Austin Avenue Brownfield Redevelopment II, LLC

Remedial Design Document

Lot 4 – Austin Avenue and Prior Place and Lot 7 and Corporate Drive Brownfield Cleanup Program (BCP) Sites

City of Yonkers, Westchester County, NY

BCP Site #C360116 and BCP Site #C360128

March 2013
Revised: August 2014

REMEDIAL DESIGN DOCUMENT
LOT 4 – AUSTIN AVENUE AND PRIOR PLACE AND LOT 7 AND CORPORATE DRIVE BROWNFIELD CLEANUP PROGRAM (BCP) SITES
CITY OF YONKERS, WESTCHESTER COUNTY, NEW YORK
BCP SITE #C360116 AND BCP SITE #C360128

Prepared for:

AUSTIN AVENUE BROWNFIELD REDEVELOPMENT II, LLC

Prepared by:

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Project No. 8614908

March 2013
Revised: August 2014

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1. Introduction

Austin Avenue Brownfield Redevelopment II, LLC is a Volunteer (herein referred to as 'Volunteer') conducting a cleanup of two adjacent Brownfield Cleanup Program (BCP) Sites under separate Brownfield Cleanup Agreements (BCA): the Lot 4 – Austin Avenue and Prior Place BCP Site (Lot 4, BCA #C360116-04-11, BCP Site #C360116) and the Lot 7 and Corporate Drive BCP Site (Lot 7, BCA #C360128-08-14, BCP Site #C360128) (Figure 1). As part of the Brownfield Cleanup Agreements entered into between the Volunteer and the New York State Department of Environmental Conservation (NYSDEC), the Volunteer has completed a Remedial Investigation (RI) on Lot 4, additional surface and subsurface soil sampling on Lot 4 and Lot 7, has submitted to NYSDEC a Remedial Work Plan (RWP) for each BCP Site, and is now ready to proceed with the Remedial Design component of the project.

The historical use and environmental conditions of Lot 4 were presented in the Remedial Investigation Report completed by the Volunteer's consultant, GHD Consulting Engineers, LLC (GHD, August 2012), which is currently under review and awaiting approval by NYSDEC. Similar conditions are assumed on Lot 7 due to its similar historic use. The remedial investigation findings and the proposed remedial action for the Sites were further presented in the RWPs prepared by GHD in August 2012 (Lot 4) and November 2012 (Lot 7). The 45-day public comment period for the RWPs has been completed and the RWPs have been approved by NYSDEC.

Since the Sites are adjacent, have similar contamination issues, and similar proposed remedies, this Remedial Design Document (RDD) address the remedial actions for both Sites based on the remedial activities being completed concurrently. This RDD has been prepared incorporating the requirements set forth in NYSDEC's Decision Document. This RDD details the placement of a geotextile demarcation layer, cover material, and final grading as proposed by the RWPs and further refined by this RDD. This RDD also includes a joint Stormwater Pollution Prevention Plan (SWPPP) as prepared and stamped by GHD (Appendix A).

A draft Site Management Plan (SMP) is being developed in accordance with Chapter 6 of DER-10 on behalf of the Volunteer and submitted to NYSDEC for review and approval. A Final Engineering Report (FER) will be prepared and submitted to the NYSDEC following completion of the remedial activities. It is anticipated that the submission of the FER shall occur 45 days after the completion of the activities outlined in this RDD. In addition, the Volunteer has submitted a draft environmental easement (EE) for the sites to the NYSDEC for review and acceptance. The submission of the SMP, FER and EE shall be completed consistent with NYSDEC's scheduling requirements.

2. Remedial Action

All remedial activities will be conducted in accordance with the NYSDEC-approved RWPs and this RDD. The NYS licensed professional engineer preparing and certifying the FER will have primary responsibility for the review of the construction program to confirm that the remedial activities are in conformance with the RWP and RDD. A Fact Sheet announcing the selection of a remedy and announcing an anticipated start of work will be distributed at least 10-days prior to initiating Site remedial activities.

The combined area of the two BCP Sites is approximately 10-acres, of which approximately half is comprised of the former Austin Avenue Landfill. A geotextile demarcation layer and soil cover engineering control will be placed within the identified limits of ash from the former landfill and will overlap the limit of ash by approximately 15-feet to act as a transition to surrounding grades (Sheet L001 in Appendix D). This portion of the Site consists of approximately 1.36-acres and will be capped with approximately 2,200-cubic yards (cy) of material, such that a minimum 1-foot thick soil barrier will be placed over the existing soils as stated in the RWPs. It is not anticipated that any material which is presently on-Site will be taken off-Site as part of this project. The soil cover material will likely come from the on-Site shot rock stockpile. The existing rock in the stockpile used as cover material will be a graded soil/aggregate comprised of crushed rock and earth where the rock will be crushed to a maximum size of 6-inches, with the exception of the material used to make the transition from the soil cover to the existing shot rock stockpile, which will be rocks pulled from the stockpile and placed directly on the demarcation layer without being crushed first.

A demarcation layer will be used to identify the bottom of the soil cover and the top of potential remaining contamination associated with the ash fill area within the limits of the cover areas. The demarcation layer will consist of a non-woven geotextile fabric that will be installed on the ground surface prior to placing the soil cover material.

NYSDEC approved the use of the shot rock stockpile as soil cover material. Sampling of this on-site material is not required.

2.1 Site Boundary

The limit of the proposed soil cover extends beyond the identified extent of ash, allowing for a gradual transition of the soil cover material into the adjacent topography. The proposed soil cover areas shown on Sheet L001 in Appendix D depict this area with hatching and details of the transitions are shown on Sheet L005 in Appendix D. A limited test pit investigation may be performed in areas outside the proposed cover areas to identify the presence (or absence) of ash and to identify the presence (or absence) of geotextile demarcation layer placed during remediation of adjacent BCP Site #C360066 (Former Austin Avenue Landfill BCP Site, Lot 1). This data will be used to refine the limits of the proposed soil cover areas.

It is proposed that the area along the northern border (between Lot 1 and Austin Avenue) and the area outside the ash boundary at the western border (near Prior Place) will not require a geotextile demarcation layer and 1-foot of soil cover (Sheet L001 in Appendix D). A Site survey will be performed in conjunction with the Remedial Action and Environmental Easement. The survey will define the metes and bounds of the defined Site subject to NYSDEC approval.

2.2 Stormwater Pollution

Handling stormwater during and after construction is addressed in the comprehensive Stormwater Pollution Prevention Plan (SWPPP) included in Appendix A. The NYSDEC has delegated authority regarding stormwater issues to the City of Yonkers. The SWPPP will be approved by the City of Yonkers and the signed MS4 (SWPPP) Acceptance Form will be submitted with the Notice of Intent (NOI) to the NYSDEC.

2.3 Survey

Pre- and post-construction surveys of the Sites will be performed by a New York State Licensed Land Surveyor to confirm the1 foot minimum depth of soil cover. As-built drawings will show the pertinent elements of the remedial action. The pre- and post-construction surveys will be performed on a 75-foot grid with additional points within a grid that contains more than 5-feet of grade difference. The final survey will define the specific boundaries of the Site remedial activities.

2.4 Health and Safety

The contractor performing the Remedial Action shall provide a comprehensive Site-specific Health and Safety Plan (HASP) in accordance with OSHA. To assure community and worker safety, community air monitoring shall be performed during all ground intrusive activities in accordance with the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP) included in Appendix B. Monitoring of volatile organic compounds (VOCs) will be waived based on the findings of the Remedial Investigation. Particulate emissions (i.e. dust) will be monitored during the disturbance of the material on-Site due to the potential of air borne contaminant releases. Particulate matter (dust) releases will be controlled by the application of water to the ground surface, or other appropriate methods.

2.5 Quality Assurance Project Plan

Remedial Action sampling and analysis activities shall occur in accordance with the Quality Assurance Project Plan (QAPP), which is included in Appendix C.

2.6 Sequence of Construction / Site Figures

The project is staged in four (4) phases to minimize the disturbed area at any one time. The overall proposed soil cover areas are included on Sheet L001 in Appendix D. Prior to commencing Remedial Action activities, all required permits will be obtained by the contractor, including a building permit from the City of Yonkers.

2.6.1 Phase 1 – Site Preparation

- Install perimeter silt fence;
- Install sediment traps, access paths, and stone ditch;
- Install construction fencing as needed to control site access; and
- Clear Site:
    - Remove trees within construction area but leave stumps cut at ground surface;
    - Remove large tree trunks and logs for off-site disposal;

- Small trees and branches to be chipped and spread as needed; and
- Remove debris at ground surface for off-site disposal

2.6.2 Phase 2 – Initial Site Work

- Install anti-tracking pad;
- Construct required berms to control stormwater runoff;
- Excavated shot rock from existing stockpile and begin to break down to required size. Material can be stockpiled for later spreading over soil cover areas; and
- Particulate monitoring to be performed during any ground intrusive activities.

2.6.3 Phase 3 – Soil Cover Installation

- Place the geotextile demarcation layer prior to final 1-foot soil cover;
- Spread soil cover material; and
- Stabilize disturbed areas.

2.6.4 Phase 4 – Final Stabilization

- Establish vegetation;
- Remove accumulated sediment from sediment traps and drain protection structures;
- Convert sediment traps to water quality basins as appropriate;
- Remove all silt fence and hay bales; and
- Remove all temporary fencing.

2.7 Schedule

Work will commence once the 10-day public notification period is complete. The project work hours will be limited to between 7 AM and 6 PM as required by the City of Yonkers noise ordinance. It is expected that the project will take about 2 months to complete.

Monthly progress reports will be prepared by the contractor. These reports will include the following:

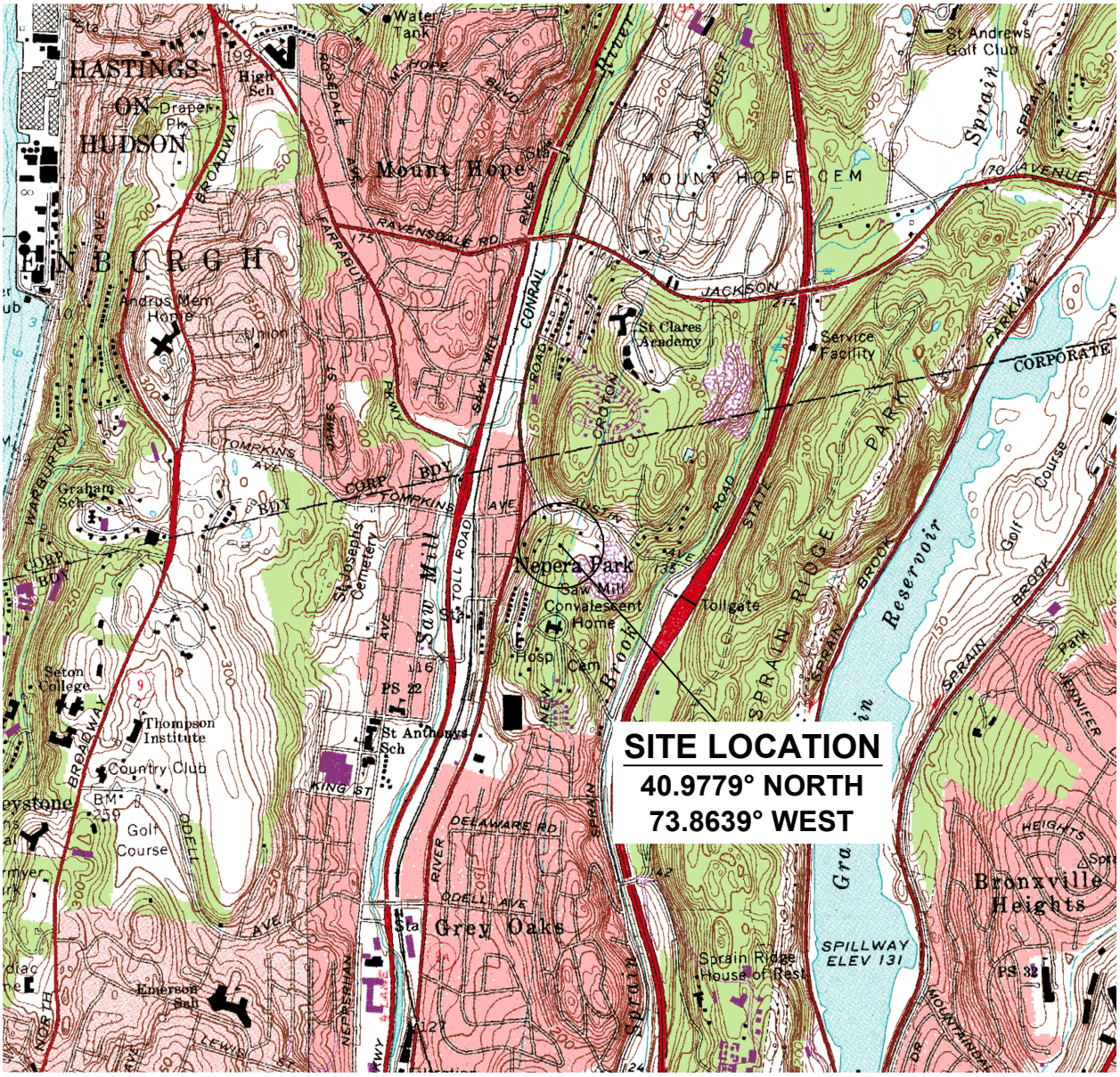
- Discussion of project progress and significant activities during the reported period, including status of any requisite permits;
- Discussion of pending/planned significant project activities during the next month;
- Proposed modifications to the remedial action schedule resulting from new information and/or unforeseen conditions;
- Discussion of any problems or delays in the implementation of the remedial action relative to work and/or the remedial action schedule;
- Proposed actions to correct any identified problems, including how to mitigate any adverse schedule impacts; and

- Any additional pertinent documentation that is available (e.g. photographs) that help to communicate progress/issues facing the project.

2.8 Post Remedial Action

- A post-construction survey will be performed by a NYS licensed surveyor defining the Site boundaries and the pertinent location of elements of the remedial action;
- A Final Engineering Report will be prepared documenting the remedial activities and will include a certification by a NYS Licensed professional engineer certifying the remedial activities were completed in conformance with the approved Remedial Work Plans.
- The final NYSDEC approved Site Management Plan (SMP) will be included in the Final Engineering Report;
- The institutional controls to be implemented are included in the approved Remedial Work Plans and approved SMP;
- The provisions for the potential intrusion of landfill gas/vapor are addressed in the approved Remedial Work Plans and the SMP; and
- The final executed Environmental Easement will be filed with the County Clerk's office.

Figures



Austin Avenue Brownfield Redevelopment II, LLC
Remedial Design Document
Lot 4 and Lot 7 BCP Sites
Site Location Map

Job Number	86-14908
Revision	A
Date	08.20.2014

Figure 1

One Remington Park Drive, Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5853 **E** cazmail@ghd.com **W** www.ghd.com

Plot Date: 25 August 2014 - 4:12 PM Cad File No: G:\86\14908\Remedial.Design.Document\RDD\Figures\Figure 1.dwg

Appendices

Appendix A – Stormwater Pollution Prevention Plan (SWPPP)

Austin Avenue Brownfield Redevelopment II, LLC

Stormwater Pollution Prevention Plan

Lot 4 and Lot 7 Remedial Action Construction

August 2014

STORMWATER POLLUTION PREVENTION PLAN

LOT 4 AND LOT 7 REMEDIAL ACTION CONSTRUCTION

Prepared for

AUSTIN AVENUE BROWNFIELD REDEVELOPMENT II, LLC

Prepared by

GHD CONSULTING SERVICES INC.
One Remington Park Drive
Cazenovia, NY 13035

August 2014

Project No. 8614908

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Appendices

1. Introduction

Austin Avenue Brownfield Redevelopment II, LLC is a Volunteer (Volunteer) in the New York State Brownfield Cleanup Program (BCP). As part of a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC), the Volunteer has entered the properties known as Lot 4 - Austin Avenue and Prior Place and Lot 7 and Corporate Drive (the Site) into the BCP. The properties are designated as BCP Site #C360116 and BCP Site #C360128, respectively. As part of the requirements of the BCA, the Volunteer has completed a remedial investigation (RI) at the Site and is prepared to proceed with a remedial approach that is consistent with the future contemplated commercial use of the Site and is protective of human health and the environment.

A Remedial Work Plan (RWP) was submitted to the NYSDEC and New York State Department of Health concurrently with the RI Report (GHD, June 2012) to facilitate the timely implementation of a remedial approach consistent with the proposed future commercial Site development plans. The RWP was prepared in accordance with the NYSDEC's draft Brownfield Cleanup Program Guide (May 2004), 6 NYCRR Part 375-3, and the NYSDEC Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation (DER-10) (May 2010) and was approved by the NYSDEC. The proposed construction at the Site will be to implement the remedial measures outlined in the approved RWP.

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared in accordance with the NYSDEC SPDES General Permit for Stormwater Discharge from Construction Activities (GP-0-10-001) and is intended to provide measures to reduce and eliminate adverse impacts from runoff during the implementation of the approved RWP.

2. Scope

2.1 Project Information

The project is located in the City of Yonkers, Westchester County, NY. The Site is located at the end of Stew Leonard Drive, south of Austin Avenue and east of Prior Place. The Site is approximately 10 acres and consists of previously developed area, remnant paving, incinerator ash, and vegetation.

Austin Avenue Brownfield Redevelopment II, LLC is proposing to implement the following engineering controls and remedial actions in accordance with the approved RWP, including:

1. Placing 1 foot of clean soil in discrete locations across the Site.
2. Placing 6 inches of concrete slab/asphalt paving at select utility areas to protect against potential human contact with soil that may be contaminated.
3. Excavating and disposing of fill or waste encountered during Site development which meet the definition of "grossly contaminated," as defined by 6 NYCRR 375-1.2(u).

These engineering controls are protective of human health and the environment while also preparing the Site for future redevelopment. However, the measures outlined in this SWPPP are intended to address the engineering controls outlined above and not the ultimate Site redevelopment, which will be submitted separately for approval in the future.

Owner	Operator	Site Engineer	Contractor
Westchester Industrial Development Agency (WIDA)	Austin Avenue Brownfield Redevelopment II, LLC 350 Veterans Boulevard Rutherford, NJ 07070 Phone: (201) 804-8700	GHD Consulting Services Inc. One Remington Park Drive Cazenovia, NY 13035 Phone: (315) 679-5800	To be determined

2.2 Technical Standards

The SWPPP was prepared using the guidance documents suggested by the NYSDEC. These documents include the *"New York Standards and Specifications for Erosion and Sediment Controls, 2005"* published by NYSDEC. The proposed stormwater management practices described in the SWPPP conform to the technical standards contained in the references listed.

2.3 Drawings

The project, including the proposed work and all erosion and sediment controls, is detailed on the Contract Drawings (Appendix A).

2.4 Receiving Waters

There are no surface water bodies located on the Site. Stormwater from the Site ultimately discharges to the Saw Mill River, a tributary of the Hudson River, which discharges to the New York/New Jersey Echo Bay, which is part of the Long Island Sound.

2.5 Responsibilities

GHD has prepared the SWPPP in accordance with the SPDES General Permit for Construction Activities 0-10-001 (GP 0-10-001). The construction general contractor shall manage the discharge of stormwater from the entire work site in accordance with GP 0-10-001 and be responsible for implementing all stormwater management work. This includes having a “trained contractor” on Site in accordance with Part 4 of GP 0-10-001. The project Owner will be responsible for administering weekly erosion control monitoring and inspections as outlined in GP 0-10-001. A copy of GP 0-10-001 is included in Appendix B.

2.6 Certifications

Prior to the commencement of construction, all contractors and subcontractors identified in the SWPPP must sign a copy of the certification statements included in Appendix C.

2.7 SWPPP Location Requirements

The SWPPP shall be maintained at the site of the construction activities at all times throughout the project and shall be kept on Site until the Site is stabilized and complies with Section 4 of this document. One copy of the SWPPP ledger shall be provided (by contractor) in a three-ring binder, tabbed and indexed for the following sections:

- Table of Contents
- SWPPP narrative
- Erosion and Sedimentation Control Plan(s)
- Signed NYSDEC Notice of Intent
- Signatory Authorization Designation
- General Contractor’s Certification
- Subcontractor’s Certification
- Inspection report(s)
- Stabilization schedule
- Implementation schedule
- Status report
- Final Stabilization/Termination Checklist

3. Project Description

3.1 Existing Conditions

The Site occupies approximately 10 acres and includes a portion of the former Austin Avenue Landfill (approximately the eastern half of the Site), which was formerly owned and operated by the City of Yonkers. The landfill operated from at least the 1960s until 1979 when it ceased operations. The landfill property was transferred to Westchester County in 1979 and is currently owned by the Westchester County Industrial Development Agency (WIDA). The operator, Morris Industrial Builders, L.P., has a long-term lease arrangement that allows them to develop the Site for future uses.

The underlying materials at the Site consist primarily of incinerator ash and miscellaneous refuse (i.e., building debris, broken glass, wood fragments, etc.). A large stone pile is centrally located on the Site. Sloping hillsides with scattered trees and brush and rock outcrops surround the stone pile to the north and west. There are several catch basins, utility poles, and slab-mounted utilities at the base of the hillside, along Prior Place. Reference is made to the RWP.

3.2 Proposed Project Description

The project will include limited clearing of trees and brush and capping a portion of the Site with a minimum of 1 foot of fill. The fill will consist of processed rock from the existing pile and/or off-site fill/compost. Following placement, the fill will be seeded with native grasses and covered with a biodegradable erosion control matting or straw mulch.

A minor area along Prior Place will be paved with 6 inches of asphalt to accommodate access to existing utilities.

3.3 Construction Sequence

The contractor will be responsible for implementing the following construction phase schedule for the Site. The contractor may designate these tasks to subcontractors, but the ultimate responsibility for implementing the controls and ensuring their proper functioning remains with the contractor. At no time shall the amount of disturbed area exceed 5 acres. The order of activities will be as follows (in chronological order):

1. Prior to commencement of work, coordinate with Owner and Engineer to conduct a preconstruction meeting.
2. Mobilization.
3. Identify trees to remain and install erosion control (silt fence, drain inlet protection) and vegetation protection as needed.
4. Establish Site construction staging and contractor parking areas. Stabilize these areas with granular material or crushed stone. Install silt fence between staging area and water resources.
5. Clear construction areas of plant growth. Woody growth suitable to be used as temporary erosion control material or future mulch may be chipped and stockpiled on the Site or disposed at a pre-approved off-site location.

6. When the Site is cleared, additional erosion controls shall be placed as noted on plans and as required by Site conditions (at downgradient edges of graded areas and at the base of fill slopes and walls).
7. Install geotextile fabric per the RWP and final engineering drawings.
8. Place 1 foot of fill material per the RWP and establish vegetative cover on disturbed areas.
9. Install mulch or biodegradable erosion control matting as needed.
10. Prior to erosion control removal, notify Owner and Engineer for inspection and final approval of the work. When construction is completed and stable surfaces (vegetated or paved) have been achieved, the erosion controls shall be removed.
11. Demobilization.

4. Project Controls

4.1 Erosion Prevention and Sediment Controls

At a minimum, the contractor shall adhere to the erosion control drawings as well as the permanent and temporary sediment control measures outlined in the SWPPP. It is the contractor's responsibility to install additional erosion control measures or materials as needed to prevent sediment from leaving the Site and to protect downstream water quality.

4.1.1 Stabilization Practices (Permanent)

Permanent stabilization practices for this Site include seeding and planting of all disturbed areas that are not paved in accordance with the Site drawings.

4.1.2 Stabilization Practices (Temporary)

Temporary stabilization practices for this Site include:

1. Temporary seeding and planting of all disturbed areas that are not paved when construction activity has ceased, or will cease, in an area for 14 days. Water management practices must be installed as appropriate for Site conditions. The area must be rough graded and slopes physically stable. Seedbed must be seeded within 24 hours of disturbance, or scarification of the soil surface is required prior to seeding. Any seeding method may be used that will provide uniform application of seed to the area and result in relatively good soil-to-seed contact. Temporary erosion control seed mix shall be applied at a rate of 1 lb/1,250 square feet.
2. Mulch the area with weed-free straw at 2 tons/acre (approximately 90 lbs/1,000 ft^2 or two bales). Mulch anchoring will be required where wind or areas of concentrated water are of concern. Wood fiber hydro-mulch or other sprayable products approved for erosion control (nylon web or mesh) may be used if applied according to manufacturer's specification.
3. Dust control will be provided to prevent surface and air movement of dust from disturbed soil surfaces that may cause off-site damage, health hazards, and traffic safety problems.

Non-Driving Areas

1. Vegetative cover. For disturbed areas not subject to traffic. Vegetation provides the most practical method of dust control.
2. Mulch (including gravel mulch). Mulch offers a fast, effective means of controlling dust. This can also include rolled erosion control blankets.

Driving Areas

1. Sprinkling. The Site may be sprayed with water until the surface is wet. This is especially effective on haul roads and access routes.
2. Mulch, wood chips, and gravel can be placed on the driving surface to effectively reduce dust throw and particle migration on haul roads.

3. Windbreak. A silt fence or similar barrier can control air currents at intervals equal to 10 times the barrier height. Preserve existing wind barrier vegetation as much as practical.

4.1.3 Structural Practices (Permanent)

Permanent structural practices for this Site include:

1. Rock-lined swales will be installed at the base of hillsides along Austin Avenue and Prior Place to facilitate positive drainage to existing stormwater infrastructure.
2. Stone check dams will be installed within the swales to provide water quality treatment.

4.1.4 Structural Practices (Temporary)

Temporary structural practices for this Site include:

1. Temporary sediment trap will be installed at the base of the hillside along Austin Avenue. The capacity of the temporary sediment trap shall be 3,600 cubic yards per acre of drainage area.
2. Silt fences are barriers to intercept sediment and diffuse runoff and will be installed prior to commencement of construction. Silt fence will be installed parallel to land slope at the perimeter of the work site and at interior locations as shown on the Erosion Control Plan.
3. Straw bales will be installed prior to commencement of construction and will act as a barrier to collect silt and sediment from stormwater runoff. Straw bales will be installed perpendicular to land slope at the work site as shown on the Erosion Control Plan.
4. Drain inlet protection shall be installed as shown on the Erosion Control Plan prior to construction. Such protection is installed at catch basins to reduce the potential for sediment leaving the Site.
5. A stabilized construction entrance shall be installed as shown on the Erosion Control Plan prior to starting construction. Stabilized construction entrances prevent off-site sediment and debris from entering the Site.
6. The contractor shall install appropriate measures in rights-of-way to control runoff and stabilize disturbed areas.

4.2 Conversion of Temporary Structures to Permanent

The majority of the sediment control measures are temporary and will be removed following stabilization. Removal and conversion of these practices will be included on the ultimate final use build-out of this Site.

4.3 Exposed Areas

Runoff resulting from flow over exposed soils or stockpiles will flow first through silt fencing. The primary pollutant of concern is sediment, and these structural measures will efficiently capture sediment.

4.4 Pollution Prevention Plan

The construction superintendent will be required to maintain a clean and orderly Site by requiring proper storage of new and used materials. Any new or used materials that pose a pollution threat will be stored in areas which limit pollutant discharge from the Site. Such materials will be covered with plastic or tarps prior to any predicted rainfall. Additional silt fencing will be installed on the downhill slope of any storage area posing a pollution threat. Drip pans will be placed underneath the fuel connections if vehicle fueling is done on the Site. Any construction chemicals stored at the Site will be placed in a trailer or other shelter to preclude runoff.

4.4.1 Good Housekeeping

The following good housekeeping practices will be followed on Site during the construction project:

1. An effort will be made to store only enough products required to do the job.
2. All materials stored on Site will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use.
3. The project Site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

4.4.2 Hazardous Products

The following measures will be used to reduce the risks associated with hazardous materials:

1. Products will be kept in original containers with the original labels in legible condition.
2. Original labels and Material Safety Data Sheets will be procured and used for each material.
3. If surplus product must be disposed of, manufacturers' or local/state/federal recommended methods for proper disposal will be followed.
4. Spills shall be reported to the NYSDEC Hotline at 1-800-457-7362.

4.5 Hazardous Wastes

All hazardous waste materials will be disposed of by the contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Project personnel will be instructed in these practices by the project Site superintendent, who will also be responsible for seeing that these practices are followed.

4.6 Product-Specific Practices

The following product-specific practices shall be adhered to at the project Site.

4.6.1 Petroleum Products

All on-Site vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum-leaking vehicles and equipment will not be allowed on the property. Petroleum products will be stored in tightly sealed, clearly labeled containers. Any petroleum storage tanks used on Site will have a dike or berm containment structure constructed

around it to contain any spills which may occur. Drip pans shall be provided for all dispensers. Any asphalt substances used on Site will be applied according to the manufacturer's recommendations.

4.6.2 Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

4.6.3 Sanitary Wastes

All sanitary waste will be collected from the portable units a minimum of three times per week by a licensed portable facility provider in complete compliance with local and state regulations. All sanitary waste units will be located in an area where the likelihood of the unit contributing to stormwater discharges is negligible. If required, additional Best Management Practices should be implemented, such as sandbags around the base, to prevent wastes from contributing to stormwater discharges.

4.6.4 Contaminated Soils

Any contaminated soils resulting from spills of materials with hazardous properties during construction activities will be contained and cleaned up immediately in accordance with applicable state and federal regulations and the approved RWP.

5. Construction Phase Inspection and Maintenance Schedule

5.1 Maintenance Procedures

Austin Avenue Brownfield Redevelopment II, LLC shall be responsible for administering the weekly "qualified inspections" in accordance with Section 5.2 herein and Part 4 of GP 0-10-001. Austin Avenue Brownfield Redevelopment II, LLC will be responsible for conducting weekly inspections using qualified staff or shall request assistance from qualified professionals.

The general contractor shall be responsible for conducting his own daily inspections as well as all maintenance and/or repair of erosion controls, including any deficiencies identify by the qualified professional.

The following inspection and maintenance practices will be used to maintain erosion and sediment controls and stabilization measures during construction:

1. All control measures will be inspected at least once every seven calendar days.
2. A walk around the site perimeter, identifying any areas where sediment is released from the site.
3. All measures will be maintained in good working order; if repairs or other erosion control measures are found to be necessary, they will be initiated by the contractor within 24 hours of report.
4. Built-up sediment will be removed from silt fence when it has reached one-third the height of the fence.
5. Silt fences will be inspected for depth of sediment, tears, etc., to determine if the fabric is securely attached to the fence posts and that the fence posts are securely in the ground.
6. Temporary and permanent seeding and all other stabilization measures will be inspected for bare spots, washouts, and healthy growth.
7. Drain inlet protection will be inspected for sediment accumulation after every rain event. Accumulated sediment shall be removed. Fabric shall be inspected and repairs made as necessary.
8. A maintenance inspection report will be prepared after each inspection. A copy of the report forms to be completed by the inspector is included in Appendix D.
9. Contractor shall perform required maintenance activities immediately following the weekly inspection. Possible maintenance activities are cleaning of deep catch basins, application of erosion control matting, grading of disturbed areas, mowing, repair of diversion channels, and seeding or mulching.

Any non-compliance with the SWPPP that will endanger public health or the environment shall be reported to the NYSDEC within 24 hours. Follow up with a written report within five days of the non-compliance event. The written submission must contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance

has not been corrected, the anticipated time it is expected to continue; and steps planned or taken to reduce, eliminate, and prevent recurrence of the non-compliance.

5.2 Qualified Inspectors

Austin Avenue Brownfield Redevelopment II, LLC is responsible for having a “qualified inspector” conduct the weekly erosion control inspections in accordance with Part 4 of GP 0-10-001. A qualified inspector must be a certified professional in erosion and sediment control (CPESC), a licensed professional engineer (P.E.), a registered landscape architect (RLA), or someone who has taken the NYSDEC four-hour training class and is under the direct supervision of, and within the same company as, a CPESC, P.E., or RLA.

5.3 Inspection Forms

A blank reporting form is included in Appendix D of this SWPPP, to be used (or used as a guide) by the qualified inspector. The report forms shall become an integral part of the SWPPP and made readily accessible to Austin Avenue Brownfield Redevelopment II, LLC; its engineer; SWPPP preparer; and/or governmental inspection officials for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. Inspection and maintenance report forms are to be maintained by Austin Avenue Brownfield Redevelopment II, LLC for three years following final stabilization of the site.

5.4 Other Recordkeeping Requirements

The construction contractor shall maintain the following records related to construction activities for the project:

1. Dates when major grading activities occur and which areas were graded.
2. Dates and details concerning the installation of temporary and permanent structural controls.
3. Dates when construction activities cease in an area.
4. Dates when an area is stabilized, either temporarily or permanently.
5. Dates of rainfall and the amount of rainfall.
6. Dates and descriptions of the type and amount of any spills of hazardous materials.
7. Records of reports filed with regulatory agencies if reportable quantities of hazardous materials are spilled.

5.5 Certifications

All contractors and subcontractors shall sign the Contractor Certification Statement Form prior to undertaking any construction activities on the work site.

5.6 Final Review

Prior to project completion, Austin Avenue Brownfield Redevelopment II, LLC shall have a qualified professional perform a final site inspection once the site is considered stabilized. The site can be considered stabilized when:

1. All soil disturbing activities have been completed;
2. A uniform perennial vegetative cover with a density of 80 percent of the unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been established; and
3. The facility no longer discharges stormwater associated with construction activities.

