NYS Office of General Services
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STATE OF NEW YORK
OFFICE OF GENERAL SERVICES
DESIGN AND CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242

ADDENDUM NO. 2 TO PROJECT NO. 44146
CONSTRUCTION WORK
REPAIR/REPLACE WEST END
OF ARTERIAL HIGHWAY
EMPIRE STATE PLAZA
ALBANY, NY

March 5, 2013

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

INTRODUCTORY INFORMATION

1. Document 000115 LIST OF DRAWINGS: Delete Reference Drawing Nos. 502-02, 502-04, 502-06, and 502-07 in their entirety from this Document.

SPECIFICATIONS

2. SECTION 071400 LIQUID APPLIED WATERPROOFING SYSTEM: Discard the Section bound in the Project Manual and substitute the attached Section (pages 071400-1 thru 071400- 9) noted "REVISED 3/5/13".

CONSTRUCTION WORK DRAWINGS

3. Delete Reference Drawing Nos. 502-02, 502-04, 502-06, and 502-07 in their entirety from the Project Manual

4. Drawing No. S-501 SECTIONS: Delete Detail 6/S-501 in its entirety. Refer to Addendum Drawing No. S-503 (Noted "Addendum Drawing 3/5/13") for replacement detail.

5. Drawing Nos. WZTC-01 and WZTC-02: Add ISLAND DETAIL as shown on Addendum Drawing No. S-504 noted "ADDENDUM DRAWING 3/5/13".

6. Reference Drawing No. 606-04 (4 sheets): Add BASE DETAIL – BOX BEAM GUIDERAIL POST as shown on Addendum Drawing No. S-505 noted "ADDENDUM DRAWING 3/5/13".

ADDENDUM DRAWINGS

7. Drawing No. S-503 noted "ADDENDUM DRAWING 3/5/13" accompanies this Addendum and forms part of the Contract Documents. The detail on this Drawing replaces Detail 6/S-501 that was deleted from Drawing No. S-501.

8. Drawing No. S-504 noted "ADDENDUM DRAWING 3/5/13" accompanies this Addendum and forms part of the Contract Documents.

9. Drawing No. S-505 noted "ADDENDUM DRAWING 3/5/13" accompanies this Addendum and forms part of the Contract Documents.

END OF ADDENDUM

James Dirolf, P.E.
Director of Design

JRC:jc

SECTION 071400

LIQUID APPLIED WATERPROOFING SYSTEM

PART 1 GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

A. Surface Preparation for Liquid Applied Waterproofing System: Section 320117.

B. Cast-In-Place Concrete: Section 033000.

1.02 SUMMARY

A. The work of this section includes, but is not limited to, the following:

1. Liquid applied waterproofing system
2. Protection board
3. Insulation

B. System Description: The cold liquid-applied elastomeric waterproofing membrane system shall consist of the following:

1. Liquid Applied Membrane: coal-tar and solvent free, single component, elastomeric liquid that provides a seamless reinforced waterproofing membrane at 120 mil thickness.
2. Accessories and Materials for complete waterproofing application.

1.03 REFERENCE STANDARDS

A. The following standards and publications are applicable to the extent referenced in the text. The most recent version of these standards is implied unless otherwise stated.

B. American Society for Testing and Materials (ASTM)

C 836	Standard Specification for High Solids, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course
C 898	Standard Guide for Use of High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane With Separate Wearing Course
D 412	Standard Test Methods for Rubber Properties in Tension
D 903	Standard Test Method for Peel or Stripping Strength of Adhesive Bonds
D 1644	Test Methods for Nonvolatile Content of Varnishes

D 1970	Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
D 3767	Standard Practice for Rubber - Measurements of Dimensions
D 4833	Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
D 1709	Standard Test Methods for Impact Resistance of Plastic Films by the Free Falling Dart Method
D 882	Standard Test Method for Tensile Properties of Thin Plastic Sheeting
E 96	Standard Test Method for Water Vapor Transmission of Materials.

