STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

AUTOMATED TRAFFIC SIGNAL PERFORMANCE MEASURES (ATSPM)

GUIDANCE DOCUMENT

INDEX OF ATSPM DETECTION GUIDANCE

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>SHEET DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-1</td>
<td>KEY SHEET</td>
</tr>
<tr>
<td>T-2</td>
<td>DETECTION WIRING - LOOPS</td>
</tr>
<tr>
<td>T-3</td>
<td>DETECTION SETUP - VIDEO</td>
</tr>
<tr>
<td>T-4</td>
<td>DETECTION SETUP - RADAR</td>
</tr>
<tr>
<td>T-5</td>
<td>DETECTION SETUP - HYBRID</td>
</tr>
<tr>
<td>T-6</td>
<td>DETECTION SETUP - INTERSECTION MOVEMENT COUNTS</td>
</tr>
<tr>
<td>T-7</td>
<td>DETECTION SETUP - 32-CH: CONTROLLER CONFIGURATION</td>
</tr>
<tr>
<td>T-8</td>
<td>DETECTION SETUP - 64-CH: CONTROLLER CONFIGURATION</td>
</tr>
</tbody>
</table>

INTERSECTION MOVEMENT COUNT SYSTEMS

TESTED TO BE TESTED

GRIDSMART WAVETRONIX
MOIVISION HAWKEYE (RHYTHM)
NOTES:
1. CONTRACTOR SHALL USE NO. 14 AWG SHEIELDED WIRE
   (EXCEPT NEMA CO-2-14, 1-PAIR) AND FOLLOW THE FOLLOWING COLOR CODE OR
   PHASE/LABEL IN CABINET AND PULLBOX*
   DETECTORS
   LOOP WIRES
   LEAD-IN CABLE, 1-PAIR
   First (Outside lane) Red Wire  Red/Black Pair
   Second Lane Green Wire  Green/Black Pair
   Third Lane White Wire  White/Black Pair
   Fourth (Inside lane) Yellow Wire  Yellow/Black Pair
   First (Outside) Left Turn Lane Red Wire  Red/Black Pair
   Second Left Turn Lane Green Wire  Green/Black Pair
   2. ENGINEER SHALL INCLUDE ON SIGNAL PLANS THE PROPOSED DISTANCE FROM
   STOP BAR AND SIZE OF EACH LOOP.
   3. LOOP SIZE AND DISTANCE(S) FROM STOP BAR TO BE APPROVED BY
   FDOT DISTRICT 5 AND MAINTAINING AGENCY PRIOR TO APPROVAL OF SIGNAL PLANS.
   4. ENGINEER SHALL VERIFY PROPOSED LOOP CONFIGURATION AND CONTROLLER INPUT
   ASSIGNMENT MEETS FOOT DISTRICT 5 AND MAINTAINING AGENCY'S CURRENT STANDARDS.
   5. PRIOR TO IMPLEMENTING INTO ATSPM SOFTWARE, DETECTION TO BE
   FIELD VERIFIED.
   ***FOR APPROACHES UNDER 45 MPH THE MIDDLE DILEMA ZONE
   "A" LOOP SHALL BE REMOVED
   PUURDUE" APPROACH VOLUME/SPEED LOOP (TYPE "A")**
   "PUURDUE" SPLIT FAILURE LOOP (TYPE "F")**
   QUEUE LOOP
   ADVANCE/SET-BACK LOOP***
   **LOOP SIZE DETERMINED BY # OF APPROACH LANES
   ***FOR APPROACHES UNDER 45 MPH THE MIDDLE DILEMA ZONE
   "A" LOOP SHALL BE REMOVED
   NEMA TP 6 CABINET W/ 64 CHANNEL (4 RACK) DETECTOR INPUTS (TYP)
   NOT TO SCALE
   ****FOR INFORMATIONAL PURPOSES ONLY****
   LEDICATION
   LEAD-IN CABLE, 1-PAIR
   "PURDUE" APPROACH VOLUME/SPEED LOOP (TYPE "A")**
   "PURDUE" SPLIT FAILURE LOOP (TYPE "F")**
   QUEUE LOOP
   ADVANCE/SET-BACK LOOP***
   **LOOP SIZE DETERMINED BY # OF APPROACH LANES
   ***FOR APPROACHES UNDER 45 MPH THE MIDDLE DILEMA ZONE
   "A" LOOP SHALL BE REMOVED
   NEMA TP 6 CABINET W/ 64 CHANNEL (4 RACK) DETECTOR INPUTS (TYP)
NOT TO SCALE

