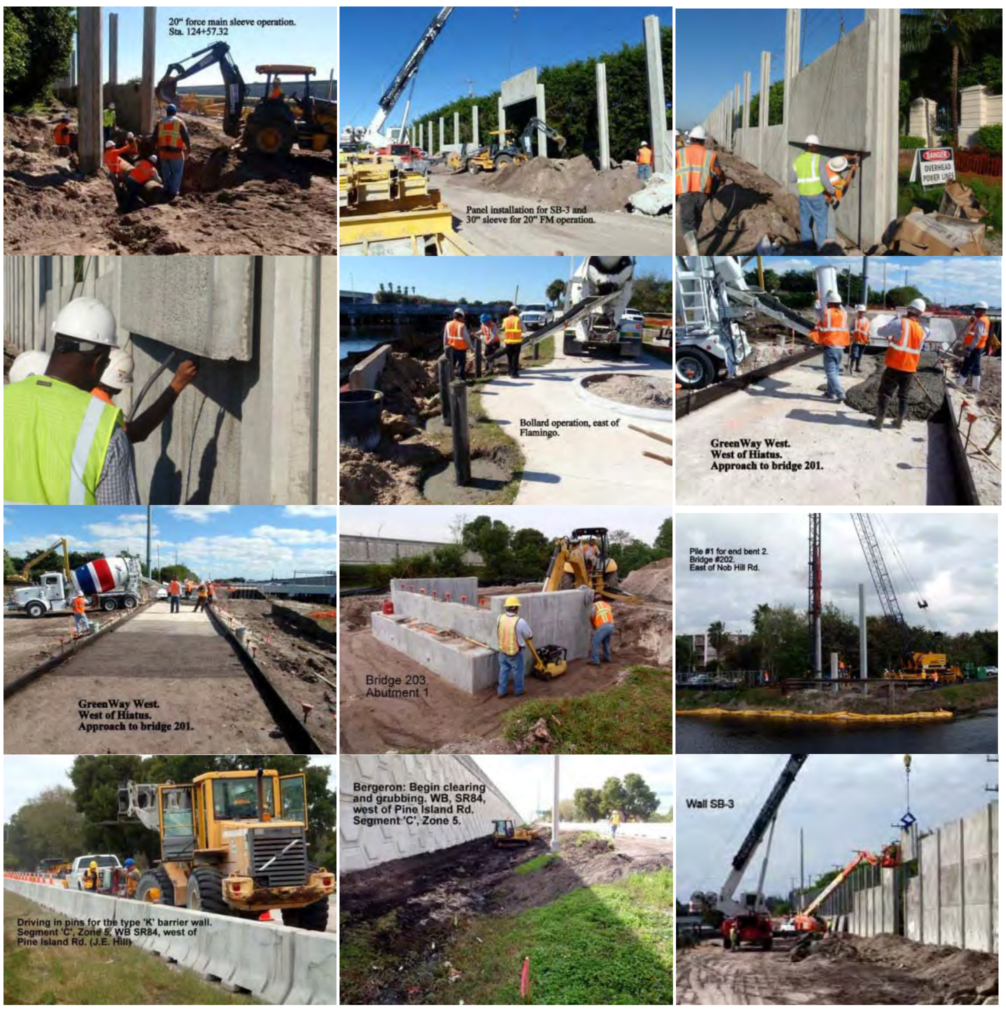
Witness & Hold Inspection Plan

I-595 Corridor Roadway Improvement Project



Revision 6 • March 2013

Procedure for Witness and Hold Point	
Prepared by: I 595 Express / CCEI	
Issued by:	Approved by:
Project Quality Manager	for: 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:

- Additional items added to the CMS/LCS Hold Point C7
- Additional items added to the DMS Hold Point C11
- Additional items added to the HAR Hold Point C4
- Inclusion of Micro-Pile Foundations Hold Point process and checklist

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 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 2 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 requirement 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. The Contractor will not be allowed to proceed with construction until all corrections have been made and the inspection passed. 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 <u>In- Process Inspection</u>
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. <u>Work Request (WR)</u>
The Contractor shall submit a work request (WR) notification to the CCEI in the system 2 days prior to the start of construction activities for a given element. Consideration will be given for activities requiring less notification on a case by case basis. 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
   Once a Work Request has been approved in the system, the Contractor/Subcontractor may log into the system under the associated Work Request ID and pre-schedule an Inspection Request (IR) at a

minimum of 24 hours prior to the anticipated date of inspection. Consideration will be given for activities requiring less notification on a case by case basis. 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 CCEI will perform an Inspection of the work constructed. If the preceding Witness or Hold Points have not been completed, the system will not allow the inspection of a Hold Point to be processed and will send a rejection message to the inspector. Inspection of a Hold Point 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 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.

