

**OSCEOLA COUNTY, FLORIDA
TRANSPORTATION AND TRANSIT**

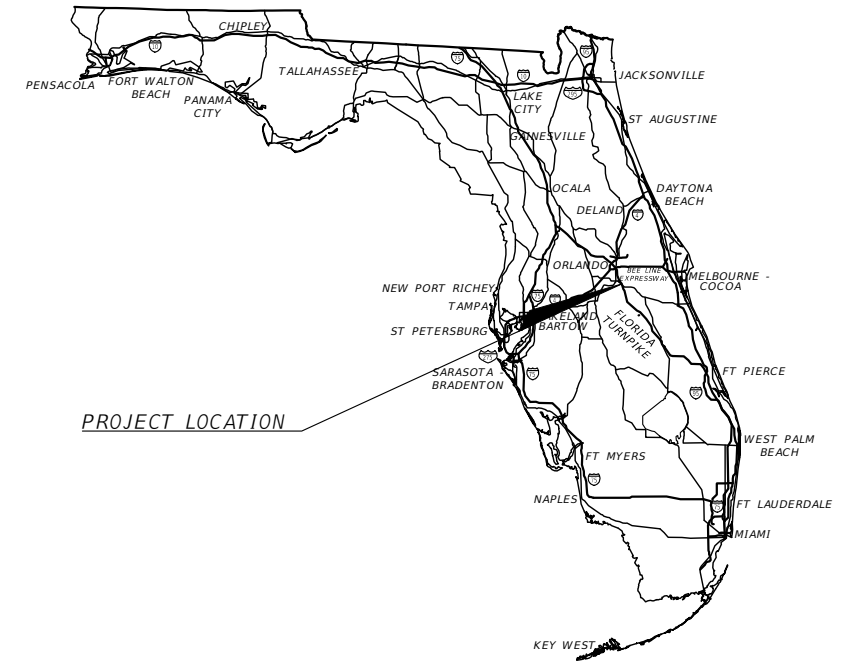
SIGNALIZATION PLANS

**FORTUNE RD AND SIMPSON RD
INTERSECTION IMPROVEMENT PLANS**

FPID: 443548-1-58-01
FAN: D522-081-B

INDEX OF SIGNALIZATION PLANS

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SHOP DRAWINGS TO BE SUBMITTED TO:

JENNIFER M. DISTEFANO, P.E.
VANASSE HANGEN BRUSTLIN, INC.
225 E. ROBINSON STREET, SUITE 300
ORLANDO, FL 32801

PLANS PREPARED BY:

 **vhb**
Engineers | Scientists
Planners | Designers
225 E. Robinson Street, Suite 300
Orlando, FL 32801 (407)839-4006
Certificate of Authorization # 3932

NOTE: THE SCALE OF THESE PLANS MAY
HAVE CHANGED DUE TO REPRODUCTION.

SIGNALIZATION PLANS
PROFESSIONAL OF RECORD: JENNIFER M. DISTEFANO, P.E.

P.E. NO.: 81844

OSCEOLA COUNTY TRANSPORTATION AND TRANSIT

BRANDON ARRINGTON CHAIRMAN OF THE BOARD OF COUNTY COMMISSIONERS
VIVIANA JANER VICE CHAIRWOMAN OF THE BOARD OF COUNTY COMMISSIONERS
PEGGY CHOUDHRY COUNTY COMMISSIONER
RICKY BOOTH COUNTY COMMISSIONER
CHERYL GRIEB COUNTY COMMISSIONER
DON FISHER COUNTY MANAGER
TAWNY H OLORE, P.E. DIRECTOR OF TRANSPORTATION AND TRANSIT

GOVERNING STANDARD PLANS:
Florida Department of Transportation, FY2022-23 Standard plans for
Road and Bridge Construction and applicable Interim Revisions (Irs).

Standard Plans for Road Construction and associated Irs are available
at the following website:
<http://www.fdot.gov/design/Standardplans.shtm>

APPLICABLE IRs: IR700-010-01

Standard Plans for Bridge Construction are included in the Structures
Plans Component.

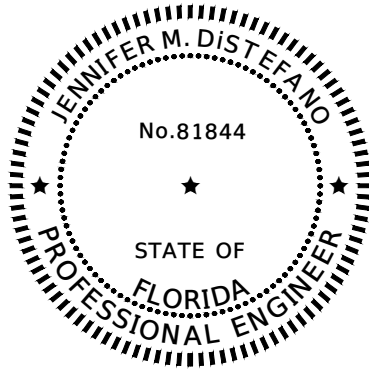
GOVERNING STANDARD SPECIFICATIONS:
Florida Department of Transportation, July, 2022 Standard
Specifications for Road and Bridge Construction at the following
website:
<http://www.fdot.gov/programmanagement/Implemented/SpecBooks>

**FINAL PLANS
DATE: DECEMBER 20, 2022**

OSCEOLA COUNTY PROJECT MANAGER: STEVEN KANE, P.E.

FISCAL YEAR	SHEET NO.
23	T-1

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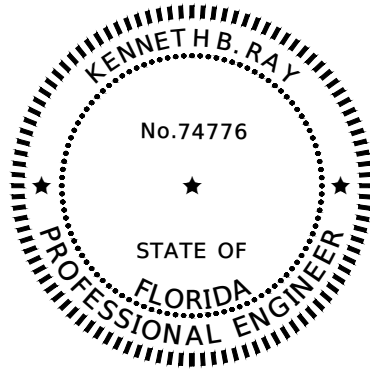
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VANASSE HANGEN BRUSTLIN, INC.
TRANSPORTATION, LAND DEVELOPMENT,
ENVIRONMENTAL SERVICES
225 E. ROBINSON ST., SUITE 300
LANDMARK CENTER TWO
ORLANDO, FL 32801
JENNIFER M. DISTEFANO, P.E. NO. 81844

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

PLAN INDEX

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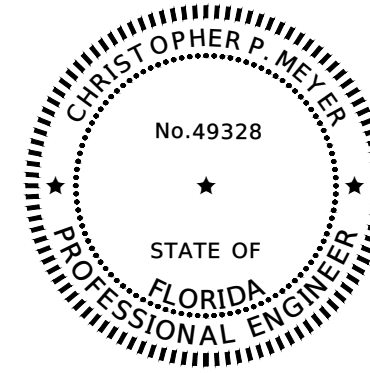
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225 E. ROBINSON ST., SUITE 300
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ORLANDO, FL 32801
KENNETH B. RAY, P.E. NO. 74776

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PLAN INDEX

SHEET NO.	SHEET DESCRIPTION
T-2	SIGNATURE SHEET
T-8	STANDARD MAST ARM ASSEMBLIES DATA TABLE



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GEOTECHNICAL AND ENVIRONMENTAL
CONSULTANTS, INC.
2510 MICHIGAN AVENUE, SUITE D
KISSIMMEE, FL 34744-1933
CHRISTOPHER P. MEYER, P.E. NO. 49328

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PLAN INDEX

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T-2	SIGNATURE SHEET
T-10	SPT BORING RESULTS

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

Engineers | Scientists
Planners | Designers
225 E. Robinson Street, Suite 300
Orlando, FL 32801 (407)839-4006
Certificate of Authorization # 3932
Jennifer M. DiStefano, P.E.
PE # 81844



OSCEOLA COUNTY
FLORIDA

SIGNATURE SHEET

SHEET NO.

