

## LETTER OF TRANSMITTAL

<b>TO</b>
Conservation Department 41 Cochituate Road Wayland, MA 01778

<b>DATE</b>	<b>JOB NO.</b>
9/13/2018	2170229.C
<b>ATTENTION</b>	Linda Hansen
<b>RE</b>	
Chapter 194 RCoC Filing – Wayland High School Athletic Field	

### WE ARE SENDING YOU:

- |                                       |  |  |   |
|---------------------------------------|--|--|---|
| <input type="checkbox"/> Shop Drawing | <input checked="" type="checkbox"/> Attached | <input type="checkbox"/> Plans                     | <input type="checkbox"/> Samples        |
| <input type="checkbox"/> Change Order | <input type="checkbox"/> Prints              | <input type="checkbox"/> Copy of Letter            | <input type="checkbox"/> Specifications |
| <input type="checkbox"/> Other        |  | <input type="checkbox"/> Under Separate Cover Via: | _____                                   |

COPIES	DATE	NO.	DESCRIPTION
1			Chapter 194 RCoC Filing – Wayland High School Athletic Field

### THESE ARE TRANSMITTED AS CHECKED BELOW:

- |  |   |   |
|--|---|---|
| <input checked="" type="checkbox"/> For Approval | <input type="checkbox"/> Approved as Submitted            | <input type="checkbox"/> Resubmit Copies for Approval   |
| <input type="checkbox"/> For Your Use            | <input type="checkbox"/> Approved as Noted                | <input type="checkbox"/> Submit Copies for Distribution |
| <input type="checkbox"/> For Review and Comment  | <input type="checkbox"/> As Requested                     | <input type="checkbox"/> Return Corrected Prints        |
| <input type="checkbox"/> FOR BIDS DUE            | <input type="checkbox"/> Prints Returned After Loan to Us | <input type="checkbox"/> Returned for Corrections       |
| <input type="checkbox"/> Other                   |   |   |

### REMARKS:

<b>COPY TO:</b>	<b>SIGNED</b>

# **Request for Certificate of Compliance**

CHAPTER 194

Wayland High School Athletic Field

September 2018

**Proponent:**

Town of Wayland

**Submitted to:**

Wayland Conservation Commission



Five Centennial Drive  
Peabody, MA 01960-7985  
[www.westonandsampson.com](http://www.westonandsampson.com)  
Tel: 978-532-1900  
Fax: 978-977-0100

Wayland Athletic Field  
WSE Project No. 2170229

September 7, 2018

Wayland Conservation Commission  
c/o Ms. Linda Hansen  
41 Cochituate Road  
Wayland, MA 01778

Re: Request for Certificate of Compliance  
Wayland High School Athletic Field  
264 Old Connecticut Path, Wayland  
**Chapter 194**

Dear Ms. Hansen:

On behalf of the Town of Wayland, Weston & Sampson is submitting this letter to serve as the formal Chapter 194 Request for Certificate of Compliance (RCoC) for the high school athletics field project located at 264 Old Connecticut Path in Wayland.

The original applicant, the Wayland Boosters Association, was dissolved following the completion of the field construction project and the Town of Wayland and is now looking to close out the associated Chapter 194 permit.

This request includes the following Appendices:

Appendix A: Chapter 194 Certificate of Compliance Request Application  
Appendix B: Order of Conditions Narrative  
Appendix C: 2018 Existing Conditions Survey (supplied in lieu of an As-Built Plan of the 2007 field project) and the Gale Associates 2007 Bid Documents Drawing Set  
Appendix D: Letter from Don Millette, Wayland Water Superintendent, related to monitoring and testing at the Happy Hollow wells

The narrative provided identifies how the project met, or did not meet, the conditions set forth in the Order of Conditions. Please contact our office with any questions at (617) 412-4480.

Very truly yours,

WESTON & SAMPSON ENGINEERS, INC.



Eugene Bolinger, RLA  
Vice President

## **APPENDIX A**

### **Chapter 194 Certificate of Compliance Request Application**

## Wayland Wetlands and Water Resources Bylaw, Chapter 194 Application

### 1. Applicant:

Town of Wayland		bkeefe@wayland.ma.us	
Name (PLEASE PRINT)		Email Address (if applicable)	
41 Cochituate Road	Wayland	MA	01778
Mailing Address	City/Town	State	Zip Code
508-358-3696			
Phone Number	Fax Number (if applicable)		

### 2. Representative:

Town of Wayland - Ben Keefe		Ben Keefe	
Firm/Business Name		Contact Name	
41 Cochituate Road	Wayland	MA	01778
Mailing Address	City/Town	State	Zip Code
508-358-3696			
Phone Number	Fax Number (if applicable)		

### 3. Property Owner(s)

Town of Wayland			
Property Owner (PLEASE PRINT)		Email Address (if applicable)	
41 Cochituate Road	Wayland	MA	01778
Address	City/Town	State	Zip Code
508-358-3696			
Phone Number	Fax Number (if applicable)		

### 4. Type of Application

- |   |   |
|---|---|
| <input type="checkbox"/> Request for a Determination of Applicability (RDA) | <input type="checkbox"/> Notice of Intent (NOI)               |
| <input type="checkbox"/> Abbreviated NOI                                    | <input type="checkbox"/> Extension of O.O.C.                  |
| <input type="checkbox"/> Notice of Resource Area Delineation                | <input checked="" type="checkbox"/> Certificate of Compliance |
| <input type="checkbox"/> After the Fact Amendment (AFA)                     | <input type="checkbox"/> After the Fact Filing (AFF)          |
| <input type="checkbox"/> Amendment to Order of Conditions                   |   |

### 5. Project

260 Old Connecticut Path	37	34
Location Address	Assessors Map(s)	Parcel(s)
Project Description (PLEASE PRINT): <u>Please see attached.</u>		
<hr/>		
<hr/>		
<hr/>		

### 6. Title/Date of Plan(s)

N/A

### 7. Bylaw Application Fee:

\$ N/A

### 8. Application filed pursuant to MGL Chapter 131, Section 40

☐ Yes ☒ No

### 9. Signature of Applicant

\_\_\_\_\_ Date

Signature of Property Owner

\_\_\_\_\_ Date

(NOTE: This application shall be signed by the property owner as well as the applicant.  
Signature of the property owner on this application shall be deemed permission  
granted to the Conservation Commission and their agents to go upon the subject property.)

## **APPENDIX B**

### **Order of Conditions Narrative**

## Wayland High School Field - Order of Conditions Narrative

What follows is a detailed narrative on how this project met the Superseding Order of Conditions (which includes the Wayland Conservation Commission's Order of Conditions) or, if it did not meet them, the reasoning why the condition was not met. As is stated in the Cover Letter, this project was taken over by the Town (from the original applicant) after construction was complete. Therefore, many pre-construction and construction conditions were either not carried out or documented by the prior applicant. This has resulted in the Town not having access to many of the monitoring reports for those phases of the project.

### "Attachment D" - WPA Form 5

**Condition 39:** The applicant shall take photographs of the site before and after work regulated by this Order is conducted. Preconstruction photographs shall be submitted before that work commences on the site. Post construction photographs shall be submitted to the Conservation Commission at the conclusion of the project. The photographs shall be taken to show all of the areas of jurisdiction on the site.

*Response:* The town does not have these photographic records

**Condition 42:** Grading shall conform to the plans referenced in this decision except as conditioned herein. Excess material shall be removed from the site and legally disposed of during construction. Documentation that fill has been legally disposed of shall be provided with the request for a Certificate of Compliance. This grading shall be reviewed by the Commission and may require a separate application. There shall be no increase in the grade within the 100-year floodplain. The as-built plan shall clearly depict spot elevations and grades sufficient to determine this requirement has been met.

*Response:* In lieu of as-built plans, an Existing Conditions Survey performed in 2018 is included as Appendix C.

**Condition 51:** No debris, refuse or other materials, including but not limited to landscaping debris, leaves, shrubs and tree trimmings, logs, bricks, stone or trash shall be deposited within the vegetated wetland, riverfront area, or within 100 feet of the vegetated wetland. ***This condition shall remain in perpetuity and shall be recorded as such on the Certificate of Compliance as well as included in the revised Stormwater O&M Plan.***

*Response:* The Town of Wayland has been properly maintaining the site to meet this condition. No material has been deposited into any of the resource areas.

**Condition 52:** The rip rap has been specified on the plans. The median stone size shall be 8" and there shall be no stone smaller than 6". The minimum stone size shall be 1.5 times the medium stone size by weight. **This must be addressed in the request for a Certificate of Compliance.**

*Response:* The Town of Wayland has been properly maintaining the site. It is assumed that the stone sizes are adequate and was built as specified on the plans.

**Condition 54:** No underground sprinkler systems shall be installed within the riverfront area, 100-foot buffer zone or directed toward the buffer zone. ***This Condition shall remain in force permanently and be recorded on the Certificate of Compliance.***

*Response: Since the Town of Wayland has been maintaining the site as the applicant, they have been following protocol and therefore have not installed any such sprinkler systems.*

**Condition 55:** No de-icing chemicals shall be used on any paved surface located within the 100-foot buffer zone, except with the prior written permission of the Commission. The Commission will consider the use of calcium chloride. ***This Condition shall remain in force permanently and shall be recorded as such on the Certificate of Compliance as well as included in the revised O&M Plan .***

*Response: Since the Town of Wayland has been maintaining the site as the applicant, they have been following protocol and therefore have not utilized any de-icing chemicals within the 100-foot buffer.*

**Condition 57:** Upon completion of the project, at least three (3) signs shall be posted and maintained noting the restriction of the use of de-icing chemicals in the paved areas and that the area is environmentally sensitive.

*Response: These signs are posted. See picture at the end of this narrative for example of the signs.*

**Condition 58:** No pesticides, herbicides or insecticides shall be used on the lawns or grounds located within the riverfront area and 100-foot buffer zone, except with the prior written permission of the Commission. ***Signs shall be posted noting this restriction. This Condition shall remain in force permanently and shall be recorded as such on the Certificate of Compliance as well as included in the O&M Plan .***

*Response: Since the Town of Wayland has been maintaining the site as the applicant, they have been following protocol and therefore have not utilized pesticides, herbicides or insecticides on the lawns or grounds located within the riverfront area and 100-foot buffer zone.*

**Condition 59:** The restored riverfront is to be a meadow. A revised O&M shall clearly specify limitation on mowing of this area to not more than four times a year.

*Response: Due to the lack of proper records for the project, it is uncertain if the O&M specifies these limitations.*

**Condition 61:** Documentation shall be provided when the Certificate of Compliance is requested to demonstrate that any excess excavated material was properly disposed of during construction.

*Response: All excess material was disposed of accordingly during construction.*

**Condition 64:** The applicant shall use [WPA Form 8A] to request a Certificate of Compliance and shall submit the following items with his request:

a) The Certificate of Compliance shall be submitted with a **detailed narrative** (original and 8 copies) prepared by a Professional Engineer or Professional Land Surveyor registered in the Commonwealth of Massachusetts, which lists each condition and how the condition has been met or detailing the lack of compliance, shall be submitted with a request for a Certificate of Compliance. This shall include the date any required material was submitted to the Commission. This narrative shall ***specifically address each condition*** and certify compliance with the approved plans referenced above and this Order of Conditions

and setting forth any deviation/s that exist with a note as to how t/they may be corrected. **This request shall be submitted not later than 180 calendar days prior to the expiration of this Order.** Work that is not complete shall be detailed in a schedule of planned completion dates prior to expiration of the Order with a certification to the commitment of resources by an authorized official representative of the applicant to complete the work prior to expiration of the Order. The request for a Certificate of Compliance shall specifically address the installation of the drainage mitigation.

b) Two sets of as-built site plans shall be prepared by a registered land surveyor or registered professional engineer showing the wetland resource areas, grades, utilities, building footprint and landscaping. These plans shall include the date/s of fieldwork.

c) A copy of the as built shall be submitted on a computer disk in AutoCAD format dxf, dwg or may be e-mailed to the Town Surveyor at [aberry@wayland.ma.us](mailto:aberry@wayland.ma.us) (if this is not possible please contact the Commission).

*Response: Our Request for a Certificate of Compliance will contain all documentation that we are able to acquire from the Town of Wayland. However, this project was not properly recorded, causing documentation to be incomplete. Attached are as-built plans, this narrative, and our DEP Request for Certificate of Compliance.*

**Condition 65:** The work authorized hereunder shall be completed within three years from the date of this Order except as herein conditioned. A request for an Extension shall be filed with the Conservation Commission not less than thirty days prior to the expiration date of this Order. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.

*Response: The work was completed however a Certificate of Compliance was never issued, so the Order remains open.*

#### MassDEP Superseding Order of Conditions

**Special Condition 67:** Prior to submitting a request for Certificate of Compliance to the MassDEP for file #322-0661, the applicant shall address any outstanding issues associated with Drinking Water Source Protection outlined in the letter referenced above in Special Condition 46c ("Town of Wayland, PWS: Wayland Water Department, PWS ID#: 3315000, Program: Source Protection," Prepared by: Massachusetts Department of Environmental Protection, Northeast Regional Office. Dated February 5, 2007).

*Response:* The town does not have this letter. Therefore, we cannot confirm what outstanding issues were outlined and whether they were addressed satisfactorily. However, there is laboratory data and a summary data interpretation report from Norfolk Ram Group, LLC dated October 24, 2008. This report describes the leachate sampling effort for the synthetic turf field. The report concludes "it appears that potentially significant adverse impacts to surface water via direct leachate discharge and to groundwater by leachate infiltration appear to be unlikely." The report text follows this narrative.

**Special Condition 68:** Upon completion of the project, applicant shall submit to MassDEP a request for a Certificate of Compliance with an affidavit prepared by a professional engineer or land surveyor registered in the Commonwealth of Massachusetts, stating that the site subject to the Superseding Order of

Conditions has been developed in accordance with the requirements of this SOC, based upon an on-site inspection and the referenced site plans. Additionally, the applicant shall submit an as-built plan prepared by a registered professional engineer or land surveyor of the Commonwealth, for all work that has been proposed within the area of the MassDEP's jurisdiction within the site subject to the SOC. Such plan shall indicate in a clear manner the final and actual conditions of the site. The date of field work shall be noted on the plan.

*Response: We are submitting the As-Built plans as part of this submittal. There is limited documentation regarding the project during construction. All documentation we have been able to obtain is located in the following attachment.*

**Special Condition 69:** All submittals shall be made to the MassDEP and copied to the Conservation Commission, with the exception of the following Special Conditions that are not applicable under M.G.L c. 131, s.40 and are subject to the Wayland by-law only: Finding; bb and Special Conditions; 37.

*Response: Many submittals were never properly recorded by the original applicant. Any documentation that has been left with the Town of Wayland, and has been included in the Attachment to this document.*

#### **OTHER OUTSTANDING ITEMS:**

#### **Dates of Inspections, Monitoring Well Testing, and Maintenance Actions as Required in the Chapter 194 Order of Conditions**

*Response: There are no records of the applicant (Wayland Boosters) or the owner (Town of Wayland) performing the required inspection and maintenance related to the pre- and post-construction of the high school synthetic turf field and set forth in the Chapter 194 Order of Conditions. The current town officials related to this project believe the failure to comply with these requirements is due to a lack of communication between the applicant and the owner in establishing protocols for compliance and who was responsible for performing these actions.*



09/06/18

---

Signature and Date

Example of posted sign at the site.



## **APPENDIX C**

### **2018 Existing Conditions Survey**

**LOCATION MAP**  
N.T.S.

GALE ASSOCIATES, INC.  
163 LIBBEY PARKWAY  
WEYMOUTH, MA 02189

DRAWING NUMBER	DRAWING DESCRIPTION
C0.1	COVER SHEET
C1.1	EXISTING CONDITIONS PLAN
C1.2	DEMOLITION & EROSION CONTROL PLAN
C1.3	LAYOUT & MATERIALS PLAN
C1.4	DRAINAGE PLAN
C1.5	GRADING PLAN
C5.1	SITE DETAIL SHEET 1
C5.2	SITE DETAIL SHEET 2
C5.3	SITE DETAIL SHEET 3

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PROJECT	WAYLAND HIGH SCHOOL ATHLETIC FIELD PRESERVATION PROJECT 264 OLD CONNECTICUT PATH WAYLAND, MA 01778
CLIENT	WAYLAND HIGH SCHOOL BOOSTERS ASSOCIATION WAYLAND, MA 01778

[illegible]

CADD FILE	712050_C0.1
DESIGNED BY	NAC
DRAWN BY	NAC/JMC
CHECKED BY	PJT
DATE	4/18/07
DRAWING SCALE	N.T.S.

