DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO
ATTENTION OF:
Regulatory Branch

JUN 2 4 2013

SUBJECT: DEPARTMENT OF THE ARMY PERMIT Number NAN-2012-00090-M1 Issued to New York State Thruway Authority on 25 April 2013 Authorizing Regulated Work to Facilitate Construction of The New NY Bridge in the Hudson River Between Tarrytown and Nyack, New York

PERMITTEE:
New York State Thruway Authority
ATTN: Peter Sanderson, Project Director
555 White Plains Rd, 4th Floor
Tarrytown, NY 10591
(518) 436-2810
(914) 789-3200

1. Reference is made to

a. Subject Department of the Army permit issued 25 April 2013.

b. The subject permittee's agent's e-mail permit modification request dated 11 June 2013 for additional regulated work identified during the design phase of the ongoing project design-build process.

2. In accordance with the provisions of Section 10 of the River & Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344), the New York District of the U.S. Army Corps of Engineers issued the subject [enclosed] Department of the Army permit [Reference 1(a)] on 25 April 2013 to New York State Thruway Authority

3. The additional regulated work includes a new floating dock structure for safe transfer of personnel and material to and from work boats at the former Castle Oil Terminal in the Hudson River at Sleepy Hollow, Town of Mount Pleasant, Westchester County, New York; and maintenance and repair of approximately 100 linear feet of existing stream culverts and roadbed of an existing access road approximately 300 feet south of the existing Interchange 9 New York State Thruway toll plaza to provide temporary construction access. The improved access road and culvert drainage system would disturb fill approximately 900 square feet of an unnamed, non-navigable, intermittent stream and its associated wetlands.

Regulatory Branch JUN 24 2013

SUBJECT: DEPARTMENT OF THE ARMY PERMIT Number NAN-2012-00090-M1 Issued to New York State Thruway Authority on 25 April 2013 Authorizing Regulated Work to Facilitate Construction of The New NY Bridge in the Hudson River Between Tarrytown and Nyack, New York

4. Based upon an evaluation of the administrative record supporting the issuance of the subject permit, a review of the permittee's submitted materials in support of their permit modification request [reference 1(b)], the subject permit is hereby modified so that:

a. The number of dated permit drawings increase to twenty-five (25) from sixteen (16) to include:

i. Three (3) permit drawings titled Location Map and Temporary Docking Facility dated today, 24 June 2013, are hereby added to the subject issued Department of the Army permit.

ii. Six (6) permit drawings titled Unit 22-Access Road Design dated today, 24 June 2013, are hereby added to the subject issued Department of the Army permit.

b. The following Special Condition (M) is added to the subject issued permit:

(M) The permittee shall mitigate at Piermont Marsh for the herein authorized filling of 900 Square Feet of the unnamed, non-navigable, intermittent stream and its associated wetlands.

5. All other terms, General Conditions, and Special Conditions of the subject issued permit shall remain in effect, including the permit expiration date of 24 MARCH 2019. Going forth this modified permit shall be known as Permit Number NAN-2012-00090-M1. This modified permit shall be available at project offices and regulated work sites.

24 JUN 13

"FOR AND IN BEHALF OF"
PAUL E. OWEN
Colonel, U.S. Army
Commander

Encl (1)
Modified DA Permit

CF: (w/encl)
CENAN-OP-RE (Enforcement)
NYSDEC Region 3 Permit Administrator
TAPPAN ZEE CONSTRUCTORS, LLC

DEPARTMENT OF THE ARMY PERMIT

Permittee: New York State Thruway Authority
200 Southern Boulevard
PO BOX 189,
Albany, New York 12201-0189
(518) 436-2810

Permit Number: NAN-2012-00090

Permit Date: APR 25 2013

Issuing Office: US Army Corps of Engineers New York District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer. You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: Regulated discharges of fill materials and work integral to the construction of the dual-span New NY Bridge north of, and replacing, the existing Tappan Zee Bridge to include:

(i) Construction of four (4) commercial construction vessel mooring buoys as shown on the attached dated permit drawings, to be removed at the end of all marine work.

(ii) Construct a 150-foot permanent new steel bulkhead at the Rockland County Bridge Staging and Maintenance Area encompassing approximately 0.02 acre of navigable waters as measured waterward of the line of Spring High Water on the shoreline, as shown on the attached dated permit drawings.

(iii) New-work bucket dredging to a maximum depth of 14 feet below the plane of Mean Lower Low Water, including one-foot of allowable overdepth dredging, in order to create two (West and East) needed and integral construction vessels access channels as shown on the attached dated permit drawings. All of the approximately 800,000 CYs of dredged material from the two dredging areas (approx. 120 acres) shall be disposed at a State-approved upland disposal site, outside of Department of the Army regulatory jurisdiction.

(iv) Permanently discharge approximately 310,000 CYs of sand bedding and gravel armoring (approx. 94 acres) to a maximum thickness of two feet within the dredged West and East construction vessel access channels to minimize river sediment resuspension because of construction vessel movements.

1145-2-303b (Hudson River/NYSTA/Construction dredging w/ upland disposal, discharge of fill materials for bridges' construction and removals)

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(v) Permanently discharge fill materials below the plane of Spring High Water integral to the construction of the US Coast Guard permitted new bridge spans' structures and elements to include, but not limited to, poured concrete into tightly-sealed forms, placement of poured concrete into encapsulated bridge support pilings, placement of stone riprap for anti-scour bedding mats around bridge support structures, placement of stone for river bank stabilization, decanting of excess water from barges during dredging operations, and decanting of excess water from barges during rock drilling dewatering operations.

(vi) Permanently discharge dredged or fill materials into regulated waters or wetlands, and perform regulated construction work, to construct aquatic mitigation sites to include oyster bed restoration, secondary channel and stream restoration, and wetlands mitigation in accordance with the New York State Department of Environmental Conservation issued water quality certificate number 3-9903-00043/00013.

All work shall be performed in accordance with the attached dated permit drawings; Special Conditions (A) thru (L) listed below; and the attached New York State Department of Environmental Conservation issued Section 401 of the Clean Water Act Water Quality Certificate Numbered 3-9903-00043/00013 dated March 25, 2013, including any future amendments; all of which are hereby made part of this permit.

Project Location: IN: Hudson River
AT: River Mile 27, between Nyack, Rockland County and Tarrytown, Westchester County, New York

Permit Conditions:
General Conditions:

1. Time limit for completing the regulated work authorized herein ends on **24 MARCH 2019**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least two (2) months before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains

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while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned Section 401 of the Clean Water Act water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. The permittee shall allow representatives from this office to inspect the authorized activities at any time deemed necessary; and shall promptly provide any required written reports, to ensure that authorized activities are being or have been accomplished in accordance with the terms and conditions of this permit.

Special Conditions:

(A) The permittee shall submit to this office the dates of commencement of the herein authorized activities.

(B) The permittee shall be responsible for complying with the special conditions and/or stipulations incorporated into the Coastal Zone Management Program Consistency Determination issued by the New York State Department of State (NYSDOS) on September 20, 2012, with modification letter dated February 7, 2013 (NYSDOS File Number F-2012-0315), and all future amendments thereto.

(C) The permittee, and its agents, shall not dredge from November 2nd through July 31st of any calendar year in order to minimize adverse aquatic impacts to diadromous fish spawning migrations and their peak biological activity.

(D) The permittee shall comply with the terms and conditions of the National Marine Fisheries Service (NMFS) Biological Opinion (BO) and Incidental Take Statement (ITS) dated April 10, 2013, and all future amendments thereto. This Department of the Army permit does not authorize the permittee, or its agents, to take an animal of an endangered species, in particular, Shortnose sturgeon or Atlantic sturgeon. In order to take a listed species, the permittee shall have a separate authorization under

the Endangered Species Act (ESA) (16 U.S.C. 1531 et. seq.), e.g., a permit under Section 10 of the Endangered Species Act or a Biological Opinion (BO) under Section 7 of the Endangered Species Act (ESA), with Incidental Take Statement (ITS) provisions with which the permittee must comply. The cited Biological Opinion (BO) contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with the Incidental Take Statement (ITS), that are specified in the Biological Opinion (BO). The permittee's authorization under this Department of the permit is conditioned upon the permittee's compliance with the Incidental Take Statement (ITS) of the Biological Opinion (BO), which terms and conditions are incorporated by reference into this permit. Failure to comply with the terms and conditions associated with the Incidental Take Statement (ITS) of the Biological Opinion (BO), where a take of a listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with this issued Department of the Army permit. The National Marine Fisheries Service (NMFS) is the appropriate authority to determine compliance with the terms and conditions of its Biological Opinion (BO), and with the Endangered Species Act (ESA) (16 U.S.C. 1531 et. seq.)

(E) The permittee shall maintain a copy of this permit on all vessels engaged in dredging and transporting dredged materials.

(F) The permittee shall undertake all dredging activities in such a manner as to avoid large refuse piles, ridges across the bed of the waterway or deep holes, which have a tendency to cause injury to navigable channels or the banks of the waterway.

(G) The permittee shall, no less than 24 hour prior to the commencement of any dredging, notify the United States Coast Guard office (USCG) of the commencement of any dredging and expected completion date, the hours of the day the work will be performed, the names of the vessels on-scene, the VHF radio channel(s) the vessels will monitor, and the project's 24/7 point(s) of contact. This information may be faxed to (718) 354-4190 or mailed to the following address:

USCG Commander
Activities New York (wob)
212 Coast Guard Drive
Staten Island, New York 10305
(718) 354-4012

(H) No less than 24 hours prior to the commencement of any dredging, the permittee shall inform local waterway users of the commencement of any dredging, using the "Local Notice to Mariners." Information required to

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be provided in the Local Notice to Mariners can be found at HTTP://www.navcen.uscg.gov. This information may be faxed to (617) 223-8073 or mailed to:

Commander (oan)
First Coast Guard District
408 Atlantic Avenue
Boston, MA 02111-3350

(I) The permittee shall provide the National Oceanic and Atmospheric Administration National Ocean Service (NOAA-NOS) of the project's physical completion date and as-built specifications so that NOAA may initiate the appropriate navigation chart updates and corrections. This information may be faxed to (301) 713-4516 or mailed to the following address:

National Oceanic and Atmospheric Administration
National Ocean Service
N/CS261, Marine Chart Division
Nautical Data Branch, Station 7317
1315 East-West Highway
Silver Springs, MD 20910-3282

(J) The permittee shall verify, in writing, compliance with all required notices to USCG and NOAA-NOS as called for above, within five (5) calendar days of each notice. Verifications shall be delivered to the New York District at the following address:

Chief, Regulatory Branch
US Army Corps of Engineers
26 Federal Plaza, Room 1937
New York, NY 10278-0090

(K) All temporary construction structures and falsework shall be removed to a depth of at least two (2) feet below the river's mud line before this permit expires.

(L) The permittee shall submit to this office the dates of completion of the herein authorized activities.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. Code 403).

(X) Section 404 of the Clean Water Act (33 U.S. Code 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

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2. Limits of this authorization:

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability: in issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures

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ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Dan Duson — 25 April, 2013

NEW YORK STATE THRUWAY AUTHORITY (DATE)
(PERMITTEE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

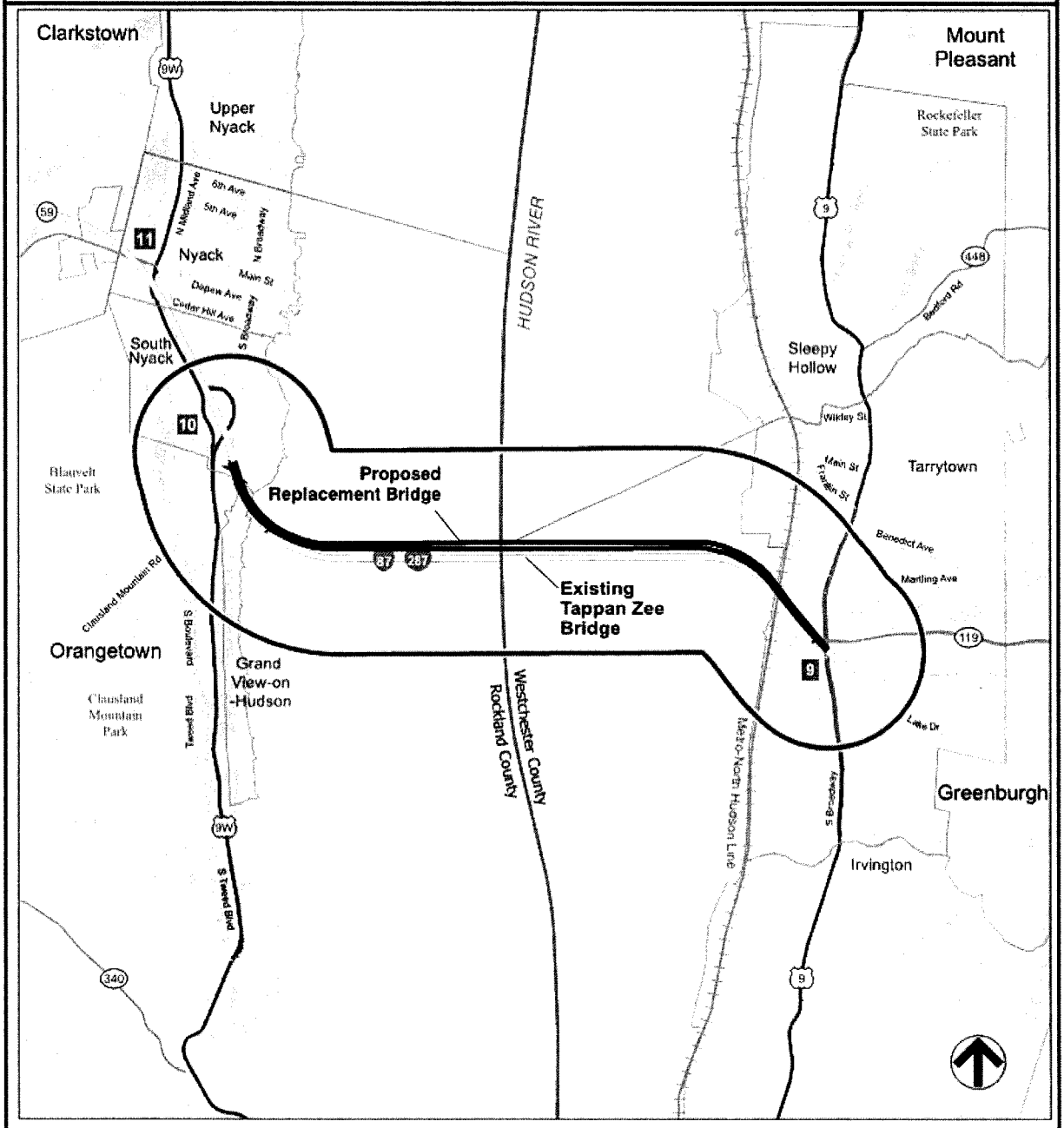
Thomas H. Creamer — APR 25 2013

(DISTRICT ENGINEER) 25 Apr 13 (DATE)
"FOR AND IN BEHALF OF"
PAUL E. OWEN
Colonel, US Army
Commander

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below. A copy of the permit signed by the transferee should be sent to this office.

(TRANSFEREE) (DATE)

USACE FILE: NAN-2012-00090



PURPOSE: REPLACEMENT BRIDGE

DATUM: MLW = -1.69'
MHW = +1.76'
REF. NAVD88

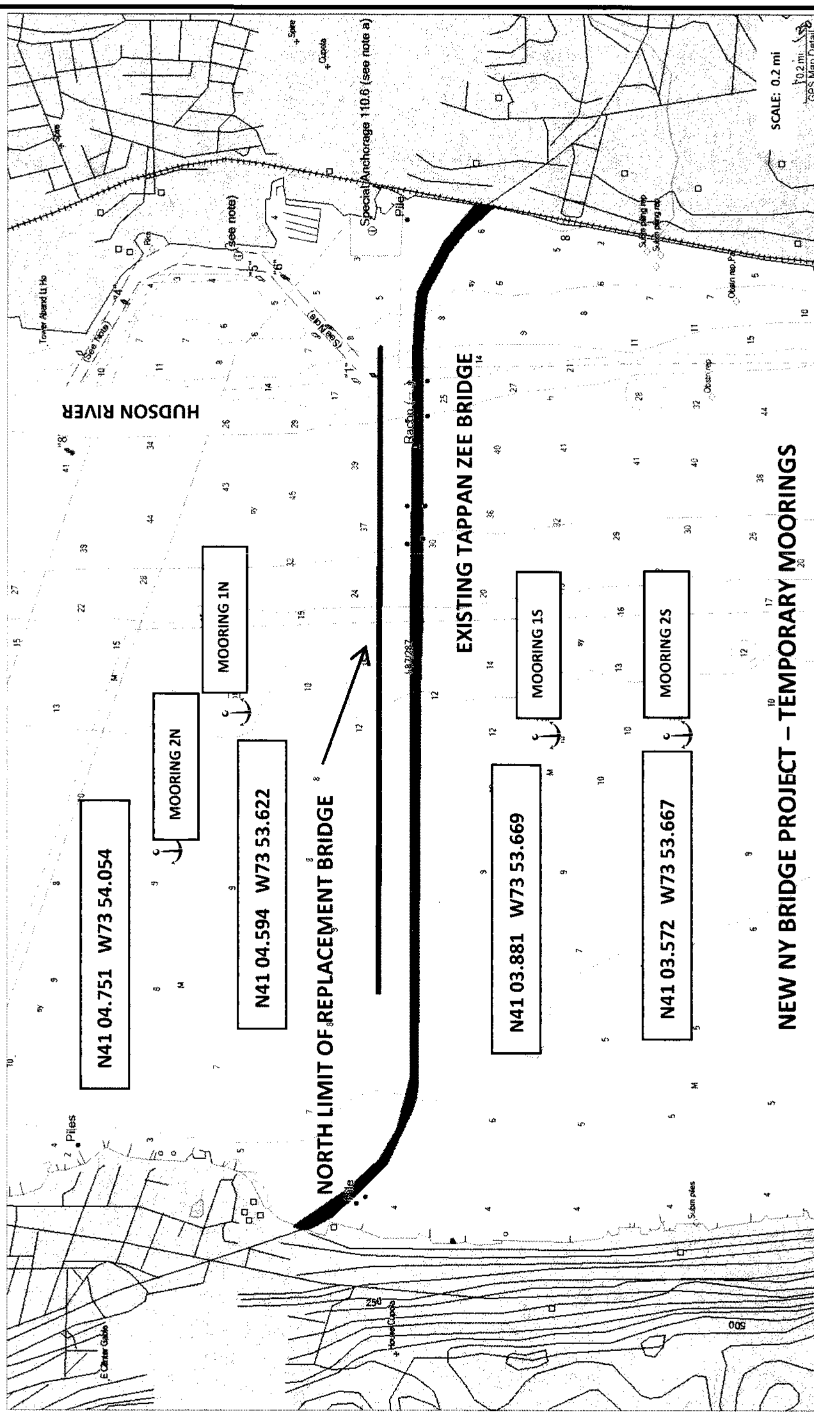
VICINITY MAP

APPLICANT:
NYS THRUWAY AUTHORITY
TAPPAN ZEE BRIDGE
THE NEW NY BRIDGE PROJECT

HUDSON RIVER
MILE POINT 27
SOUTH NYACK - TARRYTOWN , NEW YORK
ROCKLAND AND WESTCHESTER COUNTIES

DATE: APRIL 2013

USACE FILE: NAN-2012-00090



PURPOSE: REPLACEMENT BRIDGE

DATUM: MLW = -1.69'
MHW = +1.76'
REF. NAVD88

COMMERCIAL MOORING BUOYS

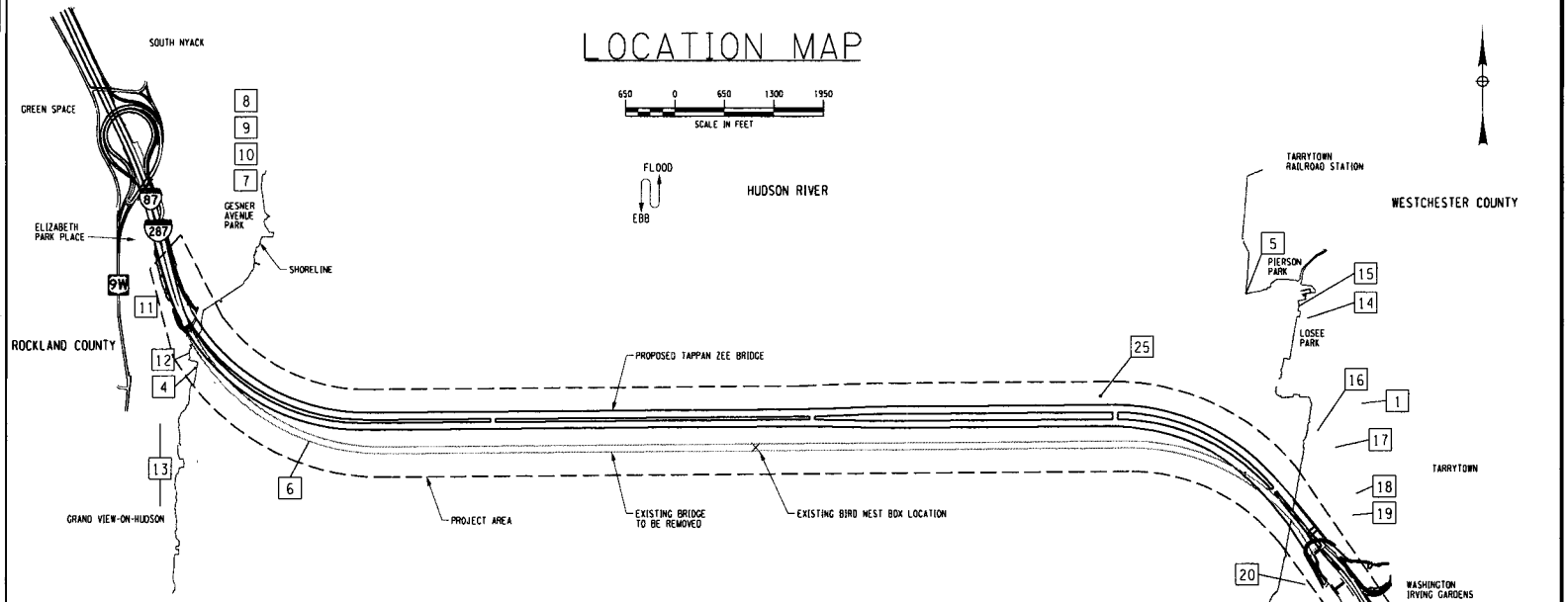
APPLICANT:
NYS THRUWAY AUTHORITY
TAPPAN ZEE BRIDGE
THE NEW NY BRIDGE PROJECT

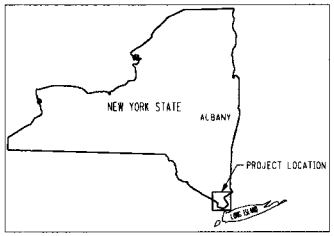
HUDSON RIVER
MILE POINT 27
SOUTH NYACK – TARRYTOWN, NEW YORK
ROCKLAND AND WESTCHESTER COUNTIES

DATE: APRIL 2013

SHEET 2 OF 25

LOCATION MAP





HISTORICAL STRUCTURES

NATIONAL HISTORICAL LANDMARK

1. OLD CROTON AQUEDUCT
2. LYNDHURST
3. SUNNYSIDE

S/NRHP LISTED

4. WAYSIDE CHAPEL
5. TARRYTOWN LIGHTHOUSE

POTENTIAL S/NRHP ELIGIBLE

6. TAPPAN ZEE BRIDGE
7. SOUTH NYACK HISTORIC DISTRICT
8. 129 PIEMONT AVENUE
9. 135 PIEMONT AVENUE
10. 147 PIEMONT AVENUE
11. 2 SHADYSIDE AVENUE
12. 10 FERRIS LANE
13. RIVER ROAD HISTORIC DISTRICT
14. TARRYTOWN SEWAGE TREATMENT PLANT
15. TARRYTOWN RAILROAD STATION
16. TAPPAN LANDING HISTORIC DISTRICT
17. WASHINGTON IRVING GARDENS
18. 99 WHITE PLAINS ROAD
19. 100 WHITE PLAINS ROAD
20. IRVING HISTORIC DISTRICT
21. HOPE UNITED PRESBYTERIAN CHURCH
22. GLENWOLDE PARK HISTORIC DISTRICT
23. NEW COUNTY PARK
24. SOUTH END HISTORIC DISTRICT
25. SHIPWRECK TARGET 001

NOTES:
1. BIRD WEST BOX TO BE RELOCATED PER PERMIT CONDITIONS.

DATUM: MLW = -1.69'
MHW = +1.76
REF. NAVD88

PROJECT MANAGER | CHECK | DRAFTING | CHECK | DESIGN | JOB MANAGER | DESIGN SUPERVISOR

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NEW YORK STATE THRUWAY AUTHORITY

TAPPAN ZEE CONSTRUCTORS
A Consortium of Fluor, American Bridge, Granite, and Traylor Bros

SIGNATURE

APRIL 2013
DATE

TAPPAN ZEE BRIDGE	
HUDSON RIVER, MILEPOINT 27	
SOUTH NYACK-TARRYTOWN, NEW YORK	
ROCKLAND AND WESTCHESTER COUNTIES	
THE NEW NY BRIDGE PROJECT	

APPLICANT: NYS THRUWAY AUTHORITY
PURPOSE: REPLACEMENT BRIDGE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

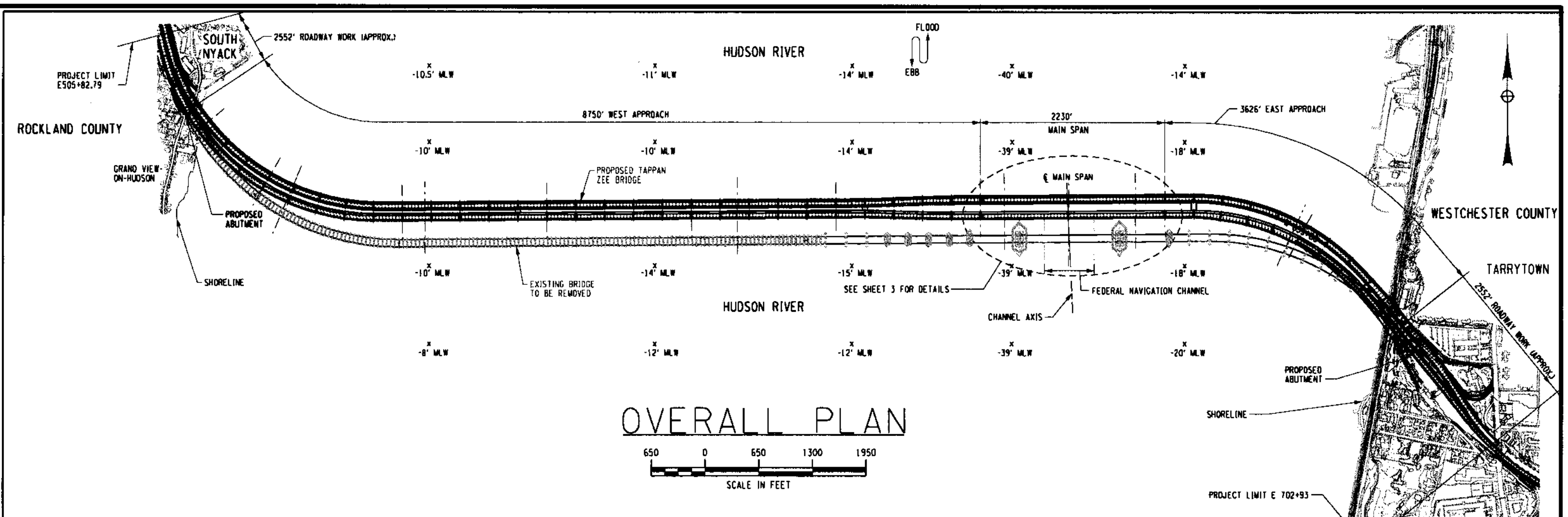
LOCATION MAP

CONTRACT NUMBER
D214134

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION

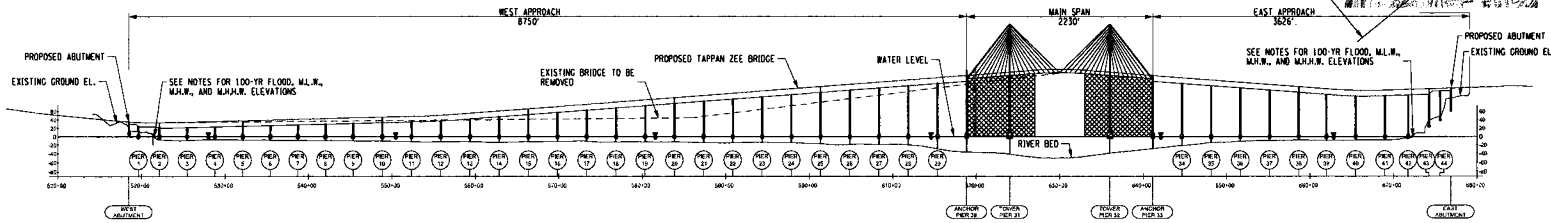
DOCUMENT NAME:

USACE FILE: NAN-2012-00090



OVERALL PLAN

650 0 650 1300 1950
SCALE IN FEET



OVERALL ELEVATION

650 0 650 1300 1950
SCALE IN FEET

NOTES:

1. HORIZONTAL DATUM: NAD83
2. VERTICAL DATUM: NAVD88
3. TIDAL DATUM:
   M.L.W. = EL. -1.69'
   M.H.W. = EL. +1.76'
   M.H.H.W. = EL. +2.02'
4. WIDTH OF APPROACH STRUCTURE: VARIES (219' TO 279')
5. WIDTH OF MAIN SPAN STRUCTURE 279'
6. FEMA MAP 100-YEAR FLOOD ELEVATION: EL. 7' NAVD88
7. REMOVE TO 2 FEET BELOW MUDLINE: ALL WOOD PILE-SUPPORTED PIERS AND CAISSON-SUPPORTED PIERS
8. REMOVE TO 2 FEET BELOW GRADE: ALL LAND-BASED PIERS AND ABUTMENTS
9. SPOT SOUNDINGS ARE BASED ON HYDROGRAPHIC SURVEY DATED JANUARY 2012, PREPARED BY S.T. HUDSON ENGINEERING.

TAPPAN ZEE CONSTRUCTORS

SIGNATURE | APRIL 2013 DATE

TAPPAN ZEE BRIDGE
HUDSON RIVER, MILEPOINT 27
SOUTH NYACK-TARRYTOWN, NEW YORK
ROCKLAND AND WESTCHESTER COUNTIES
THE NEW NY BRIDGE PROJECT

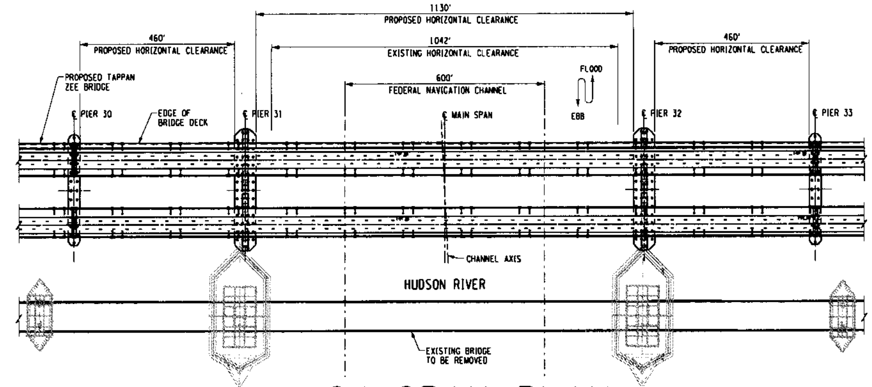
APPLICANT: NYS THRUWAY AUTHORITY
PURPOSE: REPLACEMENT BRIDGE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED
OVERALL PLAN AND ELEVATION
CONTRACT NUMBER 0214134

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION
DOCUMENT NAME:

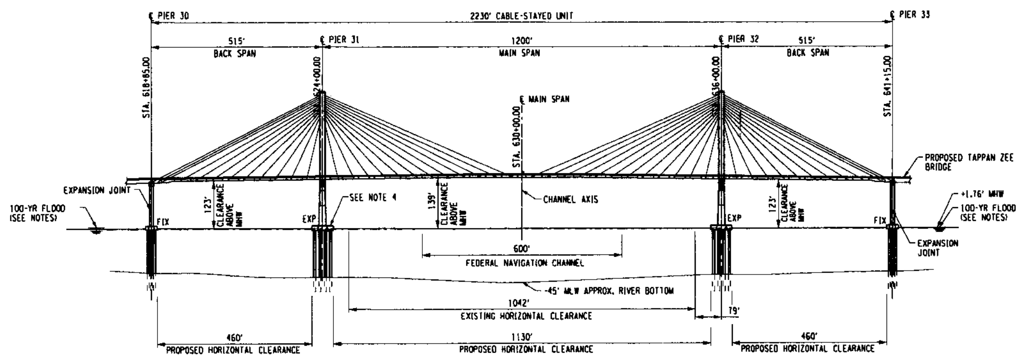
PROJECT MANAGER / CHECK / DRAFTING / CHECK / DESIGN / JOB MANAGER / DESIGN SUPERVISOR

USACE FILE: NAN-2012-00090



MAIN SPAN PLAN

150 0 150 300 450
SCALE IN FEET



MAIN SPAN ELEVATION

150 0 150 300 450
SCALE IN FEET

NOTES:
1. FEMA MAP 100-YEAR FLOOD ELEVATION EL. 7' NAVD88
2. MAIN SPAN ANCHOR PIERS ARE CONSTRUCTED OF REINFORCED CONCRETE, HAVE THREE SIDED NOSES (NORTH & SOUTH ENDS) TO REDUCE ICE LOADING AND PROVIDE VESSEL IMPACT PROTECTION AND ARE PROTECTED ON ALL SIDES WITH ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE PANELS (2" THICK x 11' HIGH x 4' WIDE) ALTERNATING YELLOW AND BLACK IN COLOR.

TAPPAN ZEE CONSTRUCTORS
A Consortium of Fluor, American Bridge, Granite, and Traylor Bros.

SIGNATURE	DATE: APRIL 2013	TAPPAN ZEE BRIDGE HUDSON RIVER, MILEPOINT 27 SOUTH NYACK-TARRYTOWN, NEW YORK ROCKLAND AND WESTCHESTER COUNTIES THE NEW NY BRIDGE PROJECT	APPLICANT: NYS THRUWAY AUTHORITY PURPOSE: REPLACEMENT BRIDGE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED MAIN SPAN PLAN AND ELEVATION	CONTRACT NUMBER D214134

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION
DOCUMENT NAME:

DESIGN SUPERVISOR — JOB MANAGER — DESIGN — CHECK — DRAFTING — CHECK — PROJECT MANAGER

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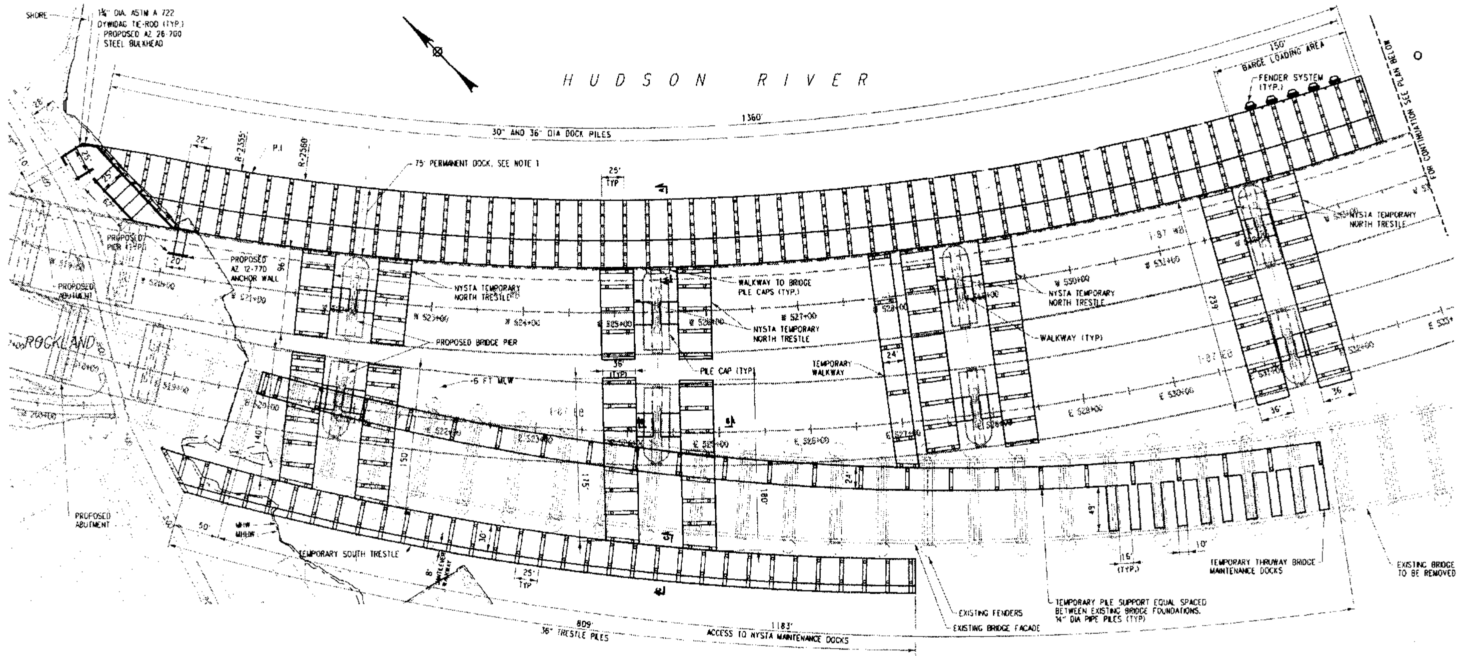
USACE FILE: NAN-2012-00090

SHEET 5 OF 25

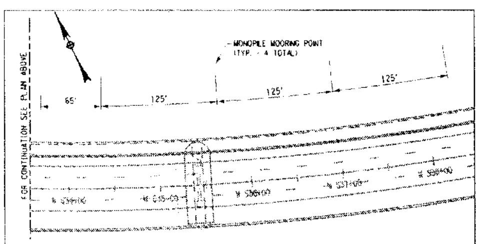


LEGEND:

MHHW : EL. +2.02' (NAVD88)
MHW : EL. +1.16' (NAVD88)
-6 FT MLW : EL. -7.69' (NAVD88)

NOTES:

1. NYSTA NORTH DOCK TO BE SUPPORTED ON PILES AND CONNECTED TO BRIDGE PIERS.



USACE FILE: NAN-2012-00090

ROCKLAND TEMPORARY AND PERMANENT PLATFORMS

TAPPAN ZEE BRIDGE
THE NEW NY BRIDGE PROJECT
(FORMERLY TAPPAN ZEE HUDSON RIVER CROSSING)

HUDSON RIVER
MILEPOINT 27

SOUTH NYACK - TARRYTOWN, NEW YORK
ROCKLAND AND WESTCHESTER COUNTIES

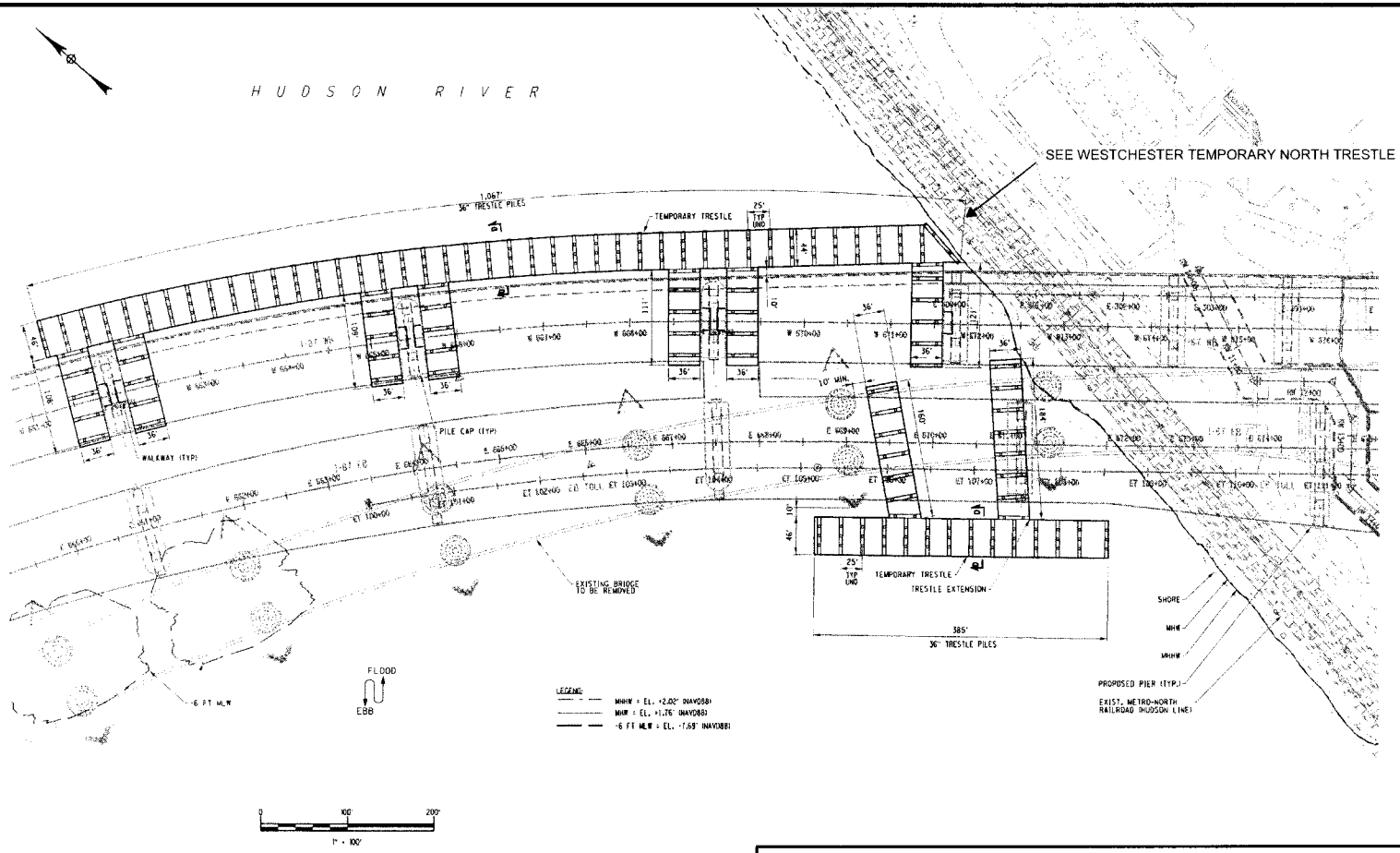
APPLICANT/OWNER:
NEW YORK STATE THRUWAY AUTHORITY

