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## **Section 7**

### Appendices

*Site Plan Review Application*  
HUNNEWELL FIELD SOFTBALL  
RENOVATION PROJECT

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# Appendix 1

GEOTECHNICAL INFORMATION

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# MEMORANDUM

TO: Steven Roy

FROM: Nathaniel Parker

DATE: 03/25/2019

SUBJECT: Summary of Subsurface Investigations – Hunnewell Field Design

WSE PROJECT: 2180782.B

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This memorandum summarizes subsurface conditions encountered in three (3) deep observation holes (test pits) completed in the Hunnewell field complex in Wellesley, Massachusetts. The project site is located south of Washington Street and shown in Figure 1, attached to this memorandum.

**Subsurface Explorations** – On Monday, March 25, 2019, subsurface conditions were explored by completing three Deep Observation Hole test pits (TP-1 through TP-3) to depths up to 9.5 feet below existing grades at the approximate locations shown on Figure 1. The test pits were excavated using a Komatsu PC45MR excavator, provided and operated by the Town of Wellesley. The test pits were observed by a Weston & Sampson certified Soil Evaluator. Upon completion, each test pit was backfilled and regraded to the elevations that existed prior to the beginning of this test pitting effort.

**Subsurface Conditions** – All three test pits were completed north of the existing tennis courts shown in Figure -1. The top two feet of subsurface materials in all of the test pits generally consisted of fill and loam with various percentages of sand, gravel and cobbles. Beneath the fill/loam layers, materials consisted of silt and fine sand. Detailed descriptions of the subsurface conditions encountered in each test pit are included in the attached *Test Pit Logs*.

Groundwater was encountered in all test pits. Groundwater seepage was observed in TP-1 at approximately 2 feet below existing grade. Groundwater seepage was observed in TP-2 at approximately 3 feet below existing grade, and groundwater seepage was observed in TP-3 at approximately 4 feet below existing grade. Redoximorphic features (mottling) were observed in all test pits starting between 2.5 to 3 feet below grade. Materials in TP-1 showed a strongly reduced matrix of silty sand with percentages of iron concentrations varying between 15 and 40 percent between 2 and 3.5 feet below grade. Mottling in TP-2 and TP-3 was observed at 2 and 2.5 feet below grade and percentages of iron concentrations varied between 10 and 50 percent throughout the matrices.

**Limitations** - The information presented herein and attached is for use by the Town of Wellesley and members of the design and construction teams for the subject project only. The information can be used for estimating purposes, but our report, conclusions, and interpretations should not be construed as a warranty of the subsurface conditions and are not applicable to other sites.

Soil test pits indicate soil conditions only at specific locations and only to the depths penetrated. They do not necessarily reflect subsurface conditions that may exist between exploration locations. If subsurface conditions differing from those described are noted during the course of excavation and construction, reevaluation may be necessary.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, expressed or implied, are given.

**Attachments:**

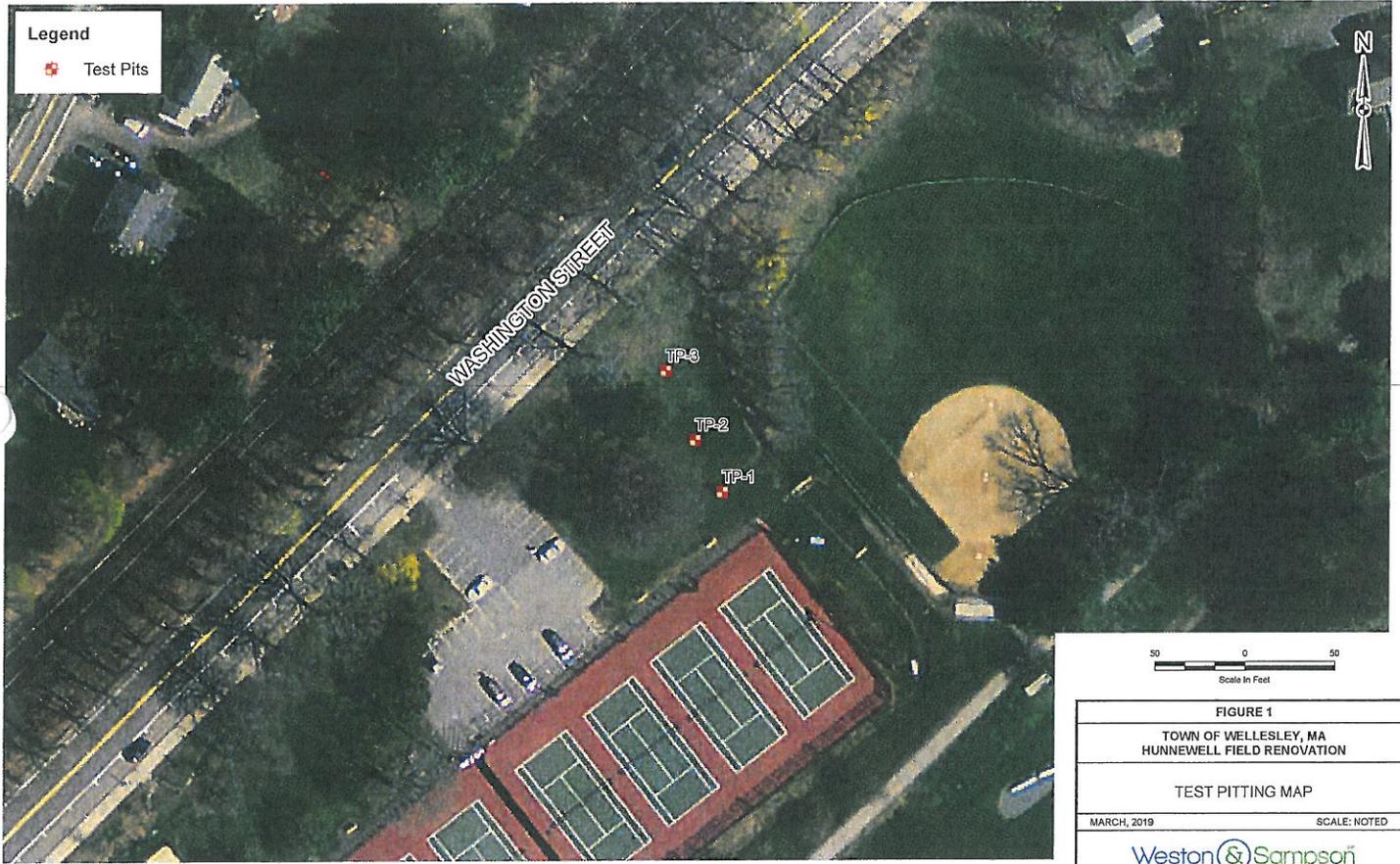
- Figure 1 – Test Pitting Map
- Test Pit Logs

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FIGURE 1  
TEST PITTING MAP

Legend

Test Pits



FILE: \\S:\61022025\61022025.dwg PLOT: 61022025.dwg PLOT DATE: 3/15/2019 10:00:00 AM PLOT SCALE: 1"=50' PLOT SHEET: 1 OF 1

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TEST PIT LOGS

**TEST PIT LOG**

PROJECT NAME/NO.	HUNNEWELL FIELD RENOVATION, 2180742.B	<b>TEST PIT NUMBER</b>	
LOCATION	WELLESLEY, MA	TP-1	
CLIENT	WELLESLEY DPW	GROUND SURFACE	
CONTRACTOR	TOWN OF WELLESLEY	FOREMAN:	TONY FERRO
OBSERVED BY	NATHANEL PARKER	DATE	3/25/19
CHECKED BY		DATE	
		ELEVATION	136.00
		DEPTH TO GROUNDWATER	24"

DEPTH BELOW GROUND SURFACE (ft.)	SOIL DESCRIPTION	STRATUM DESCRIPTION
Surface	Grass	LAWN
1	medium stiff, dark brown, SILT and Sand, little Gravel, trace glass, moist	LOAM/FILL
2	medium dense, tan, coarse SAND, little to some Gravel, trace Cobbles, trace Silt, moist	FILL
3	medium stiff, gray (5Y 5/1), fine SAND, some Silt, trace clay, moist to saturated, mottling at 2.5 ft, concentrations 10YR 5/8	SILT and FINE SAND
4		
5		
6		
7	stiff, tan, SILT and fine Sand, trace clay, moist to saturated	
8		
9		
10	Bottom of Pit	Bottom of Pit

**NOTES:** Excavator: Komatsu PC45MR  
 Seepage: < 1 gpm @ 24 inches below ground surface (bgs)  
 Caving: Moderate caving from 2 - 9 feet bgs  
 Depth to groundwater listed above indicates a perched water table.  
 Depth to the water table is approximately 9.5 feet bgs.

<b>TEST PIT NUMBER</b> TP-1


**TEST PIT LOG**

PROJECT NAME/NO.	HUNNEWELL FIELD RENOVATION, 2180742.B	TEST PIT NUMBER	TP-2
LOCATION	WELLESLEY, MA	GROUND SURFACE	ELEVATION 137.00
CLIENT	WELLESLEY DPW	DEPTH TO GROUNDWATER	36"
CONTRACTOR	TOWN OF WELLESLEY	FOREMAN:	TONY FERRO
OBSERVED BY	NATHANEL PARKER	DATE	3/25/19
CHECKED BY		DATE	

DEPTH BELOW GROUND SURFACE (ft.)	SOIL DESCRIPTION	STRATUM DESCRIPTION
Surface	Grass	LAWN
1	medium stiff, dark brown, SILT and some Sand, trace to little Gravel, trace Cobbles, trace roots, moist	FILL/LOAM
2		
3	stiff, tan, fine to medium SAND and Silt, saturated at 36", mottling at 24". Matrix is 10YR 5/3 and concentrations are 7.5YR 5/8	
4		
5		
6		SILT AND FINE SAND
7	tan SILT, moist to saturated	
8		
9		
10	Bottom of Pit	Bottom of Pit

**NOTES:** Excavator: Komatsu PC45MR  
 Seepage: < 1 gpm @ 38 inches below ground surface (bgs)  
 Caving: Severe caving from 3 - 9 feet bgs  
 Depth to groundwater listed above indicates a perched water table.  
 Depth to the water table was not observed due to frequent caving.

TEST PIT NUMBER	TP-2
	

### TEST PIT LOG

PROJECT NAME/NO.	HUNNEWELL FIELD RENOVATION, 2180742.B	<b>TEST PIT NUMBER</b>
LOCATION	WELLESLEY, MA	TP-3
CLIENT	WELLESLEY DPW	GROUND SURFACE
CONTRACTOR	TWN OF WELLESLEY FOREMAN: TONY FERRO	ELEVATION <span style="float: right;">138.00</span>
OBSERVED BY	NATHANEL PARKER DATE 3/25/19	DEPTH TO GROUNDWATER
CHECKED BY	DATE	45"

DEPTH BELOW GROUND SURFACE (ft.)	SOIL DESCRIPTION	STRATUM DESCRIPTION
Surface	Grass	<b>LAWN</b>
1	medium stiff, dark brown, SILT and some Sand, trace Gravel, trace Cobbles, trace roots, moist	<b>FILL/LOAM</b>
2		
3		
4		
5		
6	stiff, tan, SILT and fine Sand, moist to saturated with mottling at 30 inches below ground surface. Matrix of sedimentary deposit is 2.5Y 5/3 and concentrations are 5YR 4/6.	<b>SILT and Fine Sand</b>
7		
8		
9		
10	<b>Bottom of Pit</b>	<b>Bottom of Pit</b>

**NOTES:** Excavator: Komatsu PC45MR  
 Seepage: < 1 gpm @ 45 inches below ground surface (bgs)  
 Caving: Severe caving from 3 - 9 feet bgs  
 Depth to groundwater listed above indicates a perched water table.  
 Depth to the water table is approximately 8 feet bgs.

<b>TEST PIT NUMBER</b>
TP-3


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## Appendix 2

CONSTRUCTION MANAGEMENT PLAN

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# **Construction Management Plan**

**Town of Wellesley Hunnewell Field Softball Renovation Project  
438 Washington Street  
Wellesley, MA**

**May 2019**

Prepared by: Department of Public Works  
Engineering Division  
20 Municipal Way  
Wellesley, MA 02481

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## **Overview**

The intent of this plan is to identify and manage the potential construction impacts associated with the proposed Wellesley Hunnewell Field Softball Renovation Project at 438 Washington Street in Wellesley. Inherent with the construction of any project are issues involving the delivery of materials, hours of operation, traffic routes, site cleanliness, noise and general project phasing. This plan serves to address the specific issues that are anticipated with this project.

## **Plan Execution and Accountability**

The Weston & Sampson Project Manager will have responsibility for all matters pertaining to the implementation of the Construction Management Plan. The Project Manager will be identified to the Police Department, the Building Inspector, and the other appropriate persons as the contact person for the project. The Project Manager will notify any and all of these groups regarding any issues that may arise during the construction process. This plan will be included as part of the project specifications and will be contractually binding with all participants during the construction process.

The Project Manager will coordinate with the appropriate personnel responsible to establish a safety plan, schedule deliveries; spot construction-related vehicles and equipment to the site; ensure the cleanliness of the streets; and verify that all conditions of this plan and related permits are fulfilled. The Project Manager will coordinate activities and construction scheduling with the School Department, Recreation Department and notify abutters of project progress.

## **Proposed Traffic Routing and Deliveries**

General construction traffic will enter and exit the project site via a temporary construction entrance to be located off the Calvin Road parking lot which is located off Donizetti Street North and located between the Middle School and Sprague Fields.

General construction traffic will enter and exit the project site via the construction entrance, track pad areas as shown on the Site Preparation Plan, for work to be accomplished on the Hunnewell Fields. All subcontractors working on this project will be advised of procedures related to traffic routing and deliveries. As reviewed with the Town of Wellesley Police Department all deliveries will be scheduled between the hours of 7:00 am and 4:00 pm.

At this time, we anticipate the majority of the construction traffic will be traveling to the Hunnewell Field via Route 9 west (Worcester Street) from I-95. Traffic will be traveling Route 9 for approximately 3 miles and taking the turnaround onto Kingsbury Street. Traffic will then turn on to Washington Street, for access to the Hunnewell Fields. Traffic leaving the Hunnewell Fields site will reverse the route and travel on Kingsbury Street to access Route 9.

During any work that will have an impact on Public Streets, a police detail may be required. If any temporary detours are needed, it will be reviewed with the Wellesley Police Department and Wellesley Fire Department.

Over the course of the project we estimate there will be a maximum of approximately 15 construction workers at the site. We also anticipate approximately 15 construction vehicles entering the site ranging from pick-up trucks to dump trucks/flat beds delivering materials and/or hauling material offsite, as well as paving equipment.

See attached Site Preparation Plan, Sheet L2.01 & L2.02, for proposed locations for construction fencing, staging areas, and construction worker parking.

**Fenced Construction Perimeter**

A 6-foot high chain link perimeter fence will be placed around the perimeter of the construction site. Staging of the construction will be within the construction fencing when possible or near the construction site when necessary. The construction fence will be in place for the duration of construction, which is currently scheduled for July 2019 to November 2019.

**Construction Traffic Summary**

In addition to the general construction passenger traffic to and from the site, the estimated size and duration of material deliveries can be summarized in the following manner:

Tasks	Vehicles	Duration of Tasks
Drainage Structures/Piping	5 Truck Loads	6 weeks
Chain Link Fencing	5 Truck Loads	4 weeks
Remove Excess Materials	15 Truck Loads	4 weeks
Gravel, Dura Edge	15 Truck Loads	3 weeks
Seat-Wall, Brick Pavers	5 Truck Loads	3 weeks

**Hours of Operations**

Normal construction hours will be 7:00 am – 4:00 pm Monday through Friday with the vast majority of all work performed during this time. Occasional extended weekday hours and Saturdays may be required to maintain schedule. The hours of construction shall be confined to the hours of 7:00 am – 6:00 pm Monday through Friday. Work at alternate times, including weekends and Holidays, may occur only with advance approval of the Town of Wellesley Police Department and other Town Departments.

**Construction Workers**

Construction worker departure times may be staggered, with earliest departures around 3:00 pm. Anticipated arrival, departure and delivery times related to the project construction are as follows:

Workers Arrival	6:30 am – 7:00 am
Workers Departure	3:30 pm – 4:30 pm
Deliveries	7:00 am – 4:00 pm

It is estimated that the construction work force will average approximately 5 to 10 people, with an anticipated peak work force of approximately 15 people.

### **Proposed Parking**

The Town of Wellesley will provide parking accommodations within the confines of the project site. Wellesley will strongly recommend that the subcontractor's work forces share transportation to and from the site to minimize traffic. No parking or idling of trucks will be permitted on public streets at any time. Parking for the project contractor's vehicles will be located in an area away from the general public vehicles.

It is anticipated that the project area located inside the temporary construction fence will be sufficient for the majority of the contractor's employee parking, material storage and equipment storage.

### **Proposed on Site Storage of Equipment, Materials and Debris**

The Town of Wellesley has defined the access, staging and storage areas to within the area designated on the plans. The construction zone will be fenced in with a temporary 6-foot high chain link fence and access gate for the duration of the construction work. The construction fence location may be adjusted slightly from time to time to accommodate the work. The construction access gate will be locked during non-construction hours. During major excavation, the Project Contractor shall provide street cleaning to remove construction debris or mud from streets abutting the site as may be caused by the project. All appropriate steps will be taken to minimize dust generated during the grading of the site, excavation and construction and the Town of Wellesley shall require all contractors to place covers over any open trucks transporting debris and materials to or from the site.

At the start of the construction contract and prior to initiating the work of the contract, the contractor will establish the construction zone and if needed install construction trailers within that zone. Site traffic will be rerouted as required to maintain site traffic flow including the installation of signage.

Access will be required to allow for the delivery of drainage structures, drainage pipe, concrete, paving materials and soils as needed. In general, material deliveries will be scheduled on a "when needed" basis to minimize the need for on site storage. All construction materials, debris and construction offices (if needed) will be maintained within this zone.

The Project Manager will ensure the site is maintained in an organized and clean manner at all times with proper disposal of all debris. Any construction related debris will be placed in appropriate dumpsters and will be emptied on an "as needed basis" to ensure the level of trash never exceeds the capacity of the dumpsters. The Project Manager will have on-site personnel clean around the perimeter of the site at least once a week, and more often if necessary. Construction operations shall comply with the appropriate Town bylaws at all times. Noise levels shall be maintained to comply with the Town's bylaws.

### **Operational Plan During Construction**

The operational plan is to continue with the scheduled summer session during the construction work. Pedestrian access to other areas at Hunnewell Fields Complex will be maintained throughout the project construction.

### **Safety**

The Town of Wellesley has an aggressive and effective safety program. The strength of our program lies in the clear communication of our goals to employees, vendors and contractors and the strict enforcement of proper procedure. The Project Manager will coordinate closely with contractor personnel regarding safety duties including spot inspections, on-site training, seminars and keeping abreast of all safety regulations. Safety will be discussed at weekly project meetings with contractors.

All employees and subcontractors will be made aware that the use of any alcohol or drugs, as well as the use of inappropriate language, will be grounds for immediate termination and/or dismissal from the project site.

### **Project Schedule**

The proposed timetable for the project construction is July 2019 to November 2019, subject to receipt of construction permit approvals. The majority of the work will need to be accomplished during the school summer break.

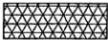
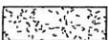
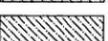
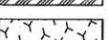
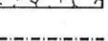
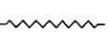
The contractor will be required to submit a construction schedule for the duration of the project. The Town of Wellesley's Project Manager will review the construction schedule for compliance with the Construction Management Plan and cause the contractor to make any necessary adjustments to the schedule to comply with the Construction Management Plan and the needs of the Town of Wellesley.

This project received approval of project funding at the 2018 Annual Town Meeting.

### **Emergency Services**

The Town of Wellesley has a 24/7 service enabling immediate response to an emergency through our network of on-call emergency contractors. Contractors must provide emergency phone numbers that can be contacted 24/7 to promptly assist in addressing any concern. The on-call person will make the appropriate response, ensuring that the required contractor and personnel remedy the situation.

**LEGEND**

-  STRIP AND DISPOSE SKINNED INFILIED, TYP.
-  TURF RENOVATION, TYP.
-  CONSTRUCTION TRACKING PAD
-  CLEAR AND GRUB
-  R&D STONE DUST COMPLETE TYP.
-  R&D CONCRETE PAD COMPLETE TYP.
-  R&D PEDESTRIAN BRIDGE COMPLETE TYP.
-  STRIP AND STOCKPILE TOPSOIL, TYP.
-  EROSION CONTROL- STRAW WATTLES
-  6' HT. CONSTRUCTION FENCE, TYP.
-  R&D DRAINAGE OUTLET, COMPLETE, TYP.
-  CONSTRUCTION ENTRANCE
-  R&D EXISTING TREE, TYP.
-  TREE PROTECTION, TYP.
-  CAP AND ABANDON UTILITY LINE
-  R&D DRAINAGE STRUCTURE
-  REMOVE & SALVAGE
-  R&D REMOVE & DISPOSE
-  R&S REMOVE & SALVAGE TYPICAL

**DEMOLITION & SITE PREPARATION NOTES**

1. THE CONTRACTOR SHALL INCLUDE IN THE BID THE COST OF REMOVING ANY EXISTING SITE FEATURES AND APPURTENANCES NECESSARY TO ACCOMPLISH THE CONSTRUCTION OF THE PROPOSED SITE IMPROVEMENTS. THE CONTRACTOR SHALL ALSO INCLUDE IN THE BID THE COST NECESSARY TO RESTORE SUCH ITEMS IF THEY ARE SCHEDULED TO REMAIN AS PART OF THE FINAL SITE IMPROVEMENTS. REFER TO PLANS TO DETERMINE EXCAVATION, DEMOLITION AND TO DETERMINE THE LOCATION OF THE PROPOSED SITE IMPROVEMENTS.
2. THE OWNER RESERVES THE RIGHT TO REVIEW ALL MATERIALS DESIGNATED FOR REMOVAL AND TO RETAIN OWNERSHIP OF SUCH MATERIALS, IF THE OWNER RETAINS ANY MATERIAL THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OWNER TO HAVE THOSE MATERIALS REMOVED OFF SITE AT NO ADDITIONAL COST.
3. UNLESS SPECIFICALLY NOTED TO BE REMOVED / SALVAGED (R&S), ALL SITE FEATURES CALLED FOR REMOVAL (REM) SHALL BE REMOVED WITH THEIR FOOTINGS, ATTACHMENTS, BASE MATERIAL, ETC. TRANSPORTED FROM THE SITE TO BE DISPOSED OF IN A LAWFUL MANNER AT AN ACCEPTABLE DISPOSAL SITE AND AT NO ADDITIONAL COST TO THE OWNER.
4. ALL EXISTING SITE FEATURES TO REMAIN SHALL BE PROTECTED THROUGHOUT THE CONSTRUCTION PERIOD. ANY FEATURES DAMAGED DURING CONSTRUCTION OPERATIONS SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST.
5. DURING EARTHWORK OPERATIONS, CONTRACTOR SHALL TAKE CARE TO NOT DISTURB EXISTING MATERIALS TO REMAIN, OUTSIDE THE LIMITS OF EXCAVATION AND BACKFILL AND SHALL TAKE WHATEVER MEASURES NECESSARY, AT THE CONTRACTOR'S EXPENSE, TO PREVENT ANY EXCAVATED MATERIAL FROM COLLAPSING. ALL BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED AS SPECIFIED TO THE SUBGRADE REQUIRED FOR THE INSTALLATION OF THE REMAINDER OF THE CONTRACT WORK.
6. IT SHALL BE THE CONTRACTOR'S OPTION, WITH CONCURRENCE OF THE OWNER, TO REUSE EXISTING GRAVEL IF IT MEETS THE REQUIREMENTS OF THE SPECIFICATIONS FOR GRAVEL BORROW.
7. 'STRIP AND REMOVE TURF' SHALL INCLUDE REMOVAL OF GRASS, SHRUBS, AND UNDERBRUSH, REMOVAL OF ROOTS, ROUGH GRADING, INSTALLATION OF LOAM (IF APPLICABLE), FINE GRADING, SEEDING AND TURF ESTABLISHMENT BY THE CONTRACTOR.
8. TREES DESIGNATED FOR REMOVAL SHALL BE TAGGED BY CONTRACTOR AND APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
9. THE STORAGE OF MATERIALS AND EQUIPMENT WILL BE PERMITTED AT LOCATIONS DESIGNATED BY OWNER OR OWNER'S REPRESENTATIVE. PROTECTION OF STORED MATERIALS AND EQUIPMENT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. LOAM / TOP SOIL DESIGNATED FOR REUSE AS GENERAL FILL SHALL BE BLENDED WITH SUITABLE BORROW MATERIAL AS SPECIFIED.
11. THE CONTRACTOR SHALL PROTECT EXISTING TREES TO REMAIN, CONTRACTOR SHALL INSTALL TREE PROTECTION BARRIER AFTER CLEARING UNDERBRUSH AND TAKE DUE CARE TO PREVENT INJURY TO TREES DURING CLEARING OPERATIONS.

Project  
TOWN OF WELLESLEY, MA



HUNNEWELL FIELD RENOVATIONS  
421 WASHINGTON ST, WELLESLEY, MA 02482

Weston & Sampson

427 Main Street,  
Suite 400, Worcester, MA 01608  
978.977.0110 800.SAMPSON  
www.westonandsampson.com

Consultants:

Revisions:

No.	Date	Description
1	02/28/2019	Revised as per comments
2	03/21/2019	Revised as per comments
3	07/26/2019	Revised as per comments
4	05/03/2019	Revised as per comments



Issued For:

PERMITTING DOCUMENTS  
NOT FOR CONSTRUCTION

Scale: AS NOTED

Date: 02 / 21 / 2019

Drawn By: KSK, JCC

Reviewed By: MSM

Approved By: MSM

W&S Project No:

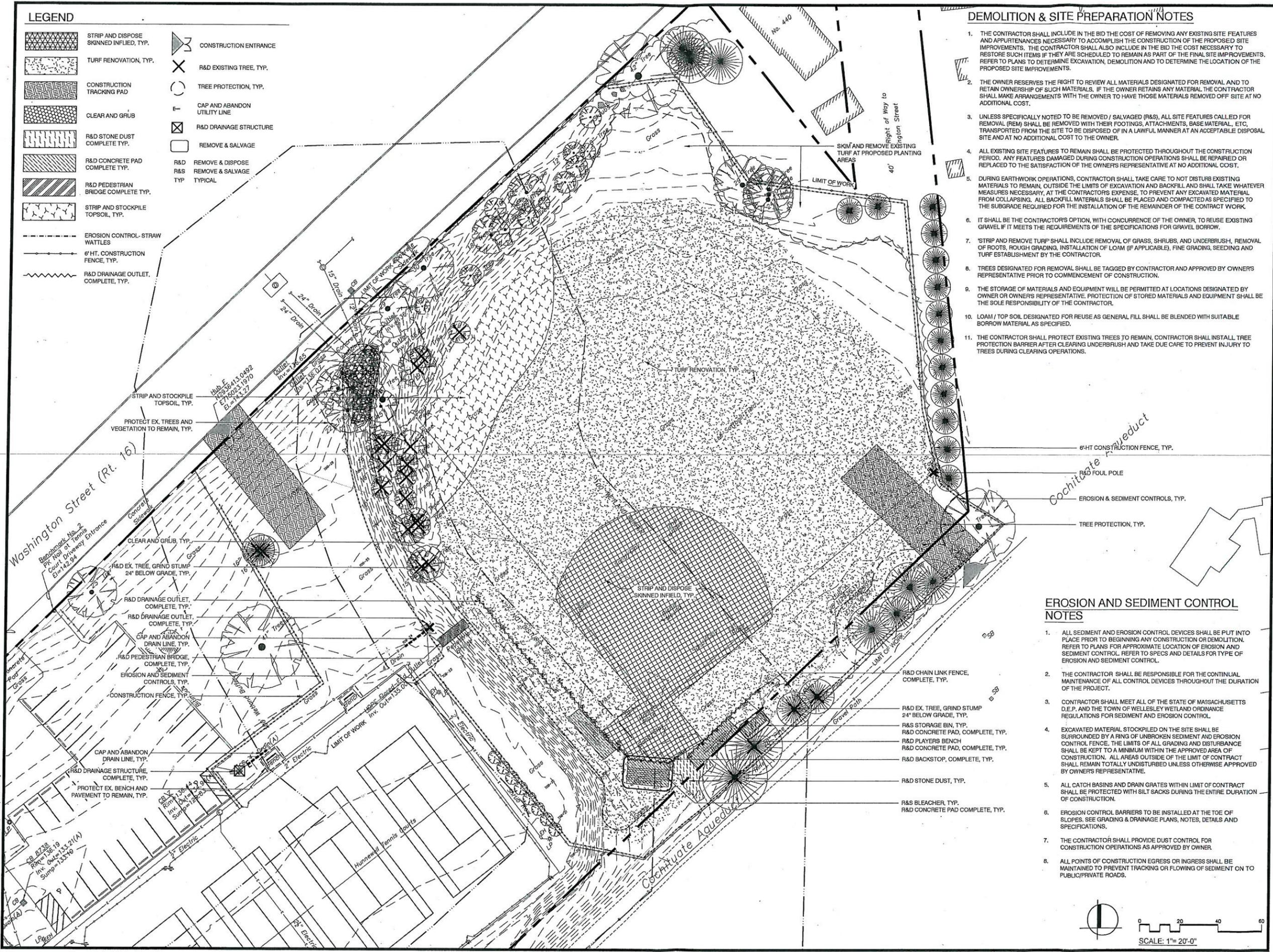
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PLAN ENLARGEMENT-  
LEE FIELD

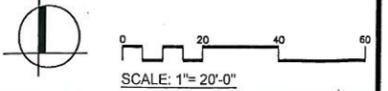
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**L2.01**



**EROSION AND SEDIMENT CONTROL NOTES**

1. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE PUT INTO PLACE PRIOR TO BEGINNING ANY CONSTRUCTION OR DEMOLITION. REFER TO PLANS FOR APPROXIMATE LOCATION OF EROSION AND SEDIMENT CONTROL. REFER TO SPECS AND DETAILS FOR TYPE OF EROSION AND SEDIMENT CONTROL.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUAL MAINTENANCE OF ALL CONTROL DEVICES THROUGHOUT THE DURATION OF THE PROJECT.
3. CONTRACTOR SHALL MEET ALL OF THE STATE OF MASSACHUSETTS D.E.P. AND THE TOWN OF WELLESLEY WETLAND ORDINANCE REGULATIONS FOR SEDIMENT AND EROSION CONTROL.
4. EXCAVATED MATERIAL STOCKPILED ON THE SITE SHALL BE SURROUNDED BY A RING OF UNBROKEN SEDIMENT AND EROSION CONTROL FENCE. THE LIMITS OF ALL GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE APPROVED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THE LIMIT OF CONTRACT SHALL REMAIN TOTALLY UNDISTURBED UNLESS OTHERWISE APPROVED BY OWNER'S REPRESENTATIVE.
5. ALL CATCH BASINS AND DRAIN GRATES WITHIN LIMIT OF CONTRACT SHALL BE PROTECTED WITH SILT SACKS DURING THE ENTIRE DURATION OF CONSTRUCTION.
6. EROSION CONTROL BARRIERS TO BE INSTALLED AT THE TOE OF SLOPES. SEE GRADING & DRAINAGE PLANS, NOTES, DETAILS AND SPECIFICATIONS.
7. THE CONTRACTOR SHALL PROVIDE DUST CONTROL FOR CONSTRUCTION OPERATIONS AS APPROVED BY OWNER.
8. ALL POINTS OF CONSTRUCTION EGRESS OR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ON TO PUBLIC/PRIVATE ROADS.





