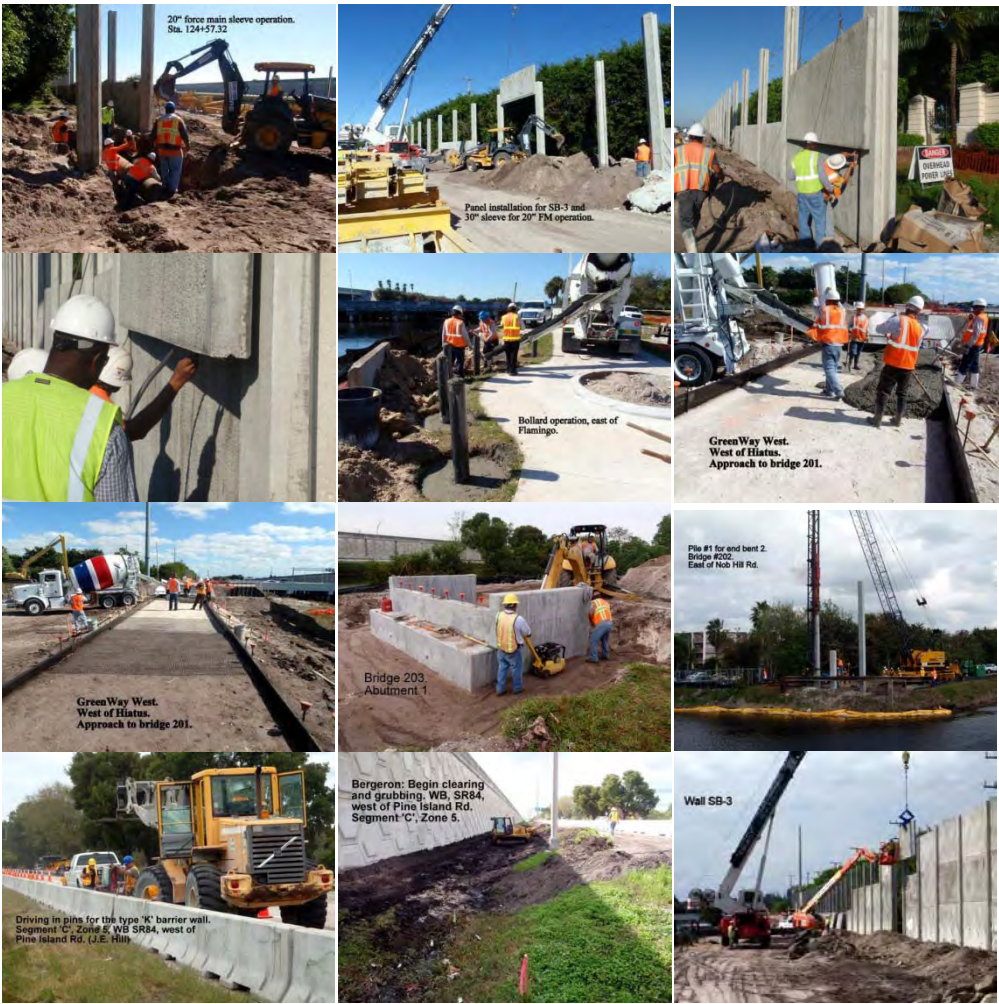


# Witness & Hold Inspection Plan

## I-595 Corridor Roadway Improvement Project



Procedure for Witness and Hold Point	
Prepared by: I 595 Express / CCEI	
Issued by: <i>A. Paul A. Quinn</i> 12,20,12	Approved by: <i>[Signature]</i>
Project Quality Manager	Chief Executive Officer

**1. PURPOSE**

This procedure describes the Witness & Hold Point Inspection Plan requirements and the Inspection Request process for applicable construction activities identified herein. The Procedure describes the Witness & Hold Point Inspection process to be implemented through HNTB's automated system as well as the key roles and responsibilities of all parties involved. In keeping with best management practices for quality control, Witness/Hold Points may be adjusted by the Concessionaire from time to time as required to adapt to construction concerns.

**2. REVISION DESCRIPTION**

The items listed below summarize the changes that have been introduced to the Witness and Hold Procedure and the automated system in an effort to make the process more efficient:

- Consolidate witness/hold point and identify critical hold points
- No longer require the Contractor to submit witness points
- Change the system to allow items to be populated by descriptions (ie, MSE Wall #, Footing #, Cap #, etc)
- Create a work request that captures all of the witness and hold requests for a given element
- Contractor will send inspection requests on all hold points which will need to be linked to the Work Request ID
- Create safeguards in the system that will allow an inspection request to be scheduled, but not processed until the predecessors have been completed and passed

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- Create another category for TSR's (Test Sample Request) for the contractors to use to send out notifications which are linked to the corresponding Work Request ID

### **3. DEFINITIONS**

- 3.1 IR: Inspection Request
- 3.2 IP: Witness and Hold Inspection Plan
- 3.3 WR: Work Request- A notification submitted by the Contractor to the CCEI of work commencing on a Work Product for which Witness/Hold points have been defined.
- 3.4 TSR: Test Sample Request – A notification by the Contractor to the CQM and CEI that a material sample needs to be taken and tested for compliance at a given location.
- 3.5 OCEI: Oversight Construction Engineering & Inspection Team
- 3.6 CCEI: The Concessionaire Construction Engineering & Inspection Team
- 3.7 I 595 Express: The Concessionaire
- 3.8 D-USA: Dragados USA (The Contractor)
- 3.9 FDOT CPM: FDOT Construction Project Manager
- 3.10 PQM: I 595 Express Project Quality Manager
- 3.11 CQM: D-USA Construction Quality Manager
- 3.12 Inspection: Examination by visual check of executed work through measurement or monitoring devices, to ensure the work is constructed in substantial compliance with the contract plans and specifications.
- 3.13 Work Product: Any material, equipment, or work which is permanently placed into the project
- 3.14 Witness Point: A point defined in this procedure and identified during the construction of a given element in which the CCEI inspects the activity point that has been reached. The Contractor is not required to stop work during this process with the exception of the activities where the CCEI must be present at all times, such as concrete or asphalt placement, or unless the result of the inspection dictates otherwise.
- 3.15 Hold Point: A point at which D-USA is required to notify the CCEI prior to undertaking subsequent work. A formal Inspection Request (IR) is required. Work may not proceed until the Contractor/Subcontractor provides the IR in the system, an inspection of the work is performed by the CCEI and the CCEI inspector passes the Hold Point, indicating that the Contractor/Subcontractor may proceed with subsequent activities.

- 3.16 Record Review: Examination of records to ensure compliance, or to verify certain characteristics are met.
- 3.17 Nonconforming Product:
  - 2.1.1. Works executed incorporating material or installed equipment which has not been inspected and verified.
  - 2.1.2. Work found not to be in accordance with the design requirements or specification.
  - 2.1.3. Damaged constructed or installed items.
  - 2.1.4. Any defective, damaged or wrongly supplied material, or equipment.
  - 2.1.5. Improperly stored equipment or material (stored in a way that might affect its quality).
  - 2.1.6. Work completed in which an IR was required per the IP, yet the Contractor/Subcontractor began subsequent work without submittal of an IR to the CCEI.
  - 2.1.7. Work that failed the Witness or Hold Point inspection

#### **4. SCOPE**

This procedure applies to I-595 Corridor Roadway Improvements Project, and is applicable to all construction activities identified in Attachment 8.2.

#### **5. REFERENCES**

- 5.1 I-595 RFP Volume II – Technical Requirements, Division II, Section 3, Attachment 3
- 5.2 The Concessionaire Quality Manual
- 5.3 Construction Quality Assurance Management Plan
- 5.4 Construction Engineering and Inspection Quality Assurance Plan
- 5.5 Witness/Hold Inspection Guide, State Construction Office, May 2005
- 5.6 FDOT 2007 Standard Specifications Workbook July 2008
- 5.7 ISO 9001:2000 QMS-Requirements, Clause 8.3

#### **6. RESPONSIBILITIES**

- 6.1 The Contractor and all Subcontractors shall be responsible to check, examine and inspect work under their scope, during and after the work, to ensure proper execution of construction activities. The CCEI must receive proper notification of all Work Requests, TSR's and Hold Points included under the applicable IP. If work is rejected, it is the Contractor's responsibility to ensure corrective action is performed. The IR will not be "closed out" in the system, and the

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Contractor will not be allowed to proceed with construction until all corrections have been made and the inspection passed.

- 6.2 The Construction Quality Manager (CQM) is responsible for ensuring that this procedure is implemented by DUSA and its subcontractors. The CQM is responsible for overseeing the submission of Work Requests (WRs) to the CCEI at least 7 days prior to the commencement of work for the associated element, and Hold Point Inspection Requests (IRs) and Test Sample Requests (TSRs) at least 24 hours prior to the proposed inspection time for a given activity. The CQM shall regularly review the Witness and Hold Inspection Plan (IP) and shall ensure that WRs, IRs, and TSRs are submitted for all elements under construction according to the frequency indicated in the IP.
- 6.3 The CCEI shall review and verify that WRs, TSRs and IRs for Hold Points are received in accordance with the frequency stated in the applicable IP. Once notified of a Work Request, the CCEI may, at any time, request the Contractor not to proceed until an inspection is performed. In such case and/or for Hold Points, once an inspection is performed, the CCEI will pass the inspection in the system indicating the Contractor may proceed with subsequent activities, or will reject the work and leave the activity open in the system thus preventing the Contractor from submitting subsequent Hold Points. If it is found that the Contractor is performing an activity without the required notification, the CCEI will issue a Non Conformance (NCR) for each offense.
- 6.4 The Project Quality Manager (PQM) is responsible for review, approval and submittal of IPs to the FDOT CPM.

## **7. PROCEDURE**

### **7.1 General Requirements:**

- 7.1.1. All new activities subject to these procedures, will require the submittal of a Work Request notification.
- 7.1.2. The Contractor/Subcontractor can choose to submit an IR to the CCEI for an activity indicated as a Witness Point if they wish to request a formal inspection of a particular component before proceeding to a subsequent activity.

7.2 Inspection Plan (IP) (Ref Attachment 1.01 – 1.XX)

IPs are developed for specific work activities and shall be submitted and approved before start of the activity (Ref. Att. 1 List of Witness & Hold Plan Activities). The notification and inspection frequency requirements shall be specified in the Inspection Plan (IP), and each activity listed will be defined as either a Witness or Hold point. The Inspection Plan (IP) shall, at a minimum, include the following:

- 7.2.1. Activity Name
- 7.2.2. Contractor/Subcontractor performing the work
- 7.2.3. Construction Characteristics to be inspected
- 7.2.4. Identification of Witness and Hold Points for each characteristic described
- 7.2.5. Test Sample Request Requirement (TSR) or Inspection Request (IR) submittal requirement

7.3 The CCEI will prepare the IPs (in word & PDF format) for the activities included in Attachment 1, herein, as well as IPs for additional Work Activities as necessary, and will forward to I-595 Express for approval.

7.4 The I-595 Express PQM will review, comment and discuss the plan with Concessionaire Team for approval, and will submit the IP to FDOT for review and comment or concurrence.

7.5 Upon FDOT concurrence, PQM or designee will distribute the IP to all related parties for implementation.

7.6 The CQM will provide the Contractor/Subcontractor with all applicable IPs prior to start of work, and will notify the CCEI of the expected start date at least 7 days prior to their arrival on the project.

7.7 In- Process Inspection

During construction, inspections shall be carried out in accordance with the Construction Engineering & Inspection Requirements set forth in the Concession Agreement, including the requirements of this procedure where a Work Product shall be inspected by the CCEI as detailed in the relevant IPs. The steps outlined below illustrate the revised process. A work Flow Chart is also attached depicting the steps involved.

1. Work Request (WR)

The Contractor shall submit a work request (WR) notification to the CCEI in the system 7 days prior to the start of construction activities for a given element. Upon receipt of the notification, the CCEI will ensure that all necessary documentation (i.e., approved plans, shop drawings, installation plans, material certifications....etc.) are in place prior to performing any work at this location. If the required documentation is not in hand, then the CCEI will reject the WR and the Contractor will be required to submit a new Work Request with the required documentation. If the Contractor is found to have proceeded without the proper notification and required documentation, then the CCEI will issue an NCR to the CQM.

2. Witness Points

The CCEI will inspect all witness points identified in the IP for a given element. The Contractor is only required to submit a notification on Witness Points for those activities identified in the IP that require a TSR. The notification required will be in the form of a TSR. The Contractor is not required to stop work during this process with the exception of the activities where the CCEI must be present all the time, like concrete or asphalt placement, or unless the result of the inspection dictates otherwise. Upon completion of a Witness Point, the CCEI inspectors will log the result into the system, and if passed, close out the Witness Point in the program.

3. Test Sample Request (TSR)

When the construction of an element reaches a point where a TSR is required as identified in the IP, the Contractor will go into the system under the associated Work Request ID and submit a TSR notification for the associated work activity 24 hours prior to the scheduled date. Any work subject to the requirements of a TSR shall not proceed until the specified test has been performed and accepted by the CQC and CCEI. The CCEI inspectors, upon successful completion of a TSR, will then log into the system and close out the Witness Point in the program. If the Contractor is found to have proceeded with a Nonconforming Product, then the CCEI will issue an NCR to the

CQM, and the Witness Point will remain open in the system until the issue has been resolved and retested with passing results.