PURPOSE: REPLACEMENT BRIDGE

12/27/2012
DATE

SHEET NUMBER
SHEET 6 OF 25

SIGNATURE
12/31/12
DATE



NOTE: WESTCHESTER TEMPORARY NORTH TRESTLE REVISED.
SEE DRAWING MFA-RL-002R1

WESTCHESTER TEMPORARY PLATFORM

TAPPAN ZEE BRIDGE
THE NEW NY BRIDGE PROJECT
(FORMERLY TAPPAN ZEE HUDSON RIVER CROSSING)

HUDSON RIVER
MILEPOINT 27

SOUTH NYACK - TARRYTOWN, NEW YORK
ROCKLAND AND WESTCHESTER COUNTIES

APPLICANT/OWNER:
NEW YORK STATE THRUWAY AUTHORITY

PURPOSE: REPLACEMENT BRIDGE

12/27/2012
DATE

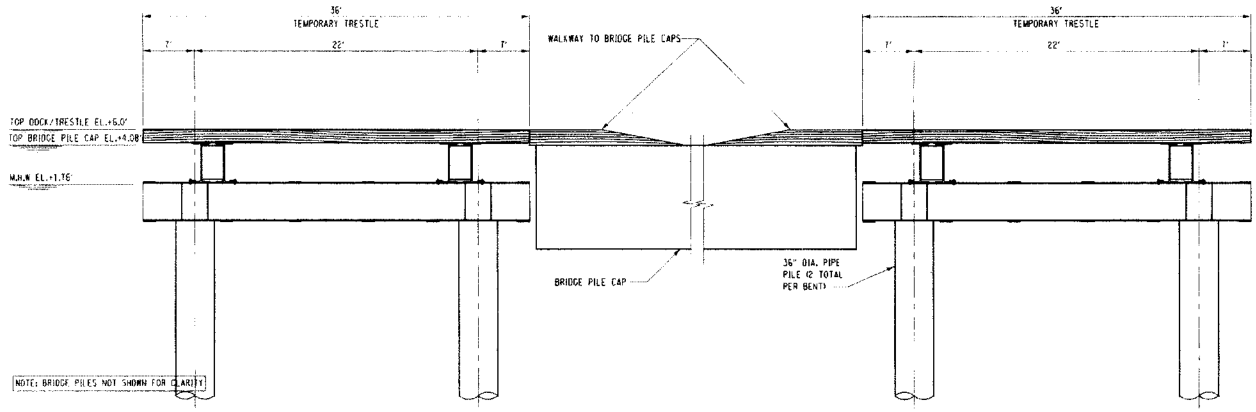
SHEET NUMBER
SHEET 7 OF 15

SIGNATURE

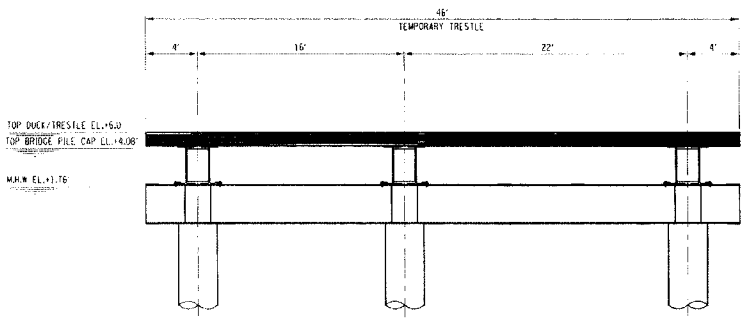
DATE 12/31/12

USACE FILE: NAN-2012-00090

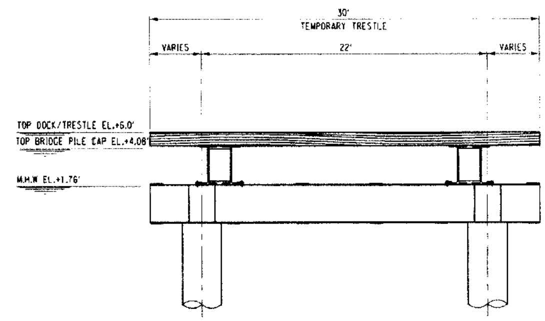
USACE FILE: NAN-2012-00090



TYPICAL PILE BENT
CROSS-SECTION B-B



TYPICAL TEMPORARY TRESTLE
CROSS-SECTION D-D



TYPICAL TEMPORARY TRESTLE
CROSS-SECTION C-C

NOTES
1. ELEVATIONS REFERENCE NAVD88.
2. PILE CAP TO BE PRECAST 30"x48" PRECAST CONCRETE.
3. PRECAST PLANKS TO BE 12" THICK WITH 6" STRUCTURAL TOPPING FOR DECK.
4. PILE CAPACITY. ALLOWABLE = 235 TONS
   ULTIMATE = 705 TONS SF=3
5. SECTION FOR TRESTLE AND PIER BETWEEN STATIONS 520+0 TO 525+0.
6. LENGTH OF PILE VARIES BETWEEN 30' LONG TO 120' LONG.
7. 25' BENT SPACING.
8. POWER PEDESTALS SHALL BE ADMIRAL-SS 14 INCH MODEL AS MANUFACTURED BY MARINA POWER AND LIGHTING, INC. (800-723-8009). POWER PEDESTALS SHALL BE INSTALLED AT 100 FOOT SPACING ALONG THE PIER AND AT THE HEAD OF EACH VESSEL SLIP. 18 PEDESTALS ARE ESTIMATED.

6 0 6 12 18
SCALE IN FEET

TYPICAL TRESTLE CROSS SECTIONS

SIGNATURE
DATE 12/31/12

TAPPAN ZEE BRIDGE
THE NEW NY BRIDGE PROJECT
(FORMERLY TAPPAN ZEE HUDSON RIVER CROSSING)

HUDSON RIVER
MILEPOINT 27

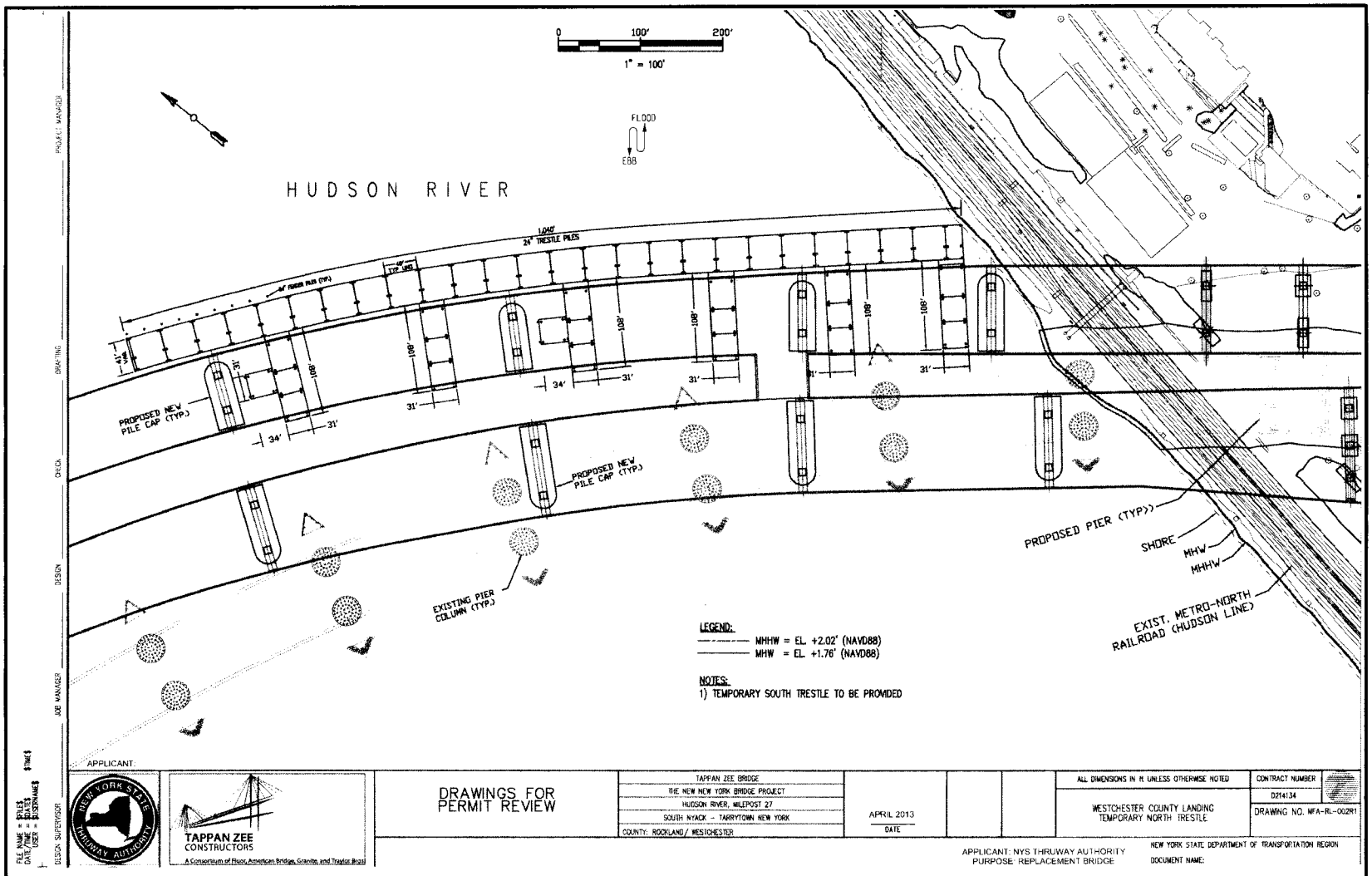
SOUTH NYACK - TARRYTOWN, NEW YORK
ROCKLAND AND WESTCHESTER COUNTIES

APPLICANT/OWNER:
NEW YORK STATE THRUWAY AUTHORITY

PURPOSE: REPLACEMENT BRIDGE

12/27/2012
DATE

SHEET NUMBER
SHEET 8 OF 25



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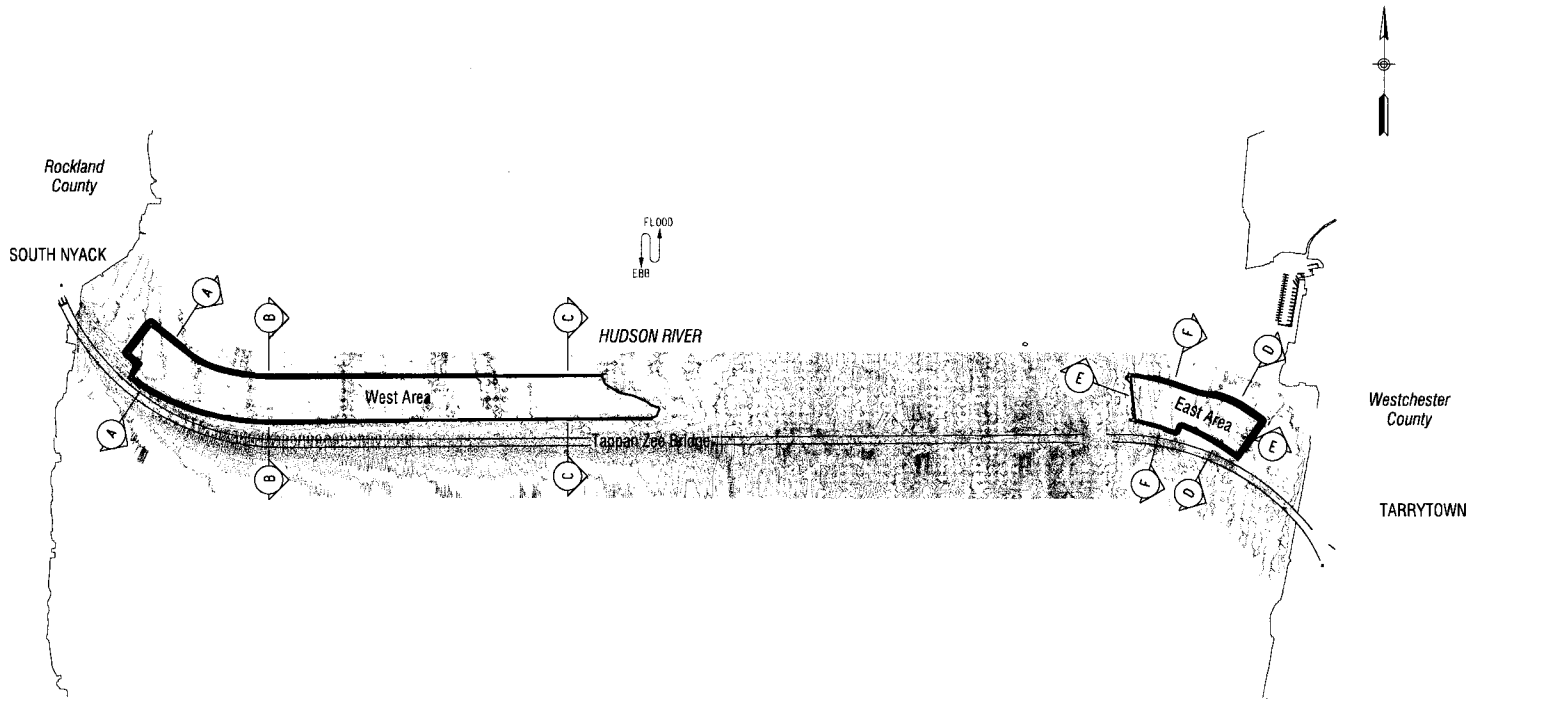


DATUM: MLW = -1.69'
MHW = +1.76
REF. NAVD88

NOTES:

1. DIMENSIONS AND LOCATION OF TEMPORARY ACCESS CHANNEL BOTTOM BASED ON THAT PROVIDED BY NYSTA DRAWING NO. DIR-001THRU 004.

2. BASED UPON S.T. HUDSON ENGINEERS, INC. HYDROGRAPHIC SURVEY DATED JANUARY 26, 2012, SIGNED BY MR. MARK KLEIN #182 AND SIGNED AND SEALED BY MR. MICHAEL FASNACHT, NYSPE #57352.

3. AREAS IN TABLE BASED ON TOP OF SLOPE OF ACCESS CHANNEL AND ARMORING ELEVATION.

DREDGING	DEPTH AT MEAN LOW LOWER WATER (MLLW)	WEST AREA SCHEDULED: AUG-OCT 2013 SURFACE AREA (AC.)	WEST AREA SCHEDULED: AUG-OCT 2013 VOLUME (MCY)	EAST AREA SCHEDULED: AUG-OCT 2013 SURFACE AREA (AC.)	EAST AREA SCHEDULED: AUG-OCT 2013 VOLUME (MCY)	TOTAL SURFACE AREA (AC.)	TOTAL VOLUME (MCY)
ACCESS CHANNEL	-13	95.3	0.52	24.1	0.16	119.4	0.68
OVERDEPTH ALLOWANCE	-14		0.10		0.02		0.12
DREDGING TOTAL			0.62		0.18	119.4	0.80
ARMORING	-11	76.1	0.25	17.1	0.06	93.2	0.31

0 600' 1200' 1800' 2400'

PROJECT MANAGER | CHECK | DRAFTING | CHECK | DESIGN | JOB MANAGER | DESIGN SUPERVISOR

NEW YORK STATE THRUWAY AUTHORITY

TAPPAN ZEE CONSTRUCTORS, LLC

REVISIONS
DESCRIPTION OF ALTERATIONS:

APPLICANT: NYS THRUWAY AUTHORITY
PURPOSE: REPLACEMENT BRIDGE

APRIL 2013
DATE

TAPPAN ZEE BRIDGE
HUDSON RIVER, MILEPOINT 27
SOUTH NYACK - TARRYTOWN, NEW YORK
THE NEW NY BRIDGE PROJECT
COUNTY: ROCKLAND/WESTCHESTER

PIN | BRIDGES | CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

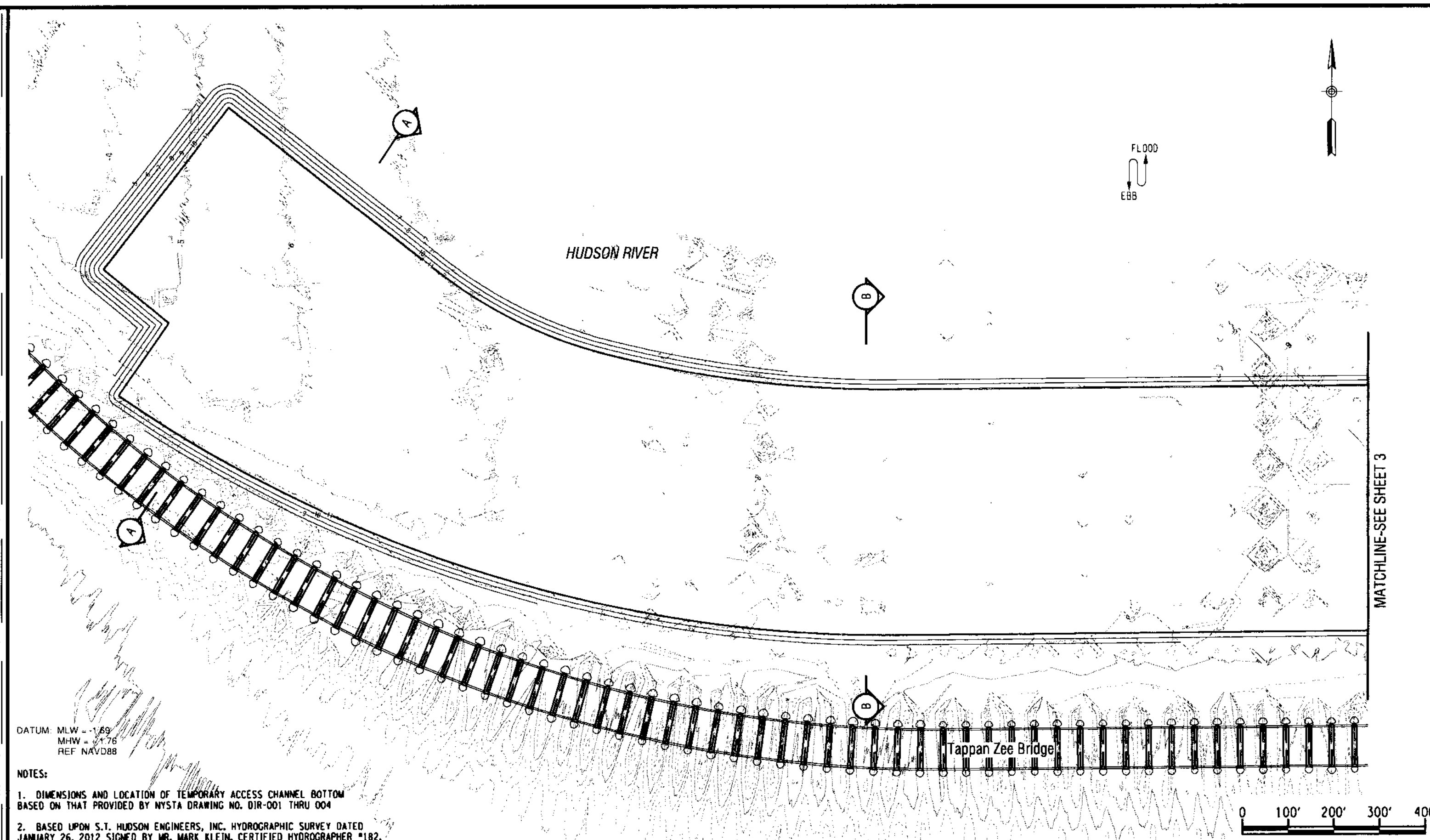
PROPOSED TEMPORARY ACCESS CHANNEL DREDGING PLAN

CONTRACT NUMBER
D261434
DRAWING NO.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION

DOCUMENT NAME:

USACE FILE: NAN-2012-00090



DATUM: MLW = -1.69
MHW = +1.76
REF NAVD88

NOTES:

1. DIMENSIONS AND LOCATION OF TEMPORARY ACCESS CHANNEL BOTTOM BASED ON THAT PROVIDED BY NYSTA DRAWING NO. DIR-001 THRU 004

2. BASED UPON S.T. HUDSON ENGINEERS, INC. HYDROGRAPHIC SURVEY DATED JANUARY 26, 2012 SIGNED BY MR. MARK KLEIN, CERTIFIED HYDROGRAPHER #182, AND SIGNED AND SEALED BY MR. MICHAEL FASNACHT, NYPSE #57352.

TAPPAN ZEE CONSTRUCTORS
A Consortium of Fluor, American Bridge, Granite, and Traylor Bros.

REVISIONS
DESCRIPTION OF ALTERATIONS:
APPLICANT: NYS THRUWAY AUTHORITY
PURPOSE: REPLACEMENT BRIDGE
APRIL 2013
DATE

TAPPAN ZEE BRIDGE
HUDSON RIVER, MILEPOINT 27
SOUTH NYACK - TARRYTOWN, NEW YORK
THE NEW NY BRIDGE PROJECT
COUNTY: ROCKLAND/WESTCHESTER

PIN | BRIDGES | CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

PROPOSED TEMPORARY ACCESS CHANNEL DREDGING PLAN - WEST AREA (STAGE 1)

CONTRACT NUMBER 0214134
DRAWING NO.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION
DOCUMENT NAME:

DESIGN SUPERVISOR | JOB MANAGER | DESIGN | CHECK | DRAFTING | CHECK | PROJECT MANAGER

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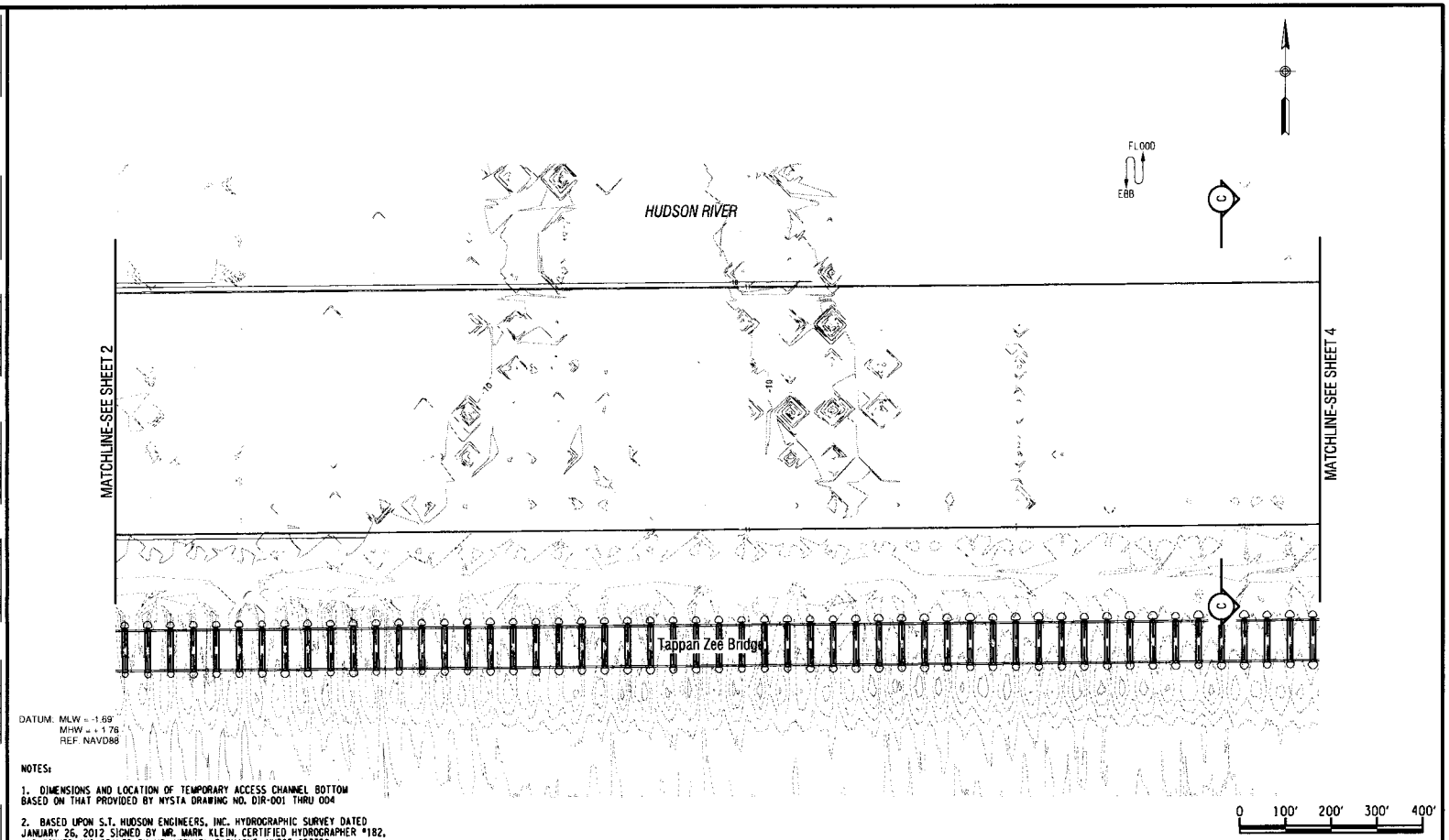
USER:

USACE FILE: NAN-2012-00090



DATUM: MLW = -1.69'
MHW = +1.78'
REF. NAVD88

NOTES:

1. DIMENSIONS AND LOCATION OF TEMPORARY ACCESS CHANNEL BOTTOM BASED ON THAT PROVIDED BY NYSTA DRAWING NO. DIR-001 THRU 004

2. BASED UPON S.T. HUDSON ENGINEERS, INC. HYDROGRAPHIC SURVEY DATED JANUARY 26, 2012 SIGNED BY MR. MARK KLEIN, CERTIFIED HYDROGRAPHER #182, AND SIGNED AND SEALED BY MR. MICHAEL FASNACHT, NYPSE #57352.

NEW YORK STATE THRUWAY AUTHORITY

TAPPAN ZEE CONSTRUCTORS
A Consortium of Fluor, American Bridge, Granite, and Traylor Bros.

REVISIONS
DESCRIPTION OF ALTERATIONS:
APPLICANT: NYS THRUWAY AUTHORITY
PURPOSE: REPLACEMENT BRIDGE
APRIL 2013
DATE

TAPPAN ZEE BRIDGE
HUDSON RIVER, MILEPOINT 27
SOUTH NYACK - TARRYTOWN, NEW YORK
THE NEW NY BRIDGE PROJECT
COUNTY: ROCKLAND/WESTCHESTER

PIN | BRIDGES | CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

PROPOSED TEMPORARY ACCESS CHANNEL DREDGING PLAN - WEST AREA (STAGE 1)

CONTRACT NUMBER
D214134
DRAWING NO.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION

DOCUMENT NAME:

PROJECT MANAGER | CHECK | DRAFTING | CHECK | DESIGN | JOB MANAGER | DESIGN SUPERVISOR

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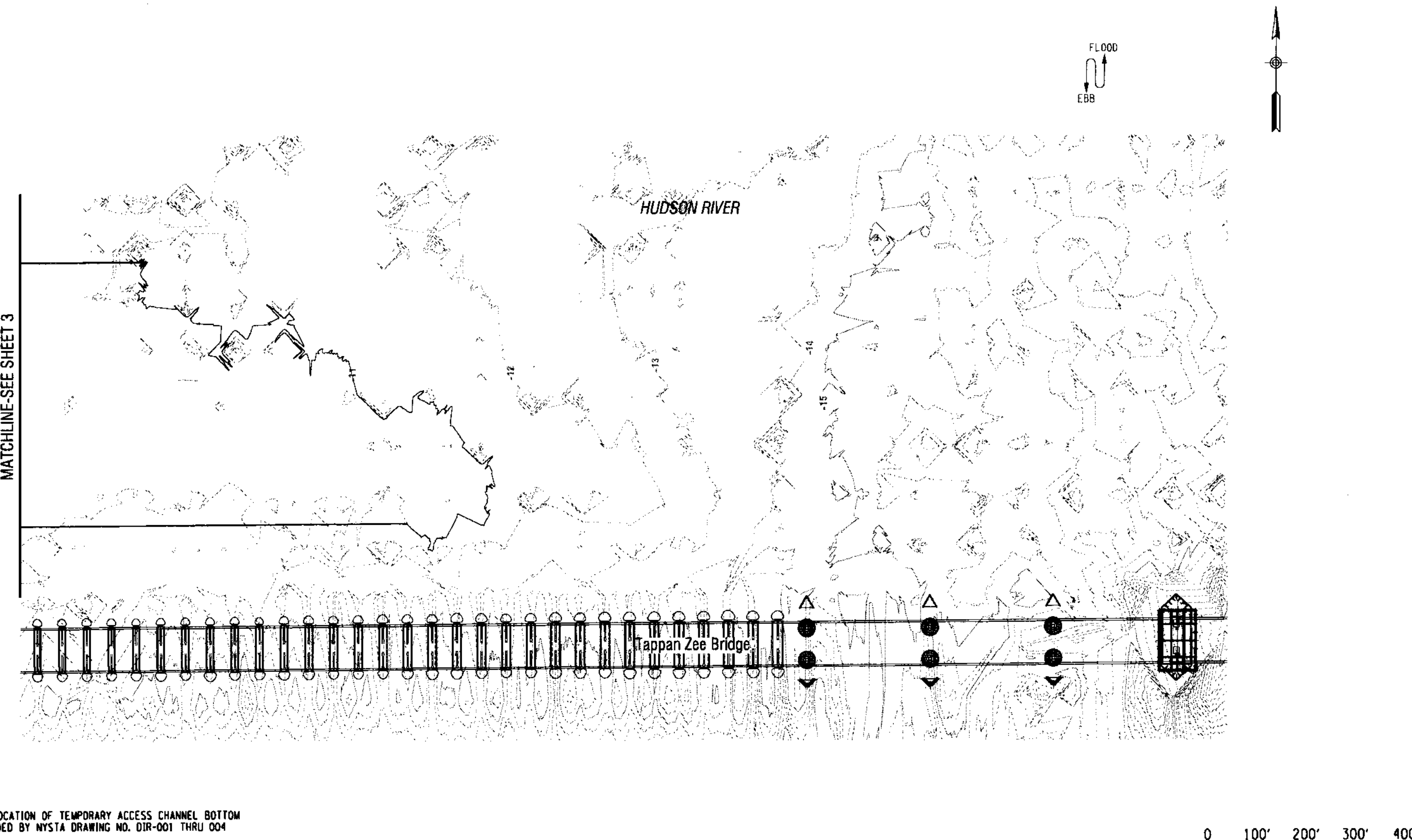

DATUM: MLW = -1.69'
MHW = +1.76'
REF: NAVD88

NOTES:

1. DIMENSIONS AND LOCATION OF TEMPORARY ACCESS CHANNEL BOTTOM BASED ON THAT PROVIDED BY NYSTA DRAWING NO. DIR-001 THRU 004

2. BASED UPON S.T. HUDSON ENGINEERS, INC. HYDROGRAPHIC SURVEY DATED JANUARY 26, 2012 SIGNED BY MR. MARK KLEIN, CERTIFIED HYDROGRAPHER #182, AND SIGNED AND SEALED BY MR. MICHAEL FASNACHT, NYPSE #57352.

NEW YORK STATE THRUWAY AUTHORITY

TAPPAN ZEE CONSTRUCTORS
A Consortium of Fluor, American Bridge, Granite, and Traylor Bros.

REVISIONS
DESCRIPTION OF ALTERATIONS:
APPLICANT: NYS THRUWAY AUTHORITY
PURPOSE: REPLACEMENT BRIDGE

APRIL 2013
DATE

TAPPAN ZEE BRIDGE
HUDSON RIVER, MILEPOINT 27
SOUTH NYACK - TARRYTOWN, NEW YORK
THE NEW NY BRIDGE PROJECT
COUNTY: ROCKLAND/WESTCHESTER

PIN | BRIDGES | CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

PROPOSED TEMPORARY ACCESS CHANNEL DREDGING PLAN - WEST AREA (STAGE 1)

CONTRACT NUMBER
D214134
DRAWING NO.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION
DOCUMENT NAME:

DESIGN SUPERVISOR — JOB MANAGER — DESIGN — CHECK — DRAFTING — CHECK — PROJECT MANAGER

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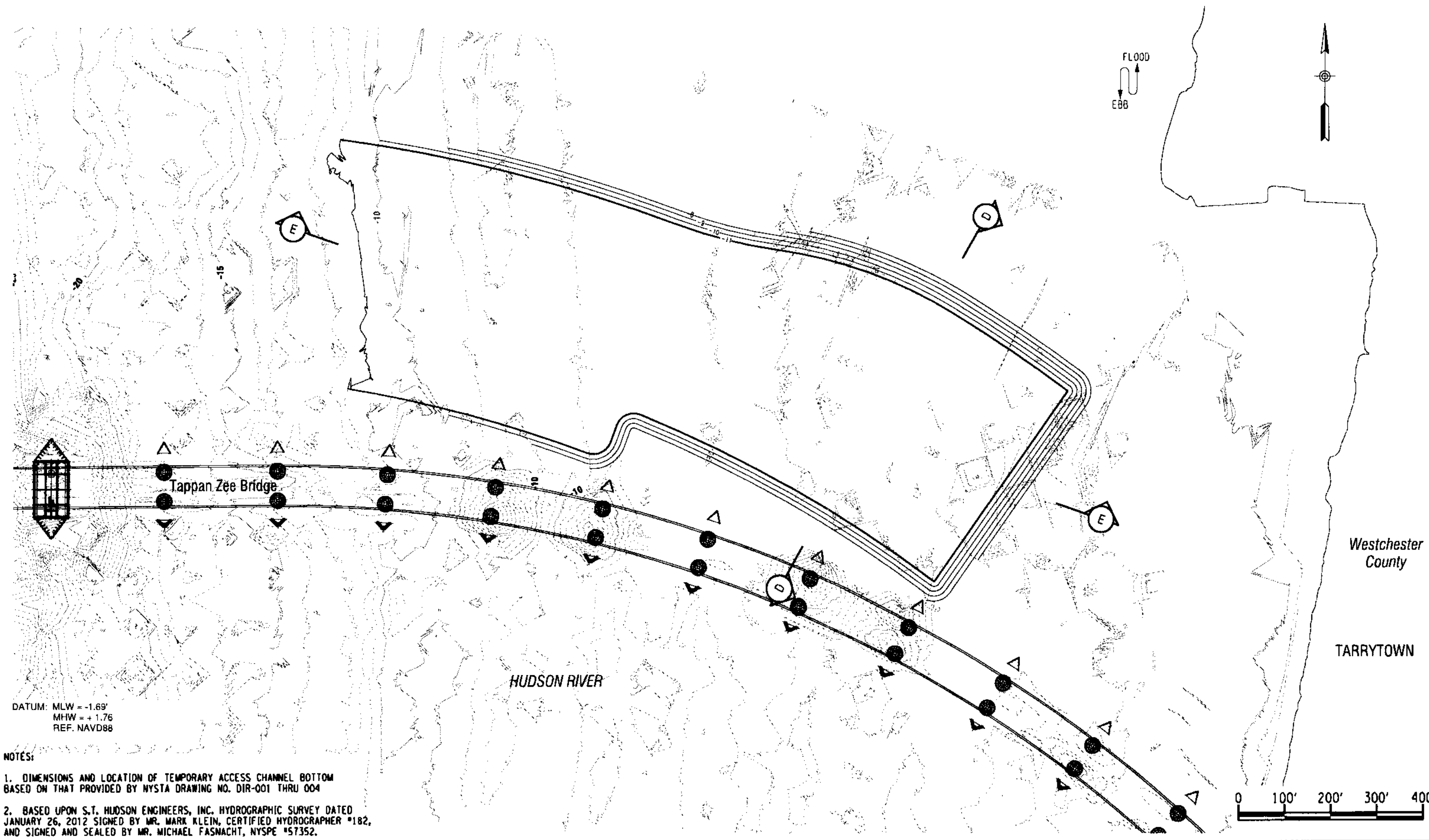


DATUM: MLW = -1.69'
MHW = + 1.76
REF. NAVD88

NOTES:

1. DIMENSIONS AND LOCATION OF TEMPORARY ACCESS CHANNEL BOTTOM BASED ON THAT PROVIDED BY NYSTA DRAWING NO. DIR-001 THRU 004

2. BASED UPON S.T. HUDSON ENGINEERS, INC. HYDROGRAPHIC SURVEY DATED JANUARY 26, 2012 SIGNED BY MR. MARK KLEIN, CERTIFIED HYDROGRAPHER #182, AND SIGNED AND SEALED BY MR. MICHAEL FASNACHT, NYSPE #57352.

NEW YORK STATE THRUWAY AUTHORITY

TAPPAN ZEE CONSTRUCTORS
A Consortium of Fluor, American Bridge, Granite, and Traylor Bros.

REVISIONS
DESCRIPTION OF ALTERATIONS:
APPLICANT: NYS THRUWAY AUTHORITY
PURPOSE: REPLACEMENT BRIDGE

APRIL 2013
DATE

TAPPAN ZEE BRIDGE
HUDSON RIVER, MILEPOINT 27
SOUTH NYACK - TARRYTOWN, NEW YORK
THE NEW NY BRIDGE PROJECT
COUNTY: ROCKLAND/WESTCHESTER

PIN | BRIDGES | CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

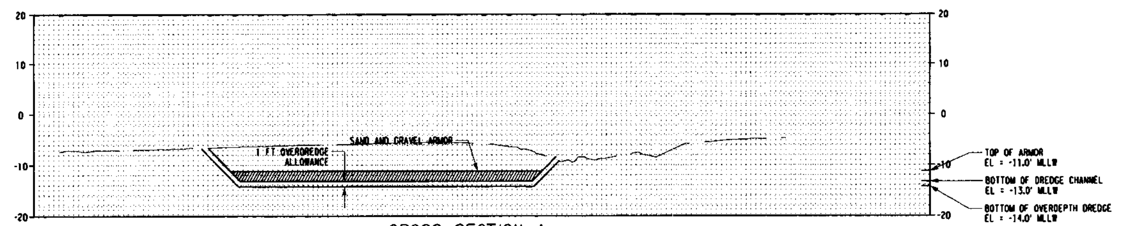
PROPOSED TEMPORARY ACCESS CHANNEL DREDGING PLAN - EAST AREA (STAGE 1)

CONTRACT NUMBER
D214134
DRAWING NO.

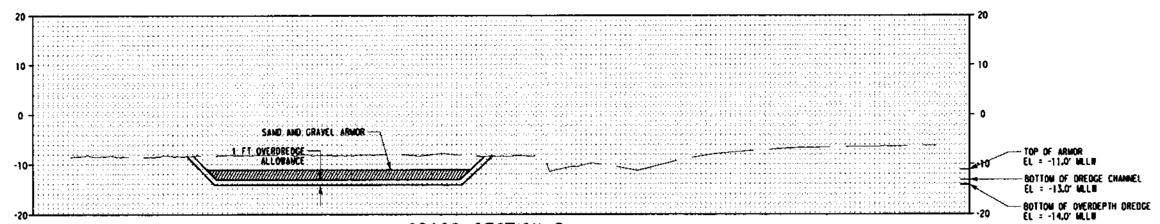
NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION
DOCUMENT NAME:

DESIGN SUPERVISOR | JOB MANAGER | DESIGN | CHECK | DRAFTING | CHECK | PROJECT MANAGER

USACE FILE: NAN-2012-00090



CROSS SECTION A



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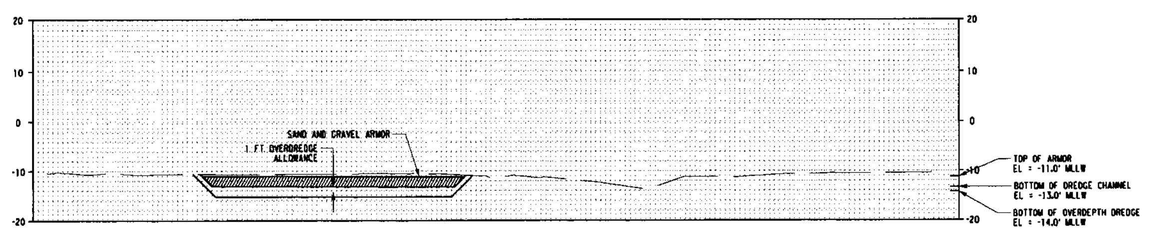

CROSS SECTION C

DATUM: MLW = -1.69'
MHW = - 1.76
REF. NAVD88

NEW YORK STATE THRUWAY AUTHORITY

TAPPAN ZEE CONSTRUCTORS
A Consortium of Fluor, American Bridge, Granite, and Traylor Bros.

