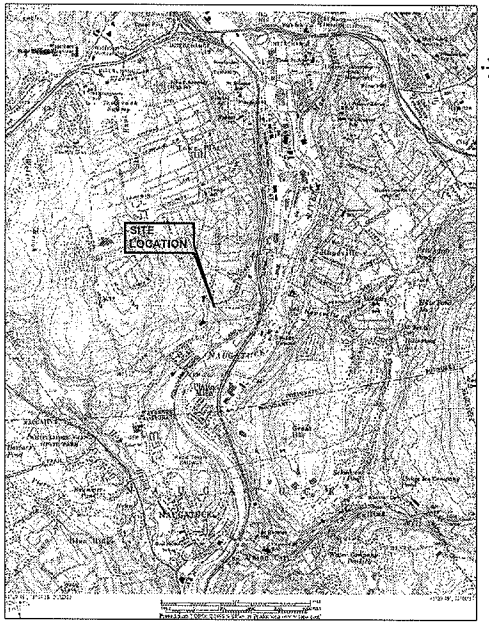
EXHIBIT A

To

CLOSURE OF THE
CRRA WATERBURY BULKY WASTE LANDFILL AGREEMENT

PLANS

CONNECTICUT RESOURCES RECOVERY AUTHORITY
WATERBURY LANDFILL
LANDFILL CLOSURE



LOCATION MAP

0 2,000' 4,000'
GRAPHIC SCALE

DRAWING LIST

SHEET NO.	DRAWING NO.	DRAWING TITLE
1	T-1	TITLE SHEET AND INDEX
2	P-1	EXISTING SITE PLAN
3	P-2	PROPOSED GRADING PLAN FINAL CAP SURFACE
4	P-3	PROPOSED GRADING PLAN PRE-CAP SUBGRADE SURFACE
5	S-1	SECTIONS A-A', B-B', C-C', D-D', AND E-E'
6	D-1	SITE DETAILS
7	EC-1	EROSION AND SEDIMENTATION CONTROL PLAN
8	EC-2	EROSION AND SEDIMENTATION CONTROL NOTES AND DETAILS

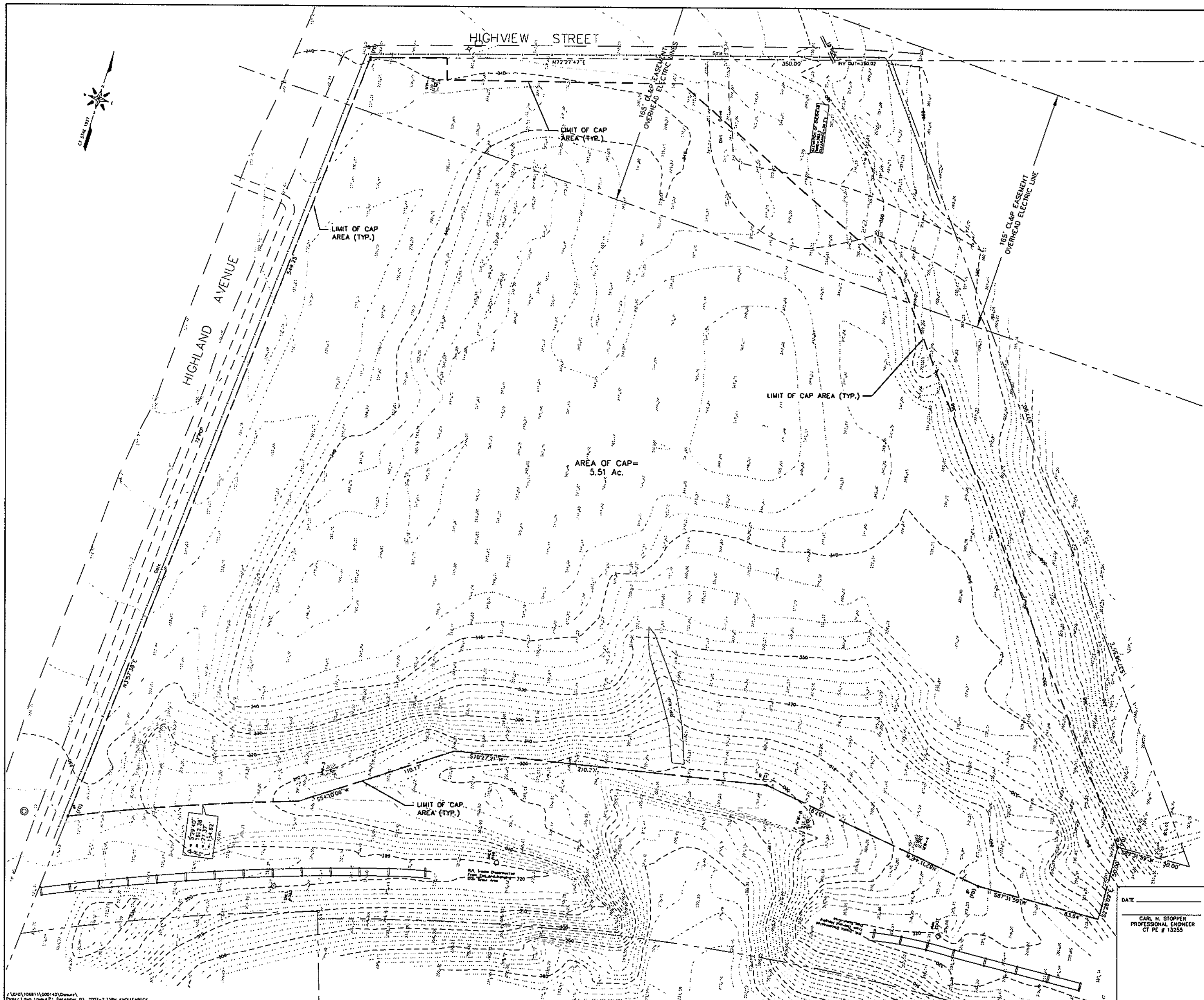
PREPARED BY:

TRC
21 Griffin Road North
Windsor, CT 06095
(860) 298-9692

OCTOBER 15, 2007

T-1

SYMBOL	REVISIONS	DATE	APPROVAL



SOURCE:
BASE MAP FROM TOPOGRAPHIC SURVEY TITLED "TOPOGRAPHIC SURVEY, WATERBURY LANDFILL, HIGHLAND AVENUE & HIGHLAND STREET, WATERBURY, CONNECTICUT, PREPARED FOR CONNECTICUT RESOURCE RECOVERY AUTHORITY", DRAWING NUMBER: 26-350TP, SCALE: 1"=20', DATED: 12-20-06, BY MARTINEZ, COUCH & ASSOCIATES, LLC.

NOTES:
1) PROPERTY BOUNDARY IS APPROXIMATE AS NOTED ON ABOVE REFERENCED TOPOGRAPHIC SURVEY.
2) LOCATION OF PROPERTY WITHIN THE CONNECTICUT STATE PLANE NAD 1927 IS APPROXIMATE AND SHOULD NOT BE CONSIDERED ACCURATE.

NO.	REVISIONS	DATE	APPROVAL

DATE ____________

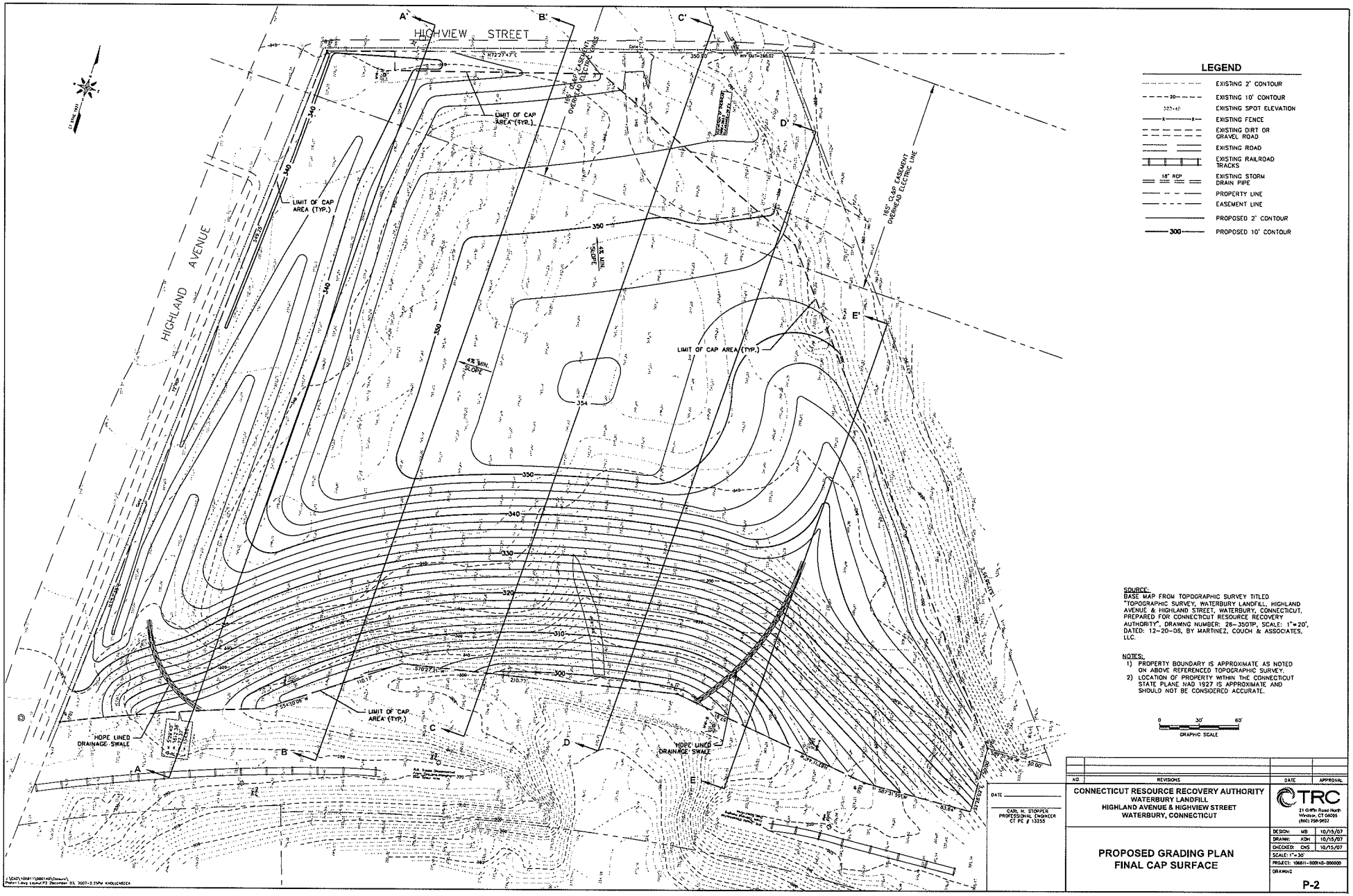
CARL N. STOPPER
PROFESSIONAL ENGINEER
CT PE # 13255

CONNECTICUT RESOURCE RECOVERY AUTHORITY
WATERBURY LANDFILL
HIGHLAND AVENUE & HIGHVIEW STREET
WATERBURY, CONNECTICUT

EXISTING SITE PLAN

TRC
21 Griffin Road North
Windsor, CT 06095
(860) 298-9692

DESIGN:	MB	10/15/07
DRAWN:	KOH	10/15/07
CHECKED:	CHS	10/15/07
SCALE: 1"=30'		
PROJECT: 106811-000140-000000		
DRAWING	P-1	


HIGHVIEW STREET
HIGHLAND AVENUE
A'
B'
C'
D'
E'
LIMIT OF CAP AREA (TYP.)
185' CL&P EASEMENT OVERHEAD ELECTRIC LINES
4% MIN. SLOPE
45 MIN. SLOPE
HOPE LINED DRAINAGE SWALE
LEGEND
EXISTING 2' CONTOUR
EXISTING 10' CONTOUR
EXISTING SPOT ELEVATION
EXISTING FENCE
EXISTING DIRT OR GRAVEL ROAD
EXISTING ROAD
EXISTING RAILROAD TRACKS
EXISTING STORM DRAIN PIPE
PROPERTY LINE
EASEMENT LINE
PROPOSED 2' CONTOUR
PROPOSED 10' CONTOUR
SOURCE:
BASE MAP FROM TOPOGRAPHIC SURVEY TITLED "TOPOGRAPHIC SURVEY, WATERBURY LANDFILL, HIGHLAND AVENUE & HIGHLAND STREET, WATERBURY, CONNECTICUT, PREPARED FOR CONNECTICUT RESOURCE RECOVERY AUTHORITY", DRAWING NUMBER: 26-3501P, SCALE: 1"=20', DATED: 12-20-05, BY MARTINEZ, COUCH & ASSOCIATES, LLC.
NOTES:
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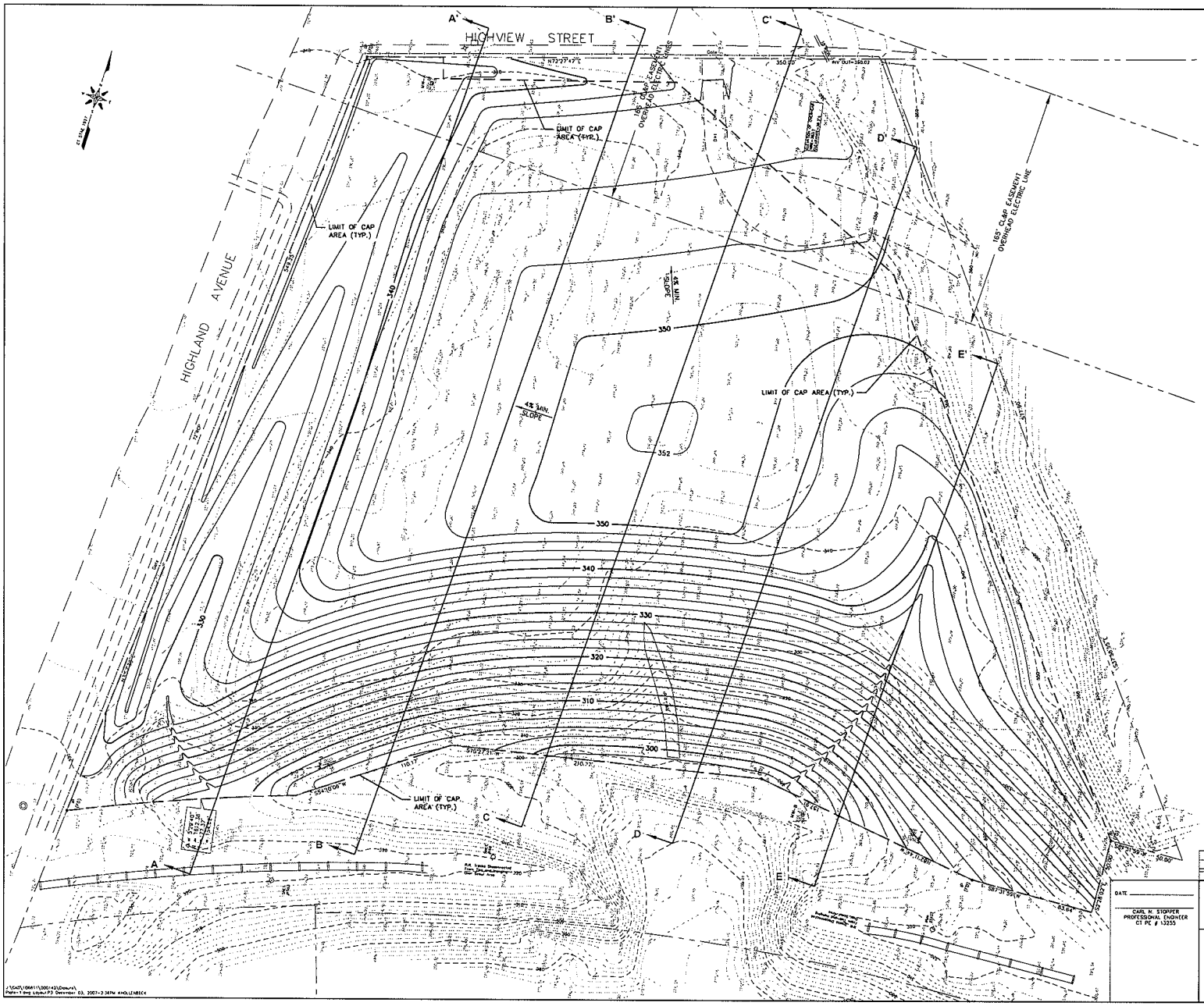
0 30' 60'
GRAPHIC SCALE
NO REVISIONS DATE APPROVAL
DATE
CARL N. STOPPER
PROFESSIONAL ENGINEER
CT PE # 13255
CONNECTICUT RESOURCE RECOVERY AUTHORITY
WATERBURY LANDFILL
HIGHLAND AVENUE & HIGHVIEW STREET
WATERBURY, CONNECTICUT
TRC
21 Griffin Road North
Windsor, CT 06095
(860) 298-9692
PROPOSED GRADING PLAN
FINAL CAP SURFACE
DESIGN: MB 10/15/07
DRAWN: KDH 10/15/07
CHECKED: CNS 10/15/07
SCALE: 1"=30'
PROJECT: 106811-000163-000000
DRAWING
P-2



LEGEND

- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING FENCE
- EXISTING DIRT OR GRAVEL ROAD
- EXISTING ROAD
- EXISTING RAILROAD TRACKS
- EXISTING STORM DRAIN PIPE
- PROPERTY LINE
- EASEMENT LINE
- PROPOSED 2' CONTOUR
- PROPOSED 10' CONTOUR

SOURCE:
BASE MAP FROM TOPOGRAPHIC SURVEY TITLED "TOPOGRAPHIC SURVEY, WATERBURY LANDFILL, HIGHLAND AVENUE & HIGHLAND STREET, WATERBURY, CONNECTICUT, PREPARED FOR CONNECTICUT RESOURCE RECOVERY AUTHORITY", DRAWING NUMBER: 26-3507P, SCALE: 1"=20', DATED: 12-20-06, BY MARTINEZ, COUCH & ASSOCIATES, LLC

NOTES:
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0 30' 60'
GRAPHIC SCALE

DATE _____
CARL N. STOPPER
PROFESSIONAL ENGINEER
CT PE # 13255

NO.	REVISIONS	DATE	APPROVAL

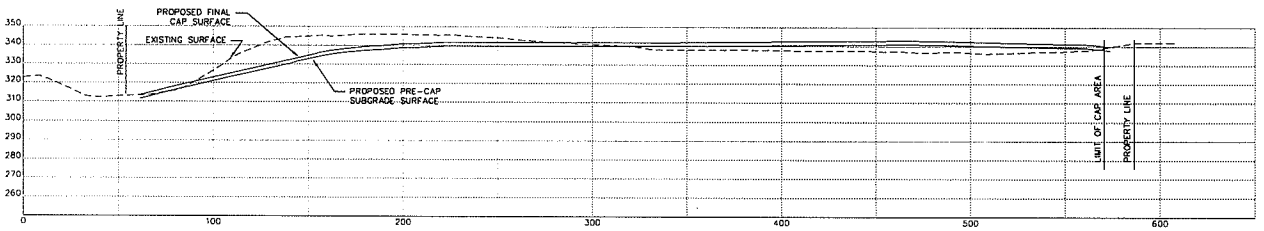
CONNECTICUT RESOURCE RECOVERY AUTHORITY
WATERBURY LANDFILL
HIGHLAND AVENUE & HIGHVIEW STREET
WATERBURY, CONNECTICUT

TRC
21 Griffin Road North
Windsor, CT 06095
(860) 298-9692

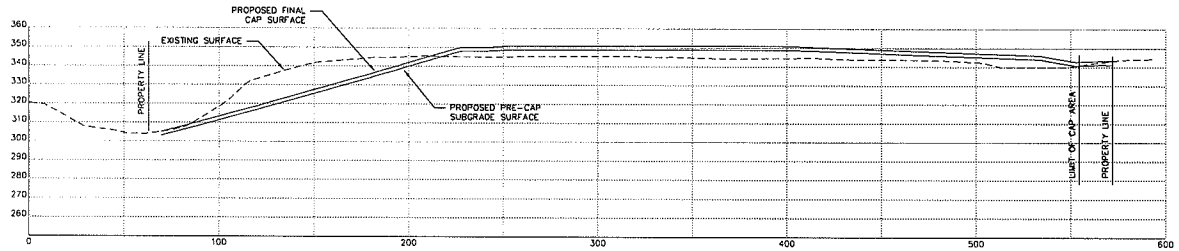
DESIGN:	MB	10/15/07
DRAWN:	KDH	10/15/07
CHECKED:	CNS	10/15/07
SCALE: 1"=30'		
PROJECT: 106811-000140-000000		
DRAWING		

PROPOSED GRADING PLAN
PRE-CAP SUBGRADE SURFACE

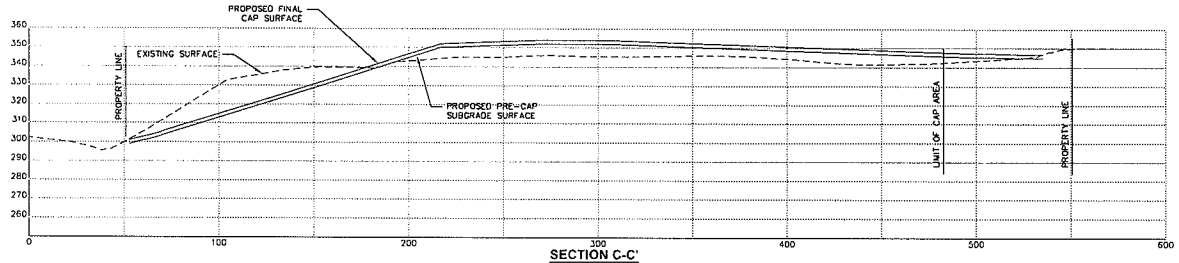
P-3



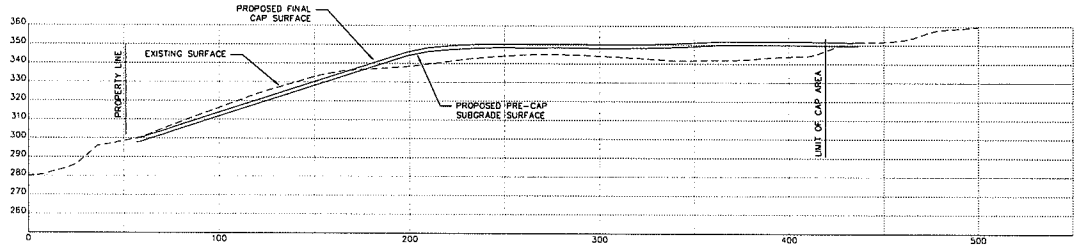
SECTION A-A'



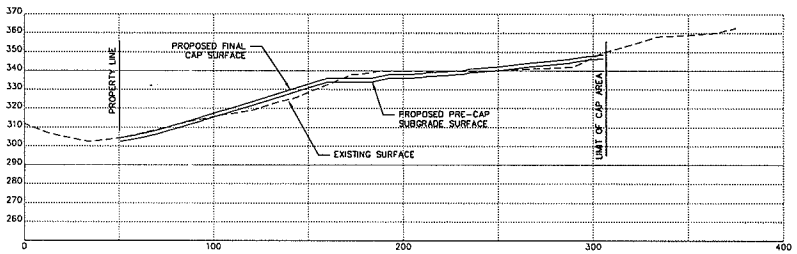
SECTION B-B'



SECTION C-C'



SECTION D-D'



SECTION E-E'

NO.	REVISIONS	DATE	APPROVAL

DATE

CARL H. STORPER
PROFESSIONAL ENGINEER
CT PE # 13255

CONNECTICUT RESOURCE RECOVERY AUTHORITY
WATERBURY LANDFILL
HIGHLAND AVENUE & HIGHVIEW STREET
WATERBURY, CONNECTICUT

SECTIONS A-A', B-B', C-C' D-D' AND E-E'

TRC
21 Griffin Road North
Windsor, CT 06095
(860) 298-9692

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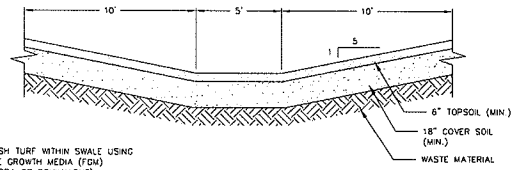
CHECKED:	CHS	10/15/07
SCALE: 1" = 30'		
PROJECT: 106811-000140-000000		
DRAWING		
S-1		

0 30' 60'
HORIZONTAL & VERTICAL GRAPHIC SCALE

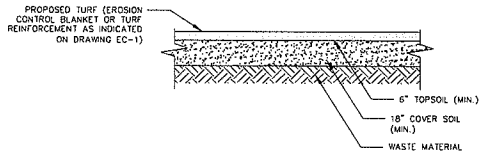
NOTE:
SEE DRAWING P-2 FOR PLAN SHOWING SECTION LOCATIONS.

