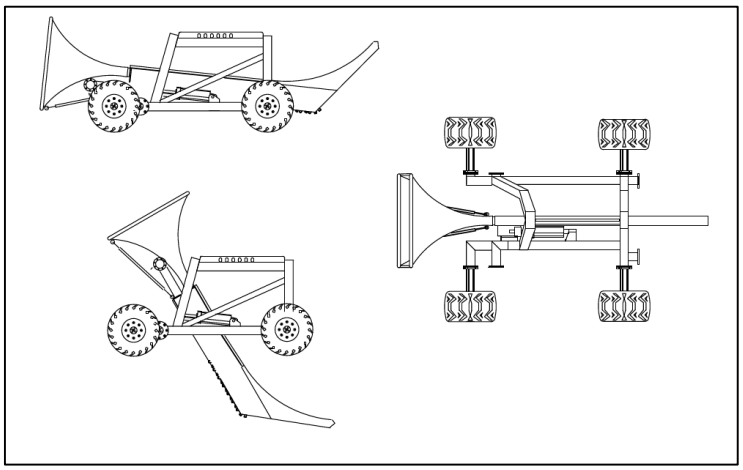
Appendix H

HP-VI, Hydroplow 4 Cable Burial Machine

HP-VI, Hydroplow 4 Cable Burial Machine 01/12/10



General
Manufacturer: Prysmian Power Cables & Systems Submarine Group
Type : Towed
Work Capabilities: Cable Embedment

Operating Depth
50m

HP and Propulsion
Towed by a support vessel propelled with dynamic positioning or kedging on anchors
Buoyancy and Ballast: variable with attachments

Systems:

Cameras / Video / Lighting / Sonars
Full Telemetry System
Navigation / Tracking*:* Heading sensor, water depth sensor, ground speed indicator, cable tracking

Dimensions / Structure
Length: 7m, typical

Breadth: 5m, typical
Depth: 5m, typical
Weight in air: 1890Kg
Structure: Welded tubular steel
Frame: A36 steel
Fittings 304 stainless steel

Typical Speed 50-200 m/hr

Number of Units Built: 3, w-various stingers & access's

Shipboard Support
Deployment system: Ship's crane

Support ship requirements: Deck area 8m x 6m x 6m (typical)
Vehicle power requirements 10gpm hydraulic, low voltage electricity for video and telemetry
Operating/maintenance 3 persons

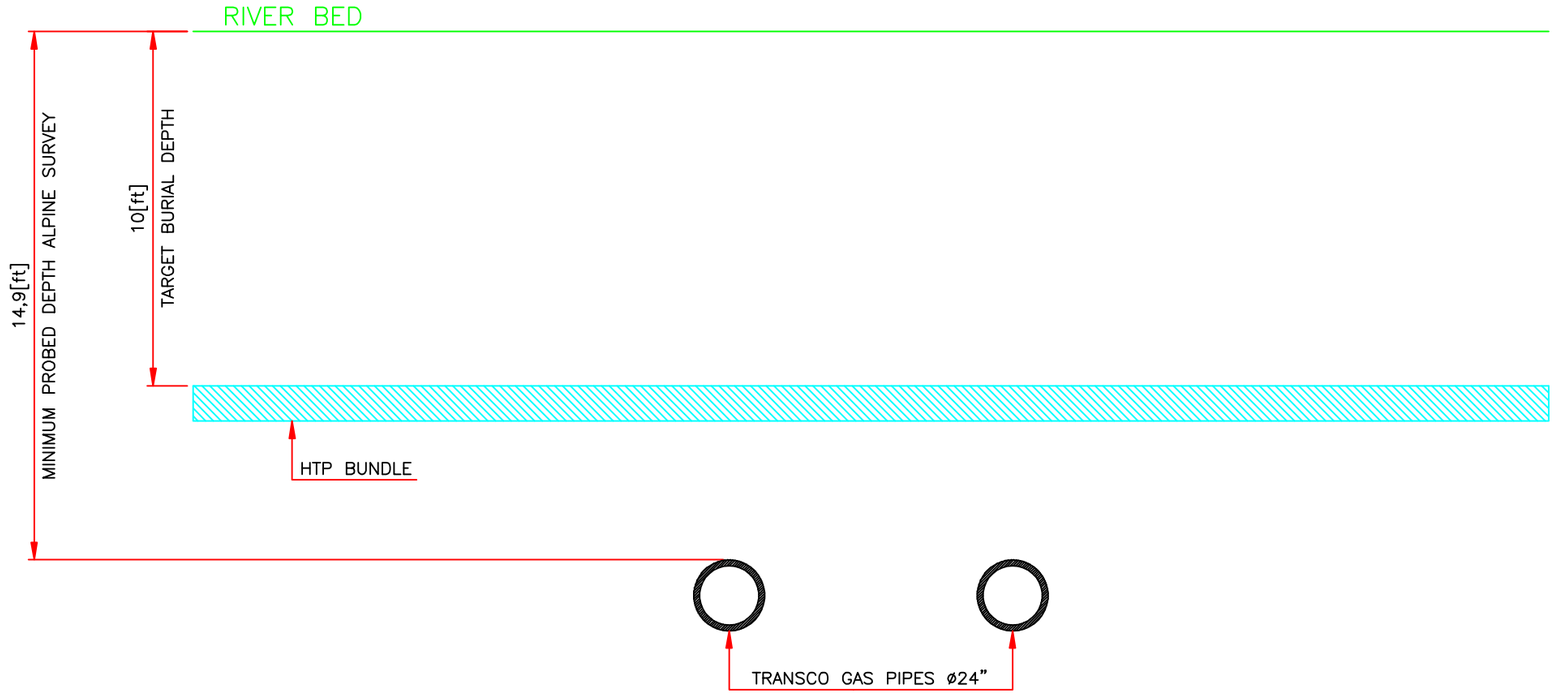
Additional Data

1. The working principle for the Hydroplow VI is to fluidize the seabed materials in a narrow path and to a predetermined depth without displacing the majority of the material or turbidizing the surrounding waters beyond 5m. The method has been positively proven to place fiber optic cables and power cables at a consistent required depth of embedment in all jettable bottom conditions. The Hydroplow IV is towed by a support vessel propelled with dynamic positioning or kedging on anchors. The fluidizing effect provides relatively low and controlled towing forces.
2. Model built for Hudson Project – Coverage depth capability of 15ft.
3. Accessory options available include: Deep-water skid base frame.