T-2

TABULATION OF QUANTITIES

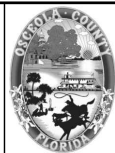
PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS										TOTAL THIS SHEET		GRAND TOTAL	
			T-5		T-6								PLAN	FINAL	PLAN	FINAL
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL				
630-2-11	CONDUIT (F&I) (OPEN TRENCH) UNDERGROUND	LF	246										246		246	
630-2-12	CONDUIT (F&I) (DIRECTIONAL BORE) UNDERGROUND OR UNDER PAVEMENT	LF	598										598		598	
632-7-1	SIGNAL CABLE (F&I)	PI	1										1		1	
635-2-11	PULL & SPLICE BOX (F&I) (13X24)	EA	17										17		17	
639-1-122	ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER PURCHASED BY CONTRACTOR	AS	1										1		1	
639-2-1	ELECTRICAL SERVICE WIRE, FURNISH & INSTALL	LF	144										144		144	
639-3-11	ELECTRICAL SERVICE DISCONNECT, F&I, POLE MOUNT	EA	1										1		1	
641-2-12	PRESTRESSED CONCRETE POLE, F&I, TYPE P-11 SERVICE POLE	EA	2										2		2	
641-2-60	PRESTRESSED CONCRETE POLE, COMPLETE POLE REMOVAL - PEDESTAL/SERVICE POLE	EA	2										2		2	
641-2-70	PRESTRESSED CONCRETE POLE, SHALLOW POLE REMOVAL - POLE 30' AND GREATER	EA	2										2		2	
646-1-11	ALUMINUM SIGNALS POLE, PEDESTAL	EA	4										4		4	
646-1-12	ALUMINUM SIGNALS POLE, FURNISH & INSTALL PEDESTRIAN DETECTOR POST	EA	4										4		4	
646-1-60	ALUMINUM SIGNALS POLE, REMOVE	EA	1										1		1	
649-21-15	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 70'	EA	4										4		4	
649-21-21	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 78'	EA	1										1		1	
650-1-14	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY	AS			28								28		28	
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNTDOWN, 1 WAY	AS	8										8		8	
660-3-11	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL CABINET EQUIPMENT	EA	1										1		1	
660-3-12	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL ABOVE GROUND EQUIPMENT	EA	4										4		4	
663-1-121	SIGNAL PRIORITY AND PREEMPTION SYSTEM, F&I, GPS, REPLACE CABINET ELECTRONICS	EA	1										1		1	
663-1-122	SIGNAL PRIORITY AND PREEMPTION SYSTEM, F&I, GPS, DETECTOR	EA	1										1		1	
665-1-11	PEDESTRIAN DETECTOR (F&I) (STANDARD)	EA	8										8		8	
670-5-111	TRAFFIC CONTROLLER ASSEMBLY, F&I, NEMA, 1 PREEMPTION	AS	1										1		1	
670-5-600	TRAFFIC CONTROLLER ASSEMBLY, REMOVE CONTROLLER WITH CABINET	AS	1										1		1	
685-1-13	UNINTERRUPTIBLE POWER SUPPLY, FURNISH AND INSTALL, LINE INTERACTIVE WITH CABINET	EA	1										1		1	
700-3-201	SIGN PANEL, FURNISH & INSTALL OVERHEAD MOUNT, UP TO 12 SF	EA			2								2		2	
700-5-22	INTERNALLY ILLUMINATED SIGN, FURNISH & INSTALL, OVERHEAD MOUNT, 12-18 SF	EA			5								5		5	

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION



Engineers | Scientists
Planners | Designers
225 E. Robinson Street, Suite 300
Orlando, FL 32801 (407)839-4006
Certificate of Authorization # 3932
Jennifer M. DiStefano, P.E.
PE # 81844



OSCEOLA COUNTY
FLORIDA

TABULATION OF QUANTITIES

SHEET
NO.

T-3

General

- Unless otherwise noted in the technical specifications: installation, acceptance, and payment for all items required in these plans shall be in accordance with the current editions of the following, referenced in the key sheet: Manual on Uniform Traffic Control Devices (MUTCD), FDOT Standard Plans, FDOT Design Manual, FDOT Standard Specifications for Road and Bridge Construction and Osceola County Contractor Signal Specifications.
- Temporary traffic control shall be maintained in accordance with the MUTCD, dated (current year). And the FDOT Standard Plans, dated (current year). Attention is directed to the 102 standard plan index series.
- The contractor shall notify Osceola County at least 48 hours before beginning any related traffic signal work.
- All existing signalization equipment to remain, including loop assemblies, is assumed to be in good working order unless Osceola County is notified in writing prior to the start of construction. Any subsequent damage to the signal equipment shall be repaired at the contractor's expense.
- The contractor shall be advised that other projects may be under construction concurrently with this project. The contractor shall be responsible for coordinating all aspects of scheduling and work with other agencies and contractors in charge of concurrent projects.
- Final locations of any devices including cabinets shall be approved by the engineer prior to placement of the foundation if the location has changed from the plan.
- The contractor shall notify the TMC 48 hours in advance should communication to an intersection be disrupted to perform work. Notification shall be conveyed via email to lindsey.giovinazzo@osceola.org and shall include contact name, phone number, purpose, location, and duration of outage.
- Three spare conductors shall be installed for each vehicle phase per Osceola County Standard.
- Signal cable shall be spliced to a separate 7 conductor cable for each signal and 7 conductor cable for each pedestrian head. These splices shall be installed in either the hand-hole of the steel pole/concrete strain pole or within the transformer base of a pedestrian pedestal. The color code of signal cable shall be verified with Osceola County prior to wiring intersection. A permanent tag shall be placed at both wire terminations designating the phase used. All unused signal wires shall be bonded to the pole ground. Each detector push button shall be fed with an individual two conductor cable, with the shield wire bonded to the pole ground. The outside insulation jacket of all signal cables shall remain intact from the signal heads to the field termination points. No un-jacketed individual conductors shall rest in any field drilled structures or assemblies.
- Solid colored insulation conductors should be used for main roadway phases and tracers used for side street phases.
- The contractor shall verify structure orientation prior to placement. Structures of incorrect orientation shall be replaced at contractor's expense. The contractor shall verify that all structures are set to elevations that will meet vertical clearance requirements specified in FDOT, MUTCD, and County standards prior to installing structural material. If a discrepancy is found, contact the engineer of record.
- If the contractor calls for an inspection and the contractor is not prepared for the inspection (i.e. the inspection has to be rescheduled), the contractor shall be back charged for all costs associated with the inspection.
- These plans reflect conditions known during plan development. In the event actual physical conditions prevent the application or the progression of any work specified in these plans, the contractor shall notify the engineer immediately and prior to any further work activity.