J:\CAD\106811\000140\Drawings\Plans-1.dwg, Layout:S1, December 03, 2007 - 2:40PM, KMOLLENBECK

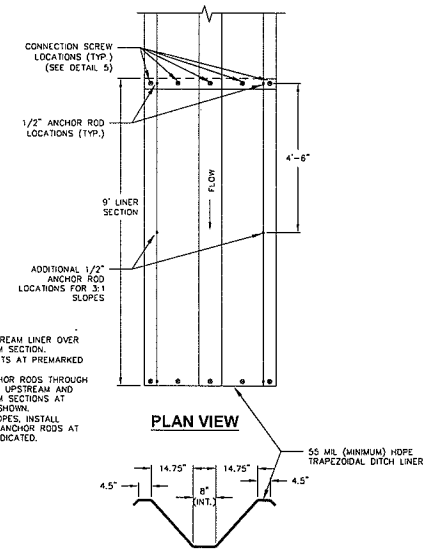


NOTES:
1) ESTABLISH TURF WITHIN SWALE USING FLEXIBLE GROWTH MEDIA (FGM) (FLEXTERRA OR EQUIVALENT)
2) LINE SWALE WITH JUTE NETTING AFTER APPLYING FGM.

1 GRASS LINED DRAINAGE SWALE
N.T.S.



2 TYPICAL COVER (CAP) SECTION
N.T.S

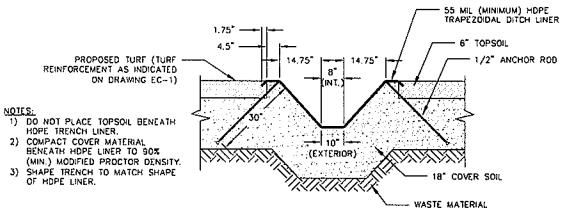


NOTES:
1) PLACE UPSTREAM LINER OVER DOWNSTREAM SECTION.
2) INSTALL BOLTS AT PREMARKED LOCATIONS.
3) INSTAL ANCHOR RODS THROUGH OVERLAP OF UPSTREAM AND DOWNSTREAM SECTIONS AT LOCATIONS SHOWN.
4) FOR 3:1 SLOPES, INSTALL ADDITIONAL ANCHOR RODS AT LOCATION INDICATED.

PLAN VIEW

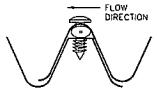
SECTION VIEW

3 HDPE-LINED TRAPEZODAL DOWNCHUTE CONNECTION AND ANCHOR DETAIL
N.T.S.



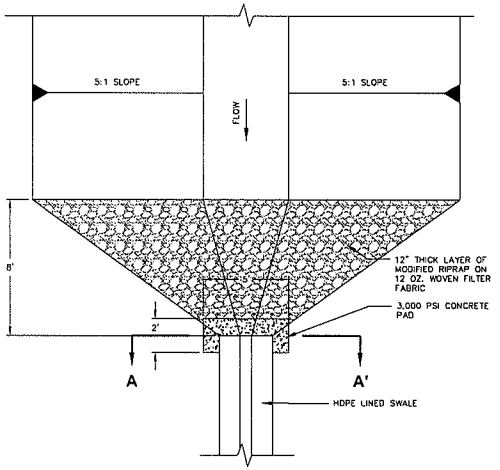
NOTES:
1) DO NOT PLACE TOPSOIL BENEATH HDPE TRENCH LINER.
2) COMPACT COVER MATERIAL BENEATH HDPE LINER TO 90% (MIN.) MODIFIED PROCTOR DENSITY.
3) SHAPE TRENCH TO MATCH SHAPE OF HDPE LINER.

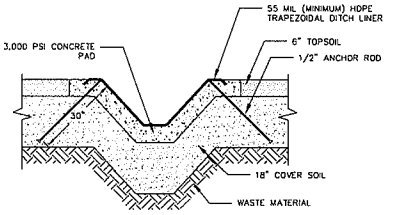
4 HDPE-LINED TRAPEZODAL DOWNCHUTE ON FINAL COVER
N.T.S.



NOTES:
1) FIVE PREMARKED BOLT LOCATIONS FOR EACH CONNECTION POINT.
2) WHEN CONNECTING INDIVIDUAL SECTIONS, UPSTREAM SECTIONS OVERLAP DOWNSTREAM SECTIONS.
3) INSTALL SEAL UNDERNEATH ROUND CORRUGATION ON THE DOWNSTREAM SECTION.
4) OVERLAP WITH DOWNSTREAM SECTION, DRILL 1/4" HOLE THROUGH BOTH CHANNELS, INSTALL SCREW.

5 HDPE SWALE LINER CONNECTION DETAIL
N.T.S.





SECTION A-A'

6 GRASS-LINED SWALE INTO HDPE LINED SWALE CONNECTION DETAIL
N.T.S.

NO.	REVISIONS	DATE	APPROVAL

DATE _____

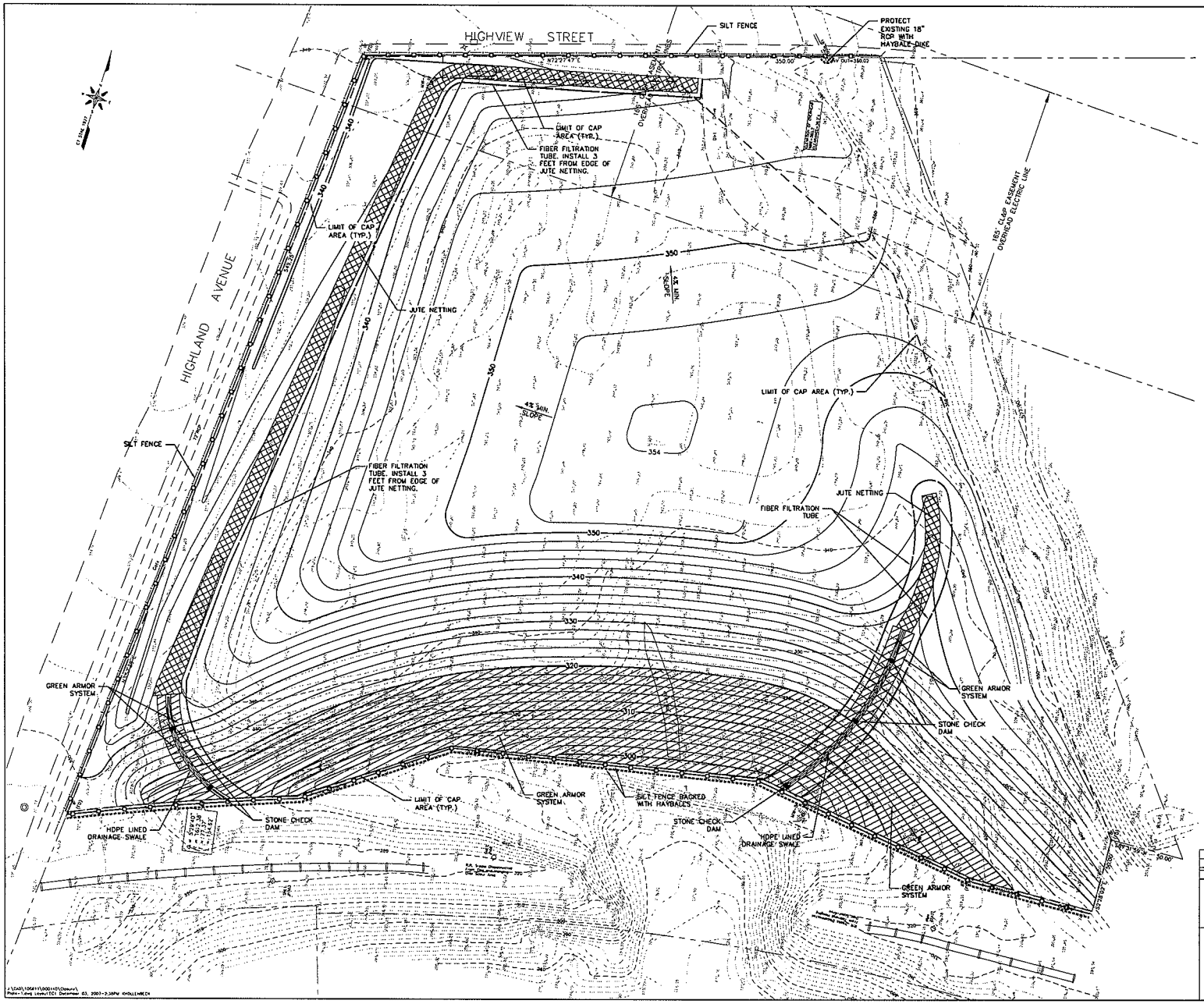
CARL N. STOPPER
PROFESSIONAL ENGINEER
CT PE # 13255

CONNECTICUT RESOURCE RECOVERY AUTHORITY
WATERBURY LANDFILL
HIGHLAND AVENUE & HIGHVIEW STREET
WATERBURY, CONNECTICUT

DETAILS

TRC
21 Griffin Road North
Windsor, CT 06095
(860) 298-9692

DESIGN:	MB	10/15/07
DRAWN:	KDH	10/15/07
CHECKED:	CHS	10/15/07
SCALE:	NTS	
PROJECT:	108111-000140-000000	
DRAWING	D-1	



LEGEND

- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING FENCE
- EXISTING DIRT OR GRAVEL ROAD
- EXISTING ROAD
- EXISTING RAILROAD TRACKS
- EXISTING STORM DRAIN PIPE (18" RCP)
- PROPERTY LINE
- EASEMENT LINE
- PROPOSED 2' CONTOUR
- PROPOSED 10' CONTOUR
- PROPOSED SILT FENCE
- PROPOSED HAYBALE
- PROPOSED FIBER FILTRATION TUBE
- JUTE NETTING
- GREEN ARMOR SYSTEM (ENKAMAT 7010 INFILLED WITH FLEXTERRA FGM) OR EQUAL

SOURCE:
BASE MAP FROM TOPOGRAPHIC SURVEY TITLED "TOPOGRAPHIC SURVEY, WATERBURY LANDFILL, HIGHLAND AVENUE & HIGHLAND STREET, WATERBURY, CONNECTICUT, PREPARED FOR CONNECTICUT RESOURCE RECOVERY AUTHORITY", DRAWING NUMBER: 26-350TP, SCALE: 1"=20', DATED: 12-20-06, BY MARTINEZ, COUCH & ASSOCIATES, LLC.

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0 30' 60'
GRAPHIC SCALE

NO.	REVISIONS	DATE	APPROVAL

CONNECTICUT RESOURCE RECOVERY AUTHORITY
WATERBURY LANDFILL
HIGHLAND AVENUE & HIGHVIEW STREET
WATERBURY, CONNECTICUT

TRC
21 Griffin Road North
Windsor, CT 06095
(860) 298-9692

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SCALE: 1"=30'		
PROJECT:	106811-000140-000000	
DRAWING		

EROSION AND SEDIMENTATION CONTROL PLAN PLAN

EC-1

EROSION AND SEDIMENTATION CONTROL PLAN:

The sea area includes approximately 5.51 acres. The receiving water for the site's runoff is the Naugatuck River located along the east edge of the site

The project consists of the closing and capping of the Connecticut Resources Recovery Authority (CRRA) Waterbury Landfill. Construction is expected to take place in 2008.

DESIGN CRITERIA:

1. Erosion and sedimentation control measures have been located with consideration given to slopes, wetlands, and watercourses and in accordance with the Connecticut "Guidelines for Soil Erosion and Sediment Control" (the Guidelines), of the Connecticut Council of Soil and Water Conservation, Latest Edition. The Guidelines shall be considered an integral component of the erosion control design requirements and the minimum standards contained within shall be considered part of the plan and shall be observed during all phases of the construction.

2. Temporary sediment traps are located throughout the project site where earth disturbance and ground shaping will be performed. These sediment traps have been sized in accordance with the Guidelines. All sediment traps shall be maintained until final stabilization of the contributing area.

INSTALLATION AND/OR APPLICATION PROCEDURES:

1. Erosion and sedimentation control devices shall be constructed in accordance with the project plans and specifications.

OPERATION, MAINTENANCE PROGRAM, AND INSPECTIONS:

1. Prior to any construction, a pre construction conference is to be held among the Design Engineer, the Owners, and the Contractor to review the erosion and sedimentation control measures to be taken. The contractor shall be responsible for arranging the pre construction conference.

2. All erosion control measures associated with the construction are to be installed and maintained in accordance with the schedule and requirements. Additional control measures shall be installed during the construction period as necessary and required. Such additional measures shall be designed in accordance with the Guidelines

3. All soil erosion and sediment control measures within any phase of construction must be installed before any construction within the limits of that phase begins.

4. Silt Fence, backed by hay bales, will be installed along the toe of all critical cut and fill slopes, as depicted on the design plans

5. Sediment removed from control measures must be disposed of at a location approved by the Design Engineer that will not cause additional sedimentation to the surrounding area.

6. Qualified personnel (provided by the contractor) shall inspect disturbed areas of the construction activity that have not been fully stabilized, structure control measures, and locations where vehicles enter or exit the site at least once every seven (7) calendar days within 24 hours of the end of a storm that is 0.1 inches or greater. Where sites have been stabilized, such inspection shall be conducted at least once every month for three (3) months.

7. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment loading. Contractor shall remove any sediments tracked onto surrounding roadways immediately and implement measures to prevent further impact to surrounding roadways

8. Based on the results of this inspection, the description of potential sources and pollution prevention measures identified in the plan shall be revised as appropriate or as soon as practicable after such inspection. Such modifications shall provide for timely implementation of any changes to the site within 24 hours and implementation of any changes to the plan within three (3) calendar days following the inspection. The plan shall be revised and the site controls updated in accordance with sound engineering practices, the Guidelines and subsections (4) and (6)(c)(ii)(3) of the Stormwater General Permit

9. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Stormwater Pollution Control Plan and actions taken shall be made and retained as part of the plan for at least three (3) years after the date of inspection. The report shall be signed by the Contractor, or his authorizing representative.

10. Contractor shall maintain adequate water supply to perform dust suppression as conditions require. Alternative dust control methods include application and maintenance of wood chips to unpaved roadway surfaces. Paved surfaces shall be swept of tracked soil on a regular basis to ensure proper dust control

BEST MANAGEMENT PRACTICES

1. Construction shall proceed in accordance with the requirements of the general sequence of grading and construction activities, application of soil erosion and sediment control measures, and final stabilization of site as indicated on the plans.

2. Prior to any dewatering the contractor must submit to the Engineer a written proposal for specific methods and devices to be used, and obtain the Engineer's approval of such method and devices to be used for dewatering activities including, but not limited to, pumping the water into a temporary sedimentation trap, providing surge protection at the inlet and outlet of pumps or flooding the intake of the pump, or other methods to minimize and retain the suspended solids. If the Engineer determines that the pump operation is causing turbidity problems, said operation shall cease until such time as means of containing turbidity is submitted by the contractor and approved by the Engineer and implemented by the contractor.

3. Dumping of oil, chemicals or other deleterious materials on the ground is forbidden. The contractor shall provide a means of catching, retaining and properly disposing of drained oil, removed oil filters, and other deleterious material. All spills of such materials shall be reported immediately the contractor to the DEP.

4. Applications of fertilizers, herbicides or pesticides must be done by a Connecticut licensed applicator. The Contractor shall submit to the Engineer the proposed Applicator's name and license number, and must receive the Engineer's approval of the proposed applicator before such application is carried out.

SOIL STABILIZATION MEASURES

1. All topsoil not to be used for final grading/landscaped areas shall be removed from the site immediately, in accordance with applicable State and Local laws. All topsoil to be used in landscaped areas shall be stored/stockpiled in accordance with applicable State and Local laws

2. Jute Netting shall be installed on all final slopes steeper than 3:1 in grade. Green Armor System (Enkamat 7010 Turf Reinforcement Mat (TRM) Infilled with Fiberfirm (GM) or approved equal shall be installed in accordance with manufacturers recommendations in areas noted on EC-1.

4. All disturbed areas are to be provided with at least 6" of topsoil before final seeding

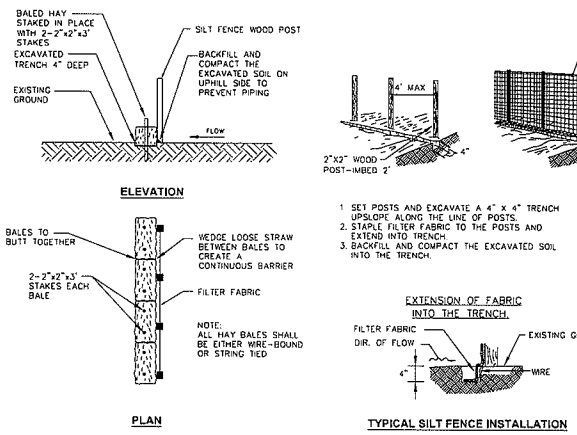
5. Permanent vegetation is to be hydroseeded on all exposed areas within ten (10) days after final grading.

6. Permanent vegetation: See Landscaping Plans

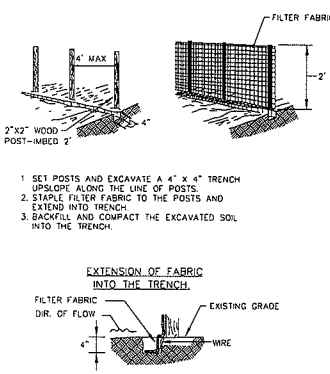
RESPONSIBLE PARTIES

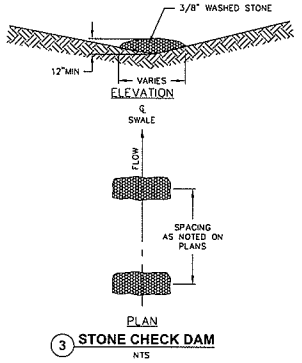
Connecticut Resources Recovery Authority (CRRA)
100 Constitution Plaza, 8th Floor
Hartford, Connecticut 06103
(860) 757-7700

is assigned the responsibility for implementing the control measures of this plan. This responsibility includes the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of this plan, and notifying the Planning and Zoning Commission of the transfer of responsibility, and for conveying a copy of this plan if title to the property is transferred

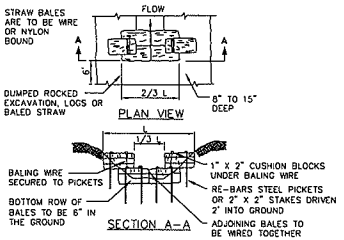


1 TEMPORARY SEDIMENT AND EROSION CONTROL BARRIER
SILT FENCE BACKED BY HAY BALES
NTS

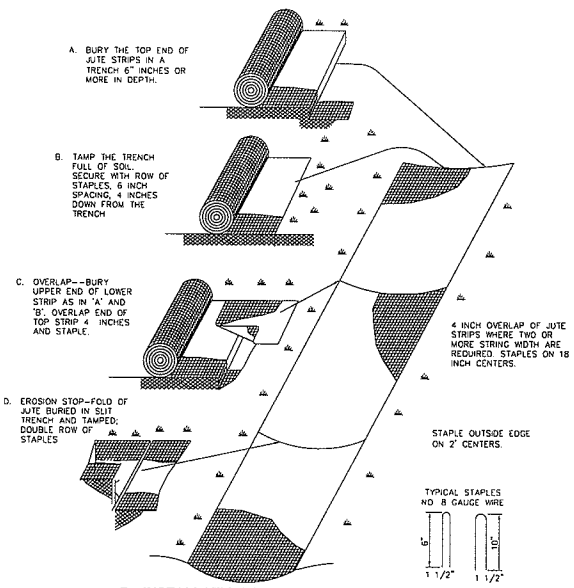




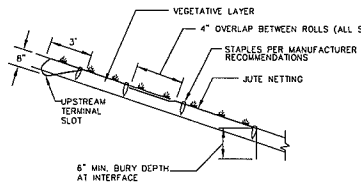
3 STONE CHECK DAM
NTS



5 STRAW BALE CHECK DAM (SD)
NTS

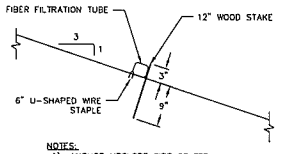


2 INSTALLATION OF JUTE NETTING IN GRASS SWALES
NTS



4 INSTALLATION OF JUTE NETTING ON SLOPES
NTS

NOTE: IN AREAS ADJACENT TO PROPERTY LINE AND WITHIN 100' OF WETLAND BOUNDARY, ENKAMAT 7010 OR APPROVED EQUAL SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.



NOTES:
1) ANCHOR UPSLOPE SIDE OF FFT USING 6" U-SHAPED WIRE STAPLES AT 1' INTERVALS. PLACE ANCHORS 1" INWARD FROM UPER EDGE OF FFT.
2) RAISE TO BE THE FULLEST HEIGHT AND DRIVE 12" WOOD STAKES THROUGH DOWNSTREAM SIDE.

6 INSTALLATION OF FIBER FILTRATION TUBES (FFT)
NTS

NO.	REVISIONS	DATE	APPROVAL

DATE _____

CARL N. STOPPER
PROFESSIONAL ENGINEER
CT PE # 12205

CONNECTICUT RESOURCE RECOVERY AUTHORITY
WATERBURY LANDFILL
HIGHLAND AVENUE & HIGHVIEW STREET
WATERBURY, CONNECTICUT

TRC
21 Griffin Road North
Windsor, CT 06095
(860) 298-9692

EROSION AND SEDIMENTATION CONTROL DETAILS

DESIGN:	MB	10/12/07
DRAWN:	KDH	10/12/07
CHECKED:	CNS	10/12/07
SCALE: NTS		
PROJECT: 106811-000143-000000		
DRAWING		

EC-2

J:\CAD\106811\000143\Drawn\
EC-2.dwg Layout EC-2 December 03, 2007 2:53PM KHOLLENBECK

EXHIBIT B

To

CLOSURE OF THE
CRRA WATERBURY BULKY WASTE LANDFILL AGREEMENT

GENERAL REQUIREMENTS

GENERAL REQUIREMENTS

Section	Title
01010	Summary of Work
01025	Measurement and Payment
01039	Coordination and Meetings
01300	Submittals
01340	Shop Drawings
01400	Quality Control (QC)
01410	Testing Laboratory Services
01600	Material and Equipment
01700	Contract Closeout
01740	Warranties and Bonds

SECTION 01010
SUMMARY OF WORK

PART 1 - GENERAL

1.1 Related Documents

A. Contract Documents and general provisions of the Contract, including General and Supplementary Conditions and other Technical Specifications, apply to this Section.

1.2 Work Covered By Contract Documents

A. The Project is entitled, "Closure of the CRRA Waterbury Landfill". The Landfill, as shown on the Contract Drawings, will be regraded, capped, and landscaped. The work involves surveying, mobilization and establishing temporary facilities, establishing sediment and erosion controls, preparation of the site, preparing the grades, constructing the surface cap and drainage structures, placing topsoil, and landscaping.

B. The Contractor shall include in its bid all items required in order to carry out the intent of the Work as described, shown, and implied in the Contract Documents.

C. It shall be the Contractor's responsibility upon discovery to immediately notify CRRA in writing, of errors, omissions, discrepancies, and instances of non-compliance with applicable codes and regulations within the documents. Any additional costs arising from the Contractor's failure to provide such notification shall be borne by the Contractor.

D. The Contractor shall include in his bid all items required in order to carry out the intent of the Work as described, shown, and implied in the Contract Documents.

1.3 Work Sequence

A. Contractor shall register under the CTDEP General Permit for Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities. Contractor shall pay all fees associated with the preparation of the registration application and the application itself.

B. The Contractor shall mobilize all equipment, labor, tools, materials, and incidentals to the site. Temporary facilities may include a construction trailer and sanitary facilities. The Contractor shall demobilize following the completion of work and shall restore all storage areas to their condition prior to commencing work.

C. CRRA shall obtain all cover soil required for the 18 inch thick cover layer and shall

arrange for transport of this material to the site. Contractor shall obtain all topsoil required for the 6 inch thick topsoil layer and shall arrange for transport of this material to the site. Contractor shall be responsible for the onsite handling of soil and topsoil after it has been transported to the site and dumped near stockpile areas.

D. Prior to mobilization to the site the Contractor shall have all property boundaries and limits of the surface cap construction determined and staked in the field by a licensed land surveyor. The Contractor may use the existing topographic survey data for initial surface elevations. After the boundaries have been marked, the Contractor shall mobilize to the site and prepare the site for construction by installing sediment and erosion controls as shown on the Contract Drawings. Following this, the Contractor shall prepare the site for construction by clearing the area of cap construction as marked in the field of all vegetation. Wastes generated during clearing may be chipped and disposed of onsite. Wastes not chipped must be transported offsite for disposal.

E. The Contractor shall complete the grading of the subgrade within the cap area as shown on the Contract Drawings. Prior to initiating construction of the landfill cap, the Contractor shall perform a survey to determine that the subgrade elevations have been achieved. The Contractor shall be responsible for regrading the surface and the relocation of subgrade material on the site. The Contractor shall also be responsible for determining that all waste materials beyond the southern property boundary have been removed and placed within the cap area. All grades prior to construction of the landfill cap shall be no greater than 33%, nor less than 4%.

F. The Contractor place and compact 18 inches of cover soil on the subgrade in accordance with the provisions of the Contract Documents. CRRA shall obtain the soil and arrange for transport to stockpile areas at the site. The Contractor shall be responsible for handling of cover soil once it has been dumped near the stockpile area. Contractor shall be responsible for providing all physical laboratory testing of cover soil.

