### BOLTON INLAND WETLANDS COMMISSION REGULAR MEETING 7:00 P.M., TUESDAY, NOVEMBER 18, 2025

VIRTUAL.MEETING.VIA.ZOOM

**Inland Wetlands Commission Members Present Via Zoom:** Chair Ross Lally, Member Michael McDonnell, Vice Chair James Loersch, Member Diane DeNunzio, Member David Lynn.

Staff Present Via Zoom: Wetlands Agent Alyssa Barroso, Board Clerk Mary Johnston

Others Present Via Zoom: Joseph Dillion

The Commission said their qualifications.

### 1. Approval of Agenda

D. Lynn MOVED to approve the agenda. M. McDonnell SECONDED the motion. MOTION CARRIED UNANIMOUSLY 5:0:0.

### 2. Public Comment:

None.

### 3. Approval of Minutes

### 3a. October 28, 2025, Regular Meeting

J. Loersch MOVED to approve October 28, 2025, Regular Meeting Minutes. D. DeNunzio SECONDED. R. Lally ABSTAINED. MOTION CARRIED 4:0:1

### 4. Old Business

### 5a. IW-25-16: 29 Hebron Rd – Town of Bolton – Construction of a Soccer Field at Herrick Park

A. Barroso discussed the changes made to the application/map since the last meeting. J. Dillion said he provided additional information to staff this morning, but that information was not provided to the Commission for tonight's meeting. Therefore, M. McDonnell MOVED to table this application to the next meeting. J. Loersch SECONDED the motion. MOTION CARRIED UNANIMOUSLY 5:0:0.

### 4b. IW-25-17: 206-220-222-266 Bolton Center Rd – Town of Bolton – Construct a Town Center Subsurface Sewage Disposal System

A. Barroso presented an updated map and pointed out the changes made since the last meeting. A. Barroso explained the sewer line was adjusted to limit the disturbance to the wetlands and said the only disturbance to the wetlands was behind Town Hall. A. Barroso said this sewage system will need a pumping mechanism due to the changes made and other areas is gravity piping. J. Dillion provided more information for the piping system. R. Lally wondered if the new system is sized appropriately for growth, the size of the tanks,

Bolton IWC 11/18/25 Regular Meeting

backup power in emergency situations and electric power. J. Dillion replied it is sized appropriately for growth, tanks will be standard size, two underground pumps backups available if needed, and power will be underground. R. Lally expressed concerns with lack of permit, no lighting shown and lack of coordination requiring re-work of the project. R. Lally suggested having this information available and explained for the Public Hearing to avoid questions by the public. R. Lally said the Commission had requested a wetlands soil scientist to review the wetlands to which J. Dillion replied there has been a survey done previously. J. Loersch MOVED to withdraw the need for a soil scientist at this time. After discussion, J. Loersch withdrew his motion. M. McDonnell suggested using a no trenching option as an alternative if feasible, program and number of test borings, do drilling in winter months, use bombardier in wetlands, use an auger, avoid flush drilling and geophysical testing. M. McDonnell said he would like to be on site during the sub surface work. R. Lally stated he is concerned with inadvertently draining the wetlands. J. Dillion replied there will be trench hill installations. M. McDonnell suggested there are two options to investigate: trench-less or going the long way around. J. Loersch had concerns with installing a six-inch gravity pipe northeast edge of the pavement/parking lot. R. Lally questioned how these fits in with the planned walkway and expressed concerns with the archeological site near this proposed project. J. Dillion replied the proposed walkway will be constructed after the sewer installation. R. Lally asked that the archeological site/encampment added to the project map. M. McDonnell displayed a map of the archaeological site in relation to the proposed project. R. Lally asked the members to think about a hybrid Public Hearing for this application. The Commission will continue to review this application at next month's meeting.

### 5. New Business

None.

### 6. Wetlands Agent Report

A. Barroso reported on the CACIWC conference held last weekend and said it was a great conference with informative sessions. A. Barroso informed the commission members required training completed by March 1<sup>st</sup>. A. Barroso stated all ongoing permits are good.

### 7. Other

### 7a. Cease and Correct – Alexey Ouzonov & Tenant – 37 Notch Road – Debris in Wetlands

A. Barroso reported she and R. Lally met with the Town Attorney about this matter to discuss the next steps. R. Lally stated a letter was sent to George Logan to submit the soil report to which Mr. Logan replied the scope of the work has changed and with additional costs. A. Barroso said the Town Attorney suggested continuing to negotiate with Mr. Logan to submit his report so the property owner can mitigate the issues in the wetlands. R. Lally pointed out the Town granted an agricultural exemption on this property many years ago, but those files cannot be found. R. Lally suggested sending a note to Town Administrator Jim Rupert about the Novus program and lost files and check with Barbara Kelly on missing documents.

### 7b. Ongoing Discussion & Review of Proposed Updates to Wetlands Regulation

A. Barroso reported there has been no outcome yet about the changes to the fee schedule and recently discovered that the Town cannot charge compliance fees unless by Ordinance. The Commission discussed how the Town can charge for noncompliance fees through Ordinance. R. Lally suggested doing the review of the Wetlands Regulations separately from the fees so the Selectmen and Town Attorney can review before setting the Public Hearing. The Commission can work on the fee schedule separately. M. McDonnell will send the proposed updates to the Wetlands Regulations to the Commission to review at the next meeting before presenting to the Board of Selectmen. R. Lally reported there are no increases to the FY27 Budget request, but the Commission can review at the next meeting.

**8. Adjournment:** M. McDonnell MOVED to adjourn the meeting at 8:43 p.m. D. DeNunzio SECONDED the motion. MOTION CARRIED UNANIMOUSLY 5:0:0.

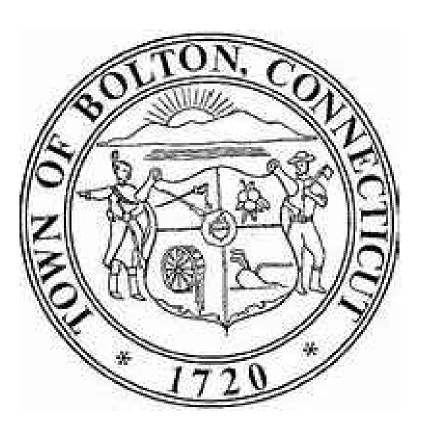
Respectfully submitted by Mary J. Johnston Mary J. Johnston

Please see the Minutes of subsequent meetings for corrections to these Minutes and any corrections hereto.

# Bit. BITUMINOUS Conc. CONCRETE CL&P CONNECTICUT LIGHT AND POWER EL. ELEVATION INV. INVERT N/F NOW OR FORMERLY RCP REINFORCED CONCRETE PIPE HDPE HIGH DENSITY POLYETHYLENE PIPE SNET SOUTHERN NEW ENGLAND TELEPHONE CO. T.O.W. TOP OF WALL TYP. TYPICAL