Procedures

- The contractor shall coordinate a field meeting with the signal project manager (407) 738- 9405, prior to removing any existing equipment, to determine which equipment should be delivered to Osceola County Transportation and Transit. The agreed upon equipment shall be disassembled into their component parts, tagged as to location, packaged as needed for protection from damage and delivered to:

3850 Old Canoe Creek Road
Attn: Aaron Torres
Saint Cloud, FL 34769
- The signal project manager is to be contacted at least 48 hours prior to delivery. Written acknowledgement of equipment receipt shall be obtained from the project manager in the form of a signed receipt bearing the contractor's letterhead. This itemized receipt shall state all equipment removed from each location was returned to Osceola County in good condition. The contractor shall present the receipt to the project manager at the time of signal inspection. Absence of such receipt shall be recorded on the punch list as an item to be corrected prior to final approval of the installation.
- All signalization equipment that is removed and not requested by Osceola County shall be properly disposed of at the contractor's expense in a manner and location approved by the project manager (407) 738-9405.

Submittals

- All submittal data on Osceola County projects should be submitted to Aaron Torres via Email at Aaron.Torres@osceola.org

Survey

- Data sources: Elevations shown hereon are based on N.A.V.D. 1988 Datum. Reference benchmark is Osceola County Benchmark OC-1279, a brass disk located on the north side of the intersection of Boggy Creek Road and Borinquen Street, Elevation 77.85'.

Drilled Shafts

- The contractor shall hire a certified drilled shaft CTQP level I construction engineering and inspection (CEI) firm, and a concrete testing laboratory for the purpose of inspecting all drilled shaft installations per current FDOT standards. The firm shall then submit a signed and sealed report verified by the PE in responsible charge of the drilled shaft inspector to the department for approval. Contractor to also coordinate with Osceola County to perform VT inspection at time of drilled shaft pour. Failure to obtain these services prior to the construction of the drilled shaft(s) shall result in rejection of the drilled shaft(s).
- The signal contractor is responsible for ensuring that no conflicts exist during the soft digs with drill shaft locations and must notify the Engineer of Record when they arise. The signal contractor is responsible for all associated cost, not complying with this signal note.
- The contractor shall be responsible for supplying approved shop drawings showing the bolt pattern and arm orientation prior to the pre-drill shaft meeting.

Mast Arms

- Mast arms shall be painted "midnight neutral". Contractor shall coordinate with Osceola County to obtain details related to the mast arm paint color requirements. Approval of paint color will be required as part of the shop drawing process.

As-Built Plans

- As defined in the FDOT Standard Specifications, section 611-2.3, seven days prior to signal conditional acceptance inspection by the maintaining agency, the contractor shall provide a PDF of the as built plans to Osceola County Transportation and Transit. The Contractor shall also leave one as-built plan in the drawer of the signal cabinet. In addition to as built plans, contractor shall submit bore logs. The contractor shall be required to become familiar with Osceola County's inspection procedure.
- Any fiber interconnect cable that is cut or damaged during construction must be replaced as an entire run and shall be re-spliced within the splice closure at the end of the run. Splicing of fiber interconnect cable between splice closures is not permitted. The contractor shall bear all expenses associated with the installation of the new interconnect cable.

Utilities

- The Contractor shall notify all utilities at least 48 hours in advance of any operation that may conflict with overhead or underground utilities, including pole setting operations where a conflict with overhead electrical conductors is expected.


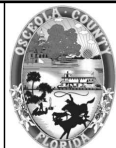
List of Utility Owners

AT&T Corp.	Greg Jacobson (813) 342-0512	gtjacobson@att.com
AT&T Distribution	Alan Reynolds (407) 351-8180	ar2916@att.com
Brighthouse (Charter/Spectrum)	Marvin Usry (407) 532-8509	marvin.usryjr@charter.com
Centurylink (Embarq)	Robert Godek (407) 830-3421	rob.m.godek@centurylink.com
Centurylink (Level3)	Xan Rypkema (720) 888-1089	xan.rypkema@centurylink.com
Crown Castle	Gruger Walter (215) 622-5927	walter.gruger@crowncastle.com
Kissimmee Utility Authority	Felix Escobar (407) 933-7777, x6600	fescobar@kua.com
Sprint	Jon Baker (321) 280-9596	jon.baker@sprint.com
Summit Broadband	Michelle Daniel (407) 996-1183	mdaniel@summit-broadband.com
Teco	Shawn Winsor (407) 420-6663	swinsor@tecoenergy.com
Toho	Robert Pelham (407) 944-5132	rpelham@tohowater.com
Verizon (MCI)	Tim Cole (407) 618-2078	timothy.cole@verizon.com
Zayo Group	Tess Bentayou (813) 363-6797	tess.bentayou@zayo.com

