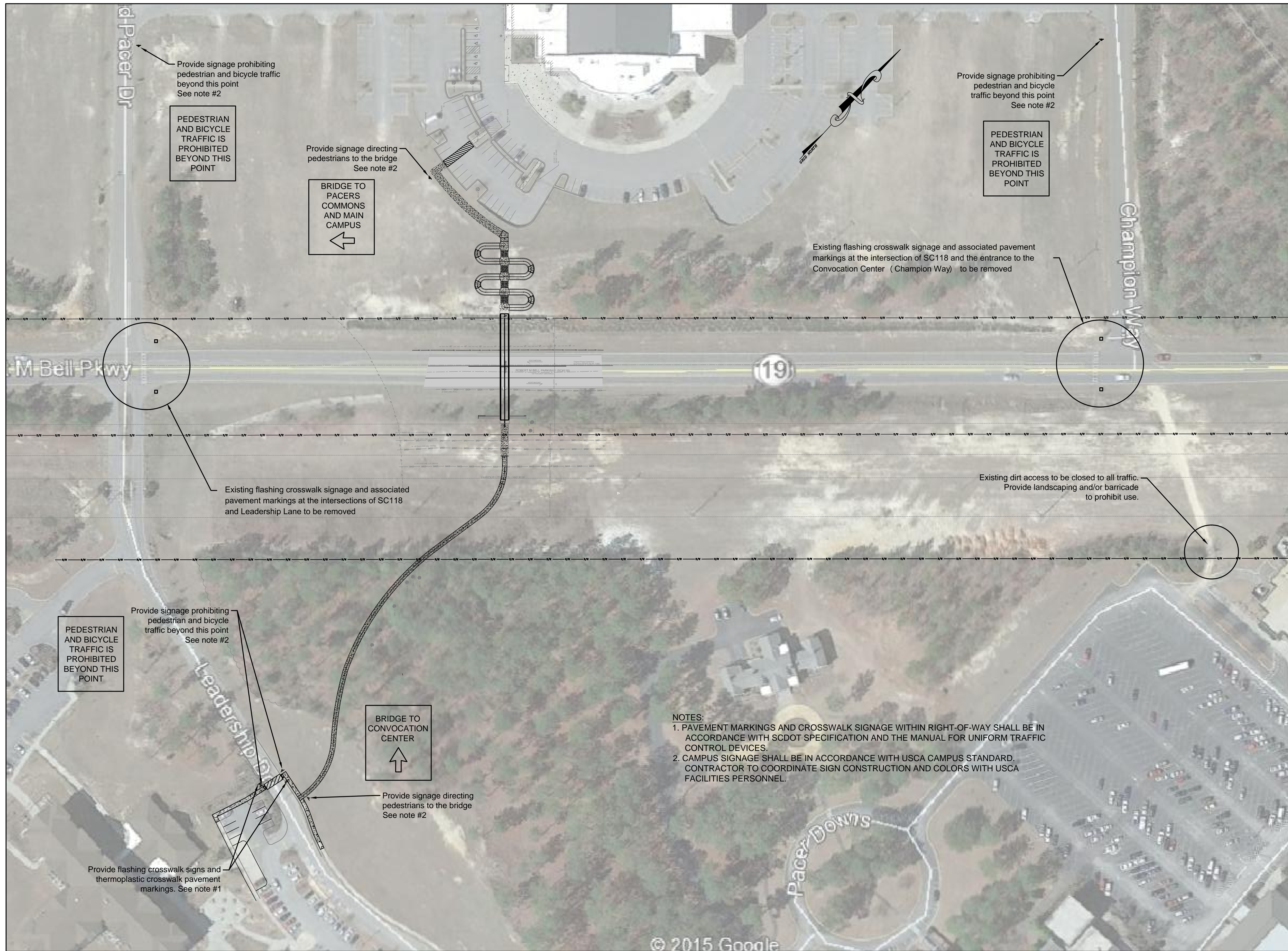


**Miscellaneous Details**  
 USCA Pedestrian Bridge  
 Project No.: H29-9545-PG  
 University of South Carolina  
 Aiken County, SC

Drawn: TKS Checked: LEE  
 Revised:  
 Project No.: 391402F  
 File: 391402F-C.dwg

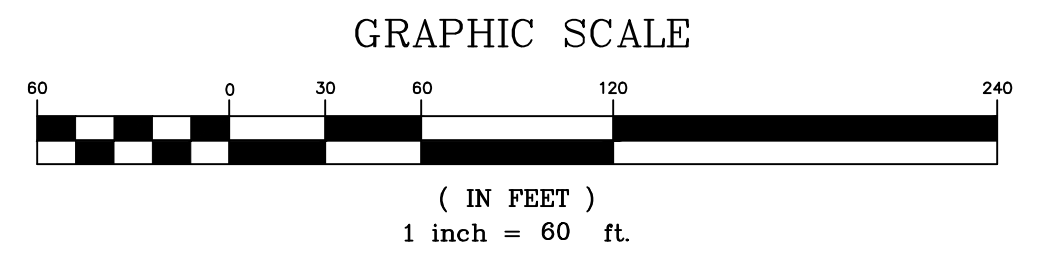
**C6.1**  
 Sheet Number  
 August 10, 2015  
 Date



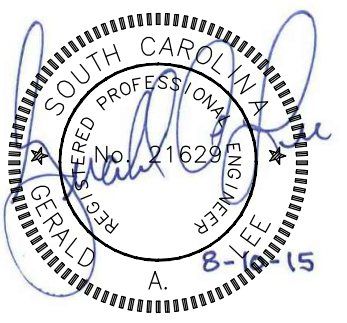


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**NOTES:**  
1. PAVEMENT MARKINGS AND CROSSWALK SIGNAGE WITHIN RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH SCDOT SPECIFICATION AND THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES.  
2. CAMPUS SIGNAGE SHALL BE IN ACCORDANCE WITH USCA CAMPUS STANDARD. CONTRACTOR TO COORDINATE SIGN CONSTRUCTION AND COLORS WITH USCA FACILITIES PERSONNEL.



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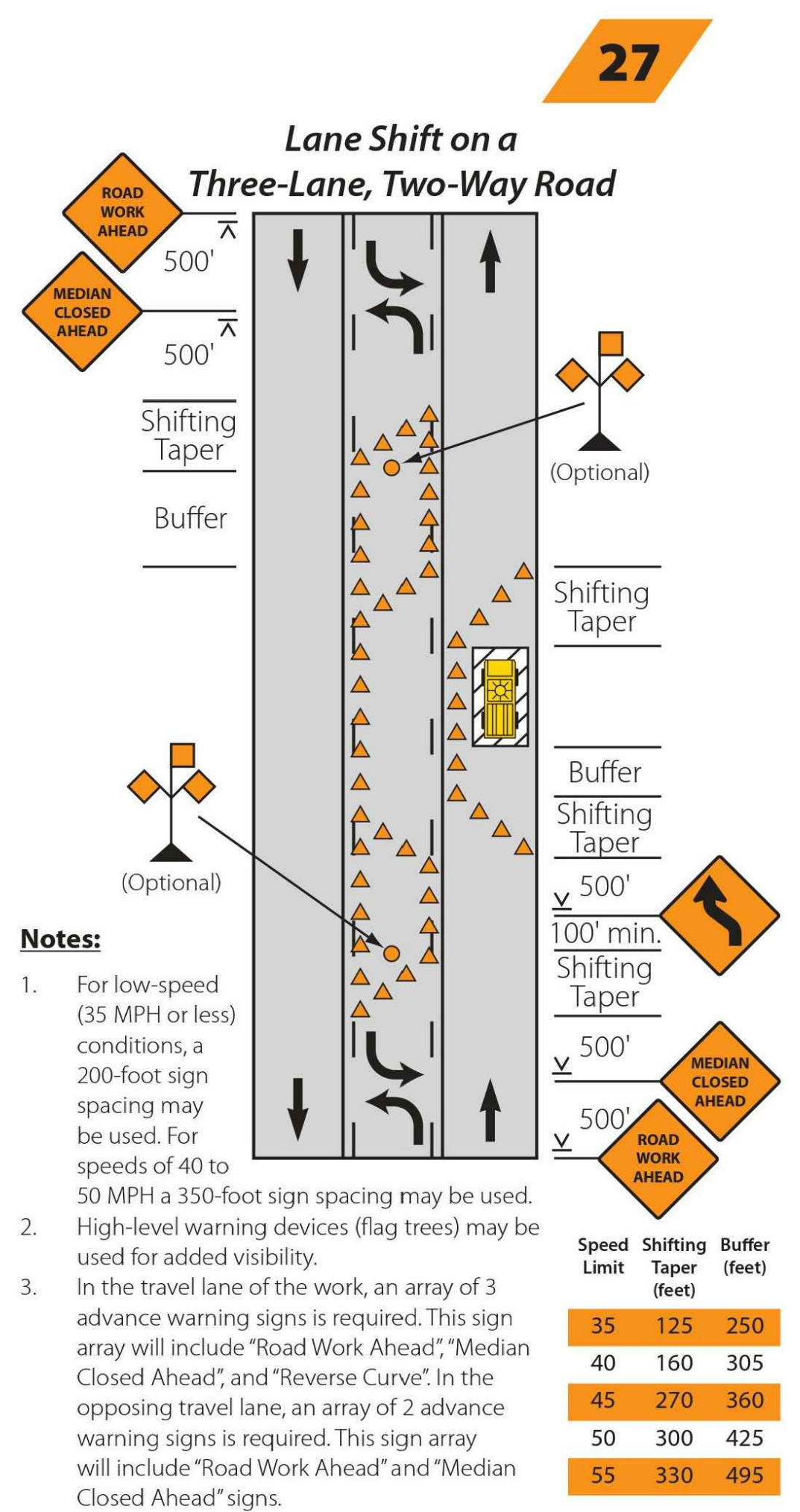
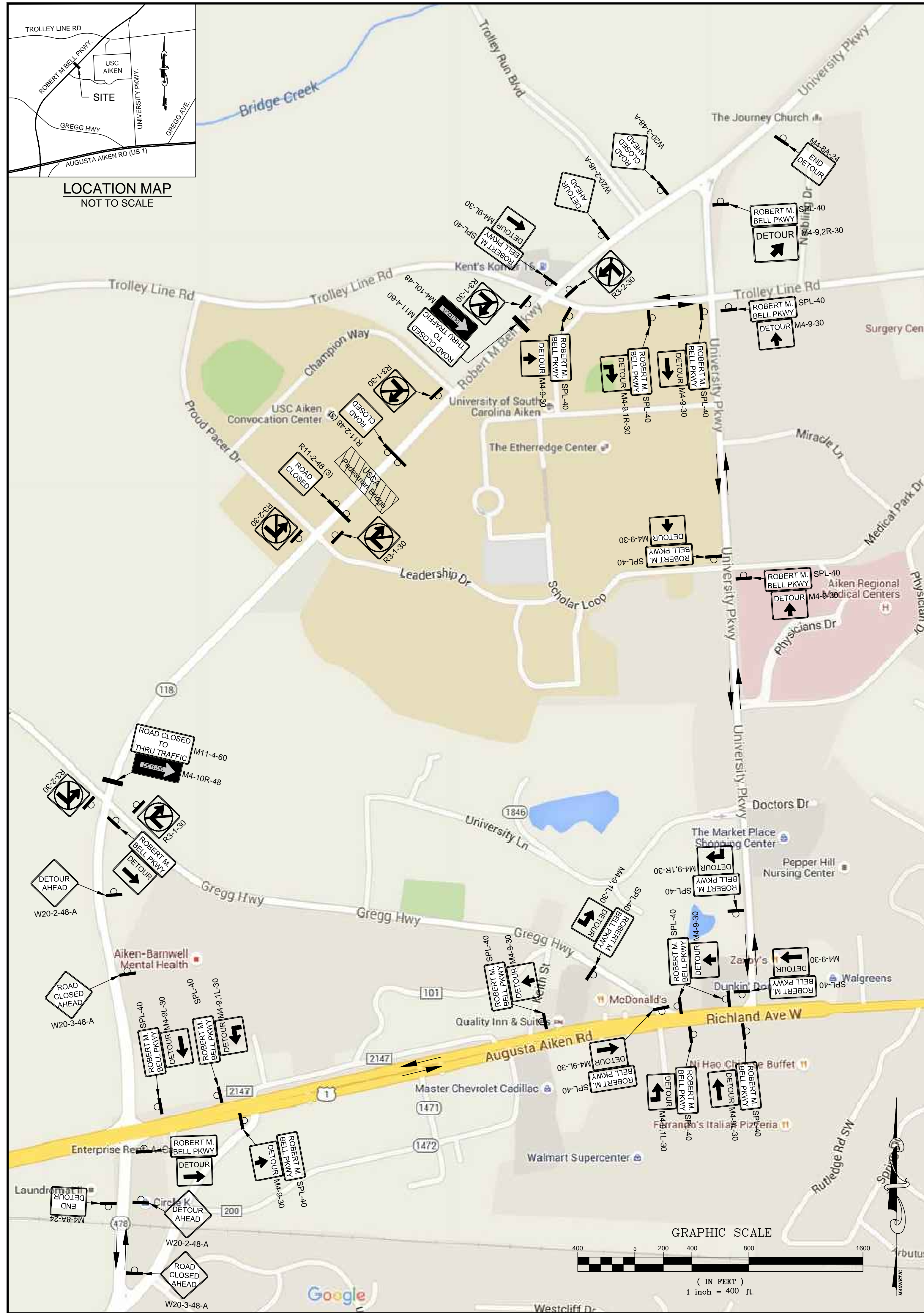


**Pedestrian Signage Plan**  
USCA Pedestrian Bridge  
Project No.: H29-9545-PG  
University of South Carolina  
Aiken County, SC

Drawn: TKS	Checked: LEE
Revised:	
File: 391402F-C.dwg	
Project No.: 391402F	

**C7.0**  
Sheet Number  
August 10, 2015  
Date

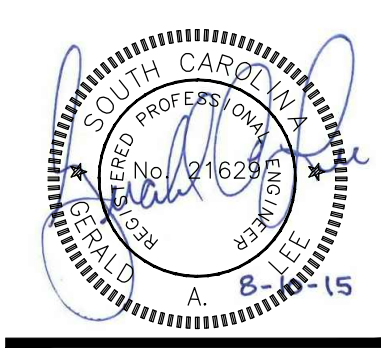




- General Notes:**
- All sign locations are to be measured from the work area. Work limits for the project will be determined by the engineer and as indicated in the contract.
  - In areas with paved shoulders or curb & gutter, ground mount all detour sign assemblies 2 feet from either the pavement edge of a paved shoulder or the face of a curb. In areas with no paved shoulders or curb & gutter, ground mount all detour sign assemblies 6-12 feet from the near edge of an adjacent travel lane to the nearest edge of the sign assembly. Mount each detour sign assembly so the bottom edge of the bottom sign has a minimum mounting height of no less than 5 feet above the near edge of the adjacent travel lane.
  - Spacing indicated are for normal conditions; adjustments may be required due to horizontal and/or vertical alignments or other sight distance restrictions.
  - Mount all signs such that they are straight and level and the face of the signs are perpendicular to the surface of the roadway.
  - Reflectorize all detour markers, detour signs, and detour arrow signs with a fluorescent orange colored prismatic reflective sheeting.
  - All traffic control devices, including type III barricades, port able sign supports, sign substratums, breakaway systems for ground mounted sign supports, warning lights, etc., shall comply with all NCHRP report 350 requirements and shall be approved by the department. All approved traffic control devices are included on the "approved products list for traffic control devices in work zones". This list may be accessed on the department's web site at: [www.scdot.org](http://www.scdot.org).
  - Special sign mounting assemblies may be necessary in areas of concrete median barrier, bridge parapet walls, or doublefaced guardrail and shall be provided by the contractor.
  - Reflectorize all barricades with a type III high intensity reflective sheeting unless otherwise directed by the SCDOT department.
  - All supplemental signs attached to type III barricades shall be constructed of an approved reflective roll-up material or an approved aluminum composite material. Only those aluminum composite materials included on the "approved products list for traffic control devices in work zones" such as "alpolc", "dibond", or "reynolite" are approved. All other rigid sign substratums, including .08 and .10 aluminum sign blanks, are prohibited for attachment to a type III barricade.
  - The traffic control setup shown is a typical installation for a secondary roadway. Specific signing will be based on site conditions and shall require the engineer's approval prior to installation. Road and street names may also be used.
  - The SCDOT department reserves the right to restrict construction operations and/or withhold the monthly estimate if the traffic control is not properly installed and maintained as directed by the standard specifications, the special provisions, the standard drawings, the plans, and/or the engineer.
  - The traffic control setup illustrated on this standard drawing, including installation and maintenance of the detour signing and all traffic control devices pertinent to the detour, shall be included in the contract lump sum price bid item for traffic control.
  - Coordinate the signs in each sign assembly according to location, route, direction, size, and color.



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**Traffic Control / Detour Plan**  
 USCA Pedestrian Bridge  
 Project No.: H29-9545-PG  
 University of South Carolina  
 Aiken County, SC

Drawn: HMC    Checked: GAL  
 Revised:  
 File: Traffic Control.dwg    Project No.: 391402F

**C7.1**  
 Sheet Number  
 August 10, 2015  
 Date



## MATERIAL & WORKMANSHIP

Provide all material and workmanship in accordance with the South Carolina Department of Transportation 2007 Standard Specifications for Highway Construction, unless otherwise specified on the Plans or the Special Provisions.

## PAYMENT

This project is a lump sum bid including the installation of the piles. Bidder shall include all anticipated costs in his/her bid.

## COORDINATION OF PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS

Generally, in case of discrepancy, this General Notes sheet governs over the Standard Specifications but the remainder of the plans govern over notes on this sheet and Special Provisions govern over all. See Subsection 105.4 of the Standard Specifications.

## REINFORCING STEEL

Fabricate reinforcing bars in accordance with the current C.R.S.I. Manual of Standard Practice except for ties, stirrups, and welded hoops.

Provide all ties and stirrups with 135° hooks that have extensions no less than the larger of ten bar diameters or six inches. This 135° hook requirement does not apply to stirrups extending from prestressed concrete beams.

The fabrication tolerance for out-to-out dimension of welded hoop diameter is  $\pm 1/2$  inch.

Do not use lap splices in column and shaft reinforcing steel.

## CONCRETE

Provide the class of concrete as noted in the contract documents. For cast-in-place structural elements, use Class 4000 concrete where the class of concrete is not specified in the contract documents.

When holes are cast in beams to accommodate falsework, fill the holes with a non-shrink structural grout suitable for overhead repairs after falsework is removed.

Chamfer all exposed edges  $3/4$ " unless otherwise noted.

The minimum acceptable concrete cover for reinforcing steel is  $1/2$ " less than the plan dimensions when required by reinforcing bar fabrication tolerances.

## DRIVEN PILE FOUNDATIONS

Where piles occur in fill, place fill before driving piles.

## STRUCTURAL AND MISCELLANEOUS STEEL

All structural and miscellaneous steel shall conform to the Thirteenth Edition of the AISC "Specification for the Design, Fabrication & Erection of Structural steel for Buildings" and all its supplements, and to the AISC "Code of Standard Practice for Steel Buildings and Bridges".

All structural steel shall conform to ASTM A-36,  $FY=36,000$  PSI unless otherwise noted.

Steel W-Shapes shall conform to ASTM A992,  $FY=50,000$  PSI. All rectangular or square steel HSS-Shapes shall conform to ASTM A500 grade B,  $FY=46,000$  PSI. All round steel HSS-Shapes shall conform to ASTM A500 grade B,  $FY=42,000$  PSI.

All steel pipes shall conform to A-53 grade B,  $FY=35,000$  PSI. All welded connections shall be done with E70XX electrodes with  $1/4$ " min. material, unless otherwise noted.

All bolts shall be A325 bolts, unless otherwise noted. Fabrication and assembly of bolted connections shall comply with applicable sections of AISC "Specification for Structural Joints using ASTM A325 or A490 bolts."

No openings in beams shall be permitted without the written permission of the engineer.

The use of a gas-cutting torch in the field for cutting holes or for correcting fabrication errors will not be permitted on structural framing members except w/ the written approval of the Engineer for each specification.

An independent inspection agency shall be employed by the contractor and approved by the engineer to inspect the structural steel in the field and verify that it conforms to the requirements of the contract documents.

