

# Preliminary Utility Report

Interstate 85 Bridge Replacement over Rocky Creek  
Greenville County, SC  
Project ID P038111  
July 2019



Prepared by:

**Michael Baker**  
INTERNATIONAL

Prepared for:

**SCDOT**  
South Carolina Department of Transportation

# Preliminary Utility Report

## Interstate 85 Bridge Replacement over Rocky Creek Greenville County, SC Project ID P038111

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## PROJECT SCHEDULE

Advertise Request for Qualifications: March 04, 2019

Deadline for Submittal of Qualifications: April 01, 2019 10 AM to 2 PM EST

Announcement of Short-Listed Proposers: May 16, 2019

Issue RFP for Industry Review: May 22, 2019

Issue Final RFP: July 2019

Submittal of Technical Proposals: November 2019

Submittal of Cost Proposals / Public Announcement: January 2020

## UTILITY CONTACTS

Utility	Owner	Contact	Phone	Email	Address
Power-Distribution	Duke Energy Distribution	Stephen Hall	(864) 439-5133 (864) 345-3708	stephen.hall@duke-energy.com	808 Duncan Reidville Rd. Duncan, SC 29334
Power-Transmission	Duke Energy Transmission	Cynthia Roarty	(919) 431-4738	highway.relocation@duke-energy.com	4690 Simms Creek Rd. Raleigh, NC 27616
Water	Greenville Water System	Matt Fleahman	(864) 241-6000	mfleahman@greenvillewater.com	P.O. Box 687 Greenville, SC 29602
Sewer	Renewable Water Resources	Eddie Bright Terry Childress	(864) 350-9131 (864) 419-7977	christopherb@re-wa.org terrych@re-wa.org	561 Mauldin Road Greenville, SC 29607
	Metro Connects	Joshua Hawkins	(864) 277-4442	jhawkins@metroconnects.org	120 Augusta Arbor Way Greenville, SC 29605
Gas	Piedmont Natural Gas	Carlos Roper	(864) 286-7882 (o) (864) 505-6434 (c)	carlos.roper@piedmontng.com	P.O. Box 16087 Greenville, SC 29606
Telephone/ CATV	AT&T Distribution	Michael Nat	(864) 573-4016 (o) (864) 494-4822 (c)	mn5627@att.com	100 Belton Drive Spartanburg, SC 29349
	AT&T Transmission	Trina Ivy	(678) 641-5522	ki2863@att.com	360 Gees Mill Road Conyers GA 30013
	Charter Communications	Paula Bragg	(864) 887-7122 (864) 387-9638	paula.bragg@charter.com	1511 S. Batesville Rd. Greer SC 29650
	SCDOT	Matthew Pelton	(803) 609-9528	itspups@gmail.com	1408 Shop Road Columbia, SC 29201

## **Preliminary Prior Rights Assessment**

The possible impacts to power poles that are set outside present right-of-way are where the roadway widening changes the controlled access areas and proposed right-of-way encroaches into power company easements. No impacts are expected to power poles or aerial attachments, as no new right-of-way is expected. The possible impacts with underground utilities are where proposed roadway and drainage items cross over utility facilities that are encroaching in existing right-of-way. No impacts are expected the existing sewer crossing as there is a proposed fill at the sewer crossing on conceptual plans. The SCDOT ITS communication fiber will likely conflict with the project at the Rocky Creek bore location, depending on the depth and profile of the bore.

Prior Rights documents provided by utility owners when needed due to relocation can be found in the respective appendices at the end of this report.

<b>Utility</b>	<b>Owner</b>	<b>Prior Rights</b>
Power-Distribution	Duke Energy Distribution	Prior Rights by Easement, No Conflict
Power- Transmission	Duke Energy Transmission	Not present within the project limits
Water	Greenville Water System	Not present within the project limits
Sewer	Renewable Water Resources	Encroachment
	Metro Connects	Not present within the project limits
Gas	Piedmont Natural Gas	Not present within the project limits
Telephone/ CATV/ Communications	AT&T Distribution	Not present within the project limits
	AT&T Transmission	Not present within the project limits
	Charter Communications	Prior Rights by Easement, No Conflict
	SCDOT	N/A

## **Preliminary Utility Impact Assessment**

(Includes Recommendations for Early Relocations and Recommendations for In-Contract Relocations)

### **Duke Energy Distribution**

- Owns and operates a three-phase areal distribution line that parallels I-85 south bound lanes, located on easement along the project limits from Sta. 406+36.79 to 425+15.03 outside of the project footprint.
- **Preliminary Design Concept:** Remain in-place / No Conflict
- **Early Relocations:** N/A
- **In-Contract Relocations:** N/A



### **Duke Energy Transmission**

- Duke Energy Transmission has no facilities impacted by the project.

### **Greenville Water System**

- Owns and operates 8-inch water mains along Honbarrier Drive and along Beacon Drive but does not have any facilities within the anticipated project footprint.
- **Preliminary Design Concept:** Remain in place / No Conflict
- **Early Relocations:** N/A
- **In-Contract Relocations:** N/A

### Renewable Water Resources (ReWa)

- Owns and operates a 27-inch fiberglass reinforced sewer line encased in a 48-inch CMP liner plate sewer line crossing I-85 at station 418+00.
- **Preliminary Design Concept:** ReWa was allowed to remain in place for the recent SCDOT I-85 / I-385 project. The conceptual plan at Sta. 418+00 has an approximate four-foot fill, and no cuts. Cover at edge of pavement on each side will be approximately 15 feet. ReWa will request to remain in-place with no conflict assuming final plans are consistent with concept plans and pose no conflicts with the line.
- **Early Relocations:** N/A
- **In-Contract Relocations:** N/A



### **Metro Connects**

- Owns and operates a gravity sewer main parallel to I-85 south bound, outside of the C/A on private easement.
- **Preliminary Design Concept:** Remain in place / No Conflict
- **Early Relocations:** N/A
- **In-Contract Relocations:** N/A

### **Piedmont Natural Gas**

- Piedmont Natural Gas has no facilities impacted by the project.

### **AT&T Distribution**

- Owns and operates multiple communication lines along Honbarrier Drive and along Beacon Drive but does not have any facilities within the anticipated project footprint.
- **Preliminary Design Concept:** Remain in place / No Conflict
- **Early Relocations:** N/A
- **In-Contract Relocations:** N/A

### **AT&T Transmission**

- AT&T Transmission has no facilities impacted by the project.

### **Charter Communications**

- Owns and operates a CA-TV line attached to Duke Distribution pole line that parallels I-85 south bound lanes, located on easement along the project limits from Sta. 406+36.79 to 425+15.03
- **Preliminary Design Concept:** Remain in place / No Conflict
- **Early Relocations:** N/A
- **In-Contract Relocations:** N/A



### SCDOT (Communications)

- Owns and operates 96-fiber ITS cable that parallels I-85 south bound lanes, located in SCDOT ROW from Sta. 406+36.79 to 425+15.03. Within this run is a 501 foot bore under Rocky Creek.
- Owns and operates a Flood Warning System including gauge and signs at Rocky Creek.
- **Preliminary Design Concept:** The ITS fiber cable is likely in conflict with the project at the proposed grading of the creek channel. Depth and profile of this bore will determine the need for relocation. The Flood Warning System gauge and signs should not conflict with the project and will remain in place until traffic is placed on the new bridge.
- **Early Relocations:** If the SCDOT ITS fiber or camera is determined to conflict with the project, these will be relocated prior to the project start.
- **In-Contract Relocations:** N/A



APPENDIX A  
PRELIMINARY UTILITY MEETING  
MINUTES

**I-85 Bridge Replacement over Rocky Creek  
Preliminary Utility Meeting  
February 25, 2019, 2 pm  
SCDOT- Greenville Office**

**Meeting attendees were as follows:**

<b>Name</b>	<b>Company</b>
David Herbert	SCDOT RCE
Kimberly Bishop	SCDOT RCE Assistant
Robert Ryggs	SCDOT District 3 Utility Coordinator
Eddie Bright	Renewable Water Resources
Michael Nat	AT&T Distribution (Legacy B)
Paula Bragg	Charter Communications
Reneé Tison	Michael Baker International
Brad Whittle	Michael Baker International

**Preliminary Utility Meeting overview:**

Participants met at the SCDOT – Greenville Office February 25, 2019 at 2:00 pm to discuss existing utilities, potential conflicts, and other concerns for the proposed I-85 Bridge Replacement over Rocky Creek. An overview of the meeting is summarized below.

Ms. Tison presented an overview of the project as listed below.

- Ms. Tison presented a graphic of the project limits, which included the proposed I-85 bridge over Rocky Creek and a one-lane widening of I-85 south bound to tie into the current I-85 / I-385 interchange improvement project. Ms. Tison indicated that a plan revision was pending that would be provided to all when meeting minutes are sent.
- Ms. Tison noted that there is no SUE on this project, but SUE would be provided by SCDOT from the current I-85 / I-385 interchange improvement project.

## Existing Utilities:

Mr. Whittle presented a list of utilities identified near the project area as present according to the SC811 One Call Ticket.

1. AT&T Distribution (Legacy B)
2. AT&T Transmission (Legacy T)
3. Charter Communications
4. Duke Energy Distribution
5. Duke Energy Transmission
6. Greenville Water System
7. Piedmont Natural Gas
8. Renewable Water Resources
9. SCDOT ITS

Mr. Whittle inquired about any additional utilities that may be present in or around the project area. Mr. Bright from Renewable Water Resources indicated that Metropolitan Sewer may have facilities near the project area. Mr. Whittle indicated that he would reach out to Metropolitan Sewer to provide project details and gather any information needed.

## Utility Updates:

Mr. Whittle and utility owners provided updates covering project impacts from all utilities listed above. Summaries of those updates are listed below:

- **AT&T Distribution (Legacy B):** Michael Nat attended the meeting and provided updates for AT&T Distribution. Facilities for AT&T Distribution exist outside the project area, both on Honbarrier Drive and Beacon Drive. No AT&T Distribution facilities conflict with the project based on conceptual plans.
- **AT&T Transmission (Legacy T):** Ron Dukes provided an email stating that AT&T Transmission does not own any facilities within the project footprint and they are not in conflict based on conceptual plans.
- **Charter Communications:** Paula Bragg attended the meeting and has provided updates for Charter Communications. Paula indicated that Charter facilities are attached to the Duke Distribution pole line located outside of the C/A, paralleling the south bound lanes through the project area. Paula indicated that she could provide GIS mapping or a mark-up of her facilities in the area for future record but has no conflict with the project based on the conceptual plans.
- **Duke Energy Distribution:** Stephen Hall with Duke Energy Distribution provided updates for Duke Energy Distribution via email. Duke Energy Distribution owns and operates a 3-phase service on their pole line running parallel to I-85 south

bound along the project footprint. This pole line is outside of the C/A on private easement. Stephen Hall has provided a "No Conflict" letter for Duke Energy Distribution based on conceptual plans.

- **Duke Energy Transmission:** Lisa Plumley with Duke Energy Transmission provided an update via email confirming that they have no assets within the project area based on conceptual plans.
- **Greenville Water System:** Matthew Fleahman with Greenville Water System provided an update via email. Mr. Fleahman confirmed they have no conflict with the project based on conceptual plans, and provided a GIS drawing of their facilities, which consists of eight-inch water mains on Honbarrier Drive and Beacon Drive.
- **Piedmont Natural Gas:** Carlos Roper with Piedmont Natural Gas provided an update via email confirming that they have no assets within the project area.
- **Renewable Water Resources:** Eddie Bright with Renewable Water Resources attended the meeting to discuss his facilities within the project footprint. Mr. Bright confirmed that Renewable Water has a 27" fiberglass reinforced gravity sewer line encased in a 48" CMP liner plate and provided GIS mapping and 1972 as-builts for their facilities crossing I-85 at Sta. 418+00. Mr. Bright was not aware if Renewable Water Resources has prior rights for this gravity line. Mr. Whittle showed a graphical representation of the sewer line crossing in the cross-section, which shows at least 8 feet of separation between the proposed guardrail post and the existing gravity sewer line. There is approximately four feet of additional fill at this crossing per the conceptual plans. Mr. Bright expressed his wishes to remain in place due to these details. Mr. Whittle indicated he would follow up with Mr. Bright concerning prior rights and details required for his request to remain in place.

After Mr. Bright left the meeting, further discussion of Renewable Water Resources revolved around their sewer crossing. Mr. Ryggs indicated that SCDOT would require confirmation that the 48" CMP liner plate extended far enough to provide protection for all pavement at the crossing and have adequate strength to withstand the proposed fill at this location. Mr. Ryggs, Mr. Herbert and Ms. Bishop agreed that this should be done on the existing project, due to pot-holing being a requirement of Renewable Water's existing request to remain in place for the current I-85 / I-385 interchange improvement project. Ms. Bishop agreed to reach out to Flatiron for additional information concerning Renewable Water Sources existing request to remain in place.

The possibility of allowing an early request to remain in place to be submitted based off conceptual plans was discussed. Ms. Tison suggested that an early submission of a request to remain in place could be allowed with stipulations that re-evaluation would be necessary if any significant plan changes occur in final

plans. Mr. Ryggs indicated he would provide Mr. Whittle a copy of the SCDOT guidelines to remain in place for distribution to Renewable Water Sources to aid in their submission.

- **SCDOT ITS:** Ms. Bishop provided ITS final plans prior to the meeting so that plans could be evaluated within the project footprint. Mr. Whittle indicated that plans show ITS running inside of C/A, parallel to I-85 south bound lane, offset approximately 26 feet. Plans also indicated that there is a 501 ft. bore under Rocky Creek. Mr. Whittle pointed out that ITS is likely in conflict with the project, depending on the bore profile and the offset throughout the project. Ms. Bishop indicated that she would reach out for more details on the bore at Rocky Creek to better determine if the ITS line is in conflict with the project. Ms. Tison confirmed that ITS relocation requirement details would be provided by SCDOT in the bid package of the design build project.

Ms. Tison and Mr. Whittle thanked everyone for attending the meeting and informed that they will be forwarding a copy of the meeting minutes along with revised conceptual plans as soon as they are available.

**Rocky Creek ■ Preliminary Utility Meeting  
Michael Baker International  
February 25, 2019**

NAME	COMPANY	PHONE	EMAIL
Brad Reynolds	SCDOT	(803) 737-1440	reynoldsbs@scdot.org
David Herbert 	SCDOT	(864) 241-1011	hebertdl@scdot.org
Kimberly Bishop 	SCDOT	(864) 241-1120	bishopka@scdot.org
Robert Ryggs 	SCDOT	(864) 241-1010	ryggsre@scdot.org
Stephen Hall	Duke Distribution	(864) 439-5133 (864) 345-3708	stephen.hall@duke-energy.com
Cynthia Roarty	Duke Transmission	(919) 431-4738	highway.relocation@duke-energy.com
Matt Fleahman	Greenville Water System	(864) 241-6000	mfleahman@greenvillewater.com
Eddie Bright 	Renewable Water Resources	(864) 350-9131	christopherb@re-wa.org
Terry Childress	Renewable Water Resources	(864) 419-7977	terrych@re-wa.org
Carlos Roper	Piedmont Natural Gas	(864) 286-7882 (O) (864) 505-6434 (C)	carlos.roper@piedmontng.com
Michael Nat 	AT&T Distribution	(864) 573-4016 (O) (864) 494-4822 (C)	mn5627@att.com
Trina Ivy	AT&T Transmission	(678) 641-5522	ki2863@att.com

**Rocky Creek ■ Preliminary Utility Meeting  
 Michael Baker International  
 February 25, 2019**

NAME	COMPANY	PHONE	EMAIL
Paula Bragg <i>PB</i>	Charter Communications	(864) 887-7122 (864) 387-9638	paula.bragg@charter.com
Reneé Tison <i>RT</i>	Michael Baker International	(803) 231-3948	rtison@mbakerintl.com
Brad Whittle <i>BW</i>	Michael Baker International	(803) 231-3850	bradley.whittle@mbakerintl.com

**APPENDIX B**  
**DUKE ENERGY DISTRIBUTION**



808 Duncan Reidville Rd.  
Duncan , SC 29334

January 29, 2019

Bradley Whittle  
Michael Baker International  
Utility Coordinator  
700 Huger Street | Columbia, SC 29201  
Office: 803-231-3850  
Mobile: 803-216-4176

Subject: Greenville County  
I-85 Bridge over Rocky Creek  
Project ID: P038111

Project Description: Bridge replacement over I-85 Bridge over Rocky Creek

Dear Mr. Whittle,

Field verification has determined that Duke Energy's facilities are not in conflict with the proposed construction for the above referenced project. However, if there are any changes in regard to the construction plans please notify us as soon as possible.

Please accept this no conflict letter as the Duke Energy official notification for this project. Should you have questions or concerns, feel free to contact me at (864) 439-5133.

Sincerely,

A handwritten signature in black ink that reads "Stephen Hall". The signature is fluid and cursive, with the first name "Stephen" and last name "Hall" clearly legible.

Stephen Hall  
Engineering Technologist  
Duke Energy Carolinas  
Office (864) 439-5133

APPENDIX C  
DUKE ENERGY TRANSMISSION

## Whittle, Bradley

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**From:** Plumley, Lisa <Lisa.Plumley@duke-energy.com>  
**Sent:** Saturday, February 23, 2019 12:49 PM  
**To:** Highway.Relocation@duke-energy.com; CWTransPD@duke-energy.com  
**Cc:** Whittle, Bradley  
**Subject:** RE: EXTERNAL: RE: I-85 Bridge over Rocky Creek, Greenville SC - Duke Energy Contact Request

There are no Duke Energy Transmission assets in the area you have outlined.

### Lisa Plumley

Project Manager  
Duke Energy, Carolinas West Transmission  
Office: (980) 373-1219 | Cell: (704) 303-3848  
[Lisa.Plumley@Duke-Energy.com](mailto:Lisa.Plumley@Duke-Energy.com)

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**From:** Highway.Relocation@duke-energy.com  
**Sent:** Thursday, February 21, 2019 8:39 AM  
**To:** CWTransPD@duke-energy.com; Plumley, Lisa <Lisa.Plumley@duke-energy.com>  
**Cc:** bradley.whittle@mbakerintl.com  
**Subject:** FW: EXTERNAL: RE: I-85 Bridge over Rocky Creek, Greenville SC - Duke Energy Contact Request

Please see the request below and verify if there are any transmission facilities in the area of the attached graphic.  
Thank you,

*Cynthia Roarty*

Duke Energy  
Work Management-Relocations  
US1N Ops Center  
4690 Simms Creek Rd.  
Raleigh, NC 27616  
Ph: 919-431-4738

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**From:** Whittle, Bradley [<mailto:Bradley.Whittle@mbakerintl.com>]  
**Sent:** Wednesday, February 20, 2019 4:22 PM  
**To:** [Highway.Relocation@duke-energy.com](mailto:Highway.Relocation@duke-energy.com)  
**Subject:** RE: EXTERNAL: RE: I-85 Bridge over Rocky Creek, Greenville SC - Duke Energy Contact Request

Cynthia,

Just wanted to follow up with you on this project. I have heard back from Stephen Hall, and received a No Conflict letter from him for Duke Distribution. There are no transmission lines visible within the project limits so I don't think there are any transmission facilities in the area. I don't want to make any assumptions though. Have you guys determined that there are no Duke Transmission lines existing in the area?

Thanks,  
Brad

**Brad Whittle** | Utility Coordinator | Michael Baker International  
700 Huger Street | Columbia, SC 29201 | [O] 803-231-3850 | [M] 803-216-4176  
[bradley.whittle@mbakerintl.com](mailto:bradley.whittle@mbakerintl.com) | [www.mbakerial.com](http://www.mbakerial.com)



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**From:** [Highway.Relocation@duke-energy.com](mailto:Highway.Relocation@duke-energy.com) <[Highway.Relocation@duke-energy.com](mailto:Highway.Relocation@duke-energy.com)>  
**Sent:** Monday, January 14, 2019 1:44 PM  
**To:** Whittle, Bradley <[Bradley.Whittle@mbakerintl.com](mailto:Bradley.Whittle@mbakerintl.com)>  
**Subject:** EXTERNAL: RE: I-85 Bridge over Rocky Creek, Greenville SC - Duke Energy Contact Request

You can put me down as the contact for Transmission or Distribution lines, using the information from my signature line below.

*Cynthia Roarty*  
Duke Energy  
Work Management-Relocations  
4690 Simms Creek Rd.  
Raleigh, NC 27616  
Ph: 919-431-4738  
[Highway.Relocation@duke-energy.com](mailto:Highway.Relocation@duke-energy.com)

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**From:** Whittle, Bradley [<mailto:Bradley.Whittle@mbakerintl.com>]  
**Sent:** Monday, January 14, 2019 12:03 PM  
**To:** [Highway.Relocation@duke-energy.com](mailto:Highway.Relocation@duke-energy.com)  
**Cc:** Whittle, Bradley <[Bradley.Whittle@mbakerintl.com](mailto:Bradley.Whittle@mbakerintl.com)>  
**Subject:** I-85 Bridge over Rocky Creek, Greenville SC - Duke Energy Contact Request

**\*\*\* Exercise caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. \*\*\***

Hey Guys,

I am working on a contact list for the Preliminary Utility Report for the SCDOT design build project adding a bridge over Rocky Creek, just south of Exit 54 (Pelham Road) on I-85, Greenville SC. Could you provide me the correct contacts that I will need to correspond with for any relocation efforts that may exist for Duke Energies Transmission and Distribution lines?



