



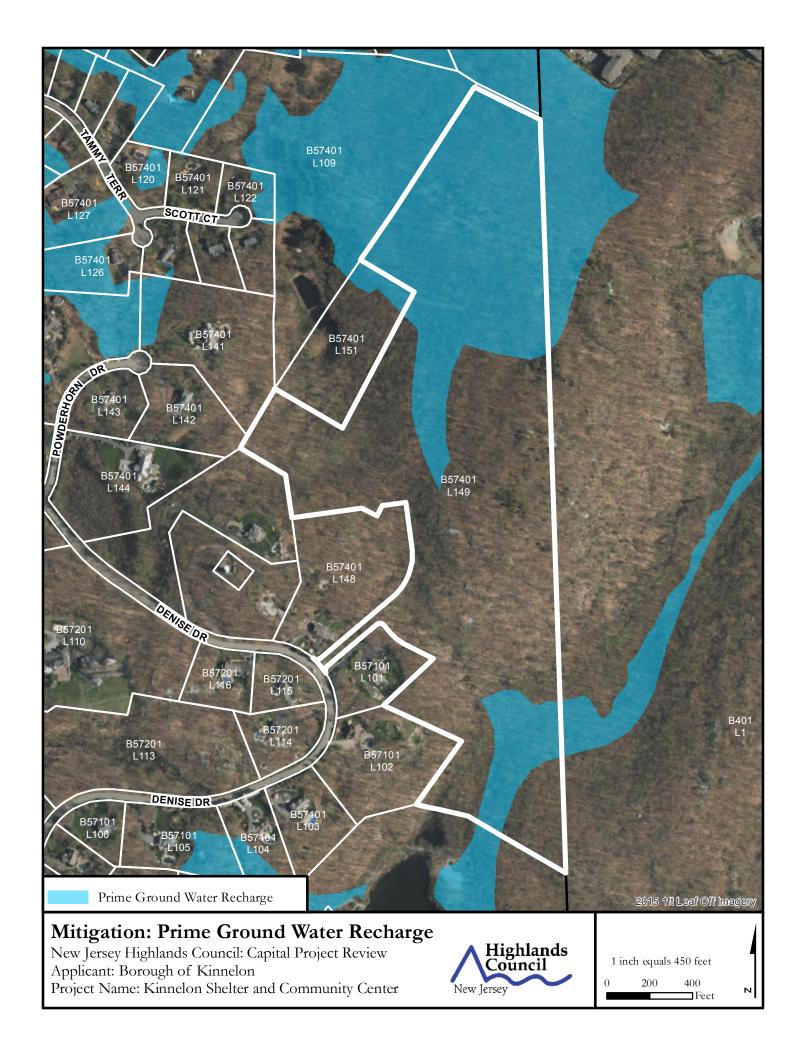
New Jersey Highlands Council: Capital Project Review Applicant: Borough of Kinnelon

Project Name: Kinnelon Shelter and Community Center



1 inch equals 450 feet
0 200 400
Feet









Kinnelon Shelter and Community Center, Proposed Project Site, Kinnelon Borough: Block 45502 Lot 119



Kinnelon Shelter and Community Center, Mitigation Site, Kinnelon Borough: Block 57401 Lot 149



State of New Jersey

PHILIP D. MURPHY Governor

SHEILA Y. OLIVER Lt. Governor DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Land Use Regulation Mail Code 501-02A P.O. Box 420 Trenton, New Jersey 08625-0420 www.nj.gov/dep/landuse CATHERINE R. McCABE Acting Commissioner

MAY 2 4 2018

Pompton Plains Reformed Bible Church & the Borough of Kinnelon Mayor Robert Collins 130 Kinnelon Road Kinnelon, NJ 07405

Re:

Highlands Preservation Area Approval with Takings Waiver

Applicant: Pompton Plains Reformed Bible Church & Borough of Kinnelon

File No.: 1415-16-0004.1, SHR 170001

Block(s): 45502; Lot(s): 119

Borough of Kinnelon, Morris County

Dear Mr. Collins:

The Division of Land Use Regulation acting under the provisions of the Highlands Water Protection and Planning Act (N.J.S.A. 13:20-1 et seq.), has decided to approve the referenced Highlands Preservation Area Approval with Takings Waiver for the reasons set forth in the attached summary.

In accordance with N.J.A.C. 7:38-1.5, any person who is aggrieved by this decision may request a hearing within 30 days of the date the decision is published in the DEP Bulletin by writing to: New Jersey Department of Environmental Protection, Office of Legal Affairs, Attention: Adjudicatory Hearing Requests, Mail Code 401-04L, P.O. Box 402, 401 East State Street, 7th Floor, Trenton, NJ 08625-0402. This request must include a completed copy of the Administrative Hearing Request Checklist found at www.state.nj.us/dep/landuse/forms. Hearing requests received after 30 days of publication notice may be denied. The DEP Bulletin is available on the Department's website at www.state.nj.us/dep/bulletin. In addition to your hearing request, you may file a request with the Office of Dispute Resolution to engage in alternative dispute resolution. Please see the website www.nj.gov/dep/odr for more information on this process.

If you have any questions regarding this letter, please contact Christopher Squazzo of my staff at (609) 633-6563 or chris.squazzo@dep.nj.gov. Be sure to indicate the Division's file number in all communication.

Sincerely,

Vincent J. Mazzei, Jr. P.E., Manager Division of Land Use Regulation Bureau of Inland Regulation

c: Borough of Kinnelon, Municipal Clerk, w/plan(s)
Borough of Kinnelon, Construction Official
Borough of Kinnelon, Planning Board
Borough of Butler, Municipal Clerk
Margaret Nordstrom, Executive Director Highlands Council
Agent, Paul Darmofalski, Darmofalski Engineering Associates, Inc., w/plan(s)
N.J. Highlands Council, John Maher, Esq.
James Pontoriero, NJDEP, Division of Land Use Planning
Joseph Barilla, Morris County Planning Board, w/plan(s)
Joseph Dunn, Morris County Soil Conservation
Lewin Weyl, DAG

State of New Jersey Department of Environmental Protection Division of Land Use Regulation Bureau of Inland Regulation

Staff Summary Report

Re: Highlands Preservation Area Approval with Takings Waiver

Applicant(s): Pompton Plains Reformed Bible Church and Borough of Kinnelon

Program Interest No.: 1415-16-0004.1, SHR 170001

Block(s): 45502; Lot(s): 119

Borough of Kinnelon, Morris County Sub-watershed: Stone House Brook Watershed: Pequannock River

The decision by the Manager of the Bureau of Inland Regulation of the Division of Land Use Regulation (DLUR) is to approve this Highlands Preservation Area Approval with Takings Waiver.

I. INTRODUCTION

The Highlands Water Protection and Planning Act (N.J.S.A. 13:20-1 et seq.) requires that a Highlands Preservation Area Approval (HPAA) be obtained from the Department for all "Major Highlands Development" in the preservation area. A "Major Highlands Development" means (1) any non-residential development in the preservation area; (2) any residential development in the preservation area that requires an environmental land use or water permit or that results in the ultimate disturbance of one acre or more of land or a cumulative increase in impervious surface by one-quarter acre or more; (3) any activity undertaken or engaged in the preservation area that is not a development but results in the ultimate disturbance of one-quarter acre or more on a lot; or (4) any capital or other project of a State entity or local government unit in the preservation area that requires an environmental land use or water permit or that results in the ultimate disturbance of one acre or more of land or a cumulative increase in impervious surface by one-quarter acre or more.

The application has been reviewed and the proposed project has been determined to be subject to the applicable provisions of the Highlands Act, including the need for an HPAA along with a Highlands Takings Waiver, to avoid the taking of property without just compensation. Pursuant to N.J.A.C. 7:38-6.8(g) an applicant for an HPAA may request that the Division waive requirements of this chapter only after the Division has rendered a decision on an HPAA application under the rules, as strictly applied. The Division denied the HPAA application on March 6, 2018. The Division has determined that a Highlands Waiver is appropriate for the proposed project. The decision of the Division has been justified in the contents of this document.

II. DESCRIPTION OF THE SITE

The subject property ("site") consists of 10.68 acres and is located on Boonton Avenue in the northeasterly portion of the Borough of Kinnelon, Morris County. The site is upland forest with red

oak, red maple, black birch, tulip tree and hop hornbeam as the predominant vegetation. As per a Letter of Interpretation (LOI) issued September 20, 2000 and a Highlands Resource Area Determination (HRAD) issued October 21, 2016, the Division determined that no freshwater wetlands, State open waters, transition areas, riparian zones or Highlands open waters are on the site.

III. DESCRIPTION OF THE PROJECT

The Borough of Kinnelon (co-applicant) proposes to construct a grass all-purpose recreational field, community center and emergency shelter with associated parking and features. The layout is depicted on the plan(s) referenced below. The project will also include the installation of potable water and sanitary sewer lines through the rear (western) portion of the site and through an existing parcel, Block 45502, lot 171, and owned by one of the co-applicants, Pompton Plains Reformed Bible Church.

Plan(s) Reviewed:

The plan(s) submitted and reviewed with this application are entitled:

"LANDSCAPE PLAN, KINNELON COMMUNITY CENTER, BOROUGH OF KINNELON, NEW JERSEY", sheet 1 of 2, dated July 15, 2017, last revised July 26, 2017, and prepared by Edward J. Snieckus, Jr., of Burgis Associates, Inc.

"PROPOSED KINNELON COMMUNITY CENTER & SHELTER FOR LOT 119 / BLOCK 45502 – 46 BOONTON AVENUE SITUATED IN THE BOROUGH OF KINNELON, MORRIS COUNTY, NEW JERSEY", three (3) sheets, all dated March 31, 2017, revised May 18, 2018, unless otherwise noted, and all prepared by Paul P. Darmofalski of Darmofalski Engineering Assoc., Inc.

"SITE WATER / SANITARY SEWER PLAN", sheet C2.06, 7 of 14;

"STORMWATER MANAGEMENT PLAN", sheet C2.07, 8 of 14; and,

"CULTEC CONSTRUCTION DETAILS", no revisions, sheet C2.13, 14 of 14.

IV. SUMMARY

Based on the following analysis, the Division was able to make the applicable findings required in the Highlands Water Protection and Planning Act at N.J.S.A. 13:20-1 et seq. and applicable rules at N.J.A.C. 7:38 for a Highlands Preservation Area with Takings Waiver approval for this proposed project.

V. ADMINISTRATIVE HISTORY

<u>September 20, 2000</u> - NJDEP issued a Letter of Interpretation; June 15, 2005 - Pompton Plains Reformed Bible Church (PPRBC) is denied a Highlands Exemption; <u>June 11, 2007</u> – PPRBC files suit in District Court, claiming the New Jersey Department of Environmental Protection (NJDEP) denial of the exemption violated the Religious Land Use and Institutionalized Persons Act;

<u>February 12, 2009</u> - NJDEP and the PPRBC enter into a Memorandum of Understanding after PPRBC and the Borough of Kinnelon agreed upon a site design for the subject property;

July 8, 2015 - Pre-application meeting held;

September 16, 2015 - Follow up Pre-application meeting held;

October 21, 2016 - NJDEP issued a Highlands Resource Area Determination;

October 26, 2016 – Additional Pre-application meeting held;

May 3, 2017 - NJDEP received a HPAA and a HPAA with Waiver applications; and,

March 6, 2018 – NJDEP denied the HPAA application.

VI. PUBLIC COMMENTS

The applicant gave notice of the HPAA with Waiver application in accordance with the rules. On December 22, 2015 the Department received a letter from Ralph Cerulo stating that he was interested in purchasing the property and that he had questions about the valuation process. Mr. Cerulo was contacted by the Department to explain the Takings Waiver procedures and processes. The DLUR notified Mr. Cerulo of the denial, issued March 6, 2018, and the waiver application, which seeks authorization for the Athletic fields and Community Center.

VII. ANALYSIS

The following analysis is based on the Highlands Water Protection and Planning Act, Preservation Area Rules, at N.J.A.C. 7:38 readopted on November 1, 2006, specifically subchapter 3 & sections 6.1 and 6.2 of the rules.

Subchapter 3-Preservation Area Standards (7:38-3)

1. Pursuant to N.J.A.C. 7:38-3.1, the Department shall issue a HPAA, only if the proposed development or activity satisfies all the requirements in this subchapter and N.J.A.C. 7:38-6.2. An applicant is subject to the standards in this subchapter, if any of the environmental resources described in this subchapter existed on a lot on August 10, 2004.

The HPAA application was denied because it did not meet all the requirements in this subchapter and N.J.A.C. 7:38-6.2. This HPAA with Takings Waiver identifies which requirements were initially met and explains the relaxation of the strict standards, as applicable.

2. Pursuant to N.J.A.C. 7:38-3.2, any person applying for a new or modified water supply allocation permit or water use registration where at least one of the diversion sources is located within the preservation area shall obtain an HPAA including compliance with the standards and requirements in the Water Supply Allocation Rules, N.J.A.C. 7:19.

The Department's Division of Water Supply has determined that a water allocation permit is not required for the project because the applicant is tying into the existing municipal water supply; therefore, this standard does not apply.

3. Pursuant to N.J.A.C. 7:38-3.3, construction of a new public community water system or extension of an existing public community water system is prohibited within the preservation area unless the Department determines that the development to be served meets the requirements at N.J.A.C.7:38-3.3(a)1-3. Any construction of a new public water supply system shall comply with the Safe Drinking Water Act rules at N.J.A.C. 7:10.

The NJDEP determined the project is not exempt and was inconsistent with the applicable areawide Water Quality Management Plan (WQMP). The applicant proposes to tie into the existing water line via a proposed easement for access to said line in the Borough of Butler, Morris County. The applicant has applied for an areawide WQMP amendment along with this HPAA with Takings Waiver. The WQMP amendment was approved May 18, 2018 and the Borough of Butler has granted the needed easement.

4. Pursuant to N.J.A.C. 7:38-3.4, major Highlands development shall meet the requirements in this section of the rules for any proposed wastewater treatment facilities or disposal systems.

The NJDEP has determined that the project is not exempt and is inconsistent with the applicable areawide Water Quality Management Plan (WQMP). The applicant proposes to tie into an existing sanitary sewer line and has approval for a Water Quality Management Plan Amendment along with this HPAA with Takings Waiver. The WQMP amendment was approved on May 18, 2018, and the Borough of Butler has granted the needed easement.

5. Pursuant to N.J.A.C. 7:38-3.5, major Highlands development shall meet the requirements in this section of the rules for any proposed impervious surfaces.

The project proposes 12.68% impervious surface which exceeds the 3% allowed under the rules; therefore, compliance with this standard has not been met. However, the amount of proposed impervious cover has been reduced significantly from the 30-35% impervious cover proposed with the original design.

6. Pursuant to N.J.A.C. 7:38-3.6, there shall be a 300-foot buffer adjacent to Highlands open waters in which no disturbance is permitted, except as provided in this chapter.

The proposed project does not lie within any Highlands open waters or their associated 300' buffers; therefore, this standard does not apply.

7. Pursuant to N.J.A.C. 7:38-3.7, a major Highlands development in a flood hazard area shall meet the requirements of either 7:38-3.7(b) 1 or (b) 2 for zero percent net fill.

The proposed project does not lie within the Flood Hazard Area; therefore, this standard does not apply.

8. Pursuant to N.J.A.C. 7:38-3.8, a major Highlands development shall meet the requirements of this section on steep slopes.

The site is 10.68 acres with the majority of the steep slopes on the western 5.85 acres of the subject property. The applicant proposes no disturbances to said steep slopes. However, the remaining 4.83 acres is the proposed project area and contains approximately 0.5 acres of both slopes between 10 and 20 percent and slopes greater than 20 percent. In addition, only linear development is permitted on these slopes and this project is not linear development; therefore, compliance with this standard has not been met. Despite non-compliance, the proposed development avoids disturbance on the western portion of the property, where a majority of the steep slopes on the property are located. Disturbances to steep slopes have been reduced from its original design to minimize impacts to those slopes between 10 and 20 percent and greater than 20 percent to the maximum extent feasible. Thus the DLUR has determined that the relaxation of this standard is acceptable.

9. Pursuant to N.J.A.C. 7:38-3.9, a major Highlands development shall meet the requirements of this section on upland-forested areas.

The site is 10.68 acres and approximately 10 acres +/- of it is forested. The proposed project area and forest loss is 4.83 acres, some of which will occur on slopes greater than 10%; therefore, compliance with this standard has not been met. However, the proposed project has been reduced from its original design to avoid impacts to forested areas and steep slopes to the maximum extent practicable. Given the minimization of these impacts, the DLUR finds the site design acceptable.

10. Pursuant to N.J.A.C. 7:38-3.10, an application for a proposed project in any of the Historic and Archaeological locations described in this section must submit the appropriate survey(s) as required.

As per the Highlands Resource Area Determination (HRAD) issued October 21, 2016, there are no known areas of historic or archeological significance on the subject property; therefore, this standard does not apply.

11. Pursuant to N.J.A.C. 7:38-3.11, the Department shall not issue an HPAA unless it determines that the proposed activity will not jeopardize the continued existence of, or result in the likelihood of the destruction or adverse modification of habitat for, any rare, threatened or endangered species of animal or plant.

The proposed project was reviewed by staff of the DLUR threatened and endangered species unit which determined the parcel in question is suitable habitat for threatened and endangered species. Based upon an analysis of the onsite habitat to be impacted, the E&T Unit does not believe the proposed project will jeopardize the continued existence of a local population of endangered or threatened species nor will it adversely modify any habitat for such species. Our review has indicated that, while the onsite habitat has a level of suitability for all identified species, the property proposed for development does not feature any habitat critical to the existence of such species or is

significant in the annual life-cycle of such species. In addition, the proposed mitigation property features habitat of much higher quality from both a physical and landscape position for the species of concern. Based on these findings, the DLUR has determined that the rule standard is met.

12. Pursuant to N.J.A.C. 7:38-3.12, the Department shall not issue an HPAA unless the proposed activity would result in the minimum practicable degradation to a unique or irreplaceable land type or existing scenic attributes on the site or within the immediate area of the proposed project.

The project site does not contain any of the above attributes as defined in the rules. The project site is surrounded by existing development. Additionally, no vernal pools were found on the site. Therefore, compliance with this standard has been met.

General Provisions 7:38-6.1

1. Pursuant to N.J.A.C. 7:38-6.1(d), the Department shall not issue an HPAA for any regulated activity in an area identified in the Regional Master Plan pursuant to N.J.S.A. 13:20-6n as a special area within which development shall not occur in order to protect water resources and environmentally sensitive lands.

The subject property is not classified as a Special Environmental Zone in the Highlands Regional Master Plan (Highlands Council Website Mapping); therefore, this standard does not apply.

2. Pursuant to N.J.A.C. 7:38-6.1(e), the Department shall not issue an HPAA unless the project complies with Stormwater Management rules, N.J.A.C. 7:38.

Staff of the Division reviewed the application for compliance with the Stormwater Management Rules at N.J.A.C. 7:8. The proposed project meets the definition of "major development" per N.J.A.C. 7:8-1.2, due to an increase of impervious surface that exceeds one-quarter acre and land disturbance that exceeds one acre. Because the project meets the definition of "Major Development" at N.J.A.C. 7:8-1.2, the entire site must comply with the Storm Water Management Rules at N.J.A.C. 7:8. As described in detail below, review of the application shows that compliance with this standard has been met.

a. N.J.A.C. 7:8-5.4(a)3iii of the Stormwater Management Rules states that in order to control stormwater runoff quantity impacts, the design engineer shall "design storm water management measures so that the post-construction peak runoff rates for the 2, 10 and 100-year storm events are 50, 75 and 80 percent, respectively, of the preconstruction peak runoff rates."

The applicant proposes to achieve the required reduction rates through the construction of a rain garden and one (1) underground detention basin. The rain garden and basin peak volumes and discharge rates for the 2, 10 and 100-year storm events were calculated using the SCS Method using Type III 24-hour

storm for the existing and proposed conditions. Thus, the applicant has demonstrated compliance with the water quantity standards.

b. N.J.A.C. 7:8-5.4(a)2i(1) and (2) of the Stormwater Management Rules state that in order to meet the minimum design and performance standards for groundwater recharge, the design engineer shall "demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100 percent of the average annual pre-construction groundwater recharge volume for the site" or "demonstrate through hydrologic and hydraulic analysis that the increase of storm water runoff volume from pre-construction to post-construction for the two-year storm is infiltrated."

The applicant performed five (5) test pits, two (2) of which lie within the proposed location of the infiltration basins and evidence of groundwater was not encountered. Further, as per the Rule, the applicant must provide an analysis to illustrate that proposed project will allow for at least 125% of groundwater recharge of the pre-construction site conditions. The applicant submitted a GSR-32 Groundwater Recharge Analysis worksheet and calculations to illustrate that the post-construction groundwater recharge will be 133%; therefore, the applicant has demonstrated compliance with recharge standards as set forth at N.J.A.C. 7:8-5.4(a)2.

In addition to the above, the proposed application must satisfy the water quality standards at N.J.A.C. 7:8-5.5. The applicant is proposing a rain garden to treat and infiltrate the water quality storm from the proposed new parking lot. The higher intensity storms will be diverted to an infiltration basin located under the proposed parking lot; achieving the 80% TSS removal rate requirement, per N.J.A.C. 7:8-5.5(h)3ii; and complying with water quality standards of the Stormwater Management Rules, N.J.A.C. 7:8-5.5.

c. N.J.A.C. 7:8-5.3(a) of the Stormwater Management Rules states, "to the maximum extent practicable, the standards in N.J.A.C. 7:8-5.4 and 5.5 shall be met by incorporating nonstructural storm water management strategies at N.J.A.C. 7:8-5.3 into the design. The persons submitting an application for review shall identify the nonstructural strategies incorporated into the design of the project. If the applicant contends that it is not feasible for engineering, environmental, or safety reasons to incorporate any nonstructural storm water management strategies identified in (b) below into the design of a particular project, the applicant shall identify the strategy and provide a basis for the contention".

The proposed project is confined to the eastern portion of the subject property and the applicant proposes to preserve the western portion of the subject property which is completely forested and greater than 50% of the site. The Borough of Kinnelon permits up to 27% impervious cover per site, and this project, as designed, proposes 13.5% impervious coverage, which meets municipal requirements. A rain garden has been proposed to provide nonstructural storm water strategies to the maximum extent practicable; therefore, the proposal complies with N.J.A.C. 7:8-5.3.

Standards Requirements for all Highlands Preservation Area Approvals 7:38-6.2

Additionally, pursuant to N.J.A.C. 7:38-6.2, the Department shall issue a Highlands Approval only upon a finding that the proposed major Highlands development meets the following criteria:

1. The project would have a de minimus impact on water resources and would not cause or contribute to a significant degradation of surface or ground waters.

The project proposes to tie into an existing sanitary sewer line and the site does not have any freshwater wetlands, State open waters or transition area, so the project will have a de minimus impact on water resources. Further, the project design incorporates an infiltration basin, non-structural stormwater basin and the takings waiver is premised upon the conservation of 61.67 acres of forested land cover within the Borough of Kinnelon to mitigate for the loss of 5 acres of woodlands to construct the project.

2. The project would cause minimal feasible interference with the natural functioning of animal, plant, and other natural resources at the site and within the surrounding area, and minimal feasible individual and cumulative adverse impacts to the environment both onsite and offsite of the major Highlands development.

The proposed project does not affect any Highlands open waters or their buffers; however, it will disturb steep slopes and forest. Therefore, compliance with this standard has not been demonstrated. Although, the proposed development has been minimized to the maximum extent feasible and avoids a majority of the steep slopes on the property, the applicant will conserve 61.67 acres of forested land within the Borough of Kinnelon to mitigate for the 5 acres of onsite forest disturbance.

3. The project will result in minimum feasible alteration or impairment of the aquatic ecosystem including contour, vegetation, fish and wildlife resources, and aquatic circulation of a freshwater wetland.

There are no freshwater wetlands, State open waters or transition areas on or adjacent to the subject property; therefore, this standard does not apply.

4. The project will not jeopardize the continued existence of species listed pursuant to the Endangered and Nongame Species Conservation Act, N.J.S.A. 23:2A-1 et seq, the Endangered Plant Species List Act N.J.S.A 13:1B-15.151 et seq., or which appear on the federal endangered or threatened species list, and will not result in the likelihood of the destruction or adverse modification of habitat for any rare, threatened, or endangered species of animal or plant.

The proposed project was reviewed by DLUR staff of the threatened and endangered species unit which determined the parcel in question is suitable habitat for threatened and endangered species. Based upon an analysis of the onsite habitat to be impacted, the DLUR E&T Unit does not believe the proposed project will jeopardize the continued existence of a local population of endangered or threatened species nor will it adversely modify any habitat for such species. DLUR review has indicated that, while the onsite habitat has a level of suitability for all identified species, the property proposed for development does not feature any habitat critical to the existence of such

species or is significant in the annual life-cycle of such species. In addition, the proposed mitigation property features habitat of much higher quality from both a physical and landscape position for the species of concern. Based on these findings, DLUR has determined the rule standard is met.

5. The project shall be located or constructed so as to neither endanger human life or property nor otherwise impair the public health, safety, and welfare.

This project to construct a recreational field and community center with an emergency shelter will promote public health, safety and welfare; therefore, this standard is met.

6. The project will result in minimal practicable degradation of unique or irreplaceable land types, historical or archeological areas, and existing public scenic attributes at the site and within the surrounding area.

The subject property was not classified as an area with "unique or irreplaceable land types" in the HRAD; therefore, this standard does not apply.

Highlands Preservation Area Takings Waiver Approvals – N.J.A.C. 7:38-6.4

As discussed in section N.J.A.C. 7:38-6.4, the Department may, in its discretion, waive any provision contained in Chapter 38 on an individual case-by-case basis. The applicant has applied for a takings waiver under section 7:38-6.4. For the purposes of this section, the applicant has met all preservation area standards except those pertaining to Impervious Surfaces 7:38-3.5, Steep Slopes 7:38-3.8, Upland-Forested Areas N.J.A.C. 7:38-3.9, and rare, threatened or endangered plant and animal species N.J.A.C. 7:38-3.11, as detailed above.