All anchor bolts shall be ASTM F1554 Grade 36, unless noted otherwise.

All steel plates in moment connection shall be ASTM A572 Grade 50. All bolts in moment connection shall be fully tensioned A325-X bearing bolts.

All moment connected members shall be fabricated, erected, inspected and approved in compliance with FEMA-353, "Recommended Specifications and Quality Assurance Guidelines for Steel Moment Frame Construction for Seismic Applications."

Generally, holes for  $3/4$ " dia. bolts shall be  $13/16$ " dia. However, oversize holes,  $3/16$ " larger than bolt dia., may be used in diaphragms and/or crossframes and their connection plates provided hardened washers are installed over oversize holes in the outer ply of the material gripped. Hardened washers are required under DTIs on oversized holes. In every case install a hardened washer under the element turned for each bolt of a bolted connection. Indicate on the Shop Plans which holes are to be oversize and where hardened washers are required. No additional payment is made for the costs associated with the use of oversize holes and furnishing additional hardened washers as necessary.

## PAINT FOR STRUCTURAL STEEL

Paint System shall be in accordance with 710.2.7.2 Paint System NS2. And the contractor shall submit finish coat color to the owner for approval before proceeding. Ensure that the intermediate coat of Acrylic paint is of a different color than the finish coat of Acrylic paint.

Surface preparation shall be in accordance with 710.4.1.1.1 Surface Preparation.

See SECTION 710 "PAINT FOR STRUCTURAL STEEL" for all other requirements.

## BEARING AND ANCHOR BOLT ASSEMBLIES

Galvanize bearing and anchor bolt assemblies in accordance with AASHTO M 111, AASHTO M 232, or ASTM F 2329 as applicable.

After the required field welding of galvanized bearing assemblies, field repair the weld areas and/or damaged areas of the galvanized coating in accordance with ASTM A 780.

## ORIENTATION IN RELATION TO STATIONING

Left and right sides, where referred to in these plans, are in relation to direction of stationing.

## SPECIFICATIONS

AASHTO 2010 LRFD Bridge Design Specifications, 5th Edition, with Interim Revisions through 2010.

AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges

ANSI/AASHTO/AWS D1.5 Bridge Welding Code (Latest Edition) with additions and revisions as stated in the Standard Specifications.

## DESIGN DATA

- 1: Dead Loads: The weight of all materials of construction
- 2: Uniform live loads: Pedestrian: 90 psf
- 3: Truck Load: H-5

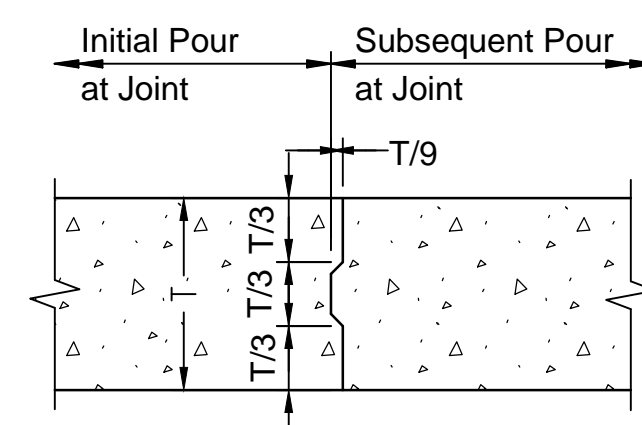
Seismic design is in accordance with the 2008 SCDOT "Seismic Design Specifications for Highway Bridges", Version 2.0 with the following parameters:

Seismic Design Category: B  
Analysis method: No detailed analysis  
Operational Classification: II  
Site Class: D  
Design Acceleration Coefficients:  
PGA (FFE): 0.15g  
Sds (FFE): 0.26g  
Sd1 (FFE): 0.13g  
PGA (SEE): 0.33g  
Sds (SEE): 0.60g  
Sd1 (SEE): 0.33g

Values determined from the Three-Point Method

Where notes specify "Department", this refers to the project owner being the University of South Carolina Aiken.

Where notes specify "RCE", this refers to the project Engineer being Chao & Associates, Inc.



Before making subsequent pour, wait either a minimum of 96 hours after placement of the initial pour or until the initial pour concrete has attained a minimum of 75% of the specified 28-day compressive strength as verified by testing extra cylinders.

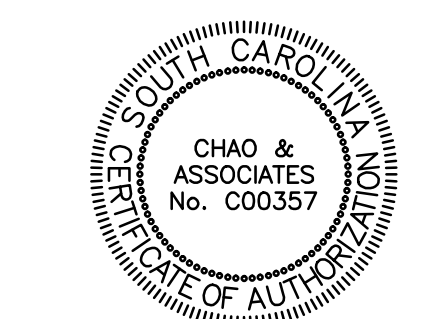
## Construction Joint Detail



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General Notes & Details  
USCA Pedestrian Bridge  
State Project No. H29-9545-PG  
University of South Carolina  
Aiken County, SC

Drawn: MAB Checked: DC

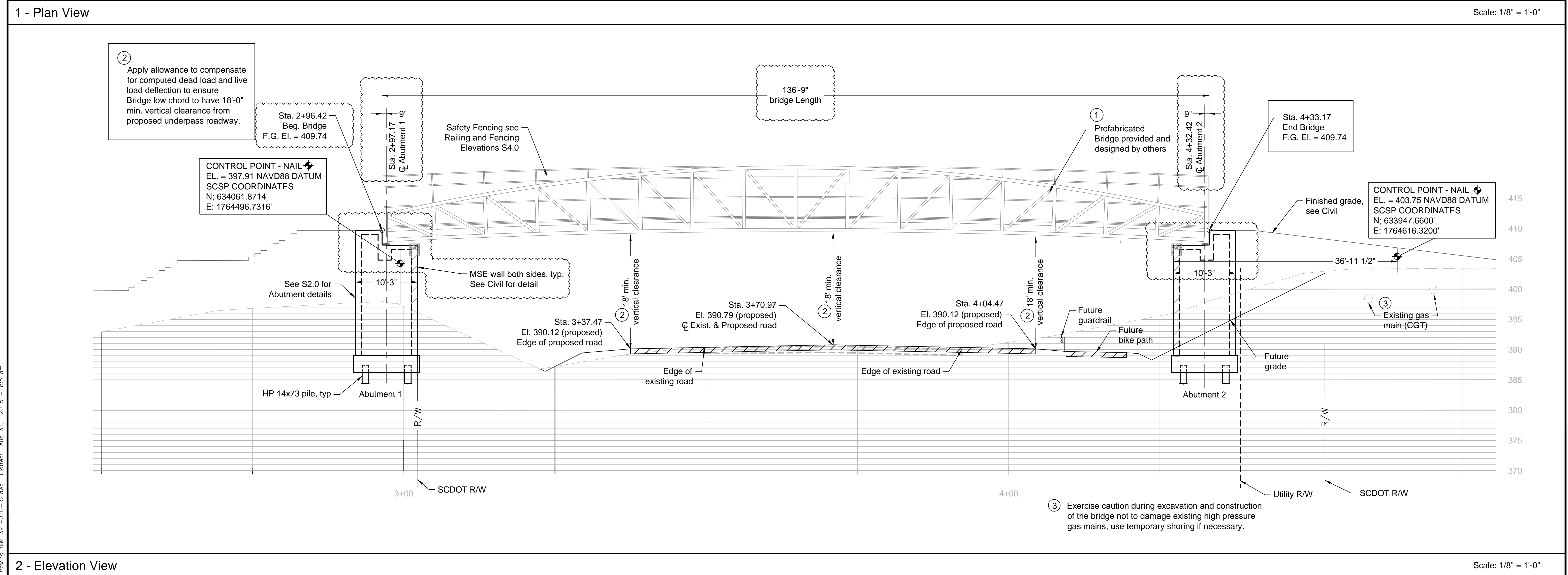
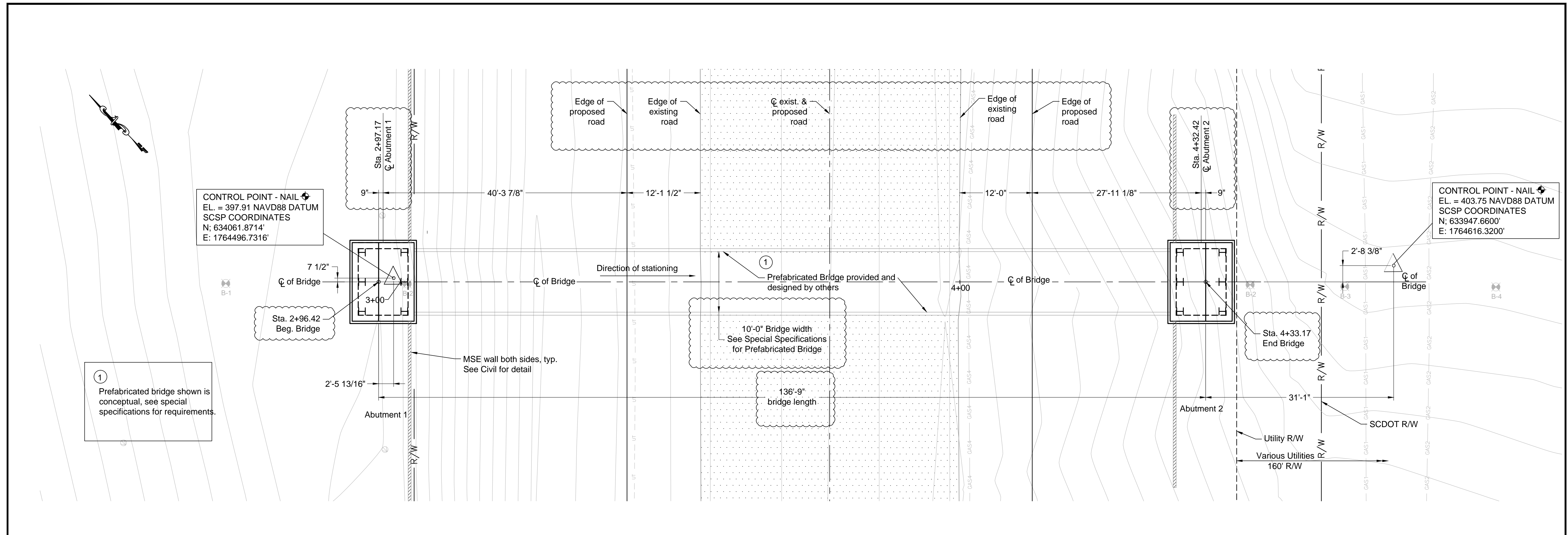
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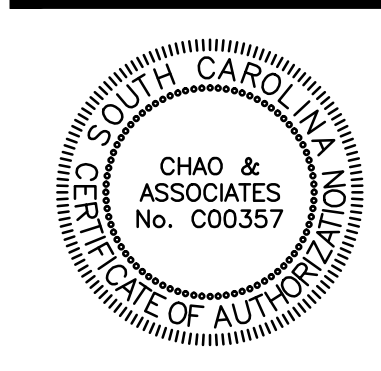
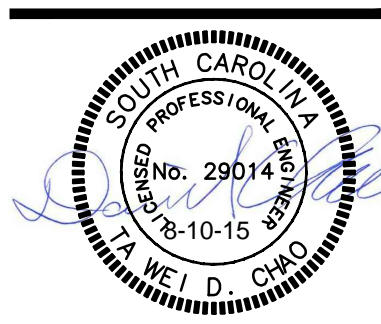




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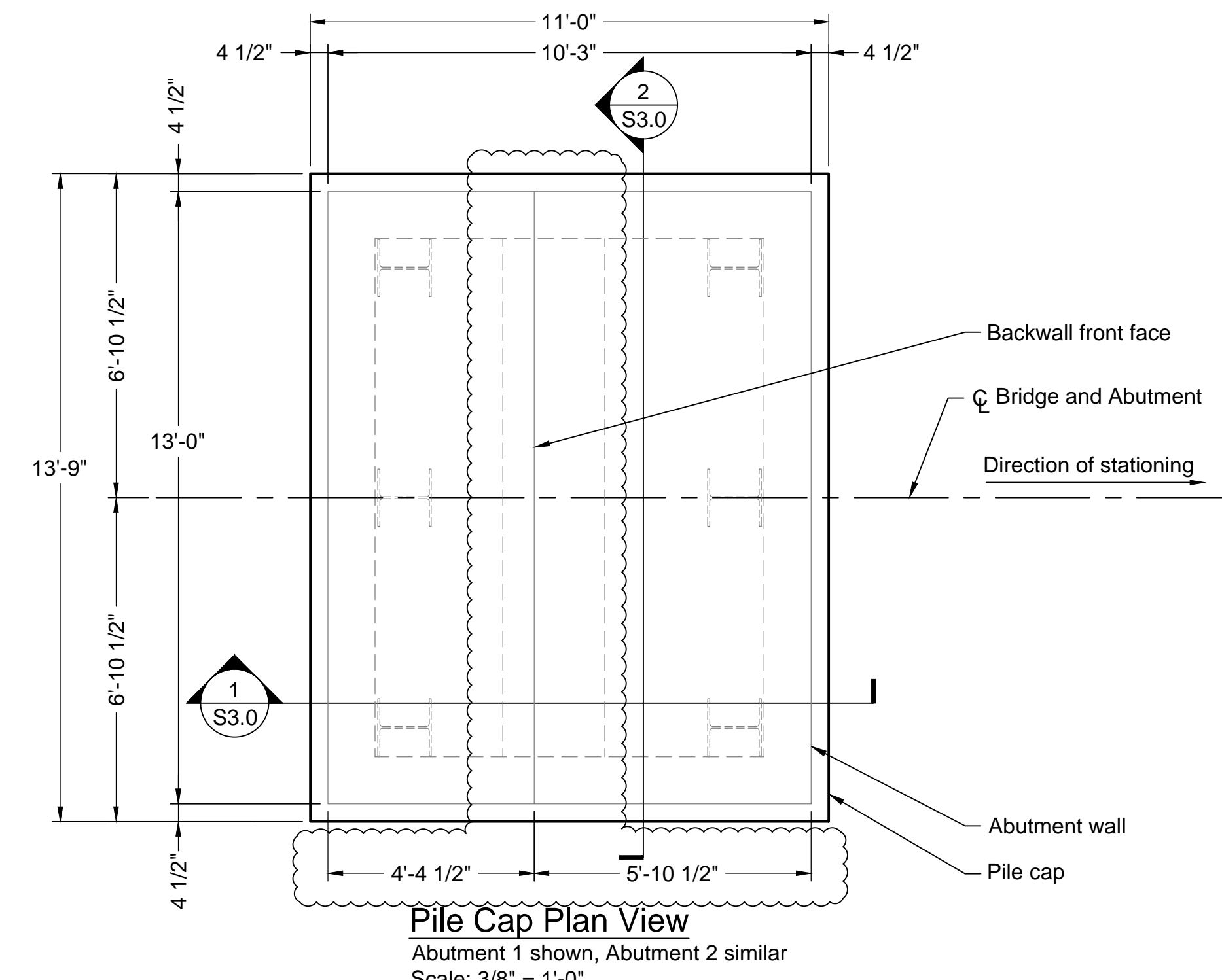
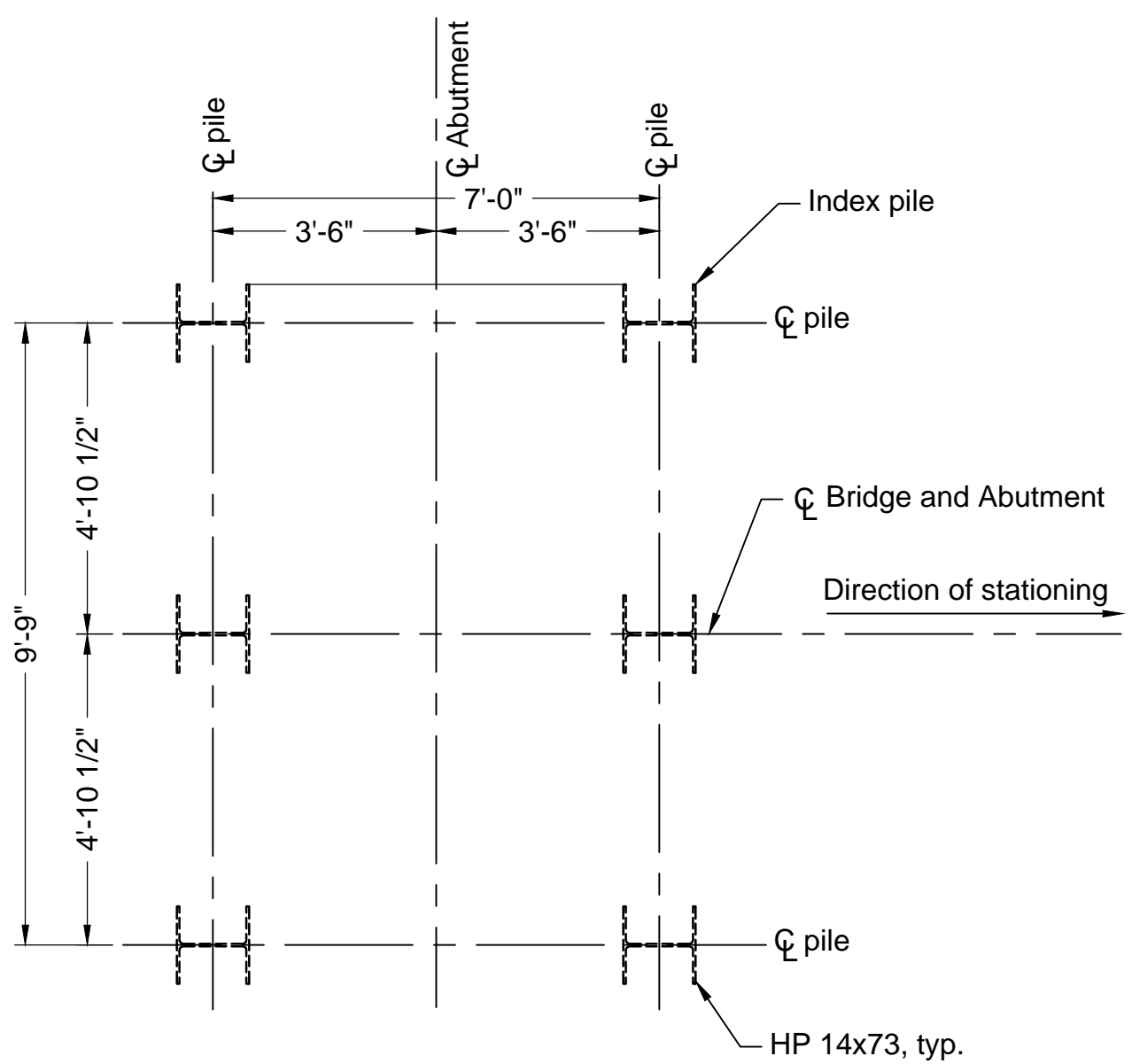
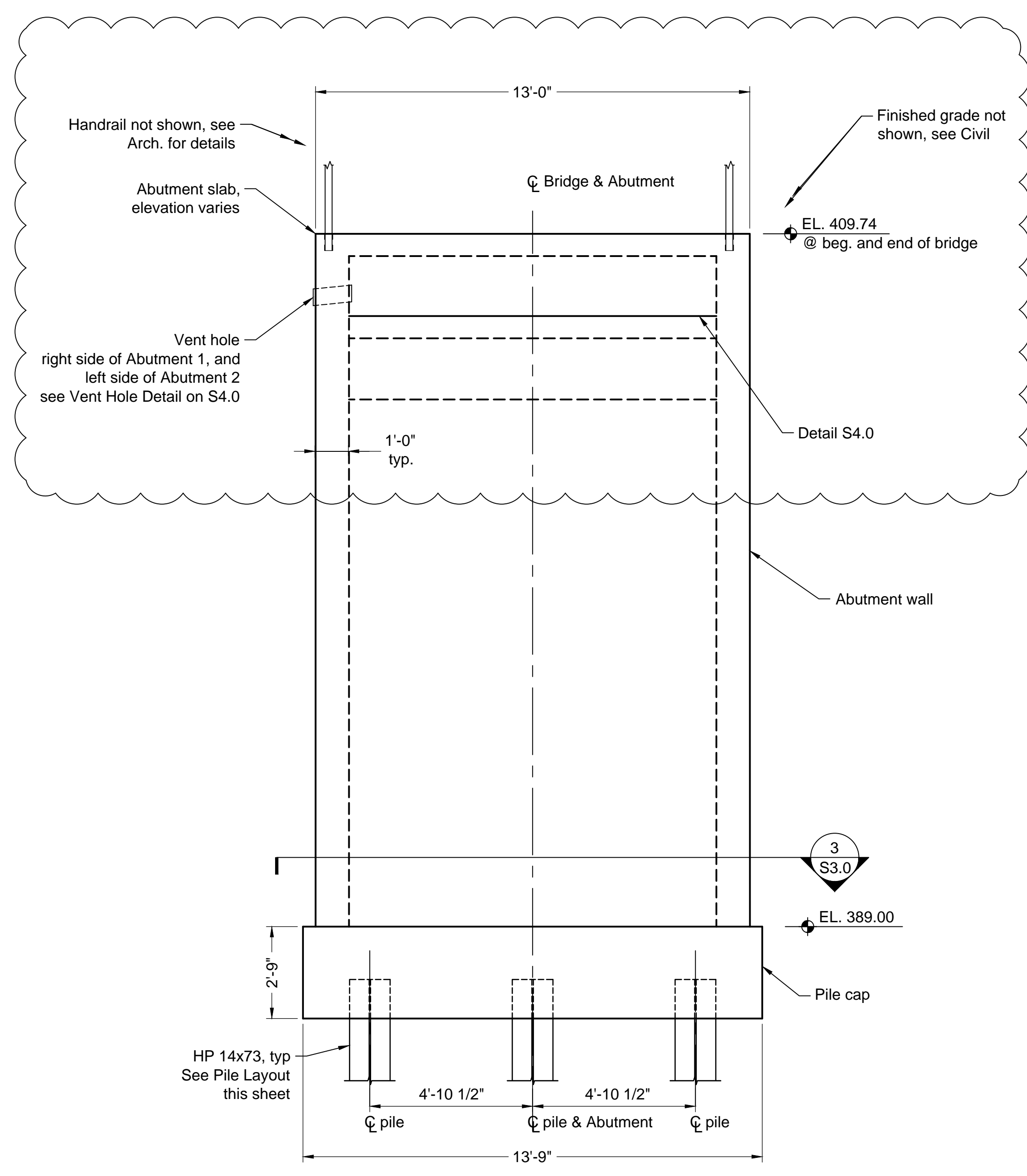
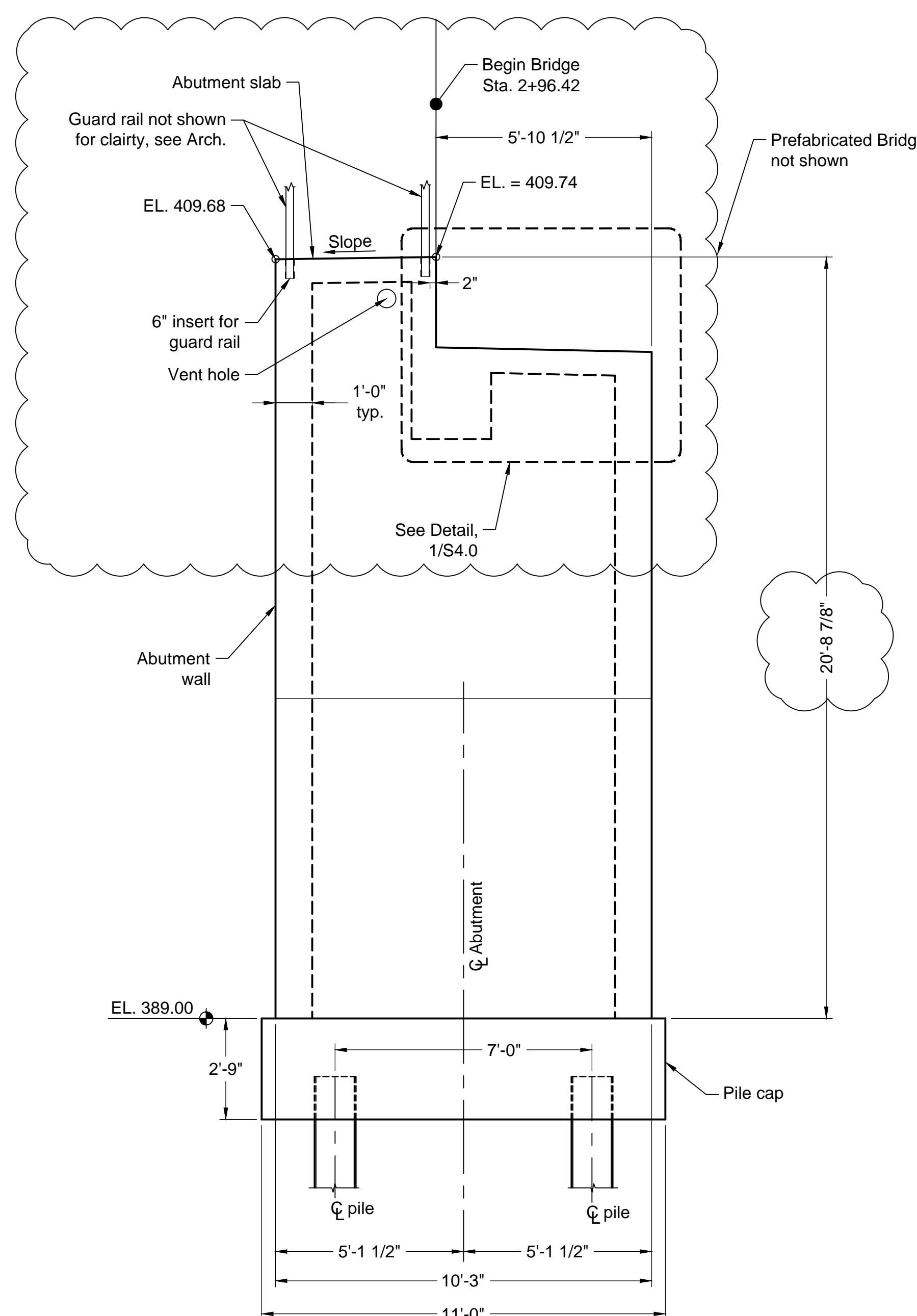