REVISIONS
DESCRIPTION OF ALTERATIONS:
APPLICANT: NYS THRUWAY AUTHORITY
PURPOSE: REPLACEMENT BRIDGE
APRIL 2013
DATE

TAPPAN ZEE BRIDGE
HUDSON RIVER, MILEPOINT 27
SOUTH NYACK - TARRYTOWN, NEW YORK
THE NEW NY BRIDGE PROJECT
COUNTY: ROCKLAND/WESTCHESTER

PIN | BRIDGES | CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

PROPOSED CROSS SECTIONS-WEST AREA
ELEVATION FOOTPRINT -11.2

CONTRACT NUMBER D214134
DRAWING NO.
SHEET NO.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION
DOCUMENT NAME:

DESIGN SUPERVISOR — JOB MANAGER — DESIGN — CHECK — DRAFTING — CHECK — PROJECT MANAGER

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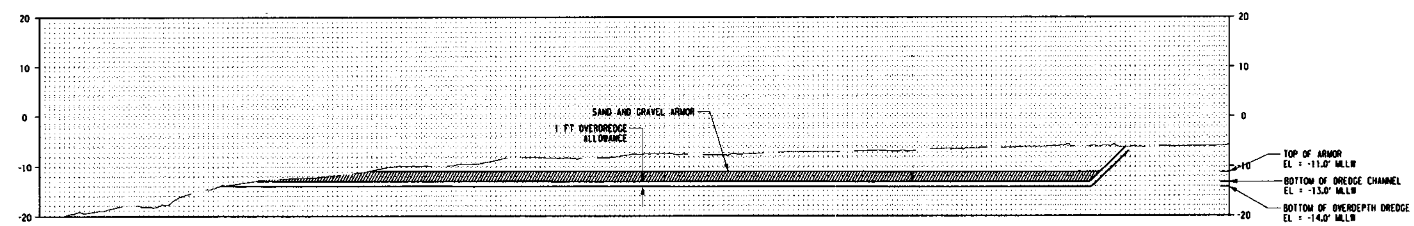


CROSS SECTION E

DATUM: MLW = -1.69'
MHW = + 1.76
REF: NAVD88

TAPPAN ZEE CONSTRUCTORS
A Consortium of Fluor, American Bridge, Granite, and Traylor Bros.

REVISIONS
DESCRIPTION OF ALTERATIONS:
APPLICANT: NYS THRUWAY AUTHORITY
PURPOSE: REPLACEMENT BRIDGE
APRIL 2013
DATE

TAPPAN ZEE BRIDGE
HUDSON RIVER, MILEPOINT 27
SOUTH NYACK - TARRYTOWN, NEW YORK
THE NEW NY BRIDGE PROJECT
COUNTY: ROCKLAND/WESTCHESTER

PIN | BRIDGES | CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED
PROPOSED CROSS SECTIONS-EAST AREA
ELEVATION FOOTPRINT -11.2

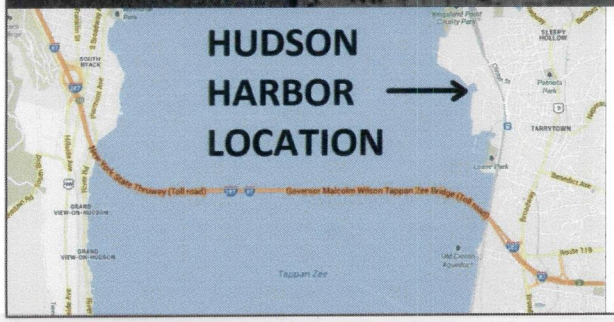
CONTRACT NUMBER
D214134
DRAWING NO.
SHEET NO.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION
DOCUMENT NAME:

DESIGN SUPERVISOR — JOB MANAGER — DESIGN — CHECK — DRAFTING — CHECK — PROJECT MANAGER

USACE FILE: NAN-2012-00090

JUN 2 4 2013



0 100 200

SCALE IN FEET

TAPPAN ZEE HUDSON RIVER CROSSING
THE NEW NY BRIDGE
NEW YORK STATE THRUWAY AUTHORITY
ROCKLAND & WESTCHESTER COUNTIES

TEMPORARY DOCKING FACILITY AND LOCATION MAP AT HUDSON HARBOR
TARRYTOWN VILLAGE, WESTCHESTER COUNTY

TAPPAN ZEE CONSTRUCTORS, LLC

6							
5							
4							
3							
2							
1							
REV	DATE	DWG BY	DWG CHK	DSGN BY	DSGN CHK	DESCRIPTION	

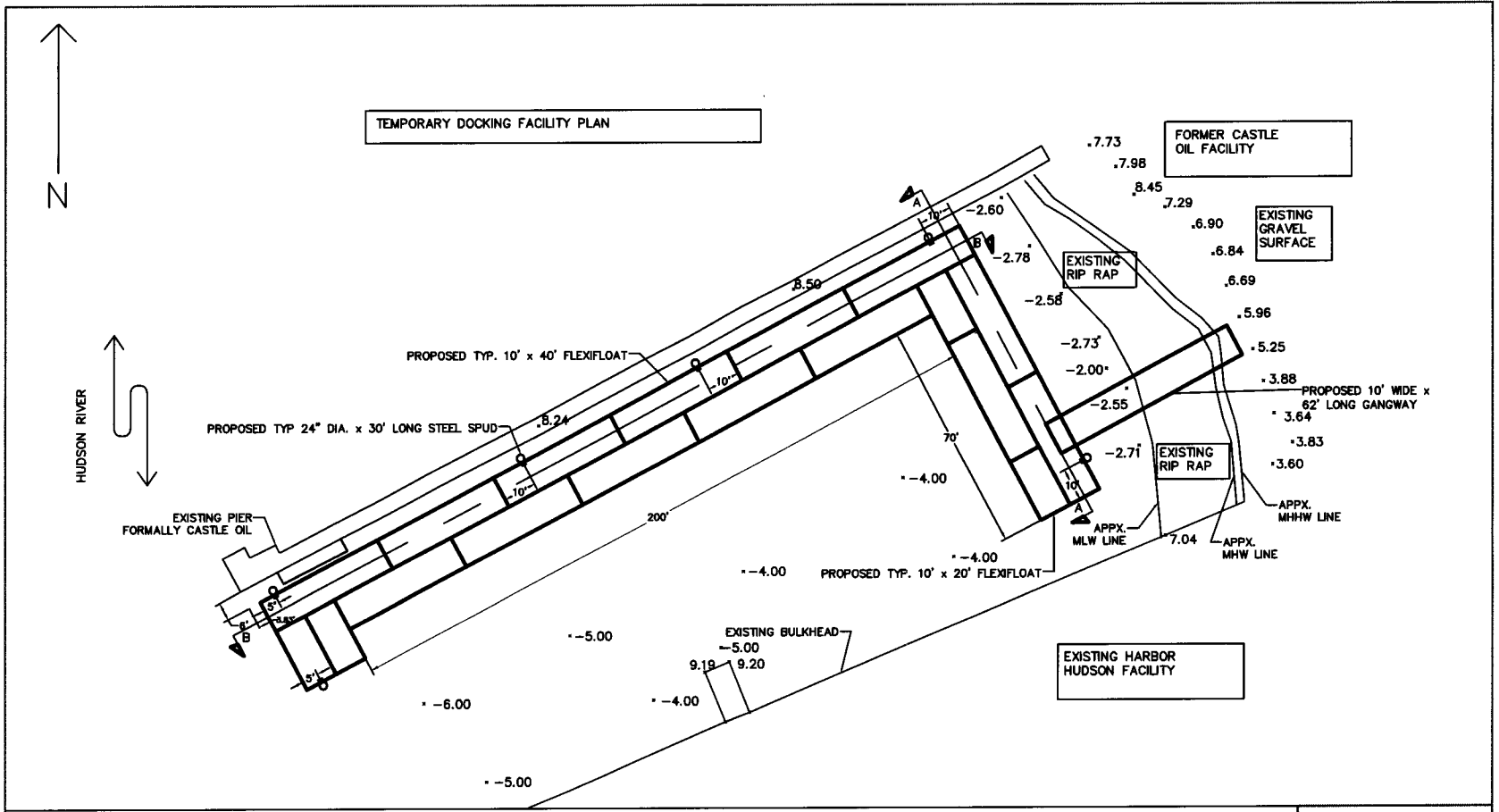
Design By:	Date:
Design Chk:	Date:
Drawn By: JW	Date: 6/6/2013
Drawing CHK: JS	Date: 6/6/2013
In Charge Of:	
NYSTA Contract Number D214134	Sheet No. TZC-HHDF3
Scale: NTS	Revision:

SHEET 17 of 25

USACE FILE: NAN-2012-00090

JUN 2 4 2013

JUN 2 4 2013



NOTES:
1. ELEV. IN NAVD 88
2. MLW = −1.69 FT.
3. MHW = 1.76 FT.
4. MHHW =2.11 FT.
5. FEMA 100 YEAR FLOOD ELEV. = 7' NAVD 88
6. PROPOSED SPUDS WILL BE ONLY STRUCTURE PLACED IN RIVER BOTTOM.

LEGEND:

O – PROPOSED STEEL SPUD

0 50 100

SCALE IN FEET

REV	DATE	DWG BY	DWG CHK	DSGN BY	DSGN CHK	DESCRIPTION
6						
5						
4						
3						
2						
1						

TAPPAN ZEE HUDSON RIVER CROSSING
THE NEW NY BRIDGE
NEW YORK STATE THRUWAY AUTHORITY
ROCKLAND & WESTCHESTER COUNTIES

TEMPORARY DOCKING FACILITY
AT HUDSON HARBOR
TARRYTOWN VILLAGE, WESTCHESTER COUNTY

TAPPAN ZEE CONSTRUCTORS, LLC

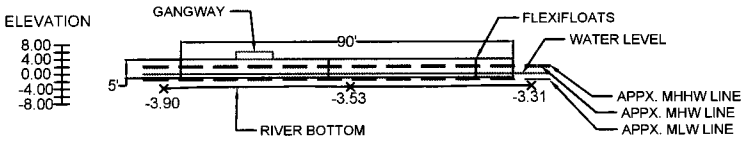
Design By:	Date:
Design Chk:	Date:
Drawn By: JW	Date: 6/6/2013
Drawing CHK: JS	Date: 6/6/2013
In Charge Of:	
NYSTA Contract Number: D214134	Sheet No.: TZC-HHDF1
Scale: NTS	Revision:

USACE FILE: NAN-2012-00090

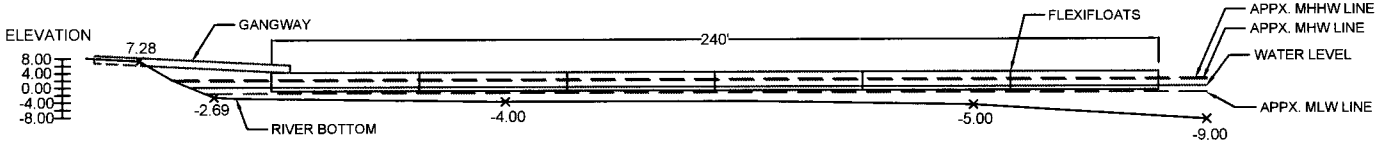
SHEET 18 of 25

JUN 2 4 2013

JUN 2 4 2013



TEMPORARY DOCKING FACILITY - SECTION A



TEMPORARY DOCKING FACILITY - SECTION B

DATUM:
1. ELEV. IN NAVD 88
2. MLW = -1.69 FT.
3. MHW = 1.76 FT.
4. MHHW =2.11 FT.
5. FEMA 100 YEAR FLOOD ELEVATION = 7' NAVD 88

0 50 100

SCALE IN FEET

REV	DATE	DWG BY	DWG CHK	DSGN BY	DSGN CHK	DESCRIPTION
6						
5						
4						
3						
2						
1						

TAPPAN ZEE HUDSON RIVER CROSSING
THE NEW NY BRIDGE
NEW YORK STATE THRUWAY AUTHORITY
ROCKLAND & WESTCHESTER COUNTIES

TEMPORARY DOCKING FACILITY
AT HUDSON HARBOR
TARRYTOWN VILLAGE, WESTCHESTER COUNTY

TAPPAN ZEE CONSTRUCTORS, LLC

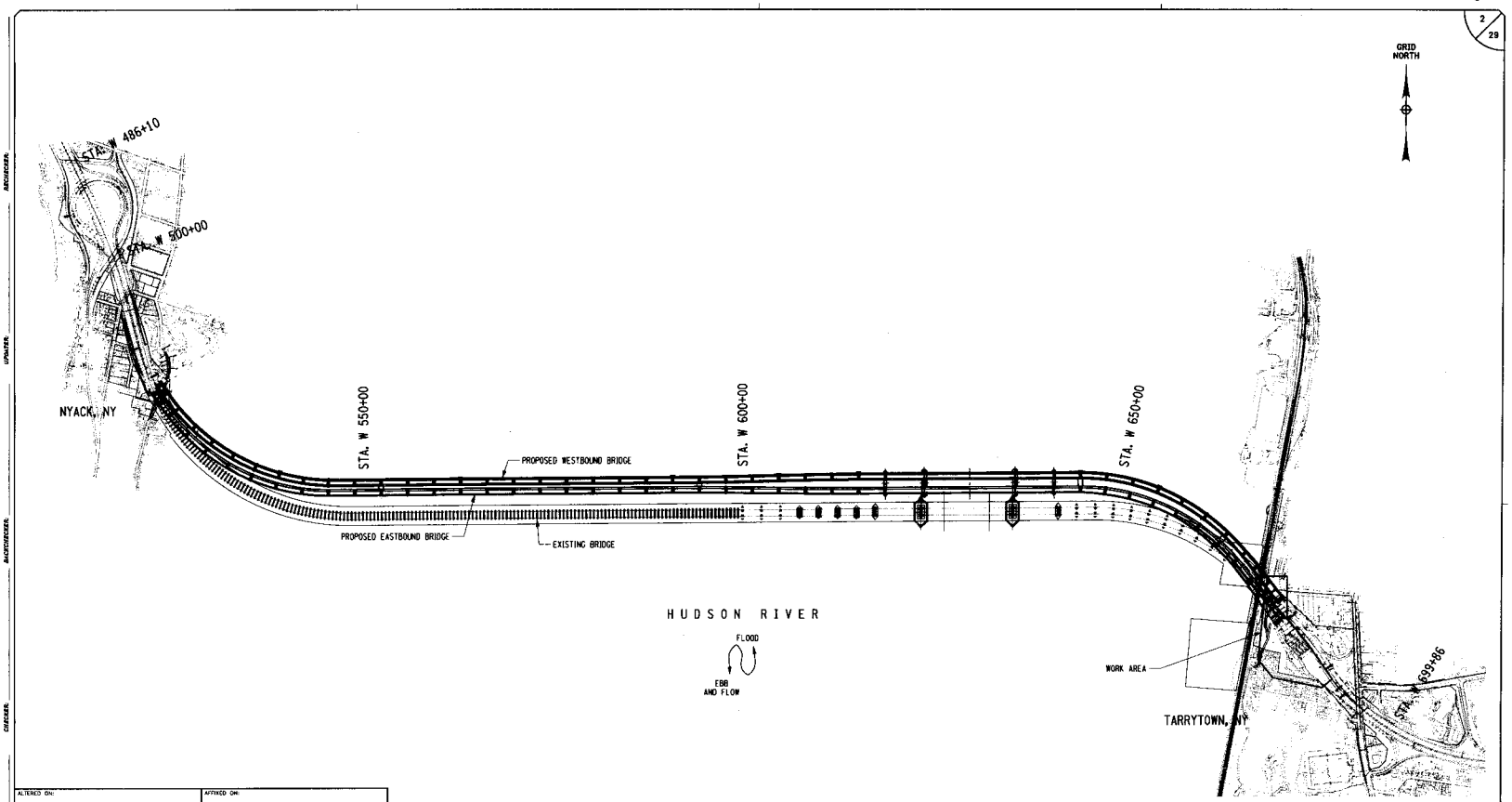
Design By:	Date:
Design Chk:	Date:
Drawn By: JW	Date: 6/6/2013
Drawing CHK: JS	Date: 6/6/2013
In Charge Of:	
NYSTA Contract Number: D214134	Sheet No.: TZC-HHDF2
Scale: NTS	Revision:

USACE FILE: NAN-2012-00090

SHEET 19 of 25

JUN 2 4 2013

JUN 2 4 2013



KEY PLAN
NOT TO SCALE

ALTERED ON:	AFFIXED ON:
SIGNATURE: STAMP:	SIGNATURE: STAMP:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISIONS

DATE	DESCRIPTION	BY	SYM.
05/15/13	PROGRESS SUBMISSION	MJ	1C

NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TAPPAN ZEE CONSTRUCTORS, LLC

TITLE OF PROJECT: THE NEW NY BRIDGE
LOCATION OF PROJECT: MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES
TITLE OF DRAWING: UNIT 22-ACCESS ROAD DESIGN KEY PLAN

CONTRACT NUMBER: D214134
DATE: 05/15/13
DRAWING NUMBER: H22F-03 C0002

DOCUMENT TRACKING CODE: H22F-03

USER:jromao DATE:05-15-2013 TIME:8:43:36 PM FILE:ACCES ROAD STANDARD KEYPLAN

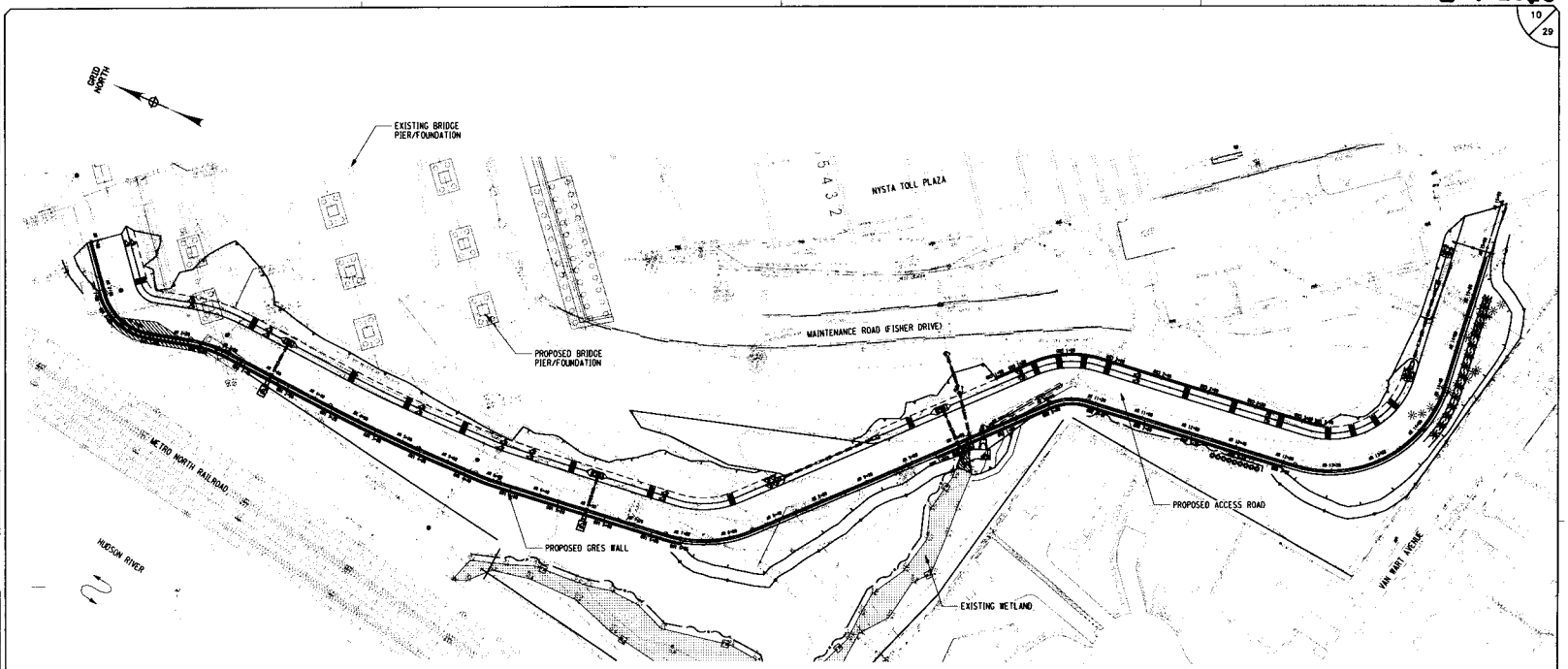
USACE FILE: NAN-2012-00090

SHEET 20 of 25

JUN 2 4 2013

JUN 2 4 2013

10/29



ACCESS ROAD - GENERAL LOCATION PLAN
SCALE: 1"=80'

40 0 40 80 120 160
1" = 80'

ALTERED ON:	AFFIXED ON:
SIGNATURE: STAMP:	SIGNATURE: STAMP:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISIONS

DATE	DESCRIPTION	BY	SYM.
05/15/13	PROGRESS SUBMISSION	MJ	1
			2
			3
			4

NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TAPPAN ZEE CONSTRUCTORS, LLC

TITLE OF PROJECT: THE NEW NY BRIDGE
CONTRACT NUMBER: D214134
LOCATION OF PROJECT: MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES
DATE: 05/15/13
TITLE OF DRAWING: UNIT 22-ACCESS ROAD DESIGN GENERAL LOCATION PLAN
DRAWING NUMBER: H22F-03 C0100

DOCUMENT TRACKING CODE: H22F-03

USER: jromeo DATE: 05-15-2013 TIME: 5:45:36 PM FILE: ACCESS ROAD GENERAL LOCATION PLAN

USACE FILE: NAN-2012-00090

SHEET 21 of 25

JUN 2 4 2013

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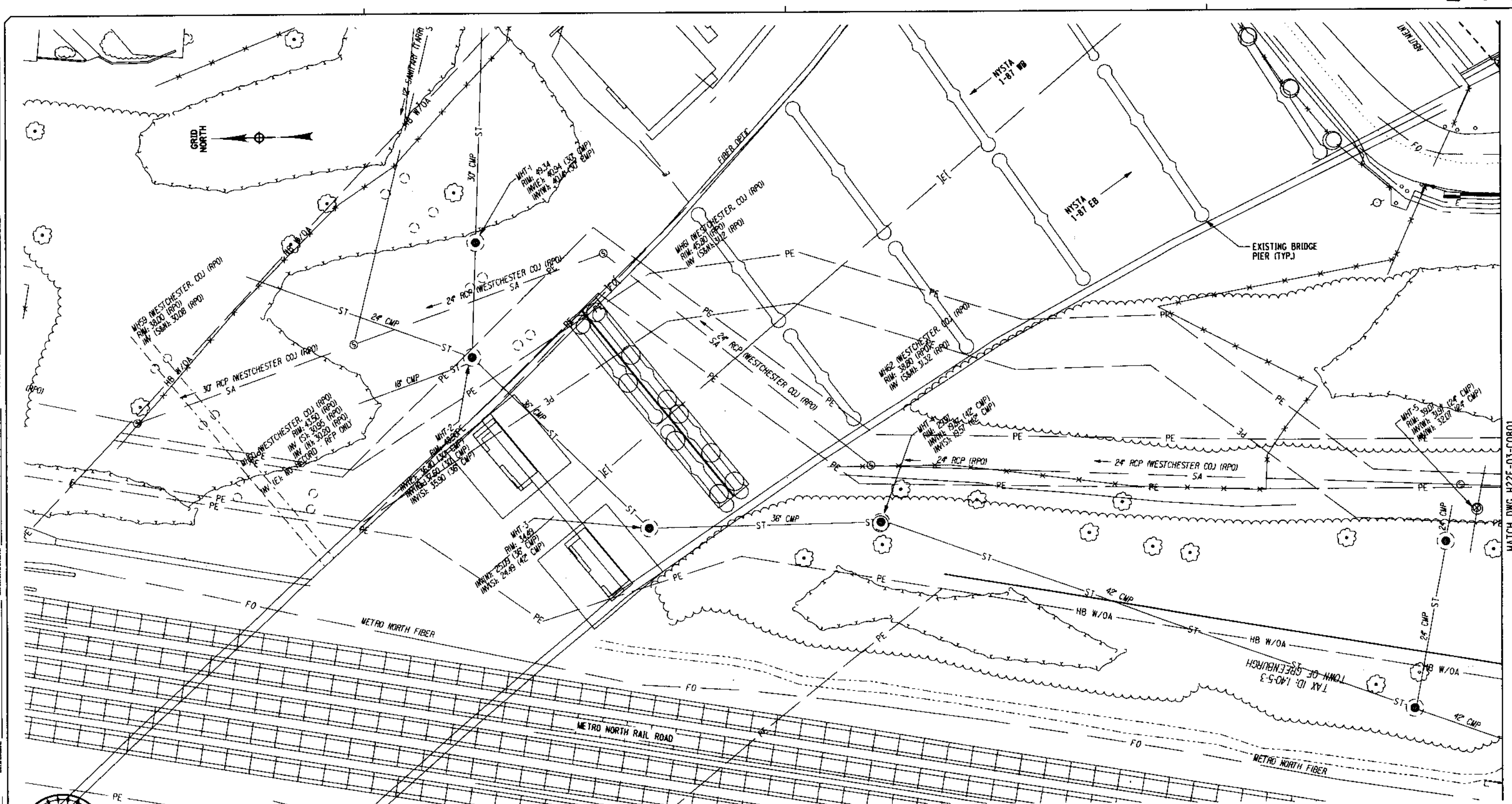

EXISTING UTILITIES AND MAPPING FEATURES DEPICTED ON THESE DRAWINGS ARE DERIVED FROM A COMBINATION OF INFORMATION PROVIDED IN THE RFP AND/OR RECORD PLANS AS WELL AS ACTUAL FIELD INVESTIGATIONS. EXISTING UTILITIES SHOWN ARE COMBINATION OF QUALITY LEVEL A/B/C OR D (QL-A/B/C/D).

20 0 20 40 60 80
1" = 40'

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REVISIONS

DATE	DESCRIPTION	BY	SYM.
05/15/13	PROGRESS SUBMISSION	MJ	IC

NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TITLE OF PROJECT: THE NEW NY BRIDGE
LOCATION OF PROJECT: MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES
TITLE OF DRAWING: UNIT 22-ACCESS ROAD DESIGN EXISTING CONDITIONS PLAN-1

CONTRACT NUMBER: D214134
DATE: 05/15/13
DRAWING NUMBER: H22F-03 C0800

DOCUMENT TRACKING CODE: H22F-03

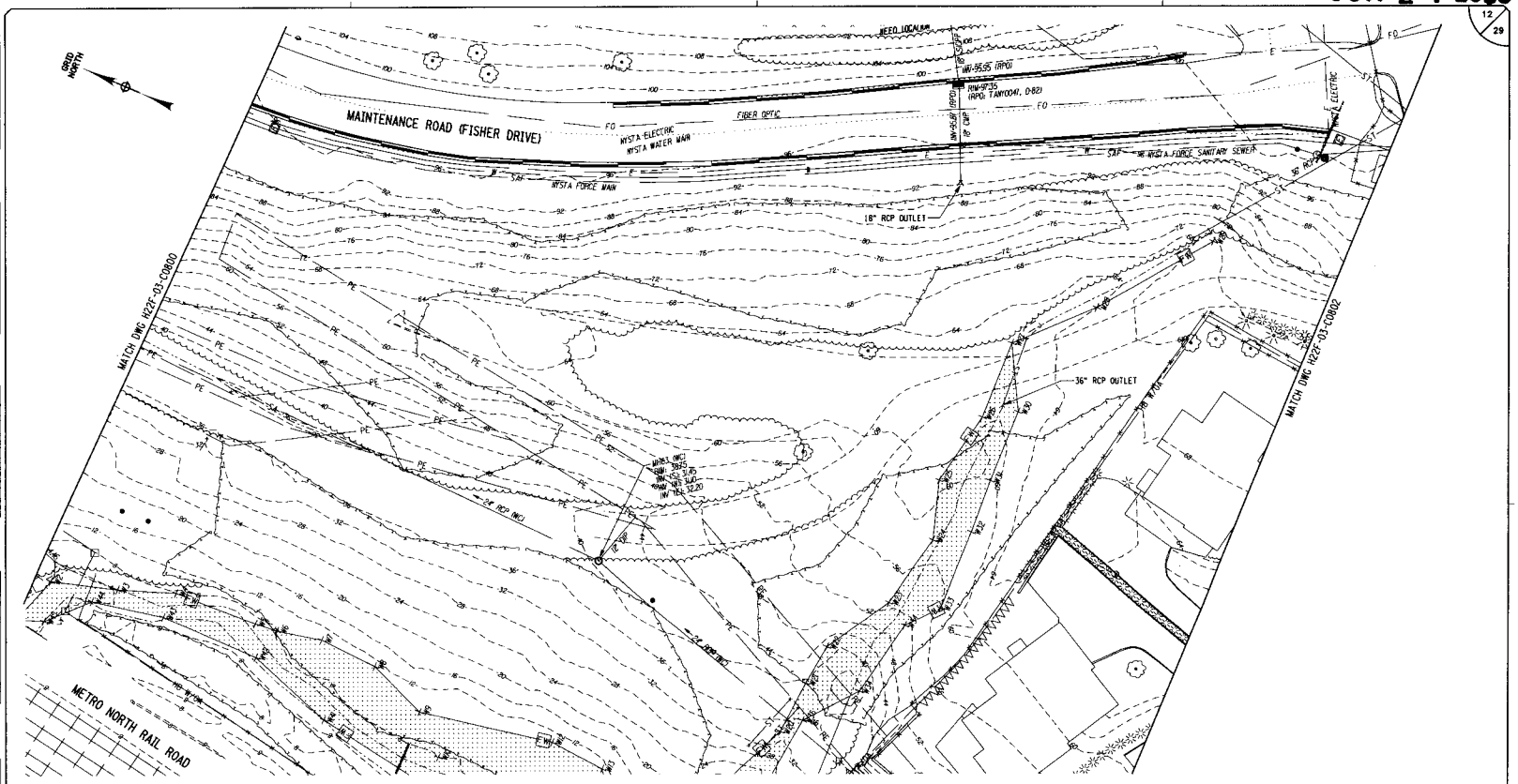
DATE: 05-15-2013 TIME: 5:45:55 PM FILE: ACCESS ROAD DESIGN (EXISTING CONDITIONS) 01

USACE FILE: NAN-2012-00090

SHEET 22 of 25
JUN 2 4 2023

JUN 2 4 2013

12/29



EXISTING UTILITIES AND MAPPING FEATURES DEPICTED ON THESE DRAWINGS ARE DERIVED FROM A COMBINATION OF INFORMATION PROVIDED IN THE RFP AND/OR RECORD PLANS AS WELL AS ACTUAL FIELD INVESTIGATIONS. EXISTING UTILITIES SHOWN ARE COMBINATION OF QUALITY LEVEL A/B/C OR D (QL-A/B/C/D).

20 0 20 40 60 80

1" = 40'

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SIGNATURE: STAMP:	SIGNATURE: STAMP:

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REVISIONS

DATE	DESCRIPTION	BY	SYM.
05/15/13	PROGRESS SUBMISSION	MJ	IC

NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TAPPAN ZEE CONSTRUCTORS, LLC

TITLE OF PROJECT:	THE NEW NY BRIDGE
LOCATION OF PROJECT:	MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES
TITLE OF DRAWING:	UNIT 22-ACCESS ROAD DESIGN EXISTING CONDITIONS PLAN-2
CONTRACT NUMBER:	D214134
DATE:	05/15/13
DRAWING NUMBER:	H22F-03 C0801

DOCUMENT TRACKING CODE: H22F-03

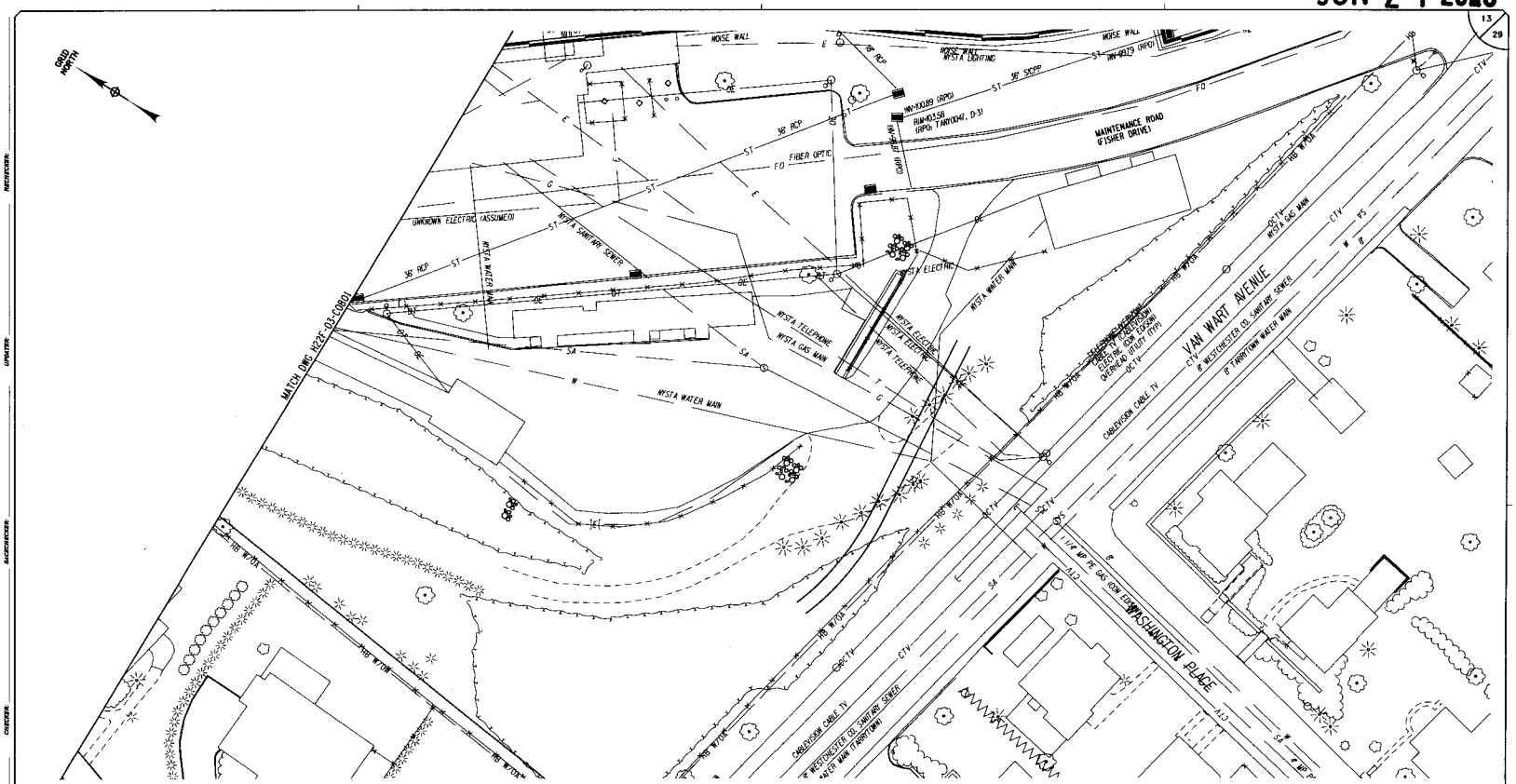
USER: hwallin DATE: 06-05-2013 TIME: 11:10:06 AMFILE: ACCESS ROAD DESIGN (EXISTING CONDITIONS) 02

USACE FILE: NAN-2012-00090

SHEET 23 of 25

JUN 2 4 2013

JUN 2 4 2013



EXISTING UTILITIES AND MAPPING FEATURES DEPICTED ON THESE DRAWINGS ARE DERIVED FROM A COMBINATION OF INFORMATION PROVIDED IN THE RFP AND/OR RECORD PLANS AS WELL AS ACTUAL FIELD INVESTIGATIONS. EXISTING UTILITIES SHOWN ARE COMBINATION OF QUALITY LEVEL A/B/C OR D (QL-A/B/C/D).

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1" = 40'

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REVISIONS

DATE	DESCRIPTION	BY	SYM.
05/15/13	PROGRESS SUBMISSION	MJ	IC

NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TAPPAN ZEE CONSTRUCTION

TITLE OF PROJECT: THE NEW NY BRIDGE
CONTRACT NUMBER: D214134
LOCATION OF PROJECT: MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES
DATE: 05/15/13
TITLE OF DRAWING: UNIT 22-ACCESS ROAD DESIGN EXISTING CONDITIONS PLAN-3
DRAWING NUMBER: H22P-03 C0802
DOCUMENT TRACKING CODE: H22P-03

USER:jromeo DATE:05-15-2013 TIME:5:48:38 PM FILE:ACCESS ROAD DESIGN (EXISTING CONDITIONS) 03

USACE FILE: NAN-2012-00090

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JUN 2 4 2013

JUN 24 2013

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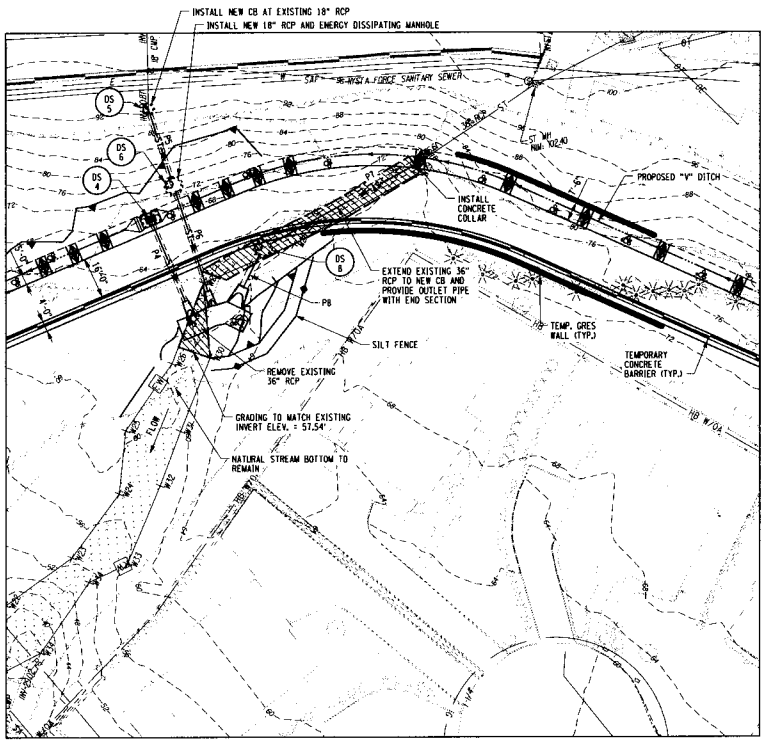
29



CULVERT REPLACEMENT PLAN

20 0 20 40 60 80
1" = 40'

WETLAND IMPACT AREA
FILLED AREA
900 SF

LEGEND:

EXISTING WETLAND BOUNDARY

WETLAND FILL AREA

TREE / VEGETATION PROTECTION BARRIER

SILT FENCE

STONE CHECK DAMN

NOTES:

1. EROSION CONTROL MEASURES AS INDICATED ON THE PLANS SHALL BE PLACED AS CLOSE AS POSSIBLE TO THE EDGE OF THE EXISTING WETLANDS TO BE PRESERVED WITHOUT INTERFERING WITH GRADING OPERATIONS.
2. WETLAND AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO THE AREAS SHOWN ON THE PLANS. THESE AREAS SHALL BE SEEDED WITH WETLAND SEED MIX AS SOON AS WORK IN THESE AREAS IS FINISHED. CULVERT MODIFICATION WILL BE IMMEDIATELY ADJACENT TO ACCESS ROAD WORK.
3. CONSTRUCTION METHODS WILL COMPLY WITH THE FINAL REGIONAL CONDITIONS, WATER QUALITY CERTIFICATION AND COASTAL ZONE CONCURRENCE FOR NATIONWIDE PERMIT 14.
4. SLOPE APPLIED EROSION CONTROL PRODUCT SHALL BE PLACED ON SLOPES GREATER THAN 3 ON 1.
5. HEAVY MACHINERY SHALL NOT BE PLACED WITHIN DELINEATED WETLANDS.
6. EROSION CONTROL MEASURES TO BE REMOVED UPON ESTABLISHMENT.

SEED MIX B
A - MIN. GERMINATION
B - MIN. % GERMINATION & HARD SEED
C - LBS. PURE LIVE SEED/ACRE

NAME	VARIETY	A	B	C
ANNUAL RYEGRASS (LOLIUM MULTIFLORUM)	COMMERICAL	90		15
PEREMNIAL RYEGRASS (POA ANNUA)	COMMERICAL	90		50
REDTOP (AGROSTIS GIGANTA ROTH)	COMMERICAL	85		35

ALTERED ON:	AFFIXED ON:
SIGNATURE: STAMP:	SIGNATURE: STAMP:

REFERENCES
REF. NO. DRAWING TITLE

UNLESS NOTED OTHERWISE, ALL REFERENCED DRAWINGS ARE WITHIN THIS DESIGN PACKAGE.