	LEGEND	
Existing		PROPOSED
	INDEX CONTOUR	100
98	INTERMEDIATE CONTOUR	98
000000000	STONEWALL	
	APPROXIMATE WETLANDS	
	100' WETLANDS BOUNDARY	
	PROPERTY LINE	
•	IRON ROD	
$\triangle$	SURVEY CONTROL	
C.	UTILITY POLE	
	EDGE OF GRAVEL	
	EDGE OF PAVEMENT	
	DRAINAGE PIPE	
~~~~~	TREE LINE	
	RIPRAP	超品的品質
	GRAVEL	
	EROSION CONTROL BLANKET	<b>《</b> 等分类的数数
	SEDIMENTATION FENCE	

### TOWN OF BOLTON



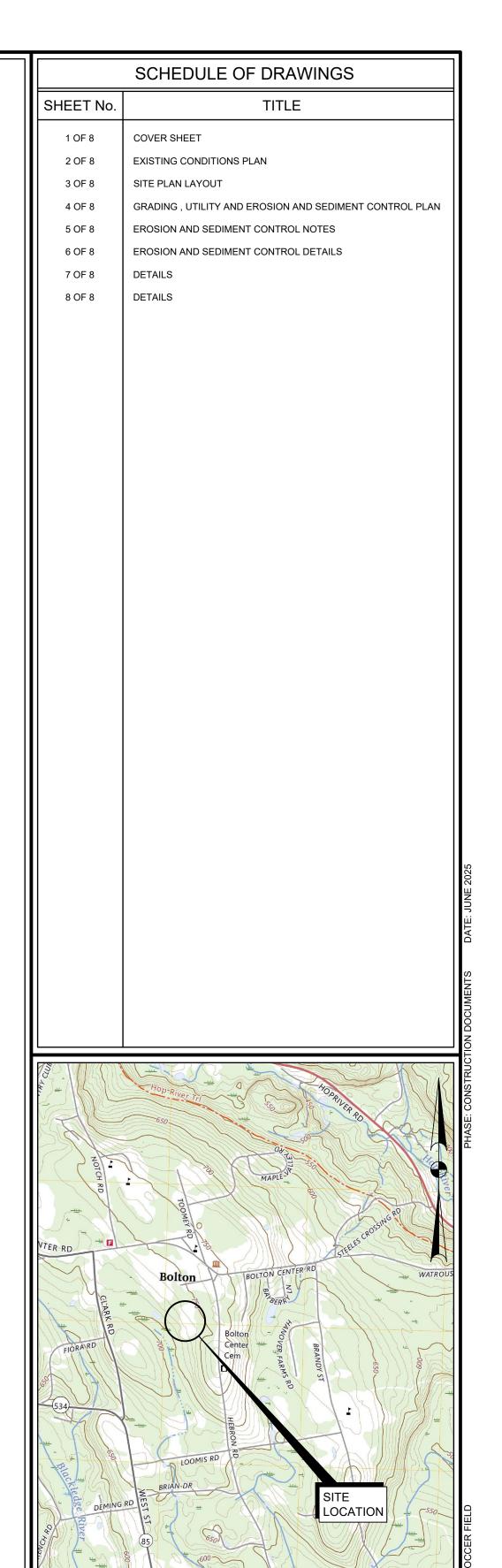
CONNECTICUT

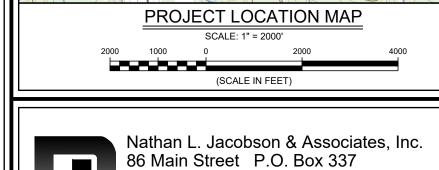
## HERRICK MEMORIAL PARK SOCCER FIELD

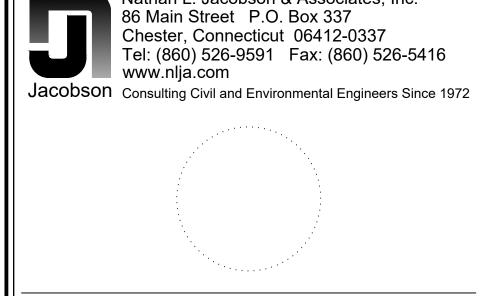
### BOARD OF SELECTMEN

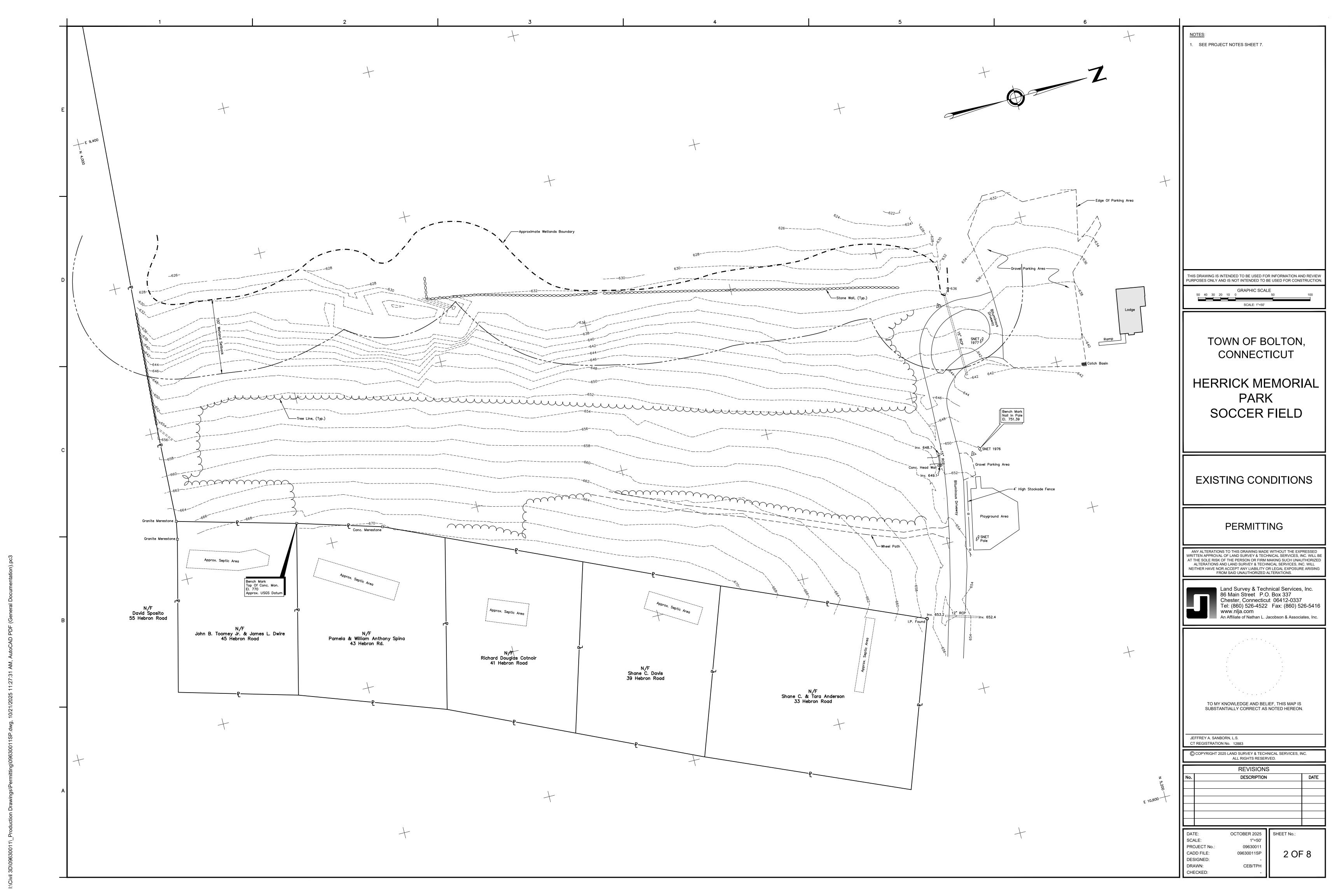
RODNEY FOURNIER, FIRST SELECTMAN
PAMELA SAWYER, SELECTMAN
TIMOTHY SADLER, SELECTMAN
ROBER MORRA, SELECTMAN
MATHER CLARK, SELECTMAN
AMANDA GORDON, SELECTMAN
GWEN MARRION, SELECTMAN

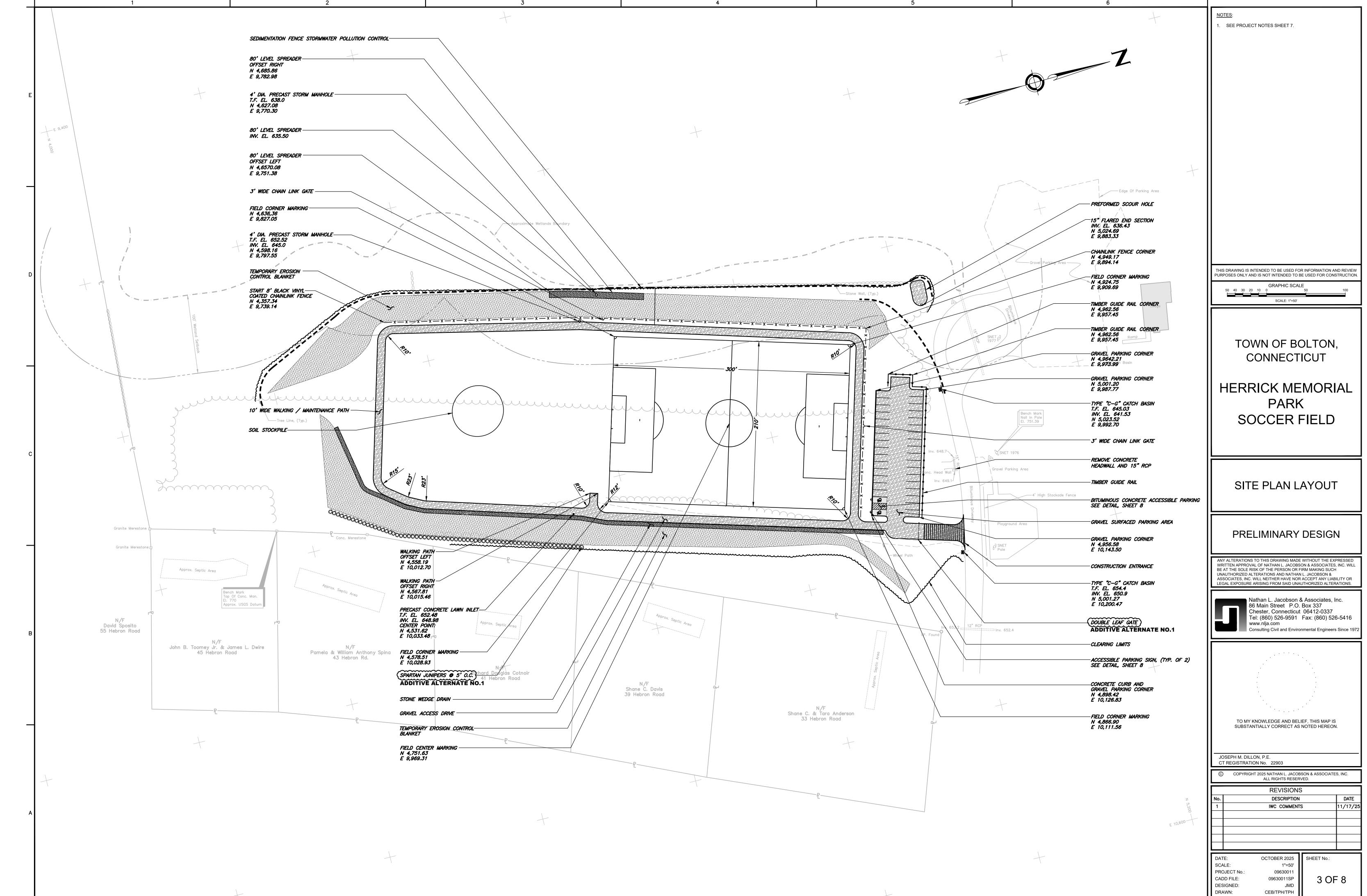
PERMITTING OCTOBER 2025



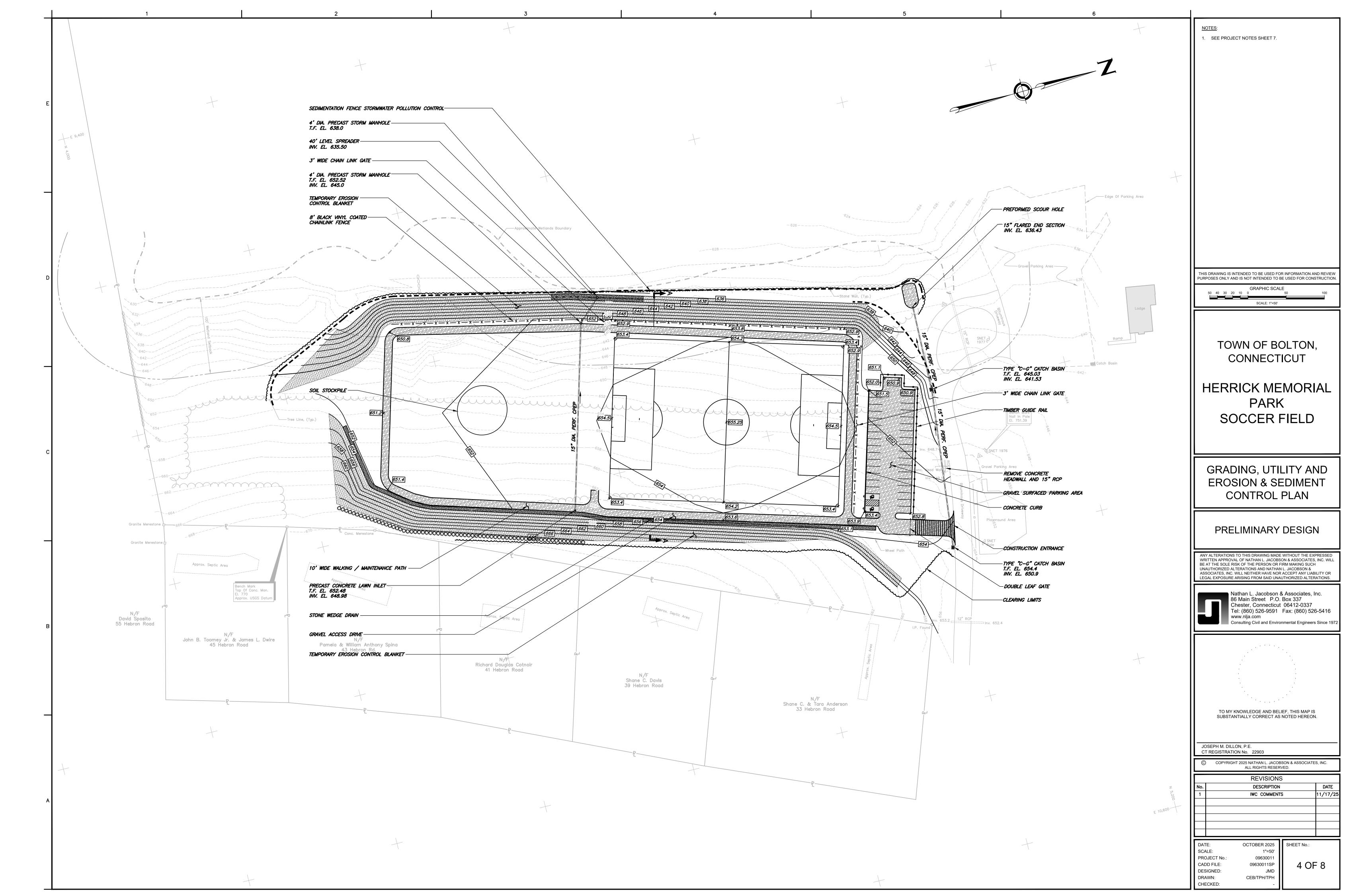








CHECKED:



I:\Civil 3D\09630011\\_Production Drawings\09630011SP.dwg, 11/18/2025 11:01:32 AM, AutoCAD PDF (General Documer

$\top$	DD0 /505 *** = - :
	PROJECT NARRATIVE  THE SUBJECT PROJECT INCLUDES THE CO
	DRAINAGE.  ADDRESS OF PROPOSED USE:
	HERRICK MEMORIAL PARK 29 HEBRON ROAD BOLTON, CT 06043
	ADDRESS OF OWNER'S AGENT:
	JAMES RUPERT TOWN ADMINISTRATOR 222 BOLTON CENTER ROAD BOLTON, CT 06043
E	ADDRESS OF PROPERTY OWNER:
	TOWN OF BOLTON 222 BOLTON CENTER ROAD BOLTON, CT 06043
	CONSTRUCTION SCH
	IT IS PROPOSED TO PERFORM CONSTRUC SITE STABILIZATION MAY BE AS FOLLOWS:
	<ol> <li>INSTALL CONSTRUCTION ENTRANCE</li> <li>INSTALL SEDIMENT AND EROSION CO</li> </ol>
	CLEAR VEGETATION, CUT TREES AN     CONDUCT EARTHWORK CUTS AND F
	5. INSTALL DRAINAGE STRUCTURES AN
$\neg$	INSTALL GRAVELS FOR ACCESS DRIV     PLACE TOPSOIL AND SEED IN ALL AR
	<ul><li>8. PLACE EROSION CONTROL BLANKET</li><li>9. INSTALL FENCING AND GUIDE RAILS.</li></ul>
	CLEAN UP AND REMOVE ALL CONSTI SITE.
	11. SILT FENCE TO BE REMOVED WITHIN THE CONTRACTOR SELECTED TO CONSTR
	EROSION CONTROL MEASURES ON THIS S BOLTON CONSERVATION COMMISSION EN AND ZONING ENFORCEMENT OFFICERS W
	SHOULD ANY PROBLEMS OCCUR, THEN THE CONTINGENCY PLAN
D	A MINIMUM OF TWO WEEKS PRIOR TO THE AND THE TOWN ENGINEER WITH THE NAM THE EVENT OF AN EPOSION AND/OR SEDIM
	THE EVENT OF AN EROSION AND/OR SEDING THE CONTRACTOR SHALL AT ALL TIMES KINTHE PROJECT SITE TO CONTROL UNFORE:
	CONTRACTOR SHALL PROMPTLY STABILIZ  EROSION AND SEDIMENT
	THE CONTRACTOR SHALL BE RESPONSIBL PROJECT.
	THE MINIMUM STANDARDS FOR ALL EROSI CONNECTICUT GUIDELINES FOR SOIL ERO
	MEANS AND TECHNIQUES MAY BE ALLOWE  GENERAL GUIDELINE
	5. NO CONSTRUCTION ACTIVITY SHALL FLOODPLAINS, DESIGNATED UPLAND
$\dashv$	REQUIRED APPROVALS AND/OR PER  6. TEMPORARY EROSION AND SEDIMEN
	ALL EROSION AND SEDIMENT CONTR DISTURBED AREAS HAVE BEEN STAE
	8. THE CONTRACTOR SHALL LIMIT THE REASONABLE CARE TO PROTECT AN FEASIBLE.
	WHERE PRACTICABLE, THE CONTRA     EXPOSED SOIL TO AREAS ACTIVELY     THE PERIOD OF EXPOSURE OF DISTI
	ACCOMPLISHED AS SOON AS IS PRA  10. ADEQUATE PROVISIONS SHALL BE T.
	DAMAGE.  11. ALL MATERIAL FROM CLEARING AND
	12. WATER FROM DEWATERING OPERAT SUCH WATER SHALL BE DISCHARGE SYSTEM ONLY WHEN APPROVED. NO
٦	SEWER SYSTEM.  13. THE STORAGE, WASHING, FUELING A
	AREAS ONLY. IN THE EVENT OF A CO ENERGY AND ENVIRONMENTAL PRO AGENT.
	PRESERVE AND CONS
	TOPSOILING  MATERIALS
	SITE INVESTIGATIONS SHALL BE MAI ON THE SITE TO JUSTIFY STRIPPING SANDY CLAY LOAM CLAY LOAM) OT
	SANDY CLAY LOAM, CLAY LOAM). OT TESTING. IT SHALL BE FREE OF DEB BEING ABLE TO SUPPORT HEALTHY ' GROWTH.
_	ALL TOPSOIL SHALL BE TESTED BY A AND FERTILIZER.
	INSTALLATION REQUIREMENT  1. STRIPPING OF TOPSOIL SHALL BE CO
	DEPENDING ON THE SITE CONDITION OPERATIONS.
	TOPSOIL SHALL BE STOCKPILED IN S     OFF-SITE SEDIMENT DAMAGE SHALL
	SIDE SLOPES OF STOCKPILES SHALL     A SEDIMENT BARRIER SHALL SURRO
	5. TEMPORARY SEEDING OF STOCKPIL ACCORDANCE WITH THE TEMPORAR
	PREVIOUSLY ESTABLISHED GRADES     DRAWINGS.      WHERE THE THE STREET SUBSCILLED.
В	7. WHERE THE pH OF THE SUBSOIL IS 6 WITH THE SOIL TEST TO A pH OF 6.0  8. AFTER THE AREAS TO BE TOPSOILEI
	TOPSOIL, THE SUBGRADE SHALL BE INCHES TO ENSURE BONDING OF TH
	TOPSOIL SHALL NOT BE PLACED WH     IN A CONDITION THAT MAY OTHERWI     TOPSOIL SHALL BE UNIFORMLY DIST  ANY INDEED IN ADITION.
	ANY IRREGULARITIES IN THE SURFAY ORDER TO PREVENT THE FORMATIO  10. TOPSOIL SHALL BE COMPACTED ENG
	UNIFORM FIRM SEEDBED FOR THE E INCREASES RUNOFF VELOCITY AND
	11. IMMEDIATELY FOLLOWING TOPSOIL AND/OR MULCHING.
	LAND GRADING  1. ALL GRADED OR DISTURBED AREAS
$\dashv$	ACCORDANCE WITH THE APPROVED  2. AREAS TO BE FILLED SHALL BE CLEA
	OTHER OBJECTIONABLE MATERIAL.  3. ALL FILLS SHALL BE COMPACTED AS RELATED PROBLEMS.
	<ol> <li>FILL MATERIAL SHALL BE FREE OF BI MATERIALS.</li> </ol>
	5. FROZEN MATERIAL OR SOFT, MUCKY
	<ol> <li>FILL SHALL NOT BE PLACED ON A FR</li> <li>TOPSOILING SHALL BE ACCOMPLISH</li> </ol>
	8. ALL GRADED AREAS SHALL BE PERN DUST CONTROL

1	
_	PROJECT NARRATIVE:
	THE SUBJECT PROJECT INCLUDES THE CONSTRAINAGE.  ADDRESS OF PROPOSED USE:
	HERRICK MEMORIAL PARK 29 HEBRON ROAD
	BOLTON, CT 06043  ADDRESS OF OWNER'S AGENT:
	JAMES RUPERT TOWN ADMINISTRATOR 222 BOLTON CENTER ROAD
E	BOLTON, CT 06043  ADDRESS OF PROPERTY OWNER:
	TOWN OF BOLTON 222 BOLTON CENTER ROAD BOLTON CT 06042
	BOLTON, CT 06043
	CONSTRUCTION SCHE  IT IS PROPOSED TO PERFORM CONSTRUCTION  TO SERVICE STATEMENT OF THE PROPOSED TO PERFORM CONSTRUCTION  TO SERVICE STATEMENT OF THE PERFORM CONSTRUCTION  TO SERVICE STATEMENT OF T
	SITE STABILIZATION MAY BE AS FOLLOWS:  1. INSTALL CONSTRUCTION ENTRANCE. A
	2. INSTALL SEDIMENT AND EROSION CON
	CLEAR VEGETATION, CUT TREES AND (     CONDUCT EARTHWORK CUTS AND FILL
_	<ol> <li>INSTALL DRAINAGE STRUCTURES AND</li> <li>INSTALL GRAVELS FOR ACCESS DRIVE</li> </ol>
	7. PLACE TOPSOIL AND SEED IN ALL AREA  8. PLACE EROSION CONTROL BLANKETS
	INSTALL FENCING AND GUIDE RAILS.
	10. CLEAN UP AND REMOVE ALL CONSTRU SITE.
	SILT FENCE TO BE REMOVED WITHIN 30  THE CONTRACTOR SELECTED TO CONSTRUCT EROSION CONTROL MEASURES ON THIS SITE
	BOLTON CONSERVATION COMMISSION ENFO AND ZONING ENFORCEMENT OFFICERS WITH SHOULD ANY PROBLEMS OCCUR, THEN THE
	CONTINGENCY PLAN
D	A MINIMUM OF TWO WEEKS PRIOR TO THE S' AND THE TOWN ENGINEER WITH THE NAMES THE EVENT OF AN EROSION AND/OR SEDIME
	THE CONTRACTOR SHALL AT ALL TIMES KEE THE PROJECT SITE TO CONTROL UNFORESE
	CONTRACTOR SHALL PROMPTLY STABILIZE TO EROSION AND SEDIMENT C
	THE CONTRACTOR SHALL BE RESPONSIBLE PROJECT.
	THE MINIMUM STANDARDS FOR ALL EROSIOI CONNECTICUT GUIDELINES FOR SOIL EROSIO MEANS AND TECHNIQUES MAY BE ALLOWED
	GENERAL GUIDELINES
	5. NO CONSTRUCTION ACTIVITY SHALL TA FLOODPLAINS, DESIGNATED UPLAND R REQUIRED APPROVALS AND/OR PERMI
_	6. TEMPORARY EROSION AND SEDIMENT
	ALL EROSION AND SEDIMENT CONTRO DISTURBED AREAS HAVE BEEN STABIL     THE CONTRACTOR SHALL LIMIT THE DI
	REASONABLE CARE TO PROTECT AND FEASIBLE.
	<ol> <li>WHERE PRACTICABLE, THE CONTRACT EXPOSED SOIL TO AREAS ACTIVELY UN THE PERIOD OF EXPOSURE OF DISTUR</li> </ol>
	ACCOMPLISHED AS SOON AS IS PRACT  10. ADEQUATE PROVISIONS SHALL BE TAK DAMAGE.
	11. ALL MATERIAL FROM CLEARING AND G
С	<ol> <li>WATER FROM DEWATERING OPERATIO SUCH WATER SHALL BE DISCHARGED SYSTEM ONLY WHEN APPROVED. NO W SEWER SYSTEM.</li> </ol>
	13. THE STORAGE, WASHING, FUELING ANI AREAS ONLY. IN THE EVENT OF A CON
	ENERGY AND ENVIRONMENTAL PROTE AGENT.
	PRESERVE AND CONS
	MATERIALS
	SITE INVESTIGATIONS SHALL BE MADE ON THE SITE TO JUSTIFY STRIPPING. H SANDY CLAY LOAM, CLAY LOAM). OTHI
	TESTING. IT SHALL BE FREE OF DEBRI: BEING ABLE TO SUPPORT HEALTHY VE GROWTH.
_	ALL TOPSOIL SHALL BE TESTED BY A R AND FERTILIZER.
	INSTALLATION REQUIREMENT  1. STRIPPING OF TOPSOIL SHALL BE CON
	DEPENDING ON THE SITE CONDITIONS. OPERATIONS.  2. TOPSOIL SHALL BE STOCKPILED IN SUG
	2. TOPSOIL SHALL BE STOCKPILED IN SUC OFF-SITE SEDIMENT DAMAGE SHALL RI 3. SIDE SLOPES OF STOCKPILES SHALL N
	A SEDIMENT BARRIER SHALL SURROUN     TEMPORARY SEEDING OF STOCKPILES
	TEMPORARY SEEDING OF STOCKPILES     ACCORDANCE WITH THE TEMPORARY      PREVIOUSLY ESTABLISHED GRADES OF
_	DRAWINGS.  7. WHERE THE pH OF THE SUBSOIL IS 6.0
В	WITH THE SOIL TEST TO A pH OF 6.0 TO  8. AFTER THE AREAS TO BE TOPSOILED H TOPSOIL, THE SUBGRADE SHALL BE LO
	INCHES TO ENSURE BONDING OF THE TOPSOIL SHALL NOT BE PLACED WHILE
	IN A CONDITION THAT MAY OTHERWISE TOPSOIL SHALL BE UNIFORMLY DISTRI ANY IRREGULARITIES IN THE SURFACE
	ORDER TO PREVENT THE FORMATION (  10. TOPSOIL SHALL BE COMPACTED ENOU UNIFORM FIRM SEEDBED FOR THE EST
	INCREASES RUNOFF VELOCITY AND VO
	AND/OR MULCHING.  LAND GRADING
	ALL GRADED OR DISTURBED AREAS IN ACCORDANCE WITH THE APPROVED SI
	AREAS TO BE FILLED SHALL BE CLEAR!     OTHER OBJECTIONABLE MATERIAL.
	ALL FILLS SHALL BE COMPACTED AS RI RELATED PROBLEMS.
	FILL MATERIAL SHALL BE FREE OF BRU MATERIALS.      FROZEN MATERIAL OR SOFT MIJCKY OF
	FROZEN MATERIAL OR SOFT, MUCKY O     FILL SHALL NOT BE PLACED ON A FROZ
	<ol> <li>TOPSOILING SHALL BE ACCOMPLISHED</li> <li>ALL GRADED AREAS SHALL BE PERMAN</li> </ol>
	DUST CONTROL
А	INSTALLATION REQUIREMENTS WATER

	1
	PROJECT NARRATIVE:  THE SUBJECT PROJECT INCLUDES THE CONSTRUCTION OF A GRASSED DRAINAGE.  ADDRESS OF PROPOSED USE:
	HERRICK MEMORIAL PARK 29 HEBRON ROAD BOLTON, CT 06043
	ADDRESS OF OWNER'S AGENT:  JAMES RUPERT TOWN ADMINISTRATOR 222 BOLLTON CENTER ROAD POLITION OF COMPA
Е	BOLTON, CT 06043  ADDRESS OF PROPERTY OWNER:  TOWN OF BOLTON 222 BOLTON CENTER ROAD
	BOLTON, CT 06043
	CONSTRUCTION SCHEDULING:  IT IS PROPOSED TO PERFORM CONSTRUCTION IN THE SUMMER OF 2015.  SITE STABILIZATION MAY BE AS FOLLOWS:
	<ol> <li>INSTALL CONSTRUCTION ENTRANCE. AND SEDIMENT AND EROSION</li> <li>INSTALL SEDIMENT AND EROSION CONTROLS.</li> <li>CLEAR VEGETATION, CUT TREES AND GRID STUMPS WITHIN THE CI</li> </ol>
	4. CONDUCT EARTHWORK CUTS AND FILLS.  5. INSTALL DRAINAGE STRUCTURES AND PIPE.  6. INSTALL OR NOTES AND PROPERTY AND PROPERTY.
	6. INSTALL GRAVELS FOR ACCESS DRIVE AND PARKING AREA.  7. PLACE TOPSOIL AND SEED IN ALL AREAS OTHER THAN AREAS SUR  8. PLACE EROSION CONTROL BLANKETS ON SLOPES AS SPECIFIED O
	<ol> <li>INSTALL FENCING AND GUIDE RAILS.</li> <li>CLEAN UP AND REMOVE ALL CONSTRUCTION MATERIALS, EQUIPME SITE.</li> </ol>
	11. SILT FENCE TO BE REMOVED WITHIN 30 DAYS AFTER STABILIZATIO  THE CONTRACTOR SELECTED TO CONSTRUCT THIS PROJECT WILL BE RI EROSION CONTROL MEASURES ON THIS SITE. PRIOR TO THE START OF 0 BOLTON CONSERVATION COMMISSION ENFORCEMENT OFFICERS, INLAN
	AND ZONING ENFORCEMENT OFFICERS WITH THE NAME, ADDRESS AND SHOULD ANY PROBLEMS OCCUR, THEN THE OWNER'S AGENT SHOULD B CONTINGENCY PLAN
D	A MINIMUM OF TWO WEEKS PRIOR TO THE START OF CONSTRUCTION, TI AND THE TOWN ENGINEER WITH THE NAMES AND TELEPHONE NUMBERS THE EVENT OF AN EROSION AND/OR SEDIMENT CONTROL PROBLEM. THE CONTRACTOR SHALL AT ALL TIMES KEEP SUFFICIENT ADDITIONAL S
