

ADDRESS: COLUMBIA, SC  
PROJECT NAME: COLUMBIA CLUSTER 25  
SERVICE ORDER:  
FIBER ORDER ID:  
EBS: 910982-001

288F  
Prysmian Cable  
08-2019  
Installed 10-29-2019  
Access Underground Services



CONTACTS

SEGRA ENGINEER  
BRAD PAYNE  
803-726-6421  
BRAD.PAYNE@SEGRA.COM

ENGINEER  
ROSS BRADLEY  
980-285-3035  
ROSS.BRADLEY@BYERS.COM

SITE INDEX

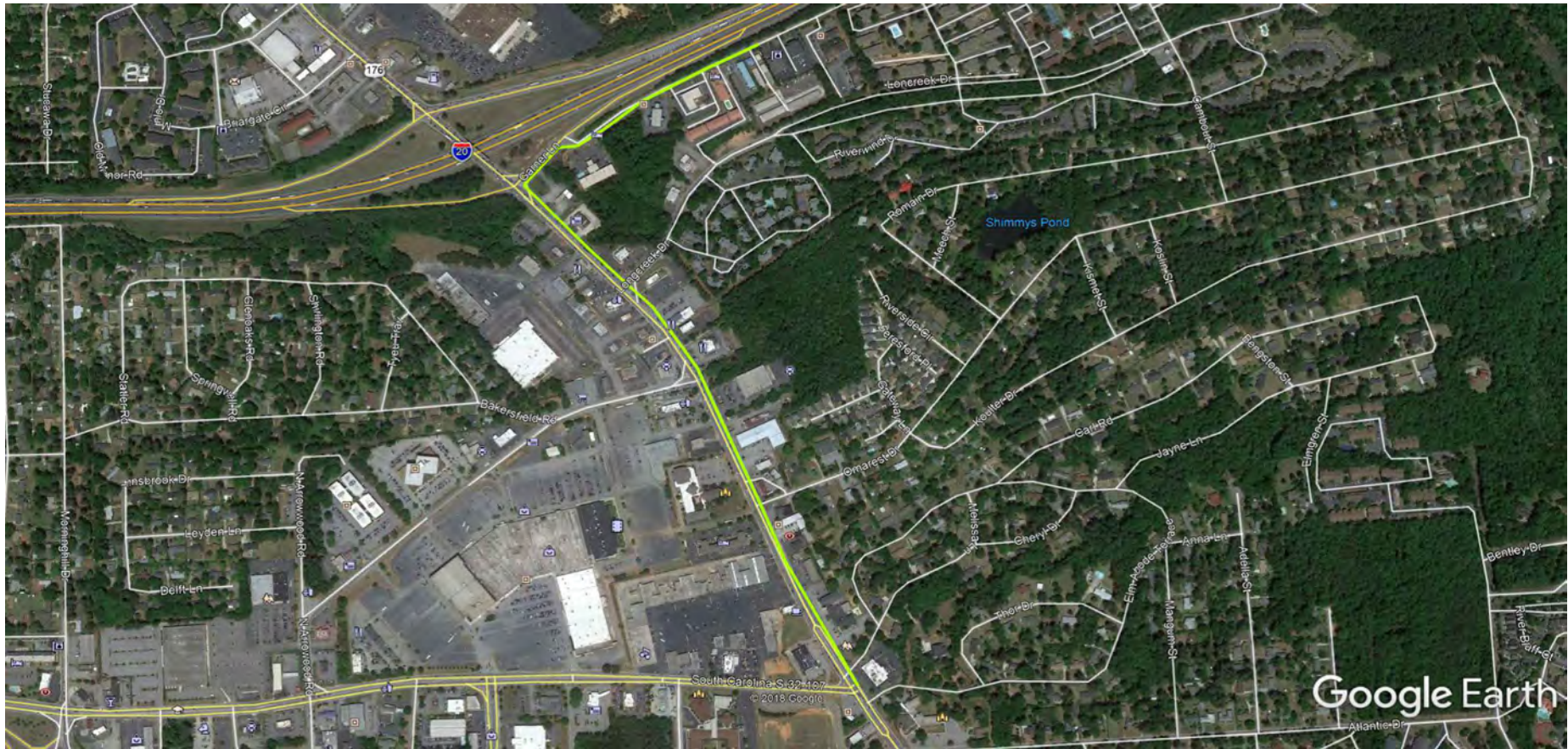
- C1 - COVER SHEET/SITE LOCATION
- C2 - CONTACT LIST AND REQUIRED PERMITS
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- 1- 11 - OSP PROJECT SHEET

PERMITS REQUIRED

- 1 - RICHLAND COUNTY SCDOT

SCOPE OF WORK:

PLACE FIBER OPTIC CABLE ALONG BROAD  
RIVER RD (US 176), GARNER LN (S-2906)



SITE LOCATION



Know what's below.  
Call before you dig.

3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG DESIGN	DRAFTING	COMMENT
SOUTH CAROLINA TELECOMMUNICATIONS GROUP HOLDINGS, LLC d/b/a SEGRA				
PROJECT MANAGER: ROSS BRADLEY				
ENGINEERING FIRM: BYERS ENGINEERING				
SO/EWO#, EBS# 910982-001				
PROJECT: COLUMBIA CLUSTER 25				
ADDRESS: COLUMBIA, SC				
DRAWING NAME: SEGRA COVERS - RICHLAND COUNTY.dwg				
CONFIDENTIAL/PROPRIETARY				
SHEET: C1 OF C9				

# CONTACT LIST AND REQUIRED PERMITS

REQUIRED PERMITS:

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_

OTHER:

CALL PROPERTY OWNERS 24 HOURS IN ADVANCE

NAME: \_\_\_\_\_

E-MAIL: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

OUTSIDE PLANT ENGINEERING:

MANAGER:

THOMAS LANCASTER \_\_\_\_\_

(980) 285-3016 \_\_\_\_\_

PROJECT MANAGER:

ROSS BRADLEY \_\_\_\_\_

(980) 285-3035 \_\_\_\_\_

PROJECT ENGINEER:

ROSS BRADLEY \_\_\_\_\_

(980) 285-3035 \_\_\_\_\_

INSPECTOR:

TBD \_\_\_\_\_

\_\_\_\_\_

OUTSIDE PLANT CONSTRUCTION CONTRACTOR:

PROJECT SUPERVISOR:

TBD \_\_\_\_\_

\_\_\_\_\_

FIELD CONST. SUPER:

TBD \_\_\_\_\_

\_\_\_\_\_

MANAGER:

TBD \_\_\_\_\_

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CITY GOVERNMENT:

CITY OF COLUMBIA - PLANNING & DEVELOPMENT SERVICES

803-545-3400

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COUNTY GOVERNMENT:

RICHLAND COUNTY ENGINEERING DIVISION

803-576-2420

\_\_\_\_\_

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\_\_\_\_\_

STATE OF SOUTH CAROLINA GOVERNMENT:

DISTRICT PERMIT MANAGER

803-737-6667

PERMIT ENGINEER

803-737-0587

DISTRICT MAINTENANCE ENGINEER

803-737-6660

STATE OF SOUTH CAROLINA DEPARTMENT OF PUBLIC SAFETY:

HIGHWAY PATROL TELECOMMUNICATIONS

803-896-9621

ADDRESS: 10311 WILSON BLVD, BLYTHEWOOD, SC 29016

SOUTH CAROLINA HIGHWAY PATROL

803-896-7920

ADDRESS: 10311 WILSON BLVD, BLYTHEWOOD, SC 29016

STATE TRANSPORT POLICE

803-896-5500

ADDRESS: 10311 WILSON BLVD, BLYTHEWOOD, SC 29016

BUREAU OF PROTECTIVE SERVICES

803-896-5442

ADDRESS: 10311 WILSON BLVD, BLYTHEWOOD, SC 29016

RAILROADS:

CSX

904-359-3100

NORFOLK SOUTHERN (AECOM)

404-962-5751 OR 864-878-3581

\_\_\_\_\_

\_\_\_\_\_

SOUTH CAROLINA ONE CALL

CALL BEFORE YOU DIG

811 OR  
1-888-721-7877

UTILITIES:

ELECTRIC:

DOMINION ENERGY SOUTH CAROLINA, INC

(800) 251-7234

CENTRAL ELECTRIC POWER COOPERATIVE

864-242-6350

MID-CAROLINA ELECTRIC COOPERATIVE

803-749-5056

TRI-COUNTY ELECTRIC COOPERATIVE

803-874-1215

GAS:

DOMINION ENERGY SOUTH CAROLINA, INC

(800) 251-7234

CABLE TV:

SPECTRUM

803-252-2253

AT&T U-VERSE

(888) 757-6500

TELEPHONE:

HUGHESNET

(877) 286-2406

BELL SOUTH (BUS)

864-780-2800

WATER / SEWER:

RICHLAND COUNTY UTILITIES

803-401-0050

CAROLINA WATER SERVICE, INC.

(800) 272-1919



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SHEET: C2 OF C9				



LEGEND

LINETYPES	
	UG FIBER - EXISTING
	UG FIBER - PROPOSED
	AERIAL FIBER - EXISTING
	AERIAL FIBER - PROPOSED
	STRAND - EXISTING
	STRAND - PROPOSED
	CONDUIT - EXISTING
	CONDUIT - PROPOSED
	INNERDUCT - EXISTING
	INNERDUCT - PROPOSED
	GAS
	WATER
	TELEPHONE
	ELECTRIC
	SANITARY SEWER (SEW)
	STORM DRAIN
	FENCE
	CABLE TV
	STEAM
	OIL
	UNKNOWN UTILITY
	RIGHT OF WAY
	EDGE OF PAVEMENT
	SIDEWALK

SYMBOL	DESCRIPTION
ASW	ASPHALT SIDEWALK
BIP	BLACK IRON PIPE
BOS	BACK OF SIDEWALK
CSW	CONCRETE SIDEWALK
EOP	EDGE OF PAVEMENT
EOTW	EDGE OF TRAVEL WAY
FOC	FIBER OPTIC CABLE
HDPE	HIGH DENSITY POLYETHYLENE
HH	HANDHOLE
JB	JUNCTION BOX
MH	MANHOLE
MP	MILE POST
O/S	OFFSET
PVC	POLY VINYL CHLORIDE
RGS	RIGID GALVANIZED STEEL CONDUIT
ROW	RIGHT OF WAY
STA.	STATION

	RISER
	TELEPHONE
	POWER VAULT
	CATCH BASIN/INLET
	FIRE HYDRANT
	GROUND/BOND
	STREET LIGHT
	TREE
	CULVERT
	WING WALL
	BRIDGE
	MISC. UTILITY
	UTILITY POLE - EXISTING
	POLE - PROPOSED
	OWNER ID
	SEGRA ID

	HH- HANDHOLE SEGRA	HANDHOLE - EXISTING
	HH- HANDHOLE SEGRA	HANDHOLE - PROPOSED
	MH- MANHOLE SEGRA	MANHOLE - EXISTING
	MH- MANHOLE SEGRA	MANHOLE - PROPOSED
	PB- PULLBOX SEGRA	PULLBOX - EXISTING
	PB- PULLBOX SEGRA	PULBOX - PROPOSED

	VAULT- VAULT SEGRA	VAULT - EXISTING
	VAULT- VAULT SEGRA	VAULT - PROPOSED
	0' AERIAL STORAGE - EXISTING	AERIAL STORAGE - EXISTING
	0' AERIAL STORAGE - PROPOSED	AERIAL STORAGE - PROPOSED
	0' VAULT/BUILDING STORAGE - EXISTING	VAULT/BUILDING STORAGE - EXISTING
	0' VAULT/BUILDING STORAGE - PROPOSED	VAULT/BUILDING STORAGE - PROPOSED
	POLE ANCHOR/DOWN GUY - EXISTING	POLE ANCHOR/DOWN GUY - EXISTING
	POLE ANCHOR/DOWN GUY - PROPOSED	POLE ANCHOR/DOWN GUY - PROPOSED
	PROPOSED DOWN GUY ON EXISTING ANCHOR	PROPOSED DOWN GUY ON EXISTING ANCHOR

	FDP NAME SIZE LOCATION	TERMINATION - EXISTING
	FDP NAME SIZE LOCATION	TERMINATION - PROPOSED
	BUILDING NAME STREET	BUILDING CALLOUT - PROPOSED

	MANUFACTURER NAME	SPLICE POINT - EXISTING
	MANUFACTURER NAME	SPLICE POINT - PROPOSED

#F	IN: 0 OUT: 0	SEQUENTIAL CALLOUT
#F	IN: 0 TAIL: 0	SEQUENTIAL IN TAIL CALLOUT
#F	TAIL: 0 OUT: 0	SEQUENTIAL TAIL OUT CALLOUT

	POLE ATTACHMENT CALLOUT - EXISTING USE DYNAMIC PULL DOWN TO SELECT FROM 1 TO 6 ATTACHMENTS
	POLE ATTACHMENT CALLOUT - PROPOSED USE DYNAMIC PULL DOWN TO SELECT FROM 1 TO 6 ATTACHMENTS
	CABLE FIBERS: FIBERS CABLE OWNER: SEGRA CABLE LENGTH: LENGTH NOTES: CABLE SPAN CALLOUT - EXISTING FOR USE ON PAPER SPACE (SHOWN AT 50X)
	CABLE FIBERS: FIBERS CABLE OWNER: SEGRA CABLE LENGTH: LENGTH NOTES: CABLE SPAN CALLOUT - PROPOSED FOR USE ON PAPER SPACE (SHOWN AT 50X)
	CONDUIT OWNER: SEGRA CONDUIT LENGTH: LENGTH CONDUIT QTY: CONDUITS CONDUIT SIZE: SIZE CONDUIT TYPE: TYPE INNER DUCT QTY: INNERDUCTS INNER DUCT SIZE: SIZE INNER DUCT TYPE: TYPE NOTES: CONDUIT CALLOUT - EXISTING FOR USE ON PAPER SPACE (SHOWN AT 50X) WITH OR WITHOUT INNER DUCT INFO
	CONDUIT OWNER: SEGRA CONDUIT LENGTH: LENGTH CONDUIT QTY: CONDUITS CONDUIT SIZE: SIZE CONDUIT TYPE: TYPE INNER DUCT QTY: INNERDUCTS INNER DUCT SIZE: SIZE INNER DUCT TYPE: TYPE NOTES: CONDUIT CALLOUT - PROPOSED FOR USE ON PAPER SPACE (SHOWN AT 50X) WITH OR WITHOUT INNER DUCT INFO
	STRAND TYPE: TYPE STRAND LENGTH: LENGTH NOTES: STRAND CALLOUT - EXISTING FOR USE ON PAPER SPACE (SHOWN AT 50X)
	STRAND TYPE: TYPE STRAND LENGTH: LENGTH NOTES: STRAND CALLOUT - PROPOSED FOR USE ON PAPER SPACE (SHOWN AT 50X)



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# GENERAL NOTES

## GENERAL NOTES

CONTRACTOR MUST OBTAIN LOCATES PRIOR TO DISTURBING THE GROUND.

CONTRACTOR MUST HAVE A COPY OF THE APPROVED PERMIT FROM THE APPROPRIATE AGENCY ON THE JOBSITE AT ALL TIMES.

ALL CABLE WILL BE PLACED AT STANDARD MINIMUM DEPTH. (SEGRA STANDARD IS 48" DEEP UNLESS OTHERWISE DIRECTED BY A SEGRA REPRESENTATIVE.)

ANY LANDSCAPING WILL BE REPLACED TO EQUAL OR BETTER THAN THAT WHICH EXISTED PRIOR TO WORK.

PROJECT SITE WILL BE PROPERLY SECURED PRIOR TO THE END OF EACH DAY.

