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BID ITEM NO.	DESCRIPTION		SHEET NUMBER  T-3 T-4 T-5										TOTAL		GRAND	
		דואט	ORIGINAL	(10)	ORIGINAL	-4 FINAL	ORIGINAL T	-5 FINAL	ORIGINAL	FINAL	ORIGINAL	FINAL	THIS SHEET		TOTAL	
	CONDUIT, UNDERGROUND	LF														
630-1-14	CONDUIT, UNDERGROUND JACKED	LF														
	SPAN WIRE ASSEMBLY (DIAGONAL)	PI														
	PULL BOX	EA											-		1	
	ELECTRICAL SERVICE WIRE	LF														
64I-XX-XXX	PRESTRESSED CONCRETE POLES, TYPE N-XX, XX'	EA														
	TRAFFIC SIGNAL, 3 SECTION, I WAY (LED)	AS														
650-51-312	TRAFFIC SIGNAL, 3 SECTION, 2 WAY (LED)	AS														
650-54	TRAFFIC SIGNAL, RELOCATE	AS							0							
653-191	PEDESTRIAN SIGNALS (LED) (I-WAY) (COUNTDOWN)	AS														
653-192	PEDESTRIAN SIGNALS (LED) (2-WAY) (COUNTDOWN)	AS														
659-108	SIGNAL HEAD AUXILIARIES (STEEL PEDESTAL)	EA														
660-1-109	INDUCTIVE LOOP DETECTOR (TYPE 9, 2CH)	EA														
660-1-110	INDUCTIVE LOOP DETECTOR (TYPE 10, 2CH, TD)	EA													1	
660-2-102	LOOP ASSEMBLY TYPE B	AS														
660-2-106	LOOP ASSEMBLY TYPE F	AS														<u> </u>
665-II	PEDESTRIAN DETECTOR	EA														
	ACTUATED SOLID STATE CONTROLLER ASSEMBLY (MODIFY)	AS														
	REMOVE TRAFFIC SIGNAL HEAD ASSEMBLY	EA										-		-		
690-33-1	POLE REMOVAL (DEEP)	LF														
690-80	REMOVE SPAN WIRE ASSEMBLY	EA											1	-		
	REMOVE CONDUIT & CABLING	PI													-	
690-100	REMOVE MISCELLANEOUS EQUIPMENT	PI							1				ļ			1
	REMOVE SIGN	AS											<u> </u>	-		
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# PAY ITEM NOTES

- 1. PAY ITEM NO. 630-1-12 SHALL BE INSTALLED PER SECTION 630, CONDUIT OF THE STANDARD SPECIFICATIONS. ALL CONDUITS SHALL ENTER PULL BOXES AS REQUIRED IN STANDARD INDEX 17721, SHEET 2 OF 2.
- 2. WHEN JACKING CONDUIT UNDER PAVEMENT, THE CONTRACTOR MAY USE AN FOOT APPROVED GUIDED BORING SYSTEM AS AN ALTERNATE METHOD OF CONSTRUCTION. AN ACCEPTABLE METHOD IS THE DITCH WITCH JET-TRAC OR EQUIVALENT, PAID FOR UNDER PAY ITEM NUMBER 630-1-14.
- 3. PAY ITEM NO. 639-2-1 THE CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING THE CONDUCTORS FOR THE POWER SERVICE.

	REVISIONS		
	DESCRIPTION	BY	DATE
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HARTWOOD MARSH ROAD - PHASE I

TABULATION OF QUANTITIES

SHEET NO.