**Bridge Plan and Elevation**  
 USCA Pedestrian Bridge  
 State Project No. H29.9545-PG  
 University of South Carolina  
 Aiken County, SC

Drawn: MAB	Checked: DC
Revised:	
Project No.: 391402F	
File: 391402C-R2.dwg	

**S1.0**  
 Sheet Number  
 August 10, 2015  
 Date





**Note:**  
 Do not backfill to full height around new structures that causes unbalanced earth pressure until the Abutment has cured for at least 14 days. Place and compact fill around Abutment Wall in accordance with Section 205 of SCDOT Standard Specifications and the Geotechnical Report.

Do not erect the pre-manufactured bridge superstructure until the abutment has cured for at least 14 days or has attained at least 75% percent of the specified 28-day compressive strength as verified by testing extra cylinders.

**Geotechnical Notes**  
 The installation of the driven piles shall be conducted in accordance with Section 711 Driven Pile Foundations section of the SCDOT Standard Specifications for Highway Construction, 2007 edition.

Method of controlling Installation of piles and verifying their capacity: Capacity will be verified by Pile Driving Analyzer (PDA) and CAPWAP analysis on Index piles. A pile Installation chart developed from the analysis will be used to verify the capacity of production piles.  
 The following parameters should be used for performing drivability analysis for the bents:

Pile Bearing (one pile)	
	Abutments
Factored Design Load	100 tons
Geotechnical Resistance Factor	0.6500
Nominal Resistance	154 tons
Est. Loss Due to Scour	0 tons
Est. Loss Due to Downdrag	0 tons <sup>(1)</sup>
Required Driving Resistance	154 tons
Estimated Pile Tip Elevation (ft, MSL)	340.0 ft
Minimum Pile Tip Elevation for Lateral Stability (ft, MSL)	363.0 ft <sup>(2)</sup>

(1) Consolidation downdrag (2) Minimum that must be achieved

Perform pile driving analyzer (PDA) testing on the index piles. Index piles should be lengthened an additional 5 feet in order to accommodate the PDA testing. Drive index pile to grade or practical refusal, whichever occurs first. If a CAPWAP analysis determines that capacity has not been achieved, restrike the index pile. Perform PDA testing during the restrike. Contact the bridge construction office to determine the time between initial driving and restrike.

Each pile is to be installed in one continuous operation. Include details of any anticipated temporary driving discontinuities including anticipated time intervals during the pile installation plan.

A pile hammer having the rated energy indicated is considered suitable for driven pile installation. However final hammer acceptance is based on a wave equation analysis that accurately reflects the contractor's proposed driving system.

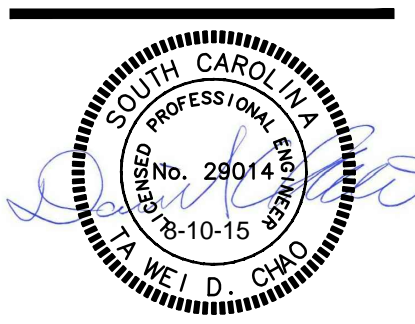
This project is a lump sum bid including the installation of the piles. Bidder shall include all anticipated costs in his/her bid.

Drivability Analysis	
	End Bents
Pile Type	HP 14 x 73 Steel Pile
Skin Quake	0.10
Toe Quake	0.10
Skin Damping	0.05
Toe Damping	0.15
% Skin Friction	N/A
% End Bearing	N/A
Distribution Shape No.	Variable Resistance Distribution <sup>(1)</sup>
Pile Penetration	100%
Hammer Rated Energy Range	20 to 40 ft-kips <sup>(3)</sup>

Notes:  
 1. Variable Unit Skin Distribution: at 5 feet depth = 0; at 27 feet depth = 1.9 ksf; and at 40 feet depth = 2.4 ksf. Variable Unit toe Resistance: at 5 feet depth = 0; at 23 feet depth = 22.0 ksf; at 40 feet depth = 22.0 ksf.  
 2. Hammer rated energy is based on GRLWEAP maximum rated energy database for diesel hammers



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 Columbia, SC 29210  
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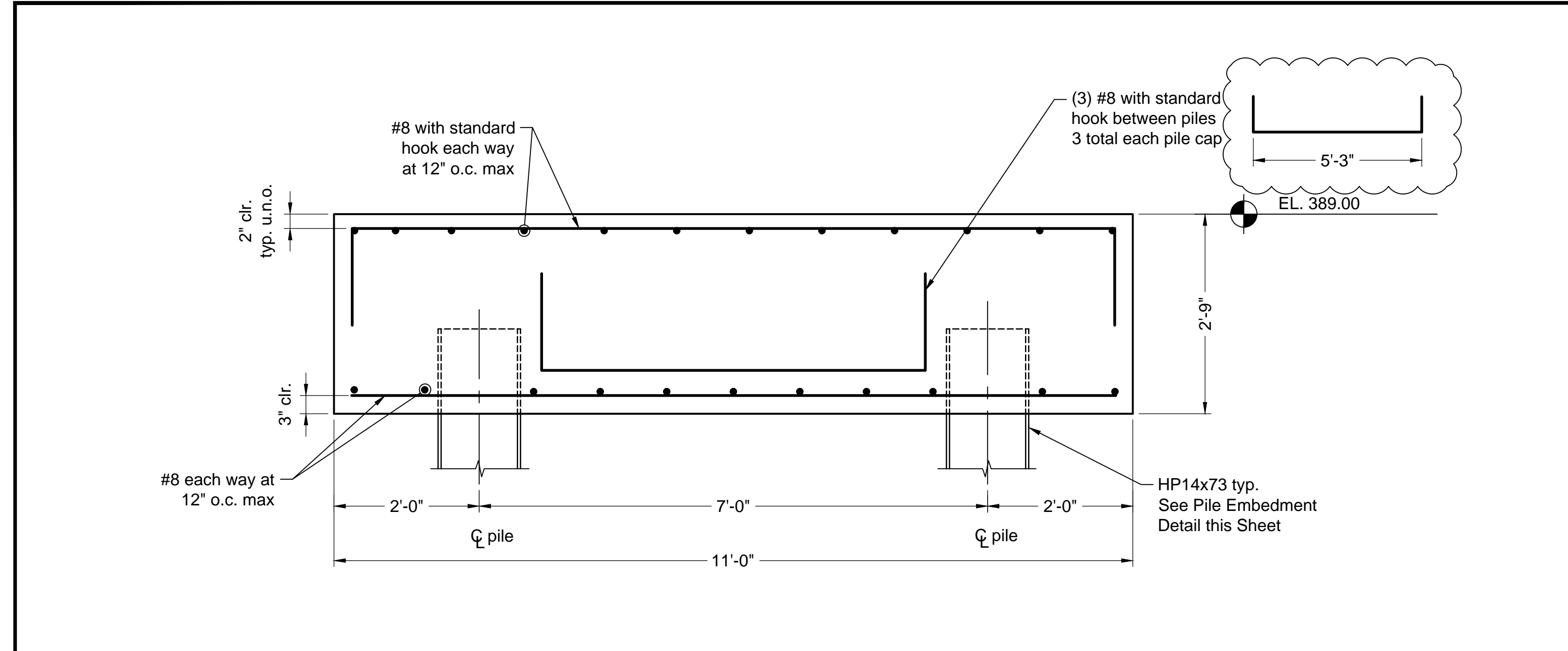


**Abutment Sections & Details**  
 USCA Pedestrian Bridge  
 State Project No. H29-9545-PG  
 University of South Carolina  
 Aiken County, SC

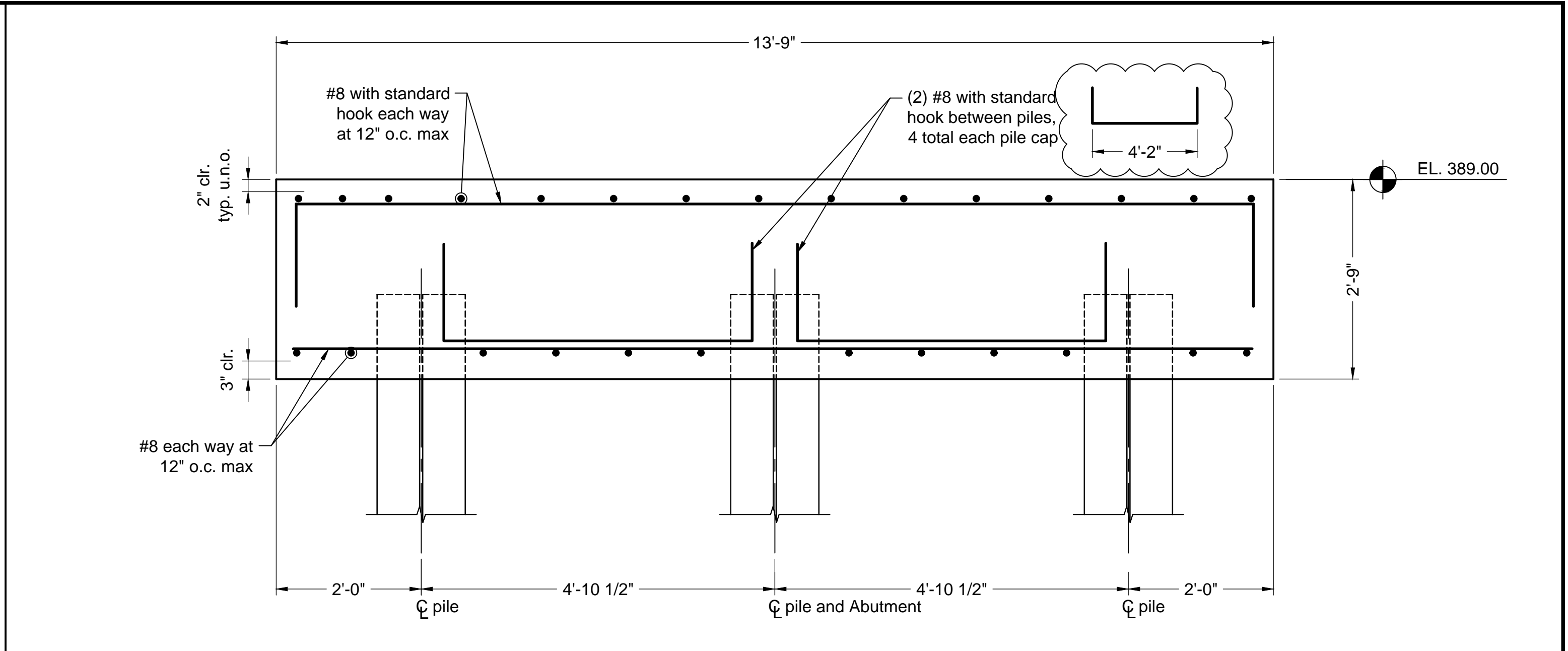
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 Revised:  
 Project No.: 391402F  
 File: 391402C-R2.dwg