	THE PROJECT SITE TO CONTROL UNFORESEEN EROSION AND/OR SEDIN CONTRACTOR SHALL PROMPTLY STABILIZE THE PROBLEM AND CONTAIN EROSION AND SEDIMENT CONTROL
	THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF TIPROJECT.  THE MINIMUM STANDARDS FOR ALL EROSION AND SEDIMENT CONTROL CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL
	MEANS AND TECHNIQUES MAY BE ALLOWED WITH THE PRIOR APPROVALED SERVICE OF THE PRIOR APPROVALED
4	<ol> <li>NO CONSTRUCTION ACTIVITY SHALL TAKE PLACE WITHIN AREAS DI FLOODPLAINS, DESIGNATED UPLAND REVIEW ZONES OR WITHIN S' REQUIRED APPROVALS AND/OR PERMITS.</li> <li>TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE INSTA</li> </ol>
	7. ALL EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED CODISTURBED AREAS HAVE BEEN STABILIZED.  8. THE CONTRACTOR SHALL LIMIT THE DISTURBANCE OF LAND TO THE REASONABLE CARE TO PROTECT AND PRESERVE EXISTING VEGET
	FEASIBLE.  9. WHERE PRACTICABLE, THE CONTRACTOR SHALL PLAN HIS CONSTI EXPOSED SOIL TO AREAS ACTIVELY UNDER CONSTRUCTION. THE THE PERIOD OF EXPOSURE OF DISTURBED AREAS. THE INSTALLAT
	ACCOMPLISHED AS SOON AS IS PRACTICABLE.  10. ADEQUATE PROVISIONS SHALL BE TAKEN TO PROTECT ALL EXPOS DAMAGE.
c	ALL MATERIAL FROM CLEARING AND GRUBBING OPERATIONS SHAL  WATER FROM DEWATERING OPERATIONS SHALL NOT BE DISCHARSUCH WATER SHALL BE DISCHARGED TO AN APPROVED SEDIMENT SYSTEM ONLY WHEN APPROVED. NO WATER FROM DEWATERING
	SEWER SYSTEM.  13. THE STORAGE, WASHING, FUELING AND MAINTENANCE OF EQUIPM AREAS ONLY. IN THE EVENT OF A CONTAMINANT SPILL THE CONTENERGY AND ENVIRONMENTAL PROTECTION OIL AND CHEMICAL SI AGENT.
	PRESERVE AND CONSERVE SOIL TOPSOILING
	MATERIALS  SITE INVESTIGATIONS SHALL BE MADE TO DETERMINE IF THERE IS ON THE SITE TO JUSTIFY STRIPPING. HIGH QUALITY TOPSOIL SHAL
	SANDY CLAY LOAM, CLAY LOAM). OTHER SOIL TYPES WITH HIGH O TESTING. IT SHALL BE FREE OF DEBRIS, TRASH, STUMPS, ROCKS, BEING ABLE TO SUPPORT HEALTHY VEGETATION. IT SHALL CONTA GROWTH.
$\dashv$	ALL TOPSOIL SHALL BE TESTED BY A RECOGNIZED LABORATORY T AND FERTILIZER.  INSTALLATION REQUIREMENTS
	STRIPPING OF TOPSOIL SHALL BE CONFINED TO THE IMMEDIATE C DEPENDING ON THE SITE CONDITIONS. ALL SEDIMENT CONTROLS OPERATIONS.      TOPSOIL SHALL BE STOCKPILED IN SUCH A MANNER THAT NATURAL OF SITE SEDIMENT DAMAGE SHALL BESULT.
	OFF-SITE SEDIMENT DAMAGE SHALL RESULT.  3. SIDE SLOPES OF STOCKPILES SHALL NOT BE STEEPER THAN 2 HOR  4. A SEDIMENT BARRIER SHALL SURROUND ALL TOPSOIL STOCKPILE:
	5. TEMPORARY SEEDING OF STOCKPILES SHALL BE COMPLETED WIT ACCORDANCE WITH THE TEMPORARY VEGETATIVE COVER REQUIF 6. PREVIOUSLY ESTABLISHED GRADES ON THE AREAS TO BE TOPSOI DRAWINGS.
В	<ol> <li>WHERE THE pH OF THE SUBSOIL IS 6.0 OR LESS, GROUND AGRICUL WITH THE SOIL TEST TO A pH OF 6.0 TO 6.5 OR THE VEGETATIVE ES</li> <li>AFTER THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GROUP THE AREAS TO BE TOPSOILED THE AREAS</li></ol>
	TOPSOIL, THE SUBGRADE SHALL BE LOOSENED BY DISCING OR SC INCHES TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.  9. TOPSOIL SHALL NOT BE PLACED WHILE IN A FROZEN OR MUDDY COIN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPTOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMP
	ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATE!  10. TOPSOIL SHALL BE COMPACTED ENOUGH TO ENSURE GOOD CONT UNIFORM FIRM SEEDBED FOR THE ESTABLISHMENT OF A DURABLE
	INCREASES RUNOFF VELOCITY AND VOLUME, AND PREVENTS SEEI  11. IMMEDIATELY FOLLOWING TOPSOIL APPLICATION, PROTECT THE TAND/OR MULCHING.
	LAND GRADING  1. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN UN
	2. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPEI OTHER OBJECTIONABLE MATERIAL.  3. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSI RELATED PROBLEMS.
	4. FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS, LOGS MATERIALS.  5. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE N
	<ol> <li>FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION.</li> <li>TOPSOILING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE</li> </ol>
	8. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIA  DUST CONTROL  INSTALLATION REQUIREMENTS
A	WATER  1. THE EXPOSED SOIL SURFACE SHALL BE MOISTENED PERIODICALL' DUST.
	STONE  1. COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL. IN STABLE AGGREGATE.
- 1	STABLE AGGREGATE.

E	PROJECT NARRATIVE:  THE SUBJECT PROJECT INCLUDES THE CONSTRUCTION OF A GRASSED SOCCER FIELD WITH ASSOCIATED PARKING AREAS AND DRAINAGE.  ADDRESS OF PROPOSED USE:  HERRICK MEMORIAL PARK 29 HEBRON ROAD BOLTON, CT 06043  ADDRESS OF OWNER'S AGENT:  JAMES RUPERT TOWN ADMINISTRATOR 222 BOLTON CENTER ROAD BOLTON, CT 06043  ADDRESS OF PROPERTY OWNER: TOWN OF BOLTON
	222 BOLTON CENTER ROAD BOLTON, CT 06043  CONSTRUCTION SCHEDULING:  IT IS PROPOSED TO PERFORM CONSTRUCTION IN THE SUMMER OF 2015. IN GENERAL, THE SEQUENCE FOR CONSTRUCTION AND SITE STABILIZATION MAY BE AS FOLLOWS:  1. INSTALL CONSTRUCTION ENTRANCE. AND SEDIMENT AND EROSION CONTROLS.  2. INSTALL SEDIMENT AND EROSION CONTROLS.  3. CLEAR VEGETATION, CUT TREES AND GRID STUMPS WITHIN THE CLEARING LIMITS.  4. CONDUCT EARTHWORK CUTS AND FILLS.  5. INSTALL DRAINAGE STRUCTURES AND PIPE.  6. INSTALL GRAVELS FOR ACCESS DRIVE AND PARKING AREA.
D	<ol> <li>PLACE TOPSOIL AND SEED IN ALL AREAS OTHER THAN AREAS SURFACED WITH GRAVEL.</li> <li>PLACE EROSION CONTROL BLANKETS ON SLOPES AS SPECIFIED ON DRAWINGS.</li> <li>INSTALL FENCING AND GUIDE RAILS.</li> <li>CLEAN UP AND REMOVE ALL CONSTRUCTION MATERIALS, EQUIPMENT, SURPLUS MATERIALS AND DEBRIS FROM PROJECT SITE.</li> <li>SILT FENCE TO BE REMOVED WITHIN 30 DAYS AFTER STABILIZATION OF DISTURBED AREAS.</li> <li>THE CONTRACTOR SELECTED TO CONSTRUCT THIS PROJECT WILL BE RESPONSIBLE FOR IMPLEMENTATION OF SEDIMENT AND EROSION CONTROL MEASURES ON THIS SITE. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR WILL PROVIDE THE BOLTON CONSERVATION COMMISSION ENFORCEMENT OFFICERS, INLAND WETLANDS ENFORCEMENT OFFICERS, TOWN ENGINEE AND ZONING ENFORCEMENT OFFICERS WITH THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE RESPONSIBLE PERSON. SHOULD ANY PROBLEMS OCCUR, THEN THE OWNER'S AGENT SHOULD BE CONTACTED.</li> <li>CONTINGENCY PLAN</li> <li>AMINIMUM OF TWO WEEKS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE THE OWNER'S AGENT AND THE TOWN ENGINEER WITH THE NAMES AND TELEPHONE NUMBERS OF THE RESPONSIBLE PERSONS TO BE CONTACTED IN THE EVENT OF AN EROSION AND/OR SEDIMENT CONTROL PROBLEM.</li> <li>THE CONTRACTOR SHALL AT ALL TIMES KEEP SUFFICIENT ADDITIONAL SEDIMENTATION CONTROL FENCE AND/OR HAY BALES ON THE PROJECT SITE TO CONTROL UNFORESEEN EROSION AND/OR SEDIMENT AND THEN NOTIFY THE OWNER'S AGENT EROSION AND SEDIMENT CONTROL PROBLEM THE CONTRACTOR SHALL PROMPTLY STABILIZE THE PROBLEM AND CONTAIN ANY SEDIMENT AND THEN NOTIFY THE OWNER'S AGENT EROSION AND SEDIMENT CONTROL PLAN FOR THE PROJECT.</li> <li>THE MINIMUM STANDARDS FOR ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE THOSE OUTLINED IN THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL", LATEST REVISION. ALTERNATIVE MEASURES, METHOD MEANS AND TECHNIQUES MAY BE ALLOWED WITH THE PRIOR APPROVAL OF THE OWNER'S AGENT.</li> <li>GENERAL GUIDELINES:</li> <li>NO CONSTRUCTION ACTIVITY SHALL TA</li></ol>
С	<ol> <li>TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.</li> <li>ALL EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED CONTINUOUSLY AND SHALL NOT BE REMOVED UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED.</li> <li>THE CONTRACTOR SHALL LIMIT THE DISTURBANCE OF LAND TO THOSE AREAS SHOWN ON THE DRAWINGS AND SHALL TAKE REASONABLE CARE TO PROTECT AND PRESERVE EXISTING VEGETATION WITHIN THE LIMITS OF DISTURBANCE WHERE FEASIBLE.</li> <li>WHERE PRACTICABLE, THE CONTRACTOR SHALL PLAN HIS CONSTRUCTION OPERATIONS SO AS TO LIMIT THE AREAS OF EXPOSED SOIL TO AREAS ACTIVELY UNDER CONSTRUCTION. THE CONTRACTOR SHALL TAKE REASONABLE CARE TO LIMIT THE PERIOD OF EXPOSURE OF DISTURBED AREAS. THE INSTALLATION OF PERMANENT VEGETATIVE MEASURES SHALL BE ACCOMPLISHED AS SOON AS IS PRACTICABLE.</li> <li>ADEQUATE PROVISIONS SHALL BE TAKEN TO PROTECT ALL EXPOSED CUT AND FILL SLOPES FROM SURFACE WATER FLOW DAMAGE.</li> <li>ALL MATERIAL FROM CLEARING AND GRUBBING OPERATIONS SHALL BE DISPOSED OF IN A LAWFUL MANNER.</li> <li>WATER FROM DEWATERING OPERATIONS SHALL NOT BE DISCHARGED DIRECTLY TO ANY WETLAND OR WATERCOURSE. SUCH WATER SHALL BE DISCHARGED TO AN APPROVED SEDIMENT BASIN AND/OR FILTER DEVICE OR TO A STORM DRAINAG SYSTEM ONLY WHEN APPROVED. NO WATER FROM DEWATERING OPERATIONS SHALL BE DISCHARGED INTO A SANITARY SEWER SYSTEM.</li> <li>THE STORAGE, WASHING, FUELING AND MAINTENANCE OF EQUIPMENT AND VEHICLES SHALL TAKE PLACE IN DESIGNATED AREAS ONLY. IN THE EVENT OF A CONTAMINANT SPILL THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DEPARTMENT ENERGY AND ENVIRONMENTAL PROTECTION OIL AND CHEMICAL SPILL RESPONSE DIVISION (860-424-3338) AND THE OWNER AGENT.</li> <li>PRESERVE AND CONSERVE SOIL</li> <li>TOPSOILING</li> <li>MATERIALS</li> <li>SITE INVESTIGATIONS SHALL BE MADE TO DETERMINE IF THERE IS A SUFFICIENT QUANTITY OF TOPSOIL OF GOOD QUALITY ON THE SITE TO JUSTIFY STRIPPING. HIGH QUALITY TOPSOIL SHALL BE FREADLE AND LOAMY (LOAM, SANDY LOAM, SILT L</li></ol>
В	INSTALLATION REQUIREMENTS  1. STRIPPING OF TOPSOIL SHALL BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA. THE DEPTH OF REMOVAL MAY VAR DEPENDING ON THE SITE CONDITIONS. ALL SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO BEGINNING STRIPPING OPERATIONS.  2. TOPSOIL SHALL BE STOCKPILED IN SUCH A MANNER THAT NATURAL SURFACE WATER FLOW IS NOT OBSTRUCTED AND NO OFF-SITE SEDIMENT DAMAGE SHALL RESULT.  3. SIDE SLOPES OF STOCKPILES SHALL NOT BE STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL.  4. A SEDIMENT BARRIER SHALL SURROUND ALL TOPSOIL STOCKPILES.  5. TEMPORARY SEEDING OF STOCKPILES SHALL BE COMPLETED WITHIN 30 DAYS OF THE FORMATION OF THE STOCKPILE, IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE COVER REQUIREMENTS.  6. PREVIOUSLY ESTABLISHED GRADES ON THE AREAS TO BE TOPSOILED SHALL BE MAINTAINED ACCORDING TO THE DRAWINGS.  7. WHERE THE pH OF THE SUBSOIL IS 6.0 OR LESS, GROUND AGRICULTURAL LIMESTONE SHALL BE SPREAD IN ACCORDANCE WITH THE SOIL TEST TO A pH OF 6.0 TO 6.5 OR THE VEGETATIVE ESTABLISHMENT PRACTICE BEING USED.  8. AFTER THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GRADE, AND IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENED BY DISCING OR SCARIFYING OR TRACKING TO A DEPTH OF AT LEAST 4 INCHES TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.  9. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 6 INCHES, UNLESS OTHERWISE NOTED ANY IRREGULARITIES IN THE SUBFACE RESULTING FROM TOPSOILING OR TRACKING TO A DEPTH OF AT LEAST 4 INCHES TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.  10. TOPSOIL SHALL BE COMPACTED ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL AND TO OBTAIN A UNIFORM FIRM SEEDBED FOR THE ESTABLISHMENT OF A DURBBLE TURF. UNDUE COMPACTION IS TO BE AVOIDED AS IT INCREASES RUNOFF VELOCITY AND VOLUME, AND PREVENTS SEED GERMINATION.  11. IMMEDIATELY FOLLOWING TOPSOIL APPLICATION, PROTECT THE TOPSOIL FROM EROSION BY EITHER SODDING, SEEDING AND ORDER TO DISTURBED AREAS INCLUDING SOLDEDS HALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN INCREASES RUNO