ALL WORK IS TO BE IN ACCORDANCE WITH ALL AUTHORITIES HAVING JURISDICTION IN THE WORK ZONE.

CONTRACTORS ARE ADVISED TO CONTACT SEGRA FOR ANY ADDITIONAL INFORMATION OR CLARIFICATION CONCERNING SCOPE OF WORK OR THE REQUIREMENTS NECESSARY FOR PROJECT COMPLETION.

CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY ALL DIMENSIONS, QUANTITIES AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION. IF A SIGNIFICANT CHANGE TO THE RUNNING LINE IS NEEDED, PLEASE CONTACT YOUR SEGRA REPRESENTATIVE BEFORE PROCEEDING.

BEFORE CONSTRUCTION BEGINS, CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO AVOID ANY POTENTIAL OBSTRUCTIONS PRIOR TO PROCEEDING WITH WORK.

NO CONSTRUCTION ON PRIVATE PROPERTY WILL COMMENCE UNTIL APPROVAL IS GIVEN BY THE APPROPRIATE SEGRA EMPLOYEE.

CONTRACTOR SHALL NOT PROCEED WITH WORK UNTIL THEY HAVE RECEIVED A PURCHASE ORDER AND HAVE BEEN DIRECTED TO DO SO BY AN AUTHORIZED SEGRA REPRESENTATIVE.

CONTRACTOR SHALL NOT EXCEED THE PURCHASE ORDER VALUE WITHOUT AUTHORIZATION IN WRITING FROM THE APPROPRIATE SEGRA REPRESENTATIVE.

AS-BUILTS WILL BE REQUIRED FOR EACH PROJECT INCLUDING CABLE FOOTAGE SEQUENTIALS AT EVERY ACCESS POINT, SLACK LOOP, SPLICE LOCATION, POLE AND TERMINATION POINT. CONTRACTOR SHOULD ALSO PROVIDE NOTES OF ALL CHANGES IN DEPTHS, RUNNING LINES, WH/HH LOCATIONS, AND ANY OTHER APPLICABLE NOTES TO DEPICT THE WORK THAT TOOK PLACE. NOTE: ALL MAJOR CHANGES NEED TO BE PRE-APPROVED BY AN AUTHORIZED SEGRA EMPLOYEE PRIOR TO STARTING THE WORK.

## SITE CONDITIONS

THE ACTUAL LOCATION OF EXISTING CONDUIT AND CABLES MAY VARY FROM THE LOCATION SHOWN. REPAIR OF ANY DAMAGED CONDUIT CONTAINING CABLE SHALL BE MADE BY USE OF PVC SPLIT DUCT. THE CONTRACTOR SHALL ENCLOSE THE EXISTING CABLES IN PVC.

THE LOCATIONS OF EXISTING UTILITIES SHOWN IN THIS PLAN ARE APPROXIMATE. WHEN WORK IS TO BE CONDUCTED IN THE VICINITY OF KNOWN UTILITIES, THEIR ACTUAL LOCATION MUST BE FIELD VERIFIED TO AVOID CONFLICTS IR DAMAGE TO THOSE UTILITIES. VARIATION IN LOCATION BETWEEN "RECORDED POSITIONS" AND ACTUAL POSITIONS SHOULD BE ANTICIPATED.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES. BURIED UTILITIES MAY EXIST IN THE AREA IN ADDITION TO THOSE SHOWN ON THE PLAN. THE CONTRACTOR SHALL CONTACT PROPERTY OWNERS WHEN WORKING WITHIN PRIVATE EASMENTS FOR LOCATION OF UNDERGROUND TANKS, PIPELINES, DRAIN TILES, OR OTHER BURIED IMPROVEMENTS. THE CONTRACTOR SHALL ALSO NOTIFY THE UTILITY NOTIFICATION CENTER PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES.

THE CONTRACTOR MUST ASSUME ALL BURIED UTILITIES ENCOUNTERED ARE ALIVE AND ACTIVE UNLESS SPECIFICALLY INSTRUCTED OTHERWISE BY OWNERS OR OPERATORS OF SAID UTILITIES.

DAMAGE TO SUB-SURFACE STRUCTURES IS THE SOLE RESPONSIBILITY OF THE PLACING CONTRACTOR.

THE CONTRACTOR SHALL PROTECT THE EXISTING TRAFFIC CONTROL LOOPS. IF EXISTING TRAFFIC CONTROL LOOPS ARE DAMAGED DURING CONSTRUCTION, THE ENTIRE LOOPWIRE FROM TERMINAL TO TERMINAL SHALL BE REPLACED IN ACCORDANCE WITH GOVERNING AGENCY STANDARDS AND REGULATIONS AT CONTRACTOR'S EXPENSE.

REMOVAL OF EXISTING ASPHALT PAVEMENT, CONCRETE CURBS, AND CONCRETE SIDEWALKS WILL BE "NEAT LINE" WITH SAW OR PAVEMENT CUTTER, PER REQUIREMENTS AND SPECIFICATIONS OF THE AGENCY OR DEPARTMENT RESPONSIBLE FOR EACH LOCATION. IF CONCRETE PAVEMENT IS ENCOUNTERED WHILE EXCAVATING CONDUIT TRENCHES, THE CONCRETE REMOVAL WILL BE "NEAT LINE" WITH A PAVEMENT SAW.

IF CONCRETE CURB RETURNS AND/OR SIDEWALKS ARE REPLACED DUE TO CONDUIT OR MANHOLE INSTALLATION, THE CONTRACTOR SHALL PLACE APPROVED HANDICAPPED SIDEWALK AND CURB ACCESS RAMPS IN CONFORMANCE WITH STATE OF JURISDICTION STATUTES.

ALL MATERIALS NECESSARY FOR THE REPAIR OF STREETS, CURBS, SIDEWALKS, SANITARY SEWERS, STORM SEWERS, AND PUBLIC SERVICE UTILITIES, AND THE INSTALLATION OF SUCH MATERIALS SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE AGENCY OR DEPARTMENT RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE REPAIRED FACILITY.

ALL WORK SHALL CONFORM TO THE SPECIFICATIONS OF THE JURISDICTIONAL PERMIT AGENCY.

ALL OPEN TRENCH WILL BE CLEARLY MARKED WITH BARRICADES OR CONES. STEEL PLATES OR OTHER TYPES OF BRIDGING SHALL BE PROVIDED TO COVER OPEN TRENCH IN THE TRAVEL PORTION OF THE STREETS. THESE PLATES OR BRIDGING SHALL BE ADEQUATE TO SUPPORT THE NORMAL VEHICLE LOADS ANTICIPATED IN THIS AREA AND SHALL BE IN PLACE DURING ALL NON-WORKING AREAS.

ALL SURFACES TO BE RESTORED TO ORIGINAL CONDITION, AND BACKFILL TO BE COMPACTED AS SPECIFIED. TRENCH EXCAVATION IN SURFACES WHICH INCLUDE CONCRETE TREATED BASE SHALL FOLLOW LOCAL AREA SPECIFICATIONS.

## HAZARDOUS MATERIALS

THE CONTRACTOR SHALL NOTIFY THE JURISDICTIONAL PERMIT AGENCY IMMEDIATELY IF ANY MATERIALS ARE ENCOUNTERED THAT ARE CONSIDERED HAZARDOUS BY THE EPA, DEQ, OR OSHA. IF POTENTIALLY HAZARDOUS MATERIALS ARE ENCOUNTERED THE CONTRACTOR SHALL SECURE THE SITE AND PREVENT THE ACCIDENTAL EXPOSURE BY THE PUBLIC OR THE CONTRACTOR'S PERSONNEL.

THE CONTRACTOR MAY EXCAVATE UP TO, BUT SHALL NOT DISTURB KNOWN HAZARDOUS MATERIALS SUCH AS ASBESTOS, OILS, ACID, ETC. THE REMOVAL OF ALL HAZARDOUS MATERIALS MUST BE DONE BY AN APPROVED OR CERTIFIED HAZARDOUS MATERIALS CONTRACTOR LICENSED BY THE STATE OF JURISDICTION.

A COPY OF ALL CORRESPONDENCE PERTINENT TO THE REMOVAL OF HAZARDOUS MATERIALS SHALL BE TRANSMITTED TO OWNER AND A COPY SHALL BE AVAILABLE AT THE PROJECT OFFICE AND THE JOB SITE.

## AERIAL NOTES

- AERIAL CONSTRUCTION TO BE PERFORMED TO INDUSTRY ACCEPTABLE STANDARDS.
- ALL HEIGHTS OF CABLE PLACEMENT WILL BE RECORDED AT TIME OF CONSTRUCTION. DOCUMENT ALL POINTS OF ATTACHMENT.
- 6.6M STRAND WILL BE USED WITH STANDARD 5/8 HARDWARE.
- ALL EXTENSION ARMS TO BE PLACED WILL BE EPOXY ARMS UNLESS OTHERWISE NOTED OR APPROVED BY THE INSPECTOR.
- BOND STRAND TO POWER MGN WHERE APPLICABLE. ANCHORS TO BE USED WILL BE 3/4 SCREW IN TYPE.
- ALL STRAPS WILL BE PLACED 4" BEFORE AND AFTER EVERY SUPPORTING CLAMP AT A MINIMUM OF 21" APART.
- P.O.A. = POINT OF ATTACHMENT.
- ADD MISSING GROUNDS.
- REPAIR/REPLACE EXISTING LASHING WIRE IF DAMAGED.

## CONSTRUCTION STAKING

IN AREAS WHERE THE CONDUIT ALIGNMENT IS NOT CLEARLY DEFINED BY CURB LINES, FENCE LINES, OR OTHER EVIDENCE OF THE RIGHT-OF-WAY, THE ENGINEER WILL PROVIDE CENTERLINE STAKES OR PAINT MARKS WHERE REQUIRED TO MAKE THE PROPOSED CONDUIT ALIGNMENT EVIDENT.

MANHOLE CENTERS WILL BE FIELD STAKED BY THE ENGINEER WHEN REQUESTED WITH OFFSET STAKES AT RIGHT ANGLES (90°) TO THE CONDUIT ALIGNMENT.

CLOSURES IDENTIFIED IN THE PLANS SHALL BE LOCATED BY THE CONTRACTOR. DEVIATION FROM PLAN LAYOUT SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONDUIT AND/OR CLOSURE INSTALLATION.

IF ADDITIONAL, FIELD STAKING OR LOCATION OF CONDUITS, MANHOLES, PROPERTY LINES, ETC., BECOMES NECESSARY, THE CONTRACTOR IS TO NOTIFY THE INSPECTOR OR THE ENGINEER TWO WORKING DAYS PRIOR TO BEGINNING THE WORK.

## PERMITS - FRANCHISES - EASEMENTS

PHYSICAL WORK SHALL NOT BE STARTED UNTIL THE GOVERNING AGENCY INSPECTOR AND THE CONTRACTOR ARE IN POSSESSION OF AND HAVE CAREFULLY REVIEWED AND FULLY UNDERSTAND ALL CONDITIONS AND SPECIFICATIONS SET FORTH IN THE REQUIRED PERMITS, FRANCHISES, AND/OR EASEMENTS.

PLACING FOREMAN TO HAVE A COPY OF THE PERMITS/EASEMENTS ON SITE AT ALL TIMES.

ANY CONFLICT BETWEEN WORK PRINT SPECIFICATIONS AND SPECIFICATIONS SET FORTH UNDER RELATED PERMITS, FRANCHISES, AND/OR EASEMENTS MUST BE CLEARED BY PROPER COMPANY AUTHORITY BEFORE PROGRESSING WITH WORK INVOLVED

## .TRAFFIC CONTROL

THIS PROJECT WILL INVOLVE WORKING ALONG A MAJOR ARTERIAL ROAD AND HEAVY TRAFFIC VOLUME SHOULD BE ANTICIPATED.

UNIFORM TRAFFIC FLOW SHALL BE MAINTAINED AT ALL TIMES. ONLY EQUIPMENT AND MATERIALS NECESSARY FOR IMMEDIATELY SCHEDULED OR IN PROGRESS WORK WILL BE MAINTAINED IN THE WORK AREA. ALL OTHER EQUIPMENT AND MATERIALS WILL BE "STORED OR STOCKPILED" IN SUCH A MANNER AS TO ELIMINATE HAZARDOUS CONDITIONS FOR TRAFFIC OR PEDESTRIANS DURING NON-WORKING OR SHUT DOWN PERIODS.

TRAFFIC WARNING DEVICES AND SIGNS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (U.S. GOVERNMENT PRINTING OFFICE) AND TO THE STATE HIGHWAY DIVISION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION. HIGH LEVEL WARNING TYPE DEVICES ARE TO BE USED AT ALL TIMES AND SPECIAL WARNING DEVICES MAY BE STIPULATED BY THE JURISDICTIONAL PERMIT AGENCY AT ANY TIME THE USE WILL ADD TO THE SAFETY AND PROTECTION OF TRAFFIC OR PEDESTRIANS IN THE CONSTRUCTION AREA.

ALL CONDUIT TRENCHING IN PAVED AREAS SHALL BE BACKFILLED WITH CRUSHED GRAVEL OR COMPLETELY COVERED AT THE COMPLETION OF EACH WORKING DAY. ANY BACKFILLED TRENCH SHALL BE CAPPED WITH A MINIMUM LAYER OF ASPHALTIC CONCRETE COLD PATCH AT THE END OF EACH WORKING DAY.

THE CONTRACTOR SHALL MARK THE CONDUIT TRENCH AND DEFINE HIS CONSTRUCTION AREA CLEARLY WITH BARRICADES, CONES, AND/OR OTHER VISIBLE METHODS THAT ALERT THE PUBLIC OF THE CONSTRUCTION ACTIVITY.

A TRAFFIC CONTROL PLAN SHALL BE PREPARED BY THE CONTRACTOR AS REQUIRED AND SUBMITTED TO EACH PERMITTING AGENCY REQUESTING SUCH PLAN FOR REVIEW AND APPROVAL OR REVISION PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY FOR THIS PROJECT. THE APPROVED PLAN SHALL BE SUBMITTED TO THE AGENCY AND A COPY OF THE PLAN SHALL BE KEPT AT THE CONSTRUCTION SITE AND MUST BE READILY AVAILABLE FOR REVIEW BY THE AGENCY REPRESENTATIVES.

## SPECIAL UTILITY CLEARANCES

ALL WORK CONDUCTED ADJACENT TO WATER MAINS SHALL CONFORM TO THE FOLLOWING CONDITIONS:

- WHEREVER POSSIBLE CONDUIT SHALL MAINTAIN A HORIZONTAL SEPARATION OF 3.0 FEET, MEASURED SURFACE TO SURFACE (OUTSIDE EDGE TO OUTSIDE EDGE), FROM PARALLEL WATER MAINS.
- WHEREVER POSSIBLE, CONDUIT SHALL PASS UNDER EXISTING WATER MAINS AND MUST MAINTAIN 12" VERTICAL CLEAR SEPARATION. CONDUITS PASSING OVER WATER MAINS MUST ALSO MAINTAIN THE 12" VERTICAL SEPARATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING THIS REQUIRED VERTICAL SEPARATION BY EITHER EXPOSING THE WATER MAIN EVERY 100 FEET IN THOSE AREAS WHERE HORIZONTAL SEPARATION IS LESS THAN 3.0 FEET OR BY UTILIZING THE DEPTHS OF ADJACENT WATER VALVES. IF THE CONTRACTOR UTILIZES THE ADJACENT WATER TO DETERMINE WATER MAIN DEPTH, HE SHALL CONTACT THE AGENCY AT EACH SUCH LOCATION AND THE AGENCY WILL DETERMINE THE NECESSARY DEPTH OF THE TOP OF THE CONDUIT AT THAT POINT.
- THE VERTICAL AND HORIZONTAL SEPARATION SHALL BE MAINTAINED AT ALL TIMES UNLESS SPECIFICALLY REVISED BY AGREEMENT BETWEEN THE JURISDICTIONAL PERMIT AGENCY AND THE AGENCY ANY SPECIFIC DEVIATION IN VERTICAL AND HORIZONTAL SEPARATION FROM THOSE DESCRIBED SHALL BE REPORTED TO THE OWNER BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING VERTICAL AND HORIZONTAL SEPARATION AT ALL TIMES AND SHALL BE RESPONSIBLE FOR ANY AND ALL ENCROACHMENTS.
- CLEARANCES TO STORM SEWERS AND SANITARY SEWERS SHALL BE EXACTLY THE SAME AS THOSE TO WATER MAINS.