GRAPHIC SCALE

SHEET TITLE

COVER  
SHEET

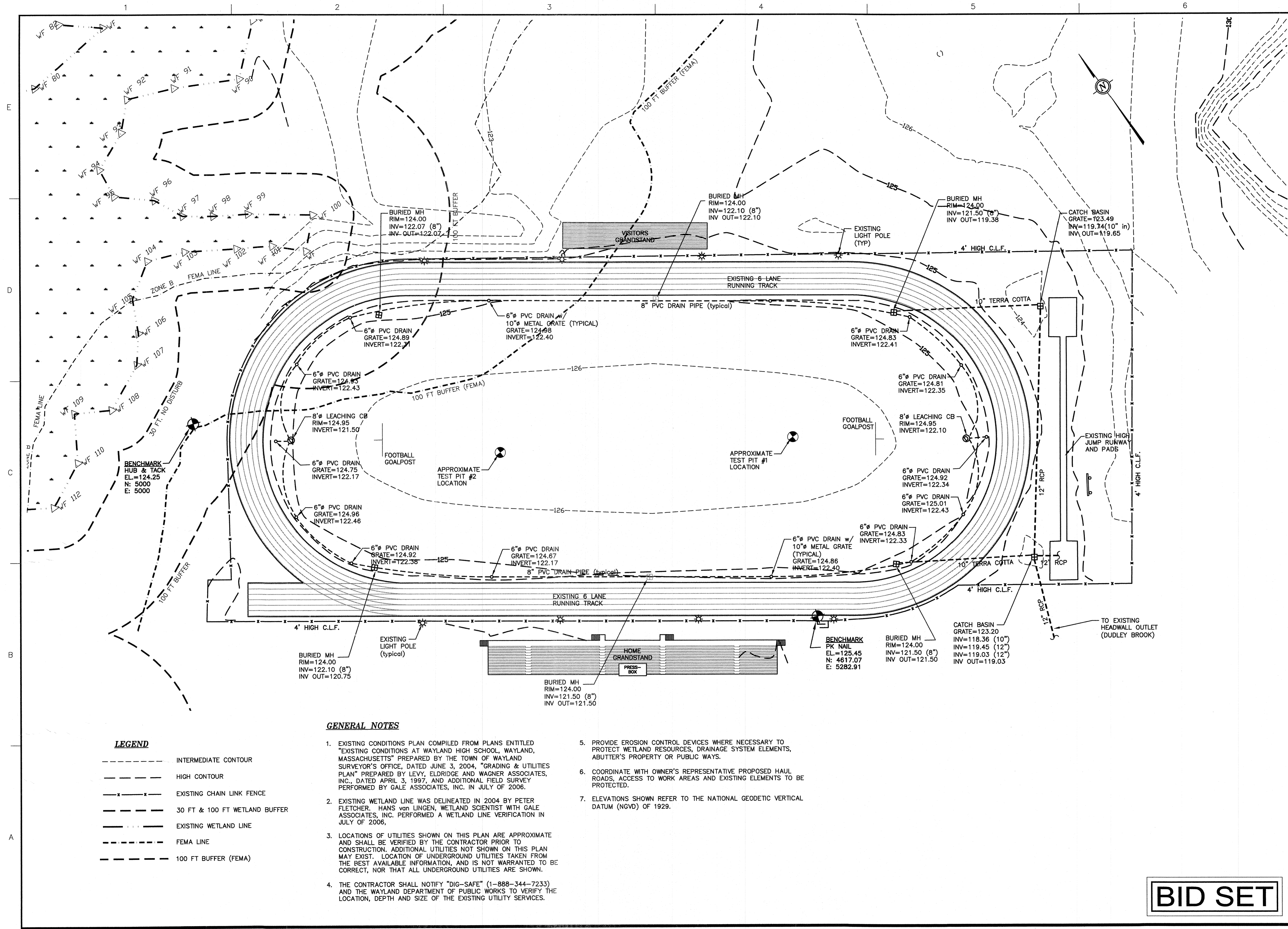
DRAWING NO.

C0.1

PROJECT NO. 712050

**BID SET**

\\712050\plot files\Bid Documents\Re-Bid - 41807\712050\_C1.1.dwg, 4/17/2007 3:23:48 PM



**Gale Associates, Inc.**  
Engineers Architects Planners  
163 LIBBEY PARKWAY | WEYMOUTH, MA 02189  
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Boston Baltimore Orlando San Francisco

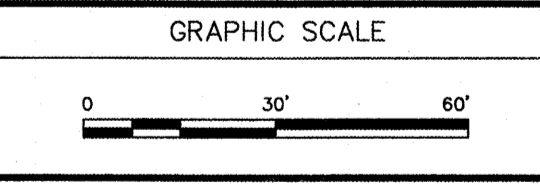
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**PROJECT**  
WAYLAND HIGH SCHOOL  
ATHLETIC FIELD PRESERVATION PROJECT  
264 OLD CONNECTICUT PATH  
WAYLAND, MA 01778

**CLIENT**  
WAYLAND HIGH SCHOOL  
BOOSTERS ASSOCIATION  
WAYLAND, MA 01778

REVISIONS		
NO.	DATE	DESCRIPTION

CADD FILE	712050-C1.1
DESIGNED BY	NAC
DRAWN BY	NAC/WAH
CHECKED BY	PJT
DATE	4/18/07
DRAWING SCALE	1"=30'-0"



**SHEET TITLE**  
  
EXISTING  
CONDITIONS  
PLAN

DRAWING NO.	C1.1
PROJECT NO.	712050

**BID SET**

- LEGEND**
- INTERMEDIATE CONTOUR
  - HIGH CONTOUR
  - EXISTING CHAIN LINK FENCE
  - 30 FT & 100 FT WETLAND BUFFER
  - EXISTING WETLAND LINE
  - FEMA LINE
  - 100 FT BUFFER (FEMA)

- GENERAL NOTES**
- EXISTING CONDITIONS PLAN COMPILED FROM PLANS ENTITLED "EXISTING CONDITIONS AT WAYLAND HIGH SCHOOL, WAYLAND, MASSACHUSETTS" PREPARED BY THE TOWN OF WAYLAND SURVEYOR'S OFFICE, DATED JUNE 3, 2004, "GRADING & UTILITIES PLAN" PREPARED BY LEVY, ELDRIDGE AND WAGNER ASSOCIATES, INC., DATED APRIL 3, 1997, AND ADDITIONAL FIELD SURVEY PERFORMED BY GALE ASSOCIATES, INC. IN JULY OF 2006.
  - EXISTING WETLAND LINE WAS DELINEATED IN 2004 BY PETER FLETCHER, HANS von LINGEN, WETLAND SCIENTIST WITH GALE ASSOCIATES, INC. PERFORMED A WETLAND LINE VERIFICATION IN JULY OF 2006.
  - LOCATIONS OF UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ADDITIONAL UTILITIES NOT SHOWN ON THIS PLAN MAY EXIST. LOCATION OF UNDERGROUND UTILITIES TAKEN FROM THE BEST AVAILABLE INFORMATION, AND IS NOT WARRANTED TO BE CORRECT, NOR THAT ALL UNDERGROUND UTILITIES ARE SHOWN.
  - THE CONTRACTOR SHALL NOTIFY "DIG-SAFE" (1-888-344-7233) AND THE WAYLAND DEPARTMENT OF PUBLIC WORKS TO VERIFY THE LOCATION, DEPTH AND SIZE OF THE EXISTING UTILITY SERVICES.

- PROVIDE EROSION CONTROL DEVICES WHERE NECESSARY TO PROTECT WETLAND RESOURCES, DRAINAGE SYSTEM ELEMENTS, ADJUTTER'S PROPERTY OR PUBLIC WAYS.
- COORDINATE WITH OWNER'S REPRESENTATIVE PROPOSED HAUL ROADS, ACCESS TO WORK AREAS AND EXISTING ELEMENTS TO BE PROTECTED.
- ELEVATIONS SHOWN REFER TO THE NATIONAL GEODETIC VERTICAL DATUM (NGVD) OF 1929.



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PROJECT  
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264 OLD CONNECTICUT PATH  
WAYLAND, MA 01778

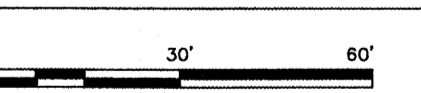
CLIENT  
WAYLAND HIGH SCHOOL  
BOOSTERS ASSOCIATION  
WAYLAND, MA 01778

#### REVISIONS

NO.	DATE	DESCRIPTION

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DESIGNED BY	NAC
DRAWN BY	NAC/VAH
CHECKED BY	PJT
DATE	4/18/07
DRAWING SCALE	1"=30'-0"

#### GRAPHIC SCALE



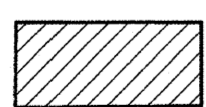
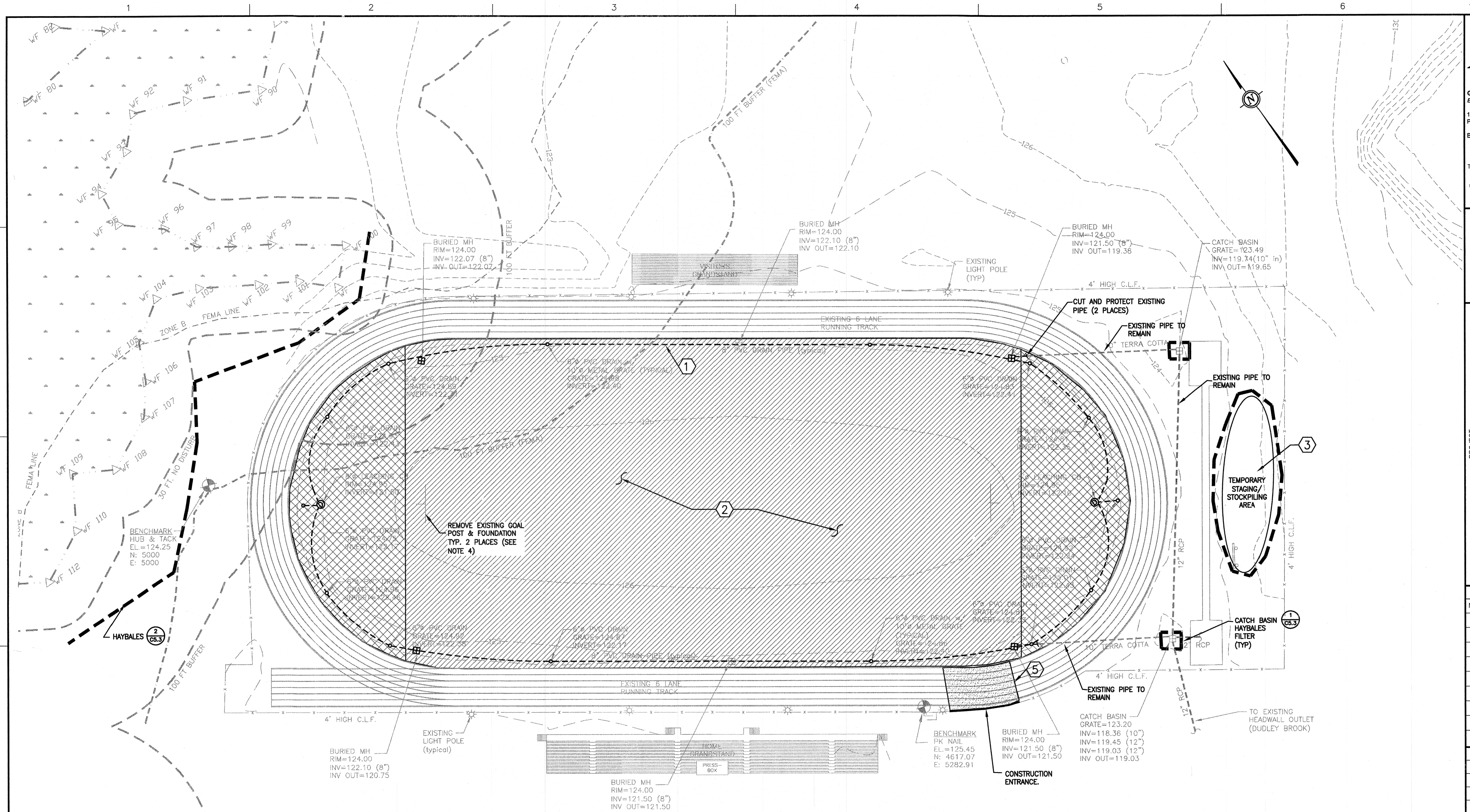
#### SHEET TITLE

## DEMOLITION & EROSION CONTROL PLAN

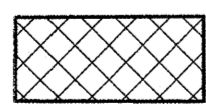
DRAWING NO.

C1.2

PROJECT NO. 712050



CONTRACTOR SHALL EXCAVATE EXISTING NATURAL TURF FIELD TO A DEPTH OF 16"± TO PREPARE FOR ARTIFICIAL TURF. ALL TOPSOIL SHALL REMAIN PROPERTY OF THE TOWN OF WAYLAND (SEE NOTE 4)



CONTRACTOR SHALL EXCAVATE EXISTING NATURAL TURF FIELD TO A DEPTH OF 11"± TO PREPARE FOR BITUMINOUS CONCRETE PAVEMENT. ALL TOPSOIL SHALL REMAIN PROPERTY OF THE TOWN OF WAYLAND (SEE NOTE 4)

#### DEMOLITION NOTES:

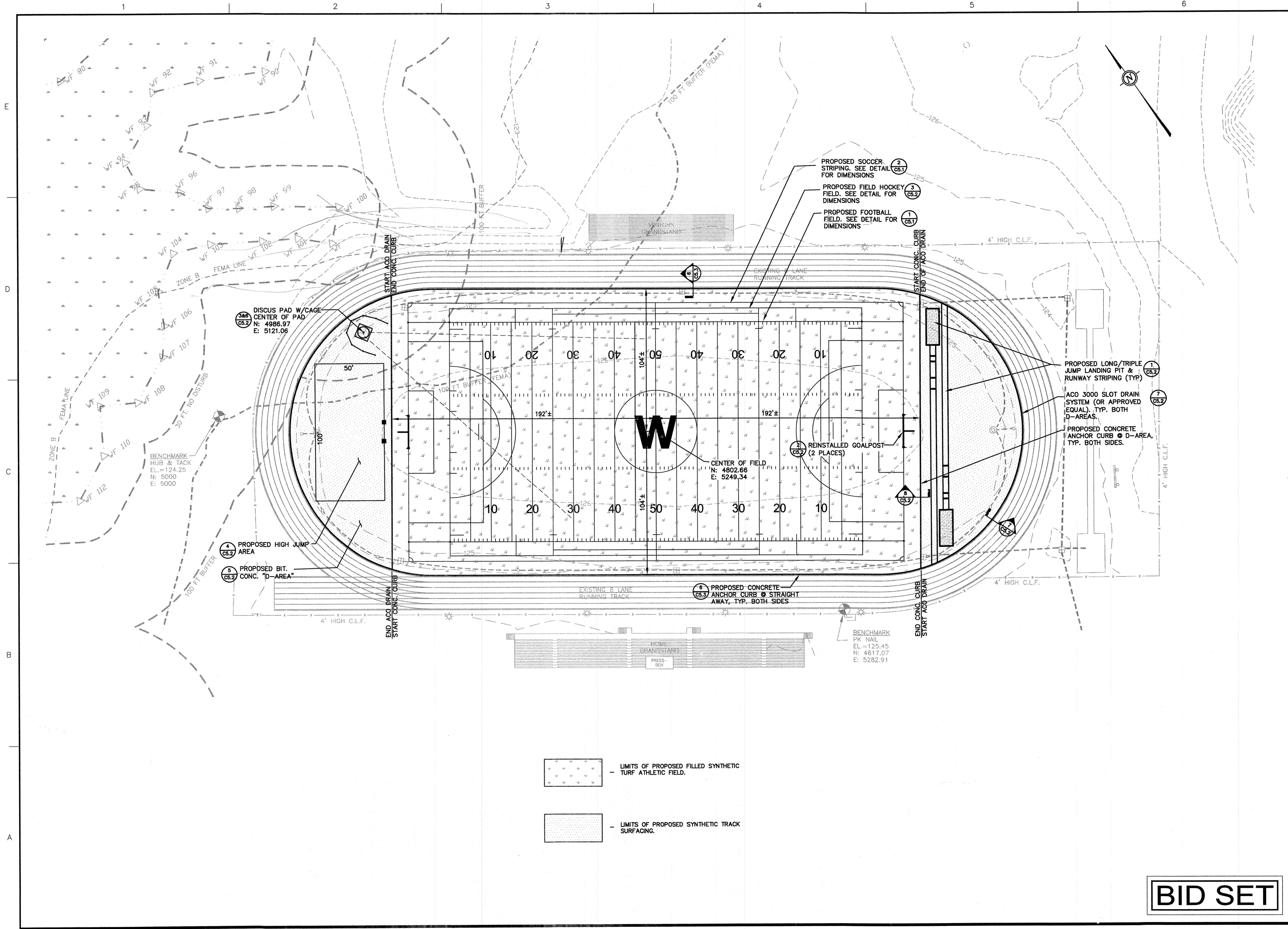
- CONTRACTOR SHALL VERIFY ALL EXISTING FIELD UNDER DRAINS (PIPES & STRUCTURES) TO BE REMOVED AND DISPOSE OF THEM PROPERLY TO THE EXTENTS INDICATED.  
EXISTING FIELD IRRIGATION (PIPES & IRRIGATION HEADS) TO BE REMOVED AND DISPOSED OF PROPERLY. PRIOR TO REMOVAL, THE GENERAL CONTRACTOR SHALL COORDINATE THE EXISTING LOCATIONS AND WATER SOURCE WITH SCHOOL MAINTENANCE PERSONNEL. THE WATER SOURCE SHALL BE CAPPED AND ABANDONED OUTSIDE THE EXISTING TRACK.
- CONTRACTOR TO INSTALL CONSTRUCTION FENCING AND HAY BALES AROUND THE "TEMPORARY STAGING/STOCKPILE AREA" FOR RESIDENT'S PROTECTION.
- CONTRACTOR SHALL REMOVE AND STORE EXISTING FOOTBALL GOAL POSTS. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONDITION OF GOAL POST FOR REINSTALLATION.
- CONTRACTOR SHALL TAKE ALL MEANS NECESSARY TO PROTECT THE EXISTING TRACK (SURFACING AND PAVEMENT) FROM BEING DAMAGED BY HEAVY EQUIPMENT, SPILLAGE OF SOLVENTS, ETC. THROUGHOUT THE DURATION OF THE WORK. ANY DAMAGE TO THE EXISTING TRACK SHALL BE REPAIRED TO THE SATISFACTION OF THE TOWN AT NO ADDITIONAL COST TO THE TOWN. CONTRACTOR SHALL ASSUME THE REMOVAL OF APPROXIMATELY 30 FT OF 4' HIGH CHAIN LINK FENCE FOR ACCESS TO THE SITE. THIS FENCE SHALL BE REPLACED TO MATCH EXISTING.
- CONTRACTOR SHALL REMOVE EXISTING GOAL POST & FOUNDATION TYP. 2 PLACES (SEE NOTE 4)