4. Inspection Request (IR) for Hold Points

When the work reaches a Hold Point identified in the IP, the Contractor/Subcontractor will verify that all associated Work Products are complete and ready for inspection. Upon satisfactory findings, the Contractor/Subcontractor shall log into the system under the associated Work Request ID and submit an Inspection Request (IR) to the CCEI 24 hours prior to the scheduled date of inspection. If the preceding Witness or Hold Points have not been completed, the system will not allow the notification to be processed and will send a rejection message to the initiator of the request. Submittal of an IR will only be allowed when all preceding activities have been successfully completed and closed in the system. An inspection will be performed by the CCEI upon submission of an IR for all Hold Point activities per the applicable Inspection Plan (IP). Any work subject to the requirements of an IR shall not proceed until the inspection has been performed and accepted by the CCEI. Any items requiring correction must be repaired and/or resolved by the Contractor/Subcontractor and re-inspected by the CCEI. The Hold Point will remain open in the system until a passing inspection has been obtained. The CCEI inspectors, upon successful completion of an IR, will then log into the system and close out the Hold Point in the program. If the Contractor is found to have proceeded with a Nonconforming Product, then the CCEI will issue an NCR to the CQM, and the Hold point will remain open in the system until the issue has been resolved and re-inspected with passing results.

7.8 Inspection Records

Objective evidence showing that inspections were performed in accordance with the appropriate IP will be illustrated on the automated check lists associated with each Work Request ID that is logged and stored within HNTB's automated program. HNTB is responsible to provide any related information or reports as I 595 Express may require.

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7.9 System Audits

The CCEI shall be responsible for performing monthly audits of the Witness & Hold procedure to ensure compliance by all parties of this procedure. Results of the Audit will be submitted to the PQM and shared with the CQM.

In addition, the PQM shall perform an audit of the Witness and Hold Inspection Plan each month for the first three months of the revised implementation, and at a minimum, on a bi-monthly basis thereafter. The audit shall cover the implementation of the process and records relating to W&H inspections. The audit sample size and frequency of audit may be adjusted according to the audit results. The audits will be submitted to the Department for its information.

The CCEI will be responsible for identifying and proposing changes to the system if the process is found to be deficient. If changes are required, the CCEI will submit a proposal to the PQM for approval.

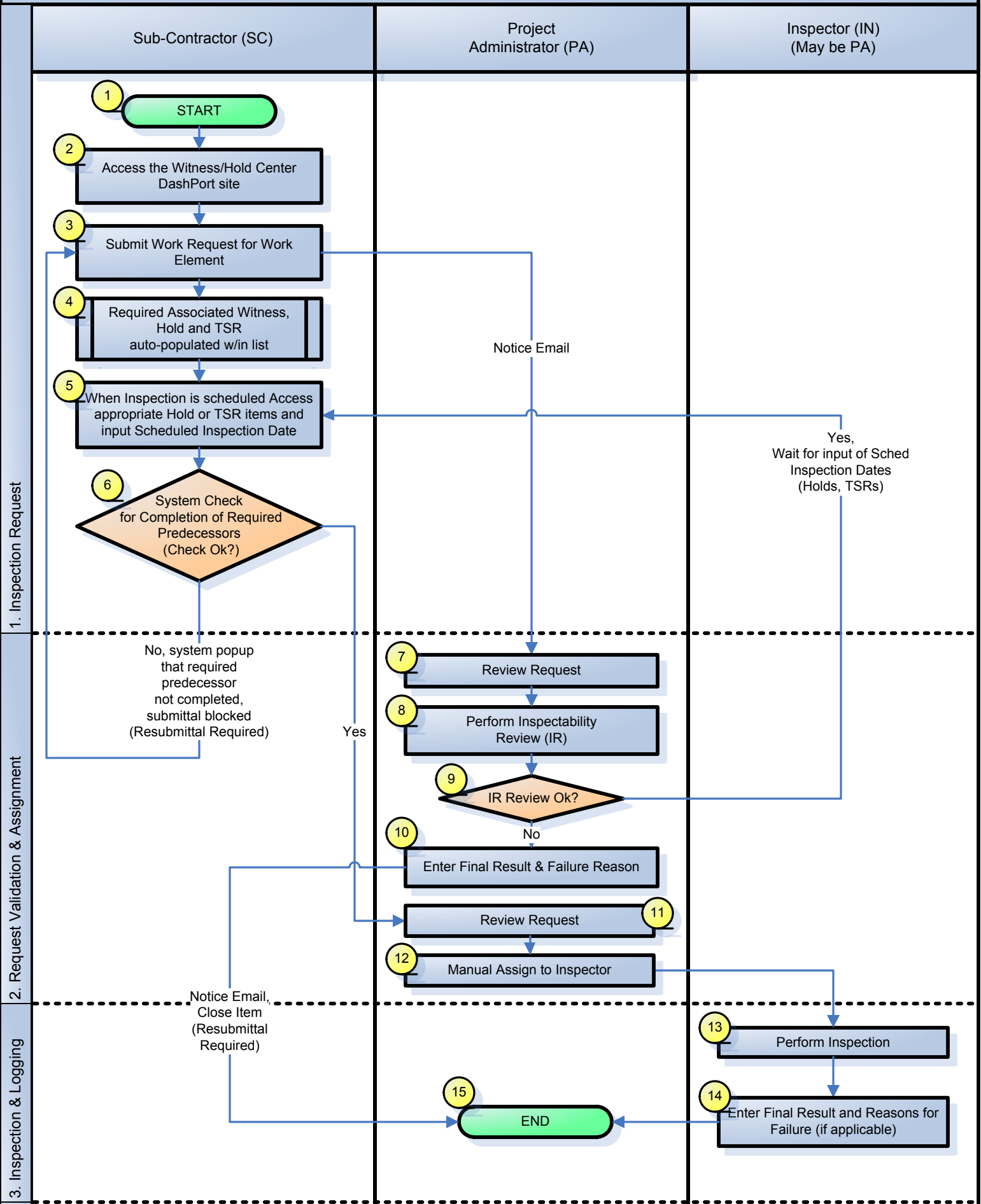
**8. ATTACHMENTS**

8.1 Work Flow Chart

8.2 Attachment 1: List of Witness & Hold Plan Activities

8.3 Attachment 1.01 – 1.XX: Inspection Plans (IP)

# Process: W/H Inspection Request & Tracking (I-595)



## **Witness & Hold Point Inspection Plans**

### **The following categories have been included in the CCEI Witness & Hold Inspection Plan (IP)**

1. Barrier Walls (all types)
2. Base and Subbase
3. Bituminous Paving
4. Coatings (and Paint)
5. Concrete Beams
6. Drainage
7. Drilled Shafts (Misc)
8. Excavation and Embankment
9. Fencing
10. Friction Course
11. Grass, Sod & Landscape
12. Guardrail
13. Highway Lighting
14. Micro Tunneling/Jack & Bore/Directional Bores
15. MOT
16. MSE Walls
17. Non-Structural Concrete
18. Pavement Markings
19. Pile Foundations
20. Post-Tensioning
21. Rip Rap
22. Sheetpile Bulkhead
23. Signalization
24. Signing
25. Soundwalls
26. Structural Concrete (decks)
27. Structural Concrete (other than decks)
28. Structural Steel

### **The following categories have been included in the CCEI Witness & Hold Inspection Plan (IP) for ITS**

29. Fiber Optic Cable
30. ITS Power Sub-System

31. CCTV
32. MVDS
33. PTMS
34. TTMS
35. HAR Repeater
36. HAR Beacons
37. DMS
38. CMS/LCS
39. Emergency Access Gate Sub-system
40. Express Lanes Access Control System
41. Toll Gantry
42. HUB
43. TMC

**WITNESS / HOLD PLAN: BARRIER WALLS (Cast-In-Place)**

Sub-Contractor:												Segment:																
Work Location/Component:																												
Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re- Insp. Date	Inspector	Pass	Fail	COMMENTS														
<b>CONSTRUCTION ACTIVITIES</b>																												
<b>FOR FORMED METHOD:</b>																												
C1) Notice of work commencing			x *																									
C2) Complete formwork, reinforcing, inserts, etc.				x	H																							
C3) Start of concrete placement		x				W																						
C4) Form removal notification					W																							
<b>FOR EXTRUDED METHOD</b>																												
C1) Notice of work commencing			x																									
C2) Complete reinforcing and set-up of extruder				x	H																							
C3) Start of extrusion / concrete placement		x			W																							
<table style="width:100%; border:none;"> <tr> <td style="width:20%;">H = Hold Point</td> <td>A point at which notification is required prior to further activities taking place; IR to be issued</td> </tr> <tr> <td>W = Witness Point</td> <td>A point at which the QC/CCEI must be notified that the activity point has been reached</td> </tr> <tr> <td>CCEI = Concessionaire CEI</td> <td>CCEI (Verification) Inspection Personnel</td> </tr> <tr> <td>IR = Inspection Request</td> <td>A request for inspection of a work activity / notification of reaching a Hold Point</td> </tr> <tr> <td>WR = Work Request</td> <td>A notification of work commencing / notification by contractor * The Work Request shall serve as the hold point to ensure that all related documentation is complete.</td> </tr> <tr> <td>TSR = Test Sample Request</td> <td>A request for inspection requiring testing and sampling / notification given by DUSA QC</td> </tr> </table>																	H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued	W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached	CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel	IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point	WR = Work Request	A notification of work commencing / notification by contractor * The Work Request shall serve as the hold point to ensure that all related documentation is complete.	TSR = Test Sample Request	A request for inspection requiring testing and sampling / notification given by DUSA QC
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## **HOLD POINT INSPECTION ITEMS FOR:**

## **Barrier Walls (CIP)**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C2 (For Formed Method - Complete formwork, reinforcing, inserts, etc.):

1. Verify cleanliness of forms including reinforcing steel (free of curing compound and hardened concrete)
2. Verify that forms are smooth and mortar-tight
3. Verify alignment of forms, vertically and horizontally
4. Verify that forms are securely in place and will withstand the flowing concrete and vibration
5. Verify that forms are securely held down to prevent uplift
6. Verify clearances on reinforcing steel (front, back and ends)
7. Verify that reinforcing steel is tied sufficiently and as per the specifications (additional diagonal bracing may be required form slip-forming)
8. Verify that spacers used to hold reinforcing steel off of forms have plastic tips
9. Verify location of expansion joints and contraction joints (if formed)
10. Verify that all inserts for lighting, ITS, etc. are located as per the plans
11. Verify that inserts are held securely in place (especially anchor bolts)
12. Verify that expansion couplings are in place on conduits where the barrier wall has expansion joints
13. Verify that all conduits and piping are water-tight and will not allow intrusion of cement paste

### Hold Point C2 (For Extruded Method – Complete reinforcing and set up of extruder):

1. Verify the alignment of the string line
2. Verify that extrusion mold has correct dimensions for wall being placed, and is clean
3. Verify that extrusion machine has functioning vibration Verify clearances on reinforcing steel (front, back and ends)
4. Verify that reinforcing steel is tied sufficiently and as per the specifications (additional diagonal bracing may be required form slip-forming)
5. Verify that all inserts for lighting, ITS, etc. are located as per the plans
6. Verify that inserts are held securely in place (especially anchor bolts)
7. Verify that expansion couplings are in place on conduits where the barrier wall has expansion joints
8. Verify that all conduits and piping are water-tight and will not allow intrusion of cement paste

**WITNESS / HOLD PLAN: BASE COURSES AND SUB-BASES**

<b>Sub-Contractor:</b>	<b>Segment:</b>
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**Work Location/Component:**

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
<b>Sub-Base</b>														
C1) Notice of work commencing			x *											
C2) Start of in-place subgrade mixing (if applicable)				x	H									
C3) Start of sub-base placement		x			W									
C4) Start of sub-base fine grading					W									
C5) Completed fine grading				X	H									
<b>Base</b>														
C6) Start of base placement		x			W									
C7) Start of base fine grading					W									
C8) Completed fine grading				X	H									
C9) Primer application				x	H									

<p>H = Hold Point  W = Witness Point  CCEI = Concessionaire CEI  IR = Inspection Request  WR = Work Request  TSR = Test Sample Request</p>	<p>A point at which notification is required prior to further activities taking place; IR to be issued  A point at which the QC/CCEI must be notified that the activity point has been reached  CCEI (Verification) Inspection Personnel  A request for inspection of a work activity / notification of reaching a Hold Point  A notification of work commencing / notification by contractor * The Work Request shall serve as the hold point to ensure that all related documentation is complete.  A request for inspection requiring testing and sampling / notification given by DUSA QC</p>
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## **HOLD POINT INSPECTION ITEMS FOR:**

## **Base and Sub-Base**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C2 (Sub-base - Start of in-place mixing):

1. Refer to Excavation and Embankment IP
2. Verify that the graded excavation is not contaminated prior to placing base material.
3. Verify that the stabilizing material is from an approved source
4. Verify that stabilizing material is spread uniformly