## STRUCTURE PROTECTION

MANHOLES AND CONDUIT TO BE PLACED ADJACENT TO EXISTING STRUCTURES SUCH AS BRIDGE BRIDGE FOOTINGS/PIERS, BUILDING FOUNDATIONS, WALLS, POWER AND TELEPHONE POLES, AND OTHER UTILITIES SHALL MAINTAIN A MINIMUM CLEARANCE AS SHOWN. THE CONTRACTOR SHALL NOT UNDERMINE ANY ADJACENT STRUCTURE WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE OWNER/OPERATOR OF SUCH STRUCTURE.

SHORING USED AS FOUNDATION SUPPORT SHALL BE DESIGNED SPECIFICALLY FOR BOTH THE LIVE AND DEAD LOADS OF THE STRUCTURE, OR IF ONLY THE DEAD LOAD IS USED FOR DESIGN, THE CONTRACTOR SHALL PROVIDE A DETAILED LAYOUT AND PLAN OF THE METHOD OF ESTABLISHING AND MAINTAINING THE DESIGN LOAD CONDITIONS (I.E., ROAD DETOURS, TIEBACKS, ETC.).

SEE UTILITY CLEARANCE SECTION NOTES FOR CLEARANCE CRITERIA TO PARALLEL OR CROSS UTILITIES.

EXISTING UTILITIES EXPOSED DURING EXCAVATION SHALL BE 100% SUPPORTED BY EITHER TRENCH BRIDGING AND SUSPENSION OR BY THE USE OF LONGITUDINAL TRAYS OR PLATFORMS VERTICALLY SUPPORTED BY ADJUSTABLE BUILDING JACKS.

EXISTING SPLICE CASES AND CABLES SHALL BE SUPPORTED BY SUSPENSION FROM A CROSSING BEAM. SUPPORTS SHALL BE PLACED AT A MAXIMUM SPACING OF 4.0 FEET AND SHALL CONSIST OF A CANVAS SLING WITH NYLON BELTING OR ROPE. ALL CABLE SUPPORTS SHALL BE PLACED IN A MANNER THAN PREVENTS KINKS OR OTHER DAMAGE TO THE CABLE SHEATH.

AN ACCEPTABLE ALTERNATIVE TO CABLE SLINGS WOULD BE THE UTILIZATION OF A WIDE FLANGE "I" BEAM OR CHANNEL AS A "CABLE TRAY" WITH THE CABLES/CASES BANDED IN PLACE.

## SHORING

THE CONTRACTOR SHALL PROVIDE SHORING FOR CONDUIT TRENCH EXCAVATION 42" OR MORE IN DEPTH AS MEASURED FROM THE HIGH SIDE OF THE TRENCH AND FOR ALL MANHOLE EXCAVATION.

MANHOLE SHORING SHALL BE TIGHT-SHEETED.

ALL SHORING SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF LOCAL COUNTY AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

SHORING SHALL BE DESIGNED TO MEET H-20 HIGHWAY LOADING.

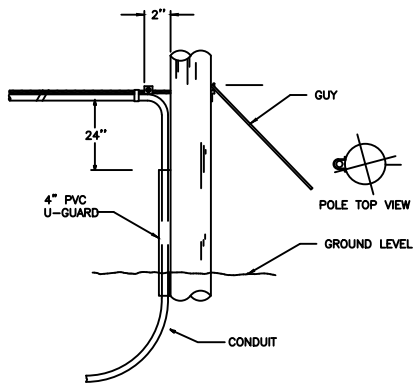
THE CONTRACTOR SHALL PROVIDE ALL SHORING AND DESIGN CALCULATIONS TO THE PERMIT ISSUING AGENCY PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY.



3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG DESIGN	DRAFTING	COMMENT
SOUTH CAROLINA TELECOMMUNICATIONS GROUP HOLDINGS, LLC d/b/a SEGRA				
PROJECT MANAGER: ROSS BRADLEY				
ENGINEERING FIRM: BYERS ENGINEERING				
SO/EWO#, EBS# 910982-001				
PROJECT: COLUMBIA CLUSTER 25				
ADDRESS: COLUMBIA, SC				
DRAWING NAME: SEGRA COVERS - RICHLAND COUNTY.dwg				
CONFIDENTIAL/PROPRIETARY				SHEET: C4 OF C9

# TYPICALS

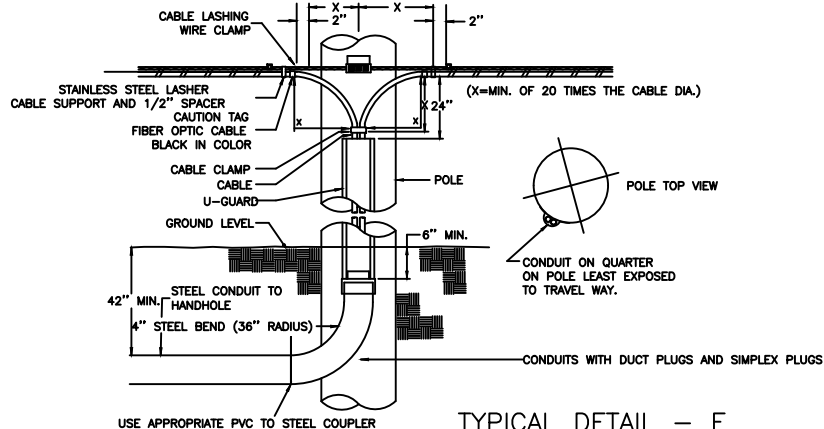
TYPICAL DETAIL – A  
POLE ARRANGEMENT FOR AERIAL TO BURIED CABLE



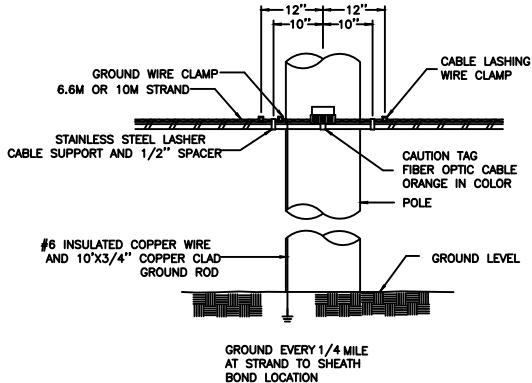
NOTES:

1. EXTEND U-GUARD MIN. 6" BELOW GROUND LEVEL
2. FOR CONDUIT PL. U-GUARD BELOW SURFACE TO CONDUIT ADAPTER.
3. USE STEEL CONDUIT OR U-GUARD FROM BOTTOM OF POLE UP 10'.

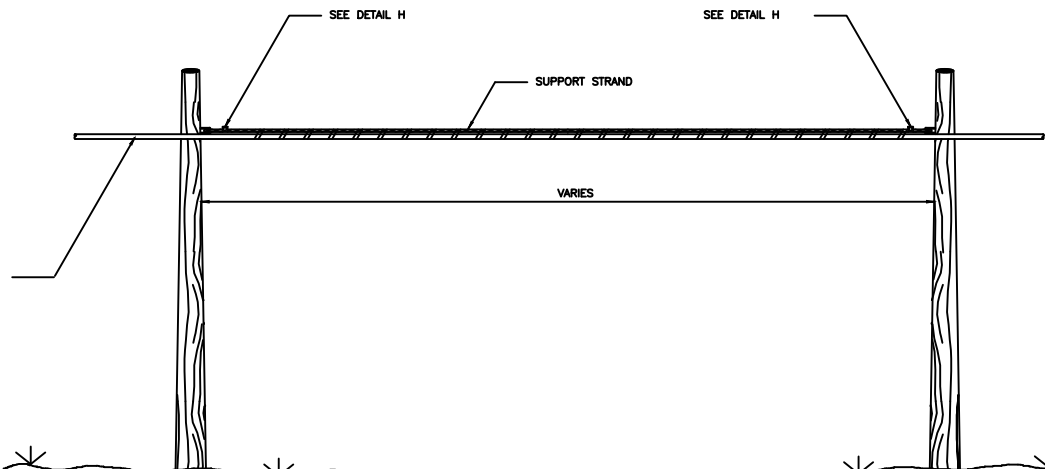
TYPICAL DETAIL – B  
POLE ARRANGEMENT FOR REPEATER  
OR HANDHOLE LOCATION



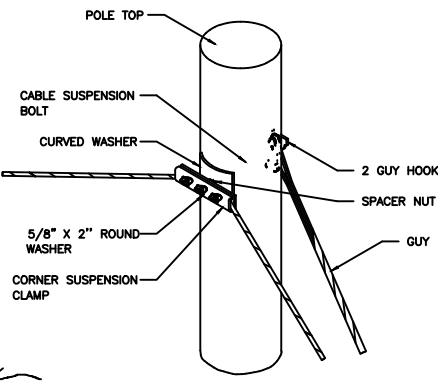
TYPICAL DETAIL – C  
TYPICAL CABLE & HARDWARE INSTALLATION  
(6.6M STRAND \ 10M STRAND)



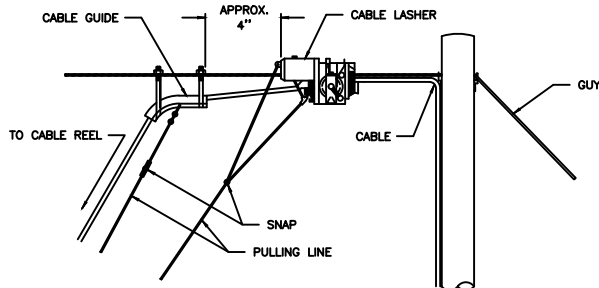
TYPICAL DETAIL – D



TYPICAL DETAIL – E  
SUSPENSION STRAND – PULL AWAY  
FROM POLE – 5 FEET OR MORE



TYPICAL DETAIL – F  
TYPICAL ARRANGEMENT OF  
CABLE LASHER AND CABLE GUIDE



TYPICAL DETAIL – G  
JOINING 045 LASHING WIRE



REMOVE ANY SLACK IN THE LASHING WIRE BY MAINTAINING A PULL ON THE WIRE AND TAPPING THE STRAND SHARPLY. THEN FORM THE WIRE OVER THE STUD AND TIGHTEN THE NUT. CUT THE FREE END OF THE LASHING WIRE OFF 3/4" BEYOND THE END OF THE CLAMP.

FORMING WIRE OVER STUD OF CLAMP

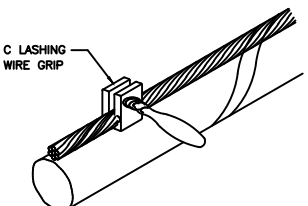
FORM THE LASHING WIRE AROUND THE STRAND AND PLACE IT BELOW THE STUD AND BETWEEN THE SECOND WASHER AND STUD SHOULDER.

FORMING LASHING WIRE AROUND STRAND



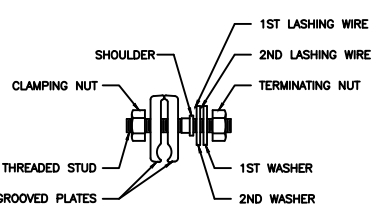
TYPICAL DETAIL – H  
LASHING WIRE GRIP AND CLAMP

C LASHING WIRE GRIP INSTALLED ON STRAND

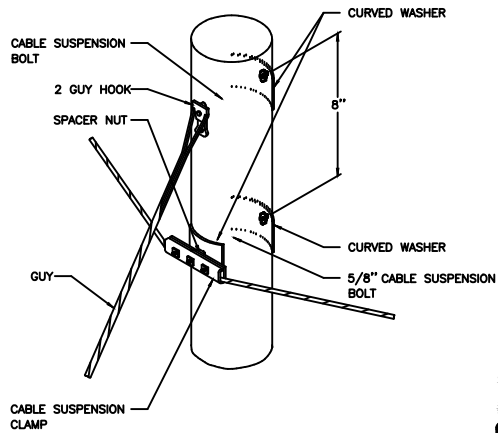


NOTE:  
LASHING WIRE  
SHOULD FOLLOW LAY  
OF STRAND WIRES UNDER  
GRIP.

D CABLE LASHING CLAMP



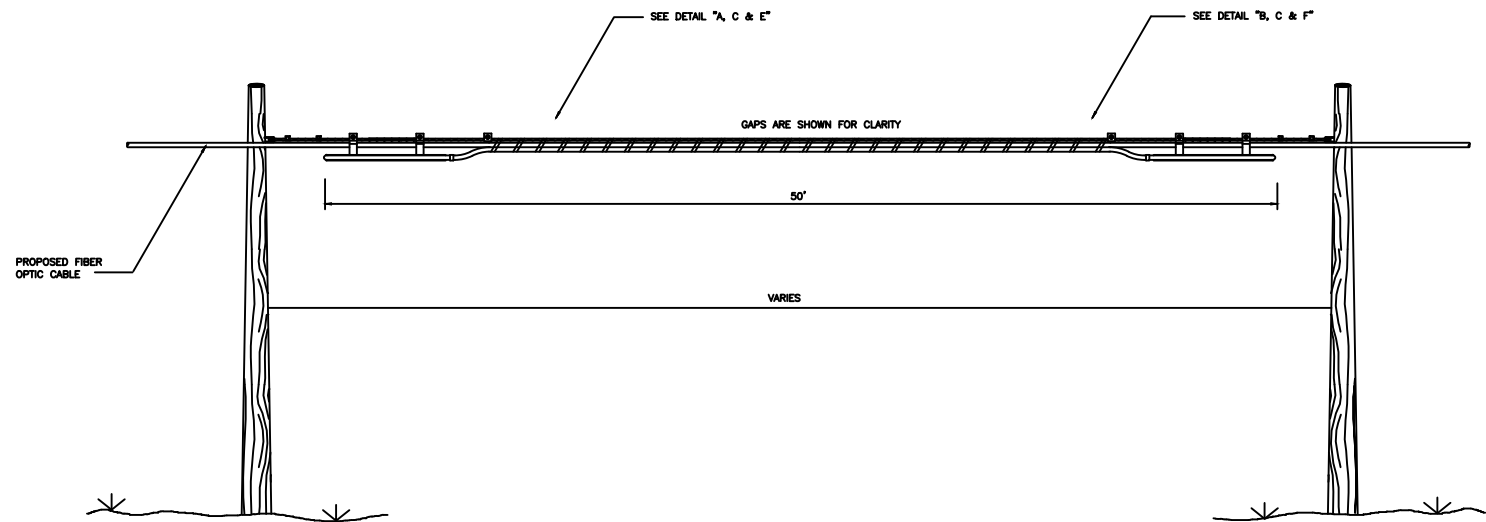
TYPICAL DETAIL – I  
SUSPENSION STRAND – PULL TOWARD  
POLE – LESS THAN 5 FEET



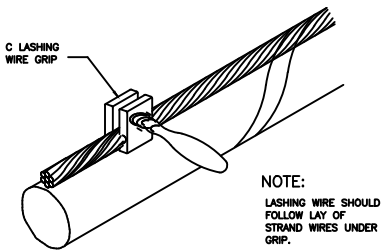
3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG	DESIGN	DRAFTING
				COMMENT
SOUTH CAROLINA TELECOMMUNICATIONS GROUP HOLDINGS, LLC d/b/a SEGRA				
PROJECT MANAGER: ROSS BRADLEY				
ENGINEERING FIRM: BYERS ENGINEERING				
SO/EWO#, EBS# 910982-001				
PROJECT: COLUMBIA CLUSTER 25				
ADDRESS: COLUMBIA, SC				
DRAWING NAME: SEGRA COVERS - RICHLAND COUNTY.dwg				
CONFIDENTIAL/PROPRIETARY				
SHEET: C5 OF C9				