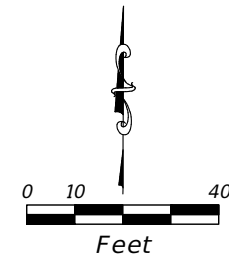
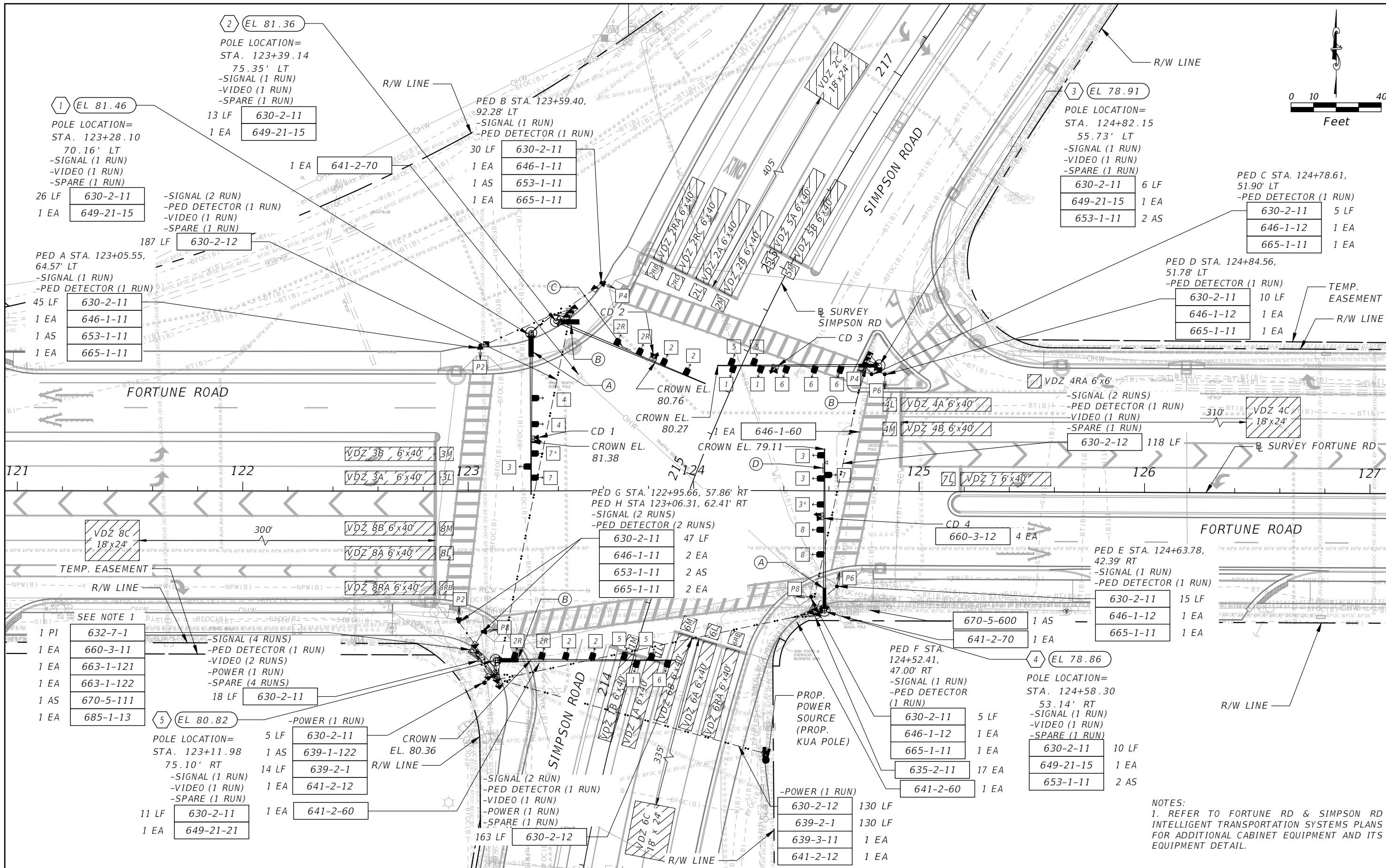
Pay Item Notes

- 630-2-XX A green #12 AWG trace wire shall be installed within any unused conduit and spliced within the pull box to provide electrical continuity. All references in the plan to rigid conduit shall be installed as 1.5" galvanized steel metal conduit. There shall be one spare 2" underground conduit installed per run. This shall be reflected in the callout. There shall be a separate conduit for video or loop runs from signal power conduits. Under no circumstances shall loop and video runs be housed in the same conduit as signal power.
- 633-1-XXX backbone fiber optic cable shall be at minimum 72 count, single mode and armored. Drop fiber optic cable shall be at minimum 12 count, single mode and armored.
- 635-2-XX pull boxes shall be "Quazite", have non-conductive covers, and meet ANSI Tier 22 rating. Covers shall be stamped "Osceola County Traffic Signal" for all signalization applications.
- 641-2-12 includes the cost of providing concrete service pole to mount signal disconnect when not permitted to be mounted on power company pole. Service pole shall be exposed 12' above grade with disconnect mounted at 8'. Surge arrester shall be wired on the load side of the disconnect.
- 646-1-XX all pedestrian pedestals shall be provided with aluminum breakaway transformer-type bases.
- 649-031 bid price for installation of mast arms shall include foundation construction, including CSL tubes (number and configuration of CSL tubes shall comply with standards and specifications section 455-16.4 CSL tubes and FDOT standard plan.
- 650-1-XX all traffic signal heads shall be aluminum. An articulated astro-bracket shall be provided under this pay item if needed for proper orientation of horizontal signal head on a skewed arm or approach. Retro reflective back plate borders are required on all back plates. Any four section signal heads with the flashing yellow arrow shall have the FTP-85-13 sign installed adjacent to the head assembly to the right.
- 653-1-XX led pedestrian signals are to be single section and provided with international style lenses and countdown feature.
- 660-4-XX all microwave detectors shall meet Osceola County's functionality requirements. Sunshields shall be provided on each camera, a menu-driven interface requiring no separate computer for set-up or maintenance shall be provided. Detectors shall be color and sealed pressurized housing. This pay item shall also include lightning and surge protection consisting of point discharge dissipation terminals on each detector, coax or cat 5 line protectors. Proper grounding must be provided including a bond wire attached to the assembly running to the pole ground, this item includes exterior use cabling, and mounting brackets necessary to meet the performance expectations of the system as described in the signal general notes. Payment includes all labor (man-hours) and equipment necessary to develop an acceptance testing plan and to complete a successful detection accuracy test A.K.A. Field acceptance test of the detection system.