#### GENERAL DEMOLITION & EROSION CONTROL NOTES:

- CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS STATED IN THE ORDER OF CONDITIONS ISSUED BY THE TOWN OF WAYLAND CONSERVATION COMMISSION, DATED 11/21/06. FAILURE TO COMPLY WITH THIS ORDER MAY RESULT IN PROJECT SHUTDOWN FOR DURATION OF NON-COMPLIANCE.
- ALL EROSION CONTROL TO BE INSTALLED PRIOR TO ANY OTHER WORK ON THE SITE. HAY BALE & SILT FENCE LINE MUST BE LAID OUT BY A PROFESSIONAL SURVEYOR REGISTERED IN THE STATE OF MASSACHUSETTS. EROSION CONTROL WILL BE INSPECTED DAILY AND REPAIRED AS NECESSARY.
- THE CONTRACTOR SHALL TAKE BENEFICIAL OCCUPANCY OF ALL AREAS WITHIN THE EXISTING 4' HIGH C.L.F. THE OWNER RESERVES THE RIGHT TO UNRESTRICTED USE OF ALL OTHER AREAS ON THE SITE.
- THE CONTRACTOR SHALL STRIP THE EXISTING TOPSOIL (TOP 10"), LOAD AND HAUL THE MATERIAL TO AN OFF-SITE LOCATION WITHIN THE TOWN OF WAYLAND. THIS MATERIAL WILL REMAIN THE PROPERTY OF THE TOWN OF WAYLAND. THE CONTRACTOR SHALL ASSUME A ROUND TRIP OF 5-MILES. THE MATERIAL WILL BE STOCKPILED AT THE DESIGNATED LOCATION, BUT SCREENING OF THE MATERIAL IS NOT REQUIRED.
- ALL MATERIALS TO BE REMOVED FROM THE SITE MUST BE DISPOSED OF LEGALLY AT AN APPROVED LOCATION. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL EXCESS TOPSOIL.
- CONTRACTOR IS RESPONSIBLE FOR LOAMING AND RESEEDING ALL AREAS DISTURBED BY DEMOLITION OR CONSTRUCTION, DISTURBED AREAS TO BE BROUGHT TO ORIGINAL GRADE.
- ALL STOCKPIILING OF EXCAVATED MATERIAL (SUBSOIL AND ASPHALT BASE) WILL BE IN DESIGNATED AREAS ONLY, SURROUNDED BY EROSION CONTROL FENCING.

**BID SET**

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PROJECT

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CLIENT

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REVISIONS		
NO.	DATE	DESCRIPTION

CADD FILE	712050_C1.3
DESIGNED BY	NAC
DRAWN BY	NAC/VAH
CHECKED BY	PJT
DATE	4/18/07
DRAWING SCALE	1"=30'-0"

GRAPHIC SCALE

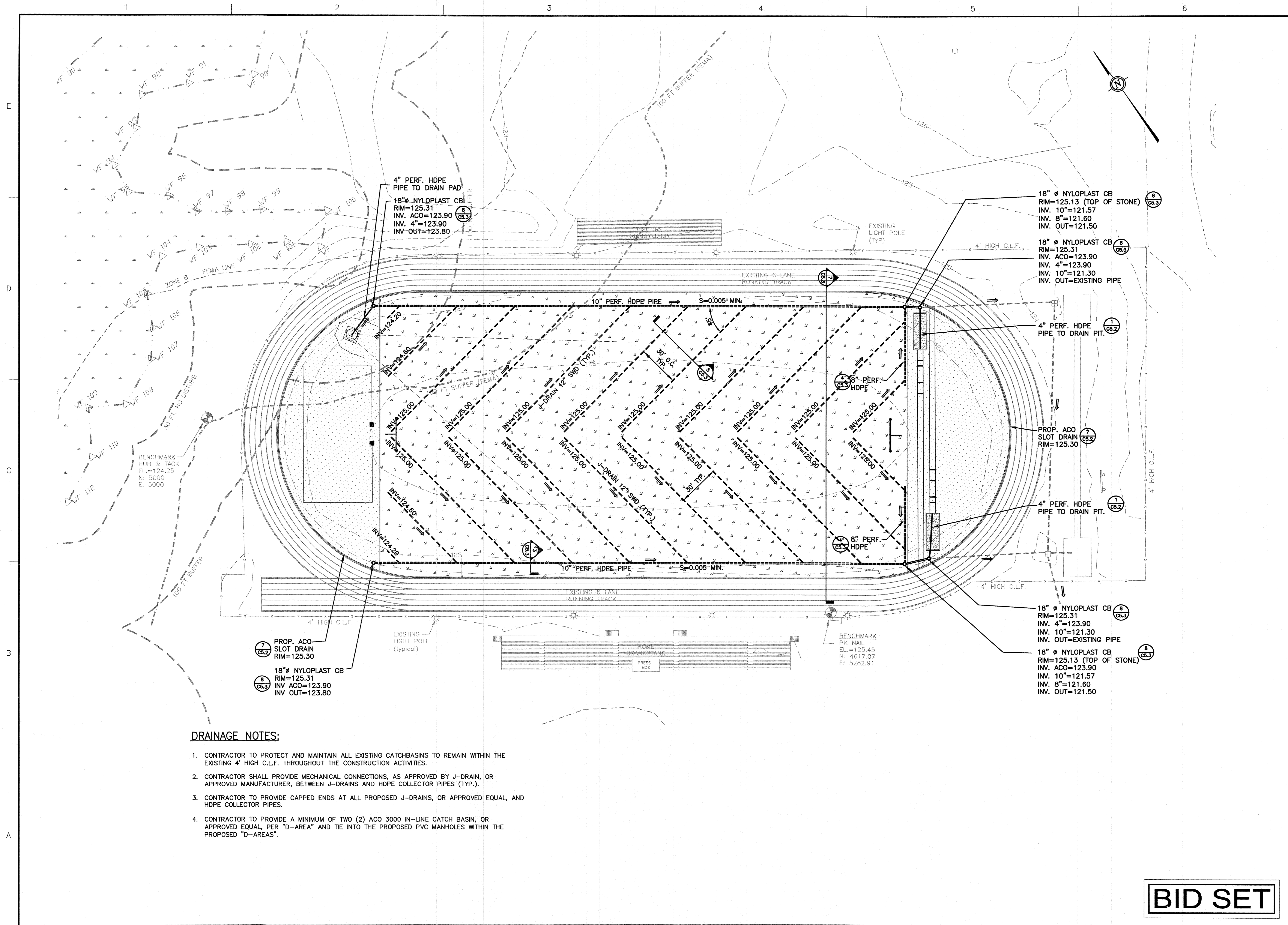
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SHEET TITLE

LAYOUT & MATERIALS PLAN

DRAWING NO.	C1.3
PROJECT NO.	712050

\\712050\plot files\Bid Documents\Re-Bid - 41807\712050\_C1.4.dwg, 4/17/2007, 3:27:04 PM



DRAINAGE NOTES:

1. CONTRACTOR TO PROTECT AND MAINTAIN ALL EXISTING CATCHBASINS TO REMAIN WITHIN THE EXISTING 4' HIGH C.L.F. THROUGHOUT THE CONSTRUCTION ACTIVITIES.
2. CONTRACTOR SHALL PROVIDE MECHANICAL CONNECTIONS, AS APPROVED BY J-DRAIN, OR APPROVED MANUFACTURER, BETWEEN J-DRAINS AND HDPE COLLECTOR PIPES (TYP.).
3. CONTRACTOR TO PROVIDE CAPPED ENDS AT ALL PROPOSED J-DRAINS, OR APPROVED EQUAL, AND HDPE COLLECTOR PIPES.
4. CONTRACTOR TO PROVIDE A MINIMUM OF TWO (2) ACO 3000 IN-LINE CATCH BASIN, OR APPROVED EQUAL, PER "D-AREA" AND TIE INTO THE PROPOSED PVC MANHOLES WITHIN THE PROPOSED "D-AREAS".



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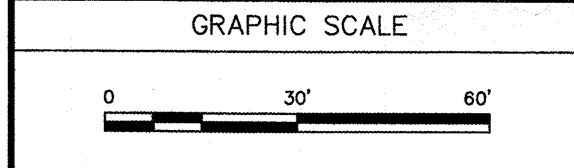
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PROJECT  
WAYLAND HIGH SCHOOL  
ATHLETIC FIELD PRESERVATION PROJECT  
264 OLD CONNECTICUT PATH  
WAYLAND, MA 01778

CLIENT  
WAYLAND HIGH SCHOOL  
BOOSTERS ASSOCIATION  
WAYLAND, MA 01778

REVISIONS		
NO.	DATE	DESCRIPTION

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DESIGNED BY	NAC
DRAWN BY	NAC/WAH
CHECKED BY	PJT
DATE	4/18/07
DRAWING SCALE	1"=30'-0"



SHEET TITLE

DRAINAGE  
PLAN

DRAWING NO.	C1.4
PROJECT NO.	712050

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REVISIONS		
NO.	DATE	DESCRIPTION

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CHECKED BY	PJT
DATE	4/18/07
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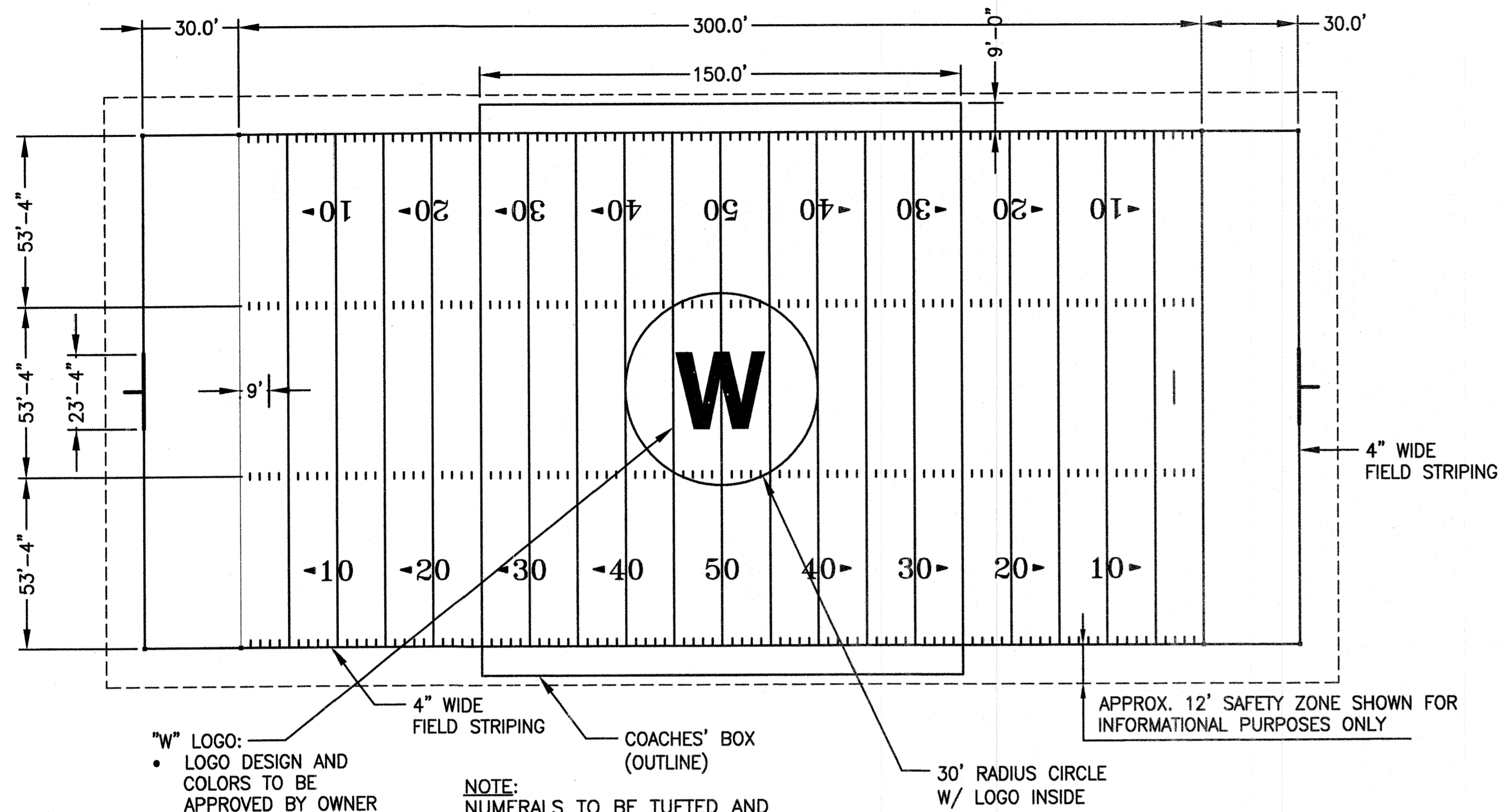
SHEET TITLE

DETAIL  
SHEET 1

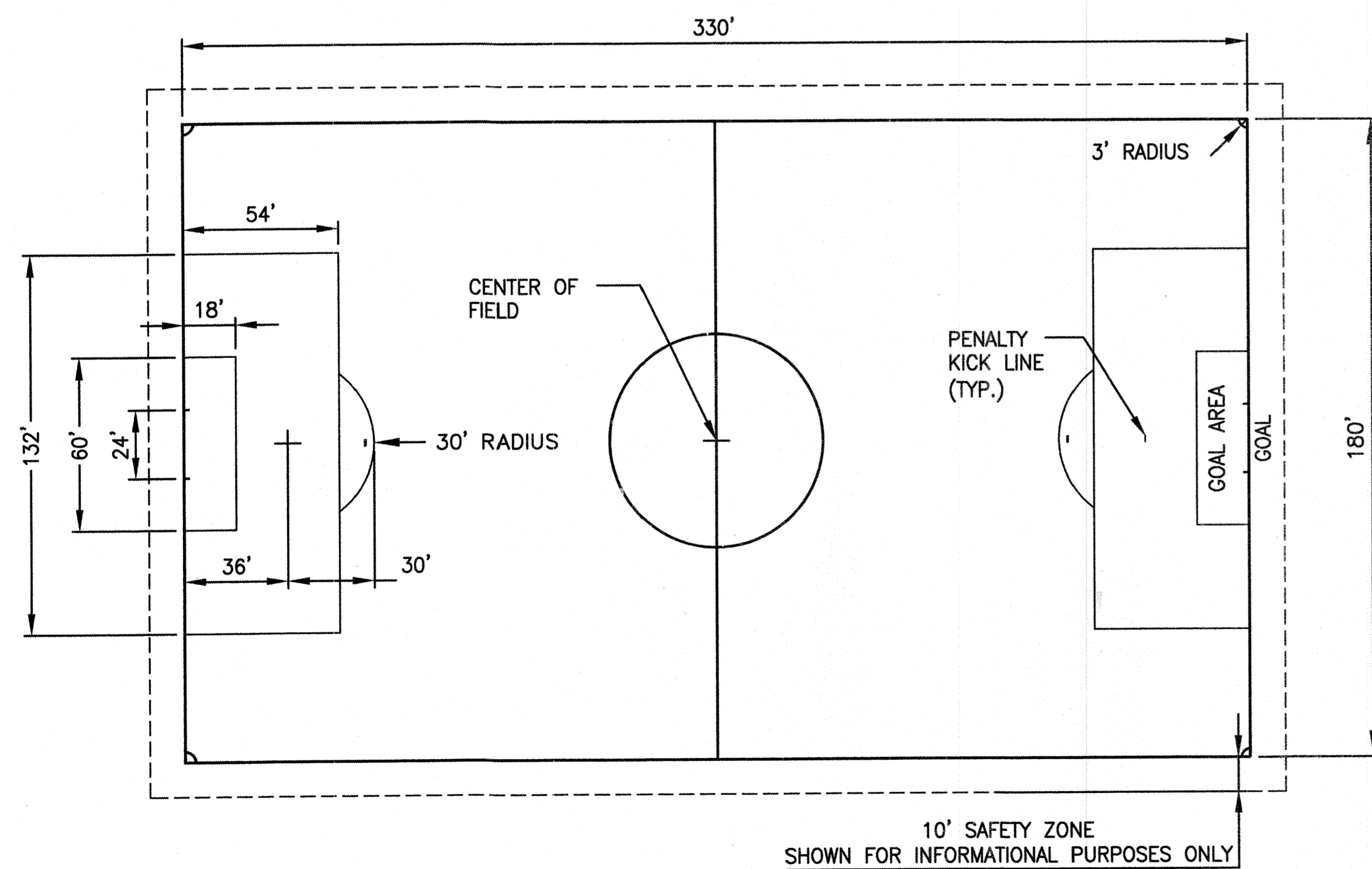
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C5.1

