GEI Consultants

Geotechnical
Environmental and
Water Resources
Engineering

July 11, 2013
Project 116820

VIA EMAIL: sxdeyett@gw.dec.state.ny.us

Mr. R. Scott Deyette
Chief, Inspection Unit
Remedial Bureau
625 Broadway
Albany, New York 12233-7014

Re: Fort Edward Former MGP
Fort Edward, Washington County
Site # V00472
Remedial Design Modification Response

Dear Mr. Deyette:

On behalf of National Grid, GEI Consultants, Inc., P.C. has reviewed your comments on the Remedial Design for the Fort Edward Former Manufactured Gas Plant (MGP) Site dated July 2, 2013. The following responses are offered for your consideration:

1.) Specification Section 31-23-19, Dewatering: In 3.2A, the text refers to Specification Section 44-01-40, Operation and Maintenance of Water Treatment Equipment; however, this specification section is not included. Please provide this specification in the revised report.

Response: This specification section was removed from the design set due to the low volume of anticipated dewatering. National Grid preferred to store the water on-site, test the water, and dispose of it at an approved facility. The paragraph referenced now reads:

"3.2 SAMPLING AND ANALYSES
A. Water sampling and analysis will be performed by the Contractor in accordance with the disposal facility requirements."

2.) Drawing 3, Erosion and Sediment Controls: The location of the Anti-Tracking Pad (Detail 3/7) should be at the Canal Street entrance to prevent any material from being tracked offsite.

Response: Prior to remediation, a permanent improved access road will be constructed across the site. The reasoning for the placement of the Anti-Tracking Pad at the end of this access road is to prevent possibly contaminated soil from being tracked across the National Grid property, which has already been remediated. The permanent improved access road will be made of Item 304, which should preclude any material from being tracked onto

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Canal Street. The contractor will be instructed that no material shall be tracked onto Canal Street.

3.) Drawing 5, Material Management Plan: For Soil, the last two boxes should be removed since there is no reuse of soil in-site.

Response: Agreed. The two boxes have been removed from the drawing.

4.) Drawing 7, Details: For Detail 2/7, Project Sign, change the phone number to 402-9662.

Response: The Detail 2/7, Project Sign, has been changed to the new phone number, 518-402-9662.

We look forward to your approval of the aforementioned changes to the specifications and drawings for the Fort Edward Former MGP Remedial Design.

Sincerely,

GEI CONSULTANTS, INC., P.C.

Daniel R. Kopcow, P.E.
Project Manager

DRK:mlr

Attachments: Revised Technical Specifications and Contract Drawings

c: Mr. Steven Stucker – National Grid

M:\Admin\Project\NationalGrid\NG-Fort Edward_Canal St PDI _116820\Remedial Design Modification Response 7.11.13\R.Scott Deyette Letter 7.11.13.docx

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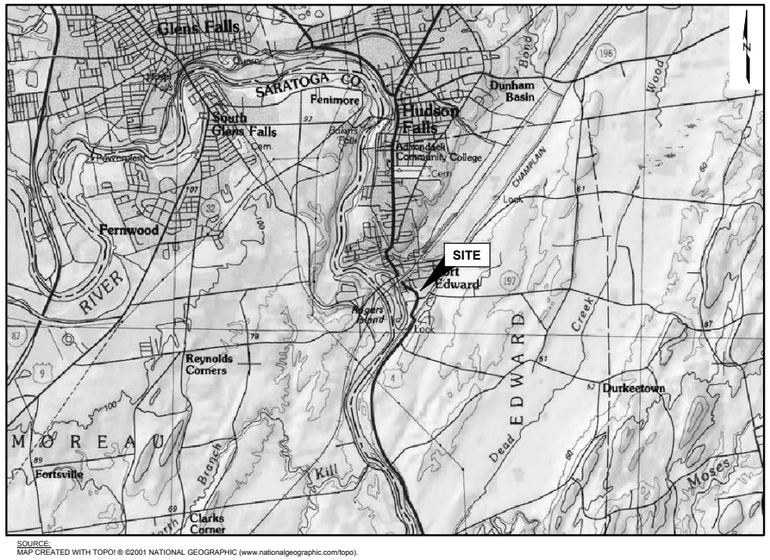
REMEDIAL MEASURE

FORT EDWARD CANAL STREET
FORMER MGP SITE - OFF SITE AREAS
FORT EDWARD, NEW YORK

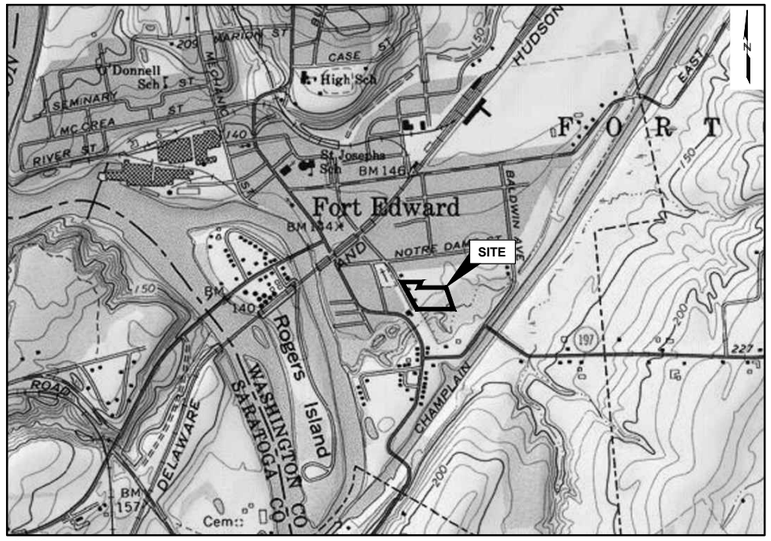


SOURCE:
MAP CREATED WITH TOPO! © ©2001 NATIONAL GEOGRAPHIC (www.nationalgeographic.com/topo).

REGIONAL MAP

0 1 2

SCALE, MILES



SOURCE:
MAP CREATED WITH TOPO! © ©2001 NATIONAL GEOGRAPHIC (www.nationalgeographic.com/topo)

SITE LOCATION

0 1000 2000

APPROXIMATE GRAPHIC SCALE IN FEET

SCHEDULE OF DRAWINGS

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811 Know what's below. Call before you dig.

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SYRACUSE, NEW YORK

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1301 TRUMANSBURG ROAD
SUITE N
ITHACA, NY 14850

PROJECT NUMBER: 116820-1-1103

JULY 2013

For Bid Only
Not For Construction

PROFESSIONAL ENGINEER LIC. NO. 077276
Daniel R. Kopcow, P.E. EXP. DATE: --/--

NO.	DATE	DESCRIPTION	DES	DR	CH	APP
1	7/9/2013	REMEDIAL DESIGN MODIFICATIONS	AJG	DTE	JTF	DRK
0	5/3/2013	ISSUED FOR REVIEW	AJG	DTE	JTF	DRK

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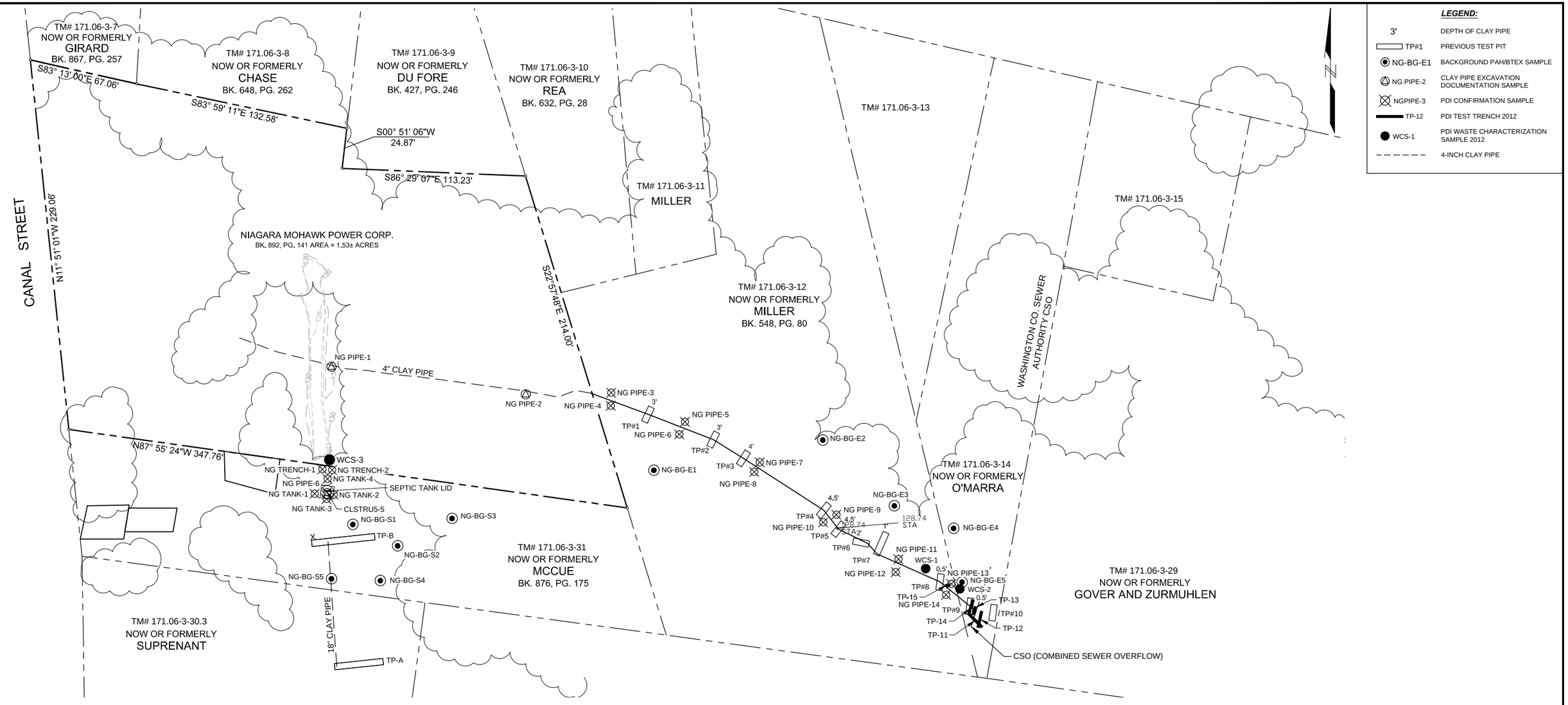

FOR REVIEW

SOURCE:

1. DRAWING BASED ON FIGURE 1 OF MWH TECHNICAL MEMORANDUM--ADJACENT PROPERTY TEST PIT INVESTIGATION IRM, APRIL 12, 2011.
2. AS-BUILT LOCATIONS PREPARED BY GILBERT VANGUILDER LAND SURVEYOR, PLLC - 2-17-12.

0 30 60
SCALE, FEET

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

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DRAFT

Designed: -
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Drawn: DTE
Submitted By: -
NY P.E. No.: xxxxxx
Submittal Date: 7/9/2013

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DWG. NO. 1

EXISTING CONDITIONS AND UTILITIES

REV 1

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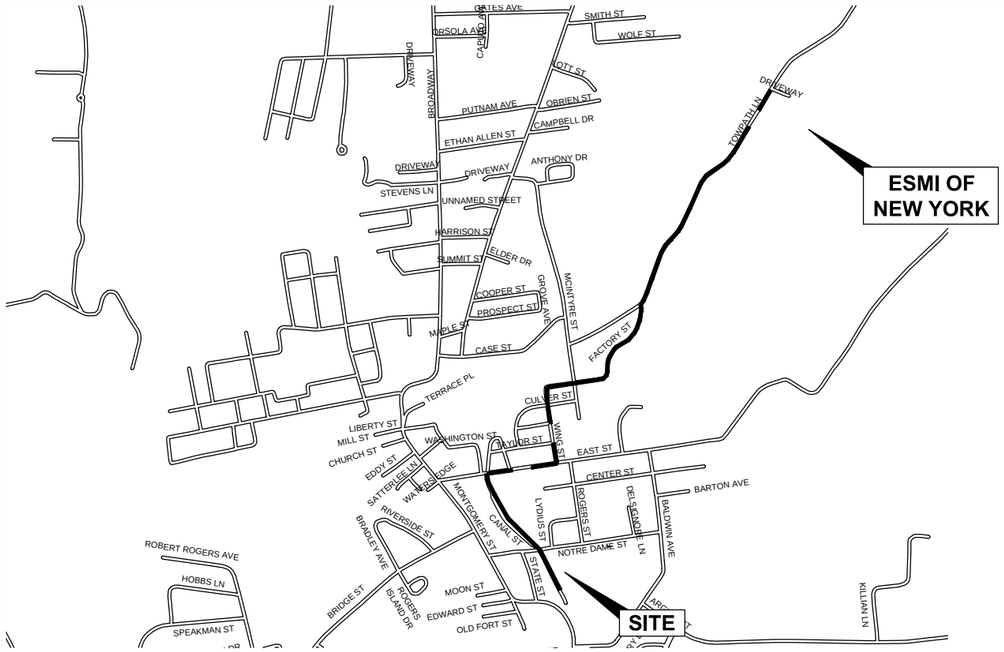

TRUCK ROUTE LEGEND:

PROJECT TRUCK ROUTE

0 50 100
SCALE, FEET

FOR REVIEW

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DWG. NO. 2

TRUCK ROUTE

REV 1

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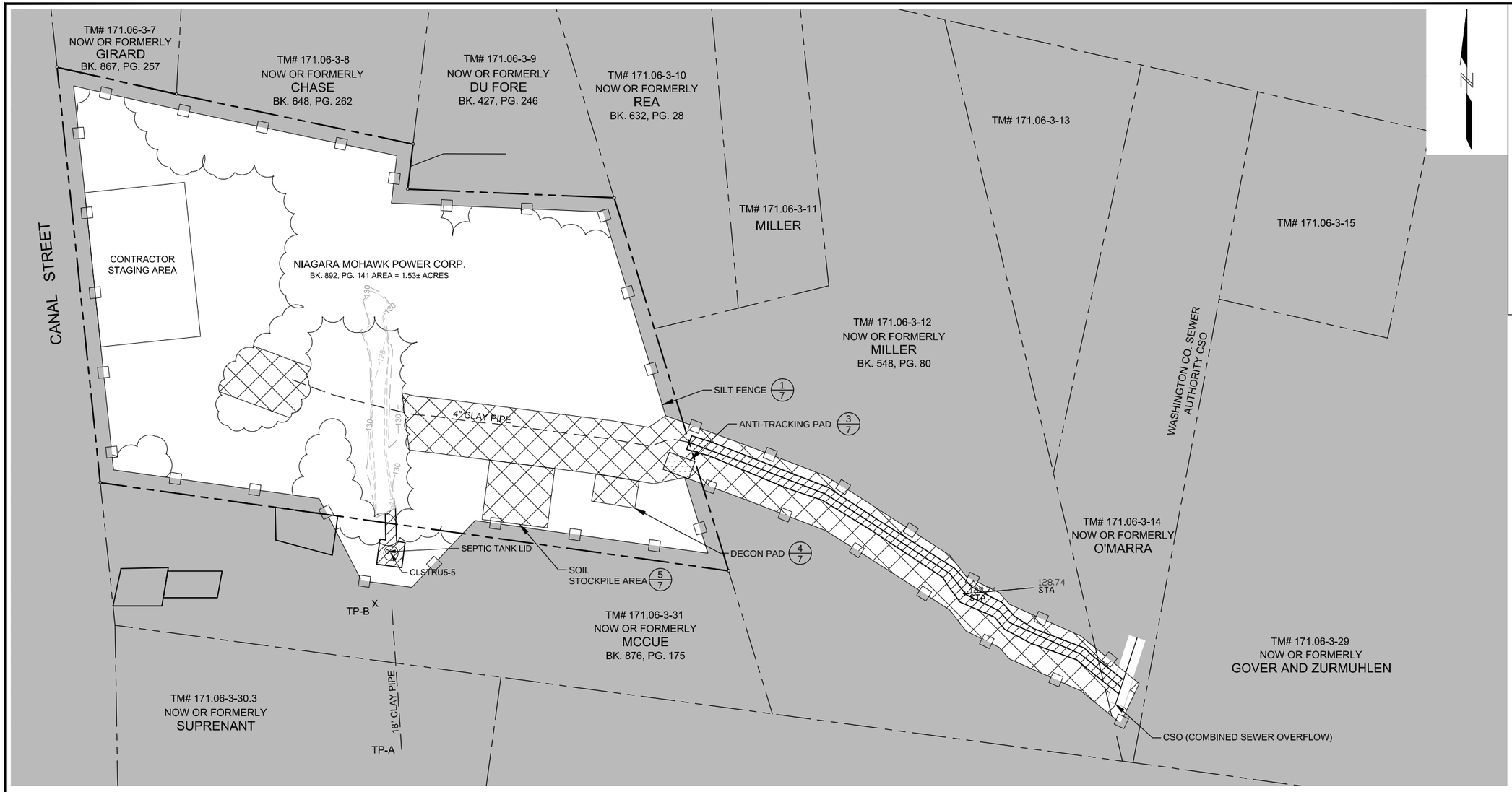

NOTE:

STORMWATER SHALL BE DIRECTED AWAY FROM OPEN EXCAVATIONS, AND SHALL NOT BE DIVERTED IN SUCH A WAY AS TO CAUSE DAMAGE TO PROPERTIES.