T - 1

### SIGNALIZATION GENERAL NOTES

- I. THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS (JANUARY, 2006), AND ALL SUPPLEMENTS APPLICABLE THERETO.
- 2. ALL WORK SHALL CONFORM TO THE ABOVE STANDARD REQUIREMENTS, ANY LOCAL JURISDICTIONAL REQUIREMENTS THAT EXCEED THOSE LISTED ABOVE, AND ANY MANUFACTURER'S REQUIREMENTS THAT ARE NOT COVERED ABOVE.
- 3. THE MAINTAINING AGENCY SHALL BE LAKE COUNTY.
- 4. NO TEST BORINGS WERE MADE IN THE VICINITY OF PROPOSED CONDUIT RUNS OR DIRECTIONAL BORES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO EXAMINE JOB SITE CONDITIONS PRIOR TO THE SUBMISSION OF BID PROPOSALS PER SECTION 2-4 OF THE FDOT SPECIFICATIONS.
- 5. THESE PLANS REFLECT CONDITIONS KNOWN AT THE TIME OF PLAN DEVELOPMENT. IN THE EVENT THAT ACTUAL FIELD CONDITIONS PREVENT THE APPLICATION OF THESE PLANS AND/OR THE SPECIFICATIONS OR THE PROGRESSION OF THE WORK SPECIFIED IN THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN CHARGE IMMEDIATELY AND PRIOR TO ANY FURTHER PROSECUTION OF THE WORK.
- 6. ALUMINUM HOUSINGS SHALL BE USED FOR ALL TRAFFIC SIGNAL HEADS. NO POLYCARBONATE HOUSING OR MOUNTING HARDWARE WILL BE PERMITTED.
  TUNNEL VISORS SHALL BE FULL VISORS (NOT CUT-AWAY TYPE) AND PAYMENT FOR TUNNEL VISORS SHALL BE INCIDENTAL TO PAY ITEMS FOR TRAFFIC
  SIGNAL HEAD ASSEMBLIES. SIGNAL HOUSINGS SHALL BE BLACK IN COLOR.
- 7. THE CONTRACTOR SHALL VERIFY WITH THE MAINTAINING AGENCY, COLOR CODES FOR THE SIGNAL CABLE CONDUCTORS PRIOR TO ORDERING.
- 8. ONE ADDITIONAL (SPARE) CONDUIT SHALL BE RUN FROM THE CONTROLLER CABINET BASE TO THE NEAREST PULL BOX FOR DETECTION EQUIPMENT WIRES AND SIGNAL CABLE RESPECTIVELY.
- 9. PULL BOXES SHALL BE QUAZITE 1324 OR EQUIVALENT AND SHALL BE PLACED BEHIND CURB AND GUTTER. IF THERE IS NO CURB AND GUTTER, THE PULL BOXES SHALL BE PLACED A MINIMUM OF 10' FROM THE EDGE OF PAVEMENT, BUT NOT AT THE BOTTOM OF ANY DITCH OR RETENTION AREA. THE LIDS SHALL BE NON-METALLIC, TRAFFIC BEARING MATERIAL AND PRESSED COVER LOGO WITH "TRAFFIC SIGNAL". ALL PULL BOXES AND COVERS SHALL BE FOOT APPROVED.
- 10. DURING NON-WORKING HOURS, THE CONTRACTOR SHALL NOT STORE ANY MATERIALS OR PARK ANY EQUIPMENT WITHIN 30' OF THE EDGE OF THE TRAVELWAY. IF THE ABOVE IS NOT POSSIBLE, THE CONTRACTOR SHALL REQUEST THE ENGINEER IN CHARGE TO APPOINT AN APPROVED STORAGE AREA AND SUCH AREA SHALL BE PROPERLY DELINEATED AND ADVANCE WARNING SHALL BE UTILIZED.
- II. PER FOOT STANDARD SPECIFICATIONS, ALL FIELD WIRING SHALL BE CLEARLY IDENTIFIED WITH WEATHER PROOF TAGS THAT ARE SECURELY ATTACHED TO EACH CABLE. THE CONTRACTOR SHALL SUBMIT THE PROPOSED TAGGING SYSTEM WITH THE SUBMITTALS PACKAGE AS REQUIRED FOR PERMIT JOBS.
- 12. THE CONTROLLER BASE ELEVATION SHALL BE 4" TO 8" ABOVE THE GRADE.
- 13. THREE SPARE CONDUCTORS PER SIGNAL CABLE ARE REQUIRED. SPARES SHALL BE BOUND TOGETHER AND GROUNDED TO THE BUS GROUNDING FACILITY IN THE CONTROLLER CABINET.
- 14. ALL TRAFFIC SIGNAL HEAD ASSEMBLIES SHALL HAVE A MINIMUM LOW POINT OF CLEARANCE OF 17.5' AND A MAXIMUM HIGH POINT OF CLEARANCE OF 19' FROM THE BOTTOM OF THE ASSEMBLY TO THE ROADWAY.
- 15. AT THE TIME OF FINAL INSPECTION OF THE INSTALLATION, THE CONTRACTOR SHALL PROVIDE TWO SETS OF CONSTRUCTION AS-BUILT PLANS, THAT INCLUDE CONDUIT AND PULL BOX LOCATIONS, AND FOOT FORMAT SERIES RESISTENCE DATA FORMS FOR ALL GROUNDING ELECTRODES.
- 16. THE CONTRACTOR SHALL FURNISH ALL NECESSARY EQUIPMENT INCLUDING A BUCKET TRUCK FOR TESTING AND INSPECTION OF TRAFFIC SIGNALS.
- 17. UPON COMPLETION OF THE TRAFFIC SIGNAL INSTALLATION, THE TRAFFIC SIGNAL SHALL BE PLACED IN FLASHING OPERATION FOR A PERIOD OF 7-14 DAYS PRIOR TO COMMENCEMENT OF FULL STOP CONTROL OPERATION.
- 18. SIGNAL CABLE AND LOOP WIRES TO BE IN SEPARATE PULL BOXES.
- 19. THE CONTRACTOR SHALL STAKE ALL POLE LOCATIONS AND HAVE THEM APPROVED BY LAKE COUNTY TRAFFIC ENGINEERING.
- 20. AS DIRECTED BY THE PROJECT ENGINEER, THE CONTRACTOR SHALL ADJUST CONDUIT AND PULL BOXES HORIZONTALLY AND/OR VERTICALLY IN ORDER TO AVOID ANY POSSIBLE CONFLICTS WITH UNDERGROUND UTILITIES.
- 21. ALL CONDUIT SHALL BE 2-INCH MINIMUM UNLESS OTHERWISE SPECIFIED IN THE PLANS AND SHALL HAVE A LOCATE WIRE INSTALLED IN ALL FIBER OPTIC AND FUTURE USE CONDUITS.
- 22. TYPE "F" LOOPS SHALL BE 40' LONG BY 6' WIDE QUARDRAPOLE, CENTERED IN THE LANE AND EXTEND 5' BEYOND THE STOP BAR UNLESS OTHERWISE SHOWN ON PLAN SHEET.
- 23. THE CONTRACTOR SHALL MAKE ALL LOOP ASSEMBLIES AND LOOP DETECTORS INSTALLED AS PART OF THE PROJECT FULLY OPERATIONAL IN ACCORDANCE WITH THEIR ASSOCIATED ISOLATED INTERSECTION SIGNAL TIMING CHART. ALL LOOP ASSEMBLIES SHALL BE SEALED WITH AN FOOT APPROVED LOOP SEALANT. ALL SAW CUTS SHALL BE SEALED IMMEDIATELY AFTER THE LOOP WIRES AND LEAD-IN WIRES HAVE BEEN PLACED IN THE SAW CUTS. LOOPS SHALL NOT BE INSTALLED IN SERIES.
- 24. NO LOOP HOME RUNS SHALL BE CUT IN THE RADIUS.

