INDEX OF SIGNAL PLANS

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TABULATION OF QUANTITIES

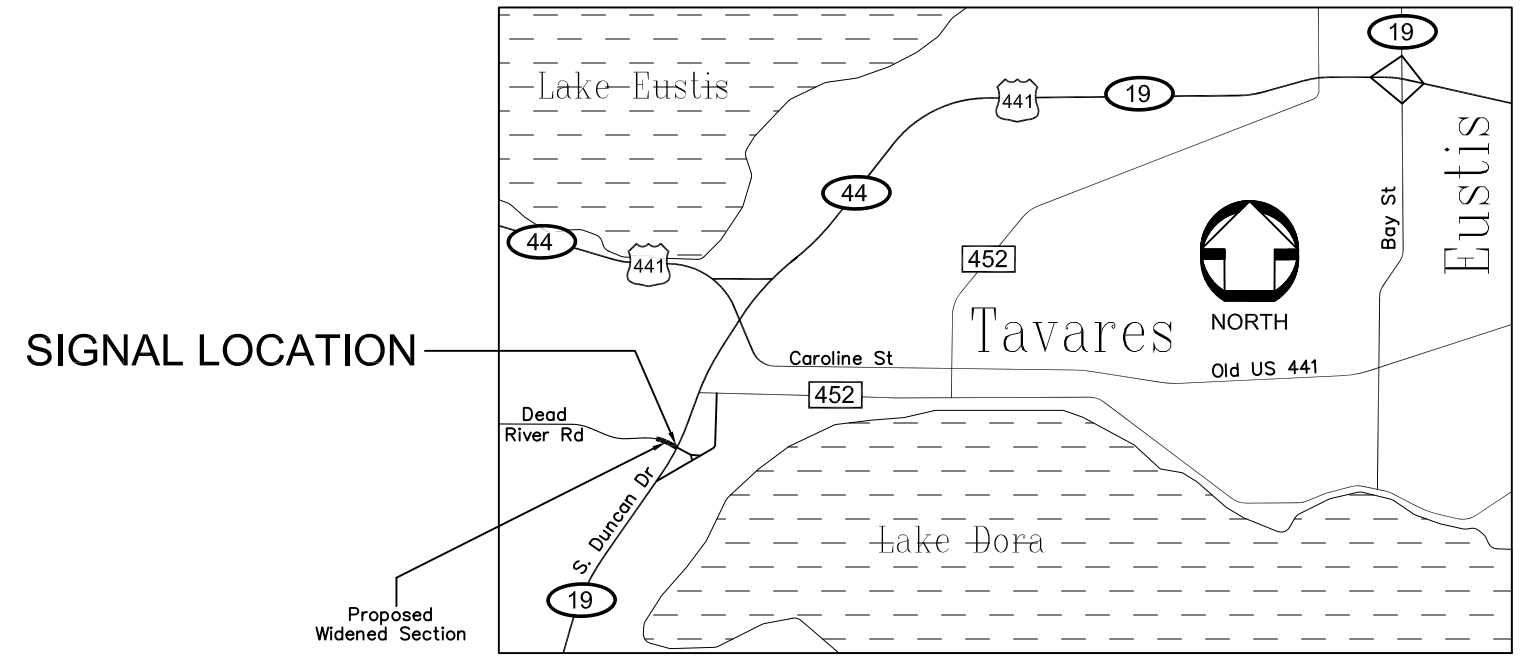
BID ITEM NO.	DESCRIPTION	UNIT	SHEET # T-4 ORIG.	SHEET # T-4 FINAL
101-1	MOBILIZATION	LS	1	
102-1	MAINTENANCE OF TRAFFIC	LS	1	
630-2-11	CONDUIT, UNDERGROUND	LF	250	
630-2-12	CONDUIT, UNDER PAVEMENT	LF	120	
630-2-14	CONDUIT, ABOVE GROUND (RISER)	LF	100	
632-7-1	SIGNAL CABLE	PI	1	
633-1-121	FIBER OPTIC CABLE, 12sm	LF	100	
633-2-31	FIBER OPTIC SPLICE	EA	12	
633-2-32	FIBER OPTIC TERMINATION	EA	12	
633-3-11	SPLICE ENCLOSURE	EA	1	
633-3-12	SPLICE TRAY	EA	1	
633-3-16	PATCH PANEL, FIELD TERMINATED	EA	1	
634-4-153	SPAN WIRE ASSEMBLY, BOX	PI	1	
635-2-11	PULL BOX	EA	6	
639-1-121	ELECTRICAL POWER SERVICE, UNDERGROUND	AS	1	
639-2-1	ELECTRICAL SERVICE WIRE	LF	150	
641-2-12	CONCRETE SERVICE POLE	EA	1	
641-2-18	CONCRETE STRAIN POLE, TYPE PVIII, 50'	EA	1	
641-2-18	CONCRETE STRAIN POLE, TYPE PVIII, 52'	EA	2	
641-2-18	CONCRETE STRAIN POLE, TYPE PVIII, 54'	EA	1	
646-1-11	ALUMINUM PEDESTAL	EA	4	
650-1-14	TRAFFIC SIGNAL HEAD, 3-SECTION WITH BACKPLATE	AS	7	
650-1-16	TRAFFIC SIGNAL HEAD, 4-SECTION WITH BACKPLATE	AS	2	
650-1-19	TRAFFIC SIGNAL HEAD, 5-SECTION WITH BACKPLATE	AS	2	
653-1-40	PEDESTRIAN SIGNAL HEAD, 1 WAY, RELOCATE	AS	5	
660-4-11	VIDEO DETECTION SYSTEM, CABINET EQUIPMENT	EA	1	
660-4-12	VIDEO DETECTION SYSTEM, CAMERAS	EA	4	
663-1-111	PREEMPTION SYSTEM, CABINET ELECTRONICS	EA	1	
663-1-112	PREEMPTION SYSTEM, DETECTOR	EA	4	
665-1-11	PEDESTRIAN DETECTOR	EA	8	
670-5-111	CONTROLLER ASSEMBLY WITH CABINET	AS	1	
682-1-133	CCTV CAMERA, DOME PTZ, NON-PRESSURIZED, IP/HD	EA	1	
685-1-13	UNINTERRUPTIBLE POWER SUPPLY	AS	1	
700-5-22	INTERNALLY ILLUMINATED SIGNS, 2 SIDED, CANTILEVER	EA	4	
	ADJUST/MODIFY CONDUIT	LS	1	

632-7-6	SIGNAL CABLE, REMOVE	PI	1	
633-1-60	REMOVE FIBER OPTIC CABLE	LF	100	
634-4-600	SPAN WIRE ASSEMBLY, REMOVE	PI	1	
639-1-610	ELECTRICAL POWER SERVICE, REMOVE	AS	1	
641-2-70	STRAIN POLE, REMOVE (SHALLOW)	EA	2	
650-1-60	TRAFFIC SIGNAL HEAD, REMOVE	AS	8	
665-1-60	REMOVE PEDESTRIAN DETECTOR	EA	8	
670-5-600	REMOVE SIGNAL CABINET, PAD	AS	1	
700-3-601	SIGN PANEL, REMOVE	EA	3	

LAKE COUNTY, FLORIDA

SIGNALIZATION PLANS

SR 19 / S DUNCAN DRIVE & DEAD RIVER ROAD/LAKE HARRIS DRIVE



PLANS PREPARED IN ACCORDANCE WITH FDOT STANDARD PLANS - BOOKLET DATED 2020-2021 AND LATEST INTERIMS.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS DATED 2020.

This item has been digitally signed and sealed by **Daniel W. Folsom, P.E.** on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by Dan Folsom
Date: 2021.02.23 '16:41:30 -05'00

SCALE	DRAWN	DESIGNED	CHECKED
N/A	DF	DF	TD

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KEY SHEET, TABULATION OF QUANTITIES

SR 19 / S DUNCAN DRIVE & DEAD RIVER ROAD/LAKE HARRIS DRIVE

LAKE COUNTY, FLORIDA

SHEET T-1 OF T-7

DANIEL FOLSOM
FLORIDA P.E. NO. 66752
2-23-21

TPD JOB# 5369 D6

GENERAL NOTES (1 of 2)

General, MOT

1) THE SIGNALIZATION PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION'S STANDARD PLANS, DATED 2020–2021 AND LATEST INTERIMS. GOVERNING SPECIFICATIONS ARE THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, DATED 2020.

