



DATED: APRIL 2014

TO THE  
FLORIDA DEPARTMENT OF TRANSPORTATION  
STANDARD SPECIFICATIONS  
FOR  
ROAD AND BRIDGE  
CONSTRUCTION  
AND  
STATE OF FLOIDA  
DEPARTMENT OF TRANSPORTATION  
DESIGN STANDARDS

## INDEX OF TECHNICAL SPECIAL PROVISIONS

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<i>REVISIONS</i>						 <p>Collier County Traffic Operations 2885 South Horseshoe Drive Naples, Florida 34104</p> <p>Phone: (239) 252-8260 Fax: (239) 252-6685</p>	<p><b>COLLIER COUNTY</b></p> <p><b>DEPARTMENT OF TRANSPORTATION</b></p>	<p><b><u>INDEX OF TECHNICAL</u></b></p> <p><b><u>SPECIAL PROVISIONS</u></b></p>	SHEET NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION				TSP-L

COLLIER COUNTY TRAFFIC OPERATIONS  
SIGNALIZATION  
"TECHNICAL SPECIAL PROVISIONS"  
DATED: APRIL 2014

All work associated with the installation of a traffic signal shall conform to current Florida Department of Transportation (FDOT), National Electrical Codes (NEC) and this supplement. It is the intent of this supplement to detail installation requirements dictated by the County, which exceed standard FDOT and NEC requirements. It is the Contractor's responsibility to note these extended specifications, and to adhere to the methods and requirements mandated in this document.

GENERAL INSTALLATION AND MAINTENANCE REQUIREMENTS  
WORKMANSHIP:

All work is to be performed in a workmanlike manner. It is the Contractor's responsibility to provide the labor, skilled in the appropriate areas, necessary to provide an acceptable and professional finished product. The Contractor and his personnel shall have, at all times, all the necessary paperwork needed to complete the job. It is expected that plumb surfaces shall be plumb. Spacing of multiple components, such as conduit stubs or straps, shall be in equal increments. All materials shall be new or in like-new condition.

All pole assemblies, pedestrian poles, and supplemental signal poles shall be leveled to the satisfaction of the Collier County Signal Inspector.

The Collier County Signal Inspector assigned to the project shall have the authority to make final determinations on whether workmanship, materials, and/or final product(s) meet the specifications contained herein.

### QUALIFICATIONS OF SIGNAL CONTRACTOR PERSONNEL

The Contractor who is engaged in installing or maintaining traffic signals within Collier County shall have all work performed under the supervision of a traffic signal technician certified by the International Municipal Signal Organization (I.M.S.A.) as a Level II, Traffic Signal Technician. All cabinet-related work shall be performed by an International Municipal Signal Association (IMSA) Level II Technician, certified in traffic signals. This certification shall be presented at the pre-construction conference or upon request.

A local permanent telephone number where trouble-calls can be received on a 24-hour basis shall be provided by the Contractor.

Licensed Electricians shall supervise all electrical type work.

During all working hours, the Contractor shall have a responsible, English-speaking superintendent on the project with the capabilities and authority required by FDOT Specifications, Section 5-8.

## RESPONSIBILITIES OF SIGNAL CONTRACTOR PERSONNEL

Collier County Traffic Operations Department Inspection Staff shall be notified in writing either via form letter (To: Collier County Traffic Operations, At: 2885 Horseshoe Drive South, Naples FL 34104) or e-mail (TrafficOps@colliergov.net) a minimum of 72 Hours prior to the commencement of jobs that include overhead or underground work that will be conducted as part of construction or maintenance projects within Collier County or State road rights-of-way within Collier County.

Collier County Traffic Operations Department Inspection Staff shall also be notified either via form letter or e-mail a minimum of 12 Hours prior to any and all daily work to be performed throughout the entire length of construction or maintenance projects. Any changes that necessitate the rescheduling of work that has been previously scheduled shall be provided in writing via e-mail no later than the morning that it was to be performed.