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REVISIONS			
DATE	DESCRIPTION	BY	SYM.
05/15/13	PROGRESS SUBMISSION	MJ	IC

NEW YORK STATE THRUWAY AUTHORITY

NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TAPPAN ZEE CROSSING OFFICE

TITLE OF PROJECT: THE NEW NY BRIDGE
LOCATION OF PROJECT: MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES
TITLE OF DRAWING: UNIT 22-ACCESS ROAD DESIGN CULVERT REPLACEMENT PLAN

CONTRACT NUMBER: D214134
DATE: 06/07/13
DRAWING NUMBER: H22F-03 C1400

DOCUMENT TRACKING CODE: H22F-03

USER: lwatkin DATE: 06-06-2013 TIME: 3:37:01 PM FILE: ACCESS ROAD DESIGN (WETLAND IMPACT AND RESTORATION

USACE FILE: NAN-2012-00090

SHEET 25 of 25

JUN 24 2013

New York State
Department of Environmental Conservation

PERMIT

Under the New York State Environmental Conservation Law (ECL)

PERMITTEE AND FACILITY INFORMATION

USACE FILE: NAN-2012-00090-WSC

PERMITTEE

New York State Thruway Authority
200 Southern Boulevard PO Box 189
Albany, NY 12209-0189

FACILITY

Tappan Zee Bridge/The New NY Bridge

PROJECT LOCATION

The Hudson River north of the existing Tappan Zee Bridge.

AUTHORIZED ACTIVITY

The Permittee will construct a new crossing of the Hudson River consisting of two parallel structures between Rockland County and Westchester County. The new bridge will replace the existing Tappan Zee Bridge, which will be demolished.

This permit approves the following Authorized Activity:

1. Implementation of a phased Pile Load Testing Program, including the installation and removal of 15 temporary piles in the Hudson River.

2. Construction of two parallel bridge structures extending from landings to be built in Rockland and Westchester Counties. The new structures will span the Hudson River navigation channel using cable-stayed towers. This work will require the dredging, installation of piles, pile caps, piers, and other support structures in the Hudson River, and includes the following:
   - Dredging of 951,000 cubic yards of sediment over 139 acres of Hudson River bottom.
   - Covering, or "armoring," 107 acres of dredged river bottom with sand and stone up to two feet in depth.
   - Construction of 6.69 acres of temporary fixed platforms and 2.44 acres of trestles and permanent fixed platforms supported by steel piles, over the Hudson River.
   - Construction of 42 in-water pile-supported support piers.
   - Installation of 150 linear feet of steel sheet pile bulkhead.
   - Installation of piles (other than piles for Pile Load Testing Program in 1, above).

3. Demolition and removal of the existing Tappan Zee Bridge from the bed and banks of the Hudson River.

4. An Incidental Take, as defined in 6NYCRR Part 182.2(j), for potential physiological effects to an estimated 43 Atlantic sturgeon and 43 shortnose sturgeon during project construction, including potentially lethal injury to two Atlantic and two shortnose sturgeon.

PERMIT AUTHORIZATIONS

TIDAL WETLANDS – ECL Article 25
Permit ID 3-9903-00043/00012
New Permit Effective Date: March 25, 2013 Expiration Date: March 24, 2019

SECT. 401 WATER QUALITY CERTIFICATION – ECL Article 15
Permit ID 3-9903-00043/00013
New Permit Effective Date: March 25, 2013 Expiration Date: March 24, 2019

ENDANGERED/THREATENED SPECIES (INCIDENTAL TAKE) – ECL Article 11
Permit ID 3-9903-00043/00014
New Permit Effective Date: March 25, 2013 Expiration Date: March 24, 2019

NYSDEC APPROVAL

By accepting this permit the Permittee agrees that the Department's approval is contingent on compliance with the ECL, all applicable regulations and all permit conditions.

Permit Administrator: John J. Ferguson, Chief Permit Administrator
Address: NYSDEC ALBANY HEADQUARTERS
625 BROADWAY, 4TH FLOOR
ALBANY, NY 12233

Authorized Signature:  Date: 3-25-13

SECTION 401 WATER QUALITY CERTIFICATION

The Department of Environmental Conservation hereby certifies that the Authorized Activity, when conducted in compliance with permit conditions, will comply with effluent limitations and standards under Sections 301, 302, 303, 306 and 307 of the Clean Water Act of 1977 (PL 95-217).

NET CONSERVATION BENEFIT

By letter dated June 25, 2012, the Permittee provided an Endangered and Threatened Species Mitigation Plan. By letter July 23, 2012 the Permittee submitted an Implementation Plan. Each plan fulfills the requirements of 6 NYCRR §182.11(d).

Within 120 days of the effective date of this permit (except as identified in C, below) the Permittee must submit to the Department for its approval refinements to these plans, including final details, schedule, and execution program, as outlined below. These final details are to be developed in collaboration with the Department.

Carrying out the Authorized Activity in conformity with the conditions of this Permit and executing the final Endangered and Threatened Species Mitigation Plan as outlined below – and as finalized in collaboration with, and approved by, the Department – will result in a Net Conservation Benefit to the shortnose and Atlantic sturgeon of the Hudson River.

The Endangered and Threatened Species Mitigation Plan will consist of the following:

A. Mapping of Hudson River shallows less than four meters deep to document benthic habitat used by Atlantic and shortnose sturgeon. Mapping will extend from the Troy Dam south to New York Harbor, and will use techniques consistent with those used by the NOAA Coastal Services Center to map the shallows from Saugerties north to the Troy Dam. The mapping effort may omit the Saugerties to Troy Dam river stretch if the new data can be integrated with the NOAA data into a seamless digital product that can be viewed by general public users. To support and illuminate the sturgeon-related mitigation actions that follow, this work must be completed *within two years of the effective date of the Permit.*

B. A study of sturgeon foraging habits using gastric lavage to obtain gut contents in order to link sturgeons' diet to benthic habitats. Twenty to thirty of each life stage and species described below are to be lavaged; these fish will not be tagged with sonic tags. Biological characteristics (length and weight) will be collected; a PIT tag will be applied to each fish prior to release.

C. *No more than 90 days after the effective date of this permit*, or as soon as the Permittee can obtain requisite authorizations to do so, including National Marine Fisheries Services (NMFS) approvals, the Permittee must begin capture and tagging of approximately 30 adult shortnose sturgeon (>500 mm TL); 30 juvenile shortnose sturgeon (300-500 mm TL); 30 pre-migrant juvenile (450 to 1000 mm TL) Atlantic sturgeon; and 30 sub-adult (1000-1300 mm TL) Atlantic sturgeon.

D. Shortnose sturgeon will be captured at overwintering locations in Haverstraw Bay in early spring (late March through early April and New York harbor in late fall. Attempts to collect juvenile shortnose sturgeon will also be made during the fall downriver of the spawning area which is above Coxsackie. Juvenile Atlantic sturgeon will be captured in late winter and early spring in Haverstraw Bay; sub-adult fish in late spring through early summer in the Tappan Zee reach.

E. Sonic tags are to be the same as those used in the existing NYSDEC program (LOTEK Dual Mode transmitters). Sturgeon shall be measured for total length, identified to species, examined for a Passive Integrated Transponder (PIT) tag, and if not found to have been tagged, the sturgeon shall be marked with a PIT tag applied in the flesh below the base of the dorsal fin (left side), and surgically implanted with a sonic tag and released. Application of all tags will follow the procedures as outlined in the NMFS permit. Any fish previously tagged with a PIT tag shall be identified to species, measured, PIT tag recorded then released.

F. Tracking of acoustically marked fish from the vicinity of the bridge construction site and other locations to contribute knowledge of species distribution and habitat use with the Hudson River Estuary. Two techniques will be used: Stationary Gateway receivers, described in Permit Condition 40, below; and Mobile tracking.

i. Stationary gateway receivers will be used to identify sonic tagged fish as they enter the lower Hudson River, but prior to their arrival in the bridge construction zone. In addition, the applicants shall install stationary gateway receivers at intervals within a 50 kilometer (km) stretch encompassing the bridge construction site. At minimum, receivers shall be placed as follows to cover the entire width of the river:

- George Washington Bridge to Piermont – One centrally located receiver every 5 km.
- Piermont to Stony Point – three at equally spaced intervals across river every 5 km.

Stationary gateway receivers will be in place *within 90 days of the effective date of the Permit*.

ii. Mobile tracking will be designed to provide a more precise location to determine the bottom and habitat type the tagged fish utilizes. The 50 km stretch of river centered on the Tappan Zee Bridge will be monitored by mobile tracking for tagged fish two days per week on a schedule to be determined and approved by the Department as part of the final Endangered and Threatened Species Mitigation Plan. Tracking procedures will be consistent with NYSDEC procedures.

Progress reports will be submitted to the Department on a schedule to be developed, with data files, numbers of fish caught, tagged or lavaged, and a summary of work to present, including progress in stomach content analyses and/or fish tracking data.

G. Development and implementation of an outreach campaign, designed in collaboration with, and approved by, the Department, directed at the commercial fishing industry with the goal of reducing the impact of commercial by-catch of Atlantic sturgeon in the near shore Atlantic Ocean.

MITIGATION

Within ninety days of the effective date of this Permit the Permittee will submit to the Department for its review and approval a Compensatory Mitigation Plan for dredging-related impacts to the benthic community, tidal wetlands and open water community, and plant and animal species utilizing these resources. The final plan will be developed in collaboration with the Department consistent with the Department's July 3, 2102 letter to counsel for New York State concerning the Mitigation Proposal. Upon Department approval Permittee shall implement the Compensatory Mitigation Plan in accordance with the schedule in the approved plan.

The Compensatory Mitigation Plan will include the following:

A. Oyster Restoration - Permittee will re-establish 13 acres of hard bottom/shell oyster habitat.

i. In collaboration with the Department, the Permittee will seek to harvest local oysters and historic reef materials from the dredge zone and stockpile these for subsequent habitat re-establishment.

ii. Habitat re-establishment will occur as soon as possible following construction, and shall take place in the vicinity of the new bridge.

iii. The habitat will be created using native materials to the maximum extent practicable, supplemented as necessary, resulting in a density and pattern of distribution commensurate with that removed in the course of bridge construction. While it's assumed that collecting a live oysters from a nearby reef and conveying them to a marine oyster hatchery to be raised, spawned, and cultured will provide the brood stock to re-establish the oyster reef; Permittee may propose alternative measures.

iv. All details of the oyster restoration, including the location of the restored habitat, identification of the sources for shell/non-shell material, and the location where broodstock will be cultured, will be developed in collaboration with the Department.

B. Secondary Channel Restoration at Gay's Point– To be completed *within seven years of the effective date of Permit.*

i. In collaboration with DEC staff, the Permittee will develop a secondary channel restoration conceptual design project intended to increase habitat diversity and function at Gay's Point (Columbia County).

ii. The Permittee will prepare and expeditiously implement a plan to sample and analyze sediment contaminants in the prospective dredge spoil removal area at Gay's Point, and will determine the costs of sediment disposal.

iii. If the secondary channel restoration project at Gay's Point can be implemented in a cost-effective manner the Permittee will finalize a restoration design, and, after receiving the Department's approval, implement a secondary channel restoration demonstration project. The design will document the project baseline and reference site conditions, develop target conditions and restoration goals, and specify restoration activities.

iv. Alternatively, if the initial assessment shows that a secondary channel restoration project would exceed budget thresholds, as decided by the Department and the Permittee, Permittee will propose and, upon Department approval, implement an alternative project designed to provide equal habitat benefits.

v. The secondary channel restoration plan shall include one year of baseline condition assessment and post-construction monitoring (of a duration to be determined later) of water quality, water flows, vegetation coverage, and other biotic indicators to assess progress toward restoration goals and target conditions. The Permittee will prepare a final report to DEC documenting the restoration process, interim conditions and outcomes, and final conditions and outcomes, including comparisons to baseline and reference conditions.

C. Wetlands Enhancement at Piermont Marsh - To be completed *within seven years of the effective date of Permit.*

i. The Permittee must design and after receiving the Department's approval implement a plan to enhance and restore Piermont Marsh that will reduce invasive species (primarily *Phragmites*), restore the hydrologic connection of an oxbow in Crumkill Creek, enhance the quality of Sparkill Creek stormwater entering the marsh, and assess the feasibility of restoring historic wetlands. Annual progress reports will be provided to the Department, and a final report will be provided within six months of completion.

ii. *Phragmites* control will be implemented on approximately 200 acres through application of herbicide or other means with the goal, where practically achievable, of complete eradication

from 90% of the project area while minimizing damages to native vegetation. Maintenance spraying will be performed over a five-year period as needed.

iii. The oxbow in Crumkill Creek in the central area will be restored along with historic flow regimes of the creek channel by the one-time placement of a small amount of fill in the existing by-pass, diverting flow into the historic oxbow.

iv. The Permittee shall design and implement a green infrastructure project intended to improve the quality of stormwater entering Sparkill Creek, and will monitor this project for a period to be decided between the Department and Permittee.

v. The Permittee will assess the feasibility of restoring historic wetlands in an area at the northern end of Piermont Marsh through removal of landfill materials and restoration of the native marsh community. As part of the assessment, the Permittee will conduct baseline studies of existing plant and animal communities, sample and analyze sediment contaminants in the former landfill area, and determine the costs of landfill material and sediment removal and disposal.

The Permittee will prepare annual monitoring/progress reports and within six months of project completion submit a final report documenting the restoration process, interim conditions and outcomes, final conditions and outcomes, and recommendations for ongoing management and future restoration projects.

D. Supplemental Habitat Replacement or Enhancement - *Within one year of the effective date of this Permit,* and after consultation with the Department, the Permittee will submit to the Department for its review and approval a plan for supplemental compensatory mitigation projects which have a total capital cost of $2 million. Permittee shall implement the projects *within seven years of approval of the supplemental mitigation plan*.

PERMIT CONDITIONS

PROJECT PLANS

1. The Pile Load Testing Program, also known as the Pile Installation Demonstration Program 2 (PIDP 2), in Authorized Activity item 1, above, must be conducted in substantial conformity with the program description and drawings provided in a December 28, 2012 letter from Elizabeth Novak of NYSTA to John Ferguson of this Department as supplemented by a letter submitted on her behalf dated March 21, 2013. *At least 30 days before starting the Pile Load Testing Program* the Permittee must give the Department a current program description and drawings showing the work to be done.

2. The dredging, pile driving, pile caps, piers, armoring and other support structures and project components in Authorized Activity item 2, above, must be conducted in substantial conformity with the project description and drawings provided in a January 3, 2013 letter from Elizabeth Novak of NYSTA to John Ferguson of this Department.

3. The Permittee must notify the Department of material alterations to any Authorized Activity before starting that Activity.

ENVIRONMENTAL COMPLIANCE MONITOR

4. The Permittee will retain an independent Oversight Environmental Compliance Monitor (OECM) for the duration of Authorized Activity and six months thereafter. The OECM will perform the following duties:

   A. Be present on-site during all Authorized Activity.

   B. Observing and inspecting the Authorized Activity.

   C. Reporting to the Department on a weekly basis (or another frequency to be approved by the Department) regarding compliance with this Permit and its terms, requirements, and conditions; and with the New York State Environmental Conservation Law (NYSECL) and its implementing regulations, where applicable and appropriate.

   D. Reporting noncompliance with the Permit or the NYSECL and implementing regulations immediately to the Department, but no later than 12 hours after observation.

5. *At least 30 days before starting the work described in Authorized Activity item 2 above* the Permittee must provide the Department with an Environmental Compliance Plan for implementation of this requirement, including the following information:

   A. The procedures established to ensure compliance with the Permit and the applicable NYS Environmental Conservation Law and implementing regulations.

   B. The personnel responsible for compliance with this condition, including:
      (1) Names, titles and responsibilities, training, years of relevant experience, licensing and applicable training;
      (2) Organization structure, including specific names, duties and responsibilities.

   C. Environmental compliance tracking and reporting procedures, including
      (1) Process meetings and reporting requirements, including the purpose and frequency of reports;
      (2) Environmental compliance schedule;

(3) Method of reporting to the Department non-compliance with permit conditions and NYS Environmental Conservation Law;
(4) QA/QC procedures for environmental compliance.

6. The work identified in Authorized Activity item 2 above may start when the Department has given written approval of the Environmental Compliance Plan.

TEMPORARY AND PERMANENT PLATFORMS AND BULKHEAD

7. *At least 30 days before work begins on the construction of temporary or permanent platforms*, or bulkheads, the Permittee must submit final plans for same to the Department. The plans must specify the number, location and diameter of all piles supporting the platforms and piers to be installed in the Hudson River; and the dimensions and height above mean low water of the deck of each platform.

PILE DRIVING

8. The results of sound attenuation tests conducted during the 2012 Pile Installation Demonstration Program (PIDP); and any additional test results from underwater sound attenuation studies during the 2013 PIDP2 will be used to determine the most effective underwater sound attenuation system. An underwater sound attenuation system or systems must be deployed during driving of steel piles four feet and larger in diameter to minimize to the maximum extent practicable the effects of underwater sound upon fishes in the Hudson River.

9. *At least 30 days before starting installation of permanent piles four feet in diameter or more* within each specific in-river design unit (as indentified in the March 21, 2013 letter) the Permittee must give the Department design plans and operational specifications for the underwater sound attenuation system for that design unit. Except for piles installed during the 2013 PIDP2, installation of piles four feet and larger in diameter may begin when the Department has given written approval of the underwater sound attenuation system for each in-river design unit. Upon Department approval the final sound attenuation plan will be posted on the project website maintained by the Permittee.

10. The underwater sound attenuation system may be incorporated into falsework structures and the containment boom required by Condition 15, below.

11. The underwater sound attenuation system must include monitoring of underwater sound during installation of piles four feet in diameter or more, and must verify that the system is deployed and operating in accordance with design specifications.

12. Pile driving may be conducted from 7AM to 7PM only.

13. Vibratory pile drivers shall be used to the maximum extent practicable.

14. At all times during pile driving an acoustic corridor will be maintained, having a total length of at least one mile across the Hudson River, running east to west, within which impact pile driving is prohibited. This corridor must be continuous for 1500 feet at all times. Within the corridor the sound level from pile driving must be less than 187 dB re $1\mu Pa^2s$ cSEL criterion at all times.

15. A floating containment boom shall be deployed around the pile and false work structures when work is being conducted.

16. Water from pile and cofferdam dewatering installations may cause no increase in turbidity that results in a substantial visible contrast to the Hudson River outside the piling or cofferdam. As described in the Final Environmental Impact Statement the discharge must be treated if necessary to prevent such substantial visible contrast.

17. Cofferdams must be backfilled using clean material; no excavated sediment may be placed in the River or the cofferdam.

CONCRETE PRODUCTION, DELIVERY & PLACEMENT

18. *At least 45 days before concrete is to be used for the Authorized Activity* the Permittee must submit plans and descriptions of the means of concrete production, delivery and placement. Discharge of concrete and concrete leachate is prohibited. In-water concrete production, delivery and placement, and actions preliminary to same, may start when the Department has given written approval of these plans. The Permit authorizes no withdrawal of water from the Hudson River that may require a permit from the Department pursuant to 6 NYCRR Part 601.

DREDGING

19. *At least 45 days before dredging begins in any year* the Permittee must submit to the Department a Dredging Plan verifying conformity with the conditions (20-35) of the permit in this Dredging section. The plan must include starting and ending dates and dredging locations. .

20. Dredging may be conducted from August 1 to November 1, only, in any calendar year.

21. This Permit authorizes no upland handling, transferring, storage, disposing or placing of dredged materials in New York State; any such activity will require approvals from the Department before dredging begins.

22. Barge overflow is prohibited.

23. Dredging must be conducted using a closed clamshell dredge. Drawings and specifications of the closed clamshell bucket and other dredging equipment, including specifications demonstrating that appropriate design considerations are incorporated in the equipment, must be provided to the Department at least 45 days before dredging related activities start.

24. The bucket must be lifted in a continuous motion through the water column and into the barge. Bucket decanting and loss of dredged material into the River during barge loading will be minimized to the maximum extent practicable.

25. Dredging equipment must be operated in a manner that minimizes the resuspension of sediments in the Hudson River. Dredging operations may not cause turbidity that results in a substantial visible contrast to the Hudson River outside of the 500 foot mixing zone as set forth in the Water Quality Monitoring section below.

26. Best management practices include lowering the bucket to the level of the barge gunwales prior to release of the load and placing the dredged material in the barge in a controlled manner. Excessive loss of material from the bucket should be investigated and repaired. Bucket retrieval rates will be controlled to minimize turbidity.

27. If decanting of barges is necessary, a detailed plan must be submitted to the Department for review and approval before decanting may start.

    The following will apply if dewatering is approved by the Department:

    A. The overlying water in the barge may be pumped to the water column after 24 hours of settling.
    B. Decanting of the barge shall be conducted in a manner that precludes adding substantial suspended solids, turbidity or sheens to the receiving water body. During pumping of the decant water, great care shall be taken to avoid re-suspending or pumping previously settled sediment.
    C. A flocculent may be added to enhance settling. If a flocculent is proposed to be used, the form "Water Treatment Chemical Usage Notification Requirements for SPDES Permittee" must be submitted and approved by DEC prior to its use.
    D. Decanting activities may not cause turbidity that results in a substantial visible contrast to the Hudson River outside of the 500 foot mixing zone as set forth in the Water Quality Monitoring section below. In the event that this requirement is exceeded, the Department will be notified and an evaluation of the adequacy of the holding time and/or the need to add a flocculant to aid in settling shall be undertaken by the Permittee.

28. All side slopes of the dredged channel will have a maximum 1:3 slope.

29. The Permittee will monitor the sedimentation rate within Piermont Marsh, prior to and during dredging operations. A plan detailing the procedures the Permittee will employ for this task must be submitted to the Department no less than 60 days before dredging starts.

30. All sediment transporting barges must be inspected and certified as properly sealed.

31. Loss of material during transport is prohibited.

32. If material is transferred between barges, measures must be implemented to minimize the potential for discharge to the river, as described in the FEIS.

33. Sidecasting of dredged sediment is prohibited.

34. By January 30 following every calendar year in which dredging has occurred the Permittee must submit to the Department a Dredging Report specifying the location and amount of sediments dredged and deposited either uplands or at the HARS.

35. The top three feet of East Sediment Mound #3 near the existing bridge must be removed.

ARMORING

36. *At least 45 days before dredging starts* the Permittee must submit to the Department an armoring plan that describes the source and size of the armoring materials and layering/placement methods. Armoring may begin when the Department has given written approval of the armoring plan.

37. Armoring material must be placed using methods designed to minimize resuspension of newly-exposed sediment (as described in the FEIS). Armoring activities may not cause turbidity that results in a substantial visible contrast to the Hudson River outside of the 500 foot mixing zone as set forth in the Water Quality Monitoring section below.

38. The total depth of armoring deposited in the excavated access channel will be no more than two feet.

39. Stone and sand may be placed only in the dredged access channel and it side slopes.

FISH MONITORING

40. *As soon as possible, but no more than 60 days after the effective date of this Permit*, and before installation of permanent piles four feet or more in diameter the Permittee must submit to the Department a plan for monitoring the movement of shortnose and Atlantic sturgeon in the vicinity of the Tappan Zee Bridge.

The plan will include at minimum the following components:

A. *As soon as possible, but no more than 60 days after the effective date of this Permit*, and before starting installation of permanent piles four feet or more in diameter, and prior to the commencement of dredging, the Permittee will have in place an operational-capable array of stationary receivers capable of detecting sonic tags in the vicinity of any Authorized Activities. These receivers may include those currently used by the NYSDEC (LOTEK MAP, and LOTEK dual mode) and those used by other coastal researchers (VEMCO).

   Receivers must be range tested in the field and placed in such a way that fish in the vicinity of the bridge and the construction zone north of the existing bridge, can be detected by at least three receivers.

   Data downloads shall occur every 60 days at minimum including GPS coordinates of each receiver location to verify the location of each remote receiver. Following each data download, a report shall be submitted with data files, and a summary of fish present and /or moving through the construction zone.

41. The Permittee must survey the project area (River Mile 27) daily during driving of permanent piles and dredging for the purpose of locating stunned or dead fish. An Standard Operating Procedure (SOP) detailing the procedures for this survey must be submitted to the Department for approval as soon as practicable, but at least 30 days before starting dredging or installation of permanent piles four feet or more in diameter.

42. All live stunned or injured sturgeon shall be placed in a holding tank onboard a survey vessel and transported outside the area ensonified by pile driving. The sturgeon shall be measured for total length, identified to species, examined for a Passive Integrated Transponder (PIT) tag, and if untagged, the sturgeon will be marked with a PIT tag applied in the flesh below the base of the dorsal fin (left side), then released. Application of the PIT tag will follow the procedures as outlined in the NMFS protocol.

43. Necropsies shall be performed on any dead sturgeon collected. After completion of the necropsy all dead sturgeon must be placed on ice and held for delivery to the Department. After collection of a dead Shortnose or Atlantic sturgeon the Permittee shall contact the Department's Hudson River Fisheries Unit Leader during the following DEC work day for delivery procedures.

44. *Within 90 days of the effective date of this Permit*, the Permittee must submit detailed procedures for the necropsies, which identifies the contractor that will perform the necropsies and the location of the laboratory where the necropsies will be performed.

BRIDGE DEMOLITION

45. *At least 45 days before any in-water demolition-related work begins* the Permittee must submit a plan to the Department providing details of all in-water demolition-related work including, among other things, a detailed plan for any dredging, cofferdams, or silt curtains. The plan will demonstrate conformity with all special conditions (45-51) in this Bridge Demolition Section. .

46. Bridge demolition must be conducted in a manner that minimizes the resuspension of sediment.

47. All debris and materials from the demolition of the existing Tappan Zee Bridge must be removed from the bed and banks of the Hudson River.

48. Piles, caissons, abutments, fenders and other in-water components of the existing Tappan Zee Bridge must be removed to two feet below the mud line. Silt curtains must be deployed during this operation.

49. A floating containment booms and/or silt curtains must be deployed around all active substructure demolition areas to control and contain debris and discharges to meet water quality standards.

50. A debris containment net must be deployed and maintained at all times during demolition of the bridge deck and superstructure.

51. Blasting for bridge demolition is prohibited.

POST-CONSTRUCTION

52. *Within one year of completion of the Authorized Activity, and again at two years and five years* after completion of the Authorized Activity, the Permittee must submit a bottom hydrographic survey report of the dredged area to the Department. For comparison purposes, a pre-construction bottom hydrographic survey of the same area must be provided with the first post-construction survey

53. *Within one year of completion of the Authorized Activity, and again at two years and five years* after completion of the Authorized Activities a benthic invertebrate survey must be conducted at the dredged area, and a report and data submitted to the Department. For comparison purposes a pre-construction survey must be provided with the first post-construction survey.

54. *Within 60 days of completion of bridge demolition*, a hydrographic survey of the river bottom beneath the footprint of the demolished bridge must be submitted to the Department. For comparison purposes a pre-demolition survey must be provided with the post-construction survey.

PEREGRINE FALCON

55. The Permittee must minimize disturbance to Peregrine Falcons during all phases of the bridge replacement project. All activities must maintain the maximum distance from the peregrine falcon nest on the existing bridge as practical. No less than 30 days before starting the Authorized Activity the Permittee must submit a plan for protection of the falcon nest to the Department.

56. Any upland blasting must be approved in writing by the Department and must avoid impacts to nesting peregrine falcons.

57. The Permittee must evaluate Peregrine Falcon nesting activity during each year of construction and demolition to determine if a pair is active on the territory, are nesting, and the success of that nest. Any reports of impacts to the nest should be reported to the Wildlife Manager at the NYS DEC Region 3 Headquarters in New Paltz, NY.

58. A Peregrine Falcon nest box must be installed on the new bridge between September 1 and January 31 in any calendar year, when construction is finished and before demolition of the old bridge. The design and location of the nest box on the new structure must be approved by the Department.

WATER QUALITY MONITORING

59. *At least 45 days before starting dredging activities*; decanting activities; removal of large debris fields; pile driving in zone C; channel armoring; cofferdam construction; removal of the existing bridge; or any activity that may cause resuspension of bottom sediments, Permittee must submit a water quality monitoring plan to the Department. If activities occur concurrently in multiple locations, each activity that may cause resuspension of bottom sediments must be monitored separately. The Plan must be in effect at all times during these activities. The above activities may start when the Department has given written approval of the plan.

60. The plan shall include monitoring for total suspended solids (TSS), turbidity (visual monitoring) and the following contaminants: total mercury, dissolved nickel, copper, lead, zinc, PCB and naphthalene and benzo(a)pyrene. The plan must: (i) describe procedures for background sampling, and sampling at the edge of a 500-foot mixing zone around the activities identified in condition 59, above (ii) include daily sampling during each tidal cycle; (iii) use an Acoustic Doppler Current Profiler to locate the plume; (iii) require whole water samples in the vertical water column (from at least 3 depths) along a transect within the plume; and (iv) include upstream transect. When silt curtains are deployed, monitoring should take place immediately outside the confines of the silt curtain.

61. The following Water Quality Standards must be achieved immediately outside of the silt curtain or at the edge of the 500-foot mixing zone around the activities identified in condition 59, above,

subject to the monitoring requirements of condition 64 below. When a Detection Limit listed below is greater than the listed Water Quality Standard, the Water Quality Standard will be presumed to be met when analytical results demonstrate compliance with the Detection Limit.

Where background concentrations exceed the Water Quality Standard, the limit at the edge of the mixing zone is 30% over background, with the exception of TSS which shall be 100 mg/l above ambient..

Contaminant	Water Quality Standard (ppb)	Detection Limit * (ppb)
Total Mercury	0.0007 – H(FC)	0.050
Dissolved nickel	8.2 – A(C)	
Dissolved copper	3.4 – A(C)	
Dissolved lead	8.0 – A(C)	
Dissolved zinc	66 – A(C)	
PCB	1.0x10^6	
Aroclor 1242		0.2
Aroclor 1248		0.2
Aroclor 1254		0.2
Aroclor 1260		0.2
Naphthalene	16	
Benzo(a)pyrene	0.0006	0.1
TSS	None from sewage, industrial waste or other wastes that will cause deposition or impair the waters for their best usages.	100 mg/l above ambient[1]

* Using EPA analytical method with the lowest possible detection limit as promulgated under 40CFR Part 136.

62. All analytical results must be sent to DEC by fax or email within 48 hours of receipt of data results, followed by a mailed hard copy. Exceedances should be highlighted.

63. In the event of exceedance of a water quality standard, the Department will be notified and the Permittee and the Department will determine if there is a need for procedural changes.
64. Water quality monitoring must be conducted daily at the start of each activity identified in condition 59, above. If there are no water quality exceedances during the first two weeks of an in-

river Authorized Activity water quality monitoring for contaminants for that activity may be reduced. Daily TSS and turbidity monitoring must continue through the duration of the in-river operation. If during the reduced sampling, there is an exceedance of 100 ppm above ambient TSS value, monitoring shall return to daily for all parameters until such time as TSS concentrations are less than 100 ppm above ambient values.

65. Three copies of a monitoring report, summarizing the results of the monitoring and analyses, shall be submitted to the Department within 30 days of completion of the in-river Authorized Activity in any calendar year.

66. All laboratory analyses required by this permit must be conducted by a laboratory certified by the New York State Department of Health.

67. Nothing contained in this Permit shall be construed as authorizing a violation of Water Quality Standards.

ROCK DRILLING DEWATERING CONDITIONS

68. All decant water-holding scows must be water tight and of solid hull construction.

69. Decant water must be discharged within the confines of the silt curtain containment area surrounding the rock drilling operation.

70. All decant water must be held in the decant-holding scow for a minimum of 24 hours.

71. During pumping of the decant water from the holding scow, care shall be taken to avoid re-suspending or pumping sediment which has previously settled in the scow.

72. Discharge of decant water into the silt curtain containment area shall not cause turbidity that results in a substantial visible contrast to the Hudson River as set forth in the Water Quality Monitoring section above. In the event this requirement is exceeded, the Department will be notified and an evaluation of the adequacy of the holding time and/or the need to add a flocculent to aid in settling of solids in the scow shall be undertaken by the Permittee. Addition of a flocculent requires Department approval and the completion of the form "Water Treatment Chemical (WTC) Usage Notification Requirements for SPDES Permittee".

GENERAL CONDITIONS – APPLICABLE TO ALL PERMITS

73. **FACILITY INSPECTION BY THE DEPARTMENT**
The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department to determine Permittee's

compliance with this permit and the Environmental Conservation Law. Such representative may order work suspended pursuant to ECL 71-0301 and SAPA 401(3).

When requested, a Permittee representative must accompany the Department's representative during project inspection.

A copy of this permit, including all referenced maps, plans, and drawings must be available for inspection by the Department at all times at the project site. Failure to provide a copy of the permit at the request of a Department representative is a violation of this permit.

74. **RELATIONSHIP OF PERMIT TO DEPARTMENT ORDERS AND DETERMINATIONS**
Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

75. **APPLICATIONS FOR PERMIT RENEWALS OR MODIFICATIONS**
The Permittee must submit a written application to the Department for renewal or modification of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Requests for permit renewal or modification must be submitted to:

REGIONAL PERMIT ADMINISTRATOR
NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL PERMITS
21 SOUTH PUTT CORNERS ROAD
NEW PALTZ, NY 12561

76. **APPROVED PLANS BECOME ENFORCABLE PERMIT CONDITIONS**
Upon Department approval of plans required pursuant to this Permit, the terms; conditions; schedule and other requirements in final approved plan shall become an enforceable condition of this Permit.

77. **RENEWAL APPLICATION DEADLINES**
A renewal application must be submitted no less than 30 calendar days before the permit expiration date for all the permit types.

78. **PERMIT MODIFICATIONS, SUSPENSIONS AND REVOCATIONS**
The Department reserves the right to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:
a. Materially false or inaccurate statements in the permit application or supporting documentation.
b. Failure by the Permittee to comply with any terms or conditions of the permit.
c. Exceeding the scope of the project as described in the permit application.

d. Newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the permit.
e. Noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

ITEM A: PERMITTEE ACCEPTS LEGAL RESPONSIBILITY AND AGREES TO INDEMNIFICATION
The Permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the Permittee's acts or omissions in connection with the Permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

ITEM B: PERMITTEE'S CONTRACTORS MUST COMPLY WITH PERMIT
The Permittee is responsible for informing its contractors, employees, agents and assigns of their responsibility to comply with this permit, including all conditions, while acting as the Permittee's agent with respect to permitted activities. Said parties are subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the Permittee.

ITEM C: PERMITTEE RESPONSIBLE FOR OBTAINING OTHER REQUIRED PERMITS
The Permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way necessary to carry out the activities authorized by this permit.

ITEM D: NO RIGHT TO TRESPASS OR INTERFERE WITH RIPARIAN RIGHTS
This permit conveys no right to the Permittee to trespass upon the lands of, or interfere with the riparian rights of others. It authorizes no impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

Attachment A

Joint Application Form

JOINT APPLICATION FORM

For Permits/Determinations to undertake activities affecting streams, waterways, waterbodies, wetlands, coastal areas and sources of water withdrawal.

New York State

You must separately apply for and obtain separate Permits/Determinations from each involved agency prior to proceeding with work. Please read all instructions.

US Army Corps of Engineers (USACE)

APPLICATIONS TO

1. NYS Department of Environmental Conservation

Check all permits that apply:

- ☐ Stream Disturbance
- ☐ Excavation and Fill in Navigable Waters
- ☐ Docks, Moorings or Platforms
- ☐ Dams and Impoundment Structures
- ☐ 401 Water Quality Certification
- ☐ Freshwater Wetlands
- ☐ Tidal Wetlands
- ☐ Coastal Erosion Management
- ☐ Wild, Scenic and Recreational Rivers
- ☐ Water Withdrawal
- ☐ Long Island Well
- ☐ Aquatic Vegetation Control
- ☐ Aquatic Insect Control
- ☐ Fish Control
- ☐ Incidental Take of Endangered/Threatened Species

☐ I am sending this application to this agency.

2. US Army Corps of Engineers

Check all permits that apply:

- ☐ Section 404 Clean Water Act
- ☐ Section 10 Rivers and Harbors Act
- ☐ Nationwide Permit(s) - Identify Number(s):

  _____

  _____

Preconstruction Notification - ☑ Y / ☐ N

☑ I am sending this application to this agency.

3. NYS Office of General Services

Check all permits that apply:

- ☐ State Owned Lands Under Water
  - ☐ Utility Easement (pipelines, conduits, cables, etc.)
  - ☐ Docks, Moorings or Platforms

☐ I am sending this application to this agency.

4. NYS Department of State

Check if this applies:

- ☐ Coastal Consistency Concurrence

☐ I am sending this application to this agency.

5. Name of Applicant (use full name)

Peter Sanderson, New York State Thruway Authority

Mailing Address: 555 White Plains Road, Suite 400

Post Office City: Tarrytown

State: NY Zip Code: 10591

Telephone (daytime): 845-918-2651

Email: peter.sanderson@newnybridge.com

Applicant must be:

- ☑ Owner
- ☐ Operator
- ☐ Lessee

(check all that apply)

Taxpayer ID (If applicant is NOT an individual):

6. Name of Facility or Property Owner (if different than Applicant): Same as Applicant

Mailing Address:

Post Office City:

State: NY Zip Code:

Telephone (daytime):

Email:

7. Contact/Agent Name

Company Name:

Mailing Address:

Post Office City:

State: Zip Code:

Telephone (daytime):

Email:

8. Project / Facility Name

Westchester Access Road for the New NY Bridge Project

Property Tax Map Section / Block / Lot Number: New York State Thruway Right-of-way

Project Location - Provide directions and distances to roads, bridges and bodies of waters:

From NYSTA Weschester Toll Plaza, take Exit 9 to Broadway/Route 9 North (0.2 mi), left turn on Paulding/Van Wart Ave(0.1 mi). 300 feet south of TZ bridge

Street Address, if applicable: Van Wart Ave, near Toll Plaza

Post Office City: Tarrytown State: NY Zip Code: 10591

Town / Village / City: Town of Greenburgh

County: Westchester

Name of USGS Quadrangle Map: White Plains

Stream/Water Body Name: Unnamed tributary of Hudson River

Location Coordinates: Enter NYTMs in kilometers, **OR** Latitude/Longitude

NYTM-E	NYTM-N	Latitude	Longitude
		41.0651	73.866

For Agency Use Only DEC Application Number: USACE Number:

RESET

9. **Project Description and Purpose:** Provide a complete narrative description of the proposed work and its purpose. Attach additional page(s) if necessary. Include: description of current site conditions and how the site will be modified by the proposed project; structures and fill materials to be installed; type and quantity of materials to be used (i.e., square ft of coverage and cubic yds of fill material and/or structures below ordinary/mean high water) area of excavation or dredging, volumes of material to be removed and location of dredged material disposal or use; work methods and type of equipment to be used; pollution control methods and mitigation activities proposed to compensate for resource impacts; and where applicable, the phasing of activities. **ATTACH PLANS ON SEPARATE PAGES.**

For the New NY Bridge Project, a construction access road identified as the "Westchester Access Road" is necessary to facilitate construction of the new bridge and demolition of the existing Tappan Zee Bridge in the vicinity of the Toll Plaza in Westchester County. A gravel access road exists along the proposed alignment of the Westchester Access Road and crosses a 36-inch circular reinforced concrete pipe (RCP) draining to the subject unnamed tributary of the Hudson River. The proposed work involves placing minor fills within the subject unnamed stream to accommodate road widening, an extension of the existing 36-inch RCP, a retaining wall and three stormwater culvert outlets. Total fills within delineated wetlands will be approximately 795 square feet and 110 cubic yards. The purpose of the Westchester Access Road is to widen the road to accommodate TZC trucks and equipment access for the new bridge construction and the demolition of the existing bridge. Proposed road is located within NYSTA ROW and will remain permanently after construction of the new bridge for NYSTA bridge maintenance and emergency purposes. The proposed Westchester Access Road minimizes environmental and wetlands impacts to the extent practicable, as the alignment follows and widens the existing road, crosses the delineated wetlands at the narrowest point, follows sideslope terrain to minimize impacts to the surrounding vegetation and environment. Construction work will protect waters, employ soil erosion and stormwater best management practices in accordance with an approved NYSDEC SPDES General Permit.

Proposed Use: ☐ Private ☐ Public ☑ Commercial	Proposed Start Date: 7/15/2013	Estimated Completion Date: 10/15/2013

Has Work Begun on Project? ☐ Yes ☑ No If Yes, explain.

Will Project Occupy Federal, State or Municipal Land? ☑ Yes ☐ No If Yes, please specify.

Work is completely within NYTA right-of-way, south of Westchester Toll Plaza.

10. List Previous Permit / Application Numbers (if any) and Dates:

USACE Permit NAN-2012-00090 (4/25/13); NYSDEC Permit ID 3-9903-00043/00012, 00013, 00014 (3/25/13); USCG Bridge Permit 3-13-1 (4/15/13)

11. Will this project require additional Federal, State, or Local Permits including zoning changes? ☑ Yes ☐ No If yes, please list:

NYSDEC SPDES General Permit (GP-0-10-001) for Stormwater Discharges from Construction Activity applied for 6/10/2013

12. **Signatures.** If applicant is not the owner, both must sign the application.