Highlands Preservation Area Takings Waiver Approvals – N.J.A.C. 7:38-6.8

N.J.A.C. 7:38-6.8(a): In determining whether to waive any sections or requirements of this chapter to potentially avoid taking of property without just compensation, DLUR examines each project on a case by case basis.

N.J.A.C. 7:38-6.8(b): The Department determined that the proposed project does not meet all the requirements in the chapter N.J.A.C. 7:38-1.1 et seq. as strictly applied. An HPAA was denied on March 6, 2018. PPRBC has chosen not to appeal this decision and to seek a takings waiver.

N.J.A.C. 7:38-6.8(c): See discussion at N.J.A.C. 7:38-6.8(d), (e), and (f) below.

N.J.A.C. 7:38-6.8(d): The Department reviewed PPRBC's investment in the property as a whole and determined that it was reasonable. The PPBRC acquired the property prior to the enactment of the Highlands Act. Consistent with the applicable zoning and regulations, the property owner reasonably expected to realize a viable use of the property for its religious purposes. The PPRBC has since determined that it no longer needs the property and will transfer the property to the Borough for the proposed development of athletic fields, community center and emergency shelter.

N.J.A.C. 7:38-6.8(e): The Department assessed the Project for minimum beneficial economically viable use as a whole irrespective of profitability, marketability, and loss of investment to PPRBC and the Borough of Kinnelon. After several discussions and meetings on the Highlands takings waiver, the applicant has reduced disturbances in accordance with DLUR's requests and has incorporated many suggestions such as preservation of remaining onsite and additional offsite forested land. The applicant has also reduced percentage of on-site impervious surface. See also N.J.A.C. 7:38-6.3(g).

N.J.A.C. 7:38-6.8(f): The Department assessed environmental impacts of the minimum beneficial economically viable use of the Property as a whole and the consistency of these impacts with the goals of the Highlands Act. The Department has determined that the reduced development minimizes to the extent possible impacts to natural resources. The Property, 10.68 acres of undeveloped land, is wooded with steep slopes but is surrounded by residential and recreational development on adjacent properties. The existing surrounding lots are all serviced by existing sewer and water. Given the site's circumstances and project design constraints, the DLUR agrees that PPRBC and the Borough of Kinnelon have minimized development on steep slopes and forested areas to the maximum extent practicable. The required forest preservation will also mitigate adverse impacts to threatened and endangered species habitat and compensate for forest loss.

N.J.A.C. 7:38-6.8(g): The Department determined that PPRBC and the Borough of Kinnelon followed proper administrative procedures to sell the Property. The Property was appraised by an independent consultant to determine fair market value. The applicant also followed DLUR guidelines in regards to transfer development rights as referenced at N.J.A.C. 7:38-6.8(c). Furthermore, a certified mailing was sent by the applicant to private and public entities including Green Acres to solicit interest in acquisition of the Property. The Department was contacted by an adjacent landowner who expressed possible interest in purchasing the Property. However, after being notified of the Department's decision to deny the HPAA as well as the intention of the applicant to proceed with this HPAA with Waiver, the adjacent landowner did not express further interest in purchasing the property. There are no alternatives to the proposed major Highlands development and the applicant has made a good faith effort to transfer development rights and has offered the Property for sale as specified under N.J.A.C. 7:38-6.8 (g). Furthermore, as previously noted, the Department denied the HPAA for this Project on March 6, 2018 and PPRBC and the Borough of Kinnelon did not appeal that decision.

N.J.A.C. 7:38-6.8(h): The Department has confirmed that there was a potential buyer interested in the Property. However, there was no offer from said potential buyer to purchase the Property and therefore, no reasonable alternative to the Project was found except for this approval.

N.J.A.C. 7:38-6.8(i): The Department has received a takings waiver application from PPRBC and the Borough of Kinnelon under this section in accordance with N.J.A.C. 7:38-9.

N.J.A.C. 7:38-6.8(j): The Department has reviewed a complete analysis of factors contributing for a takings waiver as part of this approval as outlined in this section N.J.A.C. 7:38-6.8.

N.J.A.C. 7:38-6.8(k): The Department has reviewed and approved the Project to ensure the minimum relief necessary to enable PPRBC and the Borough of Kinnelon to realize the

minimum beneficial economically viable use of the property, while conserving the Highlands resources to the maximum extent possible. In determining whether to waive any sections or requirements of this chapter to potentially avoid taking of property without just compensation, the DLUR examined whether the investment made by PPRBC was reasonable; the proposed project is the minimum viable and economically beneficial use of the property as a whole; total adverse environmental impacts would be minimized; a de-minimis impact on the ecology and aquatic ecosystems would result; adverse impacts to any species or structures of special concern would occur; development alternatives could further reduce adverse impacts; and any public or private entities would offer to purchase the Property. The Project is conditionally approved subject to PPRBC and the Borough of Kinnelon's grant of conservation restrictions to the Department for the 5.85 acres and 61.67 acres of forested land areas on and off-site respectively.

Approved Plans

The drawing(s) hereby approved are four (4) sheets, entitled:

"LANDSCAPE PLAN, KINNELON COMMUNITY CENTER, BOROUGH OF KINNELON, NEW JERSEY", sheet 1 of 2, dated July 15, 2017, last revised July 26, 2017, and prepared by Edward J. Snieckus, Jr., of Burgis Associates, Inc.

"PROPOSED KINNELON COMMUNITY CENTER & SHELTER FOR LOT 119 / BLOCK 45502 – 46 BOONTON AVENUE SITUATED IN THE BOROUGH OF KINNELON, MORRIS COUNTY, NEW JERSEY", three (3) sheets, all dated March 31, 2017, revised May 18, 2018, unless otherwise noted, and all prepared by Paul P. Darmofalski of Darmofalski Engineering Assoc., Inc.

"SITE WATER / SANITARY SEWER PLAN", sheet C2.06, 7 of 14;

"STORMWATER MANAGEMENT PLAN", sheet C2.07, 8 of 14; and,

"CULTEC CONSTRUCTION DETAILS", no revisions, sheet C2.13, 14 of 14.

Permit Conditions

The activities authorized by this takings waiver shall comply with the following conditions. Failure to comply with these conditions shall constitute a violation of the Highlands Water Protection and Planning Act Rules N.J.A.C. 7:38-1.1

Special Conditions:

- 1. The applicant shall preserve all vegetation to the maximum extent possible. All temporarily disturbed areas shall be replanted with native, indigenous herbaceous and woody vegetation. The remaining undisturbed areas shall not be maintained as a lawn or landscaped area. These areas shall 'remain in a natural state or be allowed to revert to a natural plant community.
- 2. The applicant is responsible for installing and maintaining a sediment barrier around all soils before construction. Prior to the commencement of site clearing, grading or construction, the permittee must install a silt fence and a construction debris fence erected at the limit of disturbance. These fences shall serve both as a siltation and debris barrier as well as a physical barrier protecting area outside the limit of disturbance from encroachment by

- construction vehicles or activities. These fences shall be kept in place and maintained throughout the duration of construction or until such time that the site is stabilized.
- Prior to site preparation and/or construction, the applicants shall sign a Department approved 3. conservation restrictions, including all land that remains onsite beyond the limit of disturbance and the additional 61.67 acres off-site parcel, (Block 57401, Lot 149), comprised of forested land, in accordance with N.J.A.C. 7:38-6.3. The restriction shall be recorded in the Office of the Morris County Clerk no later than ninety (90) days after the execution of this Highlands Preservation Area Approval with Takings Waiver. Said restriction shall run with the land and be binding upon all successive owners. All individual lot surveys shall show the approved conservation restriction area boundaries. The conservation restrictions shall be filed with the Morris County Clerk, and a complete copy of the recorded conservation restrictions sent to DLUR. Failure to comply with this condition shall be considered a violation of the Highlands Water Protection and Planning Act Preservation Area Rules. The conservation restriction shall conform to the format and content of the enclosed model conservation restriction entitled: "Grant of Conservation Restriction Appurtenant to Highlands Preservation Area Approval" and shall be reviewed and approved by the DEP prior to its recordation.
- 4. This approval allows the disturbance of forested area within the Highlands Preservation Area. Therefore, to mitigate these losses the applicant has proposed to preserve a parcel known as the Bandanco Parcel. Specifically, the preservation parcel consists of 62.83 acres, 61.67 acres of which is comprised primarily of mature upland forest situated on Block 57401; Lot 149 in the Borough of Kinnelon, Morris County. The site is valued for threatened and endangered species barred owl (*Strix varia*). The parcel is surrounded on three sides by residential development and has a series of hiking trails for passive recreational use. As proposed the preservation of the Bandanco Parcel yields a mitigation ratio of approximately 13:1. Based upon the preceding information the Department has determined that the Bandanco Parcel adequately mitigates for the proposed impacts to highlands upland forest on the impact site.
- 5. The Department has determined that this project meets the requirements of the Stormwater Management rules at N.J.A.C. 7:8. Any future expansion or alteration of the approved stormwater management system, that might affect water quality, increase the rate or volume of stormwater leaving the site, affect the infiltration capacity on the site, or alter the approved low impact site design, shall be reviewed and approved in writing by DLUR, prior to any site disturbance or construction. This includes, but is not limited to, any proposed changes to the discharge characteristics of any basin, the construction of new inlets or pipes that tie into the storm sewer network and/or the replacement of existing inlets or pipes with structures of different capacity.
- 6. PPRBC and the Borough of Kinnelon shall make specific arrangements to ensure the continuous maintenance and efficient operation of all proposed stormwater management measures onsite. This includes the inspection (and cleaning where necessary) of any and all constructed swales, basins, and inlets at least four times per year and after every major storm totaling 1 inch of rainfall or more, the use of appropriate soil conservation practices onsite, and any other reasonable effort required to maintain the stormwater management system in good working order.
- 7. The construction of the new public water supply system shall comply with the Safe Drinking Water Act Rules.

8. Prior to the commencement of site preparation, grading or construction, the permittee shall obtain a Treatment Works Approval for the installation and extension of a sanitary sewer line.

Mitigation Conditions:

- 1. The permittee shall compensate for the permanent disturbance to 4.83 acres of highlands upland forest via the off-site preservation of 61.67 acres of forested uplands as shown on the plans entitled "Survey of Property- Lands of the Borough of Kinnelon Tax lot 149, Block 57401, Borough of Kinnelon, Morris County, New Jersey", sheet 1 of 1, dated August 01, 2017, unrevised and prepared by Douglas O. Dykstra P.L.S. of Dykstra Associates, PC. Please note: the Department is in receipt of an electronic copy of the plan of survey for the Bandanco Preservation parcel; however the permittee shall provide the Mitigation Unit with three (3) hard copies of the plan for filing.
- Prior to the initiation of regulated activities authorized by this permit, the permittee shall 2. sign a Department approved conservation restriction to protect the mitigation area from future development that would remove the vegetation planted (N.J.A.C. 7:13-13(g)). conservation restriction shall conform to the format and content of the rules at N.J.A.C. 7:38the Highlands Mitigation Area model The restriction shall be included on the http://www.nj.gov/dep/landuse/forms/index.html. deed and recorded in the office of the County Clerk (the Registrar of Deeds and Mortgages in some counties) in the county wherein the lands of the mitigation project are located. A metes and bounds description shown on a map must be included within the recorded conservation restriction. Within 10 days of filing the conservation restriction, the permittee must send a copy of the conservation restriction to the attention of the Mitigation Unit Supervisor, NJDEP, Division of Land Use Regulation at Mail Code 501-02A, P.O. Box 420, Trenton, NJ 08625-0420.
- 3. **Prior to the initiation of regulated activities authorized by this permit,** the applicant must demonstrate that the conservation restriction has been filed for the preservation of the above-referenced site. **Please note**: The Department is in receipt of a <u>draft</u> conservation restriction. The permittee shall continue to consult with the Department to finalize the document.
- 4. **Prior to the completion of regulated activities authorized by this permit,** the permittee must provide written documentation that a government or charitable conservancy has agreed to receive the property in fee simple and that the transfer has been completed and recorded with the county in which the land is located. **Please note:** The permittee will have 60 days from the date of this approval to submit documentation indicating that the property has been transferred to a long-term steward.
- 5. If the Division determines that the above-referenced preservation project has not been completed in conformance with the conditions above, the permittee will be notified in writing by the Department and will have 60 days to submit a proposal to indicate how the mitigation will be provided.

In addition to the above special conditions the following general conditions must be met:

General Conditions:

1. All fill and other earth work on the lands encompassed within this permit authorization shall be stabilized in accordance with "Standards for Soil Erosion and Sediment Control in New

Jersey" to prevent eroded soil from leaving the site at any time during and subsequent to construction.

- 2. This permit is revocable in accordance with DEP regulations and State law.
- 3. The issuance of this permit shall not be deemed to affect in any way other actions by the Department on any future application.
- 4. The activities shown on the approved plans shall be constructed and/or executed in conformity with any notes and details on said plans and any conditions stipulated herein.
- 5. No change in plans or specifications shall be made, except with the prior written permission of the Department.
- 6. The granting of this authorization shall not be construed in any way to affect the title or ownership of the Property, and shall not make the Department or the State a party in any suit or question of ownership of the Property.
- 7. This permit is not valid and no work shall be undertaken pursuant to this authorization until all other required federal, state, and local approvals, licenses and permits necessary for commencement of work onsite have been obtained.
- 8. A complete, legible copy of this permit shall be kept at the work site and shall be exhibited upon request of any person.
- 9. The permittee shall allow the Department the right to inspect the construction site and also shall provide the Bureau of Coastal and Land Enforcement, NJDEP with written notification 7 days prior to the start of the authorized work.
- 10. This authorization is valid for five years from the date of this letter.
- 11. If PPRBC or the Borough of Kinnelon or its successor begins any activity approved by this permit, it thereby accepts this document in its entirety, and agrees to adhere to all terms and conditions. If the permittee, PPRBC or the Borough of Kinnelon or successor does not accept or agree with this document it its entirety, it must not begin any site disturbance, preconstruction earth movement or construction. PPRBC and the Borough of Kinnelon are entitled to request an appeal within a limited time as detailed on the administrative hearing request checklist and tracking form.

Appeal of Decision

In accordance with Highlands Water Protection and Planning Act Rules N.J.A.C. 7:38-1.1, any person who is aggrieved by this decision may request a hearing within 30 days after notice of the decision is published in the DEP Bulletin by writing to: New Jersey Department of Environmental Protection, Office of Legal Affairs, Attention: Adjudicatory Hearing Requests, 401 East State Street, P.O. Box 402, Trenton, NJ 08625-0402. This request must include a completed copy of the Administrative Hearing Request Checklist. If a person submits the hearing request after this time, the Department shall deny the request. The DEP bulletin and checklist is available through the Department's website at www.state.nj.us/dep.

If you have any questions regarding the taking waiver, please contact Christopher Squazzo of my staff at chris.squazzo@dep.nj.gov or at (609) 633-6563.

Sincerely,

Vincent J. Mazzei, Jr., P.E., Manager Bureau of Inland Regulation

c: Borough of Kinnelon, Municipal Clerk, w/plan(s)
Borough of Kinnelon, Construction Official
Borough of Kinnelon, Planning Board
Borough of Butler, Municipal Clerk
Margaret Nordstrom, Executive Director Highlands Council
Agent, Paul Darmofalski, Darmofalski Engineering Associates, Inc., w/plan(s)
N.J. Highlands Council, John Maher, Esq.
James Pontoriero, NJDEP, Division of Land Use Planning
Joseph Barilla, Morris County Planning Board, w/plan(s)
Joseph Dunn, Morris County Soil Conservation
Lewin Weyl, DAG

EDWARD J. BUZAK (MEMBER OF N.J. & D.C. BAR) KELI L. GALLO (MEMBER OF N.J. & N.Y. BAR) VALERIE J. KIMSON (MEMBER OF N.J. & CO. BAR)

JACQUELIN P. GIOIOSO OF COUNSEL MONTVILLE OFFICE PARK 150 RIVER ROAD SUITE N-4 MONTVILLE, NEW JERSEY 07045

Telephone: (973) 335-0600 Fax: (973) 335-1145 BLG@BUZAKLAWGROUP.COM

June 5, 2018

EJBUZAK@BUZAKLAWGROUP.COM KLGALLO@BUZAKLAWGROUP.COM VJKIMSON@BUZAKLAWGROUP.COM JPGIOIOSO@BUZAKLAWGROUP.COM

Margaret Nordstrom, Executive Director New Jersey Highlands Council 100 North Road (Route 513) Chester, NJ 07930-2322 E-Mail

margaret.nordstrom@highlands.nj.gov

Re: Highlands Preservation Area Approval with Takings Waiver

Applicant: Pompton Plains Reformed Bible Church & Borough of Kinnelon

DEP File No.:1415-16-0004.1, SHR 170001

Block 4502 Lot 119, Borough of Kinnelon, Morris County

Dear Executive Director Nordstrom:

Please be advised that we are counsel to the Borough of Kinnelon and in such capacity formally request that the Highlands Council undertake a "Project Review" of the project which was granted a Highlands Preservation Area Approval ("HPAA") with Takings Waiver by letter dated May 24, 2018 from the New Jersey Department of Environmental Protection ("NJDEP").

The project proposed by the Borough of Kinnelon involves the construction of a grass all-purpose recreational field, community center and emergency shelter with associated parking and features. The project includes the installation of potable water and sanitary sewer lines through the rear (western) portion of the site and through an existing easement which inures to the benefit of Block 45502, Lot 119 on the Official Tax Map of the Borough of Kinnelon which is the location of the project. The property consists of approximately 10.68 acres located on Boonton Avenue in the Borough of Kinnelon.

We acknowledge that there have been prior meetings with representatives of the Highlands Council regarding this project. However, now that the NJDEP has granted the HPAA with the Takings Waiver, formal action must be taken by the Highlands Council to complete that aspect of the approval process.

We recognize that the Highlands Council has a 30 day review period as requested, and hereby grant an additional 60 days to the Council to complete its review and act on the

submission. While time is of the essence, we fully understand that extent of the review that must take place by the Council prior to its taking formal action and will continue to work with you to achieve your approval.

If you need any further material from us, please feel free to contact me and Linda Gloshinski, at the Land Conservancy, who is the Borough's consultant with regard to this project.

Thank you for your consideration.

Respectfully submitted,

THE BUZAK AW GROUP, LLC

Edward L. Buzak

EJB:fd (Kinn. ltr to Highlands Council)

cc: Mayor Robert Collins E-Mail rcollins@kinnelonboro.org

Karen M. Iuele, Borough Clerk E-Mail kiuele@kinnelonboro.org

Tom A. Boorady E-Mail tab@darmofalski.com

John Maher, Esq. (Counsel for Highlands Council) E-Mail john.maher@highlands.nj.gov

Lewin Weyl, DAG E-Mail Lewin. Weyl@law.njoag.gov

John J. Delaney, Esq. E-Mail jdelaney@lindabury.com

Valerie J. Kimson, Esq. E-Mail vjkimson@buzaklawgroup.com

Monica Vir, Esq. E-Mail MVir@lindabury.com

Linda Gloshinski E-Mail lgloshinski@tlc-nj.org

Drew Siglin E-Mail drew.siglin@highlands.nj.gov

Mark Meneghin (Crew Engineers.Com) E-Mail mmeneghin@crewengineers.com

Bill Hemstead (PPRBC) E-Mail Bhemstead@optonline.net

PROPOSED KINNELON COMMUNITY CENTER & SHELTER LOT 119, BLOCK 45502 - 46 BOONTON AVENUE

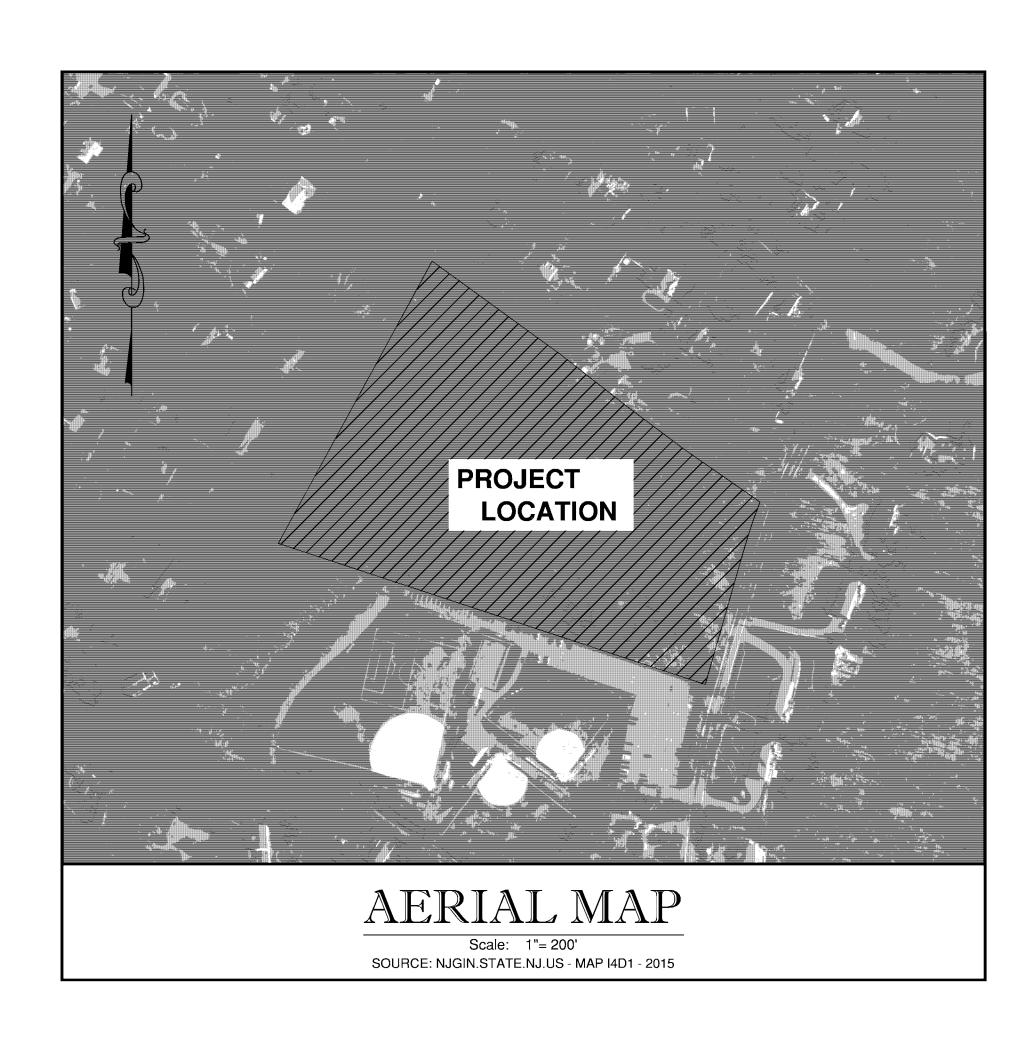
situated in the

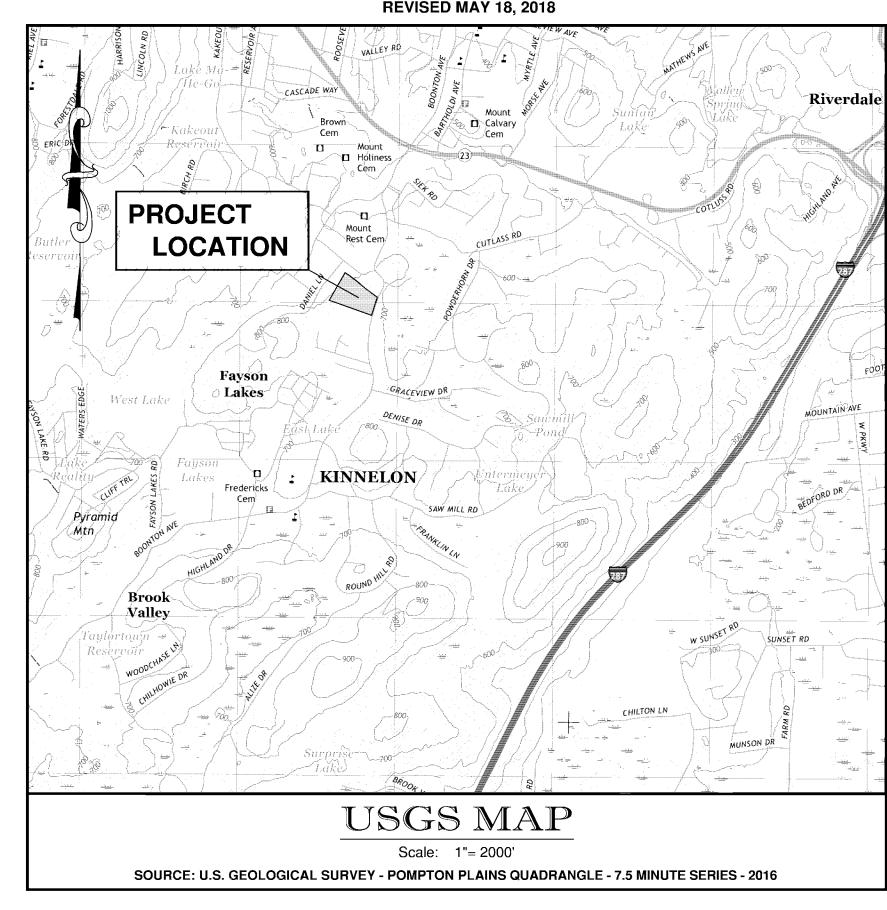
BOROUGH of KINNELON, COUNTY of MORRIS, STATE of NEW JERSEY

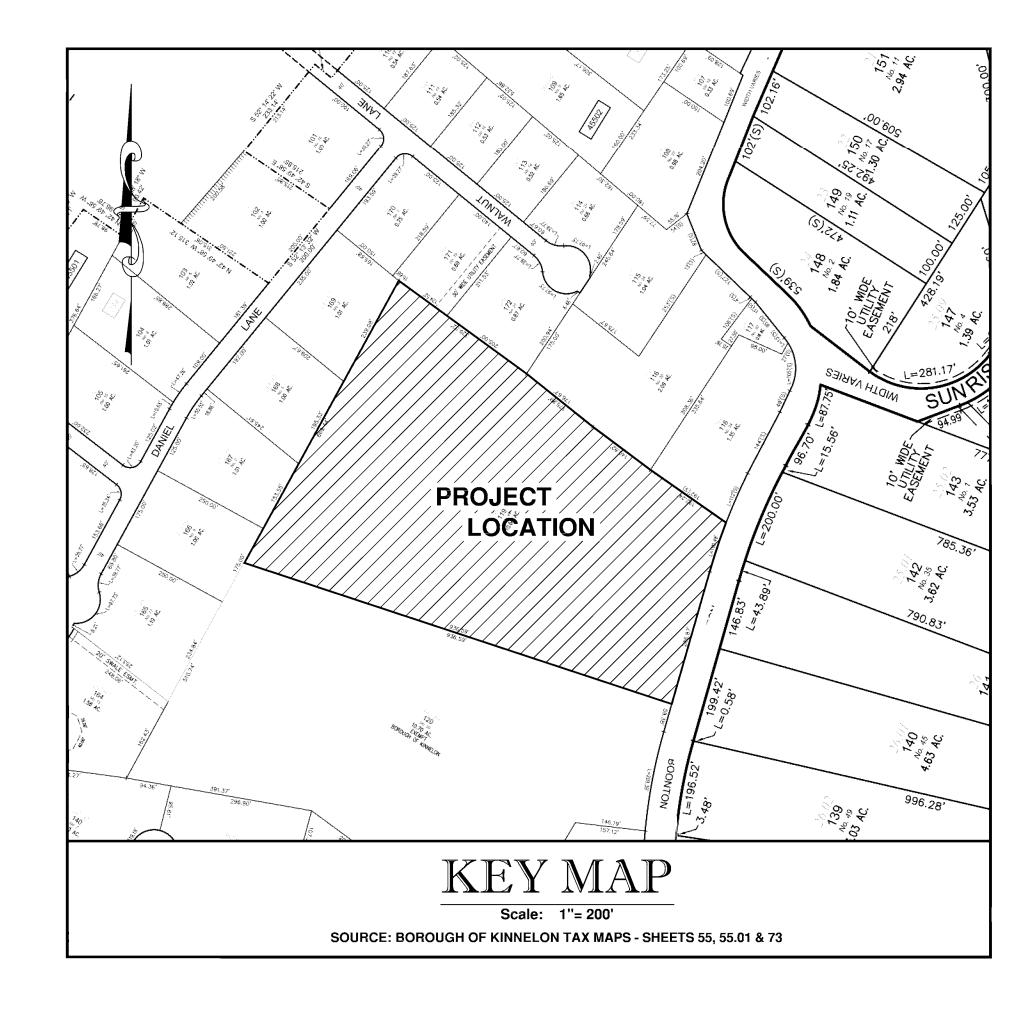
prepared by

Darmofalski Engineering Associates, Inc.

