

# PALM BEACH COUNTY TRAFFIC SIGNAL INSTALLATION STANDARDS AND DETAILS 2019

## TYPICAL NO.

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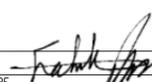
- T-6.1 CABLE DISTRIBUTION SYSTEM FOR MAST ARM INSTALLATION
- T-6.2 SERVICE DISCONNECT/BREAKER ASSEMBLY, STUB POLE DETAIL, MAST ARM ASSEMBLY INSTALLATION
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1	2/15/17	REVISED COVERSHEET.	CGT	FNU	DRAWING T-1
2	5/10/18	REVISED COVERSHEET.	JH	FNU	
3	3/13/19	REVISED COVERSHEET.	JH	FNU	
NO.	DATE	REVISIONS	BY	APP.	SHEET 1 OF 25 SHEETS

REFER TO PALM BEACH COUNTY ANNUAL TRAFFIC SIGNAL CONTRACT  
FOR SPECIFICATIONS AND APPROVED MATERIALS.

PALM BEACH COUNTY, FLORIDA  
TRAFFIC DIVISION  
SIGNAL TYPICAL

NOTE

SIGNATURE 		5/1/15	FATMEH N. JAFAR
NAME		DATE	ENGINEER OF RECORD
DRAWN BY		SCALE	CONTRACT NO.
TRACED BY		N. T. S.	
CHECKED BY		DRAWING T-2	
NO.		DATE	SHEET 2 OF 25 SHEETS

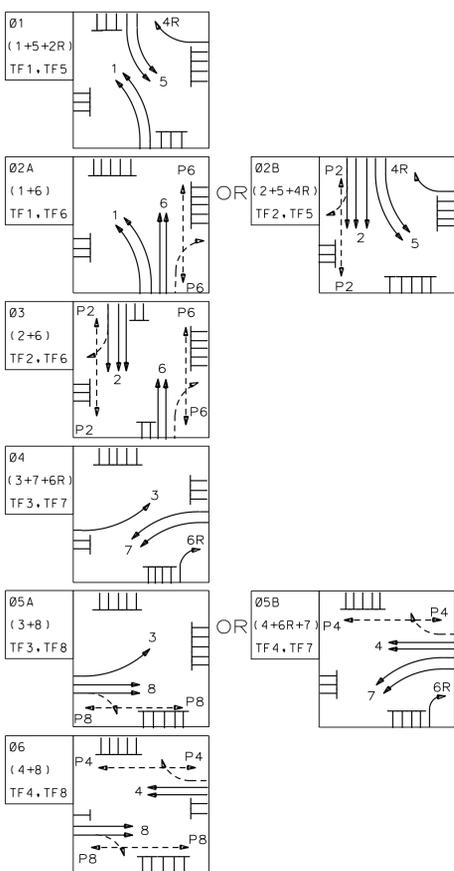
NO.	DATE	REVISIONS	BY	APP.

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PALM BEACH COUNTY, FLORIDA				
TRAFFIC DIVISION				
SIGNAL TYPICAL				
BLANK				
SIGNATURE <i>Fatimah N. Jafar</i>		DATE	ENGINEER OF RECORD	
		5/1/15	FATMEH N. JAFAR	
DRAWN BY	NAME	DATE	SCALE	CONTRACT NO.
			N. T. S.	
TRACED BY			DRAWING	
CHECKED BY			T-3	
NO.	DATE	REVISIONS	BY	APP.
SHEET 3 OF 25			SHEETS	



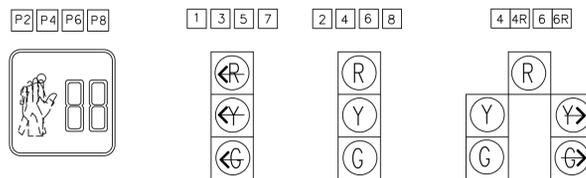
**ASSOCIATED PHASE MOVEMENTS**



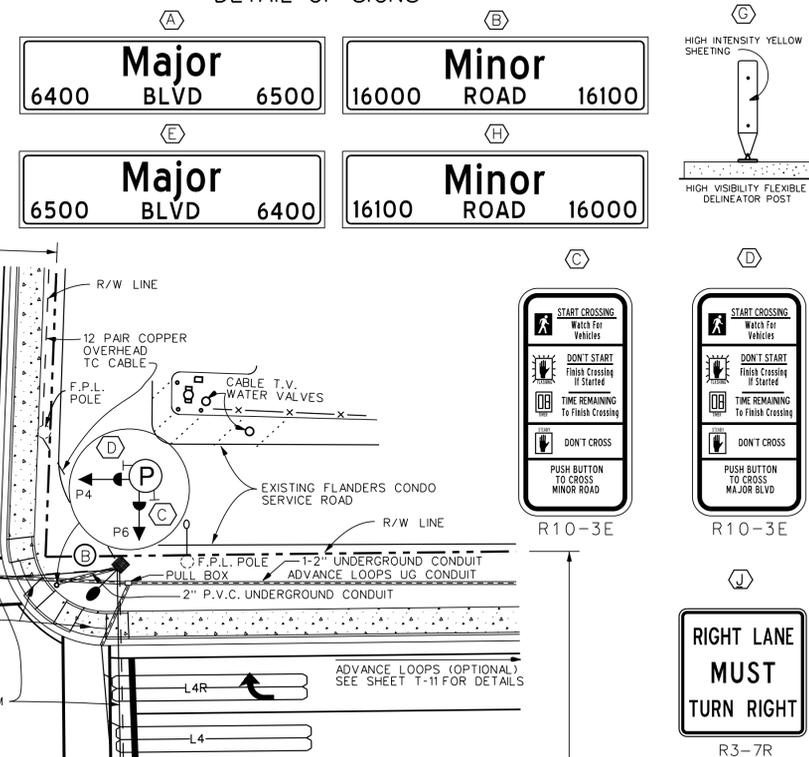
**DESIGN NOTES:**

- LUMINAIRE LOCATIONS: NE, NW, SE, SW (PBC)
- FLASHING OPERATION:  
YELLOW -----2 AND 6  
RED -----1,3,4,5,7 AND 8
- SPEED LIMITS:  
MAJOR BOULEVARD - 45 MPH  
MINOR ROAD - S/A - 45 MPH, N/A - 40 MPH

**DETAIL OF SIGNAL HEADS**



**DETAIL OF SIGNS**

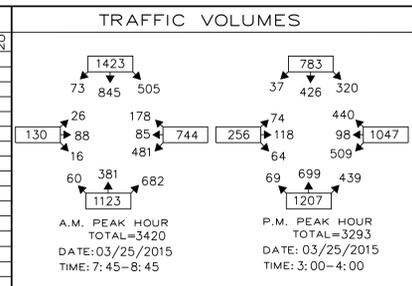


NOTE:  
REFER TO PBC TYPICALS FOR PAVEMENT MARKINGS, SIGNING AND GEOMETRICS FOR STRIPING DETAILS AND DIMENSIONS.

\* (A, B, D & E) REFER TO SHEET T-5.3 (CONCRETE POLE DETAIL)

POLE TABULATION											
POLE I.D.	UPPER TIE-INTO TOP OF POLE * (A)	LOWER TIE-INTO TOP OF POLE * (B)	SPAN	POLE LENGTH * (D)	UPPER TIE-INTO GROUND LEVEL (D-E-A)	LOWER TIE-INTO GROUND LEVEL (D-E-B)	LOWER TIE-INTO CROWN LEVEL	TYPE	CLASS	ROAD CROWN TO GROUND LEVEL	DEPTH BELOW GROUND * (E)
(A)	4'	14'	161'	46'	33'	23'	23'	CONC.	VII	0'	10'
(B)	4'	14'	166'	46'	33'	23'	23'	CONC.	VII	0'	10'
(C)	4'	14'	161'	46'	33'	23'	23'	CONC.	VII	0'	10'
(D)	4'	14'	166'	46'	33'	23'	23'	CONC.	VII	0'	10'

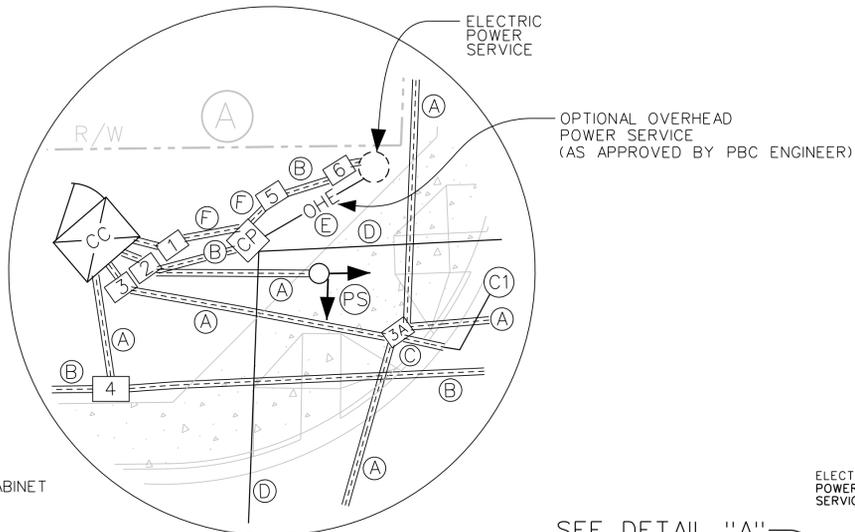
LOOP DETECTOR CONNECTION			
DETECTOR UNIT NO.	DETECTOR OPERATION	CONNECTED TO LOOP	CONNECTED TO TIMING FUNCTION
1	DELAY/STRETCH	L2	TF5
2	NORMAL	L5	TF5
3	NORMAL	L2A	TF2
4	DELAY/NORMAL	L4R	TF4
5	DELAY/STRETCH	L4	TF4
6	NORMAL	L7	TF7
7	DELAY/NORMAL	L6R	TF6
8	NORMAL	L6A	TF6
9	DELAY/STRETCH	L6	TF6
10	NORMAL	L1	TF1
11	DELAY/STRETCH	L8	TF8
12	DELAY/NORMAL	L3	DISCONNECTED
13	DELAY/NORMAL	L2R	TF2
14	NORMAL	L3	TF3



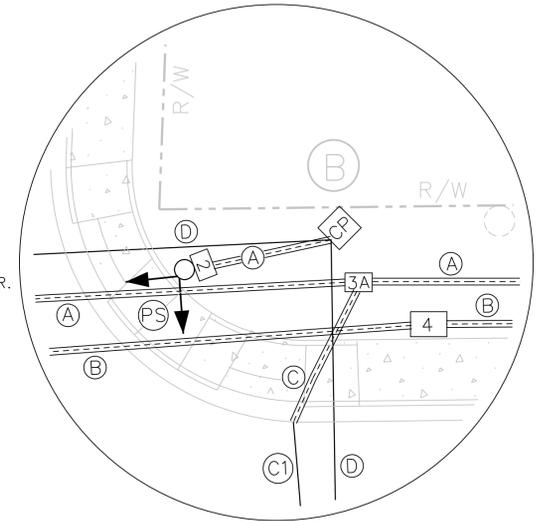
\* SCALE AND ROW NOT SURVEY ACCURATE. ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ALTERED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

**GENERAL NOTES:**  
1. THIS DRAWING IS NOT TO SCALE.  
2. DESIGN, LAYOUT & DATA ON THIS SHEET ARE FOR ILLUSTRATION PURPOSE ONLY.  
PALM BEACH COUNTY, FLORIDA  
TRAFFIC DIVISION  
SIGNAL TYPICAL

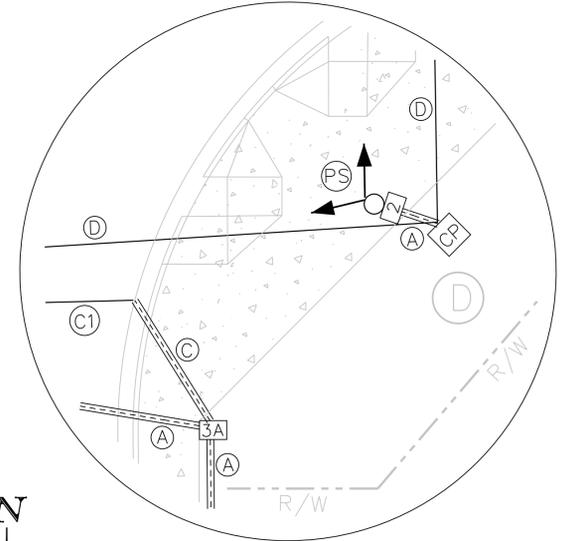
TYPICAL SPAN SIGNAL OPERATION AND INSTALLATION			
SIGNATURE	NAME	DATE	SCALE
<i>[Signature]</i>	FATMEH N. JAFAR	5/1/15	* N. T. S.
DRAWN BY	CHECKED BY	DRAWING NUMBER	SHEET
R-T-S	42-46-22	T-5	5 OF 25 SHEETS



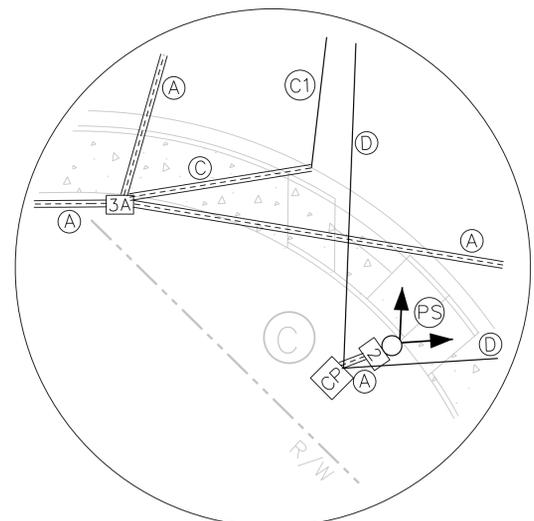
DETAIL "A"



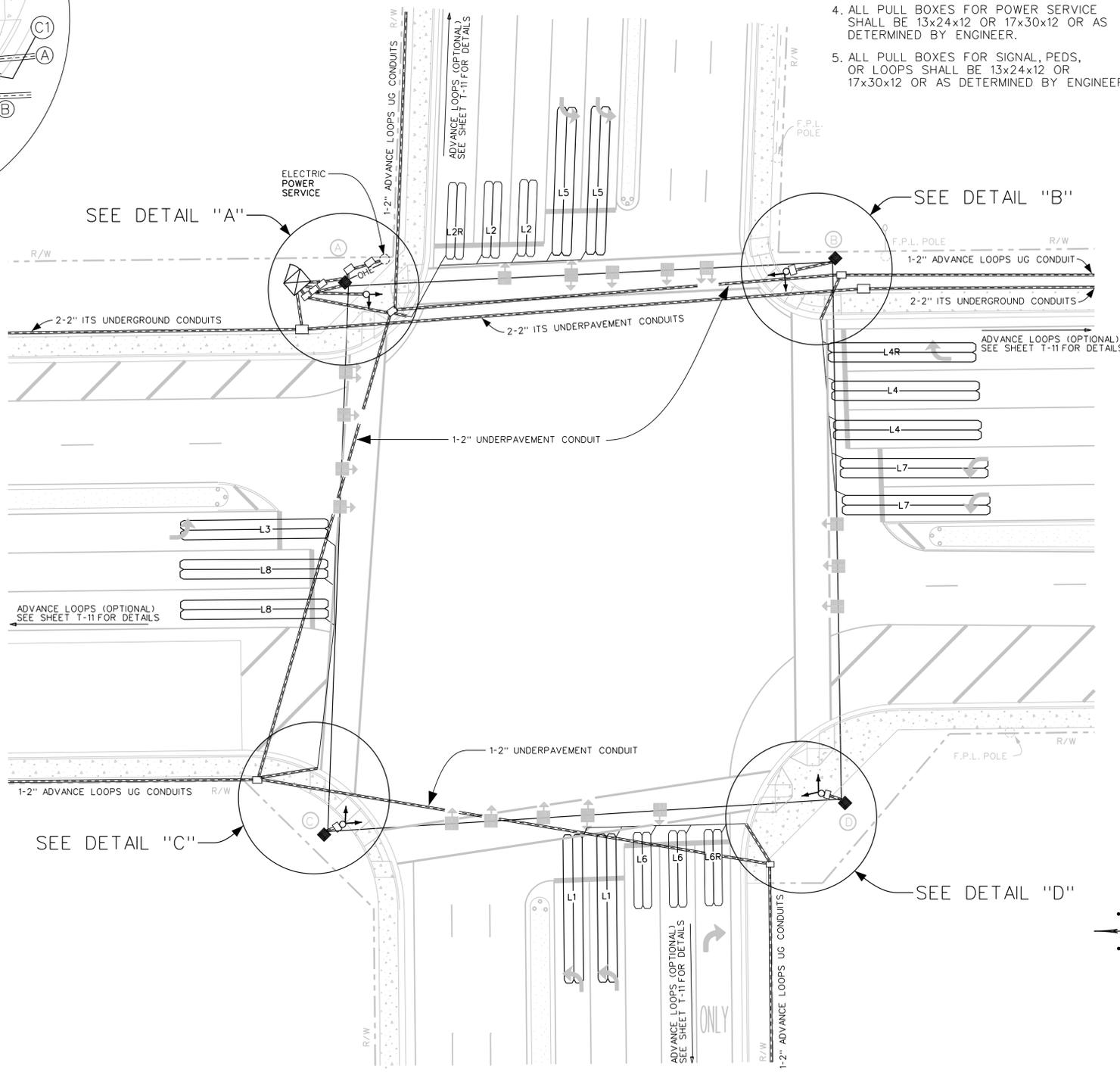
DETAIL "B"



DETAIL "D"



DETAIL "C"



MAJOR BOULEVARD

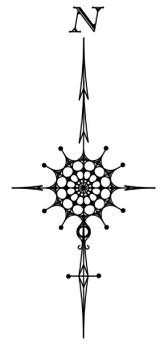
MINOR ROAD

NOTES:

1. ANY CONDUIT ABOVE GROUND SHALL BE ALUMINUM OR HD GALVANIZED.
2. ANY CONDUIT BELOW GROUND SHALL BE PVC.
3. IF VIDEO AND LOOPS ARE USED SIMULTANEOUSLY AT AN INTERSECTION THEY SHOULD BE INSTALLED PER FOOT STANDARDS.
4. ALL PULL BOXES FOR POWER SERVICE SHALL BE 13x24x12 OR 17x30x12 OR AS DETERMINED BY ENGINEER.
5. ALL PULL BOXES FOR SIGNAL, PDS, OR LOOPS SHALL BE 13x24x12 OR 17x30x12 OR AS DETERMINED BY ENGINEER.

LEGEND

- CC = CONTROLLER CABINET
- CP = CONCRETE POLE
- PS = PEDESTRIAN SIGNAL
- 1 = PULL BOX FOR POWER SERVICE
- 2 = PULL BOX FOR SIGNAL & PEDESTRIAN CABLE
- 3 = PULL BOX FOR ALL LOOPS
- 3A = PULL BOX FOR CONNECTING STOP BAR LOOPS & FOR OPTIONAL ADVANCE LOOPS
- 4 = PULL BOX (30x48x24) FOR ITS. OPTIONAL SIZE (17x30x24) OR AS DETERMINED BY ENGINEER.
- 5 = PULL BOX FOR POWER SERVICE - OPTIONAL AS DETERMINED BY ENGINEER.
- 6 = PULL BOX FOR FPL POWER CONNECTION
- A = 1-2" UNDERGROUND/UNDER PAVEMENT CONDUIT
- B = 2-2" UNDERGROUND/UNDER PAVEMENT CONDUITS (1-2" FOR SIGNAL & PEDESTRIAN) (1-2" FOR SPARE)
- C = 1-2" UNDERGROUND CONDUIT FOR LOOP LEAD-IN (PIPE 1' (FT) UNDER CURB)
- C1 = LOOP LEAD-IN
- D = SPAN WIRE WHEN SPECIFIED WIRING (VIDEO OR MICROWAVE WITH SIGNAL CABLE)
- E = OVERHEAD ELECTRIC POWER SERVICE - OPTION 2
- F = 1-1" UNDERGROUND CONDUIT

