



South Carolina Department of Transportation



# PROPOSED PLANS FOR

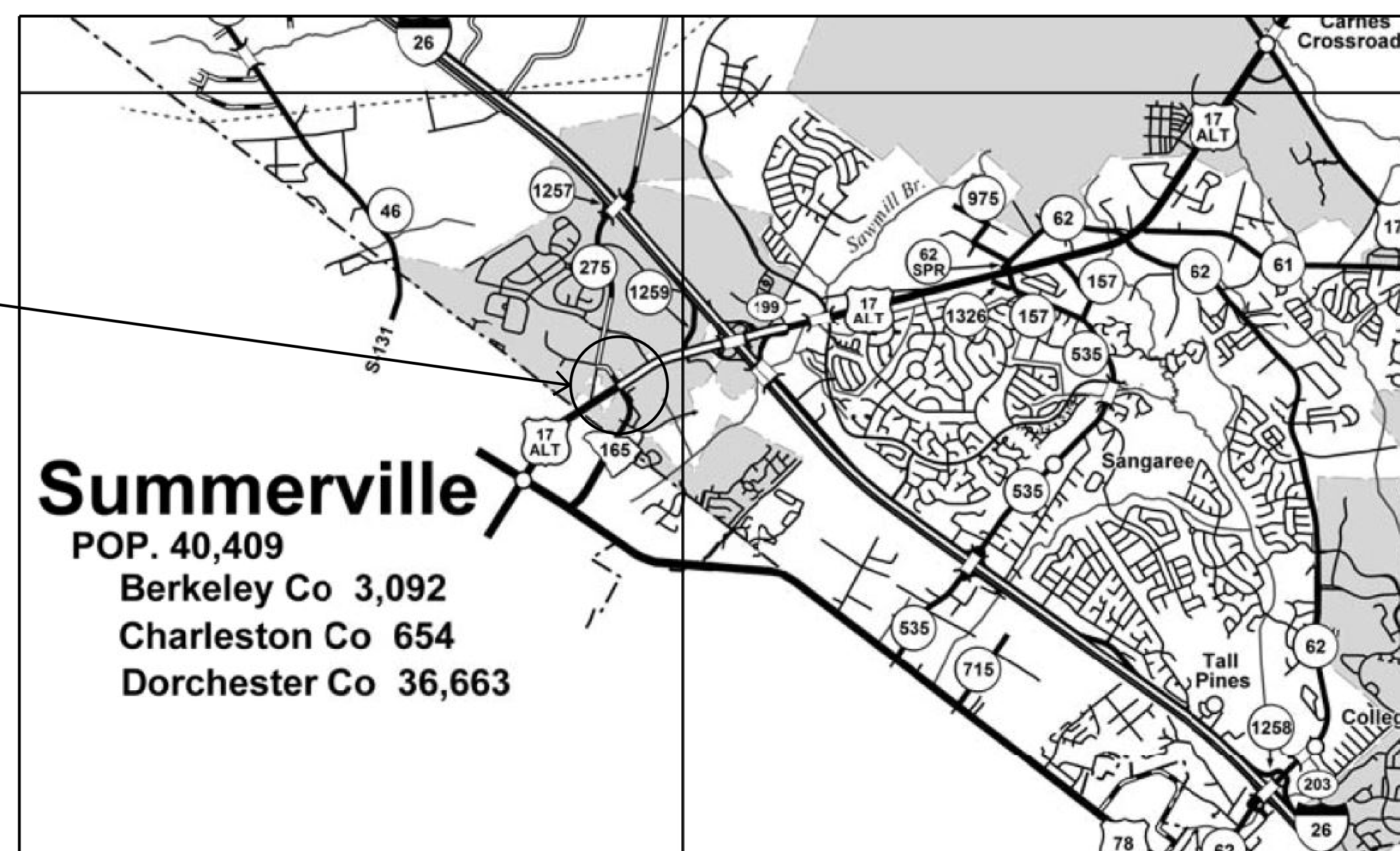
BERKELEY COUNTY

RTE./RD. US 17A & SC 165

US 17A & SC 165 TRAFFIC SIGNAL PLAN

INDEX OF SHEETS		
SHEET NO.	DESCRIPTION	SHEET SUBTOTALS
1	TITLE SHEET	1
2	SUMMARY OF ESTIMATED QUANTITIES	1
3	TRAFFIC SIGNAL PLAN	1
4	MAST ARM POLE DETAIL	1
TOTAL		4

PROJECT LOCATION



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

RAILROAD INVOLVEMENT?  
YES  NO

TRAFFIC DATA		
US 17A	ADT	32,300
SC 165	ADT	22,400
TRUCKS	N/A	%

### LAYOUT

SCALE 1 INCH = N.T.S. FEET

NET LENGTH OF ROADWAY	-	MILES
NET LENGTH OF BRIDGES	-	MILES
NET LENGTH OF PROJECT	-	MILES
LENGTH OF EXCEPTIONS	-	MILES
GROSS LENGTH OF PROJECT	-	MILES

EQUALITIES IN STATIONING

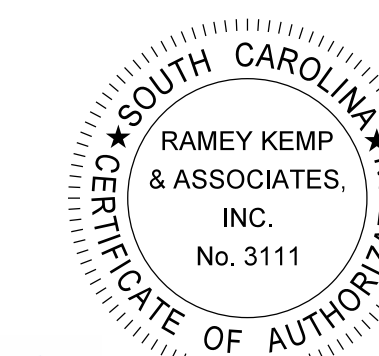
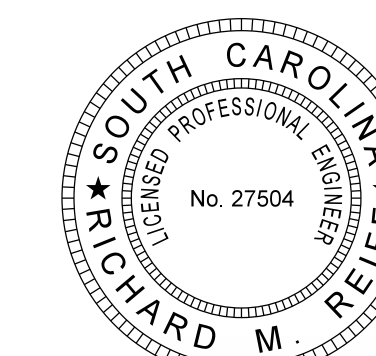
NOTE: EXCEPT AS MAY OTHERWISE BE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIALS AND WORKMANSHIP ON THIS PROJECT SHALL CONFORM TO THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2007 EDITION) AND THE STANDARD DRAWINGS FOR ROAD CONSTRUCTION IN EFFECT AT THE TIME OF LETTING.