CIVIL ENGINEERING - RIVERDALE, NEW JERSEY ISSUED - MARCH 31, 2017







5/18/18

DARMOFALSKI ENGINEERING ASSOCIATES, INC. (3)

DRAWING SHEET INDEX

SHEET TITLE		SHEET NUMBER
COVER SHEET	COVER SHEET	
EXISTING CONDITION	EXISTING CONDITIONS / SLOPE MAP	
DRAINAGE AREA MAP	DRAINAGE AREA MAP - PRE-CONSTRUCTION	
DRAINAGE AREA MAP	DRAINAGE AREA MAP - POST CONSTRUCTION	
SITE LAYOUT & DIMEN	SITE LAYOUT & DIMENSION PLAN	
SITE GRADING PLAN	SITE GRADING PLAN	
SITE WATER / SANITA	SITE WATER / SANITARY SEWER PLAN	
STORMWATER MANAG	STORMWATER MANAGEMENT PLAN	
SOIL EROSION SEDIM	SOIL EROSION SEDIMENT CONTROL PLAN	
SOIL EROSION SEDIM	SOIL EROSION SEDIMENT CONTROL DETAILS	
CONSTRUCTION DETA	CONSTRUCTION DETAILS	
CONSTRUCTION DETA	CONSTRUCTION DETAILS	
ACO & CULTEC PROD	ACO & CULTEC PRODUCT CUT SHEETS	
CULTEC CONSTRUCTION DETAILS		C2.13

BOROUGH OF KINNELON | MAYOR and COUNCIL

ROBERT W. COLLINS MAYOR

> GLENN L. SISCO COUNCILMAN

WILLIAM NEELY

CLIFFORD GIANTONIO

WILLIAM YAGO CAROL SVENTY COUNCILMAN COUNCILWOMAN

without th	ne written permi	/ not be copied or reproduced, either in whole or in possion of DARMOFALSKI ENGINEERING ASSOCIATES, INC. This engineers signature and raised seal has been affixed t	drawing shall not be
Dwg. Location NetWork		CERTIFICATE OF AUTHORIZATION NO. 24GA27	921100
Drawn ReJ	Checked PpD	<u>Darmofalski Engineering A</u> tele. 973.835.8300 Civil Engineers	•
Scale As Noted	Date 03/31/2017	86 Newark—Pompton Turnpike — Riverd Professional Engineers / Professional Pla Lic.No. GE24743 Lic.No. LIO4	anners
Tracer Engineering/Jobs/Kinnelon/2016 K16-04 (Comm.Center46BoontonAve) Design_Work.dwg		Sheet Title COVER SHEET	

ENGINEERS SEAL & SIGNATURE Proposed Kinnelon Community Center & Shelter for Lot 119 | Block 45502 - 46 Boonton Avenue Borough of Kinnelon, Morris County, New Jersey

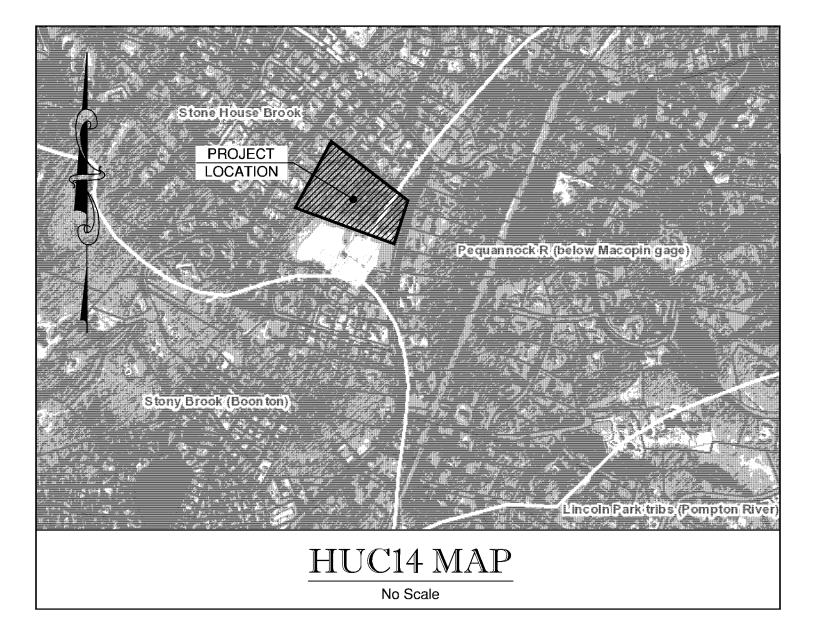
REVISED AS PER NJDEP COMMENTS

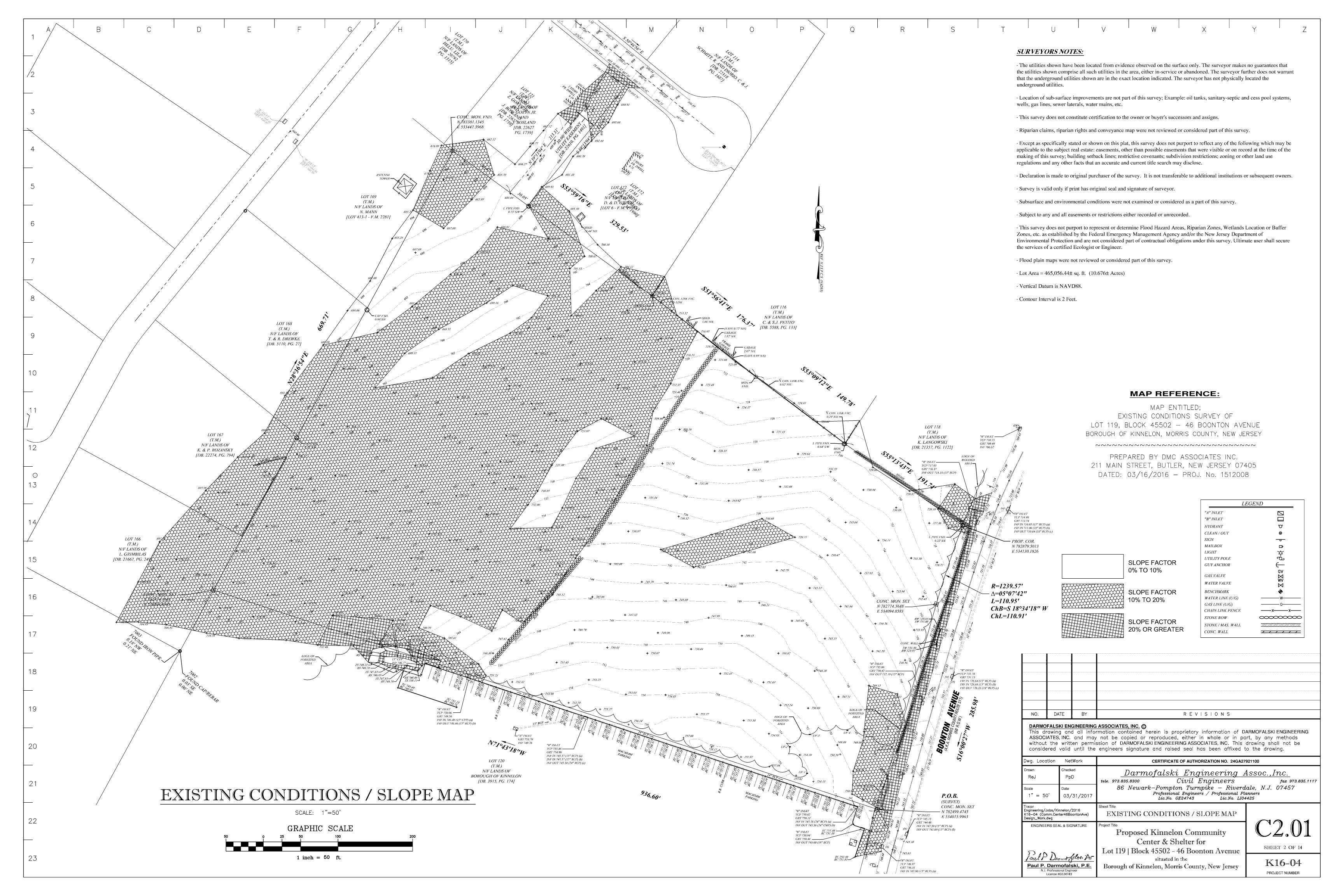
This drawing and all information contained herein is proprietary information of DARMOFALSKI ENGINEERING