**S2.0**  
 Sheet Number  
 August 10, 2015  
 Date

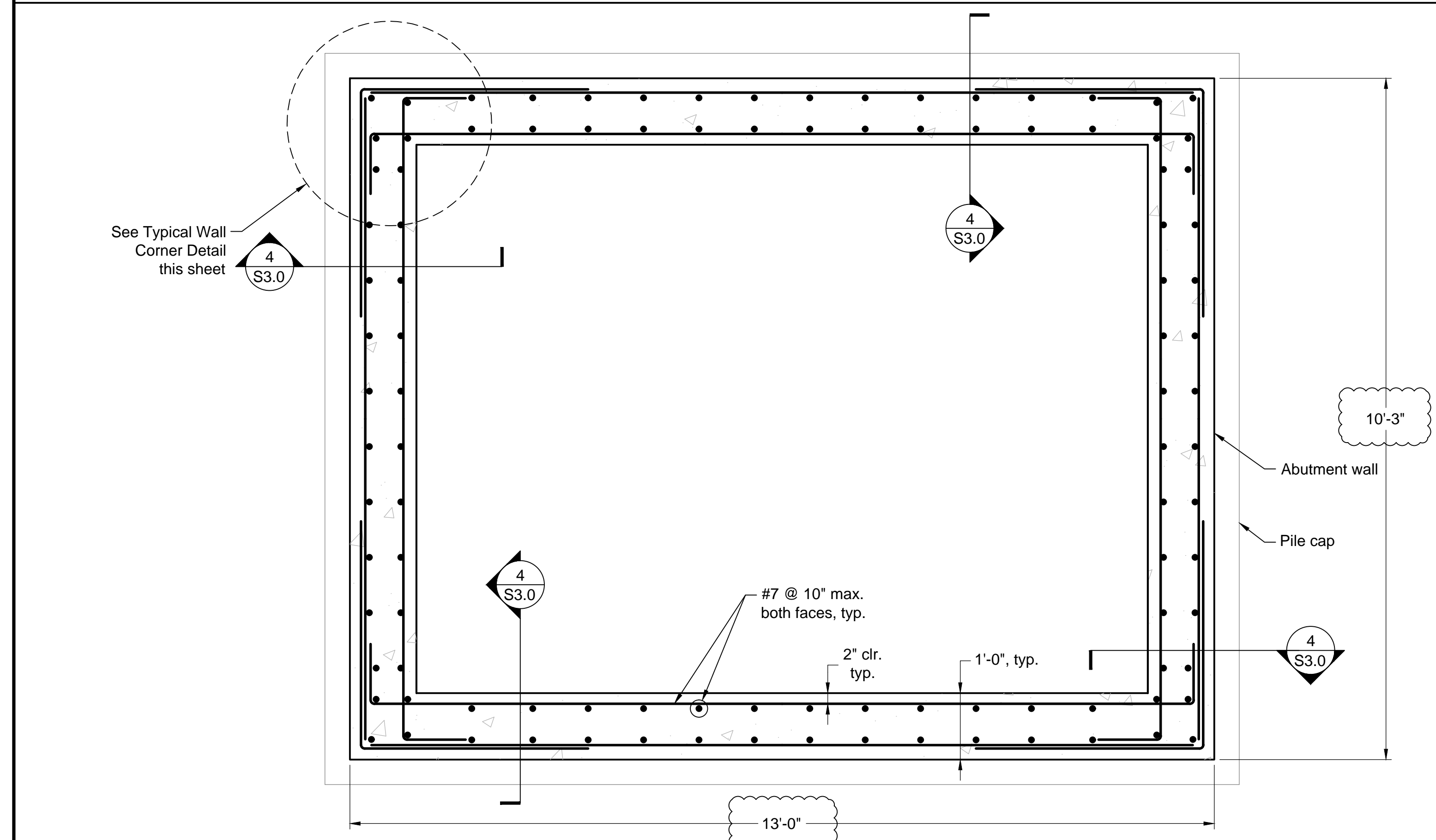




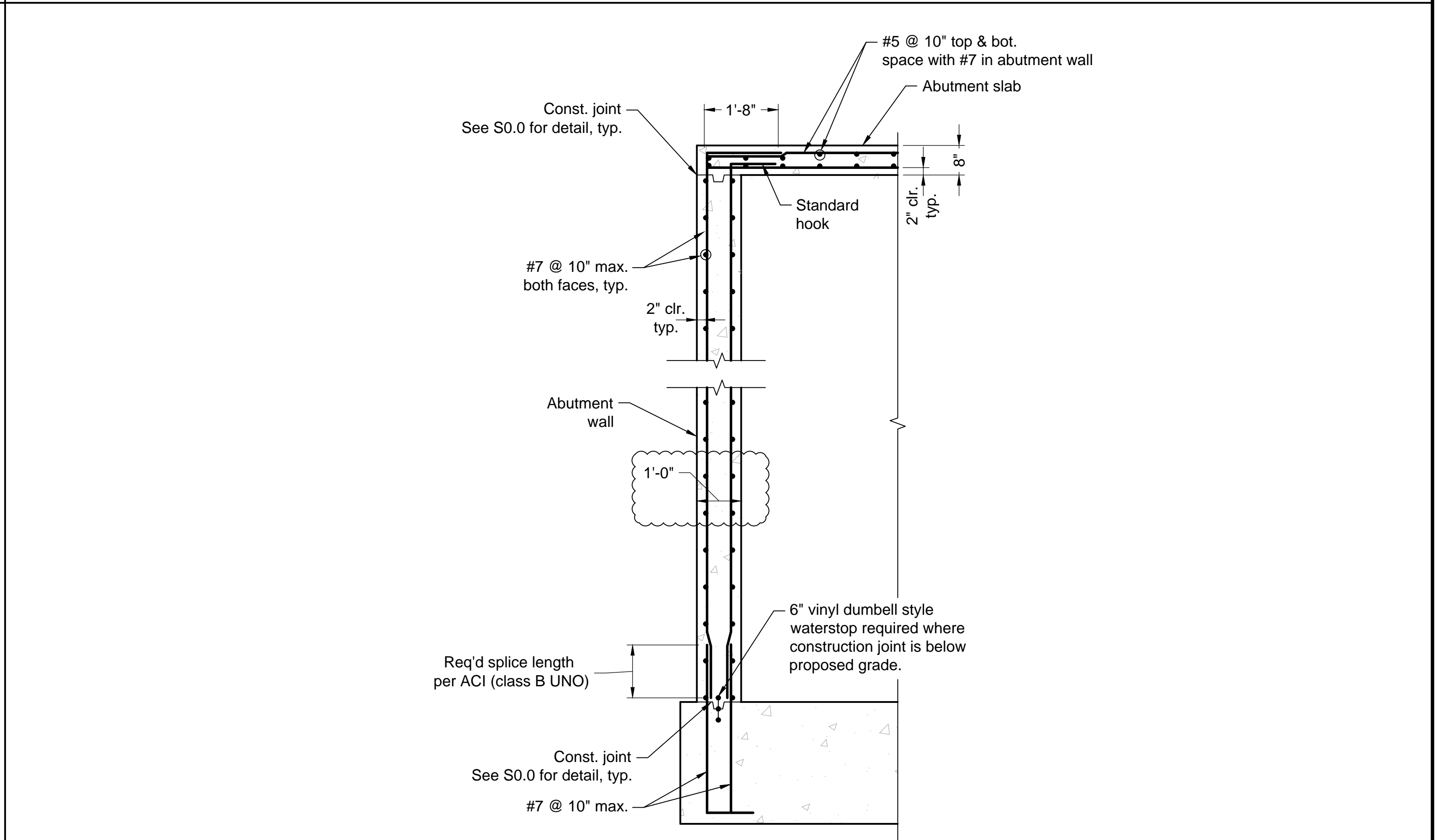
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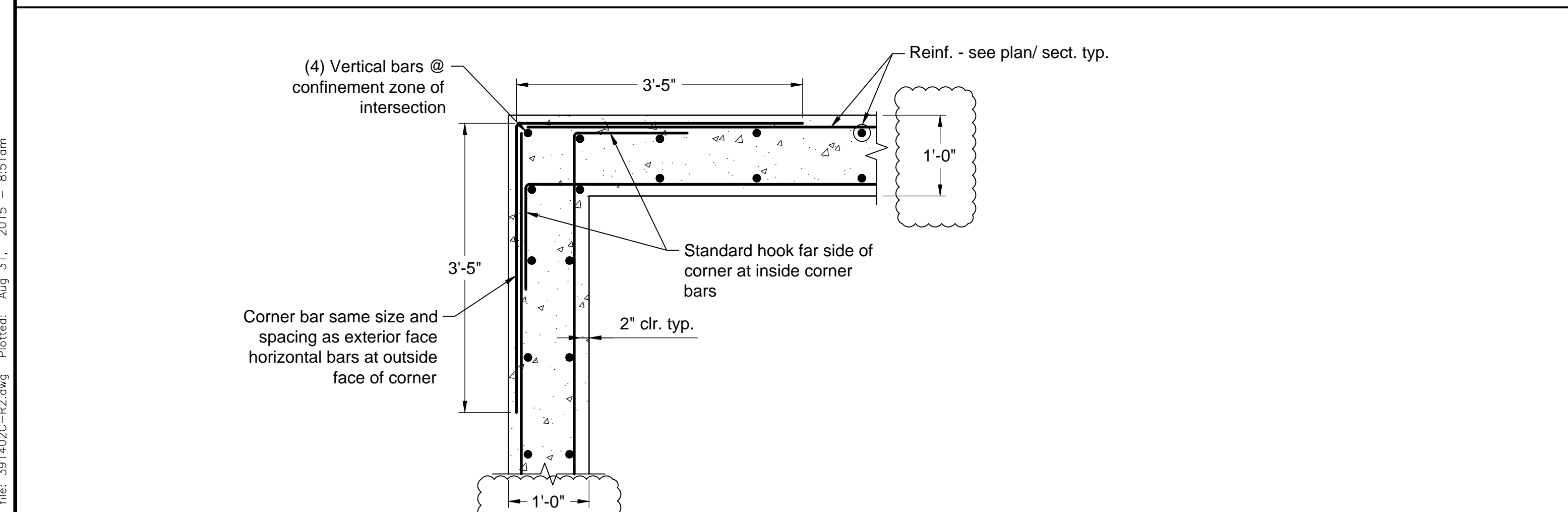
2 - Section Scale: 3/4" = 1'-0"



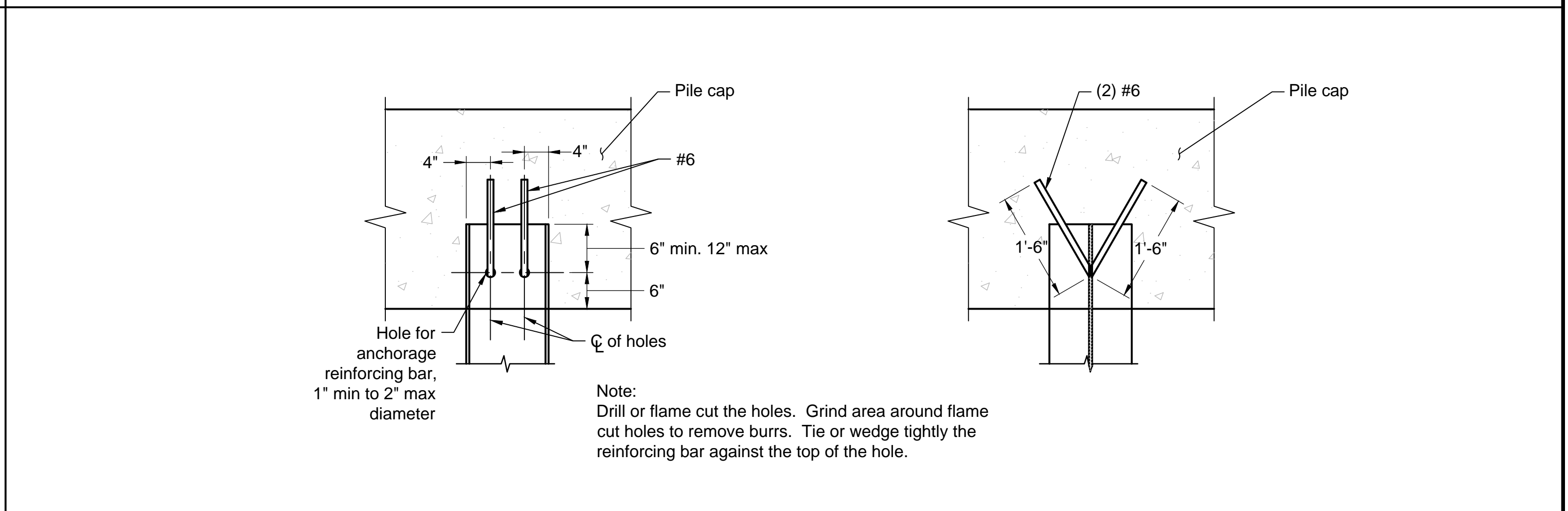
3 - Section Scale: 3/4" = 1'-0"



4 - Section Scale: 1/2" = 1'-0"



5 - Typical Wall Corner Detail

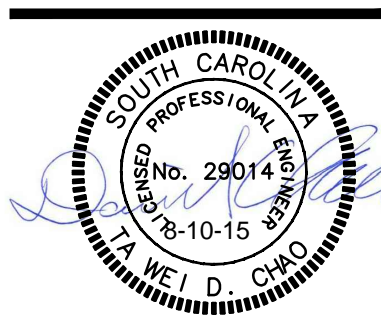


6 - Pile Embedment Detail Scale: 3/4" = 1'-0"

Drawing file: 391402C-R2.dwg Plotfile: Aug 31, 2015 - 8:51am



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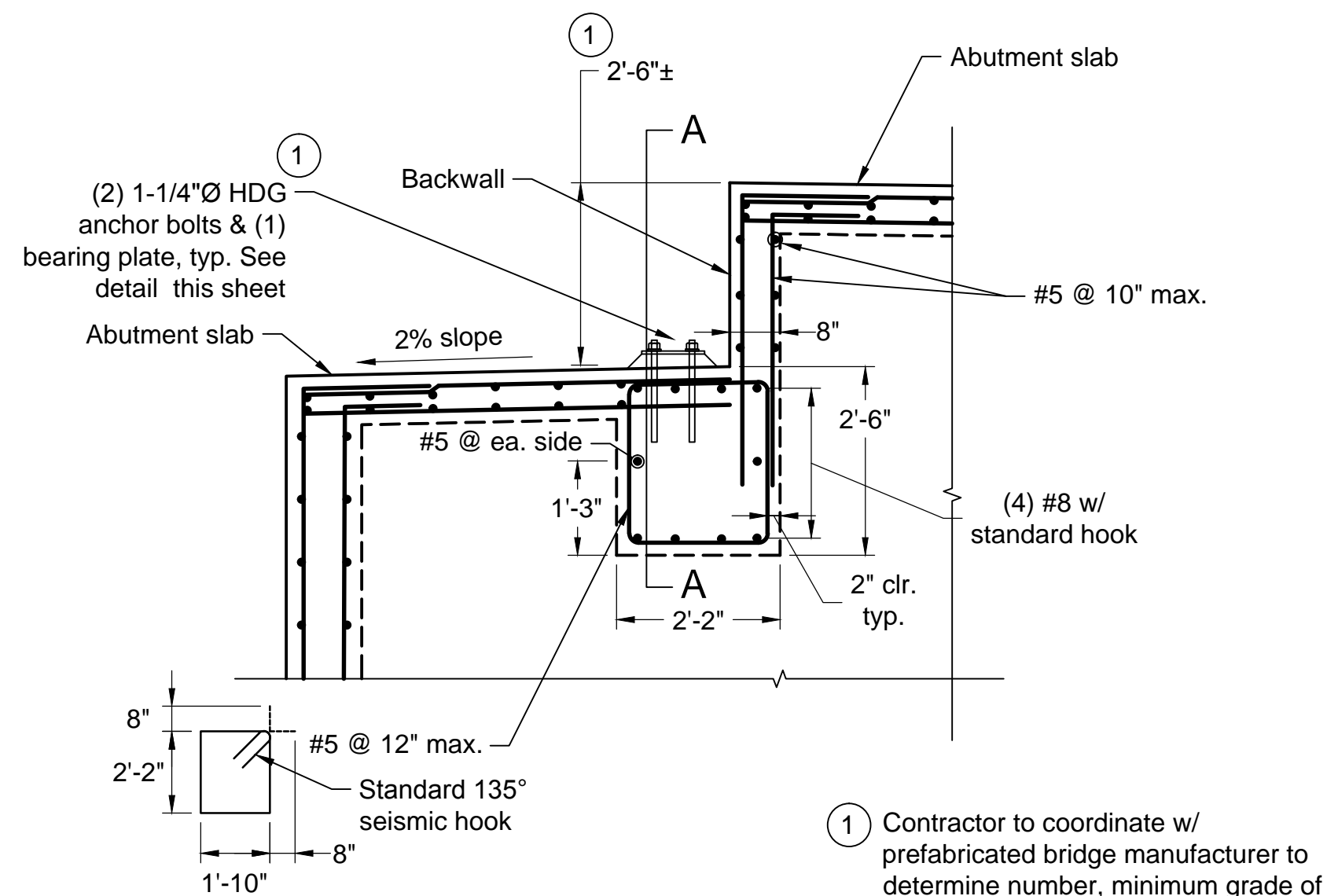


**Abutment Sections & Details**  
USCA Pedestrian Bridge  
State Project No. H29-9545-PG  
University of South Carolina  
Aiken County, SC

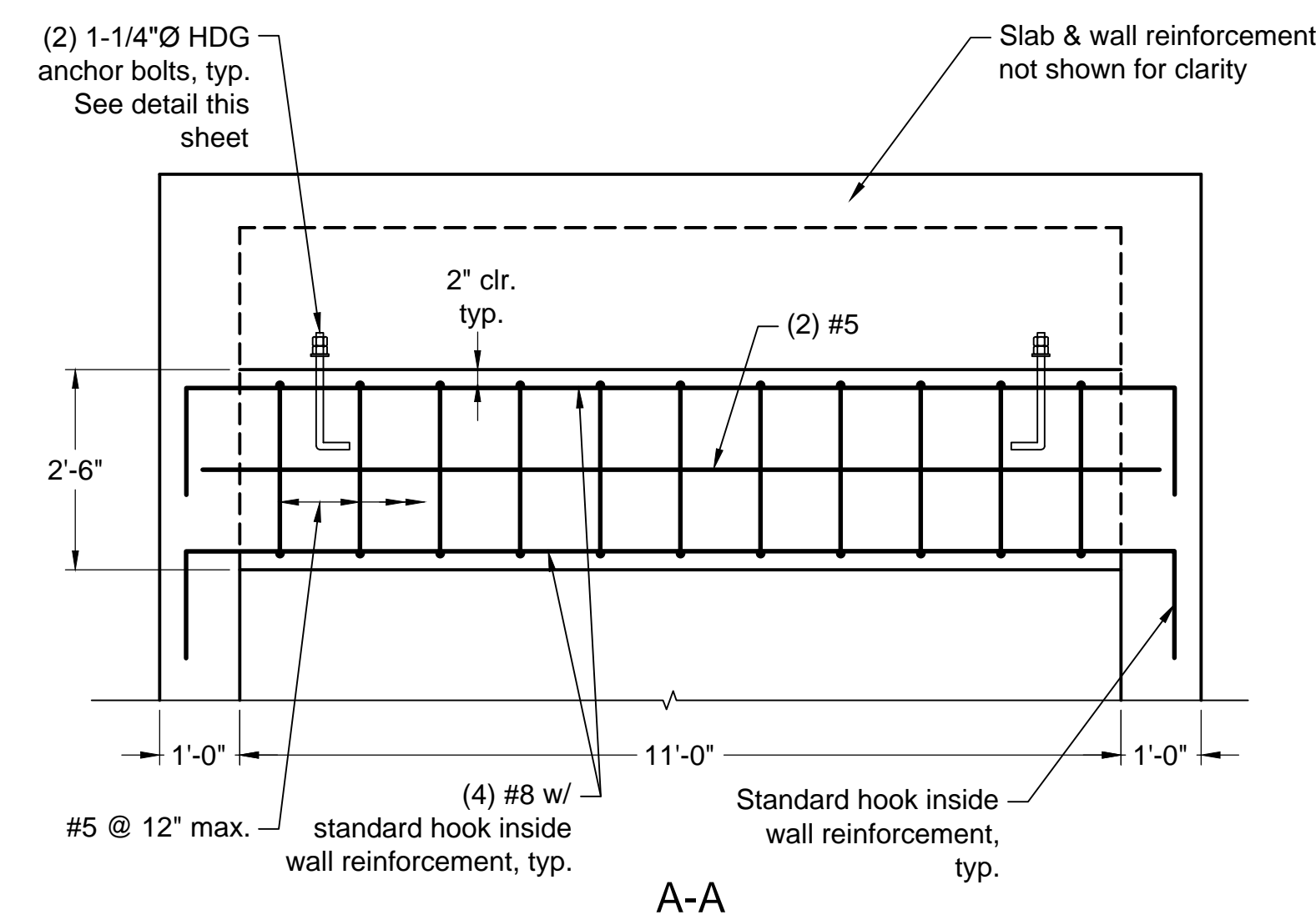
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**S3.0**  
Sheet Number  
August 10, 2015  
Date



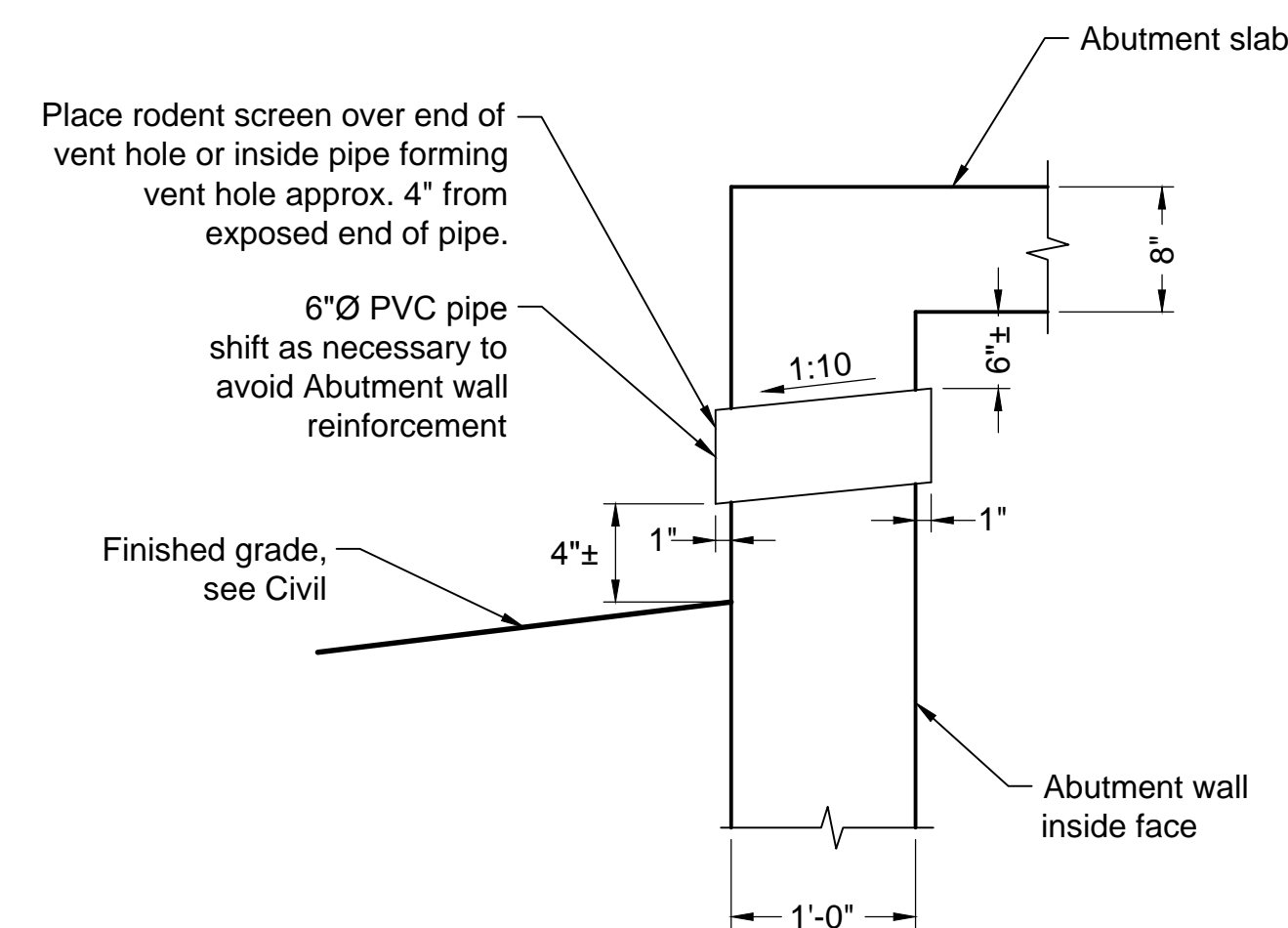


1 Contractor to coordinate w/ prefabricated bridge manufacturer to determine number, minimum grade of anchor bolt, elevation of bearing plate and height of back wall.



