



**Town of Groveland**  
**Economic Development**  
**Planning & Conservation Department**  
**Planning Board**  
 183 Main Street  
 Groveland, MA 01834

*Brad Ligols, Chair*  
*Walter Sorenson, Vice-Chair*  
*Chris Goodwin*  
*John Stokes III*  
*DJ McNulty*  
*Jason Naves, Associate Member*

**MEETING NOTICE**  
 (M.G.L Chapter 30A Sections 18-25)

Board/Committee Name: PLANNING BOARD  
 Date: TUESDAY, February 6, 2024  
 Time of Meeting: 7:00 PM  
 Location: Town Hall 183 Main Street  
 Groveland, MA 01834  
 Signature: *Annie Schindler*

**AGENDA**

*Join Zoom Meeting*  
 Meeting ID: 939 9517 4414  
 Passcode: 948618

*For discussion and possible vote:*  
**PUBLIC HEARING**

**NEW PROPOSED ZONING BYLAW CHANGES:** Pursuant to M.G.L. Ch.40A, Section 5 to consider amendments and additions to the Zoning Bylaw as follows:

- 1) Addition of a Battery Energy Storage System section to Article 7, Special Use Regulations.
- 2) Addition of a section to Article 13, Section 2(A) Applicability for Site Plan Review, to require a site plan review for Battery Energy Storage Systems.

**HOMESTEAD LANE:** 30-foot no cut zone issue along Cannon Hill Ave.

**929 – 931 SALEM STREET:** Review of vault storage plans.

**142 KING STREET:** Close escrow account from initial application.

**TOWN PLANNER UPDATE**

**OTHER ITEMS NOT REASONABLE ANTICIPATED AT TIME OF POSTING**

**NEXT MEETING** February 20, 2024

**ADJOURNMENT**

Revised on 1-30-2024 to include agenda item "142 King Street".

TOWN OF GROVELAND  
 2024 JAN 30 PM 1:39  
 TOWN CLERK  
 RECEIVED/POSTED

**Town of Groveland**  
**Planning Board**  
183 Main Street  
Groveland, MA 01834



TOWN OF GROVELAND  
2024 JAN 16 PM 12:22  
PAID  
TAX COLLECTOR

### **Legal Notice**

Notice to run in the Eagle Tribune on January 22, 2024, and January 39, 2024.

The Groveland Planning Board will hold a public hearing on Tuesday, February 6, 2024, at 183 Main St, Groveland beginning at 7:00 p.m., pursuant to M.G.L. Ch.40A, Section 5 to consider amendments and additions to the Zoning Bylaw as follows:

- 1) Addition of a Battery Energy Storage System section to Article 7, Special Use Regulations.
- 2) Addition of a section to Article 13, Section 2(A) Applicability for Site Plan Review, to require a site plan review for Battery Energy Storage Systems.

For questions or to view the materials contact [aschindler@grovelandma.com](mailto:aschindler@grovelandma.com). Texts of the proposed amendments are on file and can be viewed at the Economic Development, Planning and Conservation Department Monday – Thursday 8AM-3PM 183 Main Street Groveland, MA 01834.

ARTICLE XX: To see if the Town will vote to add the following language to the Groveland Zoning Bylaws Article 7 to allow for Battery Energy Storage Systems:

## **BATTERY ENERGY STORAGE SYSTEMS**

### **A. Purpose**

The purpose of this Section is to advance and protect the public health, safety, welfare, and quality of life by creating regulations for the installation and use of battery energy storage systems, with the following objectives:

1. To provide a regulatory scheme for the location, construction and operation of battery energy storage systems consistent with best practices and safety protocols;
2. To ensure compatible land uses in the vicinity of the areas affected by battery energy storage systems and to mitigate any potential impacts on abutting and nearby properties; and
3. To mitigate the impacts of battery energy storage systems on environmental resources such as agricultural lands, forests, wildlife, wetlands, aquifer, and other natural resources.

This Section shall be construed to be consistent with state law, including but not limited to the provisions of General Laws chapter 40A, section 3, and state regulations, including but not limited to the provisions of the State Building Code, State Fire Code, and State Electrical Code. In the event of any conflict between the provisions of this section and the provisions of state law or regulations, the state law and regulations shall prevail.

### **B. Definitions**

As used in this bylaw, the following terms shall have the meanings indicated. Terms that are not defined herein or elsewhere in this Zoning Bylaw shall be as defined in NFPA 855 if applicable.

ANSI: American National Standards Institute

BATTERY OR BATTERIES: A single cell or a group of cells connected together electrically in series, in parallel, or a combination of both, which can charge, discharge, and store energy electrochemically. For the purposes of this bylaw, batteries utilized in consumer products are excluded from these requirements.

BATTERY ENERGY STORAGE MANAGEMENT SYSTEM (BESS): An electronic system that protects energy storage systems from operating outside their safe operating parameters and disconnects electrical power to the energy storage system or places it in a safe condition if potentially hazardous temperatures or other conditions are detected.

CELL: The basic electrochemical unit, characterized by an anode and a cathode, used to receive, store, and deliver electrical energy.

COMMISSIONING: A systematic process that provides documented confirmation that a battery energy storage system functions according to the intended design criteria and complies with applicable code requirements.

DEDICATED-USE BUILDING: A building that is built for the primary intention of housing battery energy storage system equipment, and complies with the following:

1. The building's only use is battery energy storage, energy generation, and other electrical grid-related operations.
2. No other occupancy types are permitted in the building.
3. Occupants in the rooms and areas containing battery energy storage systems are limited to personnel that operate, maintain, service, test, and repair the battery energy storage system and other energy systems.
4. Administrative and support personnel are permitted in areas within the buildings that do not contain battery energy storage system, provided the following:
  - a. The areas do not occupy more than 10 percent of the building area of the story in which they are located.
  - b. A means of egress is provided from the administrative and support use areas to the public way that does not require occupants to traverse through areas containing battery energy storage systems or other energy system equipment.

**NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL):** A U.S. Department of Labor designation recognizing a private sector organization to perform certification for certain products to ensure that they meet the requirements of both the construction and general industry OSHA electrical standards.

**NFPA:** National Fire Protection Association.

**NON-DEDICATED-USE BUILDING:** All buildings that contain a battery energy storage system and do not comply with the dedicated-use building requirements.

**NON-PARTICIPATING PROPERTY:** Any property that is not a participating property.

**NON-PARTICIPATING RESIDENCE:** Any residence located on non-participating property.

**PARTICIPATING PROPERTY:** A battery energy storage system host property or any real property that is the subject of an agreement that provides for the payment of monetary compensation to the landowner from the battery energy storage system owner (or affiliate) regardless of whether any part of a battery energy storage system is constructed on the property.

**THIS BYLAW:** Section 8.12 of the Zoning Bylaw

**UL:** Underwriters Laboratory

### **C. Applicability**

1. The requirements of this bylaw shall apply to battery energy storage systems permitted, installed, decommissioned or modified after the effective date of this bylaw, excluding general maintenance and repair. BESS subject to this bylaw are only those that exceed the following capacities:
  - Lead-acid with a capacity of greater than 70 kWh
  - Nickel with a capacity of greater than 70 kWh
  - Lithium-ion with a capacity of greater than 30 kWh

- Sodium nickel chloride with a capacity of greater than 20 kWh
- Flow with a capacity of greater than 20 kWh
- Other battery technologies with a capacity of greater than 10 kWh

BESS that do not exceed the threshold capacities above are not subject to this bylaw and are allowed by right in all zoning districts.

2. A battery energy storage system that is subject to this bylaw is classified as a Tier 1 or Tier 2 Battery Energy Storage System as follows:

- a) Tier 1 Battery Energy Storage Systems having an aggregate energy capacity less than or equal to 1MWh and, if in a room or enclosed area, consist of only a single energy storage system technology.
- b) Tier 2 Battery Energy Storage Systems having an aggregate energy capacity greater than 1MWh or are comprised of more than one storage battery technology in a room or enclosed area.
- c) Modifications to, retrofits or replacements of an existing battery energy storage system that increase the total battery energy storage system designed discharge or power rating shall be subject to this bylaw.

**D. General Requirements**

1. All permits required by state codes, including but not limited to building permit, an electrical permit, and a fire department permit shall be required for installation of all battery energy storage systems.

2. All battery energy storage systems, all Dedicated Use Buildings, and all other buildings or structures that (a) contain or are otherwise associated with a battery energy storage system and (b) subject to the requirements of the State Building Code, shall be designed, erected, and installed in accordance with all applicable provisions of the State Building Code 780 CMR, State Fire Code 527 CMR 1.00, and State Electrical Code 527 CMR 12.00. All battery energy storage systems shall comply with NFPA 855, Standard for the Installation of Stationary Energy Storage Systems.

3. Energy storage system capacities, including array capacity and separation, are limited to the thresholds contained in NFPA 855.

4. All access roads should be at least 12' wide, constructed of an all-weather surface, an area for vehicular use and/or parking area that shall be surfaced with either asphalt, concrete, chip seal, graded and compacted gravel, or other stabilized system approved by the Groveland Fire Department, and be cleared of all obstructions on both sides by at least 2'. A 16" vertical clearance shall be maintained for large vehicle access. Access gates erected on site shall be a minimum of 12' wide, accessible via Groveland Fire Department emergency access key system. Access to all sides of each enclosure shall be provided where practical.

**E. Permitting Requirements for Tier 1 Battery Energy Storage Systems**

Tier 1 Battery Energy Storage Systems are allowed by right in all zoning districts, subject to applicable provisions of the State Building Code, Electrical Code, Fire Code, and other applicable codes, and are subject to minor site plan review and such provisions of this bylaw as are applicable.

#### **F. Permitting Requirements for Tier 2 Battery Energy Storage Systems**

Tier 2 Battery Energy Storage Systems are subject to this bylaw and require the issuance of a special permit in all zoning districts. Tier 1 and Tier 2 BESS shall comply with the applicable requirements set forth in this bylaw, as well as this Zoning Bylaw, and the Groveland General Bylaws. The following requirements apply to all Tier 1 and Tier 2 BESS subject to this bylaw, except where it is specifically noted to apply only to Tier 2 BESS:

1. **Utility Lines and Electrical Circuitry.** All on-site utility lines shall be placed underground to the extent feasible and as permitted by the serving utility, with the exception of the main service connection at the utility company right-of-way and any new interconnection equipment, including without limitation any poles.
2. **Signage.** Signage shall comply with the requirements of Section 11 of this Zoning Bylaw and the following additional requirements; in the event of a conflict between the provisions of Section 11 and this section, the requirements of this section shall prevail.
  - a) The signage shall be in compliance with ANSI Z535 and shall include the type of technology associated with the battery energy storage systems, any special hazards associated, the type of suppression system installed in the area of battery energy storage systems, and 24-hour emergency contact information, including reach-back phone number.
  - b) As required by the state electrical code, disconnect and other emergency shutoff information shall be clearly displayed on a light reflective surface. A clearly visible warning sign concerning voltage shall be placed at the base of all pad-mounted transformers and substations.
  - c) Signage compliant with ANSI Z535 shall be provided on doors to rooms, entrances to BESS facilities, and on BESS outdoor containers.
3. **Lighting.** Lighting of the battery energy storage system shall be limited to that minimally required for safety, security and operational purposes and shall be consistent with local, state and federal law. Lighting of other parts of the installation, such as appurtenant structures, shall be limited to that required for safety and operational purposes, shall be shielded to eliminate glare from abutting properties and shall be directed downward to reduce light pollution.
4. **Vegetation and tree-cutting.** Areas within ten feet on each side of Tier 2 Battery Energy Storage Systems shall be cleared of combustible vegetation and other combustible growth. Single specimens of trees, shrubbery, or cultivated ground cover such as green grass, ivy, succulents, or similar plants used as ground covers shall be permitted provided that they do not form a means of readily transmitting fire. Removal of trees should be minimized to the extent possible.
6. **Setbacks.** Tier 2 Battery Energy Storage Systems shall be set back a minimum of 50 feet from all side, rear, and front lot lines; except that Tier 2 BESS shall be set back a minimum of 100 feet from side, rear, and front lot lines that abut or are across a street from residential zoning districts or existing single, two-family, or multi-family structures. The minimum setback areas shall include a buffer area at least fifteen feet wide along all property lines that will limit visual impacts and be consistent with

neighborhood characteristics. Access drives and parking are allowed in the setback areas but shall not intrude into the required buffer areas except where necessary to provide access or egress to the property. In addition, a minimum of 10 feet must be maintained between BESS components and all buildings, stored combustible materials, hazardous materials, high-piled storage, personnel means of egress, and other exposure hazards not associated with electrical grid infrastructure.

7. Dimensional. Tier 2 Battery Energy Storage Systems shall comply with the dimensional limitations for principal structures of the underlying zoning district as provided in Section 8 of this Zoning Bylaw, unless otherwise provided in this bylaw.

8. Fencing Requirements. Tier 2 Battery Energy Storage Systems, including all mechanical equipment, shall be enclosed by a minimum eight foot high fence with locking gate to prevent unauthorized access unless housed in a dedicated-use building. Security barriers, fences, landscaping, and other enclosures must not inhibit required air flow to or exhaust from the BESS and components. Electrical equipment greater than 1,000V require a separate and additional means to restrict access. NFPA 855 requires specialty safety systems to be provided based on the BESS chemistry and installed location.