Thanks in advance,

**Brad Whittle** | Utility Coordinator | Michael Baker International  
700 Huger Street | Columbia, SC 29201 | [O] 803-231-3850 | [M] 803-216-4176  
[bradley.whittle@mbakerintl.com](mailto:bradley.whittle@mbakerintl.com) | [www.mbakerintl.com](http://www.mbakerintl.com)

**Michael Baker**  
INTERNATIONAL

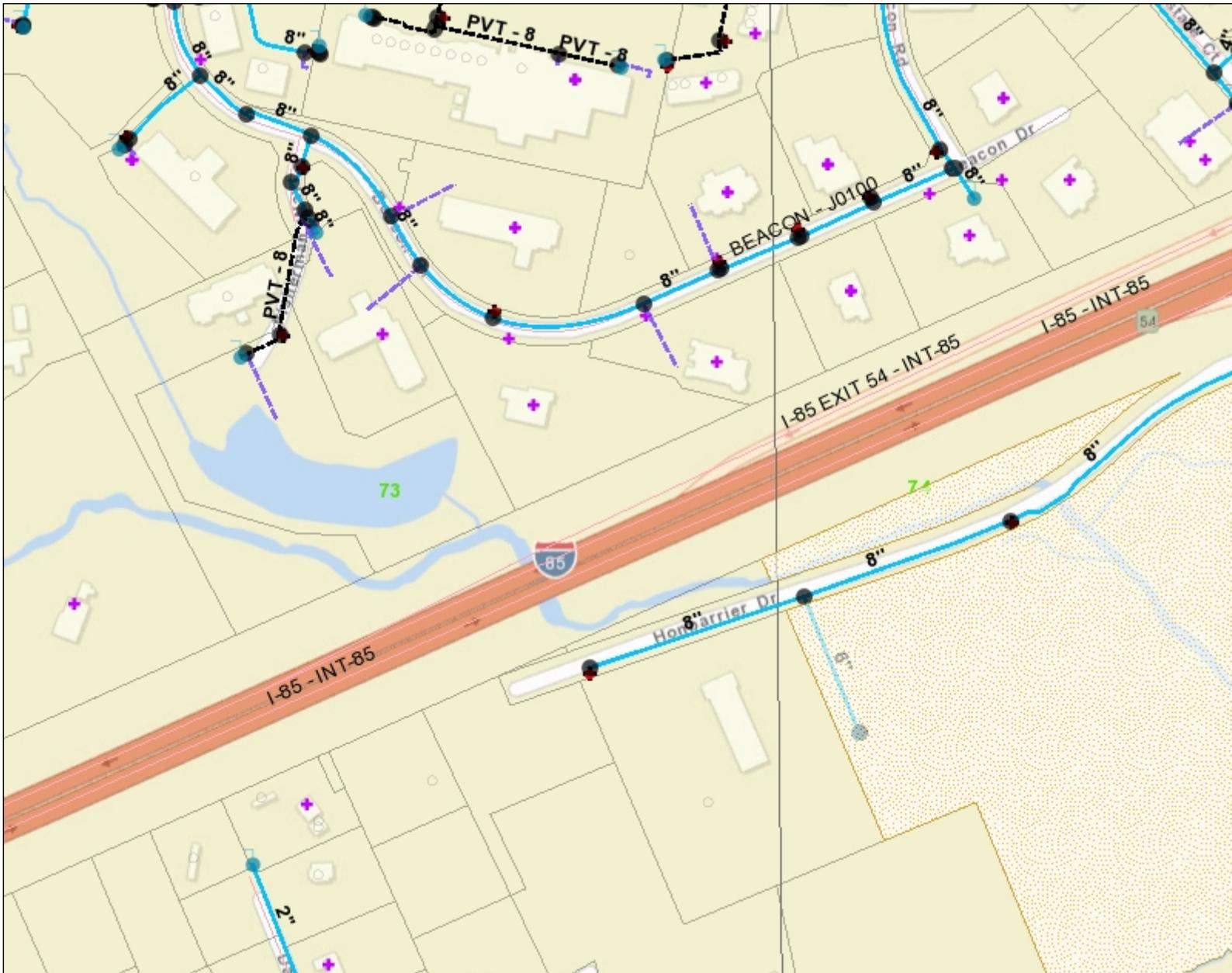
Connect with us:     



*We Make a Difference*

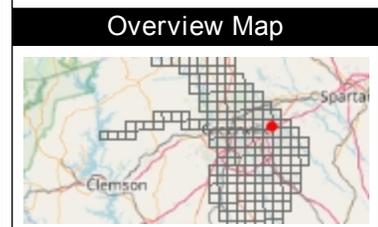
APPENDIX D  
GREENVILLE WATER SYSTEM

# Rocky Creek Bridge Project



### Legend

- Pipe Break - Current
  - IS
  - MAIN
  - VALVE
- Current Water Off
- Engineering Projects
- Butterfly Valves
  - Direction Not Known
  - Open Left
  - Open Right
- Altitude Valves
- Air Valves
- Blow Off Valves
- Check Valves
- Flow Control Valves
- Fireline Valves
  - Direction Not Known
  - Open Left



### Notes

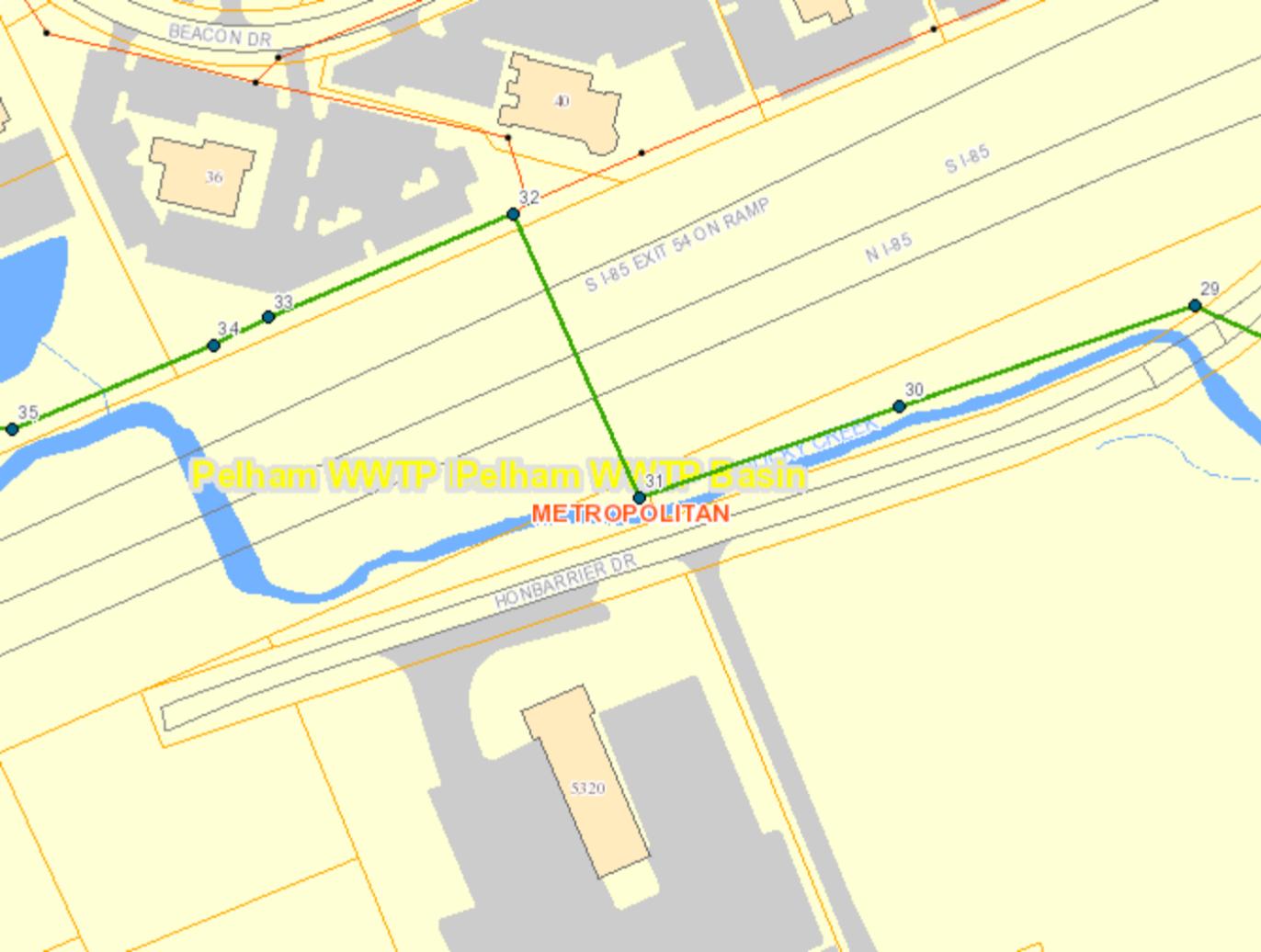


1: 3,706



This map is not an as-built and is for general reference purposes only. Greenville Water expressly disclaims responsibility for damages or liability that may arise from the use of this map.

APPENDIX E  
RENEWABLE WATER RESOURCES



BEACON DR

40

36

32

S I-85

S I-85 EXIT 54 ON RAMP

N I-85

34

33

29

Pelham WWTP | Pelham WTP Basin

METROPOLITAN

30

31

HONBARRIER DR

5320

35



## Whittle, Bradley

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**From:** Whittle, Bradley  
**Sent:** Wednesday, February 27, 2019 4:25 PM  
**To:** 'Eddie Bright'  
**Subject:** I-85 Rocky Creek Bridge Replacement  
**Attachments:** SCDOT Utility Company Checklist Form 2018.03.05.pdf; UCM - Utility Conflict Analysis Template 2016-10.pdf; UT Guide Remain Under Pvmt 2015.05.21.pdf; SCDOT TESTHOLE REPORT FORM.pdf

Eddie,

As we discussed, attached are a few documents provided by SCDOT for your use on your request to remain in place at your crossing near Sta. 418+00. Included in this is the SCDOT testhole form. Once you testhole this line for the current improvement project, you can use this form for your request to remain under pavement submittal for the Rocky Creek job as well. As mentioned, on this submittal, please verify that your 48" CMP liner can withstand 4 feet of fill as shown on conceptual plans, and verify that this encasement extends across the entire roadway footprint. If you complete your "Request to Remain" package soon, forward to me and I will submit to SCDOT.

For my scope in the preliminary utility report phase...I need any prior rights information that can be provided for the project.

Thanks for your help,

**Brad Whittle** | Utility Coordinator | Michael Baker International  
700 Huger Street | Columbia, SC 29201 | [O] 803-231-3850 | [M] 803-216-4176  
[bradley.whittle@mbakerintl.com](mailto:bradley.whittle@mbakerintl.com) | [www.mbakerial.com](http://www.mbakerial.com)



**APPENDIX G  
METRO CONNECTS**

## Whittle, Bradley

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**From:** Joshua Hawkins <JHawkins@metroconnects.org>  
**Sent:** Thursday, April 25, 2019 2:16 PM  
**To:** Whittle, Bradley  
**Subject:** EXTERNAL: FW: I-85 Rocky Creek Bridge Replacement  
**Attachments:** Rocky\_Creek.pdf

Brad,

Please see the attached GIS map depicting our utilities in this area.

**Joshua Hawkins, PE**  
Director of Engineering



---

**From:** Kristina Robertson <KRobertson@metroconnects.org>  
**Sent:** April 25, 2019 2:05 PM  
**To:** Joshua Hawkins <JHawkins@metroconnects.org>  
**Subject:** RE: I-85 Rocky Creek Bridge Replacement

Josh,  
Here is the map we discussed. Please take a look and let me know if you need any changes.

Kris

**Kristina Robertson, GISP**  
GIS Analyst/Developer



---

**From:** Joshua Hawkins <[JHawkins@metroconnects.org](mailto:JHawkins@metroconnects.org)>  
**Sent:** April 25, 2019 8:57 AM  
**To:** Kristina Robertson <[KRobertson@metroconnects.org](mailto:KRobertson@metroconnects.org)>

**Cc:** Michael Blake <[MBlake@metroconnects.org](mailto:MBlake@metroconnects.org)>; Carol Elliott <[CElliott@metroconnects.org](mailto:CElliott@metroconnects.org)>; Bobby Emory <[BEemory@metroconnects.org](mailto:BEemory@metroconnects.org)>

**Subject:** FW: I-85 Rocky Creek Bridge Replacement

Kris,

SCDOT has an upcoming design/build project and has requested utility information within their project area. Can you please send me a shape file from GIS? It looks like we could potentially be impacted from MH519-01 to MH 660-06.

**Joshua Hawkins, PE**  
Director of Engineering



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**From:** Whittle, Bradley <[Bradley.Whittle@mbakerintl.com](mailto:Bradley.Whittle@mbakerintl.com)>

**Sent:** April 25, 2019 8:50 AM

**To:** Joshua Hawkins <[JHawkins@metroconnects.org](mailto:JHawkins@metroconnects.org)>

**Subject:** RE: I-85 Rocky Creek Bridge Replacement

Josh,

We are currently in the process of completing the Preliminary Utility Report for the SCDOT design build project adding a bridge over Rocky Creek, just south of Exit 54 (Pelham Road) on I-85, Greenville SC. During our preliminary utility meeting, it was discussed that Metro may have utilities in the area of the project. Please see the attached graphic and provide information (as-builts or GIS mapping) as available.

Thanks for your help.

**Brad Whittle** | Utility Coordinator

700 Huger Street Columbia, SC 29201 | [O] 803-231-3850 | [M] 803-216-4176

[bradley.whittle@mbakerintl.com](mailto:bradley.whittle@mbakerintl.com) | [www.mbakertnl.com](http://www.mbakertnl.com) | [f](#) [t](#) [@](#) [in](#) [v](#)





-  MetroConnects Manhole
-  MetroConnects Gravity Main
-  MetroConnects Service Lateral
-  ReWa Manhole
-  ReWa Gravity Main

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APPENDIX H  
AT&T DISTRIBUTION

## Whittle, Bradley

---

**From:** NAT, MIKE <mn5627@att.com>  
**Sent:** Thursday, February 28, 2019 10:59 AM  
**To:** Whittle, Bradley  
**Subject:** EXTERNAL: I-85 Bridge over Rocky Creek

Bradley,

After reviewing the preliminary plans for the above project, AT&T has no conflict. If these plans change please advise me so I review them.

**Michael Nat**

MGR OSP PLNG & ENG DESIGN  
Construction & Engineering-SE

**AT&T**

100 Belton Dr., 2nd Floor  
Spartanburg, SC 29301  
P: 864.573.4016 | [mn5627@att.com](mailto:mn5627@att.com)  
C: 864.494.4822

MOBILIZING **YOUR** WORLD

APPENDIX I  
AT&T TRANSMISSION

**From:** Ron Dukes <rmdukes@att.net>  
**Sent:** Wednesday, February 13, 2019 1:14 PM  
**To:** Whittle, Bradley  
**Cc:** Trina Ivey; Danny Hemphill; Levi Kendrick  
**Subject:** EXTERNAL: ATI01470 - NO CONFLICT AT&T/T - I-85 Bridge over Rocky Creek - Preliminary Utility Meeting

Brad,

AT&T/T (Transmission) Long Distance has no facilities that will be impacted by this project. As always, thank you for giving us the opportunity to review these plans.

Thanks,

*Ron*



-----Original Appointment-----

**From:** IVEY, TRINA <[ki2863@att.com](mailto:ki2863@att.com)> **On Behalf Of** Whittle, Bradley  
**Sent:** Wednesday, February 13, 2019 8:41 AM  
**To:** Whittle, Bradley; 'Danny Hemphill'  
**Subject:** FW: I-85 Bridge over Rocky Creek - Preliminary Utility Meeting  
**When:** Monday, February 25, 2019 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).  
**Where:** SCDOT District 3 Office - 252 South Pleasantburg Drive, Greenville, SC - Conference Room 4A

Danny,

Please check to see if we need representation, and have someone attend if necessary.

Thank you,

**Trina Ivey**

Senior Tech – PROJ/PROG MGMT

AT&T Technology Operations, C&E, Legacy T Long Haul

**AT&T Corp.**

360 Gees Mill Business Parkway, Conyers, GA 30013  
m 678-641-5522 | [ki2863@att.com](mailto:ki2863@att.com)

MOBILIZING **YOUR** WORLD

-----Original Appointment-----

**From:** Whittle, Bradley [<mailto:Bradley.Whittle@mbakerintl.com>]

**Sent:** Thursday, February 07, 2019 5:03 PM

**To:** Whittle, Bradley; Hall, Stephen; [HIGHWAY.RELOCATION@DUKE-ENERGY.COM](mailto:HIGHWAY.RELOCATION@DUKE-ENERGY.COM);  
[mfleahman@greenvillewater.com](mailto:mfleahman@greenvillewater.com); Eddie Bright; [terrych@re-wa.org](mailto:terrych@re-wa.org); [carlos.roper@piedmontng.com](mailto:carlos.roper@piedmontng.com); NAT,  
MIKE; IVEY, TRINA; [paula.bragg@charter.com](mailto:paula.bragg@charter.com); [reynoldsbs@scdot.org](mailto:reynoldsbs@scdot.org); [hebertdl@scdot.org](mailto:hebertdl@scdot.org);  
[bishopka@scdot.org](mailto:bishopka@scdot.org); [ryggsre@scdot.org](mailto:ryggsre@scdot.org); Keitt, Cedric C.; Tison, Renee

**Subject:** I-85 Bridge over Rocky Creek - Preliminary Utility Meeting

**When:** Monday, February 25, 2019 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).

**Where:** SCDOT District 3 Office - 252 South Pleasantburg Drive, Greenville, SC - Conference Room 4A

Good Afternoon,

Michael Baker International has been selected to provide Preliminary Utility Coordination services for the upcoming I-85 Bridge over Rocky Creek Project in Greenville County. Please join us for our preliminary utility meeting.

**This meeting will take place on Monday, February 25 at 2:00 PM at SCDOT's District 3 office, Conference Room 4A at 252 South Pleasantburg Drive, Greenville, SC 29607.**

This meeting is being scheduled to introduce the project to utility owners, review design and receive

feedback of the following as available:

- Potential and confirmed utility conflicts within the project corridor
- Potential facility upgrades and/or planned projects within the project corridor
- Necessity of utility relocation work being In-Contract with the road project
- Preliminary Prior Rights assessment
- Conceptual relocation durations
- Estimation of relocation expenses
- Early Relocations / Environmental Permitting

See the attached preliminary plan sheets for this project and plan to bring any as-builts that may be helpful. Please do not hesitate to contact me if you have any questions prior to our meeting.

**Brad Whittle** | Utility Coordinator | Michael Baker International  
700 Huger Street | Columbia, SC 29201 | [O] 803-231-3850 | [M] 803-216-4176  
[bradley.whittle@mbakerintl.com](mailto:bradley.whittle@mbakerintl.com) | [www.mbakertnl.com](http://www.mbakertnl.com)

APPENDIX J  
CHARTER COMMUNICATIONS

Tools More...