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.

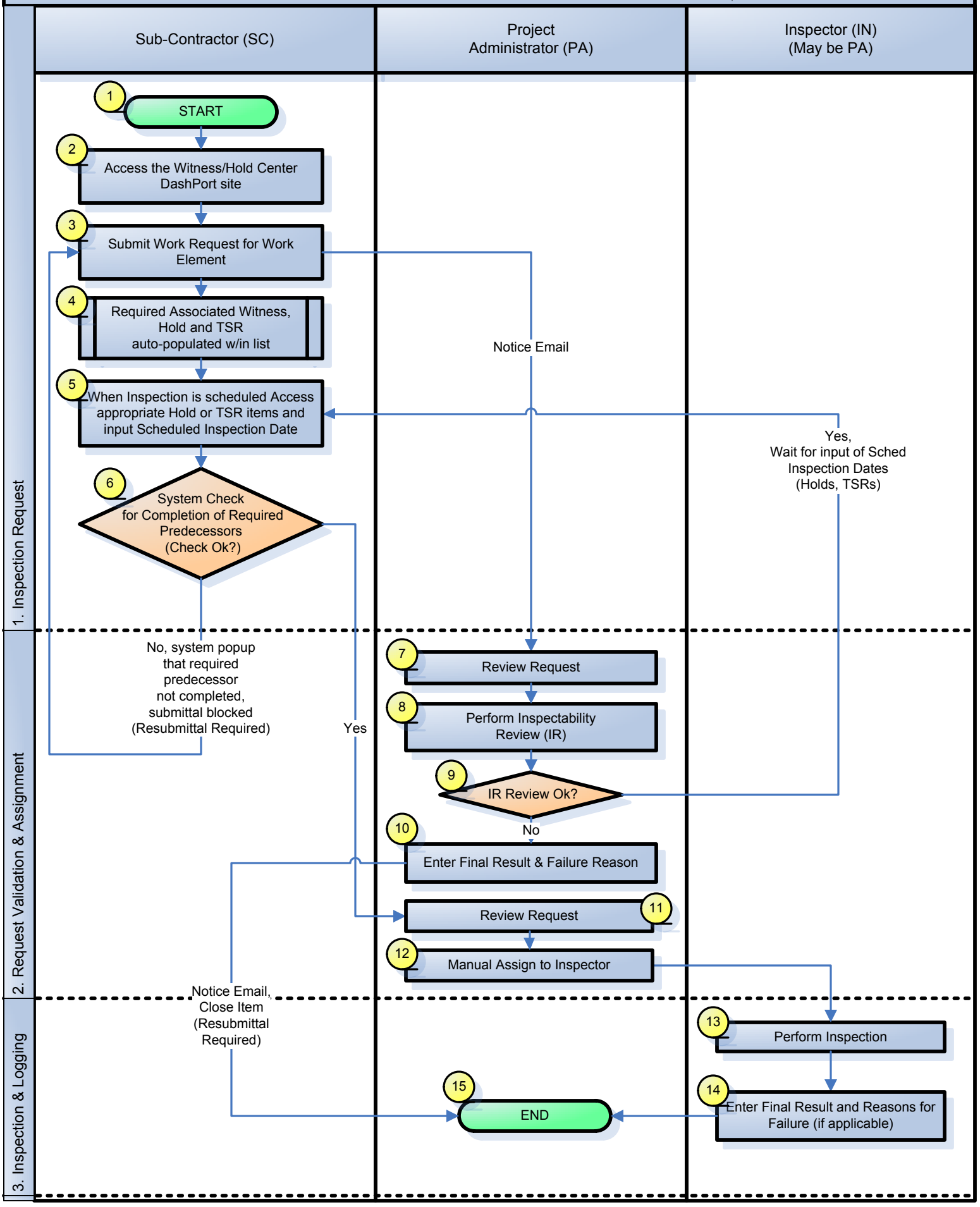
8. ATTACHMENTS

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)

HNTB – DashPort - Process Flowchart (Summary)