9. Screening and Visibility. Tier 2 Battery Energy Storage Systems shall have views minimized from adjacent properties to the extent reasonably practicable using architectural features, earth berms, landscaping, or other screening methods that will harmonize with the character of the property and surrounding area. Such features may not inhibit required air flow to or exhaust from the BESS and components and must comply with the setbacks established in paragraph 6 above.

10. Mitigation for Loss of Carbon Sequestration and Forest Habitat. If land that is Forestland or has been Forestland within one year immediately preceding the filing an application to install a Tier 2 BESS, the plans shall designate thereon an area of unprotected (meaning, not subject to G.L. c. 184, sections 31-33 at time of application) land on the same lot and of a size equal to two times the total area of Forestland that will be eliminated, cut, destroyed, or otherwise disturbed by such installation. Such designated land shall remain in substantially its natural condition without alteration, including prohibition of commercial forestry or tree cutting not related to the maintenance of the installation, until such time as the installation is decommissioned; except in response to a natural occurrence, invasive species or disease that impacts the trees and requires cutting to preserve the health of the forest.

11. Mitigation for Disruption of Trail Networks. If existing trail networks, old roads, or woods or cart roads are disrupted by the location of a Tier 2 BESS, the plans shall show alternative trail alignments to be constructed by the applicant, although no rights of public access may be established hereunder.

12. Mitigation for Disruption of Historic Resources and Properties. Historic resources, structures and properties, such as cellar holes, farmsteads, stone corrals, marked graves, water wells, or pre-Columbian features, including those listed on the Massachusetts Register of Historic Places or as defined by the National Historic Preservation Act, shall be excluded from the areas proposed to be developed for a Tier 2 BESS. A written assessment of the project's effects on each identified historic resource or property and ways to avoid, minimize or mitigate any adverse effects shall be submitted as part of the application. A suitable buffer area as determined by the PEDB shall be established on all sides of each historic resource.

13. Batteries. Failed battery cells and modules shall not be stored on the site and shall be removed no later than 30 days after deemed failed by the BESS operator or cell/module manufacturer. The operator shall notify the Groveland Fire Chief and Groveland Building Commissioner in advance if the type of battery or batteries used onsite is to be changed.

14. Decommissioning Plan. The applicant shall submit with its application a decommissioning plan for Tier 2 BESS to be implemented upon abandonment and/or in conjunction with removal of the facility. The owner or operator of the BESS shall notify the Building Commissioner, Groveland Municipal Light Department and Groveland Fire Chief in writing at least twenty days prior to when a Tier 2 BESS will be decommissioned. Decommissioning of an abandoned or discontinued Tier 2 BESS shall be completed within six months after the facility ceases operation. The decommissioning plan shall include:

- a. A narrative description of the activities to be accomplished, including who will perform that activity and at what point in time, for complete physical removal of all battery energy storage system components, structures, equipment, security barriers, and transmission lines from the site;
- b. Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations;
- c. The anticipated life of the battery energy storage system;
- d. The estimated decommissioning costs and how said estimate was determined;
- e. The method of ensuring that funds will be available for decommissioning and restoration;
- f. The method by which the decommissioning cost will be kept current;
- g. The manner in which the site will be restored, including a description of how any changes to the surrounding areas and other systems adjacent to the battery energy storage system, such as, but not limited to, structural elements, building penetrations, means of egress, and required fire detection suppression systems, will be protected during decommissioning and confirmed as being acceptable after the system is removed; and
- h. A listing of any contingencies for removing an intact operational energy storage system from service, and for removing an energy storage system from service that has been damaged by a fire or other event.

15. Decommissioning Fund. The owner and/or operator of the energy storage system, shall continuously maintain a fund or other surety acceptable to the Town, in a form approved by the Planning Board and Town Counsel, for the removal of the battery energy storage system, in an amount to be determined by the Town, for the period of the life of the facility. All costs of the financial security shall be borne by the applicant.

16. Proof of Liability Insurance. The applicant or property owner shall provide evidence of commercially liability insurance in an amount and type generally acceptable in the industry and approved by the Planning Board prior to the issuance of a building permit, and shall continue such insurance in effect until such facility has been decommissioned, removed, and the site restored in accordance with this bylaw.

**G. Battery Energy Storage System Site plan application.**

For a Tier 2 Battery Energy Storage System the site plan application shall include the following information, in addition to that required by Section 3.5 of this Zoning Bylaw and the Planning and Economic Development Board Rules and Regulations Governing Site Plan Applications:



1. A one- or three-line electrical diagram detailing the battery energy storage system layout, associated components, and electrical interconnection methods, with all State Electrical Code compliant disconnects and over current devices.
2. A preliminary equipment specification sheet that documents the proposed battery energy storage system components, inverters and associated electrical equipment that are to be installed. A final equipment specification sheet shall be submitted prior to the issuance of building permit.
3. Name, address, and contact information of proposed or potential system installer and the owner and/or operator of the battery energy storage system. Such information of the final system installer shall be submitted prior to the issuance of building permit.
4. Large-scale fire test data, evaluation information, and calculations, and modeling data. For any of the following, UL 9540A fire test data must be made available to the Planning and Economic Development Board for review:
  - BESS systems with a capacity of greater than 50kWh
  - BESS systems with spacing between arrays of less than 3 feet
  - Safety data sheets (SDS) that address response safety concerns and extinguishment.
5. Commissioning Plan. The system installer or commissioning agent shall prepare a commissioning plan prior to the start of commissioning. Such plan shall be compliant with NFPA 855 and document and verify that the system and its associated controls and safety systems are in proper working condition per requirements set forth in applicable state codes. Where commissioning is required by the Building Code, battery energy storage system commissioning shall be conducted by a Massachusetts Licensed Professional Engineer after the installation is complete but prior to final inspection and approval. A corrective action plan shall be developed for any open or continuing issues that are allowed to be continued after commissioning. A report describing the results of the system commissioning and including the results of the initial acceptance testing required by applicable state codes shall be provided to Zoning Enforcement Officer, Groveland Municipal Light Department and Groveland Fire Department prior to final inspection and approval and maintained at an approved on-site location.
6. Fire Safety Compliance Plan. Such plan shall document and verify that the system and its associated controls and safety systems are in compliance with state codes.
7. Operation and Maintenance Manual. Such plan shall describe continuing battery energy storage system maintenance and property upkeep, as well as design, construction, installation, testing and commissioning information and shall meet all requirements set forth state codes and NFPA 855. Maintenance provisions will be driven by manufacturer requirements for the specific listed system.
8. Depending on the location of the BESS in relation to and its interaction with the electrical grid, interconnection will be completed per 527 CMR 12.00. System interconnections into utility grids shall be in accordance with NFPA 855. An accessible disconnect is required per 527 CMR 12.00.
- 9 Prior to the issuance of the building permit, engineering documents must be signed and sealed by a Massachusetts Licensed Professional Engineer.
10. Emergency Operations Plan. An Emergency Operations Plan compliant with NFPA 855 is required. A copy of the approved Emergency Operations Plan shall be given to the system owner, the local fire department, and local fire code official. For so long as the BESS is operational, the operator

shall provide the Fire Department, Police Department, Building Commissioner, Groveland Municipal Light Department, and Town Administrator's office with contact information for personnel that can be reached 24 hours per day every day, and this contact information shall be updated by the operator whenever there is a change in the information. The operator shall also be required to have an official representative be present onsite not later than two hours after notification by the Fire Chief, Police Chief, or their designee. A permanent copy shall also be placed in an approved location to be accessible to facility personnel, fire code officials, and emergency responders. The emergency operations plan shall include the following information:

- a. Procedures for safe shutdown, de-energizing, or isolation of equipment and systems under emergency conditions to reduce the risk of fire, electric shock, and personal injuries, and for safe start-up following cessation of emergency conditions.
- b. Procedures for inspection and testing of associated alarms, interlocks, and controls, including time intervals for inspection and testing.
- c. Procedures to be followed in response to notifications from the Battery Energy Storage Management System, when provided, that could signify potentially dangerous conditions, including shutting down equipment, summoning service and repair personnel, and providing agreed upon notification to fire department personnel for potentially hazardous conditions in the event of a system failure.
- d. Emergency procedures to be followed in case of fire, explosion, release of liquids or vapors, damage to critical moving parts, or other potentially dangerous conditions. Procedures can include sounding the alarm, notifying the fire department, evacuating personnel, de-energizing equipment, and controlling and extinguishing the fire.
- e. Response considerations similar to a safety data sheet (SDS) that will address response safety concerns and extinguishment when an SDS is not required.
- f. Procedures for safe disposal of battery energy storage system equipment damaged in a fire or other emergency event, including maintaining contact information for personnel qualified to safely remove damaged battery energy storage system equipment from the facility.
- g. Other procedures as determined necessary by the Town to provide for the safety of occupants, neighboring properties, and emergency responders.
- h. Procedures and schedules for conducting drills of these procedures and for training local first responders on the contents of the plan and appropriate response procedures.
- i. Explosion control mitigation plan.
- j. A plan showing the proposed location of the system on the lot.

#### **H. Ownership Changes**

If the owner of the battery energy storage system changes or the owner of the property changes, the special permit shall remain in effect, provided that the successor owner or operator assumes in writing all of the obligations of the special permit, site plan approval, and decommissioning plan. A new owner or operator of the battery energy storage system shall notify the Building Commissioner, Groveland Municipal Light Department and Groveland Fire Department of such change in ownership or operator

within 14 days of the ownership change. A new owner or operator must provide such notification to the Building Commissioner in writing.

## **I. Safety**

1. System Certification. Battery energy storage systems and equipment shall be listed by a Nationally Recognized Testing Laboratory to UL 9540 (Standard for battery energy storage systems and Equipment) or approved equivalent, with subcomponents meeting each of the following standards as applicable:

- a. UL 1973 (Standard for Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail Applications),
- b. UL 1642 (Standard for Lithium Batteries),
- c. UL 1741 or UL 62109 (Inverters and Power Converters),
- d. Certified under the applicable electrical, building, and fire prevention codes as required.
- e. Alternatively, field evaluation by an approved testing laboratory for compliance with UL 9540 (or approved equivalent) and applicable codes, regulations and safety standards may be used to meet system certification requirements.

2. Site Access. Battery energy storage systems shall be maintained in good working order and in accordance with industry standards. Site access shall be maintained, including snow removal at a level acceptable to the local fire department.

3. Battery energy storage systems, components, and associated ancillary equipment shall have required working space clearances, and electrical circuitry shall be within weatherproof enclosures marked with the environmental rating suitable for the type of exposure in compliance with NFPA 70.

## **J. Abandonment**

The battery energy storage system shall be considered abandoned when it ceases to operate consistently for more than six months. If the owner and/or operator fails to comply with decommissioning upon any abandonment, the Town may, after compliance with any applicable state and federal constitutional requirements, enter the property and utilize the available bond and/or security for the removal of a Tier 2 BESS and restoration of the site in accordance with the decommissioning plan.

## **K. Waivers**

Waivers may only be granted for aesthetic items, not health and/or safety requirements.

Reasoning: As technology progresses, BESS are used more frequently, so the Town is seeking to be proactive in allowing for BESS with proper regulations in place to ensure they fit within the needs of Groveland.

ARTICLE XX: To see if the Town will vote to amend its Zoning Bylaws to add Section 50-13.2(A)(5):

(5) Any construction of any new or expanded Battery Energy Storage System as set forth in Section 50-7, Battery Energy Storage Systems, are subject to site plan review under the regulations listed within that section.

Reasoning: Battery Energy Storage Systems require a different set of parameters and regulations than a typical Site Plan Review.

## Annie Schindler

---

**From:** Kelly Pelkey <kellyjpelkey@gmail.com>  
**Sent:** Wednesday, November 8, 2023 12:30 PM  
**To:** Annie Schindler  
**Cc:** Pelkey, Jameson  
**Subject:** Re: 6 Homestead Ln Tree Removal Request  
**Attachments:** WEB17762.pdf

Hi Annie,

I wanted to follow up regarding the Planning Board meeting on 10/30. It was our understanding that Walter would be reaching out to arrange a time to view the trees within the buffer zone. We have not yet heard from him, but we wanted to let you know that a certified arborist came to our property to verify that the trees we are requesting to remove are dead. He identified most as dead Ash Trees from the emerald ash borer as well as one chokecherry tree with a significant lean and decay by the ground. I've attached the quote he provided to show confirmation of his visit. Please let us know if there is anything else we can provide.

Thanks,  
Kelly and Jameson Pelkey

On Wed, Oct 25, 2023 at 2:47 PM Annie Schindler <[ASchindler@grovelandma.com](mailto:ASchindler@grovelandma.com)> wrote:

Thank you for sending this along – I will add it to the Boards meeting packet.

I've attached the letter from the abutter.

