

**Torres Rojas, Genara**

*FOIA 361*

**From:** tgrycan@eicassociates.com  
**Sent:** Tuesday, December 04, 2012 8:49 AM  
**To:** Duffy, Daniel  
**Cc:** Torres Rojas, Genara; Van Duyne, Sheree  
**Subject:** Freedom of Information Online Request Form

Information:

First Name: Thomas  
Last Name: Grycan  
Company: EIC Associates  
Mailing Address 1: 140 Mountain Avenue  
Mailing Address 2: Suite 303  
City: Springfield  
State: NJ  
Zip Code: 07081  
Email Address: [tgrycan@eicassociates.com](mailto:tgrycan@eicassociates.com)  
Phone: 973 315-0200  
Required copies of the records: Yes

List of specific record(s):

All timesheets and payroll records for PANYNJ employees and subcontractors associated with the performance of concrete and reinforcing inspections for Contract WTC 264.596 Transit Hall Foundations. Please also include the all concrete and reinforcing inspection reports for this Contract.

FOI Administrator

June 11, 2013

Mr. Thomas Grycan  
EIC Associates  
140 Mountain Avenue, Suite 303  
Springfield, NJ 07081

Re: Freedom of Information Reference No. 13607

Dear Mr. Grycan:

This is a response to your December 4, 2012 request, which has been processed under the Port Authority's Freedom of Information Code (the "Code") for copies of timesheets and payroll records for Port Authority employees and subcontractors associated with the performance of concrete and reinforcing inspections for Contract No. WTC 264.596 - Transit Hall Foundations and the inspection reports for this contract.

Material responsive to your request and available under the Code can be found on the Port Authority's website at <http://www.panynj.gov/corporate-information/foi/13607-WTC.pdf>. Paper copies of the available records are available upon request.

We have searched our files and no records were found in response to your specific request for timesheets and payroll records associated with the performance of concrete and reinforcing inspections as these records do not allocate time to a specific contract or type of work.

Please refer to the above FOI reference number in any future correspondence relating to your request.

Very truly yours,



Daniel D. Duffy  
FOI Administrator



THE PORT AUTHORITY OF NY & NJ

Construction Division  
Materials Engineering Unit  
**Inspection Report**

<b>Date</b>	11/23/2010	<b>Weather</b>	Cloudy (60°F)	<b>Time</b>	7:00AM-3:30 PM
<b>Contract Title</b>	WTC -TRANSIT HALL FOUNDATION			<b>Contract No.</b>	WTC 264.596
<b>Contractor</b>	EIC ASSOCIATES INC.			<b>Inspector</b>	KYLE LOTT
<b>Location</b>	SHEAR WALL ESW-1 THRU ESW-9				

**Description of Work/Test Performed & Non-Conformance Notations:**

On site to perform the installation and grouting of rock anchors for shear wall ESW7 and ESW8. Rock anchor installation was performed using the appropriate 3" diameter grade 150 dywidag threadbar with a total length of 43'. The unbonded and bonded length of the bar remained consistent with the approved drawing, being 13' and 22' respectively. The remaining 8' of threaded bar will be cut after the load test is performed to obtain the 5' of exposed bar above the bedrock.

Grout was placed in each anchor hole prior to threadbar installation. Grout was mixed using a colloidal grout plant using a ratio of 5 gallons of water to 1 bag (94 lbs) of Portland type II cement. Grout samples were taken using 3"x6" cylinders and placed in an on-site curing box.

See below for rock anchor installation locations:

- ESW7: #7, 8, 9, 10, 11, 12, 13
- ESW8: #4, 5

Construction Division  
Materials Engineering Unit  
**Inspection Report**

<b>Date</b>	12/23/2010	<b>Weather</b>	Cloudy (32°F)	<b>Time</b>	7:00AM-3:30 PM
<b>Contract Title</b>	WTC -TRANSIT HALL FOUNDATION		<b>Contract No.</b>	WTC 264.596	
<b>Contractor</b>	EIC ASSOCIATES INC.		<b>Inspector</b>	KYLE LOTT	
<b>Location</b>	SHEAR WALL ESW-1 THRU ESW-9				

**Description of Work/Test Performed & Non-Conformance Notations:**

On site to perform rock anchor drilling inspections for the east shear wall. The rate computed for each anchor deducts all non-drilling times and is for drilling in bedrock only (i.e. the rate does not include drilling through grout). Anchors were drilled beyond the production depth of 35.5' using an 8.5" drill bit. See below for rock anchor drill locations, times, and associated rates:

- ESW5-5: Anchor drilled ~27' to a depth of 37' (continued from yesterday) from 7:40am to 7:50am, with a total anchor drill rate of **0.47 ft/min.**
- ESW5-7: Anchor drilled to a depth of ~37' from 9:50am to 11:50am, with a rate of **0.53 ft/min.**
- ESW5-2: Anchor drilled to a depth of ~37' from 1:45pm to 3:0pm, with a rate of **0.57 ft/min.**

Grout and bar-anchor installation occurred at ESW8 and ESW9. Prior to installation, the hole was flushed clean with water, sounded, and grouted. Rock anchor installation was performed using the appropriate 3" diameter grade 150 dywidag threadbar with a total length of 43'. The unbonded and bonded length of the bar was 13' and 22' respectively, with ~8' of exposed bar. Grout samples were taken at 1:45pm using 3"x6" cylinders and placed in an on-site curing box. The specific gravity of the sample taken was 1.92 lb/ft<sup>3</sup> (tested by Moretrench). See below for anchor installation locations and depths:

- ESW8-1: 36'
- ESW8-2: 36'6"
- ESW9-1: 36'9"
- ESW9-2: 37'2"
- ESW9-3: 36'9"
- ESW9-4: 37'
- ESW9-5: 37'
- ESW9-6: 36'6"



STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Construction Division  
Materials Engineering Unit  
Inspection Report

<b>Date</b>	12/30/2010	<b>Weather</b>	Clear (35°F)	<b>Time</b>	6:30AM-4:00 PM
<b>Contract Title</b>	WTC - TRANSIT HALL FOUNDATION		<b>Contract No.</b>	WTC 264.596	
<b>Contractor</b>	EIC ASSOCIATES INC.		<b>Inspector</b>	Adam Watson	
<b>Location</b>	SHEAR WALL ESW-1 THRU ESW-9				

**Description of Work/Test Performed & Non-Conformance Notations:**

On site to perform inspection of rock anchor installation activities at the following locations:

Contractor performance test of anchor ESW6-7

This test exceeded the elongation tolerance during the test.

Please see anchor proof tests log for details.

Contractor drilled holes to install anchors at future date. Please see supplemental report with locations of holes as well as drill times

Contractor grouted anchor ESW 6-9

*(Signature: AW)*

*(Signature: Adam Watson)*

Adam Watson

*(Signature: Robert Gill)*

Robert Gill



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WT2064.596 Date: 1/7/2011

CONTRACTOR: EIC

LOCATION: 25 cu. yd of 5,000 psi concrete for

Footings C128 + C129, el. 2.36'  
(W-1/10 + W-1/11)

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*Upon completion of the pour the footings were covered with thermal blankets to assure adequate curing temperatures.*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano  
Inspector  
Alexander Sciffiano  
(Print Name)

1 17 2011  
Date

Concur: [Signature]  
Supervising Engineer of Materials  
[Signature]  
(Print Name)  
1 20 11  
Date



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS: - 1. Footing #118 CL 12/w1 @ EL 233'-0" to EL 237'-0": Work in progress  
2. Footing #117 CL 8.5/w1 @ EL 233'-0" to EL 237'-0": Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Footing #118 CL 12/w1 @ EL 233'-0" to EL 237'-0"

1. Contractor started installing footing bottom reinforcement.
2. Contractor finished formwork.

Footing #117 CL 8.5/w1 @ EL 233'-0" to EL 237'-0":

1. Contractor started installing the formwork.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete
- Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305
- Approved as corrected shop drawing 01A, 01B dated 10-15-10
- RFI # 699 dated 12-22-10

**LEGEND**

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly  
Inspector

1/13/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

1/20/11  
Date

SABER GHAZALY  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transportation Hub CONTRACT NO.: WTC 264.596 Date: 1-13-11

CONTRACTOR: FIC

LOCATION: 250 cu. yd of 5000 psi mass concrete for fill at south foundation slab el. 244'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano  
 Inspector  
Alexander Sciffiano  
 (Print Name)

1/13/11  
Date

Concur: Joseph Marsano  
 Supervising Engineer of Materials  
Joseph Marsano  
 (Print Name)

1/26/12  
Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transportation Hub CONTRACT NO.: WTC 264.586 Date: 1-13-11

CONTRACTOR: EFC

LOCATION: 40 cu. yd of 5000 psi #467 stone concrete for North Foundation slab, T2 interface @ el. 232'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 1/13/11  
 Inspector Date  
Alexander Sciffiano  
 (Print Name)

Concur: Joseph Marsano 1/28/12  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 1-14-11

CONTRACTOR: ETC

LOCATION: 20 cu. yd of 5000 psi concrete for

footing C117 (w/12) + C118 (w/8.5) el. 236'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*When the footings were finished being poured, they were covered with blankets to assure adequate heat during the initial hours of setting.*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: Alexander Sciffiano 1/14/11  
Inspector Date

Concur: [Signature] 1/20/11  
Supervising Engineer of Materials Date

Alexander Sciffiano  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS: 1. Shear wall 7 approximately between CL (14-17)/W1.2 @ EL 228'-0" TO EL 236'-0": Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 7 approximately between CL (14-17)/W1.2 @ EL 228'-0" TO EL 236'-0":

1. Contractor started installing footing bottom reinforcement.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete
- Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305
- Approved as corrected shop drawing 02C, dated 12-2-10

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 19/01/11  
Inspector Date

Concur: [Signature] 1/25/11  
Supervising Engineer of Materials Date

SABER GHAZALY  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS: 1. Shear wall 7 approximately between CL (14-17)/W1.2 @ EL 228'-0" TO EL 236'-0": Work in progress  
2. Footing 127 CL 7/W-1 @ EL 233'-0" TO EL 237'-0": Final inspection

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 7 approximately between CL (14-17)/W1.2 @ EL 228'-0" TO EL 236'-0":

- 1. Contractor continues installing footing bottom reinforcement.

Footing 127 CL 7/W-1 @ EL 233'-0" TO EL 237'-0":

- 1. Contractor finished installing footing reinforcement.
- 2. Contractor finished installing column dowels.

Final inspection completed.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 02C, dated 12-2-10

Approved as corrected shop drawing 01 B dated 10-15-10

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 20/01/11  
Inspector Date

Concur: [Signature] 1/25/11  
Supervising Engineer of Materials Date

SABER GHAZALY  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264,596 Date

CONTRACTOR: EIC

LOCATION: 10 cu. yd of 5000psi concrete for Footing #C127, W-1/7 el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and procedures (see PA 340 report).

The footing was covered with blankets to assure adequate temperatures.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano  
Inspector  
Alexander Sciffiano  
(Print Name)

1/29/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials  
V. Mosino  
(Print Name)



**SPECIAL INSPECTION REPORT**

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264,596 Date: 1-20-11

CONTRACTOR: EIC

LOCATION: 10 cu. yd of 5000psi concrete for Footing #C127, W-1/7 el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*The footing was covered with blankets to assure adequate temperatures.*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano  
Inspector  
Alexander Sciffiano  
(Print Name)

1/20/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials  
J. J. [Signature]  
(Print Name)  
1/20/11  
Date



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS: 1. Shear wall 7 approximately between CL (14-17)/W1.2 @ EL 227'-6" TO EL 236'-0": Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 7 approximately between CL (14-17)/W1.2 @ EL 228'-0" TO EL 236'-0":

1. Contractor continues installing footing bottom reinforcement.
2. Contractor started installing shear wall dowels.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete
- Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305
- Approved as corrected shop drawing 02C, dated 12-2-10

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: <u>Saber Ghazaly</u>	<u>01/24/11</u>	Concured: <u>[Signature]</u>	<u>1/31/11</u>
Inspector	Date	Supervising Engineer of Materials	Date
<u>SABER GHAZALY</u>		<u>[Signature]</u>	
(Print Name)		(Print Name)	



CONTRACT DOCUMENT CONTROLS

**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS: 1. Shear wall 7 footing approximately between CL (14-17)/W1.2 @ EL 227'-6" TO EL 236'-0": Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 7 approximately between CL (14-17)/W1.2 @ EL 227'-6" TO EL 236'-0":

1. Contractor continues installing footing bottom reinforcement.
2. Contractor continues installing shear wall dowels.
3. Contractor started installing column 168 dowels.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete
- Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305
- Approved as corrected shop drawing 02C, dated 12-2-10

**LEGEND**

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  01/25/11  
Inspector Date

SABER GHAZALY  
(Print Name)

Concur:  2/1/11  
Supervising Engineer of Materials Date

(Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS: 1. Shear wall 7 footing approximately between CL (14-17)/W1.2 @ EL 227'-6" TO EL 236'-0": Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 7 approximately between CL (14-17)/W1.2 @ EL 227'-6" TO EL 236'-0":

1. Contractor finished installing footing bottom reinforcement.
2. Contractor finished installing shear wall dowels.
3. Contractor continues installing column 168 dowels.
4. Contractor started installing formwork.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete
- Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305
- Approved as corrected shop drawing 02C, dated 12-2-10

**LEGEND**

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 01/26/11  
Inspector Date

Concur: [Signature] 2/1/11  
Supervising Engineer of Materials Date

SABER GHAZALY  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS: 1. Shear wall 7 footing approximately between CL (14-17)/W1.2 @ EL 227'-6" TO EL 236'-0": Work in progress  
2. Footing 109 CL 10/WR1 @ EL 231'-0" to EL 238'-0": Work In progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 7 approximately between CL (14-17)/W1.2 @ EL 227'-6" TO EL 236'-0":

1. Contractor finished installing footing bottom reinforcement.
2. Contractor finished installing shear wall dowels.
3. Contractor finished installing column 168 dowels.
4. Contractor continues installing formwork.

Footing 109 CL 10/WR1 @ EL 231'-0" to EL 238'-0":

1. Contractor started installing footing bottom reinforcement.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 02C, dated 12-2-10

Approved drawing 01A, dated 10-15-10

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly  
Inspector

01/27/11  
Date

Concur: [Signature] 2/11/11  
Supervising Engineer of Materials Date

SABER GHAZALY  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 1-28-11

CONTRACTOR: ERC

LOCATION: 3 Cu. yd of 12,000 psi concrete for Footing #109, 10/WRI el. 231'-238'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*the Footing was covered with a blanket upon completion of the pour to keep temperatures sufficiently elevated.*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- 'Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete

ACI 305R - Hot Weather Concreting

ACI 306 - Cold Weather Concreting

ACI 309R - Guide for Consolidation of Concrete

ACI 308 - Standard Practice for Curing Concrete

ACI 311 - Manual of Concrete Inspection

ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: Alexander Sciffiano  
Inspector

1/28/11  
Date

Concur: [Signature] 2/11/11  
Supervising Engineer of Materials Date

Alexander Sciffiano  
(Print Name)

[Signature]  
(Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS: 1. Shear wall 7 footing approximately between CL (14-17)/W1.2 @ EL 227'-6" TO EL 236'-0": Final inspection  
2. Footing 109 CL 10/WR1 @ EL 231'-0" to EL 238'-0": Final inspection

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 7 approximately between CL (14-17)/W1.2 @ EL 227'-6" TO EL 236'-0":

1. Contractor finished installing footing bottom reinforcement.
2. Contractor finished installing shear wall dowels.
3. Contractor finished installing column 168 dowels.
4. Contractor finished installing formwork.
5. Final inspection completed.

Footing 109 CL 10/WR1 @ EL 231'-0" to EL 238'-0":

1. Contractor finished installing footing reinforcement.
2. Contractor finished formwork  
Final inspection completed.

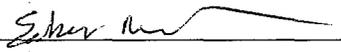
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete
- Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305
- Approved as corrected shop drawing 02C, dated 12-2-10
- Approved shop drawing 01A, dated 10-15-10

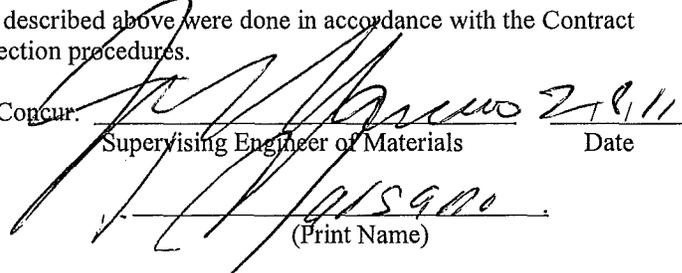
**LEGEND**

CL = COLUMN LINE      EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
Inspector

01/28/11  
Date

Concur:   
Supervising Engineer of Materials      Date

SABER GHAZALY  
(Print Name)

015900  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 1-28-11

CONTRACTOR: ETC

LOCATION: 141 cu. yd of 12,000 psi concrete for  
ESW#7, 14-17/W1.2 @ el. 227-236'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*The concrete was covered with blankets upon completion of the pour to keep adequate temperatures.*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano  
Inspector  
Alexander Sciffiano  
(Print Name)

1/28/11  
Date

Concur: [Signature] 2/1/11  
Supervising Engineer of Materials  
[Signature]  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

WTC 264.596

CONTRACT TITLE: HUB Foundations CONTRACT NO.: \_\_\_\_\_

CONTRACTOR: EIC

LOCATION: Shear Wall 8 footing, EL 228' -0" to 236' -0", CL 14.3/W-05 - 15/W-04. Work in Progress.

Footing C-167, EL 228' -0" to 236' -0", CL 14.2/W-05. Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

Shear Wall 8, elevation 228' -0" to 236' -0"

(approximate column lines: 14.3/W-05 - 15/W-04)

1 - Wire lathers set vertical #11L bars. Work in Progress.

Footing C-167, elevation 228' -0" to 236' -0"

(approximate column lines: 14.2/W-05)

1 - Wire lathers set footing reinforcement. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings dated 10 June 2010 (Addendum 22): S8301, S8302, S8303, S8304 and S8305

Approved as corrected shop drawings dated 2 December 2010: 01B

CL - column lines; EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
Inspector

01/31/2011 Date

Concur: [Signature] 7/3/11  
Supervising Engineer of Materials Date

Alfredo Vitrano  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

WTC 264.596

CONTRACT TITLE: HUB Foundations CONTRACT NO.:

CONTRACTOR: EIC

LOCATION: Shear Wall 8 footing, EL 228' -0" to 236' -0", CL 14.3/W-05 - 15/W-04. Work in Progress.

Footing C-167, EL 228' -0" to 236' -0", CL 14.2/W-05. Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Shear Wall 8, elevation 228' -0" to 236' -0"

(approximate column lines: 14.3/W-05 - 15/W-04)

1 - Wire lathers set vertical #11L bars and #10 bottom bars. Work in Progress.

Footing C-167, elevation 228' -0" to 236' -0"

(approximate column lines: 14.2/W-05)

1 - Wire lathers set bottom #10 bars. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings dated 10 June 2010 (Addendum 22): S8301, S8302, S8303, S8304 and S8305

Approved as corrected shop drawings dated 2 December 2010: 01B and 2C

RFI TH-00808 dated 1 February 2011

CL - column lines; EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano 2/11/2011 Inspector Date

Alfredo Vitrano (Print Name)

Concur: [Signature] 2/8/11 Supervising Engineer of Materials Date

[Signature] (Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS: 1. Shear wall 8 footing, approximately CL 14.3/W-05 – 15/W-04 @ EL 228'-0" TO EL 236'-0": Work in progress  
2. Footing C-167, CL 10/WR1 @ EL 228'-0" to EL 236'-0": Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 8 footing approximately CL14.3/W-05 – 15/W-04 @ EL 228'-0" TO EL 236'-0"

1. Contractor finished installing bottom reinforcement.
2. Contractor continues installing wall dowels

Footing C-167, CL 10/WR1 @ EL 228'-0" to EL 236'-0":

1. Contractor started installing column 167 dowels.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete
- Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305
- Approved as corrected shop drawing 02C and 01B dated 12-2-10
- RFI TH-00808 dated 2-1-11

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 02/03/11  
Inspector Date

SABER GHAZALY  
(Print Name)

Concur: [Signature] 2/8/11  
Supervising Engineer of Materials Date

[Signature]  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC264.596 Date: 2-4-11

CONTRACTOR: EIC

LOCATION: 98 cu. yd of 12,000 psi concrete for

ESW #8 W-0.5/16 el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*ESW #8 was covered with curing blankets upon completion of the pour.*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete

ACI 305R - Hot Weather Concreting

ACI 306 - Cold Weather Concreting

ACI 309R - Guide for Consolidation of Concrete

ACI 308 - Standard Practice for Curing Concrete

ACI 311 - Manual of Concrete Inspection

ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Serrano  
Inspector

2-14-11  
Date

Concur:

[Signature] 2-10-11  
Supervising Engineer of Materials Date

Alexander Serrano  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264-596 Date: 2-4-11

CONTRACTOR: ETC

LOCATION: 40 cu. yd of 5,000 psi concrete for  
2110 + C116 footing w/1.5/12 + w/1/5

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Footings were covered with curing blankets upon completion of the pour.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
Inspector  
Alexander Sciffano  
(Print Name)

2/4/11  
Date

Signed:   
Supervising Engineer of Materials  
J. J. Parsons  
(Print Name)

2/10/11  
Date



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO WTC264.596

CONTRACTOR: EIC

- LOCATIONS: 1. Shear wall 8 footing, approximately CL 14.3/W-05 – 15/W-04 @ EL 228'-0'' TO EL 236'-0'': Final inspection  
 2. Footing C-167, CL 10/WR1 @ EL 228'-0'' to EL 236'-0'': Final inspection  
 3. Footing C-110, CL 12/WR1 @ EL 230'-0'' TO EL 237'-0'': Final inspection  
 4. Footing C-116, CL 4.5/W1 @ EL 233'-0'' TO EL 237'-0'': Final inspection

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 8 footing approximately CL14.3/W-05 – 15/W-04 @ EL 228'-0'' TO EL 236'-0''

1. Contractor finished installing bottom reinforcement.
2. Contractor finished installing wall dowels

Final inspection completed.

Footing C-167, CL 10/WR1 @ EL 228'-0'' to EL 236'-0'':

1. Contractor finished installing column 167 dowels.

Final inspection completed.

Footing C-110, CL 12/WR1 @ EL 230'-0'' TO EL 237'-0'':

1. Contractor finished installing footing reinforcement.
2. Contractor finished installing column dowels.

Final inspection completed.

Footing C-116, CL 4.5/W1 @ EL 233'-0'' TO EL 237'-0'':

1. Contractor finished installing footing reinforcement.
2. Contractor finished installing column dowels.

Final inspection completed.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 02C and 01B dated 12-2-10

RFI TH-00808 dated 2-1-11

**LEGEND**

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: Saber Ghazaly  
Inspector

02/04/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

2/11/11  
Date

SABER GHAZALY  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 2-8-2011

CONTRACTOR: ETC

LOCATION: 23 cu. yd of 5,000 psi concrete for  
Footings C103 + C104 W2.6/12 + W2.6/14.2 el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*Curing blankets were placed over the footings upon completion of the pour*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 2/7/11  
Inspector Date  
Alexander Sciffano  
(Print Name)

Concur: [Signature] 2/10/11  
Supervising Engineer of Materials Date  
[Signature]  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264,596 Date: 2-9-11

CONTRACTOR: ETC

LOCATION: 27 cu. yd of 5,000 psi concrete for

Footing C139, W-1.5/12 el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*Curing blankets were placed over the footing upon completion of the pour.*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scriffano 2/9/11  
 Inspector Date  
Alexander Scriffano  
 (Print Name)

Concur: [Signature] 2/8/11  
 Supervising Engineer of Materials Date  
J. P. Balsano  
 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 2-10-11

CONTRACTOR: \_\_\_\_\_

LOCATION: 10 cu. yd of 5,000 psi concrete for  
footing C162, W2.6/10 el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

The footing was covered with curing blankets upon completion of pour.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 2/10/11  
Inspector Date  
Alexander Sciffano  
(Print Name)

Concur: [Signature] 2/10/11  
Supervising Engineer of Materials Date  
V. Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS

1. Footing C-162, CL 10/W3.2 @ EL 233'-0" to EL 237'-0": Final inspection
2. Shear wall 9 footing, approximately CL 14.3/W-1.5 – 15/W-1.4 @ EL 228'-0" TO EL 236'-0": Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Footing C-162, CL 10/W3.2 @ EL 233'-0" to EL 237'-0":

1. Contractor finished installing footing reinforcement.
2. Contractor finished installing column 162 dowels.
3. Contractor finished cleaning the footing.
4. Contractor finished installing the formwork.

Final inspection completed.

Shear wall 9 footing, approximately CL 14.3/W-1.5 – 15/W-1.4 @ EL 228'-0" TO EL 236'-0":

1. Contractor continues installing footing bottom reinforcement.
2. Contractor started installing shear wall dowels
3. Contractor started installing column 146 dowels
4. Contractor started cleaning the bottom of the footing.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 02D dated 12-2-10

Approved as corrected shop drawing 01B and 1A dated 10-15-10

RFI TH-00808 dated 2-1-11

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly  
Inspector

02/10/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

2/11/11  
Date

SABER GHAZALY  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS

- 2. Shear wall 9 footing, approximately CL 14.3/W-1.5 – 15/W-1.4 @ EL 228'-0" TO EL 236'-0": Final inspection

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 9 footing, approximately CL 14.3/W-1.5 – 15/W-1.4 @ EL 228'-0" TO EL 236'-0":

- 1. Contractor continues installing footing bottom reinforcement.
- 2. Contractor finished installing shear wall dowels
- 3. Contractor finished installing the dowels for column# 146.
- 4. Contractor finished cleaning the bottom of the footing.

Final inspection completed.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 02D dated 12-2-10

Approved as corrected shop drawing 01B and 1A dated 10-15-10

RFI TH-00808 dated 2-1-11

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 02/11/11  
 Inspector Date

Concur: V. Marsano 2/17/11  
 Supervising Engineer of Materials Date

SABER GHAZALY  
 (Print Name)

V. Marsano  
 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 2-11-11

CONTRACTOR: ETC

LOCATION: 98 cu. yd of 12,000 psi concrete for  
ESW #9 W-1.7/16 el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*ESW #9 was covered with curing blankets upon completion of the pour.*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 2/11/11  
Inspector Date  
Alexander Sciffiano  
(Print Name)

Concur: [Signature] 2/18/11  
Supervising Engineer of Materials Date  
V. J. Sciffano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS

2. Footing C-138 CL WR1/10@ EL 231'-0'' to EL 237'-0'': Final inspection

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Footing C-138 CL WR1/10@ EL 231'-0'' to EL 237'-0''

1. Contractor finished installing footing reinforcement.
2. Contractor finished installing column 138 dowels

Final inspection completed.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 02D dated 12-2-10

Approved as corrected shop drawing 01B and 1A dated 10-15-10

RFI TH-00808 dated 2-1-11

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 02/15/11  
Inspector Date

SABER GHAZALY  
(Print Name)

Consur: [Signature] 2/15/11  
Supervising Engineer of Materials Date

[Signature]  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 2-15-11

CONTRACTOR: ETC

LOCATION: 28 cu. yd of 5,000 psi concrete for

Footing C138 W-1.66/10 e.l. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

The footing was covered with curing blankets upon completion of the pour.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scriffiano  
Inspector

2/15/11  
Date

Concur: [Signature] 2-18-11  
Supervising Engineer of Materials Date

Alexander Scriffiano  
(Print Name)

[Signature]  
(Print Name)

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: PORT TRANSIT HALL CONTRACT NO.: WTC 264596 DATE: 2/17/11

CONTRACTOR: EIC

LOCATION: 30 cu. yd of ~~psi concrete for~~ 5k PSI concrete for Footing C108  
Col. line W. 8/7 EC 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for proper material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report)

Curing:

Concrete Curing Blankets were installed after concrete placement

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector  
LOD KUNTOR  
(Print Name)

2/17/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials  
V. P. Saisano  
(Print Name)  
2/22/11  
Date



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS

2. Footing C-108 CL WR1/7@ EL 230'-0'' to EL 237'-0'': Final inspection

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Footing C-108 CL WR1/7@ EL 230'-0'' to EL 237'-0''

1. Contractor finished installing footing reinforcement.
2. Contractor finished installing column 138 dowels
3. Contractor finished installing formwork.

Final inspection completed.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 02D dated 12-2-10

Approved as corrected shop drawing 01B and 1A dated 10-15-10

RFI TH-00808 dated 2-1-11

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 02/17/11  
Inspector Date

Concur: V. Masano 2/25/11  
Supervising Engineer of Materials Date

SABER GHAZALY  
(Print Name)

V. Masano  
(Print Name)



**SPECIAL INSPECTION REPORT** PA 3666-10-09

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit HUB CONTRACT NO.: WTC 264-596 DATE: 2/18/11

CONTRACTOR: EIC

LOCATION: 10 cu. yd of <sup>5000</sup> psi concrete for footing C166 CL W.O. 8/16 @ elev 237

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for proper material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report)

Curing:

curing blankets applied after concrete placement.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections:
1. Sampling and Strength Testing
  2. Formwork
  3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: \_\_\_\_\_  
Inspector

1/1  
Date

Concur

[Signature]  
Supervising Engineer of Materials

2/22/11  
Date

\_\_\_\_\_  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS

1. Footing C-166 CL W.5/16 @ EL 233'-0" to EL 237'-0": Final inspection

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Footing C-166 CL W.5/16@ EL 233'-0" to EL 237'-0"

1. Contractor finished installing footing reinforcement (#9@6" spacing each way).
2. Contractor finished installing column 166 dowels (40#11)
3. Contractor finished installing formwork.
4. PA inspector checked the footing cleaning before the concrete placement.

Final inspection completed. Concrete placed.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 27 dated 6-10-10 S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 02D dated 12-2-10

Approved as corrected shop drawing 01B and 1A dated 10-15-10

RFI TH-00808 dated 2-1-11

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly  
Inspector

02/18/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

3/1/11  
Date

SABER GHAZALY  
(Print Name)

[Signature]  
(Print Name)





CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

*Scanned*

CONTRACT TITLE: HUB FOUNDATIONS CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS

1. Footing C-169 CL W-1.2/16 @ EL 231'-0" to EL 237'-0": Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Footing C-169 CL W-1.2/16 @ EL 231'-0" to EL 237'-0":

1. Contractor started installing footing reinforcement (#9@6" spacing each way).
2. Contractor started installing formwork.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete
- Contract DWG Addendum 27 dated 6-10-10 S8301,S8302,S8303,S8304,S8305
- Approved as corrected shop drawing 01B and 1A dated 10-15-10
- RFI TH-00808 dated 2-1-11

LEGEND

CL = COLUMN LINE      EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: *Saber Ghazaly*      02/23/11      Date

SABER GHAZALY  
(Print Name)

Concur: *[Signature]* 03/11      Date

*[Signature]*  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 2-23-11

CONTRACTOR: EFC

LOCATION: 45 cu. yd of 5,000 psi concrete for Footing C169, W-1.2/16 el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Footing C169 was covered with curing blanket when the concrete pour was completed.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scriffiano 2/23/11  
Inspector Date  
Alexander Scriffiano  
(Print Name)

Concur: [Signature] 3/4/11  
Supervising Engineer of Materials Date  
V. J. Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS 1. Shear wall 5 CL (6.5-12.5)/W2@ EL 228'-0" TO EL 236'-0": Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 5 CL (6.5-12.5)/W2@ EL 228'-0" TO EL 236'-0"

- 1. Contractor started installing shear wall west footing reinforcement.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete
- Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305
- Approved as corrected shop drawing 01A, 01B dated 10-15-10
- Approved as corrected shop drawing 02B dated 12-02-10

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 03 / 02 / 11  
Inspector Date

SABER GHAZALY  
(Print Name)

Concur: [Signature] 3/11/11  
Supervising Engineer of Materials Date

[Signature]  
(Print Name)



SECRET, UNCLASSIFIED, UNCONTROLLED

CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO. WTC264.596

CONTRACTOR: EIC

3/8/11 to 7/5/11

LOCATIONS 1. Shear wall 5 CL (6.5-12.5)/W2@ EL 228'-0" TO EL 236'-0": Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

S+FC

Shear wall 5 CL (6.5-12.5)/W2@ EL 228'-0" TO EL 236'-0"

- 1. Contractor finished installing shear wall west footing reinforcement.
- 2. Contractor finished shear wall east footing reinforcement.
- 3. Contractor continues installing footing formwork.
- 4. Contractor started installing shear wall dowels

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 01A, 01B dated 10-15-10

Approved as corrected shop drawing 02B dated 12-02-10

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: Saber Ghazaly 03 / 08 / 11  
Inspector Date

Concur: [Signature] 3/15/11  
Supervising Engineer of Materials Date

SABER GHAZALY  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 3-9-11

CONTRACTOR: ETC

LOCATION: 130 cu. yd of 12,000 psi concrete for  
ESW-#5 Footing el. 237' W2/10-12

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*The footing was covered with curing blankets upon completion of the pour.*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 3/9/11  
Inspector Date

Concur: [Signature] 3/9/11  
Supervising Engineer of Materials Date

Alexander Sciffano  
(Print Name)

V. Masano  
(Print Name)



SECRET/CONFIDENTIAL/UNCLASSIFIED/CONTROLLED INFORMATION/RESTRICTED INFORMATION

**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS 1. Shear wall 5 CL (6.5-12.5)/W2@ EL 228'-0'' TO EL 236'-0'': Final inspection

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 5 CL (6.5-12.5)/W2@ EL 228'-0'' TO EL 236'-0''

1. Contractor finished installing shear wall west footing reinforcement.
2. Contractor finished shear wall east footing reinforcement.
3. Contractor finished installing footing formwork.
4. Contractor finished installing shear wall dowels

Final inspection completed.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 01A, 01B dated 10-15-10

Approved as corrected shop drawing 02B dated 12-02-10

**LEGEND**

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly  
Inspector

03 / 09 / 11  
Date

Concur: J. Merano  
Supervising Engineer of Materials

3/23/11  
Date

SABER GHAZALY  
(Print Name)

J. Merano  
(Print Name)



STRUCTURAL INSPECTION REPORT

CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS 1. Shear wall 5 CL (6.5-12.5)/W2@ EL 228'-0" TO EL 236'-0": Final inspection

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 6 CL (14-17)/W2.1@ EL 228'-0" TO EL 236'-0"

- 1. Contractor finished installing footing reinforcement.
- 2. Contractor started installing footing formwork.
- 3. Contractor started installing shear wall dowels.

Final inspection completed.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 01A, 01B dated 10-15-10

Approved as corrected shop drawing 02B dated 12-02-10

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 03 / 14 / 11  
Inspector Date

Concur: [Signature] 3/20/11  
Supervising Engineer of Materials Date

SABER GHAZALY  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS 1. Shear wall 5 CL (6.5-12.5)/W2@ EL 228'-0'' TO EL 236'-0'': Final inspection

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 6 CL (14-17)/W2.1@ EL 228'-0'' TO EL 236'-0''

- 1. Contractor finished installing footing reinforcement.
- 2. Contractor finished installing footing formwork.
- 3. Contractor finished installing shear wall dowels.
- 4. Contractor finished installing column 165 dowels

Final inspection completed.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 01A, 01B dated 10-15-10

Approved as corrected shop drawing 02B dated 12-02-10

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 03 / 15 / 11  
Inspector Date

Concur: V. Marsano 3/23/11  
Supervising Engineer of Materials Date

SABER GHAZALY  
(Print Name)

V. Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 3-15-2011

CONTRACTOR: ETC

LOCATION: 80 cu. yd of 12,000 psi concrete for  
ESW#6 W2/14-16 el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*ESW#6 was covered with curing blankets upon completion of the pour*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano  
Inspector  
Alexander Sciffiano  
(Print Name)

3/15/2011  
Date

Concur: [Signature]  
Supervising Engineer of Materials  
[Signature]  
(Print Name)

3/20/11  
Date



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Page 6 of 10

CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS 1. Shear wall 1 footing, CL (-2.5 -10.0)/W4@ EL 221'-6'' TO EL 227'-6'': Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall 1 footing, CL (-2.5 -10.0)/W4@ EL 221'-6'' TO EL 227'-6'':

1. Contractor started installing the footing bottom reinforcement for column 154.(#9@6''EW)
2. Contractor started installing footing side reinforcement

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete
- Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305
- Approved as corrected shop drawing 08A, dated 1-04-11

LEGEND

CL = COLUMN LINE EL = ELEVATION EW = EACH WAY

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 03 / 21 / 11 Date

SABER GHAZALY  
(Print Name)

Concur: V. Marsano 3/21/11 Date

V. Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Shear Wall (ESW1) Footing, CL (-2.5 to -10)/W4, EL 221' -6" to 227' -6". Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

Shear Wall (ESW1) footing, elevation 221' -6" to 227' - 6"

(approximate column lines: (-2.5 to -10)/W4)

1 - Wire lathers set #10 bottom footing and #9 side footing reinforcement. Work in Progress.

2 - Wire lathers set #11L column dowels for projected type F column. Note: the column dowels had female formsaver couplers at the top end. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawing WTC 264 dated 9 October 2009 (Addendum 19): S1104

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S4401, S4411 and S8502

Approved as corrected shop drawings dated 4 January 2011: 04A and 08A

Incoming RFI TH-01061

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitran  
Inspector

3/23/2011 Date

Concur: [Signature]  
Supervising Engineer of Materials

3/28/11 Date

Alfredo Vitran  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Shear Wall (ESW1) Footing, CL (-2.5 to -10)/W4, EL 221' -6" to 227' -6". Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:
Reinforcement and formwork inspection:

Contractor worked in the following locations:

Shear Wall (ESW1) footing, elevation 221' -6" to 227' - 6"
(approximate column lines: (-2.5 to -10)/W4)

- 1 - Wire lathers set #10 bottom footing and #9 side footing reinforcement. Work in Progress.
2 - Wire lathers set #11L column dowels for projected type F column. Note: the column dowels had female formsaver couplers at the top end. Work in Progress.
3 - Wire lathers set #5 stirrups. Work in Progress.
4 - The contractors set formwork. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC 264 dated 9 October 2009 (Addendum 19): S1104
Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S4401, S4411 and S8502
Approved as corrected shop drawings dated 4 January 2011: 04A and 08A
Incoming RFI TH-01061

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano 3/12/2011 Concur: J. M. ... 3/31/11
Inspector Date Supervising Engineer of Materials Date
Alfredo Vitrano (Print Name) J. M. ... (Print Name)



**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Shear Wall (ESW1) Footing, CL (-2.5 to -10)/W4, EL 221' -6" to 227' -6". Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

Shear Wall (ESW1) footing, elevation 221' -6" to 227' - 6"  
(approximate column lines: (-2.5 to -10)/W4)

- 1 - Wire lathers set remaining #10 bottom footing and #9 side footing reinforcement. Final Inspection.
- 2 - Wire lathers set #5H08 ties. Final Inspection.
- 3 - The contractors set formwork and shear key. Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawing WTC 264 dated 9 October 2009 (Addendum 19): S1104
- Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S4401, S4411 and S8502
- Approved as corrected shop drawings dated 4 January 2011: 04A and 08A
- Incoming RFI TH-01061

CL - column lines  
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
Inspector  
Alfredo Vitrano  
(Print Name)

3 12/11/2011  
Date

Concur: [Signature] 3/11/11  
Supervising Engineer of Materials  
[Signature]  
(Print Name)



SPECIAL INSPECTION CONTROL REPORT 3656/10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 3-25-11

CONTRACTOR: ETC

LOCATION: ESW#1 120 cu. yd of 12,000 psi concrete for  
W2.5/-9 to -4 el. 237, shear wall #1

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

The concrete was covered with curing blankets upon completion of the pour.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano  
Inspector

3/25/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

4/8/11  
Date

Alexander Sciffiano  
(Print Name)

V. Marsaro  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS 1. Shear wall 4 footing, CL (.5-4.5)/W2@ EL 227'-6" TO EL 236'-0": Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

1. Shear wall 4 footing, CL (.5-4.5)/W2@ EL 227'-6" TO EL 236'-0"

1. Contractor started installing the footing bottom reinforcement #6 @12" spacing
2. The contractor started installing footing formwork.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete
- Contract DWG Addendum 22 dated 6-10-10 S8301,S8302,S8303,S8304,S8305
- Approved as corrected shop drawing 08A, dated 1-04-11

LEGEND

CL = COLUMN LINE EL = ELEVATION EW = EACH WAY

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 03 / 28 / 11  
Inspector Date

Concur: [Signature] 3/28/11  
Supervising Engineer of Materials Date

SABER GHAZALY  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Shear Wall (ESW4) Footing, CL (0 - 2.2)/(WR1 - W2.2), EL 227' -6" to 236' -0". Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Shear Wall (ESW4) footing, elevation 227' -6" to 236' - 0" (approximate column lines: (0 - 2.2)/(WR1 - W2.2))

- 1 - Wire lathers set bottom #6B04 bars @ 12 inches on center. Work in Progress.
2 - Wire lathers set bottom #9B39 bars @ 6 inches on center for projected column C-106. Work in Progress.
3 - Wire lathers set bottom #7 bottom bars for projected column C-106. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0122
Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S1203, S1203 and S4215
Approved as corrected shop drawing dated 2 December 2010: 02A
Approved as corrected shop drawing dated 15 October 2010: 01A

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano 3/29/2011 Date: 4/8/11 Date
Inspector Date: Supervising Engineer of Materials Date
Alfredo Vitrano (Print Name) (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Shear Wall (ESW4) Footing, CL (0 - 2.2)/(WR1 - W2.2), EL 227' -6" to 236' -0". Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Shear Wall (ESW4) footing, elevation 227' -6" to 236' - 0" (approximate column lines: (0 - 2.2)/(WR1 - W2.2))

1 - Wire lathers set bottom #9B39 bars @ 6 inches on center for projected column C-106. Work in Progress.

3 - Wire lathers set bottom #9B15 bottom bars for projected column C-107. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0122

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S1203, S1203 and S4215

Approved as corrected shop drawing dated 2 December 2010: 02A

Approved as corrected shop drawing dated 15 October 2010: 01A

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitro Inspector

03/30/2011 Date

Supervising Engineer of Materials V. J. Pearson

4/18/11 Date

Alfredo Vitro (Print Name)

(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Shear Wall (ESW4) Footing, CL (0 - 2.2)/(WR1 - W2.2), EL 227' -6" to 236' -0". Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Shear Wall (ESW4) footing, elevation 227' -6" to 236' - 0" (approximate column lines: (0 - 2.2)/(WR1 - W2.2))

1 - Wire lathers set bottom, top and side footing reinforcement. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0122

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S1203, S1203 and S4215

Approved as corrected shop drawing dated 2 December 2010: 02A

Approved as corrected shop drawing dated 15 October 2010: 01A

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano Inspector

3/13/11 2011 Date

Supervising Engineer of Materials Date 4/8/11

Alfredo Vitrano (Print Name)

(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Shear Wall (ESW4) Footing, CL (0 - 2.2)/(WR1 - W2.2), EL 227' -6" to 236' -0". Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Shear Wall (ESW4) footing, elevation 227' -6" to 236' - 0" (approximate column lines: (0 - 2.2)/(WR1 - W2.2))

1 - Wire lathers set wall dowels for projected shear wall and also set top and side footing reinforcement. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0122
Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S1203, S1203 and S4215
Approved as corrected shop drawing dated 2 December 2010: 02A
Approved as corrected shop drawing dated 15 October 2010: 01A

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector
Alfredo Vitrano
(Print Name)

4/11/2011
Date

Concur: [Signature]
Supervising Engineer of Materials
Date: 4/15/11
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Shear Wall (ESW4) Footing, CL (0 - 2.2)/(WR1 - W2.2), EL 227' -6" to 236' -0". Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Shear Wall (ESW4) footing, elevation 227' -6" to 236' - 0" (approximate column lines: (0 - 2.2)/(WR1 - W2.2))

- 1 - Wire lathers set wall dowels for projected shear wall and also column dowels for projected C-106 column. t. Work in Progress.
2 - Wire lathers set #9B14 bars. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0122
Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S1203, S1203 and S4215
Approved as corrected shop drawing dated 2 December 2010: 02A
Approved as corrected shop drawing dated 15 October 2010: 01A

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector
Alfredo Vitrano
(Print Name)

04/04/2011
Date

Concur: [Signature]
Supervising Engineer of Materials
[Signature]
(Print Name)

4/5/11
Date

**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS 1. Shear wall 4 footing, CL (.5-4.5)/W2@ EL 227'-6'' TO EL 236'-0''; Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

1. Shear wall 4 footing, CL (.5-4.5)/W2@ EL 227'-6'' TO EL 236'-0''

1. The Contractor finished installing the footing bottom reinforcement.
2. The contractor continues installing footing formwork.
3. The contractor finished installing the footing side reinforcement.
4. The contractor continues installing the footing top reinforcement.
5. The contractor continues installing shear wall 4 and C-106 and C-107 dowels.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 30 dated 1-14-11 S8301,S8302,S8303,S8304,S8305

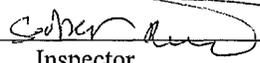
Approved as corrected shop drawing 01A, dated 10-15-10

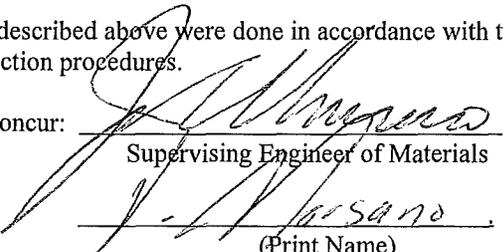
Approved as corrected shop drawing 02A dated 12-02-10

**LEGEND**

CL = COLUMN LINE EL = ELEVATION EW = EACH WAY

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  04 / 05 / 11  
Inspector Date

Concur:  4/8/11  
Supervising Engineer of Materials Date

SABER GHAZALY  
(Print Name)

J. Marsano  
(Print Name)



**SPECIAL INSPECTION REPORT** 10000 / 10-10

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264,596 Date: 4-6-11

CONTRACTOR: ETC

LOCATION: 220 cu. yd of 12,000 psi concrete for  
ESW #4 W2/O to 4 el. 237' and east tower crane pad.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*When the pour completed, the concrete was covered with curing blankets*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 4/6/11  
Inspector Date  
Alexander Sciffano  
(Print Name)

Concur: Joseph Marsano 4/19/11  
Supervising Engineer of Materials Date  
Joseph Marsano  
(Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS 1. Shear wall 4 footing, CL (.5-4.5)/W2@ EL 227'-6'' TO EL 236'-0'': Final inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

1. Shear wall 4 footing, CL (.5-4.5)/W2@ EL 227'-6'' TO EL 236'-0''

1. The Contractor finished installing the footing bottom reinforcement.
2. The contractor finished installing footing formwork.
3. The contractor finished installing the footing side reinforcement.
4. The contractor finished installing the footing top reinforcement.
5. The contractor finished installing shear wall 4 and C-106 and C-107 dowels.

Final inspection completed. About 180 cubic yard of 12000-PSI concrete placed.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 30 dated 1-14-11 S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 01A, dated 10-15-10

Approved as corrected shop drawing 02A dated 12-02-10

**LEGEND**

CL = COLUMN LINE EL = ELEVATION EW = EACH WAY

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 04 / 06 / 11 Concur: [Signature] 4/8/11  
Inspector Date Supervising Engineer of Materials Date  
SABER GHAZALY P1 of 1 [Signature]  
(Print Name) (Print Name)



**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Shear Wall (ESW1) EL 227' -6" to 235' -0", CL (-2.5 to -10)/W4. Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

- Shear Wall (ESW1), elevation 227' - 6" to  
(approximate column lines: W4/(-2.5 to -10))
- 1 - Wire lathers set wall reinforcement. Work in Progress.
  - 2 - The contractors set formwork and water stop material. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawing WTC 264 dated 14 January 2011 (Addendum 30): SS1104
- Contract drawings WTC 264 dated 10 June 2010 (Addendum 26): S0002
- Contract drawing WTC-264 dated 9 October 2009: S4320
- Approved as corrected shop drawings dated 4 January 2011: 08A

CL - column lines  
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
Inspector

4/21/2011 Concur.  
Date

[Signature]  
Supervising Engineer of Materials

4/21/11  
Date

Alfredo Vitrano  
(Print Name)

[Signature]  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596
CONTRACTOR: EIC
LOCATION: Shear Wall (ESW1) EL 227' -6" to 235' -0", CL (-2.5 to -10)/W4. Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Shear Wall (ESW1), elevation 227' - 6" to (approximate column lines: W4/(-2.5 to -10))

- 1 - Wire lathers set wall reinforcement including column dowels and "end of wall detail". Work in Progress.
2 - The contractors set formwork and water stop material. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC 264 dated 14 January 2011 (Addendum 30): SS1104
Contract drawings WTC 264 dated 10 June 2010 (Addendum 26): S0002
Contract drawing WTC-264 dated 9 October 2009: S4320
Approved as corrected shop drawings dated 4 January 2011: 08A
RFI TH-01061 dated 4 April 2010

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector

4/18/2011
Date

Concur: Joe Marsano
Supervising Engineer of Materials

4/14/11
Date

Alfredo Vitrano
(Print Name)

Joe Marsano
(Print Name)



**SPECIAL INSPECTION REPORT**

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO. WT 264.596 Date: 4-9-11

CONTRACTOR: ETC

LOCATION: 85 cu. yd of 12,000 psi concrete for ESW #1 W4/-4 to -3 el. 230' to 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*At the end of the pour - the wall was covered with a blanket (curing)*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scrittano 4/9/11  
 Inspector Date  
Alexander Scrittano  
 (Print Name)

Concur: Joseph Marsano 4/9/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS 1. Shear wall (ESW1) CL (-2.5 to-10)/W4@ EL 227'-6" TO EL 235'-0": Final inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Shear wall (ESW1) CL (-2.5 to-10)/W4@ EL 227'-6" TO EL 235'-0",

1. All the main vertical and horizontal reinforcement were previously set.
2. The contractor finished installing the dowels for the intersecting walls at the west and the east side of the wall.
3. The contractor finished installing the water stop
4. The contractor finished installing the formwork.

Final inspection completed. About 85 cubic yard of 12000-PSI concrete installed.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 30 dated 1-14-11 S1104,S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 08A dated 01-04-11

RFI # 1061 dated 04-4-10

LEGEND

CL = COLUMN LINE EL = ELEVATION EW = EACH WAY

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 04 / 09 / 11  
Inspector Date

Concur: Joe Marsano 4/14/11  
Supervising Engineer of Materials Date

SABER GHAZALY  
(Print Name)

JOE MARSANO  
(Print Name)



**SUBJECT: INSPECTION REPORT**

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 4-12-11

CONTRACTOR: EIC

LOCATION: 20 cu. yd of 5,000 psi concrete for  
footing C137, WR-1/7 el. 227'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 4/12/11 Concur: Joseph Marsano 4/12/11  
Inspector Date Supervising Engineer of Materials Date  
Alexander Sciffano Joseph Marsano  
(Print Name) (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596  
 CONTRACTOR: EIC  
 LOCATION: F22 Footing for Column C-137, EL 227' -6", CL WR-1/7. Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

F22 Footing for Column C-137, elevation 227' -6"

(approximate column lines: WR-1/7)

1 - Wire lathers set footing reinforcement including column dowels for column C-137. Final Inspection.

2 - Contractors set formwork and removed debris and water from area. Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0122, S1205 and S8303

Approved as corrected shop drawing dated 7 December 2010: 03A

RFI TH-00699 dated 22 December 2010

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: Alfredo Vitrano  
 Inspector

4/18/11  
 Date

Concur: [Signature]  
 Supervising Engineer of Materials

4/18/11  
 Date

Alfredo Vitrano  
 (Print Name)

Joe Marsano  
 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: ESW9 Elevator Pit Slab, EL 229' -0", CL (W-1.5 - W-2.3)/(14.5 - 14.7). Work in Progress.

Shear Wall ESW2 footings, EL 227' -6", CL W-2/(2 -6). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations: Reinforcement and formwork inspection:

Contractor worked in the following locations:

- ESW9 Elev. Pit Slab, elevation 229' -0" (approximate column lines: (W-1.5 - W-2.3)/(14.5 - 14.7)) 1 - Wire lathers set bottom slab reinforcing steel. Work in Progress. 2 - Wire lathers set bottom and top mat reinforcement layers at the sump pit. Work in Progress.

- Shear Wall ESW2 footings, elevation 227' -6" (approximate column lines: W-2/(2 - 6)) 1 - Wire lathers field bent footing reinforcement. No other activity was performed. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials. ACI 318- Building Code Requirements for Reinforced Concrete. ACI 301- Specifications for Structural Concrete. Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0122, S1205, S4202 and S8303 Approved as corrected shop drawing dated 2 December 2010: 01B Approved as corrected shop drawing dated 11 November 2010: 06B RFI TH-00816 dated 8 December 2011; RFI TH-00818 dated 4 February 2011; RFI TH-00845 dated 14 February 2011; RFI TH-00955 dated 9 March 2011; and, RFI TH-00960 dated 16 March 2011

CL - column lines EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano Inspector Date: 4/13/2011 Alfredo Vitrano (Print Name)

Concur: Joe Marsano Supervising Engineer of Materials Date: 4/18/11 Joe Marsano (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: ESW9 Elevator Pit Slab, EL 229' -0", CL (W-1.5 - W-2.3)/(14.5 - 14.7). Work in Progress.

Shear Wall ESW2 footings, EL 227' -6", CL W-2/(2 -6). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

ESW9 Elev. Pit Slab, elevation 229' -0"

(approximate column lines: (W-1.5 - W-2.3)/(14.5 - 14.7))

1 - Wire lathers set top slab reinforcing steel. Work in Progress.

2 - Wire lathers set bottom and top mat reinforcement layers at the sump pit. Work in Progress.

Shear Wall ESW2 footings, elevation 227' -6"

(approximate column lines: W-2/(2 - 6))

1 - Wire lathers set footing reinforcement. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0122, S1105, S S1205, S4202 and S8303

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S4402

Approved as corrected shop drawing dated 2 December 2010: 01B

Approved as corrected shop drawing dated 4 January 2011: 08B

RFI TH-00816 dated 8 December 2011; RFI TH-00818 dated 4 February 2011; RFI TH-00845 dated 14 February 2011;

RFI TH-00955 dated 9 March 2011; and, RFI TH-00960 dated 16 March 2011

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
Inspector

4/19/2011  
Date

Concur: Joe Marsano  
Supervising Engineer of Materials

4/18/11  
Date

Alfredo Vitrano  
(Print Name)

Joe Marsano  
(Print Name)



**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: ESW9 Elevator Pit Slab, EL 229' -0", CL (W-1.5 - W-2.3)/(14.5 - 14.7). Work in Progress.

Shear Wall ESW2 footings, EL 227' -6", CL W-2/(2 -6). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

ESW9 Elev. Pit Slab, elevation 229' -0"

(approximate column lines: (W-1.5 - W-2.3)/(14.5 - 14.7))

1 - Wire lathers set top slab reinforcing steel and wall dowels. Work in Progress.

2 - Wire lathers set #6A13 "Z" bars at sump pit. Work in Progress.

3 - Contractors set construction joint and water stop. Work in Progress.