CONSULTING ENGINEERING FIRM



7301 Rivers Avenue, Suite 242  
North Charleston, SC 29406  
Tel: 843.614.3800  
www.rameykemp.com

ENGINEER OF RECORD



FOR CONSTRUCTION:





*Ramey Kemp*

5/17/2017  
DATE

# SUMMARY OF ESTIMATED QUANTITIES

SECTION	ITEM	QUANTITY	UNIT
1031000	MOBILIZATION	1.000	LS
1071000	TRAFFIC CONTROL	1.000	LS
6510108	FLAT SHEET, TYPE VIII OR IX, SIZE DETERMINED BY MSG. - OVERHEAD	168.000	SF
6513020	FURNISH & INSTALL MOUNTING ASSEMBLY FOR FLAT SHEET SIGN ERCTD ON MAST ARM	14.000	EA
675027C	FURNISH & INSTALL 3.0" SCHEDULE 80 PVC CONDUIT	10.000	LF
6750278	FURNISH & INSTALL 2.0" SCHEDULE 80 PVC CONDUIT	80.000	LF
6760065	FURNISH & INSTALL 2" SCHEDULE 80 HDPE CONDUIT (DIRECTIONAL BORED)	950.000	LF
6770388	FURNISH & INSTALL NO. 14 COPPER WIRE, 4 CONDUCTOR - BLACK	1,115.000	LF
6770389	FURNISH & INSTALL NO. 14 COPPER WIRE, 4 CONDUCTOR - GRAY	2,860.000	LF
6770393	FURNISH & INSTALL NO. 14 COPPER WIRE, 8 CONDUCTOR (BLACK)	2,385.000	LF
6770394	FURNISH & INSTALL NO. 14 COPPER WIRE, 8 CONDUCTOR (GRAY)	680.000	LF
6800499	FURNISH & INSTALL ELECTRICAL SERVICE FOR TRAFFIC SIGNAL	1.000	EA
6800518	F&I - 13"X24"X18"D.ELEC.FLUSH UNDGRD.ENCLOSURE-(STR.POLY.CONC.)HD	5.000	EA
6800528	17"X30"X18"D.ELEC.FLUSH UNDGRD.ENCLOSURE-(STR.POLY.CONC.)HD	1.000	EA
6825486	INSTALL CONCRETE FOUNDATION FOR ALUMINUM PEDESTAL POLE	1.000	EA
6865710	FURNISH & INSTALL - 12" 5 SECTION SIGNAL HEAD	1.000	EA
6865720	FURNISH & INSTALL - 12" 4 SECTION SIGNAL HEAD	3.000	EA
6865723	FURNISH & INSTALL - 12" 3 SECTION SIGNAL HEAD	9.000	EA
6865834	FURNISH & INSTALL BACKPLATE W/ RETROREFL.BORDERS FOR TRAFFIC SIGNAL	13.000	EA
6888191	INSTALL BREAK-AWAY PEDESTRIAN POLE ON EXISTING BASE	1.000	EA
6885982	REMOVE FOUNDATION OF STEEL STRAIN POLE - 18" BELOW GRADE	1.000	LS
6885990	REMOVAL, SALVAGE, & DISP. OF EXISTING TRAFFIC SIGNAL EQUIPMENT	1.000	LS
6885992	TEMPORARY ADJUSTMENT OF TRAFFIC SIGNAL EQUIPMENT	1.000	LS
6886078	INSTALL ETHERNET IP RADIO ASSEM & CABLE	1.000	EA
6888167	POWDERCOATING PER MAST ARM OVER GALVANIZED	4.000	EA
6888177	DESIGN, FURNISH & INSTALL STEEL POLE WITH TWIN MAST ARMS INCLUDING FOUNDATION	2.000	EA
6888225	INSTALL CONTROLLER AND 332/336 CABINET-BASE MOUNTED-INCLDING FOUNDATION	1.000	EA

- PROJECT NOTES:
1. TRAFFIC CONTROL  
PERFORM TRAFFIC CONTROL FOR SIGNAL IMPROVEMENTS IN ACCORDANCE WITH SCDOT STANDARDS AND TRAFFIC SIGNAL SPECIAL PROVISIONS - TRAFFIC CONTROL, FOR TRAFFIC SIGNAL PROJECTS. REFER TO THIS SPECIAL PROVISION FOR LANE CLOSURE RESTRICTIONS AND CONSTRUCTION RESTRICTIONS.
  2. EMERGENCY RESPONSE  
IN THE EVENT OF AN EMERGENCY SITUATION THAT REQUIRES REPAIR AND/OR CLOSURE OF THE ROADWAY TO ENSURE PUBLIC SAFETY, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE SCDOT DISTRICT 6 RESIDENT MAINTENANCE ENGINEER AND ESTABLISH TRAFFIC CONTROL PER SCDOT STANDARDS TO ENSURE THAT THE DAMAGED SECTION OF ROADWAY IS FREE FROM VEHICULAR TRAVEL.
  3. SURVEY INFORMATION  
ALL SURVEYS ARE APPROXIMATE. NO CONTROL HAS BEEN ESTABLISHED FOR THIS PROJECT.
  4. UTILITY COORDINATION  
CONTRACTOR SHALL COORDINATE WITH ALL EXISTING UTILITIES FOR CONDUIT AND POLE PLACEMENT.
  5. POLES AND MAST ARMS  
STEEL POLES AND MAST ARMS SHALL CONFORM TO THE TOWN OF SUMMERVILLE SPECIFIC DETAILS SHOWN ON SHEET 4.
  6. DIRECTIONAL BORING  
CONTRACTOR SHALL ENSURE THAT ALL DIRECTIONAL BORED CONDUIT WILL BE LOCATED AT LEAST 4 FEET BELOW THE LOWEST POINT OF THE ROADWAY CROSS-SECTION.

 <p>7301 Rivers Avenue Suite 242 North Charleston, SC 29406 P: 843.614.3800 www.rameykemp.com</p>		<p>Prepared For:</p> <p align="center"><b>SUMMARY OF ESTIMATED QUANTITIES</b> US 17A (North Main Street) at SC 165 (Berlin G. Myers Parkway)</p> <p>District 6 Berkeley County Summerville, SC</p>			 <p>5/17/2017</p>
		<p>Plan Date: January 11, 2017</p>	<p>Reviewed By: Rick Reiff</p>		
3					
2					
1					
Rev. No.	By	Date	Description of Revision		

### SIGNAL EQUIPMENT

ONE (1) EXISTING 8-PHASE FULLY ACTUATED STANDARD 2070 CONTROLLER WITH FLASHER, SIGNAL MONITOR UNIT, AND BASE-MOUNTED 332A CABINET.

CABINET: EXT.  PROP.