Best,

Annie Schindler

Town Planner & Conservation Agent

Town of Groveland | 978.556.7214

*The Secretary of the Commonwealth's Office has determined that most e-mails to and from municipal offices and officials are public records. Consequently, confidentiality should not be expected.*

---

**From:** Kelly Pelkey <[kellyjpelkey@gmail.com](mailto:kellyjpelkey@gmail.com)>  
**Sent:** Wednesday, October 25, 2023 2:28 PM  
**To:** Annie Schindler <[ASchindler@Grovelandma.com](mailto:ASchindler@Grovelandma.com)>  
**Cc:** Pelkey, Jameson <[jpelkey@stjohnsprep.org](mailto:jpelkey@stjohnsprep.org)>  
**Subject:** 6 Homestead Ln Tree Removal Request

Dear Annie,

As outlined in our covenant, we are requesting Planning Board approval for the removal of 12 dead trees in our buffer zone at 6 Homestead Ln. Some of these treetops have snapped during strong winds over the past several months, hitting our home and swing set, and damaging our fence. We have two small children who frequently play in the backyard and feel that it is imperative to remove this dead wood for their safety.

Our request is to remove them at the end of November (between the 24th and 30th). We would not be removing the stumps.

I have attached photos showing the dead trees. Our intention is to preserve the screening between neighbors as well as keep the natural feel of the area.

Thank you for your consideration.

Sincerely,

Jameson and Kelly Pelkey



# Estimate

Cicoria Tree and Crane Services, Inc.  
 30 LP Henderson Road  
 Beverly, MA 01915  
 Office Phone: 978-922-5500  
 info@cicoriatree.com

**Estimate Number:** WEB17762  
**Estimate Date:** 11/03/2023  
**Payment Terms:** Payment 30 days  
 after invoice date  
**Estimate Amount:** 3,500.00  
**Created By:** Mark Cicoria

**Billing Address**  
 Pelkey, Jameson  
 6 Homestead Lane  
 Groveland, MA 01834

**Work Address**  
 Pelkey, Jameson

Item Name	Quantity	Unit Price	Total
1003 Crane 1003 Crane with the crane set up in the driveway. Remove numerous dead ash trees behind the fence. There are about 20 of them. Also remove one choke cherry tree with a significant lean and decay by the ground. Remove all the wood and all the brush, cut the stumps low.	1.00	3,500.00	3,500.00
Consult Consult to the Groveland conservation committee I was called out on Friday, November 3 to inspect the property at 6 Homestead Ln., and looked at approximately 20 ash trees which are dead and have been killed by the emerald ash borer. Also, there is a chokecherry tree with a significant lean and decay by the ground, which also poses a risk to fail. I recommend removing all of the ash trees in that area and that chokecherry as they pose an unreasonable risk. I'm available for questions on my cell phone at 508-726-9246. Mark Cicoria, ISA, certified arborist NE-6814a	1.00	0.00	0.00

Subtotal: \$ 3,500.00  
**Estimate Amount \$ 3,500.00**

**Terms & Conditions:**

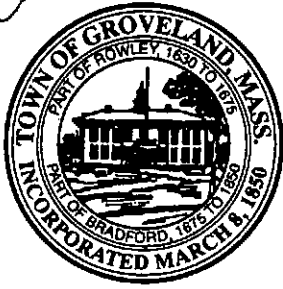
Please Read- Your signature authorizes us to proceed.

1. Risk is inherent with all trees & tree care operations. These recommendations are based only on a visual inspection from the ground. There are no guarantees that all hazards have been detected or rectified now or in the future.
2. Work zones shall be kept free & clear of unauthorized people, pets, vehicle, etc. during work operations for the safety of all concerned.
3. Cicoria Tree, its employees & representatives shall not be held liable for damages to any and all undisclosed utilities including, but not limited to: septic systems, electric lines, cesspools, storage tanks & irrigation systems, nor will we assume any liability for lawn or driveway damage.
4. Customer warrants that all trees, plant material and property upon which work is to be performed are either owned by them or permission has been given by owner to perform work as outlined.





we  
75m



PLANNING BOARD

# TOWN OF GROVELAND

TOWN HALL COMPLEX  
183 MAIN STREET  
GROVELAND, MASSACHUSETTS 01834-1396

  
2008091000157 Bk:28032 Pg:275  
09/10/2008 11:50 MEMO Pg 1/9

## MEMORANDUM OF DECISION UNDER THE SUBDIVISION CONTROL LAW

**To:** Application of Christopher Darke for a definitive subdivision pursuant to the Town of Groveland subdivision control law

**Date:** May 27, 2008

### Procedural History:

1. On or about February 13, 2007 Christopher Darke, (herein after, The Applicant) applied for a definitive subdivision, pursuant to the Town of Groveland Subdivision Control Law. The property contains approximately 6.3 acres and is located at 48 King Street. The parcels that comprise the property are shown on Assessor's Map 17 - Parcel 74 & 74A. The proposed subdivision consists of six (6) lots of single family housing. Note, lot 1 is an existing 2 family home. The parcels are owned Christopher and Karen Darke, Bill H. & Katie A. Darke.
2. A duly advertised public hearing was opened on March 13, 2007; continued to January, 22, 2008;; a site walk was conducted on June 30, 2007.
3. The decision is rendered on June 10, 2008, subsequent to the hearing on January 22, 2008 submission/Applicant for approval of a certain definitive subdivision plan relative to parcel of land in Groveland, Massachusetts located off King Street shown on Assessors Map 17, Parcels 74 & 74A.
4. The public hearing was closed on January 22, 2008.
5. The approval was voted unanimous, with the conditions enumerated in this decision, five in favor – none opposed (5-0) on May 27, 2008.

6. The following documents and exhibits were received during the public hearing and are hereby incorporated by reference in this decision:

- Definitive Subdivision Plan Homestead Lane prepared by Port Engineering Associates, Inc. dated 2/12/07 revised through 10/08/07, sheets 1-9.
- Interoffice memo from Port Engineering Associates, Inc. dated February 13, 2007 and September 28, 2007 with lot closures, hydrology study, stormwater

TOWN OF GROVELAND

MAILED 50

TOWN CLERK RECEIVED



# TOWN OF GROVELAND

TOWN HALL COMPLEX  
183 MAIN STREET  
GROVELAND, MASSACHUSETTS 01834-1396

## PLANNING BOARD

management forms, miscellaneous forms, waiver request list, environmental assessment, traffic study, and miscellaneous calculations.

- Peer reviews – W. C. Cammett Engineering, Inc. dated April 24, 2007 pages 1-7 and 1-5; February 27, 2007 pages 1-5; October 2, 2007 pages 1-11; October 18, 2007 pages 1-5.

The plans and other submission material were reviewed by the Planning Board; it's consulting engineer, W. C. Cammett Engineering, Inc. (CE). Throughout its deliberations, the Planning Board has been mindful of the statements of the applicants and their representatives, and the comments of the general public, all as made at the public hearings.

### **Decision:**

The Groveland Planning Board has decided to grant approval under the Subdivision Control Law with the terms and conditions stated below:

1. Prior to issuance of Building Permits the Applicant will provide documentation that the Memorandum of Decision, Forms F, G or Substitution Performance Guarantee as outlined in M.G.L. Chapter 41, Section 81-U and subject Definitive Plans are recorded in the Essex County Deed Office. No work shall begin on this project prior to this recording; this includes the clearing of any trees.
2. No roadway construction to be executed without permission from the Road Commissioner and the Town of Groveland Planning Board and its agents. Notification must be no less than 10 days, prior to beginning construction or as required by Groveland By-Laws.
3. Due to the unique geographical features of this parcel, to adjacent wetlands, and to protect present inhabitants/abutter's health, safety and welfare; The Planning Board requires that the actual use of the lots contained therein and the subject parcel shall conform to the intended use of these lots as presented by the Applicant to the Planning Board. All buildable lots contained in the subject parcel of land are approved for single family dwellings, only. It is the determination of The Planning Board that the spirit and intent of the Town of Groveland Zoning By Laws and applicable Massachusetts General Laws would be violated by any use other than Residential Single Family Dwellings.
4. All electric and utility service to the lots shall be underground. A plan of underground utilities shall be provided to The Planning Board and include on the definitive plan the



# TOWN OF GROVELAND

TOWN HALL COMPLEX  
183 MAIN STREET  
GROVELAND, MASSACHUSETTS 01834-1396

## PLANNING BOARD

location of all utilities as required by the Town of Groveland By-Laws, Planning Board Rules and Regulations prior to beginning construction.

5. In lieu of shade trees, the Planning Board requires that the developer shall comply with Section 4.14, and Section 5.12 of the Town of Groveland Subdivision Rules and Regulations. In the event that the remaining trees are not deemed suitable by the Planning Board, the Developer shall provide shade trees that are acceptable to the Board.
6. This decision shall be binding upon the executors, heirs, administrators, devisees, successors, and assigns of the applicant.
7. Street lighting shall be of a type, and set at a distance as determined by the Town of Groveland Municipal Light Department.
8. The Owner/Applicant/Developer shall obtain general liability insurance covering the development in the amount of One Million Dollars (\$1,000,000.00), and further that the Owner/Applicant/Developer shall indemnify and hold harmless The Town of Groveland and their Consultants from any and all claims which may arise from the development and construction relating thereto, prior to beginning construction.
9. The Planning Board shall at the Owner/Applicant/Developer's expense hire an independent third party to oversee and verify for the Planning Board the important construction milestone events of this development. Said third party shall be responsible to, and report to the Planning Board; shall file written reports as deemed necessary by the Planning Board, to the Planning Board and other Town Boards, as required. It is the Applicant's responsibility to notify the said 3<sup>rd</sup> party and other Town Officials to arrange these required observations, which are detailed in the Subdivision Regulations. The account shall be established with an initial deposit of \$10,000 and shall maintain a balance of \$5,000. The Planning Board shall notify the developer when additional funds are required. Failure of the developer to sustain the minimum balance shall result in automatic recession of the plan approval upon thirty (30) days notice by the Planning Board to the developer.
10. Violation of any terms of this decision or Covenants relating thereto shall be just cause for Recision, Modification or Amendment pursuant to Massachusetts General Law, Chapter 41 Section 81W.



# TOWN OF GROVELAND

TOWN HALL COMPLEX  
183 MAIN STREET  
GROVELAND, MASSACHUSETTS 01834-1396

## PLANNING BOARD

11. This Decision is based on the acceptance of the Definitive plan by the Town of Groveland Board of Health, and the Town of Groveland Conservation Commission. Any objection by the previously mentioned Town Boards to the Definitive plan, or lots contained therein shall NEGATE the acceptance by the Planning Board for the Definitive plan, or the lots affected by the aforementioned decision, or require a modification to the Definitive plan.
12. The subject roadway shall have a cross section comprising of 12" compacted gravel sub-base, 8" base of compacted processed gravel, in lifts as outlined in Massachusetts Highway Department specifications; a 3 inch compacted bituminous concrete binder and a 2 inch compacted bituminous concrete overlay/topcoat, all hot application. The plans shall be revised to reflect this cross-section, prior to endorsement.
13. Submission of an As Built plan of the subdivision, Roadway Acceptance Plan, and petition for road acceptance shall be completed and filed with the Planning Board, by the Applicant, prior to conveyance of the last lot in the subdivision or prior to the release of the performance guarantee, which ever occurs first. The road acceptance request shall include acceptance of all utility easements as shown on the approved plans.
14. All other Town of Groveland By-Laws not mentioned, but relevant to this Decision, shall be adhered to, otherwise this Decision shall become Null and Void.
15. The Owner/Applicant and Developer shall complete Groveland Subdivision Rules and Regulations Forms F or G, for the compliance of the Performance Guarantee as Required by Massachusetts General Laws, Chapter 41.
16. The applicant shall also post the following signs:
  - A.) "Slow Children Playing" signs (2) located on the proposed subdivision road.
  - B.) "Stop" sign at the intersection of the proposed development and King Street.
  - C.) Street sign with the name of the proposed street for the subdivision at King Street.
17. All buildable lots contained in the subject parcel of land are approved for single family dwellings only.



# TOWN OF GROVELAND

TOWN HALL COMPLEX

183 MAIN STREET

GROVELAND, MASSACHUSETTS 01834-1396

## PLANNING BOARD

18. All engineering deficiencies, as stated per peer review Engineer, W. C. Cammett Engineering, Inc., in reports dated October 2, 2007 and October 18, 2007 shall be corrected to the Planning Board and peer review engineers approval prior to plan endorsement.
19. All terms and conditions of this approval, items 1-31 listed in this decision, shall be listed on the final plans prior to endorsement, including the list of waivers as granted or denied by the Board.
20. Vital Access must be maintained at all times and is the Sole Responsibility of the Developer. This Access includes plowing, sanding and general up keep until road acceptance by the Town of Groveland.
21. Driveways must be accessible for Emergency Vehicles and approved by the Groveland Fire and Police Chiefs, and the Groveland Road Commissioner.
22. The Planning Board shall at the Owner/Applicant/Developer's expense hire the Road Preparedness Commissioner (R.P.C.), to oversee and verify for the Planning Board the important construction milestone events of this development. Said R.P.C. shall be responsible to, and report to the Planning Board; shall file written reports as deemed necessary by the Planning Board to the Planning Board and other Town Boards, as required. It is the Applicants responsibility to notify the said R.P.C. and other Town Officials to arrange these required inspections, which are detailed in the Subdivision Control Regulations.
23. The requirements of the Groveland Road Commissioner must be met for construction of the subdivision road.
24. The Groveland Board of Health approval and a copy of their decision shall be filed with the Planning Board concerning individual lots meeting municipal water supply and water pressure requirements and any approval necessary for sewer connections.
25. Copies of the following documents, plans, and applications shall be submitted to the Planning Board and their engineering consultant for review prior to beginning construction:
  - Copy of the Groveland Order of Conditions with submitted plans of record.
  - NPDES Phase II permit application, erosion control/sediment plans, and weekly observation reports (during construction).