Collier County Traffic Operation Department Inspection Staff has the full authority to shut down any and all overhead or underground work that has failed to comply with the aforementioned requisites.

Collier County reserves the right to redirect the termination point(s) of any or all conduit(s) from what is shown on the plans. If the quantity of materials is increased, the Contractor shall be compensated according to the per unit price of this change.

The Contractor shall submit cut sheets on all materials proposed for the installation of a traffic signal. The material submittal will be reviewed by Collier County for conformance and returned to the Contractor within five business days.

Whenever a new traffic control device is to be installed at a location where no device exists, the installing Contractor (from the time of activation of the device) will assume the full responsibility of maintenance of said device until such time as a final inspection is completed by the County and the installation accepted.

Whenever a new traffic control device is to be installed at a location where there is an existing device, the Contractor shall assume the full responsibility of maintenance of the existing device on the commence work date of the contract. The Contractor shall be responsible for continuous maintenance of the existing device until such time as the new device is activated, inspected by the County, and accepted. For new traffic signals, conditional acceptance and inspection will be scheduled with Collier County Traffic Operations, (239) 774-8260, before the signal is placed in the normal operational mode. Notification is also required before placing the signal in the flashing mode.

When a signal malfunction occurs, the Contractor shall respond within two hours of notification and repair the traffic signal so that it is operating in a safe manner. The Contractor shall be responsible for the permanent repair, and shall notify the County of the completion of the repairs within 24 hours. If the Contractor fails to respond within two hours, the County reserves the right to either repair the malfunction or employ alternate personnel and charge all costs incurred by Collier County to the Contractor. Authorized Collier County personnel may, at any time, enter the controller cabinet in order to restore any and all signal equipment to proper operation, if the malfunction or non-function of such equipment poses a hazard or inconvenience to motorists or pedestrians. Such authorized entry may occur at any time within the period of the contract, and such authorized entry shall in no way relieve the Contractor or manufacturer of his respective warranties.

The Contractor shall be responsible for coordinating with all utilities having overhead or underground facilities in close proximity or possible conflict with the Contractor's excavations and underground cable installation. The Contractor shall notify all utility companies and maintaining agencies forty-eight (48) hours in advance of commencing work. Hand-digging will be required in all areas where the utilities stake or locate a possible conflict, or where hand-digging is specified on the plans. The exact location of utilities shall be determined by the Contractor when necessary, during construction.

Traffic shall be maintained in accordance with the "Manual on Uniform Traffic Control Devices" and "Roadway and Traffic Design Standards" and as designated in the plans. Existing signalization shall remain in place to the extent possible and shall be used for Maintenance of Traffic as required. Except as approved by the County, there will be no lane closures or signal shutdowns during the following periods:

- \* Monday through Friday, from 6:00 AM until 9:00 AM and from 3:00 PM until 6:00 PM, or as specified on the local agency permit documents.

- \* The Contractor will be permitted to work in the roadway during all other periods, unless informed otherwise by the County. In no case shall the Contractor close more than one lane without approval of the County.

CONCEALED WORK:

All work which will not be readily visible upon completion shall not be concealed until a County Signal Inspector gives approval. In the event the below items are concealed, it will be the Contractor's responsibility to expose the questioned item(s) for the Inspectors' approval, at no additional cost to the County. This includes, but is not limited to:

1. Buried or imbedded conduit
2. Ground wire, rods, and array
3. Loops and homeruns
4. Leveling nuts before grouting
5. Loop splices before encapsulating

ADDENDUM TO FLORIDA DEPARTMENT OF  
TRANSPORTATION SPECIFICATIONS

SPECIFICATION FOR COLLIER COUNTY TYPE 1 AND  
TYPE 2 SOLAR POWERED SCHOOL ZONE FLASHING  
BEACON.

CELLULAR PROGRAMMABLE TIME SWITCH SHALL BE RTC MODEL AP22 CELLULAR AND MODEL RTC TSC2G COMPACT COMMUNICATIONS MODEM WITH EXTERNAL OMNI ANTENNA OR APPROVED EQUIVALENT COMPATIBLE WITH THE EXISTING COLLIER COUNTY SCHOOL ZONE FLASHING BEACON CELLULAR SYSTEM.