2) 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.

3) A PRE–CONSTRUCTION MEETING SHALL BE SCHEDULED WITH LAKE COUNTY TRAFFIC OPERATIONS, (352) 742–1766, PRIOR TO ANY CONSTRUCTION.

4) THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING LAKE COUNTY TRAFFIC OPERATIONS, AT 352–742–1766, 48 HOURS IN ADVANCE OF ALL PHASES OF CONSTRUCTION INCLUDING AND NOT LIMITED TO, INSTALLING SIGNAL POLES, GROUND RODS, UNDERGROUND CONDUIT, SIGNAL HEAD ASSEMBLIES, AND LOOP/VIDEO INSTALLATION.

5) THE CONTRACTOR SHALL FURNISH LAKE COUNTY TRAFFIC OPERATIONS WITH EMERGENCY CONTACTS AND PHONE NUMBERS AND HAVE AN IMSA LEVEL II CERTIFIED SIGNAL TECHNICIAN ON CALL WITHIN A MAXIMUM TWO HOUR RESPONSE TIME.

6) CONTRACTOR TO NOTIFY FDOT 2 BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION.

7) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS INCLUDING THE ELECTRIC PERMIT. THE APPLICATION FOR POWER SHOULD BE COORDINATED WITH LAKE COUNTY TRAFFIC OPERATIONS.

8) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY PROVIDING THE ELECTRICAL POWER, TO DETERMINE IF ANY ADDITIONAL FEES ARE REQUIRED TO CONNECT POWER. IF REQUIRED, THE FEE SHALL BE INCLUDED AS PART OF BID ITEM PAYMENT FOR ELECTRICAL SERVICE ASSEMBLY.

9) THE CONTRACTOR SHALL NOTIFY SUNSHINE ONE–CALL 1–800–432–4770 AT LEAST 48 HOURS IN ADVANCE OF ANY EXCAVATION OR ANY WORK WHICH WOULD OTHERWISE INTERFERE WITH ANY ABOVE–GROUND OR BELOW–GROUND UTILITIES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING CURRENT LOCATE TICKET THROUGHOUT THE DURATION OF THE WORK.

10) IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE LOCATION OF UNDERGROUND UTILITIES BEFORE DIGGING. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY OWNERS TO RESOLVE UTILITY CONFLICTS AND UTILITY ADJUSTMENTS. ALL UTILITIES WHICH REMAIN IN PLACE SHALL BE PROTECTED.

11) ALL MATERIALS AND HARDWARE SHALL BE FDOT APPROVED, AND PRE–APPROVED BY LAKE COUNTY TRAFFIC OPERATIONS.

12) IT SHALL BE NOTED THAT NO TEST BORINGS HAVE BEEN MADE WHERE CONDUIT RUNS ARE TO BE INSTALLED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE JOB SITE CONDITIONS BEFORE SUBMITTING BID PROPOSALS IN ACCORDANCE WITH SECTION 2–4 OF THE FDOT SPECIFICATIONS.

13) THE CONTRACTOR IS REQUIRED TO INSPECT THE INSTALLATION OF THE TRAFFIC SIGNALS IN ACCORDANCE WITH FDOT SPECIFICATION 105–5.10. THE CONTRACTOR SHALL COORDINATE THE FINAL ACCEPTANCE INSPECTION IN ACCORDANCE WITH FDOT SPECIFICATION 611–2.2 WITH THE ENGINEER AT LEAST 10 DAYS IN ADVANCE. LAKE COUNTY AND THE FDOT TRAFFIC SIGNAL QUALITY ASSURANCE MANAGER AT (386) 943–5318 SHOULD ALSO BE CONTACTED TEN DAYS BEFORE THE INSPECTION IS TO BE PERFORMED SO THEY MAY BE PRESENT.

14) MAINTENANCE OF TRAFFIC SHALL BE ESTABLISHED FOR TRAFFIC CONTROL THROUGH WORK ZONE IN ACCORDANCE WITH FDOT STANDARD PLANS, INDEX 102–600 SERIES.

15) DURING NON–WORKING HOURS, NO EQUIPMENT, VEHICLES OR MATERIAL SHALL BE PARKED OR STORED WITHIN THE CLEAR ZONE OF THE ROADWAY CARRYING TRAFFIC. IF THE ABOVE IS NOT POSSIBLE, A STORAGE AREA WITH PROPER DELINEATION AND ADVANCED WARNING SHALL BE USED WITH THE APPROVAL OF THE ENGINEER.

16) THERE SHALL BE NO LANE CLOSURES BETWEEN THE HOURS OF 6:00 AM TO 10:00 AM AND 3:00 PM TO 8:00 PM. A MAXIMUM OF ONE LANE CAN BE CLOSED IN EACH DIRECTION DURING WORK PERIODS. ALL LANES ARE TO BE OPEN DURING INACTIVE PERIODS.

17) THE MAINTENANCE OF SIGNALS SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR, FROM THE TIME WORK BEGINS UNTIL FINAL ACCEPTANCE.

18) EXISTING SIGNALIZATION SHALL REMAIN IN PLACE TO THE EXTENT POSSIBLE AND SHALL BE USED FOR THE MAINTENANCE OF TRAFFIC AS REQUIRED.

19) THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TEMPORARY DETECTION DURING CONSTRUCTION. THE USE OF RECALL ON VEHICLE AND PEDESTRIAN MOVEMENTS IS PROHIBITED.

20) IN THE EVENT PERMANENT VEHICLE DETECTION IS DISRUPTED, PROVIDE AN ALTERNATIVE MEANS OF DETECTION TO ALL LANES APPROACHING THE INTERSECTION, SEPARATING EACH MOVEMENT WHICH PREVIOUSLY HAD DETECTION. THE TYPE OF DETECTOR SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. EQUIPMENT SHALL ONLY DETECT THE INTENDED MOVEMENT.

21) THE COST FOR THE USE OF TRAFFIC CONTROL OFFICER IN THE EVENT OF LANE CLOSURES SHALL BE INCIDENTAL TO THE WORK AND WILL NOT BE PAID SEPARATELY.

22) 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. CARE SHALL BE TAKEN NOT TO DAMAGE EQUIPMENT DURING THE REMOVAL PROCESS.

23) ANY STRIPING/PAVEMENT MARKINGS OR LANSCAPING DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE.

24) ANY ITEM NOT SPECIFICALLY ADDRESSED IN THESE PLANS, USE FDOT SPECIFICATIONS.

25) THE MAINTAINING AGENCY FOR THE SIGNAL IS LAKE COUNTY.

Street Name Signs

26) ALL INTERNALLY ILLUMINATED STREET NAME SIGNS SHALL BE DOUBLE FACED UNLESS STATED OTHERWISE IN THE PLANS, AND SHALL BE ILLUMINATED WITH WHITE LEDS.

27) ALL INTERNALLY ILLUMINATED STREET NAME SIGNS SHALL BE LED.

28) THE CONTRACTOR SHALL INSTALL AND TEST IN PLACE THE INTERNALLY ILLUMINATED STREET NAME SIGNS. THE SIGNS ARE TO BE BURNED IN FOR 60 DAYS BEFORE FINAL ACCEPTANCE. THE SIGNS SHALL BE BREAKERED SEPARATELY FROM THE SIGNAL CABINET AND SHALL BE CONTROLLED BY ONE MASTER PHOTOCELL.

29) INTERNALLY ILLUMINATED STREET NAME SIGNS (LED), SHALL BE INSTALLED 1' BELOW THE MESSENGER CABLE WHERE POSSIBLE, POWERED BY A SEPARATE CIRCUIT BREAKER, AND BE DESIGNED AND INSTALLED IN ACCORDANCE WITH LAKE COUNTY PUBLIC WORKS INTERNALLY ILLUMINATED STREET NAME SIGN DETAIL. A PHOTOCELL SHALL BE INSTALLED NEAR THE ELECTRIC SERVICE WITHIN REACH OF A LIFT TRUCK. CARE TO BE GIVEN TO INSTALL WHERE STREET LIGHTING DOES NOT AFFECT OPERATION.