### Hold Point C5 (Sub-Base – Completed fine grading):

5. Verify that final course is finished to the proper line and grade
6. Verify that the final course is firm and unyielding and remove all soft and yielding material
7. Verify that QC personnel has performed the required testing per section 160 of the project specs

### Hold Points C8 & C9 (Base - Completed final grading and Primer application) :

1. Verify that the sub-grade is not disturbed by the base construction activities
2. If the sub-grade is contaminated by the base, it must be removed and replaced (200-6)
3. Verify that final course is finished to the proper line and grade
4. Verify that irregularities in excess of  $\frac{1}{4}$ " , using a 15-foot straightedge, are corrected by scarifying, removal and replacement
5. Verify that QC personnel measure the depth of the base at intervals not exceeding 200 feet
6. Verify that areas deficient by more than  $\frac{1}{2}$ " are corrected
7. Verify that there are no cracks or checks in the base prior to primer application
8. Verify that the moisture content of the base does not exceed optimum prior to primer application



**WITNESS / HOLD PLAN: BITUMINOUS PAVING OPERATIONS**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Start of milling operation					W									
C3) Clean surface before paving					W									
C4) Start of tack spread					W									
C5) Start of paving operation				X	H									
C6) Rolling straightedge (structural course)					W									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
WR = Work Request	A notification of work commencing / notification by contractor * The Work Request shall serve as the hold point to ensure that all related documentation is complete.
TSR = Test Sample Request	A request for inspection requiring testing and sampling / notification given by DUSA QC

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## **HOLD POINT INSPECTION ITEMS FOR:**

## **Bituminous Paving Operations**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C5 (Start of Paving Operations):

1. Verify that milling is done to the proper cross slope, if applicable
2. Verify that the depth of milling is as per the plan, if applicable
3. Verify that all loose materials from the milling operations are cleaned off the surface, if applicable
4. Verify that QC is checking the milled cross slope at the proper frequency, if applicable
5. Verify that the surface is clean prior to paving
6. Verify that the surface has no standing water on it and is dry
7. Verify that the proper tack has been applied and applied at the correct spread rate
8. Verify that the correct mix design is being delivered to the paving site
9. Verify that the mix temperatures are being checked as required
10. Verify that all haul truck have tarps as required

**WITNESS / HOLD PLAN: COATINGS**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Start of cleaning					W									
C3) Testing for chlorides		X			W									
C4) Start of painting, each coat				x	H									
C5) Start application of Class V				X	H									

H = Hold Point  
 W = Witness Point  
 CCEI = Concessionaire CEI  
 IR = Inspection Request  
 WR = Work Request  
 TSR = Test Sample Request

A point at which notification is required prior to further activities taking place; IR to be issued  
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 A request for inspection requiring testing and sampling / notification given by DUSA QC

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## **HOLD POINT INSPECTION ITEMS FOR:**

## **Coatings**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C4 (Start of painting, each coat):

1. Verify cleanliness prior to painting
2. For any areas that required blast cleaning, verify that the profile of the steel has been accepted by the consultant
3. Verify that wet film thickness is being measured by the consultant
4. Verify that dry film thickness of the preceding coat is measured and accepted by the consultant
5. Verify that all bolted connections are cleaned as per the paint manufacturers requirements and the specifications
6. Verify that non-welded, plated connections are caulked or sealed as per 560-11.8
7. Verify that overspray of paint is contained (560-11.6)

### Hold Point C5 (Start application of Class 5):

1. Verify areas not intended to be coated have been protected
2. Verify concrete surfaces are cleaned by water-blasting
  - a. Verify that the blasting equipment is supplied with a gauge near the nozzle. The required water pressure is to be 2900 psi
3. Verify surfaces are dry prior to coating
4. Verify that any containment system required is in place
5. Verify that the coating material is from the Department QPL
6. Verify that wet film thickness and spread rate is being measured
7. Verify that dry film thickness of the preceding coat is measured and accepted by the consultant
8. Verify that all bolted connections are cleaned as per the paint manufacturers requirements and the specifications
9. Verify that non-welded, plated connections are caulked or sealed as per 560-11.8
10. Verify that overspray of paint is contained (560-11.6)
11. Verify that the coating is applied as per the manufacturers recommendation
12. Verify that the area is protected until dry

**WITNESS / HOLD PLAN: ERECTION OF CONCRETE BEAMS**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Completed preparation of bearing areas				X	H									
C3) Placement of bearing pads					W									
C4) Beginning of erection process				X	H									
C5) Temporary bracing completed					** W									

H = Hold Point  
 W = Witness Point  
 CCEI = Concessionaire CEI  
 IR = Inspection Request  
 WR = Work Request  
 TSR = Test Sample Request  
 \*\*

A point at which notification is required prior to further activities taking place; IR to be issued  
 A point at which the QC/CCEI must be notified that the activity point has been reached  
 CCEI (Verification) Inspection Personnel  
 A request for inspection of a work activity / notification of reaching a Hold Point  
 A notification of work commencing / notification by contractor \* The Work Request shall serve as the hold point to ensure that all related documentation is complete.  
 A request for inspection requiring testing and sampling / notification given by DUSA QC  
 To be done immediately

I-595 Corridor Roadway Improvement Project

## **HOLD POINT INSPECTION ITEMS FOR:**

## **Erection of concrete beams**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C2 (Completed preparation of bearing areas):

1. Verify that Contractor Survey has verified beam seat elevations (see 400-11.2.2)
2. Verify that dimensions of layout for bearings match those of the shop drawing beam spacing
3. Verify smoothness of seats as per 400-11.2.3
4. Verify flatness (Level) is within requirements in 400-11.2.4 or 400-11.2.5
5. Verify cleanliness of bearing areas
6. Verify that neoprene bearings are stored out of the elements
7. Verify that anchor bolts are installed in accordance with 460-7.4 and are correct size
8. Verify tightening of anchor bolt nuts as per 460-7.6.1 or 460-7.6.2

### Hold Point C4 (Beginning of erection process):

1. Verify that beams have not sustained damage during shipping or storage
2. Verify that Maintenance of traffic plans are approved and used appropriately
3. Verify that an erection plan has been approved
4. Verify that the crane leads are securely attached and lifting is done in a safe manner
5. Verify that placement of the beams on the bearings is as shown in the approved shop drawings and contract plans
6. Verify that temporary bracing is in place and secure prior to releasing the beam

**WITNESS / HOLD PLAN: DRAINAGE**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Completed excavation					W									
C3) Foundation preparation					W									
C4) Safety/Trench Shoring					W									
C5) Start of placement				x	H									
C6) Start of backfilling		x			W									
C7) Invert construction (if applicable)				x	H									
C8) Final Pipe Inspection				x	H									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
WR = Work Request	A notification of work commencing / notification by contractor * The Work Request shall serve as the hold point to ensure that all related documentation is complete.
TSR = Test Sample Request	A request for inspection requiring testing and sampling / notification given by DUSA QC

I-595 Corridor Roadway Improvement Project

## **HOLD POINT INSPECTION ITEMS FOR:**

## **Drainage**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C5 (Start of placement):

1. Verify that trench depth and width is sufficient for work being performed, with adequate room to test (125-4.1)
2. Verify de-watering if needed
3. Verify soundness (firmness) of bottom of excavation
4. Verify that elevations and grade (slope) are correct
5. Verify that boulders, logs or other objects are removed
6. Verify that rock and unsuitable material are removed to a depth of 12 inches below the bottom of pipe
7. Verify thickness of stone base if needed
8. Verify that stone base produces a "cradle" for the pipe to rest in and is well compacted
9. Verify proper line and grade for pipe

### Hold Point C7 (Invert Construction – If Applicable):

1. Verify structure is cleaned out
2. Verify that the concrete meets the project specification (346)
3. Verify that the grate is fastened to the structure, if applicable

### Hold Point C8 (Final Pipe Inspection):

1. Verify that Contractor notifies CCEI prior to videotaping pipe runs
2. Upon Completion of paving operations the Contractor dewateres and videotapes the interior of all pipes less than 48" in diameter and provides those tapes to the CEI Staff to use in final pipe inspection. [Spec. 430-4.8.1]



**WITNESS / HOLD PLAN: DRILLED SHAFTS (MISC)**

<b>Sub-Contractor:</b>	<b>Segment:</b>
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<b>Work Location/Component:</b>															
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Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS	
<b>CONSTRUCTION ACTIVITIES</b>															
C1) Notice of work commencing			x *												
C2) Casing Placement					W										
C3) Start of excavation					W										
C4) Shaft bottom inspection					W										
C5) Cage assembly and installation				x	H										
C6) Start of concrete placement		x			W										
C7) Casing removal					W										
C8) CSL Grouting		x			W										

<p>H = Hold Point</p> <p>W = Witness Point</p> <p>CCEI = Concessionaire CEI</p> <p>IR = Inspection Request</p> <p>WR = Work Request</p> <p>TSR = Test Sample Request</p>	<p>A point at which notification is required prior to further activities taking place; IR to be issued</p> <p>A point at which the QC/CCEI must be notified that the activity point has been reached</p> <p>CCEI (Verification) Inspection Personnel</p> <p>A request for inspection of a work activity / notification of reaching a Hold Point</p> <p>A notification of work commencing / notification by contractor      * The Work Request shall serve as the hold point to ensure that all related documentation is complete.</p> <p>A request for inspection requiring testing and sampling / notification given by DUSA QC</p>
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<p>I-595 Corridor Roadway Improvement Project</p>
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## **HOLD POINT INSPECTION ITEMS FOR:**

## **Drilled shafts (Misc)**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C5 (Cage assembly and installation):

1. Verify that the equipment on site matches the approved Drilled Shaft Installation Plan
2. Verify that the equipment is capable of constructing a shaft equal to the deepest shaft on the plans plus five feet (the first production shaft may be the demonstration shaft)
3. Verify that the template is adequate to maintain the position of the shaft, if required
4. Temporary surface casing is required on all drilled shafts, regardless of method of construction
5. Verify that monitoring of existing structures is taking place as per 455-1.1
6. Verify that there are no fresh concrete placements within the limits shown in 455-1.4
7. Verify that the surface casing is set in the correct location and is plumb
8. Verify that the inside diameter of the casing is equal to or greater than the size of the shaft being constructed
9. Temporary casing is required to be one foot above the ground and five feet below the ground
10. Verify that embankment has been placed prior to start of excavation for the shaft
11. If wet method – verify that slurry is of the approved type, mixed properly, desanded and maintained within the hole as needed
12. If polymer slurry is used – manufacturer’s representative must be on site or available for first three installations
13. Verify that the hole is located within three inches laterally of the plan location
14. Verify that the hole is within 1/4” per foot of depth for vertical alignment
15. Verify that the Contractor is performing slurry testing as required
16. Witness the Contractor checking dimensions and alignment of the excavation – progress depths may be determined by marks on the Kelly Bar; final depth must be measured
17. Witness the Contractor measuring the final depth of the excavation
18. Verify that the bottom of the shaft does not have sedimentary deposits greater than one inch deep
19. Verify that the bottom of the shaft is level
20. Verify the sizes of bars (length, diameter, etc) are as per the plans
21. Verify that the reinforcing steel is tied at every intersection, including cage stiffeners, prior to placement
22. Verify that the side clearances are maintained with the use of approved spacers placed as per 455-16.3
23. Verify that the bottom of the cage is supported off the bottom, at the clearance required by the plans
24. Verify that the top of the cage is at the correct elevation

**WITNESS / HOLD PLAN: EXCAVATION AND EMBANKMENT**

W/H Inspection Plan No: 9

3/1/2010

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Start of excavation					W									
C3) Completion of excavation of unsuitable (if applicable)				X	H									
C4) Test sections (i.e deep lifts, etc.)		x			W									
C5) Start of embankment placement		x			W									
C6) Fine grading					W									

H = Hold Point  
 W = Witness Point  
 CCEI = Concessionaire CEI  
 IR = Inspection Request  
 WR = Work Request  
 TSR = Test Sample Request

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 A point at which the QC/CCEI must be notified that the activity point has been reached  
 CCEI (Verification) Inspection Personnel  
 A request for inspection of a work activity / notification of reaching a Hold Point  
 A notification of work commencing / notification by contractor \* The Work Request shall serve as the hold point to ensure that all related documentation is complete.  
 A request for inspection requiring testing and sampling / notification given by DUSA QC

I-595 Corridor Roadway Improvement Project

**HOLD POINT INSPECTION ITEMS FOR: Excavation and embankment**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

Hold Point C3 (Start of excavation for unsuitable material):

1. Verify that all required erosion control measures are in place prior to any earth disturbing activities taking place, and are functioning correctly
2. Verify that limits of unsuitable material are clearly identified (as shown on plans or designated by Engineer)
3. Verify that excavation is completed to the limits shown on the plans, or as approved by the Engineer
4. Verify that material being excavated is disposed of as approved (120-5)
5. Verify that unsuitable material has been removed completely and the area is stable enough to backfill
6. Verify that backfill material is as approved
7. Verify that backfill material is placed and compacted in accordance with the specifications
8. Verify that excavation ceases upon the discovery of potentially contaminated materials
9. In the event of possible spread of contamination – effort should be made to minimize any spread of contamination and **NOTIFY YOU PA OR SPE IMMEDIATELY**