# TOWN OF GROVELAND

TOWN HALL COMPLEX  
183 MAIN STREET  
GROVELAND, MASSACHUSETTS 01834-1396

## PLANNING BOARD

- Six copies of the entire definitive plan as certified recorded by the Essex County Registry of Deeds.
  - Copy of the Stormwater Management and Land Disturbance Bylaw application and approval.
26. The applicant shall comply with all mitigation measures as detailed in the Traffic Impact and Access Study (TIASRC) prepared by Hajac Associates and further detailed in the Planning Board's deliberations.
- Stop sign and stop bar on Homestead Lane
  - Stop sign and stop bar on Outlook Drive.
  - A yellow centerline along a continuous 100 foot distance of Homestead Lane, from a beginning point at the aforementioned stop bar.
  - Re-painting the double yellow centerline on King Street.
  - Vegetation maintenance along King Street to ensure maximum stopping sight distances are maintained for the proposed intersection.
  - The recommended sign installations as shown on Attachment 8 (not received by Cammett Engineering).
27. During construction of the roadway, the Road Preparedness Commissioner shall determine the location of subdrain, if required.
28. Prior to the issuance of building permits, a site plan for each lot indicating the proposed house, driveway, methods of infiltration and proposed grading to insure the assumptions made in the stormwater analysis shall be submitted to the Planning Board for review by their consulting engineer.
29. Prior to the sale of any lots, the owner/applicant shall apply for and obtain the Special Permit relative to Section 950 of the Groveland Zoning Bylaw, Affordable Housing Requirements. Covenants and other documents necessary to ensure compliance with this section shall be executed and, if applicable, recorded prior to and as a condition of the issuance of any building permit or certificate of occupancy, as the SPGA shall deem appropriate.
30. The owner/applicant shall obtain an opinion from the Zoning Enforcement Officer regarding the existing tennis court fence property line set backs on Lot 1 at least 90 days prior to the issuance of any building permit.
31. Prior to endorsement, plans shall indicate all "No Cut/No Disturb and No-Build" zones on all lots subject to the local Wetland Protection Bylaw and reference the covenant



# TOWN OF GROVELAND

TOWN HALL COMPLEX  
183 MAIN STREET  
GROVELAND, MASSACHUSETTS 01834-1396

## PLANNING BOARD

describing/defining these areas. The owner/applicant shall provide a copy of the restrictive covenant for review by the Board prior to recording of the covenant at the Registry of Deeds.

32. The owner/applicant shall record and abide by the Covenant for Cannon Hill, NO CUT, Build, NO Disturb buffer as indicated in said Covenant and shall be placed and recorded on all plans to run with the land. Said Buffer Zone is 30 feet along the rear portions of the site as shown on the plan. See attached and recorded Buffer Zone Covenant.

### Waivers:

The following waivers from the Subdivision Control Law have been considered by the Planning Board. The Planning Board has approved these waivers finding it is in the best interest of the public health, welfare and safety.

### Waiver List:

- **Section 4.3.8.3**  
To allow less than a 150 foot tangent between reverse curves.
- **Section 4.3.8.5**  
To allow less than 400 feet separation between intersections of minor streets. A distance of approximately 275 feet between Homestead Lane and Outlook Drive is provided.
- **Section 4.9.3**  
To allow a sidewalk on one side of the roadway only.
- **Section 303.6 (2) Zoning Bylaw**  
To allow the existing driveway on Lot 1 to remain on King Street.

### The following waiver request has been denied:

- **Section 5.9.1**



# TOWN OF GROVELAND

TOWN HALL COMPLEX  
183 MAIN STREET  
GROVELAND, MASSACHUSETTS 01834-1396

## PLANNING BOARD

To allow cape cod berm in lieu of granite curbing.






# TOWN OF GROVELAND

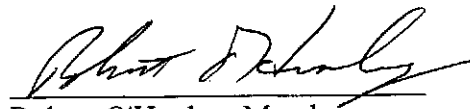
TOWN HALL COMPLEX  
183 MAIN STREET  
GROVELAND, MASSACHUSETTS 01834-1396

## PLANNING BOARD


### RECORD OF VOTE

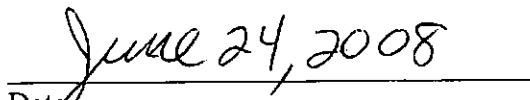
The following members of the Planning Board vote to grant the definitive subdivision subject to the above-stated terms and conditions:


  
Walter F. Sorenson, Jr. Chairman

  
Robert O'Hanley, Member

  
James Freer, Member

  
Carole Gist, Member

  
Date


  
Mary Farren, Member

The following members of the Planning Board are in opposition to the grant of the definitive subdivision.

\_\_\_\_\_

\_\_\_\_\_

Filed with the Town Clerk on June 25, 2008

  
Town Clerk

Copy of Decision Mailed to:

Christopher and Karen Darke  
Port Engineering Associates, Inc.

We.  
175  
2

**COVENANT**

Billy and Kate Darke (hereinafter referred to as the "Grantor"), do hereby impose the following covenant on a portion of land situated on King Street, Groveland, Essex County, Massachusetts:

The existing vegetation in the area shown as "Buffer Zone" on a plan entitled "Definitive Subdivision Plan In Groveland, Mass.; scale 1" = 40'; October 8, 2007; by Port Engineering Associates Inc." (Plan) which Plan is recorded at the Essex South District Registry of Deeds herewith shall not be removed and shall be protected in accordance with the following standards. The "Buffer Zone" shall be a width of thirty feet (30') along the rear portion of the site as shown on the above referenced plan. This restriction is imposed because the vegetation in the Buffer Zone provides screening and serves as a buffer for residents, including both abutters and those who will inhabit the dwellings being constructed on the lots within Homestead Lane. The natural condition of the Buffer Zone further contributes to the preservation of the Town of Groveland unique character. The Buffer Zone contains a variety of plant species.

No buildings or structures shall be placed in the Buffer Zone. During any construction, silt fences and hay bales shall be installed around the work area and the limit of work area shall be clearly marked prior to any construction to protect the Buffer Zone from erosion and construction damage. The Grantor covenants that the Buffer Zone will at all time be held, used and conveyed subject to and not used in violation of these restrictions.

Notwithstanding the foregoing, or anything contained in this document to the contrary, these provisions do not prevent the Grantor from (a) the use and alterations of the Buffer Zone consistent with approved plans, decisions, variances, permits and orders as issued by agencies, boards and commissions of the Town of Groveland and any orders of conditions issued under the State Wetlands Protection Act or local ordinances, and as said approvals, decisions, variances, permits and orders may be extended, amended, replaced or reissued; or (b) selective pruning of trees and their shrub under story to remove hazards, disease and insect, storm or fire damage and for the removal of dead wood; or (c) any trees and shrubs to be cut or removed from the "buffer zone" shall be flagged and approved by the Planning Board prior to removal; or (d) no earth shall me removed or added in the area designated as the Buffer Zone on said plans.

The Buffer Zone subject to these restrictions shall be for the private use by the residents of the individual dwelling units on which lots that the Buffer Zone is a part.

The Grantor shall incorporate by reference the terms of this restriction in any deed by which it divests itself of any interest in all or a portion of the land comprising the Buffer Zone or the transfer of dwelling units on said lots.

For grantor's title see deed recorded at the Essex South District Registry of Deeds, Book 5637, Page 315.

<sup>KATIE</sup>  
IN WITNESS WHEREOF, Billy and ~~Kate~~ Darke has caused these presents to be signed in its name and behalf this \_\_ day of September, 2008.

For: Billy and <sup>KATIE</sup>~~Kate~~ Darke

By: <sup>B. H. Darke</sup>  
Katie A Darke

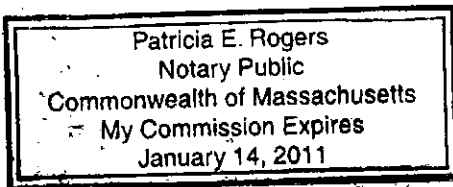
COMMONWEALTH OF MASSACHUSETTS

Essex, ss:

*K.A.D.* On September ~~8~~<sup>7</sup>, 2008, before me, the undersigned notary public, personally appeared Billy and Kate Darke, proved to me through satisfactory evidence of identification, which was a driver's license, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that she signed it voluntarily

Patricia E. Rogers

Notary Public:  
My Commission Expires:



WAIVER REQUESTS

SECTION 3.4.4.6 - WAIVER FROM THE SUBMITAL OF THE SITE SPECIFIC SOIL MAP DUE TO THE SIZE AND NATURE OF THE DEVELOPMENT

NOTES:

- 1. PROPERTY LINES SHOWN HEREIN WERE ESTABLISHED BY A CADASTRAL RETRACEMENT SURVEY MADE ON THE GROUND, IN ACCORDANCE WITH THE PROVISIONS OF 250CMR 6.01-CADASTRAL, ORIGINAL, AND RETRACEMENT SURVEYS.

REFERENCE DEEDS

BILLY & KATIE A. DARKE ASSESSOR'S MAP 17, LOT 74A E.S.D.R.D. BK. 5637 PG. 315

PLAN REFERENCES:

- 1. E.S.D.R.D. PL. BK. 368, PL. 23 (2003)
2. E.S.D.R.D. PL. BK. 356, PL. 85 (2001)
3. E.S.D.R.D. PL. BK. 243, PL. 95 (1988)

ZONING CLASSIFICATION

ZONING DISTRICT: R-B RESIDENCE DISTRICT
MINIMUM LOT AREA: SINGLE FAMILY 30,000 SF
MINIMUM LOT FRONTAGE: SINGLE FAMILY 150 FT

INDEX TO DRAWINGS

Table with 2 columns: SHEET No and TITLE. Includes entries for COVER SHEET, EXISTING CONDITIONS AND SOIL SURVEY, LOT LAYOUT PLAN, etc.

REVISIONS

Table with 3 columns: DATE, BY, DESCRIPTIONS. Lists revision dates and descriptions from 03/09/07 to 12/09/08.

Professional seals for Paul Damien Turbide, No. 30375 Civil, and Paul Turbide, No. 29260 Civil. Includes signature and date 12/9/08.