Shear Wall ESW2 footings, elevation 227' -6"

(approximate column lines: W-2/(2 - 6))

1 - Wire lathers set footing reinforcement including 7H37, 9H27 and 9H30 bars. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 14 January 2011 (Addendum 3b): S0122, S1105, S S1205, S4202 and S8303

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S4402

Approved as corrected shop drawing dated 2 December 2010: 01B

Approved as corrected shop drawing dated 4 January 2011: 08B

RFI TH-00816 dated 8 December 2011; RFI TH-00818 dated 4 February 2011; RFI TH-00845 dated 14 February 2011;

RFI TH-00955 dated 9 March 2011; and, RFI TH-00960 dated 16 March 2011

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
Inspector

4/15/2011 Concur:  
Date

Joe Marsano  
Supervising Engineer of Materials 4/20/11  
Date

Alfredo Vitrano  
(Print Name)

Joe Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC264.496 Date: 4-18-11

CONTRACTOR: EIC

LOCATION: 12 cu. yd of 5,000 psi concrete for ESW9

elevator Pit slab el. 229' W-1.5 to W-2.3/14.5 to 14.7

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 4/18/11 Concur: Joseph Marsano 5/13/11  
 Inspector Date Supervising Engineer of Materials Date  
Alexander Sciffano (Print Name) Joseph Marsano (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596
CONTRACTOR: EIC
LOCATION: ESW9 Elevator Pit Slab, EL 229' -0", CL (W-1.5 - W-2.3)/(14.5 - 14.7). Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

- ESW9 Elev. Pit Slab, elevation 229' -0" (approximate column lines: (W-1.5 - W-2.3)/(14.5 - 14.7))
1 - Wire lathers set two remaining #6 wall dowels; all other reinforcement was previously set. Final Inspection.
2 - Contractors set construction joint and water stop. Final Inspection.
3 - Contractors removed water and debris from area. Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0122, S1105, S \$1205, S4202 and S8303
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S4402
Approved as corrected shop drawing dated 2 December 2010: 01B
RFI TH-00816 dated 8 December 2011; RFI TH-00818 dated 4 February 2011; RFI TH-00845 dated 14 February 2011;
RFI TH-00955 dated 9 March 2011; and, RFI TH-00960 dated 16 March 2011
RFI TH-01161 dated 18 April 2011

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano 4/18/2011 Date Concur: Joe Marsano 4/20/11 Date
Inspector Date Supervising Engineer of Materials Date
Alfredo Vitrano (Print Name) Joe Marsano (Print Name)



**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: ESW9 Elevator Pit Walls , EL 229' -0" to 236' -0", CL 14.5/(W-1.5 to W-2.3), W-2.3/(14.5-14.7), and 14.7/(W-1.5 to W-2.3). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

ESW9 Elev. Pit Walls, elevation 229' -0" to 236' -0"  
(approximate column lines: 14.5/(W-1.5 - W-2.3), W-2.3/(14.5 - 14.7) and 14.7/(W-1.5 to W-2.3))  
1 - Wire lathers set vertical and horizontal wall reinforcement including corner bar detail. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0122, S1105, S S1205, S4202 and S8303

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S4402

Approved as corrected shop drawing dated 2 December 2010: 01B

RFI TH-00816 dated 8 December 2011; RFI TH-00818 dated 4 February 2011; RFI TH-00845 dated 14 February 2011;

RFI TH-00955 dated 9 March 2011; and, RFI TH-00960 dated 16 March 2011

RFI TH-01161 dated 18 April 2011

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
Inspector

4/18/2011  
Date

Concur: Joe Marsano  
Supervising Engineer of Materials

4/20/11  
Date

Alfredo Vitrano  
(Print Name)

Joe Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: \_\_\_\_\_

Footings for Shear Wall ESW2 and Columns C-135 and C-136, EL 229' -6", CL W-2/(2 - 6). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

Footings for Shear Wall ESW2 and Columns C-135 and C-136, elevation 229' -6"

(approximate column lines: W-2/(2 - 6))

1 - Wire lathers field bent column dowels and wall dowels. Reinforcement was not set today.

Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0122, S1105, S4201, S4410 and S8303

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S4402

Approved as corrected shop drawing dated 4 January 2011: 08B

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: Alfredo Vitrano  
Inspector

4/29/2011  
Date

Concur: [Signature]  
Supervising Engineer of Materials 4/25/11  
Date

Alfredo Vitrano  
(Print Name)

Joe Marsano  
(Print Name)



STRUCTURAL ENGINEERING PROJECT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION:

Footings for Shear Wall ESW2 and Columns C-135 and C-136, EL 229' -6", CL W-2/(2 - 6). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Footings for Shear Wall ESW2 and Columns C-135 and C-136, elevation 229' -6" (approximate column lines: W-2/(2 - 6))

1 - Wire lathers set footing reinforcement including column and wall dowels. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0122, S1105, S4201, S4410 and S8303

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S4402

Approved as corrected shop drawing dated 4 January 2011: 08B

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano Inspector

4/21/2011 Date

Signature of Joe Marsano

Supervising Engineer of Materials

4/25/11 Date

Alfredo Vitrano (Print Name)

Joe Marsano (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Footings for SW ESW2 and Columns C-135 and C-136, EL 229' -6", CL w-2/(2 - 6). Work in Progress. Shear Wall ESW9-elevator pit walls, EL 229'-0" to 235' -3 1/2", CL 16/(w-1.5 to w-2.2); 16.2/(w-1.5 to w-2.3); and, w-2.2/(16 - 16.2). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Footings for Shear Wall ESW2 and Columns C-135 and C-136, elevation 229' -6" (approximate column lines: W-2/(2 - 6))

1 - Wire lathers set footing reinforcement including #10L and #9L extension bars, #5H10 "ties" and #9 sideface bars. Work in Progress.

2 - Contractors set up material for the slab shear key. Work in Progress.

Shear Wall ESW9-elevator pit walls, elevation 229'-0" to 235' -3 1/2" (approximate column lines: 16/(w-1.5 to w-2.2); 16.2/(w-1.5 to w-2.3); and, w-2.2/(16 - 16.2))

1 - Contractors used a drill, compressed air and a wire brush to "drill and grout" approximately eighteen #6 rebars. The holes were cleaned prior to grouting. The embedment depth measures 7 1/2" to 8". The contractor used Hilti HIT-HY 150 Max. Sixteen #6L rebars were grouted into the existing concrete footing for Shear Wall ESW9. Two #6 rebars were grouted into the existing elevator pit slab. The sixteen #6L rebars satisfy the response to RFI TH-01161 (Waterstop at ESW0 & Elev. Pit Wall). The two #6 bars grouted into the elevator pad complete the work for incoming RFI TH-01215 (Cover of Dowels at Elev. Pit walls).

Work in Progress.

2 - The contractors set up the formwork and waterstop. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0132, S0122, S1105, S1205, S4201, S4410 and S8303

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S4402

Approved as corrected shop drawing dated 2 December 2010: 01B

Approved as corrected shop drawing dated 4 January 2011: 08B

Unapproved shop drawing: 08B (Rev. 5)

RFI TH-01161 dated 18 April 2011

Incoming RFI TH-01215

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano Inspector

4/22/2011 Date

Concur: Joe Marsano Supervising Engineer of Materials

4/27/11 Date

Alfredo Vitrano (Print Name)

Joe Marsano (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 4/25/11

CONTRACTOR: ETC

LOCATION: 11 cu. yd of 5,000 psi Concrete for ESW'9 elevator Walls, el. 229' to 235' 16 to 16.2/W-1.5 to W-2.3

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: Alexander Sciffano 4/25/11  
 Inspector Date  
Alexander Sciffano  
 (Print Name)

Concur: Joseph Marsano 5/16/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



SPECIAL INSPECTION REPORT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Shear Wall ESW9-elevator pit walls, EL 229'-0" to 235' -3 1/2", CL 16/(w-1.5 to w-2.2); 16.2/(w-1.5 to w-2.3); and, w-2.2/(16 - 16.2). Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations: Reinforcement and formwork inspection:

Contractor worked in the following locations:

- Shear Wall ESW9-elevator pit walls, elevation 229'-0" to 235' -3 1/2" (approximate column lines: 16/(w-1.5 to w-2.2); 16.2/(w-1.5 to w-2.3); and, w-2.2/(16 - 16.2))
1 - All reinforcement previously set. Final Inspection.
2 - The contractors set up the formwork at the outside face. Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0132, S0122, S1105, S1205, S4201, S4410 and S8303
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S4402
Approved as corrected shop drawing dated 4 January 2011: 04B
RFI TH-01161 dated 18 April 2011
Incoming RFI TH-01215

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano 4/25/2011 Date Concur: Joe Marsano 4/27/11 Date
Inspector Date Supervising Engineer of Materials Date
Alfredo Vitrano (Print Name) Joe Marsano (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Footings for SW ESW2 and Columns C-135 and C-136, EL 229' -6", CL w-2/(2 - 6). Work in Progress.

Slab on Grade, EL 237' -0", (w-1 to w-2.2)/(10 to 14), & (w to w-1)/(14 - 16). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Footings for Shear Wall ESW2 and Columns C-135 and C-136, elevation 229' -6" (approximate column lines: W-2/(2 - 6))

- 1 - Wire lathers set #10L and #10 female formsaver couplers. Wire lathers also set #10 male formsaver couplers. These couplers provide a connection to the projected concrete slab. Note: the formsaver couplers are specified in the unapproved shop drawing 08B - Rev. 5. (Note: the current approved as corrected shop drawing 08B, Rev. 2, does not show how the footing is connected to the projected slab concrete slab.) Work in Progress.
2 - Contractors set up shear key and water stop material. Work in Progress.

Slab on Grade, elevation 237' -0"

(approximate column lines: (w-1 to w-2.2)/(10 to 14) and (w to w-1)/(14 - 16))

- 1 - Wire lathers set bottom slab reinforcement. Work in Progress.
2 - Contractors set construction joint and water stop at projected pour stops. Work in Progress.
3 - Contractors set electrical conduits over the bottom slab reinforcing layer. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0132, S0122, S1105, S1205, S4201, S4202, S4410 and S8303
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S4402
Contract drawing WTC-264 dated 23 June 2010 (Addendum 26): S4320
Approved as corrected shop drawing dated 2 December 2010: 01B; Approved as corrected shop drawing dated 4 January 2011: 08B
Unapproved shop drawing: 08B (Rev. 5)
Approved as corrected shop drawing dated 15 April 2011: 04B
RFI TH-01161 dated 18 April 2011
Incoming RFI TH-01215

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano Date: 4/25/2011 Concur: Date: 1/1
Inspector Date Supervising Engineer of Materials Date
Alfredo Vitrano Joe Marsano
(Print Name) (Print Name)





CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Footings for SW ESW2 and Columns C-135 and C-136, EL 229' -6", CL W-2/(2 - 6). Work in Progress.

Slab on Grade, EL 237' -0", (W-1 to W-2.2)/(10 to 14) & (W to W-1)/(14 - 16). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Footings for Shear Wall ESW2 and Columns C-135 and C-136, elevation 229' -6" (approximate column lines: W-2/(2 - 6))

1 - Wire lathers set the remaining #10L and #10 female formsaver couplers. Wire lathers also set #10 male formsaver couplers. These couplers provide a connection to the projected concrete slab. Note: the formsaver couplers are specified in the unapproved shop drawing 08B - Rev. 5. (Note: the current approved as corrected shop drawing 08B, Rev. 2, does not show how the footing is connected to the projected slab concrete slab.) Work in Progress.

2 - Contractors set shear key and water stop material. Work in Progress.

Slab on Grade, elevation 237' -0"

(approximate column lines: (W-1 to W-2.2)/(10 to 14) and (W to W-1)/(14 - 16))

1 - Wire lathers completed the bottom slab reinforcement. Work in Progress.

2 - Wire lathers started setting the top slab reinforcement. Work in Progress.

3 - Wire lathers set reinforcement detail at the slab on grade/T3 shear wall interface. (Note: this detail is contained in the incoming RFI TH-01219.) Contractors set construction joint and water stop at projected pour stops. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0132, S0122, S1105, S1205, S4201, S4202, S4410 and S8303

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S4402

Contract drawing WTC-264 dated 23 June 2010 (Addendum 26): S4320

Approved as corrected shop drawing dated 2 December 2010: 01B; Approved as corrected shop drawing dated 4 January 2011: 08B

Unapproved shop drawing: 08B (Rev. 5)

Approved as corrected shop drawing dated 15 April 2011: 04B

RFI TH-01161 dated 18 April 2011

Incoming RFI TH-01175; Incoming RFI TH-01215; Incoming RFI TH-01219.

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano Inspector

4/26/2011 Date Concur:

Supervising Engineer of Materials Date

Alfredo Vitrano (Print Name)

Joe Marsano (Print Name)



SPECIAL INSPECTION REPORT

PA 3066 / HQ-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Footings for SW ESW2 and Columns C-135 and C-136, EL 229' -6", CL W-2/(2 - 6). Work in Progress.

Slab on Grade, EL 237' -0", CL (W-1 to W-2.2)/(10 to 14) & (W to W-1)/(14 - 16). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Footings for Shear Wall ESW2 and Columns C-135 and C-136, elevation 229' -6"

(approximate column lines: W-2/(2 - 6))

1 - Wire lathers set #9U bars at the southeast face of the footing. These #9U bars are specified in the incoming RFI TH-01175. Work in Progress.

2 - Contractors set shear key and water stop material. Work in Progress.

Slab on Grade, elevation 237' -0"

(approximate column lines: (W-1 to W-2.2)/(10 to 14) and (W to W-1)/(14 - 16))

1 - Wire lathers continued setting the top slab reinforcement. Work in Progress.

2 - At the T3 slab on grade/HUB slab on grade interface the wire lathers set #6 dowels across the construction joint. Note: this construction joint detail is not included in the contract documents - see punch list item created today. Work in Progress.

3 - The contractors set construction joints at the south, west and north ends. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0132, S0122, S1105, S1205, S4201, S4202, S4410 and S8303

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S4402

Contract drawing WTC-264 dated 23 June 2010 (Addendum 26): S4320

Approved as corrected shop drawing dated 2 December 2010: 01B; Approved as corrected shop drawing dated 4 January 2011: 08B

Unapproved shop drawing: 08B (Rev. 5)

Approved as corrected shop drawing dated 15 April 2011: 04B

RFI TH-01161 dated 18 April 2011

Incoming RFI TH-01175; Incoming RFI TH-01215; Incoming RFI TH-01219.

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano Inspector

4/27/2011 Date

Concur: Joe Marsano Supervising Engineer of Materials

5/2/11 Date

Alfredo Vitrano (Print Name)

Joe Marsano (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Footings for SW ESW2 and Columns C-135 and C-136, EL 229' -6", CL W-2/(2 - 6). Final Inspection.

Twelve-inch thick Slab on Grade, EL 237' -0", CL (W-1 to W-2.2)/(10 to 14) & (W to W-1)/(14 - 16). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Footings for Shear Wall ESW2 and Columns C-135 and C-136, elevation 229' -6" (approximate column lines: W-2/(2 - 6))

- 1 - Wire lathers set remaining column dowels at C-135. Final Inspection.
2 - Contractors removed water and debris from the footing area. Final Inspection.

Twelve-inch thick Slab on Grade, elevation 237' -0" (approximate column lines: (W-1 to W-2.2)/(10 to 14) and (W to W-1)/(14 - 16))

- 1 - Wire lathers continued setting the top slab reinforcement. Work in Progress.
2 - The contractors set construction joints at the south, west and north ends. Note: the north end construction joint locations do not coincide with the locations shown in the approved construction joint layout diagram. See punch list item created today. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0132, S0122, S1105, S1205, S4201, S4202, S4410 and S8303
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S4402
Contract drawing WTC-264 dated 23 June 2010 (Addendum 26): S4320
Approved as corrected shop drawing dated 10 February 2011: 01B
Approved as corrected shop drawing dated 4 January 2011: 08B; Unapproved shop drawing: 08B (Rev. 5)
Approved as corrected shop drawing dated 15 April 2011: 04B
Approved as corrected CJ layout diagram dated 6 January 2011: "Slab on Grade - Elevation 237' -0", Construction Joint Layout Plan"
RFI TH-01161 dated 18 April 2011; Incoming RFI TH-01175; Incoming RFI TH-01215; Incoming RFI TH-01219.

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano Date: 4/20/2011 Concur: Joe Marsano Date: 5/2/11
Alfredo Vitrano (Print Name) Joe Marsano (Print Name)

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SPECIAL INSPECTION REPORT

LA 3000 / 10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Port Transit Hall CONTRACT NO.: WTC 264596 Date: 4/28/11

CONTRACTOR: ETC

LOCATION: 190 cu. yd of 12K psi concrete for SW-ESW2 & Column C135 & C136

Footings

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material.

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Curing and Protection:

Concrete Curing Blankets were installed after concrete placement

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
 Inspector  
Leo A. [Signature]  
 (Print Name)

4/28/11  
Date

Concur: [Signature]  
 Supervising Engineer of Materials  
Joseph Marsano  
 (Print Name)

5/16/11  
Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION:

Twelve-inch thick Slab on Grade, EL 237' -0", CL (W-2 to W-2.5)/(10 to 14) & (W-1.5 to W-2.5)/(14 - 16). Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Twelve-inch thick Slab on Grade, elevation 237' -0"

(approximate column lines: (W-2 to W-2.5)/(10 to 14) and (W-1.5 to W-2.5)/(14 - 16))

1 - Wire lathers set additional reinforcement around square slab openings for projected drains. All other reinforcement was previously set. Final Inspection.

2 - The contractors removed debris and water from the slab area. Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0002, S0003, S0132, S0122 and S1205

Approved as corrected shop drawing dated 10 February 2011: 01B

Approved as corrected shop drawing dated 15 April 2011: 04B

Approved as corrected CJ layout diagram dated 6 January 2011: "Slab on Grade - Elevation 237' -0", Construction Joint Layout Plan"

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano Inspector

4/29/2011 Date

Concur: Joe Marsano Supervising Engineer of Materials

5/3/11 Date

Alfredo Vitrano (Print Name)

Joe Marsano (Print Name)



**SPECIAL INSPECTION REPORT**

PA3666 / 10-09

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO.: WJC 264.596 Date: 4-29-11

CONTRACTOR: EIC

LOCATION: 140 cu. yd of 5000 psi concrete for slabs F & B @ elev 240

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*Note - sets 2, 3 & 4 left outside of curing box with insulated curing blankets wrapped around them due to limited space in curing box.*

*states Curing compound applied on slabs after concrete placement.*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- 'Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] 4/29/11  
Inspector Date

Concur: [Signature] 5/1/11  
Supervising Engineer of Materials Date

Emanuel Rodriguez  
(Print Name)

Joseph Marsano  
(Print Name)



STRUCTURAL ENGINEERING DIVISION

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Twelve-inch thick Slab on Grade, EL 237' -0", CL (W-2.5 to W.5)/(10 to 14). Work in Progress.

Shear Wall ESW2 and Columns C-135 and C-136, EL 229' -6" to 240' -0", CL W-2/(2 - 6). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Twelve-inch thick Slab on Grade, elevation 237' -0" (approximate column lines: (W-2.5 - W.5)/(10 to 14)) 1 - Wire lathers set bottom slab reinforcement. Work in Progress.

Shear Wall ESW2 and Columns C-135 and C-136, elevation 229' -6" to 240' -0" (approximate column lines: W-2/(2 - 6)) 1 - Wire lathers set #11 vertical reinforcement bars. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0002, S0003, S0132, S0122 and S1205

Approved as corrected shop drawing dated 10 February 2011: 01B

Approved as corrected shop drawing dated 15 April 2011: 04B

Approved as corrected CJ layout diagram dated 6 January 2011: "Slab on Grade - Elevation 237' -0", Construction Joint Layout Plan"

Approved as corrected shop drawing dated 4 January 2011: 08B

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano Inspector

5/12/2011 Date

Concur: Joe Marsano Supervising Engineer of Materials 5/18/11 Date

Alfredo Vitrano (Print Name)

Joe Marsano (Print Name)



STATE OF NEW YORK

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Portion of the 12-inch thick Slab on Grade, EL 237' -0", CL (W-1.1 to W.7)/(10 to 14). Final Inspection. Shear Wall ESW2 and Columns C-135 and C-136, EL 229' -6" to 240' -0", CL W-2/(2 - 6). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations: Reinforcement and formwork inspection:

Contractor worked in the following locations:

Twelve-inch thick Slab on Grade, elevation 237' -0" (approximate column lines: (W-1.1 - W.7)/(10 to 14))

- 1 - Wire lathers set top slab reinforcement including additional reinforcement around projected slab openings. Final Inspection.
2 - Contractors set construction joints. Final Inspection.
3 - Construction joint locations have not been approved by the EOR. See punch list item created today. Final Inspection.

Shear Wall ESW2 and Columns C-135 and C-136, elevation 229' -6" to 240' -0" (approximate column lines: W-2/(2 - 6))

- 1 - Wire lathers set #11 vertical reinforcement bars. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0002, S0003, S0132, S0122 and S1205
Approved as corrected shop drawing dated 10 February 2011: 01B
Approved as corrected shop drawing dated 15 April 2011: 04B
Approved as corrected CJ layout diagram dated 6 January 2011: "Slab on Grade - Elevation 237' -0", Construction Joint Layout Plan"
Approved as corrected shop drawing dated 4 January 2011: 08B

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano 5/13/2011 Concur: Joe Marsano 5/11/11
Inspector Date Supervising Engineer of Materials Date
Alfredo Vitrano (Print Name) Joe Marsano (Print Name)



**SPECIAL INSPECTION REPORT** PA 3000/10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Port Transit Hall CONTRACT NO.: UTC 264596 Date: 5/3/11

CONTRACTOR: EIC

LOCATION: 100 cu. yd of 5K <sup>467</sup> stampi concrete for EL 232' 12" slab CC W-1.1 to W-7 / 10 to 14

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material.

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Curing and Protection:

- 1200 Water Base Curing compound was applied after concrete placement
- Concrete Insulated blankets were installed after concrete placement

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections:
1. Sampling and Strength Testing
  2. Formwork
  3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
 Inspector  
LOD K. J. J. J.  
 (Print Name)

5/3/11  
Date

Concur: [Signature] 5/12/11  
 Supervising Engineer of Materials  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Portion of the 12-inch thick Slab on Grade, EL 237' -0", CL (W1 to W2.2)/(12 to 15). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Portion of the 12-inch thick Slab on Grade, elevation 237' -0" (approximate column lines: (W1 - W2.2)/(12 to 15)) 1 - Wire lathers set bottom slab reinforcement. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0002, S0003, S0132, S0122 and S1205
Approved as corrected shop drawing dated 10 February 2011: 01B
Approved as corrected shop drawing dated 15 April 2011: 04B
Approved as corrected CJ layout diagram dated 6 January 2011: "Slab on Grade - Elevation 237' -0", Construction Joint Layout Plan"

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano 5/15/2011 Concur: Joe Marsano 5/10/11
Inspector Date Supervising Engineer of Materials Date
Alfredo Vitrano (Print Name) Joe Marsano (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: A portion of the 12-inch thick Slab on Grade, EL 237' -0", CL (W1 to W2.2)/(12 to 15). Final Inspection. ESW9 elevator pit-beams, EL 229' 0" to 232' -0", CL 15.9/(W-1.5 - W-2.2) & 16.3/(W-1.5 - W-2.2). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations: Reinforcement and formwork inspection:

Contractor worked in the following locations:

A portion of the 12-inch thick Slab on Grade, elevation 237' -0" (approximate column lines: (W1 - W2.2)/(12 to 15))

- 1 - Wire lathers set top slab reinforcement & also set additional reinforcement around projected slab openings. Final Inspection.
2 - Wire lathers set the "wall detail" reinforcement at the east end. Final Inspection.
3 - Contractors set waterstop and construction joints. Final Inspection.

ESW9 elevator pit - slab anchor beams, elevation 229' -0" to 232' -0" (approximate column lines: 15.9/(W-1.5 - W-2.2) and 16.3/(W-1.5 - W-2.2))

1 - Contractors started constructing the slab anchor beams as per RFI TH-1203. They used a drill, compressed air and a "T-shaped" wire brush to "drill and grout" approximately fifty-three #5J bars into the existing rock at the east and west ends of elevator pit slab. (Approximately 26 holes were drilled into the rock west of the elevator pit slab and 27 holes were drilled into the rock east of elevator pit slab.) The embedment depth measured 15 inches. (The required embedment depth is 12 inches.) The holes were cleaned prior to grouting. Hilti HIT-HY 150 Max epoxy was used. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0002, S0003, S0132, S0122 and S1205
Approved as corrected shop drawing dated 10 February 2011: 01B
Approved as corrected shop drawing dated 15 April 2011: 04B
Approved as corrected CJ layout diagram dated 6 January 2011: "Slab on Grade - Elevation 237' -0", Construction Joint Layout Plan"
RFI TH-01203 dated 2 May 2011

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector
Alfredo Vitrano
(Print Name)

5/16/2011
Date

Concur: Joe Marsano
Supervising Engineer of Materials
Joe Marsano
(Print Name)

5/10/11
Date





CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: A segment of an 8"-thick wall, EL 237'-0" to 243'-9 3/8", CL (W.6 - W-1.5)/17. Work in Progress. Shear Wall ESW 2 + Columns C-135 & C-136, EL 229' -6" to 238' -11 1/2", CL W-2/(2 - 6). Work in Progress. ESW9 elevator pit-beams, EL 229' 0" to 232' -0", CL 15.9/(W-1.5 - W-2.2) & 16.3/(W-1.5 - W-2.2). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations: Reinforcement and formwork inspection:

Contractor worked in the following locations:

A segment of an 8-inch thick wall, elevation 237' -0" to 243' -9 3/8" (approximate column lines: (W.6 - W-1.5)/17)

- 1 - Wire lathers horizontal and vertical wall reinforcement. Work in Progress. 2 - Contractors set formwork. Work in Progress.

Shear Wall ESW 2 + Columns C-135 & C-136, elevation 229' -6" to 238' -11 1/2" (approximate column lines: W-2/(2 - 6))

- 1 - Wire lathers "spliced" vertical #11 bars to the footing wall dowels and the footing column dowels. Work in Progress. 2 - Wire lathers set horizontal #9 bars along the wall's outside and inside faces. Work in Progress. 3 - Wire lathers set #5H22 and #5H29 ties at column C-135. Work in Progress.

ESW9 elevator pit-beams, elevation 229' 0" to 232' -0" (approximate column lines: 15.9/(W-1.5 - W-2.2) & 16.3/(W-1.5 - W-2.2))

- 1 - Contractors continued constructing the slab anchor beams as per RFI TH-1203. They set the horizontal #7 bars and the #4 ties for the anchor beams. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials. ACI 318- Building Code Requirements for Reinforced Concrete. ACI 301- Specifications for Structural Concrete. Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0002, S0003, S0132, S0122, S1205, S4201, S4204 and S4402 Approved as corrected shop drawing dated 10 February 2011: 01B Approved as corrected shop drawing dated 15 April 2011: 04B Approved as corrected shop drawings dated 4 January 2011: 08B RFI TH-01203 dated 2 May 2011

CL - column lines EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano 5/17/2011 Inspector Date Concur: Joe Marsano 5/10/11 Supervising Engineer of Materials Date (Print Name) (Print Name)



SPECIAL INSPECTION REPORT

DATE: 5/16/11

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: A segment of an 8"-thick wall, EL 237'-0" to 243'-9 3/8", CL (W.6 - W-1.5)/17. Final Inspection. ESW9 elev. pit-beams, EL 229'-0" to 233'-1/2", CL 15.9/(W-1.5-W-2.2), W-2.2/(16-16.2) & 16.3/(W-1.5 - W-2.2). Final Inspection. Shear Wall ESW 2 + Columns C-135 & C-136, EL 229' -6" to 238' -11 1/2", CL W-2/(2 - 6). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

A segment of an 8-inch thick wall, elevation 237' -0" to 243' -9 3/8" (approximate column lines: (W.6 - W-1.5)/17)

- 1 - All reinforcement previously set. Final Inspection.
2 - Contractors set waterstop and shear key at the top of the wall/projected slab interface. Final Inspection.

ESW9 elevator pit-beams, elevation 229' -0" to 232' -0" (approximate column lines: 15.9/(W-1.5 - W-2.2), W-2.2/(16 - 16.2) & 16.3/(W-1.5 - W-2.2))

- 1 - All reinforcement for slab anchor beams previously set. (Note: reinforcement specified in RFI TH-1203.) Final Inspection.

Shear Wall ESW 2 + Columns C-135 & C-136, elevation 229' -6" to 238' -11 1/2" (approximate column lines: W-2/(2 - 6))

- 1 - Wire lathers "spliced" vertical #11 bars to the footing wall dowels and the footing column dowels at column C-136. Work in Progress.
2 - Wire lathers set ties at column C-136. Work in Progress.
3 - Wire lathers set horizontal #9 bars at the wall's inside face. Work in Progress.
4 - Contractors set 2-inch seat and male shear key at the wall/projected sloped slab interface. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0002, S0003, S0132, S0122, S1205, S4201, S4204 and S4402
Approved as corrected shop drawing dated 10 February 2011: 01B
Approved as corrected shop drawing dated 15 April 2011: 04B
RFI TH-01203 dated 2 May 2011
Approved as corrected shop drawings dated 4 January 2011: 08B

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector

5/17/2011
Date

Concur: Joe Marsano
Supervising Engineer of Materials
5/16/11
Date

Alfredo Vitrano
(Print Name)

Joe Marsano
(Print Name)



SPRINGFIELD PROTECTIVE PROGRAM 5/9/11

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 5-9-11

CONTRACTOR: ETC

LOCATION: 40 cu. yd of 5,000 psi concrete for 8" Wall el. 237' to 244' W.6 to W-1.5/17

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 5/9/11 Concur: Joseph Marsano 5/12/11  
 Inspector Date Supervising Engineer of Materials Date  
Alexander Sciffiano Joseph Marsano  
 (Print Name) (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

- LOCATION:
- 1. Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (W.8 to W-1.8)/(9 to 14). Final inspection.
  - 2. Foundation Slab for Sump Pit on Waterproofing, Thickness t=18" @ Elev. 221.6', approx CL (W-1.8—WR-1) /5-6. Final Inspection.
  - 3. Shear Wall ESW 2 + Columns C-135 & C-136, EL 229' -6" to 238' -11 1/2", CL W-2/(2 - 6). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (W.8 to W-1.8)/(9 to 14). Final inspection.
  - a. Contractor performed last adjustments in reinforcement prior to concrete placement.
  - b. Contractor placed concrete with alternate construction joint limits pattern. Please refer to punch list item issued today. *(C)*
- 2. Foundation Slab for Sump Pit on Waterproofing, Thickness t=18" @ Elev. 221.6', approx CL (W-1.8—WR-1) /5-6. Final Inspection.
  - a. Contractor finished installing bottom reinforcement #7 @6"
  - b. Contractor finished installing top reinforcement #7 @6.
  - c. Contractor finished installing the required wall dowels #6@9".
  - d. Contractor placed concrete today.
- 3. Shear Wall ESW 2 + Columns C-135 & C-136, EL 229' -6" to 238' -11 1/2", CL W-2/(2 - 6). Work in Progress.
  - a. Contractor continues installing vertical reinforcement for Shear Wall #2.
  - b. Contractor continues installing shear ties # 5 @ 6".

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1205, S1206, S1104, S4206, S1105
- Approved as corrected shop dwgs: 04B (4/15/11), 01B (02/10/11), 06C (04/26/11)
- CL : Column Lines:

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: *(Signature)* May/10/11 Concur: *(Signature)* 5/16/11  
Inspector Date Supervising Engineer of Materials Date  
Ricardo A. Tigua Joseph Marsano  
(Print Name) (Print Name)



STANDARD INSPECTION PROCEDURE (SI) 1000 / 1000

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 5/10/11

CONTRACTOR: ETC

LOCATION: 90 cu. yd of 5,000 psi concrete for  
"G" slab el. 237' W-1.3 to W.2/8 to 13

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano  
Inspector  
Alexander Sciffiano  
(Print Name)

5/10/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

5/20/11  
Date



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

- LOCATION:
1. Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (W.2-W2.8)/(9- 14). Work in progress.
  2. Concrete Wall, Thickness t=8" @ Elev. 237' To 243', approx CL (W1.5—W2) /14.5-E.L.C.). Work in progress.
  3. Shear Wall ESW 2 + Columns C-135 & C-136, EL 229' -6" to 238' -11 1/2", CL W-2/(2 - 6). Work in Progress.
  4. Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (3A.2-3A.6)/(14.5-E.L.C.). Work in progress.

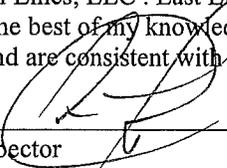
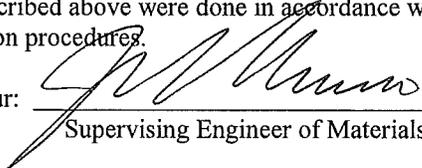
Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. *Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (W.2-W2.8)/(9- 14). Work in progress.*
  - a. Contractor started installing bottom reinforcement in the east west direction #6 @9.
2. *Concrete Wall, Thickness t=8" @ Elev. 237' To 243', approx CL (W1.5—W2) /14.5-E.L.C.). Work in progress.*
  - a. Contractor started installing the east far face of this wall #4@12".
3. *Shear Wall ESW 2 + Columns C-135 & C-136, EL 229' -6" to 238' -11 1/2", CL W-2/(2 - 6). Work in Progress.*
  - a. Contractor started removing forms for repairs in the keyway for slope down slab.
4. *Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (3A.2-3A.6)/(14.5-E.L.C.). Work in progress.*
  - a. PA-MEU inspection witnessed drill/grout procedure for reinforcement bars 14 #6 @9" (location: along slab edge of WTC Tower 3), with an embedment depth of 15". The contractor used Hilti 150 as grouting material.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1205, S1206, S1104, S4206, S1105
- Approved as corrected shop dwgs: 04B (4/15/11), 01B (02/10/11), 06C (04/26/11)
- CL : Column Lines; ELC : East Limit of Contract.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  May/11/11 Date Concur:  5/16/11 Date

Inspector Date Supervising Engineer of Materials Date

Ricardo A. Tigua Joseph Marsano  
(Print Name) (Print Name)



**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Portion of the 12-inch thick Slab on Grade, EL 237' -0", CL (W.5 - W2)/(10 - 14). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

Portion of the 12-inch thick Slab on Grade, elevation 237' -0"

(approximate column lines: (W.5 - W2)/(10 - 14))

1 - Wire lathers set top slab reinforcement (#6 continuous bars @ 9 inches on center). The bottom slab reinforcement was previously set. Work in Progress.

2 - Note: the contractor's construction joint locations have not been approved by the EOR. See punch list item created today. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0002, S0003, S0132, S0122 and S1205

Approved as corrected shop drawing dated 10 February 2011: 01B

Approved as corrected shop drawing dated 15 April 2011: 04B

Approved as corrected CJ layout diagram dated 6 January 2011: "Slab on Grade - Elevation 237' -0", Construction Joint Layout Plan"

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
Inspector

5/12/2011  
Date

Concur: Joe Marsano  
Supervising Engineer of Materials

5/17/11  
Date

Alfredo Vitrano  
(Print Name)

Joe Marsano  
(Print Name)

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**SPECIAL INSPECTION REPORT**

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: PATH Transit Hall CONTRACT NO.: WTC 264596 Date: 5/13/11

CONTRACTOR: EIC

LOCATION: 146 cu. yd of 5k (4674k) psi concrete for Slab on Grade "I" & "A"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material.

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Curing and Protection:

12,000 white curing compound was applied after concrete placement.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
 Inspector  
Leo Nunez  
 (Print Name)

5/13/11  
Date

Concur: [Signature]  
 Supervising Engineer of Materials  
Joseph Marsano  
 (Print Name)

5/20/11  
Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Portion of the 12-inch thick Slab on Grade, EL 237' -0", CL (W.5 - W2)/(10 - 14). Final Inspection.

Portion of the 12-inch thick Slab on Grade, EL 237' -0", CL (W-1.5 - W-2.2)/(14 - 15.2). Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Portion of the 12-inch thick Slab on Grade, elevation 237' -0" (approximate column lines: (W.5 - W2)/(10 - 14))

- 1 - Wire lathers set remaining top slab reinforcement (#6 continuous bars @ 9 inches on center). The bottom slab reinforcement was previously set. Final Inspection.
2 - The contractors set the construction joints and waterstops. Final Inspection.

Portion of the 12-inch thick Slab on Grade, elevation 237' -0" (approximate column lines: (W-1.5 - W-2.2)/(14 - 15.2))

- 1 - Wire lathers set top and bottom slab reinforcement. Final Inspection.
2 - Contractors set construction joints and water stop. Final Inspection.
3 - Note: the construction joint locations differ from those in the approved construction joint layout diagram. See punch list item created today. Final Inspection.
4 - Note 2: the contractor terminated the bottom slab reinforcing steel at the T3 column footing (column IC302). The shop drawing indicates that the slab on grade reinforcement should pass thru the column footings. See punch list item created today. Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0002, S0003, S0132, S0122 and S1205
Approved as corrected shop drawing dated 10 February 2011: 01B
Approved as corrected shop drawings dated 15 April 2011: 04A and 04B
Approved as corrected CJ layout diagram dated 6 January 2011: "Slab on Grade - Elevation 237' -0", Construction Joint Layout Plan"

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitano
Inspector
Alfredo Vitano
(Print Name)

5/13/2011 Date
Joe Marsano
Supervising Engineer of Materials
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: E.I.C. Associates

LOCATION: 1. Shear Wall ESW 2 & columns C135 & C136 CL 2-6/W-2 EL 229'6"-238'11.5" W.I.P.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

The contractor worked in the following locations:

- 1. Shear Wall ESW 2 & columns C135 & C136 CL 2-6/W-2 EL 229'6"-238'11.5" W.I.P.  
Contractor completed the placement of all the right angled DBS's needed for the adjoining walls and Plenum.  
Contractor began installing forms.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete

Contract drawings WTC 264 Addendum 30 S1205, S1206, S1104

Approved as corrected shop drawings dated 4/26/11 06B

Abbreviations used: CL=Column Line El = Elevation, o.c.= on center, e.w = each way, e.f. = each face

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Gary S Wills 05/14/11  
Inspector Date  
Gary S Wills  
(Print Name)

Concur: J. Marsano 5/17/11  
Supervising Engineer of Materials Date  
J. Marsano  
(Print Name)



**SPECIAL INSPECTION REPORT** PA 3100-0109

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 5/16/11

CONTRACTOR: ETC

LOCATION: 8 cu. yd of 5,000 psi concrete for  
8" Wall W to W1 / East Slurry Wall el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano  
Inspector  
Alexander Sciffano  
(Print Name)

5/16/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

5/20/11  
Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

- LOCATION:
1. Concrete Wall, Thickness  $t=8''$  @ Elev. 237' To 243', approx CL (W1.5—W2) /15-15.5). Final inspection.
  2. Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (W.2-W2.8)/(13- ELC). Work in progress.
  3. Shear Wall ESW 2 + Columns C-135 & C-136, EL 229' -6" to 238' -11 1/2", CL W-2/(2 - 6). Work in Progress.
  4. Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (3A.2-3A.6)/(14.5-E.L.C.). Work in progress.

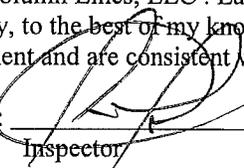
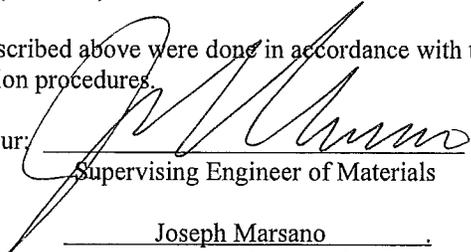
Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. Concrete Wall, Thickness  $t=8''$  @ Elev. 237' To 243', approx CL (W1.5—W2) /14.5-15.). Final inspection.
  - a. All reinforcement was previously set.
  - b. Contractor placed concrete today.
  - c. PA-MEU inspection detected a different location of this mentioned wall as required by the contract documents. Please refer punch list item issued today.
2. Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (W2-W2.8)/(13- ELC). Work in progress.
  - a. Contractor started installing bottom reinforcement in the east west direction #6 @9.
3. Shear Wall ESW 2 + Columns C-135 & C-136, EL 229' -6" to 238' -11 1/2", CL W-2/(2 - 6). Work in Progress.
  - a. Contractor continues installing forms in the top of the wall.
4. Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (3A.2-3A.6)/(14.5-E.L.C.). Work in progress.
  - a. PA-MEU inspection witnessed drill/grout procedure for reinforcement bars 14 #6 @4.5" (location: along slab edge of WTC Tower 3), with an embedment depth of 15". The contractor used Hilti 150 as grouting material.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1203, S1204, S1205, S1206, S1104, S4206, S1105
- Approved as corrected shop dwgs: 04A (1/4/11), 01B (02/10/11), 06C (04/26/11)
- CL : Column Lines; ELC : East Limit of Contract.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  May/16/11 Date Concur:  S17/11 Date

Ricardo A. Tigua Joseph Marsano  
(Print Name) (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

- LOCATION:
1. Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (W.2-W2.8)/(13- ELC). Work in progress.
  2. Shear Wall ESW 2 + Columns C-135 & C-136, EL 229' -6" to 240' -11 1/2", CL W-2/(2 - 6). Work in Progress.
  3. Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (3A.2-3A.6)/(14.5-E.L.C.). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

1. *Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (W2-W2.8)/(13- ELC). Work in progress.*
  - a. Contractor started installing bottom innermost reinforcement in the north south direction #6 @9.
2. *Shear Wall ESW 2 + Columns C-135 & C-136, EL 229' -6" to 240' -11 1/2", CL W-2/(2 - 6). Work in Progress.*
  - a. Contractor continues installing forms in the top of the wall.
3. *Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (3A.2-3A.6)/(14.5-E.L.C.). Work in progress.*
  - a. Contractor started installing the porous material (gravel) , vapor barrier and waterproof sheet over the above mentioned area..

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1203, S1204, S1205, S1206, S1104, S4206, S1105
- Approved as corrected shop dwgs: 04A (1/4/11), 04B (4/15/11), 06C (04/26/11)
- CL : Column Lines; ELC : East Limit of Contract.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

May/17/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

5/17/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



**SPECIAL INSPECTION REPORT**

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTZ 264.986 Date: 5-18-11

CONTRACTOR: EIC

LOCATION: 80 cu. yd of 12,000 psi concrete for wall

ESW #2 1<sup>st</sup> Lift, W-2/O to 5.5 el. 237'6243' and ESW #2 footing repair

Description of Controlled Work/Test Performed & Non-Conformance Notations: NCR-11-MED-EIC-001

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 5/18/11  
 Inspector Date  
Alexander Sciffiano  
 (Print Name)

Concur: Joseph Marsano 6/16/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



**SPECIAL INSPECTION REPORT**

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 5-18-11

CONTRACTOR: ETC

LOCATION: 80 cu. yd of 12,000 psi concrete for  
ESW #2 W-2/0 to 5-5 el. 232' to 243'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 5/18/11  
Inspector Date

Concur: Joseph Marsano 6/6/11  
Supervising Engineer of Materials Date

Alexander Sciffiano  
(Print Name)

Joseph Marsano  
(Print Name)



SPECIAL INSPECTION REPORT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 5-18-11

CONTRACTOR: ETC

LOCATION: 10 cu. yd of 12,000 psi Repair Concrete for  
ESW#2 W-2/5.5 el. 228'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- 'Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano  
Inspector

5/18/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials

6/10/11  
Date

Alexander Sciffiano  
(Print Name)

Joseph Marsano  
(Print Name)



**SPECIAL INSPECTION REPORT** PA 340 11-11

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 5-18-11

CONTRACTOR: ETC

LOCATION: 150 cu. yd of 5,000 psi concrete for brid "Q" Fill to el. 232'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

\* Fill concrete. In lieu of backfill of soil.  
Non-Structural

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scifano 5, 18, 11  
Inspector Date

Concur: Joseph Marsano 6, 16, 11  
Supervising Engineer of Materials Date

Alexander Scifano  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION: 1. Shear Wall ESW 2 + Columns C-135 & C-136, EL 229' -6" to 240' -11 1/2", CL W-2/(2 - 6). Final inspection.  
2. Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (W.2-W2.8)/(11- ELC). Work in progress.  
3. Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (3A.2-3A.6)/(14.5-E.L.C.). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. *Shear Wall ESW 2 + Columns C-135 & C-136, EL 229' -6" to 240' -11 1/2", CL W-2/(2 - 6). Work in Progress.*
  - a. Contractor installed additional reinforcement for connectors #5 @ 6 between C-136 column and ESW2.
  - b. PA-MEU final inspection was performed with unapproved shop drawing 08B, Rev 5. Please refer to punch list item issued today.
  - c. Contractor placed concrete today.
- 2. *Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (W2-W2.8)/(11- ELC). Work in progress.*
  - a. Contractor started installing bottom innermost reinforcement in the north south direction #6 @9.
- 3. *Trans Hub Foundation Portion Slab on grade, EL 237' -0", CL (3A.2-3A.6)/(14.5-E.L.C.). Work in progress.*
  - a. Contractor started installing the bottom reinforcement outermost and innermost #6 @9".

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List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1203, S1204, S1205, S1206, S1104, S4206, S1105
- Approved as corrected shop dwgs: 04A (1/4/11), 04B (4/15/11), Unapproved Shop Drawing 08B (Rev 5)
- CL : Column Lines; ELC - East Limit of Contract.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
Inspector  
Ricardo A. Tigua  
(Print Name)

May/18/11 Date Concur:   
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

5/20/11  
Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

- LOCATION:
1. Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (W2-W.5)/(4-8). Work in progress.
  2. Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (NwLC-W2)/(9.5-15.5). Work in progress.
  3. Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (W-1.8—W2.2)/(16.5-E.L.C.). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. *Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (W2-W.5)/(4-8). Work in progress.*
  - a. Contractor started installing bottom reinforcement north south direction #6@9.
2. *Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (NwLC-W2)/(9.5-15.5). Work in progress.*
  - a. Contractor started installing top outermost reinforcement in the north south direction #6 @9.
  - b. Contractor did not provide construction joint limits as required by approved drawing. Please refer to punch list item #26. *(Signature)*
3. *Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (W-1.8—W2.2)/(16.5-E.L.C.). Work in progress.*
  - a. Contractor started installing the top reinforcement outermost and innermost #6 @9".

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1203, S1204, S1205, S1206, S1104, S4206, S1105
- Approved as corrected shop dwgs: 04A (1/4/11), 04B (4/15/11),
- CL : Column Lines; ELC : East Limit of Contract.; NwLC: North west corner of the limit of the contract.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: _____	_____	Concur: _____	_____
Inspector	May/19/11 Date	Supervising Engineer of Materials	5/18/11 Date
<u>Ricardo A. Tigua</u>		<u>Joseph Marsano</u>	
(Print Name)		(Print Name)	



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

- LOCATION:
1. Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (W2-W.5)/(4-8). Work in progress.
  2. Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (NwLC\*-W2)/(9.5-15.5). Work in progress.
  3. Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (W-1.8—W-2.2)/(16.5-E.L.C.). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. *Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (W2-W.5)/(4-8). Work in progress.*
  - a. Contractor started installing bottom reinforcement #6@9 (east west direction).
  - b. Contractor started installing top reinforcement #6@9 (east west direction).
2. *Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (NwLC\*-W2)/(9.5-15.5). Work in progress.*
  - a. Contractor repaired some areas where water barrier was damaged.
3. *Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (W-1.8—W-2.2)/(16.5-E.L.C.). Work in progress.*
  - a. Contractor performed adjustments to achieve the required concrete cover in the top and bottom mat.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1203, S1204, S1205, S1206
- Approved as corrected shop dwgs: 04A (1/4/11), 04B (4/15/11), Construction Joint Layout Plan Rev. 5 (5/17/11)

CL : Column Lines: ELC: East Limit of Contract.; NwLC: North west corner of the limit of the contract.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

May/20/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

5/20/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



SPECIAL INSPECTION REPORT

PA3666 / 10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 5-21-11

CONTRACTOR: ETC

LOCATION: 210 cu. yd of 5,000 psi 4675 stone concrete for slab "M" and "E" el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

WR Meadows SealTight 1200 White curing compound was applied to the slab after the slab had been finished.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: Alexander Sciffano  
Inspector  
Alexander Sciffano  
(Print Name)

5/21/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

6/23/11  
Date



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

- LOCATION:
- 1. Trans Hub Foundation Portion Slab on grade EL 237' -0", Thickness 12", CL(W2-W.3/4-9). Final inspection
  - 2. Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (NwLC\*-W2)/(9.5-15.5). Final inspection.
  - 3. Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (W-1.8—W2.2)/(16.5-E.L.C.). Final inspection.

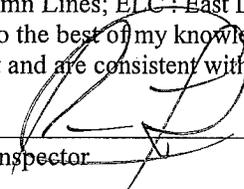
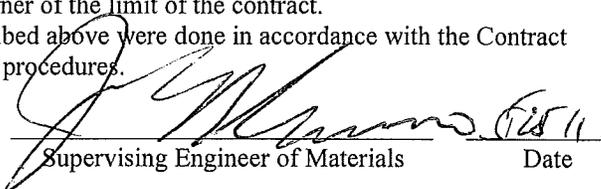
Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (W2-W.5)/(4-8). Final inspection.*
  - a. Contractor finished installing top reinforcement north south direction #6@9.
  - b. Contractor did not provide construction joint limits as required by approved drawing. Please refer to punch list item issued today.
  - c. Contractor placed concrete today.
- 2. Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (NwLC\*-W2)/(9.5-15.5). Final inspection.*
  - a. Contractor finished installing wall dowels #4 @ 12 for double vertical mat.
  - b. Contractor placed concrete today.
- 3. Trans Hub Foundation Portion Slab on grade, EL 237' -0", Thickness 12", CL (W-1.8—W2.2)/(16.5-E.L.C.). Final inspection.*
  - a. All reinforcement was previously set.
  - b. Contractor placed concrete today. Therefore, a punch list item remains open.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1203, S1204, S1205, S1206, S1104, S4206, S1105
- Approved as corrected shop dwgs: 04A (1/4/11), 04B (4/15/11), Approved construction joint layout plan (5/17/11)
- CL : Column Lines; ELC : East Limit of Contract.; NwLC: North west corner of the limit of the contract.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  May/21/11 Concur:   
Inspector Date Supervising Engineer of Materials Date  
Ricardo A. Tigua Joseph Marsano  
(Print Name) (Print Name)



CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION: 1. Trans Hub Foundations – Knee Partition Wall, EL 237' -0" to 243', Thickness 8", CL (NwLC\*-W2)/(9-ELC).  
Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

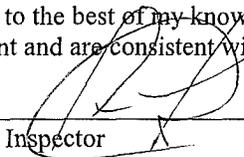
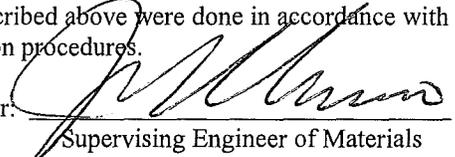
- 1. *Trans Hub Foundations – Knee Partition Wall, EL 237' -0" to 243', Thickness 8", CL (NwLC\*-W2)/(9-ELC). Work in progress.*
  - a. Contractor started installing vertical reinforcement #4 @12'
  - b. Contractor started installing horizontal reinforcement #4 @12'

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1203, S1204, S1205, S1206, S1104, S4206, S1105
- Approved as corrected shop dwgs: 04A (1/4/11), 04B (4/15/11).

CL : Column Lines; ELC : East Limit of Contract.; \* NwLC: North west corner of the limit of the contract.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  May/23/11 Concur:  5/25/11  
Inspector Date Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: PATH HALL & TRANSIT HALL CONSTRUCTION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

**LOCATION**

1. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (NWLC-W2/10-ELC). Work in progress.
2. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W-1.7—W-2.2/19.2-20). Work in progress.
3. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL (WR1-W/SW3\*-6.5). Work in progress.
4. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL (W1.5—W-1.2/8-10). Work in progress.
5. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL (W1-W.5/14-ELC). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. *Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (NWLC-W2/10-ELC). Work in progress.*
  - a. Contractor continues installing vertical reinforcement #4 @12.
  - b. Contractor continues installing horizontal reinforcement #4 @12.
  - c. Contractor started installing form panels.
2. *Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W-1.7—W-2.2/19.2-20). Work in progress.*
  - a. Contractor continues installing vertical reinforcement #4 @12.
  - b. Contractor continues installing horizontal reinforcement #4 @12.
3. *Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL (WR1-W/SW3\*-6.5). Work in progress.*
  - a. Contractor finished installing outermost bottom reinforcement #6 @9.
  - b. Contractor finished installing innermost bottom reinforcement #6 @9.
  - c. Contractor started installing innermost top reinforcement #6 @9.
4. *Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL (W1.5—W-1.2/8-10). Work in progress.*
  - a. Contractor finished installing outermost bottom reinforcement #6 @9.
  - b. Contractor started installing innermost bottom reinforcement #6 @9.
5. *Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL (W1-W.5/14-ELC). Work in progress.*
  - a. Contractor started installing outermost bottom reinforcement #6 @9.
  - b. Contractor started installing innermost bottom reinforcement #6 @9.

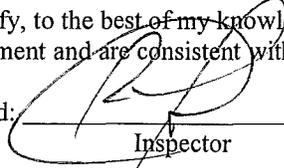
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

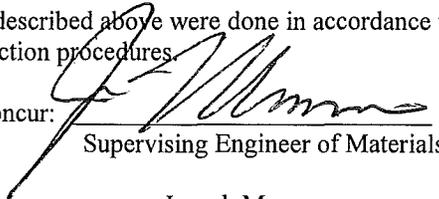
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete

Contract DWG: WTC 264 S1203, S1205, S1105 (Addendum 30 ) 1/4/11  
Approved as corrected shop drawings 04A(1/4/11), 04B (4/15/11)

\*Abbreviations used: NELC : North East Limit of the Contract;  
SW3: Construction Joint of this panel was set @ 4' to the east side of Shear Wall 3 (Line)  
ELC : East Limit of the contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  05/24/11  
Inspector Date  
Ricardo A. Tigua  
(Print Name)

Concur:  6/3/11  
Supervising Engineer of Materials Date  
Joseph Marsano  
(Print Name)

55

SPECIAL INSPECTION REPORT

PA 50007-10-19

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 204.596 Date: 5-25-11

CONTRACTOR: ETC

LOCATION: 170 cu. yd of 5,000 psi slab (467) stone for  
slabs "C", "N" and "L" el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

WR Meadows SealTight 1200 White curing compound was applied to the finished slab after the concrete placement concluded.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- 'Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Schiffano 5/25/11 Date

Alexander Schiffano (Print Name)

Concur: Joseph Marsano 6/23/11 Date

Joseph Marsano (Print Name)



**SPECIAL INSPECTION REPORT**

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 5-25-11

CONTRACTOR: ETC

LOCATION: 15 cu. yd of 5,000 psi concrete for 8" Knee Wall W2.5/East Slurry Wall el. 242'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- 'Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scarpitta 5/25/11  
 Inspector Date  
Alexander Scarpitta  
 (Print Name)

Concur: Joseph Marsano 5/8/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (NELC\*-W2/10-ELC). Final inspection.
- 2. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL (WR1-W1.4/SW3\*-4). Final inspection.
- 3. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL (W1.5—W-1/7-9). Final inspection.
- 4. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL (W1-W.5/14-ELC). Final inspection.
- 5. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W-1.7—W-2.2/19.2-20). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (NELC\*-W2/10-ELC). Final inspection.
  - a. Contractor finished installing keyway with required waterstop.
  - b. Contractor finished installing all form panels.
  - c. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL (WR1-W1.4/SW3\*-4). Final inspection.
  - a. Contractor finished installing all reinforcement.
  - b. Contractor did not follow approved limits for construction joint. Please refer to punch list item #29.
  - c. Contractor placed concrete today.
- 3. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL (W1.5—W-1/7-9). Final inspection.
  - a. Contractor finished installing all reinforcement.
  - b. Contractor did not follow approved limits for construction joint. Please refer to punch list item #29.
  - c. Contractor placed concrete today.
- 4. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL (W1-W.5/14-ELC). Final inspection.
  - a. All reinforcement was previously set.
  - b. Contractor placed concrete today.
- 5. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W-1.7—W-2.2/19.2-20). Work in progress.
  - a. Contractor finished installing all reinforcement.
  - b. PA-MEU inspection detected a missing vertical waterstop in the Knee Wall built by others in the limit with Tower #3. Please refer to punch list item #28

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1203, S1204, S1205, S1206, S1104, S4206, S1105
- Approved as corrected shop dwgs: 04A (1/4/11), 04B (4/15/11).
- Abbreviations- CL : Column Lines; \*ELC : East Limit of Contract.; \* NELC: North East corner of the limit of the contract. \*SW3 (Shear Wall #3 line)

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
Inspector

May/25/11  
Date

Concur:   
Supervising Engineer of Materials

6/3/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W-1.7—W-2.2/19.2-20). Work in progress.
- 2. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W1-W.5/ELC\*). Work in progress
- 3. Transportation Hub Foundations, Sump Pit Walls 12" thick, Elev. 221' to 227'6. CL (W-1.8—W-2). Work in progress.

**Description of Controlled Work/Test Performed & Non-Conformance Notations:**  
**Reinforcement and formwork inspection:**

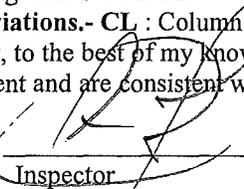
- 1. *Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W-1.7—W-2.2/19.2-20). Work in progress.*
  - a. Contractor started installing all form panels in the far face.
  - b. Contractor prepared an RFI-TH-01332 (approval pending) regarding to punch list item 29. Proposed solution will be implemented in the field.
- 2. *Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W1-W.5/ELC). Work in progress.*
  - a. Contractor started installing all form panels in the far face.
  - b. Contractor started installing vertical reinforcement #4 @12".
- 3. *Transportation Hub Foundations, Sump Pit Walls 12" thick, Elev. 221' to 227'6. CL (W-1.8—W-2). Work in progress.*
  - a. Contractor started installing vertical reinforcement #6 @ 9 at the far face.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

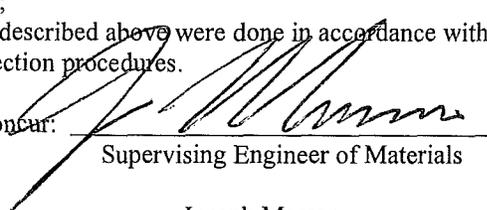
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1203, S1204, S1205, S1206, S1104, S4206, S1105
- Approved as corrected shop dwgs: 04A (1/4/11), 04B (4/15/11), 06C (5/13/11)
- Incoming RFI-TH-01332.