FOR REVIEW

0 30 60
SCALE, FEET

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DWG. NO. 3

EROSION AND SEDIMENT CONTROLS AND DEMOLITION AND PROTECTION PLAN

REV 1

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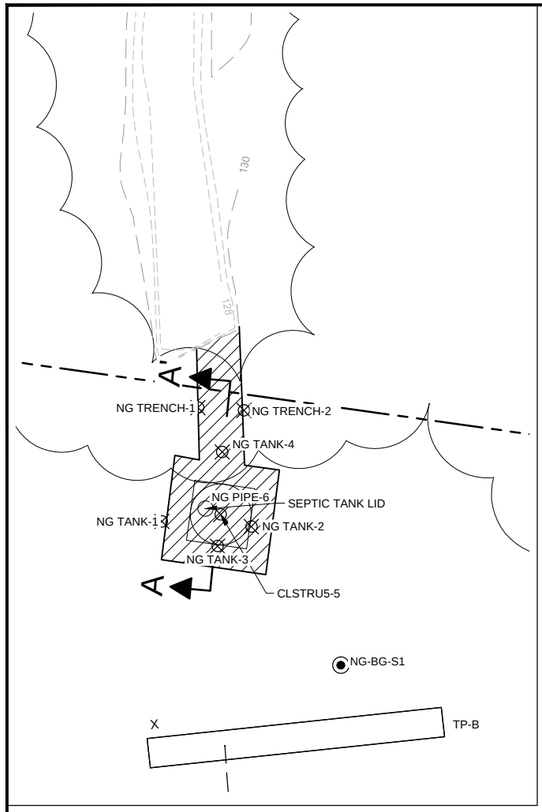
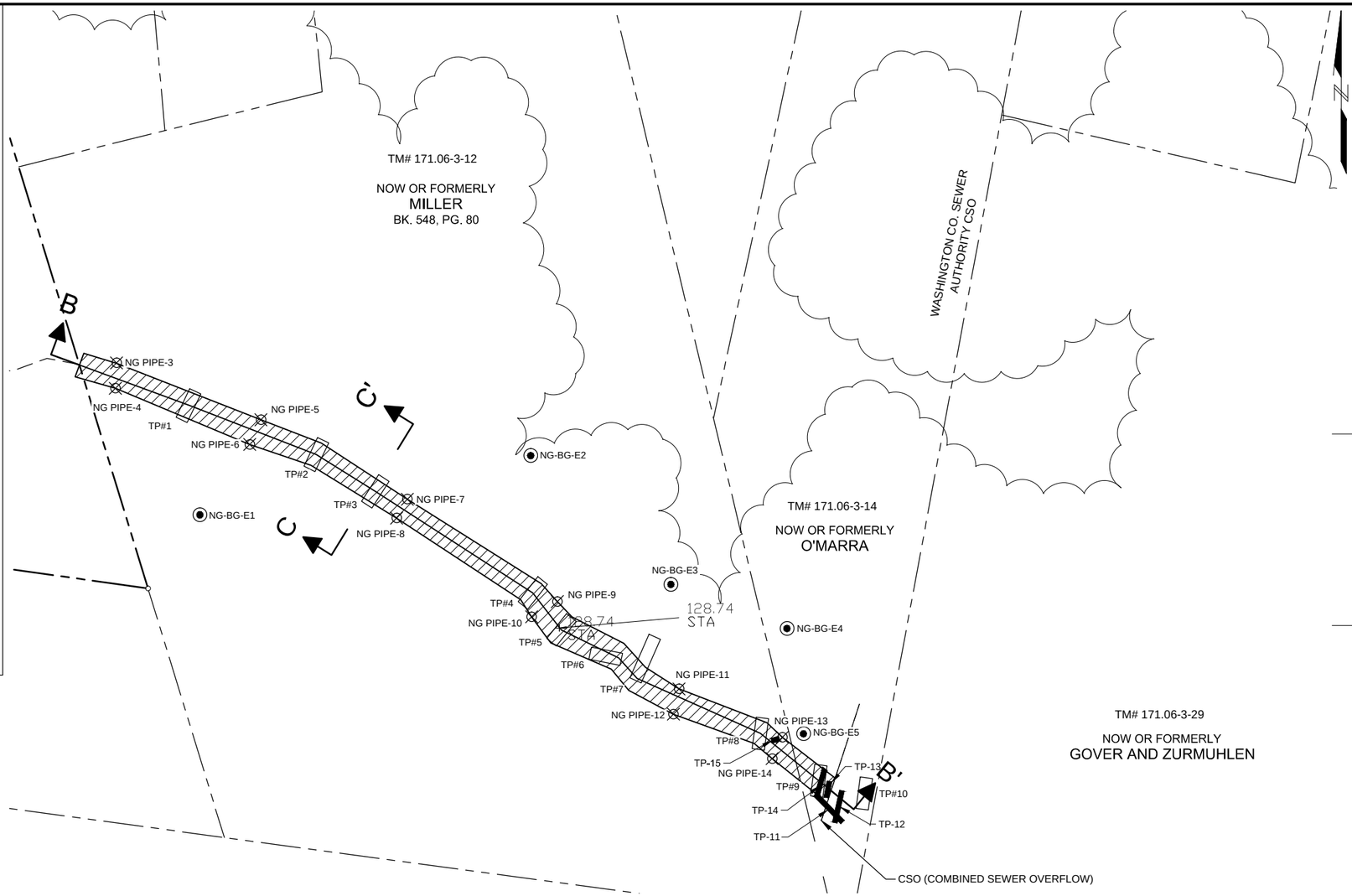
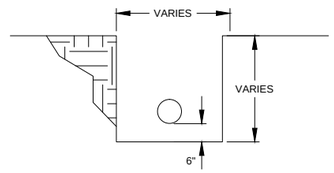
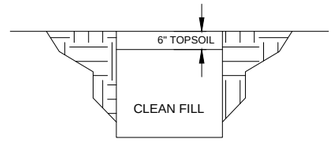




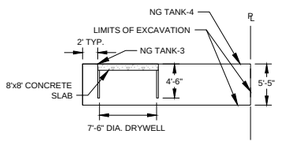


EXCAVATION

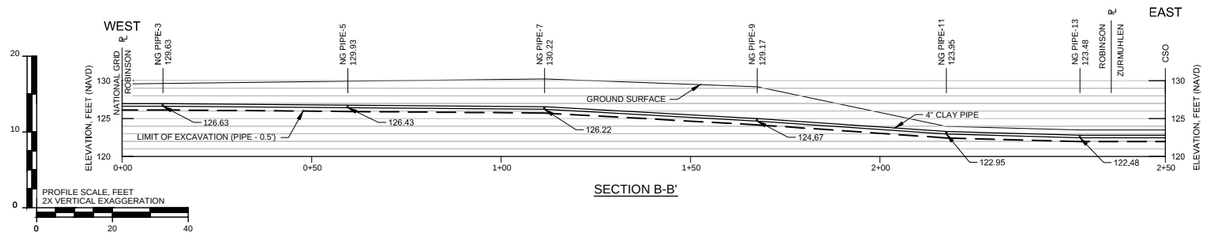


BACKFILL

SECTION C-C'



SECTION A-A'



SECTION B-B'

FOR REVIEW

SOURCE:

1. DRAWING BASED ON FIGURE 1 OF MWH TECHNICAL MEMORANDUM--ADJACENT PROPERTY TEST PIT INVESTIGATION IRM, APRIL 12, 2011.
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EXCAVATION PLAN AND CROSS SECTIONS

DWG. NO. 4

REV 1

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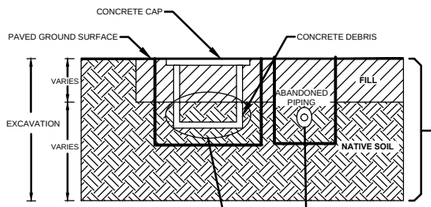
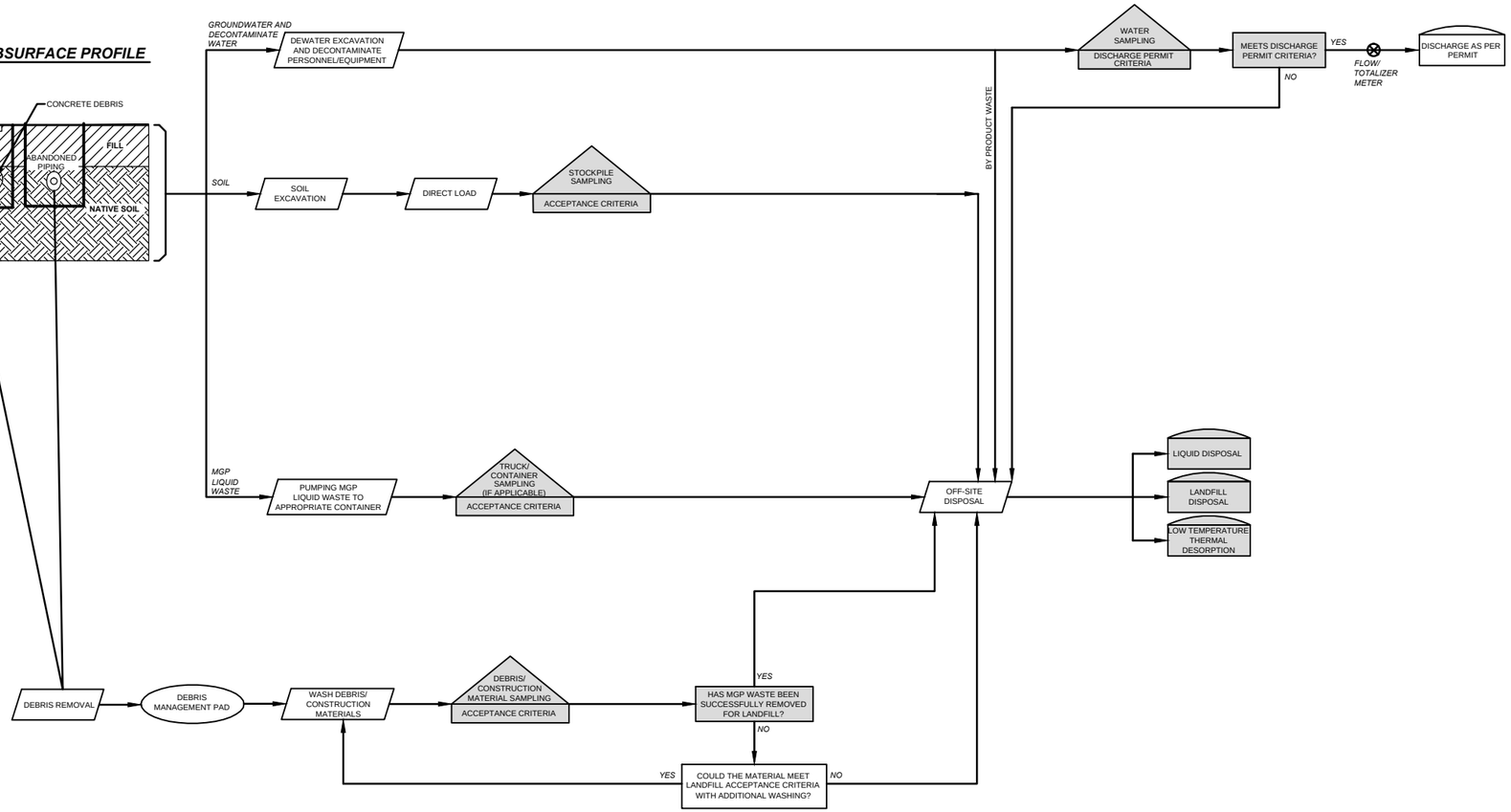
MATERIAL MANAGEMENT SCHEMATIC

CONCEPTUAL SUBSURFACE PROFILE





MATERIAL MANAGEMENT LEGEND:

1. ACTIVITIES IN A SHADED SHAPE TO BE PERFORMED AND/OR APPROVED BY ENGINEER.

REMEDIATION ACTIVITY

DECISION ACTIVITY

SOIL/MATERIAL STOCKPILE

SAMPLING ACTIVITY

FINAL DISPOSITION

STOCKPILE NOTES:

1. SURVEY STOCKPILES TO ESTIMATE VOLUME FOR STOCKPILE SAMPLING AT A FREQUENCY DICTATED BY THE ENGINEER.

MATERIAL MANAGEMENT NOTES:

1. MGP LIQUID WASTE INCLUDES NAPL, TAR, AND ANY TYPE OF VISIBLY CONTAMINATED MOBILE PRODUCT THAT CAN BE PUMPED (NOT ANTICIPATED).
2. ENGINEER MAY MODIFY DISPOSITION OF SOIL AND DEBRIS BASED ON OBSERVATIONS DURING EXCAVATION TO A MORE STRINGENT CLASSIFICATION (I.E. RECLASSIFY MATERIAL SCHEDULED FOR NON-HAZARDOUS LANDFILL DISPOSAL TO THERMAL DESORPTION OR VICE VERSA).
3. STABILIZE, STAGE, AND CONTAINERIZE MGP LIQUID WASTE THAT IS NOT BOUND TO SOIL/MATERIAL MATRIX FOR OFF-SITE TRANSPORTATION. DO NOT DILUTE AND MIX WITH STOCKPILED SOIL.
4. USE LINED, WATERTIGHT, HAZARDOUS WASTE RATED CONTAINERS FOR OFF-SITE DISPOSAL OF MGP LIQUID WASTE.

FOR REVIEW

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DWG. NO. 5

MATERIAL MANAGEMENT PLAN

REV 1

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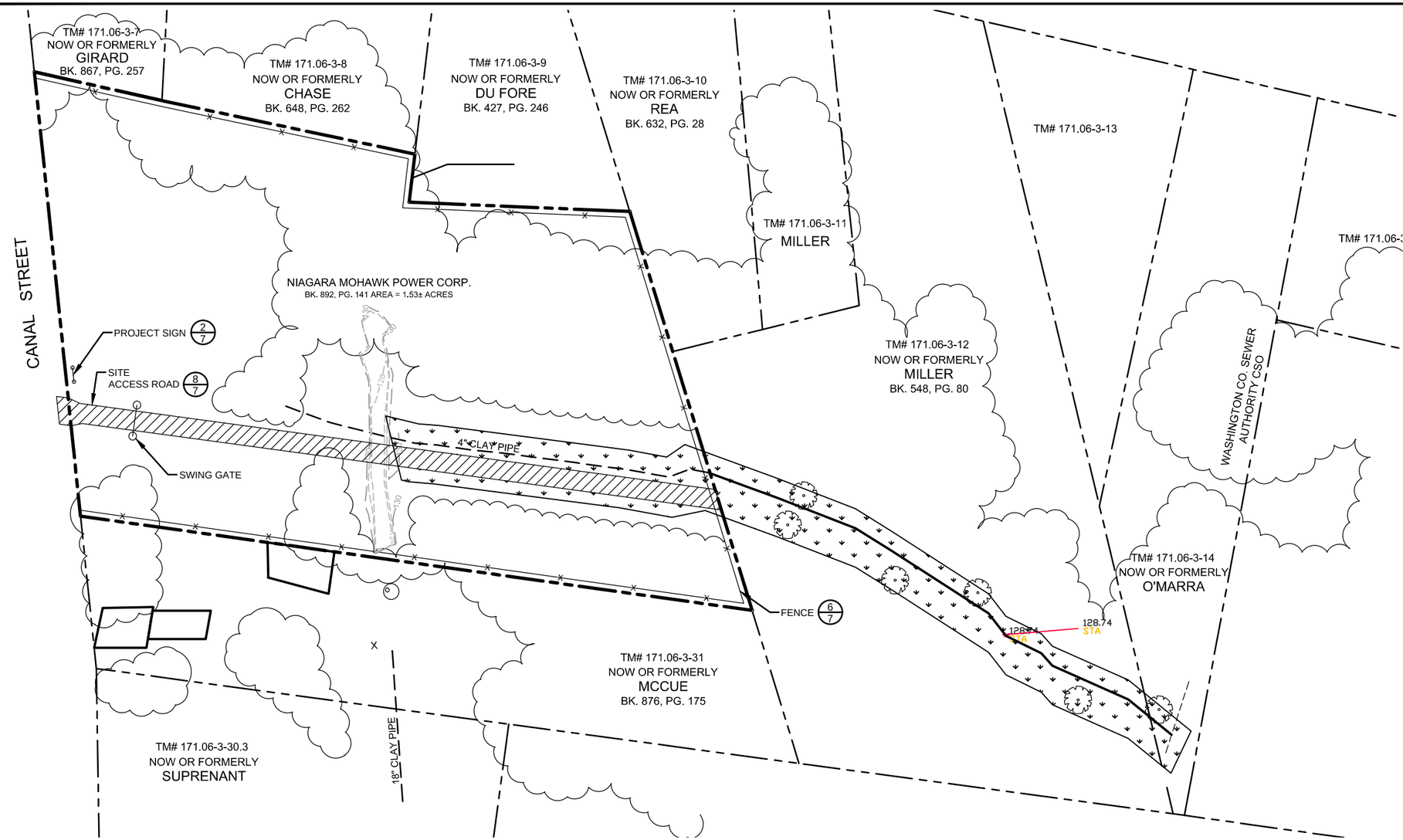


LEGEND:

- RESTORE LAWN - SEE DETAIL 2/6
- RESTORE PLANTINGS (IF NEEDED)
- CHAIN LINK FENCE (SEE DETAIL)

FENCE NOTES:

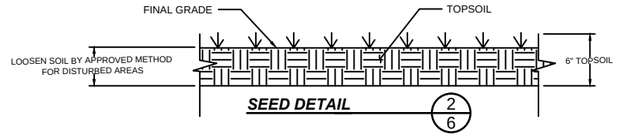
1. FENCE WILL BE PLACED 24-INCHES INSIDE PROPERTY LINE.

RESTORATION NOTES:

1. ALL DISTURBED AREAS TO BE RESTORED AS REQUIRED BY ENGINEER.

PLANTING NOTES:

1. PLANTINGS TO BE PERFORMED PER THE SUPPLIERS' RECOMMENDATIONS.



SEED DETAIL 2/6

SEED NOTES:

1. SEED SHALL BE A MIX OF RED FESCUE, RYE, AND KENTUCKY BLUE. CONTRACTOR MAY SUBMIT REQUEST TO ENGINEER FOR ALTERNATE SEED MIXTURE TO TAKE ADVANTAGE OF PROVEN VARIETIES.
2. USE A FERTILIZER THAT IS APPROPRIATE FOR THE LOCAL SOIL TYPE AND CLIMATE.
3. USE A LIME THAT IS APPROPRIATE FOR THE LOCAL SOIL TYPE AND CLIMATE.
4. APPLY AT A RATE OF 75 LBS/ACRE.
5. HYDROSEEDING OR OTHER MECHANICAL METHODS OF APPLICATION THAT WILL NOT DAMAGE THE WORK ARE ACCEPTABLE.
6. MOW THE PROPERTY TWICE ONCE A SATISFACTORY STAND OF GRASS HAS BEEN ESTABLISHED.
7. WARRANTY PLANTINGS FOR 90 DAYS FOLLOWING ESTABLISHMENT OF A SATISFACTORY STAND OF GRASS.
8. SILT FENCE WILL REMAIN IN PLACE UNTIL VEGETATION IS ACCEPTED BY ENGINEER.

FOR REVIEW

SCALE, FEET 0 30 60

Attention:

0 1"

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Fort Edward, New York

RESTORATION PLAN

DWG. NO. 6

REV 1

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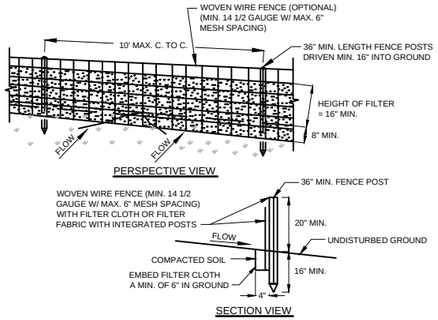
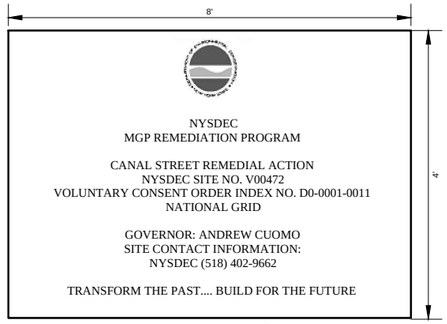


DETAIL 1/7
TYPICAL HAY BALE

SILT FENCE NOTES:

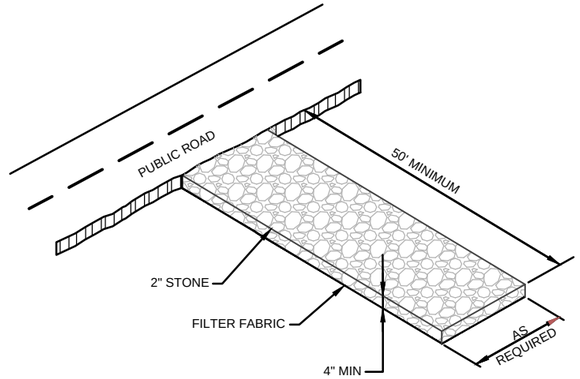
1. FASTEN WOVEN WIRE FENCE SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FASTEN FILTER CLOTH SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24-INCHES AT TOP AND MID-SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6-INCH MAXIMUM MESH OPENING.
3. OVERLAP ADJACENT FILTER CLOTH SIX INCHES AND FOLD. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. PERFORM MAINTENANCE AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
6. FILTER FABRIC WITH INTEGRATED STAKES MAY BE USED INSTEAD OF WIRE FENCE.



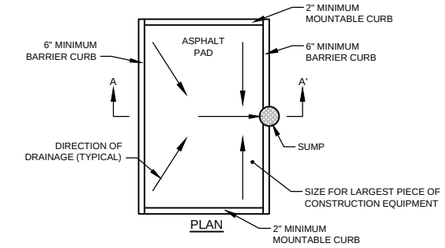
DETAIL 2/7
TYPICAL SIGN

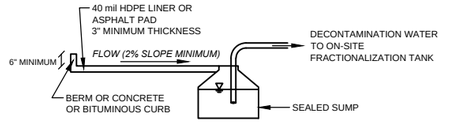
SIGN NOTES:

1. SIZE: HORIZONTAL FORMAT 96" BY 48" HIGH
2. DEC LOGO
   TEXT: PMS 355
   LOGO: PMS 301 BLUE
   PMS 355 GREEN
3. TEXT: CASLON 540
   MGP REMEDIATION PROGRAM PMS 301
   SITE NAME, SITE NUMBER, PARTY PERFORMING PMS 355
   NAME OF GOVERNOR PMS 301
   TRANSFORM THE PAST.... BUILD FOR THE FUTURE PMS 355
4. CENTER EACH LINE OF COPY WITH SMALL CAPS AND INITIAL CAPS
5. 96" WIDE BY 48" HIGH ALUMINUM BLANKS WILL BE COVERED WITH VINYL SHEETING TO ACHIEVE BACKGROUND COLOR. COPY LOGO WILL BE SILK SCREENED ON THIS SURFACE.