**WITNESS / HOLD PLAN: FENCING**

Sub-Contractor:													Segment:			
Work Location/Component:																
Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS		
<b>CONSTRUCTION ACTIVITIES</b>																
C1) Notice of work commencing			x *													
C2) Start of installation process					W											
H = Hold Point		A point at which notification is required prior to further activities taking place; IR to be issued														
W = Witness Point		A point at which the QC/CCEI must be notified that the activity point has been reached														
CCEI = Concessionaire CEI		CCEI (Verification) Inspection Personnel														
IR = Inspection Request		A request for inspection of a work activity / notification of reaching a Hold Point														
WR = Work Request		A notification of work commencing / notification by contractor * The Work Request shall serve as the hold point to ensure that all related documentation is complete.														
TSR = Test Sample Request		A request for inspection requiring testing and sampling / notification given by DUSA QC														
I-595 Corridor Roadway Improvement Project																

**WITNESS / HOLD PLAN: FRICTION COURSE**

Sub-Contractor:	Segment:
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Work Location/Component:

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Complete straightedge on final structural				x	H									
C3) Correct deficiencies after straightedge				x	H									
C4) Place Friction Course		x			W									
C5) Perform Laser Profile					W									
C6) Perform Staightedge				x	H									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
WR = Work Request	A notification of work commencing / notification by contractor      * The Work Request shall serve as the hold point to ensure that all related documentation is complete.
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I-595 Corridor Roadway Improvement Project

**HOLD POINT INSPECTION ITEMS FOR: \_\_\_\_\_ Friction Paving Operations**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

Hold Point C2 (Complete Straightedge):

1. Verify that the area has had the last lift of structural asphalt was straightedge per the project requirements
2. Verify that all corrections were performed as identified in the straightedge report and re-tested with a straightedge

**WITNESS / HOLD PLAN: GUARDRAIL**

<b>Sub-Contractor:</b>	<b>Segment:</b>
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<b>Work Location/Component:</b>														
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Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
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<b>CONSTRUCTION ACTIVITIES</b>														
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C1) Notice of work commencing			x *											
C2) Start of installation of GR items					W									

<p>H = Hold Point</p> <p>W = Witness Point</p> <p>CCEI = Concessionaire CEI</p> <p>IR = Inspection Request</p> <p>WR = Work Request</p> <p>TSR = Test Sample Request</p>	<p>A point at which notification is required prior to further activities taking place; IR to be issued</p> <p>A point at which the QC/CCEI must be notified that the activity point has been reached</p> <p>CCEI (Verification) Inspection Personnel</p> <p>A request for inspection of a work activity / notification of reaching a Hold Point</p> <p>A notification of work commencing / notification by contractor      * The Work Request shall serve as the hold point to ensure that all related documentation is complete.</p> <p>A request for inspection requiring testing and sampling / notification given by DUSA QC</p>
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<p>I-595 Corridor Roadway Improvement Project</p>
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**WITNESS / HOLD PLAN: GRASS, SOD & LANDSCAPING**

Sub-Contractor:													Segment:			
Work Location/Component:																
Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS		
<b>CONSTRUCTION ACTIVITIES</b>																
C1) Notice of work commencing			x *													
C2) Completion of grading prior to seed/sod					W											
C3) Start of sod placement					W											
C4) Start of seeding					W											
C5) Start of planting				x	H											
C6) Notice of Maintenance - watering, fertilizing, etc.					W											
C7) Start of replacement if needed					W											
H = Hold Point		A point at which notification is required prior to further activities taking place; IR to be issued														
W = Witness Point		A point at which the QC/CCEI must be notified that the activity point has been reached														
CCEI = Concessionaire CEI		CCEI (Verification) Inspection Personnel														
IR = Inspection Request		A request for inspection of a work activity / notification of reaching a Hold Point														
WR = Work Request		A notification of work commencing / notification by contractor * The Work Request shall serve as the hold point to ensure that all related documentation is complete.														
TSR = Test Sample Request		A request for inspection requiring testing and sampling / notification given by DUSA QC														
I-595 Corridor Roadway Improvement Project																

## **HOLD POINT INSPECTION ITEMS FOR:**

**Grass, Sod & Landscaping**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C5 (Start of Planting):

1. Verify that area is graded as per plans and details
2. Verify that any required testing (PH, etc.) has been completed and approved
3. If treatment is required – verify that it is done as per specifications
4. Verify that ensuing activities and materials are as approved

**WITNESS / HOLD PLAN: HIGHWAY LIGHTING**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Start of pole placement				x	H									
C3) Wiring continuity tests				X	H									
C4) Grounding test				X	H									
C5) Other assemblies					W									

H = Hold Point  
 W = Witness Point  
 CCEI = Concessionaire CEI  
 IR = Inspection Request  
 WR = Work Request  
 TSR = Test Sample Request

A point at which notification is required prior to further activities taking place; IR to be issued  
 A point at which the QC/CCEI must be notified that the activity point has been reached  
 CCEI (Verification) Inspection Personnel  
 A request for inspection of a work activity / notification of reaching a Hold Point  
 A notification of work commencing / notification by contractor \* The Work Request shall serve as the hold point to ensure that all related documentation is complete.  
 A request for inspection requiring testing and sampling / notification given by DUSA QC

I-595 Corridor Roadway Improvement Project

## **HOLD POINT INSPECTION ITEMS FOR:**

**Highway Lighting**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C2 (Start of Pole Placement):

1. Verify that foundation certification package has been accepted
2. Verify that pole meets the plans, shop drawings and the project specs

### Hold Point C3 (Wiring continuity testing):

1. Verify that the continuity testing meets the project requirements

### Hold Point C4 (Grounding testing):

1. Verify that the grounding testing meets the project requirements

**WITNESS / HOLD PLAN: MICRO-TUNNEL / JACK AND BORE / DIRECTIONAL BORING**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Drive Sheetpiling					W									
C3) Start excavation of pits				x	H									
C4) Start Drilling for anchors				x	H									
C5) Tension Anchors					W									
C6) Cast Mud Seal		x			W									
C7) Start Drilling (Dir. Bore) or augering				x	H									
C8) Placement of conductive tracking material					W									
C9) Pressure test (if needed)					W									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
WR = Work Request	A notification of work commencing / notification by contractor * The Work Request shall serve as the hold point to ensure that all related documentation is complete.
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I-595 Corridor Roadway Improvement Project

## **HOLD POINT INSPECTION ITEMS FOR: Micro-tunnel, jack & bore, directional bore**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C3 (Start excavation of pits):

1. Entry, exit, recovery pits and slurry pits are to be excavated as per section 120
2. Verify depth of pit is as required to perform the work
3. If needed, verify that pits are de-watered with water outletted as approved

### Hold Point C4 (Start drilling for anchors):

1. Verify that anchors are of the type and size shown on the shop drawings
2. Verify that the anchors are placed to the depth shown on the shop drawings

### Hold Point C7 (Start drilling Directional bore or augering):

3. Verify Location is as per plans
4. Verify that sheet length, size and type are as per plans and shop drawings, if applicable
5. If required, verify vibration monitoring is being performed
6. Verify that sheets are plumb, if applicable
7. Verify depth of penetration and top elevation, if applicable
8. Verify that any whalers indicated on shop drawings are installed, if applicable
9. Entry, exit, recovery pits and slurry pits are to be excavated as per section 120, if applicable
10. Verify depth of pit is as required to perform the work, if applicable
11. If needed, verify that pits are de-watered, if applicable
12. Verify that anchors are of the type and size shown on the shop drawings, if applicable
13. Verify that the anchors are placed to the depth shown on the shop drawings, if applicable
14. Verify that qualified personnel are on site (555-4.1 or 556-4.1)
15. Verify that drilling/augering fluid is used as required and pressure maintained (555-4.4 or 556-4.5)
16. Verify that drilling fluid is of the type approved (555-4.4)
17. Verify that product is installed in a bore hole the same day as the pre-bore
18. Verify that pipe jacking is maintained at a rate similar to that of the cutting head of the auger
19. Verify the use of slurry if needed and the type of material used
20. Verify that tracking of the drill head (Directional Bore) is performed as indicated in the plans and specs
21. Verify that conductive tracking materials are installed as per the plans, shop drawings (555-4.2 or 556-4.4)

**WITNESS / HOLD PLAN: MAINTENANCE OF TRAFFIC**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1: Notice of work commencing			x											
C2: Lane closure request (Encompass)					W									
C3: Roadway inspection prior to MOT implementation				x	H									
C4: Mot completed per S&S document					W									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
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I-595 Corridor Roadway Improvement Project

## **HOLD POINT INSPECTION ITEMS FOR:**

## **Maintenance of Traffic**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

Hold Point C3 (Roadway inspection prior to MOT implementation):

1. Verify VMS prior to closure / MOT implementation
2. Layout
3. Offset barrier / attenuator / etc.
4. New & existing asphalt condition (e.g. joints between new and old / raveling / potholes etc.)
5. Manhole aprons per spec. (50:1)
6. Check clear zone
7. Implementation and location of Temporary/ MOT /construction signs



**WITNESS / HOLD PLAN: MSE WALLS**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Completed excavation for levelling pad					W									
C3) Concrete placement for pad		x			W									
C4) Start of panel placement					W									
C5) Placement of Strap reinforcement at obstacles				x	H									
C6) Start of backfilling operation		x			W									
C7) Complete form/reinforcing for cap or coping				x	H									
C8) Concrete placement for cap or coping		x			W									
C9) Notification of form removal					W									

H = Hold Point  
 W = Witness Point  
 CCEI = Concessionaire CEI  
 IR = Inspection Request  
 WR = Work Request  
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 A point at which the QC/CCEI must be notified that the activity point has been reached  
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I-595 Corridor Roadway Improvement Project

## **HOLD POINT INSPECTION ITEMS FOR:**

**MSE Walls**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C5 (Placement of strap reinforcement at obstacles):

1. Verify that the strap and clip are connected according to the approved shop drawings or applicable indexes.
2. Verify that the strap does not exceed the maximum allowable angle around the obstacle

### Hold Point C7 (Complete form / reinforcing for cap or coping):

1. Verify that the dimensions of the forms are as per plan
2. Verify the cleanliness of the forms
3. Verify the clearances on the reinforcing steel
4. Verify that the reinforcing steel is tied as per specifications
5. Verify the cleanliness of the steel
6. Verify that the forms are adequately braced to withstand the concrete placement

**WITNESS / HOLD PLAN: NON-STRUCTURAL CONCRETE**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Completed excavation					W									
C3) Complete form / reinforcing (If Applicable)				X	H									
C4) Start of concrete placement		x			W									
C5) Notification of form removal					W									

H = Hold Point  
 W = Witness Point  
 CCEI = Concessionaire CEI  
 IR = Inspection Request  
 WR = Work Request  
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A point at which notification is required prior to further activities taking place; IR to be issued  
 A point at which the QC/CCEI must be notified that the activity point has been reached  
 CCEI (Verification) Inspection Personnel  
 A request for inspection of a work activity / notification of reaching a Hold Point  
 A notification of work commencing / notification by contractor \* The Work Request shall serve as the hold point to ensure that all related documentation is complete.  
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I-595 Corridor Roadway Improvement Project

## **HOLD POINT INSPECTION ITEMS FOR:**

## **Non-structural Concrete**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

Hold Point C3 (Completed form / reinforcing):

1. Verify that base is compacted
1. Verify dimensions of forms
2. Verify alignment of forms
3. Verify proper reinforcing if required
4. If extruded is being used– verify alignment of string line

**WITNESS / HOLD PLAN: PAVEMENT MARKINGS**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Completed layout				x	H									
C3) Removal of existing conflicting markings					W									
C4) Clean surfaces					W									
C5) Application of materials				x	H									
C6) Application of RPMs					W									

H = Hold Point  
 W = Witness Point  
 CCEI = Concessionaire CEI  
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I-595 Corridor Roadway Improvement Project

## **HOLD POINT INSPECTION ITEMS FOR:**

## **Pavement markings**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C2 (Completed layout):

1. Verify that layout matches plans and index

### Hold Point C5 (Application of material):

1. Ensure contractor/sub provides certifications for materials
2. Verify manufacturer's name and lot numbers for paint and spheres
3. Verify/measure and record that stripe width and thickness is per plans and specs
4. Verify and document reflectivity with calibrated Miralux machine within the specified time frame – initial,
5. intermediate, and final
6. Ensure applications are being done only on surfaces compliant with cleanliness and temperature requirements
7. Verify alignment, width, and spacing of striping
8. Inspect placement of pavement messages and compare to standards
9. Verifies striping of symbols, legends, stripes, and markings applied in accordance with Contract
10. Verifies application rate of paint and glass spheres
11. Ensure proper stripe placement relative to pavement edge
12. Ensure that markers and bituminous adhesives are on QPL
13. Collect samples of RPM's are required by sampling guide
14. Use the type marker required by the plans or specs
15. Verify contractor's equipment for heating of bituminous adhesive complaint with specs
16. Ensure temperatures for heating are per specs
17. Ensure that surfaces to receive RPM's clean and free of deleterious materials
18. Ensure appropriate amount of adhesive being applied that will cover entire bonding surface or marker
19. Clean excess adhesive with allowable cleaner/solvent
20. Verify lot numbers of supplied RPM's to those indicated on the certification
21. Monitor performance of markers and instruct replacement per specs as necessary
22. Review standard indexes to ensure proper placement
23. Ensure that right color RPM is used in correct locations
24. Ensure RPM's placement adjacent to stripes per indexes
25. Verifies that color of delineator corresponds to the color of the traffic stripe
26. Verifies object markers & delineators are installed plumb
27. Verifies delineators on ramps installed uniform height and offset
28. Verifies delineator @ crossovers uniform height and offset
29. Verifies proper assembly and installation of delineator

**WITNESS / HOLD PLAN: PILE FOUNDATIONS**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Start of template assembly					W									
C3) Start of test pile				x	H									
C4) Completion of test pile					W									
C5) Start of production pile driving (If Applicable)				x	H									
C6) Pile splicing				x	H									
C7) Set check or re-drive					W									
C8) Bitumen coating and Poly sheeting					W									

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I-595 Corridor Roadway Improvement Project

## **HOLD POINT INSPECTION ITEMS FOR:**

## **Pile Foundations**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

Hold Point C5 (Start of Production Pile Driving, If Applicable):

1. This Hold Point belongs to the Geotechnical Engineer Contracted with I595 Express.
2. CCEI responsibility is to verify that the Geotechnical Representative is on site during all operations, and to observe the complete piling operations.