The qualified professional shall certify that the site has undergone final stabilization using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed.

6. Water Quality and Quantity Analysis

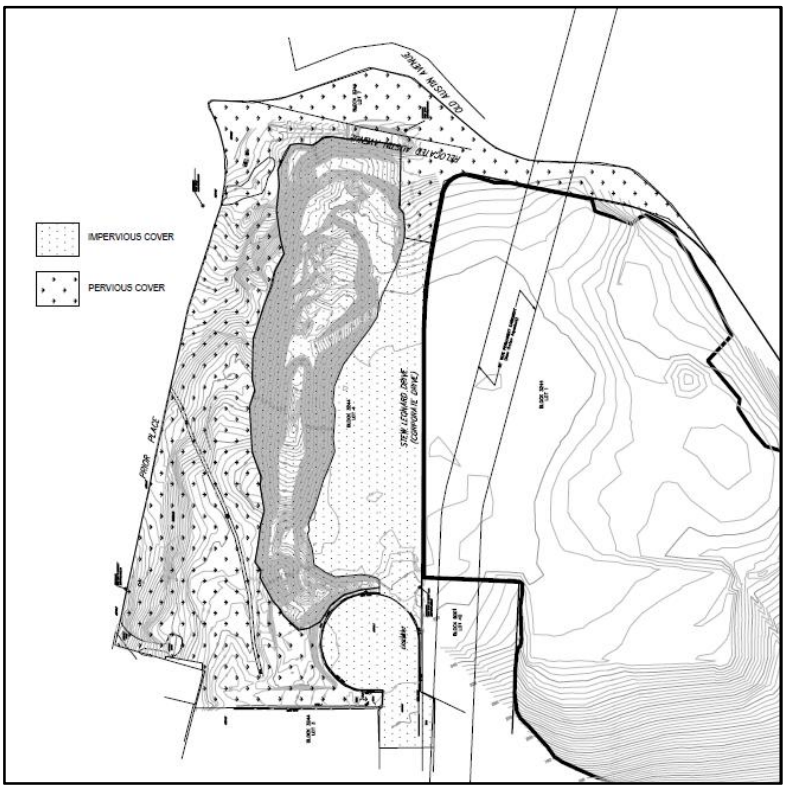
6.1 Existing Hydrology

The Site is currently vacant and consists of woodlands along the western portion and land that was cleared and graded as part of activities that occurred on the adjacent Site along the eastern portion. There is a large shot rock stockpile that runs from north to south in the middle and eastern portions of the Site. The Site is adjacent to a mixed residential/commercial area west of Prior Place and is bordered by Prior Place to the west, Austin Avenue to the north, vacant land (Lot 1, BCP Site #C360066) to the east, and Stew Leonard's Grocery Store parking lot to the south. The former Austin Avenue Landfill was located on the eastern portion of the Site and adjoining parcel (Lot 1).

Table 1 Existing Conditions Cover Types

Existing Cover Type	Runoff Curve Number (CN)	Area (Square Feet)
Existing shot rock stockpile located throughout central portion of the site	89	119,000
Existing asphalt and compacted gravel pavements	98	98,850
Existing wooded hillside with bedrock outcrops and areas of brush/lawn along roadsides	77	215,000
Curve Number (Weighted)	**84**	**432,850**

Refer to the figure below.



6.2 Proposed Hydrology

Following the completion of the remedial activities, the site hydrology will generally remain unchanged. This is due to the proposed soil cover engineering control methods of using stone and soil mixtures to cover the existing soil matrix of incinerator ash and miscellaneous refuse and debris.

The project will generally consist of capping the Site with a minimum of 1 foot of fill. To do this, a portion of the existing shot rock stockpile will be processed on Site to be used as stone fill (maximum size 6-inch diameter). The bulk of the shot rock stockpile will remain and act as a soil cover engineering control on that portion of the Site where it is located. The processed stone will be spread within the areas designated in the approved RWP. At the perimeter of the property, along the adjacent roadway, soil fill will be used as a transition from the steep slopes to the road edge. Also, the extension of the existing driveway will be covered with a combination of the shot rock, soil, and asphalt. Reference is made to Table 2 and Figure 3.

Table 2 Proposed Cover Types

Proposed Cover Type for Remedial Action Plan	Runoff CN	Area (Square Feet)
Area along extension of driveway where existing asphalt pavement will be restored to serve as the soil cover engineering control.	98	19,000
Area along extension of driveway where existing stone shot rock will remain as soil cover engineering control.	89	119,000
Area where soil cover engineering control will be transitioned to the existing shot rock stockpile. The transition layer will consist of geotextile overlapped onto the stockpile and covered with shot rock.	89	6,500
Area where soil cover engineering control will be asphalt pavement.	98	1,350
Area where soil cover engineering control will be transitioned to existing roadway. Soil cover will consist of a geotextile demarcation layer with a minimum of 1 foot of clean fill. Fill to be seeded with a native meadow seed mix.	71	11,500
Two separate areas with proposed soil cover engineering control will be established. The soil cover will consist of a geotextile demarcation layer and a minimum of 1 foot of either clean fill or crushed shot rock (d50 6 inches minus) mixed with topsoil and organic matter. Area to be seeded with a native meadow seed mix.	71	72,500
Two separate areas where no soil cover engineering control will be established. Existing trees and soils to remain.	77	159,000
Area along extension of driveway where existing ground cover will be used to establish a soil cover engineering control such as a geotextile demarcation layer with minimum 2 feet of clean soil fill (seeded).	77	44,000
Curve Number (Weighted)	**79**	**432,850**

6.3 Stormwater Management

The remedial activity is not anticipated to increase the peak flow rate or volume of runoff from the site. As shown in Tables 1 and 2, the overall CN slightly decreases following installation of the remedial actions. Therefore, no post-remedial stormwater management practices are proposed. However, the following drainage improvements are proposed to improve site drainage during and after the remedial site work:

1. Collection swales along roadways to facilitate runoff to existing stormwater catch basins located at the intersection of Prior Place and Austin Avenue.

6.3.1 Vegetated Swales

Two vegetated drainage swales are proposed along Prior Place and Austin Avenue. The swales will collect hillside runoff and convey flow to the existing stormwater catch basin in this area. The swales will be constructed as part of the remedial action to facilitate positive drainage during and following construction of the remedial action. The vegetation will consist of a native, low-mow seed mix to prevent scour and trap sediment. Check dams will be installed at set intervals to provide water quality treatment. Reference is made to Figure 4.

7. Monitoring and Maintenance Procedures

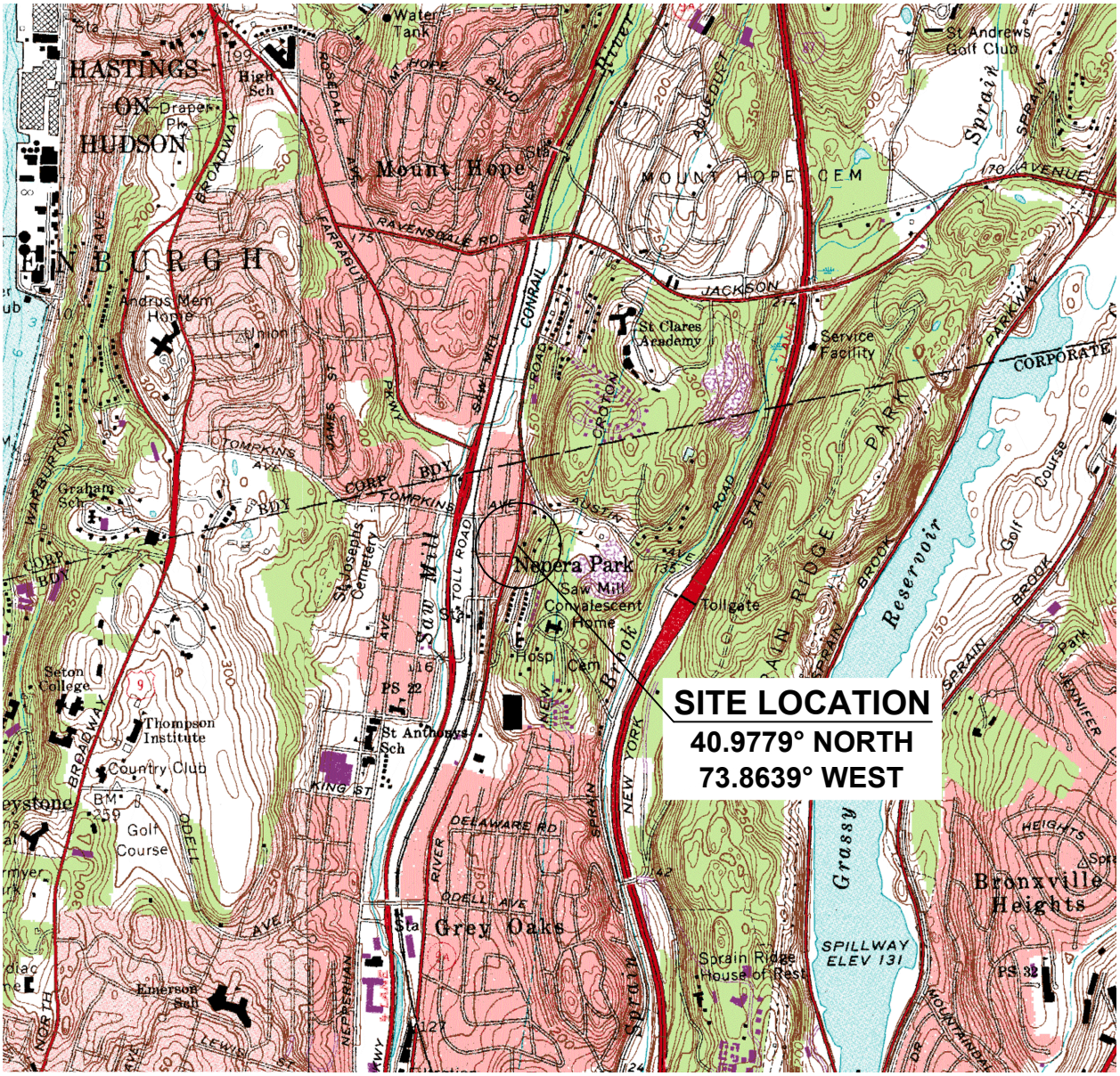
The purpose of the swales is to collect stormwater from the hillside and direct runoff to the existing drain inlets along Austin Avenue and Prior Place. The primary maintenance objective is to maintain the system functionality by preventing the treatment practices from becoming clogged and/or scoured. The swales will need to be inspected and maintained on an annual basis to ensure the system is functioning properly. The inspections should occur in early fall or late spring. If the inspections show accumulations of debris and sediment, more frequent inspections will be scheduled according to the rate of debris generation. Accumulated debris and sediment will be removed from the swales following the regular inspections. The material shall be removed from the Site and legally disposed of.

The following items should be checked and maintained as necessary during the scheduled inspections and maintenance operations for the stormwater drainage system:

1. Catch basin grates will be cleaned of all debris. Catch basins will be opened and checked for sediment accumulation and cleaned of all silt and debris. Outlet piping from catch basins will be checked for proper runoff flow and cleaned of accumulated debris and sediment, if needed, to prevent clogging of the water discharge pipe.
2. The swale should be periodically inspected for the first few months following construction. Once vegetation is established, inspections can be made annually. Inspection priorities should include checking the vegetative cover, condition of drain structure, and accumulation of sediment.

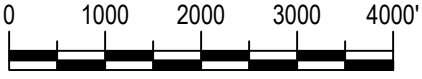
Note: The property owner is responsible for long-term maintenance of the drainage system and shall hire qualified landscape and/or environmental professionals to conduct the inspections and maintenance work as needed. A number of the items noted within the maintenance and monitoring tasks listed above may be included within the overall program for the general landscape maintenance of the completed property.

Appendix A – Contract Drawings



CONTOUR INTERVAL: 10 Feet

MAP TAKEN FROM: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLES:
MOUNT VERNON(1966, PHOTOREVISED 1979) &
YONKERS (1966, PHOTOREVISED 1979)
(www.nysgis.state.ny.us/quads/usgsdrg.htm)



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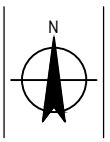


Austin Avenue Brownfield Redevelopment II
Stormwater Pollution Prevention Plan
Lot 4 and Lot 7 BCP Sites
Site Location Map

Job Number	86-14908
Revision	A
Date	08.20.2014

Figure 1

One Remington Park Drive, Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5853 **E** cazmail@ghd.com **W** www.ghd.com

Plot Date: 25 August 2014 - 4:36 PM Cad File No: G:\86\14908\WP\Reports\8614908.1 - SWPPP\Figures\Figure 1.dwg

LEGEND:

- LOT 1 BCP SITE PROPERTY BOUNDARY
- LOT 4 BCP SITE PROPERTY BOUNDARY
- LOT 7 BCP SITE PROPERTY BOUNDARY
- EXTENT OF SHOT ROCK STOCKPILE (APPROXIMATE)
- EXTENT OF ASH (APPROXIMATE)
- LIMIT OF LOT 1 SOIL COVER AND DEMARCATION LAYER (APPROXIMATE)
- MW-1 / SWR-MW-1 — GROUNDWATER MONITORING WELL LOCATION AND ID (SURVEYED)
- SV-1 — SOIL VAPOR MONITORING WELL LOCATION AND ID (SURVEYED)
- AREA WHERE THE SOIL COVER ENGINEERING CONTROL WILL BE TRANSITIONED TO THE EXISTING ROADWAY. THE SOIL COVER WILL CONSIST OF A GEOTEXTILE DEMARCATION LAYER AND A MINIMUM OF 1-FOOT OF CLEAN SOIL FILL (SEE DETAIL NO. 3 ON FIGURE 6). (APPROXIMATELY 11,000 SQUARE FEET)
- TWO SEPARATE AREAS WHERE A SOIL COVER ENGINEERING CONTROL WILL BE ESTABLISHED. THE SOIL COVER WILL CONSIST OF A GEOTEXTILE DEMARCATION LAYER AND A MINIMUM OF 1-FOOT OF EITHER CLEAN SOIL FILL OR 6-INCH MINUS CRUSHED SHOT ROCK (SEE DETAIL NOS. 1, 2, 3, AND 4 ON FIGURE 6). (APPROXIMATELY 72,000 SQUARE FEET)
- AREA WHERE THE SOIL COVER ENGINEERING CONTROL WILL BE TRANSITIONED TO THE EXISTING SHOT ROCK STOCKPILE. THE TRANSITION AREA WILL CONSIST OF A GEOTEXTILE DEMARCATION LAYER OVERLAPPED ONTO THE STOCKPILE AND COVERED WITH SHOT ROCK FROM THE STOCKPILE (SEE DETAIL NO. 2 ON FIGURE 6). (APPROXIMATELY 6,000 SQUARE FEET)
- AREA WHERE A SOIL COVER ENGINEERING CONTROL WILL BE ESTABLISHED. THE SOIL COVER WILL CONSIST OF A MINIMUM OF 6-INCHES OF ASPHALT PAVEMENT (SEE DETAIL NO. 5 ON FIGURE 6). (APPROXIMATELY 1,000 SQUARE FEET)
- TWO SEPARATE AREAS WHERE NO SOIL COVER ENGINEERING CONTROL WILL BE ESTABLISHED. (APPROXIMATELY 159,000 SQUARE FEET)
- AREAS WHERE EXISTING GROUND COVER WILL BE USED TO ESTABLISH A SOIL COVER ENGINEERING CONTROL. THE GROUND COVER IN THESE AREAS CURRENTLY CONSISTS OF EITHER:
  1. A GEOTEXTILE DEMARCATION LAYER AND A MINIMUM OF 2-FEET OF CLEAN SOIL FILL. (APPROXIMATELY 44,000 SQUARE FEET).
  2. ASPHALT PAVEMENT. (APPROXIMATELY 19,000 SQUARE FEET).
  3. SHOT ROCK STOCKPILE WHERE THE THICKNESS IS GREATER THAN 3 FEET. (APPROXIMATELY 119,000 SQUARE FEET).

NOTES:

LOT 1 BASE MAP FROM A FIELD SURVEY CONDUCTED BY CONTRACTORS LINE AND GRADE SOUTH, LLC, MAY 11, 2011.

LOT 4 BASE MAP FROM A FIELD SURVEY CONDUCTED BY JOHN MEYER CONSULTING, P.C. JUNE 30, 2011.

EXTENT OF ASH FROM EXISTING CONDITIONS, PLATE 1, MORRIS WESTCHESTER CONSTRUCTION COMPANY, L.L.P. HISTORIC AUSTIN AVENUE LANDFILL CLOSURE PLAN, LEGGETTE, BRASHEARS, & GRAHAM ENGINEERING SERVICES, P.C. MARCH 1988. REVISED BY S&W REDEVELOPMENT OF NORTH AMERICA, LLC, MAY 2011. FURTHER REVISED BY GHD CONSULTING ENGINEERS, LLC, DECEMBER 2012.

SHOT ROCK STOCKPILE EXTENT BASED ON FIELD SURVEY AND FIELD OBSERVATIONS, AND IS APPROXIMATE.

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

N

0 30 60 90 120'
SCALE 1"=60' AT ORIGINAL SIZE

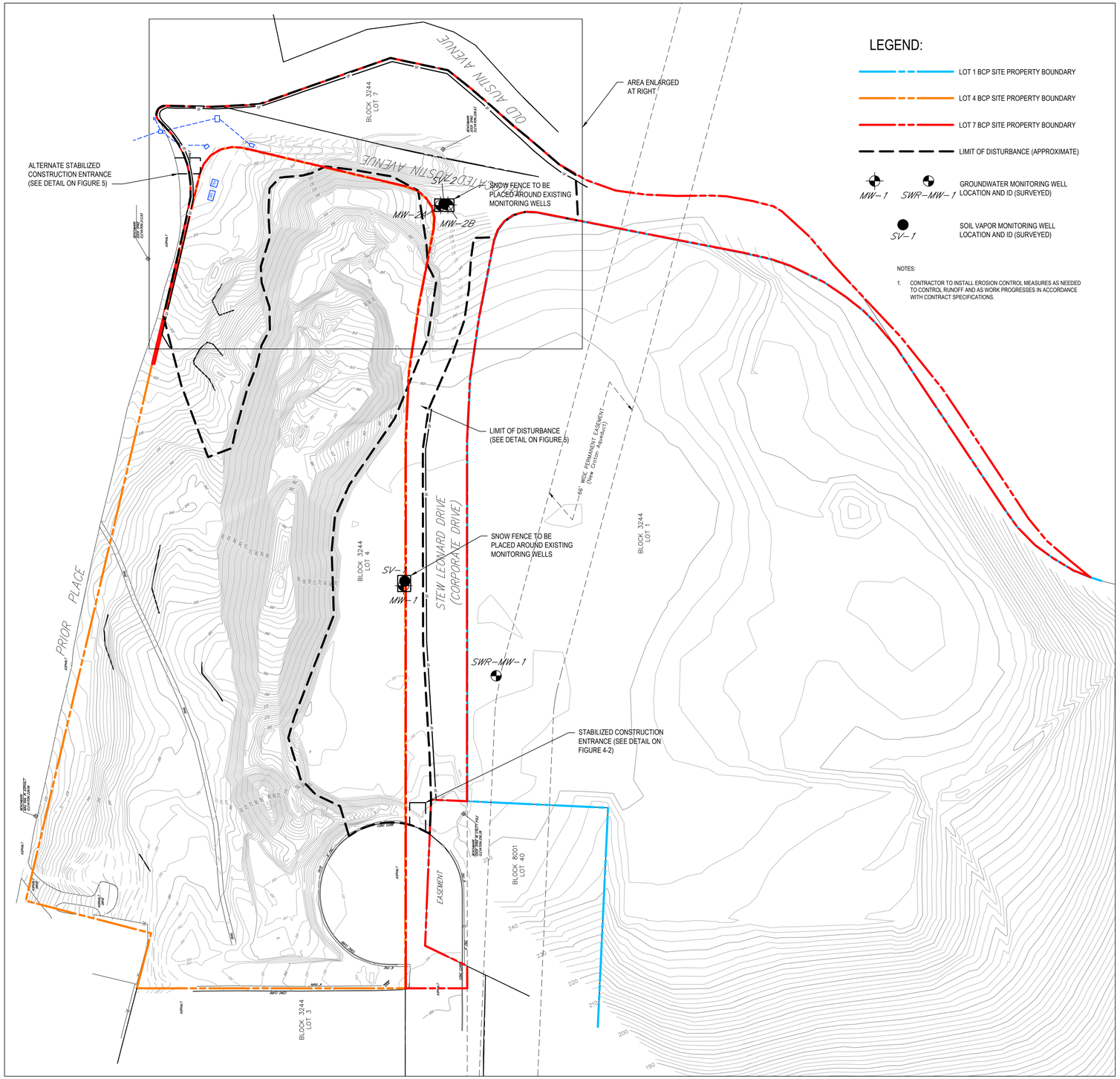
GHD Consulting Services Inc.
One Remington Park Drive
Cazenovia NY 13035 USA
T 1 315 679 5800 F 1 315 679 5801
E cazmail@ghd.com W www.ghd.com

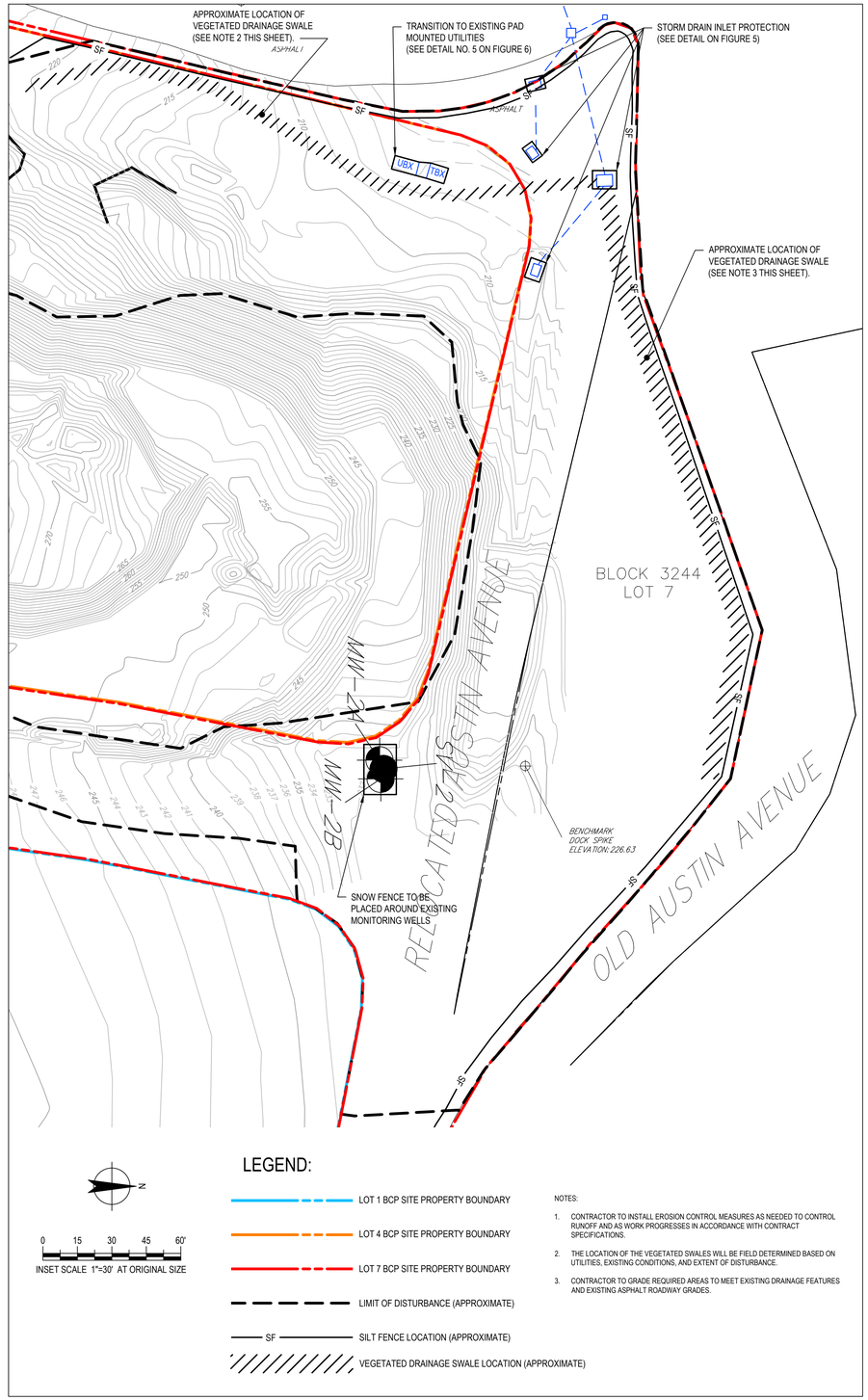
Drawn	IEM	Designer	
Drafting Check		Design Check	
Approved (Project Director)			
Date			
Scale	AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction	

Client: Austin Avenue Brownfield Redevelopment II, LLC
Project: Stormwater Pollution Prevention Plan
Title: Proposed Engineering Controls

Original Size: Arch D
Drawing No: Figure 2
Rev: A

Plot Date: 5 September 2014 - 3:29 PM Plotted by: Ian McNamara Cad File No: G:\86\14908\WP\Reports\8614908.1 - SWPPP\Figures\Figure 2.dwg





No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

GHD
GHD Consulting Services Inc.
One Remington Park Drive
Cazenovia NY 13035 USA
T 1 315 679 5800 F 1 315 679 5801
E cazmail@ghd.com W www.ghd.com

Drawn	IEM	Designer	
Drafting Check		Design Check	
Approved (Project Director)			
Date			
Scale	AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction	

Client: Austin Avenue Brownfield Redevelopment II, LLC
Project: Stormwater Pollution Prevention Plan
Title: Erosion Control Plan

Original Size: Arch D
Drawing No: Figure 3
Rev: A

Plot Date: 25 August 2014 - 4:37 PM
Plotted by: Ian McNamara
Cad File No: G:\86\14908\WP\Reports\8614908.1 - SWPPP\Figures\Figure 3.dwg

LEGEND:

- LOT 1 BCP SITE PROPERTY BOUNDARY
- LOT 4 BCP SITE PROPERTY BOUNDARY
- LOT 7 BCP SITE PROPERTY BOUNDARY
- UNDERGROUND GAS LINE
- UNDERGROUND WATER LINE
- UNDERGROUND TELEPHONE LINE
- OVERHEAD UTILITY WIRES
- STORM SEWER

NOTES:

1. UTILITY LOCATIONS ARE APPROXIMATE AND TO BE FIELD VERIFIED BY CONTRACTOR.
2. LOT 1 BASE MAP FROM A FIELD SURVEY CONDUCTED BY CONTRACTORS LINE AND GRADE SOUTH, LLC, MAY 11, 2011.
3. LOT 4 BASE MAP FROM A FIELD SURVEY CONDUCTED BY JOHN MEYER CONSULTING, P.C. JUNE 30, 2011.
4. EXTENT OF ASH FROM EXISTING CONDITIONS, PLATE 1, MORRIS WESTCHESTER CONSTRUCTION COMPANY, L.L.P. HISTORIC AUSTIN AVENUE LANDFILL CLOSURE PLAN, LEGGETTE, BRASHEARS, & GRAHAM ENGINEERING SERVICES, P.C. MARCH 1988. REVISED BY S&W REDEVELOPMENT OF NORTH AMERICA, LLC, MAY 2011. FURTHER REVISED BY GHD CONSULTING ENGINEERS, LLC, DECEMBER 2012.
5. SHOT ROCK STOCKPILE EXTENT BASED ON FIELD OBSERVATIONS, AND IS APPROXIMATE.

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

N

0 30 60 90 120'
SCALE 1"=60' AT ORIGINAL SIZE

GHD Consulting Services Inc.
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T 1 315 679 5800 **F** 1 315 679 5801
E cazmail@ghd.com **W** www.ghd.com

Drawn IEM	Designer
Drafting Check	Design Check
Approved (Project Director) Date	
Scale AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction

Client **Austin Avenue Brownfield Redevelopment II, LLC**
Project **Stormwater Pollution Prevention Plan**
Title **Existing Utilities Layout**

Original Size **Arch D** **Drawing No: Figure 4** **Rev: A**

Plot Date: 25 August 2014 - 4:37 PM Plotted by: Ian McNamara Cad File No: G:\86\14908\WP\Reports\8614908.1 - SWPPP\Figures\Figure 4.dwg

EROSION & SEDIMENTATION CONTROL MEASURES

1. CONTRACTOR AND ALL SUBCONTRACTORS SHALL COMPLY WITH THE LATEST PROJECT SWPPP AND REQUIREMENTS UNDER NYSDEC SPDES GP-0-10-001.
2. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED BY THE CONTRACTOR DAILY AND IMMEDIATELY AFTER PERIODS OF RAINFALL. REPAIR AND/OR MAINTENANCE OF SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE MADE AS SOON AS NEEDED. THE CONTRACTOR IS RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF ALL CONTROL MEASURES ON THIS SITE.
3. LAND DISTURBANCE SHALL BE KEPT TO A MINIMUM. SOIL STABILIZATION WILL BE SCHEDULED IMMEDIATELY AFTER ANY DISTURBANCE. NEWLY GRADED STEEP SLOPES SHALL BE IMMEDIATELY STABILIZED WITH SEED MIX AND/OR ROLLED BIODEGRADABLE EROSION CONTROL MATTING.
4. SILT FENCES SHALL BE INSTALLED ALONG THE TOE OF ALL CRITICAL CUT AND FILL SLOPES.
5. CATCH BASINS SHALL BE PROTECTED WITH INLET PROTECTION BARRIERS OR SILT FENCES THROUGHOUT THE CONSTRUCTION SEQUENCE AND UNTIL ALL DISTURBED AREAS ARE STABILIZED.
6. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ALL CONSTRUCTION ACTIVITIES.
7. ANCHOR ALL TOPSOIL STOCK PILES WITH STRAW MULCH AND RING WITH SILT FENCE, OR STRAW BALE BARRIER.
8. DURING CONSTRUCTION, ALL EXPOSED SLOPES THAT WILL NOT RECEIVE PERMANENT SURFACE TREATMENT IMMEDIATELY, AND ALL PILES OF SOIL SHALL BE TEMPORARILY SEEDED WITH A MIXTURE OF PERENNIAL RYEGRASS, ANNUAL RYEGRASS AND WINTER GRASS. SHOULD CONSTRUCTION ACTIVITIES BE HALTED, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS BY APPROVED METHODS SUCH AS MULCHING AND HYDROSEEDING.
9. SEDIMENT REMOVAL FROM CONTROL STRUCTURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SEDIMENT SHALL BE DISPOSED OF IN A MANNER WHICH DOES NOT RESULT IN ADDITIONAL EROSION AND WHICH IS CONSISTENT WITH THE CONTRACT DOCUMENTS AND REGULATORY REQUIREMENTS.
10. THE EROSION AND SEDIMENTATION CONTROL MEASURES DESCRIBED HEREIN ARE INTENDED AS A GENERAL GUIDE FOR THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ANY AND ALL WORK NECESSARY TO PREVENT EROSION OF SOIL FROM THE CONSTRUCTION SITE. TO PREVENT EROSION, THE CONTRACTOR SHALL PROVIDE SILT FENCES OR OTHER CONTROL MEASURES AS THE NEED ARISES DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
11. PAVED ROADWAYS SHALL BE KEPT CLEAN AT ALL TIMES.
12. A TEMPORARY CRUSHED STONE PAD OR ROADWAY SHALL BE CONSTRUCTED AT ALL NON-PAVED PARKING AREAS, HEAVY USE AREAS, OR ROADWAYS WHERE THERE IS NO EXISTING PAVEMENT, OR WHERE PAVEMENT HAS BEEN REMOVED.