DEFINITIVE SUBDIVISION PLAN
HOMESTEAD LANE
ASSESSORS MAP 17 LOT 74A & LOT 74

AS PREPARED FOR
APPLICANT: CHRISTOPHER DARKE

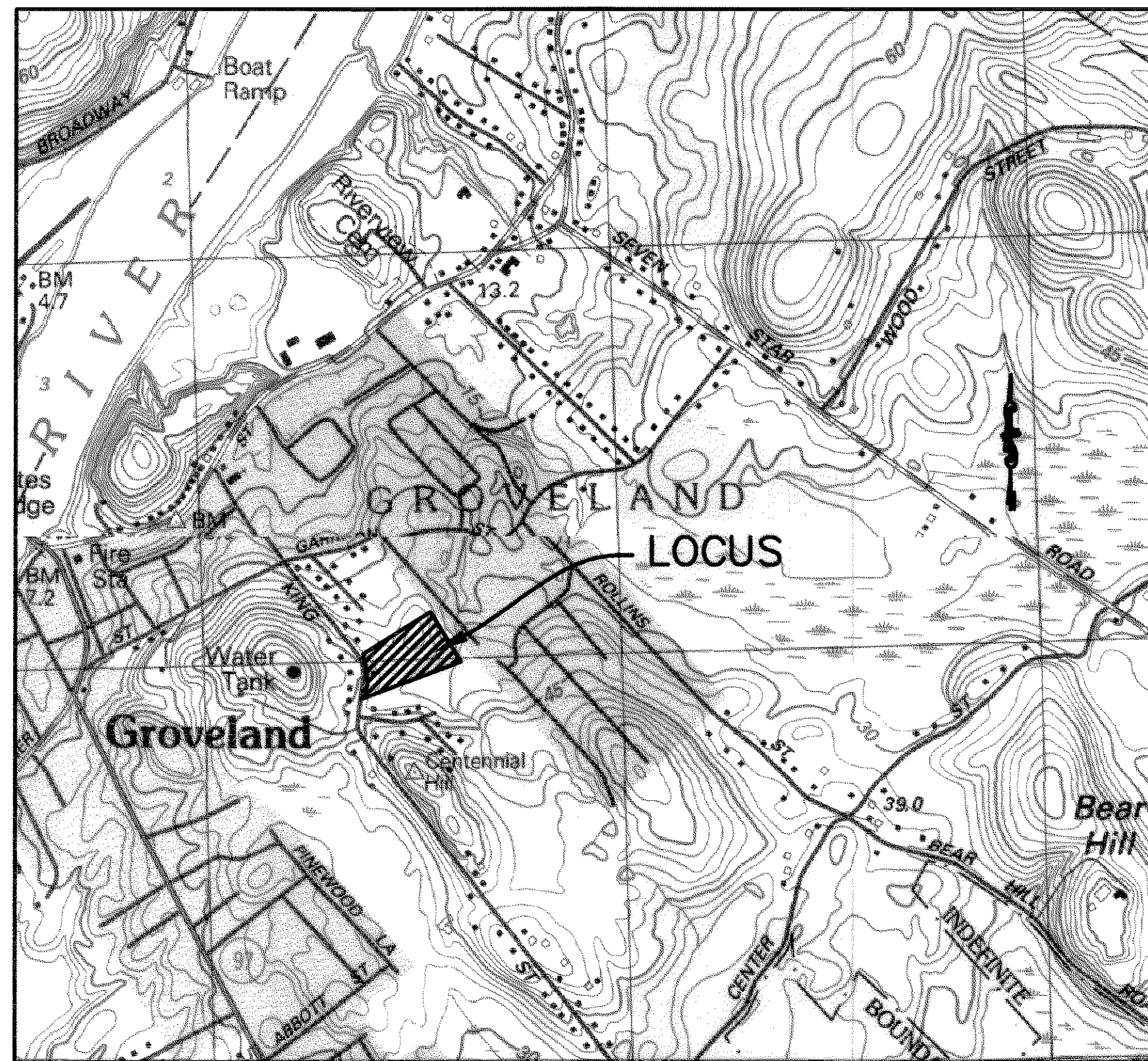
48 KING STREET, GROVELAND, MA. 01834

OWNERS: BILLY H. & KATIE A. DARKE

53 MAIN STREET, GROVELAND, MA. 01834

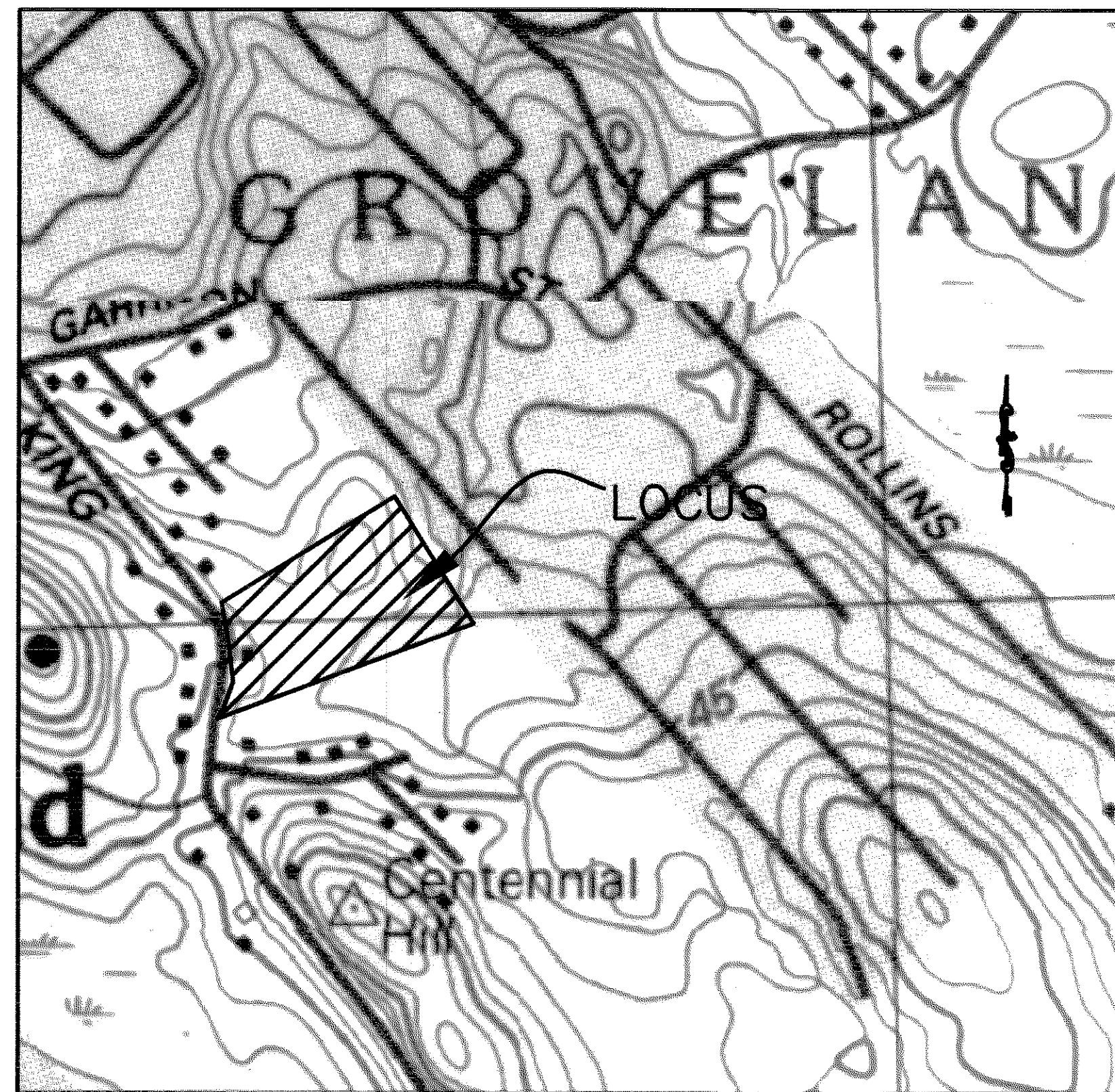
CHRISTOPHER & KAREN DARKE

48 KING STREET, GROVELAND, MA. 01834



LOCUS MAP

SCALE: 1"=1000'



LOCUS MAP

SCALE: 1"=400'

PLAN BOOK 437 PLAN 99

RECORD MAY 20, 2013
WITH APPL. BILLY H. & KATIE A. DARKE
REC'D 32483 P.249
ALIST: J. G. Bunk
Register of Deeds (11 pgs.)

FOR REGISTRY USE ONLY

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTRARS OF DEEDS

Signature of Paul D. Turbide, PE/PLS, dated 12/9/08.

TOWN OF GROVELAND, MA

PLANNING BOARD APPROVAL UNDER THE SUBDIVISION CONTROL LAW, M.G.L. CH. 41, S. 81-U

Signatures of Paul Turbide, Carol Turbide, and another official.

12-11-2008 DATE

APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS STATED IN A MEMORANDUM OF DECISION DATED MAY 27, 2008 BETWEEN THE GROVELAND PLANNING BOARD, ON BEHALF OF THE TOWN OF GROVELAND, BILLY DARKE, AND CHRISTOPHER DARKE

A COPY OF WHICH DECISION IS RECORDED HERewith AND SUBJECT ALSO TO RECORDING OF THIS PLAN AND SAID DECISION IN THE SOUTH ESSEX REGISTRY OF DEEDS ON OR BEFORE SEPTEMBER 10, 2008 IN BOOK 28032 PAGE 275

APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS OF A COVENANT RECORDED IN ESSEX SOUTH DISTRICT REGISTRY OF DEEDS BOOK 28032 PAGE 284

GROVELAND PLANNING BOARD

DATE FILED: 2/13/07
PUBLIC HEARING OPENED: 3/13/07
SITWALK: 6/30/07
PUBLIC HEARING CLOSED: 1/22/08
DATE APPROVED: 6/10/08
DECISION FILED: 6/25/08

GROVELAND TOWN CLERK: I HEREBY CERTIFY THAT NO APPEAL HAS BEEN FILED WITHIN THE 20 DAYS AS PRESCRIBED BY M.G.L. CHAPTER 41, SECTION 81 B-B.

Signature of Carol Turbide, dated 12/12/08, TOWN CLERK.

LEGEND OF SYMBOLS

Legend table listing symbols for existing and proposed features: index contour lines, trees, water lines, fire hydrants, sewer manholes, sewer lines, water lines, wetlands, catch basins, granite bounds, water gates, intermediate contour lines, fire hydrants, sewer manholes, sewer lines, water lines, drain lines, drain manholes, building envelopes.

PORT ENGINEERING ASSOCIATES, INC.
ONE HARRIS STREET
NEWBURYPORT, MASSACHUSETTS
978-465-8594

SOIL LOG - TEST PIT #1 DATE: 05/08/07			SOIL LOG - TEST PIT #2 DATE: 05/08/07			SOIL LOG - TEST PIT #3 DATE: 05/08/07			SOIL LOG - TEST PIT #4 DATE: 05/08/07			SOIL LOG - TEST PIT #5 DATE: 05/08/07			SOIL LOG - TEST PIT #6 DATE: 05/08/07			SOIL LOG - TEST PIT #8 DATE: 05/08/07		
LAYER	DEPTH	USCS DESCRIPTION	LAYER	DEPTH	USCS DESCRIPTION	LAYER	DEPTH	USCS DESCRIPTION	LAYER	DEPTH	USCS DESCRIPTION	LAYER	DEPTH	USCS DESCRIPTION	LAYER	DEPTH	USCS DESCRIPTION	LAYER	DEPTH	USCS DESCRIPTION
A	0-12"	10YR 3/2 FINE SANDY LOAM	A	0-12"	10YR 3/2 FINE SANDY LOAM	A	0-10"	10YR 3/2 SANDY LOAM, LOAM	A	0-9"	7.5YR 3/4 FINE SANDY LOAM	A	0-10"	7.5YR 3/4 FINE SANDY LOAM	A	0-12"	10YR 3/2 FINE SANDY LOAM	A	0-9"	10YR 3/2 SANDY LOAM, LOAM
B <sub>w</sub>	12-27"	10YR 5/8 FINE SANDY LOAM	B <sub>w</sub>	12-26"	10YR 5/8 SANDY LOAM	B <sub>w</sub>	10-20"	10YR 5/8 SANDY LOAM	B <sub>w</sub>	9-21"	10YR 5/8 SANDY LOAM	B <sub>w</sub>	10-23"	10YR 5/8 SANDY LOAM	B <sub>w</sub>	12-26"	10YR 5/8 FINE SANDY LOAM	B <sub>w</sub>	9-20"	10YR 5/8 SANDY LOAM
C	27-60"	2.5YR 5/4 SANDY LOAM, GRAVELLY, STONY, COBBLY	C	26-60"	2.5YR 5/4 FINE SAND	C	20-80"	2.5YR 5/4 VERY STONY, COBBLY	C	21-88"	2.5YR 5/4 LOAMY SAND, VERY STONY, FIRM	C	23-82"	2.5YR 5/4 LOAMY SAND, GRAVELLY, VERY STONY	C	26-70"	2.5YR 5/4 FINE LOAMY SAND, GRAVELLY	C	20-72"	2.5YR 5/4 VERY STONY, COBBLY
GROUND SURFACE EL.=138.1'± WATER OBSERVED AT: WEeping @ 38" DEPTH TO MOTTLES: 36" E.S.H.W.T. @ 36" SOIL EVALUATOR: DAVID OUELLETTE			GROUND SURFACE EL.=129.9'± WATER OBSERVED AT: WEeping @ 48" DEPTH TO MOTTLES: 39" E.S.H.W.T. @ 39" SOIL EVALUATOR: DAVID OUELLETTE			GROUND SURFACE EL.=143.0'± WATER OBSERVED AT: N/A DEPTH TO MOTTLES: N/A E.S.H.W.T. @ >60" SOIL EVALUATOR: DAVID OUELLETTE			GROUND SURFACE EL.=133.8'± WATER OBSERVED AT: WEeping @ 86" DEPTH TO MOTTLES: 77" E.S.H.W.T. @ 77" SOIL EVALUATOR: DAVID OUELLETTE			GROUND SURFACE EL.=137.9'± WATER OBSERVED AT: WEeping @ 80" DEPTH TO MOTTLES: 70" E.S.H.W.T. @ 70" SOIL EVALUATOR: DAVID OUELLETTE			GROUND SURFACE EL.=127.9'± WATER OBSERVED AT: WEeping @ 62" DEPTH TO MOTTLES: 52" E.S.H.W.T. @ 52" SOIL EVALUATOR: DAVID OUELLETTE			GROUND SURFACE EL.=133.6'± WATER OBSERVED AT: N/A DEPTH TO MOTTLES: N/A E.S.H.W.T. @ >72" SOIL EVALUATOR: DAVID OUELLETTE		

PLAN BOOK 437 PLAN 99  
 ESSEX DISTRICT REGISTERED  
 RECORDED MAY 20, 2013  
 WITH APPLICANT BILLY H. & KATIE A. DARKE  
 REC. B 32483 p.249  
 ATTORNEY: J. J. O'NEILL  
 REGISTERED DEEDS (11 PLS)