***FOR INFORMATIONAL PURPOSES ONLY***

NOTES:

1. ENGINEER SHALL INCLUDE ON SIGNAL PLANS THE PROPOSED DISTANCE FROM STOP BAR AND SIZE OF EACH LOOP.

2. DETECTION ZONE SIZE AND DISTANCE(S) FROM STOP BAR TO BE APPROVED BY FDOT DISTRICT 5 AND MAINTAINING AGENCY PRIOR TO APPROVAL OF SIGNAL PLANS.

3. PRIOR TO IMPLEMENTING INTO ATSPM SOFTWARE, DETECTION TO BE ASSIGNMENT MEETS FDOT DISTRICT 5 AND MAINTAINING AGENCY'S CURRENT STANDARDS.

4. ENGINEER SHALL VERIFY PROPOSED DETECTION ZONE CONFIGURATION AND CONTROLLER INPUT ASSIGNMENT MEETS FDOT DISTRICT 5 AND MAINTAINING AGENCY'S CURRENT STANDARDS.

5. PRIOR TO IMPLEMENTING INTO ATSPM SOFTWARE, DETECTION TO BE FIELD VERIFIED.

*APPROACHES OVER 4 LANES SHALL HAVE WIRING DESIGNATION DESIGNED BY THE ENGINEER AND SHOWN ON SIGNAL PLANS.*

*A LOOP SHALL BE REMOVED*

"Purdue" Approach Volume/Speed Zone**

"Purdue" Split Failure Zone**

Presence Zone

Queue Detection Zone

Advance/Set-Back Detection Zone***

**Detection Zone Size Determined By # Of Approach Lanes

***For Approaches Under 45 MPH The Middle Dilema Zone

NEMA TP 6 Cabinet W/ 64 Channel (4 Rack) Detector Inputs (Typ)
NOT TO SCALE

***FOR INFORMATIONAL PURPOSES ONLY***

NOTES:
1. ENGINEER SHALL INCLUDE ON SIGNAL PLANS THE PROPOSED DISTANCE FROM STOP BAR AND SIZE OF EACH LOOP.
2. DETECTION ZONE SIZE AND DISTANCE(S) FROM STOP BAR TO BE APPROVED BY FDOT DISTRICT 5 AND MAINTAINING AGENCY PRIOR TO APPROVAL OF SIGNAL PLANS.
3. PRIOR TO IMPLEMENTING INTO ATSPM SOFTWARE, DETECTION TO BE FIELD VERIFIED.
4. ENGINEER SHALL VERIFY PROPOSED DETECTION ZONE CONFIGURATION AND CONTROLLER INPUT ASSIGNMENT MEETS FDOT DISTRICT 5 AND MAINTAINING AGENCY'S CURRENT STANDARDS.
5. APPROACHES OVER 4 LANES SHALL HAVE WIRING DESIGNATION DESIGNED BY THE ENGINEER AND SHOWN ON SIGNAL PLANS*

*NEMA TP 6 CABINET W/ 64 CHANNEL (4 RACK) DETECTOR INPUTS (TYP)*

**DETECTION ZONE SIZE DETERMINED BY # OF APPROACH LANES**

***FOR APPROACHES UNDER 45 MPH THE MIDDLE DILEMA ZONE "A" LOOP SHALL BE REMOVED***

ENGINEER SHALL INCLUDE ON SIGNAL PLANS THE PROPOSED DISTANCE FROM STOP BAR AND SIZE OF EACH LOOP.

ENGINEER SHALL VERIFY PROPOSED DETECTION ZONE CONFIGURATION AND CONTROLLER INPUT ASSIGNMENT MEETS FDOT DISTRICT 5 AND MAINTAINING AGENCY'S CURRENT STANDARDS.