G. The Contractor shall construct surface water drainage control structures in accordance with the provisions of the Contract Documents. The Contractor shall provide a final as-built survey of the surface drainage control structures showing topography and spot elevations, prepared and sealed by a Connecticut licensed surveyor. Copies of all field notes shall accompany the as-built survey.

H. The Contractor shall provide place and compact 6 inches of topsoil as specified in the Contract Documents. Contractor shall be responsible for providing all physical and chemical testing of topsoil.

I. The Contractor shall place surface erosion control materials, turf reinforcement mat and jute matting, and fiber filter tubes, in accordance with the provisions of the Contract Documents. Vegetation shall be established by applying the flexible growth media mixed with the specified grass seed mixture to the areas indicated on the Contract Drawings. Areas not indicated as requiring flexible growth media can

be hydroseeded with the specified grass seed mixture. The Contractor shall ensure that vegetation is established by maintaining sediment and erosion controls and water as necessary until the work is accepted by CRRA. The Contractor shall provide a final as-built survey of the final surface grades showing topography and spot elevations, prepared and sealed by a Connecticut licensed surveyor. Copies of all field notes shall accompany the as-built survey.

J. Contractor shall employ dust control measures as necessary to prevent dust. In no case shall dust be allowed to migrate beyond property line of site. Dust control measures may include but not be limited to the use of water, calcium chloride, or other surface treatment measures.

1.4 Miscellaneous Provisions

A. Examination of the Site:

1. It is not the intent of the Contract Documents to show all existing conditions.

2. Contractor should investigate and satisfy itself as to the conditions affecting the work, including but not restricted to those bearing upon transportation, handling, and storage of materials, availability of labor, water, electric power, uncertainties of weather, roads or similar physical conditions of the ground, and facilities needed preliminary to and during the prosecution of the Work. Any failure by the Contractor to acquaint itself with the available information shall not relieve it from the responsibility for estimating properly the difficulty and cost of successfully performing the Work.

B. Decontamination of Vehicles

1. The Contractor shall be responsible for decontaminating vehicles used in construction. Dry decontamination methods will be allowed if sufficient to prevent tracking of soil and other materials offsite. If any tracking of soil or other materials occurs off-site, Contractor shall promptly clean such areas.

1.5 Contractor Use Of Premises

A. General: The Contractor shall have full access to the Work Area. There are no operations at the facility that might interfere with the cap construction.

B. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.

1. The Contractor shall confine his operations, including storage or materials, supplies, equipment, and incidentals to the areas specified in the Contract Documents.

2. Existing access roads and drives are to be kept free and clear at all times. All deliveries for the project are to enter the Waterbury Landfill property between 7 AM and 3 PM, Monday through Friday. All Contractors are to check all roadways for accessibility and clearances for deliveries of all large material and equipment. Only designated areas shall be used for parking and storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

3. The Contractor shall be responsible for keeping the work area clean and shall pick up rubbish and debris generated by the Contractor and shall promptly remove the material from the site.

4. Contractor's daily access to the site shall be as indicated on the Contract Documents. Parking for the Contractor's employees shall be limited to an area designated by CRRA and the Contractor may be required to provide identification stickers for all vehicles.

5. Special precautions shall be taken to protect all drainage systems near the Work Area. Prevent any and all sediment, debris, or other materials from getting into these systems. Should any sediment, debris, or other materials get into these systems or if any damage occurs to them, the Contractor shall immediately contact CRRA. The Contractor shall be fully responsible for all costs associated with additional cleaning and repairs caused by neglecting to protect the drainage systems.

6. No signs, other than those approved by CRRA, shall be visible on the premises.

7. Contractor shall contact Call-Before-You-Dig prior to starting construction. Contractor shall protect all utilities that may be affected by the work.

1.6 Work Site Location

A. CRRA Waterbury Landfill
Corner of Highland Avenue and Highview Street
Waterbury, CT

PART 2 - PRODUCTS

None

PART 3 - EXECUTION

None

END OF SECTION

SECTION 01025
MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 Section Includes

A. Schedule of Values
B. Format
C. Preparation of Applications
D. Submittal Procedures
E. Substantiating Data

1.2 Related Sections

A. Agreement
B. General Requirements
C. Technical Specifications
D. Section 01700 - Contract Closeout

1.3 Schedule Of Values

A. Schedule of Values shall include all work items and prices listed in the Bid Price Form. Submit in duplicate within ten (10) days after Effective Date of Agreement or date established in Notice to Proceed.

B. Submit a Progress Schedule.

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

1.4 Format

A. Form AIA G702 and G703 (or approved substitute) Application for Payment (included at the end of this section).

B. Utilize Schedule of Values for listing items in Application for Payment.

C. Provide a column for listing each of the following items. Items Number; Description of Work; Scheduled Value; Previous Applications; Work in Place and Stored Materials under this Application; Authorized Change Orders; Total Completed and Stored to Date of Application; Percentage of Completion; Balance to Finish; and Retainage.

1.5 Preparation Of Applications

A. Present required information in typewritten form.

B. Execute certification by signature of authorized officer.

C. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed.

D. List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of Work.

E. Application for Final Payment: as specified in Section 01700.

1.6 Submittal Procedures

A. Submit three (3) copies of each Application for Payment.

B. Submit an updated construction schedule with each Application for Payment.

C. Payment Period: at intervals stipulated in the Agreement.

D. Submit under transmittal letter specified in Section 01300.

1.7 Substantiating Data

A. When ENGINEER requires substantiating information, submit data justifying dollar amounts in question.

B. Provide one (1) copy of data with cover letter for each copy of submittal. Show Application number and date, and line item by number and description.

PART 2 - PRODUCTS

Not used

PART 3 - EXECUTION

Not used

END OF SECTION

SECTION 01039
COORDINATION AND MEETING

PART 1 - GENERAL

1.1 Section Includes

A. Coordination.
B. Field engineering.
C. Pre-construction meeting.
D. Progress meetings.
E. Pre-installation meeting.

1.2 Related Sections

A. Section 01300 - Submittals.

1.3 Coordination

A. Coordinate scheduling, submittals, and Work of the various sections of the Contract Documents to assure efficient and orderly sequence of installation of interdependent construction elements.

B. Coordinate completion and clean up of Work of separate sections in preparation for Substantial Completion.

C. Coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents to minimize disruption of OWNER'S activities.

1.4 Field Engineering

A. Confirm drawing dimensions and elevations.

B. Submit a copy of as-built drawings in conformance with the Contract Documents.

1.5 Pre-Construction Meeting

A. OWNER will schedule a meeting after Notice of Award.

B. Attendance Required: OWNER, ENGINEER, and CONTRACTOR.

C. Agenda:

1. Submission of executed bonds and insurance certificates.

2. Distribution of Contract Documents.

3. Submission of list of Subcontractors, list of Products, Schedule of Values, and Progress Schedule.

4. Designation of personnel representing parties in Contract.

5. Procedures and processing of field decisions, submittals, and substitutions, Applications for Payments, proposal request, Change orders and Contract Closeout procedures.

6. Scheduling.

D. Record minutes and distribute copies within three (3) days after meeting to participants and those affected by decisions made.

1.6 Progress Meetings

A. OWNER will schedule and administer meetings throughout progress of the Work.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required: CONTRACTOR, major Subcontractors and Suppliers, OWNER, and ENGINEER, as appropriate to agenda topics for each meeting.

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 fabrication 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 the Work.

E. Record minutes and distribute copies within two (2) days after meeting to participants and those affected by decisions made.

1.7 Pre-Installation Meeting

A. When required in individual specification sections, convene a pre-installation meeting at work site prior to commencing work of the section.

B. Require attendance of parties directly affecting, or affected by, work of the specific section.

C. Notify OWNER five (5) days in advance of meeting date.

D. Prepare agenda and preside at meeting:

1. Review conditions of installation, preparation and installation procedures.

2. Review coordination with related work.

E. Record minutes and distribute copies within two days after meeting to participants and those affected by decisions made.

PART 2 - PRODUCTS

Not used

PART 3 - EXECUTION

Not used

END OF SECTION

SECTION 01300
SUBMITTALS

PART 1 - GENERAL

1.1 Section Includes

A. Submittal procedures.
B. Construction progress schedules.
C. Manufacturer's certificates

1.2 Related Sections

A. Section 01340 - Shop Drawings
B. Section 01400 - Quality Control
C. Section 01410 - Testing Laboratory Services
D. Section 01700 - Contract Closeout
E. Section 01740 - Warranties and Bonds

1.3 Submittal Procedures

A. Transmit each submittal with a transmittal letter, except Shop Drawings which will be submitted as specified in Section 01340.

B. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate.

C. 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.

D. Schedule submittals to expedite the Project, and deliver to Engineer with a copy to Owner. Coordinate submission of related items.

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

F. Provide space for Contractor and Engineer review stamps.

G. Revise and resubmit, identify all changes made since previous submission.

H. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with provisions.

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

1.4 CONSTRUCTION PROGRESS SCHEDULES

A. Submit initial schedule in duplicate within 10 days after date established in Notice to Proceed.

B. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.

C. Submit revised schedules with each Application for Payment, identifying changes since previous version. Progress Reports shall include the following:

1. Listing of target delivery dates for material.

2. A narrative of any problem experienced by the Contractor that could impact progress.

D. Submit a horizontal bar chart with separate line for each section of Work, identifying first work day of each week.

1.5 MANUFACTURER CERTIFICATES

A. Submit certifications by manufacturer to Engineer for all materials required on the project, in quantities specified for Product Data.,

B. Indicate material of Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certification as appropriate.

C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01340
SHOP DRAWINGS

PART 1 - GENERAL

1.1 Requirements Include

A. Shop drawing submittal procedures.
B. ENGINEER'S review.
C. Shop drawing schedule.
D. Number of copies.
E. Project record documents.

1.2 Related Sections

A. Standard General Conditions.
B. Supplementary Conditions
C. Section 01300 - Submittals.

1.3 Shop Drawing Submittal Procedures

A. Coordinate and check all Shop Drawings furnished by suppliers and Subcontractors for accuracy and for conformance with requirements of the Contract Documents.

B. Attach a copy of a Shop Drawing Transmittal form to each group of Shop Drawings, manufacturer's literature, equipment data and samples submitted. Use a sufficient number of Shop Drawing Transmittal forms to provide for the following:

1. Items on a single transmittal form pertain to the same Specification Section.

2. Items on a single transmittal form are either all original submittals or the same number resubmittal.

3. Each material sample is listed on a separate transmittal form.

C. Number each submittal consecutively and insert the number in the space provided on the transmittal form. Assign re-submittals the same transmittal number as the original with a suffix of a sequential letter to indicate the resubmittal. For example, the first resubmittal of submittal 25 would be number 25A.

D. Insert the applicable Specification Section number in the space provided.

E. Enter the number of each item Submitted.

F. Indicate whether the submittal is an original submittal, a first resubmittal or a higher numbered resubmittal by checking the proper box.

G. Indicate the number of resubmittal for second or higher number re-submittals.

H. Complete the information required under the column headings "Manufacturer", "Manufacturer's Number", "Revision Number" and "Subject". Select a brief title under "Subject" which clearly distinguishes the equipment or material covered by the transmittal from other equipment and material furnished under the Contract.

I. Complete the certification at the bottom of the Shop Drawing Transmittal form indicating whether or not the submittal is in strict accordance with the Contract Documents. Specifically note all deviations, if any, from the Contract Documents and reasons therefore in the space provided on the Shop Drawing Transmittal form or in a referenced serial letter.

J. Sign and date the Shop Drawing Submittal form.

K. Submittals which do not have a fully completed Shop Drawings Transmittal form will be returned along with un-reviewed attachments. Such submittals, even though incomplete, will be counted as a submittal. See Supplementary Conditions.

1.4 Engineer's Review

A. ENGINEER'S review will be completed within a reasonable time after receipt by ENGINEER of each submittal in proper sequence and will be returned to CONTRACTOR with one of the following markings:

1. "No Exception Taken" indicates submittal has been reviewed and appears to be in conformance with requirements of the Contract Documents. CONTRACTOR may proceed with construction shown on the submittal.

2. "Make corrections noted" indicates submittal appears to be in conformance with requirements of the Contract Documents. CONTRACTOR shall incorporate the corrections noted and may proceed with construction shown on the submittal. No resubmittal is required.

3. "Revise and Resubmit" indicates submittal does not appear to be in conformance with the Contract Documents. ENGINEER'S comments will be noted on the submittal or in a separate letter. CONTRACTOR shall recheck, make necessary revisions and resubmit.

4. "Reference" indicates submittal gives general information incidental to but not required for construction.

B. Review of conformance with design concepts and compliance with Contract Documents does not require ENGINEER to review features solely related to construction or all dimensions, quantities and other data. CONTRACTOR shall not rely on ENGINEER'S approval as a verification or check of all such items in the submittal or of satisfactory and safe installation and construction. CONTRACTOR shall verify all fabrication and installation requirements, quantities and dimensions.

1.5 Shop Drawing Schedule

A. Include the following:

1. Description of each submittal.

2. Date by which each submittal will be delivered to ENGINEER.

3. Date by which each submittal must be approved to maintain construction schedule.

4. Relevant Specification Section Reference.

B. Allow reasonable time for ENGINEER to review Shop Drawings and for possible resubmittal.

1.6 Number Of Copies

A. Submit the following:

1. Four (4) copies in addition to the number the CONTRACTOR wants returned of each Shop Drawing which has been specifically prepared for the Work.

2. Five (5) copies in addition to the number the CONTRACTOR wants returned of all pre-printed manufacturer's data, brochures, Suppliers, information and other information submitted as Shop Drawings.

3. Five (5) samples except as otherwise specified.

1.7 Presentation

A. Present in a clear and thorough manner.

B. Identify field dimensions, show relation to adjacent or critical features or Work.

C. Provide space for CONTRACTOR and ENGINEER review stamps.

D. Use sheet size of not less than 8½ by 11 inches and not more than 28 by 40 inches.

PART 2 - PRODUCTS

Not used

PART 3 - EXECUTION

Not used

END OF SECTION

SECTION 01400
QUALITY CONTROL

PART 1 - GENERAL

1.1 Section Includes

A. Quality assurance - control of installation.
B. Tolerances.
C. References.
D. Inspecting and testing laboratory services.
E. Manufacturers, field services and reports.

1.2 Related Sections

A. Section 01300 Submittals: Submission of manufacturers' instructions and certificates.
B. Section 01410 Testing Laboratory Services.

1.3 Quality Assurance - Control Of Installation

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

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

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from ENGINEER before proceeding.

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

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

1.4 Tolerances

A. Monitor tolerance control of installed Products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from ENGINEER before proceeding.

C. Adjust Products to appropriate dimensions; position before securing Products in place.

1.5 References

A. For Products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on date of Contract Documents, except where a specific date is established by code.

C. Obtain copies of standards where required by product specification sections.

D. The contractual relationship, duties, and responsibilities of the parties to the agreement nor those of the Engineer shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.6 Inspection And Testing Services

A. Contractor will appoint and employ services of an independent firm to perform inspecting and testing as specified in Section 01410.

B. The independent firm will perform inspections, tests, and other services as required by the Engineer or the Owner.

C. Inspecting, testing, and source quality control may occur on or off the project site. Perform off-site inspecting or testing as required by the Engineer or the Owner.

D. Reports will be submitted by the independent firm to the Engineer in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.

E. Cooperate with independent firm, furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.

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

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

F. Testing or inspecting does not relieve Contractor to perform Work to contract requirements.

G. If any work is found to be defective in any respect because of a fault of the Contractor, or if any work has been covered over without the approval or consent of the Owner (whether or not it is found to be defective), the Contractor shall be liable for testing costs and all costs of correction, including labor, material, services or required consultants, additional supervision, and the Owner's administration

costs. Said costs will be charged to the Contractor by deducting inspection and testing charges from the contract price.

PART 2 - PRODUCTS

Not used

PART 3 - EXECUTIONS

Not used

END OF SECTION

SECTION 01410
TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.1 Section Includes

A. Selection and payment.
B. Contractor submittals.
C. Laboratory responsibilities.
D. Laboratory reports.
E. Limits on testing laboratory authority.
F. Contractor responsibilities.
G. Schedule of inspections and tests.

1.2 Related Sections

A. General Conditions: Inspections, testing, and approvals required by public authorities.
B. Section 01300 - Submittals: Manufacturer's certificates.
C. Section 01400 - Quality Control
D. Section 01700 - Contract Closeout: Project record documents.
E. Contract Drawing Specification Requirements: Inspections and tests required, and standards for testing.

1.3 References

A. ASTM C1077 - Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.

B. ASTM D3740 - Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

C. ASTM E329 - Practice for Use in the Evaluation of Inspection and Testing Agencies as Used in Construction.

D. ASTM E543 - Practice for Determining the Qualification of Nondestructive Testing Agencies.

E. ASTM E548 - Practice for Preparation of Criteria for Use in the Evaluation of Testing Laboratories and Inspection Bodies.

F. ASTM E699 - Practice for Criteria for Evaluation of Agencies Involved in Testing, Quality Assurance, and Evaluating Building Components in Accordance with Test Methods Promulgated by ASTM-Committee E6.

1.4 Selection And Payment

A. Employment and payment for services of an independent testing laboratory to perform specified inspecting and testing, by Contractor.

B. Employment of testing laboratory in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

1.5 Quality Assurance

A. Comply with requirements of ASTM C1077, ASTM D3740, ASTM D4561, ASTM E329, ASTM E543, ASTM E548, and ASTM E699.

B. Laboratory: Authorized to operate in State in which Project is located.

C. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.

D. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.

1.6 Contractor Submittals

A. None.

1.7 Laboratory Responsibilities

A. Test samples of mixes submitted by Contractor.

B. Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.

C. Perform specified inspecting, sampling, and testing of Products in accordance with specified standards.

D. Ascertain compliance of materials and mixes with requirements of Contract Documents.

E. Promptly notify Engineer and Contractor of observed irregularities or non-conformance of Work or Products.

F. Perform additional inspection and tests required by Engineer.

1.8 Laboratory Reports

A. After each inspection and test, promptly submit three (3) copies of laboratory report to Engineer, and to Contractor.

B. Include:

1. Date issued,
2. Project title and number,
3. Name of inspector,
4. Date and time of sampling or inspection,
5. Identification of product and specifications section,
6. Location on the site,
7. Type of inspection or test,
8. Date of test,
9. Results of tests,
10. Conformance with Contract Documents.

C. When requested by Engineer or owner, provide interpretation of test results.

1.9 Limits On Testing Laboratory Authority

A. Laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.

B. Laboratory may not approve or accept any portion of the Work.

C. Laboratory may not assume any duties of Contractor.

D. Laboratory has no authority to stop the Work.

1.10 Contractor Responsibilities

A. Deliver to laboratory at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs.

B. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers, facilities.

C. Provide incidental labor and facilities:

1. to provide access to Work to be tested,
2. to obtain and handle samples at the site or at source of Products to be tested,
3. to facilitate tests and inspections,
4. to provide storage and curing of test samples.

D. Notify Engineer and laboratory 24 hours prior to expected time for operations requiring inspecting and testing services.

1.11 Schedule Of Inspections And Tests

A. Provide supervision, labor, equipment, materials to conduct the tests and inspection.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01600
MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.1 Section Includes

A. Products.
B. Transportation and handling.
C. Storage and protection.
D. Product options.
E. Substitutions.

1.2 Related Sections

A. Section 01300 - Submittals.
B. Section 01400 – Quality Control: Product quality monitoring.

1.3 Products

A. Product: Means new material, -machinery, components, fixtures and systems forming the work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the work. Product may also include existing materials or components required for reuse.

B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.

C. Provide interchangeable components of the same manufacture for components being replaced.

1.4 Transportation And Handling

A. Transport and handle Products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.

C. Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.5 Storage And Protection

A. Store and protect Products in accordance with manufacturers' instructions.

B. Store with seals and labels intact and legible.

C. Store sensitive Products in weather tight, climate controlled, enclosures in an environment favorable to Product.

D. For exterior storage of fabricated Products, place on sloped supports above ground.

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

F. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of-Products.

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

H. Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.

I. Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.

J. After receipt of products, the Contractor assumes responsibility for loss and damage including but not limited to breakage, corrosion, weather damage and distortion.

K. Notify Owner and Engineer in writing upon acceptance of a shipment.

1.6 Product Options

A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article.

1.7 Substitutions

A. Engineer will consider requests for Substitutions only within 15 days after date established in Notice to Proceed.

B. Substitutions may be considered when a Product becomes unavailable through no fault of the Contractor.

C. Document each request with complete data substantiating Compliance of proposed Substitution with Contract Documents.

D. A request constitutes a representation that the Contractor:

1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.

2. Will provide the same warranty for the Substitution as for the specified Product.

3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.

4. Waives claims for additional costs or time extension that may subsequently become apparent.

5. Will reimburse owner and Engineer for review or redesign services associated with re-approval by authorities.

E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

F. Substitution Submittal Procedure:

1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.

2. Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.

3. The Engineer will notify Contractor in writing of decision to accept or reject request.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 Section Includes

A. Closeout procedures.
B. Final cleaning.
C. Project record documents.
D. As-built and conformed to Construction Record Drawings.
E. Warranties and Bonds.

1.2 Related Sections

A. Standard General Conditions
B. Supplementary Conditions
C. Section 01025 - Measurement and Payment
D. Section 01300 - Submittals
E. Section 01340 - Shop Drawings
F. Section 01740 - Warranties and Bonds

1.3 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. Provide submittals to Engineer and Owner that are required by governing or other authorities.

C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and balance due.

1.4 Final Cleaning

A. Execute final cleaning prior to final project assessment.

B. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

C. Clean site; sweep paved areas.

D. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.5 Project Record Documents

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

1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. Reviewed Shop Drawings, Product Data, and Samples.
6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by owner.

C. Store record documents separate from documents, used for construction.

D. Record information concurrent with construction progress.

E. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:

1. Manufacturer's name and product model and number.
2. Product substitutions or alternates utilized.
3. Changes made by Addenda and modifications.

F. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:

1. Measured elevations of buried piping.
2. Measured locations of existing buried utilities and appurtenances encountered during the progress of the work.
3. Field changes of dimension and detail.
4. Details not on original Contract drawings.

1.6 As-Built And Conformed To Construction Record Drawings

A. As-builts for products: In accordance with Section 01340.

B. Conformed to construction Record Drawings: One complete set of full size prints marked to show changes and revisions to date of the project completion.

1.7 Warranties And Bonds

A. Submit in accordance with Section 01740.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01740
WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 Section Includes

A. Preparation and submittal.
B. Time and schedule of submittals.

1.2 Related Sections

A. Instruction to Bidders
B. General Conditions: Performance bond and labor and material payment bonds or letters of credit, warranty, and correction of work.
C. Section 01700 - Contract Closeout: Contract closeout procedures.
D. Section 01700 - Contract Closeout.
E. Contract Drawing Specifications: Warranties required for specific Products or Work.

1.3 Form Of Submittals

A. Bind in commercial quality 8-1/2 x 11 inch three ring binders with durable plastic covers.

B. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and supplier; and name of responsible company principal.

C. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of Product or work item.

D. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

1.4 Preparation Of Submittals

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals' when required.

D. Retain warranties and bonds until time specified for submittal.

1.5 Time Of Submittals

A. Make submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.

B. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

EXHIBIT C

To

CLOSURE OF THE
CRRA WATERBURY BULKY WASTE LANDFILL AGREEMENT

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

Section	Title
02110	Clearing
02112	Erosion And Sediment Control
02220	Excavation, Backfill And Re-Grading
02227	Cover Soil Material
02228	Topsoil Material
02230	Gravel
02271	Riprap
02272	HDPE Swale Liner
02900	Turf Establishment And Landscaping
06642	Erosion Control Geosynthetics

Stormwater Pollution Control Plan, TRC (March 2008)

SECTION 02110
CLEARING

PART 1 - GENERAL

1.1 Applicable Publications

None.

1.2 Scope Of Work

The work described herein and as shown on the Contract Drawings shall consist of furnishing all labor, material and equipment and performing all operations required for performing clearing prior to construction of the landfill cap as specified herein and as shown on the Contract Drawings. Site soil erosion and sediment controls must be in place before proceeding with any site construction activity (i.e., clearing).

1.3 Delivery And Storage

Deliver materials to and store at the site in a manner which will maintain the materials in their original manufactured or fabricated condition until ready for use.

1.4 Protection

1.4.1 Roads

Keep roads free of dirt and debris at all times.

1.4.2 Existing Facilities

Protect existing facilities (e.g., fencing) designated to remain in areas to be cleared. The Contractor shall be responsible for the repair of any damage to existing facilities caused by the Contractor's operations.

1.4.3 Utility Lines

Protect from damage all existing utility lines that are indicated to remain. Notify CRRA immediately of any damage to or encounter with an unknown existing utility line. The Contractor shall be responsible for the repair of any damage to existing utility lines that are indicated or made known to the Contractor prior to start of clearing operations.

1.4.4 Blasting

The use of explosives will not be permitted.

1.4.5 Personal Protective Equipment

The Contractor shall be responsible for providing their workers with the appropriate personal protective equipment.