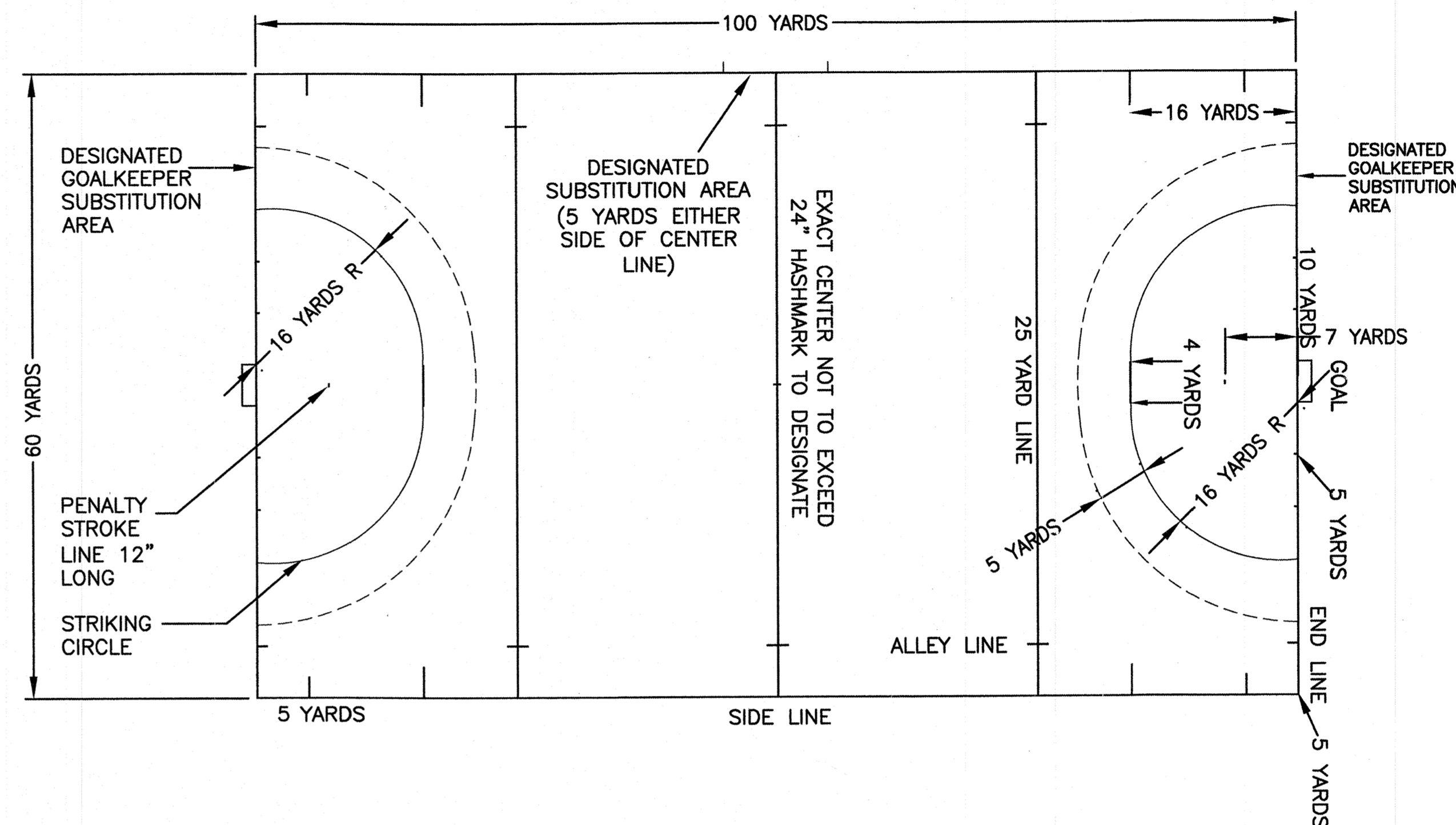
PROJECT NO. 712050



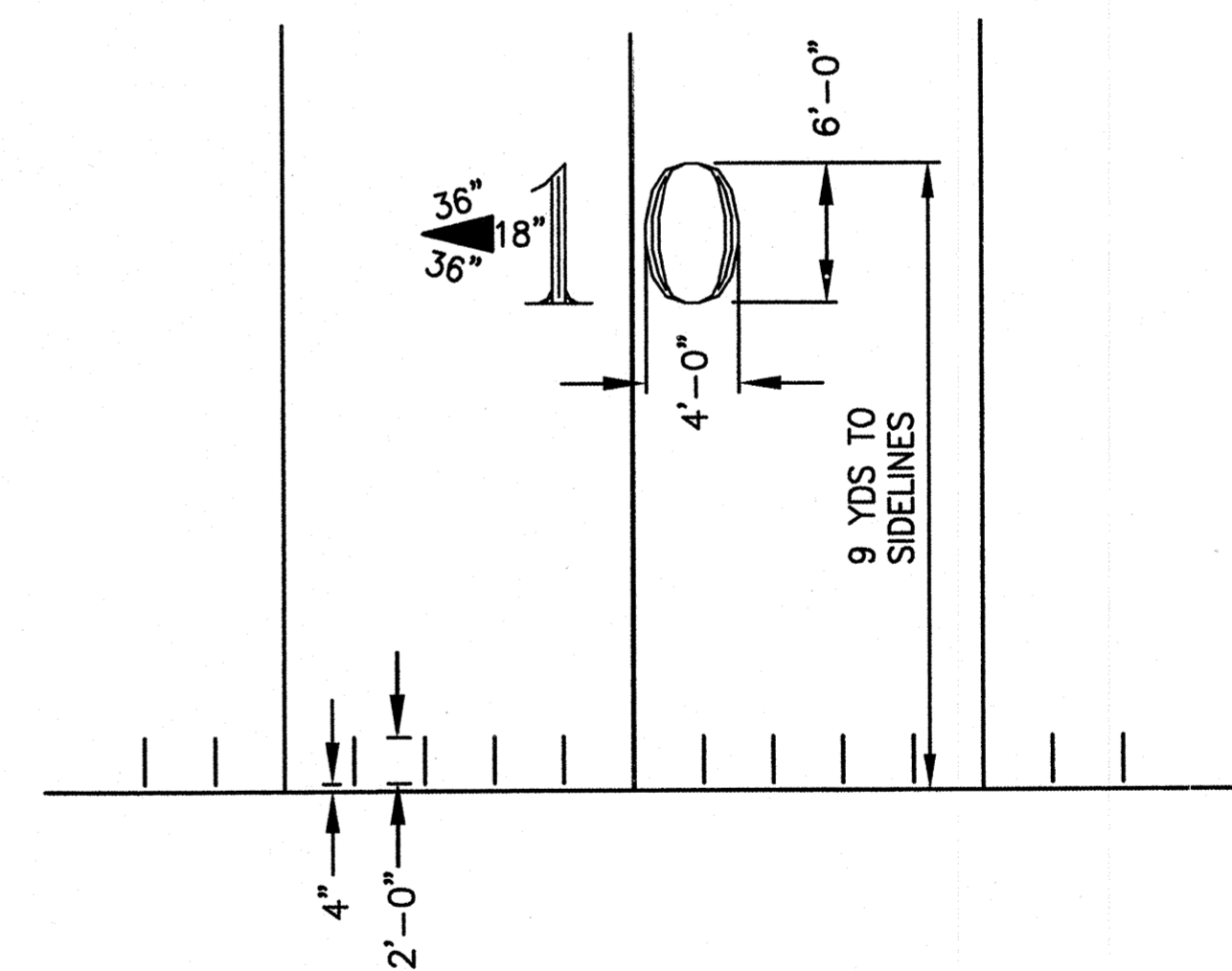
1 FOOTBALL STRIPING DETAIL (TUFTED WHITE)  
N.T.S.



2 SOCCER STRIPING DETAIL (TUFTED YELLOW)  
N.T.S.



2 FIELD HOCKEY STRIPING DETAIL (TUFTED RED)  
N.T.S.



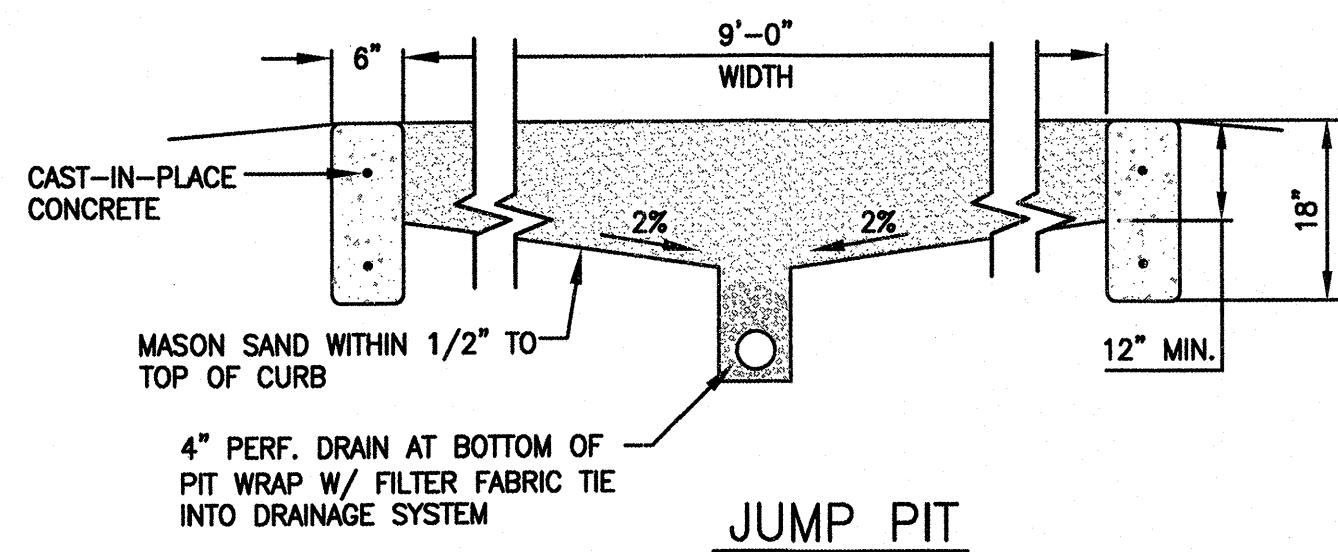
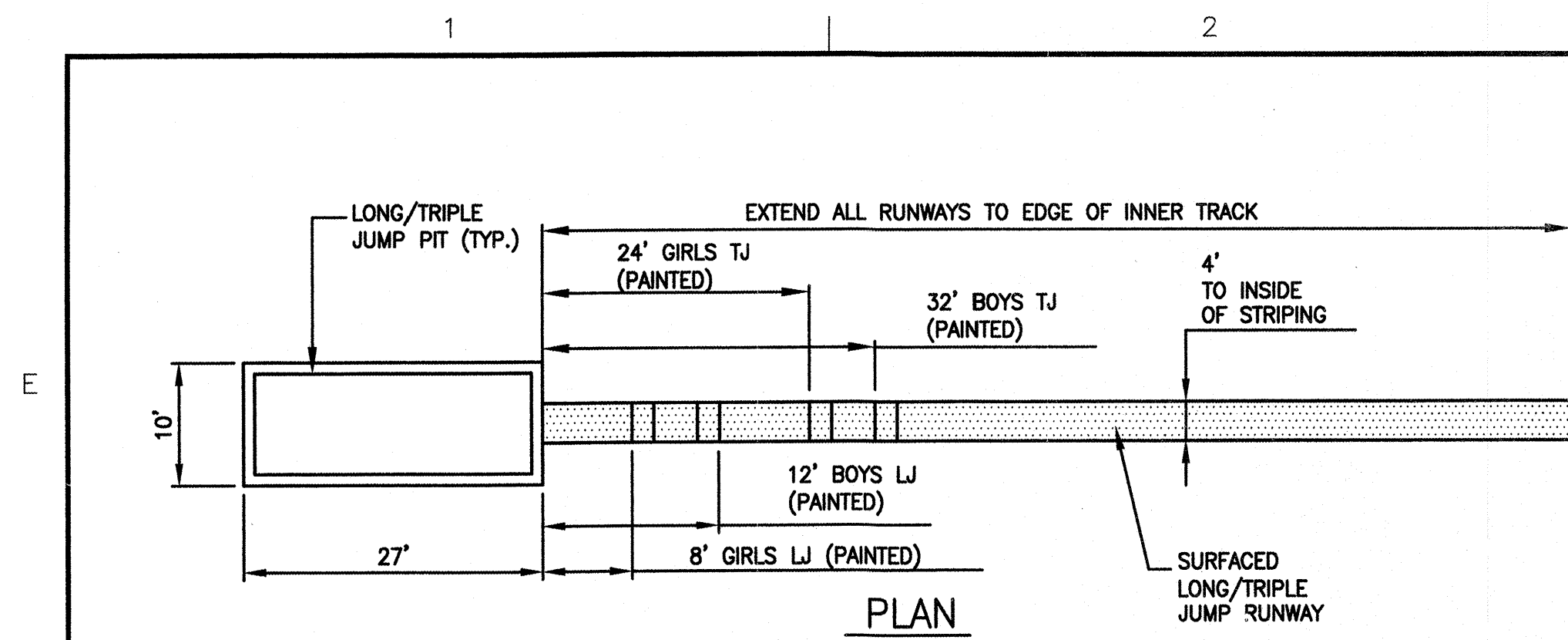
- NOTE:
1. THE CONTRACTOR SHALL PAINT ON THE FIELD, 4-INCHES FROM EACH SIDELINE, YARD-LINE EXTENSIONS (HASH MARKS) THAT SHOULD BE 2-FEET IN LENGTH AND 4-INCHES IN WIDTH.
  2. THE CONTRACTOR SHALL IN-LAY NUMERALS, WHICH SHALL BE 6-FEET IN HEIGHT AND 4 FEET IN WIDTH, & DIRECTIONAL ARROWS AT THE 10, 20, 30, 40 AND 50 YARD LINES.
  3. THE TOPS OF THE NUMBERS SHOULD BE 9-YARDS FROM THE SIDELINE.
  4. CONTRACTOR SHALL INCLUDE DIRECTIONAL ARROWS NEXT TO THE YARD-LINE NUMBERS INDICATING THE DIRECTION TOWARD THE NEAREST GOAL LINE.