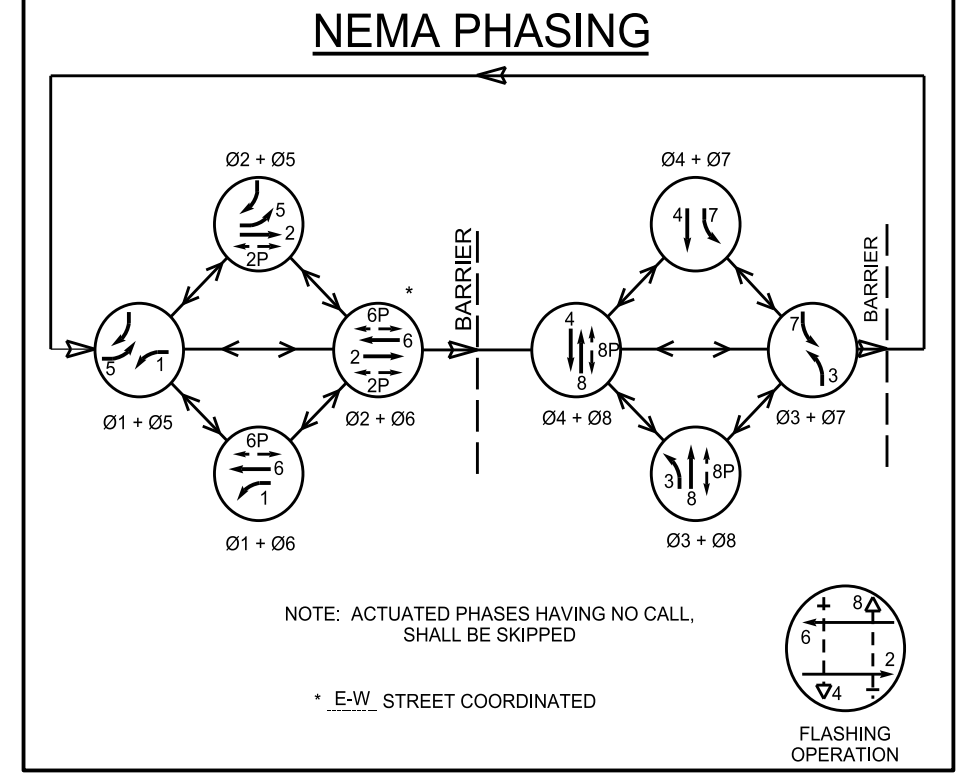
VEHICLE SIGNALS: EXT.  PROP.

PEDESTRIAN SIGNALS: EXT.  PROP.

HEAD NUMBER	1	2	3,4F	4	5conc	5	6	7,8F	8	2P	6P	8P
LENS	←R	R	←R	R	←R	R	←R	R	←R	R	←R	R
PHASE	1	2	3,OLB	4	5	5	6	7,OLD	8	2P	6P	8P
SIZE	12"	12"	12"	12"	12"	12"	12"	12"	12"	16"	16"	16"
QUANTITY	2	2	1	2	1	1	2	1	2	2	2	2

OLA: Ø3 + Ø4 (FYA) OLC: Ø7 + Ø8 (FYA)  
 OLB: Ø3 + Ø4 (FYA) OLD: Ø7 + Ø8 (FYA)

METAL POLES W/O MAST ARMS: EXT.  PROP.   
 METAL POLES W/ MAST ARMS: EXT.  PROP.   
 WOOD POLES AS NECESSARY: EXT.  PROP.   
 SPLICE BOXES AS NECESSARY: EXT.  PROP.   
 INDUCTANCE LOOPS AS NECESSARY: EXT.  PROP.   
 GUYS AS NECESSARY: EXT.  PROP.   
 WIRELESS DETECTORS AS NECESSARY: EXT.  PROP.