1.04 SUBMITTALS

A. Product Data: Submit manufacturer's product data, installation instructions, use limitations and recommendations.

B. Shop drawings showing locations and extent of waterproofing including details for terminations and flashings, projections, penetrations, drains and treatment of substrate joints and cracks.

C. Written documentation demonstrating installers qualifications under the "Quality Assurance" article including reference projects of a similar scope.

D. Samples: Submit representative samples of the following for approval:

1. Liquid applied membrane
2. Polyester fabric reinforcement
3. Protection board

E. Warranty: Submit a sample warranty identifying the terms and conditions stated in Article 1.08.

1.05 QUALITY ASSURANCE

A. Manufacturer: Waterproofing systems shall be manufactured and marketed by a firm with a minimum of 20 years' experience in the production and sales of waterproofing. The liquid applied membrane waterproofing system must be supplied by single manufacturer. Manufacturers proposed for use, but not named in these specifications shall submit evidence of ability to meet all requirements specified, and include a list of projects of similar design and complexity completed within the past five years.

B. Installer: The installer shall demonstrate qualifications to perform the work of this Section by submitting the following:

1. Certification or written license from the Waterproofing Manufacturer that the Installer is a trained applicator.
2. List of at least three (3) projects contracted within the past five (5) years of similar scope and complexity to this project.
3. Installer must show evidence of adequate equipment and trained field personnel to successfully complete the project in a timely manner.

4. Installer's credentials must be approved by both the Architect and the Waterproofing Materials Manufacturer.

C. Materials: Liquid applied waterproofing system shall be by single source manufacturer and shall consist of cold liquid-applied elastomeric waterproofing with a polyester reinforcing fabric.

D. Pre-Installation Conference: A pre-installation conference shall be held prior to commencement of field operations to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work. Agenda for meeting shall include review of surface preparation, minimum curing period, installation procedures, special details and flashings, inspection, testing, protection and repair procedures. The conference shall be attended by the Contractor, approved applicator, and the manufacturer's representative.

E. Inspection and Testing: All areas shall be water tested following application and be inspected an individual trained and approved by the waterproofing systems manufacturer.

F. Provide all necessary instruments to measure wet film and dry film thicknesses as specified in this Section.

G. Contractor to provide independent third party inspections full time during waterproofing installation.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials and products in the original, unopened containers with seals unbroken, labeled with the manufacturer's name, product brand name and type, date of manufacture and directions for storage and use.

B. Store and handle materials in strict compliance with manufacturer's instructions, recommendations and material safety data sheets. Protect from damage from sunlight, weather, excessive temperatures and construction operations. Remove damaged material from the site and dispose of in accordance with applicable regulations.

1. Do not double-stack pallets of waterproofing on the job site. Provide cover on top and all sides, allowing for adequate ventilation.
2. Store protection board flat and off the ground. Provide cover on top and all sides.
3. Protect waterproofing materials from freezing.

C. Sequence deliveries to avoid delays, but minimize on-site storage.

1.07 PROJECT CONDITIONS

A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials and products used.

B. Proceed with installation only when substrate construction and preparation work is complete and in condition to receive membrane waterproofing.

C. Do not allow waste products (i.e. petroleum, grease, oil, solvents, vegetable or mineral oil, animal fat, acids, etc.) to come into contact with the waterproofing membrane. Any exposure to foreign materials or chemical discharges must be presented to the Membrane Manufacturer to determine the impact on the waterproofing assembly performance.

D. Horizontal Application - Concrete Deck Surface condition:

1. Ensure no excessive deflection or movement of the deck or other structural problems.
2. The deck shall provide for support of the maximum anticipated dead and environmental loads and for expansion and contraction suitable for the roof system structure.
3. All projections, penetrations and openings in the deck should be completed before the waterproofing application begins.
4. Joints in pre-cast/pre-stressed concrete decks are to be grouted so that the top surface is level and smooth before membrane application.