4 YARD-LINE NUMBERING DETAIL  
N.T.S.

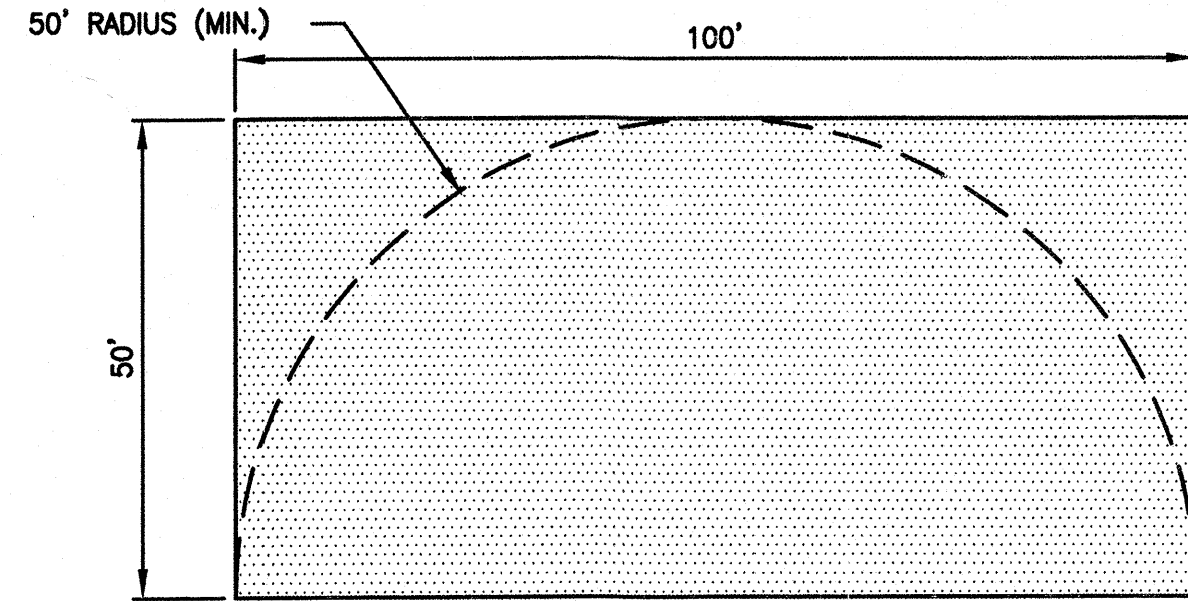
BID SET

ALL PROPOSED STRIPING SHALL BE IN ACCORDANCE WITH MASSACHUSETTS INTERSCHOLASTIC ATHLETIC ASSOCIATION.

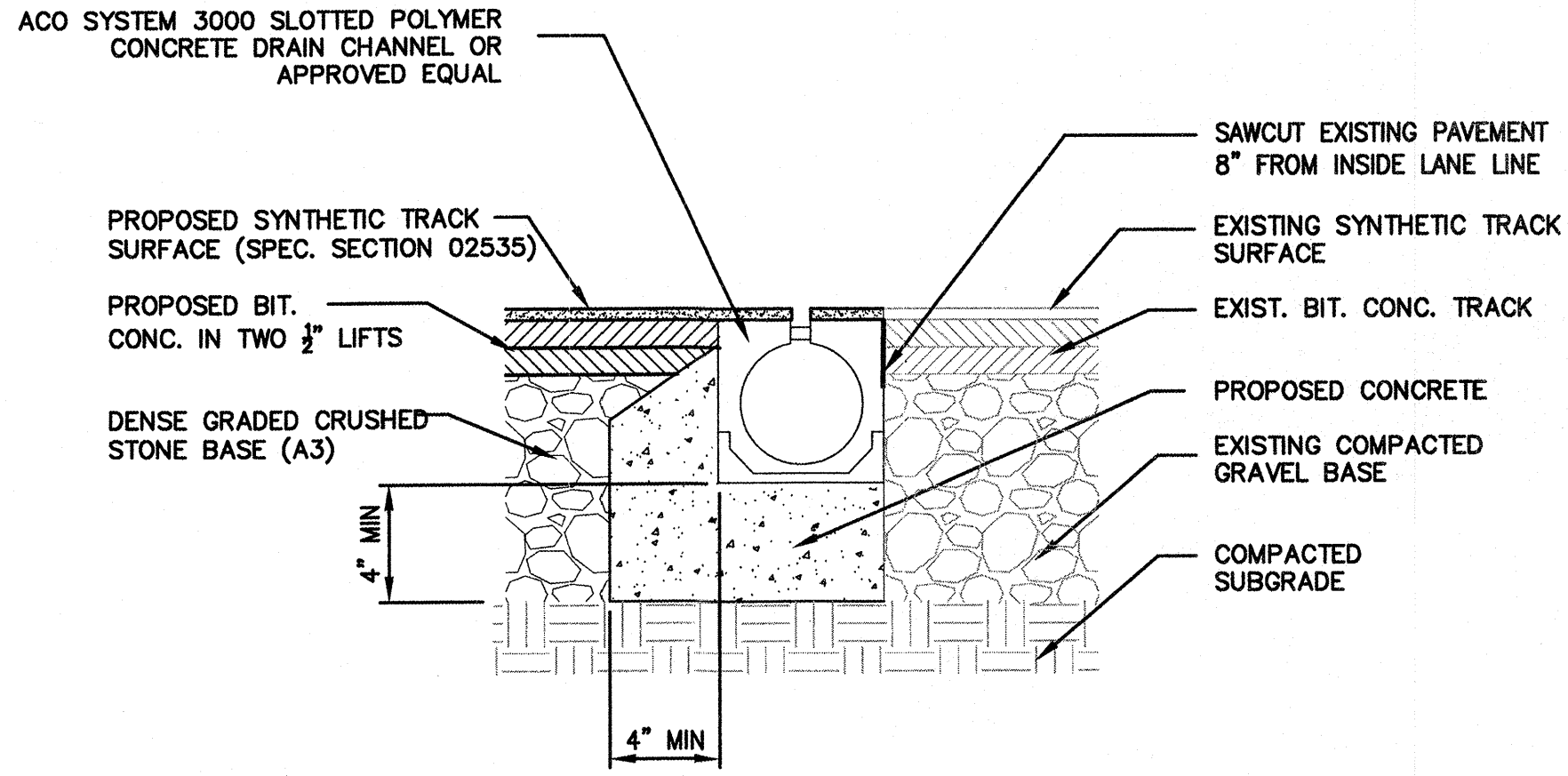
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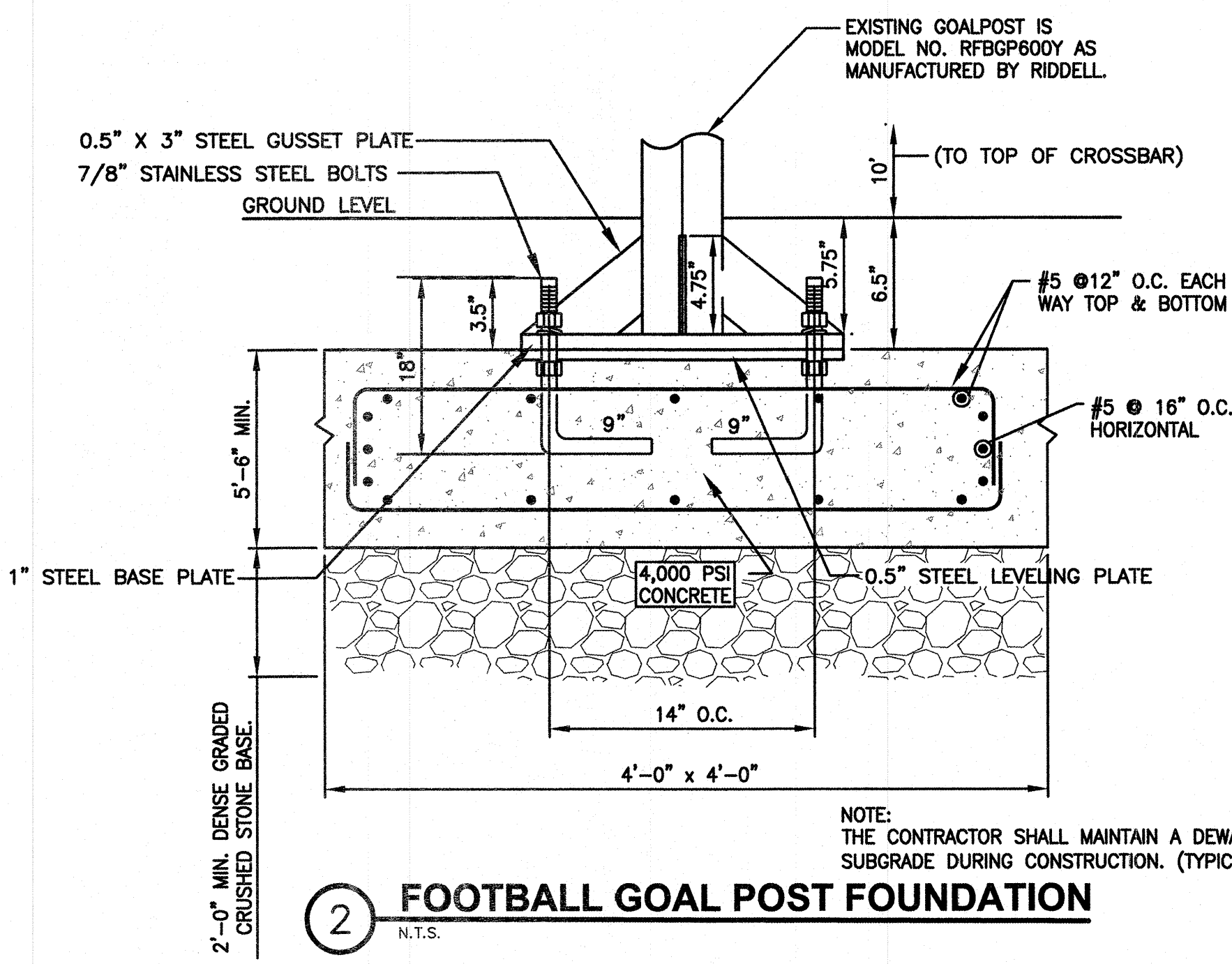
1 COMBINED (LONG JUMP/TRIPLE JUMP) RUNWAY LAYOUT DETAIL  
N.T.S.



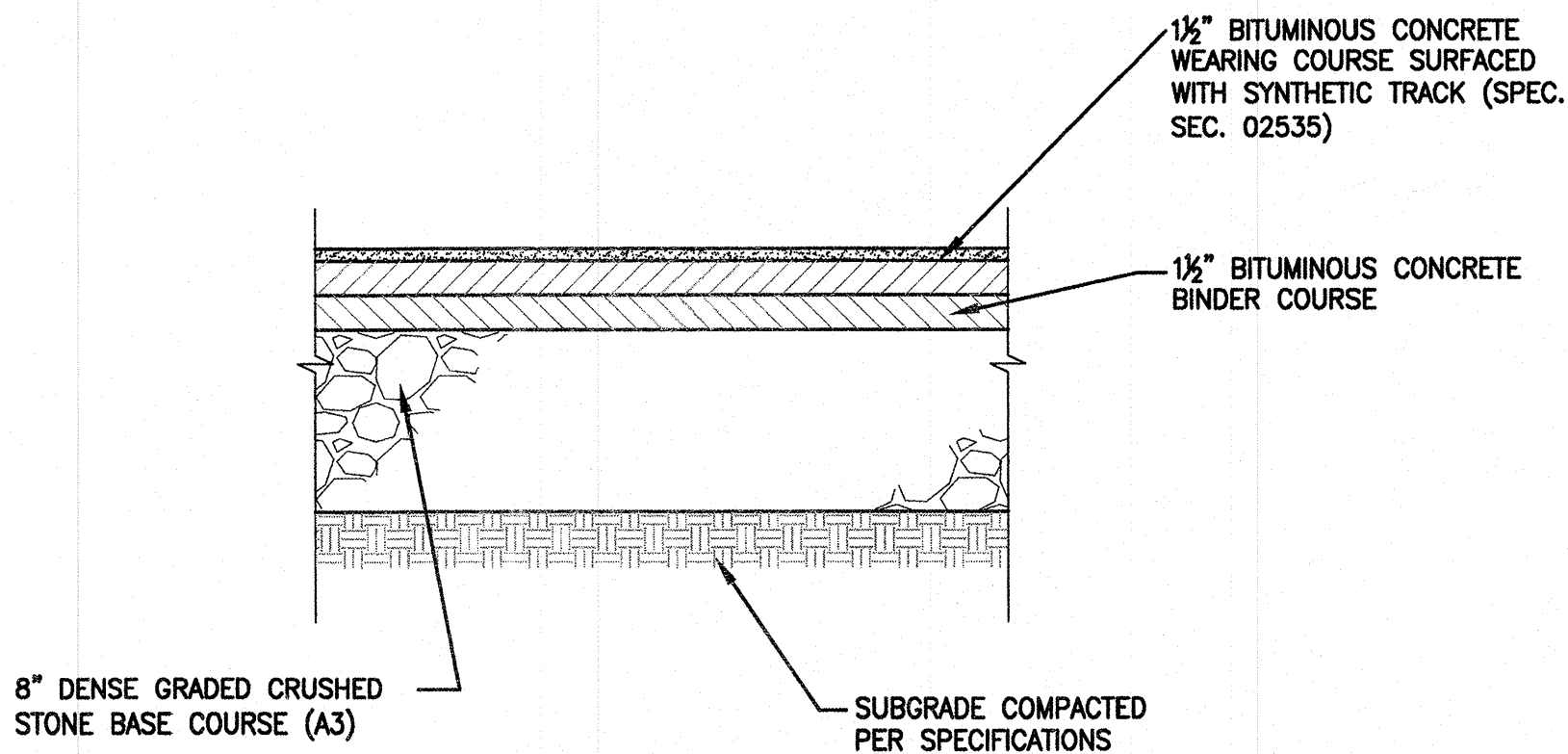
4 HIGH JUMP AREA STRIPING DETAIL  
N.T.S.



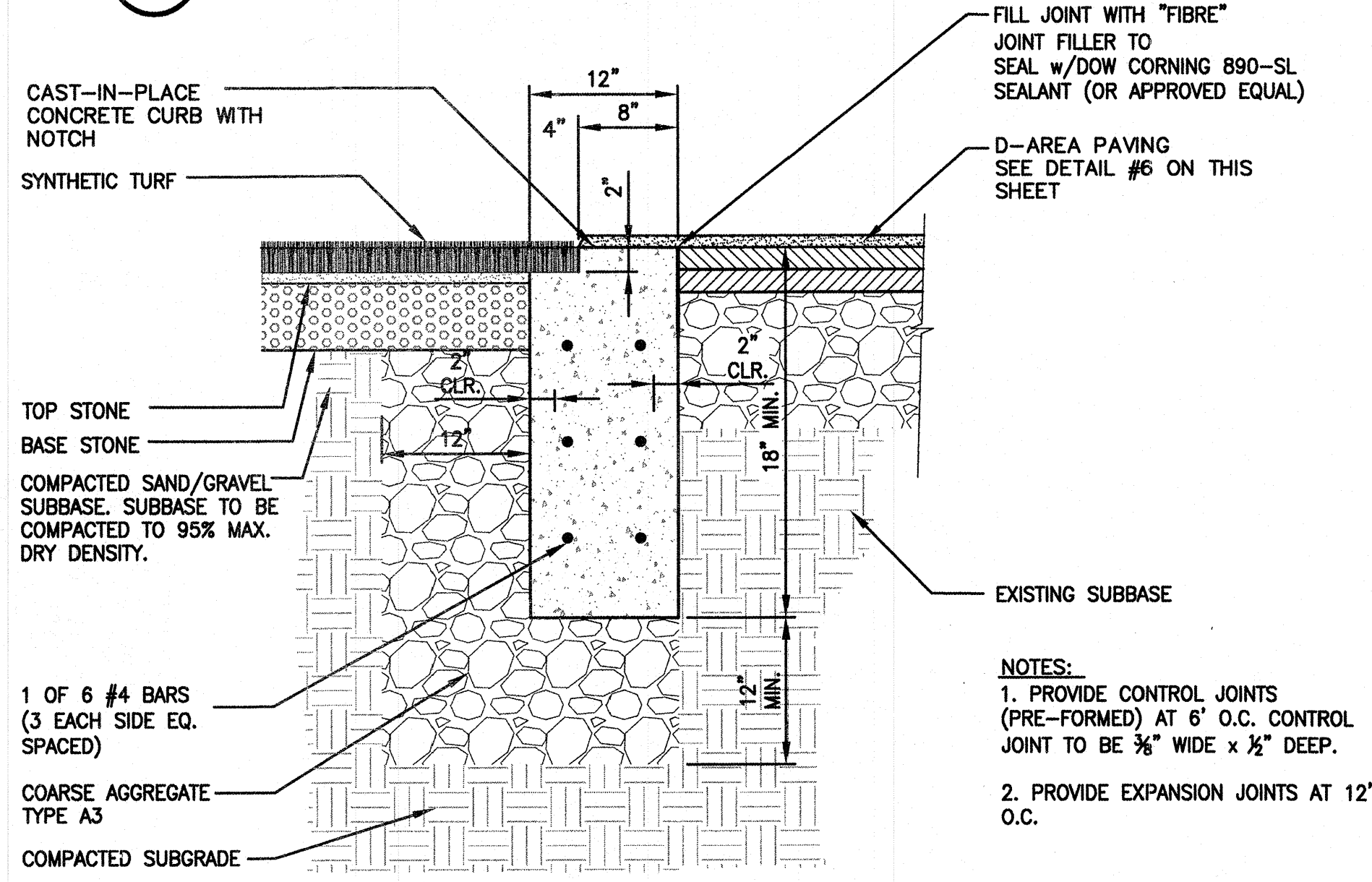
7 PROPOSED TRENCH DRAIN DETAIL  
N.T.S.