**WITNESS / HOLD PLAN: POST-TENSIONING**

<b>Sub-Contractor:</b>	<b>Segment:</b>
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<b>Work Location/Component:</b>															
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Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS	
<b>CONSTRUCTION ACTIVITIES</b>															
C1) Notice of work commencing			x *												
C2) Pressure testing of ducts				x	H										
C3) Placement of ducts					W										
C4) Proving of ducts				x	H										
C5) Installation of strands					W										
C6) Stressing of strands				x	H										
C7) Grouting of tendons		x			W										
C8) Post Grouting inspection				x	H										

<p>H = Hold Point</p> <p>W = Witness Point</p> <p>CCEI = Concessionaire CEI</p> <p>IR = Inspection Request</p> <p>WR = Work Request</p> <p>TSR = Test Sample Request</p>	<p>A point at which notification is required prior to further activities taking place; IR to be issued</p> <p>A point at which the QC/CCEI must be notified that the activity point has been reached</p> <p>CCEI (Verification) Inspection Personnel</p> <p>A request for inspection of a work activity / notification of reaching a Hold Point</p> <p>A notification of work commencing / notification by contractor      * The Work Request shall serve as the hold point to ensure that all related documentation is complete.</p> <p>A request for inspection requiring testing and sampling / notification given by DUSA QC</p>
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I-595 Corridor Roadway Improvement Project
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## **HOLD POINT INSPECTION ITEMS FOR:**

## **Post-tensioning**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C2 (Pressure testing of ducts):

1. Test is to be conducted prior to use on project
2. Verify that test is performed as per 462-7.6
3. Verify amount of pressure loss recorded

### Hold Point C4 (Proving of ducts):

1. Verify that this test is performed as per 462-8.2
2. Verify that the torpedo is run through the duct by hand (no mechanical assistance)

### Hold Point C6 (Stressing of strands):

1. Verify that the equipment delivered matches that shown in the approved shop drawings and certification
2. Verify that all materials are stored in a weatherproof building until used
3. Verify that all components of the system are stamped with the suppliers name, model number and size
4. Verify that ducts are delivered with end caps in place
5. Verify that ducts are stored off the ground and protected from sun light
6. Verify proper storage of grout (one month or less storage)
7. Verify that LOT numbers are clearly identified on strands
8. Test is to be conducted prior to use on project
9. Verify that test is performed as per 462-7.6
10. Verify amount of pressure loss recorded
11. Verify that the ducts are placed in the locations shown in the plans or shop drawings
  - a. Tolerances for placement are shown in a table in section 462-7.5
12. Verify that ducts are secured at intervals not exceeding those in 462-7.2
13. Verify that transition areas of alignment have no kinks or dents
14. Verify that all openings and connections in the duct are sealed, except low-point outlets
15. Verify that duct being used is on the approved post-tensioning system
16. Verify that inlets and outlets are located as shown in the plans or shop drawings
17. Verify that inlets and outlets are equipped with shut-off valves
18. Verify that tensioning steel is in satisfactory condition without broken wires, non-uniform color or pitting
19. Verify that the packaging containing the strands is marked as called for in 462-6.1
20. Verify that the duct is clean and dry prior to placing tendons
21. Verify that the strands are not getting snagged in the duct
22. Verify that strands are not cut by flame-cutting, and are cut  $\frac{3}{4}$  inch to 1-1/2 inches from the anchorage device
23. Verify that the concrete has achieved the required compressive strength prior to post-tensioning
24. Verify that the post-tensioning force is equal to that required by the plans or shop drawings to achieve the elongation required

25. Verify that stressing is applied as per section 462-10.2.3
26. Verify that stressing equipment is that provided by the supplier of the post-tensioning system
27. Verify that the theoretical elongation is achieved within 7%
28. Verify that grout caps are installed and all other openings sealed within four hours after stressing

Hold Point C8 (Post-grouting inspection):

1. Inspections should be performed at the frequency shown in 462-11.5.8
2. Verify that grout has cured for 24 to 48 hours prior to inspecting
3. Verify that inspections are performed within one hour after removing inlets and outlets
4. Sound grout caps to check for voids
5. Verify that any voids are filled within four hours of inspecting
6. Inlets and outlets must be repaired as per 462-12.2

**WITNESS / HOLD PLAN: RIP RAP**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Start of placement of Filter Fabric				x	H									
C3) Placement of Rip Rap		x			W									

<p>H = Hold Point                  W = Witness Point                  CCEI = Concessionaire CEI                  IR = Inspection Request                  WR = Work Request                  TSR = Test Sample Request</p>	<p>A point at which notification is required prior to further activities taking place; IR to be issued                  A point at which the QC/CCEI must be notified that the activity point has been reached                  CCEI (Verification) Inspection Personnel                  A request for inspection of a work activity / notification of reaching a Hold Point                  A notification of work commencing / notification by contractor * The Work Request shall serve as the hold point to ensure that all related documentation is complete.                  A request for inspection requiring testing and sampling / notification given by DUSA QC</p>
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I-595 Corridor Roadway Improvement Project

## **HOLD POINT INSPECTION ITEMS FOR:**

## **Rip Rap and Filter Fabric**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

Hold Point C2 (Start of placement of filter fabric)::

1. Verify that area is graded as per plans and details
2. Verify that soil has been treated if required (herbicide, etc.)
3. Verify that fabric is from approved source
4. Verify that fabric is lapped and anchored as per specifications (514-3.4)
5. Verify that fabric covers area indicated in plans
6. Verify that fabric is embedded along perimeter if detailed
7. As per section 985-1.2, geotextile filter fabric is to be placed at various locations

**WITNESS / HOLD PLAN: SHEET PILING BULKHEADS**

3/1/2010

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing				x *										
C2) Start of Channel excavation					x	H								
C3) Completed template placement						W								
C4) Installation of sheets						W								
C5) Start installation of tie back anchors					x	H								
C6) Complete form / reinforcing for cap					X	H								
C7) Concrete placement for cap			x			W								
C8) Notification of form removal						W								

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I-595 Corridor Roadway Improvement Project

## **HOLD POINT INSPECTION ITEMS FOR:**

## **Sheet piling bulkheads**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C2 (Start of channel excavation):

1. Verify that any required permits are in hand
2. Verify that erosion control measures have been implemented
3. Verify that limits of excavation have been established and delineated
4. Verify that spoils are being handled as approved

### Hold Point C5 (Start installation of tie-back anchors):

1. Verify that anchors are located as per plans
2. Verify length of anchors, and type
3. Verify angle of placement relative to sheeting

### Hold Point C6 (Complete form / reinforcing for cap):

1. Verify Location is per plans
2. Verify that sheets are plumb
3. Verify depth of penetration and top elevation
4. Verify that anchors are located as per plans
5. Verify length of anchors, and type
6. Verify dimensions of cap
7. Verify that any reinforcing is as per plans
8. Verify clearances on reinforcing

**WITNESS / HOLD PLAN: SIGNALIZATION**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Start of excavation					W									
C3) Form / reinforcement / anchors				X	H									
C4) Start of concrete placement		x			W									
C5) Placement of poles, arms and cabinets				x	H**									
C6) Completed placement of wiring					W									
C7) Start of signal placement					W									
C8) Ground test				X	H									
C9) Start of Loop/Video installation					W									
C10) Loop/Video testing				X	H									
C11) Final Inspection by jurisdiction				X	H									

H = Hold Point

A point at which notification is required prior to further activities taking place; IR to be issued

W = Witness Point

A point at which the QC/CCEI must be notified that the activity point has been reached

CCEI = Concessionaire CEI

CCEI (Verification) Inspection Personnel

IR = Inspection Request

A request for inspection of a work activity / notification of reaching a Hold Point

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\*\*

Includes pedestrian poles and features

I-595 Corridor Roadway Improvement Project



## HOLD POINT INSPECTION ITEMS FOR:

## Signalization

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C3 (Form / reinforcement / anchors):

1. For foundations other than drilled shafts – Verify that placement of forms and reinforcing steel are as per the specifications for clearances, tying, spacing, etc.
2. Verify that anchor bolts are placed as per the shop drawings and plans, and are held securely in place during concreting

### Hold Point C5 (Placement of poles, arms and cabinets):

1. Verify that mast arms are placed vertical
2. Verify that mast arms are secured with nuts as shown on the shop drawings
3. Verify dimensions of mast arm is in accordance with shop drawings and plans
4. Verify that all conduit is placed as per the plans and shop drawings, at the proper depth
5. Verify that conduit trenches are properly backfilled according to their location
6. Verify size and number of wires in each conduit run
7. Verify that there are no splices in the signal wires between each element
8. Verify that pull boxes n sidewalks are not separated from the sidewalk by expansion material
9. Verify that span wires are one continuous length with no splices
10. Verify that concrete poles are set to the proper depth
11. Verify dimensions of concrete poles
12. Verify proper compaction around the base of concrete poles
13. Verify that poles are erected at the proper rake (amount out of plumb)
14. Verify that signal head lenses are installed upright
15. Verify that two weep holes are drilled in the bottom of each signal head assembly
16. Verify that signal heads are installed at the right angle for approaching traffic and have proper clearance below
17. Verify that pedestrian signal installation meets the requirements of sections 653 and 665

### Hold Point C8 (Ground testing):

1. Verify that the proper number and size of ground rods has been installed
2. Witness the grounding test with a Contractor's representative and a representative of the maintaining agency
3. Verify that as-built plans are prepared indicating the location of ground rods
4. Verify that the resistance of each ground rod is tested if required
5. Verify that all separately grounded elements at an intersection are bonded to form an intersection grounding network (620-3 & 17736)

Hold Point C10 (Loop testing):

1. Verify that loop wire and sealant is on the Approved products list
2. Verify that the correct number of loops is installed at each location shown on the plans
3. Verify testing of loops for correct resistance

Hold Point C11 (Final Inspection by jurisdiction):

1. Verify that notice was provided for final inspection to all parties
2. Verify that a punch list was created and provided to DUSA
3. Verify that all punch list items have been addressed

**WITNESS / HOLD PLAN: SIGNING**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Completed excavation for footings					W									
C3) Completed forms and reinforcing for footings				X	H									
C4) Placement of concrete for foundation		x			W									
C5) Start of placement for structures/posts				x	H									
C6) Start of placement for signs					W									
C7) Start of backfilling foundation		x			W									
C8) Start of bolting on structures and signs				x	H									
C9) Torquing of bolts					W									

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CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
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I-595 Corridor Roadway Improvement Project

## **HOLD POINT INSPECTION ITEMS FOR:**

**Signing**

Specification section 700

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

Hold Point C3 (Completed forms and reinforcing for footings):

**NOTE: Spread footings are to be constructed in accordance with 455-25 through 455-37**

1. Verify location of the excavation, including offset from the travel way
2. Verify depth of excavation
3. Verify the elevation at the top of the footing forms
4. Verify dimensions of the formwork are as per plans
5. Verify that reinforcing steel is located as per plan with tolerances no greater than those in section 415
6. Verify that reinforcing steel is tied as per section 415
7. Verify clearances on the reinforcing steel are as per section 415
8. Verify that the proper anchor bolts are placed as per the plan and securely held in place

Hold Point C5 (Start of placement for structures /posts):

1. Overhead sign supports may not be erected prior to curing of the foundation concrete for a minimum of seven days unless approved otherwise
2. Verify that ground-mount posts are the dimension shown in the plans
3. Verify that breakaway supports are used where indicated
4. Verify that posts or columns are placed plumb

Hold Point C8 (Start of bolting on structures and signs):