E. Deck/Wall Preparation: refer to Article 3.02 Substrate Preparation

F. General contractor shall assure adequate protection and ventilation during the application of the Waterproofing assembly.

1.08 WARRANTY

A. Upon Project completion the contractor must submit a written warranty for the waterproofing materials signed by the Waterproofing Manufacturer.

B. Please see manufacturer specific written warranty documents for specifics:

1. **Material Warranty:** Manufacturer's standard 5-year material warranty
2. **Watertightness Warranty:** Manufacturer's standard 15-year watertightness warranty**.**

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. CCW-MiraSEAL reinforced liquid applied waterproofing membrane by Carlisle Coatings and Waterproofing Incorporated, 900 Hensley Lane, Wylie, Tx. 78098, Phone (800) 527-7092.

B. CM-100 by Henry Company, 999 North Sepulveda Blvd., Suite 800, El Segundo, CA 90245, Phone (310) 955-9200.

C. Barr Liquid Waterproofing Membrane by Chemlink, 353 E. Lyons Street, Schoolcraft, MI 49087, Phone (800) 826-1681.

2.02 MATERIALS

A. Liquid Applied Waterproofing Membranes: 100% solids content, cold liquid-applied elastomeric membrane. Liquid applied membranes shall meet or exceed the performance requirements of ASTM C 836.

B. Membrane reinforcement: polyester fabric for membrane reinforcement.

C. Protection Board:

1. Asphalt Hardboard: A premolded semi-rigid protection board consisting of bitumen, mineral core and reinforcement. Provide 3 mm (0.125 in.) thick hardboard on horizontal surfaces not receiving steel reinforced slab. Where steel reinforcing bars are to be used, apply two layers of 3 mm (0.125 in.) thick hardboard or one layer of 6 mm (0.25 in.) thick hardboard.

2. Expanded Polystyrene Protection Board: 25 mm (1 in.) thick for vertical applications with the following characteristics:

a) Normal Density: 16 kg/m3 (1.0 lb/ft3)

b) Thermal Conductivity, K factor: 0.24 at 5°C (40°F), 0.26 at 24°C (75°F)

c) Thermal Resistance, R-Value: 4 per 25 mm (1 in.) of thickness.

D. An extruded polystyrene rigid board insulation meeting the following requirements:

1. Minimum compressive strength, ASTM D1621, 60 psi .
2. Maximum water absorption by volume per ASTM C272, 0.1%
3. Insulation shall have an R-value of 5.0 F.ft2.h/Btu/in. (0.88 K.m2/W) of thickness when tested at 75°F (23.9°C) mean temperature in accordance with ASTM C518.
4. Product shall be free of CFCs.

E. Miscellaneous Materials: Tape and other accessories specified or acceptable to manufacturer of liquid applied waterproofing membrane.

PART 3 EXECUTION

3.01 EXAMINATION

A. The installer shall examine conditions of substrates and other conditions under which this work is to be performed and notify the contractor, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 PREPARATION

A. Refer to manufacturer's literature for requirements for preparation of substrates. Surfaces shall be structurally sound and free of voids, spalled areas, loose aggregate and sharp protrusions. Remove contaminants such as grease, oil and wax from exposed surfaces. Remove dust, dirt, loose stone and debris. Use repair materials and methods that are acceptable to manufacturer of the liquid applied waterproofing.

B. Tie-holes and "bugholes" larger than 13 mm (1/2") in diameter or deeper than 3 mm (1/8"), or both, should be repaired with a lean concrete mix or with a lean concrete mix or grout. See ASTM D 5295, Preparation of Concrete Surfaces for Adhered Membrane Waterproofing Systems, for further details on substrate preparation.

C. Cracked, pitted, honeycombed or heavily bugholed surfaces can be filled by spraying from close in (10" to 12") but high material usage with result. Under these circumstances it may be more efficient to fill the surface with a parge coat of lean mortar mix before application of the waterproofing membrane. It is also acceptable to fill in gaps with a compatible sealant or caulk.