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

Version: 2.0 (draft)
Date: 9/14/10 Revised:
Author: MSC, SC Approved by:



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-Pile Foundations
15. Micro Tunneling/Jack & Bore/Directional Bores
16. MOT
17. MSE Walls
18. Non-Structural Concrete
19. Pavement Markings
20. Pile Foundations
21. Pipe Video Inspection
22. Post-Tensioning
23. Rip Rap
24. Sheetpile Bulkhead
25. Signalization
26. Signing
27. Soundwalls
28. Structural Concrete (decks)
29. Structural Concrete (other than decks)
30. Structural Steel

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

31. Fiber Optic Cable
32. ITS Conduit Testing
33. ITS Power Sub-System
34. CCTV
35. MVDS
36. PTMS
37. TTMS
38. HAR Repeater
39. HAR Beacons
40. DMS
41. CMS/LCS
42. Emergency Access Gate Sub-system
43. Express Lanes Access Control System
44. Toll Gantry
45. HUB
46. 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
CONSTRUCTION ACTIVITIES														
FOR FORMED METHOD:														
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									
FOR EXTRUDED METHOD														
C1) Notice of work commencing			x											
C2) Complete reinforcing and set-up of extruder				x	H									
C3) Start of extrusion / concrete placement		x			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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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

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
CONSTRUCTION ACTIVITIES														
Sub-Base														
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									
Base														
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									

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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 ¼", 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 ½" 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
CONSTRUCTION ACTIVITIES														
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		X	H									
C6) Rolling straightedge (structural course)					W									

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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
CONSTRUCTION ACTIVITIES														
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									

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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
CONSTRUCTION ACTIVITIES														
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									

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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
**	To be done immediately

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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
CONSTRUCTION ACTIVITIES														
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									

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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: 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

WITNESS / HOLD PLAN: DRILLED SHAFTS (MISC)

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
CONSTRUCTION ACTIVITIES														
C1) Notice of work commencing			x *											
C2) Casing Placement					W									
C3) Start of excavation		x			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									

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I-595 Corridor Roadway Improvement Project

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
CONSTRUCTION ACTIVITIES														
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									

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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
CONSTRUCTION ACTIVITIES														
C1) Notice of work commencing			x *											
C2) Start of installation process					W									

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I-595 Corridor Roadway Improvement Project

WITNESS / HOLD PLAN: FRICTION COURSE

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
CONSTRUCTION ACTIVITIES														
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									

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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

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
CONSTRUCTION ACTIVITIES														
C1) Notice of work commencing			x *											
C2) Start of installation of GR items					W									

H = Hold Point	A point at which notification is required prior to further activities taking place; IR to be issued
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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
CONSTRUCTION ACTIVITIES														
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
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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
CONSTRUCTION ACTIVITIES														
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	A point at which notification is required prior to further activities taking place; IR to be issued
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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: MICROPILES

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
CONSTRUCTION ACTIVITIES														
C1) Notice of work commencing			x *											
C2) Verify Layout					W									
TEST PILE														
C3) Start of test pile (drlling/casing installation)				x	H									
C4) Grouting of test pile		x			W									
C5) Placement of Reinforcement					W									
C6) Load Test		x			W									
PRODUCTION PILE														
C7) Start of drlling/casing installation				x	H									
C8) Grouting of pile		x			W									
C8) Placement of Reinforcement					W									
C9) Proof Test		x			W									

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I-595 Corridor Roadway Improvement Project

Note: The Installation of a micropile is a continuous operation. The drilling, casing installation, grouting and reinforcement placement occur in a single operation

HOLD POINT INSPECTION ITEMS FOR: Micro-Pile Foundations

This is a continuous operation and the following items should be checked as part of this operation

Start of test pile/production pile (drilling/casing installation)

The inspector/construction staff should verify that the micropile contractor:

1. Does not progress a hole, pressure grout or post-grout within a radius of 5 pile diameters or 5 feet, whichever is greater, of a micropile until the grout for that micropile has set for 24 hours, or longer if a retarder is used
2. Removes casing carefully, using methods so that the reinforcement is not disturbed, damaged, or is left in contact with the soil
3. Plugs or covers drilled holes for safety and to prevent foreign objects and material from falling in
4. Provides for the proper disposal and containment of spoil
5. Meets construction tolerances (3 inches from plan location; rebar within 3/8" of center of pile; ¼ inch/foot or less variation from vertical or batter)
6. Review the soil boring logs for each location
7. Confirm stability of each hole and record specific methods used to maintain hole stability
8. Verify and record the depth to top of rock, where encountered
9. Verify the final depth of each hole by counting drill casings used, and/or by using a weighted tape
10. Record observations made during drilling. Pay particular attention to loss of drilling fluid, sudden drop of drill tools, and encountering boulders or other obstructions
11. Verify that the drilling slurry/spoil materials are well contained and do not enter into nearby waterways.
12. Pay close attention when drilling adjacent to bodies of water, as air pressure can follow underground fissures in rock and percolate into adjacent water. If this happens, the contractor should immediately halt the operation and develop a procedure to eliminate the possibility of silt or grout from entering the waterway or water body.
13. CCEI responsibility is to verify that the Geotechnical Representative is on site during all operations, and to observe the complete piling operations.

Grouting

1. Grout as soon as possible after drilling the bond zone
2. Place grout from the bottom-up to ensure complete filling of the hole
3. Maintain a positive head at the grout holding tank
4. Verify the water/cement ratio and grout mix design
5. Verify that all grouting equipment (pumps, gauges, hoses, etc.) are in good working order
6. Grout cylinders shall also be taken for later strength testing,
7. Record grouting pressure and volume of grout ("grout take") pumped during pressure grouting for each micropile. Readings are typically recorded in 2 or 5 foot increments for the entire pressure grouted zone.
8. Observe the quality of grout at the ground surface (i.e. when the hole is full of grout). Excess grout should be pumped until the flushing grout appears to be uncontaminated.
9. Check and record the specific gravity of the grout using a mud balance test at a frequency of one test per micropile.

Placement of Reinforcement

10. Verify reinforcement size, type, length and condition just prior to insertion into the drill hole
11. Verify size, type, and condition of bar couplers
12. Ensure that the micropile contractor installs the reinforcement either before or after initial grout placement but before temporary casing (if used) is withdrawn
13. Always record the total pile length and bond zone length
14. Ensure that the micropile contractor inserts the reinforcement to the prescribed length without the use of force
15. Verify location and spacing of centralizers/spacers, and locations of couplers
16. Make sure reinforcement is clean of any surface dirt, oil, mud, etc.
17. Check the attachment and intervals of centralizers/spacers
18. Ensure that the reinforcement remains centered in the borehole

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
CONSTRUCTION ACTIVITIES														
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									

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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
CONSTRUCTION ACTIVITIES														
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									

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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
CONSTRUCTION ACTIVITIES														
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 reinforcemet 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	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: 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
CONSTRUCTION ACTIVITIES														
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	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: 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
CONSTRUCTION ACTIVITIES														
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	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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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
CONSTRUCTION ACTIVITIES														
C1) Notice of work commencing			x *											
C2) Start of template assembly					W									
C3) Start of test pile		x		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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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: PIPE VIDEO INSPECTION

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
CONSTRUCTION ACTIVITIES														
C1) Submit Work Request			x*											
C2) Start of Pipe Video					W									
C3) Review of Pipe Video CD's					W									
C4) Perform Repairs Identified From Video Review (If Required)				x	H									
C5) Video the repair areas (If Required)					W									
C6) Review of Pipe Video CD's of repair areas (If Required)					W									

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HOLD POINT INSPECTION ITEMS FOR: Pipe Video Inspection

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 (Perform Repairs Identified From Video Review):

1. Verify that all repairs are performed in accordance with the FDOT Pipe repair matrix or approved repair procedure.
2. Re-video the damaged area to ensure that the repair made is adequate.

WITNESS / HOLD PLAN: POST-TENSIONING

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
CONSTRUCTION ACTIVITIES														
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									

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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 ¾ 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
CONSTRUCTION ACTIVITIES														
C1) Notice of work commencing			x *											
C2) Start of placement of Filter Fabric				x	H									
C3) Placement of Rip Rap		x			W									

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: 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
CONSTRUCTION ACTIVITIES														
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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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
CONSTRUCTION ACTIVITIES														
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									

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**	Includes pedestrian poles and features

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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
CONSTRUCTION ACTIVITIES														
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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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
CONSTRUCTION ACTIVITIES														
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									

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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
CONSTRUCTION ACTIVITIES														
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									

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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