1. Verify that signs get stenciled with "FDOT", date of fabrication, date of installation and fabricator's initials
2. Overhead sign supports may not be erected prior to curing of the foundation concrete for a minimum of seven days unless approved otherwise
3. Verify that bolts are tightened to a torque as shown in Table A, Section 700-2.5.3 (except span sign structure bolts)
4. Verify that span sign structure bolts are tightened in accordance with section 460, to the required tension. See 460-5 for details on testing and tightening high strength bolts
5. On overhead signs – witness testing of the in-place bolts within 24 hours after tightening as per 700-2.5.3
6. Threads on all bolts are to be burred after tightening of the nuts

**WITNESS / HOLD PLAN: SOUND WALLS**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Completed layout for wall					W									
C3) Start of demonstration pile					W									
C4) Removal of unsuitable materials					W									
C5) Start of augercast excavation				X	H									
C6) Placement of reinforcing steel					W									
C7) Placement of grout		x			W									
C8) Erection of column					W									
C9) Start of panel installation				x	H									

H = Hold Point                      A point at which notification is required prior to further activities taking place; IR to be issued  
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CCEI = Concessionaire CEI        CCEI (Verification) Inspection Personnel  
IR = Inspection Request            A request for inspection of a work activity / notification of reaching a Hold Point  
WR = Work Request                  A notification of work commencing / notification by contractor        \* The Work Request shall serve as the hold point to ensure that all related documentation is complete.  
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## HOLD POINT INSPECTION ITEMS FOR:

Soundwalls

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C5 (Start of augercast excavation):

1. Verify location of excavation is as per plans and shop drawings, within 3" of plan location
2. Verify that all unsuitable material has been removed as per 455-44(2)
3. Verify that auger diameter is within 3% of the plan diameter for the pile
4. Verify length of pile (augering) is as per plans
5. Verify that the auger is marked in one foot increments
6. Verify that the hole in the end of the auger is plugged while drilling, and removed for grouting
7. Verify that there is a five foot head of grout on the auger before extraction

### Hold Point C9 (Start of panel installation):

1. Verify that the grout has reached the specified compressive strength before installing the panels
2. Verify that the panels match the approved shop drawings
3. Inspect panels for damage
4. Verify that the panels are being installed per the shop drawings and the project specs

**WITNESS / HOLD PLAN: STRUCTURAL CONCRETE (DECK)**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Start of SIP form placement					W									
C3) Start of overhang form placement					W									
C4) Completed SIP/overhang forms/reinforcing/shear studs				x	H									
C5) Completed screed rail placement					W									
C6) Screed demonstration				X	H									
C7) Start of concrete placement and curing		x			W									CEI present at all concrete placement
C8) Form removal notification					W									
C9) Start of Profilagraph					W									
C10) Start of Planing					W									
C11) Start of Grooving				x	H									

H = Hold Point  
 A point at which notification is required prior to further activities taking place; IR to be issued  
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## **HOLD POINT INSPECTION ITEMS FOR:**

## **Structural Concrete Deck**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

Hold Point C4 (Completed SIP/overhang forms/reinforcing/shear studs):

### **Forms**

1. Verify dimensions of overhangs
2. Verify shape, slope and drip-notch at overhangs
3. Verify chamfers are used where required
4. Verify side forms are vertical
5. Check cross-slope of forms at several areas
6. Verify that spacing of overhang bucks is sufficient to support concrete and screed without significant deflection
7. Look for bent or damaged (galvanized coating) panels
8. Verify that construction joints are located at the bottom of a flute and ¼" holes are drilled at no more than 12" spacing for drainage

### **Steel**

1. Verify that bars are placed within 1" of plan position
2. Verify that bar splices are lapped as per the approved plans
3. Verify that bars are tied 100% at the periphery and at every third intersection elsewhere with a double-strand, single tie
4. Verify that slab bolsters for the bottom mat are placed no more than four feet apart
5. Verify that bottom mat clearance is within ¼ inch of plan clearance
6. Verify clearances at ends of bars
7. Verify that bars are clean and free of rust scale, etc.

### **Shear Studs**

1. Verify certification of welders installing the studs
2. Verify spacing of studs is in accordance with contract plans and shop drawings, within ½ inch
3. **SHEAR STUDS SHALL NOT BE INSTALLED UNTIL AFTER THE DECK FORMS ARE IN PLACE (502-1)**
4. Ensure that arc-shields are in place prior to welding
5. Verify cleanliness of studs and beam flanges prior to welding (502-4.3 and 502-4.6)
6. Perform 45 degree bend test on first two studs on each beam (502-4.8)
7. Verify that studs do not increase more than 1/16 inch upon welding
8. "Bend test any studs that do not have a 360 degree weld as per 502-5.1

Hold Point C6 (Screed demonstration):

9. Verify chamfers are used where required
10. Verify side forms are vertical
11. Check cross-slope of forms at several areas



12. Verify that spacing of overhang bucks is sufficient to support concrete and screed without significant deflection
13. Look for bent or damaged (galvanized coating) panels
14. Verify that construction joints are located at the bottom of a flute and ¼" holes are drilled at no more than 12" spacing for drainage
15. Verify that reinforcing bars are placed within 1" of plan position
16. Verify that reinforcing bar splices are lapped as per the approved plans
17. Verify that reinforcing bars are tied 100% at the periphery and at every third intersection elsewhere with a double-strand, single tie
18. Verify that slab bolsters for the bottom mat are placed no more than four feet apart
19. Verify that bottom mat clearance is within ¼ inch of plan clearance
20. Verify clearances at ends of reinforcing bars
21. Verify that reinforcing bars are clean and free of rust scale, etc.
22. Verify that headers and deck joints are in place, secure and at proper grade
23. Measure and record top reinforcing clearances and deck depths, from bottom of screed rollers, in each bay at no greater than ten foot intervals
24. Verify that screed does not dislocate barrier reinforcing steel
25. Verify that screed is set to proper cross-slope, including any breaks in slope
26. Verify that the rollers operate in accordance with the manufacturer's recommendations
27. Verify that there are no leaks (hydraulic, fuel, etc.) from the screed that may be detrimental to the plastic concrete
28. Verify that there is sufficient run-off for the screed to completely finish the deck, including drag-pan and burlap if included

Hold Point C11 (Start grooving):

1. Verify that profile testing was performed per FM 5-558E and in the wheel paths of vehicular traffic
2. Verify grooving perpendicular to traffic flow
3. Verify depth, width and spacing of grooves as per 400-15.2.5.6
4. Verify 18" from barrier walls or curb
5. Verify no grooving across metal expansion joints
6. Verify that slurry is not permitted to run-off deck (contained)
7. Verify that deck is cleaned prior to opening to traffic

**WITNESS / HOLD PLAN: STRUCTURAL CONCRETE (OTHER THAN DECK)**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Completed excavation					W									
C3) Complete Foundation Prep					W									
C4) Complete form assembly/reinforcing/inserts (bolts, conduit, etc.)				X	H									
C5) Start of concrete placement and curing		x			W									
C6) Form removal notification				x	H									
C7) Start of backfilling around structures		x			W									
<b>Additional Requirements for Mass Concrete</b>														
C8) Installation of monitoring devices					W									
C9) Submittal of Readings					W									
C10) Submittal of final monitoring report					W									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
WR = Work Request	A notification of work commencing / notification by contractor * The Work Request shall serve as the hold point to ensure that all related documentation is complete.
TSR = Test Sample Request	A request for inspection requiring testing and sampling / notification given by DUSA QC

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## **HOLD POINT INSPECTION ITEMS FOR: Structural Concrete (Other than deck)**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

Hold Point C4 (Complete form assembly / reinforcing steel / inserts (bolts, conduit, etc.) :

### 1. FOOTINGS:

- a. Verify that form dimensions are as per plan
- b. Verify that forms are adequately braced to withstand the lateral loads of the plastic concrete
- c. Verify that forms are coated with an approved release agent
- d. Verify that bars are placed within 1" of plan position
- e. Verify that bottom mat of footing reinforcing steel is supported in accordance with 415-5.5.1
- f. Verify that bottom clearance of footing steel is within ½ inch vertically of plan position
- g. Verify top clearance of top mat
- h. Verify that spacing between mats is as per plan and top mat is supported adequately
- i. Verify that footing reinforcing steel is tied 100% at the periphery and at alternating intersections within the mat
- j. Verify clearances at ends and sides of bars are within one inch of plan clearance
- k. Verify that bars are clean and free of rust scale, etc.
- l. Verify that extended bars (dowels for columns, etc) are located within ½ inch of plan location and are held securely in place. Side clearance tolerance should not exceed ¼ inch (415-5.6.1)

### 2. STEMS / COLUMNS / BACKWALLS:

- a. Verify that age / strength requirements are met for the footing prior to placing forms
- b. Verify that form dimensions are as per plan
- c. Verify that form material is as approved
- d. Verify that forms are adequately braced to withstand the lateral loads of the plastic concrete
- e. Verify that forms are coated with an approved release agent
- f. Verify that bars are placed within 1" of plan position
- g. Verify that the column reinforcing steel is held off of forms by concrete blocks as per 415-5.7.1
- h. Verify that reinforcing steel is tied 100% at the periphery and at every third intersection within the mat
- i. Verify clearances at ends and sides of bars are within one inch of plan clearance
- j. Verify that bars are clean and free of rust scale, etc.
- k. Verify that extended bars (dowels for caps, etc) are located as per plan and are held securely in place

### 3. CAPS:

- a. Verify that age / strength requirements are met for the column prior to placing forms
- b. Verify that form dimensions are as per plan
- c. Verify that form material is as approved
- d. Verify that forms are adequately braced to withstand the lateral loads of the plastic concrete
- e. Verify that falsework and supports (friction collars, column inserts, etc.) is placed as approved
- f. Verify that forms are coated with an approved release agent

- g. Verify that bars are placed within 1" of plan position
- h. Verify that the cap reinforcing steel is held off of forms by concrete blocks as per 415-5.9.1
- i. Verify that reinforcing steel is tied 100% at every intersection
- j. Verify clearances at ends and sides of bars are within 1/2 inch of plan clearance
- k. Verify that bars are clean and free of rust scale, etc.
- l. Verify that extended bars (dowels for caps, etc) are located as per plan and are held securely in place
- m. Verify that bearing pad elevations are as per plan

Hold Point C6 (Form removal notification):

1. The Specialty Engineer is required to provide temperature readings to the Engineer as they are determined
2. The Specialty Engineer is required to provide notification on when the forms can be removed
3. The representative of the Specialty Engineer is required to provide a final report to the Engineer within three days after completion of monitoring

**WITNESS / HOLD PLAN: STRUCTURAL STEEL**

<b>Sub-Contractor:</b>	<b>Segment:</b>
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<b>Work Location/Component:</b>														
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Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x *											
C2) Completed preparation of bearing areas					H									
C3) Placement of bearings					W									
C4) Beginning of erection process				X	H									
C5) Temporary bracing completed					** W									
C6) Cross frame installation					W									
C7) Tightening of bolted connections				X	H									

H = Hold Point W = Witness Point CCEI = Concessionaire CEI IR = Inspection Request WR = Work Request TSR = Test Sample Request **	A point at which notification is required prior to further activities taking place; IR to be issued A point at which the QC/CCEI must be notified that the activity point has been reached CCEI (Verification) Inspection Personnel A request for inspection of a work activity / notification of reaching a Hold Point A notification of work commencing / notification by contractor      * The Work Request shall serve as the hold point to ensure that all related documentation is complete. A request for inspection requiring testing and sampling / notification given by DUSA QC To be done Immediately
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## **HOLD POINT INSPECTION ITEMS FOR:**

## **Structural Steel**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### Hold Point C2 (Completed preparation of bearing areas):

1. Verify that Contractor Survey has verified beam seat elevations (see 400-11.2.1)
2. Verify that dimensions of layout for bearings match those of the shop drawing beam spacing
3. Verify smoothness of seats as per 400-11.2.3
4. Verify flatness (Level) is within requirements in 400-11.2.4 or 400-11.2.5
5. Verify cleanliness of bearing areas
6. Verify that neoprene bearings are stored out of the elements
7. Verify that anchor bolts are installed in accordance with 460-7.4 and are correct size
8. Verify tightening of anchor bolt nuts as per 460-7.6.1 or 460-7.6.2

### Hold Point C4 (Beginning of erection process):

1. Verify that beams have not sustained damage during shipping or storage
2. Verify that Maintenance of traffic plans are approved and used appropriately
3. Verify that an erection plan has been approved
4. Verify that the crane leads are securely attached and lifting is done in a safe manner
5. Verify that placement of the beams on the bearings is as shown in the approved shop drawings and contract plans
6. Verify that temporary bracing is in place and secure prior to releasing the beam if needed
7. Verify that at least 50% of bolts in major connections are installed prior to releasing the beam from the crane

### Hold Point C7 (Tightening of bolted connections):

1. Witness testing of the bolts performed by QC personnel. Tests include Rotational Capacity testing and Determination of snug-tight tension and torque
2. Verify lubrication is on bolts and nuts
3. Verify that bolts are placed in connections without forcing or damaging threads
4. Witness testing of in-place bolts for snug-tight torque and ensure that the work is performed as per 460-5.4.11.1
5. Verify that all nuts and bolts are properly marked for turn-of-nut tightening once placed in the connections and brought to snug-tight
6. Verify that the nut is the element being turned unless unable to do so. If the bolt head is turned, verify placement of a washer under the bolt head
7. Verify that the amount of rotation required for each bolt has been achieved without over-tensioning the bolt
8. Verify that all bolts are at least flush with the flat of the nuts, with no recess, after tightening