D. Cast-In-Place Concrete Substrates:

1. For horizontal applications, poured in-place concrete must be cast with a minimum slope to drain of 11 mm/m (1/8 in./ft). and must be monolithic, smooth, and free of unapproved curing compounds, form release agents and other surface contaminants.
2. Fill form tie rod holes with concrete and finish flush with surrounding surface.
3. Repair bugholes over 13 mm (0.5 in.) in length and 6 mm (0.25 in.) deep and finish flush with surrounding surface.
4. Remove scaling to sound, unaffected concrete and repair exposed area.
5. Grind irregular construction joints to suitable flush surface.

E. Substrate Cleaning:

a) Thoroughly sweep the substrate that is to receive the waterproofing membrane.

b) Substrate must also be blown using oil free air to remove any remaining loose debris.

c) A final check to determine if the substrate is sufficiently clean is to apply a test patch of membrane and check its adhesion. Remove all debris, dirt, dust, and other substances that are detrimental to the application of materials specified in this Section.

F. Patch all areas of the existing substrate that have been damaged by removals. Remove loose materials and fill voids to obtain a reasonably smooth surface for proper bonding of the waterproofing materials. Use patching materials recommended by the elastomeric membrane manufacturer.

G. Follow the written instructions of the elastomeric membrane manufacturer; unless otherwise specified herein.

1. Prime all surfaces.
2. Fill static joints and cracks.

3. Where cant strips are required, embed the strips in elastomeric material.
4. Install expansion joint filler, backer rod, and sealant.
5. Install bond breaker (tape or wax) along each side of expansion joints. Make bond breaker at least 4 times the width of the expansion joint.
6. Mask off and protect all adjoining surfaces that are not to receive elastomeric waterproofing.

3.03 INSTALLATION

A. Refer to manufacturer's literature for recommendations on installation, including but not limited to, the following:

1. Vertical Application Liquid Applied Membrane (Material Warranty Only):

   a) Detailing: Apply a minimum thickness of 1.5 mm (60 mils) over all detail areas (including inside corners, outside corners, pipe penetrations, cracks, construction joints, etc) prior to application of the field of the membrane.

   b) Apply a minimum thickness of 1.5 mm (60 mils) over all vertical areas to be waterproofed and lapping a minimum of 100mm (4 in.) onto pre-treated detail areas. Perform wet film thickness tests as work progresses to confirm thickness.

2. Vertical Application Liquid Applied Membrane (Watertightness Warranty)

   a) Detailing: Apply a minimum thickness of 1.5 mm (60 mils) over all detail areas (including inside corners, outside corners, pipe penetrations, cracks, construction joints, etc) prior to application of the field of the membrane.

   b) Apply a minimum thickness of 2.3 mm (90 mils) over all vertical areas to be waterproofed and lapping a minimum of 100mm (4 in.) onto pre-treated detail areas. Perform wet film thickness tests as work progresses to confirm thickness.

3. Horizontal Application Liquid Applied Membrane (Material Warranty Only):

   a) Detailing: Apply a minimum thickness of 1.5 mm (60 mils), or as per manufacturer's drawings and written application instructions, over all detail areas (including inside corners, outside corners, pipe penetrations, cracks, construction joints, etc) prior to application of the field of the membrane

   b) Apply a minimum thickness of 1.5 mm (60 mils) over all horizontal areas to be waterproofed and lapping a minimum of 100mm (4 in.) onto detail areas. Perform wet film thickness tests as work progresses to confirm thickness.