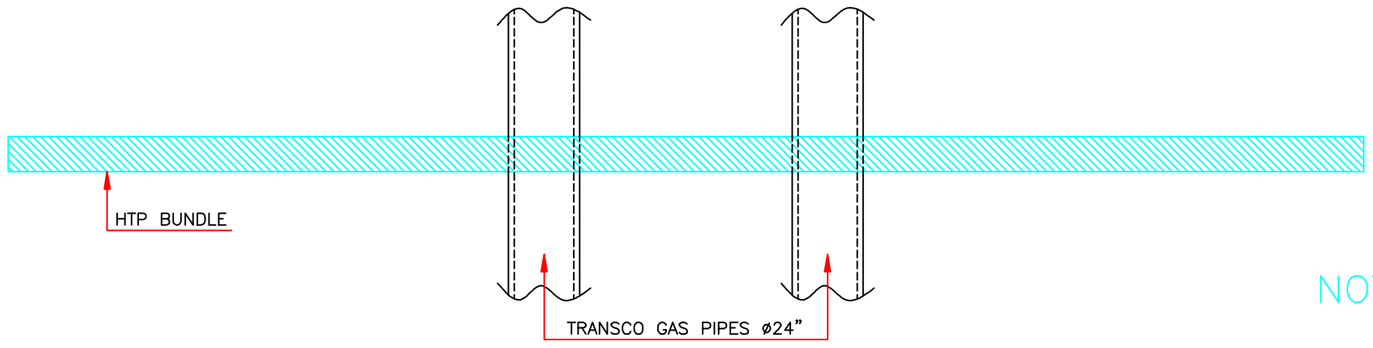
Appendix I

Proposed Utility Crossing Method

PROFILE



PLAN



NOTE: – DRAWING NOT IN SCALE

REVISIONS						
	0	01-07-11	FIRST ISSUE	M.A.	M.R.	
	N.	Date:	Description:	Prepared:	Checked:	Approved:

PRYSMIAN

PROJECT : HUDSON PROJECT

DOCUMENT TITLE : PRYSMIAN PROPOSAL FOR TRANSCO PIPES CROSSING

Dis N° : B-006-0055

Drawn : M.A.

Checked : M.R.

Date : 01-07-11

Scale : //

A3

Appendix J

Plan to Avoid or Further Assess Potentially Significant Submerged Targets Along the Submarine Cable Route in New York Waters (Letter Dated July 23, 2010)

ESS Group, Inc.

Engineers
Scientists
Consultants

888 Worcester Street
Suite 240
Wellesley
Massachusetts
02482
p 781.431.0500
f 781.431.7434

July 23, 2010

Mr. Douglas P. Mackey
Historic Preservation Program Analyst
New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, P.O. Box 189
Waterford, New York 12188-0189

Re: Plan to Avoid or Further Assess Potentially Significant Submerged Targets Along the Submarine Cable Route in New York Waters
Hudson Transmission Project
New York County, New York
OPRHP No. 08PR00413; NYSPSC Case 08-T-0034

Dear Mr. Mackey:

This letter provides information on how the 17 submerged targets that were identified within the 200-foot-wide route corridor surveyed for the proposed Hudson Transmission Project (the Project) as possible cultural resources will be avoided and also includes plans for evaluating any that cannot be avoided. Avoidance of the 17 targets, 16 of which are in New York waters of the Lower Hudson River (with one on the New York-New Jersey border) was recommended by the Project marine archeologist in the report cited below. The report was previously provided to New York State Office of Parks, Recreation and Historic Preservation (OPRHP) for review and comment. Background information from that report is summarized below, followed by commitments by Hudson Transmission Partners, LLC (HTP), to avoid or further investigate the targets prior to construction.

BACKGROUND

The Project is a proposed 660 MW electric transmission single-cable bundled system across the Lower Hudson River from Edgewater, New Jersey to the existing Consolidated Edison West 49th Street substation in midtown Manhattan. Those portions of the Project in New York State are undergoing review by the New York State Public Service Commission (NYSPSC) under Article VII of New York State Public Service Law, with concurrent review by the New York District of the United States Army Corps of Engineers (USACE). Cultural resource assessments were conducted of the Upland and Submarine components of the Project in New York and New Jersey, to assist in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and applicable New York and New Jersey state laws. The following two cultural resource reports were submitted to OPRHP in January 2008:

- ***Phase 1A Cultural Resources Reconnaissance of the Upland Component of the New York Portion of the Hudson Transmission Project, New York County, New York,*** dated October 2007 and prepared by John Milner Associates, Inc.

- ***Submerged Cultural Resources Review of Geophysical Data for the Hudson Transmission Project, New York County, New York and Bergen and Hudson counties, New Jersey***, dated October 2007 and prepared by Dolan Research, Inc. This report included assessment of the submarine portions of the Project in New York and New Jersey waters, and was also submitted to the New Jersey Department of Historic Preservation.

By letter dated February 11, 2008, OPRHP found "no concerns regarding historic buildings or structures, or archeological resources in the Upland section of the project" in New York State (Douglas Mackey, OPRHP, February 11, 2008).

Also in that letter, OPRHP "concurs with the recommendations of the Submerged resources report that the 17 identified targets that might be cultural resources should be avoided". These potential cultural resources were identified by a marine archeologist at Dolan Research, Inc. during review of data collected during the Project's remote sensing geophysical survey of the route corridor. The data included magnetic anomalies of ferrous materials on or under the seafloor and/or sidescan sonar (acoustic) signatures of bottom features within the survey corridor.

The marine archeologist found that the 17 targets had signatures that may be associated with submerged cultural resources. The report stated that "While none of the target locations appear to be an intact shipwreck site, the targets may represent cultural material from shipwreck sites, such as anchors, machinery, or sections of hull" (Dolan Research Inc., 2007, page 11). "If any of these targets cannot be avoided during cable installation, additional investigation is recommended to determine if they are associated with significant cultural resources" (Ibid, Abstract page). Dolan recommended the targets be avoided by the direct plow zone of the jet plow during cable installation. This Area of Potential Effect (APE) was defined as "the maximum area of disturbance at the seabed surface [which] will generally be less than 20 feet wide (the area disturbed by the pontoon-mounted sled supporting the jet plow)" (Ibid, page 18).

PLAN TO AVOID OR FURTHER ASSESS CULTURAL SIGNIFICANCE OF SUBMERGED TARGETS

As has been the practice in other recent submarine cable projects, following issuance of the Article VII Certificate by the NYSPSC, a pre-construction survey will be conducted along the route corridor. The cable route will then be finalized within the surveyed corridor by cable engineers. HTP will design the final cable route to avoid impacts to the 17 submerged targets to the extent feasible. After the survey but prior to construction, HTP will file with the NYSPSC and issue for comment by interested agencies, including OPRHP, an Environmental Management and Construction Plan (EM&CP) for the submarine route.