30) THE CONTRACTOR SHALL FURNISH LAKE COUNTY TRAFFIC OPERATIONS, TWO COMPLETE SETS OF AS–BUILT PLANS THAT INCLUDE CONDUIT AND PULL BOX LOCATIONS, AT FINAL INSPECTION.

Pull Boxes, Conduit

31) PULL BOXES AND COVERS SHALL BE FDOT APPROVED OF NON–METALLIC CONSTRUCTION WITH RECESSED COVER LOGO "TRAFFIC SIGNAL" OR "FIBER OPTIC" AS APPROPRIATE.

32) PULL BOXES SHALL BE LOCATED AWAY FROM EDGE OF PAVEMENT, OR BEHIND A CURB WHEN POSSIBLE, ATTEMPTING TO KEEP FROM THE BOTTOM OF A DITCH OR RETENTION AREA, AND WHERE LARGE VEHICLES PARK.

33) ALL CONDUITS TO BE INSTALLED UNDER PAVEMENT OR SIDEWALK SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF THE BASE COURSE.

34) ALL CONDUIT SHALL BE SCHEDULE 40, 2 INCH (5 CM) DIA. MINIMUM UNLESS OTHERWISE SPECIFIED IN PLANS, EXCEPT ELECTRICAL POWER SERVICE DUCT.

35) ALL ENDS OF CONDUITS IN PULL BOXES AND CABINETS SHALL BE SEALED WITH ELECTRICAL PUTTY AFTER WIRING IS COMPLETE.

Concrete Strain Poles

36) THE CONTRACTOR SHALL STAKE ALL POLE LOCATIONS AND HAVE THEM APPROVED BY LAKE COUNTY TRAFFIC OPERATIONS.

37) THE CONTRACTOR SHALL HAND DIG THE FIRST 2' AT EACH PEDESTAL AND FIRST 4' AT EACH STRAIN POLE, TO VERIFY NO UTILITY CONFLICTS. CONTACT THE ENGINEER FOR SOFT DIG REPORTS AND LOCATION TIES.

38) DURING THE INSTALLATION OF STRAIN POLE 2, ADJUSTMENTS TO EXISTING SIGNAL CONDUITS WILL BE NECESSARY. PAYMENT FOR THIS CONDUIT ADJUSTMENT SHALL BE A LUMP SUM, PER THE TABULATION OF QUANTITIES.

39) THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY DEPARTMENT AT LEAST 48 HOURS IN ADVANCE OF POLE SETTING OPERATIONS WHERE A CONFLICT WITH OVERHEAD CONDUCTORS IS EXPECTED, AND IN ALL CASES WHERE JOINT USE POLES ARE TO BE USED.

40) ALL ELEVATIONS SHOWN IN THIS PLAN SET SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO THE ORDERING OF STRAIN POLES.

41) 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.

42) THE CONTRACTOR SHALL INSTALL A CONDUIT STUB WITH CAP A MINIMUM OF 12 INCHES (30 CM) OUTSIDE THE POLE FOOTING COMPLETE WITH SWEEP UP INTO THE POLE, IN EACH CONDUIT ENTRANCE IN THE POLE. THE FOOTING, TOP OF SIDEWALK, SIDE OF POLE, ETC. SHALL BE MARKED WITH AN APPROPRIATE ETCHED "X" IN ORDER THAT IT MAY BE READILY LOCATED FOR FUTURE USE.

43) OVERHEAD PROXIMITY EXISTS BETWEEN EXISTING/PROPOSED SIGNAL EQUIPMENT AND DUKE ENERGY DISTRIBUTION/TRANSMISSION FACILITIES. CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH DUKE ENERGY AND RESOLVE OVERHEAD CONFLICT(S). CONTRACTOR SHALL MEET ALL ASSOCIATED REQUIREMENTS REGARDING CONSTRUCTION PROCEDURES, POWER LINE ADJUSTMENTS/OUTAGES, AND FINAL EQUIPMENT POSITIONS/CLEARANCES.

Controller, Power Service, F/O Cable, Video Detection

44) THE CONTROLLER ASSEMBLY SHALL BE A LAKE COUNTY NAZTEC REGIONAL TS2–1; WITH A TS2–2 CONTROLLER ETHERNET ENABLED FOR COUNTY CLOSED LOOP SYSTEM, TO INCLUDE AN ETHERNET SWITCH WITH BYPASS CAPABILITIES, TO INCLUDE A GENERATOR SWITCH BOX PANEL. TYPE 6 CABINET.

45) UNINTERRUPTABLE POWER SUPPLY (UPS) SHALL BE STAND ALONE WITHIN ITS OWN CABINET, INSTALLED ON A CONCRETE PAD ADJACENT TO THE CABINET BASE. THE UNINTERRUPTABLE POWER SUPPLY SHALL BE ON THE FDOT APPROVED PRODUCTS LIST (APL).

46) A GENERATOR PAD, 3'X3'X4' CONCRETE SHALL BE INSTALLED WITH 5/8" EYEBOLT INSTALLED IN THE PAD ADJACENT TO CABINET BASE.

47) THE CABINET CONCRETE BASE SHALL BE A MINIMUM OF 32"x 48" TO ACCOMMODATE TYPE 6 CABINETS.

48) GROUNDING FOR THE CONTROLLER ASSEMBLY SHALL MEASURE 25 OHMS. OR LESS.

49) THE CABINET DOOR SHALL OPEN AWAY FROM THE INTERSECTION.

50) THE MOUNTING OF THE ELECTRICAL SERVICE TO THE TRAFFIC SIGNAL CABINET SHALL BE PROHIBITED.

51) AN ELECTRIC SERVICE DISCONNECT WITH A 30 AMP BREAKER FOR THE TRAFFIC SIGNAL AND A 20 AMP BREAKER FOR THE OVERHEAD INTERNALLY ILLUMINATED STREET SIGNS SHALL BE INSTALLED NEAR THE TRAFFIC SIGNAL CABINET ON A SEPARATE CONCRETE POWER SERVICE PEDESTAL.

52) A MANUAL PUSH BUTTON CORD SHALL BE FURNISHED IN ALL CONTROLLER CABINETS.

53) THE FIRST BUFFER (BLUE BUFFER) OF SINGLE MODE FIBER SHALL BE TERMINATED IN THE CABINET USING SC CONNECTORS.

54) A SECOND DETECTION RACK SHALL BE INCLUDED IF NECESSARY.

55) SEE PLAN SHEET FOR THE NUMBER OF VIDEO CAMERAS INCLUDED IN THE VIDEO DETECTION ASSEMBLY.

56) NO VIDEO DETECTION IS TO BE INSTALLED ON STRAIN POLES OR CANTILEVER ARMS. SPAN WIRE PLACEMENT IS REQUIRED (ITERIS SMARTSPAN OR EQUIVALENT).

57) AS APPLICABLE, DETECTION ZONE DELAY TIMES SHALL BE SET TO 5 SECONDS.

58) ITEM 633–1–60 (REMOVE FIBER OPTIC CABLE) SHALL ALSO INCLUDE REMOVAL OF THE ASSOCIATED SPLICE ENCLOSURE, AND THE CLIPPING OF EXISTING BLUE BUFFER TUBE FIBERS OF THE 96sm CABLE FOR USE IN NEW SPLICES (COVERED UNDER SEPARATE ITEMS).

59) AT THE CONTRACTOR'S OPTION, THE EXISTING 12sm FIBER OPTIC DROP CABLE MAY BE RE–USED FOR CONNECTION TO THE NEW SIGNAL CONTROLLER. IN THIS CASE, THE NEW DROP CABLE WILL NOT BE NECESSARY AND THE QUANTITY SHALL BE DELETED, WITH OTHER QUANTITIES ADJUSTED ACCORDINGLY.

60) EXISTING FIBER OPTIC CABLES OWNED BY SUMMIT BROADBAND (SEE SHEET T–5) WILL BE RECONNECTED TO THE SIGNAL CONTROLLER BY SUMMIT PERSONNEL. CONTRACTOR SHALL CONTACT MICHAEL RINESMITH AT (239) 571–0568 AND BOB MCCOY AT (352) 255–1675 TWO WEEKS PRIOR TO ORDERING CABINET EQUIPMENT, IN ORDER TO COORDINATE TECHNICAL REQUIREMENTS.