TYPICALS

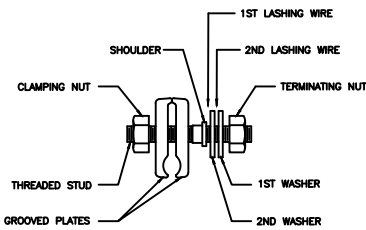
TYPICAL DETAIL FOR STORING CABLE SLACK



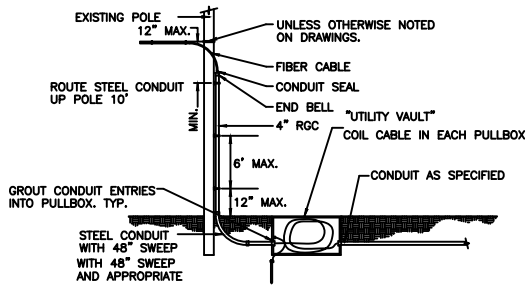
TYPICAL DETAIL – C  
LASHING WIRE GRIP AND CLAMP  
C LASHING WIRE GRIP INSTALLED ON STRAND



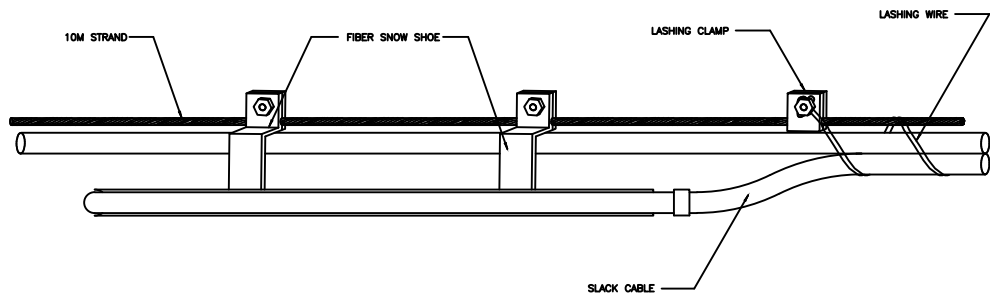
TYPICAL DETAIL – D  
CABLE LASHING CLAMP



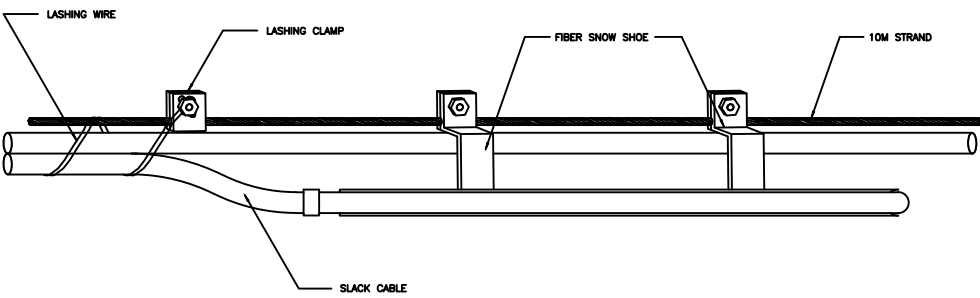
TYPICAL DETAIL – # 1  
AERIAL/UNDERGROUND TRANSITION



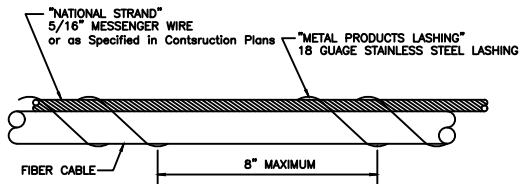
TYPICAL DETAIL – A



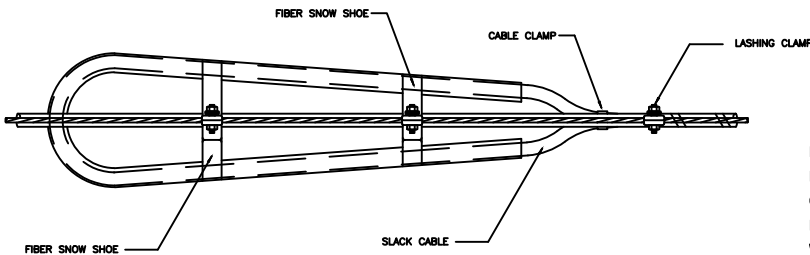
TYPICAL DETAIL – B



TYPICAL DETAIL – # 2  
LASHING

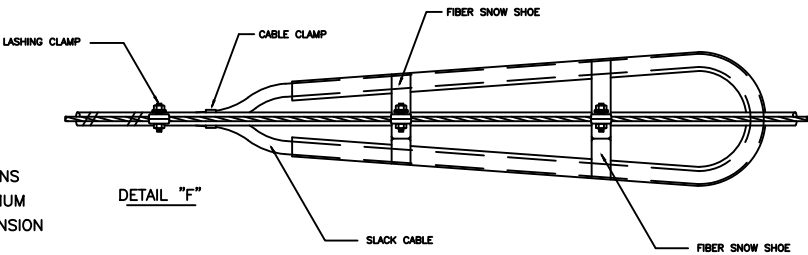


TYPICAL DETAIL – E



NOTE:  
DO NOT EXCEED THE MANUFACTURERS SPECIFICATIONS CONCERNING MINIMUM BENDING RADIUS. THE MINIMUM BENDING RADIUS OF FIBER OPTIC CABLE UNDER TENSION WILL NOT EXCEED 20 TIMES THE CABLE DIAMETER.

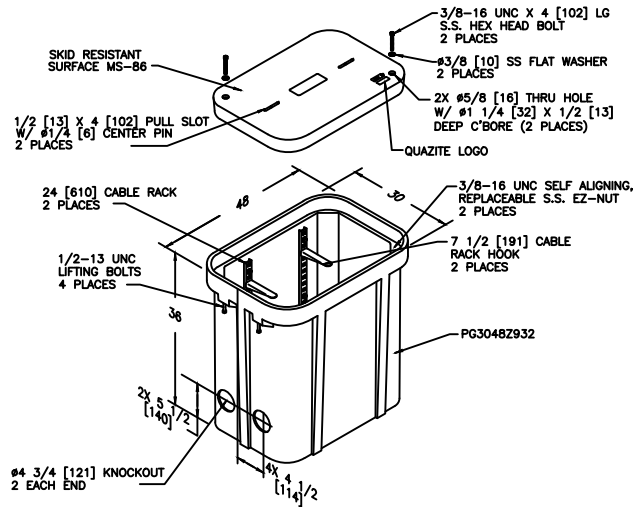
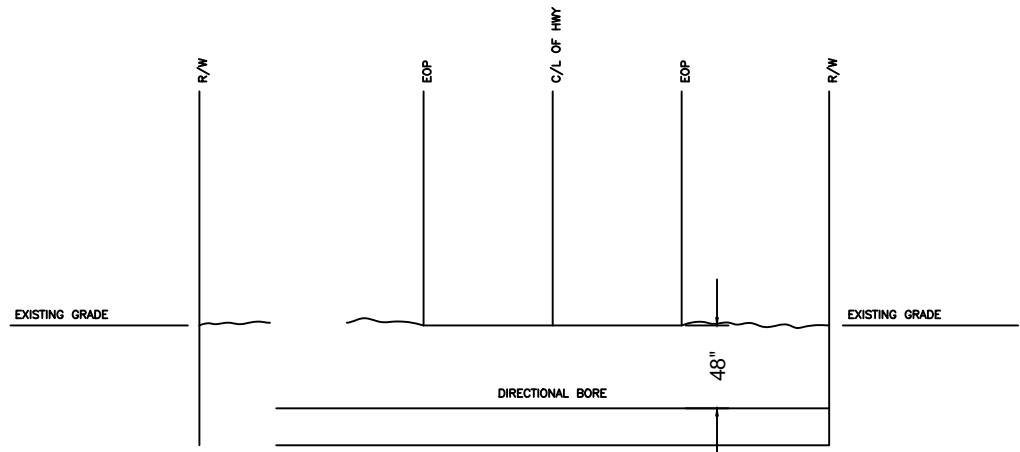
TYPICAL DETAIL – F



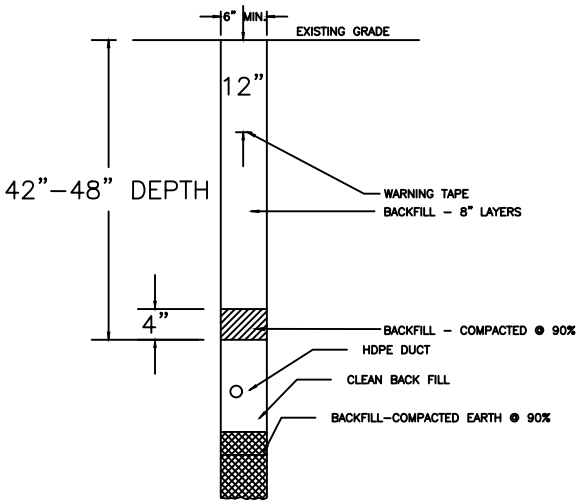
3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG DESIGN	DRAFTING	COMMENT
SOUTH CAROLINA TELECOMMUNICATIONS GROUP HOLDINGS, LLC d/b/a SEGRA				
PROJECT MANAGER: ROSS BRADLEY				
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PROJECT: COLUMBIA CLUSTER 25				
ADDRESS: COLUMBIA, SC				
DRAWING NAME: SEGRA COVERS - RICHLAND COUNTY.dwg				
CONFIDENTIAL/PROPRIETARY				

TYPICALS

TYPICAL DETAIL -- # 1  
DIRECTIONAL BORE  
UNDER ROAD / HIGHWAY / INTERSTATE

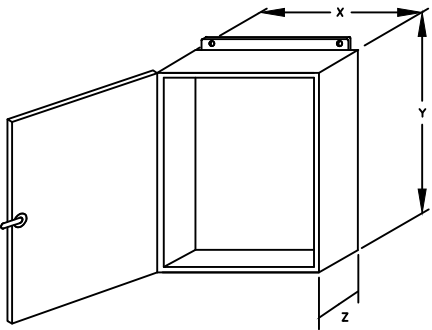
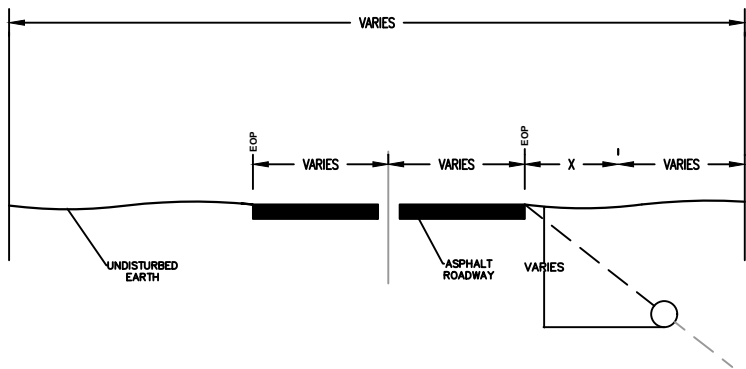


TYPICAL DETAIL -- # 3  
QUAZITE 30X48X36 BOX ASSEMBLY  
W/(2) 24" CR, (2) 7 1/2" CR, HOOKS  
& (4) #4 3/4 KNOCKOUT  
PG30482932



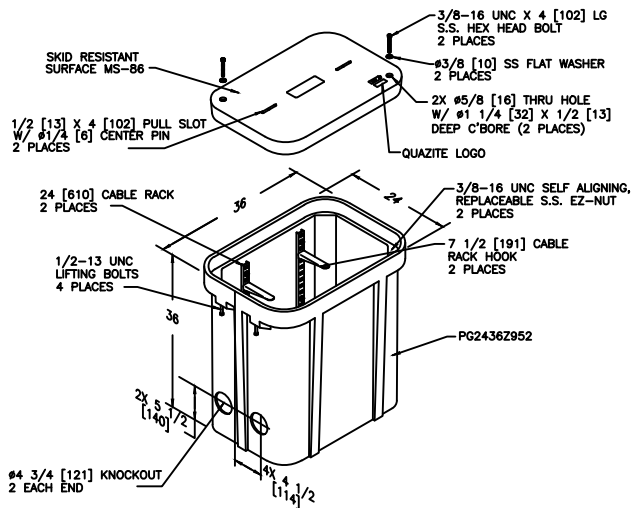
TYPICAL DETAIL -- #4  
TRENCH IN SOIL (NON TRAFFIC AREAS)

TYPICAL DETAIL "H"  
PARALLEL CONDUIT DETAIL FOR DOT R/W

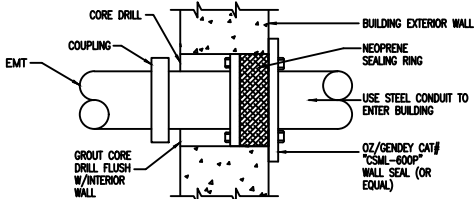


PULL BOX TYPE	X"	Y"	Z"
DISTRIBUTION	24"	24"	8"
CABLE STORAGE	36"	36"	12"

TYPICAL DETAIL -- 1  
TYPICAL SINGLE DOOR  
HOFFMAN LOCKING PULL BOX



TYPICAL DETAIL -- # 8  
QUAZITE 24X36X36 BOX ASSEMBLY  
W/(2) 24" CR, (2) 7 1/2" CR, HOOKS  
& (4) #4 3/4 KNOCKOUT  
PG24362952



TYPICAL DETAIL -- # 2  
CONDUIT SEAL



3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG DESIGN	DRAFTING	COMMENT

SOUTH CAROLINA TELECOMMUNICATIONS  
GROUP HOLDINGS, LLC d/b/a SEGRA

PROJECT MANAGER: ROSS BRADLEY  
ENGINEERING FIRM: BYERS ENGINEERING  
SO/EWO#, EBS# 910982-001  
PROJECT: COLUMBIA CLUSTER 25  
ADDRESS: COLUMBIA, SC  
DRAWING NAME: SEGRA COVERS - RICHLAND COUNTY.dwg