PART 2 - PRODUCTS

None.

PART 3 - EXECUTION

3.1 Clearing

Clearing shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within the areas to be cleared. Cut off flush with the original ground surface trees, stumps, roots, brush, and other vegetation in areas to be cleared.

3.2 Disposal Of Cleared And Grubbed Materials

All trees, shrubs, and stumps removed during clearing shall be thoroughly dried and cleaned of all soil prior to chipping and grinding. Wastes from chipping and grinding may be removed from site or spread on-site in an area designated by CRRA.

Timber or other materials that are not chipped must be disposed of off site. Burning will not be permitted.

END OF SECTION

SECTION 02112
EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 Description

A. The work described herein and as shown in the details on the Contract Drawings shall consist of furnishing all labor, material and equipment and performing all operations required for installing the erosion and sediment controls during construction activities. The work also includes maintenance of the erosion and sediment controls through the construction period until the site has been stabilized and the work has been accepted by CRRA. The Contractor shall be responsible for maintaining compliance with all applicable erosion and sediment control regulations.

B. The work shall conform to the Soil Erosion and Sediment Control Plan as defined below. Site soil erosion and sediment controls must be in place before proceeding with any construction activities.

1.2 References

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 185	(1997) Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
ASTM C 33	(1997) Concrete Aggregates
ASTM D 3787	(1989) Bursting Strength of Knitted Goods – Constant-Rate-or-Transverse (CRT) Ball Burst Test
ASTM D 4355	(1992) Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
ASTM D 4533	(1991; R 1996) Trapezoid Tearing Strength of Geotextiles
ASTM D 4632	(1991; R 1996) Grab Breaking Load and Elongation of Geotextiles
ASTM D 5141	(1996) Determining Filtering Efficiency and Flow rate of a Geotextile for Silt Fence Application Using Site-Specific Soil

CT Public Act No. 83-388 - An Act Concerning Soil Erosion and Sediment Control

CT Council on Soil and Water Conservation (2002) Connecticut Guidelines for Soil Erosion and Sediment Control

1.3 Submittals

The CONTRACTOR will be furnished with copies of and must comply with the following documents:

A. Stormwater Pollution Control Plan for the Waterbury Landfill Closure, to be prepared by TRC.

B. Quality Assurance Plan for the Waterbury Landfill Closure, to be prepared by TRC.

PART 2 - PRODUCTS

2.1 Silt Fence Fabric

A. Fabric used in silt fence construction shall be non-rotting, ultraviolet light resistant woven polyester geotextile with sufficient strength for the purpose intended. The grab tensile strength shall exceed 150 pounds and puncture strength shall exceed 50 pounds.

2.2 Strawbales

A. Bales used in sedimentation control system shall be made of straw with forty pounds minimum weight and one hundred and twenty pounds maximum.

2.3 Wood Stakes

A. Wood stakes used in sedimentation control system shall be a minimum 1 inch by 2 inch nominal size by a minimum 3 feet long.

2.4 Fiber Filtration Tubes

A. The Fiber Filtration Tubes (FFT) shall consist of an engineered composite of wood fibers, man-made fibers and performance-enhancing polymers encased within cylindrical tubes composed of a heavy-duty, knitted, high density polyethylene mesh. The photodegradable mesh shall be oriented in diamond or hexagonal patterns and shall move freely at all knitted yarn intersections. The FFT shall allow water to flow freely through its matrix, provide three-dimensional filtration of soil particles and facilitate the release of flocculants to coagulate and aggregate suspended soil particles.

B. Product and Manufacturer

1. Terra-Tubes by Profile Products, LLC

2. or Equal

2.5 Jute Netting

A. Jute netting shall be a jute netting woven from undyed and unbleached plain, single jute yarn, loosely twisted with approximately uniform diameter yarn in both length and width directions. The finished cloth physical requirements are as follows:

Width – Nominal 48 inches
Length – Convenient lengths; 50 yard minimum
Weight – 1.05 pounds – 1.70 pounds per linear yard of 48 inch wide material
Mass – 0.5 to 0.769 kg/m of 1200 mm wide material
Openings – Approximately ½" to 1" in width and length

1. The use of either staples or stakes shall be as recommended by the manufacturer of the erosion control netting.

2. Staples used to fasten the erosion control netting to the soil surface shall be steel, U-shaped and shall be approximately 6 inches long and 1 inch wide. Machine made staples shall be of No. 11 gauge or heavier steel wire. Hand made staples shall be made from 13 inch lengths of No. 9 gauge or heavier steel wire.

3. Stakes used to fasten the erosion control netting to the soil surface shall be of a type, shape and length as recommended by the manufacturer unless designated otherwise by the plans.

PART 3 - EXECUTION

3.1 Construction Methods

Construction of erosion and sediment control practices shall be sequenced to coordinate with the construction schedule. Perimeter erosion and sediment controls shall be in place and be completely functional prior to start of any land disturbing activities. All erosion and sediment controls shall be constructed and installed in accordance with the Contract Drawings and Soil Erosion and Sediment Control Plan approved by the Owner's Representative.

A. Silt Fence

1. Furnish and install silt fence where indicted on the Project Drawings and as required by the Soil Erosion and Sediment Control Plan. The silt fence shall remain in place during the duration of the project and shall be removed with the approval of the Engineer.

B. Storm Water Inlet Protection

2. For storm water inlets, provide a haybale dike as shown on the Drawings.

C. Furnish and install Fiber Filtration Tubes (FFT) where indicated on the Contract Drawings.

1. Install FFTs in accordance with manufacture's recommendations. The FFTs shall be installed after final grading and remain until turf is firmly established.

D. Jute Netting

1. Jute netting strips shall be rolled out flat, parallel to the direction of flow, in flumes and ditches, perpendicular to the direction of flow on backslopes. When two or more strips are required to cover an area, they shall overlap 3 inches (minimum); and staples placed with half of each staple located in each of the adjoining blankets. Ends of strips shall overlap a minimum of 6 inches with the upgrade section on top. The upslope end (anchor slot) of each strip shall be buried in 6 inch vertical slots, and soil tamped firmly against it.

E. Maintenance

1. The erosion and sediment control measures shall remain in place for the duration of the construction period and until turf has been established pursuant to Section 02900. The Contractor shall inspect all erosion and sediment control measures after each rainfall event and replace or repair as necessary for measures to remain functional and as directed by the Engineer.

3.2 Best Management Practices

A. Erosion and Sediment Control Devices

1. Soil erosion and sediment controls are measures that are used to reduce the amount of soil particles that are carried off of a land area and deposited into a receiving water. This section provides a general description of the most appropriate measures planned for this project. All applicable soil erosion and sediment control measures shall be implemented in accordance with the guidelines contained herein prior to commencement of construction activities. Measures shall be maintained during and after the demolition activity until final stabilization is accomplished, after which time all temporary soil erosion and sediment control measures will be removed.

a. Temporary Stabilization

Temporary stabilization consists of terracing, mulching, or reseeding vegetation in all disturbed or unvegetated areas that are exposed during prolonged periods of inactivity. Due to the relatively short nature of the proposed project activities, it is not likely that temporary stabilization will be required. However, temporary stabilization measures shall be implemented if construction halts for more than 14 days, where

construction will not resume within 21 days, and where the area is not subject to traffic.

b. Permanent Stabilization

Permanent stabilization for the footprint of the landfill cap consists of turf establishment as described in Section 02900.

c. Temporary Erosion Control Practices

Prior to initiating construction, all temporary erosion and sediment control practices shall be in place. This section discusses all temporary erosion and sediment control practices that are necessary for the construction practices.

(1) Construction Access

Any material which is transported outside the contract boundaries and is deposited on public roadways shall be removed immediately. Material may be removed by shoveling, wet mopping, wet sweeping, or wet power brooming and shall be transported to the appropriate stockpile within the contract boundaries. Road washing shall be allowed only after the sediment is removed in the above manner and approved by the ENGINEER. Dry sweeping or dry power brooming shall not be allowed.

(2) Silt Fence and Straw Bales

Silt Fence and straw bales will be used to intercept and retain small amounts of sediment carried by sheet flow from the disturbed areas during construction activities in order to prevent sediment runoff from the project site. Silt fence and straw bales shall be placed within or around the work zones as shown on the Contract Drawings. Silt fence and straw bales are to be used in areas with slope except in drainageways. Silt fence and straw bales shall be placed perpendicular to the flow of runoff and parallel to the contours. The devices shall be placed down slope of disturbed areas where erosion would occur in the form of sheet or rill erosion. Construct silt fence and straw bale applications as shown on the Contract Drawings.

END OF SECTION

SECTION 02220
EXCAVATION, BACKFILL AND RE-GRADING

PART 1 - GENERAL

1.1 Description

A. Scope:

1. The Contractor shall provide all labor, materials, tools, equipment, tests and incidentals required to perform all excavating, backfilling, compaction, and regrading of earth materials and solid waste as shown, specified, and required for the purpose of constructing the landfill cap, drainage structures, embankments, grading, and other facilities required to complete the Work in every respect.

2. All of the necessary excavation, backfilling and compaction of soil material and solid waste to achieve the landfill cap subgrade contours as shown on the Contract Drawings.

3. All temporary means needed to maintain the site in a continuously dewatered condition.

4. All necessary testing of materials as required in the Contract Documents.

5. All necessary preparation of subgrade for the landfill cap, pavements, roadways, soil and fill material, erosion control geosynthetics is included.

6. All necessary preparation required torepair displaced and eroded soil materials on subgrade, general fill layers, and vegetative layer prior to final acceptance is included.

7. All temporary means needed to prevent discharge of sediment to water courses due to dewatering systems or erosion during construction are included. Such means shall be included in the Stormwater Pollution Control Plan attached to these Contract Documents.

8. No classification of excavated materials will be made. Excavation includes all materials regardless of type, character, composition, moisture, or condition.

9. CRRA shall be responsible for all necessary earthwork required to load and transport Cover Soil Material, as defined herein; and unload near stockpiles. The Contractor shall be responsible for placing and compacting subgrade and

the landfill cap materials. All necessary earthwork that is designated as the responsibility of the Contractor is included.

10. All necessary earthwork required to cut, fill and grade existing grade to within 1-inch of specified subgrade.

11. All necessary earthwork required to excavate, load and temporarily stockpile existing on-site soil material; unload, place, compact and grade the subgrade material, embankment fill, structural fill, barrier protection material, and topsoil is included.

B. Related Sections:

1. Section 02227, Cover Soil Material
2. Section 02228, Topsoil
3. Section 02900, Turf Establishment and Landscaping

C. General:

1. The Contractor shall be required to excavate waste material and temporary soil cover from the site as directed by the Engineer and use the same as compacted backfill to achieve the landfill cap subgrade contours shown on the Contract Drawings.

2. Contractor is required to use Cover Soil Material provided by CRRA to achieve final landfill cap configuration.

3. All Topsoil will be obtained, tested, and transported to the site by the Contractor.

4. Fill materials and their respective applications include, but are not limited to the following:

Fill Material	**Application**
Cover Soil	Layer overlying Subgrade
Topsoil	Vegetative Layer
Relocated Wastes	Cap Subgrade

5. Prior to mobilization to the site to construct the landfill cap, the Contractor shall perform a survey of the Work Area to determine areas that will require cut or fill to achieve the final subgrade surface grade. The Contractor will be responsible for regrading the surface of the Work Area to achieve this final grade. It may be necessary for the Contractor to move large amounts of fill to achieve the final grades. Payment will be made on a lump sum basis. Contractor will determine means and methods to achieve final grades. All grades prior to placement of subbase shall be no greater than 33%, nor less than 4%. Contractor shall remove all visible pieces of metal within the waste material layer prior to placement of subbase.

6. The Contractor shall provide a final as-built survey of lines and grades showing topography and spot elevations prepared and sealed by a Connecticut licensed surveyor for finished grades. Copies of all field notes shall accompany the as-built surveys and shall be submitted prior to the request for payment.

7. Contractor's test field data must indicate compliance with the Contract Documents in order to be accepted. The data must be presented to and accepted by the Engineer prior to placement of the next lift. Contractor must assist the Engineer in doing periodic conformance testing while the work is in progress. The field data must be certified and sealed by a Connecticut licensed Professional Engineer. The Owner reserves the right to have the Engineer present to observe performance of testing or collection of test samples to be submitted by the Contractor. The Contractor must notify the Owner prior to performing any testing or collecting test samples such that the Engineer can be present for the Work. Test data will not be accepted without the notification to the Owner prior to performance of tests or collection of samples.

D. The Contractor shall maintain open access to roads at all times during landfill cap construction. The Contractor shall not block the existing roads at any time. If access needs to be temporarily blocked during construction, the Contractor shall provide written notice to CRRA at least one week prior to needing to block this access.

1.2 Quality Assurance

A. Tests:

1. The services of a qualified testing laboratory shall be engaged by the Contractor to make tests and determine acceptability of the fill or material as listed below. The Contractor will be responsible for onsite testing of compaction based on the test data obtained by the Contractor or CRRA as indicated herein.

2. Required Tests:

a. Topsoil samples from Off-Site: (one composite sample for every 3,000 cubic yards or portion thereof) Total Organic Content, Gradation, ASTM D 422, Priority Pollutant Semivolatile Organic Compounds (SVOCs), EPA Method 8270, Priority Pollutant Volatile Organic Compounds (VOCs), EPA Method 8260, Priority Pollutant Metals, EPA Method 6010 (Hg Method), Pesticides, EPA Method 8081, PCBs, EPA Method 8082, Herbicides, EPA Method 8151. All environmental test results shall be in conformance with the criteria for Residential Direct Exposure Criteria (RDEC) and Class GB Groundwater Pollutant Mobility Criteria (GBPMC) of the CTDEP's Remediation Standard

Regulations (RSRs), 22a-133k-l to k-3 of the Regulations of Connecticut State Agencies.

b. Cover soil material provided by CRRA shall be tested (sampled at a rate of one every 5,000 cubic yards or portion thereof) by contractor for: Gradation, Modified Proctor Density ASTM D 1557. In-place compaction, ASTM D 1556, ASTM D 6398-07.

B. Permits and Regulations:

1. Contractor shall obtain all necessary permits for work.

2. Contractor shall perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction and any other permits required for this project.

3. Contractor shall comply with the CTDEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities.

C. Reference Standards: Comply with applicable provisions and recommendations of the following except as otherwise shown or specified.

1. ASTM D 1556, Density of Soil in Place by the Sand-Cone Method.

2. ASTM D 6938-07, Density and Water Content of Soil in Place by Nuclear Methods.

1.3 Submittals

A. Test Reports:

1. Submit six (6) copies of the following reports directly to the Engineer from the testing service:

a. Required topsoil test data as per 1.2(A)(2)(a) and (b)
b. Compliance testing during construction.
c. Field density tests.

2. Testing shall conform to the requirements as indicated in the specific material specification sections.

B. Registration under CTDEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities. CRRA has provided a Stormwater Pollution Control Plan which addresses temporary means needed to prevent discharge of sediment to water courses because of dewatering systems or erosion and off-site removal and disposal of all water that has contacted exposed solid waste material as a result of construction activities. The Contractor shall be required to comply with all provisions of the approved plan.

1.4 Job Conditions

A. Existing Structures: Shown on the Drawings are certain surface and underground structures adjacent to the Work. This information has been obtained from existing records. It is not guaranteed to be correct or complete and is shown for the convenience of the Contractor. The Contractor shall explore ahead of the required excavation to determine the exact location of all structures. They shall be supported and protected from injury by the Contractor. If they are damaged, broken or injured, they shall be restored immediately by the Contractor at his expense. Contractor shall contact Call-Before-You-Dig prior to beginning construction.

B. Existing Utilities: Locate existing underground utilities in the areas of Work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.

1. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult the Engineer immediately for directions as to procedure. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

2. Do not interrupt existing utilities serving facilities occupied and used by Owner or others, except when permitted in writing by Engineer and then only after acceptable temporary utility services have been provided.

C. Use of Explosives:

1. The use of explosives will not be permitted.

D. Protection of Persons and Property: Barricade open excavations occurring as part of this Work and post with warning lights. Operate warning lights during hours from dusk to dawn each day and as otherwise required.

1. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

E. Dust Control: Contractor shall conduct all of his operations and maintain the area of his activities, including sweeping and sprinkling of roadways, so as to minimize creation and dispersion of dust. Calcium chloride shall be used to control serious or prolonged dust problems, subject to approval of Engineer.

PART 2 - PRODUCTS

2.1 Acceptable Manufacturers

A. Not Applicable.

2.2 Soil Materials

A. Cover Soil:

1. Cover soil shall be used where shown and specified, including, but not limited to subgrade preparation of access roads.

2. Cover soil in accordance with Section 02227.

3. All cover soil will be obtained, and transported to the site by CRRA. Contractor shall be responsible for performing laboratory density testing to provide a baseline against which to measure in-place field density tests.

B. Topsoil:

1. Topsoil shall be placed where shown or specified or directed by Engineer.

2. All Topsoil will be obtained, tested, and transported to the site by the Contractor. The Owner reserves the right to have the Engineer observe the loading of Topsoil from the source identified by the Contractor. The Contractor shall notify the Owner prior to any loading of Topsoil and materials will not be accepted if this prior notification is not provided.

3. See Section 02900 "Turf Establishment and Landscaping" for full specifications.

PART 3 - EXECUTION

3.1 Inspection

A. Engineer will examine the areas and conditions under which excavating, filling, and grading are to be performed and notify the Contractor of conditions he may find that are detrimental to the proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected in an acceptable manner.

3.2 Site Preparation

A. Vegetation will be cleared from the work area. Contractor will grade the subbase surface to achieve grades as shown on the Contract Drawings prior to construction of the landfill cap. The Contractor will excavate excess subgrade material and temporary cover soil to achieve the subgrade contours and place the excavated in areas requiring fill. The excavated material used as backfill shall be compacted in loose lifts not exceeding 8 inches thickness with four passes of a vibratory roller.

3.3 Excavation

A. Contractor shall perform all excavation required to complete the Work as directed

by the engineer. Excavations shall not require drilling and blasting to remove.

B. Material Storage: Stockpile satisfactory excavated materials in approved areas, until required for backfill or fill. Place, grade and shape stockpiles for proper drainage.

1. Locate and retain soil materials at locations indicated on Contract Drawings.

2. Contractor shall ensure temporary erosion & sediment control measures are in place in accordance with the Contract Drawings and the Stormwater Management Plan.

3.4 Unauthorized Excavation

A. All excavation outside the lines and grades shown, and which is not approved by the Engineer, together with the removal and disposal of the associated material shall be at the Contractor's expense. The unauthorized excavation shall be filled and compacted with select backfill by the Contractor at his expense. Any damage, disturbance, or settlement that occurs as a result of the Contractor's stockpiling of material or equipment on site shall be the responsibility of the Contractor to repair and/or supply additional materials to compensate for settlement caused by the Contractor's actions.

3.5 Grading

A. General: Uniformly grade areas within limits of grading under this Section, including adjacent transition areas. Smooth subgrade surfaces within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.

B. Compaction:

1. After grading, compact subgrade surfaces to the depth and percentage of maximum density for each area classification.

3.6 Field Quality Control

A. Quality Control Testing During Construction:

1. Contractor shall establish and maintain a 50 foot grid for control of field density testing.

2. Compaction testing shall be performed by contractor on a 50 foot grid in the presence of the Engineer.

3. Compaction testing shall be performed according to ASTM D 6938-07, Density of Soil and Moisture Content in Place by Nuclear Methods.

4. Compaction testing shall be presented and accepted by the Engineer prior to placement of the next lift. Fill Compaction test results on the 50 foot grid interval to be signed and stamped by a professional engineer licensed in the State of Connecticut prior to submission to the Engineer.

5. Field compaction testing shall be included in each of the bid items. Field compaction testing for additional compacted backfill and structural fill shall be included in the respective bid items.

PART 4 - RE-GRADING MEASUREMENT AND PAYMENT

A. Method of Measurement

1. The Contractor shall re-grade the landfill as necessary to meet the pre-cap subgrade elevations depicted on the drawings.

B. Basis for Payment

1. The Contractor will be paid at the contract lump sum price for "re-grading". The price shall include all labor, equipment, materials and tools incidental to the excavation, relocation, regrading, placement, covering, and compaction of waste material and temporary cover soil to achieve the landfill cap subgrade shown on the Contract Drawings.

END OF SECTION

SECTION 02227
COVER SOIL MATERIAL

PART 1 - GENERAL

1.1 Description

A. Scope:

1. The work to be performed under this Section shall include materials, all labor, tools, equipment, and testing for placing, grading, and compacting Cover Soil as shown on the Contract Drawings or as otherwise directed by the Engineer.

2. All necessary testing of materials as required in the Contract Documents.

3. The Contractor's field test data shall indicate compliance with the Contract Documents in order to be accepted. The field data shall be certified by the Engineer.

4. All soil layer thicknesses referenced in this Section represent the installed compacted thickness.

5. Items listed in Section 02220, Part 1 - General, 1.1 Description also apply.

6. The landfill cap shall consist of 18 inches of cover soil and 6 inches of topsoil placed and compacted on top of the subgrade. Requirements for cover soil are specified within this section. Section 02228 provides the requirements for topsoil.

B. Related Sections:

1. Section 02220, Excavation and Backfill and Regrading
2. Section 02228, Topsoil

1.2 Quality Assurance

A. Tests:

1. CRRA shall obtain the cover soil and perform all necessary chemical testing on the material. The Contractor shall assume that cover soil stockpiled on site is suitable for use. Contractor shall perform laboratory density testing as per ASTM D 1557 for every 5,000 cubic yards of cover soil used.

2. In-place Density testing using ASTM D 6938-07b, Density of Soil and Water Content in Place by Nuclear Methods.

3. Depth Test Hole

B. Permits and Regulations:

1. The Contractor shall obtain all necessary permits for work.

2. The Contractor shall perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

C. Reference Standards: Comply with applicable provisions and recommendations of the following except as otherwise shown or specified.

1. Modified Proctor Density Test ASTM D 1557

2. ASTM D 6938-07b, Density of Soil and Water Content in Place by Nuclear Methods.

1.3 Submittals

A. Test Reports:

1. Submit six (6) copies of the following reports directly to Engineer from the testing service, with copy to the Contractor:

a. Laboratory density tests

b. Field density tests.

2. Testing shall conform to the following as a minimum.

a. Laboratory density tests:

(1) Cover Soil material: The Contractor shall conduct one (1) test every 5,000 cubic yards or portion thereof using ASTM D 1557.

b. Field density tests:

(1) Cover Soil material: The Contractor shall conduct one (1) test every 10,000 square feet per nine (9) inch lift. A Troxler Nuclear Moisture-Density gauge shall be used for all field density tests. Test locations shall be tied into a site grid system 50 foot square. Test reports shall note the grid location point and lift for each test. The Contractor shall establish and maintain grid points for each lift of material placed.

c. Depth Test Hole:

(1) Cover Soil Material: for both nine (9) inch lifts, the Contractor shall hand excavate test holes on a 50 foot grid to confirm the in-place depth of cover soil. Test locations shall be tied into a site grid system 50 foot square. Test reports shall note the grid location point and lift for each test. The Contractor shall establish and maintain grid points for each lift of material placed.

B. CRRA has prepared a Stormwater Pollution Control Plan in accordance with the CTDEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities. This plan shall address temporary means needed to prevent discharge of sediment to water courses because of dewatering systems or erosion and off-site removal and disposal of all water that has contacted exposed solid waste material as a result of construction activities.

PART 2 - PRODUCTS

2.1 Acceptable Manufacturers

A. Not Applicable.

2.2 Cover Soil

A. Cover Soil

1. Cover Soil material shall be obtained by CRRA and CRRA will be responsible for chemically testing the material to determine its suitability for use. The Contractor may assume that Cover Soil material delivered to the site meets the specified requirements. Contractor shall perform grain size and density testing as prescribed herein.

PART 3 - EXECUTION

3.1 Installation

A. The Engineer or his representative will examine the areas and conditions under which excavating, filling, and grading are to be performed and notify the Contractor of conditions that the Contractor may encounter that are detrimental to the proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected in an acceptable manner.

B. Cover material shall be placed on all areas as shown on the Drawings or as directed by the Engineer and as described in these Specifications. The thickness of each lift prior to compaction of the cover material shall be no greater than twelve (12) inches. Total compacted thickness of the cover material shall be as shown on the Contract Drawings. Compaction of the Cover Soil material shall be accomplished by suitable compaction equipment, subject to approval by the Engineer.

C. The cover material shall be placed and compacted as necessary to achieve the required permeabilities and shear strength. The cover material shall be compacted to 90 percent of the Modified Proctor Density. The moisture content of the material shall be maintained within 3 percent of optimum moisture. Contractor shall not work wet cover material that cannot support equipment. Contractor shall perform density testing as prescribed herein.

D. If changes in the material occur, the Engineer shall verify the material is from an approved source and the Engineer may require additional testing. If the material is not from an approved source or if the material is determined to not be acceptable by the Engineer, the Contractor shall be notified that the material is not approved.