PRIOR TO IMPLEMENTING INTO ATSPM SOFTWARE, DETECTION TO BE FIELD VERIFIED.

"APPROACHES OVER 4 LANES SHALL HAVE WIRING DESIGNATION DESIGNED BY THE ENGINEER AND SHOWN ON SIGNAL PLANS"
**NOT TO SCALE**

**PROPOSED ATSPM SIGNAL DETECTION SETUP - HYBRID**

**LEGEND**

- "Purdue" Approach Volume/Speed Zone**
- "Purdue" Split Failure Zone**

**PRESENCE ZONE**

**QUEU DETECTION ZONE**

**ADVANCE/SET-BACK DETECTION ZONE***

**DETECTION ZONE SIZE DETERMINED BY # OF APPROACH LANES**

***FOR APPROACHES UNDER 45 MPH THE MIDDLE DILEMA ZONE***

**A LOOP SHALL BE REMOVED**

NEMA TP 6 CABINET W/ 64 CHANNEL (4 RACK) DETECTOR INPUTS (TYP)

---

NOTES:

1. Contractor shall use No. 14 AWG shielded wire (Spec. IMSA 50-2-14, 1-pair) and follow the following color code or phase/label in cabinet and pullbox:

   - Shielded loop detectors loop wire and pull-in cable, 1-pair
   - First outside lane/Red wire/Red/Black pair
   - Second lane/White wire/Black pair
   - Third lane/Grn wire/Black pair
   - Fourth lane/Yel wire/Black pair

2. Engineer shall include on signal plans the proposed distance from stop bar and size of each loop.

3. Loop size and distance(s) from stop bar to be approved by FDOT District 5 and maintaining agency prior to approval of signal plans.

4. Engineer shall verify proposed loop configuration and controller input assignment meets FDOT District 5 and maintaining agency's current standards.

5. Prior to implementing into ATSPM software, detection to be field verified.

***Approaches over 4 lanes shall have wiring designation designed by the engineer and shown on signal plans***

---

**STATE OF FLORIDA**

**DEPARTMENT OF TRANSPORTATION**

**PROPOSED ATSPM SIGNAL DETECTION SETUP - HYBRID**

**SHEET NO. T-5**

---

**NOTES:**

- For informational purposes only**
NOTES:
1. CONTRACTOR SHALL USE NO. 14 AWG SHIELDED WIRE [SPEC. IMSA 50-2-14, 1-PAIR] AND FOLLOW THE FOLLOWING COLOR CODE OR PHASE/LABEL IN cabinet AND PULLBOX:

SHIELDED LOOP
DETECTORS/LOOP WIRE/SHIELDE-IN CABLE, 1-PAIR
First Outside Lane [Red Wire/Red/Black Pair]
Second Lane [Green Wire/Black Pair]
Third Lane [White Wire/Black Pair]
Fourth Lane [Yellow Wire/Black Pair]

Field verified.

2. PRIOR TO IMPLEMENTING INTO ATSPM SOFTWARE, DETECTION TO BE FIELD VERIFIED.

3. ENGINEER SHALL VERIFY PROPOSED LOOP CONFIGURATION AND CONTROLLER INPUT ASSIGNMENT MEETS FOOT DISTRICT 5 AND MAINTAINING AGENCY'S CURRENT STANDARDS.

4. ENGINEER SHALL VERIFY PROPOSED LOOP CONFIGURATION AND CONTROLLER INPUT ASSIGNMENT MEETS FOOT DISTRICT 5 AND MAINTAINING AGENCY'S CURRENT STANDARDS.