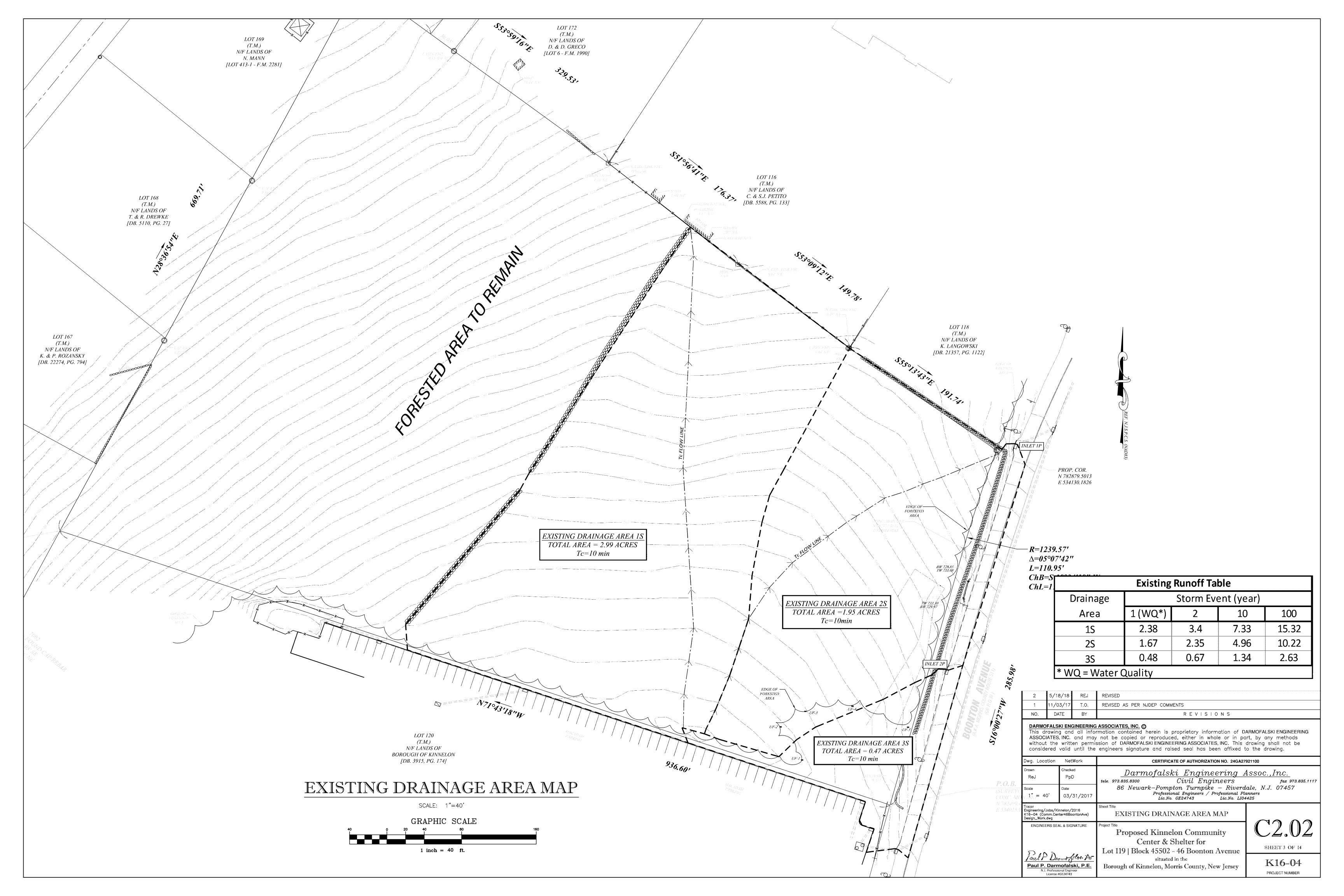
REVISIONS

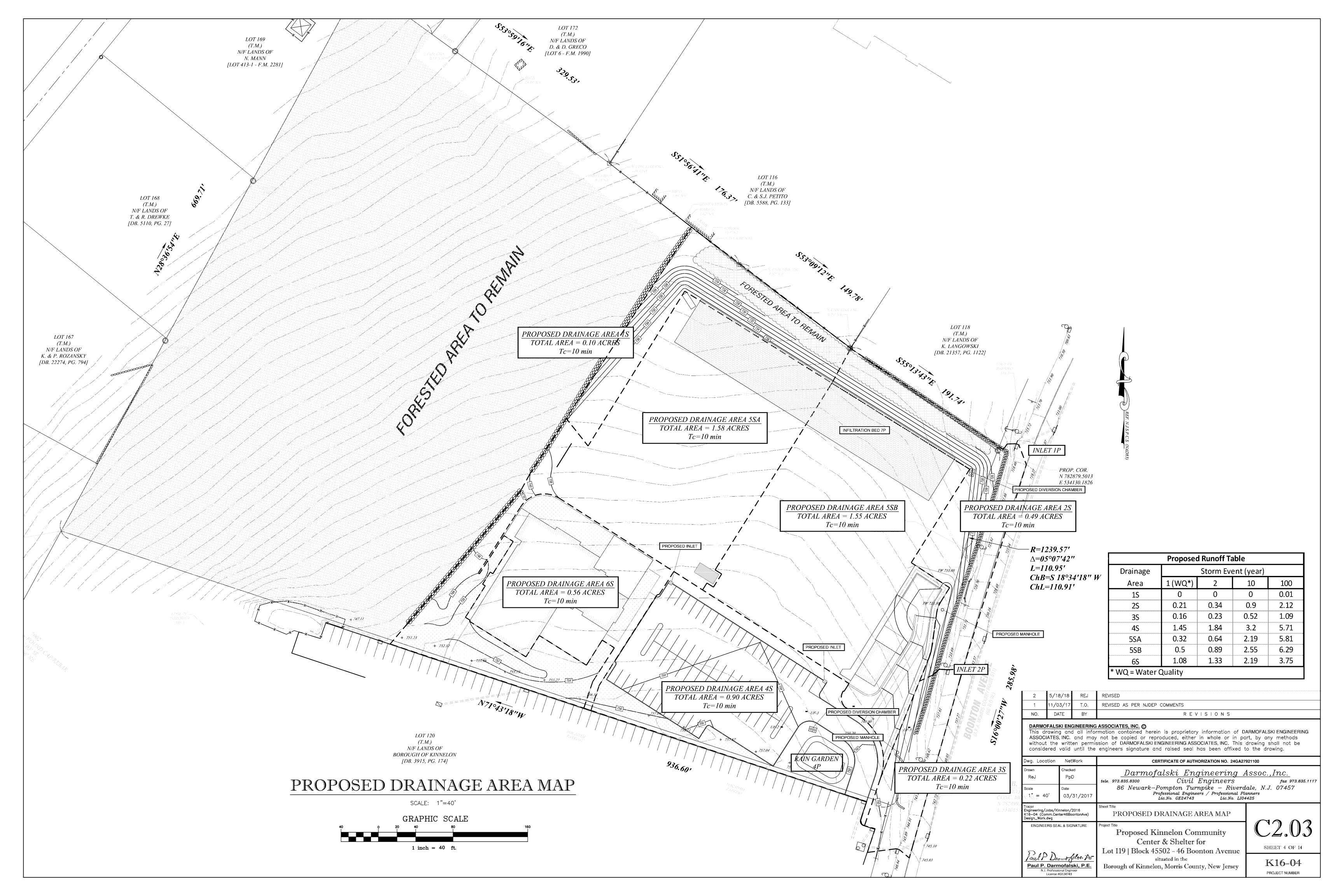
SHEET 1 OF 14 K16-04PROJECT NUMBER

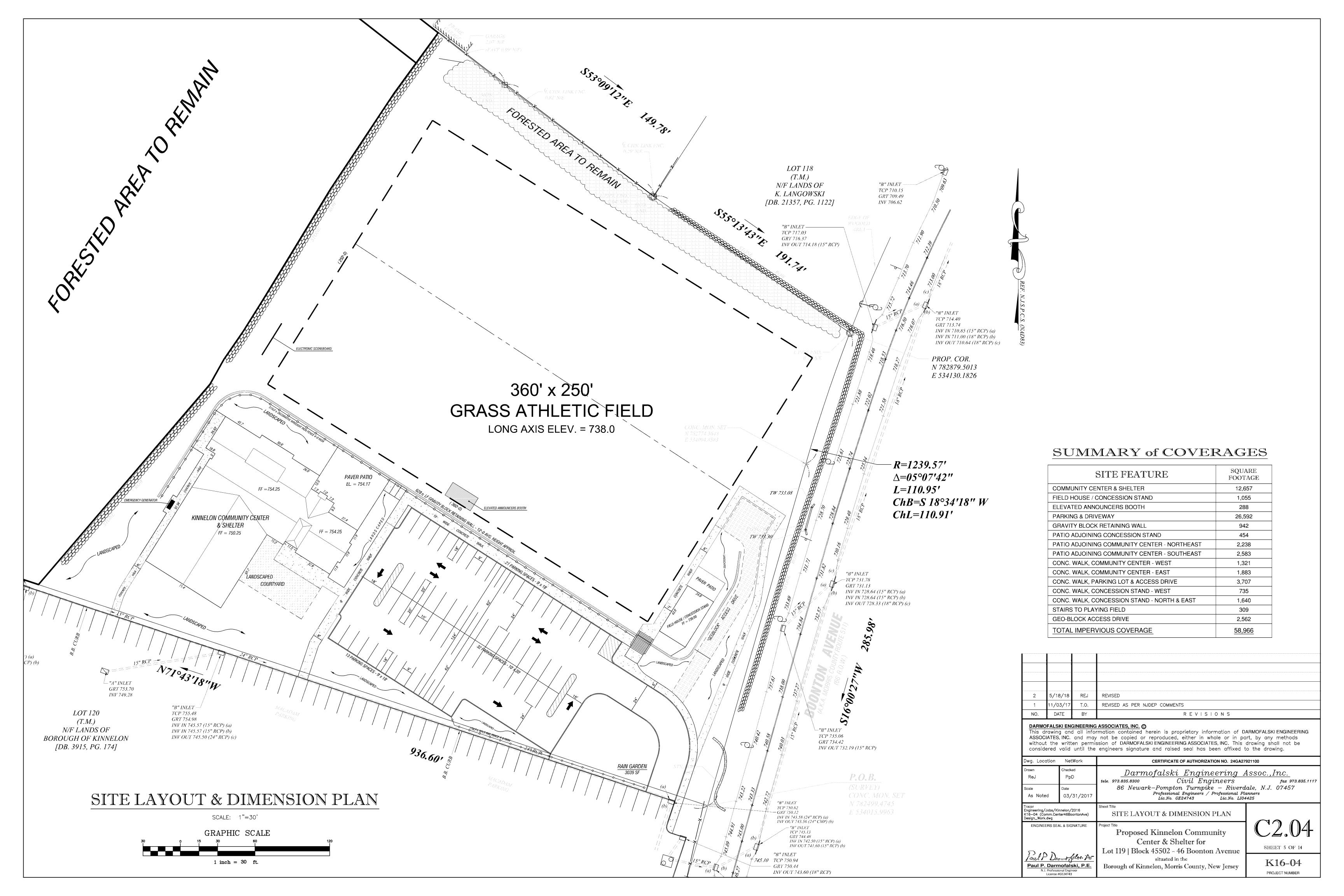
fax 973.835.1117

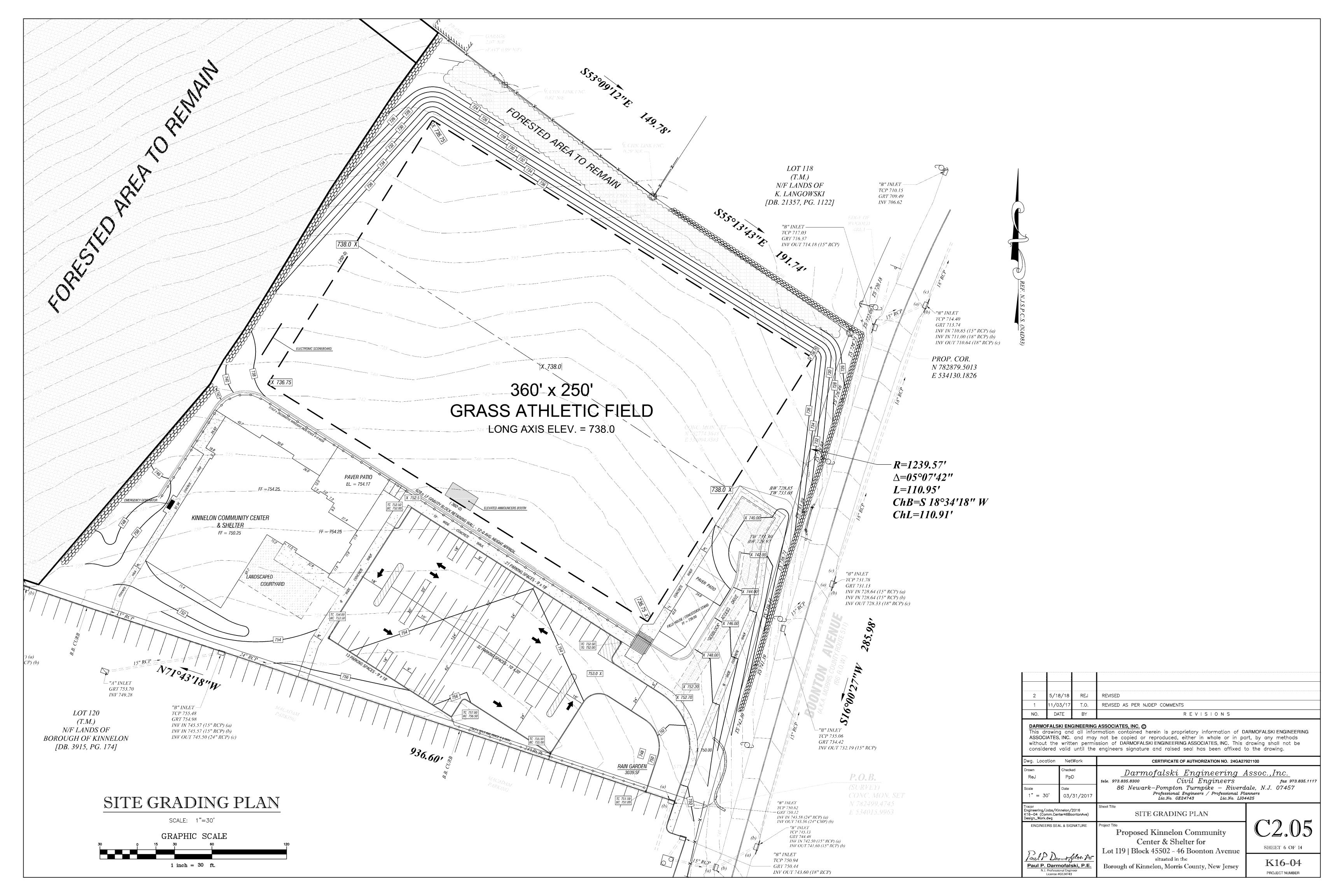


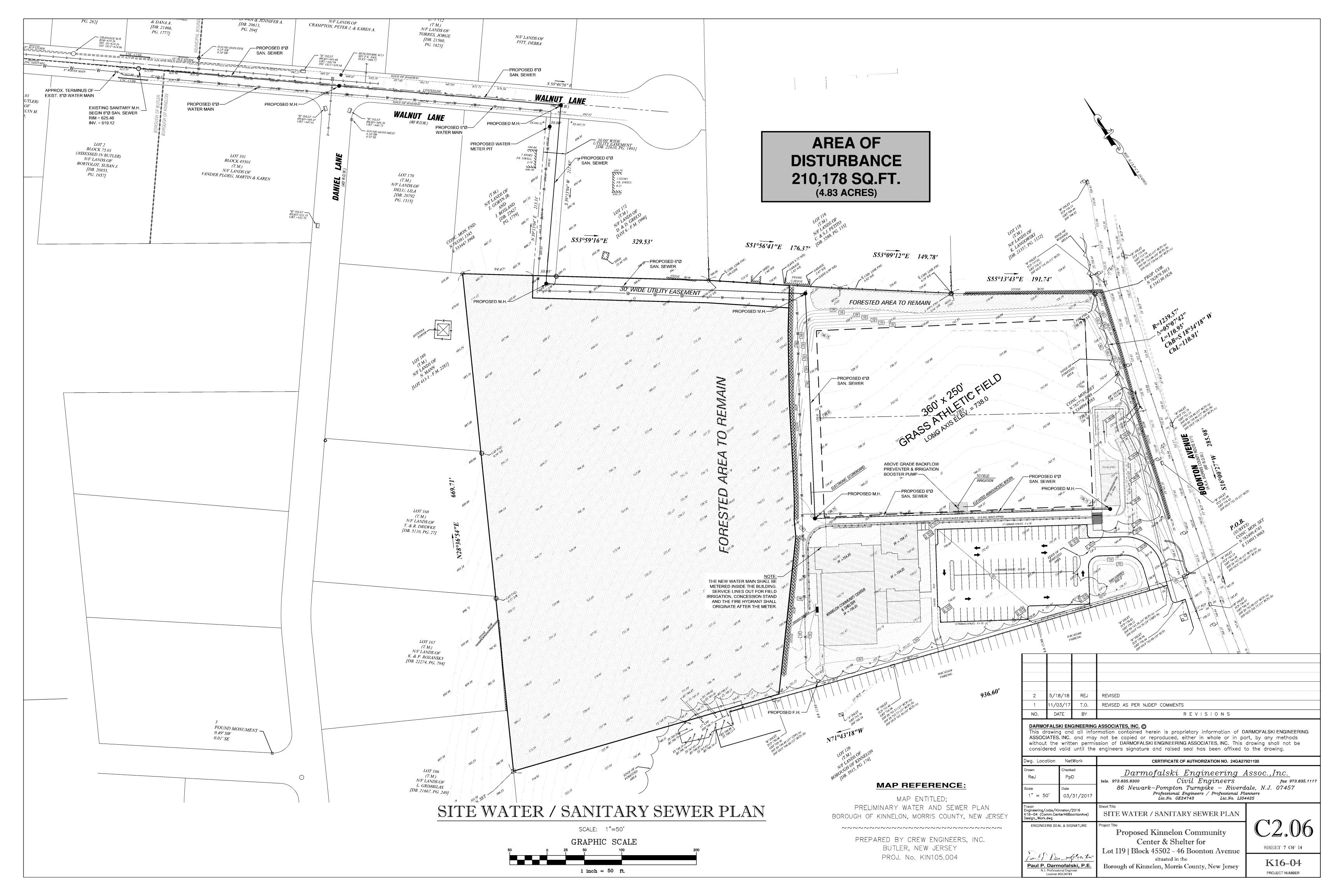


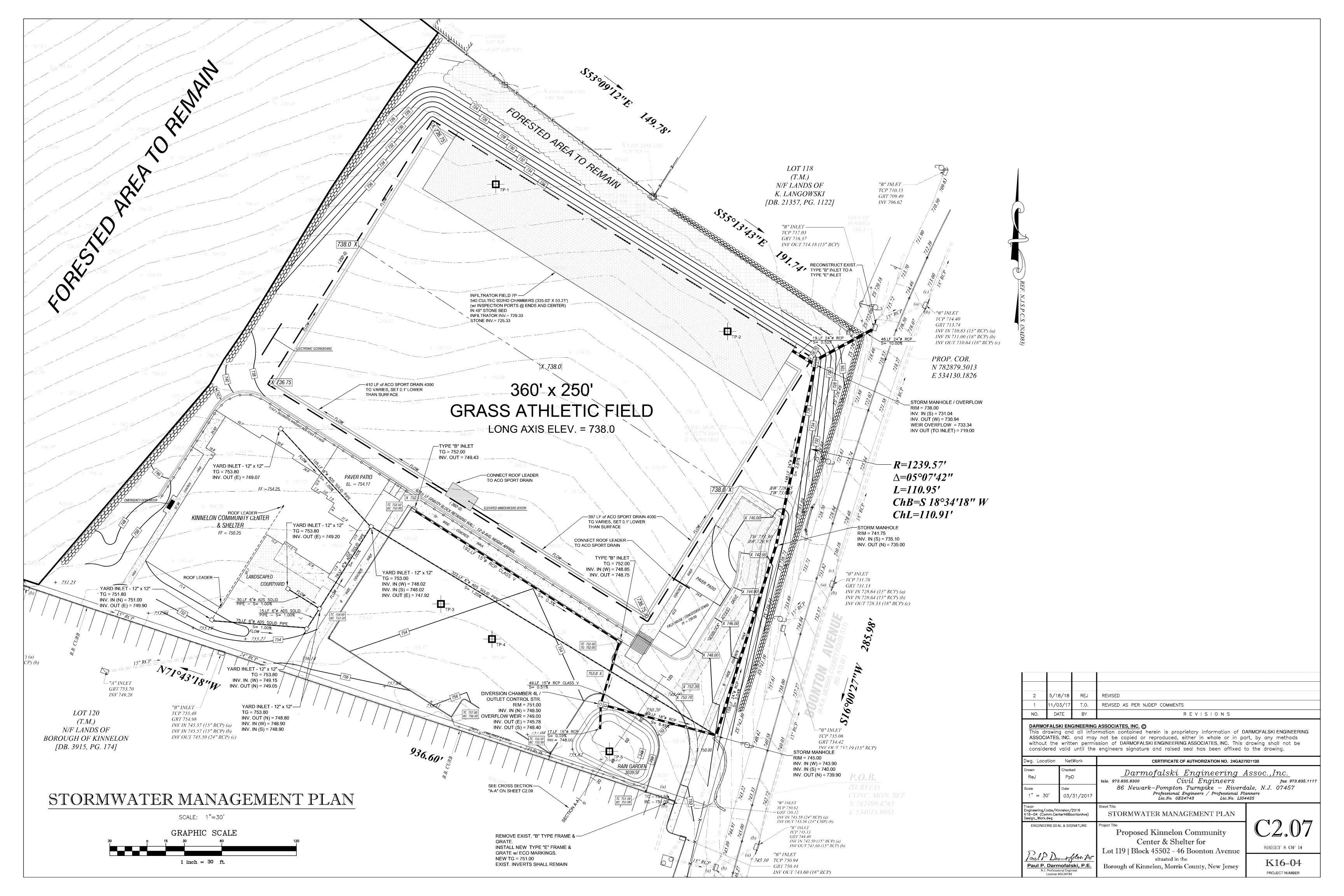


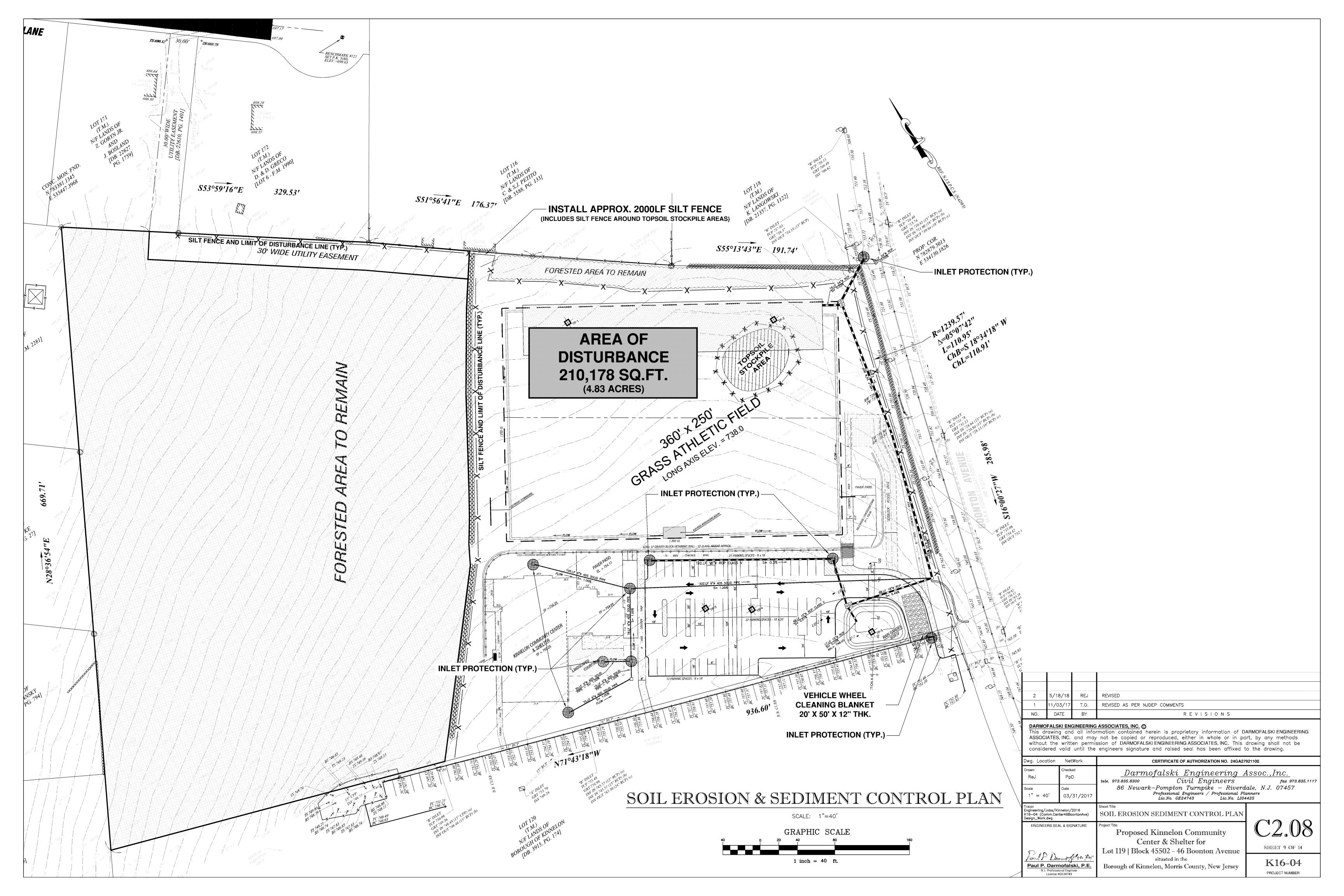


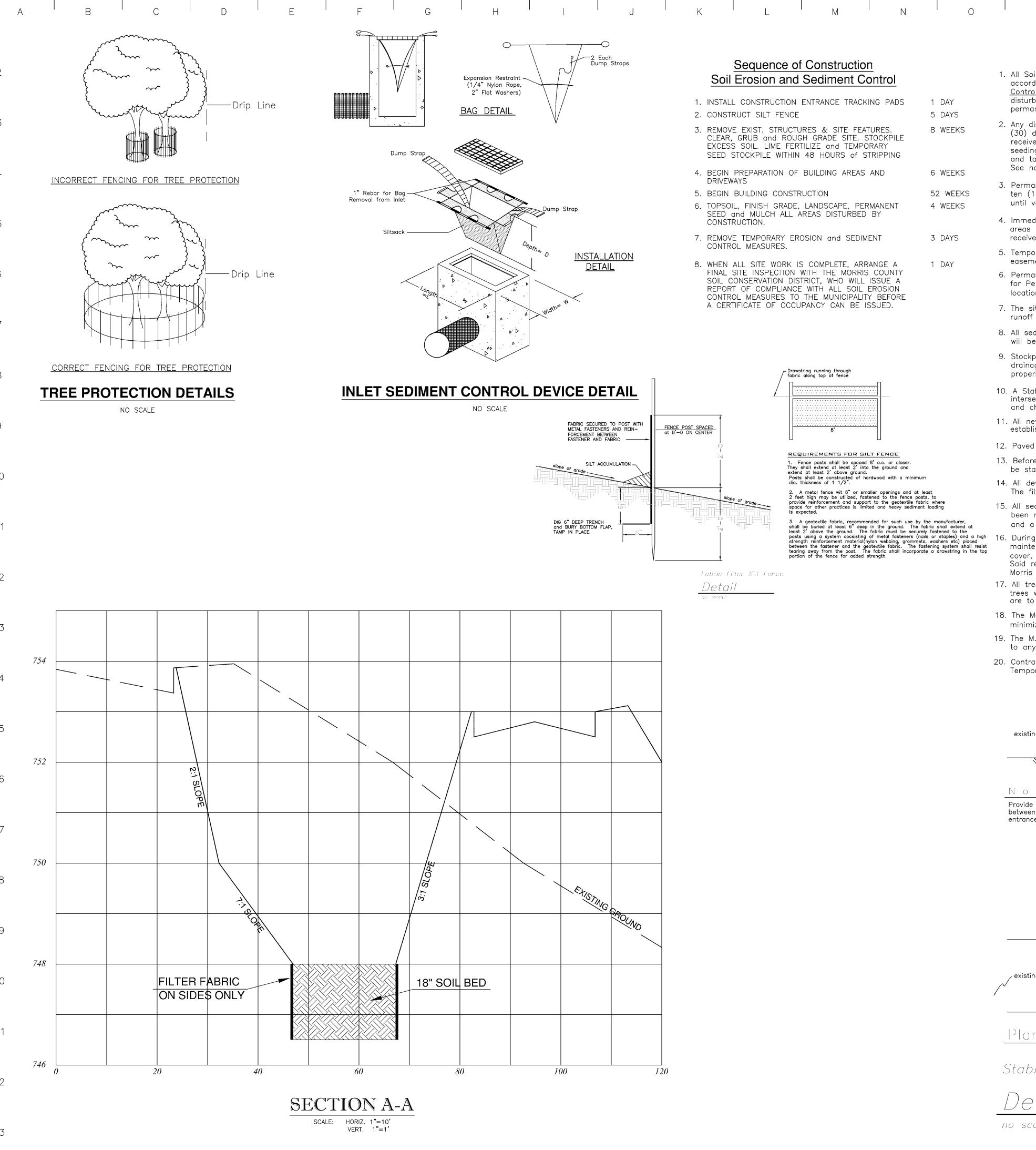






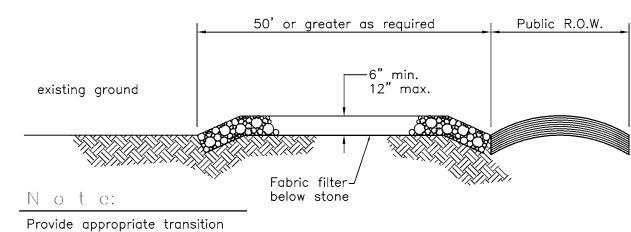






MORRIS COUNTY SOIL CONSERVATION DISTRICT SOIL EROSION AND SEDIMENT CONTROL NOTES

- 1. All Soil Erosion and Sediment Control Practices will be installed in accordance with the <u>Standards for Soil Erosion and Sediment Control in New Jersey</u>, and will be in place prior to any major soil disturbance, or in their proper sequence and maintained until permanent protection is established.
- 2. Any disturbed area that will be left exposed for more than thirty (30) days, and not subject to construction traffic shall immediately receive a temporary seeding. If the season prohibits temporary seeding, the disturbed areas will be mulched with straw or hay and tacked in accordance with the New Jersey Standards. See note 21 below.
- 3. Permanent vegetation is to be established on exposed areas within ten (10) days after final grading. Mulch is to be used for protection until vegetation is established. See note 22 below.
- 4. Immediately following initial disturbance or rough grading. All critical areas (steep slopes, sandy soils, wet conditions) subject to erosion will receive a temporary seeding in accordance with Note 21 below.
- 5. Temporary Diversion Berms are to be installed on all cleared roadways and easement areas. See the Diversion Detail.
- 6. Permanent seeding and stabilization to be in accordance with the "Standards for Permanent Vegetative Cover for Soil Stabilization Cover". Specified rates and locations shall be on the approved Soil Erosion and Sediment Control Plan.
- 7. The site shall at all times be graded and maintained so that all storm water runoff is diverted to Soil Erosion and Sediment Control facilities.
- 8. All sedimentation structures (silt fence, inlet filters, and sediment basins) will be inspected and maintained daily.
- 9. Stockpiles shall not to be located within 50' of a floodplain, slope, drainage facility or roadway. All stockpile bases shall have a silt fence properly entrenched at the toe of slope.
- 10. A Stabilized Construction Access will be installed, whenever an earthen road intersects with a paved road. See the Stabilized Construction Access detail and chart for dimensions.
- 11. All new roadways will be treated with a suitable subbase upon establishment of final grade elevations.
- 12. Paved roadways must be kept clean at all times.
- 13. Before discharge points become operational, all storm drainage outlets will be stabilized as required.
- 14. All dewatering operations must be discharged directly into a sediment filter area. The filter should be composed of a fabric or approved material. See the dewatering detail.
- 15. All sedimentation basins will be cleaned when the capacity has been reduced by 50%. A clean out elevation will be identified on the plan and a marker installed on the site.
- 16. During and after construction, the applicant will be responsible for the maintenance and upkeep of the drainage structures, vegetation cover, and any other measures deemed appropriate by the District. Said responsibility will end when completed work is approved by the Morris County Soil Conservation District.
- 17. All trees outside the disturbance limit indicated on the subject plan or those trees within the disturbance area which are designated to remain after construction are to be protected with tree ptotection devices. See the Tree Protection Detail.
- 18. The Morris County Soil Conservation District may request additional measures to minimize on or off site erosion problems during construction.
- 19. The M.C.S.C.D. must be notified, in writing, at least 72 hours prior to any land disturbance, and a preconstruction meeting held.
- 20. Contractor to set up a meeting with the inspector for periodic inspections of the Temporary Sediment Basin prior to a during its construction.



Provide appropriate transition between stabilized construction entrance and public R.O.W.

Profile

50' or greater as required

()

21. TOPSOIL STOCKPILE PROTECTION

- a) Apply ground limestone at a rate of 90 lbs per 1000 sq. ft.
- b) Apply fertilizer (10-20-10) at a rate of 11 lbs per 1000 sq. ft.
- c) Apply Perennial Ryegrass at a rate of 1 lb per 1000 sq. ft. and Annual Ryegrass at 1 lb per 1000 sq. ft.
- d) Mulch stockpile with straw or hay at a rate of 90 lbs. per 1000 sq. ft.
- e) Apply a liquid mulch binder or tack to straw or hay mulch.
- f) Properly entrench a silt fence at the bottom of the stockpile.

22. TEMPORARY STABILIZATION SPECIFICATIONS

a) Apply ground limestone at a rate of 90 lbs per 1000 sq. ft.

e) Apply a liquid mulch binder or tack to straw or hay mulch.

- b) Apply fertilizer (10-20-10) at a rate of 11 lbs per 1000 sq. ft.
- c) Apply Perennial Ryegrass at a rate of 1 lb per 1000 sq. ft. and
- Annual Ryegrass at 1 lb per 1000 sq. ft.

 d) Mulch stockpile with straw or hay at a rate of 90 lbs. per 1000 sq. ft.
- a) Mulch stockpile with straw or hay at a rate of 90 lbs. per 1000 sq. 1

23. PERMANENT STABILIZATION SPECIFICATIONS

- a) Apply topsoil to a depth of 5" (unsettled).
- b) Apply Ground Limestone at a rate of 90 lbs. per 1000 sq. ft. and work four inches into soil.
- c) Apply fertilizer (10-20-10) at a rate of 11 lbs. per 1000 sq. ft.
- d) Apply Hard Fescue seed at 2.7 lbs. per 1000 sq. ft. and Creeping Red Fescue seed at 0.7 lbs. per 1000 sq. ft. and Perennial Ryegrass seed at 0.25 lbs. per 1000 sq. ft
- e) Mulch stockpile with straw or hay at a rate of 90 lbs. per 1000 sq. ft.
- e) Mulch stockpile with straw or hay at a rate of 90 lbs. per 1000 so f) Apply a liquid mulch binder or tack to straw or hay mulch.

*NOTE: 72 HOURS PRIOR TO ANY SOIL DISTURBANCE, NOTICE IN WRITING, SHALL BE GIVEN TO THE MORRIS COUNTY SOIL

CONSERVATION DISTRICT AND A PRE-CONSTRUCTION MEETING HELD.

MAY 2006

DUST CONTROL NOTES

The following methods should be considered for controlling dust:

<u>Mulches</u>— See Standards for Stabilization with Mulches Only (pg. 5-1)

<u>Vegetative Cover</u>— See Standards for Temporary Vegetative Cover(pg. 7-1),

Permament Vegetative Cover for Soil Stabilization(pg.4-1), and Permanent Stabilization with Sod(pg.6-1)

<u>Spray-On Adhesives</u>- On mineral soils (not effective on muck soils). Keep traffic

TABLE 16-1: DUST CONTROL MATERIALS

MATERIAL	WATER DILUTION	TYPE OF NOZEL	APPLY GALLONS/ACRE
Anionic ashalt emulsion	7:1	Coarse Spray	1200
Latex emulsion	12.5:1	Fine Spray	235
Resin in water	4:1	Fine Spray	300
Polyacrylamide (PAM) spray on Polyacrylamide (PAM) dry spray	Apply according to manufacturer's instructions. May also be used as an additive to sediment basins to flocculate and precipitate suspended colloids.		
	See Sediment Basins Standard (pg. 26—1)		
Acidulated Soy Bean Soap Stick	none	Coarse Spray	1200

<u>Tillage</u>— To roughen surface and bring clods to the surface. This is a temporary emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel type plows spaced about 12 inches apart, and spring—toothed harrows are examples of equipment which may produce the desired effect.

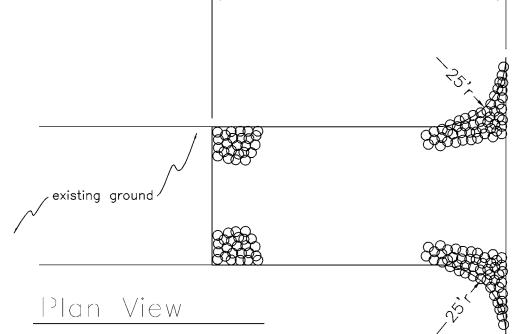
<u>Sprinkling</u>— Site is sprinkled until surface is wet.

<u>Barriers</u>— Solid board fences, snow fences, burlap fences, crate walls, bales of hay and similar material can be used to control air currents and soil blowing.

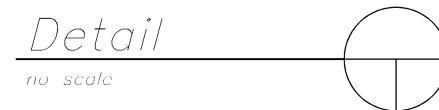
<u>Calcium Chloride</u>— Shall be in the form of loose, dry granulates of flakes fine enough to feed through commonly used spreaders at a rate that will keep surface moist but not cause pollution or plant damage. If used on steeper slopes, then use other practices to prevent

washing into streams, or accumulation around plants.

<u>Stone</u>— Cover surface with crushed stone or coarse gravel.



Stabilized Construction Entrance



2	5/18/18	REJ	REVISED
1	11/03/17	T.O.	REVISED AS PER NJDEP COMMENTS
NO.	DATE	BY	REVISIONS

DARMOFALSKI ENGINEERING ASSOCIATES, INC. ©

Paul P. Darmofalski, P.E

This drawing and all information contained herein is proprietary information of DARMOFALSKI ENGINEERING ASSOCIATES, INC. and may not be copied or reproduced, either in whole or in part, by any methods without the written permission of DARMOFALSKI ENGINEERING ASSOCIATES, INC. This drawing shall not be

Dwg. Location	NetWork	CERTIFICATE OF AUTHORIZATION NO. 24GA27921100
Drawn ReJ	Checked PpD	Darmofalski Engineering Assoc., Inc. tele. 973.835.8300 Civil Engineers fax 973.835.117
Scale As Noted	Date 03/31/2017	86 Newark—Pompton Turnpike — Riverdale, N.J. 07457 Professional Engineers / Professional Planners Lic.No. GE24743 Lic.No. L104425

Borough of Kinnelon, Morris County, New Jersey

considered valid until the engineers signature and raised seal has been affixed to the drawing.