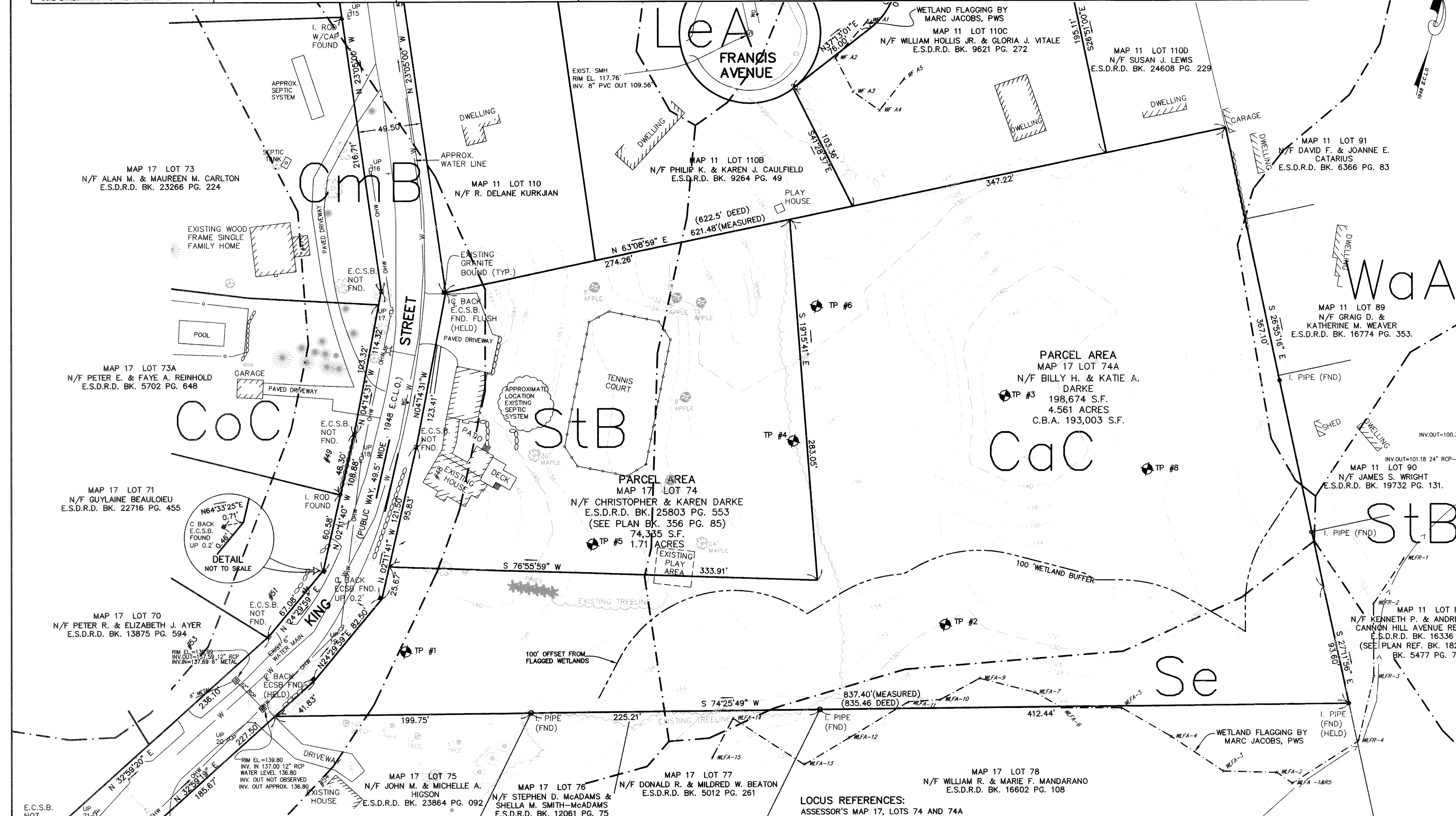
FOR REGISTRY USE ONLY  
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS  
 PAUL D. TURBIDE PE/PLS 4/25/08 DATE

TOWN OF GROVELAND, MA  
 PLANNING BOARD APPROVAL UNDER THE SUBDIVISION CONTROL LAW, M.G.L. CH. 141, S. 81-U  
 APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS STATED IN A MEMORANDUM OF DECISION DATED MAY 27, 2008 BETWEEN THE GROVELAND PLANNING BOARD, ON BEHALF OF THE TOWN OF GROVELAND, BILLY DARKE, AND CHRISTOPHER DARKE  
 APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS OF A COVENANT RECORDED IN ESSEX SOUTH DISTRICT REGISTRY OF DEEDS BOOK 28032 PAGE 284

APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS OF A COVENANT RECORDED IN ESSEX SOUTH DISTRICT REGISTRY OF DEEDS BOOK 28032 PAGE 284  
 GROVELAND PLANNING BOARD

DATE FILED: 2/13/07  
 PUBLIC HEARING OPENED: 3/13/07  
 SITEWALK: 6/30/07  
 PUBLIC HEARING CLOSED: 1/22/08  
 DATE APPROVED: 6/10/08  
 DECISION FILED: 6/25/08

GROVELAND TOWN CLERK:  
 I HEREBY CERTIFY THAT NO APPEAL HAS BEEN FILED WITHIN THE 20 DAYS AS PRESCRIBED BY M.G.L. CHAPTER 41, SECTION 81 B-B.  
 ANNE BRIDGES 12/12/08 TOWN CLERK DATE



**ZONING CLASSIFICATION**

ZONING DISTRICT:	R-B RESIDENCE DISTRICT
MINIMUM LOT AREA:	SINGLE FAMILY 30,000 SF DUPLX 40,000 SF
MINIMUM LOT FRONTAGE:	SINGLE FAMILY 150 FT DUPLX 200 FT
MINIMUM FRONT SETBACK:	MAIN DWELLING 30 FT ACCESSORY BLDG 60 FT
MINIMUM SIDE SETBACK:	ANY BUILDING 15 FT
PERCENTAGE BUILDABLE:	WITH TOWN WATER 50 % W/O TOWN WATER 60 %

**SOIL LEGEND**

<b>CaC</b>	CANTONE FINE SANDY LOAM, 8 TO 15% SLOPES
<b>CmB</b>	CHARLTON FINE SANDY LOAM, 3 TO 8% SLOPES
<b>CoC</b>	CHARLTON VERY STONY FINE SANDY LOAM, 8 TO 15% SLOPES
<b>StB</b>	SUTTON FINE SANDY LOAM, 3-8% SLOPES
<b>LeA</b>	LEICESTER FINE SANDY LOAM, 0 TO 3% SLOPES
<b>WaA</b>	WALPOLE FINE SANDY LOAM, 0 TO 3% SLOPES

LOCUS REFERENCES:  
 ASSESSOR'S MAP 17, LOTS 74 AND 74A

BILLY H. & KATIE A. DARKE  
 E.S.D.R.D. BK. 5637 PG. 315

CHRISTOPHER & KAREN DARKE  
 E.S.D.R.D. BK. 25803 PG. 553

ZONING DISTRICT: RB

- PLAN REFERENCES:
1. E.S.D.R.D. PL. BK. 368, PL. 23 (2003)
  2. E.S.D.R.D. PL. BK. 356, PL. 85 (2001)
  3. E.S.D.R.D. PL. BK. 243, PL. 95 (1988)
  4. E.S.D.R.D. PL. BK. 220, PL. 28 (1986)
  5. E.S.D.R.D. PL. BK. 182, PL. 93 (1983)
  6. E.S.D.R.D. PL. 592 OF 1961
  7. E.S.D.R.D. PL. 857 OF 1953

PAUL DAMIEN TURBIDE  
 No. 30375  
 CIVIL ENGINEER  
 REGISTERED PROFESSIONAL ENGINEER

PAUL DAMIEN TURBIDE  
 No. 26980  
 REGISTERED PROFESSIONAL ENGINEER

PAUL D. TURBIDE, PE/PLS 4/25/08 DATE

REVISIONS

DATE	BY	DESCRIPTION
03/09/07	T.P.T.	LOTS RECONFIGURATION AND RELATED CHANGES
06/28/07	M.R.D.	EDIT PER 4/21/07 CANNETT ENGINEERING REVIEW
10/26/07	M.R.D.	EDIT PER 10/08/07 CANNETT ENGINEERING REVIEW
11/24/08	T.P.T.	PLOT ON MYLAR AND FINAL REVISIONS

EXISTING CONDITIONS AND SITE SPECIFIC SOIL MAP

HOMESTEAD LANE  
 DEFINITIVE SUBDIVISION PLAN  
 GROVELAND, MASSACHUSETTS

OWNER: BILLY H. & KATIE A. DARKE  
 53 MAIN STREET, GROVELAND, MA 01834

APPLICANT: CHRISTOPHER DARKE  
 48 KING STREET, GROVELAND, MA

PORT ENGINEERING ASSOCIATES, INC.  
 ONE HARRIS ST., NEWBURYPORT, MA. 01950  
 TELEPHONE : (978) 465-8594

DATE: 02/12/07  
 DESIGNED BY: D.T.D.  
 DRAWN BY: T.P.T.  
 CHECKED BY: P.D.T.  
 SCALE: 1"=40'  
 JOB NO.: P2999  
 SHEET NO.: 1 OF 10

99/437  
(11pls.)

PLAN BOOK 437 PLAN 99  
ESSEX COUNTY OF DEEDS SAID DISTRICT OF SALEM MASS  
Recorded May 20, 2013  
with Appl. Billy H. & Katie A. Darke  
Rec. 32483 p.249  
Attest: *J. Gobaud*  
Register of Deeds  
(11pls.)

FOR REGISTRY USE ONLY  
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTER OF DEEDS  
*Paul D. Turbide* 11/25/08  
PAUL D. TURBIDE PE/PLS DATE

TOWN OF GROVELAND, MA  
PLANNING BOARD APPROVAL UNDER THE SUBDIVISION CONTROL LAW, M.G.L. CH. 141, S. 81-U  
*Carol Darke*  
12-11-2008  
DATE

APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS STATED IN A MEMORANDUM OF DECISION DATED MAY 27, 2008 BETWEEN THE GROVELAND PLANNING BOARD, ON BEHALF OF THE TOWN OF GROVELAND, BILLY DARKE, AND CHRISTOPHER DARKE  
A COPY OF WHICH DECISION IS RECORDED HERewith AND SUBJECT ALSO TO RECORDING OF THIS PLAN AND SAID DECISION IN THE SOUTH ESSEX REGISTRY OF DEEDS ON OR BEFORE SEPTEMBER 10, 2008 IN BOOK 28032 PAGE 275  
APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS OF A COVENANT RECORDED IN ESSEX SOUTH DISTRICT REGISTRY OF DEEDS BOOK 28032 PAGE 284  
GROVELAND PLANNING BOARD

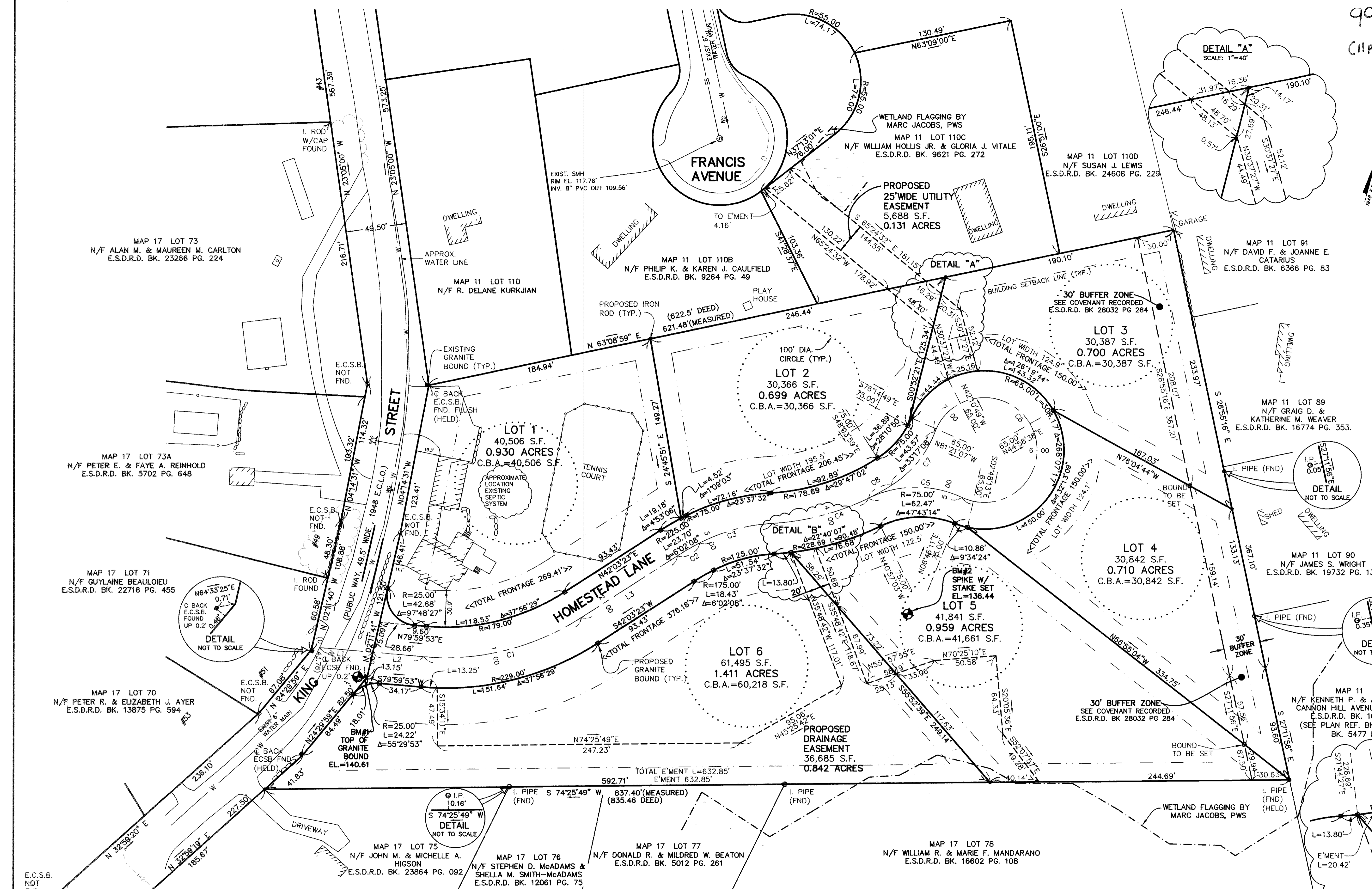
DATE FILED: 2/13/07  
PUBLIC HEARING OPENED: 3/13/07  
SITAWALK: 6/30/07  
PUBLIC HEARING CLOSED: 1/22/08  
DATE APPROVED: 6/10/08  
DECISION FILED: 6/25/08