GENERAL EROSION AND SEDIMENTATION NOTES

1. ALL REQUIRED EROSION CONTROL MEASURES SHALL BE ESTABLISHED WITHIN A DRAINAGE AREA PRIOR TO EXCAVATION WITHIN THE AREA.
2. THE LISTED EROSION CONTROL MEASURES ARE REQUIRED. ADDITIONAL EROSION CONTROL MEASURES MAY BE NEEDED AT THE TIME OF CONSTRUCTION BASED ON CONSTRUCTION PRACTICES AND SITE CONDITIONS.
3. SPECIFIC EROSION CONTROL PRACTICES FOR INDIVIDUAL AREAS ARE SHOWN ON THE INDIVIDUAL DRAWINGS. GENERAL PRACTICES AND DETAILS ARE LISTED ON THIS SHEET.
4. THE GENERAL SEQUENCE OF CONSTRUCTION WILL BE AS FOLLOWS:
   - A. IDENTIFY THE LIMITS OF THE DRAINAGE AREA.
   - B. ESTABLISH EROSION CONTROL MEASURES WITHIN THE DRAINAGE AREA.
   - C. INSTALL BYPASS SWALE AND STORM DRAINAGE AS NEEDED TO RE-ROUTE RUNOFF AWAY FROM WORK SITE.
   - D. EXCAVATE MATERIAL FROM THE EXCAVATION AND STOCKPILE ACCEPTABLE MATERIAL ADJACENT TO THE EXCAVATION OR MOVE TO OTHER AREAS OF SITE TO BE FILLED.
   - E. REMOVE UNACCEPTABLE MATERIAL FROM THE SITE.
   - F. HAUL IN ACCEPTABLE BACKFILL AND STOCKPILE MATERIAL ADJACENT TO THE EXCAVATION.
   - G. INSTALL NEW FACILITIES, IE: FOUNDATIONS, BEDDING, PIPE.
   - H. BACKFILL WITH ACCEPTABLE MATERIAL.
   - I. ESTABLISH SURFACE TREATMENTS (I.E. RAIN GARDENS) AND PROTECT AS NEEDED.
   - J. MAINTAIN EROSION CONTROLS UNTIL ALL SURFACE AREAS ARE STABILIZED.
   - K. REMOVE EROSION CONTROL MEASURES.
5. DRAINAGE WILL BE SLOPED AWAY FROM THE EXCAVATION AREA.
6. EXCAVATIONS WILL BE KEPT DRY USING SUMP PUMP SYSTEMS. THE SUMP WILL BE LOCATED AT THE LOW POINT OF THE TRENCH, AND WILL CONSIST OF A SUCTION HOSE DRAWING FROM A POCKET OF WASHED GRAVEL WRAPPED IN NON-WOVEN GEOTEXTILE. THE SUMP WILL DISCHARGE TO STABILIZED CATCH BASINS. STABILIZED CATCH BASINS WILL BE CLEANED PRIOR TO HAVING STORMWATER DISCHARGED TO THEM AND THEIR GRATES WILL BE WRAPPED WITH WOVEN GEOTEXTILE (SILT FENCE MATERIAL) TO PREVENT THE ENTRANCE OF FINES. STABILIZED CATCH BASINS WILL ALSO BE CLEANED WHEN THE SILT REACHES THE MIDPOINT OF THE SUMP AND AT THE COMPLETION OF THE PROJECT.
7. IF A STABILIZED CATCH BASIN IS NOT AVAILABLE WITHIN A DRAINAGE AREA THE TRENCH SUMP WILL DISCHARGE TO A SILT BAG AND FLOW OVERLAND TO NATURAL DRAINAGE COURSES. THE VOLUME OF WATER DISCHARGED WILL BE MONITORED TO PREVENT EROSION OR DAMAGE WITHIN THE NATURAL DRAINAGE COURSES.
8. MATERIAL TAKEN FROM ROADWAYS, CATCH BASINS, AND SILT BAGS WILL BE DISPOSED OF IN A MANNER THAT MEETS ALL LOCAL, STATE AND FEDERAL LAWS.

EROSION CONTROL NARRATIVE

PRIOR TO COMMENCING WORK, CONTRACTOR SHALL INSTALL SEDIMENT AND EROSION CONTROL MEASURES.

WHEN THE SITE IS CLEARED, BUT BEFORE GRUBBING, EROSION CONTROLS SHALL BE PLACED AT POINTS NOTED ON THE PLANS. THESE INCLUDE POSITIONING CONTROLS AS NEEDED AT DOWNGRADIENT EDGES OF GRADED AREAS AND AT THE BASE OF PROPOSED FILL SLOPES AND WALLS.

STABILIZED CONSTRUCTION AND WASHDOWN PAD SHALL BE INSTALLED AS SHOWN ON DRAWINGS. IF NECESSARY, ROUGH GRADES SHALL BE ESTABLISHED AND SHAPED. SITE AREAS SHALL BE ESTABLISHED FOR USE AS CONSTRUCTION MATERIAL STORAGE AND PARKING.

CUTS AND FILLS WILL BE MADE TO DESIGN GRADES. EXCESS FILL WILL BE HAULED AND PLACED IN FILL AREAS OR DISPOSED OF AT AN APPROVED OFF-SITE LOCATION.

EROSION CONTROLS SHALL BE PERIODICALLY CHECKED AND MAINTAINED AT THE DOWNHILL EDGE OF DISTURBED AREAS AND SHALL BE PLACED AT THE BASE OF SLOPES. STRAW BALES OR SILT FENCES SHALL BE MAINTAINED AT THE POINTS OF RUNOFF PIPE AND DITCH OUTLETS.

WHEN CONSTRUCTION WORK IS COMPLETED AND STABLE SURFACES (VEGETATED OR PAVED) HAVE BEEN ACHIEVED, THE EROSION CONTROLS SHALL BE REMOVED.

DUST CONTROL MEASURES

DUST CONTROL MEASURES WILL BE IMPLEMENTED ACROSS AREAS OF SITE DISTURBANCE.

TEMPORARY STABILIZATION (SEEDING, MULCHING) WILL BE EMPLOYED IF CONSTRUCTION AREAS ARE TO BE LEFT OPEN FOR PERIODS OF TIME. THESE NOTED GENERAL OPERATIONS WILL HELP REDUCE THE POTENTIAL LEVEL OF DUST GENERATED FROM THE SITE.

DUST CONTROL MEASURES WILL BE EMPLOYED DURING DRY WEATHER PERIODS UNTIL ALL DISTURBED AREAS ARE STABILIZED.

SPECIFIC DUST CONTROL MEASURES FOLLOW IN ORDER OF HIERARCHY.

- SPRINKLING: WATER WILL BE SPRAYED ON THE SURFACE OF DISTURBED AREAS UNTIL THE SURFACE IS WET. THIS PRACTICE IS ESPECIALLY EFFECTIVE ON TRAFFICKED AREAS.
- VEGETATION: TEMPORARY SEEDING WILL BE EMPLOYED IN SITE DISTURBED AREAS NOT SUBJECT TO TRAFFIC.
- MULCH: MULCH MATERIAL INCLUDING WOOD CHIPS AND GRAVEL WILL BE USED ON AREAS WHERE A FAST EFFECTIVE MEANS TO CONTROL DUST IS NEEDED.
- BARRIERS: TEMPORARY "FENCING" WILL BE USED TO CONTROL AIR CURRENTS. EFFECT OF A BARRIER MAY BE AS LARGE AS 15 TIMES THE BARRIER HEIGHT. EXISTING OPEN FIELD VEGETATION (3' +/-HT) CAN PROVIDE AN EFFECTIVE CONTROL FOR DUST FROM LOCAL WORK AREAS.

SILT FENCE DESIGN CRITERIA

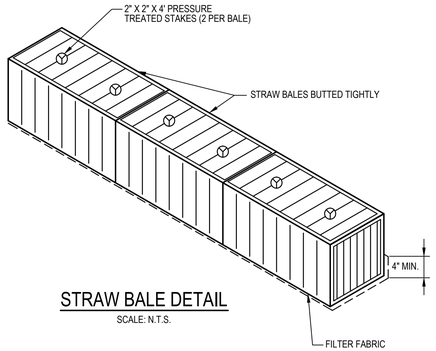
SLOPE STEEPNESS	(MAXIMUM) SLOPE LENGTH	(MAXIMUM) SILT FENCE LENGTH
FLATTER THAN 50:1	UNLIMITED	UNLIMITED
50:1 TO 10:1	125 FEET	1,000 FEET
10:1 TO 5:1	100 FEET	750 FEET
5:1 TO 3:1	60 FEET	500 FEET
3:1 TO 2:1	40 FEET	250 FEET
2:1 AND STEEPER	20 FEET	125 FEET

CONSTRUCTION SPECIFICATIONS

1. A DETAIL OF THE SILT FENCE SHALL BE SHOWN ON THE PLAN AND CONTAIN THE FOLLOWING REQUIREMENTS:
   - A. THE TYPE, SIZE, AND SPACING OF FENCE POSTS.
   - B. THE TYPE OF FILTER CLOTH USED.
   - C. THE METHOD OF FASTENING THE FILTER CLOTH TO THE FENCING SUPPORT.
   - D. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN IT REACHES 50% OF THE HEIGHT OF THE FABRIC.
2. WHERE ENDS OF THE FILTER CLOTH COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
3. DESIGN COMPUTATIONS ARE NOT REQUIRED.
4. ALL SILT FENCES SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE.
5. THE AREA BELOW THE FENCE MUST BE UNDISTURBED OR STABILIZED.
6. SILT FENCE FABRIC SHALL BE MIRAFI 100X OR EQUAL.
7. FENCE POSTS (FOR FABRIC UNITS): THE LENGTH SHALL BE A MINIMUM OF 36 INCHES LONG. WOOD POSTS 2 X 2 WITH A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES WILL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHT NOT LESS THAN 1.00 POUND PER LINEAR FOOT.

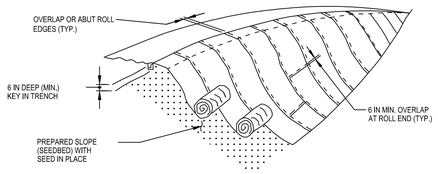
NOTE:

IN AREAS OF LESS THAN 2% SLOPE AND SANDY SOILS (USDA GENERAL CLASSIFICATION SYSTEM, SOIL CLASS A) MAXIMUM SLOPE LENGTH AND SILT FENCE LENGTH WILL BE UNLIMITED. IN THESE AREAS, A SILT FENCE MAY BE THE ONLY PERIMETER CONTROL NEEDED.



STRAW BALE DETAIL

SCALE: N.T.S.



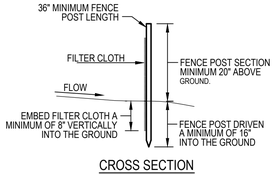
ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS

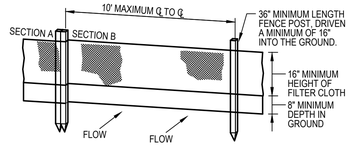
1. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
2. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 ½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
3. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
4. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
5. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
6. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.

ROLLED EROSION CONTROL MATTING

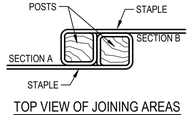
SCALE: N.T.S.



CROSS SECTION



PERSPECTIVE DETAIL



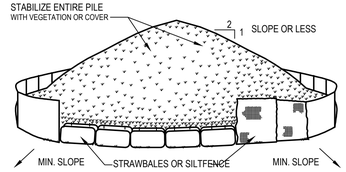
TOP VIEW OF JOINING AREAS

CONSTRUCTION SPECIFICATIONS

1. WHERE ENDS OF THE FILTER CLOTH COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
2. DESIGN COMPUTATIONS ARE NOT REQUIRED.
3. ALL SILT FENCES SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE.
4. THE AREA BELOW THE FENCE MUST BE UNDISTURBED OR STABILIZED.
5. FENCE POSTS (FOR FABRIC UNITS): THE LENGTH SHALL BE A MINIMUM OF 36 INCHES LONG. WOOD POSTS 2 X 2 WITH A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES WILL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHT NOT LESS THAN 1.00 POUND PER LINEAR FOOT.

SILT FENCE DETAIL

SCALE: N.T.S.

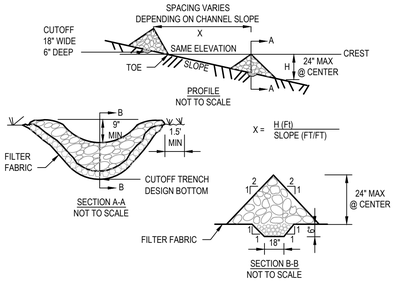


INSTALLATION NOTES

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVERED.

SOIL STOCKPILING

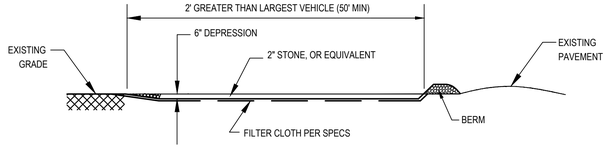
SCALE: N.T.S.



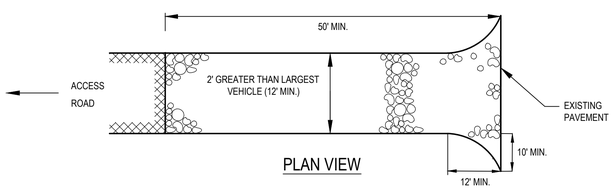
1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

STONE CHECK DAM

SCALE: N.T.S.



PROFILE



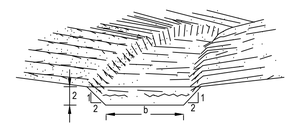
PLAN VIEW

WHEEL WASH STATION-STABILIZED CONSTRUCTION ENTRANCE

SCALE: N.T.S.

WHEEL WASH STATION- STABILIZED CONSTRUCTION ENTRANCE SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET.
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH PER SPECIFICATION 02421 - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH ALSO DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED WEEKLY AND AFTER EACH RAIN EVENT. NO SEDIMENT FROM SITE SHALL BE ALLOWED ONTO STREETS.
10. ENTRANCE(S) SHALL BE ENTIRELY REMOVED UPON COMPLETION OF ALL CONSTRUCTION OPERATIONS.
11. FINAL LOCATION(S) TO BE COORDINATED WITH OWNER.



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

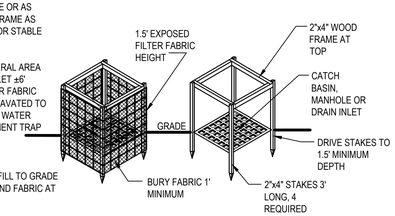
1. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE WATERWAY.
2. THE WATERWAY SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN, AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
3. FILLS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETE WATERWAY.
4. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE WATERWAY.
5. STABILIZATION SHALL BE DONE ACCORDING TO THE APPROPRIATE STANDARD AND SPECIFICATIONS FOR VEGETATIVE PRACTICES.
   - A. A. FOR DESIGN VELOCITIES OF LESS THAN 3.5 FT. PER. SEC., SEEDING AND MULCHING MAY BE USED FOR THE ESTABLISHMENT OF THE VEGETATION. IT IS RECOMMENDED THAT, WHEN CONDITIONS PERMIT, TEMPORARY WATERWAYS OR OTHER MEANS SHOULD BE USED TO PREVENT WATER FROM ENTERING THE WATERWAY DURING THE ESTABLISHMENT OF THE VEGETATION.
   - B. B. FOR DESIGN VELOCITIES OF MORE THAN 3.5 FT. PER. SEC., THE WATERWAY SHALL BE STABILIZED WITH SOD, WITH SEEDING PROTECTED BY JUTE OR EXCELSIOR MATTING OR WITH SEEDING AND MULCHING INCLUDING TEMPORARY DIVERSION OF THE WATER UNTIL THE VEGETATION IS ESTABLISHED.
   - C. C. STRUCTURAL - VEGETATIVE PROTECTION SUBSURFACE DRAIN FOR BASE FLOW SHALL BE CONSTRUCTED AS SHOWN ON THE STANDARD DRAWING AND AS SPECIFIED IN THE STANDARD AND SPECIFICATIONS FOR SUBSURFACE DRAIN.

SWALE DETAIL

SCALE: N.T.S.

SET SILT FENCE PROTECTION AROUND INLET FRAME OR AS CLOSE TO FRAME AS FEASIBLE FOR STABLE STAKING

NOTE: GENERAL AREA AROUND INLET ±6' FROM FILTER FABRIC MAY BE EXCAVATED TO 1' DEPTH AS WATER POOL SEDIMENT TRAP



STORM DRAIN INLET PROTECTION DETAIL

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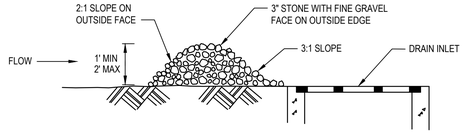


DRAIN INLET PROTECTION

SCALE: N.T.S.

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

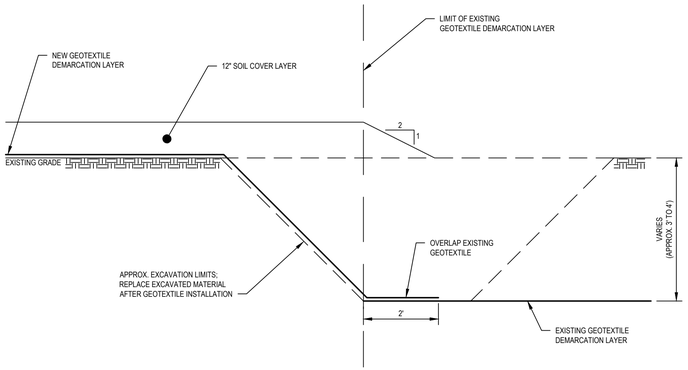
GHD Consulting Services Inc.
One Remington Park Drive
Cazenovia NY 13035 USA
T 1 315 679 5800 **F** 1 315 679 5801
E cazmail@ghd.com **W** www.ghd.com

Drawn IEM	Designer
Drafting Check	Design Check
Approved (Project Director)	
Date	
Scale AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction

Client: Austin Avenue Brownfield Redevelopment II, LLC
Project: Stormwater Pollution Prevention Plan
Title: Erosion Control Details

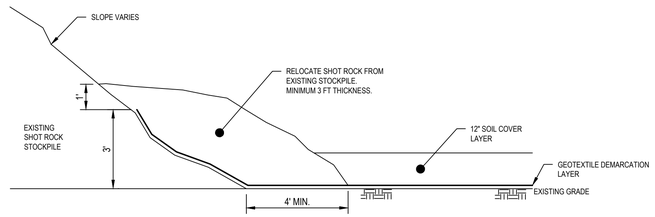
Original Size: Arch D
Drawing No: Figure 5
Rev: A

Plot Date: 25 August 2014 - 4:37 PM Plotted by: Ian McNamara Cad File No: G:\86\14908\WP\Reports\8614908.1 - SWPPP\Figures\Figure 5.dwg



DETAIL NO. 1
TIE-IN TO EXISTING GEOTEXTILE DEMARCATION LAYER

SCALE: N.T.S.



DETAIL NO. 2
GEOTEXTILE TERMINATION AT SHOT ROCK STOCKPILE

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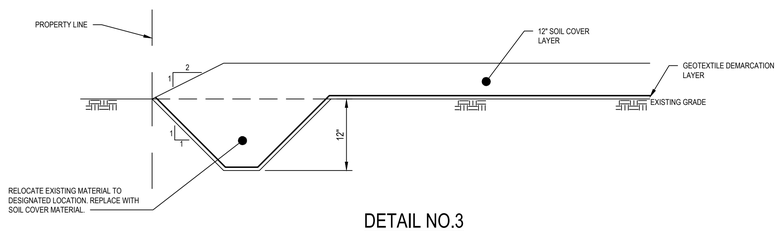

DETAIL NO.3
GEOTEXTILE TERMINATION AT PROPERTY LINE

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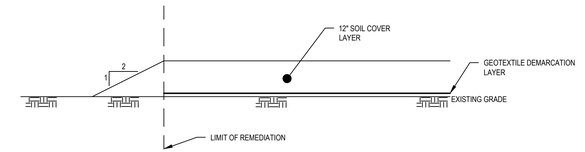

DETAIL NO. 4
TYPICAL TERMINATION DETAIL

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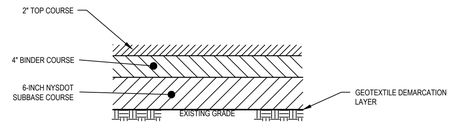


NOTES:

1. CONTRACTOR TO EXCAVATE TO REQUIRED ELEVATION PRIOR TO PLACEMENT OF GEOTEXTILE DEMARCATION LAYER. EXCAVATED MATERIAL TO BE RELOCATED TO DESIGNATED LOCATION.
2. CONTRACTOR SHALL ENSURE THAT ELEVATION OF TOP OF ASPHALT PAVEMENT IS A MINIMUM OF 1-INCH BELOW THE TOP OF EXISTING CONCRETE UTILITY PADS.
3. CONTRACTOR TO EXTEND ASPHALT PAVEMENT TO EDGE OF EXISTING CONCRETE UTILITY PADS.

DETAIL NO. 5
TYPICAL ASPHALT PAVEMENT ENGINEERING CONTROL DETAIL

SCALE: N.T.S.

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

GHD Consulting Services Inc.
One Remington Park Drive
Cazenovia NY 13035 USA
T 1 315 679 5800 **F** 1 315 679 5801
E cazmail@ghd.com **W** www.ghd.com

Drawn	IEM	Designer	
Drafting Check		Design Check	
Approved (Project Director)			
Date			
Scale	AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction	

Client **Austin Avenue Brownfield Redevelopment II, LLC**
Project **Stormwater Pollution Prevention Plan**
Title **Engineering Controls Details**

Original Size **Arch D** Drawing No: **Figure 6** Rev: **A**

Plot Date: 25 August 2014 - 4:38 PM Plotted by: Ian McNamara Cad File No: G:\86\14908\WP\Reports\8614908.1 - SWPPP\Figures\Figure 6.dwg

Appendix B - SPDES Permit GP-0-10-001

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES

from

CONSTRUCTION ACTIVITY

Permit No. GP-0-10-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70
of the Environmental Conservation Law

Effective Date: January 29, 2010 Expiration Date: January 28, 2015

William R. Adriance
Chief Permit Administrator

William R. Adriance — January 28, 2010
Authorized Signature — Date

Address: NYS DEC
Div. Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York's *State Pollutant Discharge Elimination System ("SPDES")* is a NPDES-approved program with permits issued in accordance with the *Environmental Conservation Law ("ECL").*

This general permit ("permit") is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL. An *owner or operator* may obtain coverage under this permit by submitting a Notice of Intent ("NOI") to the Department. Copies of this permit and the NOI for New York are available by calling (518) 402-8109 or at any New York State Department of Environmental Conservation ("the Department") regional office (see Appendix G).They are also available on the Department's website at:

http://www.dec.ny.gov/

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a point source and therefore, pursuant to Article 17-0505 of the ECL, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. They cannot wait until there is an actual *discharge* from the construction site to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES

FROM CONSTRUCTION ACTIVITIES

TABLE OF CONTENTS

Part I. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application - This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

B. Maintaining Water Quality - It shall be a violation of this permit and the *ECL* for any *discharge* to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

C. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph D. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater discharges from *construction activities.*

(Part I. C)

3. Notwithstanding paragraphs C.1 and C.2 above, the following non-stormwater *discharges* may be authorized by this permit: discharges from fire fighting activities; fire hydrant flushings; waters to which cleansers or other components have not been added that are used to wash vehicles or control dust in accordance with the SWPPP, routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated groundwater or spring water; uncontaminated discharges from construction site de-watering operations; and foundation or footing drains where flows are not contaminated with process materials such as solvents. For those entities required to obtain coverage under this permit, and who discharge as noted in this paragraph, and with the exception of flows from fire fighting activities, these discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with water quality standards in Part I.B.

D. Activities Which Are Ineligible for Coverage Under This General Permit - All of the following are **not** authorized by this permit:

1. *Discharges* after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection C.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII, subparagraph K of this permit;

4. *Discharges* from *construction activities* that adversely affect a listed, or proposed to be listed, endangered or threatened species, or its critical habitat;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects that:

    a. are tributary to waters of the state classified as AA or AA-s; and

(Part I. D. 6)

b. disturb one or more acres of land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey for the County in which the disturbance will occur.

7. *Construction activities* for linear transportation projects and linear utility projects that:
   a. are tributary to waters of the state classified as AA or AA-s; and

   b. disturb two or more acres of land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey for the County in which the disturbance will occur.

8. *Construction activities* that adversely affect a property that is listed or is eligible for listing on the State or National Register of Historic Places (Note: includes Archeological sites), unless there are written agreements in place with the NYS Office of Parks, Recreation and Historic Preservation (OPRHP) or other governmental agencies to mitigate the effects, or there are local land use approvals evidencing the same.

Part II. OBTAINING PERMIT COVERAGE

A. Notice of Intent (NOI) Submittal

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a *regulated, traditional land use control MS4* must first develop a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the address below in order to be authorized to *discharge* under this permit. The NOI form shall be one which is associated with this permit, signed in accordance with Part VII.H. of this permit.

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first develop a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the *MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4*, or by a duly authorized representative of that person, and then submit that form along with the NOI to the address referenced under "Notice of Intent (NOI) Submittal".

(Part II. A.2)

This requirement does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.E. (Change of Owner or Operator).

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

B. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

    a. project review pursuant to the State Environmental Quality Review Act (SEQRA) have been satisfied, when SEQRA is applicable,

    b. where required, all necessary Department permits subject to the *Uniform Procedures Act (UPA)* (see 6 NYCRR Part 621) have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits must submit a preliminary SWPPP to the appropriate DEC Regional Office in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

    c. the final SWPPP has been prepared, and

    d. an NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.B.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

(Part II. B. 3)

a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

   i. Five (5) business days from the date the Department receives a complete NOI for *construction activities* with a SWPPP that has been prepared in conformance with the technical standards referenced in Parts III.B.1, 2 and/or 3, or

   ii. Sixty (60) business days from the date the Department receives a complete NOI for *construction activities* with a SWPPP that has not been prepared in conformance with the technical standards referenced in Parts III.B.1, 2 or 3.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

   i. Five (5) business days from the date the Department receives a complete NOI and signed "MS4 SWPPP Acceptance" form,

4. The Department may suspend or deny an *owner's or operator's* coverage under this permit if the Department determines that the SWPPP does not meet the permit requirements.

5. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department.

C. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination (NOT) has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-10-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form and inspection reports at the construction site until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department.

(Part II. C. 2)

The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the MS4 (provided the MS4 is not the *owner or operator* of the construction activity). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

    a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

    b. In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control.

    c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

    d. The *owner or operator* shall install any additional site specific practices needed to protect water quality.

    e. The *owner or operator* shall include the requirements above in their SWPPP.

4. The Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements.

(Part II. C)

5. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4,* the *owner or operator* shall notify the *MS4* in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *MS4,* the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *MS4* prior to commencing construction of the post-construction stormwater management practice.

D. Permit Coverage for Discharges Authorized Under GP-0-08-001

1. Upon renewal of SPDES General Permit for Stormwater Discharges from Construction Activity (Permit No. GP-0-08-001), a*n owner or operator* of *construction activity* with coverage under GP-0-08-001, as of the effective date of GP-0-10-001, shall be authorized to *discharge* in accordance with GP-0-10-001 unless otherwise notified by the Department.

E. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.A.1.. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

   Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or operator* was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator.*

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity.*

(Part III. A)

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the pollutants in stormwater discharges and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP:

    a. whenever the current provisions prove to be ineffective in minimizing pollutants in stormwater *discharges* from the site;

    b. whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the discharge of pollutants; and

    c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP.

(Part III. A. 6)

The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

> "I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the construction site. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

8. The SWPPP must include documentation supporting the determination of permit eligibility with regard to Part I.D.8. (Historic Places or Archeological Resource). At a minimum, the supporting documentation shall include the following:

(Part III. A. 8)

a. Information on whether the stormwater discharge or *construction activities* would have an effect on a property (historic or archeological resource) that is listed or eligible for listing on the State or National Register of Historic Places;

b. Results of historic resources screening determinations conducted. Information regarding the location of historic places listed, or eligible for listing, on the State or National Registers of Historic Places and areas of archeological sensitivity that may indicate the need for a survey can be obtained online by viewing the New York State Office of Parks, Recreation and Historic Places (OPRHP) online resources located on their web site at: http://nysparks.state.ny.us/shpo/online-tools/ (using The Geographic Information System for Archeology and National Register). OPRHP can also be contacted at: NYS OPRHP, State Historic Preservation Office, Peebles Island Resources Center, P.O. Box 189, Waterford, NY 12188-0189, phone: 518-237-8643;

c. A description of measures necessary to avoid or minimize adverse impacts on places listed, or eligible for listing, on the State or National Register of Historic Places. If the *owner or operator* fails to describe and implement such measures, the stormwater *discharge* is ineligible for coverage under this permit; and

d. Where adverse effects may occur, any written agreements in place with OPRHP or other governmental agency to mitigate those effects, or local land use approvals evidencing the same.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control. Where erosion and sediment control practices are not designed in conformance with this technical standard, the *owner or operator* must demonstrate equivalence to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

    a. Background information about the scope of the project, including the location, type and size of project;

(Part III. B. 1)

b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s), wetlands and drainage patterns that could be affected by the construction activity; existing and final slopes; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater discharge(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of construction activities, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each construction activity that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of final stabilization;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

(Part III. B. 1)

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6., to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule shall be in accordance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a pollutant source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the construction site; and

l. Identification of any elements of the design that are not in conformance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is equivalent to the technical standards.

2. Post-construction stormwater management practice component - All construction projects identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the most current version of the technical standard, New York State Stormwater Management Design Manual ("Design Manual"). If the Design Manual is revised during the term of this permit, an *owner or operator* must begin using the revised version of the Design Manual to prepare their SWPPP six (6) months from the final revision date of the Design Manual.

   Where post-construction stormwater management practices are not designed in conformance with this technical standard, the *owner or operator* must demonstrate equivalence to the technical standard.

   At a minimum, the post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project;

(Part III. B. 2)

b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. The dimensions, material specifications and installation details for each post-construction stormwater management practice;

d. Identification of any elements of the design that are not in conformance with the Design Manual. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is equivalent to the technical standards;

e. A hydrologic and hydraulic analysis for all structural components of the stormwater management control system;

f. A detailed summary (including calculations) of the sizing criteria that was used to design all post-construction stormwater management practices. At a minimum, the summary shall address the required design criteria from the applicable chapter of the Design Manual; including the identification of and justification for any deviations from the Design Manual, and identification of any design criteria that are not required based on the design criteria or waiver criteria included in the Design Manual; and

g. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.g. above.

(Part III. C)

C. Required SWPPP Components by Project Type - Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices and all post-construction stormwater management practices identified in the SWPPP are maintained in effective operating condition at all times.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

B. Owner or Operator Maintenance Inspection Requirements

1. The *owner or operator* shall inspect, in accordance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, the erosion and sediment controls identified in the SWPPP to ensure that they are being maintained in effective operating condition at all times.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the *owner or operator* can stop conducting the maintenance inspections. The *owner or operator* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *owner or operator* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

(Part IV. C)

C. <u>Qualified Inspector Inspection Requirements</u> - The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- Licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- Someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, <u>with the exception of</u>:

    a. the construction of a single family residential subdivision with 25% or less impervious cover at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is <u>not</u> located in one of the watersheds listed in Appendix C and <u>not</u> directly discharging to one of the 303(d) segments listed in Appendix E;

    b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is <u>not</u> located in one of the watersheds listed in Appendix C and <u>not</u> directly discharging to one of the 303(d) segments listed in Appendix E;

    c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

    d. construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

    a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

(Part IV. C. 2)

b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.C.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the Regional Office stormwater contact person (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the MS4 (provided the MS4 is not the *owner or operator* of the construction activity) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the Regional Office stormwater contact person (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the MS4 (provided the MS4 is not the *owner or operator* of the construction activity). in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "Final Stabilization" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.A.1..

(Part IV. C. 3)

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of discharge from the construction site.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

    a. Date and time of inspection;

    b. Name and title of person(s) performing inspection;

    c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

    d. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any *discharges* of sediment from the construction site. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

    e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

    f. Identification of all erosion and sediment control practices that need repair or maintenance;

    g. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

    h. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;

(Part IV. C 4)

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s); and

k. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.C.2., the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.A.1. The NOT form shall be one which is associated with this general permit, signed in accordance with Part VII.H.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

(Part V. A. 2)

a. Total project completion - All construction activity identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.E.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "Final Stabilization" and "Post-Construction Stormwater Management Practice" certification statements on the NOT, certify that all disturbed areas have achieved *final stabilization;* and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall also have the MS4 sign the "MS4 Acceptance" statement on the NOT. The *owner or operator* shall have the principal executive officer, ranking elected official, or duly authorized representative from the *regulated, traditional land use control MS4*, sign the "MS4 Acceptance" statement. The MS4 official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The MS4 can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector's* final site inspection certification(s) required in Part V.3.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

(Part V. A. 5)

a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has modified their deed of record to include a deed covenant that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, college, university), or government agency or authority, the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION OF RECORDS

A. Record Retention - The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the site achieves *final stabilization*. This period may be extended by the Department, in its sole discretion, at any time upon written notification.

B. Addresses - With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.A.1), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate Department Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply - The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied.

(Part VII. A)

The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

B. Continuation of the Expired General Permit - This permit expires five (5) years from the effective date. However, coverage may be obtained under the expired general permit, which will continue in force and effect, until a new general permit is issued. Unless otherwise notified by the Department in writing, an *owner or operator* seeking authorization under the new general permit must submit a new NOI in accordance with the terms of such new general permit.

C. Enforcement - Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense - It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate - The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to minimize or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information - The *owner or operator* shall make available to the Department for review and copying or furnish to the Department within five (5) business days of receipt of a Department request for such information, any information requested for the purpose of determining compliance with this permit. This can include, but is not limited to, the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form, executed maintenance agreement, and inspection reports. Failure to provide information requested by the Department within the request timeframe shall be a violation of this permit.

The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review the NOI, SWPPP or inspection reports. Copying of documents will be done at the requester's expense.