The following clause is included in the draft Article VII Certificate Conditions proposed by both HTP and Department of Public Service (DPS) for the Project:

28. The Certificate Holder shall address at least the following information in the EM&CP:

...(v) plans for avoidance of impacts to potential underwater archeological Resources

The EM&CP will contain all agreed-upon compliance and mitigation measures pertinent to Project construction, and will include detailed cable route plans showing avoidance of the 17 submerged targets, as feasible, within the surveyed corridor. HTP commits that the EM&CP will also describe the methodology and results of further investigation and assessment of historic significance by a qualified marine archeologist of those targets, if any, which could not be avoided (including field inspection, if warranted), in consultation with OPRHP. If any targets that cannot be avoided are found to meet criteria for eligibility to the National Register of Historic Places (i.e. be significant cultural resources), HTP will consult with OPRHP to develop measures to minimize or mitigate impacts to those resources. After a 30-day comment period, HTP will make any required adjustments to the EM&CP. The EM&CP must be accepted by the NYSPSC before construction can start.

Other Article VII Certificate Conditions pertaining to protection of cultural resources during construction are:

CULTURAL RESOURCES

Condition 51: *Should archeological materials be encountered during construction, the Certificate Holder shall stabilize the area and cease construction activities in the immediate vicinity of the find and protect the same from further damage. Within twenty-four hours of such discovery, the Certificate Holder shall notify DPS Staff and the New York State Office of Parks, Recreation and Historical Preservation (OPRHP) to determine the best course of action. No construction activities shall be permitted in the vicinity of the find until such time as the significance of the resource has been evaluated and the need for and scope of impact mitigation has been determined.*

Condition 52: *Should human remains or evidence of human burials be encountered during the conduct of archeological data recovery fieldwork or during construction, all work in the vicinity of the find shall be immediately halted and the remains shall be protected from further damage. Within twenty-four hours of any such discovery, the Certificate Holder shall notify the DPS Staff and OPRHP. All archaeological/burial encounters and their handling shall be reported in the status reports required by Condition 50, above.*

Condition 53: *The Certificate Holder shall refrain from undertaking construction in areas where cultural resource surveys have not been completed and until such time as the results of any additional cultural resource surveys that are required have been reviewed by the appropriate authorities, including OPRHP and DPS Staff. DPS Staff shall be contacted prior to commencement of construction in any such areas.*

SUMMARY

We believe that Article VII Certificate Conditions 28(v), 51, 52, and 53, together with the post-Certification survey, careful consideration of the targets during final routing, and the reporting of the results of avoidance or further assessment in the EM&CP, as described above, will ensure that the 17 identified potentially significant submerged cultural resources, as well as any unanticipated finds encountered during Project construction, are carefully and lawfully addressed by HTP. The Project will avoid, minimize or mitigate potential impacts to historically significant submerged cultural resources.

We respectfully request that you communicate your concurrence with our planned approach to the USACE project reviewer, Mr. Craig Spitz (copied below). Please contact me if I can provide additional information at (781) 489-1110 or sfaldetta@essgroup.com.

Sincerely,

ESS GROUP, INC.

Sarah K. Faldetta

Sarah K. Faldetta
Senior Scientist

C: Andrew Davis, NYSDPS
Craig Spitz, USACE—New York District
Christopher Hocker, HTP
John Dax, The Dax Law Firm, P.C.

Appendix K

Specification of Reel and Reel Trailer

RENTALS, SALES AND SERVICE NEW and USED • AERIAL PLATFORMS • DIGGER-DERRICK TRUCKS • SPECIALTY EQUIPMENT

MIRK # 101K

CHASSIS:
MIRK INC. 100,000 LB. REEL TRAILER
VIN NO. 1048595140100WBAB D.O.M. 04 / 03
VIRGINIA PERMANENT PLATE # 660-579 TR
8'6" OVERALL WIDTH COLLAPSED WIDTH
14'10" OVERALL WIDTH EXPANDED WIDTH
MAXIMUM REEL CAPACITY 14.5' TALL
MAXIMUM REEL WIDTH 9' WIDE
MAXIMUM REEL WEIGHT 100,000 LBS.
5" X 130" SPINDLE BAR W/ LOCKING COLLARS
8'6" REEL IS THE SMALLEST LOAD & DRIVE
EMPTY TRAILER WEIGHT 24,000 LBS.

JOHN DEERE 4020 D 44 HP - 4 CYL. DIESEL POWER
HYDRAULIC CONTROLS: LIFT TOWERS, EXPAND & RETRACT, TONGUE JACK, POWER RIM DRIVE, EXPANDING LIFT WHEELS, ADJ. FLOW CONTROL
DP24CDU RIM DRIVE MOTOR 24,000 INCH LBS.
18" X 7" ADJUSTABLE URETHANE DRIVE WHEEL
INDEPENDENT LIFT TOWERS FOR LEVELING
20.5 / R 25 MICHELIN RADIAL TIRES
25 X 17 BUDD RIM 10 HOLE 13 3/16 SPACING
ADJUSTABLE PINTLE HITCH H.D.

BODY:
OVERALL LENGTH 26'
50" GROUND TO FIRST LIFT NOTCH
113" OVER ALL HEIGHT
WALKING BEAM SUSPENSION 72" CENTER HUB
AIR BRAKES
4 –50 TON SPINDLE ACP. STUB AXLES
8" GROUND CLEARANCE

CALL US FOR ALL YOUR EQUIPMENT NEEDS:BUCKETS*DIGGERS*PULLERS*CRANES*SKIDDERS TRACK MACHINES*TRAILERS*CHIPPERS*REEL CARRIERS AND MUCH, MUCH MORE!!!!!!!!!