**Abbreviations.-** CL : Column Lines; \*ELC : East Limit of Contract.;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
Inspector

May/26/11  
Date

Concur:   
Supervising Engineer of Materials

6/3/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 5-27-11

CONTRACTOR: ETC

LOCATION: 16 cu. yd of 5000 psi Mass concrete for  
8" knee wall W1 to W-1 east of grid "C" + "A1" el. 244'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

\* 4 yd<sup>3</sup> rejected from truck 400 for overtime and temp.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scuffiano 5/27/11  
Inspector Date

Alexander Scuffiano  
(Print Name)

Concur: Joseph Marsano 6/8/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W-1.7—W-2.2/19.2-20). Final inspection.
- 2. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W1-W.5/ELC\*). Final inspection.
- 3. Transportation Hub Foundations, Sump Pit Walls 12" thick, Elev. 221' to 227'6. CL (W-1.8—W-2). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

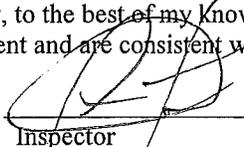
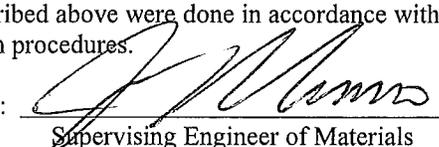
- 1. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W-1.7—W-2.2/19.2-20). Final inspection.*
  - a. Contractor finished installing all form panels in the far face.
  - b. Contractor prepared an RFI-TH-01332 regarding to punch list item 29. Proposed solution was implemented in the field. PA-MEU inspection witnessed the complete procedure in this RFI using dowels #4 @6" and bentonite waterstop. This Punch list item will be closed when RFI is respectively approved by EOR. Otherwise, contractor performed this work under his own risk.
  - c. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W1-W.5/ELC). Final inspection.*
  - a. Contractor finished installing all form panels in the far face.
  - b. Contractor finished installing waterstop.
  - c. Contractor placed concrete today.
- 3. Transportation Hub Foundations, Sump Pit Walls 12" thick, Elev. 221' to 227'6. CL (W-1.8—W-2). Work in progress.*
  - a. Contractor continues installing vertical reinforcement #6 @ 9 at the near face.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1203, S1204, S1205, S1206, S1104, S4206, S1105
- Approved as corrected shop dwgs: 04A (1/4/11), 04B (4/15/11), 06C (5/13/11)
- Incoming RFI-TH-01332

Abbreviations.- CL : Column Lines; \*ELC : East Limit of Contract.;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  May/27/11 Concur:  6/3/11  
Inspector Date Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 5-31-11

CONTRACTOR: ETC

LOCATION: 140 cu. yd of 5000 psi 467 stone concrete for  
slab "J" W-2.5/10 to 14 and slab "K" W-1.5/5 to 10 el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano  
Inspector  
Alexander Sciffano  
(Print Name)

5/31/11  
Date

Concur:

Joseph Marsano  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

6/23/11  
Date



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237', CL(W2-W2.5/6-11). Final inspection.
- 2. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237', CL (W-1.2—W-2.4/SW3\*-9). Panel "K" Final inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL(W2-W2.5/6-11). Final inspection.
  - a. Contractor finished installing all reinforcement #6 @9" (top + bottom).
  - b. Contractor did not follow approved limits for construction joint. Please refer to punch list item issued today.
  - c. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL(W-1.2—W-2.4/SW3\*-9) Panel "K". Final inspection.
  - a. Contractor finished installing all reinforcement #6 @ 9" (top + bottom).
  - b. Contractor placed concrete today.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1203, S1204, S1205, S1206, S1104, S4206, S1105
- Approved as corrected shop dwgs: 04A (1/4/11), 04B (4/15/11).

Abbreviations.- CL: Column Lines; \*SW3 (4' away of the Shear Wall #3 line)

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

May/31/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

6/3/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Sump Pit Walls 12" thick. Elev. 221' to 227'6. CL (W-1.8—W-2/5-5.8). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

*1. Transportation Hub Foundations, Sump Pit Walls 12" thick. Elev. 221' to 227'6. CL (W-1.8—W-2/5-5.8). Work in progress.*

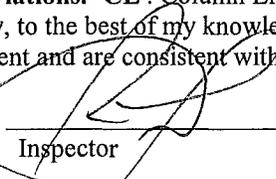
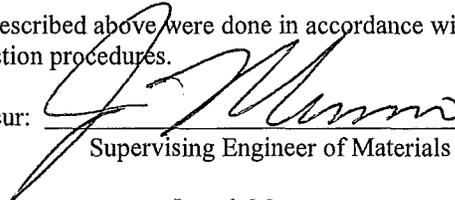
- a. Contractor continues installing vertical reinforcement #6 @ 9 at the far face.
- b. Contractor continues installing all form panels.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1105, S4206
- Approved as corrected shop dwgs: 06C (04/26/11)

Abbreviations.- CL : Column Lines;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  June/1/11 Concur:  6/3/11  
Inspector Date Supervising Engineer of Materials Date  
Ricardo A. Tigua Joseph Marsano  
(Print Name) (Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Sump Pit Walls 12" thick, Elev. 221' to 227'6. CL (W-1.8—W-2/5-5.8). Final inspection
- 2. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W2.8/9-11). Final inspection.

**Description of Controlled Work/Test Performed & Non-Conformance Notations:**

Reinforcement and formwork inspection:

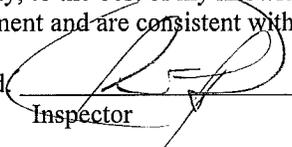
- 1. Transportation Hub Foundations, Sump Pit Walls 12" thick, Elev. 221' to 227'6. CL (W-1.8—W-2/5-5.8). Final inspection.*
  - a. Contractor finished installing vertical reinforcement #6 @ 9 at the far face.
  - b. Contractor finished installing all form panels.
  - c. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W2.8/9-11). Final inspection.*
  - a. Contractor finished installing vertical reinforcement #4 @12".
  - b. Contractor finished installing horizontal reinforcement #4 @12".
  - c. Contractor placed concrete today.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

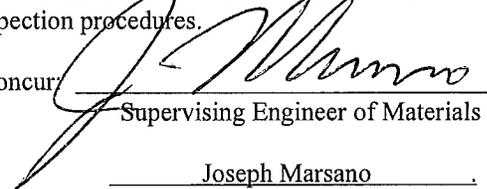
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1105, S4206
- Approved as corrected shop dwgs: 06C (04/26/11), 04A(1/4/11)

**Abbreviations.- CL :** Column Lines;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed   
Inspector

June/2/11  
Date

Concur  6/3/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



**SPECIAL INSPECTION REPORT**

PA3666 / 10-09

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO.: WLC 264.596 Date: 6-2-11

CONTRACTOR: EIC

LOCATION: 14 cu. yd of 5000 psi concrete for sump pit  
walls w-2/3 elev 232 & north knee wall elev 237

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

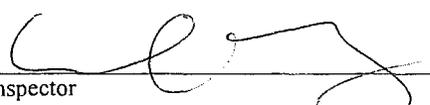
Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

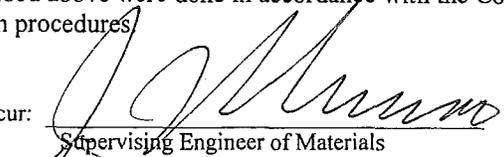
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  6/2/11  
 Inspector Date  
Emmanuel Rodriguez  
 (Print Name)

Concur:  6/2/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W2.8/9-11). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

*1. Transportation Hub Foundations, Knee Wall, 8" Thick, Elev. 237' to 242'. CL (W2.8/9-11). Work in progress.*

a. Contractor continues installing waterproof sheet behind the above mentioned wall.

General Note.- No work for wire lathers was performed today, the contractor is preparing a new area in the north of the project.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC 264, Addendum 30, S1105, S4206

Approved as corrected shop dwgs: 06C (04/26/11), 04A(1/4/11)

Abbreviations.- CL : Column Lines;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: <u></u>	<u>June/3/11</u>	Concur: <u></u>	<u>6/7/11</u>
Inspector	Date	Supervising Engineer of Materials	Date
<u>Ricardo A. Tigua</u>		<u>Joseph Marsano</u>	
(Print Name)		(Print Name)	



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264,596

**CONTRACTOR:** EIC Associates

**LOCATION:**

1. Transportation Hub Foundations, Knee Wall, 8" Thick, back area Elev. 237' to 242'. CL (W1-W2/16). Work in progress.

**Description of Controlled Work/Test Performed & Non-Conformance Notations:**

Reinforcement and formwork inspection:

*1. Transportation Hub Foundations, Knee Wall, 8" Thick, back area Elev. 237' to 242'. CL (W1-W2/16). Work in progress.*

a. Contractor continues installing waterproof sheet and gravel for slab over knee wall.

General Note. - No work for wire lathers was performed today; the contractor is preparing a new area in the north of the project for slabs.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

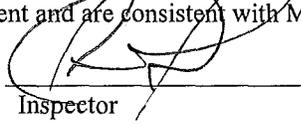
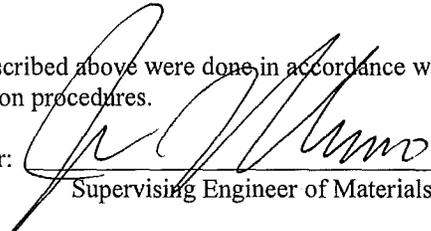
ACI 301- Specifications for Structural Concrete.

Contract drawings WTC 264, Addendum 30, S1105, S4206

Approved as corrected shop dwgs: 06C (04/26/11), 04A(1/4/11)

**Abbreviations.- CL :** Column Lines;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  June/6/11 Date Concur:  6/7/11 Date  
Inspector Supervising Engineer of Materials

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Knee Wall, 8" Thick, back area Elev. 237' to 242'. CL (W1-W2/16). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

*1. Transportation Hub Foundations, Knee Wall, 8" Thick, back area Elev. 237' to 242'. CL (W1-W2/16). Work in progress.*

a. Contractor continues installing gravel for slab over knee wall.

General Note. - No work for wire lathers was performed today; the contractor plans to have lathers for tomorrow.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC 264, Addendum 30, S1105, S4206

Approved as corrected shop dwgs: 06C (04/26/11), 04A(1/4/11)

Abbreviations.- CL : Column Lines;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]

Inspector

June/7/11  
Date

Concur: [Signature]

Supervising Engineer of Materials

6/10/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Rock Shelf Slab, 12" Thick, Elev. 245'. CL (W1—W-1.8/ELC). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Rock Shelf Slab, 12" Thick, Elev. 245'. CL (W1—W-1.8/ELC). Work in progress.

- a. Contractor started installing the waterproof barrier (vapor barrier membrane + waterproof sheet), following the approved documents.
- b. Contractor started installing bottom reinforcement #4 @12" in the above mentioned slab.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1105, S4206
- Approved as corrected shop dwgs: 06C (04/26/11), 04A(1/4/11), Approved RFI-TH-01281(5/19/11)

Abbreviations.- CL : Column Lines; ELC: East limit of contract (liner wall property)

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] June/9/11 Date

Inspector  
Ricardo A. Tigua  
(Print Name)

Concur: [Signature] 6/10/11 Date

Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION: 1. Transportation Hub Foundations, Rock Shelf Slab, 8" Thick, Elev. 245'. CL (W1—W-1.8/ELC). Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Rock Shelf Slab, 8" Thick, Elev. 245'. CL (W1—W-1.8/ELC). Final Inspection.

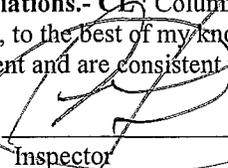
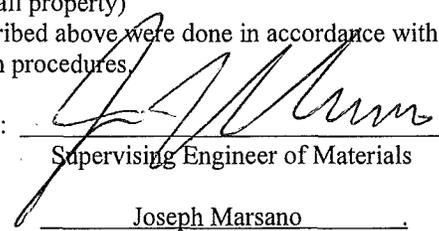
- a. Contractor finished installing the waterproof barrier (vapor barrier membrane + waterproof sheet), following the approved documents.
- b. Contractor finished installing top reinforcement #4 @12" in the above mentioned slab.
- c. Contractor installed the proper waterstop following the requirements of the RFI-TH-01281.
- d. Contractor placed concrete today.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, S1105, S4206
- Approved as corrected shop dwgs: 06C (04/26/11), 04A(1/4/11), Approved RFI-TH-01281(5/19/11)

Abbreviations.- CL: Column Lines; ELC: East limit of contract (liner wall property)

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  June/10/11 Date Concur:  6/20/11 Date

Ricardo A. Tigua Inspector (Print Name) Joseph Marsano Supervising Engineer of Materials (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 6-10-11

CONTRACTOR: ETC

LOCATION: 10 cu. yd of 5,000 psi #467 concrete for  
Rock shelf slab between knee and liner wall el. 245'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*Seal tight 1200-white curing compound was applied to the slab*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- \*Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: Alexander Sciffiano 6/10/11  
Inspector Date

Concur: [Signature] 6/29/11  
Supervising Engineer of Materials Date

Alexander Sciffiano  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WT 264.596 Date: 6-10-11

CONTRACTOR: ETC

LOCATION: 250 cu. yd of 5,000 psi concrete for ESW#2 over excavation fill, to el. 226'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- 'Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano  
 Inspector  
Alexander Sciffano  
 (Print Name)

6/10/11  
 Date

Concur: Joseph Marsano 6/23/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Rock Shelf Slab, 8" Thick, Elev. 245'. CL (W-1.8—W-2.2/ELC). Final inspection.
- 2. Transportation Hub Foundations, Rock Shelf Slab, 8" Thick, Elev. 245'. CL (W2—W1/ELC). Final inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

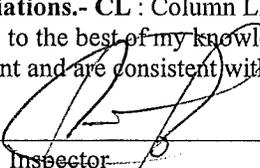
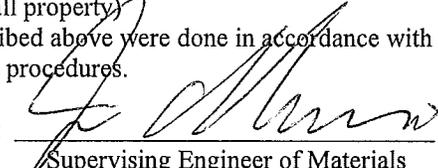
- 1. Transportation Hub Foundations, Rock Shelf Slab, 8" Thick, Elev. 245'. CL (W-1.8--W-2.2/ELC). Work in progress.
  - a. Contractor finished installing top and bottom reinforcement #4@12 each way.
  - b. All construction joints were installed with waterstop and required.
  - c. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Rock Shelf Slab, 8" Thick, Elev. 245'. CL (W2—W1/ELC). Final inspection.
  - a. Contractor finished installing top and bottom reinforcement #4 @12" each way.
  - b. Contractor placed concrete today.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
- Approved as corrected shop dwgs: 06C (04/26/11), 04A(1/4/11), Approved RFI-TH-01281(5/19/11)

Abbreviations.- CL : Column Lines; ELC: East limit of contract (liner wall property)

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  June/13/11 Concur:  6/20/11  
Inspector Date Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



ES

SPECIAL INSPECTION REPORT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: PATH Transit Hub CONTRACT NO.: WTC 264.596 Date: 6/13/11

CONTRACTOR: EIC Construction Co.

LOCATION: 20 cu. yd of 5000 #467 psi concrete for Rock shelf slab, 8" thick, Elevation 245'-0" CL W6-W1.2

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material .

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Curing and Protection:

Applied curing compound to the slab

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing 2. Formwork 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
ACI 305R - Hot Weather Concreting
ACI 306 - Cold Weather Concreting
ACI 309R - Guide for Consolidation of Concrete
ACI 308 - Standard Practice for Curing Concrete
ACI 311 - Manual of Concrete Inspection
ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Colin Reed Inspector Date: 6/13/11 Concur: Joseph F. Marsano Supervising Engineer of Materials Date: 6/24/11 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: PATH Hall CONTRACT NO.: WTC 264.596 Date: 6-14-11

CONTRACTOR: Skanska

LOCATION: 88 cu. yd of 12,000 psi concrete for shear wall 10, 3<sup>rd</sup> Lift

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

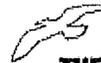
- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 6/14/11  
 Inspector Date  
Alexander Sciffiano  
 (Print Name)

Concur: Joseph Marsano 6/29/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION: TRANSPORTATION HUB FOUNDATIONS, FOOTING FOR COLUMN C-144  
ELEV. 225'-6" CL (-3/WR-1.8), COLUMN C-133 ELEV. 223'-6" CL (-4/WR-1)  
AND COLUMN C-134, ELEV. 222'-6", CL (-2/WR-1); WORK IN PROGRESS

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

<p>① TRANSPORTATION HUB FOUNDATIONS, FOOTING FOR COLUMN C-144, ELEV. 225'-6" CL (-3/WR-1.8); WORK IN PROGRESS.</p> <p>A. CONTRACTOR STARTED INSTALLING THE WATER PROOF BARRIER. NO REBAR INSTALLATION WAS DONE, ONLY STAGING &amp; BENDING.</p>
<p>② TRANSPORTATION HUB FOUNDATIONS, FOOTING FOR COLUMN C-133, ELEV. 223'-6" CL (-4/WR-1); WORK IN PROGRESS.</p> <p>A. NO REBAR INSTALLATION WAS DONE, ONLY STAGING &amp; BENDING.</p>
<p>③ TRANSPORTATION HUB FOUNDATIONS, FOOTING FOR COLUMN C-134, ELEV. 222'-6", CL (-2/WR-1); WORK IN PROGRESS.</p> <p>A. CONTRACTOR STARTED INSTALLING FORMWORK PANELS TO ENCASE THIS COLUMN (C-134)</p>

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30, \$1106, 58303 (01-14-11)
- Approved as corrected shop dwgs OLB (05-18-11)

Abbreviations.- CL : Column Lines; ELC: East limit of contract (liner wall property)

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  06-14-11 Concur:  6/20/11  
Inspector Date Supervising Engineer of Materials Date  
Paulo Quintero Joseph Marsano  
(Print Name) (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Portion of the 8-inch thick Rock Shelf Slab, EL 243' -0", CL (W2.2 - W2.7)/16 + W2.7/(14.2 - 16) + (W2.7 - W2.9)/14.2 + W2.9/(10 - 14.2) Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

- Portion of the the 8-inch thick Rock Shelf Slab, elevation 243' -0"  
 (approximate column lines: (W2.2 - W2.7)/16 + W2.7/(14.2 - 16) + (W2.7 - W2.9)/14.2 + W2.9/(10 - 14.2))
- 1 - Wire lathers set bottom slab reinforcing layer (#4 continuous @ 12 inches on center). Work in Progress.
  - 2 - Prior to reinforcement work, the contractors set the water proofing material. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S0002, S0003, S1203 and S4204
- Approved as corrected shop drawing dated 4 January 2011: 04A
- RFI TH-01331 dated 2 June 2011
- RFI TH-01281 dated 19 May 2011
- RFI TH-00665 dated 15 February 2011
- CL - column lines
- EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
 Inspector  
Alfredo Vitrano  
 (Print Name)

6/14/2011  
 Date

Concur: Joe Marsano  
 Supervising Engineer of Materials  
Joe Marsano  
 (Print Name)

6/17/11  
 Date

ES

**SPECIAL INSPECTION REPORT** PA3066, 10-09

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: PATH Transit Hub CONTRACT NO.: WTC 264.596 Date: 6/15/11

CONTRACTOR: EIC Construction Co.

LOCATION: 25 cu. yd of 5000 <sup>Mass</sup> psi concrete for Mat Slab North, South, East  
of ESW 2, Approx. Elevation 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

*4/15-7/26*

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material .

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Curing and Protection:

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: *Colin Reed*  
Inspector

6/15/11  
Date

Concur: *Joseph F. Marsano* 7/18/11  
Supervising Engineer of Materials Date

Colin Reed  
(Print Name)

Joseph F. Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations

CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION: Transportation Hub Foundations, footing for Column C-144, Elev. 225'-6" C.L. (-3/WR-1.8); Column C-133, Elev. 223'-6" C.L. (-4/WR.1); And Column C-134, Elev. 222'-6" C.L. (-2/WR-1)

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

The contractor worked in the following locations:

1. *Transportation Hub Foundations, footing for Column C-144, Elev. 225'-6" C.L.(-3/WR-1.8); Work in progress.*
  - A- Contractor finished installing water proofing barrier and continue bending and staging rebars (*No rebar installation has been performed yet*)
2. *Transportation Hub Foundations, footing for column C-133, Elev. 223'-6" C.L. (-4/WR.1); Work in progress.*
  - A- Contractor continue staging and bending rebar. (*No rebar installation has been performed yet*); **Work in progress.**
3. *Transportation Hub Foundations, footing for Column C-134, Elev. 222'-6" C.L. -2/WR-1); Work in progress.*
  - A- Contractor continue installing formwork panels and bracings to encase the above mentioned column.

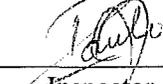
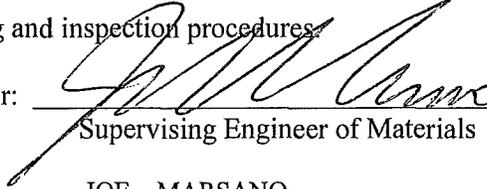
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test , reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete.
- Contract drawing *WTC 264, Addendum 30, S1106, S8303 (01/14/11)*
- Approved as corrected shop drawing *06B (05/18/11)*

Abbreviations-CL: Column lines; ELC: East Limit of Contract ( Liner Wall Property)

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract

Document and are consistent with Materials Section testing and inspection procedures:

Signed:  06-15-11 Concur:  6/20/11  
Inspector Date Supervising Engineer of Materials Date  
Paulo Quintero JOE MARSANO  
(Print Name) (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Rock Shelf Slab, 8" Thick, Elev. 243'. CL's (W2.2-W2.7/16 + W2.7/(14.2-16) +(W2.7-W2.9)/14.2 & W2.9/(10-14.2)). Final inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

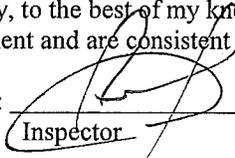
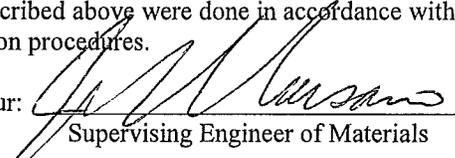
- 1. *Transportation Hub Foundations, Rock Shelf Slab, 8" Thick, Elev. 243'. CL's (W2.2-W2.7/16 + W2.7/(14.2-16) +(W2.7-W2.9)/14.2 & W2.9/(10-14.2)). Final inspection.*
  - a. Contractor finished installing top and bottom reinforcement #4@12 each way.
  - b. All construction joints were installed with waterstop as required.
  - c. Contractor placed concrete today.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
- Approved as corrected shop dwgs: 06C (04/26/11), 04A(1/4/11), Approved RFI-TH-01281(5/19/11)

Abbreviations.- CL : Column Lines; ELC: East limit of contract (liner wall property)

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  June/15/11 Concur:  6/20/11

Inspector Date Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)

55

**SPECIAL INSPECTION REPORT**

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: PATH Transit Hub CONTRACT NO.: WTC 264.596 Date: 6 / 15 / 11

CONTRACTOR: EIC Construction Co.

LOCATION: 10 cu. yd of 5000 #467.5<sup>stone</sup> psi concrete for Rock shelf slab, 8" thick.  
Elevation 245', CL W3 and Liner wall

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material .

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Curing and Protection:

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Colin Reed  
Inspector  
Colin Reed  
(Print Name)

6 / 15 / 11  
Date

Concur: Joseph F. Marsano  
Supervising Engineer of Materials  
Joseph F. Marsano  
(Print Name)

6 / 24 / 11  
Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 6-16-11

CONTRACTOR: EIC

LOCATION: 40 cu. yd of 12,000 psi concrete for

ESW# 2 ~~Over~~ excavation Fill el. 229', Liner + Knee Wall Fill to el. 245'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

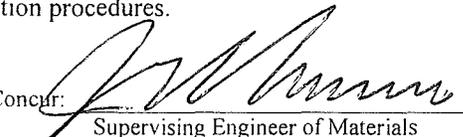
- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
 Inspector  
Alexander Sciffano  
 (Print Name)

6/16/11  
Date

Concur:   
 Supervising Engineer of Materials  
Joseph Marsano  
 (Print Name)

7/18/11  
Date





CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL (W2-W2.5/0-7). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Slab on grade, 12" Thick, Elev. 237'. CL (W2-W2.5/0-7). Work in progress.
  - a. Contractor started installing gravel, vapor barrier and waterproof sheet.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
- Approved as corrected shop dwgs: 04A(1/4/11)

Abbreviations.- CL : Column Lines;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
Inspector

June/16/11  
Date

Concur:   
Supervising Engineer of Materials

6/20/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations

CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION: Transportation Hub Foundations, footing for Column C-144, Elev. 225'-6" C.L. (-3/WR-1.8); Column C-133, Elev. 223'-6" C.L. (-4/WR.1); And Column C-134, Elev. 222'-6" C.L. (-2/WR-1)

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

The contractor worked in the following locations:

1. *Transportation Hub Foundations, footing for Column C-144, Elev. 225'-6" C.L.(-3/WR-1.8)*
  - A- Contractor started installing bottom reinforcement for above mentioned footing. **Work in progress.**
  - B- Bottom reinforcement (#9f12 @ 6") length was changed from 3'-5" to 5'-3" as per RFI No. TH-01365 and RFI No. TH-01333. **Work in progress.**
2. *Transportation Hub Foundations, footing for column C-133, Elev. 223'-6" C.L. (-4/WR.1)*
  - A- Contractor continue staging and bending rebar. (No rebar installation has been performed yet); **Work in progress.**
  - B- Contractor continue installing water proofing barrier for above mentioned footing. **Work in progress.**
3. *Transportation Hub Foundations, footing for Column C-134, Elev. 222'-6" C.L. -2/WR-1)*
  - A- Contractor continue staging and bending rebar. (No rebar installation has been performed yet); **Work in progress.**
  - B- Contractor continue installing water proofing barrier for above mentioned footing. **Work in progress.**

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test , reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete.
- Contract drawing WTC 264, Addendum 30, S1106, S8303 (01/14/11), S8304 (01/14/11)
- Approved as corrected shop drawing: 06B (05/18/11) , RFI No. TH-01365 (06/08/11) & RFI No. TH-01333 (06/02/11)

Abbreviations-CL: Column lines. RFI: Request For Information.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract

Document and are consistent with Materials Section testing and inspection procedures.

Signed: Paulo Quintero 06-16-11 Concur: Joe Marsano 6/20/11  
 Inspector Date Supervising Engineer of Materials Date  
Paulo Quintero (Print Name) JOE MARSANO (Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations

CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION: 1.- Transportation Hub Foundations, Slab on grade, 12" thick, Elev. 237'-0", C.L. (W2-W2.5/1-6). Final Inspection  
2.- Transportation Hub Foundations, footing for Column C-144, Elev. 225'-6" C.L. (-3/WR-1.8) Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

The contractor worked in the following locations:

1. *Transportation Hub Foundations, Slab on grade, 12" thick, Elev. 237'-0" C.L. (W2-W2.5/1-6). Final Inspection.*
  - A- Contractor finished installing top & bottom reinforcement (#6 @ 9") at the above location and water stop and keyway as required.
  - B- Contractor placed concrete today in a panel between Col. Lines (W2-W2.5/1-6) not included in revised construction joint layout plan approved on 5/17/11. Refer to punch list item issued today. ②
2. *Transportation Hub Foundations, footing for Column C-144, Elev. 225'-6" C.L. (-3/WR-1.8). Work in progress.*
  - A- Contractor finished installing side reinforcement for above mentioned footing.
  - B- Contractor started installing Column dowels, 20 (bundle of 2 # 11).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test, reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete.

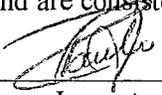
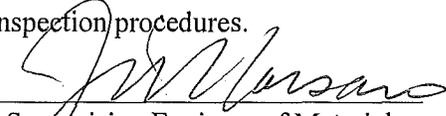
Contract drawing *WTC 264, Addendum 30, S1106, S8303 (01/14/11), S8304 (01/14/11), S1205 (01/14/11), S1203 (01/14/11)*

Approved as corrected shop drawing: *06B (05/18/11), RFI No. TH-01365 (06/08/11) & RFI No. TH-01333 (06/02/11), 04A (01/14/11)*

Abbreviations-CL: Column lines. RFI: Request For Information.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract

Document and are consistent with Materials Section testing and inspection procedures.

Signed:  06-20-11 Concur:  6/23/11

Inspector Date Supervising Engineer of Materials Date

Paulo Quintero JOE MARSANO

(Print Name) (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 6-20-11

CONTRACTOR: EIC

LOCATION: 80 cu. yd of 5,000 psi #462 stone concrete for slab "0" el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*Sealtight 1200-white curing compound was applied to the slab after pouring.*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing ..

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scriffain 6/20/11  
 Inspector Date  
Alexander Scriffain  
 (Print Name)

Concur: Joseph Marsano 7/1/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations

**CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:** 1- Footing for Column C-144, Elev. 225'-6" C.L.(-3/WR-1.8); W.I.P.  
2- Footing for Column C-133, Elev. 223'-6" C.L.(-4/WR.1); W.I.P.  
3-Footing for Column C-134, Elev. 222'-6" C.L.(-2/WR-1); W.I.P.  
4- Rock Shelf Slab, 8" Thick, Elev. 245'-0" @ C.L's (W1.1-W1.4 / L.W- E.L.), (W.1-W.3 / L.W.- E.L.) & (W.4-W.5 / L.W.-E.L.)

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

1. *Transportation Hub Foundations, footing for Column C-144, Elev. 225'-6" C.L.(-3/WR-1.8). Work in progress.*  
A- Contractor finished installing Column dowels, 20 (bundle of 2#11) for above mentioned footing.
2. *Transportation Hub Foundations, footing for column C-133, Elev. 223'-6" C.L. (-4/WR.). Work in progress.*  
A- Contractor finished installing bottom and side reinforcement @ the above mentioned footing.
3. *Transportation Hub Foundations, footing for column C-134, Elev. 222'-6" C.L.(-2/WR-1). Work in progress.*  
A- Contractor finished installing bottom reinforcement (#9 @ 6") at the above location.
4. *Transportation Hub Foundations, Rock Shelf Slab, 8" Thick, Elev. 245'-0" @ C.L's (W1.1-W1.4 / L.W- E.L.), (W.1-W.3 / L.W.- E.L.) & (W.4-W.5 / L.W.-E.L.). Work in progress.*  
A- Contractor started installing bottom & top reinforcement (#4 @ 12") @ the above mentioned slab.

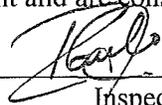
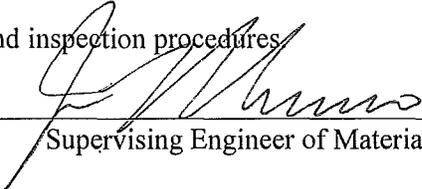
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test , reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete.
- Contract drawing *WTC 264, Addendum 30, S1106, S8303 (01/14/11), S8304 (01/14/11), S1205 (01/14/11), S1203 (01/14/11)*
- Approved as corrected shop drawing: *06B (05/18/11) , 04A (01/14/11), 04B (04/15/11)*

**Abbreviations-CL:** Column lines. **W.I.P.:** Work in progress. **L.W.:** Liner Wall. **E.L.:** East limit.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract

Document and are consistent with Materials Section testing and inspection procedures

Signed:  06-21-11 Concur:  6/23/11  
Inspector Date Supervising Engineer of Materials Date

Paulo Quintero  
(Print Name)

Joe Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 6-22-11

CONTRACTOR: RIC

LOCATION: 5 cu. yd of 5000 psi #407 concrete for slab fill between FSW # 007 + 9 along east liner wall el. 244'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scifano 6/22/11  
 Inspector Date  
Alexander Scifano  
 (Print Name)

Concur: Joseph Marsano 6/30/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WT 264.596 Date: 6-22-11

CONTRACTOR: FIC

LOCATION: 67 cu. yd of 5000 psi concrete for footing #132(w-1.8/-4), #134(w-1.8/-2) and #144(w-2.7/-3) el. 227'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scifano 6/22/11  
 Inspector Date  
Alexander Scifano  
 (Print Name)

Concur: Joseph Marsano 6/30/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations

CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION: 1- Footing for Column C-144, Elev. 225'-6" C.L. (-3/WR-1.8) Final inspection.  
2- Footing for Column C-133, Elev. 223'-6" C.L. (-4/WR.1) Final inspection.  
3- Footing for Column C-134, Elev. 222'-6" C.L. (-2/WR-1) Final inspection.  
4- Rock Shelf Slab, 8" Thick, Elev. 245'-0" @ C.L.'s (W1.1-W1.4 / L.W.-E.L.), (W.1-W.3 / L.W.-E.L.), (W.4-W.5 / L.W.-E.L.), (W1.2-W1.3 / L.W.-E.L.) & (W1.4-W1.6 / L.W.-E.L.) Final inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

The contractor worked in the following locations:

1. *Transportation Hub Foundations, footing for Column C-144, Elev. 225'-6" C.L. (-3/WR-1.8). Final inspection.*
  - A- Contractor finished installing Column dowels, 20 (bundle of 2#11) for above mentioned footing.
  - B- Contractor placed concrete today
2. *Transportation Hub Foundations, footing for column C-133, Elev. 223'-6" C.L. (-4/WR.). Final inspection.*
  - A- Contractor finished installing Column dowels, 24 (bundle of 2#11) for above mentioned footing.
  - B- Contractor placed concrete today.
3. *Transportation Hub Foundations, footing for column C-134, Elev. 222'-6" C.L. (-2/WR-1). Final inspection.*
  - A- Contractor finished installing side reinforcement (#9 @ 6"), and Column dowels, 24 (bundle of 2#11) at the above mentioned location.
  - B- Contractor placed concrete today.
4. *Transportation Hub Foundations, Rock Shelf Slab, 8" Thick, Elev. 245'-0" @ C.L.'s (W1.1-W1.4 / L.W.-E.L.), (W.1-W.3 / L.W.-E.L.), (W.4-W.5 / L.W.-E.L.), (W1.2-W1.3 / L.W.-E.L.) & (W1.4-W1.6 / L.W.-E.L.) . Final inspection.*
  - A- Contractor finished installing bottom & top reinforcement (#4 @ 12") @ (W1.2-W1.3 / L.W.-E.L.) & (W1.4-W1.6 / L.W.-E.L.)
  - B- Contractor placed concrete today.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test , reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete.

Contract drawing *WTC 264, Addendum 30, S1106, S8303 (01/14/11), S8304 (01/14/11), S1205 (01/14/11), S1203 (01/14/11)*

Approved as corrected shop drawing: *06B (05/18/11) , 04A (01/14/11), 04B (04/15/11)*

Abbreviations-CL: Column lines. L.W.: Liner Wall. E.L.: East limit.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  06-22-11 Concur:  6/23/11  
Inspector Date Supervising Engineer of Materials Date

Paulo Quintero  
(Print Name)

Joe Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations

CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION: Portion of Shear Wall #3, ESW3, from Elev. 221'-6" to 237'-0" C.L. W1.4-W5 / ESW3). W.I.P.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

The contractor worked in the following locations:

- 1. *Transportation Hub Foundations, portion of Shear Wall #3, ESW3, from Elev. 221'-6" to 237'-0" C.L. (W1.4-W5 / ESW3). Work in progress*

A- Contractor started installing Wall dowels reinforcement (9C17 @ 12") and bottom 4#10 bottom runners.

B- PA-MEU Inspections brought the attention of contractor regarding existing conflict between Contract plans and Shop drawings. On the Elevation view of Shear Wall #3, 03B/Section 4(Shop Dwings) horizontal #9 bars are located on the inside of the wall, meanwhile Contract drawings plan view, S4410/ S-A( Contract Dwings), horizontal bars are the outermost reinforcement. Please refer to punch list issued today.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test , reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete.

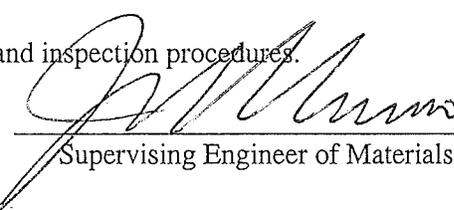
Contract drawing *WTC 264, Addendum 30, S1103 (06/10/11), S4410 (01/14/11), S4411 (01/14/11)*

Approved as corrected shop drawing: *03A, 03B (5/22/11)*

Abbreviations-CL: Column lines. ESW: Elevation Shear Wall. W.I.P.: Work in progress.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract

Document and are consistent with Materials Section testing and inspection procedures.

Signed:  06-23-11 Concur:  6/28/11  
Inspector Date Supervising Engineer of Materials Date

Paulo Quintero  
(Print Name)

Joe Marsano  
(Print Name)

**SPECIAL INSPECTION REPORT**

PA 3666 / 10-19

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTL 264.596 Date 6/24/11

CONTRACTOR: ELC

LOCATION: 550 cu. yd of 5000 psi concrete for Area 4 Fill around Footings #133, 134, and 144 @ Elev. 229.5

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material. Ensured Cold Weather concrete precautions taken (preheat subgrade/formwork) as conditions require.

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Curing and Protection:

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing  
2. Formwork  
3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Christopher Maniaci 6/24/11 Date: Joseph Marsano 6/24/11 Date  
Inspector Date: Supervising Engineer of Materials Date  
Christopher Maniaci (Print Name) Joseph Marsano (Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations

CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION: 1-Portion of Shear Wall #3, ESW3, from Elev. 221'-6" to 237'-0" C.L. W1.4-W5 / ESW3). W.I.P.  
2- Footing for Column C-115 (Incorporated), Elev. 221'-6", C.L. (W1-2 / ESW3). W.I.P.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

The contractor worked in the following locations:

1. *Transportation Hub Foundations, portion of Shear Wall #3, ESW3, from Elev. 221'-6" to 237'-0" C.L. (W1.4-W5 / ESW3). Work in progress*

A- Contractor finished installing Shear Wall dowels reinforcement (9C17 @ 12") and bottom 4#10 bottom runners.

B- Contractor started installing horizontal Shear Wall reinforcement (#9 @ 12") inside vertical bars. See pending item on punch list issued 06/23/11.

C- PA-MEU reminded contractor to place water proofing 10" below bottom of slab Elev 227'-6" as per Contract drawings.

2. *Footing for Column C-115 (Incorporated), Elev. 221'-6", C.L. (W1-2 / ESW3). Work in progress.*

A- Contractor started installing Column C-115 dowels 20(11C31 bundle of 2).

B- PA-MEU reminded contractor to place (4x3-8C19 dowels) as per section 3.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test , reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete.

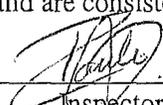
Contract drawing WTC 264, Addendum 30, S1103 (06/10/11), S4410 (01/14/11), S4411 (01/14/11)

Approved as corrected shop drawing: 03A, 03B (5/22/11)

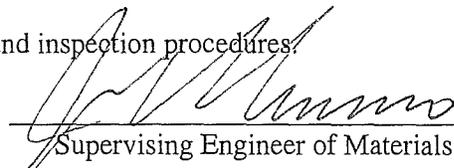
Abbreviations-CL: Column lines. ESW: Elevation Shear Wall. W.I.P.: Work in progress.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract

Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
Inspector

06-24-11  
Date

Concur:   
Supervising Engineer of Materials

7/16/11  
Date

Paulo Quintero  
(Print Name)

Joe Marsano  
(Print Name)



**SPECIAL INSPECTION REPORT**

PA3606/10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC - Transit Hub CONTRACT NO.: WTC 264.596 Date: 6/27/11

CONTRACTOR: EIC

LOCATION: 4 cu. yd of 5K psi concrete for Sump pit mud wall @ East Shear Wall 3 (Elev. 221-227.6)

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material. Ensured Cold Weather concrete precautions taken (preheat subgrade/formwork) as conditions require.

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Curing and Protection:

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Chris Maman 6/27/11  
Inspector Date

Concur: Joseph Marsano 7/18/11  
Supervising Engineer of Materials Date

Chris Maman  
(Print Name)

Joseph Marsano  
(Print Name)

**SPECIAL INSPECTION REPORT**

PAS666 / 10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC - Transit Hub CONTRACT NO.: WTC 264.596 Date: 6/27/11

CONTRACTOR: EIC

LOCATION: 48 cu. yd of 12K psi concrete for East Stear Wall 3 sockets, north corner of placement → 35 ft. south (Elev. 221.6 → 227.6)

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material. Ensured Cold Weather concrete precautions taken (preheat subgrade/formwork) as conditions require.

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Curing and Protection:

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing  
 2. Formwork  
 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
 Inspector

6/27/11  
 Date

Concur:   
 Supervising Engineer of Materials

7/1/11  
 Date

Christopher Maniaci  
 (Print Name)

Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Portion of Footing for Shear Wall #3, ESW3, 3' thick Elev. 227'-6". CL (W1.4-W.5/ESW3). Final inspection.
- 2. Transportation Hub Foundations, Knee Wall 8" thick, Elev. 237' to 245'. CL (W1.1-W2.5/ELC). Work in progress.
- 3. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W2-2.5/0-7). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Portion of Footing for Shear Wall #3, ESW3, 3' thick Elev. 227'-6". CL (W1.4-W.5/ESW3). Final inspection.

- a. Contractor finished installing additional vertical bars #8 @ the corner of column C-115 incorporated to the ESW3.
- b. Contractor finished installing #5 @24 in the footing for shear wall 3.
- c. Contractor placed concrete today. Otherwise a punch list item still remains open for right location of horizontal reinforcement. Punch list item #34.

2. Transportation Hub Foundations, Knee Wall 8" thick, Elev. 237' to 245'. CL (W1.1-W2.5/ELC). Work in progress.

- a. Contractor exceeded limits in the construction joint connecting shear walls #5, 6, 7, 8 and 9. Please refer to punch list item issued today.

3. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W2-2.5/0-7). Work in progress.

- a. Contractor did not provide the required shear key and male key waterstop. Please refer to punch list item issued today and also open NCR's generated by prior punch list items #9 and 12.
- b. Contractor started installing bottom reinforcement #10 @6 in the outermost layer.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205

Approved as corrected shop dwgs: 11A(6/26/11), 09A to 09F (5/18/11), 06B (5/18/11), 04A (1/4/11), 04B (4/15/11), 03A (5/19/11)

Abbreviations.- CL : Column Lines; ESW: Elevation Shear Wall, ELC East limit of the contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] June/27/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur: [Signature] 7/16/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)

FS

**SUBJECT: INSPECTION REPORT**

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: PATH Transit Hub CONTRACT NO.: WTC 264.596 Date: 6/23/11

CONTRACTOR: EIC Construction Co.

LOCATION: 75 cu. yd of 5k psi concrete for - WRL/Cg EL 229'-231' CL 2-(2)/W-2

South West E Columns Circle Footing CL W-1/4

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material .

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Curing and Protection:

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections:
1. Sampling and Strength Testing
  2. Formwork
  3. Placement and Curing

ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete

ACI 305R - Hot Weather Concreting

ACI 306 - Cold Weather Concreting

ACI 309R - Guide for Consolidation of Concrete

ACI 308 - Standard Practice for Curing Concrete

ACI 311 - Manual of Concrete Inspection

ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

6/24/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

7/8/11  
Date

Leo K... [Signature]  
(Print Name)

Joseph F. Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Footing for Column C-126, (8'x 8' x 4') Elev. 227'-6". CL (W-1/). Final inspection.
- 2. Transportation Hub Foundations, Reinforcement for Iron Cast Pipe around the Shear Wall 2, (2.5 x .2.5) Square Box, Elev. 229'. Work in progress.
- 3. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W2-2.5/0-7). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Footing for Column C-126, (8'x 8' x 4') Elev. 227'-6". CL (W-1/). Final inspection.
  - a. Contractor finished installing all bottom reinforcement #9 @6" and side reinforcement #6 @12.
  - b. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Reinforcement for Iron Cast Pipe around the Shear Wall 2, (2.5 x .2.5) Square Box, Elev. 229'. Work in progress.
  - a. Contractor started installing bottom reinforcement #5 @6.
- 3. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W2-2.5/0-7). Work in progress.
  - a. Contractor continues installing bottom reinforcement but problems with the right location of form saver coupler are limiting the concrete cover in the bottom. Please refer to punch list item issued today.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.

Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205  
Approved as corrected shop dwgs: 11A(6/26/11), 09A to 09F (5/18/11), 06B (5/18/11)

Abbreviations.- CL : Column Lines; ESW: Elevation Shear Wall

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] June/28/11 Concur: [Signature] 7/6/11.  
Inspector Date Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



STRUCTURAL INSPECTION REPORT

**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Footing for Column C-126, (8'x 8' x 4') Elev. 227'-6". CL (W-1). Final inspection.
- 2. Transportation Hub Foundations, Underground Cast Iron Pipe Reinforcement along Shear Wall 2, CL (W1—W-1/2-7), Elev. 229'. Work in progress.
- 3. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W2-2.5/0-7). Work in progress.

**Description of Controlled Work/Test Performed & Non-Conformance Notations:**

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Footing for Column C-126, (8'x 8' x 4') Elev. 227'-6". CL (W-1). Final inspection.
  - a. Contractor finished installing all bottom reinforcement #9 @6" and side reinforcement #6 @12.
  - b. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Underground Cast Iron Pipe Reinforcement along Shear Wall 2, CL (W1—W-1/2-7), Elev. 229'. Work in progress.
  - a. Contractor started installing bottom reinforcement #5 @6.
- 3. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W2-2.5/0-7). Work in progress.
  - a. Contractor continues installing bottom reinforcement but problems with the right location of form saver coupler are limiting the concrete cover in the bottom. Please refer to punch list item issued today.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
- Approved as corrected shop dwgs: 11A(6/26/11), 09A to 09F (5/18/11), 06B (5/18/11)
- Abbreviations.-** CL : Column Lines; ESW: Elevation Shear Wall

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  June/28/11 Date Concur:  7/6/11 Date  
 Inspector Supervising Engineer of Materials

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Underground Cast Iron Pipe Reinforcement along Shear Wall 2, CL (W1—W-1/2-7), Elev. 229', Work in progress.
- 2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W2-2.5/0-7). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

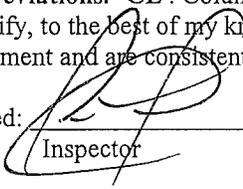
- 1. Transportation Hub Foundations, Underground Cast Iron Pipe Reinforcement along Shear Wall 2, CL (W1—W-1/2-7), Elev. 229', Work in progress.
  - a. Contractor continues installing bottom reinforcement #5 @6 each way.
- 3. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W2-2.5/0-7). Work in progress.
  - a. Contractor continues installing bottom reinforcement #10 @6".
  - b. PA-MEU inspection witnessed drill process of #10 @12" but contractor still needs to clean the holes for these bars #10.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

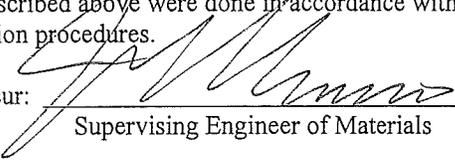
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
- Approved as corrected shop dwgs: 11A(6/26/11), 09A to 09F (5/18/11), 06B (5/18/11)

Abbreviations.- CL : Column Lines; ESW: Elevation Shear Wall

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
Inspector

June/29/11  
Date

Concur:   
Supervising Engineer of Materials

7/9/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Underground Cast Iron Pipe Reinforcement along Shear Wall 2, CL (W1—W-1/2-7), Elev. 229', Work in progress.
- 2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W2-2.5/0-7). Work in progress.
- 3. Transportation Hub Foundations, Sump Pit Bottom Slab, (1'6" thick), Elev. 221', CL (0 -2/W1-W1.5). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

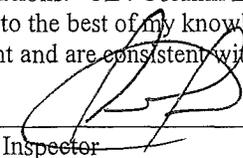
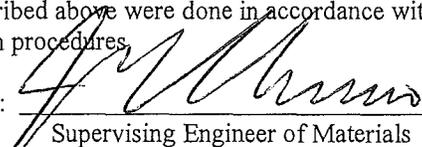
- 2. Transportation Hub Foundations, Underground Cast Iron Pipe Reinforcement along Shear Wall 2, CL (W1—W-1/2-7), Elev. 229', Work in progress.
  - a. Contractor started installing side reinforcement #5 @6 each way.
- 3. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W2-2.5/0-7). Work in progress.
  - a. Contractor continues installing bottom reinforcement #10 @6".
  - b. PA-MEU inspection witnessed drill and grout process of #10 @12" with an embedment depth of 14" following directions of proposed solution in an incoming RFI-TH-1460.
- 3. Transportation Hub Foundations, Sump Pit Bottom Slab, (1'6" thick), Elev. 221', CL (0 -2/W1-W1.5). Work in progress.
  - a. Contractor started installing bottom reinforcement #7 @6" for this triple sump pit.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
- Approved as corrected shop dwgs: 11A(6/26/11), 09A to 09F (5/18/11), 06B (5/18/11), 06C (11/11/10)

Abbreviations.- CL : Column Lines;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  June/30/11 Date Concur:  7,7,11 Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Underground Cast Iron Pipe Reinforcement along Shear Wall 2, CL (W1—W-1/2-7), Elev. 229', Work in progress.
- 2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W2-2.5/0-7), Work in progress.
- 3. Transportation Hub Foundations, Sump Pit Bottom Slab, (1'6" thick), Elev. 221', CL (0 -2/W1-W1.5), Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

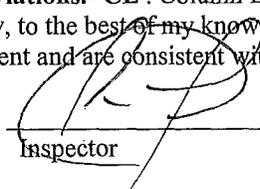
- 2. Transportation Hub Foundations, Underground Cast Iron Pipe Reinforcement along Shear Wall 2, CL (W1—W-1/2-7), Elev. 229', Work in progress.  
a. Contractor started installing bottom additional reinforcement #5 @6 each way at the intersections.
- 3. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W2-2.5/0-7), Work in progress.  
a. Contractor continues installing bottom reinforcement #10 @6".  
b. PA-MEU inspection witnessed drill and grout process of 20 #10 @12" with an embedment depth of 14" following directions of proposed solution in an incoming RFI-TH-1460. The contractor installed a bar #10 @ the northeast bottom end with 9" embedment. Please refer to punch list item issued today.
- 3. Transportation Hub Foundations, Sump Pit Bottom Slab, (1'6" thick), Elev. 221', CL (0 -2/W1-W1.5), Work in progress.  
a. Contractor started installing #6 wall dowels for this triple sump pit.

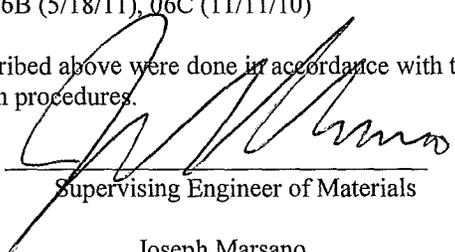
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
- Approved as corrected shop dwgs: 11A(6/26/11), 09A to 09F (5/18/11), 06B (5/18/11), 06C (11/11/10)

Abbreviations.- CL : Column Lines;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
 Inspector \_\_\_\_\_  
 Date July 1/11  
Ricardo A. Tigua  
 (Print Name)

Concur:   
 Supervising Engineer of Materials \_\_\_\_\_  
 Date 7.7.11.  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 7-1-11  
CONTRACTOR: ETC

LOCATION: 150 cu. yd of 5000 psi concrete for

S. Bound Over excavation (w-2/0, el. 222'); slab "A" mud Wall el. 231'; Mud Mat Wall (w-2/0, el. 232')  
Description of Controlled Work/Test Performed & Non-Conformance Notations: + West of Perch Fill (w-3/5' el. 237')

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: Alexander Scriffiano 7/1/11 Concur: Joseph Marsano 7/1/11  
Inspector Date Supervising Engineer of Materials Date  
Alexander Scriffiano Joseph Marsano  
(Print Name) (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Sump Pit Bottom Slab, (1'6" thick), Elev. 221', CL (0 -2/W1-W1.5). Final inspection.
2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1-W2-2.5/0-7). Work in progress.
3. Transportation Hub Foundations, Underground Cast Iron Pipe Reinforcement along Shear Wall 2, CL (W1-W-1/2-7), Elev. 229'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Sump Pit Bottom Slab, (1'6" thick), Elev. 221', CL (0 -2/W1-W1.5). Final inspection.
a. Contractor finished installing #4 @12 wall dowels for this triple (sump + ejector + oil rejecter) pit.
b. Contractor placed concrete today. No exceptions noted.
2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1-W2-2.5/0-7). Work in progress.
a. Contractor continues installing bottom reinforcement #10 @6" in the east west direction.
b. PA-MEU inspection witnessed the torque installation of 100#10 @6 bottom bars with an inspection wrench. Contractor followed the manufacturer's requirements, no exceptions noted.
c. PA-MEU inspection witnessed the drill/grout procedure for #10 @12" instructed in incoming RFI-TH-1460. Contractor drilled 12 holes with an 14" embedment depth.
3. Transportation Hub Foundations, Underground Cast Iron Pipe Reinforcement along Shear Wall 2, CL (W1-W-1/2-7), Elev. 229'. Work in progress.
a. Contractor continues adjusting bottom additional reinforcement #5 @6 each way at the intersections and cross with main bottom mat of the slab @ Elev. 229'6".

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
Approved as corrected shop dwgs: 11A(6/26/11), 09A to 09F (5/18/11), 06B (5/18/11), 06C (11/11/10)

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] July/5/11 Date Concur: [Signature] 7/7/11 Date
Inspector Supervising Engineer of Materials

Ricardo A. Tigua (Print Name)

Joseph Marsano (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 7-5-11

CONTRACTOR: ETC

LOCATION: 14 cu. yd of 12,000 psi concrete for

mud mat @ ESW#3 around sump slab

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- 'Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: Alexander Sciffiano 7/5/11  
Inspector Date

Alexander Sciffiano  
(Print Name)

Concur: Joseph Marsano 7/8/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)

ES

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 7-5-11

CONTRACTOR: ETC

LOCATION: 50 cu. yd of 5,000 psi concrete for over excavation fill @ perch slab W3/2 el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: Alexander Sciffiano  
Inspector

7/5/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials

7/8/11  
Date

Alexander Sciffiano  
(Print Name)

Joseph Marsano  
(Print Name)

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 7-5-11

CONTRACTOR: EIC

LOCATION: 8 cu. yd of 5,000 psi #467 stone concrete for  
semp slab w1 to w2 / 0 to 2 el. 229'6"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*SealTight 1200-White curing compound was applied to the slab*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 7/5/11  
Inspector Date

Alexander Sciffiano  
(Print Name)

Concur: Joseph Marsano 7/13/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Sump Pit Walls, (1'6" thick), Elev. 221' to 229', CL (0 -2/W1-W1.5). Work in progress.
- 2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W2-2.5/0-7). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Sump Pit Walls, (1'6" thick), Elev. 221' to 229', CL (0 -2/W1-W1.5). Work in progress.
  - a. Contractor started installing the vertical dowels #6 @9".
  - b. Contractor started installing the side reinforcement #6 @9"
- 2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W2-2.5/0-7). Work in progress.
  - a. Contractor continues installing additional bottom reinforcement #10 @6" in the east west direction.
  - b. PA-MEU inspection witnessed the torque installation of 200#10 @6 bottom bars with an inspection wrench. Contractor followed the manufacturer's requirements, no exceptions noted.
  - c. PA-MEU inspection witnessed the drill/grout procedure for #10 @12" instructed in incoming RFI-TH-1460. Contractor drilled 6 holes with 14" embedment depth.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
- Approved as corrected shop dwgs: 11A(6/26/11), 09A to 09F (5/18/11), 06B (5/18/11), 06C (11/11/10)

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

July/6/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

7/13/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS

1. Sump Pit walls, (1'6" thick and 8" thick), El 222'-6" to EL227'-0". CL (0 -2/W1-W1.5). Final inspection.
2. Slab on Grade, 2'-0" Thick, Elev. 229'6". CL (W-1 to W-2.5)/ (2 to 7). Work in progress.
3. Shear wall # 3 between CL (W1 TO W) / ESW3 @ EL 227'-0" to EL 237'-0". Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Sump Pit walls, (1'6" thick and 8" thick), Elev. 222'-6" to EL227'-0", CL (0 -2/W1-W1.5),

1. Contractor finished installing walls vertical and horizontal reinforcement.
2. Contractor finished installing formwork, water stop and walls key.

Final inspection completed.

Slab on Grade, 2'-0" Thick, Elev. 229'6". CL (W-1 to W-2.5)/ (2 to 7).

1. Contractor finished installing slab bottom reinforcement. (#10@6" EW)
2. Contractor finished installing #10 threaded end bars in to existing couplers. Pa inspector witnessed 75% of the torque process according to the torque manual.
3. Contractor installed 1#10 bar in to existing shear wall to replace the damage coupler. Pa inspector checked the embedment, cleanliness and witnessed the installation process.(RFI#1460)
- 4.