DETAIL 3/7
ANTI-TRACKING PAD



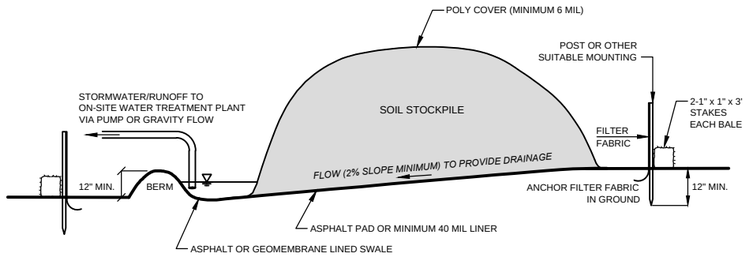


SECTION A-'A

EQUIPMENT DECONTAMINATION PAD 4/7
NOT TO SCALE

DECONTAMINATION NOTES:

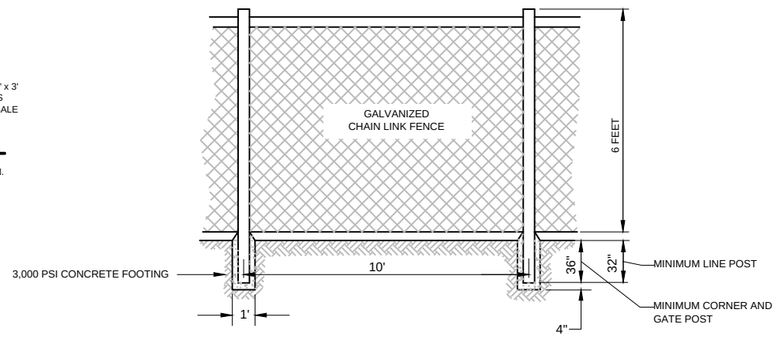
1. ALL VEHICLES EXITING EXCLUSION ZONE MUST PASS THROUGH THE CONTAMINANT REDUCTION ZONE. USE EQUIPMENT DECONTAMINATION PAD AS REQUIRED BY ENGINEER AND NYSDEC. CONTROL OVER SPRAY.



SOIL/DEBRIS STOCKPILE PAD 5/7
NOT TO SCALE

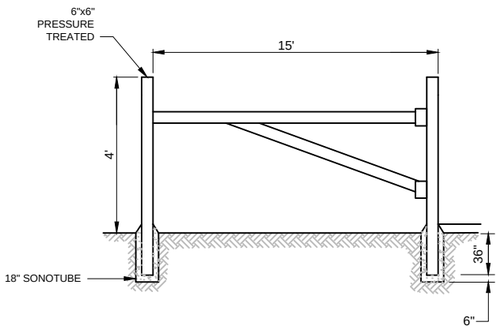
PAD NOTES:

1. SOIL/DEBRIS STOCKPILE PAD DESIGN IS CONCEPTUAL. FINAL DESIGN WILL MEET THE INTENT OF THE CONCEPT AND BE APPROVED BY ENGINEER.
2. COLLECT ALL STORMWATER/RUNOFF WATER FROM THE SOIL/DEBRIS PADS AND DIRECT TO WATER TREATMENT SYSTEM.
3. LOCATE PADS INSIDE THE UNEXCAVATED PORTION OF THE REMEDIAL EXCAVATION. PADS MAY NOT BE LOCATED ON COMPLETED WORK OR PARTIALLY BACKFILLED SURFACES.

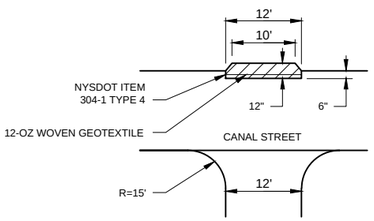


CHAIN LINK FENCE 6/7
NOT TO SCALE

1. MATERIALS PER SPECIFICATIONS.



SWING GATE DETAIL 7/7
NOT TO SCALE



SITE ACCESS ROAD 8/7
NOT TO SCALE

FOR REVIEW

NO.	DATE	ISSUE/REVISION	APP
1	7/9/2013	REMEDIAL DESIGN MODIFICATIONS	BMN
0	5/3/2013	ISSUED FOR REVIEW	BMN

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

DRAFT

Designed: -
Checked: -
Drawn: DTE
Submitted By: -
NY P.E. No.: xxxxxx
Submittal Date: 7/9/2013

GEI Consultants
GEI Consultants, Inc., P.C.
1301 Trumansburg Road, Suite N
Ithaca, NY 14850
(607) 216-8955, FAX (607) 274-7577

National Grid
300 Erie Street,
Syracuse, NY
nationalgrid

GEI Project 116820-1-1103

Fort Edward Remedial Design Drawings
Canal Street Fort Edward MGP
Fort Edward, New York

DWG. NO. 7

DETAILS

REV 1

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TECHNICAL SPECIFICATIONS
FOR
REMEDIAL ACTION

CANAL STREET
FORT EDWARD FORMER MANUFACTURED GAS PLANT SITE

TO
NATIONAL GRID
INTERIM REMEDIAL MEASURE
PURCHASE ORDERS

9 July 2013

TECHNICAL SPECIFICATIONS
TABLE OF CONTENTS

Contract Drawings

1. Existing Conditions
2. Truck Route
3. Soil Erosion and Sediment Control / Demolition Plan
4. Excavation Plan and Cross Sections
5. Material Management Plan
6. Restoration Plan
7. Details

Information for Bidders

Attachment A	Fort Edward Canal Street Remedial Action Work Plan
Attachment B	PDI Report

SECTION 01 11 00
SUMMARY OF WORK

PART 1 GENERAL

1.1 PROJECT DESCRIPTION

A. The Canal Street Former Manufactured Gas Plant (MGP) Remedial Action (RA) consists of the excavation, removal, and off-Site disposal of MGP-related material and adjacent fill material that may be encountered. This includes, but is not limited to, the excavation and disposal of MGP-impacted material, and the restoration of the Site.

B. All tasks, requirements, deliverables, and obligations contained in the Contract Documents are the sole responsibility of the Contractor unless specifically assigned to Others in the Contract Documents.

C. Project Work performed by the Contractor includes:

D. Perform a pre-construction survey of the Site to 50 feet beyond the Project limits. This will include establishment of property boundaries.

E. Perform photographic documentation of the pre-construction conditions of all areas within the Site to include work areas on non-owned properties.

F. Establish additional survey control points as necessary.

G. Obtain all local permits required for completion of the RA including, but not limited to, road closures, utility repairs, lane closures, and sidewalk closures.

H. Provide contact information for all Subcontractors including transporters and disposal facilities for National Grid's approval.

I. Site mobilization

J. Install, operate, and maintain temporary facilities and controls, including:

1. Perimeter fence.
2. Stormwater and erosion controls.
3. Site worker health and safety measures.
4. Equipment and personnel decontamination facilities.
5. Site roadways and traffic controls.
6. Sanitary facilities.
7. Signs.
8. Dust, odor, and vapor control.
9. Excavated material (soil and debris) management/loading areas.

K. Prepare and implement a Contractor Health and Safety Plan in accordance with Section 6.12 of the National Grid Standard Conditions.

L. Prepare and implement a Site Operations Plan.

M. Perform Site Work:

1. Identify, temporarily relocate, or protect existing Site utilities and Site features to remain after the Work is complete.
2. Site preparation and Site clearing.
3. Provide clear pathways for Emergency Vehicles entering and exiting the Site.
4. Furnish and install a temporary excavation support system.
5. Excavate, remove, and dispose of MGP-related impacted material off-Site, its overlying soil, and concrete debris.
6. Furnish and place approved soil backfill and topsoil cover.
7. Restore the Site and adjoining properties.

N. Site demobilization.

O. Provide and perform any other equipment, Work, or submittals required to facilitate Project Work as described above and the Work shown on the Contract Drawings.

1.2 CONTRACT DOCUMENTS

A. The Contract Documents include all Specifications, National Grid Terms and Conditions, Contract Drawings, figures and conditions included or referenced in the Request for Proposal package, and any subsequent approved Change Orders.

B. It is not the intent of the Contract Documents to show every pipe, wire, conduit, utility connection, detail, and appurtenance necessary to complete the Work. However, such connections and details that may be necessary to complete the Work in accordance with Contract Documents, code requirements, and to the Construction Manager/Engineer's satisfaction are to be included in the Work.

C. The organization and division of Work contained within the Contract does not make the Construction Manager/Engineer or National Grid an arbitrator to establish contract limits between the Contractor and any Subcontractor.

D. Perform Work in accordance with the concepts and intent of the Fort Edward Canal Street Remedial Action Work Plan (RAWP).

1.3 CONTRACTOR REQUIREMENTS

A. The Work will be performed on a known MGP-impacted Site.

B. Comply with the requirements of the National Grid Generic Health and Safety Plan (HASP), along with any Site specific amendments, taking precautions as necessary to protect the public and work force personnel from potential hazards.

C. For any Work performed in close proximity to commercial properties, utilities, or any other third party property, utilize every precaution to protect the property, utility lines, trees, walls, and other structures and related appurtenances from damage.

D. Repair any damage caused directly or indirectly outside the Project limits in a prompt manner as directed by National Grid and/or the Construction Manager/Engineer at no additional cost to National Grid.

E. Identify plan for storage, lay down, and material handling facilities and locations with this bid submittal.

F. Representatives of regulatory agencies from New York State, Washington County, and the Town of Fort Edward may be on-Site to observe and inspect the Work. Direct all communications with regulatory agency personnel to National Grid or their designee. The Contractor and his employees will not communicate with third party property owners without a National Grid representative present.

G. Do not conduct any work activities outside of the permitted working hours (Monday through Friday, 7:00 am to 5:00 pm) without advance written approval from the Town of Fort Edward.

1.4 PROTECTION OF EXISTING UTILITIES

A. Contact and cooperate with utility companies to locate all utilities (including pipelines, cables, power poles, guy wires, and other structures) on the Site prior to beginning the Work.

B. Comply with the requirements of specific utility protection Laws or Regulations.

C. Protect all utilities from damage during construction, unless otherwise indicated to be removed or abandoned. If damaged, repair the utilities as required by the utility Owner at the Contractor's expense.

D. If a utility is encountered that is not shown on the Contract Drawings or otherwise made known to the Contractor prior to beginning the Work, promptly take necessary steps to ensure that the utility is not damaged, and give written notice to the Construction Manager/Engineer. The Construction Manager/Engineer will review the conditions and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence of the utility.

1.5 DRAWINGS AND SPECIFICATIONS

A. Maintain at the Site two (2) copies of all Drawings, Specifications, Addenda, approved Shop Drawings, Change Orders, and other modifications, schedules and instructions, in good order. One set shall be marked to record all changes made during construction, and one set shall be kept clean of all markings. Make both sets available to National Grid, New York State Department of Environmental Conservation (NYSDEC), and the Construction Manager/Engineer at all times.

B. The Contract Drawings include notes. Refer to the Contract Drawings in conjunction with the Specifications. If there is a conflict between the Contract Drawings and the Specifications, the Contract Drawings take precedent over the Specifications.

1.6 WORK BY OTHERS

A. Community Air Monitoring Plan (CAMP) monitoring labor and equipment will be provided by Others. Refer to the Contract Drawings for locations of CAMP equipment and action criteria.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION 01 11 00

SECTION 01 20 00
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

A. The items listed in Price Schedule constitute all of the pay items for completion of the Work.

1.2 PAYMENT TERMS

A. See National Grid Terms and Conditions, and Supplemental Conditions.

B. Payment will not be made unless the proper support documentation has been submitted and approved by National Grid or National Grid's representative.

C. Payment includes full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals, erection, application, or installation of an item of the Work, including overhead and profit.

D. For the purpose of New York State Sales and Use Tax, this project is classified as a **Repair and Maintenance** project. As such, Owner is required to pay tax on 100% of the Value of Work Completed, including materials, supplies and labor. However, National Grid utilizes a Direct Payment Permit (DPP) issued by the NYS Department of Taxation and will pay all sales, consumer, use, gross receipt and other similar taxes directly to the NYS Department of Taxation. Bidders shall not include any sales, consumer, use, gross receipt or other similar taxes in the bid cost proposal.

During the performance of the Remediation, the successful Contractor may be required to pay sales, consumer, use, gross receipts and other similar taxes to certain vendors/suppliers as required in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Remediation. However, the Contractor is entitled to a refund or credit from the NYS Department of Taxation and Finance for the tax that was paid on the materials and subsequently transferred to the Owner. For additional guidance refer to NYS Department of Tax and Finance Publication 862 at http://www.tax.state.ny.us/pdf/publications/sales/pub862 _ 401.pdf

E. A copy of National Grid's DPP will be provided to the successful bidder. Payment will not be made for any of the following:

1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from the transporting vehicle.
4. Products placed beyond the lines and levels of the required Work.
5. Loading, hauling, and disposing of rejected materials.

6. Products remaining on hand after completion of Work.

7. Additional Work undertaken to expedite Contractor's operations.

8. Repair or replacement of active monitoring wells, utilities, or any other facilities property located within or adjacent to the Work Area.

F. Payment will be made by National Grid for all Work actually performed during a particular payment period. Payments for lump sum items will be made based on the percent completion of the pay item upon approval by the Construction Manager/Engineer. Judgments of percent completion of lump sum items will be made in reference to the Schedule of Quantities and Prices.

G. Retainage (10 percent) will be withheld from payments as specified in the Agreement.

1.3 SUBMITTALS

A. Submit a Project Price Schedule and Bid Form signed, dated, and sealed with a Company Seal by a Company Officer.

B. Submit invoices monthly in accordance with the terms of the Agreement.

1.4 QUANTITY ESTIMATES

A. Verify estimated quantity for unit prices in the field.

B. For all Unit Price Work, the Contract Price will include an amount equal to the sum of the unit price for each pay item times the estimated quantity of each item as indicated in the Bid Form. The estimated quantities shown on the Project Price Schedule are not guaranteed and are solely for the purpose of comparison of bids and determining an initial Contract Price. Quantities and measurements supplied or placed in the Work in accordance with the Specifications and Contract Drawings and verified by the Construction Manager/Engineer will determine payment.

C. The Construction Manager/Engineer will determine the actual quantities and classifications of Unit Price Work performed by the Contractor. The Construction Manager/Engineer will review with the Contractor the preliminary determinations before rendering a written decision on an Application for Payment.

D. If the actual Work requires more or fewer units than the estimated units indicated on the Project Price Schedule, provide the required units at the contracted unit prices. Under no circumstances may the Contractor exceed stated quantities without prior written approval from the Construction Manager/Engineer.

E. The Construction Manager/Engineer reserves the right to increase or decrease any quantity or to eliminate any line item as a result of actual conditions encountered during the performance of the Work.

1.5 MEASUREMENT OF QUANTITIES

A. Measurement by Weight:

Weigh Scales: Certified in accordance with applicable laws and regulations for the state in which the scales are located. Scales must have been certified within a period of not more than one year prior to date of use for weighing commodity.

The term "ton" will mean the short ton consisting of 2,000 pounds.

For shipments to off-Site disposal facilities, trucks will be weighed at the receiving facility for the purpose of measuring the quantity of Work for payment.

B. Measurement by Volume:

Volumes measured as in-place volumes will be determined by survey and approved by the Construction Manager/Engineer. Contractor to retain the services of an independent land surveyor licensed or registered in the State of New York, whose determination of in-place volumes will be authoritative and final for the purpose of measurement for payment. To compute in-place volumes of excavation, the average end area method or other methods acceptable to the Construction Manager/Engineer will be used.

C. Measurement by Area:

Measured by square dimension using length and width or radius, and verified by the Construction Manager/Engineer.

D. Linear Measurement:

Measured by linear dimension, at the item centerline or mean chord, and verified by the Construction Manager/Engineer.

E. Measurement by Time:

Measure by the actual time rounded to the nearest time unit and verified by the Construction Manager/Engineer.

F. Measurement of Percent Moisture of Disposed Soil:

Measurement of "percent moisture" of disposed soil will mean the measurement by the disposal facility on a dry weight basis: weight of moisture divided by the dry weight of soil.

1.6 ASSESSMENT OF NON-CONFORMING WORK:

A. Replace Work, or portions of the Work, that do not conform to the requirements of the Specifications and Contract Drawings, as assessed by the Construction Manager/Engineer.

B. If, in the opinion of the Construction Manager/Engineer, it is not practical to remove and replace the non-conforming Work, the Construction Manager/Engineer will direct one of the following remedies:

1. The non-conforming Work may remain, but the unit price will be adjusted to a new price at the discretion of the Construction Manager/Engineer.

2. Partially repair non-conforming Work to the instructions of the Construction Manager/Engineer, and the unit price will be adjusted to a new price at the discretion of the Construction Manager/Engineer.

C. The individual Specification sections may modify these options or may identify a specific formula or percentage price reduction.

D. The authority of the Construction Manager/Engineer to assess non-conforming Work and identify payment adjustment is final.

1.7 ELIMINATED ITEMS:

A. Should any items contained in the Contract Drawings or Specifications be found unnecessary for the proper completion of the Work, the Construction Manager/Engineer may, upon written order to the Contractor, eliminate such items from the Work, and such action will in no way invalidate the Agreement.

B. Contractor will be paid for actual Work done and all documented costs incurred, including mobilization of materials prior to elimination of such items.

1.8 MEASUREMENT AND PAYMENT OF BID ITEMS:

A. The Project Price Schedule lists the Bid items and unit price items for the Work. Measurement and payment of the Work covered by the Contract Documents is specified below.

B. At the direction of the Construction Manager/Engineer, the Contractor may be asked to perform Change Order Work on a Time and Materials (T&M) basis. The unit rate schedule included in the Contractor's proposal will be the basis for measurement and payment of equipment and labor for T&M. Include overhead and profit on the Contractor unit rate schedule for T&M Work.

C. The following paragraphs specify measurement and payment of the Bid items listed on the Project Price Schedule (attached to this Specification):

Item 1 Mobilization/Demobilization

Work required to complete Mobilization and Demobilization includes, but is not limited to:

a. Movement of personnel, equipment, and materials to and from the Site, if such movement is not included in any other Bid Item.

b. Preconstruction coordination meetings.

c. Permits

d. Preparation, submittal, and revision of all required pre-mobilization submittals as described in Specification 01 33 00 – Submittal Procedures.

Mobilization/Demobilization will be measured for payment as one unit, complete as specified.

Payment for Mobilization/Demobilization will be made in accordance with the lump sum price for the Bid item "Mobilization/Demobilization" listed on the Project Price Schedule. Payment of the lump sum price for "Mobilization/Demobilization" will constitute full compensation for all labor, supervision, materials, equipment, start up submittals, incidentals and all other costs necessary to complete Mobilization/Demobilization Work, including the transport of all equipment, labor and temporary facilities and materials to and from the Site.

Item 2 Site Preparation, Clearing and Protection

1. Work required to complete the Site Preparation includes, but is not limited to:

   a. Implement requirements for environmental protection as specified in Specification Section 01 50 00 – Temporary Facilities and Controls unless specifically identified as being provided by Others.

   b. Conduct clearing and grubbing work as specified in Specification Section 31 13 00 – Site Clearing.

   c. Provide and maintain temporary fencing as shown on the Contract Drawings.

   d. Removal and off-Site disposal or recycling of existing debris on the Project Site.

   e. Protection of site features as detailed in the Contract Drawings.

   f. All other one-time activities required by the Contractor to complete the Work, unless included in another pay item or specifically identified as being the responsibility of Others.