5. PRIOR TO IMPLEMENTING INTO ATSPM SOFTWARE, DETECTION TO BE FIELD VERIFIED.

**APPROACHES OVER 4 LANES SHALL HAVE WIRING DESIGNATION DESIGNED BY THE ENGINEER AND SHOWN ON SIGNAL PLANS**

NOT TO SCALE

****FOR INFORMATIONAL PURPOSES ONLY****
<table>
<thead>
<tr>
<th>DATE</th>
<th>DESCRIPTION</th>
<th>SHEET NO.</th>
<th>STATE OF FLORIDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/6/2018</td>
<td></td>
<td>T-7</td>
<td>DETECTION SETUP</td>
</tr>
</tbody>
</table>

### T-7 DISTRICT 5 ROAD NO. DETECTION SETUP - 32-CH CONFIGURATION

#### DET-BU1
- **No. of Channels:** C1, C2, C3
- **Terminal Block:** L1, L2, L3
- **Channel No.:** CH1, CH2, CH3
- **Loop/Video Zone:** VEH DET, VEH DET
- **DESCRIPTION:**

<table>
<thead>
<tr>
<th>POTENTIAL 4-CH</th>
<th>POTENTIAL 4-CH</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>C2</td>
</tr>
<tr>
<td>C3</td>
<td>C4</td>
</tr>
</tbody>
</table>

#### DET-BU2
- **No. of Channels:** C1, C2, C3
- **Terminal Block:** L1, L2, L3
- **Channel No.:** CH1, CH2, CH3
- **Loop/Video Zone:** VEH DET, VEH DET
- **DESCRIPTION:**

<table>
<thead>
<tr>
<th>POTENTIAL 4-CH</th>
<th>POTENTIAL 4-CH</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>C2</td>
</tr>
<tr>
<td>C3</td>
<td>C4</td>
</tr>
</tbody>
</table>

---

**DEPARTMENT OF TRANSPORTATION**

**COUNTY FINANCIAL PROJECT ID:**

**ROAD NO.:**

**DISTRICT 5**

**NOTE:**
- [Office Document] 11/6/2018
- [Office Document] 11/6/2018
<table>
<thead>
<tr>
<th>DET BUL 1</th>
<th>DET BUL 2</th>
<th>DET BUL 3</th>
<th>DET BUL 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Channels</td>
<td>2-Ch</td>
<td>2-Ch</td>
<td>2-Ch</td>
</tr>
<tr>
<td>Terminal Block</td>
<td>L7</td>
<td>L7</td>
<td>L7</td>
</tr>
<tr>
<td>Channel No.</td>
<td>CH 17</td>
<td>CH 18</td>
<td>CH 19</td>
</tr>
<tr>
<td>Loop/Vid. Zone</td>
<td>VEH DET</td>
<td>VEH DET</td>
<td>VEH DET</td>
</tr>
<tr>
<td>No. of Channels</td>
<td>2-Ch</td>
<td>2-Ch</td>
<td>2-Ch</td>
</tr>
<tr>
<td>Terminal Block</td>
<td>LT5</td>
<td>LT5</td>
<td>LT5</td>
</tr>
<tr>
<td>Channel No.</td>
<td>CH 33</td>
<td>CH 34</td>
<td>CH 35</td>
</tr>
<tr>
<td>Loop/Vid. Zone</td>
<td>VEH DET</td>
<td>VEH DET</td>
<td>VEH DET</td>
</tr>
<tr>
<td>No. of Channels</td>
<td>2-Ch</td>
<td>2-Ch</td>
<td>2-Ch</td>
</tr>
<tr>
<td>Terminal Block</td>
<td>L35</td>
<td>L35</td>
<td>L35</td>
</tr>
<tr>
<td>Channel No.</td>
<td>CH 39</td>
<td>CH 40</td>
<td>CH 41</td>
</tr>
<tr>
<td>Loop/Vid. Zone</td>
<td>VEH DET</td>
<td>VEH DET</td>
<td>VEH DET</td>
</tr>
<tr>
<td>No. of Channels</td>
<td>2-Ch</td>
<td>2-Ch</td>
<td>2-Ch</td>
</tr>
<tr>
<td>Terminal Block</td>
<td>LT1</td>
<td>LT1</td>
<td>LT1</td>
</tr>
<tr>
<td>Channel No.</td>
<td>CH 1</td>
<td>CH 2</td>
<td>CH 3</td>
</tr>
<tr>
<td>Loop/Vid. Zone</td>
<td>VEH DET</td>
<td>VEH DET</td>
<td>VEH DET</td>
</tr>
</tbody>
</table>