CONFIDENTIAL/PROPRIETARY

SHEET: C7 OF C9



TYPICALS

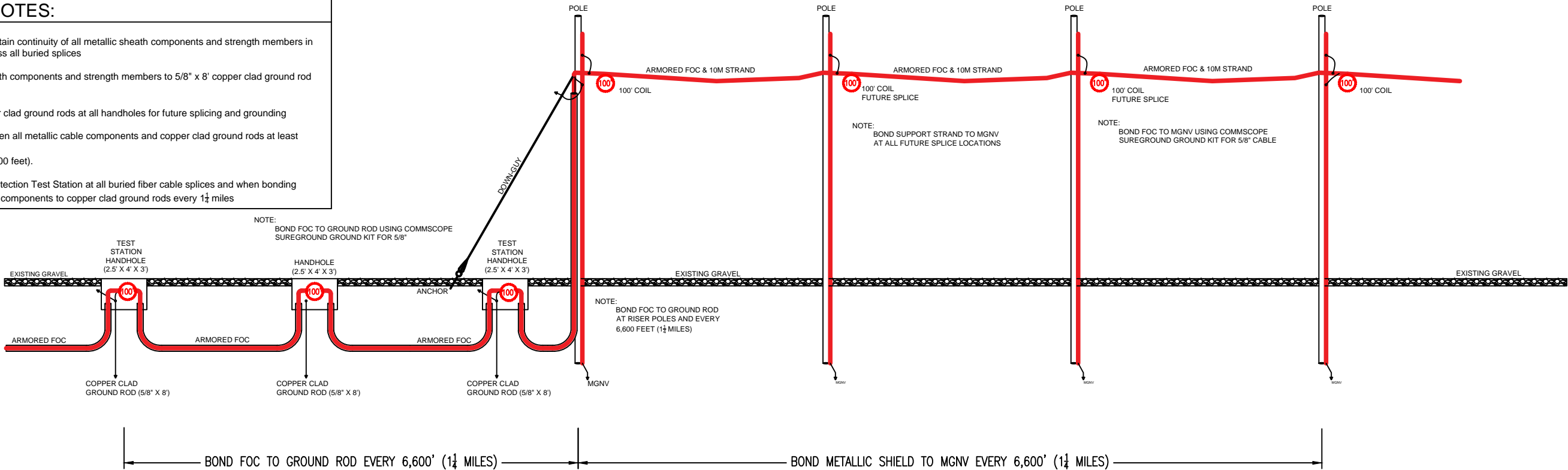
BONDING AND GROUNDING DETAILS

AERIAL NOTES:

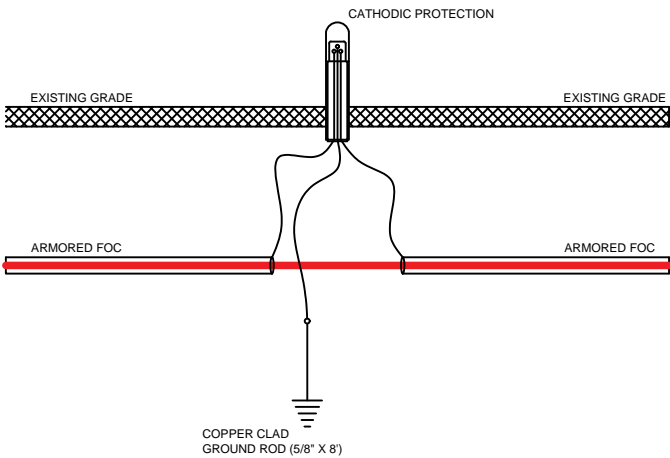
- 1. Establish and maintain continuity of all metallic components (strength member, shield, moisture barrier, armor) across all aerial splices.
- 2. Bond metallic components to the support strand at all splice locations
- 3. Bond support strand to pole MGNV at all riser poles, fiber loop (2,000') locations for future splice and fiber splice locations
- 4. Place bonds between all metallic cable components and the support strand at least once every 1 1/4 miles (6,600 feet).

BURIED NOTES:

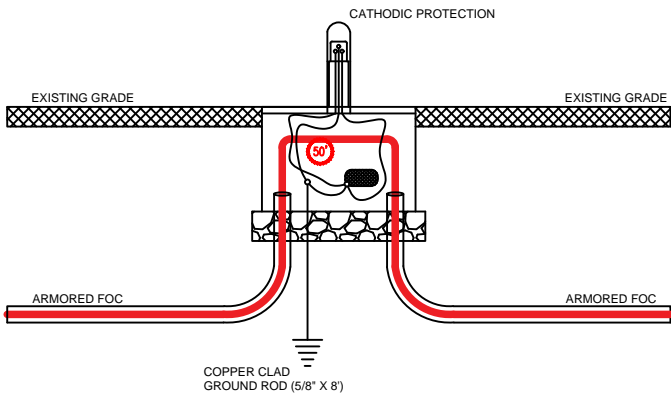
- 1. Establish and maintain continuity of all metallic sheath components and strength members in the cable and across all buried splices
- 2. Bond metallic sheath components and strength members to 5/8" x 8' copper clad ground rod at all buried splices
- 3. Place 5/8" x 8' copper clad ground rods at all handholes for future splicing and grounding
- 4. Place bonds between all metallic cable components and copper clad ground rods at least once every 1 1/4 miles (6,600 feet).
- 5. Place Cathodic Protection Test Station at all buried fiber cable splices and when bonding fiber metallic cable components to copper clad ground rods every 1 1/4 miles



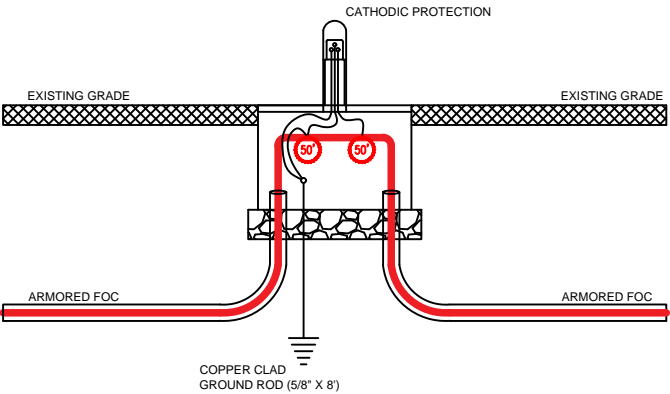
TEST STATION DETAIL SCHEMATIC



TEST STATION WITH FIELD SPLICE



TEST STATION WITH COIL FOR FUTURE SPLICE



Know what's below.  
Call before you dig.

3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG DESIGN	DRAFTING	COMMENT
SOUTH CAROLINA TELECOMMUNICATIONS GROUP HOLDINGS, LLC d/b/a SEGRA				
PROJECT MANAGER: ROSS BRADLEY				
ENGINEERING FIRM: BYERS ENGINEERING				
SO/EWO#, EBS# 910982-001				
PROJECT: COLUMBIA CLUSTER 25				
ADDRESS: COLUMBIA, SC				
DRAWING NAME: SEGRA COVERS - RICHLAND COUNTY.dwg				
CONFIDENTIAL/PROPRIETARY				
SHEET: C8 OF C9				



MATERIAL TOTALS

288CT FOC	6506'
(3) 1-1/4" HDPE	5406'
30"X48"X36" HANDHOLE	10

OSP 288CT. FIBER OPTIC CABLE	UNDERGROUND	5406'
OSP 288CT. SLACK LOOP	UNDERGROUND	1100'

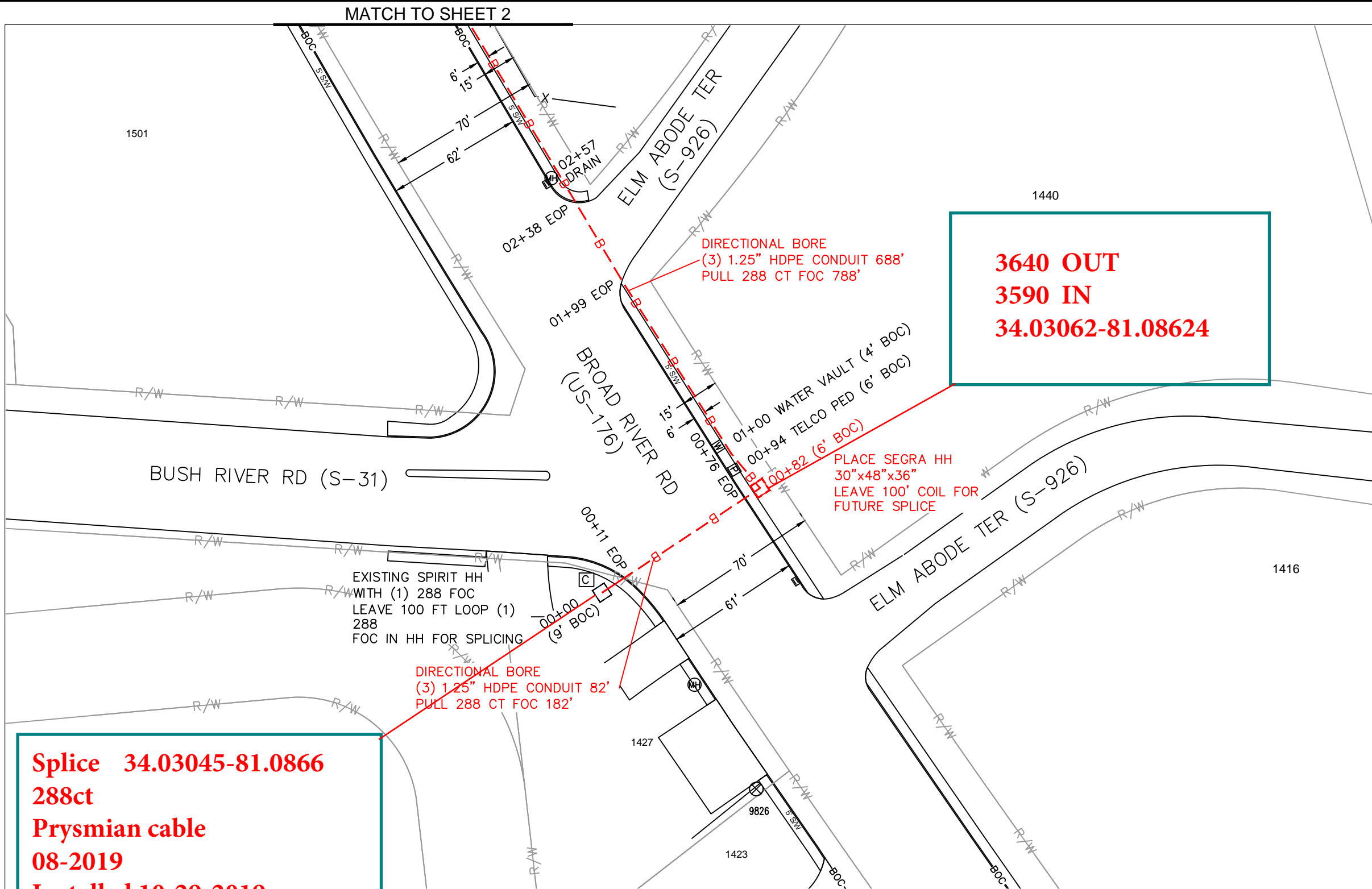
TOTAL 6506'

JOB TOTAL (288CT): 6506'



Know what's below.  
Call before you dig.

3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG DESIGN	DRAFTING	COMMENT
SOUTH CAROLINA TELECOMMUNICATIONS GROUP HOLDINGS, LLC d/b/a SEGRA				
PROJECT MANAGER: ROSS BRADLEY				
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SO/EWO#, EBS# 910982-001				
PROJECT: COLUMBIA CLUSTER 25				
ADDRESS: COLUMBIA, SC				
DRAWING NAME: SEGRA COVERS - RICHLAND COUNTY.dwg				
CONFIDENTIAL/PROPRIETARY				SHEET: C9 OF C9



**3640 OUT**  
**3590 IN**  
**34.03062-81.08624**

**Splice 34.03045-81.0866**  
**288ct**  
**Prysmian cable**  
**08-2019**  
**Installed 10-29-2019**  
**3540 END**  
**3440 IN**


SCALE IS FOR REFERENCE PURPOSES ONLY. THE CABLE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE PERMITTING MUNICIPALITY PRIOR TO BEGINNING CONSTRUCTION, IN ORDER TO VERIFY THAT THE CABLE IS BEING PLACED WITHIN THEIR RIGHT-OF-WAY.



Know what's below.  
Call before you dig.



SCALE: 1"=50'



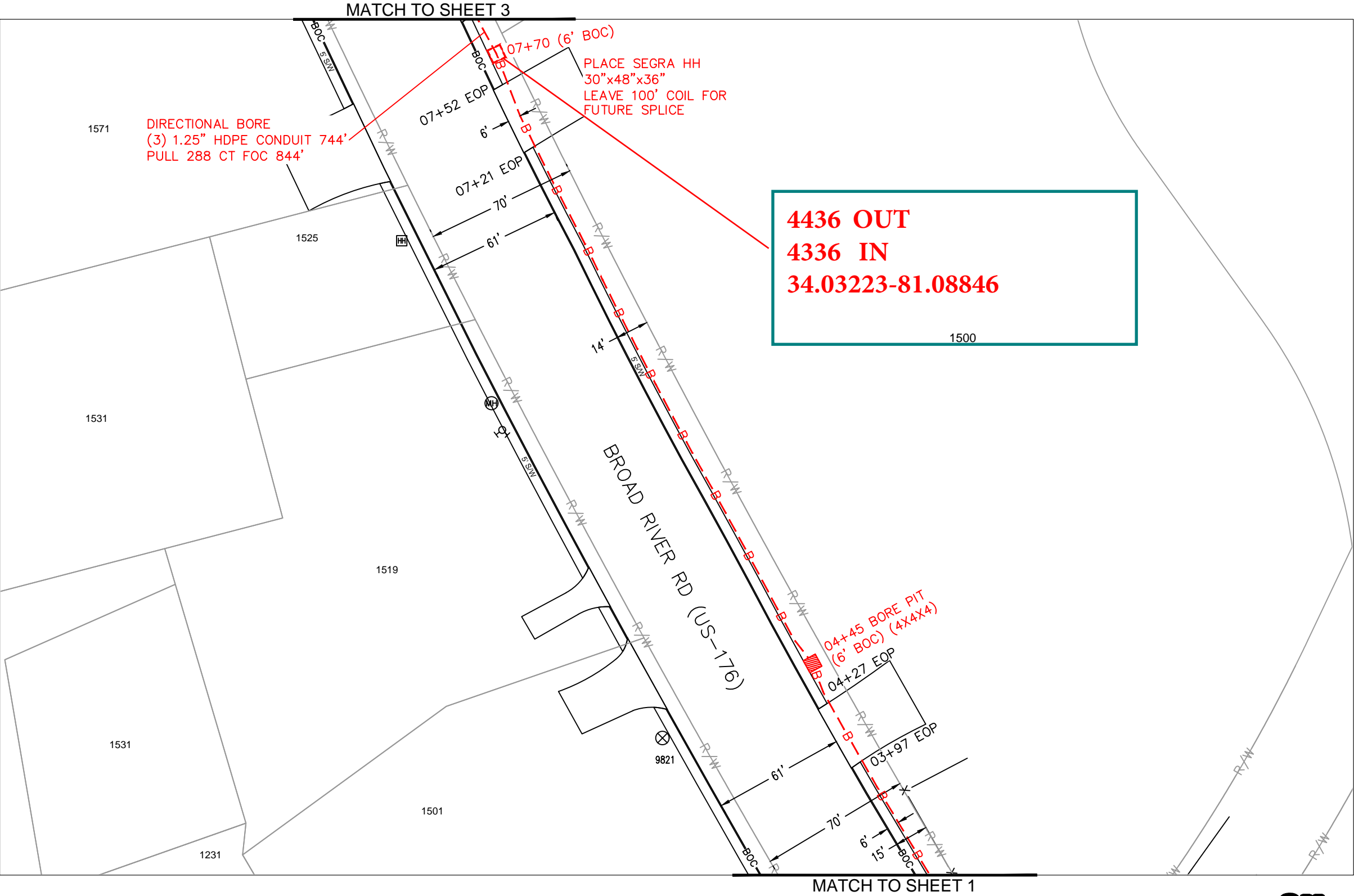
SYMBOL CORRESPONDS TO PHOTO LOCATIONS AND ORIENTATION. SEE SHEET # FOR SITE PHOTOGRAPHS.