- 663-1-XXX contractor to furnish and install Global Traffic Technologies GPS receiver and antenna. The contractor will perform all signal testing, mapping and system activation. Contractor to furnish and install global traffic technologies fire-rescue GPS pre-emption controller interface module. Contractor to furnish and install Global Traffic Technologies system-specific preemption GPS multi-pair cable to connect to GPS antennas to GPS pre-emption controller interface.
- 665-1-XX pedestrian push buttons shall include an MUTCD pedestrian sign, R10-3E for each button. The button and sign shall be placed on the face of the pole. Contact the engineer before proceeding if all A.D.A. Requirements cannot be met regarding the placement and accessibility of the buttons. Audible push buttons shall only be installed when called for on plan sheets.
- 670-5-XXX the controller assembly shall be Econolite R77 T52 Type 1 operation, consist of an Econolite Cobalt 2100 controller, and 3 shelves. (Special note: if there is limited sidewalk A.D.A. clearance, a reduced depth Type VI cabinet can be used with prior approval from Osceola County Transportation and Transit). The cabinet air filter shall be of the reusable washable aluminum type. The top of the controller pad shall be at least six inches above the roadway elevation. This pay item shall also include complete reintegration of the existing GPS priority control preemption equipment, and relocation to/from the existing cabinet. A flush mounted automatic power transfer switch shall be included on the cabinet. A technician service pad 30" in width shall also be provided. Whenever possible, the cabinet is to be placed so that the door opens away from the intersection and opens fully within the right of way. This pay item includes the cost of the concrete for the controller pad and the service pad. NOTE- Refer to Osceola County Traffic Signal Cabinet and Controller Specifications 5/2016. For more detailed specifications contact Aaron Torres (407) 738-9405, aaron.torres@osceola.org
- 682-1-XXX all new CCTV Camera's shall be mounted to have the ability to view 360-degree angle by placing the camera on the Mast arm using a candy cane support riser.
- 685-1-13 The UPS systems shall be Alpha XM 1100 or an equivalent Alpha model that meets Osceola County's communication system requirements. UPS cabinets shall be installed separately from the controller assembly, no piggy back mounts.
- 700-5-XX illuminated street signs shall be L.E.D. double faced type, producing a minimum of 50 lumens per watt. Signs shall be double-sided and mounted to separate cantilever arms below the mast arms. All internally illuminated street name signs shall have one common photocell installed in cabinet. Internally illuminated street name signs shall have a 24" viewing height. This viewing height does not include the height of the sign assembly. Internally illuminated street name signs shall be burned in for 60 days before final acceptance. The signs shall use a breaker separately from the signal cabinet and shall be controlled by one master photocell.

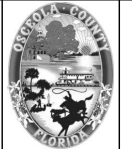
R E V I S I O N S				 Engineers Scientists Planners Designers 225 E. Robinson Street, Suite 300 Orlando, FL 32801 (407)839-4006 Certificate of Authorization # 3932 Jennifer M. DiStefano, P.E. PE # 81844	 OSCEOLA COUNTY FLORIDA	GENERAL NOTES SHEET	SHEET NO. T-4
DATE	DESCRIPTION	DATE	DESCRIPTION				

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NOTES:
 1. REFER TO FORTUNE RD & SIMPSON RD INTELLIGENT TRANSPORTATION SYSTEMS PLANS FOR ADDITIONAL CABINET EQUIPMENT AND ITS EQUIPMENT DETAIL.

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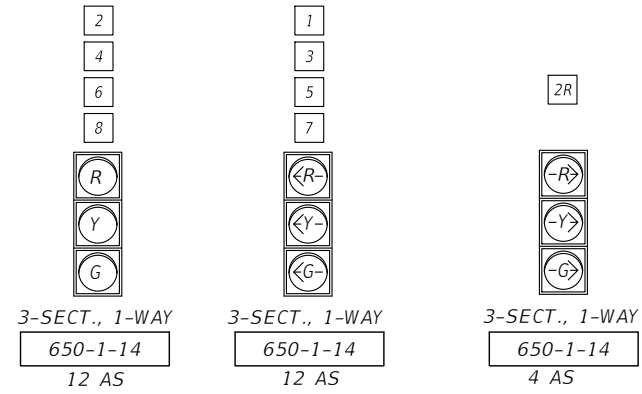


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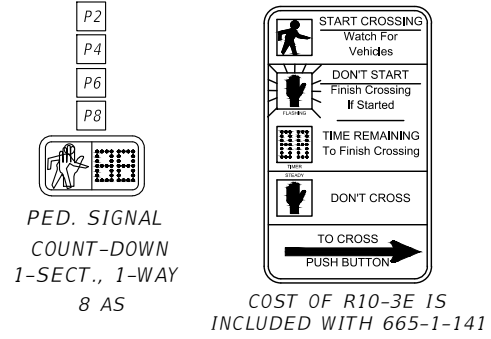
SIGNALIZATION PLAN SHEET 1