As Noted 03/31/2017 Project Title

Sheet Title SOIL EROSION DETAILS & NOTES

Project Title Proposed Kinnelon Community

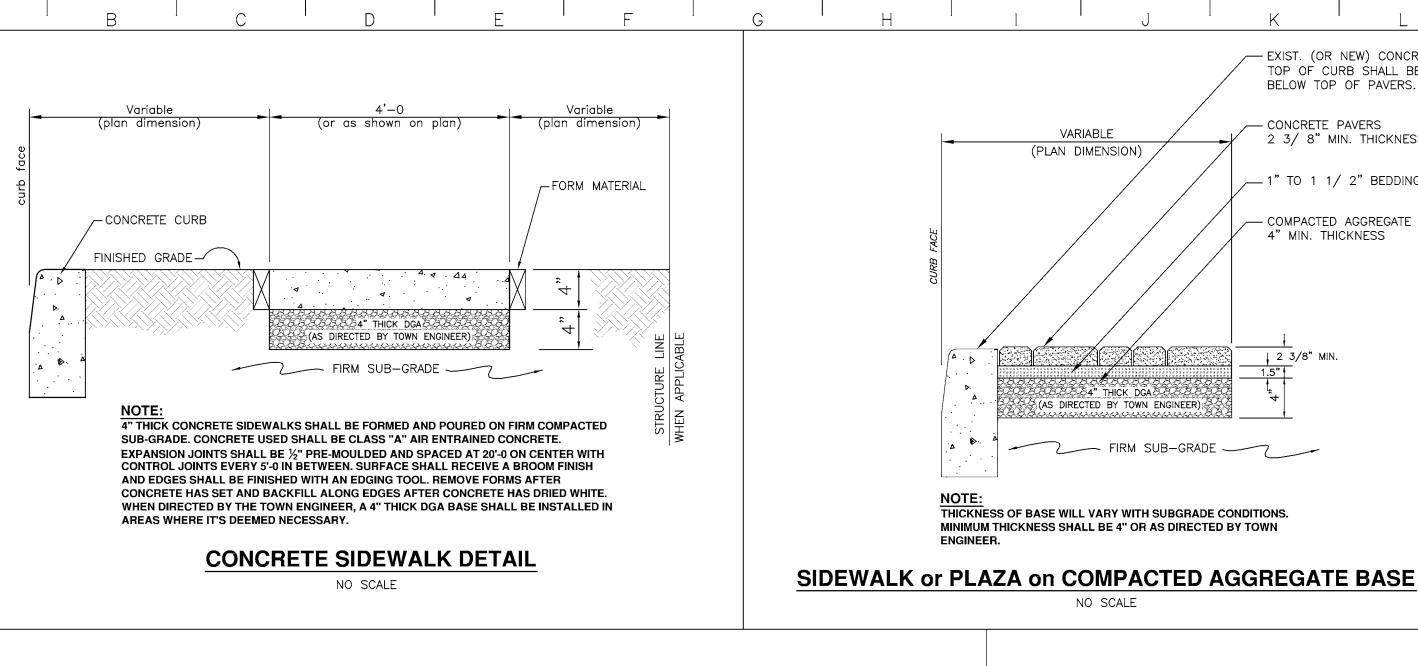
Center & Shelter for

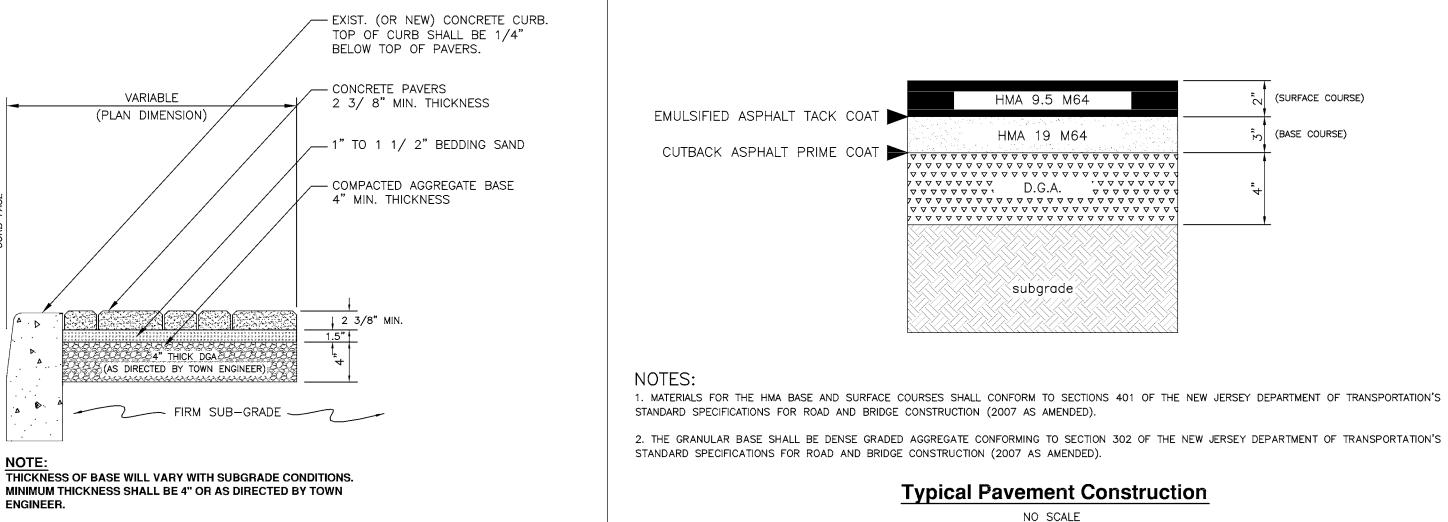
Lot 119 | Block 45502 - 46 Boonton Avenue situated in the

SHEET 10 OF 14

K16-04

PROJECT NUMBER





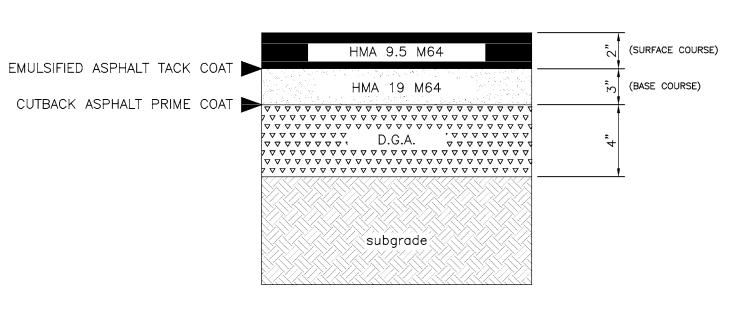
NO SCALE

10" TO 12" HIGH GRANITE BLOCK -

WITH 1/4" TO 1/2" TOOLED MORTAR

JOINTS. MORTAR FOR JOINTS TO BE

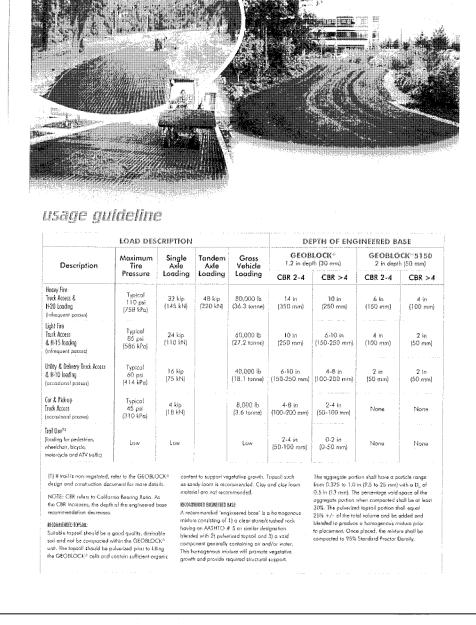
A MIX OF 2 SAND and 1 CEMENT.

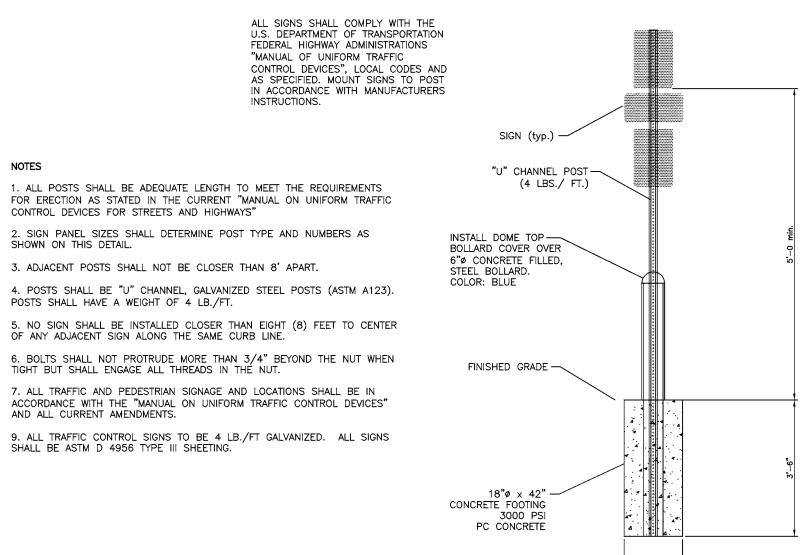


1. MATERIALS FOR THE HMA BASE AND SURFACE COURSES SHALL CONFORM TO SECTIONS 401 OF THE NEW JERSEY DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2007 AS AMENDED).

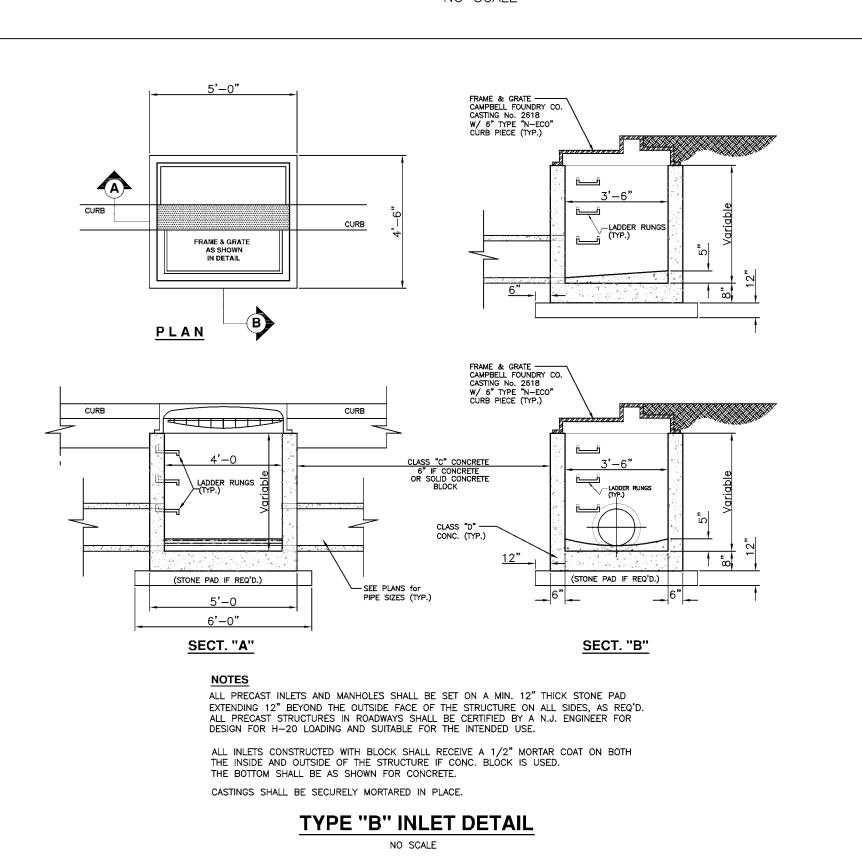
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2007 AS AMENDED).

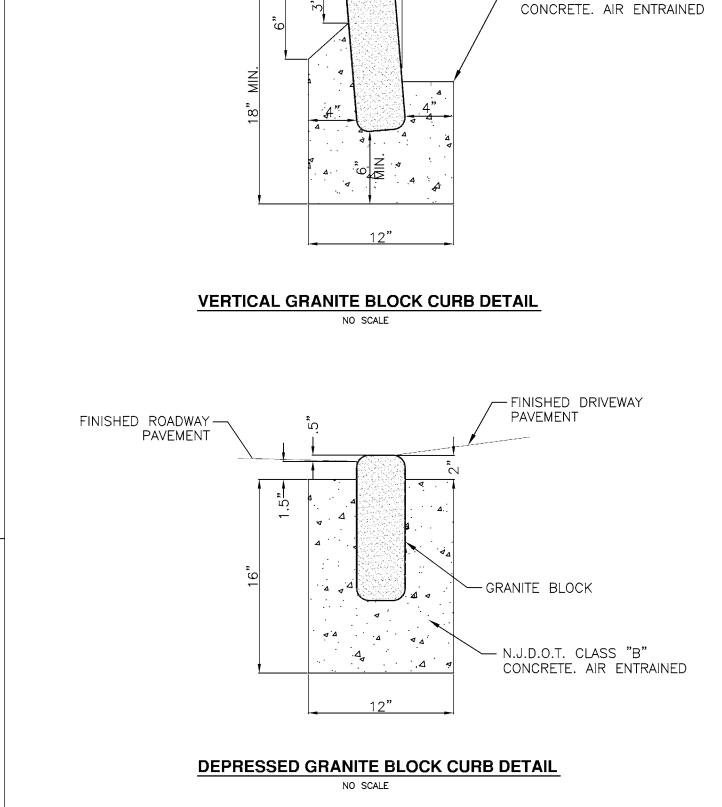
Typical Pavement Construction NO SCALE



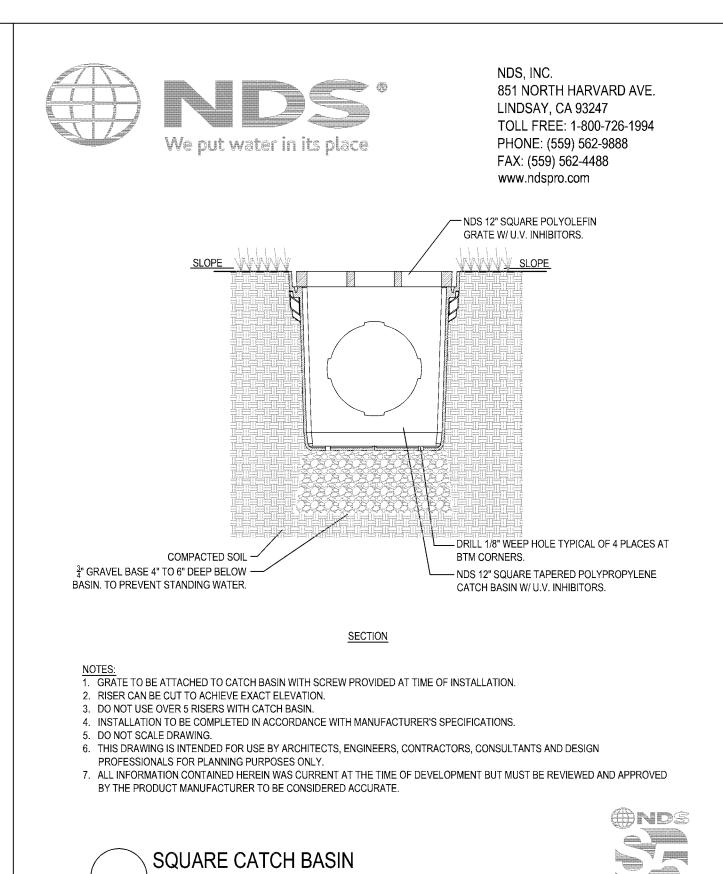


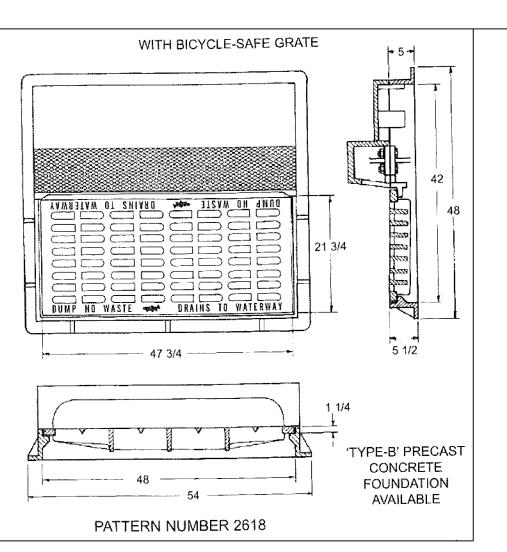






— N.J.D.O.T. CLASS "B"

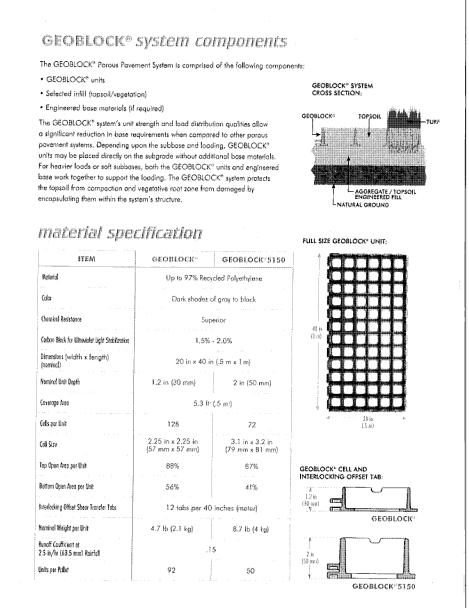


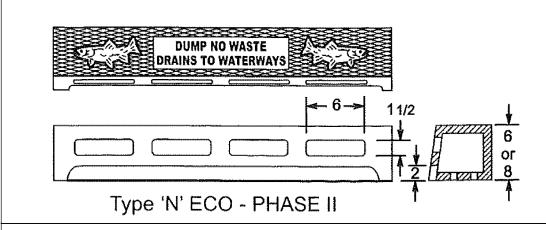


12" SQUARE CATCH BASIN - TYPICAL INSTALLATION FOR LANDSCAPE APPLICATIONS

INLET CASTING FOR TYPE "B" INLET

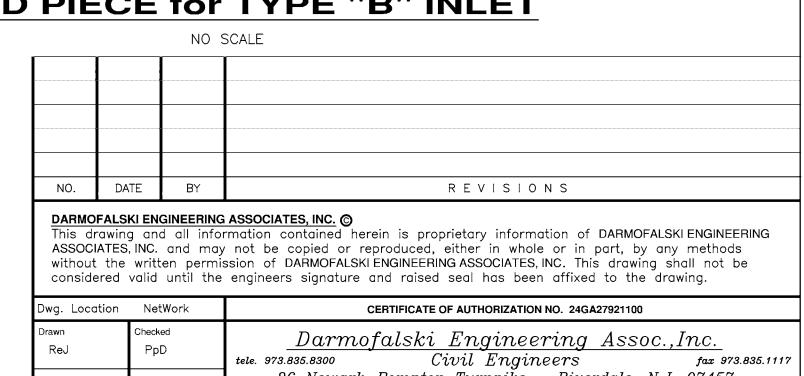
NO SCALE





REVISION DATE 8-24-2015 TYPE 'N' ECO - PHASE II **HEAD PIECE for TYPE "B" INLET**

Paul P. Darmofalski, P.E.

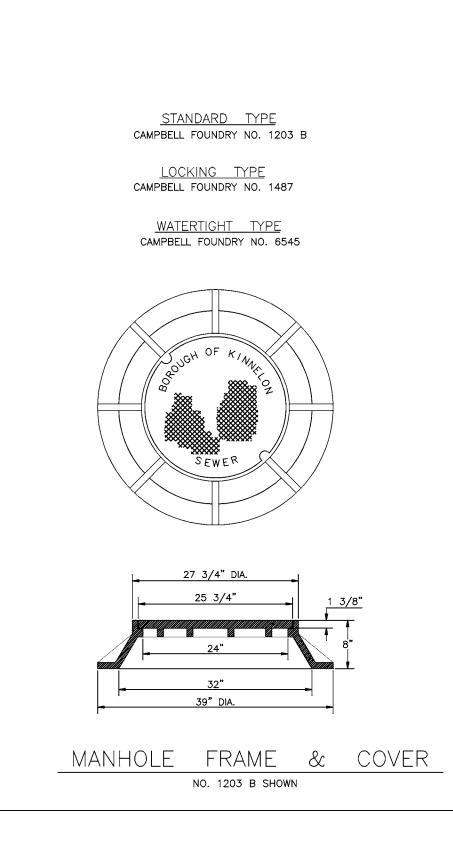


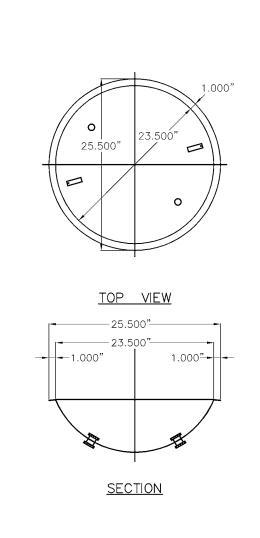
Dwg. Location	wg. Location NetWork CERTIFICATE OF AUTHORIZATION NO. 24GA279		
Drawn ReJ PpD Checked PpD Darmofalski Engineering tele. 973.835.8300 Civil Engineers 86 Navyark-Pompton Tympika - Rivery		fax 973.835.	
Scale As Noted	Date 03/31/2017	86 Newark—Pompton Turnpike — Riverd Professional Engineers / Professional Plo Lic.No. GE24743 Lic.No. LI04	anners
Tracer Engineering/Jobs/Kin K16-04 (Comm.Cent Design_Work.dwg		Sheet Title CONSTRUCTION DETAILS	
ENGINEERS SEAL & SIGNATURE		Project Title Proposed Kinnelon Community Center & Shelter for Lot 119 Block 45502 - 46 Boonton Avenue	C2.1(

situated in the

Borough of Kinnelon, Morris County, New Jersey

K16-04PROJECT NUMBER

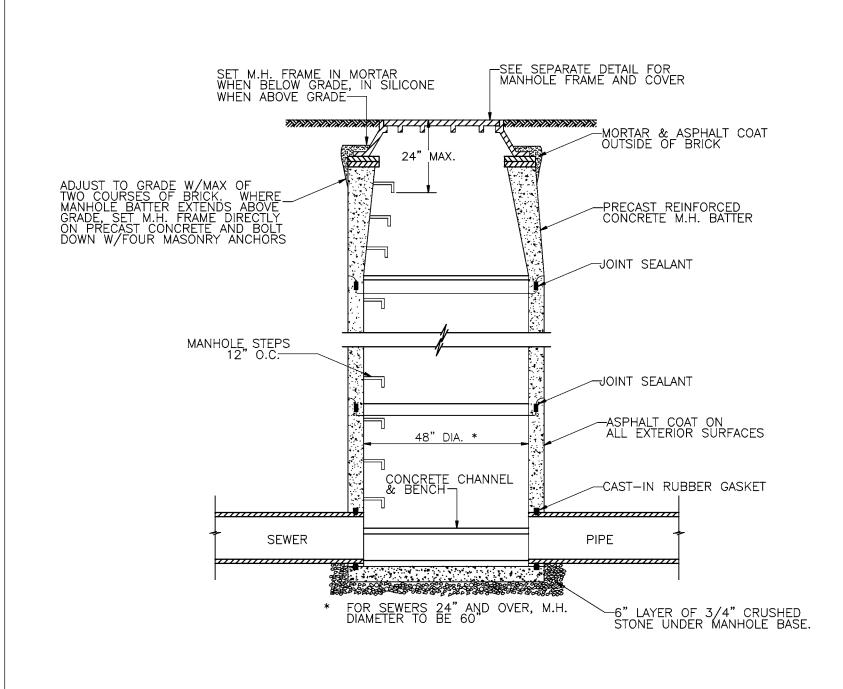




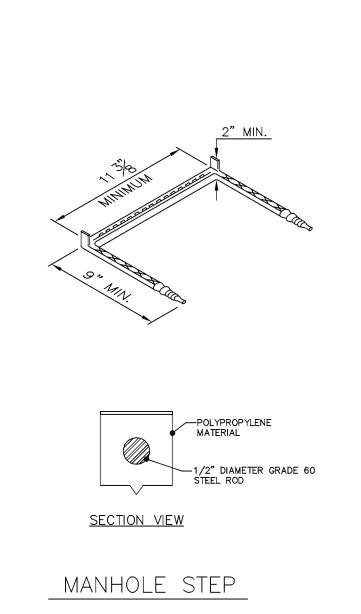
NOTES:

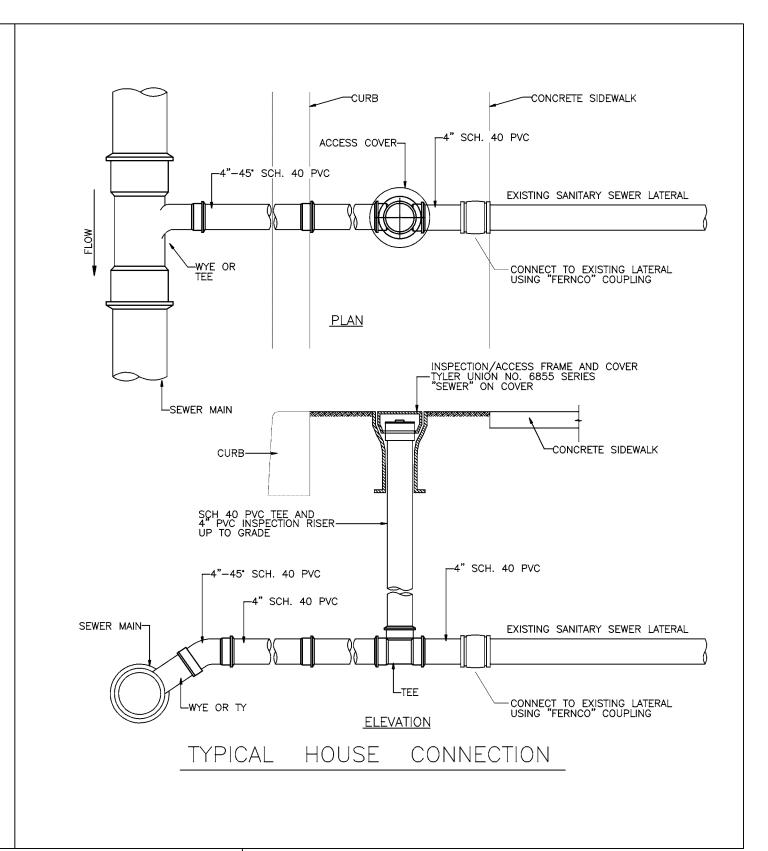
- 1. BOWL MATERIAL SHALL BE HIGH-DENSITY POLYETHYLENE MEETING ASTM D-1248 CLASS A, CATEGORY 5, TYPE III.
- 2. HANDLE MATERIAL SHALL BE POLYPROPYLENE LIFTING STRAP WITH POP RIVET AND WASHER.
- 3. GASKET MATERIAL SHALL BE MANUFACTURED OF CLOSED CELL RADIATION CROSS—LINKED POLYETHYLENE FOAM.
- 4. INSERT TO CONTAIN (1) SPRING LOAD GAS VENT AND (1) SPRING LOADED VACUUM VENT.

