

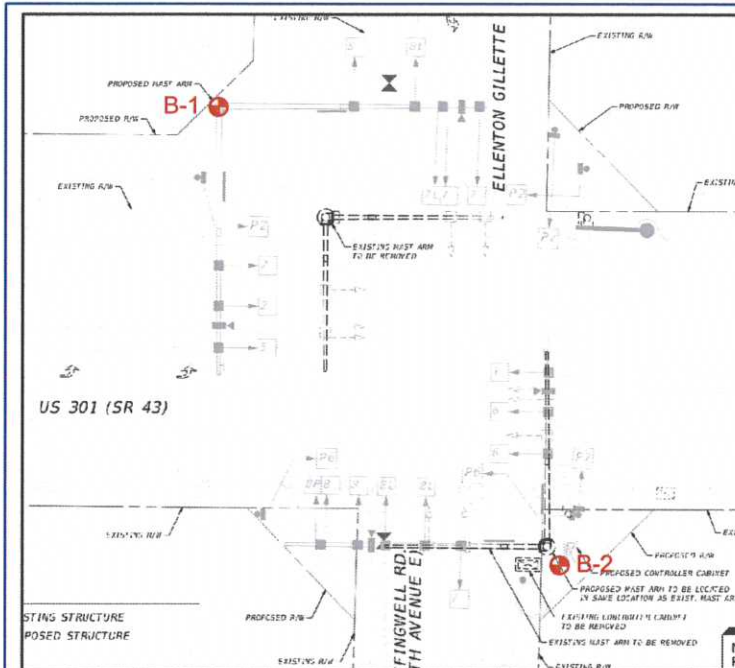
SPECIAL MAST ARM ASSEMBLIES DATA TABLE																							Table Date 01-01-12	
NUMBER OF LOCATIONS	STRUCTURE NUMBER	FIRST ARM				FIRST ARM EXTENSION				SECOND ARM				SECOND ARM EXTENSION				POLE						
		FA(ft)	FB(in)	FC(in)	FD(in)	FE(ft)	FF(in)	FG(in)	FH(in)	SA(ft)	SB(in)	SC(in)	SD(in)	SE(ft)	SF(in)	SG(in)	SH(in)	UA(ft)	UB(ft)	UC(in)	UD(in)	UE(in)	UF(deg)	UG(ft)
1	1-2	35.6	8.27	13.25	0.375	34.4	12.22	17.00	0.5	28.8	6.97	11.0	0.25	27.2	10.22	14	0.375	25	22.0	18.53	22	0.5	270	0
2	1-4	38.1	8.16	13.5	0.5	34.4	12.22	17.00	0.5	38.1	8.16	13.5	0.5	34.4	12.22	17.0	0.5	25	22.0	20.53	24	0.5	270	0



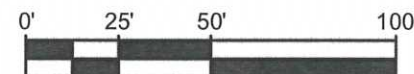
SPECIAL MAST ARM ASSEMBLIES DATA TABLE (CONT.)																						Table Date 01-01-12
STRUCTURE NUMBER	FIRST ARM CONNECTION (in)					First Arm Camber Angle = 2 Degrees						SECOND ARM CONNECTION (in)					Second Arm Camber Angle = 2 Degrees					
	#Bolts	HT	FJ	FK	FL	FN	FO	FP	FR	FS	FT	#Bolts	HT	SJ	SK	SL	SN	SO	SP	SR	SS	ST
1-2	6	30	35	3.5	1.75	0.5	21.47	1.5	2.25	12.0	0.5	6	30	35	3.5	1.75	0.25	21.47	1.5	2.25	12.0	0.5
1-4	6	30	35	3.0	0.75	0.5	21.47	1.5	2.25	12.0	0.5	6	30	35	3.0	0.75	0.5	21.47	1.5	2.25	12.0	0.5

SPECIAL MAST ARM ASSEMBLIES DATA TABLE (CONT.)																						Table Date 01-01-12
STRUCTURE NUMBER	POLE BASE CONNECTION (in)					SHAFT AND REINF.						LUMINAIRE AND LUMINAIRE CONNECTION										
	#Bolts	BA	BB	BC	BF	DA(ft)	DB(ft)	RA	RB	RC	RD(in)	LA(ft)	LB(ft)	LC(in)	LD(in)	LE	LF(ft)	LG(in)	LH(in)	LJ(in)	LK(in)	L(deg)
1-2	6	38	2.5	2	40	18.5	4.5	11	16	20	6											
1-4	6	40	2.5	2	40	18.5	5.0	11	19	20	6											

- NOTES:
- 1. Work with Index 17745.
  - 2. Design Wind Speed = 130mph
  - 3. Contractor shall coordinate anchor bolt requirements with fabricator.
  - 4. Contractor shall identify Structures Numbers and submit detailed shop drawings.
- FOUNDATION NOTES:
- 1. Design based on Borings taken by Dunkleberger Engineering and Testing Inc.
  - 2. Assumptions and Values used in design:  
Soil Type for poles: Clay  
Soil Friction Angle = 29deg.  
Soil Weight = 110pcf  
Cohesion Strength = 1,400psf  
Design Water Table is 0ft. below surface



SOURCE: GRIMAIL CRAWFORD, INC.