I hereby affirm that information provided on this form and all attachments submitted herewith is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law. Further, the applicant accepts full responsibility for all damage, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and agrees to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from said project. In addition, Federal Law, 18 U.S.C., Section 1001 provides for a fine of not more than $10,000 or imprisonment for not more than 5 years, or both where an applicant knowingly and willingly falsifies, conceals, or covers up a material fact; or knowingly makes or uses a false, fictitious or fraudulent statement.

	Printed Name	Title	Date
Signature of Applicant			
Signature of Owner			
Signature of Agent			

For Agency Use Only **DETERMINATION OF NO PERMIT REQUIRED**

_____ (Agency Name) has determined that No Permit is required from this Agency for the project described in this application.

Agency Project Number _____

Agency Representative: Name (printed) _____ Title _____

Signature _____ Date _____

RESET

Attachment B

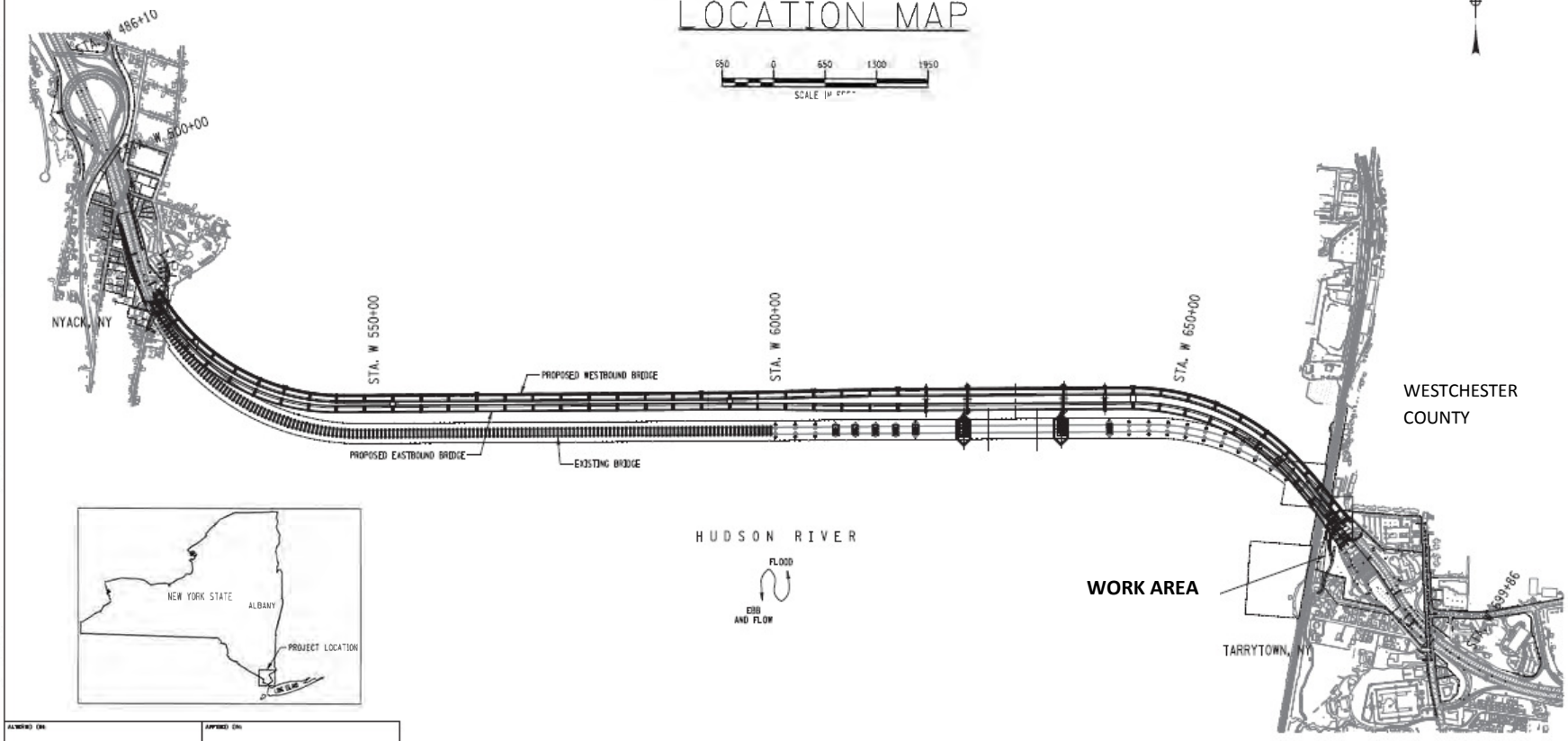
Project Plans

ROCKLAND COUNTY

LOCATION MAP

650 0 650 1300 1950
SCALE IN FEET

GRID NORTH



KEY PLAN
NOT TO SCALE

ALTERED ON:	APPROVED ON:
SIGNATURE: STAMP:	SIGNATURE: STAMP:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISIONS

DATE	DESCRIPTION	BY	SYM.
05/15/13	PROGRESS SUBMISSION	MJ	IC

NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TAPPAN ZEE CONSTRUCTORS, LLC

TITLE OF PROJECT: THE NEW NY BRIDGE
LOCATION OF PROJECT: MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES
TITLE OF DRAWING: UNIT 22-ACCESS ROAD DESIGN KEY PLAN

CONTRACT NUMBER: D214134
DATE: 05/15/13
DRAWING NUMBER: H22F-03 C0002

DOCUMENT TRACKING CODE: H22F-03

\USER\jromeo DATE=05-15-2013 TIME=09:43:39 PM FILE=ACCESS ROAD STANDARD KEYPLAN

pw:\\PWTZHRC:TZ_HRC\Documents\Tappan_Zee_Bridge\13.00_CAD\13.03_Civil_Roadway\13.03.02_Sheet_Files\13.03.02.22_Access Road\H22F-03\H22F-03-C0030

RECHECKER: J. ROMEO
UPDATER: N. GIBSON
BACKCHECKER: B. COOPER
CHECKER: R. DEARSTYNE
ORIGINATOR:

ALIGNMENT

STYLE	NAME	DESCRIPTION
	AC	CONTROL (CENTERLINE)
	AD_P	DETOUR
	AT_P	TRANSITION CONTROL
BRIDGE		
	BR	RAIL
	BSHT	SHEET PILING
CONTROL		
℄	CB	BASELINE
	CBPR	BASELINE, PROJECTION
DRAINAGE		
ST	DCP	CULVERT PIPE
ST	DCP_P	CULVERT PIPE (DIR)
	DDG_P	DITCH, GRASS LINED
	DDP_P	DITCH, PAVED INVERT
	DDS_P	DITCH, STONE LINED
	DFL_P	FLOW LINE
	DSSD	SLOTTED DRAIN
ENVIRONMENTAL		
S	EBLHS	BALE, HAY/STRAW
	ECT	CURTAIN, TURBIDITY
	EDMC	DAM, COFFER TYPE
	EDMEC_P	DAM, EARTHEN, CHECK
	EDMPC_P	DAM, PREFAB, CHECK
	EDMSC_P	DAM, STONE, CHECK
	EFNS	FENCE, SILT
	EFNSV	FENCE, SILT/VEGETATION
	EFNV	FENCE, VEGETATION
AA	EWAA_P	WETLAND, ADJACENT AREA
FW	EWF	WETLAND, FEDERAL
SW FW	EWFS	WETLAND, FEDERAL/STATE
WM	EWM	WETLAND, MITIGATION AREA
SW	EWS	WETLAND, STATE
SIGNS		
	SBLB	BILLBOARDS
	SM	MULTIPLE POST

SIGNS - (CONT'D)

STYLE	NAME	DESCRIPTION
	SSO	STRUCTURE, OVERHEAD
	SSOC	STRUCTURE, OVHD. CANTILEVER
LANDSCAPE		
	LABL	AREA, BRUSH LINE
	LAHR	AREA, HEDGE ROW
	LAPB	AREA, PLANTING BED
	LAWA	AREA, WOODED AREA OUTLINE
	LAWE	AREA, WATERS EDGE
	LCUT_P	CUT LIMIT
	LFILL_P	FILL LIMIT
	LFNC	FENCE
	LTRC	TREE ROW, CONIFEROUS
	LTRD	TREE ROW, DECIDUOUS
	LWH	WALL, H PILE
RW RW	LWR	WALL, RETAINING
	LWS	WALL, STONE
ROW MAPPING		
	MDL	DEED LINE
PE	MEE	EASEMENT, EXISTING
	MEP_P	EASEMENT, PERMANENT
APE	MEPA_P	EASEMENT, PERMANENT, APPROX.
TE	MET_P	EASEMENT, TEMPORARY
ATE	META_P	EASEMENT, TEMPORARY, APPROX.
FEE	MF_P	FEE ACQUISITION, W/ ACCESS
AFEE	MFA_P	FEE ACQUISITION, APPROXIMATE
	MFS_P	FEE ACQUISITION, SHAPE
FEE W/OA	MFWOA_P	FEE ACQUISITION, W/O ACCESS
HB	MHB	HIGHWAY BOUNDARY
AHB	MHBA	HIGHWAY BOUNDARY, APPROX.
	MHBW	HWY BOUNDARY, FACE OF WALL
HB W/OA	MHBWOA	HIGHWAY BOUNDARY, W/O ACCESS
	MJC	JURISDICTION, CITY
	MJCY	JURISDICTION, COUNTY
	MJHD	JURISDICTION, HISTORIC DIST.
	MJLL	JURIS., (MILITARY) LOT LINE
	MJN	JURISDICTION, NATION
	MJPB	JURISDICTION, PUBLIC LANDS
	MJS	JURISDICTION, STATE
	MJT	JURISDICTION, TOWN
	MJV	JURISDICTION, VILLAGE
P	MPL	PROPERTY LOT LINE
AP	MPLA	PROPERTY LOT LINE, APPROX.
	MSL	SUB LOT LINE

ROADWAY

STYLE	NAME	DESCRIPTION
	RG	GUIDE RAIL, MISCELLANEOUS
	RGB	GUIDE RAIL, BOX BEAM
	RGBM	GUIDE RAIL, BOX BEAM, MEDIAN
	RGC	GUIDE RAIL, CABLE
	RGCB	GUIDE RAIL, CONC. BARRIER
	RGP_P	GUIDE POST
	RGW	GUIDE RAIL, W BEAM
	RGWM	GUIDE RAIL, W BEAM, MEDIAN
	RPB	PARKING BUMPER
	RRC	RAIL ROAD, CATENARY
	RRER	RAIL ROAD, 3RD RAIL
	RRPLS_P	RAIL, PHOTO, LARGE SCALE
	RRPSS	RAIL, PHOTO, SMALL SCALE
	RRS	RUMBLE STRIP
	RRSLS_P	RAIL, SURVEY, LARGE SCALE
	RRSSS	RAIL, SURVEY, SMALL SCALE
STRIPING		
	STB•	BROKEN LINE
	STDB•	DOUBLE BROKEN LINE
	STDL•	DOTTED LINE LONG
	STDS•	DOTTED LINE SHORT
	STFB•	FULL BARRIER LINE
	STH•	HATCH LINE
	STPB•	PARTIAL BARRIER LINE
	STRCT	ROUNDABOUT, CAT TRACKS
	STRYL	ROUNDABOUT, YIELD LINE
	STSB	STOP BAR
	STSE	SOLID, EDGE
	STXL•	X WALK, LADDER LINE
		•=W (WHITE) OR Y (YELLOW)
TRAFFIC CONTROL		
	TCSW	SIGNAL, SPAN WIRE
TRAFFIC MAINTENANCE		
	TMBCD_P	BARRICADES
	TMBCDL_P	BARRICADES, LIGHTED
	TMBT_P	BARRIER, TEMPORARY
	TMBTL_P	BARRIER, TEMP., LIGHTED
	TMDB_P	DEVICE, BARRELS
	TMDBL_P	DEVICE, BARRELS, LIGHTED
	TMDC_P	DEVICE, CONES

UTILITIES

STYLE	NAME	DESCRIPTION
C	UC	CONDUIT, UNDERGROUND
]C[	UCH	CONDUIT, HANGING
OC	UCO	CONDUIT, OVERHEAD
E	UE	ELECTRIC LINE, UNDERGROUND
]E[	UEH	ELECTRIC LINE, HANGING
OE	UEO	ELECTRIC LINE, OVERHEAD
OET	UETO	ELECTRIC TRANSMISSION, O/H
	UESS	ELECTRIC, SUBSTATIONS
FO	UFO	FIBER OPTIC, UNDERGROUND
]FO[	UFOH	FIBER OPTIC, HANGING
OFO	UFOO	FIBER OPTIC, OVERHEAD
G	UG	GAS, UNDERGROUND
]G[	UGH	GAS, HANGING
OG	UGO	GAS, OVERHEAD
IC	UIC	INFORM CABLE, UNDERGROUND
]IC[	UICH	INFORM CABLE, HANGING
O	UO	OIL LINE, UNDERGROUND
]O[	UOH	OIL LINE, HANGING
	UPBP	POLE, BRACE, PUSH BRACE
	UPGW	POLE, GUY WIRE
SA	USA	SANITARY SEWER, UNDERGROUND
]SA[	USAH	SANITARY SEWER, HANGING
SAF	USAF	SANITARY SEWER, FORCE MAIN, UGND
]SAF[	USAFH	SANITARY SEWER, FORCE MAIN, HANG
T	UT	TELEPHONE, UNDERGROUND
]T[	UTH	TELEPHONE, HANGING
OT	UTO	TELEPHONE, OVERHEAD
CTV	UTV	CABLE TV, UNDERGROUND
]CTV[	UTVH	CABLE TV, HANGING
OCTV	UTVO	CABLE TV, OVERHEAD
UU	UUU	UNKNOWN, UNDERGROUND
]UU[	UUH	UNKNOWN, HANGING
OUU	UUO	UNKNOWN, OVERHEAD
W	UW	WATER LINE, UNDERGROUND
]W[	UWH	WATER LINE, HANGING
OW	UWO	WATER LINE, OVERHEAD

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6. FEATURES SHOWN AT THE HEAVIER WEIGHT ARE PROPOSED ONLY AND DO NOT HAVE CORRESPONDING EXISTING FEATURES.

ALTERED ON: | AFFIXED ON:

SIGNATURE: STAMP: | SIGNATURE: STAMP:

REVISIONS

DATE	DESCRIPTION	BY	SYM.
05/15/13	PROGRESS SUBMISSION	MJ	IC

NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TAPPAN ZEE CONSTRUCTORS, LLC

TITLE OF PROJECT: THE NEW NY BRIDGE
LOCATION OF PROJECT: MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES
TITLE OF DRAWING: UNIT 22-ACCESS ROAD DESIGN LEGEND & ABBREVIATIONS-1
CONTRACT NUMBER: D214134
DATE: 05/15/13
DRAWING NUMBER: H22F-03 C0030

pw:\\PWTZHRC-TZ_HRC\Documents\Tappan_Zee_Bridge\13.00_CAD\13.03_Civil_Roadway\13.03.02_Sheet_Files\13.03.02.22_Access Road\H22F-03\H22F-03-C0031

RECHECKER: J. ROMEO UPDATER: N. GIBSON BACKCHECKER: B. COOPER CHECKER: R. DEARSTYNE ORIGINATOR:

ALIGNMENT

CELL	NAME	DESCRIPTION
	ACC	CENTER OF CURVATURE
	ACOGO	COGO
	ACS	CURVE TO SPIRAL
	ADPI_P	DETOUR, POINT OF INTERSECT.
	ADPL_P	DETOUR, POINT ON LINE
	AEQN	EQUATION
	AEQNAHD	EQUATION AHEAD
	AEQNBK	EQUATION BACK
	AEVT	EVENT STATION
	APC	POINT OF CURVATURE
	APCC	POINT OF COMPOUND CURVATURE
	API	POINT OF INTERSECTION
	APOB	POINT OF BEGINNING
	APOC	POINT OF CURVATURE
	APOE	POINT OF END
	APOL	POINT ON LINE
	APOS	POINT ON SPIRAL
	APOT	POINT ON TANGENT
	APOVC	POINT ON VERTICAL CURVE
	APOVT	POINT ON VERTICAL TANGENT
	APORC	POINT ON REVERSE CURVE
	APT	POINT OF TANGENCY
	APVC	POINT OF VERTICAL CURVATURE
	APVCC	POINT OF VERT. CMPND CURVE
	APVI	POINT OF VERT. INTERSECTION
	APVRC	POINT OF VERT. REVERSE CURVE
	APVT	POINT OF VERTICAL TANGENCY
	ASC	SPIRAL TO CURVE
	ASPI	SPIRAL POINT OF INTERSECTION
	ASTS	SPIRAL TO SPIRAL
	AST	SPIRAL TO TANGENT
	ATS	TANGENT TO SPIRAL
	AVEVT	VERTICAL EVENT POINT
	AVHIGH	VERTICAL HIGH POINT
	AVLOW	VERTICAL LOW POINT

DRAINAGE

CELL	NAME	DESCRIPTION
	DINV	INVERT
	DS	STRUCTURE, RECTANGULAR
	DSI	STRUCTURE, INVERT
	DSM	STRUCTURE, MANHOLE
	DSMTXX_P	STRUCTURE, MANHOLE, TYPE "XX" "XX" = 48, 60, 72, 96
	DSR	STRUCTURE, ROUND
	DST"X"CB P	STRUCTURE, RECT., WITH CURB TYPE "X" "X" = F, G, N, O, P, R
	DST"X" P	STRUCTURE, RECT., TYPE "X" "X" = I, K, L, M, O, P, U

ENVIRONMENTAL

CELL	NAME	DESCRIPTION
CULV	EIOP_P	STR., INLET, OUTLET PROT.
GB	EIPGB_P	STR., INLET PROT., GRAVEL BAG
H/S	EIPHS_P	STR., INLET PROT., HAY/STRAW
PRFB	EIPP_P	STR., INLET PROT., PREFAB.
SF	EIPSF_P	STR., INLET PROT., SILT FENCE
	ERCB	RISER, CONCRETE BOX
	ETRS_P	TRAP, SEDIMENT
	EWFG	WETLAND FLAG

GEOTECHNICAL

CELL	NAME	DESCRIPTION
	GDH	DRILL HOLE

LANDSCAPE

CELL	NAME	DESCRIPTION
	LELS	ELEVATION, SPOT
	LFP	FLAG POLE
	LMB	MAILBOX
	LPB	PAPER BOX
	LPST	POST, SINGLE
	LRB	ROCK, BOULDER
	LSHC	SHRUB, CONIFEROUS
	LSHD	SHRUB, DECIDUOUS
	LTC	TREE, CONIFEROUS
	LTD	TREE, DECIDUOUS
	LTS	TREE, STUMP

ITS

CELL	NAME	DESCRIPTION
	IANT P	ANTENNAS
	IASCTS	ACCOU. SPEED/COUNT SNSR.S
	ICABPAD	CABINET & PAD
	ICCTV	CCTV SITE
CDPD	ICDPD	CDPD TRANSCEIVER
	ICELLT	CELL PHONE TOWER
	ICJB	CONDUIT JACK OR BORING
	ICNTLCAB	CONTROLLER CABINET
	ICPB	COMMUNICATION PULL BOX
	ICTD	CONDUIT TURNING DOWN
	ICTU	CONDUIT TURNING UP
	ICVTRT	COMM. VEH. ROAD TRANSCEIVER
	IDEFAULT	DEFAULT
EZ	IEZR	E-ZPASS READER
EZ-T	IEZTR	TRANSMITTAL READER
XC	IFOXCAB	FIBER OPTIC X-CONNECT CABINET
	IFUSSPL	FUSION SPLICE
	IHARADV	HAR ADVISORY SIGN
	IHARST	HAR SITE
LC	ILC	LOAD CENTER
	IMECSPL	MECHANICAL SPLICE
PM	IMSCS	PORT. SPEED & COUNT SENSOR
M	IMSCTS	MICRO SPEED & COUNT SENSOR
M	IMT	MICROWAVE TRANSCEIVER
VMS	IOVHVMS	PERM. OVERHEAD VMS
PA	IPASCS	PORT. ACCOU. SPD & CNT. SENSOR
	IPEDS	PEDESTRIAN SIGNAL HEAD
	IPSS	PAVEMENT SURFACE SENSOR
PVMS	IPVMS	PERM. VMS
	IRM	RAMP METER
RWIS	IRWIS	RDWY WEATHER INFO. SENSOR
	ISP	SOLAR PANEL
SS	ISST	SPREAD SPECT. TRANSCEIVER
TC	ITDB	TELEPHONE DEMARCATION BLK
TP	ITP	SUBSURFACE TEMP. PROBE
	IVTRT	VEHICLE TO RDWY TRANSCEIVER
WIM	IWIMD	WEIGHT IN MOTION DETECTOR
WVR	IWVR	WIRELESS VIDEO REPEATER
V	IWVRC	WIRELESS VIDEO RECEIVER
V	IWVTT	WIRELESS VIDEO TRANSMITTER

ROW MAPPING

CELL	NAME	DESCRIPTION
	MDL1P	DEED LINE, TYPE 1
	MDL2P	DEED LINE, TYPE 2
	MDL3P	DEED LINE, TYPE 3
	MDL4P	DEED LINE, TYPE 4
	MDL5P	DEED LINE, TYPE 5
	MEEP	EASEMENT, EXISTING
	MEPAP_P	EASEMENT, PERM., APPROX.
	MEPP_P	EASEMENT, PERM., BACK LINE
	MEPSP_P	EASEMENT, PERM., SHAPE
	MFAP_P	FEE ACQUISITION, APPROX.
	MFP_P	FEE ACQUISITION, BACK LINE
	MFSP_P	FEE ACQUISITION, SHAPE
	MHBAP	HIGHWAY BNDRY., APPROX.
	MHBCP	HISTORICAL, BLDG. CORNERS
	MHBP	HIGHWAY BNDRY, PT.
	MJCP	PT., JURIS. CITY
	MPBC	PT., BUILDING CORNER
	MPCC	PT., CROSS CUT
	MPDH	PT., DRILL HOLE
	MPF	PT., FENCE LOCATION
	MPIP	PT., IRON PIPE
	MPIR	PT., IRON ROD
	MPM	PT., MONUMENT
	MPMM	PT., MONUMENT, MISC.
	MPN	PT., NAIL
	MPRS	PT., RAILROAD SPIKE
	MPSP	PT., SPIKE
	MPST	PT., STAKE
	MPTW	PT., TREE W/ WIRE
	MPWL	PT., WALL LOCATION

ROW ACQUISITION

CELL	NAME	DESCRIPTION
M1 PT FEE	MFS_P_T	FEE ACQUISITION
M1 PT PE	MEPS_P_T	EASEMENT, PERMANENT
M1 PT TE	METS_P_T	EASEMENT, TEMPORARY
M1 PT TO	METS_P_T	OCCUPANCY, TEMPORARY
M1 PT FEE W/O/A	MFS_P_T	FEE ACQUISITION W/O ACCESS

ROADWAY

CELL	NAME	DESCRIPTION
	RES P	ELEVATION, SPOT
	RGA	GUIDE RAIL, ANCHOR
	RGP	GUIDE POST, SINGLE

SIGNS

CELL	NAME	DESCRIPTION
	S	SINGLE POST
	S_P	SINGLE POST, PROPOSED
	SB_P	BACK TO BACK, PROPOSED
	SDEL	DELINEATORS
	SPM	PARKING METER
RFM	SRM	REFERENCE MARKERS
	SRSC3	SHLD, CTY, 123 DIG.
	SRSC4	SHLD, CTY, 4 DIG.
	SRSCT2	SHLD, CTY TOUR, 1-2 DIG.
	SRSCT4	SHLD, CTY TOUR, 3-4 DIG.
	SRSI	SHLD, INTERSTATE
	SRSN2	SHLD, NATIONAL, 2 DIG.
	SRSN3	SHLD, NATIONAL, 3 DIG.
	SRSS2	SHLD, STATE, 2 DIG.
	SRSS3	SHLD, STATE, 3 DIG.
	SRSS4	SHLD, STATE, 4 DIG.

TRAFFIC CONTROL

CELL	NAME	DESCRIPTION
	TCBJ	BOX, JUNCTION
	TCBP	BOX, PULL BOX
	TCBS	BOX, SPLICE
	TCMC	MICROCOMPUTER CABINET
	TCPP	PED POLE
	TCSH	SIGNAL HEADS
	TCSP	SIGNAL POLE

TRAFFIC WORK ZONE

CELL	NAME	DESCRIPTION
	TWZAP_P	ARROW PANEL
	TWZAPC_P	ARROW PANEL, CAUTION MODE
	TWZAPT_P	ARROW PANEL, TRAILER OR SUPPORT
	TWZBCD_P	BARRICADE (TYPE III)
	TWZCMS_P	CHANGEABLE MESSAGE SIGN (PVMS)
	TWZFLG_P	FLAGGER
	TWZFT_P	FLAG TREE
	TWZIA_P	IMPACT ATTENUATOR / CRASH CUSHION (TEMPORARY)
	TWZLUM_P	LUMINAIRE (TEMPORARY)
	TWZSDT_P	SYMBOL, DIRECTION OF TRAFFIC
	TWZSDTD_P	SYMBOL, DIRECTION OF TEMPORARY TRAFFIC DETOUR
	TWZSGN_P	SIGN (TEMPORARY)
	TWZSIG_P	SIGNAL, TRAFFIC OR PEDESTRIAN (TEMPORARY)
	TWZWL_P	WARNING LIGHT
	TWZWV_P	WORK VEHICLE
	TWZWVA_P	WORK VEHICLE WITH TRUCK MOUNTED ATTENUATOR

UTILITIES

CELL	NAME	DESCRIPTION
	UEB	ELECTRIC, BOX
	UEM	ELECTRIC, METER
	UEMH	ELECTRIC, MANHOLE
	UEPT	ELECTRIC, POLE, TRANS.
	UGM	GAS, METER
	UGMH	GAS, MANHOLE
	UGLM	GAS, LINE MARKER
	UGP	GAS/FUEL PUMP
	UGV	GAS, VALVE
	UGVT	GAS, VENT
	ULP	LIGHTING, POLE
	ULPM	LIGHTING, POLE, MEDIAN
	ULPP	LIGHTING, POLE, PED.
	UMFC	MISC. FILLER CAP
	UOLM	OIL, LINE MARKER
	UP	POLE, WITH UTILITY
	UPD	POLE, DEAD (NO UTILITY)
	UPL	POLE, WITH LIGHT
	USMH	SANITARY SEWER MANHOLE
	UTB	TELEPHONE, BOOTH
	UTLM	TELEPHONE, LINE MARKER
	UTMH	TELEPHONE, MANHOLE
	UTVLM	CABLE TV, LINE MARKER
	UTVPB	CABLE TV, PULL BOX
	UUB	UNKNOWN, BOX
	UUJB	UNKNOWN, JUNCTION BOX
	UUMH	UNKNOWN, MANHOLE
	UUPB	UNKNOWN, PULL BOX
	UUVL	UNKNOWN, VALVE
	UUVT	UNKNOWN, VENT
	UUW	UNKNOWN, WELL
	UWFH	WATER, FIRE HYDRANT
	UWM	WATER, METER
	UWMH	WATER, MANHOLE
	UWV	WATER, VALVE
	UWW	WATER, WELL

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REVISIONS

DATE	DESCRIPTION	BY	SYM.
05/15/13	PROGRESS SUBMISSION	MJ	IC

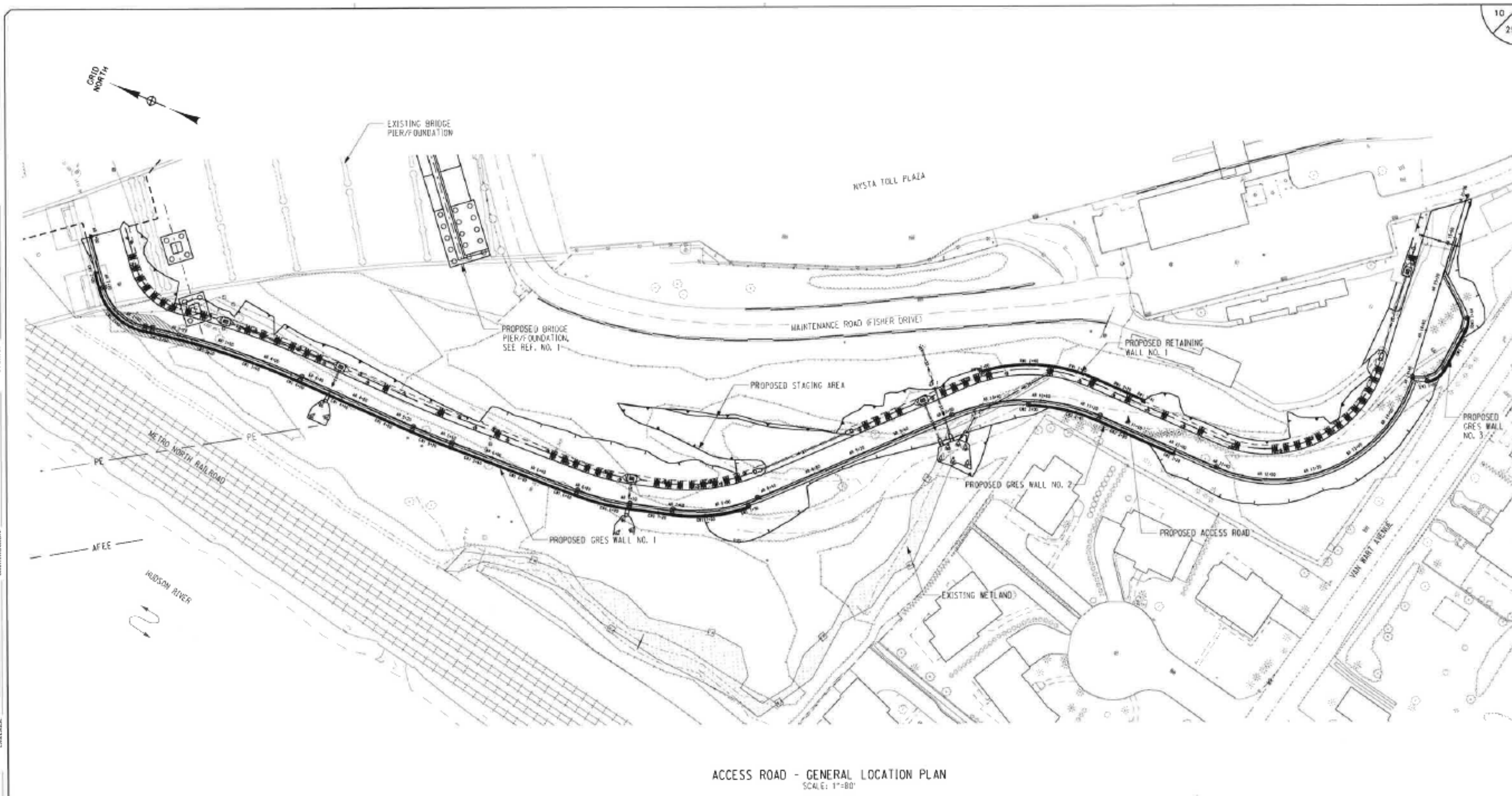
NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TAPPAN ZEE CONSTRUCTORS, LLC

TITLE OF PROJECT: THE NEW NY BRIDGE
LOCATION OF PROJECT: MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES
TITLE OF DRAWING: UNIT 22-ACCESS ROAD DESIGN LEGEND & ABBREVIATIONS-2
CONTRACT NUMBER: D214134
DATE: 05/15/13
DRAWING NUMBER: H22F-03 C0031

DOCUMENT TRACKING CODE: H22F-03

USER:jromeo DATE:05-15-2013 TIME:5:44:25 PM FILE:ACCESS ROAD DESIGN- LEGEND 2



ACCESS ROAD - GENERAL LOCATION PLAN

SCALE: 1"=80'

REFERENCES

REF. NO.	DRAWING TITLE
1	H1OD-01 AND H1OD-02 DEFINTIVE DESIGN PACKAGE

UNLESS NOTED OTHERWISE, ALL REFERENCED DRAWINGS ARE WITHIN THIS DESIGN PACKAGE.

40 0 40 80 120 160

1" = 80'

REVISIONS

DATE	DESCRIPTION	BY	SYM.
05/15/13	H22F-03 ISSUED FOR INFORMAL CONCEPT REVIEW	MJ	W
06/10/13	H22F-03 DETAILED CHECK PRINT SUBMISSION	MJ	CO

NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

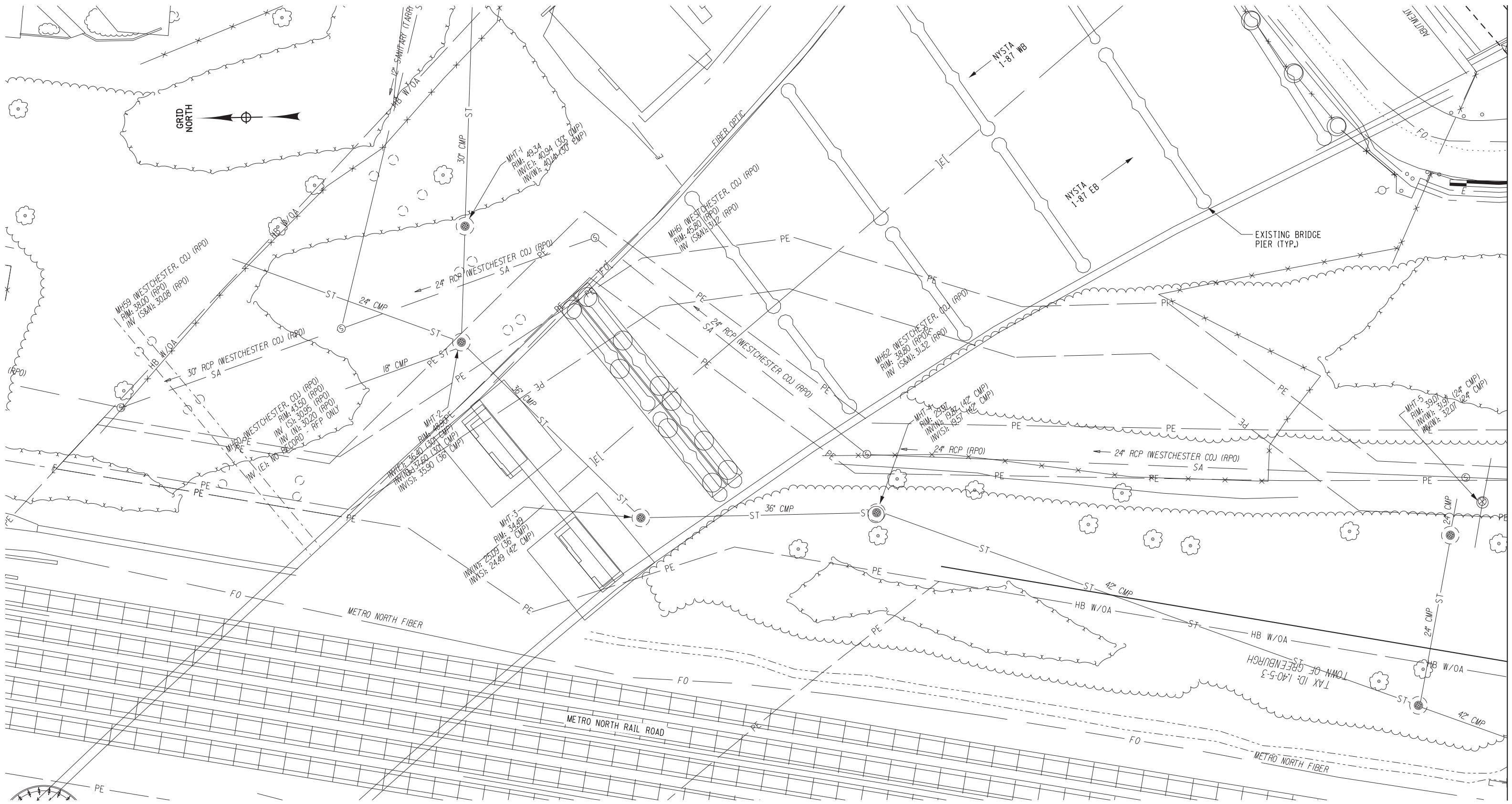
TAPPAN ZEE CONSTRUCTORS, LLC

TITLE OF PROJECT: THE NEW NY BRIDGE	CONTRACT NUMBER: D214134
LOCATION OF PROJECT: MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES	DATE: 06/10/13
TITLE OF DRAWING: UNIT 22 - ACCESS ROAD GENERAL LOCATION PLAN	DRAWING NUMBER: H22F-03 C0100

USER cschneider DATE 06-10-2013 TIME 9:06:40 PM FILE: ACCESS ROAD GENERAL LOCATION PLAN

DOCUMENT TRACKING CODE H22F-03

ORIGINATOR: C. SCHNEIDER CHECKER: B. COOPER BACKCHECKER: J. ROMEO DRAFTER: Z. HARRISON RECHECKER: B. COOPER



EXISTING UTILITIES AND MAPPING FEATURES DEPICTED ON THESE DRAWINGS ARE DERIVED FROM A COMBINATION OF INFORMATION PROVIDED IN THE RFP AND/OR RECORD PLANS AS WELL AS ACTUAL FIELD INVESTIGATIONS. EXISTING UTILITIES SHOWN ARE COMBINATION OF QUALITY LEVEL A/B/C OR D (QL-A/B/C/D).