Greenville Maps

Identify

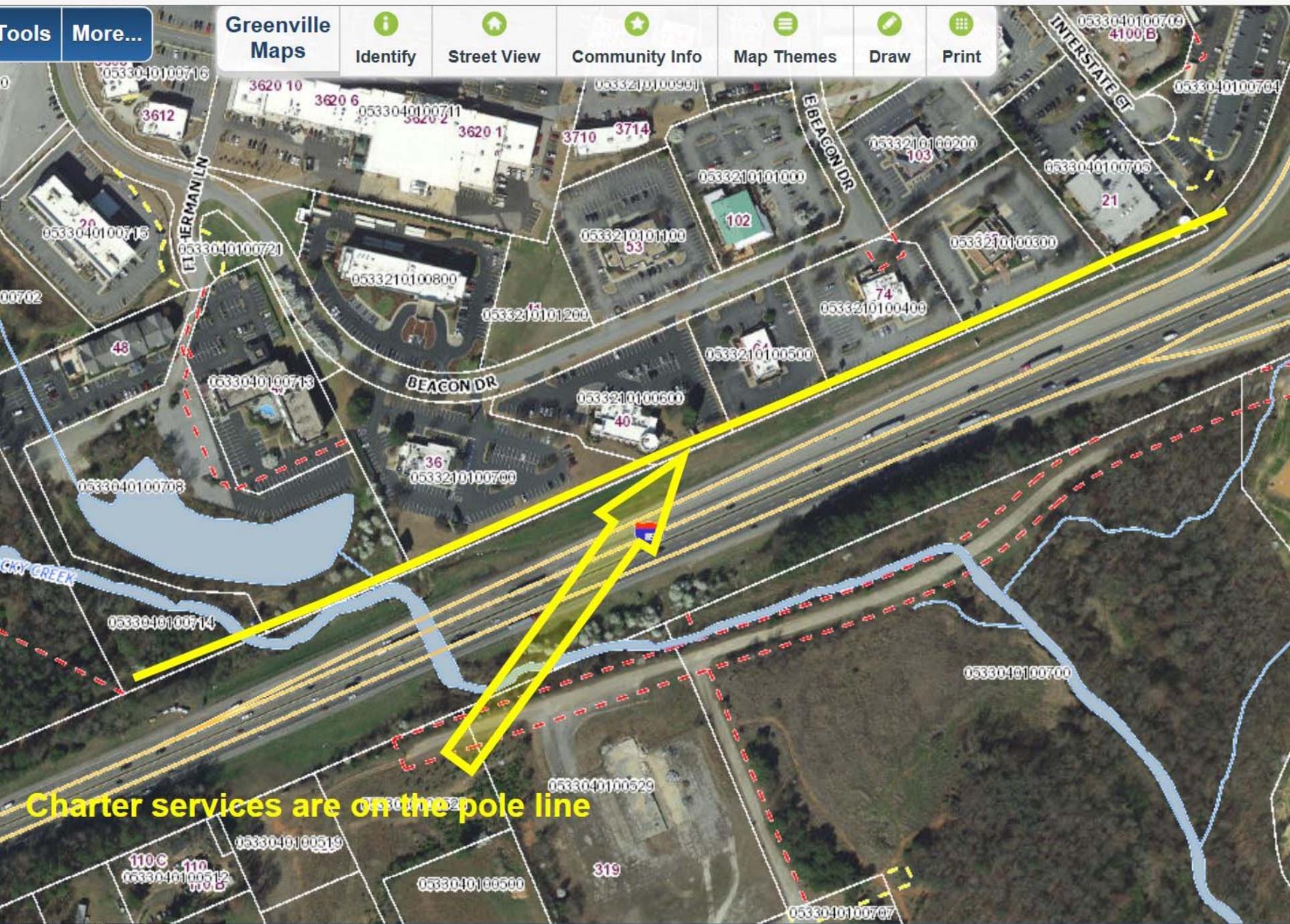
Street View

Community Info

Map Themes

Draw

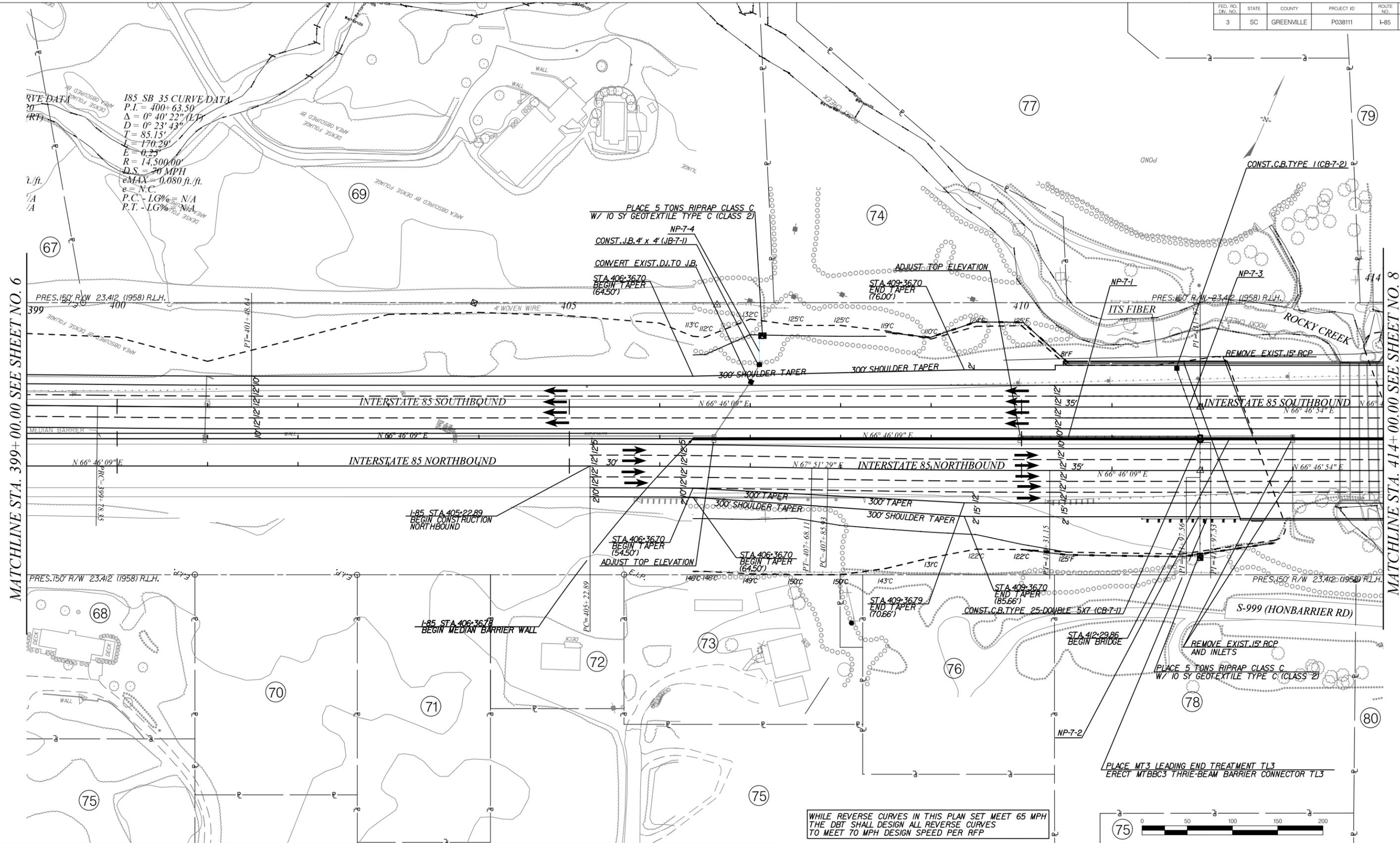
Print



Charter services are on the pole line

APPENDIX K  
SCDOT (COMMUNICATIONS)

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	SC	GREENVILLE	P038111	I-85	7



MATCHLINE STA. 399+00.00 SEE SHEET NO. 6

MATCHLINE STA. 414+00.00 SEE SHEET NO. 8



PRELIMINARY NOT FOR CONSTRUCTION

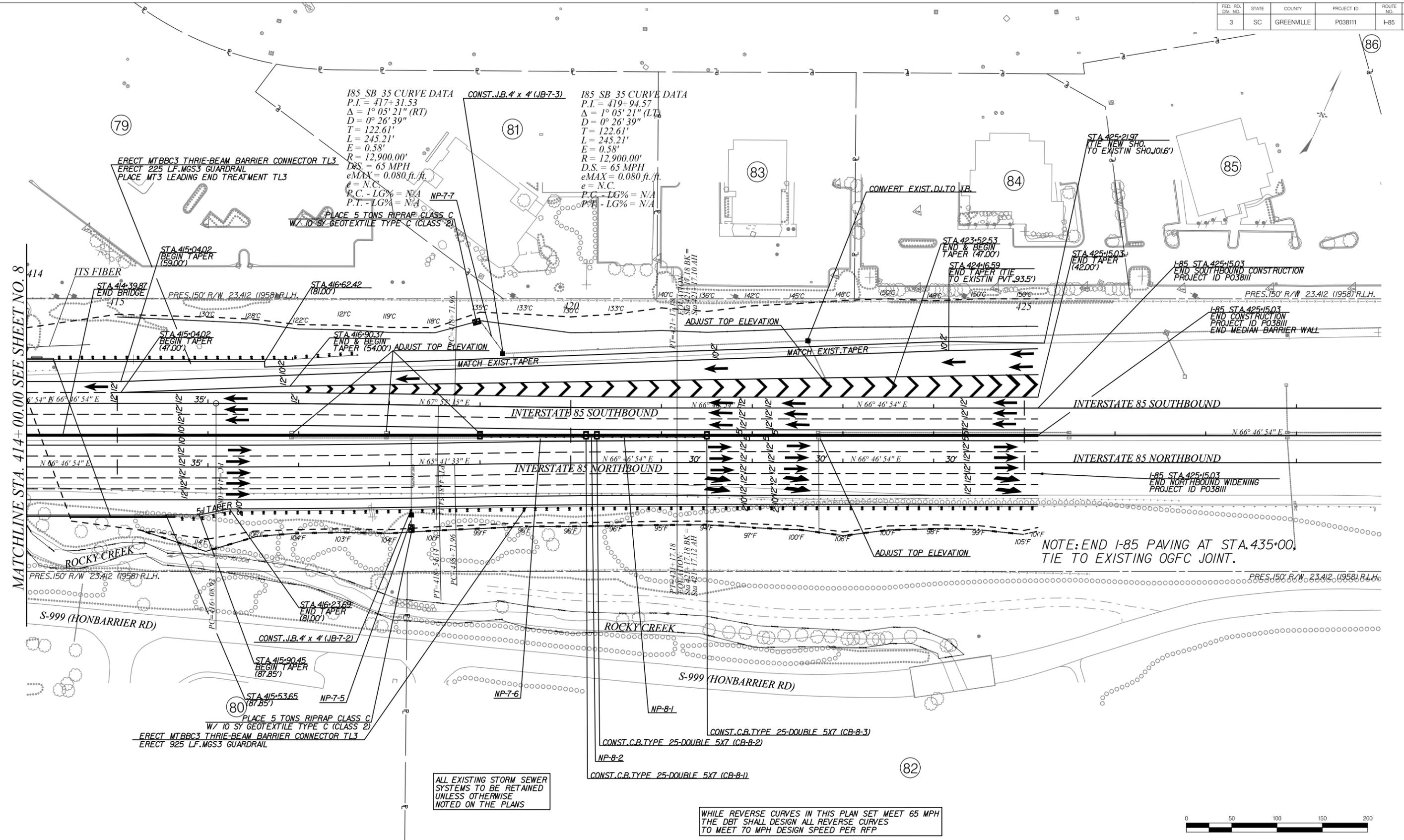
WHILE REVERSE CURVES IN THIS PLAN SET MEET 65 MPH THE DBT SHALL DESIGN ALL REVERSE CURVES TO MEET 70 MPH DESIGN SPEED PER RFP

4				
3				
2				
1				
REV. NO.	BY	DATE	DESCRIPTION OF REVISION	
DESIGNED BY:		DATE		
DRAWN BY:		DATE		
CHECKED BY:		DATE		

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION  
I-85 BRIDGE REPLACEMENT OVER ROCKY CREEK

PLAN SHEET  
I-85 BRIDGE REPLACEMENT OVER ROCKY CREEK

SHEET 7 SCALE: 1" = 50'



MATCHLINE STA. 414+00.00 SEE SHEET NO. 8



PRELIMINARY NOT FOR CONSTRUCTION

4			
3			
2			
1			
REV. NO.	BY	DATE	DESCRIPTION OF REVISION
DESIGNED BY:		DATE	
DRAWN BY:		DATE	
CHECKED BY:		DATE	

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION  
I-85 BRIDGE REPLACEMENT OVER ROCKY CREEK

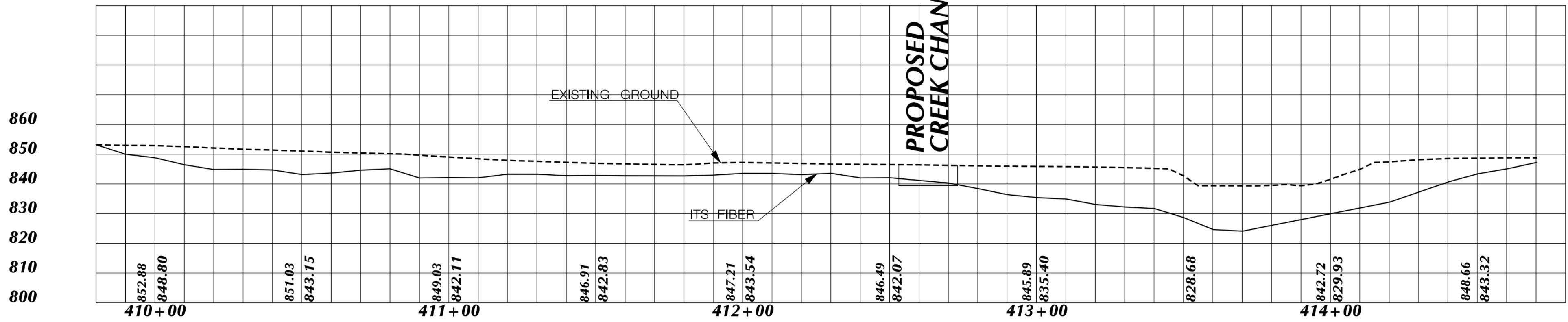
PLAN SHEET  
I-85 BRIDGE REPLACEMENT OVER ROCKY CREEK

SHEET 8 SCALE: 1" = 50'

ALL EXISTING STORM SEWER SYSTEMS TO BE RETAINED UNLESS OTHERWISE NOTED ON THE PLANS

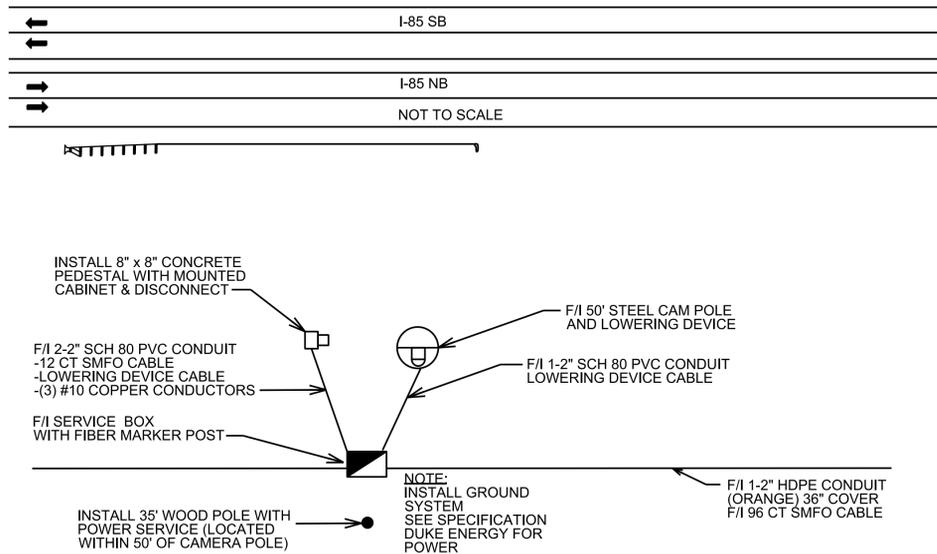
WHILE REVERSE CURVES IN THIS PLAN SET MEET 65 MPH THE DBT SHALL DESIGN ALL REVERSE CURVES TO MEET TO MPH DESIGN SPEED PER RFP





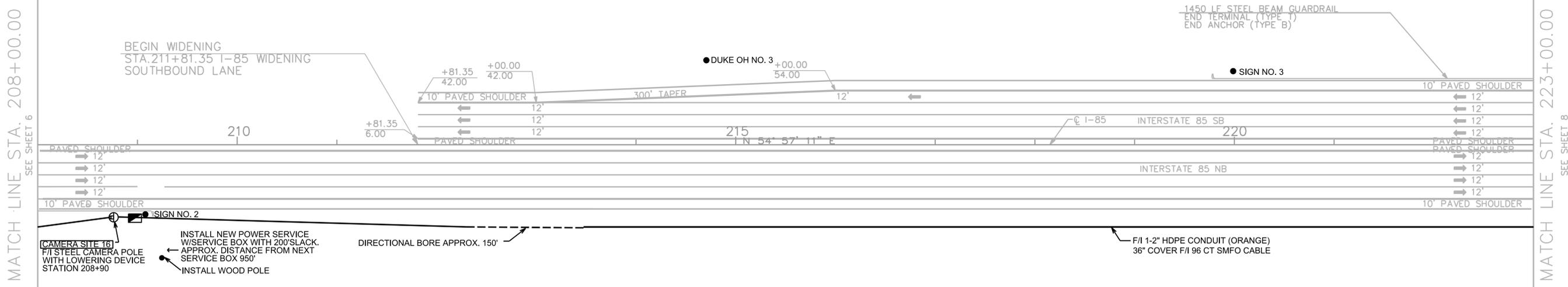
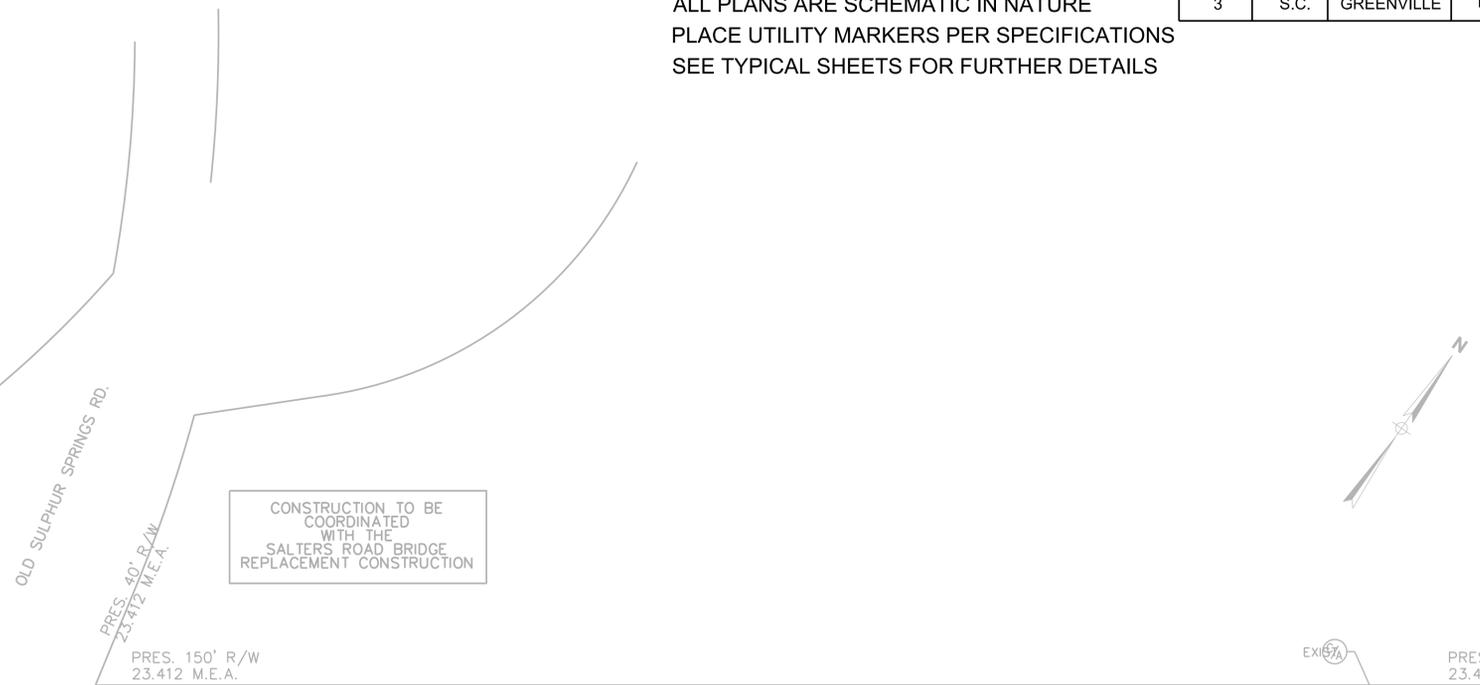
**CAMERA SITE #16**

**DETAIL FOR OVERHEAD ELECTRICAL SERVICE**



**GENERAL NOTES:**  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	I-85/ I-385	IT 11-07



**Haselden**  
 AND ASSOCIATES  
 Lexington, SC (803) 629-9523

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2	EHC	4/20/18	POLE RELOCATION TO EXISTING GUARDRAIL
1	EHC	9/20/17	CHANGE TO STEEL POLE

TOPO. \_\_\_\_\_ DATE \_\_\_\_\_  
 DWG. TAK DATE 7-1-2017 GROUP - -  
 R/W \_\_\_\_\_ DATE \_\_\_\_\_

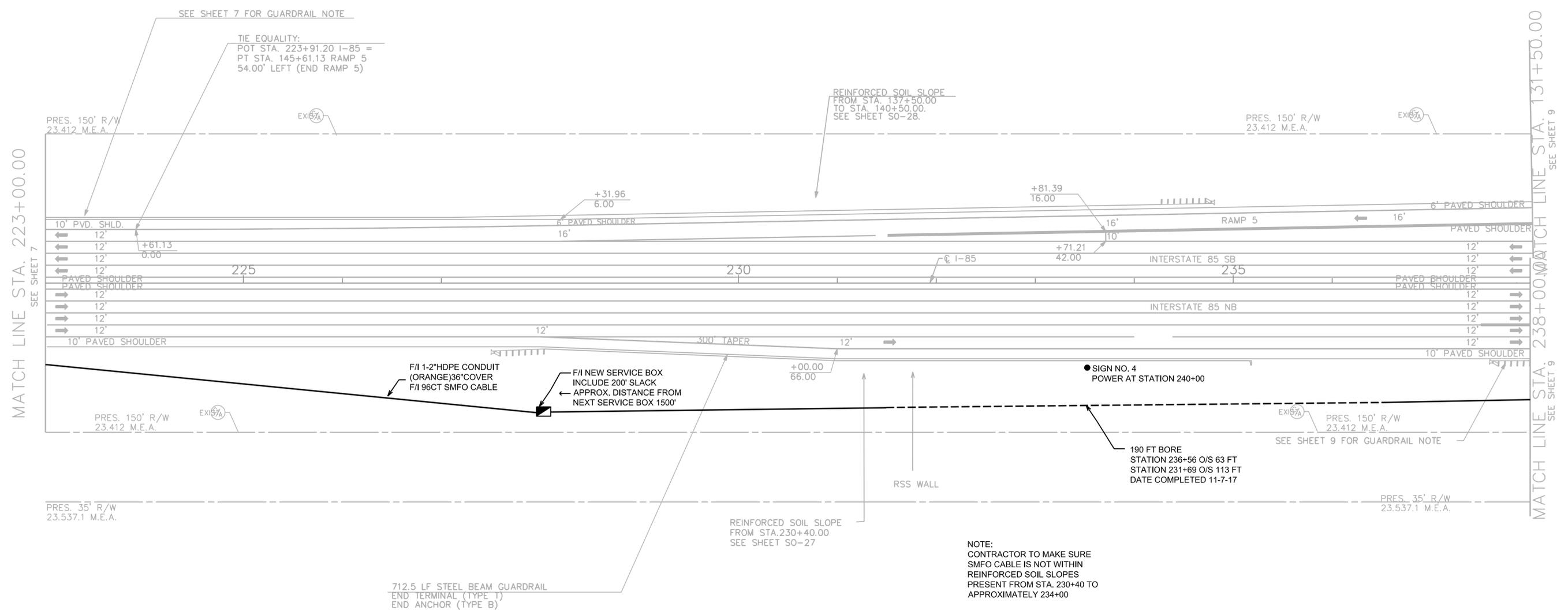
SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

I-85/385  
 I.T.S. INSTALLATION

SCALE 1"= 50' RTE. DWG. NO. PN1

GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	I-85/I-385	11-08



MATCH LINE STA. 223+00.00  
SEE SHEET 7

MATCH LINE STA. 238+00.00  
MATCH LINE STA. 131+50.00  
SEE SHEET 9

SEE SHEET 7 FOR GUARDRAIL NOTE  
 TIE EQUALITY:  
 POT STA. 223+91.20 I-85 =  
 PT STA. 145+61.13 RAMP 5  
 54.00' LEFT (END RAMP 5)

REINFORCED SOIL SLOPE  
 FROM STA. 137+50.00  
 TO STA. 140+50.00.  
 SEE SHEET 50-28.