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## Appendix 3

HYDROLOGY CALCULATIONS

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# Stormwater Report

Conservation Commission  
Wellesley, Massachusetts

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## Lee Field Renovation

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**Notice of Intent**  
**Massachusetts Wetland Protection Act**  
**M.G.L. c. 131 § 40**

February 14, 2019  
(Revised March 6, 2019)

JOB NO: 2180742

Weston & Sampson<sup>SM</sup>

Weston & Sampson  
5 Centennial Drive  
Peabody, MA 01960

[www.westonandsampson.com](http://www.westonandsampson.com)  
Tel: 978-532-1900 Fax: 978-977-0100

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Checklist for Stormwater Report

Stormwater Report Summary

Attachment A - Locus Map

Attachment B - NRCS Soils Map, Soils Report, and HSG Classifications

Attachment C - HydroCAD Reports

Attachment D - Construction Period Pollution and Erosion and Sedimentation  
Control Plan

Attachment E - Long-Term Operation and Maintenance Plan

Attachment F - Critical Areas



# Checklist for Stormwater Report

## A. Introduction

**Important:** When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.<sup>1</sup> This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8<sup>2</sup>
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

<sup>1</sup> The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

<sup>2</sup> For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



# Checklist for Stormwater Report

## B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

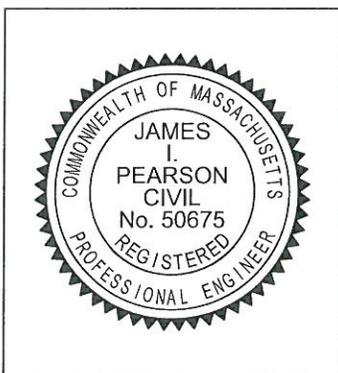
*Note:* Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

### Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



  
Signature and Date

3/6/2019

## Checklist

**Project Type:** Is the application for new development, redevelopment, or a mix of new and redevelopment?

- New development
- Redevelopment
- Mix of New Development and Redevelopment



# Checklist for Stormwater Report

---

## Checklist (continued)

**LID Measures:** Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- No disturbance to any Wetland Resource Areas
- Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
  - Credit 1
  - Credit 2
  - Credit 3
- Use of "country drainage" versus curb and gutter conveyance and pipe
- Bioretention Cells (includes Rain Gardens)
- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe): \_\_\_\_\_

### Standard 1: No New Untreated Discharges

- No new untreated discharges
- Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



# Checklist for Stormwater Report

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## Checklist (continued)

### Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

### Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
  - Static
  - Simple Dynamic
  - Dynamic Field<sup>1</sup>
- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
  - Site is comprised solely of C and D soils and/or bedrock at the land surface
  - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
  - Solid Waste Landfill pursuant to 310 CMR 19.000
  - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

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<sup>1</sup> 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



# Checklist for Stormwater Report

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## Checklist (continued)

### Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

### Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
  - Provisions for storing materials and waste products inside or under cover;
  - Vehicle washing controls;
  - Requirements for routine inspections and maintenance of stormwater BMPs;
  - Spill prevention and response plans;
  - Provisions for maintenance of lawns, gardens, and other landscaped areas;
  - Requirements for storage and use of fertilizers, herbicides, and pesticides;
  - Pet waste management provisions;
  - Provisions for operation and management of septic systems;
  - Provisions for solid waste management;
  - Snow disposal and plowing plans relative to Wetland Resource Areas;
  - Winter Road Salt and/or Sand Use and Storage restrictions;
  - Street sweeping schedules;
  - Provisions for prevention of illicit discharges to the stormwater management system;
  - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
  - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
  - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
  - Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
    - is within the Zone II or Interim Wellhead Protection Area
    - is near or to other critical areas
    - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
    - involves runoff from land uses with higher potential pollutant loads.
  - The Required Water Quality Volume is reduced through use of the LID site Design Credits.
  - Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



# Checklist for Stormwater Report

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## Checklist (continued)

### Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
  - The ½" or 1" Water Quality Volume or
  - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the proprietary BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

### Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted *prior to* the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does *not* cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has *not* been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

### Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



# Checklist for Stormwater Report

## Checklist (continued)

### Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

- The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
- Limited Project
  - Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
  - Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
  - Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
  - Bike Path and/or Foot Path
  - Redevelopment Project
  - Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

### Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
  - Construction Period Operation and Maintenance Plan;
  - Names of Persons or Entity Responsible for Plan Compliance;
  - Construction Period Pollution Prevention Measures;
  - Erosion and Sedimentation Control Plan Drawings;
  - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
  - Vegetation Planning;
  - Site Development Plan;
  - Construction Sequencing Plan;
  - Sequencing of Erosion and Sedimentation Controls;
  - Operation and Maintenance of Erosion and Sedimentation Controls;
  - Inspection Schedule;
  - Maintenance Schedule;
  - Inspection and Maintenance Log Form.
- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



# Checklist for Stormwater Report

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## Checklist (continued)

### Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- The project is **not** covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

### Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
  - Name of the stormwater management system owners;
  - Party responsible for operation and maintenance;
  - Schedule for implementation of routine and non-routine maintenance tasks;
  - Plan showing the location of all stormwater BMPs maintenance access areas;
  - Description and delineation of public safety features;
  - Estimated operation and maintenance budget; and
  - Operation and Maintenance Log Form.
- The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
  - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
  - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

### Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.

Stormwater Report  
To Be Submitted with the Notice of Intent  
(Revised March 6, 2019)

Applicant/Project Name: Town of Wellesley/Hunnewell Field Softball Renovation

Project Address: Washington Street, Wellesley MA

Application Prepared by:

Firm: Weston & Sampson, Inc.  
Registered PE James I. Pearson, P.E.

Below is an explanation concerning Standards 1-10 as they apply to the Town of Wellesley – Hunnewell Field Softball Renovation:

General:

The Lee softball field is located off of Washington Street in Wellesley (see Attachment A for locus map). The Town's goals for the project include renovating the field to improve softball facilities. Renovations will be done in a fashion that preserves the essential character and quality of natural features located within the park. This project achieves many of the goals established by the town at the outset of the project and importantly it will allow the high school girls softball team to enjoy a new level of facility parity when compared to other sports and their respective playing venues.

Standard 1: No New Untreated Discharges

The proposed project will create no new untreated discharges. No new impervious area will be created during this project.

Standard 2: Peak Rate Attenuation

There is no appreciable increase in impervious area within the project limits and there will be no increase in post-development (post-improvement) peak discharge rates versus pre-development (pre-improvement) peak discharge rates.

With the addition of approximately 4,200-sf of woodland restoration and the rehabilitation of the clay and grass playing surface, a decrease in peak discharge rates is expected. See Attachment C for peak discharge tables.

To ensure that the work incorporates the performance standards recommended in the DEP's Stormwater Management Policy, necessary erosion and sedimentation control measures will be utilized during construction. These measures will include straw bales, silt fencing, a stabilized construction entrance, and a dewatering sediment trap as depicted on the site plans.

### Standard 3: Recharge

As noted in the Standard 2 explanation, the impervious area within the project limits will not be increased by an appreciable amount at the completion of the project. Therefore, recharge rates will not change in the work area at the end of the project.

### Standard 4: Water Quality

The proposed work will not change water quality at the site. There will be no increase in stormwater flow, and the proposed redesign will not increase soil erosion. During the project, appropriate BMPs will be used to minimize sedimentation and soil erosion.

### Standard 5: Land Uses with Higher Potential Pollutant Loads (LUHPPLs)

Not Applicable. There are no LUHPPLs in the work area.

### Standard 6: Critical Areas

There will be no new discharge to critical areas. There are no critical areas within the vicinity of the project, as shown in Attachment F.

### Standard 7: Redevelopments and Other Projects Subject to the Standards Only to the Maximum Extent Practicable

This is not a limited project

### Standard 8: Construction Period Pollution Prevention and Erosion and Sediment Control

A detailed Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan is included. To ensure that the work incorporates the performance standards recommended in the DEP's Stormwater Management Policy, necessary erosion and sedimentation control measures will be utilized during construction. These measures will include straw bales, a stabilized construction entrance, and a dewatering sediment trap as depicted on the site plans.

### Standard 9: Operation and Maintenance Plan

An operations and maintenance plan is included in Attachment E of the stormwater report.

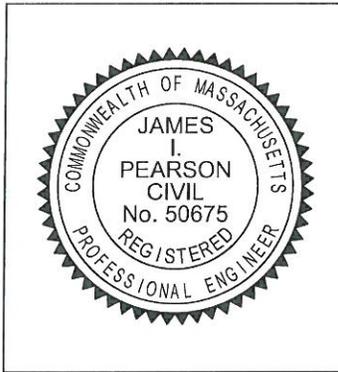
### Standard 10: Prohibition of Illicit Discharges

By the nature of the proposed work, there will be no illicit discharges. There will be no opportunity for illicit discharges into the system.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including any relevant soil evaluations, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan, the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature

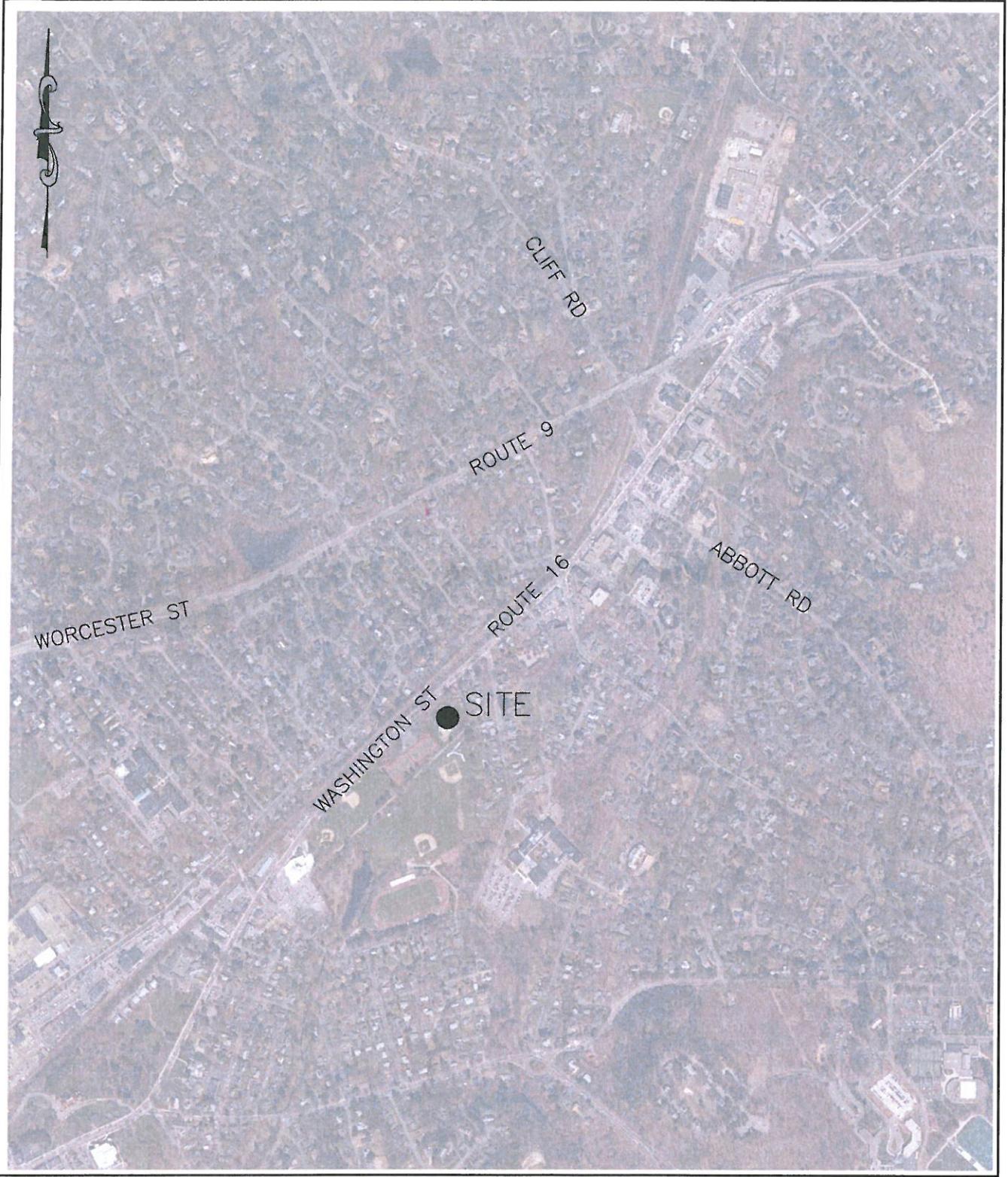


3/6/2019

Signature and Date

**Attachment A - Locus Map**

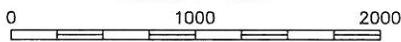
\\wse03.local\Projects\MA\Wellesley MA\Hunnewell Field Softball Renovation\CAD\XREF\XR-HydroWetland.dwg



ATTACHMENT A  
WELLESLEY, MA  
HUNNEWELL FIELD SOFTBALL RENOVATION

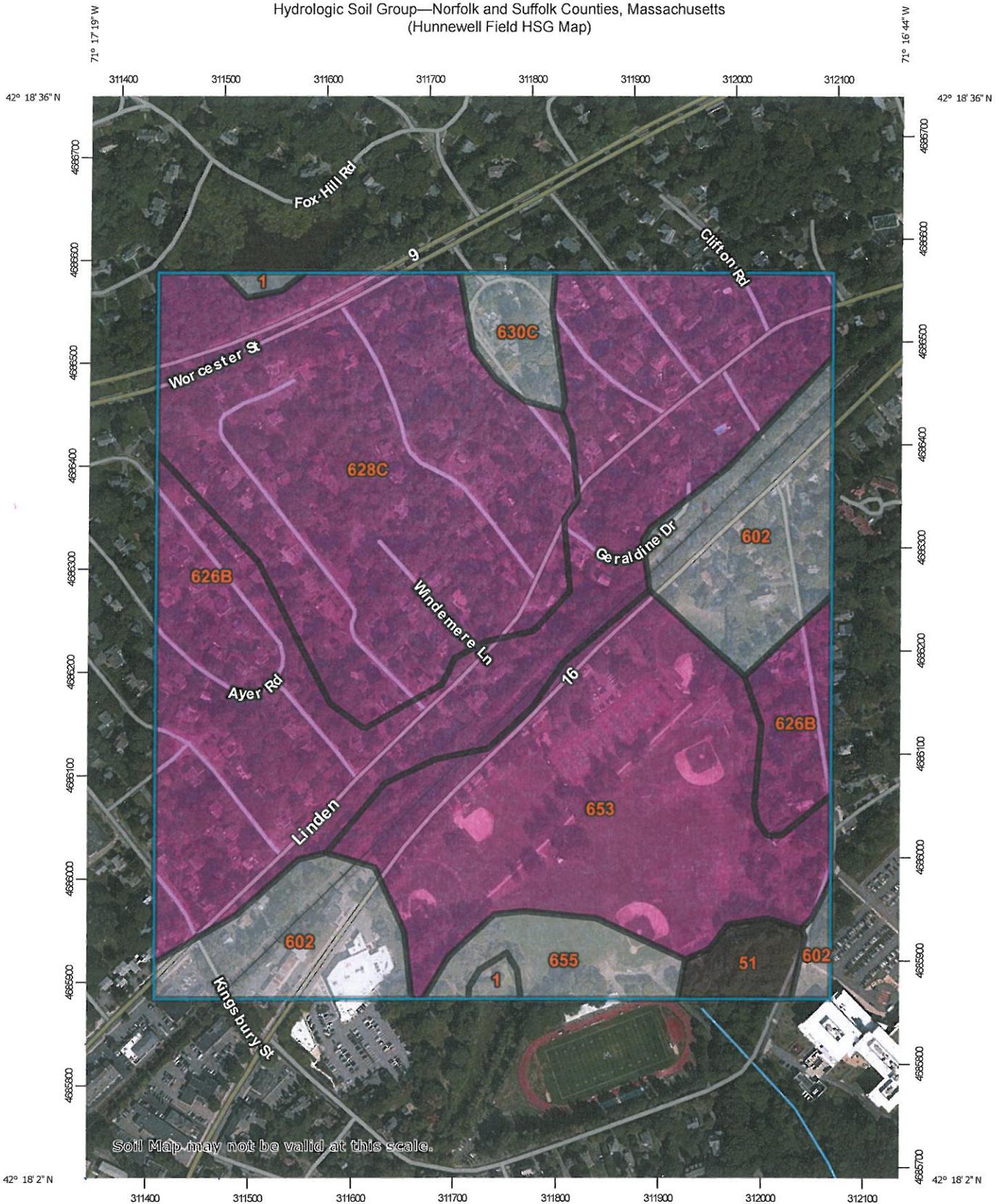
LOCUS MAP

SCALE: 1"=1000'



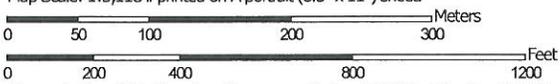
**Attachment B - NRCS Soils Map, Soils Report, and HSG  
Classifications**

Hydrologic Soil Group—Norfolk and Suffolk Counties, Massachusetts  
(Hunnewell Field HSG Map)



Soil Map may not be valid at this scale.

Map Scale: 1:5,110 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

Hydrologic Soil Group—Norfolk and Suffolk Counties, Massachusetts  
(Hunnewell Field HSG Map)

**MAP LEGEND**

- Area of Interest (AOI)**
-  Area of Interest (AOI)
- Soils**
- Soil Rating Polygons**
-  A
  -  A/D
  -  B
  -  B/D
  -  C
  -  C/D
  -  D
  -  Not rated or not available
- Soil Rating Lines**
-  A
  -  A/D
  -  B
  -  B/D
  -  C
  -  C/D
  -  D
  -  Not rated or not available
- Soil Rating Points**
-  A
  -  A/D
  -  B
  -  B/D
-  C
  -  C/D
  -  D
  -  Not rated or not available
- 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 1:25,000.

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: Norfolk and Suffolk Counties, Massachusetts  
Survey Area Data: Version 14, Sep 12, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 12, 2014—Sep 28, 2014

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.

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		0.7	0.6%
51	Swansea muck, 0 to 1 percent slopes	B/D	1.8	1.6%
602	Urban land, 0 to 15 percent slopes		14.8	12.8%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	A	36.9	32.0%
628C	Canton-Urban land complex, 3 to 15 percent slopes	A	30.9	26.8%
630C	Charlton-Hollis-Urban land complex, 3 to 15 percent slopes		2.4	2.1%
653	Udorthents, sandy	A	24.1	20.9%
655	Udorthents, wet substratum		3.6	3.2%
<b>Totals for Area of Interest</b>			<b>115.2</b>	<b>100.0%</b>

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method: Dominant Condition*

*Component Percent Cutoff: None Specified*

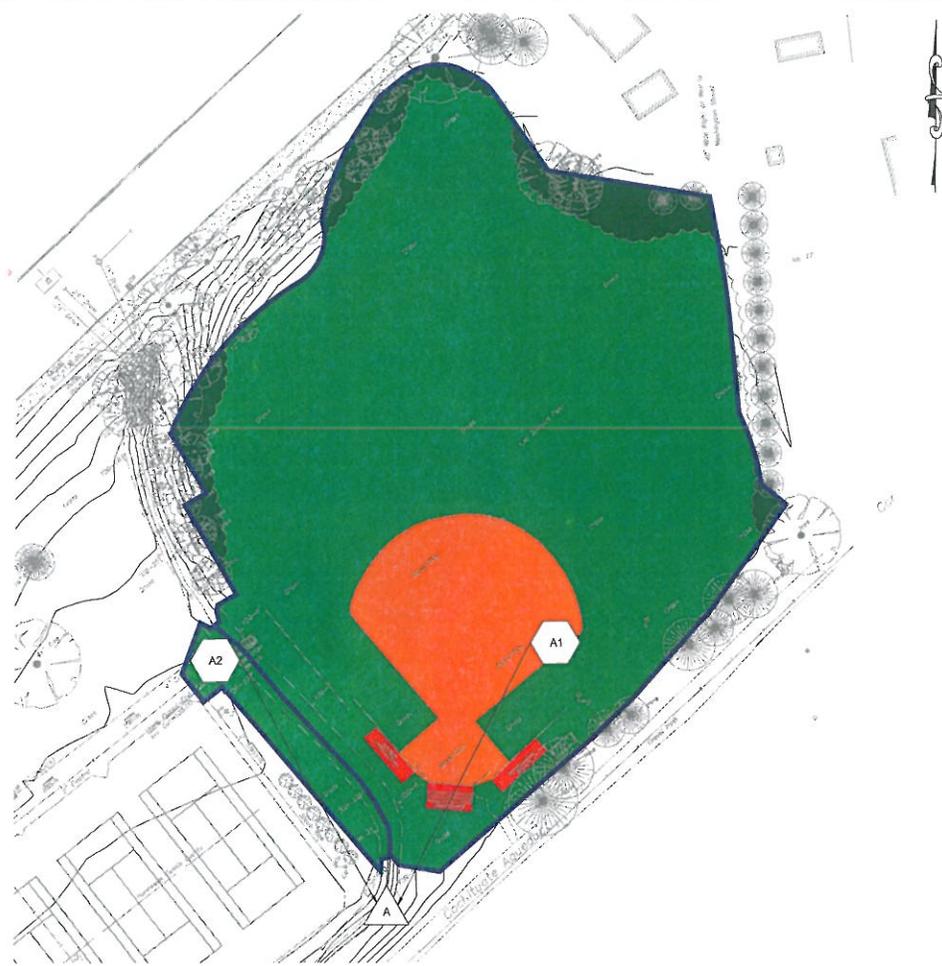
*Tie-break Rule: Higher*

**Attachment C - HydroCAD Reports**

Lee Softball Field  
Wellesley, MA  
Stormwater Discharge Summary Table  
6-Mar-19

Analysis Point	24 Hr Storm	Peak Discharge (cfs)	
		Pre-Development	Post-Development
A	2yr	0.27	0.14
	10yr	0.57	0.29
	25yr	0.93	0.55
	50yr	1.44	0.92
	100yr	2.07	1.40

- LEGEND**
- IMPERIOLYS
  - WATER-TO-LAND
  - GRASSED-LANDSCAPE AREAS
  - CLAY



**Weston & Sampson**  
 437 Main Street  
 1000-010 Worcester, MA 01515  
 P.O. Box 11110 Worcester, MA 01515  
 www.westonandsampson.com

Revisions:

No.	Date	Description

Scale: 1" = 20'-0"

Date: 6/24/13

Drawn By: JMS

Reviewed By: JP

Approved By: JP

MSD Project No:

MSD File No:

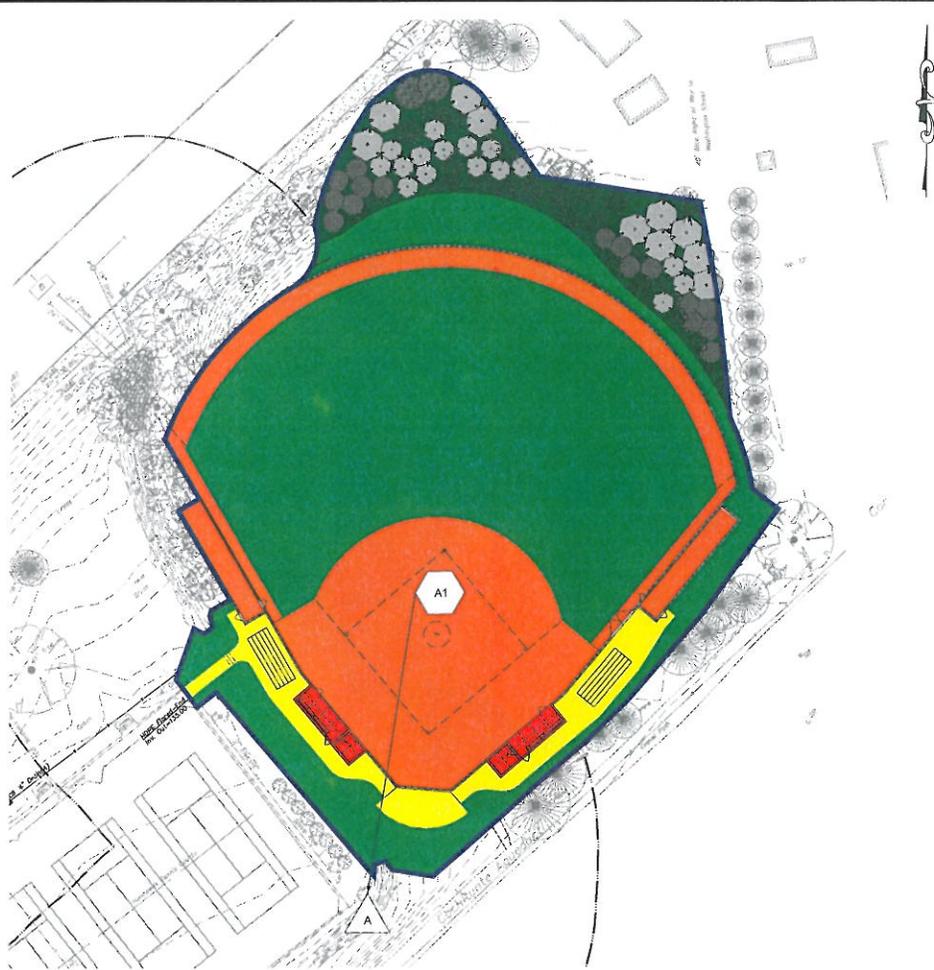
Drawing Title:

**EXISTING HYDROLOGIC MAP**

Sheet Number:

**FIG-1**

- LEGEND**
- IMPERVIOUS
  - W/OUTLAND
  - GRASSIED/LANDSCAPE AREAS
  - CLAY
  - STONE DUST





**Weston & Sampson**  
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 www.westonandsampson.com

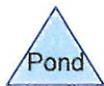
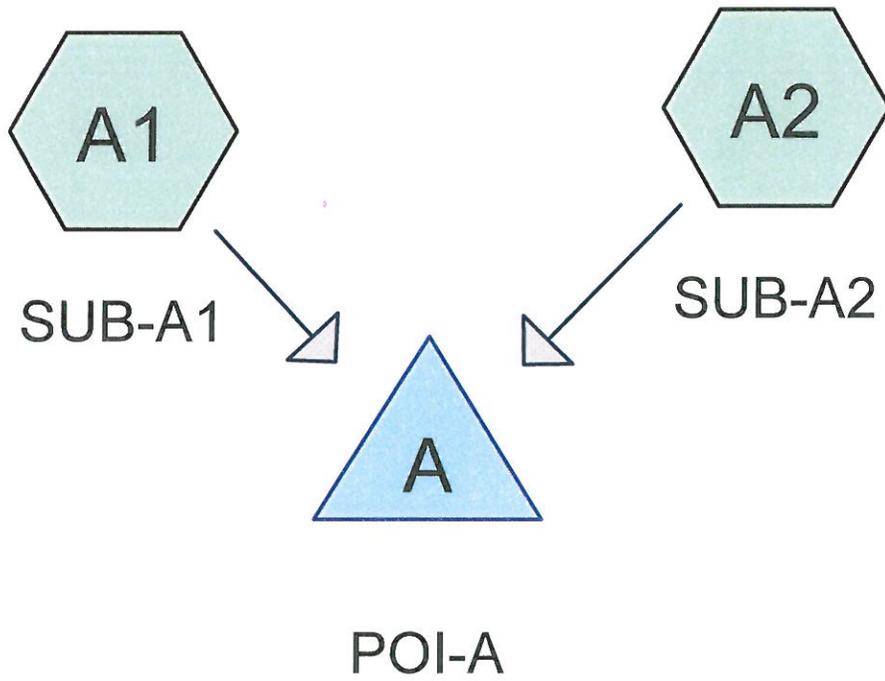
Drawn By: \_\_\_\_\_  
 Checked By: \_\_\_\_\_  
 Date: \_\_\_\_\_

Scale: 1" = 20'-0"

Date: 8/21/19  
 Drawn By: APD  
 Reviewed By: JP  
 Approved By: JP  
 V.A.C. Project No.:  
 1913-014-001

Drawing Title:  
**PROPOSED  
 HYDROLOGIC MAP**

Sheet Number:  
**FIG-2**



## HydroCAD-EX

Prepared by Weston & Sampson

HydroCAD® 10.00-20 s/n 00455 © 2017 HydroCAD Software Solutions LLC

Printed 3/6/2019

Page 2

### Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
53,443	39	>75% Grass cover, Good, HSG A (A1, A2)
7,890	77	Fallow, bare soil, HSG A (A1)
656	98	Unconnected pavement, HSG A (A1)
4,121	32	Woods/grass comb., Good, HSG A (A1)
<b>66,110</b>	<b>44</b>	<b>TOTAL AREA</b>

# HydroCAD-EX

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## Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
66,110	HSG A	A1, A2
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
<b>66,110</b>		<b>TOTAL AREA</b>

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## Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
53,443	0	0	0	0	53,443	>75% Grass cover, Good
7,890	0	0	0	0	7,890	Fallow, bare soil
656	0	0	0	0	656	Unconnected pavement
4,121	0	0	0	0	4,121	Woods/grass comb., Good
<b>66,110</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>66,110</b>	<b>TOTAL AREA</b>

S  
N

**HydroCAD-EX**

Type III 24-hr 2YR Rainfall=3.33"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentA1: SUB-A1**

Runoff Area=63,505 sf 1.03% Impervious Runoff Depth=0.20"  
Flow Length=304' Tc=10.8 min CN=WQ Runoff=0.27 cfs 1,039 cf

**SubcatchmentA2: SUB-A2**

Runoff Area=2,605 sf 0.00% Impervious Runoff Depth=0.00"  
Tc=6.0 min CN=39 Runoff=0.00 cfs 1 cf

**Pond A: POI-A**

Inflow=0.27 cfs 1,039 cf  
Primary=0.27 cfs 1,039 cf

**Total Runoff Area = 66,110 sf Runoff Volume = 1,039 cf Average Runoff Depth = 0.19"**  
**99.01% Pervious = 65,454 sf 0.99% Impervious = 656 sf**

**HydroCAD-EX**

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Type III 24-hr 2YR Rainfall=3.33"

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**Summary for Subcatchment A1: SUB-A1**

Runoff = 0.27 cfs @ 12.16 hrs, Volume= 1,039 cf, Depth= 0.20"

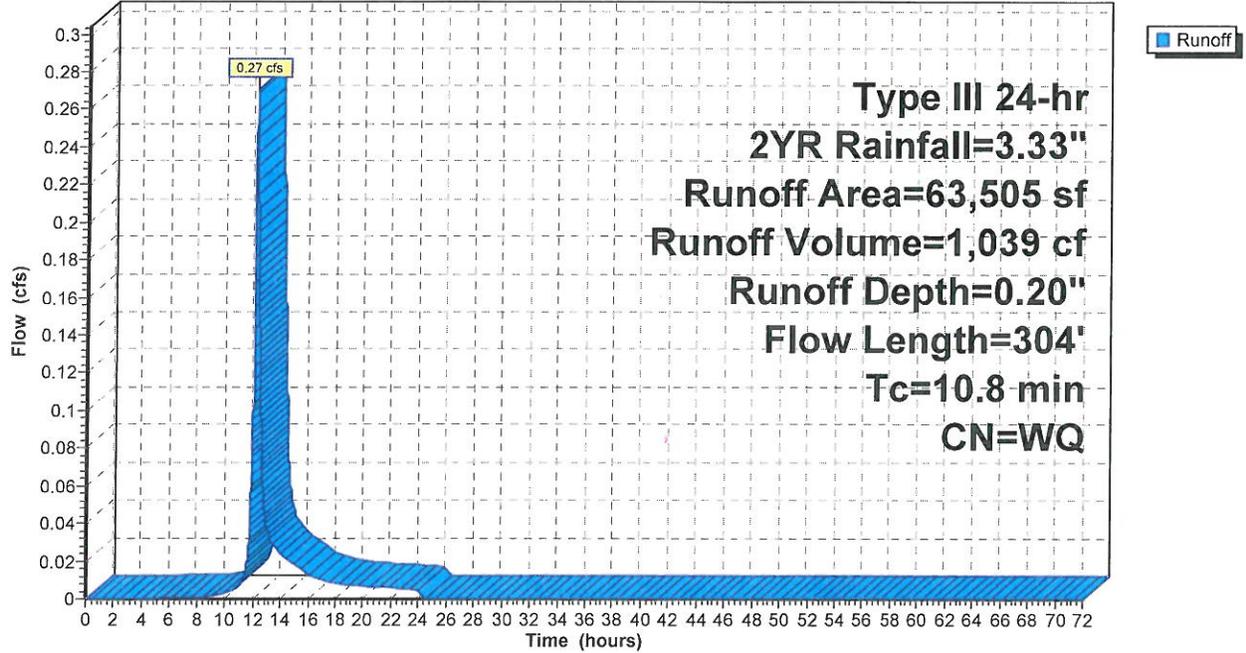
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2YR Rainfall=3.33"

Area (sf)	CN	Description
656	98	Unconnected pavement, HSG A
4,121	32	Woods/grass comb., Good, HSG A
7,890	77	Fallow, bare soil, HSG A
50,838	39	>75% Grass cover, Good, HSG A
63,505		Weighted Average
62,849		98.97% Pervious Area
656		1.03% Impervious Area
656		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.10"
0.3	33	0.0600	1.71		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
5.6	167	0.0050	0.49		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.5	33	0.0300	1.21		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	21	0.1400	2.62		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
10.8	304	Total			

### Subcatchment A1: SUB-A1

Hydrograph



**Summary for Subcatchment A2: SUB-A2**

Runoff = 0.00 cfs @ 24.01 hrs, Volume= 1 cf, Depth= 0.00"

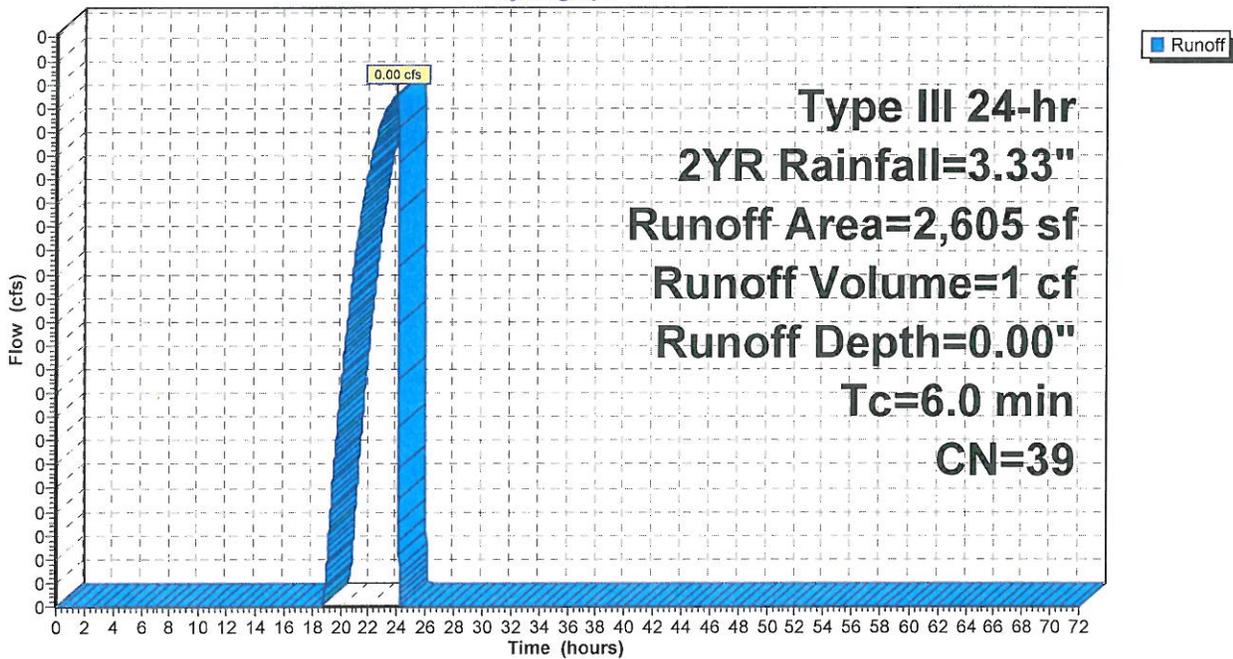
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2YR Rainfall=3.33"

Area (sf)	CN	Description
2,605	39	>75% Grass cover, Good, HSG A
2,605		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