SHEET NO.
T-5

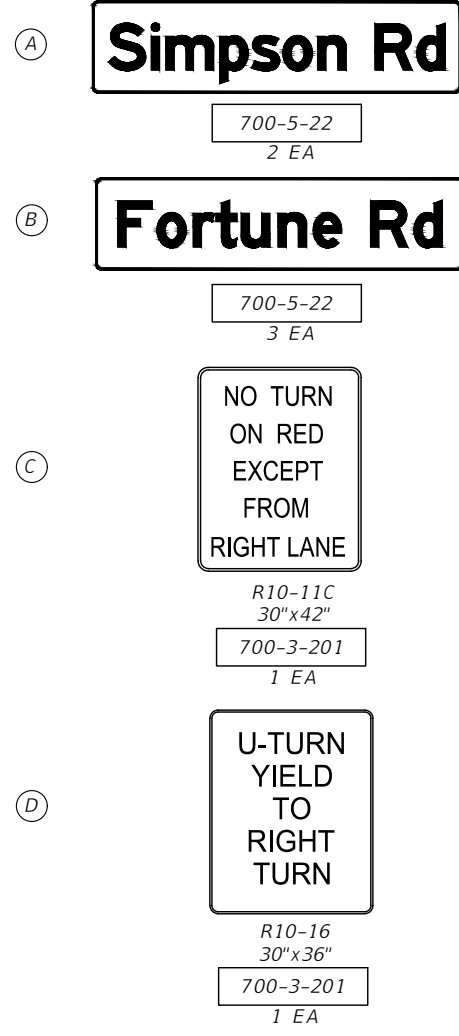
SIGNAL HEAD DETAILS



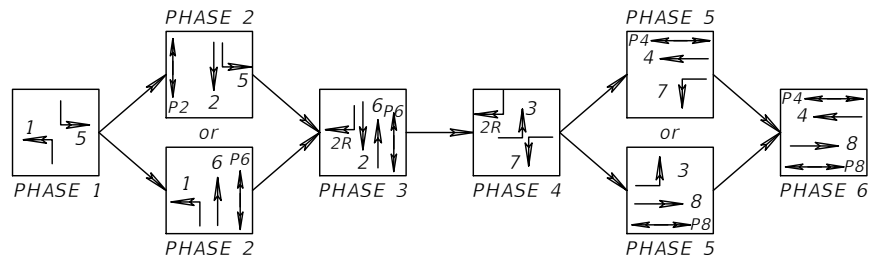
PEDESTRIAN HEAD DETAILS



OVERHEAD SIGN DETAILS



MOVEMENT DIAGRAM
SOP 10



CONTROLLER TIMINGS

CONTROLLER TIMINGS								
TIMING FUNCTION								
MOVEMENT NUMBER	1	2	3	4	5	6	7	8
MINIMUM GREEN	8	15	8	8	8	15	8	8
EXTENSION	3	3	3	3	3	3	3	3
MAXIMUM GREEN 1	24	45	40	45	51	45	20	45
MAXIMUM GREEN 2	-	-	-	-	-	-	-	-
YELLOW CLEARANCE	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
ALL RED	3.5	2.0	4.2	2.3	3.5	2.0	4.2	2.3
PEDESTRIAN WALK	-	7	-	7	-	7	-	7
PED. CLEARANCE	-	29	-	30	-	23	-	36
RECALL	-	MIN	-	MIN	-	MIN	-	MIN
DETECTOR FUNCTION	-	L	-	NL	-	L	-	NL

NOTES:

1. PROPOSED OVERHEAD STREET NAME SIGNS SHALL BE DOUBLE SIDED AND CANTILEVER MOUNTED TO THE PROPOSED MAST ARM UPRIGHT.
2. SIGNS SHALL BE FREE-SWINGING ON THE CANTILEVER ARM.
3. THE CANTILEVER ARM ON POLE 3 SHALL BE A MAXIMUM OF 9' LONG.

VIDEO DETECTORS

CAMERA DETECTOR	DETECTION ZONE	DELAY TIME (SEC.)	CHANNEL NO.	CAMERA DETECTOR	DETECTION ZONE	DELAY TIME (SEC.)	CHANNEL NO.
CD 1	VDZ 4A	-	CH 21	CD 3	VDZ 1A	-	CH 1
	VDZ 4B	-	CH 22		VDZ 1B	-	CH 2
	VDZ 4C	-	CH 23		VDZ 1L	-	CH 3
	VDZ 4L	-	CH 24		VDZ 1M	-	CH 4
	VDZ 4M	-	CH 25		VDZ 6A	-	CH 37
	VDZ 4RA	5	CH 26		VDZ 6B	-	CH 38
CD 2	VDZ 7A	-	CH 49	VDZ 6C	-	CH 39	
	VDZ 7L	-	CH 50	VDZ 6L	-	CH 40	
	VDZ 2A	-	CH 5	VDZ 6M	-	CH 41	
	VDZ 2B	-	CH 6	VDZ 6RA	5	CH 42	
	VDZ 2C	-	CH 7	VDZ 6RB	5	CH 43	
	VDZ 2L	-	CH 8	VDZ 3A	-	CH 17	
	VDZ 2M	-	CH 9	VDZ 3B	-	CH 18	
	VDZ 2RA	5	CH 10	VDZ 3L	-	CH 19	
	VDZ 2RB	5	CH 11	VDZ 3M	-	CH 20	
	VDZ 2RC	-	CH 12	VDZ 8A	-	CH 53	
VDZ 2RD	-	CH 13	VDZ 8B	-	CH 54		
CD 4	VDZ 5A	-	CH 33	VDZ 8C	-	CH 55	
	VDZ 5B	-	CH 34	VDZ 8L	-	CH 56	
	VDZ 5L	-	CH 35	VDZ 8M	-	CH 57	
	VDZ 5M	-	CH 36	VDZ 8RA	5	CH 58	
				VDZ 8RB	5	CH 59	

NOTES:

1. THE MAJOR ROAD IS SIMPSON ROAD WHICH HAS A POSTED SPEED OF 45 MPH.
2. THE MINOR ROAD IS FORTUNE ROAD WHICH HAS A POSTED SPEED OF 45 MPH.
3. REFER TO THE FORTUNE ROAD AND SIMPSON ROAD IMPROVEMENT PLANS INTELLIGENT TRANSPORTATION SYSTEMS COMPONENT SET FOR ALL ITS EQUIPMENT, PAY ITEMS, AND DETAILS.

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

Engineers | Scientists
Planners | Designers
225 E. Robinson Street, Suite 300
Orlando, FL 32801 (407)839-4006
Certificate of Authorization # 3932
Jennifer M. DiStefano, P.E.
PE # 81844



OSCEOLA COUNTY
FLORIDA

SIGNALIZATION PLAN SHEET 2

SHEET NO.

T-6

STANDARD MAST ARM ASSEMBLIES DATA TABLE

STRUCTURE ID NUMBERS	DESIGNATION	FIRST ARM		SECOND ARM		UF (deg)	LL (deg)	POLE				STANDARD DRILLED SHAFT ID
		ARM ID	FAA (ft.)	ARM ID	FAA (ft.)			POLE TYPE	UAA (ft.)	UB (ft.)	UCA (in.)	
1	A70/S/H-P5/S	A70/S/H						P5/S		20.5		DS/25/5.0
2	A70/S/H-P5/S	A70/S/H						P5/S		20.0		DS/25/5.0
3	A70/S/H-P5/S	A70/S/H						P5/S		22.0		DS/25/5.0
4	A70/S/H-P5/S	A70/S/H						P5/S		21.0		DS/25/5.0
5	A78/S/H-P6/S	A78/S/H						P6/S		20.5		DS/25/5.0

NOTES:

- IF AN ENTRY APPEARS IN COLUMN FAA, A SHORTER ARM IS REQUIRED. THIS IS OBTAINED BY REMOVING LENGTH FROM THE ARM TIP AND THE ARM LENGTH SHORTENED FROM FA TO FAA. SAA SIMILAR.
- IF AN ENTRY APPEARS IN COLUMN UAA, A SHORTER POLE IS REQUIRED. THIS IS OBTAINED BY REMOVING LENGTH FROM THE POLE TIP AND THE POLE HEIGHT SHORTENED FROM UA TO UAA.
- ARM MOUNTING HEIGHT UB MUST BE BETWEEN 18-22 FEET.
- POLE TYPES P2 AND LARGER REQUIRE A MINIMUM 4.5 FOOT DIAMETER DRILLED SHAFT. POLE TYPES P5 AND LARGER REQUIRE A MINIMUM 5.0 FOOT DIAMETER DRILLED SHAFT.
- WORK THIS SHEET WITH THE SIGNAL DESIGNER'S "MAST ARM TABULATION". SEE "MAST ARM TABULATION" FOR SPECIAL INSTRUCTIONS THAT INCLUDE NON-STANDARD HANDHOLE LOCATIONS, PAINT COLOR, TERMINAL COMPARTMENT REQUIREMENT, AND PEDESTRIAN FEATURES.
- WORK WITH INDEX 649-030 AND 649-031.