PRES. 150' R/W  
 23.412 M.E.A.

PRES. 150' R/W  
 23.412 M.E.A.

PRES. 150' R/W  
 23.412 M.E.A.

PRES. 35' R/W  
 23.537.1 M.E.A.

PRES. 35' R/W  
 23.537.1 M.E.A.

712.5 LF STEEL BEAM GUARDRAIL  
 END TERMINAL (TYPE T)  
 END ANCHOR (TYPE B)

NOTE:  
 CONTRACTOR TO MAKE SURE  
 SMFO CABLE IS NOT WITHIN  
 REINFORCED SOIL SLOPES  
 PRESENT FROM STA. 230+40 TO  
 APPROXIMATELY 234+00



**Haselden**  
 AND ASSOCIATES  
 Lexington, SC (803) 629-9523

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	EHC	12-12-17	190' BORE ADDED TO PLAN

TOPO. \_\_\_\_\_ DATE \_\_\_\_\_  
 DWG. TAK DATE 7-1-2017 GROUP - -  
 R/W \_\_\_\_\_ DATE \_\_\_\_\_

SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

I-85/385  
 I.T.S. INSTALLATION

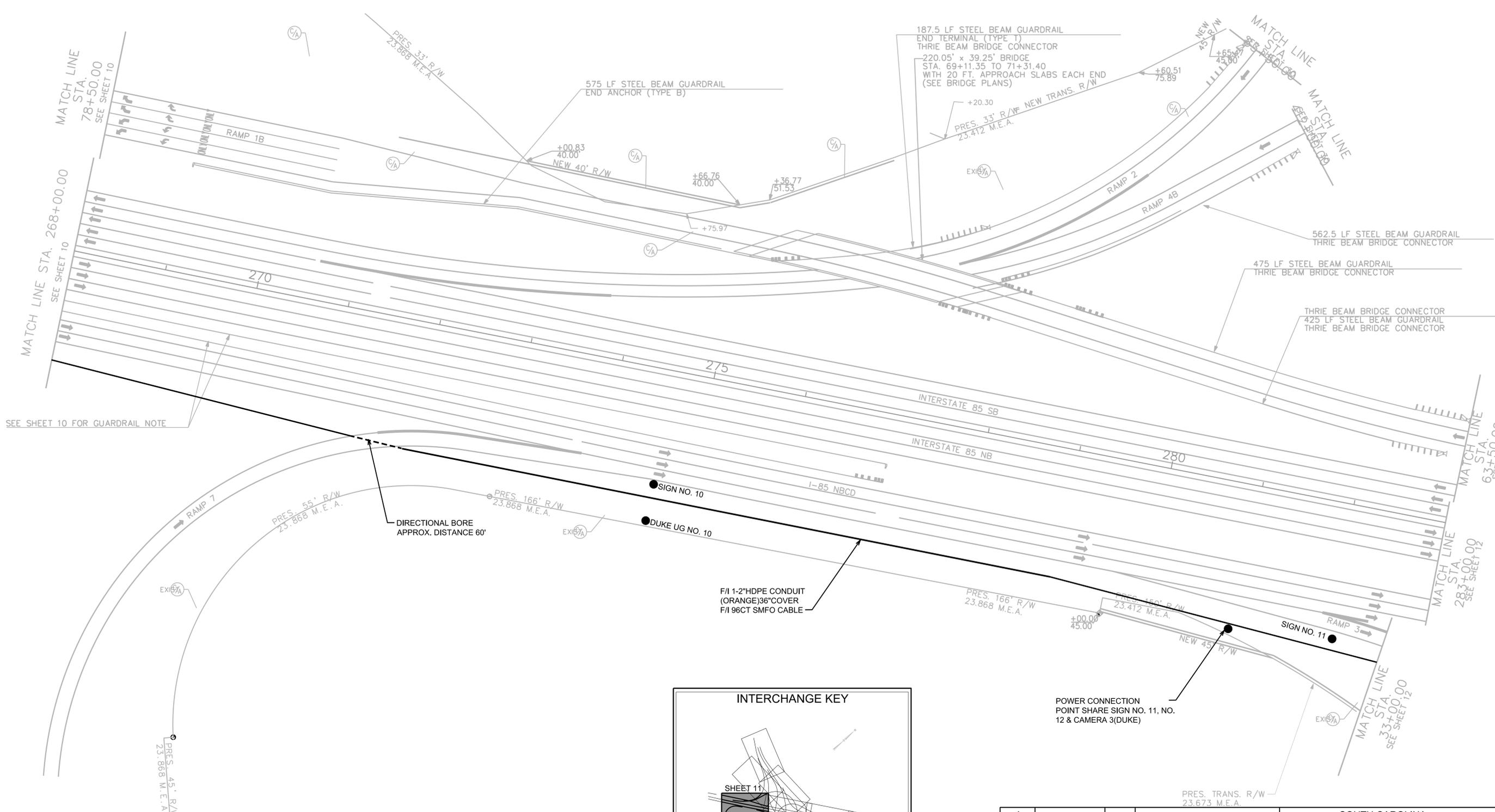
SCALE 1"= 50' RTE. DWG. NO. PN1



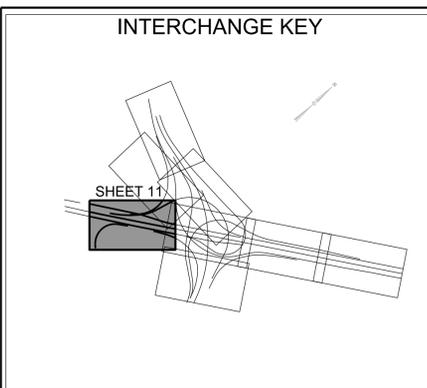


GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	755 I-385	IT 11-11



SEE SHEET 10 FOR GUARDRAIL NOTE



REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			*
2			
1			

TOPO.	DATE	GROUP
DWC: TAK	DATE 7-1-2017	GROUP * - -
R/W	DATE	

SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

I-85/385  
 I.T.S. INSTALLATION

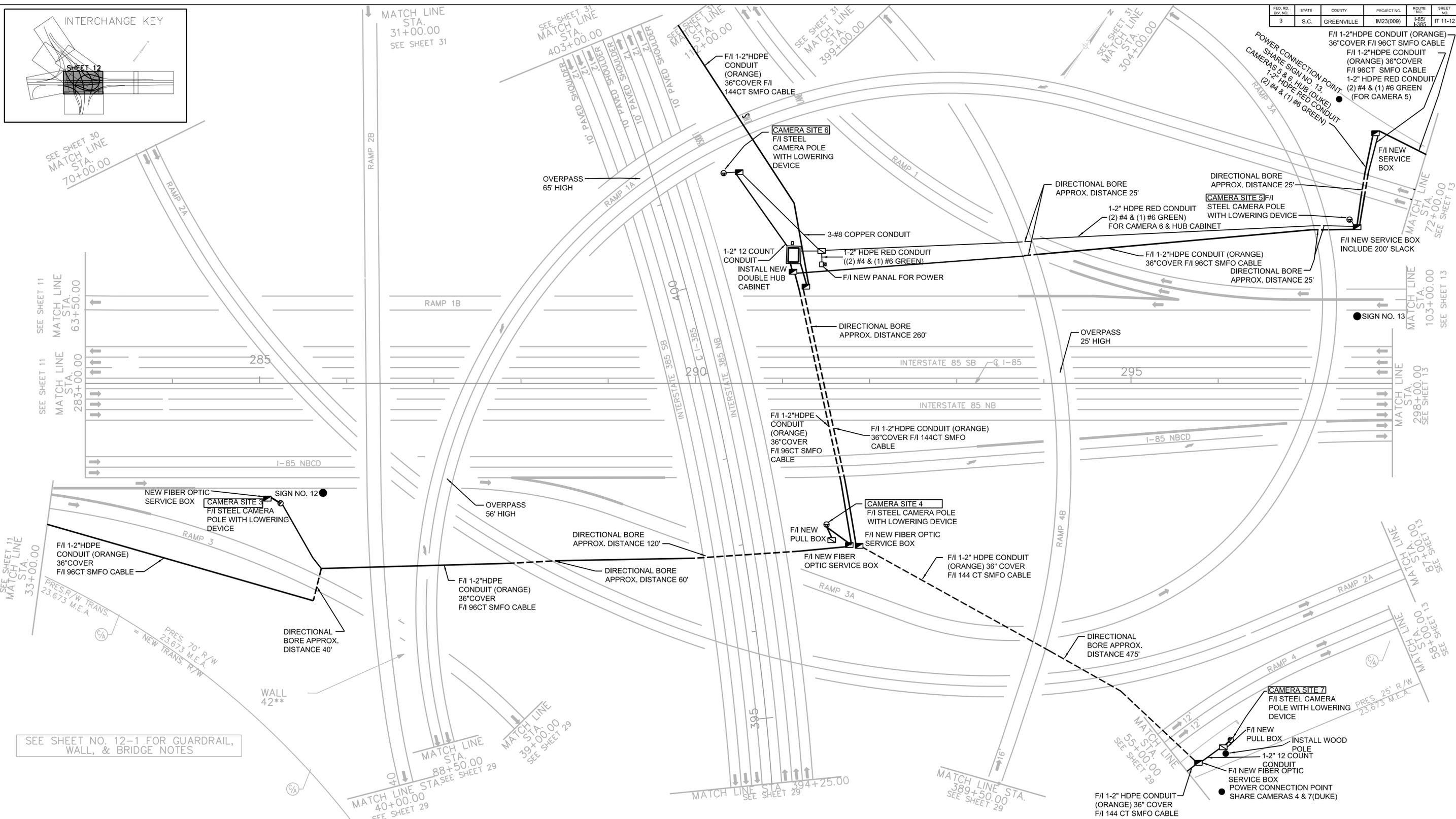
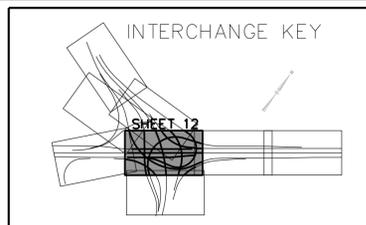
SCALE 1"=50" RTE. DWG. NO. PN1

**Haselden**  
 AND ASSOCIATES  
 Lexington, SC (803) 629-9523



SEE PROJECT ID NO. 0038111-R03  
 FOR PROPERTY CLOSURES AND  
 RIGHT OF WAY ACQUISITION

FED. RD. DIST. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	I-85/385	IT 11-12



GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS  
 CAMERA DETAILS ON PAGE 12A



**Haselden AND ASSOCIATES**  
 Lexington, SC (803) 629-9523

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3	EHC	3-29-18	RELOCATED CAMERA 7
2	EHC	1-16-18	RELOCATED FIBER FROM I 385 NB
1	EHC	9-20-17	CHANGE TO STEEL POLE

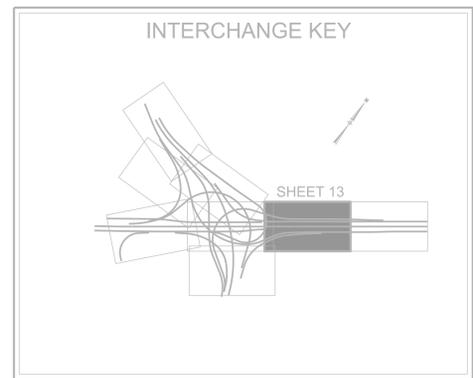
SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

I-85/385  
 I.T.S. INSTALLATION

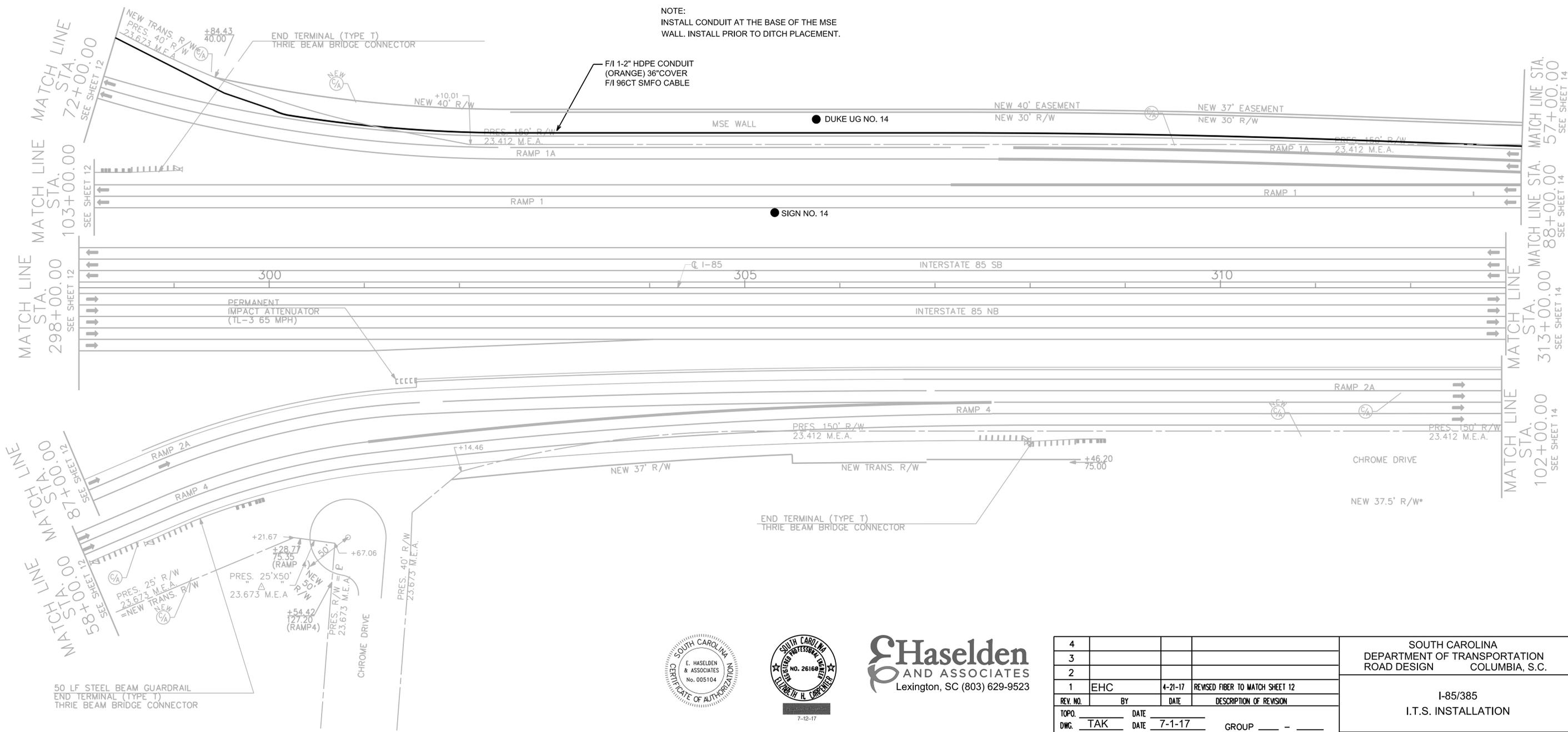
SCALE 1"=50' RTE. DWG. NO. PN1

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	I-85/385	IT 11-13

GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS



NOTE:  
 INSTALL CONDUIT AT THE BASE OF THE MSE WALL. INSTALL PRIOR TO DITCH PLACEMENT.



**Haselden AND ASSOCIATES**  
 Lexington, SC (803) 629-9523

4			
3			
2			
1	EHC	4-21-17	REVISED FIBER TO MATCH SHEET 12
REV. NO.	BY	DATE	DESCRIPTION OF REVISION
TOPO.	TAK	DATE 7-1-17	GROUP - - -
DWG.		DATE	
R/W		DATE	

SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

I-85/385  
 I.T.S. INSTALLATION

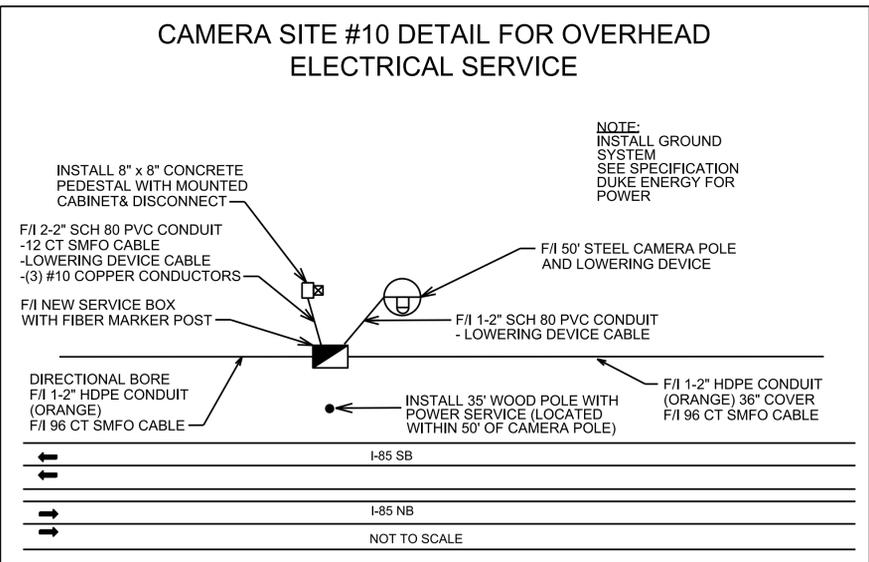
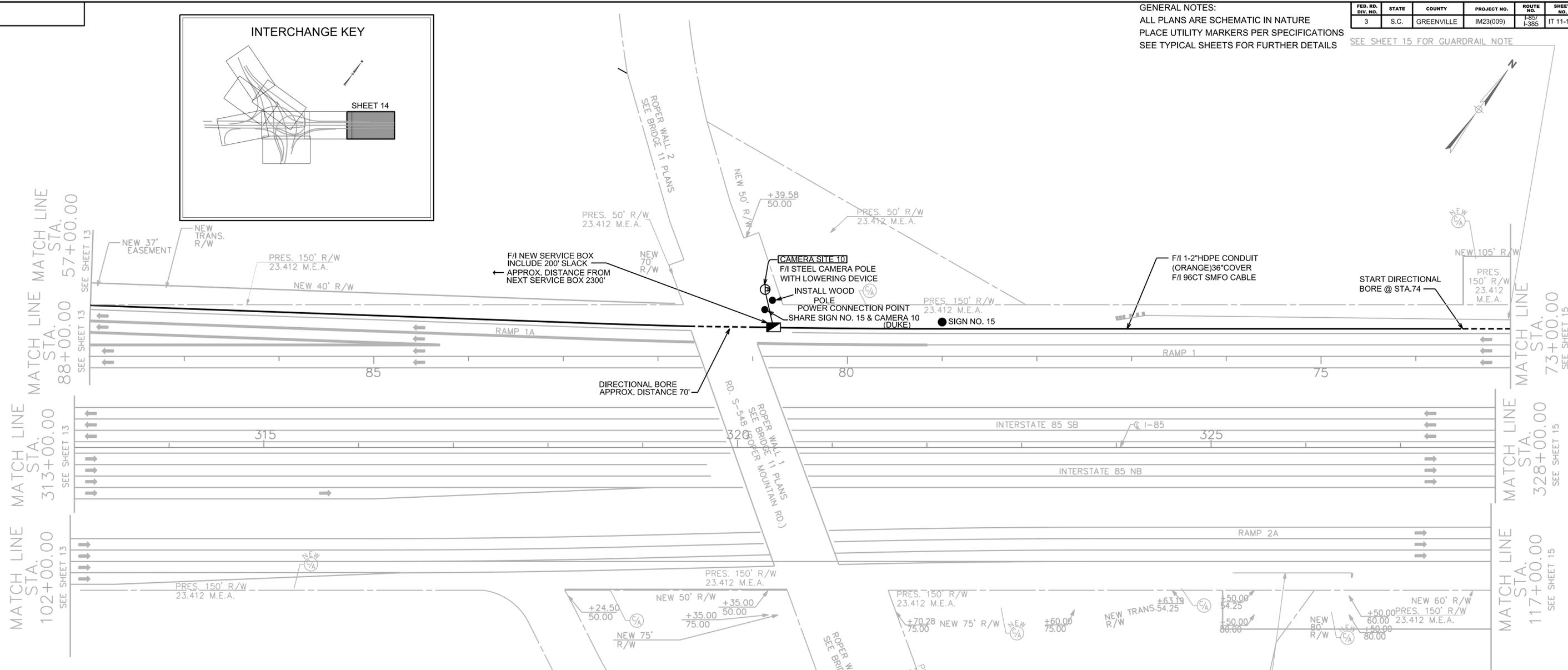
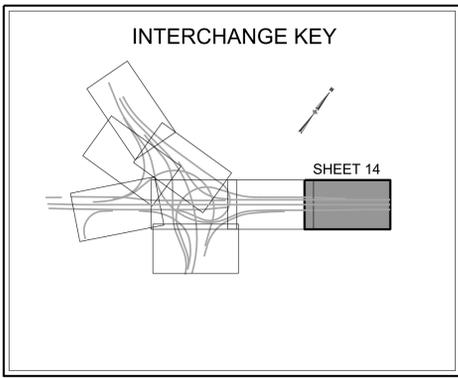
SCALE 1"=50" RTE. NO. DWG. PN1