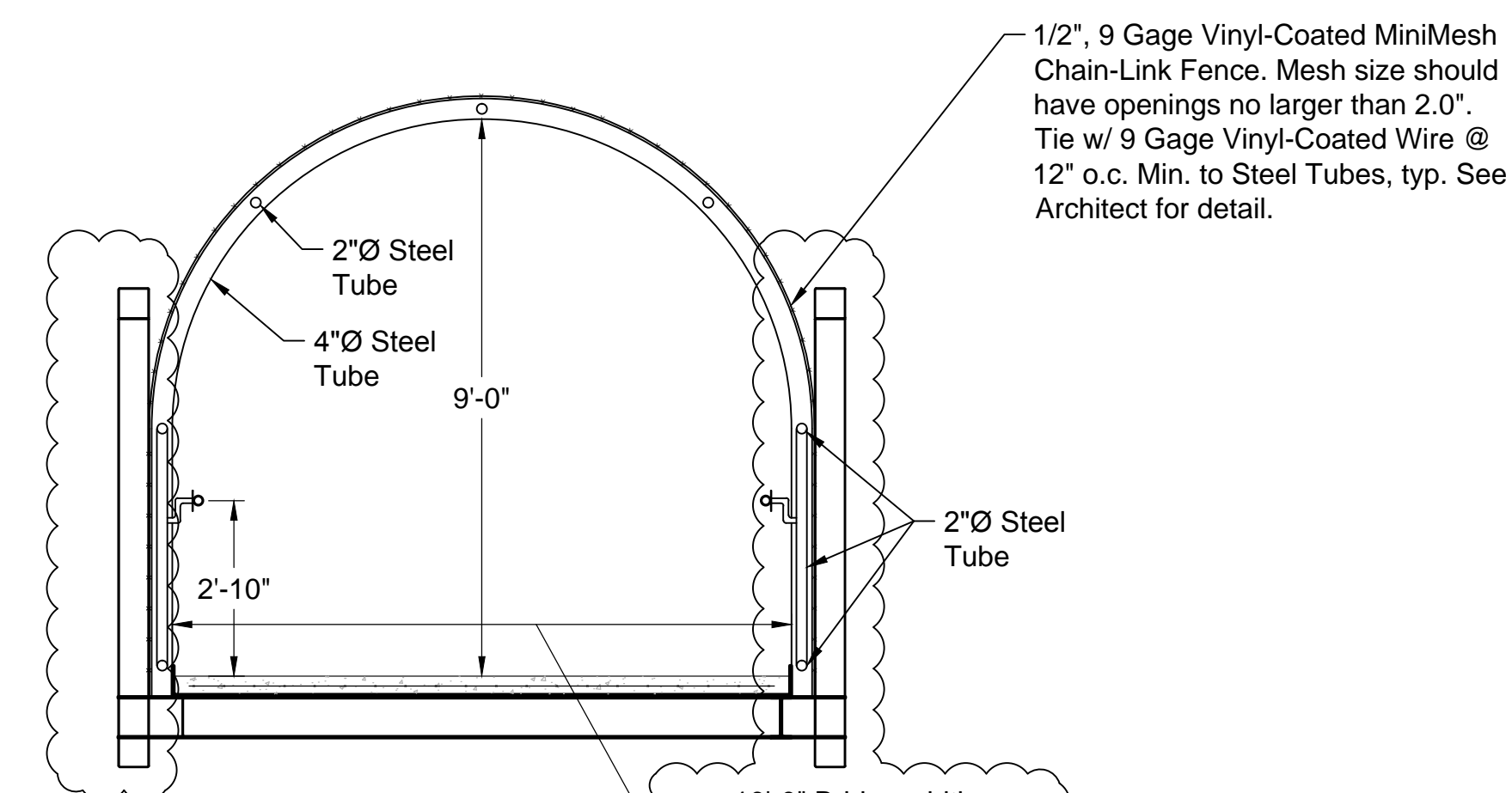
2 - Expansion Joint Detail

Scale: NTS



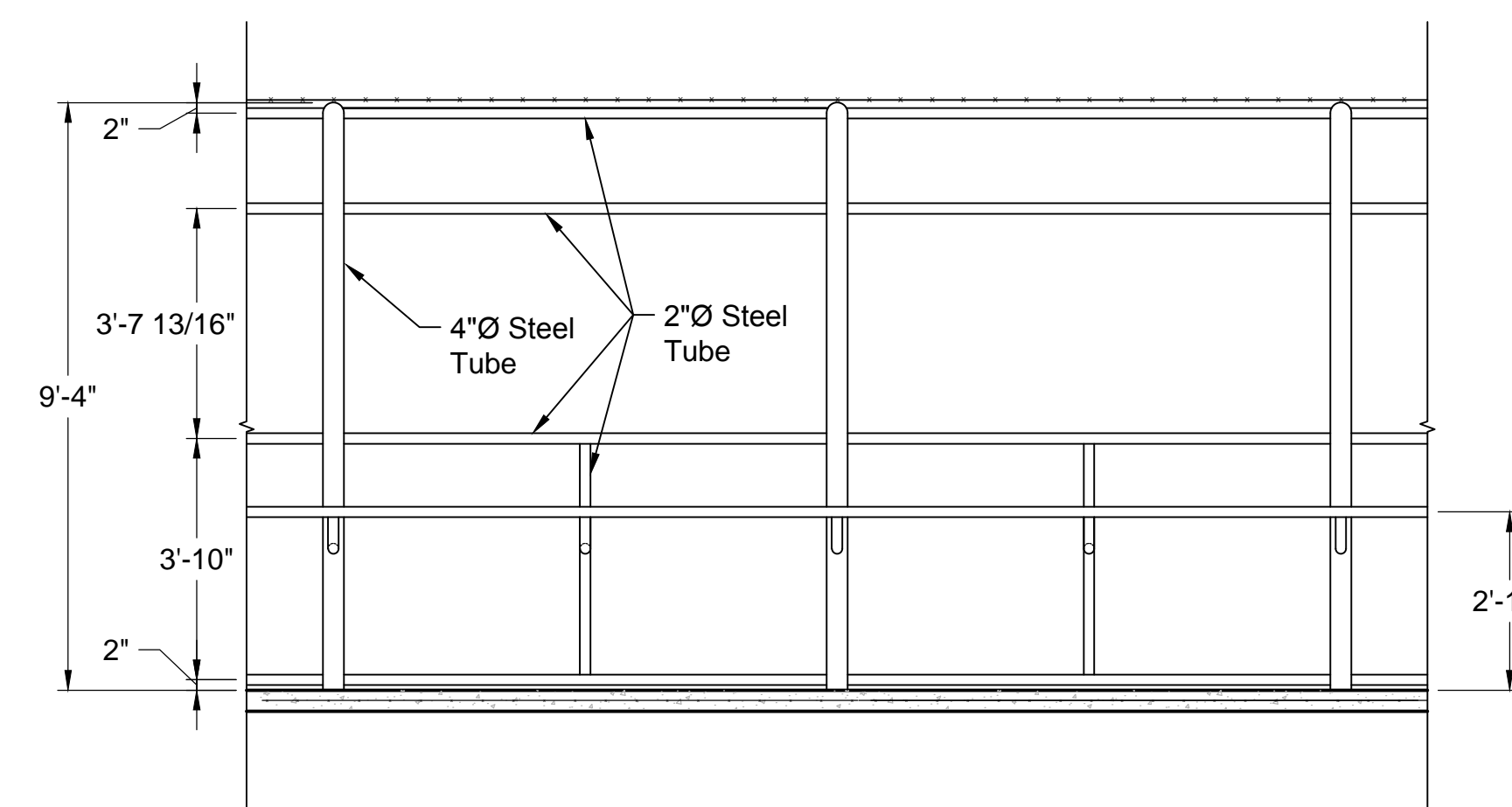
3 - Vent Hole Detail

Scale: NTS



Front Elevation

For information only, see Arch. for details

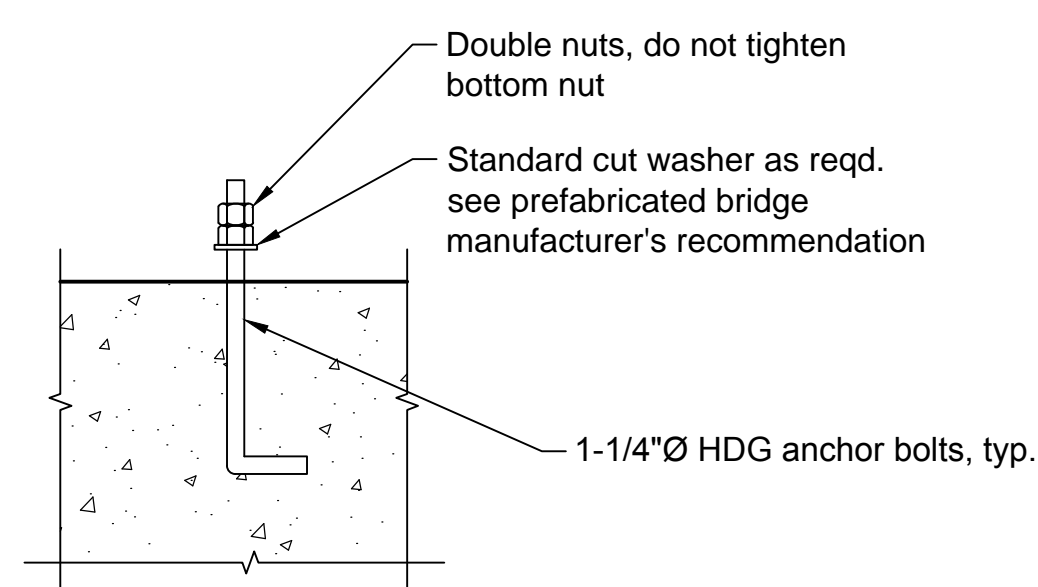


Side Elevation

For information only, see Arch. for details

4 - Railing and Fencing Elevations

Scale: NTS

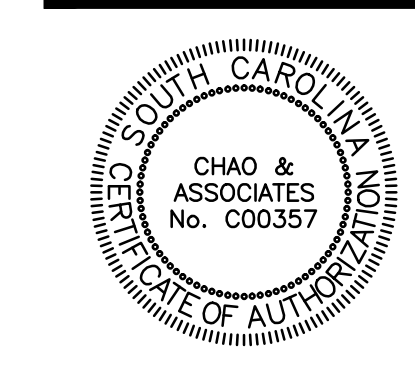


5 - Anchor Bolt Detail

Scale: NTS



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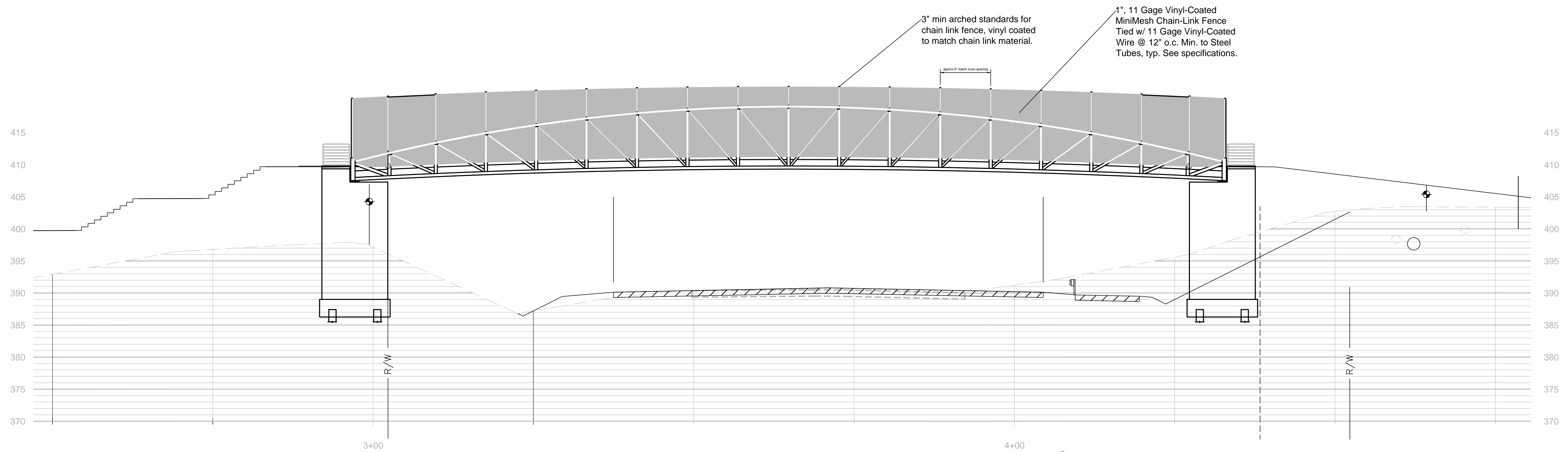


**Miscellaneous Details**  
USCA Pedestrian Bridge  
State Project No. H29-9545-PG  
University of South Carolina  
Aiken County, SC

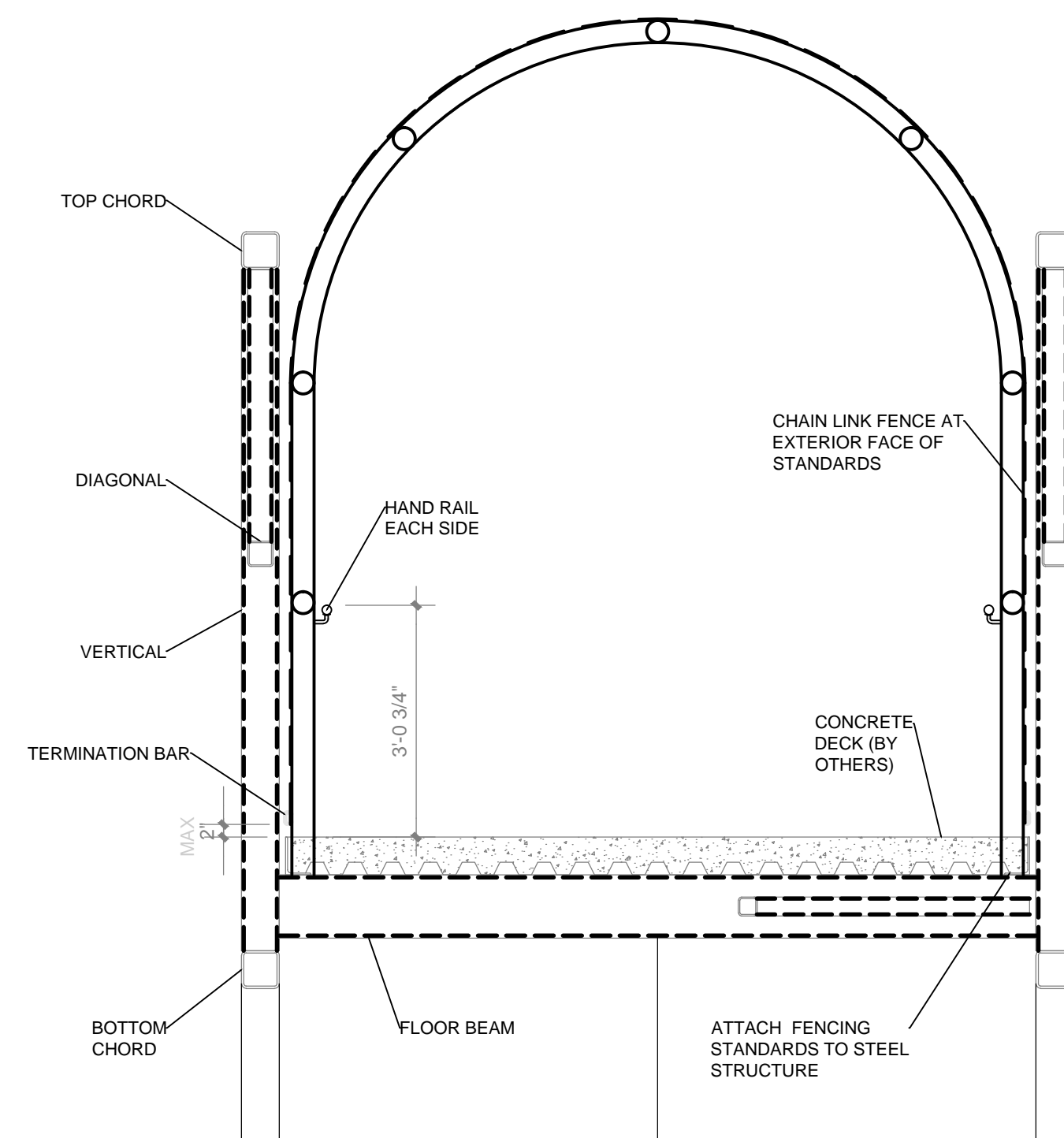
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Sheet Number  
August 10, 2015  
Date

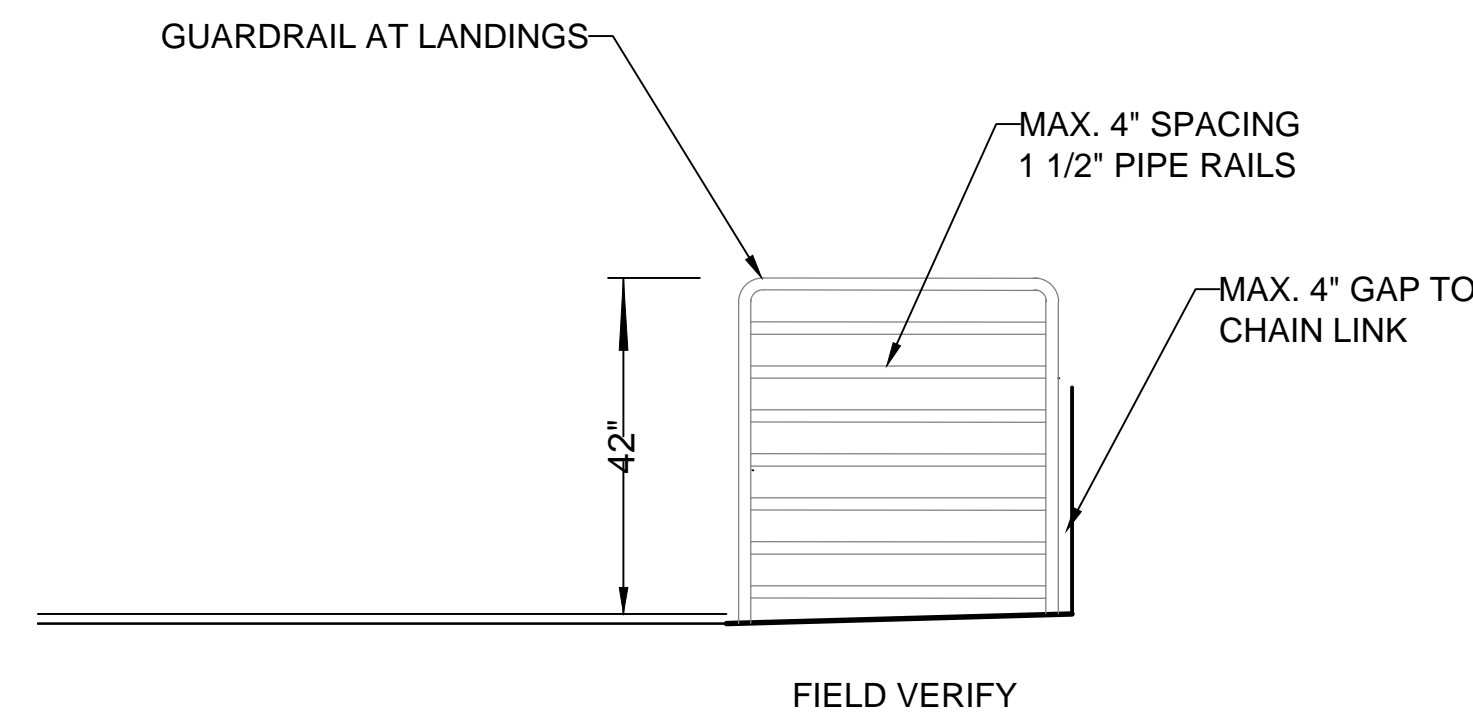




Bridge Elevation - Chain Link & Guardrails  
Scale: 1/8" = 1'-0"