2. Site Preparation will be measured for payment as one unit, complete as specified.

3. Payment for this item will be made in accordance with the lump sum price for the Bid item "Site Preparation, Demolition and Protection" listed on the Project Price Schedule. Payment of the lump sum price for "Site Preparation, Demolition, and Protection" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete the Site Preparation Work, as specified in Specification Section 01 50 00 – Temporary Facilities and Controls, 31 13 00 – Site Clearing, and 31 10 00 – Site Preparation.

Item 3 Temporary Facilities and Controls

1. Work required to complete the Temporary Facilities and Controls includes, but is not limited to:

   a. Provide an odor/vapor suppressant foam generator and labor. Foam expendables will be paid under bid item 12.

   b. Implement the health and safety requirements specified in the approved Contractor Site Operations Manual as detailed in Specification Section 01 30 00 – Administrative Requirements.

   c. Install and maintain temporary facilities and controls as specified in Specifications Section 01 50 00 – Temporary Facilities and Controls, unless specifically identified as being provided by Others. Properly dispose of decontamination liquids or sediments generated during decontamination.

   d. Conduct any surveying needed to control and document the Work.

   e. Project management and oversight as specified in Section 01 30 00 – Administrative Requirements.

   f. Maintain and repair all temporary facilities and controls including those provided by Others during the period when Work is taking place at the Site.

   g. All other recurring activities required by the Contractor to complete the Work, unless included in another pay item or specifically identified as being the responsibility of Others.

2. Temporary Facilities and Controls will be measured for payment as one unit, complete as specified.

3. Payment for Temporary Facilities and Controls will be made on a percent complete basis of the lump sum price for the Bid item "Temporary Facilities and Controls" listed on the Project Price Schedule. Payment of the lump sum price for "Temporary Facilities and Controls" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete the Temporary

Facilities and Controls Work, as specified in Specification Section 01 50 00 – Temporary Facilities and Controls.

Item 4 Soil Excavation

1. Work required to complete Soil Excavation includes, but is not limited to:
   a. Excavation of impacted soils as detailed in the Contract Drawings.
2. Soil Excavation Work will be measured for payment on an in-place cubic yard basis, as verified by survey.
3. Payment for Soil excavation Work will be made in accordance with the unit price for the Bid item "Soil Excavation" listed on the Project Price Schedule. Payment of the unit price for "Soil Excavation" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Soil Excavation Work, as specified in Specification Section 31 23 00 – Excavation and Fill.

Item 5 Transportation and Disposal: Soil

1. Work required to complete the Transportation and Disposal: Soil pay item includes, but is not limited to:
   a. Loading, transportation and disposal of excavated soil from the Project Site to the approved disposal facilities in accordance with Specification Section 02 61 00 – Removal and Disposal of Contaminated Materials.
   b. Designing the Project excavation and sequencing so as not to exceed the capacity of the disposal facility to accept excavated materials.
   c. The approved disposal facilities for soil excavated from the Project Site are as follows:
      - ESMI of New York, 304 Towpath Road, Fort Edward, New York, 12828, (800) 511-3764
      - ESMI of New Hampshire, 67 International Drive, Loudon, New Hampshire 03307, (603) 783-0228
      - Colonie Landfill, 1319 New Loudon Road, Cohoes, NY (518) 783-2845
2. Transportation and Disposal: Soil will be measured for payment on a per ton basis, as documented by disposal facility scale weight tickets.
3. Payment for Transportation: Soil Work will be made in accordance with the unit price for the Bid item "Transportation and Disposal: Soil" listed on the Project Price Schedule. Payment of the unit price for

"Transportation and Disposal: Soil" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Transportation and Disposal: Soil Work, as specified in Specification Section 02 61 00 – Removal and Disposal of Contaminated Materials.

Item 6 Surcharge for Disposal of Soil with Excess Moisture

1. This pay item is a limited allowance for the surcharge anticipated for disposal of soil with excess moisture. This allowance is only applicable to soils transported and disposed at ESMI and only for those soils determined to have a moisture content above 18 percent and below 24 percent.
2. Surcharge for Disposal of Soil with Excess Moisture will be measured for payment on a per ton basis and percent moisture content, as documented by disposal facility scale weight tickets and percent moisture reports.
3. Payment for disposal of soil with moisture content of 18 percent or less will be made in accordance with Bid Item # 6 Transportation and Disposal: Soil.
4. Any surcharge for disposal of soil with moisture content of 24 percent or above will be the responsibility of the Contractor and will not be applicable for payment by National Grid.
5. Payment for Surcharge for Disposal of Soil with Excess Moisture will be made in accordance with the unit price for the Bid item "Surcharge for Disposal of Soil with Excess Moisture" listed on the Project Price Schedule. Payment of the unit price for "Surcharge for Disposal of Soil with Excess Moisture" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete this pay item.

Item 7 Transportation and Disposal: Construction Debris

1. Work required to complete the Transportation and Disposal: Debris pay item includes, but is not limited to:
   a. Transportation and disposal of excavated debris from the Project Site at the National Grid approved disposal facility identified in the Contractor Site Operations Plan in accordance with Specification Section 02 61 00 – Removal and Disposal of Contaminated Materials.
   b. Designing the Project excavation and sequencing so as not to exceed the capacity of the disposal facility to accept debris generated during the performance of the Work.

2. Transportation and Disposal: Debris will be measured for payment on a per ton basis, as documented by disposal facility scale weight tickets.

3. Payment for Transportation and Disposal: Debris Work will be made in accordance with the unit price for the Bid item "Transportation and Disposal: Debris" listed on the Project Price Schedule. Payment of the unit price for "Transportation and Disposal: Debris" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Transportation and Disposal: Debris, as specified in Specification Section 02 61 00 – Removal and Disposal of Contaminated Materials.

Item 8 Dewatering and Water Treatment System Equipment

1. Work required to complete the Dewatering and Water Treatment System Equipment pay item includes, but is not limited to:

   a. Provision of all dewatering and wastewater treatment equipment required, as specified in Specification Sections 31 23 19 – Dewatering.

2. Provision of equipment will be measured for payment on a per day basis, defined as each day the system is fully operable and present on site on days requested by the Construction Manager/Engineer.

3. Payment for Dewatering and Water Treatment System Equipment will be made in accordance with the unit price for the Bid item "Dewatering and Water Treatment System Equipment" listed on the Project Price Schedule. Payment of the unit price for "Dewatering and Water Treatment System Equipment" will constitute full compensation for all equipment, incidentals and all other costs necessary provide the Dewatering and Water Treatment System Equipment , as specified in Specification Section 31 23 19 – Dewatering.

Item 9 Dewatering and Water Treatment System Operation

1. Work required to complete the Dewatering and Water Treatment System Operation pay item includes, but is not limited to:

   a. Dewatering and operation and maintenance of the site wastewater treatment system in accordance with specifications Section 31 23 19 – Dewatering.

2. This Pay item will be measured for payment on a per day basis, as documented and approved by the Construction Manager/Engineer.

3. Payment for this Item will be made in accordance with the unit price for the Bid item "Dewatering and Water Treatment System Operation" listed on the Project Price Schedule. Payment of the unit price for "Dewatering

and Water Treatment System Operation" will constitute full compensation for all labor, supervision, fees, materials, incidentals and all other costs necessary to complete the Dewatering and Water Treatment System Operation Work, as specified in Specification Sections 31 23 19 – Dewatering.

Item 10 Transportation and Disposal: Wastewater

1. Work required to complete the Transportation and Disposal: Wastewater pay item includes, but is not limited to:
   a. Transportation of wastewater and decontamination fluids from the Project Site to the approved off-site disposal facilities in accordance with Specification 02 61 00 – Removal and Disposal of Contaminated Materials.
   b. Designing the Project phasing so as not to exceed the capacity of the disposal facility to accept wastewater generated after the demobilization of the wastewater treatment system.
2. Disposal will be measured for payment on a per gallon basis, as documented by an appropriately calibrated and inspected flow meter at the receiving facility.
3. Payment for Transportation and Disposal: Wastewater Work will be made in accordance with the unit price for the Bid item "Transportation and Disposal: Wastewater" listed on the Project Price Schedule. Payment of the unit price for "Transportation and Disposal: Wastewater" will constitute full compensation for all labor, supervision, fees, materials, equipment, incidentals and all other costs necessary to complete Transportation and Disposal: Wastewater Work, as specified in Specification Section 02 61 00 – Removal and Disposal of Contaminated Materials.

Item 11 Backfill with Approved Off-Site Backfill Material - Clean Fill

1. Work required to complete Backfill with Approved Off-Site Backfill Material – Clean Fill includes, but is not limited to:
   a. Delivery, placement, compaction, and density testing of approved Clean Fill, as specified in Specification Section 31 23 00 – Excavation and Fill.
2. Backfill with Approved Off-Site Backfill Material – Clean Fill will be measured for payment on an in-place cubic yard basis as verified by survey.
3. Payment for Backfill with Approved Off-Site Backfill Material – Clean Fill Work will be made in accordance with the unit price for the Bid item

"Backfill with Approved Off-Site Backfill Material – Clean Fill" listed on the Project Price Schedule. Payment of the unit price for "Backfill with Approved Off-Site Backfill Material – Clean Fill" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Backfill with Approved Off-Site Backfill Material – Clean Fill Work, as specified in Specification Section 31 23 00 – Excavation and Fill.

Item 12 Odor Control Foam System – Expendables

1. Work required to complete Odor Control Foam System – Expendables includes, but is not limited to:
   a. Furnish odor control foam as directed by the Construction Manager/Engineer.
2. Odor Control Foam System – Expendables will be measured for payment by the gallon of odor suppressant concentrate(s) used, as directed by the Construction Manager/Engineer.
3. Payment for Odor Control Foam System – Expendables Work will be made in accordance with the unit price for the Bid item "Odor Control Foam System – Expendables" listed on the Project Price Schedule. Payment of the unit price for "Odor Control Foam System – Expendables" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Odor Control Foam System – Expendables Work, as directed by the Construction Manager/Engineer.

Item 13 Site Restoration

1. Work required to complete Site Restoration includes, but is not limited to:
   a. Fertilizing, seeding, and mulching disturbed areas as specified in Section 32 12 00 – Restoration Items and Section 32 90 00 – Planting.
   b. Environmental tree plantings as specified in Section 32 12 00 – Restoration Items and Section 32 90 00 – Planting.
2. Site Restoration will be measured for payment as one unit, complete as specified.
3. Payment for Site Restoration will be made on a percent complete basis of the lump sum price for the Bid item "Site restoration" listed on the Project Price Schedule. Payment of the lump sum price for "Site Restoration" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete the Site

Restoration Work, as specified in Specification Section 32 12 00 – Restoration Items and 31 23 00 Excavation and Fill..

Item 14 Site Fencing

1. Work required to complete Site Fencing includes, but is not limited to:
   a. Site Fencing as specified in Section 32 31 00 – Fences and Gates.
2. Site Fencing will be measured for payment by the linear foot, complete as specified.
3. Payment for Site Fencing will be made in accordance with the unit price for the Bid item "Site Fencing" listed on the Project Price Schedule. Payment of the lump sum price for "Site Fencing" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete the Site Fencing Work, as specified in Specification Section 32 31 00 – Fences and Gates.

Item 15 Site Access Road

1. Work required to complete Site Access Road includes, but is not limited to:
   a. Installation of Site Access Road as specified in Section 31 23 00 – Excavation and Fill.
2. Site Access Road will be measured for payment by the linear foot along the centerline of the road, complete as specified.
3. Payment for Site Access Road will be made in accordance with the unit price for the Bid item "Site Access Road" listed on the Project Price Schedule. Payment of the lump sum price for "Site Access Road" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete the Site Access Road Work, as specified in Specification Section 31 23 00 – Excavation and Fill.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION 01 20 00

SECTION 01 30 00
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. This section describes the minimum level of coordination and meetings required to execute the Work in accordance with Sections 4.0 and 15.0 of the National Grid Terms and Conditions. Additional meetings and/or other coordination may be required.

1.2 SCHEDULE AND PHASING

A. The Work has been divided into three phases. Complete each phase of the Work as per the guidelines below. The Work for Phases I, II, and III must be at Final Acceptance, as verified by the Construction Manager/Engineer, on or before, November 15, 2013.

Phase I – Mobilization and Site Preparation:

1. Complete this phase of Work, including utility location, temporary facilities, site protection, clearing and grubbing, and survey control.

Phase II – Excavation:

2. Complete this phase of Work, including excavation of impacted material, dewatering and treatment, disposal of excavated material and backfilling.

Phase III – Restoration:

3. Complete this phase of Work, including installation of the fence, seeding and mulching, and planting trees.

1.3 ON-SITE CONSTRUCTION MANAGEMENT

A. National Grid will maintain a full time Construction Manager/Engineer on site for the duration of the Work. This Construction Manager/Engineer will be responsible for contractual oversight of the Work. The Construction Manager/Engineer will also be responsible for observing the Work relative to conformance with the technical requirements of the Contract Drawings and Specifications, and with construction quality assurance, ensuring that the Work is completed in accordance with the Contract Documents, and final certification of the Work.

B. Maintain a full-time on-Site Superintendent, who will be responsible for QA/QC, and Contractor health and safety. The Superintendent will be responsible for the supervision and/or coordination of all Contractor employees, Subcontractors, manufacturers, fabricators, suppliers, distributors, installers, and testing agencies whose services, materials, or equipment are required to ensure the completion of the Work. The Superintendent must have sufficient

qualifications, experience, and authority to act as a single point of contact for the on-Site staff, and to make adjustments to the means and methods as needed and as requested by National Grid and the Construction Manager/Engineer.

C. Maintain a dedicated full-time on-Site Health and Safety officer in accordance with Section 6.13 of the National Grid Standard Conditions. The Health and Safety officer will have no other on-Site responsibilities or duties outside of health and safety.

D. New York State Department of Environmental Conservation (NYSDEC) may maintain a part/full-time field representative for the duration of the Work. NYSDEC will be responsible for administration of the RA.

1.4 MEETINGS

A. Attend Project meetings as often as deemed necessary by National Grid during the term of the Agreement.

B. A post-award meeting will be held at National Grid's Syracuse, New York office, the Site, or via teleconference to discuss Project submittals, schedule, etc. Contractor's Officer-in-Charge, Project Manager, and Superintendent for the Project will attend the meeting.

C. A pre-construction meeting will be held, in accordance with Section 2.05 of the National Grid Standard Conditions at the Site prior to start of Work. At a minimum, the Contractor's Project Manager and/or Superintendent for the Project will attend the meeting. It is recommended that the Contractor assemble input from the primary Subcontractors.

This meeting is intended to make certain that the Work is properly scheduled, responsibilities are coordinated among Subcontractors and suppliers, and that those responsibilities are reflected on the Contractor's submittals. Questions concerning the administrative requirements outlined during the Pre-construction conference or any other aspect of the Project may also be addressed.

D. Beginning with the mobilization on the Site, facilitate weekly construction meetings for the duration of the Work. Prior to mobilization and if necessary, bi-weekly meetings may be held via teleconference. After mobilization, weekly meetings will be held at the Site. Present a progress update at all weekly construction meetings to include all tasks completed from the prior week, currently active tasks, and tasks/activities planned for the next two weeks.

E. The standard meeting day and time for the weekly construction meeting will be established based on mutual agreement with the Construction Manager/Engineer and the other participants. Prior to each weekly meeting the Construction Manager/Engineer will prepare a meeting agenda. Participants in the weekly meeting may include representatives of National Grid, NYSDEC, and the Town of Fort Edward.

F. Special construction meetings will be held at the Site or other designated locations to discuss urgent construction issues. The Contractor, National Grid, the Construction Manager/Engineer, or NYSDEC may call special construction meetings. Coordination (agenda, meeting minutes, location, time, and attendance) of special construction meetings is the responsibility of the organization calling the meeting. Special construction meetings will be called judiciously.

G. Ensure weekly construction meeting and special construction meeting attendance by all Contractor staff required to discuss and make decisions relative to the meeting agenda.

H. Make physical arrangements for all meetings to be held on-Site.

I. All expenses associated with attending the meetings, except those that are incurred by National Grid, their representatives or consultants shall be borne by the Contractor.

1.5 REQUESTS FOR INFORMATION, CLARIFICATIONS, AND CHANGES

A. All Contractor communications regarding discrepancies, claims, and change conditions will be made in accordance with Article 9 of the National Grid Standard Conditions.

B. All Contractor requests for Project information and clarifications or changes in the requirements of the Contract Documents must be made in writing to National Grid and the Construction Manager/Engineer.

C. Written requests must be provided regardless of any preceding conversations and preliminary decisions regarding the matter(s) subject to the requests.

D. At National Grid's discretion, email communications may qualify as "requests made in writing" for the purposes of this provision.

E. National Grid or the Construction Manager/Engineer will provide written responses to the request.

F. At their discretion, National Grid or the Construction Manager/Engineer may provide verbal approvals of requests to expedite the Work. In such cases, the Contractor is still required to provide written documentation of request and National Grid or Construction Manager/Engineer approval.

G. National Grid or the Construction Manager/Engineer may also issue clarifications and/or amendments based on their own assessment of Project needs.

H. Any potential increases or decreases in Contractor compensation due to amendments will be in accordance with the provisions of the National Grid Standard Conditions.

I. National Grid and/or their representative will issue the Contractor supplemental instructions authorizing minor changes in the Work that may or may not involve adjustments to the Contract Price or the schedule.

J. If latent or unforeseen conditions require modifications to the Contract, the Contractor may propose changes in the Work by submitting a detailed request to include labor rates, equipment rates, material costs, etc. for a change to National Grid and/or their representative.

K. Document Change Order requests in accordance with the requirements of the National Grid Standard Conditions, Supplemental Conditions, and with the procedures set forth by National Grid during procurement.

L. The Construction Manager/Engineer may issue an Authorization for Contract Change (ACC) on behalf of National Grid, which instructs the Contractor to proceed with a change in the Work, for subsequent inclusion for a Change Order. Any ACC must be authorized by National Grid in advance and signed by the Construction Manager/Engineer and National Grid.

1.6 COMMUNITY RELATIONS

A. National Grid will provide all external communication with the media/press, Project stakeholders, elected officials, public, etc. Do not communicate with the media/press, project stakeholders, elected officials, public, etc. regarding the Work. Refer all external questions and comments to National Grid.

1.7 RECORDS

A. Maintain on-Site copies of all Project correspondence and Project documents generated during the Work.

1.8 PRE-MOBILIZATION SUBMITTALS

A. All submittals are subject to review and approval by National Grid and the Construction Manager/Engineer. Follow the procedures detailed in Specification Section 01 33 00 – Submittal Procedures when submitted items for review.

B. Contractor Health and Safety Plan:

Submit Contractor Health and Safety Plan in accordance with the Supplemental Conditions.

Include relevant safety information for all proposed and likely Site activities.

Contractor Health and Safety Plan is to be prepared and reviewed by a certified industrial hygienist.

C. Critical Path Method Project Schedule:

Prepare a Critical Path Method (CPM) Project schedule. Update and disseminate the schedule on a weekly basis prior to the weekly construction meetings.

D. Pre-Construction Survey Results:

Perform a pre-construction survey of the Site to 50 feet beyond the Project limits under the supervision of the Construction Manager/Engineer. This survey will include meets and bounds of the National Grid Canal Street property.

Submit the findings of the pre-construction survey to the Construction Manager/Engineer for review and approval prior to mobilization.

Include video/photographic documentation of the existing conditions of the Site and surrounding structures.

Claims determined to be resulting from pre-existing structural and/or cosmetic damage, not identified during the pre-construction survey, will be the responsibility of the Contractor.