G. Other Information - When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any other report, or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s)

changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or impervious area), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

        i. a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

        ii. the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

    b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

    c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

        i. the chief executive officer of the agency, or

(Part VII. H. 1. c)

ii. a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described in Part VII.H.1.;

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

   c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights - The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity.*

J. Severability - The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

(Part VII. K)
K. Denial of Coverage Under This Permit

1. At its sole discretion, the Department may require any *owner or operator* authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from *owner or operator* receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Regional Water Engineer, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. Any *owner or operator* authorized by this permit may request to be excluded from the coverage under this permit by applying for an individual permit or another general permit. In such cases, the *owner or operator* shall submit an individual application or an alternative general permit application in accordance with the requirements of this general permit, 40 CFR 122.26(c)(1)(ii) and 6 NYCRR Part 621, with reasons supporting the request, to the Department at the address for the appropriate Department Office (see addresses in Appendix F).The request may be granted by issuance of an individual permit or another general permit at the discretion of the Department.

3. When an individual SPDES permit is issued to a discharger authorized to discharge under a general SPDES permit for the same discharge(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance - The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry - The *owner or operator* shall allow the Department or an authorized representative of EPA, the State, or, in the case of a construction site which discharges through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

(Part VII. M)

1. Enter upon the *owner's or operator's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment).

N. Permit Actions - At the Department's sole discretion, this permit may, at any time, be modified, suspended, revoked, or renewed. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions - Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with *construction activity* covered by this permit, the *owner or operator* of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports – Article 17 of the ECL provides for a civil penalty of $37,500 per day per violation of this permit. Articles 175 and 210 of the New York State Penal Law provide for a criminal penalty of a fine and/or imprisonment for falsifying forms and reports required by this permit.

R. Other Permits – Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A

Definitions

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "Construction Activity(ies)" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a construction site by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a construction site to a separate storm sewer system and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or point source.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 authorizing a category of discharges.

Groundwater - means waters in the saturated zone. The saturated zone is a subsurface zone in

which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct construction activities are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) application, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that construction activities may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

i. Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State;
ii. Designed or used for collecting or conveying stormwater;
iii. Which is not a *combined sewer*; and
iv. Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from construction activity.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the construction activity is occurring; and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in Parts 700 et seq of this Title.

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics in order to prepare a SWPPP that conforms to the Department's technical standard. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is required to gain coverage under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s).

Routine Maintenance Activity - means construction activity that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Stream bank restoration projects (does not include the placement of spoil material),
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that makes the transition between the road shoulder and the ditch or embankment,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or embankment,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for point source discharges, load allocations (LAs) for nonpoint sources, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* will be responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B

Required SWPPP Components by Project Type

Table 1
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres: • Single family home not located in one of the watersheds listed in Appendix C and not *directly discharging* to one of the 303(d) segments listed in Appendix E • Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E • Construction of a barn or other agricultural building, silo, stock yard or pen.
The following construction activities that involve soil disturbances of one (1) or more acres of land: • Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains • Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects • Bike paths and trails • Sidewalk construction projects that are not part of a road/ highway construction or reconstruction project • Slope stabilization projects • Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics • Spoil areas that will be covered with vegetation • Land clearing and grading for the purposes of creating vegetated open space (i.e. recreational parks, lawns, meadows, fields), excluding projects that *alter hydrology from pre to post development* conditions • Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions • Demolition project where vegetation will be established and no redevelopment is planned • Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover* • Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of less than five acres and construction activities that include the construction or reconstruction of impervious area
The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land: • All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other agricultural building(e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional, includes hospitals, prisons, schools and colleges
- Industrial facilities, includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's and water treatment plants
- Office complexes
- Sports complexes
- Racetracks, includes racetracks with earthen (dirt) surface
- Road construction or reconstruction
- Parking lot construction or reconstruction
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project , wind-power project, cell tower project, oil or gas well drilling project or other linear utility project
- All other construction activities that include the construction or reconstruction of *impervious area* and *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

APPENDIX C

Watersheds Where Enhanced Phosphorus Removal Standards Are Required

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4

Figure 1 - New York City Watershed East of the Hudson

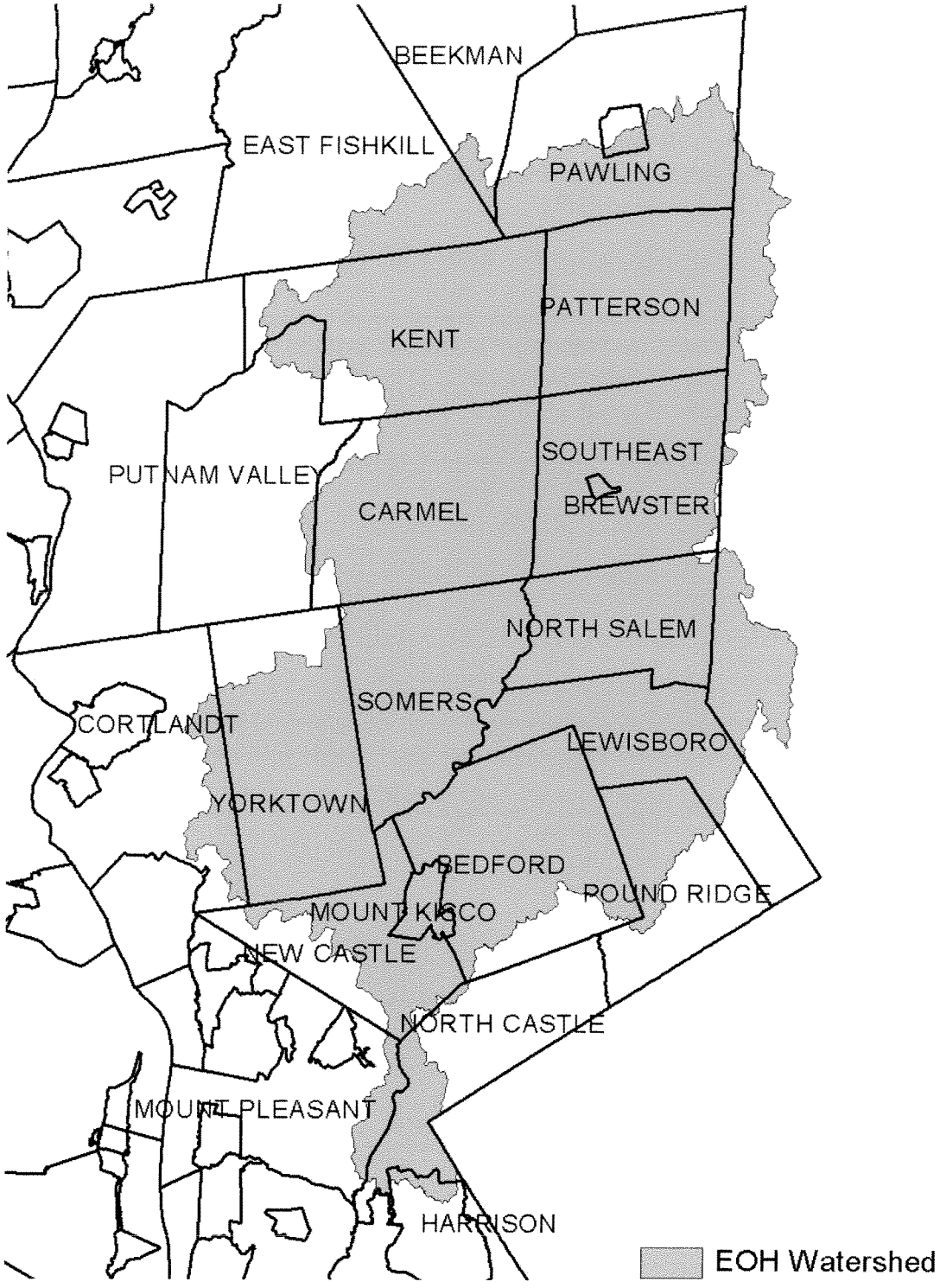


Figure 2 - Onondaga Lake Watershed

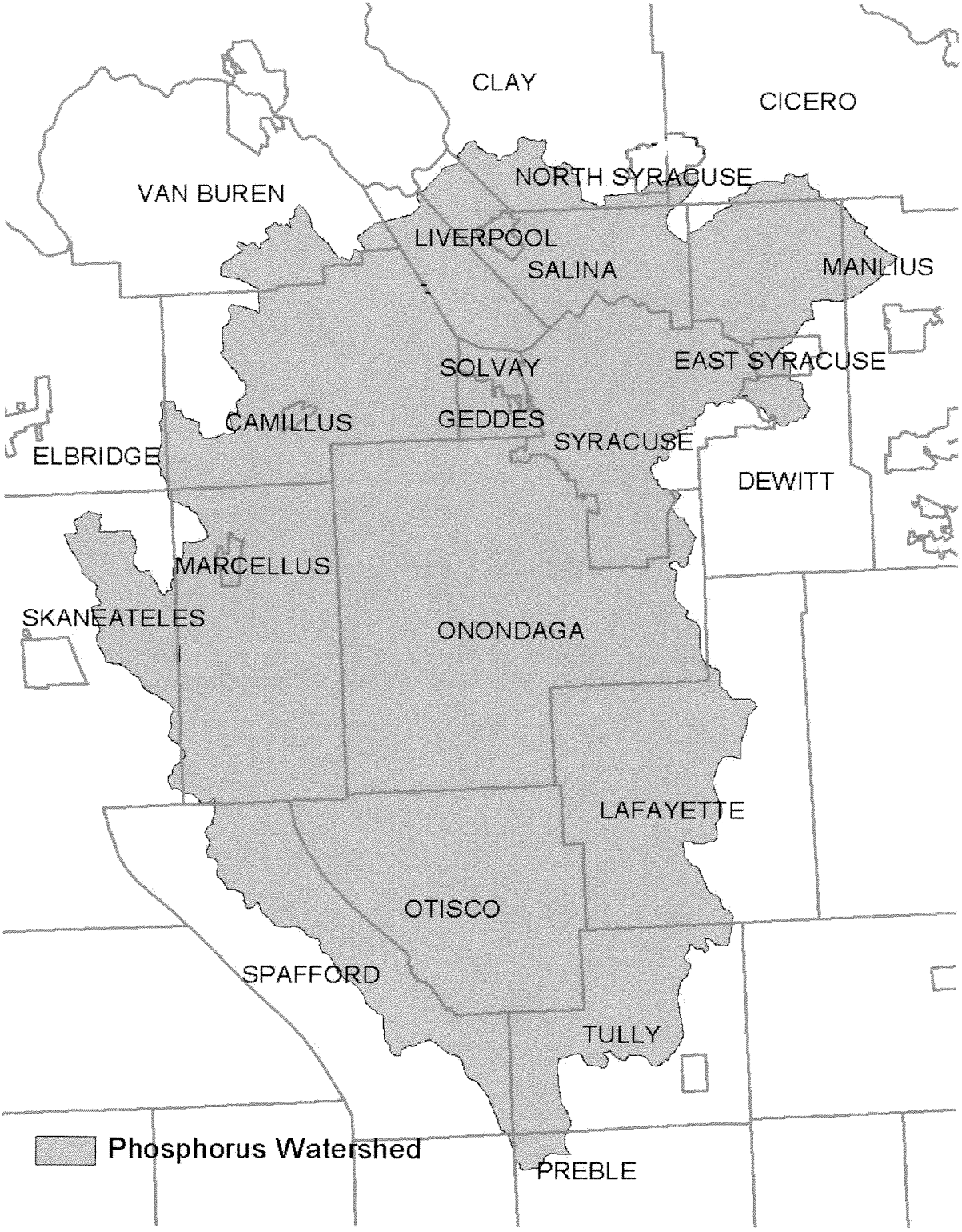


Figure 3 - Greenwood Lake Watershed

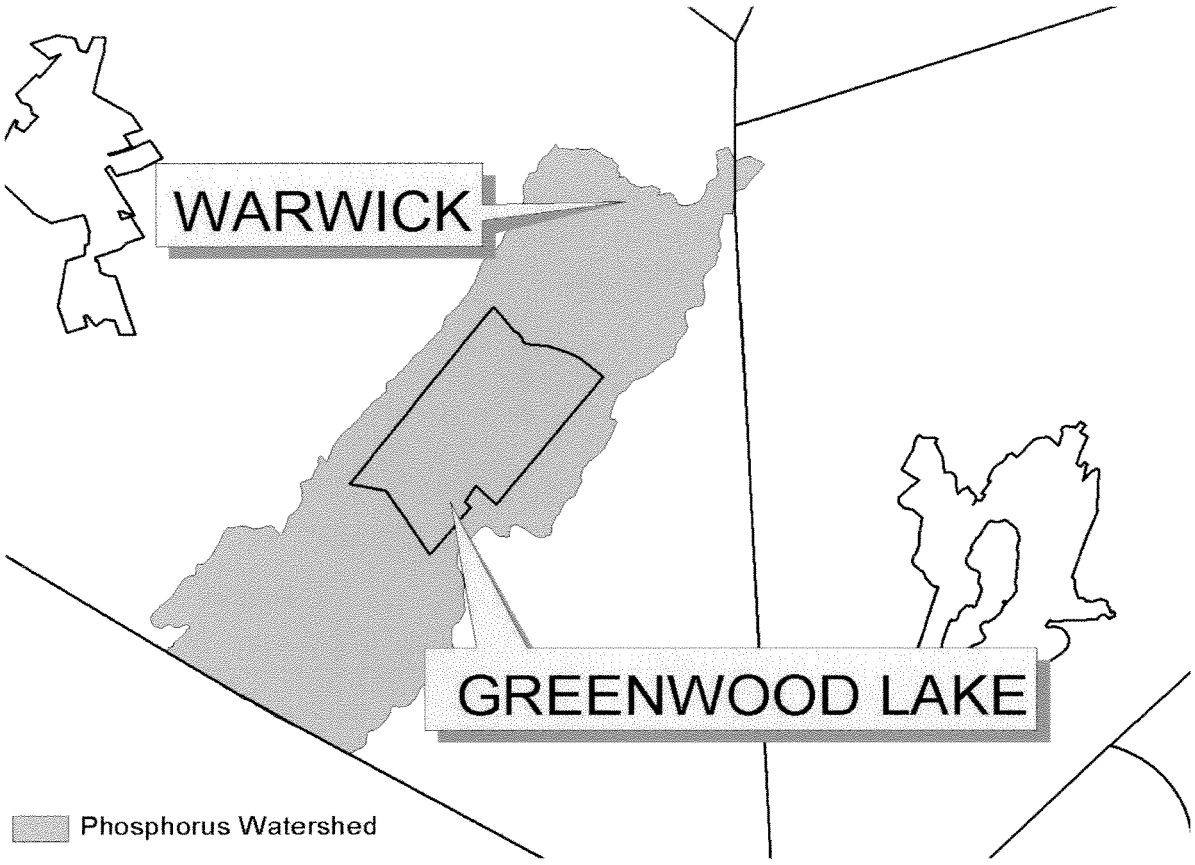
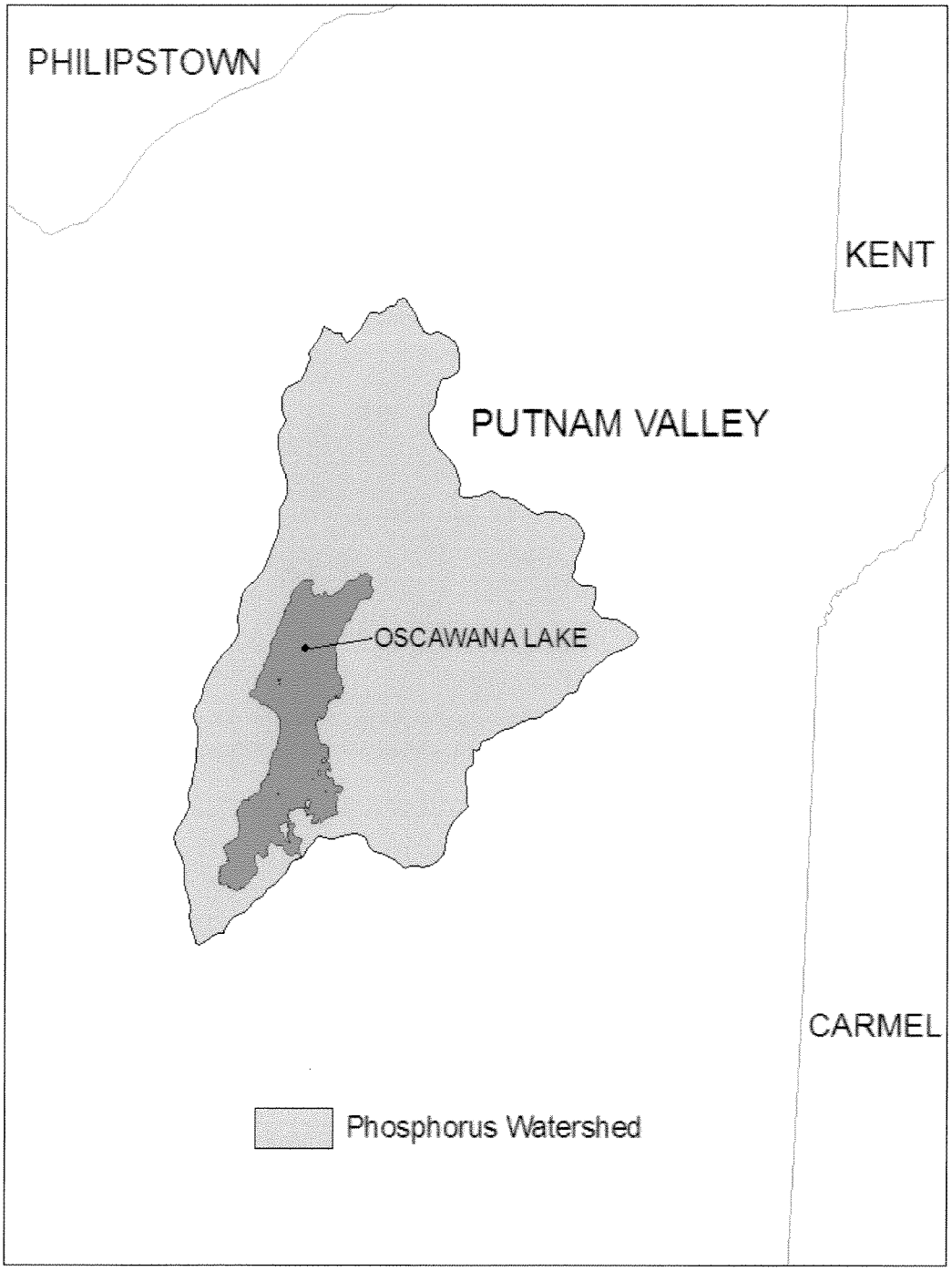


Figure 4 - Oscawana Lake Watershed



APPENDIX D

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C

APPENDIX E

List of 303(d) segments impaired by pollutants related to construction activity (e.g. silt, sediment or nutrients). *Owners or operators* of single family home and single family residential subdivision construction activities that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the most current version of the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

COUNTY	WATERBODY
Albany	Ann Lee (Shakers) Pond, Stump Pond
Albany	Basic Creek Reservoir
Bronx	Van Cortlandt Lake
Broome	Whitney Point Lake/Reservoir
Broome	Beaver Lake
Broome	White Birch Lake
Chautauqua	Chautauqua Lake, North
Chautauqua	Chautauqua Lake, South
Chautauqua	Bear Lake
Chautauqua	Chadakoin River and tribs
Chautauqua	Lower Cassadaga Lake
Chautauqua	Middle Cassadaga Lake
Chautauqua	Findley Lake
Clinton	Great Chazy River, Lower, Main Stem
Columbia	Kinderhook Lake
Columbia	Robinson Pond
Dutchess	Hillside Lake
Dutchess	Wappinger Lakes
Dutchess	Fall Kill and tribs
Dutchess	Rudd Pond
Erie	Rush Creek and tribs
Erie	Ellicott Creek, Lower, and tribs
Erie	Beeman Creek and tribs
Erie	Murder Creek, Lower, and tribs
Erie	South Branch Smoke Cr, Lower, and tribs
Erie	Little Sister Creek, Lower, and tribs
Essex	Lake George (primary county listed as Warren)
Genesee	Black Creek, Upper, and minor tribs
Genesee	Tonawanda Creek, Middle, Main Stem
Genesee	Tonawanda Creek, Upper, and minor tribs
Genesee	Little Tonawanda Creek, Lower, and tribs
Genesee	Oak Orchard Creek, Upper, and tribs
Genesee	Bowen Brook and tribs
Genesee	Bigelow Creek and tribs
Greene	Schoharie Reservoir
Greene	Sleepy Hollow Lake
Herkimer	Steele Creek tribs
Kings	Hendrix Creek
Lewis	Mill Creek/South Branch and tribs
Livingston	Conesus Lake
Livingston	Jaycox Creek and tribs
Livingston	Mill Creek and minor tribs
Monroe	Genesee River, Lower, Main Stem
Monroe	Genesee River, Middle, Main Stem
Monroe	Black Creek, Lower, and minor tribs
Monroe	Buck Pond
Monroe	Long Pond
Monroe	Cranberry Pond
Monroe	Mill Creek and tribs
Monroe	Shipbuilders Creek and tribs
Monroe	Minor tribs to Irondequoit Bay
Monroe	Thomas Creek/White Brook and tribs
Nassau	Glen Cove Creek, Lower, and tribs
Nassau	LI Tribs (fresh) to East Bay
Nassau	East Meadow Brook, Upper, and tribs
Nassau	Hempstead Bay
Nassau	Hempstead Lake
Nassau	Grant Park Pond
Niagara	Bergholtz Creek and tribs
Oneida	Ballou, Nail Creeks
Onondaga	Ley Creek and tribs
Onondaga	Onondaga Creek, Lower and tribs
Onondaga	Onondaga creek, Middle and tribs
Onondaga	Onondaga Creek, Upper, and minor tribs
Onondaga	Harbor Brook, Lower, and tribs
Onondaga	Ninemile Creek, Lower, and tribs
Onondaga	Minor tribs to Onondaga Lake
Ontario	Honeoye Lake
Ontario	Hemlock Lake Outlet and minor tribs
Ontario	Great Brook and minor tribs
Oswego	Lake Neatahwanta
Putnam	Oscawana Lake
Putnam	Lake Carmel
Queens	Jamaica Bay, Eastern, and tribs (Queens)
Queens	Bergen Basin
Queens	Shellbank Basin
Rensselaer	Snyders Lake
Richmond	Grasmere, Arbutus and Wolfes Lakes
Saratoga	Dwaas Kill and tribs
Saratoga	Tribs to Lake Lonely
Saratoga	Lake Lonely
Saratoga	Schuyler Creek and tribs
Schenectady	Collins Lake

APPENDIX E

List of 303(d) segments impaired by pollutants related to construction activity, cont'd.

COUNTY	WATERBODY	COUNTY	WATERBODY
Schoharie	Engleville Pond		
Schoharie	Summit Lake		
St. Lawrence	Black Lake Outlet/Black Lake		
Steuben	Lake Salubria		
Steuben	Smith Pond		
Suffolk	Millers Pond		
Suffolk	Mattituck (Marratooka) Pond		
Suffolk	Tidal tribs to West Moriches Bay		
Suffolk	Canaan Lake		
Suffolk	Lake Ronkonkoma		
Tompkins	Cayuga Lake, Southern End		
Tompkins	Owasco Inlet, Upper, and tribs		
Ulster	Ashokan Reservoir		
Ulster	Esopus Creek, Upper, and minor tribs		
Warren	Lake George		
Warren	Tribs to L.George, Village of L George		
Warren	Huddle/Finkle Brooks and tribs		
Warren	Indian Brook and tribs		
Warren	Hague Brook and tribs		
Washington	Tribs to L.George, East Shore of Lake George		
Washington	Cossayuna Lake		
Wayne	Port Bay		
Wayne	Marbletown Creek and tribs		
Westchester	Peach Lake		
Westchester	Mamaroneck River, Lower		
Westchester	Mamaroneck River, Upper, and minor tribs		
Westchester	Sheldrake River and tribs		
Westchester	Blind Brook, Lower		
Westchester	Blind Brook, Upper, and tribs		
Westchester	Lake Lincolndale		
Westchester	Lake Meahaugh		
Wyoming	Java Lake		
Wyoming	Silver Lake		

Note: The list above identifies those waters from the final New York State "2008 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy", dated May 26, 2008, that are impaired by silt, sediment or nutrients.

APPENDIX F

LIST OF NYS DEC REGIONAL OFFICES

Region	COVERING THE FOLLOWING COUNTIES:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS	DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM
1	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
2	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
3	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	100 HILLSIDE AVENUE, SUITE 1W WHITE PLAINS, NY 10603 TEL. (914) 428 - 2505
4	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1150 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2069	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2045
5	CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON	1115 STATE ROUTE 86, PO BOX 296 RAY BROOK, NY 12977-0296 TEL. (518) 897-1234	232 GOLF COURSE ROAD, PO BOX 220 WARRENSBURG, NY 12885-0220 TEL. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROAD AVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVE. BUFFALO, NY 14203-2999 TEL. (716) 851-7070

Appendix C - Contractor Certifications

Austin Avenue Brownfield Redevelopment Lots 4 & 7
Stormwater Pollution Prevention Plan

Stormwater Certification Statement - Contractor

_____
Name of Contractor

_____
Address of Contractor

_____
Phone Number of Contractor

_____
Site Identification / Description

I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges From Construction Activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Signature: _____

Typed Name of Person Signing for Contractor: _____

Date of Certification: _____

Austin Avenue Brownfield Redevelopment Lots 4 & 7
Stormwater Pollution Prevention Plan

Stormwater Certification Statement - Owner

_____
Name of Owner

_____
Address of Owner

_____
Phone Number of Owner

_____
Site Identification / Description

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Signature: _____

Typed Name of Person Signing for Owner: _____

Date of Certification: _____

Appendix D - Inspection Forms

Weekly Erosion Control Inspection Form
Austin Avenue Brownfield Redevelopment Lots 4 and 7

DATE:	**PROJECT NO.**	**REPORT NO.**
JOB:		
CONTRACTOR:		
PROJECT REPRESENTATIVE:		
SIGNATURE:		

1. Initial remarks or comments?

2. What were the weather and site conditions?

Time	Precipitation	Skies	Air Temperature	Ground/Pavement Moisture
10:00 a.m.				
Noon				
3:00 p.m.				

3. Did observations reveal any work *not* in compliance with the Erosion Control Plan?
   ☐ Yes ☐ No
   If yes, explain and describe actions taken.

4. Are the erosion and sediment control measures in place adequately installed to capture sediment in runoff from the site? ☐ Yes ☐ No
   Comments:

5. Walk around the site perimeter to identify any areas where sediment may escape from the site. Do all areas to be disturbed drain to an area where sediment will be captured by silt fencing, haybales, catch basins, or equal measure? ☐ Yes ☐ No
   Comments:

6. Are any previously disturbed areas in need of hydro-seeding or manual seeding?
   ☐ Yes ☐ No
   Comments:

7. Do all disturbed areas drain to either to a drainage swale, sediment basin, or protected stormwater systems? ☐ Yes ☐ No Comments:
8. Are the construction vehicle entrances/exits free of sediment, mud, or trash? ☐ Yes ☐ No Comments:
9. Are any erosion channels visible in the project area? ☐ Yes ☐ No Comments:
10. Is dust control water spraying required? ☐ Yes ☐ No Occurring as required? ☐ Yes ☐ No Comments:
11. Are there any disturbed areas that could cause ponding of runoff, other than a sediment basin? ☐ Yes ☐ No Comments:
12. Are the silt fences installed as shown on the Erosion and Sediment Control Drawing? ☐ Yes ☐ No Comments:
13. Additional Comments: **Areas of Concern:**

PHOTOGRAPHS TO BE ATTACHED TO FORM AS NEEDED

www.ghd.com

Appendix B – Generic Community Air Monitoring Plan (CAMP)

New York State Department of Health
Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all <u>ground intrusive</u> activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well bailing/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a **continuous** basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored **continuously** at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

June 20, 2000

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Appendix C – Quality Assurance Project Plan (QAPP)

Austin Avenue Brownfield Redevelopment II, LLC

Quality Assurance Project Plan (QAPP)

Lot 4 – Austin Avenue and Prior Place and Lot 7 and Corporate Drive Brownfield Cleanup Program (BCP) Sites

City of Yonkers, Westchester County, NY

BCP Site #C360116 and BCP Site #C360128

August 2014

QUALITY ASSURANCE PROJECT PLAN (QAPP)
LOT 4 – AUSTIN AVENUE AND PRIOR PLACE AND LOT 7 AND CORPORATE DRIVE BROWNFIELD CLEANUP PROGRAM (BCP) SITES
CITY OF YONKERS, WESTCHESTER COUNTY, NEW YORK
BCP SITE #C360116 AND BCP SITE #C360128

Prepared for:

AUSTIN AVENUE BROWNFIELD REDEVELOPMENT II, LLC

Prepared by:

GHD CONSULTING SERVICES INC.
ONE REMINGTON PARK DRIVE
CAZENOVIA, NY 13035
315.679.5800

Project No. 8614908

August 2014

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1. Project Description

The Lot 4 – Austin Avenue and Prior Place Site (Lot 4) occupies approximately 7.1 acres along the east side of Prior Place and south side of Austin Avenue. The Lot 7 and Corporate Drive Site (Lot 7) occupies approximately 2.8 acres along the south side of Austin Avenue and the right-of-way for Corporate Drive. The Lot 4 and Lot 7 sites are collectively referred to herein as the 'Site'. The Site is located in the City of Yonkers, Westchester County, New York in a commercial/residential area just east of Prior Place and is bordered by Austin Avenue to the north; Stew Leonard's grocery store to the south; and adjacent Lot 1 BCP Site (BCP Site #C360066) to the east. The Site is currently vacant wooded land with a large crushed rock stockpile extending along the central portion of the Site. The western portion of the Site has several bedrock outcrops. The Site is owned by Westchester County Industrial Development Agency (WIDA). The Site location is depicted on Figure 1-1 and Figure 1-2.

The Applicant is interested in investigating and remediating the Lot 4 - Austin Avenue and Prior Place Site and the Lot 7 and Corporate Drive Site under the New York State Brownfield Cleanup Program (BCP) through agreement with the NYSDEC. Under the BCP, a Remedial Investigation was completed in accordance with the NYSDEC's Department of Environmental Remediation (DER) DER-10 Technical Guidance for Site Investigation and Remediation (NYSDEC, May 2010) to provide a systematic assessment of environmental conditions at the Site.

The Remedial Design Document (RDD) has been developed in accordance with DER-10. The RDD sets forth the scope and methods that will be followed during the course of the remedial action. This Quality Assurance Project Plan (QAPP) describes quality assurance objectives and the methods that will be followed for sample collection and analysis during the remedial action.

2. Project Organization

The organization of the project management team and areas of responsibility are presented below:

Position	Employee	Description
Project Principal	Damian J. Vanetti	Provide technical and administrative oversight and guidance throughout the project, assist in securing company resources, participate in technical review of deliverables, and attend key meetings as needed.
Principal Engineer	Damian J. Vanetti	Provide technical guidance and review of reports and analytical data. Will have key involvement in screening and development of remedial alternatives.
Project Manager	Donald S. Sorbello	Responsible for maintaining the day-to-day schedule for completing the fieldwork and deliverables according to schedule and for using proper field procedures.
Field Team Leader	Ian E. McNamara	Responsible for coordinating and directing field efforts of GHD staff and subcontractors.
Quality Assurance Officer (QAO)	As designated on a project specific basis	Responsible for reviewing sampling procedures and certifying that the data was collected and analyzed using the appropriate procedures.

3. QA/QC Objectives for Measurement of Data

Where NYSDOH Environmental Laboratory Accreditation Program (ELAP) Certification exists for a specific group or category of parameters, the laboratories performing analyses in connection with this project will have appropriate NYSDOH ELAP Certification. For analyses of samples where NYSDEC Analytical Services Protocol (NYSDEC-ASP, June 2000) Category B deliverables are required, NYSDOH ELAP certification is required.

Detection limits set by NYSDEC-ASP will be used for all sample analyses unless otherwise noted. If ASP-dictated detection limits prove insufficient to assess project goals (i.e. comparison to drinking water standards or attainment of Standards, Criteria, and Guidance (SCGs)), then ASP Special Analytical Services (SAS) or other appropriate methods will be utilized.

The quality assurance/quality control objectives for all measurement data include completeness, representativeness, comparability, precision, and accuracy.

3.1 Completeness

The analyses performed must be appropriate and inclusive. The parameters selected for analysis are chosen to meet the objectives of this study.

Completeness of the analyses will be assessed by comparing the number of parameters intended to be analyzed with the number of parameters successfully determined and validated. Data must meet QC acceptance criteria for 100 percent or more of requested determinations.

3.2 Representativeness

Samples must be taken of the population and, where appropriate, the population will be characterized statistically to express the degree to which the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process, or environmental condition.

Non-dedicated sampling devices will be cleaned between sampling points by washing with a potable water and alconox solution and rinsing with potable water. Specific cleaning techniques are described in the Field Sampling Procedure. Two types of blank samples will accompany each sample set where Target Compound List (TCL) volatiles are to be analyzed (water matrix only). A trip blank, consisting of a 40 ml VOA vial of organic-free water prepared by the laboratory, will accompany each set of sample bottles from the laboratory to the field and back. This bottle will remain sealed throughout the shipment and sampling process. This blank will be analyzed for TCL volatile organic compounds along with the groundwater samples to ensure that contamination with TCL volatile compounds has not occurred during the bottle preparation, shipment, or sampling phase of the project. In order to check for contaminant carryover when non-dedicated sampling equipment is used, a rinsate blank will be submitted to the laboratory. This blank will also be analyzed for TCL volatile organic compounds. The TCL compounds are identified in the United

States Environmental Protection Agency (USEPA) Contract Laboratory Program dated 7/85 or as periodically updated. Field activities are audited by the GHD Quality Assurance Officer.