4. Horizontal Application Liquid Applied Membrane (15 year Watertightness Warranty):

   a) Detailing: Apply a minimum thickness of 1.5 mm (60 mils), or as per manufacturer's drawings and written application instructions, over all detail areas (including inside corners, outside corners, pipe penetrations, cracks, construction joints, etc) prior to application of the field of the membrane

   b) Apply a minimum thickness of 1.5 mm (60 mils) over all horizontal areas to be waterproofed and lapping a minimum of 100mm (4 in.) onto detail areas. Perform wet film thickness tests as work progresses to confirm thickness.

   c) Apply a second coat at a minimum thickness of 1.5 mm (60 mils) over first coat and completely covering all detail areas to give a minimum total thickness of 3.0 mm (120 mils) in the field and 4.5mm (180 mils) at detail areas. Perform wet film thickness tests as work progresses to confirm thickness.

5. Polyester fabric reinforcement: install per manufacturer's recommendations.

3.04 FIELD QUALITY CONTROL

A. Thickness of Membrane:
   1. During application, take frequent wet gage checks to assure sufficient coverage to obtain the specified dry film thickness.
   2. When and where directed by the Director's Representative, make test cuts thru the cured membrane and measure the dry film thickness. (Up to one test for each 100 sf may be required). Patch the cuts immediately with matching materials. Apply additional membrane material where required, if tests show less than specified membrane thickness.

B. All areas of the deck must be water tested by means of electronic testing or ponding to a minimum depth of 50mm (2 in.) for a period of 24 hours to confirm the integrity of the membrane.

C. Allow the membrane to cure for a minimum period of 48 hours before starting water tests.

D. Before flood testing, be sure the structure will withstand the dead load of the water.

E. Mark any leaks and repair according to manufacturers repair procedures when the membrane is dry.

3.05 PROTECTION

A. General: Keep all unnecessary traffic off the completed membrane until protection board has been placed.

B. Remove any masking materials after installation. Clean any stains on materials that would be exposed in the completed work.

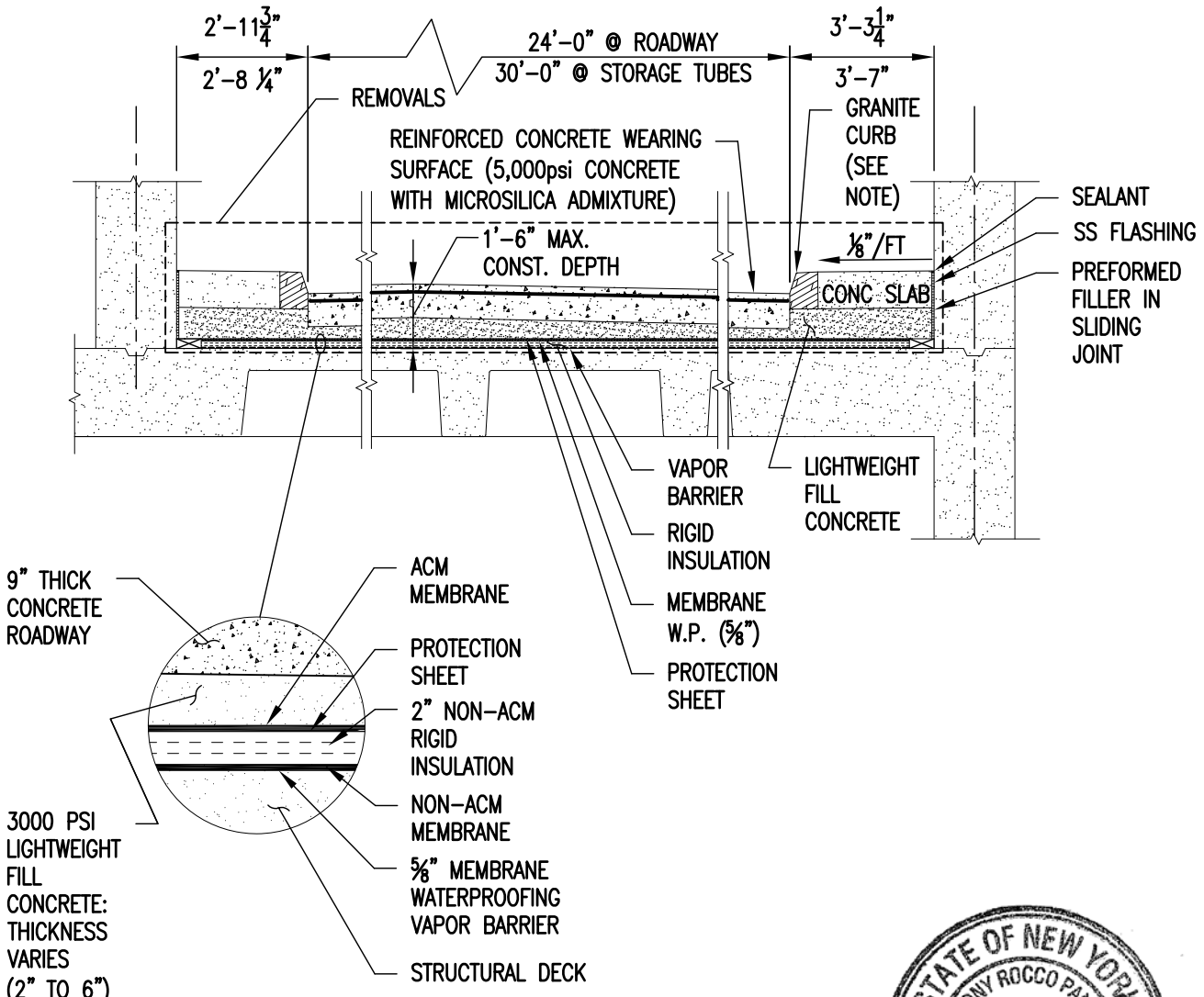
C. A protection course should always be installed as soon as possible after completion of the waterproofing installation and flood testing to protect the membrane from mechanical damage and UV.