E. Schedule of Permits:

1. Submit a schedule of applicable permits including approximate lead time. Indicate any action items or information required from the Construction Manager/Engineer.
2. Submit copies of all supplemental data required by permits with documentation that the supplemental data was provided to the entity that issued the permit according to the schedule required by the permit.
3. Submit copies of complete permit applications to the Construction Manager/Engineer prior to submittal to the regulatory entity.
4. Submit copies of fully executed permit applications and final permits to the Construction Manager/Engineer.

F. RA Contingency Plan:

Prepare the RA Contingency Plan (RACP). This plan will describe the provisions required for responding to Site-related emergencies that could potentially occur during the Work. The RACP will, at a minimum, present the following components:

a. A spill response plan (SRP) for addressing spills that occur on Site during remedial construction activities. The SRP will describe the methods, means, and facilities required to prevent soil, water, structure, equipment, and material impacts caused by spills; provide information regarding spill containment and cleanup, and provide information related to decontamination measures.

b. Procedures that Contractor's personnel will take in response to an emergency.

c. Designation of an emergency coordinator.

d. Include a current list of all emergency equipment and evacuation plans.

e. Procedures for monitoring weather emergencies and discussion of how weather conditions and notifications will impact Site operations.

f. Procedures and routes for emergency vehicular access/egress.

g. Procedures for the evacuation of personnel from the Site.

h. A listing of contact personnel with phone numbers that, at a minimum, includes fire officials, ambulance service, local, county, and state police, local hospitals, a spill response team.

i. Routes to local hospitals, including written directions and a map that depicts the location of the Site relative to the hospital(s).

G. Site Operations Plan:

Prepare a narrative discussion and drawings describing the means and methods that will be used to execute the Work. The final design will be based on the requirements, intent, and concepts contained in the Contract Documents. Scale drawings included in the Site Operations Plan at no less than 40 feet per inch. At a minimum, the Site Operations Plan will include final submittals with means and methods for the following Project elements:

1. Excavation and backfill phasing plan for performance of the Work.

2. Traffic control plan for equipment delivery. At a minimum, the traffic control plan must include the usage of flaggers and proper signage.

3. Site specific Contractor Quality Control Plan for ensuring the Work objectives are met. This will include a summary of equipment maintenance procedures and contract personnel training requirements.

4. Manufacturer cut sheets for all products requiring approval by the Construction Manager/Engineer prior to being incorporated into the Work.

5. Shop drawings.

6. Temporary security fence alignment, gate locations, construction details, and signage.

7. Security procedures and equipment specifications in accordance with Section 01 50 00 – Temporary Facilities and Controls.

8. Sanitary facility locations.

9. On-Site parking and traffic layout.
10. Off-Site parking locations, if utilized, including routes to and from the Site.
11. Off-Site trucking Subcontractors.
12. Gross level decontamination of delivery vehicle tires and chassis to remove surface soils prior to vehicles departing the Site.
13. Debris management, including proposed disposal facilities.
14. Manufacturers' MSDS's and product information for all stabilization agents, such as Cement Kiln Dust (CKD).

Staff roles and responsibility summary, including explicit identification of Contractor or Subcontractor staff and qualifications, and who will personally perform and be responsible for the following tasks:

a. Site health and safety.
b. Quality control.
c. Construction documentation.
d. For each company performing one of the above roles, include company contact information (address, telephone number, facsimile number, website, etc.). For each person identified in the Site Operations Plan include resume with license number for surveyors and engineers.

Crew size and equipment list for major tasks.

Site Operations Plan may be submitted in parts, so long as all parts are submitted by the submittal deadline. Organize for use in the field and for review. Site Operations Plan will be reviewed for both technical content and organization. Include table of contents, technical sections and subsections, appendices (tables, drawings, data, etc.), etc.

H. Borrow Source Evaluation:

Submit a borrow source evaluation for each material type that will be incorporated into the Work.

Refer to Specification Section 31 23 00 – Excavation and Fill for details on the required components of the borrow source evaluation submittal.

I. Utility Survey:

Contact DIGSAFE to perform a utility markout.

Conduct a utility survey of the excavation area using a private utility locating service and markout all suspected utility locations. Confirm all suspected utility locations with the utility provider prior to beginning intrusive activities.

Provide copies of all DIGSAFE numbers/tickets/utilities plates/private utility location information to the Construction Manager/Engineer prior to beginning intrusive activities. The Construction Manager/Engineer will maintain copies on-Site in a clearance package.

1.9 DAILY REPORT

A. Prepare a daily report summarizing the staff and equipment used and the Work performed each Day and anticipated Work for the next Day. The daily report should also list all daily quantities applicable to pay items listed on the Project Price Schedule. The Contractor's internal documentation used for this purpose may be used to fulfill this requirement, subject to approval by the Construction Manager/Engineer. At a minimum the daily report will include the following additional items:

Description of any QC testing performed and the results.

Excavation and backfill rate for each working Day. Submit certified weight tickets for material exported for off-Site disposal and for each load of imported backfill material.

Estimate of the excavation rate, number of trucks needed for transportation to the disposal facility, and the disposal facility production rate for the next Day.

B. Provide, in an addendum to the Daily Report for the last Day of Work in a week, a weekly dewatering log summarizing the following information at a minimum:

Weekly rainfall measured at the Site.

Weekly record of water levels within the excavation area.

Weekly record of water stored, treated, and discharged.

C. Submit daily report for each working Day by 10 AM of the next Day worked.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION 01 30 00

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

A. This section summarizes the protocol and procedures for the preparation and delivery of required submittals to the Construction Manager/Engineer.

1.2 GENERAL REQUIREMENTS

A. Provide all submittals in hardcopy format directly to the Construction Manager/Engineer in accordance with the schedule and procedures contained in this section and Article 6.16 of the National Grid Terms and Conditions.

B. Include calculations, construction drawings, shop drawings, plans, reports, records, photographs, diagrams, and details with submittals where applicable to facilitate the review and/or approval.

C. For all submittals, provide six (6) copies; two (2) to the Construction Manager/Engineer, and two (2) to National Grid, unless otherwise noted by the Construction Manager/Engineer.

D. If directed by National Grid or the Construction Manager/Engineer, provide submittals electronically in the format requested (i.e. document file, drawing file, image file, etc.). For electronic drawings, submit an AutoCAD file (2004 thru 2010 release) using e-transmit feature (i.e. include external references, image files, color table file, font file, line file, etc.). Convert all AutoCAD add on data to AutoCAD format. Use descriptive layer titles (not numbers only). Use extensive layer control and use line color by layer and line type by layer. AutoCAD files of Contract Drawings will be available to the Contractor upon request.

E. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and Certifications shall be signed and dated by an officer, or other individual, authorized to sign documents on behalf of that entity. Submittals requiring preparation by an engineer shall be signed and sealed by a Professional Engineer licensed to practice engineering in the State of New York.

F. Schedule submittals to expedite Work. Provide the Construction Manager/Engineer a minimum of 5 working Days, excluding transmittal time, for review.

1.3 SUBMITTAL SCHEDULE

A. See Table 01 33 00-1 Project Submittal Summary attached at the end of this Section. Submittals are required on the items as described individually in each Section of the Technical Specification.

1.4 SUBMITTAL PROCEDURES

A. Use the submittal numbers assigned in Table 01 33 00-1. For submittals not included in Table 01 33 00-1, use the next sequential number as the submittal number. For revised, use original number and a sequential alphabetic suffix. For multiple submittals with the same submittal number, use the original number with a sequential numerical suffix.

B. Use a cover form for submittals. The cover form will include Project identification, Project number, date, submittal number, submittal description/title, submittal exclusions, special issues, Contractor, Subcontractor, etc.

C. Include drawings and details as appropriate.

D. Use the same units of weights and measures used on all submittals as are used in the Contract Documents.

E. Submit all supplier and Subcontractor submittals.

F. Apply Contractor's stamp, signed or initialed, certifying that review, verification of products required, field dimensions, adjacent construction Work, and coordination of information, are in accordance with the requirements of the Work and Contract Documents.

G. Sign the following certification as part of the Submittal Form.

I hereby certify that I have carefully examined the enclosed submittal(s) and have determined and verified all field measurements, construction criteria, materials, catalog numbers and similar data, coordinated the submittal(s) with other submissions and the work of other trades and Contractors, and to the best of my knowledge and belief, the enclosed submittal(s) is/are in full compliance with the Contract Documents, except as follows (enter “NONE” if there are no exceptions).

H. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.

I. Prepare submittals that are complete and in sufficient detail for ready determination of compliance with the contract requirements.

J. Revise submittals as requested by the Construction Manager/Engineer. Identify all changes made since the previous submission.

K. Submittals not requested will not be recognized or processed.

1.5 SUBMITTAL REGISTER

A. Maintain a Technical Submittal Register at the Site including the submittal number, description, date submitted, status, date of approval/rejection in accordance with Article 6.16 of the National Grid Terms and Conditions.

1.6 SUBMITTAL REVIEW

A. The Construction Manager/Engineer will review all submittals solely for the purpose of determining whether the information contained in the submittal conforms to the design concept of the Contract Documents. The Construction Manager/Engineer will return the submittals with the following classifications:

1. Approved as Submitted: Work may proceed, no exceptions taken.
2. Approved as Noted: Work may proceed subject to comments, resubmittal not required.
3. Revise and Resubmit: Work may not proceed, resubmittal required for indicated items. Proceed with work on other items subject to comments.
4. Rejected: Work may not proceed, resubmittal required. Submittal unresponsive and/or not in conformance with Contract Documents.
5. For Information Only: Items not reviewed or items for which no submittal is required.

B. Construction Manager/Engineer's review of submittals for conformance with Contract Documents does not relieve the Contractor from responsibility with regard to fulfillment of the terms of the Contract and proper and complete performance of the Work in accordance with the requirements of the Contract Drawings, Specification, applicable permits, as well as the general requirements of the Contract Documents.

C. Construction Manager/Engineer's review of submittals does not relieve the Contractor from responsibility for errors or omissions in its designs, details, calculations, analyses, test methods, materials, and its sole responsibility for means and methods of construction, and safe and successful construction of the Work.

1.7 CERTIFICATES OF COMPLIANCE

A. Execute any certificates required for demonstrating proof of compliance of materials with the requirements of the Contract Drawings and Specifications in three (3) copies.

B. Sign each certificate by an official authorized to certify on behalf of the manufacturing or testing company and provide the name and address of the Contractor, the Project name and location, and the quantity and data, or dates of shipment or delivery to which the certificates apply.

C. Provide the name and address of the testing laboratory and the date or dates of the tests to which the report applies with copies of laboratory test reports that are submitted with certificates.

D. Certifications are not to be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specified requirements.

1.8 INVOICES

A. Submit invoices monthly in accordance with the provisions of the National Grid General Conditions and Supplemental Conditions.

Include update of Price Schedule with each invoice.

Payment will not be made unless all the proper support documentation has been submitted and approved by National Grid or National Grid's representative.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

SUBMITTAL SUMMARY TABLE 01 33 00-1

Submittal Number	Description of Submittal	Submission Deadline	Referenced Specification Section
PRE-CONSTRUCTION			
1	Critical Path Method Project Schedule	Submitted with Bid, updated weekly during construction	01 30 00
2	Pre-Construction Survey Results	1 week after award	01 30 00
3	Site Operations Plan	1 week after award	01 30 00
4	Contractor Health and Safety Plan	1 week after award	01 30 00
5	Contractor Quality Control Plan	1 week after award	01 30 00
6	RA Contingency Plan	1 week after award	01 30 00
7	Schedule of Permits	1 week after award	01 30 00
8	Borrow Source Evaluations	2 weeks prior to importing fill to the Site	31 23 00
9	Utility Survey	1 week prior to mobilization	01 30 00
10	Permits and Data Submittals	Prior to submittal to agency	01 30 00
11	Final Executed Permits	Upon receipt	01 30 00
12	Disposal Facility Contracts	Prior to excavation	02 61 00
REMEDIATION			
13	Daily Report	10:00 AM of the next work Day	01 30 00
14	Invoices	Monthly	01 33 00
PROJECT CLOSEOUT			
15	Substantial Completion	Work is at Substantial Completion	01 77 00
16	Record Documents	Prior to application for Final Acceptance	01 77 00
17	As-built Survey	Prior to application for Final Acceptance	01 77 00
18	Utility Repair Confirmation	Prior to application for Final Acceptance	01 77 00
19	Permit Closeout	Prior to application for Final Acceptance	01 77 00
20	Final Acceptance	Work is complete	01 77 00
21	Final Invoice	After Final Acceptance	01 77 00

END OF SECTION 01 33 00

SECTION 01 41 00
REGULATORY REQUIREMENTS – PERMITS

PART 1 GENERAL

1.1 SUMMARY

A. This section establishes responsibility for obtaining major Project permits between National Grid, the Construction Manager/Engineer, and the Contractor.

1.2 NATIONAL GRID PERMITS

A. National Grid will obtain the following Project permits:

Approvals from NYSDEC and/or New York State Department of Health (NYSDOH), excluding approvals of Contractor submittals required by NYSDEC and/or NYSDOH.

1.3 CONTRACTOR PERMITS

A. Obtain the following Project permits in accordance with Article 6.07 of the General Conditions:

1. Local building, construction and demolition permits, if necessary.
2. Permits required for temporary road closures, if necessary.
3. Permits required for temporary access entrances off of public roads, if necessary.
4. Permits required for parking and traffic restrictions on public roads, if necessary.
5. Local variances for temporary fence installation, if necessary.
6. Permits required for temporary lane closures and sidewalk closures, if necessary.
7. POTW Permit from the Town of Fort Edward
8. Wetlands Permit – If required
9. General Construction Permit – If required
10. Any other permits required for the Work.

B. This Section does not describe all permits required for performance of the Work. Any permits not identified in this Section, or elsewhere in the Contract Documents, are the responsibility of Contractor.

C. The Contractor is responsible for performing in accordance with the terms and conditions of all permits.

D. Provide any technical and equipment related-data required for Contractor to obtain the necessary permits.

1.4 COORDINATION/ASSISTANCE

A. National Grid and/or the Construction Manager/Engineer will coordinate delivery of Contractor submittals to NYSDEC and/or NYSDOH, as required.

B. Provide all data requested by National Grid or the Construction Manager/Engineer required to support permit applications. When necessary, National Grid and/or the Construction Manager/Engineer may provide data summaries or other Project information to the Contractor in support of Contractor data submittals.

C. Any coordination and/or assistance between National Grid and the Construction Manager/Engineer are provided in the interest of expediting the Project. Provision of coordination and/or assistance does not relieve the Contractor of any obligations regarding the timeliness and completeness relative to the permit submittals.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION 01 41 00

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SUMMARY

A. The Work required under this section includes furnishing all labor, equipment, supplies, laboratory testing, materials, and performing all operations required for providing temporary facilities and controls during the performance of the Work.

PART 2 PRODUCTS

2.1 MATERIALS AND FACILITIES

A. All materials will be suitable for their intended use and conform to applicable codes and standards.

B. Provide a sufficient number of self-contained, single occupancy toilets with chemical flush, aerated re-circulation, which are properly vented and fully enclosed with fiberglass or other nonabsorbent material. At a minimum provide two single occupancy toilets outside of the exclusion zone. Designate one toilet as “Women Only.” These toilets must be serviced at a minimum of once a week.

C. Provide fully equipped hand wash stations outside of toilets and in the personnel decontamination area.

D. Designate three on-Site parking spaces for the exclusive use of the Construction Manager/Engineer and National Grid.

2.2 FIELD OFFICES

A. The Construction Manager/Engineer's field office trailer shall provide a minimum of 400 square feet of floor space. The Construction Manager/Engineer's field office trailer shall include two separate office spaces, a center common meeting room, and two outside doors.

B. The NYSDEC's Agency field office trailer shall provide a minimum of 160 square feet of floor space. This space will not be co-located with the Construction Manager/Engineer’s trailer.

C. The Contractor shall install and maintain, in accordance with all applicable codes and regulations, the electric, heat, and cooling services for each office trailer.

D. The field office trailer utilized by the Construction Manager/Engineer shall have the following items:

1. One drafting table (48 inches by 89 inches minimum) with double storage cabinets underneath.

2. Force air heat.
3. Two 5,000 BTU (minimum) air conditioners.
4. Sufficient supply of electrical outlets and a minimum of one operational telephone outlet in each office space.
5. Four flat-top movable desks (44" x 30") with filing and lockable storage drawers.
6. Four office chairs.
7. One large waste basket and two office size waste baskets.
8. Three 4-drawer legal size, filing cabinets with locks.
9. Ten folding or stacking chairs.
10. Two tables (30" x 60").
11. One vertical filing plan rack for two sets of 22" x 36" plans each rack.
12. One ten-pound Class ABC fire extinguisher, inspected and approved by the appropriate local authority.
13. One first aid kit meeting the minimum requirements of ANSI/ISEA Z30S.1 (10 person ANSI First Aid Kit by Genuine First Aid® or equal).
14. One 16 ounce eyewash station.
15. One refrigerator with freezer (minimum 5-cubic-feet capacity).
16. One all-in-one (printer, copies, fax, scanner), Hewlett-Packard Model No. L 77S0 or equal.
17. Two cordless telephones with digital answering systems.

E. Agency field office trailer office furniture - The Contractor shall be required to provide the Agency's field office trailer with the following movable items:

1. Force air heat.
2. One 5,000 BTU (minimum) air conditioner.
3. Sufficient supply of electrical outlets and a minimum of one telephone outlet.
4. One flat-top movable desk (44" x 30") with filing and lockable storage drawers.
5. Two office chairs.
6. One large waste basket.
7. One 2-drawer legal size cabinet with lock.

8. One 10-pound Class ABC fire extinguisher inspected and approved by the appropriate local authority.
9. One refrigerator (minimum 2.5-cubic-feet capacity).
10. One cordless telephone with digital answering system.

F. Maintenance of each trailer shall include adequate heating and cooling, electric and telephone services, lighting, portable sanitary facilities, snow removal as required, and janitorial services not less than weekly. All garbage, dust, and miscellaneous material collected during clean-up of the facilities shall be disposed of at a sanitary landfill.

G. Install temporary fencing at the locations shown on the Contract Documents.

Temporary fencing will be 4-foot orange safety fencing with steel T-posts 8 feet on center, and firmly secured to withstand wind and prevent unauthorized access.

Furnish, install, and maintain all other proposed temporary fencing, gates and barriers around impacted areas as required by the Contract Documents and to complete the Work.

Furnish and post signs at every entrance and gate, and at not less than every 50 feet along the fence warning the general public that the Site contains physical and chemical hazards, and that access is forbidden to unauthorized persons.

Furnish and affix the NYSDEC MGP remediation sign as detailed in the Contract Drawings.

Furnish and post a professionally lettered sign, of a minimum size of 4 feet by 4 feet, at each entrance, or gate to the Site with the following text, or other similar text approved by the Construction Manager/Engineer.

> "All Personnel and Visitors Beyond This Point Must Wear Hard Hat, Safety Glasses, High-Visibility Vest, and Steel Toe Boots."

H. Provide Rusmar AC 645 Long Duration foam or Construction Manager/Engineer approved equivalent. Provide a foam application unit with a minimum capacity and flow rate equal to or in excess of the RUSMAR PFU 400/25.

PART 3 EXECUTION

3.1 GENERAL

A. Operate and maintain all equipment and systems to ensure that that the temporary facilities, controls, utilities, other services, etc. are provided without disruption.

B. Design, furnish, install, and maintain all temporary Site facilities and controls required for the performance of the Work.

C. Maintain vegetation in a neat and trimmed manner during the Work.

D. Provide and maintain all temporary environmental controls as necessary for protection of the environment throughout the performance of the Work.

E. Provide and maintain proper barricades and warning signs at all closures, holes, hazards, and equipment areas.

F. Ensure that all Subcontractors comply with the provisions of this Specification.

3.2 SANITARY FACILITIES

A. Empty the sanitary facilities before the capacity is exceeded, or on a weekly basis, whichever occurs first. Clean sanitation facilities concurrently with emptying.