E. The thickness of the in-place cover material will be checked after the completion of the work on a grid pattern not to exceed 50-foot by 50-foot by digging, by hand, with a shovel in the presence of and as directed by the Engineer. The size of the test hole shall not be less than one-foot in diameter. Measurements shall be made perpendicular to the slope. The Contractor shall be responsible for digging holes in the cover material to allow for the measurements to be taken by the Engineer. After measurements have been made, the Contractor shall backfill the holes with cover material, and hand tamp.

F. The Contractor shall be responsible to repair damage to the cover material between testing and acceptance.

G. All soil samples are to be obtained under the direction of the Engineer.

H. Final acceptance of cover material is dependent on:

1. Satisfying the minimum requirement of thickness from the selected alternative as shown on the Contract Drawings measured perpendicular to the slope.

2. Cover material meeting all the physical/analytical properties listed in Section 02227.

I. Any damage, disturbance, or settlement that occurs as a result of the Contractor's stockpiling of material or equipment on site shall be the responsibility of the Contractor to repair and/or supply additional materials to compensate for settlement caused by the Contractor's actions.

3.2 Cover Soil

A. Cover Soil

1. Quality Control Testing:

a. The Engineer shall perform quality control testing during construction. This testing is in addition to all other tests required to be conducted by

the Contractor.

b. The Engineer shall collect representative samples from each material source of Cover Soil for testing at a frequency determined by the Engineer.

END OF SECTION

SECTION 02228
TOPSOIL MATERIAL

PART 1 - GENERAL

1.1 Description

A. Scope:

1. The Contractor shall provide and place topsoil as shown on the Contract Drawings.

B. Related Sections:

1. Section 02220, Excavation and Backfill and Regrading.
2. Section 02900, Turf Establishment and Landscaping.

C. General:

1. Contractor shall obtain material from off-site sources and perform the necessary testing.

1.2 Quality Assurance

A. Tests:

1. The services of a qualified testing laboratory shall be engaged by the Contractor to make tests and determine acceptability of the fill or material as listed below. The Contractor will be responsible for onsite testing of compaction based on the test data obtained by the Contractor.

2. Required Tests:

a. Topsoil from Off-Site (perform one test for every 3000 cubic yards of material used, or portion thereof): Total Organic Content, Gradation, ASTM D 422, Priority Pollutant Semivolatile Organic Compounds (SVOCs), EPA Method 8270, Priority Pollutant Volatile Organic Compounds (VOCs), EPA Method 8260, Priority Pollutant Metals, EPA Method 6010 (Hg Method), Pesticides, EPA Method 8081, PCBs, EPA Method 8082, Herbicides, EPA Method 8151. All environmental test results shall be in conformance with the criteria for Residential Direct Exposure Criteria (RDEC) and Class GB Groundwater Pollutant Mobility Criteria (GBPMC) of the CTDEP's Remediation Standard Regulations (RSRs), 22a-133k-l to k-3 of the Regulations of Connecticut State Agencies.

b. Total Organic Content of Topsoil shall be between 5% and 15%.

1.3 Submittals

A. Test Reports:

1. Submit six (6) copies of the following reports directly to the Engineer from the testing service:

   a. Required topsoil test data as per 1.2(A)(2)(a) and (b)

2. Testing shall conform to the requirements as indicated in the specific material specification sections.

PART 2 - PRODUCTS

2.1 Soil Materials

A. Topsoil:

1. Topsoil shall be placed where shown or specified or directed by Engineer.

2. All Topsoil will be obtained, tested, and transported to the site by the Contractor. The Owner reserves the right to have the Engineer observe the loading of Topsoil from the source identified by the Contractor. The Contractor shall notify the Owner prior to any loading of Topsoil and materials will not be accepted if this prior notification is not provided.

3. See Section 02900 "Turf Establishment and Landscaping" for full specifications.

PART 3 - EXECUTION

3.1 Placing

A. ENGINEER will examine the areas and conditions under which Topsoil placing is to be performed and notify the Contractor of conditions he may find that are detrimental to the proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected in an acceptable manner. Placing of Topsoil shall conform to the requirements of Section 02220.

B. The thickness of the in-place Topsoil material will be checked after the completion of the work on a grid pattern not to exceed 50-foot by 50-foot by digging, by hand, with a shovel in the presence of and as directed by the Engineer. The size of the test hole shall not be less than one-foot in diameter. Measurements shall be made perpendicular to the slope. The Contractor shall be responsible for digging holes in the Topsoil to allow for measurements to be taken by the Engineer. After measurements have been made, the Contractor shall backfill the holes with cover material, and hand tamp. Test locations shall be tied into a site grid system 50 foot square. Test reports shall note the grid location point and lift for each test. The

Contractor shall establish and maintain grid points for each lift of material placed.

END OF SECTION

SECTION 02230
GRAVEL

PART 1 - GENERAL

1.1 Description

A. Scope:

1. Contractor shall furnish and place gravel of the types specified at locations shown on the Drawings including, weeps into drainage swales, diversion swale and perimeter or as otherwise directed by the Engineer.

B. Related Sections:

1. Section 02220, Excavation, Backfill and Regrading.
2. Section 02271, Riprap.

1.2 Submittals

A. Contractor shall advise the Engineer of the source location and provide a representative sample.

PART 2 - PRODUCTS

2.1 Materials

A. Rounded gravel for weeps (pea stone): The materials shall be well-graded clean, screened rock obtained from an approved source and conforming to the specifications of ASTM C-33. Maximum size shall be 1-inch, 85 percent shall pass a 3/4-inch sieve and a maximum 5 percent shall pass a #10 sieve.

1. Contractor shall submit sample meeting the above requirements to an approved commercial testing laboratory for sieve analysis. The laboratory analysis results shall be approved by the Engineer before any material is ordered.

2. After the materials are delivered to the job site, the Engineer will take two samples from each shipment of material. The Contractor shall have a sieve analysis performed on these samples by a commercial testing laboratory. If the results of the samples taken in the field do not conform to those previously approved, the material will be rejected and shall be modified or removed from the job site.

3. Contractor shall furnish and place gravel as shown and specified or as directed by the Engineer.

PART 3 - EXECUTION

3.1 Placing

A. Gravel shall be spread in layers of uniform thickness not exceeding 12 inches and shall be thoroughly compacted with suitable power driven tampers or other power driven equipment. The placing of gravel shall conform to applicable requirements of Section 02220 except as noted above.

END OF SECTION

SECTION 02271
RIPRAP

PART 1 - GENERAL

1.1 Description

A. Scope:

1. Contractor shall provide all labor, materials, tools, equipment, testing, and incidentals required to furnish and place riprap at the base of the drainage downchute or as otherwise specified by the Engineer.

B. Related Work Sections:

1. Section 02220, Excavation, Backfill and Regrading.

PART 2 - PRODUCTS

A. Riprap shall consist of hard, durable, angular field or quarry stone. All stones shall be between 6 inches and 10 inches with 75% greater than 8 inches. The stones shall be free of dirt, debris, or deleterious material. Stones salvaged from excavation and meeting the above requirements maybe used for riprap if approved by the Engineer.

PART 3 - EXECUTION

3.1 Placing

A. Minimum total thickness of the riprap layer shall be as shown on the Drawings.

B. The stones shall be placed so that the weight of the stone is carried by the underlying material and not by the adjacent stones. On slopes, the largest of stones shall be at the bottom. Riprap shall be of proper size to form a compact solid blanket to protect the slopes.

C. Riprap shall be placed so as to conform as closely as practicable in size and character to existing riprap, if any.

D. Riprap may be placed with equipment, however, care shall be taken in placing to obtain a good gradation of materials so that the riprap will be firm and solid. Surfaces shall be leveled to the required alignment and slopes by hand placing the stone so as to fill large voids and to make the surface even.

END OF SECTION

SECTION 02722

HDPE SWALE LINER

PART 1 - GENERAL

1.1 Description

A. Scope: Contractor shall provide all labor, materials, tools, equipment, and incidentals necessary for the placement of High Density Polyethylene (HDPE) swale liners as shown and specified on the Contract Drawings or as otherwise directed by the Engineer.

B. Related Sections:

1. Section 02900, Turf Establishment and Landscaping.

1.2 Quality Control

A. Manufacturer Qualifications: HDPE swale liner manufacturer shall be a specialist in the manufacture of the particular geosynthetic.

1.3 Submittals

A. Shop Drawings:

1. Submit six (6) copies of manufacturer data, specifications, dimensions and installation instructions for HDEP swale liner.

2. Submit six (6) copies of an affidavit certifying that each liner furnished complies with all requirements specified herein.

3. No materials shall be shipped until the affidavit is submitted to Engineer.

PART 2 - PRODUCTS

2.1 Acceptable Products

A. HDPE Swale Liner

1. Swale liner segments shall be manufactured from HDPE and resin additives used shall not detrimentally effect the performance of the product. Acceptable manufacturers include:

a. Smart Ditch 12-inch Depth Trapezoidal Liners produced by Penda Corporation.

b. Or equal.

B. The HDPE Swale Liner shall meet the requirements of Table 1.

TABLE 1 – HDPE Swale Liner

Property	Test Method	Units	Value
Tensile Yield Strength (2"/min)	ASTM D 638	psi	3,000 (min)
Ultimate Elongation	ASTM D 638	%	500 (min)
Environmental Stress Crack Resistance	ASTM D 1693	h	250 (min)
Flexural Modulus	ASTM D 790	psi	110,000 (min)
Density	ASTM D 1505	g/cc	0.946
Brittleness Temperature	ASTM D 746	F	131 (max)
Impact Resistance	ASTM D 5420	lbs-ft	2,060
Coefficient of Linear Thermal Expansion	ASTM D 696	in/in/F	0.00007

1. Acceptable facilities include Utah State University, Colorado State University

C. Anchoring Devices

1. The HDPE Swale Liner shall be secured in place using anchor rods as shown on the Contract Drawings.

PART 3 - EXECUTION

3.1 Preparation And Installation

A. The HDPE Swale Liner product will be installed explicitly according to the manufacturer recommendations. The installation site shall be prepared by trenching to the design widths.

B. The surface to receive the HDPE Swale Liner shall be prepared to relatively smooth conditions free of obstructions, depressions, debris and soft or low density pockets of material. The material shall be capable of supporting the HDPE Swale Liner continuously along each section installed.

C. Erosion features such as rills, gullies, etc. must be graded out of the surface before HDPE Swale Liner deployment. Smooth roll drum compaction may be required before deploying HDPE Swale Liner to make sure the HDPE Swale Liner makes immediate contact with the soil.

D. Contractor shall connect the HDPE Swale Liner sections in such a manner to ensure that: the sections are not damaged; that abutting sections are securely fastened as detailed in the manufacturer's instructions; and that each section is anchored as detailed in the manufacturer's instructions and the Contract Drawings.

E. Contractor shall consult with manufacturer regarding recommendation as to the sequence for construction.

END OF SECTION

SECTION 02900
TURF ESTABLISHMENT AND LANDSCAPING

PART 1 - GENERAL

1.1 Description

A. Scope:

1. The Contractor shall provide all labor, tools, materials, testing, equipment and incidentals as shown, specified and required to furnish and perform landscaping work.

2. The extent of the landscaping Work shall be performed as shown and as specified in schedules.

3. The landscaping Work required includes the following:

   a. Maintenance Work as specified until completion of the Contract,

   b. Soil amendments,

   c. Fertilizers,

   d. Grass materials,

   e. Miscellaneous landscape materials, and

   f. Guarantees.

B. Coordination:

1. Review installation procedures under other Sections and coordinate the installation of items that must be installed with the landscaping.

2. Notify other contractors in advance of the installation of the landscaping to provide the other contractors with sufficient time for the installation of items included in their contracts that must be installed before landscaping.

C. Related Sections:

1. Section 02220, Excavation, Backfill, and Regrading.
2. Section 06642, Erosion Control Geosynthetics.

1.2 Quality Assurance

A. Landscape Subcontractor Qualifications:

1. Subcontract the landscape Work to a single firm specializing in landscape Work.

2. The landscape subcontractor shall have a minimum of five years of experience of performing substantially similar work.

B. Source Quality Control:

1. General:

a. Ship landscape materials with certificates of inspection as required by governmental authorities.

b. Comply with governing regulations applicable to landscape materials.

c. Engineer will request inspection of delivery slips for materials to verify specified quantities of bulk deliveries of soil amendments and fertilizers.

2. Analysis and Standards: Package standard products with manufacturer's certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Analytical Chemists, wherever applicable or as further specified.

C. Reference Standards: Comply with the applicable provisions and recommendations of the following, except as otherwise shown or specified.

1. ASTM C 602, Agricultural Liming Materials.

2. ASTM D 422, Method for Particle Size Analysis of Soils.

3. ASTM D 2487, Classification of Soils for Engineering.

4. Association of Official Analytical Chemists, Official Methods of Analysis.

5. American Joint Committee on Horticultural Nomenclature, Standardized Plant Names.

6. Official Seed Analysts of North America, Standards of Quality.

7. FSO-F-241D, Fertilizer, Mixed, Commercial.

8. FSO-F-166E, Peat Moss; Peat, Humus; and Peat, Reed-sedge.

1.3 Submittals

A. Shop Drawings: The Contractor shall submit six (6) copies of the following for approval:

1. Planting schedule showing scheduled dates for Turf Work in each area of site.

2. Manufacturer's specifications and installation instructions for all materials required.

B. Certificates: Submit for approval the following:

1. Certificates of inspection as may be required by governmental authorities to accompany shipments, and manufacturer's or vendors certified analysis for soil amendments and fertilizer materials. For standard products submit other data substantiating that materials comply with specified requirements.

2. Certificates from seed vendors certified statement for each seed mixture required, stating botanical and common name, percentage by weight and percentages of purity, germination, and weed seed for each species.

C. Operation and Maintenance Data: Submit for approval the following:

1. Typewritten instructions recommending procedures to be established by Owner for the maintenance of landscape Work for one full year. Submit prior to expiration of required maintenance period(s). Include moisture requirements of each type of planting and insect prevention measures including types of spray and application instructions, and special winter protection measures required for each planting.

D. Guarantee: Submit for approval a written guarantee, in the terms specified under "Guarantee" provision of these Specifications, signed by Contractor.

1.4 Product Delivery, Storage And Handling

A. Delivery of Materials:

1. Deliver packaged materials in original, unopened containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery.

2. Furnish seed in sealed, standard containers.

3. Notify Engineer of delivery schedule in advance so materials may be inspected upon arrival at job site.

4. Remove unacceptable material immediately from project site.

B. Storage of Materials:

1. Store and cover materials to prevent deterioration. Remove packaged materials which have become wet or show deterioration or water marks from the site. Replace at no further cost to Owner.

2. Seed that is wet or moldy or that has been otherwise damaged in transit or storage is not acceptable. Replace at no further cost to Owner.

1.5 Job Conditions

A. Environmental Requirements:

1. Proceed with and complete the Work as rapidly as portions of the Site become available, working within the seasonal limitations for each kind of landscape Work required.

2. Do not spread seed when wind velocity exceeds 5 miles per hour.

3. Do not plant when drought, or excessive moisture, or other unsatisfactory conditions prevail.

B. Scheduling:

1. Plant or install materials only during normal planting seasons for each type of landscape Work required. Correlate planting with specified maintenance periods to provide maintenance until occupancy by Owner.

1.6 Alternatives

A. Substitutions are not allowed.

1.7 Guarantee

A. Guarantee turf through the specified maintenance period, until Final Acceptance of the Work.

B. Immediately remove and replace turf found to be dead or in unhealthy condition during guarantee period and through the specified maintenance period. Make replacements during growth season following end of guarantee period. Furnish and plant replacements which comply with requirements shown and specified. Engineer will make another inspection at end of extended guarantee period, if any, to determine acceptance or rejection. Only one replacement will be required at end of guarantee period, except for losses or replacements due to failure to comply with specified requirements.

PART 2 - PRODUCTS

2.1 Materials

A. Topsoil:

1. The Contractor shall provide topsoil as required to complete landscape Work.

B. Soil Amendments:

1. The Contractor shall amend the soil as necessary.

C. Commercial Fertilizers:

1. Complete fertilizer of neutral character, with a minimum of 75 percent nitrogen derived from natural organic sources or ureaform; 40-50 percent of the nitrogen shall be water soluble. Available phosphoric acid derived form superphosphate, bone, or tankage. Potash derived from muriate of potash, containing 60 percent potash shall be uniform in composition, free flowing and suitable for application with approved equipment. Provide fertilizer with the following percentages of available plant nutrients.

    a. For lawns, provide fertilizer with not less than 4 percent phosphoric acid and not less than 2 percent potassium, and the percentage of nitrogen required to provide not less than 1.5 pounds of actual nitrogen per 1000 square feet of lawn area. Provide nitrogen in a form that will be available to the lawn during the initial period of growth.

2. Bonemeal: Commercial, raw, finely ground; 4 percent nitrogen and 20 percent phosphoric acid.

3. Superphosphate: Soluble mixture of treated minerals; 20 percent available phosphoric acid.

4. Hydroseeding Fertilizer:

    a. Commercial designation of 18-24-6. Provide a complete fertilizer of neutral character with a minimum of 75 percent nitrogen derived from natural organic sources.

    b. Minimum 40-50 percent of nitrogen shall be water soluble.

    c. Uniform in composition, free-flowing and suitable for application with approved equipment.

    d. Product and Manufacturer: Provide one of the following:

        (1) Scotts Starter Fertilizer by the Scotts Company.
        (2) Or equal.

A. Grass Materials:

1. Grass Seed Mixture: Provide fresh, clean, new-crop seed complying with the, tolerance for purity and germination established by the Official Seed Analysts of North America. Provide seed of the grass species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed, as specified. Birdsfoot trefoil shall be inoculated before planting.

2. The "Schedule of Grass Seed Requirements" is as follows:

GRASS SEED MIX SEEDING SCHEDULE			
BOTANICAL NAME	**COMMON NAME**	**MIXTURE PERCENT BY WEIGHT**	**MINIMUM PERCENT PURITY/ GERMINATION**
Agrastis tenuis	Colonial Bentgrass	5%	95/90%
Festuca rubra	Chewings Fescue	35%	97/80%
Festuca longifolia	Hard Fescue	30%	96/85%
Lotus corniculatus	Birdsfoot Trefoil	10%	96/90%
Lolium perenne	Perennial Ryegrass	20%	98/90%

The seeding rate for the mixture shall be 175 pounds per acre. The acceptable planting periods are from April 1 through June 15 and September 1 through October 15.

B. Miscellaneous Landscape Materials:

1. Hydromulch:

a. On areas and slopes within the Limit of Cap as shown on Contract Drawings, provide a hydraulically applied flexible growth medium (FGM) at the rate of 3,500 pounds per acre.

b. Provide the following:

(3) Product and manufacturer:

(a) Flexterra FGM by Profile Products, LLC
(b) or equal.

2. Water: Potable.

PART 3 - EXECUTION

3.1 Inspection

A. Contractor and his installer shall examine the subgrade, verify the elevations, observe the conditions under which Work is to be performed, and notify Engineer of unsatisfactory conditions. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to the Engineer.

3.2 Preparation

A. Soil Preparation:

1. Loosen subgrade of turfbed areas as required to prepare seedbed. Remove debris over 1-1/2 inches in any dimension and sticks, roots, rubbish and other extraneous matter. Limit preparation to areas which will be planted promptly after preparation.

2. Spread topsoil to minimum depth of 6-inches after natural settlement and light rolling to 85 percent Modified Proctor density.

    a. Do not spread topsoil while in frozen condition or when moisture content is so great that excessive compaction will occur nor when so dry that dust will form in the air or that clods will not break readily.

3. Apply ground limestone, by machine, over all areas to receive turf, as required, to bring the soil to a neutral pH. Work lightly into the top 3 inches of topsoil at least five days before applying the commercial fertilizers.

4. Apply commercial fertilizers in the following quantities:

    a. For grass apply only at a rate sufficient to supply 1.5 pounds of nitrogen per 1000 square feet. For 5-10-5 use 30 pounds per 1000 square feet.

5. Apply commercial fertilizers within 10 days of seeding.

6. Apply commercial fertilizers in 2 operations. First application shall be 3/4 of total amount.

7. Thoroughly and evenly incorporate commercial fertilizers with the soil to depth of 3 inches by discing, or other approved method.

    a. In areas inaccessible to power equipment, use hand tools.

8. Apply superphosphate for grass areas at the rate of 20 pounds per 1000 square feet and incorporate into the top 3 inches of topsoil.

9. Grade turfbed areas to smooth, even surface with loose, uniformly fine texture- Remove all stones and extraneous foreign material in excess of 3/4 inch in diameter. Roll and rake and remove ridges and fill depressions, as required to meet finish grades. Limit fine grading to areas which can be planted immediately after grading.

10. Apply a second dressing of fertilizer. Use 1/4 of the total amount.

11. Moisten prepared turfbed areas before planting if soil is dry. Water thoroughly and allow surface moisture to dry before planting. Do not create a muddy soil condition.

12. Restore turfbed areas to specified condition if eroded or otherwise disturbed after fine grading and prior to planting.

B. Adequate sedimentation and erosion control management measures, practices and devices, such as phased construction, vegetated filter strips, geotextile silt fences, or other devices shall be installed and properly maintained to reduce erosion and retain sediment on-site during and after construction in accordance with the Contractor's Leachate Control Plan and Stormwater Pollution Control Plan. These devices shall be capable of preventing erosion, of collecting sediment, suspended and floating materials, and of filtering fine sediment. These devices shall be removed upon completion of work and the disturbed areas shall be stabilized. The sediment collected by these devices shall be removed and placed at an upland location, in a manner that will prevent its later erosion into a waterway or wetland. If the Engineer determines that the on-site placement of the collected sediment may adversely affect the integrity of the site, the collected sediment will be removed and disposed of at no additional cost to the Owner. All exposed soil and other fills shall be permanently stabilized at the earliest practicable date. See Section 02112 "Sedimentation and Erosion Controls".

3.3 Installation

A. Hydroseeding

1. Strictly comply with manufacturer's installation instructions and recommendations. For optimum pumping and application performance use approved mechanically agitated, hydraulic seeding/mulching machines with a fan-type nozzle (50-degree tip). Apply FGM from opposing directions and to achieve best soil coverage.

2. Erosion Control and Revegetation:

a. For maximum performance, apply FGM in a two-step process:

b. Step One: Mix and apply seed and soil amendments with small amount of FGM for visual metering.

c. Step Two: Mix and apply FGM at a rate of 50 lb per 125 gallons (23 kg/475 liters) of water over freshly seeded surfaces. Confirm loading rates with equipment manufacturer. Do not leave seeded surfaces unprotected, especially if precipitation is imminent.

d. Depending upon site conditions FGM may be applied in a one-step process where all components may be mixed together in single tank loads. Consult with manufacturer for further details.

3. Mixing: A mechanically agitated hydraulic-application machine is recommended:

a. Fill tank to middle of agitator shaft or tank about 1/3 full of water. Turn on pump to wet or purge lines. Begin agitating. Keep adding water slowly while adding the FGM at a steady rate.

b. Consult application and loading charts to determine number of bags to be added. Mix at a rate of 50 lbs. of FGM per 125 gallons (23kg/475 liters). Contact equipment manufacturer to confirm optimum FGM mixing rates.

c. All FGM should be loaded when the tank is approximately 3/4 full.

d. Fertilizer should be added once the tank is nearly full.

e. Before applying, mix the slurry for at least 10 minutes after adding the last amount of FGM. This is very important to fully activate the bonding additives and to attain proper viscosity.

f. Turn off recirculation valve to minimize potential for air entrainment within the slurry.

4. Application:

a. Use a fan-type nozzle (50-degree tip) whenever possible for best soil surface coverage. Apply FGM from opposing directions to soil surface, reducing the "shadow effect" and assuring a minimum of 95% of soil surface coverage. Slope interruption devices or water diversion techniques are recommended when slope lengths exceed 100 ft (30m).

b. Install materials at an application rate of 3500 pounds per acre.

c. Increase application rates on highly erosive soils or chiseled, disked, furrowed or tracked slopes. Contact Manufacturer for additional details.

d. Material should not be applied in channels, swales or other areas where concentrated flows are anticipated, unless installed in conjunction with

a temporary erosion control blanket or non-degradable turf reinforcement mat.

e. After application, thoroughly flush the tank, pumps and hoses to remove all FGM material. Wash all material from the exterior of the machine and remove any slurry spills. FGM will be more difficult to remove once it dries.

5. Prevent foot or vehicular traffic, or the movement of equipment over the seeded areas. Reseed areas damaged as a result of such activity.

6. Prevent the seeded areas from drying out. After seedlings appear in about 2-3 weeks reseed all bare spots larger than 18-inches in diameter. Areas to be reseeded shall be hand raked to scarify the surface and seed shall be applied by cyclone spreader. Lightly rake the seed into the soil.

B. Reconditioning Existing Turf:

1. Recondition existing turf areas damaged by Contractor's operations including storage of materials and equipment and movement of vehicles. Also recondition existing turf areas where minor regrading is required.

2. Provide fertilizer, seed or sod, soil amendments, and erosion control matting as specified for new turf and as required to provide a satisfactorily reconditioned turf. Provide new topsoil as required to fill low spots and meet new finish grades.