GROVELAND TOWN CLERK:  
I HEREBY CERTIFY THAT NO APPEAL HAS BEEN FILED WITHIN THE 20 DAYS AS PRESCRIBED BY M.G.L. CHAPTER 41, SECTION 81-B.  
*Carol Darke* 12/12/08  
TOWN CLERK DATE

LOCUS REFERENCES:  
ASSESSOR'S MAP 17, LOTS 74 & LOT 74A  
BILLY H. & KATIE A. DARKE  
E.S.D.R.D. BK. 5637 PG. 315  
CHRISTOPHER & KAREN DARKE  
E.S.D.R.D. BK. 25803 PG. 553  
ZONING DISTRICT: RB

PLAN REFERENCES:  
1. E.S.D.R.D. PL. BK. 368, PL. 23 (2003)  
2. E.S.D.R.D. PL. BK. 356, PL. 85 (2001)  
3. E.S.D.R.D. PL. BK. 243, PL. 95 (1988)  
4. E.S.D.R.D. PL. BK. 220, PL. 28 (1986)  
5. E.S.D.R.D. PL. BK. 182, PL. 93 (1983)  
6. E.S.D.R.D. PL. 592 OF 1961  
7. E.S.D.R.D. PL. 857 OF 1953

LOT LAYOUT PLAN  
HOMESTEAD LANE  
DEFINITIVE SUBDIVISION PLAN  
GROVELAND, MASSACHUSETTS  
OWNER: BILLY H. & KATIE A. DARKE  
83 MAIN STREET, GROVELAND, MA. 01834  
APPLICANT: CHRISTOPHER DARKE  
48 KING STREET, GROVELAND, MA.  
PORT ENGINEERING ASSOCIATES, INC.  
ONE HARRIS ST., NEWBURYPORT, MA. 01950  
TELEPHONE: (978) 465-8594



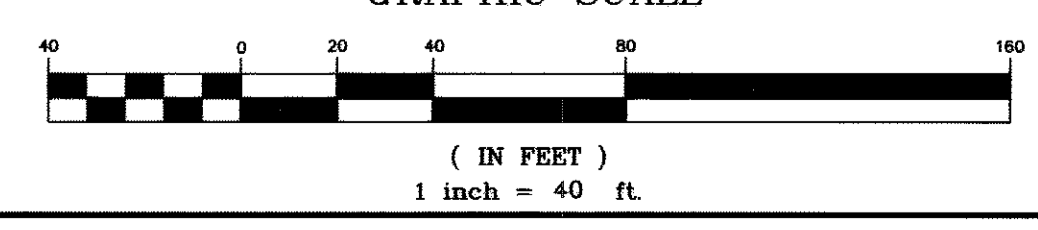
**ZONING CLASSIFICATION**

ZONING DISTRICT:	R-B RESIDENCE DISTRICT
MINIMUM LOT AREA:	SINGLE FAMILY 30,000 SF DUPLEX 40,000 SF
MINIMUM LOT FRONTAGE:	SINGLE FAMILY 150 FT DUPLEX 200 FT
MINIMUM FRONT SETBACK:	MAIN DWELLING 30 FT ACCESSORY BLDG 60 FT
MINIMUM SIDE SETBACK:	ANY BUILDING 15 FT
PERCENTAGE BUILDABLE:	WITH TOWN WATER 50 % W/O TOWN WATER 60 %

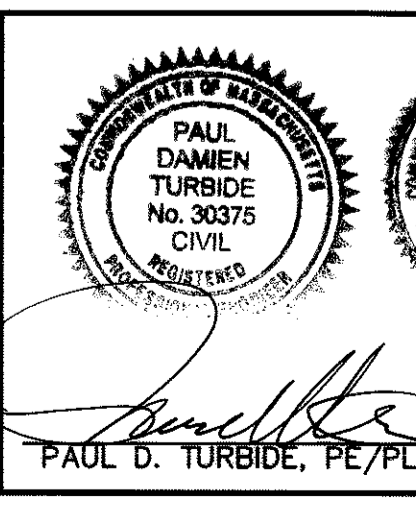
**CENTERLINE DATA**

LINE/CURVE	BEARING/RADIUS	LENGTH	DELTA
L1	N79°59'53"E	L=43.76'	-
L2	N79°59'53"E	L=41.69'	-
L3	N42°03'23"E	L=93.43'	-
C1	R=204.00'	L=135.09'	37°26'29"
C2	R=200.00'	L=21.07'	6'02'08"
C3	R=150.00'	L=61.85'	23°37'32"
C4	R=203.69'	L=81.68'	22°58'34"
C5	R=88.00'	L=79.03'	51°27'14"
C6	R=43.00'	L=206.35'	27°27'19"
C7	R=88.00'	L=57.46'	37°24'30"
C8	R=203.69'	L=21.66'	6'05'35"

**NOTES:**  
1. THE ELEVATION DATUM FOR THIS PLAN IS N.G.V.D. OF 1929. BEGINNING BENCHMARK: TOP OF THE WEST CORNER POST AT THE RIGHT OF STEPS TO THE CIVIL WAR MONUMENT ON KING STREET, JUST OFF MAIN STREET - ELEV. 47.800'  
2. ALL LOTS SHOWN HEREON MEET THE PRECISION REQUIREMENTS AS DEFINED IN 250 CMR SECTION 6.01: CADASTRAL, ORIGINAL AND RETRACEMENT SURVEYS  
PROPOSED CUL-DE-SAC LENGTH FROM SIDELINE OF KING STREET TO REAR OF CUL-DE-SAC EQUALS 623±



DATE	BY	DESCRIPTION
03/09/07	T.P.T.	REVISIONS
08/28/07	M.R.D.	LOTS RECONFIGURATION AND RELATED CHANGES
10/28/07	M.R.D.	EDIT PER 4/27/07 CAMMETT ENGINEERING REVIEW
11/24/08	T.P.T.	EDIT PER 10/16/07 CAMMETT ENGINEERING REVIEW
		PLOT ON W/LAN AND FINAL REVISIONS



DATE	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	JOB No.	SHEET No.
02/12/07	D.T.D.	T.P.T.	P.D.T.	1"=40'	P2999	2 OF 10

PLAN BOOK 437 PLAN 99  
 Received May 30, 2013  
 with Appl. by Billy H. & Katie A. Darke  
 Recd. 32423 p. 249  
 Artist: J. Gobul  
 Dayaratheeds  
 (11pls.)

FOR REGISTRY USE ONLY  
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS  
 PAUL D. TURBIDE PE/PLS DATE 12/9/08

TOWN OF GROVELAND, MA  
 PLANNING BOARD APPROVAL UNDER THE SUBDIVISION CONTROL LAW, M.G.L. CH. 41, S. 81-U  
 DATE 12-11-2008

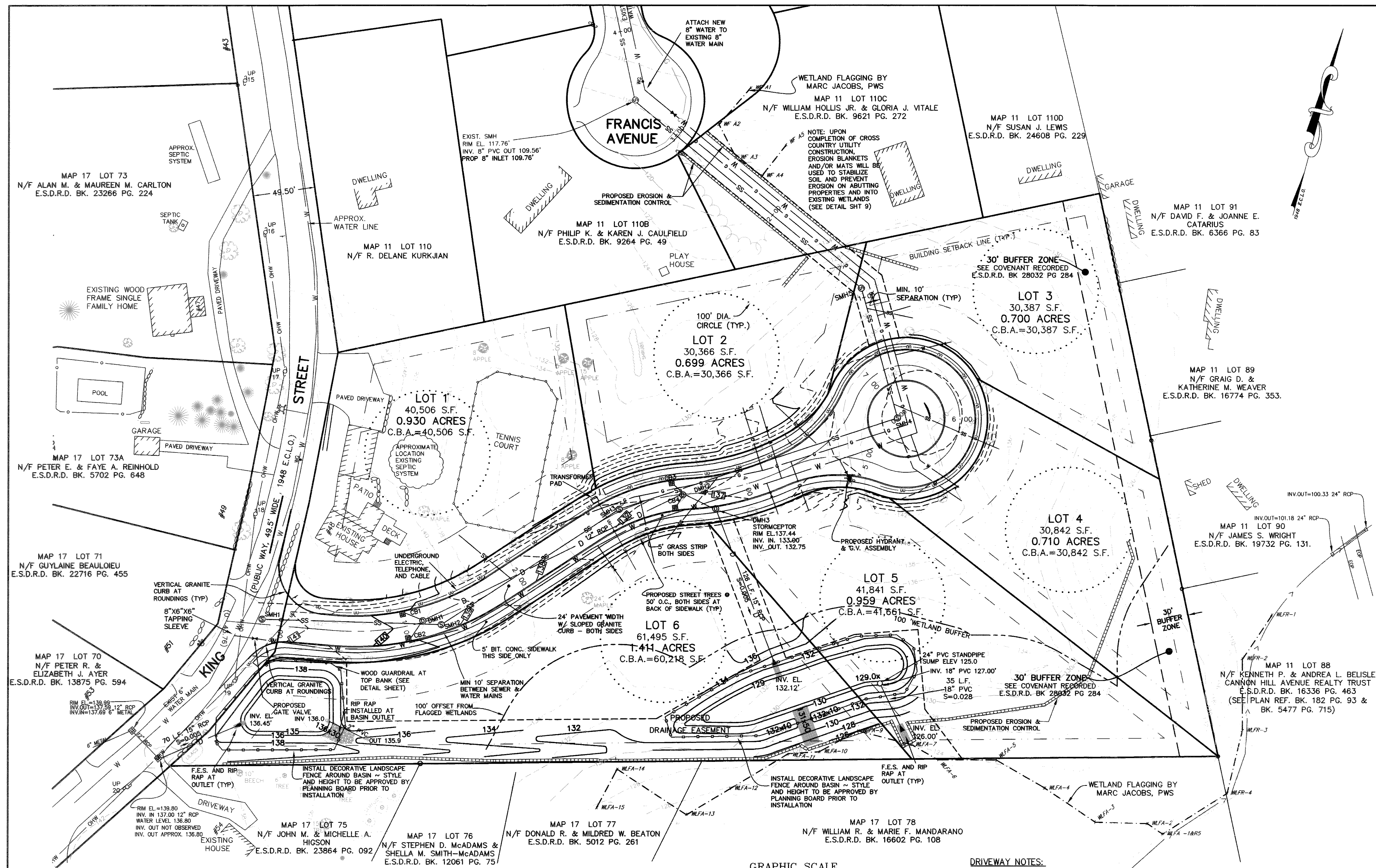
APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS STATED IN A MEMORANDUM OF DECISION DATED MAY 27, 2008 BETWEEN THE GROVELAND PLANNING BOARD, ON BEHALF OF THE TOWN OF GROVELAND, BILLY DARKE, AND CHRISTOPHER DARKE  
 A COPY OF WHICH DECISION IS RECORDED HERewith AND SUBJECT ALSO TO RECORDING OF THIS PLAN AND SAID DECISION IN THE SOUTH ESSEX REGISTRY OF DEEDS ON OR BEFORE SEPTEMBER 10, 2008 IN BOOK 28032 PAGE 275  
 APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS OF A COVENANT RECORDED IN ESSEX SOUTH DISTRICT REGISTRY OF DEEDS BOOK 28032 PAGE 284

GROVELAND PLANNING BOARD

DATE FILED: 2/13/07  
 PUBLIC HEARING OPENED: 3/13/07  
 SCHEDULED: 6/30/07  
 PUBLIC HEARING CLOSED: 1/22/08  
 DATE APPROVED: 6/10/08  
 DECISION FILED: 6/25/08

GROVELAND TOWN CLERK:  
 I HEREBY CERTIFY THAT NO APPEAL HAS BEEN FILED WITHIN THE 20 DAYS AS PRESCRIBED BY M.G.L. CHAPTER 41, SECTION 81 B-B.  
 TOWN CLERK DATE

BENCHMARK DATUM:  
 THE ELEVATION DATUM FOR THIS PLAN IS N.G.V.D. OF 1929. BEGINNING BENCHMARK: TOP OF THE WEST CORNER POST AT THE RIGHT OF STEPS TO THE CIVIL WAR MONUMENT ON KING STREET, JUST OFF MAIN STREET - ELEV. 47.800'