B. Clean and restock hand wash stations as needed.

3.3 TEMPORARY UTILITIES

A. Provide water suitable for decontamination for the duration of the Project.

B. Supply potable drinking water for on-Site personnel.

C. Provide all temporary utility services in accordance with this Specification for the duration of the Project. This includes, but is not limited to installation, operation, maintenance, and removal of all equipment and/or systems required to assure uninterrupted service, and all charges associated with installation, connection, service, and shut-off.

D. No utilities currently service this property.

Incorporate additional costs for temporary utilities into the initial bid. Subsequent claims for temporary utility related changes in cost or time will be denied.

E. The use of existing on-Site utilities on all other private properties is prohibited.

3.4 PERSONNEL DECONTAMINATION

A. Comply with all requirements of Site Specific Contractor Health and Safety Plan.

B. Provide the means for National Grid and the Construction Manager/Engineer to comply with Site Specific Contractor Health and Safety Plan.

C. Provide a personnel decontamination station within the Work Zone where personnel can drop equipment and remove personal protective equipment (PPE).

Equip decontamination station with basins for water and detergent and trash bags or cans for containing disposable PPE and other discarded materials.

Supply a sink as a secondary means of personal hygiene for personnel.

3.5 EQUIPMENT DECONTAMINATION

A. Install decontamination equipment in accordance with the Contract Drawings.

Decontamination pad will be located and operated at any point that equipment leaves the Site.

Decontamination pad will be sufficiently sized to ensure the largest piece of equipment can be adequately decontaminated.

B. Remove heavy contamination using a broom and/or brushes within the excavation area prior to movement to the decontamination pad.

C. Perform heavy equipment decontamination within the limits of the decontamination pad.

D. Pressure wash heavy equipment before leaving the Site, if necessary.

E. Decontaminate any equipment utilized to excavate impacted materials prior to backfilling.

F. Collect and pump wastewater from equipment decontamination into frac tanks.

G. Collect and remove soils from the decontamination pad and bulk with excavated materials.

3.6 NOISE CONTROL

A. Conform to the local noise ordinances for Town of Fort Edward at all times.

Applicable sections of the Town of Fort Edward Town Code are excerpted below:

B. § 73.2. Prohibited Noises

1. The erection, excavation, demolition, alteration or repair of any building other than between the hours of 7:00 a.m. and 9:00 p.m. except in the case of public safety or emergency.

C. Work outside of the hours, listed above; require an approved permit by the Town of Fort Edward.

D. Measure the noise level at Project limit as needed. Provide noise barrier or apply for ordinance to exceed noise limit, as needed.

E. Equip vehicles and motorized equipment with appropriate noise control devices to maintain noise levels that conform to current OSHA standards and current State and local regulations. Immediately take steps to correct any deficiencies noticed or as directed by National Grid and/or the Construction Manager/Engineer.

F. Properly maintain all mufflers and noise control devices and replace when necessary. Operate all construction equipment in the manner that it was

intended. Excessive amount of noise and vibration due to improper use of vehicles and equipment is prohibited.

G. All equipment that is required to operate beyond standard Site work hours will, to the maximum extent possible, be electrically driven.

H. Do not conduct Work outside of the permitted working hours (Monday through Friday, 7:00 am to 9:00 pm, no work on Federal holidays) without an approved permit by the Town of Fort Edward.

3.7 EQUIPMENT LEFT ON SITE

A. Secure all vehicles and/or equipment left on the Site outside of the standard work hours.

B. Ensure that all equipment, where feasible, is de-energized when left on-Site and not in use to prevent electrical/fire/explosive hazards. Contractor will be responsible for security, operation and maintenance of any systems that require such services outside standard work hours. If systems are operational outside the standard work hours, provide oversight at all times when equipment is in operation or provide an electronic monitoring system with remote communication ability in the event of system failure. Repair system failures such that the Project schedule is not affected.

3.8 SITE SECURITY

A. Take every security precaution necessary to prevent any unauthorized access to the Work area, and to control construction traffic to and from the Site.

B. Establish written Site security procedures as part of the Site Operations Plan. At a minimum the procedures will include:

1. Roles and responsibilities of personnel involved with Site security.
2. Description of proposed daily security operations.
3. Sign in/sign out procedures.
4. Description of how a breach of security will be handled. A breach of security includes, but not be limited to, unauthorized personnel located on the Site working area, unauthorized personnel attempting to gain access to the Site working area, broken fences and unlocked gates, and unauthorized personnel in the hazardous work zones.
5. Communications.
6. List of personnel to be contacted in case of emergency.

3.9 ENVIRONMENTAL PROTECTION

A. For the purposes of this specification, environmental protection is defined as the retention of the environment in its natural state to the greatest extent possible

during construction and to enhance the natural appearance in its final condition. Environmental protection requires consideration of air, water, and land resources and involves noise, solid waste management, and management of other pollutants. Comply with all applicable or relevant and appropriate Federal, State, and local laws to provide for abatement and control of any environmental pollution arising from the construction activities in performance of the Work.

B. The Construction Manager/Engineer may notify the Contractor in writing of any non-compliance with Federal, State, and/or local laws. After receipt of the notice, immediately inform the Construction Manager/Engineer of the proposed corrective action and take such actions, if they are approved by the Construction Manager/Engineer. If the Contractor fails or refuses to comply promptly, the Construction Manager/Engineer may issue an order suspending or halting all or parts of the Work until satisfactory corrective action has been taken. Claims for extensions of time, or for excess costs or damages by the Contractor due to the stop orders described above, will be denied.

C. Do not pollute any stream, river, waterway, roadway, or soil with fuel, oil, grease, lubricant, hydraulic fluid, bitumen, calcium chloride, acid, base, or other harmful materials. Comply with the appropriate Federal, State, and local regulations and guidelines for the handling and disposal of all materials.

D. Properly dispose any debris resulting from the performance of the Work. Disposing of any debris, soil, water, effluent, by product, waste, trash, chemical, fuel, oil, grease, lubricant, bitumen, calcium chloride, acid, base, or other harmful material etc., in or adjacent to the Project area is not acceptable. Remove any unauthorized dumped materials and restore the area as directed by the Construction Manager/Engineer. If necessary, contaminated areas as a result of unauthorized activity or dumping by the Contractor will be remediated or excavated at no additional cost.

E. Dispose of all contaminated materials (debris, soil, water, effluent, by-product, waste, trash, chemical, fuel, oil, grease, lubricant, bitumen, calcium chloride, acid, base, used erosion controls, or other harmful material etc.) resulting from the Work in accordance with all applicable or relevant and appropriate Federal and State laws prior to completion of construction.

3.10 DUST, ODOR AND VAPOR CONTROLS

A. Apply odor-suppressing foam to the soil stockpiles, excavation, loading operations, or any other Site operation as directed by the Construction Manager/Engineer.

B. Provide labor, equipment, and material required to apply odor and vapor suppressant foam to all exposed soil areas including stockpiles within 5 minutes when directed by National Grid or the Construction Manager/Engineer. No

separate payment will be made for the supplying and operation of vapor/odor control equipment. Payment for vapor/odor suppression materials will be per the bid unit price. Failure to apply vapor/odor suppression materials within the specified time will result in all Contractor operations being suspended until such time as the Construction Manager/Engineer feels the request for controls has been fully satisfied by the Contractor, and no additional payment for such downtime will be due to the Contractor.

C. Maintain sufficient material on hand, to apply foam as directed, when intrusive Work or soil handling is being performed.

D. All exposed areas and stockpiles left untouched for greater than 2 hours are to be covered with a secured polyethylene tarp. Provide an equivalent covering for all soil stockpiles left on-Site overnight. Utilize vapor suppression to cover stockpiles during the stockpiling and loading of soil. Foam application must begin within 10 minutes of creation of the stockpile or the beginning of loading activities, and continue until stockpile activities are completed. At which time the pile will be covered with polyethylene sheeting, and secured.

E. Provide dust control using water trucks, hoses, or engineered dust suppression materials.

END OF SECTION 01 50 00

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

A. Project completion covers the administrative and technical requirements for final cleaning, inspection, Project as-built documents, warranties, bonds, final payment, and other procedures for project closeout in accordance with Article 13.0 of the National Grid Standard Conditions.

1.2 CLOSEOUT PROCEDURES

A. Substantial Completion:

1. When the Contractor considers the Work or designated portion thereof to be at Substantial Completion, provide written notice, with a list of items to be completed or corrected (punch list), the value of items on the list, and reasons why the Work is not complete.

2. The Construction Manager/Engineer will inspect to determine the status of completion.

3. Should the Construction Manager/Engineer determine that Work is not Substantially Complete, the Construction Manager/Engineer will notify Contractor in writing.

4. The Contractor will within two (2) days of the notice provide a schedule for when all defects will be corrected and/or the Work completed for the Construction Manager/Engineer's review.

5. Upon the Construction Manager/Engineer's approval, remedy any deficient and/or incomplete Work and upon completion, notify the Construction Manager/Engineer. The Construction Manager/Engineer will re-inspect the Work for the purpose of Final Acceptance.

B. Project As-Built Drawings:

1. Submit record surveys in electronic format and provide 8 hard copies to the Construction Manager/Engineer. Record surveys include:

a. Encountered structures left in place

b. Encountered pipes not removed and cut/capped pipes

c. Utility locations, elevations, and inverts

d. Bottom of remedial excavation

e. Backfill grade

f. Final Grade

g. Benchmark coordinates and elevation

h. Property lines

C. Provide copies of all Project records including:

1. Manifests and bills of lading
2. Weight tickets
3. Testing results
4. Health and Safety reports
5. Copies of permits

D. Utility Relocation:

1. Submit written confirmation from the utility providers that all temporary relocated utilities have been restored to pre-remediation condition and that all temporary utility connection points have been restored to a suitable condition.

E. Permit Closeout:

1. Submit written confirmation that all permits have been closed with their governing authority and that any and all remaining fees have been paid in full.

F. Final Acceptance:

1. Submit written certification that confirms the following: Contract Documents have been reviewed, Work has been inspected, Work is complete in accordance with the Contract Documents including satisfactory compliance with performance guarantees, any previously noted deficiencies have been corrected or remediated, equipment has been tested in presence of the Construction Manager/Engineer, and Work is complete and ready for final inspection.
2. Submit evidence of final continuing insurance coverage, complying with insurance requirements, with the application for final payment. The Contractor is required to name National Grid and associated property owners as additional insured.
3. The Construction Manager/Engineer will inspect Work to verify status of completion.
4. Should the Construction Manager/Engineer consider the Work to be incomplete or defective, the Contractor will be notified in writing identifying incomplete or defective Work.

5. Take immediate action to remedy incomplete and deficient Work and send written notice when Work is complete. The Construction Manager/Engineer will re-inspect Work to verify status of completion.

G. Final Payment:

1. Submit applicable for final payment after the final acceptance of the Work.

2. Identify total Contract amount, previous payments and the amount due.

PART 2 MATERIALS

(Not Applicable)

PART 3 EXECUTION

3.1. POST-CONSTRUCTION INSPECTION

A. Prepare the Site for Substantial Completion and Final Acceptance. Work includes record documents, cleaning the Site and administrative provisions.

B. After final cleaning and upon written notice from the Contractor that Work is complete, the Construction Manager/Engineer will make a preliminary inspection. The Construction Manager/Engineer will notify the Contractor in writing of defective and/or incomplete Work by generating a "punch list."

C. Upon receiving written notice from the Construction Manager/Engineer, remedy defects and/or incomplete Work to the satisfaction of the Construction Manager/Engineer at no additional cost in a time frame suitable to support the Project schedule.

D. Inform the Construction Manager/Engineer in writing after the items listed in the "punch list" are corrected or completed. Upon receipt of notice, Construction Manager/Engineer will make final inspection of the Project in the presence of the Contractor.

E. Should the Construction Manager/Engineer find the Work to be satisfactory, the Contractor will be allowed to make application for final payment in accordance with provisions of the Agreement. Should the Construction Manager/Engineer still find deficiencies and incomplete Work, the Contractor will be notified in writing of deficient and/or incomplete Work and requests for final payment will not be approved until such time that the Contractor has satisfactorily completed the required Work.

END OF SECTION 01 77 00

SECTION 02 61 00
REMOVAL AND DISPOSAL OF CONTAMINATED MATERIALS

PART 1 GENERAL

1.1 SUMMARY

A. The Work required under this section includes furnishing all labor, materials and equipment, and performing all operations required for the proper management, off-Site transportation, and disposal of waste materials and waste liquids generated during implementation of the RA.

1.2 GENERAL

A. The National Grid list of approved thermal desorption facilities for the receipt of soil from the Project Site are as follows:

1. ESMI of New York, 304 Towpath Road, Fort Edward, New York 12828 (800) 511-3764.

2. ESMI of New Hampshire, 67 International Drive, Loudon, New Hampshire 03307; (603) 783-0228.

3. Colonie Landfill, 1319 New Loudon Road, Cohoes, NY (518) 783-2845

B. The National Grid list of approved facilities for receipt of wastewater from the Project Site are as follows:

1. Washington County Sewer District

1.3 SUBMITTALS

A. Designate and submit primary and alternate thermal desorption receiving facilities, liquid waste treatment facilities, and landfill receiving facilities for materials (soils, debris, and liquid waste). Upon final approval from National Grid, contract with all facilities prior to any excavation. Copies of contracts from each facility or letters from each facility-indicating acceptance of the total estimated volume of material from this Project will be submitted to the Construction Manager/Engineer.

B. Submit copies of all waste manifests, bills of lading, and certified weight slips from a scale approved for use by the Construction Manager/Engineer and/or National Grid for all materials removed from the Site for disposal.

C. Submit copies of Part 364 Permits for all waste transporters.

PART 2 MATERIALS

2.1 VEHICLE REQUIREMENTS

A. Vehicles used for the transport of materials shall be structurally sound and watertight to prevent leakage or spillage. All trucks must have a gasket seal on the back truck gate (that is in serviceable condition) and all tarps should have a

flap (in serviceable condition, with proper grommets and holes) that covers the back top gap of the truck that can be secured via bungee cord or other Construction Manager/Engineer-approved methods. If trucks are not equipped as such, plastic must be placed on top of the soils before the tarp is lowered so that soils and/or odors that might escape from the back of the truck are minimized and the material is protected from rain during transit.

B. Properly affix license plates on the truck and remain visible at all times.

C. Display proper placards and cover or remove extraneous or incorrect placards prior to the truck departing the Site.

D. Display or have required permits readily available for verification by the Construction Manager/Engineer.

E. Drivers must remain in the truck at all times unless they are wearing the correct personal protective equipment required for the Site.

F. The Construction Manager/Engineer reserves the right to reject vehicles that are not properly equipped and/or require the use of plastic sheeting if the gasket seal and flaps are not considered by the Construction Manager/Engineer or National Grid to be in serviceable condition.

2.2 IMPACTED MATERIAL STORAGE

A. Vehicles and storage containers utilized for the storage and/or transport of impacted materials will be structurally sound and tight to prevent leakage or spillage of materials.

B. Vehicles and containers utilized for the storage and/or transport of materials will be provided with solid sealable covers to minimize the release of odors from the containers during transport.

C. Provide impermeable liners for the interior of the excavated impacted material storage containers and vehicles to prevent leakage of entrained liquid. The liner material will be strong enough to withstand the placement of excavated material into the container without tearing, and chemically resistant to the contaminants within the material.

2.3 ODOR SUPPRESSANT

A. Provide odor and dust suppressing foam to supplement covers, as requested by the Construction Manager/Engineer.

PART 3 EXECUTION

3.1 LOADING AND TRANSPORTATION OF MATERIAL

A. Trucks must arrive on-site clean. The Construction Manager/Engineer may instruct a truck to depart the Site if it arrives in a dirty condition.

B. Do not stand on the back of the truck. Use ladders or scaffolding when securing tarps and/or covers.

C. Use pre-characterization sample results to allow direct load, transport, and disposal of all MGP-related impacted material whenever possible.

D. Provide traffic control at the Site entry to ensure a smooth flow of traffic and to minimize congestion at the Site entrance. At a minimum, the traffic control must include the usage of flaggers and proper signage.

E. Appropriately cover trucks (see Section 2.1) filled with excavated material prior to exiting the Site to prevent vapor and fugitive dust emissions during transport. Supplement with odor suppressant foam or solvent as needed. Gross vehicle truck weights shall conform to the most current DOT regulations for the Federal, State, and local level.

F. All Work in and around trucks shall be performed in appropriate personal protective equipment. These activities must be specifically addressed in the Site Specific Contractor HASP.

G. Prior to leaving the Site, inspect all material transport vehicles and containers for evidence of contamination (including inside of wheels and undercarriage). All trucks leaving the Site shall proceed to a decontamination station for cleaning prior to exiting onto public roads.

Brush off equipment using a broom and/or brushes within the excavation area prior to movement to the decontamination pads to decrease the amount of respirable particulates leaving the remediation area.

If necessary, at the decontamination pad, all heavy equipment will be pressure washed before leaving the Site.

All equipment leaving the Site will be decontaminated per these guidelines. In addition, any equipment previously utilized to excavate impacted material will be decontaminated prior to use in backfilling (e.g. excavator bucket).

Size decontamination pads to ensure that the largest piece of Contractor equipment can be adequately decontaminated. Provisions will be made to control overspray at the decontamination pads.

Collect and pump wastewater from equipment decontamination into frac tank(s).

Wastewater will be transported from the Site by a properly licensed liquid waste hauler.

Soils collected from the decontamination pads will be bulked with the MGP-related impacted material and sent to the properly licensed National Grid-approved disposal facility, as necessary.

H. Trucks shall proceed directly to the designated thermal desorption facility.

I. The Contractor is responsible for any and all actions necessary to remedy situations involving material spilled or leaked in transit, or mud or dirt tracked off-Site. This includes trucks carrying imported fill or other materials to the Site (i.e. dust generated from trucks entering the Site on adjacent roads). Clean up shall be performed in accordance with all applicable Federal, State, and local regulations at no additional costs to National Grid.

J. All transporters used shall be properly licensed, permitted, and certified for the service provided.

K. Material from the Site will not be combined with any other material, without the Construction Manager/Engineer's approval.

L. National Grid or the Construction Manager/Engineer will sign transport bills of lading or manifests. National Grid will provide a hazardous waste generator number, if required. Maintain copies of all documents involving transportation of materials from the Site. Copies of these records shall be submitted to the Construction Manager/Engineer at a frequency agreed to by the Contractor and National Grid. All records shall be turned over to National Grid at the completion of the Work.

M. Ensure that transport vehicles are properly secured, labeled, and placarded prior to exiting the Site.

3.2 DISPOSAL OF MATERIALS

A. Dispose of soils that contain MGP-related impacted material at an off-Site licensed thermal desorption facility approved by National Grid, unless otherwise specified.

B. In the event that material cannot be thermally desorbed, notify National Grid in writing that the material must be disposed of as non-hazardous waste at a Subtitle D landfill or as hazardous waste at a Subtitle C landfill.

C. After notification that soils cannot be thermally desorbed, National Grid will provide a list of approved landfill facilities.

D. Dispose of debris to an off-Site licensed landfill receiving Construction & Debris facility approved by National Grid, unless otherwise specified.

E. The Contractor is responsible for the acceptance of materials at the facilities. In the event that the identified and approved facilities cease to accept the materials, the Contractor will be responsible for identifying alternate facilities, and making arrangements with such facilities to accept material from the Site with no change in the unit price submitted in the Contractor's Bid for this Project. Alternate facilities are subject to review and approval by National Grid.

F. In the event that an alternate facility is needed to accept the material, the Contractor will supply a written submission to National Grid on the material type, amount, location, and reason the approved facility ceased to accept the material. Alternate facilities not previously audited by National Grid will require an audit prior to allowing transport of materials to the facility. Any charges or fees incurred by the Contractor associated with delays to the Project schedule during this audit process are the responsibility of the Contractor.

G. If any materials are encountered during excavation that appear to exhibit hazardous characteristics these materials should be segregated, stored on Site, sampled, and disposed of appropriately.