A	ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN UNTIL THEY ARE PERMANENTLY STABILIZED.  2. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OF OTHER OBJECTIONABLE MATERIAL.  3. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.  4. FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLI MATERIALS.  5. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.  6. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION.  7. TOPSOILING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS FOR TOPSOILING.  8. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.  DUST CONTROL  INSTALLATION REQUIREMENTS  WATER  1. THE EXPOSED SOIL SURFACE SHALL BE MOISTENED PERIODICALLY WITH ADEQUATE QUANTITIES OF WATER TO CONTROL DUST.  STONE

	PRO IECT NIADDATIVE:
	PROJECT NARRATIVE:  THE SUBJECT PROJECT INCLUDES THE CONSTRUCTION OF A GI
	DRAINAGE.  ADDRESS OF PROPOSED USE:
	HERRICK MEMORIAL PARK 29 HEBRON ROAD
	BOLTON, CT 06043  ADDRESS OF OWNER'S AGENT:
	JAMES RUPERT TOWN ADMINISTRATOR 222 BOLTON CENTER ROAD
_	BOLTON, CT 06043  ADDRESS OF PROPERTY OWNER:
	TOWN OF BOLTON 222 BOLTON CENTER ROAD
	BOLTON, CT 06043
	CONSTRUCTION SCHEDULING:
	IT IS PROPOSED TO PERFORM CONSTRUCTION IN THE SUMMER SITE STABILIZATION MAY BE AS FOLLOWS:
l	<ol> <li>INSTALL CONSTRUCTION ENTRANCE. AND SEDIMENT AND</li> <li>INSTALL SEDIMENT AND EROSION CONTROLS.</li> </ol>
	CLEAR VEGETATION, CUT TREES AND GRID STUMPS WITH
l	<ol> <li>CONDUCT EARTHWORK CUTS AND FILLS.</li> <li>INSTALL DRAINAGE STRUCTURES AND PIPE.</li> </ol>
1	INSTALL GRAVELS FOR ACCESS DRIVE AND PARKING AREA     PLACE TOPSOIL AND SEED IN ALL AREAS OTHER THAN AREA
ı	PLACE EROSION CONTROL BLANKETS ON SLOPES AS SPE
	<ul><li>9. INSTALL FENCING AND GUIDE RAILS.</li><li>10. CLEAN UP AND REMOVE ALL CONSTRUCTION MATERIALS,</li></ul>
	SITE.  11. SILT FENCE TO BE REMOVED WITHIN 30 DAYS AFTER STAE
	THE CONTRACTOR SELECTED TO CONSTRUCT THIS PROJECT W EROSION CONTROL MEASURES ON THIS SITE. PRIOR TO THE ST BOLTON CONSERVATION COMMISSION ENFORCEMENT OFFICER
	AND ZONING ENFORCEMENT OFFICERS WITH THE NAME, ADDRESHOULD ANY PROBLEMS OCCUR, THEN THE OWNER'S AGENT SI
	CONTINGENCY PLAN  A MINIMUM OF TWO WEEKS PRIOR TO THE START OF CONSTRUC
D	AND THE TOWN ENGINEER WITH THE NAMES AND TELEPHONE N THE EVENT OF AN EROSION AND/OR SEDIMENT CONTROL PROB
	THE CONTRACTOR SHALL AT ALL TIMES KEEP SUFFICIENT ADDI' THE PROJECT SITE TO CONTROL UNFORESEEN EROSION AND/C CONTRACTOR SHALL PROMPTLY STABILIZE THE PROBLEM AND
	EROSION AND SEDIMENT CONTROL
	THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION PROJECT.
	THE MINIMUM STANDARDS FOR ALL EROSION AND SEDIMENT CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT MEANS AND TECHNIQUES MAY BE ALLOWED WITH THE PRIOR AI
	GENERAL GUIDELINES:
	<ol> <li>NO CONSTRUCTION ACTIVITY SHALL TAKE PLACE WITHIN / FLOODPLAINS, DESIGNATED UPLAND REVIEW ZONES OR V REQUIRED APPROVALS AND/OR PERMITS.</li> </ol>
+	6. TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL I
	7. ALL EROSION AND SEDIMENT CONTROLS SHALL BE MAINT DISTURBED AREAS HAVE BEEN STABILIZED.
	<ol> <li>THE CONTRACTOR SHALL LIMIT THE DISTURBANCE OF LAR REASONABLE CARE TO PROTECT AND PRESERVE EXISTIN FEASIBLE.</li> </ol>
	9. WHERE PRACTICABLE, THE CONTRACTOR SHALL PLAN HIS EXPOSED SOIL TO AREAS ACTIVELY UNDER CONSTRUCTIO THE PERIOD OF EXPOSURE OF DISTURBED AREAS. THE IN
	ACCOMPLISHED AS SOON AS IS PRACTICABLE.  10. ADEQUATE PROVISIONS SHALL BE TAKEN TO PROTECT AL
	DAMAGE.  11. ALL MATERIAL FROM CLEARING AND GRUBBING OPERATIO
	12. WATER FROM DEWATERING OPERATIONS SHALL NOT BE I SUCH WATER SHALL BE DISCHARGED TO AN APPROVED S
	SYSTEM ONLY WHEN APPROVED. NO WATER FROM DEWA'S EWER SYSTEM.  13. THE STORAGE WASHING FILELING AND MAINTENANCE OF
	<ol> <li>THE STORAGE, WASHING, FUELING AND MAINTENANCE OF AREAS ONLY. IN THE EVENT OF A CONTAMINANT SPILL TH ENERGY AND ENVIRONMENTAL PROTECTION OIL AND CHE AGENT.</li> </ol>
	PRESERVE AND CONSERVE SOIL
	TOPSOILING
	MATERIALS  SITE INVESTIGATIONS SHALL BE MADE TO DETERMINE IF T
	ON THE SITE TO JUSTIFY STRIPPING. HIGH QUALITY TOPS SANDY CLAY LOAM, CLAY LOAM). OTHER SOIL TYPES WITI TESTING. IT SHALL BE FREE OF DEBRIS, TRASH, STUMPS,
	BEING ABLE TO SUPPORT HEALTHY VEGETATION. IT SHAL GROWTH.
+	ALL TOPSOIL SHALL BE TESTED BY A RECOGNIZED LABOR AND FERTILIZER.
	INSTALLATION REQUIREMENTS  1. STRIPPING OF TOPSOIL SHALL BE CONFINED TO THE IMME  PERFORMS ON THE SITE CONFIDENCE ALL SERVICES.
	DEPENDING ON THE SITE CONDITIONS. ALL SEDIMENT COI OPERATIONS.  2 TOPSOIL SHALL BE STOCKPILED IN SLICH A MANNER THAT
	TOPSOIL SHALL BE STOCKPILED IN SUCH A MANNER THAT OFF-SITE SEDIMENT DAMAGE SHALL RESULT.      SIDE SLOPES OF STOCKPILES SHALL NOT BE STEEPER TH
	4. A SEDIMENT BARRIER SHALL SURROUND ALL TOPSOIL STO
	5. TEMPORARY SEEDING OF STOCKPILES SHALL BE COMPLE ACCORDANCE WITH THE TEMPORARY VEGETATIVE COVER
	PREVIOUSLY ESTABLISHED GRADES ON THE AREAS TO BE DRAWINGS.  AMUSEDE THE CHARGE THE
3	7. WHERE THE PH OF THE SUBSOIL IS 6.0 OR LESS, GROUND WITH THE SOIL TEST TO A PH OF 6.0 TO 6.5 OR THE VEGET  8. AFTER THE AREAS TO BE TOPSOILED HAVE REEN BROUGH
	<ol> <li>AFTER THE AREAS TO BE TOPSOILED HAVE BEEN BROUGH TOPSOIL, THE SUBGRADE SHALL BE LOOSENED BY DISCIN INCHES TO ENSURE BONDING OF THE TOPSOIL AND SUBS</li> </ol>
	<ol> <li>TOPSOIL SHALL NOT BE PLACED WHILE IN A FROZEN OR N IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMU</li> </ol>
	ANY IRREGULARITIES IN THE SURFACE RESULTING FROM ORDER TO PREVENT THE FORMATION OF DEPRESSIONS C
	TOPSOIL SHALL BE COMPACTED ENOUGH TO ENSURE GOUNIFORM FIRM SEEDBED FOR THE ESTABLISHMENT OF A INCREASES RUNOFF VELOCITY AND VOLUME, AND PREVEN
	IMMEDIATELY FOLLOWING TOPSOIL APPLICATION, PROTECT AND/OR MULCHING.
	LAND GRADING
4	ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES S     ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL  ADDAS TO BE FILLED SHALL BE CLEANED. COMPRED AND
	AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND SOTHER OBJECTIONABLE MATERIAL.  ALL FILLS SHALL BE COMPACTED AS BEOLUBED TO BEDILO
	ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUC RELATED PROBLEMS.  4 FILL MATERIAL SHALL BE FREE OF BRUSH RUBBISH ROCK
	<ol> <li>FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCK MATERIALS.</li> <li>FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRE:</li> </ol>
	FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRES     FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION.
	<ul><li>7. TOPSOILING SHALL BE ACCOMPLISHED IN ACCORDANCE V</li><li>8. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED</li></ul>
	DUST CONTROL
	INSTALLATION REQUIREMENTS
1	WATER
	<ol> <li>THE EXPOSED SOIL SURFACE SHALL BE MOISTENED PERIODUST.</li> </ol>

E	PROJECT NARRATIVE:  THE SUBJECT PROJECT INCLUDES THE CONDRAINAGE.  ADDRESS OF PROPOSED USE:  HERRICK MEMORIAL PARK 29 HEBRON ROAD BOLTON, CT 06043  ADDRESS OF OWNER'S AGENT:  JAMES RUPERT TOWN ADMINISTRATOR 222 BOLTON CENTER ROAD BOLTON, CT 06043  ADDRESS OF PROPERTY OWNER:  TOWN OF BOLTON 222 BOLTON CENTER ROAD BOLTON, CT 06043
	CONSTRUCTION SCHE  IT IS PROPOSED TO PERFORM CONSTRUCT SITE STABILIZATION MAY BE AS FOLLOWS:  1. INSTALL CONSTRUCTION ENTRANCE.  2. INSTALL SEDIMENT AND EROSION CO.  3. CLEAR VEGETATION, CUT TREES AND  4. CONDUCT EARTHWORK CUTS AND FILE  5. INSTALL DRAINAGE STRUCTURES AND  6. INSTALL GRAVELS FOR ACCESS DRIVI
D	7. PLACE TOPSOIL AND SEED IN ALL ARE 8. PLACE EROSION CONTROL BLANKETS 9. INSTALL FENCING AND GUIDE RAILS. 10. CLEAN UP AND REMOVE ALL CONSTRISITE. 11. SILT FENCE TO BE REMOVED WITHIN THE CONTRACTOR SELECTED TO CONSTRUEROSION CONTROL MEASURES ON THIS SIT BOLTON CONSERVATION COMMISSION ENFAND ZONING ENFORCEMENT OFFICERS WITSHOULD ANY PROBLEMS OCCUR, THEN THE CONTINGENCY PLAN A MINIMUM OF TWO WEEKS PRIOR TO THE AND THE TOWN ENGINEER WITH THE EVENT OF AN EROSION AND/OR SEDIM THE CONTRACTOR SHALL AT ALL TIMES KEITHE PROJECT SITE TO CONTROL UNFORES CONTRACTOR SHALL PROMPTLY STABILIZE EROSION AND SEDIMENT (THE CONTRACTOR SHALL BE RESPONSIBLE PROJECT.  THE MINIMUM STANDARDS FOR ALL EROSIC CONNECTICUT GUIDELINES FOR SOIL EROSIMEANS AND TECHNIQUES MAY BE ALLOWED GENERAL GUIDELINES 5. NO CONSTRUCTION ACTIVITY SHALL TO THE SITE OF THE STANDARD SEDIMENTS.
_	FLOODPLAINS, DESIGNATED UPLAND REQUIRED APPROVALS AND/OR PERM 6. TEMPORARY EROSION AND SEDIMEN' 7. ALL EROSION AND SEDIMENT CONTRO
C	8. THE CONTRACTOR SHALL LIMIT THE E REASONABLE CARE TO PROTECT AND FEASIBLE.  9. WHERE PRACTICABLE, THE CONTRACE EXPOSED SOIL TO AREAS ACTIVELY UTHE PERIOD OF EXPOSURE OF DISTURE ACCOMPLISHED AS SOON AS IS PRACE  10. ADEQUATE PROVISIONS SHALL BE TADAMAGE.  11. ALL MATERIAL FROM CLEARING AND CONTRACE WATER SHALL BE DISCHARGED SYSTEM ONLY WHEN APPROVED. NO SEWER SYSTEM.  13. THE STORAGE, WASHING, FUELING AND AREAS ONLY. IN THE EVENT OF A CONTRACT AND ENVIRONMENTAL PROTECTION OF THE STORAGE OF THE
	TESTING. IT SHALL BE FREE OF DEBR BEING ABLE TO SUPPORT HEALTHY V GROWTH.  ALL TOPSOIL SHALL BE TESTED BY A AND FERTILIZER.  INSTALLATION REQUIREMEN  1. STRIPPING OF TOPSOIL SHALL BE CODEPENDING ON THE SITE CONDITIONS OPERATIONS.  2. TOPSOIL SHALL BE STOCKPILED IN SU
В	OFF-SITE SEDIMENT DAMAGE SHALL I  3. SIDE SLOPES OF STOCKPILES SHALL  4. A SEDIMENT BARRIER SHALL SURROL  5. TEMPORARY SEEDING OF STOCKPILE ACCORDANCE WITH THE TEMPORARY  6. PREVIOUSLY ESTABLISHED GRADES OF DRAWINGS.  7. WHERE THE pH OF THE SUBSOIL IS 6.0 WITH THE SOIL TEST TO A PH OF 6.0 TOPSOIL, THE SUBGRADE SHALL BE LINCHES TO ENSURE BONDING OF THE INCHES TO ENSURE BONDING OF THE IN A CONDITION THAT MAY OTHERWIS TOPSOIL SHALL BE UNIFORMLY DISTREMY IRREGULARITIES IN THE SURFACORDER TO PREVENT THE FORMATION  10. TOPSOIL SHALL BE COMPACTED ENOUNIFORM FIRM SEEDBED FOR THE ES
	UNIFORM FIRM SEEDBED FOR THE ES INCREASES RUNOFF VELOCITY AND V  11. IMMEDIATELY FOLLOWING TOPSOIL A AND/OR MULCHING.  LAND GRADING  1. ALL GRADED OR DISTURBED AREAS II ACCORDANCE WITH THE APPROVED SEED AND ADDRESS OF THE OTHER OBJECTIONABLE MATERIAL.  3. ALL FILLS SHALL BE COMPACTED AS INCREASED PROBLEMS.  4. FILL MATERIAL SHALL BE FREE OF BRIGHT MATERIALS.  5. FROZEN MATERIAL OR SOFT, MUCKY OF THE OTHER OBJECTION SOFT, MUCKY OBJECTION SOFT, MUCKY OTHER OBJECTION SOFT, MUCKY OTHER OBJECTION SOFT, MUCKY OTHER OBJECTION SOFT, MUCKY OBJECTION SOFT, MUCKY OTHER OBJECTION SOFT, MUCKY OTHER OBJECTION SOFT, MUCKY OTHER OBJECTION SOFT, MUCKY OTH
А	<ul> <li>6. FILL SHALL NOT BE PLACED ON A FRO</li> <li>7. TOPSOILING SHALL BE ACCOMPLISHE</li> <li>8. ALL GRADED AREAS SHALL BE PERMADUST CONTROL</li> <li>INSTALLATION REQUIREMENTS</li> <li>WATER</li> </ul>