**Subcatchment A2: SUB-A2**

Hydrograph



### Summary for Pond A: POI-A

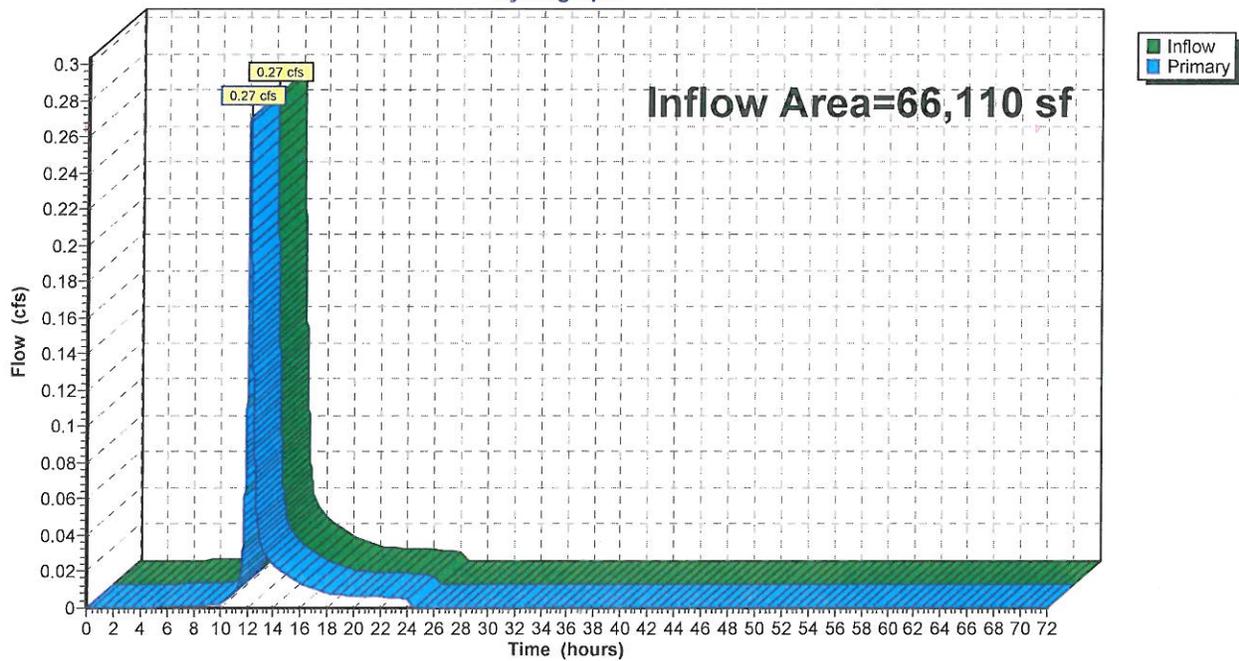
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 66,110 sf, 0.99% Impervious, Inflow Depth = 0.19" for 2YR event  
Inflow = 0.27 cfs @ 12.16 hrs, Volume= 1,039 cf  
Primary = 0.27 cfs @ 12.16 hrs, Volume= 1,039 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Pond A: POI-A

Hydrograph



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Type III 24-hr 10YR Rainfall=5.21"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentA1: SUB-A1**

Runoff Area=63,505 sf 1.03% Impervious Runoff Depth=0.60"  
Flow Length=304' Tc=10.8 min CN=WQ Runoff=0.57 cfs 3,163 cf

**SubcatchmentA2: SUB-A2**

Runoff Area=2,605 sf 0.00% Impervious Runoff Depth=0.24"  
Tc=6.0 min CN=39 Runoff=0.00 cfs 53 cf

**Pond A: POI-A**

Inflow=0.57 cfs 3,216 cf  
Primary=0.57 cfs 3,216 cf

**Total Runoff Area = 66,110 sf Runoff Volume = 3,216 cf Average Runoff Depth = 0.58"**  
**99.01% Pervious = 65,454 sf 0.99% Impervious = 656 sf**

**HydroCAD-EX**

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Type III 24-hr 10YR Rainfall=5.21"

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**Summary for Subcatchment A1: SUB-A1**

Runoff = 0.57 cfs @ 12.15 hrs, Volume= 3,163 cf, Depth= 0.60"

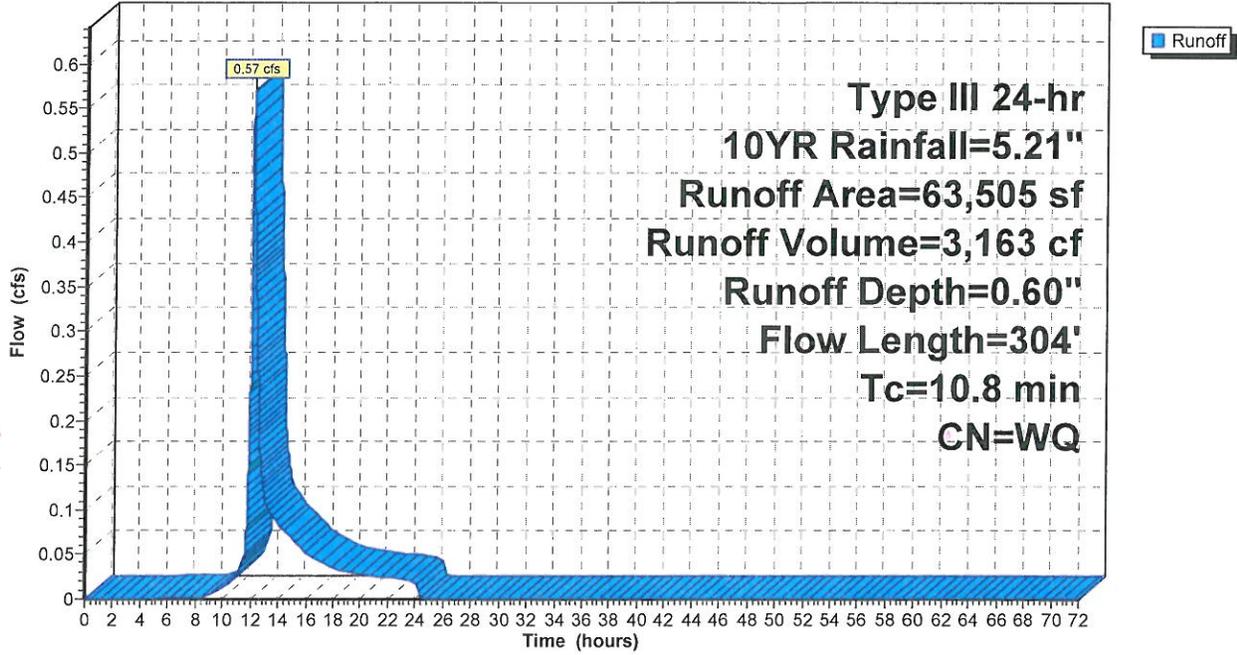
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10YR Rainfall=5.21"

Area (sf)	CN	Description
656	98	Unconnected pavement, HSG A
4,121	32	Woods/grass comb., Good, HSG A
7,890	77	Fallow, bare soil, HSG A
50,838	39	>75% Grass cover, Good, HSG A
63,505		Weighted Average
62,849		98.97% Pervious Area
656		1.03% Impervious Area
656		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.10"
0.3	33	0.0600	1.71		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
5.6	167	0.0050	0.49		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.5	33	0.0300	1.21		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	21	0.1400	2.62		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
10.8	304	Total			

Subcatchment A1: SUB-A1

Hydrograph





### Summary for Pond A: POI-A

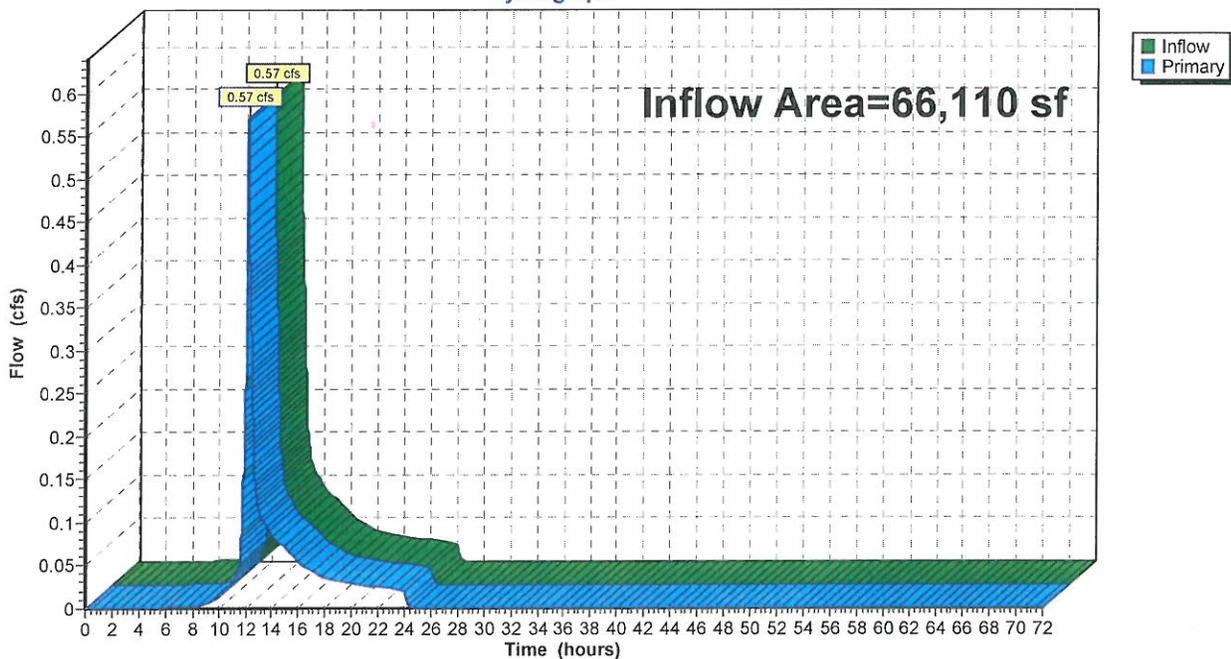
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 66,110 sf, 0.99% Impervious, Inflow Depth = 0.58" for 10YR event  
Inflow = 0.57 cfs @ 12.15 hrs, Volume= 3,216 cf  
Primary = 0.57 cfs @ 12.15 hrs, Volume= 3,216 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Pond A: POI-A

Hydrograph



**HydroCAD-EX**

Type III 24-hr 25YR Rainfall=6.39"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentA1: SUB-A1**

Runoff Area=63,505 sf 1.03% Impervious Runoff Depth=1.00"  
Flow Length=304' Tc=10.8 min CN=WQ Runoff=0.92 cfs 5,301 cf

**SubcatchmentA2: SUB-A2**

Runoff Area=2,605 sf 0.00% Impervious Runoff Depth=0.56"  
Tc=6.0 min CN=39 Runoff=0.02 cfs 122 cf

**Pond A: POI-A**

Inflow=0.93 cfs 5,423 cf  
Primary=0.93 cfs 5,423 cf

**Total Runoff Area = 66,110 sf Runoff Volume = 5,423 cf Average Runoff Depth = 0.98"**  
**99.01% Pervious = 65,454 sf 0.99% Impervious = 656 sf**

**Summary for Subcatchment A1: SUB-A1**

Runoff = 0.92 cfs @ 12.18 hrs, Volume= 5,301 cf, Depth= 1.00"

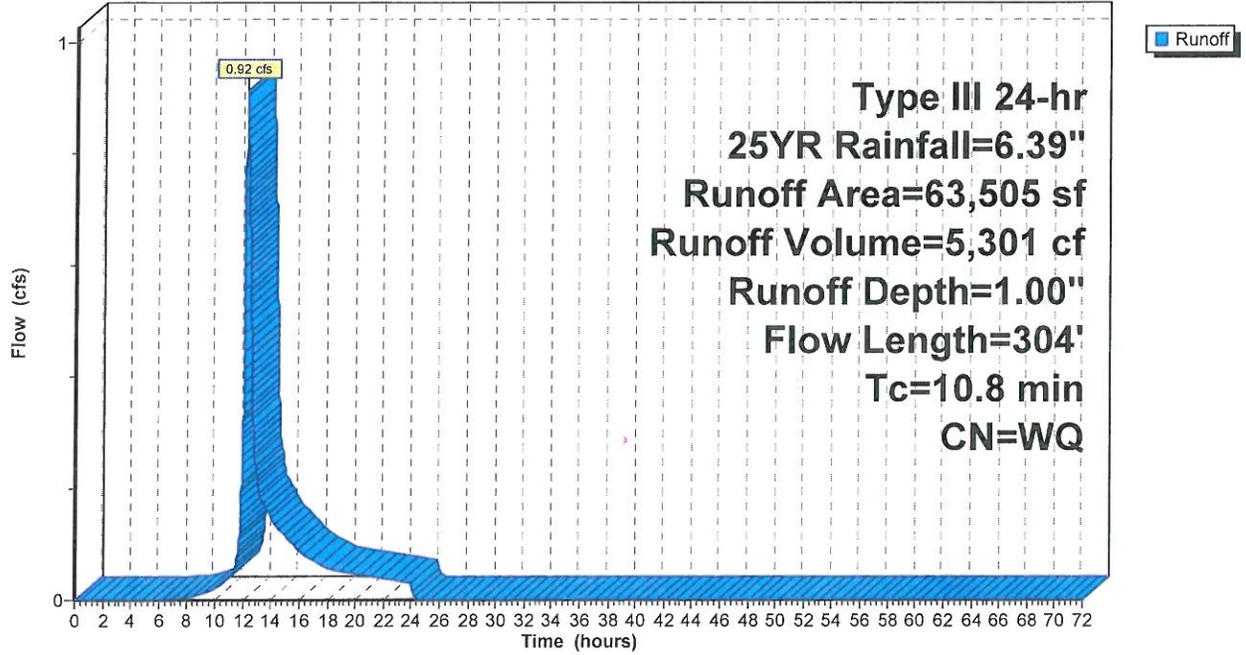
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25YR Rainfall=6.39"

Area (sf)	CN	Description
656	98	Unconnected pavement, HSG A
4,121	32	Woods/grass comb., Good, HSG A
7,890	77	Fallow, bare soil, HSG A
50,838	39	>75% Grass cover, Good, HSG A
63,505		Weighted Average
62,849		98.97% Pervious Area
656		1.03% Impervious Area
656		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.10"
0.3	33	0.0600	1.71		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
5.6	167	0.0050	0.49		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.5	33	0.0300	1.21		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	21	0.1400	2.62		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
10.8	304	Total			

Subcatchment A1: SUB-A1

Hydrograph



**Summary for Subcatchment A2: SUB-A2**

Runoff = 0.02 cfs @ 12.30 hrs, Volume= 122 cf, Depth= 0.56"

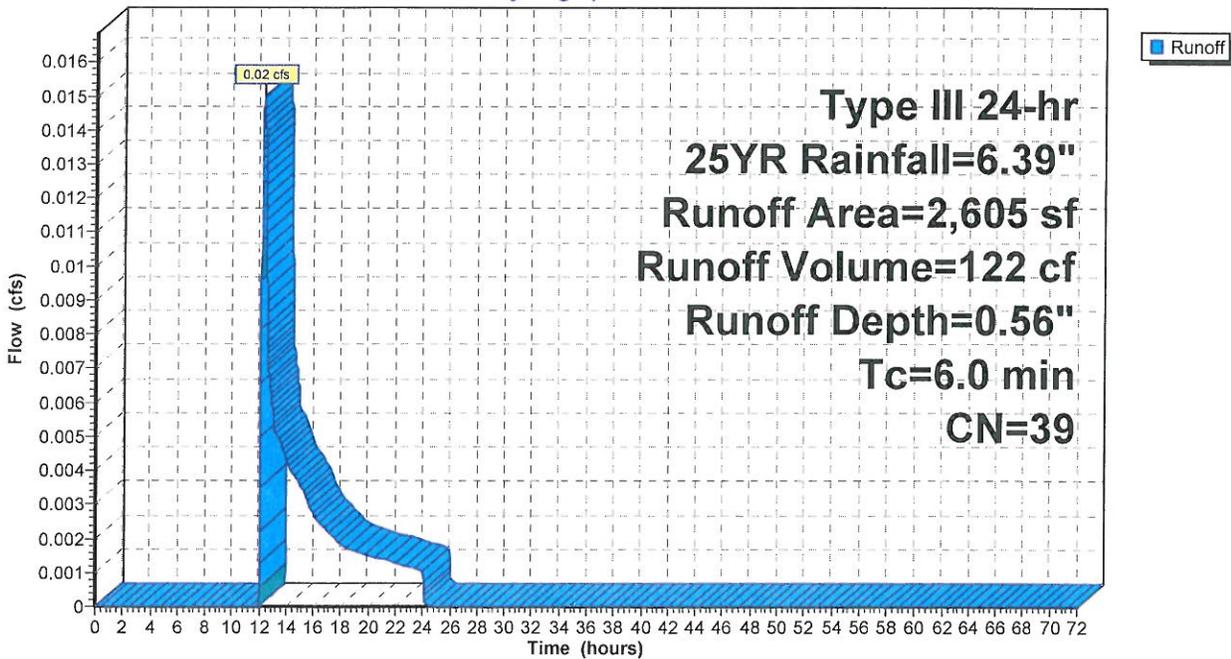
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25YR Rainfall=6.39"

Area (sf)	CN	Description
2,605	39	>75% Grass cover, Good, HSG A
2,605		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

**Subcatchment A2: SUB-A2**

Hydrograph



### Summary for Pond A: POI-A

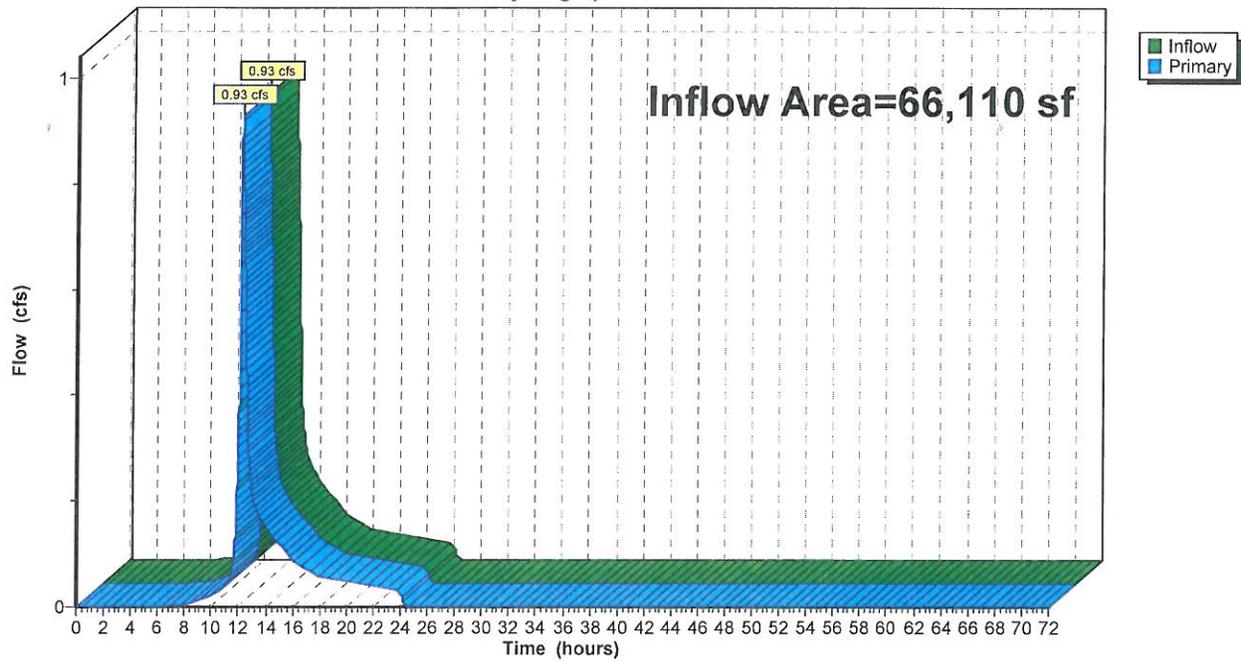
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 66,110 sf, 0.99% Impervious, Inflow Depth = 0.98" for 25YR event  
Inflow = 0.93 cfs @ 12.18 hrs, Volume= 5,423 cf  
Primary = 0.93 cfs @ 12.18 hrs, Volume= 5,423 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Pond A: POI-A

Hydrograph



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Type III 24-hr 50YR Rainfall=7.30"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentA1: SUB-A1**

Runoff Area=63,505 sf 1.03% Impervious Runoff Depth=1.38"  
Flow Length=304' Tc=10.8 min CN=WQ Runoff=1.41 cfs 7,287 cf

**SubcatchmentA2: SUB-A2**

Runoff Area=2,605 sf 0.00% Impervious Runoff Depth=0.88"  
Tc=6.0 min CN=39 Runoff=0.03 cfs 191 cf

**Pond A: POI-A**

Inflow=1.44 cfs 7,478 cf  
Primary=1.44 cfs 7,478 cf

**Total Runoff Area = 66,110 sf Runoff Volume = 7,478 cf Average Runoff Depth = 1.36"**  
**99.01% Pervious = 65,454 sf 0.99% Impervious = 656 sf**

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Type III 24-hr 50YR Rainfall=7.30"

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**Summary for Subcatchment A1: SUB-A1**

Runoff = 1.41 cfs @ 12.18 hrs, Volume= 7,287 cf, Depth= 1.38"

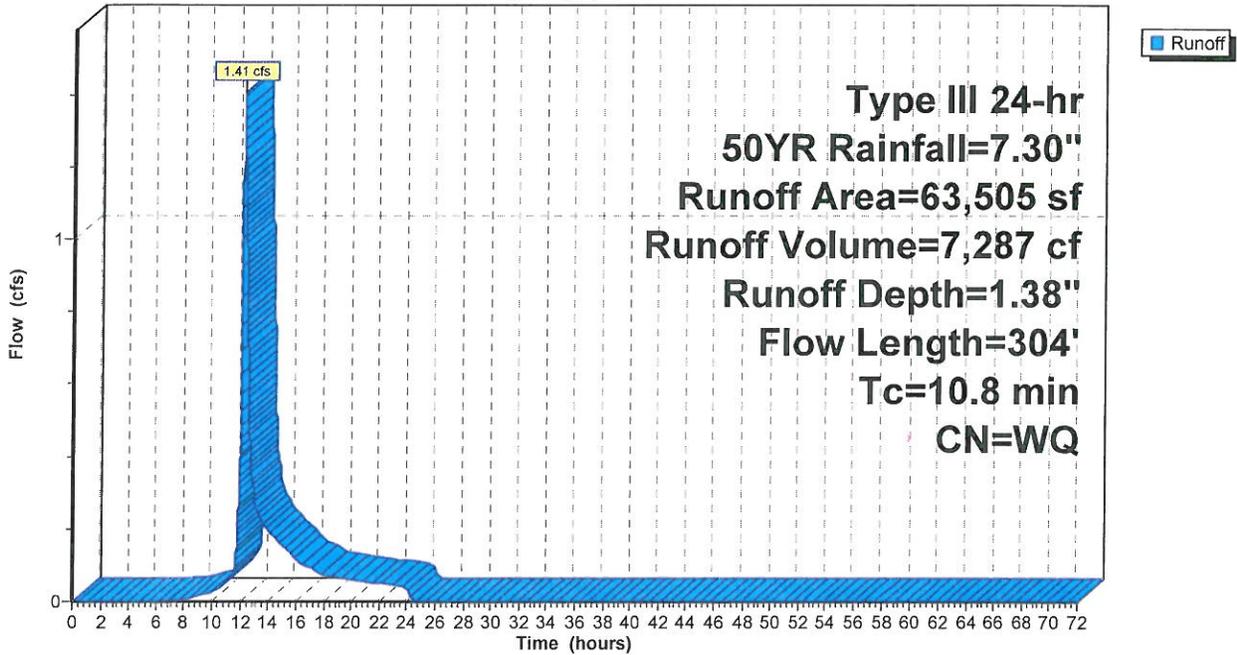
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
Type III 24-hr 50YR Rainfall=7.30"

Area (sf)	CN	Description
656	98	Unconnected pavement, HSG A
4,121	32	Woods/grass comb., Good, HSG A
7,890	77	Fallow, bare soil, HSG A
50,838	39	>75% Grass cover, Good, HSG A
63,505		Weighted Average
62,849		98.97% Pervious Area
656		1.03% Impervious Area
656		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.10"
0.3	33	0.0600	1.71		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
5.6	167	0.0050	0.49		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.5	33	0.0300	1.21		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	21	0.1400	2.62		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
10.8	304	Total			

**Subcatchment A1: SUB-A1**

Hydrograph



**Summary for Subcatchment A2: SUB-A2**

Runoff = 0.03 cfs @ 12.13 hrs, Volume= 191 cf, Depth= 0.88"

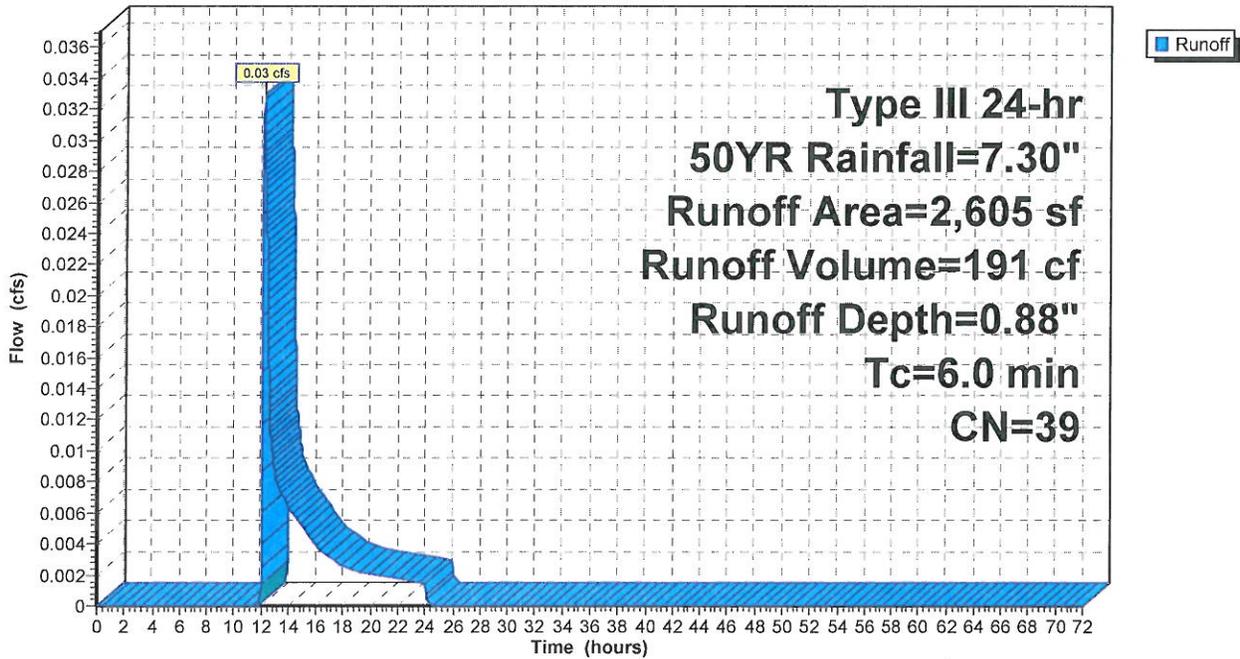
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50YR Rainfall=7.30"

Area (sf)	CN	Description
2,605	39	>75% Grass cover, Good, HSG A
2,605		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

**Subcatchment A2: SUB-A2**

Hydrograph



### Summary for Pond A: POI-A

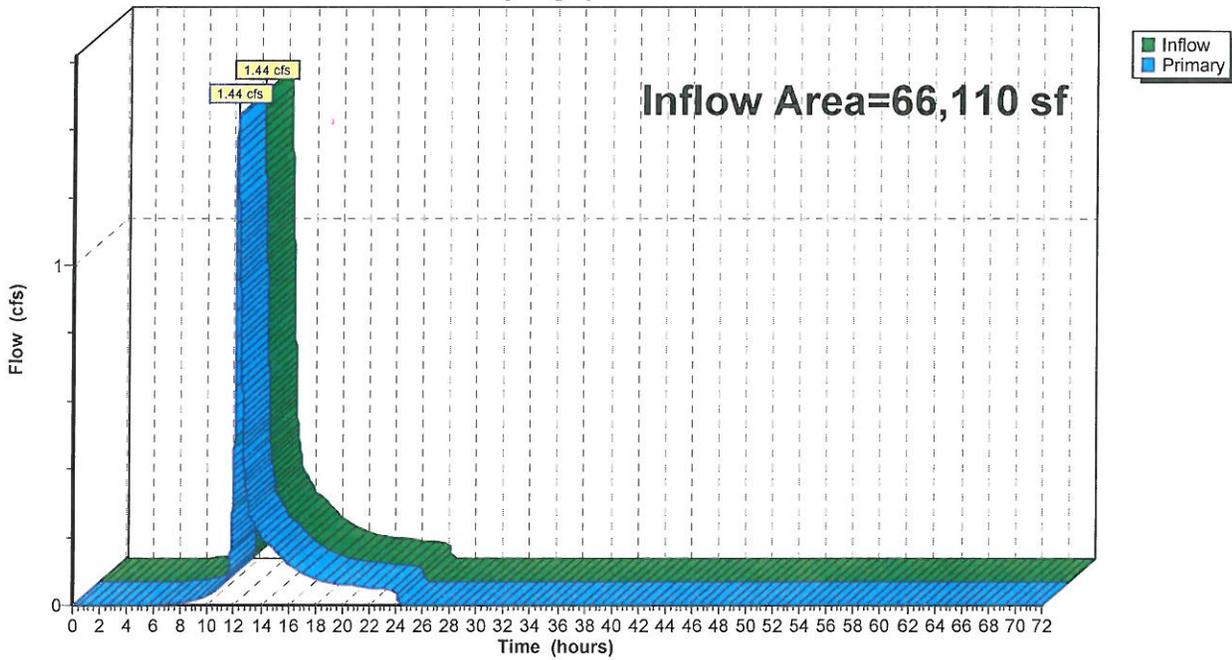
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 66,110 sf, 0.99% Impervious, Inflow Depth = 1.36" for 50YR event  
Inflow = 1.44 cfs @ 12.18 hrs, Volume= 7,478 cf  
Primary = 1.44 cfs @ 12.18 hrs, Volume= 7,478 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Pond A: POI-A

Hydrograph



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Type III 24-hr 100YR Rainfall=8.21"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentA1: SUB-A1**

Runoff Area=63,505 sf 1.03% Impervious Runoff Depth=1.80"  
Flow Length=304' Tc=10.8 min CN=WQ Runoff=2.02 cfs 9,524 cf

**SubcatchmentA2: SUB-A2**

Runoff Area=2,605 sf 0.00% Impervious Runoff Depth=1.25"  
Tc=6.0 min CN=39 Runoff=0.06 cfs 271 cf

**Pond A: POI-A**

Inflow=2.07 cfs 9,794 cf  
Primary=2.07 cfs 9,794 cf

**Total Runoff Area = 66,110 sf Runoff Volume = 9,794 cf Average Runoff Depth = 1.78"**  
**99.01% Pervious = 65,454 sf 0.99% Impervious = 656 sf**

**Summary for Subcatchment A1: SUB-A1**

Runoff = 2.02 cfs @ 12.17 hrs, Volume= 9,524 cf, Depth= 1.80"

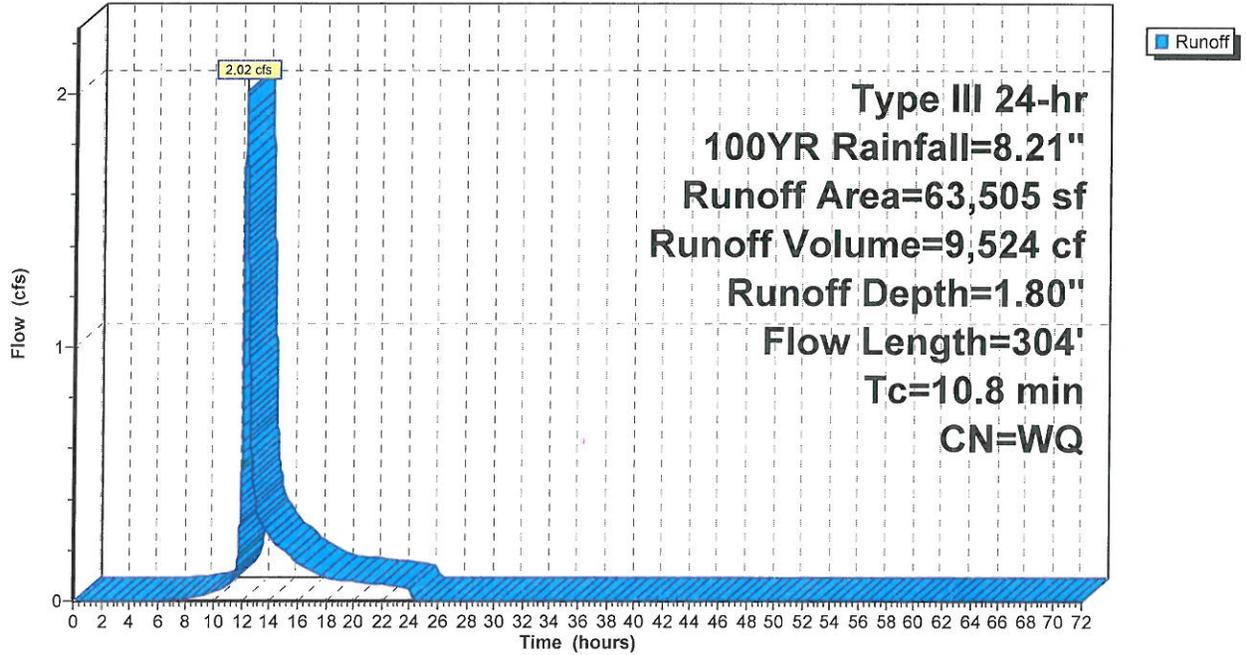
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 100YR Rainfall=8.21"