SOLAR POWER ASSEMBLY SHALL BE MODEL R829DUAL-RTC AS MANUFACTURED BY CAMANAH, INC. OR APPROVED EQUIVALENT MEETING THE FOLLOWING SPECIFICATION.

Operation  
Flash Pattern MUTCD compliant  
Button Activation MUTCD compliant

LED Signal Module  
Standard ITE VTCSH LED circular signal supplement\*  
Size 12" (300 mm) diameter

Environmental  
Optimal Ambient Range -4° to 77° F (-20° to +25° C)  
Maximum Ambient Temperature Range 6-40° to 176° F (40° to +80° C)  
Solar Requirements: maximum installation latitude 55° North / South

Energy Management System  
Battery Life Span 5-8 years (field replaceable)  
Operational Capacity Without Solar Charging 30 days  
Daily Operation Profile up to 12 hours per day


Mounting Hardware  
Mounting Hardware: 4 1/2" round  
Pelco traffic signal mounting hardware

Traffic Control Device Standards  
Manual of Uniform Traffic Control Devices Meets all MUTCD standards  
for flashing beacons

Quality Standards  
Quality Assurance ISO 9001:2000

Warranty  
Term 3-year prorated warranty on entire system including batteries

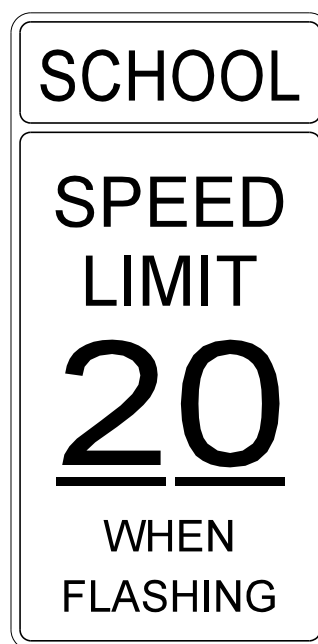
\* Meets all specifications for flashing beacons required by MUTCD, chapter 4d.18

<i>REVISIONS</i>						 <p>Collier County Traffic Operations 2885 South Horseshoe Drive Naples, Florida 34104</p> <p>Phone: (239) 252-8260 Fax: (239) 252-6685</p>	<p align="center"><b><i>COLLIER COUNTY</i></b></p> <p align="center"><b><i>DEPARTMENT OF TRANSPORTATION</i></b></p>	<p align="center"><b><u><i>TECHNICAL SPECIAL</i></u></b></p> <p align="center"><b><u><i>PROVISIONS</i></u></b></p>	SHEET NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION				TSP-2



FTP-33-04  
30" X 30"

OR



S5-1  
(24" X 48")

CONSTRUCTION NOTES:

1. ALL FASTENERS SHALL BE STAINLESS STEEL.
2. SIGNAL INDICATIONS SHALL BE 12" L.E.D. TYPE.
3. GROUND WIRE SHALL BE #6 STRANDED.
4. CONTRACTOR SHALL NOTIFY COLLIER COUNTY TRAFFIC OPERATIONS SIGNAL INSPECTOR (239-252-8260) 48 HOURS PRIOR TO START OF CONSTRUCTION.