50 LF STEEL BEAM GUARDRAIL  
 END TERMINAL (TYPE T)  
 THRIE BEAM BRIDGE CONNECTOR

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	I-85/I-385	IT 11-14

GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS

SEE SHEET 15 FOR GUARDRAIL NOTE



SEE PROJ.ID 0038111-R01 FOR CHROME DRIVE AND ROPER MOUNTAIN ROAD

**Haselden**  
 AND ASSOCIATES  
 Lexington, SC (803) 629-9523

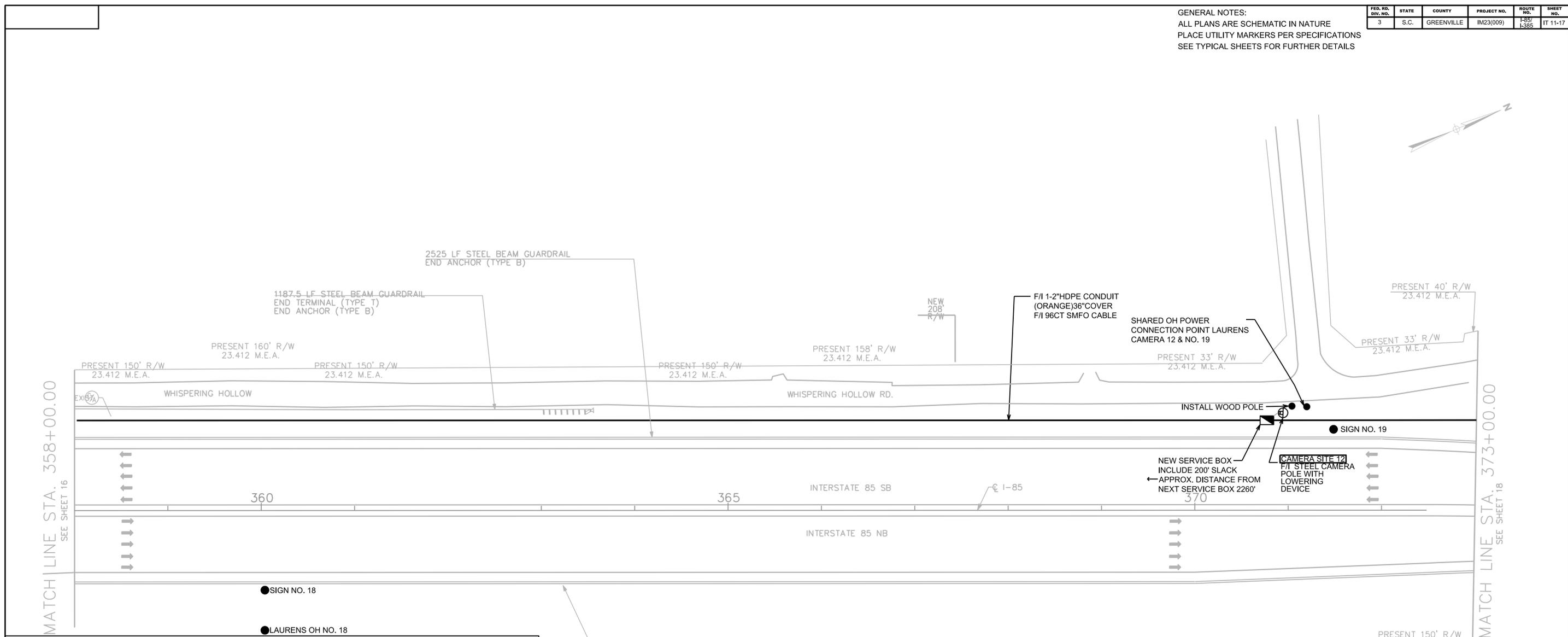
4			
3			
2			
1	EHC	9-20-17	STEEL CAMERA POLE CHANGE
REV. NO.	BY	DATE	DESCRIPTION OF REVISION
TOPO.		DATE	
DWG.	TAK	DATE 7-1-2017	GROUP - - -
R/W		DATE	

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION ROAD DESIGN COLUMBIA, S.C.	
I-85/385 I.T.S. INSTALLATION	
SCALE 1"=50'	RTE. DWG. NO. PN1

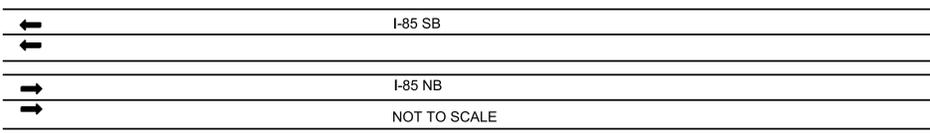
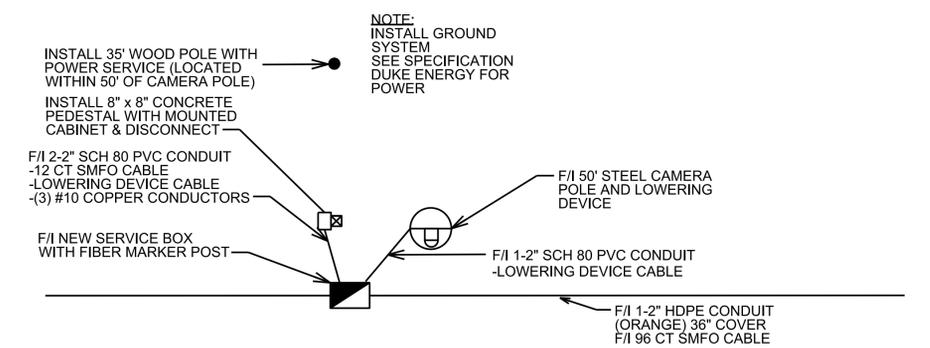


GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS

FED. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	I-85 I-385	IT 11-17



**CAMERA SITE #12  
 DETAIL FOR OVERHEAD ELECTRICAL SERVICE**



**Haselden**  
 AND ASSOCIATES  
 Lexington, SC (803) 629-9523

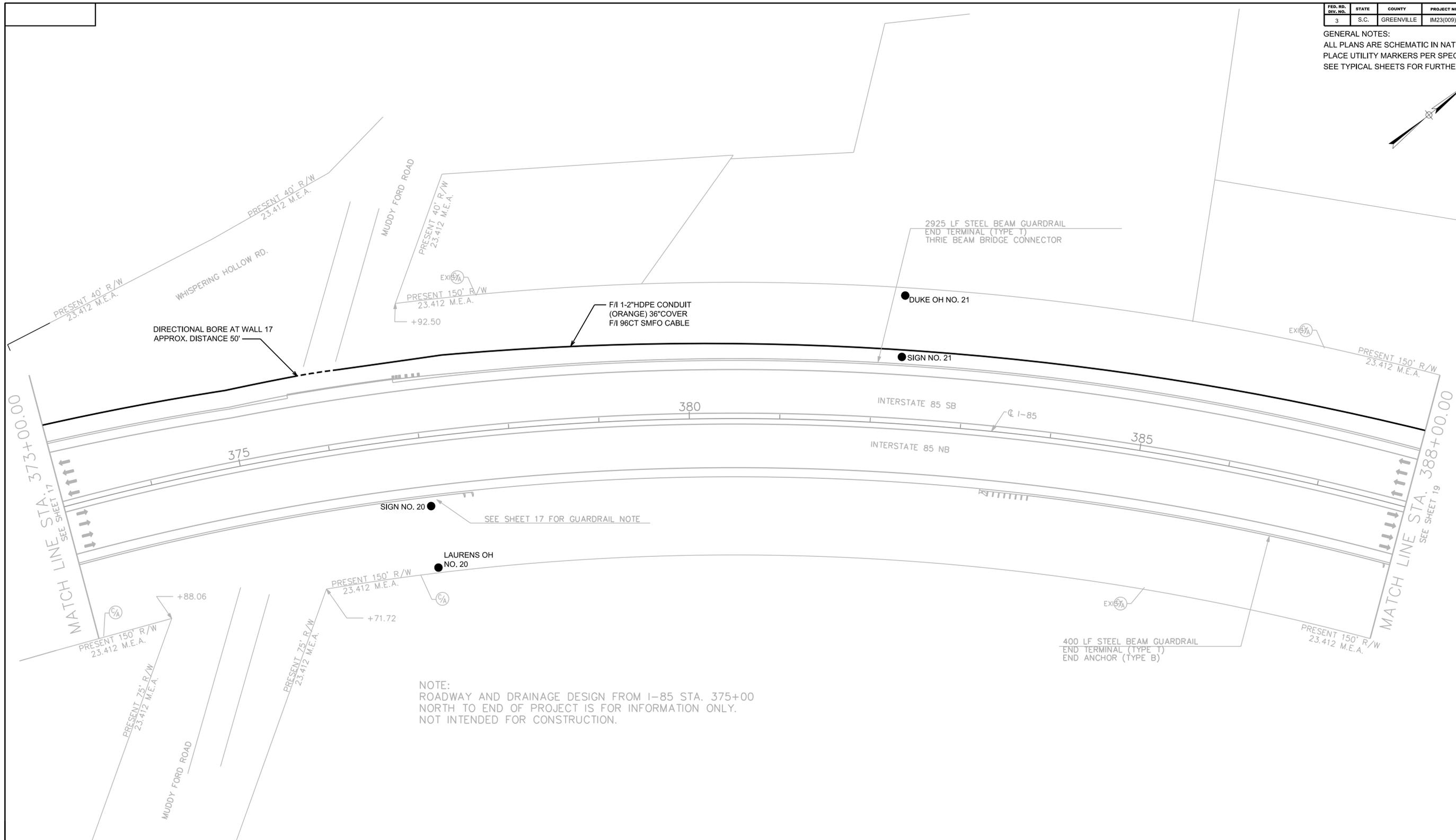
REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	EHC	9-20-17	CHANGED TO STEEL POLE

TOPO. \_\_\_\_\_ DATE \_\_\_\_\_  
 DWG. TAK DATE 7-1-2017 GROUP \_\_\_\_\_  
 R/W \_\_\_\_\_ DATE \_\_\_\_\_

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION ROAD DESIGN COLUMBIA, S.C.	
I-85/385 I.T.S. INSTALLATION	
SCALE 1"= 50"	RTE. DWG. NO. PN1

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	P351 I-385	IT 11-18

GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS



NOTE:  
 ROADWAY AND DRAINAGE DESIGN FROM I-85 STA. 375+00  
 NORTH TO END OF PROJECT IS FOR INFORMATION ONLY.  
 NOT INTENDED FOR CONSTRUCTION.



**Haselden**  
 AND ASSOCIATES  
 Lexington, SC (803) 629-9523

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1			

TOPO.	DATE		
DWG.	TAK	12-8-16	GROUP - -
R/W	DATE		

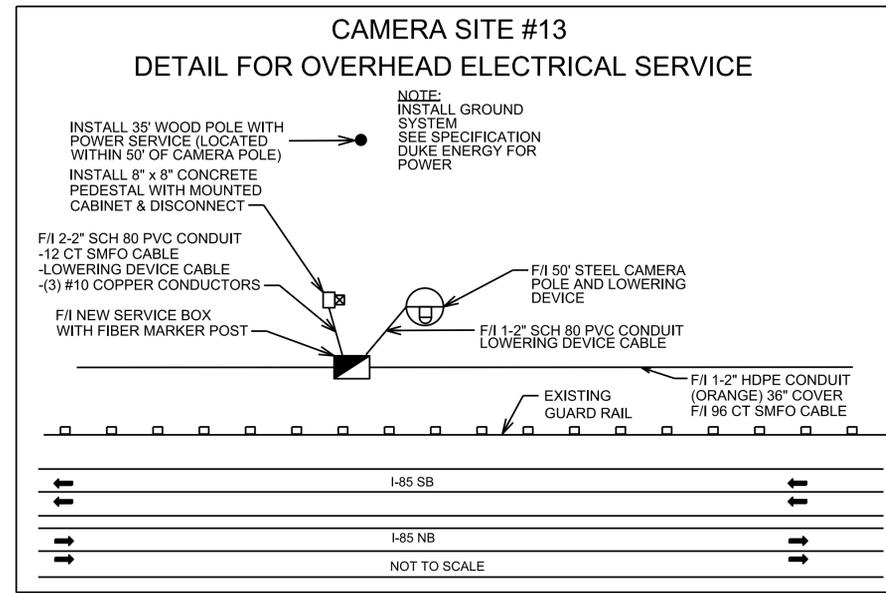
SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

I-85/385  
 I.T.S. INSTALLATION

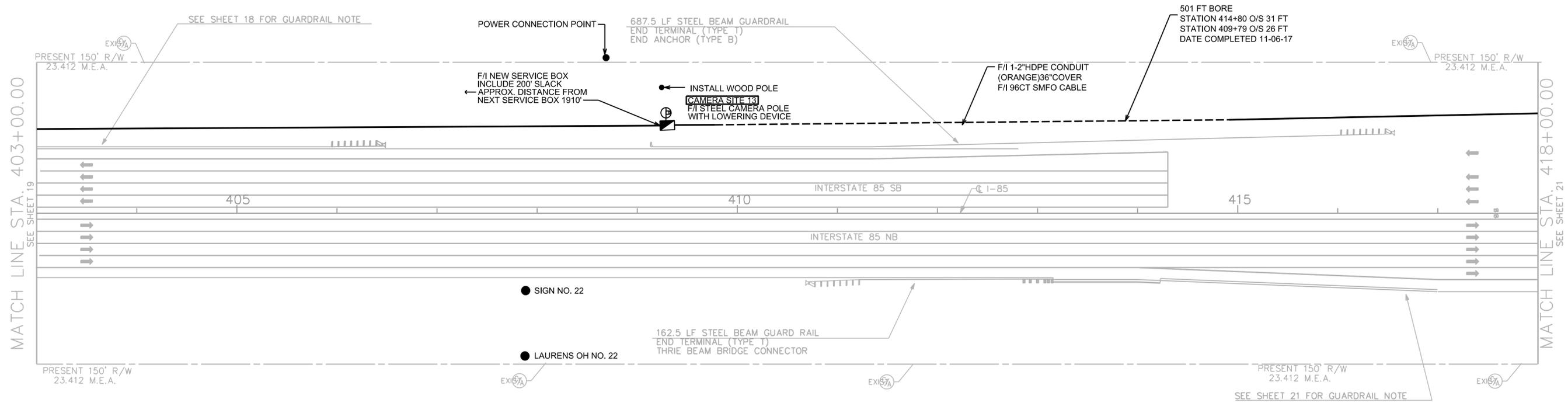
SCALE 1"=50' RTE. DWG. NO. PN1

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	I-85 I-385	IT 11-20

GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS



NOTE: FROM MUDDY FORD RD. TO PELHAM RD. WAITING ON F100D INFORMATION FOR ROCKY CREEK.



**Haselden**  
 AND ASSOCIATES  
 Lexington, SC (803) 629-9523

4			
3			
2	EHC	12-12-17	501 FT BORE ADDED TO PLAN
1	EHC	9-20-17	CHANGED TO STEEL POLE
REV. NO.	BY	DATE	DESCRIPTION OF REVISION
TOPO.	TAK	DATE 7-1-2017	GROUP - - -
DWG.		DATE	
R/W		DATE	

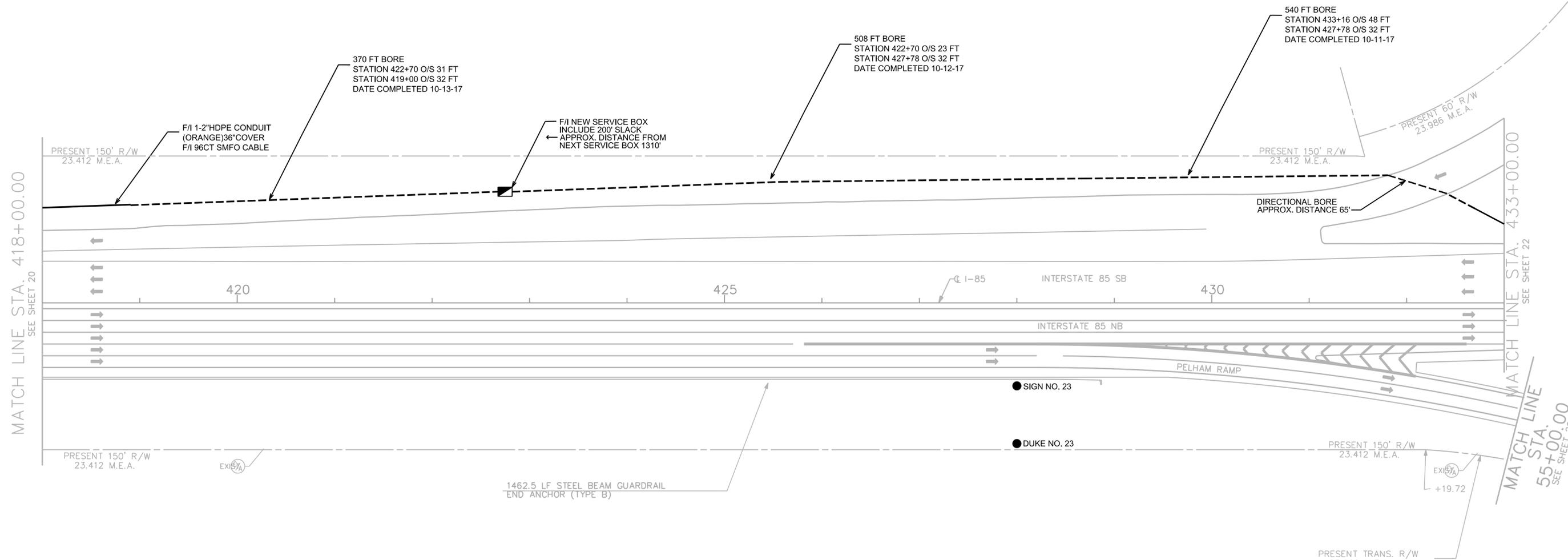
SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

I-85/385  
 I.T.S. INSTALLATION

SCALE 1"= 50' RTE. DWG. NO. PN1

GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	I-85/ I-385	IT 11-21



NOTE: FROM MUDDY FORD RD. TO PELHAM RD. WAITING ON F100D INFORMATION FOR ROCKY CREEK.