3. Cultivate bare and compacted areas thoroughly to provide a satisfactory planting bed.

4. Remove diseased and unsatisfactory turf areas; do not bury into soil. Remove topsoil containing foreign materials resulting from Contractor's operations including, but not limited to oil drippings, stone, gravel and other loose building materials.

5. In areas approved by Engineer, where substantial turf remains (but is thin), mow, rake, aerate if compacted, fill low spots, remove humps and cultivate soil, fertilize, and seed. Remove weeds before seeding or if extensive, apply selective chemical weed killers as required. Apply seedbed mulch, if required, to maintain moist conditions.

6. Water newly planted areas and keep moist until new turf is established.

3.4 Maintenance

A. Begin maintenance immediately after planting.

B. Maintain turf for not less than the period stated below, and longer as required to establish an acceptable stand, as determined by Engineer.

1. Grass seed lawns, not less than 60 days.

2. If seeded in fall and not given a full 60 days maintenance, or if not considered acceptable at that time, continue maintenance the following spring until acceptable lawn is established.

3.5 Cleanup And Protection

A. During landscape Work, store materials and equipment where directed. Keep pavements clean and work area in an orderly condition.

B. Protect landscape Work and materials form damage due to landscape operations, operations by other contractors and trades and trespassers. Maintain production during installation and maintenance periods. Treat, repair or replace damaged landscape Work as directed.

C. Take all precautions to insure that hydroseed slurry, is only placed on the areas designated. Completely clean any overspray, on areas not designated to receive slurry, to the satisfaction of Engineer.

D. Remove all rubbish, equipment and rejected materials from the site.

E. Protection includes all temporary fences, barriers and signs and other Work incidental to proper maintenance.

3.6 Inspection And Acceptance

A. When the landscape Work is completed, including maintenance, the Engineer will make an inspection to determine acceptability.

B. Where inspected landscape Work does not comply with the requirements, replace rejected Work and continue specified maintenance until reinspected by Engineer and found to be acceptable. Remove rejected plants and materials promptly from the project site.

C. Any damage, disturbance, or settlement that occurs as a result of the Contractor's stockpiling of material or equipment on site shall be the responsibility of the Contractor to repair and/or supply additional materials to compensate for settlement caused by the Contractor's actions.

D. The thickness of the in-place Topsoil will be checked by the Contractor after the completion of the work on a grid pattern not to exceed 50-foot by 50-foot by digging, by hand, with a plastic shovel in the presence of and as directed by the Engineer. The size of the test hole shall not be less than one-foot in diameter. Measurements shall be made perpendicular to the slope. The Contractor shall be responsible for digging holes in the Topsoil to allow for the measurements to be taken by the Engineer. After measurements have been made, the Contractor shall backfill the holes with Topsoil, and hand tamp. During digging and backfill of test holes, the Contractor shall use plastic

shovels and exercise care not to damage any materials. Any such damage shall be repaired at the expense of the Contractor.

END OF SECTION

SECTION 06642
EROSION CONTROL GEOSYNTHETICS

PART 1 - GENERAL

1.1 Description

A. Scope: Contractor shall provide all labor, materials, tools, equipment, and incidentals necessary for the placement of erosion control geosynthetics and Turf Reinforcement Mats (TRM) on slopes and drainage swales as shown and specified on the Contract Drawings or as otherwise directed by the Engineer.

B. Related Sections:

1. Section 02900, Turf Establishment and Landscaping.

1.2 Quality Control

A. Manufacturer Qualifications: Erosion control geosynthetic manufacturer shall be a specialist in the manufacture of the particular geosynthetic.

1.3 Submittals

A. Shop Drawings:

1. Submit six (6) copies of manufacturer data, specifications, dimensions and installation instructions for erosive soils and high runoff velocities.

2. Submit six (6) copies of an affidavit certifying that each geosynthetic furnished complies with all requirements specified herein.

3. No geosynthetic shall be shipped until the affidavit is submitted to Engineer.

PART 2 - PRODUCTS

2.1 Acceptable Products

A. Turf Reinforcement Mat (TRM)

1. TRM shall be non-biodegradable turf reinforcing erosion control material mesh matrix with stabilizer (as necessary to protect from ultraviolet radiation), supplied in rolls. Permanent Erosion control geosynthetic shall be:

a. Enkamat 7010 produced by Colband Geosynthetics, Inc..

b. Or equal.

B. The TRM shall be made from 100% synthetic material and contain no biodegradable or photodegradable components or materials.

C. The TRM shall be a three-dimensional matrix and maintain the three dimensional stability without laminated or stitched layers. The TRM shall have a sufficient Area Holding Capacity and a minimum 90% open space available for soil and root interaction. The TRM shall not loose its structural integrity and shall not unravel or separate when TRM is cut in the field.

D. The TRM shall exhibit no buoyancy factor (i.e., the specific gravity of the fibers used should be greater than 1.0) so as to allow the TRM to maintain intimate contact with the soil (particularly between fasteners) under low flow conditions.

E. The TRM shall meet the requirements of Table 1.

TABLE 1 – PERMANENT TURF REINFORCEMENT MAT

Property	Test Method	Units	Value
Mass/Unit Area	ASTM D 5261	oz/yd^2	8.0
Thickness	ASTM D 5199	inches	0.4
Tensile Strength (MD)	ASTM D 5035 mod	lb/ft	160.0
Area Holding Capacity	Calculated	in^3/yd^2	450
Porosity	Calculated	%	>95
UV Stability	ASTM D 1682 mod	%	80
Velocity			
30 min. Vegetated	Flume Testing[1]	ft/sec	19.0
50 hr. Vegetated			14.0
Shear			
30 min. Vegetated	Flume Testing[1]	lb/ft^2	8.0
50 hr. Vegetated			6.0

1. Acceptable facilities include Utah State University, Colorado State University

F. Anchoring Devices

1. The TRM shall be secured in place using heavy-duty metal staples. The metal staples shall be U-shaped, a minimum of 6 inch long (each leg), one and one half (1-1/2) inches wide, and shall be fabricated from 9 gauge

diameter metal wire. If difficulties arise installing the staples, then 10 inch pins fabricated from 9 gauge with one and one half (1-1/2) inch diameter washer or 7 inch gutter spike with one and one half (1-1/2) inch diameter washer shall be used. In some cases where loose soil conditions exists and anchors of stated length do not properly secure the TRM to the ground, then longer staple should be used such as a 8-12 inch long staples or pins.

PART 3 - EXECUTION

3.1 Preparation

A. The TRM product will be installed explicitly according to the manufacturer recommendations. The installation site shall be prepared by filling the area to the design grade.

B. The surface to receive the TRM shall be prepared to relatively smooth conditions free of obstructions, depressions, debris and soft or low density pockets of material. The material shall be capable of supporting a vegetative cover.

C. Erosion features such as rills, gullies, etc. must be graded out of the surface before TRM deployment. Smooth roll drum compaction may be required before deploying TRM to make sure the TRM makes immediate contact with the soil.

D. Cut trenches for initial anchor trenches, termination trench and longitudinal anchor trenches (6 inches wide and 9 inches in depth).

E. Contractor shall place all cover materials in such a manner to ensure: the erosion control geosynthetics are not damaged; minimal slippage of the erosion control geosynthetics or underlying layers; and no excess tensile stresses are introduced into the erosion control geosynthetic.

F. Contractor shall consult with manufacturer regarding recommendation as to the sequence for seeding and placement of the erosion control geosynthetic. Following seeding and placement of the erosion control geosynthetic, Contractor may be directed by the Engineer to mulch the surface in accordance with directions for mulching in Section 02900 Turf Establishment and Landscaping.

3.2 Installation - Slopes

A. Install Erosion control geosynthetics as per Manufacturer's installation procedure, or as described below.

B. Grade subgrade to be stable and firm, but not crusted.

C. Apply erosion control geosynthetic with the length of roll laid perpendicular to the slope.

D. Install an anchor slot at the up slope and down slope ends of the geosynthetic placement. Bury at least 12 inches of the end of the geosynthetic horizontally in the anchor trenches. Secure the geosynthetic in the anchor trench by stakes at intervals of 3 feet or less prior to burying. Tamp the soil against the geosynthetic in the slot.

E. Overlap successive lengths of the erosion control geosynthetic at least 3 feet, with the up slope length on top. Stake the overlap by placing 3 staples spaced across the end of each of the overlapping lengths and by placing 3 staples across the width of the center of overlap area.

F. Construct check slots by placing a fold at least 6 inches vertically into the soil. Staple the geosynthetic at each check slot edge, overlap and in the center of the geosynthetic. Coordinate check slots with adjacent rolls such that check slots are not staggered. Check slots shall be placed at a frequency of every 25 feet.

G. Place 1 row of staples, spaced 10 inches on center on each side of check slot and place staples on all longitudinal overlaps at a maximum spacing of 3 feet.

H. Maintain the geosynthetic until all Work has been completed and accepted. Contractor shall repair areas where damaged by any cause until vegetation final acceptance.

I. Place additional staples to maintain contact of geosynthetic with ground surface as required by manufacturer.

END OF SECTION

STORMWATER POLLUTION CONTROL PLAN

Waterbury Landfill Closure

Prepared for

CONNECTICUT RESOURCES RECOVERY AUTHORITY

Hartford, Connecticut

Prepared by

TRC

Windsor, Connecticut

March 2008

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TABLE OF CONTENTS

PLATES

APPENDICES

1.0 INTRODUCTION

1.1 General

Construction activities (including other land-disturbing activities) that disturb one acre or more are regulated under the National Pollutant Discharge Elimination System (NPDES) stormwater program. Under the authority of the Clean Water Act, the State of Connecticut General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (General Permit), dated October 1, 2002 and modified on April 8, 2004, requires such activities to obtain coverage under the General Permit., and as a requirement of coverage under the permit, prepare and implement a Stormwater Pollution Control (SPCP) Plan.

The Connecticut Resources Recovery Authority (CRRA) is performing landfill closure activities for the Waterbury Landfill located at the intersection of Highland Avenue and Highview Street in Waterbury, Connecticut. This project meets the definition of a "construction activity" in accordance with the General Permit. A copy of the General Permit and associated General Permit Registration Form are included in Appendix A. This SPCP was prepared in accordance with the requirements of the General Permit. The purpose of this plan is to address pollution caused by soil erosion and sedimentation during and after construction and stormwater pollution caused by use of the site after construction is completed, including, but not limited to, roadways and the maintenance of grassed areas. Erosion and sedimentation control requirements are also shown on the Drawings for this project.

During construction, the construction contractor(s) shall be responsible for implementing all elements of the erosion and sedimentation control measures as defined on the Drawings and in this SPCP. After construction, the permittee (CRRA) shall be responsible for maintaining these erosion and sedimentation control measures. Throughout the construction process, CRRA or CRRA's agent and the Contractor shall periodically inspect all erosion control measures. A copy of the inspection form to be used is provided in Appendix B. This construction project will not be considered complete until all disturbed areas have been satisfactorily stabilized, all erosion has been repaired, and all temporary erosion control measures have been removed.

The general contractor and subcontractor(s) will be required to sign the certification statement provided in Appendix C of this plan.

1.2 Plan Organization

The SPCP is organized into six parts including a summary of the key provisions of the SPCP (Section 1.0); a site description (Section 2.0); a description of the construction sequence (Section 3.0); a description of the stormwater controls to be used to attain SPCP objectives (Section 4.0); inspection procedures (Section 5.0); and contractor requirements (Section 6.0).

1.3 Revisions to the SPCP

In accordance with the requirements of the General Permit, the SPCP will be amended whenever:

(1) there is a change in contractors or subcontractors at the site; or

(2) there is a change in design, construction, operation or maintenance at the site which has the potential for the discharge of pollutants to the waters of the State and which has not otherwise been addressed in the SPCP; or

(3) if the actions required by the SPCP fail to prevent pollution.

The Commissioner of the CTDEP may also require to registrant to revise the SPCP if it does not meet one or more of the minimum requirements of the General Permit.

2.0 SITE DESCRIPTION

2.1 Site Location

The Waterbury Landfill is located as indicated on the Site Location Map (Figure 1). The approximate 6-acre parcel is located just north of the Platts Mills section of Waterbury, Connecticut along the Naugatuck River. The landfill consists of Bulky Waste. A plan indicating the location of the proposed construction activities is presented in the Drawings.

Direct access into the landfill area is via Highview Street, which intersects Highland Avenue at the northeast corner of the site. Contractor access and materials delivery to the landfill during closure activities will be via the adjacent property to the east of the landfill. Traffic will be routed on a gravel road from Nichols Drive through the adjacent property onto the landfill site. The landfill parcel is bounded on the south by a rail road property, on the west by Highland Avenue, on the north by Highview Street, and on the east by another CRRA property currently leased to a third party. There are no buildings or structures located on the site.

2.2 Description of the Construction Activity

Construction activities will be conducted in a single phase to be completed in the 2008 construction season. The construction activity will consist of the closure of the landfill through the placement of a soil cap over the disposal area. The cap will include an 18-inch cover soil layer and 6-inches of topsoil to be vegetated. The top surface of the cap will be constructed at a minimum 4% slope, which will then transition to the steeper 3 horizontal to 1 vertical (3H:1V) side slopes. Erosion and sedimentation control features, as described in more detail later in this document, are incorporated into the final cover design to minimize potential impacts on stormwater quality during and after construction.

Erosion control measures incorporated into the final closure design were designed in accordance with the 2002 edition of the "Connecticut Guidelines for Soil Erosion and Sediment Control" (CT DEP Bulletin 34) as published by The Connecticut Council on Soil and Water Conservation in cooperation with the Connecticut Department of Environmental Protection. Installation details and detailed erosion and sediment control notes are provided in the Drawings. These notes are in accordance with DEP Bulletin 34.

With regard to CTDEP Natural Diversity Database (CT NDDB), CRRA has submitted a CT

NDDB Review Request form and is awaiting a response. This project to cap the landfill does not involve any disturbance outside the area of the landfill site and does not involve the removal of any trees.

2.3 Area of Disturbance

The general intent of the final closure grading plan is to promote rapid runoff of stormwater while simultaneously preventing erosion. Stormwater draining from the top of the landform to be capped will be allowed to run off as sheet flow. This sheet flow will then be intercepted and channelized in order to minimize erosion. The end result shall be the creation of a stable, mounded landform that will maximize surface water run-off and minimize infiltration.

The total disturbed area within the capped area will be approximately 5.51 acres. The drainage of the area will generally be characterized by sheet flow off the surface of the landfill, with stormwater from the upper surface of the landfill intercepted by diversion swales on the west and east and directed to two HDPE-lined downchutes eventually discharging to the south property line. Sheet flow on the southern 3:1 slope will discharge to the south property line.

2.4 Stormwater Discharge Information

Currently, precipitation that falls on the landfill property as a whole is collected on the west and east side of the site via swales and eventually drains to the southern property line in the direction of the rail road property.

The proposed final landform of the capped landfill will follow the same drainage scheme but the drainage swales directing flow to the south property line will be HDPE lined. All proposed drainage features have been engineered to safely convey a 100-year storm event. After construction activities are complete within the landfill, the surface of the landfill will be vegetated with a hardy grass mix. For drainage calculations, a cover soil with slow infiltration rates (Hydrologic Group C) was assumed, with the average runoff coefficient for the top surface of the landfill (4% minimum slope) assumed to be 0.185 and the average runoff coefficient for the side slopes of the landfill (maximum 3H:1V slope) assumed to be 0.29.

2.5 Receiving Waters

As described above, all stormwater runoff from the Waterbury Landfill eventually flows to the Naugatuck River. Stormwater outfall locations are indicated in Figure 2. The Naugatuck River located to the south and east of the subject site is classified as SC/SB.

A map of wetlands in the vicinity of the Waterbury Landfill, as mapped by the U.S. Fish and Wildlife Service, is provided in Appendix E. These include riverine wetlands along the Naugatuck River.

3.0 CONSTRUCTION SEQUENCE

The landfill closure activities will be completed in a single construction season. Access to the construction area will be via Highview Street.

During construction, three main activities will occur in a sequential fashion:

- rough grading of bulky waste;
- cover soil placement and grading; and
- top soil placement and stabilization.

As the total cap area will be less than 10 acres, the area of disturbance at any given time will be less than 10 acres. This applies to both rough grading and and the placement of cover soil prior to the installation of stabilization measures (e.g. erosion control blanket or turf reinforcement).

4.0 CONTROLS

The following sections address the controls and measures to be implemented on this site both during and after construction to minimize stormwater pollution to the waters of the State of Connecticut.

4.1 Erosion and Sediment Controls

The goal of this plan is to control erosion on the site and to control movement of sediment into adjacent wetlands, watercourses or storm sewer systems. Note that erosion and sediment controls shall conform to the requirements of the "Connecticut Guidelines for Soil Erosion and Sediment Control," dated May 2002, which will hereafter be referred to as the Guidelines.

To meet the guidelines, stabilization, structural, and maintenance practices shall be implemented by the construction contractor/subcontractors (herein after referred to collectively as the Contractor) as outlined below.

4.1.1 Stabilization Practices

Both temporary and permanent stabilization practices shall be implemented to minimize erosion of soil from the disturbed site areas during and after construction. When construction activities have permanently ceased or if they are temporarily suspended for more than thirty days 30, or when final grades are reached in any portion of the site, stabilization practices shall be implemented within ten days.

The stabilization practices to be implemented during the construction of the proposed development are as follows:

- **Limitation of Disturbance** – Disturbed earth surfaces will be limited to areas of less than 10 acres during all aspects of the landfill closure construction activities.

- **Temporary Vegetative Cover** – Due to the relatively short nature of the construction activities, it is not likely that temporary stabilization will be required. However, if any exposed areas or stockpiles will be inactive for more than 30 days and have not yet reached finished grades, they shall receive a temporary vegetative cover. The temporary vegetative cover shall consist of annual rye grass. The rye grass shall be planted at a rate of not less than 1 pound per 1,000 square feet. Also, fertilizer shall be applied at a rate of 7.5 pounds per 1,000 square feet of 10-10-10 or equivalent and limestone shall be applied

at a rate of 90 pounds per 1,000 square feet. Seed bed preparation and seeding shall be conducted as outlined in the Guidelines.

- **Permanent Vegetative Cover** – Permanent vegetation shall be hydroseeded on all exposed areas within ten days of final grading. The final vegetative cover shall consist of a grass seed mix consisting of bentgrass, fescue, trefoil and ryegrass as defined in the project specifications. Acceptable planting periods are from April 1 through June 15 and September 1 through October 15.

- **Flexible growth medium** – A flexible growth medium (FGM) (Flexterra or equivalent), made of long-strand, thermally processed wood fibers, crimped interlocking fibers, and additives, shall be hydraulically applied to all surfaces after placement of final cover and seeding. FGM forms a bond with the soil surface to create a continuous, porous, absorbent and erosion-resistant blanket that allows for rapid germination and accelerated plant growth.

4.1.2 Structural Practices

Structural practices shall be implemented to control the movement of sediment and minimize any discharge of pollutants from the site. The structural practices to be implemented during construction are as follows:

- **Filtration barriers** - Silt fence, backed by hay bales, will be installed along the toe of all critical slopes (e.g., at the toe of the landfill slope and also along the southern edge of the cap construction area). The silt fence and hay bales will reduce downgradient siltation by acting as sediment filters. These filters will remove sediment transported by sheet flow from stormwater runoff.

- **Fiber filtration tubes(with polymer)** – Fiber filtration tubes (FFTs) will be placed at various locations to minimize the migration of soil particles into downgradient drainage control devices. The FFTs shall consist of an engineered composite of wood fibers and performance-enhancing polymers encased within cylindrical tubes of a heavy-duty, knitted, high density polyethylene mesh. The FFTs allow water to flow freely through the tube matrix while providing three-dimensional filtration of soil particles. The FFTs also facilitate the release of flocculants to coagulate and aggregate suspended soil particles. FFTs will be implemented immediately upgradient of critical drainage features (e.g., diversion swales).

- **Erosion control blankets** – Jute netting shall be installed at the base of diversion drainage swales. After placement of final cover on the 3H:1V side slope, Green Armor System (Enkamat 7010 Turf Reinforcement Mat (TRM) infilled with Flexterra FGM) or equivalent shall be installed to minimize erosion from the lower portion of the 3H:1V side slope and allow growth of permanent vegetative cover. These controls also retain soil moisture and modify soil temperature to further enhance growth.

- **HDPE-Lined Downchutes** - Downchutes will collect the flow from the west and east diversion swales and convey it down the southerly slopes of the landfill and to the south property line. Downchutes will be constructed at the southwest and southeast corner of the cap construction area. The bottom surface of the downchutes will be lined with a 55-mil HDPE trapezoidal ditch liner product to prevent water from infiltrating to the underlying landfill cap materials.

- **Stone Check Dams** – Stone check dams will be placed at the bottom of the HDPE-lined drainage swales to reduce the velocity of concentrated stormwater flows. Check dams can also trap small amounts of sediment, should any sediment bypass the upgradient sediment control devices.

- **Inlet Sedimentation Control** – During construction, a 18-inch RCP on the northeastern corner of the landfill that drains a very small area will be protected by a haybale dike.

4.1.3 Maintenance

The erosion and sediment controls must be maintained in a condition that will protect the resource areas from pollution during site construction. The Contractor shall conduct the following maintenance to ensure the proper performance of erosion and sediment control measures during construction.

- **Temporary and Permanent Vegetation**: Any eroded areas shall be repaired by filling to finished grades, replacing vegetative support material, and seeding, fertilizing and liming, as specified for temporary and permanent stabilization.

- **Filtration Barriers, Fiber Filtration Tubes and Inlet Sedimentation Control**: Silt fence, haybales and fiber filtration tubes shall be inspected within 24 hours of the end of any rainfall that is 0.1 inches or greater. Any required repairs and/or cleaning of sediment shall be made within 24 hours. Should any of these features become ineffective while still needed and require replacement, they shall be replaced promptly.

  Should sediment deposits reach approximately one-half the height of the silt fence barrier, they shall be removed and disposed of on-site as non-structural fill. Any sediment deposits remaining in place after the barrier is no longer required shall be removed and placed in a stockpile surrounded by silt fence in a location suitable to CRRA.

- **Swales and Downchutes**: Accumulated sediment shall be removed from the affected area(s) when sediment reaches a depth of 6 inches. Removed sediment shall be used to complete non-structural fill areas during project. Once the site has been stabilized, sediment removed at the end of construction shall be stockpiled on-site, surrounded by silt fence, in a location approved by CRRA.

4.2 Dewatering Wastewaters

Should excavation dewatering become necessary for this project, there shall be no discharge directly into wetlands, watercourses, or storm sewer structures. Proper methods and devices shall be utilized to the extent permitted by law, such as pumping water into a temporary sedimentation trap, providing surge protection at the inlet and outlet of pumps, floating the intake of the pump, or other methods to minimize and retain the suspended solids. If a pumping operation causes turbidity problems, the operation shall cease until feasible means of controlling turbidity are determined and implemented.

4.3 Post-Construction Stormwater Management

At the end of construction, all areas disturbed by construction activities shall be stabilized. As a result, the potential for erosion at this site after construction is minimal. Grassed areas will also serve as a filter to remove any sediment from runoff if permanently stabilized areas are properly maintained.

The goal of the post-construction stormwater management is to remove 80% of the total suspended solids from the stormwater runoff.

4.4 Vehicle Tracking and Dust Control

The access road to be used by construction vehicles when entering and leaving the site will be through the adjacent property to the east. This property is accessed via Nichols Drive. Since site access is along a 2000 foot gravel roadway through the adjacent property, tracking of site material onto public roadways will not be an issue. If this does occur though, the Contractor is required to immediately remove any material transported outside the contract boundaries and deposited on public roadways. The Contractor shall also provide water or alternate means of dust suppression as necessary to control dust from construction activities.

5.0 INSPECTION

CRRA or CRRA's agent and qualified personnel provided by the Contractor shall inspect disturbed areas of the construction activity that have not been permanently stabilized, structural control measures, and locations where vehicles enter or exit the site at least once every seven calendar days and within 24 hours of the end of a storm that generated 0.1 inches during a twenty-four hour period. Where areas have been temporarily or finally stabilized, inspections shall be conducted at least once every month for three months.

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be visually inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking.

Based on the results of the inspections, the description of potential sources and pollution prevention measures identified in this plan shall be revised as appropriate by CRRA or its assigned agent as soon as practicable after such inspection. Such modifications shall provide for timely implementation of any changes to the site within 24 hours and implementation of any changes to the SPCP within 3 calendar days following the inspection.

A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SPCP, and actions taken shall be made and retained as part of the SPCP for at least three years after the date of inspection. The report shall be signed by CRRA or its assigned agent. A blank copy of the inspection report is provided in Appendix B.