The analytical results obtained from the determination of identical parameters in field duplicate samples can be used to further assess the representativeness of the sample data.

3.3 Comparability

Consistency in the acquisition, preparation, handling, and analysis of samples is necessary in order for the results to be compared where appropriate. Additionally, the results obtained from analyses of the samples will be compared with the results obtained in previous studies, if available.

To ensure the comparability of analytical results with those obtained in previous or future testing, all samples will be analyzed by NYSDEC-approved methods. The NYSDEC-ASP mandated holding times for various analyses will be strictly adhered to.

3.4 Precision and Accuracy

The validity of the data produced will be assessed for precision and accuracy. Analytical methods which will be used include gas chromatography/mass spectrometry (GC/MS), gas chromatography (GC), colorimetry, atomic spectroscopy, gravimetric, and titrametric techniques. The following outlines the procedures for evaluating precision and accuracy, routine monitoring procedures, and corrective actions to maintain analytical quality control. All data evaluations will be consistent with NYSDEC-ASP procedures. Data will be 100 percent compliant with NYSDEC-ASP requirements.

The requirements of QA/QC are both method specific and matrix dependent. The procedures to be used are described on this basis in Sections 6 and 8. The number of duplicate, spiked, and blank samples analyzed will be dependent upon the total number of samples of each matrix to be analyzed, but there will be at least one split per matrix. The inclusion and frequency of analysis of field blanks and trip blanks will be on the order of one per each Site. Samples to be analyzed for volatile organic compounds will be accompanied by trip and field blanks (water matrix).

Quality assurance audit samples will be prepared and submitted by the laboratory QA manager for each analytical procedure used. The degree of accuracy and the recovery of analyte to be expected for the analysis of QA samples and spiked samples is dependent upon the matrix, method of analysis, and compound or element being determined. The concentration of the analyte relative to the detection limit is also a major factor in determining the accuracy of the measurement. The lower end of the analytical range for most analyses is generally accepted to be five times the detection limit. At or above this level, the determination and spike recoveries for metals in water samples will be expected to range from 75 to 125 percent. The recovery of organic surrogate compounds and matrix spiking compounds determined by GC/MS will be compared to the guidelines for recovery of individual compounds as established by the United States Environmental Protection Agency Contract Laboratory Program dated 7/85 or as periodically updated.

The quality of results obtained for inorganic ion and demand parameters will be assessed by comparison of QC data with laboratory control charts for each test.

4. Sampling Procedures

4.1 Sampling Program

The soil sampling program could include the collection of soil samples from materials transported on-Site to be used to create the soil cover system.

All sampling will be done using appropriate tools and equipment for the respective environmental media based on industry standard, and constructed of stainless steel, Teflon, or other appropriate inert or approved material acceptable to NYSDEC.

All sampling will be completed in accordance with the NYSDEC approved Community Air Monitoring Plan (CAMP) and the Site Health and Safety Plan (HASP).

4.2 Sample Preservation and Shipment

Since all bottles provided by the laboratory will contain the necessary preservatives, they need only be filled. Soil bottles should be filled to within about ¼ inch from the top, except VOC bottles, which should be filled completely.

The bottles will be sent to the laboratory in coolers, which will be organized on a per Site basis. Following sample collection, the bottles will be placed on ice in the shipping cooler. The samples will be cooled to 4°C, but not frozen.

Final packing and shipment of coolers will be performed in accordance with guidelines outlined in the "User's Guide to the CLP."

5. Sample Custody

The program for sample custody and sample transfer is in compliance with the NYSDEC-ASP, as periodically updated. If samples may be needed for legal purposes, chain-of-custody procedures, as defined by NEIC Policies and Procedures (USEPA-330/9-78-001-R) will be used. Sample chain-of-custody is initiated by the laboratory with selection and preparation of the sample containers. To reduce the chance for error, the number of personnel handling the samples should be minimized.

5.1 Field Sample Custody

A chain-of-custody record accompanies the sample from initial sample container selection and preparation at the laboratory, shipment to the field for sample containment and preservation, and return to the laboratory. Two copies of this record follow the samples to the laboratory. The laboratory maintains one file copy and the completed original is returned to the Site inspection team. Individual sample containers provided by the laboratory are used for shipping samples. The shipping containers are insulated and chemical or ice water is used to maintain samples at approximately 4°C (39.4°F) until samples are returned and in the custody of the laboratory. All sample bottles within each shipping container are individually labeled and controlled. Samples are to be shipped to the laboratory within 24 to 48 hours of the day of collection.

Each sample shipping container is closed and sealed. This seal must be broken to open the container. Tampering is possible if the seal is broken before receipt at the laboratory. The laboratory will contact the Site investigation team leader and the sample will not be analyzed if tampering is apparent.

5.2 Laboratory Sample Custody

The Site investigation team leader or Project Quality Assurance Officer notifies the laboratory of upcoming field sampling activities and the subsequent transfer of samples to the laboratory. This notification will include information concerning the number and type of samples to be shipped as well as the anticipated date of arrival.

The laboratory sample program meets the following criteria:

- The laboratory has designated a sample custodian who is responsible for maintaining custody of the samples and for maintaining all associated records documenting that custody.
- Upon receipt of the samples, the custodian will check the original chain-of-custody documents and compare them with the labeled contents of each sample container for correctness and traceability. The sample custodian signs the chain-of-custody record and records the date and time received.
- Care is exercised to annotate any labeling or descriptive errors. In the event of a discrepancy in the documentation, the laboratory will immediately contact the Site investigation team leader as part of the corrective action process. A qualitative assessment of each sample container is performed to note any anomalies, such as broken or leaking bottles. This assessment is recorded as part of the incoming chain-of-custody procedure.

- The samples are stored in a secured area at a temperature of approximately 4°C (39.4°F) until analyses are to commence.
- A laboratory chain-of-custody record accompanies the sample or sample fraction through final analysis for control.
- A copy of the chain-of-custody form will accompany the laboratory report and will become a permanent part of the project records.

5.3 Final Evidence Files

Final evidence files include all originals of laboratory reports and are maintained under documented control in a secure area.

A sample or an evidence file is under custody if:

- It is in your possession; it is in your view, after being in your possession.
- It was in your possession and you placed it in a secure area.
- It is in a designated secure area.

6. Calibration Procedures

Instruments and equipment used to gather, generate, or measure environmental data will be calibrated with sufficient frequency and in such a manner that accuracy and reproducibility of results are consistent with the appropriate manufacturer's specifications or project specific requirements. The procedures for instrument calibration, calibration verification, and the frequency of calibrations are described in the NYSDEC-CLP. The calibration of instruments used for the determination of metals will be as described in the appropriate CLP standard operating procedures.

Calibration of other instruments required for measurements associated with these analyses will be in accordance with the manufacturer's recommendations and the standard operating procedures of the laboratory.

7. Analytical Procedures

Analytical procedures shall conform to the most recent revision of the NYSDEC-ASP and are summarized on QAPP Table 7-1. In the absence of USEPA or NYSDEC guidelines, appropriate procedures shall be submitted for approval by NYSDEC prior to use.

The procedures for the sample preparation and analysis for organic compounds are as specified in the NYSDEC-ASP. Analytical cleanups are mandatory where matrix interferences are noted. No sample shall be diluted any more than 1 to 5. The sample shall be either extracted again, sonicated again, stream distilled again, etc. or be subjected to any one analytical cleanup noted in SW846 or a combination thereof. The analytical laboratory shall expend such effort and discretion to demonstrate good laboratory practice and demonstrate an attempt to best achieve the method detection limit.

7.1 Volatile Organic Compounds

For the analysis of water samples for Target Compound List (TCL), volatile organic compounds (VOCs), no sample preparation is required. The analytical procedure for volatiles is detailed in NYSDEC-ASP (Volume I, Section D-I). A measured portion of the sample is placed in the purge and trap apparatus and the sample analysis is performed by gas chromatography/mass spectrometry for the first round. USEPA Methods 8010 or 8020 (gas chromatography with different detectors) will be used if subsequent rounds with lower limits of detection are warranted. Air analyses will be complete by EPA Method TO-15 (gas chromatography/mass spectrometry).

7.2 Semi-Volatile Organic Compounds

The extraction and analytical procedures used for preparation of water, soil and sediment samples for the analysis of the TCL semi-volatile organic compounds are described in NYSDEC-ASP Volume I, Section D-III.

Instrument calibration, compound identification, and quantitation are performed as described in Section 6 of this document and in the NYSDEC-ASP.

7.3 Pesticide and PCB Compounds

The sample preservation procedures for gas chromatography for pesticides and PCBs will be as described in the NYSDEC-ASP methods (Section D-IV). The analysis of standard mixes, blanks and spiked samples will be performed at the prescribed frequency with adherence to the 72-hour requirement described in the method.

7.4 Metals

Water, soil and sediment samples will be analyzed for the metals listed in Table 7-1. The detection limits for these metals are as specified in the NYSDEC-ASP, Section D-V. The instrument detection limits will be determined using calibration standards and procedures specified in the NYSDEC-ASP. The detection limits for individual samples may be higher due to the sample matrix. The procedures for these analyses will be as described in the NYSDEC-ASP.

The digestion procedures for water samples are not recommended for samples requiring analysis for mercury, arsenic (As) or selenium (Se). The aliquot of sample analyzed for As and Se will be prepared using methods described in USEPA Methods 200.7. Analysis for mercury requires a separate digestion procedure (245.1 or 245.2).

The analyses for metals will be performed by atomic absorption spectroscopy (AAS), inductively coupled plasma emission spectroscopy (ICP-ES), or inductively coupled plasma mass spectrometry (ICP-MS), as specified in the ASP with regard to AAS flame, ICP-ES, or ICP-MS analysis.

7.5 Site Specificity of Analyses

Work plans prepared for remedial investigation waste Sites contain recommendations for the chemical parameters to be determined for each Site. Thus, some or all of the referenced methods will apply to the analysis of samples collected at the individual waste Sites. Analyses of Target Compound List (TCL) analytes will be performed on all samples.

8. Internal Quality Control

8.1 Quality Assurance Batching

Each set of samples will be analyzed concurrently with blanks, matrix spikes, surrogate spikes and replicate at the frequency described in the NYSDEC-ASP.

8.2 Organic Standards and Surrogates

All standard and surrogate compounds are checked by the method of mass spectrometry for correct identification and gas chromatography for degree of purity and concentration. When the compounds pass the identity and purity tests, they are certified for use in standard and surrogate solutions. Concentrations of the solutions are checked for accuracy before release for laboratory use. Standard solutions are replaced monthly or earlier based upon indications of deterioration.

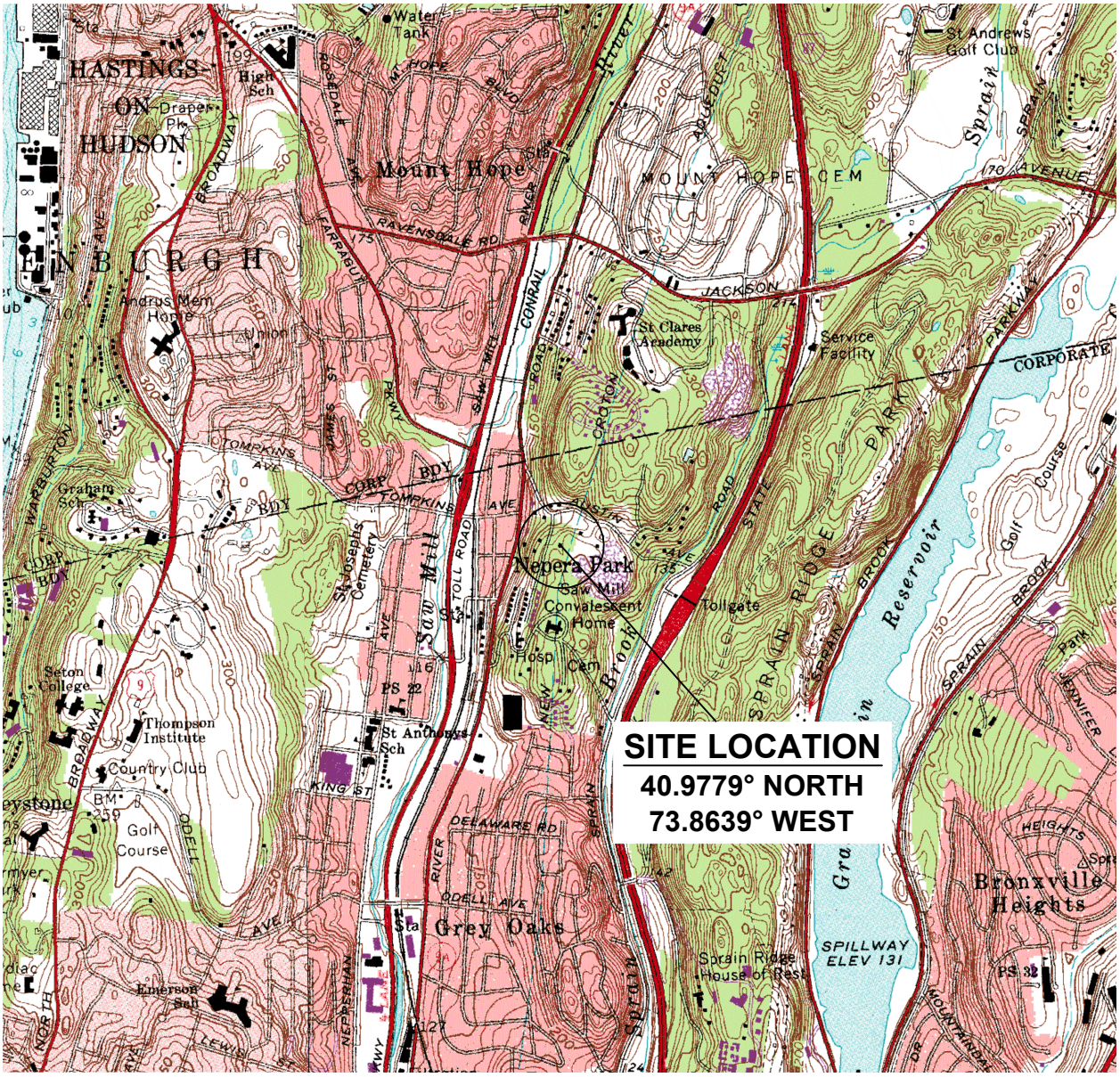
8.3 Organic Blanks, Spiked Blank and Matrix Spike

Analysis of blank samples verifies that the analytical method does not introduce contaminants. The blank water can be generated by reverse osmosis and Super-Q filtration systems, or distillation of water containing KMnO4. The spiked blank is generated by addition of standard solutions to the blank water. The matrix spike is generated by addition of standard solutions to the blank water. The matrix spike is generated by addition of surrogate standard to each sample.

8.4 Trip and Field Blanks

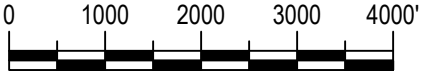
Trip blanks and field blanks will be utilized in accordance with the specifications in Section 4 of this QA/QC Project Plan. These blanks will be analyzed to provide a check on sample bottle preparation and to evaluate the possibility of atmospheric or cross contamination of the samples.

Figures

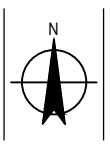


CONTOUR INTERVAL: 10 Feet

MAP TAKEN FROM: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLES:
MOUNT VERNON(1966, PHOTOREVISED 1979) &
YONKERS (1966, PHOTOREVISED 1979)
(www.nysgis.state.ny.us/quads/usgsdrg.htm)



SCALE 1"=2000' AT ORIGINAL SIZE



Austin Avenue Brownfield Redevelopment II, LLC
Quality Assurance Project Plan
Lot 4 and Lot 7 BCP Sites
Site Location Map

Job Number	86-14908
Revision	A
Date	08.25.2014

Figure 1-1

One Remington Park Drive, Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5853 **E** cazmail@ghd.com **W** www.ghd.com

Plot Date: 25 August 2014 - 4:15 PM Cad File No: G:\86\14908\Remedial.Design.Document\RDD\Appendices\App C - QAPP\Figures\Figure 1-1.dwg

NOTES:

LOT 1 BASE MAP FROM A FIELD SURVEY CONDUCTED BY CONTRACTORS LINE AND GRADE SOUTH, LLC, MAY 11, 2011.

LOT 4 BASE MAP FROM A FIELD SURVEY CONDUCTED BY JOHN MEYER CONSULTING, P.C. JUNE 30, 2011.

EXTENT OF ASH FROM EXISTING CONDITIONS, PLATE 1, MORRIS WESTCHESTER CONSTRUCTION COMPANY, L.L.P. HISTORIC AUSTIN AVENUE LANDFILL CLOSURE PLAN, LEGGETTE, BRASHEARS, & GRAHAM ENGINEERING SERVICES, P.C. MARCH 1988. REVISED BY S&W REDEVELOPMENT OF NORTH AMERICA, LLC, MAY 2011. FURTHER REVISED BY GHD CONSULTING ENGINEERS, LLC, DECEMBER 2012.

SHOT ROCK STOCKPILE EXTENT BASED ON FIELD OBSERVATIONS, AND IS APPROXIMATE.

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

N

0 30 60 90 120'

SCALE 1"=60' AT ORIGINAL SIZE

GHD Consulting Services Inc.
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Drawn IEM		Designer
Drafting Check		Design Check
Approved (Project Director)		
Date		
Scale AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction	

Client **Austin Avenue Brownfield Redevelopment II, LLC**
Project **Quality Assurance Project Plan**
Title **Site Layout**

Original Size **Arch D** Drawing No: **Figure 1-2** Rev: **A**

Plot Date: 25 August 2014 - 4:16 PM Plotted by: Ian McNamara Cad File No: G:\86\14908\Remedial.Design.Document\RDD\Appendices\App C - QAPP\Figures\Figure 1-2.dwg

Tables

Table 7-1

Proposed Method Detection Limits and Analytical Methods
ASP Inorganics, ASP Volatiles, ASP Semi-Volatiles, ASP Pesticides, and PCBs

Superfund Target Compound List (TCL) and Contract-Required Quantization Limit

Section 1 – ASP Inorganics
Method: NYSDEC-ASP, June 2000

Parameter	Contract-Required Detection Level* (µG/L)
1. Aluminum	200
2. Antimony	60
3. Arsenic	10
4. Barium	200
5. Beryllium	5
6. Cadmium	5
7. Calcium	5000
8. Chromium	10
9. Cobalt	50
10. Copper	25
11. Iron	100
12. Lead	3
13. Magnesium	5000
14. Manganese	15
15. Mercury	0.2
16. Nickel	40
17. Potassium	5000
18. Selenium	5
19. Silver	10
20. Sodium	5000
21. Thallium	10
22. Vanadium	50
23. Zinc	20
24. Cyanide	10

* Matrix: groundwater. For soil matrix, multiply CRDL by 100.

Table 7-1 (cont.)

Section 1 – ASP Inorganics
Method: NYSDEC-ASP, June 2000

Volatile		Proposed Method Detection Limits (µg/l)*
1.	Chloromethane	1
2.	Bromomethane	1
3.	Vinyl chloride	1
4.	Chloroethane	1
5.	Methylene chloride	1
6.	Acetone	1
7.	Carbon disulfide	1
8.	1,1-Dichloroethylene	1
9.	1,1-Dichloroethane	1
10.	1,2-Dichloroethylene (total)	1
11.	Chloroform	1
12.	1,2-Dichloroethane	1
13.	2-Butanone	1
14.	1,1,1-Trichloroethane	1
15.	Carbon tetrachloride	1
16.	Bromodichloromethane	1
17.	1,1,2,2-Tetrachloroethane	1
18.	1,2-Dichloropropane	1
19.	cis-1,3-Dichloropropene	1
20.	Trichloroethene	1
21.	Dibromochloromethane	1
22.	1,1,2-Trichloroethane	1
23.	Benzene	1
24.	Trans-1,3-Dichloropropene	1
25.	Bromoform	1
26.	2-Hexanone	1
27.	4-Methyl-2-pentanone	1
28.	Tetrachloroethylene	1
29.	Toluene	1
30.	Chlorobenzene	1
31.	Ethylbenzene	1
32.	Styrene	1
33.	Total xylenes	1

* Quantitation limit for medium-level soil is 1,200 µg/kg (wet weight basis). For soil vapor VOCs (TO-15), limits are 1 ug/m3, except TCE, which is 0.25 ug/m3.

Table 7-1 (cont.)

Section 1 – ASP Inorganics
Method: NYSDEC-ASP, June 2000

Semi-Volatiles	Contract-Required Quantitation Limit (µg/l)
1. Phenol	10
2. Bis(2-chloroethyl) ether	10
3. 2-Chlorophenol	10
4. 1,3-Dichlorobenzene	10
5. 1,4-Dichlorobenzene	10
6. 1,2-Dichlorobenzene	10
7. 2-Methylphenol	10
8. 2,2' oxybis(1-Chloropropane)	10
9. 4-Methylphenol	10
10. N-Nitroso-dipropylamine	10
11. Hexachloroethane	10
12. Nitrobenzene	10
13. Isophorone	10
14. 2-Nitrophenol	10
15. 2,4-Dimethylphenol	10
16. bis(2-Chloroethoxy) methane	10
17. 2,4-Dichlorophenol	10
18. 1,2,4-Trichlorobenzene	10
19. Naphthalene	10
20. 4-Chloroaniline	10
21. Hexachlorobutadiene	10
22. 4-Chloro-3-methylphenol	10
23. 2-Methylnaphthalene	10
24. Hexachlorocyclopentadiene	10
25. 2,4,6-Trichlorophenol	10
26. 2,4,5-Trichlorophenol	25
27. 2-Chloronaphthalene	10
28. 2-Nitroaniline	25
29. Dimethyl phthalate	10
30. Acenaphthylene	10
31. 2,6-Dinitrotoluene	10
32. 3-Nitroaniline	25
33. Acenaphthene	10
34. 2,4-Dinitrophenol	25
35. 4-Nitrophenol	25
36. Dibenzofuran	10
37. Dinitrotoluene	10
38. Diethylphthalate	10
39. 4-Chlorophenyl phenyl ether	10

Table 7-1 (cont.)

Section 1 – ASP Inorganics
Method: NYSDEC-ASP, June 2000

Semi-Volatiles	Contract-Required Quantitation Limit (µg/l)
40. Fluorene	10
41. 4-Nitroanile	25
42. 4,6-Dinitro-2-methylphenol	25
43. N-nitrosodiphenylamine	10
44. 4-Bromophenyl phenyl ether	10
45. Hexachlorobenzene	10
46. Pentachlorophenol	25
47. Phenanthrene	10
48. Anthracene	10
49. Carbazole	10
50. Di-n-butyl phthalate	10
51. Fluoranthene	10
52. Pyrene	10
53. Butyl benzyl phthalate	10
54. 3,3'-Dichlorobenzidine	10
55. Benz(a) anthracene	10
56. Chrysene	10
57. bis(2-ethylhexyl)phthalate	10
58. Di-n-octyl phthalate	10
59. Benzo(b)fluoranthene	10
60. Benzo(k)fluoranthene	10
61. Benzo(a)pyrene	10
62. Indeno(1,2,3-cd)pyrene	10
63. Dibenz(a,h)anthracene	10
64. Benzo(g,h,i)perylene	10

Table 7-1 (cont.)

Section 1 – ASP Inorganics
Method: NYSDEC-ASP, June 2000

Pesticides/PCBs	Contract-Required Quantitation Limit (µg/l)
1. alpha-BHC	0.05
2. beta-BHC	0.05
3. delta-BHC	0.05
4. gamma-BHC (lindane)	0.05
5. Heptachlor	0.05
6. Aldrin	0.05
7. Heptachlor epoxide	0.05
8. Endosulfan I	0.05
9. Dieldrin	0.10
10. 4,4'-DDE	0.10
11. Endrin	0.10
12. Endosulfan II	0.10
13. 4,4'-DDD	0.10
14. Endosulfan sulfate	0.10
15. 4,4'-DDT	0.10
16. Methoxychlor	0.5
17. Endrin ketone	0.10
18. Endrin aldehyde	0.10
19. alpha-Chlordane	0.05
20. gamma-Chlordane	0.05
21. Toxaphene	5.0
22. AROCLOR-1016	1.0
23. AROCLOR-1221	1.0
24. AROCLOR-1232	1.0
25. AROCLOR-1242	1.0
26. AROCLOR-1248	1.0
27. AROCLOR-1254	1.0
28. AROCLOR-1260	1.0

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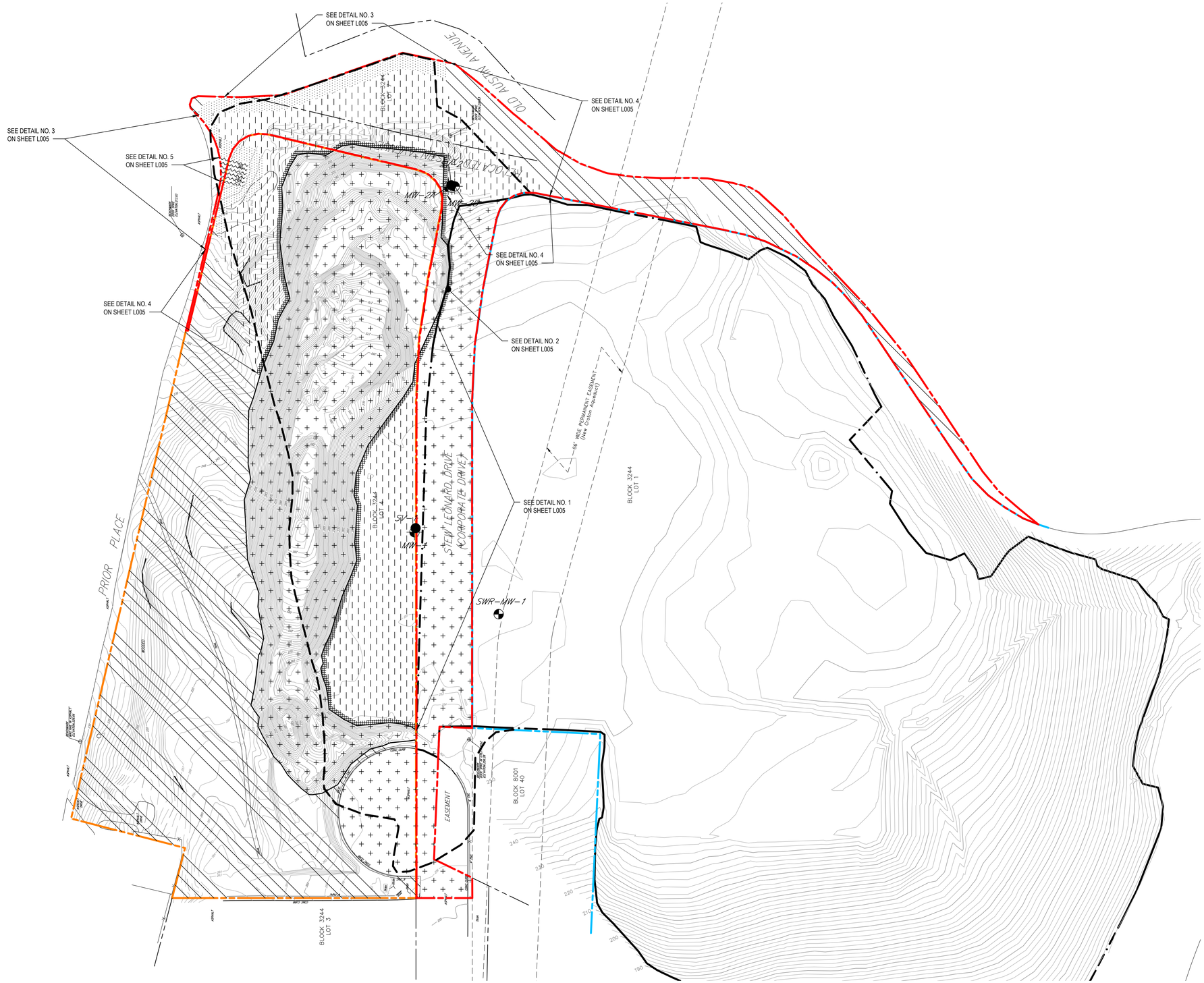
Appendix D – Contract Drawings



LEGEND:

- LOT 1 BCP SITE PROPERTY BOUNDARY
- LOT 4 BCP SITE PROPERTY BOUNDARY
- LOT 7 BCP SITE PROPERTY BOUNDARY
- EXTENT OF SHOT ROCK STOCKPILE (APPROXIMATE)
- EXTENT OF ASH (APPROXIMATE)
- LIMIT OF LOT 1 SOIL COVER AND DEMARCATION LAYER (APPROXIMATE)
- MW-1 / SWR-MW-1 — GROUNDWATER MONITORING WELL LOCATION AND ID (SURVEYED)
- SV-1 — SOIL VAPOR MONITORING WELL LOCATION AND ID (SURVEYED)
- AREA WHERE THE SOIL COVER ENGINEERING CONTROL WILL BE TRANSITIONED TO THE EXISTING ROADWAY. THE SOIL COVER WILL CONSIST OF A GEOTEXTILE DEMARCATION LAYER AND A MINIMUM OF 1-FOOT OF CLEAN SOIL FILL (SEE DETAIL NO. 3 ON SHEET L005). (APPROXIMATELY 11,000 SQUARE FEET)
- TWO SEPARATE AREAS WHERE A SOIL COVER ENGINEERING CONTROL WILL BE ESTABLISHED. THE SOIL COVER WILL CONSIST OF A GEOTEXTILE DEMARCATION LAYER AND A MINIMUM OF 1-FOOT OF EITHER CLEAN SOIL FILL OR 6-INCH MINUS CRUSHED SHOT ROCK (SEE DETAIL NOS. 1, 2, 3, AND 4 ON SHEET L005). (APPROXIMATELY 72,000 SQUARE FEET)
- AREA WHERE THE SOIL COVER ENGINEERING CONTROL WILL BE TRANSITIONED TO THE EXISTING SHOT ROCK STOCKPILE. THE TRANSITION AREA WILL CONSIST OF A GEOTEXTILE DEMARCATION LAYER OVERLAPPED ONTO THE STOCKPILE AND COVERED WITH SHOT ROCK FROM THE STOCKPILE (SEE DETAIL NO. 2 ON SHEET L005). (APPROXIMATELY 6,000 SQUARE FEET)
- AREA WHERE A SOIL COVER ENGINEERING CONTROL WILL BE ESTABLISHED. THE SOIL COVER WILL CONSIST OF A MINIMUM OF 6-INCHES OF ASPHALT PAVEMENT (SEE DETAIL NO. 5 ON SHEET L005). (APPROXIMATELY 1,000 SQUARE FEET)
- TWO SEPARATE AREAS WHERE NO SOIL COVER ENGINEERING CONTROL WILL BE ESTABLISHED. (APPROXIMATELY 159,000 SQUARE FEET)
- AREAS WHERE EXISTING GROUND COVER WILL BE USED TO ESTABLISH A SOIL COVER ENGINEERING CONTROL. THE GROUND COVER IN THESE AREAS CURRENTLY CONSISTS OF EITHER:
  1. A GEOTEXTILE DEMARCATION LAYER AND A MINIMUM OF 2-FEET OF CLEAN SOIL FILL. (APPROXIMATELY 44,000 SQUARE FEET).
  2. ASPHALT PAVEMENT. (APPROXIMATELY 19,000 SQUARE FEET).
  3. SHOT ROCK STOCKPILE WHERE THE THICKNESS IS GREATER THAN 3 FEET. (APPROXIMATELY 119,000 SQUARE FEET).

NOTES:

LOT 1 BASE MAP FROM A FIELD SURVEY CONDUCTED BY CONTRACTORS LINE AND GRADE SOUTH, LLC, MAY 11, 2011.

LOT 4 BASE MAP FROM A FIELD SURVEY CONDUCTED BY JOHN MEYER CONSULTING, P.C. JUNE 30, 2011.

EXTENT OF ASH FROM EXISTING CONDITIONS, PLATE 1, MORRIS WESTCHESTER CONSTRUCTION COMPANY, L.L.P. HISTORIC AUSTIN AVENUE LANDFILL CLOSURE PLAN, LEGGETTE, BRASHEARS, & GRAHAM ENGINEERING SERVICES, P.C. MARCH 1988. REVISED BY S&W REDEVELOPMENT OF NORTH AMERICA, LLC, MAY 2011. FURTHER REVISED BY GHD CONSULTING ENGINEERS, LLC, DECEMBER 2012.

SHOT ROCK STOCKPILE EXTENT BASED ON FIELD SURVEY AND FIELD OBSERVATIONS, AND IS APPROXIMATE.