61) OPTICOM PREEMPTION OR EQUIVALENT SHALL BE USED WHEN EMERGENCY PREEMPTION IS REQUESTED.

SCALE	DRAWN	DESIGNED	CHECKED
N/A	DF	DF	TD

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GENERAL NOTES (1 of 2)

SR 19 / S DUNCAN DRIVE &
DEAD RIVER ROAD/LAKE HARRIS DRIVE

LAKE COUNTY, FLORIDA

SHEET T–2 OF T–7

DANIEL FOLSOM
FLORIDA P.E. NO. 66752

2–23–21

TPD JOB# 5369 D6

GENERAL NOTES (2 of 2)

Signal Heads, Cables

61) ALL SIGNAL INDICATIONS SHALL BE LED. LED SIGNAL PRODUCT INFORMATION SHALL BE SUBMITTED TO LAKE COUNTY AND FDOT FOR APPROVAL.

62) CIRCULAR DRIP LOOPS (MINIMUM ONE CIRCLE) ARE TO BE PROVIDED AT ALL AERIAL DISCONNECT HANGERS, INTERCONNECT JUNCTION BOXES, ELECTRICAL SIGNS, AND POLE JUNCTIONS.

63) ALL SIGNAL ASSEMBLIES SHALL HAVE A VERTICAL CLEARANCE OF 17.5 FEET (5.3 METERS) MINIMUM AND 19 FEET (5.8 METERS) MAXIMUM FROM THE BOTTOM OF THE ASSEMBLY TO THE ROAD.

64) THE INSIDE LANE DISCONNECT SHALL BE WIRED FOR FUTURE 5 SECTION SIGNAL HEADS.

65) SIGNAL HEADS SHALL BE WIRED DIRECTLY TO THE TERMINAL BLOCKS. THE USE OF 'JONES' PLUGS IS PROHIBITED.

66) THREE SPARE WIRES ARE REQUIRED PER SIGNAL CABLE.

67) THE CONTRACTOR SHALL VERIFY COLOR CODES FOR SIGNAL CABLE WITH LAKE COUNTY BEFORE ORDERING. WIRING DIAGRAMS SHALL BE IN ACCORDANCE WITH LAKE COUNTY SPECIFICATIONS. SEE LAKE COUNTY SIGNAL CABLE WIRING COLOR CODE ON THIS SHEET FOR FURTHER DETAILS.

68) ALL FIELD WIRING SHALL BE NEATLY BUNDLED AND CLEARLY IDENTIFIED WITH PERMANENT LEGIBLE, WEATHERPROOF TAGS THAT ARE SECURELY ATTACHED TO EACH CABLE. THE TAGGING SYSTEM PROPOSED SHALL BE SUBMITTED FOR APPROVAL WITH THE OTHER EQUIPMENT SUBMITTALS REQUIRED FOR THIS PROJECT.

69) DISCONNECTS SHALL OPEN FROM THE SIGNAL FACE. (not from the rear)

70) SIGNAL HEADS SHALL BE WIRED PER IMSA NEMA PHASING, PHASES 2 AND 6 ARE TYPICALLY ASSIGNED TO MAJOR-STREET WITH PHASE 2 BEING SOUTH OR WEST BOUND THROUGH MOVEMENTS. THE USUAL CONVENTION IS FOR THROUGH PHASES TO BE NUMBERED IN THE CLOCKWISE DIRECTION STARTING WITH PHASE 2, AND THE LEFT-TURN PHASES TO BE NUMBERED IN THE CLOCKWISE DIRECTION, WITH PHASE 1 BEING ACCOMPANYING LEFT-TURN TO PHASE 6.

71) NO POLYCARBONATE HOUSING OR MOUNTING HARDWARE WILL BE PERMITTED FOR SIGNAL HEAD ASSEMBLIES. ALL LENSES FOR THESE HEADS SHALL BE GLASS. ALL SIGNAL HEADS SHALL BE BLACK CAST ALUMINUM. TUNNEL VISORS AND BACK PLATES (WITH YELLOW RETROREFLECTIVE BORDER) SHALL BE USED ON ALL SIGNAL HEADS. PAYMENT FOR ALL SHALL BE INCLUDED IN 650-1-XX.

72) RELOCATION OF PEDESTRIAN SIGNS/SIGNALS SHALL INCLUDE INSTALLATION OF NEW MOUNTING BRACKETS/HARDWARE, IF NECESSARY.

73) CONTRACTOR IS TO INSURE THAT A 4'x4' FLAT LANDING AREA (522-1) IS ADJACENT TO ALL PED BUTTONS FOR PEDESTRIAN ACCESS.

74) 3 SPARE CONDUCTORS SHALL BE RUN TO THE FURTHEST PEDESTRIAN SIGNAL HEAD. VEHICULAR SIGNAL HEADS SHALL HAVE 3 SPARES PER PHASE.

75) ALL PEDESTRIAN SIGNAL HEAD ASSEMBLIES SHOWN ARE EXISTING – TO REMAIN OR EXISTING – TO BE RELOCATED.

76) ALL PEDESTRIAN SIGNALS NOT MOUNTED ON EXISTING PEDESTALS OR PROPOSED SIGNAL POLES SHALL BE ON ALUMINUM PEDESTALS OF THE BREAKAWAY TYPE COMMONLY REFERRED TO AS A 'T-BASE'. THIS T-BASE WILL HAVE AN ACCESS DOOR FOR WIRING AND MAINTENANCE.

77) SIGNAL CABLE SHALL BE ATTACHED TO MESSENGER WIRE USING PROPER SIZE SPIRAL WRAP.

78) FOR SPAN WIRE ASSEMBLIES, THE DUAL POINT SPAN WIRE ATTACHMENT, FDOT STANDARD PLANS INDEX 634-001 REQUIRING A TRI-STUD ADJUSTABLE HANGER, EXTENSION CONNECTOR, SPAN WIRE CLAMP AND MESSENGER WIRE CLAMP SHALL BE USED.

Lake County Signal Cable Wiring Color Code

Main St Colors & Disconnect Terminals

	Indication	Cable Color 12 cond.	Cable Color 16 cond.	
1	Red	Red	Red	
2	Yellow	Orange	Orange	Phase 2&6
3	Green	Green	Green	
4	Yellow Arrow	Black	Black	5 Section
5	Green Arrow	Blue	Blue	
6	Red Arrow	Red/ black	Red/ white	3 Section Protected
7	Flashing Yellow Arrow	Black/ white	Black/ white	
8-10	Spare	Spare	Spare	
11	Neutral	White	White	

13-16 Spares	8-10 spares
Red/black	Orange/black
Green/black	Green/black
Orange/black	Blue/black
Green/White	White/Black
Blue/White	
Black/Red	
White/Black	
Blue/black	

Side Street Colors & Disconnect Terminals

	Indication	Cable Color	Cable Color 16 cond.	
1	Red	Red/Black	Red/Black	
2	Yellow	Orange/Black	Orange/Black	Phase 4 & 8
3	Green	Green/Black	Green/Black	
4	Yellow Arrow	Black/White	Blue/White	5 Section
5	Green Arrow	Blue/Black	Green/White	
6	Red Arrow	Red	Black/Red	3 Section Protected
7	Flashing Yellow Arrow	White/black	White/black	
8-10	Spare	Spare	Spare	
12	Neutral	White	White	

13-16 Spares	8-10 spares
Red	Orange
Orange	Green
Green	Blue
Black	Black
Blue	
Red/ white	
Blue/black	
Black/white	

Pedestrian Cable Wiring - Main Street 12 or 16

Don't Walk	Red	
Walk	Green	
Pushbutton	Orange	
Pushbutton return	Black	
Neutral	White	

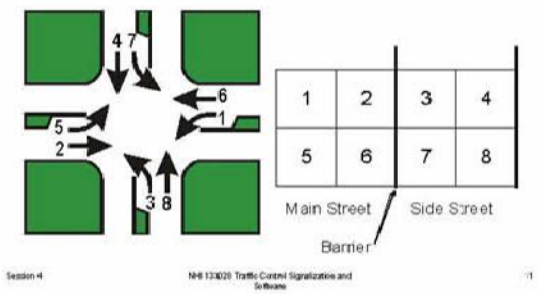
Pedestrian Cable Wiring - Side Street

Don't Walk	Red/Black	
Walk	Green/Black	
Pushbutton	Orange/Black	
Pushbutton return	Black/White	
Neutral	White/Black	
Spare	Blue,Blue/Black	