20 0 20 40 60 80
1" = 40'

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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISIONS

DATE	DESCRIPTION	BY	SYM.
05/15/13	PROGRESS SUBMISSION	MJ	IC

NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TAPPAN ZEE CONSTRUCTORS, LLC

TITLE OF PROJECT: THE NEW NY BRIDGE
LOCATION OF PROJECT: MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES
TITLE OF DRAWING: UNIT 22-ACCESS ROAD DESIGN EXISTING CONDITIONS PLAN-1

CONTRACT NUMBER: D214134
DATE: 05/15/13
DRAWING NUMBER: H22F-03 C0800

MATCH DWG H22F-03-C0801

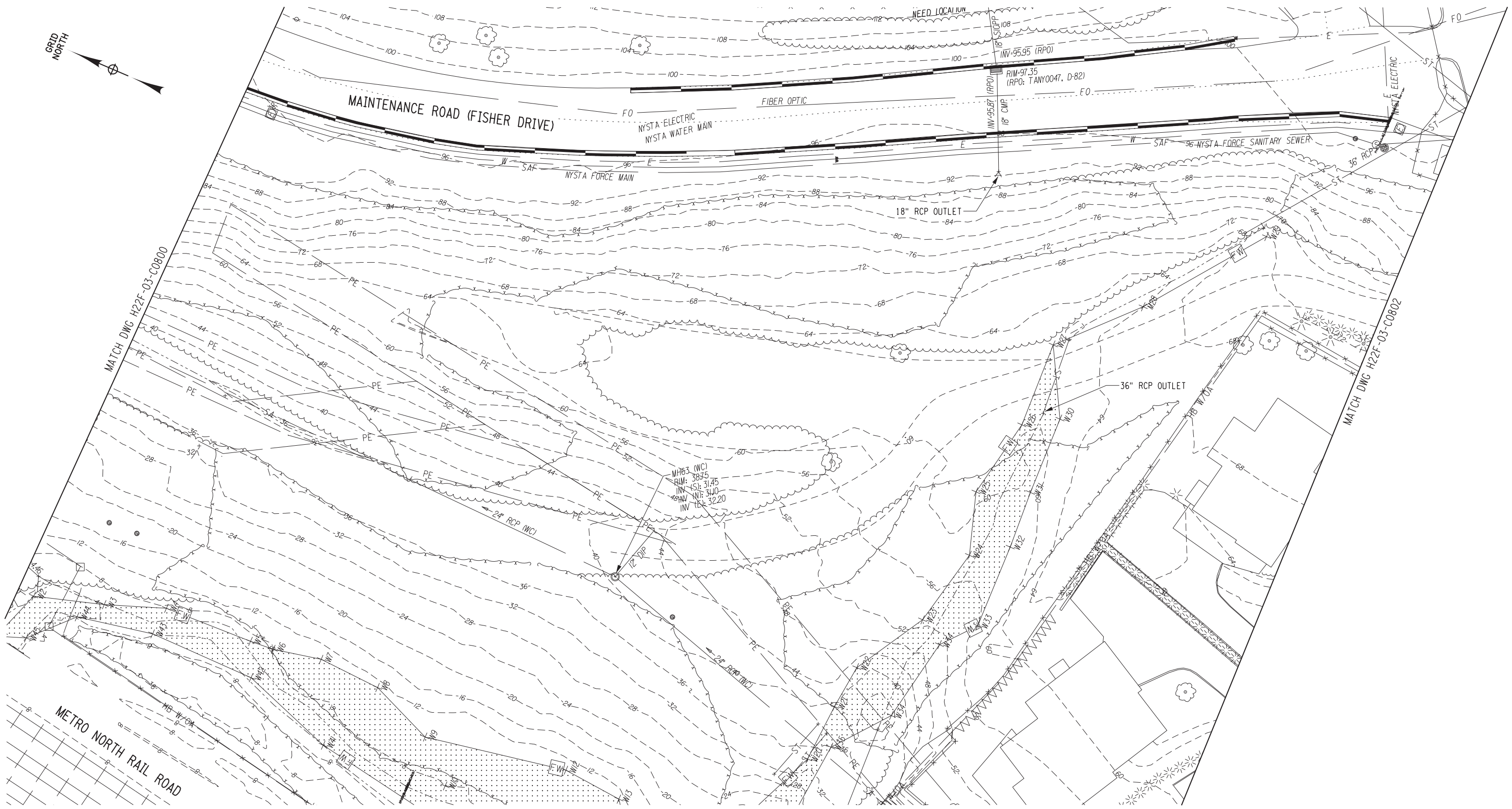
DOCUMENT TRACKING CODE: H22F-03

ORIGINATOR: CHECKER: BACKCHECKER: UPDATER: RECHECKER:

pw:\\PWTZHRC.TZ_HRC\Documents\Tappan_Zee_Bridge\13.00_CAD\13.03_Civil_Roadway\13.03.02_Sheet_Files\13.03.02.22_Access Road\H22F-03\H22F-03-C0800

USER:jromeo DATE:05-15-2013 TIME:5:45:55 PM FILE:ACCESS ROAD DESIGN (EXISTING CONDITIONS) 01

ORIGINATOR: BACKCHECKER: UPDATER: CHECKER: RECHECKER:



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SIGNATURE: STAMP:	SIGNATURE: STAMP:

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20 0 20 40 60 80
1" = 40'

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE. THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISIONS

DATE	DESCRIPTION	BY	SYM.
05/15/13	PROGRESS SUBMISSION	MJ	IC

NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TAPPAN ZEE CONSTRUCTORS, LLC

TITLE OF PROJECT: THE NEW NY BRIDGE

LOCATION OF PROJECT: MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES

TITLE OF DRAWING: UNIT 22-ACCESS ROAD DESIGN EXISTING CONDITIONS PLAN-2

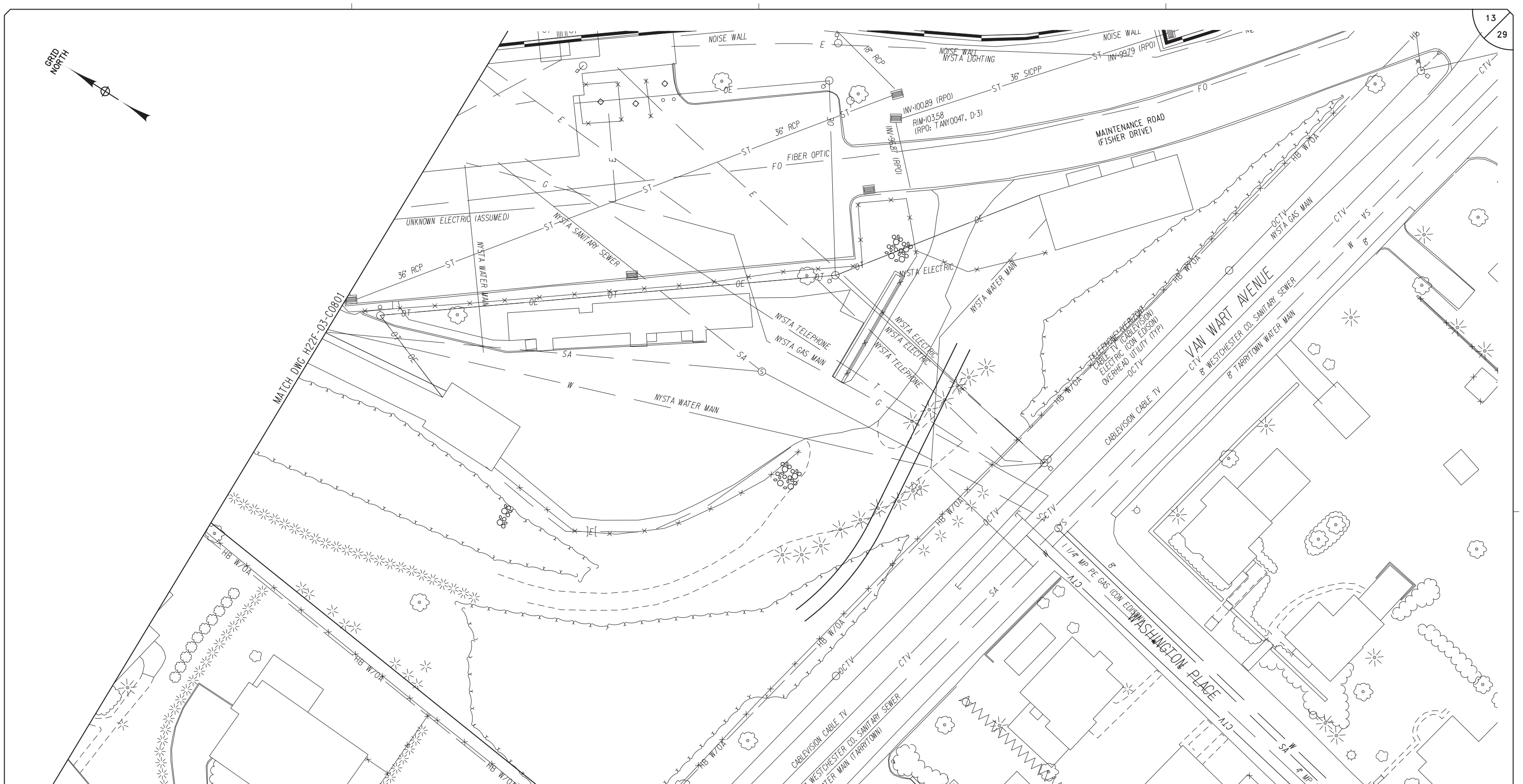
CONTRACT NUMBER: D214134

DATE: 05/15/13

DRAWING NUMBER: H22F-03 C0801

DOCUMENT TRACKING CODE: H22F-03

USER:lwallin DATE:06-05-2013 TIME:11:10:06 AM FILE:ACCESS ROAD DESIGN (EXISTING CONDITIONS) 02



EXISTING UTILITIES AND MAPPING FEATURES DEPICTED ON THESE DRAWINGS ARE DERIVED FROM A COMBINATION OF INFORMATION PROVIDED IN THE RFP AND/OR RECORD PLANS AS WELL AS ACTUAL FIELD INVESTIGATIONS. EXISTING UTILITIES SHOWN ARE COMBINATION OF QUALITY LEVEL A/B/C OR D (QL-A/B/C/D).

20 0 20 40 60 80

1" = 40'

ALTERED ON:	AFFIXED ON:
SIGNATURE: STAMP:	SIGNATURE: STAMP:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISIONS

DATE	DESCRIPTION	BY	SYM.
05/15/13	PROGRESS SUBMISSION	MJ	IC

NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TAPPAN ZEE CONSTRUCTORS, LLC

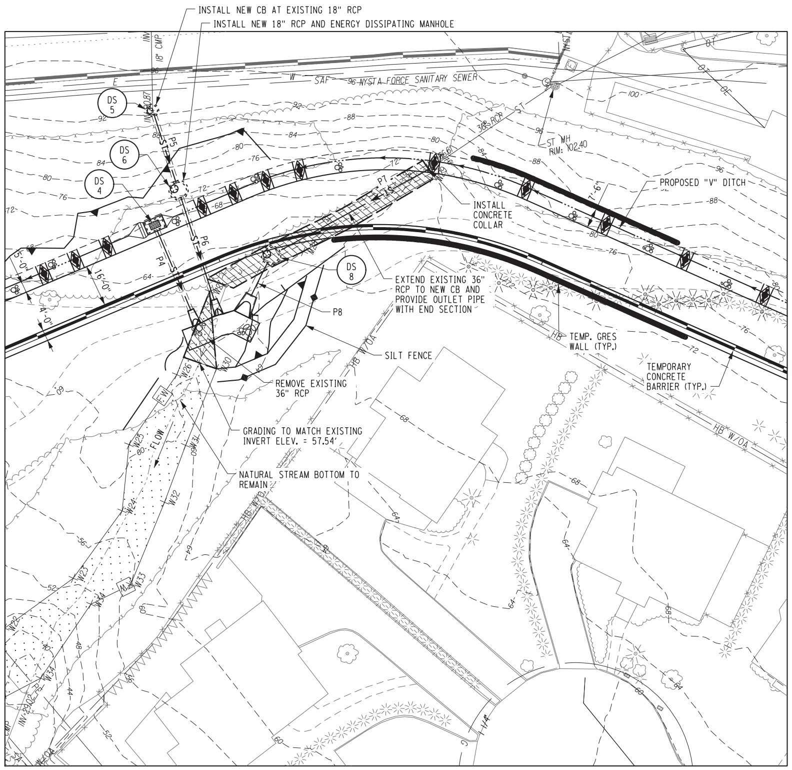
TITLE OF PROJECT: THE NEW NY BRIDGE
LOCATION OF PROJECT: MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES
TITLE OF DRAWING: UNIT 22-ACCESS ROAD DESIGN EXISTING CONDITIONS PLAN-3

CONTRACT NUMBER: D214134
DATE: 05/15/13
DRAWING NUMBER: H22F-03 C0802

DOCUMENT TRACKING CODE: H22F-03

ORIGINATOR: CHECKER: BACKCHECKER: UPDATER: RECHECKER:

USER:jromeo DATE:05-15-2013 TIME:5:46:38 PM FILE:ACCESS ROAD DESIGN (EXISTING CONDITIONS) 03



CULVERT REPLACEMENT PLAN

20 0 20 40 60 80
1" = 40'

WETLAND IMPACT AREA
FILLED AREA
900 SF

LEGEND:

- EXISTING WETLAND BOUNDARY
- WETLAND FILL AREA
- TREE / VEGETATION PROTECTION BARRIER
- SILT FENCE
- STONE CHECK DAMN

NOTES:

1. EROSION CONTROL MEASURES AS INDICATED ON THE PLANS SHALL BE PLACED AS CLOSE AS POSSIBLE TO THE EDGE OF THE EXISTING WETLANDS TO BE PRESERVED WITHOUT INTERFERING WITH GRADING OPERATIONS.
2. WETLAND AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO THE AREAS SHOWN ON THE PLANS. THESE AREAS SHALL BE SEEDED WITH WETLAND SEED MIX AS SOON AS WORK IN THESE AREAS IS FINISHED. CULVERT MODIFICATION WILL BE IMMEDIATELY ADJACENT TO ACCESS ROAD WORK.
3. CONSTRUCTION METHODS WILL COMPLY WITH THE FINAL REGIONAL CONDITIONS, WATER QUALITY CERTIFICATION AND COASTAL ZONE CONCURRENCE FOR NATIONWIDE PERMIT 14.
4. SLOPE APPLIED EROSION CONTROL PRODUCT SHALL BE PLACED ON SLOPES GREATER THAN 3 ON 1.
5. HEAVY MACHINERY SHALL NOT BE PLACED WITHIN DELINEATED WETLANDS.
6. EROSION CONTROL MEASURES TO BE REMOVED UPON ESTABLISHMENT.

SEED MIX B
A - MIN. GERMINATION
B - MIN. % GERMINATION & HARD SEED
C - LBS. PURE LIVE SEED/ACRE

NAME	VARIETY	A	B	C
ANNUAL RYEGRASS (LOLIUM MULTIFLORUM)	COMMERICAL	90		15
PERENNIAL RYEGRASS (POA ANNUA)	COMMERICAL	90		50
REDTOP (AGROSTIS GIGANTA ROTH)	COMMERICAL	85		35

ALTERED ON:	AFFIXED ON:
SIGNATURE: STAMP:	SIGNATURE: STAMP:

REFERENCES
REF. NO. DRAWING TITLE

UNLESS NOTED OTHERWISE, ALL REFERENCED DRAWINGS ARE WITHIN THIS DESIGN PACKAGE.

REVISIONS

DATE	DESCRIPTION	BY	SYM.
05/15/13	PROGRESS SUBMISSION	MJ	IC

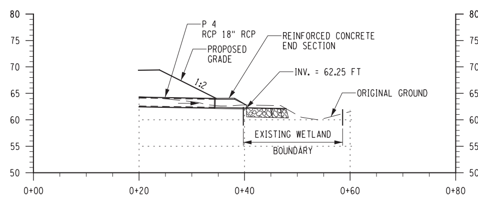
NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TAPPAN ZEE CONSTRUCTORS, LLC

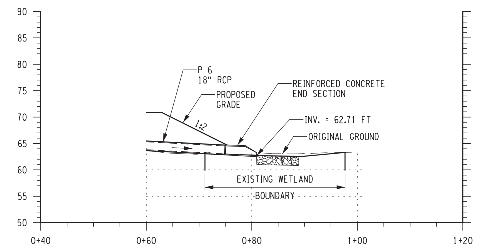
TITLE OF PROJECT: THE NEW NY BRIDGE
LOCATION OF PROJECT: MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES
TITLE OF DRAWING: UNIT 22-ACCESS ROAD DESIGN CULVERT REPLACEMENT PLAN

CONTRACT NUMBER: D214134
DATE: 06/07/13
DRAWING NUMBER: H22F-03 C1400

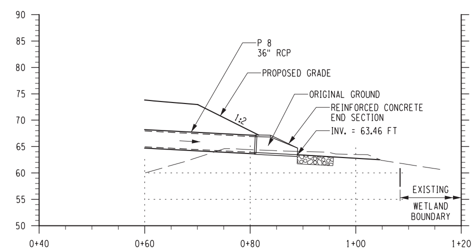
DOCUMENT TRACKING CODE: H22F-03



18" RCP OUTLET AT PIPE P4
SCALE: 1" = 20'-0"



18" RCP OUTLET AT PIPE P6
SCALE: 1" = 20'-0"



36" RCP OUTLET AT PIPE P8
SCALE: 1" = 20'-0"

NOTES:

1. EXISTING UTILITIES AND MAPPING FEATURES DEPICTED ON THESE DRAWINGS ARE DERIVED FROM A COMBINATION OF INFORTMATION PROVIDED IN THE RFP AND/OR RECORD PLANS AS WELL AS ACTUAL FIELD INVESTIGATIONS. EXISTING UTILITIES SHOWN ARE COMBINATION OF QUALITY LEVELS A/B/C OR D (QL-A/B/C/D).

10 0 10 20 30 40

1" = 20'

ALTERED ON:	AFFIXED ON:
SIGNATURE: STAMP:	SIGNATURE: STAMP:

REVISIONS

DATE	DESCRIPTION	BY	SYM.
05/15/13	PROGRESS SUBMISSION	MJ	IC

NEW YORK STATE THRUWAY AUTHORITY
DEPARTMENT OF ENGINEERING
200 SOUTHERN BLVD., ALBANY, N.Y. 12209

TAPPAN ZEE CONSTRUCTORS, LLC

TITLE OF PROJECT: THE NEW NY BRIDGE
LOCATION OF PROJECT: MILEPOST 14.67 +/- IN ROCKLAND AND WESTCHESTER COUNTIES
TITLE OF DRAWING: UNIT 22-ACCESS ROAD DESIGN CULVERT SECTIONS
CONTRACT NUMBER: D214134
DATE: 06/07/13
DRAWING NUMBER: H22F-03 C1702

DOCUMENT TRACKING CODE: H22F-03

USER:lwallin DATE:06-06-2013 TIME:3:06:47 PM FILE:ACCESS ROAD DESIGN (MISCELLANEOUS DETAILS-3) (DRN PR

ORIGINATOR: CHECKER: BACKCHECKER: UPDATER: RECHECKER:

pw:\\PWTZHRC-TZ_HRC\Documents\Tappan_Zee_Bridge\13.00_CAD\13.06_Working\MJ Working\Access Road NWP\H22F-03-C1702

Attachment C

Wetland Delineation Report

Attachment 8: NAN-2012-0090-WSC

Wetland Delineation Report for the Tappan Zee Hudson River Crossing Project

June 2012

Enclosure 1: Wetland Delineation Report

Tappan Zee Hudson River Crossing Project
Wetland Delineation Report
Temporary Access Road Location, Westchester County, NY
April 12, 2012

SUMMARY

Federally-regulated wetlands and waters have been identified and field delineated at the proposed location of the temporary construction access road in Westchester County. The boundaries of these regulated wetland areas have been surveyed by a licensed land surveyor.

INTRODUCTION

The Federal Highway Administration (FHWA), as the federal lead agency, and the New York State Department of Transportation (NYSDOT) and the New York State Thruway Authority (NYSTA), as joint lead agencies are proposing the Tappan Zee Hudson River Crossing Project, which would result in the construction of a new bridge crossing, consisting of two structures (Replacement Bridge), over the Hudson River between Rockland and Westchester Counties (proposed project). The project site is located on the Hudson River (River Mile [RM] 27) in the Village of Tarrytown, Westchester County, NY and the Village of South Nyack, Rockland County, NY. The project site can be identified on the United States Geological Survey (USGS) map (Nyack and White Plains Quadrants; 41 04'12.55''N, 73 54'27.47''W) (see Enclosure 2, Figure 1). The purpose of the proposed project is to maintain a vital link in the regional and national transportation network by providing an improved Hudson River crossing between Rockland and Westchester Counties. The proposed project would address the structural, operational, mobility, safety, and security limitations and deficiencies of the existing Tappan Zee Bridge.

A Joint Permit Application (JPA) was submitted to the United States Army Corps of Engineers (USACE), New York State Department of Environmental Conservation (NYSDEC), and New York State Office of General Services (NYSOGS) on March 26, 2012 for the proposed construction of waterfront bridge staging areas in Westchester and Rockland Counties and a temporary access road immediately south of the toll plaza in Westchester County (see Enclosure 2, Figure 2). The existing conditions with respect to wetlands as described in the March 2012 JPA were based on a preliminary wetland investigation that was performed prior to the growing season (March 6, 2012). On April 6, 2012, several of the project team members (i.e., FHWA, NYSDOT, NYSTA, and AKRF) met with the USACE onsite to discuss the wetlands present within the vicinity of the Westchester and Rockland County Bridge Staging Areas and temporary access road location in Westchester County. As described in the JPA (JPA Enclosure 3, page 10), in the vicinity of the proposed Westchester County temporary access road there is a small stream and wetland area located approximately 300 feet south of the existing bridge and toll plaza. During the April 6, 2012 site visit, the USACE indicated that the stream/wetland would fall under the jurisdiction of the USACE and requested a formal delineation in order to

initiate the review of the JPA. This report and attached datasheets serve as the formal delineation report and replace the existing conditions section (JPA Enclosure 3, Page 10) of the March 2012 JPA pertaining to the Westchester County stream and wetland area.

METHODOLOGY

Prior to field investigations, NYSDEC and National Wetlands Inventory (NWI) maps were reviewed to determine the presence or absence of state and federal wetlands in the proposed project area. No NYSDEC- or NWI-mapped wetlands occur in the project area (see Enclosure 2, Figure 3). On April 12, 2012, a team of two AKRF, Inc. field staff conducted a delineation of the stream and associated wetland following methods outlined in the United States Army Corps of Engineers (USACE) *Corps of Engineers Wetlands Delineation Manual* (1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (Version 2.0) (January 2012). Methodology pertaining to the three USACE wetland indicators (i.e., hydrology, soils, and hydrophytic vegetation) is described below.

HYDROLOGY AND SOILS

Hydrology was documented using site observations and an auger to determine soil saturation or a high water table. The soils of the site were documented with the use of an auger and a Munsell Soil Color Chart. Both hydrology and soils observations were made during a period of dry weather.

VEGETATION

Wetland

Due to the linear orientation of the riparian zone, the tree and vine strata were documented for two 20 by 35 foot (ft) (700 square [sq] ft) linear plots paralleling the stream. One 10 by 10 ft (100 square ft) shrub plot was established in each of the tree stratum plots and herbaceous vegetation was documented and averaged for three 3.28 ft by 3.28 ft (~9 sq ft) plots located within each of the tree stratum plots. Both the Dominance Test and Prevalence Index tests were used to calculate the indicators of hydrophytic vegetation.

Upland

For the upland plot, a 30-ft radius plot was established for the tree and vine strata. Within this plot, a 15-ft radius plot and a 5-ft radius plot were sampled for shrubs and herbs, respectively.

STREAM AND WETLAND BOUNDARY MAPPING

Both sides of the wetland and stream were flagged and surveyed by a NYSDOT licensed land survey team

EXISTING CONDITIONS

The federally-regulated area consists of an intermittent stream corridor and portions of its adjacent, vegetated floodplain. The stream and wetland area measure 0.2344 acres. The stream begins near the top of the slope at an approximately 2-ft diameter outfall located in an embankment (see Enclosure 3, photo 1). The stream flows through a disturbed successional forest (approximately 0.63 acres) dominated by Norway maple (*Acer platanoides*) with European black alder (*Alnus glutinosa*) and oak (*Quercus* sp.) at lower percentages in the

canopy. Multi-flora rose (*Rosa multiflora*), Japanese honeysuckle (*Lonicera japonica*), wineberry (*Rubus phoenicolasius*), and Japanese knotweed (*Polygonum cuspidatum*) form dense thickets along the stream banks and upland areas, particularly at the higher contour elevations. Large rocks, boulders, metal, asphalt, pipes, and slabs of concrete are present within the streambed at the higher elevations (see Enclosure 3, photo 2). Particularly along the southern edge of the site, the streambed is cut deeply into the hill with large sections of bank erosion. This steeply sloped portion of the stream, before it turns northwards, has no vegetation or soils and was flagged solely on the presence of flowing water and the eroded banks that approximate an "ordinary high water mark." Where the stream width was greater than 3+/- feet, both banks were flagged and surveyed in the field.

At the toe of the slope, the stream flows through a foundation structure and takes a sharp bend to the north. This region exhibits hydrophytic vegetation and hydric soils in and adjacent to the stream. The stream flows parallel to the Metro North Railroad (MNR) tracks and the toe of slope along a flat streambed (see Enclosure 3, photo 3) for approximately 250 feet until it turns directly west and flows under the MNR tracks to the Hudson River. The wetland associated with the stream at the toe of the slope as well as the conditions immediately upslope from the wetland are described below in the context of the three wetland parameters as defined by the USACE: hydrology, hydrophytic vegetation, and hydric soils.

HYDROLOGY

Wetland

The wetland is located between the east bank of the stream and the toe of the slope. It is fed, in part, by surface expressions (i.e., groundwater seeps) from the side of the slope (see Enclosure 3, photo 4). In some locations, these seeps produce surface water (A1) flow to the stream and in other locations, are limited to standing water (A1) with minimal flow. As documented for Sampling Plots W-1 and W-2 the water table was observed at 8 inches and 6 inches (A2), respectively. Water stained leaves (B9) were observed throughout the sampling plots, particularly where seeps are present. All of these hydrologic features are defined by USACE as "primary indicators" of hydrology.

In addition to the stream and associated seeps, a drainage channel or ditch (see Enclosure 3, photo 5) is located at the northern end of the stream where it is diverted to the Hudson River via a culvert that runs under the MNR tracks. This ditch conveys surface runoff along the eastern side of railroad tracks southwards, entering the stream channel where it is conveyed beneath the railroad tracks. Although hydrology was observed within this ditch, hydric soils and hydrophytic vegetation are not present. Ditches that drain only uplands and do not carry a relatively permanent flow of water are generally not jurisdictional under the Clean Water Act (CWA). Therefore, it is expected that the USACE would not take jurisdiction over this ditch. This ditch appears to be located on MNR property and in close proximity to moving trains. It was not flagged as part of the April 12, 2012 delineation.

Upland

Hydrology indicators were not observed upslope from the wetland area.

VEGETATION

Wetland

Enclosure 3, Photos 6 through 10, show the vegetation sampling areas. The tree canopy along the streambed and associated wetland area is dominated by European black alder (FACW-) with a small number of Norway maple (NI). The shrub layer contains pockets of common privet (*Ligustrum vulgare*) (FACU) (see data form for Sampling Plot W-3). Skunk cabbage (*Symplocarpus foetidus*) (OBL) (see data form for Sampling Plot W-1) is present in small pockets within the herbaceous layer with patches of garlic mustard (*Alliaria petiolata*) (FACU-), poison ivy (*Toxicodendron radicans*) (FAC), and Indian strawberry (*Duchesnea indica*) (FACU-) (see Enclosure 4, data form for Sampling Plot W-2). While there are non-wetland species present in the herbaceous layer, these are represented in low percentages and are not dominant. In general, the species composition/absolute percent cover in the understory is relatively scarce in comparison to the European black alder-dominated (~55 to 65 percent absolute cover) canopy.

Upland

Immediately upslope from the wetland area, the canopy is dominated by Norway maple, with a small percentage of European black alder. The understory is quite open and is lacking a shrub layer altogether. The herbaceous layer is also quite bare, with garlic mustard as the only herbaceous plant observed at about 7 percent absolute cover.

SOILS

Wetland

Soils within the three sampling locations meet one or more of the following hydric soil indicators: “Thick Dark Surface” (A12), “Loamy Mucky Mineral” (F1), “Loamy gleyed matrix” (F2), and “Depleted Matrix” (F3). Soil texture ranges from silty loam to sandy loam within the upper 16 inches of the solum. The O and A horizons were uniformly low value/low chroma and typically include 4 inches (+/-) of mucky mineral soil material. Within 10 inches, a depleted matrix is observed, mottling was shown, or the dark surface value/chroma continues to a depth of 10 inches or greater where gley soil colors are obtained without appreciable mottling.

Upland

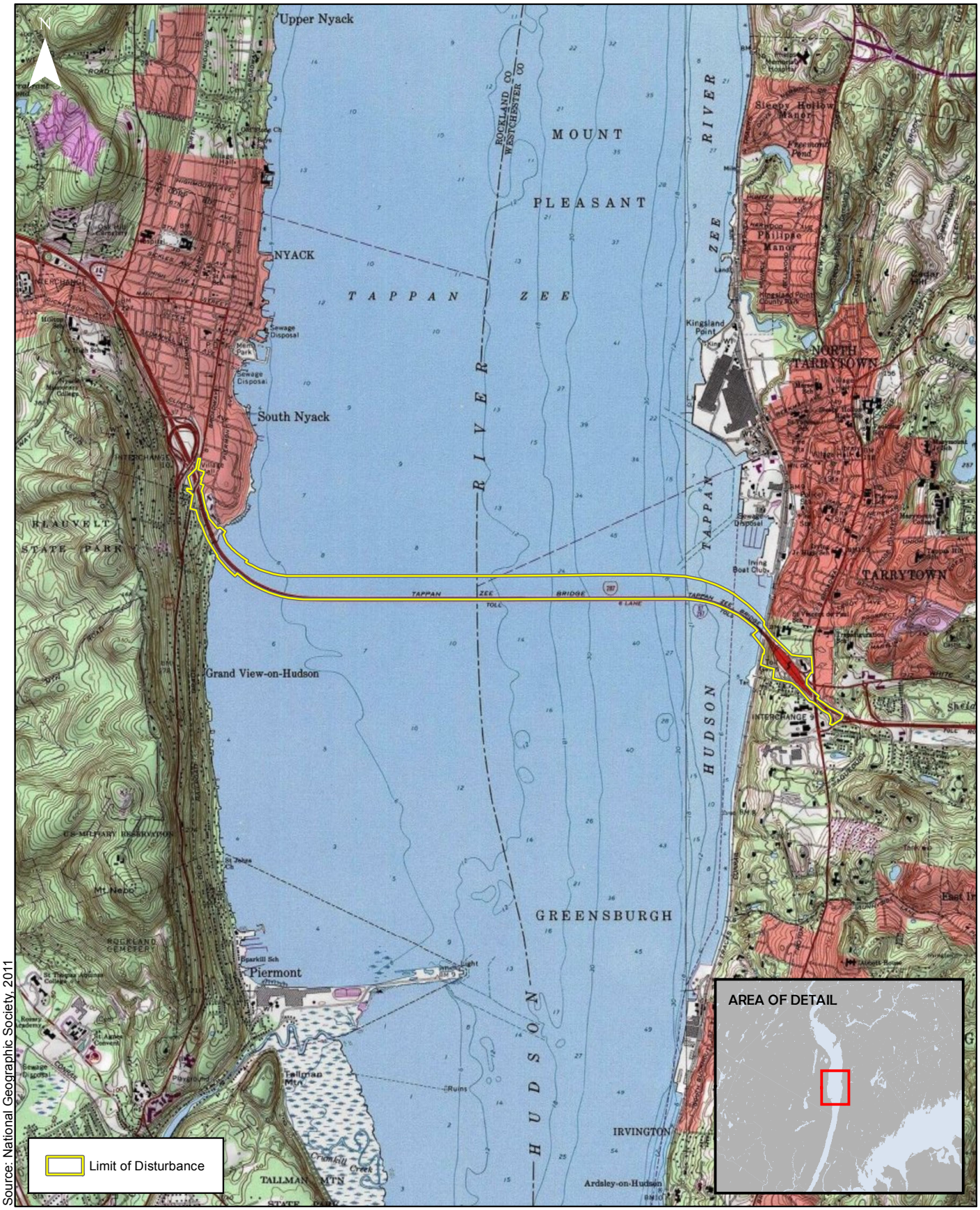
Hydric soils were not observed in the upland portions of the site. In some locations, it was difficult to sample soils due to rock, riprap, and other debris located near the surface of the soil. In locations where a sample was possible, the soils demonstrated a 10 YR 5/4 and 4/4 to 4/6 up to a 12 inch depth with no redox features.

CONCLUSIONS

Based on the data collected during the wetland delineation performed on April 12, 2012 and the site visit with USACE on April 6, 2012, the stream and associated wetland area would be expected to fall under the jurisdiction of the USACE. Enclosure 4 includes four data sheets documenting the wetland and upland hydrology, vegetation, and soils of the site. Three of the data forms (Sampling Plots W-1 to W-3) show wetland conditions as defined by USACE and the fourth (Sampling Plot W-4) demonstrates the non-wetland conditions immediately upslope from the wetland boundary. In addition, Drawing Sheet 10 of 16 in Enclosure 4 of the JPA, has been

updated to include the survey of the wetland boundary showing the flag numbers and is included (see Sheet 6 of 6) in Enclosure 2 of this report.

Enclosure 2: Vicinity Map and Figures



Source: National Geographic Society, 2011

Approximate coordinates of
Project Site:
41° 4' 15" N, 73° 53' 39" W

Tappan Zee Hudson River Crossing

Figure 1

USGS 7.5 Minute Topographic Map - Nyack and White Plains Quads

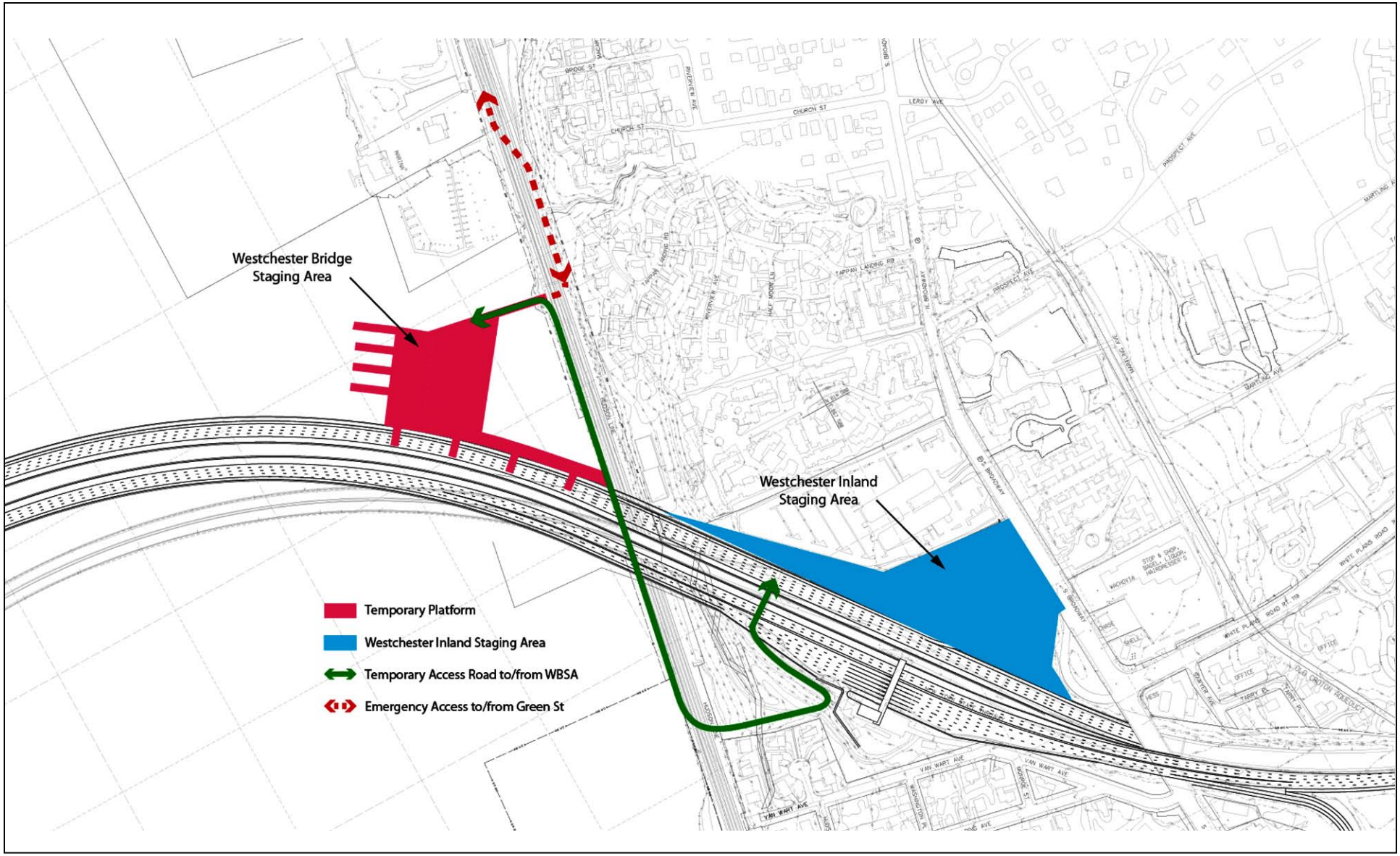


Figure 2

Westchester Landing Construction Access

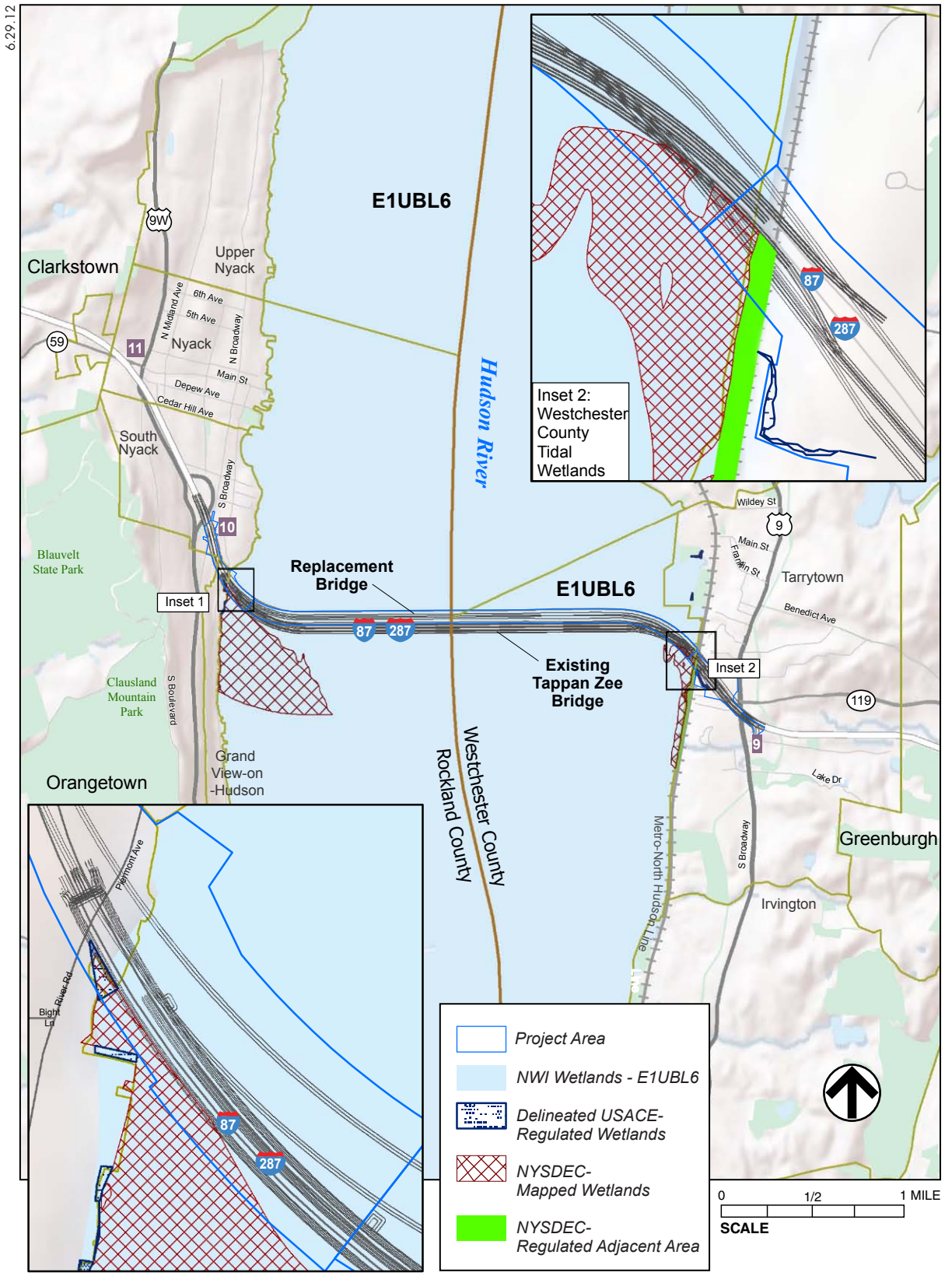
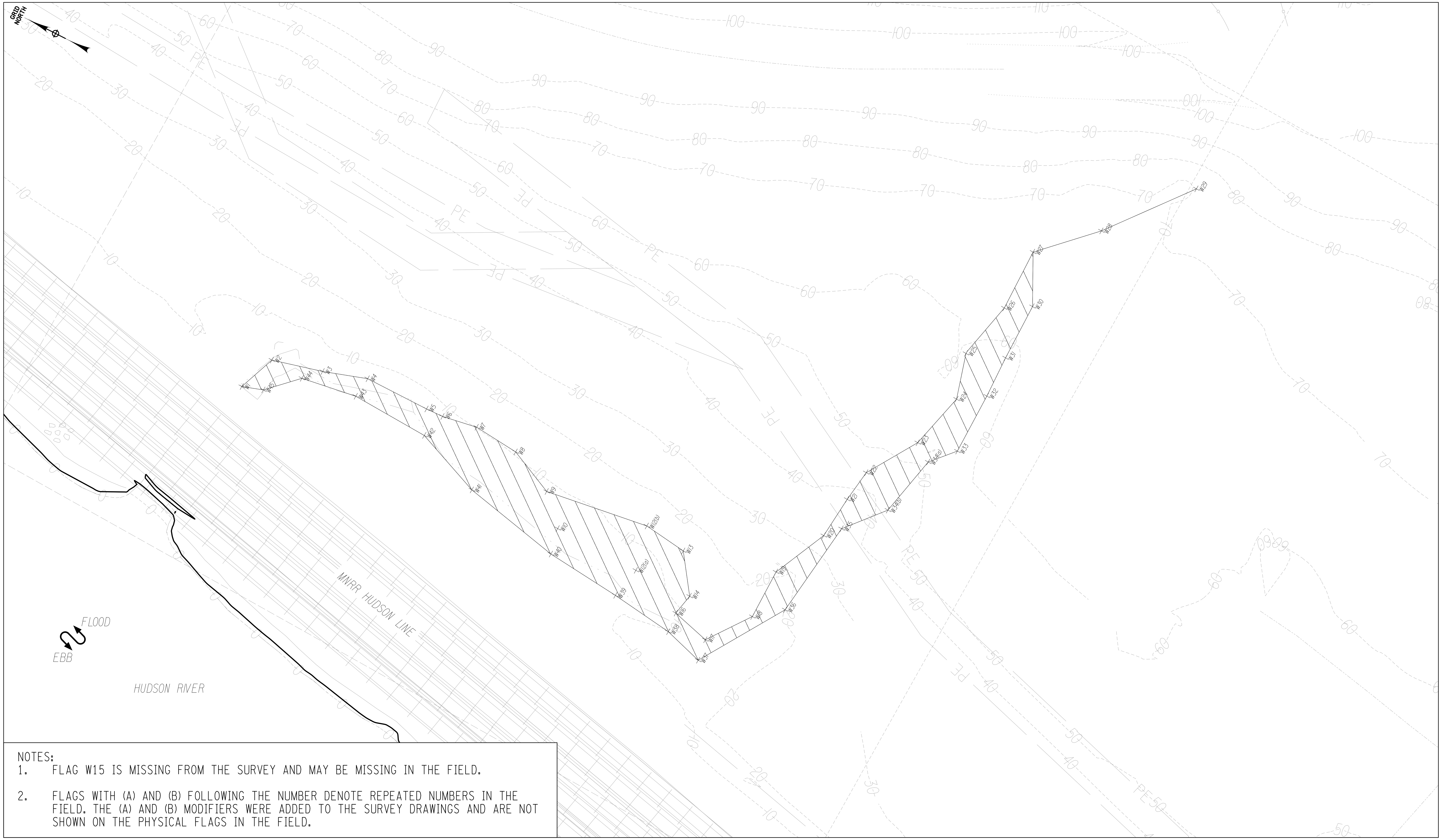


Figure 3

TAPPAN ZEE HUDSON RIVER CROSSING

Freshwater and Tidal Wetlands



NOTES:
1. FLAG W15 IS MISSING FROM THE SURVEY AND MAY BE MISSING IN THE FIELD.