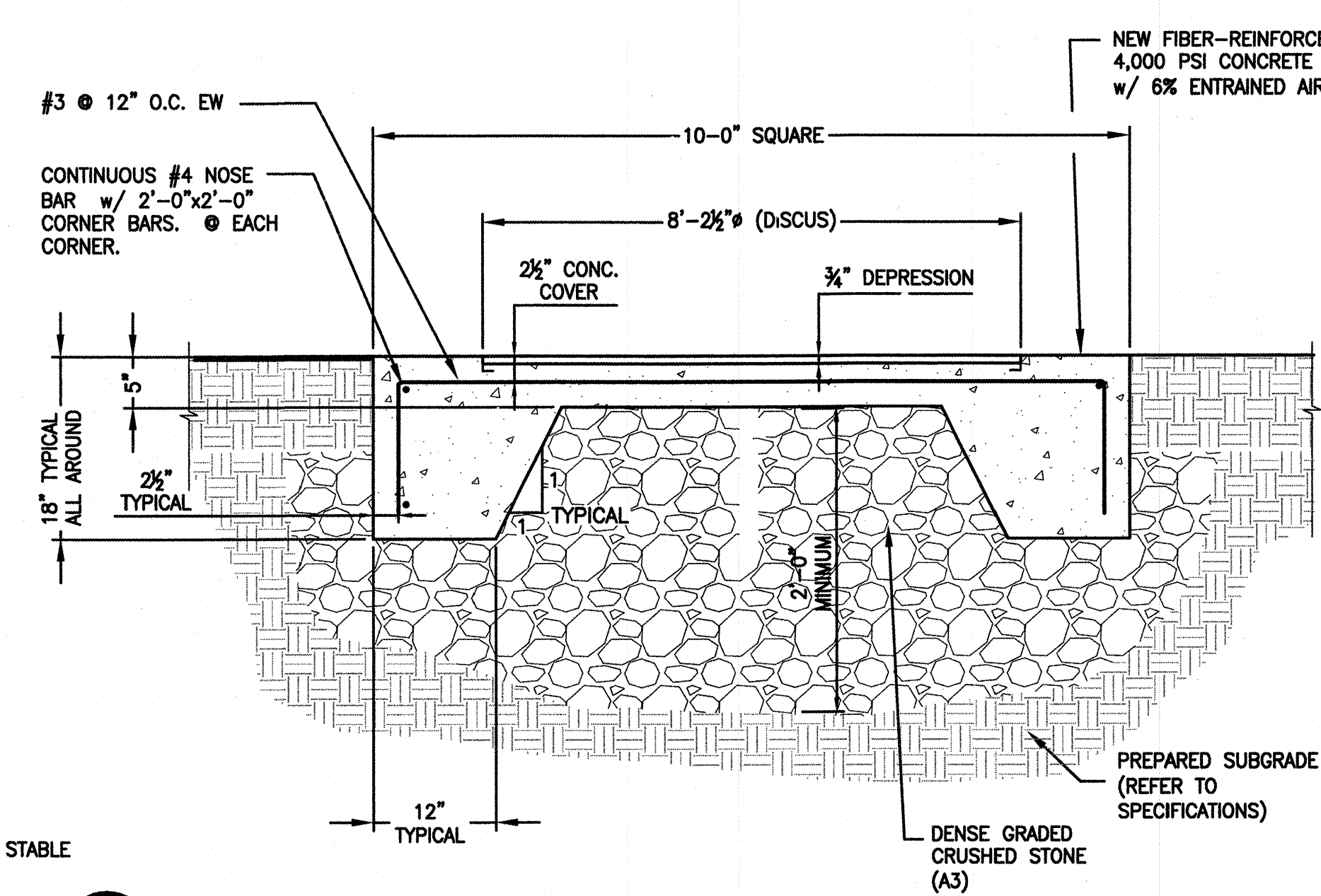
2 FOOTBALL GOAL POST FOUNDATION  
N.T.S.



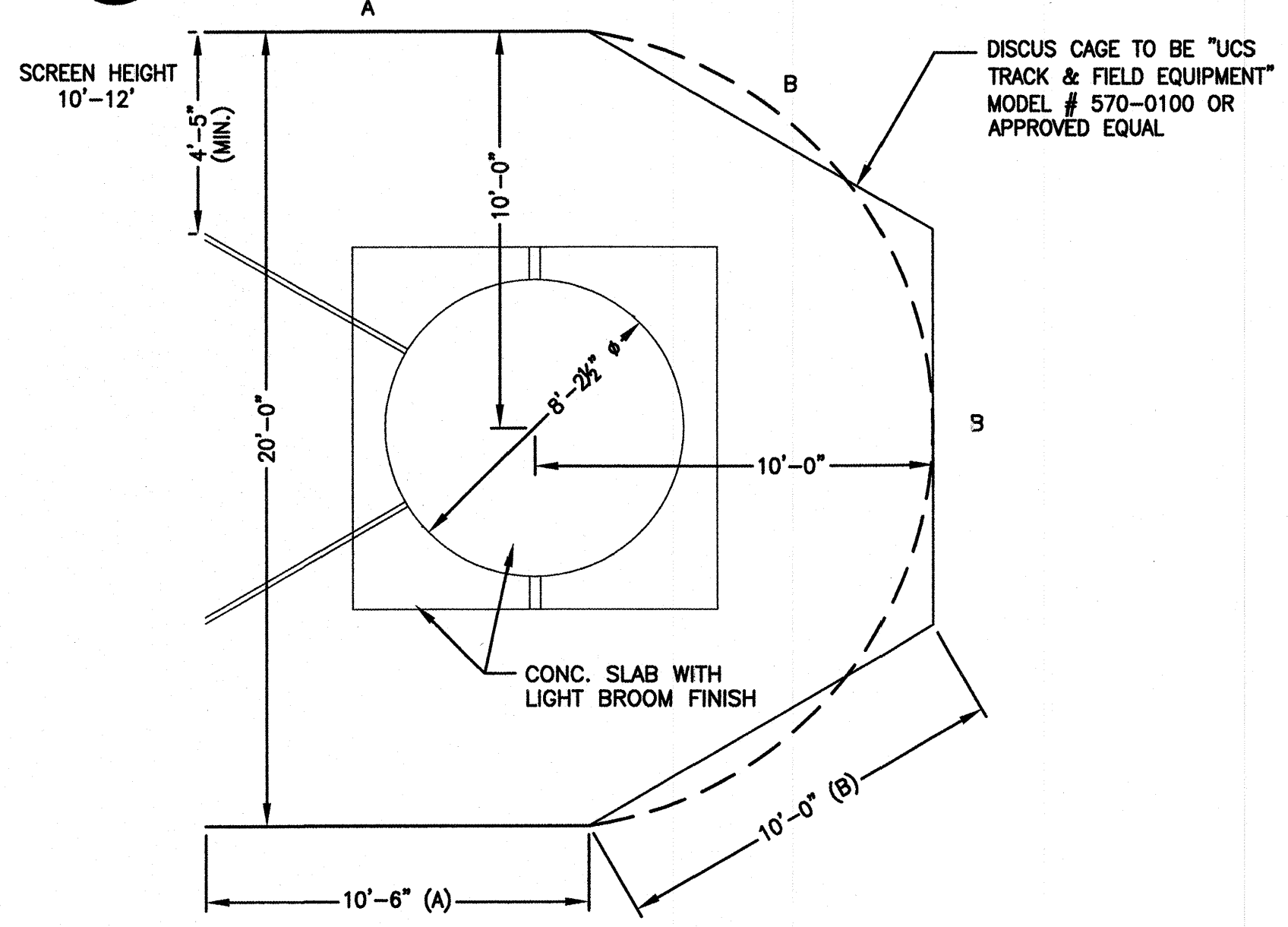
5 TYPICAL D-AREA PAVING DETAIL  
N.T.S.



8 TYPICAL CONCRETE CURB DETAIL @ D-AREA  
N.T.S.



3 DISCUS PAD DETAIL  
N.T.S.



6 DISCUSS CAGE DETAIL  
N.T.S.



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WAYLAND, MA 01778

REVISIONS		
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CADD FILE	712050_C1.2
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DRAWN BY	NAC/WAH
CHECKED BY	PJT
DATE	4/18/07
DRAWING SCALE	N.T.S.

GRAPHIC SCALE

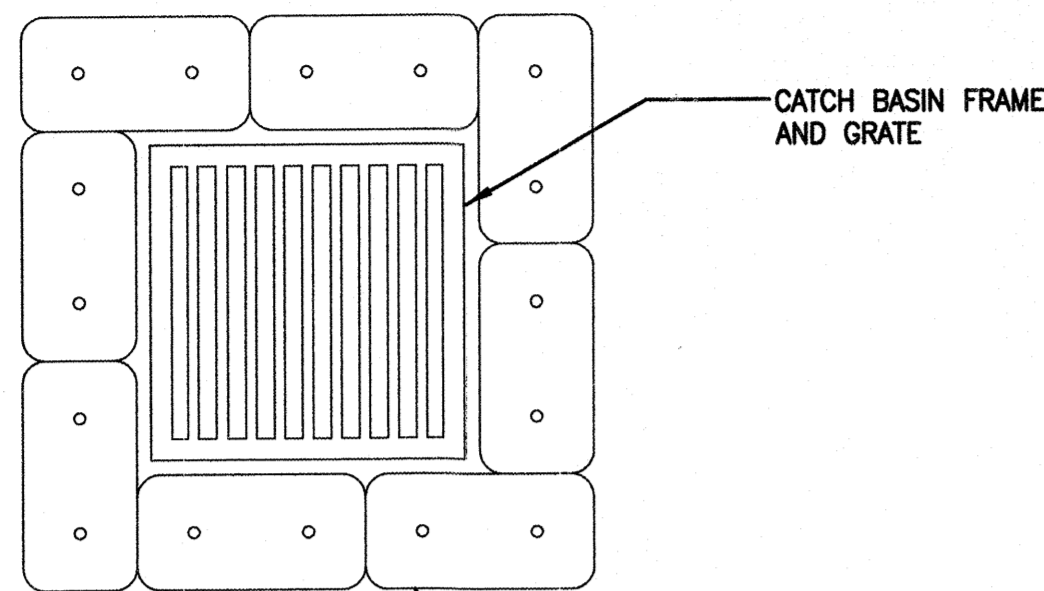
SHEET TITLE

DETAIL SHEET 2

DRAWING NO.	C5.2
PROJECT NO.	712050

BID SET

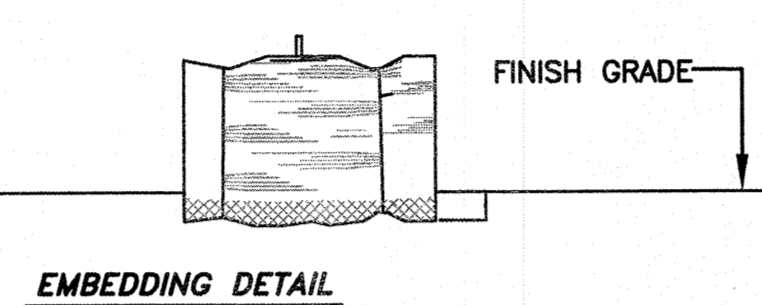
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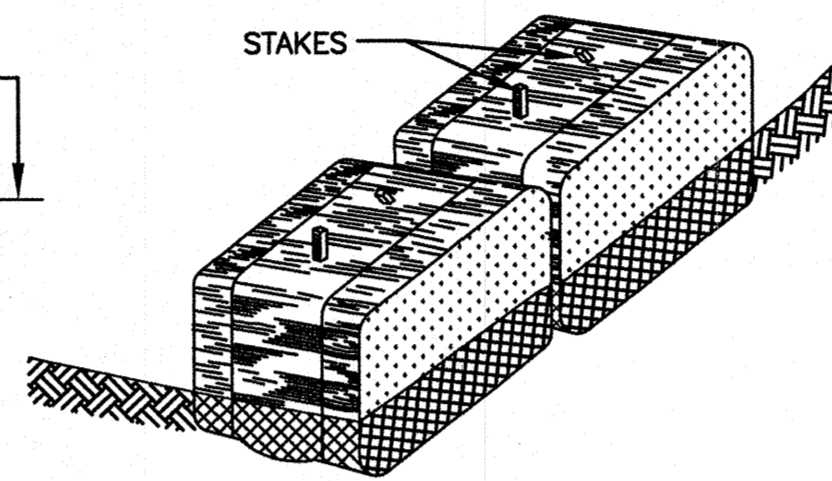
1 CATCH BASIN HAYBALE FILTER  
N.T.S.

NOTES:

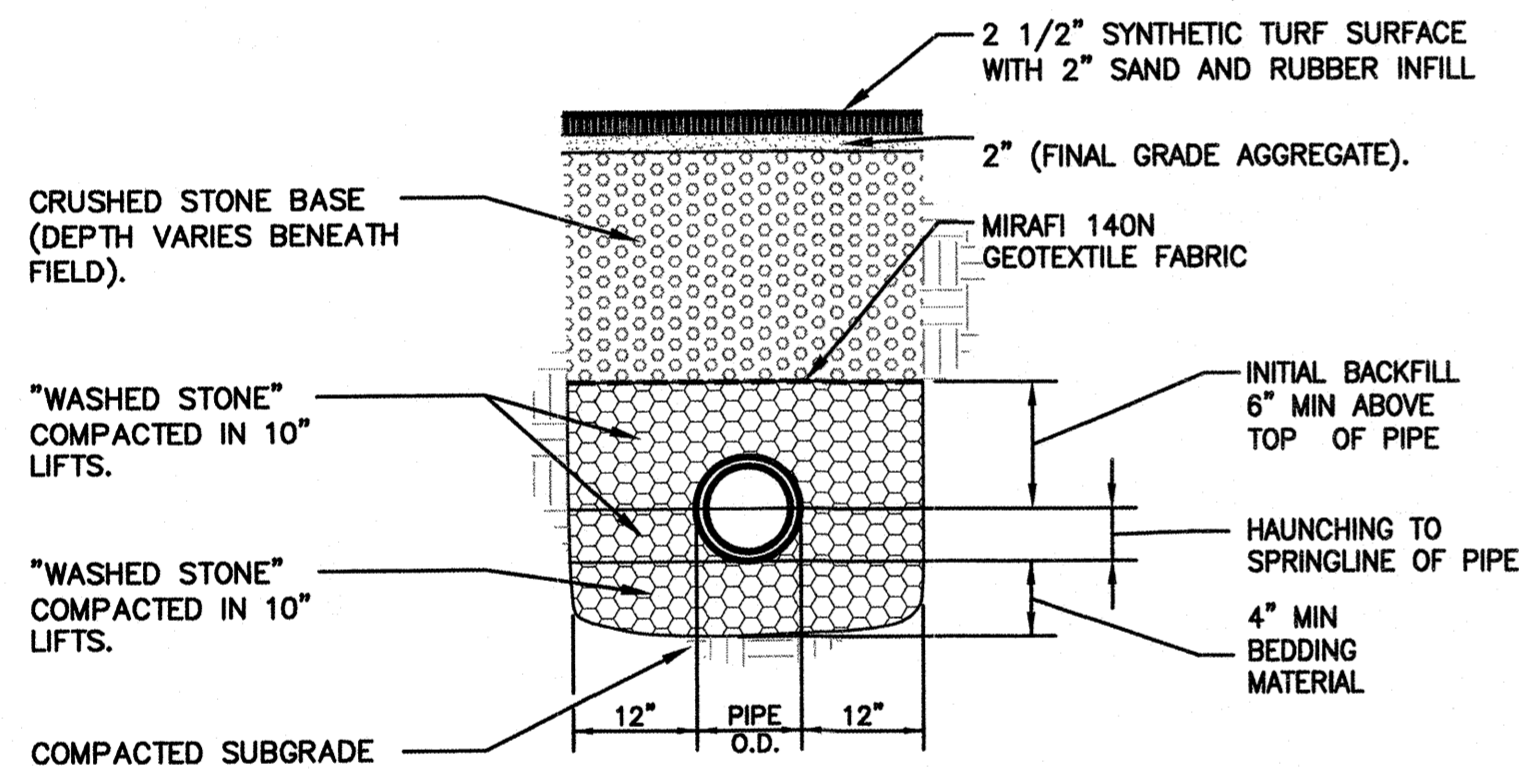
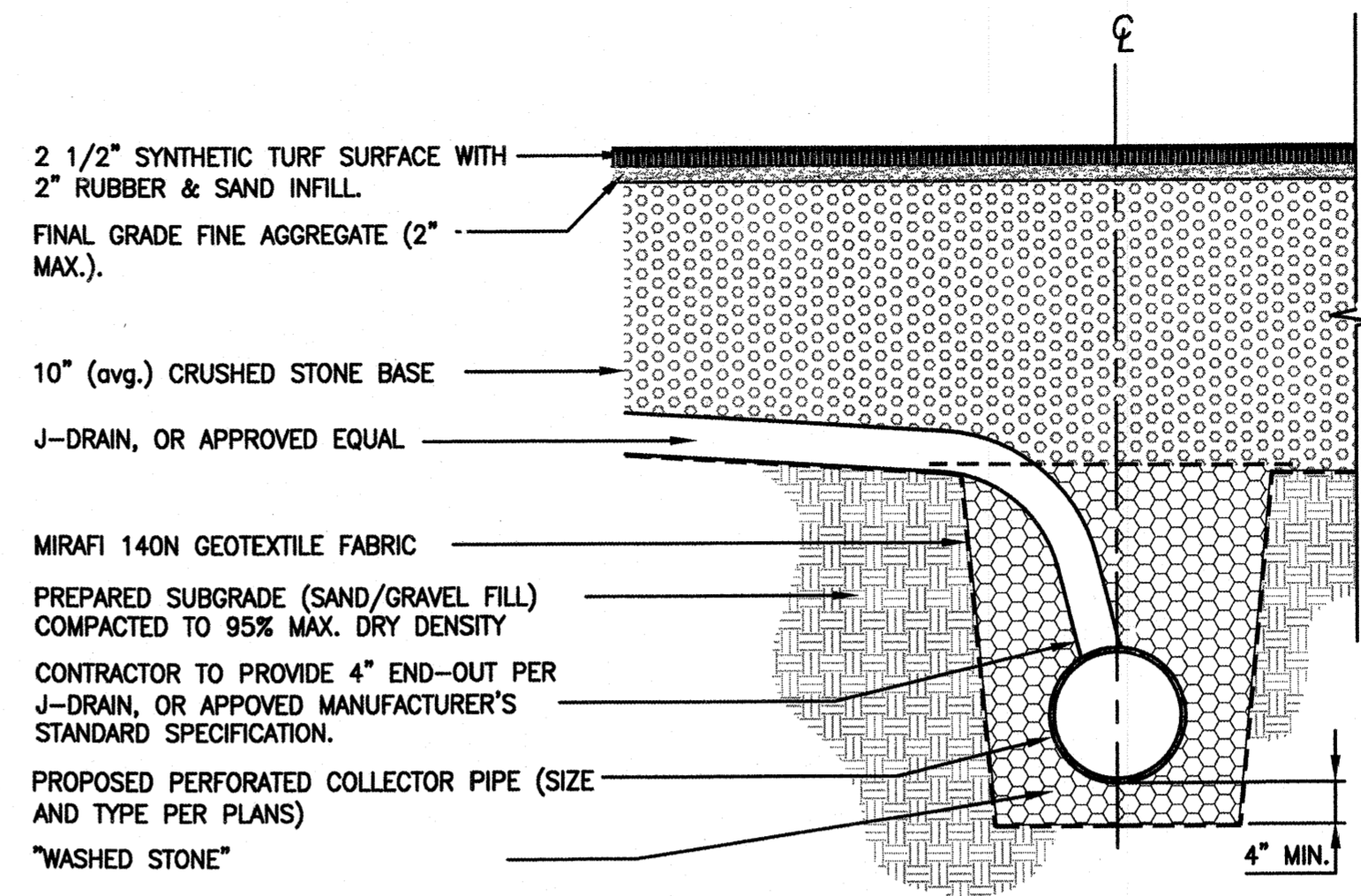
1. BALES SHALL BE PLACED IN A ROW WITH THE ENDS TIGHTLY ABUTTING THE ADJACENT BALES. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
2. BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR RE-BARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
3. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
4. BALES SHALL BE REMOVED AND REPLACED WHEN THEY BECOME FILLED WITH SEDIMENT AND BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
5. BALES SHALL BE REMOVED UPON RECEIPT OF A CERTIFICATE OF COMPLIANCE FROM THE WAYLAND CONSERVATION COMMISSION.