Lake County Signal NEMA Phasing per IMSA

Phases 2 and 6 are typically assigned to major-street with Phase 2 being South or West bound through movements. The usual convention is for through phases to be numbered in the clockwise direction starting with Phase 2, and the left-turn phases to be numbered in the clockwise direction, with Phase 1 being accompanying left-turn to Phase 6

Rev. 6/18/2015 JHG



Session 4 — NHI 133020 Traffic Control Signalization and Software — 71

SCALE	N/A
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2-23-21	REVISED PER LAKE COUNTY & FDOT COMMENTS

TRAFFIC PLANNING AND DESIGN, INC.
535 Versailles Drive Maitland, FL 32751
Tel: (407) 628-9955 Fax: (407) 628-8850
Info@tpdtraffic.com www.tpdtraffic.com
Certificate of Authorization No. EB-3702

GENERAL NOTES (2 of 2)

SR 19 / S DUNCAN DRIVE & DEAD RIVER ROAD/LAKE HARRIS DRIVE

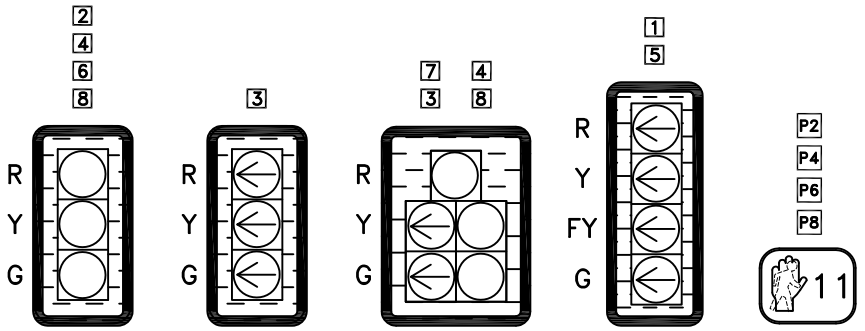
LAKE COUNTY, FLORIDA

SHEET T-3 OF T-7

DANIEL FOLSOM
FLORIDA P.E. NO. 66752
2-23-21

TPD JOB# 5369 D6

SIGNAL HEAD DETAIL



ITEM NO.	650-1-14	650-1-14	650-1-19	650-1-16	653-1-11
# REQUIRED	6	1	2	2	–
# EXISTING TO REMAIN	–	–	–	–	3
# EXISTING TO BE RELOCATED	–	–	–	–	5

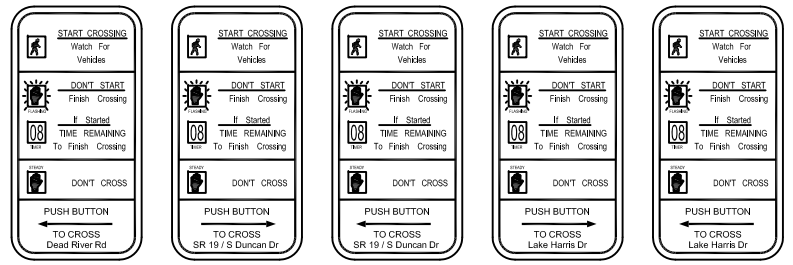
TWO-SIDED CANTILEVER ARM MOUNTED *(See sheet T-7 for design details)*

Item #700-5-22

- SR 19 / S Duncan Dr — A — 2 Required
- Dead River Rd — B — 1 Required
- Lake Harris Dr — C — 1 Required

PEDESTRIAN SIGNS

R10-3i (per MUTCD)

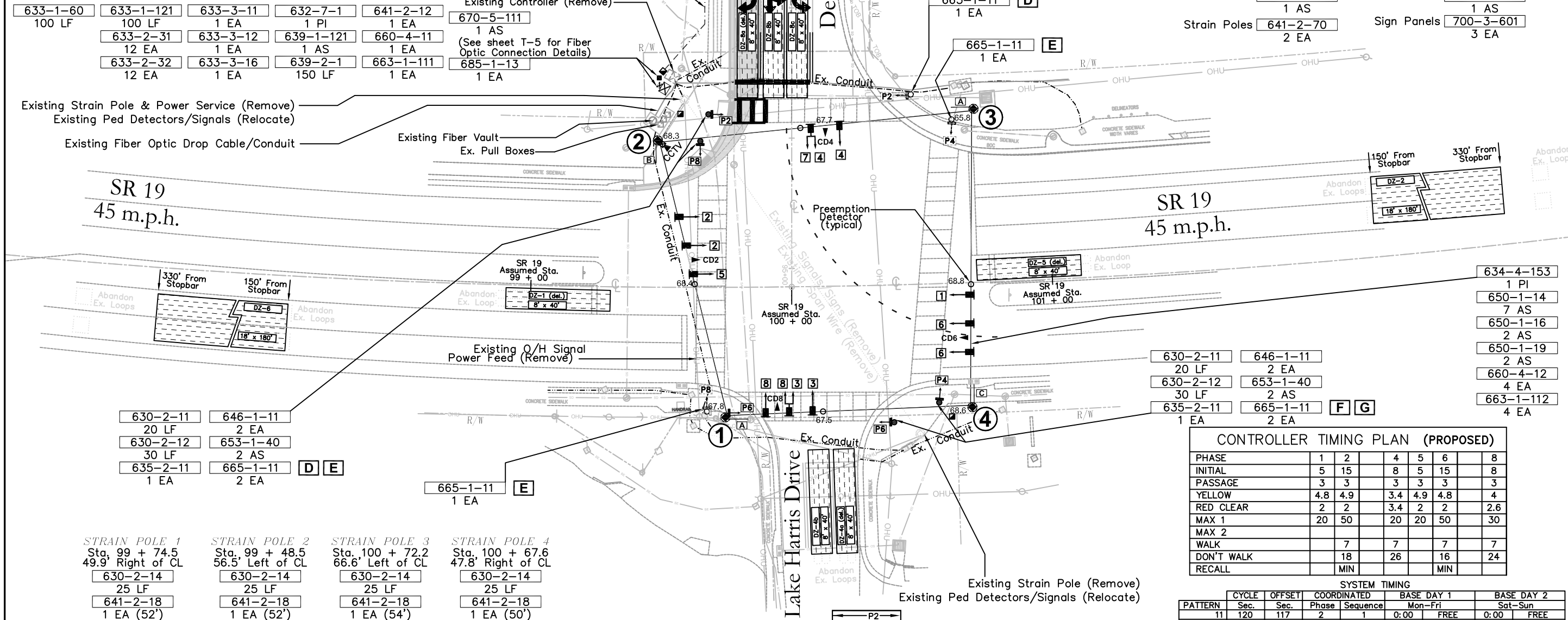


D E F G H

GRAPHIC SCALE

0 10 20 40 60

SCALE: 1" = 40'



633-1-60	633-1-121	633-3-11	632-7-1	641-2-12
100 LF	100 LF	1 EA	1 PI	1 EA
	633-2-31	633-3-12	639-1-121	660-4-11
	12 EA	1 EA	1 AS	1 EA
	633-2-32	633-3-16	639-2-1	663-1-111
	12 EA	1 EA	150 LF	1 EA

630-2-11 20 LF; 630-2-12 30 LF; 635-2-11 1 EA — 646-1-11 2 EA; 653-1-40 2 AS; 665-1-11 D E 2 EA

665-1-11 E 1 EA

630-2-11 20 LF; 630-2-12 30 LF; 635-2-11 1 EA — 646-1-11 2 EA; 653-1-40 2 AS; 665-1-11 F G 2 EA

634-4-153 1 PI; 650-1-14 7 AS; 650-1-16 2 AS; 650-1-19 2 AS; 660-4-12 4 EA; 663-1-112 4 EA

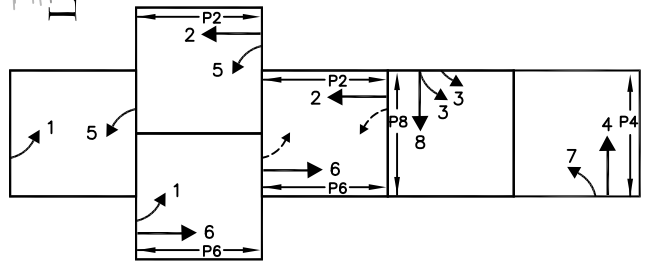
STRAIN POLE 1 Sta. 99 + 74.5, 49.9' Right of CL
630-2-14 25 LF; 641-2-18 1 EA (52'); 653-1-40 1 AS; 665-1-11 H 1 EA; 700-5-22 1 EA