**Haselden AND ASSOCIATES**  
 Lexington, SC (803) 629-9523

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2	EHC	12-12-17	1418' OF BORE ADDED TO PLAN
1	TAK	4-20-17	REVISED FIBER TO MATCH 11-22

TOPO: \_\_\_\_\_ DATE \_\_\_\_\_  
 DWG: TAK DATE 5-19-2017 GROUP - - -  
 R/W: \_\_\_\_\_ DATE \_\_\_\_\_

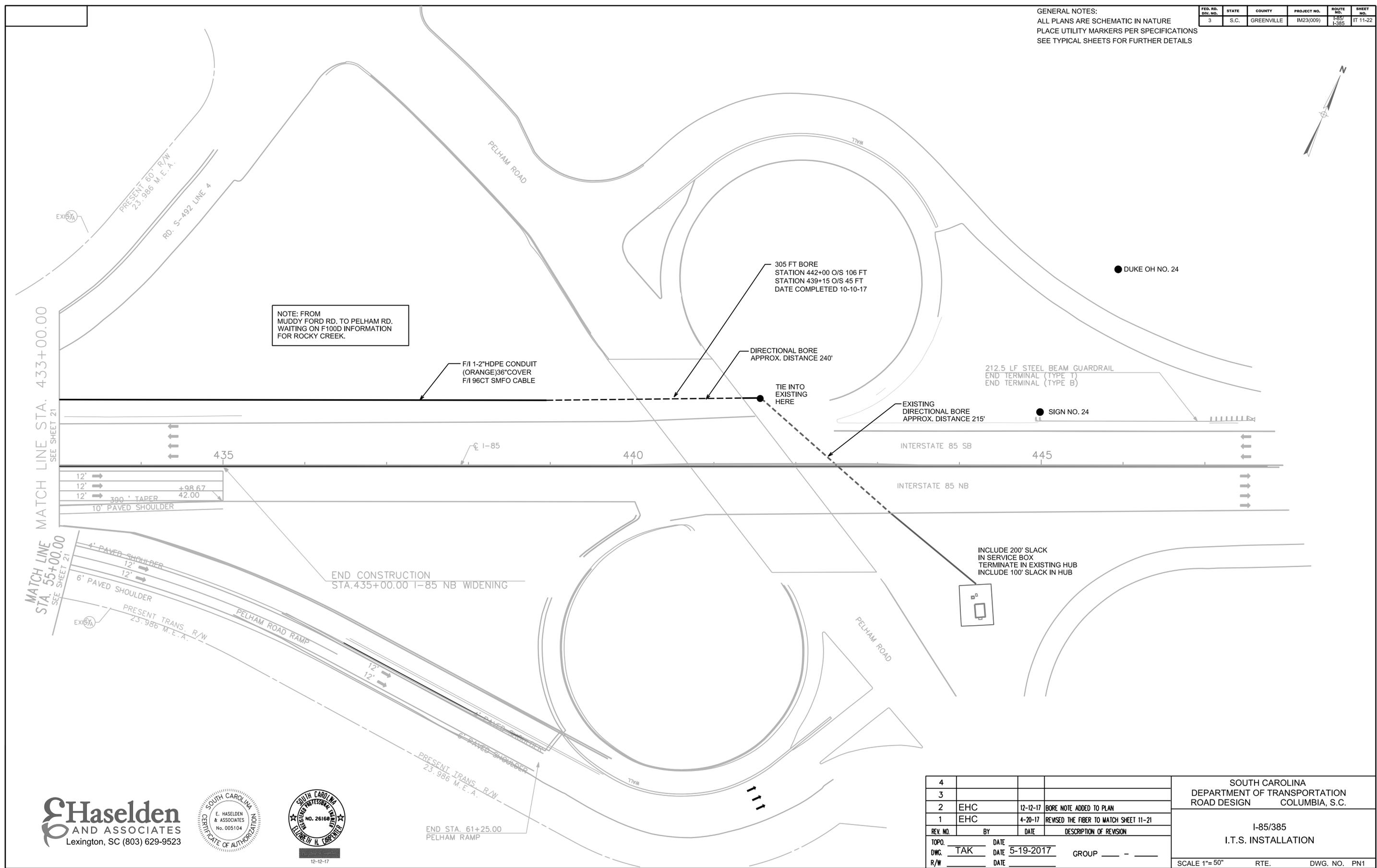
SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

I-85/385  
 I.T.S. INSTALLATION

SCALE 1"=50" RTE. DWG. NO. PN1

GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS

FED. RD. DIST. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	I-85/I-385	IT 11-22



NOTE: FROM MUDDY FORD RD. TO PELHAM RD. WAITING ON F100D INFORMATION FOR ROCKY CREEK.

F/I 1-2\"/>

305 FT BORE  
 STATION 442+00 O/S 106 FT  
 STATION 439+15 O/S 45 FT  
 DATE COMPLETED 10-10-17

DIRECTIONAL BORE  
 APPROX. DISTANCE 240'

TIE INTO EXISTING HERE

EXISTING DIRECTIONAL BORE  
 APPROX. DISTANCE 215'

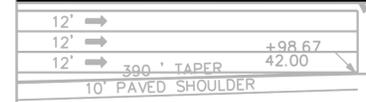
212.5 LF STEEL BEAM GUARDRAIL  
 END TERMINAL (TYPE T)  
 END TERMINAL (TYPE B)

SIGN NO. 24

INCLUDE 200' SLACK IN SERVICE BOX  
 TERMINATE IN EXISTING HUB  
 INCLUDE 100' SLACK IN HUB

MATCH LINE STA. 433+00.00  
 SEE SHEET 21

MATCH LINE STA. 55+00.00  
 SEE SHEET 21



END CONSTRUCTION STA. 435+00.00 I-85 NB WIDENING

END STA. 61+25.00 PELHAM RAMP

**Haselden AND ASSOCIATES**  
 Lexington, SC (803) 629-9523



12-12-17

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2	EHC	12-12-17	BORE NOTE ADDED TO PLAN
1	EHC	4-20-17	REVISED THE FIBER TO MATCH SHEET 11-21

TOPO.	DATE		
DWG.	TAK	DATE 5-19-2017	GROUP - - -
R/W		DATE	

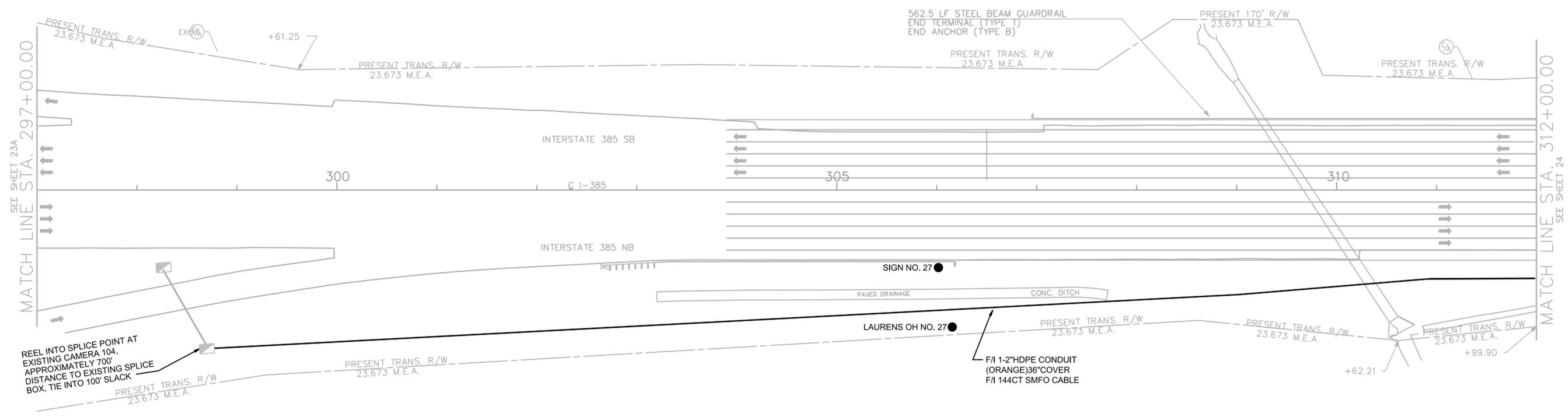
SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

I-85/385  
 I.T.S. INSTALLATION

SCALE 1"=50' RTE. DWG. NO. PN1

GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	1857 I-385	IT 11-23



REEL INTO SPLICE POINT AT EXISTING CAMERA 104, APPROXIMATELY 700' DISTANCE TO EXISTING SPLICE BOX, TIE INTO 100' SLACK



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REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1			

TOPO.	DATE	GROUP
DWG. TAK	DATE 7-1-2017	GROUP - -
R/W	DATE	

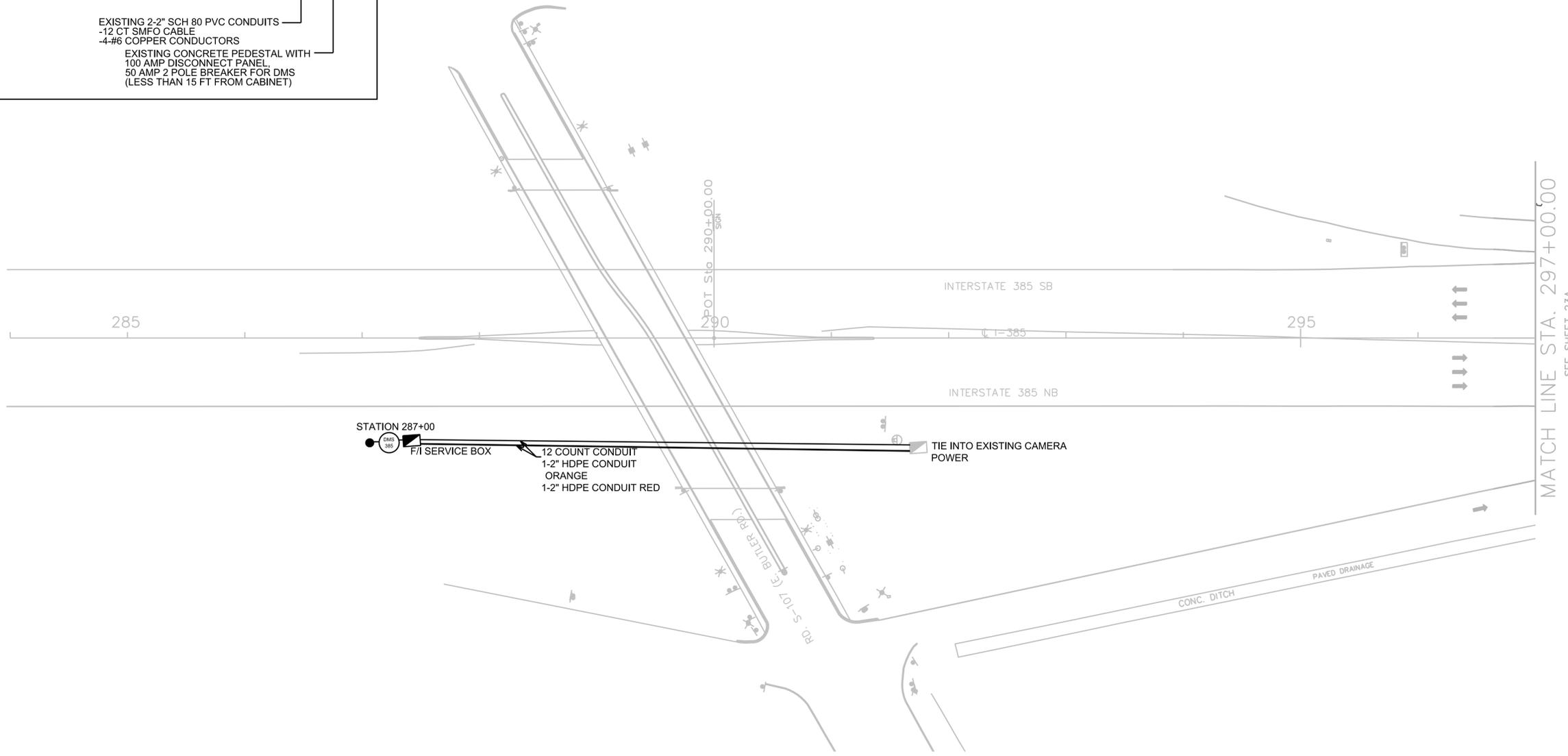
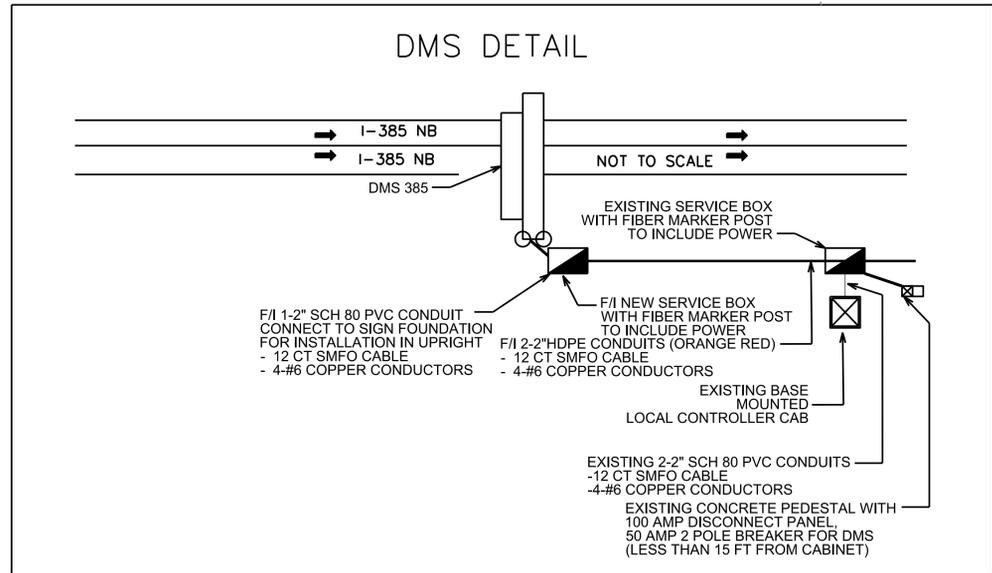
SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

I-85/385  
 I.T.S. INSTALLATION

SCALE 1"=50' RTE. DWG. NO. PN1

GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS  
 & DMS DETAILS

FED. RD. DIST. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	I-385 I-385	11-23A



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 AND ASSOCIATES  
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REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1			

TOPO.	DATE		
DWG.	EHC	DATE 8-28-18	GROUP -- --
R/W		DATE	

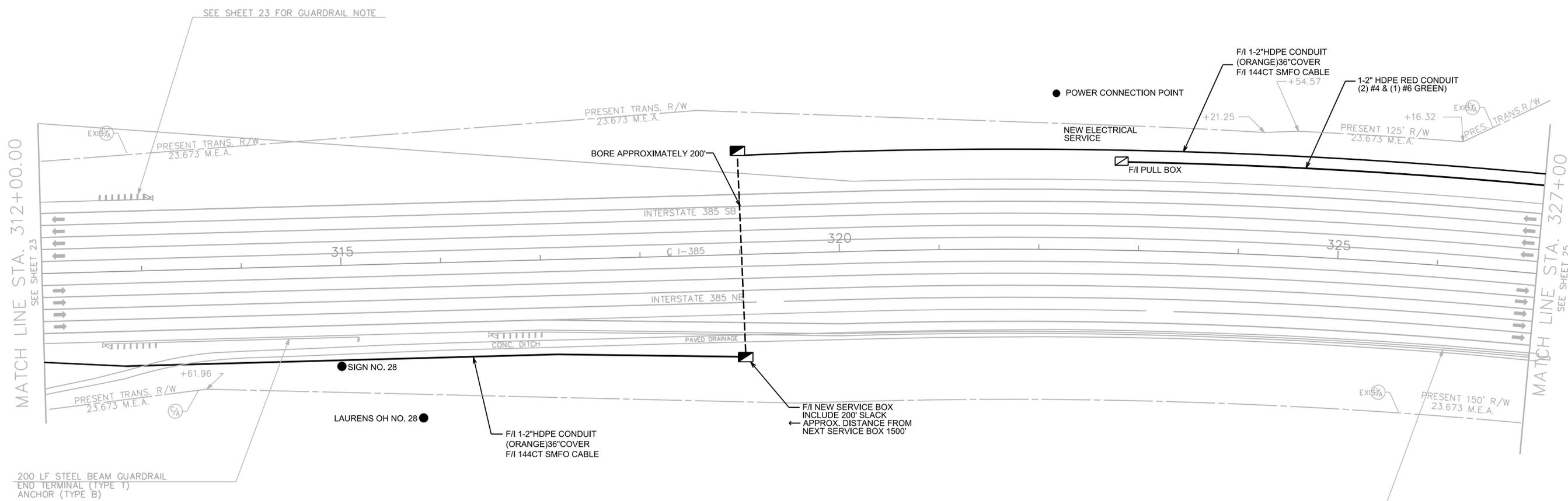
SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

I-85/385  
 I.T.S. INSTALLATION

SCALE 1"=50"      RTE.      DWG. NO. PN1

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	I-385 I-385	IT 11-24

GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS



200 LF STEEL BEAM GUARDRAIL  
 END TERMINAL (TYPE T)  
 ANCHOR (TYPE B)

1000 LF STEEL BEAM GUARDRAIL  
 END TERMINAL (TYPE T)  
 THREE BEAM BRIDGE CONNECTOR



**Haselden**  
 AND ASSOCIATES  
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REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2	EHC	1-16-18	estimated information added, will be updated when new data is available
1	EHC	4-20-17	MOVED OVERHEAD SIGN TO STATION 323+00, 800' FROM EXISTING OVERHEAD SIGN AT STATION 315+00

TOPO.	DATE		GROUP	
DWG.	TAK	DATE 12-8-16	GROUP	- - -
R/W		DATE		

SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

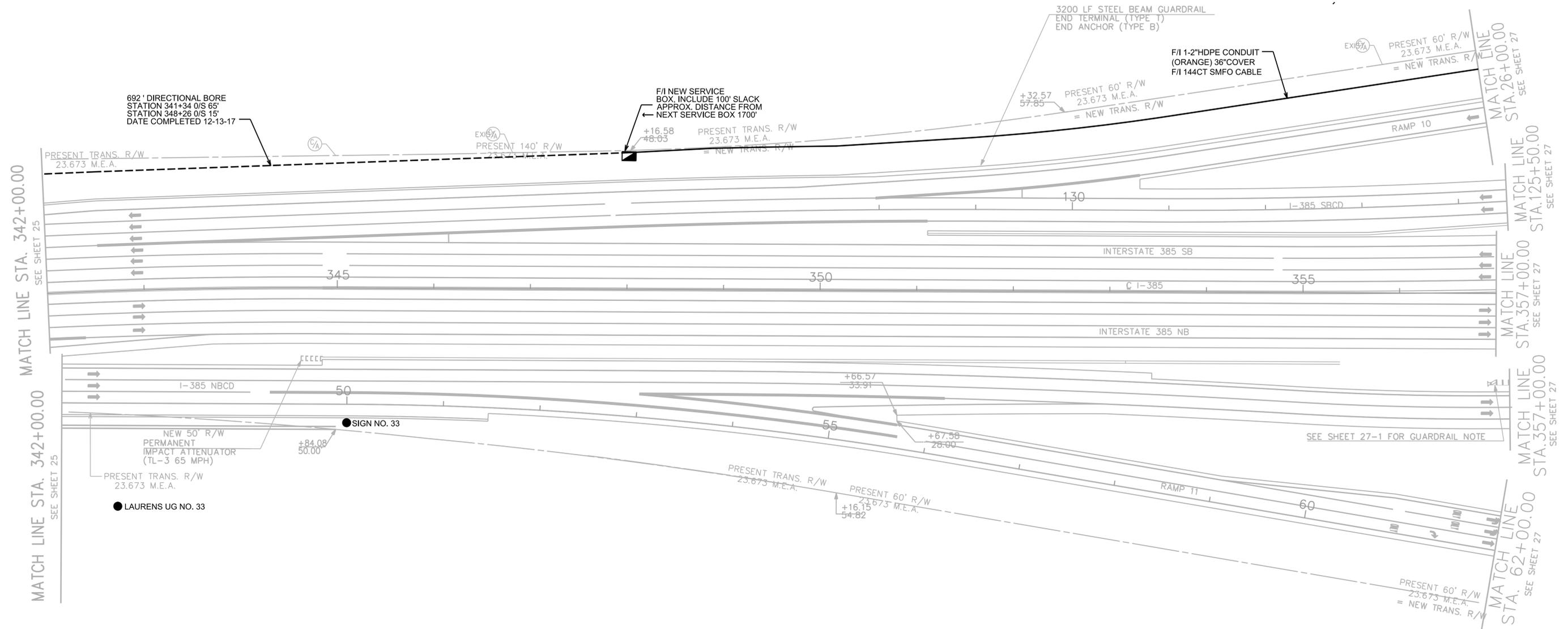
I-85/385  
 I.T.S. INSTALLATION

SCALE 1"=50' RTE. DWG. NO. PN1



GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	I-385	IT 11-26



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 AND ASSOCIATES  
 Lexington, SC (803) 629-9523

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	EHC	1-16-18	RELOCATED FIBER TO I-385 SB SIDE

TOPO. DATE \_\_\_\_\_  
 DWG. TAK DATE 12-8-16 GROUP - - -  
 R/W DATE \_\_\_\_\_

SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

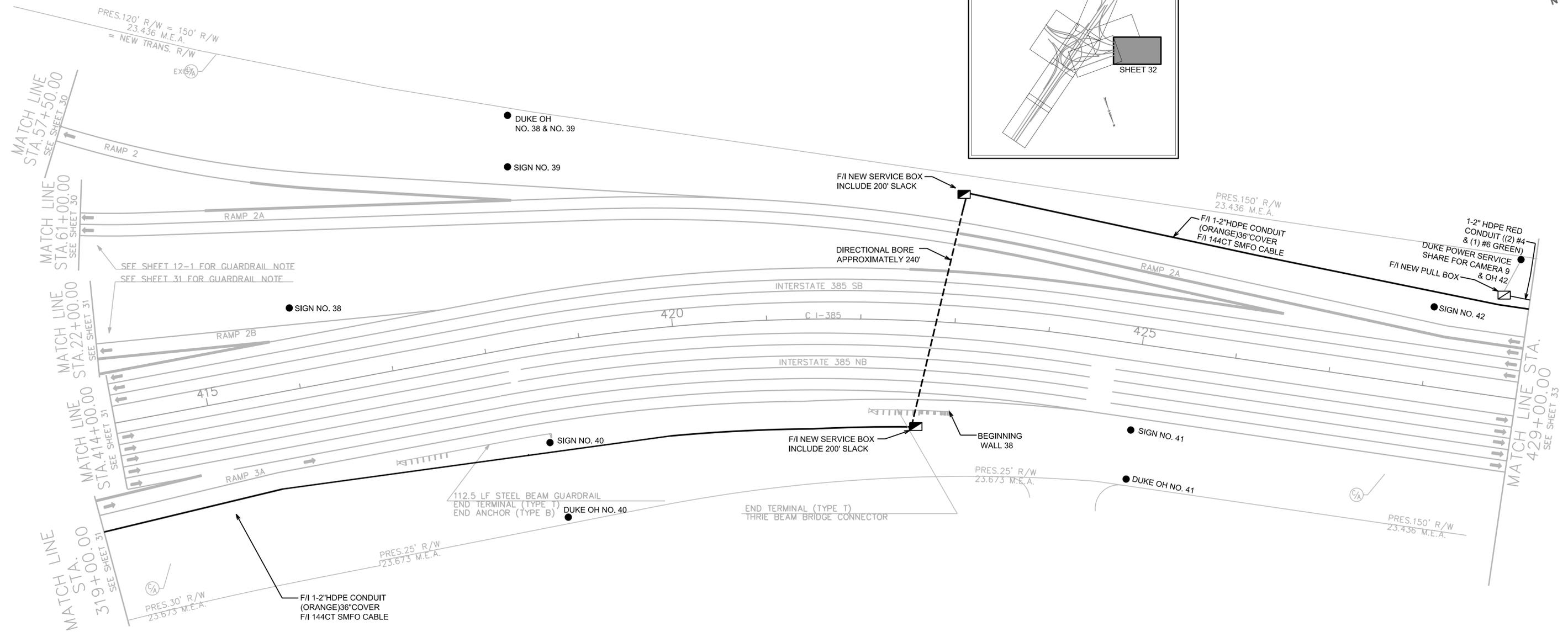
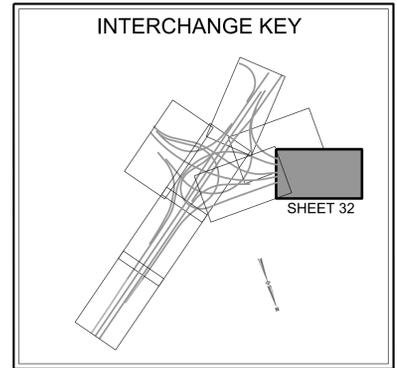
I-85/385  
 I.T.S. INSTALLATION