2. FLAGS WITH (A) AND (B) FOLLOWING THE NUMBER DENOTE REPEATED NUMBERS IN THE FIELD. THE (A) AND (B) MODIFIERS WERE ADDED TO THE SURVEY DRAWINGS AND ARE NOT SHOWN ON THE PHYSICAL FLAGS IN THE FIELD.

10 0 10 20 30 40 50'
1" = 25'

ARUP
Arup USA, Inc.
155 Avenue of the Americas
New York, NY 10013
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www.arup.com

NEW YORK STATE THRUWAY AUTHORITY
Thruway Authority

SIGNATURE

06-27-2012
DATE

TAPPAN ZEE HUDSON RIVER CROSSING PROJECT
HUDSON RIVER, MILEPOINT 27
SOUTH NYACK-TARRYTOWN, NEW YORK
ROCKLAND AND WESTCHESTER COUNTIES
USACE WETLAND SURVEY FLAGS

CONTRACT NUMBER
131219

DRAWING NO. DR-112
SHEET NO. 6 OF 6

DOCUMENT NAME:

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION

Enclosure 3: Photographs

Enclosure 3 Wetland Delineation Report Photographs

Photo 1: View of the culvert where the stream surfaces above ground at the top of the slope.

Photo 2: View of boulders and debris lining the channel along the south side of the property.

Photo 3: View of the flat streambed before it discharges to the Hudson River.

Photo 4: View of surface water from hillside seep. (Note: This photo is located in the vicinity of Sampling Plot W-2.)

Photo 5: View facing north of drainage ditch that is located parallel to MNR tracks.

Photo 6: View of skunk cabbage and garlic mustard in Sampling Plot W-1.

Photo 7: View facing south of Sampling Plot W-1.

Photo 8: View of general location of Sampling Plot W-2.

Photo 9: View of general location of Sampling Plot W-3 facing south.

Photo 10: View of general location of Sampling Plot W-3 facing north.

Enclosure 4: Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Tappan Zee Bridge Hudson River Crossing Project City/County: Tarrytown/Westchester County Sampling Date: April 12, 2012

Applicant/Owner: New York Thruway Authority State: NY Sampling Point: W-1

Investigator(s): Jim Nash and Aubrey McMahon, AKRF, Inc. Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Stream floodplain Local relief (concave, convex, none): _____

Slope (%): 0 Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Charlton loam 25 to 35% slopes (ChE) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	If yes, optional Wetland Site ID: W
Wetland Hydrology Present?	Yes X	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)

This wetland is adjacent to a stream at the toe of a steep slope. The upland, stream, and wetland have been disturbed as large boulders, debris, drainage channels, and pipes are present throughout the site. Saturated soils, high water table, and surface water are present throughout the wetland area. Seeps are present at the toe of the slope, and in most instances, produce surface flow to the stream. Although much of the understory of the wetland along the stream is bare, the invasive European Black Elder (Alnus glutinosa) (FACW-) is dominant in the canopy. Skunk cabbage (Symplocarpus foetidus) (OBL), poison ivy (Toxicodendron radicans) (FAC) is present in pockets as are invasive species such as garlic mustard (Alliaria petiolata) (FACU-) and privet (Ligustrum vulgare) (FACU). As stated in the attached wetland delineation report, this wetland is in a narrow riparian habitat. Therefore, the vegetation monitoring plot sizes were modified to accommodate the linear configuration of the wetland area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes X	No _____	Depth (inches): 8 inches
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Observations were made during a dry period. The sampling point is in between an intermittent stream (located in a floodplain of this stream) and a rocky/talus slope.

A high water table at an 8 inch depth was observed within the sampling plot. Adjacent the sampling plot seeps (surface water [A1]) at the toe of the adjacent rocky/talus slope are present. In some instances, these seeps produce surface flow to the creek, while others demonstrate ponding at the soil surface.

VEGETATION – Use scientific names of plants.

Sampling Point: W-1

Tree Stratum (Plot size: 20x35 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus glutinosa	65	Y	FACW-
2. Acer platanoides	5	N	NL
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 10 x 10 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 3.28 x 3.28 ft plot ave)			
1. Symplocarpus foetidus	25	Y	FAC
2. Alliaria petiolata	15	N	FACU-
3. Toxicodendrons radicans	5	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	

Woody Vine Stratum (Plot size: 20 x35 ft)			
1. N/A			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

Photos are included in the Wetland Delineation Report. Photographs 6 and 7 show Sampling Plot W-1.

SOIL

Sampling Point: W-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 2/1; 3/1; 4/1	30/30/40					Loam	mucky mineral soil material
6-12	10 YR 2/1; 3/1	50/50					Loam	
11-17+	5/10GY	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ☐ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ☐ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ☑ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ☑ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR K, L**)
- ☐ Thin Dark Surface (S9) (**LRR K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Tappan Zee Bridge Hudson River Crossing Project City/County: Tarrytown/Westchester County Sampling Date: April 12, 2012

Applicant/Owner: New York Thruway Authority State: NY Sampling Point: W-2

Investigator(s): Jim Nash and Aubrey McMahon, AKRF, Inc. Section, Township, Range: _____

Landform (hillslope, terrace, etc.): stream floodplain Local relief (concave, convex, none): _____

Slope (%): 0 Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Charlton loam 25 to 35% slopes (ChE) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

See remarks in the data form for Sampling Point W-1.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes X	No _____	Depth (inches): 6 inches
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Observations were made during a dry period. The sampling point is in between an intermittent stream (located in a floodplain of this stream) and a rocky/talus slope.

A high water table at a 6 inch depth was observed within the sampling plot. Adjacent the sampling plot seeps (surface water [A1]) at the toe of the adjacent rocky/talus slope are present. In some instances, these seeps produce surface flow to the creek, while others demonstrate ponding at the soil surface.

VEGETATION – Use scientific names of plants. Sampling Point: W-2

Tree Stratum (Plot size: 20 x 35 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus glutinosa	65	Y	FACW-
2. Acer platandoides	5	N	NL
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 10 x 10 ft)			
1. Ligustrum vulgare	10	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	

Herb Stratum (Plot size: 3.28 ft x 3.28 ft (3 plot ave))			
1. Duchesnea indica	7	Y	FACU-
2. Alliaria petiolata	4	Y	FACU-
3. Toxicodendron radicans	1	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	12	= Total Cover	

Woody Vine Stratum (Plot size: 20 x 35 ft)			
1. N/A			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	1	x 3 =	3
FACU species	22	x 4 =	88
UPL species	0	x 5 =	0
Column Totals:	87 (A)		221 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☑ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (Include photo numbers here or on a separate sheet.)

The sampling plot contains bare areas lacking vegetation. The Duchesnea indica forms one ~4 x ~4 ft patch within the entire wetland area. Alliaria petiolata and Toxicodendron radicans are sparsely scattered throughout the plots. Alnus glutinosa (FACW-) is dominant in the canopy.

Photographs are included in the Wetland Delineation Report. Photograph 8 shows Sampling Plot W-2.

SOIL

Sampling Point: W-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 2/1	100					Sandy Loam	
6-12	10 YR 4/2	70	10 YR 4/6, 3/6, 5/2&5/8	10,10,10			Sandy Loam	mottles
12-15	10 YR 3/1	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ☐ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ☐ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ☐ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR K, L**)
- ☐ Thin Dark Surface (S9) (**LRR K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Tappan Zee Bridge Hudson River Crossing Project City/County: Tarrytown/Westchester County Sampling Date: April 12, 2012

Applicant/Owner: New York Thruway Authority State: NY Sampling Point: W-3

Investigator(s): Jim Nash and Aubrey McMahon, AKRF, Inc. Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Hill slope/ Local relief (concave, convex, none): none

Slope (%): 0 Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Charlton loam 25 to 35% slopes (ChE) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

See remarks section in data form for Sampling Point W-1.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches): ~ < 1 inch
Water Table Present?	Yes X	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): surface

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Observations were made during a dry period. The sampling point is in between an intermittent stream (located in a floodplain of this stream) and a rocky/talus slope.

Within the sampling plot seeps (surface water [A1]) at the toe of the adjacent rocky/talus slope are present. In some instances, these seeps produce surface flow to the creek, while others demonstrate ponding at the soil surface.

VEGETATION – Use scientific names of plants. Sampling Point: W-3

Tree Stratum (Plot size: 20 x 35 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus glutinosa	55	Y	FACW-
2. Acer platandoides	5	N	NL
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size: 10 x 10 ft)			
1. Ligustrum vulgare	30	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	

Herb Stratum (Plot size: 3.28 x 3.28 ft (3 plot ave))			
1. Toxicodendron radicans	20	Y	FAC
2. Ligustrum vulgare	5	N	FACU
3. Alliaria petiolata	5	N	FACU-
4. Polygonum cuspidatum	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	

Woody Vine Stratum (Plot size: 20 X 35 ft)			
1. N/A			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

Photographs are included with the Wetland Delineation Report. Photographs 9 and 10 show Sampling Plot W-3.

SOIL

Sampling Point: W-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 3/1 & 2/1	50/50					Silt Loam	mucky mineral soil material
6-10	10 YR 4/1	100					Sandy Loam	
10-15	10 YR 5/1	100					Silt Loam	
16+	Gley 1 5/10 GY	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ☐ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ☐ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ☑ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR K, L**)
- ☐ Thin Dark Surface (S9) (**LRR K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): ~ < 1 inch

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Tappan Zee Bridge Hudson River Crossing Project City/County: Tarrytown/Westchester County Sampling Date: April 12, 2012

Applicant/Owner: New York Thruway Authority State: NY Sampling Point: W-4

Investigator(s): Jim Nash and Aubrey McMahon, AKRF, Inc. Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): none

Slope (%): 35 Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Charlton loam 25 to 35% slopes (ChE) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

This Sampling Point is located on a slope located immediately upland from the wetland documented in data forms for Sampling Points W-1 through W-3. The Sampling Point does not meet the USACE wetland definition with respect to hydrology, hydrophytic vegetation, and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W-4

Tree Stratum (Plot size: 30-ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer platandoides	70	Y	NL
2. Alnus glutinosa	10	N	FACW-
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15-ft radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	N/A	= Total Cover	

Herb Stratum (Plot size: 3.28 x 3.28 ft (3 plot ave))			
1. Alliaria petiolata	7	Y	FACU-
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	7	= Total Cover	

Woody Vine Stratum (Plot size: 30-ft radius)			
1. N/A			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10 YR 5/4 & 4/4	90/10					Silty Loam	
8-12	10 YR 5/4 and 4/6	90/10					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ☐ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ☐ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ☐ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR K, L**)
- ☐ Thin Dark Surface (S9) (**LRR K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

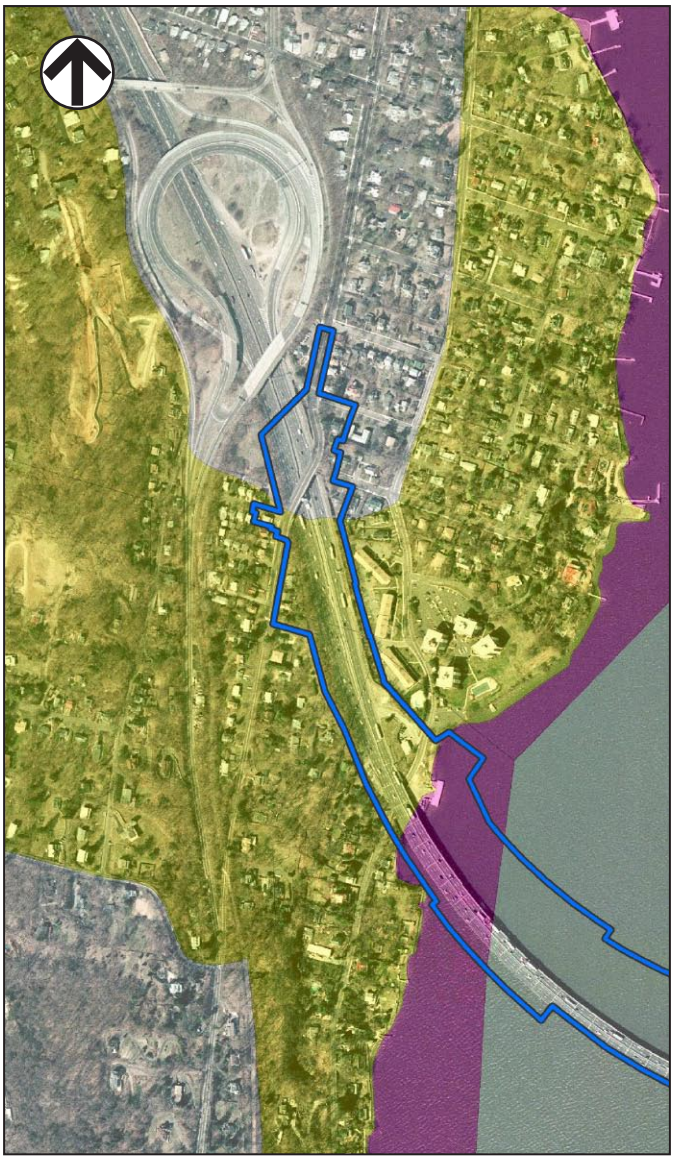
Hydric Soil Present? **Yes** _____ **No** X

Remarks:

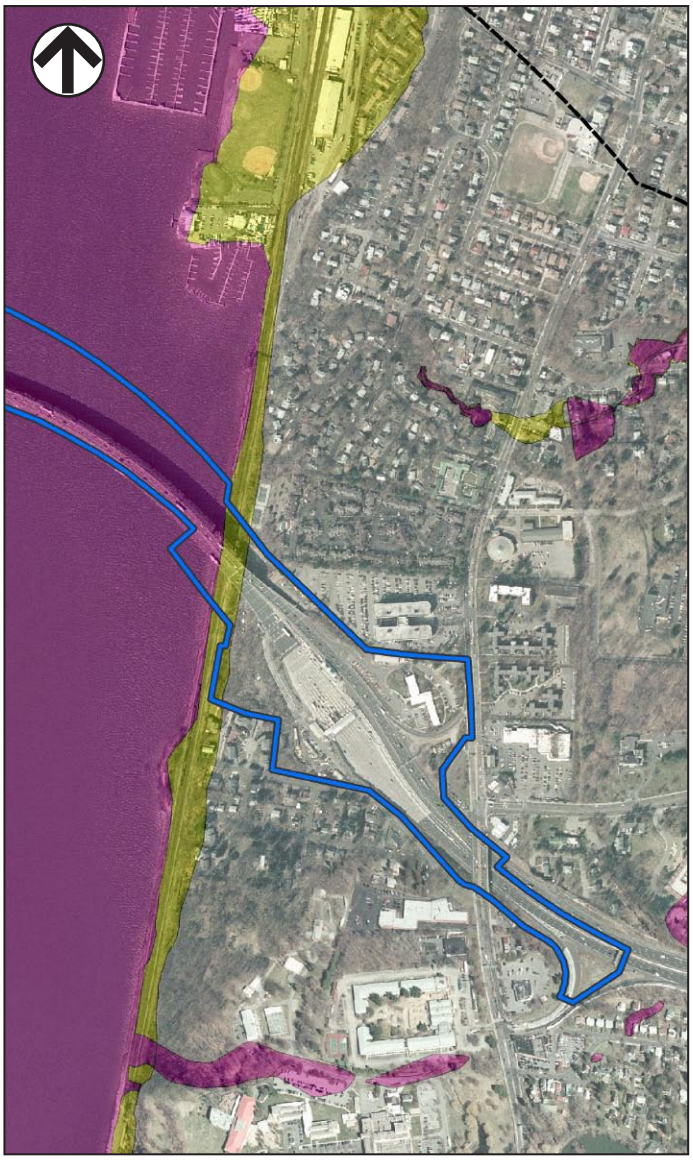
Attachment D

Resource Mapping

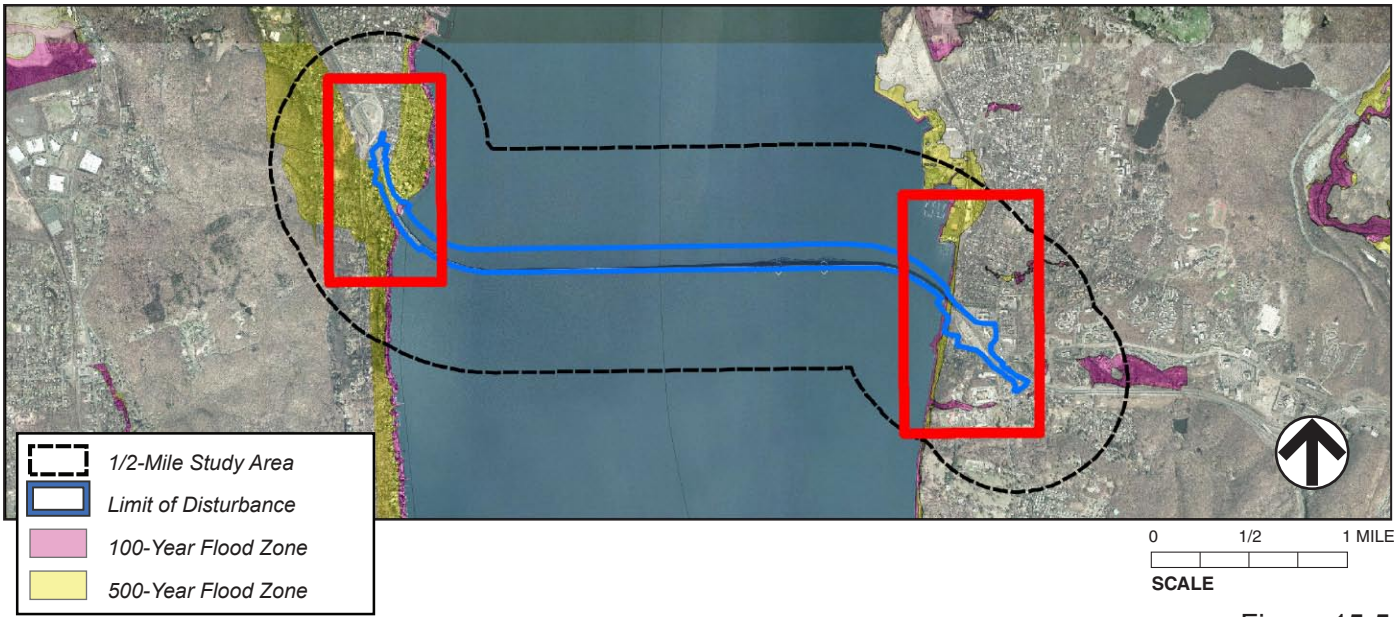
1.9.12



0 500 1000 FEET
SCALE



0 500 1000 FEET
SCALE



0 1/2 1 MILE
SCALE

TAPPAN ZEE HUDSON RIVER CROSSING
Environmental Impact Statement

Figure 15-5
Floodplain

Attachment E

Photographs

Photo 1: Upstream 36-inch RCP outlet at beginning of upper 80 foot reach of stream.

Photo 2: 80 foot upper reach of stream along the existing road facing east.

Photo 3: 36-inch culvert draining the upper 80 foot reach under the gravel road.

Photo 4: Outlet of the 36-inch culvert draining the under the gravel road.

Photo 5: Town sewer line crossing stream creating a dam-like impediment.

Attachment F

NYSHPO Memorandum of Agreement

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION (FHWA),
ADVISORY COUNCIL ON HISTORIC PRESERVATION (ACHP),
THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT),
THE NEW YORK STATE THRUWAY AUTHORITY (NYSTA),
AND THE
NEW YORK STATE HISTORIC PRESERVATION OFFICER (NYSHPO)
REGARDING THE
TAPPAN ZEE HUDSON RIVER CROSSING PROJECT
IN WESTCHESTER AND ROCKLAND COUNTIES, NEW YORK

WHEREAS, the Federal Highway Administration (FHWA) proposes to undertake the Tappan Zee Hudson River Crossing Project (hereafter referred to as "the Project"), the purpose of which is to maintain a vital link in the regional and national transportation network by providing a Hudson River crossing between Rockland and Westchester Counties, New York that addresses the structural, operational, safety, security and mobility needs of the Tappan Zee Hudson River Crossing **(Exhibit A – Project Location)**;

WHEREAS, in compliance with the National Environmental Policy Act (NEPA, codified as 42 USC 4321 *et seq.*), FHWA is progressing an Environmental Impact Statement (EIS) for this project, in coordination with the New York State Department of Transportation (NYSDOT) and the New York State Thruway Authority (NYSTA), acting as Joint Lead Agencies under NEPA; and

WHEREAS, prior to the completion of the NEPA process, the NYSTA and NYSDOT have issued a Request for Proposals (RFP) for the design, construction and other identified activities for the Project under a Design-Build contract, and the RFP includes appropriate provisions ensuring that all environmental and mitigation measures identified in the NEPA document will be implemented; and

WHEREAS, the Project would require permits and approvals from other Federal agencies, including the United States Army Corps of Engineers (USACE) and the United States Coast Guard (USCG) and FHWA, USACOE and USCG have agreed that FHWA is the federal lead agency pursuant to NEPA;

WHEREAS, FHWA is the federal agency responsible for compliance with Section 106 of the National Historic Preservation Act (NHPA, codified at 16 USC 470f, and herein "Section 106");

WHEREAS, NYSTA and NYSDOT, the project applicants, have been delegated specific tasks by FHWA to assist in meeting Section 106 obligations, and are signatories to this Agreement; and

WHEREAS, FHWA, in coordination with NYSTA and NYSDOT, conducted extensive analysis to study and evaluate alternatives to rehabilitate the existing Tappan Zee Bridge, a structure determined eligible for listing in the National Register of Historic Places in 2003, and concluded that rehabilitation does not meet the Project's purpose and need; and

WHEREAS, the New York State Historic Preservation Officer (NYSHPO) has concurred with the finding that rehabilitation of the existing Tappan Zee Bridge is not a viable alternative, and FHWA, in coordination with NYSTA and NYSDOT, determined that only the No Build and Replacement Bridge Alternative would be considered in the EIS; and

WHEREAS, the Replacement Bridge Alternative, consisting of Short Span and Long Span options, would require the removal and demolition of the existing Tappan Zee Bridge; and

WHEREAS, FHWA, in coordination with NYSTA and NYSDOT, and in consultation with the NYSHPO has determined that the Project would adversely affect properties included in or eligible for inclusion in the National Register of Historic Places ("Historic Properties') and have determined that it is appropriate to enter into this Memorandum of Agreement ("Agreement") pursuant to Section 106 of the

National Historic Preservation Act of 1966, as amended, and its implementing regulations 36 CFR Part 800 – Protection of Historic Properties ; and

WHEREAS, FHWA invited the Advisory Council on Historic Preservation ("ACHP") to participate in the Section 106 process for this Project and ACHP has accepted;

WHEREAS, the project is located within the identified area of interest of five federally recognized Indian tribes, and FHWA has consulted with the Delaware Nation, the Delaware Tribe, the Saint Regis Mohawk Tribe, the Shinnecock Indian Nation and Stockbridge-Munsee Band of Mohican Indians on a government-to-government basis in accordance with 36 CFR Part 800.2(c)(ii), and invited them to sign this Agreement as concurring parties; and

WHEREAS, in keeping with 36 CFR 800.2(c)(3) and (5), FHWA identified representatives of local governments, individuals and organizations with a demonstrated interest in the undertaking, has approved requests to participate in Section 106 consultation for the Project, and invited these Consulting Parties to sign this Agreement as concurring parties (The Section 106 Consulting Parties for the Project are presented in **Exhibit B – Consulting Parties)**; and

WHEREAS, FHWA in coordination with NYSTA and NYSDOT has provided the Consulting Parties and the public appropriate opportunities to review and comment on Section 106 documents and findings to date; and

WHEREAS, the NYSTA and NYSDOT have prepared a Public Involvement Plan (PIP), with the goal of engaging a diverse group of public and agency participants, including the NYSHPO, seeking and using their views, and providing timely information throughout the design and construction process; and

WHEREAS, the RFP establishes that the Project will be designed with particular regard to its surroundings and the process of design will maximize opportunities for community input, including the NYSHPO, Section 106 Consulting Parties and the broader public; and

WHEREAS, the Project's Design-Build contractor is required to ensure that all visual quality management is consistent with the principles of context-sensitive solutions using inclusive design approaches that integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals; and that during final design efforts will be made to minimize any effects to historic properties by reason of final design; and

WHEREAS, in consultation with the NYSHPO, an Area of Potential Effects (APE) has been established for the project as defined by 36 CRF 800.16(d), extending 500 feet from either side of the existing centerline of Interstate 87/287 from Interchange 10 (Route 9W), in Rockland County on the west, to Interchange 9 (Route 9), in Westchester County, on the east; and

WHEREAS, the APE expands to approximately 1.5 miles south of the existing bridge and approximately 1.2 miles north of the existing bridge in both Rockland and Westchester Counties within visual range of the Tappan Zee Bridge to encompass potential indirect effects associated with construction of the replacement bridge, and the APE for the Project is depicted on the map presented in **Exhibit C– Area of Potential Effect** hereto; and

WHEREAS, in accordance with 36 CFR 800.10(a), FHWA in coordination with NYSTA and NYSDOT, has planned and designed the Project to minimize effects on the following National Historic Landmarks (NHL) located within the APE in Westchester County, with the result that the Project will have no adverse effects on these properties: Lyndhurst, Sunnyside, and the Old Croton Aqueduct; and

WHEREAS, the Wayside Chapel at 24 River Road, Grand-View-on Hudson, and the Tarrytown Lighthouse at Kingsland Point Park, Route 9 in Sleepy Hollow, Westchester County, are properties listed in the National Register of Historic Places, and are located within the APE for the Project; and

WHEREAS, FHWA in coordination with NYSDOT and NYSTA, and in consultation with the NYSHPO, has carried out steps to evaluate previously unevaluated properties within the APE, and identified 19 additional properties determined eligible for the National Register, as depicted in the table and maps presented in **Exhibit D – Historic Properties** hereto, thereby supplementing existing data on Historic Properties in the APE that have been previously listed and /or determined eligible for National Register listing; and

WHEREAS, FHWA, in coordination with NYSDOT and NYSTA, and in consultation with the NYSHPO, has determined that proposed removal and demolition of the existing Tappan Zee Bridge would constitute an Adverse Effect as defined by 36 CFR 800.5(a)(1); and

WHEREAS, Phase I archaeological survey has been completed for terrestrial portions of the APE and no archaeological resources were identified; and

WHEREAS, archaeological studies and analysis to assess the sensitivity of the Hudson River portion of the APE have identified an area of potential sensitivity associated with a submerged and deeply buried Paleo landform, and possible historic resources lying on the river bottom, including shipwrecks and historic piers; and

WHEREAS, FHWA, in coordination with NYSDOT and NYSTA, has consulted with the NYSHPO to develop methods for further investigations to gather sufficient information to identify and evaluate potential Hudson River resources for National Register eligibility; and

WHEREAS, if submerged archaeological properties are identified in the Hudson River and determined eligible for inclusion in the National Register of Historic Places, FHWA in coordination with NYSTA and NYSDOT, and in consultation with the NYSHPO and other consulting parties as appropriate, will consider measures to avoid, minimize or mitigate adverse effects on identified resources; and

WHEREAS, this Agreement was developed with appropriate public participation during the NEPA process pursuant to 36 CFR 800.2(d)(3). A copy of this draft Agreement was included in the Draft Environmental Impact Statement (DEIS), a copy of the executed Agreement will be included in and distributed with the Final Environmental Impact Statement (FEIS), and the public shall be duly notified as to the execution and effective dates of this Agreement through the issuance of the FEIS and FHWA Record of Decision (ROD) for the Project.

NOW, THEREFORE, the FHWA, ACHP, NYSHPO, NYSTA, and NYSDOT agree that the Project shall be implemented in accordance with the following stipulations to take into account the effects of the Project on historic properties.

STIPULATIONS

FHWA, in coordination with NYSTA and NYSDOT, shall ensure that the following stipulations are implemented.

I. ARCHAEOLOGICAL RESOURCES

NYSTA and NYSDOT, in coordination with FHWA, shall implement additional archaeological investigations to identify potential submerged Hudson River archaeological resources, following an approved work plan outlined in a Technical Memo, *Status of Recent Cultural Resource Identification Efforts and Proposed Evaluation Strategies*, incorporated as an addendum to the Phase I Archaeological Survey Report. The objective of these investigations is to gather sufficient information to evaluate National Register eligibility of any confirmed resources, and to inform the consideration of measures to avoid, minimize, or mitigate the Project's effects on any submerged resources determined to be eligible for the National Register. The field investigations shall be completed prior to FHWA's issuance of the Record of Decision (ROD) for the Project.

A. Submerged Paleo Landform

NYSTA and NYSDOT will oversee implementation of the following measures to investigate deeply buried *in situ* marsh deposits and underlying river terraces that may be present approximately 20 to 50 feet below the Hudson River's bottom to the north of the bridge, and to avoid, minimize, or mitigate adverse effects to any deposits that may contain evidence of prehistoric activity dating to the Archaic or Paleo-Indian Periods.

1. To determine the presence, extent, and significance of this landform, borings shall be undertaken in the potentially sensitive area and monitored by a professional archaeologist. The professional archaeologist shall also collect and analyze organic and/or soil samples recovered from the borings.

2. A report, documenting the findings of the soil boring program and soil analyses, shall be prepared by the professional archaeologist and submitted to NYSTA, NYSDOT, and FHWA for distribution to the NYSHPO, ACHP, Delaware Nation, Delaware Tribe, Shinnecock Indian Nation, St. Regis Mohawk Tribe, and Stockbridge-Munsee Band of Mohican Indians.

3. If the deeply buried Paleo landform is determined to be present and significant, the soil boring analysis report will serve to document the deeply buried Paleo landform and will serve as mitigation in the event that the Project's impacts to this resource cannot be avoided.

B. Submerged Historic Resources and Potential Shipwrecks

NYSTA and NYSDOT will oversee implementation of the following measures to investigate two potential archaeological resources lying on the Hudson River bottom. All activities will be carried out in accordance with the terms described under Stipulation I.D., 'General Requirements for Archaeological Investigations'.

1. Archaeologists will conduct additional research and document review to identify 'Target 003', a potential historic resource on the river bottom within the APE.

2. Archaeologists will conduct Phase II-level investigations of 'Target 001', a potential shipwreck, including the removal of overburden and excavation of trenches to expose the vessel structure and identify characteristics such as vessel type, structural materials, cargo type, age and use.

3. Phase II field investigations will be followed by testing and analysis of collected data, including imaging information, samples and artifacts. A Phase II report documenting these findings will be prepared and submitted to the NYSTA and NYSDOT, for consultation with the NYSHPO and FHWA to determine National Register eligibility.

4. Measures to avoid, minimize, or mitigate adverse effects on any identified National Register eligible shipwrecks or other submerged historic resources, if identified, will be developed in consultation among the NYSHPO, FHWA, NYSTA, and NYSDOT.

C. Unanticipated Discoveries Plan

1. NYSTA and NYSDOT, in consultation with FHWA shall develop and implement an Unanticipated Discoveries Plan for human and non-human archaeological resources in the event that any unanticipated archaeological resources are encountered during construction of the Project.

2. The Unanticipated Discoveries Plan shall be prepared and submitted to the NYSHPO for review and approval prior to any Project excavation and construction activities. The Unanticipated Discoveries Plan shall also be submitted for review to the Delaware Nation, Delaware Tribe, Shinnecock Indian Nation, St. Regis Mohawk Tribe, and Stockbridge-Munsee Band of Mohican Indians.

D. General Requirements for Archaeological Investigations

1. All archaeological investigations will be performed in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology (48 FR 44734-37), the Advisory Council on Historic Preservation's Section 106 Archaeology Guidance (www.achp.gov/archguide), the New York State Education Department Cultural Resources Survey Program Work Scope Specifications for Cultural Resource Investigations on New York State Department of Transportation Projects (2004), and the New York Archaeological Council's Standards for Cultural Resource Investigations and Curation of Archaeological Collections (NYAC 1994).

2. All cultural resource studies carried out pursuant to this Agreement will be conducted by or under the direct supervision of a person or persons meeting the Secretary of the Interior's Professional Qualifications Standards (36 CFR Part 61; 48 FR 44138-9).

3. All artifacts, notes and other documentation of archaeological investigations will be curated according to federal (36 CFR 79) and state (NYAC 1994) guidelines.

II. ARCHITECTURAL RESOURCES

NYSTA and NYSDOT, in coordination with FHWA shall ensure that the following measures are undertaken to minimize and mitigate adverse effects to Historic Properties:

A. Historic American Engineering Record (HAER)-Level Recordation

Historic American Engineering Record (HAER)-level recordation shall be prepared for the Tappan Zee Bridge by a professional who meets the Secretary of the Interior's Professional Qualifications Standards (36 CRF Part 61) with experience in preparing such reports. This recordation shall include the following:

1. Measured drawings of the Tappan Zee Bridge, including a plan, elevations, and details;

2. Three-dimensional computer model of the Tappan Zee Bridge;

3. Archival photography of the Tappan Zee Bridge. Photographs, prints, and duplicates would meet appropriate HAER archival standards;

4. A narrative that describes in detail the physical and historic characteristics of the Tappan Zee Bridge; and

5. Archival copies of the HAER report shall be provided to FHWA, the NYSHPO and local repositories accessible to the public located in Rockland and Westchester Counties.

B. Educational and Interpretive Materials

A plan for the development and preparation of educational and interpretive materials shall be prepared with the goal of documenting the history and significance of the Tappan Zee Bridge and making the information available to the public.

1. The format and content of the educational materials and interpretive exhibits shall be identified by FHWA, NYSTA, and NYSDOT in consultation with the NYSHPO, other signatories, and concurring parties to this MOA.

2. The Plan will identify the targeted audience for the educational materials and locations of the interpretive exhibits.

3. Education materials shall include the following:

    a. Written, graphic, and electronic media for use by local libraries, historical societies, and educational institutions; and
    b. Interpretive exhibit(s) to be located on the project's planned shared-use path that present the history and engineering of the Tappan Zee Bridge.

4. The NYSDOT and NYSTA shall submit a draft of the Plan to the NYSHPO and concurring parties to this MOA to provide 30 calendar days for review and comment. The Educational and Interpretive Materials Plan shall be finalized and implemented once it has been approved by the NYSHPO.

C. Construction Protection Plan

To avoid inadvertent project-related construction damage to historic properties, NYSTA and NYSDOT, in coordination with FHWA, will develop a Construction Protection Plan for Historic Properties.

1. The Construction Protection Plan shall be developed prior to initiation of any excavation and construction activities.

2. In accordance with standard construction management practices, NYSTA and NYSDOT will:

    a. Implement measures to protect historic properties from vibration, excavation, and damage from heavy equipment. These measures will be incorporated into the Construction Protection Plan to address both direct and indirect effects, including any effects from re-routed traffic flow.

b. Take measures to ensure the safe and efficient movement of traffic around work zones through a Maintenance and Protection of Traffic Plan, including access for emergency services, (fire, medical, police).

c. Take measures to ensure the maintenance of basic services (water, gas, electric).

d. Implement measures for the control and / or management of fugitive dust, erosion, noise, lighting and visual effects of construction activities to the extent practicable.

3. NYSTA and NYSDOT shall ensure that all historic properties that may be subject to damage by construction activities are covered by the Construction Protection Plan and thereafter ensure that the provisions of the Construction Protection Plan are implemented by the Project contractors.

4. The Construction Protection Plan will be distributed to concurring parties to the MOA for a 30 day period of review and comment, and to the NYSHPO and FHWA for review and approval.

III. DISPUTE RESOLUTION

Should any party to this Agreement object in writing to FHWA, NYSTA or NYSDOT regarding any action carried out or proposed with respect to the undertaking or to the implementation of this Agreement, FHWA shall consult with the objecting party to resolve the objection.

If after initiating consultation FHWA in coordination with NYSTA and NYSDOT determine that the objection cannot be resolved through consultation, FHWA shall forward all documentation relevant to the objection to the ACHP, including the FHWA's proposed response to the objection.

Within 30 days after receipt of all pertinent documentation, ACHP shall exercise one of the following options:

A. Advise the FHWA that the ACHP concurs in the FHWA's proposed response to the objection, whereupon the FHWA will respond to the objection accordingly;

B. Provide the FHWA with recommendations, which the Federal Lead Agency shall take into account in reaching a final decision regarding its response to the objection; or

C. Notify the FHWA that the objection will be referred for comment pursuant to 36 CFR 800.7(a) (4), and proceed to refer the objection and comment. The FHWA shall take the resulting comment into account in accordance with 36 CFR 800.7(c) (4), with reference to the subject of the dispute.

D. FHWA's responsibility to carry out all actions under this MOA that are not subject to the dispute shall remain unchanged.

IV. REPORTING AND OVERSIGHT

A. Reports

1. NYSDOT, in coordination with NYSTA, will provide to the NYSHPO, ACHP, and FHWA all final cultural resources plans, reports and studies resulting from this Agreement. NYSDOT, in coordination with NYSTA, will also make these documents available to the concurring parties, subject to the confidentiality provisions of 36 CFR 800.11(c).

2. The NYSHPO shall provide written concurrence or comments within 30 calendar days of receipt of draft and final plans, reports and studies. If no comments are received, FHWA, NYSTA and NYSDOT shall consider the NYSHPO in concurrence.

3. Concurring parties to this MOA shall provide written comments within 30 days of receipt of any plans, reports and studies provided for their review. FHWA, NYSTA, and NYSDOT shall take all written comments into consideration.

B. Annual Reports. Commencing July 1, 2013, and every year thereafter until the Project has been completed, or the Agreement has been terminated, NYSTA and NYSDOT will prepare and submit a joint annual report to the NYSHPO, ACHP, and FHWA providing information concerning the status of implementation of the terms of this Agreement. The annual report will include milestone accomplishments, resolution of any problems encountered in implementation, and a schedule for completing any outstanding commitments. NYSTA and NYSDOT will notify other consulting parties of the availability of the annual reports via the Project website or another agreed-upon method of distribution.

V. DURATION, AMENDMENT AND TERMINATION

A. This Memorandum of Agreement shall take effect on the date it is signed by the last signatory (FHWA, NYSHPO, ACHP, NYSTA, NYSDOT) and will remain in effect until the Stipulations set forth herein have been met.

B. Any signatory to this Agreement may request that it be amended, whereupon the parties will consult to reach a consensus on the proposed amendment. Where no consensus can be reached, the Agreement will not be amended. Any resulting amendments shall be developed and executed among the signatories in the same manner as the previous version(s) of the MOA. Any amendment to this MOA will go into effect only upon written agreement of all the signatories.

C. Any signatory to this Agreement may terminate it by providing thirty (30) days notice to the other parties, provided that the signatories will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. If within thirty (30) days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, FHWA must either (a) execute an MOA pursuant to 36 CFR §800.6, or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR §800.7. FHWA shall notify the signatories as to the course of action it will pursue.

EXECUTION OF THIS MEMORANDUM OFAGREEMENT and implementation of its Stipulations evidences that FHWA has taken into account the effects of the Project on historic properties and afforded the ACHP an opportunity to comment on those effects.

EXECUTION OF THIS MEMORANDUM OF AGREEMENT and implementation of its Stipulations evidences that FHWA has taken into account the effects of the Project on historic properties and afforded the ACHP an opportunity to comment on those effects.

Signatory:

New York State Department of Transportation

By: _____ Date: 6-8-12

Daniel P. Hitt, (Acting) Director, Office of Environment

EXECUTION OF THIS MEMORANDUM OF AGREEMENT and implementation of its Stipulations evidences that FHWA has taken into account the effects of the Project on historic properties and afforded the ACHP an opportunity to comment on those effects.

Signatory:

New York State Thruway Authority

By: Donald R Bell Date: 6/8/12

Donald R. Bell P.E., Acting Chief Engineer

EXECUTION OF THIS MEMORANDUM OF AGREEMENT and implementation of its Stipulations evidences that FHWA has taken into account the effects of the Project on historic properties and afforded the ACHP an opportunity to comment on those effects.

Signatory:

New York State Historic Preservation Officer

By: Ruth A Pierpont Date: 6/18/12

Ruth Pierpont, Deputy Commissioner/Deputy SHPO

EXECUTION OF THIS MEMORANDUM OF AGREEMENT and implementation of its Stipulations evidences that FHWA has taken into account the effects of the Project on historic properties and afforded the ACHP an opportunity to comment on those effects.

Signatory:

Federal Highway Administration

By: _____ Date: 6/27/12

Jonathan D. McDade, Division Administrator

EXECUTION OF THIS MEMORANDUM OF AGREEMENT and implementation of its Stipulations evidences that FHWA has taken into account the effects of the Project on historic properties and afforded the ACHP an opportunity to comment on those effects.

Signatory:

Advisory Council on Historic Preservation

By: John M. Fowler Date: 6/28/12

John M. Fowler, Executive Director

EXECUTION OF THIS MEMORANDUM OF AGREEMENT and implementation of its Stipulations evidences that FHWA has taken into account the effects of the Project on historic properties and afforded the ACHP an opportunity to comment on those effects.

Invited Signatory:

Delaware Tribe

By: Bruce Obermeyer, Director Date: 6/15/2012

Name and Title

EXECUTION OF THIS MEMORANDUM OF AGREEMENT and implementation of its Stipulations evidences that FHWA has taken into account the effects of the Project on historic properties and afforded the ACHP an opportunity to comment on those effects.