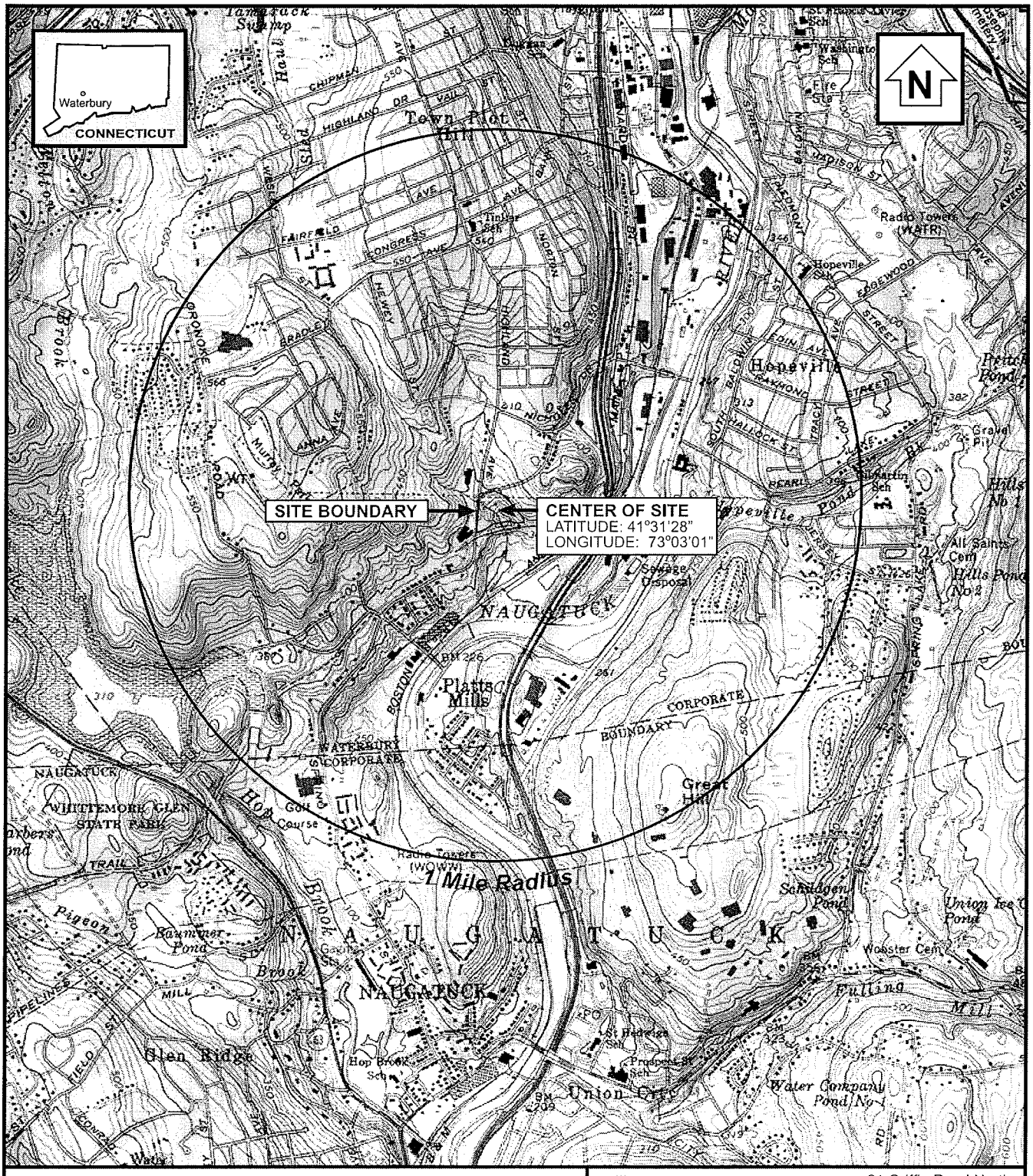
6.0 CONTRACTORS

6.1 General

All contractors and subcontractors who will perform actions on site that may reasonably be expected to cause or have the potential to cause pollution of the waters of the State are identified in Appendix C.

6.2 Certification Statement

All contractors and subcontractors must sign the certification included in Appendix C. All certifications shall be included in this Stormwater Pollution Control Plan.



0 2000
SCALE FEET

0 1
SCALE MILE
1:24000

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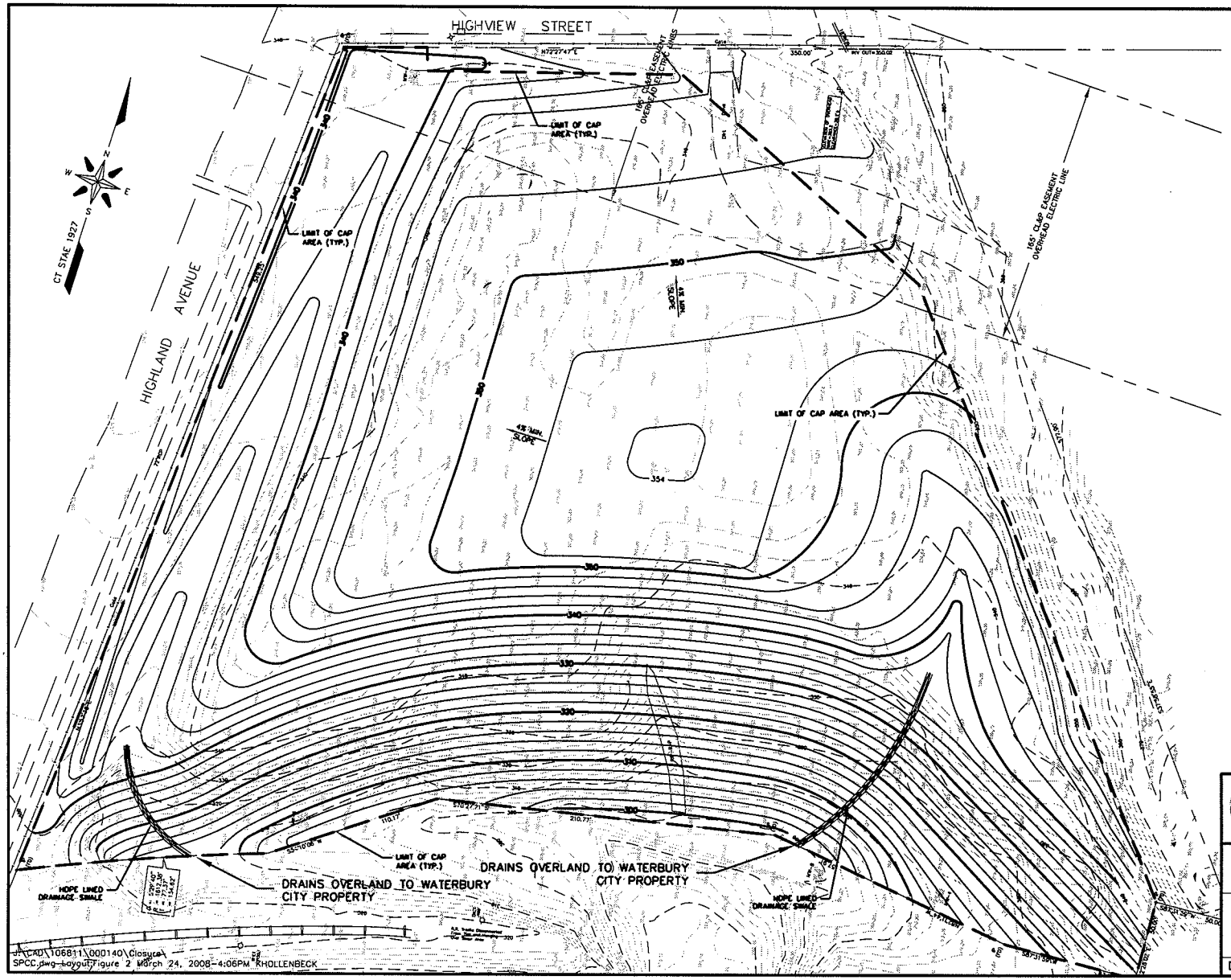
CRRA WATERBURY LANDFILL
WATERBURY, CONNECTICUT

FIGURE 1
SITE LOCATION MAP

Date: 03/08 | Project No. waterbury landfill

GRAPHICS/CRRA/153306/waterbury landfill.FH10



LEGEND

- EXISTING 2' CONTOUR
- 20 — EXISTING 10' CONTOUR
- 323x45 — EXISTING SPOT ELEVATION
- EXISTING FENCE
- EXISTING DIRT OR GRAVEL ROAD
- EXISTING ROAD
- EXISTING RAILROAD TRACKS
- 18" RCP — EXISTING STORM DRAIN PIPE
- PROPERTY LINE
- EASEMENT LINE
- PROPOSED 2' CONTOUR
- 300 — PROPOSED 10' CONTOUR

SOURCE:
BASE MAP FROM TOPOGRAPHIC SURVEY TITLED "TOPOGRAPHIC SURVEY, WATERBURY LANDFILL, HIGHLAND AVENUE & HIGHLAND STREET, WATERBURY, CONNECTICUT, PREPARED FOR CONNECTICUT RESOURCE RECOVERY AUTHORITY", DRAWING NUMBER: 26-350TP, SCALE: 1"=20', DATED: 12-20-06, BY MARTINEZ, COUCH & ASSOCIATES, LLC.

NOTES:
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2) LOCATION OF PROPERTY WITHIN THE CONNECTICUT STATE PLANE NAD 1927 IS APPROXIMATE AND SHOULD NOT BE CONSIDERED ACCURATE.

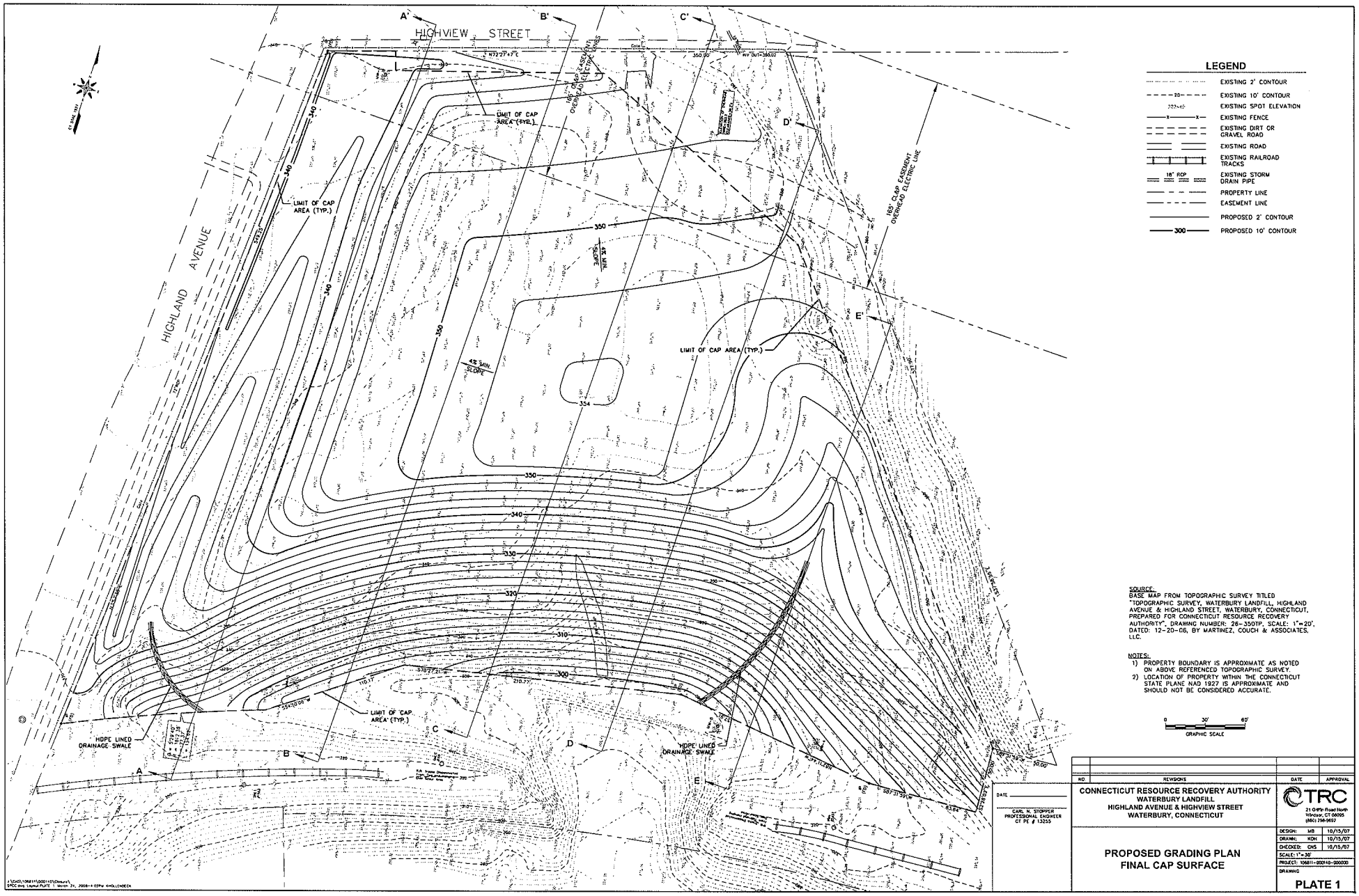
0 60' 120'
GRAPHIC SCALE

TRC
21 Griffin Road North
Windsor, CT 06095
(860) 298-9692

CONNECTICUT RESOURCE RECOVERY AUTHORITY
WATERBURY LANDFILL
HIGHLAND AVENUE & HIGHVIEW STREET
WATERBURY, CONNECTICUT

FIGURE 2
STORMWATER OUTFALL LOCATIONS

Date: 03/24/08 | Project No. 106811-000140-000000



LEGEND

- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING FENCE
- EXISTING DIRT OR GRAVEL ROAD
- EXISTING ROAD
- EXISTING RAILROAD TRACKS
- EXISTING STORM DRAIN PIPE (18" RCP)
- PROPERTY LINE
- EASEMENT LINE
- PROPOSED 2' CONTOUR
- PROPOSED 10' CONTOUR (300)

SOURCE:
BASE MAP FROM TOPOGRAPHIC SURVEY TITLED "TOPOGRAPHIC SURVEY, WATERBURY LANDFILL, HIGHLAND AVENUE & HIGHLAND STREET, WATERBURY, CONNECTICUT, PREPARED FOR CONNECTICUT RESOURCE RECOVERY AUTHORITY", DRAWING NUMBER: 26-350TP, SCALE: 1"=20', DATED: 12-20-06, BY MARTINEZ, COUCH & ASSOCIATES, LLC.

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0 30' 60'
GRAPHIC SCALE

NO.	REVISIONS	DATE	APPROVAL

DATE _____

CARL N. STOPPER
PROFESSIONAL ENGINEER
CT PE # 13255

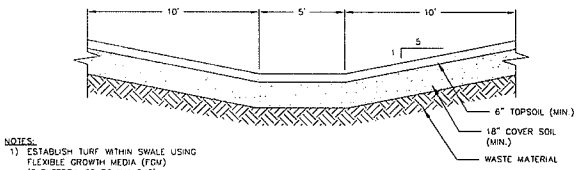
CONNECTICUT RESOURCE RECOVERY AUTHORITY
WATERBURY LANDFILL
HIGHLAND AVENUE & HIGHVIEW STREET
WATERBURY, CONNECTICUT

TRC
21 Griffin Road North
Windsor, CT 06095
(860) 298-9692

DESIGN:	MB	10/15/07
DRAWN:	KDH	10/15/07
CHECKED:	CNS	10/15/07
SCALE: 1"=30'		
PROJECT: 106811-000140-000000		
DRAWING		

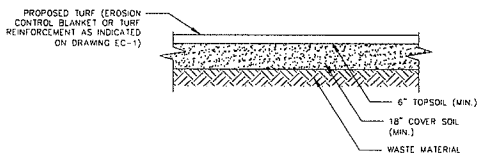
PROPOSED GRADING PLAN
FINAL CAP SURFACE

PLATE 1

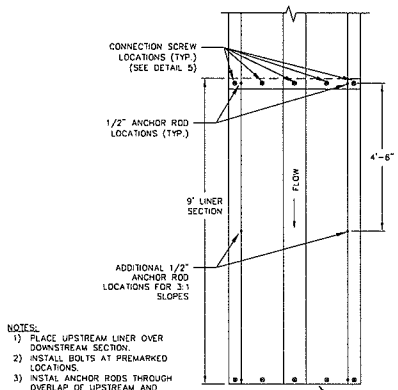


NOTES:
1) ESTABLISH TURF WITHIN SWALE USING FLEXIBLE GROWTH MEDIA (FGM) (FLEXTERRA OR EQUIVALENT)
2) LINE SWALE WITH JUTE NETTING AFTER APPLYING FGM.

1 GRASS LINED DRAINAGE SWALE
N.T.S.

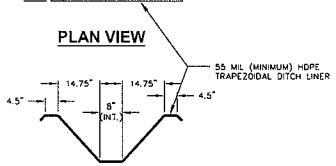


2 TYPICAL COVER (CAP) SECTION
N.T.S.



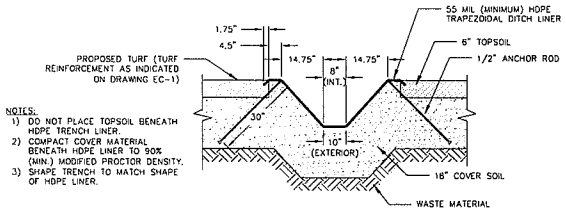
NOTES:
1) PLACE UPSTREAM LINER OVER DOWNSTREAM SECTION.
2) INSTALL BOLTS AT PREMARKED LOCATIONS.
3) INSTAL ANCHOR RODS THROUGH OVERLAP OF UPSTREAM AND DOWNSTREAM SECTIONS AT LOCATIONS SHOWN.
4) FOR 3:1 SLOPES, INSTALL ADDITIONAL ANCHOR RODS AT LOCATION INDICATED.

PLAN VIEW



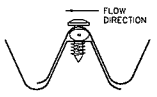
SECTION VIEW

3 HDPE-LINED TRAPEZODAL DOWNCHUTE CONNECTION AND ANCHOR DETAIL
N.T.S.



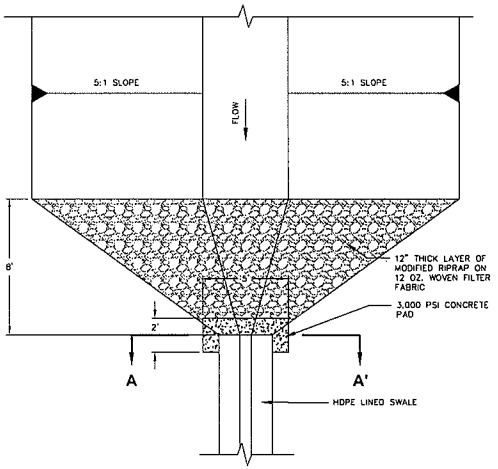
NOTES:
1) DO NOT PLACE TOPSOIL BENEATH HDPE TRENCH LINER.
2) COMPACT COVER MATERIAL BENEATH HDPE LINER TO 90% (MIN.) MODIFIED PROCTOR DENSITY.
3) SHAPE TRENCH TO MATCH SHAPE OF HDPE LINER.

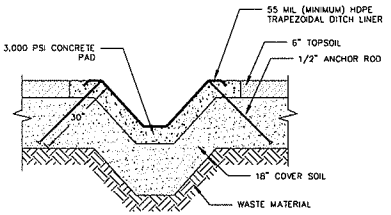
4 HDPE-LINED TRAPEZODAL DOWNCHUTE ON FINAL COVER
N.T.S.



NOTES:
1) FIVE PREMARKED BOLT LOCATIONS FOR EACH CONNECTION POINT.
2) WHEN CONNECTING INDIVIDUAL SECTIONS, UPSTREAM SECTIONS OVERLAP DOWNSTREAM SECTIONS
3) INSTALL SEAL UNDERNEATH ROUND CORRUGATION ON THE DOWNSTREAM SECTION.
4) OVERLAP WITH DOWNSTREAM SECTION, DRILL 1/4" HOLE THROUGH BOTH CHANNELS, INSTALL SCREW.

5 HDPE SWALE LINER CONNECTION DETAIL
N.T.S.





SECTION A-A'

6 GRASS-LINED SWALE INTO HDPE LINED SWALE CONNECTION DETAIL
N.T.S.

NO.	REVISIONS	DATE	APPROVAL

DATE _____

CARL N. STOPPER
PROFESSIONAL ENGINEER
CT PE # 13255

CONNECTICUT RESOURCE RECOVERY AUTHORITY
WATERBURY LANDFILL
HIGHLAND AVENUE & HIGHVIEW STREET
WATERBURY, CONNECTICUT

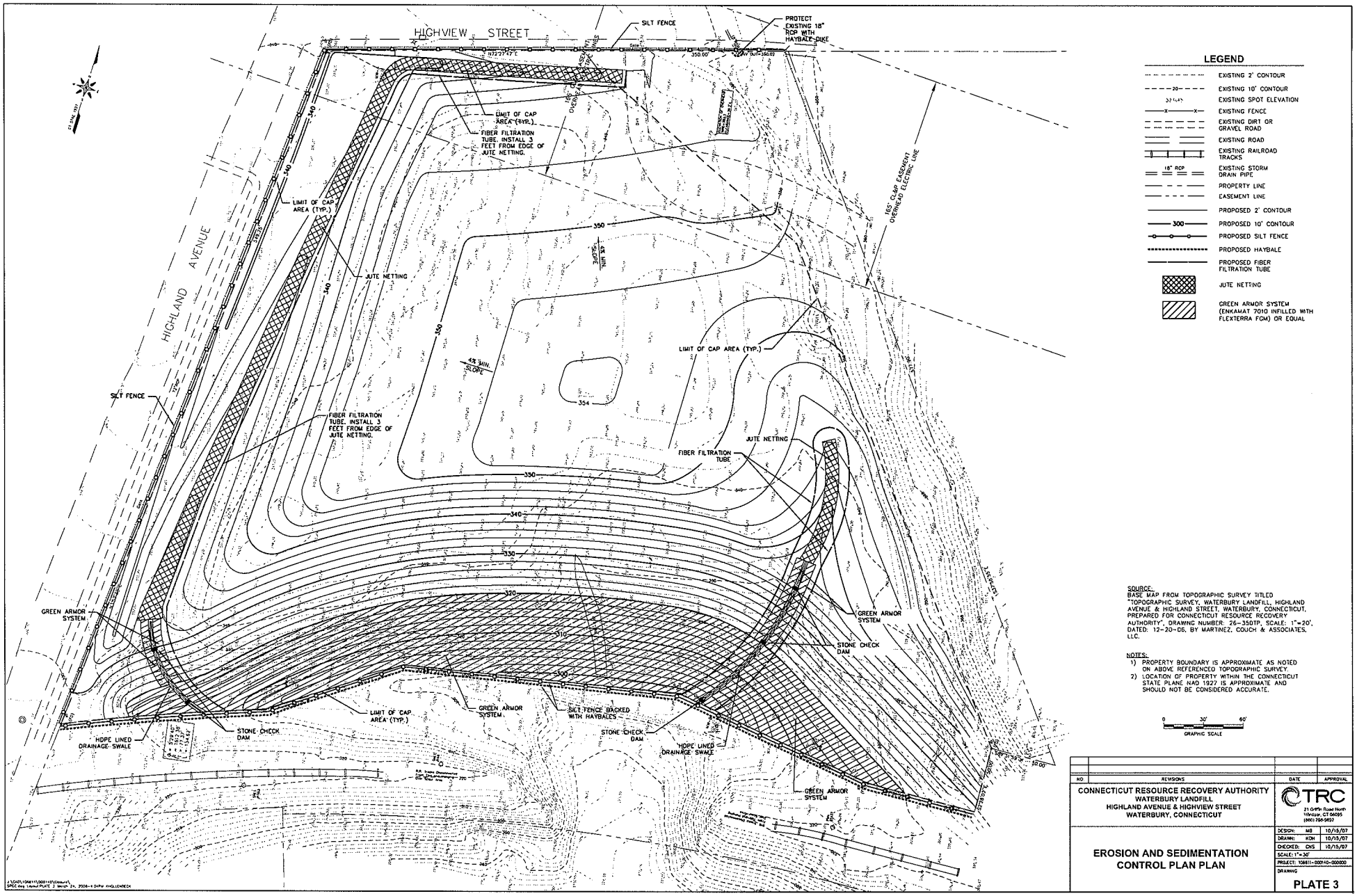
DETAILS

TRC
21 Griffin Road North
Windsor, CT 06095
(860) 298-9692

DESIGN:	MB	10/15/07
DRAWN:	KDH	10/15/07
CHECKED:	CNS	10/15/07
SCALE:	NTS	
PROJECT:	108811-002145-000000	

DRAWING
PLATE 2

J:\CAD\108811\002145\Drawings\
Plate 2.dwg Layout: Plate 2 March 24, 2008 - 4:08pm KHOLLENBECK



LEGEND

- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING FENCE
- EXISTING DIRT OR GRAVEL ROAD
- EXISTING ROAD
- EXISTING RAILROAD TRACKS
- EXISTING STORM DRAIN PIPE (18" RCP)
- PROPERTY LINE
- EASEMENT LINE
- PROPOSED 2' CONTOUR
- PROPOSED 10' CONTOUR (300)
- PROPOSED SILT FENCE
- PROPOSED HAYBALE
- PROPOSED FIBER FILTRATION TUBE
- JUTE NETTING
- GREEN ARMOR SYSTEM (ENKAMAT 7010 INFILLED WITH FLEXTERRA FGM) OR EQUAL

SOURCE:
BASE MAP FROM TOPOGRAPHIC SURVEY TITLED "TOPOGRAPHIC SURVEY, WATERBURY LANDFILL, HIGHLAND AVENUE & HIGHLAND STREET, WATERBURY, CONNECTICUT, PREPARED FOR CONNECTICUT RESOURCE RECOVERY AUTHORITY", DRAWING NUMBER: 26-350TP, SCALE: 1"=20', DATED: 12-20-06, BY MARTINEZ, COUCH & ASSOCIATES, LLC.