SCALE 1"=50" RTE. DWG. NO. PN1



GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	I-85/ I-385	IT 11-32



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 Lexington, SC (803) 629-9523

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1			

TOPO.	DATE		
DWG.	TAK	DATE 7-1-16	GROUP - - -
R/W		DATE	

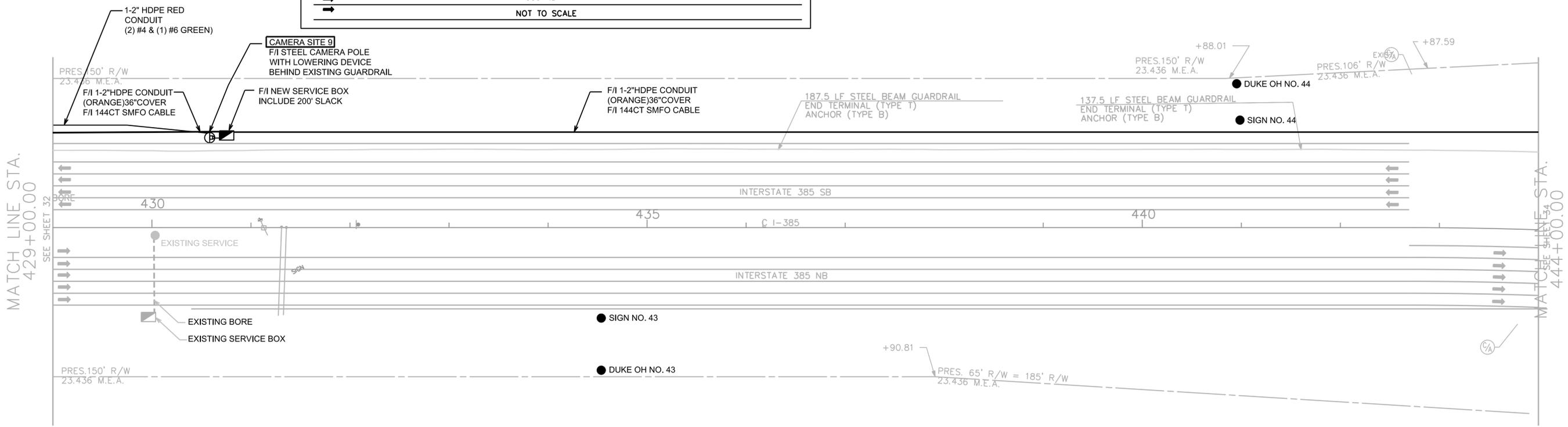
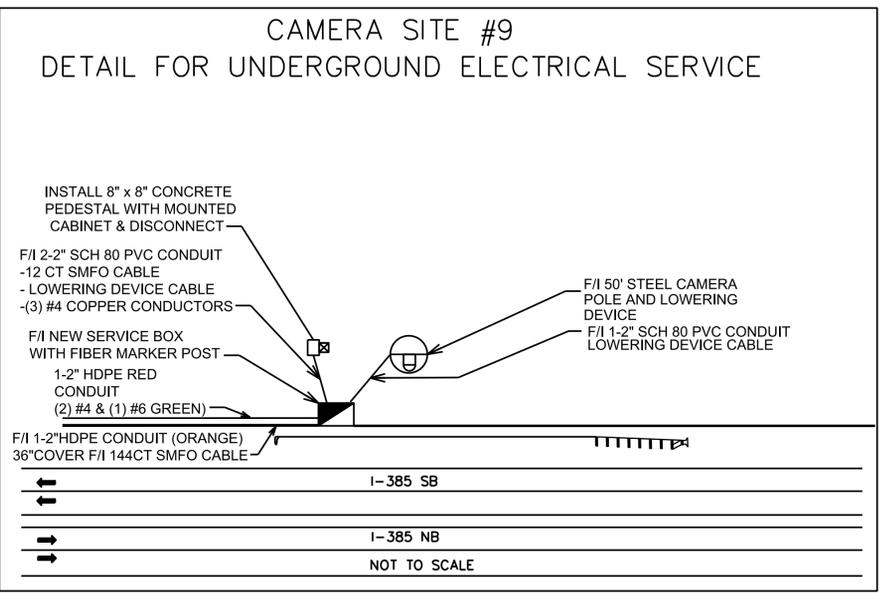
SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

I-85/385  
 I.T.S. INSTALLATION

SCALE 1"= 50' RTE. DWG. NO. PN1

GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS

FED. RD. DIST. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	1-385	IT 11-33



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 AND ASSOCIATES  
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REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3	EHC	4-26-18	RELOCATED CAMERA BEHIND EXISTING GUARDRAIL
2	EHC	3-29-18	RELOCATED FIBER TO 385 SB SIDE
1	EHC	9-20-17	CHANGED TO STEEL

TOPO	DATE	GROUP
DWG. TAK	DATE 7-1-2017	GROUP - -
R/W	DATE	

SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

I-85/385  
 I.T.S. INSTALLATION

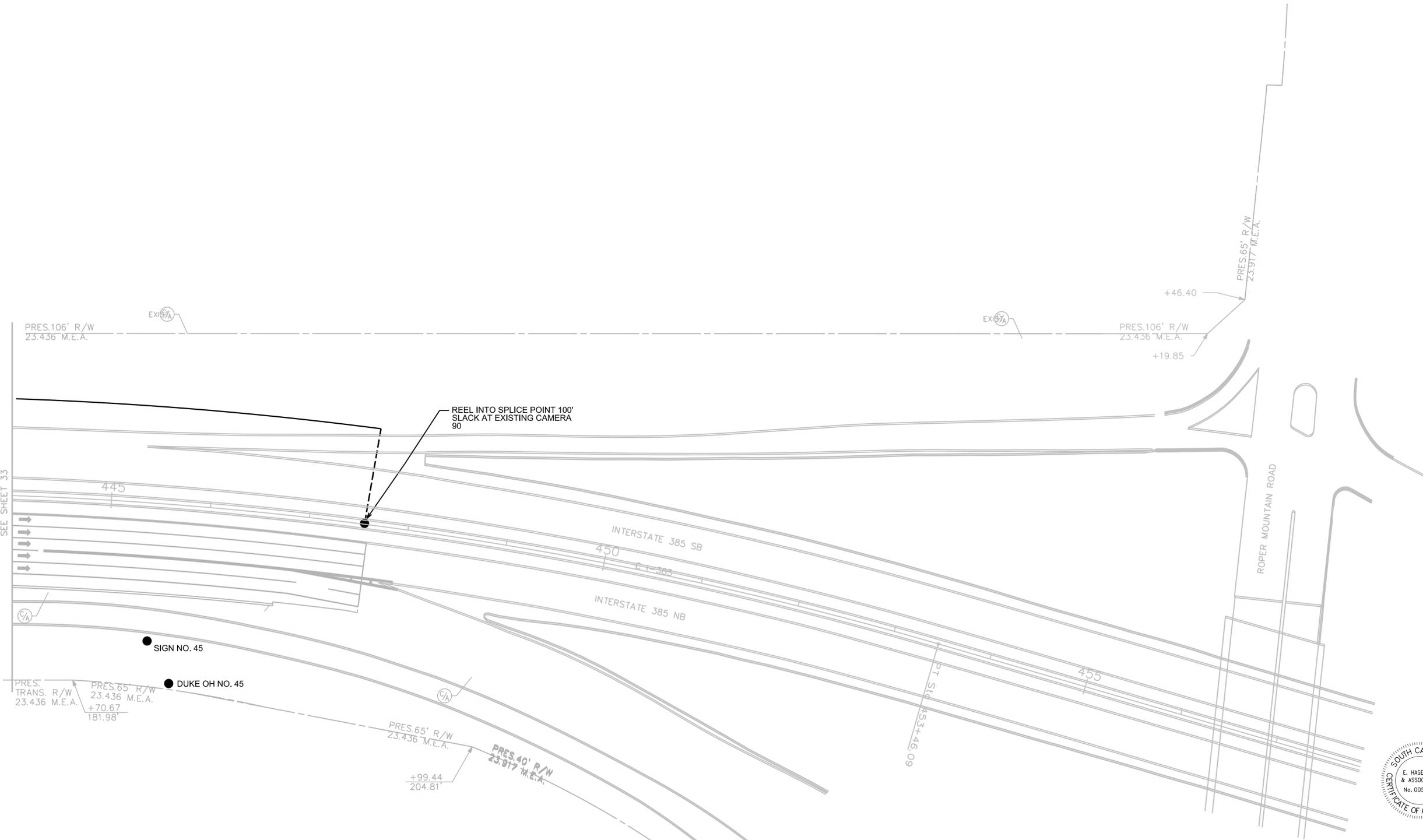
SCALE 1"=50" RTE. DWG. NO. PN1

FED. RD. DIST. NO.	STATE	COUNTY	PROJECT NO.	ROUTE NO.	SHEET NO.
3	S.C.	GREENVILLE	IM23(009)	P85 I-385	IT 11-34

GENERAL NOTES:  
 ALL PLANS ARE SCHEMATIC IN NATURE  
 PLACE UTILITY MARKERS PER SPECIFICATIONS  
 SEE TYPICAL SHEETS FOR FURTHER DETAILS



MATCH LINE STA. 444+00.00  
SEE SHEET 33



PRES. 106' R/W  
23.436 M.E.A.

PRES. 106' R/W  
23.436 M.E.A.

PRES. 65' R/W  
23.917 M.E.A.

PRES. TRANS. R/W  
23.436 M.E.A.

PRES. 65' R/W  
23.436 M.E.A.  
+70.67  
181.98'

PRES. 65' R/W  
23.436 M.E.A.

PRES. 40' R/W  
23.917 M.E.A.

+99.44  
204.81'

INTERSTATE 385 SB

INTERSTATE 385 NB

ROPER MOUNTAIN ROAD

SIGN NO. 45

DUKE OH NO. 45

REEL INTO SPLICE POINT 100'  
SLACK AT EXISTING CAMERA  
90



4			
3			
2			
1			
REV. NO.	BY	DATE	DESCRIPTION OF REVISION
TOPO.		DATE	
DWG.	TAK	DATE 12-8-16	GROUP - -
R/W		DATE	

SOUTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 ROAD DESIGN COLUMBIA, S.C.

I-85/385  
 I.T.S. INSTALLATION

SCALE 1"=50' RTE. DWG. NO. PN1



Chris Lamm  
Project Manager  
Flatiron Constructors, Inc.  
215 Southport Drive, Suite 1400  
Morrisville, North Carolina 27560

Sent via: email [CLamm@flatironcorp.com](mailto:CLamm@flatironcorp.com)

Subject: **Change in Scope Item #10 – Rocky Creek Mitigation Signs**  
SC File 23.038111 – I-85/385 Interchange Improvement  
Greenville County

Mr. Lamm,

Please provide pricing for additional signs and flashers as detailed on the attached drawings and specifications. Also reference section 652 of the *2007 Standard Specifications* and Standard Drawings 652-000-XX. Upon final acceptance of the project, the signs would remain in place, in a permanent mounting configuration, and would become the responsibility/property of the SCDOT.

Let me know if you have any questions or comments.

Thanks,

District Construction Engineer









- (1) I-85 Flood 162x96 Multi Panel Sign
  - (2) Flashing Beacons
  - Mounted on (2) 4x6 wood posts
- Note: Location approximate. This sign to be installed and then relocated as necessary during construction.



- (1) I85 Flood 162x96 Multi Panel Sign
- (2) Flashing beacons
- Mounted on (2) 4x6 wood posts
- Note: Adjacent to Macaroni Grill Sign



Google

Search Google Maps



Sign

Map



## **688.9 SOLAR POWERED FLASHER ASSEMBLY**

### **1.1 Description**

This work shall consist of installing and/or furnishing a Solar Powered Flasher Assembly and performing all related wiring necessary, in accordance with these Specifications.

### **1.2 Materials**

Acceptable materials can be found on the current SCDOT Qualified Products List. Product Specifications for acceptable materials are located at [http://www.scdot.org/doing/publications\\_Traffic.aspx](http://www.scdot.org/doing/publications_Traffic.aspx)

### **1.3 Construction**

#### **1.3.1 24/7 Single Solar 24 Hour Flashing Beacon**

##### **1.3.1.1 Mounting**

Each individual component, the solar engine, signal housing and LED module, shall be provided with hardware for mounting to one of the following pole types. If the sign is larger than 36 inches, then two posts shall be used.

- 2" square perforated tubing
- 2 3/8" diameter round sign post
- 4.5" Round
- 4" x 4" wood post

All Pedestrian Bases shall include Anchor Bolts.

#### **1.3.2 24/7 Single Compact Solar 24 Hour Flashing Beacon**

##### **1.3.2.1 Mounting**

The entire assembly, including solar engine, signal housing and LED module shall be provided with hardware for mounting on to the top of one of the following pole types. If the sign is larger than 36 inches, then two posts shall be used.

- 2" square perforated tubing
- 2 3/8" diameter round sign post
- 4.5" Round
- 4" x 4" wood post

The entire assembly shall mount at one point. Separate mounting for the signal head or any other component shall not be required. All Pedestrian Bases shall include Anchor Bolts.

#### **1.3.3 Dual 24 Hour Solar Powered Flashing Beacon**

##### **1.3.3.1 Mounting**

The entire assembly, including solar engine, signal housing and LED modules shall be provided with hardware for mounting on to one of the following pole types. If the sign is larger than 36 inches, then two posts shall be used.

- 2" square perforated tubing

- 2 3/8" diameter round sign post
- 4 1/2" diameter round sign post
- 4" x 4" or larger square wood post
- Side-of-pole arm

All Pedestrian Bases shall include Anchor Bolts.

### **1.3.4 Dual Solar Powered School Flashing Beacon**

#### **1.3.4.1 Mounting**

Each component including solar engine, signal housing, LED modules, etc. shall be provided with hardware for mounting on to one of the following pole types. If the sign is larger than 36 inches, then two posts shall be used.

- 2" square perforated tubing
- 2 3/8" diameter round sign post
- 4.5" Round
- 4" x 4" wood post
- Side-of-pole arm

All Pedestrian Bases shall include Anchor Bolts.

### **1.3.5 Dual Compact Solar School Zone Flasher**

#### **1.3.5.1 Mounting**

The entire assembly, including solar engine, signal housing and LED modules shall be provided with hardware for mounting to one of the following pole types. If the sign is larger than 36 inches, then two posts shall be used.

- 2" square perforated tubing
- 2 3/8" diameter round sign post
- 4.5" Round
- 4" x 4" wood post
- Side-of-pole arm

All Pedestrian Bases shall include Anchor Bolts.

## **1.4 Measurement**

Furnishing and/or Installing a Solar Powered Flasher Assembly, shall be measured by EACH, erected and placed as shown on the Plans, which shall include all electrical connections and all required incidental hardware.

**1.5 Payment**

Furnishing and/or Installing a Solar Powered Flasher Assembly, accepted and measured as provided above, will be paid at the contract unit price bid for:

6865700	FURNISH & INSTALL SOLAR POWERED FLASHER ASSEMBLY - SINGLE BEACON	EA
6865701	FURNISH & INSTALL SOLAR POWERED FLASHER ASSEMBLY - DUAL BEACON	EA
6865702	FURNISH & INSTALL SOLAR POWERED FLASHER ASSEMBLY	EA
6887960	INSTALL SOLAR POWERED FLASHER ASSEMBLY	EA

which shall be full compensation for furnishing all materials, equipment, labor, and incidentals necessary to complete the work as specified.

Pay Item Notes

This specification is not limited to these pay items. Other pay items may be applicable.

## **M688.9 FURNISH SOLAR POWERED FLASHER ASSEMBLY**

### **1.1 Description**

This specification describes requirements for furnishing a Solar Powered Flasher Assembly.

### **1.2 Materials**

#### **1.2.1 24/7 Single Solar 24 Hour Flashing Beacon**

##### 1.2.1.1 Overview

This specification is for the Single Beacon Solar 24 Hour Flashing Beacon. Each unit shall consist of a solar engine, LED signal module and signal housing, and mounting hardware. The system shall conform to all provisions of the MUTCD, Chapter 4K, and Flashing Beacons.

##### 1.2.1.2 Mechanical Specifications

The solar engine shall be vented to provide cooling of the battery and electronic system. Venting shall be covered by wire mesh to prevent intrusion of insects. The unit shall have the provision to mount a external device for remote activation. System must have capability to power such device.

##### 1.2.1.3 Solar / Battery System

The solar engine shall have a field replaceable sealed lead acid battery or batteries. Solar panel and battery system shall be 12 Volt DC.

The solar panel or panels shall meet the design qualification and type approval of photovoltaic modules in accordance with IEC 61215. This specification includes radiation testing, thermal testing, and mechanical testing for environmental conditions such as UV-exposure, thermal cycling, as well as degradation of maximum power output.

Battery shall be mechanically secured into the housing. System shall have an auxiliary 12 VDC power output to power third party devices such as wireless radios or sensing equipment.

##### 1.2.1.4 Signal Housing

The signal housing shall meet the equipment standard of the Institute of Transportation Engineers (ITE) Vehicle Traffic Control Signal Heads (VTCSH) Chapter 2.

##### 1.2.1.5 LED Signal Module

The LED signal module shall conform to the mandatory specifications of: Light Emitting Diode (LED) Circular Signal Supplement as required by the Manual of Uniform Traffic Control Devices 2003 Edition Revision 1.

##### 1.2.1.6 Operational Specifications

The system shall conform to all standards for flashing beacons as required in the Manual of Uniform Traffic Control Devices 2003 Edition Revision 1 or current version.

- The beacon shall flash at a rate set by MUTCD.
- The beacon shall have a minimum operating autonomy of 30 days.
- The beacon shall automatically reduce light output in case of low battery situations, reducing risk that the beacons will fail entirely under conditions of poor solar insolation.

1.2.1.7 Activation

The beacon shall operate continuously when the battery is connected. The beacon shall have the option to be turned on by a third party switch or third party device with a compatible contact closure output.

**1.2.2 24/7 Single Compact Solar 24 Hour Flashing Beacon**

1.2.2.1 Overview

This specification is for the Single Beacon Compact Solar 24 Hour Flashing Beacon.

Each unit shall consist of a self-contained solar engine, LED signal module and signal housing, and mounting hardware such that the entire assembly mounts to the top of the pole. The solar engine shall contain all electronics, batteries & solar panels. No additional cabinet is required. The system shall conform to all provisions of the MUTCD, Chapter 4K, and Flashing Beacons. See Diagrams 1a and 1b.

**Diagram 1a.  
Single Beacon  
Compact – Pole  
Mount  
(Square/Round)**



**Diagram 1b.  
Single Beacon  
Compact – Top of  
Pole Mount  
(4 1/2" Round)**



1.2.2.2 Mechanical Specifications

The Solar panel shall be mounted to the solar engine. All batteries and electronics shall be mounted in the solar engine, with no external control cabinet or battery cabinet required. The solar engine shall be vented to provide cooling of the battery and electronic system. Venting shall be covered by wire mesh to prevent intrusion of insects.

The solar engine shall have the provision to mount an external device for remote activation. System must have capability to power such device. Solar engine must contain sufficient space to house third party device inside a sealed enclosure located inside the solar engine.

The entire system must be delivered as a complete unit ready to install and requiring no assembly.

1.2.2.3 Solar / Battery System

The solar engine shall include a minimum 10-watt solar panel. The solar engine shall house a field replaceable sealed lead acid battery or batteries. Solar panel and battery system shall be 12 Volt DC.

The solar panel shall meet the design qualification and type approval of photovoltaic modules in accordance with IEC 61215. This specification includes radiation testing, thermal testing, and mechanical testing for environmental conditions such as UV-exposure, thermal cycling, as well as degradation of maximum power output.

The solar panel shall consist of a solar panel or panels, mounted to the solar engine.

Battery or batteries shall be mechanically secured into the housing. Battery bracket shall enclose the battery in a manner to restrict the thermal expansion of the battery.

System shall have an auxiliary 12 VDC power output to power third party devices such as wireless radios or sensing equipment.