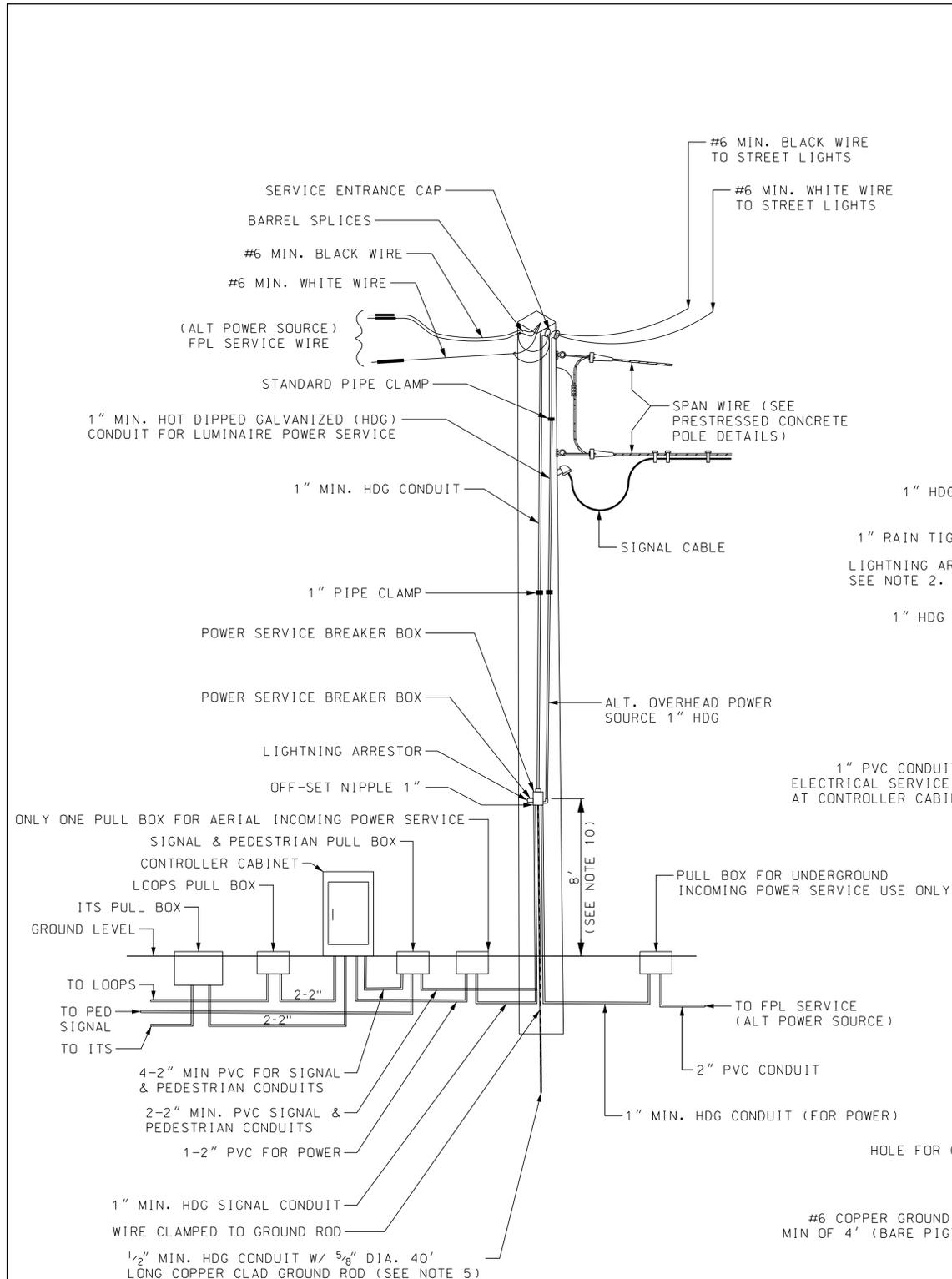


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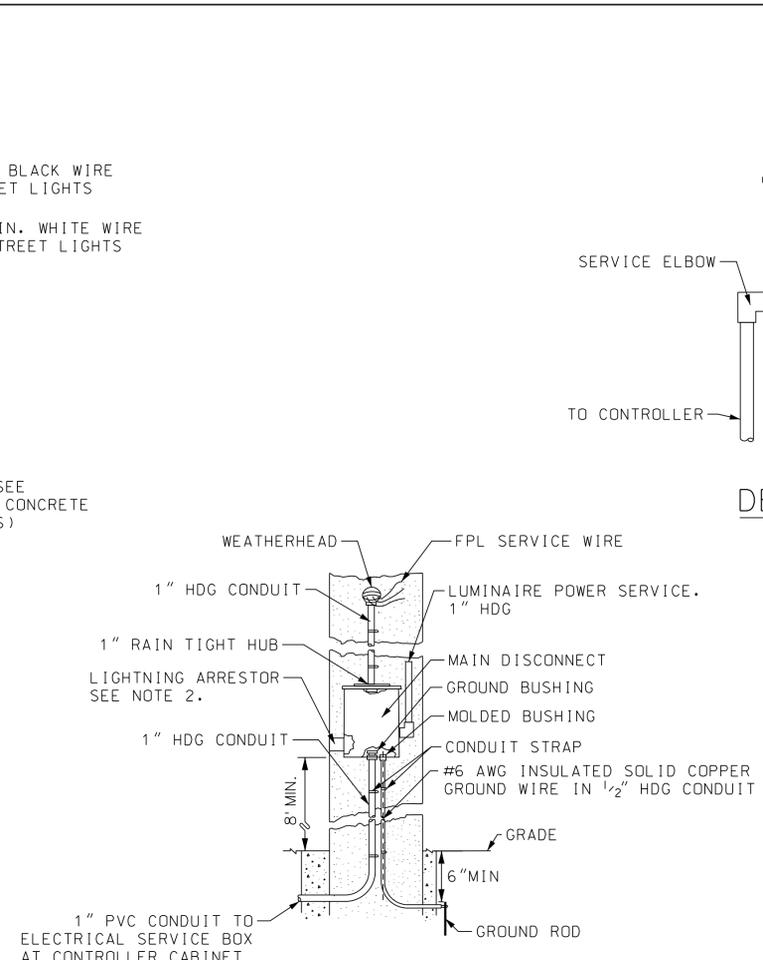
PALM BEACH COUNTY, FLORIDA  
 TRAFFIC DIVISION  
 SIGNAL TYPICAL

CABLES DISTRIBUTION SYSTEM  
 FOR SPAN WIRE INSTALLATION

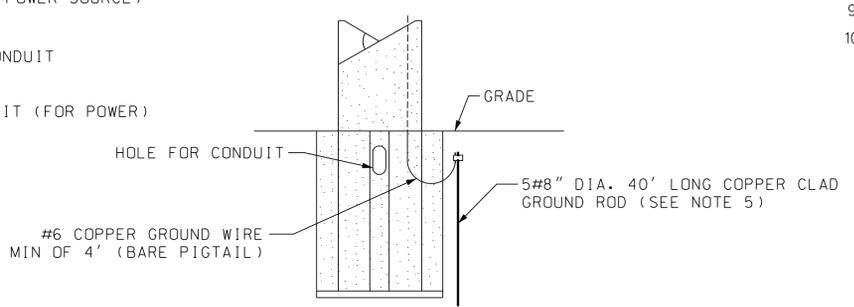
1	5/10/18	UPDATED NOTES 4 AND 5. UPDATED LEGEND.	JH	FNU
SIGNATURE		5/1/15	FATMEH N. JAFAR	
NAME		DATE	ENGINEER OF RECORD	
DRAWN BY		SCALE	N. T. S.	
TRACED BY		DRAWING		
CHECKED BY		T-5.1		
NO.	DATE	REVISIONS	BY	APP.
SHEET 6 OF 25 SHEETS				



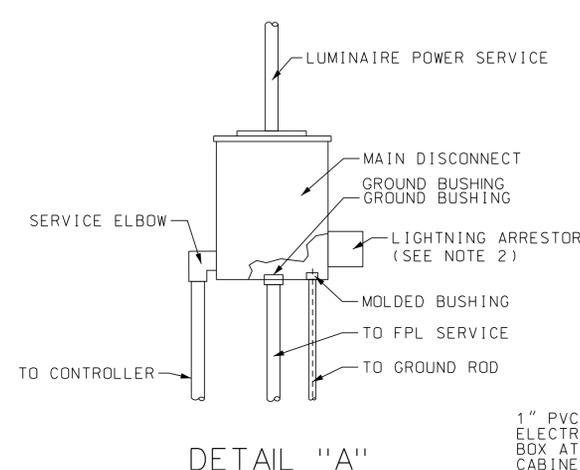
CONCRETE SERVICE POLE DETAIL



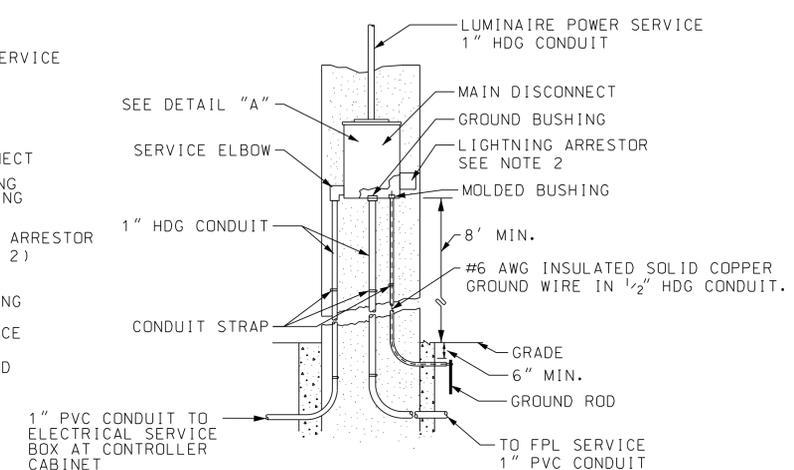
AERIAL FEED DETAIL



PRESTRESSED CONCRETE POLE DETAIL



DETAIL "A"



MAIN DISCONNECT/UNDERGROUND FEED DETAIL

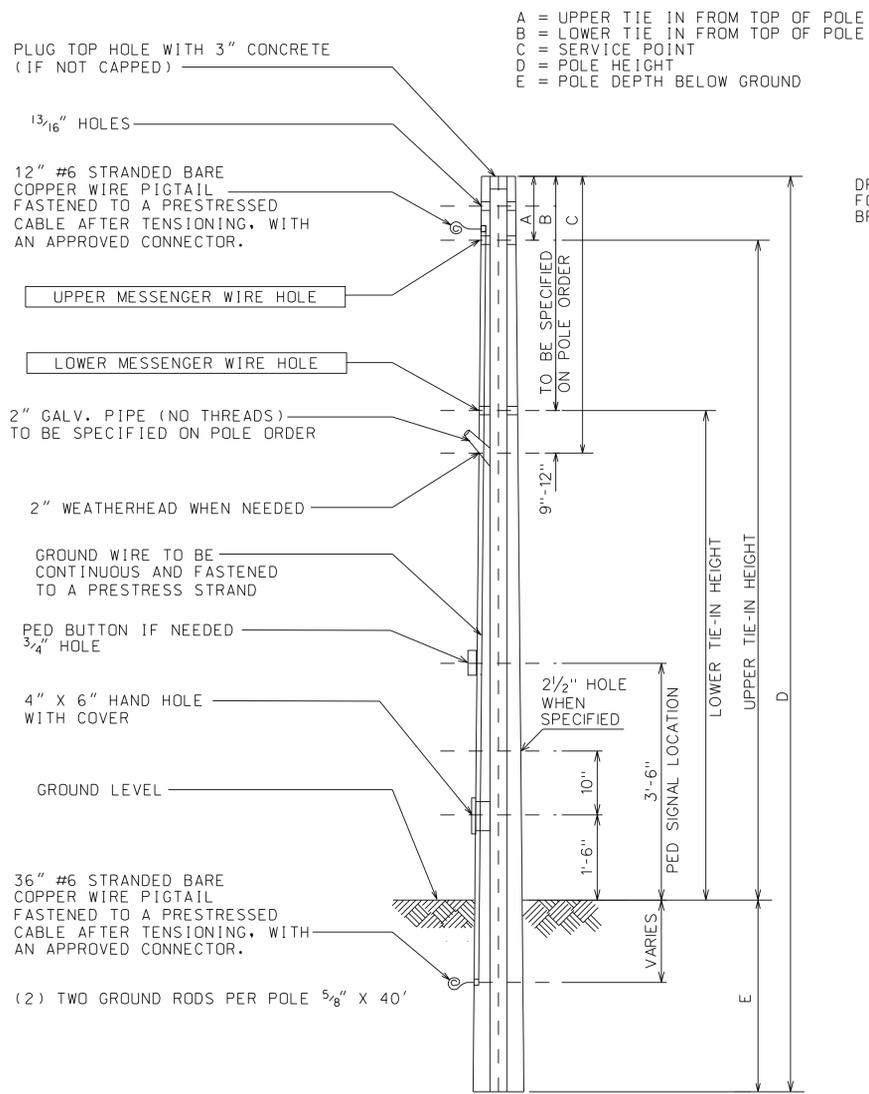
NOTES:

1. BREAKER BOX SQUARE D MODEL #Q024L70RB, OR APPROVED EQUIVALENT.
2. THE LIGHTING ARRESTER TO BE LOCATED ON THE SIDE OF THE MAIN DISCONNECT ENCLOSURE.
3. THE MAIN DISCONNECT SHALL BE LOCKABLE.
4. THE MAIN DISCONNECT ENCLOSURE SHALL BE NEMA 4X OR BETTER.
5. FOR GROUNDING ROD INFORMATION SEE NOTES ON T-6.3.
6. BOND ALL ELEMENTS TOGETHER TO FORM AN INTERSECTION GROUNDING NETWORK IN ACCORDANCE WITH SECTION 620 OF THE FDOT CURRENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. THE BOND WIRE SHALL BE RUN IN CONDUIT WITH THE ELECTRICAL SERVICE WIRE OR SIGNAL CABLE.
7. STAINLESS STEEL FLEXIBLE CONDUITS ARE APPROVED FOR USE FROM THE ELECTRICAL DISCONNECT TO THE CABINET WHEN BOTH ARE ON THE SAME POLE AND INSULATED.
8. NEW INSTALLATIONS REQUIRE COMPLETE HARDWARE AS SHOWN FOR THAT OPTION: INSTALLATION AT EXISTING SIGNALS REQUIRE NEW DEVICE WIRE, SECOND BREAKER, CONDUIT RISER, AND OTHER ASSOCIATED HARDWARE FOR A COMPLETE AND OPERATIONAL FINISHED PRODUCT. GROUNDING IS REQUIRED FOR ALL PROJECTS.
9. LUMINAIRE SERVICE TO BE TIE-WRAPPED TO CATENARY (UPPER) CABLE, SPACED MAXIMUM OF 1' APART.
10. MINIMUM CLEARANCE FROM BOTTOM OF NIPPLE TO GROUND LEVEL IS TO BE 8 FEET.

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 PALM BEACH COUNTY, FLORIDA  
 TRAFFIC DIVISION  
 SIGNAL TYPICAL

CONCRETE SERVICE POLE DETAIL FOR SPAN WIRE

1	5/10/18	UPDATED UNDERGROUND CONDUITS AND GROUND ROD DETAILS.	JH	FNJ
2	3/13/19	UPDATED NOTE 5.	JH	FNJ
NO.		DATE	BY	APP.
SIGNATURE		DATE	SCALE	CONTRACT NO.
DRAWN BY		DATE	N. T. S.	
TRACED BY			DRAWING	T-5.2
CHECKED BY				
SHEET		7	OF	25 SHEETS



**CONCRETE POLE DETAIL**

AT THE OPTION OF THE CONTRACTOR, A PRECAST LEVELING PAD MAY BE USED AS SHOWN BELOW.

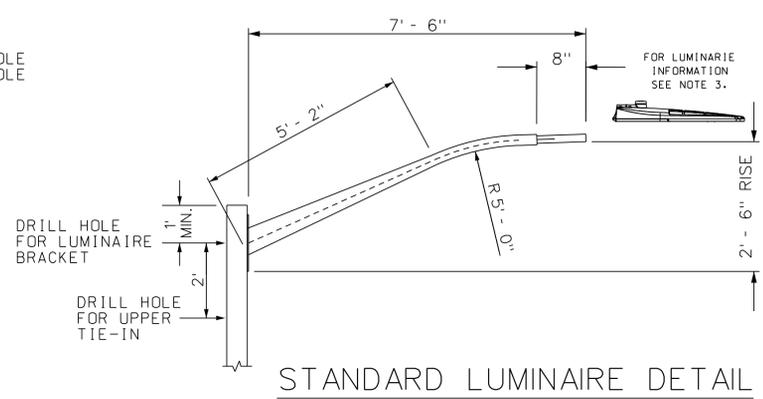
- \*CLASS VI P POLE - 3.5 CU. YDS. MIN. CONCRETE PER POLE BASE
- \*CLASS VII P POLE - 4 CU. YDS. MIN. CONCRETE PER POLE BASE
- \*CLASS VIII P POLE - 5 CU. YDS. MIN. CONCRETE PER POLE BASE

**FOUNDATION NOTES:**

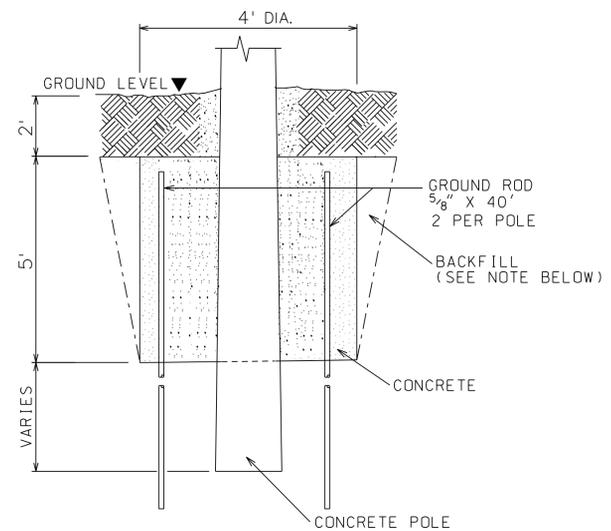
**EXCAVATION & BACKFILL:** EXCAVATION AND BACKFILL FOR THE FOOTINGS SHALL BE IN ACCORDANCE WITH ARTICLES 125-4 AND 125-8.2 WITH THE EXCEPTION OF THE BACKFILL IN LIEU OF THE REQUIREMENTS FOR OBTAINING THE SPECIFIED DENSITY, MAY BE HAND TAMPED IN FOUR INCH MAXIMUM LAYERS OR MACHINE TAMPED IN MAXIMUM SIX INCH LAYERS. THE MATERIAL SHOULD BE NEITHER DRY NOR SATURATED. BACKFILLING SHALL BE DONE WITH POURED CONCRETE SUFFICIENT TO FILL CAVITY.

**CONCRETE:** FOOTING & BACKFILL TO BE POURED WITH 2500 PSI CONCRETE (PER FDOT SSRBC SECTION 346 & 347).

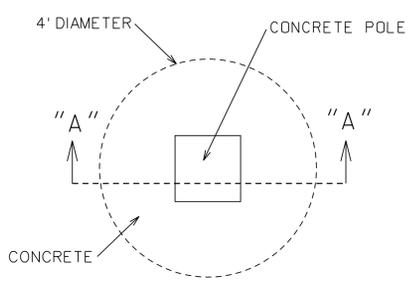
**FORMS:** SHALL BE IN ACCORDANCE WITH ARTICLE 700-8.3 IF THE FOOTING IS POURED IN AN OVERSIZE HOLE. THE CONCRETE IN THE TOP SIX INCHES SHALL BE PLACED IN A FORM. ALL EXPOSED SURFACES SHALL BE TROWELLED TO A SMOOTH FINISH, AND 48\"/>



**STANDARD LUMINAIRE DETAIL**

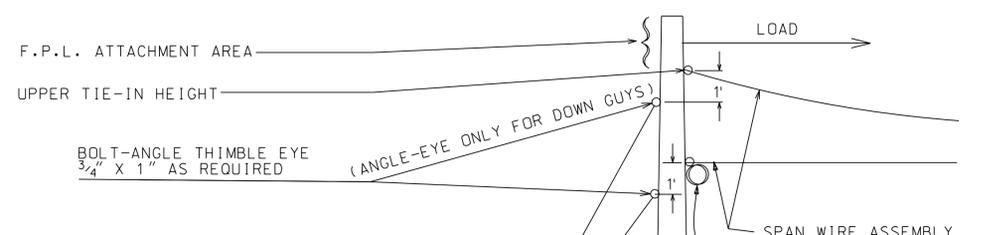


**SECTION "A"-"A"**



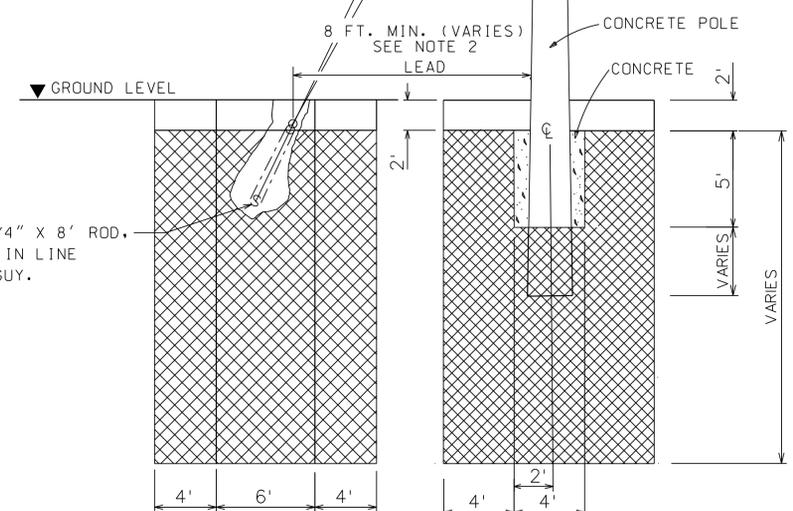
**FOUNDATION PLAN**

**TYPICAL GUYING & CLEAR ZONE (NO EXCAVATION) DETAIL**

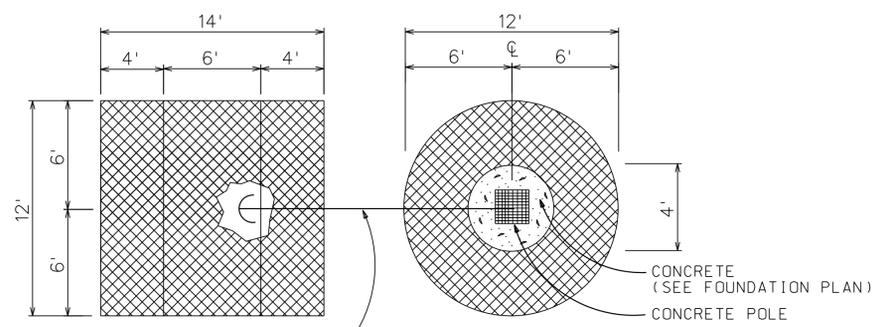


**LEGEND**

RESTRICTED EXCAVATION AREAS AROUND TRAFFIC SIGNAL POLES. MATERIAL NOT TO BE DISTURBED.



**ELEVATION VIEW**



**PLAN VIEW**

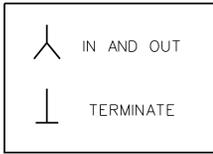
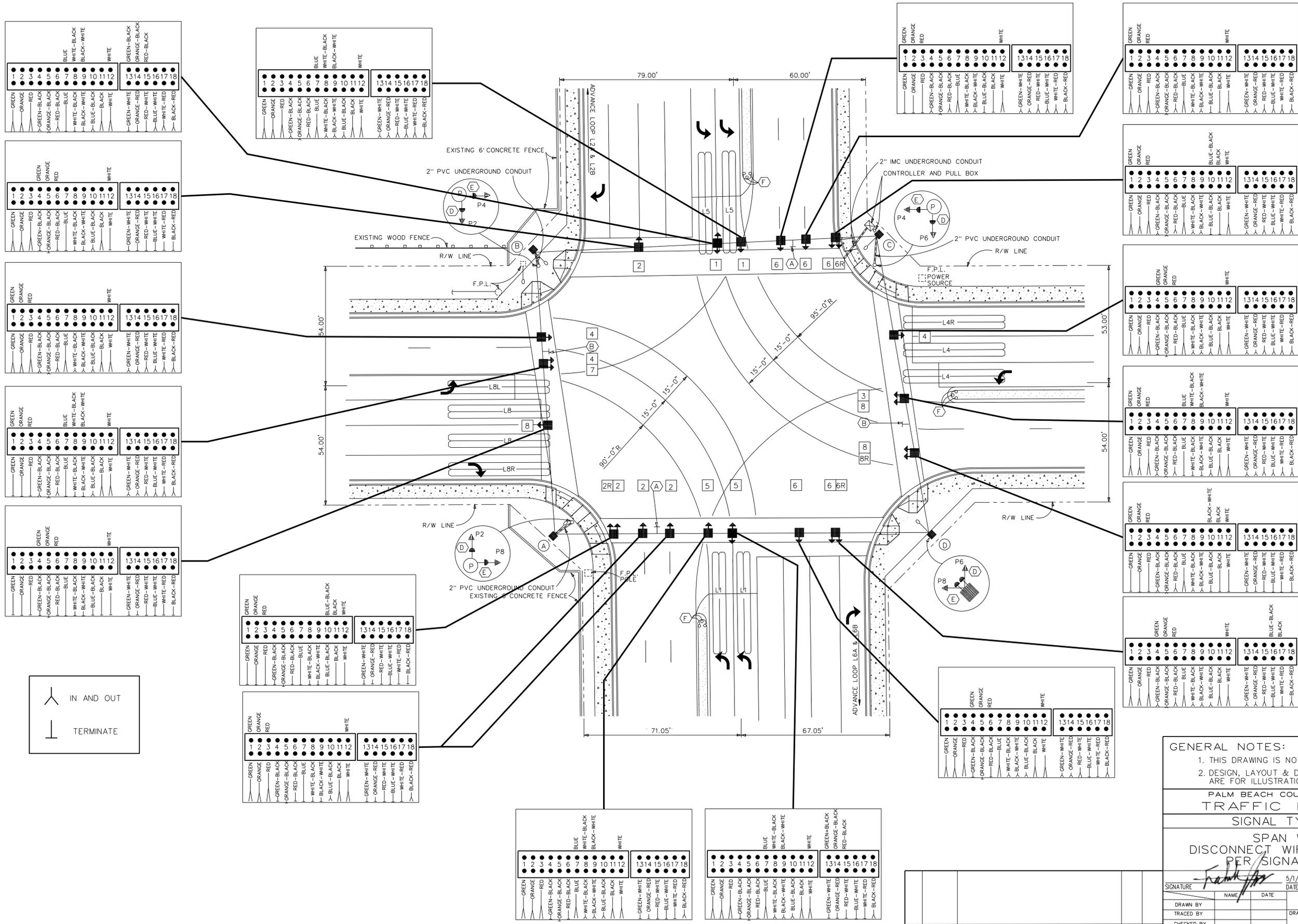
- NOTES:**
1. TRAFFIC SIGNAL POLES TO BE LOCATED WITHIN RIGHT OF WAY AND MAINTAIN CLEARANCES AS SPECIFIED BY FDOT LATEST DESIGN STANDARDS.
  2. GUY WIRE LEAD DISTANCE TO BE 8 FT. MINIMUM OR AS SPECIFIED BY STRUCTURAL ANALYSIS.
  3. LED LUMINAIRES ARE TO BE AUTOBAHN SERIES ATB2 OR EQUAL TO BE APPROVED BY PALM BEACH COUNTY ENGINEER.
  4. FOR GROUNDING ROD INFORMATION SEE NOTES ON T-6.3.