Area (sf)	CN	Description
656	98	Unconnected pavement, HSG A
4,121	32	Woods/grass comb., Good, HSG A
7,890	77	Fallow, bare soil, HSG A
50,838	39	>75% Grass cover, Good, HSG A
63,505		Weighted Average
62,849		98.97% Pervious Area
656		1.03% Impervious Area
656		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.10"
0.3	33	0.0600	1.71		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
5.6	167	0.0050	0.49		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.5	33	0.0300	1.21		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	21	0.1400	2.62		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
10.8	304	Total			

### Subcatchment A1: SUB-A1

Hydrograph



**Summary for Subcatchment A2: SUB-A2**

Runoff = 0.06 cfs @ 12.12 hrs, Volume= 271 cf, Depth= 1.25"

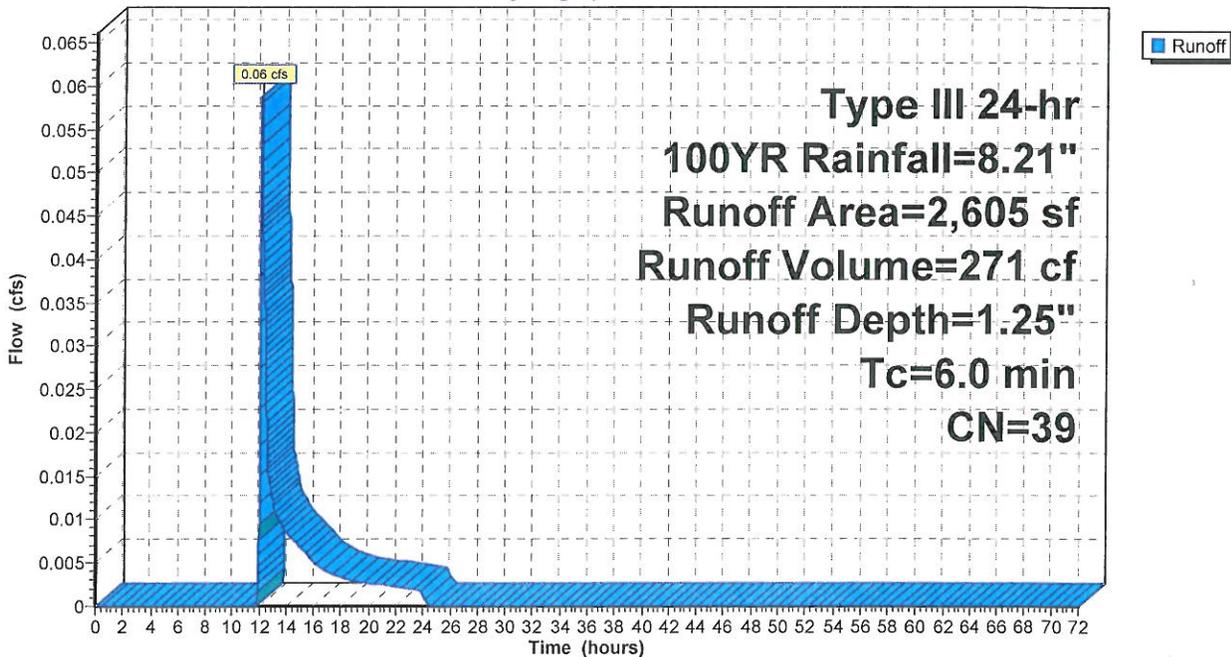
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100YR Rainfall=8.21"

Area (sf)	CN	Description
2,605	39	>75% Grass cover, Good, HSG A
2,605		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

**Subcatchment A2: SUB-A2**

Hydrograph



### Summary for Pond A: POI-A

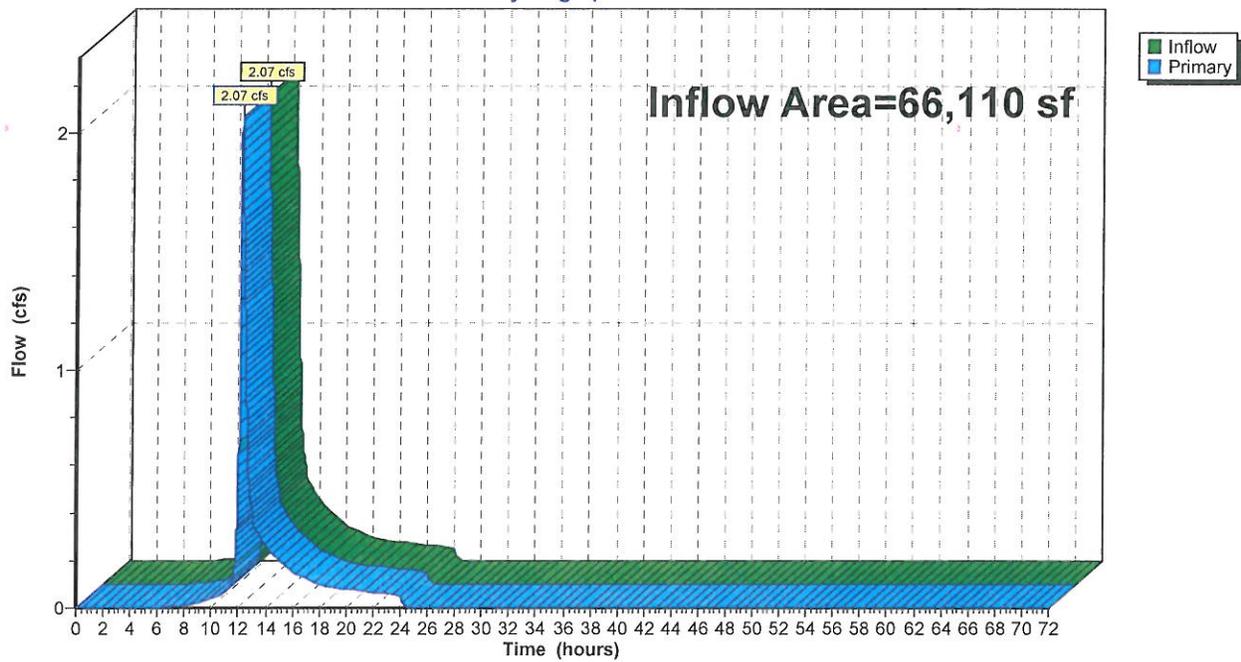
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 66,110 sf, 0.99% Impervious, Inflow Depth = 1.78" for 100YR event  
Inflow = 2.07 cfs @ 12.17 hrs, Volume= 9,794 cf  
Primary = 2.07 cfs @ 12.17 hrs, Volume= 9,794 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

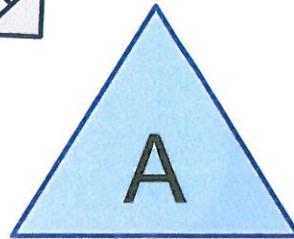
### Pond A: POI-A

Hydrograph

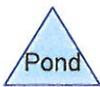




SUB-A1



POI-A



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### Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
52,939	39	>75% Grass cover, Good, HSG A (A1)
3,941	76	Gravel roads, HSG A (A1)
880	98	Unconnected pavement, HSG A (A1)
8,350	32	Woods/grass comb., Good, HSG A (A1)
<b>66,110</b>	<b>41</b>	<b>TOTAL AREA</b>

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## Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
66,110	HSG A	A1
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
<b>66,110</b>		<b>TOTAL AREA</b>

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## Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
52,939	0	0	0	0	52,939	>75% Grass cover, Good
3,941	0	0	0	0	3,941	Gravel roads
880	0	0	0	0	880	Unconnected pavement
8,350	0	0	0	0	8,350	Woods/grass comb., Good
<b>66,110</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>66,110</b>	<b>TOTAL AREA</b>

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N

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Type III 24-hr 2YR Rainfall=3.33"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentA1: SUB-A1**

Runoff Area=66,110 sf 1.33% Impervious Runoff Depth=0.12"  
Flow Length=296' Tc=16.4 min CN=WQ Runoff=0.14 cfs 647 cf

**Pond A: POI-A**

Inflow=0.14 cfs 647 cf  
Primary=0.14 cfs 647 cf

**Total Runoff Area = 66,110 sf Runoff Volume = 647 cf Average Runoff Depth = 0.12"**  
**98.67% Pervious = 65,230 sf 1.33% Impervious = 880 sf**

**Summary for Subcatchment A1: SUB-A1**

Runoff = 0.14 cfs @ 12.23 hrs, Volume= 647 cf, Depth= 0.12"

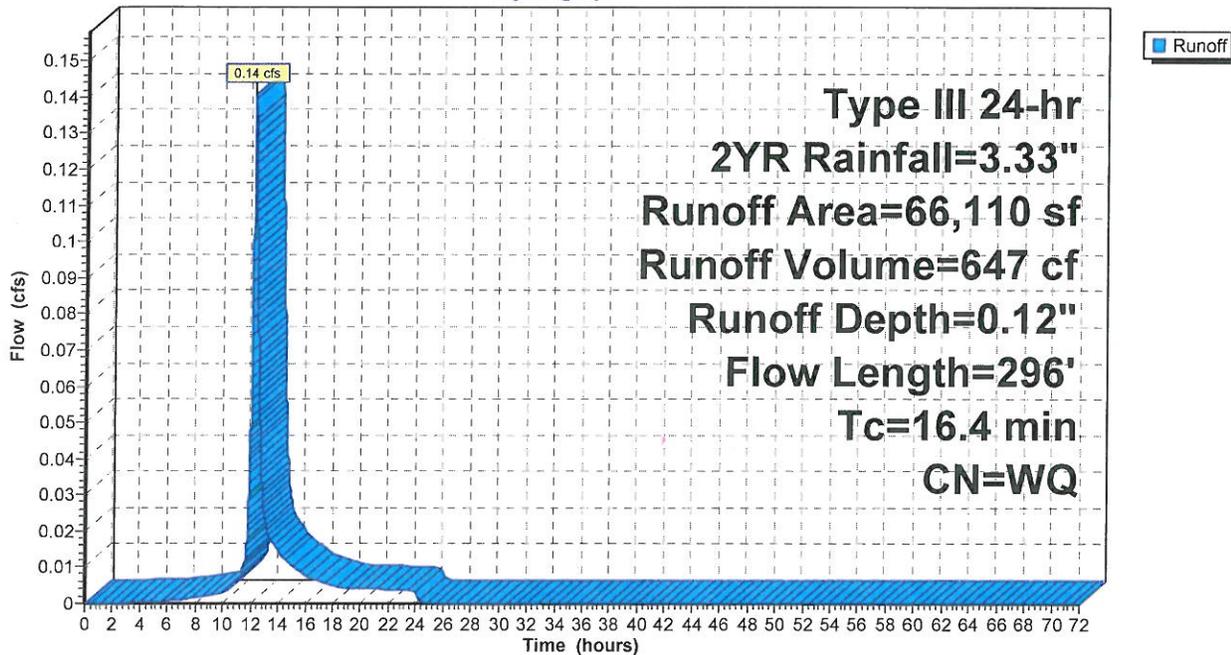
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2YR Rainfall=3.33"

Area (sf)	CN	Description
880	98	Unconnected pavement, HSG A
3,941	76	Gravel roads, HSG A
8,350	32	Woods/grass comb., Good, HSG A
52,939	39	>75% Grass cover, Good, HSG A
66,110		Weighted Average
65,230		98.67% Pervious Area
880		1.33% Impervious Area
880		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.0400	0.09		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.3	33	0.0600	1.71		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
6.5	192	0.0050	0.49		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	21	0.1400	2.62		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
16.4	296	Total			

### Subcatchment A1: SUB-A1

Hydrograph



### Summary for Pond A: POI-A

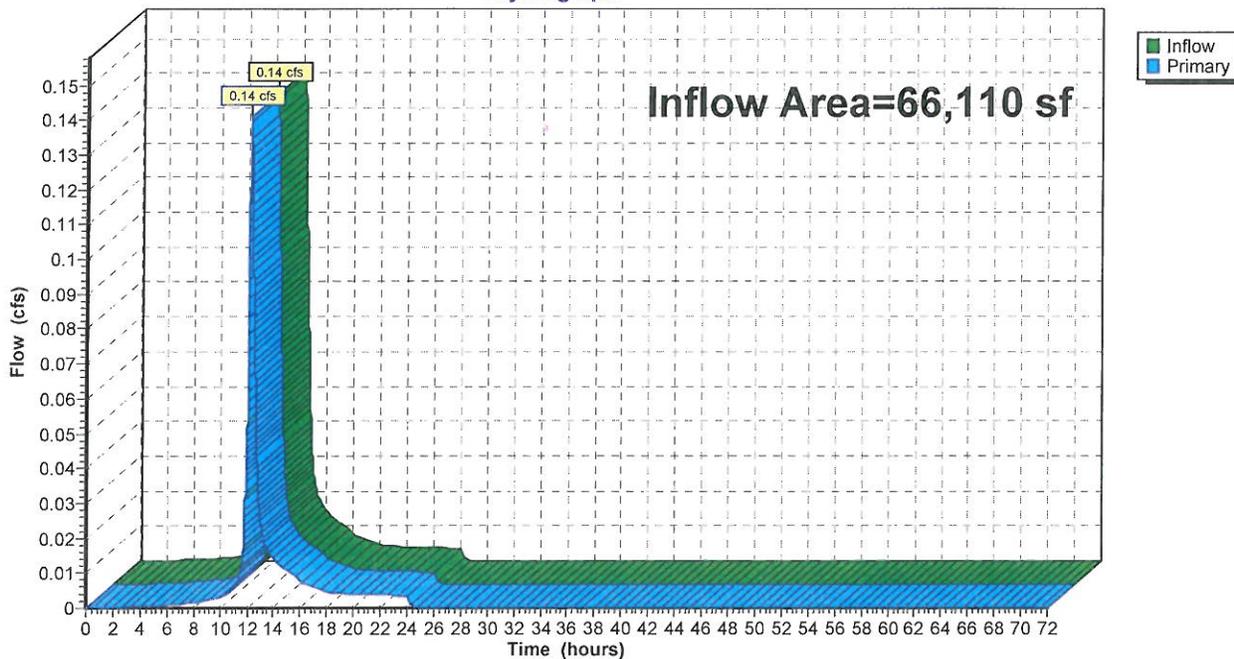
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 66,110 sf, 1.33% Impervious, Inflow Depth = 0.12" for 2YR event  
Inflow = 0.14 cfs @ 12.23 hrs, Volume= 647 cf  
Primary = 0.14 cfs @ 12.23 hrs, Volume= 647 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Pond A: POI-A

Hydrograph



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Type III 24-hr 10YR Rainfall=5.21"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentA1: SUB-A1**

Runoff Area=66,110 sf 1.33% Impervious Runoff Depth=0.43"  
Flow Length=296' Tc=16.4 min CN=WQ Runoff=0.29 cfs 2,362 cf

**Pond A: POI-A**

Inflow=0.29 cfs 2,362 cf  
Primary=0.29 cfs 2,362 cf

**Total Runoff Area = 66,110 sf Runoff Volume = 2,362 cf Average Runoff Depth = 0.43"**  
**98.67% Pervious = 65,230 sf 1.33% Impervious = 880 sf**

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Type III 24-hr 10YR Rainfall=5.21"

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**Summary for Subcatchment A1: SUB-A1**

Runoff = 0.29 cfs @ 12.23 hrs, Volume= 2,362 cf, Depth= 0.43"

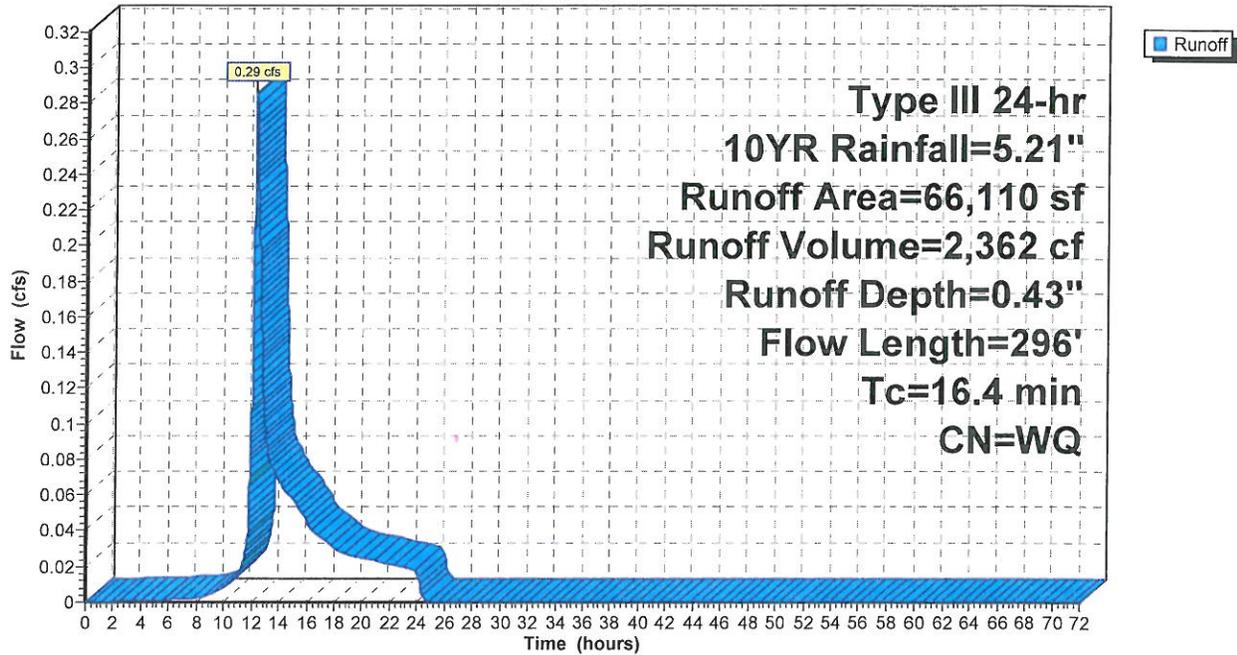
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10YR Rainfall=5.21"

Area (sf)	CN	Description
880	98	Unconnected pavement, HSG A
3,941	76	Gravel roads, HSG A
8,350	32	Woods/grass comb., Good, HSG A
52,939	39	>75% Grass cover, Good, HSG A
66,110		Weighted Average
65,230		98.67% Pervious Area
880		1.33% Impervious Area
880		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.0400	0.09		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.3	33	0.0600	1.71		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
6.5	192	0.0050	0.49		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	21	0.1400	2.62		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
16.4	296	Total			

### Subcatchment A1: SUB-A1

Hydrograph



### Summary for Pond A: POI-A

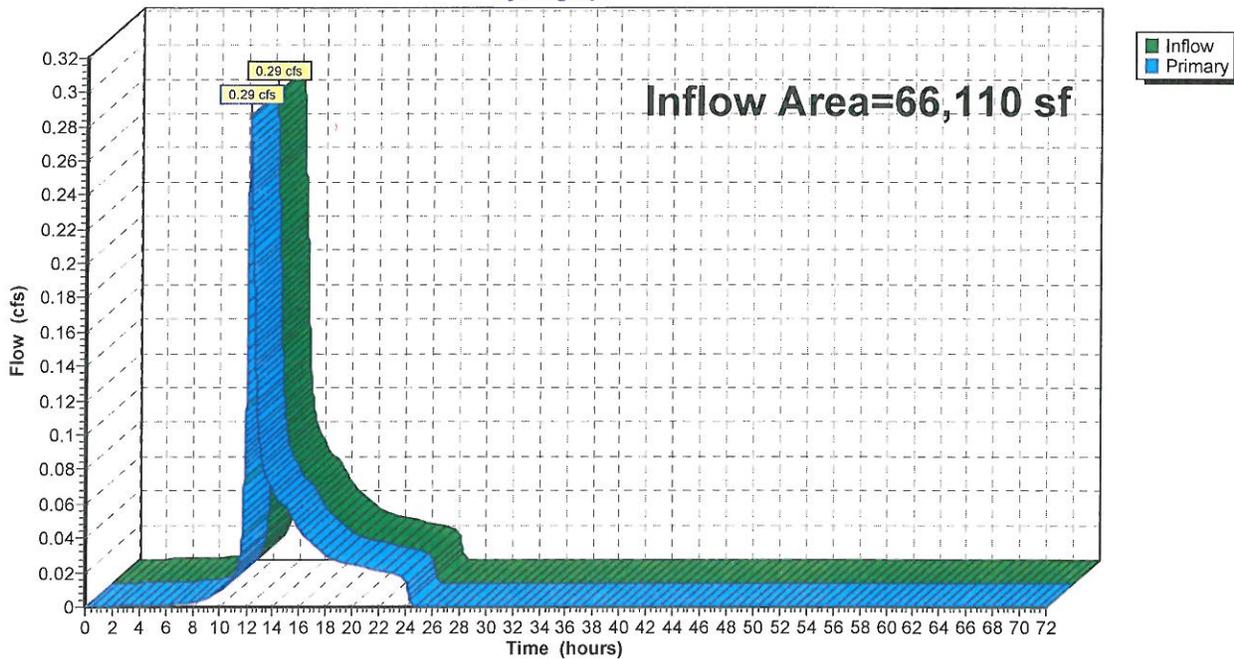
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 66,110 sf, 1.33% Impervious, Inflow Depth = 0.43" for 10YR event  
Inflow = 0.29 cfs @ 12.23 hrs, Volume= 2,362 cf  
Primary = 0.29 cfs @ 12.23 hrs, Volume= 2,362 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Pond A: POI-A

Hydrograph



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Type III 24-hr 25YR Rainfall=6.39"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentA1: SUB-A1**

Runoff Area=66,110 sf 1.33% Impervious Runoff Depth=0.78"  
Flow Length=296' Tc=16.4 min CN=WQ Runoff=0.55 cfs 4,292 cf

**Pond A: POI-A**

Inflow=0.55 cfs 4,292 cf  
Primary=0.55 cfs 4,292 cf

**Total Runoff Area = 66,110 sf Runoff Volume = 4,292 cf Average Runoff Depth = 0.78"**  
**98.67% Pervious = 65,230 sf 1.33% Impervious = 880 sf**

**Summary for Subcatchment A1: SUB-A1**

Runoff = 0.55 cfs @ 12.30 hrs, Volume= 4,292 cf, Depth= 0.78"

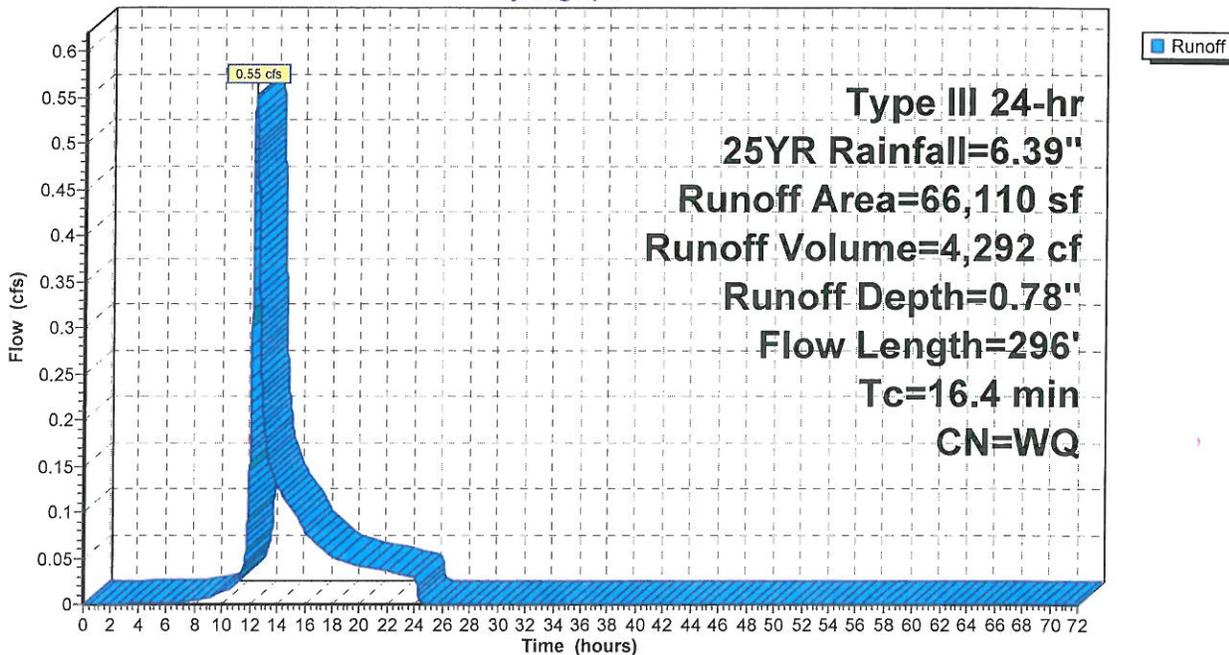
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25YR Rainfall=6.39"

Area (sf)	CN	Description
880	98	Unconnected pavement, HSG A
3,941	76	Gravel roads, HSG A
8,350	32	Woods/grass comb., Good, HSG A
52,939	39	>75% Grass cover, Good, HSG A
66,110		Weighted Average
65,230		98.67% Pervious Area
880		1.33% Impervious Area
880		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.0400	0.09		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.3	33	0.0600	1.71		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
6.5	192	0.0050	0.49		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	21	0.1400	2.62		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
16.4	296	Total			

### Subcatchment A1: SUB-A1

Hydrograph



### Summary for Pond A: POI-A

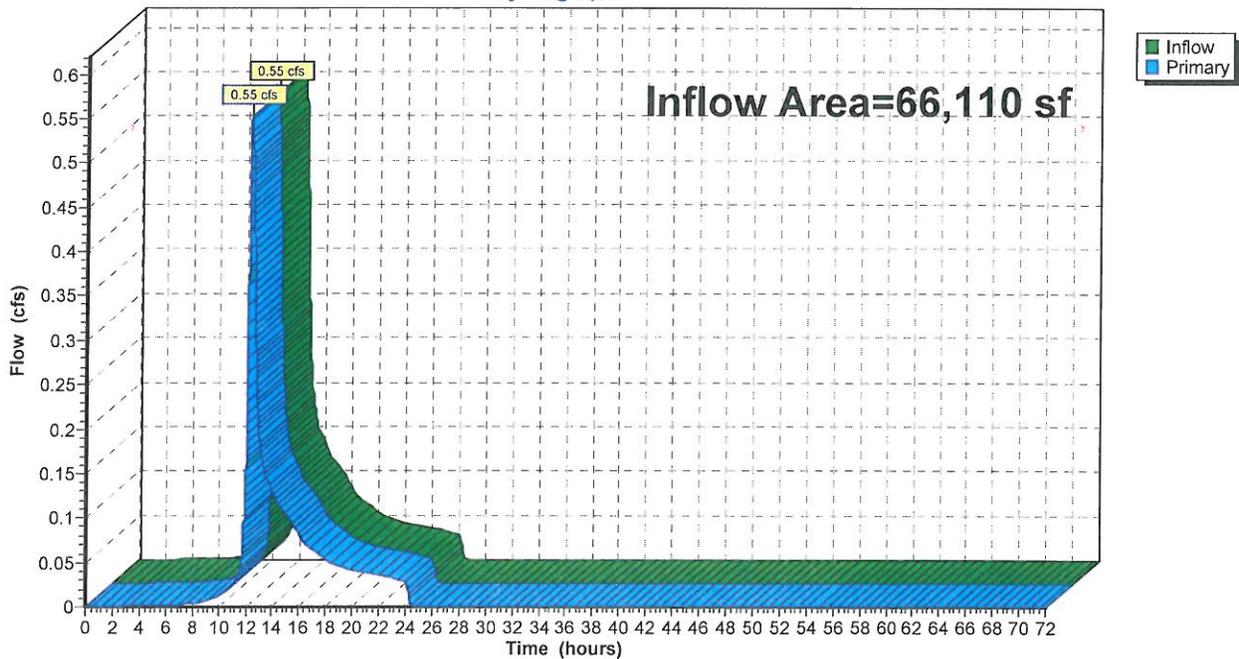
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 66,110 sf, 1.33% Impervious, Inflow Depth = 0.78" for 25YR event  
Inflow = 0.55 cfs @ 12.30 hrs, Volume= 4,292 cf  
Primary = 0.55 cfs @ 12.30 hrs, Volume= 4,292 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Pond A: POI-A

Hydrograph



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Type III 24-hr 50YR Rainfall=7.30"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentA1: SUB-A1**

Runoff Area=66,110 sf 1.33% Impervious Runoff Depth=1.12"  
Flow Length=296' Tc=16.4 min CN=WQ Runoff=0.92 cfs 6,146 cf

**Pond A: POI-A**

Inflow=0.92 cfs 6,146 cf  
Primary=0.92 cfs 6,146 cf

**Total Runoff Area = 66,110 sf Runoff Volume = 6,146 cf Average Runoff Depth = 1.12"**  
**98.67% Pervious = 65,230 sf 1.33% Impervious = 880 sf**

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Type III 24-hr 50YR Rainfall=7.30"

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**Summary for Subcatchment A1: SUB-A1**

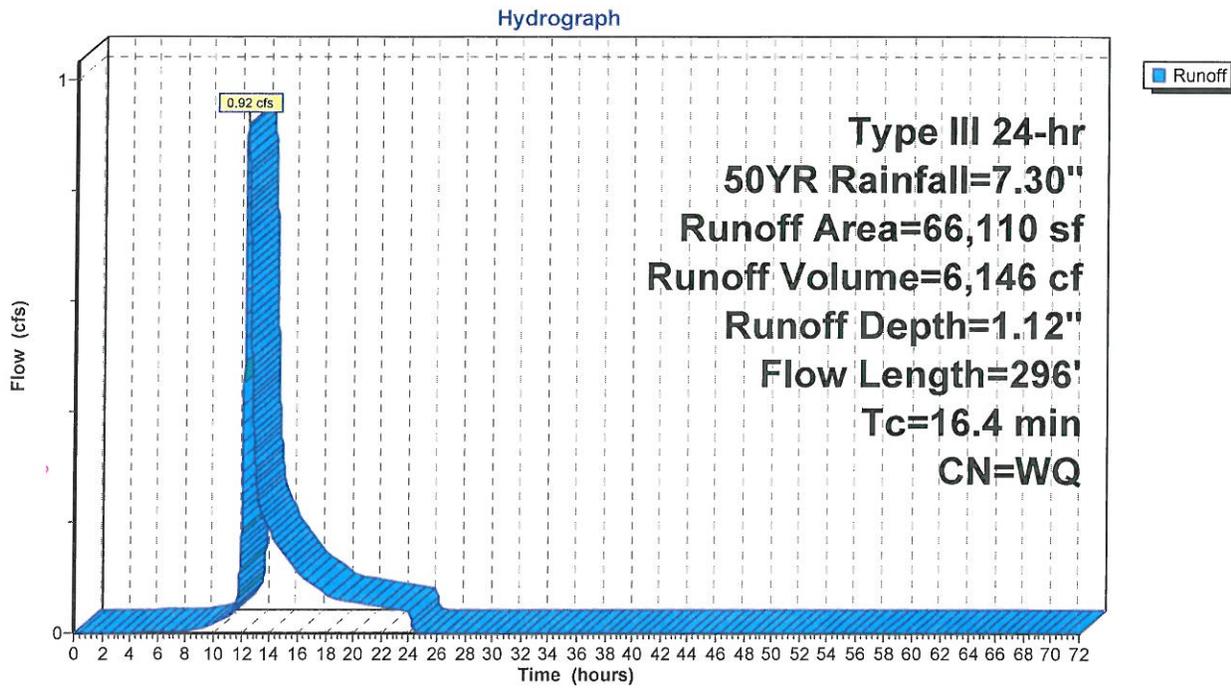
Runoff = 0.92 cfs @ 12.29 hrs, Volume= 6,146 cf, Depth= 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
Type III 24-hr 50YR Rainfall=7.30"

Area (sf)	CN	Description
880	98	Unconnected pavement, HSG A
3,941	76	Gravel roads, HSG A
8,350	32	Woods/grass comb., Good, HSG A
52,939	39	>75% Grass cover, Good, HSG A
66,110		Weighted Average
65,230		98.67% Pervious Area
880		1.33% Impervious Area
880		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.0400	0.09		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.3	33	0.0600	1.71		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
6.5	192	0.0050	0.49		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	21	0.1400	2.62		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
16.4	296	Total			

### Subcatchment A1: SUB-A1



### Summary for Pond A: POI-A

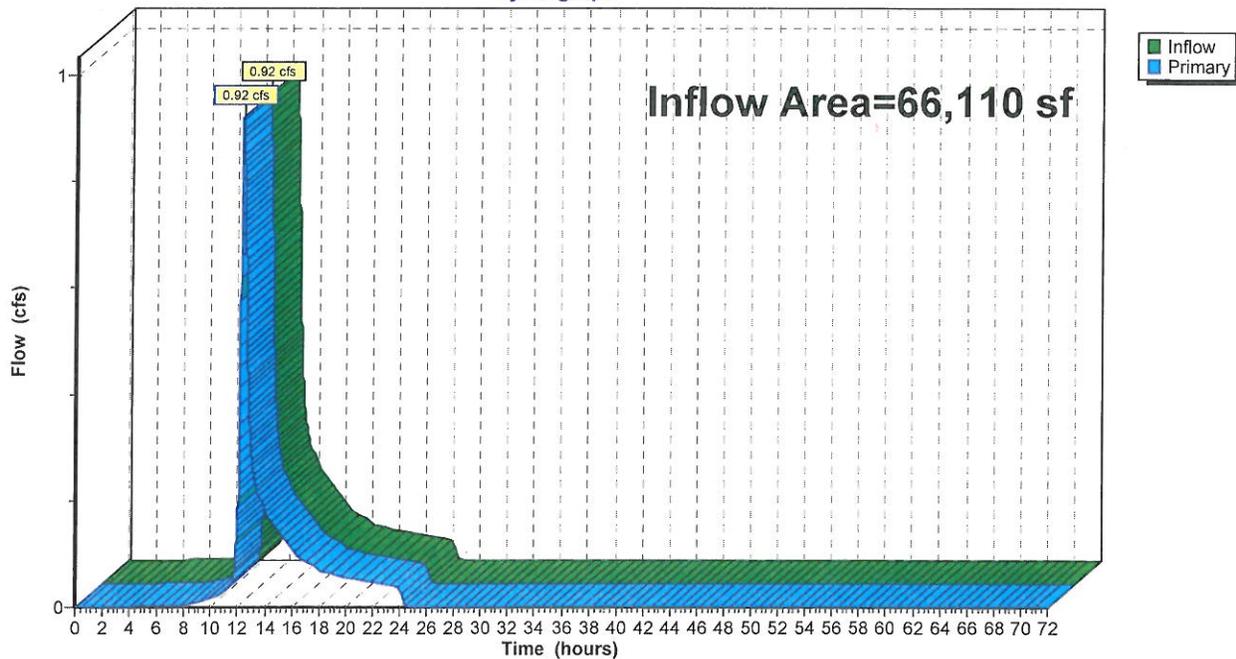
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 66,110 sf, 1.33% Impervious, Inflow Depth = 1.12" for 50YR event  
Inflow = 0.92 cfs @ 12.29 hrs, Volume= 6,146 cf  
Primary = 0.92 cfs @ 12.29 hrs, Volume= 6,146 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Pond A: POI-A