STRAIN POLE 2 Sta. 99 + 48.5, 56.5' Left of CL
630-2-14 25 LF; 641-2-18 1 EA (52'); 682-1-133 1 EA; 700-5-22 1 EA; ADJUST CONDUIT 1 LS

STRAIN POLE 3 Sta. 100 + 72.2, 66.6' Left of CL
630-2-14 25 LF; 641-2-18 1 EA (54'); 700-5-22 1 EA

STRAIN POLE 4 Sta. 100 + 67.6, 47.8' Right of CL
630-2-14 25 LF; 641-2-18 1 EA (50'); 700-5-22 1 EA

MOVEMENT CHART
SOP 9



SIGNALIZATION REMOVAL ITEMS:

Signal Cable	632-7-6 1 PI	Signal Heads	650-1-60 8 AS
Span Wire	634-4-600 1 PI	Ped Signs/ Detectors	665-1-60 8 EA
Power Service	639-1-610 1 AS	Controller	670-5-600 1 AS
Strain Poles	641-2-70 2 EA	Sign Panels	700-3-601 3 EA

CONTROLLER TIMING PLAN (PROPOSED)

PHASE	1	2		4	5	6		8
INITIAL	5	15		8	5	15		8
PASSAGE	3	3		3	3	3		3
YELLOW	4.8	4.9		3.4	4.9	4.8		4
RED CLEAR	2	2		3.4	2	2		2.6
MAX 1	20	50		20	20	50		30
MAX 2								
WALK		7		7		7		7
DON'T WALK		18		26		16		24
RECALL		MIN				MIN		

SYSTEM TIMING

PATTERN	CYCLE Sec.	OFFSET Sec.	COORDINATED Phase	COORDINATED Sequence	BASE DAY 1 Mon–Fri		BASE DAY 2 Sat–Sun	
11	120	117	2	1	0:00	FREE	0:00	FREE
12	150	113	2	1	6:00	C11011S11	7:00	C14014S14
13	160	25	2	1	10:00	C12012S12	19:00	FREE
14	160	57	2	1	14:00	C14014S14		
					16:00	C13013S13		
					17:30	C14014S14		
					18:00	FREE		

SPLIT ALLOCATION – Sec

PHASE	1	2	3	4	5	6	7	8
11	18	53		23	18	53		26
12	18	82		25	18	52		25
13	20	75		28	20	75		37
14	18	86		25	18	86		31

SIDE STREET SPLIT PHASE

SCALE	DRAWN	DESIGNED	CHECKED
1"=40'	DF	DF	TD

REVISIONS

DATE	
12-10-20	REVISED PER LAKE COUNTY COMMENTS
1-15-21	REVISED PER LAKE COUNTY & FDOT COMMENTS
2-15-21	REVISED PER LAKE COUNTY COMMENTS
2-23-21	REVISED PER LAKE COUNTY & FDOT COMMENTS