```
SSOCIATED PARKING AREAS AND
 UENCE FOR CONSTRUCTION AND
 ALS AND DEBRIS FROM PROJECT
LEMENTATION OF SEDIMENT AND CONTRACTOR WILL PROVIDE THE
 EMENT OFFICERS, TOWN ENGINEERS
  F THE RESPONSIBLE PERSON.
   PROVIDE THE OWNER'S AGENT
  PERSONS TO BE CONTACTED IN
   EVENT OF A PROBLEM THE
 HEN NOTIFY THE OWNER'S AGENT
 MENT CONTROL PLAN FOR THE
   TERNATIVE MEASURES, METHODS
 WETLANDS, WATERCOURSES OR
 OACHMENT LINES WITHOUT ALL
TART OF CONSTRUCTION.
 ALL NOT BE REMOVED UNTIL ALL
   THE DRAWINGS AND SHALL TAKE
```

### TS OF DISTURBANCE WHERE SO AS TO LIMIT THE AREAS OF AKE REASONABLE CARE TO LIMI

- GETATIVE MEASURES SHALL BE
- PES FROM SURFACE WATER FLOW
- A LAWFUL MANNER. WETLAND OR WATERCOURSE DEVICE OR TO A STORM DRAINAGE DISCHARGED INTO A SANITARY
- ALL TAKE PLACE IN DESIGNATED ELY NOTIFY THE DEPARTMENT OF

- THE DEPTH OF REMOVAL MAY VARY
- OW IS NOT OBSTRUCTED AND NO

- INED ACCORDING TO THE
- ALL BE SPREAD IN ACCORDANCE
- PRIOR TO SPREADING THE G TO A DEPTH OF AT LEAST 4
- SUBGRADE IS EXCESSIVELY WET. OR OSED SODDING OR SEEDING. THE CHES, UNLESS OTHERWISE NOTED ONS SHALL BE CORRECTED IN
- YING SOIL AND TO OBTAIN A CTION IS TO BE AVOIDED AS IT
- N BY EITHER SODDING, SEEDING
- LEARING AND CONSTRUCTION IN NENTLY STABILIZED. OVE TREES, VEGETATION, ROOTS OR
- EMENT, SUBSIDENCE OR OTHER
- EBRIS AND OTHER OBJECTIONABLE
- BE INCORPORATED INTO FILLS.
- TOPSOILING
- ISHED GRADING.
- ANTITIES OF WATER TO CONTROL
- N AREAS ADJACENT TO WATERWAYS USE CHEMICALLY MAINTENANCE
- WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHALL BE APPLIED AS NEEDED TO

### VEGETATIVE SOIL COVER

### TEMPORARY SEEDING

### INSTALLATION REQUIREMENTS

SITE PREPARATION

- GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH THE REQUIREMENTS FOR
- 2 INSTALL NEEDED EROSION CONTROL MEASURES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, SEDIMENT
- SEEDBED PREPARATION
- APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS THOSE OFFERED BY THE UNIVERSITY OF CONNECTICUT SOIL TESTING LABORATORY. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL COOPERATIVE EXTENSION SERVICE OFFICE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE IMING IS CRITICAL. FERTILIZER MAY BE APPLIED AT THE RATE OF 300 POUNDS PER ACRE OR 7.5 POUNDS PER 1.000 SQUARE FEET OF 10-10-10 OR EQUIVALENT. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AS
- SOIL TEXTURE TONS/ACRE LBS/1,000 SQUARE FEET CLAY, CLAY LOAM, AND HIGH ORGANIC SOIL SANDY LOAM, LOAM, SILT LOAM
- LOAMY SAND, SAND REFER TO COUNTY SOIL SURVEY REPORT FOR SOIL TEXTURES AT THE SITE

### SEEDING

- ANNUAL RYE GRASS 40 LBS/ACRE, 1 LB/1000 SF
- 2. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER LIME AND SEED.

3. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDEF

- IYDROSEEDINGS WHICH INCLUDE MULCH, MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED BY 10 PERCENT WHEN HYDROSEEDING 4. SPRING SEEDINGS USUALLY GIVE THE BEST RESULTS. SPRING SEEDINGS OF ALL SEED LEGUMES IS RECOMMENDE
- SUMMER AT LEAST 35 PERCENT OF THE SEED SHOULD BE HARD SEED (UNSCARIFIED). THE RECOMMENDED SEEDING DATES MARCH 15 THROUGH JUNE 15

AUGUST 15 THROUGH OCTOBER 15

### PERMANENT SEEDING

### INSTALLATION REQUIREMENTS

GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION EEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE. ALL GRADING SHOULD BE BE DONE IN ACCORDANCE WITH THE REQUIREMENTS FOR LAND GRADING.

### SEEDBED PREPARATION

APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS SUCH AS THOSE OFFERED BY THE UNIVERSITY OF CONNECTICUT SOIL TESTING LABORATORY. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL COOPERATIVI EXTENSION SERVICE OFFICE. LE SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES. OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 300 POUNDS PER ACRE OR 7.5 POUNDS PER 1,000 SQUARE FEE USING 10-10-10 OR EQUIVALENT. IN ADDITION, 300 POUNDS OF 38-0-0 PER ACRE OR EQUIVALENT OF SLOW RELEASE NITROGEN MAY BE USED FOR TOPDRESSING. APPLY GROUND LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS

MAGNESIUM OXIDE) AS FOLLOWS:		
SOIL TEXTURE	TONS/ACRE	LBS/1,000 SQUARE FEE
CLAY, CLAY LOAM, AND HIGH ORGANIC SOIL	3	135
SANDY LOAM, LOAM, SILT LOAM	2	90
LOAMY SAND. SAND	1	45

- REFER TO COUNTY SOIL SURVEY REPORT FOR SOIL TEXTURES AT THE SITE. IARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHALL BE ON THE GENERA CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS
- AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE REMOVE FROM THE SURFACE ALL STONES ONE INCH OR LARGER IN ANY DIMENSION UNLESS OTHERWISE SPECIFIED.
- REMOVE ALL OTHER DEBRIS SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS OR OTHER 4. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED AND

### FIRMED AS ABOVE. SEEDING DATES

SPRING SEEDINGS USUALLY GIVE THE BEST RESULTS. SPRING SEEDINGS OF ALL SEED MIXES WITH LEGUMES IS RECOMMENDED, HOWEVER LATE SUMMER SEEDINGS PRIOR TO SEPTEMBER 15 CAN BE MADE. WHEN CROWN VETCH IS SEEDED IN LATE SUMMER AT LEAST 35 PERCENT OF THE SEED SHOULD BE HARD SEED (UNSCARIFIED). THE RECOMMENDED

### MARCH 15 THROUGH JUNE 15 SEPTEMBER 1 THROUGH OCTOBER 15

- WITH THE EXCEPTION OF CROWN VETCH, THE FINAL SEEDING DATE MAY BE EXTENDED 15 DAYS IN THE COASTAL TOWNS OF NEW LONDON, MIDDLESEX, NEW HAVEN AND FAIRFIELD COUNTIES
- LINI FSS OTHERWISE SPECIFIED. THE SEED MIXTURE SHALL BE NEW ENGLAND CONSERVATION/WILDLIFE MIX FROM NEW ENGLAND WETLAND PLANTS, INC. AMHERST, MA, OR ACCEPTED SUBSTITUTION
- APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER. NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDINGS WHICH ARE MULCHED MAY BE LEFT ON SOIL SURFACE. WHERE FEASIBLE, EXCEPT WHERE EITHER A CULTIPACKER TYPE SEEDER OR HYDROSEEDER IS USED. THE SEEDBED
- OWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG. SEEDING OPERATIONS SHOULD BE
- 4. FROST CRACK SEEDING MUST BE DONE IN LATE WINTER OR EARLY SPRING. SUITABLE WEATHER CONDITIONS ARE FREEZING NIGHTS AND THAWING DAYS WITH LITTLE OR NO SNOW COVER. SEEDING RATES MUST BE INCREASED 10 PERCENT WHEN
- 5. HYDRAULIC APPLICATION (HYDROSEEDING), IS A SUITABLE METHOD FOR USE ON CRITICAL AREAS. WHEN HYDROSEEDING, A SEEDBED IS PREPARED IN THE CONVENTIONAL WAY OR BY HAND RAKING TO LOOSEN AND SMOOTH THE SOIL AND TO REMOVE SURFACE STONES LARGER THAN ONE INCH IN DIAMETER. SLOPES MUST BE NO STEEPER THAN 2 TO 1 (2 FEET HORIZONTALLY TO ONE FOOT VERTICALLY). LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF FIBER MULCH ON CRITICAL AREAS IS NOT RECOMMENDED (UNLESS IT IS USED TO HOLD STRAW OR HAY). FIBER MULCH DOES NOT PROVIDE ADEQUATE SEEDBED PROTECTION. BETTER PROTECTION IS GAINED BY USING STRAW MULCH AND HOLDING IT WITH ADHESIVE MATERIALS OR 500 POUNDS PER ACRE OF WOOD FIBER MULCH. SEEDING RATES MUST BE INCREASED BY 10 PERCENT WHEN HYDROSEEDING.
- 6. APPLY MULCH ACCORDING TO THE TEMPORARY MULCHING MEASURE.
- IF SEEDING CANNOT BE DONE WITHIN THE SEEDING DATES, USE THE TEMPORARY MULCHING MEASURE TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD
- LIME ACCORDING TO A SOIL TEST OR AT A MINIMUM OF EVERY FIVE YEARS USING A RATE OF TWO TONS PER ACRE (100 POUNDS PER 1,000 SQUARE FEET).
- WHERE GRASSES PREDOMINATE, FERTILIZE ACCORDING TO A SOIL TEST OR BROADCAST BIENNIALLY, 300 POUNDS OF 10-10-10 OR EQUIVALENT PER ACRE (7.5 POUNDS PER 1,000 SQUARE FEE
- WHERE LEGUMES PREDOMINATE. FERTILIZE ACCORDING TO A SOIL TEST OR BROADCAST EVERY THREE YEARS 300 POUNDS OF 0-20-20 PER ACRE OR EQUIVALENT (7.5 POUNDS PER 1,000 SQUARE FEET).

### NON-LIVING SOIL PROTECTION

### MULCH FOR SEED

- **MATERIALS**
- SELECT MULCH MATERIALS BASED ON SITE CONDITIONS, AVAILABILITY OF MATERIALS AND LABOR AND EQUIPMENT. OTHER MATERIALS MAY BE USED ONLY WITH THE PERMISSION OF THE APPROVING AUTHORITY.

### INSTALLATION REQUIREMENTS

ORGANIC MULCHES MAY BE USED IN ANY AREA WHERE MULCH IS REQUIRED, SUBJECT TO THE RESTRICTIONS NOTED BELOW:

### MULCHES PER ACRE PER 1,000 SQUARE FEET

STRAW OR HAY 1 1/2 - 2 TONS 35-45 LBS

HAND, DIVIDE THE AREA TO BE MULCHED INTO APPROXIMATELY 1,000 SQUARE FOOT SECTIONS AND PLACE 35-45 POUNDS (3/4 TO 1 BALE) OF STRAW OR HAY IN EACH SECTION TO ENSURE UNIFORM DISTRIBUTION.

MULCH MATERIALS SHALL BE SPREAD UNIFORMLY, BY HAND OR MACHINE. WHEN SPREADING STRAW OR HAY MULCH B

HAY OR STRAW MULCHES MUST BE ANCHORED IMMEDIATELY AFTER APPLICATION TO PREVENT WINDBLOWING. HAY OR STRAW MULCH MAY BE ANCHORED BY TRACKING WITH CONSTRUCTION EQUIPMENT, BUT NOT BY USING NETTING.

ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. WHERE EROSION IS OBSERVED, ADDITIONAL MULCH SHOULD BE APPLIED. NETS SHALL BE INSPECTED AFTER RAINSTORMS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, REINSTALL NET AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE. INSPECTIONS SHALL TAKE PLACE UNTIL GRASSES ARE FIRMLY ESTABLISHED. GRASSES SHALL NOT E CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED WHICH IS MATURE ENOUGH TO CONTROL SOIL ROSION AND TO SURVIVE SEVERE WEATHER CONDITIONS. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL

PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE

### TEMPORARY EROSION CONTROL BLANKET

A MANUFACTURED BLANKET COMPOSED OF BIODEGRADABLE/PHOTODEGRADABLE NATURAL OR POLYMER FIBERS AND/OR FILAMENTS THAT HAVE BEEN MECHANICALLY, STRUCTURALLY OR CHEMICALLY BOUND TOGETHER TO FORM A CONTINUOUS

TO PROVIDE TEMPORARY SURFACE PROTECTION TO NEWLY SEEDED AND/OR DISTURBED SOILS TO ABSORB RAINDROP IMPACT AND TO REDUCE SHEET AND RILL EROSION AND TO ENHANCE THE ESTABLISHMENT OF VEGETATION. **APPLICABILITY** 

- 2. WHERE WIND AND TRAFFIC GENERATED AIR FLOW MAY DISLODGE STANDARD, UNARMORED MULCHES.
- MAY BE USED AS A SUBSTITUTE FOR TEMPORARY SOIL PROTECTION 4. MAY BE USE AS A SUBSTITUTE FOR MULCH FOR SEED.

1. ON DISTURBED SOILS WHERE SLOPES ARE 2:1 OR STEEPER.

PLANNING CONSIDERATION THE SUCCESS OF TEMPORARY EROSION CONTROL BLANKETS IS DEPENDENT UPON STRICT ADHERENCE TO THE

### MATERIALS

SITE PREPARATION AND INSTALLATION

- 1. TEMPORARY EROSION CONTROL BLANKETS SHALL BE COMPOSED OF FIBERS AND/OR FILAMENTS THAT
- A. ARE BIODEGRADABLE OR PHOTODEGRADABLE WITHIN TWO YEARS BUT WITHOUT SUBSTANTIAL DEGRADATION OVER HE PERIOD OF INTENDED USAGE (FIVE MONTHS MAXIMUM);
- B. ARE MECHANICALLY, STRUCTURALLY OR CHEMICALLY BOUND TOGETHER TO FORM A CONTINUOUS MATRIX OF EVEN THICKNESS AND DISTRIBUTION THAT RESIST RAINDROP SPLASH AND WHEN USED WITH SEEDINGS ALLOW VEGETATION TO PENETRATE THE BLANKET;
- C. ARE OF SUFFICIENT STRUCTURAL STRENGTH TO WITHSTAND STRETCHING OR MOVEMENT BY WIND OR WATER WHEN INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- D. ARE FREE OF ANY SUBSTANCE TOXIC TO PLANT GROWTH AND UNPROTECTED HUMAN SKIN OR WHICH INTERFERES E. CONTAIN NO CONTAMINANTS THAT POLLUTE THE AIR OR WATERS OF THE STATE WHEN PROPERLY APPLIED;
- PROVIDE FITHER 80% 95% SOIL COVERAGE WHEN USED AS A SUBSTITUTE FOR MULCH FOR SEED OR 100% INITIAL SOIL COVERAGE WHEN USED AS A SUBSTITUTE FOR TEMPORARY SOIL PROTECTION MEASURE, AND; G. DO NOT CONTAIN NETTING.
- 2 MATERIALS SHALL BE SELECTED AS APPROPRIATE FOR THE SPECIFIC SITE CONDITIONS IN ACCORDANCE WITH SUPPORTED BY MANUFACTURER'S TEST DATA THAT CONFIRMS THE BLANKET MEETS THESE MATERIAL SPECIFICATIONS AND WILL PROVIDE THE SHORT TERM EROSION CONTROL CAPABILITIES NECESSARY FOR THE SPECIFIC PROJECT.
- PREPARE THE SURFACE, REMOVE PROTRUDING OBJECTS AND INSTALL TEMPORARY EROSION CONTROL BLANKETS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ENSURE THAT THE ORIENTATION AND ANCHORING OF THE
- THE BLANKET CAN BE LAID OVER AREAS WHERE SPRIGGED GRASS SEEDLINGS HAVE BEEN INSERTED INTO THE SOIL 3. WHERE LANDSCAPE PLANTINGS ARE PLANNED, LAY THE BLANKET FIRST AND THEN PLANT THROUGH THE BLANKET IN
- INSPECT THE INSTALLATION TO INSURE THAT ALL LAP JOINTS ARE SECURE, ALL EDGES ARE PROPERLY ANCHORED AND ALL STAKING OR STAPLING PATTERNS FOLLOW MANUFACTURER'S RECOMMENDATIONS.
- INSPECT TEMPORARY EROSION CONTROL BLANKETS AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A SOILS AND/OR SEED HAVE WASHED AWAY FROM BENEATH THE BLANKET AND THE SOIL SURFACE CAN BE EXPECTED TO INUE TO ERODE AT AN ACCELERATED RATE, AND/OR (2) THE BLANKET HAS BECOME DISLODGEI
- SURFACE OR IS TORN. IF WASHOUTS OR BREAKOUTS OCCUR, RE-INSTALL THE BLANKET AFTER REGRADING AND RE-SEEDING, ENSURING THA BLANKET INSTALLATION STILL MEETS DESIGN SPECIFICATIONS. WHEN REPETITIVE FAILURES OCCUR AT THE SAME LOCATION. REVIEW CONDITIONS AND LIMITATIONS FOR USE AND DETERMINE IF DIVERSIONS, STONE CHECK DAMS OR OTHER MEASURES
- ARE NEEDED TO REDUCE FAILURE RATE. REPAIR ANY DISLODGED OR FAILED BLANKETS IMMEDIATELY. 4. WHEN USED AS A SUBSTITUTE FOR MULCH FOR SEED, CONTINUE TO INSPECT AS REQUIRED BY THE SEEDING MEASURE.

### WHEN USED AS A SUBSTITUTE FOR TEMPORARY SOIL PROTECTION. CONTINUE TO INSPECT UNTIL IT IS REPLACED BY OTHER EROSION CONTROL MEASURES OR UNTIL WORK RESUMES.

### PERMANENT TURF REINFORCEMENT MAT

- 1. A MANUFACTURED MAT COMPOSED OF NON-BIODEGRADABLE POLYMER OR SYNTHETIC FIBERS MECHANICALLY, STRUCTURALLY OR CHEMICALLY BOUND TOGETHER TO FORM A CONTINUOUS MATRIX
- 1. TO PROVIDE PERMANENT TURF REINFORCEMENT WHERE DESIGN FLOWS EXCEED THE STABILITY OF THE SOILS AND/OR PROPOSED VEGETATION.
- 2. TO ENHANCE THE ESTABLISHMENT OF VEGETATION AS THE FINAL SURFACE PROTECTION.
- APPLICABILITY IN CHANNELS WHERE DESIGN VELOCITIES EXCEED THE STABILITY LIMITS OF THE SOIL AND/OR VEGETATION, AND A
- SOFT-ARMORED APPROACH IS DESIRED 2. ON UNSTABLE SOILS WHERE INTERMITTENT FLOW EXISTS.
- 3. ON DISTURBED SOILS WITH SLOPES 2:1 OR FLATTER. ON SHORELINES ABOVE A PROTECTED OR STABLE TOE TO REDUCE SOIL EROSION.

1. AS A RULE OF THUMB, WHEN FLOWS OVER EXPOSED SOILS EXCEED 2 FEET PER SECOND AND FLOWS OVER PROPOSED TURF

### PLANNING CONSIDERATIONS

REAS EXCEED 5-6 FEET PER SECOND, THEN SOIL EROSION CAN BE EXPECTED WHERE TURF REINFORCEMENT MATS ARE USED IN AREAS OF CONCENTRATED FLOWS AN ENGINEERED DESIGN IS REQUIRED.

### MATERIAL

FOR OTHER APPLICATIONS REFER TO THE MANUFACTURER'S RECOMMENDATIONS

- PERMANENT TURF REINFORCEMENT MATS SHALL: 1. CONSIST OF ULTRAVIOLET LIGHT RESISTANT POLYMER OR SYNTHETIC FIBERS MECHANICALLY, STRUCTURALLY, AND/OR CHEMICALLY BOUND TOGETHER FOR A CONTINUOUS MATRIX OF CONSISTENT THICKNESS;
- CONTAIN NO CONTAMINANTS THAT POLLUTE THE AIR OR WATERS OF THE STATE WHEN PROPERLY INSTALLED: AND BE FREE OF ANY SUBSTANCE TOXIC TO PLANT GROWTH AND UNPROTECTED HUMAN SKIN OR WHICH INTERFERES WITH SEED
- MATERIALS SHALL BE SELECTED AS APPROPRIATE FOR THE SPECIFIC SITE CONDITIONS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. USE OF ANY PARTICULAR PERMANENT TURE REINFORCEMENT MAT SHOULD BE SUPPORTED BY MANUFACTURER'S TEST DATA THAT CONFIRMS THE MAT WILL PROVIDE THE LONG TERM EROSION CONTROL CAPABILITIES NECESSARY FOR THE SPECIFIC PROJECT, AND;
- PREPARE SITE AND INSTALL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. ESTABLISH VEGETATIVE COVER IN ACCORDANCE WITH THESE GUIDELINES. MODIFY THE SEQUENCE OF APPLICATION TO MEET THE MANUFACTURER'S REQUIREMENTS FOR THE SPECIFIC INSTALLATION. INSPECT THE INSTALLATION TO ENSURE THAT THE MAT IS IN DIRECT CONTACT WITH THE PREPARED SOIL SURFACE, ALL LAP
- JOINTS ARE SECURE, ALL EDGES AND INTERIOR MATS ARE PROPERLY ANCHORED AND/OR TREATED, BACKFILLING FOLLO. THE MANUFACTURER'S REQUIREMENTS, AND THE VEGETATIVE SOIL MEASURES USED HAVE BEEN CORRECTLY APPLIED. INSPECT PERMANENT TURF REINFORCEMENT MATS AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCH OR GREATER FOR FAILURES UNTIL THE TURF HAS BECOME ESTABLISHED. MAT FAILURE HAS OCCURRED WHEN SOILS AND/OR SEED HAVE WASHED AWAY FROM BENEATH OR WITHIN THE MAT RESULTING
- IN A SOIL SURFACE THAT CAN BE EXPECTED TO CONTINUE TO ERODE OR WHEN THE MAT HAS BECOME DISLODGED FROM THE SOIL SURFACE. WHEN REPETITIVE FAILURES OCCUR AT THE SAME LOCATION, REVIEW CONDITIONS AND LIMITATIONS OF TURF REINFORCEMENT MATS AND DETERMINE IF ADDITIONAL CONTROLS, (E.G. DIVERSIONS, STONE BARRIERS) ARE NEEDED ENSURE SUCCESS. REPAIR MAT FAILURES WITHIN ONE WORK DAY
- 2. AFTER THE TURF HAS BECOME ESTABLISHED, INSPECT ANNUALLY OR AFTER MAJOR STORM EVENTS.

2. TO TEMPORARILY POND STORM WATER RUNOFF TO ALLOW SEDIMENTS TO SETTLE OUT.

### **ENERGY DISSIPATORS**

DO NOT CONTAIN NETTING.

**INSTALLATION REQUIREMENTS** 

- STONE CHECK DAM
- DEFINITION 1. A TEMPORARY STONE DAM PLACED ACROSS A DRAINAGEWAY
- 1. TO REDUCE THE VELOCITY OF CONCENTRATED STORM WATER FLOWS, THEREBY REDUCING EROSION OF THE
- APPLICABILITY

25-YR FREQUENCY STORM ANY DRAINAGE SIZE

- WHERE CONCENTRATED FLOWS ARE EXPECTED TO CAUSE EROSION FOR TEMPORARY DRAINAGEWAYS WHICH, BECAUSE OF THEIR SHORT LENGTH OF SERVICE, WILL NOT RECEIVE A NON-ERODABLE LINING BUT STILL NEED PROTECTION TO REDUCE EROSION.
- FOR PERMANENT DRAINAGEWAYS WHICH, FOR SOME REASON, WILL NOT RECEIVE A PERMANENT NON-ERODABLE LINING FOR AN EXTENDED PERIOD OF TIME. 4. FOR TEMPORARY OR PERMANENT DRAINAGEWAYS WHICH NEED PROTECTION DURING THE ESTABLISHMENT OF VEGETATIVE LININGS. THIS MEASURE IS NOT A SUBSTITUTE FOR A TEMPORARY SEDIMENT TRAP OR A TEMPORARY SEDIMENT BASIN, HOWEVER, STONE CHECK DAMS MAY BE USED IN CONJUNCTION WITH THOSE MEASURES.
- PLANNING CONSIDERATIONS

### 1. A STONE CHECK DAM IS CONSIDERED TO BE TEMPORARY IF IT IS USED LESS THAN 1 YEAR. IT IS CONSIDERED TO BE PERMANENT IF IT IS USED MORE THAN 1 YEAR. DESIGN REQUIREMENTS DRAINAGE AREA LENGTH OF USE NO ENGINEERED DESIGN < OR = 2 ACRES <6 MONTHS 6 MONTHS TO <1 YEAR 2-YR FREQUENCY STORM >2 ACRES

DESIGN CRITERIA FOR USE OF A STONE CHECK DAM LESS THAN 1 YEAR, DESIGN THE STONE CHECK DAM TO SAFELY PASS THE PEAK FLOW EXPECTED FROM A 2-YEAR FREQUENCY STORM WITHOUT STRUCTURAL FAILURE AND ADVERSE TAILWATER EFFECTS.

### FOR USE OF A STONE CHECK DAM EXCEEDING 1 YEAR, DESIGN THE STONE CHECK DAM TO SAFELY PASS THE PEAK FLOW EXPECTED FROM A 25-YEAR FREQUENCY STORM WITHOUT STRUCTURAL FAILURE OF THE CHECK DAM AND ADVERSE

- SPECIFICATIONS FOR ENGINEERED STONE CHECK DAMS, CONSTRUCT THE STONE CHECK DAM IN ACCORDANCE WITH THE DESIGN STANDARDS AND SPECIFICATIONS. FOR ALL NON-ENGINEERED STONE CHECK DAMS, COMPLY WITH THE FOLLOWING
- 1. STONE: SHALL MEET THE REQUIREMENTS OF DOT STANDARD SPECIFICATIONS SECTION M.01.01, 2" CRUSHED STONE. THE STONE SHALL BE SOUND, TOUGH, DURABLE, ANGULAR, NOT SUBJECT TO DISINTEGRATION ON EXPOSURE TO WATER OR WEATHERING, BE CHEMICALLY STABLE, AND SHALL BE SUITABLE IN ALL OTHER RESPECTS FOR THE PURPOSE INTENDED. PLACE THE STONE BY HAND OR MACHINE, MAKING THE SIDE SLOPES NO STEEPER THAN 1.5:1 (I.E., THE ANGLE OF REPOSE)