**WITNESS / HOLD PLAN: Fiber Optic Cable (FOC)**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x											
C2) FOC Reel Test				X	H									
C3) FOC backbone installaiton					W									
C4) FOC laterals installation					W									
C5) FOC splicing					W									
C6) Tone Wire installation					W									
C7) FOC locate system test				X	H									
C8)FOC Tests				X	H									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
WR = Work Request	A notification of work commencing / notification by contractor
TSR = Test Sample Request	A request for inspection requiring testing and sampling / notification given by DUSA QC

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## **HOLD POINT INSPECTION ITEMS FOR: Fiber Optic Cable (FOC)**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C2 (FOC Reel Test):**

1. Verify that the correct FOC material is available
2. Witness the FOC reel test with a Contractor's representative

### **Hold Point C7 (FOC locate System test):**

1. Verify that the system is installed following the plans, manufacturer recommendations and specifications
2. Verify that approved test procedure is used to conduct the test
3. Verify that contractor provides all necessary equipment to conduct the test along with power available to conduct the test
4. Witness the FOC locate system test with a Contractor's representative
5. Verify that in case the test fails, Contractor replace faulty equipment and test is repeated

### **Hold Point C8 (FOC Tests):**

1. Verify that all FOC is installed following the plans and specifications
2. Verify that all FOC splicing was performed following the splicing plan.
3. Verify that approved test procedures are used to conduct the tests
4. Verify that contractor provides all necessary equipment to conduct the test
5. Witness the FOC End-to-End Attenuation test, OTDR Tracing test, Splice Loss Test and the Connector Loss test with a Contractor's representative
6. Verify that in case the test fails, Contractor replace cable sections, splices or connectors and test is repeated



**WITNESS / HOLD PLAN: ITS Power Sub-System**

<b>Sub-Contractor:</b>	<b>Segment:</b>
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<b>Work Location/Component:</b>															
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Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS	
<b>CONSTRUCTION ACTIVITIES</b>															
C1) Notice of work commencing			x												
C2) Installation of Disconnects, transformers, electric panels					W										
C3) Installation of generators, ATS, UPS					W										
C4) Grounding installation				X	H										
C5) Ground test				X	H										
C6) Generator / UPS test				X	H										

<p>H = Hold Point  W = Witness Point  CCEI = Concessionaire CEI  IR = Inspection Request  WR = Work Request  TSR = Test Sample Request</p>	<p>A point at which notification is required prior to further activities taking place; IR to be issued  A point at which the QC/CCEI must be notified that the activity point has been reached  CCEI (Verification) Inspection Personnel  A request for inspection of a work activity / notification of reaching a Hold Point  A notification of work commencing / notification by contractor  A request for inspection requiring testing and sampling / notification given by DUSA QC</p>
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## **HOLD POINT INSPECTION ITEMS FOR: ITS Power Sub-System**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C4 (Grounding installation):**

1. Verify that grounding is installed per Plans and per FDOT requirements
2. Verify that as-build plans are prepared indicating the location of ground rods

### **Hold Point C5 (Ground Test):**

1. Witness the grounding test with a Contractor's representative
2. Verify that the recommended resistance is achieved

### **Hold Point C6 (Generator / UPS test):**

1. Verify that the system is installed following the plans, manufacturer recommendations and specifications
2. Verify that approved test procedure is used to conduct the test
3. Verify that contractor provides all necessary equipment to conduct the test
4. Witness the Generator and UPS test with a Contractor's representative
5. Verify that in case the test fails, Contractor replace faulty equipment and test is repeated

**WITNESS / HOLD PLAN: CCTV**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x											
C2) Start of excavation					W									
C3) Placement of pole					W									
C4) Start of Class I concrete placement				X	H									
C5) Grounding installation				X	H									
C6) Lowering device installation if equipped					W									
C7) Cabinet and equipment installation					W									
C8) Conduit and power service installation					W									
C9) CCTV installation					W									
C10) Ground test				X	H									
C11) CCTV Stand Alone Test				X	H									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
WR = Work Request	A notification of work commencing / notification by contractor
TSR = Test Sample Request	A request for inspection requiring testing and sampling / notification given by DUSA QC

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## **HOLD POINT INSPECTION ITEMS FOR: CCTV**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C4 (Start of Class I concrete placement):**

1. Verify that the location of the pole is according to plans
2. Verify that the penetration of the pole and the length of the pole above ground is per shop drawings and plans
3. Verify that the pole is plumbed
4. Verify that approved mix Class I concrete is used
5. Verify that environmental control and site restoration is performed
6. Verify that the as-build plans are prepared indicating the location of the pole

### **Hold Point C5 (Grounding installation):**

1. Verify that grounding is installed per Plans and per FDOT standard 785-2
2. Verify that as-build plans are prepared indicating the location of ground rods

### **Hold Point C10 (Ground Test):**

1. Witness the grounding test with a Contractor's representative
2. Verify that the resistance of 5 ohms or less is achieved

### **Hold Point C11 (Stand Alone Test):**

1. Verify that all equipment is installed following the plans and specifications
2. Verify that approved test procedure is used to conduct the test
3. Verify that contractor provides all necessary equipment and software to conduct the test along with power available to conduct the test
4. Witness the stand alone test with a Contractor's representative
5. Verify that in case the stand alone test fails, Contractor replace faulty equipment and test is repeated

**WITNESS / HOLD PLAN: MVDS**

Sub-Contractor:														Segment:			
Work Location/Component:																	
Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS			
<b>PREPARATORY ACTIVITIES</b>																	
P1) Submittal of shop drawings and/ or cut sheets					H												
P2) Locate existing utilities					W												
P3) Submittal of MOT request if required					H												
<b>CONSTRUCTION ACTIVITIES</b>																	
C1) Notice of work commencing			x														
C2) Start of excavation					W												
C3) Placement of pole					W												
C4) Start of Class I concrete placement				X	H												
C5) Grounding installation				X	H												
C7) Cabinet and equipment installation					W												
C8) Conduit and power service installation					W												
C9) MVDS installation					W												
C10) Ground test				X	H												
C11) MVDS Stand Alone Test				X	H												
<p>H = Hold Point                              A point at which notification is required prior to further activities taking place; IR to be issued</p> <p>W = Witness Point                        A point at which the QC/CCEI must be notified that the activity point has been reached</p> <p>CCEI = Concessionaire CEI              CCEI (Verification) Inspection Personnel</p> <p>IR = Inspection Request                 A request for inspection of a work activity / notification of reaching a Hold Point</p> <p>WR = Work Request                        A notification of work commencing / notification by contractor</p> <p>TSR = Test Sample Request              A request for inspection requiring testing and sampling / notification given by DUSA QC</p>																	
<p>I-595 Corridor Roadway Improvement Project</p>																	

## **HOLD POINT INSPECTION ITEMS FOR: MVDS**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C4 (Start of Class I concrete placement):**

1. Verify that the location of the pole is according to plans
2. Verify that the penetration of the pole and the length of the pole above ground is per shop drawings and plans
3. Verify that the pole is plumbed
4. Verify that approved mix Class I concrete is used
5. Verify that environmental control and site restoration is performed
6. Verify that the as-build plans are prepared indicating the location of the pole

### **Hold Point C5 (Grounding installation):**

1. Verify that grounding is installed per Plans and per FDOT standard 785-2
2. Verify that as-build plans are prepared indicating the location of ground rods

### **Hold Point C10 (Ground Test):**

1. Witness the grounding test with a Contractor's representative
2. Verify that the resistance of 5 ohms or less is achieved

### **Hold Point C11 (Stand Alone Test):**

1. Verify that all equipment is installed following the plans and specifications
2. Verify that approved test procedure is used to conduct the test
3. Verify that contractor provides all necessary equipment and software to conduct the test along with power available to conduct the test
4. Witness the stand alone test with a Contractor's representative
5. Verify that in case the stand alone test fails, Contractor replace faulty equipment and test is repeated

**WITNESS / HOLD PLAN: PTMS**

Sub-Contractor:													Segment:			
Work Location/Component:																
Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS		
<b>CONSTRUCTION ACTIVITIES</b>																
C1) Notice of work commencing			x													
C2) Placement of inductive loops					W											
C3) Grounding installation				X	H											
C4) Cabinet and equipment installation					W											
C5) Ground test				X	H											
C6) Inductive loop Test				X	H											
H = Hold Point		A point at which notification is required prior to further activities taking place; IR to be issued														
W = Witness Point		A point at which the QC/CCEI must be notified that the activity point has been reached														
CCEI = Concessionaire CEI		CCEI (Verification) Inspection Personnel														
IR = Inspection Request		A request for inspection of a work activity / notification of reaching a Hold Point														
WR = Work Request		A notification of work commencing / notification by contractor														
TSR = Test Sample Request		A request for inspection requiring testing and sampling / notification given by DUSA QC														
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## **HOLD POINT INSPECTION ITEMS FOR: PTMS**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C3 (Grounding installation):**

1. Verify that grounding is installed per Plans and per FDOT standard 785-2
2. Verify that as-build plans are prepared indicating the location of ground rods

### **Hold Point C5 (Ground Test):**

1. Witness the grounding test with a Contractor's representative
2. Verify that the resistance of 5 ohms or less is achieved

### **Hold Point C6 (Inductive loop Test):**

1. Verify that all equipment is installed following the plans and specifications
2. Verify that approved test procedure is used to conduct the test
3. Verify that contractor provides all necessary equipment and software to conduct the test along with power available to conduct the test
4. Witness the stand alone test with a Contractor's representative
5. Verify that in case the test fails, Contractor replace faulty equipment and test is repeated



**WITNESS / HOLD PLAN: TTMS**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x											
C2) Start of excavation					W									
C3) Placement of pole					W									
C4) Start of Class I concrete placement				X	H									
C5) Grounding installation				X	H									
C10) Ground test				X	H									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
WR = Work Request	A notification of work commencing / notification by contractor
TSR = Test Sample Request	A request for inspection requiring testing and sampling / notification given by DUSA QC

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## **HOLD POINT INSPECTION ITEMS FOR: TTMS**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C4 (Start of Class I concrete placement):**

1. Verify that the location of the pole is according to plans
2. Verify that the penetration of the pole and the length of the pole above ground is per shop drawings and plans
3. Verify that the pole is plumbed
4. Verify that approved mix Class I concrete is used
5. Verify that environmental control and site restoration is performed
6. Verify that the as-build plans are prepared indicating the location of the pole

### **Hold Point C5 (Grounding installation):**

1. Verify that grounding is installed per Plans and per FDOT standard 785-2
2. Verify that as-build plans are prepared indicating the location of ground rods

### **Hold Point C10 (Ground Test):**

1. Witness the grounding test with a Contractor's representative
2. Verify that the resistance of 5 ohms or less is achieved

**WITNESS / HOLD PLAN: HAR Repeater**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x											
C2) Start of excavation					W									
C3) Placement of pole					W									
C4) Start of Class I concrete placement				X	H									
C5) Grounding installation				X	H									
C7) Cabinet and equipment installation					W									
C8) Conduit and power service installation					W									
C9) HAR installation					W									
C10) Ground test				X	H									
C11) HAR Stand Alone Test				X	H									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
WR = Work Request	A notification of work commencing / notification by contractor
TSR = Test Sample Request	A request for inspection requiring testing and sampling / notification given by DUSA QC

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## **HOLD POINT INSPECTION ITEMS FOR: HAR Repeater**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C4 (Start of Class I concrete placement):**

1. Verify that the location of the pole is according to plans
2. Verify that the penetration of the pole and the length of the pole above ground is per shop drawings and plans
3. Verify that the pole is plumbed
4. Verify that approved mix Class I concrete is used
5. Verify that environmental control and site restoration is performed
6. Verify that the as-build plans are prepared indicating the location of the pole

### **Hold Point C5 (Grounding installation):**

1. Verify that grounding is installed per Plans and per FDOT standard 785-2
2. Verify that as-build plans are prepared indicating the location of ground rods

### **Hold Point C10 (Ground Test):**

1. Witness the grounding test with a Contractor's representative
2. Verify that the resistance of 5 ohms or less is achieved

### **Hold Point C11 (Stand Alone Test):**

1. Verify that all equipment is installed following the plans and specifications
2. Verify that approved test procedure is used to conduct the test
3. Verify that contractor provides all necessary equipment and software to conduct the test along with power available to conduct the test
4. Witness the stand alone test with a Contractor's representative
5. Verify that in case the stand alone test fails, Contractor replace faulty equipment and test is repeated

**WITNESS / HOLD PLAN: HAR Beacons**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x											
C2) HAR Beacon structure installaiton					W									
C3) Grounding installation				X	H									
C4) Cabinet and equipment installation					W									
C5) Conduit and power service installation					W									
C6) Ground test				X	H									
C7) HAR Beacon Stand Alone Test				X	H									