Hydrograph



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Type III 24-hr 100YR Rainfall=8.21"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentA1: SUB-A1**

Runoff Area=66,110 sf 1.33% Impervious Runoff Depth=1.50"  
Flow Length=296' Tc=16.4 min CN=WQ Runoff=1.40 cfs 8,272 cf

**Pond A: POI-A**

Inflow=1.40 cfs 8,272 cf  
Primary=1.40 cfs 8,272 cf

**Total Runoff Area = 66,110 sf Runoff Volume = 8,272 cf Average Runoff Depth = 1.50"**  
**98.67% Pervious = 65,230 sf 1.33% Impervious = 880 sf**

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Type III 24-hr 100YR Rainfall=8.21"

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**Summary for Subcatchment A1: SUB-A1**

Runoff = 1.40 cfs @ 12.27 hrs, Volume= 8,272 cf, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100YR Rainfall=8.21"

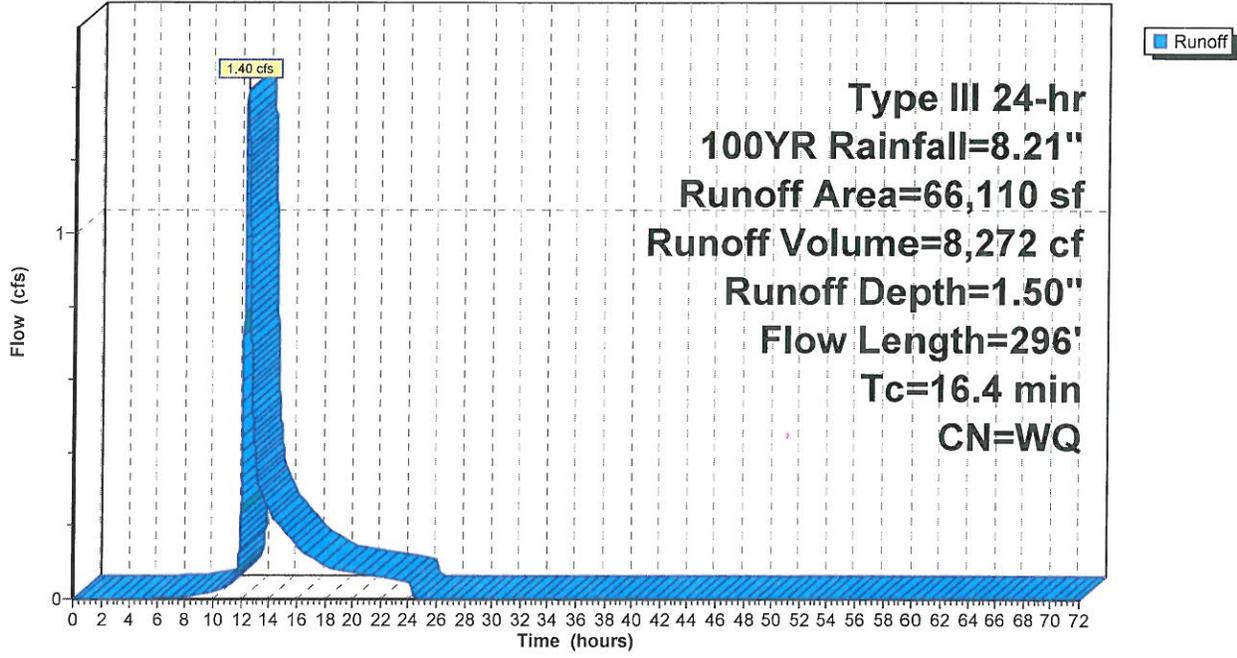
Area (sf)	CN	Description
880	98	Unconnected pavement, HSG A
3,941	76	Gravel roads, HSG A
8,350	32	Woods/grass comb., Good, HSG A
52,939	39	>75% Grass cover, Good, HSG A
66,110		Weighted Average
65,230		98.67% Pervious Area
880		1.33% Impervious Area
880		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.0400	0.09		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.10"
0.3	33	0.0600	1.71		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
6.5	192	0.0050	0.49		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	21	0.1400	2.62		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
16.4	296	Total			

### Subcatchment A1: SUB-A1

Hydrograph



### Summary for Pond A: POI-A

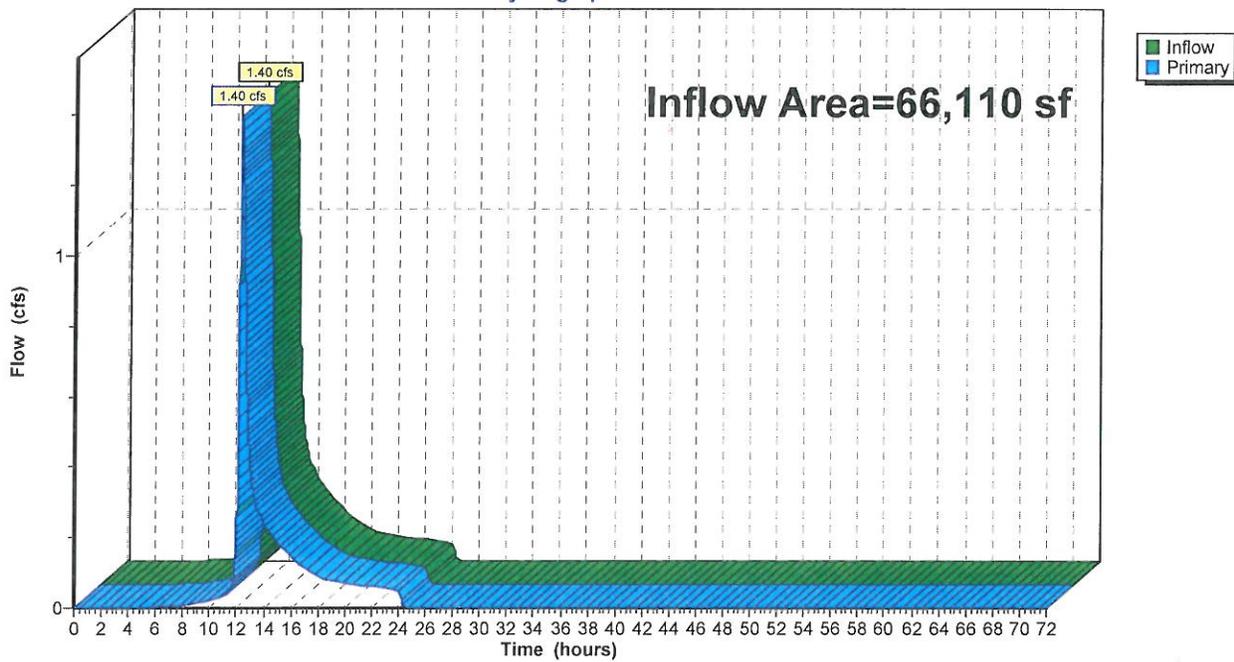
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 66,110 sf, 1.33% Impervious, Inflow Depth = 1.50" for 100YR event  
Inflow = 1.40 cfs @ 12.27 hrs, Volume= 8,272 cf  
Primary = 1.40 cfs @ 12.27 hrs, Volume= 8,272 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Pond A: POI-A

Hydrograph



**Attachment D - Construction Period Pollution and Erosion  
and Sedimentation Control Plan**

## Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan

### SECTION 1: Introduction

The Lee softball field is located off of Washington Street in Wellesley (see Attachment A for locus map). The Town's goals for the project include renovating the field to improve softball facilities. Renovations will be done in a fashion that preserves the essential character and quality of natural features located within the park. This project achieves many of the goals established by the town at the outset of the project and importantly it will allow the high school girls softball team to enjoy a new level of facility parody when compared to other sports and their respective playing venues.

As part of this project, this "Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan" has been created to ensure that no further disturbance to the wetland resource is created during the project.

### SECTION 2: Construction Period Pollution Prevention Measures

Best Management Practices (BMPs) will be utilized as Construction Period Pollution Prevention Measures to reduce potential pollutants and prevent any off-site discharge. The objectives of the BMPs for construction activity are to minimize the disturbed areas, stabilize any disturbed areas, control the site perimeter and retain sediment. Both erosion and sedimentation controls and non-stormwater best management measures will be used to minimize site disturbance and ensure compliance with the performance standards of the WPA and Stormwater Standards. Measures will be taken to minimize the area disturbed by construction activities to reduce the potential for soil erosion and stormwater pollution problems. In addition, good housekeeping measures will be followed for the day-to-day operation of the construction site under the control of the contractor to minimize the impact of construction. This section describes the control practices that will be in place during construction activities. Recommended control practices will comply with the standards set in the MA DEP Stormwater Policy Handbook.

#### 2.1 Minimize Disturbed Area and Protect Natural Features and Soil

In order to minimize disturbed areas, work will be completed within well-defined work limits. These work limits are shown on the construction plans. The Contractor shall not disturb native vegetation in the undisturbed wetland area without prior approval from the Engineer. The Contractor will be responsible to make sure that all of their workers and any subcontractors know the proper work limits and do not extend their work into the undisturbed areas. The protective measures are described in more detail in the following sections.

#### 2.2 Control Stormwater Flowing onto and through the project

Construction areas adjacent to wetland resources will be lined with compost filter tubes. The tubes will be inspected daily, and accumulated silt will be removed as needed. Silt

curtains will be placed upstream and downstream of the work area and inspected daily for sediment build-up.

### **2.3 Stabilize Soils**

The Contractor shall limit the area of land which is exposed and free from vegetation during construction. In areas where the period of exposure will be greater than two (2) months, mulching, the use of erosion control mats, or other protective measures shall be provided as specified.

The Contractor shall take account of the conditions of the soil where erosion control seeding will take place to ensure that materials used for re-vegetation are adaptive to the sediment control.

### **2.4 Proper Storage and Cover of Any Stockpiles**

The location of the Contractor's storage areas for equipment and/or materials shall be upon cleared portions of the job site or areas to be cleared as a part of this project and shall require written approval of the Engineer.

Adequate measures for erosion and sediment control such as the placement of compost filter tubes around the downstream perimeter of stockpiles shall be employed to protect any downstream areas from siltation.

There shall be no storage of equipment or materials in areas designated as wetlands.

The Engineer may designate a particular area or areas where the Contractor may store materials used in his operations.

### **2.5 Perimeter Controls and Sediment Barriers**

Erosion control lines as described in Section 5 will be utilized to ensure that sedimentation does not occur outside the perimeter of the work area.

### **2.6 Storm Drain Inlet Protection**

There are no storm drains in the work area.

### **2.7 Retain Sediment On-Site**

The Contractor will be responsible to monitor erosion control measures. Whenever necessary the Contractor will clear sediment from the compost filter tube and silt curtain that have been silted up during construction. Daily monitoring should be conducted using the attached Monitoring Form.

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

### **2.8 Material Handling and Waste Management**

Materials stored on-site will be stored in a neat, orderly manner in appropriate containers.

Materials will be kept in their original containers with the original manufacturer's label. Substances will not be mixed with one another unless recommended by the manufacturer.

Waste materials will be collected and stored in a securely lidded metal container from a licensed management company. The waste and any construction debris from the site will be hauled off-site daily and disposed of properly. The contractor will be responsible for waste removal. Manufacturer's recommendations for proper use and disposal will be followed for materials. Sanitary waste will be collected from the portable units a minimum of once a week, by a licensed sanitary waste management contractor.

## 2.9 Designated Washout Areas

The Contractor shall use washout facilities at their own facilities, unless otherwise directed by the Engineer. If necessary, areas shall be provided for concrete washdown activities under direction of the engineer.

## 2.10 Proper Equipment/Vehicle Fueling and Maintenance Practices

On-site vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the risk of leakage. To ensure that leaks on stored equipment do not contaminate the site, oil-absorbing mats will be placed under oil-containing equipment during storage. Regular fueling and service of the equipment may be performed using approved methods and with care taken to minimize chance of spills. Repair of equipment or machinery within the 100' water resources area shall not be allowed without the prior approval of the Engineer. Any petroleum products will be stored in tightly sealed containers that are clearly labeled with spill control pads/socks placed under/around their perimeters.

## 2.11 Equipment/Vehicle Washing

The Contractor will be responsible to ensure that no equipment is washed on-site.

## SECTION 3: Spill Prevention and Control Plan

The Contractor will be responsible for preventing spills in accordance with the project specifications and applicable federal, state and local regulations. The Contractor will identify a properly trained site employee, involved with the day-to-day site operations to be the spill prevention and cleanup coordinator. The name(s) of the responsible spill personnel will be posted on-site. Each employee will be instructed that all spills are to be reported to the spill prevention and cleanup coordinator.

## 3.1 Spill Control Equipment

Spill control/containment equipment will be kept in the Work Area. Materials and equipment necessary for spill cleanup will be kept either in the Work Area or in an otherwise accessible on-site location. Equipment and materials will include, but not be limited to, absorbent booms/mats, brooms, dust pans, mops, rags, gloves, goggles, sand,

plastic and metal containers specifically for this purpose. It is the responsibility of the Contractor to ensure the inventory will be readily accessible and maintained.

### 3.2 Notification

Workers will be directed to inform the on-site supervisor of a spill event. The supervisor will assess the incident and initiate proper containment and response procedures immediately upon notification. Workers should avoid direct contact with spilled materials during the containment procedures. Primary notification of a spill should be made to the local Fire Department and Police Departments. Secondary Notification will be to the certified cleanup contractor if deemed necessary by Fire and/or Police personnel. The third level of notification (within 1 hour) is to the DEP or municipality's Licensed Site Professional (LSP). The specific cleanup contractor to be used will be identified by the Contractor prior to commencement of construction activities.

### 3.3 Spill Containment and Clean-Up Measures

Spills will be contained with granular sorbent material, sand, sorbent pads, booms or all of the above to prevent spreading. Certified cleanup contractors should complete spill cleanup. The material manufacturer's recommended methods for spill cleanup will be clearly posted and on-site personnel will be made aware of the procedures and the location of the information and cleanup supplies.

### 3.4 Hazardous Materials Spill Report

The Contractor will report and record any spill. The spill report will present a description of the release, including the quantity and type of material, date of the spill, circumstances leading to the release, location of spill, response actions and personnel, documentation of notifications and corrective measures implemented to prevent reoccurrence.

*This document does not relieve the Contractor of the Federal reporting requirements of 40 CFR Part 110, 40 CFR Part 117, 40 CFR Part 302 and the State requirements specified under the Massachusetts Contingency Plan (M.C.P) relating to spills or other releases of oils or hazardous substances. Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302, occurs during a twenty-four (24) hour period, the Contractor is required to comply with the response requirements of the above-mentioned regulations. Spills of oil or hazardous material in excess of the reportable quantity will be reported to the National Response Center (NRC).*

SECTION 4: Contact Information/Responsible Parties

**Owner/Operator:**  
David Hickey  
Town of Wellesley, Town Engineer  
20 Municipal Way  
Wellesley, MA 02481  
(781)-235-7600 x3315

**Engineer:**  
James Pearson, PE  
Weston & Sampson Engineers, Inc.  
5 Centennial Drive  
Peabody, MA 01960  
978-532-1900

**Site Inspector:**  
TBD

**Contractor:**  
TBD

SECTION 5: Erosion and Sedimentation Control

Erosion and Sedimentation Control Drawings can be found in the attached project plans. In addition, a technical specification (*Section 01570 Wetlands Protection and Erosion Control*) has been included as part of Appendix D, which details all Erosion and Sedimentation controls.

SECTION 6: Site Development Plan

The Site Development Plan is included in the attached plans.

SECTION 7: Operation and Maintenance of Erosion Control

The erosion control measures will be installed as detailed in the technical specification *01570 Environmental Protection*. If there is a failure to the controls the Contractor, under the supervision of the Engineer, will be required to stop work until the failure is repaired.

Periodically throughout the work, whenever the Engineer deems it necessary, the sediment that has been deposited against the controls will be removed to ensure that the controls are working properly.

## SECTION 8: Inspection Schedule

During construction, the erosion and sedimentation controls will be inspected daily. Once the Contractor is selected, an onsite inspector will be selected to work closely with the Engineer to ensure that erosion and sedimentation controls are in place and working properly. An Inspection Form is included.

**Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan**

Hunnewell Field Softball Renovation

Inspection Form

Inspected By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

YES	NO	DOES NOT APPLY	ITEM
			Do any erosion/siltation control measures require repair or clean out to maintain adequate function?
			Is there any evidence that sediment is leaving the site and entering the wetlands?
			Are any temporary soil stockpiles or construction materials located in non-approved areas?
			Are on-site construction traffic routes, parking, and storage of equipment and supplies located in areas not specifically designed for them?

Specific location, current weather conditions, and action to be taken:

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Other Comments:

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Pending the actions noted above I certify that the site is in compliance with the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## SECTION 01570

### ENVIRONMENTAL PROTECTION

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION:

- A. The work covered by this section of the specifications consists of furnishing all labor, materials, tools and equipment and performing all work required for the prevention of environmental pollution during and as a result of construction operations under this contract.
- B. The requirements set forth in this section of the specifications apply to cross-country areas, river and stream crossings, and construction in and adjacent to wetlands, unless otherwise specifically stated.
- C. All work under this Contract shall be in accordance with the Conservation Commissions' Orders of Conditions as well as any conditional requirements applied, all of which are attached to Section 00890, PERMITS.
- D. Prior to commencement of work, the Contractor shall meet with representatives of the Engineer to develop mutual understandings relative to compliance of the environmental protection program.

##### 1.02 RELATED WORK:

- A. Section 00890, PERMITS
- B. Section 01330, SUBMITTALS
- C. Section 01562, DUST CONTROL
- D. Section 02230, CLEARING AND GRUBBING
- E. Section 02240, DEWATERING
- F. Section 02252, SUPPORT OF EXCAVATION
- G. Section 02300, EARTHWORK
- H. Section 02347, BENTONITE DAMS
- I. Section 02921, SURFACE RESTORATION OF CROSS COUNTRY AREAS

##### 1.03 SUBMITTALS:

- A. The Contractor shall submit details and literature fully describing environmental protection methods to be employed in carrying out construction activities within 100 feet of wetlands or across areas designated as wetlands.

**PART 2 - PRODUCTS**

**2.01 SILT FENCE:**

- A. The silt fence shall consist of a 3-foot wide continuous length sediment control fabric, stitched to a mesh backing, and stapled to preweathered oak posts installed as shown on the drawings. The oak posts shall be 1-1/4-inches by 1-1/4-inches (Minimum Dimension) by 48-inches and shall be tapered. The bottom edge of the silt fence shall be buried as shown on the drawings.
- B. The silt fence shall be DOT Silt Fence PPDM3611, as manufactured by U.S. Silt & Site Supply/Getsco, Concord, NH, or approved equal.
- C. Silt fence properties:

<b><u>Physical Properties</u></b>	<b><u>Test Method</u></b>	<b><u>Minimum Value</u></b>
Grab Strength, lbs.	ASTM-D-4632	124
Grab Elongation, %	ASTM-D-4632	15
Mullen burst, psi	ASTM-D-3786	300
Puncture, lbs.	ASTM-D-4833	65
Trapezoidal Tear, lbs.	ASTM-D-4833	65
UV Resistance <sup>2</sup> , % <sup>3</sup>	ASTM-D-4355	80@500 hrs.
AOS, US Sieve No.	ASTM-D-4751	30
Flow Rate, gal/min/sq. ft.	ASTM-D-4491	10
Permittivity, (1/sec) gal/min/sq. ft.	ASTM-D-4491	0.05 sec <sup>-1</sup>

**2.02 STRAW BALES:**

- A. Straw bales shall consist of certified seed free stems of agricultural grain and cereal crops and shall be free of grasses and legumes. Standard bales shall be 14-inches high, 18-inches wide and 36- to 40-inches long tied with polypropylene twine and weigh within 5 percent of 7 lbs. per cubic ft.

**2.03 STRAW WATTLES:**

- A. Straw Wattles shall consist of a 100% biodegradable exterior jute or coir netting with 100% wheat straw interior filling as manufactured by GEI Works, Sebastian, Florida (Phone: 772-646-0597; website: [www.erosionpollution.com](http://www.erosionpollution.com)), or approved equal.

#### 2.04 SILT CURTAIN:

- A. The silt curtain shall be a Type-1-Silt-Barrier consisting of 18-ounce vinyl fabric skirt with a 6-inch marine quality floatation device. The skirt shall be ballasted to hang vertical in the water column by a minimum 3/16-inch galvanized chain. The silt curtain shall extend into the water as shown on the drawings. If necessary, join adjacent ends of the silt curtain by connecting the reinforcing grommets and shackling ballast lines.

#### 2.05 CATCH BASIN PROTECTION:

- A. To trap sediment and to prevent sediment from clogging drainage systems, catch basin protection in the form of a siltation sack (Siltsack as manufactured by ACF Environmental, Inc. or approved equal) shall be provided as approved by the Engineer.

### PART 3- EXECUTION

#### 3.01 NOTIFICATION AND STOPPAGE OF WORK:

- A. The Engineer will notify the Contractor in writing of any non-compliance with the provisions of the Order of Conditions. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails to act promptly, the Owner may order stoppage of all or part of the work through the Engineer until satisfactory corrective action has been taken. No claim for an extension of time or for excess costs or damage incurred by the Contractor as a result of time lost due to any stop work orders shall be made unless it was later determined that the Contractor was in compliance.

#### 3.02 AREA OF CONSTRUCTION ACTIVITY:

- A. Insofar as possible, the Contractor shall confine his construction activities to those areas defined by the plans and specifications. All land resources within the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their present condition or be restored to a condition after completion of construction at least equal to that which existed prior to work under this contract.

#### 3.03 PROTECTION OF WATER RESOURCES:

- A. The Contractor shall not pollute streams, lakes or reservoirs with fuels, oils, bitumens, calcium chloride, acids or other harmful materials. It is the Contractor's responsibility to comply with all applicable Federal, State, County and Municipal laws regarding pollution of rivers and streams.
- B. Special measures should be taken to insure against spillage of any pollutants into public waters.

### 3.04 CONSTRUCTION IN AREAS DESIGNATED AS WETLANDS ON THE DRAWINGS:

- A. Insofar as possible, the Contractor shall make every effort to minimize disturbance within areas designated as wetlands or within 100-feet of wetland resource areas. Total easement widths shall be limited to the widths shown.
- B. The Contractor shall perform his work in such a way that these areas are left in the condition existing prior to construction.
- C. The elevations of areas designated as wetlands shall not be unduly disturbed by the Contractor's operations outside of the trench limits. If such disturbance does occur, the Contractor shall take all measures necessary to return these areas to the elevations which existed prior to construction.
- D. In areas designated as wetlands, the Contractor shall carefully remove and stockpile the top 24 inches of soil. This topsoil material shall be used as backfill for the trench excavation top layer. The elevation of the trench shall be restored to the preconstruction elevations wherever disturbed by the Contractor's operation.
- E. The Contractor shall use a trench box, sheeting or bracing to support the excavation in areas designated as wetlands.
- F. Excavated materials shall not be permanently placed or temporarily stored in areas designated as wetlands. Temporary storage areas for excavated material shall be as required by the Engineer.
- G. The use of a temporary gravel roadway to construct the pipeline in the wetlands area is not acceptable. The Contractor will be required to utilize timber or rubber matting to support his equipment in these areas. The timber or rubber matting shall be constructed in such a way that it is capable of supporting all equipment necessary to install the pipeline. The timber or rubber matting shall be constructed of materials and placed in such a way that when removed the material below the matting will not be unduly disturbed, mixed or compacted so as to adversely affect recovery of the existing plant life.
- H. Bentonite dams shall be placed in wetlands to prevent drainage. Locations for dams are as indicated on the drawings or as required by the Engineer.
- I. During construction, easements within wetlands shall be lined with a continuous line of straw wattles (aka compost filter tube, silt/filter sock).

### 3.05 PROTECTING AND MINIMIZING EXPOSED AREAS:

- A. The Contractor shall limit the area of land which is exposed and free from vegetation during construction. In areas where the period of exposure will be greater than two (2)

months, temporary vegetation, mulching or other protective measures shall be provided as specified.

- B. The Contractor shall take account of the conditions of the soil where temporary cover crop will be used to insure that materials used for temporary vegetation are adaptive to the sediment control. Materials to be used for temporary vegetation shall be approved by the Engineer.

### 3.06 LOCATION OF STORAGE AREAS:

- A. The location of the Contractor's storage areas for equipment and/or materials shall be upon cleared portions of the job site or areas to be cleared as a part of this project, and shall require written approval of the Engineer. Plans showing storage facilities for equipment and materials shall be submitted for approval of the Engineer.
- B. No excavated materials or materials used in backfill operations shall be deposited within a minimum distance of one hundred (100) feet of any watercourse or any drainage facility. Adequate measures for erosion and sediment control such as the placement of baled **hay or straw** around the downstream perimeter of stockpiles shall be employed to protect any downstream areas from siltation.
- C. There shall be no storage of equipment or materials in areas designated as wetlands.
- D. The Engineer may designate a particular area or areas where the Contractor may store materials used in his operations.
- E. Storage areas in cross-country locations shall be restored to pre-construction conditions with the planting of native species of trees and shrubs.

### 3.07 PROTECTION OF LANDSCAPE:

- A. The Contractor shall not deface, injure, or destroy trees or shrubs nor remove or cut them without written authority from the Owner. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorages unless specifically authorized by the Engineer. Excavating machinery and cranes shall be of suitable type and be operated with care to prevent injury to trees which are not to be removed, particularly overhanging branches and limbs. The Contractor shall, in any event, be responsible for any damage resulting from such use.
- B. Branches, limbs, and roots shall not be cut except by permission of the Engineer. All cutting shall be smoothly and neatly done without splitting or crushing. When there is unavoidable injury to branches, limbs and trunks of trees, the injured portions shall be neatly trimmed and covered with an application of grafting wax or tree healing paint as directed.

- C. Where, in the opinion of the Engineer, trees may possibly be defaced, bruised, injured, or otherwise damaged by the Contractor's equipment or by his blasting or other operations, the Engineer may require the Contractor to adequately protect such trees by placing boards, planks, poles or fencing around them. Any trees or landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the expense of the Contractor. The Engineer will decide what method of restoration shall be used, and whether damaged trees shall be treated and healed or removed and disposed of under the provisions of Section 02230, CLEARING AND GRUBBING.
- D. Cultivated hedges, shrubs, and plants which could be injured by the Contractor's operations shall be protected by suitable means or shall be dug up, balled and temporarily replanted and maintained. After construction operations have been substantially completed, they shall be replanted in their original positions and cared for until growth is re-established. If cultivated hedges, shrubs, and plants are injured to such a degree as to affect their growth or diminish their beauty or usefulness, they shall be replaced by items of a kind and quality at least equal to that existing at the start of the work.

#### 3.08 CLEARING AND GRUBBING:

- A. The Contractor shall clear and grub only on the Owner's land or the Owner's easements, and only the area required for construction operations, as approved by the Engineer. Removal of mature trees (4 inches or greater DBH) will not be allowed on temporary easements.
- B. The Contractor shall not remove trees in the Owner's temporary easements without permission of the Engineer.

#### 3.09 DISCHARGE OF DEWATERING OPERATIONS:

- A. Any water that is pumped and discharged from the trench and/or excavation as part of the Contractor's water handling shall be filtered by an approved method prior to its discharge into a receiving water or drainage system.
- B. Under no circumstances shall the Contractor discharge water to the areas designated as wetlands. When constructing in a wetlands area, the Contractor shall discharge water from dewatering operations directly to the nearest drainage system, stream, or waterway after filtering by an approved method.
- C. The pumped water shall be filtered through filter fabric and baled **hay/straw**, a vegetative filter strip or a vegetated channel to trap sediment occurring as a result of the construction operations. The vegetated channel shall be constructed such that the discharge flow rate shall not exceed a velocity of more than 1 foot per second. Accumulated sediment shall be cleared from the channel periodically.

#### 3.10 DUST CONTROL:

- A. During the progress of the work, the Contractor shall conduct his operations and maintain the area of his activities, including sweeping and sprinkling of streets as necessary, to minimize creation and dispersion of dust. If the Engineer decides it is necessary to use calcium chloride for more effective dust control, the Contractor shall furnish and spread the material, as directed. Calcium chloride shall be as specified under Section 01562, DUST CONTROL.
- B. Calcium Chloride shall not be used for dust control within a drainage basin or in the vicinity of any source of potable water.

### 3.11 SEPARATION AND REPLACEMENT OF TOPSOIL:

- A. Topsoil shall be carefully removed from cross-country areas where excavations are to be made, and separately stored to be used again as required. The topsoil shall be stored in an area acceptable to the Engineer and adequate measures shall be employed to prevent erosion of said material.

### 3.12 BALED HAY OR STRAW:

- A. To trap sediment and to prevent sediment from clogging drainage systems, **baled hay or straw** shall be used where shown on the drawings. Care shall be taken to keep the bales from breaking apart. The bales should be securely staked to prevent overturning, flotation, or displacement. All deposited sediment shall be removed periodically. Hay bales shall not be placed within a waterway during construction of the pipeline crossing.

### 3.13 ERECTION AND MAINTENANCE OF SILT FENCE:

- A. Where indicated on the drawings or where required by the Engineer, the Contractor shall erect and maintain a temporary silt fence. In areas designated as wetlands, the Contractor shall line the limits of the construction easement with a silt fence. The silt fence shall be used specifically to contain sediment from runoff water and to minimize environmental damage caused by construction.

### 3.14 SURFACE RESTORATION OF CROSS COUNTRY AREAS:

- A. Plantings detailed in Section 02921 shall be conducted when construction of the pipeline has been completed within the areas designated. A one-year guarantee of maintenance will be required on these plantings to ensure that they establish in the area.

### 3.15 CATCH BASIN PROTECTION:

- A. Catch basin protection shall be used for every catch basin, shown on the plans or as required by the Engineer, to trap sediment and prevent it from clogging drainage systems and entering wetlands. Siltation sacks shall be securely installed under the catch basin grate. Care shall be taken to keep the siltation sacks from breaking apart or clogging.

All deposited sediment shall be removed periodically and at times prior to predicted precipitation to allow free drainage flow. Prior to working in areas where catch basins are to be protected, each catch basin sump shall be cleaned of all debris and protected. The Contractor shall properly dispose of all debris at no additional cost to the Owner.

- B. All catch basin protection shall be removed by the Contractor after construction is complete.

### 3.16 STRAW WATTLES:

- A. The wattles will be placed in a shallow trench (2-3 inches deep) and staked in the ground using wooden stakes driven at 4-foot intervals. The wooden stakes will be placed at a minimum depth of 24-inches into the ground.
- B. The wattles shall be regularly inspected and before and after every forecasted major weather event. All deposited sediment shall be removed and not allowed to accumulate to the top of the wattles. Wattles damaged during construction shall be repaired or replaced as required by the Engineer at no additional cost to the Owner.
- C. The Contractor shall remove all wattles after construction is completed.

END OF SECTION

**Attachment E - Long Term Operations & Maintenance Plan**

## 1.0 Introduction

The following document has been written to comply with the stormwater guidelines set forth by the Massachusetts Department of Environmental Protection (MassDEP). The intent of these guidelines is to encourage Low Impact Development techniques to improve the quality of the stormwater runoff. These techniques, also known as Best Management Practices (BMPs) collect, store, and treat the runoff before discharging to adjacent environmental resources.

## 2.0 Purpose

This Operation and Maintenance Plan (O&M Plan) is intended to provide a mechanism for the consistent inspection and maintenance of each BMP installed on the project site. Included in this O&M Plan is a description of each BMP type and an inspection form for each BMP. The Town of Wellesley is the owner and operator of the system and is responsible for its upkeep and maintenance. This work will be funded on an annual basis through the town's operating budget. The estimated budget to maintain these BMPs utilizing the Department of Public Works workforce and equipment is approximately \$1,000 per year. This budget assumes that Town equipment will be utilized and no additional equipment rental is required.

In the event the Town sells the property, it is the Town's responsibility to transfer this plan as well as the past three years of operation and maintenance records to the new property owner.

## 3.0 BMP Description and Locations

### 3.1 Area Drain

An area drain will be located on the field, behind home plate. The drain is designed to collect runoff and receive flow from the underdrain system so no ponding occurs on the playing field.

### 3.2 Drainage Outfall

There is one flared end section located within the project. The outfall is designed to dissipate velocities and prevent erosion.

### 3.3 Drainage Swale

There is one drainage swale located within the project boundaries. The swale is designed as a means of conveyance to collect and transport stormwater runoff to the nearby stream channel.

### 3.4 Sediment Forebay

There is one sediment forebay located on site. Sediment forebays are used to slow down stormwater flow and settle out sediments.

## 4.0 Inspection, Maintenance Checklist and Schedule

### 4.1 Area Drain

Inspect and/or clean the area drain at least four times per year and at the end of foliage and snow removal seasons. Remove grass clippings and any other debris present to maintain proper operation of the drainage structure.

### 4.2 Drainage Outfall

Inspect and/or clean the flared end outlet at least four times per year and at the end of foliage and snow removal seasons. Be sure to keep the outlet free from debris to allow for proper flow.

### 4.3 Drainage Swale

Inspect the swale every month for the first two months to ensure no erosion is taking place and that vegetation is establishing. Thereafter, inspect at least twice a year for slope integrity, vegetative health and sediment accumulation.