60 % SUBMITTAL

- 25. ALL SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE LOCATED IN PULL BOXES AND SOLDERED AND TAPED WITH A WATERPROOF COATING APPLIED IN A MANNER APPROVED BY THE ENGINEER.
- 26. ALL TRAFFIC SIGNAL LOOP ASSEMBLY WIRES AND SHIELDED LEAD-IN CABLES SHALL BE ROUTED TO THE TRAFFIC SIGNAL CONTROLLER CABINET IN ONE CONTINUOUS RUN. THERE SHALL BE NO SPLICING ALLOWED EXCEPT IN INSTANCES WHERE LOOP WIRE IS SPLICED TO SHIELDED LEAD-IN CABLE. ALL SHIELDED LOOP LEAD-IN WIRES MUST BE GROUNDED TO THE CONTROLLER CABINET GROUND.

27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UTILITY LOCATION COORDINATION EFFORTS AS REQUIRED BY FLORIDA STATUTE REGARDING PROTECTION OF EXISTING UTILITIES. THE CONTRACTOR IS REMINDED THAT NOT ALL UTILITY PROVIDERS ARE SUBSCRIBERS TO THE SUNSHINE STATE ONE-CALL SYSTEM, AND IT SHALL BE INCUMBENT UPON THE CONTRACTOR TO MAKE EVERY EFFORT TO INSURE THAT ALL UTILITIES ARE LOCATED PRIOR TO CONSTRUCTION.