Concurring Party:

Bruce D. Forrest

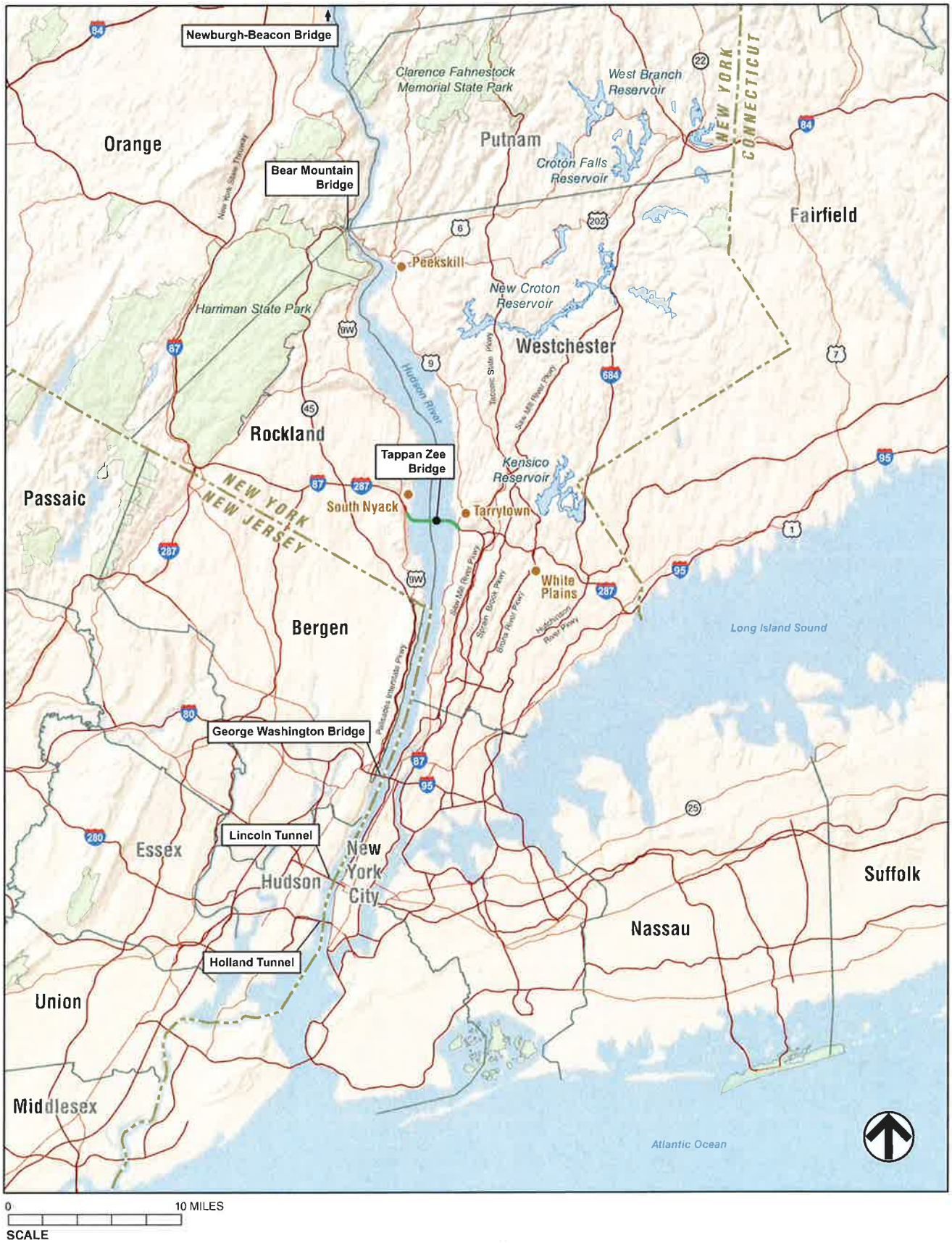
By: _____ Date: 6/22/2012

LIST OF EXHIBITS

EXHIBIT A

PROJECT LOCATION MAP

1.12.12



TAPPAN ZEE HUDSON RIVER CROSSING
Memorandum of Agreement

Exhibit A
Project Location

EXHIBIT B

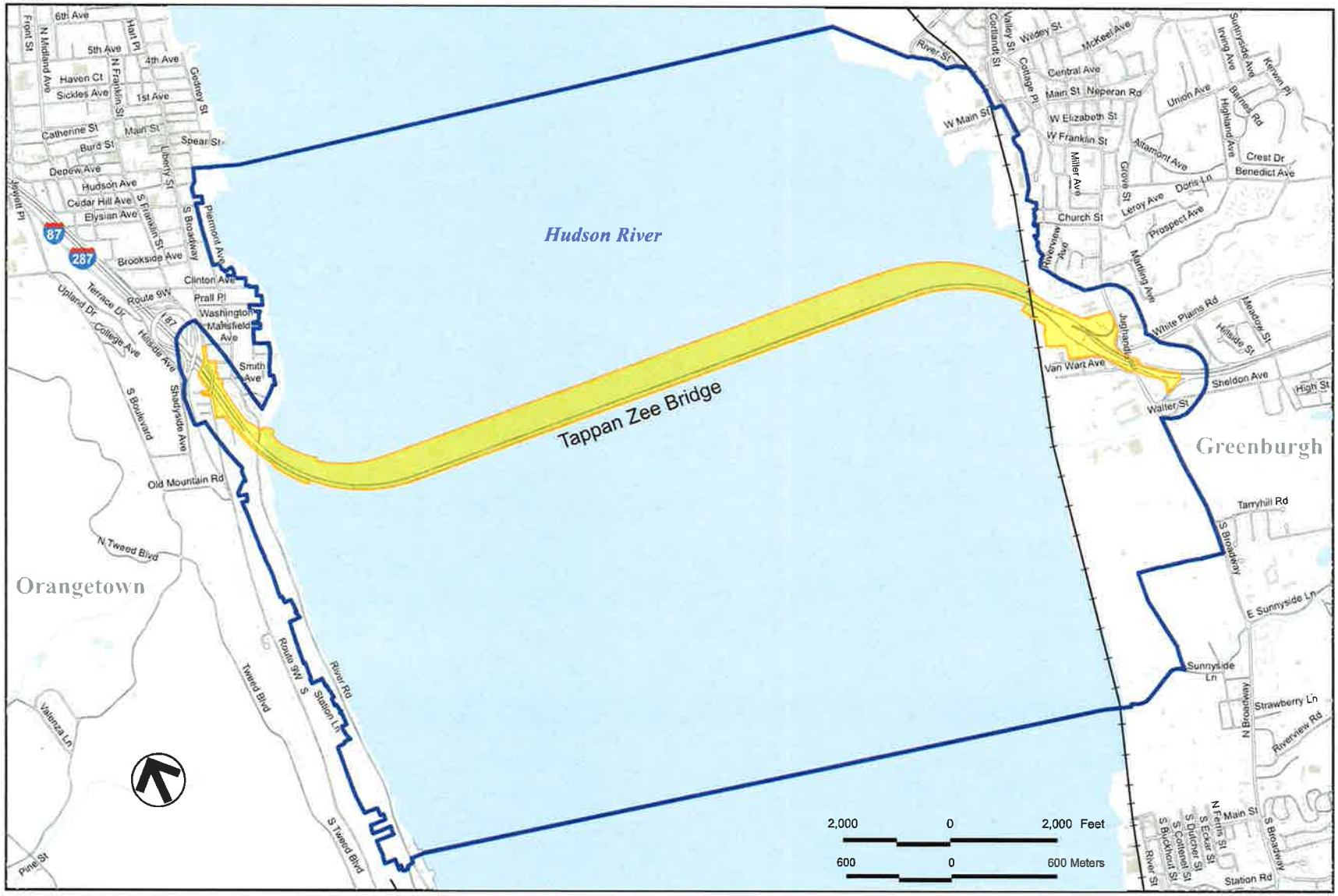
SECTION 106 CONSULTING PARTIES

Individual/Organization	Contact	Address
Advisory Council on Historic Preservation (ACHP)	Carol Legard, FHWA Liaison	1100 Pennsylvania Avenue NW, Suite 807 Washington, DC 20004
African American Chamber of Commerce of Westchester & Rockland	Robin L. Douglas, President, CEO & Founder	402 South 7th Avenue, Mount Vernon, NY 10550
Berezowsky, Adrian, Sleepy Hollow resident		55 West Red Oak Lane, White Plains, NY 10604
Delaware Nation	Tamara Francis, Cultural Resource Preservation Director, Jason Ross, Section 106 Assistant	31064 State Highway 281, Anadarko, OK 73005
Delaware Tribe	Dr. Brice Obermeyer,	Delaware Tribe Historic Preservation Office, 1420 C of E Drive, Suite 190, Emporia, KS 66801
Forrest, Bruce D.		Forrest & Company, Inc., P.O. Box 444, Nyack, NY 10960
Friends of the Old Croton Aqueduct	Robert Kornfeld	47 Summit Drive, Hastings-on-Hudson, NY 10706
The Historical Society Inc.	Sara Mascia	One Grove St, Tarrytown, NY 10591
Historical Society of the Nyacks	Winston C. Perry Jr, President	319 North Broadway, Nyack, NY 10960
Historical Society of Rockland County	Marianne B. Leese	20 Zukor Road, New City, NY 10956
Irving Neighborhood Preservation Association	Victoria Weisel, President	8 Washington Place, Tarrytown, NY 10591
	Stacy Shatkin-Cusick	113 Paulding Avenue, Tarrytown, NY 10591
	Melissa Demarest	72 Paulding Avenue, Tarrytown, NY 10591
Lecuona, Milagros, White Plains Council woman		269 Old Mamaroneck Rd, White Plains, NY 10605
Lynn, Lawrence, Mayor of Village of Grand View-on-Hudson		276 River Road, Grand View, NY 10960
National Trust for Historic Preservation	Elizabeth S. Merritt, Deputy Counsel	1785 Massachusetts Ave N.W. Washington, DC 20036
	Krystyn Hastings-Silver	Lyndhurst, 635 South Broadway, Tarrytown, NY 10591
	Roberta Lane	7 Faneuil Hall Marketplace, 4th floor, Boston, MA 02109
Preservation League of New York State	Daniel Mackay	44 Central Avenue, Albany, NY 12206
Riverkeeper	c/o Pace University School of Law	Pace University School of Law, 78 North Broadway, White Plains, NY 10603
Rockland County Historic Preservation Board	Craig H. Long, Chair	120 Wayne Avenue, Suffern, NY 10901
Saint Regis Mohawk Tribe	Chief Randy Hart Arnold Printup, Jr. THPO	412 State Route 37, Hogansburg, NY 13655
Shinnecock Indian Nation	Marguerite Smith, Office of Tribal Trustees/Legal	100 Church Street, Shinnecock Community Center, Southampton, NY 11968
SHPO	John Bonafide, Ruth Pierpont, Mark Peckham	P.O. Box 189, Peebles Island, Waterford, NY 12188
Steiner, Henry, Village of Sleepy Hollow Historian		56 Pocantico Street, Sleepy Hollow, NY 10591
Stockbridge-Munsee Band of Mohican Indians	Sherry White, THPO	W13447 Camp 14 Road, Bowler, WI 54416
Stolldorf, Gini, Nyack resident		15 Fourth Avenue, Nyack, NY 10960
Village of Tarrytown	Michael Blau, Village Administrator	One Depot Plaza, Tarrytown, NY 10591
Westchester County Historical Society	Katherine Hite, Executive Director	2199 Saw Mill River Rd, Elmsford, NY 10523

EXHIBIT C

AREA OF POTENTIAL EFFECTS MAP

1.12.12



Direct Effect Area of Potential Effect (APE)

Indirect Effect Area of Potential Effect (APE)

TAPPAN ZEE HUDSON RIVER CROSSING
Memorandum of Agreement

Exhibit C

Direct and Indirect Effects APEs

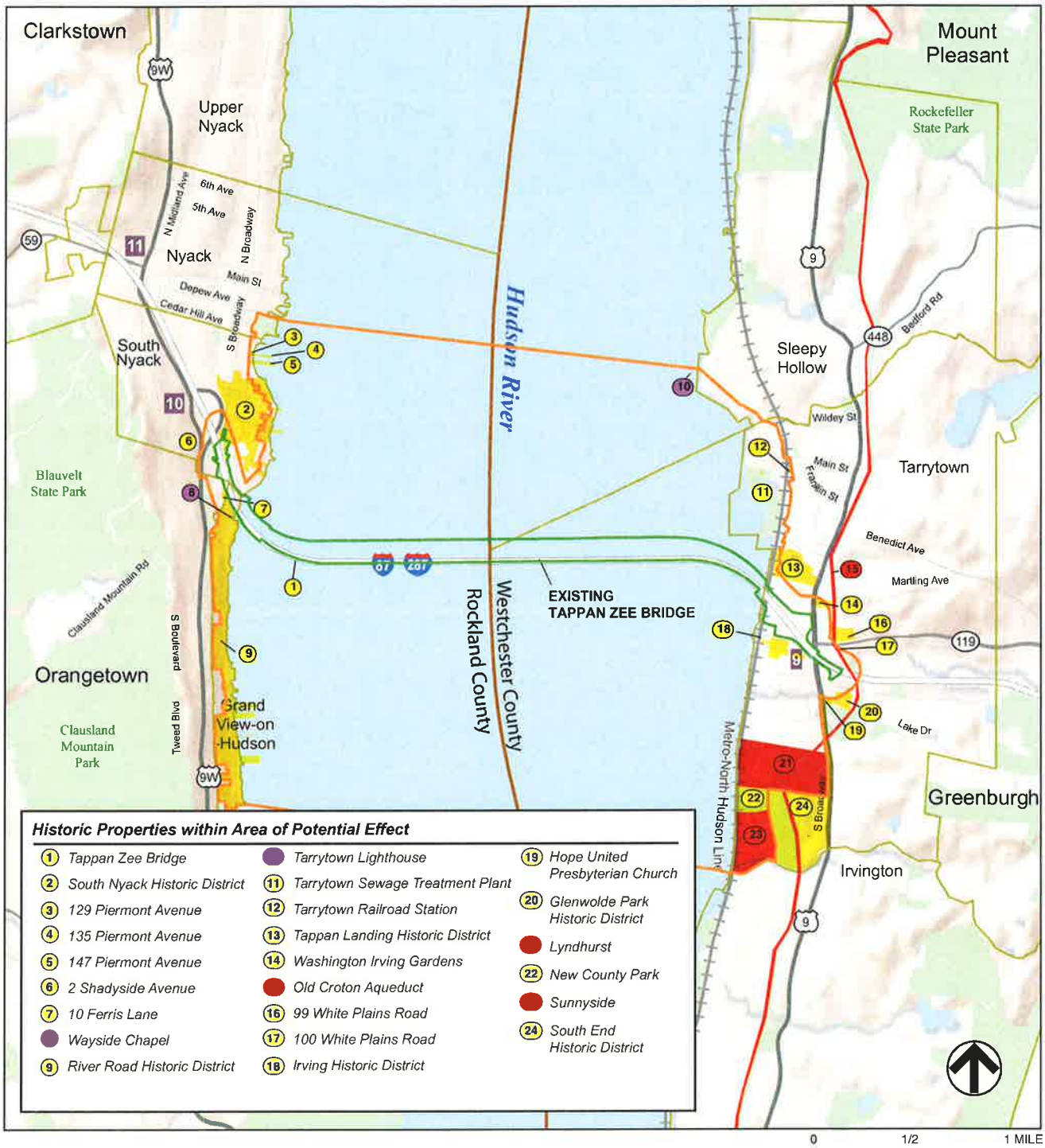
EXHIBIT D

IDENTIFIED HISTORIC PROPERTIES IN THE APE

Ref No.[1]	Name	Location	NHL	NR Listed	NR Eligible
1	Tappan Zee Bridge (BIN 5516340)	Interstate I-87/287 over the Hudson River			X
Rockland County					
2	South Nyack Historic District*	South Nyack			X
3	129 Piermont Avenue*	South Nyack			X
4	135 Piermont Avenue*	South Nyack			X
5	147 Piermont Avenue*	South Nyack			X
6	2 Shadyside Avenue*	South Nyack			X
7	10 Ferris Lane*	Orangetown			X
8	Wayside Chapel**	24 River Road, Grand-View-on-Hudson		X	
9	River Road Historic District*	River Road, Grand-View-on-Hudson			X
Westchester County					
10	Tarrytown Lighthouse	Kingsland Point Park, Route 9, Sleepy Hollow		X	
11	Tarrytown Sewage Treatment Plant*	Pierson Park, Tarrytown			X
12	Tarrytown Railroad Station	1 Depot Plaza, Tarrytown			X
13	Tappan Landing Historic District*	Tappan Landing Road & North Tappan Road Tarrytown			X
14	Washington Irving Gardens*	300 South Broadway, Tarrytown			X
15	Old Croton Aqueduct	Route 9, Tarrytown	X	X	
16	99 White Plains Road*	Tarrytown			X
17	100 White Plains Road*	Tarrytown			X
18	Irving Historic District*	Van Wart & Paulding Avenues, Tarrytown			X
19	Hope United Presbyterian Church*	500 South Broadway, Tarrytown			X
20	Glenwolde Park Historic District*	Glenwolde Park, Water Street, and Willowbrook Avenue, Tarrytown			X
21	Lyndhurst	635 South Broadway, Tarrytown	X	X	
22	New County Park	Route 9, Tarrytown			X
23	Sunnyside	1 West Sunnyside Lane, Tarrytown	X	X	
24	South End Historic District*	West side of Route 9, Tarrytown			X

Notes:
[1]Corresponds to **Figures D-1** through **D-5**.
*Determined National Register of Historic Places-Eligible as part of this project
**Also a contributing resource within S/NR-eligible River Road Historic District, Grand View-on-Hudson, Rockland County
NHL: National Historic Landmark.
NR: National Registers of Historic Places.

4.4.12



Historic Properties within Area of Potential Effect

1. Tappan Zee Bridge
2. South Nyack Historic District
3. 129 Piermont Avenue
4. 135 Piermont Avenue
5. 147 Piermont Avenue
6. 2 Shadyside Avenue
7. 10 Ferris Lane
8. Wayside Chapel
9. River Road Historic District
10. Tarrytown Lighthouse
11. Tarrytown Sewage Treatment Plant
12. Tarrytown Railroad Station
13. Tappan Landing Historic District
14. Washington Irving Gardens
15. Old Croton Aqueduct
16. 99 White Plains Road
17. 100 White Plains Road
18. Irving Historic District
19. Hope United Presbyterian Church
20. Glenwolde Park Historic District
21. Lyndhurst
22. New County Park
23. Sunnyside
24. South End Historic District

0 1/2 1 MILE
SCALE

14 Interchange Number
87 Interstate Highway
9W U.S. Highway
59 State Highway

Historic Properties

- Direct Effect Area of Potential Effect (APE)
- Indirect Effect Area of Potential Effect (APE)
- NHL
- S/NRHP Listed
- S/NRHP Eligible

TAPPAN ZEE HUDSON RIVER CROSSING
Memorandum of Agreement

Appendix D:
Figure D-1
Historic Properties in APE

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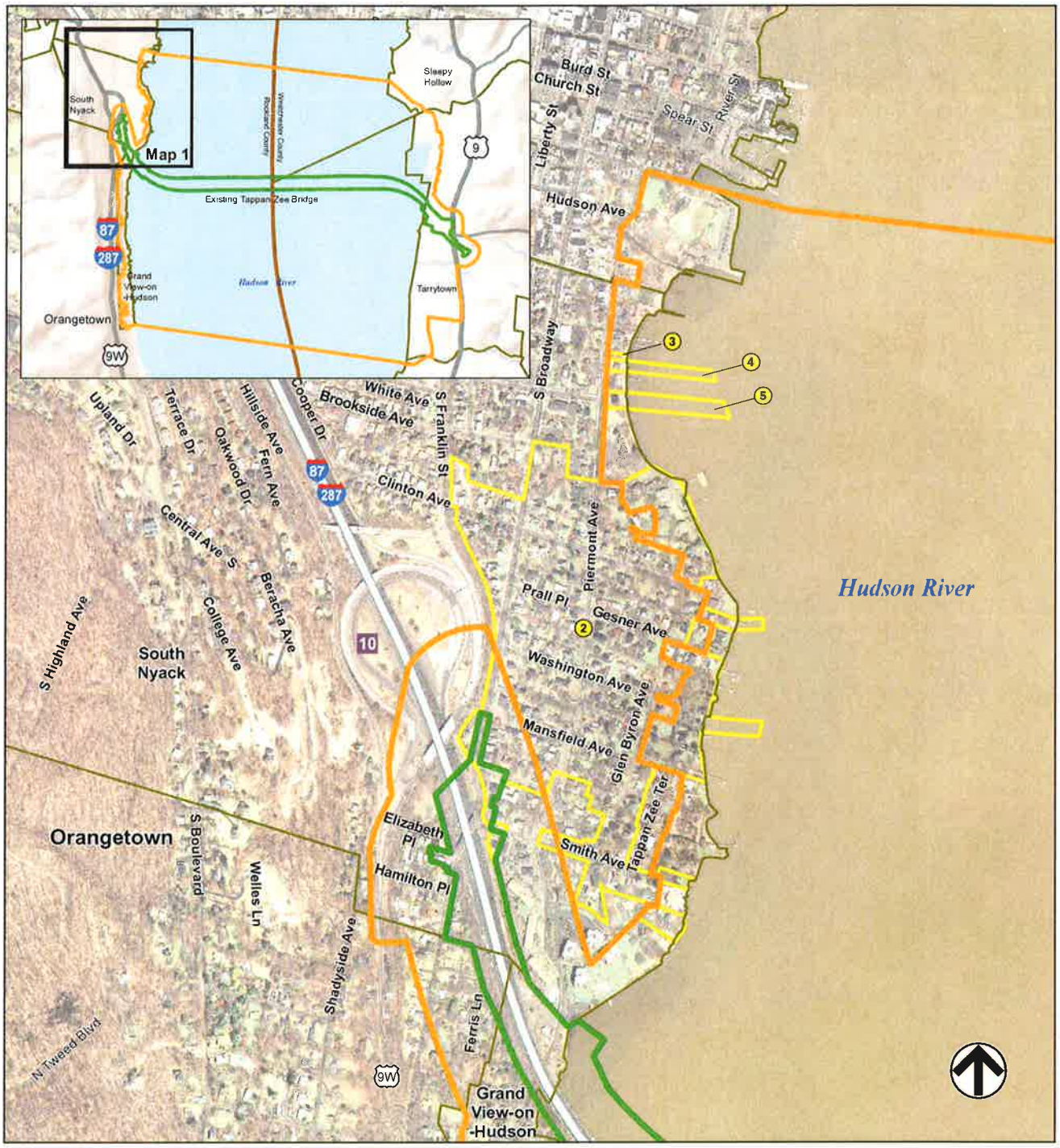

Direct Effect Area of Potential Effect (APE)

Indirect Effect Area of Potential Effect (APE)

S/NRHP Eligible

Historic Properties within Area of Potential Effect – Map 1

2. *South Nyack Historic District*
3. *129 Piermont Avenue*
4. *135 Piermont Avenue*
5. *147 Piermont Avenue*

Appendix D:
Figure D-2

Historic Properties in APE: Detail of Rockland County North

TAPPAN ZEE HUDSON RIVER CROSSING
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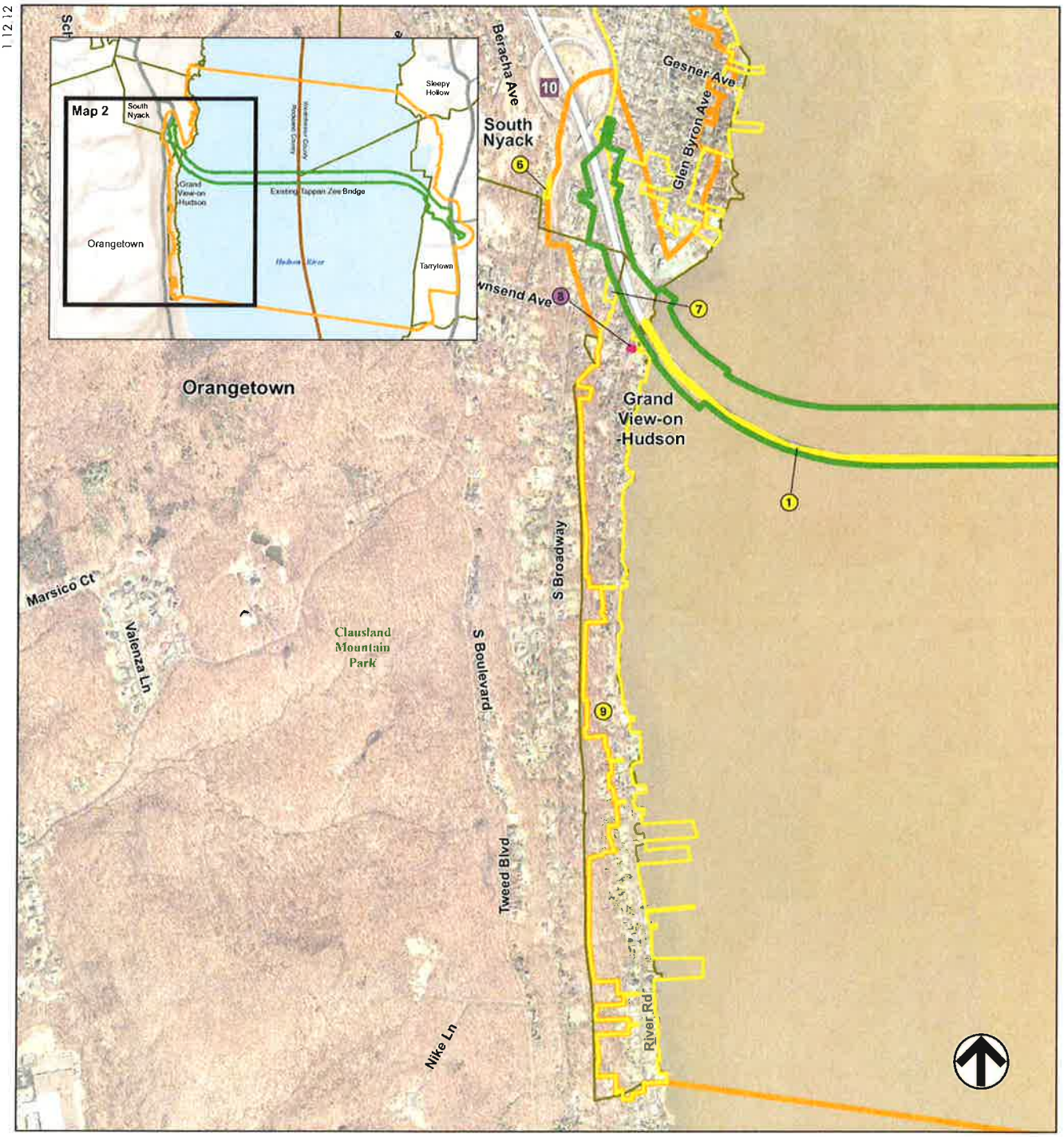

Direct Effect Area of Potential Effect (APE)

Indirect Effect Area of Potential Effect (APE)

S/NRHP Listed

S/NRHP Eligible

Historic Properties within Area of Potential Effect – Map 2

1. *Tappan Zee Bridge*
6. *2 Shadyside Avenue*
7. *10 Ferris Lane*
- *Wayside Chapel*
9. *River Road Historic District*

0 2000 FEET

SCALE

Appendix D:
Figure D-3

Historic Properties in APE: Detail of Rockland County South

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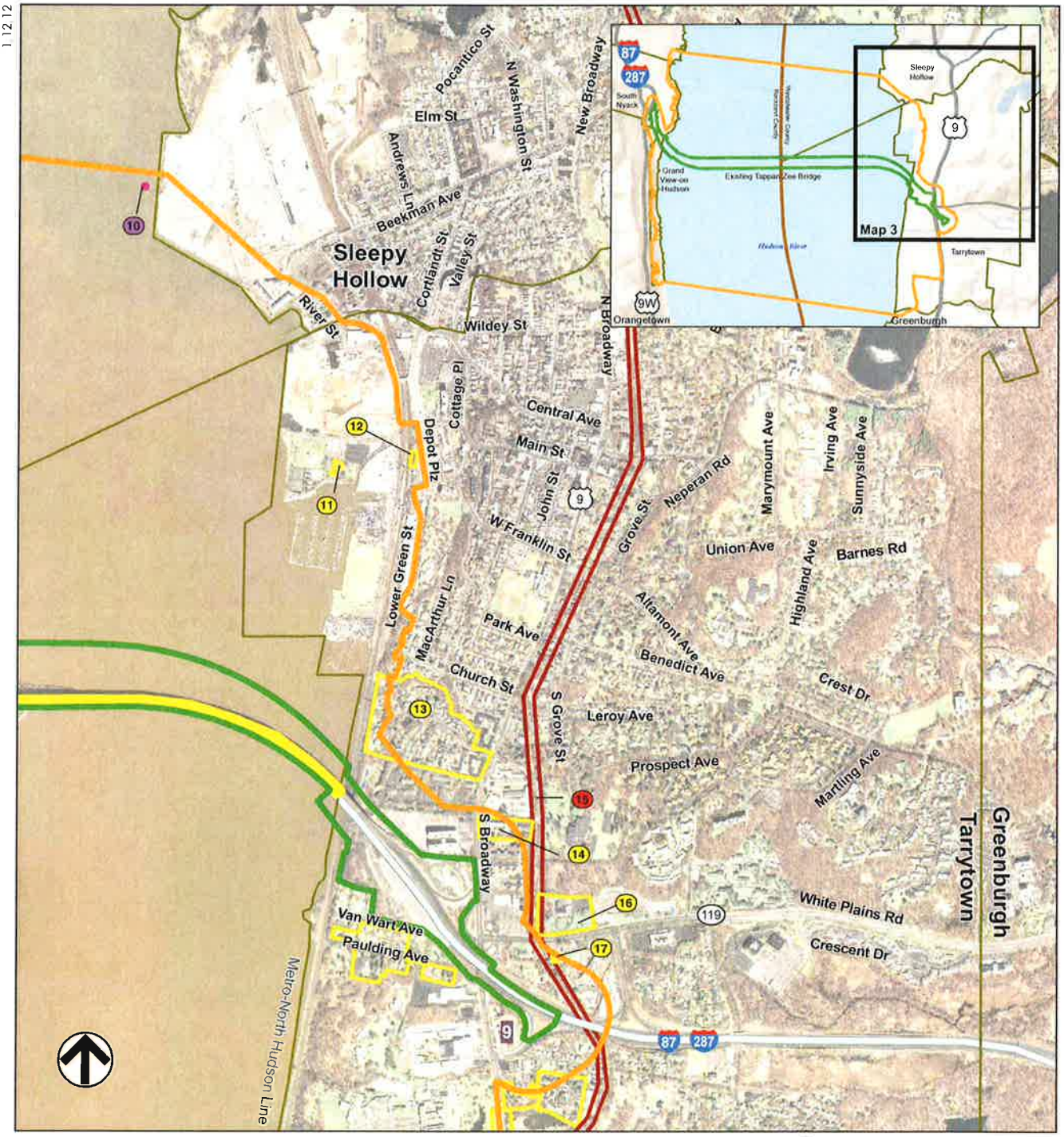


Direct Effect Area of Potential Effect (APE)

Indirect Effect Area of Potential Effect (APE)

NHL

S/NRHP Listed

S/NRHP Eligible

Historic Properties within Area of Potential Effect – Map 3

10 *Tarrytown Lighthouse*

11 *Tarrytown Sewage Treatment Plant*

12 *Tarrytown Railroad Station*

13 *Tappan Landing Historic District*

14 *Washington Irving Gardens*

Old Croton Aqueduct

16 *99 White Plains Road*

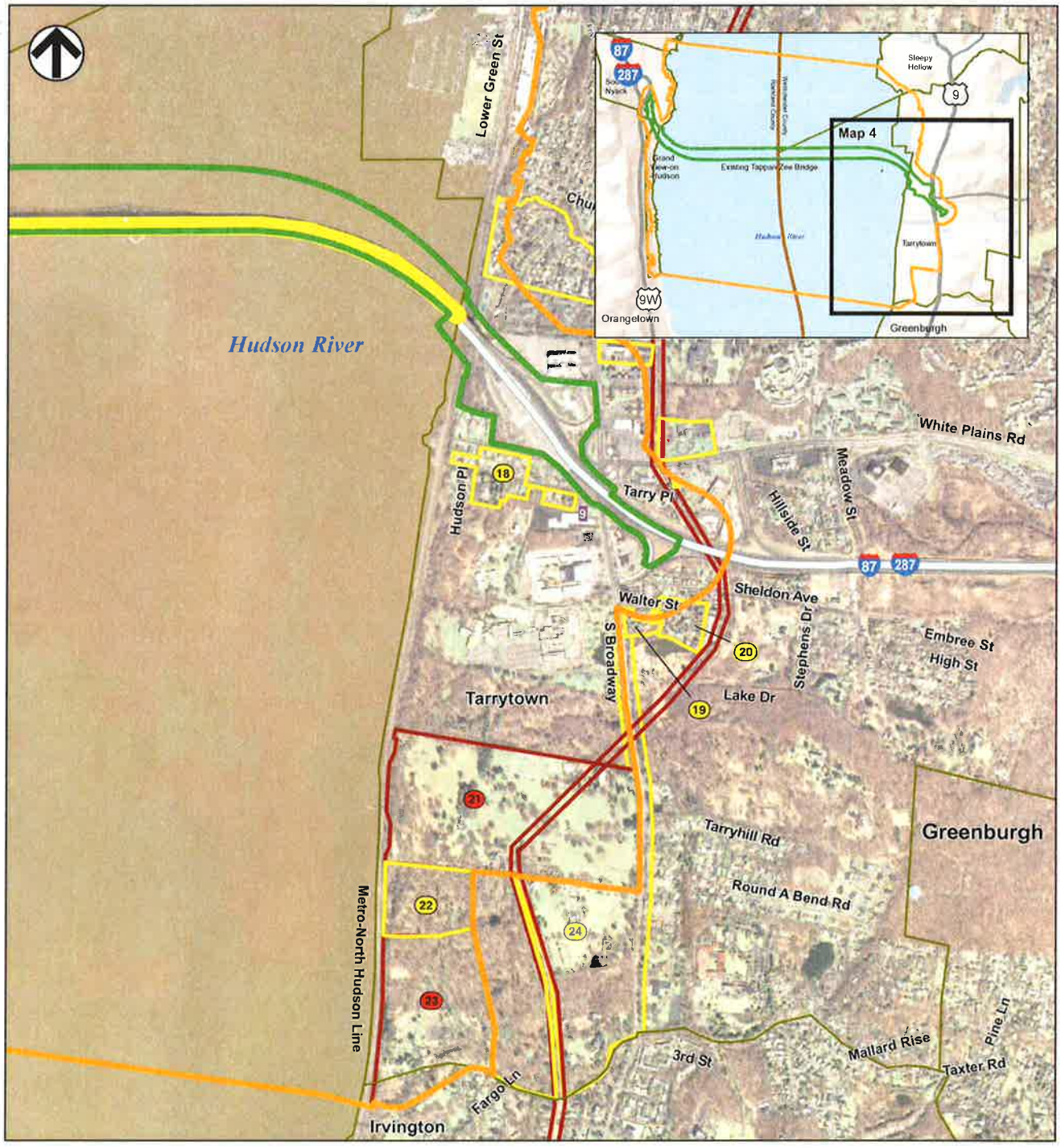
17 *100 White Plains Road*

TAPPAN ZEE HUDSON RIVER CROSSING
Memorandum of Agreement

Appendix D:
Figure D-4

Historic Properties in APE: Detail of Westchester County North

4.4.12



0 2000 FEET

SCALE

- Direct Effect Area of Potential Effect (APE)
- Indirect Effect Area of Potential Effect (APE)
- NHL
- S/NRHP Listed
- S/NRHP Eligible

Historic Properties within Area of Potential Effect – Map 4

- (18) Irving Historic District
- (19) Hope United Presbyterian Church
- (20) Glenwolde Park Historic District
- Lyndhurst
- (22) New County Park
- Sunnyside
- (24) South End Historic District

TAPPAN ZEE HUDSON RIVER CROSSING
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Appendix D:
Figure D-5

Historic Properties in APE: Detail of Westchester County South

Attachment G

Fish Species

Table 16-2
List of Fish Species Occurring within the Project Area Based on Gill-net Sampling, 2007-2008

Common name	Scientific name	Assemblage
Alewife	*Alosa pseudoharengus*	Anadromous
American eel*	*Anguilla rostrata*	Catadromous
American shad	*Alosa sapidissima*	Anadromous
Atlantic butterfish	*Peprilus triacanthus*	Marine
Atlantic menhaden	*Brevoortia tyrannus*	Marine
Atlantic tomcod	*Microgadus tomcod*	Estuarine
Bluefish	*Pomatomus saltatrix*	Marine
Blueback herring	*Alosa aestivalis*	Anadromous
Blue runner	*Caranx crysos*	Marine
Common carp	*Cyprinus carpio*	Freshwater
Gizzard shad	*Dorosoma cepedianum*	Freshwater
Hickory shad	*Alosa mediocris*	Marine
Hogchoker	*Trinectes maculatus*	Estuarine
Naked goby*	*Gobiosoma bosci*	Estuarine/Marine
Northern kingfish	*Menticirrhus saxatilis*	Estuarine/Marine
Northern sea robin	*Prionotus carolinus*	Marine
Oyster toad fish*	*Opsanus tau*	Estuarine/Marine
Porgy	Family Sparidae	Marine
Shortnose sturgeon	*Acipenser brevirostrum*	Anadromous
Spot	*Leiostomus xanthurus*	Estuarine/Marine
Striped bass	*Morone saxitalis*	Anadromous
Summer flounder	*Paralichthys dentatus*	Estuarine/Marine
Weakfish	*Cynoscion regalis*	Estuarine
White catfish	*Ameiurus catus*	Freshwater
White perch	*Morone americana*	Estuarine

Note: * Species only captured in fish traps.

In comparison to the one-year dataset, 10 years of fishery data from the Utilities-sponsored fisheries monitoring program were analyzed to evaluate fish-species composition and abundance between 1998 and 2007 within the Tappan Zee region. The seven most abundant species collected during this sampling effort are presented in **Appendix F-11**, Table 1. Three of these species (bay anchovy, striped bass, and weakfish) made up about 94 percent of the standing stock abundance. Only two of the seven species analyzed in **Appendix F-11** were not collected during the one-year survey. These included Atlantic croaker and bay anchovy, the latter of which is one of the most abundant fish taxa collected in the Hudson River. Bay anchovy were not collected during the one-year survey due to the use of gill nets and fish traps, which do not effectively sample this small species as a result of the large mesh size.

The use of multiple gear types and sampling programs that differ over temporal and spatial intensity provides a comprehensive assessment of the fish community of the study area. Any specific gear type or targeted sampling program will have bias for the

Attachment H

USFWS Letter

United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 Luker Road
Cortland, NY 13045

June 20, 2012

Mr. Jonathan McDade
Division Administrator
New York Division
Federal Highway Administration
Leo W. O'Brien Federal Building
11A Clinton Avenue, Suite 719
Albany, NY 12207

Dear Mr. McDade:

This responds to U.S. Department of Transportation's Federal Highway Administration (FHWA) May 31, 2012, threatened and endangered species determination letter regarding the proposed Tappan Zee Bridge Hudson River Crossing, in the Village of Tarrytown, Westchester County, New York, and the Village of South Nyack, Rockland County, New York. The FHWA references in their May 31, 2012, correspondence the New York State Department of Transportation's (NYSDOT) May 25, 2012, threatened and endangered species determination for this project.

Pursuant to section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), the FHWA concurred with the NYSDOT's determination that the proposed project may affect, but is not likely to adversely affect, the federally-listed endangered Indiana bat (*Myotis sodalis*). Given the project location, linear nature, and the timing of tree removal (October 1 through March 31), we do not anticipate any measurable impacts to the Indiana bat. Therefore, we concur with your determination. The NYSDOT has also determined that the proposed project will result in no effects to the federally-listed threatened bog turtle (*Clemmys muhlenbergii*) and the federal candidate species for listing, the New England cottontail (*Sylvilagus transitionalis*), as no suitable habitat occurs in the area for these species.

Therefore, at this time, no further coordination or consultation under the ESA is required with the U.S. Fish and Wildlife Service (Service). Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered. The most recent compilation of federally-listed and proposed threatened and endangered species in New York is available for your information. Until the proposed

project is complete, we recommend that you check our website every 90 days from the date of this letter to ensure that listed species presence/absence information for the proposed project is current.*

The above comments pertaining to endangered species under our jurisdiction are provided pursuant to the ESA. This response does not preclude additional Service comments under other legislation.

The above-listed species are also listed by the state of New York. Any additional information regarding the proposed project and its potential to impact listed species should be coordinated with both this office and with the New York State Department of Environmental Conservation.

Thank you for your time. If you require additional information or assistance please contact Steve Sinkevich at (631) 286-0485.

Sincerely,

David A. Stilwell
Field Supervisor

*Additional information referred to above may be found on our website at:
http://www.fws.gov/northeast/nyfo/es/section7.htm

cc: NYSDEC, Wildlife Diversity, Albany, NY (C. Herzog)
NYSDOT, Albany, NY (D. Hitt)