2 TYPICAL HAYBALE DETAIL  
N.T.S.

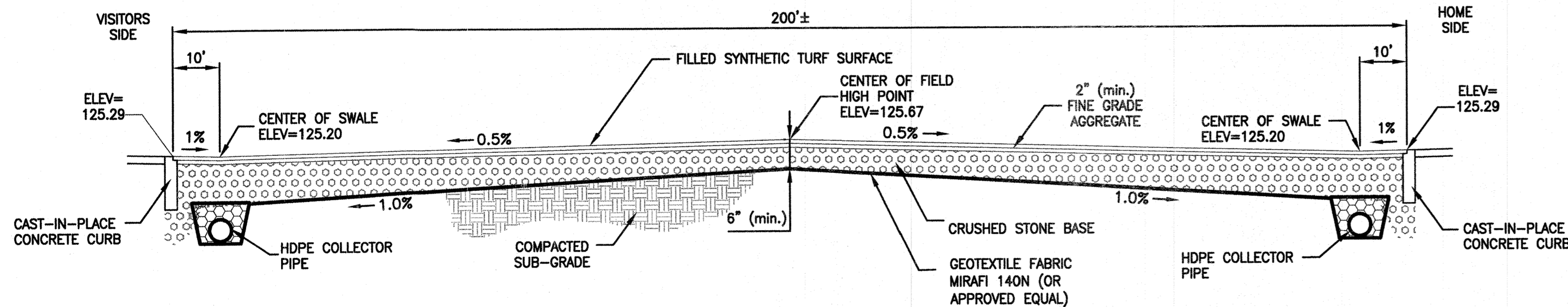


3 FIELD UNDERDRAIN LATERAL CONNECTION DETAIL  
N.T.S.



4 HDPE TRENCHING DETAIL  
N.T.S.

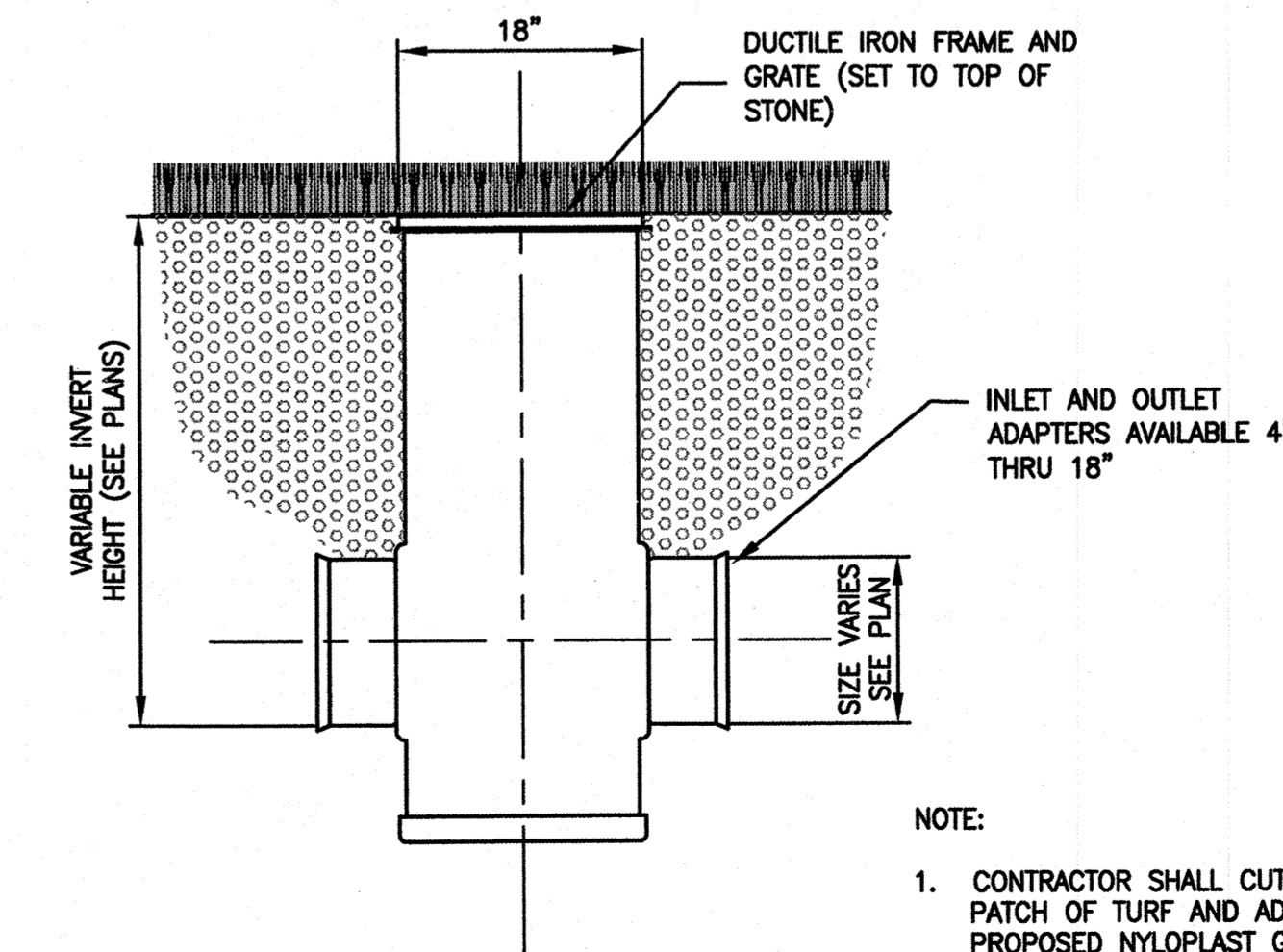
5 SYNTHETIC TURF SECTION & FIELD UNDERDRAIN DETAIL  
N.T.S.



- NOTE:
1. GRADES SHOWN WITHIN FIELD LIMITS ARE CALCULATED TO TOP OF SAND & RUBBER INFILL.

7 SECTION THROUGH FIELD  
N.T.S.

6 TYPICAL CONCRETE CURB DETAIL @ STRAIGHT AWAY  
N.T.S.



8 18" PVC DRAIN BASIN DETAIL  
N.T.S.

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264 OLD CONNECTICUT PATH  
WAYLAND, MA  
CLIENT  
WAYLAND HIGH SCHOOL  
BOOSTERS ASSOCIATION  
WAYLAND, MA

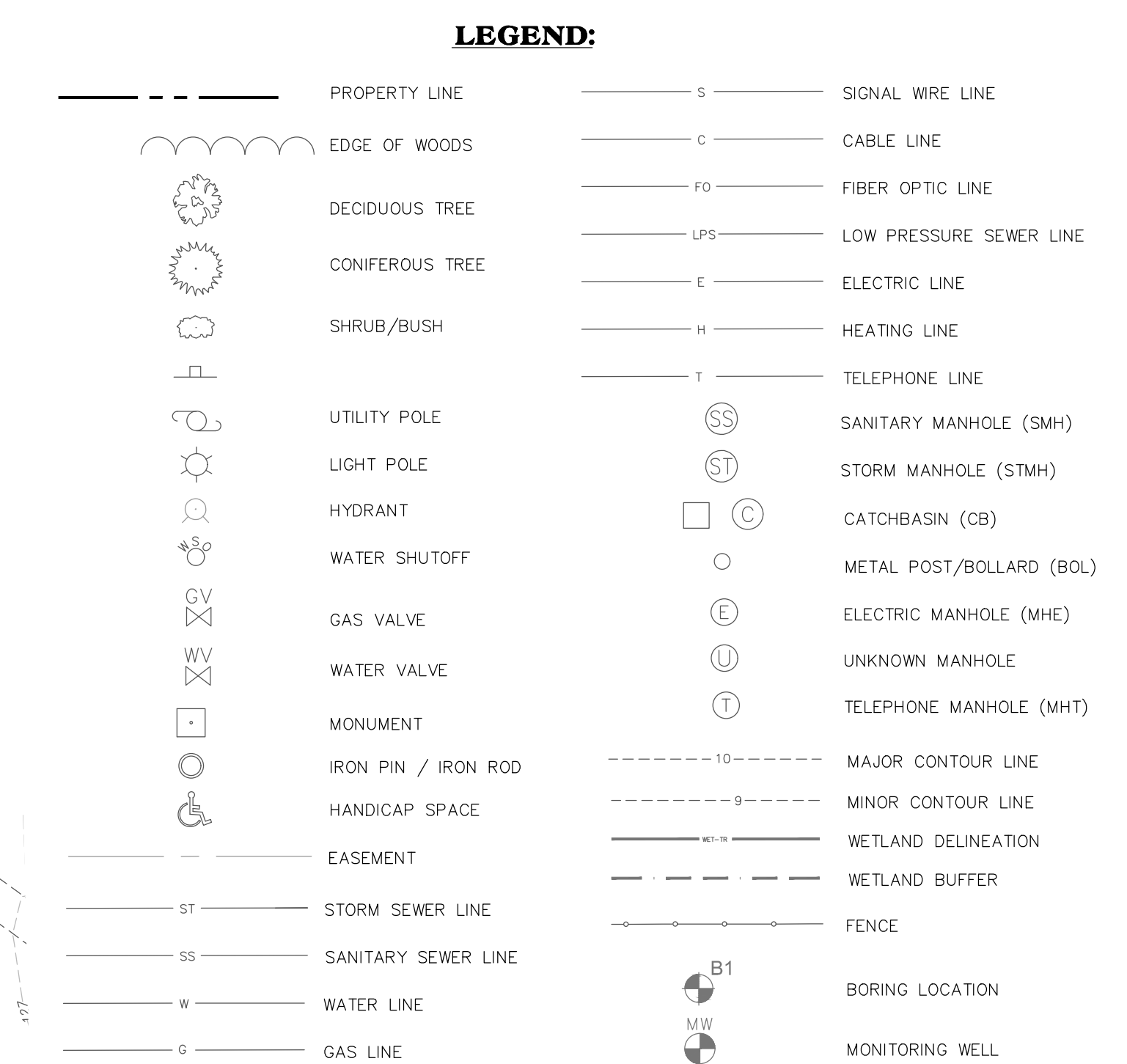
REVISIONS		
NO.	DATE	DESCRIPTION

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DESIGNED BY	NAC
DRAWN BY	NAC/VAH
CHECKED BY	PJT
DATE	2/14/07
DRAWING SCALE	N.T.S.

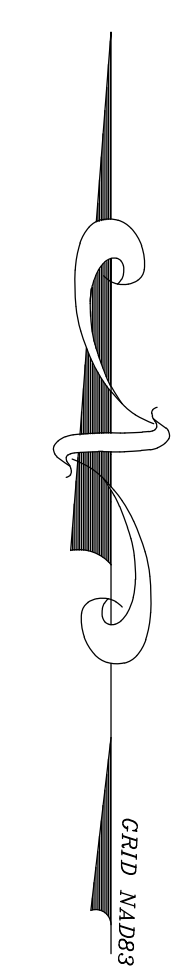
GRAPHIC SCALE

SHEET TITLE  
DETAIL  
SHEET 3

DRAWING NO.	C5.3
PROJECT NO.	712050



1. UNDERGROUND UTILITY LOCATIONS SHOWN HEREON ARE BASED ON UTILITY EVIDENCE VISIBLE AT GROUND SURFACE AND RECORD DRAWINGS AND ARE SUBJECT TO FIELD VERIFICATION BY EXCAVATION. UTILITIES SHOWN DO NOT PURPORT TO CONSTITUTE OR REPRESENT ALL UTILITIES LOCATED UPON OR ADJACENT TO THE SURVEYED PREMISES.
2. SURVEY PERFORMED BY WESTON & SAMPSON IN APRIL 2018.
3. CONTOURS AND ELEVATIONS SHOWN ON NAVD83 VERTICAL DATUM BASED ON GPS OBSERVATIONS.
4. NORTH ORIENTATION IS TRUE NORTH BASED ON GPS OBSERVATIONS TAKEN AT THE FIELD SURVEY. MAPPING PRESENTED ON THE NAVD83 STATE PLANE COORDINATE SYSTEM—MASSACHUSETTS MAINLAND ZONE.



9/12/2018

Date \_\_\_\_\_

A circular professional seal for Michael G. Gales, a Professional Land Surveyor in the State of Tennessee. The seal features the text "STATE OF TENNESSEE" at the top, "MICHAEL G. GALES" in the center, and "PROFESSIONAL LAND SURVEYOR" at the bottom. The number "24322" is also present. The seal is stamped over a document with a grid pattern.