FOUNDATION NOTES:

DESIGN OF DRILLED SHAFT FOUNDATIONS IS BASED ON BORINGS TAKEN AND SEALED BY GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, INC.

THE FOLLOWING ASSUMPTIONS AND VALUES WERE USED IN DESIGN:

POLE 1:
SOIL FRICTION ANGLE = 29 DEG
SOIL WEIGHT = 42 PCF
N-VALUE (BLOWCOUNTS) = 6

POLE 3:
SOIL FRICTION ANGLE = 29 DEG
SOIL WEIGHT = 42 PCF
N-VALUE (BLOWCOUNTS) = 9

POLE 2:
SOIL FRICTION ANGLE = 29 DEG
SOIL WEIGHT = 42 PCF
N-VALUE (BLOWCOUNTS) = 6

POLE 4:
SOIL FRICTION ANGLE = 29 DEG
SOIL WEIGHT = 42 PCF
N-VALUE (BLOWCOUNTS) = 9

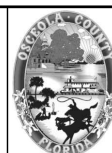
POLE 5:
SOIL FRICTION ANGLE = 29 DEG
SOIL WEIGHT = 42 PCF
N-VALUE (BLOWCOUNTS) = 9

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION



Engineers | Scientists
Planners | Designers
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Orlando, FL 32801 (407)839-4006
Certificate of Authorization # 3932
Kenneth B. Ray, P.E.
PE # 74776



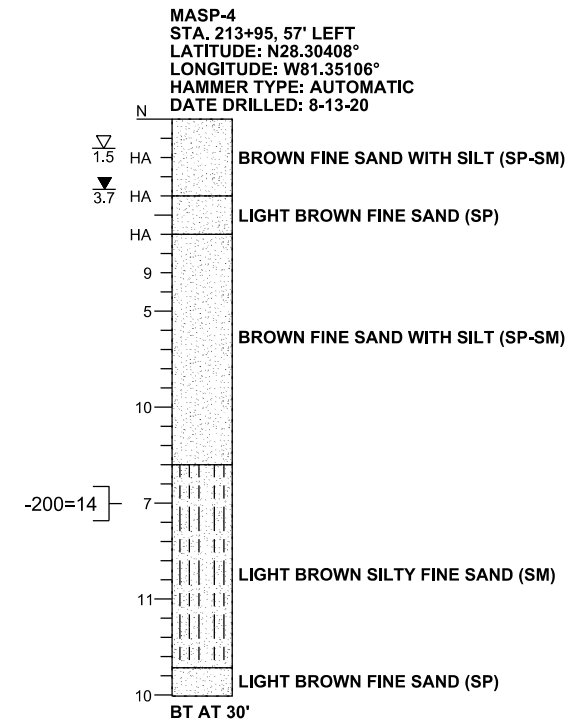
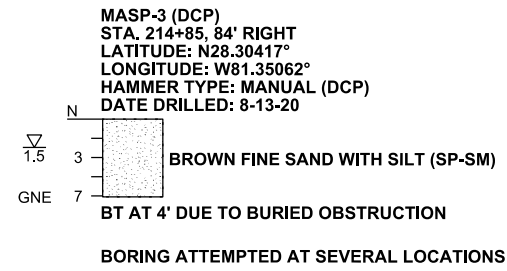
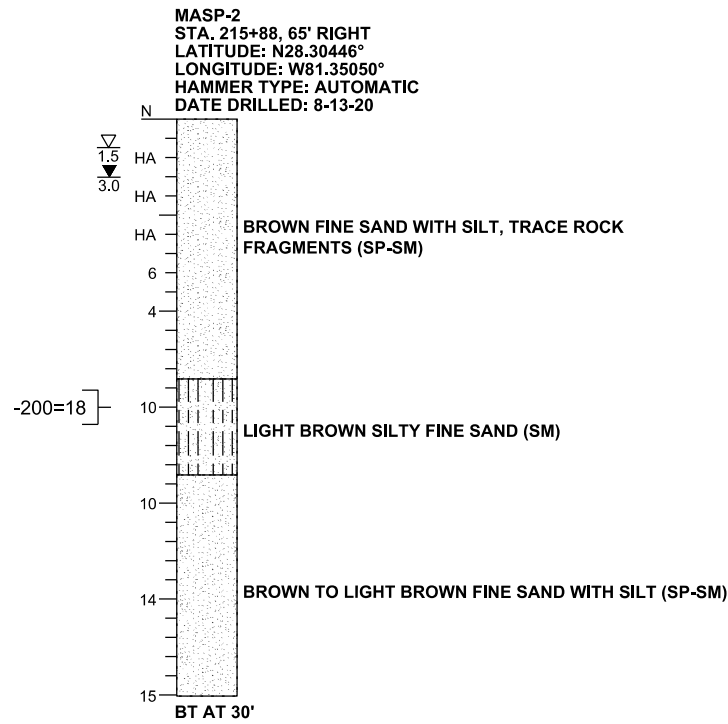
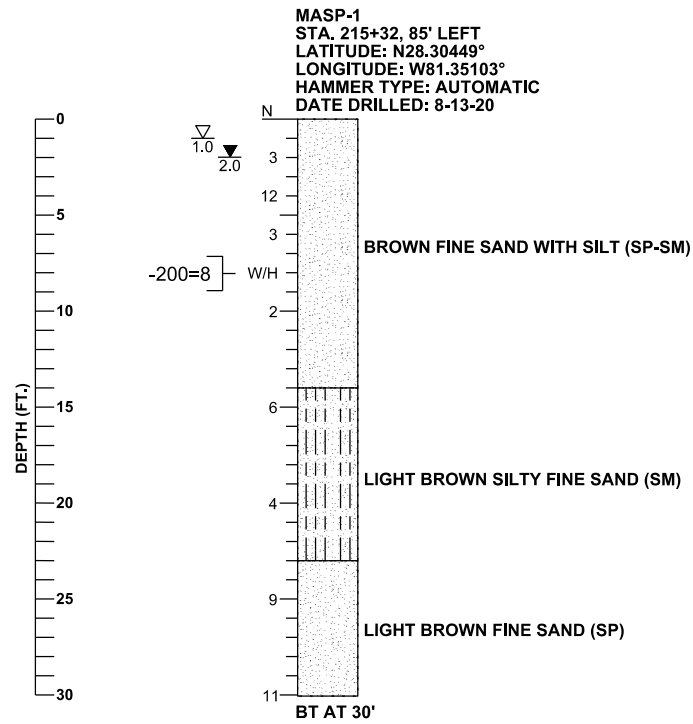
**OSCEOLA COUNTY
FLORIDA**

**STANDARD MAST ARM
ASSEMBLIES DATA TABLE**

SHEET NO.