Detail Security Fence at Bridge  
Scale: 1/2" = 1'-0"



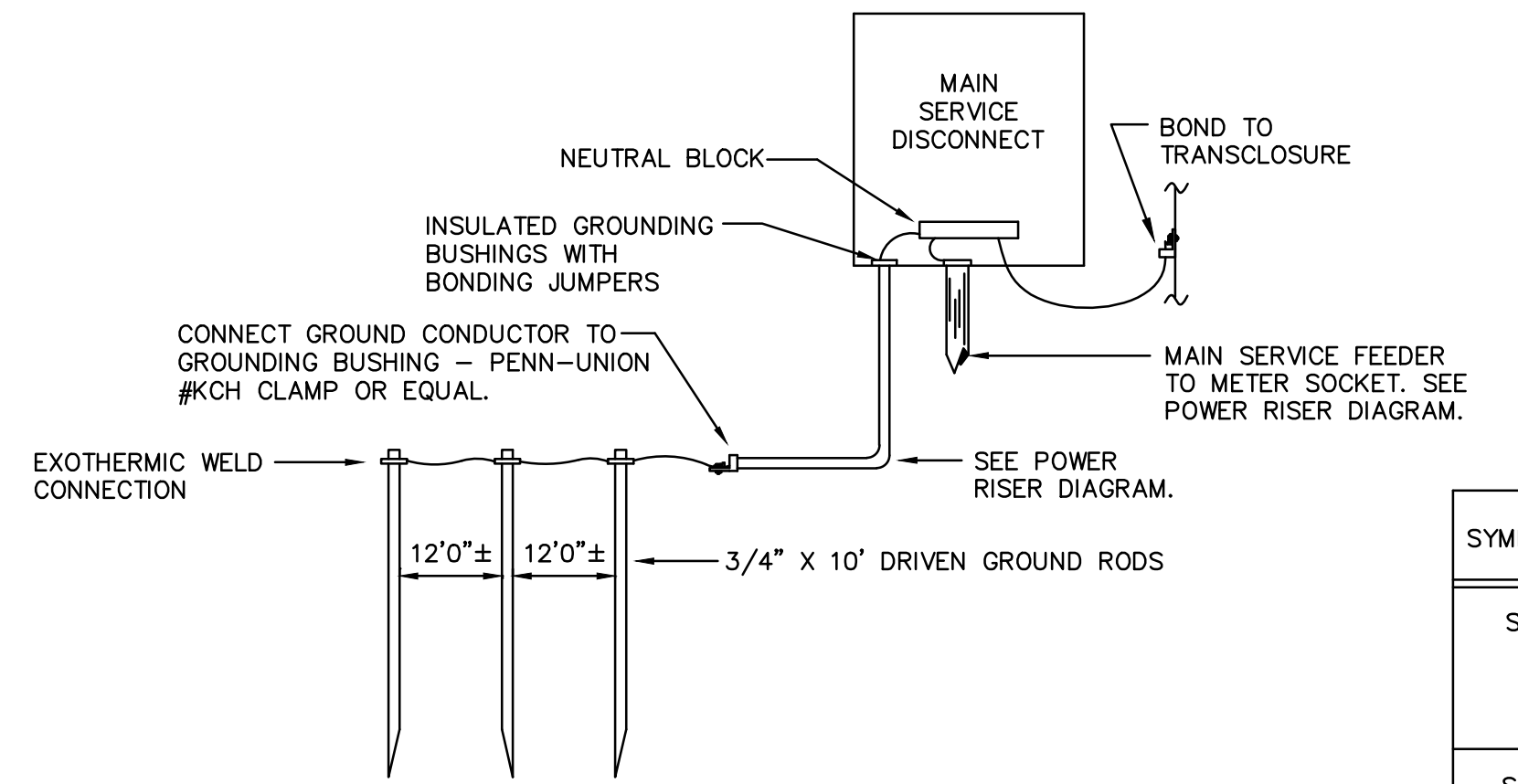
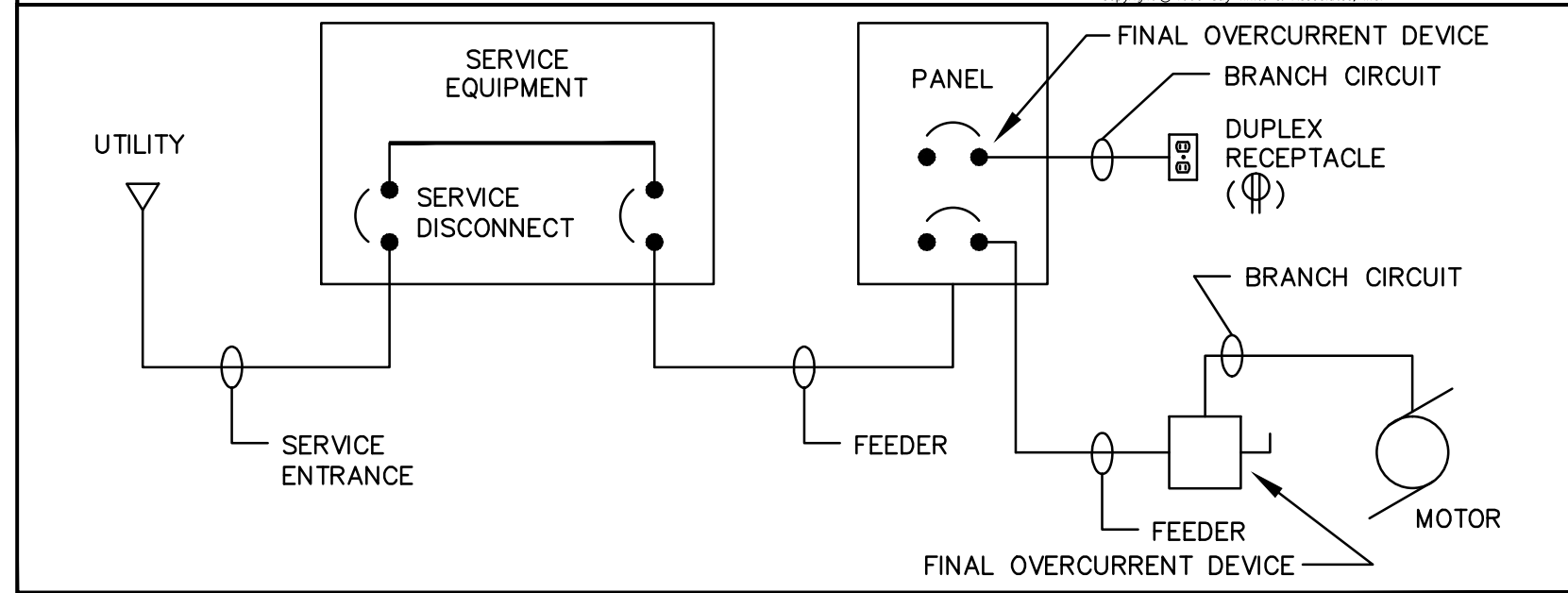
Guardrails at Bridge  
Scale: 1/2" = 1'-0"



**RACEWAY MATERIAL USE TABLE**

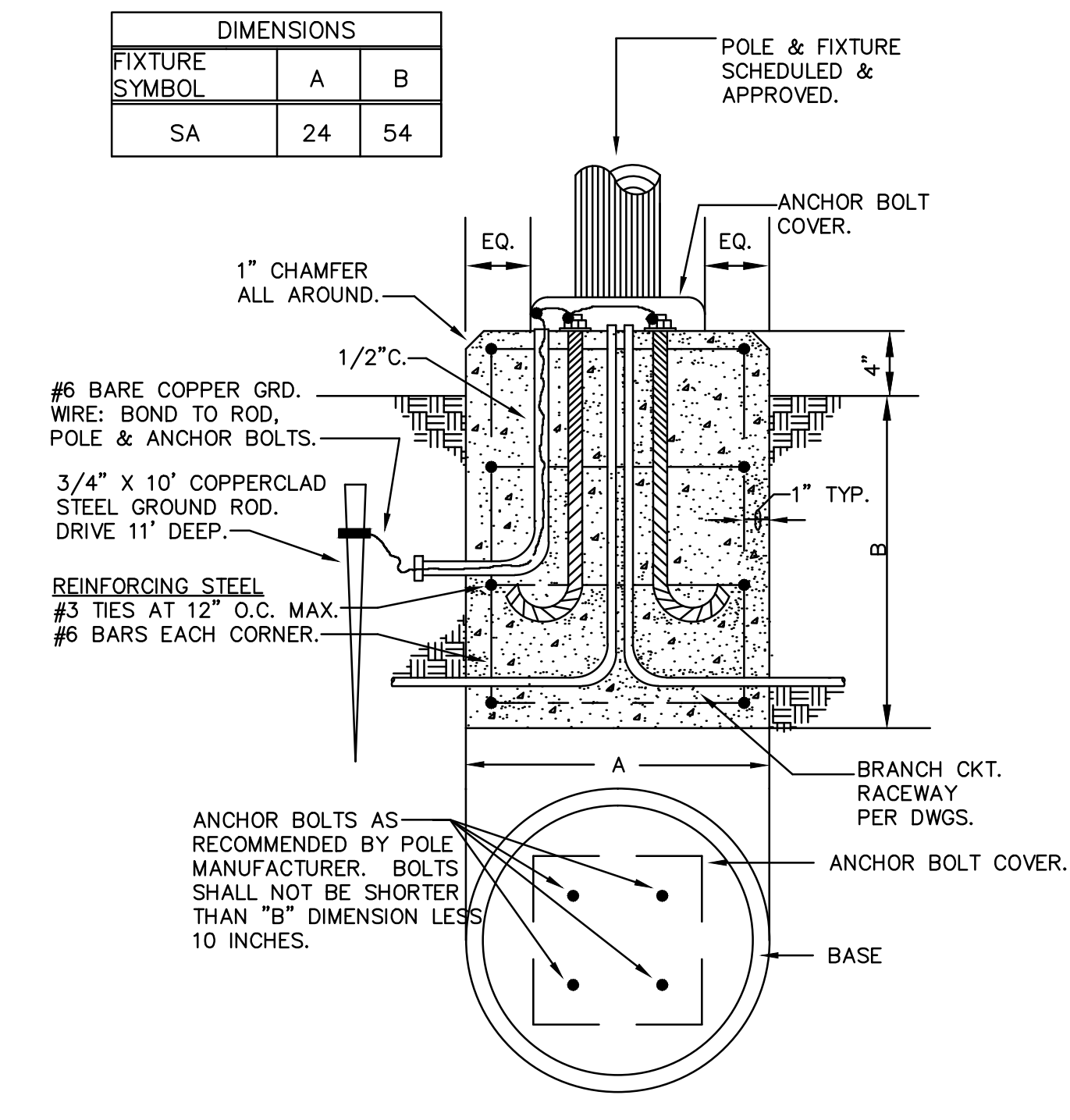
APPLICATION	RACEWAY MATERIAL						
	EMT	IMC	GRS	40 PVC	ENT	AC/MC CABLE	MFD. WIRING
CONTRACTOR MAY USE ANY MATERIAL MARKED (●) FOR APPLICATION LISTED. IF MATERIAL IS NOT MARKED FOR AN APPLICATION, IT SHALL NOT BE USED FOR THAT APPLICATION.							
OUTDOORS - BELOW GRADE	(1)	(1)	(1)	(1)	(1)	(1)	(1)
OUTDOORS - EXPOSED	(1)	(1)	(1)	(1)	(1)	(1)	(1)
STUB-UPS BELOW PANELS & ENCLOSURES	(2)	(2)	(2)	(2)	(2)	(2)	(2)
FEEDER CONDUITS	(3)	(3)	(3)	(3)	(3)	(3)	(3)
SERVICE ENTRANCE	(3)	(3)	(3)	(3)	(3)	(3)	(3)

(1) WITH BITUMINOUS COATING, SEE SPEC.  
 (2) WITH PANEL "SKIRT" ONLY.  
 (3) OUTDOORS - BELOW GRADE.



**GROUNDING OF METER POINT**

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 NO SCALE



**OUTDOOR LIGHTING FIXTURE 'SC' FOUNDATION**

NOT TO SCALE

**ABBREVIATIONS**

THE FOLLOWING STANDARD ABBREVIATIONS ARE USED IN THESE PLANS AND SPECIFICATIONS. CONTRACTOR IS CAUTIONED THAT ALL ABBREVIATIONS LISTED MAY NOT BE USED; CONSULT PLANS AND SPECIFICATIONS FOR ABBREVIATIONS APPLICABLE TO THIS PROJECT.

A.F.F. ABOVE FINISHED FLOOR  
 B.F.F. BELOW FINISHED FLOOR  
 A.F.G. ABOVE FINISHED GRADE  
 B.F.G. BELOW FINISHED GRADE  
 U.N.O. UNLESS NOTED OTHERWISE  
 CKT. CIRCUIT  
 C. CONDUIT  
 E.C. EMPTY CONDUIT  
 FLX. FLEXIBLE CONDUIT  
 WFLX WEATHERPROOF FLEXIBLE CONDUIT

**BRANCH CIRCUIT WIRING - HASHMARK CODE**

**HASHMARK CODE**

NO SCALE

BRANCH CIRCUITS SHOWN ON THESE DRAWINGS MAY INCLUDE HASHMARKS WHICH INDICATE THE NUMBER OF WIRES TO BE PROVIDED IN A CONDUIT RUN BETWEEN OUTLETS OR JUNCTION BOXES. WIRE SIZES SHALL BE AS TABULATED IN PANELBOARD SCHEDULES UNLESS OTHERWISE INDICATED ON PLAN. SEE SYMBOL SCHEDULE FOR CONDUIT ROUTING NOTATION. HASHMARK CODE IS AS FOLLOWS:

EACH PHASE AND NEUTRAL WIRE IN A CONDUIT RUN IS REPRESENTED BY A HASHMARK. FOR EXAMPLE -

- TWO WIRES (NO HASHMARKS)
- /// THREE WIRES (3 HASHMARKS)
- //// FOUR WIRES (4 HASHMARKS)
- ///// FIVE WIRES (5 HASHMARKS)
- ... AND SO FORTH.

NOTE: GROUND WIRES ARE NOT GENERALLY SHOWN. EXAMINE SPECIFICATIONS AND GENERAL NOTES TO DETERMINE REQUIREMENTS FOR GROUND WIRES AND WHERE SPECIFIED, PROVIDE IN ADDITION TO THE NUMBER OF WIRES INDICATED BY HASHMARK CODE.

NOTE: CONTRACTOR IS CAUTIONED THAT MULTIWIRE (LINE-TO-NEUTRAL) BRANCH CIRCUITS DO NOT INDICATE ALL REQUIRED NEUTRAL CONDUCTORS. PROVIDE SEPARATE NEUTRAL CONDUCTORS (WITH COLORED STRIPE TO MATCH PHASE CONDUCTOR) FOR EACH PHASE CONDUCTOR.

EMPTY CONDUITS ARE NOTED BY "EC" WITH TRADE SIZE.

**GENERAL NOTES**

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- DO NOT SCALE DRAWINGS UNLESS DIMENSIONS ARE SHOWN. LOCATE LIGHTING FIXTURES AND EQUIPMENT AS OBVIOUSLY INDICATED AND COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS. SEE CIVIL PLANS.
- MINIMUM SIZE CONDUCTOR FOR POWER SHALL BE NO. 12 AWG. ALL CONDUCTORS SHALL BE COPPER.
- ALL FUSES SHALL BE DUAL-ELEMENT TYPE, "FUSETRON" BY BUSSMAN, OR "ECON" BY ECONOMY.
- BRANCH CIRCUIT SIZES ARE AWG 12-3/4" C. UNLESS OTHERWISE NOTED IN PANELBOARD SCHEDULES.
- ALL BRANCH CIRCUIT LOADS SHALL BE BALANCED ACROSS PANELBOARD BUSES TO OBTAIN MINIMUM NEUTRAL CURRENT.
- ALL FLEXIBLE CONDUIT SHALL CONTAIN A GREEN WIRE BONDED TO RIGID RACEWAY, BOX OR FIXTURE AT EACH END OF FLEX. SIZE GROUND WIRE PER N.E.C. TABLE 250-122.
- CONTRACTOR IS CAUTIONED THAT WORK SHALL BE COMPLETED IN PHASES AS REQUIRED TO MAINTAIN USE OF STREETS, SIDEWALKS, BUSINESSES AND THE LIKE. REFER TO LANDSCAPE ARCHITECT AND CIVIL PLANS FOR PHASING OF WORK.
- ALL WORK SHALL COMPLY WITH NFPA, ADA, AASHTO, SCDOT, CITY OF COLUMBIA AND ALL OTHER APPLICABLE CODES AND STANDARDS.
- SEE CIVIL AND UTILITY PLANS FOR EXISTING AND NEW UTILITIES. VERIFY EXACT LOCATIONS OF HANDHOLES, RISER POLES, PEDASTALS AND THE LIKE WITH UTILITIES.
- CONDUIT ROUTING SHOWN DOES NOT INDICATE PATH OF ROUTING-SHOWN FOR CLARITY ONLY. ROUTE CONDUITS IN R.O.W. SEE CIVIL PLANS.
- COORDINATE ALL NEW METER POINT LOCATIONS AND SERVICE LOCATIONS WITH UTILITY PRIOR TO BIDDING.
- ALL CONDUIT ELBOWS BELOW GRADE SHALL BE BITUMINOUS COATED GRS.
- IF REQUIRED TO SUIT LUGS, PROVIDE HYDRAULIC CRIMP TYPE WIRE REDUCERS IN METER CENTER AS REQUIRED TO CONNECT FEEDER CONDUCTORS TO CONTACTOR/CIRCUIT BREAKERS.
- MINIMUM COVER FOR LIGHTING, TRAFFIC CONTROL AND IRRIGATION POWER CIRCUITS SHALL BE 30".
- CONTRACTOR IS CAUTIONED THAT THESE PLANS ARE DIAGRAMMATIC ONLY AND THAT EXACT LOCATIONS AND ROUTINGS FOR NEW WORK SHALL BE AS OBVIOUSLY INDICATED AND AS DIRECTED BY OWNER, WITH MODIFICATIONS AS REQUIRED TO AVOID CONFLICTS IN THE FIELD. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND

**LIGHTING FIXTURE SCHEDULE**

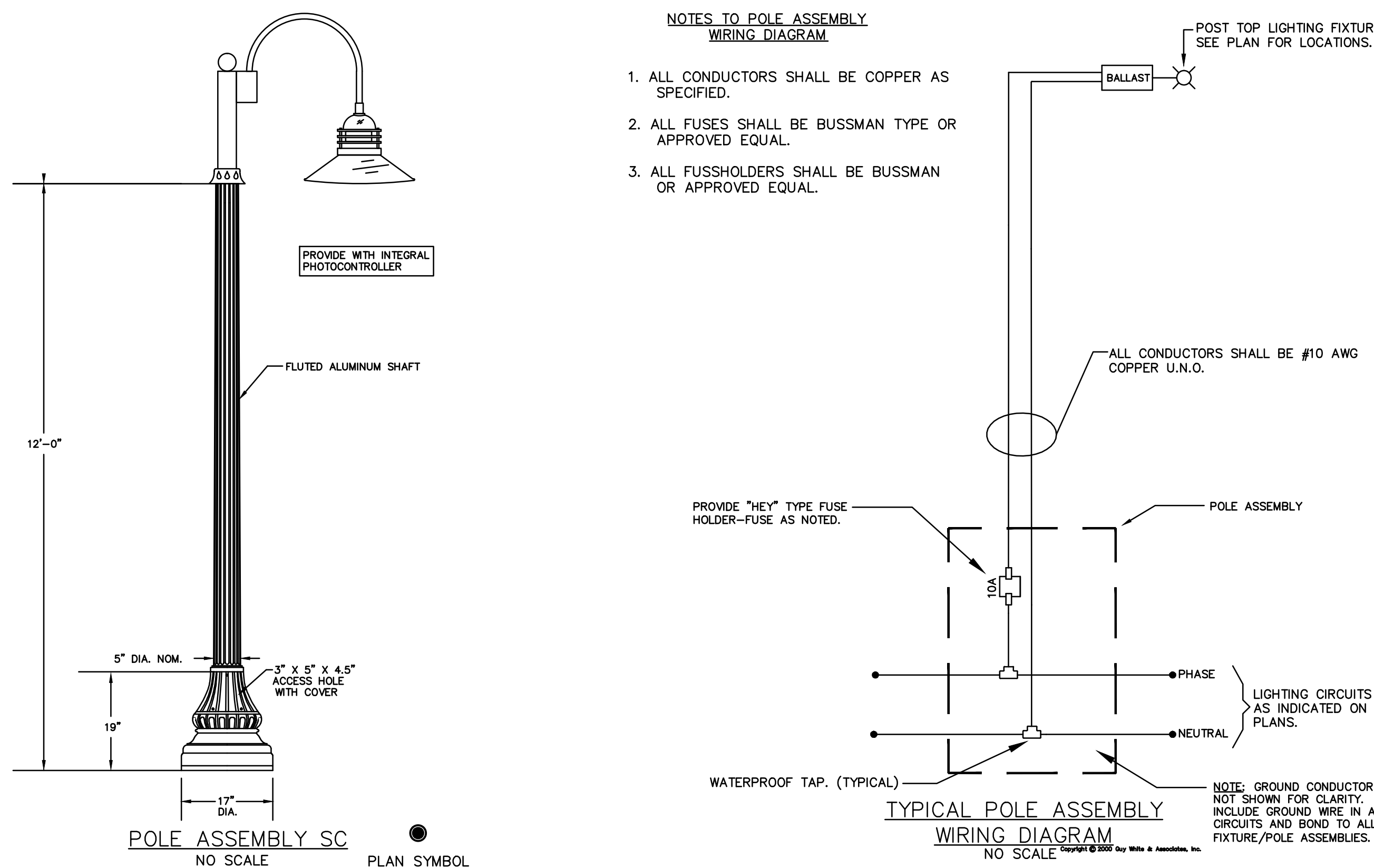
SYMBOL	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	VOLTAGE	LAMPS*	BALLASTS*	FIXTURE WATTAGE	NOTES
S1	LED LINEAR FIXTURE WITH 45° BEAM SPREAD, WET LOCATION.	INSIGHT	MVW-6W/FT-40K-45°-D-48"	120V	LED	N/A	30W	LED ILLUMINATED LINEAR LIGHTING FIXTURE MOUNTED TO CENTER OF BRIDGE CAGE FENCE AT APPROXIMATELY 9'-0" ABOVE WALKWAY. PROVIDE ALL HARDWARE REQUIRED FOR MOUNTING. CONNECT COMPLETE.
SC	CAMPUS STANDARD LED POST TOP	STERNBERG	1970LED-S-BTSR-FG-ONPT-6ARC45TS-PEC 1-0D-DBA-BK(FIXTURE) 4212-FP5(POLE)	240V	LED	N/A	110W	MOUNT TO CONCRETE BASE. PROVIDE POLE EPA RATED 90MPH (1.3 GUST FACTOR). PROVIDE FINISH TO MATCH EXISTING CAMPUS STANDARD. INTEGRAL PHOTOCELL.

**NOTES TO LIGHTING FIXTURE SCHEDULE**

- LOCATE ALL FIXTURES IN STRICT ACCORDANCE WITH ARCHITECTURAL AND LANDSCAPE PLANS.

**NOTES TO POLE ASSEMBLY WIRING DIAGRAM**

- ALL CONDUCTORS SHALL BE COPPER AS SPECIFIED.
- ALL FUSES SHALL BE BUSSMAN TYPE OR APPROVED EQUAL.
- ALL FUSSELDERS SHALL BE BUSSMAN OR APPROVED EQUAL.



**TYPICAL POLE ASSEMBLY WIRING DIAGRAM**

NO SCALE

**ELECTRICAL SYMBOLS**

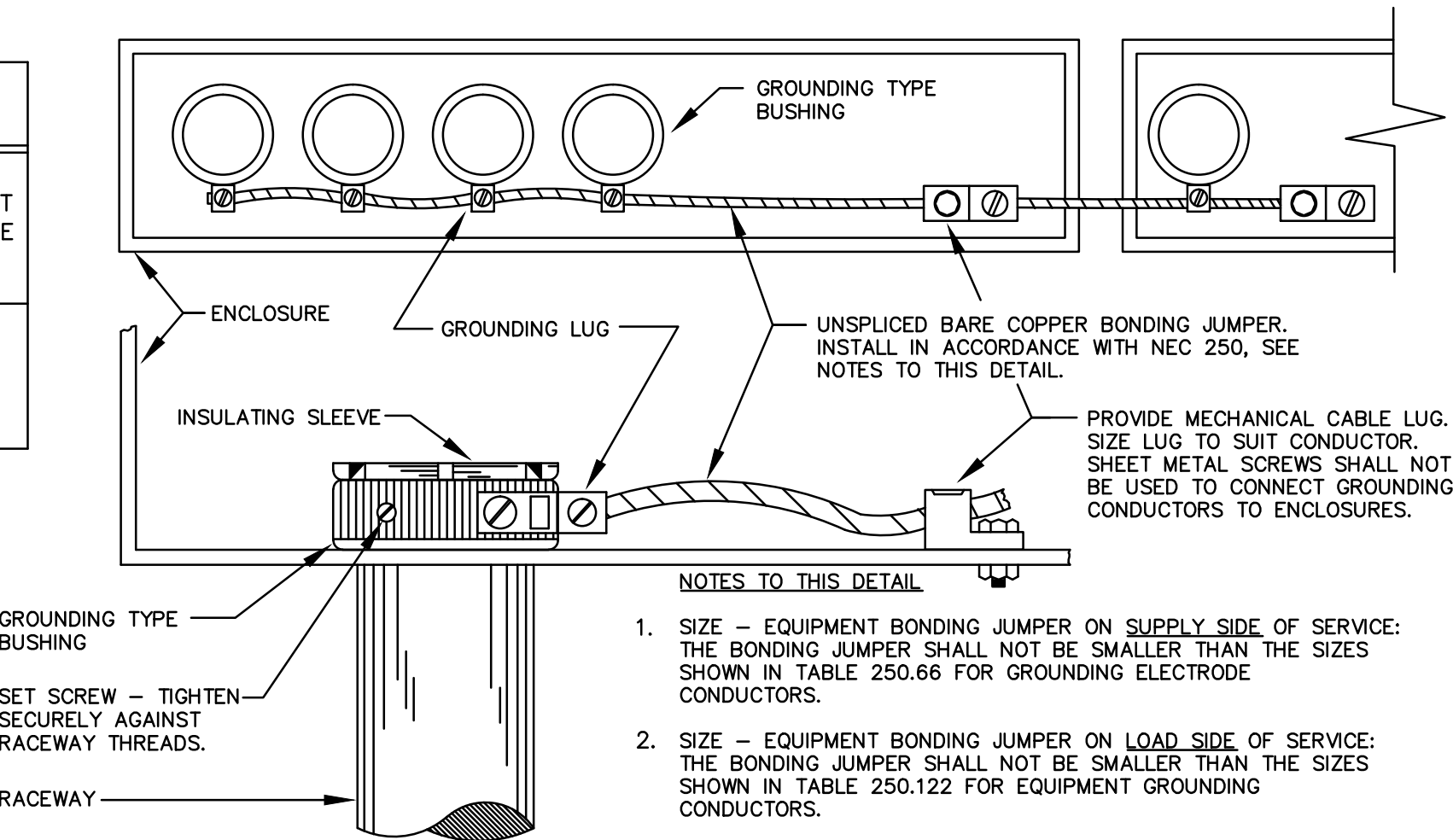
○	OUTDOOR LIGHTING STANDARD & FIXTURE	○	CONDUIT STUB
□	DOWNLIGHT FIXTURE	□	PHOTOCELL, 1800VA U.N.O., AIM NORTH.
⊞	TRANSFORMER	⊞	TIME SWITCH
⊞	PANELBOARD	⊞	MOTION SENSOR SWITCH
⊞	FLUSH JUNCTION BOX CEILING (⊞-WALL)	⊞	SECURITY CAMERA
⊞	PULL BOX OR JUNCTION BOX IN FLOOR	⊞	EMERGENCY CALL STATION
⊞	DUPLEX RECEPTACLE (⊞-HIGH MOUNT)	⊞	BRANCH CIRCUIT RACEWAY - CONCEALED IN WALL OR CEILING
⊞	WEATHERPROOF DUPLEX RECEPTACLE, 16" UP	⊞	BRANCH CIRCUIT RACEWAY - CONCEALED IN FLOOR OR UNDERGROUND
⊞	GROUND FAULT INTERRUPTER RECEPTACLE	⊞	BRANCH CIRCUIT RACEWAY - EXPOSED

NOTE: ALL DEVICES SHOWN ON THIS SCHEDULE ARE SYMBOLIC ONLY. SEE ELECTRICAL SPECIFICATIONS FOR EXACT DEVICE REQUIREMENTS AND PERFORMANCE CHARACTERISTICS.

**SPECIAL NOTE:** CONTRACTOR IS CAUTIONED THAT THESE PLANS ARE DIAGRAMMATIC ONLY AND THAT EXACT LOCATIONS OF LIGHTING FIXTURES, METER POINTS, RACEWAY (INCLUDING ROUTING) AND THE LIKE FOR NEW WORK SHALL BE AS OBVIOUSLY INDICATED AND AS DIRECTED BY THE CIVIL ENGINEER. PRIOR TO BIDDING, CONTRACTOR SHALL REVIEW ALL PLANS AND SPECIFICATIONS (ALL TRADES). FIELD VERIFY EXISTING CONDITIONS AND COORDINATE WITH NEW WORK, TO INCLUDE FIELD MODIFICATIONS AS REQUIRED FOR A COMPLETE PROJECT.

**NOTES TO ELECTRICAL WORK**

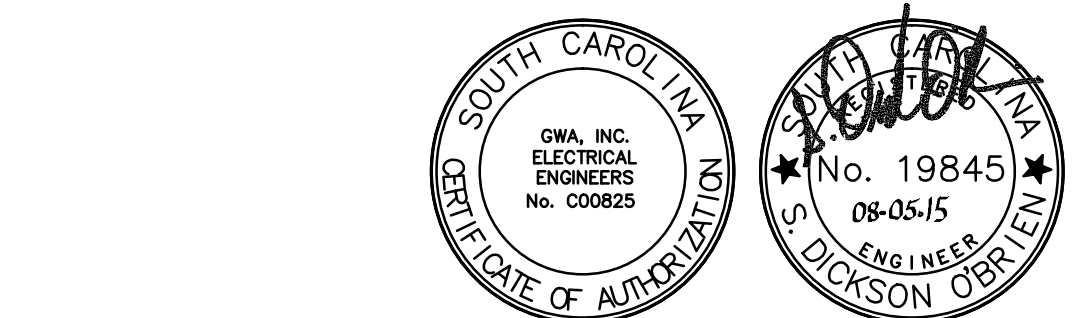
- PRIOR TO BIDDING, CONTRACTOR SHALL REVIEW PLANS FOR ALL TRADES AND INCLUDE IN BID ALL WORK AS REQUIRED FOR A COMPLETE AND OPERABLE ELECTRICAL AND LIGHTING SYSTEM AS INDICATED.
- CONTRACTOR IS CAUTIONED THAT SOME BRIDGE AND RAMP/STAIR COMPONENTS MAY BE REMANUFACTURED/PRECAST AND FIELD ASSEMBLED. COORDINATE CLOSELY WITH GC FOR MOUNTING OF ALL EQUIPMENT, FIXTURES, RACEWAY AND OTHER COMPONENTS.
- COORDINATE WITH LANDSCAPE CONTRACTOR FOR LOCATION OF IRRIGATION CONTROLLER AND PROVIDE 120V POWER AS REQUIRED TO CONTROLLER LOCATION.
- LOCATION FOR METER POINT IS PROPOSED AND MAY BE ADJUSTED AS REQUIRED TO SUIT FINAL SITE LAYOUT AND CONSTRUCTION SEQUENCE. COORDINATE WITH OWNER, GC AND ELECTRIC UTILITY FOR FINAL LOCATION. MAINTAIN NEC 110 CLEARANCES AND WORKSPACE.
- ALL LIGHTING SHALL BE AIMED, ADJUSTED AND SECURED TO PREVENT GLARE AND DISTRACTION TO DRIVERS ALONG ROADWAY.



**GROUNDING OF CONDUITS 1" C. AND LARGER**

**AND LARGER**

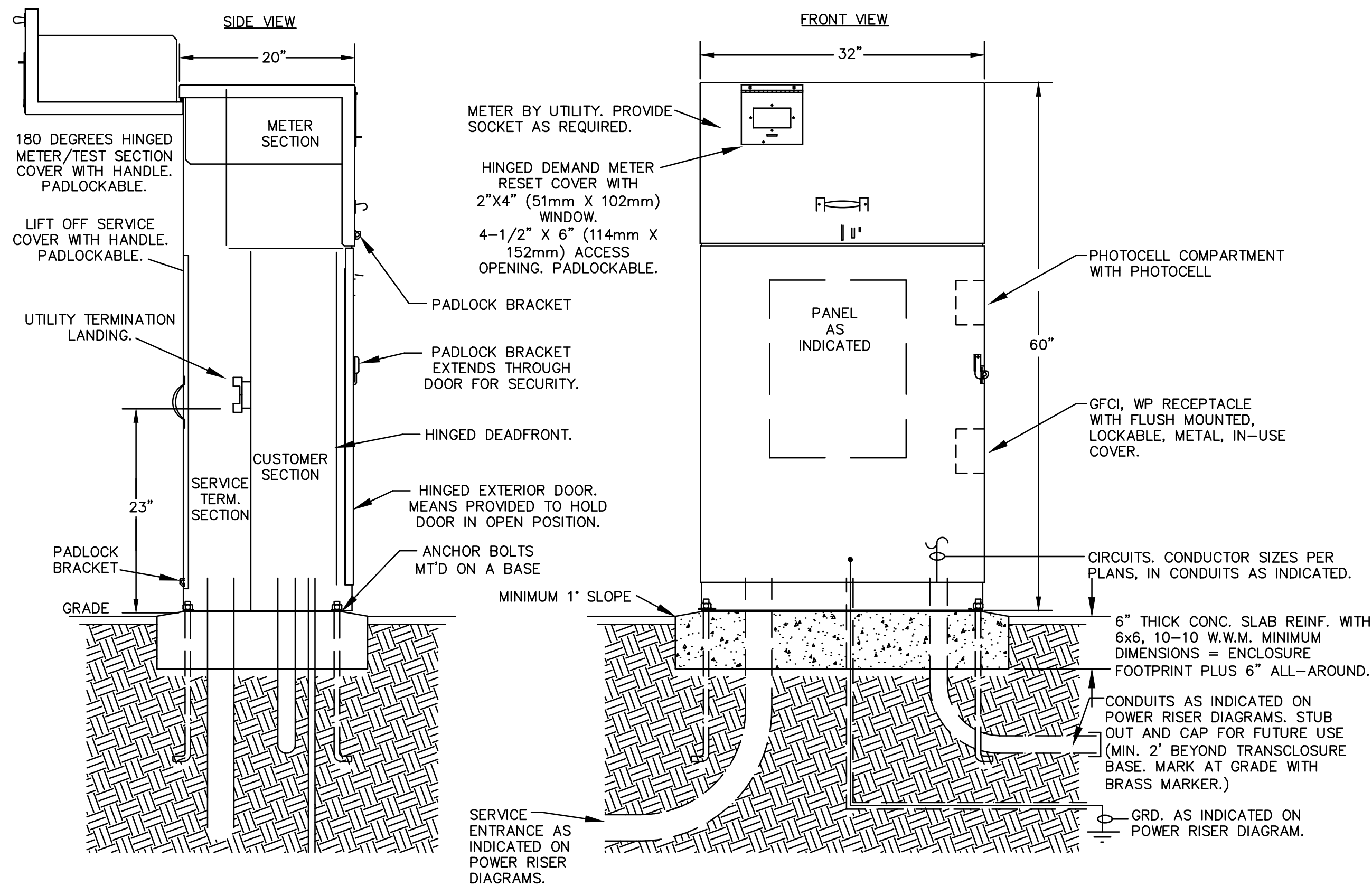
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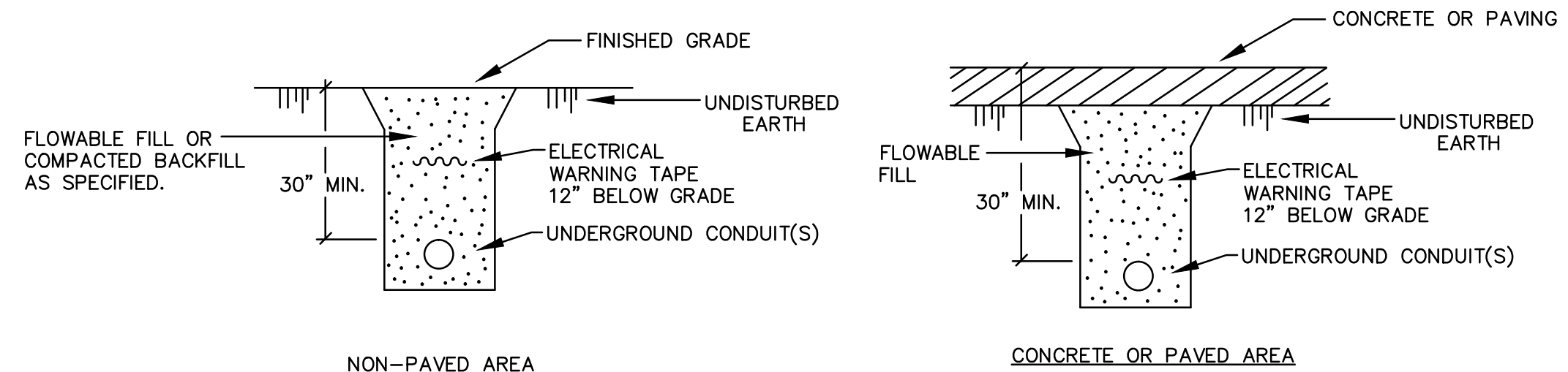




**PAD MOUNTED METER POINT DETAIL**  
NO SCALE

**NOTES TO METER POINT ASSEMBLY**

- CONTROL CABINET SHALL BE U/L LISTED "INDUSTRIAL CONTROL PANEL" PER UL 508.
- CONSTRUCTION SHALL BE NEMA 3R, MIN. 12 GA A60 STEEL - POWDER COATED, FINISH PER ARCHT.
- VOLTAGE RATINGS OF SERVICE EQUIPMENT SHALL CONFORM TO THE SERVICE VOLTAGES INDICATED ON THE PLANS.
- SERVICE EQUIPMENT ENCLOSURE AND METERING EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE SERVING UTILITY. THE METER AREA SHALL HAVE A SEALABLE, LOCKABLE, RAIN-TIGHT COVER THAT CAN BE REMOVED WITHOUT THE USE OF TOOLS.
- SERVICE EQUIPMENT SHALL BE FACTORY WIRED AND CONFORM TO NEMA STANDARDS.
- THE EXTERIOR DOOR SHALL HAVE PROVISIONS FOR PADLOCKING. THE PADLOCK HOLE SHALL BE A MINIMUM DIAMETER OF 11mm.
- ALL TERMINALS FOR INCOMING SERVICE CONDUCTORS SHALL BE COMPATIBLE WITH EITHER COPPER OR ALUMINUM CONDUCTORS SIZED TO SUIT THE CONDUCTORS SHOWN ON THE PLAN. TERMINAL LUGS SHALL BE COPPER OR TIN-PLATED ALUMINUM. SOLID NEUTRAL TERMINAL STRIP SHALL BE RATED 125A UNLESS OTHERWISE SPECIFIED AND FOR USE WITH COPPER OR ALUMINUM CONDUCTORS. THE TERMINAL SHOULD INCLUDE BUT NOT BE LIMITED TO: INCOMING TERMINALS (LANDING LUGS), NEUTRAL LUGS, SOLID NEUTRAL TERMINAL STRIP, TERMINAL STRIPS FOR CONDUCTORS WITHIN THE ENCLOSURE.
- FASTENERS ON THE EXTERIOR OF THE ENCLOSURE SHALL BE VANDAL RESISTANT AND SHALL NOT BE REMOVABLE FROM THE EXTERIOR. ALL NUTS, BOLTS, SCREWS, WASHERS, AND HINGES SHALL BE STAINLESS STEEL.
- PHENOLIC NAME PLATES SHALL BE PROVIDED AS SPECIFIED.
- A PLASTIC COVERED WIRING DIAGRAM SHALL BE ATTACHED TO THE INSIDE OF THE FRONT DOOR.
- ASSEMBLY SHALL BE BY MILBANK MFG CO. (816)483-5314 COMMERCIAL PEDESTAL OR EQUAL BY MYERS POWER PRODUCTS (866)696-9377 OR PACIFIC UTILITY PRODUCTS (800)860-6157.
- OBTAIN APPROVAL OF UTILITY PRIOR TO ORDERING. ASSEMBLY AND METERING SHALL MEET ALL REQUIREMENTS OF UTILITY.