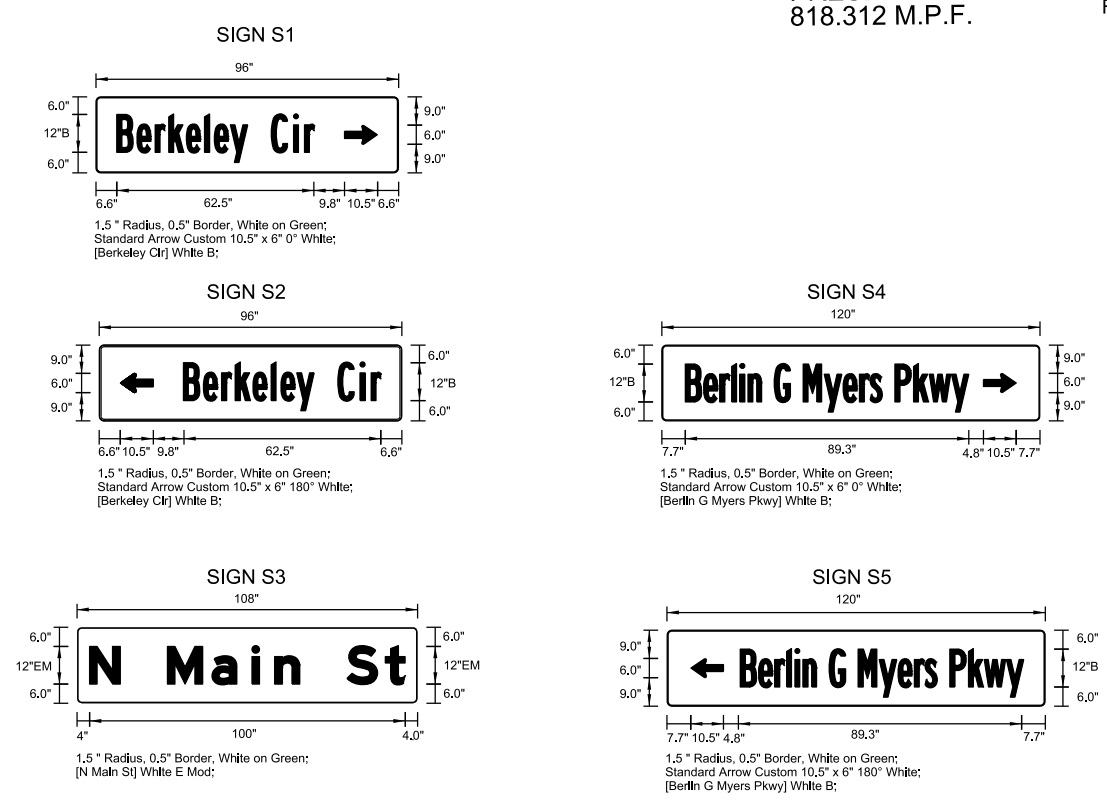
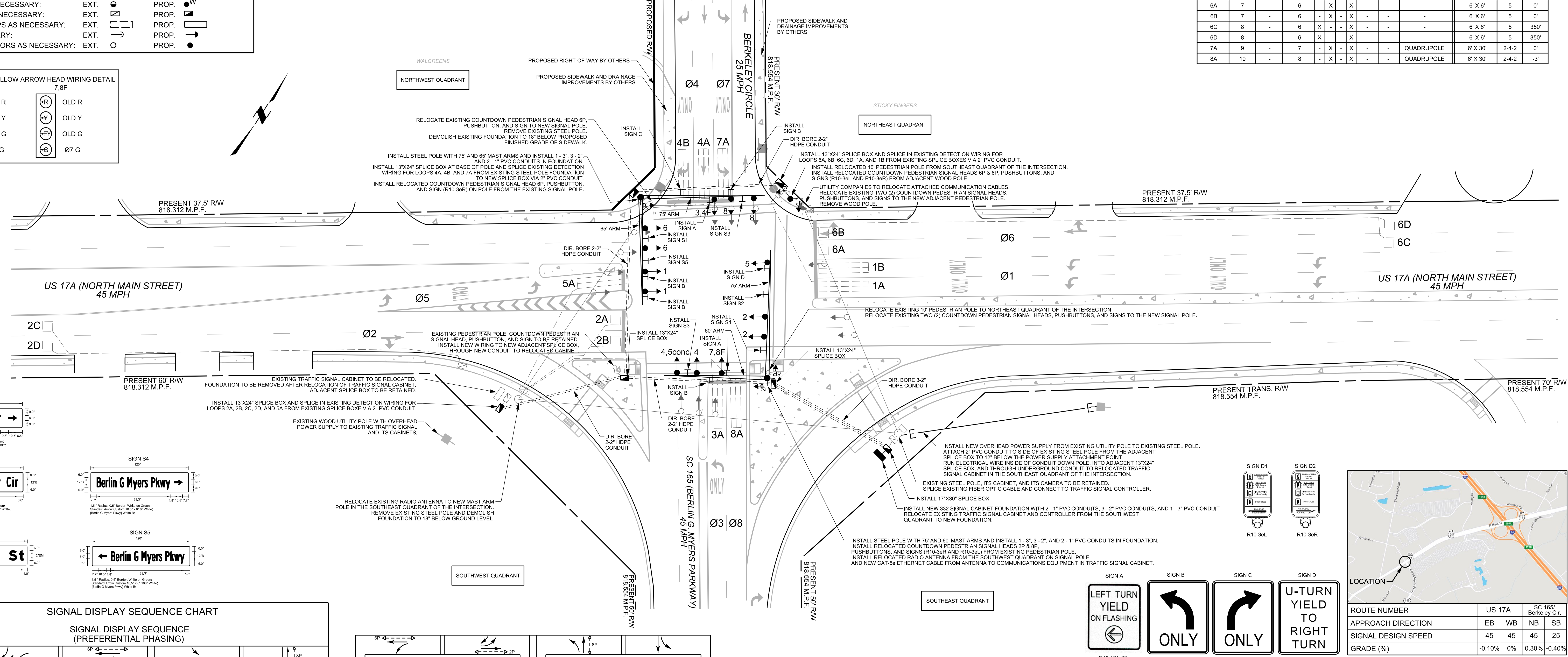
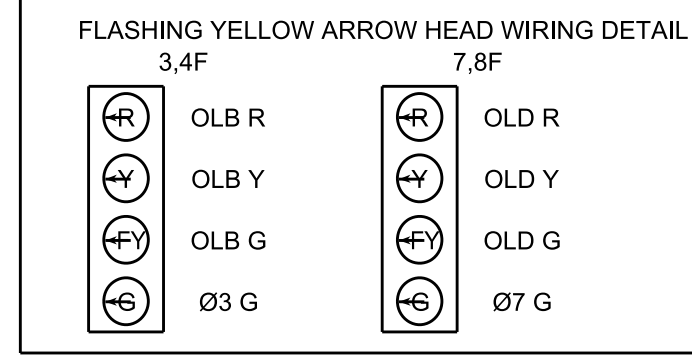
- NOTES:
- SEE SHEET 4 FOR THE TOWN OF SUMMERVILLE MAST ARM AND POLE DETAILS.
  - CONTRACTOR SHALL COORDINATE WITH EXISTING UTILITIES ON POLE, CONDUIT, AND CABINET FOUNDATION PLACEMENT.
  - SPLICE ALL EXISTING DETECTION WIRING FROM THE NEAREST EXISTING SPLICE BOX TO THE NEAREST NEW SPLICE BOX AND RUN SPLICE-FREE TO THE SIGNAL CABINET.
  - INSTALL BACKPLATES WITH RETRO-REFLECTIVE BORDERS ON ALL NEW SIGNAL HEADS.
  - NEW SIGNAL HEADS SHALL BE COVERED WITH BURLAP WHILE NOT IN USE. EXISTING SIGNAL HEADS SHALL BE COVERED WITH BURLAP AFTER DEACTIVATION.
  - PEDESTRIAN PUSHBUTTONS SHALL BE SOLID-STATE WITH LIGHT AND AUDIBLE TONE.
  - CONTRACTOR SHALL COORDINATE WITH SCDOT DISTRICT 6 STAFF FOR THE RELOCATION OF THE SIGNAL CABINET AND ACTIVATION OF THE NEW SIGNAL HEADS.
  - EXISTING SPAN WIRE, OVERHEAD POWER SUPPLY, AND SIGNAL HEADS TO BE REMOVED AFTER THE NEW SIGNAL HEADS HAVE BEEN INSTALLED, TESTED, AND PLACED IN OPERATION.
  - REMOVE EXISTING STEEL POLE FOUNDATIONS TO AN ELEVATION OF 18" BELOW SURFACE GRADE.
  - AFTER RELOCATION OF THE TRAFFIC SIGNAL CABINET AND CONTROLLER, DEMOLISH AND REMOVE THE EXISTING CABINET FOUNDATION.
  - RETURN ALL EXISTING TRAFFIC SIGNAL EQUIPMENT TO BE REMOVED TO THE SCDOT DISTRICT 6 SIGNAL SHOP.

### SIGNAL TIMINGS

INTERVAL	PHASE							
	1	2	3	4	5	6	7	8
WALK	-	7	-	-	-	-	7	-
DONT WALK	-	19	-	-	-	-	25	-
MIN INITIAL	6	20	8	6	6	20	8	6
MAX INITIAL	-	-	-	-	-	-	-	-
ADD/VEH	-	-	-	-	-	-	-	-
VEH EXT	3.5	4	3	3	3	4	3	3
TIM BFR REDUC	-	-	-	-	-	-	-	-
TIME TO REDUC	-	-	-	-	-	-	-	-
MIN GAP	-	-	-	-	-	-	-	-
MAX LIMIT	20	40	14	20	20	40	14	20
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	4.5	4.5	4.4	4.4	4.5	4.5	4.4	4.4
RED CLEAR	3.5	3.5	3.1	3.1	3.5	3.5	3.1	3.1