Shear wall # 3 between CL (W1 TO W) / ESW3 @ EL 227'-0" to EL 237'-0"

1. Contractor started installing wall vertical reinforcement.(#9@9")

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete
- Contract DWG Addendum 30 dated 1-14-11 S8301,S8302,S8303,S8304,S8305
- Approved as corrected shop drawing 03B and 03A dated 5/26/11
- Approved as corrected shop drawing 06c dated 11/11/10
- Approved as corrected shop drawing 09C and 09B dated 5-18-11

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 7/17/11 Concur: [Signature] 7/13/11  
 Inspector Date Supervising Engineer of Materials Date

SABER GHAZALY [Signature]  
 (Print Name) (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 7/7/11

CONTRACTOR: ETC

LOCATION: 40 cu. yd of 5000 MASS psi concrete for Mudmat @

@ El. 231/Mudmat DB @ El. 227.6/ESW3 Sump Pit Walls @ El. 223.3 -> 227.6

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

- Curing Compound applied to mudmats after trowel finish

- Possible cold joints in Sump pit walls due to improper consolidation and concrete setting up

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete

ACI 305R - Hot Weather Concreting

ACI 306 - Cold Weather Concreting

ACI 309R - Guide for Consolidation of Concrete

ACI 308 - Standard Practice for Curing Concrete

ACI 311 - Manual of Concrete Inspection

ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Ken Brault  
Inspector

7/7/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

7/7/11  
Date

Ken Brault  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS

1. Slab on Grade, 2'-0" Thick, Elev. 229'6". CL (W-1 to W-2.5)/(2 to 7). Work in progress.
2. Shear wall # 3 between CL (W1 TO W )/ ESW3 @ EL 227'-0" to EL 237'-0". Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Slab on Grade, 2'-0" Thick, Elev. 229'6". CL (W-1 to W-2.5)/(2 to 7).

1. Contractor finished installing slab bottom reinforcement. (#10@6" EW)
2. Contractor finished installing #10 threaded end bars in to existing couplers. Pa inspector witnessed 75% of the torque process according to the torque manual.
3. Contractor started installing top mat reinforcement
4. Contractor installed 4#10 bar in to existing shear wall to replace the damage coupler. Pa inspector checked the embedment, cleanliness and witnessed the installation process.(RFI#1460)
- 5.

Shear wall # 3 between CL (W1 TO W )/ ESW3 @ EL 227'-0" to EL 237'-0"

1. Contractor started installing wall vertical reinforcement.(#9@12")
2. Contractor started installing wall horizontal reinforcement.(#9@9")
3. Contractor started installing wall ties(#5@24")

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete
- Contract DWG Addendum 30 dated 1-14-11 S8301,S8302,S8303,S8304,S8305
- Approved as corrected shop drawing 03B and 03A dated 5/26/11
- Approved as corrected shop drawing 06C dated 11/11/10
- Approved as corrected shop drawing 09C and 09B dated 5-18-11

LEGEND

CL = COLUMN LINE EL = ELEVATION

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 07/ 08 / 11 Concur: [Signature] 7/13/11  
 Inspector Date Supervising Engineer of Materials Date  
SABER GHAZALY [Signature]  
 (Print Name) (Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS

1. Slab on Grade, 2'-0'' Thick, Elev. 229'6''. CL (W-1 to W-2.5)/ (2 to 7). Work in progress.
2. Shear wall # 3 between CL (W1 TO W)/ ESW3 @ EL 227'-0'' to EL 237'-0''. Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Slab on Grade, 2'-0'' Thick, Elev. 229'6''. CL (W-1 to W-2.5)/ (2 to 7).

1. Contractor started installing top mat reinforcement. (#10@6'' EW)
2. Contractor installed 4#10 bar in to existing shear wall to replace the damage coupler. Pa inspector checked the embedment, cleanliness and witnessed the installation process.(RFI#1460)
3. Contractor started installing shear wall #3 dowels.(#8@9'')

Shear wall # 3 between CL (W1 TO W) / ESW3 @ EL 227'-0'' to EL 237'-0''

1. Contractor continues installing wall vertical reinforcement.(#9@12'')
2. Contractor continues installing wall horizontal reinforcement.(#9@9'')
3. Contractor started installing wall ties(#5@24'')

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301 - Specification for Structural Concrete
- Contract DWG Addendum 30 dated 1-14-11 S8301,S8302,S8303,S8304,S8305
- Approved as corrected shop drawing 03B and 03A dated 5/26/11
- Approved as corrected shop drawing 06cC dated 11/11/10
- Approved as corrected shop drawing 09C and 09B dated 5-18-11

LEGEND

CL = COLUMN LINE EL = ELEVATION EW = each way

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] 07/ 11/ 11 Date

SABER GHAZALY  
(Print Name)

Concur: [Signature] 7 13/ 11 Date

[Signature]  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS

1. Slab on Grade, 2'-0" Thick, Elev. 229'6". CL (W-1 to W-2.5)/ (2 to 7). Work in progress.
2. Shear wall # 3 between CL (W1 TO W)/ ESW3 @ EL 227'-0" to EL 237'-0". Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Slab on Grade, 2'-0" Thick, Elev. 229'6". CL (W-1 to W-2.5)/ (2 to 7).

1. Contractor continues installing top mat reinforcement. (#10@6" EW)
2. Contractor installed 4#10 bar in to existing shear wall to replace the damage coupler. Pa inspector checked the embedment, cleanliness and witnessed the installation process.(RFI#1460)
3. Contractor continues installing shear wall #3 dowels.( #8@9")

Shear wall # 3 between CL (W1 TO W) / ESW3 @ EL 227'-0" to EL 237'-0"

1. Contractor finished installing wall vertical reinforcement.(#9@12")
2. Contractor continues installing wall horizontal reinforcement.(#9@9")
3. Contractor continues installing wall ties(#5@24")

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 30 dated 1-14-11 S8301,S8302,S8303,S8304,S8305

Approved as corrected shop drawing 03B and 03A dated 5/26/11

Approved as corrected shop drawing 06C dated 11/11/10

Approved as corrected shop drawing 09C and 09B dated 5-18-11

LEGEND

CL = COLUMN LINE      EL = ELEVATION      EW = each way

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly  
Inspector

07/ 12/ 11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

7/18/11  
Date

SABER GHAZALY  
(Print Name)

[Signature]  
(Print Name)





CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W-2.5/2-ESW3\*). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W-2.5/2-ESW3). Work in progress.

- a. Contractor continues installing additional top reinforcement #10 @6" in the north south direction.
- b. PA-MEU inspection witnessed the torque installation of 20#10 @6 bottom bars with an inspection wrench. Contractor followed the manufacturer's requirements, no exceptions noted.
- c. PA-MEU inspection witnessed the drill/grout procedure for 5#10 @12" instructed in incoming RFI-TH-1460. Contractor drilled and grouted 5 holes with 14" embedment depth.
- d. Contractor started installing the wall dowels for 1.5' thick #8 @9. Please refer to punch list item issued today for not detail provided.
- e. Contractor set construction limits that have not been approved by EOR. Please refer to punch list item today. B

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
- Approved as corrected shop dwgs: 11A(6/26/11), 09A to 09F (5/18/11), 06B (5/18/11), 06C (11/11/10)

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information, ESW3: Elevation Shear Wall 3

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

July/14/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

7/10/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)

**THE PORT AUTHORITY OF NY & NJ  
CONSTRUCTION DIVISION  
MATERIALS ENGINEERING SECTION  
SPECIAL INSPECTION REPORT**

**CONTRACT TITLE:** PATH Hall & Transit Hall Construction      **CONTRACT #:** WTC 264.596      **DATE:** 07/14/11

**CONTRACTOR:** Tishman/Turner JV

**LOCATION:** ESW2 Footing Southeast Area At Elevation 229.6, Missing FSCs/Couplers Supplemental #10 Rebar Dowels

**Weather:** Partly Cloudy      **Temperature:** 92 °F

**DESCRIPTION OF WORK/TEST(S) PERFORMED & NON-CONFORMANCE NOTATIONS:**

On July 12, 2011, the Port Authority of NY & NJ Engineering Materials Unit performed a pull tests on horizontal #10 rebar dowel installed at the location indicated above. Of the six (6) rebar installed, one (10%) was tested to the requested load of 10,000 Pounds. The anchor withstood the referenced load. Below is a summary of our results:

<b>Base Material:</b>	Existing CIP Concrete	<b>Anchor Type:</b>	Adhesive	<b>Expansive - Drop-In</b>	<b>Other:</b>	<b>Adhesive Used:</b>	Hilti Hit-500	RE
<b># of Anchors Installed:</b>	6	<b>Percentage to be Tested:</b>	10%	<b>#of Anchors Tested</b>	1	<b>Anchor Manufacture:</b>		
<b>Type of Test Performed:</b>	Direct Load	<b>Witnessed Testing:</b> Marcos Gonzales (EIC Associates, Inc.)						

	Test Number	Date Installed	Date Tested	Embedment Depth (In.)	Rebar Diameter (In.)	Applied Load (Pounds)	Horizontal
	1	07/06/11	07/12/11	14.00	#10 (1.25)	12,964	Horizontal

**Remarks**

- Testing requested by: Sean Blakely (Tishman/Turner JV)
- Requested loads supplied by: Bashar Altalba (Downtown Design Partnership)

BELOW IS A LIST OF APPLICABLE DOCUMENTS THAT DESCRIBE INSPECTION PRECEDURE(S), INSPECTION, TEST REPORTS AND WRITTEN

- 1 - The anchors were tested in accordance with ASTM E-488.
- 2 - The anchors were tested using a Enerpac Hollow Plunger load cell:

RCH 123 (12 Ton)      RCH 302 (30 Ton)      RCH 603 (60 Ton)

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Documents and are consistent with Materials testing and inspection procedures.

**SIGNED:** Thomas Murphy      07/14/11  
DATE

**INSPECTOR'S NAME:** Thomas Murphy

**CONCURRED:** Joseph Marsano      07/14/11  
DATE

**SUPERVISOR'S NAME:** Joseph Marsano

---

**Tishman/TurnerJV on behalf of PANYNJ****TRANSMITTAL OF RESPONSE**

100 Broadway - 5th Floor  
New York, NY 10005  
Phone: 646-556-6700  
Fax: 646-556-6747

**RFI :** No. TH-01460  
**DATE:** 6/27/2011  
**STATUS:** CLO

---

**TO:** Attn: Leo Pflug  
**EIC Associates, Inc.**

**TITLE:** ESW2 Drill & Grout slab reinf.  
**PROJECT:** WTC 264.TRADE PACKAGES  
**JOB #:** WTC-264.TRADE PACKAGES

---

**REQUEST:**

As discussed in the 6/21/2011 technical meeting, some EL 229'-6" slab reinforcement (#10 @6" O.C.) was not installed. See marked up plan indicating the areas where the slab reinforcement was not installed. Also see attached pictures.

1. Please confirm it is acceptable to drill and grout reinforcement in areas missing form saving couplers (FSCs) using the Hilti HIT RE 500 with #10@12" bars. Confirm an embedment depth of 14" is acceptable.
2. In the southeast area of ESW2 footing, FSCs/ couplers are missing for the E-W reinforcement. It is requested that this reinforcement be omitted due to reinforcement congestion. This amounts to one (1) #10 T&B. Confirm acceptable.

**PROPOSED SOLUTION:**

DDP Response Dated 6/24/11:

1. Acceptable; proof test every 10th anchor for a tension load of 10,000 lbs.
2. Acceptable

Signed: \_\_\_\_\_



Date: \_\_\_\_\_

6/27/11

# Downtown Design Partnership

100 Broadway  
New York, NY 10005

TRANSMITTAL

**PROJECT:** WTC-264.596 TH Foundations -EIC

**DATE:** 6/24/2011

**TO:** Tishman/Turner  
100 Broadway 5th Floor  
New York, N.Y. 10005

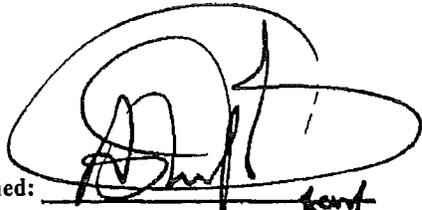
**REF:** Request for Information for  
264.596 32  
DDP-TT-0761-11

**ATTN:** Sean Blakely

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
<input type="checkbox"/> Shop Drawings	<input type="checkbox"/> Approval	<input type="checkbox"/> Approved as Submitted
<input type="checkbox"/> Letter	<input type="checkbox"/> Your Use	<input type="checkbox"/> Approved as Noted
<input type="checkbox"/> Prints	<input type="checkbox"/> As Requested	<input type="checkbox"/> Returned After Loan
<input type="checkbox"/> Change Order	<input checked="" type="checkbox"/> Review and Comment	<input type="checkbox"/> Resubmit
<input type="checkbox"/> Plans		<input type="checkbox"/> Submit
<input type="checkbox"/> Samples	<b>SENT VIA:</b>	<input type="checkbox"/> Returned
<input type="checkbox"/> Specifications	<input checked="" type="checkbox"/> Attached	<input type="checkbox"/> Returned for Corrections
<input checked="" type="checkbox"/> Other: Request for Information	<input type="checkbox"/> Separate Cover Via: Mail	<input type="checkbox"/> Due Date:

Package #	SUBMITTAL NO.	REV.	ITEM NO.	COPIES	DATE	DESCRIPTION	STATUS
264.596			1	1	6/23/2011	RFI # TH-01460, ESW2 Drill & Grout slab reinf.	CLO

CC:File

Signed:   
Scott R. McIntyre, PE

**Tishman/Turner**

100 Broadway 5th Floor

**REQUEST FOR INFORMATION****RFI No. TH-01460****TITLE:** ESW2 Drill & Grout slab reinf.**DATE:** 6/23/2011**PROJECT:** WTC-264.596 TH Foundations -EIC**PACKAGE #:** 264.596**TO:** Attn: Bashar Altabba, P.E.  
Downtown Design Partnership  
7 Hanover Square, Suite 1800  
New York, NY 10004**STARTED:** 6/23/2011

Phone: 917 522 2923 Fax: 212-785-3138

**REQUEST:**

As discussed in the 6/21/2011 technical meeting, some EL 229'-6" slab reinforcement (#10 @6" O.C.) was not installed. See marked up plan indicating the areas where the slab reinforcement was not installed. Also see attached pictures.

1. Please confirm it is acceptable to drill and grout reinforcement in areas missing form saving couplers (FSCs) using the Hilti HIT RE 500 with #10@12" bars. Confirm an embedment depth of 14" is acceptable.
2. In the southeast area of ESW2 footing, FSCs/ couplers are missing for the E-W reinforcement. It is requested that this reinforcement be omitted due to reinforcement congestion. This amounts to one (1) #10 T&B. Confirm acceptable.

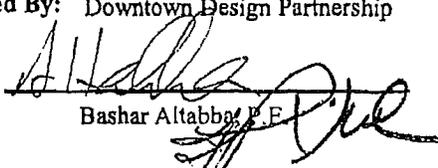
**ANSWER:**

1. Acceptable; proof test every 10th anchor for a tension load of 10,000 lbs.
2. Acceptable

Cost Impact:

 Yes No

Answered By: Downtown Design Partnership

Signed: 

Bashar Altabba, P.E.

Date: 6/24/11

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**Tishman/TurnerJV on behalf of PANYN****REQUEST FOR INFORMATION**

100 Broadway - 5th Floor  
New York, NY 10005

Phone: 646-556-6700  
Fax: 646-556-6747

**No. TH-01460**

---

**TITLE:** ESW2 Drill & Grout slab reinf.**DATE:** 6/23/2011**PROJECT:** WTC 264. TRADE PACKAGES**JOB:** WTC-264. TRADE PACKA**TO:** Attn: DDP Reviewers  
**Downtown Design Partnership**  
100 Broadway  
3rd Flr  
New York, NY 10005  
Phone: (917) 552-2800**REQUIRED:** 6/30/2011**Contractor:** EIC Associates, Inc.**Contact:** Leo Pflug**Contractor/Sub Ref. #:** 596-000**REQUEST:**

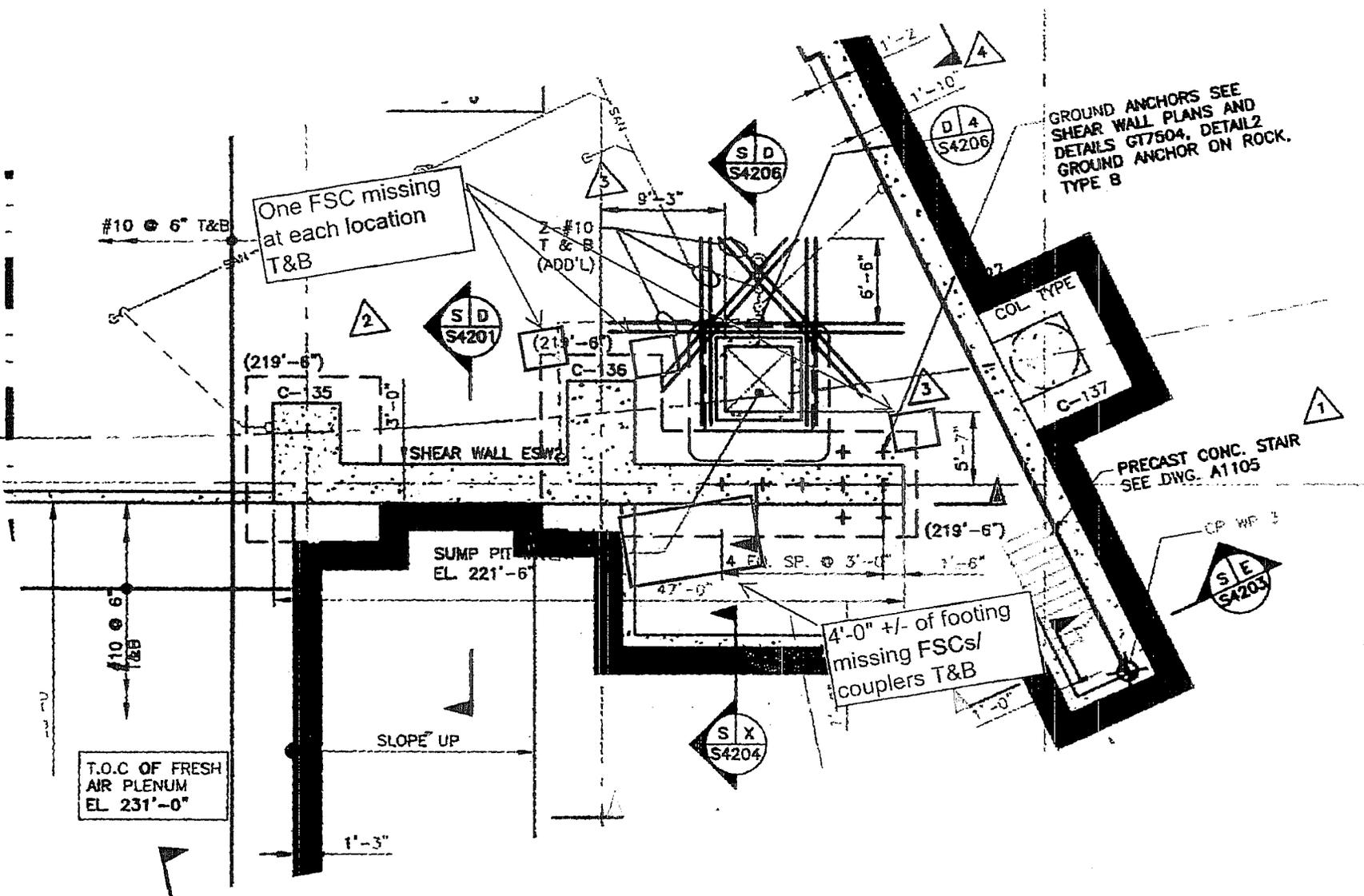
As discussed in the 6/21/2011 technical meeting, some EL 229'-6" slab reinforcement (#10 @6" O.C.) was not installed. See marked up plan indicating the areas where the slab reinforcement was not installed. Also see attached pictures.

1. Please confirm it is acceptable to drill and grout reinforcement in areas missing form saving couplers (FSC's) using the Hilti HIT RE 500 with #10 @ 12" bars. Confirm an embedment depth of 14" is acceptable.

2. In the southeast area of ESW2 footing, FSC's/ couplers are missing for the E-W reinforcement. It is requested that this reinforcement be omitted due to reinforcement congestion. This amounts to one (1) #10 T&B. Confirm acceptable.

**PROPOSED SOLUTION:**

MATCHLINE DWG.



One FSC missing at each location T&B

GROUND ANCHORS SEE SHEAR WALL PLANS AND DETAILS GT7504, DETAIL 2 GROUND ANCHOR ON ROCK, TYPE B

PRECAST CONC. STAIR SEE DWG. A1105

4'-0" +/- of footing missing FSCs/couplers T&B

T.O.C OF FRESH AIR PLENUM EL 231'-0"

SUMP PIT EL. 221'-6"

SLOPE UP

S X S4204

S D S4206

D 4 S4206

S D S4201

S E S4203

COL TYPE

C-137

#10 @ 6" T&B

#10 T & B (ADD'L)

(219'-6")

(219'-6")

(219'-6")

C-35

C-36

#10 @ 6" T&B

1'-3"

47'-0"

4 FN. SP. @ 3'-0"

1'-0"

1'-6"

5'-7"

6'-6"

9'-3"

1'-2"

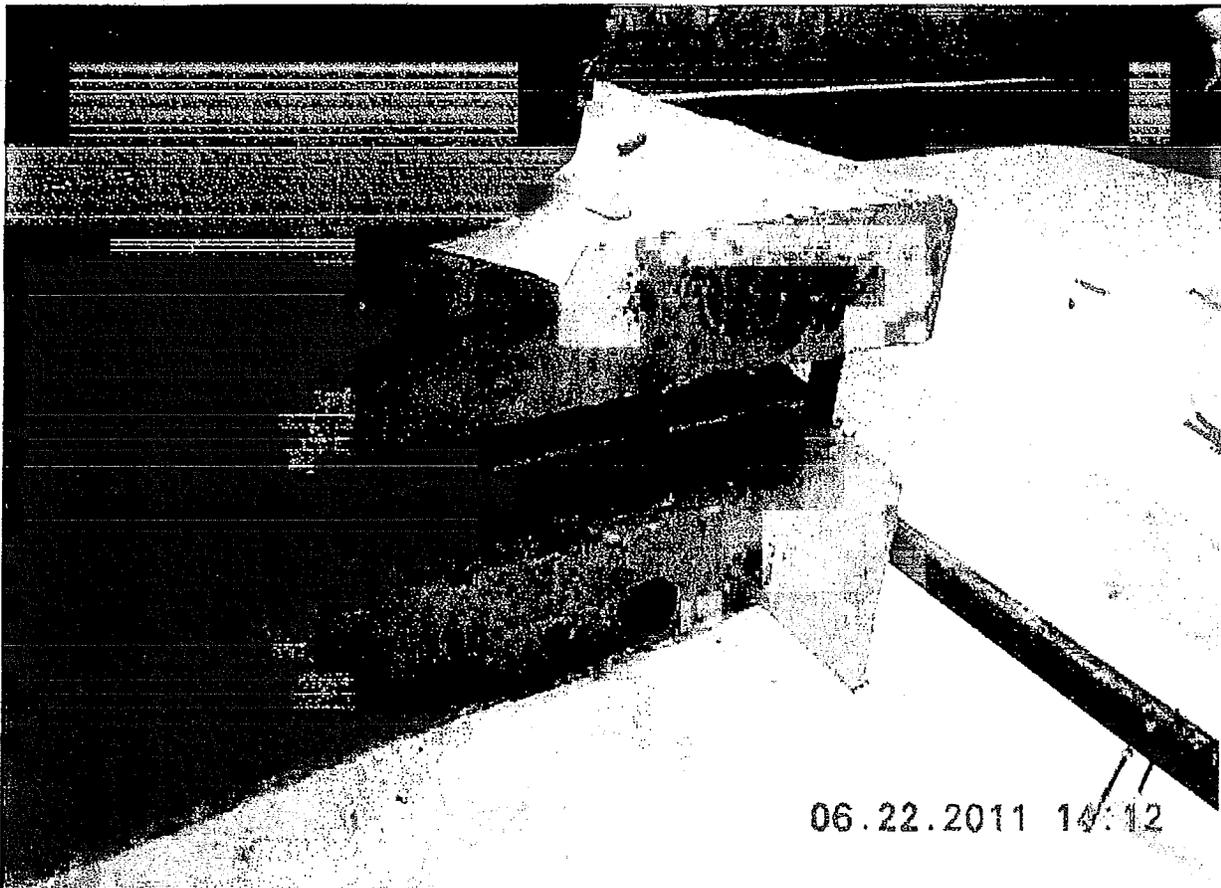
1'-10"

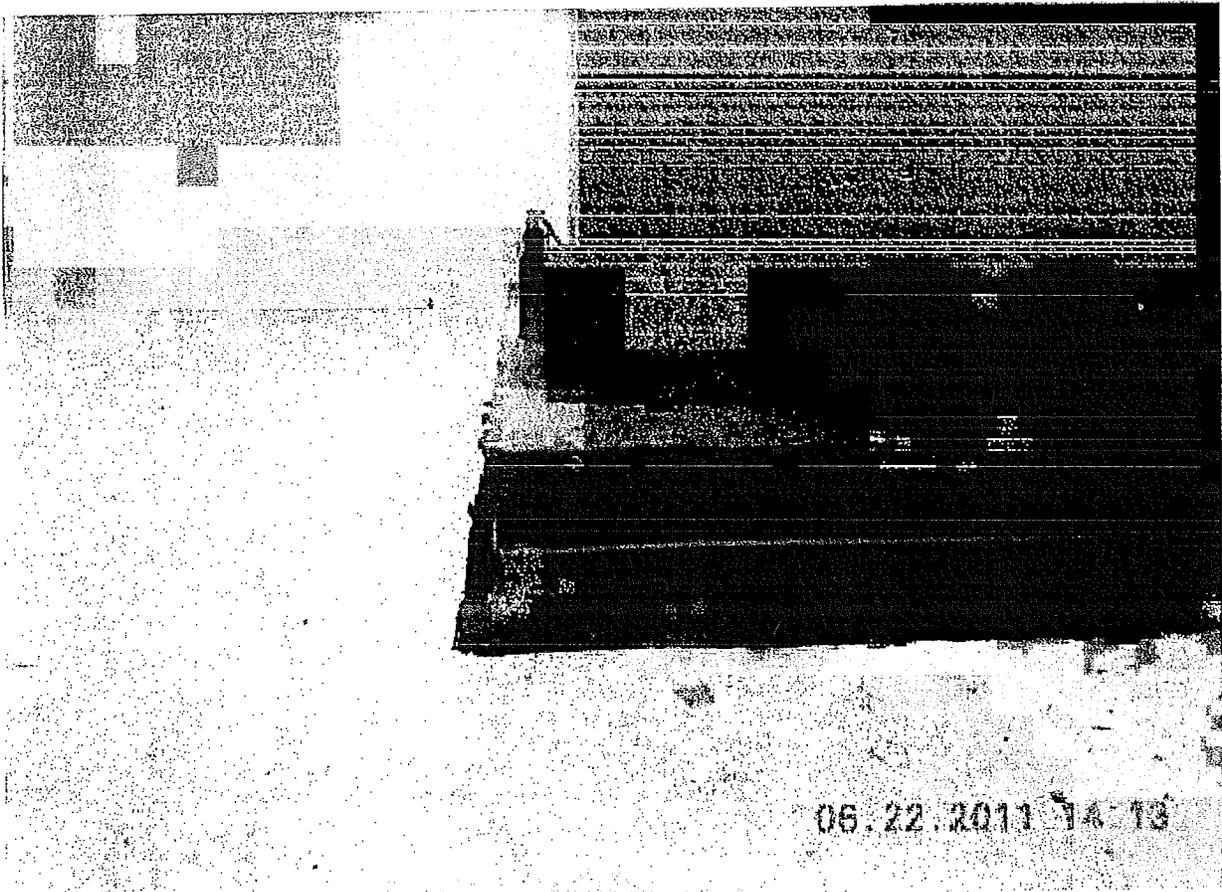
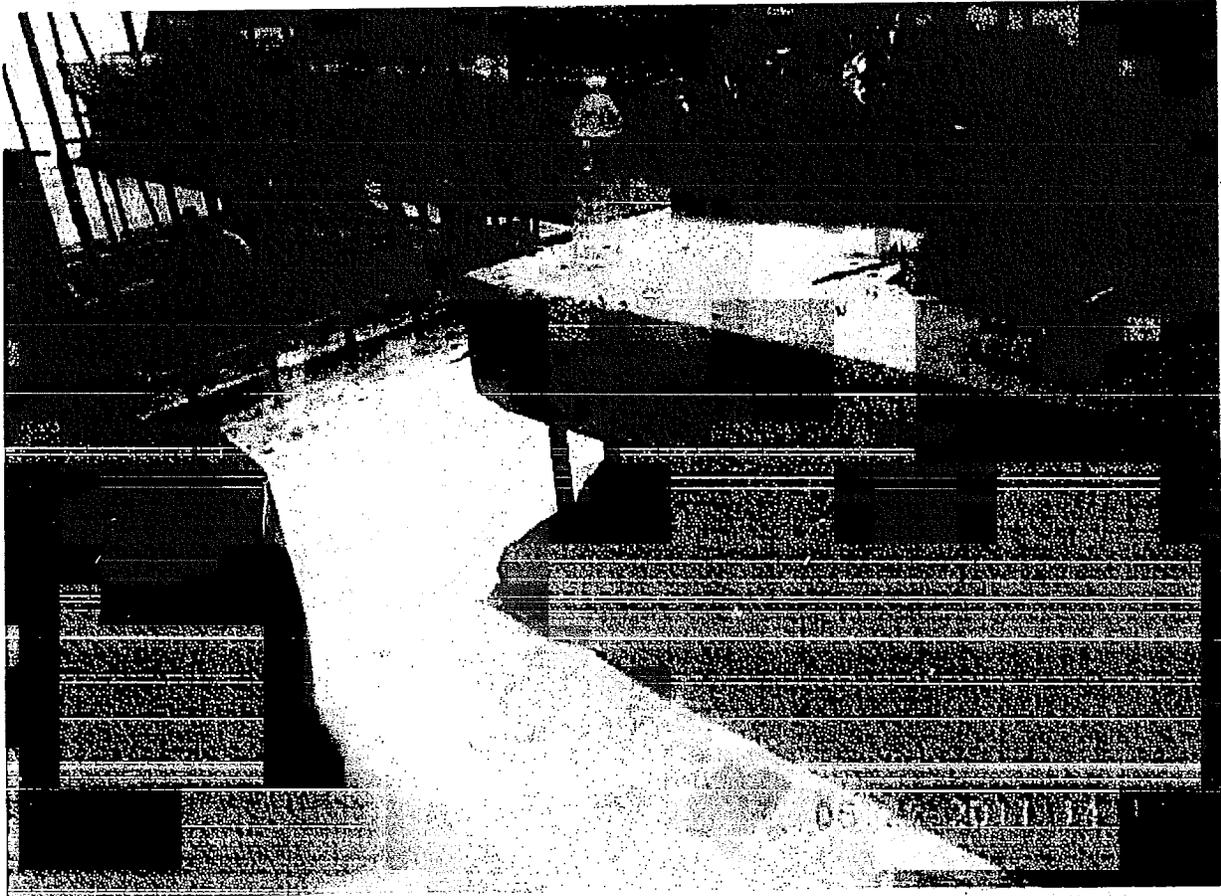
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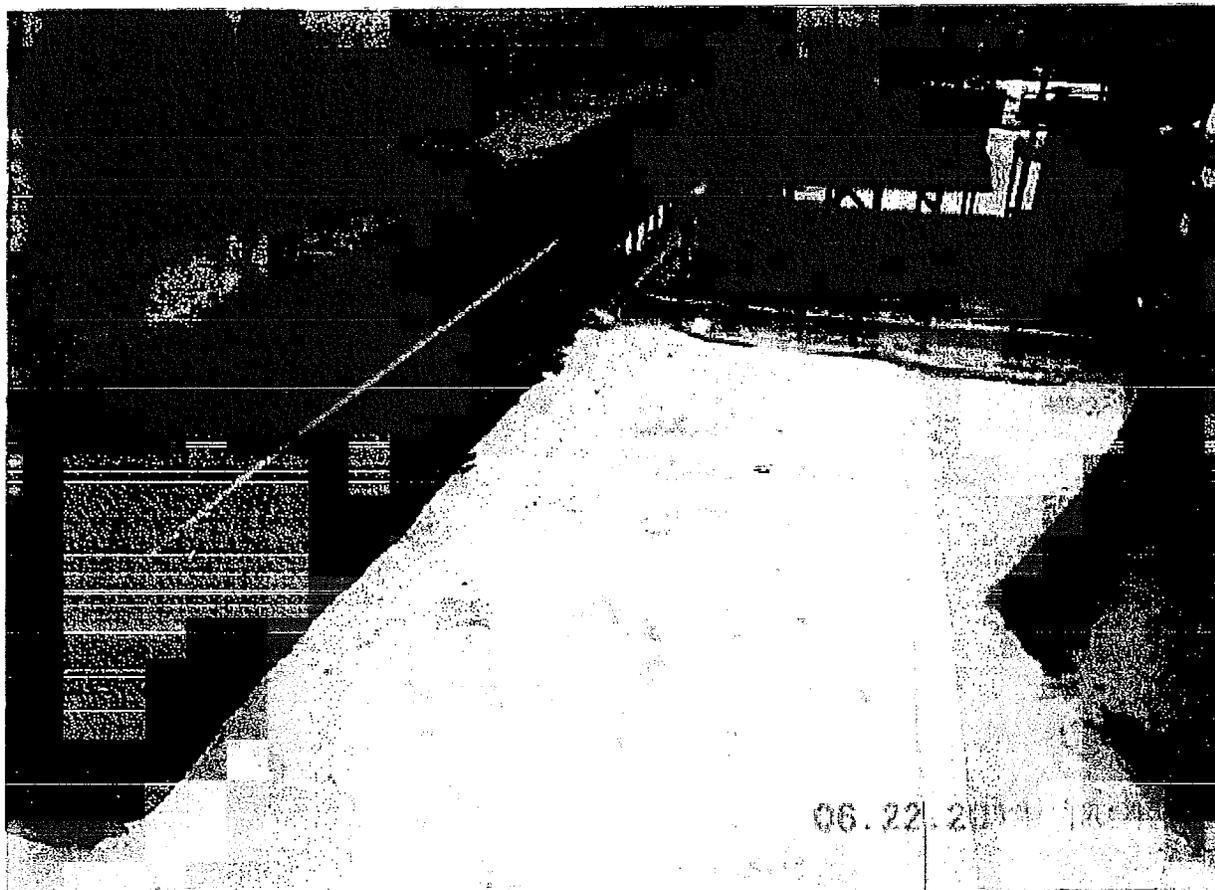
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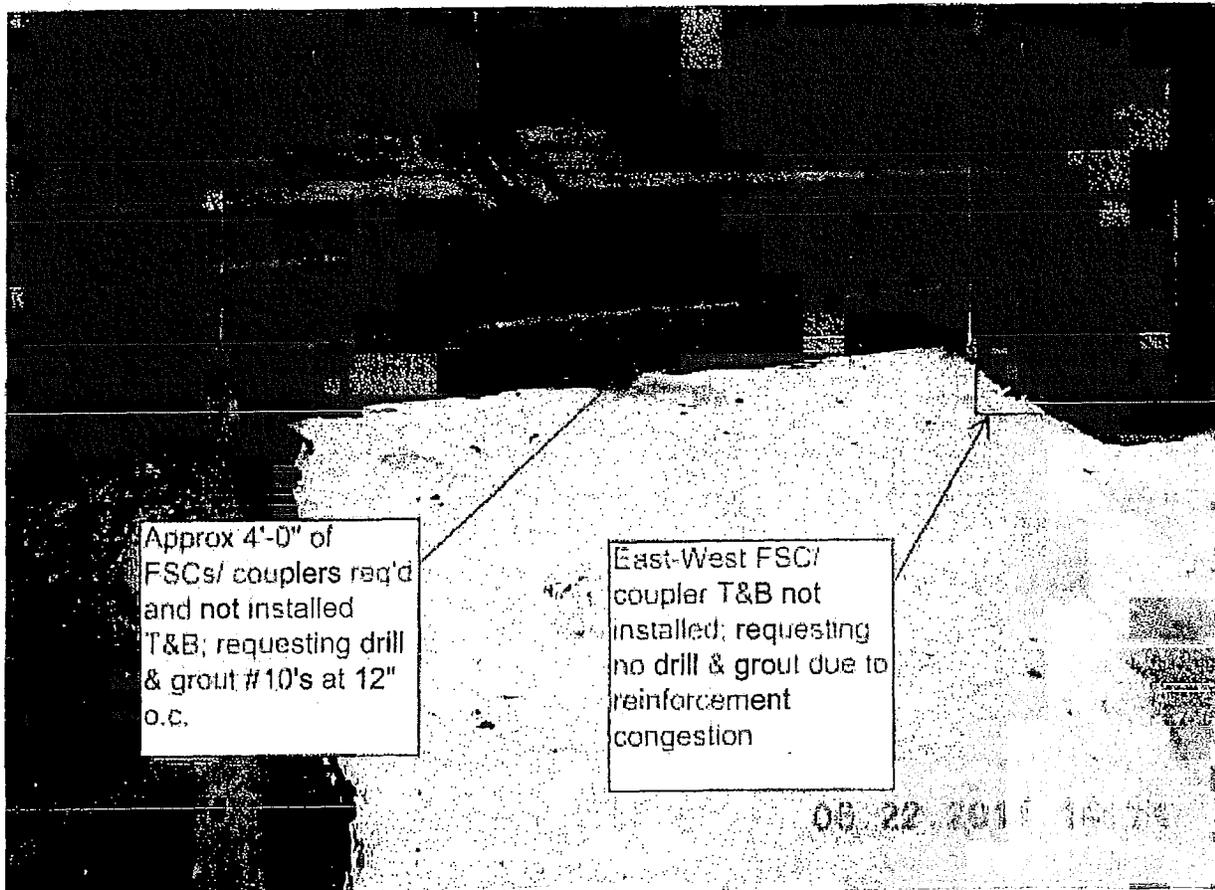
1

CP WF 3





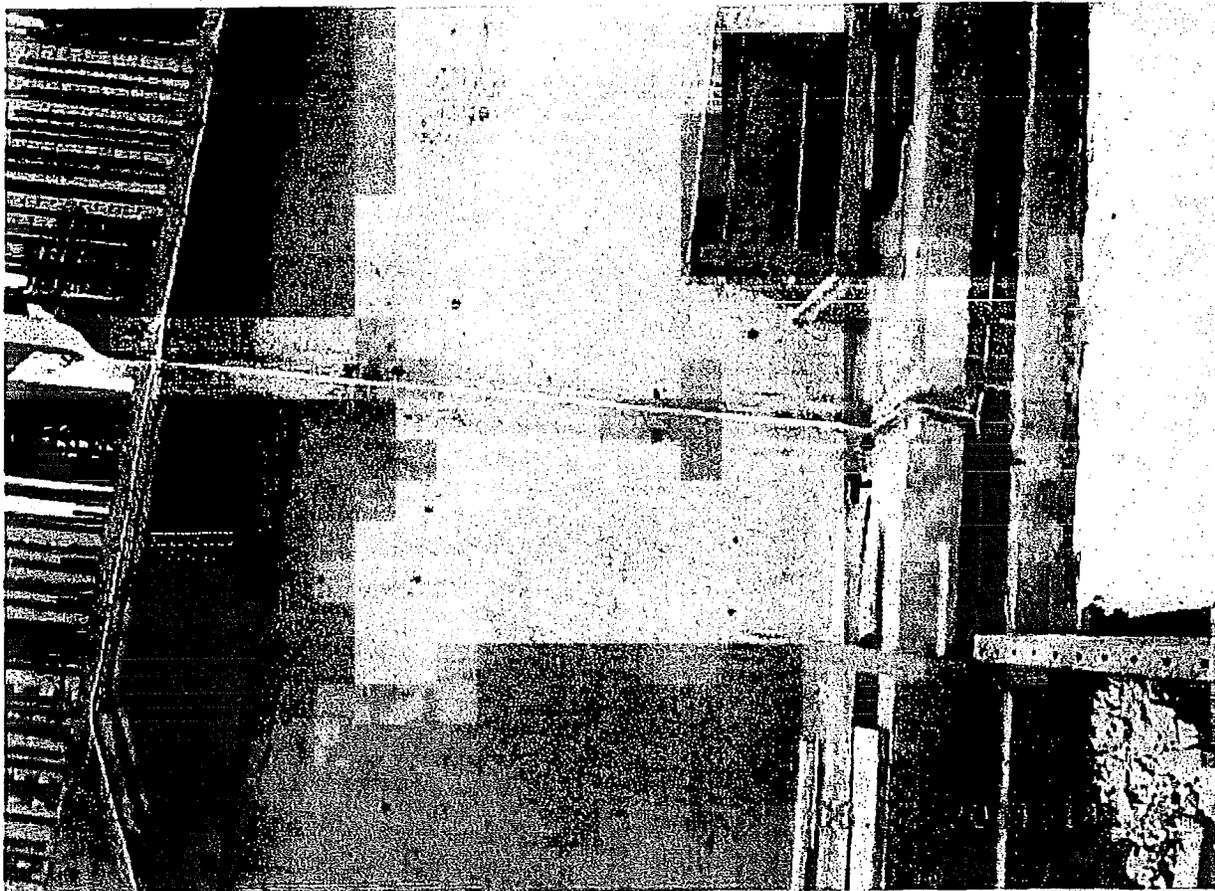


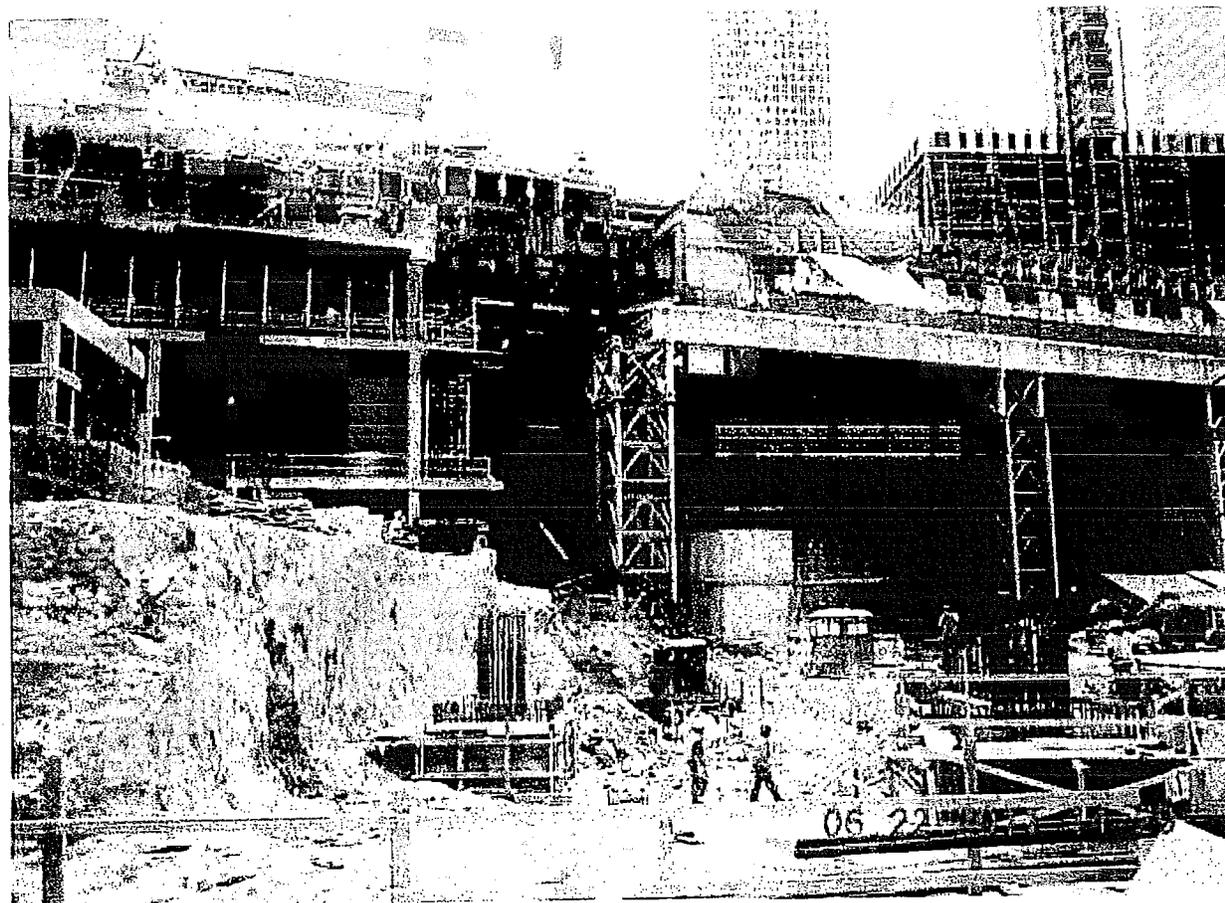


Approx 4'-0" of  
FSCs/ couplers req'd  
and not installed  
T&B; requesting drill  
& grout #10's at 12"  
o.c.

East-West FSC/  
coupler T&B not  
installed; requesting  
no drill & grout due to  
reinforcement  
congestion

08.22.2011







NEW YORK STATE DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W-2.5/2-ESW3\*). Final inspection.
- 2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (WR1-W/-2-ESW3\*). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (W-1—W-2.5/2-ESW3). Final inspection.

- a. Contractor finished installing additional top reinforcement #10 @6" in the north south direction.
- b. PA-MEU inspector discussed with Derek Serpe EIC Associates representative and Richard Lapointe TTJV representative about the open punch list items #35, 37, 38 & 39 prior to final inspection. They agreed to address all this issues promptly. EOR has been advised about all these issues during technical meeting on field. PA-MEU inspection will close all these items when received the response for RFI -TH-1469.
- c. Contractor placed concrete today.

2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (WR1-W/-2-ESW3\*). Work in progress.

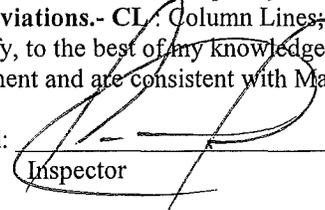
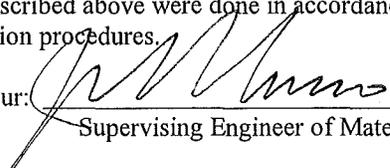
- a. Contractor started installing bottom reinforcement #10 @6" in the north south direction.
- b. Contractor started installing bottom additional #5 @ 6" each way for reinforcement around the cast iron pipe.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
- Approved as corrected shop dwgs: 11A(6/26/11), 09A to 09F (5/18/11), 06B (5/18/11), 06C (11/11/10)

Abbreviations.- CL: Column Lines; Elev. Elevation; RFI : Request for information

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  July/15/11 Date Concur:  7/20/11 Date

Inspector  
Ricardo A. Tigua  
(Print Name)

Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO WTC264.596

CONTRACTOR: EIC

LOCATIONS

1. Slab on Grade, 2'-0'' Thick, Elev. 229'6'' . CL (WR1 to W)/ (2 to ESW3). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Slab on Grade, 2'-0'' Thick, Elev. 229'6'' . CL (WR1 to W)/ (2 to ESW3).

1. Contractor continues installing bottom reinforcement(#10@6'' EW)
2. Contractor started installing the construction joint key and water stop.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 30 dated 1-14-11 S8301,S8302,S8303,S8304,S8305,S1105,S1203

Approved as corrected shop drawing 06B dated 5/18/11

Approved as corrected shop drawing 06C dated 11/11/10

Approved as corrected shop drawing 09A TO 09F dated 5-18-11

LEGEND

CL = COLUMN LINE EL = ELEVATION EW = each way

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 07/18/11  
Inspector Date

Concur: [Signature] 7/20/11  
Supervising Engineer of Materials Date

SABER GHAZALY  
(Print Name)

\_\_\_\_\_  
(Print Name)

25

SPECIAL INSPECTION REPORT PA 30666 / 10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264-596 Date: 7-19-11

CONTRACTOR: Skanska

LOCATION: 77 cu. yd of 12,000 psi concrete for South portion of SW#3 Footing el. 242'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*Is bc approved of  
Filed*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 7/19/11  
Inspector Date  
Alexander Sciffiano  
(Print Name)

Concur: Joseph Marsano 8/19/11  
Supervising Engineer of Materials Date  
Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 231' CL (WR-1—SLC\*/-2--2). Work in progress.
- 2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (WR1-W/-2-ESW3\*). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 231' CL (WR-1—SLC\*/-2--2). Work in progress.
  - a. Contractor started installing outermost bottom reinforcement #10 @6.
- 2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (WR1-W/-2-ESW3\*). Work in progress.
  - a. Contractor continues installing bottom reinforcement #10 @6" in the north south direction.
  - b. Contractor continues installing bottom additional #10 @ 6" each way for reinforcement around the cast iron pipe as per RFI-TH-1425 & RFI-TH-1470.
  - c. Contractor started installing couplers #10 @6 for the bottom reinforcement. PA-MEU inspection reminded to secure and fasten all female couplers against form panels to avoid future inconvenient in search post-construction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
- Approved as corrected shop dwgs: 11A(6/26/11), 09A to 09F (5/18/11), 06B (5/18/11), 06C (11/11/10), RFI-TH-01425 (6/17/11), RFI-TH-01470 (7/12/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  July/19/11 Concur:   
Inspector Date Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 231' CL (WR-1—SLC\*/-2--2). Work in progress.
- 2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (WR1-W/-2-ESW3\*). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 231' CL (WR-1—SLC\*/-2--2). Work in progress.

- a. Contractor finished installing outermost bottom reinforcement #10 @6.
- b. Contractor started installing innermost bottom reinforcement #10 @ 6.
- c. PA-MEU inspection found a deficiency for bottom reinforcement @ top of footing belonging to Shear Wall 2, for wrong elevation of an area (42" x 30") that currently interferes the bottom reinforcement. EOR approval accepted this matter for being one time exception for this location. Please refer to RFI-TH-1527.

2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (WR1-W/-2-ESW3\*). Work in progress.

- a. Contractor started installing top reinforcement #10 @6" in the east west direction.
- b. Contractor finished installing bottom additional #10 @ 6" each way for reinforcement around the cast iron pipe as per RFI-TH-1425 & RFI-TH-1470.
- c. Contractor continues installing couplers #10 @6 for the bottom reinforcement. PA-MEU inspection reminded to secure and fasten all female couplers against form panels to avoid future inconvenient in search post-construction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
- Approved as corrected shop dwgs: 11A(6/26/11), 09A to 09F (5/18/11), 06B (5/18/11), 06C (11/11/10), RFI-TH-01425 (6/17/11), RFI-TH-01470 (7/12/11), RFI-TH-1527 (7/18/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

July/20/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

7/21/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)





CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 231' CL (WR-1—SLC\*/-4-2) & Transition Slab 2'thick from Elev. 231' to 229'6". Work in progress.
- 2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (WR1-W/-2-ESW3\*). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

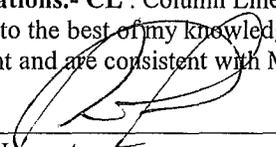
- 1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 231' CL (WR-1—SLC\*/-4-2) & Transition Slab 2'thick from Elev. 231' to 229'6". Work in progress.
  - a. Contractor started installing bottom reinforcement #10 @6" in the east west direction.
  - b. Contractor started installing transition reinforcement #10 @6 in the east west direction.
- 2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (WR1-W/-2-ESW3\*). Work in progress.
  - a. Contractor continues installing innermost top reinforcement #10 @6.
  - b. Contractor started installing outermost top reinforcement #10 @ 6.
  - c. Contractor is adjusting female couplers for post-construction due to inappropriate concrete cover.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

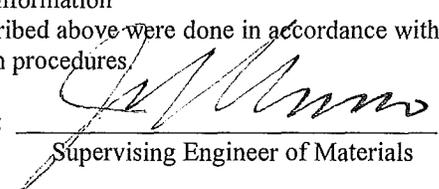
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
- Approved as corrected shop dwgs: 11A(6/26/11), 09A to 09F (5/18/11), 06B (5/18/11), 06C (11/11/10), RFI-TH-01425 (6/17/11), RFI-TH-01470 (7/12/11), RFI-TH-1527 (7/18/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information

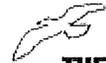
I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
 Inspector  
Ricardo A. Tigua  
 (Print Name)

July/21/11  
Date

Concur:   
 Supervising Engineer of Materials  
Joseph Marsano  
 (Print Name)

7/22/11  
Date



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 231' CL (WR-1—SLC\*/-4-2) & Transition Slab 2'thick from Elev. 231' to 229'6". Work in progress.
- 2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (WR1-W/-2-ESW3\*). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

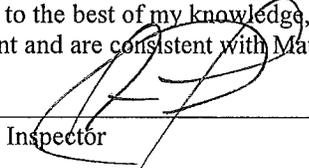
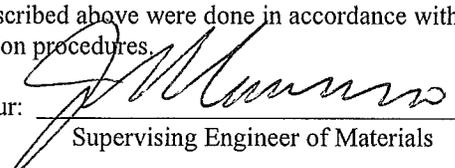
- 1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 231' CL (WR-1—SLC\*/-4-2) & Transition Slab 2'thick from Elev. 231' to 229'6". Work in progress.
  - a. Contractor continues installing bottom reinforcement #10 @6" in the east west direction.
  - b. Contractor continues installing transition reinforcement #10 @6 in the east west direction.
- 2. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 229'6". CL (WR1-W/-2-ESW3\*). Work in progress.
  - a. Contractor finished installing innermost top reinforcement #10 @6.
  - b. Contractor continues installing outermost top reinforcement #10 @ 6.
  - c. Contractor continues installing wall dowels for Elevation Shear Wall #3.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205
- Approved as corrected shop dwgs: 11A(6/26/11), 09A to 09F (5/18/11), 06B (5/18/11), 06C (11/11/10), RFI-TH-01425 (6/17/11), RFI-TH-01470 (7/12/11), RFI-TH-1527 (7/18/11)

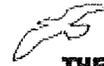
Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  July/22/11 Concur:  7/22/11  
Inspector Date Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO. WTC264.596

CONTRACTOR: EIC

LOCATIONS

1. Slab on Grade, 2'-0" Thick, Elev. 229'6". CL (WR1 to W)/ (2 to ESW3). Final inspection
2. Slab on Grade, 2'-0" Thick, Elev. 231'-0" CL (WR-1 – SLC/-4 to -2). Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

Slab on Grade, 2'-0" Thick, Elev. 229'6". CL (WR1 to W)/ (2 to ESW3).

1. Contractor finished installing slab reinforcement(#10@6" EW)
2. Contractor finished installing the construction joint key and water stop.

Final inspection completed.