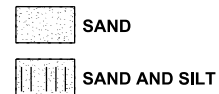
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LEGEND

- N STANDARD PENETRATION RESISTANCE, BLOWS PER FOOT
- HA HAND AUGERED FOR UTILITY CLEARANCE
- W/H WEIGHT OF HAMMER
- ▽ 1.0 ESTIMATED SEASONAL HIGH GROUNDWATER DEPTH (FT.)
- ▽ 2.0 ENCOUNTERED GROUNDWATER DEPTH (FT.) 24 HRS. AFTER DATE DRILLED
- GNE GROUNDWATER NOT ENCOUNTERED
- BT BORING TERMINATED AT DEPTH INDICATED
- 200= PERCENT PASSING NO. 200 U.S. STANDARD SIEVE



GENERAL NOTES

SUBSURFACE CONDITIONS SHOWN ON THE BORINGS REPRESENT THE CONDITIONS ENCOUNTERED AT THE BORING LOCATIONS. ACTUAL CONDITIONS BETWEEN THE BORINGS MAY VARY FROM THOSE SHOWN. UNIFIED SOIL CLASSIFICATIONS SHOWN ON THE BORINGS ARE BASED ON VISUAL EXAMINATION AND THE LABORATORY TESTING SHOWN.

STANDARD PENETRATION TEST BORINGS WERE PERFORMED IN ACCORDANCE WITH ASTM D-1586. STANDARD PENETRATION RESISTANCES ARE SHOWN ON THE BORINGS AT THE TEST DEPTHS IN IN BLOWS PER FOOT UNLESS OTHERWISE NOTED.

THE DYNAMIC CONE PENETROMETER (DCP) TEST BORING MASP-3 (DCP) WAS PERFORMED IN GENERAL ACCORDANCE WITH "DYNAMIC CONE FOR SHALLOW IN-SITU PENETRATION TESTING, VANE SHEAR AND CONE PENETRATION TESTING OF IN-SITU SOILS", ASTM STP 377, 1966.

THE "N" VALUES SHOWN FOR THE DCP TEST BORING REPRESENT APPROXIMATE STANDARD PENETRATION RESISTANCE, BLOWS PER FOOT CORRELATED FROM MEASURED DCP RESISTANCE, BLOWS PER 1.75 INCHES OF PENETRATION. THE CORRELATION OF DCP TO SPT "N" VALUES IS BASED ON THE CALIBRATION CURVE FOR COASTAL PLAINS SOILS, ASTM SPT 399, 1966.

BORING LOCATIONS WERE NOT SURVEYED. BORING LOCATIONS WERE ESTABLISHED IN THE FIELD USING A SUB-METER ACCURACY GPS UNIT AND PROJECT PLANS PROVIDED BY VHB.

ACCORDING TO THE SEPTEMBER 2017 FDEP POTENTIOMETRIC CONDITIONS MAP, "UPPER FLORIDAN POTENTIOMETRIC SURFACE", THE POTENTIOMETRIC SURFACE OF THE AQUIFER IN THE VICINITY OF THE SUBJECT INTERSECTION IS APPROXIMATELY +48 FEET NGVD. THE CONTRACTOR SHALL BE PREPARED TO HANDLE ARTESIAN HEAD LEVELS UP TO +48 FEET NGVD. BASED ON REVIEW OF THE U.S.G.S. QUADRANGLE MAP, EXISTING GROUND SURFACE ELEVATIONS ARE ABOUT +80 FEET NGVD AND ARTESIAN CONDITIONS ARE NOT ANTICIPATED.

SPLIT SPOON SAMPLER:
 INSIDE DIAMETER: 1.375 IN.
 OUTSIDE DIAMETER: 2.0 IN.
 AVERAGE HAMMER DROP: 30 IN.
 HAMMER WEIGHT: 140 LBS.

ENVIRONMENTAL CLASSIFICATION (BASED ON RECENT RESULTS):
 SUPERSTRUCTURE: N/A
 SUBSTRUCTURE:
 STEEL: SLIGHTLY AGGRESSIVE
 CONCRETE: SLIGHTLY AGGRESSIVE

GRANULAR SOILS: SANDS		NON-GRANULAR SOILS: SILTS, CLAYS, MUCK	
N VALUE (BLOWS/FT)	RELATIVE DENSITY	N VALUE (BLOWS/FT)	CONSISTENCY
AUTOMATIC HAMMER			
0-3	VERY LOOSE	0-1	VERY SOFT
3-8	LOOSE	1-3	SOFT
8-24	MEDIUM DENSE	3-6	FIRM
24-40	DENSE	6-12	STIFF
OVER 40	VERY DENSE	12-24	VERY STIFF
		OVER 24	HARD
MANUAL HAMMER			
0-4	VERY LOOSE	0-2	VERY SOFT
4-10	LOOSE	2-4	SOFT
10-30	MEDIUM DENSE	4-8	FIRM
30-50	DENSE	8-15	STIFF
OVER 50	VERY DENSE	15-30	VERY STIFF
		OVER 30	HARD

SECTIONS: 18, 19
 TOWNSHIP: 25 SOUTH
 RANGE: 30 EAST

FIGURE 3

REVISIONS				 CHRISTOPHER P. MEYER, P.E. P.E. LICENSE NUMBER 49328 GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, INC. 2510 MICHIGAN AVENUE, SUITE D KISSIMMEE, FL 34744-1933	 OSCEOLA COUNTY FLORIDA	<i>SPT BORING RESULTS FOR SIGNALS</i>	SHEET NO. T - 10
DATE	DESCRIPTION	DATE	DESCRIPTION				

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