3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG	DESIGN	DRAFTING
				COMMENT

SOUTH CAROLINA TELECOMMUNICATIONS GROUP HOLDINGS, LLC d/b/a SEGRA

PROJECT MANAGER: ROSS BRADLEY  
ENGINEERING FIRM: BYERS ENGINEERING  
SO/EWO#, EBS# 910982-001  
PROJECT: COLUMBIA CLUSTER 25  
ADDRESS: COLUMBIA, SC  
DRAWING NAME: Columbia Cluster 25.dwg

CONFIDENTIAL/PROPRIETARY



# SYMBOL CORRESPONDS TO PHOTO LOCATIONS AND ORIENTATION. SEE SHEET # FOR SITE PHOTOGRAPHS.

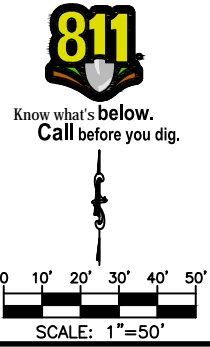
3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG	DESIGN	DRAFTING
				COMMENT

SOUTH CAROLINA TELECOMMUNICATIONS  
GROUP HOLDINGS, LLC d/b/a SEGRA

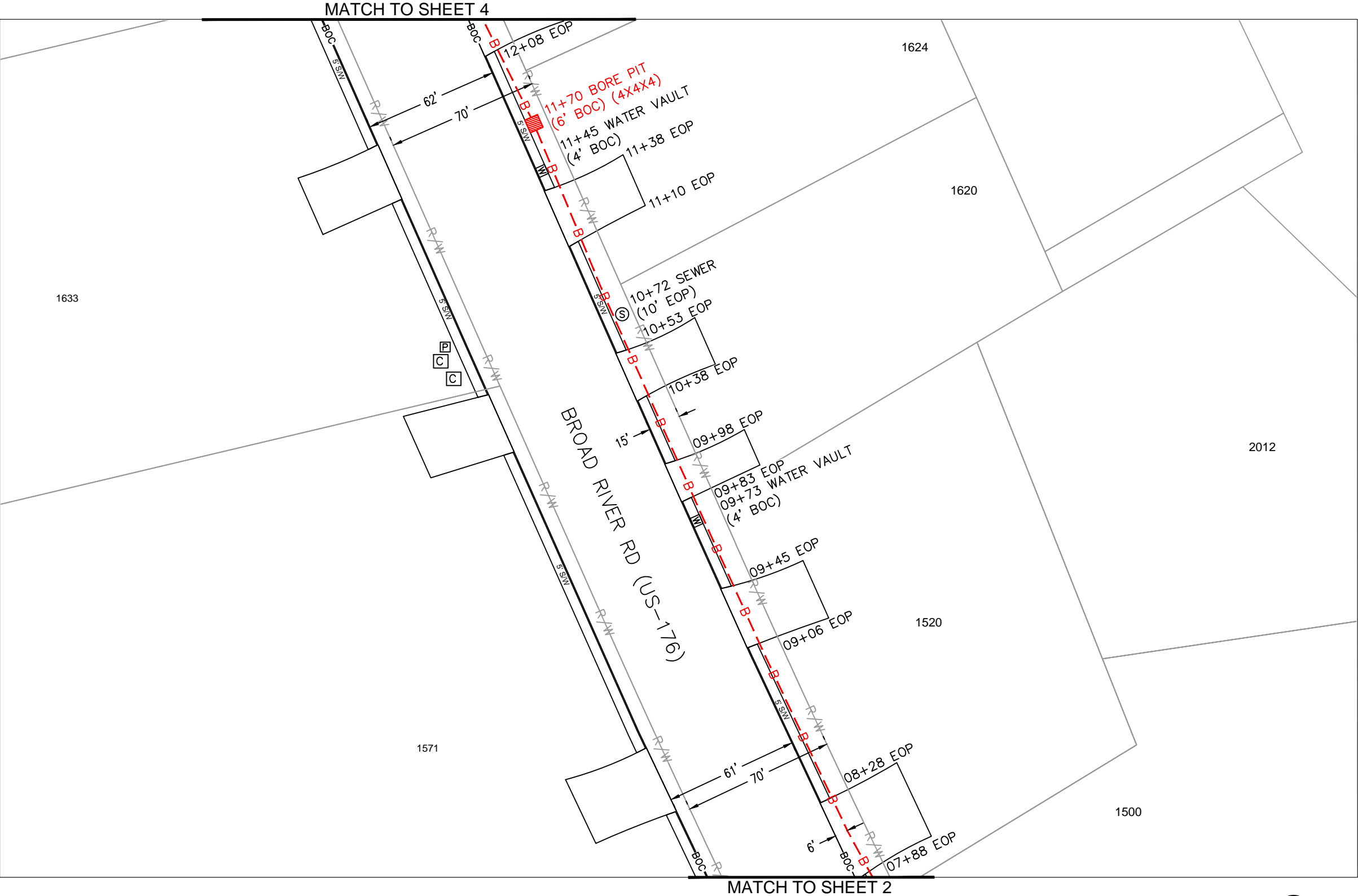
PROJECT MANAGER: ROSS BRADLEY  
ENGINEERING FIRM: BYERS ENGINEERING  
SO/EWO#, EBS# 910982-001  
PROJECT: COLUMBIA CLUSTER 25  
ADDRESS: COLUMBIA, SC  
DRAWING NAME: Columbia Cluster 25.dwg

CONFIDENTIAL/PROPRIETARY SHEET: 02 OF 11

SCALE IS FOR REFERENCE PURPOSES ONLY. THE CABLE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE PERMITTING MUNICIPALITY PRIOR TO BEGINNING CONSTRUCTION, IN ORDER TO VERIFY THAT THE CABLE IS BEING PLACED WITHIN THEIR RIGHT-OF-WAY.







# SYMBOL CORRESPONDS TO PHOTO LOCATIONS AND ORIENTATION. SEE SHEET # FOR SITE PHOTOGRAPHS.

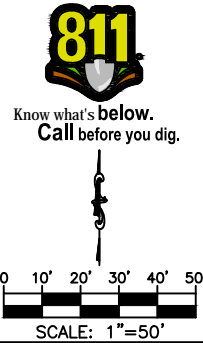
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2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG	DESIGN	DRAFTING
				COMMENT

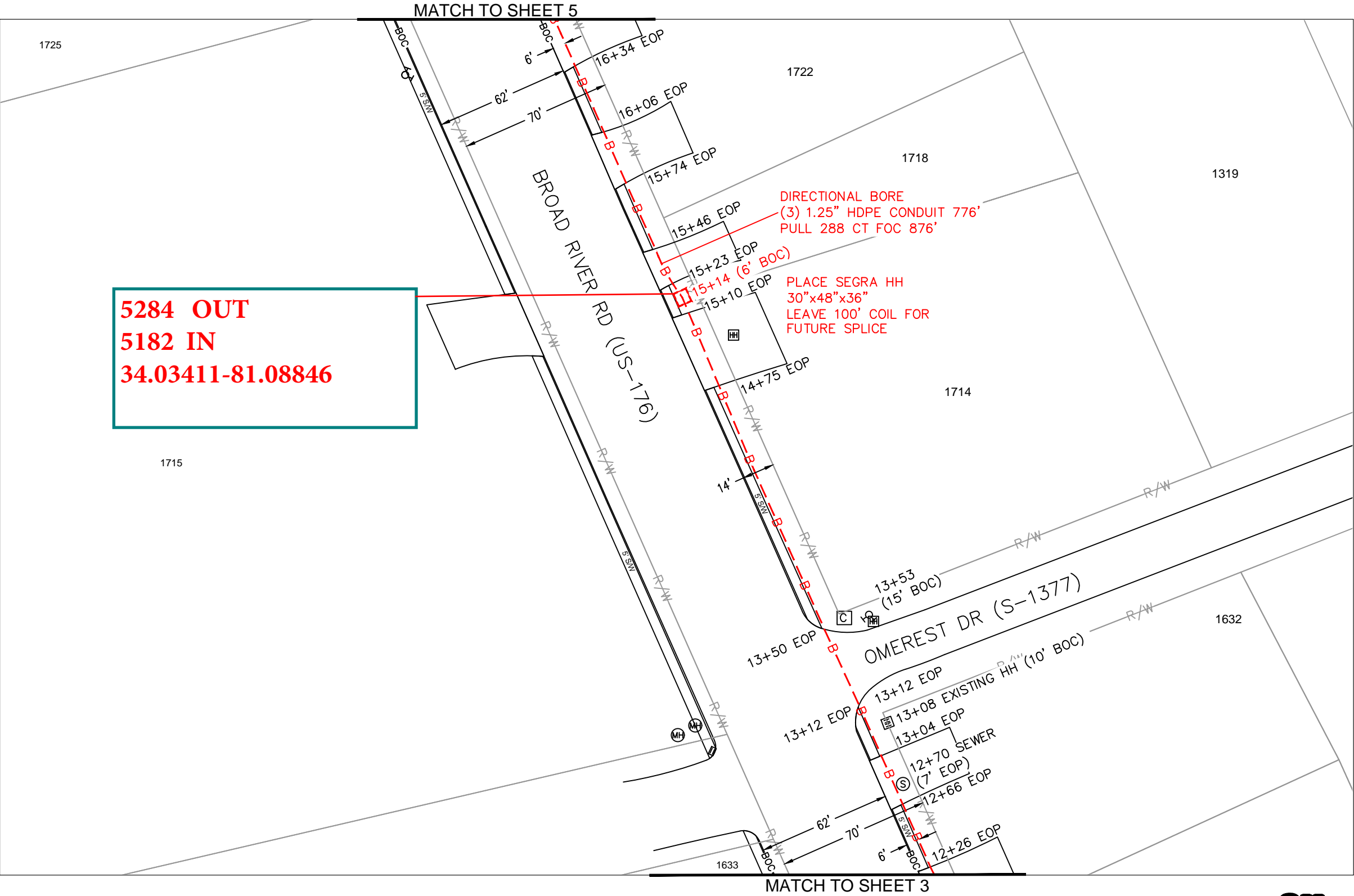
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SO/EWO#, EBS# 910982-001  
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ADDRESS: COLUMBIA, SC  
DRAWING NAME: Columbia Cluster 25.dwg

CONFIDENTIAL/PROPRIETARY SHEET: 03 OF 11

SCALE IS FOR REFERENCE PURPOSES ONLY. THE CABLE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE PERMITTING MUNICIPALITY PRIOR TO BEGINNING CONSTRUCTION, IN ORDER TO VERIFY THAT THE CABLE IS BEING PLACED WITHIN THEIR RIGHT-OF-WAY.





5284 OUT  
5182 IN  
34.03411-81.08846

DIRECTIONAL BORE  
(3) 1.25" HDPE CONDUIT 776'  
PULL 288 CT FOC 876'

PLACE SEGRA HH  
30"x48"x36"  
LEAVE 100' COIL FOR  
FUTURE SPLICE

SCALE IS FOR REFERENCE PURPOSES ONLY. THE CABLE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE PERMITTING MUNICIPALITY PRIOR TO BEGINNING CONSTRUCTION, IN ORDER TO VERIFY THAT THE CABLE IS BEING PLACED WITHIN THEIR RIGHT-OF-WAY.

**811**  
Know what's below.  
Call before you dig.

SCALE: 1"=50'

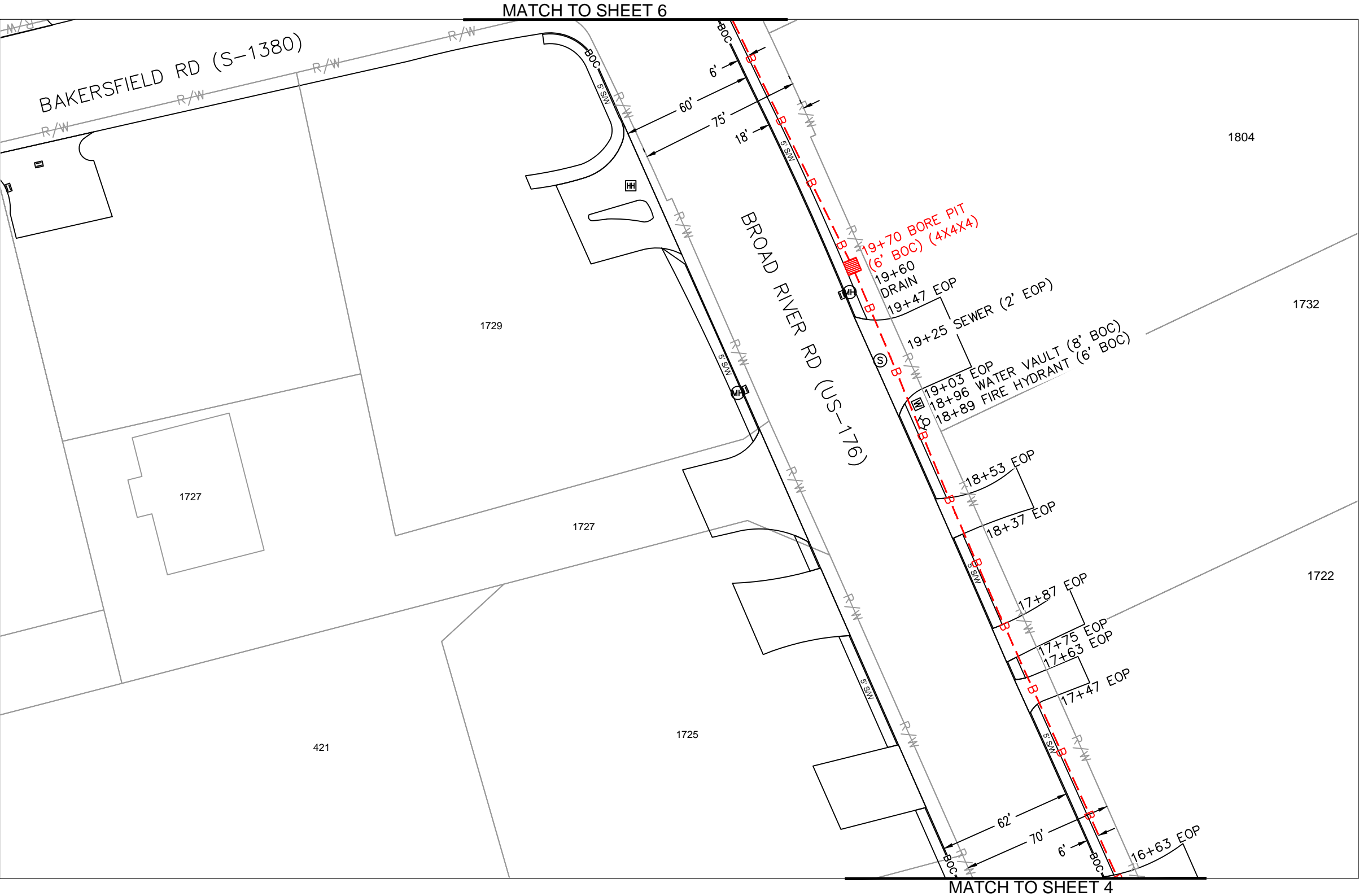
SYMBOL CORRESPONDS TO PHOTO LOCATIONS AND ORIENTATION. SEE SHEET # FOR SITE PHOTOGRAPHS.