MANHOLE INFILTRATION SHIELD



TYPICAL PRECAST CONCRETE MANHOLE





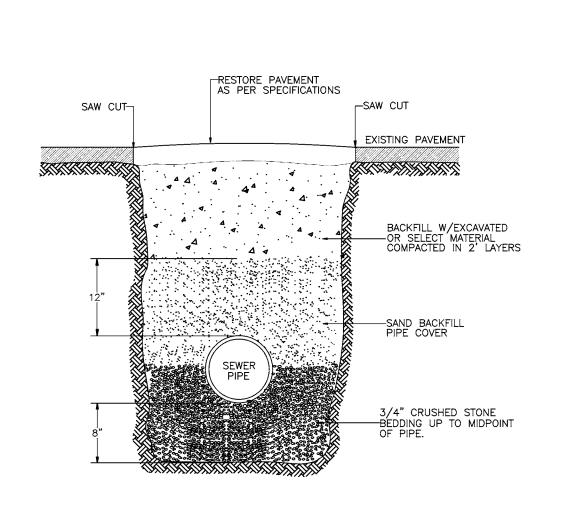
—COMPACTED SELECT BACKFILL

IF REQUIRED

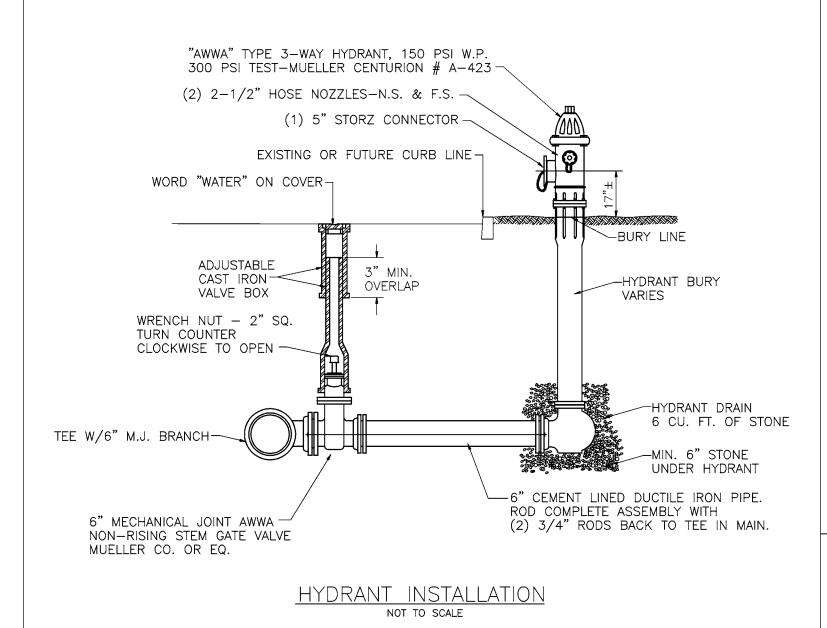
-CLEAN STONE BEDDING

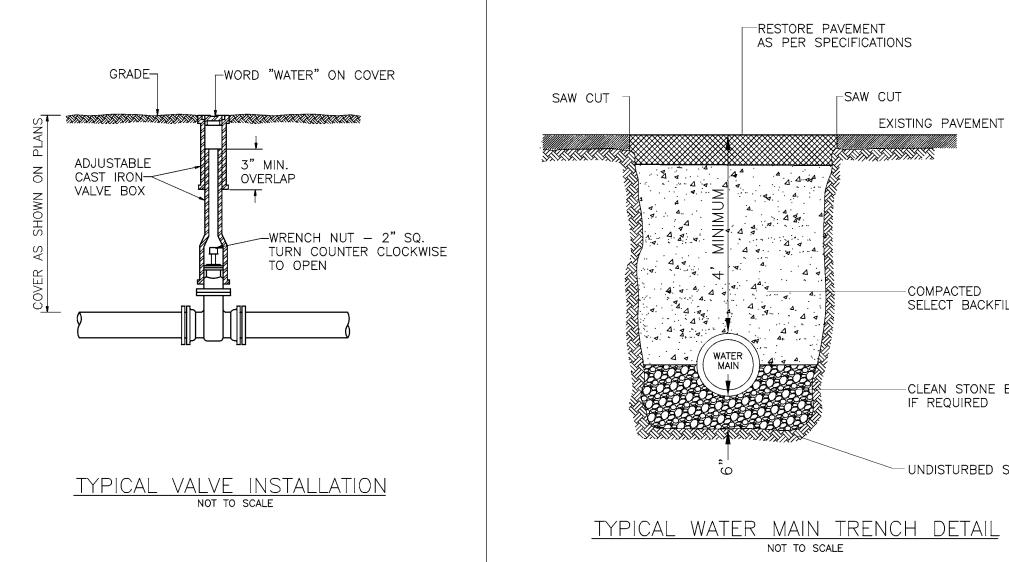
UNDISTURBED SUBGRADE

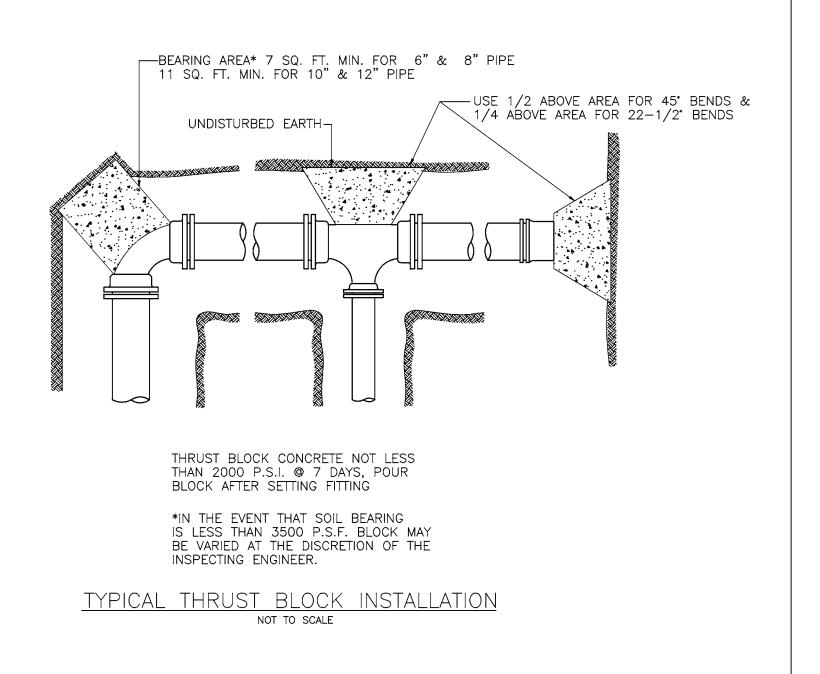
Paul P. Darmofalski, P.E.

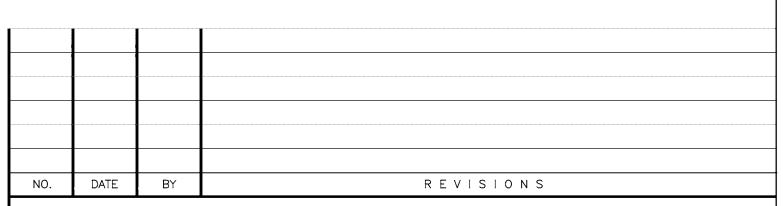












DARMOFALSKI ENGINEERING ASSOCIATES, INC. © This drawing and all information contained herein is proprietary information of DARMOFALSKI ENGINEERING ASSOCIATES, INC. and may not be copied or reproduced, either in whole or in part, by any methods without the written permission of DARMOFALSKI ENGINEERING ASSOCIATES, INC. This drawing shall not be

Dwg. Location	n NetWork	CERTIFICATE OF AUTHORIZATION NO. 24GA27	921100	
Drawn ReJ	Checked PpD		Assoc.,Inc. fax 973.835.1117	
Scale As Noted	Date 03/31/2017	86 Newark—Pompton Turnpike — Riverd Professional Engineers / Professional Plo Lic.No. GE24743 Lic.No. LIO4	lanners	
Tracer Engineering/Jobs, K16-04 (Comm. Design_Work.dwg	Center46BoontonAve)	Sheet Title CONSTRUCTION DETAILS		
ENGINEERS SEAL & SIGNATURE		Project Title Proposed Kinnelon Community Center & Shelter for Lot 119 Block 45502 - 46 Boonton Avenue	C2.11 SHEET 12 OF 14	

situated in the

Borough of Kinnelon, Morris County, New Jersey

K16-04

PROJECT NUMBER

ACO Construction & Building Products Surface Drainage and Building Elements



ACO SPORT

System 4000 Product Brochure

Open Trench Drain System for Tracks, **Sports Fields and Recreational Areas**



Typical Applications

System 4000 is available as a straight channel only. For 'D' areas it can either be combined with the System 2000 slotted channel, or the radius can be achieved by setting channels with a small gap at the Team sport facilities outside of the joint. Half meter channels create a smoother looking radius. To avoid • Tennis courts

ACO SPORT System 4000

Sporting facilities can use a wide variety of hard & soft surface materials. All external venues should incorporate surface drainage to protect these sport surfaces.

Running tracks with poured/asphalt

surfaces often utilize System 4000.

these gaps, channels can be miter cut

Technical Department.

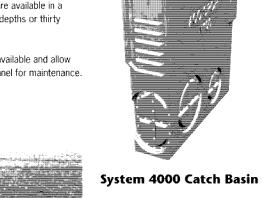
at the end. For full details on creating a radius with straight channels, call ACO's

Team sport facilities/tennis courts are more suited to System 4000 as surfaces may be 'loose' or cannot be easily fixed down. An open system allows easy access for cleaning and removal of stray surface The 4" internal width channels are supplied

Team Sports Facilities

in one meter (39.37") or half meter (19.69") lengths and are available in a For recreation areas, effective drainage of choice of four neutral depths or thirty trails, pathways and any hard paved area sloping depths. will prolong the life of the paving material and provide an all-weather, user-friendly A choice of grates is available and allow

full access to the channel for maintenance.



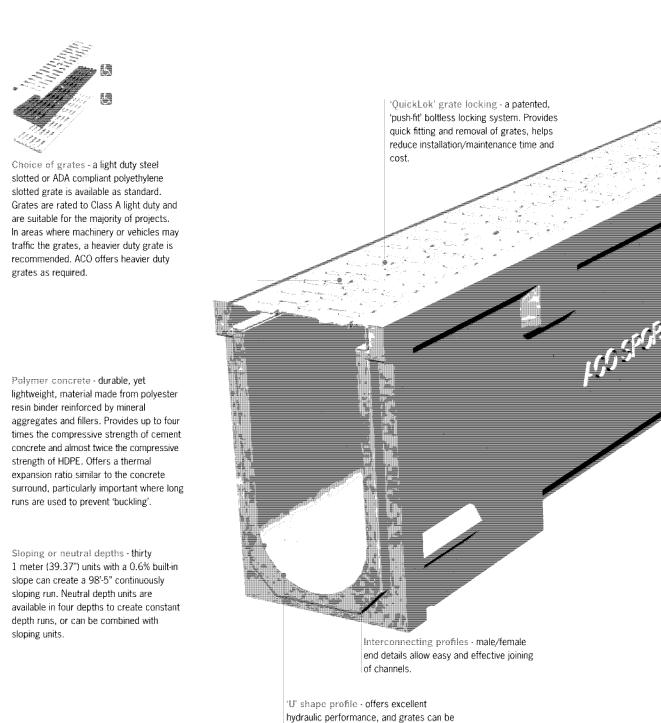
Track Drainage

The System 4000 in-line catch basin has a 4" (100mm) internal width and uses the same grates as the rest of the system, therefore not disrupting the aesthetics.

An optional plastic trash bucket acts as a sieve to collect debris washed into the system. Regular emptying helps prevent pipe blockage and flooding.

Catch basins offer drill-outs for connection to Schedule 40 4" or 6" pipes. Other size pipes can be connected by custom cutting





removed to access channel for cleaning

and maintenance.

ACO SPORT





Schedule 40 6" drill-out (requires oval to

round adapter)

4.00" (100mm)

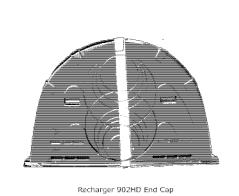
CULTEC Recharger® 902HD Stormwater Chamber

The Recharger® 902HD is a 48" (1219 mm) tall, high capacity chamber. Typically when using this model, fewer chambers are required resulting in less labor and a smaller installation area. The Recharger® 902HD has the side portal internal manifold feature. HVLV® FC-48 Feed Connectors are inserted into the side portals to create the internal manifold.

sloping units.

Recharger 902HD Chamber	
Size (L x W x H)	4.10' x 78" x 48"
	1.25 m x 1981 mm x 1219 mm
Installed Length	3.67'
	1.12 m
Length Adjustment per Row -	1.03'
with two end caps installed	0.31 m
Length Adjustment per Row -	0.44'
when not using end caps	0.133 m
Chamber Storage	17.66 ft³/ft
	1.64 m³/m
	64.75 ft³/unit
	1.84 m³/unit
Min. Installed Storage	27.27 ft³/ft
	2.53 m ³ /m
	100 ft³/unit
	2.83 m³/unit
Min. Area Required	26.58 ft ²
	2.47 m ²
Min. Center-to-Center Spacing	7.25'
	2.21 m
Max. Allowable Cover	8.3'
	2.53 m
Max. Allowable O.D.	11.5"
in Side Portal	292 mm
Compatible Feed Connector	HVLV FC-48 Feed Connector

	Stone F	oundation	Depth
	9"	12"	18"
	229 mm	305 mm	457 mm
Chamber and Stone Storage	100 ft ³	102.65 ft ³	107.97 ft ³
Per Chamber	2.83 m³	2.91 m ³	3.06 m ³
Min. Effective Depth	5.75	6.00'	6.5'
	1.75 m	1.83 m	1.98 m
Stone Required Per Chamber	3.26 yd ³	3.51 yd^3	4.00 yd ³
	2.49 m ³	2.68 m ³	3.06 m ³



9.7" x 78" x 48.5"
246 mm x 1982 mm x 1231 mm
6.2"
157 mm
5.34 ft ³ /ft
0.50 m³/m
2.76 ft³/unit
0.08 m³/unit
19.88 ft³/ft
1.85 m ³ /m
10.28 ft³/unit
0.29 m³/unit
24"

600 mm

Calculations are based on installed chamber length. Includes 12" (305 mm) stone above crown of chamber and typical stone surround, Stone void calculated at 40%.

For more information, contact CULTEC at (203) 775-4416 or visit www.cultec.com. © CULTEC, Inc., December 2016 SUB902HD 12-16

Polymer concrete grate seat and edge detail - ideal for light to medium duty applications. Exposed edge will not rust and discolor surrounding surface materials.	
	Optional Safety Edge - To improve athlete safety 'Safety Edge' channels have been added to the ACO Sport range – these channels incorporate a cellular rubber top to provide a soft, safe edge along the field to help reduce injury. Also available on System 2000 and System 3000.
Profiled side walls - side pillars provide additional channel body strength, and concrete keys hold	Direction arrows - arrows point from female end towards male end of channel. For track use these normally point clockwise around the track when viewed from inside the track. For other applications these arrows must point towards the outlet.

channel securely in concrete

surround.

System 4000 Channels		()	()		
4000-1 Sloped channel	00001	39.37 (1000)	5.65 (143)	32.0	
4002 Neutral channel	06562	39.37 (1000)	5.65 (143)	32.9	One meter channels
4000-2 Sloped channel	00002	39.37 (1000)	5.88 (149)	32.9	
4000-3 Sloped channel	00004	39.37 (1000)	6.12 (155)	33.8	39.37" (1000mm
4000-4 Sloped channel	00005	39.37 (1000)	6.35 (161)	34.7	*
4000-5 Sloped channel	00006	39.37 (1000)	6.59 (167)	35.6	
4000-5 Sloped channel	00007	39.37 (1000)	6.83 (173)	36.5	
4000-0 Sloped channel	00007			37.4	ACO RPORT S
		39.37 (1000)	7.06 (179)	38.3	AD BORE S
4000-8 Sloped channel	00009	39.37 (1000)	7.30 (185)		
4000-9 Sloped channel	00010	39.37 (1000)	7.54 (191)	39.2	
4010 Neutral channel	06561	39.37 (1000)	7.54 (191)	40.1	
40103 Neutral channel	00013	19.69 (500)	7.54 (191)	23.0	1
4000-10 Sloped channel	00014	39.37 (1000)	7.77 (197)	40.1	<u> </u>
4000-11 Sloped channel	00015	39.37 (1000)	8.01 (203)	41.0	J
4000-12 Sloped channel	00016	39.37 (1000)	8.24 (209)	41.9	
4000-13 Sloped channel	00017	39.37 (1000)	8.48 (215)	42.8	
4000-14 Sloped channel	00018	39.37 (1000)	8.72 (221)	43.7	
4000-15 Sloped channel	00019	39.37 (1000)	8.95 (227)	44.6	Half meter channel
4000-16 Sloped channel	00020	39.37 (1000)	9.19 (233)	45.5	
4000-17 Sloped channel	00346	39.37 (1000)	9.43 (239)	46.4	19.69° (500mm)
4000-17 Sloped channel	00021	39.37 (1000)	9.66 (245)	47.3	15/05 (500) listly
4000-18 Sloped channel	00021	39.37 (1000)	9.90 (251)	48.2	
					1
4020 Neutral channel	06563	39.37 (1000)	9.90 (251)	49.1	7.54"
40203 Neutral channel	05502	19.69 (500)	9.90 (251)	26.0	9.90"
4000-20 Sloped channel	00024	39.37 (1000)	10.13 (257)	49.1	12.26
4000-21 Sloped channel	00025	39.37 (1000)	10.37 (263)	50.0	
4000-22 Sloped channel	00026	39.37 (1000)	10.61 (269)	50.9	
4000-23 Sloped channel	00027	39.37 (1000)	10.84 (275)	51.8	
4000-24 Sloped channel	00028	39.37 (1000)	11.08 (281)	52.7	Catch basin
4000-25 Sloped channel	00029	39.37 (1000)	11.31 (287)	53.6	Calcii Dasiii
4000-26 Sloped channel	00030	39.37 (1000)	11.55 (293)	54.5	
4000-27 Sloped channel	00031	39.37 (1000)	11.79 (299)	55.6	19.69" (500mm) 6.10"
4000-28 Sloped channel	00032	39.37 (1000)	12.02 (305)	56.5	-
4000-29 Sloped channel	00032	39.37 (1000)	12.26 (311)	57.4	
4030 Neutral channel	00033	39.37 (1000)	12.26 (311)	58.3	
40303 Neutral channel	05503	19.69 (500)	12.26 (311)	31.0	ADD SPORT
4000-30 Sloped channel	00035	39.37 (1000)	12.50 (317)	59.2	
In-line Catch Basin	UUUJJ	35.37 (1000)	12.30 (317)	33.2	
In-line catch basin	05620	19.69 (500)	23.00 (585)	57.0	
OuickLok bar for 05620	98717	13.03 (300)	23.00 (303)	0.1	
		in .			
Plastic trash bucket	01498	-	-	1.1	
6" oval to round adapter	95140	be.	-	1.1	
Accessories	01070				Schedule 40 Sched
Closing end cap	01078	-	12.50 (311)	4.2	4" or 6" drill-out 6" drill
104-4 Inlet cap - 4"	05651		7.54 (191)	3.2	(requir
204-4 Inlet cap - 4"	05573	•	9.90 (251)	3.2	round
204-6 Inlet cap - 6"	05574		9.90 (251)	3.6	
304-4 Inlet cap - 4"	05652		12.25 (311)	3.2	_
304-6 Inlet cap - 6"	05569	-	12.25 (311)	3.6	Grates
108-4 Outlet cap - 4"	05571	_	7.77 (197)	3.2	
208-4 Outlet cap - 4"	05653	-	10.13 (257)	3.2	
208-6 Outlet cap - 6"	05570	_	10.13 (257)	3.6	
308-4 Outlet cap - 4"	05575	-	12.50 (317)	3.2	
308-6 Outlet cap - 6"	05573	•		3.6	
•	00072	<u>.</u>	12.50 (317)	3.0	
Grates Stool platted	21520	20.27.41.000		E 0	
Steel slotted	31530	39.37 (1000)	-	5.9	No.
Steel slotted	31531	19.69 (500)	•	3.0	
Black ADA plastic	97393	19.69 (500)		1.8	5 (7/7)
Gray ADA plastic	97385	19.69 (500)	-	1.8	
QuickLok locking bar	02899			0.2	779
Grate removal hook	01319	-	-	0.6	5 m . 1 m . 1 m . 1 m
Safety Edge System - b	olack TPE	rubber			
, , ,	06564	39.37 (1000)	5.88 (149)	34.0	The state of the s
	COSTI				
SE4002 neutral channel		39 37 (1000)	7 54 (1911	4 11	
SE4002 neutral channel SE4010 neutral channel	06565	39.37 (1000)	7.54 (191)	41.0 49.0	
SE4002 neutral channel		39.37 (1000) 39.37 (1000) 19.69 (500)	7.54 (191) 9.90 (251) 23.00 (585)	41.0 49.0 59.0	

2. To calculate invert depth subtract 1.0" (25mm)

DATE REVISIONS

DARMOFALSKI ENGINEERING ASSOCIATES, INC. © This drawing and all information contained herein is proprietary information of DARMOFALSKI ENGINEERING ASSOCIATES, INC. and may not be copied or reproduced, either in whole or in part, by any methods without the written permission of DARMOFALSKI ENGINEERING ASSOCIATES, INC. This drawing shall not be considered valid until the engineers signature and raised seal has been affixed to the drawing.

Dwg. Location	NetWork	CERTIFICATE OF AUTHORIZATION NO. 24GA27	921100	
Drawn ReJ	Checked PpD	<u>Darmofalski Engineering A</u> tele. 973.835.8300 Civil Engineers	Assoc., Inc. fax 973.835.11	
Scale As Noted	Date 03/31/2017	86 Newark—Pompton Turnpike — Riverd Professional Engineers / Professional Plo Lic.No. GE24743 Lic.No. LIO4	inners	
Tracer Engineering/Jobs/I K16-04 (Comm.Ce Design_Work.dwg		Sheet Title ACO & CULTEC PRODUCT CUT SHEETS		
ENGINEERS SI	EAL & SIGNATURE	Project Title Proposed Kinnelon Community	l C 2.12	

Paul P. Darmofalski, P.E.

Center & Shelter for SHEET 13 OF 14 Lot 119 | Block 45502 - 46 Boonton Avenue situated in the Borough of Kinnelon, Morris County, New Jersey

K16-04PROJECT NUMBER

CULTEC RECHARGER® 902HD PRODUCT SPECIFICATIONS

CULTEC RECHARGER® 902HD CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION OR CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

- CHAMBER PARAMETERS 1. THE CHAMBERS SHALL BE MANUFACTURED IN THE U.S.A. BY CULTEC, INC. OF BROOKFIELD, CT.
- (203-775-4416 OR 1-800-428-5832) THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD
- PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS.
- 3. THE CHAMBER SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12
- 4. THE CHAMBER SHALL BE STRUCTURAL FOAM INJECTION MOLDED OF BLUE VIRGIN HIGH MOLECULAR WEIGHT IMPACT-MODIFIED POLYPROPYLENE
- 5. THE CHAMBER SHALL BE ARCHED IN SHAPE. 6. THE CHAMBER SHALL BE OPEN-BOTTOMED.
- 7. THE CHAMBER SHALL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE
- 8. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER® 902HD SHALL BE 48. INCHES (1219 mm) TALL, 78 INCHES (1981 mm) WIDE AND 4.10 FEET (1.25 mm) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER® 902HD SHALL BE 3.67 FEET (1.12 m).
- 9. MULTIPLE CHAMBERS MAY BE CONNECTED TO FORM DIFFERENT LENGTH ROWS. EACH ROW SHALL BEGIN AND END WITH A SEPARATELY FORMED CULTEC RECHARGER® 902HD END CAP. MAXIMUM INLET OPENING ON THE END CAP IS 24 INCHES (600 mm).
- 10. THE CHAMBER SHALL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV™ FC-48 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. MAXIMUM ALLOWABLE PIPE SIZE IN THE
- SIDE PORTAL IS 11.5 INCHES (292 mm). 11. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV™ FC-48 FEED CONNECTOR SHALL
- BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 49 INCHES (1245 mm) LONG 12. THE NOMINAL STORAGE VOLUME OF THE RECHARGER® 902HD CHAMBER SHALL BE 17.66 FT3 /
- RECHARGER® 902HD SHALL BE 64.75 FT3 / UNIT (1.834 m3 / UNIT) WITHOUT STONE.

FT (1.641 m3 / m) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED

13. THE NOMINAL STORAGE VOLUME OF THE HVLV™ FC-48 FEED CONNECTOR SHALL BE 0.913 FT3

14. THE RECHARGER® 902HD CHAMBER SHALL HAVE TWENTY-FOUR DISCHARGE HOLES BORED

- INTO THE SIDEWALLS OF THE UNIT'S CORE TO PROMOTE LATERAL CONVEYANCE OF WATER. 15. THE RECHARGER® 902HD CHAMBER SHALL HAVE 7 CORRUGATIONS
- 16. THE CHAMBER SHALL HAVE A RAISED INTEGRAL CAP AT THE TOP OF THE ARCH NEAR THE CENTER OF EACH UNIT TO BE USED AS AN OPTIONAL INSPECTION PORT OR CLEAN-OUT.
- 17. THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION. 18. THE CHAMBER SHALL BE MANUFACTURED IN A FACILITY EMPLOYING CULTEC'S QUALITY CONTROL AND ASSURANCE PROCEDURES.
- 19. MAXIMUM ALLOWABLE COVER OVER THE TOP OF THE CHAMBER SHALL BE 8.3 FEET (2.53 m).
- THE CULTEC RECHARGER® 902HD END CAP (REFERRED TO AS 'END CAP') SHALL BE MANUFACTURED IN THE U.S.A. BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- 2. THE END CAP SHALL BE TWIN-SHEET THERMOFORMED OF BLACK VIRGIN HIGH MOLECULAR WEIGHT POLYETHYLENE
- . THE END CAP SHALL BE JOINED AT THE BEGINNING AND END OF EACH ROW OF CHAMBERS USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS.
- 4. THE NOMINAL DIMENSIONS OF THE END CAP SHALL BE 48.5 INCHES (1231 mm) TALL, 78 INCHES (1982 mm) WIDE AND 9.7 INCHES (246 mm) LONG, WHEN JOINED WITH A RECHARGER 902HD CHAMBER, THE INSTALLED LENGTH OF THE END CAP SHALL BE 6.2 INCHES (157 mm).
- 5. MAXIMUM INLET OPENING ON THE END CAP IS 24 INCHES (600 mm).
- 6. THE END CAP SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12.