### LOOP DETECTOR INSTALLATION CHART

PHASE/ LOOP LTR#	DETECTOR AMP NO.	CHAN NO.	WIRED TO PHASE(S)	LOCK	NON-LOCK	PULSE	OPERATION DELAY SEC	EXT SEC	SPECIAL FEATURES TIME OF DAY-TOD SWITCHING, etc.	LOOP DESIGN		
										SIZE X	NO. OF TURNS	DIST. FROM
1A	1	-	1	-	X	X	-	-	QUADRUPOLE	6' X 30'	2-4-2	0'
1B	1	-	1	-	X	X	-	-	QUADRUPOLE	6' X 30'	2-4-2	0'
2A	2	-	2	-	X	X	-	-	QUADRUPOLE	6' X 6'	5	0'
2B	2	-	2	-	X	X	-	-	QUADRUPOLE	6' X 6'	5	0'
2C	3	-	2	X	-	X	-	-	QUADRUPOLE	6' X 6'	5	350'
2D	3	-	2	X	-	X	-	-	QUADRUPOLE	6' X 6'	5	350'
3A	4	-	3	-	X	X	-	-	QUADRUPOLE	6' X 30'	2-4-2	-3'
4A	5	-	4	-	X	X	-	-	QUADRUPOLE	6' X 30'	2-4-2	0'
4B	5	-	4	-	X	X	-	-	QUADRUPOLE	6' X 30'	2-4-2	0'
5A	6	-	5	-	X	X	-	-	QUADRUPOLE	6' X 30'	2-4-2	-3'
6A	7	-	6	-	X	X	-	-	QUADRUPOLE	6' X 6'	5	0'
6B	7	-	6	-	X	X	-	-	QUADRUPOLE	6' X 6'	5	0'
6C	8	-	6	X	-	X	-	-	QUADRUPOLE	6' X 6'	5	350'
6D	8	-	6	X	-	X	-	-	QUADRUPOLE	6' X 6'	5	350'
7A	9	-	7	-	X	X	-	-	QUADRUPOLE	6' X 30'	2-4-2	0'
8A	10	-	8	-	X	X	-	-	QUADRUPOLE	6' X 30'	2-4-2	-3'



### SIGNAL DISPLAY SEQUENCE CHART

SIGNAL HEAD NUMBER	Ø1 - Ø2				Ø3 - Ø4				Ø5 - Ø6				Ø7 - Ø8							
	1	2	3,4F	4	5	6	7,8F	8	2P	6P	8P	1	2	3	4	5	6	7,8F	8	
R	←R	R	←R	R	←R	R	←R	R	←R	R	←R	R	←R	R	←R	R	←R	R	←R	R
Y	←Y	Y	←Y	Y	←Y	Y	←Y	Y	←Y	Y	←Y	Y	←Y	Y	←Y	Y	←Y	Y	←Y	Y
G	←G	G	←G	G	←G	G	←G	G	←G	G	←G	G	←G	G	←G	G	←G	G	←G	G
5conc	←G	G	←G	G	←G	G	←G	G	←G	G	←G	G	←G	G	←G	G	←G	G	←G	G
7,8F	←R	R	←R	R	←R	R	←R	R	←R	R	←R	R	←R	R	←R	R	←R	R	←R	R
2P	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD
6P	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD
8P	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD	DWD

Prepared For: **SCDOT** (South Carolina Department of Transportation)

Prepared By: **RAMEY KEMP & ASSOCIATES**  
 7301 Rivers Avenue, Suite 242, North Charleston, SC 29406  
 P: 843.614.3800, www.rameykemp.com

Scale: 0 30' 60'

TRAFFIC SIGNAL PLAN  
 US 17A (North Main Street) at SC 165 (Berlin G. Myers Parkway)  
 District 6 Berkeley County Summerville, SC

Plan Date: January 11, 2017 Reviewed By: Rick Reiff  
 Prepared By: Matt Fleming RKA Project Number: 16307.00