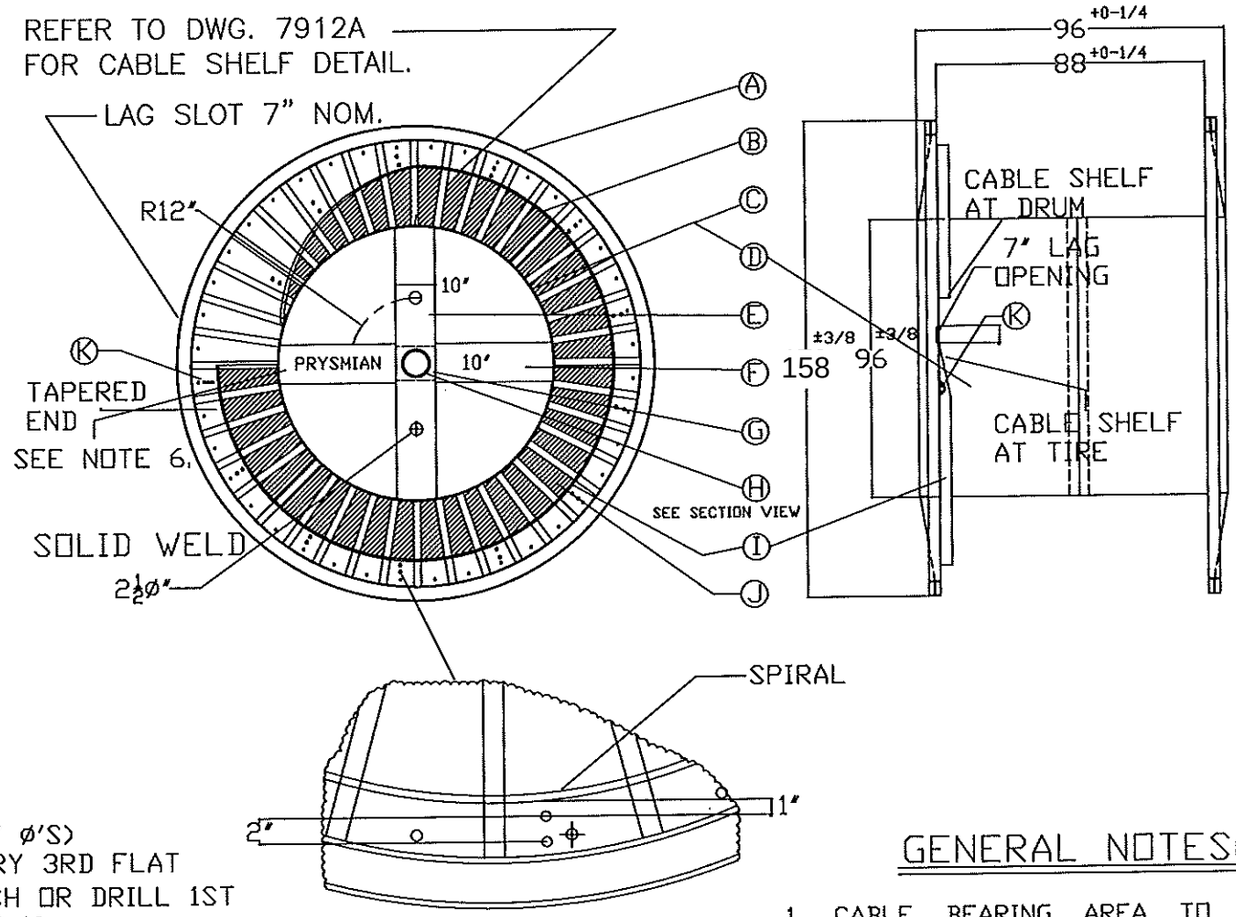
DATE ISSUE#

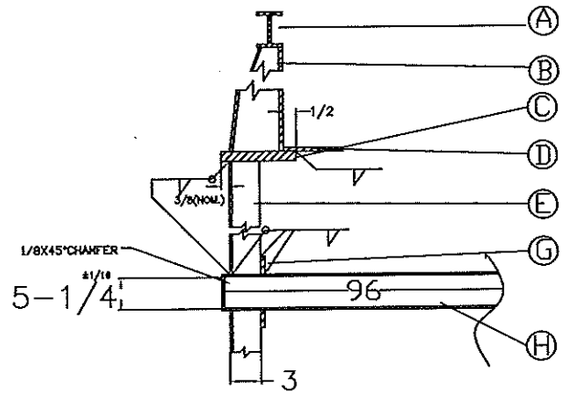
REVISION		
NUMBER	DATE	DESCRIPTION

REFER TO DWG 7912A FOR CABLE SHELF DETAIL

MAW OAW 96" SOLID WELD
SOLID WELD HDSHT JOINTS

OUTSIDE VIEW OF LEFT FLANGE





SECTION VIEW

(2 ½" Ø'S)
EVERY 3RD FLAT
PUNCH OR DRILL 1ST
HOLE 1"
ABOVE SPIRAL TO CENTER
OF HOLE
2ND HOLE 2" FROM
CENTER TO CENTER OF
1ST HOLE.
(HOLES TO FOLLOW 1"
ABOVE SPIRAL ALL THE
WAY TO DRUM)
HOLES CAN BE UNDER
OR BESIDE TOOLING HOLE

GENERAL NOTES:

1. CABLE BEARING AREA TO BE FREE FROM DENTS, SHARP EDGES, ALL WELD SPLATTER AND PROJECTIONS.
2. ALL WELDS TO BE CONTINUOUS UNLESS OTHERWISE NOTED.
3. APPROXIMATE REEL WEIGHT : 4413 #
4. CLEAN AND FINISH - DARK BLUE
5. 50,000 LB. CAPACITY
6. STENCIL PRYSMIAN ON SHORT CROSS ARM IN WHITE LETTERS

DETAIL	QTY	DESCRIPTION
O		
N		
M		
L		
K	1	TIE BAR 1/2" ROD X 2' O.D.
J	1	CABLE SHELF PLATE 12GA.
I	1	4 X 12GA. FLAT BAR CABLE SHELF
H	1	THRU HUB 5-1/4 I.D. X 5-3/4 O.D.
G	3	HUB PLATE 1/4
F	6	CROSS MEMBER SHORT 1/4
E	3	CROSS MEMBER LONG 1/4
D	1	DRUM 1/4
C	3	INNER RING - 3/8 X 4-1/2
B	2	HEAD SHEET 12 GA.
A	2	TIRE - S3 X 7.5