Mow the channel at least once per year to keep the grass between 6 to 4 inches high. Do not cut any shorter than 3 inches. Remove sediment and debris manually at least once per year and re-seed periodically to maintain vegetation.

### 4.4 Sediment Forebay

Regular maintenance of sediment forebays is essential. Inspect the forebay on a monthly basis to monitor sediment depths and clean them out at least

four times a year by hand, removing all accumulated sediment along with trash and debris.

#### 4.5 Inspections and Record Keeping

- An inspection form should be filled out each and every time maintenance work is performed.
- A binder should be kept at the Municipal Services Department that contains all of the completed inspection forms and any other related materials.
- A review of all Operation & Maintenance actions should take place annually to ensure that these Stormwater BMPs are being taken care of in the manner illustrated in this Operation & Maintenance Plan.
- All operation and maintenance log forms for the last three years, at a minimum, shall be kept on site at the Municipal Services Department.
- The inspection and maintenance schedule may be refined in the future based on the findings and results of this operation and maintenance program or policy.

#### 5.0 Stormwater Management System Owner/Responsible Party

Town of Wellesley  
Department of Public Works  
20 Municipal Way  
Wellesley, MA 02481  
Telephone: 781-235-7600

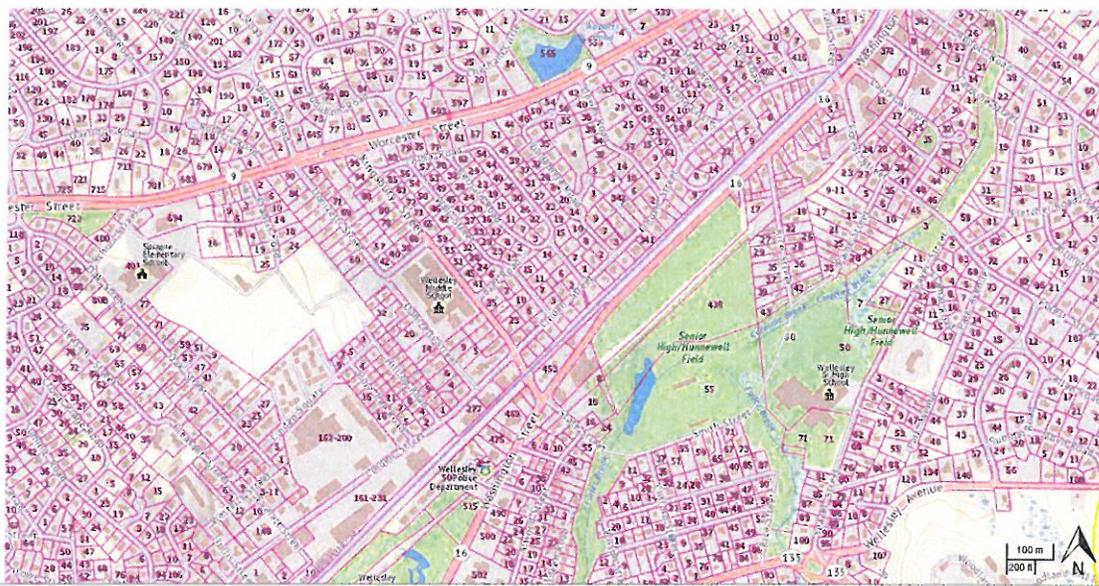
#### 6.0 Estimated Operations and Maintenance Budget

The estimated budget for annual operations and maintenance of this stormwater system is \$1,000 per year.



**Attachment F - Critical Areas**

Critical Areas



- Public Water Supplies
- Community Groundwater Well
- Non-Community Groundwater Well
- Surface Water Intake
- Emergency Surface Water Intake
- Community Labels
- Non-Community Labels
- Areas of Critical Environmental Concern ACECs Boundaries
  - ROAD/RAIL BASED
  - RIVER BASED
  - WETLAND BASED
  - FLOODPLAIN BASED
  - TIDAL BASED
  - CONTOUR BASED
  - POLITICAL BOUNDARY
  - PROPERTY LINE BASED
  - OTHER
  - NOT DEFINED
- Areas of Critical Environmental Concern ACECs
  - Potential Vernal Pools
  - NHESP Priority Habitats of Rare Species
  - NHESP Natural Communities
  - NHESP Estimated Habitats of Rare Wildlife
  - NHESP Certified Vernal Pools
  - NHESP Ecoregions
- Tax Parcels for Query
- Detailed Features
- Tax Parcels for Display
- Structures
- MassGIS Statewide Basemap
- MassGIS Topographic Features Basemap

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## **Appendix 4**

CUT AND FILL CALCULATIONS PLAN SHEET

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# Cut/Fill Report

**Generated:** 2019-05-03 12:11:57  
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Volume Summary							
Name	Type	Cut Factor	Fill Factor	2d Area (acres)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
VG-1 (Stormwater Wetland)	full	1.000	1.000	0.112	173.4	52.7	120.7<Cut>
VG-2 (Culvert)	full	1.000	1.000	0.169	18.9	249.4	230.5<Fill>
Totals							
				2d Area (acres)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total				0.281	192.3	302.1	109.8<Fill>

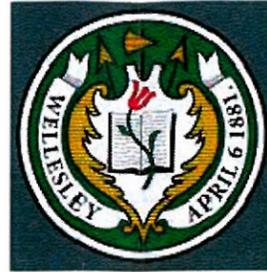
\* Value adjusted by cut or fill factor other than 1.0

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## **Appendix 5**

PROJECT PLAN SHEETS 1-24 (reduced size)

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# Town of Wellesley, Massachusetts

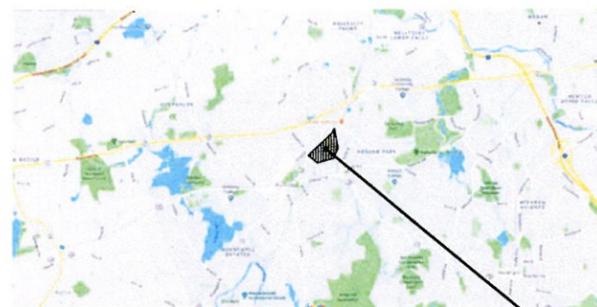
## PLANS FOR THE IMPROVEMENTS TO HUNNEWELL FIELD SOFTBALL RENOVATION

**REVISED: MAY 3, 2019**

**PERMITTING DOCUMENTS  
NOT FOR CONSTRUCTION**

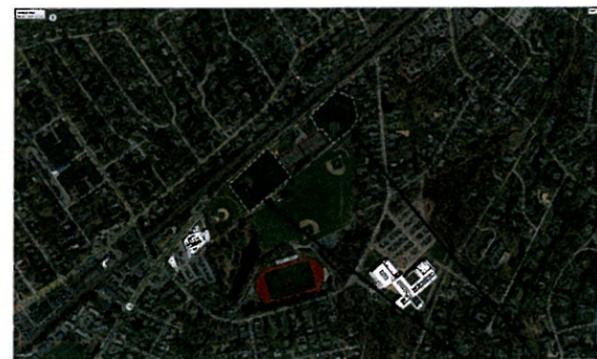
**SHEET INDEX**

C1.00.....	COVER
L0.00.....	GENERAL NOTES
L1.00.....	OVERALL SITE AND EXISTING CONDITIONS PLAN
L1.01.....	EXISTING CONDITIONS PLAN - ENLARGEMENT - LEE FIELD
L1.02.....	EXISTING CONDITIONS PLAN - ENLARGEMENT - HUNNEWELL F
L2.01.....	SITE PREPARATION PLAN - ENLARGEMENT - LEE FIELD
L2.02.....	SITE PREPARATION PLAN - ENLARGEMENT - HUNNEWELL FIELD
L3.01.....	MATERIALS PLAN - ENLARGEMENT - LEE FIELD
L3.02.....	MATERIALS PLAN - ENLARGEMENT - HUNNEWELL FIELD
L4.01.....	GRADING PLAN - ENLARGEMENT - LEE FIELD
L4.01-c.....	GRADING PLAN - ENLARGEMENT - LEE FIELD
L4.02.....	GRADING PLAN - ENLARGEMENT - HUNNEWELL FIELD
L5.01.....	PLANTING PLAN - ENLARGEMENT - LEE FIELD
L5.01-a.....	PLANTING PLAN - ENLARGEMENT a - LEE FIELD
L5.01-b.....	PLANTING PLAN - ENLARGEMENT b - LEE FIELD
L5.01-c.....	PLANTING PLAN - ENLARGEMENT c - LEE FIELD
L5.02.....	PLANTING PLAN - ENLARGEMENT - HUNNEWELL FIELD
L6.00-L6.06.....	SITE CONSTRUCTION DETAILS



SCALE: NTS  
⊕

HUNNEWELL FIELDS- LOCUS MAP



SCALE: NTS  
⊕

LEE FIELD- SITE AERIAL

HUNNEWELL FIELD- SITE AERIAL



SCALE: NTS  
⊕



SCALE: NTS  
⊕

**FEBRUARY 21, 2019**

Prepared By

**Weston & Sampson**

427 Main Street, Suite 400, Worcester, MA 01608  
(508) 762-1676 (800) Sampson  
www.westonandsampson.com

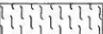
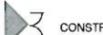
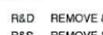
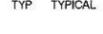


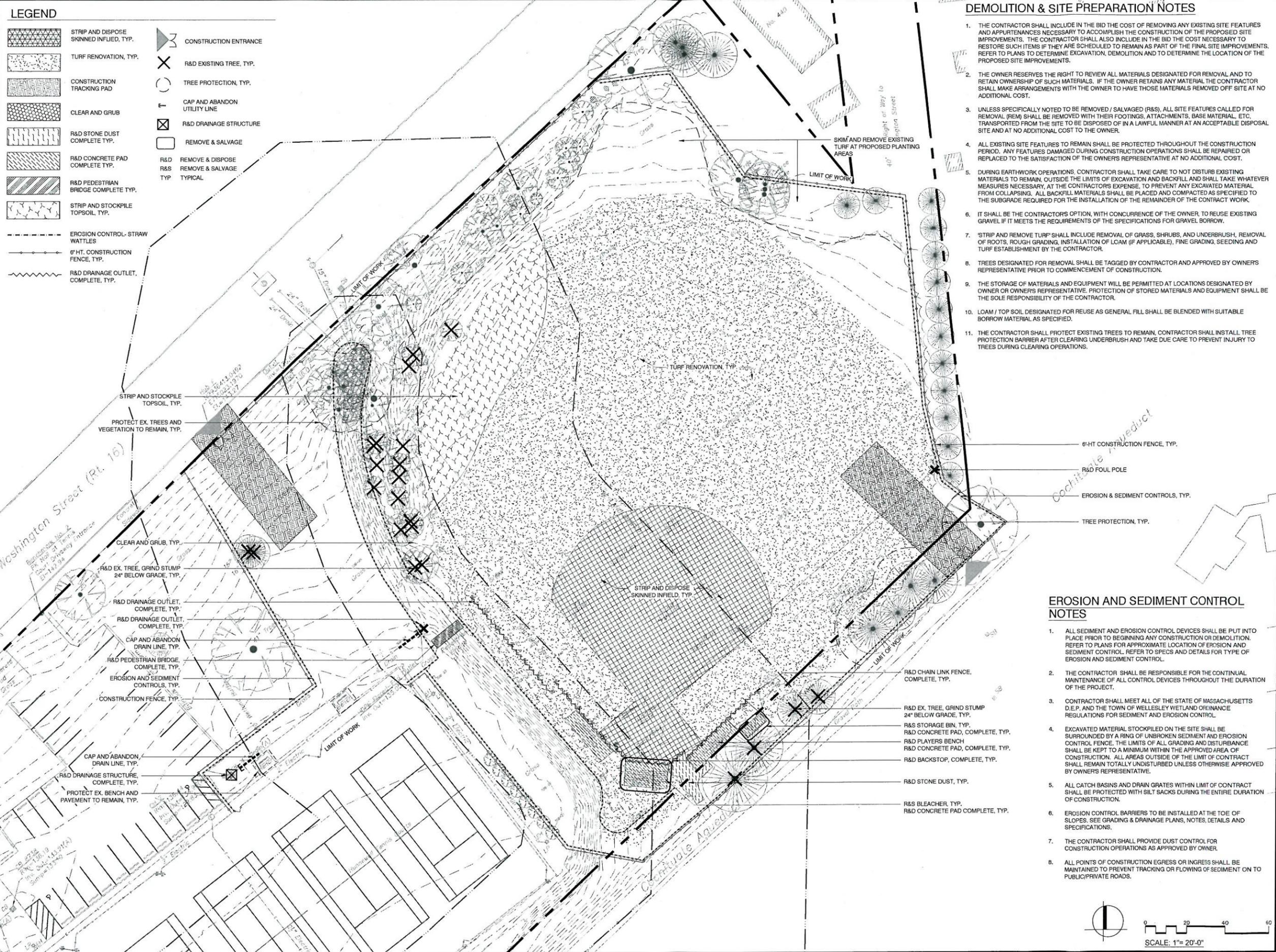






**LEGEND**

-  STRIP AND DISPOSE SKINNED INFILD, TYP.
-  TURF RENOVATION, TYP.
-  CONSTRUCTION TRACKING PAD
-  CLEAR AND GRUB
-  R&D STONE DUST COMPLETE TYP.
-  R&D CONCRETE PAD COMPLETE TYP.
-  R&D PEDESTRIAN BRIDGE COMPLETE TYP.
-  STRIP AND STOCKPILE TOPSOIL, TYP.
-  EROSION CONTROL- STRAW WATTLES
-  6' HT. CONSTRUCTION FENCE, TYP.
-  R&D DRAINAGE OUTLET, COMPLETE, TYP.
-  CONSTRUCTION ENTRANCE
-  R&D EXISTING TREE, TYP.
-  TREE PROTECTION, TYP.
-  CAP AND ABANDON UTILITY LINE
-  R&D DRAINAGE STRUCTURE
-  REMOVE & SALVAGE
-  R&D REMOVE & DISPOSE
-  R&S REMOVE & SALVAGE
-  TYP TYPICAL



**DEMOLITION & SITE PREPARATION NOTES**

1. THE CONTRACTOR SHALL INCLUDE IN THE BID THE COST OF REMOVING ANY EXISTING SITE FEATURES AND APPURTENANCES NECESSARY TO ACCOMPLISH THE CONSTRUCTION OF THE PROPOSED SITE IMPROVEMENTS. THE CONTRACTOR SHALL ALSO INCLUDE IN THE BID THE COST NECESSARY TO RESTORE SUCH ITEMS IF THEY ARE SCHEDULED TO REMAIN AS PART OF THE FINAL SITE IMPROVEMENTS. REFER TO PLANS TO DETERMINE EXCAVATION, DEMOLITION AND TO DETERMINE THE LOCATION OF THE PROPOSED SITE IMPROVEMENTS.
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5. DURING EARTHWORK OPERATIONS, CONTRACTOR SHALL TAKE CARE TO NOT DISTURB EXISTING MATERIALS TO REMAIN, OUTSIDE THE LIMITS OF EXCAVATION AND BACKFILL AND SHALL TAKE WHATEVER MEASURES NECESSARY, AT THE CONTRACTOR'S EXPENSE, TO PREVENT ANY EXCAVATED MATERIAL FROM COLLAPSING. ALL BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED AS SPECIFIED TO THE SUBGRADE REQUIRED FOR THE INSTALLATION OF THE REMAINDER OF THE CONTRACT WORK.
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1. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE PUT INTO PLACE PRIOR TO BEGINNING ANY CONSTRUCTION OR DEMOLITION. REFER TO PLANS FOR APPROXIMATE LOCATION OF EROSION AND SEDIMENT CONTROL. REFER TO SPECS AND DETAILS FOR TYPE OF EROSION AND SEDIMENT CONTROL.
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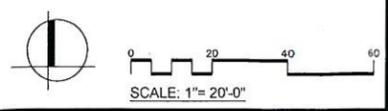
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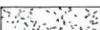
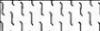
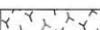
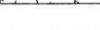
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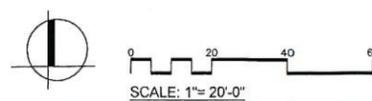
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**SITE PREPARATION PLAN ENLARGEMENT- HUNNEWELL FIELD**

Sheet Number:  
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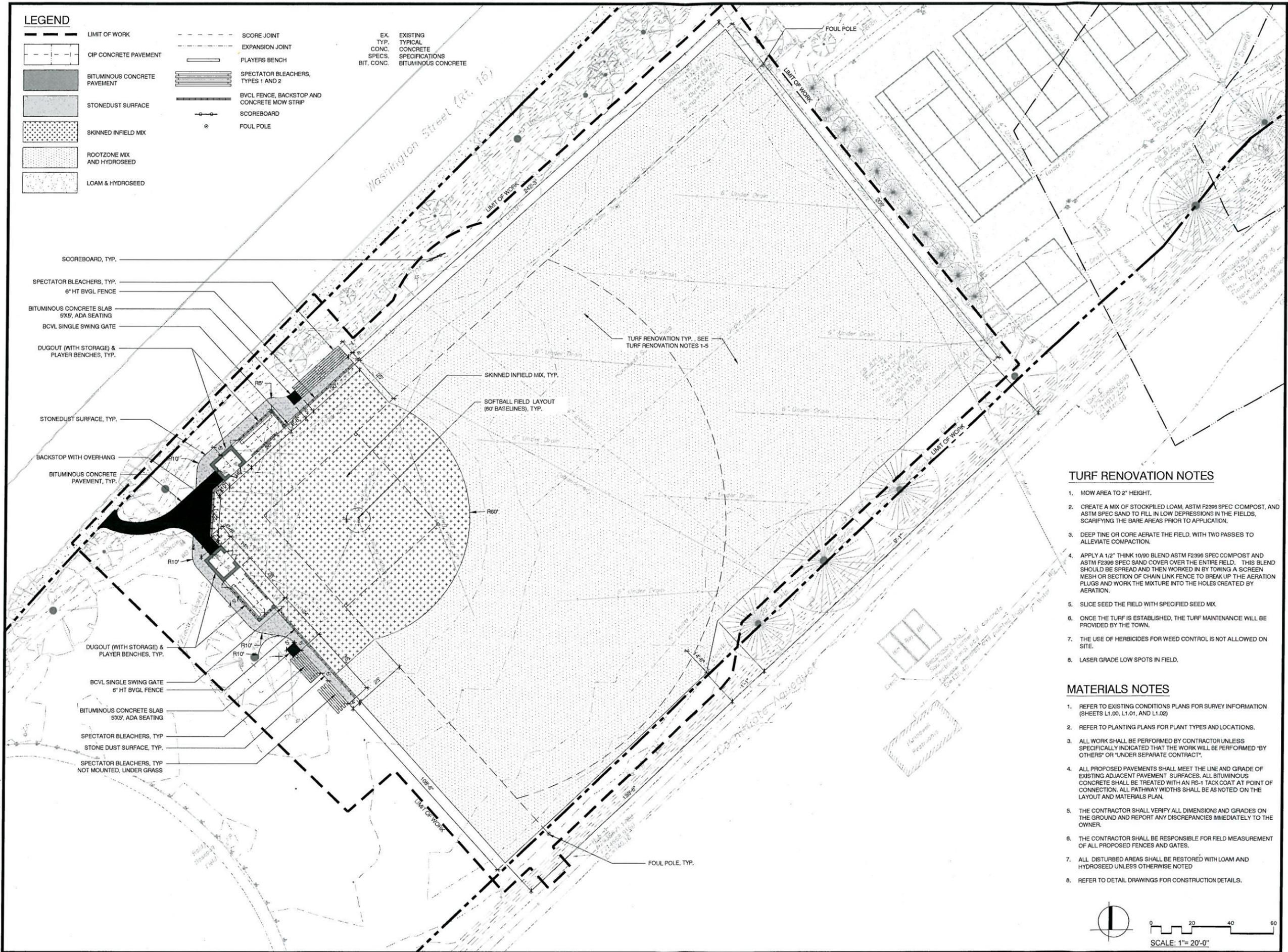
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**LEGEND**

- LIMIT OF WORK
- CIP CONCRETE PAVEMENT
- BITUMINOUS CONCRETE PAVEMENT
- STONEDUST SURFACE
- SKINNED INFIELD MIX
- ROOTZONE MIX AND HYDROSEED
- LOAM & HYDROSEED
- SCORE JOINT
- EXPANSION JOINT
- PLAYERS BENCH
- SPECTATOR BLEACHERS, TYPES 1 AND 2
- BVCL FENCE, BACKSTOP AND CONCRETE MOW STRIP
- SCOREBOARD
- FOUL POLE
- EX. TYP. CONC. SPECS. BIT. CONC.** EXISTING TYPICAL CONCRETE SPECIFICATIONS BITUMINOUS CONCRETE

- SCOREBOARD, TYP.
- SPECTATOR BLEACHERS, TYP.
- 6" HT BVGL FENCE
- BITUMINOUS CONCRETE SLAB 5X5', ADA SEATING
- BCVL SINGLE SWING GATE
- DUGOUT (WITH STORAGE) & PLAYER BENCHES, TYP.
- STONEDUST SURFACE, TYP.
- BACKSTOP WITH OVERHANG
- BITUMINOUS CONCRETE PAVEMENT, TYP.
- DUGOUT (WITH STORAGE) & PLAYER BENCHES, TYP.
- BCVL SINGLE SWING GATE
- 6" HT BVGL FENCE
- BITUMINOUS CONCRETE SLAB 5X5', ADA SEATING
- SPECTATOR BLEACHERS, TYP
- STONE DUST SURFACE, TYP.
- SPECTATOR BLEACHERS, TYP NOT MOUNTED, UNDER GRASS

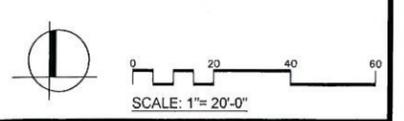


**TURF RENOVATION NOTES**

1. MOW AREA TO 2" HEIGHT.
2. CREATE A MIX OF STOCKPILED LOAM, ASTM F2396 SPEC COMPOST, AND ASTM SPEC SAND TO FILL IN LOW DEPRESSIONS IN THE FIELDS, SCARIFYING THE BARE AREAS PRIOR TO APPLICATION.
3. DEEP TINE OR CORE AERATE THE FIELD, WITH TWO PASSES TO ALLEVIATE COMPACTION.
4. APPLY A 1/2" THINK 10/90 BLEND ASTM F2396 SPEC COMPOST AND ASTM F2396 SPEC SAND COVER OVER THE ENTIRE FIELD. THIS BLEND SHOULD BE SPREAD AND THEN WORKED IN BY TOWING A SCREEN MESH OR SECTION OF CHAIN LINK FENCE TO BREAK UP THE AERATION PUGS AND WORK THE MIXTURE INTO THE HOLES CREATED BY AERATION.
5. SLICE SEED THE FIELD WITH SPECIFIED SEED MIX.
6. ONCE THE TURF IS ESTABLISHED, THE TURF MAINTENANCE WILL BE PROVIDED BY THE TOWN.
7. THE USE OF HERBICIDES FOR WEED CONTROL IS NOT ALLOWED ON SITE.
8. LASER GRADE LOW SPOTS IN FIELD.

**MATERIALS NOTES**

1. REFER TO EXISTING CONDITIONS PLANS FOR SURVEY INFORMATION (SHEETS L1.00, L1.01, AND L1.02)
2. REFER TO PLANTING PLANS FOR PLANT TYPES AND LOCATIONS.
3. ALL WORK SHALL BE PERFORMED BY CONTRACTOR UNLESS SPECIFICALLY INDICATED THAT THE WORK WILL BE PERFORMED "BY OTHERS" OR "UNDER SEPARATE CONTRACT".
4. ALL PROPOSED PAVEMENTS SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES. ALL BITUMINOUS CONCRETE SHALL BE TREATED WITH AN RS-1 TACK COAT AT POINT OF CONNECTION. ALL PATHWAY WIDTHS SHALL BE AS NOTED ON THE LAYOUT AND MATERIALS PLAN.
5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD MEASUREMENT OF ALL PROPOSED FENCES AND GATES.
7. ALL DISTURBED AREAS SHALL BE RESTORED WITH LOAM AND HYDROSEED UNLESS OTHERWISE NOTED
8. REFER TO DETAIL DRAWINGS FOR CONSTRUCTION DETAILS.



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**MATERIALS PLAN ENLARGEMENT - HUNNEWELL FIELD**

Sheet Number:  
**L3.02**

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**NEW ENGLAND WETLAND SEED MIX**

Botanical Name	Common Name	Indicator
<i>Carex vulpinoidea</i>	Fox Sedge	OBL
<i>Carex scoparia</i>	Blunt Broom Sedge	FACW
<i>Carex lurida</i>	Lurid Sedge	OBL
<i>Carex lupulina</i>	Hop Sedge	OBL
<i>Poa palustris</i>	Fowl Bluegrass	FACW
<i>Bidens frondosa</i>	Beck's Smartweed	FACW
<i>Scirpus atrovirens</i>	Green Bulrush	OBL
<i>Asclepias incarnata</i>	Swamp Milkweed	OBL
<i>Carex crinita</i>	Fringed Sedge	OBL
<i>Vernonia noveboracensis</i>	New York Ironweed	FACW+
<i>Juncus effusus</i>	Soft Rush	FACW+
<i>Aster lateriflorus (Symphyotrichum lateriflorum)</i>	Starved/Calico Aster	FACW
<i>Iris versicolor</i>	Blue Flag	OBL
<i>Glyceria grandis</i>	American Mannagrass	OBL
<i>Mimulus ringens</i>	Square Stemmed Monkey Flower	OBL
<i>Eupatorium maculatum (Eutrochium maculatum)</i>	Spotted Joe Pye Weed	OBL

**WETLAND PLANTING NOTES:**

- SEDIMENT BASIN AND DEEP POOL - NO PLANTINGS
- WETLAND SEED MIX - SCATTER UNIFORMLY AND INCORPORATE BY RAKING 1 LB OF WETLAND SEED MIX (SEE WETMIX SEED SPECIFICATION) FROM ELEVATION 135 UP TO ELEVATION 136. THIS INCLUDES THE SEDIMENT BASIN, WETLAND CELL AREA, AND DEEP POOL NEAR OUTLET.
- LOW MARSH PLANTING - ELEVATION 135. HERBACEOUS PLUG PLANTINGS (250 PLUGS) APPROXIMATELY 1 PER SQUARE FT (12 INCHES ON CENTER) SPECIES INCLUDE: CAREX COMOSA (BEARDED SEDGE) 100 PLUGS, IRIS VERSICOLOR (BLUE FLAG IRIS) 100 PLUGS AND PONTEDERIA CORDATA (PICKERWEED) 50 PLUGS. PLANT 4-5 PLUGS IN RANDOM GROUPINGS.
- HIGH MARSH PLANTING - ELEVATION 135-136. HERBACEOUS PLUG PLANTINGS (100 PLUGS) APPROXIMATELY 1 PER SQUARE FT (12 INCHES ON CENTER) SPECIES INCLUDE: ACORUS AMERICANUS (SWEETFLAG).
- THE HIGH MARSH SPECIES (SWEETFLAG) IS TOLERANT TO DROUGHT AND ALSO THRIVES IN WET CONDITIONS.
- DO NOT ACTIVATE OR PLACE THE WETLAND ONLINE UNTIL THE PLUG PLANTINGS HAVE ESTABLISHED AND SHOWN SIGNS OF NEW GROWTH, AND THE WETLAND SEED MIX SEEDS HAVE GERMINATED AND THE PLANTS REACH AT LEAST A 4 INCH HEIGHT, OR WHEN THE DESIGNER/ENGINEER INSPECTS THE PLANT GROWTH AND AUTHORIZES THE ACTIVATION.
- FIRST GROWING SEASON, WHENEVER CANOPY (OVERALL VEGETATION) REACHES A HEIGHT OF 18"-24" USE A STRING TRIMMER TO TRIM THE HIGH MARSH TO A HEIGHT OF 8". THIS WILL REDUCE COMPETITION BY FAST-GROWING WEEDS FOR SUNLIGHT AND NUTRIENTS NEEDED BY SLOW-GROWING PERENNIAL NATIVES. MOWING SHOULD CEASE BY MID-SEPTEMBER.
- PROBLEM WEEDS, SUCH AS PRAGMATIC, AND PURPLE LOOSESTRIFE, SHOULD BE HAND PULLED AS THEY ARE DISCOVERED.
- EXCESS CUT MATERIAL TO COVER NEW 36" PIPE TO BE INSTALLED.



**NEW ENGLAND WILDFLOWER SEED MIX**

Botanical Name	Common Name	Indicator
<i>Schizanthus scapularis</i>	Little Bluestem	FACU
<i>Sorghastrum nutans</i>	Indian Grass	UPL
<i>Chamaecrista fasciculata</i>	Partridge Pea	FACU
<i>Elymus virginicus</i>	Virginia Wild Rye	FACW-
<i>Elymus canadensis</i>	Canada Wild Rye	FACU+
<i>Festuca rubra</i>	Red Fescue	FACU
<i>Asclepias tuberosa</i>	Butterfly Milkweed	NI
<i>Vernonia noveboracensis</i>	New York Ironweed	FACU+
<i>Oenothera biennis</i>	Evening Primrose	FACU-
<i>Aster novae-angliae (Symphyotrichum novae-angliae)</i>	New England Aster	FACW-
<i>Rudbeckia hirta</i>	Black Eyed Susan	FACU-
<i>Solidago juncea</i>	Sairy Goldenrod	FACU
<i>Eupatorium patulum (Eutrochium patulum)</i>	Hollow-Stem Joe Pye Weed	FACW
<i>Aster lateriflorus (Symphyotrichum lateriflorum)</i>	Starved/Calico Aster	FACW

**SHRUB AND TREE PLANT SCHEDULE**

ABRV.	QTY	COMMON NAME	BOTANICAL NAME	SIZE	NOTES
<b>DECIDUOUS TREES</b>					
AR	9	RED MAPLE	ACER RUBRUM	3'-3.5" CAL. B&B	SPACE 30'-50' O.C.
AL	22	ALLEGHENY SERVICEBERRY	AMELANCHIER LAEVIS	3'-3.5" CAL. B&B	SPACE 12'-15' O.C.
OV	5	HOP HORNBEEAM	OSTRYA VIRGINIANA	3'-3.5" CAL. B&B	SPACE 15' O.C.
<b>EVERGREEN TREES</b>					
PS	8	WHITE PINE	PINUS STROBUS	6'-8" TALL B&B	SPACE 15' O.C.
AB	5	BALSAM FIR	ABIES BALSAMEA	6'-8" TALL B&B	SPACE 15' O.C.
PG	2	WHITE SPRUCE	PICEA GLAUCA	6'-8" TALL B&B	SPACE 15' O.C.
JV	5	RED CEDAR	JUNIPERUS VIRGINIANA	6'-8" TALL B&B	SPACE 10' O.C.
<b>SHRUBS AND GRASSES</b>					
AM	15	BLACK CHOKEBERRY	AMELANCHIER SPICATA	#2 CONT., B&B	SPACE 5'-4" O.C.
BG		BOULETELOUA GRACILIS	BLUE GRAMA 'BLOND AMBITION'	SEEDS	6 LBS.
L&H		LOAM AND HYDROSEED, TYP.	N/A	N/A	N/A
AS	13	RUNNING SERVICEBERRY	AMELANCHIER SPICATA	#2 CONT., B&B	SPACE 3'-0" O.C.
CP	52	SWEET FERN	COMPTONIA PEREGRINA	#2 CONT., B&B	SPACE 3'-4" O.C.
CS	18	RED TWIG DOGWOOD	CORNUS SERICEA	#2 CONT., B&B	SPACE 5'-4" O.C.
GB	21	BLACK HUCKLEBERRY	GAYLUSSACIA BACCATA	#2 CONT., B&B	SPACE 5'-4" O.C.
HV	3	AMERICAN WITCH HAZEL	HAMMELIS VIRGINIANA	#3 CONT., B&B	SPACE 10' O.C.
PV	8	CHOKECHERRY	PRUNUS VIRGINIANA	#3 CONT., B&B	SPACE 10' O.C.
RA	15	FRAGRANT SUMAC	RHUS AROMATICA	#2 CONT., B&B	SPACE 3'-4" O.C.
<b>WETLAND PLANTING</b>					
WSM	N.A.	WETLAND SEED MIX	SEE NOTES	N.A.	N.A.
LM	N.A.	LOW MARSH PLANTING	SEE NOTES	N.A.	N.A.
HM	N.A.	HIGH MARSH PLANTING	SEE NOTES	N.A.	N.A.