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PALM BEACH COUNTY, FLORIDA  
**TRAFFIC DIVISION**  
**SIGNAL TYPICAL**  
**CONCRETE POLE,**  
**TYPICAL GUYING, CLEAR ZONE DETAIL,**  
**STANDARD LUMINAIRE DETAIL**

1	5/10/18	UPDATED CONCRETE POLE DETAILS.	JH	FNJ
2	3/13/19	ADDED LED LUMINAIRE TO STANDARD LUMINAIRE DETAIL. ADDED NOTES 3 & 4.	JH	FNJ
SIGNATURE		DATE	SCALE	CONTRACT NO.
DRAWN BY		DATE	N. T. S.	
TRACED BY		DRAWING	T-5.3	
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NO.	DATE	REVISIONS	BY	APP.
SHEET 8			OF 25 SHEETS	



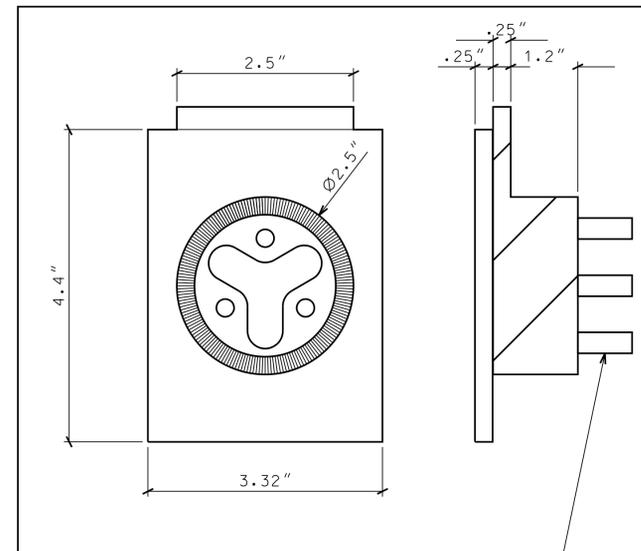
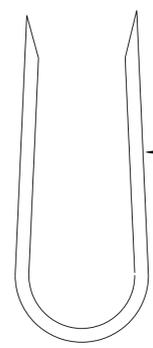
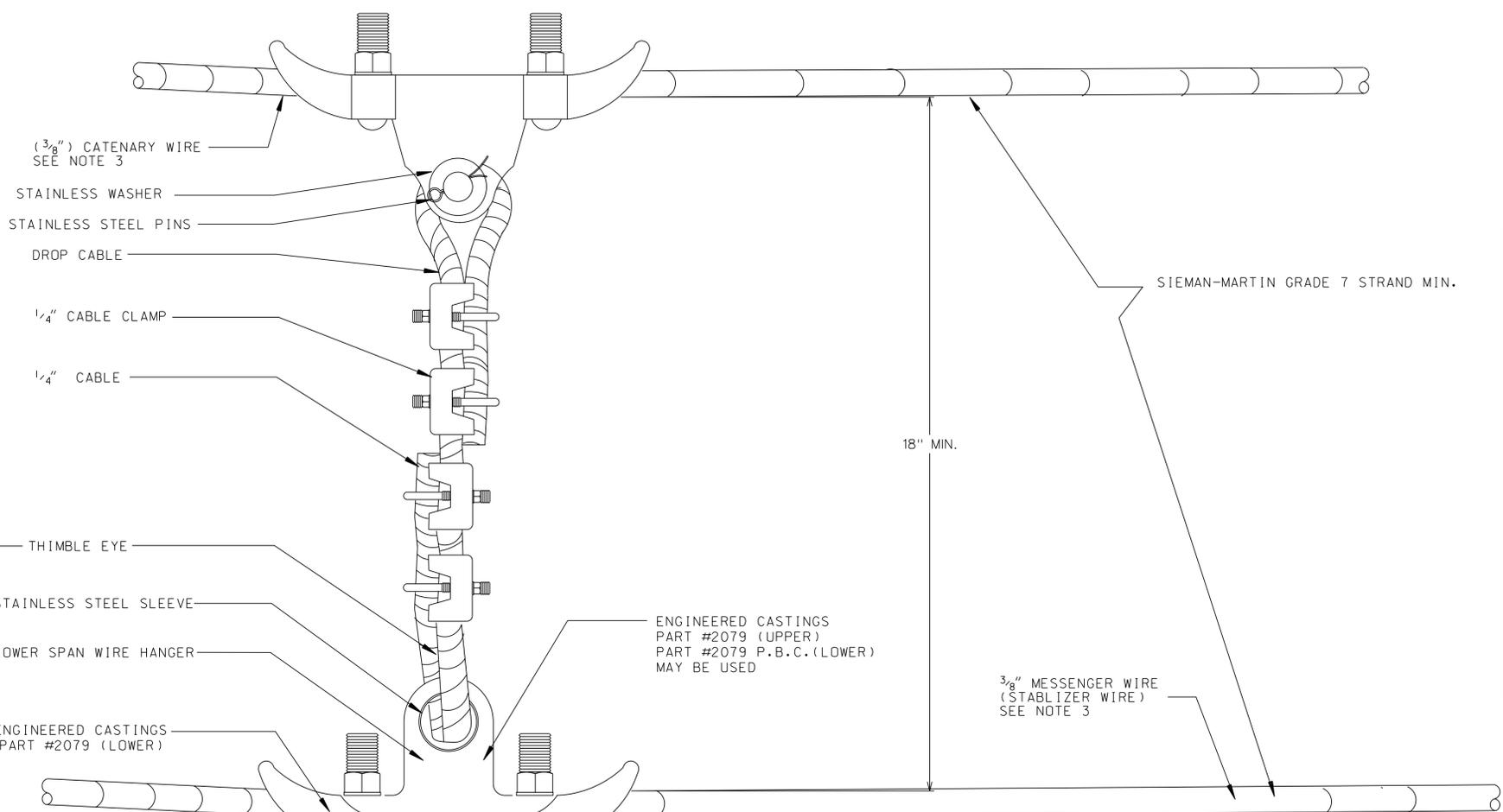
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PALM BEACH COUNTY, FLORIDA  
**TRAFFIC DIVISION**  
**SIGNAL TYPICAL**  
**SPAN WIRE DISCONNECT WIRING DIAGRAM PER SIGNAL HEAD**

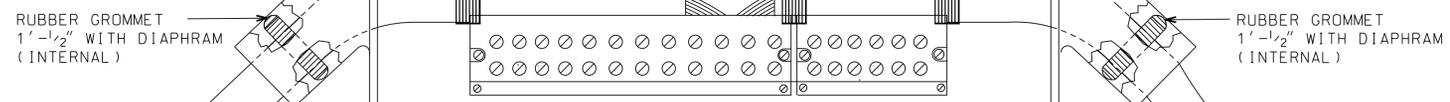
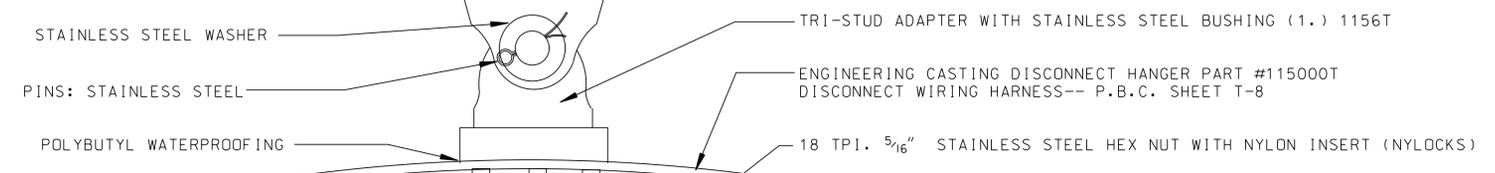
SIGNATURE	DATE	SCALE	CONTRACT NO.
<i>Fateme N. Jafar</i>	5/1/15	N. T. S.	
ENGINEER OF RECORD			
DRAWN BY		DRAWING	T-5.4
TRACED BY			
CHECKED BY			

NO.	DATE	REVISIONS	BY	APP.



DETAIL 'A'

- NOTES:**
- (1.) USE BALANCE ARM ADJUSTER (CHTL 2357 TYPE) AS ALTERNATE.
  - (2.) NO ANTI-SEIZE COMPOUND ON ANY NYLON MATERIALS.
  - (3.) MESSENGER WIRE SIZE MAY VARY AS DETERMINED BY ENGINEER.



SEE DETAIL 'A'

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PALM BEACH COUNTY, FLORIDA  
TRAFFIC DIVISION  
SIGNAL TYPICAL

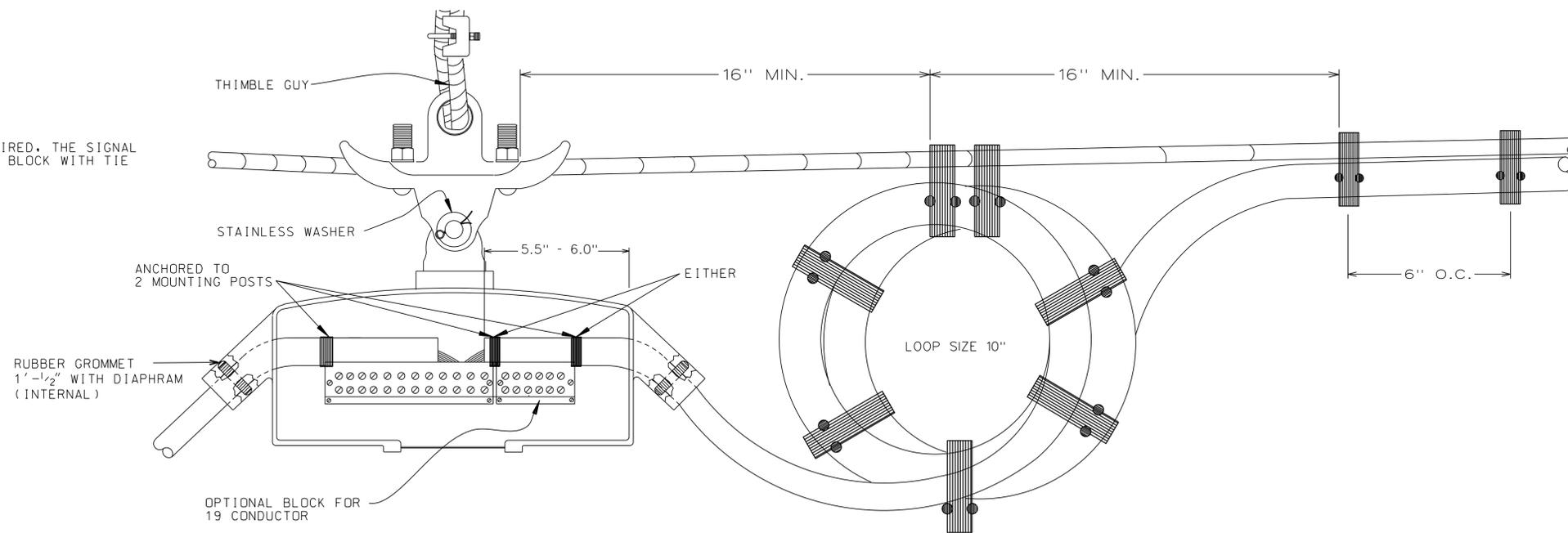
MODIFICATION TO SPAN WIRE  
INSTALLATION DETAIL OF  
FDOT STANDARD INDEX 17727

SIGNATURE	NAME	DATE	SCALE	CONTRACT NO.
<i>Fatme N. Jafar</i>		5/1/15	N. T. S.	
DRAWN BY	TRACED BY	CHECKED BY	DRAWING	
			T-5.5	

NO.	DATE	REVISIONS	BY	APP.

**NOTE:**

AFTER TERMINAL BLOCK IS WIRED, THE SIGNAL CABLE IS TO BE SECURED TO BLOCK WITH TIE WRAPS (MIN. OF 2).



**SIGNAL CABLE TIE-WRAP**

1. DRIP LOOP TO BE TIE-WRAPPED WITH PANDUIT #BT2LH-TLO (OR EQUAL)

**CONDUCTOR COLOR CODE AND SEQUENCE CHART**

CONDUCTOR	DISCONNECT WIRING BASE COLOR/TRACER	CONDUCTOR	DISCONNECT WIRING FOR OPTIONAL BLOCK BASE COLOR/TRACER
1	GREEN	13	GREEN WHITE
2	ORANGE	14	ORANGE RED
3	RED	15	RED WHITE
4	GREEN	16	BLUE WHITE
5	ORANGE	17	WHITE RED
6	RED	18	BLACK RED
7	BLUE		
8	WHITE		
9	BLACK		
10	BLUE		
11	BLACK		
12	WHITE		

WIRE: #14 THHN, 19 STRAND COPPER, NYLON COATED PVC INSULATION, GAS & OIL RESISTANT.

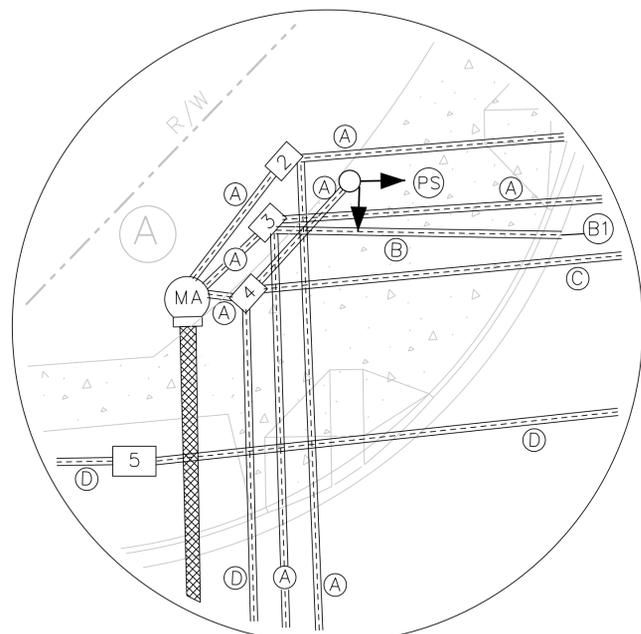
**GENERAL NOTES:**  
 1. THIS DRAWING IS NOT TO SCALE.  
 2. DESIGN, LAYOUT & DATA ON THIS SHEET ARE FOR ILLUSTRATION PURPOSE ONLY.

PALM BEACH COUNTY, FLORIDA  
 TRAFFIC DIVISION  
 SIGNAL TYPICAL

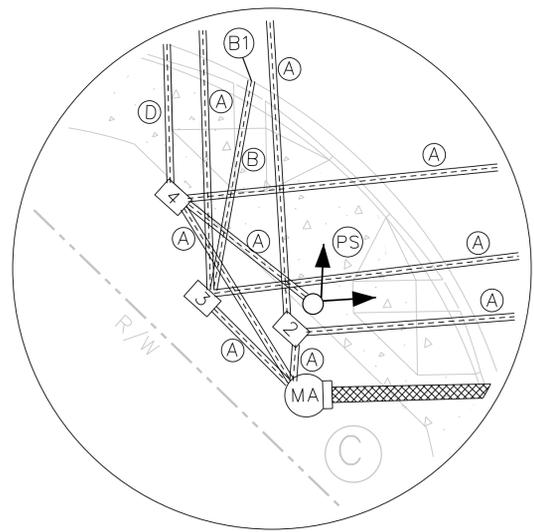
DISCONNECT WITH DOUBLE  
 DRIP LOOP SIGNAL HEAD

SIGNATURE	NAME	DATE	SCALE	CONTRACT NO.
<i>Fatme N. Jafar</i>		5/1/15	N. T. S.	
DATE			ENGINEER OF RECORD	
DRAWN BY			DRAWING	T-5.6
TRACED BY				
CHECKED BY				
NO.			DATE	REVISIONS
BY			APP.	
SHEET			11	OF 25 SHEETS

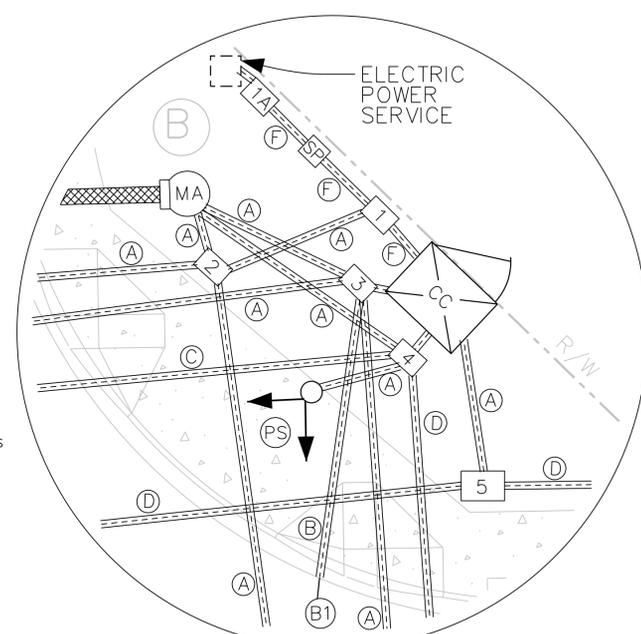




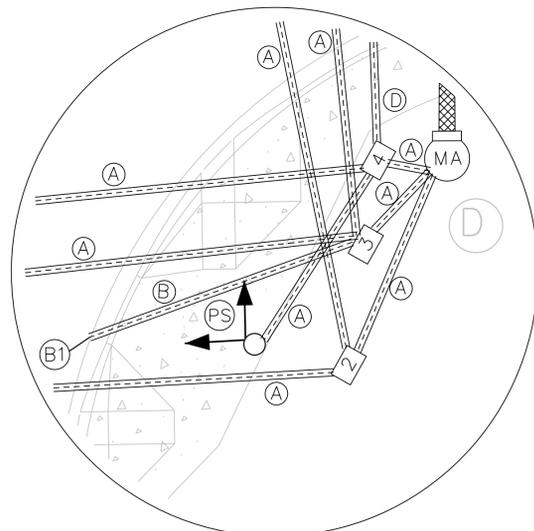
DETAIL "A"



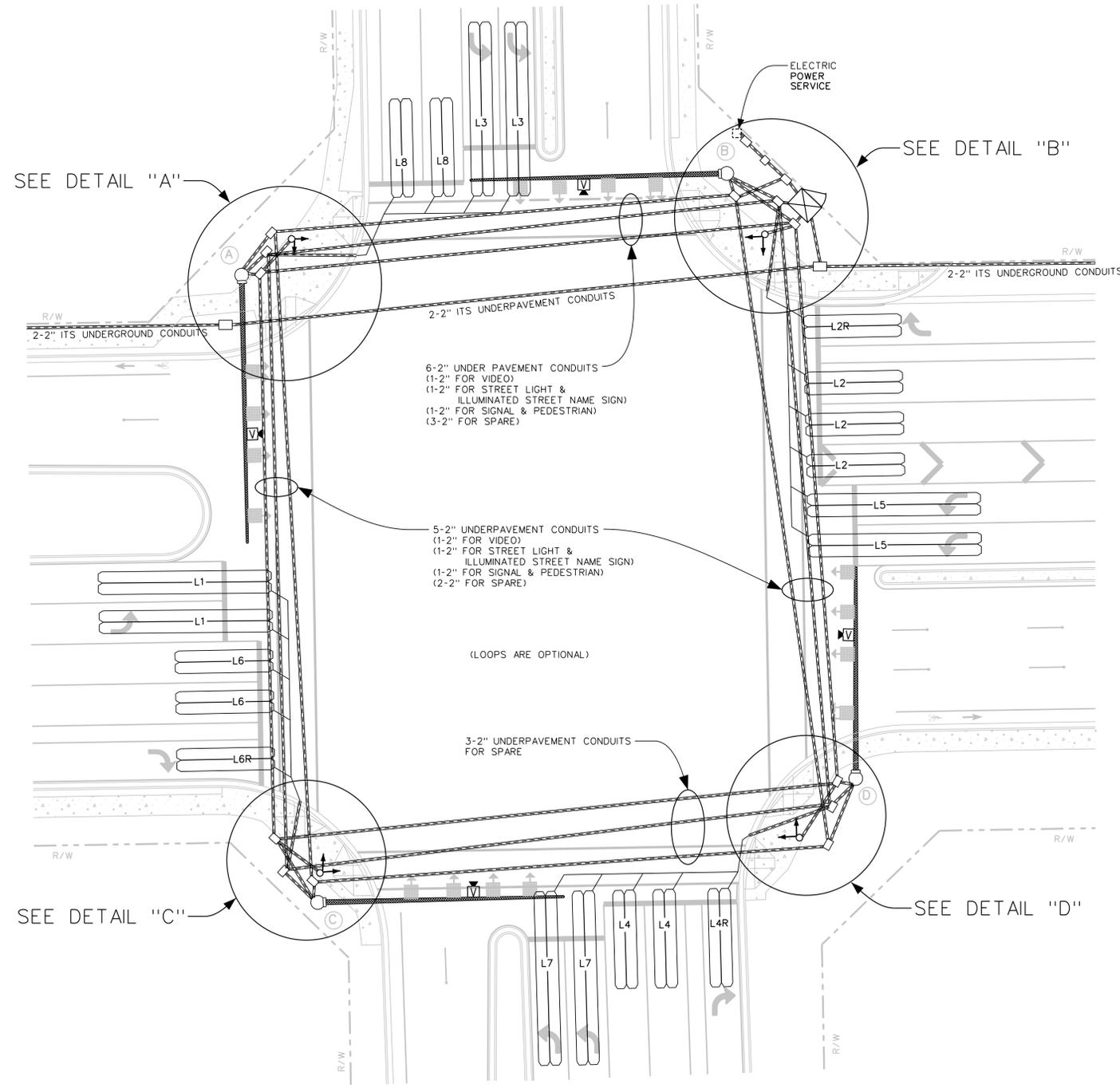
DETAIL "C"



DETAIL "B"



DETAIL "D"



SEE DETAIL "A"

SEE DETAIL "B"

SEE DETAIL "C"

SEE DETAIL "D"

LEGEND

- CC = CONTROLLER CABINET
- MA = MAST ARM
- SP = STUB POLE FOR POWER SERVICE BREAKER BOX
- PS = PEDESTRIAN SIGNAL
- 1 = PULL BOX FOR POWER SERVICE
- 1A = PULL BOX FOR POWER SERVICE - OPTIONAL AS DETERMINED BY ENGINEER
- 2 = PULL BOX FOR STREET LIGHT & ILLUMINATED STREET NAME SIGN
- 3 = PULL BOX FOR VIDEO
- 4 = PULL BOX FOR SIGNAL & PEDESTRIAN CABLE
- 5 = PULL BOX (30x48x24) FOR ITS. OPTIONAL SIZE (17x30x24) OR AS DETERMINED BY ENGINEER

- A = 1-2" UNDERGROUND/UNDER PAVEMENT CONDUIT
- B = 1-2" UNDERGROUND CONDUIT FOR LOOP LEAD-IN (PIPE 1' (FT) UNDER CURB) - OPTIONAL
- B1 = LOOP LEAD-IN - OPTIONAL
- C = 3-2" UNDERGROUND/UNDER PAVEMENT CONDUITS (1-2" FOR SIGNAL & PEDESTRIAN CABLE) (2-2" FOR SPARE)
- D = 2-2" UNDERGROUND/UNDER PAVEMENT CONDUITS (1-2" FOR SIGNAL & PEDESTRIAN CABLE) (1-2" FOR SPARE)
- F = 1-1" UNDERGROUND CONDUIT

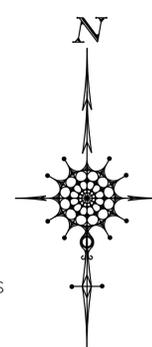
MAJOR ROAD

MAJOR BOULEVARD

NOTES:

1. ANY CONDUIT ABOVE GROUND SHALL BE ALUMINUM OR HD GALVANIZED.
2. ANY CONDUIT BELOW GROUND SHALL BE PVC.
3. IF VIDEO AND LOOPS ARE USED SIMULTANEOUSLY AT AN INTERSECTION THEY SHOULD BE INSTALLED PER FDOT STANDARDS.
4. ALL PULL BOXES FOR POWER SERVICE SHALL BE 13x24x12 OR 17x30x12 OR AS DETERMINED BY ENGINEER.
5. ALL PULL BOXES FOR SIGNAL, PDS, OR LOOPS SHALL BE 13x24x12 OR 17x30x12 OR AS DETERMINED BY ENGINEER.