STANDARD PENETRATION TEST BORING LOCATION AND NUMBER

CORROSION TEST RESULTS					
Sample Location	RESISTIVITY ohm-cm	CHLORIDES ppm	SULFATES ppm	pH	Environmental Classification
B-1 (6 - 8' bls)	8,890	97.8	233	8.2	Slightly Aggressive
B-2 (2 - 4' bls)	6,330	22.6	42.7	4.8	Extremely Aggressive

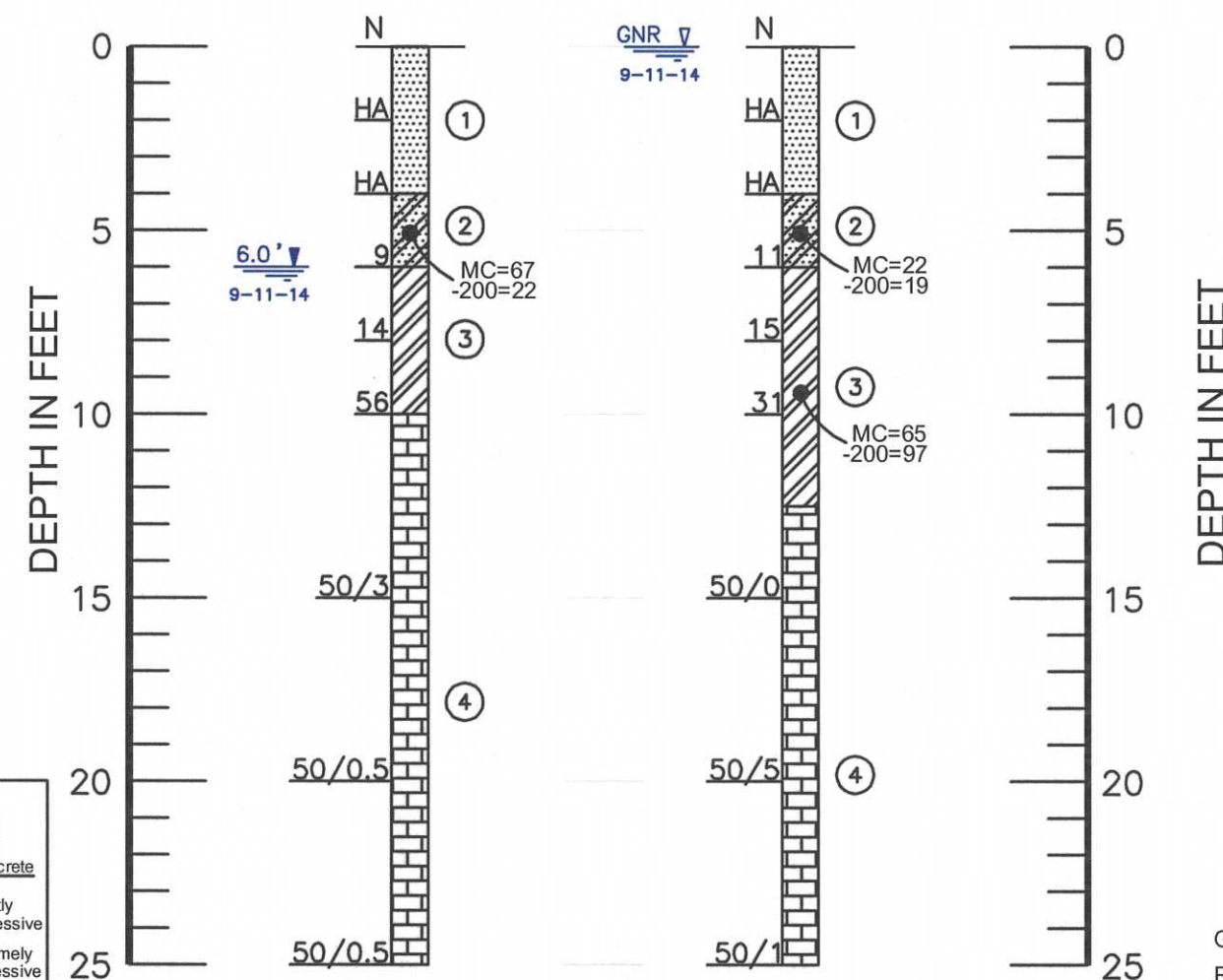
#### NOTES

- Borings were drilled on September 11, 2014 using a track-mounted BR-2500 drilling rig.
- Strata boundaries are approximate and represent soil strata at each test hole location only. Soil transitions may be more gradual than implied.
- Groundwater depths shown on the subsurface profiles represent groundwater surfaces on the dates shown. Groundwater level fluctuations should be anticipated throughout the year.
- Dense limestone was encountered in the borings for the drilled shafts. Such materials may make shaft excavations and/or temporary casing installation difficult. The Contractor shall anticipate that hard limestone and other strong materials will be encountered and contractor shall use specialized equipment and/or procedures as necessary to facilitate shaft excavation and/or temporary casing installation.

BORING NO.

B-1

B-2



SUMMARY OF FOUNDATION DESIGN PARAMETERS

Boring No.	U.S.C.S.	Depth (feet)	Range of SPT - N	Unit Weights (PCF) Moist Submerged	Angle of Interval Friction (degrees)	Effective Cohesion (PSF)	Earth Pressure Coefficients Ka Kp
B-1	SP, SP-SM	0 - 4	N/A	110 47.6	30	0	0.333 3.00
	SC	4 - 6	9	105 42.6	29	0	0.347 2.88
	CH	6 - 8	14	120 57.6	0	1,400	1.000 1.00
	CH	8 - 10	56	125 62.6	0	5,600	1.000 1.00
	Limestone	10 - 25	100+	135 72.6	0	15,000	1.000 1.00
B-2	SP, SP-SM	0 - 4	N/A	110 47.6	30	0	0.333 3.00
	SC	4 - 6	11	110 47.6	29	0	0.347 2.88
	CH	6 - 8	15	120 57.6	0	1,500	1.000 1.00
	CH	8 - 12	31	125 62.6	0	3,100	1.000 1.00
	Limestone	12 - 25	100+	135 72.6	0	15,000	1.000 1.00