<u>Hold Point C11 (Start grooving):</u>

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
CONSTRUCTION ACTIVITIES														
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									
Additional Requirements for Mass Concrete														
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.
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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

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
CONSTRUCTION ACTIVITIES														
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	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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**	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
CONSTRUCTION ACTIVITIES														
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									

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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 CONDUIT TESTING

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
CONSTRUCTION ACTIVITIES														
C1) Submit Work Request			x*											
C2) Locate Wire Installed (If Applicable)					W									
C3) PB/SV Passed Visual Inspection					W									
C4) Conduit Mandrel Test/Pull Rope Installed/Conduit Sealed				x	H									

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HOLD POINT INSPECTION ITEMS FOR: ITS Conduit Testing

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 (Conduit Mandrel Test/ Pull Rope Installed/ Conduit Sealed):

1. Witness the performance of the Mandrel Test in all conduit runs using the approved test procedure
2. Verify that at the end of each Mandrel Test the correct pull rope is installed in each conduit run
3. Verify that each conduit is properly sealed using approved material

WITNESS / HOLD PLAN: ITS Power 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
CONSTRUCTION ACTIVITIES														
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									

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
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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
CONSTRUCTION ACTIVITIES														
C1) Notice of work commencing			x											
C2) Start of excavation					W									
C3) Placement of pole					W									
C4) Start of Class I concrete placement		x		X	H									
C5) Grounding installation				X	H									
C6) Lowering device installation if equiped					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
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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
PREPARATORY ACTIVITIES														
P1) Submital of shop drawings and/ or cut sheets					H									
P2) Locate existing utilities					W									
P3) Submital of MOT request if required					H									
CONSTRUCTION ACTIVITIES														
C1) Notice of work commencing			x											
C2) Start of excavation					W									
C3) Placement of pole					W									
C4) Start of Class I concrete placement		x		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									

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
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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
CONSTRUCTION ACTIVITIES														
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									

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CCEI = Concessionaire CEI	CCEI (Verification) Inspection Personnel
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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
CONSTRUCTION ACTIVITIES														
C1) Notice of work commencing			x											
C2) Start of excavation					W									
C3) Placement of pole					W									
C4) Start of Class I concrete placement		x		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
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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
CONSTRUCTION ACTIVITIES														
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
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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
7. Verify that no physical obstructions (high tension power lines, tall buildings, trees) are near the HAR repeater
8. Verify that overhead power lines and commercial radio transmitters sites are a minimum of 100' away from HAR repeater

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
CONSTRUCTION ACTIVITIES														
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									

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 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
CONSTRUCTION ACTIVITIES														
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 interior and exterior of DMS signs are free of any damages
2. Verify that all equipment is installed following the plans and specifications
3. Verify that DMS controller cabinet is installed outside of the clear zone or behind guardrail/ barrier wall
4. Verify that the DMS controller cabinet is installed at a distance in advance of the DMS structure such that maintenance personnel performing work from the controller cabinet shall be able to view and confirm the text being displayed on the DMS.
5. Verify that approved test procedure is used to conduct the test
6. Verify that contractor provides all necessary equipment and software to conduct the test along with power available to conduct the test
7. Witness the stand alone test with a Contractor's representative
8. 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
CONSTRUCTION ACTIVITIES														
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 interior and exterior of CMS signs and LCS are free of any damages
2. Verify that CMS controller cabinet is installed outside of the clear zone or behind guardrail/ barrier wall
3. Verify that the CMS controller cabinet is installed at a distance in advance of the CMS structure such that maintenance personnel performing work from the controller cabinet shall be able to view and confirm the text being displayed on the CMS.
4. Verify that all equipment is installed following the plans and specifications
5. Verify that approved test procedure is used to conduct the test
6. Verify that contractor provides all necessary equipment and software to conduct the test along with power available to conduct the test
7. Witness the stand alone test with a Contractor's representative
8. 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
CONSTRUCTION ACTIVITIES														
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
CONSTRUCTION ACTIVITIES														
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
CONSTRUCTION ACTIVITIES														
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
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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
CONSTRUCTION ACTIVITIES														
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									

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: 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
CONSTRUCTION ACTIVITIES														
C1) Notice of work commencing			x											
C2) TMC equipment installation (switch, firewall, servers, monitors, pc's)					W									
C3) Hardware/ Software plataform test				X	H									
C4) Communication network test				X	H									
C5) ITS 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: 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