WAYLAND HIGH SCHOOL  
EXISTING CONDITIONS  
ATHLETIC FIELD  
TOWN OF WAYLAND

COUNTY OF MIDDLESEX

COMMONWEALTH OF MASSACHUSETTS

CAD FILE:  
N2180017 WAYLAND HS

DATE: APRIL 2018 SHEET 1 OF 1

SCALE: DRAWING NO.:

Weston & Sampson Engineers, Inc.  
Conventional Draw, Reelside, M.D. 01960 Tel: (978) 623-1000

## **APPENDIX D**

**Letter from Wayland Water Superintendent, Don Millette**

Client:

Wayland Water Department

41 Cochituate Rd

Wayland, MA 01778

ReportDate: 12/29/2014

**Certificate of Analysis****Wayland Water Department**

Parameter	Method	Result	MCL	MRL	Date of Analysis	Analyst
<b>5- Baldwin Pond #1 Raw</b>						
<i>Sampled: 12/23/2014 10:15:00 AM by N Iarussi</i>						
Lead, MG/L	SM 3113B	ND	0.015	0.001	12/29/2014	M-MA1118
Zinc, MG/L	EPA 200.7	0.027	5	0.002	12/24/2014	M-MA1118
<b>6- Baldwin Pond #2 Raw</b>						
<i>Sampled: 12/23/2014 10:13:00 AM by N Iarussi</i>						
Lead, MG/L	SM 3113B	0.002	0.015	0.001	12/29/2014	M-MA1118
Zinc, MG/L	EPA 200.7	0.047	5	0.002	12/24/2014	M-MA1118
<b>7- Baldwin Pond #3 Raw</b>						
<i>Sampled: 12/23/2014 10:10:00 AM by N Iarussi</i>						
Lead, MG/L	SM 3113B	ND	0.015	0.001	12/29/2014	M-MA1118
Zinc, MG/L	EPA 200.7	0.006	5	0.002	12/24/2014	M-MA1118
<b>3- Campbell Raw</b>						
<i>Sampled: 12/23/2014 9:30:00 AM by N Iarussi</i>						
Lead, MG/L	SM 3113B	ND	0.015	0.001	12/29/2014	M-MA1118
Zinc, MG/L	EPA 200.7	0.025	5	0.002	12/24/2014	M-MA1118
<b>4- Chamberlain Raw</b>						
<i>Sampled: 12/23/2014 10:00:00 AM by N Iarussi</i>						
Lead, MG/L	SM 3113B	ND	0.015	0.001	12/29/2014	M-MA1118
Zinc, MG/L	EPA 200.7	0.03	5	0.002	12/24/2014	M-MA1118
<b>1- Happy Hollow #1 Raw</b>						
<i>Sampled: 12/23/2014 8:50:00 AM by N Iarussi</i>						
Lead, MG/L	SM 3113B	ND	0.015	0.001	12/29/2014	M-MA1118
Zinc, MG/L	EPA 200.7	0.009	5	0.002	12/24/2014	M-MA1118
<b>2- Happy Hollow #2 Raw</b>						
<i>Sampled: 12/23/2014 8:45:00 AM by N Iarussi</i>						
Lead, MG/L	SM 3113B	ND	0.015	0.001	12/29/2014	M-MA1118
Zinc, MG/L	EPA 200.7	0.007	5	0.002	12/24/2014	M-MA1118

MCL=Maximum Contaminant Level (EPA Limit), MRL = Minimum Reporting Level

Sodium Guidelines- Mass 20, EPA 250, # = Result Exceeds Limit or Guideline

ND = None Detected (&lt;MRL), \* = Background Bacteria Noted



## WAYLAND BOARD OF PUBLIC WORKS

TOWN OF WAYLAND

41 COCHITUATE ROAD, Wayland, Massachusetts 01778-2697

---

April 28, 2015

Wayland School Committee  
Town of Wayland  
41 Cochituate Road  
Wayland, MA 01778

**Subject: Protection of Wayland's Happy Hollow wells near WHS athletic fields**

Dear School Committee Members:

Wayland's Happy Hollow wells are one of the two principal sources of Wayland's drinking water. The two wells were sited after an extensive study of water sources. After near-flooding in 2010, we have drilled three nearby replacements at a higher elevation. In June 2013 fecal coliform was detected in raw (not treated) water; [wells were off-line until a retest proved they were safe](#). Since then Wayland has installed an expensive chlorine injection and analysis system as required by the Massachusetts DEP.

The loss of these wells would be catastrophic for Wayland. As Wayland's Water Commissioners, we are charged with protecting this drinking water source.

Risks are classified by their proximity to the wells. Legally the DEP identifies proximity by [Zone 1 and Zone 2 areas](#); another specific delineation is the 'capture zone' where water falling on the surface will reach the well during normal pumping. The capture zone for the Happy Hollow wells was delineated in 2010. These areas are shown in the town GIS and at the end of this letter.

In 2007 the WHS artificial turf playing field was permitted by the Conservation Commission, appealed, then allowed by a Massachusetts DEP [Superseding Order of Conditions \(DEP 322-661\)](#). This order sets out **specific requirements of ongoing maintenance and reporting, and requires that a Certificate of Compliance be requested and obtained** from Wayland's Conservation Commission (conditions 67, 68).

There is also an existing [Operations and Maintenance plan](#) which was made part of the agreement and which is now being reviewed by School, Recreation, and DPW staff.

These requirements have the force of law. Even if there were no risks to our wells, a failure to abide by a Superseding Order of Conditions may result in fines and [DEP enforcement actions](#), and potentially the loss of use of the field for some period.

Wayland's [Wellhead Protection Plan](#) reviews all town wells and assess potential risks to them. On pp 28-29 the plan expresses concerns that the proximity of the WHS field may pose risks.

To assess those risks the Board of Public Works has recently arranged for two assessments:

- [Analysis for zinc and lead](#) in the raw water of *all* town wells. (Nashoba Analytical)
- [Drainage Assessment WHS Turf Field](#), (Eggleston Environmental)

Both the zinc/lead analysis and the drainage assessment have been distributed to Conservation, the Health, Recreation, and School Departments.

The zinc and lead analysis showed no detectable lead at all wells except traces at Baldwin Pond #2. Levels of zinc were no more than 1/100<sup>th</sup> of the allowed levels, and the Happy Hollow wells were lower than other wells. This is good news and addresses one of the concerns in the Wellhead Protection Plan.

The drainage assessment however noted several deficiencies -- some of which you have already begun to address in the recent spring cleanup by removing the loose synthetic fibers and crumb rubber. The report notes that several of the conditions from the DEP Superseding Order of Conditions are incomplete or cannot be verified. These conditions protect Wayland's wells.

There are no 'smoking guns' -- the Board of Public Works and DPW's Water Division will continue to work prudently to minimize risks. We are considering installation of monitoring wells to identify a problem before it reaches a well.

We ask that the School Committee and School Department review the Drainage Assessment for its WHS field.

By adhering to the Superseding Order of Conditions, following or updating the Operation & Maintenance plan, providing the maintenance reports to the Board of Health as required, providing the as-built plans as required, and applying for the required Certificate of Compliance, the School Department can do its part to protect the Happy Hollow wells.

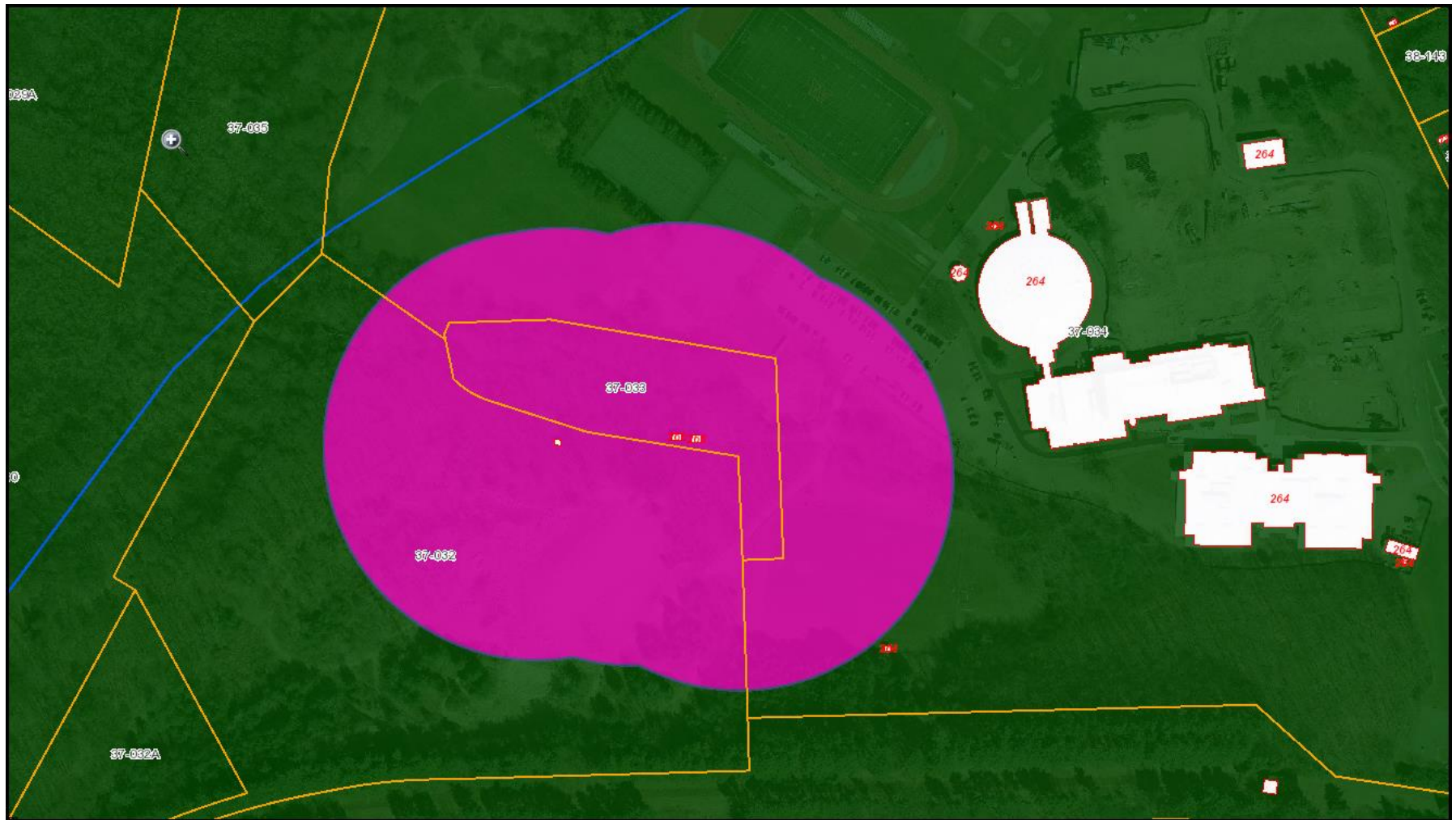
Please keep our board informed of your progress in meeting these requirements.

Thank you for your consideration,  
BOARD OF PUBLIC WORKS  
as WATER COMMISSIONERS

Christopher Brown  
Chairman

cc: Wayland Conservation Commission  
Wayland Board of Health  
Wayland Recreation Commission  
Nan Balmer, Town Administrator  
Ben Keefe, Public Buildings Director  
Stephen Kadlik, DPW Director  
Don Millette, Water Superintendent  
Allyson Mizoguchi, WHS Principal  
Stephen Cass, WHS Athletic Director  
Cherry Karlson, Board of Selectmen (Schools Liaison)

Relation of the WHS structures to wellhead protection areas. Source: Wayland GIS 4/28/2015



Magenta: DEP ZONE 1 Wellhead Protection area (approx. 400' radius)  
Green: DEP ZONE 2 Wellhead Protection area  
Blue Line Wellhead 'Capture Zone' as established by 2008 Earthtech AECOM

October 24, 2008

Mr. Frederic E. Turkington  
Town Administrator  
Town of Wayland  
41 Cochituate Road  
Wayland, MA 01778

**Re: Data Interpretation Report  
Leachate Sampling for Synthetic Turf Field  
Wayland High School  
246 Old Connecticut Path, Wayland, MA  
Norfolk Project Number 1213.1.1**

Dear Mr. Turkington:

In accordance with our proposal dated September 27, 2007 (Proposal M0907162) as follows is a summary of the results of the leachate sampling and analysis for the synthetic turf field located at Wayland High School.

### **Background**

Based on information provided by the Town of Wayland, the Wayland turf field is composed of recycled rubber tire crumbs. A leachate collection sub-drain, consisting of two 10-inch perforated HDPE pipes at the west and east sides of the turf field, discharge, via a 15-inch HDPE pipe (Outfall 1), to an above-grade drainage ditch located at the northeast side of the turf field. A drainage plan which depicts the basic drainage design is attached to this report as Figure 3.

The purpose of the leachate sampling program was to evaluate potential adverse impacts on drinking water and wetlands resources in proximity to the site. According to the drainage plan (Figure 3), the north ½ of the drainage swale is situated within the 100-foot buffer of a wetland which borders the north side of the site. According to the Mass DEP Priority Resource Map (Figure 2), the swale is located within a designated Zone II of a public water supply well and is also proximate to a medium-yield potentially productive aquifer.

### **Sampling Methods**

Leachate samples were collected from the discharge outfall on January 10, 2008 following a heavy rain and significant snow melt. Samples were additionally collected on March 10, 2008, July 24, 2008, and September 29, 2008 following approximately 3 inches of rainfall over the preceding two-day or three-day periods. Prior to sampling, flow from the outfall was checked using a plastic float. During all sampling events, the outfall appeared to be partially submerged by water which was backed up in the drainage swale. Flow from the outfall was observed to be present but was weak. Photographs of the swale and outfall are attached in Appendix B.

**Table 1:**  
**Analytical Summary for Detected Parameters: Outfall 1**  
**Samples Collected January 10, 2008 through September 29, 2008**  
**Wayland Turf Field, Wayland, MA**

Detected Parameter	Date / Concentration (ug/L)				EPA Freshwater CCC* (ug/L)	MADEP Method 1 GW-1 / GW-3** (ug/L)
	January 10, 2008	March 10, 2008	July 24, 2008	September 29, 2008		
Chromium	<5	2	<5	<5	570	100 / 600
Copper	<10	5	<5	3.2	13	NE
Zinc	21	31	<47.5	35.8	120	5,000 / 900
Bis(2-ethylhexyl) phthalate	<5	<5	<6.25	3.18	NE	6 / 50,000
Di-n-octyl phthalate	<5	<5	<6.25	1.13	NE	(10,000) <sup>1</sup>
Total Suspended Solids (TSS)	8,700	<2,000	<5,000	<5,000	NE	NE
Biochemical Oxygen Demand (BOD)	3,700	<2,000	<3,000	<3,000	NE	NE
pH ( in standard units)	7.1	7.0	8.24	7.16	6.5 to 9.0	NE

\* = Chronic Criterion Concentration for fresh surface water per U.S. EPA National Recommended Water Quality Criteria, 2006, Office of Science and Technology Document 4404T

\*\* = Method 1 Concentrations for GW-1 and GW-3 Category Groundwaters per 310 CMR 40.0974(2) as amended February 2008

NE = Not Established for this analyte

()<sup>1</sup> = Although there are no established Method 1 risk-based concentrations, the MADEP has established a Reportable Concentration of 10,000 ug/L for this analyte in GW-1 Category Groundwater areas.

Leachate samples were collected at the mouth of the outfall using a Teflon™ sampling ladle which was cleaned with distilled water prior to use. Samples were transported under chain-of-custody protocol to a Massachusetts-certified laboratory for analysis. Analytical parameters included semi-volatile organic compounds by EPA method 8270C, selected soluble metals (cadmium, chromium, copper, lead, selenium and zinc) using EPA 6000/7000 series methods, biochemical oxygen demand (BOD) by Standard Method SM521B, total suspended solids (TSS) by Standard Method SM2540D, and, pH by ASTM method 1293-99B.

### **Laboratory Results**

Laboratory results compared to EPA National Recommended Water Quality Criteria and MassDEP Method 1 Groundwater Standards are summarized on Table 1. Laboratory reports are included in Appendix C. Laboratory results indicate detectable concentrations of chromium, copper, and zinc, with zinc being the most elevated and the most prevalent. Bis (2-ethylhexyl) phthalate and di-n-octyl phthalate were detected in the latest sample collected on September 29, 2008. All detected contaminant concentrations are below the EPA Chronic Criterion Concentrations and applicable MassDEP Method 1 concentrations, where established. The pH is within the acceptable range and the BOD and TSS values are lower than is typical for most storm water runoff.

### **Contaminant Sources**

A likely source for the metals detected in the leachate samples are rubber vulcanization accelerators and rubber polymerization peptizers used in the manufacture of tires (MacCaskie, 2003 and 2006). The leaching of naturally occurring metals from soils and fill materials is another potential source of these metals. Bis (2-ethylhexyl) phthalate and di-n-octyl phthalate are common plasticizers that are used in the manufacture of rubber and various plastics (EPA, 2005, p 37). Laboratory contamination is also a possible, though unlikely, source of the phthalates.

### **Conclusions and Recommendations**

Based on the above observations and findings, it appears that potentially significant adverse impacts to surface water via direct leachate discharge and to groundwater by leachate infiltration appear to be unlikely. Additional testing or drainage design modifications are not recommended at this time based on available data.

Should it be determined that additional sampling is to be performed, Norfolk recommends that *hardness* be included as an additional analytical parameter. The EPA Chronic Criterion Concentrations for copper and zinc are hardness dependent and may require numerical adjustment (EPA, 2006, p. 23).

Should you have any questions regarding these findings and recommendations, please contact the undersigned at (508) 478-1276.

Sincerely,  
**NORFOLK RAM GROUP, LLC**

Stephen R. Lemoine  
Project Manager

Brian V. Moran, P.E., L.S.P.  
Principal

Attachments:

Appendix A: Figures  
Appendix B: Photographs  
Appendix C: Laboratory Reports  
Appendix D: References

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