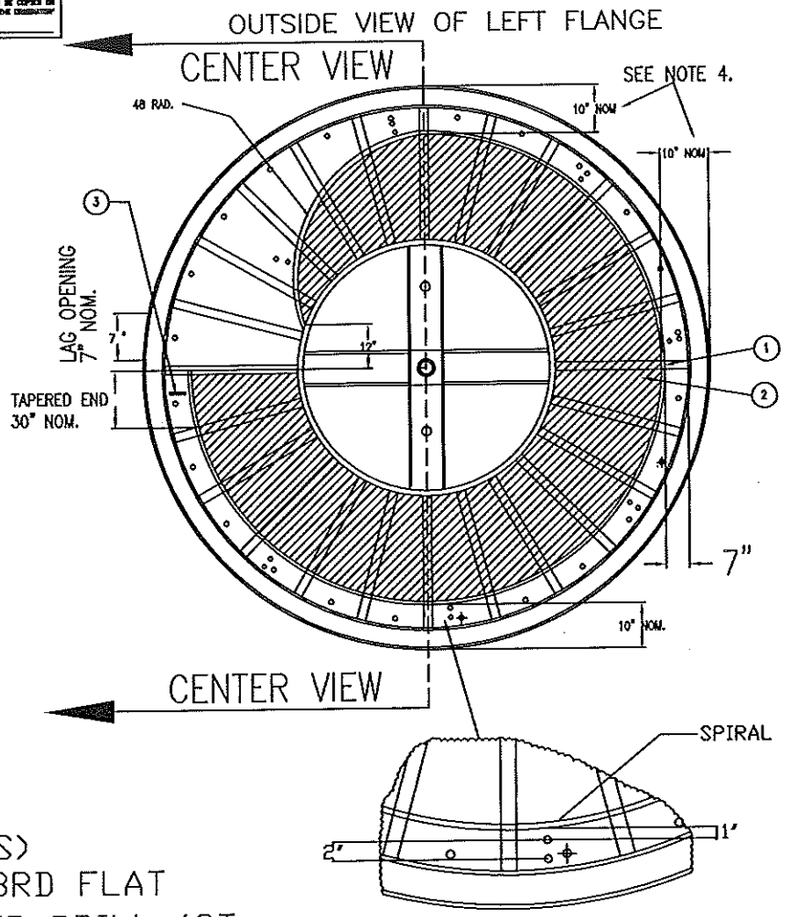
BILL OF MATERIALS

Mfg. By
METCO PLANT
P.O. BOX 577
HARTSELLE, AL 35640

SONOCO

TITLE: RMT - 158 X 88 X 96 W/SHELF PRYSMIAN

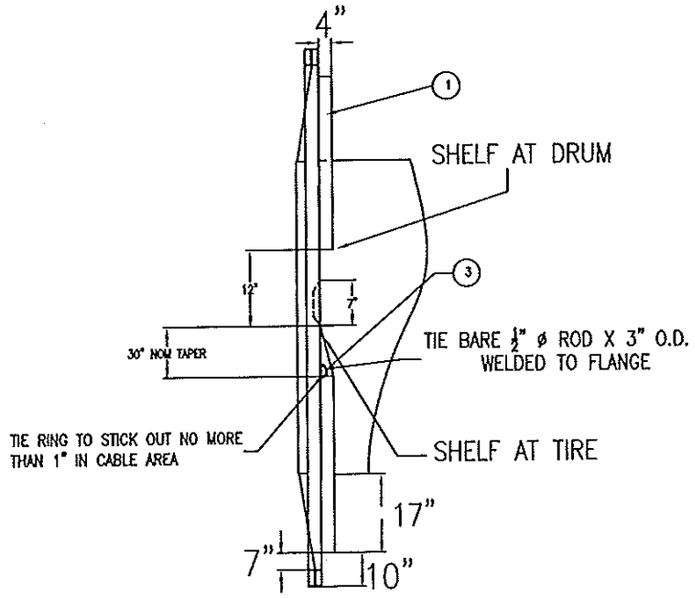
SCALE	DRAWN	CHECKED	ENGINEER	SIZE	DWG NO.	REV
NTS	S. Carpenter			D	7912	
DATE 9/16/10	SHEET 1 OF 1					



(2 ½" Ø'S)
EVERY 3RD FLAT
PUNCH OR DRILL 1ST
HOLE 1"
ABOVE SPIRAL TO CENTER
OF HOLE
2ND HOLE 2" FROM
CENTER TO CENTER OF
1ST HOLE.
(HOLES TO FOLLOW 1"
ABOVE SPIRAL ALL THE
WAY TO DRUM)
HOLES CAN BE UNDER
OR BESIDE TOOLING HOLE

GENERAL NOTES:

1. CABLE SHELF IS TO BE 4" FLAT BAR INSTALLED IN A SPIRAL AGAINST INSIDE OF LEFT FLANGE.
2. THE END OF SPIRAL IS TO BE TAPERED 30" NOM. AT LAG OPENING END.
3. THE SHELF IS TO START AGAINST THE REEL DRUM.
4. THE SHELF IS TO END 10" BELOW THE TIRE AT A POINT BEYOND THE LAG OPENING IN THE TIRE.
5. SHELF PLATE TO BE SOLID WELDED TO DRUM AND SHELF.
6. ALL EDGES AND WELDS THAT COME IN CONTACT WITH THE CABLE TO BE SMOOTH AND RADIUSED.



DETAIL	REQ'D	DESCRIPTION
3	1	TIE BAR 1/2" ROD X 2" O.D.
2	1	CABLE SHELF PLATE 12GA.
1	1	TRAY 4" 12GA. FLAT BAR

BILL OF MATERIALS

Mfg. By
METCO PLANT
P.O. BOX 577
HARTSELLE, AL 35640
SONOCO

CABLE SHELF
FOR 150 X 88 X 96 REEL
PRYSMIAN

SCALE	DRAWN	CHECKED	DESIGNER	SIZE	DWG. NO.
NONE	S.Carpenter			D	7912 A
DATE 9/16/10	SHEET 1 OF 1				

Appendix L

Pre- and Post-Installation Benthic Monitoring Plan

PRE- AND POST- INSTALLATION BENTHIC MONITORING PLAN
HUDSON TRANSMISSION PARTNERS, LLC
JULY 2011

I. INTRODUCTION

Hudson Transmission Partners, LLC (HTP) holds a Certificate of Environmental Compatibility and Public Need for the construction and operation of the New York State portion of a controllable 660 MW 345kV transmission line that will extend from Ridgefield New Jersey to New York City. Its principal physical features include:

- An interconnection with the regional Pennsylvania-Jersey-Maryland ("PJM") grid and a 230 kV underground cable 1,760 feet from the Bergen substation to a converter station where the alternating current will be converted first to direct current and back to alternating current at 345 kV for transmission to New York;

- A submarine power transmission cable that will extend for a distance of approximately 4 miles (3.3 miles in New York waters) buried below the Hudson River bottom, to a landfall point west of the pier line and north of Pier 92;

- An upland power transmission cable system, which includes an underground fluid vault and 345kV underground cable that will extend underground for a distance of approximately 0.2 miles on West 52nd Street and 12th Avenue to the entrance of Consolidated Edison's West 49th Street Substation where the transmission facility terminates.

Benthic invertebrate communities are an integral part of the marine ecosystem and consist of a wide array of micro and macro-organisms which inhabit the sediment-water interface or burrow below the sediment. Through suspension and deposit feeding, benthic organisms cycle nutrients from the sediment and water column to higher trophic levels. The sediment is modified by the benthos through bioturbation and formation of fecal pellets (Wildish and Kristmanson, 1997).

Benthic organism life strategies and sediment characteristics are tightly coupled. The distribution of abundance of benthic invertebrates is largely influenced by physical and chemical parameters (substrate, water temperature, dissolved oxygen, pH, salinity, hydrodynamics, and nutrients). Benthic organisms are useful in providing information about micro-habitat conditions and habitat quality because they generally have limited mobility and have small home ranges; hence their ability to inhabit a given area will largely depend on their ability to survive the local environmental conditions. For this reason, abundance, diversity, and composition of benthic species are good indicators of habitat disturbance and pollution.

When an area is disturbed, either naturally or as a result of marine construction, the benthic community is often the first to reestablish. Thus, it is important to understand how sediment disturbance may impact the benthic community and to also understand the timing of reestablishment.

The following benthic monitoring plan was developed and will be conducted as related to Certificate Condition 47 (b) of the New York State Public Service Commission (NYSPSC) Order Granting Certificate of Environmental Compatibility and Public Need (the Certificate) issued and effective 15 September 2010 (Case 08-T-0034), the 401 Water Quality Certificate, and the United States Army Corps of Engineers permit (NAN-2008-00732). The purpose of this plan is to document the benthic community along the cable route to assess the potential impacts associated with cable installation.