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- 28. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY DEPARTMENT AT LEAST 2 FULL BUSINESS DAYS IN ADVANCE OF POLE SETTING OPERATIONS WHERE A CONFLICT WITH OVERHEAD ELECTRICAL CONDUCTORS IS EXPECTED AND WHEN JOINT USE POLES ARE TO BE USED.
- 29. THE CONTRACTOR SHALL ADHERE TO ALL LOCAL MAINTAINING AGENCY AND STATE REGULATIONS DURING ALL CONSTRUCTION OPERATIONS.
- 30. THE CONTRACTOR SHALL NOTIFY LAKE COUNTY TRAFFIC OPERATIONS AT LEAST 2 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION AND LOOP CUTTING, NOTIFY DENIS DEITZ OR STEVE BOLLINGER 352-742-1766. THE CONTRACTOR SHALL NOTIFY LAKE COUNTY TRAFFIC OPERATIONS AT LEAST I FULL BUSINESS DAY IN ADVANCE OF INSTALLING SIGNAL POLES, GROUND RODS, UNDERGROUND CONDUIT, AND SEALING SIGNAL HEAD ASSEMBLIES SO THAT THESE OPERATIONS CAN BE OBSERVED.
- 31. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE POWER COMPANY AND MAINTAINING AGENCY OF THEIR PROPOSED DATE ON WHICH THE NEW ELECTRICAL SERVICE FOR THIS SIGNAL WILL BE COMPLETE IN ORDER THAT ARRANGEMENTS CAN BE MADE FOR ESTABLISHING AN ACCOUNT FOR THE LOCAL MAINTAINING AGENCY AND HOOK-UP DATE WITH THE LOCAL POWER COMPANY.
- 32. ALL SIGNAL HEADS SHALL USE FOOT APPROVED LED'S FOR ALL INDICATIONS. UNLESS OTHERWISE NOTED.
- 33. THE CONTRACTOR SHALL HAND DIG THE FIRST 4' AT THE STRAIN POLE FOUNDATION LOCATIONS TO ENSURE THERE ARE NO UTILITY CONFLICTS.
- 34. THE CONTRACTOR IS RESPONSIBLE FOR ALL STATE AND LOCAL PERMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING THE ELECTRIC PERMIT AND TO COORDINATE APPLICATION FOR POWER WITH LAKE COUNTY TRAFFIC OPERATIONS, KATHY WILSON, 352-742-7666.
- 35. ALL MAINTENANCE OF TRAFFIC SHALL CONFORM TO STANDARD INDEX 600 SERIES AND SHALL BE PAID FOR UNDER MOBILIZATION (IOI-I). THE COST FOR THE USE OF OFF-DUTY LAW ENFORCEMENT OFFICERS TO DIRECT TRAFFIC IN CASE OF LANE CLOSURES SHALL BE INCIDENTAL TO THE WORK AND WILL NOT BE PAID SEPARATELY.
- 36. ALL MATERIALS AND HARDWARE SHALL BE FOOT APPROVED AND PRE-APPROVED BY LAKE COUNTY TRAFFIC ENGINEERING.
- 37. ALL REMOVED EQUIPMENT SHALL BE DELIVERED TO LAKE COUNTY TRAFFIC OPERATIONS, 28127 C.R. 561, TAVARES, 352-742-1766, EXCEPT SIGNAL POLES, WHICH SHALL BE DISPOSED OF BY THE CONTRACTOR.
- 38. SIGNAL HEADS SHALL BE WIRED DIRECTLY TO THE TERMINAL BLOCKS. THE USE OF "JONES" PLUGS SHALL BE PROHIBITED.
- 39. THE INSIDE LANE DISCONNECT SHALL BE WIRED FOR FUTURE THREE SECTION HEADS.
- 40. SIGNAL CABLE SHALL BE ATTACHED TO MESSENGER WIRE USING PROPER SIZE SPIRAL WRAP.
- 41. NO POWER SERVICE INSTALLATION WILL BE ALLOWED ON THE CABINET.
- 42. A MANUAL PUSH BUTTON SHALL BE FURNISHED IN ALL CONTROLLER CABINETS.
- 43. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING THE PROPER AMOUNT OF RAKE WITH RESPECT TO LOADING TO BE USED ON POLES AT THE TIME OF INSTALLATION.
- 44. THE CONTRACTOR SHALL FURNISH LAKE COUNTY TRAFFIC OPERATIONS WITH EMERGENCY CONTACTS AND TELEPHONE NUMBERS AND HAVE AN IMSA LEVEL II CERTIFIED SIGNAL TECHNICIAN ON CALL WITHIN A TWO-HOUR MAXIMUM RESPONSE.
- 45. ANY STRIPING/PAVEMENT MARKINGS DESTROYED BY CONTRACTOR DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- 46. A FIBER OPTIC PULL BOX AND CONDUIT INTO THE CONTROLLER ASSEMBLY SHALL BE INSTALLED.
- 47. A GENERATOR SWITCH BOX ASSEMBLY SHALL BE INSTALLED WITH A POWER INDICATOR LIGHT. A GENERATOR PAD 3'X3'X4" CONCRETE SHALL BE INSTALLED, RIGHT SIDE OF THE CABINET IF POSSIBLE.
- 48. GROUNDING FOR THE CONTROLLER ASSEMBLY SHALL MEASURE 25 OHMS OR LESS.
- 49. OPTICOM PREEMPTION OR EQUIVALENT SHALL BE USED FOR EMERGENCY PREEMPTION AND SHALL INCLUDE ALL EQUIPMENT AND TIMINGS TO MAKE IT FULLY OPERATIONAL AND FUNCTIONAL.