ROVIDE A STABLE FOUNDATION AND TO FACILITATE REMOVAL OF THE STON

WITH A MAXIMUM HEIGHT OF 3 FEET AT THE CENTER OF THE CHECK DAM. A GEOTEXTILE MAY BE USED UNDER THE STONE

OXIMATELY 6 INCHES LOWER THAN THE HEIGHT OF THE OUTER EDGE 3. THE MAXIMUM SPACING BETWEEN CHECK DAMS SHALL BE SUCH THAT THE TOE OF THE UPSTREAM CHECK DAM IS AT THE SAME ELEVATION AS THE TOP OF THE CENTER OF THE DOWNSTREAM CHECK DAM.

IN DRAINAGEWAYS: THE MINIMUM HEIGHT OF THE CHECK DAM SHALL BE THE FLOW DEPTH OF THE DRAINAGEWAY BUT IT

SHALL NOT EXCEED 3 FEET IN HEIGHT AT THE CENTER. EXTEND THE STONE CHECK DAM TO THE FULL WIDTH OF THE

DRAINAGEWAY, PLUS 18 INCHES ON EACH SIDE LEAVING THE HEIGHT OF THE CENTER OF THE STONE CHECK DAM

- 4. CATCH BASINS IN DRAINAGEWAYS ON SLOPES AND AT CULVERT INLETS: WHERE CATCH BASINS IN DRAINAGEWAYS ARE OCATED ON SLOPES OR AT CULVERT INLETS, LOCATE THE CHECK DAM ACROSS THE DRAINAGEWAY NO FARTHER THAN FEET ABOVE THE CATCH BASIN OR CULVERT. FOR CULVERT INLETS, LOCATE THE CHECK DAM AT LEAST 6 FEET FROM THE
- CATCH BASINS IN DEPRESSIONS OR LOW SPOTS (YARD DRAINS): ENCIRCLE THE ENTIRE CATCH BASIN WITH A STONE CHECK
- DAM NOT TO EXCEED 18 INCHES IN HEIGHT AND 3 FEET OUT FROM THE OUTSIDE EDGE OF THE TOP OF THE FRAME.
- CULVERT INLETS: LOCATE THE STONE CHECK DAM APPROXIMATELY 6 FEET FROM THE CULVERT IN THE DIRECTION OF THE
- INCOMING FLOW.

- MAINTENANCE FOR PERMANENT STONE CHECK DAMS, INSPECT AND MAINTAIN THE STONE CHECK DAM IN ACCORDANCE WITH THE
- STANDARDS AND SPECIFICATIONS PROVIDED IN THE DESIGN.
- FOR TEMPORARY STONE CHECK DAMS. INSPECT STONE CHECK DAMS AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCH OR GREATER TO DETERMINE MAINTENANCE NEEDS.
- 3. REMOVE THE SEDIMENT DEPOSITS WHEN DEPOSITS REACH APPROXIMATELY HALF THE HEIGHT OF THE CHECK DAM. 4. REPLACE OR REPAIR THE CHECK DAM WITHIN 24 HOURS OF OBSERVED FAILURE. FAILURE OF THE CHECK DAM HAS OCCURRED WHEN SEDIMENT FAILS TO BE RETAINED BECAUSE
- B. SOIL HAS ERODED AROUND OR UNDER THE CHECK DAM REDUCING ITS FUNCTIONAL CAPACITY, OR TRAPPED
- SEDIMENTS ARE OVERTOPPING THE CHECK DAM. WHEN REPETITIVE FAILURES OCCUR AT THE SAME LOCATION, REVIEW CONDITIONS AND LIMITATIONS FOR USE AND
- DETERMINE IF ADDITIONAL CONTROLS (E.G. TEMPORARY STABILIZATION OF CONTRIBUTING AREA, DIVERSIONS, STONE CHECK DAMS) ARE NEEDED TO REDUCE FAILURE RATE. MAINTAIN THE STONE CHECK DAM UNTIL THE CONTRIBUTING AREA IS STABILIZED.
- AFTER THE CONTRIBUTING AREA IS STABILIZED. REMOVE ACCUMULATED SEDIMENT, STONE CHECK DAMS MAY BE REMOVED. OR GRADED INTO THE FLOW LINE OF THE CHANNEL OVER THE AREA LEFT DISTURBED BY SEDIMENT REMOVAL. GRADE SO THERE ARE NO OBSTRUCTIONS TO WATER FLOW. IF STONE CHECK DAMS ARE USED IN GRASS-LINED CHANNELS WHICH WILL BE MOWED, REMOVE ALL THE STONE OR CAREFULLY GRADE OUT THE STONE TO ENSURE IT DOES NOT INTERFERE WITH
- 8. STABILIZE ANY DISTURBED SOIL THAT REMAINS FROM CHECK DAM REMOVAL OPERATIONS.

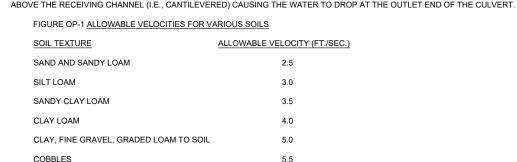
### OUTLET PROTECTION

PLANNING CONSIDERATIONS

- STRUCTURALLY LINED APRONS OR OTHER ACCEPTABLE ENERGY DISSIPATING DEVICES PLACED BETWEEN THE OUTLETS OF PIPES OR PAVED CHANNEL SECTIONS AND A STABLE DOWNSTREAM CHANNEL.
- TO PREVENT SCOUR AT STORM DRAIN, CULVERT OR DRAINAGEWAY OUTLETS AND TO MINIMIZE THE POTENTIAL FOR DOWNSTREAM EROSION BY REDUCING THE VELOCITY OF CONCENTRATED STORM WATER FLOWS
- AT THE OUTFALL OF ALL STORM DRAIN OUTLETS, ROAD CULVERTS, PAVED CHANNEL OUTLETS, NEW CHANNELS CONSTRUCTED AS OUTLETS FOR CULVERTS AND CONDUITS. ETC. DISCHARGING INTO NATURAL OR CONSTRUCTED

CHANNELS, WHICH IN TURN DISCHARGE INTO EXISTING STREAMS OR DRAINAGE SYSTEMS.

- ANALYSIS AND APPROPRIATE TREATMENT SHALL BE DONE ALONG THE ENTIRE LENGTH OF THE FLOW PATH FROM THE END OF THE CONDUIT, CHANNEL OR STRUCTURE TO THE POINT OF ENTRY INTO AN EXISTING STREAM OR PUBLICLY MAINTAI PRAINAGE SYSTEM. WHERE FLOW IS EXCESSIVE FOR THE ECONOMICAL USE OF AN APRON, EXCAVATED STILLING BASINS
- **DESIGN CRITERIA** DETERMINATION OF NEEDS. THE NEED FOR CONDUIT OUTLET PROTECTION SHALL BE DETERMINED BY COMPARING THE ALLOWABLE VELOCITY WHICH THE SOIL WILL WITHSTAND TO THE EXIT VELOCITY OF THE FLOW FROM THE CONDUIT. THE ALLOWABLE VELOCITY FOR WATER OVER THE SOIL SHALL BE THAT GIVEN IN FIGURE OP-1 BELOW. THE EXIT VELOCITY OF THE WATER IN THE CONDUIT SHALL BE CALCULATED USING THE GREATER OF THE CONDUIT DESIGN STORM OR THE 25-YEAR FREQUENCY STORM. WHEN THE EXIT VELOCITY OF THE WATER IN THE CONDUIT EXCEEDS THE ALLOWABLE VELOCITY FOR IE SOIL, OUTLET PROTECTION IS REQUIRED. OUTLET PROTECTION IS ALSO REQUIRED IF THE CONDUIT OUTFALL IS SE



- RIPRAP APRONS DESIGN LIMITATIONS: NO BENDS OR CURVES AT THE INTERSECTION OF THE CONDUIT AND THE APRON PROTECTION WILL BE
- 2. THERE SHALL BE NO VERTICAL DROP FROM THE END OF THE APRON TO THE RECEIVING CHANNEL. OTHER OUTLET PROTECTIONS
- STANDARD ENGINEERING PRACTICES ALLOW FOR MANY DIFFERENT TYPES OF OUTLET PROTECTION WHICH PROVID ENERGY DISSIPATION. COMMON OUTLET PROTECTIONS INCLUDE THE USE OF A RIPRAP APRON AND A RIPRAP STILLING INSTALLATION REQUIREMENTS
- MAINTENANCE

INSPECT THE COMPLETED STRUCTURE ANNUALLY AND AFTER EACH MAJOR RAINFALL FOR DAMAGE AND DETERIORATION.

AN OUTLET FOR DIVERSIONS AND OTHER WATER CONVEYANCES CONSISTING OF AN EXCAVATED DEPRESSION WITH A

WHERE THERE IS A NEED TO CARRY STORM WATER AWAY FROM DISTURBED AREAS AND TO AVOID STRESSING EROSION

- LEVEL SPREADER
- BROAD STABLE POINT OF DISCHARGE CONSTRUCTED AT ZERO GRADE ACROSS A SLOPE TO REDUCE THE DEPTH AND VELOCITY OF CONCENTRATED RUNOFF AND RELEASE IT UNIFORMLY AS SHEET FLOW ONTO A
- **APPLICABILITY**
- WHERE SEDIMENT REDUCED RUNOFF CAN BE RELEASED IN SHEET FLOW OVER A STABILIZED SLOPE WITHOUT CAUSING 3. WHERE THE SPREADER CAN BE CONSTRUCTED ON UNDISTURBED SOIL.
- 4. WHERE THE AREA BELOW THE LEVEL SPREADER LIP HAS A SLOPE OF 5% OR FLATTER AND IS STABILIZED BY VEGETATION. PLANNING CONSIDERATIONS
- 1. THE TEMPORARY DIVERSION MEASURE AND THE WATER BAR MEASURE EACH CALLS FOR A STABLE OUTLET FOR NCENTRATED STORM WATER FLOWS. THE LEVEL SPREADER IS A RELATIVELY LOW-COST STRUCTURE TO RELEASE SMALL OLUMES OF CONCENTRATED FLOW WHERE SITE CONDITIONS ARE SUITABLE 2. CHECK THE PROPOSED LOCATION OF THE LEVEL SPREADER TO ENSURE IT CAN BE CONSTRUCTED ON LEVEL, STABLE, AND UNDISTURBED GROUND. ANY DEPRESSIONS IN THE OUTLET LIP OF THE SPREADER COULD CONCENTRATE FLOW, AND RESULT IN EROSION. CHECK CONDITIONS DOWNSLOPE FORM THE SPREADER TO ENSURE THE RUNOFF WATER WILL NOT RECONCENTRATE AFTER RELEASE UNLESS IT OCCURS DURING INTERCEPTION BY ANOTHER MEASURE (SUCH AS A
- 3. FOR HIGHER DESIGN FLOW CONDITIONS, A RIGID OUTLET LIP DESIGN IS REQUIRED TO ENSURE THE DESIRED SHEET FLOW 4. SPECIAL CARE SHALL BE TAKEN WHEN DESIGNING LEVEL SPREADERS ON TERRACE ESCARPMENTS LOCATED IN THE CONNECTICUT RIVER VALLEY. THESE AREAS ARE VERY SUSCEPTIBLE TO EROSION BY THE CONCENTRATION FLOWS.

PERMANENT POND OR DETENTION BASIN) LOCATED BELOW THE LEVEL SPREADER.

- CONSIDER USING ALTERNATIVE METHODS TO DISCHARGE RUNOFF THROUGH THE ESCARPMENT AREA. **DESIGN CRITERIA** SLOPES SHALL BE SUFFICIENTLY SMOOTH TO PRESERVE SHEET FLOW AND PREVENT FLOW FROM CONCENTRATING.
- NON-EROSIVÉ DISCHARGE. SPREADER DIMENSIONS 1. DETERMINE THE SIZE OF THE LEVEL SPREADER BY ESTIMATING THE PEAK FLOW EXPECTED FROM A 10-YEAR STORM (Q10).

CRITERIA PROVIDED BELOW ARE FOR FLOWS FROM A 10-YEAR FREQUENCY STORM THAT IS EQUAL TO OR LESS THAN 20 CFS

(Q10 < 20 CFS). FOR HIGHER FLOWS USE OTHER STANDARD ENGINEERING PRACTICES THAT WILL RESULT IN A DIFFUSE

2. SELECT THE APPROPRIATE LENGTH, WIDTH AND DEPTH OF THE SPREADER FROM TABLE LS-1 BELOW 3. PROVIDE A 20-FOOT TRANSITION SECTION IN THE DIVERSION CHANNEL SO THAT THE WIDTH OF THE DIVERSION WILL SMOOTHLY TRANSITION WITH THE WIDTH OF THE SPREADER TO ENSURE MORE UNIFORM OUTFLOW.

4. MAKE THE DEPTH OF THE LEVEL SPREADER, AS MEASURED FROM THE LIP, AT LEAST 6 INCHES. THE DEPTH MAY BE MADE GREATER TO INCREASE TEMPORARY STORAGE CAPACITY, IMPROVE TRAPPING OF DEBRIS AND TO ENHANCE SETTLING OF

1. THE GRADE OF THE CHANNEL FOR THE LAST 20 FEET OF THE DIKE OR DIVERSION ENTERING THE LEVEL SPREADER SHALL BE

- TABLE LS-1 MINIMUM DIMENSIONS FOR LEVEL SPREADER DESIGN FLOW, Q10 (CFS) DEPTH (FT.) WIDTH OF LOWER SIDE SLOPE SPREADER (FT.) LENGTH (FT.)
- 2. THE GRADE OF THE LEVEL SPREADER CHANNEL SHALL BE 0.0%. SPREADER LIF THE LEVEL LIP OF THE SPREADER SHALL BE OF UNIFORM HEIGHT AND ZERO GRADE OVER THE LENGTH OF THE SPREADEF WITH ITS DISCHARGE TO AN UNDISTURBED WELL-VEGETATED AREA HAVING A MAXIMUM SLOPE OF 5%. SLOPES SHALL BE
- 2. THE LEVEL SPREADER LIP MAY BE STABILIZED BY VEGETATION OR MAY BE OF A RIGID NON-ERODIBLE MATERIAL DEPENDING

- VEGETATED
- INSTALLATION REQUIREMENTS
- CONSTRUCT THE LEVEL SPREADER ON UNDISTURBED SOIL (NOT FILL MATERIAL). SHAPE THE ENTRANCE TO THE SPREADER IN SUCH A MANNER AS TO ENSURE THAT RUNOFF ENTERS DIRECTLY ONTO THI

4. CONSTRUCT THE LEVEL LIP AT 0.0% GRADE TO ENSURE UNIFORM SPREADING OF STORM WATER RUNOFF FLOW.

- CONSTRUCT A 20-FT. LONG TRANSITION SECTION FROM THE DIVERSION CHANNEL TO BLEND SMOOTHLY TO THE WIDTH AND DEPTH OF THE SPREADER.
- THE PROTECTIVE COVERING FOR A VEGETATED LIP SHALL BE A MINIMUM OF 4 FEET WIDE EXTENDING 6 INCHES OVER THI LIP AND BURIED 6 INCHES DEEP IN A VERTICAL TRENCH ON THE LOWER EDGE. BUTT THE UPPER SMOOTHLY CUT SOD, AND
- SECURELY HOLD IN PLACE WITH CLOSELY SPACED HEAVY DUTY WIRE STAPLES. ENTRENCH THE RIGID LEVEL LIP AT LEAST 2 INCHES BELOW EXISTING GROUND AND SECURELY ANCHOR TO PREVENT DISPLACEMENT, PLACE AN APRON OF DOT 2" CRUSHED STONE OR MODIFIED RIPRAP AT THE TOP OF THE LEVEL LIP AND EXTENDED DOWN SLOPE AT LEAST 3 FEET. PLACE THE GEOTEXTILE UNDER STONE AND USE GALVANIZED WIRE MESH TO
- HOLD STONE SECURELY IN PLACE. STABILIZE THE DISTURBED AREA AROUND THE SPREADER IMMEDIATELY AFTER ITS CONSTRUCTION (SEE PERMANENT SEED, MULCH FOR SEED AND/OR STONE SLOPE PROTECTION MEASURES).
- FOR TEMPORARY INSTALLATIONS, INSPECT THE LEVEL SPREADER AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE
- END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCH OR GREATER TO DETERMINE MAINTENANCE NEEDS FOR PERMANENT INSTALLATIONS, INSPECT AFTER MAJOR RAINSTORMS OR ONCE A YEAR.
- MAINTAIN THE LEVEL SPREADER LIP AT 0.0% SLOPE TO ALLOW FOR PROPER FUNCTIONING OF THE MEASURE.

### SEDIMENT IMPOUNDMENTS, BARRIERS, AND FILTERS

MAINTENANCE

- INSTALLATION REQUIREMENTS
- BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE ON THE CONTOUR, WITH THE ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER
- OF 4 INCHES. AFTER THE BALES ARE STAKED AND CHINKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AGAINST THE BARRIER. BACKFILL SOIL SHALL CONFORM TO THE GROUND LEVEL ON THE DOWNHILL SIDE AND SHALL BE BUILT UP TO 4 CHES AGAINST THE UPHILL SIDE OF THE BARRIER. BALES SHOULD BE PLACED 10 FEET AWAY FROM THE TOE OF SLOPES UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR DIRECTED.

A TRENCH SHALL BE EXCAVATED THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER TO A MINIMUM DEPTH

- EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN DEEP ENOUGH INTO THE GROUND TO SECURELY ANCHOR THE BALES.
- CHANNEL FLOW APPLICATIONS BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE, ORIENTED PERPENDICULAR TO THE CONTOUR, WITH ENDS OF DJACENT BALES TIGHTLY ABUTTING ONE ANOTHER
- THE REMAINING STEPS FOR INSTALLING A BALE BARRIER FOR SHEET FLOW APPLICATIONS APPLY HERE, WITH THE FOLLOWING ADDITION:
- INSPECTION SHALL BE MADE AFTER EACH STORM EVENT AND PERIODICALLY DURING PROLONGED RAIN EVENTS AND REPAIR

### GEOTEXTILE SILT FENCE

GEOTEXTILE, GEOTEXTILE SHALL BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE FILAMENTS AND HALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE FOLLOWING REQUIREMENT

TENSILE STRENGTH AT 20% (MAX) ELONGATION

REPLACEMENT SHALL BE MADE AS REQUIRED.

- EXTRA STRENGTH 50 LBS./LIN. IN. (MIN) 30 LBS./LIN. IN. (MIN)
- 3. WIRE FENCE REINFORCEMENT FOR GEOTEXTILE SILT FENCES USING STANDARD STRENGTH MATERIAL SHALL BE A MINIMUM OF 42 INCHES IN HEIGHT, A MINIMUM OF 14 GAUGE AND SHALL HAVE A MAXIMUM MESH SPACING OF 6 INCHES
- THE HEIGHT OF THE BARRIER SHALL NOT EXCEED 36 INCHES. (HIGHER BARRIERS MAY IMPOUND VOLUMES OF WATER SUPPLICIENT TO CAUSE FAILURE OF THE STRUCTURE). THE SEDIMENTATION CONTROL FENCE SHALL BE PLACED 10 FEE AWAY FROM THE TOE OF SLOPES UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR DIRECTED.
- POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM DEPTH OF 12 WHEN STANDARD STRENGTH GEOTEXTILE IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE
- ORIGINAL GROUND SURFACE. THE STANDARD STRENGTH GEOTEXTILE SHALL BE STAPLED, WIRED OR TIED TO THE WIRE FENCE, AND 8 INCHES OF THE GEOTEXTILE SHALL BE EXTENDED INTO THE TRENCH.
- MAINTENANCE

INSPECTION SHALL BE MADE AFTER EACH STORM EVENT AND PERIODICALLY DURING PROLONGED RAINFALL. REPAIR OR

2. ACCUMULATED SEDIMENT BEHIND THE FENCE SHALL BE REMOVED WHEN IT REACHES 1/2 OF THE HEIGHT OF THE BARRIER

### AVOID THE PLACEMENT OF ANY MATERIAL ON AND PREVENT CONSTRUCTION TRAFFIC ACROSS THE STRUCTURE. IF THE MEASURE IS DAMAGED BY CONSTRUCTION TRAFFIC, REPAIR IT IMMEDIATELY.

- HAY BALE BARRIER
- SHEET FLOW APPLICATIONS
- ALL BALES SHALL BE EITHER WIRE-BOUND OR STRING TIED. BALES SHALL BE INSTALLED SO THAT BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES TO PREVENT DETERIORATION OF THE
- EACH BALE SHALL BE SECURELY ANCHORED BY AT LEAST TWO STAKES DRIVEN THROUGH THE BALE. THE FIRST STAKE IN
- THE GAPS BETWEEN BALES SHALL BE CHINKED (FILLED BY WEDGING) STRAW BETWEEN THEM TO PREVENT WATER FROM FLOWING BETWEEN THE BALES.
- THE BARRIER SHALL BE EXTENDED TO SUCH A LENGTH THAT THE BOTTOMS OF THE END BALES ARE HIGHER IN ELEVATION THAN THE TOP OF THE LOWEST MIDDLE BALE TO ASSURE THAT SEDIMENT LADEN RUNOFF WILL FLOW EITHER THROUGH OR

### OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED 2. ACCUMULATED SEDIMENT BEHIND THE BALES SHALL BE REMOVED WHEN IT REACHES 1/2 OF THE ORIGINAL HEIGHT OF THE

### MATERIALS

- REQUIREMENTS FILTERING EFFICIENCY 75% (MIN)
- 12 GAL./SF/MIN. (MIN.) STAKES FOR GEOTEXTILE SILT FENCES SHALL BE 1" x 1" WOOD WITH A MINIMUM LENGTH OF 5 FEET
- WHEN JOINTS ARE NECESSARY, GEOTEXTILE ROLL ENDS SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6" OVERLAP AND SECURELY SEALED IN CONFORMANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
- UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO A TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE
- WHEN EXTRA STRENGTH GEOTEXTILE OR BURLAP AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE 7. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE GEOTEXTILE

SEE PROJECT NOTES SHEET 7

NOTES:

HIS DRAWING IS INTENDED TO BE USED FOR INFORMATION AND REVIEW URPOSES ONLY AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION

TOWN OF BOLTON.

CONNECTICUT

HERRICK MEMORIAL

**EROSION AND** SEDIMENT CONTROL **NOTES** 

PERMITTING ANY ALTERATIONS TO THIS DRAWING MADE WITHOUT THE EXPRESSE VRITTEN APPROVAL OF NATHAN L. JACOBSON & ASSOCIATES. INC. WILL I

T THE SOLE RISK OF THE PERSON OR FIRM MAKING SUCH UNAUTHORIZ

ALTERATIONS AND NATHAN L. JACOBSON & ASSOCIATES, INC. WILL NEITHEF

HAVE NOR ACCEPT ANY LIABILITY OR LEGAL EXPOSURE ARISING FROM SAI

UNAUTHORIZED ALTERATIONS.

Nathan L. Jacobson & Associates, Inc.

86 Main Street P.O. Box 337 Chester, Connecticut 06412-0337 Tel: (860) 526-9591 Fax: (860) 526-5416 www.nlja.com Jacobson Consulting Civil and Environmental Engineers Since 1972 NOT VALID WITHOUT ORIGINAL SEAL

JOSEPH M. DILLON, P.E. CT REGISTRATION No. 22903

DESCRIPTION

DATE: OCTOBER 202 SCALE: PROJECT No. 09630011 CADD FILE: 09630011ED DESIGNED: TPH DRAWN: CHECKED:

SUFFICIENTLY SMOOTH TO PRESERVE SHEET FLOW AND PREVENT FLOW FROM CONCENTRATING.

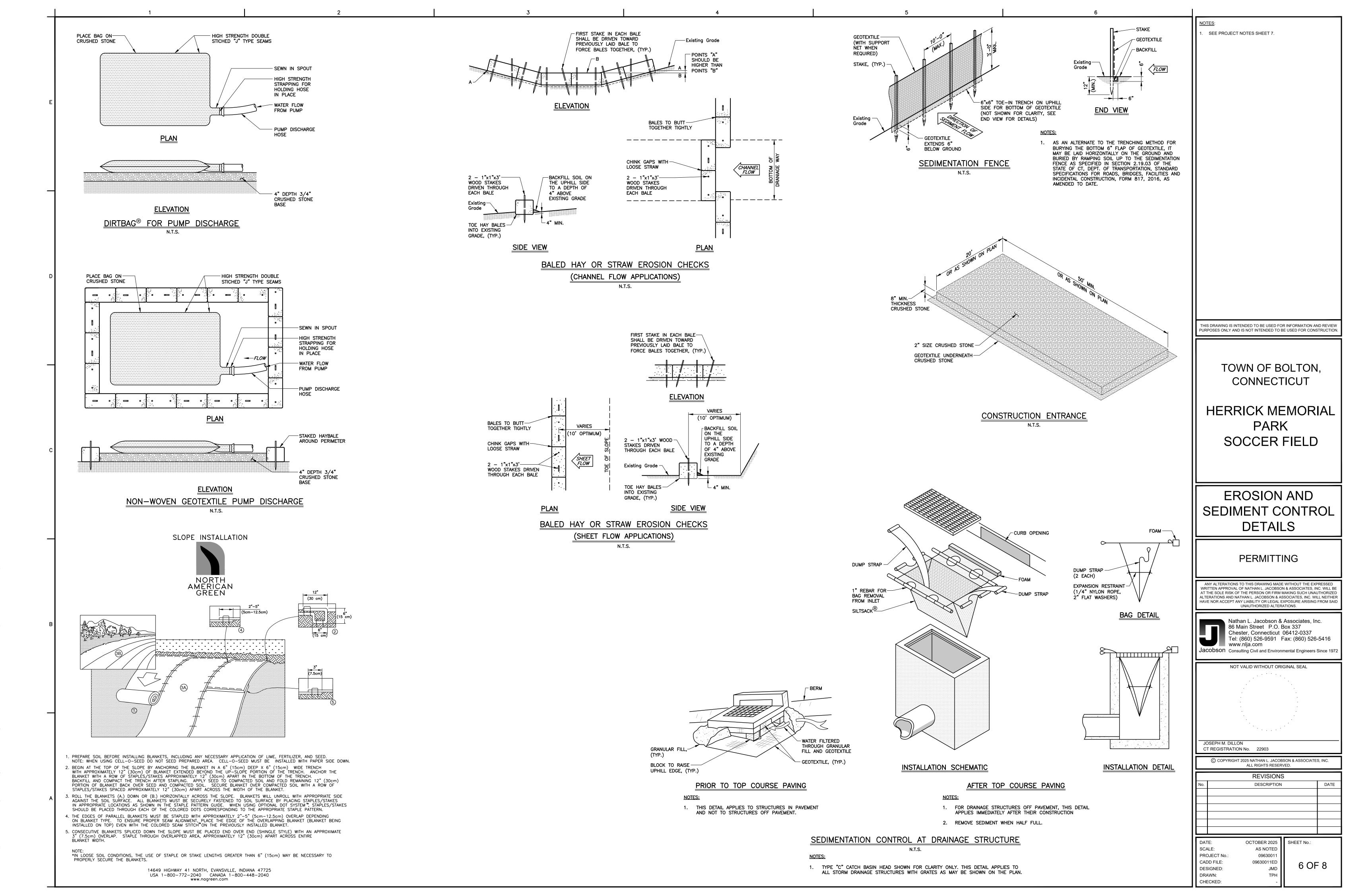
I. FOR HIGHER DESIGN FLOWS AND PERMANENT INSTALLATIONS, A RIGID LIP OF NON-ERODIBLE MATERIAL, SUCH AS

FIGURE LS-2 <u>DISCHARGE LIMITATION</u>

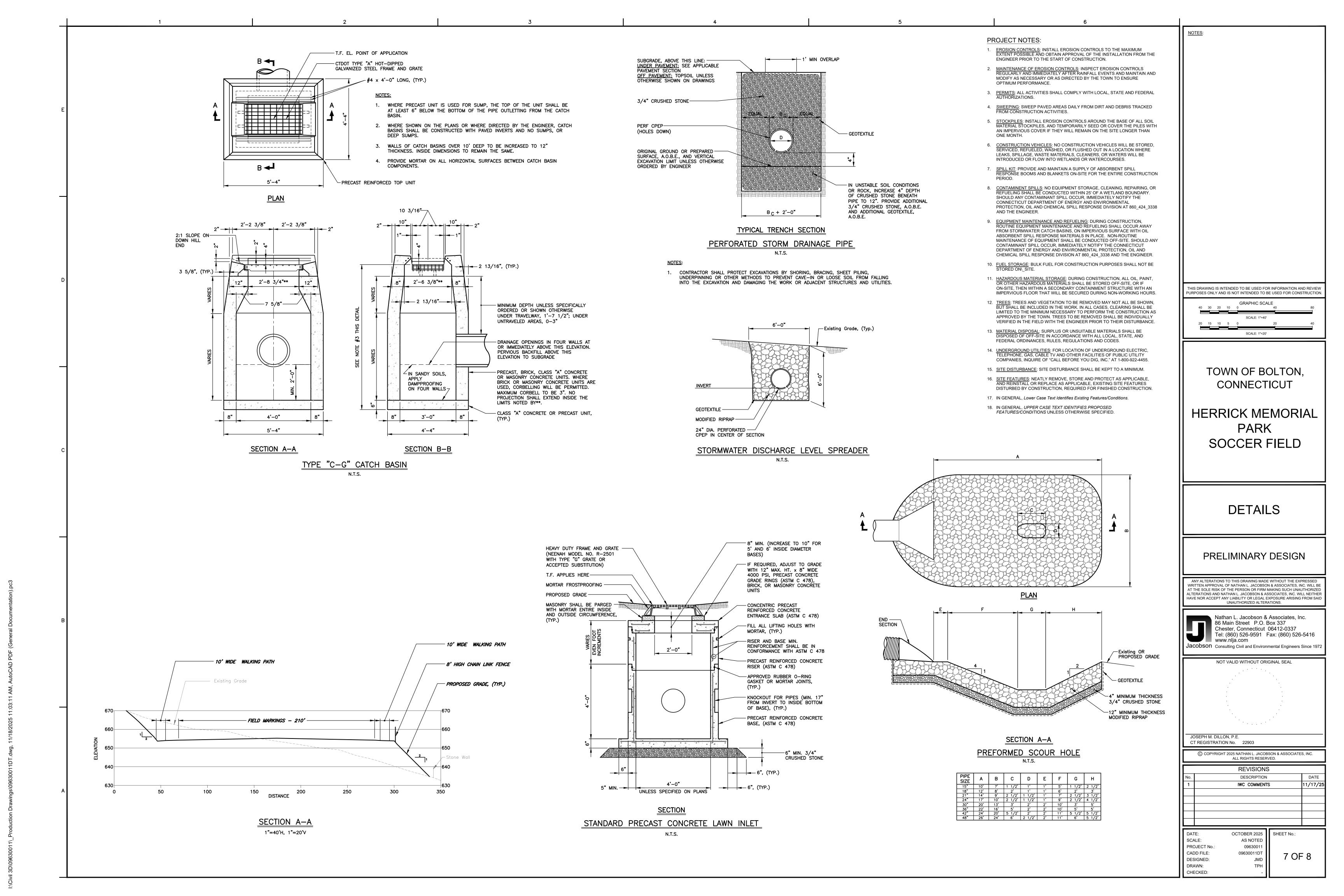
SPREADER LIP DESIGN FLOW (CFS)

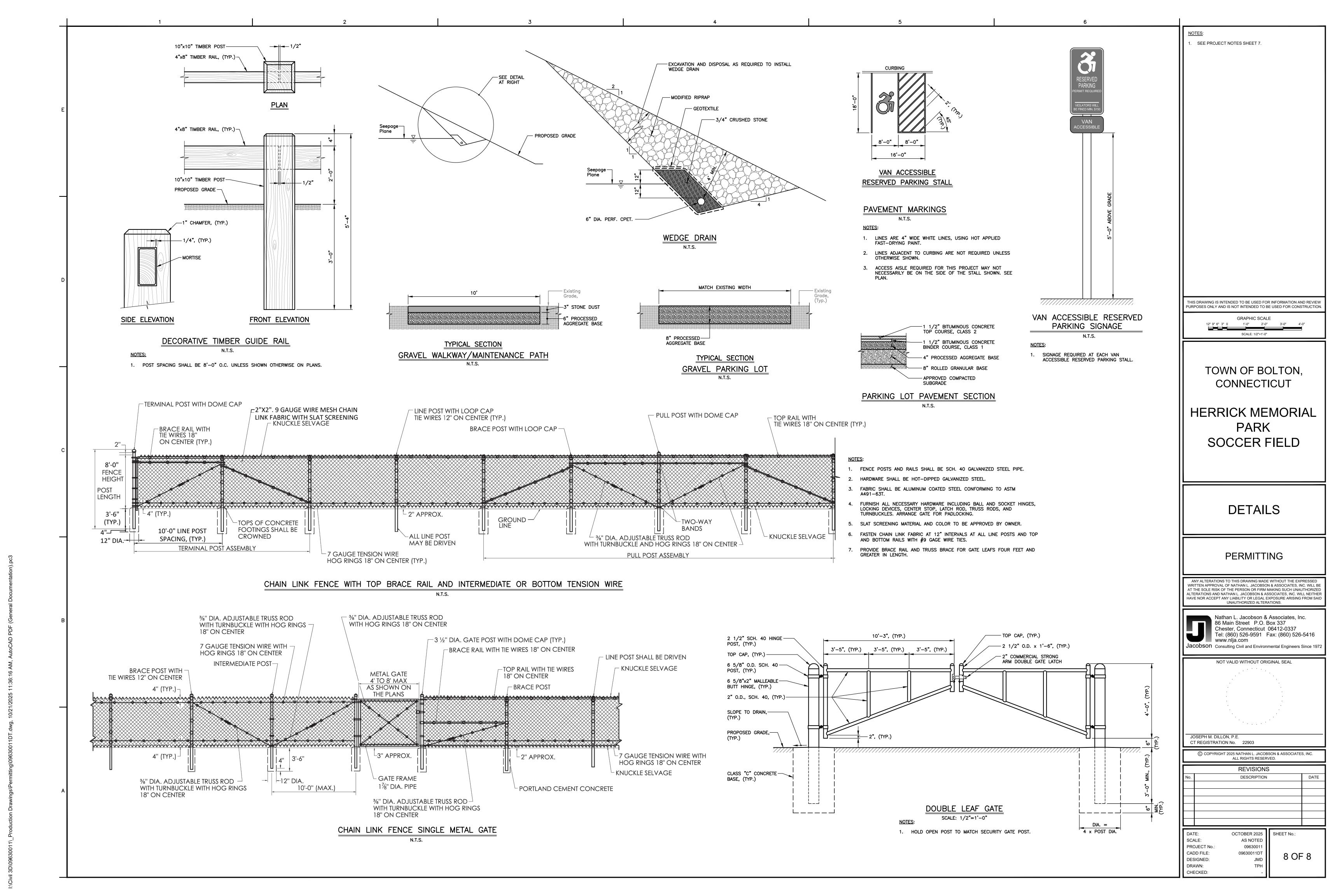
A VEGETATED LEVEL LIP SHALL BE CONSTRUCTED WITH AN EROSION-RESISTANT MATERIAL, SUCH AS PERMANENT TURF REINFORCEMENT MATTING OR TEMPORARY EROSION CONTROL BLANKETS. TO INHIBIT EROSION AND ALLOW VEGETATION TO

© COPYRIGHT 2025 NATHAN L. JACOBSON & ASSOCIATES INC. ALL RIGHTS RESERVED. REVISIONS



I:\Civil 3D\09630011\ Production Drawings\Permitting\09630011ED.dwg, 10/21/2025 11:33:56 AM, AutoCAD PDF (General Documentation)





### William M. Dest, Ph.D. Agronomist/Soil Scientist 53 McMullen Avenue Wethersfield, CT 06109

June 24, 2013

Joseph M. Dillon, P.E. Associate Nathan L. Jacobson & Associates 86 Main Street P.O. Box 337 Chester, CT 06412-0337

Dear Mr. Dillon,

The report summarizes our examination of the soils on May 6 and 7, 2013 at Herrick Park for the proposed ball fields and soccer field for the Town of Bolton. Included in the report are the soil test results of soil samples collected on the days the site visits were made.

Six test pits were excavated with a backhoe from between a 46 to 54 inch depth to examine the soil profile. The soils were assessed for their permeability (ability to conduct water) by examining soil color, soil texture by the tactile method, soil structure, aggregate stability of the topsoil, visible pores that include channels, direction of natural lines of breakage, and horizons that may impede drainage. Direction of natural breakage is observed by removing a vertical slice of soil with a spade and then tamping the spade on a firm surface and noting the direction of breakage. Root structure of the vegetation was examined and earthworm activity was noted. The need for subsurface drainage was assessed by noting the presence of soil mottles and/or a water table. Results are reported in table 1 except for a 7<sup>th</sup> pit dug in the woods east of the site. See text below.