3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG DESIGN	DRAFTING	COMMENT

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ADDRESS: COLUMBIA, SC  
DRAWING NAME: Columbia Cluster 25.dwg

CONFIDENTIAL/PROPRIETARY SHEET: 04 OF 11



# SYMBOL CORRESPONDS TO PHOTO LOCATIONS AND ORIENTATION. SEE SHEET # FOR SITE PHOTOGRAPHS.

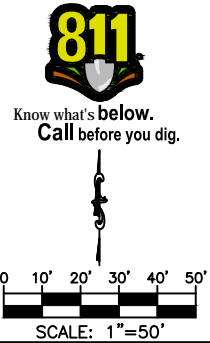
3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG	DESIGN	DRAFTING
				COMMENT

SOUTH CAROLINA TELECOMMUNICATIONS GROUP HOLDINGS, LLC d/b/a SEGRA

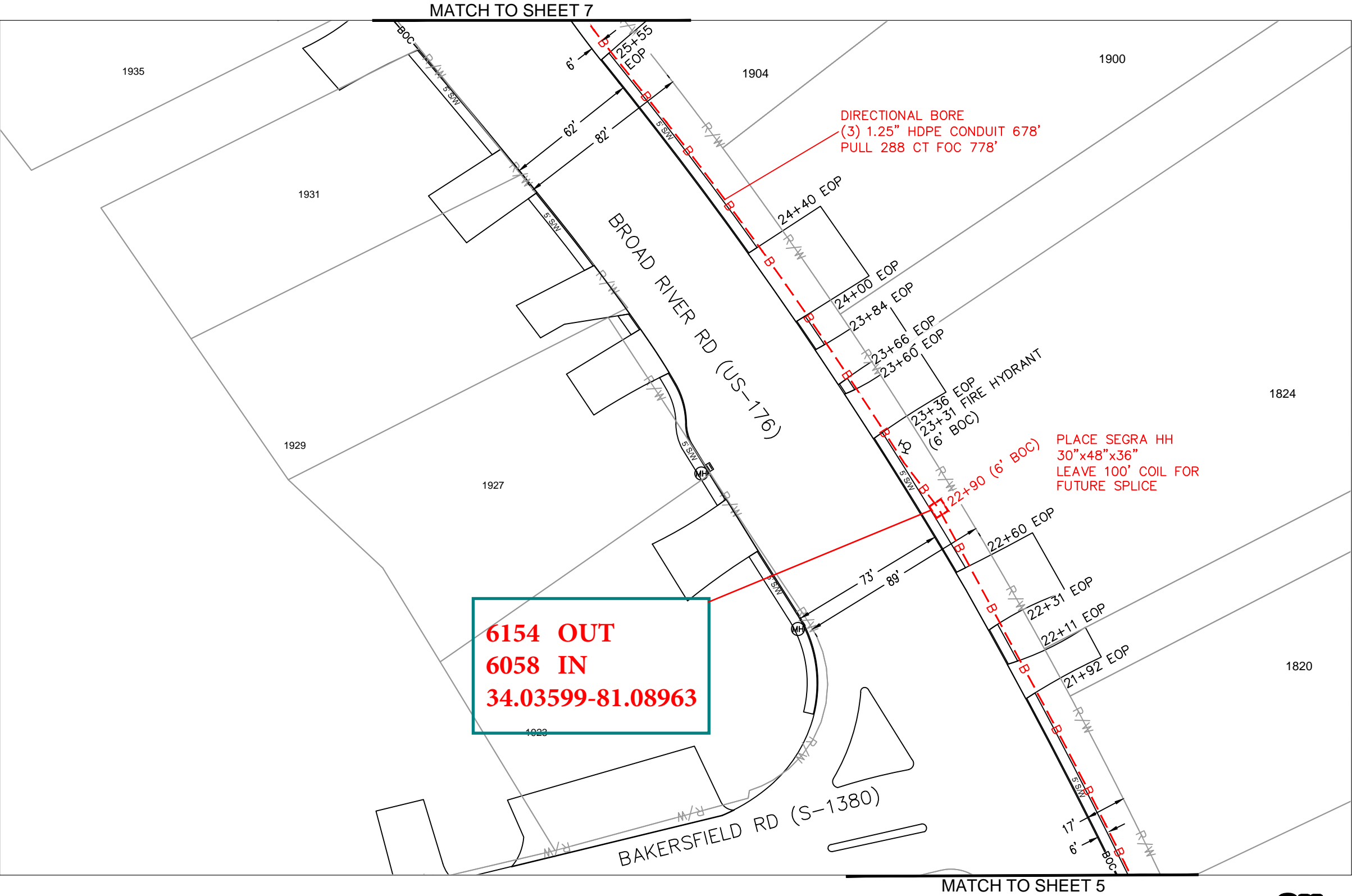
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CONFIDENTIAL/PROPRIETARY SHEET: 05 OF 11

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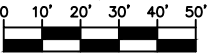


**6154 OUT**  
**6058 IN**  
**34.03599-81.08963**

SCALE IS FOR REFERENCE PURPOSES ONLY. THE CABLE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE PERMITTING MUNICIPALITY PRIOR TO BEGINNING CONSTRUCTION, IN ORDER TO VERIFY THAT THE CABLE IS BEING PLACED WITHIN THEIR RIGHT-OF-WAY.



Know what's below.  
Call before you dig.



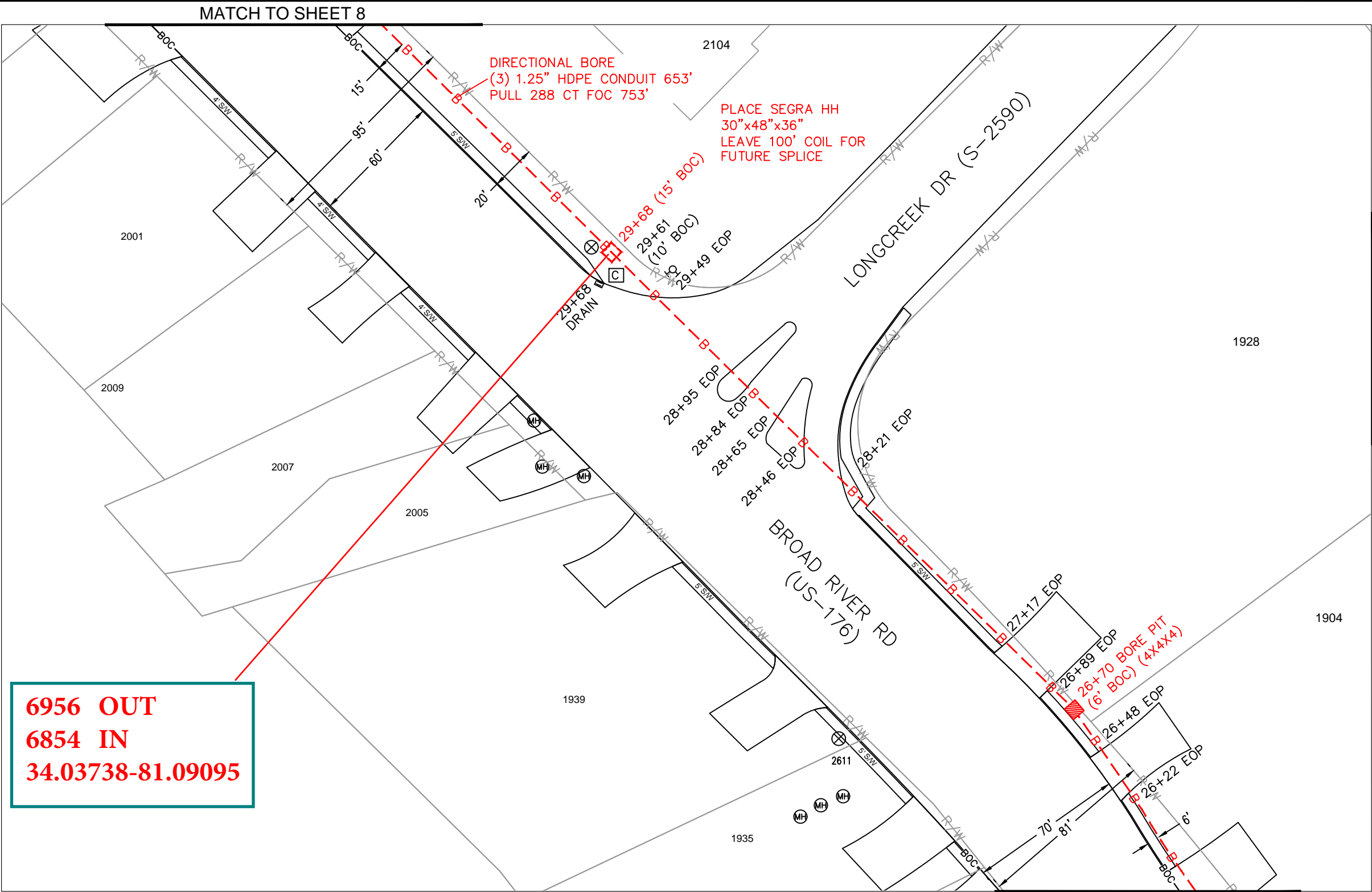
SCALE: 1"=50'

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3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG DESIGN	DRAFTING	COMMENT

SOUTH CAROLINA TELECOMMUNICATIONS GROUP HOLDINGS, LLC d/b/a SEGRA

PROJECT MANAGER: ROSS BRADLEY  
ENGINEERING FIRM: BYERS ENGINEERING  
SO/EWO#, EBS# 910982-001  
PROJECT: COLUMBIA CLUSTER 25  
ADDRESS: COLUMBIA, SC  
DRAWING NAME: Columbia Cluster 25.dwg



MATCH TO SHEET 7



SYMBOL CORRESPONDS TO PHOTO LOCATIONS AND ORIENTATION. SEE SHEET # FOR SITE PHOTOGRAPHS.


3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG DESIGN	DRAFTING	COMMENT

**SOUTH CAROLINA TELECOMMUNICATIONS GROUP HOLDINGS, LLC d/b/a SEGRA**

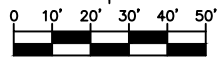
PROJECT MANAGER: ROSS BRADLEY  
ENGINEERING FIRM: BYERS ENGINEERING  
SO/EWO#, EBS# 910982-001  
PROJECT: COLUMBIA CLUSTER 25  
ADDRESS: COLUMBIA, SC  
DRAWING NAME: Columbia Cluster 25.dwg

**CONFIDENTIAL/PROPRIETARY**

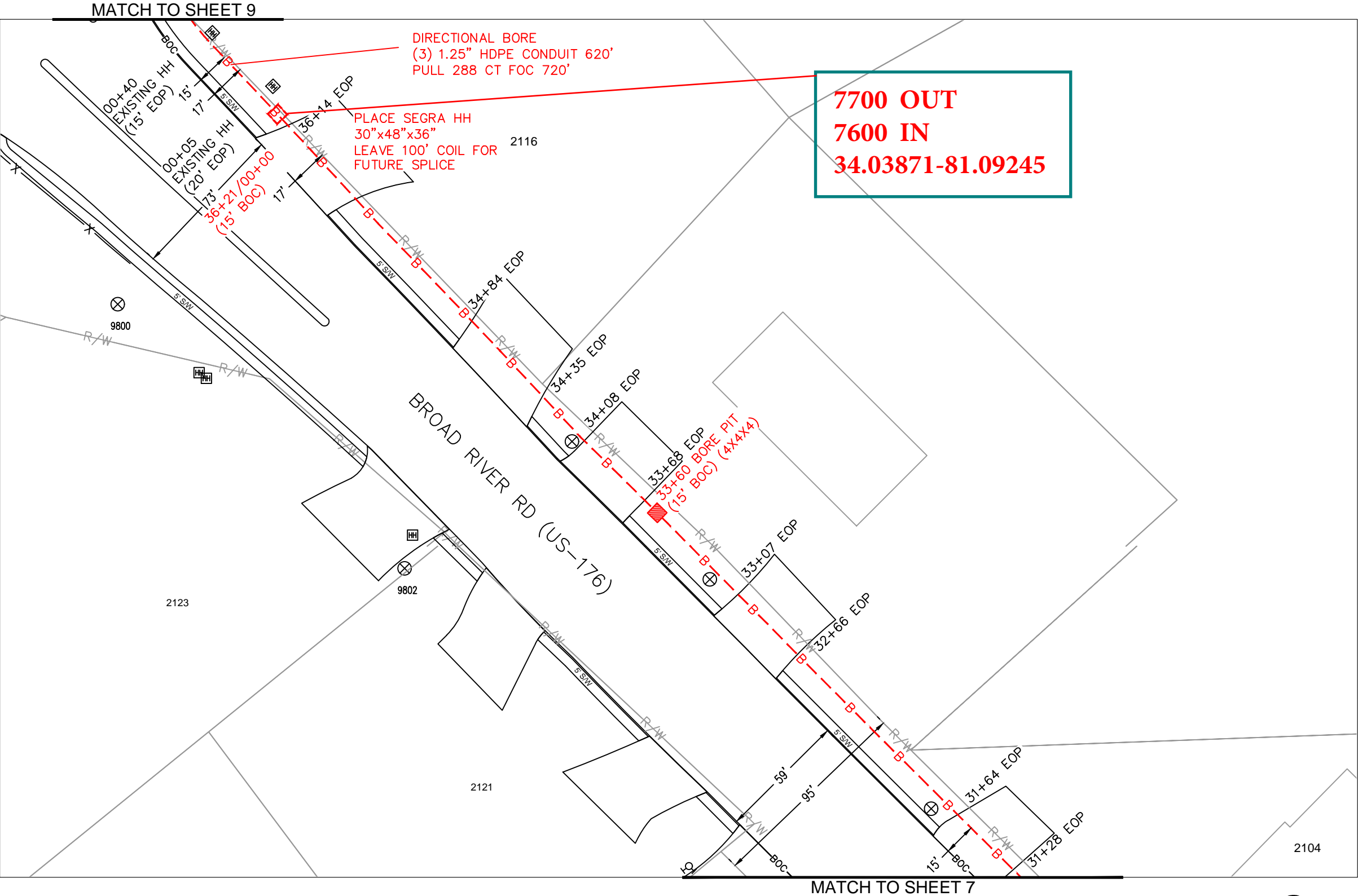
SCALE IS FOR REFERENCE PURPOSES ONLY. THE CABLE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE PERMITTING MUNICIPALITY PRIOR TO BEGINNING CONSTRUCTION, IN ORDER TO VERIFY THAT THE CABLE IS BEING PLACED WITHIN THEIR RIGHT-OF-WAY.



Know what's below.  
Call before you dig.




0 10' 20' 30' 40' 50'  
SCALE: 1"=50'

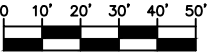


7700 OUT  
7600 IN  
34.03871-81.09245


SCALE IS FOR REFERENCE PURPOSES ONLY. THE CABLE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE PERMITTING MUNICIPALITY PRIOR TO BEGINNING CONSTRUCTION, IN ORDER TO VERIFY THAT THE CABLE IS BEING PLACED WITHIN THEIR RIGHT-OF-WAY.



Know what's below.  
Call before you dig.



SCALE: 1"=50'



SYMBOL CORRESPONDS TO PHOTO LOCATIONS AND ORIENTATION. SEE SHEET # FOR SITE PHOTOGRAPHS.