<p>H = Hold Point                  W = Witness Point                  CCEI = Concessionaire CEI                  IR = Inspection Request                  WR = Work Request                  TSR = Test Sample Request</p>	<p>A point at which notification is required prior to further activities taking place; IR to be issued                  A point at which the QC/CCEI must be notified that the activity point has been reached                  CCEI (Verification) Inspection Personnel                  A request for inspection of a work activity / notification of reaching a Hold Point                  A notification of work commencing / notification by contractor                  A request for inspection requiring testing and sampling / notification given by DUSA QC</p>
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## **HOLD POINT INSPECTION ITEMS FOR: HAR Beacons**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C3 (Grounding installation):**

1. Verify that grounding is installed per Plans and per FDOT standard 785-2

### **Hold Point C6 (Ground Test):**

1. Witness the grounding test with a Contractor's representative
2. Verify that as-build plans are prepared indicating the location of ground rods
3. Verify that the resistance of 5 ohms or less is achieved

### **Hold Point C7 (Stand Alone Test):**

1. Verify that all equipment is installed following the plans and specifications
2. Verify that approved test procedure is used to conduct the test
3. Verify that contractor provides all necessary equipment and software to conduct the test along with power available to conduct the test
4. Witness the stand alone test with a Contractor's representative
5. Verify that in case the stand alone test fails, Contractor replace faulty equipment and test is repeated

**WITNESS / HOLD PLAN: DMS**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x											
C2) Structure installation				X	H									
C3) Grounding installation				X	H									
C4) Cabinet and equipment installation					W									
C5) Conduit and power service installation					W									
C6) DMS installation					W									
C7) Ground test				X	H									
C8) DMS Stand Alone Test				X	H									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
WR = Work Request	A notification of work commencing / notification by contractor
TSR = Test Sample Request	A request for inspection requiring testing and sampling / notification given by DUSA QC

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## **HOLD POINT INSPECTION ITEMS FOR: DMS**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C2 (Structure installation):**

1. Verify that the location of the structure is according to plans
2. Verify that the structure has no damaged parts and all bolts are properly tighten
3. Verify that the structure does not have paint coat damages that cannot be field touch-up
4. Verify that proper torquing on bolts is performed
5. Verify that minimum roadway vertical clearance is achieved
6. Verify that DMS sign is installed following plans and shop drawings

### **Hold Point C3 (Grounding installation):**

1. Verify that grounding is installed per Plans and per FDOT standard 785-2
2. Verify that as-build plans are prepared indicating the location of ground rods

### **Hold Point C7 (Ground Test):**

1. Witness the grounding test with a Contractor's representative
2. Verify that the resistance of 5 ohms or less is achieved

### **Hold Point C11 (Stand Alone Test):**

1. Verify that all equipment is installed following the plans and specifications
2. Verify that approved test procedure is used to conduct the test
3. Verify that contractor provides all necessary equipment and software to conduct the test along with power available to conduct the test
4. Witness the stand alone test with a Contractor's representative
5. Verify that in case the stand alone test fails, Contractor replace faulty equipment and test is repeated



**WITNESS / HOLD PLAN: CMS/ LCS**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x											
C2) Grounding installation				x	H									
C3) Cabinet and equipment installation					W									
C4) Conduit and power service installation					W									
C5) CMS / LCS installation					W									
C6) Ground test				x	H									
C7) CMS / LCS Stand Alone Test				x	H									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
WR = Work Request	A notification of work commencing / notification by contractor
TSR = Test Sample Request	A request for inspection requiring testing and sampling / notification given by DUSA QC

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## **HOLD POINT INSPECTION ITEMS FOR: CMS/ LCS**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C2 (Grounding installation):**

1. Verify that grounding is installed per Plans and per FDOT standard 785-2
2. Verify that as-build plans are prepared indicating the location of ground rods

### **Hold Point C6 (Ground Test):**

1. Witness the grounding test with a Contractor's representative
2. Verify that the resistance of 5 ohms or less is achieved

### **Hold Point C7 (Stand Alone Test):**

1. Verify that all equipment is installed following the plans and specifications
2. Verify that approved test procedure is used to conduct the test
3. Verify that contractor provides all necessary equipment and software to conduct the test along with power available to conduct the test
4. Witness the stand alone test with a Contractor's representative
5. Verify that in case the stand alone test fails, Contractor replace faulty equipment and test is repeated

**WITNESS / HOLD PLAN: Emergency Access Gate (EAG) Sub-system**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x											
C2) Barrier, warning gate, beacon installation					W									
C3) Grounding Installaiton				X	H									
C4) ACU cabinet and equipment installation					W									
C5) Conduit and power service installation					W									
C6) Ground test				X	H									
C7) EAG components Stand Alone Test (SAT)				X	H									
C8) EAG Sub-system Test				X	H									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
WR = Work Request	A notification of work commencing / notification by contractor
TSR = Test Sample Request	A request for inspection requiring testing and sampling / notification given by DUSA QC

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## **HOLD POINT INSPECTION ITEMS FOR: Emergency Access Gate Subsystem(EAG)**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C3 (Grounding installation):**

1. Verify that grounding is installed per Plans and per FDOT standard 785-2
2. Verify that as-build plans are prepared indicating the location of ground rods

### **Hold Point C6 (Ground Test):**

1. Witness the grounding test with a Contractor's representative
2. Verify that the resistance of 5 ohms or less is achieved

### **Hold Point C7 (Stand Alone Test):**

1. Verify that all equipment is installed following the plans and specifications
2. Verify that approved test procedure is used to conduct the test
3. Verify that contractor provides all necessary equipment and software to conduct the test along with power available to conduct the test
4. Witness the stand alone test with a Contractor's representative
5. Verify that in case the stand alone test fails, Contractor replace faulty equipment and test is repeated

### **Hold Point C8 (Sub-system Test):**

1. Verify that all components of the sub-system are correctly configured and labeled in the ACU
2. Verify correct communication between ACU and all sub-system components
3. Verify that approved test procedure is used to conduct the test
4. Witness the sub-system test with a Contractor's representative
5. Verify that in case the sub-system test fails, Contractor correct the failures and test is repeated

**WITNESS / HOLD PLAN: Express Lanes Access Control System (ELACS)**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x											
C2) Barrier and Warning Gate installation					W									
C3) Grounding installation				X	H									
C4) ACU Cabinet and equipment installation					W									
C5) Conduit and power service installation					W									
C6) Ground test				X	H									
C7) ELACS Components Stand Alone Test				X	H									
C8) ELACS Sub-system Test				X	H									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
WR = Work Request	A notification of work commencing / notification by contractor
TSR = Test Sample Request	A request for inspection requiring testing and sampling / notification given by DUSA QC

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## **HOLD POINT INSPECTION ITEMS FOR: Express Lanes Access Control System (ELACS)**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C3 (Grounding installation):**

1. Verify that grounding is installed per Plans and per FDOT standard 785-2
2. Verify that as-build plans are prepared indicating the location of ground rods

### **Hold Point C6 (Ground Test):**

1. Witness the grounding test with a Contractor's representative
2. Verify that the resistance of 5 ohms or less is achieved

### **Hold Point C7 (Stand Alone Test):**

1. Verify that all equipment is installed following the plans and specifications
2. Verify that approved test procedure is used to conduct the test
3. Verify that contractor provides all necessary equipment and software to conduct the test along with power available to conduct the test
4. Witness the stand alone test with a Contractor's representative
5. Verify that in case the stand alone test fails, Contractor replace faulty equipment and test is repeated

### **Hold Point C8 (Sub-system Test):**

1. Verify that all components of the sub-system are correctly configured and labeled in the ACU
2. Verify correct communication between ACU and all sub-system components
3. Verify that approved test procedure is used to conduct the test
4. Witness the sub-system test with a Contractor's representative
5. Verify that in case the sub-system test fails, Contractor correct the failures and test is repeated

**WITNESS / HOLD PLAN: Toll Gantry**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x											
C2) Structure installation				X	H									
C3) Grounding installation				X	H									
C4) Cabinet and equipment installation					W									
C5) Conduit and power service installation					W									
C6) Maintenance Lift Installation					W									
C7) Ground test				X	H									
C8) Equipment Stand Alone Test				X	H									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
W = Witness Point	A point at which the QC/CCEI must be notified that the activity point has been reached
CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
IR = Inspection Request	A request for inspection of a work activity / notification of reaching a Hold Point
WR = Work Request	A notification of work commencing / notification by contractor
TSR = Test Sample Request	A request for inspection requiring testing and sampling / notification given by DUSA QC

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## **HOLD POINT INSPECTION ITEMS FOR: Toll Gantry**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C2 (Structure installation):**

1. Verify that the location of the structure is according to plans
2. Verify that the structure has no damaged parts and all bolts are properly tighten
3. Verify that the structure does not have paint coat damages that cannot be field touch-up
4. Verify that proper torquing on bolts is performed
5. Verify that minimum roadway vertical clearance is achieved

### **Hold Point C3 (Grounding installation):**

1. Verify that grounding is installed per Plans and per FDOT standard 785-2
2. Verify that as-build plans are prepared indicating the location of ground rods

### **Hold Point C7 (Ground Test):**

1. Witness the grounding test with a Contractor's representative
2. Verify that the resistance of 5 ohms or less is achieved

### **Hold Point C8 (Stand Alone Test):**

1. Verify that all equipment is installed following the plans and specifications
2. Verify that approved test procedure is used to conduct the test
3. Verify that contractor provides all necessary equipment and software to conduct the test along with power available to conduct the test
4. Witness the stand alone test with a Contractor's representative
5. Verify that in case the stand alone test fails, Contractor replace faulty equipment and test is repeated



**WITNESS / HOLD PLAN: HUB**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x											
C2) HUB base installation					W									
C3) HUB building installation					W									
C4) Grounding installation				X	H									
C5) Conduit and power service installation					W									
C6) HUB equipment installation (A/C, monitoring system, alarm)					W									
C7) Equipment racks and electronic equipment installation					W									
C8) Ground test				X	H									
C9) HUB Stand Alone Test				X	H									

<p>H = Hold Point  W = Witness Point  CCEI = Concessionaire CEI  IR = Inspection Request  WR = Work Request  TSR = Test Sample Request</p>	<p>A point at which notification is required prior to further activities taking place; IR to be issued  A point at which the QC/CCEI must be notified that the activity point has been reached  CCEI (Verification) Inspection Personnel  A request for inspection of a work activity / notification of reaching a Hold Point  A notification of work commencing / notification by contractor  A request for inspection requiring testing and sampling / notification given by DUSA QC</p>
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## **HOLD POINT INSPECTION ITEMS FOR: HUB**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C8 (Grounding installation):**

1. Verify that grounding is installed per Plans and per FDOT standard 785-2
2. Verify that as-build plans are prepared indicating the location of ground rods

### **Hold Point C8 (Ground Test):**

1. Witness the grounding test with a Contractor's representative
2. Verify that the resistance of 5 ohms or less is achieved

### **Hold Point C9 (Stand Alone Test):**

1. Verify that all equipment is installed following the plans and specifications
2. Verify that approved test procedure is used to conduct the test
3. Verify that contractor provides all necessary equipment and software to conduct the test along with power available to conduct the test
4. Witness the stand alone test with a Contractor's representative
5. Verify that in case the stand alone test fails, Contractor replace faulty equipment and test is repeated

**WITNESS / HOLD PLAN: TMC**

Sub-Contractor: \_\_\_\_\_ Segment: \_\_\_\_\_

Work Location/Component: \_\_\_\_\_

Main Activity	N/A	TSR	WR	IR	CCEI	Inspector	Date	Pass	Fail	Re-Insp Date	Inspector	Pass	Fail	COMMENTS
<b>CONSTRUCTION ACTIVITIES</b>														
C1) Notice of work commencing			x											
C2) TMC equipment installation (switch, firewall, servers, monitors, pc's)					W									
C3) Hardware/ Software platform test				X	H									
C4) Communication network test				X	H									
C5) ITS Sub-system Test				X	H									

<p>H = Hold Point  W = Witness Point  CCEI = Concessionaire CEI  IR = Inspection Request  WR = Work Request  TSR = Test Sample Request</p>	<p>A point at which notification is required prior to further activities taking place; IR to be issued  A point at which the QC/CCEI must be notified that the activity point has been reached  CCEI (Verification) Inspection Personnel  A request for inspection of a work activity / notification of reaching a Hold Point  A notification of work commencing / notification by contractor  A request for inspection requiring testing and sampling / notification given by DUSA QC</p>
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## **HOLD POINT INSPECTION ITEMS FOR: TMC**

In addition to the below requirements and prior to submittal of hold points ensure that all preceding witness points have been completed

### **Hold Point C3 (Hardware/ software platform test):**

1. Verify that all hardware and software is installed per plans
2. Verify that approved test procedure is used to conduct the test
3. Witness the hardware and software platform test

### **Hold Point C4 (Communication network test):**

1. Verify that all communication network is installed per plans
2. Verify that approved test procedure is used to conduct the test
3. Witness the communication network test

### **Hold Point C5 (ITS Sub-system Test):**

1. Verify that all components of the sub-systems are correctly configured and labeled in Sunguide
2. Verify correct communication between Sunguide and all sub-systems components
3. Verify that approved test procedure is used to conduct the test
4. Witness the ITS sub-system test with a Contractor's representative
5. Verify that in case any of the sub-systems test fails, Contractor correct the failures and test is repeated