Slab on Grade, 2'-0" Thick, Elev. 231'-0" CL (WR-1 – SLC/-4 to -2)

1. Contractor finished installing slab bottom reinforcement(#10@6" EW)

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301 - Specification for Structural Concrete

Contract DWG Addendum 30 dated 1-14-11 S8301,S8302,S8303,S8304,S8305,S1105,S1203

Approved as corrected shop drawing 06B dated 5/18/11

Approved as corrected shop drawing 06C dated 11/11/10

Approved as corrected shop drawing 09A TO 09F dated 5-18-11

LEGEND

CL = COLUMN LINE EL = ELEVATION EW = each way

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Saber Ghazaly 07/25/11  
Inspector Date

Concur: V. P. Johnson 7/28/11  
Supervising Engineer of Materials Date

SABER GHAZALY  
(Print Name)

V. P. Johnson  
(Print Name)



**SPECIAL INSPECTION REPORT** **1-13666 / 10-19**

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 269,596 Date: 7-25-11

CONTRACTOR: EIC

LOCATION: 70 cu. yd of 5000 fill psi concrete for shear wall 1 sumbit fill, col 155, 156 sumbit fill elev 220

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] 7/25/11  
 Inspector Date  
Emanuel Rodriguez  
 (Print Name)

Concur: [Signature] 9/25/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



**SPECIAL INSPECTION REPORT** **PA 3666 / 10-09**

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO.: WIC 264.596 Date: 7-25-11

CONTRACTOR: EIC

LOCATION: 40 cu. yd of 12000 psi concrete for shear wall 3 feeting (connects to slab on grade) elev 229 w/2-ess

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  7/25/11  
 Inspector Date  
Emmanuel Rodriguez  
 (Print Name)

Concur:  9/25/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)

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CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTK 264.596 Date: 7-28-11

CONTRACTOR: ETC

LOCATION: 120 cu. yd of 5000 psi #467 stone concrete for  
SW of ESW #2 -1 to 2 / w-2 to w-2.5 el. 231'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 7/28/11  
Inspector Date  
Alexander Sciffiano  
(Print Name)

Concur: Joseph Marsano 9/24/11  
Supervising Engineer of Materials Date  
Joseph Marsano  
(Print Name)



**SPECIAL INSPECTION REPORT**

PA3666 / 10-09

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO.: WIC 264.596 Date: 7-25-11

CONTRACTOR: EIC

LOCATION: 80 cu. yd of 5000 # 467 stone psi concrete for slab on  
grade elev 229 CL (W51-W/2-ESW3)

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*curing compound applied after concrete placement.*

*Note - some areas of slab did not appear to be properly consolidated. Also cold joint on east side & south east side of slab due to having to wait long periods of time for concrete truck and contractor not being able to get to areas where concrete appeared to be settling quick enough. - MR \*Inspection after formwork removal will be required.\**

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- 'Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

*\* NCR-11-MED-EIC-008*

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  7/25/11  
Inspector Date

Emanuel Rodriguez  
(Print Name)

Concur:  9/25/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 231' CL (WR-1—SLC\*/-4-2) & Transition Slab 2'thick from Elev. 231' to 229'6". Work in progress.
- 2. Transportation Hub Foundations, Wall 3' thick, Elev. 229-6 to 237' CL (W-1.1—W-1.3/ESW3†). Work in progress.
- 3. Transportation Hub Foundations, Wall 1'10" Thick, Elev. 229-6 to 237' CL (W-1.3-SLC\*/ESW3†). Work in progress.
- 4. Transportation Hub Foundations, Wall 1' thick (Plumbing Charger Area), Elev. 229-6 to 237' CL (SLC\*/4-7.5) Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 231' CL (WR-1—SLC\*/-4-2) & Transition Slab 2'thick from Elev. 231' to 229'6". Work in progress.
  - a. Contractor started installing top reinforcement #10 @6" in the north south direction.
- 2. Transportation Hub Foundations, Wall 3' thick, Elev. 229-6 to 237' CL (W-1.1—W-1.3/ESW3†). Work in progress.
  - a. Contractor started installing vertical reinforcement #8 @9 each face.
- 3. Transportation Hub Foundations, Wall 1'10" Thick, Elev. 229-6 to 237' CL (W-1.3-SLC\*/ESW3†). Work in progress.
  - a. Contractor started installing vertical reinforcement #8 @9 each face.
- 4. Transportation Hub Foundations, Wall 1' thick (Plumbing Charger Area), Elev. 229-6 to 237' CL (SLC\*/4-7.5) Work in progress
  - a. Contractor started installing horizontal reinforcement #6 @9 each face.
  - b. Contractor finished installing vertical reinforcement #6 @9 each face.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205, A1305
- Approved as corrected shop dwgs: 09A to 09F (5/18/11), 03A - 03B (5/26/11), 07A(11/8/10)

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information

\*SLC: South Limit of Contract; †ESW3: Elevation of Shear Wall #3 Column Line

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  July/26/11 Date Concur:  7/28/11 Date

Inspector Date Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 231' CL (WR-1—SLC\*/-4-2) & Transition Slab 2'thick from Elev. 231' to 229'6". Work in progress.
- 2. Transportation Hub Foundations, Wall 3' thick, Elev. 229-6 to 237' CL (W-1.1—W-1.3/ESW3†). Work in progress.
- 3. Transportation Hub Foundations, Wall 1'10" Thick, Elev. 229-6 to 237' CL (W-1.3-SLC\*/ESW3†). Work in progress.
- 4. Transportation Hub Foundations, Wall 1' thick (Plumbing Charger Area), Elev. 229-6 to 237' CL (SLC\*/4-7.5 ) Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 231' CL (WR-1—SLC\*/-4-2) & Transition Slab 2'thick from Elev. 231' to 229'6". Work in progress.
  - a. Contractor continues installing top reinforcement #10 @6" in the north south direction.
- 2. Transportation Hub Foundations, Wall 3' thick, Elev. 229-6 to 237' CL (W-1.1—W-1.3/ESW3†). Work in progress.
  - a. Contractor continues installing vertical reinforcement #8 @9 each face.
  - b. Contractor started installing horizontal reinforcement #8 @9 each face.
- 3. Transportation Hub Foundations, Wall 1'10" Thick, Elev. 229-6 to 237' CL (W-1.3-SLC\*/ESW3†). Work in progress.
  - a. Contractor finished installing vertical reinforcement #8 @9 each face.
  - b. Contractor started installing horizontal reinforcement #8 @9 each face.
- 4. Transportation Hub Foundations, Wall 1' thick (Plumbing Charger Area), Elev. 229-6 to 237' CL (SLC\*/4-7.5) Work in progress
  - a. Contractor continues installing horizontal reinforcement #6 @9 each face.
  - b. Contractor continues installing horizontal reinforcement in corner intersection walls as per contract details.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205, A1305
- Approved as corrected shop dwgs: 09A to 09F (5/18/11), 03A - 03B (5/26/11), 07A(11/8/10)

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information  
\*SLC: South Limit of Contract; †ESW3: Elevation of Shear Wall #3 Column Line

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

July/27/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

8/9/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)

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SPECIAL INSPECTION REPORT

PA3666/10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTZ 264.596 Date: 7-28-11

CONTRACTOR: ETC

LOCATION: 25 cu. yd of 5000 psi concrete for  
Wall S. of ESW#2 W-2/4 el. 239'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 7/28/11  
Inspector Date

Concur: Joseph Marsano 9/25/11  
Supervising Engineer of Materials Date

Alexander Sciffano  
(Print Name)

Joseph Marsano  
(Print Name)

CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 231' CL (W-2—SLC\*/-3 to 2) & Transition Slab 2'thick from Elev. 231' to 229'6". Final inspection.
- 2. Transportation Hub Foundations, Wall 1' thick (Plumbing Charger Area), Elev. 229-6 to 237' CL (SLC\*/4-7.5 ) Final inspection.
- 3. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick, Elev. 229-6 to 237' CL (W.5—W1.5/ESW3†) and Column C-115 CL(W1/2) integrated. Work in progress.
- 4. Transportation Hub Foundations, Wall 1'10" Thick, Elev. 229-6 to 237' CL (W-1.3-SLC\*/ESW3†). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Slab on Grade, 2' Thick, Elev. 231' CL (W-2—SLC\*/-3 to 2) & Transition Slab 2'thick from Elev. 231' to 229'6". Final inspection.
  - a. Contractor continues installing top reinforcement #10 @6" in the north south direction.
  - b. Contractor did not provide an approved construction joint layout plan including this area. Please refer to punch list item issued today.
  - c. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Wall 1' thick (Plumbing Charger Area), Elev. 229-6 to 237' CL (SLC\*/4-7.5 ) Final inspection.
  - a. All reinforcement was previously set.
  - b. Contractor placed concrete today.
- 3. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick, Elev. 229-6 to 237' CL (W.5—W1.5/ESW3†) and Column C-115 CL(W1/2) integrated. Work in progress.
  - a. Contractor continues installing vertical reinforcement #8 @9 each face.
  - b. Contractor started installing horizontal reinforcement #8 @9 each face.
  - c. PA-MEU inspection detected a wrong location of vertical #11 bundled bars belonging to Column C-115 (W1/2). Please refer to punch list item issued today.
- 4. Transportation Hub Foundations, Wall 1'10" Thick, Elev. 229-6 to 237' CL (W-1.3-SLC\*/ESW3†). Work in progress.
  - a. Contractor started installing shear reinforcement ties #5 @9 each way.
  - b. Contractor continues installing horizontal reinforcement in corner intersection walls as per contract details.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.  
 ACI 318- Building Code Requirements for Reinforced Concrete.  
 ACI 301- Specifications for Structural Concrete.  
 Contract drawings WTC 264, Addendum 30 (01/14/11), S1105, S4206, S1203, S1205, A1305, S1103, S1105, S1106, S4403, S1104, S4201, S4206, S8302, S8303, S8304  
 Approved as corrected shop dwgs: 09A to 09F (5/18/11), 03A - 03B (5/26/11), 07A(11/8/10)

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information  
 \*SLC: South Limit of Contract; †ESW3: Elevation of Shear Wall #3 Column Line

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
 Inspector

July/28/11  
 Date

Concur: [Signature]  
 Supervising Engineer of Materials

8/9/11  
 Date

Ricardo A. Tigua  
 (Print Name)

Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Triple Sump Bottom Slab, 1' 6" Thick, Elev. 220' 6" CL (W-3/-4 to -2). Work in progress.
- 2. Transportation Hub Foundations, Footings F-11 for Column C-158, Elev. 232'. approx CL(W4/4). Work in progress.
- 3. Transportation Hub Foundations, Footings F-11 for Column C-160, Elev. 232'. approx CL(W3/4.1). Work in progress.
- 4. Transportation Hub Foundations, Wall 1' 10" Thick, Elev. 229-6 to 237' CL (W1.3-W1.5/ESW3'). Work in progress.

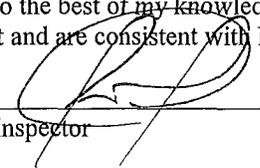
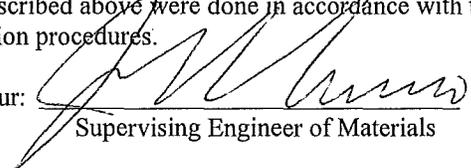
Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Triple Sump Pit Bottom Slab, 1' 6" Thick, Elev. 220' 6" CL (W-3/-4 to -2). Work in progress.
  - a. Contractor started installing outermost bottom reinforcement #7 @ 6" each way.
  - b. Contractor started installing innermost bottom reinforcement #7 @ 6" each way.
- 2. Transportation Hub Foundations, Footings F-11 for Column C-158, Elev. 232'. approx CL(W4/4). Work in progress.
  - a. Contractor started installing bottom reinforcement #9 @ 6" each way.
- 3. Transportation Hub Foundations, Footings F-11 for Column C-160, Elev. 232'. approx CL(W3/4.1). Work in progress.
  - a. Contractor started installing bottom reinforcement #9 @ 6" each way.
- 4. Transportation Hub Foundations, Wall 1' 10" Thick, Elev. 229-6 to 237' CL (W1.3-W1.5/ESW3'). Work in progress.
  - a. Contractor continues installing shear reinforcement ties #5 @ 9 each way.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 06C(4/26/10), 01A (5/3/11), 03A - 03B (5/26/11)
- Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information
- \*SLC: South Limit of Contract; †ESW3: Elevation of Shear Wall #3 Column Line

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  July/29/11 Date Concur:  8/9/11 Date

Inspector Date Supervising Engineer of Materials Date

Ricardo A. Tigua Joseph Marsano  
(Print Name) (Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Triple Sump Bottom Slab, 1' 6" Thick, Elev. 220'6" CL (W-3/-4 to -2). Work in progress.
2. Transportation Hub Foundations, Footings F-11 for Column C-158, Elev. 232'. approx CL(W4/4). Work in progress.
3. Transportation Hub Foundations, Footings F-11 for Column C-160, Elev. 232'. approx CL(W3/4.1). Work in progress.
4. Transportation Hub Foundations, Footings F-11 for Column C-157, Elev. 232'. approx CL(W3/2). Work in progress.
5. Transportation Hub Foundations, Wall 1'10" Thick, Elev. 229-6 to 237' approx. CL (W-1.1—SLC\*/ESW3†). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Triple Sump Pit Bottom Slab, 1' 6" Thick, Elev. 220'6" CL (W-3/-4 to -2). Work in progress.
  - a. PA-MEU inspection detected short wall dowels and contractor started adjusting these dowels. PA-MEU inspection confirmed the adjustments with no exceptions noted.
2. Transportation Hub Foundations, Footings F-11 for Column C-158, Elev. 232'. approx CL(W4/4). Work in progress.
  - a. Contractor started installing circular wood ring to set up column splices.
3. Transportation Hub Foundations, Footings F-11 for Column C-160, Elev. 232'. approx CL(W3/4.1). Work in progress.
  - a. Contractor started installing circular wood ring to set up column splices.
4. Transportation Hub Foundations, Footings F-11 for Column C-157, Elev. 232'. approx CL(W3/2). Work in progress.
  - a. Contractor started installing circular wood ring to set up column splices.
5. Transportation Hub Foundations, Wall 1'10" Thick, Elev. 229-6 to 237' approx. CL (W-1.1—SLC\*/ESW3†). Work in progress.
  - a. Contractor started installing horizontal reinforcement #8 @9.
  - b. PA-MEU inspection detected that in column splices belonging to column C-137 (WR-1/7) vertical bars #11 were not tied to spirals. Contractor replied that it is part of work in progress because wood pattern templates are in construction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 06C(4/26/10), 01A (5/3/11), 03A - 03B (5/26/11), RFI-TH-1548 (7/28/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information

\*SLC: South Limit of Contract; †ESW3: Elevation of Shear Wall #3 Column Line

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] August/02/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur: [Signature] [Signature]  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Triple Sump Bottom Slab, 1' 6" Thick, Elev. 220'6" CL (W-3/-4 to -2). Work in progress.
- 2. Transportation Hub Foundations, Footings F-12 for Column C-155, Elev. 229.5'. approx CL(-4/ESW1). Work in progress.
- 3. Transportation Hub Foundations, Footings F-11 for Column C-156, Elev. 229.5'. approx CL(-2/ESW3†). Work in progress.
- 4. Transportation Hub Foundations, Wall 1'10" Thick, Elev. 229-6 to 237' approx. CL (W-1.1—SLC\*/ESW3†). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. *Transportation Hub Foundations, Triple Sump Pit Bottom Slab, 1' 6" Thick, Elev. 220'6" CL (W-3/-4 to -2). Work in progress.*
  - a. Contractor finished installing all reinforcement.
- 2. *Transportation Hub Foundations, Footings F-12 for Column C-155, Elev. 229.5'. approx CL(-4/ESW1). Work in progress.*
  - a. Contractor started installing bottom reinforcement #9 @6.
- 3. *Transportation Hub Foundations, Footings F-11 for Column C-156, Elev. 229.5'. approx CL(-2/ESW3†). Work in progress.*
  - a. Contractor started installing bottom reinforcement #9 @6.
- 4. *Transportation Hub Foundations, Wall 1'10" Thick, Elev. 229-6 to 237' approx. CL (W-1.1—SLC\*/ESW3†). Work in progress.*
  - a. Contractor did not perform any work in this area today.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 06B(4/26/10), 01A (5/3/11), 03A - 03B (5/26/11), RFI-TH-1548 (7/28/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information

\*SLC: South Limit of Contract; ESW1 : Elevation of Shear Wall 1 ; †ESW3: Elevation of Shear Wall #3 Column Line

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] August/03/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur: [Signature] 8.19.11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations

**CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:** 1. Foundation for Shear Wall 2A, ESW2A, CL (-5.5 to -9)/(J) @ El. 221'-6" to 227'-6". WIP

**Description of Controlled Work/Test Performed & Non-Conformance Notations:**

Reinforcement and formwork inspection:

**The contractor worked in the following locations:**

1. Transportation Hub Foundation for Shear Wall 2A, ESW2A, CL (-5.5 to -9)/(J) @ Elev. 221'-6" to 227'-6". WIP

A- Contractor continued installation of vertical reinforcement #11@6" on both ends of wall..

B- Contractor continued installation of 2x10-7H42 @6" T&B on both ends of wall.

C- Contractor started installation of horizontal reinforcement #9@6"

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test, reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

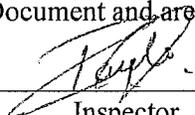
ACI 301- Specification for Structural Concrete.

Contract drawing *WTC 264, Addendum 30 (01/14/11), S1106, S1206, S4402, S4410, S4411.*

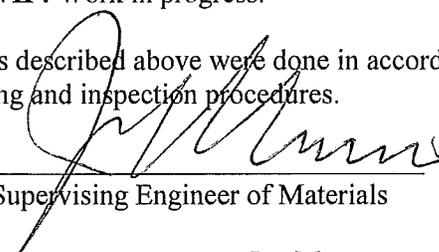
Approved as corrected shop drawing: *08C (4/26/11)*

**Abbreviations-CL:** Column lines. **ESW:** Elevation Shear Wall. **WIP:** Work in progress.

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
Inspector

08/03/11  
Date

Concur:  8/9/11  
Supervising Engineer of Materials Date

Paulo Quintero  
(Print Name)

Joe Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Triple Sump Bottom Slab, 1' 6" Thick, Elev. 220'6" CL (W-3/-4 to -2). Work in progress.
2. Transportation Hub Foundations, Footings F-12 for Column C-155, Elev. 229.5', approx CL(-4/ESW1). Work in progress.
3. Transportation Hub Foundations, Footing F-11 for Columns C-157 (W3/2), C-158(W4/4) & C-160(W3.1/4.5) Type B, approx Elev. 233' to 237'.
4. Transportation Hub Foundations, Footings F-11 for Column C-156, Elev. 229.5', approx CL(-2/ESW3†). Work in progress.
5. Transportation Hub Foundations, Wall 1'10" Thick, Elev. 229-6 to 237' approx. CL (W-1.1—SLC\*/ESW3†). Work in progress.
6. Transportation Hub Foundations, Shear Wall 2A, ESW2A, Elev. 229-6 to 227-6" approx. CL (J/-5 to -9 ). Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Triple Sump Bottom Slab, 1' 6" Thick, Elev. 220'6" CL (W-3/-4 to -2). Work in progress.
  - a. Contractor finished adjusting form panels.
2. Transportation Hub Foundations, Footings F-12 for Column C-155, Elev. 229.5', approx CL(-4/ESW1). Work in progress.
  - a. Contractor started installing vertical column splices 20x2#11 spaced equally in a diameter of 4'.
3. Transportation Hub Foundations, Footing F-11 for Columns C-157 (W3/2), C-158(W4/4) & C-160(W3.1/4.5) Type B, approx Elev. 233' to 237'.
  - a. Contractor started installing vertical column splices 20x2#11 spaced equally in a diameter of 4' in all these footing columns.
  - b. PA-MEU inspection detected a deficiency in all these footings not according with the approved EOR requirements because contractor will use this slab as crane platform. Unless PA-MEU does not receive any formal approval, the deficiency will remain open. Please refer to punch list item issued today.
  - c. Contractor started installing side reinforcement #6 @12.
4. Transportation Hub Foundations, Footings F-11 for Column C-156, Elev. 229.5', approx CL(-2/ESW3†). Work in progress.
  - a. Contractor started installing side reinforcement #6 @12.
5. Transportation Hub Foundations, Wall 1'10" Thick, Elev. 229-6 to 237' approx. CL (W-1.1—SLC\*/ESW3†). Work in progress.
  - a. PA-MEU inspection detected that in Column C-137, contractor did not perform any adjustment to comply with the required diameter of column. Despite of PA-MEU inspection had requested this adjustment on prior report 08/02/11 (RT). Please refer to punch list item issued today.
  - b. Contractor also installed the steel blast plate followed as per contract requirements.
6. Transportation Hub Foundations, Shear Wall 2A, ESW2A, Elev. 229-6 to 227-6" approx. CL (J/-5 to -9 ). Work in progress
  - a. Contractor continues installing horizontal reinforcement #9@6".

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 06B(4/26/10), 01A (5/3/11), 03A - 03B (5/26/11), RFI-TH-1548 (7/28/11), 08C(4/26/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information  
\*SLC: South Limit of Contract; ESW1 : Elevation of Shear Wall 1 ; †ESW3: Elevation of Shear Wall #3 Column Line

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] August/04/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Signed: [Signature] 8/17/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



ESTIMATE NO. INSPECTOR'S REPORT NO. PA 340 (Rev. 10-10)

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 8-5-11

CONTRACTOR: EPC

LOCATION: 12 CY OF 5,000 psi with #467 stone concrete for ESW#1 sump pit slab - 2 to 0/wz el. 220'6"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano  
Inspector

8/5/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials

9/25/11  
Date

Alexander Sciffano  
(Print Name)

Joseph Marsano  
(Print Name)

25

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.516 Date: 8-5-11

CONTRACTOR: EJC

LOCATION: 60 CY OF 12,000 psi concrete  
for ESW #2a @ el. 227'6"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano  
Inspector  
Alexander Sciffano  
(Print Name)

8/5/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

9/15/11  
Date

25

SPECIAL INSPECTION REPORT PA3666/10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 8-5-11

CONTRACTOR: ETC

LOCATION: 70 CY of 5000 psi mass concrete for footings C155 + C156 (el. 222'6") and C158 + C160 (el. 235'6")

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing 2. Formwork 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
ACI 305R - Hot Weather Concreting
ACI 306 - Cold Weather Concreting
ACI 309R - Guide for Consolidation of Concrete
ACI 308 - Standard Practice for Curing Concrete
ACI 311 - Manual of Concrete Inspection
ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 8/15/11
Inspector Date
Alexander Sciffano
(Print Name)

Concur: Joseph Marsano 9/25/11
Supervising Engineer of Materials Date
Joseph Marsano
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Triple Sump Bottom Slab, 1' 6" Thick, Elev. 220'6" CL (W-3/-4 to -2). Final inspection.
- 2. Transportation Hub Foundations, Footings F-12 for Column C-155, Elev. 229.5'. approx CL(-4/ESW1) and Footing F-12 for Column C-156, Elev 229.5' CL(-2/ESW3'). Final inspection.
- 3. Transportation Hub Foundations, Footing F-11 for Columns C-158(W4/4) & C-160(W3.1/4.5) Type B, approx Elev. 237'. Final inspection.
- 4. Transportation Hub Foundations, Shear Wall 2A, ESW2A, Elev. 221' to 227.5' approx. CL (J/-5 to -9). Final inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Triple Sump Bottom Slab, 1' 6" Thick, Elev. 220'6" CL (W-3/-4 to -2). Final inspection.
  - a. All reinforcement was previously set.
  - b. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Footings F-12 for Column C-155, Elev. 229.5'. approx CL(-4/ESW1) and Footing F-12 for Column C-156, Elev 229.5' CL(-2/ESW3'). Final inspection.
  - a. Contractor finished installing column splices 24#11 spaced equally.
  - b. Contractor placed concrete today.
- 3. Transportation Hub Foundations, Footing F-11 for Columns C-158(W4/4) & C-160(W3.1/4.5) Type B, approx Elev. 237'. Final inspection
  - a. All reinforcement was previously set.
  - b. Contractor placed concrete today.
- 4. Transportation Hub Foundations, Shear Wall 2A, ESW2A, Elev. 221' to 227.5' approx. CL (J/-5 to -9). Final inspection
  - a. All reinforcement was previously set.
  - b. Contractor placed concrete today.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 06B(4/26/10), 01A (5/3/11), 03A - 03B (5/26/11), 08C(4/26/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information

\*SLC: South Limit of Contract; ESW1: Elevation of Shear Wall 1; \*ESW3: Elevation of Shear Wall #3 Column Line

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] August/05/11  
Inspector Date

Concur: [Signature] 8/24  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Footings F-11 for Columns C-157, Elev. 237', approx CL(W3/2) and C-161 Elev 237' (W3/7). Work in progress.

2. Transportation Hub Foundations, Column C-115(2/ESW3†). Type F, approx Elev. 229.5' to 237'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Footings F-11 for Columns C-157, Elev. 237', approx CL(W3/2) and C-161 Elev 237' (W3/7). Work in progress.

a. Contractor started installing bottom reinforcement #9 @6" in both columns.

b. Contractor started installing side reinforcement #6 @12" in both columns.

2. Transportation Hub Foundations, Column C-115(2/ESW3†). Type F, approx Elev. 229.5' to 237'. Work in progress.

a. Contractor started adjusting column splices 20x2#11 spaced equally.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305

Approved as corrected shop dwgs: 01A (5/3/11), 03A - 03B (5/26/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information

\*SLC: South Limit of Contract; †ESW3: Elevation of Shear Wall #3 Column Line

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

August/08/11  
Date

Concur: [Signature] 8/10/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Footings F-11 for Columns C-157, Elev. 237'. approx CL(W3/2) and C-161 Elev 237' (W3/7). Work in progress.
- 2. Transportation Hub Foundations, Column C-115(2/ESW3<sup>†</sup>). Type F, approx Elev. 229.5' to 237'. Work in progress.
- 3. Transportation Hub Foundations, Wall thick 1'-6", approx CL(SLC\*/-4 to 0, Elev. 229.5' to 241'. Work in progress.
- 4. Transportation Hub Foundations Footing for Shear Wall 2A, ESW2A (J/-5 to -9) approx Elev. 221.5' to 227.5'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Footings F-11 for Columns C-157, Elev. 237'. approx CL(W3/2) and C-161 Elev 237' (W3/7). Work in progress.

- a. Contractor started installing bottom reinforcement #9 @6" in both columns.
- b. Contractor started installing side reinforcement #6 @12" in both columns.
- c. As per approved as corrected shop drawings (01A) received today by PA-MEU inspection these footing show the use of waterproofing all around. Contractor did not install the waterproofing. Please refer to punch list item issued today.
- d. Contractor has not received approval for the use of couplers for column splices on elevation 237'. Please refer to punch list item issued today.

2. Transportation Hub Foundations, Column C-115(2/ESW3<sup>†</sup>). Type F, approx Elev. 229.5' to 237'. Work in progress.

- a. Contractor continues adjusting vertical rebars 20x2#11.

3. Transportation Hub Foundations, Wall thick 1'-6", approx CL(SLC\*/-4 to 0), Elev. 229.5' to 241'. Work in progress.

- a. Contractor started installing vertical reinforcement #6@9 along this wall.
- b. Contractor is working with unapproved shop drawings 12A and 12B. Please refer to punch list item issued today.

4. Transportation Hub Foundations Footing for Shear Wall 2A, ESW2A (J/-5 to -9) approx Elev. 221.5' to 227.5'. Work in progress.

- a. As per approved as corrected shop drawing (08C) received today by PA-MEU inspection this footing shows the use of waterproofing all around. Contractor did not install the waterproofing. Please refer to punch list item issued today.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 01A (8/3/11) New Revision, 03A - 03B (5/26/11), 08C (8/3/11) New Revision.
- Unapproved shop drawings 12A and 12B

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information

\*SLC: South Limit of Contract; †ESW3: Elevation of Shear Wall #3 Column Line

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] August/09/11  
Inspector Date

Concur: [Signature] 8/11/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, *Footings F-11 for Columns C-159, Elev. 237'. approx CL(W3.8/7) and C-161 Elev 237' (W3/7).* Work in progress.
- 2. Transportation Hub Foundations, *Columns C-115(2/ESW3') Type F and C-137 (7/ESW3). Type A, approx Elev. 229.5' to 237'. Work in progress.*
- 3. Transportation Hub Foundations, *Wall thick 1'-6", approx CL(SLC\*/-4 to 0), Elev. 229.5' to 241'. Work in progress.*
- 4. Transportation Hub Foundations, *Sump pit Walls, 1' 6" Thick, Elev. 220'6" to 227.5' CL (W-3/-4 to -2). Work in progress.*

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, *Footings F-11 for Columns C-159, Elev. 237'. approx CL(W3.8/7) and C-161 Elev 237' (W3/7).* Work in progress.
  - a. Contractor continues installing bottom reinforcement #9 @6" in both columns.
  - b. Contractor started installing side reinforcement 20x2#11 bundles for column splices only in column C-161.
- 2. Transportation Hub Foundations, *Columns C-115(2/ESW3') Type F and C-137 (7/ESW3). Type A, approx Elev. 229.5' to 237'. Work in progress.*
  - a. Contractor continues adjusting vertical rebars 20x2#11 in the Column C-115. These adjustments are regarding to punch list item #42. Otherwise, contractor has not provided any RFI for solution adopted on site.
  - b. Contractor started adjusting vertical rebars 24x2#11 and spirals #4 in the Column C-137. These adjustments are regarding to punch list item #43. Otherwise, contractor has not provided any RFI for solution adopted on site.
- 3. Transportation Hub Foundations, *Wall thick 1'-6", approx CL(SLC\*/-4 to 0), Elev. 229.5' to 241'. Work in progress.*
  - a. Contractor continues installing vertical reinforcement #6@9 along this wall.
- 4. Transportation Hub Foundations, *Sump pit Walls, 1' 6" Thick, Elev. 220'6" to 227.5' CL (W-3/-4 to -2). Work in progress.*
  - a. Contractor started installing vertical reinforcement #6@9 along this wall.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 01A (8/3/11), 03A - 03B (5/26/11), 08C (8/3/11), 06C (4/26/11)
- Unapproved shop drawings 12A and 12B

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information  
\*SLC: South Limit of Contract; †ESW3: Elevation of Shear Wall #3 Column Line

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] August/10/11  
Inspector Date

Concur: [Signature]  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:**

1. Transportation Hub Foundations, Footings F-11 for Columns C-159, Elev. 237'. approx CL(W3.8/7) and C-161 Elev 237' (W3/7). Work in progress.
2. Transportation Hub Foundations, Columns C-115(2/ESW3') Type F and C-137 (7/ESW3). Type A, approx Elev. 229.5' to 237'. Work in progress.
3. Transportation Hub Foundations, Wall thick 1'-6", approx CL(SLC\*/-4 to 0), Elev. 229.5' to 241'. Work in progress.
4. Transportation Hub Foundations, Sump pit Walls, 1' 6" Thick, Elev. 220'6" to 227.5' CL (W-3/-4 to -2). Work in progress.

**Description of Controlled Work/Test Performed & Non-Conformance Notations:**  
Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Footings F-11 for Columns C-159, Elev. 237'. approx CL(W3.8/7) and C-161 Elev 237' (W3/7). Work in progress.
  - a. Contractor continues installing bottom reinforcement #9 @6" in both columns.
  - b. Contractor continues installing side reinforcement 20x2#11 bundles for column splices only in column C-161.
2. Transportation Hub Foundations, Columns C-115(2/ESW3') Type F and C-137 (7/ESW3). Type A, approx Elev. 229.5' to 237'. Work in progress.
  - a. Contractor started adjusting spirals #5 spaced @4 in the Column C-115. These adjustments are regarding to punch list item #42. Otherwise, contractor has not provided any RFI for solution adopted on site.
  - b. Contractor started adjusting spirals #5 spaced @4 in the Column C-137. These adjustments are regarding to punch list item #43. Otherwise, contractor has not provided any RFI for solution adopted on site.
3. Transportation Hub Foundations, Wall thick 1'-6", approx CL(SLC\*/-4 to 0), Elev. 229.5' to 241'. Work in progress.
  - a. Contractor started installing horizontal reinforcement #6@9 along this wall.
4. Transportation Hub Foundations, Sump pit Walls, 1' 6" Thick, Elev. 220'6" to 227.5' CL (W-3/-4 to -2). Work in progress.
  - a. Contractor continues installing horizontal reinforcement #6@9 along this wall.

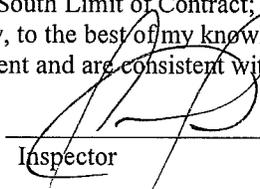
**List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:**

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 01A (8/3/11), 03A - 03B (5/26/11), 08C (8/3/11), 06C (4/26/11)
- Unapproved shop drawings 12A and 12B

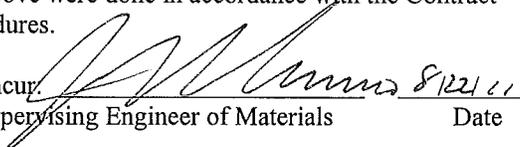
**Abbreviations.-** CL : Column Lines; Elev. Elevation; RFI : Request for information

\*SLC: South Limit of Contract; ESW3: Elevation of Shear Wall #3 Column Line

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  August/11/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur:  8/22/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Footings F-11 for Columns C-159, Elev. 237'. approx CL(W3.8/7), C-157 Elev. 237' (W3/2) and C-161 Elev 237' (W3/7) . Final inspection.
- 2. Transportation Hub Foundations, South Portion of Shear Wall ESW3 (W-1—W-2.3) and C-137 (7/ESW3), Type A. approx Elev. 229.5' to 237'.Final inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Footings F-11 for Columns C-159, Elev. 237'. approx CL(W3.8/7), C-157 Elev. 237' (W3/2) and C-161 Elev 237' (W3/7) . Final inspection.

a. Contractor placed concrete today. See general note.

- 2. Transportation Hub Foundations, South Portion of Shear Wall ESW3 (W-1—W-2.3) and C-137 (7/ESW3), Type A. approx Elev. 229.5' to 237'.Final inspection.

a. Contractor placed concrete today. See general note.

**General Note:** As per today's field technical meeting with EOR representative (Bashar Alttaba), TTJV representative (Sean Blakely) and PA-MEU inspector (Ricardo Tigua), it proceeded to review all information regarding to open punch list items in these above mentioned areas prior to final inspection, resulting in a commitment from TTJV addresses all these open issues. However, EOR was visually satisfied for all work performed by contractor to correct all relevant issues. Otherwise, it was clear that PA-MEU would close punch list items until pertinent documents have been formally approved by EOR.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 01A (8/3/11), 03A - 03B (5/26/11), 08C (8/3/11), 06C (4/26/11)
- Unapproved shop drawings 12A and 12B

**Abbreviations.-** CL : Column Lines; Elev. Elevation; RFI : Request for information  
\*SLC: South Limit of Contract; †ESW3: Elevation of Shear Wall #3 Column Line

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] August/12/11  
Inspector Date

Concur: [Signature] 8/24/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



**SPECIAL INSPECTION REPORT**

PA 3666 / 10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WK 264.596 Date: 8-12-11

CONTRACTOR: ETC

LOCATION: 360 cu. yd of 5000 psi concrete for

socket of ESW#2a (el. 229'6"), south demising wall (el. 229'6"), West crane footing

Description of Controlled Work/Test Performed & Non-Conformance Notations: and Footings C159, C157 + C161, el. 232

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: *Alexander Sciffiano*  
 Inspector  
Alexander Sciffiano  
 (Print Name)

8/12/11  
Date

Concur: *Joseph Marsano*  
 Supervising Engineer of Materials  
Joseph Marsano  
 (Print Name)

9/21/11  
Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Wall thick 1'-6", approx CL(SLC\*/-4 to 0), Elev. 229.5' to 241'. Work in progress.
- 2. Transportation Hub Foundations, Sump pit Walls, 1' 6" Thick, Elev. 220'6" to 227.5' CL (W-3/-4 to -2). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Wall thick 1'-6", approx CL(SLC\*/-4 to 0), Elev. 229.5' to 241'. Work in progress.
  - a. Contractor started installing vertical reinforcement #6@9 along this wall.
- 2. Transportation Hub Foundations, Sump pit Walls, 1' 6" Thick, Elev. 220'6" to 227.5' CL (W-3/-4 to -2). Work in progress.
  - a. Contractor started adjusting formwork due to flooding in the sump pit.

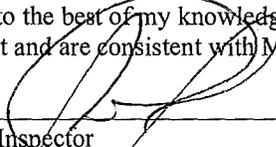
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

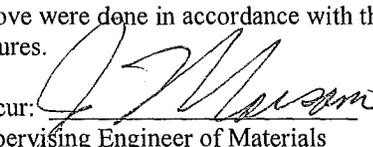
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 01A (8/3/11), 03A - 03B (5/26/11), 08C (8/3/11), 06C (4/26/11)
- Unapproved shop drawings 12A and 12B

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information

\*SLC: South Limit of Contract; \*ESW3: Elevation of Shear Wall #3 Column Line

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  August/15/11  
 Inspector Date

Concur:  8/22/11  
 Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Wall thick 1'-6", approx CL(SLC\*/-4 to 0), Elev. 229.5' to 241'. Work in progress.
- 2. Transportation Hub Foundations, Slab on grade @ Elev. 237'. CL (W-1.5—W-3/5-8). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Wall thick 1'-6", approx CL(SLC\*/-4 to 0), Elev. 229.5' to 241'. Work in progress.
  - a. Contractor started installing form panels for the wall.
- 2. Transportation Hub Foundations, Slab on grade @ Elev. 237'. CL (W-1.5—W-3/5-8). Work in progress.
  - a. Contractor started installing bottom reinforcement #6 @9".

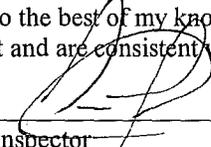
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

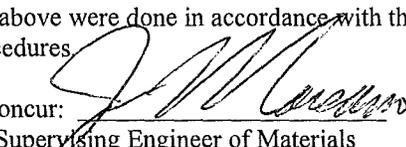
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 04B (1/4/11)
- Unapproved shop drawings 12A and 12B

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information

\*SLC: South Limit of contract.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  August/16/11  
Inspector Date

Concur:  8/23/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Wall thick 1'-6", approx CL(SLC\*/-4 to 0), Elev. 229.5' to 241'. Work in progress.
- 2. Transportation Hub Foundations, Slab on grade @ Elev. 237'. CL (W-1.5—W-3/5-8). Work in progress.
- 3. Transportation Hub Foundations, Shear Wall #7 ESW7 and Column C-168. CL (W1.2/15-18). Elev. 237 to 254'. Work in progress.

**Description of Controlled Work/Test Performed & Non-Conformance Notations:**

**Reinforcement and formwork inspection:**

- 1. *Transportation Hub Foundations, Wall thick 1'-6", approx CL(SLC\*/-4 to 0), Elev. 229.5' to 241'. Work in progress.*
  - a. Contractor started adjusting vertical reinforcement against the form panel to provide the required concrete cover.
- 2. *Transportation Hub Foundations, Slab on grade @ Elev. 237'. CL (W-1.5—W-3/5-8). Work in progress.*
  - a. Contractor started installing bottom reinforcement #6 @9".
  - b. Contractor started installing bentonite waterstop all around the limit with the Tower 3.
- 3. *Transportation Hub Foundations, Shear Wall #7 ESW7 and Column C-168. CL (W1.2/15-18). Elev. 237 to 254'. Work in progress.*
  - a. Contractor installed 3 #11 vertical bars with drill and grout procedure providing 13 inches of embedment depth without an EOR approval as part of main rebars of Column C-168 incorporated in ESW7. Please refer to punch list item issued 08/16/11.

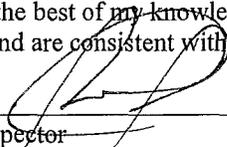
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

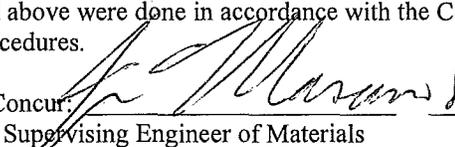
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 04B (1/4/11)
- Unapproved shop drawings 12A and 12B

**Abbreviations.-** CL : Column Lines; Elev. Elevation; RFI : Request for information

\*SLC: South Limit of contract.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  August/17/11  
 Inspector Date

Concur:  8/29/11  
 Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)

**SPECIAL INSPECTION REPORT**

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: PATH Transit Hub CONTRACT NO.: WTC 264.596 Date: 8/18/11

CONTRACTOR: EIC Construction Co.

LOCATION: 190 cu. yd of 5K psi concrete for South Foundation Wall @ SOG

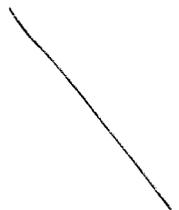
EC 229 - 235 CL - 2 to 1 (30yds) & Fill South of ESWZ (160yds)

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material .

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Curing and Protection:



List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
 Inspector  
Leo Nunez  
 (Print Name)

8/18/11  
Date

Concur: [Signature]  
 Supervising Engineer of Materials  
Joseph F. Marsano  
 (Print Name)

9/12/11  
Date

55

**SUBJECT - INSPECTION REPORT**

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: PATH Transit Hub CONTRACT NO.: WTC 264.596 Date: 8/18/11

CONTRACTOR: EIC Construction Co.

LOCATION: 30 cu. yd of 5K (467) psi concrete for Slab, East of Demising Wall

9 CL 237' CL 5-B/W-1 to W-2.5

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material .

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Curing and Protection:

1200 white curing compound was applied after concrete placement

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections:
1. Sampling and Strength Testing
  2. Formwork
  3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

8/18/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

9/21/11  
Date

Leo Nunez  
(Print Name)

Joseph F. Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Wall thick 1'-6", approx CL(SLC\*/-4 to 0), Elev. 229.5' to 241'. Final inspection.
- 2. Transportation Hub Foundations, Slab on grade @ Elev. 237'. CL (W-1.5—W-3/5-8). Final inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

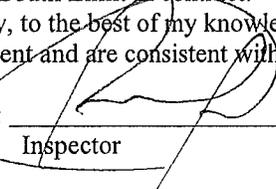
- 1. Transportation Hub Foundations, Wall thick 1'-6", approx CL(SLC\*/-4 to 0), Elev. 229.5' to 241'. Final inspection.
  - a. Contractor finished adjusting vertical reinforcement against the form panel to provide the required concrete cover.
  - b. Contractor placed concrete today with no approved shop drawings. However, contractor followed the contract drawings and specifications. Please refer to punch list item # 46.
- 2. Transportation Hub Foundations, Slab on grade @ Elev. 237'. CL (W-1.5—W-3/5-8). Final inspection.
  - a. All reinforcement was previously set.
  - b. Contractor placed concrete today with no approved construction joint limits. Please refer to punch list item today.

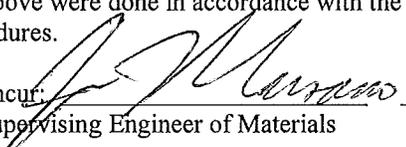
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 04B (1/4/11), 06C (4/26/11)
- Unapproved shop drawings 12A and 12B

Abbreviations.- CL : Column Lines; Elev. Elevation; RFI : Request for information  
\*SLC: South Limit of contract.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  August/18/11  
 Inspector Date  
Ricardo A. Tigua  
 (Print Name)

Concur:  8/23/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



**SPECIAL INSPECTION REPORT** PA 3666 / 10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: PATH Transit Hub CONTRACT NO.: WTC264.586 Date: 8-19-11

CONTRACTOR: ETC

LOCATION: 20 cu. yd of 5000 psi concrete for sump pit walls el. 229'6"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 8/19/11  
Inspector Date

Concur: Joseph Marsano 9/25/11  
Supervising Engineer of Materials Date

Alexander Sciffano  
(Print Name)

Joseph Marsano  
(Print Name)



CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Sump pit Walls, 1' 6" Thick, Elev. 220'6" to 227.5' CL (W-3/-4 to -2). Final inspection.
- 2. Transportation Hub Foundations, Footings for Columns C-123(W-1/-4) and C-124 (W-1/-2), Elev. 227.5'. Work in progress.

**Description of Controlled Work/Test Performed & Non-Conformance Notations:**  
Reinforcement and formwork inspection:

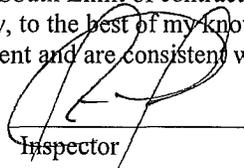
- 1. Transportation Hub Foundations, Sump pit Walls, 1' 6" Thick, Elev. 220'6" to 227.5' CL (W-3/-4 to -2). Final inspection.
  - a. All reinforcement was previously set.
  - b. Contractor placed concrete today. Other contractor will pour intermediate walls not included in the present final inspection.
- 2. Transportation Hub Foundations, Footings for Columns C-123(W-1/-4) and C-124 (W-1/-2), Elev. 227.5'. Work in progress.
  - a. Contractor started bending all reinforcement for these two footings.

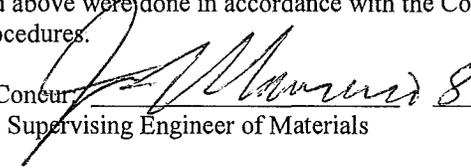
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 04B (1/4/11), 06C (4/26/11)
- Unapproved shop drawings 12A and 12B

**Abbreviations.-** CL : Column Lines; Elev. Elevation; RFI : Request for information  
\*SLC: South Limit of contract.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  August/19/11  
Inspector Date

Concur:   
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Footings for Columns C-123(W-1/-4), C-124 (W-1/-2) and C-125 (W-1/2), Elev. 227.5'. Work in progress.
- 2. Transportation Hub Foundations, Footings for Columns C-122(W-1/-8), Elev. 227.5'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Footings for Columns C-123(W-1/-4) C-124 (W-1/-2) and C-125 (W-1/2), Elev. 227.5'. Work in progress.
    - a. Contractor started installing all bottom reinforcement #9 @ 6" each way for the three footings.
  - 2. Transportation Hub Foundations, Footings for Columns C-122(W-1/-8), Elev. 227.5'. Work in progress.
    - a. Contractor started installing all bottom reinforcement #9 @ 6" each way for this footing.
- GENERAL NOTE: All these footings were prepared out of the original placement due to crane location disablement.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 30 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 06B (6/15/11)

Abbreviations.- CL : Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] August/22/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur: [Signature]  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Shear Wall (ESW3) Footing, CL (W.9 to W1.5)/2, EL 226' -5" to 229' -6". Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

Shear Wall (ESW3) footing, elevation 226' -5" to 229' - 6"

(approximate column lines: (W.9 to W1.5)/2)

1 - Wire lathers set #9 u bars (bar mark 9C17). The bars were set @ six inches on center. They will form part of the transverse footing reinforcement. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0122

Contract drawings WTC-264 dated 29 April 2011 (Addendum 31): S1103, S1105 and S4403

Contract drawing WTC-264 dated 14 January 2011 (Addendum 30): S4411

Approved as corrected shop drawings dated 26 May 2011: 03A and 03B

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
Inspector

8/23/2011 Date

Concur: [Signature]  
Supervising Engineer of Materials 8/28/11 Date

Alfredo Vitrano  
(Print Name)

[Signature]  
(Print Name)

25

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 8-24-11

CONTRACTOR: ERC

LOCATION: 50 CY of 12,000 psi concrete for  
ESW #3 to el. 229'6" W/2

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 8 24 11  
Inspector Date  
Alexander Sciffano  
(Print Name)

Concur: Joseph Marsano 9 14 11  
Supervising Engineer of Materials Date  
Joseph Marsano  
(Print Name)



SPECIAL INSPECTION REPORT PA 3666/10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 8-24-11

CONTRACTOR: EIC

LOCATION: 280 CY of 5,000 psi concrete for crane notch fill w/4 to el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing 2. Formwork 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
ACI 305R - Hot Weather Concreting
ACI 306 - Cold Weather Concreting
ACI 309R - Guide for Consolidation of Concrete
ACI 308 - Standard Practice for Curing Concrete
ACI 311 - Manual of Concrete Inspection
ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano Inspector Date: 8-24-11 Concur: Joseph Marsano Supervising Engineer of Materials Date: 9-2-11
(Print Name) (Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Footing for Shear Wall #3, ESW3, Elev. 221.5 to 227.5, CL (W1.2 –W.2/ESW3). Final inspection.
- 2. Transportation Hub Foundations, Footings for Columns C-123(W-1/-4), C-124 (W-1/-2) and C-125 (W-1/2), Elev. 227.5'. Work in progress.
- 3. Transportation Hub Foundations, Footings for Columns C-122(W-1/-8), Elev. 227.5'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. *Transportation Hub Foundations, Footing for Shear Wall #3, ESW3, Elev. 221.5 to 227.5, CL (W1.2 –W.2/ESW3). Final inspection.*
    - a. Contractor finished installing all bottom reinforcement #9 @ 6".
    - b. Contractor finished installing all shear ties #5 @24" and every 12" around the ground anchors.
    - c. Contractor placed concrete today. No exception noted.
  - 2. *Transportation Hub Foundations, Footings for Columns C-123(W-1/-4), C-124 (W-1/-2) and C-125 (W-1/2), Elev. 227.5'. Work in progress.*
    - a. Contractor started installing all side reinforcement #6 @ 12" each way for the three footings.
  - 3. *Transportation Hub Foundations, Footings for Columns C-122(W-1/-8), Elev. 227.5'. Work in progress.*
    - a. Contractor started installing all side reinforcement #6 @ 12" each way for this footing.
- GENERAL NOTE: All these footings were prepared out of the original placement due to crane location disablement.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 06B (6/15/11), 03A, 03B (8/3/11)

Abbreviations.- CL : Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] August/24/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur: [Signature] 8/31/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Footings for Columns C-123(W-1/-4), C-124 (W-1/-2) and C-125 (W-1/2), Elev. 227.5'. Work in progress.
- 2. Transportation Hub Foundations, Footings for Columns C-122(W-1/-8), Elev. 227.5'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. *Transportation Hub Foundations, Footings for Columns C-123(W-1/-4), C-124 (W-1/-2) and C-125 (W-1/2), Elev. 227.5'. Work in progress.*
  - a. Contractor started installing waterproofing material all around the footings.
  - b. Contractor installed all reinforcement previously inspected.
- 2. *Transportation Hub Foundations, Footings for Columns C-122(W-1/-8), Elev. 227.5'. Work in progress.*
  - a. Contractor started installing waterproofing material all around the footing.
  - b. Contractor installed all reinforcement previously inspected.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 06B (6/15/11), 03A, 03B (8/3/11)

Abbreviations.- CL : Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  August/25/11  
Inspector Date

Concur:  8/3/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Footings for Columns C-123(W-1/-4), C-124 (W-1/-2) and C-125 (W-1/2), Elev. 227.5'. Work in progress.
- 2. Transportation Hub Foundations, Footings for Columns C-122(W-1/-8), Elev. 227.5'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

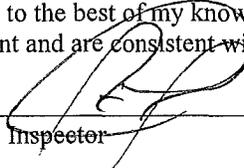
- 1. *Transportation Hub Foundations, Footings for Columns C-123(W-1/-4), C-124 (W-1/-2) and C-125 (W-1/2), Elev. 227.5'. Work in progress.*
  - a. Contractor started installing vertical 20#11 (bundle of two bars).
- 2. *Transportation Hub Foundations, Footings for Columns C-122(W-1/-8), Elev. 227.5'. Work in progress.*
  - a. Contractor started installing vertical 20#11 (bundle of two bars).

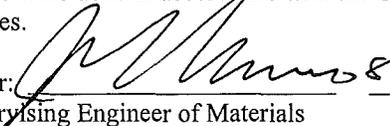
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 06B (6/15/11), 03A, 03B (8/3/11)

Abbreviations.- CL : Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  August/26/11  
Inspector Date

Concur:  8/31/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Footing for Column C-104 (WR1/-4), Elev. 227.5'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

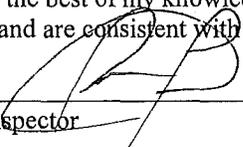
- 1. *Transportation Hub Foundations, Footing for Column C-104 (WR1/-4), Elev. 227.5'. Work in progress.*
  - a. Contractor started bending all bottom reinforcement #9 @6".

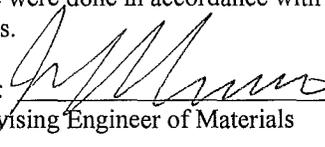
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 06B (6/15/11), 03A, 03B (8/3/11)

Abbreviations.- CL : Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  August/29/11  
Inspector Date

Concur:  9/1/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264,596

CONTRACTOR: EIC Associates

**LOCATION:**

1. Transportation Hub Foundations, Footings for Columns C-123(W-1/-4), C-124 (W-1/-2) and C-125 (W-1/2), Elev. 227.5'. Final inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

*1. Transportation Hub Foundations, Footings for Columns C-123(W-1/-4), C-124 (W-1/-2) and C-125 (W-1/2), Elev. 227.5'. Final inspection.*

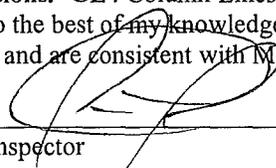
- a. Contractor finished installing waterproofing material all around the footings.
- b. All reinforcement was previously set.
- c. Contractor placed concrete today.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

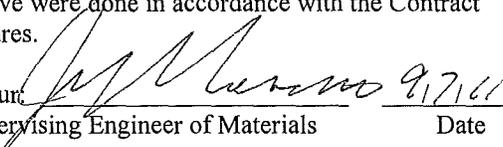
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 06B (6/15/11),

**Abbreviations.-** CL : Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  August/30/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur:  8/21/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



SPECIAL INSPECTION REPORT

PA 3066/10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 8-30-11

CONTRACTOR: ETC

LOCATION: 70 CY of 5000 psi Fill concrete for a mat slab @ el. 229'6" W-1 to W-2 / -7 to -2

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 8/30/11 Concur: J. Marsano 8/30/11  
Inspector Date Supervising Engineer of Materials Date  
Alexander Sciffano Joseph Marsano  
(Print Name) (Print Name)

25

SPECIAL INSPECTION REPORT PA 3666/10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.526 Date: 8-30-11

CONTRACTOR: EIC

LOCATION: 30 CY For C123 (W-1/-4), C124 (W-1/-2) and C125 (W-1/0) @ 21.229' 6" of 5000 psi concrete

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing 2. Formwork 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
ACI 305R - Hot Weather Concreting
ACI 306 - Cold Weather Concreting
ACI 309R - Guide for Consolidation of Concrete
ACI 308 - Standard Practice for Curing Concrete
ACI 311 - Manual of Concrete Inspection
ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 8/30/11 Date
Alexander Sciffano (Print Name)

Concur: Joseph Marsano 8/30/11 Date
Joseph Marsano (Print Name)



CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

**LOCATION:**

1. Transportation Hub Foundations, Footings F21 for Columns C-101(WR1/-12), C-103 (WR1/-7) and C-105 (WR1/-2), Elev. 227.5'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

*1. Transportation Hub Foundations, Footings F21 for Columns C-101(WR1/-12), C-103 (WR1/-7) and C-105 (WR1/-2), Elev. 227.5'. Work in progress.*

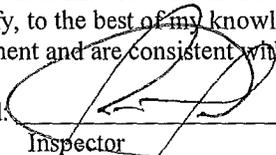
- a. Contractor started bending bottom reinforcement for footings #9 @6" each way.
- a. Contractor started bending side reinforcement for footings #6 @12" each way.

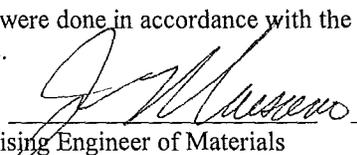
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 06A (11/10/10), 06B (6/15/11),

**Abbreviations.-** CL : Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  August/31/11  
 Inspector Date

Concur:  9/17/11  
 Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Footings F21 for Columns C-101(WR1/-12), C-103 (WR1/-7), C-143 (SEC/-7) and C-105 (WR1/-2), Elev. 227.5'. Work in progress.
- 2. Transportation Hub Foundations, Footings F22 for Columns C-102(WR1/-10), C-104 (WR1/-4) and C-132 (WR-1/-7), Elev. 227.5'. Work in progress.

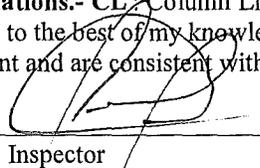
**Description of Controlled Work/Test Performed & Non-Conformance Notations:**  
**Reinforcement and formwork inspection:**

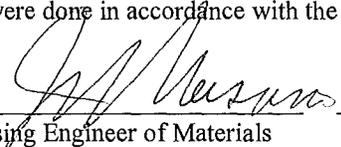
- 1. Transportation Hub Foundations, Footings F21 for Columns C-101(WR1/-12), C-103 (WR1/-7) and C-105 (WR1/-2), Elev. 227.5'. Work in progress.*
  - a. Contractor finished installing waterproofing sheet and geomembrane material around the socket prior to installation of reinforcement.
  - b. Contractor started installing vertical dowels 20x2#11 as column splices.
- 2. Transportation Hub Foundations, Footings F22 for Columns C-102(WR1/-10), C-104 (WR1/-4) and C-132 (WR-1/-7), Elev. 227.5'. Work in progress.*
  - a. Contractor started bending bottom reinforcement for footings #9 @6" each way.
  - b. Contractor started bending side reinforcement for footings #6 @12" each way.

**List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:**

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 06A (11/10/10), 06B (6/15/11),

**Abbreviations.-** CL: Column Lines; Elev. Elevation;  
I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  September/1/11  
Inspector Date

Concur:  9/17/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:**

1. Transportation Hub Foundations, Footings F21 for Columns C-101(WR1/-12), C-103 (WR1/-7), C-143 (SEC/-7) and C-105 (WR1/-2), Elev. 227.5'. Work in progress.
2. Transportation Hub Foundations, Footings F22 for Columns C-102(WR1/-10), C-104 (WR1/-4) and C-132 (WR-1/-7), Elev. 227.5'. Work in progress.
3. Transportation Hub Foundations, Reinforced Slab (Thick 2'), CL(W-1—W1/-2 to 4), Elev. 229.5'. Work in progress

**Description of Controlled Work/Test Performed & Non-Conformance Notations:**  
Reinforcement and formwork inspection:

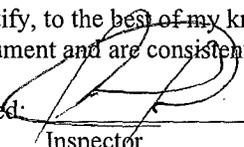
1. *Transportation Hub Foundations, Footings F21 for Columns C-101(WR1/-12), C-103 (WR1/-7) and C-105 (WR1/-2), Elev. 227.5'. Work in progress.*
  - a. Contractor continues installing vertical dowels 20x2#11 as column splices.
2. *Transportation Hub Foundations, Footings F22 for Columns C-102(WR1/-10), C-104 (WR1/-4) and C-132 (WR-1/-7), Elev. 227.5'. Work in progress.*
  - a. Contractor started installing reinforced footings previously inspected into the excavated sockets @ Elev 227.5'.
  - b. Contractor started installing of vertical dowels 24(bundle of 2) #11 for future columns.
3. *Transportation Hub Foundations, Reinforced Slab (Thick 2'), CL(W-1—W1/-2 to 4), Elev. 229.5'. Work in progress*
  - a. Contractor started installing bottom reinforcement #10 @6" north south direction.
  - b. PA-MEU inspection witnessed the proper installation of male threaded bars #10 using the inspection torque wrench set @200 ft-lbs. Installation of 40 bars #10 found acceptable.