H. Decontaminate construction debris and/or bulky material within the excavation, if encountered, if possible.

I. Segregate non-contaminated construction debris and bulky wastes for transport to a landfill facility.

J. Dispose of decontamination wastewater at an off-Site liquid waste treatment facility approved by National Grid.

K. Solid material collected in the dewatering frac tank(s), as a result of settling in the tank, shall be bulked with the suspected MGP-related impacted material and sent to the thermal desorption facility and/or landfill as necessary.

END OF SECTION 02 61 00

SECTION 31 10 00
SITE PREPARATION

PART 1 GENERAL

1.1 SUMMARY

A. The Work required under this section includes furnishing all labor, materials and equipment and performing all operations required for the Site preparation prior to performance of the RA.

1.2 SUBMITTALS

A. Provide the DIGSAFE ticket number and the findings of the utility mark out to National Grid and the Construction Manager/Engineer prior to excavation.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTIONS

3.1 GENERAL SITE PREPARATION ACTIVITIES

A. Clear all debris, rubble, and vegetation from the Work areas and in any other areas which will be used for construction support as approved by the Construction Manager/Engineer.

B. Clear all debris, rubble, and vegetation from the air monitoring station locations as directed by the Construction Manager/Engineer.

C. Provide protection for existing monuments, structures, and appurtenances during the Work.

D. Provide protection and security for air monitoring station locations during the Work.

E. Provide temporary relocation of appurtenances that have the potential to become damaged during performance of the Work.

3.2 UTILITY PROTECTION

A. Contact the DIGSAFE Call Center to request that all utilities on the Site are located and marked. Ensure that the utility mark out is refreshed as necessary, as directed by DIGSAFE, or at the direction of National Grid or the Construction Manager/Engineer.

B. Retain the services of a private underground utility location company to mark out the locations of underground utilities in the areas of planned excavation on private property.

C. Any underground utility protection will be the responsibility of the Contractor prior to and during any excavation activities.

D. Hand dig when the depth of location of utilities is uncertain.

E. Repair any utilities damaged as a result of the Work.

F. All work within 10 feet of the Combined Sewer Overflow will be performed by the Contractor by hand.

3.3 TEMPORARY CONSTRUCTION ENTRANCE

A. Obtain the appropriate permits required for temporary construction entrances, if necessary; refer to Section 01 41 00 – Regulatory Requirements – Permits.

B. Install the temporary construction entrance in accordance with any Town of Fort Edward requirements.

3.4 CONCRETE REMOVAL

A. Dispose of all removed concrete at an approved recycling facility.

3.5 SITE ACCESS ROAD

A. Construct the site access road per the plans. This site feature will remain after the construction is completed.

3.6 DEBRIS REMOVAL

A. Remove debris within the limits of Work area; handle, screen and characterize as necessary.

B. Remove all debris (i.e. trash, metal, concrete, asphalt, etc.) within the Site boundary. Conduct all handling, segregating and screening activities that are necessary to facilitate off-Site disposal.

C. Contaminated materials must be segregated from non-contaminated materials and prepared, as necessary, for disposal at the facilities approved for use during performance of the RA.

D. Dispose of all debris at an approved disposal or recycling facility.

END OF SECTION 31 10 00

SECTION 31 13 00
SITE CLEARING

PART 1 GENERAL

1.1 WORK INCLUDES

A. Provide all layout, products, materials, equipment, tools, services, transportation, supervision, and labor for vegetation removal, selective trimming, and tree removal as shown on the drawings or as required to perform the work.

B. Dispose of all cleared and grubbed material in accordance with the requirements of Section 31 10 00 – Site Preparation.

1.2 SUBMITTALS

A. Notifications:

1. Marked Trees. Submit written notice that trees and shrubs to be removed are marked in the field. The Construction Manager/Engineer will review the location of the marked trees and may make final adjustments. Notification must be submitted to the Construction Manager/Engineer 2 days prior to removal.

B. Shop Drawings:

1. Drawings showing limits of site disturbance required to install erosion and sediment control measures, and excavate and transport impacted materials.

1.3 SCHEDULE AND SEQUENCE

A. Begin site clearing and grubbing only after erosion and sediment control provisions are in place.

B. Haul roads, access roads, and additional staging areas needed by Contractor not shown on the Drawings may be cleared upon approval of Construction Manager/Engineer and after Contractor submits and implements an Erosion and Sediment Control Plan.

1.4 DEFINITIONS

A. Tree Diameter: Diameter of tree as measured 4-feet above the adjacent ground surface.

B. Multiple Trunks: A tree that has multiple trunks at 4-feet above the adjacent ground will be classified as a single tree. The tree diameter will be measured as the largest trunk at the 4-feet height.

C. Clearing: Clearing shall mean removing, hauling, and disposing of all trees, shrubs, grasses, weeds, debris, trash, rubble, downed timber, branches and other materials on the surface.

D. Grubbing: Grubbing shall mean removing, hauling, and disposing of all trees, shrubs, grasses and weeds by digging up by the roots.

1.5 PROTECTION OF EXISITING PLANT MATERIALS

A. The Contractor shall be responsible for taking all reasonable steps for protecting, transplanting, and replanting existing trees, shrubs, and other plant materials which may be affected by the Work. Plants designated to remain shall be protected by construction fencing or barriers at all times during the entire contract period. No material shall be stockpiled and no equipment shall be parked or repaired within twenty-five (25) feet of existing trees unless it is impossible to avoid doing so. No oil, gasoline, concrete, or other materials shall be dumped or temporarily stockpiled anywhere on site unless permission is first obtained from the National Grid. Any plants damaged or scarred during construction shall be mitigated immediately at the Contractor's expense.

1.6 QUALITY ASSURANCE

A. Preconstruction Meeting: Conduct meeting with National Grid, Construction Manager/Engineer, and project superintendent to review the following:

1. Clearing Limits
2. Tree removal marking system and requirements
3. Protection of existing plant materials

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.1 PREPARATION

A. Verify that existing plant life and features designated to remain or to be protected are tagged or identified.

B. Coordinate all vegetation and tree removal with the Construction Manager/Engineer.

C. Contractor shall mark all trees, shrubs and plants to be removed in accordance with the plans and these specifications. Notify the Construction Manager/Engineer once the vegetation has been marked. The Construction

Manager/Engineer shall have 2 days to field review the markings and make any adjustments prior to the start of the clearing operation.

D. Do not commence site clearing operations until temporary erosion and sediment control measures are in-place in accordance with the approved submittal.

3.2 PROTECTION

A. Protect any trees, plant growth, and features not requiring removal for the Work.

B. Protect benchmarks and survey monuments from damage or displacement. Repair or replace all benchmarks and survey monuments damaged during the work.

C. The limits of site disturbance shall be contained within designated work areas as shown on the Drawings or otherwise approved by the Construction Manager/Engineer.

3.3 VEGETATION REMOVAL

A. Vegetation Removal areas include brush, shrubs, stumps, small trees and several tree removals. Vegetation Removals are defined on the Drawings and as directed by the Construction Manager/Engineer.

B. Clear all trees, shrubs, vegetation (other than grass), debris, trash, rubble, downed timber, branches and other material on the surface within the vegetation clear zone as shown on the Drawings or as directed by the Construction Manager/Engineer.

C. Grub all stumps and root systems. Grubbing shall mean the removal of stumps, main root balls, and root systems so that no vegetative matter remains.

D. Top dress the disturbed areas with a minimum of 6-inches of topsoil as specified in Section 31 23 00: Excavation and Fill and Section 32 12 00: Restoration.

E. Plant grass seed as specified in Section 32 12 00 – Restoration Items.

3.4 TREE REMOVAL

A. Perform Tree Removal as shown on the Drawings or as directed by the Construction Manager/Engineer.

B. Grub all stumps and root systems. Grubbing shall mean the removal of stumps, main root balls, and root systems so that no vegetative matter remains.

C. Backfill root hole and depressions created by tree and stump removal immediately after removal of roots. Backfill and compact as specified in Section 31 23 00 – Excavation and Fill.

D. Top dress the disturbed areas with a minimum of 6-inches of topsoil as specified in Section 31 23 00 – Excavation and Fill and Section 32 12 00 – Restoration Items.

E. Plant grass seed as specified in Section 32 12 00 – Restoration Items.

3.5 SELECTIVE TRIMMING

A. Selectively trim tree branches overhanging into limb-free zone.

B. Trimming should be the minimum necessary to remove branches and limbs from the limb-free zone as shown on the drawings or as directed by the Construction Manager/Engineer.

C. Trimming shall not be more than ¼ of the live foliage/branches of a mature tree. If ¼ of the live foliage needs to be removed, remove the whole tree.

D. Cut branches back to the first node outside the limb free zone at a branch that is twice the diameter of the branch being cut, or as directed by the engineer.

E. Cut branches with sharp pruning instruments; do not chop or break.

3.6 DISPOSAL

A. All vegetative material will be chipped.

B. Dispose of all brush, tree trunks, stumps, roots, and debris from clearing operations to an Approved recycling facility.

3.7 RESTORATION

A. Restore items and surfaces damaged by construction operations to existing condition or better as required by Section 32 12 00 – Restoration Items.

END OF SECTION 31 13 00

SECTION 31 23 00
EXCAVATION AND FILL

PART 1 GENERAL

1.1 SUMMARY

A. The Work required under this section includes furnishing all labor, materials and equipment and performing all operations required for the excavation, handling, and backfilling of material during performance of the RA.

1.2 SUBMITTALS

A. Excavation and Backfilling Plan: Submit an Excavation and Backfilling Plan showing sequencing, staging, and phasing of the excavation, materials handling and backfilling activities. Incorporate into Site Operations Plan submittal described in Section 01 30 00 – Administrative Requirements.

B. Borrow Source Evaluation: Submit the results of the borrow source evaluation for each source to be used as imported clean backfill indicating the material is in compliance with the geotechnical and environmental criteria. Perform borrow source evaluation prior to the import of fill from the borrow source. Include the following:

1. Name, address, telephone number, facsimile number, and web site address of borrow source.

2. Certificate of clean fill from the borrow location stating that the soil is native in origin and free of contamination.

3. Analytical results from the borrow source, specific to the actual fill being imported to the Site, as confirmation that the material is free of contamination and in compliance with the clean fill environmental criteria.

C. Perform borrow source evaluation for environmental criteria to ensure that the imported material meets the project criteria. Imported backfill must meet the requirements of 6NYCRR 375-6.7(d) and DER-10 5.4(e).3.

D. Geotechnical test results from the borrow source, specific to the actual fill being imported to the Site, as confirmation that the material is in compliance with the clean fill geotechnical criteria.

PART 2 PRODUCTS

2.1 GENERAL

A. A stabilization agent, such as cement kiln dust (CKD), or equivalent to amend soils too wet to transport in trucks must be provided, as necessary. The stabilization agent used must be acceptable to the disposal facility and in accordance with NYSDEC requirements for amendments, provided in Information for Bidders. Provide National Grid and the Construction

Manager/Engineer the manufacturer MSDS and product information for all amendments prior to being imported to the Site.

B. Odor Suppressing Foam

Provide a Rusmar foam (or Construction Manager/Engineer-approved equivalent) unit of sufficient size (minimum of a Rusmar PFU400/25 unit) that is capable of covering the areas containing impacted soil within 5 minutes on the Project Site, for the duration of the excavation.

Provide sufficient odor suppressing foam to cover excavations and impacted soils in truck beds. Foam must be water based, white, and unscented.

2.2 BACKFILL

A. All imported material will meets the requirements of 6NYCRR 375-6.7(d) (NYSDEC, 2006) and DER-10 5.4(e)[NYSDEC, 2010]. Analytical data shall be submitted and approved prior to receipt of material on Site.

B. Clean Fill

Furnish Clean Fill that conforms to material designation 304-1 Type 4 in the May 1, 2008, Standard Specification prepared by the New York State Department of Transportation that has a pH greater than 5 and less than 10. Utilize Clean Fill that is free of organic matter, and meets the following requirements:

U.S. Standard Sieve	Percent Finer by Dry Weight
2 inch	100
0.25 inch	30 to 65
No. 40	5 to 40
No. 200	0 to 10

C. Topsoil:

1. Furnish Topsoil that conforms to material designation Topsoil-Type A in section §713-01 of the New York State Department of Transportation Standard Specification, January 7, 2010 letter, which includes the following gradation requirements:

U.S. Standard Sieve	Percent Finer by Dry Weight
2 inch	100
1 inch	85 to 100
0.25 inch	65 to 100
No. 200	20 to 65

2 micron particle	0 to 20

2. Complete an analysis for pH, organic content, and grain size via ASTM D6913-latest edition, for each sample of topsoil collected.

3. Collect at least one sample from each source proposed for use.

D. Furnish a high visibility, orange, polypropylene snow fence. Other high visibility or florescent colors may be used upon approval from the Construction Manager/Engineer.

E. Use underground warning tape that is non-detectable, high visible polyethylene tape of a different color than the demarcation barrier. Print warning text in Spanish and English "Danger - Do Not Dig - Peligro no Excavar." The warning may be printed directly on the demarcation barrier.

PART 3 EXECUTION

3.1 CAMP REQUIREMENTS

A. Implement airborne dust and vapor suppression measures required to comply with the CAMP and as directed by National Grid or the Construction Manager/Engineer. These actions are indicated in the Contract Drawings and may include any of the following or other measures to minimize air emissions:

1. Applying water on exposed soil surfaces and/or roadways to suppress dust.

2. Covering working areas of exposed soils or stockpiles with tarpaulins, vapor suppressing foam, or other vapor controls.

3. Modifying the means and methods of the Work (i.e. using different or additional equipment, etc.).

4. Modifying the production rate (i.e. excavation rate, etc.).

B. Changing the sequence of activities.

3.2 EXCAVATION

A. Perform excavations in accordance with OSHA regulations.

B. Perform the excavation to the lines and grades indicated on the Contract Drawings, and to depths as directed by the Construction Manager/Engineer.

C. Manage excavated materials in accordance with the Section 02 61 00 – Removal and Disposal of Contaminated Materials. Excavated material handling includes:

1. Excavate subsurface soil to contours, elevations, and dimensions indicated.

2. Whenever possible, perform the excavation of impacted material as a direct- load operation.

3. Transport and dispose of designated excavated material at a regulated, licensed, and National Grid-approved thermal desorption facility or landfill.

4. Segregate bulk solid waste and construction debris encountered during excavation from excavated soil to allow for acceptable disposal of soil at the thermal disposal facility.

5. Gravity dewater excavated soil such that the water is allowed to drain back into the excavation or captured within lined stockpile areas. The excavated soil should be dewatered to the extent that it is meets or exceeds the moisture content requirements of the accepting disposal facility.

D. Perform all excavations using proper shoring or excavation sloping/benching to ensure slope stability.

E. The excavation portion of the Work will be above and below the water table. Perform the excavation below the water table using techniques to minimize the water content of the excavated soil such that they can be transported in trucks without stabilization or other special measures. Measures will include the use of slotted or perforated buckets to allow water trapped in the bucket drain back to the excavation. If needed, use short term stockpiling within the excavation to allow excavated soil to drain as space and equipment allow. Use stabilization only for soils that are inherently too wet and cannot be dried sufficiently using other techniques. Stabilization may only be used with the approval of the Construction Manager/Engineer.

3.3 BACKFILL

A. Install the demarcation barrier on the excavation walls and bottom.

B. Backfill the excavation with Approved Clean Fill Material to within 6 inches of the existing grade.

C. Do not place backfill without the approval of the Construction Manager/Engineer. Placement of backfill prior to Construction Manager/Engineer approval is at the Contractor's risk and may require removal at the Contractor's cost. Commence backfill placement and compaction upon confirmation of the horizontal and vertical limits of the excavation; whichever is applicable, and as directed by the Construction Manager/Engineer.

D. Dewater the excavation as necessary to remove excess water during backfilling operations and to prevent a surface release of groundwater. Ensure that groundwater within the excavation does not overtop the excavation walls during backfill operations.

E. Backfill excavations in accordance with the Contract Drawings.

F. Place backfill using a method that does not cross contaminate backfill.

G. Place and compact backfill in maximum 12-inch lifts.

H. Perform Density testing

I. Maintain moisture content within +3 to –3 percent of the backfill optimum moisture content to attain required compaction density.

J. For Clean Fill, place in maximum 12-inch lifts and compact using the back of the excavator bucket and a walk behind vibratory plate tamp to the satisfaction of the Construction Manager/Engineer, prior to placing the subsequent lift of material.

Project Area	**Percent Compaction (%)**	**Test Frequency (per lift of material)**
Trench on Miller and O'Marra Properties	85	1 per lift
Septic Tank on McCue Property	85	1 per lift

K. Utilize an appropriately licensed testing Subcontractor that is certified to test soil by ASTM D6938-latest edition, Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods-Shallow Depth.

3.4 SITE ACCESS ROAD

A. The Site access road will be constructed per the lines and grades on the drawings.

1. Topsoil will be stripped to a maximum depth of 6 inches.
2. 12 oz. Woven geotextile fabric will be placed on the subbase. Field seams will be overlapped a minimum of 24-inches. Butt seams will be overlapped a minimum of 36 inches.
3. Item 304, as specified above, will be placed to a depth of 12-inches, and compacted to 95% of standard Proctor.
4. During restorations, the access road will be repaired, regraded, and recompacted and left as a permanent feature on the Site.

3.5 FIELD QUALITY CONTROL

A. If compaction testing indicates that the Work does not meet the specified requirements, provide additional compaction or remove the soil and replace with acceptable backfill.

B. The Construction Manager/Engineer reserves the right to reject backfill that differs visually from the identified source material and to randomly test backfill materials for conformance with the specifications. Remove backfill that fails to meet the specifications.

3.6 CONSTRUCTION METHODS

A. Establish excavation rates that will permit continuous Work while accommodating the receiving capacity of the selected treatment/disposal facilities.

B. Due to limited space, excavated soils designated for transport and disposal as a direct-load operation whenever possible.

C. Divert or otherwise prevent surface water from entering excavations to the greatest extent practicable without causing damage or flooding to adjacent properties.

END OF SECTION 31 23 00

SECTION 31 23 19
DEWATERING

PART 1

1.1. SUMMARY

A. The Work required under this section includes furnishing all labor, materials, equipment, and performing all operations required for the dewatering of the excavation area during performance of the Removal Action.

1.2 SUBMITTALS

A. Submit information in the dewatering section of the Site Operations Plan that details the principal components of the system and contains narratives on the installation, operation, maintenance, and removal of the dewatering system.

B. Include information in the Site Operations Plan that details the excavation, backfill, and dewatering sequence that achieves the required draw downs.

C. Include in the submittal drawings of the proposed dewatering system, calculations showing the basis for the design, and a monitoring program that will demonstrate compliance with these Specifications.

D. Submit a detailed dewatering plan in the Site Operations Plan to the Construction Manager/Engineer at least 2 weeks prior to the start of excavation.

1.3 SEQUENCING AND SCHEDULING

A. Continuously dewater the excavation until the target excavation elevations have been achieved and the area has been backfilled as specified in Specification 31 23 00 – Excavation and Fill.

B. Coordinate and schedule the dewatering Work in a manner that minimizes the quantity of water pumped while not affecting the excavation and backfill schedule.

1.4 QUALITY CONTROL

A. Establish, maintain, and document quality control of the dewatering system in a manner acceptable to the Construction Manager/Engineer.

PART 2 PRODUCTS

2.1 DEWATERING EQUIPMENT

A. Furnish, install, and operate pumping equipment of sufficient capacities to meet the requirements for the removal of groundwater, stormwater, and surface runoff water from the excavation area as necessary to complete the excavation and backfilling Work.

B. Keep on site or have immediate access to, additional pumps of sufficient capacity to maintain dewatering activities during any pump breakdown, maintenance, or in case of flooding.

C. The excavation dewatering system design should have redundant features such as adequate standby pumping capacity, valves, and piping so that damage to or failure of a principle component of the system will not result in the failure of the entire system.