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SIGNALIZATION PLAN SHEET

SR 19 / S DUNCAN DRIVE & DEAD RIVER ROAD/LAKE HARRIS DRIVE

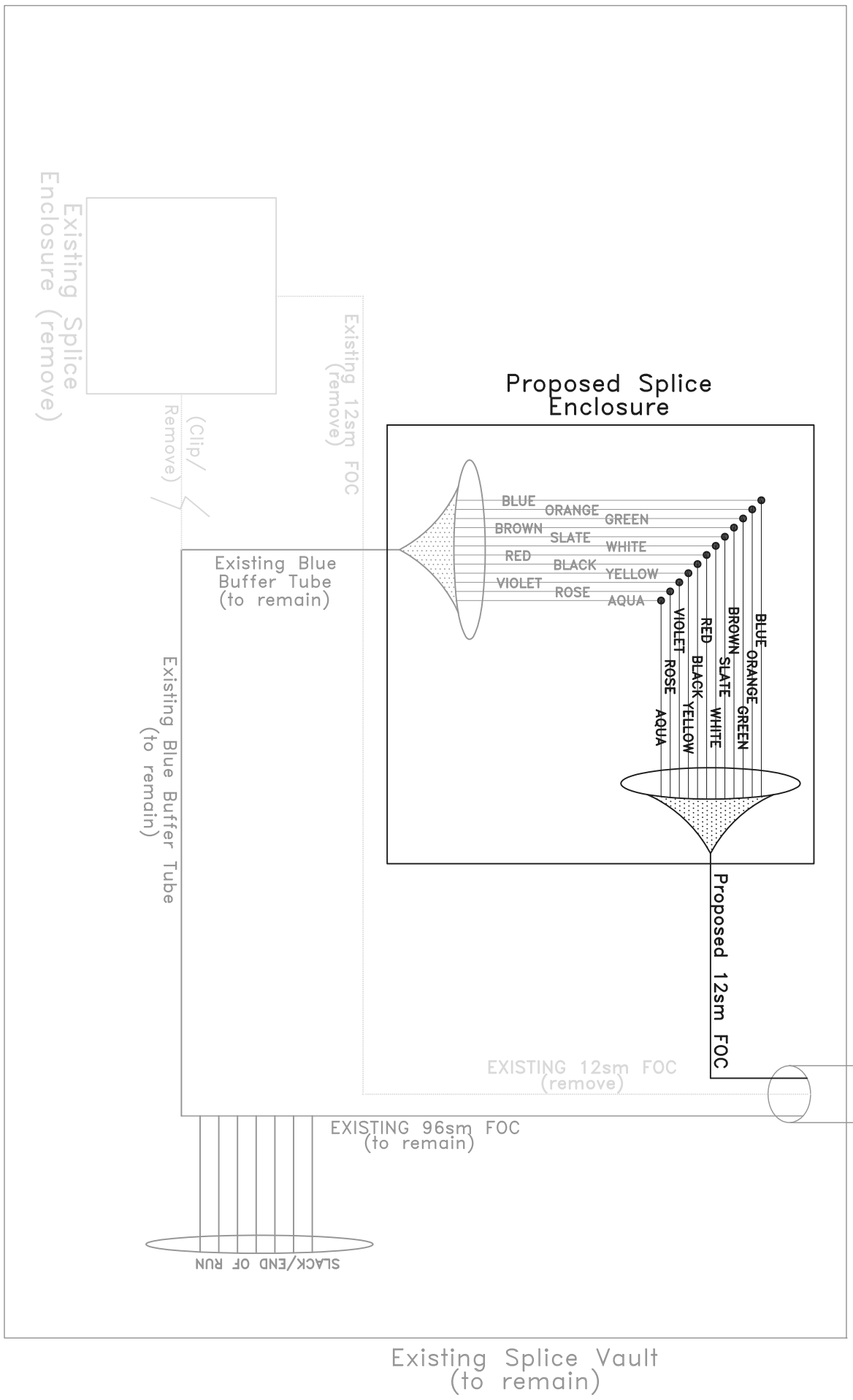
LAKE COUNTY, FLORIDA

SHEET T-4 OF T-7

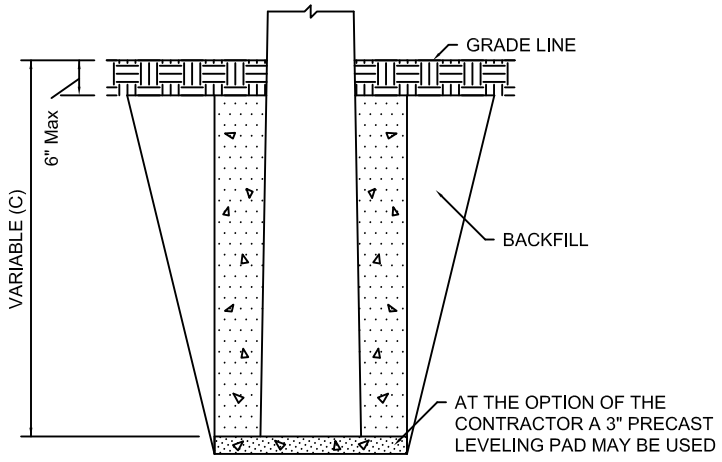
DANIEL FOLSOM
FLORIDA P.E. NO. 66752

2-23-21

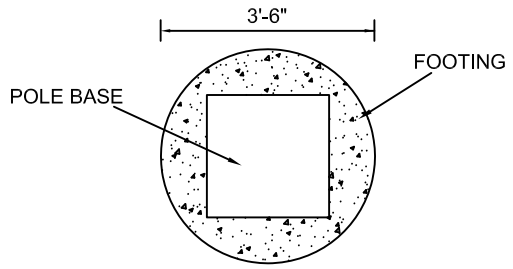
TPD JOB# 5369 D6



SHEET T-5 OF T-7	FIBER OPTIC DETAILS	TRAFFIC PLANNING AND DESIGN, INC.	SCALE	DRAWN	DESIGNED	CHECKED
DANIEL FOLSOM FLORIDA P.E. NO. 66752 2-23-21	SR 19 / S DUNCAN DRIVE & DEAD RIVER ROAD/LAKE HARRIS DRIVE	535 Versailles Drive Maitland, FL 32751 Tel: (407) 628-9955 Fax: (407) 628-8850 info@tpdtraffic.com www.tpdtraffic.com Certificate of Authorization No. EB-3702	N/A	DF	DF	TD
TPD JOB# 5369 D6	LAKE COUNTY, FLORIDA		DATE	REVISIONS		
			12-10-20	REVISED PER LAKE COUNTY COMMENTS		
			1-15-21	REVISED PER LAKE COUNTY & FDOT COMMENTS		
			2-15-21	REVISED PER LAKE COUNTY COMMENTS		
			2-23-21	REVISED PER LAKE COUNTY & FDOT COMMENTS		



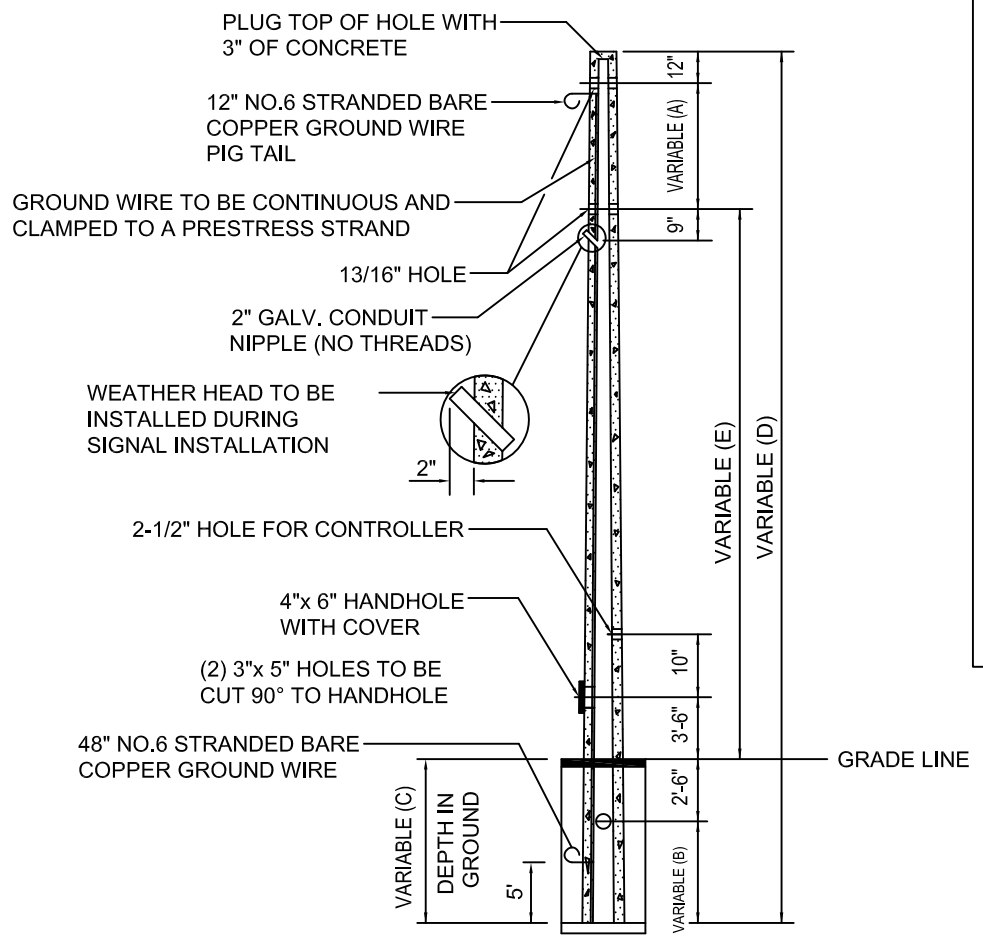
SECTION 'A' 'A'



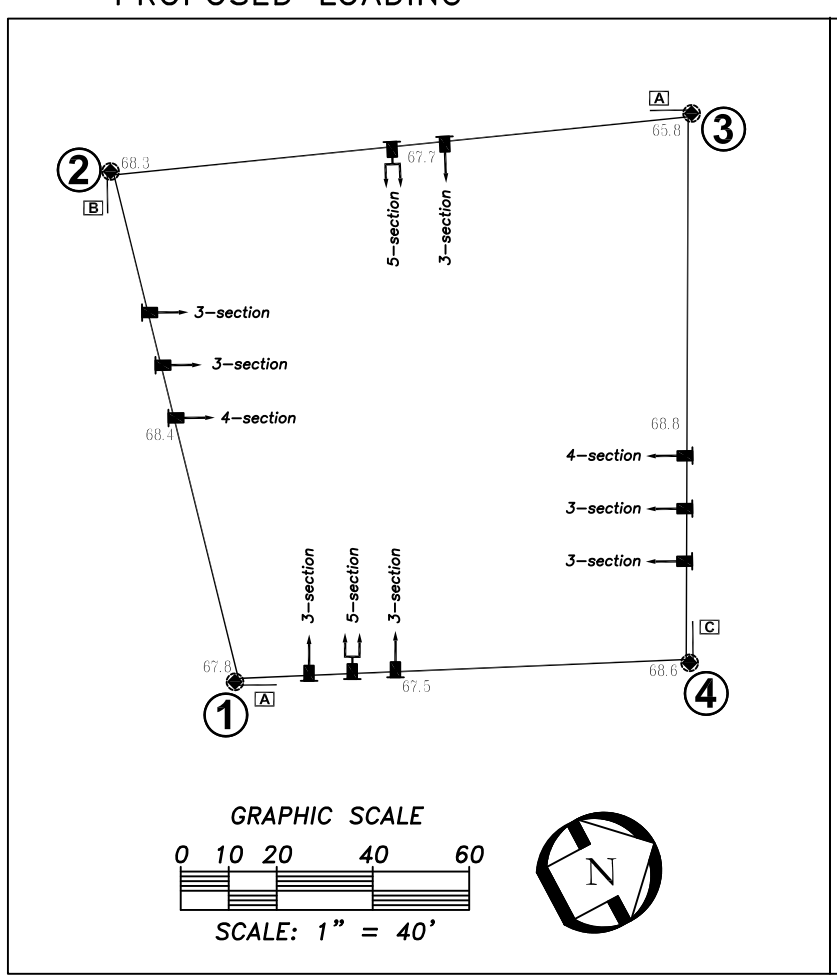
FOUNDATION PLAN

GENERAL NOTES:

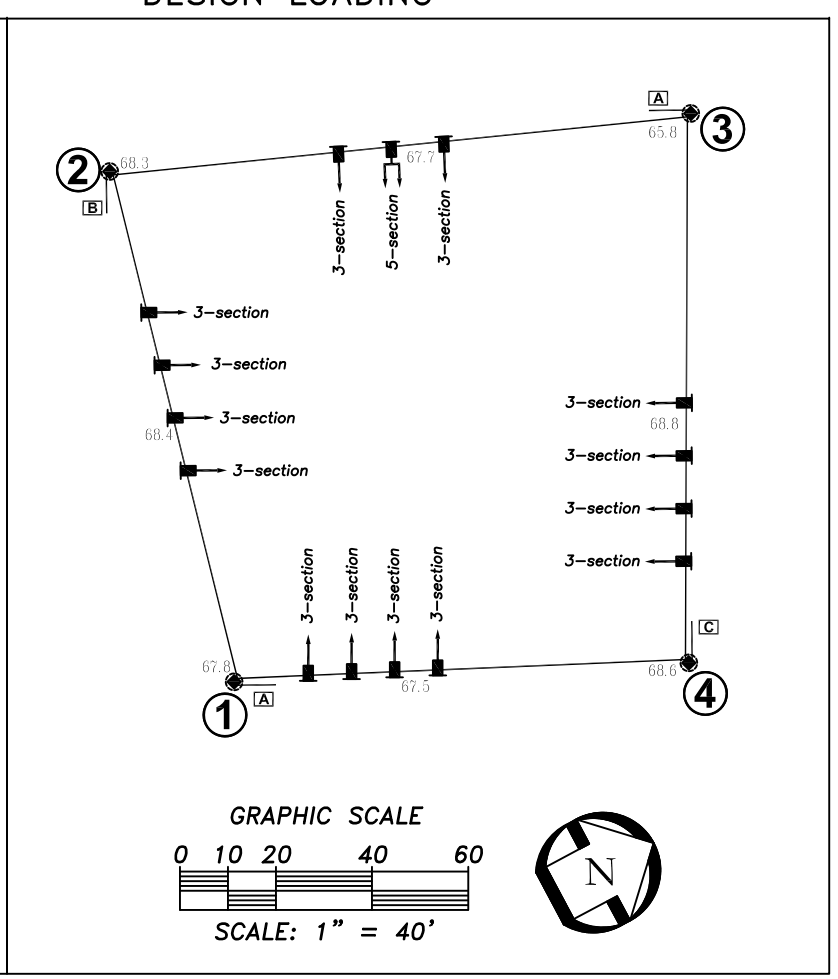
1. *The method for wire attachment to the concrete poles shall be two point. The footing depth shall be no less than the pole embedment length.*
2. *It is the responsibility of the contractor to have exact locations of all utilities prior to beginning work.*
3. *All materials and hardware shall be preapproved by Lake County and FDOT.*
4. *An 17.5'–19' clearance shall be maintained between the road surface and the bottom of signal head assemblies.*
5. *Catenary cable shall be 3/8" diameter, Utility Grade.*
6. *Messenger cable shall be 7/16" diameter, Utility Grade.*



PROPOSED LOADING



DESIGN LOADING



POLE SCHEDULE

ITEM NO.	POLE	BASE ELEV.	CROWN ELEV.	MESSENGER ELEV.	TYPE	A	B	C	D	E
641-2-18	1	67.8	Span 1-2: 68.4	92.5	PVIII	7.1	16.7	19.2	52	24.7
641-2-18	2	68.3	Span 2-3: 67.7	92.5	PVIII	7.1	17.2	19.7	52	24.2
641-2-18	3	65.8	Span 3-4: 68.8	92.5	PVIII	7.1	16.7	19.2	54	26.7
641-2-18	4	68.6	Span 4-1: 67.5	92.5	PVIII	7.1	15.5	18.0	50	23.9

SCALE	DRAWN	DESIGNED	CHECKED
As Noted	DF	DF	TD

REVISIONS	
DATE	
12-10-20	REVISED PER LAKE COUNTY COMMENTS
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STRAIN POLE DETAILS

SR 19 / S DUNCAN DRIVE &
DEAD RIVER ROAD/LAKE HARRIS DRIVE

LAKE COUNTY, FLORIDA

SHEET T-6 OF T-7

DANIEL FOLSOM
FLORIDA P.E. NO. 66752

2-23-21

TPD JOB# 5369 D6

SIGN NUMBER	A
QUANITY	4 (2 signs, dbl face)
WIDTH	8'–0"
HEIGHT	24"
BORDER WIDTH	1"
BACKGROUND COLOR	Green
LEGEND COLOR	White
BORDER COLOR	White
STATIONS(S)	

SYMBOL(S)	X	Y	WID	HT

SIGN NUMBER	CLEARANCE EDGE OF LANE	COLUMN SIZE		AVERAGE LENGTH

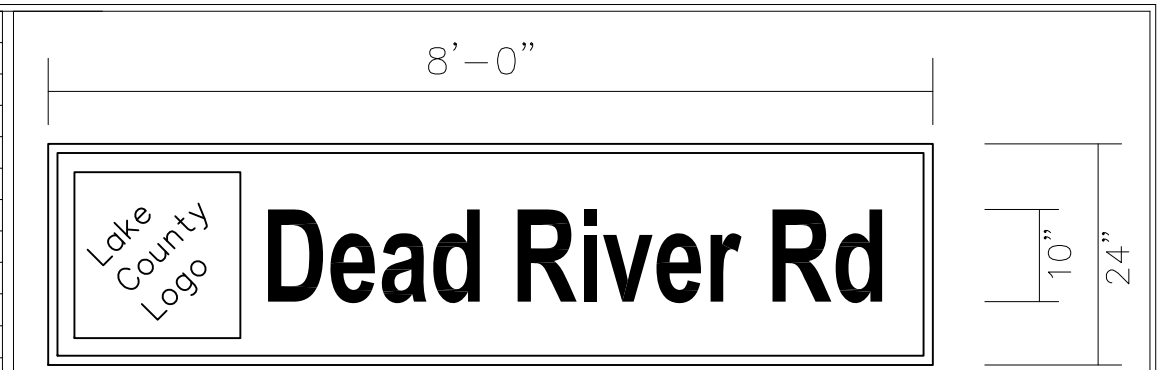
1" Border White
No Logo
"SR 19 / S Duncan Dr " 8 Inch White D

COPY		S	R		1	9	/	S		D	u	n	c	a	n		D	r					
SPACE	2.6	5.8	6.4	3.4	3.0	6.2	8.2	5.8	3.4	6.2	6.2	6.2	5.4	5.7	5.5	3.4	6.2	3.8	2.6				

SIGN NUMBER	B
QUANITY	2 (1 sign, dbl face)
WIDTH	8'–0"
HEIGHT	24"
BORDER WIDTH	1"
BACKGROUND COLOR	Green
LEGEND COLOR	White
BORDER COLOR	White
STATIONS(S)	

SYMBOL(S)	X	Y	WID	HT

SIGN NUMBER	CLEARANCE EDGE OF LANE	COLUMN SIZE		AVERAGE LENGTH



1" Border White
Lake County Logo
"Dead River Rd" 10 Inch White C

COPY		D	e	a	d		R	i	v	e	r		R	d									
SPACE	21	6.5	6.1	6.0	5.7	4.5	6.2	3.2	6.3	6.1	4.2	4.5	6.2	5.7	3.8								

SIGN NUMBER	C
QUANITY	2 (1 sign, dbl face)
WIDTH	8'–0"
HEIGHT	24"
BORDER WIDTH	1"
BACKGROUND COLOR	Green
LEGEND COLOR	White
BORDER COLOR	White
STATIONS(S)	

SYMBOL(S)	X	Y	WID	HT

SIGN NUMBER	CLEARANCE EDGE OF LANE	COLUMN SIZE		AVERAGE LENGTH

1" Border White
Lake County Logo
"Lake Harris Dr" 10 Inch White C

COPY		L	a	k	e		H	a	r	r	i	s		D	r								
SPACE	21	5.4	6.0	6.5	5.5	4.5	6.7	6.0	4.4	4.4	3.2	4.6	4.5	6.5	4.2	2.6							

SCALE	DRAWN	DESIGNED	CHECKED
N/A	DF	DF	TD

DATE	REVISIONS
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INTERNALLY ILLUMINATED SIGN DETAILS

SR 19 / S DUNCAN DRIVE &
DEAD RIVER ROAD/LAKE HARRIS DRIVE

LAKE COUNTY, FLORIDA

SHEET T–7 OF T–7

DANIEL FOLSOM
FLORIDA P.E. NO. 66752
2–23–21

TPD JOB# 5369 D6