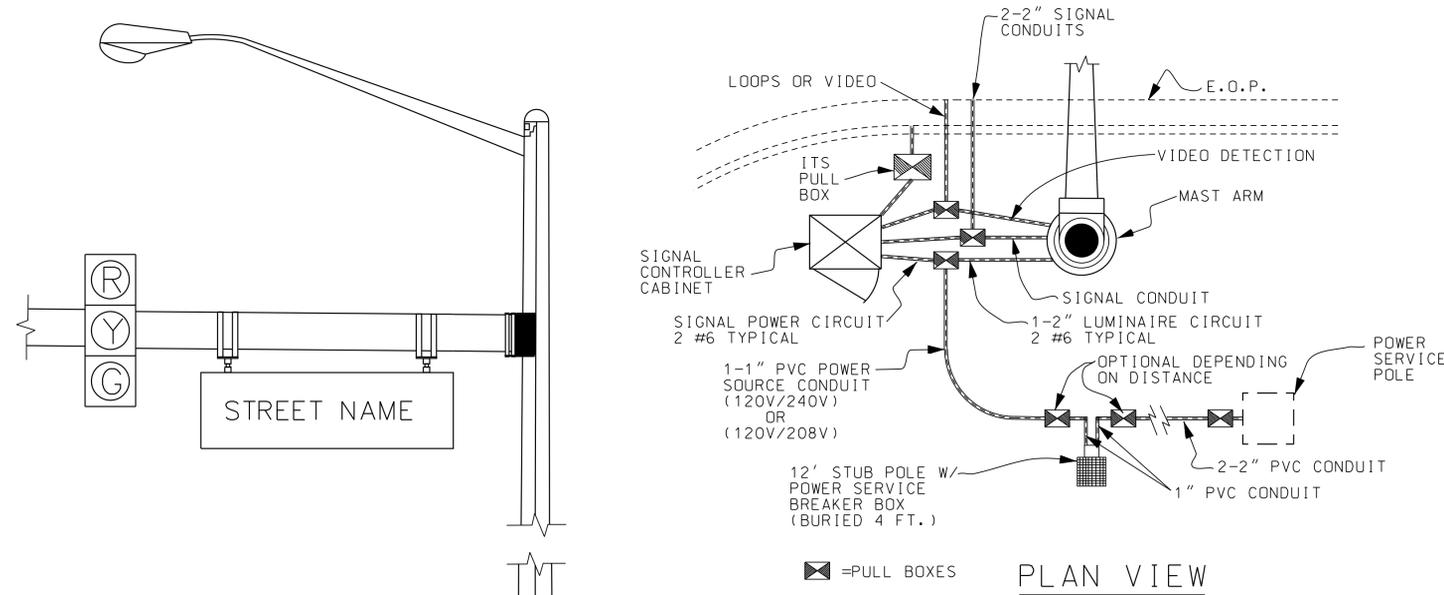
NO.	DATE	REVISIONS	BY	APP.
1	5/10/18	UPDATED NOTES 4.	JH	FNU



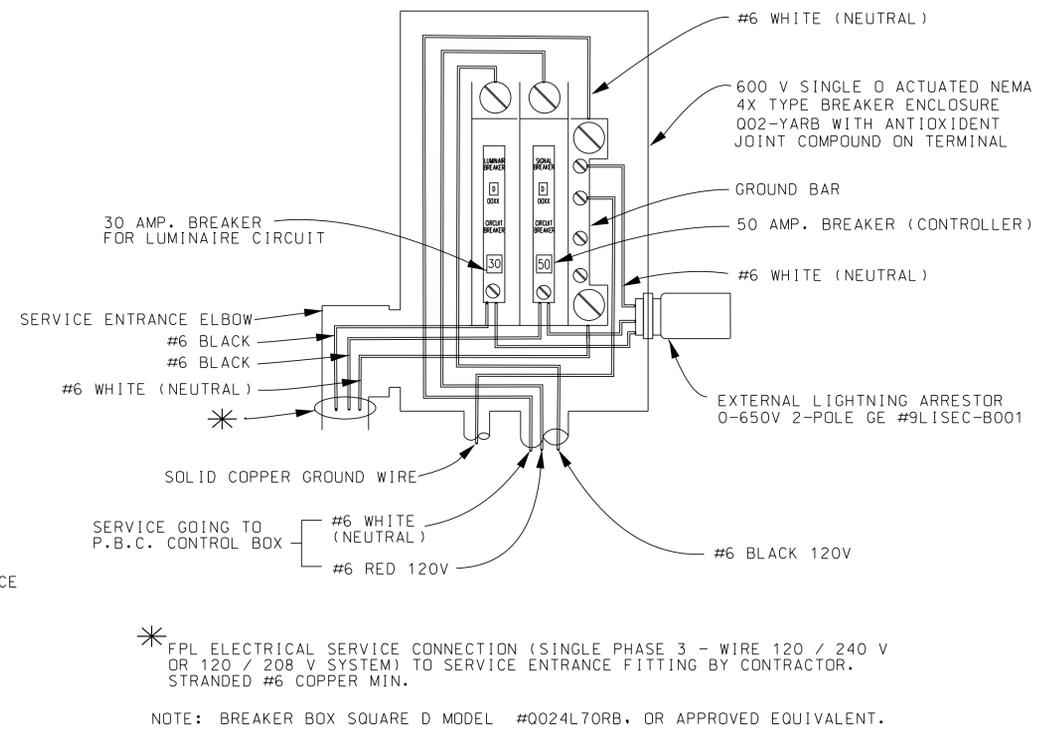
GENERAL NOTES:				
1. THIS DRAWING IS NOT TO SCALE.				
2. DESIGN, LAYOUT & DATA ON THIS SHEET ARE FOR ILLUSTRATION PURPOSE ONLY.				
PALM BEACH COUNTY, FLORIDA				
TRAFFIC DIVISION				
SIGNAL TYPICAL				
CABLE DISTRIBUTION SYSTEM FOR MAST ARM INSTALLATION				
SIGNATURE	NAME	DATE	SCALE	CONTRACT NO.
<i>Fatmeh N. Jafar</i>		5/1/15	N.T.S.	
DRAWN BY			DRAWING	T-6.1
TRACED BY				
CHECKED BY			SHEET	13 OF 25 SHEETS

**NOTES:**

1. LENGTHS OF CONDUIT ARE DETERMINED BY SUBJECT DESIGN.
2. MIN. 3 PULL BOXES NEXT TO CONTROLLER.
3. ILLUMINATED STREET NAME SIGNS AND LUMINAIRE CIRCUITS TO BE RUN SEPARATELY.
4. FOR GROUND ROD INFORMATION SEE NOTES ON T-6.3.



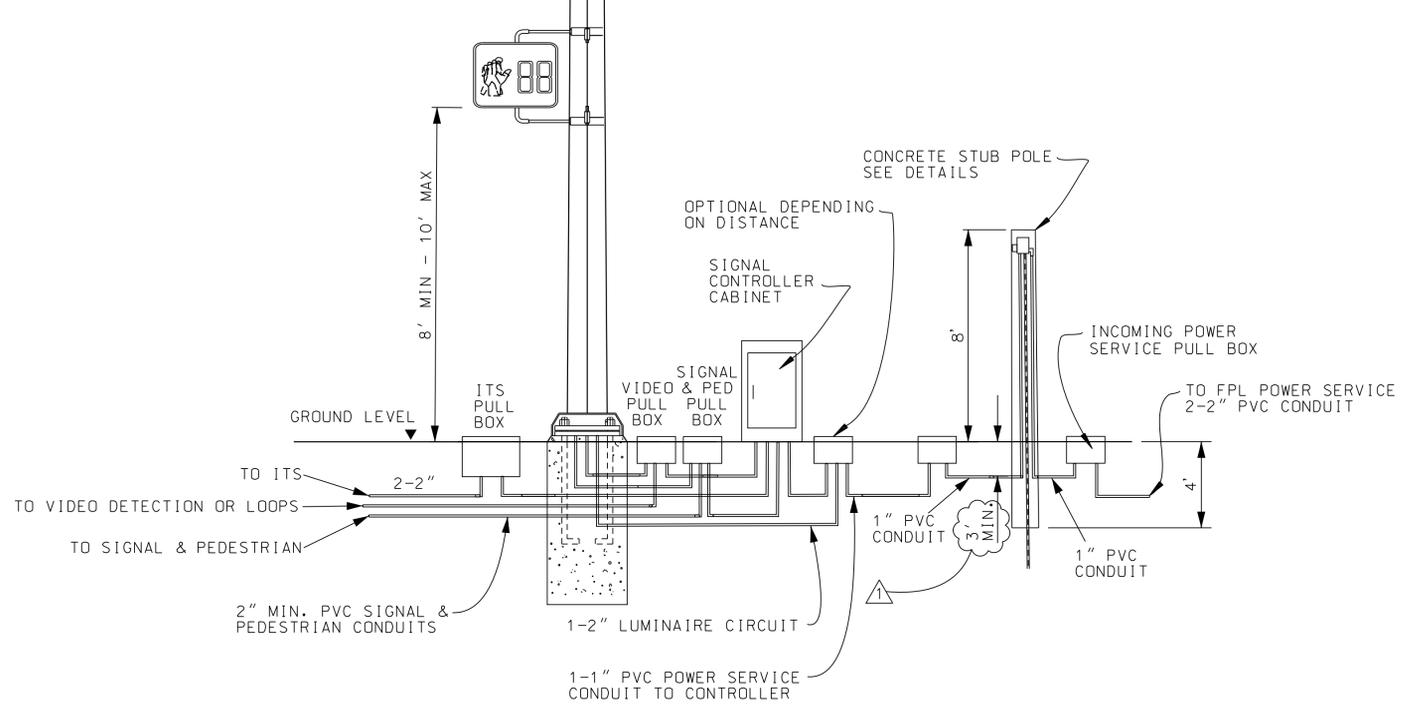
**PLAN VIEW**



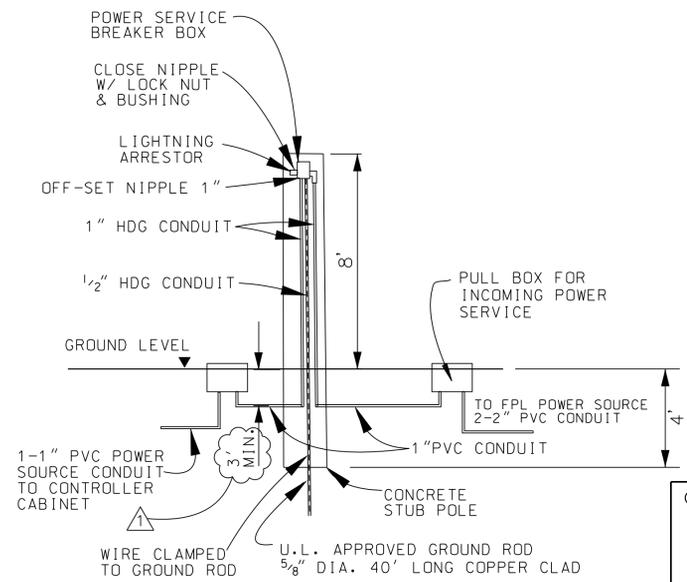
\* FPL ELECTRICAL SERVICE CONNECTION (SINGLE PHASE 3 - WIRE 120 / 240 V OR 120 / 208 V SYSTEM) TO SERVICE ENTRANCE FITTING BY CONTRACTOR. STRANDED #6 COPPER MIN.

NOTE: BREAKER BOX SQUARE D MODEL #0024L70RB, OR APPROVED EQUIVALENT.

**TRIPLEX SERVICE DISCONNECT/BREAKER ASSEMBLY**



**MAST ARM INSTALLATION**



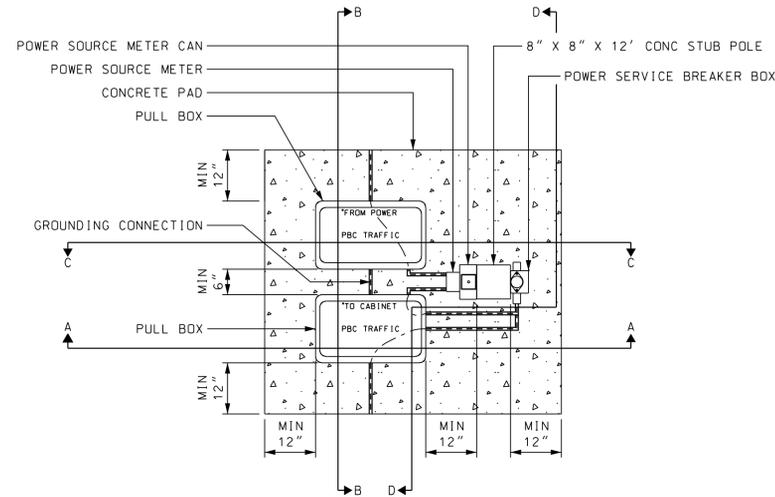
**STUB POLE DETAIL**

**GENERAL NOTES:**

1. THIS DRAWING IS NOT TO SCALE.
2. DESIGN, LAYOUT & DATA ON THIS SHEET ARE FOR ILLUSTRATION PURPOSE ONLY.
3. STUB POLE TO BE USED ON EXISTING TRAFFIC SIGNALS WITH NO METER INSTALLATION.

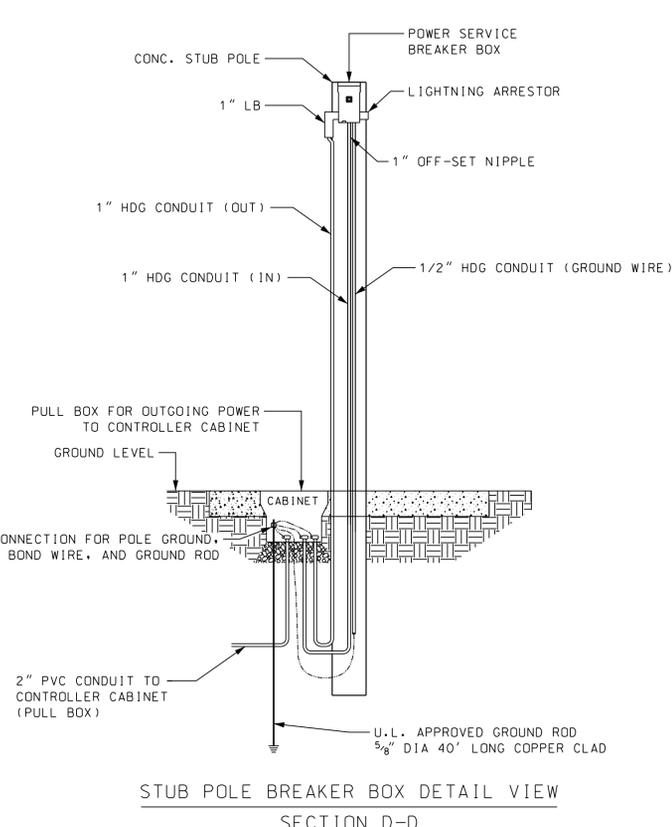
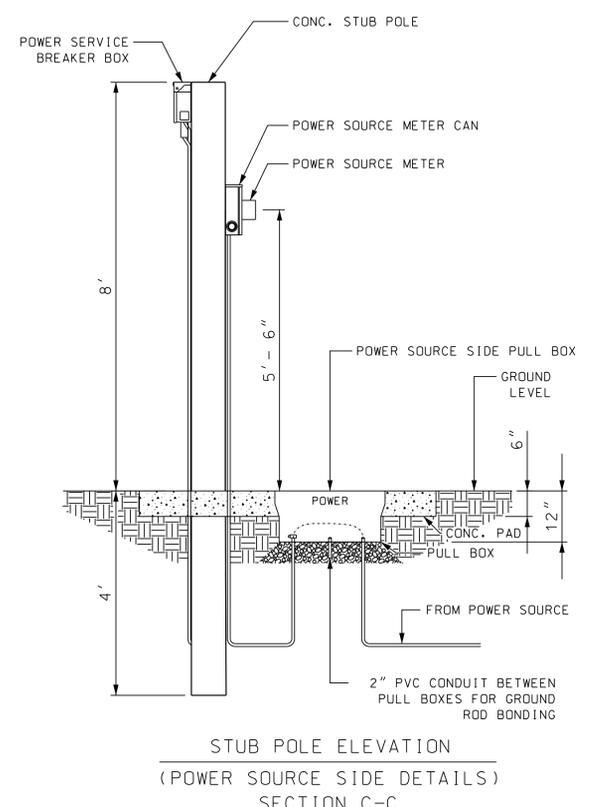
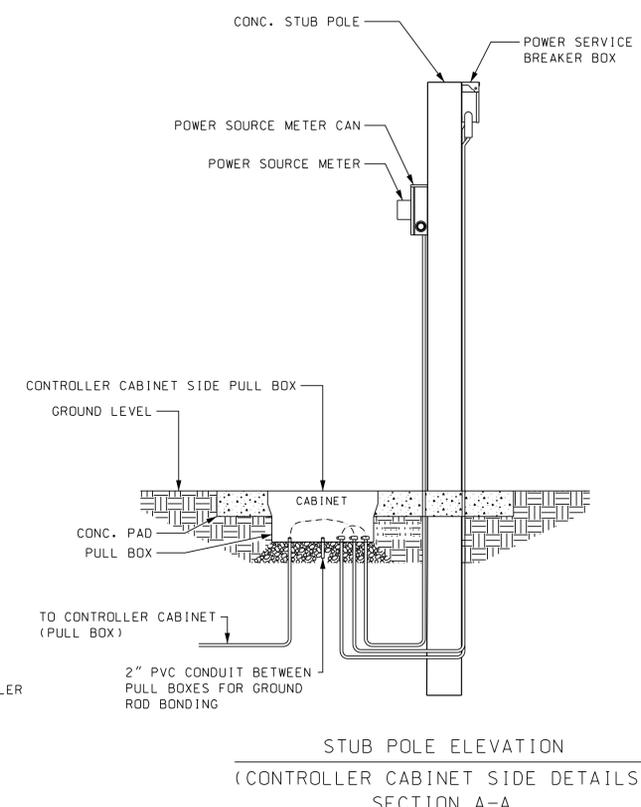
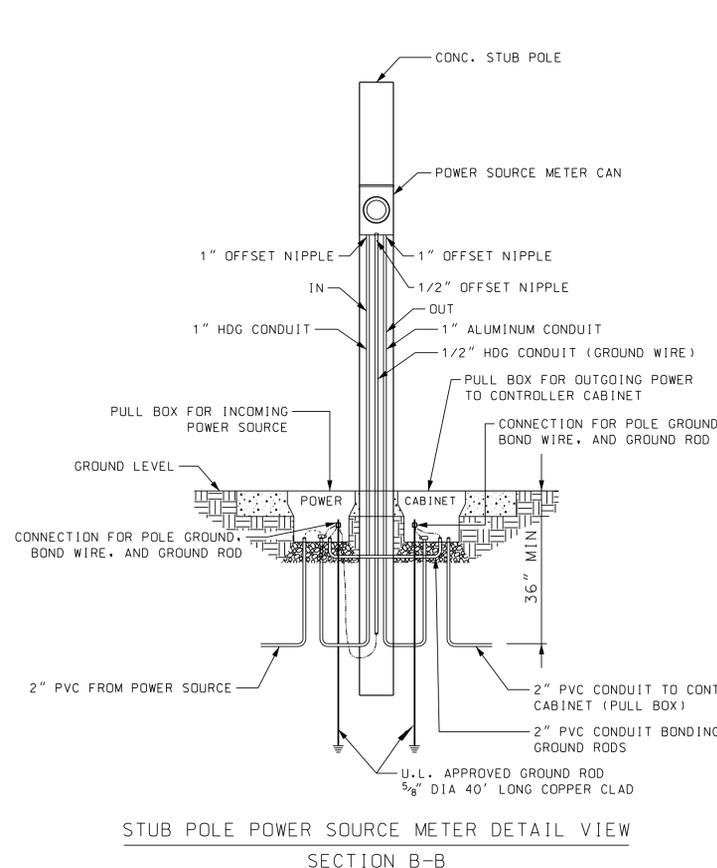
PALM BEACH COUNTY, FLORIDA  
TRAFFIC DIVISION  
SIGNAL TYPICAL  
SERVICE DISCONNECT/BREAKER ASSEMBLY,  
STUB POLE DETAIL,  
MAST ARM INSTALLATION