REVISIONS

DATE BY DESCRIPTION

HNTB

ENGINEER OF RECORD: WARC W. HUSTAD, P.E.

HNTB CORPORATION 300 PRINERA BLVO, SUITE 200 LAKE MARY, FL 32746 (407) 805-0355 CERT. OF AUTH. NO. 6500



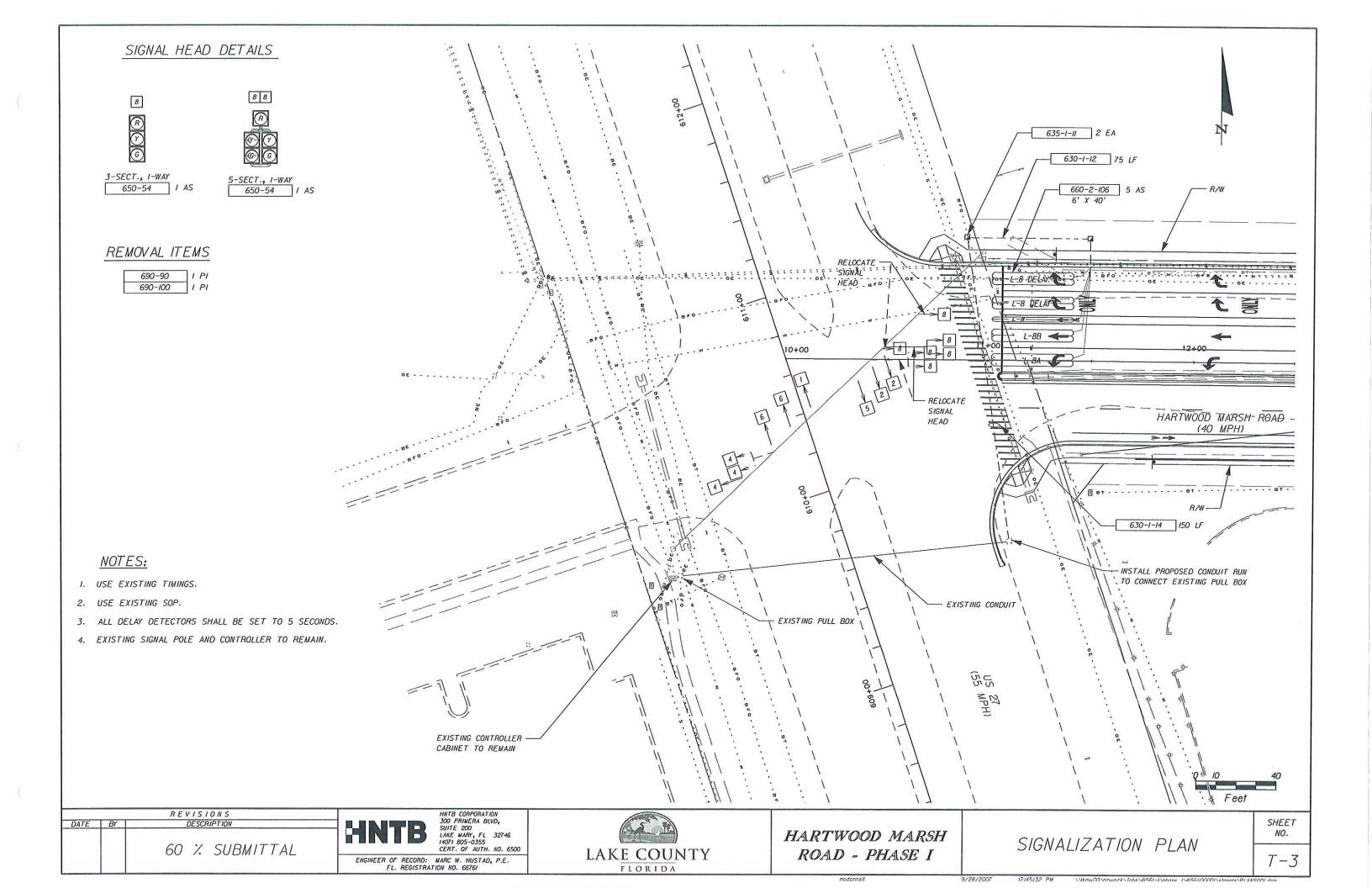
HARTWOOD MARSH ROAD - PHASE I

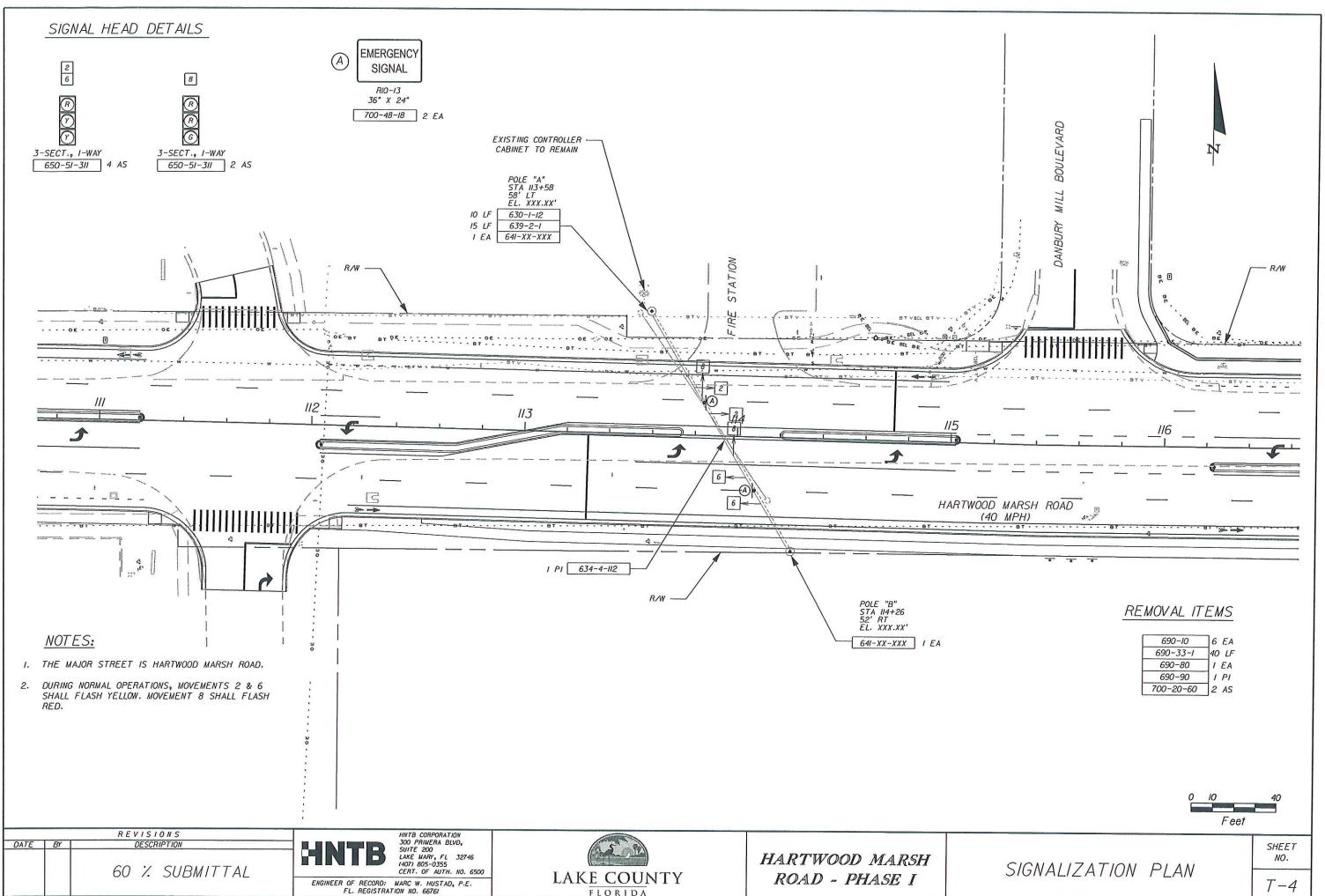
GENERAL NOTES SHEET

SHEET NO.

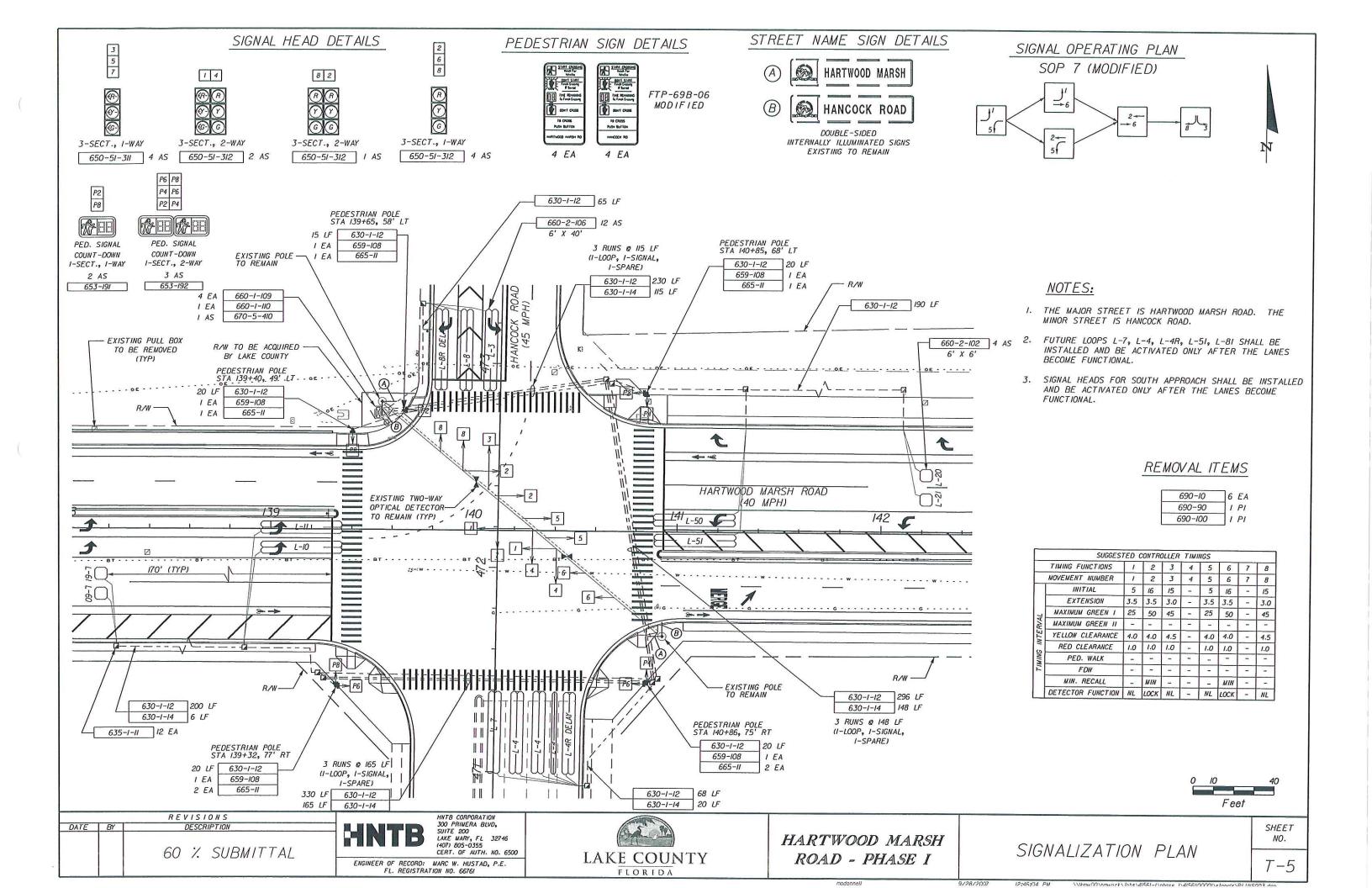
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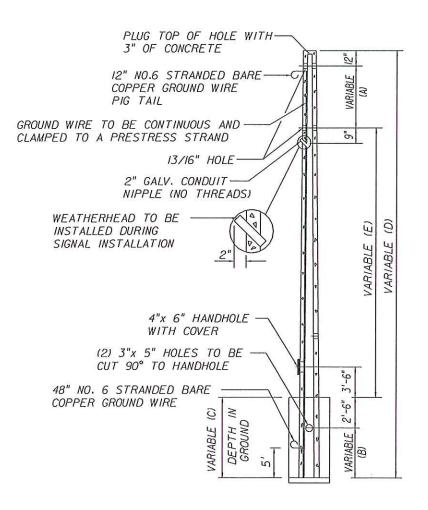
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POLE SECTION