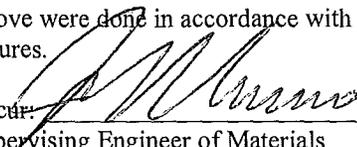
**List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:**

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.  
 ACI 318- Building Code Requirements for Reinforced Concrete.  
 ACI 301- Specifications for Structural Concrete.  
 Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305  
 Approved as corrected shop dwgs: 06A (11/10/10), 06B (6/15/11), 09A-09F (5/18/11)

**Abbreviations.- CL :** Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  September/2/11  
 Inspector Date

Conc'd:  9/2/11  
 Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



**SPECIAL INSPECTION REPORT** PA 3600/10-09

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 204.59B Date: 9-6-11

CONTRACTOR: EFC

LOCATION: 50 CY OF 5000 psi concrete for column footings for C113, C114, C122, C132 and C143

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 9/6/11  
Inspector Date

Concur: Joseph Marsano 9/21/11  
Supervising Engineer of Materials Date

Alexander Sciffiano  
(Print Name)

Joseph Marsano  
(Print Name)



**SPECIAL INSPECTION REPORT**

PA 3666 / 10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264-596 Date: 9-6-11

CONTRACTOR: ETC

LOCATION: 80 cu. yd of 5,000 psi fill concrete for  
crane notch to el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 9/6/11  
Inspector Date  
Alexander Sciffano  
(Print Name)

Concur: Joseph Marsano 9/21/11  
Supervising Engineer of Materials Date  
Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Footings F21 for Columns C-113(WR1/-3.5), C-114 (WR1/-2) and C-143 (SEC/-6). Elev. 227.5'. Final Inspection.
- 2. Transportation Hub Foundations, Footings F22 for Columns C-122 (W-1/-8.5) & C-132(W-1/-7), Elev. 227.5'. Final inspection.
- 3. Transportation Hub Foundations, Reinforced Slab (Thick 2'), CL(W-1—W1/-2 to 4), Elev. 229.5'. Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

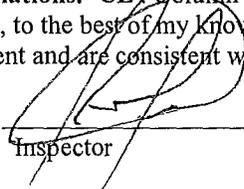
- 1. Transportation Hub Foundations, Footings F21 for Columns C-113(WR1/-3.5), C-114 (WR1/-2) and C-143 (SEC/-6). Elev. 227.5'. Final Inspection.
  - a. Contractor finished installing vertical dowels 20x2#11 as column splices.
  - b. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Footings F22 for Columns C-122 (W-1/-8.5) & C-132(W-1/-7), Elev. 227.5'. Final inspection.
  - a. Contractor finished installing reinforced footings previously inspected into the excavated sockets @ Elev 227.5'.
  - b. Contractor finished installing of vertical dowels 24 (bundle of 2) #11 for future columns.
  - c. Contractor placed concrete today.
- 3. Transportation Hub Foundations, Reinforced Slab (Thick 2'), CL(W-1—W1/-2 to 4), Elev. 229.5'. Work in progress
  - a. Contractor continues installing bottom reinforcement #10 @6" north south direction.
  - b. PA-MEU inspection witnessed the proper installation of male threaded bars #10 using the inspection torque wrench set @200 ft-lbs. Installation of 25 bars #10 found acceptable.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

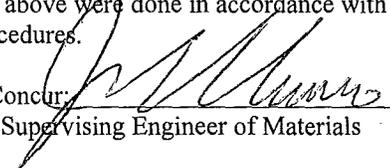
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S4206, S1203, S1205, S1103, S4206, S8302, S8303, S8304, S8305
- Approved as corrected shop dwgs: 06A (11/10/10), 06B (6/15/11), 09A-09F (5/18/11)

Abbreviations.- CL/ Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  September/6/11 Date

Inspector  
Ricardo A. Tigua  
(Print Name)

Concur:  9/21/11 Date

Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Underground pipe reinforced @ Elev. 229.5', CL (W-W-1.5/-2 to 2). Work in progress.
- 2. Transportation Hub Foundations, Reinforced Slab (Thick 2'), CL (W-1-W1/-2 to 4), Elev. 229.5'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

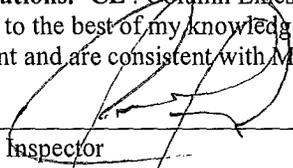
- 1. Transportation Hub Foundations, Underground pipe reinforced @ Elev. 229.5', CL (W-W-1.5/-2 to 2). Work in progress.*
  - a. Contractor started installing bottom reinforcement #5 @ 6".
  - b. Contractor started installing side reinforcement #5 @ 6".
- 2. Transportation Hub Foundations, Reinforced Slab (Thick 2'), CL (W-1-W1/-2 to 4), Elev. 229.5'. Work in progress*
  - a. Contractor continues installing bottom reinforcement #10 @6" north south direction.
  - b. PA-MEU inspection witnessed the proper installation of male threaded bars #10 using the inspection torque wrench set @200 ft-lbs. Installation of 20 bars #10 found acceptable.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

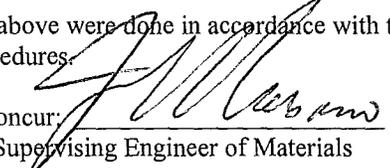
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
- Approved as corrected shop dwgs: 11A-11B (7/6/11), 09A-09F (5/18/11),

Abbreviations.- CL : Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  September/7/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur:  9/12/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Underground pipe reinforced @ Elev. 229.5', CL (W-W-1.5/-2 to 2). Work in progress.
- 2. Transportation Hub Foundations, Reinforced Slab (Thick 2'), CL (W-1-W1/-2 to 4), Elev. 229.5'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Underground pipe reinforced @ Elev. 229.5', CL (W-W-1.5/-2 to 2). Work in progress.
  - a. Contractor continues installing bottom reinforcement #5 @ 6" around the cast iron pipe.
  - b. Contractor continues installing side reinforcement #5 @ 6".
- 2. Transportation Hub Foundations, Reinforced Slab (Thick 2'), CL (W-1-W1/-2 to 4), Elev. 229.5'. Work in progress
  - a. Contractor continues installing bottom reinforcement #10 @6" north south direction.
  - b. PA-MEU inspection witnessed the proper installation of male threaded bars #10 using the inspection torque wrench set @200 ft-lbs. Installation of 20 bars #10 found acceptable.
  - c. PA-MEU inspection reminded to contractor the installation of additional reinforcement over footings as per required for contract/shop drawings.
  - d. Contractor continues installing additional reinforcement that has been interrupted by pipeline as per required on shop drawings.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
- Approved as corrected shop dwgs: 11A-11B (7/6/11), 09A-09F (5/18/11),

Abbreviations.- CL : Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] September/8/11  
Inspector Date

Concur: [Signature] 9/17/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Underground pipe reinforced @ Elev. 229.5', CL (W—W-1.5/-2 to 2). Work in progress.
- 2. Transportation Hub Foundations, Reinforced Slab (Thick 2'), CL (W-1—W1/-2 to 4), Elev. 229.5'. Work in progress.
- 3. Transportation Hub Foundations, Slab on grade (Thick 1'), CL (W—W-1.5/4 -7), Elev. 237'. Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. *Transportation Hub Foundations, Underground pipe reinforced @ Elev. 229.5', CL (W—W-1.5/-2 to 2). Work in progress.*
  - a. Contractor continues installing bottom reinforcement #5 @ 6" around the cast iron pipe.
  - b. Contractor continues installing side reinforcement #5 @ 6".
  - c. Contractor did not follow requirement from Building Code ACI-318, non-contact splice of main reinforcement was installed farther than 6". Please refer to punch list item issued today.
- 2. *Transportation Hub Foundations, Foundation Slab (Thick 2'), CL (W-1—W1/-2 to 4), Elev. 229.5'. Work in progress*
  - a. Contractor continues installing bottom reinforcement #10 @6" north south direction.
  - b. PA-MEU inspection witnessed the proper installation of male threaded bars #10 using the inspection torque wrench set @200 ft-lbs. Installation of 14 bars #10 found acceptable.
  - c. PA-MEU inspection reminded to contractor the installation of additional reinforcement over footings as per required for contract/shop drawings.
  - d. Contractor continues installing additional reinforcement that has been interrupted by pipeline as per required on shop drawings.
  - e. Contractor started installing top reinforcement #10 @6 east west direction.
- 3. *Transportation Hub Foundations, Slab on grade(Thick 1'), CL (W—W-1.5/4 -7), Elev. 237'. Work in progress*
  - a. Contractor started installing bottom reinforcement #6@9" in the north south direction.
  - b. Contractor started installing bottom reinforcement #6 @9" in the east west direction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
- Approved as corrected shop dwgs: 11A-11B (7/6/11), 09A-09F (5/18/11),

Abbreviations.- CL : Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  September/9/11  
Inspector Date

Concur:  9/12/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



**SPECIAL INSPECTION REPORT** PA 3666 / 10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: UTC 244596 Date: 9/12/11

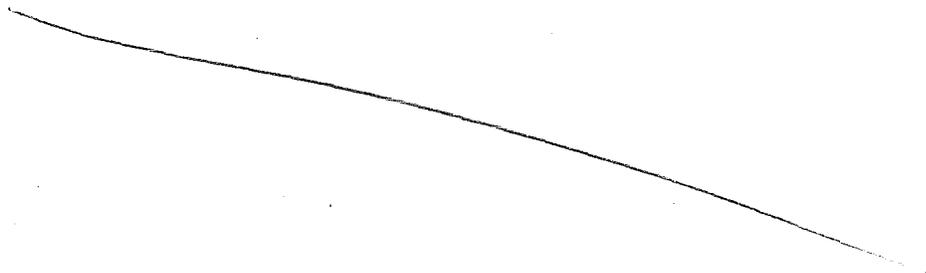
CONTRACTOR: EIC

LOCATION: 32 cu. yd of 5k psi Concrete for Mid Slab  
For SOG Hit & GC

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).



*Handwritten notes:*  
9/12/11  
9/12/11

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector  
[Signature]  
(Print Name)

9/12/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

9/24/11  
Date



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Underground pipe reinforced @ Elev. 229.5', CL (W—W-1.5/-2 to 2), Work in progress.
- 2. Transportation Hub Foundations, Reinforced Slab (Thick 2'), CL (W-1—W1/-2 to 4), Elev. 229.5'. Work in progress.
- 3. Transportation Hub Foundations, Slab on grade (Thick 1'), CL (W—W-1.5/4 -7), Elev. 237'. Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. *Transportation Hub Foundations, Underground pipe reinforced @ Elev. 229.5', CL (W—W-1.5/-2 to 2). Work in progress.*
  - a. Contractor continues installing bottom reinforcement #5 @ 6" around the cast iron pipe.
  - b. Contractor continues installing side reinforcement #5 @ 6".
- 2. *Transportation Hub Foundations, Foundation Slab (Thick 2'), CL (W-1—W1/-2 to 4), Elev. 229.5'. Work in progress.*
  - a. Contractor continues installing bottom reinforcement #10 @6" north south direction.
  - b. PA-MEU inspection witnessed the proper installation of male threaded bars #10 using the inspection torque wrench set @200 ft-lbs. Installation of 20 bars #10 east -west direction found acceptable.
  - c. Contractor continues installing additional bars #10 @ 6" in order to correct
- 3. *Transportation Hub Foundations, Slab on grade (Thick 1'), CL (W—W-1.5/4 -7), Elev. 237'. Work in progress*
  - a. Contractor started installing top reinforcement #6@9" in the north south direction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
- Approved as corrected shop dwgs: 11A-11B (7/6/11), 09A-09F (5/18/11), 04A & 04B (8/17/11)

Abbreviations.- CL : Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] September/12/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur: [Signature] 9/25/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Underground pipe reinforced @ Elev. 229.5', CL (W—W-1.5/-2 to 2). Work in progress.
- 2. Transportation Hub Foundations, Reinforced Slab (Thick 2'), CL (W-1—W1/-2 to 4), Elev. 229.5'. Work in progress.
- 3. Transportation Hub Foundations, Slab on grade (Thick 1'), CL (W—W-1.5/4 -7), Elev. 237'. Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. *Transportation Hub Foundations, Underground pipe reinforced @ Elev. 229.5', CL (W—W-1.5/-2 to 2). Work in progress.*
  - a. Contractor continues installing bottom reinforcement #5 @ 6" around the cast iron pipe at the north of the footings C-123 and C124.
- 2. *Transportation Hub Foundations, Foundation Slab (Thick 2'), CL (W-1—W1/-2 to 4), Elev. 229.5'. Work in progress.*
  - a. Contractor continues installing bottom reinforcement #10 @6" north south direction.
  - b. PA-MEU inspection witnessed the proper installation of male threaded bars #10 using the inspection torque wrench set @200 ft-lbs. Installation of 20 bars #10 east -west direction found acceptable.
  - c. Contractor started installing additional bars #10 @6 on South Wall next to Shear Wall 2.
  - d. PA-MEU inspection witnessed the drill procedure for bars #10 around the pipe. Embedment depth has not been achieved for these 12 bars. Contractor needs to clean these holes properly.
- 3. *Transportation Hub Foundations, Slab on grade (Thick 1'), CL (W—W-1.5/4 -7), Elev. 237'. Work in progress*
  - a. Contractor continues installing top reinforcement #6@9" in the north south direction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
- Approved as corrected shop dwgs: 11A-11B (7/6/11), 09A-09F (5/18/11), 04A & 04B (8/17/11)

Abbreviations.- CL : Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
Inspector

September/13/11  
Date

Concur:   
Supervising Engineer of Materials

9/24/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Underground pipe reinforced @ Elev. 229.5', CL (W-W-1.5/-2 to 2). Work in progress.
- 2. Transportation Hub Foundations, Reinforced Slab (Thick 2'), CL (W-1-W1/-2 to 4), Elev. 229.5'. Work in progress.
- 3. Transportation Hub Foundations, Slab on grade (Thick 1'), CL (W-W-1.5/4 -7), Elev. 237'. Work in progress

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. *Transportation Hub Foundations, Underground pipe reinforced @ Elev. 229.5', CL (W-W-1.5/-2 to 2). Work in progress.*
  - a. Contractor started installing side reinforcement #5 @ 6" around the cast iron pipe .
- 2. *Transportation Hub Foundations, Foundation Slab (Thick 2'), CL (W1-W-2/-2 to ESW3\*), Elev. 229.5'. Work in progress.*
  - a. Contractor continues installing top reinforcement #10 @6" north south direction.
  - b. PA-MEU inspection witnessed the proper installation of male threaded bars #10 using the inspection torque wrench set @200 ft-lbs. Installation of 25 bars #10 north south direction found acceptable.
  - c. Contractor started installing additional bars #10 @6 on South Wall next to Shear Wall 2.
  - d. PA-MEU inspection witnessed the drill/grout procedure for bars 18#10 around the pipe, no exceptions noted. Embedment depth was 14" as per response of RFI-TH-1460.
  - e. Contractor plans to pour concrete without approved construction joint limits. Please refer to punch list item issued today.
  - f. Contractor started installing all required reinforcement dowels for future walls included in this slab.
- 3. *Transportation Hub Foundations, Slab on grade (Thick 1'), CL (W1-W-1/2-7), Elev. 237'. Work in progress*
  - a. Contractor continues installing top reinforcement #6@9" in the east -west direction.
  - b. Contractor plans to pour concrete without approved construction joint limits. Please refer to punch list item issued today.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
- Approved as corrected shop dwgs: 11A-11B (7/6/11), 09A-09F (5/18/11), 04A & 04B (8/17/11)

Abbreviations.- CL: Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] September/14/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur: [Signature] 9/25/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Reinforced Slab (Thick 2'), CL (W-1—W1/-2 to 4), Elev. 229.5'. Final Inspection.
- 2. Transportation Hub Foundations, Slab on grade (Thick 1'), CL (W—W-1.5/4 -7), Elev. 237'. Final inspection.
- 3. Transportation Hub Foundations, Underground pipe reinforced @ Elev. 229.5', CL (W—W-1.5/-2 to 2). Work in progress.
- 4. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.
- 5. Transportation Hub Foundations, Footing F-21 for Columns C-101, C-103 @ Elev. 229.5', Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Foundation Slab (Thick 2'), CL (W1—W-2/-2 to ESW3\*), Elev. 229.5'. Final inspection.
  - a. Contractor finished installing top reinforcement #10 @6" north south direction.
  - b. PA-MEU inspection witnessed the proper installation of male threaded bars #10 using the inspection torque wrench set @200 ft-lbs. Installation of 12 bars #10 north south direction found acceptable.
  - c. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Slab on grade (Thick 1'), CL (W1—W-1/2-7), Elev. 237'. Final inspection.
  - a. Contractor continues installing top reinforcement #6@9" in the east -west direction.
  - b. Contractor placed concrete today.
- 3. Transportation Hub Foundations, Underground pipe reinforced @ Elev. 229.5', CL (W—W-1.5/-2 to 2). Work in progress.
  - a. Contractor continues installing side reinforcement #5 @ 6" around the cast iron pipe.
- 4. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.
  - a. Contractor started installing bottom reinforcement #10 @ 6" through Shear Wall 2A.
- 5. Transportation Hub Foundations, Footing F-21 for Columns C-101, C-103 @ Elev. 229.5', Work in progress.
  - a. Contractor started installing bottom reinforcement #9 @ 6" for these two footings.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
- Approved as corrected shop dwgs: 11A-11B (7/6/11), 09A-09F (5/18/11), 04A & 04B (8/17/11), 06A and 06B (6/15/11)

Abbreviations.- CL: Column Lines; Elev. Elevation;

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

September/15/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

9/15/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)

55

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 9-15-11

CONTRACTOR: ETC

LOCATION: 30 cu. yd of 12,000 psi concrete for ESW#3 mushroom cap to el. 229'6"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano  
Inspector  
Alexander Sciffiano  
(Print Name)

9/15/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

25

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 9-15-11

CONTRACTOR: BIC

LOCATION: 400 cu. yd of 5,000 psi concrete #467 for

1-229'6" slab on grade "FF" and "PP"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano  
Inspector

9/15/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials

9/15/11  
Date

Alexander Sciffiano  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.
- 2. Transportation Hub Foundations, Footing F-21 for Columns C-101, C-103, C-105 @ Elev. 229.5', Work in progress.
- 3. Transportation Hub Foundations, Footing F-22 for Columns C-102, C-104 @ Elev. 229.5', Work in progress.
- 4. Transportation Hub Foundations, Footing F-12 for Columns C-111 @ Elev. 229.5', Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.
    - a. Contractor continues installing bottom reinforcement #10 @ 6" through Shear Wall 2A.
    - b. PA-MEU inspection detected an inadequate field condition over column @ east end of Wall 2A where due to column vertical reinforcement is unable to pass east-west direction reinforcement. EOR was present today in the field (Technical Meeting) and provided an approved detail for additional bars (#10 @6 and #10 @12 Top + bottom L=26' long).
  - 2. Transportation Hub Foundations, Footing F-21 for Columns C-101, C-103, C-105 @ Elev. 229.5', Work in progress.
    - a. Contractor started installing side reinforcement #6 @ 12" for these three footings.
  - 3. Transportation Hub Foundations, Footing F-22 for Columns C-102, C-104 @ Elev. 229.5', Work in progress.
    - a. Contractor started installing bottom reinforcement #9 @ 6" for these two footings.
  - 4. Transportation Hub Foundations, Footing F-12 for Columns C-111 @ Elev. 229.5', Work in progress.
    - a. Contractor started installing bottom reinforcement #9 @ 6" for this footing.
- Note: All these footings have been prepared out of respective sockets because contractor just poured today mud mat on bottom of excavation.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), 06A and 06B (6/15/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: [Signature] September/16/11  
Inspector Date

Concur: [Signature] 9/25/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.
- 2. Transportation Hub Foundations, Footing F-21 for Columns C-101, C-103, C-105 @ Elev. 229.5', Work in progress.
- 3. Transportation Hub Foundations, Footing F-22 for Columns C-102, C-104 @ Elev. 229.5', Work in progress.
- 4. Transportation Hub Foundations, Footing F-12 for Columns C-111 @ Elev. 229.5', Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.
  - a. Contractor continues installing bottom reinforcement #10 @ 6" through Shear Wall 2A including the new detail sent by EOR for location of East Column in this wall.
  - b. Contractor started installing bottom reinforcement #10 @ 6" east - west direction.
- 2. Transportation Hub Foundations, Footing F-21 for Columns C-101, C-103, C-105 @ Elev. 229.5', Work in progress.
  - a. Contractor started installing waterproofing sheet and membrane around the sockets of these footings to proceed with installation of reinforcement cage.
- 3. Transportation Hub Foundations, Footing F-22 for Columns C-102, C-104 @ Elev. 229.5', Work in progress.
  - a. Contractor started installing side reinforcement #6 @ 12" for these two footings.
  - b. Contractor started installing waterproofing sheet and membrane around the sockets of these footings to proceed with installation of reinforcement cage.
- 4. Transportation Hub Foundations, Footing F-12 for Columns C-111 @ Elev. 229.5', Work in progress.
  - a. Contractor started installing side reinforcement #6 @ 12" for this footing.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), 06A and 06B (6/15/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

September/17/11  
Date

Concur: [Signature] 9/25/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.
- 2. Transportation Hub Foundations, Footing F-21 for Columns C-101, C-103, C-105 @ Elev. 229.5', Work in progress.
- 3. Transportation Hub Foundations, Footing F-22 for Columns C-102, C-104 @ Elev. 229.5', Work in progress.
- 4. Transportation Hub Foundations, Footing F-12 for Columns C-111 @ Elev. 229.5', Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.
  - a. Contractor continues installing bottom reinforcement #10 @ 6".
  - b. Contractor continues installing bottom reinforcement #10 @ 6" east - west direction.
  - c. Contractor started installing bottom reinforcement female couplers #10 @ 6 around the opening of tower crane #2 (West of project)
- 2. Transportation Hub Foundations, Footing F-21 for Columns C-101, C-103, C-105 @ Elev. 229.5', Work in progress.
  - a. Contractor started installing side reinforcement #6@12 in all these footings.
- 3. Transportation Hub Foundations, Footing F-22 for Columns C-102, C-104 @ Elev. 229.5', Work in progress.
  - a. Contractor continues installing side reinforcement #6 @ 12" for these two footings.
- 4. Transportation Hub Foundations, Footing F-12 for Columns C-111 @ Elev. 229.5', Work in progress.
  - a. Contractor continues installing side reinforcement #6@ 12" for this footing.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), 06A and 06B (6/15/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] September/19/11  
Inspector Date

Concur: [Signature] 9/25/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.
- 2. Transportation Hub Foundations, Footing F-21 for Columns C-101, C-103, C-105 @ Elev. 229.5', Work in progress.
- 3. Transportation Hub Foundations, Footing F-22 for Columns C-102, C-104 @ Elev. 229.5', Work in progress.
- 4. Transportation Hub Foundations, Footing F-12 for Columns C-111 @ Elev. 229.5', Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.

- a. Contractor started installing top reinforcement #10 @ 6" east west direction.
- b. Contractor continues installing bottom reinforcement #10 @ 6" east - west direction.
- c. Contractor started installing bottom reinforcement female couplers #10 @ 6 around the opening of tower crane #2 (West of project).
- d. Contractor placed additional bars erroneously over Shear Wall 2A but remediation work is being performed.

2. Transportation Hub Foundations, Footing F-21 for Columns C-101, C-103, C-105 @ Elev. 229.5', Work in progress.

- a. Contractor installed the cage of these footing after waterproofing installation.

3. Transportation Hub Foundations, Footing F-22 for Columns C-102, C-104 @ Elev. 229.5', Work in progress.

- a. Contractor installed wood rings for installation of vertical dowels #11.

4. Transportation Hub Foundations, Footing F-12 for Columns C-111 @ Elev. 229.5', Work in progress.

- a. Contractor finished installing side reinforcement #6@ 12" for this footing.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301

Approved as corrected shop dwgs: 09A-09F (5/18/11), 06A and 06B (6/15/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

September/20/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

9/21/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)

CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.
2. Transportation Hub Foundations, Footing F-21 for Columns C-101, C-103, C-105 @ Elev. 229.5', Work in progress.
3. Transportation Hub Foundations, Footing F-22 for Columns C-102, C-104 @ Elev. 229.5', Work in progress.
4. Transportation Hub Foundations, Footing F-12 for Columns C-111 @ Elev. 229.5', Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.
a. Contractor started installing top reinforcement #10 @ 6" north south direction.
b. Contractor continues installing top reinforcement #10 @ 6" east - west direction.
c. Contractor continues installing bottom reinforcement female couplers #10 @ 6 around the opening of tower crane #2 (West of project).
d. Contractor continues installing additional bars #10 @6 and #10 @12 over Shear Wall 2A, remediation work is being performed.
2. Transportation Hub Foundations, Footing F-21 for Columns C-101, C-103, C-105 @ Elev. 229.5', Work in progress.
a. Contractor started installing column dowels 20x2#11.
3. Transportation Hub Foundations, Footing F-22 for Columns C-102, C-104 @ Elev. 229.5', Work in progress.
a. Contractor started installing column dowels 20x2#11.
4. Transportation Hub Foundations, Footing F-12 for Columns C-111 @ Elev. 229.5', Work in progress.
a. Contractor started installing column dowels 24x2#11.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
Approved as corrected shop dwgs: 09A-09F (5/18/11), 06A and 06B (6/15/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract
I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: [Signature] Inspector Date: September/21/11
Concur: [Signature] Supervising Engineer of Materials Date: 9/29/11
Ricardo A. Tigua (Print Name) Joseph Marsano (Print Name)



SPECIAL INSPECTION REPORT PA 340 (10-09)

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transit Hub CONTRACT NO.: WTC 264.596 Date: 9/22/11

CONTRACTOR: EIC

LOCATION: 128 cu. yd of 5000 #57 psi concrete for Col. Footings #1's

111, 101, 102, 103 & 104 @ El. 229.5 / Mudmat @ El. 229.5 Col. Lines WR1 → W-1/-13 → -3

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Ken Brault 9/22/11  
Inspector Date

Concur: Joseph Marsano 9/29/11  
Supervising Engineer of Materials Date

Ken Brault  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Footing F-21 for Columns C-101, C-103 @ Elev. 229.5', Final inspection.
- 2. Transportation Hub Foundations, Footing F-22 for Columns C-102, C-104 @ Elev. 229.5', Final inspection.
- 3. Transportation Hub Foundations, Footing F-12 for Columns C-111 @ Elev. 229.5', Final inspection.
- 4. Transportation Hub Foundations, Footing F-21 for Columns C-105 @ Elev. 229.5', Work in progress.
- 5. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Footing F-21 for Columns C-101, C-103, @ Elev. 229.5', Final inspection.  
a. Contractor placed concrete today, all reinforcement was previously inspected.
- 2. Transportation Hub Foundations, Footing F-22 for Columns C-102, C-104 @ Elev. 229.5', Final inspection.  
a. Contractor placed concrete today, all reinforcement was previously inspected.
- 3. Transportation Hub Foundations, Footing F-12 for Columns C-111 @ Elev. 229.5', Final inspection.  
a. Contractor placed concrete today, all reinforcement was previously inspected.
- 4. Transportation Hub Foundations, Footing F-21 for Columns, C-105 @ Elev. 229.5', Work in progress.  
a. Contractor received a new revision for this footing. New revision needs to be applied to this footing changing reinforcement and dimensions. PA-MEU inspection received information by email via directly by EOR.
- 5. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.  
a. Contractor started installing top reinforcement #10 @ 6" north south direction.  
b. Contractor continues installing top reinforcement #10 @ 6" east - west direction.  
c. Contractor continues installing top reinforcement female couplers #10 @ 6 around the opening of tower crane #2 (located @ the West of project).  
d. PA-MEU inspection reminded to contractor install all those top bars connected with previous pour using male threaded bars #10 with the inspection wrench.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), 06A and 06B (6/15/11)

Abbreviations.- CL- Column Lines; Elev. Elevation; \*SOC: South limit of contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] September/22/11  
Inspector Date

Concur: [Signature] 9/29/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Footing F-21 for Columns C-105 @ Elev. 229.5', Work in progress.
- 2. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Footing F-21 for Columns, C-105 @ Elev. 229.5', Work in progress.
  - a. Contractor started bending bottom reinforcement #10 @6 as per new revision provided by EOR.
- 2. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Work in progress.
  - a. Contractor continues installing top reinforcement #10 @ 6" north south direction.
  - b. Contractor continues installing top reinforcement #10 @ 6" east - west direction.
  - c. Contractor continues installing top reinforcement female couplers #10 @ 6 around the opening of tower crane #2 (located @ the West of project).
  - d. PA-MEU inspection witnessed the proper installation of #10 male threaded bars connected to previous slab at the north projection part with the inspection torque wrench 200 ft-lbs. All 15 bars were found acceptable.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), 06A and 06B (6/15/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] September/23/11  
Inspector Date

Concur: [Signature] 9/29/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)

25

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 9-26-11

CONTRACTOR: EIC

LOCATION: 463 cu. yd of 5000 psi # 467 stone for  
SOG "HH", "GG" and "OO" to el. 229'6"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 9/26/11  
 Inspector Date  
Alexander Sciffano  
 (Print Name)

Concur: Joseph Marsano 9/29/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)

ES

Specification for Concrete Construction

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.586 Date: 9-26-11

CONTRACTOR: EJC

LOCATION: 40 cu. yd of 12,000 psi concrete for ESW 2a mushroom cap el. 229'6"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 9/26/11  
Inspector Date  
Alexander Sciffiano  
(Print Name)

Concur: Joseph Marsano 9/29/11  
Supervising Engineer of Materials Date  
Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Final inspection.
- 2. Transportation Hub Foundations, Footing F-21 for Columns C-105 @ Elev. 229.5', Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—SOC\*/-9 to -2). Final inspection.

- a. Contractor finished installing top reinforcement #10 @ 6" north south direction.
- b. Contractor finished installing top reinforcement #10 @ 6" east - west direction.
- c. Contractor finished installing wall dowels for demising wall at the south of the contract thickness t =10".
- d. PA-MEU inspection did not received construction joint layout plan prior to concrete placement. Please refer to punch list item issued today.
- e. Contractor placed concrete today.

2. Transportation Hub Foundations, Footing F-21 for Columns, C-105 @ Elev. 229.5', Work in progress.

- a. Contractor started installing bottom reinforcement #10 @6 east west direction as per new revision provided by EOR.
- b. Contractor started installing bottom reinforcement #10 @6 north south direction as per new revision provided by EOR.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), 06A and 06B (6/15/11)

Abbreviations.- CL: Column Lines; Elev. Elevation; \*SOC: South limit of contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] September/26/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur: [Signature] 9/26/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—WR-1/-9 to -4), Work in progress.
- 2. Transportation Hub Foundations, Footing F-21 for Columns C-105 @ Elev. 229.5', Work in progress.
- 3. Transportation Hub Foundations, Demising Wall @ South of project @ Elev. 229.5' to 237'. CL(SOC\*/-5 to -2), Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—WR-1/-9 to -4), Work in progress.
  - a. Contractor started installing bottom reinforcement #10 @ 6" north south direction.
  - b. Contractor started installing bottom reinforcement #10 @ 6" east - west direction.
  - c. Contractor started installing bottom additional reinforcement over footing C-122 required in contract drawings.
- 2. Transportation Hub Foundations, Footing F-21 for Columns C-105 @ Elev. 229.5', Work in progress.
  - a. Contractor started installing vertical dowels for column 24x2 #11.
- 3. Transportation Hub Foundations, Demising Wall @ South of project @ Elev. 229.5' to 237'. CL(SOC\*/-5 to -2), Work in progress.
  - a. Contractor started installing vertical reinforcement #6@9 in this wall.

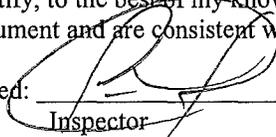
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

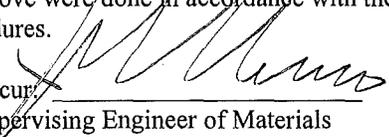
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.

Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301  
Approved as corrected shop dwgs: 09A-09F (5/18/11), 06A and 06B (6/15/11), 12A(8/17/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  September/27/11  
Inspector Date

Concur:  9/29/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)

25

SPECIAL INSPECTION REPORT

PA-3600/10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 9-28-11

CONTRACTOR: EJC

LOCATION: 48 cu. yd of 5000 psi concrete for  
column footing @ 105 @ el. 229'6"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scriffiano 9/28/11  
 Inspector Date  
Alexander Scriffiano  
 (Print Name)

Concur: Joseph Marsano 10/4/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Demising Wall @ South of project @ Elev. 229.5' to 237'. CL(SOC\*/-5 to -2), Final inspection.
- 2. Transportation Hub Foundations, Footing F-21 for Columns C-105 @ Elev. 229.5', Final inspection.
- 3. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—WR-1/-9 to -4). Work in progress.
- 4. Transportation Hub Foundations, Slab on grade @ Elev. 229.5', CL (NOC^-W2/0-9). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Demising Wall @ South of project @ Elev. 229.5' to 237'. CL(SOC\*/-5 to -2), Final inspection.
  - a. Contractor finished installing horizontal reinforcement #6@9 in this wall.
  - b. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Footing F-21 for Columns C-105 @ Elev. 229.5', Final inspection.
  - a. Contractor finished installing vertical dowels for column 24x2 #11.
  - b. Contractor placed concrete today
- 3. Transportation Hub Foundations, Foundation Slab @ Elev. 229.5', CL (WR-1—WR-1/-9 to -4). Work in progress.
  - a. Contractor finished installing bottom reinforcement #10 @ 6" north south direction.
  - b. Contractor continues installing bottom reinforcement #10 @ 6" east - west direction.
  - c. Contractor started installing top reinforcement #10 @ 6" east west direction
- 4. Transportation Hub Foundations, Slab on grade @ Elev. 229.5', CL (NOC^-W2/0-9). Work in progress.
  - a. Contractor started installing bottom reinforcement #6 @ 9" north south direction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), 06A and 06B (6/15/11), 12A(8/17/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract; ^NOC: North limit of contract  
I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

September/28/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

10/14/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (WR-1—WR-1/-9 to -4). Work in progress.
- 2. Transportation Hub Foundations, Slab on grade 1' thick @ Elev. 237', CL (NOC^~W2/0-9). Work in progress.

**Description of Controlled Work/Test Performed & Non-Conformance Notations:**

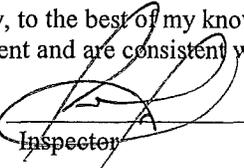
**Reinforcement and formwork inspection:**

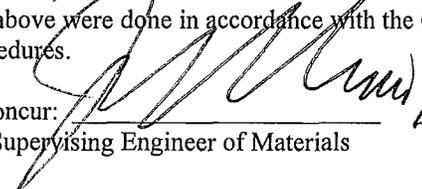
- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (WR-1—WR-1/-9 to -4). Work in progress.
  - a. Contractor continues installing top reinforcement #10 @ 6" east - west direction.
  - b. Contractor started installing top reinforcement #10 @ 6" north south direction
- 2. Transportation Hub Foundations, Slab on grade 1' thick @ Elev. 237', CL (NOC^~W2/0-9). Work in progress.
  - a. Contractor started installing top reinforcement #6 @ 9" north south direction.
  - b. Contractor started installing top reinforcement #6 @ 9" east west direction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), 06A and 06B (6/15/11), 12A(8/17/11), 04A (4/11/11)

**Abbreviations.-** CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract; ^NOC: North limit of contract  
I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  September/29/11  
Inspector Date

Concur:  10/14/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)

55

SPECIAL INSPECTION REPORT

PA 3066 / 10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTK 264.596 Date: 9-30-11

CONTRACTOR: FIC

LOCATION: 60 cu. yd of 12,000 psi concrete for ESW #3 to el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 9/30/11  
 Inspector Date  
Alexander Sciffiano  
 (Print Name)

Concur: Joseph Marsano 10/8/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)

25

SPECIAL INSPECTION REPORT

PA 3666 / 10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WT 264.596 Date: 9-30-11

CONTRACTOR: ETC

LOCATION: 372 cu. yd of 5000 psi #467 stone concrete for  
SOB "VN" el. 229 and perch slab el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano  
Inspector

9/30/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials  
10/19/11  
Date

Alexander Sciffano  
(Print Name)

Joseph Marsano  
(Print Name)



CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-W-1/-9 to -4). Final inspection.
- 2. Transportation Hub Foundations, Slab on grade 1' thick @ Elev. 237', CL (NOC^W2.5/0-9). Final inspection.
- 3. Transportation Hub Foundations, Shear Wall 3 ESW3 (portion) @ Elev. 229.5' to 237', CL (W.7-W-1.5/ESW3). Final inspection
- 4. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1-W-1.5/-9 to -4). Work in progress.

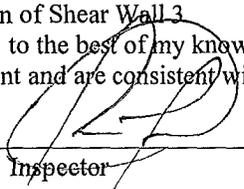
**Description of Controlled Work/Test Performed & Non-Conformance Notations:**  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-W-1/-9 to -4). Final inspection.
  - a. Contractor finished installing top reinforcement #10 @ 6" north - south direction.
  - b. Contractor did not provide to PA-MEU inspection construction joint layout plan. Please refer to punch list item issued today.
  - c. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Slab on grade 1' thick @ Elev. 237', CL (NOC^W2./0-9). Final inspection.
  - a. Contractor finished installing top reinforcement #6 @ 9" east west direction.
  - b. Contractor did not provide to PA-MEU inspection construction joint layout plan. Please refer to punch list item issued today.
  - c. Contractor placed concrete today.
- 3. Transportation Hub Foundations, Shear Wall 3 ESW3 (portion) @ Elev. 229.5' to 237', CL (W.7-W-1.5/ESW3). Final inspection.
  - a. Contractor set all reinforcement previously but prior to concrete placement. PA-MEU inspection detected any deficiencies due to reinforcement in contact with steel plate. Contractor performed remediation work prior to concrete placement. No exceptions noted.
  - b. Contractor placed concrete today.
- 4. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1-W-1.5/-9 to -4). Work in progress.
  - a. Contractor started installing bottom reinforcement #10 @ 6" north south direction.

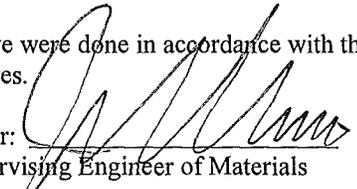
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), 06A and 06B (6/15/11), 12A(8/17/11), 04A (4/11/11), 03A(5/19/11)
- Abbreviations.- CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract; ^NOC: North limit of contract, ESW3: Elevation of Shear Wall 3

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
 Inspector  
Ricardo A. Tigua  
 (Print Name)

September/30/11  
 Date

Concur:  10/18/11  
 Supervising Engineer of Materials  
 Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1—W-1.5/-9 to -4). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:
Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1—W-1.5/-9 to -4). Work in progress.

a. Contractor continues installing bottom reinforcement #10 @ 6" north south direction.

a. Contractor continues installing bottom reinforcement #10 @ 6" east west direction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301

Approved as corrected shop dwgs: 09A-09F (5/18/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract; ^NOC: North limit of contract, ESW3: Elevation of Shear Wall 3.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Inspector Date October/3/11

Concur: Supervising Engineer of Materials Date 10/11/11

Ricardo A. Tigua (Print Name)

Joseph Marsano (Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1—W-1.5/-9 to -4). Work in progress.
- 2. Transportation Hub Foundations, Foundation Ramp Slab 2' thick @ Elev. Varies 229.5' to 237', CL (W-2—SOC\*/2 to 7). Work in progress.

**Description of Controlled Work/Test Performed & Non-Conformance Notations:**

Reinforcement and formwork inspection:

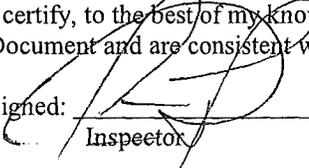
- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1—W-1.5/-9 to -4). Work in progress.
  - a. Contractor started installing top reinforcement #10 @ 6" north south direction.
  - b. Contractor started installing top reinforcement #10 @ 6" east west direction.
- 2. Transportation Hub Foundations, Foundation Ramp Slab 2' thick @ Elev. Varies 229.5' to 237', CL (W-2—SOC\*/2 to 7). Work in progress.
  - a. Contractor started installing bottom reinforcement #10 @ 6" north south direction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

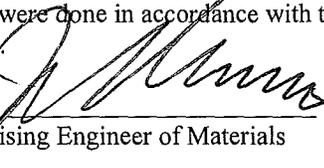
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11)

**Abbreviations.-** CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract; ^NOC: North limit of contract, ESW3: Elevation of Shear Wall 3.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  October/4/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur:  10/11/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1—W-1.5/-9 to -4). Work in progress.
- 2. Transportation Hub Foundations, Foundation Ramp Slab 2' thick @ Elev. Varies 229.5' to 237', CL (W-2—SOC\*/2 to 7). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1—W-1.5/-9 to -4). Work in progress.
  - a. Contractor finished installing top reinforcement #10 @ 6" north south direction.
  - b. Contractor finished installing top reinforcement #10 @ 6" east west direction.
- 2. Transportation Hub Foundations, Foundation Ramp Slab 2' thick @ Elev. Varies 229.5' to 237', CL (W-2—SOC\*/2 to 7). Work in progress.
  - a. Contractor finished installing bottom reinforcement #10 @ 6" north south direction.
  - b. Contractor started installing bottom reinforcement #10 @ 6" east west direction.
  - c. PA-MEU inspector Tom Murphy performed pull test of 3#10 connected in the shear wall 2 regarding to punch list item 35.1.B. None of those failed but PA-MEU inspection will keep this item open until Tishman proceeds with closure NCR process ends.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract; ^NOC: North limit of contract, ESW3: Elevation of Shear Wall 3.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

October/5/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

10/18/11  
Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)

25

SPECIAL INSPECTION REPORT

PA-3666/10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264-596 Date: 10-5-11

CONTRACTOR: FIC

LOCATION: 48 cu. yd of 5000 psi fill concrete for  
"UU", "W", + "TT" mud mats 21-229'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 10/5/11  
 Inspector Date  
Alexander Sciffano  
 (Print Name)

Concur: Joseph Marsano 10/11/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)

25

**SPECIAL INSPECTION REPORT** PA 3666 / 10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 10/6/11

CONTRACTOR: ETC

LOCATION: 170 cu. yd of 5000 psi #467 stone concrete for  
SOG "55" el. 229'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 10/6/11  
 Inspector Date  
Alexander Sciffano  
 (Print Name)

Concur: Joseph Marsano 10/12/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)

**THE PORT AUTHORITY OF NY & NJ  
CONSTRUCTION DIVISION  
MATERIALS ENGINEERING SECTION  
SPECIAL INSPECTION REPORT**

CONTRACT TITLE: Transit Hub CONTRACT #: WTC 264.596 DATE: 10/05/11

CONTRACTOR: EIC

LOCATION: South of ESW #2 ramp from elevation 229' to 237'

Weather: sunny and clear Temperature: 64 °F

**DESCRIPTION OF WORK/TEST(S) PERFORMED & NON-CONFORMANCE NOTATIONS:**

Three #10 rebar were pull tested to their required strength of 10 kips. The bars protrude south out of ESW #2 into an adjacent ramp which starts at elevation 229' and rises to elevation 237'. All three bars pulled held the minimum load required. The results of the testing are shown below.

<b>Base Material:</b>	Existing CIP Concrete	<b>Anchor Type:</b>	Adhesive	<b>Expansive - Drop-In</b>	Other:	<b>Adhesive Used:</b>	Hilti 500 SD
<b># of Anchors Installed:</b>	25	<b>Percentage to be Tested:</b>	10%	<b># of Anchors Tested</b>	3	<b>Anchor Manufacture:</b>	
<b>Type of Test Performed:</b>	Direct Load	<b>Witnessed Testing:</b>	Tom Murphy (PAMEU)				

Location	Test Number	Date Installed	Date Tested	Embedment Depth (In.)	Anchor Rods Diameter (In.)	Applied Load (Pounds)
	1	10/04/11	10/05/11	10"	1.25"	13,958
	2	10/04/11	10/05/11	10"	1.25"	14,962
	3	10/04/11	10/05/11	10"	1.25"	14,058

**Remarks**

- Testing requested by: D. Serpe (EIC)
- Requested loads supplied by: D. Serpe (EIC)

BELOW IS A LIST OF APPLICABLE DOCUMENTS THAT DESCRIBE INSPECTION PRECEDURE(S), INSPECTION, TEST REPORTS AND WRITTEN

- 1 - The anchors were tested in accordance with ASTM E-488.
- 2 - The anchors were tested using a Enerpac Hollow Plunger load cell:

RCH 123 (12 Ton)    RCH 302 (30 Ton)    RCH 603 (60 Ton)

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Documents and are consistent with Materials testing and inspection procedures.

SIGNED: Alexander Scriffiano 10/5/2011  
DATE

CONCURRED: Joseph Marsano 10/12/11  
DATE

INSPECTOR'S NAME: Alexander Scriffiano 10/5/2011

SUPERVISOR'S NAME: Joseph Marsano



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1—W-1.5/-9 to -4). Final inspection.
- 2. Transportation Hub Foundations, Foundation Ramp Slab 2' thick @ Elev. Varies 229.5' to 241', CL (W-2—SOC\*/2 to 7). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1—W-1.5/-9 to -4). Final inspection.
  - a. Contractor finished installing top reinforcement #10 @ 6" north south direction.
  - b. Contractor finished installing top reinforcement #10 @ 6" east west direction.
  - c. Contractor did not provide construction joint layout plan. PA-MEU inspection created a punch list for unapproved construction joint layout. Please refer to punch list item issued today.
  - d. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Foundation Ramp Slab 2' thick @ Elev. Varies 229.5' to 237', CL (W-2—SOC\*/2 to 7). Work in progress.
  - a. Contractor started installing top reinforcement #10 @ 6" north south direction.
  - b. Contractor started installing top reinforcement #10 @ 6" east west direction.
  - c. PA-MEU inspection witnessed installation of 60 #10 bars connected to Shear Wall 2 with inspection wrench set 200 ft-lbs. All these bars were found acceptable and spray painted with orange.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract; ^NOC: North limit of contract, ESW3: Elevation of Shear Wall 3.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: \_\_\_\_\_ October/6/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur: \_\_\_\_\_ 10/12/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)

25

SPECIAL INSPECTION REPORT 12/5/11/10:09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264,596 Date: 10-7-11

CONTRACTOR: EIC

LOCATION: 120 cu. yd of 5000 psi #467 stone concrete for ramp south of ESW2 from el. 229' to 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing 2. Formwork 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
ACI 305R - Hot Weather Concreting
ACI 306 - Cold Weather Concreting
ACI 309R - Guide for Consolidation of Concrete
ACI 308 - Standard Practice for Curing Concrete
ACI 311 - Manual of Concrete Inspection
ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scifano 10/7/11 Date Inspector (Print Name)

Constr: Joseph Marsano 10/21/11 Date Supervising Engineer of Materials (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Ramp Slab 2' thick @ Elev. Varies 229.5' to 241', CL (W-2—SOC\*/2 to 7). Final inspection.
- 2. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W1.5—W2.5/-9 to -3). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Foundation Ramp Slab 2' thick @ Elev. Varies 229.5' to 237', CL (W-2—SOC\*/2 to 7). Final inspection

- a. Contractor started installing top reinforcement #10 @ 6" north south direction.
- b. Contractor started installing top reinforcement #10 @ 6" east west direction.
- c. PA-MEU inspection detected 11#8 @ 12 that needed to be drilled and grouted into the rock foundation along Tower 3 foundation. Please refer to punch list item issued today.
- d. PA-MEU inspection did not receive any approved construction joint layout prior to concrete placement. Please refer to punch list item today.
- e. Contractor placed concrete today.

2. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W1.5—W2.5/-9 to -3). Work in progress.

- a. Contractor started installing bottom reinforcement #10 @ 6" north south direction.
- b. Contractor started installing bottom reinforcement #10 @ 6" east west direction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*SOC: South limit of contract; ^NOC: North limit of contract, ESW3: Elevation of Shear Wall 3.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] October/7/11 Date

Inspector

Ricardo A. Tigua  
(Print Name)

Concur: [Signature] 10/14/11 Date

Supervising Engineer of Materials

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1.5—ESW1\*/-9 to -5). Work in progress.
- 2. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W.5—W2/-5 to 0). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

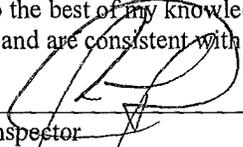
- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1.5—ESW1\*/-9 to -5). Work in progress.
  - a. Contractor started installing bottom reinforcement #10 @ 6" north south direction.
  - b. Contractor started installing bottom reinforcement #10 @ 6" east west direction.
  - c. PA-MEU inspection witnessed the proper installation of male threaded bars #10 installed in previous pour with an inspection wrench set @ 200 ft-lbs. 30 units were found acceptable.
- 2. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W.5—W2/-5 to 0). Work in progress.
  - a. Contractor started installing bottom reinforcement #10 @ 6" north south direction.
  - b. Contractor started installing bottom reinforcement #10 @ 6" east west direction.
  - c. PA-MEU inspection witnessed the proper installation of male threaded bars #10 installed in previous pour with an inspection wrench set @ 200 ft-lbs. 47 units were found acceptable.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

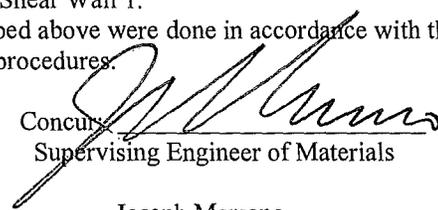
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; ESW1: Elevation of Shear Wall 1.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  October/11/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concurred:  10/19/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1.5—ESW1\*/-9 to -5). Work in progress.
- 2. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W.5—W2/-5 to 0). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1.5—ESW1\*/-9 to -5). Work in progress.

- a. Contractor continues installing bottom reinforcement #10 @ 6" north south direction.
- b. Contractor started installing bottom reinforcement #10 @ 6" east west direction.
- c. PA-MEU inspection witnessed the proper installation of male threaded bars #10 installed into ESW1, with an inspection wrench set @ 200 ft-lbs. 35 units were found acceptable.

2. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W.5—W2/-5 to 0). Work in progress.

- a. Contractor continues installing bottom reinforcement #10 @ 6" north south direction.
- b. Contractor continues installing bottom reinforcement #10 @ 6" east west direction.
- c. PA-MEU inspection witnessed the proper installation of male threaded bars #10 installed in previous pour with an inspection wrench set @ 200 ft-lbs. 21 units were found acceptable.
- d. PA-MEU inspection detected missing 12 form saver couplers but as per RFI-TH-1460, contractor shall drill and grout #10 bars @12" with 14" embedment length. Contractor is performing this work.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106,S1203, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), RFI-TH-1460 (6/30/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; ESW1: Elevation of Shear Wall 1.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] October/12/11 Date

Inspector

Ricardo A. Tigua  
(Print Name)

Concur: [Signature] 10/17/11 Date

Supervising Engineer of Materials

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1.5—ESW1\*/-9 to -5). Work in progress.
- 2. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W.5—W2/-5 to 0). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1.5—ESW1\*/-9 to -5). Work in progress.
  - a. Contractor started installing bottom reinforcement #5 @ 6" for underground pipe reinforced.
  - b. Contractor continues installing bottom reinforcement #10 @ 6" east west direction.
- 2. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W.5—W2/-5 to 0). Work in progress.
  - a. Contractor started installing top reinforcement #10 @ 6" north south direction.
  - b. Contractor continues installing top reinforcement #10 @ 6" east west direction.
  - c. PA-MEU inspection witnessed the proper installation of male threaded bars #10 installed in previous pour with an inspection wrench set @ 200 ft-lbs. 45 units were found acceptable.
  - d. PA-MEU inspection witnessed installation of 12 bars that were drilled and grouted #10 bars @12" with 14" embedment length using Hilti RE-500. Procedure was found acceptable.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106,S1203, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), RFI-TH-1460 (6/30/11)

Abbreviations.- CL: Column Lines; Elev. Elevation; ESW1: Elevation of Shear Wall 1.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] October/13/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur: [Signature] 10/13/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1.5—ESW1\*/-9 to -5). Work in progress.
- 2. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W.5—W2/-5 to 0). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1.5—ESW1\*/-9 to -5). Work in progress.
  - a. Contractor continues installing bottom reinforcement #5 @ 6" for underground pipe reinforced.
  - b. Contractor continues installing bottom reinforcement #10 @ 6" east west direction.
- 2. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W.5—W2/-5 to 0). Work in progress.
  - a. Contractor finished installing top reinforcement #10 @ 6" north south direction.
  - b. Contractor finished installing top reinforcement #10 @ 6" east west direction.
  - c. PA-MEU inspection witnessed the proper installation of male threaded bars #10 installed in previous pour with an inspection wrench set @ 200 ft-lbs. 10 units were found acceptable.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), RFI-TH-1460 (6/30/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; ESW1: Elevation of Shear Wall 1.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] October/14/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur: [Signature] 10/18/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



**SPECIAL INSPECTION REPORT**

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC - Transit Hub CONTRACT NO.: WTC 294.596 Date: 10/15/11

CONTRACTOR: EIC

LOCATION: 10 cu. yd of 10K psi for

Slab L1 Repair on west face @ Elev. 229.6

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

*just for*

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*10/15/11 -  
12/14/2011*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: *[Signature]*  
Inspector  
Christopher Maniaci  
(Print Name)

10/15/11 Date  
Concur: *[Signature]*  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

11 VLK Date



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W.5—W2/-5 to 0). Final inspection.
- 2. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1.5—ESW1\*/-9 to -5). Work in progress.
- 3. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/W1—W-1.5). Work in progress.

**Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:**

1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W.5—W2/-5 to 0). Final inspection.

- a. Contractor had installed all reinforcement previously.
- b. Contractor placed concrete today without approved construction joint layout. Please refer to punch list issued today.

2. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1.5—ESW1\*/-9 to -5). Work in progress.

- a. Contractor continues installing bottom reinforcement #5 @ 6" for underground pipe reinforced.
- b. Contractor continues installing bottom reinforcement #10 @ 6" east west direction.
- c. PA-MEU inspection witnessed the proper installation of male threaded bars #10 installed in previous pour with an inspection wrench set @ 200 ft-lbs. 20 units connected to ESW1\* were found acceptable .

3. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/W1—W-1.5). Work in progress.

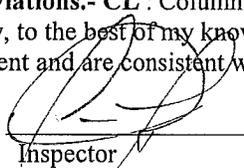
- a. Contractor started installing vertical reinforcement #9 @ 9".
- b. Contractor started installing reinforcement for column that interface shear wall 3, 12 # 11 distributed as required in contract documents.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

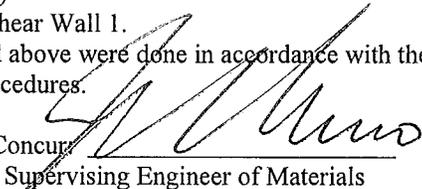
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106,S1203, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), RFI-TH-1460 (6/30/11)

**Abbreviations.- CL :** Column Lines; Elev. Elevation; \*ESW1: Elevation of Shear Wall 1.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  October/15/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur:  10/24/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1.5—ESW1\*/-9 to -5). Work in progress.
- 2. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5' to 237', CL (ESW3\*/W1—W-1.5). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1.5—ESW1\*/-9 to -5). Work in progress.
  - a. Contractor continues installing bottom reinforcement #10 @ 6" north south around north triple sum pit.
  - b. Contractor continues installing bottom reinforcement #10 @ 6" east west direction.
  - c. PA-MEU inspection witnessed the proper installation of male threaded bars #10 installed in previous pour with an inspection wrench set @ 200 ft-lbs. 12 units connected to ESW1\* were found acceptable .
- 2. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5' to 237', CL (ESW3\*/W1—W-1.5). Work in progress.
  - a. Contractor continues installing vertical reinforcement #9 @ 9".
  - b. Contractor continues installing reinforcement for column that interface shear wall 3, 12 # 11 distributed as required in contract documents.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), RFI-TH-1460 (6/30/11), 03A (5/26/11), 11 A(7/6/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW1: Elevation of Shear Wall 1.  
I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  October/17/11  
Inspector Date

Concur:  10/21/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation HUB Foundations CONTRACT NO.: WTC 264-596

CONTRACTOR: EIC Associates

LOCATION: Transportation HUB Foundations, 2' slab, EL 229' -6", CL (W-1.5 - ESW1\*)/(-9 to -5). Work in Progress. Transportation HUB Foundations, 3' Shear Wall ESW3, EL 229' -6" to 237', CL (ESW3\*/(W1 - W-1.5)). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Transportation HUB Foundations, 2' slab, elevation 229' -6" (approximate column lines: (W-1.5 - ESW1\*)/(-9 to -5))

1 - At the south end, the wire lathers set top slab reinforcement including: #10 bars @ six inches on center. Both T2 (east west) and T1 (north south) bars were set. Work in Progress.