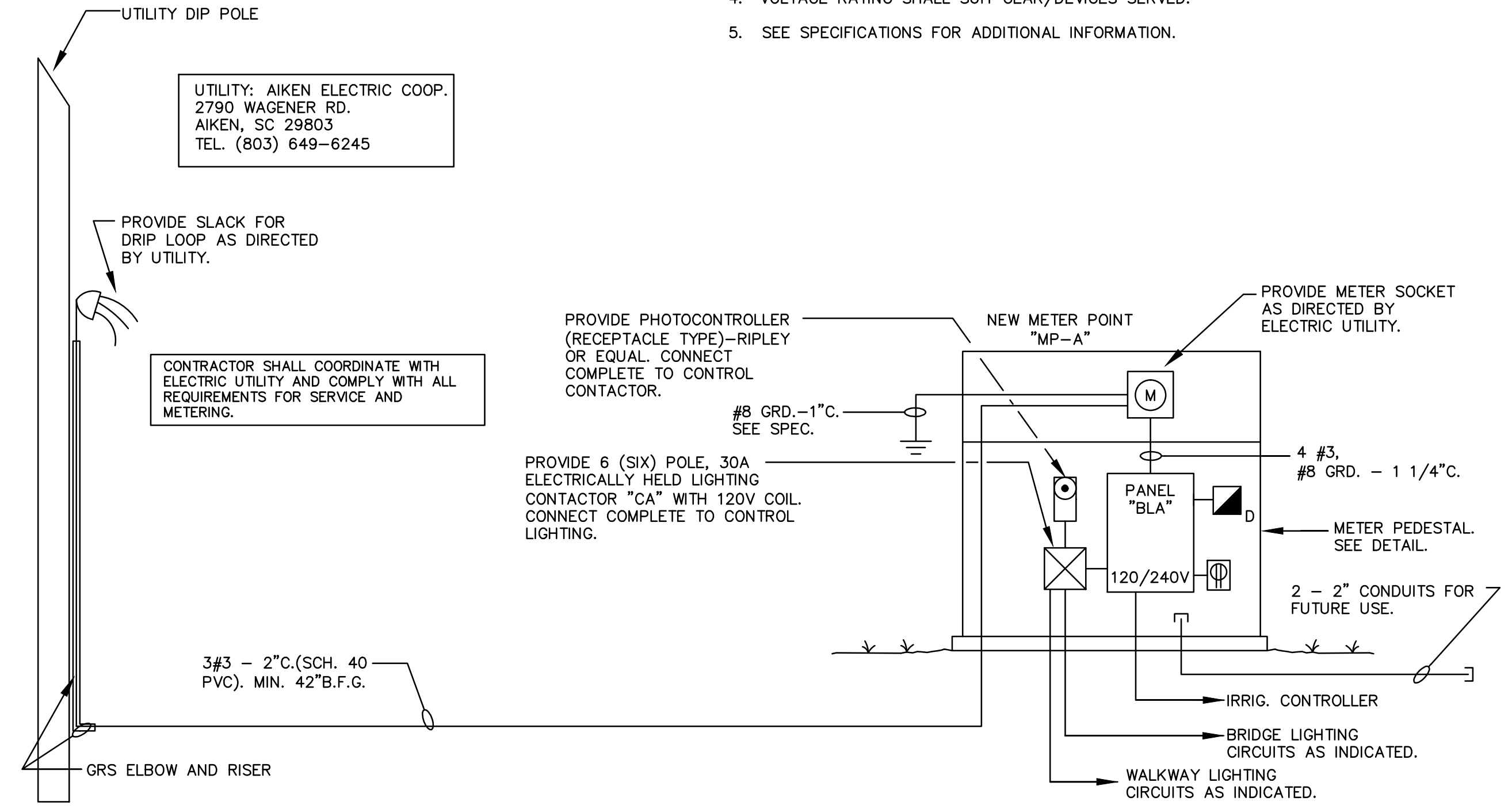


**CONDUIT NOT IN AN UNDERGROUND DUCTBANK**  
NO SCALE

**NOTES TO SPD (SURGE PROTECTION DEVICES):**

SYMBOL	APPLICATION
	DISTRIBUTION PANEL

- PROVIDE SPD AT PANELBOARD(S) AND OUTLETS AS INDICATED.
- INSTALL STRICTLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND NEC ARTICLE 285 REQUIREMENTS. LEAD LENGTHS SHALL BE EQUAL TO OR LESS THAN MANUFACTURER'S RECOMMENDED LENGTHS. PROVIDE OVERCURRENT PROTECTION IN CURRENT RATINGS AND NUMBER OF POLES PER MANUFACTURER'S INSTRUCTIONS.
- LOCATE SPD UNITS AS NEAR TO PROTECTED GEAR AS PHYSICALLY POSSIBLE IN ORDER TO MINIMIZE LEAD LENGTH.
- VOLTAGE RATING SHALL SUIT GEAR/DEVICES SERVED.
- SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



**POWER RISER DIAGRAM - MP-A**  
NO SCALE

SCHEDULE - PANELBOARD.BLA TYPE:  QO  I-LINE VOLTAGE  240/120V, 1φ, 3W  208/120V, 1φ, 3W MOUNTING:  FLUSH  SURFACE AIC RATING 22K

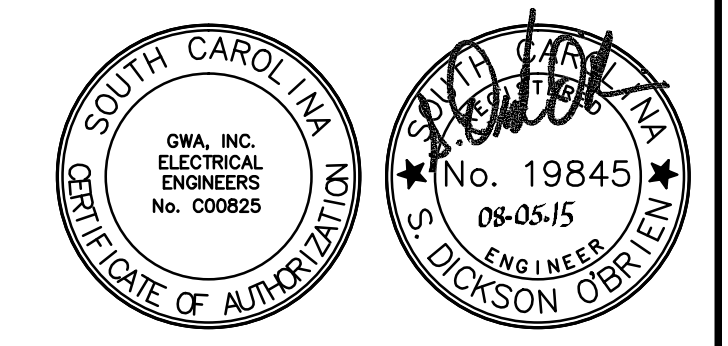
MLO  MCB  LDCTR ACCESSORY:  FEED-THRU LUGS TOTAL SPACES 42

NO.	LOAD DESCRIPTION	REMARK	BRKR AMP	CIRCUIT WIRE	COND	LOAD KVA	BUSSEING		LOAD KVA	CIRCUIT COND WIRE	BRKR AMP	REMARK	LOAD DESCRIPTION	NO.
							A	C						
1	BRIDGE CAGE LIGHTING	PC	20	10	3/4	0.8	1.0	0.8	3/4	10	30		SIDEWALK LIGHTING	2
3	SPARE		30	2							30		SPARE	6
5	SPARE		20	1	12	3/4	0.2				30		SPACE ONLY	8
9	IRRIG. CONTROLLER		20	1	12	3/4	0.2				30		SPACE ONLY	13
11	SPARE		20	1	12	3/4	0.2				30		SPACE ONLY	14
13													SPACE ONLY	15
15													SPACE ONLY	16
17													SPACE ONLY	17
19													SPACE ONLY	18
19													SPACE ONLY	20

CONNECTED LOAD, KVA: A 0.8 C 1.0 NTRL A 0.8 C 0.8 KVA, THIS SECTION: A 1.6 C 1.8

REMARK ABBREVIATION LEGEND: STB = SHUNT TRIP BRKR, GFI = GFI BRKR, SFB = SUB-FEED BRKR, PC = PHOTOCELL CTL.

SERVICE ENTRANCE RATED - INTEGRAL WITH METER POINT ASSEMBLY



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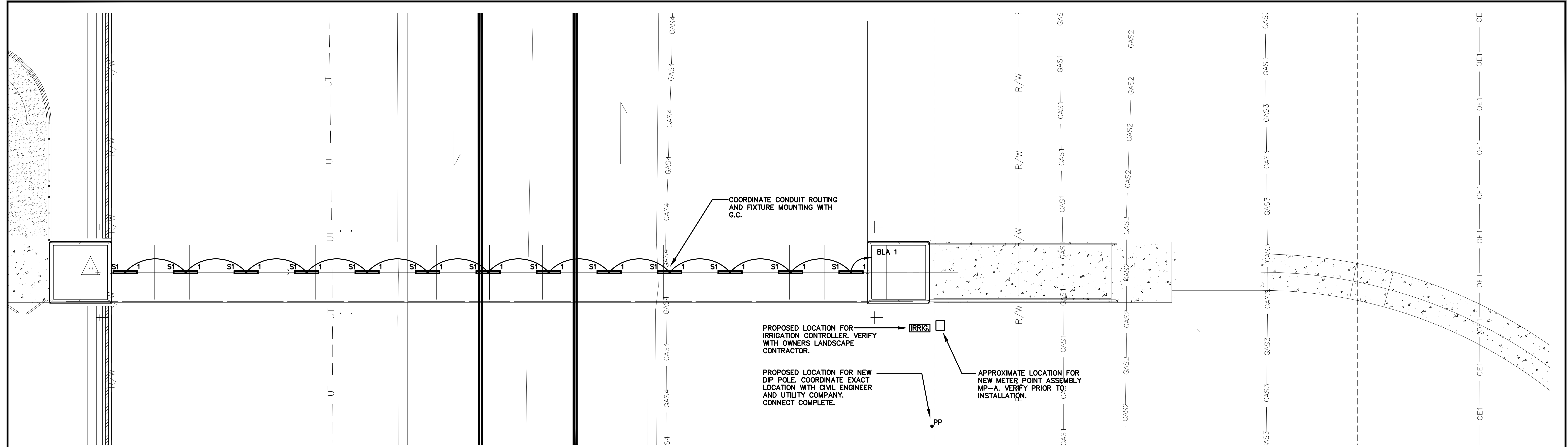
**Electrical Details**  
USCA Pedestrian Bridge  
State Project No. H29-9545-PG  
University of South Carolina  
Aiken County, SC

Drawn: CJA  
Checked: SDO  
Revised:  
Project No.: 391402B  
File: 2743-Details.dwg

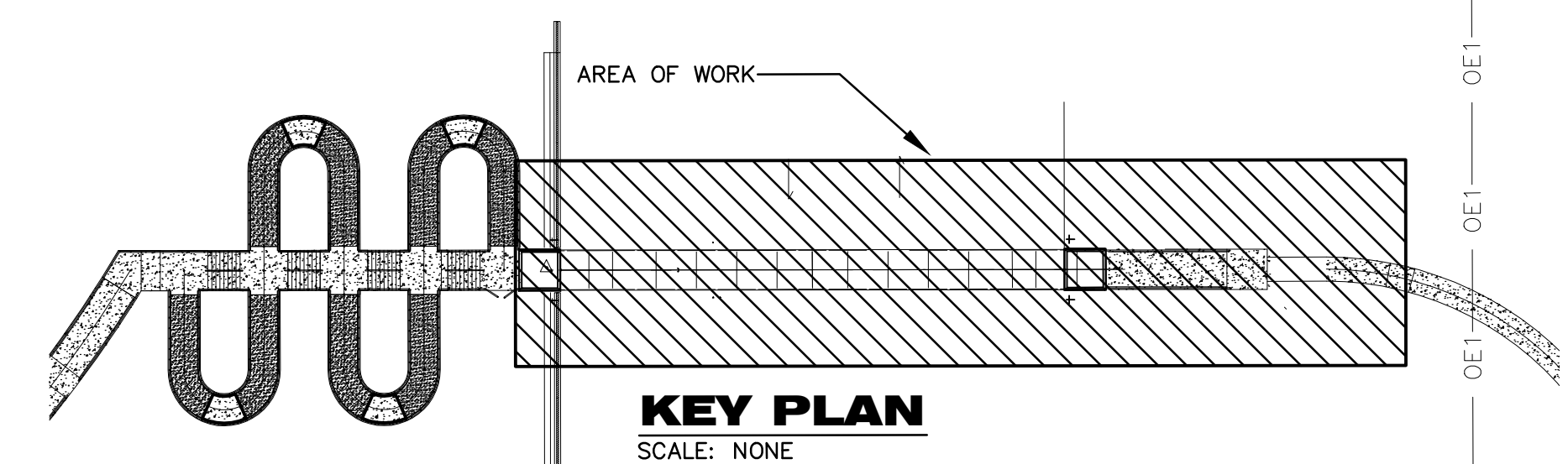
**E002**  
Sheet Number  
August 10, 2015  
Date



Drawing file: 2743-Electrical Site.dwg Printed: Aug 06, 2015 8:35am



**ELECTRICAL SITE PLAN**  
SCALE: 1/8" = 1'-0"



**KEY PLAN**  
SCALE: NONE

GWA-12-2743

**GWA inc.**  
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**SOUTH CAROLINA ENGINEERS**  
GWA, INC.  
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No. 19845  
08-05-15  
S. DICKSON O'BRYEN  
ENGINEER

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**Electrical Site Plan**  
USCA Pedestrian Bridge  
State Project No. H29-9545-PG  
University of South Carolina  
Aiken County, SC

Drawn: CJA Checked: SDO  
Revised:

File: 2743-Electrical Site.dwg Project No.: 391402B

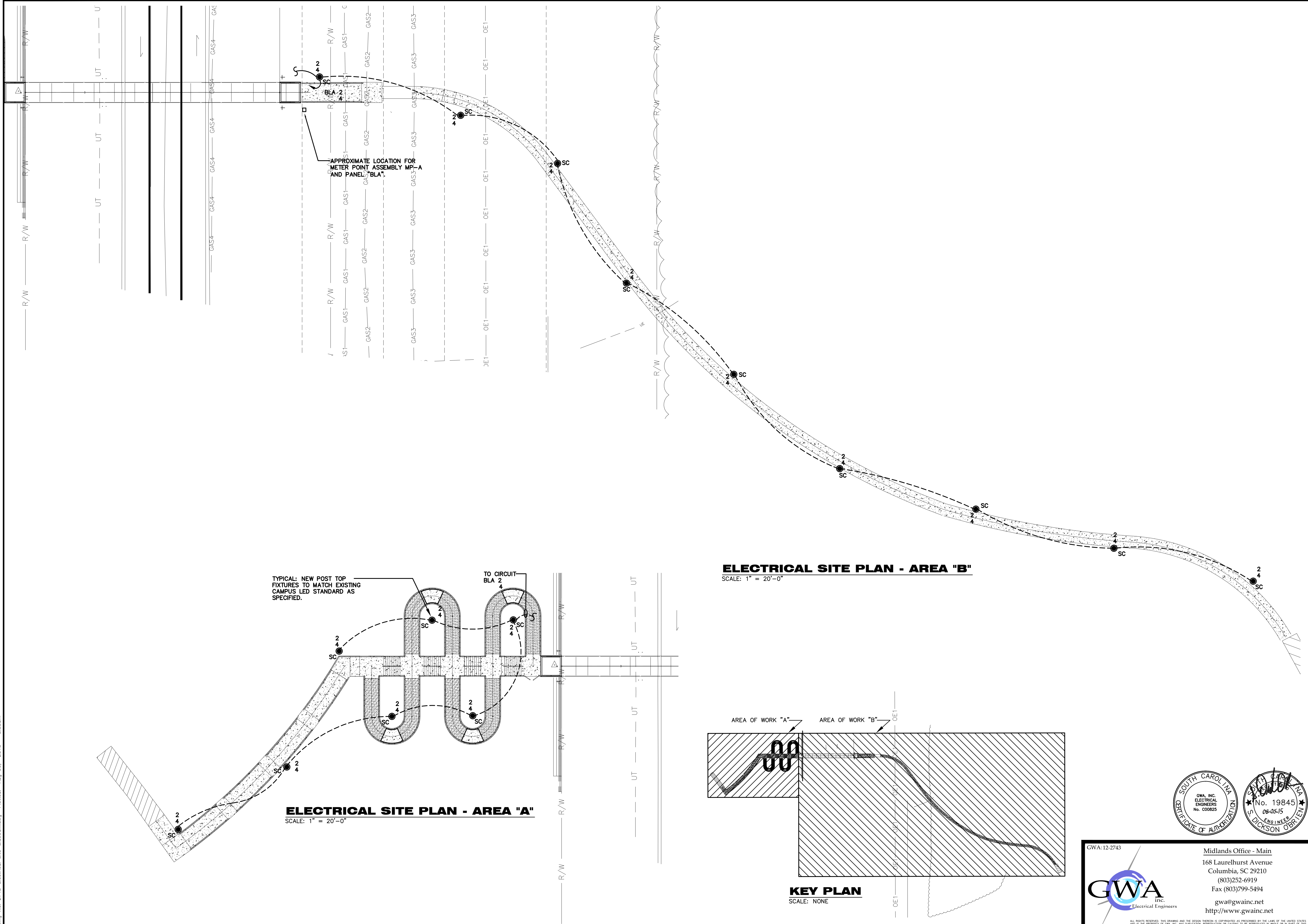
**E101**  
Sheet Number  
August 10, 2015  
Date

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7 Clusters Court  
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Drawing file: 2743-Electrical Site-Sidewalk.dwg Plotter: Aug 06, 2015 - 8:35am



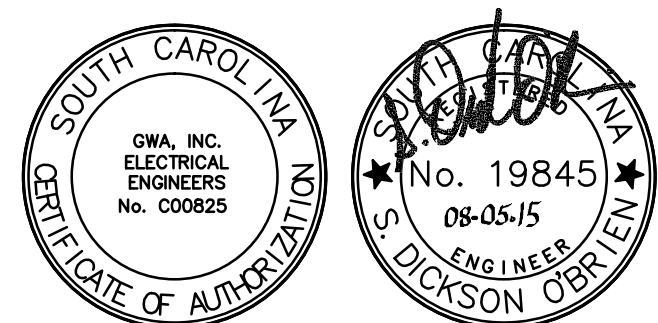
TYPICAL: NEW POST TOP FIXTURES TO MATCH EXISTING CAMPUS LED STANDARD AS SPECIFIED.

TO CIRCUIT BLA 2

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

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

**KEY PLAN**  
SCALE: NONE



GWA-12-2743

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**Electrical Site Plan**  
USCA Pedestrian Bridge  
State Project No. H29-9545-PG  
University of South Carolina  
Aiken County, SC

Drawn: CJA Checked: SDO  
Revised:

File: 2743-Electrical Site-Sidewalk.dwg No.: 391402B

**E102**  
Sheet Number  
August 10, 2015  
Date