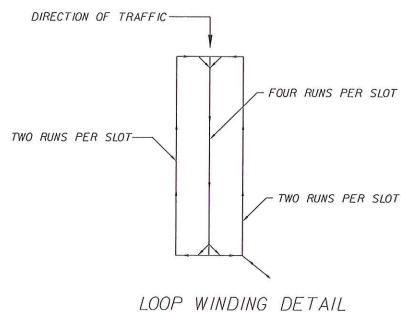
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TO BE COMPLETED FOR 90% SUBMITTAL

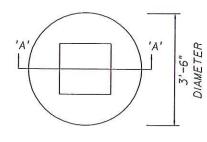
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### SPAN WIRE CABLES

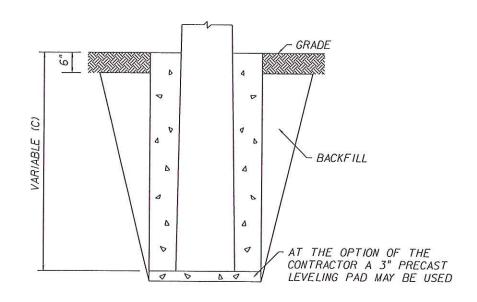
CATENARY WIRE CABLE = MESSENGER WIRE CABLE =



(QUADRAPOLE PRESENCE LOOP) NOTE: LOOP WIRE SHALL BE PLACED IN THE ABOVE MANNER TO AVOID CENTER SLOT CANCELLATION.



## FOUNDATION PLAN



SECTION 'A' - 'A'

### FOUNDATION NOTES

EXCAVATION & BACKFILL: EXCAVATION & BACKFILL FOR THE FOOTINGS SHALL BE IN ACCORDANCE WITH ARTICLES 125-4 AND 125-82 WITH THE EXCEPTION THE BACKFILL, IN LIEU OF THE REQUIREMENTS FOR OBTAINING THE SPECIFIED DENSITY, MAY BE HAND TAMPED IN FOUR INCH MAXIMUM LAYERS OR MACHINE TAMPED IN SIX INCH MAXIMUM LAYERS. THE MATERIAL SHOULD BE NEITHER DRY NOR SATURATED. AT THE CONTRACTOR'S OPTION BACKFILLING MAY BE DONE WITH POURED CONCRETE.

CONCRETE: FOOTING TO BE POURED WITH CLASS I CONCRETE. (SECTION 345)

FORMS: FORMS SHALL BE IN ACCORDANCE WITH ARTICLE 700-8-3. (IF THE FOOTING IS POURED IN AN OVERSIZED HOLE, THE CONCRETE IN THE TOP SIX INCHES SHALL BE PLACED IN A FORM. ALL EXPOSED SURFACES SHALL BE TROWELED TO A SMOOTH

REVISIONS DATE BY 60 % SUBMITTAL

SUITE 200 LAKE MARY, FL 32746 (407) 805-0355 CERT. OF AUTH. NO. 6500 ENGINEER OF RECORD: WARC W. HUSTAD, P.E. FL. REGISTRATION NO. 66761

LAKE COUNTY FLORIDA

HARTWOOD MARSH ROAD - PHASE 1

M. O'Donnell

CONCRETE STRAIN POLE SCHEDULE

SHEET NO.

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