#### GENERAL LEGEND

- ① Gray to dark brown fine SAND with trace silt to slightly silty (SP, SP-SM)
- ② Gray clayey SAND (CL)
- ③ Blue-gray CLAY (CH)
- ④ Light gray to light brown LIMESTONE

N - Indicates the number of blows of a 140 pound hammer, freely falling a distance of 30 inches, required to drive a 2-inch diameter sampler 12 inches (ASTM D 1586)

50/5 - Indicates fifty SPT hammer blows were required to drive the sampler 5 inches

-200 - Amount Passing U.S. Standard No. 200 Sieve (%)

MC - Moisture Content (%)

HA - Hand auger 4 feet in order to avoid possible conflict with underground utilities

B-1 - Standard Penetration Test (SPT) Boring and number

SP - Unified Soil Classification System Group Symbol (ASTM D 2487)

2.0' 9-11-14 - Depth of groundwater (feet) & date measured

GNR 9-11-14 - Groundwater not recorded

#### ENGINEERING CLASSIFICATION (SAFETY HAMMER)

GRANULAR MATERIALS		SILTS AND CLAYS	
Relative Density	SPT BLOW-COUNTS	Consistency	SPT BLOW-COUNTS
Very Loose	Less than 4	Very Soft	Less than 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Firm	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Greater than 50	Very Stiff	15 - 30
		Hard	Greater than 30

#### STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 inch
SPOON OUTSIDE DIA.	2.00 inches
AVG. HAMMER DROP	30 inches
HAMMER WEIGHT	140 pounds

REVISIONS				DRAWING INFORMATION				PROJECT INFORMATION			
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATE	ROAD NO.	COUNTY	PROJECT No.	PROJECT NAME
11-6-15	JMJ	ADD NOTE 4				JAMES M. JACKSON	9-23-14				U.S. 301 AND ELLENTON GILLETTE RD. - SIGNAL POLES
11-6-15	JMJ	UPDATED LOCATION PLAN				JAMES M. JACKSON	9-23-14		MANATEE		GILLETTE RD. - SIGNAL POLES
				APPROVED BY: JAMES M. JACKSON, P.E.				PROJECT NAME: U.S. 301 AND ELLENTON GILLETTE RD. - SIGNAL POLES			
				EXHIBIT NO. T-13				MANATEE COUNTY, FLORIDA			

DET Project No. HC145010