Project:  
TOWN OF WELLESLEY, MA

HUNNEWELL FIELD RENOVATIONS  
421 WASHINGTON ST., WELLESLEY, MA 02482

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5/3/2019

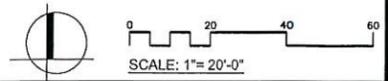
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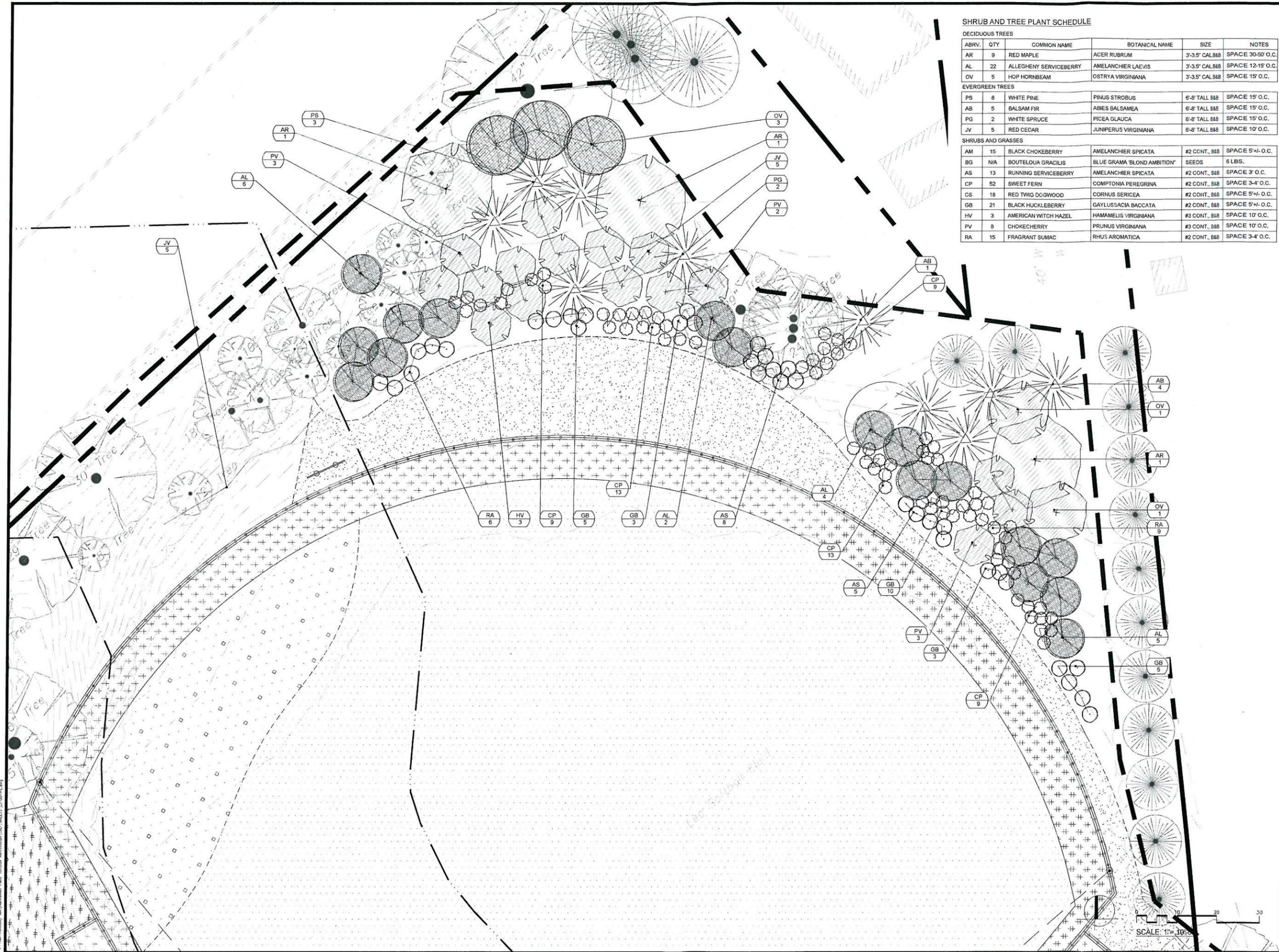
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**PLANTING PLAN ENLARGEMENT - LEE FIELD**

Sheet Number:  
**L5.01**



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**SHRUB AND TREE PLANT SCHEDULE**

DECIDUOUS TREES				
ABRV.	QTY	COMMON NAME	BOTANICAL NAME	NOTES
AR	9	RED MAPLE	ACER RUBRUM	3-3.5" CAL B&B SPACE 30-50' O.C.
AL	22	ALLEGHENY SERVICEBERRY	AMELANCHIER LAEVIS	3-3.5" CAL B&B SPACE 12-15' O.C.
OV	5	HOP HORNBEAM	OSTRYA VIRGINIANA	3-3.5" CAL B&B SPACE 15' O.C.
EVERGREEN TREES				
PS	8	WHITE PINE	PINUS STROBUS	6-8' TALL B&B SPACE 15' O.C.
AB	5	BALSAM FIR	ABIES BALSAMEA	6-8' TALL B&B SPACE 15' O.C.
PG	2	WHITE SPRUCE	PICEA GLAUCA	6-8' TALL B&B SPACE 15' O.C.
JV	5	RED CEDAR	JUNIPERUS VIRGINIANA	6-8' TALL B&B SPACE 10' O.C.
SHRUBS AND GRASSES				
AM	15	BLACK CHOKEBERRY	AMELANCHIER SPICATA	#2 CONT., B&B SPACE 5'-6" O.C.
BG	N/A	BOUTELOUA GRACILIS	BLUE GRAMA 'BLOND AMBITION'	SEEDS 6 LBS.
AS	13	RUNNING SERVICEBERRY	AMELANCHIER SPICATA	#2 CONT., B&B SPACE 3' O.C.
CP	52	SWEET FERN	COMPTONIA PEREGRINA	#2 CONT., B&B SPACE 3-4' O.C.
CS	18	RED TWIG DOGWOOD	CORNUS SERICEA	#2 CONT., B&B SPACE 5'-6" O.C.
GB	21	BLACK HUCKLEBERRY	GAYLUSSACIA BACCATA	#2 CONT., B&B SPACE 5'-6" O.C.
HV	3	AMERICAN WITCH HAZEL	HAMAMELIS VIRGINIANA	#3 CONT., B&B SPACE 10' O.C.
PV	8	CHOKECHERRY	PRUNUS VIRGINIANA	#3 CONT., B&B SPACE 10' O.C.
RA	15	FRAGRANT SUMAC	RHUS AROMATICA	#2 CONT., B&B SPACE 3-4' O.C.

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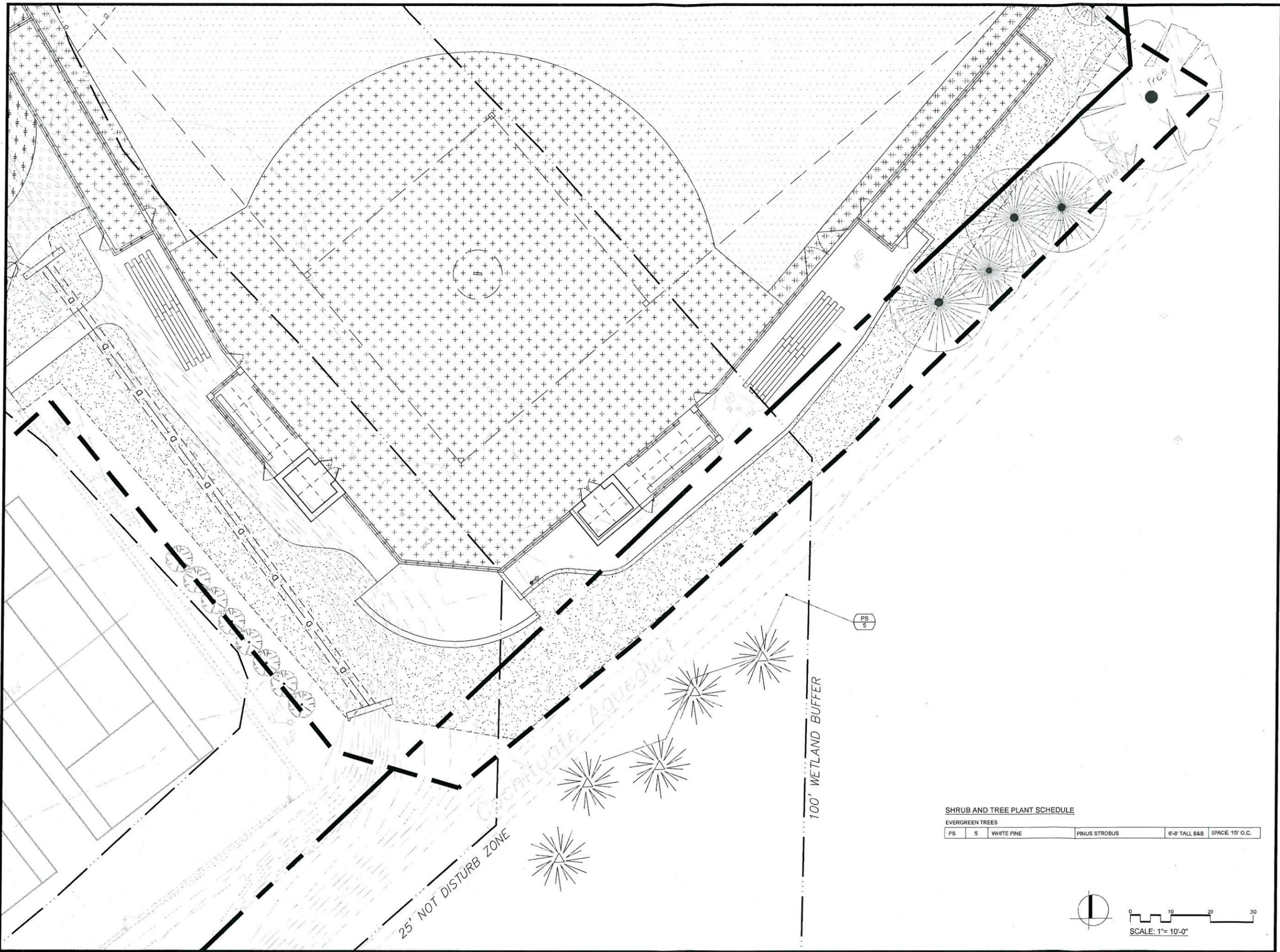
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Drawing Title:  
**PLANTING PLAN  
 ENLARGEMENT -  
 LEE FIELD**

Sheet Number:  
**L5.01a**

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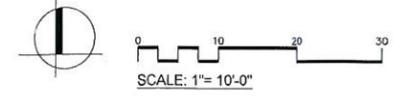
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ENLARGEMENT -  
LEE FIELD

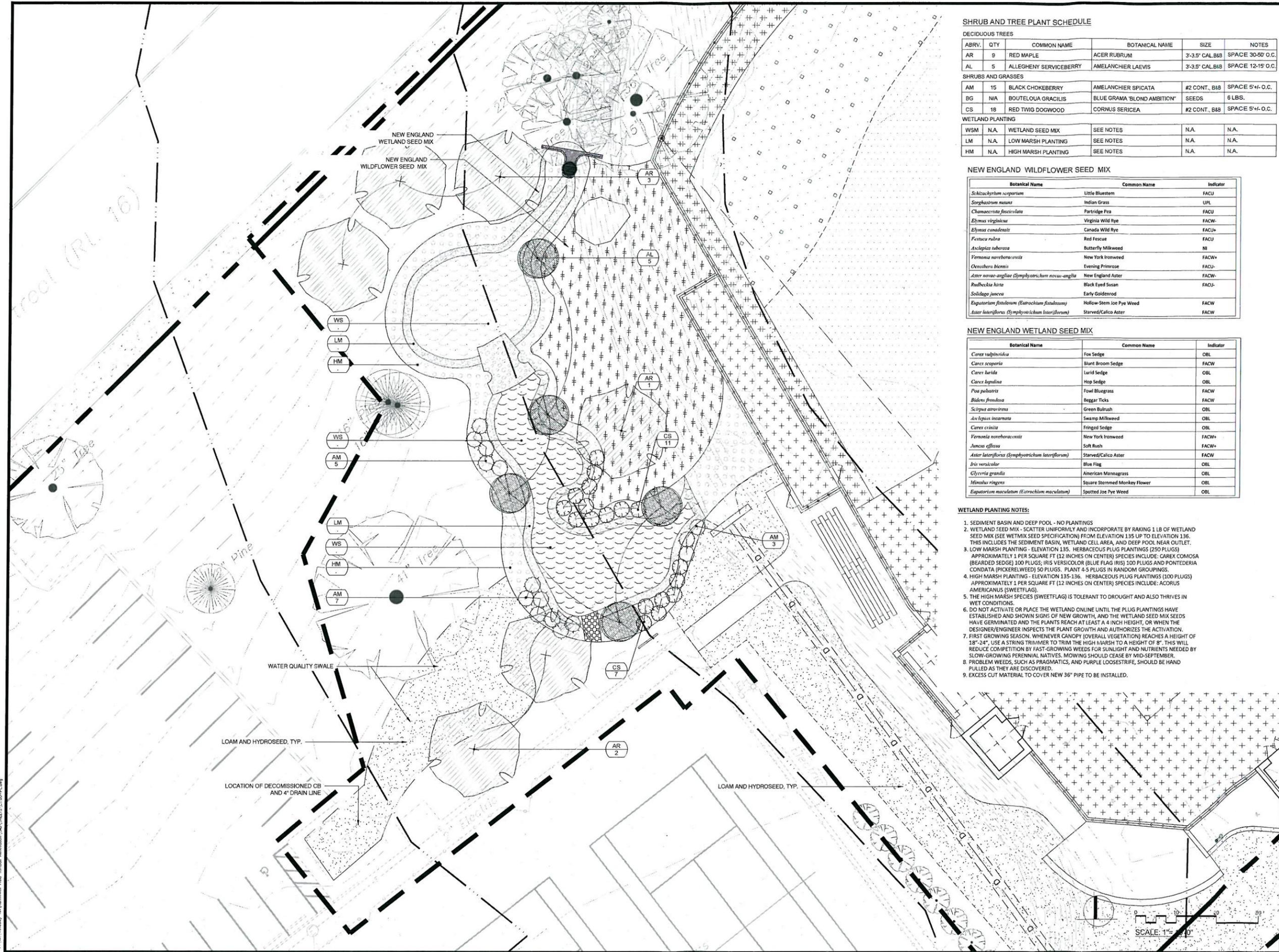
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SHRUB AND TREE PLANT SCHEDULE

EVERGREEN TREES			
PS	5	WHITE PINE	PINUS STROBUS 6'-8" TALL B&B SPACE 15' O.C.



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**SHRUB AND TREE PLANT SCHEDULE**

DECIDUOUS TREES				
ABRV.	QTY	COMMON NAME	BOTANICAL NAME	NOTES
AR	9	RED MAPLE	ACER RUBRUM	3'-3.5" CAL. B&B SPACE 30'-50" O.C.
AL	5	ALLEGHENY SERVICEBERRY	AMELANCHIER LAEVIS	3'-3.5" CAL. B&B SPACE 12'-15" O.C.

SHRUBS AND GRASSES				
ABRV.	QTY	COMMON NAME	BOTANICAL NAME	NOTES
AM	15	BLACK CHOKEBERRY	AMELANCHIER SPICATA	#2 CONT., B&B SPACE 5'-11" O.C.
BG	N/A	BOUTELOUA GRACILIS	BLUE GRAMA "BLOND AMBITION"	SEEDS 6 LBS.
CS	18	RED TWIG DOGWOOD	CORNUS SERICEA	#2 CONT., B&B SPACE 5'-11" O.C.

WETLAND PLANTING				
ABRV.	QTY	COMMON NAME	BOTANICAL NAME	NOTES
WSM	N/A	WETLAND SEED MIX	SEE NOTES	N/A. N/A.
LM	N/A	LOW MARSH PLANTING	SEE NOTES	N/A. N/A.
HM	N/A	HIGH MARSH PLANTING	SEE NOTES	N/A. N/A.

**NEW ENGLAND WILDFLOWER SEED MIX**

Botanical Name	Common Name	Indicator
<i>Schizachyrium scoparium</i>	Little Bluestem	FACU
<i>Sorghastrum nutans</i>	Indian Grass	UPL
<i>Chamaecrista fasciculata</i>	Partridge Pea	FACU
<i>Elymus virginicus</i>	Virginia Wild Rye	FACW
<i>Elymus canadensis</i>	Canada Wild Rye	FACW+
<i>Festuca rubra</i>	Red Fescue	FACU
<i>Asclepias tuberosa</i>	Butterfly Milkweed	NI
<i>Yernonia noveboracensis</i>	New York Ironweed	FACW+
<i>Oenothera biennis</i>	Evening Primrose	FACU
<i>Aster novae-angliae (Symphyotrichum novae-angliae)</i>	New England Aster	FACW-
<i>Rudbeckia hirta</i>	Black Eyed Susan	FACU
<i>Solidago juncea</i>	Early Goldenrod	FACU
<i>Eupatorium fistulosum (Eurochium fistulosum)</i>	Hollow-Stem Joe Pye Weed	FACW
<i>Aster lateriflorus (Symphyotrichum lateriflorum)</i>	Starved/Calico Aster	FACW

**NEW ENGLAND WETLAND SEED MIX**

Botanical Name	Common Name	Indicator
<i>Carex vulpinoidea</i>	Fox Sedge	OBL
<i>Carex scoparia</i>	Blunt Broom Sedge	FACW
<i>Carex lasiocarpa</i>	Lurid Sedge	OBL
<i>Carex lupulina</i>	Hop Sedge	OBL
<i>Poa pulsatris</i>	Fowl Bluegrass	FACW
<i>Bidens frondosa</i>	Beggar Ticks	FACW
<i>Scirpus atrovirens</i>	Green Bulrush	OBL
<i>Axilepis incarnata</i>	Swamp Milkweed	OBL
<i>Carex crinita</i>	Fringed Sedge	OBL
<i>Yernonia noveboracensis</i>	New York Ironweed	FACW+
<i>Juncus effusus</i>	Soft Rush	FACW+
<i>Aster lateriflorus (Symphyotrichum lateriflorum)</i>	Starved/Calico Aster	FACW
<i>Iris versicolor</i>	Blue Flag	OBL
<i>Glyceria grandis</i>	American Mannagrass	OBL
<i>Mimulus ringens</i>	Square Stemmed Monkey Flower	OBL
<i>Eupatorium maculatum (Eurochium maculatum)</i>	Spotted Joe Pye Weed	OBL

**WETLAND PLANTING NOTES:**

1. SEDIMENT BASIN AND DEEP POOL - NO PLANTINGS
2. WETLAND SEED MIX - SCATTER UNIFORMLY AND INCORPORATE BY RAKING 1 LB OF WETLAND SEED MIX (SEE WETLAND SEED SPECIFICATION) FROM ELEVATION 135 UP TO ELEVATION 136. THIS INCLUDES THE SEDIMENT BASIN, WETLAND CELL AREA, AND DEEP POOL NEAR OUTLET.
3. LOW MARSH PLANTING - ELEVATION 135. HERBACEOUS PLUG PLANTINGS (250 PLUGS) APPROXIMATELY 1 PER SQUARE FT (12 INCHES ON CENTER) SPECIES INCLUDE: CAREX COMOSA (BEARDED SEDGE) 100 PLUGS; IRIS VERSICOLOR (BLUE FLAG IRIS) 100 PLUGS AND PONTEDERIA CONDATA (PICKERELWEED) 50 PLUGS. PLANT 4-5 PLUGS IN RANDOM GROUPINGS.
4. HIGH MARSH PLANTING - ELEVATION 135-136. HERBACEOUS PLUG PLANTINGS (100 PLUGS) APPROXIMATELY 1 PER SQUARE FT (12 INCHES ON CENTER) SPECIES INCLUDE: ACORUS AMERICANUS (SWEETFLAG).
5. THE HIGH MARSH SPECIES (SWEETFLAG) IS TOLERANT TO DROUGHT AND ALSO THRIVES IN WET CONDITIONS.
6. DO NOT ACTIVATE OR PLACE THE WETLAND ONLINE UNTIL THE PLUG PLANTINGS HAVE ESTABLISHED AND SHOWN SIGNS OF NEW GROWTH, AND THE WETLAND SEED MIX SEEDS HAVE GERMINATED AND THE PLANTS REACH AT LEAST A 4 INCH HEIGHT, OR WHEN THE DESIGNER/ENGINEER INSPECTS THE PLANT GROWTH AND AUTHORIZES THE ACTIVATION.
7. FIRST GROWING SEASON, WHENEVER CANOPY (OVERALL VEGETATION) REACHES A HEIGHT OF 18"-24", USE A STRING TRIMMER TO TRIM THE HIGH MARSH TO A HEIGHT OF 8". THIS WILL REDUCE COMPETITION BY FAST-GROWING WEEDS FOR SUNLIGHT AND NUTRIENTS NEEDED BY SLOW-GROWING PERENNIAL NATIVES. MOWING SHOULD CEASE BY MID-SEPTEMBER.
8. PROBLEM WEEDS, SUCH AS PRAGMATICS, AND PURPLE LOOSESTRIFE, SHOULD BE HAND PULLED AS THEY ARE DISCOVERED.
9. EXCESS CUT MATERIAL TO COVER NEW 36" PIPE TO BE INSTALLED.

Project:  
TOWN OF WELLESLEY, MA



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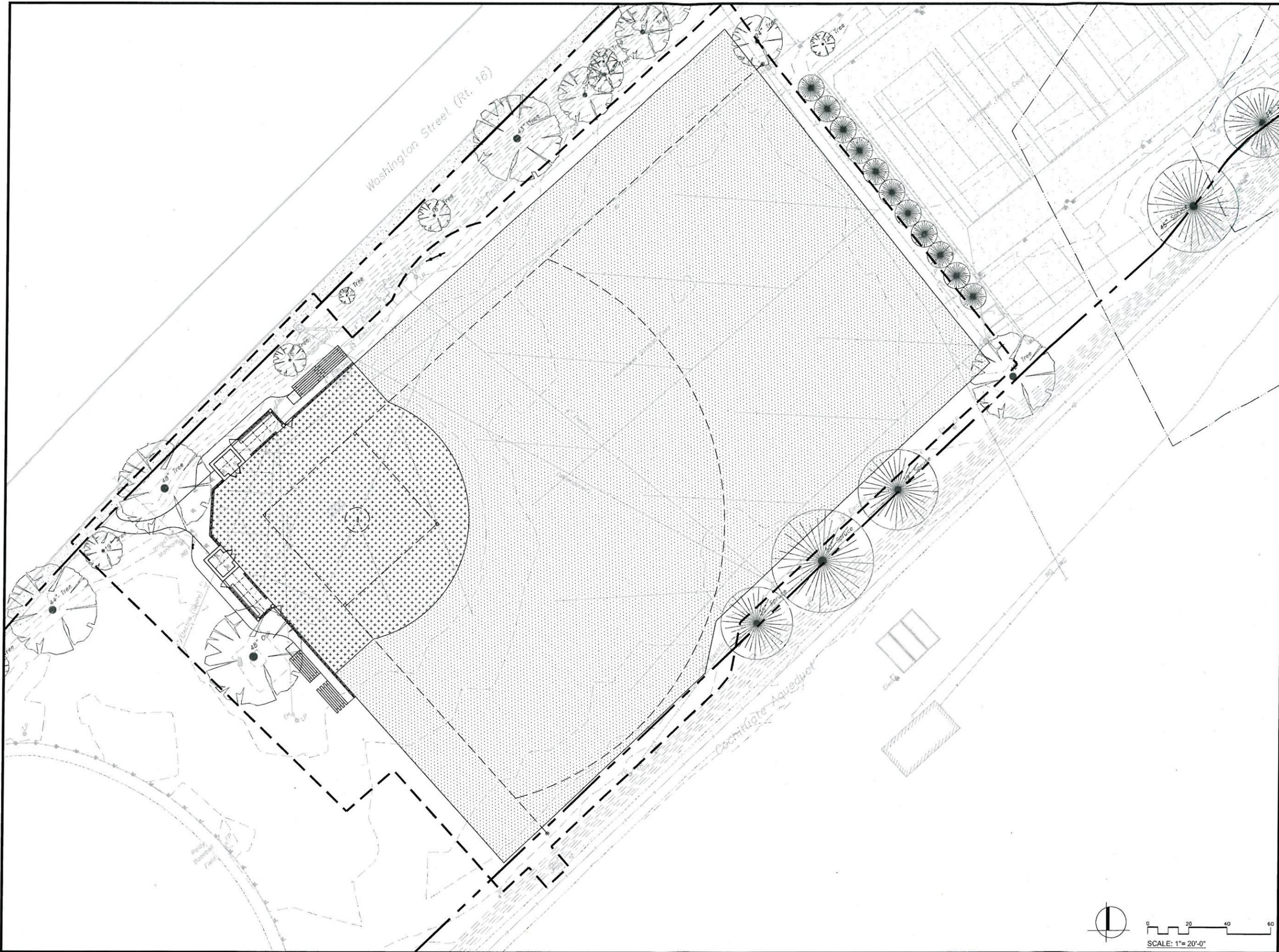
PLANTING PLAN  
ENLARGEMENT -  
LEE FIELD

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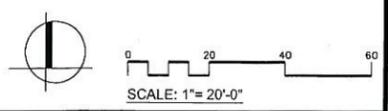
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**PLANTING PLAN ENLARGEMENT - HUNNEWELL FIELD**  
 Sheet Number:  
**L5.02**



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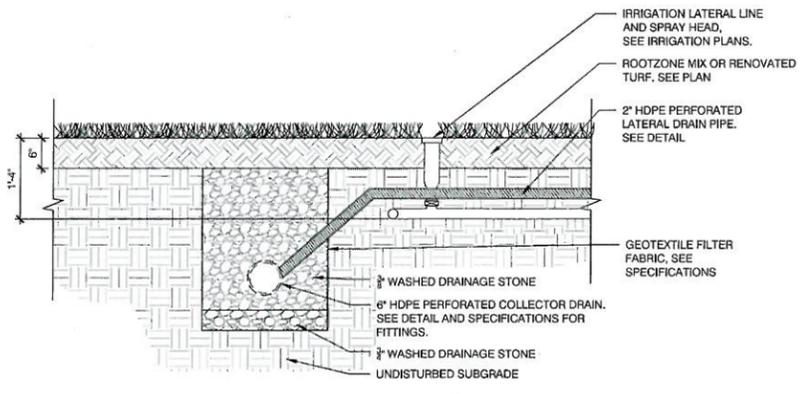
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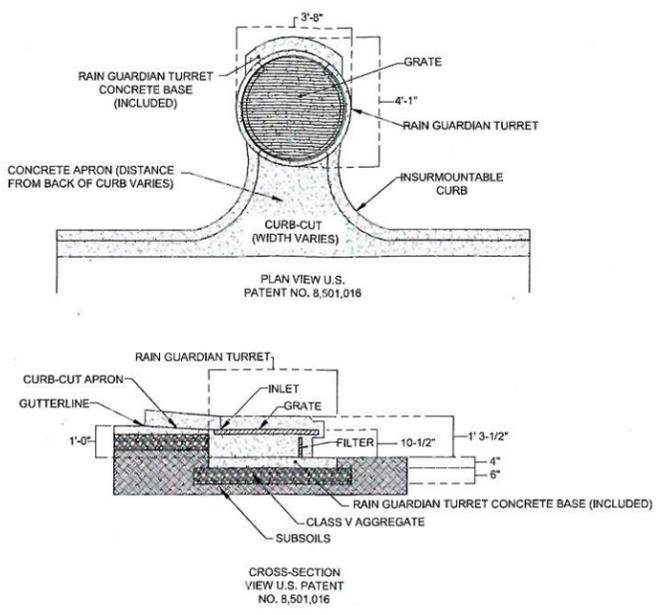
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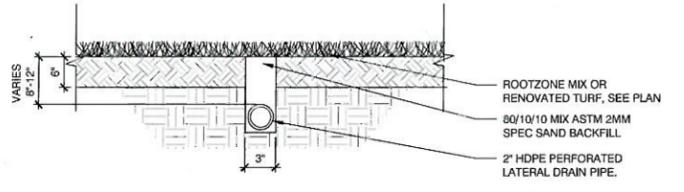
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1 COLLECTOR DRAIN W/ LATERAL CONNECTION  
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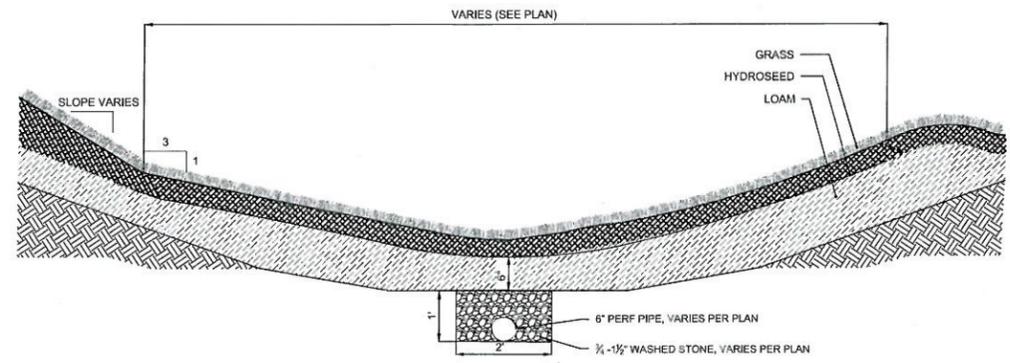


4 RAIN GUARDIAN TURRET, TYP.  
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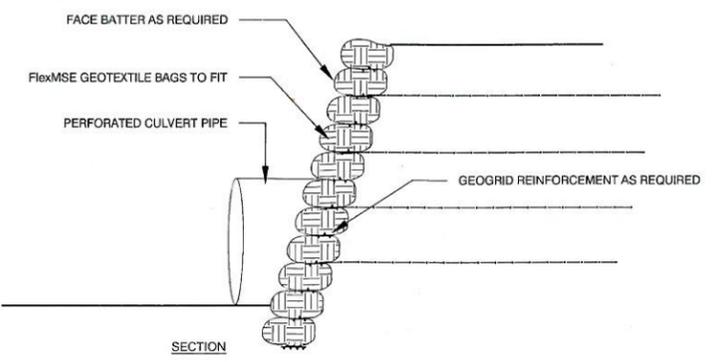
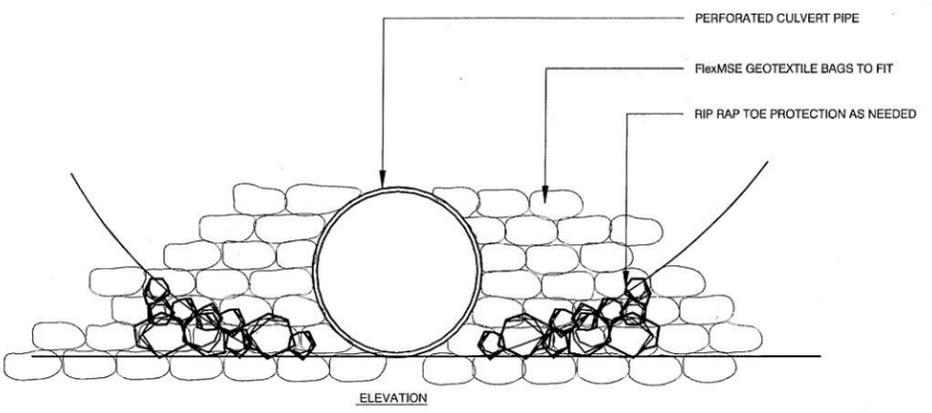


- TURF RENOVATION NOTES:
- MOW AREA TO 2" HEIGHT.
  - CREATE A MIX OF STOCKPILED LOAM, ASTM F2396 SPEC COMPOST, AND ASTM SPEC SAND TO FILL IN LOW DEPRESSIONS IN THE FIELDS, SCARIFYING THE BARE AREAS PRIOR TO APPLICATION.
  - DEEP TINE OR CORE AERATE THE FIELD, WITH TWO PASSES TO ALLEVIATE COMPACTION.
  - APPLY A 1/2" THINK 10/90 BLEND ASTM F2396 SPEC COMPOST AND ASTM F2396 SPEC SAND COVER OVER THE ENTIRE FIELD. THIS BLEND SHOULD BE SPREAD AND THEN WORKED IN BY TOWING A SCREEN MESH OR SECTION OF CHAIN LINK FENCE TO BREAK UP THE AERATION PLUGS AND WORK THE MIXTURE INTO THE HOLES CREATED BY AERATION.
  - SLICE SEED THE FIELD WITH SPECIFIED SEED MIX.

2 2" PERFORATED LATERAL DRAIN  
SCALE: N.T.S.

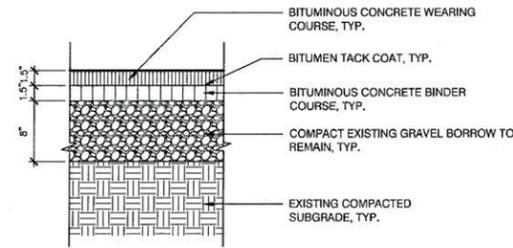


5 WATER QUALITY SWALE  
SCALE: N.T.S.  
1. WITH OR WITHOUT PIPE PER PLAN SPECIFICATION.



- NOTES:
- FlexMSE GEOTEXTILES BAGS FILLED WITH MATERIAL FROM SITE.
  - DESIGN LIFE OF 120 YEARS AND A 75-YEAR WARRANTY.
  - REQUIRED MAINTENANCE: TRIMMING OF VEGETATION ONCE PER SEASON.
  - GEOTEXTILE BAGS EASY TO CUT WITH A RAZOR KNIFE.

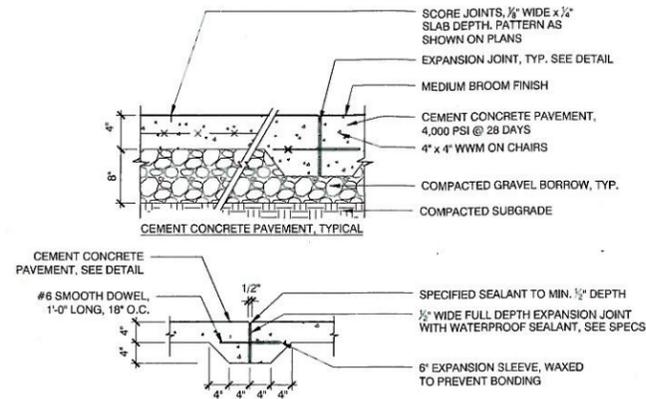
3 PERFORATED CULVERT HEADWALL FlexMSE, TYP.  
SCALE: N.T.S.



NOTE:  
1. CONTRACTOR TO PROVIDE SMOOTH TRANSITION WHERE NEW PAVEMENT ABUTS EXISTING PAVEMENT, TYP.

**1 BITUMINOUS CONCRETE PAVEMENT, TYP.**

SCALE: N.T.S.

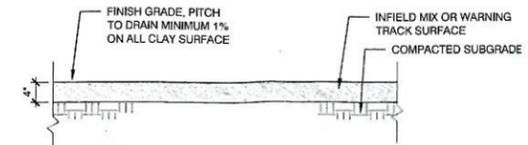


**EXPANSION JOINT INSTALLATION NOTES:**

1. DOWEL IS TYPICAL AT ALL EXPANSION JOINTS (18" O.C.) WITHIN CONCRETE PAVING AND BETWEEN NEW CONCRETE PAVING AND EXISTING CONCRETE PAVING TO REMAIN.
2. DELETE EXPANSION SLEEVE AND DOWEL WHERE JOINT ABUTS WALL, CURBS, OR OTHER VERTICAL SURFACES, UNLESS OTHERWISE NOTED.
3. EXPANSION JOINTS MAX. 25'-0" O.C. UNLESS SHOWN OTHERWISE.
4. EXPANSION JOINTS SHALL BE PLACED WHERE NEW CEMENT CONCRETE PAVEMENT MEETS EXISTING PAVEMENT OR WALLS TO REMAIN.