D. Install any protection and insulation courses according to the manufacturer's instructions.

END OF SECTION

NOTE
EXISTING GRANITE CURBS SHALL BE REMOVED, CLEANED, AND RETURNED TO THE OWNER

GC TO SURVEY EXISTING CONDITIONS, REPLACE TO MATCH GRADES



1 / S-503 **MODIFIED EXISTING SECTION**

SCALE: 1/4" = 1'-0"

STATE OF NEW YORK
ANTHONY ROCCO PANICCIA
076303
LICENSED PROFESSIONAL ENGINEER

ADDENDUM DRAWING 3/5/13

ADDENDUM #2

NYS OFFICE OF GENERAL SERVICES
Serving New York

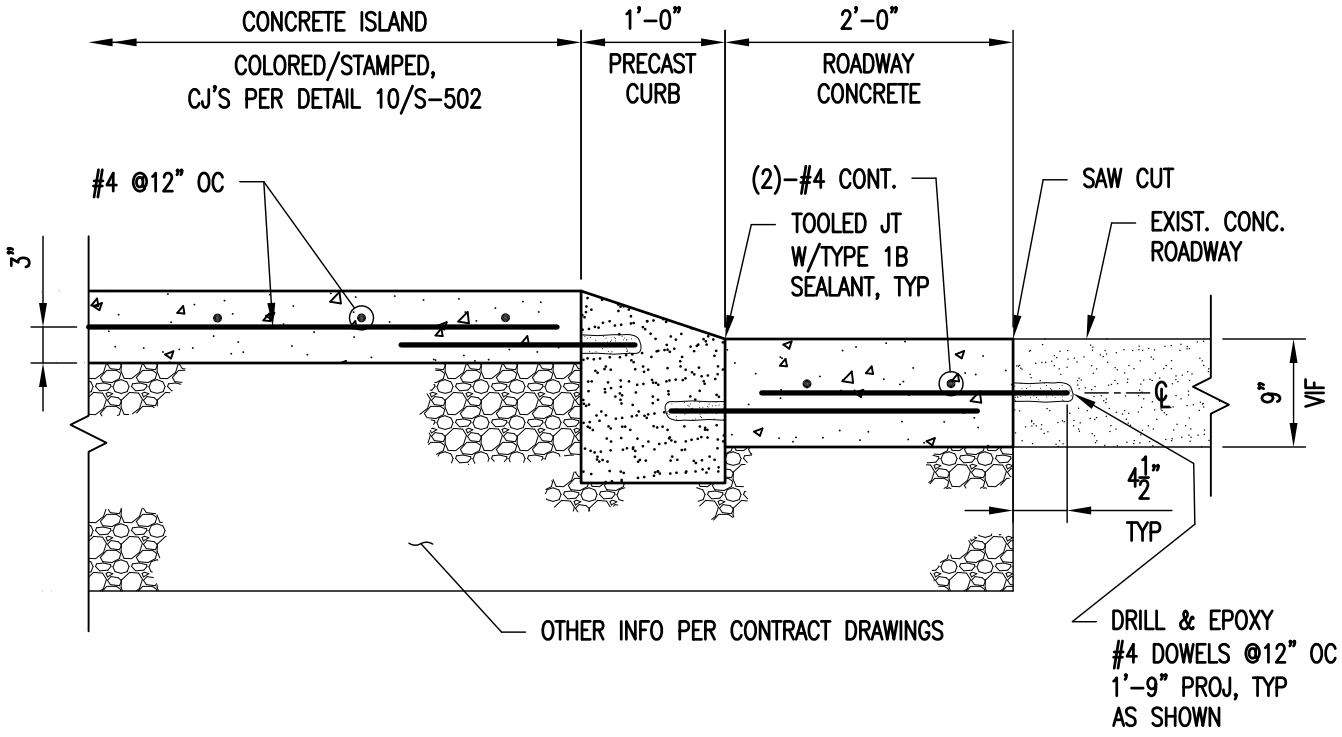
CONTRACT:	CONSTRUCTION
PROJ. NO:	44146-C
DATE:	3/5/13
DRAWN:	PEZ
APPROVED:	DEB

DELTA
ENGINEERS, ARCHITECTS, & LAND SURVEYORS
860 Hooper Road
Endwell, New York 13760
Tel: 607.231.6600
Fax: 607.231.6651
Email: mail@deltaengineers.com
Web: www.deltaengineers.com
DELTA PROJECT NUMBER: 2010.589.004

SHEET TITLE: MODIFIED EXISTING SECTION 6/S-501

PROJECT: REPAIR/REPLACE WEST END OF ARTERIAL HIGHWAY

DWG NO: S-503



1 / S-504 ISLAND DETAIL

SCALE: 3/4" = 1'-0"
(FOR DWGS WZTC-01 & WZTC-02)