CULTEC HVLV FC-48 FEED CONNECTOR PRODUCT SPECIFICATIONS

FEED CONNECTOR PARAMETERS

1. THE FEED CONNECTOR SHALL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT.

CULTEC HVLV FC-48 FEED CONNECTORS ARE DESIGNED TO CREATE AN INTERNAL MANIFOLD FOR

- (203-775-4416 OR 1-800-428-5832)
- 2. THE FEED CONNECTOR SHALL BE VACUUM THERMOFORMED OF BLACK HIGH MOLECULAR
- WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE).

CULTEC RECHARGER MODEL 902HD STORMWATER CHAMBERS.

3. THE FEED CONNECTOR SHALL BE ARCHED IN SHAPE.

4. THE FEED CONNECTOR SHALL BE OPEN-BOTTOMED.

- 5. THE NOMINAL DIMENSIONS OF THE CULTEC HVLV FC-48 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 49 INCHES (1245 mm) LONG.
- 6. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-48 FEED CONNECTOR SHALL BE 0.913 FT3 / FT (0.085 m³ / m) - WITHOUT STONE.
- 7. THE HVLV FC-48 FEED CONNECTOR SHALL HAVE 4 CORRUGATIONS.
- 8. THE HVLV FC-48 FEED CONNECTOR MUST BE FORMED AS A WHOLE UNIT HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT SHALL FIT INTO THE SIDE PORTALS OF THE CULTEC RECHARGER STORMWATER CHAMBER AND ACT AS CROSS FEED CONNECTIONS CREATING AN INTERNAL MANIFOLD.
- 9. THE FEED CONNECTOR SHALL BE DESIGNED TO WITHSTAND AASHTO HS-25 DEFINED LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- 10. THE FEED CONNECTOR SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED FACILITY.

GENERAL NOTES

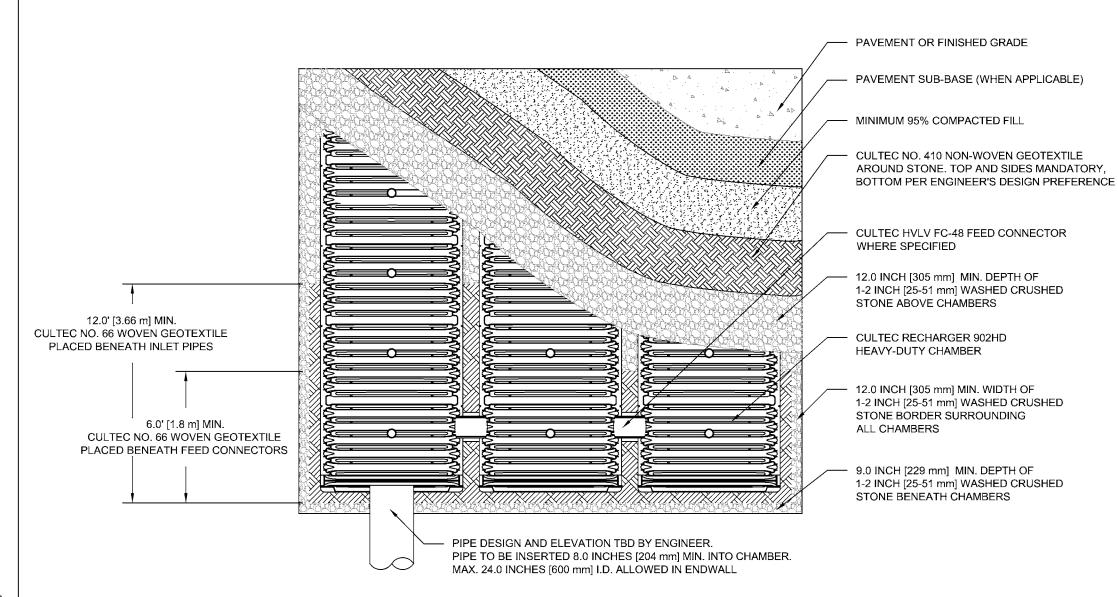
CULTEC NO. 66™ WOVEN GEOTEXTILE IS UTILIZED AS AN UNDERLAYMENT TO PREVENT SCOURING CAUSED BY WATER MOVEMENT WITHIN THE CULTEC CHAMBERS AND FEED CONNECTORS UTILIZING THE CULTEC MANIFOLD FEATURE.

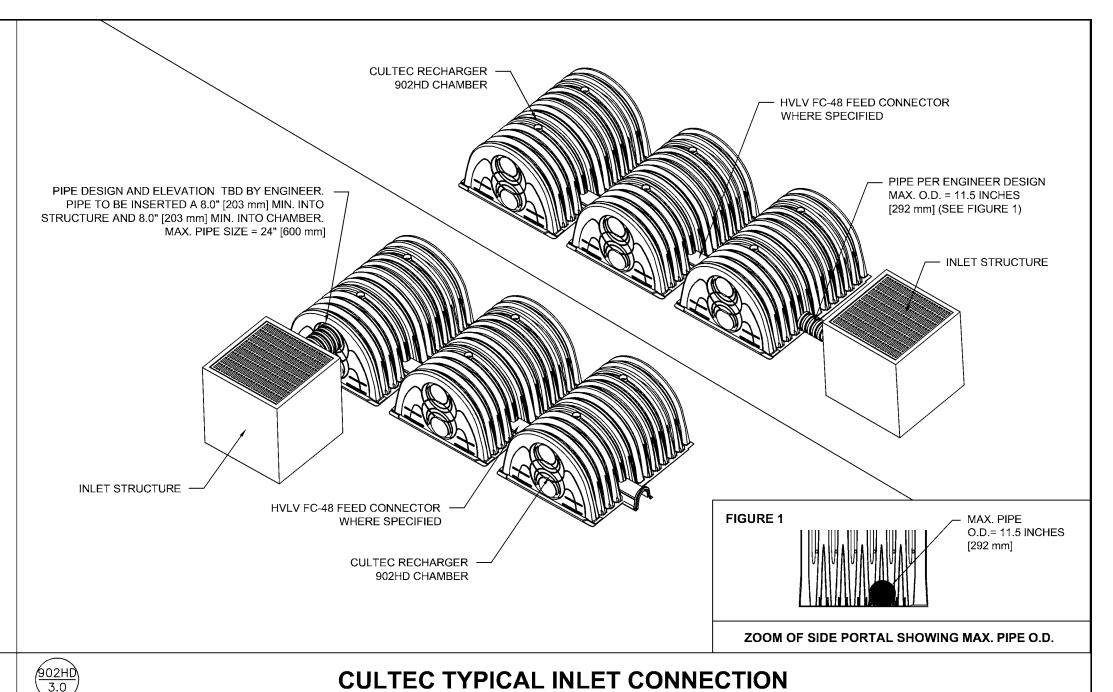
GEOTEXTILE PARAMETERS

TESTING METHOD.

CULTEC NO. 66™ WOVEN GEOTEXTILE

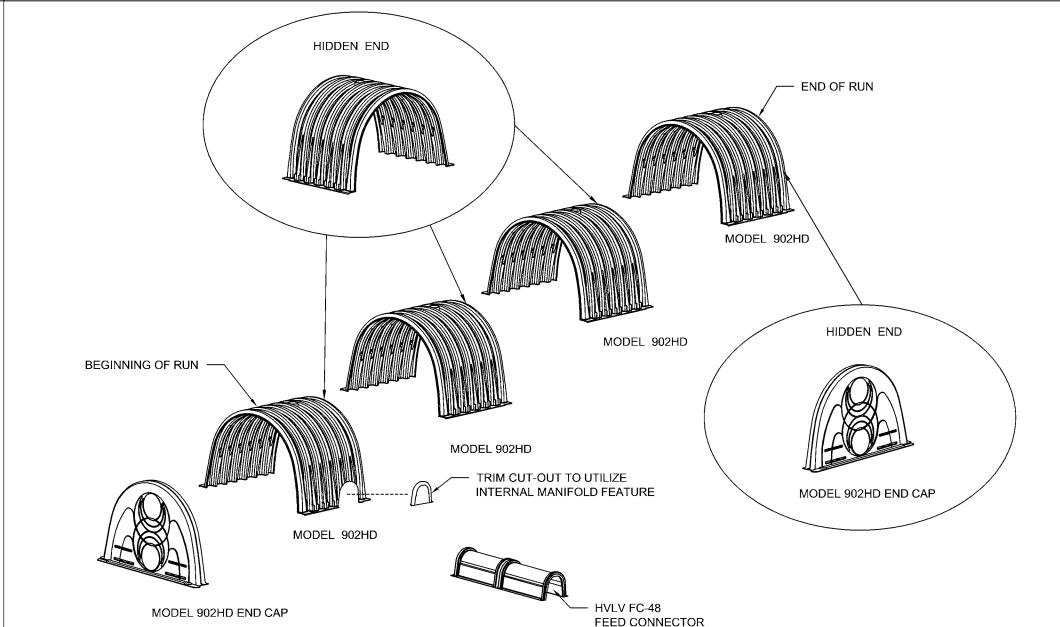
- 1. THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- 2. THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- 3. THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH OF 315 LBS (1.40KN) PER ASTM D4632 TESTING
- 4. THE GEOTEXTILE SHALL HAVE A TENSILE ELONGATION RESISTANCE OF 15% PER ASTM D4632
- TESTING METHOD. 5. THE GEOTEXTILE SHALL HAVE A MULLEN BURST RESISTANCE OF 600PSI (4138 KPA) PER ASTM D3786
- 6. THE GEOTEXTILE SHALL HAVE A TEAR RESISTANCE OF 115 LBS (0.51 KN) PER ASTM D4533 TESTING
- METHOD.
- 7. THE GEOTEXTILE SHALL HAVE A PUNCTURE RESISTANCE OF 150 LBS (0.66 KN) PER ASTM D4833 TESTING METHOD. 8. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 900 LBS (4.00 KN) PER ASTM D6241
- TESTING METHOD. 9. THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 70% @ 500 HRS. PER ASTM D4355 TESTING
- 10. THE GEOTEXTILE SHALL HAVE A PERMITTIVITY RATING OF 0.05 SEC-1 PER ASTM D4491 TESTING
- METHOD.
- 11. THE GEOTEXTILE SHALL HAVE A WATER FLOW RATING OF 4 GPM/FT2 (160 LPM/M2) PER ASTM D4491 TESTING METHOD.
- 12. THE GEOTEXTILE SHALL HAVE A PERCENT OPEN AREA OF <1% PER CW-02215 TESTING METHOD. 13. THE GEOTEXTILE SHALL HAVE AN APPARENT OPENING SIZE OF 40 US STD. SIEVE (0.425 MM) PER ASTM D4751 TESTING METHOD.
- 14. THE GEOTEXTILE SHALL CONSIST OF A 100% HIGH-TENACITY, SILT-FILM POLYPROPYLENE YARNS.





CULTEC RECHARGER 902HD HEAVY DUTY PLAN VIEW - CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" MIN. 95% COMPACTED FILL RECHARGER 902HD -- 1-2 INCH [25-51 mm] DIA. HEAVY DUTY CHAMBER - CULTEC NO. 410 NON-WOVEN GEOTEXTILE AROUND WASHED. CRUSHED STONE STONE. TOP AND SIDES MANDATORY, BOTTOM PER SURROUNDING CHAMBERS ENGINEER'S DESIGN PREFERENCE - HVLV FC-48 FEED CONNECTOR 8.3' [2.53 m] MAX. - PAVEMENT OR 🫪 WHERE SPECIFIED BURIAL DEPTH 12.0" [305 mm] MIN. FOR PAVED FINISHED GRADE 18.0" [457 mm] MIN. FOR UNPAVED 12.0" [305 mm] MIN. 48.0" [1219 mm] 9.0" [229 mm] MIN. 87.0" [2211 mm] MIN. 12.0" [305 mm] MIN. -—— 78.0" [1982 mm] —— CENTER TO CENTER THE DESIGN ENGINEER IS RESPONSIBLE FOR ENSURING THAT THE REQUIRED BEARING CAPACITY OF SUB-GRADE SOILS HAS BEEN MET ★ NOTE: NO PAVEMENT IN GRASS PLAYING FIELD · CULTEC NO. 66 WOVEN GEOTEXTILE (FOR SCOUR PROTECTION) TO BE PLACED BENEATH INTERNAL MANIFOLD FEATURE AND BENEATH ALL INLET/OUTLET PIPES RECHARGER 902HD BY CULTEC, INC. OF BROOKFIELD, CT THE CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS REFER TO CULTEC. INC.'S CURRENT RECOMMENDED INSTALLATION AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN GUIDELINES. CALL CULTEC, INC. AT (800) 428-5832 TO ARRANGE A INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. ALL PRE-CONSTRUCTION MEETING. USE RECHARGER 902HD HEAVY DUTY FOR

CULTEC RECHARGER 902HD HEAVY DUTY TYPICAL CROSS SECTION

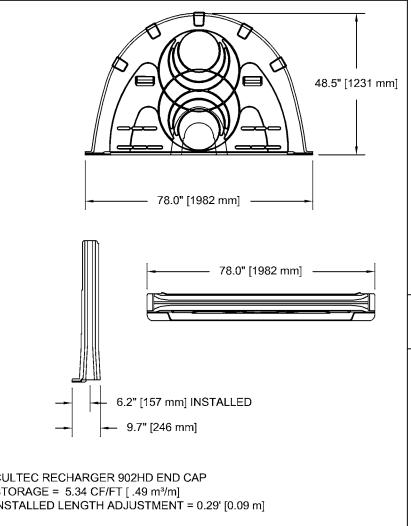


4.0" [100 mm] DIA. INSPECTION PORT 48.0" [1219 mm] 78.0" [1981 mm] —— 78.0" [1981 mm] —— 76.4" [1941 mn 44.0" [1118 mm] INSTALLED LENGTH 18.2" [461 mm] 5.8" [147 mm] —— 43.4" [1103 mm] — SMALL RIB - LARGE RIB - SIDE PORTAL FOR OPTIONAL INTERNAL MANIFOLD (ACCOMMODATES CULTEC HVLV FC-48 FEED CONNECTOR OR 11.5 INCHES [292 mm] MAX. O.D. PIPE) CULTEC RECHARGER 902HD CHAMBER STORAGE = 17.66 CF/FT [1.64 m³/m] INSTALLED LENGTH ADJUSTMENT = 0.44' [0.13 m] SIDE PORTAL ACCEPTS CULTEC HVLV FC-48 FEED CONNECTOR



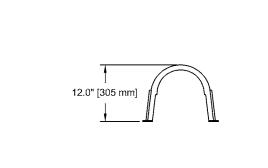
			_
PIPE	А	В	
6" [150 mm]	N/A	N/A	
8" [200 mm]	N/A	N/A	
10" [250 mm]	N/A	N/A	
12" [300 mm]	29.50" [749 mm]	2.25" [57 mm]	
15" [375 mm]	26.50" [673 mm]	2.25" [57 mm]	
18" [450 mm]	23.50" [597 mm]	2.50" [64 mm]	
24" [600 mm]	16.50" [420 mm]	3.00" [76 mm]	

*THE TYPICAL INVERT TABLE ABOVE IS BASED ON THE INSIDE DIAMETER OF STANDARD CORRUGATED PLASTIC PIPE. THE HEAVY DUTY END CAP HAS PRE-MARKED TRIM LINES FOR PIPE DIAMETERS 12" (300mm), 15" (375mm), 18" (450mm) AND 24" (600mm). PIPES OF ANY SIZE AND MATERIAL UP TO 24" MAY BE PLACED AT CUSTOM LOCATIONS AND CUSTOM INVERTS. THE CROWN OF THE PIPE MUST REMAIN A MINIMUM OF 4" (100mm) FROM THE EDGE OF THE HEAVY DUTY END CAP.



CULTEC RECHARGER 902HD END CAP STORAGE = $5.34 \text{ CF/FT} [.49 \text{ m}^3/\text{m}]$ INSTALLED LENGTH ADJUSTMENT = 0.29' [0.09 m]

> **CULTEC RECHARGER 902HD HEAVY DUTY END CAP THREE VIEW** 16.0" [406 mm]



CULTEC HVLV FC-48

FEED CONNECTOR THREE VIEW

— 49.0" [1243 mm] —

RECHARGER 902HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL

APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS

24.0" [610 mm] MIN. SQUARE 14.5" [368 mm] NEENAH FOUNDRY MODEL R-5900-A (OR EQUAL) HEAVY DUTY FRAME AND LID PAVEMENT 10.25" [260 mm] OR FINISHED GRADE 12.0" [305 mm] MIN. 12" [300 mm] SDR-35 / SCH. 40 PVC COLLAR - FIELD PLACED CLASS "C" CONCRETE MAINTAIN 6" [152 mm] CLEARANCE BETWEEN HEAVY DUTY LID AND PVC CLEAN-OUT CAP 4" [100 mm] SDR-35 / SCH. 40 PVC ENDCAP CLEAN-OUT ADAPTER W/ SCREW-IN CAP - 4" [100 mm] SDR-35 / SCH. 40 PVC RISER - 4" [100 mm] SDR-35 / SCH. 40 PVC COUPLING TRIM CHAMBER INSPECTION PORT KNOCK-OUT TO MATCH O.D. OF 4" INSPECTION PORT PIPE 4" [100 mm] SDR-35 / SCH 40 PVC (INSERTED 8" [203 mm] INTO CHAMBER) * NOTE: IN GRASS PLAYING FIELD, HEAVY DUTY FRAME

OPTIONAL INSPECTION PORT - ZOOM DETAIL

and raised seal has been affixed to the drawing.

TRAFFIC APPLICATIONS.

AND LID NOT REQUIRED. SET INSPECTION PORT FLUSH WITH FINISHED GRADE.

902HD 7.0

HVLV FC-48 FEED CONNECTOR AS NEEDED. CUT SHALL BE WITHIN 1/4" [6 mm] TOLERANCE OF SIDE PORTAL TRIM GUIDELINE THE DESIGN ENGINEER IS RESPONSIBLE FOR ENSURING THAT — THE REQUIRED BEARING CAPACITY OF SUB-GRADE SOILS HAS BEEN MET

STRUCTURE AND 8.0" [203 mm] MIN. INTO CHAMBER CULTEC NO. 410 NON-WOVEN GEOTEXTILE AROUND STONE, TOP AND SIDES MANDATORY, BOTTOM PER - OPTIONAL TRAFFIC RATED **ENGINEER'S DESIGN PREFERENCE** INSPECTION PORT (SEE DETAIL (SEE) MINIMUM 95% COMPACTED FILI RECHARGER 902HD SIDE PORTAL TO BE CUT IN FIELD TO ALLOW FOR HEAVY DUTY CHAMBER CULTEC NO. 66 WOVEN GEOTEXTILE (FOR SCOUR PROTECTION) TO BE PLACED BENEATH INTERNAL MANIFOLD FEATURE AND BENEATH ALL INLET/OUTLET PIPES CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS"

CULTEC RECHARGER 902HD HEAVY DUTY TYPICAL INTERLOCK

- PIPE DESIGN AND ELEVATION PER ENGINEER. PIPE

TO BE INSERTED 8.0" [203 mm] MIN. INTO

eering/Jobs/Kinnelon/2016

_Work.dwq

4 (Comm.Center46BoontonAve

- 1-2 INCH [25-51 mm] WASHED, CRUSHED STONE

PAVEMENT OR FINISHED GRADE

SURROUNDING CHAMBERS

*THE CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.

CULTEC INTERNAL MANIFOLD - OPTIONAL INSPECTION PORT DETAIL

CULTEC CONSTRUCTION DETAILS

902HD 8.0

CULTEC RECHARGER 902HD TYPICAL PIPE INVERTS

P.O. Box 280 378 Federal Road Brookfield, CT 06804

PH: (203) 775-4416 PH: (800) 4-CULTEC FX: (203) 775-1462 www.cultec.com tech@cultec.com

THIS DRAWING WAS PREPARED TO SUPPORT THE DESIGN ENGINEER FOR THE PROPOSED SYSTEM. IT IS THE ULTIMATE RESPONSIBILITY OF THE DESIGN ENGINEER TO ASSURE THAT THE STORMWATER SYSTEM'S DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY FOR ALL DESIGN DECISIONS.

$egin{array}{ c c c c c c c c c c c c c c c c c c c$	-	K16-
(A) P(I)	nc.	Desig
tele. 973.835.8300 CWIL ENGINEERS	fax 973.835.1117	E
Scale Date 86 Newark-Pompton Turnpike - Riverdale, N.J.	07457	ĺ
As Noted 03/31/2017 Professional Engineers / Professional Planners Lic.No. GE24743 Lic.No. L104425		

INC. and may not be copied or reproduced, either in whole or in part, by any methods without the written permission

of DARMOFALSKI ENGINEERING ASSOCIATES, INC. This drawing shall not be considered valid until the engineers signature

NGINEERS SEAL & SIGNATURE **Proposed Kinnelon Community** Center & Shelter for Lot 119 | Block 45502 - 46 Boonton Avenue situated in the Paul P. Darmofalski, P.E Borough of Kinnelon, Morris County, New Jersey License #GE24743

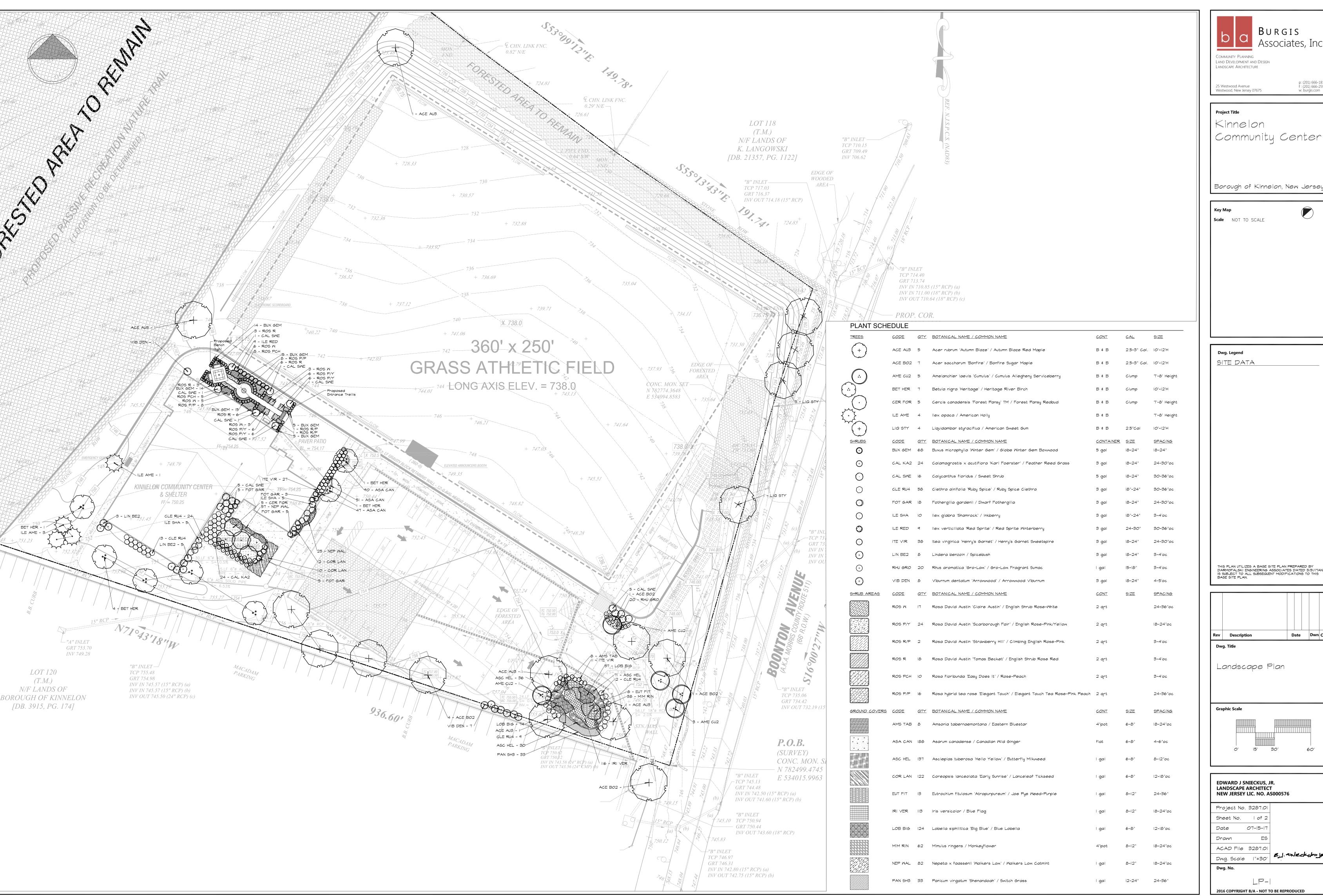
SHEET 14 OF 14

K16-04PROJECT NUMBER

CULTEC, Inc.

Subsurface Stormwater Management Systems

TO ENSURE THAT THE CULTEC PRODUCTS ARE DESIGNED IN ACCORDANCE WITH CULTEC'S MINIMUM REQUIREMENT CULTEC INC. DOES NOT APPROVE PLANS. SIZING, OR SYSTEM DESIGNS, THE DESIGNING ENGINEER IS RESPONSIBLE





Project Title Kinnelon

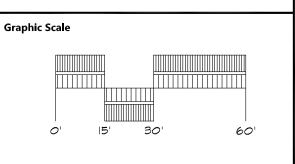
Borough of Kinnelon, New Jersey

Scale NOT TO SCALE



Dwg. Legend SITE DATA THIS PLAN UTILIZES A BASE SITE PLAN PREPARED BY DARMOFALSKI ENGINEERING ASSOCIATES DATED 3/31/17AND IS SUBJECT TO ALL SUBSEQUENT MODIFICATIONS TO THIS BASE SITE PLAN.