**4 CEMENT CONCRETE PAVEMENT AND EXPANSION JOINT**

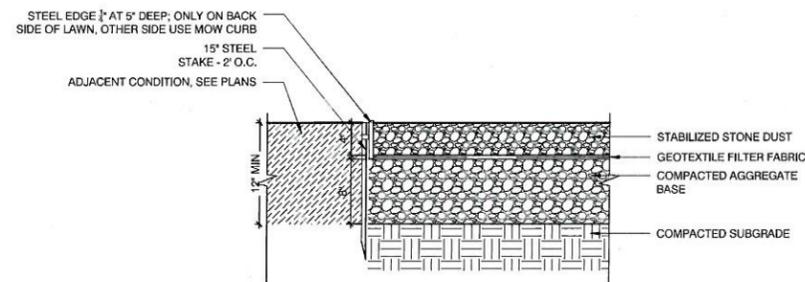
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- NOTES:
1. APPLY APPROVED PRE-EMERGENT WEED KILLER AT SUB-GRADE PRIOR TO INSTALLATION OF CLAY INFIELD MIX OR WARNING TRACK SURFACE.
  2. SEE SPECIFICATION FOR DETAILED INSTALLATION INFORMATION.

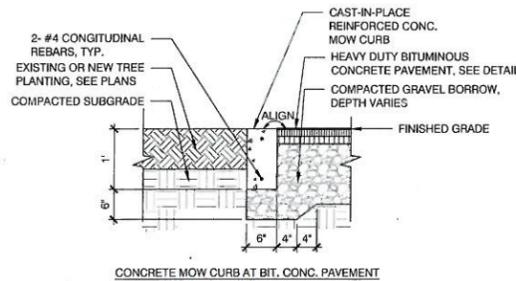
**6 CLAYMIX AND WARNING TRACK SURFACE, TYP.**

SCALE: N.T.S.

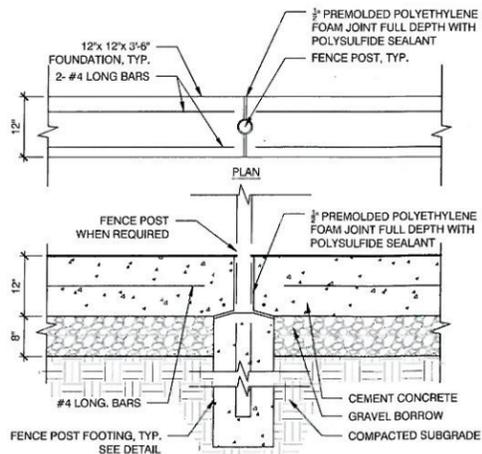


**2 STONE DUST SURFACE, TYP.**

SCALE: N.T.S.



**CONCRETE MOW CURB AT BIT. CONC. PAVEMENT**

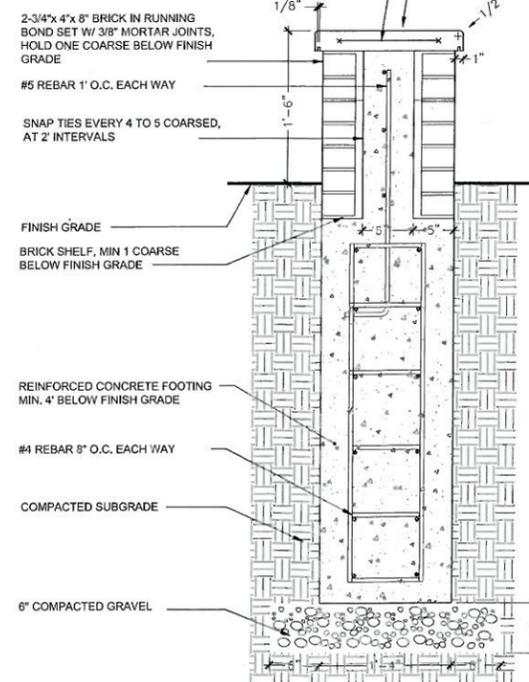


**CONCRETE MOW STRIP AT FENCE**

- NOTES:
1. MOW STRIP CORNERS ADJACENT TO RESILIENT SURFACING SHALL BE SQUARE TO ENSURE SMOOTH INTERFACE BETWEEN MATERIALS.
  2. MOW STRIP CORNERS ADJACENT TO PLANTING BED OR LAWN AREAS WILL HAVE 3/4" CHAMFER
  3. CONTRACTOR SHALL PROVIDE 3/4" PREMOLDED POLYETHYLENE FOAM EXPANSION JOIN, FULL DEPTH WITH SILICONE SEALANT EVERY 30' O.C. UNLESS OTHERWISE NOTED.
  4. CONTRACTOR SHALL USE EXTREME CAUTION AT ROOT ZONE OF EXISTING TREES TO REMAIN. CONTRACTOR SHALL CLEAN CUT ANY ROOTS OVER 2" DIA. THAT ARE EFFECTED BY THE SCOPE OF WORK. CONTRACTOR SHALL CONSULT ARBORIST PRIOR TO ANY ROOT REMOVAL.

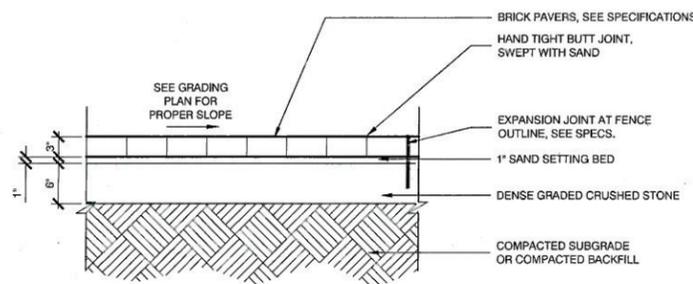
**5 MOW STRIP 3 TYPES**

SCALE: 3/4"-1'-0"



**7 BRICK SEAT WALL, TYP.**

SCALE: N.T.S.



- NOTES:
1. SEE SPECIFICATIONS.

**3 BRICK PAVER, TYP.**

SCALE: N.T.S.

Consultants:

Revisions:

No.	Date	Description
1	02/26/2019	Revised as per comments
2	03/21/2019	Revised as per comments
3	03/26/2019	Revised as per comments
4	05/01/2019	Revised as per comments

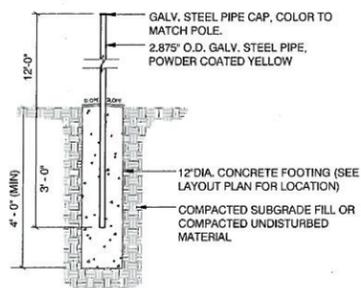
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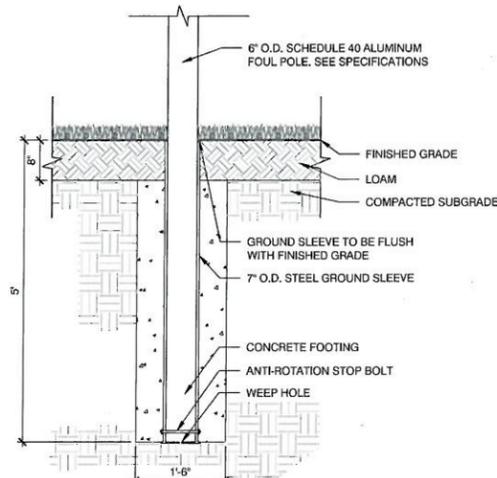
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 Reviewed By: MSM  
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 W&S File No:

Drawing Title:  
**SITE CONSTRUCTION**  
**DETAILS**

Sheet Number:  
**L6.02**

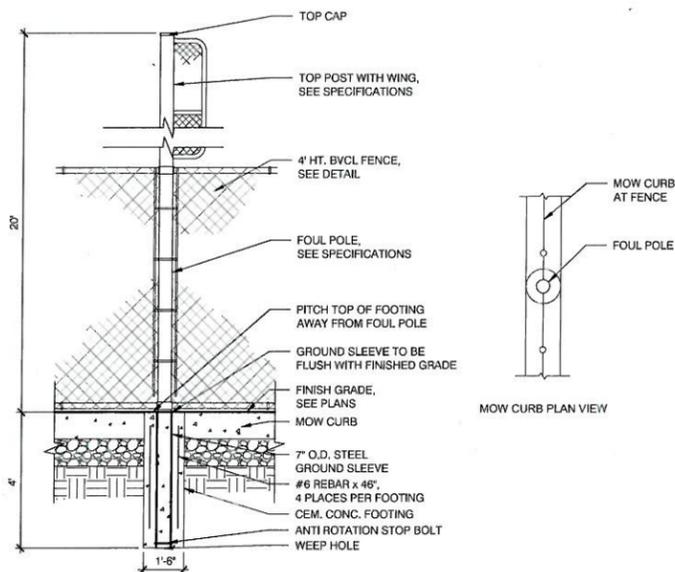


**1 FOUL POLE**  
SCALE: 1/2"=1'-0"



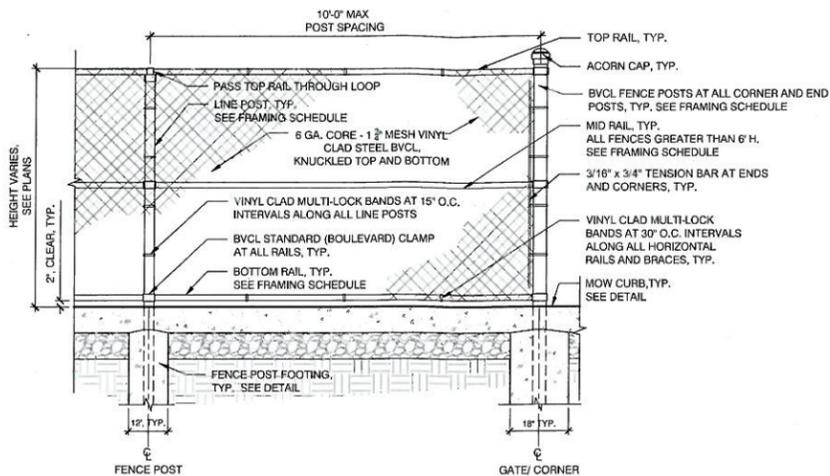
NOTES:  
1. CONTRACTOR SHALL PROVIDE GROUND SLEEVE CAP BY MANUFACTURER.  
2. ANTI-ROTATION STOP BOLT SHALL BE 1.2" X 8" LONG HEX BOLT AND ANTI-ROTATION STOP MUST BE PARALLEL WITH SLOT AT BOTTOM OF FOUL POLE.

**2 FOUL POLE FOOTING**  
SCALE: 3/4"=1'-0"



NOTES:  
1. CONTRACTOR SHALL PROVIDE GROUND SLEEVE CAP BY MANUFACTURER.  
2. ANTI-ROTATION STOP BOLT SHALL BE 1.2" X 8" LONG HEX BOLT AND ANTI-ROTATION STOP MUST BE PARALLEL WITH SLOT AT BOTTOM OF FOUL POLE.

**3 FOUL POLE AT FENCE**  
SCALE: N.T.S.



NOTES:  
1. ALL FENCE PIPE SHALL BE SCH. 40, VINYL CLAD HOT DIP GALV. STEEL PIPE.  
2. ALL LINE POSTS SHALL BE INSTALLED EQUALLY SPACED BETWEEN END & CORNER POSTS.  
3. ALL CLAMPS, TIES, POST TOPS, BANDS, POSTS, ETC. SHALL BE VINYL CLAD TO MATCH FABRIC.  
4. REFER TO DETAIL AND SPECS FOR GATE REQUIREMENTS.  
5. SEE FRAMING SCHEDULE FOR SIZING.

**FRAMING SCHEDULE:**

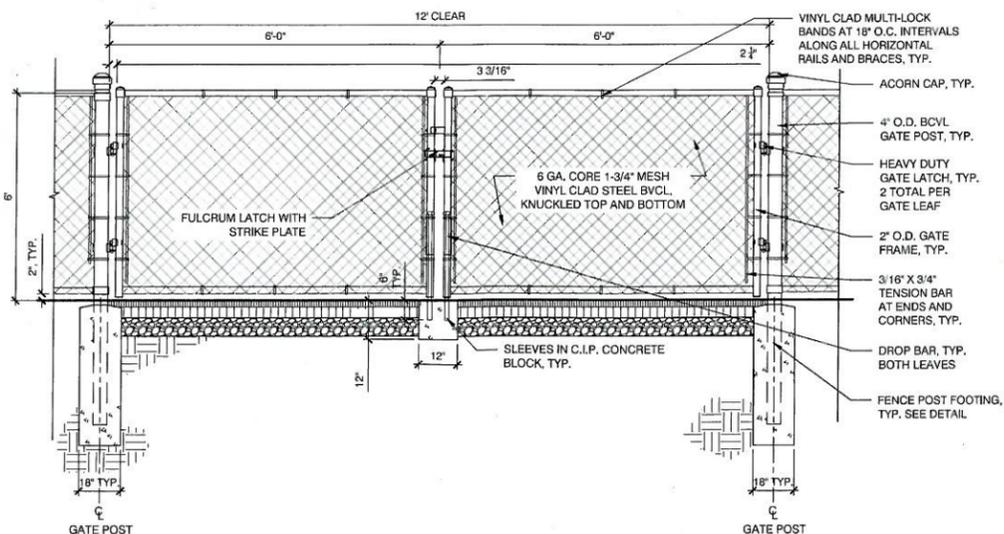
**4" H. FENCE FRAMING SIZES:**  
LINE POSTS: 2" - 2.375" O.D.  
TOP & BOTTOM RAIL: 1 1/2" - 1.68" O.D.  
GATE & END POST: 2 1/2" - 2.875" O.D.

**6" H. FENCE FRAMING SIZES:**  
LINE POSTS: 2" - 2.375" O.D.  
TOP & BOTTOM RAIL: 1 1/2" - 1.875" O.D.  
GATE & END POST: 3" - 3.5" O.D.

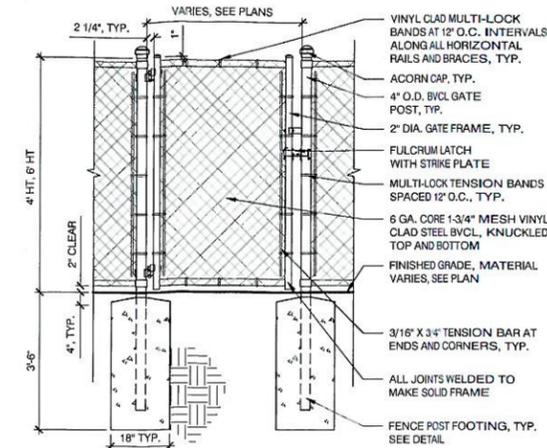
**8" H. FENCE FRAMING SIZES:**  
LINE POSTS: 2.5" - 2.875" O.D.  
TOP, MID & BOTTOM RAIL: 2" - 2.375" O.D.  
GATE & END POST: 3" - 3.5" O.D.

**10" H. & ABOVE FENCE FRAMING SIZES:**  
LINE POSTS: 2.5" - 2.875" O.D.  
TOP, MID & BOTTOM RAIL: 2.5" - 2.375" O.D.  
CORNER & END POST: 4" - 4" O.D.  
GATE POST: 4" - 4" O.D.

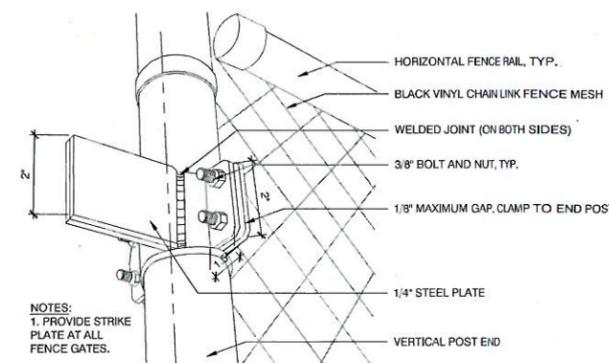
**4 TYP. BVCL FENCE**  
SCALE: N.T.S.



**5 6' HT BVCL DOUBLE SWING GATE**  
SCALE: N.T.S.

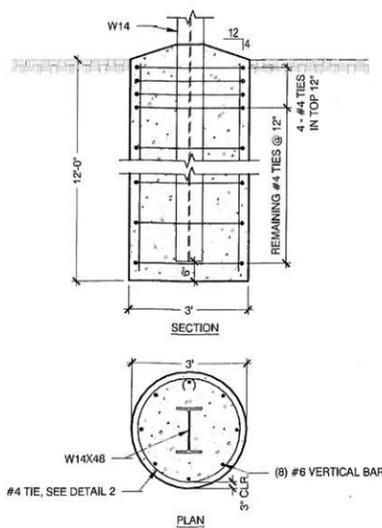


**6 BVCL SINGLE SWING GATE**  
SCALE: N.T.S.



NOTES:  
1. PROVIDE STRIKE PLATE AT ALL FENCE GATES.

**7 GATE STOP**  
SCALE: N.T.S.



**8 SCOREBOARD FOOTING**  
SCALE: N.T.S.

Consultants:

Revisions:

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1	02/26/2019	Revised as per comments
2	03/21/2019	Revised as per comments
3	03/26/2019	Revised as per comments
4	05/03/2019	Revised as per comments

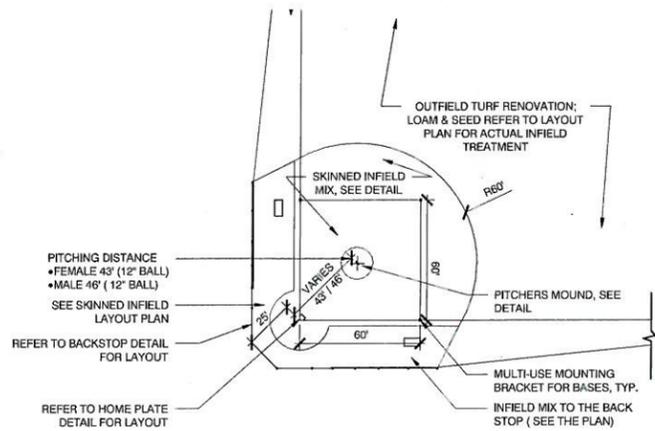
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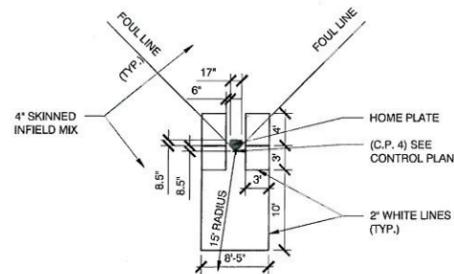
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 Drawn By: KSK, JCC  
 Reviewed By: MSM  
 Approved By: MSM  
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 W&S File No:

Drawing Title:  
 SITE CONSTRUCTION  
 DETAILS

Sheet Number:  
**L6.03**

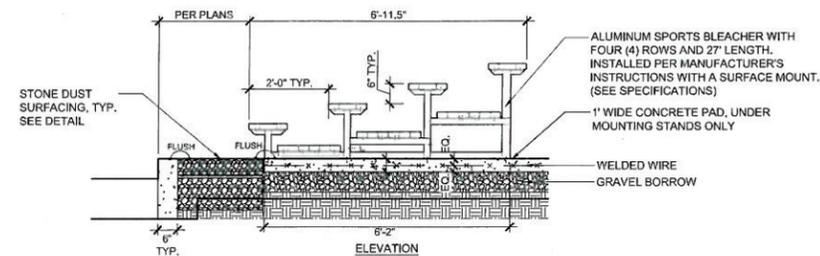


**1** SOFTBALL FIELD LAYOUT, 60' BASELINE, TYP.  
SCALE: N.T.S.



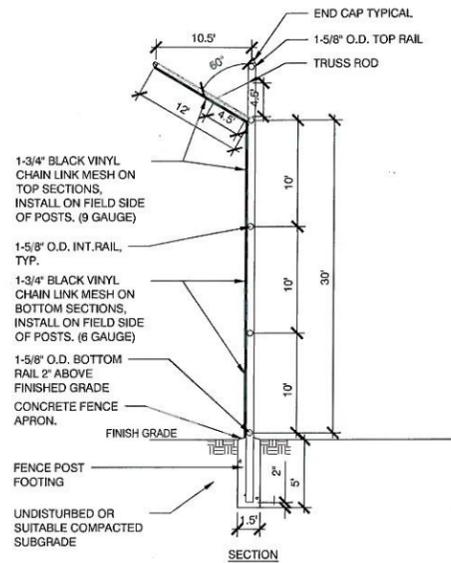
NOTES:  
1. ALL DIMENSIONS ARE GIVEN TO OUTSIDE OF WHITE LINES

**2** SOFTBALL HOME PLATE DIMENSIONS  
SCALE: 1"= 10'-0"



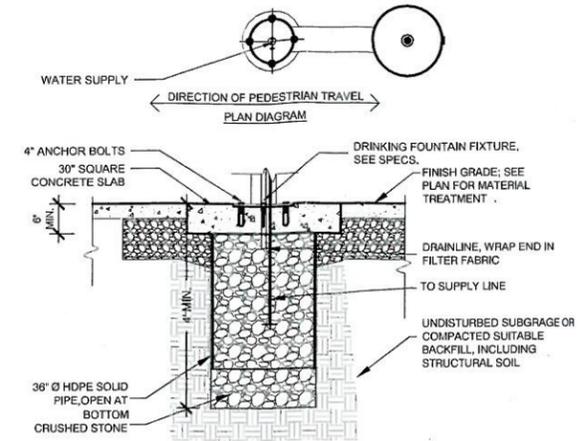
NOTES:  
1. MAINTAIN 1'-0" CLEARANCE BETWEEN EDGE OF PAD AND OUTSIDE PERIMETER OF OBJECT ON PAD.  
2. BLEACHERS WILL BE ON TOP OF STONE DUST WITH JUST A CONCRETE STRIP UNDER EACH MOUNTING AREA.  
3. STONE DUST IN BETWEEN 1' WIDE CONCRETE PADS.

**3** SPECTATOR BLEACHERS, TYP.  
SCALE: N.T.S.

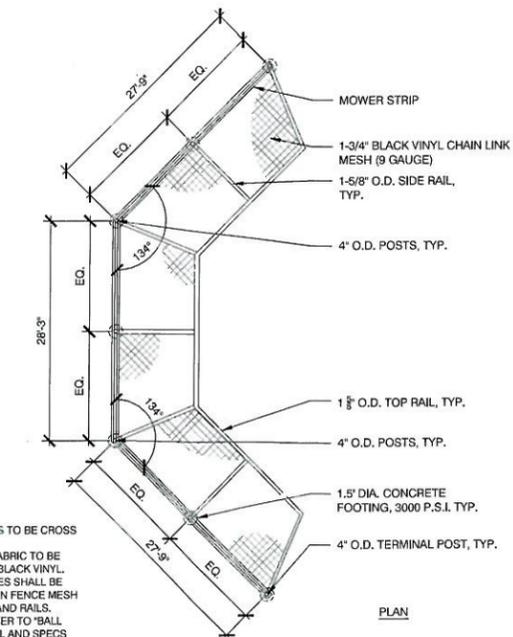


NOTES:  
1. BOTTOM 2 RAILS TO BE CROSS WELDED.  
2. FENCE MESH FABRIC TO BE FIRST QUALITY BLACK VINYL. BAND-IT BUCKLES SHALL BE USED TO FASTEN FENCE MESH TO ALL POSTS AND RAILS.  
3. FOR POSTS REFER TO 'BALL NETTING' DETAIL AND SPECS

**4** SOFTBALL BACKSTOP WITH OVERHANG, TYP.  
SCALE: N.T.S.



**5** DRINKING FOUNTAIN, TYP.  
SCALE: N.T.S.



NOTES:  
1. BOTTOM 2 RAILS TO BE CROSS WELDED.  
2. FENCE MESH FABRIC TO BE FIRST QUALITY BLACK VINYL. BAND-IT BUCKLES SHALL BE USED TO FASTEN FENCE MESH TO ALL POSTS AND RAILS.  
3. FOR POSTS REFER TO 'BALL NETTING' DETAIL AND SPECS

**6** SOFTBALL BACKSTOP WITHOUT OVERHANG, TYP.  
SCALE: N.T.S.



Consultants:

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1	02/07/2019	Revised as per comments
2	03/21/2019	Revised as per comments
3	03/26/2019	Revised as per comments
4	05/03/2019	Revised as per comments

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5/3/2019

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Drawn By: KSK, JCC

Reviewed By: MSM

Approved By: MSM

W&S Project No:

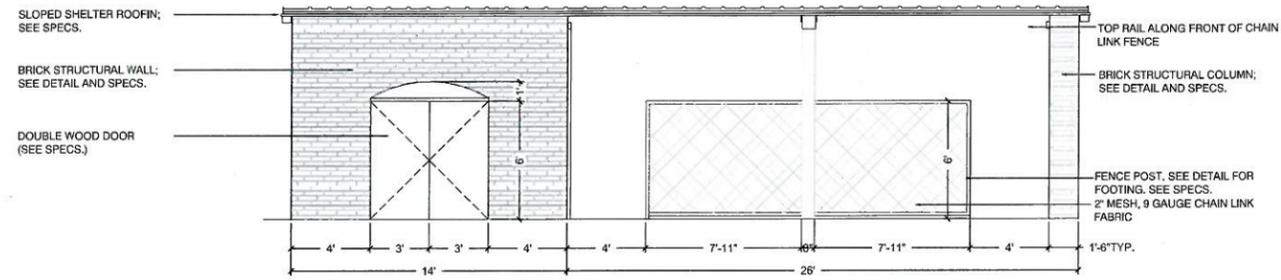
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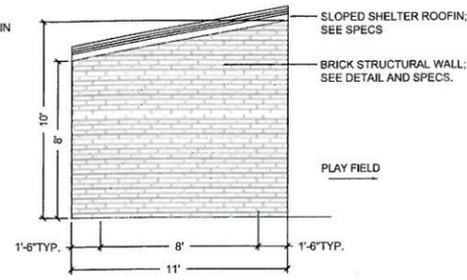
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DETAILS

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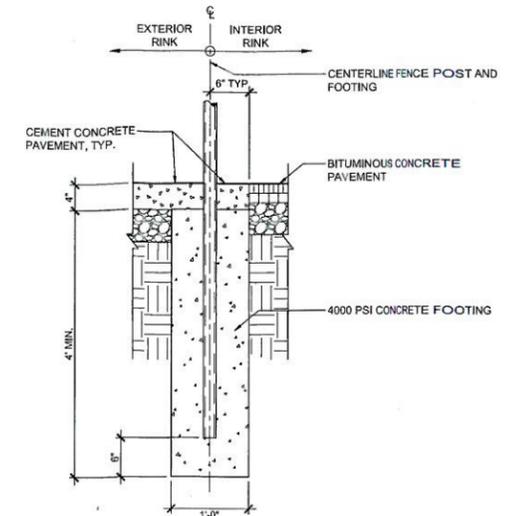
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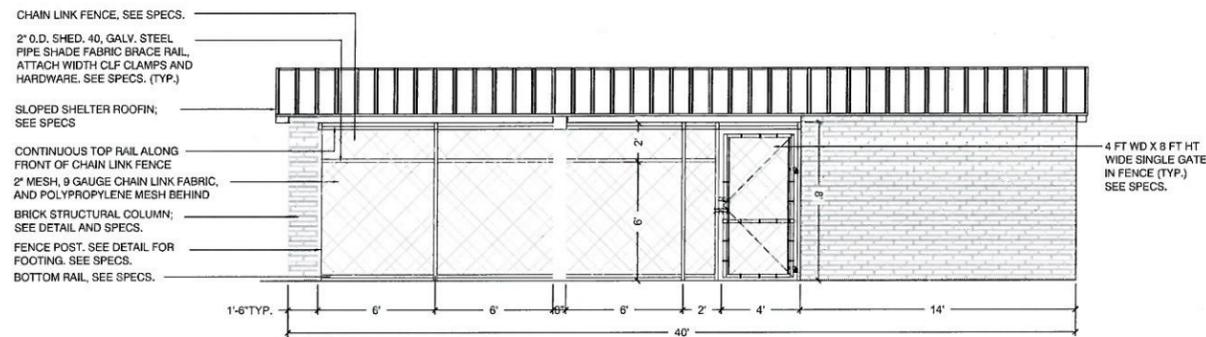
FRONT ELEVATION



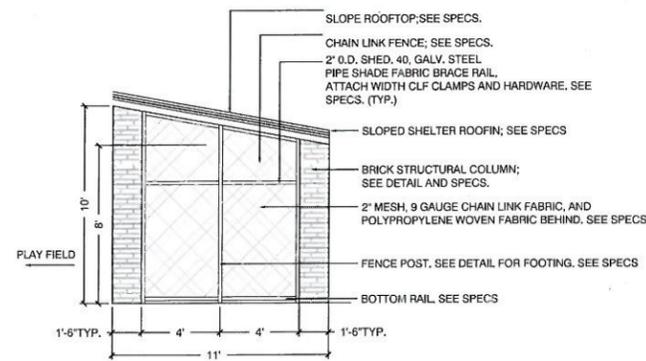
SIDE ELEVATION B



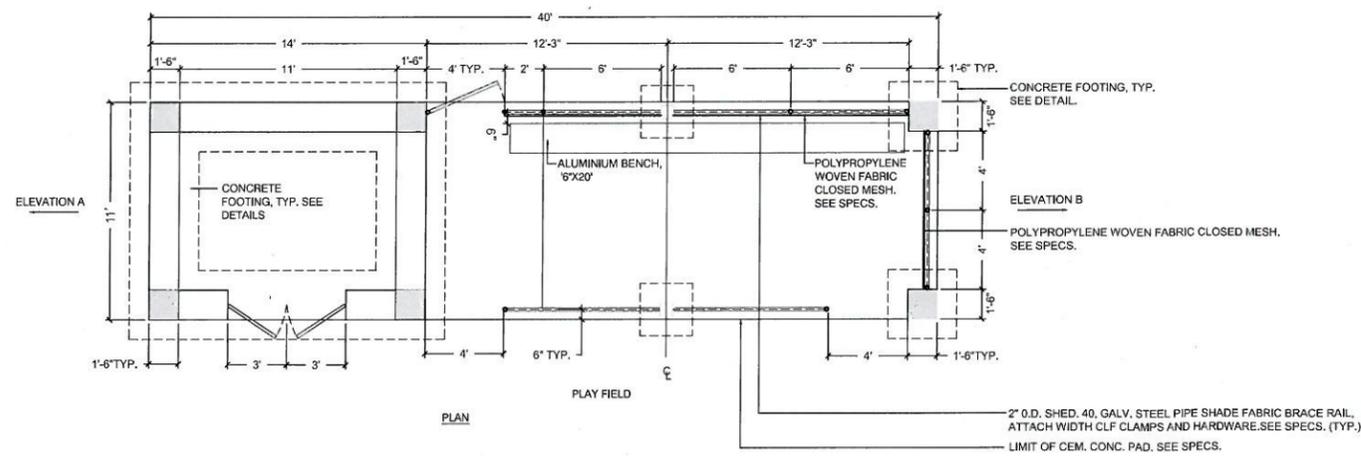
2 DUGOUT FENCE POST, TYP.  
SCALE: N.T.S.



REAR ELEVATION



SIDE ELEVATION A

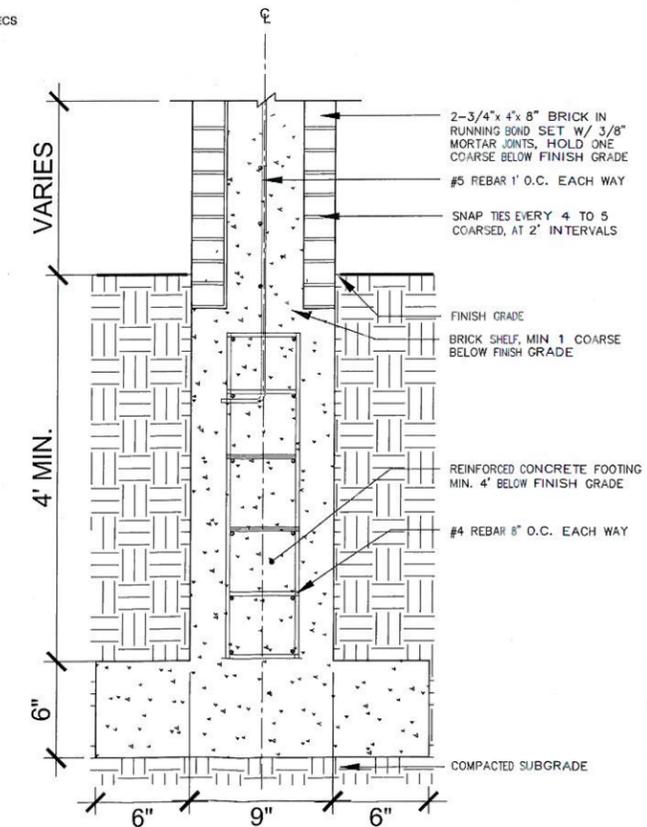


PLAN

NOTES:

- CONTRACTOR MUST REFER TO LAYOUT PLAN FOR ALL LOCATIONS AND DIMENSIONS.
- EACH COLUMN SHALL BE ANCHORED IN AN 18"Ø BY 4'-6" REINFORCED CEMENT CONCRETE FOOTING. REINFORCING #4 BARS, 12" E.W.
- LOCKING SYSTEM WITH ABILITY TO COMBO RESET.

1 DUGOUT WITH STORAGE AND PLAYERS BENCH, TYP.  
SCALE: N.T.S.



3 DUGOUT BRICK COLUMNS, TYP.  
SCALE: N.T.S.

Consultants:

Revisions:

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2	03/11/2019	Revised as per comments
3	03/25/2019	Revised as per comments
4	05/03/2019	Revised as per comments



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