D. Provide sufficient suction and discharge hose or piping for transferring pumped liquids without causing erosion, sedimentation, or other adverse consequences.

E. Provide freeze protection for all dewatering hoses, piping, and pumping equipment necessary to execute the Work throughout the winter months, including but not limited to: insulation, heat wraps, heaters, and/or enclosures. Freeze protection chemicals or solutions shall not be used on Site without prior approval of the Construction Manager/Engineer.

F. Equipment for dewatering may be new or used, but shall be suitable for the Work and maintained in good condition.

G. All dewatering equipment shall remain the property of the Contractor or Subcontractor.

H. Decontaminate dewatering equipment in accordance with Specification 01 50 00 – Temporary Facilities and Controls, and remove the equipment from the Site at the completion of the Work.

PART 3 EXECUTION

3.1 DEWATERING-GENERAL

A. Design, furnish, install, operate, and remove a dewatering system to allow excavation to the depths shown on the Contract Drawings plus an additional 1 foot without requiring redesign. The system should be designed to keep groundwater levels at least 1 foot below active excavation activities while minimizing the amount of water discharged.

B. The water from the active excavation area or water in contact with exposed impacted soils may contain MGP residuals. This water will be segregated and pumped into tanks for off-site disposal.

C. Visit the Site, be aware of its restrictions, and review the sub-surface and geotechnical information.

D. Furnish, at a minimum, all labor, materials, and equipment, required to perform all operations required to design, install, test, pump, measure, and maintain the excavation dewatering equipment and water storage systems, including the storage tank, ditches, dikes, sandbags, wells, well points, sumps, electric power supply and distribution as required to dewater the excavations so that the Work

can be conducted under controlled conditions. Decontaminate and demobilize all dewatering equipment and materials after completing the excavation and backfill Work.

E. Coordinate dewatering, excavation, and backfill so that the volumes of water generated during dewatering can be disposed offsite.

F. Test components of the excavation dewatering system, such as the individual wells and well points, immediately after their installation, so as to verify design assumptions and demonstrate yields without suspended solids.

G. Conduct localized dewatering, as necessary, to perform excavation and restoration Work.

H. Repair or replace damaged pumps, piping, hoses, tanks, and all other dewatering equipment and materials within four working hours, if damaged. Damage includes any pump and power failures, leaks, breaks, clogs, or other conditions that adversely affect the dewatering system or release contaminated water.

I. Grade the excavation area using run-on/runoff controls including but not limited to slopes, berms, and sumps in conjunction with the dewatering systems to channel water away from the immediate work areas to minimize dewatering and prevent undue impediments to the soil inspection and excavation progress.

J. Prevent any impacted water from contacting soils, or water outside of the active excavation area. If environmental contamination results from the Contractor's failure to control impacted water, remove the contamination, to the satisfaction of the Construction Manager/Engineer, at no additional cost.

K. After the excavation is completed and inspected by the Construction Manager/Engineer, backfilling may proceed with the water levels maintained at least 1 foot below the backfill level until final grades are achieved.

L. Install, operate, and remove the dewatering systems in accordance with applicable Federal, State, and local Laws and Regulations, permits, and generally accepted industry practices.

M. Safety of personnel, and protection of off-Site facilities and designated on-Site facilities during dewatering Work, shall be solely the responsibility of the Contractor.

3.2 SAMPLING AND ANALYSES

A. Water sampling and analysis will be performed by the Contractor in accordance with the disposal facility requirements.

END OF SECTION 31 23 19

SECTION 32 12 00
SITE RESTORATION

PART 1 GENERAL

1.1 WORK INCLUDES

A. Provide all layout, products, materials, equipment, tools, services, transportation, supervision, and labor to complete all site restoration required to complete the work as shown on the drawings and including the following:

1. Reclaiming disturbed areas within the limits of site disturbance, including areas disturbed as a result of site operations.

1.2 DEFINITIONS

A. Reclaiming disturbed areas shall mean regrading and preparing disturbed surfaces for designated planting, and completing seeding/plantings as indicated on the drawings.

1.3 SUBMITTALS

A. Shop Drawings: Sequence and limits of site reclamation, and materials to be used for site reclamation.

B. Vegetation Plan and Warranty

1.4 PROTECTION

A. Protect from damage areas outside the approved limits of site disturbance.

B. Reclaim any disturbance of vegetation or native ground outside of the limits of site disturbance.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 GENERAL

A. Reclaim areas where construction work has been completed as soon as possible after completion of the Work.

B. Grade all areas to drain. The maximum slope steepness shall be 3H:1V unless otherwise shown on the Drawings or approved in writing by the Construction Manager/Engineer.

C. Remove all Contractor's equipment, debris, office, temporary fences or gates, and all other Contractor's properties in accordance with Section 01 50 00 – Temporary Facilities and Controls.

D. Eliminate uneven areas and low spots. Remove debris, roots, branches and stones in excess of 3-inch size.

3.2 TOPSOIL PLACEMENT

A. Topsoil shall meet specifications defined in Section 31 23 00 – Excavation and Fill.

B. The areas on which topsoil is to be placed shall be graded to a reasonably true surface.

Topsoil shall be spread and shaped:

1. To the lines and grades shown on the plans,

2. To match the original grades, or as directed by the Construction Manager/Engineer.

3. or as directed by the Construction Manager/Engineer.

C. The required depth to which the topsoil is to be placed is to be the depth after settlement of the material has taken place. If not indicated on the plans, place topsoil to a minimum depth of 6 inches.

D. All stones, roots, debris, sod, weeds and other undesirable material shall be removed.

E. After shaping and grading, all trucks and other equipment shall be excluded from the topsoiled area to prevent excessive compaction. The Contractor shall perform such work as required to provide a friable surface for seed germination and plant growth prior to seeding.

F. It shall be the Contractor's responsibility to restore to the line, grade and surface all eroded areas with approved material and to keep topsoiled areas in acceptable condition until the completion of the construction work or grass is established.

3.3 PREPARATION FOR SEED PLACEMENT

A. In no event will seeding be permitted on hard or crusted soil surface.

B. Level areas: These areas shall be made friable and receptive for seeding by raking or by other approved methods to the satisfaction of the Construction Manager/Engineer. In all cases the final prepared and seeded soil surface shall meet the lines and grades for such surface as shown in the plans, or as directed by the Construction Manager/Engineer.

C. Slope and Embankment Areas: These areas shall be made friable and receptive to seeding by approved methods which will not disrupt the line and grade of the slope surface.

D. All areas to be seeded shall be reasonably free from weeds taller than 3 inches. Removal of weed growth from the slope areas shall be by approved methods, including hand-mowing, which do not rut or scar the slope surface, or cause excessive disruption of the slope line or grade. Seeding on level areas shall not be permitted until substantially all weed growth is removed. Seeding on slope areas shall not be permitted without removal or cutting of weed growth except by written permission of the Construction Manager/Engineer.

END OF SECTION 32 12 00

SECTION 32 31 00
CHAIN-LINK FENCES AND GATES

PART 1 GENERAL

1.1 SUMMARY

A. This Specification includes performing all Work required to furnish and install permanent replacement chain-link fences and gates in the locations shown on the Drawings.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. A 116 – Standard Specification for Metallic-Coated, Steel Woven Wire Fence Fabric
2. A 702 – Standard Specification for Steel Fence Posts and Assemblies, Hot Wrought
3. F 626 – Standard Specification for Fence Fittings
4. A 90/A 90 M – Standard Test Method for Weight (MASS) of Coatings on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings
5. F 1083 – Standard Specification for Pipe, Steel, Hot-Dipping Zinc-Coated (Galvanized) Welded, for Fence Structures
6. A 153/A 153 M – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
7. F 1043 – Standard Specification for Strength and Protective Coatings on Steel Industrial Chain Link Fence Framework
8. A 121 – Standard Specification for Metallic-Coated Carbon Steel Barbed Wire
9. C 94/C 94 M – Standard Specification for Ready-Mixed Concrete

1.3 SUBMITTALS

A. Submit to the Engineer, shop drawings for the erection and installation of the chain link fence and gates which shall include, but are not limited to, the following items:

1. Fence assembly,
2. Location of corner, end, and line posts

B. Submit manufacturer's catalog data to the Construction Manager/Engineer for the following items:

1. Fence assembly,

2. Fence hardware and accessories

1.4 DELIVERY STORAGE AND HANDLING

A. Deliver materials to the Site in an undamaged condition. Store materials off the ground to provide protection against oxidation caused by ground contact.

1.5 QUALITY ASSURANCE

A. Submit reports from the manufacturer indicating the following:

1. Weight in ounces for the zinc coating.

B. The manufacturers catalog data may satisfy the requirements of the quality assurance submittal if, as determined by the Construction Manager/Engineer, the information provided therein is sufficient to establish if the material meets the requirements of the Specification.

C. Manufacturer's Qualifications:

1. The manufacturer of the fencing and gates of the type specified or similar product shall have at least five years experience in the manufacture of such materials.

D. Installer's Qualifications:

1. The fencing and gate installer shall be the manufacturer, approved manufacturer's installer, or a Subcontractor approved by the Construction Manager/Engineer to install the fencing and gates.

PART 2 MATERIALS

2.1. GENERAL

A. Provide fencing materials that conform to the requirements of ASTM A 116, ASTM A 702, ASTM F 626, and as specified.

2.2. ZINC COATING

A. Provide hot-dip galvanized (after fabrication) ferrous-metal components and accessories, except as otherwise specified.

B. Provide zinc coating of weight as detailed in this Specification, as determined from the average result of two specimens when testing in accordance with ASTM A90/A90M.

C. Provide zinc coating that conforms to the requirements of the following:

1. Pipe: ASTM F1083.

2. Hardware and accessories: ASTM A 153/A 153M, Table 1

3. Surface: ASTM F 1043

D. Provide galvanized repair material that is cold-applied zinc-rich coating conforming to ASTM A 780/A 780M.

2.3. FABRIC

A. Provide fabric consisting of No. 6 gage wires woven into a 2 inch diamond mesh, with a Class 2 weight of zinc coating. The weight of zinc coating shall not be less than 2.0 ounces per square foot of uncoated wire surface.

B. Provide one piece fabric widths for the fence height shown on the Drawings.

2.4. TOP AND BOTTOM SELVAGES

A. Provide twisted and barbed top selvage and knuckled bottom selvage.

2.5. LINE POSTS

A. Provide Type 1 round posts with a nominal outside diameter of 2.375 inches, a weight of 3.65 pounds per linear foot, and a minimum average zinc coating of 1.8 ounces per square foot.

2.6. END AND CORNER POSTS

A. Provide Type 1 round posts with a nominal outside diameter of 2.875 inches, a weight of 5.79 pounds per linear foot, and a minimum average zinc coating of 1.8 ounces per square foot.

2.7. TOP RAIL

A. Provide a round top rail with a nominal outside diameter of 1.66 inches, a weight of 2.27 pounds per square foot, and a minimum average zinc coating of 1.8 ounces per square foot.

B. Fit top rails with couplings for connecting the lengths into a continuous run. The couple may not be less than 6 inches long with 0.070 inches minimum wall thickness, and shall allow for expansion and contraction of the rail.

C. Provide suitable wire ties in sufficient number for attaching the fabric securely to the rail at intervals not exceeding 24 inches.

D. Provide the means to attach the top rail to each corner, and line post.

2.8. WIRE TIES

A. Provide 16-gage galvanized steel wire for tying fabric to line posts at intervals not exceeding 12 inches. For tying fabric to rails and braces, space wire ties 24 inches on center.

2.9. POST TOPS

A. Provide galvanized steel combination tops fit over the outside of the posts and exclude moisture from the entering the inside of the posts.

Provide caps with an opening to permit through passage of the top rail.

2.10. CONCRETE

A. Provide concrete conforming to ASTM C 94/C 94M, and obtaining a minimum 28 day compressive strength of 3,000 psi.

2.11. GROUT

A. Provide grout of proportions one part Portland cement to three parts clean, well graded sand and a minimum amount of water to produce a workable mix.

PART 3 EXECUTION

3.1. GENERAL

A. Verify the absence of defects or errors in the subgrade or other applicable Site features which would cause defective erection, installation, or application of products, or cause latent defects in workmanship and function.

B. Comply with manufacturer's written instructions, specifications, and recommendations for the erection and installation of the chain link fences and gates.

3.2. EXCAVATION

A. Provide excavation for post footings which shall be drilled holes in virgin or compacted soil.

B. Space footings for line posts at a maximum interval of 10 feet on center, and at closer intervals where required.

C. Set the bottom of each post not less than 36 inches below finished grade with the bottom of the hole at least 3 inches below the bottom of the posts. The diameter of borehole shall be a minimum of 4 times the largest cross section of the post that is being set. Set posts deeper, as required, in soft and problem soils or to support heavy lateral loads.

D. When solid rock is encountered near the surface, drill into the rock at least 12 inches for line posts and at least 18 inches for end, corner, and gate posts. Drill

holes at least 1 inch greater in diameter than the largest dimension of the placed post.

3.3. SETTING POSTS

A. Remove loose and foreign materials from the boreholes and moisten the soil prior to placing concrete.

B. Set sleeves in a vertical position, plumb and align while concrete is backfilled

C. Provide tops of footings that are trowel finished and sloped or domed to shed water away from posts.

D. Keep exposed concrete moist for at least 7 calendar days after placement, or cured with a membrane curing material.

E. Set poles into sleeves in a vertical position, plumb and align while backfilled with grout.

3.4. CONCRETE STRENGTH

A. Allow concrete to attain at least 75% of its minimum 28 day compressive strength, but in no case sooner than 7 calendar days after placement, before rails, wire, or fabric are installed.

B. Do not stretch fabric and wires until the concrete has attained its full design strength.

3.5. TOP RAILS

A. Install top rails to run continuously through post caps, bending to radius for curved runs. Provide expansion couplings as recommended by the fencing manufacturer.

3.6. FABRIC INSTALLATION

A. Install fabric in single lengths between posts with bottom barbs placed approximately 1.0 to 1.5 inches above the ground.

B. Install fabric on the security side of the fence.

C. Pull fabric taunt and tie to posts and rails with wire ties.

D. Ensure fabric remains under tension after the pulling force is released.

3.7. WIRE TIE INSTALLATION

A. Install tie wires that are “U” shaped to the pipe diameters to which attached. Twist ends of tie wires not less than two full turns and bend so as not to present a hazard.

3.8. ZINC COATING REPAIR

A. Clean and repair galvanized surfaces damaged by welding, abrasion, peening, and cut ends of fabric, or other cut sections with specified galvanized repair material applied in strict conformance with the manufacturer's printed instructions.

3.9. TOLERANCES

A. Provide posts that are straight and plumb within a vertical tolerance of 0.25 inch after the fabric has been stretched. Provide fencing and gates that are true to line with no more than 0.5 inch deviation from the established centerline between line posts.

B. Repair defects as directed by the Engineer.

3.10. CLEANUP

A. Remove waste fencing and gate materials from the Site.

B. Dispose of soil cuttings from drilling as detailed in Specification 02 61 00 – Removal and Disposal of Contaminated Materials.

END OF SECTION 32 31 00

SECTION 32 90 00
PLANTING

PART 1 GENERAL

1.1. SUMMARY

A. The Work required under this section includes furnishing all labor, equipment, supplies, materials, and performing all operations required for establishing a satisfactory stand of grass and replacement of trees in the locations shown on the Contract Drawings.

1.2. QUALITY CONTROL

A. Perform seeding and planting in accordance with standard local practice and all applicable regulations for the Town of Fort Edward.

1.3. DELIVERY, STORAGE, AND HANDLING

A. Deliver packaged materials in containers showing weight, analysis (% pure seed, % germination, date tested, etc.) and name of manufacturer.

B. Protect materials from deterioration during delivery, and while stored on the Site.

1.4. SUBMITTALS

A. Submit recommended fertilizer and seed and application rates with source of recommendation.

1.5. PROJECT CONDITIONS

A. Perform seedbed preparation and seeding as soon as possible after completion of remediation, backfilling, and grading.

B. Proceed with planting only when existing and forecasted weather conditions permit.

PART 2 MATERIALS

2.1. WATER

A. Use clean, fresh water that is free of substances which might inhibit the vigorous growth of grass.

2.2. SEED

A. Seed mixes for permanent vegetation shall be a blend of Red Fescue, Rye, and Kentucky Blue, applied at a rate of 75 lbs/acre, or equivalent, as determined by the Engineer/Construction Manager.

B. The variety and blends of seed may be added, deleted or substituted as appropriate to take advantage of proven varieties and mixtures and to account for changes of season and weather. Submit proposed changes to the seed mixture to the Engineer/Construction Manager for approval prior to use.

C. Seed that has become wet, moldy or otherwise damaged will not be acceptable.

2.3. FERTILIZER

A. Use a fertilizer that is appropriate for the local soil type and climate.

2.4. LIME

A. Use a lime that is appropriate for the local soil type and climate.

2.5. TEMPORARY SEED (WINTER)

A. When planting seed outside the normal planting season use certified Aroostook winter rye (cereal rye).

2.6. MULCH

A. Use organic mulch that is free of weeds, mold, and other objectionable materials.

PART 3 EXECUTION

3.1. PLANTING RESTRICTIONS

A. Do not perform planting Work when the soil is frozen or otherwise in an unsatisfactory condition for working.

3.2. TEMPORARY RESTORATION

A. Apply temporary seeding to areas lacking vegetation, if no construction activities will be performed in the area for more than 30 days.

3.3. SEED

A. Scarify soil surface as needed prior to seeding. Apply fertilizer and lime as needed.

B. Apply seed using broadcasting or hydroseeding methods to result in good soil to seed contact. Apply seed from a minimum of two directions. Lightly roll the seed bed, as needed, to result in good soil to seed contact. Use equipment that is specifically designed to uniformly plant grass seed.

C. Apply seed at a rate of 75 lbs. per acre (2.5 lb/1000 sq. ft.).

D. Re-seed areas that do not germinate, as determined by the Engineer/Construction Manager.

E. Do not apply seed when weather conditions are unfavorable as determined by the Engineer/Construction Manager.

3.4. MULCH

A. Mulch seeded area to provide initial erosion controls while seed is germinating and establishing, and to aid in weed control.

B. Apply mulch immediately after seed has been applied, or simultaneously with the seed if hydroseeding equipment is used. Apply mulch at a uniform rate.

C. Anchor mulch to ground, as needed.

D. If necessary, provide an erosion mat that is consistent with Class I, Class II, and Class III Rolled Erosion Control Products in section §209-3.12 of the New York State Department of Transportation Standard Specification, January 7, 2010 letter.

E. Re-mulch areas where mulch fails to protect the seed bed, as determined by the Construction Manager/Engineer.

3.5. ESTABLISHMENT OF GRASS

A. Begin maintenance of seeded areas immediately after seed placement. Water; repair washed or eroded areas, and otherwise protect and maintain the seeded areas until a final satisfactory stand of grass is obtained.

B. The Construction Manager/Engineer will periodically inspect the seeded areas to verify that a satisfactory stand of grass is obtained in all areas seeded. Re-seed bare and eroded areas as directed by the Construction Manager/Engineer.

C. Mow the seeded areas twice, once a satisfactory stand of grass has been established.

D. Warranty the plantings for 1-year days following the establishment of a satisfactory stand of grass.

3.6. TREES

A. Tree planting will be replacement of cleared trees on a one for one basis, limited to a maximum of eight feet in height.

B. Hardwood trees will be replaced with similar species.

C. Softwood trees will be replaced with 6- foot White Pine, or 6 inch Red Spruce.

D. Contractor will submit the Nurseries Planting Guidelines. All trees will be planted per the Nursery guidelines.

E. Contractor shall water the trees as necessary until October 31, 2013.

F. Any trees which are dead or exhibit signs of stress after May 15, 2014 will be replaced at the expense of the contractor.

G. All trees installed by the Contractor shall be marked with surveyor tape and stakes for identification during the inspection.

END OF SECTION 32 90 00