II. FIELD SAMPLING

Benthic grab samples will be collected at 5 locations along the cable route in New York waters during both pre (September 2011) and post (September 2012) installation surveys. Station locations will be documented by GPS so that the same locations are sampled during each survey. At each location, four benthic grab samples will be collected; two samples within 100' and two samples within 200' on either side of the cable. A 0.1 m^2 Smith-McIntyre Grab will be used to obtain the benthic samples. Each sample will be inspected for acceptability (at least 75% full; no signs of leakage; undisturbed sediment surface) and the sampler will be redeployed if the sample is unacceptable. The sediment will be washed through a 1 mm mesh sieve and the sample material preserved for laboratory sorting and analysis. Each sample will be documented in the field including, location, time, date, weather conditions, water depth, sediment color, sediment odor, visual sediment texture, estimated grab volume and any comments regarding sampling conditions. Water quality parameters: salinity, dissolved oxygen, conductivity and temperature will be measured at each sampling location with calibrated meters.

III. LABORATORY ANALYSIS

Benthic grab samples will be analyzed for species composition and abundance. In the laboratory, organisms will be sorted from the remaining debris, identified and enumerated. Identifications will be made to the lowest practical identification level when not to the species level. Strict quality control (QC) procedures consisting of a Continuous Sampling Plan (CSP) to assure an Average Outgoing Quality Limit (AOQL) of 0.1% (90% accuracy) will be followed during sampling and sorting, enumeration and identification. When number of organisms in a sample are large (>500) sub-sampling will be conducted using a sampling tray with 30, 6 cm x 6 cm grids. Organisms in randomly selected grids will be counted until the total number or organisms removed and

sorted is >100; or the entire sample is sorted. Selected squares will be sorted in their entirety, even after the 100-organism count is reached.

The post-installation benthic macroinvertebrate survey will be conducted in September 2012 and will repeat the sampling collection and analysis described above.

IV. DATA ANALYSIS AND REPORTING

Benthic community data will be graphically and statistically analyzed to determine and depict patterns of abundance and community diversity among the individual sampling stations and over time (pre-installation vs. post-installation). Benthic abundance (density) will be calculated and biodiversity will be measured via three community indices: taxa richness, the Shannon-Wiener Diversity Index (H'), and Pielous's evenness (or equitability) Index (J'). A two-way Analysis of Variance (ANOVA) will be used to test for significant differences in benthic abundance and species richness among groups of sample means from individual sampling stations, and over time (pre- and post-installation surveys). Benthic abundance and diversity data will be transformed, as needed, to meet normaility assumptions for the ANOVA. In addition, the ratio of pollution/disturbance tolerant taxa vs. intolerant taxa will be calculated and compared among individual sampling stations and over time (pre- vs. post-installation).

A report summarizing the results of the pre- and post-installation benthic macroinvertebrate surveys will be provided to DPS and DEC. The report will characterize and compare the existing (pre-) and/ or post-installation habitat conditions and benthic community proximate to the cable route. The draft study report will be provided six months after the post-installation survey. The final report will be provided within six weeks of receiving comments from regulatory agencies.

V. LITERATURE CITED

Wildish, D. and D. Kristmanson. 1997. Benthic Suspension Feeders and Flow. Cambridge University Press.

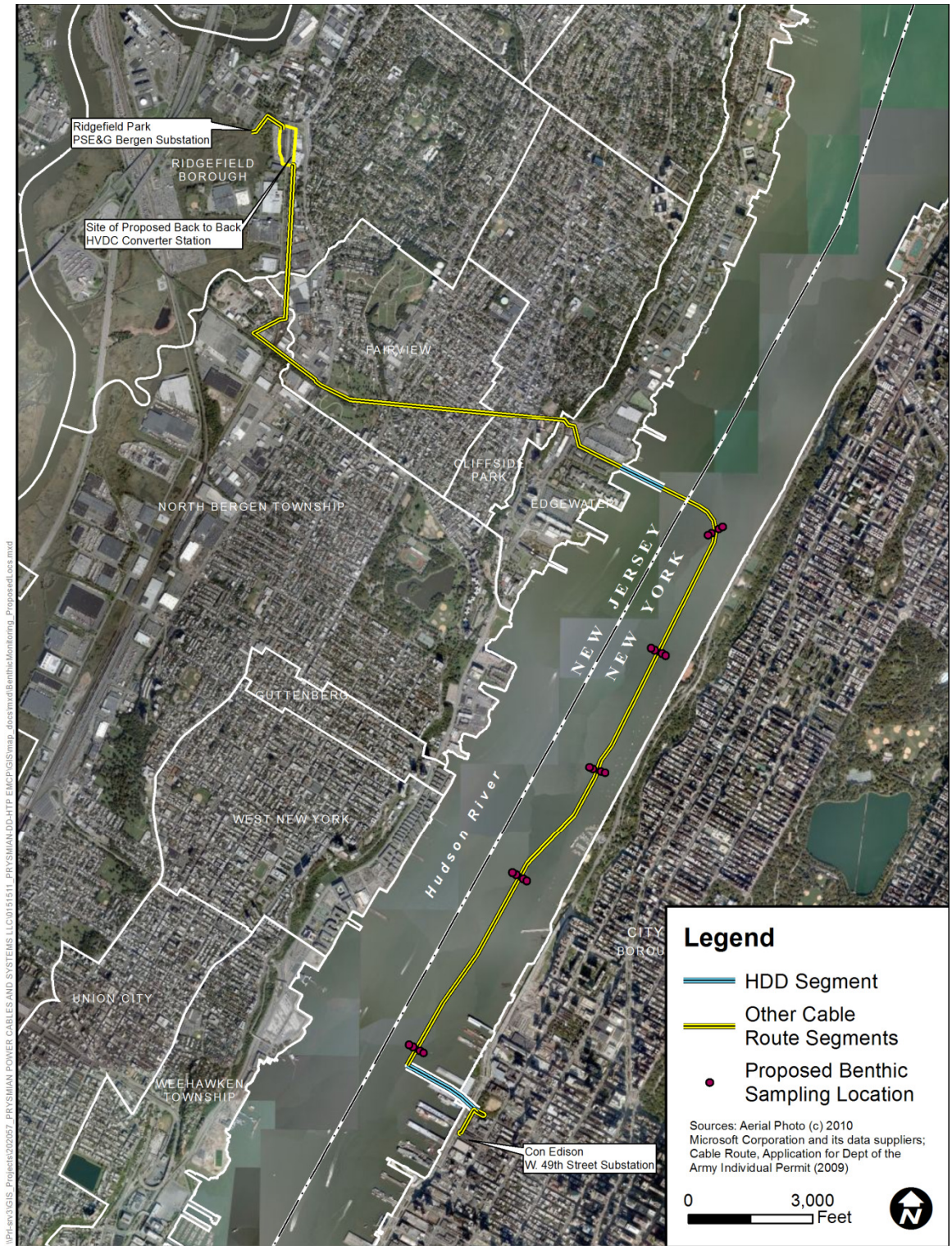


Figure 1. Proposed pre- and post-installation benthic sample locations.