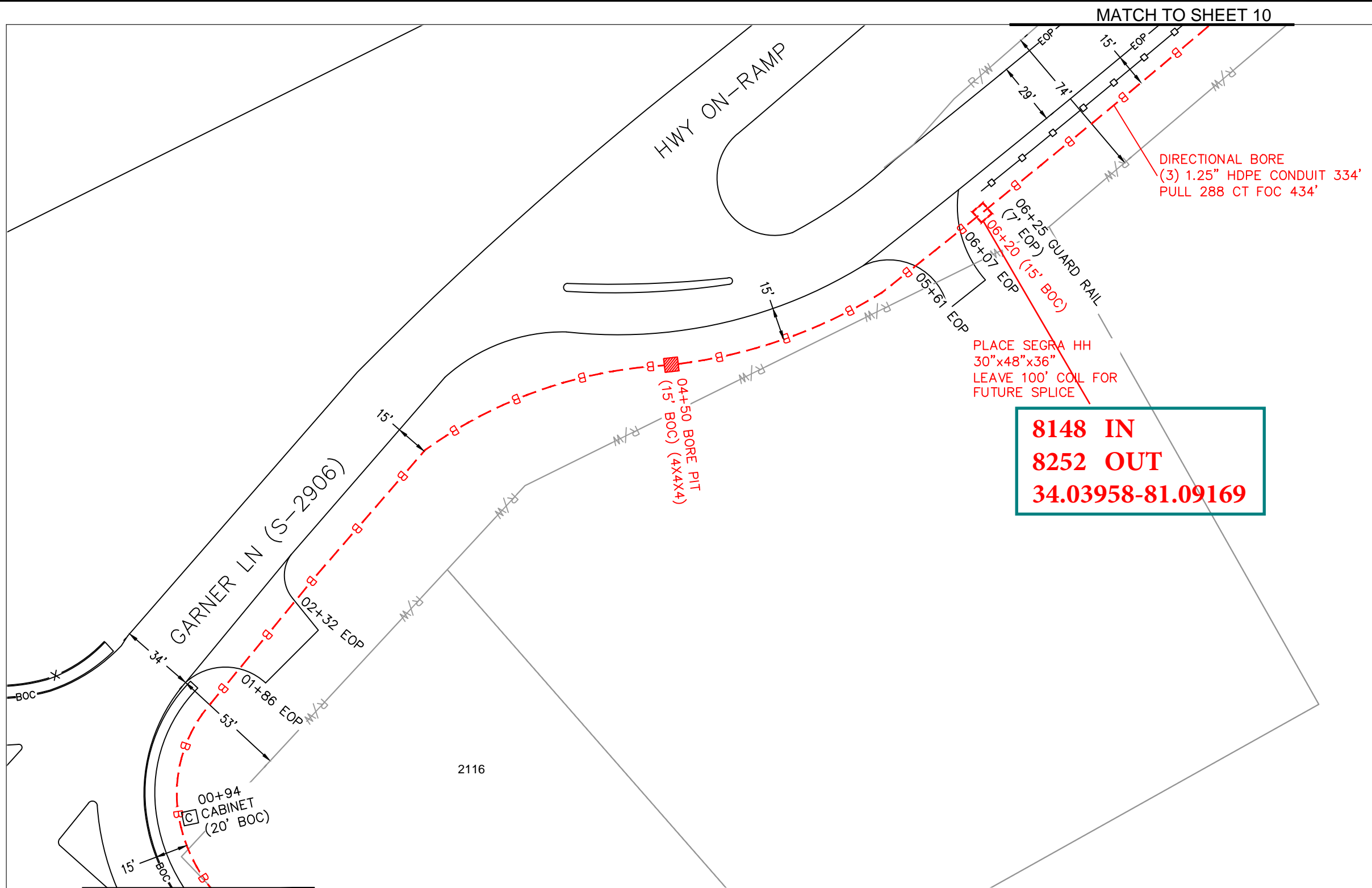
3				AS-BUILT	
2				REVISION # 1	
1	7/18/2019	RB	KI	ORIGINAL	
NO.	DATE	ENG	DESIGN	DRAFTING	COMMENT

SOUTH CAROLINA TELECOMMUNICATIONS GROUP HOLDINGS, LLC d/b/a SEGRA

PROJECT MANAGER: ROSS BRADLEY  
ENGINEERING FIRM: BYERS ENGINEERING  
SO/EWO#, EBS# 910982-001  
PROJECT: COLUMBIA CLUSTER 25  
ADDRESS: COLUMBIA, SC  
DRAWING NAME: Columbia Cluster 25.dwg

CONFIDENTIAL/PROPRIETARY





MATCH TO SHEET 8

MATCH TO SHEET 10

DIRECTIONAL BORE  
(3) 1.25" HDPE CONDUIT 334'  
PULL 288 CT FOC 434'

PLACE SEGRA HH  
30"x48"x36"  
LEAVE 100' COIL FOR  
FUTURE SPLICE

**8148 IN**  
**8252 OUT**  
**34.03958-81.09169**

SCALE IS FOR REFERENCE PURPOSES ONLY. THE CABLE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE PERMITTING MUNICIPALITY PRIOR TO BEGINNING CONSTRUCTION, IN ORDER TO VERIFY THAT THE CABLE IS BEING PLACED WITHIN THEIR RIGHT-OF-WAY.



Know what's below.  
Call before you dig.



SCALE: 1"=50'

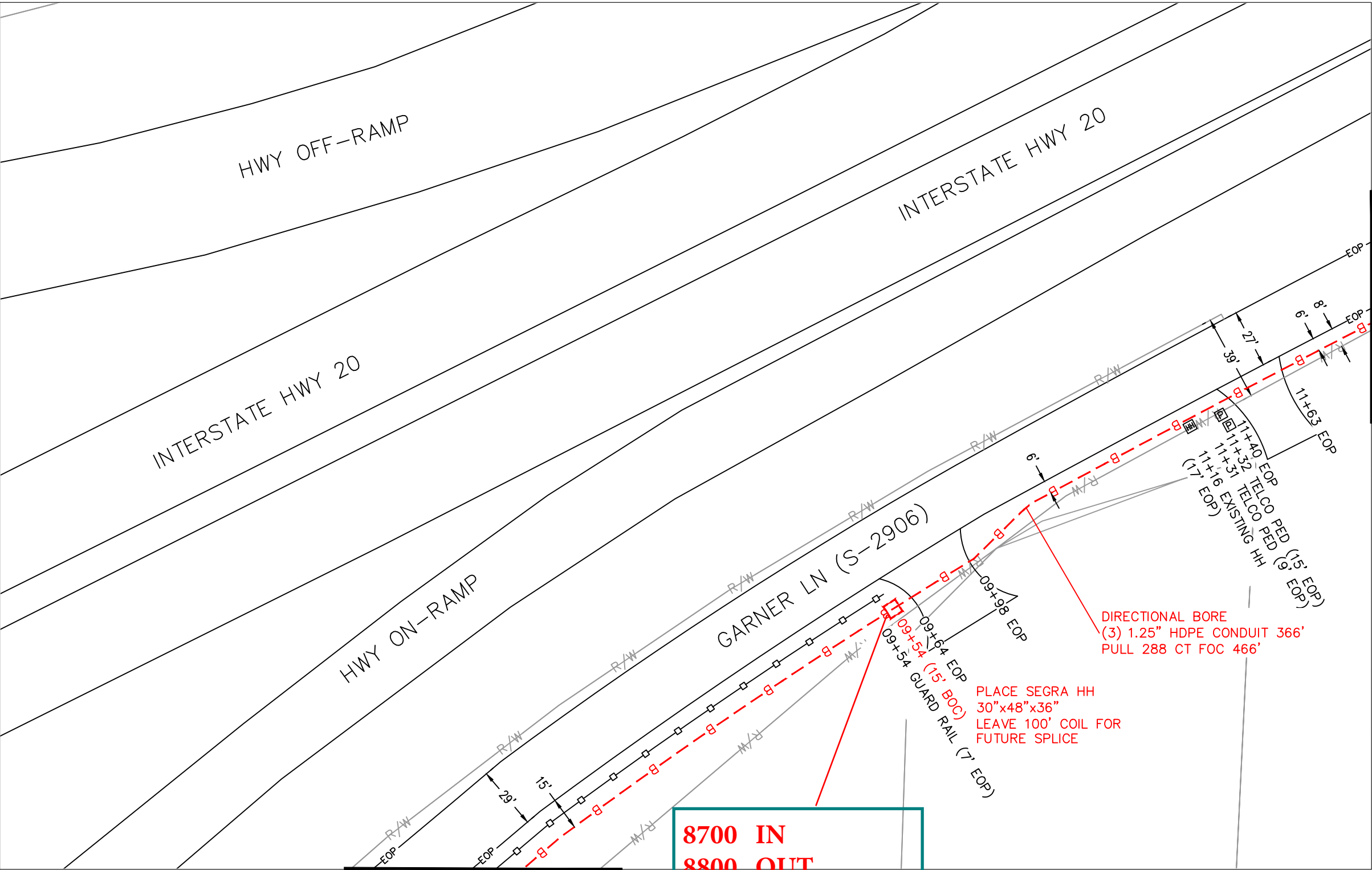
# SYMBOL CORRESPONDS TO PHOTO LOCATIONS AND ORIENTATION. SEE SHEET # FOR SITE PHOTOGRAPHS.

3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG DESIGN	DRAFTING	COMMENT

SOUTH CAROLINA TELECOMMUNICATIONS GROUP HOLDINGS, LLC d/b/a SEGRA

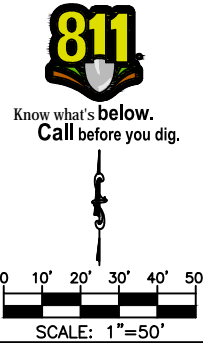
PROJECT MANAGER: ROSS BRADLEY  
ENGINEERING FIRM: BYERS ENGINEERING  
SO/EWO#, EBS# 910982-001  
PROJECT: COLUMBIA CLUSTER 25  
ADDRESS: COLUMBIA, SC  
DRAWING NAME: Columbia Cluster 25.dwg

CONFIDENTIAL/PROPRIETARY



**8700 IN**  
**8800 OUT**  
**34.04025-81.09056**

SCALE IS FOR REFERENCE PURPOSES ONLY. THE CABLE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE PERMITTING MUNICIPALITY PRIOR TO BEGINNING CONSTRUCTION, IN ORDER TO VERIFY THAT THE CABLE IS BEING PLACED WITHIN THEIR RIGHT-OF-WAY.

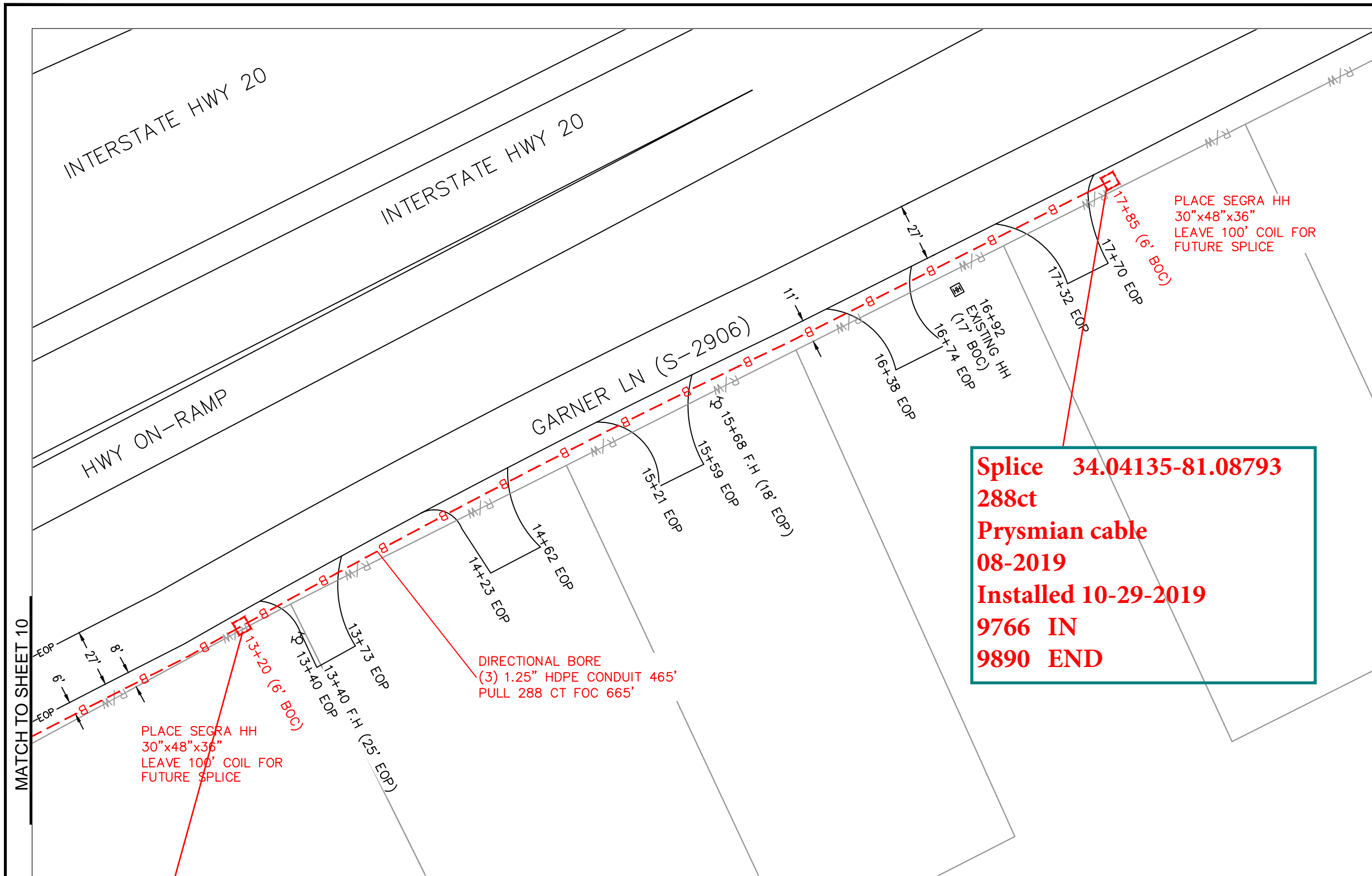


# SYMBOL CORRESPONDS TO PHOTO LOCATIONS AND ORIENTATION. SEE SHEET # FOR SITE PHOTOGRAPHS.

3				AS-BUILT
2				REVISION # 1
1	7/18/2019	RB	KI	ORIGINAL
NO.	DATE	ENG	DESIGN	DRAFTING
				COMMENT

SOUTH CAROLINA TELECOMMUNICATIONS GROUP HOLDINGS, LLC d/b/a SEGRA

PROJECT MANAGER: ROSS BRADLEY  
ENGINEERING FIRM: BYERS ENGINEERING  
SO/EWO#, EBS# 910982-001  
PROJECT: COLUMBIA CLUSTER 25  
ADDRESS: COLUMBIA, SC  
DRAWING NAME: Columbia Cluster 25.dwg



MATCH TO SHEET 10

**9144 IN**  
**9244 OUT**  
**34.04069-81.08963**

SCALE IS FOR REFERENCE PURPOSES ONLY. THE CABLE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE PERMITTING MUNICIPALITY PRIOR TO BEGINNING CONSTRUCTION, IN ORDER TO VERIFY THAT THE CABLE IS BEING PLACED WITHIN THEIR RIGHT-OF-WAY.



SYMBOL CORRESPONDS TO PHOTO LOCATIONS AND ORIENTATION. SEE SHEET # FOR SITE PHOTOGRAPHS.			
3			AS-BUILT
2			REVISION # 1
1	7/18/2019	RB	KI ORIGINAL
NO.	DATE	ENG DESIGN	DRAFTING COMMENT
SOUTH CAROLINA TELECOMMUNICATIONS GROUP HOLDINGS, LLC d/b/a SEGRA			
PROJECT MANAGER: ROSS BRADLEY			
ENGINEERING FIRM: BYERS ENGINEERING			
SO/EWO#, EBS# 910982-001			
PROJECT: COLUMBIA CLUSTER 25			
ADDRESS: COLUMBIA, SC			
DRAWING NAME: Columbia Cluster 25.dwg			
CONFIDENTIAL/PROPRIETARY			
SHEET: 11 OF 11			