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

GHD Consulting Services Inc.
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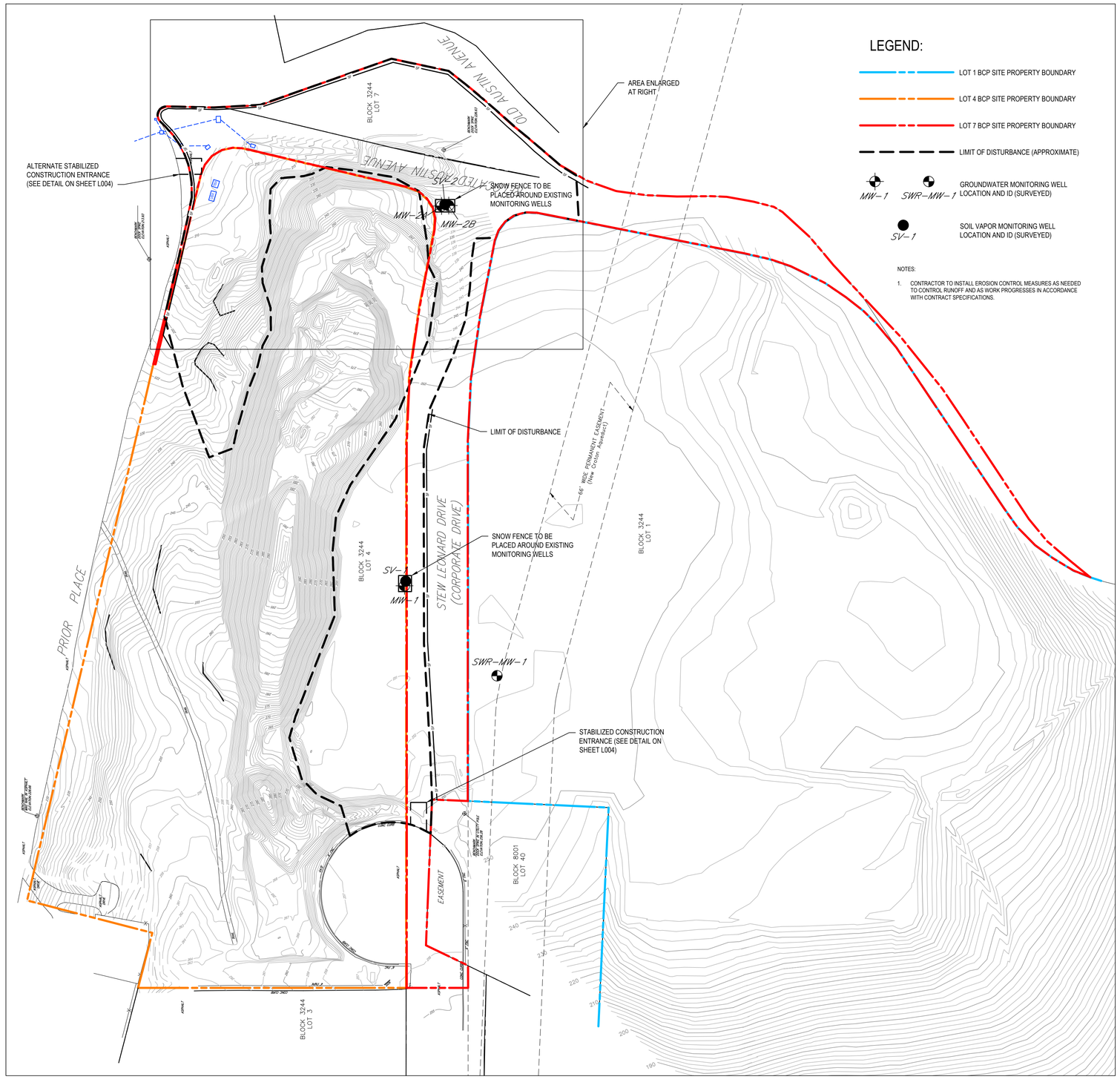
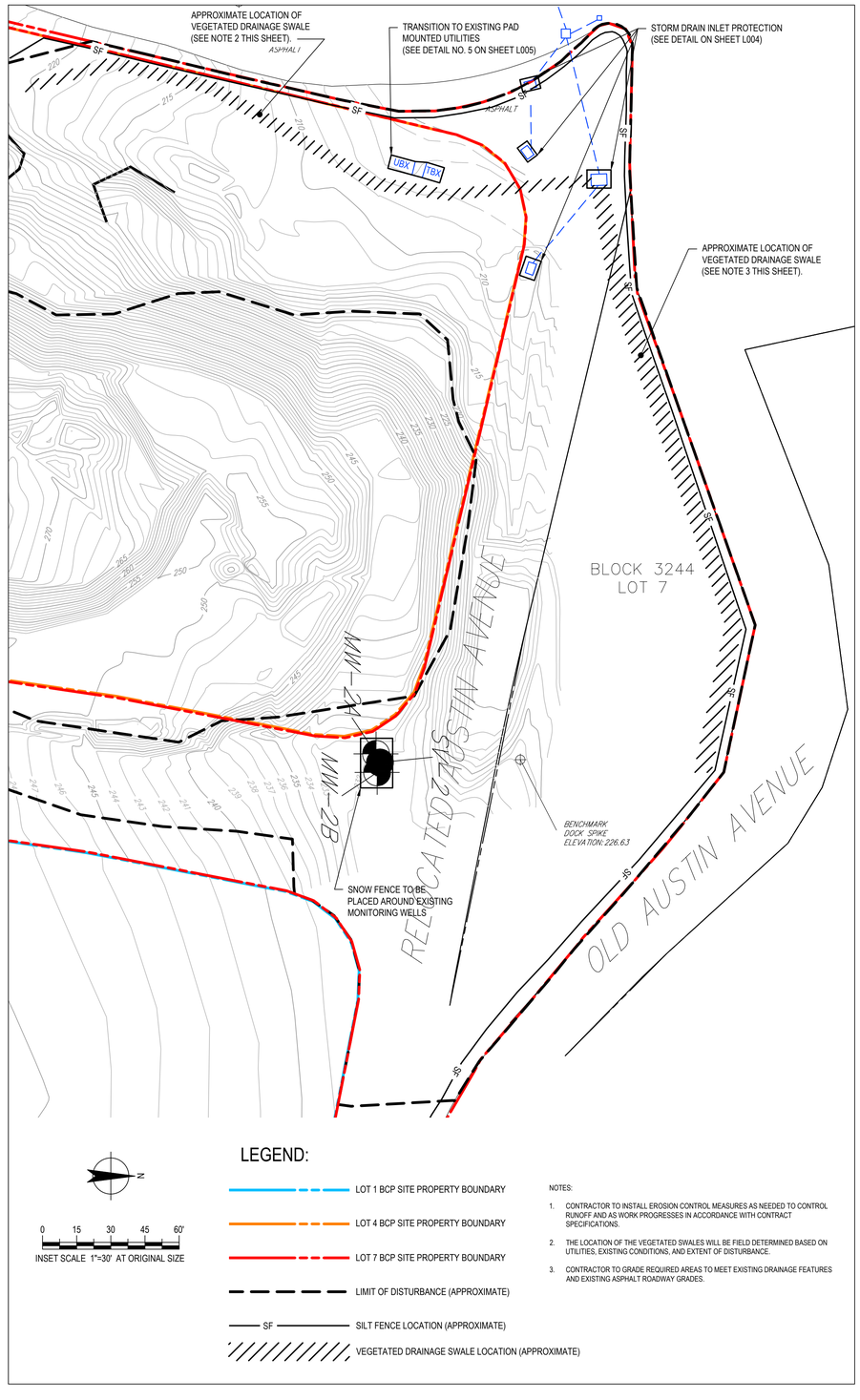
Drawn	IEM	Designer	
Drafting Check		Design Check	
Approved (Project Director)			
Date			
Scale	AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction	

Client: Austin Avenue Brownfield Redevelopment II, LLC
Project: Lot 4 and Lot 7 Remedial Action
Title: Proposed Engineering Controls

Original Size: Arch D
Drawing No: 86-14908-L001
Rev: A

Plot Date: 5 September 2014 - 3:24 PM Plotted by: Ian McNamara
Cad File No: G:\86\14908\Remedial.Design.Document\RDD\Appendices\App D - Contract Drawings\86-14908-L001.cadd.dwg





No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

NOTES:

LOT 1 BASE MAP FROM A FIELD SURVEY CONDUCTED BY CONTRACTORS LINE AND GRADE SOUTH, LLC, MAY 11, 2011.

LOT 4 BASE MAP FROM A FIELD SURVEY CONDUCTED BY JOHN MEYER CONSULTING, P.C. JUNE 30, 2011.

EXTENT OF ASH FROM EXISTING CONDITIONS, PLATE 1, MORRIS WESTCHESTER CONSTRUCTION COMPANY, L.L.P. HISTORIC AUSTIN AVENUE LANDFILL CLOSURE PLAN, LEGGETTE, BRASHEARS, & GRAHAM ENGINEERING SERVICES, P.C. MARCH 1988. REVISED BY S&W REDEVELOPMENT OF NORTH AMERICA, LLC, MAY 2011. FURTHER REVISED BY GHD CONSULTING ENGINEERS, LLC, DECEMBER 2012.

SHOT ROCK STOCKPILE EXTENT BASED ON FIELD OBSERVATIONS, AND IS APPROXIMATE.

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Drawn	IEM	Designer	
Drafting Check		Design Check	
Approved (Project Director)			
Date			
Scale	AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction	

Client: Austin Avenue Brownfield Redevelopment II, LLC
Project: Lot 4 and Lot 7 Remedial Action
Title: Erosion Control Plan

Original Size: Arch D
Drawing No: 86-14908-L002
Rev: A

Plot Date: 25 August 2014 - 4:22 PM Plotted by: Ian McNamara
Cad File No: G:\86\14908\Remedial.Design.Document\RDD\Appendices\App D - Contract Drawings\86-14908-L002.cadd.dwg

LEGEND:

- LOT 1 BCP SITE PROPERTY BOUNDARY
- LOT 4 BCP SITE PROPERTY BOUNDARY
- LOT 7 BCP SITE PROPERTY BOUNDARY
- UNDERGROUND GAS LINE
- UNDERGROUND WATER LINE
- UNDERGROUND TELEPHONE LINE
- OVERHEAD UTILITY WIRES
- STORM SEWER

NOTES:

1. UTILITY LOCATIONS ARE APPROXIMATE AND TO BE FIELD VERIFIED BY CONTRACTOR.
2. LOT 1 BASE MAP FROM A FIELD SURVEY CONDUCTED BY CONTRACTORS LINE AND GRADE SOUTH, LLC, MAY 11, 2011.
3. LOT 4 BASE MAP FROM A FIELD SURVEY CONDUCTED BY JOHN MEYER CONSULTING, P.C. JUNE 30, 2011.
4. EXTENT OF ASH FROM EXISTING CONDITIONS, PLATE 1, MORRIS WESTCHESTER CONSTRUCTION COMPANY, L.L.P. HISTORIC AUSTIN AVENUE LANDFILL CLOSURE PLAN, LEGGETTE, BRASHEARS, & GRAHAM ENGINEERING SERVICES, P.C. MARCH 1988. REVISED BY S&W REDEVELOPMENT OF NORTH AMERICA, LLC, MAY 2011. FURTHER REVISED BY GHD CONSULTING ENGINEERS, LLC, DECEMBER 2012.
5. SHOT ROCK STOCKPILE EXTENT BASED ON FIELD OBSERVATIONS, AND IS APPROXIMATE.

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

N

0 30 60 90 120'
SCALE 1"=60' AT ORIGINAL SIZE

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Drawn IEM	Designer
Drafting Check	Design Check
Approved (Project Director)	
Date	
Scale AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction

Client **Austin Avenue Brownfield Redevelopment II, LLC**
Project **Lot 4 and Lot 7 Remedial Action**
Title **Existing Utilities Layout**

Original Size **Arch D** **Drawing No: 86-14908-L003** **Rev: A**

Plot Date: 25 August 2014 - 4:23 PM Plotted by: Ian McNamara Cad File No: G:\86\14908\Remedial.Design.Document\RDD\Appendices\App D - Contract Drawings\86-14908-L003.cadd.dwg

EROSION & SEDIMENTATION CONTROL MEASURES

1. CONTRACTOR AND ALL SUBCONTRACTORS SHALL COMPLY WITH THE LATEST PROJECT SWPPP AND REQUIREMENTS UNDER NYSDEC SPDES GP-0-10-001.
2. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED BY THE CONTRACTOR DAILY AND IMMEDIATELY AFTER PERIODS OF RAINFALL. REPAIR AND/OR MAINTENANCE OF SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE MADE AS SOON AS NEEDED. THE CONTRACTOR IS RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF ALL CONTROL MEASURES ON THIS SITE.
3. LAND DISTURBANCE SHALL BE KEPT TO A MINIMUM. SOIL STABILIZATION WILL BE SCHEDULED IMMEDIATELY AFTER ANY DISTURBANCE. NEWLY GRADED STEEP SLOPES SHALL BE IMMEDIATELY STABILIZED WITH SEED MIX AND/OR ROLLED BIODEGRADABLE EROSION CONTROL MATTING.
4. SILT FENCES SHALL BE INSTALLED ALONG THE TOE OF ALL CRITICAL CUT AND FILL SLOPES.
5. CATCH BASINS SHALL BE PROTECTED WITH INLET PROTECTION BARRIERS OR SILT FENCES THROUGHOUT THE CONSTRUCTION SEQUENCE AND UNTIL ALL DISTURBED AREAS ARE STABILIZED.
6. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ALL CONSTRUCTION ACTIVITIES.
7. ANCHOR ALL TOPSOIL STOCK PILES WITH STRAW MULCH AND RING WITH SILT FENCE, OR STRAW BALE BARRIER.
8. DURING CONSTRUCTION, ALL EXPOSED SLOPES THAT WILL NOT RECEIVE PERMANENT SURFACE TREATMENT IMMEDIATELY, AND ALL PILES OF SOIL SHALL BE TEMPORARILY SEEDED WITH A MIXTURE OF PERENNIAL RYEGRASS, ANNUAL RYEGRASS AND WINTER GRASS. SHOULD CONSTRUCTION ACTIVITIES BE HALTED, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS BY APPROVED METHODS SUCH AS MULCHING AND HYDROSEEDING.
9. SEDIMENT REMOVAL FROM CONTROL STRUCTURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SEDIMENT SHALL BE DISPOSED OF IN A MANNER WHICH DOES NOT RESULT IN ADDITIONAL EROSION AND WHICH IS CONSISTENT WITH THE CONTRACT DOCUMENTS AND REGULATORY REQUIREMENTS.
10. THE EROSION AND SEDIMENTATION CONTROL MEASURES DESCRIBED HEREIN ARE INTENDED AS A GENERAL GUIDE FOR THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ANY AND ALL WORK NECESSARY TO PREVENT EROSION OF SOIL FROM THE CONSTRUCTION SITE. TO PREVENT EROSION, THE CONTRACTOR SHALL PROVIDE SILT FENCES OR OTHER CONTROL MEASURES AS THE NEED ARISES DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
11. PAVED ROADWAYS SHALL BE KEPT CLEAN AT ALL TIMES.
12. A TEMPORARY CRUSHED STONE PAD OR ROADWAY SHALL BE CONSTRUCTED AT ALL NON-PAVED PARKING AREAS, HEAVY USE AREAS, OR ROADWAYS WHERE THERE IS NO EXISTING PAVEMENT, OR WHERE PAVEMENT HAS BEEN REMOVED.

GENERAL EROSION AND SEDIMENTATION NOTES

1. ALL REQUIRED EROSION CONTROL MEASURES SHALL BE ESTABLISHED WITHIN A DRAINAGE AREA PRIOR TO EXCAVATION WITHIN THE AREA.
2. THE LISTED EROSION CONTROL MEASURES ARE REQUIRED. ADDITIONAL EROSION CONTROL MEASURES MAY BE NEEDED AT THE TIME OF CONSTRUCTION BASED ON CONSTRUCTION PRACTICES AND SITE CONDITIONS.
3. SPECIFIC EROSION CONTROL PRACTICES FOR INDIVIDUAL AREAS ARE SHOWN ON THE INDIVIDUAL DRAWINGS. GENERAL PRACTICES AND DETAILS ARE LISTED ON THIS SHEET.
4. THE GENERAL SEQUENCE OF CONSTRUCTION WILL BE AS FOLLOWS:
   - A. IDENTIFY THE LIMITS OF THE DRAINAGE AREA.
   - B. ESTABLISH EROSION CONTROL MEASURES WITHIN THE DRAINAGE AREA.
   - C. INSTALL BYPASS SWALE AND STORM DRAINAGE AS NEEDED TO RE-ROUTE RUNOFF AWAY FROM WORK SITE.
   - D. EXCAVATE MATERIAL FROM THE EXCAVATION AND STOCKPILE ACCEPTABLE MATERIAL ADJACENT TO THE EXCAVATION OR MOVE TO OTHER AREAS OF SITE TO BE FILLED.
   - E. REMOVE UNACCEPTABLE MATERIAL FROM THE SITE.
   - F. HAUL IN ACCEPTABLE BACKFILL AND STOCKPILE MATERIAL ADJACENT TO THE EXCAVATION.
   - G. INSTALL NEW FACILITIES, IE: FOUNDATIONS, BEDDING, PIPE.
   - H. BACKFILL WITH ACCEPTABLE MATERIAL.
   - I. ESTABLISH SURFACE TREATMENTS (I.E. RAIN GARDENS) AND PROTECT AS NEEDED.
   - J. MAINTAIN EROSION CONTROLS UNTIL ALL SURFACE AREAS ARE STABILIZED.
   - K. REMOVE EROSION CONTROL MEASURES.
5. DRAINAGE WILL BE SLOPED AWAY FROM THE EXCAVATION AREA.
6. EXCAVATIONS WILL BE KEPT DRY USING SUMP PUMP SYSTEMS. THE SUMP WILL BE LOCATED AT THE LOW POINT OF THE TRENCH, AND WILL CONSIST OF A SUCTION HOSE DRAWING FROM A POCKET OF WASHED GRAVEL WRAPPED IN NON-WOVEN GEOTEXTILE. THE SUMP WILL DISCHARGE TO STABILIZED CATCH BASINS. STABILIZED CATCH BASINS WILL BE CLEANED PRIOR TO HAVING STORMWATER DISCHARGED TO THEM AND THEIR GRATES WILL BE WRAPPED WITH WOVEN GEOTEXTILE (SILT FENCE MATERIAL) TO PREVENT THE ENTRANCE OF FINES. STABILIZED CATCH BASINS WILL ALSO BE CLEANED WHEN THE SILT REACHES THE MIDPOINT OF THE SUMP AND AT THE COMPLETION OF THE PROJECT.
7. IF A STABILIZED CATCH BASIN IS NOT AVAILABLE WITHIN A DRAINAGE AREA THE TRENCH SUMP WILL DISCHARGE TO A SILT BAG AND FLOW OVERLAND TO NATURAL DRAINAGE COURSES. THE VOLUME OF WATER DISCHARGED WILL BE MONITORED TO PREVENT EROSION OR DAMAGE WITHIN THE NATURAL DRAINAGE COURSES.
8. MATERIAL TAKEN FROM ROADWAYS, CATCH BASINS, AND SILT BAGS WILL BE DISPOSED OF IN A MANNER THAT MEETS ALL LOCAL, STATE AND FEDERAL LAWS.

EROSION CONTROL NARRATIVE

PRIOR TO COMMENCING WORK, CONTRACTOR SHALL INSTALL SEDIMENT AND EROSION CONTROL MEASURES.

WHEN THE SITE IS CLEARED, BUT BEFORE GRUBBING, EROSION CONTROLS SHALL BE PLACED AT POINTS NOTED ON THE PLANS. THESE INCLUDE POSITIONING CONTROLS AS NEEDED AT DOWNGRADIENT EDGES OF GRADED AREAS AND AT THE BASE OF PROPOSED FILL SLOPES AND WALLS.

STABILIZED CONSTRUCTION AND WASHDOWN PAD SHALL BE INSTALLED AS SHOWN ON DRAWINGS. IF NECESSARY, ROUGH GRADES SHALL BE ESTABLISHED AND SHAPED. SITE AREAS SHALL BE ESTABLISHED FOR USE AS CONSTRUCTION MATERIAL STORAGE AND PARKING.

CUTS AND FILLS WILL BE MADE TO DESIGN GRADES. EXCESS FILL WILL BE HAULED AND PLACED IN FILL AREAS OR DISPOSED OF AT AN APPROVED OFF-SITE LOCATION.

EROSION CONTROLS SHALL BE PERIODICALLY CHECKED AND MAINTAINED AT THE DOWNHILL EDGE OF DISTURBED AREAS AND SHALL BE PLACED AT THE BASE OF SLOPES. STRAW BALES OR SILT FENCES SHALL BE MAINTAINED AT THE POINTS OF RUNOFF PIPE AND DITCH OUTLETS.

WHEN CONSTRUCTION WORK IS COMPLETED AND STABLE SURFACES (VEGETATED OR PAVED) HAVE BEEN ACHIEVED, THE EROSION CONTROLS SHALL BE REMOVED.

DUST CONTROL MEASURES

DUST CONTROL MEASURES WILL BE IMPLEMENTED ACROSS AREAS OF SITE DISTURBANCE.

TEMPORARY STABILIZATION (SEEDING, MULCHING) WILL BE EMPLOYED IF CONSTRUCTION AREAS ARE TO BE LEFT OPEN FOR PERIODS OF TIME. THESE NOTED GENERAL OPERATIONS WILL HELP REDUCE THE POTENTIAL LEVEL OF DUST GENERATED FROM THE SITE.

DUST CONTROL MEASURES WILL BE EMPLOYED DURING DRY WEATHER PERIODS UNTIL ALL DISTURBED AREAS ARE STABILIZED.

SPECIFIC DUST CONTROL MEASURES FOLLOW IN ORDER OF HIERARCHY.

- SPRINKLING: WATER WILL BE SPRAYED ON THE SURFACE OF DISTURBED AREAS UNTIL THE SURFACE IS WET. THIS PRACTICE IS ESPECIALLY EFFECTIVE ON TRAFFICKED AREAS.
- VEGETATION: TEMPORARY SEEDING WILL BE EMPLOYED IN SITE DISTURBED AREAS NOT SUBJECT TO TRAFFIC.
- MULCH: MULCH MATERIAL INCLUDING WOOD CHIPS AND GRAVEL WILL BE USED ON AREAS WHERE A FAST EFFECTIVE MEANS TO CONTROL DUST IS NEEDED.
- BARRIERS: TEMPORARY "FENCING" WILL BE USED TO CONTROL AIR CURRENTS. EFFECT OF A BARRIER MAY BE AS LARGE AS 15 TIMES THE BARRIER HEIGHT. EXISTING OPEN FIELD VEGETATION (3' +/-HT) CAN PROVIDE AN EFFECTIVE CONTROL FOR DUST FROM LOCAL WORK AREAS.

SILT FENCE DESIGN CRITERIA

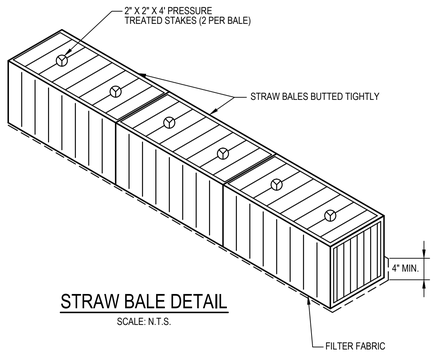
SLOPE STEEPNESS	(MAXIMUM) SLOPE LENGTH	(MAXIMUM) SILT FENCE LENGTH
FLATTER THAN 50:1	UNLIMITED	UNLIMITED
50:1 TO 10:1	125 FEET	1,000 FEET
10:1 TO 5:1	100 FEET	750 FEET
5:1 TO 3:1	60 FEET	500 FEET
3:1 TO 2:1	40 FEET	250 FEET
2:1 AND STEEPER	20 FEET	125 FEET

CONSTRUCTION SPECIFICATIONS

1. A DETAIL OF THE SILT FENCE SHALL BE SHOWN ON THE PLAN AND CONTAIN THE FOLLOWING REQUIREMENTS:
   - A. THE TYPE, SIZE, AND SPACING OF FENCE POSTS.
   - B. THE TYPE OF FILTER CLOTH USED.
   - C. THE METHOD OF FASTENING THE FILTER CLOTH TO THE FENCING SUPPORT.
   - D. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN IT REACHES 50% OF THE HEIGHT OF THE FABRIC.
2. WHERE ENDS OF THE FILTER CLOTH COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
3. DESIGN COMPUTATIONS ARE NOT REQUIRED.
4. ALL SILT FENCES SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE.
5. THE AREA BELOW THE FENCE MUST BE UNDISTURBED OR STABILIZED.
6. SILT FENCE FABRIC SHALL BE MIRAFI 100X OR EQUAL.
7. FENCE POSTS (FOR FABRIC UNITS): THE LENGTH SHALL BE A MINIMUM OF 36 INCHES LONG. WOOD POSTS 2 X 2 WITH A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES WILL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHT NOT LESS THAN 1.00 POUND PER LINEAR FOOT.

NOTE:

IN AREAS OF LESS THAN 2% SLOPE AND SANDY SOILS (USDA GENERAL CLASSIFICATION SYSTEM, SOIL CLASS A) MAXIMUM SLOPE LENGTH AND SILT FENCE LENGTH WILL BE UNLIMITED. IN THESE AREAS, A SILT FENCE MAY BE THE ONLY PERIMETER CONTROL NEEDED.



STRAW BALE DETAIL

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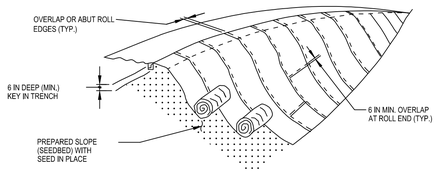

ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS

1. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
2. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 ½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
3. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
4. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
5. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
6. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.

ROLLED EROSION CONTROL MATTING

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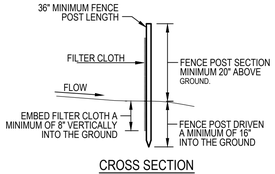
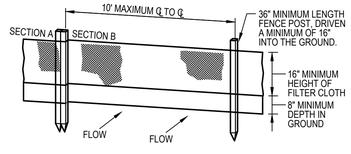
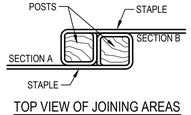


CROSS SECTION



PERSPECTIVE DETAIL



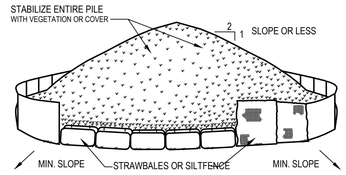
TOP VIEW OF JOINING AREAS

CONSTRUCTION SPECIFICATIONS

1. WHERE ENDS OF THE FILTER CLOTH COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
2. DESIGN COMPUTATIONS ARE NOT REQUIRED.
3. ALL SILT FENCES SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE.
4. THE AREA BELOW THE FENCE MUST BE UNDISTURBED OR STABILIZED.
5. FENCE POSTS (FOR FABRIC UNITS): THE LENGTH SHALL BE A MINIMUM OF 36 INCHES LONG. WOOD POSTS 2 X 2 WITH A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES WILL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHT NOT LESS THAN 1.00 POUND PER LINEAR FOOT.

SILT FENCE DETAIL

SCALE: N.T.S.

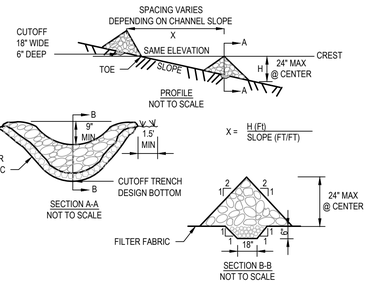


INSTALLATION NOTES

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVERED.

SOIL STOCKPILING

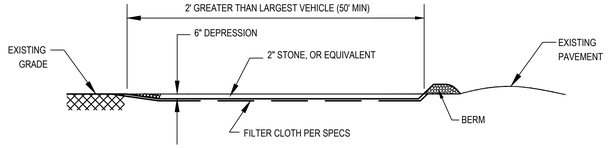
SCALE: N.T.S.



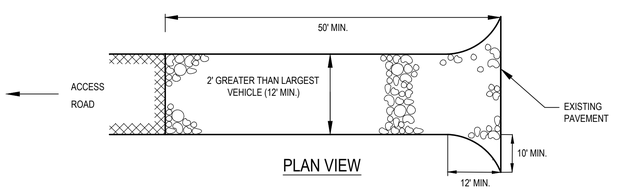
1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

STONE CHECK DAM

SCALE: N.T.S.



PROFILE



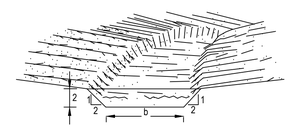
PLAN VIEW

WHEEL WASH STATION-STABILIZED CONSTRUCTION ENTRANCE

SCALE: N.T.S.

WHEEL WASH STATION- STABILIZED CONSTRUCTION ENTRANCE SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET.
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH PER SPECIFICATION 02421 - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH ALSO DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED WEEKLY AND AFTER EACH RAIN EVENT. NO SEDIMENT FROM SITE SHALL BE ALLOWED ONTO STREETS.
10. ENTRANCE(S) SHALL BE ENTIRELY REMOVED UPON COMPLETION OF ALL CONSTRUCTION OPERATIONS.
11. FINAL LOCATION(S) TO BE COORDINATED WITH OWNER.



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

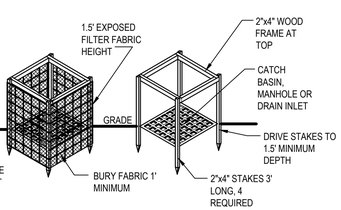
1. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE WATERWAY.
2. THE WATERWAY SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN, AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
3. FILLS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETE WATERWAY.
4. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE WATERWAY.
5. STABILIZATION SHALL BE DONE ACCORDING TO THE APPROPRIATE STANDARD AND SPECIFICATIONS FOR VEGETATIVE PRACTICES.
   - A. A. FOR DESIGN VELOCITIES OF LESS THAN 3.5 FT. PER. SEC., SEEDING AND MULCHING MAY BE USED FOR THE ESTABLISHMENT OF THE VEGETATION. IT IS RECOMMENDED THAT, WHEN CONDITIONS PERMIT, TEMPORARY WATERWAYS OR OTHER MEANS SHOULD BE USED TO PREVENT WATER FROM ENTERING THE WATERWAY DURING THE ESTABLISHMENT OF THE VEGETATION.
   - B. B. FOR DESIGN VELOCITIES OF MORE THAN 3.5 FT. PER. SEC., THE WATERWAY SHALL BE STABILIZED WITH SOD, WITH SEEDING PROTECTED BY JUTE OR EXCELSIOR MATTING OR WITH SEEDING AND MULCHING INCLUDING TEMPORARY DIVERSION OF THE WATER UNTIL THE VEGETATION IS ESTABLISHED.
   - C. C. STRUCTURAL - VEGETATIVE PROTECTION SUBSURFACE DRAIN FOR BASE FLOW SHALL BE CONSTRUCTED AS SHOWN ON THE STANDARD DRAWING AND AS SPECIFIED IN THE STANDARD AND SPECIFICATIONS FOR SUBSURFACE DRAIN.

SWALE DETAIL

SCALE: N.T.S.

SET SILT FENCE PROTECTION AROUND INLET FRAME OR AS CLOSE TO FRAME AS FEASIBLE FOR STABLE STAKING

NOTE: GENERAL AREA AROUND INLET ±6' FROM FILTER FABRIC MAY BE EXCAVATED TO 1' DEPTH AS WATER POOL SEDIMENT TRAP



STORM DRAIN INLET PROTECTION DETAIL

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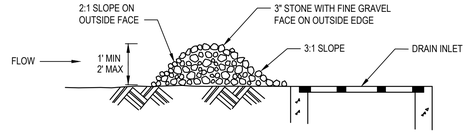

DRAIN INLET PROTECTION

SCALE: N.T.S.

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

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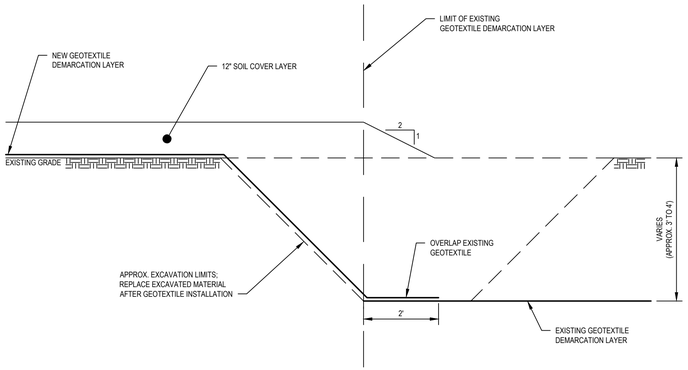
Drawn IEM	Designer	
Drafting Check	Design Check	
Approved (Project Director)		
Date		
Scale AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction	

Client: Austin Avenue Brownfield Redevelopment II, LLC
Project: Lot 4 and Lot 7 Remedial Action
Title: Erosion Control Details

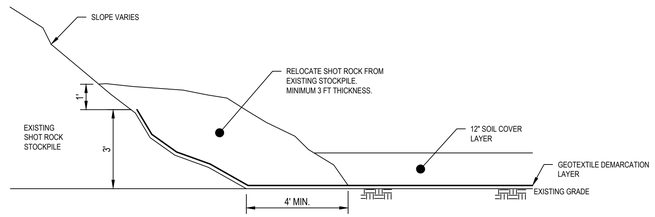
Original Size: Arch D
Drawing No: 86-14908-L004
Rev: A

Plot Date: 25 August 2014 - 4:24 PM Plotted by: Ian McNamara
Cad File No: G:\86\14908\Remedial.Design.Document\RDD\Appendices\App D - Contract Drawings\86-14908-L004.cadd.dwg



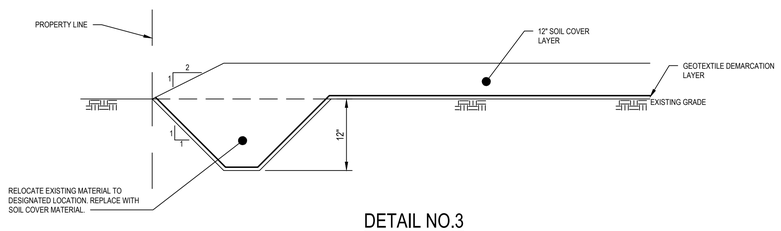
DETAIL NO. 1
TIE-IN TO EXISTING GEOTEXTILE DEMARCATION LAYER

SCALE: N.T.S.