2 - In the north east end, the wire lathers used a torque wrench to fasten horizontal #10 male threaded end bars to female couplers. The female couplers were embedded in shear wall ESW1. The #10 bars were bottom B1 (north south) bars. Approximately thirty-eight #10 bars were fastened and torqued to female couplers. Work in Progress.

Transportation HUB Foundations, 3' Shear Wall ESW3, elevation 229' -6" to 237' (approximate column lines: (ESW3\*/(W1 - W-1.5))

1 - Wire lathers set #5C10 wall ties @ 12 inches on center. Work in Progress.

2 - At the interface with the 237 slab, wire lathers "spliced out" #6 slab bars. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract Drawing WTC 264 (Volume 9) dated 29 April 2011(Addendum 31): S1104, S1105, S1106, S1203 and S8301

Approved as corrected shop drawing dated 18 May 2011: 09A-09F

Approved as corrected shop drawing dated 26 May 2011: 03A

RFI TH-1460 dated 30 June 2011

CL - column lines; EL - elevation; \*ESW1: elevation of Shear Wall ESW1

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano Inspector

10/18/2011 Date

Concur: Joe Marsano Supervising Engineer of Materials

10/11/11 Date

Alfredo Vitrano (Print Name)

Joe Marsano (Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1.5—ESW1\*/-9 to -5), Work in progress.
- 2. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/W1—W-1.5), Work in progress.

**Description of Controlled Work/Test Performed & Non-Conformance Notations:**  
**Reinforcement and formwork inspection:**

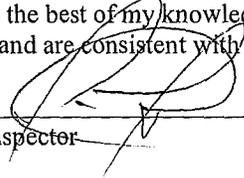
- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (W-1.5—ESW1\*/-9 to -5), Work in progress.
  - a. Contractor continues installing top reinforcement #10 @ 6" north south direction.
  - b. Contractor continues installing top reinforcement #10 @ 6" east west direction.
  - c. PA-MEU inspection witnessed the proper installation of male threaded bars #10 installed in previous pour with an inspection wrench set @ 200 ft-lbs. 10 top units connected to ESW1\* were found acceptable .
- 2. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/W1—W-1.5), Work in progress.
  - a. Contractor continues installing ties 5C10 @12".

**List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:**

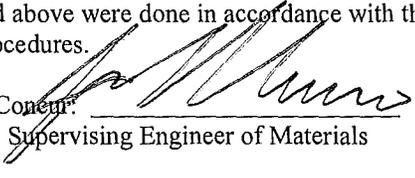
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106,S1203, S8301
- Approved as corrected shop dwgs: 09A-09F (5/18/11), RFI-TH-1460 (6/30/11), 03A (5/26/11), 11 A(7/6/11)

**Abbreviations.- CL :** Column Lines; Elev. Elevation; \*ESW1: Elevation of Shear Wall 1.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  October/19/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Signed:  10/21/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)

25

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 10-21-11

CONTRACTOR: BIC

LOCATION: 420 cu. yd of 5000 psi #467 concrete for  
SOG "W" and "LL" to el. 229'6"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scifano 10/21/11  
 Inspector Date  
Alexander Scifano  
 (Print Name)

Concur: Joseph Marsano 11/12/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)

25

SPECIAL INSPECTION REPORT

PA3066/10.00

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO. WTC 264.596 Date: 10-21-11

CONTRACTOR: ERC

LOCATION: 90 cu. yd of 12,000 psi concrete for ESW3 to el- 237' @ column line W

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

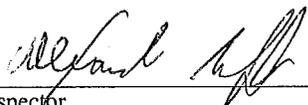
Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

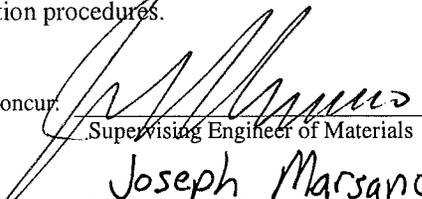
- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:   
 Inspector  
Alexander Scifano  
 (Print Name)

10/21/11  
Date

Concur:   
 Supervising Engineer of Materials  
Joseph Marsano  
 (Print Name)

11/1/11  
Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (ESW1- W1.5/-8 to ESW3\*). Final inspection.
- 2. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/W1.8—W-1.5). Final inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5', CL (ESW1- W1.5/-8 to ESW3\*). Final inspection.

- a. Contractor finished installing top reinforcement #10 @ 6" north south direction.
- b. Contractor finished installing top reinforcement #10 @ 6" east west direction.
- c. PA-MEU inspection did not receive an approved construction joint layout plan for more than 100 feet span of foundation slab. Please refer to punch list item issued today.
- d. Contractor placed concrete today.

2. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/W1.8—W-1.5). Final inspection.

- a. PA-MEU inspection had detected short splices in vertical dowels #8 @ 9" and #9 @9 over the Shear Wall #3. Contractor finished with remediation work.
- b. Contractor also finished installing bottom reinforcement #6 @9 over slab connecting the Shear Wall 3.
- c. Contractor placed concrete tonight in portion of Shear Wall 3 and portion of slab (area approx 50' x 10') with f'c = 12000 psi.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106,S1203, S8301

Approved as corrected shop dwgs: 09A-09F (5/18/11), RFI-TH-1460 (6/30/11), 03A (5/26/11), 11 A(7/6/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW : Elevation of Shear Wall.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] October/21/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur: [Signature] 10/27/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.

- a. Contractor started installing vertical reinforcement #8 @ 9" in the far face.
- b. Contractor started installing horizontal reinforcement #8 @ 9" in the far face.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301
- Approved as corrected shop dwgs: 03A (5/26/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] October/24/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur: [Signature] 10/27/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 10-25-2011

CONTRACTOR: EIC

LOCATION: 8 cu. yd of 5,000 psi concrete for overexcavation fill for column footings C121 and C131 at elevation 229'6"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

The contractor notified PAMEU at 3:27 pm of their plan to place concrete. Inspectors arrived onsite at 3:40 pm and found the pour had already taken place. A sample was taken and cylinders were made from the remainder of the concrete left in the truck. Formwork was not verified to be rid of all deleterious material or water prior to concrete placement. NCR 11-MED-EIC-015 was written in response.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Siffiano  
 Inspector  
Alexander Siffiano  
 (Print Name)

10/25/11  
Date

Concur: Joseph Marsano  
 Supervising Engineer of Materials  
Joseph Marsano  
 (Print Name)

11/2/11  
Date



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.
- 2. Transportation Hub Foundations, South Wall on Ramp Slab, 1'10" thick @ Elev. 229.5'to 241', CL (ESW3\*/ESW\*1—W2.5). Work in progress.
- 3. Transportation Hub Foundations, Slab on grade 1' thick @ Elev. 241', CL (W-2—W-2.7/-5 to 2). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.
  - a. Contractor continues installing vertical reinforcement #8 @ 9" in the far face.
  - b. Contractor continues installing horizontal reinforcement #8 @ 9" in the far face.
  - c. PA-MEU inspection detected problems with short splices. Contractor started drilling holes for wall 3 and Column C-156 (12 #8 vertical bars) incorporated to this wall. Please refer to punch list item issued today.
- 2. Transportation Hub Foundations, South Wall on Ramp Slab, 1'10" thick @ Elev. 229.5'to 241', CL (ESW3\*/ESW\*1—W2.5). Work in progress.
  - a. Contractor started installing vertical reinforcement #6 @ 9" in the far face.
  - b. Contractor started installing horizontal reinforcement #6 @ 9" in the far face.
- 3. Transportation Hub Foundations, Slab on grade 1' thick @ Elev. 241', CL (W-2—W-2.7/-5 to 2). Work in progress.
  - a. Contractor started installing bottom reinforcement #6 @ 9" in the east west direction.
  - b. Contractor started installing bottom reinforcement #6 @ 9" in the north south direction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301
- Approved as corrected shop dwgs: 03A (5/26/11), 12A(8/13/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  October/25/11  
Inspector Date

Concur:  10/31/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5' to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.
- 2. Transportation Hub Foundations, Footing F-12 for Column C-142, CL(J/-9), Elev. 227.5'. Work in progress.
- 3. Transportation Hub Foundations, Footing F-12 for Column C-140, CL(I/-12), Elev. 227.5'. Work in progress.
- 4. Transportation Hub Foundations, Footing F-21 for Column C-131, CL(G/-12), Elev. 227.5'. Work in progress.
- 5. Transportation Hub Foundations, Footing F-22 for Column C-121, CL(H/-13), Elev. 227.5'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5' to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.
  - a. Contractor started installing barlock couplers for 20x2 #11 bars for column C-156 incorporated to this wall.
  - b. Contractor continues installing vertical reinforcement #8 @ 9" in the far face.
- 2. Transportation Hub Foundations, Footing F-12(8'x8') for Column C-142, CL(J/-9), Elev. 227.5'. Work in progress.
  - a. Contractor started bending bottom reinforcement #9 @ 6" for this footing.
  - b. Contractor started bending side reinforcement #6 @ 9" for this footing.
  - c. Contractor started installing waterproofing sheet in the excavated hole for this footing.
- 3. Transportation Hub Foundations, Footing F-12b(8'x8') for Column C-140, CL(I/-12), Elev. 227.5'. Work in progress.
  - a. Contractor started bending bottom reinforcement #9 @ 6" for this footing.
  - b. Contractor started bending side reinforcement #6 @ 9" for this footing.
  - c. Contractor started installing waterproofing sheet in the excavated hole for this footing.
- 4. Transportation Hub Foundations, Footing F-21(10'x10') for Column C-131, CL(G/-12), Elev. 227.5'. Work in progress.
  - a. Contractor started bending bottom reinforcement #9 @ 6" for this footing.
  - b. Contractor started bending side reinforcement #6 @ 9" for this footing.
  - c. Contractor started installing waterproofing sheet in the excavated hole for this footing.
- 5. Transportation Hub Foundations, Footing F-22(10' x 10') for Column C-121, CL(H/-13), Elev. 227.5'. Work in progress.
  - a. Contractor started bending bottom reinforcement #9 @ 6" for this footing.
  - b. Contractor started bending side reinforcement #6 @ 9" for this footing.
  - c. Contractor started installing waterproofing sheet in the excavated hole for this footing.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301
- Approved as corrected shop dwgs: 03A (5/26/11), 06B, 06C (11/11/10)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  October/26/11 Date

Inspector

Ricardo A. Tigua

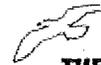
(Print Name)

Concur:  10/23/11 Date

Supervising Engineer of Materials

Joseph Marsano

(Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.
- 2. Transportation Hub Foundations, Footing F-12 for Column C-142, CL (J/-9), Elev. 227.5'. Work in progress.
- 3. Transportation Hub Foundations, Footing F-12 for Column C-140, CL (I/-12), Elev. 227.5'. Work in progress.
- 4. Transportation Hub Foundations, Footing F-21 for Column C-131, CL (G/-12), Elev. 227.5'. Work in progress.
- 5. Transportation Hub Foundations, Footing F-22 for Column C-121, CL (H/-13), Elev. 227.5'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

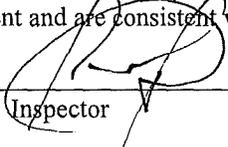
- 1. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.
  - a. Contractor continues installing barlock couplers for 20x2 #11 bars for column C-156 incorporated to this wall.
- 2. Transportation Hub Foundations, Footing F-12(8'x8') for Column C-142, CL(J/-9), Elev. 227.5'. Work in progress.
  - a. Contractor continues bending bottom reinforcement #9 @ 6" for this footing.
  - b. Contractor continues bending side reinforcement #6 @ 9" for this footing.
- 3. Transportation Hub Foundations, Footing F-12b(8'x8') for Column C-140, CL(I/-12), Elev. 227.5'. Work in progress.
  - a. Contractor continues bending bottom reinforcement #9 @ 6" for this footing.
  - b. Contractor continues bending side reinforcement #6 @ 9" for this footing.
- 4. Transportation Hub Foundations, Footing F-21(10'x10') for Column C-131, CL(G/-12), Elev. 227.5'. Work in progress.
  - a. Contractor continues bending bottom reinforcement #9 @ 6" for this footing.
  - b. Contractor continues bending side reinforcement #6 @ 9" for this footing.
- 5. Transportation Hub Foundations, Footing F-22(10' x 10') for Column C-121, CL(H/-13), Elev. 227.5'. Work in progress.
  - a. Contractor continues bending bottom reinforcement #9 @ 6" for this footing.
  - b. Contractor continues bending side reinforcement #6 @ 9" for this footing.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

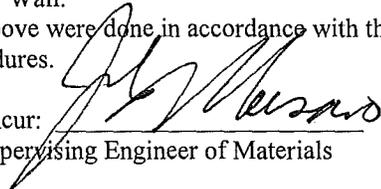
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106,S1203, S8301
- Approved as corrected shop dwgs: 03A (5/26/11), 06B, 06C (11/11/10)

**Abbreviations.-** CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  October/27/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur:  10/31/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)

**THE PORT AUTHORITY OF NY & NJ  
CONSTRUCTION DIVISION  
MATERIALS ENGINEERING SECTION  
SPECIAL INSPECTION REPORT**

**CONTRACT TITLE:** Transit Hub **CONTRACT #:** WTC 264.596 **DATE:** 10/27/11  
**CONTRACTOR:** EIC  
**LOCATION:** ESW1 and column line 2, el. 229'6"  
**Weather:** rain **Temperature:** 68 °F

**DESCRIPTION OF WORK/TEST(S) PERFORMED & NON-CONFORMANCE NOTATIONS:**

Three #9 bars and three #8 bars were pulled by a direct load to 46 kips

<b>Base Material:</b>	Existing CIP Concrete	<b>Anchor Type:</b>	Adhesive	<b>Expansive - Drop-In</b>	<b>Other:</b>	<b>Adhesive Used:</b>	Hilti 500
<b># of Anchors Installed:</b>	24	<b>Percentage to be Tested:</b>	25%	<b># of Anchors Tested</b>	6	<b>Anchor Manufacture:</b>	
<b>Type of Test Performed:</b>	Direct Load	<b>Witnessed Testing:</b>	Marcos Gonzalez (EIC)				

Location Bar #	Date Installed	Date Tested	Embedment Depth (In.)	Rebar Size	Applied Load (Pounds)
1	10/26/11	10/27/11	10	8	47735
2	10/26/11	10/27/11	10	8	47911
3	10/26/11	10/27/11	10	8	47986
1	10/26/11	10/27/11	12	9	47886
2	10/26/11	10/27/11	12	9	47848
3	10/26/11	10/27/11	12	9	48200

**Remarks**

Testing requested by: TTJV  
 Tested loads supplied by: Sean Blakely (TTJV)

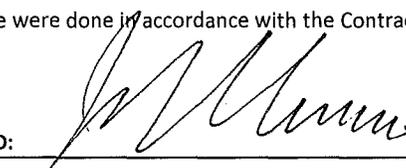
BELOW IS A LIST OF APPLICABLE DOCUMENTS THAT DESCRIBE INSPECTION PRECEDURE(S), INSPECTION, TEST REPORTS AND WRITTEN

- 1 - The anchors were tested in accordance with ASTM E-488.
- 2 - The anchors were tested using a Enerpac Hollow Plunger load cell:

RCH 123 (12 Ton)    RCH 302 (30 Ton)    RCH 603 (60 Ton)

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Documents and are consistent with Materials testing and inspection procedures.

**SIGNED:** Alexander Scriffiano 10-27-11  
DATE

**CONCURRED:**  11/4/11  
DATE

**INSPECTOR'S NAME:** Alexander Scriffiano 10/27/11

**SUPERVISOR'S NAME:** Joseph Marsano

25

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 10-28

CONTRACTOR: ETC

LOCATION: 96 cu. yd of 5000 psi mass concrete for  
C142, C140, C131 & C121 footings at el. 229'6"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 10/28/11  
Inspector Date

Concur: Joseph Marsano 11/1/11  
Supervising Engineer of Materials Date

Alexander Sciffiano  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Footing F-12 for Column C-142, CL (J/-9), Elev. 227.5'. Final inspection.
- 2. Transportation Hub Foundations, Footing F-12 for Column C-140, CL (I/-12), Elev. 227.5'. Final inspection.
- 3. Transportation Hub Foundations, Footing F-21 for Column C-131, CL (G/-12), Elev. 227.5'. Final inspection.
- 4. Transportation Hub Foundations, Footing F-22 for Column C-121, CL (H/-13), Elev. 227.5'. Final inspection.
- 5. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Footing F-12(8'x8') for Column C-142, CL(J/-9), Elev. 227.5'. Final inspection.
  - a. Contractor finished installing column dowels 20x2#11.
  - b. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Footing F-12b(8'x8') for Column C-140, CL(I/-12), Elev. 227.5'. Final inspection.
  - a. Contractor finished installing column dowels 20x2#11.
  - b. Contractor placed concrete today.
- 3. Transportation Hub Foundations, Footing F-21(10'x10') for Column C-131, CL(G/-12), Elev. 227.5'. Final inspection.
  - a. Contractor finished installing column dowels 24x2#11.
  - b. Contractor placed concrete today.
- 4. Transportation Hub Foundations, Footing F-22(10' x 10') for Column C-121, CL(H/-13), Elev. 227.5'. Final inspection.
  - a. Contractor finished installing column dowels 24x2#11.
  - b. Contractor placed concrete today.
- 5. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.
  - a. Contractor continues installing barlock couplers for 20x2 #11 bars for column C-156 incorporated to this wall.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301
- Approved as corrected shop dwgs: 03A (5/26/11), 06B, 06C (11/11/10)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector

October/28/11  
Date

Concur: [Signature] 11/21/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Shear Wall 3 ESW3 + Column C-156, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.
- 2. Transportation Hub Foundations, Shear Wall 1 ESW1, 3' thick @ Elev. 229.5'to 237', CL (ESW1\*/-11—(-3)). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.
  - a. Contractor continues installing barlock couplers for 20x2 #11 bars for column C-156 incorporated to this wall.
  - b. Contractor started installing #4 hoop ties @4" pitch in the column C-156.
- 2. Transportation Hub Foundations, Shear Wall 1 ESW1, 3' thick @ Elev. 229.5'to 237', CL (ESW1\*/-11—(-3)). Work in progress.
  - a. Contractor started drilling/grouting procedure for correction of misplaced of column C-154 regarding to incoming RFI-1950. Contractor shall drill holes for #5 bars with embedment length of 6" @12" and 12 #8 around the column, drilling 12" of embedment.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301
- Approved as corrected shop dwgs: 03A (5/26/11), 06B, 06C (11/11/10)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] October/31/11  
Inspector Date

Concur: [Signature] 11/2/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Shear Wall 3 ESW3 + Column C-156, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.
- 2. Transportation Hub Foundations, Shear Wall 1 ESW1, 3' thick @ Elev. 229.5'to 237', CL (ESW1\*/-11—(-3)). Work in progress.
- 3. Transportation Hub Foundations, Foundation Slab, 2' thick @ Elev. 229.5', CL (ESW1\*-W.5/-14 to -9)Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.
  - a. Contractor continues installing barlock couplers for 20x2 #11 bars for column C-156 incorporated to this wall.
  - b. Contractor continues adjusting #4 hoop ties @4" pitch in the column C-156.
  - c. Contractor started installing steel plate at the north end of shear wall 3.
- 2. Transportation Hub Foundations, Shear Wall 1 ESW1, 3' thick @ Elev. 229.5'to 237', CL (ESW1\*/-11—(-3)). Work in progress.
  - a. Contractor continues drilling/grouting procedure for correction of misplaced of column C-154 regarding to incoming RFI-1950. PA-MEU inspection witnessed the embedment and cleaning of 12" embedment length. 12 #8 vertical bars were found acceptable.
- 3. Transportation Hub Foundations, Foundation Slab, 2' thick @ Elev. 229.5', CL (ESW1\*-W.5/-14 to -9)Work in progress.
  - a. Contractor started installing bottom reinforcement #10 @6" north south direction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106,S1203, S8301
- Approved as corrected shop dwgs: 03A (5/26/11), 06B, 06C (11/11/10), 09A – 09F (5/18/11)
- Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] November/01/11  
Inspector Date

Concur: [Signature] 11/2/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Shear Wall 3 ESW3 + Column C-156, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.
- 2. Transportation Hub Foundations, Shear Wall 1 ESW1, 3' thick @ Elev. 229.5'to 237', CL (ESW1\*/-11—(-3)). Work in progress.
- 3. Transportation Hub Foundations, Foundation Slab, 2' thick @ Elev. 229.5', CL (ESW1\*-W.5/-14 to -9)Work in progress.

**Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:**

- 1. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5). Work in progress.  
a. Contractor continues adjusting #4 hoop ties @4" pitch in the column C-156.
- 2. Transportation Hub Foundations, Shear Wall 1 ESW1, 3' thick @ Elev. 229.5'to 237', CL (ESW1\*/-11—(-3)). Work in progress.  
a. Contractor continues drilling/grouting procedure for correction of misplaced of column C-154 regarding to incoming RFI-1950. PA-MEU inspection witnessed the embedment and cleaning of 6" embedment length. 14 #5 vertical bars were found acceptable.
- 3. Transportation Hub Foundations, Foundation Slab, 2' thick @ Elev. 229.5', CL (ESW1\*-W.5/-14 to -9)Work in progress.  
a. Contractor continues installing bottom reinforcement #10 @6" north south direction including additional reinforcement 38#10 over footing of column 111.  
a. Contractor started installing bottom reinforcement #10 @6" east-west direction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106,S1203, S8301
- Approved as corrected shop dwgs: 03A (5/26/11), 06B, 06C (11/11/10), 09A – 09F (5/18/11)

**Abbreviations.-** CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall.

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  November/02/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur:  11/12/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Shear Wall 3 ESW3 + Column C-156, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5) and portion Slab @ Elev. 237' CL (NLC-ESW3/0). Work in progress.
- 2. Transportation Hub Foundations, Shear Wall 1 ESW1, 3' thick @ Elev. 229.5'to 237', CL (ESW1\*/-11—(-3)). Work in progress.
- 3. Transportation Hub Foundations, Foundation Slab, 2' thick @ Elev. 229.5', CL (ESW1\*-W.5/-14 to -9)Work in progress.

**Description of Controlled Work/Test Performed & Non-Conformance Notations:**

**Reinforcement and formwork inspection:**

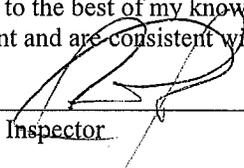
- 1. Transportation Hub Foundations, Shear Wall 3 ESW3, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5) and portion Slab @ Elev. 237' CL (NLC-ESW3/0). Work in progress.
  - a. Contractor started installing bottom reinforcement #6 @9" north south direction.
  - a. Contractor started installing bottom reinforcement #6 @9" east west direction.
- 2. Transportation Hub Foundations, Shear Wall 1 ESW1, 3' thick @ Elev. 229.5'to 237', CL (ESW1\*/-11—(-3)). Work in progress.
  - a. Contractor continues drilling/grouting procedure for correction of misplaced of column C-154 regarding to incoming RFI-1950. PA-MEU inspection witnessed the grout procedure of 14 #5 vertical bars.
- 3. Transportation Hub Foundations, Foundation Slab, 2' thick @ Elev. 229.5', CL (ESW1\*-W.5/-14 to -9)Work in progress.
  - a. Contractor started installing top reinforcement #10 @6" north south.
  - a. Contractor continues installing bottom reinforcement #10 @6" east-west direction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

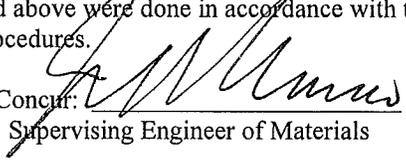
- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106,S1203, S8301
- Approved as corrected shop dwgs: 03A (5/26/11), 06B, 06C (11/11/10), 09A – 09F (5/18/11), 04A(8/17/11)

**Abbreviations.- CL :** Column Lines; **Elev.** Elevation; **\*ESW:** Elevation of Shear Wall. **NLC:**North limit of contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  November/03/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concurred:  9/12/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)

25

SPECIAL INSPECTION REPORT

PA 3666 / (10-07)

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 11-4-11

CONTRACTOR: ETC

LOCATION: 50 cu. yd of 5000 psi hydrate for electrical manhole slab and duct bank el. 229'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiam  
Inspector  
Alexander Sciffiam  
(Print Name)

11/14/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

25

SPECIAL INSPECTION REPORT

PA3366/10.09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.566 Date: 11-4-11

CONTRACTOR: ETC

LOCATION: 3 cu. yd of 12,000 psi concrete for  
column, C154 footing repair el. 229' to 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano 11/4/11  
 Inspector Date  
Alexander Sciffano  
 (Print Name)

Concur: Joseph Marsano 11/15/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Central Plant Underground duct bank, 5'x4' approx. @ Elev. 227.5', CL (F-I/-14 to -10). Final inspection.
- 2. Transportation Hub Foundations, Shear Wall 1 ESW1, square correction COLUMN C-154, 4' @ Elev. 229.5'to 237', CL (ESW1\*/-7). Final inspection.
- 3. Transportation Hub Foundations, Foundation Slab, 2' thick @ Elev. 229.5', CL (ESW1\*-W.5/-14 to -9) Work in progress.
- 4. Transportation Hub Foundations, Shear Wall 3 ESW3 + Column C-156, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5) and portion Slab @ Elev. 237' CL (NLC-ESW3/0). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Central Plant Underground duct bank, 5'x4' approx. @ Elev. 227.5', CL (F-I/-14 to -10). Final inspection.
  - a. Contractor finished installing all reinforcement #5 @ 6" sides and bottom reinforcement.
  - b. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Shear Wall 1 ESW1, square correction COLUMN C-154, 4' @ Elev. 229.5'to 237', CL (ESW1\*/-7). Final inspection.
  - a. Contractor finished installing all vertical reinforcement #8 @6 and #5 @12 following RFI-TH-1950.
  - a. Contractor placed concrete today. F'c = 12000 psi.
- 3. Transportation Hub Foundations, Foundation Slab, 2' thick @ Elev. 229.5', CL (ESW1\*-W.5/-14 to -9) Work in progress.
  - a. Contractor continues installing top reinforcement #10 @6" east-west direction.
  - b. Contractor started installing top reinforcement #10 @ 6" north south direction.
- 4. Transportation Hub Foundations, Shear Wall 3 ESW3 + Column C-156, 3' thick @ Elev. 229.5'to 237', CL (ESW3\*/ESW\*1—W2.5) and portion Slab @ Elev. 237' CL (NLC-ESW3/1). Work in progress.
  - a. Contractor continues installing top reinforcement #6 @9" east-west direction.
  - b. Contractor started installing top reinforcement #6 @9" north south direction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106,S1203, S8301
- Approved as corrected shop dwgs: 03A (5/26/11), 06B, 06C (11/11/10), 09A – 09F (5/18/11), 04A(8/17/11), 11A -11B (7/6/11)
- Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall. NLC:North limit of contract
- RFI-TH- 1950(10/10/11)

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] November/04/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur: [Signature] 11/12/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



**SPECIAL INSPECTION REPORT** PA 3660/10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 11-5-11

CONTRACTOR: EIC

LOCATION: 130 cu. yd of 5000 max psi concrete for lean fill @ area north of shear wall 1 elev 229

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  11/5/11  
 Inspector Date  
Emanuel Rodriguez  
 (Print Name)

Concur:  11/21/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Shear Wall 3 ESW3 + Column C-156, 3' thick @ Elev. 229.5' to 237', CL (ESW3\*/ESW\*1-W2.5) and portion Slab @ Elev. 237' CL (NLC-ESW3/0). Final inspection.
- 2. Transportation Hub Foundations, Foundation Slab, 2' thick @ Elev. 229.5', CL (ESW1\*-W.5/-14 to -9) Work in progress.
- 3. Transportation Hub Foundations, Walls (10" thick) @ Central Plan Level, Elev. 229.5' to 239-244 (varies) CL(A-1/6-7) Column Lines taken from Central Plant. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Shear Wall 3 ESW3 (3' thick) + Column C-156, @ Elev. 229.5' to 237', CL (ESW3\*/ESW\*1-W2.5) and portion Slab (1' thick) @ Elev. 237' CL (NLC-ESW3/1). Final inspection.
  - a. Contractor finished installing top reinforcement #6 @9" east-west direction.
  - b. Contractor finished installing top reinforcement #6 @9" north south direction.
  - c. Contractor placed concrete today. NOTE: f'c=5000 psi was poured despite of columns in transit hall need to be poured with f'c=8000 psi. This information was provide to Manny Rodriguez (PA-MEU Const. Inspector) for his concrete report and report it as deficiency. ✓
- 2. Transportation Hub Foundations, Foundation Slab, 2' thick @ Elev. 229.5', CL (ESW1\*-W.5/-14 to -9) Work in progress.
  - a. Contractor continues installing top reinforcement #10 @6" east-west direction.
  - b. Contractor continues installing top reinforcement #10 @ 6" north south direction.
- 3. Transportation Hub Foundations, Walls (10" thick) @ Central Plan Level, Elev. 229.5' to 239-244 (varies) CL(A-1/6-7) Column Lines taken from Central Plant. Work in progress.
  - a. PA-MEU inspection detected 240 wall dowels #6 @9" missing from wall dowels coming out of the slab 229.5', embedment was checked and values vary from 5" to 7". EOR approval is required. Contractor is performing a corrective action at his own risk. No approval received by PA-MEU. Please refer to punch list item issued today. ✓

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301, S4202
- Approved as corrected shop dwgs: 03A (5/26/11), 06B, 06C (11/11/10), 09A - 09F (5/18/11), 04A(8/17/11),

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall. NLC:North limit of contract  
I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: [Signature] November/05/11 Date

Inspector

Concur: [Signature] 11/12/11 Date

Supervising Engineer of Materials

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



SPECIAL INSPECTION REPORT

PA 36667 10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WSC 267.996 Date: 11-5-11

CONTRACTOR: EIC

LOCATION: 90 cu. yd of 5000 #467 psi concrete for portion

of slab @ elev 237 (Adjoining existing wall) NLC-ESW3/0

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*curing - curing compound applied to slab after concrete placement.*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: *[Signature]* 11/5/11  
 Inspector Date  
Emmanuel Rodriguez  
 (Print Name)

Concur: *[Signature]* 11/28/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 11-5-11

CONTRACTOR: EIC

LOCATION: 50 cu. yd of 5000 <sup>mpg</sup> psi concrete for SWEENT  
wall 3 + Column C-156 elev 229 ESW 3 / ESW 1 - W2.5

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] 11/15/11  
Inspector Date  
Emanuel Rodriguez  
(Print Name)

Concur: [Signature] 11/15/11  
Supervising Engineer of Materials Date  
Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Foundation Slab, 2' thick @ Elev. 229.5', CL (ESW1\*-W.5/-14 to -9) Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

1. Transportation Hub Foundations, Foundation Slab, 2' thick @ Elev. 229.5', CL (ESW1\*-W.5/-14 to -9) Work in progress.

- a. Contractor continues installing top reinforcement #10 @6" east-west direction.
- b. Contractor continues installing top reinforcement #10 @ 6" north south direction.
- c. Contractor started bending wall dowels #6 for plenum walls inserted into this slab.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1104, S1105, S1106, S1203, S8301, S4202
- Approved as corrected shop dwgs: 09A – 09F (5/18/11), 04A(8/17/11),

**Abbreviations.-** CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall. NLC: North limit of contract  
I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: \_\_\_\_\_  
Inspector

November/07/11  
Date

Concur: \_\_\_\_\_  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

1. Transportation Hub Foundations, Foundation Slab, 2' thick @ Elev. 229.5', CL (ESW1\*-W.5/-14 to -9) Final inspection.

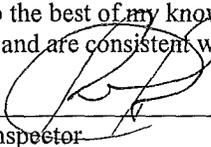
Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Foundation Slab, 2' thick @ Elev. 229.5', CL (ESW1\*-W.5/-14 to -9) Final inspection.
  - a. Contractor finished installing top reinforcement #10 @6" east-west direction.
  - b. Contractor finished installing top reinforcement #10 @ 6" north south direction.
  - c. Contractor finished installing wall dowels #6@9 for plenum walls inserted into this slab.
  - d. Contractor placed concrete today. PA-MEU did not receive construction joint layout for these three areas "UU, QQ, RR". Please refer to punch list item issued today.

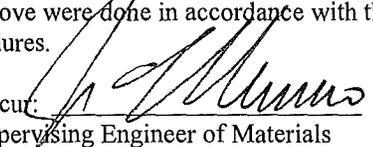
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1106, S8301, S4202
- Approved as corrected shop dwgs: 09A – 09F (5/18/11), 04A(8/17/11),

**Abbreviations.-** CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall. NLC:North limit of contract  
I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  November/08/11  
Inspector Date

Ricardo A. Tigua  
(Print Name)

Concur:  11/9/11  
Supervising Engineer of Materials Date

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 11-8-11

CONTRACTOR: ETC

LOCATION: 350 cu. yd of 5000 psi #467 stone concrete for  
506 "uu", "RR", + "QQ" el. 229'6"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 11/8/11  
Inspector Date  
Alexander Sciffiano  
(Print Name)

Concur: Joseph Marsano 11/8/11  
Supervising Engineer of Materials Date  
Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Central Plant Underground duct bank, 5'x4' approx. @ Elev. 227.5', CL (A-F/-14 to -10). Work in progress.
- 2. Transportation Hub Foundations, South Wall 1' 6" thick @ Elev. 231 to 242, CL (K/-10 to -7) Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Central Plant Underground duct bank, 5'x4' approx. @ Elev. 227.5', CL (A-F/-14 to -10). Work in progress.
  - a. Contractor started installing bottom reinforcement #5 @6".
  - b. Contractor started installing side reinforcement #5 @6".
- 2. Transportation Hub Foundations, South Wall 1' 6" thick @ Elev. 231 to 242, CL (K/-10 to -7) Work in progress.
  - a. Contractor started installing vertical reinforcement #6 @9".
  - b. Contractor started installing horizontal reinforcement #6 @9".

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1106, S8301, S4202
- Approved as corrected shop dwgs: 11A-11B (7/6/11), 12A(8/17/11),

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall. NLC: North limit of contract  
I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] November/09/11  
Inspector Date

Concur: [Signature] 11/14/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Central Plant Underground duct bank, 5'x4' approx. @ Elev. 227.5', CL (A-F/-14 to -10). Work in progress.
- 2. Transportation Hub Foundations, South Wall 1' 6" thick @Elev. 231 to 242 + Slab 1' thick @ Elev. 237', CL (K/-10 to -7) Work in progress.
- 3. Transportation Hub Foundations, Footings F12 for Columns C-151 & C-152 and C-226 @ Elev 237'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Central Plant Underground duct bank, 5'x4' approx. @ Elev. 227.5', CL (A-F/-14 to -10). Work in progress.
  - a. Contractor continues installing bottom reinforcement #5 @6".
  - b. Contractor continues installing side reinforcement #5 @6".
- 2. Transportation Hub Foundations, South Wall 1' 6" thick @Elev. 231 to 242 + Slab 1' thick @ Elev. 237', CL (K/-10 to -7) Work in progress.
  - a. Contractor continues installing vertical reinforcement #6 @9" for wall.
  - b. Contractor continues installing horizontal reinforcement #6 @9" for wall.
  - c. Contractor started installing bottom reinforcement #6 @9" north south direction for slab.
  - d. Contractor started installing bottom reinforcement #6 @9" east west direction for slab.
- 3. Transportation Hub Foundations, Footings F12 for Columns C-151 & C-152 and C-226 @ Elev 237'. Work in progress.
  - a. Contractor started installing bottom reinforcement #9 @6".
  - b. Contractor started installing side reinforcement #6 @12".

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1103, S1104, S1106, S8301, S4201, S4202
- Approved as corrected shop dwgs: 11A-11B (7/6/11), 12A - 12B(8/17/11), 10 (8/25/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall. NLC:North limit of contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] November/10/11  
Inspector Date

Concur: [Signature] 11/15/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Footings F12 for Columns C-151 & C-152 @ Elev 236'. Final inspection.
- 2. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5, CL (W—W-1/-13 to -9) Final inspection.
- 3. Transportation Hub Foundations, South Wall 1' 6" thick @Elev. 231 to 242 + Slab 1' thick @ Elev. 237', CL (K/-10 to -7) Work in progress.
- 4. Transportation Hub Foundations, Central Plant Underground duct bank, 5'x4' approx. @ Elev. 227.5', CL (A-F/-14 to -10). Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Footings F12 for Columns C-151 & C-152 @ Elev 236'. Final inspection.
  - a. Contractor finished installing bottom reinforcement #9 @6".
  - b. Contractor finished installing side reinforcement #6 @12".
  - c. Contractor installed all vertical dowels #11 corresponding to each column.
  - d. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Foundation Slab 2' thick @ Elev. 229.5, CL (W—W-1/-13 to -9) Final inspection.
  - a. Contractor finished installing bottom reinforcement #10 @6" each way.
  - b. Contractor finished installing top reinforcement #10 @ 6" each way.
  - c. Contractor placed concrete today.
- 3. Transportation Hub Foundations, South Wall 1' 6" thick @Elev. 231 to 242 + Slab 1' thick @ Elev. 237', CL (K/-10 to -7) Work in progress.
  - a. Contractor continues installing vertical reinforcement #6 @9" for wall.
  - b. Contractor continues installing horizontal reinforcement #6 @9" for wall.
  - c. Contractor finished installing bottom reinforcement #6 @9" north south direction for slab.
  - d. Contractor finished installing bottom reinforcement #6 @9" east west direction for slab.
- 4. Transportation Hub Foundations, Central Plant Underground duct bank, 5'x4' approx. @ Elev. 227.5', CL (A-F/-14 to -10). Work in progress.
  - a. Contractor has all reinforcement inspected but problems in the concrete placement not permitted performance.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1103, S1104, S1106, S8301, S4201, S4202
- Approved as corrected shop dwgs: 11A-11B (7/6/11), 12A – 12B(8/17/11), 10 (8/25/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall. NLC:North limit of contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Ricardo A. Tigua November/11/11 Date

Inspector

Ricardo A. Tigua (Print Name)

Concur: Joseph Marsano P. 11/5/11 Date

Supervising Engineer of Materials

Joseph Marsano (Print Name)



**SPECIAL INSPECTION REPORT**

PA 3666 / 10-19

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: PATH Transit Hall CONTRACT NO.: WTC 264.596 Date: 11/11/11

CONTRACTOR: EIC

LOCATION: 50 cu. yd of 5000 psi concret for Column

Footings C226 & C153/ Fill for South Rock Wall @ El. 224 → 229.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Ken Brault  
Inspector

11/11/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials  
11/11/11  
Date

Ken Brault  
(Print Name)

Joseph Marsano  
(Print Name)



**SPECIAL INSPECTION REPORT**

PA3666 / 10-19

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: PATH Transit Hall CONTRACT NO.: WTC 264.596 Date: 11/11/11

CONTRACTOR: EIC

LOCATION: 100 cu. yd of SK # 467 psi concrete for Slab @ Et.  
229 South Half of QQ

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*Blankets used to cover slab*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Ken Brault  
Inspector

11/11/11  
Date

[Signature]  
Supervising Engineer of Materials

11/28/11  
Date

Ken Brault  
(Print Name)

Joseph Marsano  
(Print Name)





CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Footings F12 for Column C-226 @ Elev 237'. Final inspection.
- 2. Transportation Hub Foundations, Central Plant Underground duct bank, 5'x4' approx. @ Elev. 227.5', CL (A-F/-14 to -10). Final inspection.
- 3. Transportation Hub Foundations, South Wall 1' 6" thick @Elev. 231 to 242, CL (K/-10 to -7) Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Footings F12 for Type "M" Column C-226 @ Elev 237'. Final inspection.
  - a. Contractor installed all vertical dowels 12 #11 corresponding to each column.
  - d. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Central Plant Underground duct bank, 5'x4' approx. @ Elev. 227.5', CL (A-F/-14 to -10). Final inspection
  - a. All reinforcement was previously inspected.
  - b. Contractor placed concrete today.
- 3. Transportation Hub Foundations, South Wall 1' 6" thick @Elev. 231 to 242 CL (K/-10 to -7) Work in progress.
  - a. Contractor continues installing vertical reinforcement #6 @9" for wall.
  - b. Contractor continues installing horizontal reinforcement #6 @9" for wall.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1103, S1104, S1106, S8301, S4201, S4202
- Approved as corrected shop dwgs: 11A-11B (7/6/11), 12A – 12B(8/17/11), 10 (8/25/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall. NLC: North limit of contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] November/14/11  
Inspector Date

Concur: [Signature] 11/18/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)

5

SPECIAL INSPECTION REPORT PA 340-09 PAS 666/10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 11/14/11

CONTRACTOR: EIC

LOCATION: 30 cu. yd of 5000 Hycrete psi Concrete for

Central Plant Underground Duct bank, Column Lines A-F /-14 to -10, Elevation 227.5'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing 2. Formwork 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
ACI 305R - Hot Weather Concreting
ACI 306 - Cold Weather Concreting
ACI 309R - Guide for Consolidation of Concrete
ACI 308 - Standard Practice for Curing Concrete
ACI 311 - Manual of Concrete Inspection
ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Colin Reed 11/14/11
Inspector Date

Concur: Joseph Marsano 11/28/11
Supervising Engineer of Materials Date

Colin Reed
(Print Name)

Joseph Marsano
(Print Name)

25

SPECIAL INSPECTION REPORT PA3666/10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 11/14/11

CONTRACTOR: EIC

LOCATION: 12 cu. yd of 5000 Mass psi Concrete for Footing C-226 Elevation 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing 2. Formwork 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
ACI 305R - Hot Weather Concreting
ACI 306 - Cold Weather Concreting
ACI 309R - Guide for Consolidation of Concrete
ACI 308 - Standard Practice for Curing Concrete
ACI 311 - Manual of Concrete Inspection
ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Colin Reed 11/14/11 Date Inspector (Print Name)

Concur: Joseph Marsano 11/28/11 Date Supervising Engineer of Materials (Print Name)

*Just in*

**SPECIAL INSPECTION REPORT**

PA 3666 / 10-11

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC - Transit Hub CONTRACT NO.: WTC 264.596 Date: 10/15/11

CONTRACTOR: EIC

LOCATION: 220 cu. yd of 5K #467 psi for

Slab on grade "T-T" @ Elev. 229.6

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

*- Curing compound applied after broom finish*

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- \*Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Christopher Mancini 10/15/11  
Inspector Date

Concur: [Signature] 11/3/11  
Supervising Engineer of Materials Date

Christopher Mancini  
(Print Name)

Joseph Marsano  
(Print Name)



**CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT**

**CONTRACT TITLE:** Transportation Hub Foundations **CONTRACT NO.:** WTC 264.596

**CONTRACTOR:** EIC Associates

**LOCATION:**

- 1. Transportation Hub Foundations, Footings F31 for Columns C-201 & C-202 @ Elev 236'. Work in progress.
- 2. Transportation Hub Foundations, Slab 1' thick @ Elev. 237', CL (K/-10 to -7) Work in progress.

**Description of Controlled Work/Test Performed & Non-Conformance Notations:**

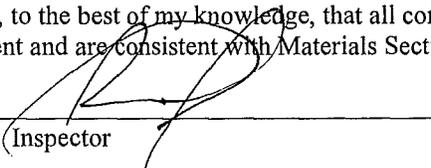
Reinforcement and formwork inspection:

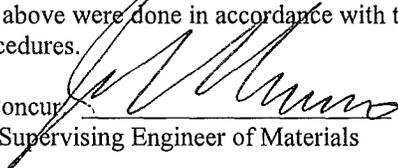
- 1. Transportation Hub Foundations, Footings F31 for Columns C-201 & C-202 @ Elev 236'. Work in progress.
  - a. Contractor started bending bottom reinforcement #8 @6" for these two footings.
  - b. Contractor started bending side reinforcement #6 @9" for these two footings.
- 2. Transportation Hub Foundations, Slab 1' thick @ Elev. 237', CL (K/-10 to -7) Work in progress.
  - a. Contractor finished installing top reinforcement #6 @ 9 in both directions.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1103, S1104, S1106, S8301, S4201, S4202
- Approved as corrected shop dwgs: 06A-B(10/12/11), 12A – 12B(8/17/11)

**Abbreviations.-** CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall. NLC: North limit of contract  
I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  November/15/11  
(Inspector) Date

Concurred:  11/14/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Slab 1' thick @ Elev. 237', CL (K/-10 to -7) Final inspection.
- 2. Transportation Hub Foundations, Footings F31 for Columns C-201, C-202 & C-203 @ Elev 236'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Slab 1' thick @ Elev. 237', CL (K/-10 to -7) Final inspection.
  - a. All reinforcement was previously inspected.
  - a. Contractor placed concrete today.
- 2. Transportation Hub Foundations, Footings F31 for Columns C-201, C-202 & C-203 @ Elev 236'. Work in progress.
  - a. Contractor continues bending bottom reinforcement #8 @6" for these two footings.
  - b. Contractor continues bending side reinforcement #6 @9" for these two footings.
  - c. Contractor started bending bottom reinforcement #8 @ 6" for Column C-203.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1103, S1104, S1106, S8301, S4201, S4202
- Approved as corrected shop dwgs: 06A-B(10/12/11), 12A - 12B(8/17/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall. NLC:North limit of contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] November/16/11  
Inspector Date

Concur: [Signature] 11/18/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)

25

STRUCTURAL INSPECTION REPORT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264.596 Date: 11-16-11

CONTRACTOR: EIC

LOCATION: 90 cu. yd of 5000 psi #467 stone mix for  
21.237' slab at T3 interface

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scifano  
Inspector  
Alexander Scifano  
(Print Name)

11/16/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

11/18/11  
Date



23	11/15/11	11/16/11	6.75	0.750	23,650
24	11/15/11	11/16/11	6.75	0.750	23,121
25	11/15/11	11/16/11	6.75	0.750	24,777
26	11/15/11	11/16/11	6.75	0.750	24,263
27	11/15/11	11/16/11	6.75	0.750	23,981
28	11/15/11	11/16/11	6.75	0.750	23,142
29	11/15/11	11/16/11	6.75	0.750	23,241
30	11/15/11	11/16/11	6.75	0.750	23,629
31	11/15/11	11/16/11	6.75	0.750	23,692
32	11/15/11	11/16/11	6.75	0.750	23,791
33	11/15/11	11/16/11	6.75	0.750	23,896
34	11/15/11	11/16/11	6.75	0.750	24,058
35	11/15/11	11/16/11	6.75	0.750	23,178
36	11/15/11	11/16/11	6.75	0.750	23,939
37*	11/15/11	11/16/11	6.75	0.750	4,334
38	11/15/11	11/16/11	6.75	0.750	24,594
39*	11/15/11	11/16/11	6.75	0.750	9,979
40	11/15/11	11/16/11	6.75	0.750	24,058
41	11/15/11	11/16/11	6.75	0.750	24,573
42	11/15/11	11/16/11	6.75	0.750	23,467
43	11/15/11	11/16/11	6.75	0.750	23,629
44	11/15/11	11/16/11	6.75	0.750	23,304
45	11/15/11	11/16/11	6.75	0.750	23,509
46	11/15/11	11/16/11	6.75	0.750	22,938
47	11/15/11	11/16/11	6.75	0.750	24,037
48	11/15/11	11/16/11	6.75	0.750	23,692
49	11/15/11	11/16/11	6.75	0.750	24,820
50	11/15/11	11/16/11	6.75	0.750	23,791
51*	11/15/11	11/16/11	6.75	0.750	18,682
52*	11/15/11	11/16/11	6.75	0.750	20,669
53	11/15/11	11/16/11	6.75	0.750	25,736
54	11/15/11	11/16/11	6.75	0.750	23,755
55	11/15/11	11/16/11	6.75	0.750	23,424
56	11/15/11	11/16/11	6.75	0.750	24,594
57	11/15/11	11/16/11	6.75	0.750	25,651
58	11/15/11	11/16/11	6.75	0.750	23,368
59	11/15/11	11/16/11	6.75	0.750	24,016
60	11/15/11	11/16/11	6.75	0.750	25,038
61	11/15/11	11/16/11	6.75	0.750	24,221
62	11/15/11	11/16/11	6.75	0.750	23,467
63	11/15/11	11/16/11	6.75	0.750	23,424
64	11/15/11	11/16/11	6.75	0.750	23,713
65	11/15/11	11/16/11	6.75	0.750	23,939
66	11/15/11	11/16/11	6.75	0.750	24,531
67	11/15/11	11/16/11	6.75	0.750	23,488
68	11/15/11	11/16/11	6.75	0.750	24,446
69	11/15/11	11/16/11	6.75	0.750	23,403





CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Wall 1'6" thick @ Elev. 229.5' to 237, CL (ESW1/-10 to -14) Work in progress.
- 2. Transportation Hub Foundations, Footings F31 for Columns C-201, C-202 & C-203 @ Elev 236'. Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:  
Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Wall 1'6" thick @ Elev. 229.5' to 237, CL (ESW1/-10 to -14) Work in progress..
  - a. Contractor started installing horizontal #6 @ 9 @ the far face.
  - b. Contractor started installing vertical #6 @ 9 @ the far face.
- 2. Transportation Hub Foundations, Footings F31 for Columns C-204 & C-205 @ Elev 236'. Work in progress.
  - a. Contractor started bending bottom reinforcement #8 @6" for these two footings.
  - b. Contractor started bending side reinforcement #6 @9" for these two footings.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1103, S1104, S1106, S8301, S4201, S4211
- Approved as corrected shop dwgs: 06A-B(10/12/11), 10(8/25/11)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall. NLC:North limit of contract

I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] November/17/11  
Inspector Date

Concur: [Signature] 11/20/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION – MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transportation Hub Foundations CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC Associates

LOCATION:

- 1. Transportation Hub Foundations, Wall 1'6" thick @ Elev. 229.5' to 237, CL (ESW1/-10 to -14) Work in progress.
- 2. Transportation Hub Foundations, Footings F31 for Columns C-201, C-202 & C-203 @ Elev 236'. Work in progress.
- 3. Transportation Hub Foundations, Slab 1'thick @ Elev. 236 Transition, CL (ESW1-NLC\*/-10 to -3) Work in progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

- 1. Transportation Hub Foundations, Wall 1'6" thick @ Elev. 229.5' to 237, CL (ESW1/-10 to -14) Work in progress.
  - a. Contractor started installing horizontal #6 @ 9" @ the far face.
  - b. Contractor started installing vertical #6 @ 9" @ the far face.
- 2. Transportation Hub Foundations, Footings F31 for Columns C-204 & C-205 @ Elev 236'. Work in progress.
  - a. Contractor continues bending bottom reinforcement #8 @6" for these two footings.
  - b. Contractor continues bending side reinforcement #6 @9" for these two footings.
- 3. Transportation Hub Foundations, Slab 1'thick @ Elev. 236 Transition, CL (ESW1-NLC\*/-10 to -3) Work in progress.
  - a. Contractor started installing bottom reinforcement #6 @9" north south direction.
  - b. Contractor started installing bottom reinforcement #6 @9" east west direction.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test Reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
- ACI 318- Building Code Requirements for Reinforced Concrete.
- ACI 301- Specifications for Structural Concrete.
- Contract drawings WTC 264, Addendum 31 (01/14/11), S1103, S1104, S1106, S8301, S4201, S4211
- Approved as corrected shop dwgs: 06A-B(10/12/11), 10(8/25/11), 07A-B (11/11/10)

Abbreviations.- CL : Column Lines; Elev. Elevation; \*ESW: Elevation of Shear Wall. NLC: North limit of contract  
I certify, to the best of my knowledge, that all controlled work/testes described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  November/18/11  
Inspector Date

Concur:  11/28/11  
Supervising Engineer of Materials Date

Ricardo A. Tigua  
(Print Name)

Joseph Marsano  
(Print Name)

25

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transportation Hub CONTRACT NO.: WTC 204.596 Date: 11-18-11

CONTRACTOR: EIC

LOCATION: 100 cu. yd of 5000 psi concrete for mudpats at C210, C205, 506" VV and utilities tunnel

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

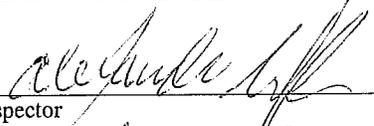
Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

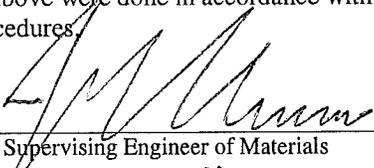
List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed:  11/18/11  
 Inspector Date  
Alexander Sciffano  
 (Print Name)

Concur:  11/18/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION:

Portion of the 3 foot diameter column C-153, EL 225' to 234' -6", CL 7/(25 feet north of W2). Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Portion of the 3 foot diameter column C-153, elevation 225' to 234' -6" (approximate column lines: 7/(25 feet north of W2))

1 - All reinforcement previously set. Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S1204, S8303 and S8304

Approved as corrected shop drawing dated 25 August 2011: 10

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano Inspector

11/21/2011 Date

Concur: Joe Marsano Supervising Engineer of Materials

11/28/11 Date

Alfredo Vitrano (Print Name)

Joe Marsano (Print Name)

25

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transportation Hub CONTRACT NO.: WTC 264.596 Date: 11-21-11

CONTRACTOR: EIC

LOCATION: 7 cu. yd of 12,000 psi concrete for column C153 to el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano 11/21/11  
 Inspector Date  
Alexander Sciffiano  
 (Print Name)

Concur: Joseph Marsano 11/21/11  
 Supervising Engineer of Materials Date  
Joseph Marsano  
 (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Column C-201, F31 footing (lower half), EL 225' -6" to 227' -6", CL CP B/CP 2. Final Inspection.
Column C-202, F31 footing (lower half), EL 225' -6" to 227' -6", CL CP C/CP 2. Final Inspection.
Column C-203, F31 footing (lower half), EL 225' -6" to 227' -6", CL CP D/CP 2. Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Column C-201, F31 footing (lower half), elevation 225' -6" to 227' -6"; (approximate column lines: CP B/CP 2)
1 - The wire lathers previously constructed the footing rebar cage. The cage was set within the footing formwork. Note: the cage consists of 24 #8U bars (bar mark 8F21) set at 6" on center each way (bottom reinforcement); and, 2 x 2 #6L bars, bar mark 6F20 bars set at 12" on center (side reinforcement). After the rebar cage was set, the wire lathers set sixteen #11L column dowels (bar mark 11F13 ). Final Inspection.

Column C-202, F31 footing (lower half), elevation 225' -6" to 227' -6"; (approximate column lines: CP C/CP 2)
1 - The wire lathers previously constructed the footing rebar cage. The cage was set within the footing formwork. Note: the cage consists of 24 #8U bars (bar mark 8F21) set at 6 " on center each way; and, 2 x 2 #6L bars (bar mark 6F20) set at 12 " on center. After the rebar cage was set, the wire lathers set sixteen #11L column dowels (bar mark 11F13 ). Final Inspection.

Column C-201, F31 footing (lower half), elevation 225' -6" to 227' -6"
(approximate column lines: CP D/CP 2)
1 - The wire lathers previously constructed the footing rebar cage. The cage was set within the footing formwork. Note: the cage consisted of 24 #8U bars (bar mark 8F21) set at 6" on center each way; and, 2 x 2 #6L bars (bar mark 6F20) set at 12". After the rebar cage was set, the wire lathers set sixteen #11L column dowels (bar mark 11F13 ). Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC-264 dated 29 April 2011 (Addendum 31): S1304
Contract drawing WTC-264 dated 14 January 2011 (Addendum 30): S8303
Approved as corrected shop drawings dated 12 October 2011: 6A and 6B

CL - column lines
EL - elevation
CP - Central Plant

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano 11/22/2011 Concur: Joe Marsano 11/20/11
Inspector Date Supervising Engineer of Materials Date
Alfredo Vitrano Joe Marsano
(Print Name) (Print Name)

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SPECIAL INSPECTION REPORT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Column C-204, F31 footing (lower half), EL 225' -6" to 227' -6", CL CP E/CP 2. Final Inspection.
Column C-205, F31 footing (lower half), EL 225' -6" to 227' -6", CL CP F/CP 2. Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:
Reinforcement and formwork inspection:

Contractor worked in the following locations:

Column C-204, F31 footing (lower half), elevation 225'-6" to 227'-6"
(approximate column lines: CP E/CP 2)

1 - The wire lathers previously constructed the footing rebar cage. The cage was set within the footing formwork. Note: the cage consists of 24 #8U bars (bar mark 8F21) set at 6" on center each way (bottom reinforcement); and, 2 x 2 #6L bars, bar mark 6F20 bars set at 12" on center (side reinforcement). After the rebar cage was set, the wire lathers set sixteen #11L column dowels (bar mark 11F13 ). Final Inspection.