Appendix M

Pre- and Post-Installation Sediment Monitoring Plan

PRE- AND POST- INSTALLATION SEDIMENT MONITORING PLAN
HUDSON TRANSMISSION PARTNERS, LLC
JULY 2011

I. INTRODUCTION

Hudson Transmission Partners, LLC (HTP) holds a Certificate of Environmental Compatibility and Public Need for the construction and operation of the New York State portion of a controllable 660 MW 345kV transmission line that will extend from Ridgefield New Jersey to New York City. Its principal physical features include:

- An interconnection with the regional Pennsylvania-Jersey-Maryland ("PJM") grid and a 230 kV underground cable 1,760 feet from the Bergen substation to a converter station where the alternating current will be converted first to direct current and back to alternating current at 345 kV for transmission to New York;

- A submarine power transmission cable that will extend for a distance of approximately 4 miles (3.3 miles in New York waters) buried below the Hudson River bottom, to a landfall point west of the pier line and north of Pier 92;

- An upland power transmission cable system, which includes an underground fluid vault and 345kV underground cable that will extend underground for a distance of approximately 0.2 miles on West 52nd Street and 12th Avenue to the entrance of Consolidated Edison's West 49th Street Substation where the transmission facility terminates.

The following sediment monitoring plan was developed and will be conducted as related to Certificate Condition 47 (a) of the New York State Public Service Commission (NYSPSC) Order Granting Certificate of Environmental Compatibility and Public Need (the Certificate) issued and effective 15 September 2010 (Case 08-T-0034), the 401 Water Quality Certificate, and the United States Army Corps of Engineers permit (NAN-2008-00732).

During submarine cable installation, there is the potential for chemical contaminants found within the sediments to be redistributed. A pre- and post-installation sediment sampling survey along the cable route in accordance with, Certificate Condition 47(a) will be conducted to collect data regarding the potential redistribution of chemical contaminants.

II. SEDIMENT SAMPLE COLLECTION

Surficial sediment samples (top 2 cm) will be collected and analyzed prior to (September 2011) and subsequent to cable installation (November 2011). Samples will be collected

at five locations along the cable route. Samples will be collected from four stations at each sampling location. The four samples will be distributed 50 m and 100 m upstream and downstream of the cable (see Figure 1). Sediment sampling will be distributed so that both the potential longitudinal movement and the lateral spread of contaminants can be documented. The sampling locations and the distribution of the four samples will be the same during pre- and post-installation surveys. Pre-installation sample locations will be recorded using a Global Positioning System (GPS). These coordinates will be used for post-installation sample locations.

Surficial samples will be collected using a Smith McIntyre grab. After each sampler deployment the sediment will be accessed through the top of the grab sampler. The top 2 centimeters (cm) of sediment will be removed from the sample, using a stainless steel sample spatula, and placed in laboratory provided glassware (sample jars) for chemical analyses [in accordance with Certificate Condition 47(a)]. A log will be prepared for each sample to document sediment conditions and will include: material type, composition, color, distinctive characteristics, and any visual or olfactory evidence of contamination. The logs will additionally document the date, time and location of each sample collected.

QC samples will be collected at the following frequencies:

- Duplicate: Duplicate samples will be collected at a frequency of 1 per 10 samples. Samples collected for duplicate analyses will be homogenized in a stainless steel mixing bowl with a stainless steel sample spatula until the sample is uniform in color and texture. The homogenized sediment sample will then be split in the field by simultaneously filling the jars provided for the sample and duplicate. Duplicate samples will be submitted blind to the laboratory.
- Matrix Spike and Matrix Spike Duplicate (MS/MSD): MS/MSD samples will be collected at a frequency of 1 per 20 samples. MS/MSDs will be split in the field. The MS and MSD samples will be submitted under the appropriate sample station identification and noted as MS and MSD on the chain of custody.

Once filled, all sample jars will be capped and kept at 4°C. Sample containers will be labeled using a permanent marker to indicate the date, time, and sample identification. Samples will be transported under chain-of-custody protocol within the allowable holding times for analyses at a NYSDOH-Certified Environmental Laboratory Accreditation Program (ELAP) Laboratory.

III. LABORATORY ANALYSIS

Sediment samples will be analyzed for the following in accordance with Certificate Condition 47(a):

- Arsenic using the Environmental Protection Agency (EPA) method 6010B,
- Cadmium using EPA method 6010B,
- Copper using EPA method 6010B,

- Lead using EPA method 6010B,
- Mercury using EPA method 7470,
- Total PCBs (sum of 22 congeners) following the USACE/Environmental Protection Agency (EPA) Regional Testing Manual for Dredged Materials, and
- Total Polycyclic Aromatic Hydrocarbons (PAHs) using EPA method 8270

The pre- and post- installation survey samples will be analyzed using the same laboratory and procedures.

IV. REPORTING

A report will be prepared that includes documentation of the sediment sampling program and analytical and QC laboratory results for each sample. The pre- and post- installation monitoring report will be submitted to DEC and DPS and include a comparison between pre- and post-surficial sediment concentrations along the route. A draft report will be available within three months of the post-installation survey and finalized within six weeks of receiving comments on the draft report.