NO.	DATE	REVISIONS	BY	APP.	SHEET	14	OF	25	SHEETS
1	2/14/17	REVISED DIMENSION FOR CONDUIT DEPTH.	CGT	FNJ					
2	5/10/18	UPDATED CONDUIT DEPTH DETAIL. UPDATED TRIPLEX SERVICE DISCONNECT/BREAKER ASSEMBLY DETAIL. ADDED NOTE 3.	JH	FNJ					
3	3/13/19	ADDED NOTE 4.	JH	FNJ					



- DETAIL NOTES:**
- MILBANK METER SOCKET (CATALOG #UAP8435-XL-TG-HSP SERIES U-125 TYPE 3R ENCLOSURE 150 AMP MAX OR APPROVED EQUAL).
  - BREAKER BOX SQUARE D MODEL #Q024L70RB, OR APPROVED EQUAL.
  - CLOSE NIPPLE & GROUNDING BUSHING ON LB. GROUNDING BUSHING ON OFFSET NIPPLES AND METAL CONDUIT ENDS IN PULL BOX.
  - RUN #6 BARE SOLID COPPER WIRE FROM BREAKER BOX DOWN THROUGH 1/2" HDG CONDUIT INTO CABINET PULL BOX. THE #6 BARE SOLID COPPER WIRE CONTINUES IN PULL BOX AND CONNECTS TO 5/8" GROUND ROD.
  - RUN #6 BARE SOLID COPPER WIRE FROM METER CAN DOWN THROUGH 1/2" HDG CONDUIT INTO POWER SOURCE PULL BOX. THE #6 BARE SOLID COPPER WIRE CONTINUES IN PULL BOX AND CONNECTS TO 5/8" GROUND ROD.
  - BOTH 5/8" GROUND RODS ARE BONDED USING #6 GREEN STRANDED COPPER WIRE RUNNING IN 2" PVC UG CONDUIT CONNECTING POWER SOURCE PULL BOX AND CONTROLLER CABINET PULL BOX.
  - RUN #6 GREEN STRANDED COPPER FROM GROUND ROD IN CONTROLLER CABINET SIDE PULL BOX TO INTERSECTION.
  - EACH PULL BOX SHALL HAVE AT LEAST 20" OF WIRE SLACK FOR EACH RUN.
  - WHEN COMPLETED ALL BOLTS SHALL BE INSTALLED IN PULL BOX COVERS.
  - FOR BREAKER BOX DETAIL SEE SHEET T-6.2

FROM POWER SOURCE BOX TO METER CAN: #6 BLACK STRANDED #6 BLACK STRANDED #6 WHITE STRANDED	FROM METER TO BREAKER BOX: #6 BLACK STRANDED #6 BLACK STRANDED #6 WHITE STRANDED	FROM BREAKER BOX TO LOADS: #6 BLACK STRANDED (LUMINAIRES AND ISNS) #6 RED STRANDED (CABINET) #6 WHITE STRANDED (NEUTRAL) #6 GREEN STRANDED (GROUND)
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- GROUND ROD NOTES:**
- GROUND RODS MUST BE 5/8" DIA COPPER CLAD STEEL MEETING UL 467 REQUIREMENTS.
  - GROUND ROD SECTIONS MUST BE A MINIMUM OF 8' AND BE MANUFACTURED FOR THE SOLE PURPOSE OF PROVIDING ELECTRICAL GROUNDING.
  - GROUND ROD ASSEMBLIES CONSISTING OF ONE OR MORE GROUND RODS COUPLED TOGETHER SHALL BE A MINIMUM OF 40', EARTHED AT A SINGLE POINT, WITHOUT DISRUPTING THE ELECTRICAL CONTINUITY.
  - ALL GROUND ROD CONNECTIONS INSIDE PULL BOXES SHALL BE MADE USING EXOTHERMIC WELDS (ERICO TYPE NX CONNECTIONS OR APPROVED EQUAL).
  - ALL GROUND ROD CONNECTIONS INSIDE THE CONTROLLER CABINET OR PEDESTRIAN BASE SHALL BE MECHANICAL CONNECTIONS. BEFORE CONNECTION IS MADE ALL NON CONDUCTING SURFACE COATINGS MUST BE REMOVED AND AN ANTI OXIDANT COMPOUND MUST BE APPLIED.
  - FOR THE FOLLOWING DEVICES A RESISTANCE TO GROUND OF NO MORE THAN 5 OHMS MUST BE OBTAINED. MULTIPLE GROUND RODS TOTALING A MAX OF 80'
 

A. POWER SERVICE FOR TRAFFIC CONTROL DEVICES.	A. PEDESTALS FOR PEDESTRIAN SIGNALS
B. SIGNAL AND ITS CABINETS.	B. SIGNAL CABLE / SPAN WIRE
C. PULL BOXES	C. AERIAL INTERCONNECT MESSENGER WIRE

- GENERAL NOTES:**
- THIS DRAWING IS NOT TO SCALE.
  - DESIGN, LAYOUT & DATA ON THIS SHEET ARE FOR ILLUSTRATION PURPOSE ONLY.
  - STUB POLE TO BE USED WITH POWER SOURCE METER

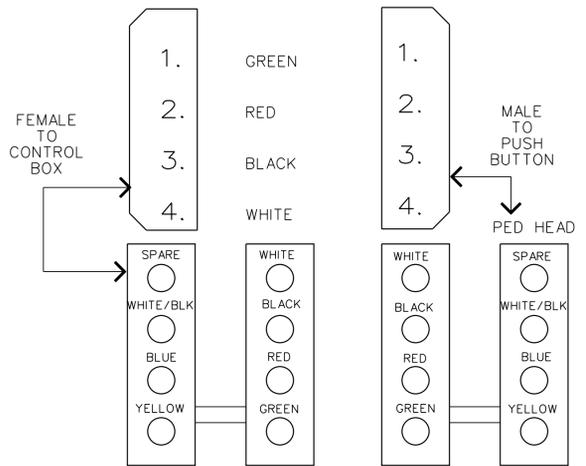
PALM BEACH COUNTY, FLORIDA  
TRAFFIC DIVISION  
SIGNAL TYPICAL

POWER SOURCE METER AND BREAKER BOX  
STUB POLE DETAIL

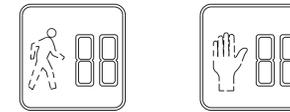
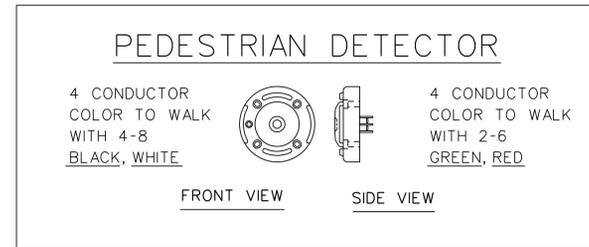
NO.	DATE	REVISIONS	BY	APP.	SHEET	15	OF	25	SHEETS
1	5/10/18	NEW SHEET.	JH	FNJ					
2	3/13/19	ADDED GROUND ROD NOTES.	JH	FNJ					
					SIGNATURE	5/10/18		FATMEH N. JAFAR	
					DATE	ENGINEER OF RECORD		N. T. S.	
					DRAWN BY	SCALE		CONTRACT NO.	
					TRACED BY	DRAWING		T-6.3	
					CHECKED BY				

**NOTES:**

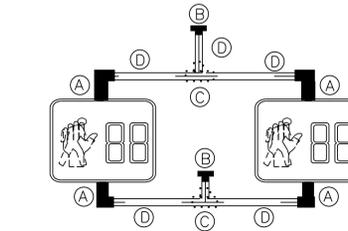
- EACH CORNER WILL BE FED WITH ONE SEVEN CONDUCTOR CABLE FOR PEDESTRIAN SIGNAL HEAD AND ONE FOUR CONDUCTOR CABLE FOR PEDESTRIAN DETECTOR. THESE CABLES WILL RUN FROM PEDESTRIAN SIGNAL AND DETECTOR DIRECTLY TO CONTROL BOX (NO SPLICES).
- HOOKE UP FOR PEDESTALS- THERE WILL BE ONE 4 PIN & ONE 8 PIN JIFFY HARNESS SOLDERED TO CABLES IN THE PEDESTAL. THESE HARNESSES WILL HAVE THE FEMALE END ON THE FEED SIDE OF CABLE AND THE MALE END ON THE PEDESTRIAN SIDE. THE LOCKING TABS MUST BE CUT OFF TO ENSURE BREAK-A-WAY PROTECTION. THE JIFFY CONNECTOR TO BE POSITIONED IN PELCO BASE AT TOP OF BASE TO AVOID WATER INTRUSION. ADD SILICON OR CAULKING AT BASE OF PELCO FOR WATER INTRUSION PROTECTION.
- IN FLASHER-CONVERTIBLE INSTALLATIONS, A PULL BOX IS TO BE INSTALLED AT THE LOCATION OF THE FUTURE PEDESTRIAN SIGNAL PEDESTAL BASE. THE PULL BOX IS TO CONTAIN ADEQUATE WIRING FOR HOOK-UP OF FUTURE PEDESTRIAN SIGNAL.
- BOND PED FIXTURE TO GROUND ROD.
- FOR GROUND ROD INFORMATION SEE NOTES ON T-6.3.



JIFFY HARNESS WIRING DIAGRAM (4 PIN AND 8 PIN)

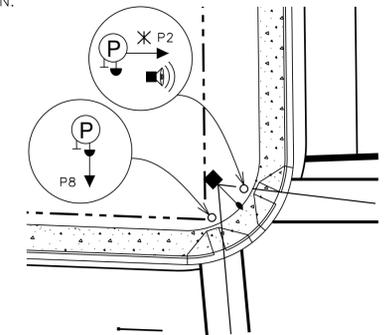


COUNTDOWN PEDESTRIAN SIGNAL

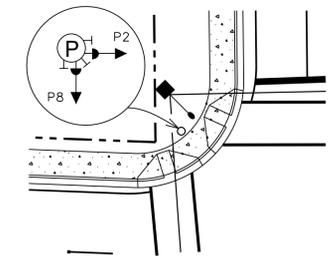


- (A) TRI-STUD ALUM. ELBOW
- (B) POLE PLATE ALUM.
- (C) 1 1/2" ALUM. TEE
- (D) 1 1/2" X 7" OR 8" ALUM. NIPPLE X

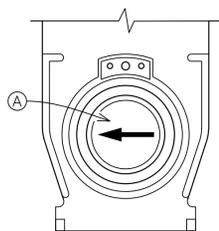
\* LENGTH OF ALUMINUM NIPPLE IS DEPENDENT ON SIGNAL HEAD ORIENTATION.



\* P2 AUDIBLE DETECTOR



PEDESTRIAN FEATURES LAYOUT DETAIL



ACCESSIBLE (AUDIBLE) PUSH BUTTON



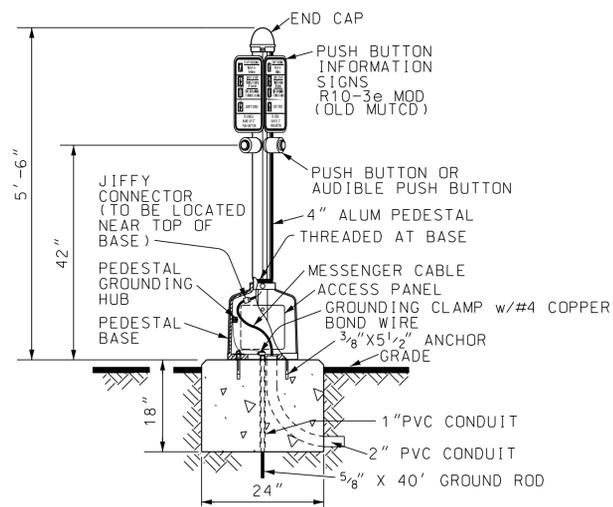
DETAIL FOR WARNING PEDESTRIAN FLASHER



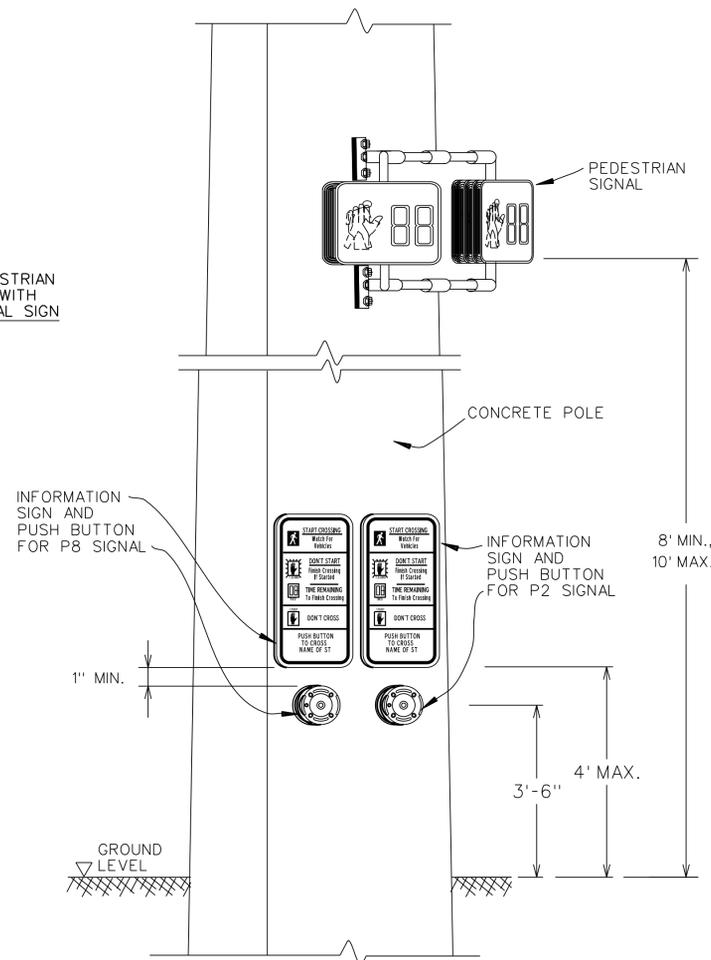
DETAIL FOR ACCESSIBLE PEDESTRIAN DETECTOR IN COMBINATION WITH COUNTDOWN PEDESTRIAN SIGNAL SIGN

(A) THIS BUTTON SHOULD BE PRESSED TO PLACE A PED CALL. THE ARROW INDICATES THE DIRECTION THROUGH THE CROSSWALK. THE BUTTON VIBRATES TO INDICATE THE WALK SIGN IS ON.

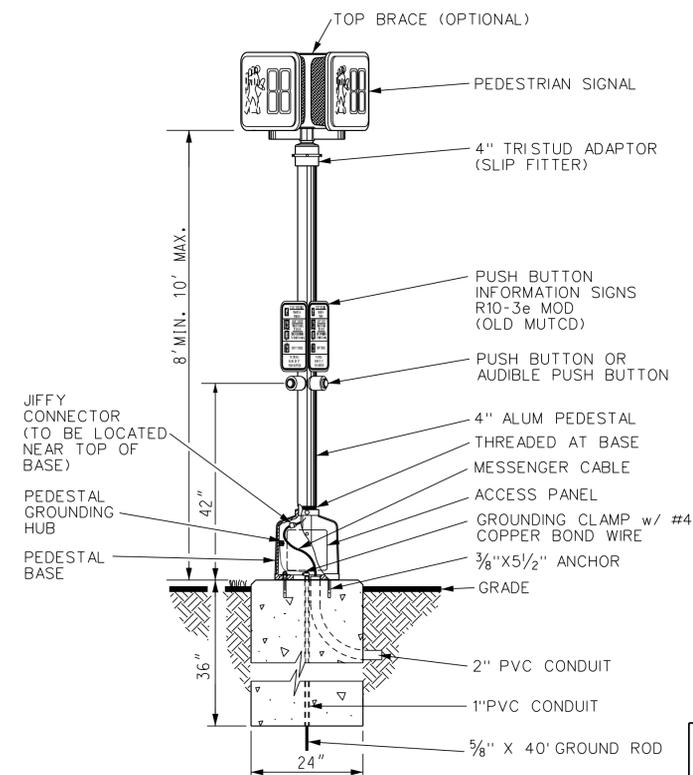
ACCESSIBLE (AUDIBLE) PEDESTRIAN DETECTOR DETAIL



PED MONUMENT DETAIL



PEDESTRIAN FEATURES ON CONCRETE POLE



PEDESTRIAN FEATURES ON PEDESTAL

**GENERAL NOTES:**  
 1. THIS DRAWING IS NOT TO SCALE.  
 2. DESIGN, LAYOUT & DATA ON THIS SHEET ARE FOR ILLUSTRATION PURPOSE ONLY.

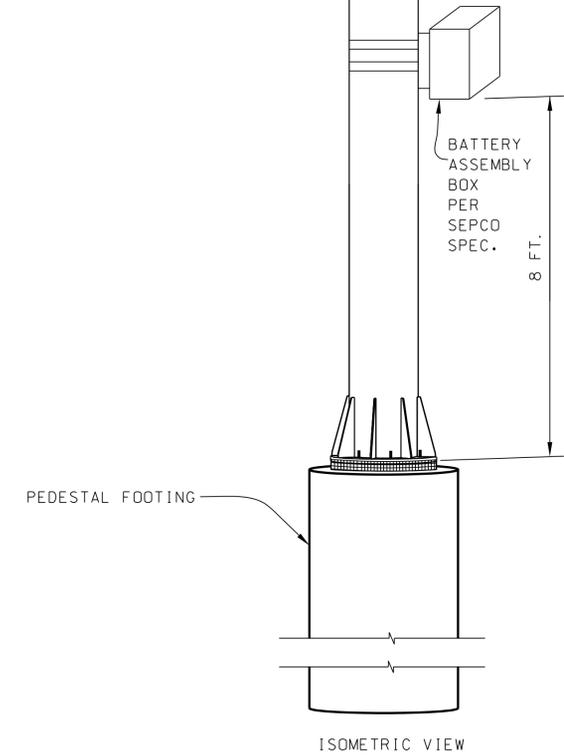
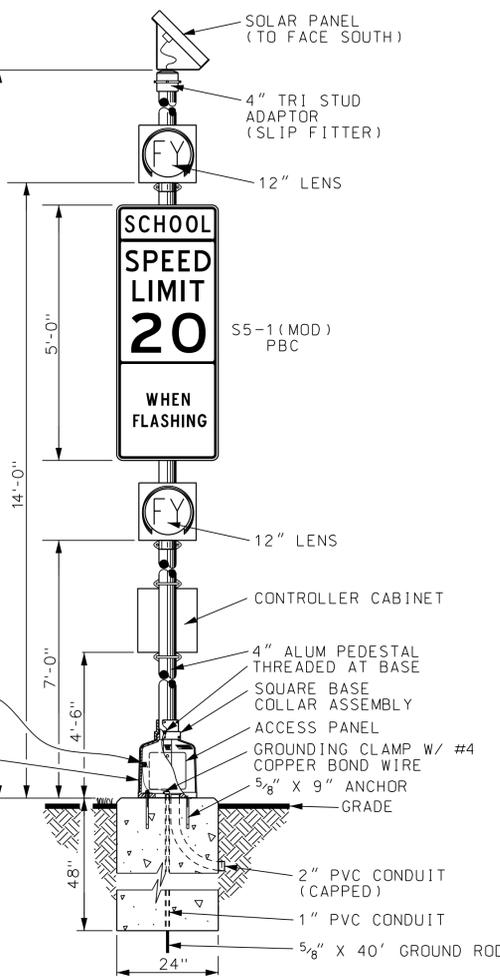
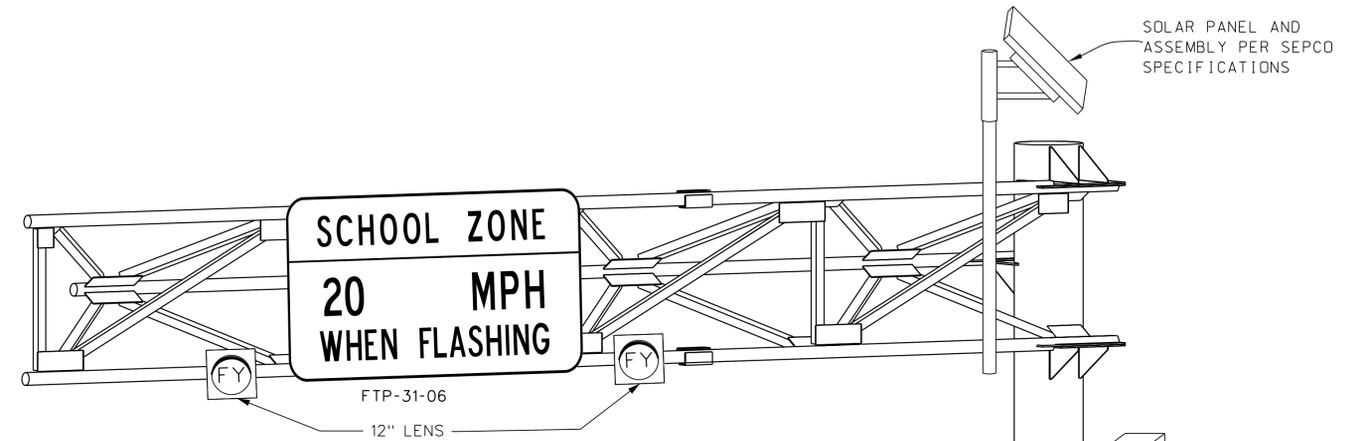
PALM BEACH COUNTY, FLORIDA  
 TRAFFIC DIVISION  
 SIGNAL TYPICAL

PEDESTRIAN SIGNAL, SIGN & EQUIPMENT INSTALLATION.