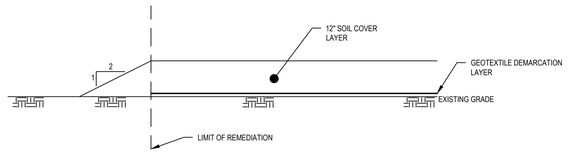
DETAIL NO. 2
GEOTEXTILE TERMINATION AT SHOT ROCK STOCKPILE

SCALE: N.T.S.



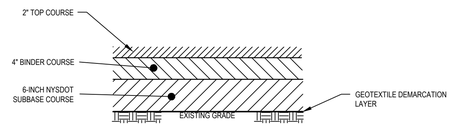
DETAIL NO.3
GEOTEXTILE TERMINATION AT PROPERTY LINE

SCALE: N.T.S.



DETAIL NO. 4
TYPICAL TERMINATION DETAIL

SCALE: N.T.S.



NOTES:

1. CONTRACTOR TO EXCAVATE TO REQUIRED ELEVATION PRIOR TO PLACEMENT OF GEOTEXTILE DEMARCATION LAYER. EXCAVATED MATERIAL TO BE RELOCATED TO DESIGNATED LOCATION.
2. CONTRACTOR SHALL ENSURE THAT ELEVATION OF TOP OF ASPHALT PAVEMENT IS A MINIMUM OF 1-INCH BELOW THE TOP OF EXISTING CONCRETE UTILITY PADS.
3. CONTRACTOR TO EXTEND ASPHALT PAVEMENT TO EDGE OF EXISTING CONCRETE UTILITY PADS.

DETAIL NO. 5
TYPICAL ASPHALT PAVEMENT ENGINEERING CONTROL DETAIL

SCALE: N.T.S.

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

GHD Consulting Services Inc.
One Remington Park Drive
Cazenovia NY 13035 USA
T 1 315 679 5800 **F** 1 315 679 5801
E cazmail@ghd.com **W** www.ghd.com

Drawn	IEM	Designer	
Drafting Check		Design Check	
Approved (Project Director)			
Date			
Scale	AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction	

Client **Austin Avenue Brownfield Redevelopment II, LLC**
Project **Lot 4 and Lot 7 Remedial Action**
Title **Engineering Controls Details**

Original Size **Arch D** Drawing No: **86-14908-L005** Rev: **A**

Plot Date: 25 August 2014 - 4:24 PM Plotted by: Ian McNamara
Cad File No: G:\86\14908\Remedial.Design.Document\RDD\Appendices\App D - Contract Drawings\86-14908-L005.cadd.dwg

Appendix E – Contract Specifications

Contract Specifications
for
Lot 4 and Lot 7 Remedial Construction
Yonkers, New York
Austin Avenue Brownfield
Redevelopment II, LLC

GHD CONSULTING SERVICES INC.
One Remington Park Drive
Cazenovia, New York

2014

TABLE OF CONTENTS

CONTRACT SPECIFICATIONS

SECTION 01001

BASIC REQUIREMENTS

PART 1 GENERAL

1.01. SECTION INCLUDES

A. Summary of work.

B. Limits of Work area.

C. Construction permits and easements.

D. Schedule of values.

E. Applications for payment.

F. Change procedures.

G. Construction photographs.

H. Coordination.

I. Field engineering.

J. Preconstruction conference.

K. Progress meetings.

L. Submittals.

M. Quality control; inspections and tests.

N. Material and equipment.

1.02. RELATED SECTIONS

A. Section 01026 - LUMP SUM ITEMS

1.03. SUMMARY OF WORK

A. Work Covered by Contract Documents

1. Work of this contract comprises the project for construction of a remedial design. Construction generally consists of clearing portions of the site, removing debris, installing a geotextile demarcation layer, and placing a 1-foot thick soil cover layer. This work is being completed as a Voluntary Action under the New York State Brownfield Cleanup Program (BCP) for the following BCP sites:

a. Lot 4 - Austin Avenue and Prior Place BCP Site No. C360116.

b. Lot 7 and Corporate Drive BCP Site No. C360128.

2. Perform Work under a lump sum price contract with Owner.

3. Work of this contract is identified on the Drawings and in the Bid Item Description pages of Section 01026.

4. Work not specifically identified on the Drawings or in the Bid Item Description pages, but required in the Contract Documents, shall be performed as specified.

1.04. LIMITS OF WORK AREA

A. Confine construction operations within the Contract Limits shown on the Drawings. Storage of equipment and materials, or erection and use of sheds outside of the Contract Limits, if such areas are the property of Owner, shall be used only with Owner's approval. Such storage or temporary structures, even within the Contract Limits, shall be confined to Owner's property and shall not be placed on properties designated as easements or rights-of-way.

1.05. CONSTRUCTION PERMITS AND EASEMENTS

A. Contractor shall obtain and pay for necessary construction permits from those authorities or agencies having jurisdiction over land areas, utilities or structures which are located within the Contract Limits and which will be occupied, encountered, used, or temporarily interrupted by Contractor's operations.

1. A City of Yonkers Building Permit will be required.

B. When construction permits are accompanied by regulations or requirements issued by a particular authority or agency, it shall be Contractor's responsibility to familiarize himself and comply with such regulations or requirements as they apply to his operations on this project.

C. Permanent and temporary easements or rights-of-way across private property, which are shown or defined as work areas within the Contract Limits, will be obtained by Owner. Where Contractor's work requires entry into easement areas to perform work, Owner will provide information on such easements and means of access thereto.

1.06. SCHEDULE OF VALUES

A. Submit Schedule of Values on Contractor's standard form.

B. Submit schedule in duplicate (if hard copy) or a single electronic copy within one week of preconstruction meeting.

C. Format - Utilize Schedule of Bid Items in Bid Proposal. Show cost breakdown for each lump sum item.

D. Revise schedule to list approved Change Orders, with each Application for Payment.

1.07. APPLICATIONS FOR PAYMENT

A. Submit one electronic copy of each application on forms furnished by Engineer.

B. Content and Format - Approved Schedule of Values will be used to list items in Application for Payment. Certification by Contractor must accompany each application.

C. Payment Period - Monthly.

D. Attach required documents and Contractor's back-up data, when indicated.

1.08. CHANGE PROCEDURES

A. The Engineer will advise of minor changes in the Work not involving an adjustment of Contract Price or Contract Time by issuing supplemental instructions in a Field Order.

B. The Engineer may issue a Proposal Request or Notice of Change which includes a detailed description of a proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit an estimate within five days.

C. Lump Sum/Price Change Order - Based on Proposal Request or Notice of Change and Contractor's fixed or estimated price quotation.

D. Unit Price Change Order - For pre-determined unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of Work which are not pre-determined, execute Work under a Work Change Directive. Changes in Contract Price or Contract Time will be computed as specified for Time and Material Change Order.

E. Work Change Directive - Engineer may issue a directive, signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Price or Contract Time. Promptly execute the change.

F. Time and Material Change Order - Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract. Engineer will determine the change allowable in Contract Price and Contract Time as provided in the Contract Documents.

G. Maintain detailed records of Work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.

H. Change Order Forms - Engineer's Form.

I. Execution of Change Orders - Engineer will issue Change Orders for signatures of parties in the following order: Engineer, Contractor, Owner.

1.09. CONSTRUCTION PHOTOGRAPHS

A. Contractor shall take digital photos in format as ordered by Engineer and specified herein.

B. Photos shall be taken with a digital camera capable of a minimum resolution of 300 dpi.

C. Take preconstruction photographs of physical features on private and public property which may be disturbed by Contractor's operations:

1. Take photographs just prior to start of construction in a particular area.

2. Camera angle, direction, and frequency will be dictated by range and nature of physical features to be recorded.

3. Provide all photos on CD/DVD in format acceptable to Engineer.

D. Take construction photographs of job progress and completed project.

E. Identify prints with date, time, orientation, and project identification. Contractor to submit a digital photo index with each submittal.

F. Photographer shall submit one acceptable copy of digital photos on disk to Engineer, who will be sole judge of acceptability.

1.10. COORDINATION

A. Coordinate scheduled Work sequences and related operations beforehand with appropriate local, county, and state officials and agencies including affected property owners, when project is to be located in or adjacent to the public right-of-way.

B. Coordinate scheduling, submittals, and Work of the various Sections of Specifications to assure efficient and orderly sequence of installation of interdependent construction elements.

C. Coordinate completion and clean up of Work of separate Sections in preparation for Substantial Completion.

D. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.11. FIELD ENGINEERING

A. Control datum for survey work is that provided by Engineer as shown on the Drawings.

B. Engineer will provide two control points at site.

C. Engineer reserves right to inspect or check results of field engineering services provided under paragraph D for conformance with Contract Documents.

D. Contractor shall provide field engineering services as follows:

1. Employ a land surveyor licensed in the State of New York and acceptable to Engineer.

2. Protect all control and reference points. Accurately replace any such point which is damaged or moved.

3. Provide correct lines, grades, locations and elevations for construction of all Project components.

4. Provide correct information for preparation of Project record documents.

a. Survey remediation area after installation of geotextile and soil cover layer at common survey points.

b. Density of survey points shall be as needed to demonstrate minimum thickness of soil cover layer. Maximum grid spacing shall be 75 feet with additional points at breaks in grade. Provide a table of survey points showing elevation of geotextile layer, soil cover final elevation, and calculate difference in elevation at each survey point.

5. Submit signed and stamped drawings by the land surveyor who provided field engineering services. Also provide AutoCAD Version 10 compatible drawing file with point file.

1.12. PRECONSTRUCTION CONFERENCE

A. Engineer will schedule a conference after Effective Date of Agreement. Attendance required: Owner, Engineer, Contractor, and Contractor's job superintendent. Optional attendees include New York State Department of Environmental Conservation, New York State Department of Health, and City of Yonkers.

B. Agenda

1. Distribution of extra sets of Contract Documents.

2. Submission of list of Schedule of Values and progress schedule.

3. Designation of personnel representing the parties in contract and the Engineer.

4. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, change orders and contract closeout procedures.

5. Scheduling.

6. Scheduling activities of testing laboratory, if required.

7. Requirements of regulatory agencies.

8. Use of premises by Owner and Contractor.

9. Temporary facilities to be provided by Contractor.

10. Procedures for maintaining record documents.

11. Maintenance of vehicular traffic.

12. Periodic cleanup of site.

13. Notification of utilities' owners.

C. Engineer will record minutes and distribute copies within five days after meeting to participants, and to those affected by decisions made.

1.13. PROGRESS MEETINGS

A. Engineer will schedule and administer meetings throughout progress of the Work at bi-weekly intervals.

B. Engineer will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies within five days to participants, and those affected by decisions made.

C. Attendance Required - Owner, Engineer, and Contractor's job superintendent.

D. Agenda

1. Review minutes of previous meetings.

2. Review of Work progress.

3. Field observations, problems, and decisions.

4. Identification of problems which impede planned progress.

5. Review of submittals schedule and status of submittals.

6. Review of off-site materials and delivery schedules.

7. Maintenance of progress schedule.

8. Corrective measures to regain projected schedules.

9. Planned progress during succeeding work period.

10. Coordination of projected progress.

11. Maintenance of quality and work standards.

12. Effect of proposed changes on progress schedule and coordination.

13. Other business relating to Work.

1.14. SUBMITTALS

A. Procedures

1. Transmit each required submittal using Engineer accepted form.

2. Sequentially number the transmittal forms. Resubmittals to have original number with an alphabetic suffix.

3. Identify project, Contractor, subcontractor or supplier; pertinent Drawing sheet and detail number(s), and Specification Section number, as appropriate.

4. Apply Contractor's stamp, signed or initialed certifying that review, verification of products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents. Stamp shall show the following information:

a. Shop Submittal Number_____

b. Deviations: None_____; As Listed_____

c. Reference Specification Number_____

d. Reference Drawing Number_____

e. Space Requirement: As Designed_____ Different,

As Listed_____

f. Representation is made to the Owner and Engineer that the Contractor has determined and verified all field measurements and quantities, field construction criteria, materials, catalog numbers and similar data, the he has reviewed and coordinated the information in each shop drawing with the requirements of the work and the Contract Documents, and hereby approves this submittal.

Contractor_____

Signature_____

Date_____

5. Schedule submittals to expedite the Project, and deliver to Engineer at business address. Coordinate submission of related items.

6. Identify deviations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work. Identify space requirements which differ from those designed or shown on the Contract Documents.

7. Provide space for Contractor and Engineer review stamps.

8. Revise and resubmit submittals as required, identify all changes made since previous submittal.

9. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

B. Construction Progress Schedule

1. Submit preliminary progress schedule at preconstruction meeting for Engineer review.

2. Submit finalized progress schedule at least 10 days before submission of the first Application for Payment.

3. Submit revised schedules at each progress meeting, identifying changes since previous version.

4. Prepare horizontal bar chart with separate entry for each major section of Work. Include Work Sequence requirements, if any. Identify first workday of each week.

5. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities.

6. Indicate estimated percentage of completion for each item of Work at each progress meeting.

C. Shop Drawings

1. Submit five opaque reproductions to Engineer, three copies of which will be retained by the Engineer.

2. After review and approval by Engineer, distribute and preserve copies for record documents purposes.

1.15. QUALITY CONTROL; INSPECTIONS AND TESTS

A. Quality Assurance/Control of Installation

1. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

2. Comply fully with manufacturers' instructions, including each step in sequence.

3. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.

4. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

5. Perform Work by persons qualified to produce workmanship of specified quality.

6. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

7. Furnish field samples at the site as required by individual specification sections.

8. Acceptable samples represent a quality level for the Work.

B. Inspection and Testing by Laboratory Services

1. Contractor shall employ and pay for the services of an independent testing laboratory, acceptable to Owner and Engineer, to perform tests and inspections required by the Contract Documents.

2. Independent testing laboratory shall:

a. Perform inspections, tests, and other services specified in the individual specification sections and as required by Engineer and Owner.

b. Perform inspecting, testing, and source quality control which may occur on or off project site, as required by Engineer or Owner.

c. Prepare and submit reports to the Engineer, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.

3. Contractor shall:

a. Cooperate with independent firm; furnish samples of materials; furnish design mix, equipment, tools, storage and assistance as requested.

b. Notify Engineer and independent firm 24 hours prior to expected time for operations requiring services.

c. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's own use.

4. Retesting required because of non-conformance to specified requirements shall be performed, on instructions by the Engineer, by the same independent firm which performed the initial tests and inspections.

5. Payment for retesting will be charged to the Contractor by deducting testing and inspection costs from the Contract Price.

1.16. MATERIAL AND EQUIPMENT

A. Products - Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components, if required by the Contract Documents, for reuse.

B. Transportation and Handling

1. Arrange deliveries of products in accordance with construction progress schedules. Allow time for inspection prior to installation.

2. Coordinate deliveries to avoid conflict with work, conditions at site, and availability of personnel and handling equipment.

3. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry, with identifying labels intact and legible.

4. Provide equipment and personnel to handle products by methods to prevent soiling or damage. Protect sensitive equipment and finishes against impact, abrasion and other damage.

5. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

C. Storage and Protection

1. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weathertight, climate controlled enclosures.

2. For exterior storage of fabricated products, place on sloped supports, above ground.

3. Provide off-site storage and protection when site does not permit on-site storage or protection.

4. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.

5. Store loose granular materials on solid flat surfaces in a well-drainage area. Prevent mixing with foreign matter.

6. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

7. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01003

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01. SECTION INCLUDES

A. Temporary Utilities - Electricity, telephone service, water, and sanitary facilities.

B. Temporary Controls - Barriers, protection of the work, water control and pollution controls.

C. Construction Facilities - Access roads, parking, maintenance of traffic, progress cleaning, and removal of utilities, facilities and controls.

1.02. RELATED SECTIONS

A. Section 01005 - CLOSEOUT: Final cleanup.

1.03. TEMPORARY UTILITIES

A. Electricity - Provide and pay for power service required from source.

1.04. TELEPHONE SERVICE

A. Engineer will pay for own telephone service.

1.05. TEMPORARY WATER SERVICE

A. Provide, maintain and pay for suitable quality water service required for construction operations.

B. Provide sufficient potable quality drinking water for workers at project site.

1.06. TEMPORARY SANITARY FACILITIES

A. Provide and maintain required sanitary facilities and enclosures for use by all persons employed at the site.

B. Remove facilities from site at end of construction.

C. Facilities shall be maintained in conformance with applicable state regulations and local ordinances. Contents shall be removed and disposed of in satisfactory manner as occasion requires.

D. Enforce sanitary regulations amongst employees and take precautions against infectious diseases as deemed necessary. Isolate infected employee(s) and arrange for immediate removal of such person(s) from site.

1.07. BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, and to protect existing facilities and adjacent properties from damage from construction operations.

B. Provide barricades and walkways required by governing authorities for public rights of way.

C. Provide protection for plant life designated to remain. Replace damaged plant life.

D. Protect non-owned vehicular traffic, stored materials, site and structures from damage.

E. Supplement barriers with suitable signs, railings, fencing and night lights, as necessary.

1.08. WATER CONTROL

A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

B. Protect site from puddling or running water.

1.09. PROTECTION OF INSTALLED WORK

A. Protect installed Work from damage and deterioration due to floods, driving rain, wind, snow storms or freezing temperatures; provide special protection where specified in individual specification sections.

B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to minimize damage.

C. Prohibit traffic over landscaped areas.

D. Owner reserves right to order that additional protective measures be taken beyond those proposed by Contractor, to safeguard the Work.

1.10. ACCESS ROADS

A. Provide and maintain temporary access roads to project site as follows:

1. Construct roads along designated rights-of-way to connect public thoroughfare(s) with construction area.

2. Extend and relocate roads as work progress requires. Provide detours as necessary for unimpeded traffic flow.

3. Roads shall be free for use by all personnel involved in project, and be adequate for transportation of persons, materials, equipment and products to construction area.

4. Maintain roads in serviceable condition, free of obstructions, potholes, ponded water, debris, accumulated snow and ice, until completion of project or until permanent access roads are installed.

5. When no longer required, remove roads and restore disturbed areas to original site conditions.

B. Designated existing on-site roads may be used for construction traffic.

1.11. PARKING

A. Provide temporary gravel surface parking areas to accommodate all construction personnel involved with project.

B. When site space is not adequate, provide additional off-site parking.

C. Coordinate construction activities and access with existing parking area along Stew Leonard Drive.

1.12. MAINTENANCE OF TRAFFIC

A. Maintain and regulate traffic within Contract Limits in accordance with applicable state, county, and local regulations.

B. Conduct operations so as to maintain access for vehicular and pedestrian traffic to and from properties adjoining or adjacent to those streets and roads affected by construction activities, and to subject the public to a minimum of delay and inconvenience.

C. Erect suitable signs and barricades including warning lights at night, to alert traveling public. Provide watchmen and flagmen as necessary to maintain and regulate traffic.

D. When the normal route of vehicular access to any property must be temporarily obstructed, notify the affected property owner at least 24 hours in advance of intended operations at the location. The route shall subsequently be re-opened not later than one day following the start of construction at that location, unless special arrangements have been made with property owner. Vehicular access to hospitals, Fire and Police Departments must be provided at all times.

1.13. PROGRESS CLEANING

A. Maintain areas free of waste materials, debris and rubbish; collect and remove same from site periodically and dispose off-site.

B. Store unused tools and equipment at Contractor's yard or base of operations.

1.14. POLLUTION CONTROLS

A. Dust Control

1. Execute Work by methods to minimize raising dust from construction operations.

2. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

B. Erosion and Sediment Control

1. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas.

2. Minimize amount of bare soil exposed at one time.

3. Provide temporary measures such as berms, dikes, and drains, to regulate water flow and prevent soil erosion.

4. Periodically inspect earthwork in disturbed areas to detect evidence of erosion and sedimentation; promptly apply corrective measures.

C. Noise Control

1. All construction equipment and tools exhibiting potential noise nuisance shall be provided with noise muffling devices.

2. Confine use of such equipment and tools during regular working hours between the hours of 7:00 a.m. and 6:00 p.m.

D. Pollutants Control - Provide methods, means and facilities to prevent contamination of soil, water and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

1. Implement controls outlined in the Stormwater Pollution Prevention Plan (SWPPP) approved by the City of Yonkers.

1.15. REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary above grade or buried utilities, equipment, facilities, materials, prior to Final Application for Payment.

B. Remove temporary controls, barriers, enclosures, etc. in concert with completion of those segments of Work which no longer require such measures.

C. Clean and repair damage caused by installation or use of temporary work.

D. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01005

CLOSEOUT

PART 1 GENERAL

1.01. SECTION INCLUDES

A. Closeout procedures.

B. Final cleanup.

C. Project record documents.

1.02. RELATED SECTIONS

A. Section 01001 - BASIC REQUIREMENTS

B. Section 01003 - TEMPORARY FACILITIES AND CONTROLS: Removal of utilities, facilities and controls.

1.03. CLOSEOUT PROCEDURES

A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's inspection.

B. Correct or replace defective work in accordance with requirements of the Contract Documents.

C. Provide submittals to Engineer that are required by the Contract Documents.

Before the Certificate of Substantial Completion is issued, submit to the Engineer the following:

1. Test results of project components.

2. Survey results of elevations of cover system.

D. Conform to procedures established by Engineer for final payment application, certificate of substantial completion, final inspection, release of liens, and other related documentations or conditions required by Contract Documents.

1.04. FINAL CLEANUP

A. Execute final cleanup prior to final inspection.

B. Clean site; sweep paved areas, rake clean restored surfaces.

C. Remove waste and surplus materials, rubbish, sheds, tools and construction facilities from the site.

1.05. PROJECT RECORD DOCUMENTS

A. Maintain on site, one set of the following record documents; record actual revisions to the Work:

1. Contract Drawings.

2. Specifications.

3. Addenda.

4. Change orders and other modifications to the contract.

5. Approved shop drawings, product data, and samples.

B. Store record documents separate from documents used for construction.

C. Record information concurrent with construction progress; make available for periodic examination by Engineer.

D. Ensure that entries are complete and accurate, enabling future reference by Owner.

E. Contract Drawings and Shop Drawings - Legibly mark in red ink or pencil to show all changes in, or directly associated with, the work of this contract. Keep entire set of drawings current on day-to-day basis. Examples of types of changes which could occur and are to be recorded:

1. Change in location or elevation of manholes, meter pits, or similar underground structures.

2. Change in dimensions of structures.

3. Unforeseen modifications to existing structures made necessary by work requirements.

4. Change in materials, such as pipe materials.

5. Relocation of existing underground utilities made necessary because of interference with work under this contract.

6. Change in topographical contours of finished earth and paved surfaces.

F. Affix Contractor’s identification stamp to each Contract Drawing, shop drawing, and on the front cover of all other documents, labeling each as “Record Documents.”

G. Submit documents to Engineer.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01026

LUMP SUM ITEMS (BID ITEM DESCRIPTIONS)

PART 1 GENERAL

1.01. SECTION INCLUDES

A. Price make-up.

B. Elements of Bid Item Description page.

C. List of lump sum items.

D. Bid Item Descriptions - Attached pages.

1.02. RELATED SECTIONS

A. Section 01001 - BASIC REQUIREMENTS: Identification of the Project and work covered by the Contract Documents.

1.03. PRICE MAKE-UP

A. Lump sum prices bid by Contractor are deemed to be full compensation for all required labor, products, tools, equipment, plant, transportation, testing, inspection, services, incidentals, administrative, procedures, applicable taxes, permit fees, overhead, profit, and other miscellaneous expenses.

1.04. ELEMENTS OF BID ITEM DESCRIPTION PAGE

A. Identification of lump sum item, as set forth in the Bid Form.

B. Brief statement of work involved in the item.

C. Listing of components of work which make up the item including reference to the Section(s) covering each component.

D. Cross-references to associated work not included in the item.

1.05. LIST OF LUMP SUM ITEMS - CONTRACT NO. 1

Bid Item No. and Title	Bid Item Description Number
Remedial Design Construction	BI-1

1.06. BID ITEM DESCRIPTIONS

A. Bid Item Description pages identified above are attached at the end of this Section.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

LUMP SUM ITEM BID ITEM 1

REMEDIAL DESIGN CONSTRUCTION

A. DESCRIPTION

Under this item, the Contractor shall provide all labor, materials, and equipment required to construct the remedial design.

B. WORK INCLUDED UNDER THIS ITEM

Mobilization, Demobilization, Construction Administration (Sections 01001, 01003, and 01005)

Site Clearing and Debris Removal (Section 02110)

Protection of Existing Facilities (Section 02205)

Erosion and Sediment Control, Stormwater Management (Sections 01564 and 02141)

Geotextile Demarcation Layer (Section 02420)

Soil Cover Layer (Sections 02223)

Site Rehabilitation (Section 02980)

C. ASSOCIATED WORK NOT INCLUDED UNDER THIS ITEM

None; all work under this Bid Item.

D. METHOD OF PAYMENT

Payment will be made on a prorated basis on the percentage of work completed each month in accordance with the Contractor's Schedule of Values.

SECTION 01564

EROSION CONTROL

PART 1 GENERAL

1.01. SECTION INCLUDES

A. Installation of sedimentation and erosion control barriers.

B. Anchoring all topsoil stockpiles with straw mulch and ringing with haybales.

C. Protection of catch basins with haybale or silt fence rings.

D. Inspection of all erosion measures after each rainfall and at least daily during prolonged rainfall.

E. Repairing immediately any failed sedimentation and erosion control barrier.

F. Removing and disposing sediment deposits in a manner that does not result in additional erosion or pollution.

G. Removal of haybales or silt fences after completion of construction and permanent stabilization of erosion.

H. Removal of sedimentation barriers after completion of construction.

1.02. RELATED SECTIONS

A. Section 01026 - LUMP SUM ITEMS: Requirements applicable to lump sum prices for work of this section.

B. Section 02110 - SITE CLEARING

C. Section 02222 - EXCAVATING

D. Section 02223 - BACKFILLING

E. Section 02980 - SITE REHABILITATION

1.03. PERFORMANCE REQUIREMENTS

A. Observe government policy established by United States Environmental Protection Agency (USEPA) Memorandum 78-1.

B. Observe requirements set forth by the Federal Highway Administration Task Force 25.

C. Conform all erosion and sedimentation control measures of “New York Guidelines for Urban Erosion and Sediment Control” published by USDA Soil Conservation Service.

D. Temporary erosion and sediment control measures shall be installed as the first step in construction and shall not be removed until permanent cover is completely established and stabilized.

1.04. PLAN

A. Taking into account specific constraints or other criteria outlined herein, the Contractor shall prepare a detailed plan which sets forth his program of operations to effectively control erosion and sediment-runoff at all times during construction and during the one-year guarantee period following completion of the work in conformance with the approved SWPPP.

1. Two copies of the plan shall be filed with the Engineer.

2. At least one copy shall be kept at the project site at all times, and shall be made available for examination by authorized representatives of the regulatory agencies having jurisdiction over the project.

3. The plan shall be arranged so as to include:

a. Chronological completion dates for each temporary (and permanent) measure for controlling erosion and sediment.

b. Location, type and purpose for each temporary measure to be undertaken.

c. Dates when those temporary measures will be removed.

4. The plan shall be submitted within five days after the Notice to Proceed.

PART 2 MATERIAL AND PRODUCTS

2.01. MATERIALS

A. Hay/Straw Bales - Shall be securely tied and measure 14 inches by 18 inches by 30 inches long or greater.

B. Silt Fence

1. Skaps Industries SW 200, Mirafi 100X or equal meeting the physical and mechanical requirements of FHA Task Force 25 specification guide for temporary silt fence.

2. Silt fence shall be constructed using fence posts and wire fence or prefabricated units in accordance with New York guidelines for urban erosion and sediment control.

C. Stakes and Fasteners

1. Shall be two #3 rebar or two 2-inch by 2-inch minimum hardwood stakes for each hay/straw bale.

2. Shall be a minimum of 2-inch by 2-inch minimum 48-inch hardwood post for silt fences.

D. Erosion Control Fabric - North American Green Type S75 or equal shall be used.

2.02. PRODUCTS

A. Sediment Barriers - Sediment barriers shall be hay or straw bales, stone, silt fences or other approved materials that will prevent migration of silts and sediment to receiving waters.

B. Mulch and Seeding - Mulch and seeding shall be in accordance with requirements of Tables 1 through 4 of this section.

C. Diversion Terraces - Diversion terraces shall be installed on the uphill side of the disturbed areas to divert surface runoff away from unstabilized slopes.

D. Interceptor Channels - Interceptor channels shall be installed across disturbed areas where the slope is running parallel to the direction of trenches.

PART 3 EXECUTION

3.01. GENERAL REQUIREMENTS

A. General drawings do not show all of the necessary control measures to prevent erosion and sedimentation.

1. The Drawings only show several techniques such as swale and haybale and silt fence details. There are a number of control techniques discussed in this section.

2. It is the Contractor's responsibility to design, implement and maintain erosion and sedimentation control measures which effectively prevent accelerated erosion and sedimentation to accommodate the site conditions and sequence of work.

B. Earthmoving activities shall be conducted in such a manner as to prevent accelerated erosion and sedimentation.

C. All erosion and sedimentation control measures shall be inspected by the Contractor daily and immediately after periods of rainfall.

1. Repair and/or maintenance of sedimentation and erosion control measures will be made as soon as needed.

2. The Contractor will be held responsible for the implementation and maintenance of all control measures on this site.

D. Land disturbance shall be kept to a minimum.

1. Restabilization will be scheduled immediately after any disturbance.

E. Silt fences or haybales will be installed along the toe of all critical cut and fill slopes.

F. Catch basins will be protected with silt fences or haybales throughout the construction sequence and until all disturbed areas are stabilized.

G. Erosion and sedimentation control measures will be installed prior to all construction activities.

H. Sediment removal from control structures shall be the responsibility of the Contractor.

1. Sediment shall be disposed of in a manner which is consistent with overall intent of plan and which does not result in additional erosion.

I. The erosion and sedimentation control measures described herein are intended as a general guide for the Contractor.

1. It is the Contractor's responsibility to provide any and all work necessary to prevent erosion of soil from the construction site and to provide silt fences, haybales or other control measures as the need arises during construction at no additional cost to the Owner.

J. Remove all sedimentation and erosion control barriers after completion of construction and permanent stabilization of erosion.

3.02. DIVERSION TERRACES

A. Diversion terraces shall be used as a temporary measure installed on the uphill side of the disturbed areas to divert surface runoff away from unstabilized slopes, and the project area.

B. Recommended Minimum Dimensions

1. Height - 1.5 feet

2. Top Width - 2 feet

3. Side Slopes - 2:1 or flatter

4. Material - Soil

3.03. INTERCEPTOR CHANNELS

A. Interceptor channels shall be used across disturbed areas where the slope is running parallel to the direction of trenches.

B. Interceptor channels reduce erosion by intercepting storm runoff and diverting it to outlets on the lower side of the disturbed area where it can be disposed of having minimum erosion impact.

C. Recommended Dimensions and Materials

1. Depth - 0.5 feet

2. Width - 2 to 4 feet

3. Side Slopes - 2:1 or flatter

4. Spacing - Where required

5. Material - Stable on-site material

3.04. SEDIMENT BARRIERS

A. Sediment barriers shall be used at storm drain inlets; across minor swales and ditches; and at other applications where the structure is of a temporary nature and structural strength is not required.

1. Sediment barriers are temporary berms, diversions, or other barriers that are constructed to retain sediment on-site by retarding and filtering storm runoff.

B. Recommended Materials and Dimensions

1. Hay or Straw Bales

a. Bales shall be installed so that runoff cannot escape freely under the bales.

b. Height - 1.5 feet

1) Width - 1.5 to 3.0 feet

2) Cross-Sectional Area Required Per Tributary Acre - 50 square feet

2. Stone

a. Height - 1.5 to 2.0 feet (uniform top elevation) top

b. Width - 3 to 5 feet

c. Side Slopes - 3:1 or flatter

d. Cross-Sectional Area Required Per Tributary Acre - 20 square feet

e. Material - Coarse rock or stone

3. Silt Fence

a. Synthetic fabric 48 inches wide for fencing material.

b. Hardwood stakes shall be per manufacturer's recommendations.

c. Height - ±30 inches above ground.

3.05. MULCH

A. Used alone or in conjunction with other structural or vegetative erosion control measure, mulch is applied on any disturbed area which is subject to erosion, for protection of disturbed soil or newly reseeded areas.