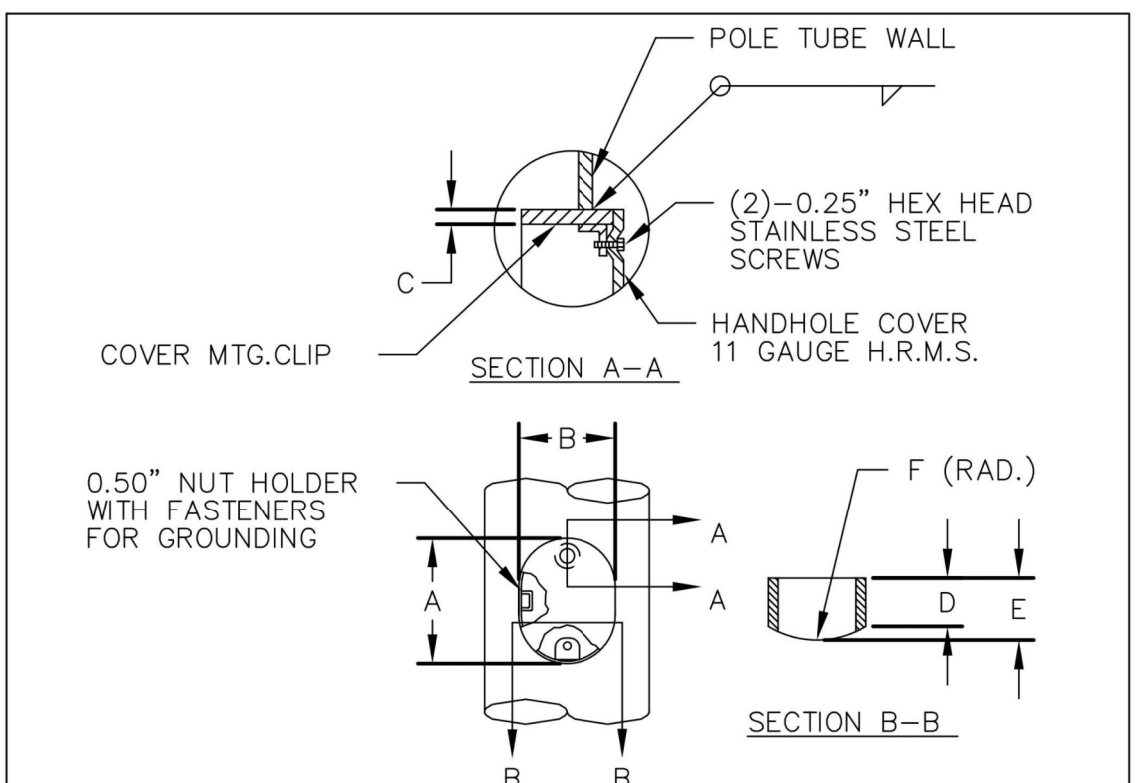
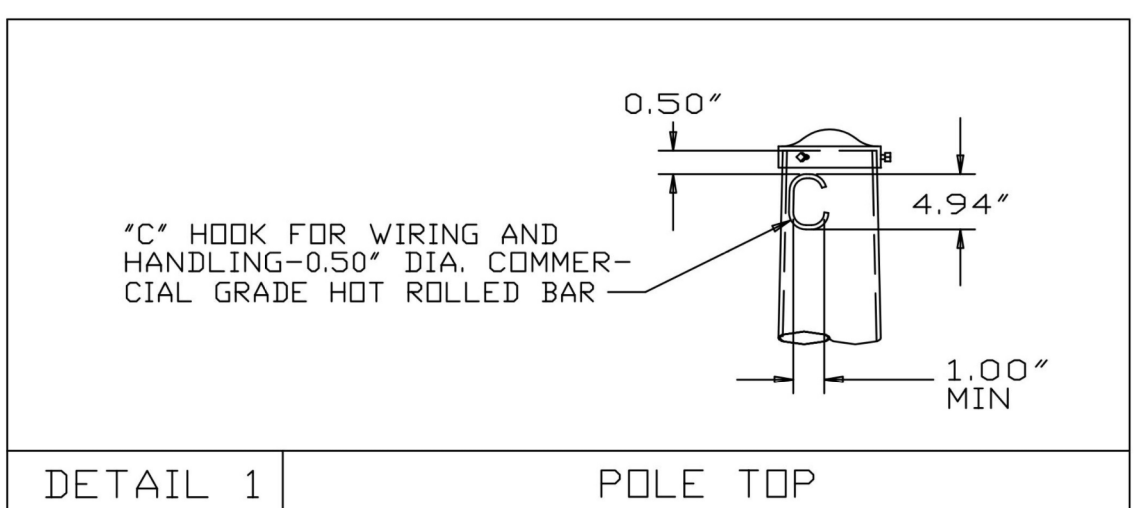
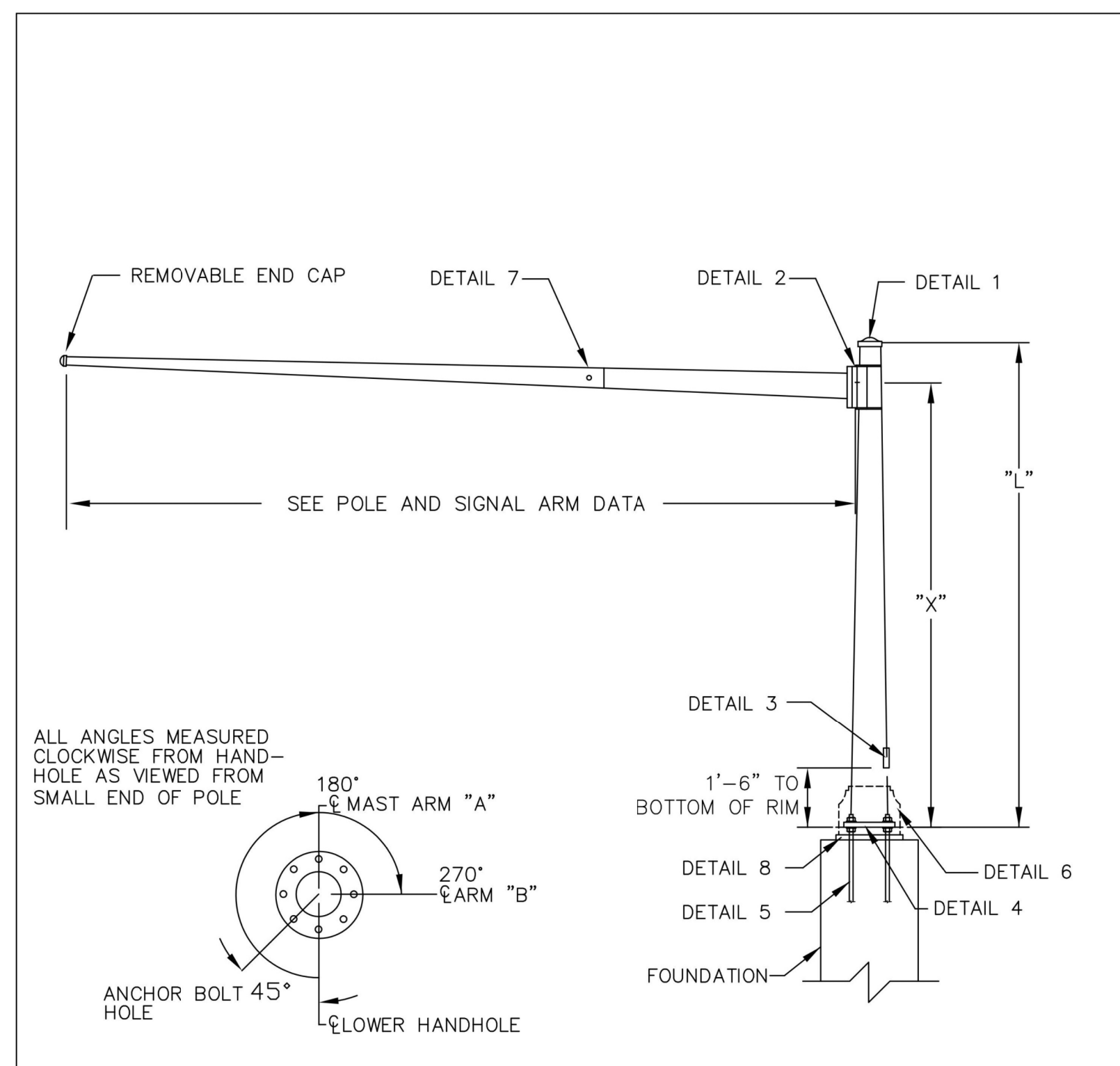
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Rev. No. By Date Description of Revision