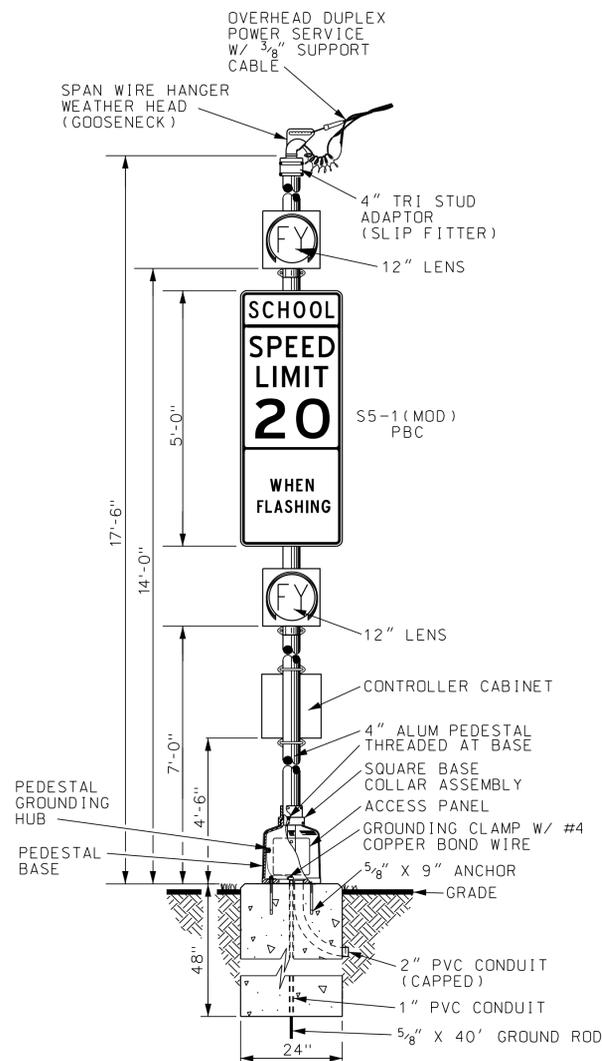
1	5/10/18	UPDATED GROUND ROD DETAILS.	JH	FNJ	5/1/15	FATMEH N. JAFAR	SCALE	CONTRACT NO.
2	3/13/19	ADDED NOTE 5.	JH	FNJ	DATE	ENGINEER OF RECORD	N. T. S.	
SIGNATURE					DRAWING			
DRAWN BY					T-7			
TRACED BY					SHEET 16 OF 25 SHEETS			
CHECKED BY								

**NOTES:**

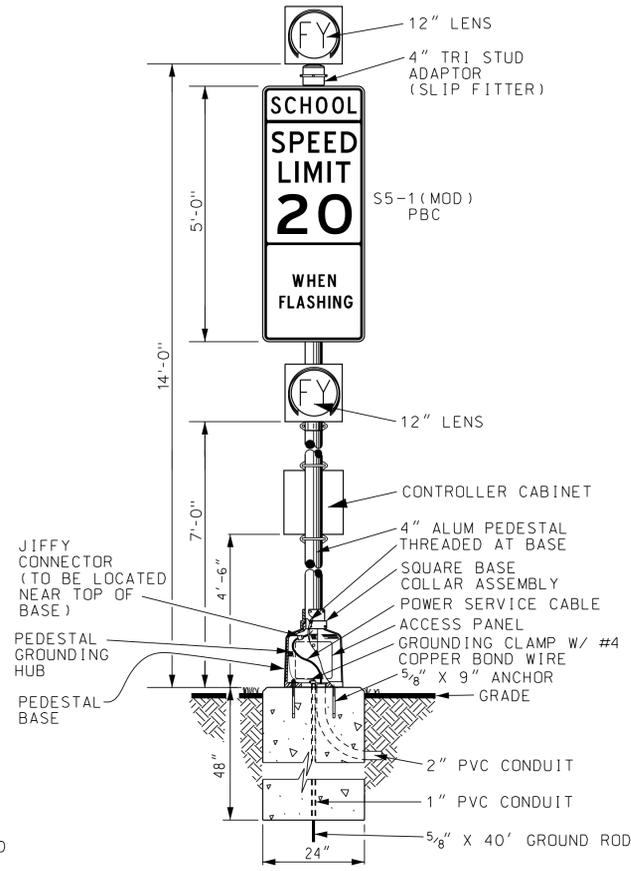
1. FOR GROUND ROD INFORMATION SEE NOTES ON T-6.3.



OVERHEAD SCHOOL ZONE FLASHER



PEDESTAL SCHOOL ZONE FLASHER OVERHEAD POWERED DETAIL



PEDESTAL SCHOOL ZONE FLASHER UNDERGROUND POWERED DETAIL

**GENERAL NOTES:**  
 1. THIS DRAWING IS NOT TO SCALE.  
 2. DESIGN, LAYOUT & DATA ON THIS SHEET ARE FOR ILLUSTRATION PURPOSE ONLY.

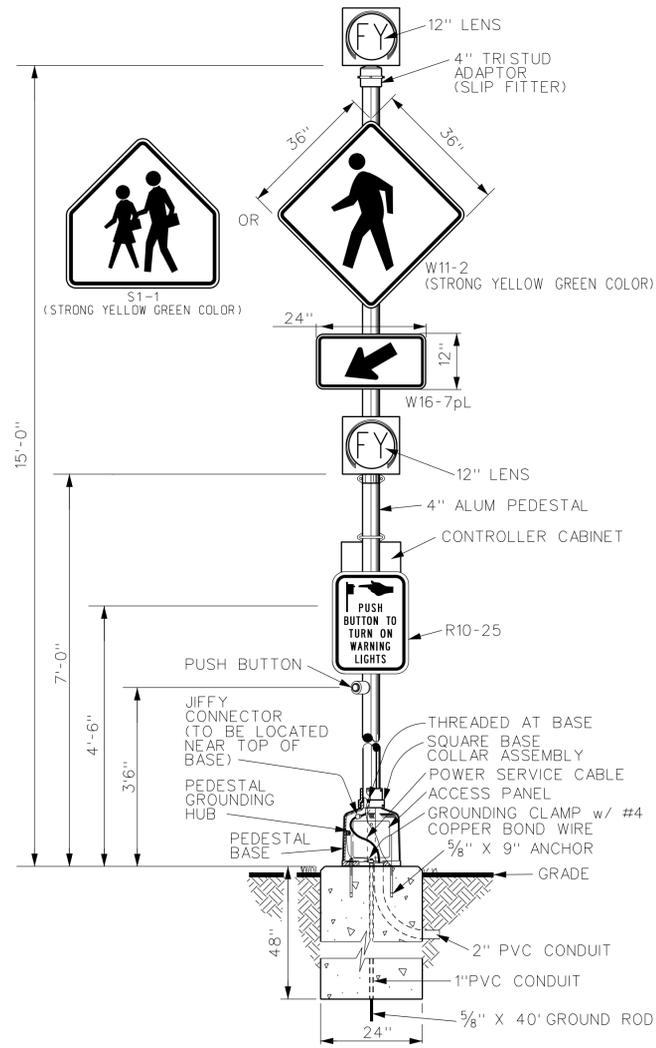
PALM BEACH COUNTY, FLORIDA  
 TRAFFIC DIVISION  
 SIGNAL TYPICAL

SCHOOL ZONE FLASHER DETAIL

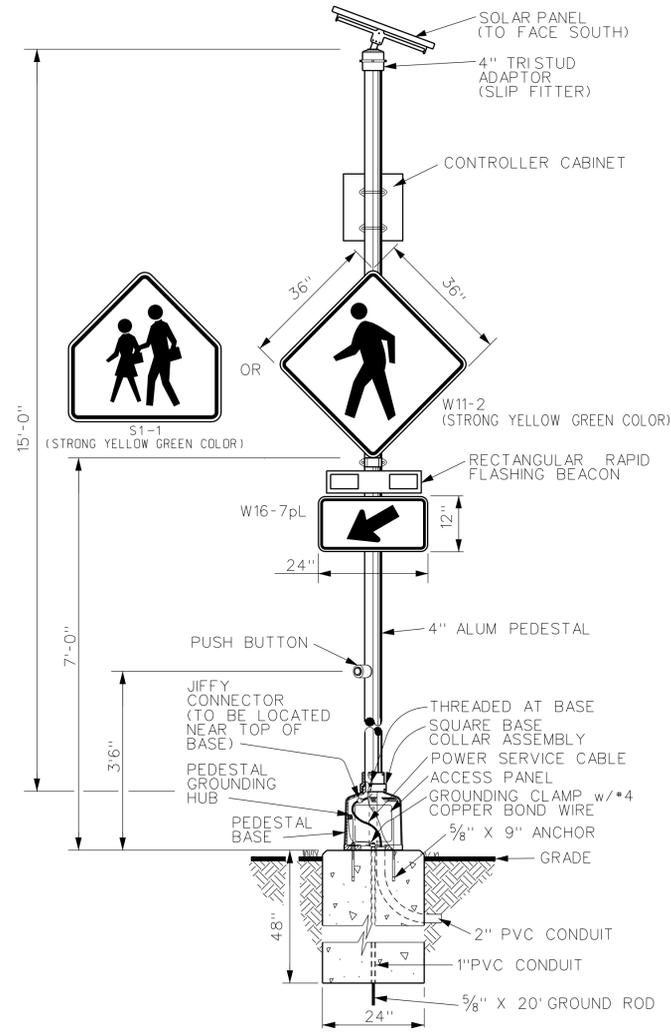
1	5/10/18	UPDATED GROUND ROD DETAILS.	JH	FNU
2	3/13/19	ADDED NOTE 1.	JH	FNU
SIGNATURE		NAME	DATE	SCALE
DRAWN BY		DATE	SCALE	CONTRACT NO.
TRACED BY		DRAWING		T-8
CHECKED BY		SHEET		17 OF 25 SHEETS

**NOTES:**

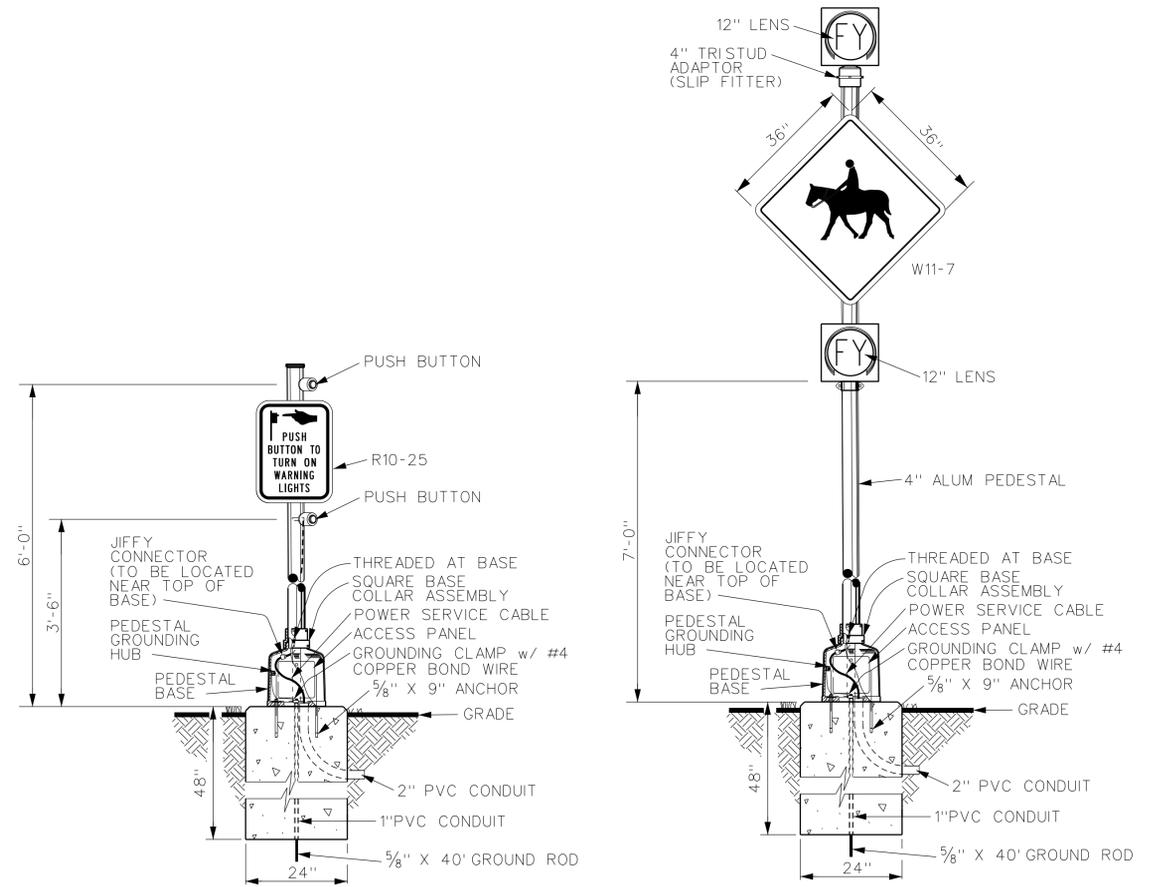
1. FOR GROUND ROD INFORMATION SEE NOTES ON T-6.3.



PED FLASHER DETAIL



RECTANGULAR RAPID FLASHING BEACON DETAIL



EQUESTRIAN CROSSING FLASHER DETAIL

**GENERAL NOTES:**

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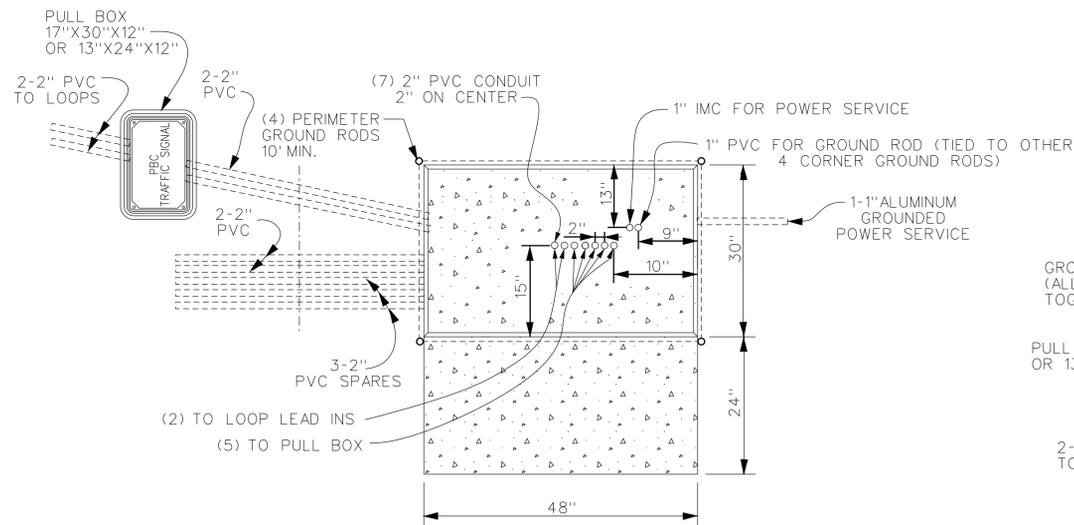
PALM BEACH COUNTY, FLORIDA  
TRAFFIC DIVISION  
SIGNAL TYPICAL

**PED, RECTANGULAR RAPID BEACON, & EQUESTRIAN FLASHER DETAIL**

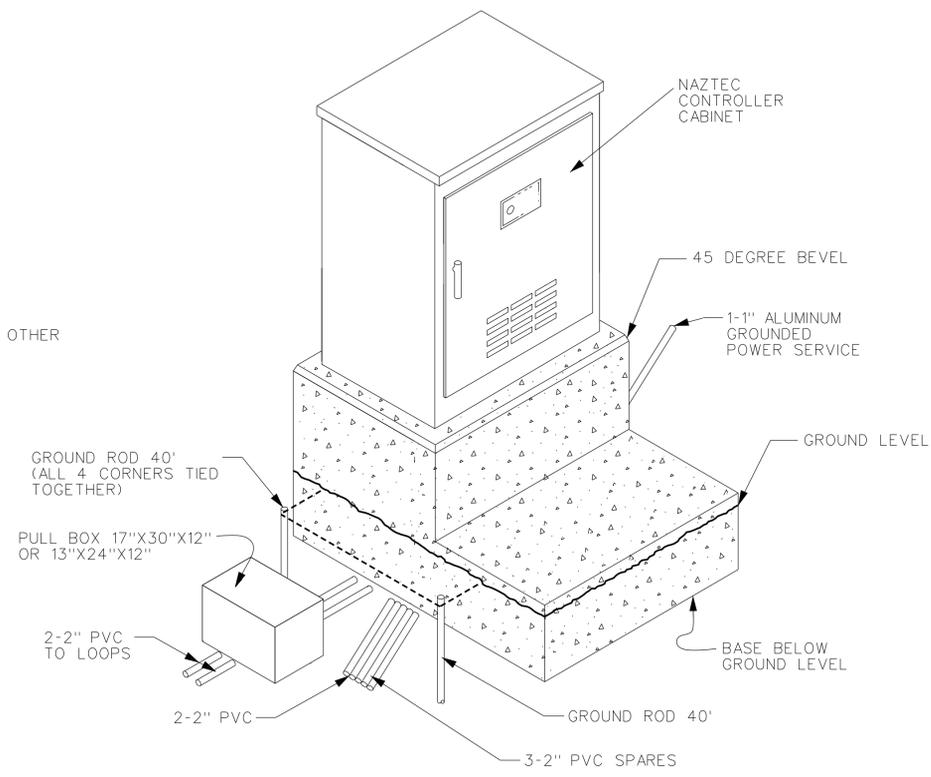
1	5/10/18	NEW SHEET.	JH	FNJ		
2	3/13/19	ADDED RECTANGULAR RAPID FLASHING BEACON DETAIL. ADDED NOTE 1.	JH	FNJ		
3	10/24/19	ADDED NOTE TO SPECIFY "STRONG YELLOW GREEN" FOR SIGNS W11-2 AND S1-1 ON PED FLASHER AND RRFB DETAILS.	JH	FNJ		
NO.	DATE	REVISIONS	BY	APP.		

SIGNATURE	NAME	DATE	SCALE	CONTRACT NO.
<i>Fatih N. Jafar</i>		5/10/18	N. T. S.	
DRAWN BY			DRAWING	T-8.1
TRACED BY				
CHECKED BY				
				SHEET 18 OF 25 SHEETS



PLAN VIEW

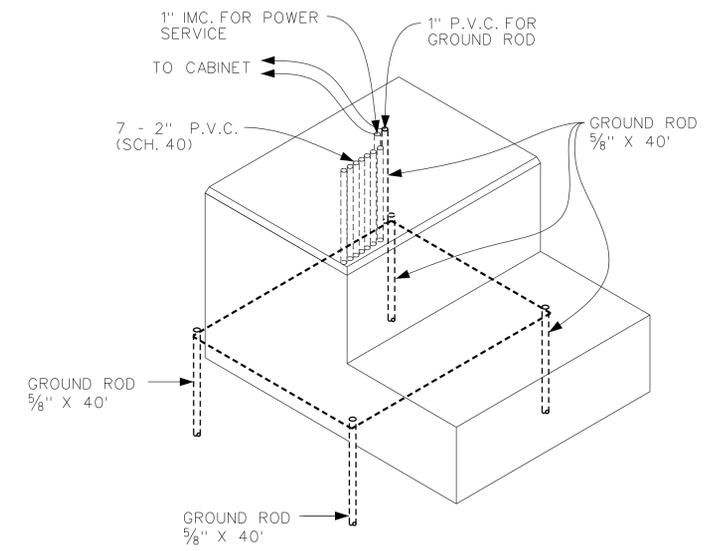


ISOMETRIC VIEW

**NOTES:**

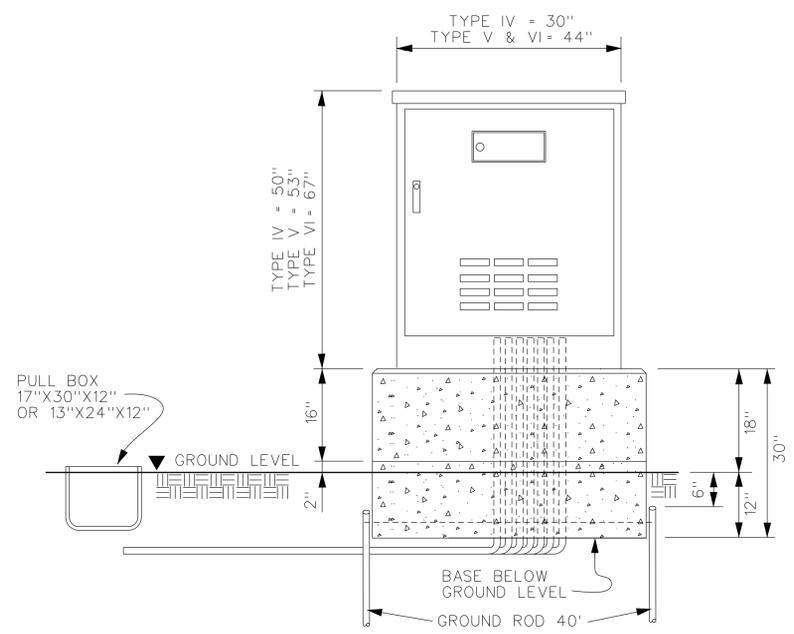
- 2" CONDUIT WILL EXTEND BEYOND THE CONTROLLER BASE IN THE PULL BOX (SIZE 17"X30"X12" OR 13"X24"X12").
- ALL DUCTS SHALL BE SEALED WITH PERGUM OR EQUAL SUBSTANCE.
- USE NAZTEC CONTROLLER ASSEMBLIES:  
A.) TYPE 4 CABINET FOR FIRE-STATION.  
B.) TYPE 6 CABINET FOR AN INTERSECTION OF MAJOR ARTERIAL WITH MAJOR ARTERIAL.  
C.) TYPE 5 CABINET FOR ALL OTHERS.
- BASE SIZES FOR ALL CABINET TYPES IS STANDARD.

**TYPICAL GROUND ROD ARRAY**

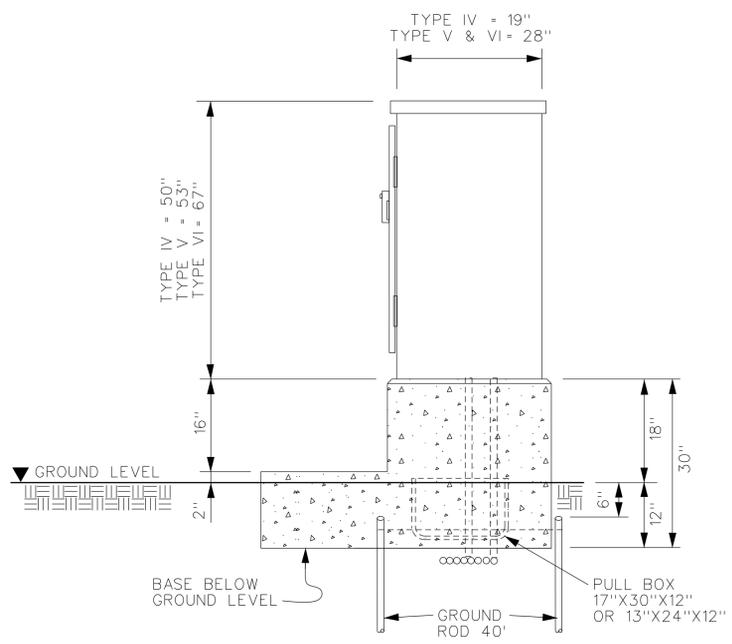


**GROUND ROD NOTES:**

- FOUR (4) PERIMETER GROUND RODS SHALL BE BONDED AND BURIED WITH TOP OF ROD 6" BELOW GROUND LEVEL, 40 FT. LENGTH PER ROD.
- FOR GROUND ROD INFORMATION SEE NOTES ON T-6.3.