ADDENDUM DRAWING 3/5/13

ADDENDUM #2

SHEET TITLE: ISLAND DETAIL

PROJECT: REPAIR/REPLACE WEST END OF ARTERIAL HIGHWAY

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DELTA
ENGINEERS, ARCHITECTS, & LAND SURVEYORS
860 Hooper Road
Endwell, New York 13760
Tel: 607.231.6600
Fax: 607.231.6651
Email: mail@deltaengineers.com
Web: www.deltaengineers.com
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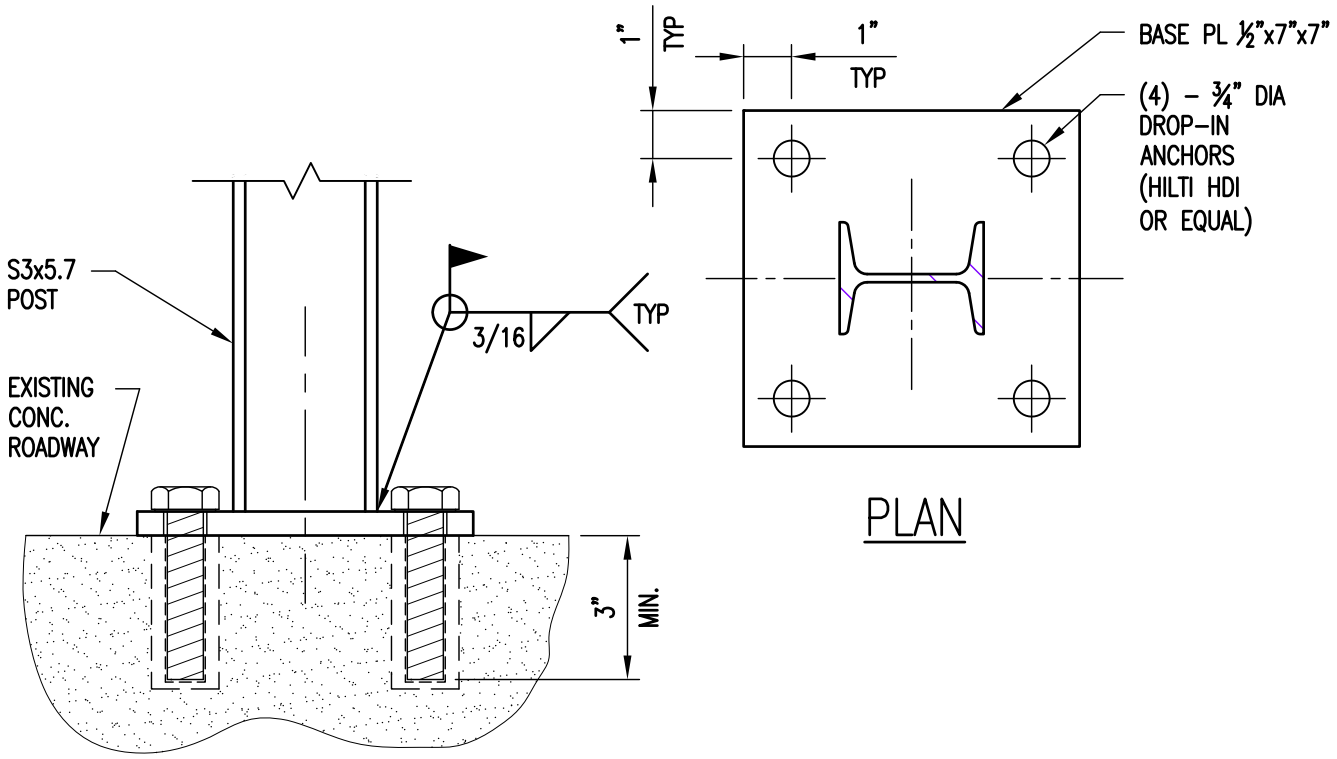
DWG NO: S-504



PLAN

ELEVATION

1 / S-505

ALTERNATE BASE DETAIL– BOX BEAM GUIDERAIL POST

SCALE: 3" = 1'-0"

USE IN–LIEU OF DETAILS SHOWN ON NYSDOT STD. SHEET 606–04

STATE OF NEW YORK · ANTHONY ROCCO PANICCIA · 076303 · LICENSED PROFESSIONAL ENGINEER

ADDENDUM DRAWING 3/5/13

ADDENDUM #2

NYS OFFICE OF GENERAL SERVICES
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APPROVED:	DEB

DELTA ENGINEERS, ARCHITECTS, & LAND SURVEYORS
860 Hooper Road
Endwell, New York 13760
Tel: 607.231.6600
Fax: 607.231.6651
Email: mail@deltaengineers.com
Web: www.deltaengineers.com
DELTA PROJECT NUMBER: 2010.589.004

SHEET TITLE: ALTERNATE BASE DETAIL– BOX BEAM GUIDERAIL POST

PROJECT: REPAIR/REPLACE WEST END OF ARTERIAL HIGHWAY

DWG NO: S–505