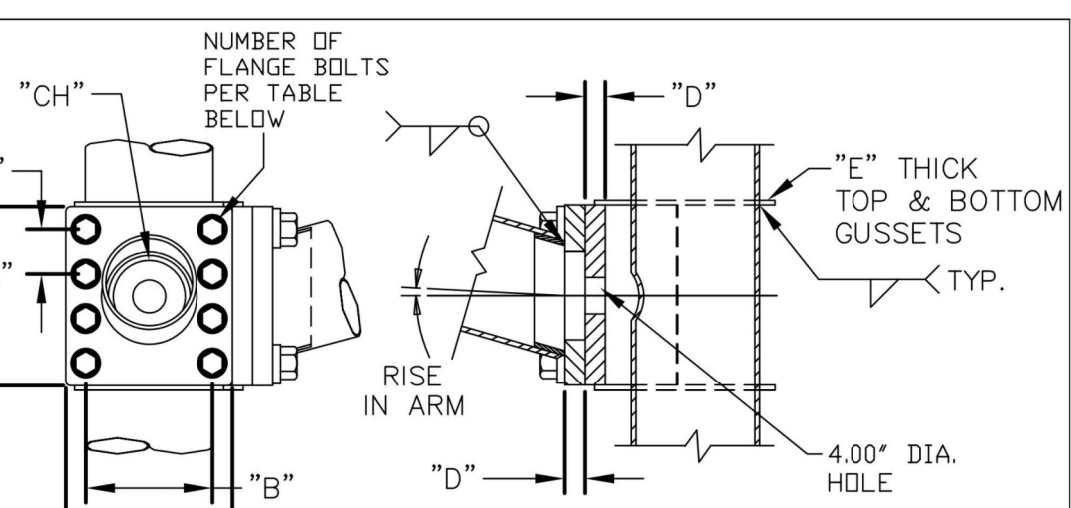
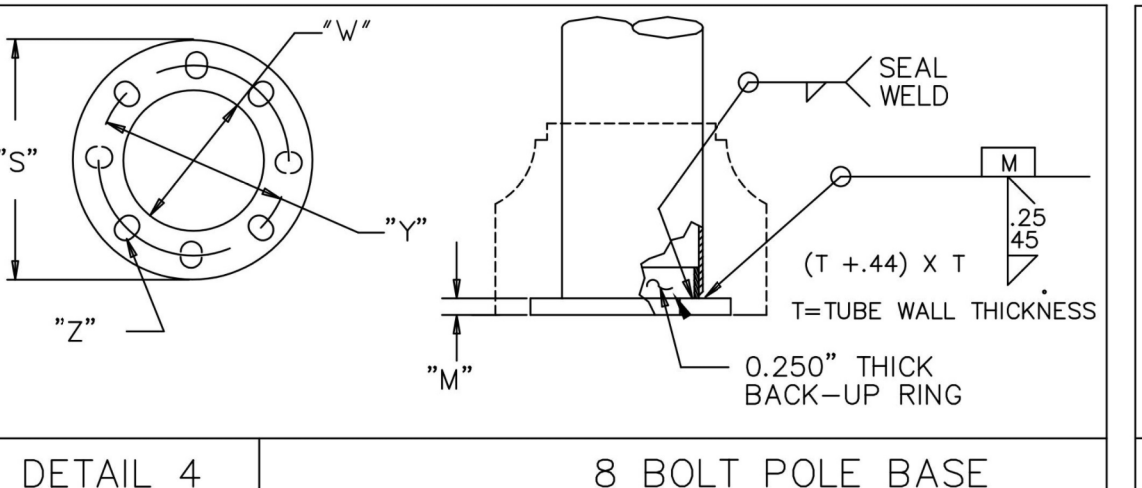
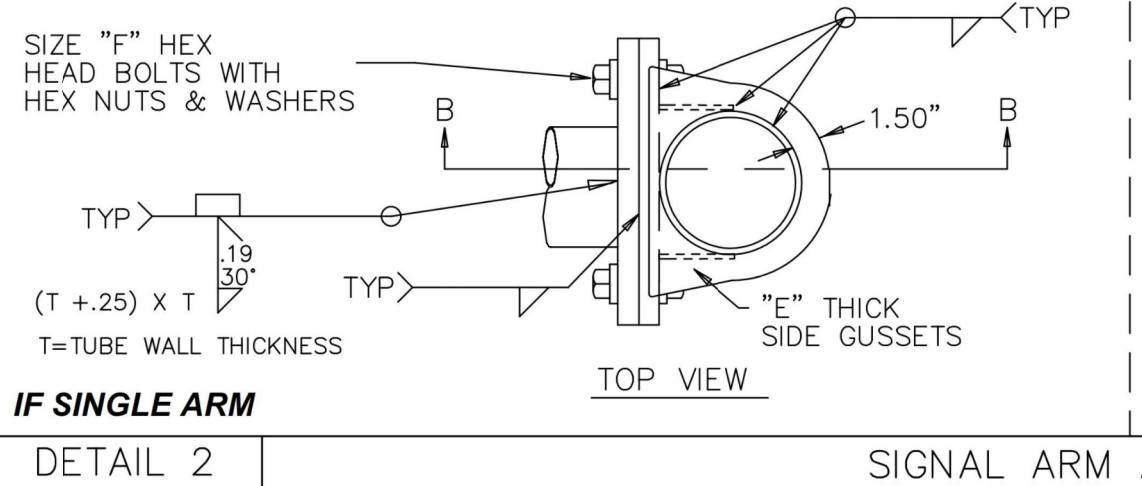
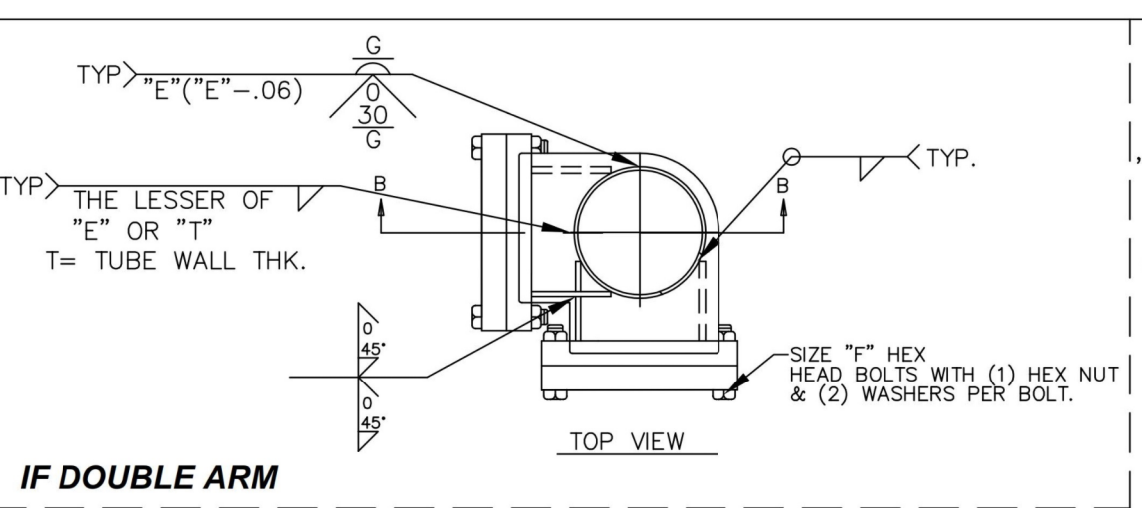
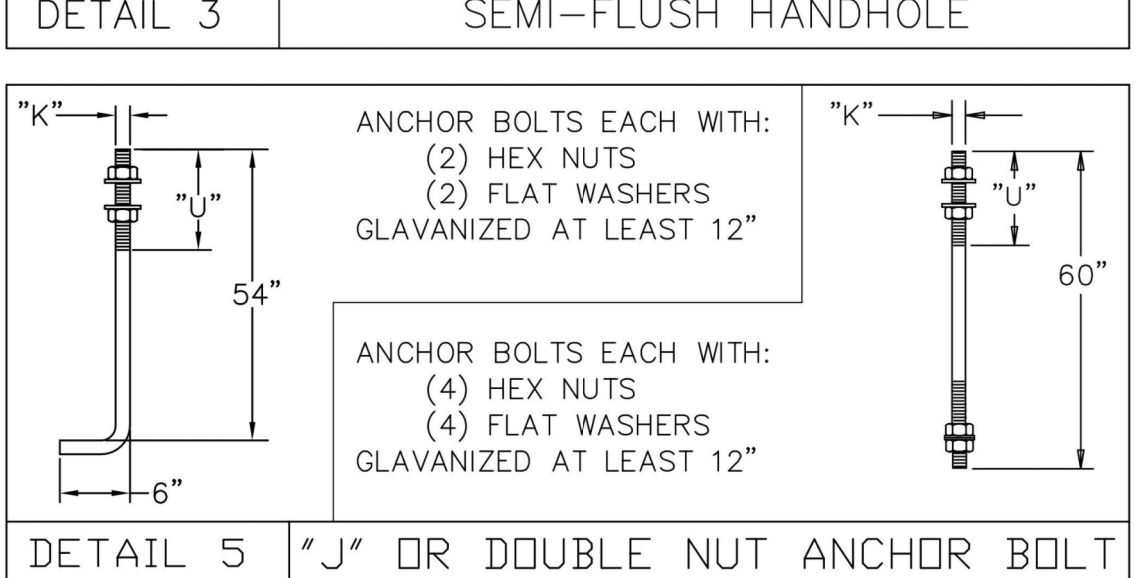
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**SOUTH CAROLINA** PROFESSIONAL ENGINEER  
 RAMEY KEMP & ASSOCIATES, INC.  
 No. 3111  
 No. 27504  
 H. M. HARD M.  
 5/17/2017