SOLAR POWERED SCHOOL ZONE FLASHER, SINGLE BEACON - YELLOW L.E.D. WITH PELCO HARDWARE OR APPROVED EQUIVALENT TO MOUNT ON 4 1/2 INCH O.D. SCHEDULE 40 ALUMINUM ROUND POLE. (CARMANAH 829DUAL-RTC OR APPROVED EQUIVALENT COMPATIBLE WITH THE EXISTING COLLIER COUNTY SCHOOL ZONE FLASHING BEACON CELLULAR SYSTEM. (COLOR: BLACK)

SIGN FACE DETAIL

SIGNAL HEAD DETAIL

U-BOLT SIGN CLAMP ASSEMBLY WITH 5/16 INCH SIGN MOUNTING HARDWARE. (PELCO SH-0206 OR APPROVED EQUIVALENT)

ALUMINUM FLASHER CABINET WITH MOUNTING HARDWARE. (PELCO SE-1002 AND SE-1100 OR APPROVED EQUIVALENT)

RTC MODEL AP22 CELLULAR PROGRAMMABLE TIME SWITCH AND MODEL RTC TSC2G COMPACT COMMUNICATIONS MODEM WITH EXTERNAL OMNI ANTENNA OR APPROVED EQUIVALENT COMPATIBLE WITH THE EXISTING COLLIER COUNTY SCHOOL ZONE FLASHING BEACON CELLULAR SYSTEM.

POLE, SPUN ALUMINUM SCHEDULE 80, 4 1/2 INCH O.D. X .237 INCH WALL (PELCO PB-5100 12 TO 15 LF. OR APPROVED EQUIVALENT)

COLLAR, ALUMINUM (PELCO PB 5325 OR APPROVED EQUIVALENT)

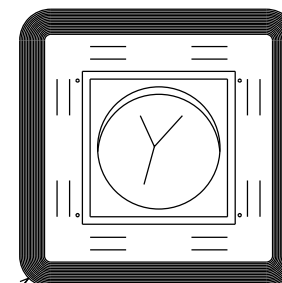
ALUMINUM SQUARE BASE ASSEMBLY WITH ALUMINUM DOOR AND GROUNDING LUG. (PELCO PB-5335 OR APPROVED EQUIVALENT)

FINAL GRADE

20 LF 5/8 INCH DIAMETER COPPER CLAD GROUND ROD CONTINUOUS OR ARRAY.

ALUMINUM LOUVERED BACK PLATE POWDER COATED BLACK WITH 2" REFLECTIVE TAPE. ATTACH BACK PLATE WITH FOUR SEMS 3/16" X 1/2" (10-24 OR 10-32) SELF TAPPING STAINLESS STEEL PAN HEAD SCREWS WITH FLAT WASHERS.

I-SECTION  
I-WAY  
(I ASSEMBLY  
REQUIRED)



TYPE 1 SOLAR POWERED SCHOOL ZONE FLASHING BEACON DETAIL  
(N.T.S.)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION



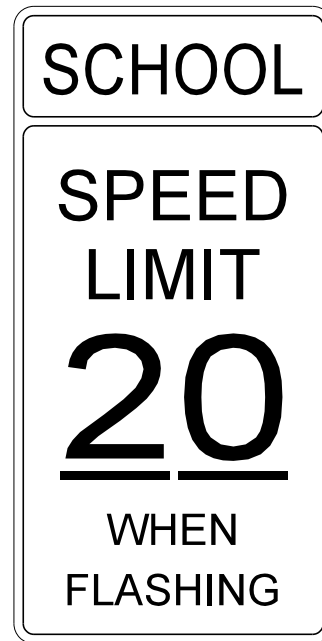
Collier County Traffic Operations  
2885 South Horseshoe Drive  
Naples, Florida 34104  
  
Phone: (239) 252-8260  
Fax: (239) 252-6685

COLLIER COUNTY DEPARTMENT OF TRANSPORTATION	TYPE 1 SOLAR POWERED SCHOOL ZONE FLASHING BEACON DETAIL	SHEET NO.
		TSP-3



FTP-33-04  
30" X 30"

OR



S5-1  
(24" X 48")

CONSTRUCTION NOTES:

1. ALL FASTENERS SHALL BE STAINLESS STEEL.
2. SIGNAL INDICATIONS SHALL BE 12" L.E.D. TYPE.
3. GROUND WIRE SHALL BE #6 STRANDED.
4. CONTRACTOR SHALL NOTIFY COLLIER COUNTY TRAFFIC OPERATIONS SIGNAL INSPECTOR (239-252-8260) 48 HOURS PRIOR TO START OF CONSTRUCTION.