Soil samples from the topsoil and subsoil were collected to determine particle size. Particle sizes were determined by the Soil and Plant Nutrient Testing Laboratory at the University of Massachusetts using the hydrometer method for silt and clay after removal of the sand fraction. See textural analysis results dated May 15, 2013. The organic matter content of the topsoil and its available nutrient content is also reported. Organic matter was determined upon loss of weight by ignition. Nutrients were determined by the Morgan Extraction method. Soil ID numbers in the reports refer to:

Sample ID

BA

Topsoil (Ap horizon)

B-B

Samples taken between 11 to 32 inches,
depth samples collected from depending on test pit
(B horizon)

B-C

Samples taken below 32 inches (C horizon)

Clod samples of the subsoil and topsoil were collected to determine their bulk density as a means to assess soil compaction. The clod method for analyzing bulk density is described in A. Klute (ed.) *Method of Soil Analysis*, Part I, 1986, American Society of Agronomy, Soil Science Society of America, 9:42-375. See table 1 for results.

Field saturated hydraulic conductivity (SHC) of the topsoil and subsoil was measured with a Guelph Field Permeameter using a constant head technique. This method provides a means to determine field SHC in the vadose zone (unsaturated zone) by maintaining a stable depth of water in an uncased auger hole. Permeability (the ease at which water passes through soil) and  $K_{fs}$  values are often used as an expression of the soil's saturated hydraulic conductivity and are used in the report. Test results are shown in table 1.

Depth of the topsoil was measured at 18 locations over the site to determine if there is a sufficient volume of topsoil on-site to do the project without importing additional topsoil. The percent volume of coarse fragments (gravel and stones) over 1 inch in diameter in the topsoil was also determined from 12 dug holes of known volume to ascertain if the topsoil requires screening. The results are reported below.

### **Topsoil**

The texture of the topsoil is a fine sandy loam based upon the USDA-NRCS classification system. See UMass Extension report designated BA. The topsoil has a moderately stable to stable granular structure, table 1. There are a moderate to many visible pores largely formed between granules. There were only a few old root channels noted with little to no earthworm activity that also produce channels. See comment under permeability below. There were many live roots except where we noted massive structure in test pit 5.

The mean depth of the topsoil is 9 inches, the minimum recorded being 8 inches with a maximum of 12 inches. There is a sufficient volume of topsoil on site to do the project without the need to purchase topsoil from an outside source. The mean percent of volume of stones over 1 inch diameter was 3.5% with a minimum of 1.7% and a maximum of 7.4% taken from the 12 dug holes. We generally recommend that the topsoil be screened if the volume of stones exceeds 2% by volume.

The soil pH was 5.1 which indicates that the soil is strongly acid. The major nutrients are all extremely low. See Soil Analysis Report designated BA. The organic matter content is 2.9% which is low and will need to be increased. The soil pH, nutrient content and organic matter content will be remedied during the construction of the fields. See conclusions and recommendations below.

The bulk density of the topsoil ranged from 1.52 to 1.75 g cm<sup>-3</sup>, table 1. The mean for the samples was 1.65 g cm<sup>-3</sup>. The bulk density of sandy loams normally range from 1.20 to 1.75 g cm<sup>-3</sup>, the density depending upon conditions such as soil disturbance, percent sand content, soil structure and organic matter content. However the densities can be either higher or lower. For instance, we recently measured the bulk density of a Paxton Soil (topsoil) with the samples

ranging from 1.05 to 1.39 g cm<sup>-3</sup> with a mean of 1.24 g cm<sup>-3</sup>. The topsoil on site is moderately to severely compacted. A lower bulk density will have to be specified in the technical specifications to ensure that the topsoil is not overcompacted when constructing the fields. See recommendations.

The permeability of the topsoil ( $K_{fs}$ ) ranged from 0.12 to 1.49 inches per hour with a mean value of 0.52 inches per hour. The  $K_{fs}$  rate for the mean value places the topsoil in a permeability class of moderately slow. To place this value in proper perspective, Rawls et al (1982) in Soil Physics Companion found a mean permeability rate for sandy loam soils of slightly greater than 1 inch per hour gathered from 1,323 soils of varying textures taken from over 30 states. A main influence for the slow percolation rate for the onsite topsoil may be attributed to a reduction in the larger (drainable) pores. As bulk density increases, pore space decreases with the largest reduction in the drainage pores. See further comments related to water movement in conclusions.

### Subsoil

### **B** horizon

Soil texture is a sandy loam. See Textural Analysis Results (UMass Extension Report) designated ID=B-B. Soil structure is subangular blocky with some massive structure at the transition between the B and C horizons. The soils are friable, failing under a slight force. There were a moderate number of viable pores some of them in the form of root channels. There were few to a moderate number of roots. The natural breakage, (lines of weakness), were largely vertical to oblique. Permeability is generally greater in soils with blocky structure compared to platy structure or massive. Further, water will move faster in soils dominated by vertical lines of weakness.

The bulk density (table 1) ranged from 1.62 g cm<sup>-3</sup> to 1.78 g cm<sup>-3</sup> with a mean value of 1.68 g cm<sup>-3</sup>. The densities were between 78 to 86% of the maximum dry density using the correction for oversized particles in the Terracon report. The soils of the B horizon are not overcompacted based upon these densities and can be used in developing the specifications for the fields. See Terracon Report dated 5/13/13 for laboratory results.

The B horizon was conducting water at a moderately rapid rate with a  $K_{\rm fs}$  mean value of 1.33 inches per hour with a minimum of 0.57 inches per hour and a maximum of 2.69 inches per hour. See table 1. The blocky structure, vertical to oblique lines of weakness and visible channels present are factors in promoting good percolation

### C horizon

Soil texture is a fine sandy loam, Textural Analysis Results, UMass Extension Report, sample ID=B-C. The structure is platy to massive. Although we did not test its permeability, water moves slowly when massive and platy structure is encountered. The consistency was hard to very hard which is also shown by the penetration resistance values. Root growth is reduced

when penetration resistance exceed 2 MPa. There were no visible pores and few to no roots. The bulk density ranged from 1.83 to 2.02 g cm<sup>-3</sup> with a mean of 1.91 g cm<sup>-3</sup>. The percent maximum dry densities were 88 to 98%. The C horizon is severely compacted therefore water movement can be expected to be slow. See concluding remarks.

### Conclusion

The soil on site for constructing the fields is mapped as a Paxton (Soil Survey of Tolland County issued December 1966) with compact till below the B horizon which on the present site is from 22 to 33 inches from the surface. The C horizon has inherently poor soil structure (platy and massive) and its compaction is shown by its high bulk density. This is a major limitation to constructing the fields for as water reaches or moves over the compact till a perched water table forms. It is seasonal and occurs in early spring and late fall except if we have an exceptionally wet summer. Although we did not encounter a water table in our test pits in the open field nor did we note any mottling, water was moving over the compact till (at approximately 2 ½ feet from the surface) in test pit 7 that was dug in the wooded area east of the hay field. We also found some mottling in the subsoil. This condition will have to be addressed because of the cuts to be made along the east side of the site. See recommendations.

Increasing the pH of the topsoil with the addition of limestone and adding compost to increase its organic matter content during construction will improve the soils structural stability and provide an environment for earthworm activity which was near absent on the days we examined the soil. Also correcting the nutrient status will promote a better plant environment for root growth and development. This should result in creating channels which will increase water flow. Most of water movement in many native soils is by channelized flow.

Native topsoils except for sands and loamy sands with a high sand content rely on a system with a framework that provides a stable granular structure to maintain the large pores that conduct excess water away from the playing surface in order to keep it firm. This framework is vulnerable to changes due to construction which results in degradation in soil structure with a subsequent decrease in permeability and reduced soil aeration. Some loss in soil structure can be expected when building the fields. However this can be minimized if the soils are handled carefully during construction, properly amended, and a maintenance program put in place once the fields are built to restore and improve its permeability. It will be incumbent upon the contractor who is to construct the fields to handle the soils in such a manner to minimize soil compaction of the topsoil and the cut and fill material when constructing the fields so that reasonable flow rates are achieved on completion of the project.

### Recommendations

1. Kill the existing sod on the present site with glyphosate. Till the sod once completely dead to pulverize it before stripping the topsoil. The intent is to accelerate its decomposition once the topsoil is stripped and stockpiled. Use a bog harrow followed by a reverse tiller to pulverize the vegetation.

- 2. Add compost to the topsoil before stripping to increase its organic matter content to at least 5% by weight. The organic matter is presently 2.9% by weight. Incorporate the organic matter throughout the top 8 inches of topsoil. This will save having to mix the compost with the topsoil off site. This same method should be applied to the topsoil in the wooded area if feasible once the trees are cut and the stumps and understory are removed. Otherwise the compost will have to be added when the topsoil in these areas are stripped and stockpiled.
- 3. Once the organic matter is incorporated, collect representative soil samples and test for its organic matter content to determine if sufficient compost was added to increase the organic matter content to greater than 5 percent. Divide the site into at least 10 grids and take a soil sample for each grid to determine its organic matter content. This should be done before stripping the topsoil.
- 4. Strip the topsoil to a 9 inch depth. Some subsoil may be stripped with the topsoil however it should have no negative effect. Screen the topsoil through a 1 inch screen. This will further ensure that the compost is thoroughly mixed with the topsoil.
- 5. Use track machines to move the soils on site during construction keeping rubber tire vehicles except for landscape machinery off the fields. Use low ground pressure machines to move and spread soil materials.
- 6. The density of the subsoil once graded and in place should have a mean of 80% of its maximum dry density with no value exceeding 85%, or approximately 1.67 to 1.74 g cm<sup>-3</sup>. A sample of the subsoil should be taken during cuts and fills and sent to a laboratory to determine its maximum dry density.
- 7. Use a subsoiler to loosen subsoil compaction after it is in place and graded if it does not meet the density specifications. A subsoiler has a working depth of 2 feet. Stones that surface from using the subsoiler will need to be raked and removed from the surface before replacing the topsoil.
- 8. The saturated hydraulic conductivity of the subsoil taken from 10 samples should not be less than 1.30 inches per hour (mean value) using an insitu method to determine its permeability.
- 9. Spread the screened topsoil to a uniform depth over the subgrade. Use track machines starting at the edge of the field and working the topsoil out onto the surface in order to prevent the grading equipment from disturbing the subgrade. Equipment is to be kept off the subgrade at all times.

- 10. Final bulk density of the topsoil should have a mean value of 1.30 g cm<sup>-3</sup> taken from 20 samples over the fields with no value exceeding 1.40 g cm<sup>-3</sup> when the finish grade is completed. This should become a part of the specifications as a means to maintain quality control.
- 11. Agricultural limestone and nutrients are presently required. However some change may take place when compost is added to the soil. Take a sample again once the compost is added and analyze it for its pH and nutrients to determine the amounts to apply.
- 12. The permeability rate of the topsoil once in place and finish graded should not be less than 0.7 inches per hour (mean value) from 12 tests taken over the fields. If a laboratory technique that employs a constant 2 cm head is used on intact cores taken from the field, the saturated hydraulic conductivity should not be less than 2.0 inches per hour. This should become part of the specifications.
- 13. Install an intercepting drain along the slope to the east, location to be determined. The drain should be set into the impermeable layer and filled with permeable material above it. If the junction between the permeable and impermeable layer is irregular than more than one drain along the slope may be required. A drain or swale along the bottom of the slope should be installed to intercept runoff before it reaches the field.
- 14. Conduct an aerification/sand topdressing program once the grass on the fields is well established. Core aerify followed directly by applying one cubic yard of sand per 1000 square feet. The sand used for topdressing should contain at least 65% of its sand fractions in the medium to coarse size range with no more than 10% of its particles in the very fine sand, silt and clay fractions with the silt and clay not to exceed 5% of the total weight. Aerify and topdress at least twice a year until 2 to 3 inches of sand is mixed with the soil from the core aerification. This will assist in firming the surface of the fields. Sands are less affected by changes in soil moisture than fine textured soils (sandy loams, loams, etc.).

Do not hesitate to contact me if you have any questions concerning the report.

Sincerely yours,

William M. Dest, Ph.D. Agronomist/Soil Scientist



Biodiversity Studies • Wetland Delineation & Assessment • Habitat Management • GIS Mapping • Permitting

### Proposed Subsurface Sewage Disposal System Bolton Center Road Bolton, Connecticut

### Wetland Impact Assessment

Submitted To:

Nathan L. Jacobson & Associates 86 Main Street Chester, Connecticut 06412

### Prepared By:

Davison Environmental, LLC Matthew Davison, PWS, PSS, CPESC, CT Forester

December 8, 2025

### **CONTENTS**

1.0	INTRODUCTION	1
2.0	EXISTING ENVIRONMENT	1
2.1	General Site Description	1
2.2	Surficial Geology and Watershed	1
2.3	Wetland Description	1
2.4	Soil Types	1
2.5	Rare Species Habitat	2
3.0	WETLAND FUNCTIONS AND VALUES	2
3.1	Wetland Functions and Values	2
3.2	Principal Functions and Values of the Site Wetland	3
4.0	REGULATED ACTIVITIES	3
5.0	WETLAND IMPACT ASSESSMENT AND RECOMMENDATIONS	4
APPE	NDICES	
Α	WETLAND PHOTOS	
В	NRCS SOIL MAPPING	
С	CTDEEP NDDB AUTOMATED SITE ASSESSMENT	

### 1.0 INTRODUCTION

Davison Environmental, LLC has prepared this wetland impact assessment in conjunction with a proposed sanitary sewer line along Toomey and Bolton Town Center Roads, in Bolton ("Project"). A portion of an existing sewer line located within wetlands located northeast of the Bolton Town Hall would be relocated within the same wetland. The Project work area associated with wetland work northeast of the Bolton Town Hall is referred to herein as the "Site".

### 2.0 EXISTING ENVIRONMENT

### 2.1 General Site Description

The Site is located to the rear (northeast) of the Bolton Town Hall and includes a maintained wet meadow/agricultural field and adjacent hardwood forest to the north. For the purpose of description, the northern Site boundary is a stone wall that runs east to west along the north side of the meadow. The meadow was recently mowed at the time of inspection and generally comprised of grasses and forbes with minimal woody stems indicating a regular mowing regime. The proposed sanitary sewer line would be located along the meadow-forest interface and running parallel to the stone wall and wood line along the northern Site boundary.

### 2.2 Surficial Geology and Watershed

The Site's surficial geology is comprised of thick till. The Site lies within the Hop River subregional drainage basin (#3108).

### 2.3 Wetland Description

Site wetlands were previously delineated by Soil Scientist Richard Snarski. Portions of the wetland boundary where Project impacts are proposed were reviewed by Davison Environmental on November 13, 2025, and found to be substantially correct. The majority of the Site wetland area is characterized by a seasonally saturated wet meadow with emergent vegetative cover (Palustrine Emergent Wetland). See Photos 1 & 2. Along the northern Site boundary, the wetland is characterized by tree cover (Palustrine Forested Wetland). The wetland generally drains from north to south within a channelized conveyance feature (intermittent or ephemeral watercourse) located centrally within the meadow. Flows within this feature are driven by landscape position and groundwater discharge. A small area characterized by saturated to seasonally flooded hydrology is located at the northern tip of the conveyance feature along the meadow edge and just within the wood line. See Photos 3 & 4.