Column C-205, F31 footing (lower half), elevation 225' -6" to 227' -6"
(approximate column lines: CP F/CP 2)

1 - The wire lathers previously constructed the footing rebar cage. The cage was set within the footing formwork. Note: the cage consists of 24 #8U bars (bar mark 8F21) set at 6 " on center each way; and, 2 x 2 #6L bars (bar mark 6F20) set at 12 " on center. After the rebar cage was set, the wire lathers set sixteen #11L column dowels (bar mark 11F13 ). Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC-264 dated 29 April 2011 (Addendum 31): S1306
Contract drawing WTC-264 dated 14 January 2011 (Addendum 30): S8303
Approved as corrected shop drawings dated 12 October 2011: 6A and 6B

CL - column lines
EL - elevation
CP - Central Plant

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector
Alfredo Vitrano
(Print Name)

11/22/2011
Date

Concur: Joe Marsano
Supervising Engineer of Materials
Joe Marsano
(Print Name)



SPECIAL INSPECTION REPORT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transportation Hub CONTRACT NO.: WTC 264.596 Date: 11-22-11

CONTRACTOR: ELC

LOCATION: 15 cu. yd of 5000 psi concrete for column  
footings C201, C202, C203, C204, and C205 to el. 229'6"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano  
Inspector  
Alexander Sciffano  
(Print Name)

11/22/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Trans. HUB Foundations, 18-inch Wall, EL 229' -6" to 237', CL ESW1/(-10 to -14). Final Inspection.
Trans. HUB Foundations, 18-inch Wall, EL 229' -6" to 236' -6", CL ESW1/(-10 to -11). Final Inspection.
Trans. HUB Foundations, 12-inch slab, EL 236' Transition, CL (ESW1 to NLC\*)/(-10 to -3). Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Transportation HUB Foundations, 18-inch Wall, elevation 229' -6" to 237' (approximate column lines (ESW1/(-10 to -14))

1 - All reinforcement was previously set. Final Inspection.

2 - Contractors made final adjustment to the formwork bracing. Final Inspection.

Transportation HUB Foundations, 18-inch Wall, elevation 229' -6" to 236' -6" (approximate column lines: ESW1/(-10 to -11))

1 - All reinforcement previously set. Final Inspection.

Transportation HUB Foundations, 12- inch slab, elevation 236' Transition (approximate column lines: (ESW1 to NLC\*)/(-10 to -3))

1 - All reinforcement previously set. Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 29 April 2011 (Addendum 31): S1103, S1104, S4203, S4304 and S4320

Contract drawing WTC-264 dated 14 January 2011 (Addendum 30): S0122

Approved as corrected shop drawings dated 12 October 2011: 06A and 06B

Approved as corrected shop drawings dated 11 November 2010: 07A and 07B

Approved as corrected shop drawing dated 25 August 2011: 10

CL - column lines

EL - elevation

\*NLC - North Limit of Contract

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano Inspector

12/23/2011 Date

Concur: Joe Marsano Supervising Engineer of Materials

11/30/11 Date

Alfredo Vitrano (Print Name)

Joe Marsano (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transportation Hub CONTRACT NO.: WTC 264.596 Date: 11-23-11

CONTRACTOR: ETC

LOCATION: 40 cu. yd of 12,000 psi concrete for T2 and Hub interface slab at e! 237' from 0 to ESW3

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffano  
 Inspector  
Alexander Sciffano  
 (Print Name)

11/23/11  
Date

Concur: Joseph Marsano  
 Supervising Engineer of Materials  
Joseph Marsano  
 (Print Name)

11/23/11  
Date



SPECIAL INSPECTION REPORT PA 3066 / 11-0109

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transportation Hub CONTRACT NO.: WTC 264.596 Date: 11-23-11

CONTRACTOR: EIC

LOCATION: 40 cu. yd of 7000 psi concrete for N. Foundation Wall along ESW1 to e! 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing 2. Formwork 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
ACI 305R - Hot Weather Concreting
ACI 306 - Cold Weather Concreting
ACI 309R - Guide for Consolidation of Concrete
ACI 308 - Standard Practice for Curing Concrete
ACI 311 - Manual of Concrete Inspection
ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Sciffiano Inspector (Print Name) 11/23/11 Date

Concur: Joseph Marsano Supervising Engineer of Materials (Print Name) 11/23/11 Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: 18" slab above supply duct, EL 222' -9", CL (G to H5)/(-10 to 14.2). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

18" slab above supply duct, elevation 222' -9"

(approximate column lines: (G to H5)/(-10 to 14.2))

1 - Wire lathers set bottom reinforcement layer: #8 continuous bars @ six inches on center. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112

Approved as corrected shop drawing dated 18 May 2011: 05

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano Inspector

11/28/2011 Date

Concur: Joe Marsano Supervising Engineer of Materials

12/2/11 Date

Alfredo Vitrano (Print Name)

Joe Marsano (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: 12" slab along "South Walls", EL 241' -0", CL (0 to -5)/(W-2.8 to \*SLC). Final Inspection.
12 inch "South Wall, EL 238' to varies 241'/243', CL (1 to -4.5)/W-2.6. Final Inspection.
12 inch "South Wall", EL 238' to 243', CL (W-2.2 to W-2.6)/(-4.5 to -5.2). Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

- 12" slab along "South Walls", elevation 241' -0"; (approximate column lines:(0 to -5)/(W-2.8 to \*SLC))
1 - Wire lathers set slab reinforcement including: #6 bars @ 9" onc center each way, top and bottom. Along the perimeter with Tower 3 the contractors previously set T shape water stop. Final Inspection.
2 - Contractors set bulkhead at the west end. Final Inspection.

- 12 inch "South Wall", elevation 238' to varies 241'/243';(approximate column lines: (1 to -4.5)/W-2.6)
1 - Wire lathers previously set wall reinforcement including: vertical #6N18 @ 9" on center and #6 horizontal bars @ 9" on center. Final Inspection.
2 - Contractors set formwork and female key at the top of the wall. Final Inspection.

- 12 inch "South Wall", elevation 238' to 243'; (approximate column lines: (W-2.2 to W-2.6)/(-4.5 to -5.2))
1 - Wire lathers previously set wall reinforcement including: vertical #6 bars at 9 inches on center and horizontal #6 bars at 9 inches on center. Final Inspection.
2 - Wire lathers previously set #6L slab dowels at the top of the wall and the "skewed corner" detail. Final Inspection.
3 - Contractors previously set wall formwork. Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC-264 dated 14 January 2011 (Addendum 30): S1206
Approved as corrected shop drawing dated 17 August 2011: 12A and 12 B

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector
Alfredo Vitrano
(Print Name)

11/29/2011
Date

Concur: Joe Marsano
Supervising Engineer of Materials
Joe Marsano
(Print Name)

12/2/11
Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transportation Hub CONTRACT NO.: WTC 264.596 Date: 11-29-11

CONTRACTOR: ETC

LOCATION: 30 cu. yd of 5000 psi concrete for SW Hub and T3 interface slab el. 241'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Schiffano  
Inspector  
Alexander Schiffano  
(Print Name)

11/29/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

12/14/11  
Date



STRUCTURAL CONSTRUCTION REPORT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: 18" slab above supply duct, EL 222' -9", CL (G to H5)/(-10' to 14.2). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations: Reinforcement and formwork inspection:

Contractor worked in the following locations:

- 18" slab above supply duct, elevation 222' -9" (approximate column lines: (G to H5)/(-10 to 14.2))
1 - Wire lathers set top slab reinforcement: #8 continuous bars @ six inches on center. Work in Progress.
2 - At the northeast end, the contractors fastened horizontal #8 male threaded end bars to female couplers. The female couplers were embedded in the existing Shear Wall 11 (SW4) footing. Approximately nine #8 male threaded end bars were fastened to the female couplers (four #8 bars at the bottom layer, and five #8 bars at the top layer). A torque wrench was used to achieve the required "tightness". The torque wrench was set as per the torque wrench manual. Work in Progress.
3 - Female couplers were not found at all the required locations on the Shear Wall 11 (SW4) footing. The contractor "drilled and grouted" #9 bars at locations that were missing female couplers. The contractor drilled approximately nine 1 1/2" diameter holes into the Shear Wall 11 (SW4) footing. Four of the holes were drilled at the top layer; and, five holes were drilled at the bottom layer. At the bottom layer, the embedment depth measured: 5", 7", 9", 9 1/2" and 9 1/2". At the top layer, the embedment depth measured: 6 1/2", 9", 10" and 13". The holes were cleaned prior to grouting with Hilti HIT-RE 500 epoxy. The #9 bars were 6' to 8' long. EOR approval of the "drilling and grouting" is required. See punch list item created today. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112
Approved as corrected shop drawing dated 18 May 2011: 05

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector
Alfredo Vitrano
(Print Name)

11/13/2011 Date
Concur: Joe Marsano
Supervising Engineer of Materials
12/2/11 Date
Joe Marsano
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Duct Bank @ north end, EL 229' -6", CL CP E/2 - CP B5/-15. Final Inspection.
18" slab above supply duct, EL 222' -9", CL (G to H5)/(-10 to 14.2). Work in Progress.
Transit Hall Column C-214 footing, EL 218' -11" to 222' -9", CLCP G/2. Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Duct Bank @ north end, elevation 229' -6"; (approximate column lines: CP E/2 - CP B5/-15)

- 1 - Wire lathers set duct bank reinforcement including: bottom #5U bars at six inches on center, bottom continuous #5 bars at six inches on center; side #5 bars at six inches on center and top #5 bars. Final Inspection.
2 - Contractors set bulkhead formwork. Final Inspection.

Transit Hall Column C-214 footing, elevation 218' -11" to 222' -9", (approximate column lines: CP G/2)

- 1 - Previously the wire lathers set the footing reinforcement structure: longitudinal and transverse #9 bars @ six inches on center; and side reinforcement #6U bars at 12 inches on center. The contractors set the reinforcement structure in place. Work in Progress.

18" slab above supply duct, elevation 222' -9"
(approximate column lines: (G to H5)/(-10 to 14.2))

- 1 - Wire lathers set remaining top slab reinforcement: #8 continuous bars @ six inches on center. Work in Progress.
2 - At the east, west and south ends, the wire lathers set #6L and #6Z wall dowels at the faces of the projected twelve inch walls. The wall dowels were set at six inches on center. Work in Progress.
3 - Contractors set water stop material, key and bulkhead formwork. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112
Contract drawing WTC-264 dated 1 April 2010 (Addendum 19): EP0833A
Approved as corrected shop drawing dated 18 May 2011: 05
Approved as corrected shop drawing dated 15 June 2011: 06B

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector

12/11/2011
Date

Signature of Joe Marsano
Supervising Engineer of Materials

12/12/11
Date

Alfredo Vitrano
(Print Name)

Joe Marsano
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transportation Hub CONTRACT NO.: WTC 264.596 Date: 12-1-11

CONTRACTOR: EIC

LOCATION: 14 cu. yd of 5000 psi hycrete for  
15 kv duct bank @ SOG "KK"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scriffiano 12/1/11  
Inspector Date

Concur: Joseph Marsano 12/1/11  
Supervising Engineer of Materials Date

Alexander Scriffiano  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Transit Hall Column C-214 footing, EL 218' -11" to 222' -9", CL CP G/2. Final Inspection. Central Plant, Part Plan 6, 18 inch slab for supply duct, EL 222' -9", CL (CP G to CP H5)/(-10 to -14.2). Final Inspection. Central Plant, Part Plan 6, 24 inch slab on grade, EL 229' -6", CL (WR-1.2 to WR-1.9)/(-10 to -13). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Transit Hall Column C-214 footing, elevation 218' -11" to 222' -9", (approximate column lines: CP G/2) 1 - Wire lathers set column dowels: sixteen #11L column dowels (bar mark 11F13 ). All other reinforcement was previously set. Final Inspection.

Central Plant, Part Plan 6, 18" slab for supply duct, elevation 222' -9" (approximate column lines: (CP G to CP H5)/(-10 to -14.2))

1 - Wire lathers set remaining wall dowels (#6L and #6Z bars). All other reinforcement was previously set. Final Inspection.

2 - At the southeast end - where the contractor had over excavated, additional vertical #6 bars were set in the fresh concrete. The bars were set at six inch spacing, along the perimeter of the overexcavated area. Note: this was done at the suggestion of the DDP. Final Inspection.

Central Plant, Part Plan 6, 2' slab on grade, elevation 229' -6" (approximate column lines: (WR-1.2 to WR-1.9)/(-10 to -13))

1 - Wire lathers started setting bottom slab reinforcement: #10 bars at six inches on center. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112
Contract drawing WTC-264 dated 1 April 2010 (Addendum 19): EP0833A
Approved as corrected shop drawing dated 18 May 2011: 05
Approved as corrected shop drawing dated 15 June 2011: 06B
Approved as corrected shop drawing dated 18 May 2011: 09B
RFI TH-02037 dated 11 November 2011

CL - column lines; EL - elevation; CP - Central Plant

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector
Alfredo Vitrano
(Print Name)

12/2/2011 Date

Supervising Engineer of Materials
Joe Marsano
(Print Name)

12/2/11 Date

25

SPECIAL INSPECTION REPORT PA 3066/10-01

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264 5963 Date: 12/2/11

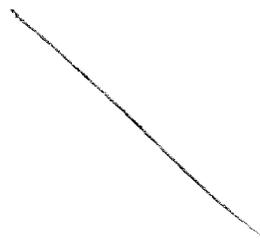
CONTRACTOR: ELC

LOCATION: 30 cu. yd of 5K psi Concrete for Slab on  
Grade Midway KK

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).



List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
Inspector  
LEO NUNOZ  
(Print Name)

12/2/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)  
12/16/11  
Date

25

**SPECIAL INSPECTION REPORT** PA 3666/10-09

**CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT**

CONTRACT TITLE: Transit Hub CONTRACT NO.: WTC 264596 Date: 12/2/11

CONTRACTOR: EIC

LOCATION: 100 cu. yd of 5k (467 stone) psi Concrete for Utility

Tunnel Slab on Grade at 222'9" East of Southwest Super Column

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

Curing: 1200 white curing compound was applied after concrete placement

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature]  
 Inspector  
Leo Nunez  
 (Print Name)

Date: 12/2/11  
 Date  
 Concur: [Signature]  
 Supervising Engineer of Materials  
Joseph Marsano  
 (Print Name)  
 Date: 12/16/11  
 Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION:

Central Plant, Part Plan 6, 24 inch slab on grade, EL 229' -6", CL (WR-1.2 to WR-1.9)/(-10 to -13). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Central Plant, Part Plan 6, 2' slab on grade, elevation 229' -6" (approximate column lines: (WR-1.2 to WR-1.9)/(-10 to -13))

1 - Wire lathers continued setting bottom slab reinforcement: #10 bars at six inches on center. Work in Progress.

2 - At the southeast end, where the slab "connects" to the existing 24 inch slab the wire lather fastened horizontal #10 male threaded rebar to female couplers. The female couplers were embedded in the existing concrete slab. The contractor will use a torque wrench to "tighten" the bars tomorrow. Note: the threaded #10 are oriented at an angle from the slab reinforcement. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 308.1- Specifications for Structural Concrete.
Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112
Approved as corrected shop drawings dated 18 May 2011: 09A, 09B, 09D, 09E and 09F

CL - column lines; EL - elevation; CP - Central Plant

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector
12/15/2011
Date
Alfredo Vitrano
(Print Name)

Concur: Joe Marsano
Supervising Engineer of Materials
12/9/11
Date
Joe Marsano
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: CP Supply Duct, Part Plan 6, 18" wall (south), EL 222' -9" to 227' -6", CL CP H4/(-10 to -12). WIP.
CP Supply Duct, Part Plan 6, 18" wall (northwest), EL 222' -9" to 227' -6", CL CP G/(-14 to -16). Work in Progress.
Central Plant, Part Plan 6, 24 inch slab on grade, EL 229' -6", CL (WR-1.2 to WR-1.9)/(-10 to -13). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:
Reinforcement and formwork inspection:

Contractor worked in the following locations:

Central Plant Supply Duct, Part Plan 6, 18" wall (south), elevation 222' -9" to 227' -6"
(approximate column lines: CP H4/(-10 to -12))

- 1 - Wire lathers set horizontal #6 bars @ twelve inches on center. Work in Progress.
2 - At the west end, wire lathers set "skewed corner" rebar detail. Work in Progress.
3 - Contractors set formwork. Work in Progress.

Central Plant Supply Duct, Part Plan 6, 18" wall (northwest), elevation 222' -9" to 227' -6"
(approximate column lines: CP G/(-14 to -16))

- 1 - Wire lathers set horizontal #6 bars at six inches on center each face. Work in Progress.
2 - Contractors set formwork. Work in Progress.

Central Plant, Part Plan 6, 2' slab on grade, elevation 229' -6"
(approximate column lines: (WR-1.2 to WR-1.9)/(-10 to -13))

- 1 - Wire lathers continued setting bottom slab reinforcement: #10 bars at six inches on center.
Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112
Contract drawing WTC-264 dated 22 June 2010 (Addendum 22): S4207
Approved as corrected shop drawings date 15 November 2010: 05
Approved as corrected shop drawings dated 18 May 2011: 09A, 09B, 09D, 09E and 09F

CL - column lines; EL - elevation;
CP - Central Plant; WIP - Work in Progress

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector
Date: 12/6/2011
Alfredo Vitrano
(Print Name)

Concur: Joe Marsano
Supervising Engineer of Materials
Date: 12/9/11
Joe Marsano
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: CP Supply Duct, Part Plan 6, 18" wall (west), EL 222' -9" to 227' -6", CL CP H4/-14 to CP H/CP 2. WIP. Central Plant Supply Duct, Part Plan 6, 18" wall (southeast), EL 222' -9" to 227' -6", CL CP H4/-10 to CP H/-12. Work in Progress. Central Plant Supply Duct, Part Plan 6, 18" wall (northeast), EL 222' -9" to 227' -6", CL CP H4/-11 to CP H/-12. Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations: Reinforcement and formwork inspection:

Contractor worked in the following locations:

Central Plant Supply Duct, Part Plan 6, 18" wall (west), elevation 222' -9" to 227' -6" (approximate column lines: CP H4/-14 to CP H/CP 2)

- 1 - Wire lathers set horizontal #6 bars @ twelve inches on center. Work in Progress. 2 - At the south end, wire lathers set "skewed corner" rebar detail. Work in Progress. 3 - Contractors set formwork. Work in Progress.

Central Plant Supply Duct, Part Plan 6, 18" wall (southeast), elevation 222' -9" to 227' -6" (approximate column lines: CP H4/-10 to CP H/-12))

- 1 - Wire lathers set horizontal #6 bars at six inches on center each face. Work in Progress. 2 - Contractors set formwork. Work in Progress.

Central Plant, Part Plan 6, 18" wall (northeast), elevation 222' -9" to 227' -6" (approximate column lines: CP H4/-11 to CP H/-12))

- 1 - Wire lathers set horizontal #6 bars at six inches on center each face. Work in Progress. 2 - Contractors set formwork. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials. ACI 318- Building Code Requirements for Reinforced Concrete. ACI 301- Specifications for Structural Concrete. Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106 Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112 Contract drawing WTC-264 dated 22 June 2010 (Addendum 22): S4207 Approved as corrected shop drawings: 05

CL - column lines; EL - elevation; CP - Central Plant; WIP - Work in Progress

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitran Inspector Date: 12/6/2011 (Print Name)

Concur: Joe Marsano Supervising Engineer of Materials Date: 1/1 (Print Name)



STATE OF NEW YORK THE PORT AUTHORITY OF NY & NJ

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION:

CP Supply Duct, Part Plan 6, 18" wall (east), EL 222' -9" to 227' -6", CL CP G/-14 to H/-12. Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Central Plant Supply Duct, Part Plan 6, 18" wall (east), elevation 222' -9" to 227' -6" (approximate column lines: CP G/-14 to H/-12)

- 1 - Wire lathers set horizontal #6 bars @ twelve inches on center. Work in Progress.
2 - Contractors set formwork. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112
Contract drawing WTC-264 dated 22 June 2010 (Addendum 22): S4207
Approved as corrected shop drawing dated 15 November 2010: 05

CL - column lines; EL - elevation;
CP - Central Plant; WIP - Work in Progress

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano 12/16/2011 Concur: Joe Marsano
Inspector Date Supervising Engineer of Materials Date
Alfredo Vitrano Joe Marsano
(Print Name) (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: CP Supply Duct, Part Plan 6, 18" wall (west), EL 222' -9" to 227' -6", CL CP H4/-14 to CP H/CP 2. WIP.
Central Plant Supply Duct, Part Plan 6, 18" wall (southeast), EL 222' -9" to 227' -6", CL CP H4/-10 to CP H/-12. Work in Progress.
Central Plant Supply Duct, Part Plan 6, 18" wall (northeast), EL 222' -9" to 227' -6", CL CP H4/-11 to CP H/-12. Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Central Plant Supply Duct, Part Plan 6, 18" wall (west), elevation 222' -9" to 227' -6"
(approximate column lines: CP H4/-14 to CP H/CP 2)

1 - All reinforcement has been set. The contractors started closing the formwork. Work in Progress.

Central Plant Supply Duct, Part Plan 6, 18" wall (southeast), elevation 222' -9" to 227' -6"
(approximate column lines: CP H4/-10 to CP H/-12))

1 - All reinforcement has been set. The contractors started closing the formwork. Work in Progress.

2 - Due to overexcavation, the contractor has increased the wall thickness to 72 inches. EOR approval is required for the increased wall thickness. See punch list item created today. Work in Progress.

Central Plant, Part Plan 6, 18" wall (northeast), elevation 222' -9" to 227' -6"
(approximate column lines: CP H4/-11 to CP H/-12))

1 - All reinforcement has been set. The contractor has started closing the formwork. Work in Progress.

2 - Due to overexcavation, the contractor has increased the wall thickness to 36 inches. EOR approval is required for the increased wall thickness. See punch list item created today. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112

Contract drawings WTC-264 dated 22 June 2010 (Addendum 22): S1102 and S4207

Approved as corrected shop drawings: 05

CL - column lines; EL - elevation;

CP - Central Plant; WIP - Work in Progress

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector

12/7/2011
Date

Concur: Joe Marsano
Supervising Engineer of Materials
12/9/11
Date

Alfredo Vitrano
(Print Name)

Joe Marsano
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: CP Supply Duct, Part Plan 6, 18" wall (south), EL 222' -9" to 227' -6", CL CP H4/(-10 to -12). WIP.
CP Supply Duct, Part Plan 6, 18" wall (northwest), EL 222' -9" to 227' -6", CL CP G/(-14 to -16). Work in Progress.
Central Plant, Part Plan 6, 24 inch slab on grade, EL 229' -6", CL (WR-1.2 to WR-1.9)/(-10 to -13). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Central Plant Supply Duct, Part Plan 6, 18" wall (south), elevation 222' -9" to 227' -6"
(approximate column lines: CP H4/(-10 to -12))

- 1 - All reinforcement has been set. The contractors started closing the formwork Work in Progress.
2 - Due to over excavation, the contractor has increased the wall thickness to 23 inches. EOR approval for the increased thickness is required. See punch list item created today. Work in Progress.

Central Plant Supply Duct, Part Plan 6, 18" wall (northwest), elevation 222' -9" to 227' -6"
(approximate column lines: CP G/(-14 to -16))

- 1 - All reinforcement has been set. The contractors started closing the formwork. Work in Progress.
2 - Due to over excavation, the contractor has increased the wall thickness to 48 inches. EOR approval for the increased thickness is required. See punch list item created today. Work in Progress.

Central Plant, Part Plan 6, 2' slab on grade, elevation 229' -6"
(approximate column lines: (WR-1.2 to WR-1.9)/(-10 to -13))

- 1 - Wire lathers started setting the top slab reinforcing steel: continuous #10 bars at 6 inches on center each way. At the south end, the wire lathers set #10J bars at the slab edge. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112
Contract drawing WTC-264 dated 22 June 2010 (Addendum 22): S4207
Approved as corrected shop drawings date 15 November 2010: 05
Approved as corrected shop drawings dated 18 May 2011: 09A, 09B, 09D, 09E and 09F

CL - column lines; EL - elevation;
CP - Central Plant; WIP - Work in Progress

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector
Alfredo Vitrano
(Print Name)

12/7/2011
Date

Concur: Joe Marsano
Supervising Engineer of Materials
Joe Marsano
(Print Name)

1/1
Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION:

Central Plant Supply Duct, Part Plan 6, 18" wall (east), EL 222' -9" to 227' -6", CL CP G/-14 to CP H/-12. Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Central Plant Supply Duct, Part Plan 6, 18" wall (east), elevation 222' -9" to 227' -6" (approximate column lines: CP G/-14 to CP H/-12)

- 1 - All reinforcement has been set. The contractors started closing the formwork. Work in Progress.
2 - Due to overexcavation, the contractors increased the wall thickness to 38 inches. EOR approval is required for the increased wall thickness. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112
Contract drawings WTC-264 dated 22 June 2010 (Addendum 22): S1102 and S4207
Approved as corrected shop drawing dated 15 November 2010: 05

CL - column lines
EL - elevation
CP - Central Plant

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector
Alfredo Vitrano
(Print Name)

12/7/2011
Date

Concur: Joe Marsano
Supervising Engineer of Materials
Joe Marsano
(Print Name)

1/1
Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: CP Supply Duct, Part Plan 6, 18" wall (south), EL 222' -9" to 227' -6", CL CP H4/(-10 to -12). WIP.
CP Supply Duct, Part Plan 6, 18" wall (northwest), EL 222' -9" to 227' -6", CL CP G/(-14 to -16). Work in Progress.
Central Plant, Part Plan 6, 24 inch slab on grade, EL 229' -6", CL (WR-1.2 to WR-1.9)/(-10 to -13). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Central Plant Supply Duct, Part Plan 6, 18" wall (south), elevation 222' -9" to 227' -6"
(approximate column lines: CP H4/(-10 to -12))

1 - Wire lathers set support chairs to achieve specified cover at the inside face. The contractors continued closing the formwork. Work in Progress.

Central Plant Supply Duct, Part Plan 6, 18" wall (northwest), elevation 222' -9" to 227' -6"
(approximate column lines: CP G/(-14 to -16))

1 - The wire lathers set rebar support chairs at the inside face. The contractors continued closing the formwork. Work in Progress.

Central Plant, Part Plan 6, 2' slab on grade, elevation 229' -6"
(approximate column lines: (WR-1.2 to WR-1.9)/(-10 to -13))

1 - Wire lathers continued setting top slab reinforcing steel: continuous #10 bars at 6 inches on center each way. At the interface with the C-141 column footing, the wire lathers set #10V bars @ six inches on center. These bars are in addition to the slab reinforcement and are spliced to the #10 male threaded end bars which were previously fastened to the female couplers. The female couplers were embedded in the C-141 column footing. Approximately 70 #10V bars were set: 35 on the bottom and 35 on the top. Work in Progress.
2 - Wire lathers set #6L wall dowels along the south perimeter. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106
Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112
Contract drawing WTC-264 dated 22 June 2010 (Addendum 22): S4207
Approved as corrected shop drawings date 15 November 2010: 05
Approved as corrected shop drawings dated 18 May 2011: 09A, 09B, 09D, 09E and 09F

CL - column lines; EL - elevation;
CP - Central Plant; WIP - Work in Progress

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector

12/8/2011
Date

Concur: Joe Marsano
Supervising Engineer of Materials

12/13/11
Date

Alfredo Vitrano
(Print Name)

Joe Marsano
(Print Name)

Page 1 of 3



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: CP Supply Duct, Part Plan 6, 18" wall (west), EL 222' -9" to 227' -6", CL CP H4/-14 to CP H/CP 2. WIP. Central Plant Supply Duct, Part Plan 6, 18" wall (southeast), EL 222' -9" to 227' -6", CL CP H4/-10 to CP H/-12. Work in Progress. Central Plant Supply Duct, Part Plan 6, 18" wall (northeast), EL 222' -9" to 227' -6", CL CP H4/-11 to CP H/-12. Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Central Plant Supply Duct, Part Plan 6, 18" wall (west), elevation 222' -9" to 227' -6" (approximate column lines: CP H4/-14 to CP H/CP 2)

1 - Wire lathers set rebar chairs along the projected wall's inside face. The contractor continued closing the formwork. Work in Progress.

2 - The contractor used a drill, compressed air and a "T-end" wire brush to "drill and grout" ten #6V bars into the existing column C-215. The #6V bars were spliced to the horizontal wall reinforcement. The embedment depth measured 7 1/2" to 8". The 7/8" diameter holes were cleaned prior to grouting with Hilti HIT-RE 500.

Note: EOR approval is required for the "drilling and grouting" procedure at this location. See punch list item created 12/9/2012. Work in Progress.

Central Plant Supply Duct, Part Plan 6, 18" wall (southeast), elevation 222' -9" to 227' -6" (approximate column lines: CP H4/-10 to CP H/-12))

1 - Wire lathers set rebar support chairs at the wall's inside face. The contractors continued closing the formwork. Work in Progress.

Central Plant, Part Plan 6, 18" wall (northeast), elevation 222' -9" to 227' -6" (approximate column lines: CP H4/-11 to CP H/-12))

1 - Wire lathers set rebar chairs along the inside face. The contractor continued closing the formwork. WIP.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112

Contract drawings WTC-264 dated 22 June 2010 (Addendum 22): S1102 and S4207

Approved as corrected shop drawings: 05

CL - column lines; EL - elevation;

CP - Central Plant; WIP - Work in Progress

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano 12/8/2011 Concur: Joe Marsano
Inspector Date Supervising Engineer of Materials Date
Alfredo Vitrano (Print Name) Joe Marsano (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: \_\_\_\_\_

Central Plant Supply Duct, Part Plan 6, 18" wall (east), EL 222' -9" to 227' -6", CL CP G/-14 to CP H/-12. Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

Central Plant Supply Duct, Part Plan 6, 18" wall (east), elevation 222' -9" to 227' -6"

(approximate column lines: CP G/-14 to CP H/-12)

1 - The wire lathers set rebar support chairs at the wall's inside face. The contractors continued closing the formwork. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112

Contract drawings WTC-264 dated 22 June 2010 (Addendum 22): S1102 and S4207

Approved as corrected shop drawing dated 15 November 2010: 05

CL - column lines

EL - elevation

CP - Central Plant

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano 12/8/2011 Concur: \_\_\_\_\_  
Inspector Date Supervising Engineer of Materials Date

Alfredo Vitrano  
(Print Name)

Joe Marsano  
(Print Name)

Page 3 of 3



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transit Hub CONTRACT NO.: WTC 264.596 Date: 12/9/11

CONTRACTOR: ETC

LOCATION: 20 cu. yd of 12000 psi Concrete for

ESV 2A, Elevation 229'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- 'Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Colin Reed  
Inspector

12/9/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials

12/9/11  
Date

Colin Reed  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transit Hub CONTRACT NO.: WTC 264.596 Date: 12/9/11

CONTRACTOR: EIC

LOCATION: 110 cu. yd of 5000 Mass psi Concrete for Mud Mat

Footings 151, 142, 140 / Mud Mat Slab "KK", EL. 227' / Supply DUCT 18" Wall, EL. 229'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Colin Reed  
Inspector

12/9/11  
Date

Concur: [Signature]  
Supervising Engineer of Materials

1/3/12  
Date

Colin Reed  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transit Hub CONTRACT NO.: WTC 264.596 Date: 12/9/11

CONTRACTOR: ETC

DESCRIPTION: 72 cu. yd of 5000 #467 psi Concrete for

Part Plan 6 Sub Grade Level Slab, Elevation 229'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

*Fill*  
12/9/11 to 1/20/12

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Colin Reed  
Inspector  
Colin Reed  
(Print Name)

12/9/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

1/3/12  
Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: CP Supply Duct, 18" wall (south), EL 222' -9" to 227' -6", CL CP H4/(-10 to -12). Final Inspection.
CP Supply Duct, Part Plan 6, 18" wall (northwest), EL 222' -9" to 227' -6", CL CP G/(-14 to -16). Final Inspection.
Central Plant, Part Plan 6, 24 inch slab on grade, EL 229' -6", CL (W-2.2 to SLC)/(-7 to WLC)). Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Central Plant Supply Duct, Part Plan 6, 18" wall (south), elevation 222' -9" to 227' -6" (approximate column lines: CP H4/(-10 to -12))

1 - All reinforcement was previously set. The contractors set the keyway and water stop at the top of the wall. Final Inspection.

Central Plant Supply Duct, Part Plan 6, 18" wall (northwest), elevation 222' -9" to 227' -6" (approximate column lines: CP G/(-14 to -16))

1 - All reinforcement was previously set. The contractors set the keyway and water stop at the top of the wall. Final Inspection.

Central Plant, Part Plan 6, 2' slab on grade, elevation 229' -6" (approximate column lines: (W-2.2 to SLC)/(-7 to ELC))

1 - The wire lathers set the remaining #6L wall dowels at shear wall ESW2a and the projected wall along the south and east end. Note: the contractor did not follow the specified wall path - see punch list item created today. Final Inspection.

2 - The plumbing contractor set several drains - some reinforcement was shifted to accommodate the drains. The wire lathers readjusted the reinforcement after the drains were set. Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112

Contract drawing WTC-264 dated 22 June 2010 (Addendum 22): S4207

Approved as corrected shop drawings date 15 November 2010: 05

Approved as corrected shop drawings dated 18 May 2011: 09A, 09B, 09D, 09E and 09F

CL - column lines; EL - elevation; CP - Central Plant

SLC - southern limit of contract; WLC - west limit of contract

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures

Signed: Alfredo Vitrano
Inspector
Alfredo Vitrano
(Print Name)

12/19/2011 Date
Concur: Joe Marsano
Supervising Engineer of Materials
Joe Marsano
(Print Name)

12/13/11 Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Central Plant Supply Duct, Part Plan 6, 18" wall (southeast), EL 222' -9" to 227' -6", CL CP H4/-10 to CP H/-12. Final Inspection.  
Central Plant Supply Duct, Part Plan 6, 18" wall (northeast), EL 222' -9" to 227' -6", CL CP H4/-11 to CP H/-12. Final Inspection

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

Central Plant Supply Duct, Part Plan 6, 18" wall (southeast), elevation 222' -9" to 227' -6"  
(approximate column lines: CP H4/-10 to CP H/-12))

1 - All reinforcement was previously set. The contractor set the keyway and water stop at the top of the wall.  
Final Inspection.

Central Plant, Part Plan 6, 18" wall (northeast), elevation 222' -9" to 227' -6"  
(approximate column lines: CP H4/-11 to CP H/-12))

1 - All reinforcement was previously set. The contractor set the keyway and water stop at the top of the wall.  
Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112

Contract drawings WTC-264 dated 22 June 2010 (Addendum 22): S1102 and S4207

Approved as corrected shop drawings: 05

CL - column lines; EL - elevation;

CP - Central Plant

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
Inspector

12/9/2011  
Date

Concur: [Signature]  
Supervising Engineer of Materials

1/1  
Date

Alfredo Vitrano  
(Print Name)

Joe Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Central Plant Supply Duct, Part Plan 6, 18" wall (west), EL 222' -9" to 227' -6", CL CP H4/-14 to CP H/CP 2. Final Inspection.  
Central Plant Supply Duct, Part Plan 6, 18" wall (east), EL 222' -9" to 227' -6", CL CP G/-14 to CP H/-12. Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

Central Plant Supply Duct, Part Plan 6, 18" wall (west), elevation 222' -9" to 227' -6"  
(approximate column lines: CP H4/-14 to CP H/CP 2)

1 - All reinforcement was previously set. The contractor set the keyway and water stop at the top of the wall.  
Final Inspection.

Central Plant Supply Duct, Part Plan 6, 18" wall (east), elevation 222' -9" to 227' -6"  
(approximate column lines: CP G/-14 to CP H/-12)

1 - All reinforcement was previously set. The contractor set the keyway and water stop at the top of the wall.  
Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106

Contract drawing WTC-264 dated 11 October 2010 (Addendum 27): S0112

Contract drawings WTC-264 dated 22 June 2010 (Addendum 22): S1102 and S4207

Approved as corrected shop drawing dated 15 November 2010: 05

CL - column lines

EL - elevation

CP - Central Plant

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
Inspector

12/9/2011 Date

[Signature] Concur: 1/1  
Supervising Engineer of Materials Date

Alfredo Vitrano  
(Print Name)

Joe Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Footing for column C-154, EL 237' -0", CL ESW1/-7. Work in Progress.
Central Plant, Part Plan 6, Underground Pipe Reinforcement, EL 229' -6", CL W1.5/-14 to W1.5/-13 to WR-0.5/-15 to W1.5/-15.
Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:
Reinforcement and formwork inspection:

Contractor worked in the following locations:

Footing for column C-154, elevation 237' -0" (approximate column lines: ESW1/-7)
1 - Wire lathers used a torque wrench to fasten vertical #11 male threaded end bars to female couplers. The female couplers were fastened to the vertical column dowels. The footing contains 20 #11 bundled column dowels with couplers. The torque wrench was set as per the torque wrench manual. The vertical #11 male threaded end bars were approximately 8 feet long. Approximately 20 #11 male threaded end bars were fastened and tightened with the torque wrench. Work in Progress.

Central Plant, Part Plan 6, Underground Pipe Reinforcement, elevation 229' -6" (approximate column lines: W1.5/-14 to W1.5/-13 to WR-0.5/-15 to W1.5/-15)
1- Wire lathers set reinforcement around the sanitary lines. The reinforcement included transverse #5U bars at six inches on center. Under the piping, the wire lathers set continuous #5 bars at 12 inches on center. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:
ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.
ACI 318- Building Code Requirements for Reinforced Concrete.
ACI 301- Specifications for Structural Concrete.
Contract drawings WTC 264 dated 29 April 2011 (Addendum 31): S1104 and S1106
Contract drawings WTC 264 dated 14 January 2011 (Addendum 30): S8303 and S8304
Approved as corrected shop drawing dated 4 January 2011: 08A
Approved as corrected shop drawings dated 6 July 2011: 11A and 11B

CL - column lines
EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano 12/13/2011 Concur: Joe Marsano 12/19/11
Inspector Date Supervising Engineer of Materials Date
Alfredo Vitrano (Print Name) Joe Marsano (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Footing for column C-154, EL 237' -0", CL ESW1/-7. Work in Progress.
Central Plant, Part Plan 4 & 6, 2' slab on grade, EL 229' -6"
CL (W-0.8/-12 to W-1.5/-10)/(WR-1.2/-11 to W-1.2/-14) + (CP 2/CP G to W-1.2/-11)/(CP2/CP C.5 to W1.3/-13). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Footing for column C-154, elevation 237' -0" (approximate column lines: ESW1/-7)

1 - Wire lathers used a torque wrench to fasten the remaining vertical #11 male threaded end bars to female couplers. The female couplers were fastened to the vertical column dowels. The footing contains 20 #11 bundled column dowels with couplers. (Twenty #11 bars were torqued yesterday.) The torque wrench was set as per the torque wrench manual. The vertical #11 male threaded end bars were approximately 8 feet long. Work in Progress.

Central Plant, Part Plan 4 & 6, 2' slab on grade, elevation 229' -6"

(approximate column lines: (W-0.8/-12 to W-1.5/-10)/(WR-1.2/-11 to W-1.2/-14) + (CP 2/CP G to W-1.2/-11)/(CP2/CP C.5 to W1.3/-13))

1 - Wire lathers set the bottom reinforcement including #10 continuous rebar @ six inches on center each way. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC 264 dated 29 April 2011 (Addendum 31): S1104 and S1106

Contract drawings WTC 264 dated 14 January 2011 (Addendum 30): S8303 and S8304

Approved as corrected shop drawing dated 4 January 2011: 08A

Approved as corrected shop drawings dated 18 May 2011: 9A, 9B, 9C, 9D, 9E and 9F

CL - column lines

EL - elevation

CP - Central Plant

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano
Inspector

12/13/2011 Date

Concur: Joe Marsano
Supervising Engineer of Materials Date

Alfredo Vitrano
(Print Name)

Joe Marsano
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

DESCRIPTION: Footing for column C-100, EL 225' -6" to 229' -6", CL W1/-15. Work in Progress.
Footing for column C-150, EL 222' -6" to 229' -6", CL W1.4/-16. Work in Progress.
Footing for column C-151, EL 233' -0" to 237' -0", CL W2.8/-14. Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:
Reinforcement and formwork inspection:

Contractor worked in the following locations:

Footing for column C-100, elevation 225' -6" to 229' -6" (approximate column lines: W1/-15)
Previously the wire lathers set reinforcement for the footing structure. The structure included #9 bars at six
inches on center (bar mark 9F12) each way. Thirty-two #9 bars (bar mark 9F12) were set. The reinforcement
included side reinforcement: #6 bars (bar mark 6F09) @ 12 inches on center. Work in Progress.
The contractors set the reinforcement footing structure in the waterproofed excavation. The wire lathers set
column dowels: 20 bundled #11L bars. Work in Progress.

Footing for column C-150, EL 222' -6" to 229' -6", CL W1.4/-16.
Previously the wire lathers set reinforcement for the footing structure. The structure included #9 bars at six
inches on center (bar mark 9F23) each way. Forty #9 bars (bar mark 9F23) were set. The reinforcement also
included side reinforcement: #6 bars (bar mark 6F22) @ 12 inches on center. Work in Progress.
The contractors set the reinforcement footing structure in the waterproofed excavation. The wire lathers set
column dowels: 24 bundled #11L bars. Work in Progress.

Footing for column C-151, elevation 233' -0" to 237' -0" (approximate column lines: W2.8/-14)
Previously the wire lathers set reinforcement for the footing structure. The structure included #9 bars at six
inches on center (bar mark 9K11). Work in Progress.
The contractors set the structure in the excavation. Work in Progress.

Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test
methods and written scope of inspection and testing services:

- 17- Standard Specifications for Tolerances for Concrete Construction and Materials.
18- Building Code Requirements for Reinforced Concrete.
11- Specifications for Structural Concrete.
Contract drawings WTC 264 dated 29 April 2011 (Addendum 31): S1104 and S1106
Contract drawings WTC 264 dated 14 January 2011 (Addendum 30): S8303 and S8304
Revised as corrected shop drawing dated 10 November 2010: 06A
Revised as corrected shop drawing dated 25 August 2011: 10

Column lines
Excavation

To the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract
requirements and are consistent with Materials Section testing and inspection procedures.

Inspector: Alfredo Vitrano
Date: 12/13/2011
(Print Name)

Concur:
Date

Supervising Engineer of Materials: Joe Marsano
Date: 1/1
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Footing for column C-100, EL 225' -6" to 229' -6", CL W1/-15. Final Inspection.

Location for column C-151, EL 233' -0" to 237' -0", CL W2.8/-14. Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:
Reinforcement and formwork inspection:

Contractor worked in the following locations:

Location for column C-100, elevation 225' -6" to 229' -6" (approximate column lines: W1/-15)

All reinforcement was previously set. Final Inspection.

Location for column C-151, elevation 233' -0" to 237' -0" (approximate column lines: W2.8/-14)

Wire lathers set side reinforcement including: #6 bars (bar mark 6K10) at twelve inches on center. They set #11L column dowels. Twenty bundled #11L dowels were set in a radial pattern. Final Inspection.

The contractors set the formwork. Final Inspection.

Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test and written scope of inspection and testing services:

- 7- Standard Specifications for Tolerances for Concrete Construction and Materials.
8- Building Code Requirements for Reinforced Concrete.
11- Specifications for Structural Concrete.

Shop drawings WTC 264 dated 29 April 2011 (Addendum 31): S1104 and S1106

Shop drawings WTC 264 dated 14 January 2011 (Addendum 30): S8303 and S8304

Revised as corrected shop drawing dated 10 November 2010: 06A

Revised as corrected shop drawing dated 25 August 2011: 10

Column lines

Location

To the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract and are consistent with Materials Section testing and inspection procedures.

Inspector: Alfredo Vitrano 12/14/2011

Alfredo Vitrano (Print Name)

Concur: Joe Marsano 12/19/11

Joe Marsano (Print Name)



QUALITY INSPECTION REPORT

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Central Plant, Part Plan 4 & 6, 2' slab on grade, EL 229' -6" (W-0.8/-12 to W-1.5/-10)/(WR-1.2/-11 to W-1.2/-14) + (CP 2/CP G to W-1.2/-11)/(CP2/CP C.5 to W1.3/-13). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations: Reinforcement and formwork inspection:

Contractor worked in the following locations:

Central Plant, Part Plan 4 & 6, 2' slab on grade, elevation 229' -6" Approximate column lines: (W-0.8/-12 to W-1.5/-10)/(WR-1.2/-11 to W-1.2/-14) + (CP 2/CP G to W-1.2/-11)/(CP2/CP C.5 to W1.3/-13) Wire lathers set the remaining bottom reinforcement including #10 continuous rebar @ six inches on center way. Work in Progress. Wire lathers started setting top slab reinforcement including #10 continuous rebar @ six inches on center way. Work in Progress.

Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test and written scope of inspection and testing services:

- 17- Standard Specifications for Tolerances for Concrete Construction and Materials.
18- Building Code Requirements for Reinforced Concrete.
11- Specifications for Structural Concrete.

Shop drawings WTC 264 dated 29 April 2011 (Addendum 31): S1104 and S1106 Revised as corrected shop drawings dated 18 May 2011: 9A, 9B, 9C, 9D, 9E and 9F

Column lines
Elevation
Central Plant

To the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract and are consistent with Materials Section testing and inspection procedures.

Inspector: Alfredo Vitrano, Date: 12/14/2011, Alfredo Vitrano (Print Name)

Supervising Engineer of Materials: Joe Marsano, Date: 1/1, Joe Marsano (Print Name)



SPECIAL INSPECTION REPORT PA 3366 / 10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transportation Hub CONTRACT NO.: WTC 264.596 Date: 12-14-11

CONTRACTOR: EIC

LOCATION: 20 cu. yd of 5000 psi concrete for

Footing C100 el. 229'6" and footing C151 el. 237'

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing 2. Formwork 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
ACI 305R - Hot Weather Concreting
ACI 306 - Cold Weather Concreting
ACI 309R - Guide for Consolidation of Concrete
ACI 308 - Standard Practice for Curing Concrete
ACI 311 - Manual of Concrete Inspection
ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: [Signature] Inspector Alexander Sciffano (Print Name) 12/14/11 Date

Concur: [Signature] Supervising Engineer of Materials Joseph Marsano (Print Name) 1/9/12 Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Footing for column C-149, EL 227' -0" to 231' -0". Work in Progress.  
Central Plant, Part Plan 4 & 6, 2' slab on grade, EL 229' -6"  
CL (CP 2/CP C5 + W1.5/-15 + W1.4/-15.5 + W/-13 + W-1/-9 + W-1.2/-13 + W-1.1/13.2 + CP2/F5). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

Footing for column C-149, elevation 227' -0" to 231' -0"

1 - Wire lathers set the footing reinforcement including: #9 bars (bar mark 9F12) at six inches on center each way. Work in Progress.

2 - The contractors set a template for the column dowels. Work in Progress.

Central Plant, Part Plan 4 & 6, 2' slab on grade, elevation 229' -6"

(approximate column lines: (CP 2/CP C5 + W1.5/-15 + W1.4/-15.5 + W/-13 + W-1/-9 + W-1.2/-13 + W-1.1/13.2 + CP2/F5)

1 - Wire lathers continued setting the top slab reinforcement including #10 continuous rebar @ six inches on center each way. Work in Progress.

2 - Contractors set pour stops for the projected concrete placement. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC 264 dated 29 April 2011 (Addendum 31): S1104 and S1106

Contract drawing WTC 264 dated 14 January 2011 (Addendum 30): S8303

Approved as corrected shop drawing dated 18 May 2011: 06A

Approved as corrected shop drawings dated 18 May 2011: 9A, 9B, 9C, 9D, 9E and 9F

CL - column lines

EL - elevation

CP - Central Plant

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
Inspector

12/15/2011 Date

Joe Marsano Signature  
Supervising Engineer of Materials

1/3/12 Date

Alfredo Vitrano  
(Print Name)

Joe Marsano  
(Print Name)



SPECIAL INSPECTION REPORT

PA 3666 / 10-09

CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transportation Hub CONTRACT NO.: WTC 264.596 Date: 12-16-11

CONTRACTOR: ETC

LOCATION: 34 cu. yd of 5000 psi concrete for footings C149 and C150

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scriffiano  
Inspector  
Alexander Scriffiano  
(Print Name)

12/16/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

1/19/12  
Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transportation Hub CONTRACT NO.: WTC 264.596 Date: 12-16-11

CONTRACTOR: ETC

LOCATION: 70 cu. yd of 5000 psi concrete for 15 kV duct bank at South D1 line

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Seriffiano  
Inspector

12/16/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials

1/9/12  
Date

Alexander Seriffiano  
(Print Name)

Joseph Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: WTC Transportation Hub CONTRACT NO.: WTC 264.596 Date: 12-16-11

CONTRACTOR: ETC

LOCATION: 252 cu. yd of 5000 psi #467 stone mix for  
SOG "KK" at el. 229'6"

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Pre-Placement: Checked formwork for cleanliness including removal of water and deleterious material

Placement: Checked trucks for approved material (batch tickets) and monitored mixing of loads. Witnessed proper concrete placement and consolidation. All QA sampling and testing of concrete was performed in accordance with ASTM and AASHTO test procedures (see PA 340 report).

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

- Scope of Inspections: 1. Sampling and Strength Testing
- 2. Formwork
- 3. Placement and Curing

- ACI 304R - Chapter 4 Mixing and Transporting Concrete, Chapter 5 Placing Concrete
- ACI 305R - Hot Weather Concreting
- ACI 306 - Cold Weather Concreting
- ACI 309R - Guide for Consolidation of Concrete
- ACI 308 - Standard Practice for Curing Concrete
- ACI 311 - Manual of Concrete Inspection
- ACI 318 - ACI Building Code

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alexander Scriffiano  
Inspector  
Alexander Scriffiano  
(Print Name)

12/16/11  
Date

Concur: Joseph Marsano  
Supervising Engineer of Materials  
Joseph Marsano  
(Print Name)

12/9/12  
Date



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Footing for column C-149, EL 227' -0" to 231' -0". Final Inspection.
Central Plant, Part Plan 4 & 6, 2' slab on grade, EL 229' -6"
CL (CP 2/CP C5 + W1.5/-15 + W1.4/-15.5 + W/-13 + W-1/-9 + W-1.2/-13 + W-1.1/13.2 + CP 2/CP F5). Final Inspection.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

Contractor worked in the following locations:

Footing for column C-149, elevation 227' -0" to 231' -0"

1 - Wire lathers set the side reinforcement including: #6 bars (bar mark 6F09) at twelve inches on center. They also set the twenty-four #11L column dowels (bar mark 11F13). Final Inspection.

2 - The contractors made final adjustments to the formwork. Final Inspection.

Central Plant, Part Plan 4 & 6, 2' slab on grade, elevation 229' -6"

(approximate column lines: (CP 2/CP C5 + W1.5/-15 + W1.4/-15.5 + W/-13 + W-1/-9 + W-1.2/-13 + W-1.1/13.2 + CP 2/CP F5)

1 - Wire lathers set remaining top slab reinforcement including additional top slab bars (eight additional #10 bars at column C-121 and five additional #10 bars at column C-205). Final Inspection.

2 - At the west end, the wire lathers set the #6L wall dowels for the projected 18-inch wall. Final Inspection.

3 - The contractors made final adjustments to the pour stop and the water stop material. Final Inspection.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC 264 dated 29 April 2011 (Addendum 31): S1104 and S1106

Contract drawing WTC 264 dated 14 January 2011 (Addendum 30): S8303

Approved as corrected shop drawing dated 18 May 2011: 06A

Approved as corrected shop drawings dated 18 May 2011: 9A, 9B, 9C, 9D, 9E and 9F

CL - column lines

EL - elevation

CP - Central Plant

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano 12/16/2011
Inspector Date

Alfredo Vitrano (Print Name)

Concur: Joe Marsano 12/12
Supervising Engineer of Materials Date

Joe Marsano (Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: Footing for column C-150, EL 222' -6" to 229' -6", CL W1.4/-16. Final Inspection.  
Duct Bank at the southeast end, EL 229' -6" to 239' -6", CL (A1.3/-11 to A1.4/-10.8)/(A1.5/-12 to A1.3/-11.8). Final Inspection.  
Central Plant, Supply Duct, 15" thick roof slab, EL 229' -0", CL (W-1 to W-2.3)/(-10 to -14). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

Footing for column C-150, EL 222' -6" to 229' -6", CL W1.4/-16.

1 - All reinforcement was previously set. Final Inspection.

Portion of Duct Bank at the southeast end, elevation 229' -6" to 239' -6"  
(approximate column lines: (A1.3/-11 to A1.4/-10.8)/(A1.5/-12 to A1.3/-11.8))

1 - Previously, the wire lathers set the duct bank reinforcement: #5U bars at six inches on center (top and bottom); bottom continuous #5 bars at six inches on center; side bars - #5 bars at six inches on center; and top continuous #5 bars at six inches on center. Final Inspection.

Central Plant, Supply Duct, 15" thick roof slab, elevation 229' -0"

(approximate column lines: (W-1 to W-2.3)/(-10 to -14))

1 - Wire lathers started setting bottom slab reinforcement layer: #6 continuous bars at six inches on center each way. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawings WTC-264 dated 29 April 2011 (Addendum 31): S1104 and S1106

Contract drawings WTC-264 dated 14 January 2011 (Addendum 30): S8303 and S8304

Contract drawing WTC-264 dated 1 April 2010: EP0833A

Approved as corrected shop drawing dated 10 November 2010: 06A

Approved as corrected shop drawing dated 18 May 2011: 09B

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
Inspector

12/16/2011  
Date

Concur: [Signature]  
Supervising Engineer of Materials

1/1  
Date

Alfredo Vitrano  
(Print Name)

Joe Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: \_\_\_\_\_

Central Plant, Part Plan 6, 2' slab on grade, EL 229' -6", CL (W-1 to WR-1)/(-9 to -14). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

Central Plant, Part Plan 6, 2' slab on grade, elevation 229' -6"

(approximate column lines: (W-1 to WR-1)/(-9 to -14))

1 - Wire lathers started setting bottom slab reinforcement: #10 bars at 6 inches on center each way.

Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106

Approved as corrected shop drawings dated 18 May 2011: 9A, 9B, 9C, 9D, 9E and 9F

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
Inspector

12/19/2011  
Date

Concur: [Signature]  
Supervising Engineer of Materials

1/13/12  
Date

Alfredo Vitrano  
(Print Name)

Joe Marsano  
(Print Name)



CONSTRUCTION DIVISION - MATERIALS ENGINEERING UNIT

CONTRACT TITLE: HUB FOUNDATION CONTRACT NO.: WTC 264.596

CONTRACTOR: EIC

LOCATION: \_\_\_\_\_

Central Plant, Part Plan 6, 2' slab on grade, EL 229' -6", CL (W-1 to WR-1)/(-9 to -14). Work in Progress.

Description of Controlled Work/Test Performed & Non-Conformance Notations:

Reinforcement and formwork inspection:

**Contractor worked in the following locations:**

Central Plant, Part Plan 6, 2' slab on grade, elevation 229' -6"  
(approximate column lines: (W-1 to WR-1)/(-9 to -14))

1 - Wire lathers set remaining bottom slab reinforcement: #10 bars at 6 inches on center each way.

Work in Progress.

2 - Wire lathers set the top slab reinforcement: #10 bars at six inches on center each way. Work in Progress.

List Applicable Documents that describe Inspection Procedures such as Materials Section Operation Bulletin, inspection and test reports and written scope of inspection and testing services:

ACI 117- Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 318- Building Code Requirements for Reinforced Concrete.

ACI 301- Specifications for Structural Concrete.

Contract drawing WTC 264 dated 29 April 2011 (Addendum 31): S1106

Approved as corrected shop drawings dated 18 May 2011: 9A, 9B, 9C, 9D, 9E and 9F

CL - column lines

EL - elevation

I certify, to the best of my knowledge, that all controlled work/tests described above were done in accordance with the Contract Document and are consistent with Materials Section testing and inspection procedures.

Signed: Alfredo Vitrano  
Inspector

12/26/2011  
Date

Concur: Joe Marsano  
Supervising Engineer of Materials

1/3/12  
Date

Alfredo Vitrano  
(Print Name)

Joe Marsano  
(Print Name)