EDWARD J SNIECKUS, JR. LANDSCAPE ARCHITECT **NEW JERSEY LIC. NO. AS000576** Project No. 3287.01 Sheet No. Date 07-15-17 Drawn ACAD File 3287.01 E.J. PONECHOLOSJA. Dwg. Scale I"=30' 2016 COPYRIGHT B/A - NOT TO BE REPRODUCED

Planting Notes

- 1. Broadleaf and Coniferous Evergreen Trees, Shrubs, Vines, and Ground covers shall be planted between August 15th and November 15th and between April 1st and May 30th. Deciduous Trees, Shrubs, Vines, Ground covers and Perennials shall be planted between September 15th and November 15th and March 15th and May 30th. These planting seasons may be extended or shortened according to prevailing weather conditions; or as directed by the
- Quality and size of plants, spread of roots and size of root balls shall be in accordance with the latest "American Standards for Nursery Stock" as published by the American
- 3. GUARANTEE OF PLANT GROWTH: All plants and
- trees shall be guaranteed by the Contractor to be in vigorous growing condition. Trees shall be guaranteed for a period of at least two years per Ordinance §350—69. Replacement shall be made by the end of the first succeeding planting season.
- 4. All plants shown semi-mature size on plans. The Contractor will examine all field conditions for exact locations of utilities, drainage and irrigation systems and adjust proposed planting accordingly pursuant to
- municipal Landscape Architect approval. The Contractor will notify the Landscape Architect in writing of all soil or drainage conditions which the Contractor considers detrimental to the growth of plant material. State condition and submit a proposal for correcting condition if feasible.
- Mulch for planting beds shall be double shredded bark mulch unless otherwise specified on the plans and shall have no leaves, young green growth, branches, twigs greater than 1/2", weeds, shavings or foreign material such as stones, etc..
- 8. Water applied to seeded or sodded areas; plants or planted areas shall be free from impurities injurious to vegetation and applied at a rate of five gallons of water per square
- If plant availability is restricted, substitutions may be made within plant type to maintain similar growth and ornamental qualities upon notification and approval by the Landscape
- Árchitect and municipal Landscape Architect. 10. The staking out of all retaining walls, walkways, patio/deck surfaces, utility, irrigation and plantings will be inspected by the Landscape Architect prior to installation.
- Areas disturbed by landscape operations shall be graded to match existing. Topsoil and seed as required. Plant locations are diagrammatic and may be adjusted to field conditions pursuant to municipal Landscape
- Architect approval.
- Protective fencing for trees to remain shall be placed 10' from the base of the trees and are to remain for the duration of construction.
- 14. Do not fill within 10' of trees to remain. All required site triangle easements shall be maintained as required by municipal ordinances.
- 16. Tree guards shall be placed around all installed trees until established to prevent deer damage. Shrubs are to be planted in continuous beds rather than individual pits.
- All topsoil used in planting shall either come from on—site sources or, if imported shall comply with Bergen County Soil Conservation District specifications.

Turf Specifications

Crown drip line or other limit of Tree Protection area. See

tree preservation plan for fence alignment.

- Mixture to be: Turf areas seed mix shall be Formula III (Grand Prix) from National Seed, New Brunswick NJ, or approved equal. 30% Aruba Red Fescue 20% Ambrose Chewings Fescue 20% Paragon GLR Perennial Ryegrass
- 2. Sod turf composition, if specified, shall match seed specification

20% Viking or Nordic Hard Fescue 10% Freedom III Kentucky Bluegrass Seeding rate shall be 215 lbs per acre

as close as possible.

1- See specifications for additional tree

2- If there is no existing irrigation, see

3- No pruning shall be performed except

4- No equipment shall operate inside the

protective fencing including during fence

fence: High density

with 3.5" x 1.5"

layer of mulch.

grade with the tree

protection fence

5- See site preparation plan for any

modifications with the Tree Protection

protection requirements.

installation and removal.

unless otherwise indicated on the

- Tacktifier shall be hydro-bond or approved equivalent, applied specifications for watering requirements.
 - hydroseeder which recirculates the slurry shall not be acceptable, due to the reduction in seed viability.

 - Seeding Care Post Hydroseeding
 - installed at 8' o.c. It is the responsibility of the seeding installer for maintaining newly seeded turf grass areas of the project limits. The responsibility shall be at least 30 days after complete seeding has occurred or at the time which the completed project is accepted by the owner, which ever is greater. This may be adjusted under separate - 2" x 6' steel posts or approved equal. agreement with owner.
 - After completion of seeding operations the seeded turf areas shall be irrigated with 1/2 to 1 1/2 inches of water to a depth of 4 inches. After this initial watering the seeded turf areas shall be irrigated 1—2 times per day with enough water to maintain a satisfactory moisture level so that the seed are does not dry out to damage the germinating seeds (approximately to The to zoThe of an inch of water).
 - This commixture condition shall be maintained in this favorable condition for seed growth until a minimum of 75% of the seed have germinated and grown to $\frac{1}{2}$ an inch in height. Sufficient time shall be allowed for germination of the various seed types
 - establishment with as much as $\frac{1}{2}$ inch of rainfall or irrigation. The soil surface should be allowed to dry between irrigation periods. This is to be continued until the grass is grown to a height of 2

NOT TO SCALE

Turf Grass Soil Preparation

ange between pH 5.5 and 7.0

- Topsoil minimum depth to be 3" consisting of screened fertile,friable,natural topsoil of a loamy character,without admixtures of subsoil, obtained from a well drained arable site, reasonably free from clay, lumps, coarse sand, stones, plant roots, sticks and other foreign materials, with acidity
- Apply 10-20-10 Fertilizer at a rate of 11 lbs/1000 s.f. Apply Dolomitic Limestone at a rate of 135 lbs/100 s.f. Work into the top 3/4 inch of the top soil.

 These general specifications should be adjusted in accordance
- with soil testing performed of the top soil installed Seed mix shall be fresh, clean, new crop seed with guaranteed
- 4. Finished top soil grade shall be free of acidic marl, sticks,
- 5. Areas which have been compacted shall be tilled friable prior Seeding shall be performed between March 15 and May 30 or August 15 and October 15. These planting seasons may be extended or shortened according to prevailing weather conditions; or as directed by the project Landscape Architect.

Sod Placement 1. All areas designated on the plan shall be sodded with freshly

to the laying of the sod.

- 2. Sod strips shall be placed parallel to the contour of the ground, beginning at the toe of the slope. During periods of high temperature the soil shall be lightly irrigated prior
- 3. Sod strip joints shall be placed with snug even joints which
- 4. Sod shall be rolled or tamped immediately to ensure proper root
- Sod shall be irrigated immediately following installation until water penetrates the soil surface to a minimum depth of 4". Optimum moisture to be maintained for a period of two weeks and shall be the responsibility of the installation contractor or approved

Tree Protection

1. REFER TO STANDARDS IN GENERAL SPECIFICATIONS FOR TREE PROTECTION. 2. DIAMETER OF PROTECTION ZONE SHOULD BE ONE FOOT FOR EACH INCH OF TRUNK DIAMETER BREAST HEIGHT OR 1/2 HEIGHT OF TREE, WHICHEVER IS GREATER. FOR 2—INCH CALIPER TREES OR SMALLER, THE PROTECTION ZONE SHALL BE 6 FOOT MINIMUM DIAMETER. 3. DEAD TREES, SCRUB, OR UNDERGROWTH SHALL BE CUT FLUSH WITH ADJACENT GRADE. THERE WILL BE NO SOIL DISTURBANCE UNDER THE DRIP LINE OF TREES TO BE PRESERVED. 4. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION: FOR ROOTS OVER 1 INCH IN DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHOULD BE TEMPORARILY COVERED WITH DAMP BURLAP AND COVERED WITH SOIL OR MULCH AS SOON AS POSSIBLE TO PREVENT DRYING. 5. FOR PRUNING GUIDELINES, SEE ANSI #300. 6. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, STORAGE OR DEPOSITION OF ANY LIQUID OTHER THAN CLEAN WATER IS ALLOWED WITHIN THE LIMIT OF THE FENCING.

Hydroseeding

- All disturbed areas, except those to be sodded shall be
- 2. Seed mix shall be fresh, clean, new crop seed with guaranteed
- Mulch shall consist of elongated virgin wood cellulose material. The material shall be non toxic to plants and animals upon contact and shall contain a green color sufficient to provide a definite color contrast with the ground surface for metering purposes. It shall be provided in uniform moisture resistant packages. If hydro—mulch is used, rate of application is 1500 lbs/acre.
- Hydroseeding shall be applied in a homogeneous slurry. Use of a
- All bare spots larger than 1 foot in diameter and areas of less than 70% grass growth, in the opinion of the Municipal reviewing official or Landscape architect shall be reseeded. Areas to be reseeded shall be hand raked to scarify the soil surfaces, and seed shall be applied by cyclone spreader.
- seed mix SA#1or #2 and SSM shall use Profile Products LLC CocoFlex ET FGM mulch as a hydroseed slurry or approved equal to insure slope retention. Install to manufacturers specifications for intended location
- orange. Steel posts

 - 9. the seed bed shall be irrigated every 3 days after seed

NATIVE PLANTS PER PONDING DEPTH LANDSCAPE PLAN LP-BERM: SEE GRADING 3H:1V SIDE SLOPEŠ, TPP-RIM EL=TBD IN FIELD COMPACTED ∕STRUCTURAL FILI ADJACEN' / GRADE ²2-3" MULCH EXCAVATE AT STABLE SLOPE ANGLE FOR NATIVE SOIL 18" AMENDED ~AREA DRAIN PLANTING SOIL TF REQ'D:NON-PERFORATED MIN SUMP DEPTI OVERFLOW PIPE TO COMPACTED NATIVE SUBGRADE APPROVED DISPOSAL POINT $^{\searrow}$ 3" LAYER OF 3 " CLEAN GRAVEL

INFILTRATION RAIN GARDEN WITH PLANTING SOIL NOTES

DESIGN NOTES:

PLANT MATERIAL SHALL CONSIST OF A MIX OF REGIONALLY NATIVE PLUGS AND SEED MIX AS PRESCRIBED ON LANDSCAPE PLAN SHEET LP-1. PLANT MATERIAL QUANTITIES SHALL BE SUFFICIENT TO FULLY COVER THE DESIGN AREA SUBJECT TO FINAL BASIN REFINEMENT AND GRADING NATIVE PLANT MATERIAL FOR EACH PRESCRIBED ZONE SHALL FALL WITHIN THE SUITABLE WETLAND INDICATOR CLASSIFICATION OF OBL, FACW, AND/OR FAC.

CONSTRUCTION NOTES:

- BUILD AND VEGETATE RAIN GARDEN AS EARLY AS POSSIBLE TO ESTABLISH PLANTINGS BEFORE DIRECTING STORMWATER RUNOFF TO IT OR DIVERT STORMWATER AROUND FACILITY PREFERABLY, THIS PERIOD WILL LAST A MINIMUM OF 3 MONTHS OR PER LANDSCAPE ARCHITECT'S
- DIRECTION. INFILTRATION AREAS (THE AREA OF THE RAIN GARDEN AS DEFINED BY THE TOP ELEVATION OF THE FACILITY) SHALL BE FENCED OFF FROM THE FIRST DAY OF EARTH MOVING UNTIL PROJECT COMPLETION TO PREVENT COMPACTION OF THE SUBGRADE, DIRT TRACKING ONTO ANY LAYER OF
- THE FACILITY AND STOCKPILING OF CONSTRUCTION MATERIALS THAT MAY CLOG THE SURFACE. DURING EXCAVATION OF NATIVE SOILS TO THE BOTTOM OF THE FACILITY, RAINFALL MAY CAUSE FINES TO CLOG THE SURFACE OF THE FACILITY. IF THE NATIVE SOIL HAS BEEN EXPOSED TO RAINFALL. HAND RAKE THE SURFACE TO A DEPTH OF 3" TO RESTORE INFILTRATION CAPACITY . CALL THE LANDSCAPE ARCHITECT, BURGIS ASSOCIATES AT 201-666-1811 24 HOURS IN ADVANCE OF CONSTRUCTING THIS FACILITY SO CONSTRUCTION OBSERVATION MAY BE PERFORMED TO IDENTIFY VARIATIONS IN THE FIELD THAT MAY AFFECT DESIGN AND VERIFY PROPER
- 5. DURING AREA DRAIN INSTALLATION, DISTURBANCE OF NATIVE SOILS SHALL BE MINIMIZED. AMENDED PLANTING SOIL MIX SPECIFICATIONS:
- AMENDED PLANTING SOIL MIX SHALL HAVE THE FOLLOWING CHARACTERISTICS: a. 60% LOAMY SAND AND 40% COMPOST.
- b. ORGANIC CONTENT MATTER FROM 8-10% BY WEIGHT c. CATION EXCHANGE CAPACITY (CEC) GREATER THAN OR EQUAL TO 5 MILLIEQUIVALENTS/100 GRAMS OF DRY SOIL
- d. 2-5% MINERAL FINES CONTENT e. US STANDARD PERCENT
- SIEVE SIZE PASSING 75-90
- 25-40 #100
- f. MINIMUM LONG-TERM HYDRAULIC CONDUCTIVITY OF 1 INCH/HOUR PER ASTM D2434 AT 85% COMPACTION PER ASTM D 1557. g. MAXIMUM IMMEDIATE HYDRAULIC CONDUCTIVITY OF 12 INCHES/HOUR.
- SOL AMENDMENTS WILL BE SUBJECT TO ON-SITE TESTS FOR INFILTRATION AND TEXTURE AT THE LOCATION FOR THE RAIN GARDEN. TESTING OF THE BASIN SHALL BE PROVIDED BY THE INSTALLATION CONTRACTOR TO CONFIRM THESE REQUIREMENTS HAVE BEEN MET PRIOR TO
- NATIVE SOILS AND MIXING MATERIALS FROM QUALITY LOCALLY-SOURCED OFF-SITE LOCATIONS AS NEEDED TO ACHIEVE THE CHARACTERISTICS DESCRIBED IN NOTE 1 ABOVE MAY BE
- AMENDED PLANTING SOIL MIX SHOULD BE UNIFORMLY MIXED WITH A SOIL MIXER. PLACEMENT OF AMENDED PLANTING SOIL MIX SHALL OCCUR PER THE FOLLOWING GUIDELINES: a. PLACE SOIL IN 12" LIFTS, KEEPING MACHINERY OUTSIDE OF INFILTRATION AREA. DO NOT PLACE SOILS IF SATURATE
- c. COMPACT EACH LIFT WITH WATER OR BOOT PACKING UNTIL JUST SATURATED TO 85% COMPACTION. DO NOT COMPACT WITH HEAVY MACHINERY OR VIBRATORY COMPACTION. . IF THE SOIL IS COMPACTED THE ENTIRE AREA TO RECEIVE THE RAIN GARDEN SHOULD BE AMENDED BY A LIFT AND DROP METHOD WITH MACHINERY OR ROTOR TILLED TO IMPROVE INFILTRATION TO A DEPTH NECESSARY TO MEET THE INFILTRATION RATE REQUIRED FOR THE ENTIRE BASIN TO DRAIN WITHIN A 48-HOUR PERIOD.
- SOIL MIXTURE SHALL BE UNIFORM, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS SHALL BE MIXED OR DUMPED WITHIN THE AREA THAT MAY BE HARMFUL TO PLANT GROWTH AND/OR MAINTENANCE. THE MIXTURE ${\sf SHALL}\ {\sf BE}\ {\sf FREE}\ {\sf OF}\ {\sf BERMUDA}\ {\sf GRASS}, {\sf QUACKGRASS}, {\sf JOHNSON}\ {\sf GRASS}, {\sf MUGWORT}, {\sf MUTSEDGE},$ POISON IVY, CANADIAN THISTLE, TEARTHUMB, OR OTHER NOXIOUS WEEDS. AVOID

OVER-COMPACTION OF RAIN GARDEN BASIN SOILS DURING CONSTRUCTION. FERTILIZER: NONE

PLANT INSTALLATION:

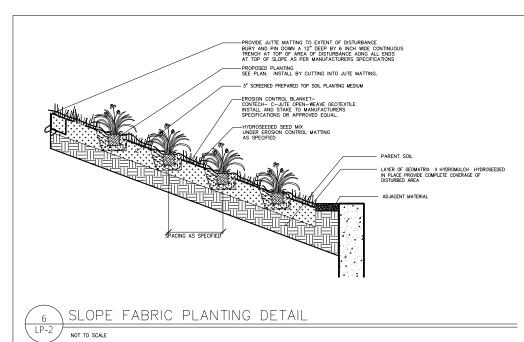
- SHRUB PLANTING PITS SHALL BE 6" WIDER THAN THE DIAMETER OF THE ROOT BALL.
- 2. PLACE 2" LAYER DOUBLE-SHREDDED, WELL-AGED HARDWOOD MULCH.

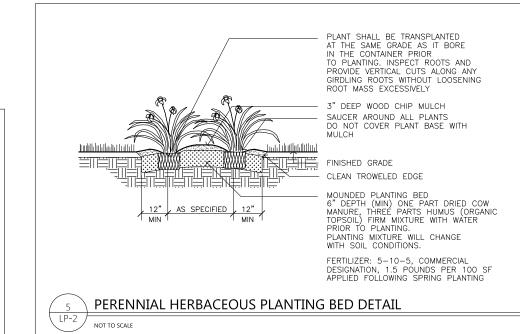
 5. INSTALL BIODEGRADABLE EROSION CONTROL NETTING PER MANUFACTURERS DIRECTIONS. CUT HOLES & INSTALL PLANT PLUGS THROUGH NETTING & MULCH. THOROUGHLY WATER ONCE INSTALLATION IS COMPLETE.
- 7 INFILTRATION RAIN GARDEN DETAIL AND NOTES

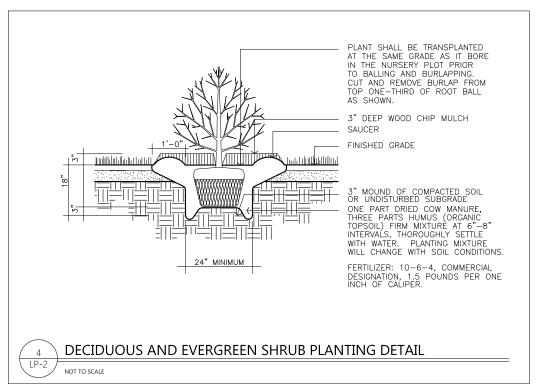
NOTES: TYPICAL TREE PLANTING ON SLOPE

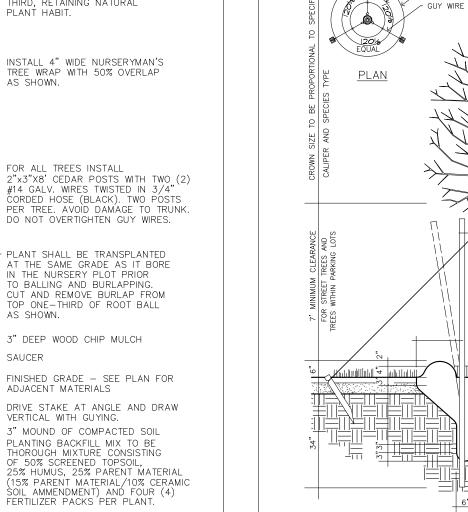
1. ALL PLANT MATERIALS SHALL BE IN ACCORDANCE WITH THE AMERICAN STANDARDS FOR NURSERY STOCK (ANSI Z60.1-2004). PLANT ACCORDING TO ANSI A300 PART 6. 2. DIG THE PLANTING HOLE A MINIMUM OF 2x WIDTH OF ROOTBALL FOR AT LEAST THE FIRST 12 INCHES OF DEPTH. BELOW 12 INCHES, DIG HOLE WIDE ENOUGH TO PERMIT ADJUSTING. DO NOT DIG THE HOLE DEEPER THAN ROOT BALL DEPTH. 3. SCARIFY THE SUBGRADE AND SIDES OF THE PLANTING HOLE WHEN PLANTING IN CLAY SOILS (MORE THAN 15% CLAY).

- 4. LIFT AND SET THE TREE BY ROOT BALL ONLY. DO NOT LIFT USING THE TREE TRUNK AND DO NOT USE TREE TRUNK AS A LEVER. 5. SET THE TOP OF THE ROOT BALL LEVEL WITH THE SOIL SURFACE OR SLIGHTLY
- HIGHER IF THE SOIL IS PRONE TO SETTLING 6. AFTER THE TREE IS SET IN PLACE, REMOVE BURLAP, WIRE AND STRAPS FROM AT LEAST THE UPPER 1/3 OF THE ROOTBALL.
- 7. BACKFILL WITH EXISTING SOIL THAT HAS BEEN WELL-TILLED OR BROKEN UP. DO NOT ADD AMENDMENTS TO THE BACKFILL SOIL. AMEND THE SURFACE WITH MULCH. 8. USE THREE 2" X 2" WOOD STAKES DRIVEN INTO UNDISTURBED SOIL A MINIMUM OF 16 INCHES. SPACE STAKES EQUALLY AROUND THE TREE. 9. ATTACH 3/4" NYLON WEBBING TO CONNECT THE TREE TO STAKES. ATTACH WEBBING
- AT 1/3 THE TREE HEIGHT. 10. APPLY A 2-3" (SETTLED) DEPTH OF PINE STRAW OR BARK MULCH TO THE PLANTING SURFACE. LEAVE A 2" SPACE AROUND THE TRUNK FOR AIR CIRCULATION. 11. PRUNING SHALL BE LIMITED TO DEAD, DISEASED, OR BROKEN LIMBS ONLY AND SHALL
- BE IN ACCORDANCE WITH ANSI A300 SPECIFICATIONS. 12. REMOVE ANY TRUNK WRAP REMAINING AT TIME OF PLANTING. NO WRAPS SHALL BE PLACED ON TRUNK.









PROTECTION

AREA

8 TREE PROTECTION
LP-2 NOT TO SCALE

laminated in

every 50'

plastic spaced

NEVER CUT LEADER

AS SHOWN.

AS SHOWN.

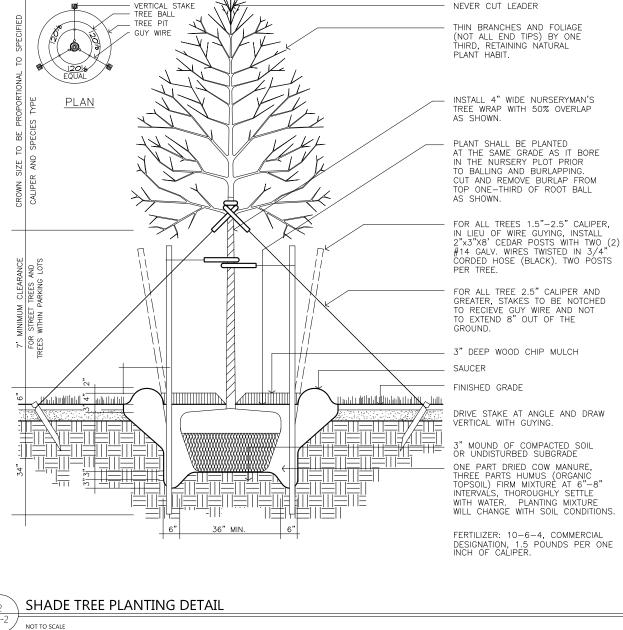
MULTISTEM TREE PLANTING DETAIL

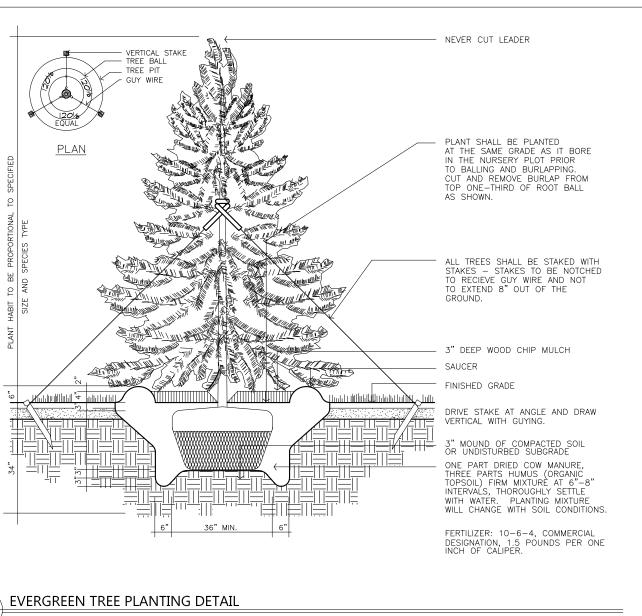
NOT TO SCALE

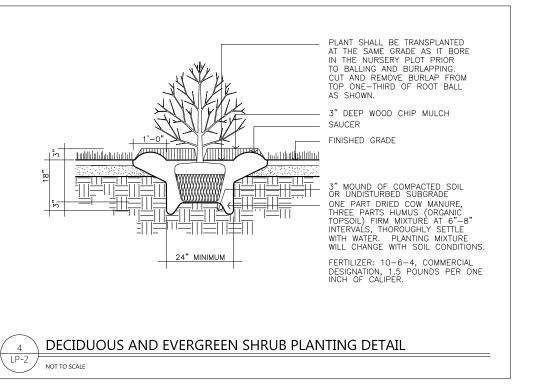
(NOT ALL END TIPS) BY ONE THIRD, RETAINING NATURAL

FOR ALL TREES INSTALL

3" DEEP WOOD CHIP MULCH









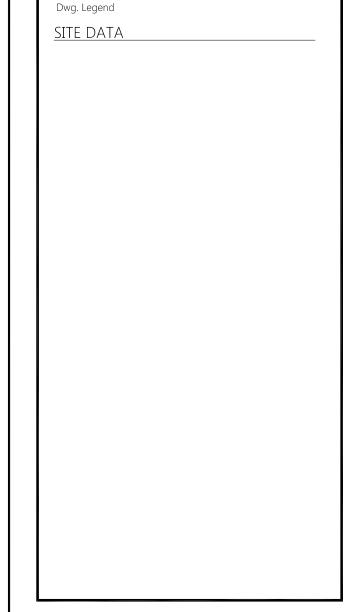
LANDSCAPE ARCHITECTURE 25 Westwood Avenue f: (201) 666-2599 Westwood, New Jersev 07675

Project Title Kinnelon

Community Center

Borough of Kinnelon, New Jersey

Scale NOT TO SCALE





Graphic Scale

LANDSCAPE ARCHITECT NEW JERSEY LIC. NO. AS000576 Project No. 3287.01 2 of 2 7-15-17 ES/es ACAD File e.l. whechelogie Dwg. Scale As Shown

EDWARD J SNIECKUS, JR.

2016 COPYRIGHT B/A - NOT TO BE REPRODUCED