FRONT VIEW



RIGHT-SIDE VIEW

**CABINET & FOUNDATION DETAIL**

**GENERAL NOTES:**  
 1. THIS DRAWING IS NOT TO SCALE.  
 2. DESIGN, LAYOUT & DATA ON THIS SHEET ARE FOR ILLUSTRATION PURPOSE ONLY.  
**PALM BEACH COUNTY, FLORIDA**  
**TRAFFIC DIVISION**  
**SIGNAL TYPICAL**

**CABINET & FOUNDATION DETAIL,**  
**TYPICAL GROUND ROD ARRAY**

1	5/10/18	UPDATED GROUND ROD DETAILS. UPDATED PULL BOX LID STAMP.	JH	FNJ	5/1/15	FAIMEH N. JAFAR	ENGINEER OF RECORD
2	3/13/19	ADDED GROUND ROD NOTE 2.	JH	FNJ			
3	11/21/19	REVISED STAMP ON PULL BOX LID.	JH	FNJ			

SIGNATURE	NAME	DATE	SCALE	CONTRACT NO.
<i>Fahmeh N. Jafar</i>			N. T. S.	
DRAWN BY			DRAWING	T-9
TRACED BY				
CHECKED BY				

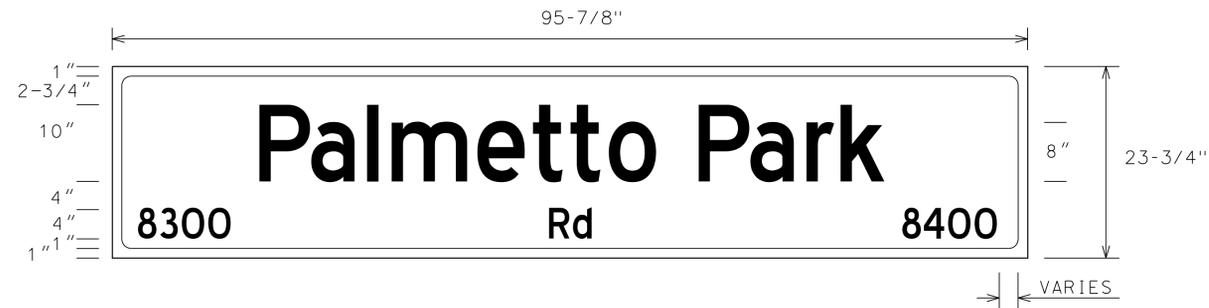
  

NO.	DATE	REVISIONS	BY	APP.

SHEET	19	OF	25	SHEETS
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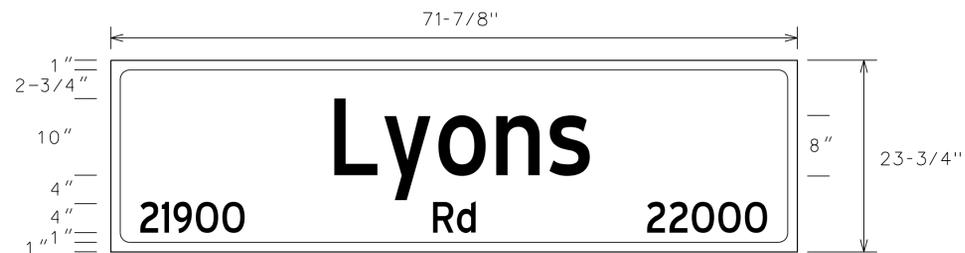
ILLUMINATED STREET NAME SIGN TYPICAL (LONG NAME)



ILLUMINATED STREET NAME SIGN TYPICAL (LONG NAME)  
DIVIDED STREET NAME OR T-INTERSECTION  
ADD BLOCK NUMBER ON THE SAME SIDE AS INTERSECTING STREET



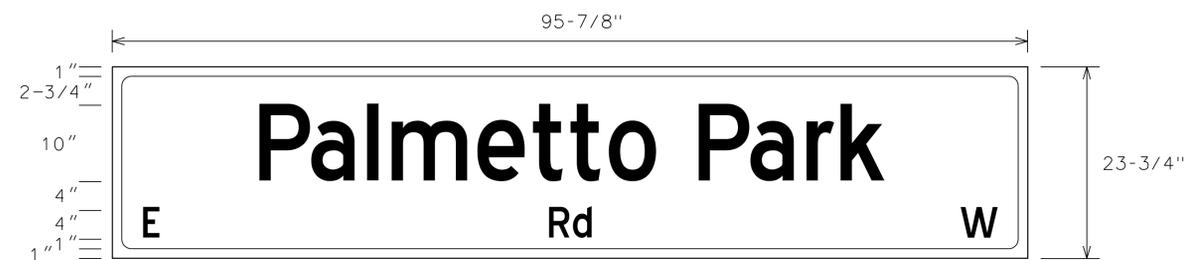
ILLUMINATED STREET NAME SIGN TYPICAL (SHORT NAME)



ILLUMINATED STREET NAME SIGN TYPICAL (SHORT NAME)  
DIVIDED STREET NAME OR T-INTERSECTION  
ADD BLOCK NUMBER ON THE SAME SIDE AS INTERSECTING STREET



ILLUMINATED STREET NAME SIGN TYPICAL (LONG NAME)  
AT EAST / WEST AND NORTH / SOUTH DIVIDING STREETS  
ALT. DISPLAY: USE E, W, N OR S TO INDICATE DIRECTION WHEN BLOCK NUMBERS NOT APPLICABLE



ILLUMINATED STREET NAME SIGN TYPICAL (SHORT NAME)  
ALT. DISPLAY: DIRECTIONAL ARROW FOR DIVIDED STREET NAME OR T-INTERSECTION  
WHEN BLOCK NUMBERS NOT APPLICABLE



NOTES:

- 1.) USE UPPERCASE AND LOWERCASE "STANDARD HIGHWAY ALPHABET SERIES" FONT.
- 2.) 10" STANDARD FONT SIZE (ADJUST AS NEEDED).
- 3.) ILLUMINATED STREET NAME SIGNS TO BE INSTALLED WITH ALL MAST ARM INSTALLATIONS.
- 4.) ILLUMINATED STREET NAME SIGNS TO BE DOUBLE SIDED FREE SWINGING.
- 5.) EACH SIGN SHALL HAVE A SEPERATE CABLE BACK TO THE BREAKER.
- 6.) EACH SIGN SHALL HAVE A SEPERATE PHOTOCCELL.

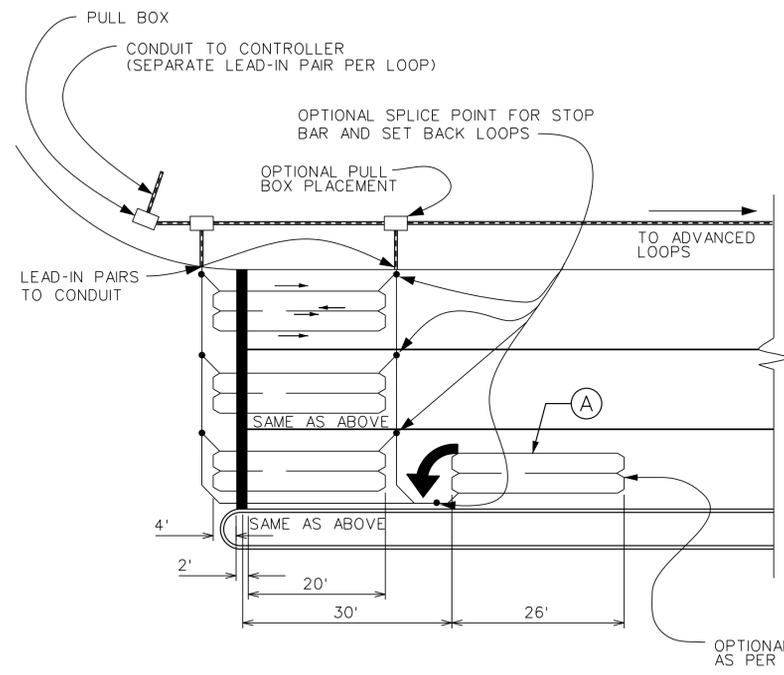
GENERAL NOTES:

1. THIS DRAWING IS NOT TO SCALE.
2. DESIGN, LAYOUT & DATA ON THIS SHEET ARE FOR ILLUSTRATION PURPOSE ONLY.

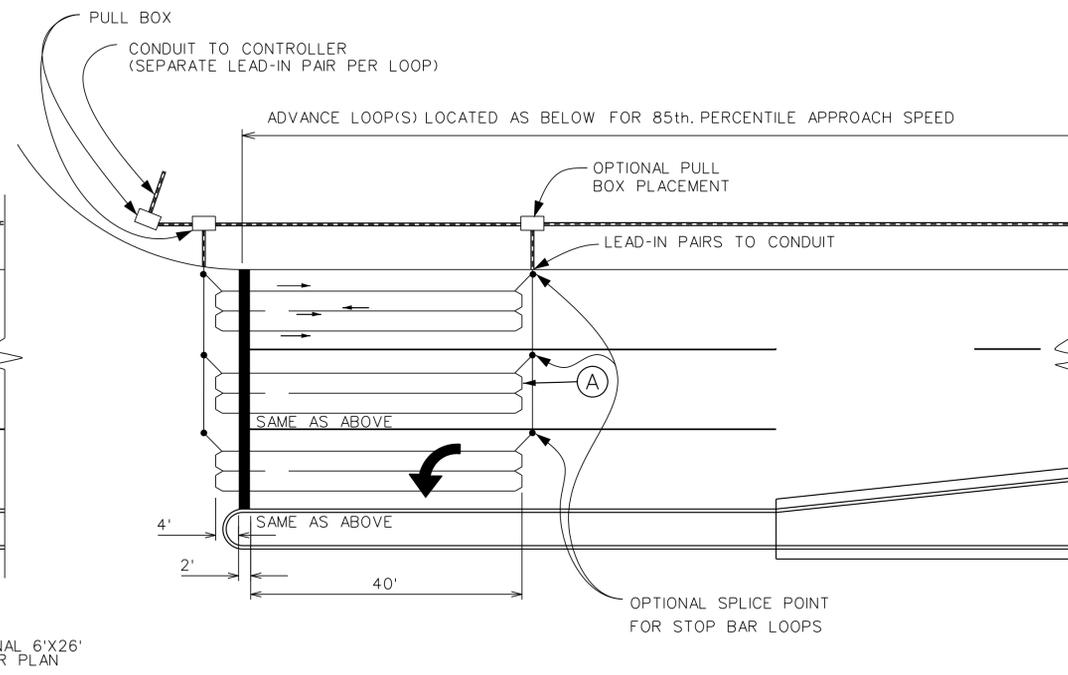
PALM BEACH COUNTY, FLORIDA  
TRAFFIC DIVISION  
SIGNAL TYPICAL

ILLUMINATED STREET NAME SIGN DETAIL

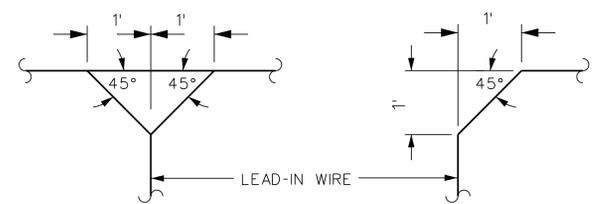
1	5/10/18	ADDED NOTES 5 AND 6.	JH	FNJ
SIGNATURE		DATE		ENGINEER OF RECORD
DRAWN BY		SCALE		CONTRACT NO.
TRACED BY		DRAWING		T-10
CHECKED BY		SHEET		20 OF 25 SHEETS



TYPICAL 26' AND 46' STOP BAR LOOP LOCATION

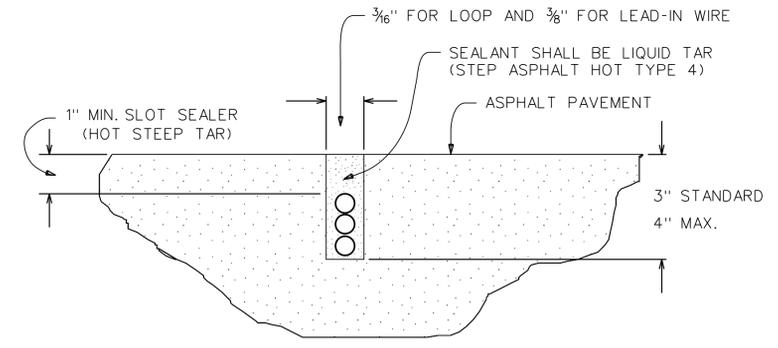


TYPICAL ADVANCE LOOP LOCATION - PER PLAN

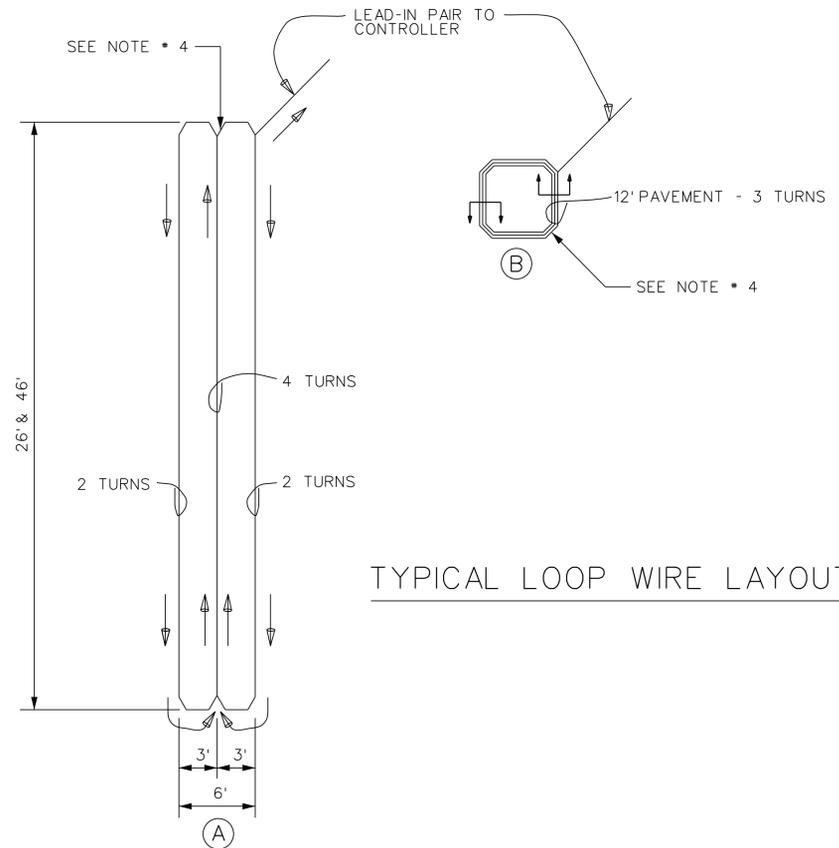


LOOP CHAMFER DETAIL

- NOTES:
1. LOOP WIRE 14 AWG XHHW WITH STRANDED CROSS-LINKED POLYETHYLENE INSULATION 600 VOLTS N.E.C. STD. (WHITNEY BLAKE TYPE 632- 0801).
  2. LEAD-IN WIRE SHALL BE BELDEN 16/2C, 16 AWG; MUST BE TINNED COPPER, POLYETHYLENE INSULATED, TWISTED PAIR, BELDFOIL ALUMINUM POLESTER SHIELD.
  3. LOOP "A" REPRESENTS TYPE F PER FDOT INDEX 17781.
  4. SEE DETAIL T-11.1 FOR LOOP LEAD-IN SPLICE.
  5. ALL LOOP CORNERS SHALL BE CHAMFERED BY 1 FOOT AT 45 DEGREES.
  6. THE DEPTH OF ALL SAW CUTS, EXCEPT ACROSS EXPANSION JOINTS, SHALL BE 3" STANDARD WITH A MAXIMUM OF 4".
  7. ALL LOOPS ARE CONNECTED TO CONTROLLER WITH CONDUITS CONNECTING PULL BOXES AT EACH CORNER.



LOOPS AND LEAD-IN HOMERUN WIRES DETAIL



TYPICAL LOOP WIRE LAYOUT

ADVANCE LOOP LOCATION

85th. PERCENTILE SPEED	ADVANCE LOOP(S) BACK EDGE (FROM STOP BAR)
+30	225 FEET
+35	255 FEET
+40	285 FEET
+45	355 FEET AND 255 FEET
+50	385 FEET AND 255 FEET
+55	435 FEET AND 255 FEET
	OR AS NOTED ON PLAN

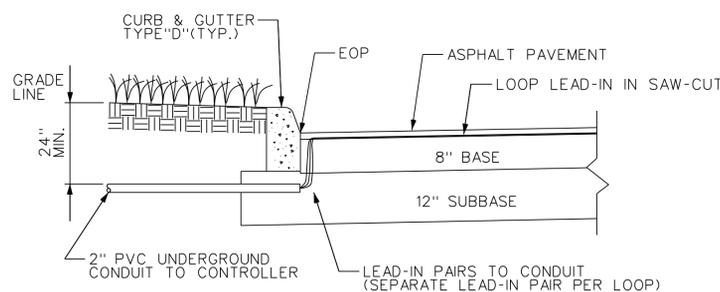
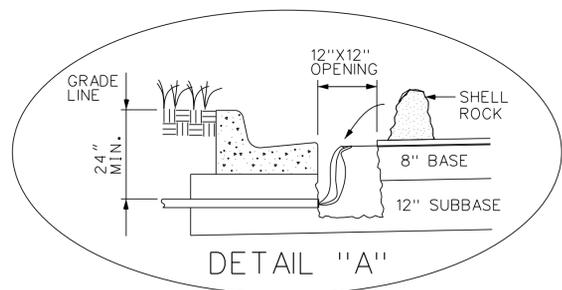
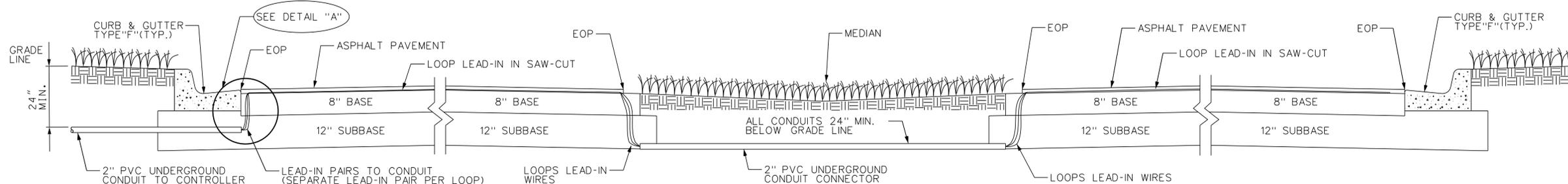
USE ADVANCE LOOPS FOR RURAL AREAS ON ROADS WITH SPEED LIMIT OF 55 MPH OR HIGHER, UNLESS OTHERWISE SPECIFIED BY COUNTY ENGINEER.

GENERAL NOTES:  
 1. THIS DRAWING IS NOT TO SCALE.  
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 PALM BEACH COUNTY, FLORIDA  
 TRAFFIC DIVISION  
 SIGNAL TYPICAL

STOP BAR LOOPS AND ADVANCE LOOPS

SIGNATURE	NAME	DATE	SCALE	CONTRACT NO.
<i>Fatmeh N. Jafar</i>		5/1/15	N. T. S.	
DRAWN BY			DRAWING	T-11
TRACED BY				
CHECKED BY				
SHEET	21	OF	25	SHEETS

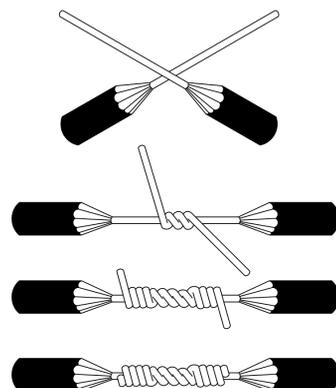
NO.	DATE	REVISIONS	BY	APP.



**LOOP LEAD-IN  
INSTALLATION DETAIL**

**NOTES:**

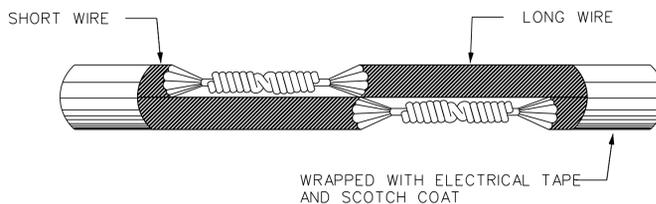
1. LOOP LEAD-IN CABLE SHALL BE 16 AWG SHIELDED TWISTED STRANDED, TINNED COPPER. IT SHALL BE CAROL-PART #C2553,41.01. OR EQUIVALENT.
2. LOOP WIRE SHALL BE 14 AWG XHHW STRANDED COPPER.



**WESTERN UNION SPLICE \* \***

USE WESTERN UNION SPLICE METHOD FOR SPLICING AS DESCRIBED BELOW.

- STEP 1:  
PREPARE THE WIRES FOR SPLICING. ENOUGH INSULATION IS REMOVED TO MAKE THE SPLICE. THE CONDUCTOR IS CLEANED.
- STEP 2:  
BRING THE WIRES TO A CROSSED POSITION AND MAKE A LONG TWIST OR BEND IN EACH WIRE.
- STEP 3:  
WRAP ONE END OF THE WIRE AND THEN THE OTHER END FOUR OR FIVE TIMES AROUND THE STRAIGHT PORTION OF EACH WIRE.
- STEP 4:  
PRESS THE ENDS OF THE WIRES DOWN AS CLOSE AS POSSIBLE TO THE STRAIGHT PORTION OF THE WIRE. THIS PREVENTS THE SHARP ENDS FROM PUNCTURING THE TAPE COVERING THAT IS WRAPPED OVER THE SPLICE.
- STEP 5:  
SOLDER CONNECTION WITH NEW 60/40 ROSIN CORE SOLDER.

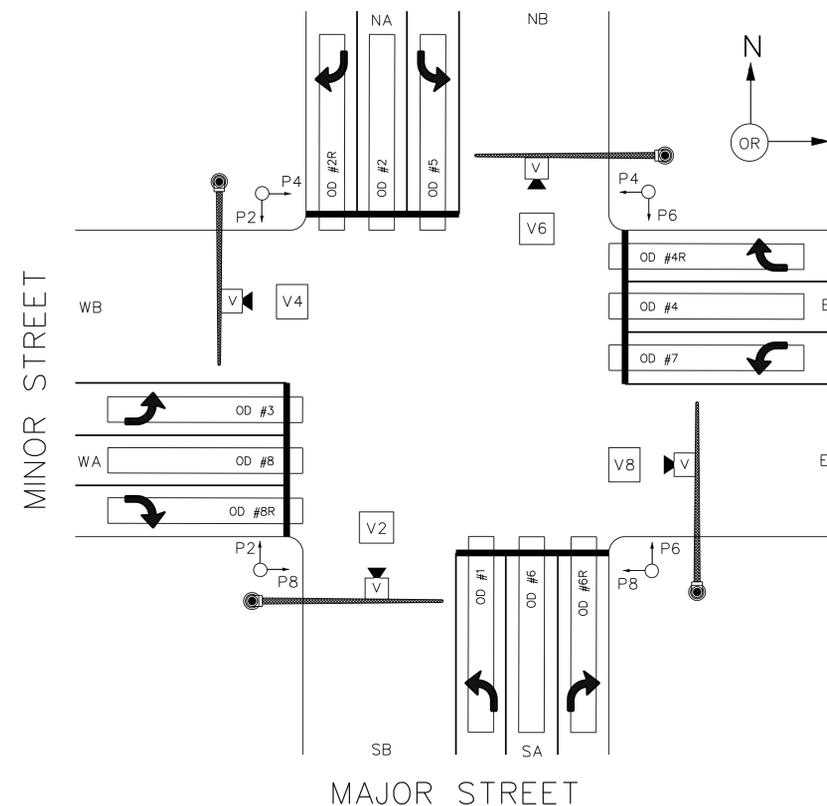


**STAGGERING SPLICES \* \***

JOINING SMALL MULTICONDUCTOR CABLES OFTEN PRESENTS A PROBLEM. EACH CONDUCTOR MUST BE SPLICED AND TAPED. IF THE SPLICES ARE DIRECTLY OPPOSITE EACH OTHER, THE OVERALL SIZE OF THE JOINT BECOMES LARGE AND BULKY. A SMOOTHER AND LESS BULKY JOINT CAN BE MADE BY STAGGERING THE SPLICES.