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0 30' 60'
GRAPHIC SCALE

NO.	REVISIONS	DATE	APPROVAL

CONNECTICUT RESOURCE RECOVERY AUTHORITY
WATERBURY LANDFILL
HIGHLAND AVENUE & HIGHVIEW STREET
WATERBURY, CONNECTICUT

TRC
21 Griffin Road North
Windsor, CT 06095
(860) 298-9692

DESIGN:	MB	10/15/07
DRAWN:	KDH	10/15/07
CHECKED:	CHS	10/15/07
SCALE: 1"=30'		
PROJECT: 108811-000140-000000		

EROSION AND SEDIMENTATION CONTROL PLAN PLAN

DRAWING
PLATE 3

EROSION AND SEDIMENTATION CONTROL PLAN.

The cap area includes approximately 5.51 acres. The receiving water for the site's runoff is the Naugatuck River located along the east edge of the site

The project consists of the closing and capping of the Connecticut Resources Recovery Authority (CRRA) Waterbury Landfill. Construction is expected to take place in 2008

DESIGN CRITERIA:

1 Erosion and sedimentation control measures have been located with consideration given to slopes, wetlands, and watercourses and in accordance with the Connecticut "Guidelines for Soil Erosion and Sediment Control" (The Guidelines), of the Connecticut Council of Soil and Water Conservation, Latest Edition. The Guidelines shall be considered an integral component of the erosion control design requirements and the minimum standards contained within shall be considered part of the plan and shall be observed during all phases of the construction.

2 Temporary sediment traps are located throughout the project site where earth disturbance and ground shaping will be performed. These sediment traps have been sized in accordance with the Guidelines. All sediment traps shall be maintained until final stabilization of the contributing area

INSTALLATION AND/OR APPLICATION PROCEDURES:

1 Erosion and sedimentation control devices shall be constructed in accordance with the project plans and specifications

OPERATION, MAINTENANCE PROGRAM, AND INSPECTIONS:

1. Prior to any construction, a pre construction conference is to be held among the Design Engineer, the Owners, and the Contractor to review the erosion and sedimentation control measures to be taken. The contractor shall be responsible for arranging the pre construction conference

2. All erosion control measures associated with the construction are to be installed and maintained in accordance with the schedule and requirements. Additional control measures shall be installed during the construction period as necessary and required. Such additional measures shall be designed in accordance with the Guidelines

3 All soil erosion and sediment control measures within any phase of construction must be installed before any construction within the limits of that phase begins.

4. Silt Fence, backed by hay bales, will be installed along the toe of all critical cut and fill slopes, as depicted on the design plans

5. Sediment removed from control measures must be disposed of at a location approved by the Design Engineer that will not cause additional sedimentation to the surrounding area

6. Qualified personnel (provided by the contractor) shall inspect disturbed areas of the construction activity that have not been fully stabilized, structure control measures, and locations where vehicles enter or exit the site at least once every seven (7) calendar days within 24 hours of the end of a storm that is 0.1 inches or greater. Where sites have been stabilized, such inspection shall be conducted at least once every month for three (3) months

7. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessibly, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment loading. Contractor shall remove any sediments tracked onto surrounding roadways immediately and implement measures to prevent further impact to surrounding roadways

8 Based on the results of this inspection, the description of potential sources and pollution prevention measures identified in the plan shall be revised as appropriate or as soon as practicable after such inspection. Such modifications shall provide for timely implementation of any changes to the site within 24 hours and implementation of any changes to the plan within three (3) calendar days following the inspection. The plan shall be revised and the site controls updated in accordance with sound engineering practices, the Guidelines and subsections (4) and (6)(c)(i)(3) of the Stormwater General Permit

9. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Stormwater Pollution Control Plan and actions taken shall be made and retained as part of the plan for at least three (3) years after the date of inspection. The report shall be signed by the Contractor, or his authorizing representative.

10 Contractor shall maintain adequate water supply to perform dust suppression as conditions require. Alternative dust control methods include application and maintenance of wood chips to Unpaved roadway surfaces. Paved surfaces shall be swept of tracked soil on a regular basis to ensure proper dust control

BEST MANAGEMENT PRACTICES

1 Construction shall proceed in accordance with the requirements of the general sequence of grading and construction activities, application of soil erosion and sediment control measures, and final stabilization of site as indicated on the plans.

2 Prior to any dewatering the contractor must submit to the Engineer a written proposal for specific methods and devices to be used, and obtain the Engineer's approval of such method and devices to be used for dewatering activities including, but not limited to, pumping the water into a temporary sedimentation trap, providing surge protection at the inlet and outlet of pumps or floating the intake of the pump, or other methods to minimize and retain the suspended solids. If the Engineer determines that the pump operation is causing turbidity problems, said operation shall cease until such time as means of controlling turbidity is submitted by the contractor and approved by the Engineer and implemented by the contractor.

3. Dumping of oil, chemicals or other deleterious materials on the ground is forbidden. The contractor shall provide a means of catching, retaining and properly disposing of drained oil, removed oil filters, and other deleterious material. All spills of such materials shall be reported immediately the contractor to the DEP.

4. Applications of fertilizers, herbicides or pesticides must be done by a Connecticut licensed applicator. The Contractor shall submit to the Engineer the proposed Applicator's name and license number, and must receive the Engineer's approval of the proposed applicator before such application is carried out

SOIL STABILIZATION MEASURES

1. All topsoil not to be used for final grading/landscaped areas shall be removed from the site immediately, in accordance with applicable State and Local laws. All topsoil to be used in landscaped areas shall be stored/stockpiled in accordance with applicable State and Local laws

2 Jute Netting shall be installed on all final slopes steeper than 3:1 in grade. Green Armor System (Enkamat 7010 Turf Reinforcement Mat (TRM) infilled with Flexterra FGM) or approved equal shall be installed in accordance with manufactures recommendations in areas noted on EC-1.

4. All disturbed areas are to be provided with at least 6" of topsoil before final seeding.

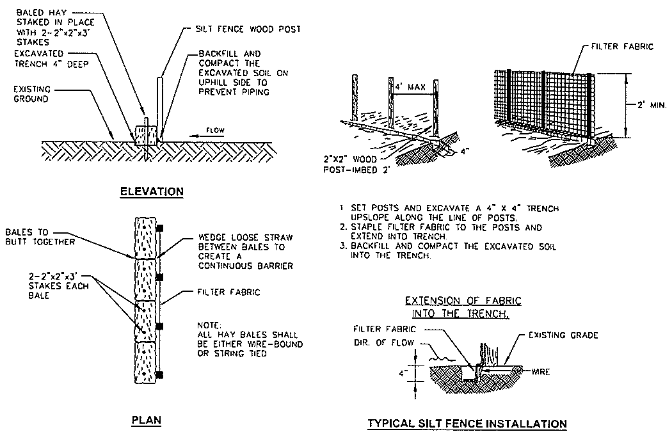
5. Permanent vegetation is to be hydroseeded on all exposed areas within ten (10) days after final grading.

6 Permanent vegetation: See Landscaping Plans

RESPONSIBLE PARTIES

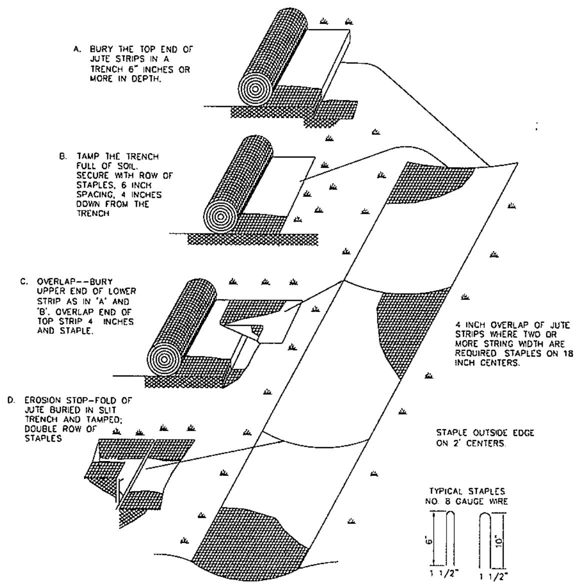
Connecticut Resources Recovery Authority (CRRA)
100 Constitution Plaza, 6th Floor
Hartford, Connecticut 06103
(860) 757-7700

is assigned the responsibility for implementing the control measures of this plan. This responsibility includes the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of this plan, and notifying the Planning and Zoning Commission of the transfer of responsibility, and for conveying a copy of this plan if title to the property is transferred



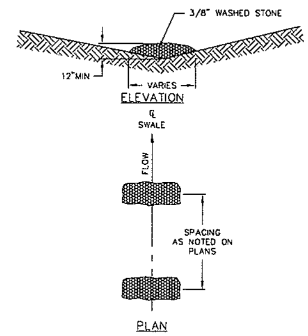
1 TEMPORARY SEDIMENT AND EROSION CONTROL BARRIER SILT FENCE BACKED BY HAY BALES

NTS



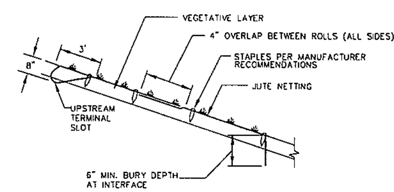
2 INSTALLATION OF JUTE NETTING IN GRASS SWALES

NTS



3 STONE CHECK DAM

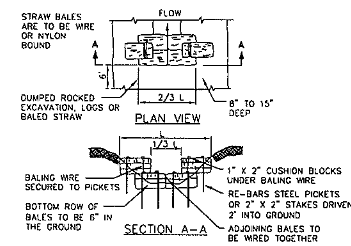
NTS



4 INSTALLATION OF JUTE NETTING ON SLOPES

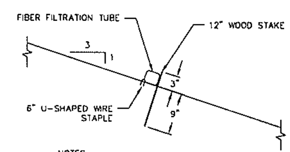
NTS

NOTE: IN AREAS ADJACENT TO PROPERTY LINE AND WITHIN 100' OF WETLAND BOUNDARY, ENKAMAT 7010 OR APPROVED EQUAL SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.



5 STRAW BALE CHECK DAM (SD)

NTS



NOTES:
1) ANCHOR UPSLOPE SIDE OF FFT USING 6" U-SHAPED WIRE STAPLES AT 1' INTERVALS. PLACE ANCHORS 1" INWARD FROM UPER EDGE OF FFT.
2) RAISE TO BE THE FULLEST HEIGHT AND DRIVE 12" WOOD STAKES THROUGH DOWNSTREAM SIDE.

6 INSTALLATION OF FIBER FILTRATION TUBES (FFT)

NTS

NO	REVISIONS	DATE	APPROVAL

DATE

CARL N. STOPPER
PROFESSIONAL ENGINEER
CT PE # 13255

CONNECTICUT RESOURCE RECOVERY AUTHORITY
WATERBURY LANDFILL
HIGHLAND AVENUE & HIGHVIEW STREET
WATERBURY, CONNECTICUT

TRC
21 Griffin Road North
Windsor, CT 06095
(860) 298-9692

EROSION AND SEDIMENTATION CONTROL DETAILS

DESIGN:	MB	10/12/07
DRAWN:	KDH	10/12/07
CHECKED:	CNS	10/12/07
SCALE: NTS		
PROJECT: 106811-000140-000000		
DRAWING		

PLATE 4

Appendix A

Stormwater Discharge Registration Form and
General Permit for the Discharge of Stormwater and Dewatering
Wastewaters from Construction Activities

General Permit Registration Form for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

Please complete this form in accordance with the general permit (DEP-PERD-GP-015) in order to ensure the proper handling of your registration. Print or type unless otherwise noted. You must submit the *Permit Application Transmittal Form* (DEP-APP-001) and the registration fee along with this form.

DEP USE ONLY
Application No. _____
Permit No. _____
Facility I.D. _____

Part I: Registration Type

Enter a check mark in the appropriate box identifying the registration type.

This registration is for (check one):	Please identify any existing permit number in the space provided:
☐ A *new* general permit registration	Existing permit number:
☐ A *modification* of an existing general permit	***GSN***

Part II: Fee Information

☐ ***Registration only***	A registration fee of $500.00 is to be submitted with *each* registration that you are submitting at least 30 days before the initiation of construction activities.
☐ ***Registration and Plan Review***	All construction projects that result in the disturbance of ten or more acres require the submittal of a Stormwater Pollution Control Plan and a $500.00 plan review fee. The plan and the fee must be submitted 30 days prior to initiation of the construction activity. $500.00 registration fee + $500.00 review fee = $1,000.00 total fee

For municipalities, a 50% discount applies. The registration will not be processed without the fee. The fee shall be non-refundable and shall be paid by certified check or money order payable to the Department of Environmental Protection.

Part III: Registrant Information

1. Fill in the name of the registrant(s) as indicated on the *Permit Application Transmittal Form* (DEP-APP-001):

   Registrant:

   Phone: ext. Fax:

   ☐ Enter a check mark if there are co-registrants. If so, label and attach additional sheet(s) with the required information as supplied above.

Part III: Registrant Information (cont.)

2. List primary contact for departmental correspondence and inquiries, if different than the registrant.

   Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext. Fax:

   Site Phone: Emergency Phone:

   Contact Person: Title:

   Association (e.g. developer, general or site contractor, etc.):

3. List owner of the property on which the activity will take place, if different from registrant:

   Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext. Fax:

   Contact Person: Title:

4. List developer, if different from registrant or primary contact:

   Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext. Fax:

   Contact Person: Title:

5. Name and address of general contractor:

   Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext. Fax:

   Site Phone: Off-hours Phone:

   Contact Person: Title:

6. List any engineer(s) or other consultant(s) employed or retained to assist in preparing the registration and Stormwater Pollution Plan.

   ☐ Please enter a check mark if additional sheets are necessary, and label and attach them to this sheet.

   Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext. Fax:

   Contact Person: Title:

   Service Provided:

Part IV: Site Information

1. Site or Project Name (if any):

   Street Address or Description of Location:

   City/Town: State: Zip Code:

2. Brief description of construction activity:

3. Start Date: Anticipated Completion Date:

4. Estimated total number of acres to be disturbed:

Part V: Stormwater Discharge Information

1. Where does stormwater discharge to:

   ☐ Municipal Separate Storm System? ☐ Yes ☐ No (Name):

   ☐ Surface water body or wetlands? ☐ Yes ☐ No (Name):

2. Is the discharge located less than 500 feet from a tidal wetland, which is not a fresh-tidal wetland?

   ☐ Yes ☐ No

3. Name of the watershed where the site is located OR nearest waterbody to which it discharges:

4. Is construction in accordance with the Guidelines established under Section 22a-329 of the Soil Erosion and Sedimentation Act? ☐ Yes ☐ No

5. Is construction in accordance with local soil erosion and sediment ordinances? ☐ Yes ☐ No

   Note: A copy of this registration and the Stormwater Pollution Control Plan must be available to the town wetlands enforcement officials, wetlands commission, or their equivalent.

6. Will the construction project disturb over ten acres? ☐ Yes ☐ No

   If yes, enclose a copy of the Stormwater Pollution Control Plan and plan review fee.

7. Has the construction project been reviewed for compliance with the following DEP programs?

   a. Coastal Management Act (Section 22a-92 of the Connecticut General Statutes) ☐ Yes ☐ No

   b. Endangered and Threatened Species (Section 26-306 of the Connecticut General Statutes) ☐ Yes ☐ No

   c. State and Federal Historic Preservation statutes? ☐ Yes ☐ No

Part VI: Supporting Documents

Please enter a check mark by the attachments as verification that *all* applicable attachments have been submitted with this registration form. When submitting any supporting documents, please label the documents as indicated in this part (e.g., Attachment A, etc.) and be sure to include the registrant's name as indicated on the *Permit Application Transmittal Form*.

☐	Attachment A:	An 8 1/2" x 11" copy of the relevant portion or a full-sized original of a USGS Quadrangle Map indicating the exact location of the facility or site. Indicate the quadrangle name on the map. (To obtain a copy of the relevant USGS Quadrangle Map, call your town hall or DEP Maps and Publications Sales at 860-424-3555.)
☐	Attachment B:	A copy of the Stormwater Pollution Control Plan and plan review fee of $500.00, if the construction project disturbs over 10 acres

Part VII: Environmental Professional Certification

The following certification must be signed by a professional engineer, licensed to practice in Connecticut.

"I certify that I have thoroughly and completely reviewed the Stormwater Pollution Control Plan for the site. I further certify, based on such review and in my professional judgment, that the Stormwater Pollution Control Plan has been prepared in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, and the conditions for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and the controls required for such Plan are appropriate for the site. I am aware that there are significant penalties for false statements in this certification, including the possibility of fine and imprisonment for knowingly making false statements."

Signature of Professional Engineer	Date
Name of Professional Engineer (print or type)	P. E. Number (if applicable)

Affix P. E. Stamp Here

Part VIII: Registrant Certification

The registrant *and* the individual(s) responsible for actually preparing the registration must sign this part. A registration will be considered incomplete unless all required signatures are provided.

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I certify that this general permit registration is on complete and accurate forms as prescribed by the commissioner without alteration of the text. I understand that a false statement made in the submitted information may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute.

I also certify under penalty of law that I have read and understand all conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, that all conditions for eligibility for authorization under the general permit are met, all terms and conditions of the general permit are being met for all discharges which have been initiated and are the subject of this registration, and that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowingly making false statements."

Signature of Registrant	Date
Name of Registrant (print or type)	Title (if applicable)
Signature of Preparer (if different than above)	Date
Name of Preparer (print or type)	Title (if applicable)

☐ Please enter a check mark if additional signatures are necessary.
If so, please reproduce this sheet and attach signed copies to this sheet.

Note: Please submit the *Permit Application Transmittal Form*, the Registration Form, Fee(s), and all Supporting Documents to:

CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Note: If discharging to municipal separate storm sewer, send a copy of this completed registration form to the owner or operator of that system.

If discharging to a public drinking water supply watershed or aquifer area, send a copy of this completed registration form to the appropriate water company.

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

(Protected Document)

Click HERE to Download Latest Version of Permit

Appendix B
Inspection Report Form

INSPECTION REPORT FORM

CONNECTICUT RESOURCES RECOVERY AUTHORITY
LANDFILL CLOSURE
WATERBURY LANDFILL
WATERBURY, CONNECTICUT

Date of Inspection _____

Inspector's Name _____

Employed By _____

Circle Type of Inspection: Monthly / Weekly / Within 24 hrs of Storm

Stabilization Practices [1]

Major Observations or Deficiencies	Actions Taken	Date Completed

Structural Practices [2]

Major Observations or Deficiencies	Actions Taken	Date Completed

_____ _____
Signature of Inspector Date

_____ _____
Signature of Owner Date

[1]Stabilization practices to be inspected include: grading, disturbed area, temporary vegetative cover, permanent vegetative cover.
[2]Structural practices to be inspected include: filtration barriers, HDPE-lined drainage swales, fiber filtration tubes, erosion control blankets, downchutes, check dams, and inlet sedimentation controls.

Appendix C

Contractor Identification and Certification

CONNECTICUT RESOURCES RECOVERY AUTHORITY
LANDFILL CLOSURE
WATERBURY LANDFILL
WATERBURY, CONNECTICUT

General Contractor	Point of Contact	Phone

Sub-Contractors	Point of Contact	Phone

CONNECTICUT RESOURCES RECOVERY AUTHORITY
LANDFILL CLOSURE
WATERBURY LANDFILL
WATERBURY, CONNECTICUT

GENERAL CONTRACTOR

"I certify under penalty of law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that as a contractor or subcontractor at the site, I am authorized by this general permit, and must comply with the terms and conditions of this general permit, including but not limited to the requirements of the Stormwater Pollution Control Plan prepared for the site."

Signed:_____ Date:_____

Printed Name: _____ Telephone:_____

Title: _____

Firm:_____

Address:_____

_____

_____

_____

CONNECTICUT RESOURCES RECOVERY AUTHORITY
LANDFILL CLOSURE
WATERBURY LANDFILL
WATERBURY, CONNECTICUT

SUBCONTRACTOR

"I certify under penalty of law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that as a contractor or subcontractor at the site, I am authorized by this general permit, and must comply with the terms and conditions of this general permit, including but not limited to the requirements of the Stormwater Pollution Control Plan prepared for the site."

Signed:_____ Date:_____

Printed Name: _____ Telephone:_____

Title: _____

Firm:_____

Address:_____

_____

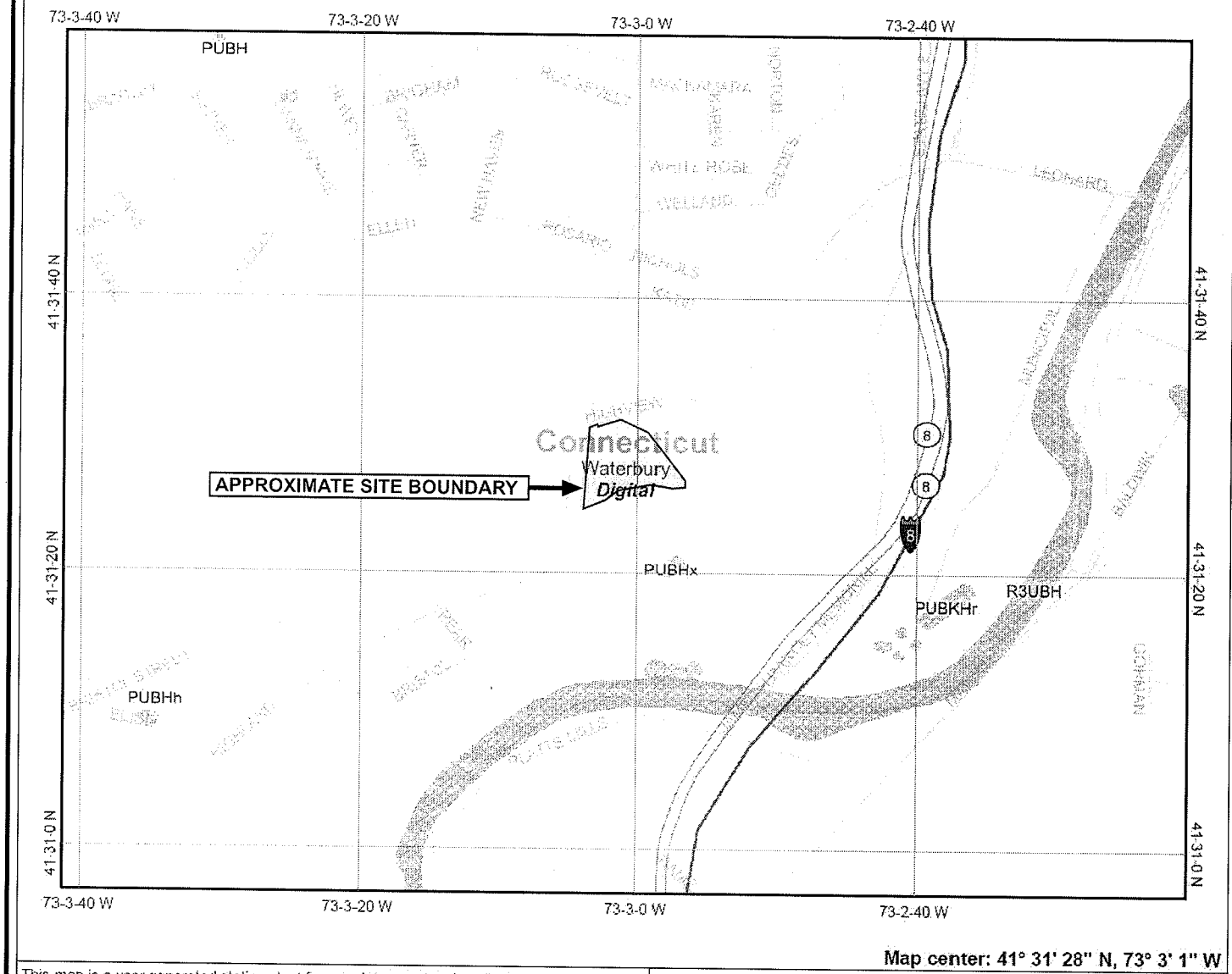
_____

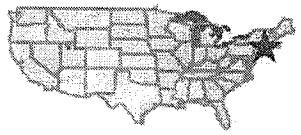
_____

Appendix D

USFWS Mapped Wetland Locations

Waterbury Landfill Area Wetlands





Legend

CONUS_wet_scan
- 0
- 1
- Out of range

Interstate

Major Roads
- Other Road
- Interstate
- State highway
- US highway

Roads

Cities

USGS Quad Index 24K

Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan

NHD Streams

Counties 100K

States 100K

South America

North America

Map center: 41° 31' 28" N, 73° 3' 1" W

Scale: 1:13,441