### 2.4 Soil Types

Digitally available updated soil survey information was obtained from the Natural Resources Conservation Service and generally confirmed during the field investigation. Soil classifications present on the property are as follows:

<u>Wetland Soils</u> - Wetland soils on the Site consist of Ridgebury, Leicester, and Whitman soils. The Ridgebury series consists of very deep, somewhat poorly and poorly drained soils formed in glacial till derived mainly from granite, gneiss and schist. They are nearly level to gently sloping soils in low areas in uplands. This series includes phases that are poorly drained and

the wetter part of somewhat poorly drained. A perched, fluctuating water table above the dense till saturates the solum to or near the surface for 7 to 9 months of the year.

The Leicester series consists of very deep, poorly drained loamy soils formed in friable till. They are nearly level or gently sloping soils in drainageways and low-lying positions on hills. Depth to bedrock is commonly more than 6 feet. Rock fragments range from 5 to 35 percent by volume to a depth of 40 inches and up to 50 percent below 40 inches. Leicester soils have a water table at or near the surface much of the year.

The Whitman series consists of very deep, very poorly drained soils formed in glacial till derived mainly from granite, gneiss, and schist. They are nearly level or gently sloping soils in depressions and drainageways on uplands. Depth to dense till is 12 to 30 inches. Some pedons have organic horizons overlying the A horizon. They are fibric hemic or sapric material, and are up to 5 inches thick. Whitman soils are found on nearly level and gently sloping soils in depressions and in drainage ways of glacial uplands. Slopes are typically 0 to 2 percent but range up to 8 percent where wetness is due to seepage water. This soil is very poorly drained. A perched water table, or excess seepage water, is at or near the surface for about 9 months of the year.

<u>Non-Wetland Soils</u> - Non-wetland soils consist of Woodbridge fine sandy loam. The Woodbridge series consists of moderately well drained loamy soils formed in compact, subglacial till. They are very deep to bedrock. They are nearly level to moderately steep soils on till plains, hills, and drumlins. Depth to the compact layer (hardpan) is 18 to 40 inches. Depth to bedrock is commonly more than 6 feet. Woodbridge soils have a seasonal high water table on top of the compact layer (18-40") from fall through late spring.

### 2.5 Rare Species Habitat

Based on a review of the most recently updated (June 2025) Connecticut Department of Energy and Environmental Protection Natural Diversity Database ("NDDB") mapping, an NDDB polygon indicating the potential presence of State-listed species on or near the Site. An Automated Site Assessment, generated on 11/19/2025, indicated the potential presence of American kestrel, a State-listed Special Concern Species bird, was identified as potentially occurring on the Site. Kestrels' habitat includes open grassy or shrubby areas with short vegetation in which to hunt for their prey. In Connecticut, kestrels are usually seen around agricultural areas, airports, large parks, and utility line corridors. Courtship and breeding generally occur between March and August. Potential kestrel habitat is present on the Site.

### 3.0 WETLAND FUNCTIONS AND VALUES

### 3.1 Wetland Functions and Values

The functions and values of Site wetlands that would be subject to impacts are summarized in Table 1 and discussed in Sections 3.2 and 3.3. The *Highway Methodology* recognizes 13 separate wetland functions and values, including: groundwater recharge/discharge, floodwater storage, fish and shellfish habitat, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, production export, sediment/shoreline stabilization, wetland

wildlife habitat, recreational value, educational/scientific value, uniqueness, visual/aesthetic quality and threatened and endangered species habitat.

The degree to which a wetland provides each of these functions is determined by one or more of the following factors: landscape position, substrate, hydrology, vegetation, history of disturbance, and size. Each wetland may provide one or more of the listed functions at significant levels. The determining factors that affect the level of function provided by a wetland can often be broken into two categories. The <u>effectiveness</u> of a wetland to provide a specified function is generally dependent on factors within the wetland whereas the <u>opportunity</u> to provide a function is often influenced by the wetland's position in the landscape as well as adjacent land uses. For example, a depressed wetland with a restricted outlet may be considered highly effective in trapping sediment due to the long residence time of runoff water passing through the system. If this wetland is located in gently sloping woodland, however, there is no significant source of sediment in the runoff therefore the wetland is considered to have a small opportunity of providing this function.

Groundwater Recharge/Discharge Sediment/Shoreline Stabilization Removal/Attenuation Educational/Scientific Value /isual Quality/Aesthetics ish & Shellfish Habitat isted Species Habitat Jniqueness/Heritage Wetland Functions Pathogen Retention -loodflow Alteration Sediment/Toxicant/ Production Export and Values Wildlife Habitat Recreation Nutrient Wetland Impact S U S U Ρ U U U U U S Ρ Area

Table 1: Summary of Wetland Functions and Values

### Suitability

P = principal function

U = function unlikely to be provided at a significant level

N/A = not applicable

### 3.2 Principal Functions and Values of the Site Wetland

<u>Wildlife Habitat and Listed Species Habitat</u> functions and values are provided at a principal level within the portion of Site wetlands proposed for impact. An Automated Site Assessment from DEEP NDDB indicates the potential presence of American kestrel in the area and the Site was found to possess suitable kestrel habitat.

### 4.0 REGULATED ACTIVITIES

Due to the needs of the proposed Project and the location of Site wetland resources, activities are proposed within wetlands. Approximately 0.165 acre of direct wetland impacts and 0.834 acre of upland review area impacts are required to complete the Project. Both direct wetland and upland review area impacts are associated with tree clearing (cover type conversion), trenching, and pipe installation.

S = secondary function

### 5.0 WETLAND IMPACT ASSESSMENT AND RECOMMENDATIONS

Potential short-term impacts are associated with erosion and sedimentation of water resources during construction. Potential long-term impacts are primarily related to the loss of wetland functions and/or water quality degradation resulting from direct wetland impacts including tree clearing and alterations to hydrology. The following are comments and recommendations related to the potential for and minimization of long-term impacts to water resources.

- 1. The new proposed sewer line route would require tree clearing along the southern forest edge. To avoid temporary impacts to possible breeding American kestrels, additional evaluations may be conducted prior to construction to determine if kestrels are present in the area. Project construction may also be scheduled outside of the kestrels' breeding season. It should be noted that the Site is in an area that is likely subject to frequent disturbances associated with the adjacent Town facilities, development, and agricultural activities. Generally, the loss of edge forest (as proposed) is preferred over forest interior for birds. The greatest potential for negative effects on high-conservation priority bird species are on those birds that are considered forest-interior birds. Forest-interior birds favor the interior of the forest or "forest core" away from non-forested "edge" habitat. In particular, forest interior birds may find edge habitat detrimental as it creates conditions favorable to predators such as raccoons and nest parasites such as brown-headed cowbird. Forest interior birds have become the focus of conservation efforts region-wide due to long-term population declines of many of these species due to forest fragmentation.
- 2. Low Permeability Seepage Barriers are proposed in intervals in the pipe trench to prevent, or significantly reduce, dewatering of the inland wetlands via lateral conveyance along the pipe route. Disturbed areas are proposed be restored with appropriate wetland and upland seed mixes from New England Wetland Plants, Inc. Temporary biodegradable erosion control blankets will be used on all slopes exceeding 5:1 to minimize erosion during revegetation.
- 3. Excavation areas should not be left open for extended periods to minimize the potential for erosion. To minimize impacts to wetlands, the top 12-inches of soil should be removed and segregated during excavation then placed back on top when backfilled, followed by the placement of wetland seed mix.

**APPENDIX A - WETLAND PHOTOS** 



Photo 1: view of the wet meadow and approximate proposed sewer line route looking northeast



Photo 2: view of the wet meadow, wooded area, and approximate proposed sewer line route looking northeast



Photo 3: view of the wooded wetland area along the northern edge of the meadow where the sewer line is proposed



Photo 4: view of channelized conveyance in the meadow where seasonal flows are directed south

APPENDIX B - NRCS SOIL MAPPING



### MAP LEGEND

### Area of Interest (AOI)

### Area of Interest (AOI)

### Soils

Soil Map Unit Polygons



Soil Map Unit Lines



Soil Map Unit Points

### **Special Point Features**

Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



**Gravelly Spot** 



Landfill



Lava Flow

Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water
Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot

### 8

Spoil Area



Stony Spot



Very Stony Spot



Wet Spot Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



**US Routes** 



Major Roads



Local Roads

### Background



Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut, Eastern Part Survey Area Data: Version 6, Sep 16, 2025

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

### **Map Unit Legend**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
45A	Woodbridge fine sandy loam, 0 to 3 percent slopes	4.5	18.6%
45C	Woodbridge fine sandy loam, 8 to 15 percent slopes	0.6	2.5%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	7.0	28.9%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	0.2	0.8%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	5.5	22.7%
85C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes, very stony	6.4	26.4%
Totals for Area of Interest		24.3	100.0%

APPENDIX C – CTDEEP NDDB AUTOMATED SITE ASSESSMENT, DATED 11/19/2025



Generated by eNDDB on: 11/19/2025

Eric Davison Towns: Bolton

Automated Site Assessment: 1083375819

Subject: Town Center Sewage Disposal

This is an automated site assessment and not a Natural Diversity Data Base determination. The information provided represents a snapshot that can be used for general planning purposes. **This letter cannot be used to fulfill Endangered Species Act compliance requirements.** Please see information below as well as our <u>FAQs</u> describing the appropriate use and limitations of the automated Site Assessment tool.

Current data maintained by the Natural Diversity Data Base (NDDB) and housed in the DEEP ezFile portal, indicates that populations of the following State Endangered, Threatened, or Special Concern species (RCA Sec. 26-306) have been documented within or in close proximity to the area delineated. **Please see the attached table for detailed species information.** 

### HOW SITE ASSESSMENT SPECIES LISTS ARE COMPILED

Site assessment species lists include all information regarding listed species available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, landowners, private conservation groups and the scientific community. New and updated information is incorporated into the Data Base and accessed through the ezFile portal as it becomes available. The species list provided is not necessarily the result of comprehensive or site-specific field investigations.

### WHAT PURPOSE DOES THIS SITE ASSESSMENT SERVE?

A site assessment is intended to provide a snapshot of the species that may be in the vicinity of your drawn area. It may be useful in project planning or to gain an understanding of the potential for listed species to utilize the site. The list is computer generated; it was not prepared or reviewed by program staff. Biologist review of your location may result in the addition of species not provided by the automated site assessment.

### I'VE REVIEWED MY SITE ASSESSMENT, WHAT DO I DO NEXT?

If you are undertaking an activity that requires a state permit, utilizes state funding, or involves state agency action, you must demonstrate compliance with the CT Endangered Species Act. This is done through the full Natural Diversity Data Base review process. Please return to the DEEP's ezFile Portal and select Natural Diversity Data Base Review to begin this review process. Keep in mind that these detailed reviews may include additional species not identified in the automated site assessment. Program staff consider factors such as habitat characteristics, species life history and other

information to determine appropriate species of concern.

### SURVEY WORK MAY BE NECESSARY

Suitable and potentially occupied habitat may extend beyond mapped NDDB areas and unmapped areas may represent potential habitat that has not been adequately surveyed for all taxa. If you are undertaking activities that involve significant ground disturbance, converting natural lands to development, or otherwise fragmenting or disturbing large areas, we recommend conducting comprehensive biological surveys and a full site habitat characterization for areas that have not been assessed through prior biological inventories. Survey work may be required as part of the NDDB review process; completing some or all of this work up front will allow the process to proceed more efficiently.

This survey and habitat characterization should be comprehensive and not strictly limited to species included in the site assessment. Field surveys should be performed by a qualified taxonomic expert with the appropriate scientific collecting permits. Surveys should be conducted at seasonally appropriate times.

A report summarizing the results of such surveys should include:

- 1. Survey date(s) and duration.
- 2. Site descriptions and photographs.
- 3. List of component vascular plant and animal species within the survey area (including scientific binomials).
- 4. Data regarding population numbers and/or area occupied by State-listed species.
- 5. Detailed maps of the area surveyed including the survey route and locations of State listed species.
- 6. Recommendations for management and protection of State-listed species with reference to project activities.
- 7. Statement/résumé indicating the taxonomic expert's qualifications.

Site survey reports should be sent to the CT DEEP-NDDB Program (<a href="mailto:deep.nddbrequest@ct.gov">deep.nddbrequest@ct.gov</a>) for further review by program biologists.

### SENSITIVE SPECIES

Please note that, for purposes of automated site assessments, certain sensitive species are not identified beyond their taxa. Additional information will be provided for those projects that will be conducting survey work in preparation for permitting ground disturbing activities or for other activities that might necessitate survey work. For these projects, please submit a <a href="Natural Diversity Data Base Review Request">Natural Diversity Data Base Review Request</a> and we will provide information to your taxonomic expert.

### **ADDITIONAL RESOURCES**

The following resources may be helpful when planning survey work

- State Listed plant species and Natural Communities documented within each CT town
- Thirteen of Connecticut's Most Imperiled Ecosystems (1998) Metzler and Wagner
- The Vegetation of Connecticut Metzler and Barrett
- <u>Nature's Network</u> identifies opportunities for conserving and connecting intact habitats and ecosystems and supporting imperiled species.
- Connecticut's Critical Habitat map. The Critical Habitat map project contains a subset of

known important natural community types and sites in CT. Refer to <u>Resource Guide</u> for a complete description and limitations of this product.

Additional sites of Critical Habitats and important natural communities exist, some of which are documented by NDDB and some of which have not been identified, or fully mapped or field verified. You may contact NDDB prior to conducting field reviews for more comprehensive information.

This letter is computer generated from our existing records and carries no signature. If however, any clarification/error is noted, or, if you have further questions, please contact the following:

CT DEEP Bureau of Natural Resources
Wildlife Division
Natural Diversity Data Base
79 Elm Street
Hartford, CT 06106-5127
(860) 424-3011
deep.nddbrequest@ct.gov

Please include a snapshot of the map, your last name, and the subject area town when you e-mail or write. Thank you for consulting the Natural Diversity Data Base.

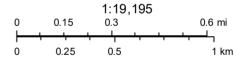
Common Name	American kestrel
Scientific Name	Falco sparverius
Listing Status <sup>1</sup>	SC
Taxa	bird
	Habitat for this bird consists of open grassy or shrubby areas with short vegetation and natural tree cavities or nest boxes for nesting. This bird returns to breed in March - July. This bird is limited by habitat in Connecticut. It can benefit from active nest box monitoring and management to decrease competition by starlings. Availability of early successional habitat benefits this species during the post fledgeling period and during migration.

<sup>&</sup>lt;sup>1</sup>E = State Endangered, T = State Threatened, SC = State Special Concern, FE = Federally Endangered, FT = Federally Threatened, NA = Not applicable.

### Town Center Sewage Disposal Map



November 19, 2025



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community