FIGURE ABOVE SHOWS HOW A TWO-CONDUCTOR CABLE IS JOINED TO A SIMILAR SIZE CABLE BY USING A WESTERN UNION SPLICE AND BY STAGGERING THE SPLICES. CARE SHOULD BE TAKEN TO ENSURE THAT A SHORT WIRE FROM ONE SIDE OF THE CABLE IS SPLICED TO A LONG WIRE, FROM THE OTHER SIDE OF THE CABLE. THE SHARP ENDS ARE THEN CLAMPED FIRMLY DOWN ON THE CONDUCTOR. THE FIGURE SHOWS A WESTERN UNION SPLICE, BUT THE OTHER TYPES OF SPLICES WORK JUST AS WELL.

\* \* WESTERN UNION SPLICE AND STAGGERING SPLICE DETAILS ADAPTED FROM ELECTRICAL ENGINEERING TRAINING SERIES. WEB SITE: [HTTP://TPUB.COM/NEETS/](http://TPUB.COM/NEETS/) (JAN. 2010)



OD # = OPTICAL DETECTION ZONE  
(SIZE EQUIVALENT TO SIZE OF LOOPS. SIZE MAY VARY AS PER PLAN.)

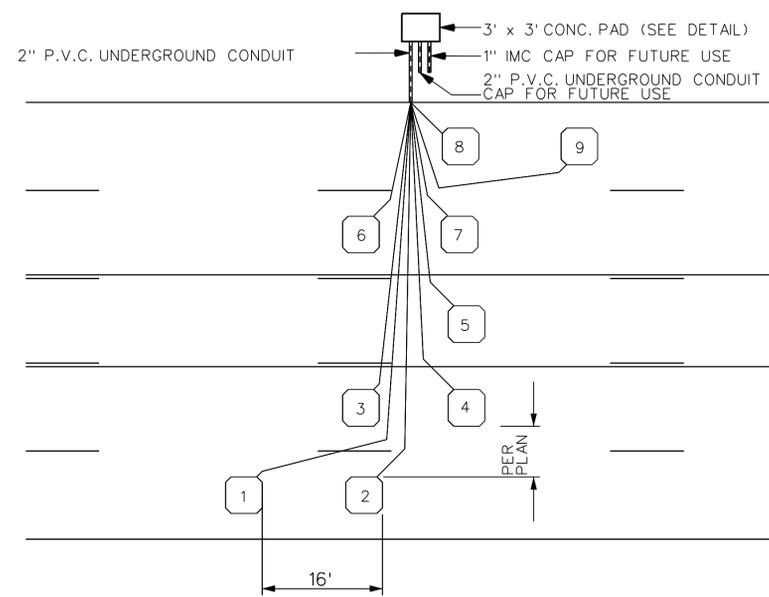
**VIDEO DETECTION ZONE DETAIL**

- GENERAL NOTES:**
1. THIS DRAWING IS NOT TO SCALE.
  2. DESIGN, LAYOUT & DATA ON THIS SHEET ARE FOR ILLUSTRATION PURPOSE ONLY.
- PALM BEACH COUNTY, FLORIDA  
TRAFFIC DIVISION  
SIGNAL TYPICAL  
INDUCTANCE LOOP DETECTOR  
SPLICING DETAIL, LOOP LEAD-IN DETAIL  
VIDEO DETECTION ZONE DETAIL

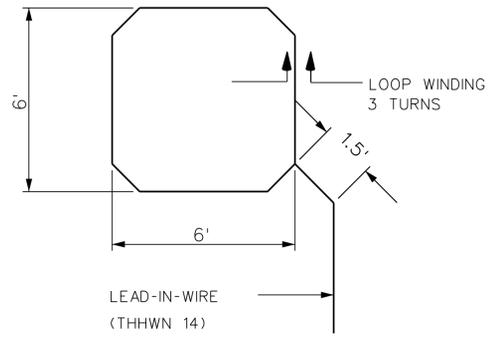
SIGNATURE	NAME	DATE	SCALE	CONTRACT NO.
<i>Fateme N. Jafar</i>		5/1/15	N. T. S.	
ENGINEER OF RECORD			DRAWING	
			T-11.1	
SHEET 22			OF 25 SHEETS	

NO.	DATE	REVISIONS	BY	APP.

### 5 - LANE ROADWAY SECTION

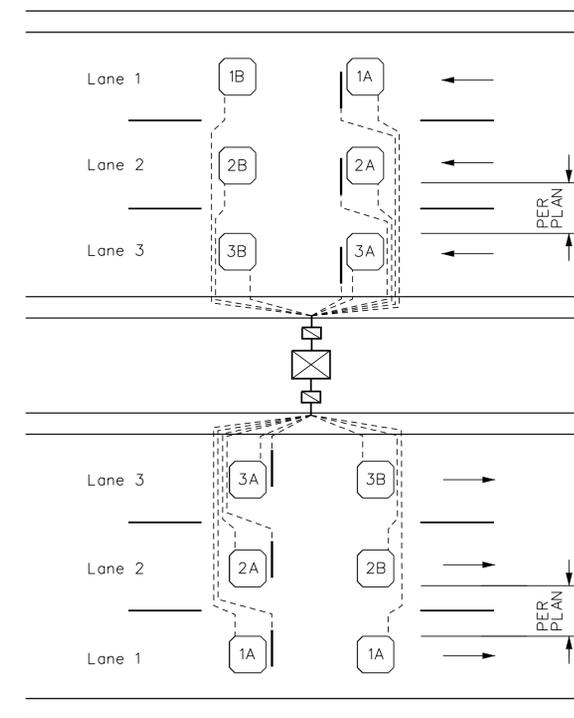


### 6'X6' LOOP DETAIL

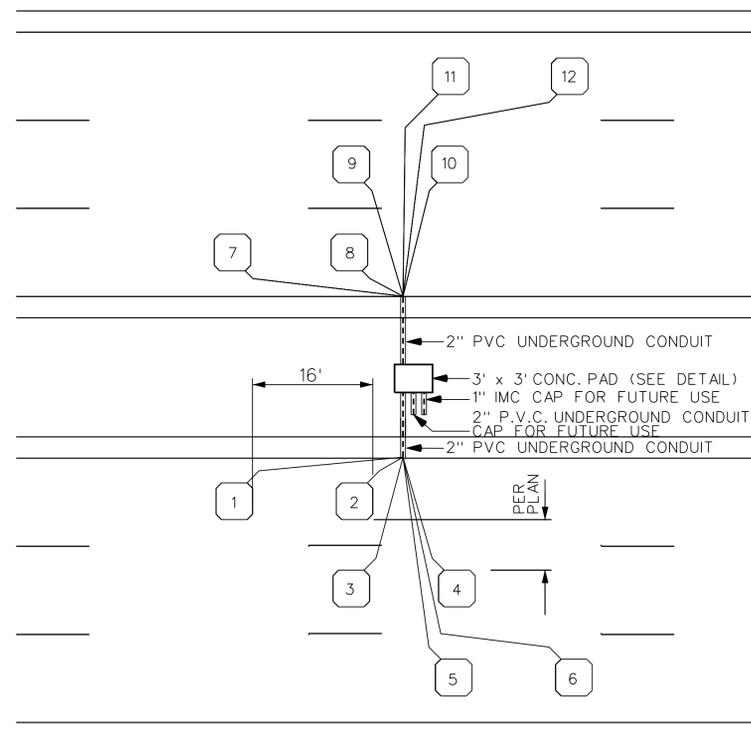


#### DESIGN NOTES:

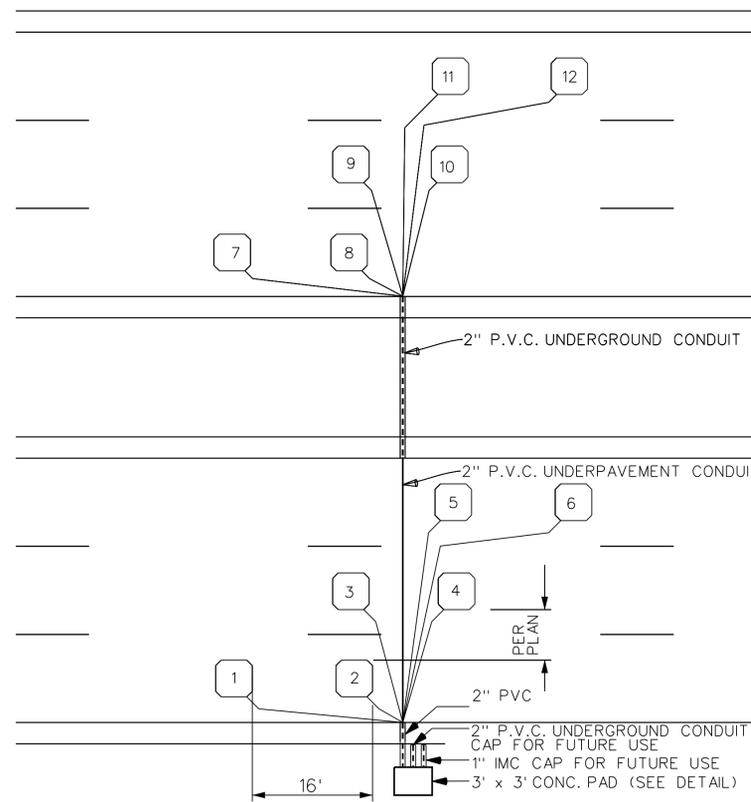
1. ALL LOOPS ARE TO BE 6' X 6', WIRE = THHN 14, THREE TURNS. (LOOP SIZE MAY VARY AS PER PLAN.)
2. LEAD-IN SHALL EXTEND 18" AT A 45° ANGLE
3. SPACE LOOPS 16' (LEADING EDGE TO LEADING EDGE) APART.
4. POSITION LOOPS TO BE IN CENTER OF LANE.
5. LOOP LEAD-INS ARE TO BE LABELED AS TO LANE & DIRECTION.
6. EXACT LOCATION OF CONCRETE PAD & BOX TO BE DETERMINED BY THE TRAFFIC DIVISION OR AS PLAN.
7. CABINET TO BE PROVIDED BY THE TRAFFIC DIVISION UNLESS OTHERWISE INDICATED.
8. ONE 2" PVC SCH. 40 AND ONE 1" IMC CONDUIT STUBED-OUT AND CAPPED ARE FOR FUTURE USE.
9. AS PER FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION 2015 EDITION SECTION 660, INDUCTIVE LOOPS AND DESIGN STANDARD OF 2015. SHEET NO. 1 TO 7. INDEX NO. 17900.



### DIVIDED ROADWAY SECTION



### DIVIDED ROADWAY SECTION



### SIX LANE, DIVIDED - TWO WAY

#### GENERAL NOTES:

1. THIS DRAWING IS NOT TO SCALE.
2. DESIGN, LAYOUT & DATA ON THIS SHEET ARE FOR ILLUSTRATION PURPOSE ONLY.

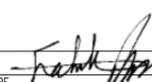
PALM BEACH COUNTY, FLORIDA  
TRAFFIC DIVISION  
SIGNAL TYPICAL

PERMANENT COUNT STATION  
LOOP DETAIL

SIGNATURE	NAME	DATE	SCALE	CONTRACT NO.
<i>Fatih N. Jafar</i>		5/1/15	N.T.S.	
ENGINEER OF RECORD			FAIMEH N. JAFAR	
DRAWN BY			DRAWING	
TRACED BY			T-12	
CHECKED BY			SHEET 23 OF 25 SHEETS	

NO.	DATE	REVISIONS	BY	APP.

THIS SHEET IS INTENTIONALLY LEFT BLANK

PALM BEACH COUNTY, FLORIDA				
TRAFFIC DIVISION				
SIGNAL TYPICAL				
BLANK				
SIGNATURE 		5/1/15	FAIMEH N. JAFAR	
NAME		DATE	SCALE	ENGINEER OF RECORD
DRAWN BY			N. T. S.	CONTRACT NO.
TRACED BY			DRAWING	T-13
CHECKED BY			SHEET	24 OF 25 SHEETS

NO.	DATE	REVISIONS	BY	APP.

**WARNING**  
BURIED  
SIGNAL  
CABLE  
  
BEFORE DIGGING  
IN THIS AREA  
CALL  
P B COUNTY  
TRAFFIC DIV.  
561 233-3900

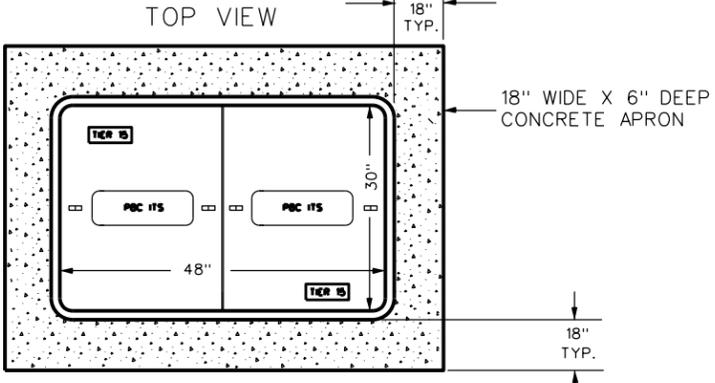
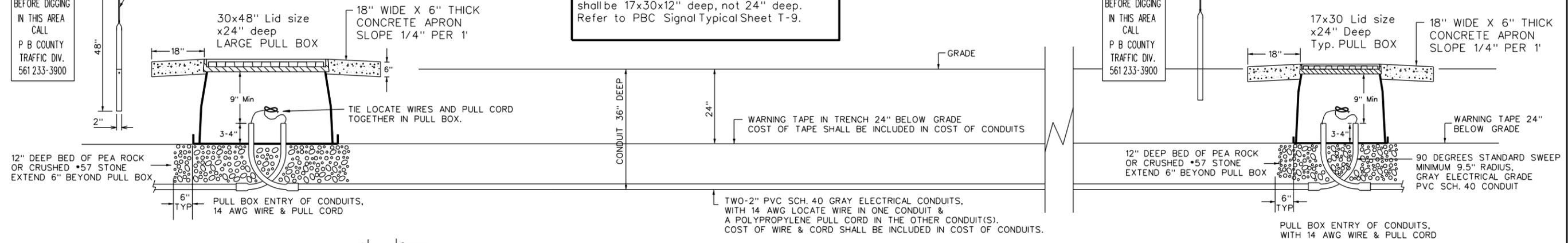
INSTALL ROUTE MARKER AT EVERY OTHER PULL BOX WHERE PULL BOXES ARE IN TURF AREAS AND ON BOTH SIDES OF CANAL CROSSING. DO NOT INSTALL MARKERS IF THE PULL BOXES ARE IN OR NEXT TO SIDEWALK. COST OF ROUTE MARKER SHALL BE INCLUDED IN COST OF CONDUITS.

Store 200' of slack Fiber Optic Cable in 30x48x24" large pullboxes, store 20' in 17x30x24" pullboxe, and store 200' on each side of a FO splice enclosure.

NOTE: SIGNAL pullboxes (for signal cables) shall be 17x30x12" deep, not 24" deep. Refer to PBC Signal Typical Sheet T-9.

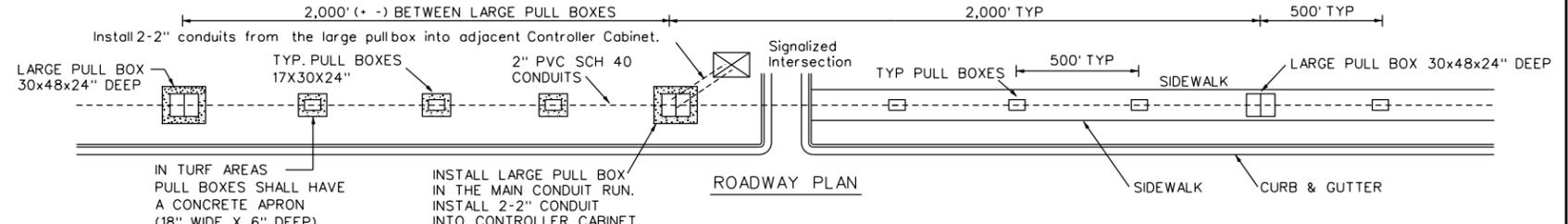
LABELS ARE SUPPLIED BY PALM BEACH COUNTY TRAFFIC. FOR LABELS CALL: 561-681-4326 (SEE NOTE NO. 6)

**WARNING**  
BURIED  
SIGNAL  
CABLE  
  
BEFORE DIGGING  
IN THIS AREA  
CALL  
P B COUNTY  
TRAFFIC DIV.  
561 233-3900



PULL BOX MATERIAL: FIBERGLASS REINFORCED POLYMER CONCRETE  
LOAD SPECIFICATION: MINIMUM TIER 15 (20K-22K) EXCEPT IN ROADWAY USE AASHTO H-20  
LID STAMPED: "PBC ITS". LID TYPE: TWO PANEL WITH TWO PULL SLOTS EACH

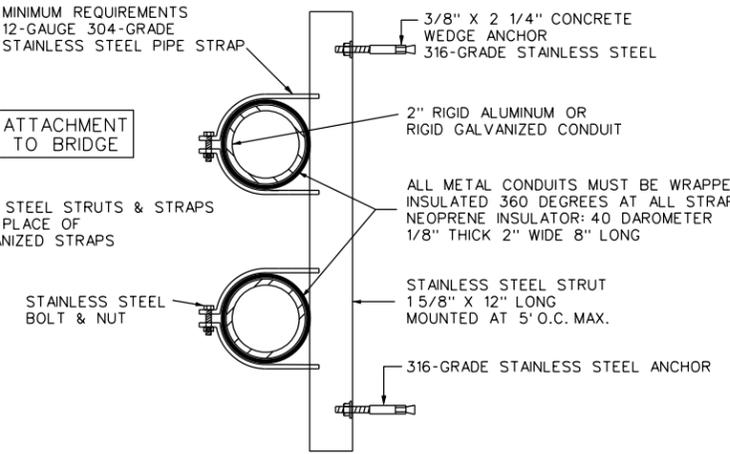
INSTALL A TYPICAL PULL BOXES (17X30X24" DEEP) EVERY 500' (+/-). INSTALL A LARGE PULL BOX (30X48X24" DEEP) EVERY 2000' (+/-) AND AT EACH SIGNALIZED INTERSECTION, OR AS SHOWN ON THE PLANS. WHERE A LARGE PULL BOX IS INSTALLED, IT TAKES THE PLACE OF THE TYPICAL PULL BOX.



MINIMUM REQUIREMENTS  
12-GAUGE 304-GRADE  
STAINLESS STEEL PIPE STRAP

ATTACHMENT  
TO BRIDGE

NOTE: STAINLESS STEEL STRUTS & STRAPS  
MAY BE USED IN PLACE OF  
TWO HOLE GALVANIZED STRAPS



**NOTES:**

- Typical (T-14) for applications not covered in this typical the contractor shall refer to the FDOT Standards Specifications 630 for Road and Bridge Construction.
- Pull Boxes and Lids in sidewalks and turf areas shall be a minimum TIER 15 (20K-22K). In vehicular traffic areas (in the roadway) pull boxes shall be AASHTO H-20. Pull Box Lid shall be stamped "PBC ITS". Large Pull Box Lids (30x48") shall have two panels with two pulling slots in each panel.
- Underground Conduits and Sweeps shall be gray-electrical grade 2" PVC SCH 40 or HDPE SDR 11. Install conduits 36" below grade. Ends of conduit shall be sealed with water resistance duct seal.
- One run of conduit between pull boxes shall not contain more than four 90 degree bends (360 degrees) including pull box bends.
- Signalized Intersections, install two-2" PVC SCH. 40 conduits from the large pull box into the traffic controller cabinet.
- Locate Wire, install a 14 AWG insulated THWN strand copper wire (locate wire) in one conduit and a polypropylene pull cord in the other conduit(s). The locate wire, pull cord, warning tape, and guide post shall be included in the cost of the conduits.
- Concrete Apron, all pull boxes shall be provided with concrete aprons when not located within sidewalk. Aprons shall be 18" wide x 6" thick sloped 1/4" per 1' away from pull box. Apron shall be Min. 2,500 PSI non structural Class I concrete. The cost of the apron is to be included in the cost to furnish and install pull box.
- Pedestrian Ramp, pull box shall not be placed in a pedestrian ramp or sloped area of a pedestrian ramp.
- Conduits in Pull Box, there shall be 9" minimum from the top of the conduit sweep (bend) to the pull box lid.
- Bridge Attachment, when attaching conduits to bridge, wrap neoprene (rubber) gasket completely around galvanized or aluminum IMC conduit at each pipe strap to insulate conduit from pipe strap. Size of neoprene (rubber) insulator: 1/8" thick x 2" wide x 8" long.
- Warning Tape: 3" wide, 6 mil thick, intended for burial and use as an underground utility warning notice, marked 'CAUTION BURIED FIBER OPTIC'. Tape shall be orange with black 2" high block letters on non color fading material. The marking tape shall be buried 24" below grade in the conduit trench from pull box to pull box. Cost included in cost of conduits.
- Warning Labels, Palm Beach County Traffic Engineering, 2300 N Jog Rd, Tel.: 561-681-4326 will supply the Contractor with two warning label for each route marker.
- PBC Engineer may request two or more 2" conduits as needed.

NO.	DATE	REVISIONS	BY	APP.
1	8-21-09	Changed pullbox for fiber optic cable from 12" deep to 24" deep.	H.E.R.	
2	11-2-09	Changed Bridge Attachment from 1-Hole 'C' Strap to 2-Hole Strap.	H.E.R.	
3	11-27-12	Revised Bridge Attachment Per PBC R & B Minimum Requirements.	H.E.R.	
4	10-25-13	Remove wire mesh for apron, Change PSI to 2500 non structural class I.	H.E.R.	
5	3-27-15	Locate wire, pull cord, warning tape, & guide post included in cost of cond.	H.E.R.	
6	12-15-15	All ITS Fiber Optic Pull Box Lids shall be stamped TRAFFIC ITS.	H.E.R.	
7	9-28-16	Pull Box in sidewalk or turf TIER 15 (20K-22K) in roadway-AASHTO H-20.	H.E.R.	
8	8-3-17	Changed Warning Tape from 12" to 24" below grade.	H.E.R.	
9	12-10-18	Store 200' Slack FO Cable on each side of a FO splice enclosure.	H.E.R.	
10	12-10-18	There shall be 9" minimum from top of conduit sweep to pull box lid.	H.E.R.	

**PALM BEACH COUNTY, FLORIDA  
TRAFFIC DIVISION**

UNDERGROUND/UNDER PAVEMENT ITS TRAFFIC FACILITIES

TYPICAL: TWO CONDUITS WITH PULL BOXES,  
ROUTE MARKERS, WARNING TAPE,  
LOCATE WIRE & PULL CORD

SIGNATURE		DATE		GIRI JEEDIGUNTA	
DRAWN BY		SCALE		CONTRACT NO.	
CHECKED BY		SHEET		T-14	
		14		OF 14 SHEETS	