SOLAR POWERED SCHOOL ZONE FLASHER, DUAL BEACON - YELLOW L.E.D. WITH PELCO HARDWARE OR APPROVED EQUIVALENT TO MOUNT ON 4 1/2 INCH O.D. SCHEDULE 40 ALUMINUM ROUND POLE. (CARMANAH 829DUAL-RTC OR APPROVED EQUIVALENT COMPATIBLE WITH THE EXISTING COLLIER COUNTY SCHOOL ZONE FLASHING BEACON CELLULAR SYSTEM. (COLOR: BLACK)

SIGN FACE DETAIL

U-BOLT SIGN CLAMP ASSEMBLY WITH 5/16 INCH SIGN MOUNTING HARDWARE. (PELCO SH-0206 OR APPROVED EQUIVALENT)

ALUMINUM FLASHER CABINET WITH MOUNTING HARDWARE. (PELCO SE-1002 AND SE-1100 OR APPROVED EQUIVALENT)

RTC MODEL AP22 CELLULAR PROGRAMMABLE TIME SWITCH AND MODEL RTC TSC2G COMPACT COMMUNICATIONS MODEM WITH EXTERNAL OMNI ANTENNA OR APPROVED EQUIVALENT COMPATIBLE WITH THE EXISTING COLLIER COUNTY SCHOOL ZONE FLASHING BEACON CELLULAR SYSTEM.

POLE, SPUN ALUMINUM SCHEDULE 80, 4 1/2 INCH O.D. X .237 INCH WALL (PELCO PB-5100 12 LF. OR APPROVED EQUIVALENT)

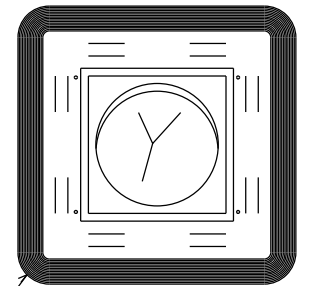
COLLAR, ALUMINUM (PELCO PB 5325 OR APPROVED EQUIVALENT)

ALUMINUM SQUARE BASE ASSEMBLY WITH ALUMINUM DOOR AND GROUNDING LUG. (PELCO PB-5335 OR APPROVED EQUIVALENT)

FINAL GRADE

20 LF 5/8 INCH DIAMETER COPPER CLAD GROUND ROD CONTINUOUS OR ARRAY.

SIGNAL HEAD DETAIL



I-SECTION  
I-WAY  
(2 ASSEMBLY  
REQUIRED)  
(TYPICAL)

ALUMINUM LOUVERED BACK PLATE POWDER COATED BLACK WITH 2" REFLECTIVE TAPE. ATTACH BACK PLATE WITH FOUR SEMS 3/16" X 1/2" (10-24 OR 10-32) SELF TAPPING STAINLESS STEEL PAN HEAD SCREWS WITH FLAT WASHERS.

5' MINIMUM  
7' MINIMUM  
12' TO 15'

4'

1"

ANCHOR BOLT SET OF 4 - 3/4 INCH DIAMETER BY 18 INCH LENGTH. (PELCO PB-5306 OR APPROVED EQUIVALENT)

24 INCH DIAMETER, 48 INCH DEPTH. (TYPE "I" CONCRETE) (FOUNDATION REINFORCING NOT REQUIRED)

TYPE 2 SOLAR POWERED SCHOOL ZONE FLASHING BEACON DETAIL  
(N.T.S.)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION



Collier County Traffic Operations  
2885 South Horseshoe Drive  
Naples, Florida 34104

Phone: (239) 252-8260  
Fax: (239) 252-6685

**COLLIER COUNTY**  
**DEPARTMENT OF TRANSPORTATION**

**TYPE 2**  
**SOLAR POWERED SCHOOL ZONE**  
**FLASHING BEACON DETAIL**

SHEET  
NO.

TSP-4