3.06. EROSION CONTROL FABRIC

A. Erosion control fabric shall be used on slopes greater than 10 percent. Prior to installation of the erosion control fabric, the underlying layer is to be graded as shown on the Drawings.

3.07. VEGETATION

A. Temporary Vegetation

1. The planting of temporary vegetative cover shall be performed on disturbed areas where the earthmoving activities will be ceased for a period of more than 45 days.

a. The vegetation shall provide short-term rapid cover for the control of surface runoff and erosion, until permanent vegetation can be established or earthmoving activities can resume.

2. Table 2 gives recommended types of temporary vegetation, corresponding rates of applications, and planting seasons.

   a. In situations where other cover is desired, the recommendations of the local and County Conservation Districts shall be followed.

B. Permanent Vegetation

1. Planting of various permanent vegetative covers shall be performed on disturbed areas where the earthmoving activities have ceased. The vegetation shall reestablish ground cover for the control of surface runoff and erosion.

2. The seed bed for permanent vegetative cover shall be prepared by using lime and fertilizer.

   a. If the time of the seeding occurs during a dry period, mulch shall be applied to conserve soil moisture.

3. Tables 3 and 4 give recommended procedures for establishing various types of permanent vegetation.

   a. The tables are differentiated by the drainage of the disturbed area.

   b. In situations where other cover is desired, the recommendations of the County Conservation Districts shall be followed.

TABLE 1

MULCH MATERIALS, RATES AND USES

MULCH MATERIAL	QUALITY STANDARDS	APPLICATION PER 1,000 SQ.FT.	RATES PER ACRE	DEPTHS OF APPLICATION
Straw or hay	Air-dried Free from coarse	75-100 lbs. 2-3 bales	1.5-2.5 tons 90-120 bales	Lightly cover 75 to 90% of surface
Wood chips	Green or air-dried	500-900 lbs.	10-20 tons	2" - 7"

TABLE 2

TEMPORARY SEEDINGS FOR EROSION CONTROL OF CONSTRUCTION SITES

SPECIES OR MIXTURE FOR TEMPORARY COVER	PERCENT BY WEIGHT	SEEDING RATES IN LBS. PER 1,000 SQ.FT.	RECOMMENDED SEEDING DATES
Annual Rye Grass	100%	1	April 1 to June 1 and August 15 to October 15
Field Broomegrass	100%	1	March 1 to June 15 and August 15 to September 15
Sundangrass	100%	1	May 15 to August 15

TABLE 3

PERMANENT SEEDINGS FOR WELL DRAINED AREAS

SPECIES OR MIXTURE FOR PERMANENT COVER	PERCENT BY WEIGHT	SEEDING RATES IN LBS. PER 1,000 SQ.FT.	RECOMMENDED SEEDING DATES
Ryegrass	100%	1	April 1 to October 15
Tall Fescue	100%	1 to 2	April 1 to October 15
Timothy	100%	1	April 1 to October 15
Tall Fescue or Ryegrass Crownvetch(1)	66% 34%	1 to 2	April 1 to July 15
Creeping Red Fescue and Crownvetch	67% 33%	1 to 2	April 1 to May 24
Flat Pea and Tall Fescue or(2)) Ryegrass	66 (80)% 34 (20)%	1 to 2	April 1 to July 15

(1) Inoculate legume seeds - use four times the normal rate when hydroseeding.
(2) When seedings are mulched, seeding may be extended from October 15 to April 1 for dormant seedings and April 1 to September 15 for regular seedings.

TABLE 4

PERMANENT SEEDINGS FOR AREAS OF VARIABLE DRAINAGE

SPECIES OR MIXTURE FOR PERMANENT COVER	PERCENT BY WEIGHT	SEEDING RATES IN LBS. PER 1,000 SQ.FT.	RECOMMENDED SEEDING DATES
Tall Fescue Birdsfoot	67%	1 to 2	April 1 to June 15
Trefoil	33%		
Tall Fescue Birdsfoot(2) Trefoil Crownvetch(1)	55% 25% 20%	1 to 2	April 1 to June 15

(1) Inoculate legume seeds - use four times the normal rate when hydroseeding.
(2) When seedings are mulched, seeding dates may be extended from October 15 to April 1 for dormant seedings and April 1 to September 15 for regular seedings.

3.08. SPECIAL CONDITIONS

A. Prohibited Construction Practices - Prohibited construction practices include but shall not be limited to the following:

1. Dumping of spoil material into any stream corridor, any wetlands, any surface waters or at unspecified locations, even with permission of the property owner.

2. Indiscriminate, arbitrary or capricious operation of equipment in any stream corridors, any wetlands or any surface waters.

3. Pumping of silt-laden water from trenches or other excavations into any surface waters, any stream corridors or any wetlands.

4. Damaging vegetation adjacent to or outside of the access road or the right-of-way.

5. Disposal of trees, brush and other debris in any stream corridors, any wetlands, any surface water or at unspecified locations.

6. Permanent or unspecified alteration of the flow line of the stream.

7. Open burning of construction project debris.

B. Defective Devices - Any erosion and sediment control devices which become damaged, clogged or otherwise non-functional shall be immediately replaced by the Contractor, without additional compensation.

C. Adjustment

1. If the planned measures do not result in effective control of erosion and sediment runoff to the satisfaction of the regulatory agencies having jurisdiction over the project, the Contractor shall immediately adjust his program and/or institute additional measures so as to eliminate excessive erosion and sediment-runoff.

2. If the Contractor fails or refuses to comply promptly, the Owner may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor.

END OF SECTION

SECTION 02110

SITE CLEARING

PART 1 GENERAL

1.01. SECTION INCLUDES

A. Removal of surface debris, rubbish, snow and water without unnecessary excavation of topsoil and subsoil.

B. Removal of trees, shrubs, and other plant life.

C. Removal of stumps and root system of trees and shrubs.

D. Disposal of excess materials, trash, and debris.

1.02. RELATED SECTIONS

A. Section 01003 - TEMPORARY FACILITIES AND CONTROLS

B. Section 01026 - LUMP SUM ITEMS: Requirements applicable to lump sum prices for the work in this section.

C. Section 01564 - EROSION CONTROL

1.03. REGULATORY AND DISPOSAL REQUIREMENTS

A. Coordinate clearing work with utility companies.

B. Conform to applicable local, state, and federal codes for environmental requirements and disposal of debris.

C. On-site disposal of surplus materials, if permitted by the Owner, shall be as approved by the Engineer.

D. Make all arrangements for disposal sites, unless the Owner designates special locations. All expenses for disposal shall be borne by the Contractor. Bidders shall carefully investigate all aspects of surplus material disposing operations.

E. Prior to depositing surplus material at any off-site location, obtain a written agreement between Contractor and the owner of the property on which the disposal of the material is proposed. The agreement shall state that the owner of the property gives permission for the Contractor to enter and deposit material of a particular classification on the owner's property at no expense to the project Owner, and shall include any other conditions pertinent to the situation as agreed upon by each party. A copy of said agreement shall be furnished to the Owner.

F. Follow standard horticultural practice for cutting and/or pruning of trees, brush, and shrubs.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.01. PREPARATION

A. Verify that existing plant life designated to remain, is tagged or identified.

B. Mark limits of clearing by flagging, fencing or other approved methods.

C. Vehicles used to haul soft or wet material over streets or pavements shall be sufficiently watertight to prevent deposits on the streets or pavements. In all cases where any materials are dropped from the vehicles of the Contractor, Contractor shall clean up the same, and keep the crosswalks, street and pavements clean and free from debris.

D. Identify on-site waste or salvage areas for placing removed materials as approved by the Engineer.

3.02. PROTECTION

A. Locate, identify, and protect existing utilities that are to remain, including notification of Underground Facilities Protection Organizations having jurisdiction in the geographic area (Call Before You Dig [CBYD]).

B. Install temporary fences (minimum 3 feet high) to protect trees, plant growth, and features designated to remain.

C. Protect bench marks, survey control points and existing structures from damage or displacement.

D. Where trees are to be protected or preserved, no excavation and grubbing, except as directly required for construction, shall be performed within the radius of spread of tree branches.

E. No storage of topsoil materials or construction equipment will be permitted within the radius of spread of such tree branches.

3.03. CLEARING

A. Clear areas required for access to site and execution of Work.

B. Remove abandoned cars, debris, and garbage piles.

C. Remove trees and shrubs within marked areas indicated as needed to complete the work. Cut tree stumps level with surface grade.

D. Clear undergrowth and deadwood, without disturbing subsoil.

E. Remove debris, extracted rock, and plant life.

3.04. DISPOSAL OF MATERIAL

A. On-site disposal of chipped wood material will be allowed at disposal locations designated by Owner, and disposed of as acceptable to Engineer.

B. All other material shall be treated as surplus material and disposed of off-site in a legal manner.

C. No topsoil shall be removed from the site without Owner's permission.

END OF SECTION

SECTION 02141

REMOVAL OF WATER

PART 1 GENERAL

1.01. SECTION INCLUDES

A. Providing equipment, materials and labor required to successfully complete the work included in this section.

B. Maintaining and operating pumps and related equipment, including standby equipment, of sufficient capacity to adequately perform dewatering as required by this section.

C. Intercepting seepage from excavation slopes.

D. Controlling groundwater flow that may adversely affect excavation or construction activities.

E. Removing and/or disposing of spoil, excess materials, equipment, trash and debris used for or resulting from the work included in this section.

1.02. RELATED SECTIONS

A. Section 01026 - LUMP SUM ITEMS: Requirements applicable to lump sum prices for the works of this section.

B. Section 01003 - TEMPORARY FACILITIES AND CONTROLS

C. Section 01564 - EROSION CONTROL

D. Section 02222 - EXCAVATING

1.03. REGULATORY REQUIREMENTS

A. Conform to applicable local, state and federal codes for legal disposal of water.

B. Temporary water supplies shall meet requirements of local, state and federal regulatory agencies.

C. Conform to applicable OSHA standards.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.01. PREPARATION

A. Review the available information and become familiar with the groundwater conditions at the site. Allocate sufficient time and use appropriate procedures based on these conditions for dewatering excavations as may be needed to complete the work.

3.02. REMOVAL OF WATER

A. Assume responsibility for site, surface and subsurface drainage. Maintain such drainage as specified herein during the life of the contract.

B. Supply all supervision, labor, material, equipment, including standby equipment, necessary to maintain a dry excavation as may be necessary to construct the project.

C. Maintain groundwater in or below the bearing strata at a safe level at all times by methods which prevent loss of fines, which preserves the undisturbed state of subgrade soils and which sufficiently lowers the groundwater level in permeable strata at or below excavation and fill levels such that blowing or unstable conditions do not develop in the bottom or sides of excavation or fill areas.

D. Protect all adjacent structures, existing and under construction, from settlement, flotation, damage or other adverse effects resulting from water removal or dewatering methods.

E. Install all drains, ditching, sluiceways, pumping equipment, sumps, cutoff trenches, and all other equipment and structures necessary to create and maintain a dry excavation.

F. Discharge water removed from the site to natural watercourses, storm drains or channels.

1. Large quantities of water shall not be discharged as overland flow. Overland flow is not permitted onto private property.

2. No unpolluted water shall be discharged to sanitary sewers.

3. Wastewater shall be disposed of in a manner satisfactory to the local Public Health Officer.

G. Dewatering operations shall cease when all foundations, structures, pipe installations and other excavated areas have been properly backfilled and compacted, and are safe from damage, flotation, settlement and displacement.

3.03. MAINTENANCE

A. Operate and maintain dewatering and removal operations on a 24-hour basis for the time required to complete that portion of the Work which requires dewatering.

END OF SECTION

SECTION 02205

PROTECTION OF EXISTING FACILITIES

PART 1 GENERAL

1.01. SECTION INCLUDES

A. Location of facilities.

B. Notification of owners and authorities.

C. Coordination and preparation.

D. Protection of facilities.

E. Relocation of facilities.

F. Protection of sewers and storm drains.

G. Protection of water mains near sewers.

H. Abandonment of utilities.

I. Restoration of property markers.

1.02. RELATED SECTIONS

A. Section 01003 - TEMPORARY FACILITIES AND CONTROLS

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.01. LOCATION OF FACILITIES

A. Prior to construction, verify location of existing underground facilities near or adjacent to project.

1. Consult with appropriate Underground Facilities Protection Organization (CBYD) and arrange for field stake-out or other markings to show locations.

B. Report field stake-out findings and results of exploratory excavations to Engineer if possible changes in project location or design are indicated because of suspected interferences with existing facilities. Allow Engineer sufficient time to determine magnitude of changes and to formulate instructions in that regard.

C. If location of an existing underground facility is uncertain, apply careful excavation and probing techniques during construction to locate and avoid damage to same.

3.02. NOTIFICATIONS OF OWNERS AND AUTHORITIES

A. Prior to construction, notify owners of existing facilities, including local Police and Fire Departments, of general scope, nature and planned progress schedule of the Work.

B. Notify owners of nearby underground facilities when excavating or blasting is to take place in a particular area, allowing them reasonable time to institute precautionary procedures or preventive measures which they deem necessary for protection of their facilities.

C. When existing utilities, such as sewer, water, gas, telephone or electric power are damaged or disturbed during construction, immediately notify affected Owner and Project Owner.

D. Notify Police and Fire Departments, including affected owners, immediately if hazardous conditions are created or have the potential for occurring, as a result of damage to an existing facility or as a result of other activities at project site. Hazardous conditions could be created from: fire, explosion, escape of gas, escape of fuel oil, gasoline or industrial fluids, downed electrical wires, and disrupted underground electrical cables.

3.03. COORDINATION AND PREPARATION

A. Discuss anticipated work schedule with local authorities and owners of utilities at preconstruction meeting, including procedures to be followed if one or more utilities are damaged or disrupted. Develop contingency plans to address Contractor's role in repair of damaged utilities.

B. Make preparations beforehand to repair and restore damaged utilities, including arrangements for standby materials and equipment to be promptly assembled at site and utilized immediately.

C. Make preparations for and conform to applicable requirements of New York State Industrial Code Rule 53 (as amended April 1, 1975) entitled, "Construction, Excavation and Demolition Operations at or Near Underground Facilities," issued by State Department of Labor.

3.04. PROTECTION OF FACILITIES

A. Plan and conduct construction operations so that operation of existing facilities near or adjacent to the Work, including electric, telephone, sewer, water, gas or drainage utilities, are sustained insofar as the requirements of the project will permit.

B. Protect existing facilities from damage or movement through installation of adequate support systems and use of proper equipment, including application of careful excavation and backfilling techniques in sensitive areas.

C. Existing utilities and other facilities which are damaged by the Contractor's construction operations shall be promptly repaired by Contractor to the satisfaction of the affected owner or, if he so elects, that owner will perform the repairs with his own forces. Under either arrangement, such repair work shall be done at Contractor's expense.

D. When aboveground visible facilities such as poles, wires, cables, fences, signs or structures constitute an unavoidable interference, notify Engineer and consult with affected owner regarding temporary removal and later restoration of the interfering item. Arrange with that owner to remove and later restore the interfering item to the satisfaction of the owner, subject to approval of the project Owner; or, allow affected owner to perform such work with his own forces. Under either arrangement, such work shall be done at Contractor's expense.

E. Take all necessary precautions to prevent fires at or adjacent to the work, buildings, and other facilities. No burning of trash or debris is permitted.

3.05. RELOCATION OF FACILITIES

A. If the location or position of an existing gas or water pipe, public or private sewer or drain, conduit or structure be such as, in the opinion of Engineer, to require its removal, realignment or change, such alteration shall be without cost to the Contractor for the work of removal, realignment or change only.

B. Uncovering, supporting and sustaining such facility before its removal or before and after its realignment or change, shall be the Contractor's responsibility as part of the work of his Contract.

C. Contractor shall be entitled to extension of time for completion of entire Work as the Engineer determines that the entire Work was delayed by the removal, realignment or change of such obstruction.

3.06. PROTECTION OF SEWERS AND STORM DRAINS

A. Existing sanitary sewer laterals damaged in the work or temporarily disconnected shall be restored to operation by the end of each work day. Existing sanitary sewer laterals crossing over new pipelines to be restored in accordance with details shown on the Drawings.

B. Maintain existing manholes, catch basins, and other utility structures in their pre-work condition. Any material or debris entering same due to the Contractor's operation shall be promptly removed.

3.07. RESTORATION OF PROPERTY MARKERS

A. Property corner markers, boundary monuments, etc., disturbed or moved by the Contractor's operation shall be restored, in conformance with the property deed description, by a licensed land surveyor. Restoration of the property corner markers or boundary monuments shall be certified by said surveyor on a map prepared by him which shows the work accomplished. One copy of the map shall be given to the property owner and one copy given to the project Owner.

END OF SECTION

SECTION 02222

EXCAVATING

PART 1 GENERAL

1.01. SECTION INCLUDES

A. Excavation for termination of soil cover layer.

B. Relocation of shot rock for cover.

C. Excavation for asphalt pavement pad.

D. Excavation for general site grading.

1.02. RELATED SECTIONS

A. Section 01003 - TEMPORARY FACILITIES AND CONTROLS

B. Section 02205 - PROTECTION OF EXISTING FACILITIES

C. Section 02110 - SITE CLEARING

D. Section 02223 - BACKFILLING

1.03. FIELD MEASUREMENTS

A. Verify that survey benchmark and intended elevations for the Work are as indicated.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.01. PREPARATION

A. Identify required lines, levels, contours, and datum. Review subsurface report and other available site information.

B. Identify known underground, above ground, and aerial utilities. Stake and flag locations.

C. Protect above- and below-grade utilities which are to remain.

D. Protect plant life and other features remaining as a portion of final landscaping.

E. Protect benchmarks, existing structures, fences, sidewalks, paving, and curbs from excavation equipment and vehicular traffic.

F. Excavations shall be in complete accordance with all details of applicable codes, rules, and regulations including all local, state, and federal regulations including the Occupational Safety

and Health Administration (OSHA) Title 29 Code of Federal Regulations Part 1926, Subpart P - Excavations and Trenching Standards. Contractor shall designate a "Competent Person" 29 CFR 1926.32(f) who shall be responsible for inspections of excavations on a daily basis and document and maintain daily trenching and excavation logs per OSHA 29 CFR 1926.

3.02. CLASSIFICATION OF EXCAVATED MATERIAL

A. Classifications of excavated materials are as follows:

1. Unclassified Excavation - "Unclassified excavation" shall include all material excavated within the authorized lines and grades prescribed in the Drawings. Unclassified excavation shall include "rock excavation" as well as "common excavation" as defined herein.

2. Common Excavation - "Common excavation" shall include all excavation except "rock excavation." All unconsolidated and non-indurated material, rippable rock, loose rock, soft mineral matter, weathered rock or saprolite, and soft or friable shale which is removable with normal earth excavation equipment shall be considered "common excavation." All boulders and detached pieces of solid rock or concrete or masonry less than 1 cubic yard in volume shall be classified as "common excavation."

3. For this project, all excavated material shall be classified as unclassified excavation or common excavation.

3.03. EXCAVATING

A. Underpin adjacent structures which may be damaged by excavation work, including utilities and pipe chases.

B. Excavate subsoil required to accommodate soil cover layer.

C. Machine-slope banks to angle of repose or less to angle which is safe for specific material in which excavation is made.

D. Excavation cut not to interfere with normal 45-degree bearing splay of foundation. Undercutting of excavation faces will not be permitted.

E. Grade top perimeter of excavation to prevent surface water from draining into excavation.

F. Remove lumped subsoil and boulders under 1 cubic yard, measured by volume.

G. Notify Engineer of unexpected subsurface conditions, or of questionable soils encountered at required subgrade elevations, and discontinue work in area until notified to resume operations.

H. Place and compact excavated material in area designated on site.

3.04. DISPOSAL OF MATERIAL

A. On-site disposal of surplus material is required at locations designated by Owner and approved by Engineer. Reuse of excavated material as on-site fill shall conform with Section 02223. Relocate surplus material and grade prior to installation of geotextile and soil cover layer.

3.05. PROTECTION

A. Protect excavations by methods required to prevent cave-in or loose soil from falling into excavation.

B. Protect bottom of excavations and soil adjacent to and beneath foundation, from freezing.

C. Exposed subgrade surfaces shall remain undisturbed, drained, and maintained as uniform, plane areas, shaped to receive the foundation components of the building or structure.

END OF SECTION

SECTION 02223

BACKFILLING

PART 1 GENERAL

1.01. SECTION INCLUDES

A. Site cover layer.

B. Site filling and backfilling.

C. Classification of materials.

D. Consolidation and compaction.

1.02. RELATED SECTIONS

A. Section 01003 - TEMPORARY FACILITIES AND CONTROLS

B. Section 02110 - SITE CLEARING

C. Section 02222 EXCAVATING

D. Section 02228 - COMPACTION

E. Section 02420 - GEOTEXITLES

1.03. REFERENCES

A. ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates

1.04. SUBMITTALS

A. Granular Materials

1. Granular materials required for filling, backfilling, and other purposes shall be as shown on the Drawings. Prior to bidding, prospective contractors shall familiarize themselves with the available quantities of approved on-site and off-site materials.

2. For each on-site or off-site materials proposed, notify the Engineer of the source of the material at least 10 calendar days prior to the date of anticipated use of such material. Off-site materials shall be from a source that meets NYSDEC approval for backfill.

3. The Engineer reserves the right to inspect proposed source of off-site granular material and to order such tests of the materials as necessary to ascertain its quality and gradation of particle size. The Contractor shall, at his own expense, engage an approved testing laboratory to perform such test, and submit certified test results to the Engineer. If similar tests of the material from a particular source were recently performed previously, submit results of these tests to the Engineer for consideration.

4. No granular materials shall be used on this project until approval is obtained from the Engineer, and only material from approved sources shall be used.

PART 2 PRODUCTS

2.01. ON-SITE MATERIALS

A. Type E - Borrow Material

1. "Borrow material" is defined as approved on-site material required for fill or backfill in excess of the quantity of available material resulting from excavations for structures, roadways, etc.

2. Shot rock from the on-site stockpile may be used as the soil cover material if it is properly processed.

3. Approval of all borrow material must be obtained from the Engineer, and only material from approved sources shall be used.

4. Use of designated borrow areas shall be subject to the approval of the Engineer and Owner at all times. Test pits and analyses of borrow material shall be provided as required by the Engineer for each borrow area and at the expense of the Contractor.

a. Unclassified Borrow Material - This material consists of a naturally occurring mixture of sand, silts, clay, gravel, deteriorated rock or other inorganic particles.

Type E-2 - Referred to as "select borrow material" and from which all frozen material, humus, peat, roots, vegetation, ashes, trash, debris, and rocks or stones greater than 6 inches in any dimension have been removed.

2.02. SOIL COVER MATERIAL

A. Shall be a generally well-graded material.

B. May be unclassified borrow material resulting from processing on-site shot rock.

C. Shall meet the gradation requirements in Table 1.

D. Any off-site soil shall be sampled in accordance with Table 2 and tested in accordance with Table 3. Shot rock does not require testing.

TABLE 1

GRADATION REQUIREMENTS: SOIL COVER MATERIAL

Sieve Size	Percent Passing By Weight
6"	100
2"	40 - 100
No. 4	10 - 80
No. 40	0 - 50
No. 200	0 - 40

TABLE 2

SAMPLING REQUIREMENTS: SOIL COVER MATERIAL

Contaminant	VOCs	SVOCs, Inorganics, and PCBs/Pesticides	
Soil Quantity (CY)	Discrete Samples	Composite	Discrete Samples/Composite
0-50	1	1	3 to 5 discrete samples from different locations in the fill being provided will comprise a composite sample for analysis
50-100	2	1	
100-200	3	1	
200-300	4	1	
300-400	4	2	
400-500	5	2	
500-800	6	2	
800-1,000	7	2	
>1,000	An additional 2 VOCs and 1 composite for each additional 1,000 CY, or consult with DER.		

TABLE 3

TESTING REQUIREMENTS: SOIL COVER LAYER

Parameter	Test Method/Guidance	Criteria
VOCs	TCL EPA Method 8260	Commercial use SCOs
SVOCs	TCL EPA Method 8270	Or 6 NYCRR Part 375-6.8(b)*
Inorganics	TAL EPA Methods 6010 and 7471	Or 6 NYCRR Part 375-6.8(b)*
PCBs	EPA Method 8082	Or 6 NYCRR Part 375-6.8(b)*
Pesticides	EPA Method 8081A	Or 6 NYCRR Part 375-6.8(b)*

*Whichever is lower.

TCL - Target Compound List
TAL - Target Analyte List

PART 3 EXECUTION

3.01. EXAMINATION

A. Verify fill materials to be used are acceptable.

B. Verify that all subsurface installations for the project have been inspected and are ready for backfilling.

3.02. PREPARATION

A. On-site processing (crushing and/or screening) shall be performed on or adjacent to the shot rock pile. If possible, material shall not come in contact with areas subject to soil cover layer.

B. Inspect spaces to be backfilled and remove all unsuitable materials, including debris, prior to commencing backfilling operations.

C. Place geotextile layer in accordance with Section 02420.

3.03. BACKFILLING

A. Backfill areas to required contours, grades and elevations with unfrozen materials.

B. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.

C. Backfill material shall be inspected prior to placement and all roots, vegetation, organic matter, or other foreign debris shall be removed. Stones larger than 6 inches in any dimension shall be removed or broken. Stones shall not be allowed to form clusters with voids.

D. Grade backfill to promote positive surface drainage.

E. Maintain optimum moisture content of backfill materials to attain required compaction density.

F. Make grade changes gradual. Blend slopes into level areas.

G. Leave fill material stockpile areas completely free of excess fill materials.

3.04. TOLERANCES

A. Soil cover layer shall be a minimum of 12 inches in thickness.

3.05. FIELD QUALITY CONTROL

A. Final surface of soil cover layer shall be rolled to remove voids and stabilize the surface.

B. Engineer shall observe surface rolling to verify acceptability and identify areas needing more work.

END OF SECTION

SECTION 02420

GEOTEXTILES

PART 1 GENERAL

1.01. SECTION INCLUDES

A. Demarcation geotextile.

1.02. RELATED SECTIONS

A. Section 01003 - TEMPORARY FACILITIES AND CONTROLS

B. Section 02223 - BACKFILLING

1.03. REFERENCES

A. Quality Control Testing Standards

1. ASTM D4533 - Standard Test Method for Trapezoid Tearing Strength of Geotextiles

2. ASTM D4354 - Standard Practice for Sampling of Geosynthetics for Testing.

3. ASTM D4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

4. ASTMD4873 - Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples

5. ASTM D5261 - Standard Test Method for Measuring Mass Per Unit Area of Geotextiles.

6. ASTM D6241 - Standard Test Method for the Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50 mm Probe

1.04. SUBMITTALS

A. Certification that each geotextile meets the criteria listed in Table 1.

1.05. DELIVERY, STORAGE, AND HANDLING

A. The requirements for identification, storage and handling of geotextiles in ASTM D4873 shall be followed as a minimum.

PART 2 MATERIALS AND PRODUCTS

2.01. MATERIALS

A. Demarcation Geotextile

1. Shall be a needle-punched, non-woven geotextile specifically designed for separation applications.

2. Shall be composed of polyester and/or polypropylene polymers.

3. Shall meet the criteria listed in Table 1.

TABLE 1

MINIMUM ACCEPTANCE CRITERIA - GEOTEXTILE

Test Description	Test Method	Criteria
Demarcation		
Mass per unit area	ASTM D5261	4 oz/SY
Puncture resistance	ASTM D6241	250 lbs.
Tensile strength	ASTM D4632	100 lbs.
Trapezoid tear strength	ASTM D4533	45 lbs.

2.02. PRODUCTS

A. None from this section.

PART 3 EXECUTION

3.01. INSPECTION

A. The Contractor shall inspect all geotextile upon delivery and verify that the proper materials and quantities have been supplied.

B. The Contractor shall inspect the subgrade for protrusions or other unacceptable conditions prior to installation of geotextiles.

C. The Contractor shall continuously inspect needle-punched geotextiles during deployment for broken needles remaining from needle-punching operations.

3.02. PREPARATION

A. The subgrade shall be prepared as indicated in the specifications.

3.03. PROTECTION

A. Protect all geotextile materials from damage due to exposure to sunlight, dirt, dust and other hazards.

B. Maintain the protective wrapping on geotextile rolls at all times.

C. The geotextiles shall be covered within 10 days of installation.

D. During spreading operations of backfill, a minimum depth of 12 inches of aggregate shall be maintained over the geotextiles. Construction equipment shall not operate directly on the geotextile.

3.04. PERFORMANCE

A. Geotextile rolls shall be positioned as required and unrolled.

B. Geotextile shall be overlapped a minimum of 2 feet on all edges.

C. Geotextile rolls shall be cut and laid flat such that buckling of the roll does not occur.

D. If geotextiles are damaged during any phase of construction or installation, a new piece of the same type shall be cut and placed over the damaged area with a 2 foot minimum overlap.

E. Aggregate shall be spread in the direction of overlap wherever possible.

3.05. MAINTENANCE

A. Maintain geotextile rolls until backfilling operations have been completed.

3.06. SPECIAL CONDITIONS

A. Unauthorized Work - Unauthorized work shall be remediated by the Contractor, as directed by the Engineer, at no additional compensation.

END OF SECTION

SECTION 02980

SITE REHABILITATION

PART 1 GENERAL

1.01. SECTION INCLUDES

A. Restoration of uncultivated lands.

B. Topsoil, fertilizer, seeding, mulching and planting.

C. Site modifications and development to meet new conditions.

D. Removal and disposal of all excess materials, equipment, trash and debris used for, or resulting from, the work included in this section.

1.02. RELATED SECTIONS

A. Section 01001 - BASIC REQUIREMENTS

B. Section 01026 - LUMP SUM ITEM: Requirements applicable to lump sum prices for the work of this section.

C. Section 01564 - EROSION CONTROL

D. Section 02110 - SITE CLEARING

E. Section 02223 - BACKFILLING: Rough grading.

1.03. REFERENCES

A. The American Association of Nurserymen Standards - ANSI Standard 2-60.1, “Nursery Stock.”

B. Soil Conservation District of the Department of Agriculture.

1.04. QUALITY ASSURANCE

A. Areas and Features to be Restored

1. All areas, including natural features occurring thereon, which are damaged or disturbed by the Contractor’s operations, shall be restored, repaired or replaced to the same or superior condition which existed prior to construction or as modified herein or as shown on the Drawings.

2. Artificial features shall be restored equal to a new condition or as modified herein or as shown on the Drawings.

1.05. SUBMITTALS

A. Submit under provisions of Section 01001.

B. Topsoil - Submit sieve analysis and characteristics of topsoil as listed in Part 2.

C. Seed mixture data.

1.06. PACKING AND SHIPPING

A. All seed furnished for this project shall be delivered in standard size unopened bags of the vendor, showing weight, mixture, vendor's name and guaranteed analysis.

1.07. STORAGE

A. Seed shall be properly stored in dry conditions at the site of the work.

1. Any seed damaged or spoiled during storage shall be replaced by the Contractor.

1.08. ENVIRONMENTAL CONDITIONS

A. Topsoil shall not be delivered or placed in a frozen or muddy condition.

B. Seeding is to be done on dry or moderately dry soil.

1. Seeding is to be done when the wind velocity does not exceed 5 miles per hour.

1.09. SCHEDULE

A. The Contractor is advised to do all seeding during the periods of May 1st to June 15th, or August 15th to October 1st.

1. Seeding may be conducted under unseasonable conditions without additional compensation, and at the option and full responsibility of the Contractor.

1.10. GUARANTEE

A. Any new, reestablished, replaced or disturbed plant material that fails to respond properly within the one-year guarantee period shall be replaced as specified above at the Contractor's expense.

PART 2 PRODUCTS

2.01. MATERIAL

A. Topsoil

1. Topsoil shall be natural, fertile, friable agricultural soil capable of sustaining healthy vegetative growth.

2. Topsoil shall meet the following gradation requirements free of stones, roots, sticks and other foreign substances:

Grain Diameter	Sieve Size	Percent Passing By Weight
6.3 mm	6.3 mm	100
4.75 mm	no. 4	60-85
.075 mm	no. 200	20-45
.002 mm	--	7-27

a. Topsoil shall contain less than 52 percent sand.

3. The pH of topsoil shall be between 5.0 and 7.0.

4. Topsoil shall contain no less than 6.0 percent organic matter.

5. Topsoil may be from previously excavated, stockpiled and protected materials, provided the materials meet the requirements for topsoil.

B. General Fertilizer

1. Fertilizer shall be a complete, partially organic, commercial 10-6-4 fertilizer.

2. All fertilizer shall contain a minimum of 10 percent nitrogen, 6 percent available phosphorous and 4 percent potash.

3. Other commercially available fertilizers, such as 20 10-10 and 12-6-6, may be utilized provided that spreading rates are adjusted to provide the aforementioned minimum requirements for nitrogen.

C. Seed

1. All seed shall be fresh, recleaned and of the latest crop year.

2. Each component shall meet or exceed the minimum state and federal requirements for purity and germination for that component.

3. The weed content of each component shall not exceed 0.1 percent.

4. For uncultivated areas, furnish seed mix in accordance with Section 01564.

D. Mulch for Seeded Areas - Mulch shall be oat, wheat or rye straw, or hay, free from noxious weeds and other materials which may interfere with the establishment of a healthy stand of grass.

PART 3 EXECUTION

Not used.

END OF SECTION

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