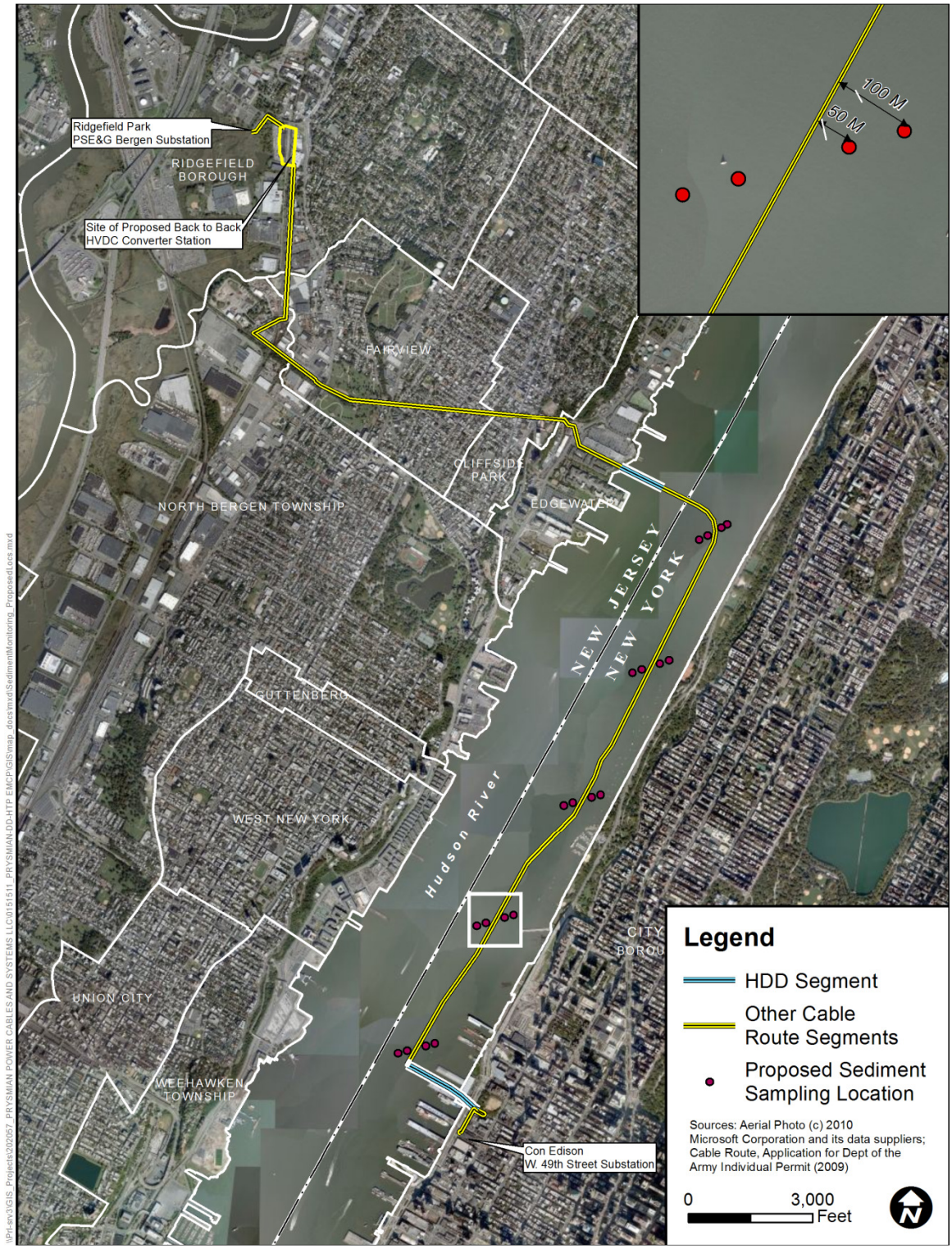


Figure 1. Proposed pre- and post-installation sediment sampling locations

Appendix N

Benthic Mitigation Plan

BENTHIC MITIGATION PLAN
HUDSON TRANSMISSION PARTNERS, LLC
JULY 2011

I. INTRODUCTION

Benthic organism life strategies and sediment characteristics are tightly coupled. The distribution of abundance of benthic invertebrates is largely influenced by physical and chemical parameters (substrate, water temperature, dissolved oxygen, pH, salinity, hydrodynamics, and nutrients). Benthic organisms are useful in providing information about micro-habitat conditions and habitat quality because they generally have limited mobility and have small home ranges; hence their ability to inhabit a given area will largely depend on their ability to survive the local environmental conditions. For this reason, abundance, diversity, and composition of benthic species are good indicators of habitat disturbance and pollution.

When an area is disturbed, either naturally or as a result of marine construction, the benthic community is often the first to reestablish. Thus, it is important to understand how sediment disturbance may impact the benthic community and to also understand the timing of reestablishment. Physical habitat and benthic recovery is expected to begin shortly after cable installation. Many benthic species, via planktonic larvae, have evolved reproductive strategies focused on colonizing newly created or recently disturbed substrates. Other mobile benthic species will colonize the disturbed sediments from adjacent undisturbed areas. Functional habitat can develop within weeks in some communities and full functionality can return on the order of one year (Newell et. al 1998).

The benthic sampling plan (Certificate Condition 47b) calls for pre- and post-installation benthic sampling at five locations along the route. At each location, four benthic grab samples will be collected; two samples within 100' and two samples within 200' on either side of the cable. The samples collected within 200'of the cable route will serve as controls in an analysis of community change to be used to estimate differences for the purpose of establishing the need for and magnitude of mitigation.

Benthic community data will be graphically and statistically analyzed to determine and depict patterns of abundance and community diversity among the individual sampling stations and over time (pre-installation vs. post-installation). Benthic abundance (density) will be calculated and biodiversity will be measured via three community indices: taxa richness, the Shannon-Wiener Diversity Index (H'), and Pielous's evenness (or equitability) Index (J'). A two-way Analysis of Variance (ANOVA) will be used to test for significant differences in benthic abundance and species richness among groups of sample means from individual sampling stations, and over time (pre- and post-installation surveys). Benthic abundance and diversity data will be examined for normality, homogeneity of variance and independence in order to meet assumptions for the ANOVA. If violations are found, appropriate corrective actions will be taken. In addition, the ratio of pollution/disturbance tolerant taxa vs. intolerant taxa will be

calculated and compared among individual sampling stations and over time (pre- vs. post-installation).

The following mitigation plan was developed to determine the need for potential mitigation due to unanticipated impacts to the benthic community (i.e. a significant change in community abundance or structure) and the plan will be implemented, if needed, as related to Certificate Condition 47 (c) of the New York State Public Service Commission (NYSPSC) Order Granting Certificate of Environmental Compatibility and Public Need (the Certificate) issued and effective 15 September 2010 (Case 08-T-0034), the 401 Water Quality Certificate, and the United States Army Corps of Engineers permit (NAN-2008-00732).

II. MITIGATION PLAN

If the initial analysis of data from the pre- and post-installation plan indicates a significant change (interaction effect, $p > 0.05$) in basic community structure, or a change in a major component of the community, particularly organisms that may require more time for natural recovery, a second year of post-installation benthic sampling and analysis will be conducted following the same sampling protocol. If significant changes are found following two years of sampling, a mitigation plan will be developed to offset this unanticipated project impact. If needed, funding for mitigation could focus on the following types of mitigation: habitat improvement, habitat enhancement and shellfish restoration.

Significant changes to the value of the benthic community as a food resource for fishes can be represented by a change in overall abundance and community structure and more qualitatively in terms of the loss or gain in individual species that are important in the diet of selected fish species, including selected size classes of the important species. The magnitude of mitigation, if needed, will be based on the estimated magnitude of change qualified by a consideration of the resource value of individual benthic species or recognized high value benthic communities.

Because the impact area is very small in relation to the overall benthic habitat in the Hudson River, a baseline of a total loss of the benthic community would represent the maximum mitigation that could be needed. Benthic community recovery will reduce this theoretical maximum, thus the magnitude of mitigation, if needed, can be a percentage of the maximum based on the estimated change qualified by the occurrence or loss of important species or community types.

III. LITERATURE CITED

Newell, R.C., L.J. Seiderer and D.R. Hitchcock, 1998. "The Impact of Dredging Works in Coastal Waters: A Review of the Sensitivity to Disturbance and Subsequent Recovery of Biological Resources on the Sea Bed." Oceanography and Marine Biology: An Annual Review, pp 36 and 127-178.