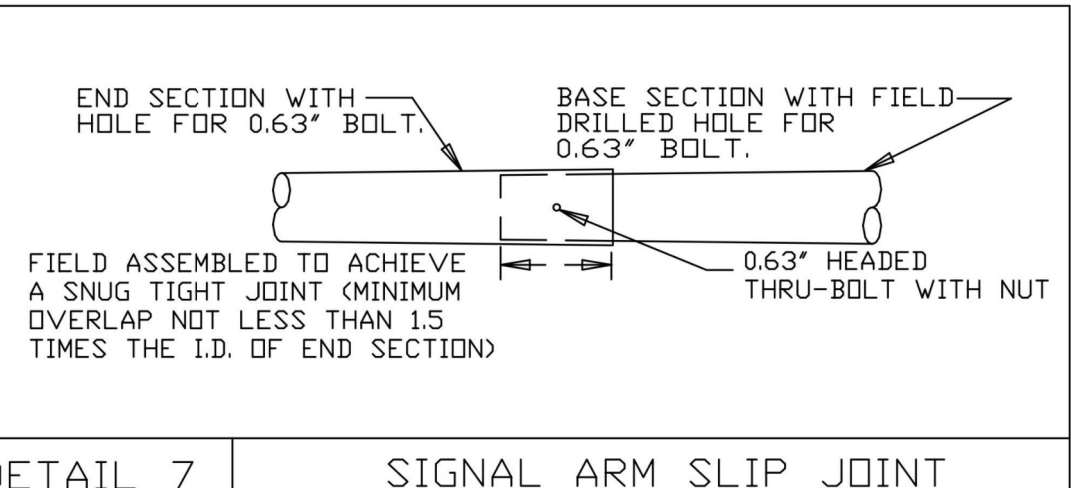
TEAMS ID: TS 6116



POLE GA.	A	B	C	D	E	F
11,7.5 & 3	7.56"	5.19"	0.280"	2.35"	3.00"	5.50"
ALL OTHERS	7.56"	5.50"	0.500"	2.25"	2.75"	7.75"



POLE ID	ARM	NUM OF BOLTS	WIDTH & LGTH "A" (IN)	BOLT DIST. "B" (IN)	BOLT SPAC. "C" (IN)	FLANGE THK. "D" (IN)	CENTER HOLE "CH" (IN)	GUSSET THK. "E" (IN)	BOLT "F" (DIA X LGTH.) (IN)
15058-1-1	A	8	25.50	21.00	7.00	2.25	6.00	0.500	1.5 X 6.75
	B	8	25.50	21.00	7.00	2.25	6.00	0.500	1.5 X 6.75
15058-1-2	A	8	25.50	21.00	7.00	2.25	6.00	0.500	1.5 X 6.75
	B	8	25.50	21.00	7.00	2.25	6.00	0.500	1.5 X 6.75



MATERIAL DATA					
COMPONENT	ASTM	MIN. YIELD (KSI)	COMPONENT	ASTM	MIN. YIELD (KSI)
POLE SHAFT - 11,7.5,3 GA	A595 GR. A	55	ARM CONN. BOLTS	F3125	
POLE SHAFT - ALL OTHERS	A572 GR.55	55	GALVANIZING - POLES	A123	
POLE BASE	A36	36	GALVANIZING - HARDWARE	A153	
ARM SHAFT - 11,7.5,3 GA	A595 GR. A	55	ANCHOR BOLTS	F1554 GR.55	55
ARM SHAFT - ALL OTHERS	A572 GR.55	55	<b>FINISH: POWDER COATED OVER GALV. SEMI-GLOSS BLACK</b>		
ARM CONNECTION	A572 GR.50	50			

SHAFT ID	SHAFT				BASE PLATE				ARM DATA							ANCHOR BOLT				
	BASE DIA. (IN)	TOP DIA. (IN)	LGTH. "L" (FT)	WALL THICK (IN)	DIA. "S" (IN)	BOLT CIRCLE "Y" (IN)	CENTER HOLE DIA. "W" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	ARM ID	FIXED END DIA. (IN)	FREE END DIA. (IN)	GAUGE OR THK (IN)	SEC. LGTH. (FT)	SPAN (FT)	ATTACH ELEV "X" (FT)	RADIAL ORIENT (DEG)	DIA. "K" (IN)	LGTH. X HOOK (J X H) (IN)	THREAD LENGTH "U" (IN)
15058-1-1 NW Corner	18.00	15.06	21.0	0.500	30.0	24.0	12.0	2.00	2.25	A	16.09	12.21	0.313	27.69	75.0	19.0	180	2.00	84 X 6	10.0
										B	13.00	6.00	0.209	50.00	65.0	19.0	270			
15058-1-2 SE Corner	18.00	15.06	21.0	0.500	30.0	24.0	12.0	2.00	2.25	A	13.99	12.21	0.313	12.69	60.0	19.0	180	2.00	84 X 6	10.0
										B	13.00	6.00	0.209	50.00	75.0	19.0	270			

DESIGN BASED ON:  
 - AASHTO 6TH EDITION  
 - 130 MPH  
 - 25 YEAR RECURRENCE  
 - FATIGUE CATEGORY II  
 - NO GALLOPING LOADS  
 - WORST CASE OF ACTUAL LOADS -VS- STANDARD LOADS



REV.	DATE	REVISION

ATS-SALES

**valmont**  
 Valley, NE 68064 POLES  
 (402) 359-2201

CUSTOMER:  
 MAST ARM POLE DETAILS  
 NORTH MAIN ST. (US 17A)  
 & BERLIN G. MYERS PKWY.  
 TOWN OF SUMMERVILLE  
 BERKELEY COUNTY, SC

02/21/17 REV.  
 15058-1 -

Prepared By:  
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MAST ARM POLE DETAIL			
US 17A (North Main Street)			
at			
SC 165 (Berlin G. Myers Parkway)			
District 6	Berkeley County	Summerville, SC	
Plan Date: January 11, 2017	Reviewed By: Rick Reiff		
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