#### 1.2.2.4 Signal Housing

The signal housing shall meet the equipment standard of the Institute of Transportation Engineers (ITE) Vehicle Traffic Control Signal Heads (VTCSH) Chapter 2.

The signal head shall be mounted below the solar engine.

#### 1.2.2.5 LED Signal Module

The LED signal module shall conform to the mandatory specifications of: Light Emitting Diode (LED) Circular Signal Supplement as required by the Manual of Uniform Traffic Control Devices 2003 Edition Revision 1.

#### 1.2.2.6 Operational Specifications

The system shall conform to all standards for flashing beacons as required in the Manual of Uniform Traffic Control Devices 2003 Edition Revision 1 or current version.

- The beacon shall be flash at a rate of set by MUTCD.
- The beacon shall have a night dimming feature.
- The beacon shall have a minimum operating autonomy of 30 days.
- The beacon shall automatically reduce light output in case of low battery situations, reducing risk that the beacons will fail entirely under conditions of poor solar insolation.

#### 1.2.2.7 Activation

The beacon shall operate continuously when the battery is connected. The beacon shall have the option to be turned on by a third party switch or third party device with a compatible contact closure output.

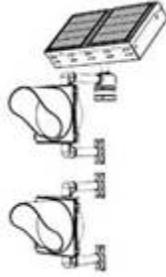
### **1.2.3 *Dual 24 Hour Solar Powered Flashing Beacon***

#### 1.2.3.1 Overview

This specification is for the solar powered 24 hour flashing beacon. Each unit shall consist of a self-contained solar engine, two LED signal modules and signal housings, and mounting hardware to fit the

installation. The solar engine shall connect to two 12" yellow or red LED lens. The solar engine, mounting hardware, and signal heads shall be available in black, yellow, and green. See Diagrams 2.

**Diagram 2.  
Dual Beacon  
Compact – Top of  
Pole Mount  
(4 1/2" Round)**



#### 1.2.3.2 Mechanical Specifications

The weight of the solar engine shall not exceed 52 pounds. The solar engine must be able to rotate 360 degrees and tilt for maximum solar energy collection. Batteries shall be field replaceable.

#### 1.2.3.3 Signal Housing

The signal housings shall be constructed of polycarbonate material, and must be adjustable independent from the bracket for lens alignment. The signal housings shall meet the equipment standard of the Institute of Transportation Engineers Vehicle Traffic Control Signal Heads (VTCSH) Chapter 2. The lenses shall be ITE compliant 12" yellow LED lenses.

#### 1.2.3.4 Standards

The system shall conform to all standards for flashing beacons as required in the Manual of Uniform Traffic Control Devices 2003 Edition Revision 1 or current version. These include complying with the VTCSH specifications.

- The flash rate shall be MUTCD compliant.
- The beacons shall have a night dimming feature.
- The beacons shall have a minimum operating autonomy of 30 days
- The beacons shall automatically reduce light output in case of low battery situations, reducing risk that the beacons will fail entirely under conditions of poor solar insolation.

### **1.2.4 *Dual Solar Powered School Flashing Beacon***

#### 1.2.4.1 Overview

This specification is for the solar powered school flashing beacon. Each unit shall consist of a solar engine, two LED signal modules and signal housings, and mounting hardware with timing device. The system shall conform to all provisions of the MUTCD, Chapter 4K, and Flashing Beacons.

#### 1.2.4.2 Mechanical Specifications

The solar engine shall be vented to provide cooling of the battery and electronic system. Venting shall be covered by wire mesh to prevent intrusion of insects. The solar engine shall have the provision to

mount an external device for remote activation. System must have capability to power such device. Unit must provide a cabinet or contain sufficient space to house third party device inside a sealed enclosure.

#### 1.2.4.3 Solar / Battery System

The solar engine shall have a field replaceable sealed lead acid battery or batteries. Solar panel or panels and battery system shall be 12 Volt DC.

The solar panel or panels shall meet the design qualification and type approval of photovoltaic modules in accordance with IEC 61215. This specification includes radiation testing, thermal testing, and mechanical testing for environmental conditions such as UV-exposure, thermal cycling, as well as degradation of maximum power output.

Battery or Batteries shall be mechanically secured into the housing.

System shall have an auxiliary 12 VDC power output to power third party devices such as wireless radios or sensing equipment.

#### 1.2.4.4 Signal Housing

The signal housings shall meet the equipment standard of the Institute of Transportation Engineers Vehicle Traffic Control Signal Heads (VTCSH) Chapter 2.

#### 1.2.4.5 LED Signal Module

The LED signal module shall conform to the mandatory specifications of: Light Emitting Diode (LED) Circular Signal Supplement as required by the Manual of Uniform Traffic Control Devices 2003 Edition Revision 1.

#### 1.2.4.6 Standards

The system shall conform to all standards for flashing beacons as required in the Manual of Uniform Traffic Control Devices 2003 Edition Revision 1 or current version.

- The flash rate shall be MUTCD compliant.
- The beacons shall have a minimum operating autonomy of 30 days
- The beacons shall automatically reduce light output in case of low battery situations, reducing risk that the beacons will fail entirely under conditions of poor solar insolation.

#### 1.2.4.7 Activation

The beacon shall operate continuously when the battery is connected. The beacon shall have the option to be turned on by a third party switch or third party device with a compatible contact closure output. A timer shall be included in this as an option.

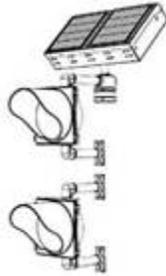
### **1.2.5 *Dual Compact Solar School Zone Flasher***

#### 1.2.5.1 Overview

This specification is for the Dual Compact Solar School Zone Flasher.

Each unit shall consist of a self-contained solar engine, two LED signal modules and signal housings, and mounting hardware such that the entire assembly with the exception of the bottom LED mounts to the top of the pole. The solar engine shall contain all electronics, batteries & solar panels. No additional cabinet is required. The system shall conform to all provisions of the MUTCD, Chapter 4K, and Flashing Beacons. See Diagram 3.

**Diagram 3**  
**Dual Beacon**  
**Compact School**  
**Zone Flasher**



#### 1.2.5.2 Mechanical Specifications

The Solar panel shall be mounted to the solar engine. All batteries and electronics shall be mounted in the solar engine, with no external control cabinet or battery cabinet required. The solar engine shall be vented to provide cooling of the battery or batteries and electronic system. Venting shall be covered by wire mesh to prevent intrusion of insects.

The solar engine shall have the provision to mount an external device for remote activation. System must have capability to power such device. Solar engine must contain sufficient space to house third party device inside a sealed enclosure located inside the solar engine.

The overall weight of the assembly, including mounting hardware, signal housing, LED module, and solar engine shall not exceed 55 lbs.

#### 1.2.5.3 Solar / Battery System

The solar engine shall include a minimum 10-watt solar panel. The solar engine shall house a replaceable sealed lead acid battery or batteries. Solar panel and battery system shall be 12 Volt DC.

The solar panel shall meet the design qualification and type approval of photovoltaic modules in accordance with IEC 61215. This specification includes radiation testing, thermal testing, and mechanical testing for environmental conditions such as UV-exposure, thermal cycling, as well as degradation of maximum power output.

The solar panel shall consist of one single solar panel, mounted to the solar engine.

Battery shall be mechanically secured into the housing. Battery bracket shall enclose the battery in a manner to restrict the thermal expansion of the battery.

System shall have an auxiliary 12 VDC power output to power third party devices such as wireless radios or sensing equipment.

#### 1.2.5.4 Signal Housing

The signal housing shall meet the equipment standard of the Institute of Transportation Engineers (ITE) Vehicle Traffic Control Signal Heads (VTCSH) Chapter 2.

The signal head shall be easily removable from the assembly. The signal housing must be adjustable independent from the bracket for lens alignment.

1.2.5.5 LED Signal Module

The LED signal module shall conform to the mandatory specifications of: Light Emitting Diode (LED) Circular Signal Supplement as required by the Manual of Uniform Traffic Control Devices 2003 Edition Revision 1.

1.2.5.6 Operational Specifications

The system shall conform to all standards for flashing beacons as required in the Manual of Uniform Traffic Control Devices 2003 Edition Revision 1 or current version.

The beacon shall be flash at a rate set by MUTCD. The illuminated period of each flash shall not be less than one-half and not more than two-thirds of the total cycle.

- The beacon shall have a night dimming feature.
- The beacon shall have a minimum operating autonomy of 30 days.
- The beacon shall automatically reduce light output in case of low battery situations, reducing risk that the beacons will fail entirely under conditions of poor solar insolation.

**1.2.6 Warranty**

The Vendor shall furnish SCDOT with any warranties on equipment and materials that are provided by the Manufacturer or Vendor as normal trade practice.

**1.3 Measurement**

Furnishing a Solar Powered Flasher Assembly shall be measured by EACH and shall include all electrical connections and all required mounting and incidental hardware.

**1.4 Payment**

Furnishing a Solar Powered Flasher Assembly, accepted and measured as provided above, will be paid at the contract unit price bid for:

FURNISH SINGLE BEACON/COMPACT/MODEL R247C (INCLUDES ALL ASSOCIATED HARWARE FOR A COMPLETE AND OPERATIONAL ASSEMBLY)	EA
FURNISH SINGLE BEACON/STANDARD/MODEL R247 (INCLUDES ALL ASSOCIATED HARWARE FOR A COMPLETE AND OPERATIONAL ASSEMBLY)	EA
FURNISH DUAL BEACON COMPACT/MODEL R247 DUAL (INCLUDES ALL ASSOCIATED HARWARE FOR A COMPLETE AND OPERATIONAL ASSEMBLY)	EA
FURNISH DUAL BEACON STANDARD/MODEL R829 (INCLUDES ALL ASSOCIATED HARWARE FOR A COMPLETE AND OPERATIONAL ASSEMBLY)	EA
FURNISH DUAL BEACON COMPACT/MODEL R829C (INCLUDES ALL ASSOCIATED HARWARE FOR A COMPLETE AND OPERATIONAL ASSEMBLY)	EA
FURNISH DUAL BEACON COMPACT/MODEL R829C-D4 (INCLUDES ALL ASSOCIATED HARWARE FOR A COMPLETE AND OPERATIONAL ASSEMBLY)	EA

FURNISH DUAL BEACON COMPACT/MODEL R820C (INCLUDES ALL ASSOCIATED HARWARE FOR A COMPLETE AND OPERATIONAL ASSEMBLY)	EA
FURNISH DUAL BEACON STANDARD/MODEL R820 (INCLUDES ALL ASSOCIATED HARWARE FOR A COMPLETE AND OPERATIONAL ASSEMBLY)	EA
FURNISH TIME CLOCK/CONNECTOR/MODELAP22-503544	EA
FURNISH TIME CLOCK SO'WARE KIT/MODELAP22-KIT	EA
FURNISH 12" YELLOW LED/MODEL 47553	EA
FURNISH 12" RED LED/MODEL 48820	EA
FURNISH 1 SECTION SIGNAL HEAD/MODEL CAMSIG	EA
FURNISH SOLAR FLASHER SCHOOL ZONE SOFTWARE/CPK	EA
FURNISH EMERGENCY MANAGEMENT SYSTEM/MODEL 46319	EA
FURNISH 12V DC SEALED BATTERY/MODEL 37912	EA
FURNISH LED HARNESS 15'/MODEL 48901	EA
FURNISH LED HARNESS 36 './MODEL 48902	EA
FURNISH LED HARNESS 75 './MODEL 56928	EA
FURNISH FIXED WEDGE TOP PLATE/BASE ASSEMBLY/WEDGE	EA
FURNISH COMMUNICATION CABLE/SZ FLASHER/MODEL COMSCH	EA
FURNISH UPLOAD HOUSING KIT/MODEL 48941	EA
FURNISH HOUSING BOX FOR TIME SWITCH/MODEL 47256	EA
FURNISH MANUAL ON/OFF SWITCH HARNESS/MODEL47223	EA
FURNISH TOP PLATE WEDGE/MODEL 50571	EA
FURNISH 2" SQUARE POLE MOUNT(C BRACKET)/MODEL47362	EA
FURNISH SLIP FILLER, 1&2 WAY/MODEL SE-3302-P29	EA
FURNISH SIDE-OF-POLE ASSEMBLY/MODEL SP-5641-P29	EA
FURNISH SIDE POLE W/HUB PLATE/MODEL SP-5641-P29	EA
FURNISH 1-WAY TRI-STUD MOUNTING/MODEL SE-0567-P29	EA
FURNISH UPPER/LOWER ARM ASSEMBLY/MODEL SE-3148-P29	EA
FURNISH 1 WAY ASTRO-BRAC ASSEMBLY/MODEL AB-0125-96	EA
FURNISH SPAN WIRE HANGAR/MODEL SP-1004SC-P29	EA
FURNISH HORIZONTAL MOUNT SOLAR ENGINE SUPPORT ARM/MODEL 46560	EA
FURNISH PIPE ADAPTOR FOR WEDGE/MODEL 47504	EA
FURNISH 8' 4 1/2" ALUMINUM PED POLE/MODEL PB-5100-8	EA
FURNISH 10' 4 1/2" PED POLE/MODEL PB-5100-10	EA
FURNISH 12' 4 1/2" PED POLE/MODEL PB-5100-12	EA
FURNISH 15' 4 1/2" PED POLE/MODEL PB-5100-15	EA
FURNISH DOUBLE PUSH BUTTON STATION/MODEL SE-6042	EA
FURNISH ALUMINUM SQUARE PED BASE /MODEL PB-5335-1S	EA
FURNISH PED BASE COLLAR/MODEL PB-5325	EA
FURNISH 2" SQUARE POST MOUNT SINGLE W/SIGNAL/LED/2SQ	EA
FURNISH SOLAR ENG 10W/MODEL R247ENGINE ONLY 10	EA
FURNISH SOLAR ENG 20W/MODEL R247ENGINE ONLY 20	EA
FURNISH SOLAR ENG 10W/SCHOOL/R829ENGINE ONLY10	EA

FURNISH SQUARE WOOD POST MOUNT W/WEDGE/MODEL SWP	EA
FURNISH TOP POLE MOUNT W/WEDGE/MODEL 45RS	EA
FURNISH TOP POLE MOUNT W/WEDGE/MODEL 45RDV	EA
FURNISH TOP POLE MOUNT W/WEDGE DUAL HORIZONTAL/45RDH	EA
FURNISH SIDE POLE MOUNT W/WEDGE/MODELSPS	EA
FURNISH SIDE POLE MOUNT W/WEDGE/DUAL/MODEL SPD	EA
FURNISH MAST ARM MOUNT W/WEDGE/SINGLE/MODEL MAMS	EA
FURNISH MAST ARM MOUNT W/WEDGE/DUAL/MODEL MAMD	EA
FURNISH CPR/AP22 COMMUNICATION CENTRAL/MODEL 501638R	EA
FURNISH CPR2102 UPDATE/MODEL 500900	EA
FURNISH CPR2102 TIME CLOCK/MODEL 503602-D	EA
FURNISH CPR2102 VERIFY UNIT/MODEL 503600-D	EA
FURNISH MASTER RADIO UNIT/POWER SUPPLY/MODEL 503646	EA
FURNISH CPR INTERNAL RADIO/MODEL 503645	EA
FURNISH CPR EXTERNAL RADIO/MODEL 503645E	EA
FURNISH CPR SOLAR REPEATER STATION/MODEL 503649F	EA
FURNISH CPR AC REPEATER STATION/MODEL 503649FAC	EA
FURNISH CPR RADIO REPEATER W/PS/MODEL 503647	EA
FURNISH CPR PROGRAMMING KIT/MODEL 501662NB	EA
FURNISH 10db YAGI ANTENNA/MODEL 503525Y	EA
FURNISH 6db OMNI ANTENNA/MODEL 503525OMNI	EA
FURNISH 11db OMNI ANTENNA/MODEL 505472-11db	EA
FURNISH DISC ANTENNA/MODEL 503544	EA
FURNISH TABLE TOP ANTENNA/MODEL 503501M	EA
FURNISH 25 ' ANTENNA LEAD/CPR RADIO/505472L-25	EA
FURNISH 50 ' ANTENNA LEAD/CPR RADIO/505472L-50	EA
FURNISH 100' ANTENNA LEAD/CPR RADIO/505472L-100	EA
FURNISH 150' ANTENNA LEAD/CPR RADIO/505472L-150	EA
FURNISH CPR RADIO/TIME SWITCH CONVERTER/503648C	EA
FURNISH CPR 2101 TIME SWITCH/503645W	EA
FURNISH 3db WI-FI ANTENNA W/3' LEAD/504413WF	EA
FURNISH WI-FI to TIME SWITCH CONVERTER/503485	EA
FURNISH WI-FI TRANSCEIVER/MODEL 501680	EA
FURNISH ANTENNA BRACKET/MODEL 502356	EA
FURNISH CPR DISPLAY TERMINAL/MODEL 502620	EA
FURNISH CPR AUDIO VISUAL ALARM/MODEL 503626	EA

# TRAFFIC PARTS INC.

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 SPRING, TX 77383-0837

800-345-6329

[SALES@TRAFFICPARTS.COM](mailto:SALES@TRAFFICPARTS.COM)  
[WWW.TRAFFICPARTS.COM](http://WWW.TRAFFICPARTS.COM)

## PANEL MOUNT FLASHERS

SPECIFICATIONS	TP# 1039 (25DF) 2 circuit	TP# 6112 (12DC10DF) 2 circuit
Operating Voltage	60-135 VAC	6-24 VDC
Load Current	25 Amps (w/adequate heat sinking @ 77°F)	10 Amps (w/adequate heat sinking @ 77°F)
Temperature Range	-30° F to 165° F	-30° F to 165° F
Flash Rate (per circuit)	56-1/4 flasher/minute standard (other rates are available upon request)	55 flasher/minute standard
Size	1-3/4" x 2-1/4"	1-3/4" x 2-1/4"
Mounting	Flat surface w/2 mounting holes (top/bottom)	Flat surface w/2 mounting holes (top/bottom)



TP# 6112  
 Pictured



TP# 2935  
 Pictured

## MUSHROOM FLASHERS

SPECIFICATIONS	TP# 2935 2 circuit (yellow)	TP# 5810 2 circuit (green)	TP# 1940 2 circuit (black)
Operating Voltage	95-135 VAC	95-135 VAC	95-135 VAC
Load Current	3 Amps	3 Amps	3 Amps
Temperature Range	-30° F to 165° F	-30° F to 165° F	-30° F to 165° F
Flash Rate	56-1/4 flashes /minute	56-1/4 flashes /minute	56-1/4 flashes /minute
Size	1-7/8" Overall Height	1-7/8" Overall Height	1-7/8" Overall Height
Mounting	Dual purpose mounting in top or bottom of signal and seals off opening	Dual purpose mounting in top or bottom of signal and seals off opening	Dual purpose mounting in top or bottom of signal and seals off opening

## Whittle, Bradley

---

**From:** Hebert, David L <HebertDL@scdot.org>  
**Sent:** Friday, August 26, 2016 12:55 PM  
**To:** Knight, Thomas P.  
**Cc:** Mungo, Randall; Valetti, Jack B  
**Subject:** RE: USGS Contract - Maintenance

Funding thru the completion of the project – currently mid 2019

---

**From:** Knight, Thomas P.  
**Sent:** Friday, August 26, 2016 12:53 PM  
**To:** Hebert, David L  
**Cc:** Mungo, Randall  
**Subject:** RE: USGS Contract - Maintenance

David,

Operation and maintenance is included in the contract. I will contact the USGS with your concerns. In addition, how long is the I85/I385 Interchange Project planning on funding the gauge at Rocky Creek?

Thank you for informing us of the issue with the Rocky Creek gauge.

Tom

---

**From:** Mungo, Randall  
**Sent:** Friday, August 26, 2016 11:16 AM  
**To:** Hebert, David L  
**Cc:** Knight, Thomas P.  
**Subject:** RE: USGS Contract - Maintenance

I will have Tom Knight find out and get back with you.

Randall

---

**From:** Hebert, David L  
**Sent:** Friday, August 26, 2016 11:15 AM  
**To:** Mungo, Randall  
**Subject:** FW: USGS Contract - Maintenance

Randall,

USGS installed the flood gauge station at I-85 and Rocky Creek back in April. Recently, I've noticed that Kudzu is starting to take over it. Is gauge maintenance included in the contract w/ DOT? Should I contact John Shelton at USGS regarding this?

Thanks,  
David

---

**From:** Sandel, Philip  
**Sent:** Tuesday, December 15, 2015 2:58 PM

**To:** Hebert, David L  
**Subject:** FW: USGS Contract

---

**From:** Mungo, Randall  
**Sent:** Tuesday, December 15, 2015 1:30 PM  
**To:** Sandel, Philip  
**Subject:** RE: USGS Contract

It has been signed by us and USGS, sent to Wendy H. and she has sent it up the ladder for approval.

Randall

---

**From:** Sandel, Philip  
**Sent:** Tuesday, December 15, 2015 11:34 AM  
**To:** Mungo, Randall  
**Subject:** FW: USGS Contract

Randall,

See below. David Hebert is inquiring on if we have the new contract with USGS in place?

Thanks,

Philip

---

**From:** Hebert, David L  
**Sent:** Tuesday, December 15, 2015 8:38 AM  
**To:** Sandel, Philip  
**Subject:** USGS Contract

Phillip,

Do you know if Mark caught up with Mungo about the status of the new USGS contract?

Also, give me call, we need to discuss ICA budget.

Thanks,  
**David L Hebert** | *District Construction Engineer*  
[hebertydl@scdot.org](mailto:hebertydl@scdot.org) | Main:864-603-5640 Direct:864-603-5644



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