**ZONING CLASSIFICATION**

ZONING DISTRICT:	R-B RESIDENCE DISTRICT
MINIMUM LOT AREA:	SINGLE FAMILY 30,000 SF DUPLX 40,000 SF
MINIMUM LOT FRONTAGE:	SINGLE FAMILY 150 FT DUPLX 200 FT
MINIMUM FRONT SETBACK:	MAIN DWELLING 30 FT ACCESSORY BLDG 60 FT
MINIMUM SIDE SETBACK:	ANY BUILDING 15 FT
PERCENTAGE BUILDABLE:	WITH TOWN WATER 50 % W/O TOWN WATER 60 %

**LEGEND**

EXISTING INDEX CONTOUR LINE	PROPOSED INDEX CONTOUR LINE
EXISTING INTERMEDIATE CONTOUR LINE	PROPOSED INTERMEDIATE CONTOUR LINE
EXISTING TREE	PROPOSED FIRE HYDRANT
EXISTING PINE	PROPOSED SEWER MANHOLE
EXISTING WATER LINE	PROPOSED SEWER LINE
EXISTING FIRE HYDRANT	PROPOSED WATER LINE
EXISTING DWELLING	PROPOSED DRAIN LINE
EXISTING TREE LINE	PROPOSED DRAIN MANHOLE
EXISTING WETLAND	PROPOSED FLARED END
PROPOSED CATCH BASIN	PROPOSED GRANITE BOUND
EXISTING WATER GATE	EXISTING GRANITE BOUND

**DRIVEWAY NOTES:**

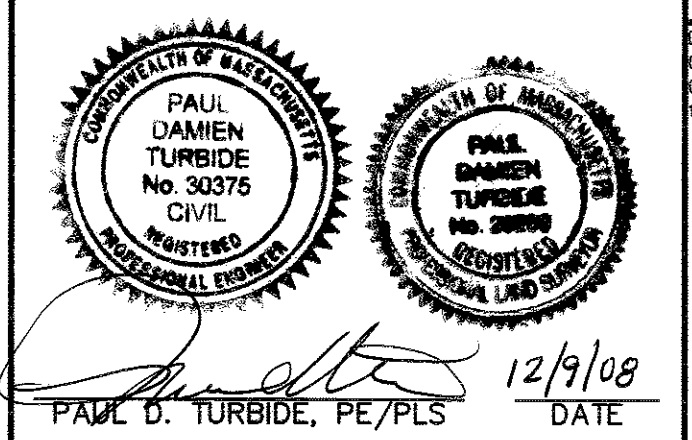
- SECTION 4.16.1. DRIVEWAY SHALL BE LOCATED AND CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING REGULATIONS AND THE REQUIREMENTS OF THE ROAD COMMISSIONER, PLANNING BOARD, AND THE PLANNING BOARD ENGINEER.
- SECTION 4.16.2. DRIVEWAY SHALL NOT ENTER A STREET WITHIN TEN (10) FEET OF A UTILITY STRUCTURE SUCH AS A CATCH BASIN OR WITHIN FIFTY (50) FEET OF AN INTERSECTION.
- SECTION 4.16.3. DRIVEWAYS SHALL BE CONSTRUCTED WITH A LEVELING AREA OF NOT GREATER THAN FOUR (4)% GRADE FROM THE EDGE OF ROADWAY TO A DISTANCE OF FORTY (40) FEET FROM THE EDGE OF STREET PAVEMENT.
- SECTION 4.16.4. DRIVEWAYS SHALL BE A MINIMUM OF TWELVE (12) FEET WIDE AND A MAXIMUM OF SIXTEEN (16) FEET WIDE.
- SECTION 4.16.5. DRIVEWAYS SHALL BE CONSTRUCTED AT A MAXIMUM GRADE OF TWELVE (12) PERCENT.

**GRADING & UTILITIES PLAN**

HOMESTEAD LANE  
 DEFINITIVE SUBDIVISION PLAN  
 GROVELAND, MASSACHUSETTS  
 OWNER: BILLY H. & KATIE A. DARKE  
 53 MAIN STREET, GROVELAND, MA 01834  
 APPLICANT: CHRISTOPHER DARKE  
 48 KING STREET, GROVELAND, MA

PORT ENGINEERING ASSOCIATES, INC.  
 ONE HARRIS ST., NEWBURYPORT, MA. 01950  
 TELEPHONE : (978) 465-8594

REVISIONS	
DATE	DESCRIPTION
03/09/07	T.P.T. LOTS RECONFIGURATION AND RELATED CHANGES
08/28/07	M.R.D. EDIT PER 4/27/07 CAMMETT ENGINEERING REVIEW
10/08/07	M.R.D. EDIT PER 10/01/07 CAMMETT ENGINEERING REVIEW
11/29/08	T.P.T. PLOT ON W/PLR AND FINAL REVISIONS
12/09/08	T.P.T. ADD DETENTION BASIN FENCING



DATE	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	JOB No.	SHEET No.
02/12/07	D.T.D.	T.P.T.	P.D.T.	1"=40'	P2999	3 OF 10

**PLAN BOOK 437 PLAN 99**  
 Received May 20, 2013  
 with APLs Billy H. + Katie A. Darke  
 Rec B: 32483 p. 79  
 J. B. ...  
 Registrar of Deeds (11 ps)

FOR REGISTRY USE ONLY  
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS  
 Paul D. Turbide PE/PLS 11/25/08  
 DATE

TOWN OF GROVELAND, MA  
 PLANNING BOARD APPROVAL UNDER THE SUBDIVISION CONTROL LAW, M.G.L. CH. 41, S. 81-U  
 Carol ...  
 DATE 12-11-2008

APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS STATED IN A MEMORANDUM OF DECISION DATED MAY 27, 2008 BETWEEN THE GROVELAND PLANNING BOARD, ON BEHALF OF THE TOWN OF GROVELAND, BILLY DARKE, AND CHRISTOPHER DARKE

A COPY OF WHICH DECISION IS RECORDED HERewith AND SUBJECT ALSO TO RECORDING OF THIS PLAN AND SAID DECISION IN THE SOUTH ESSEX REGISTRY OF DEEDS ON OR BEFORE SEPTEMBER 10, 2008 IN BOOK 28032 PAGE 275

APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS OF A COVENANT RECORDED IN ESSEX SOUTH DISTRICT REGISTRY OF DEEDS BOOK 28032 PAGE 284

GROVELAND PLANNING BOARD  
 DATE FILED: 2/13/07  
 PUBLIC HEARING OPENED: 3/13/07  
 SITEMARK: 6/30/07  
 PUBLIC HEARING CLOSED: 1/22/08  
 DATE APPROVED: 6/10/08  
 DECISION FILED: 6/25/08

GROVELAND TOWN CLERK:  
 I HEREBY CERTIFY THAT NO APPEAL HAS BEEN FILED WITHIN THE 20 DAYS AS PRESCRIBED BY M.G.L. CHAPTER 41, SECTION 81 B-B.  
 Carol ... 12/10/08  
 TOWN CLERK DATE

DRIVEWAY NOTE:  
 ALL DRIVEWAYS TO BE CONSTRUCTED IN ACCORDANCE WITH TOWN OF GROVELAND RULES AND REGULATIONS. (SEE NOTES SHEET #3)

**CENTERLINE DATA**

STA. 0+00.00	N 79-59-53 E	L= 41.69'
STA. 0+41.69 PC	R=204.00'	L=135.09' D=37-56-29
STA. 1+76.78 PT	N 42-03-23 E	L=93.43'
STA. 2+70.21 PC	R=200.00'	L=21.07' D=6-02-08
STA. 2+91.28 PRC	R=150.00'	L=61.85' D=23-37-32
STA. 3+53.13 PRC	R=203.69'	L=81.68' D=22-58-34
STA. 4+34.81 PRC	R=88.00'	L=79.03' D=51-27-14
STA. 5+13.84 PRC	R=43.00'	L=206.35' D=274-57-19
STA. 7+20.19 PRC	R=88.00'	L=57.46' D=37-24-30
STA. 7+77.65 PCC	R=203.69'	L=21.66' D=6-05-35
STA. 7+99.31		

**CURVE DATA**

C1	R=38.00'	L=36.81'	VERTICAL GRANITE CURB
C2	S79°59'53"W	L=34.17'	SLOPED GRANITE CURB
C3	R=216.00'	L=143.04'	SLOPED GRANITE CURB
C4	S42°03'23"W	L=93.43'	SLOPED GRANITE CURB
C5	R=188.00'	L=19.80'	SLOPED GRANITE CURB
C6	R=138.00'	L=56.90'	SLOPED GRANITE CURB
C7	R=215.69'	L=78.87'	SLOPED GRANITE CURB
C8	R=100.00'	L=78.74'	SLOPED GRANITE CURB
C9	R=55.00'	L=256.62'	SLOPED GRANITE CURB
C10	R=100.00'	L=67.51'	SLOPED GRANITE CURB
C11	R=191.69'	L=81.94'	SLOPED GRANITE CURB
C12	R=162.00'	L=66.80'	SLOPED GRANITE CURB
C13	R=212.00'	L=22.33'	SLOPED GRANITE CURB
C14	N42°03'23"E	L=93.43'	SLOPED GRANITE CURB
C15	R=192.00'	L=127.14'	SLOPED GRANITE CURB
C16	N79°59'53"E	L=9.62'	SLOPED GRANITE CURB
C17	R=38.41'	L=61.76'	VERTICAL GRANITE CURB

**LEGEND**

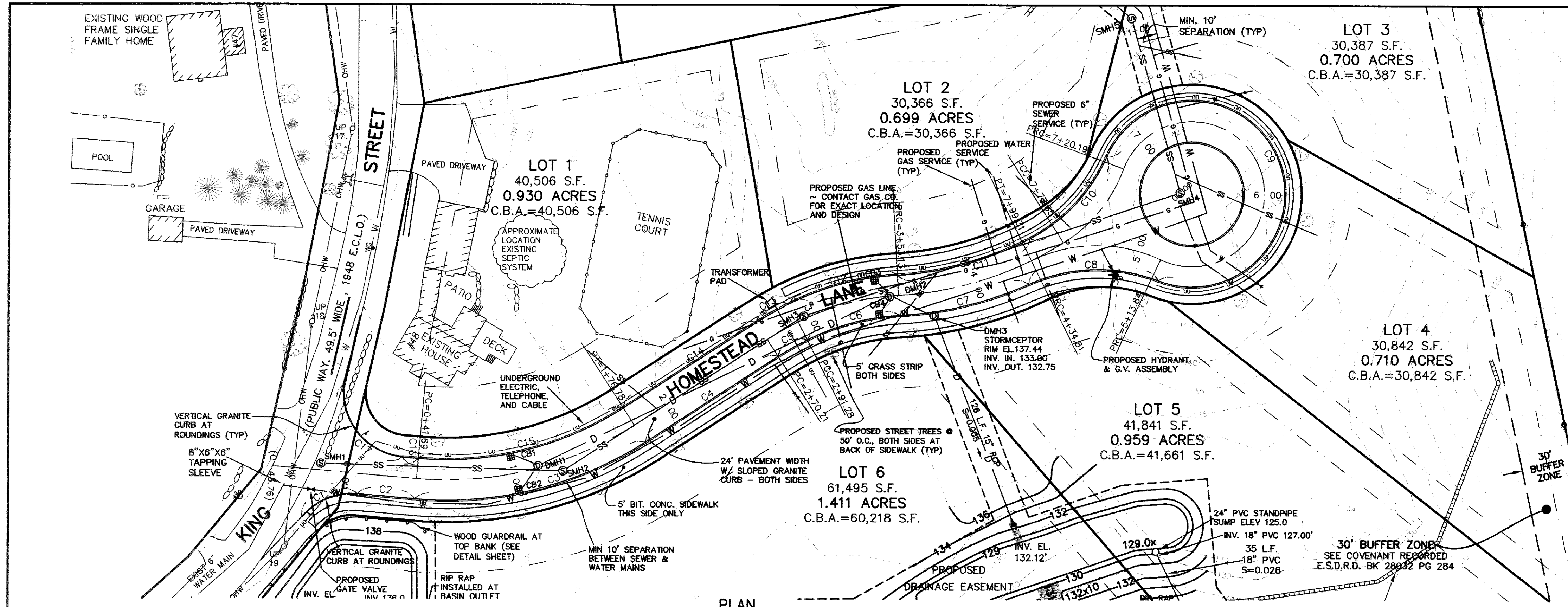
- EXISTING INDEX CONTOUR LINE
- EXISTING INTERMEDIATE CONTOUR LINE
- EXISTING TREE
- EXISTING PINE
- EXISTING WATER LINE
- EXISTING FIRE HYDRANT
- EXISTING DWELLING
- EXISTING TREE LINE
- EXISTING WETLAND
- PROPOSED CATCH BASIN
- EXISTING WATER GATE
- PROPOSED INDEX CONTOUR LINE
- PROPOSED INTERMEDIATE CONTOUR LINE
- PROPOSED FIRE HYDRANT
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER LINE
- PROPOSED WATER LINE
- PROPOSED DRAIN LINE
- PROPOSED DRAIN MANHOLE
- PROPOSED FLARED END

**REVISIONS**

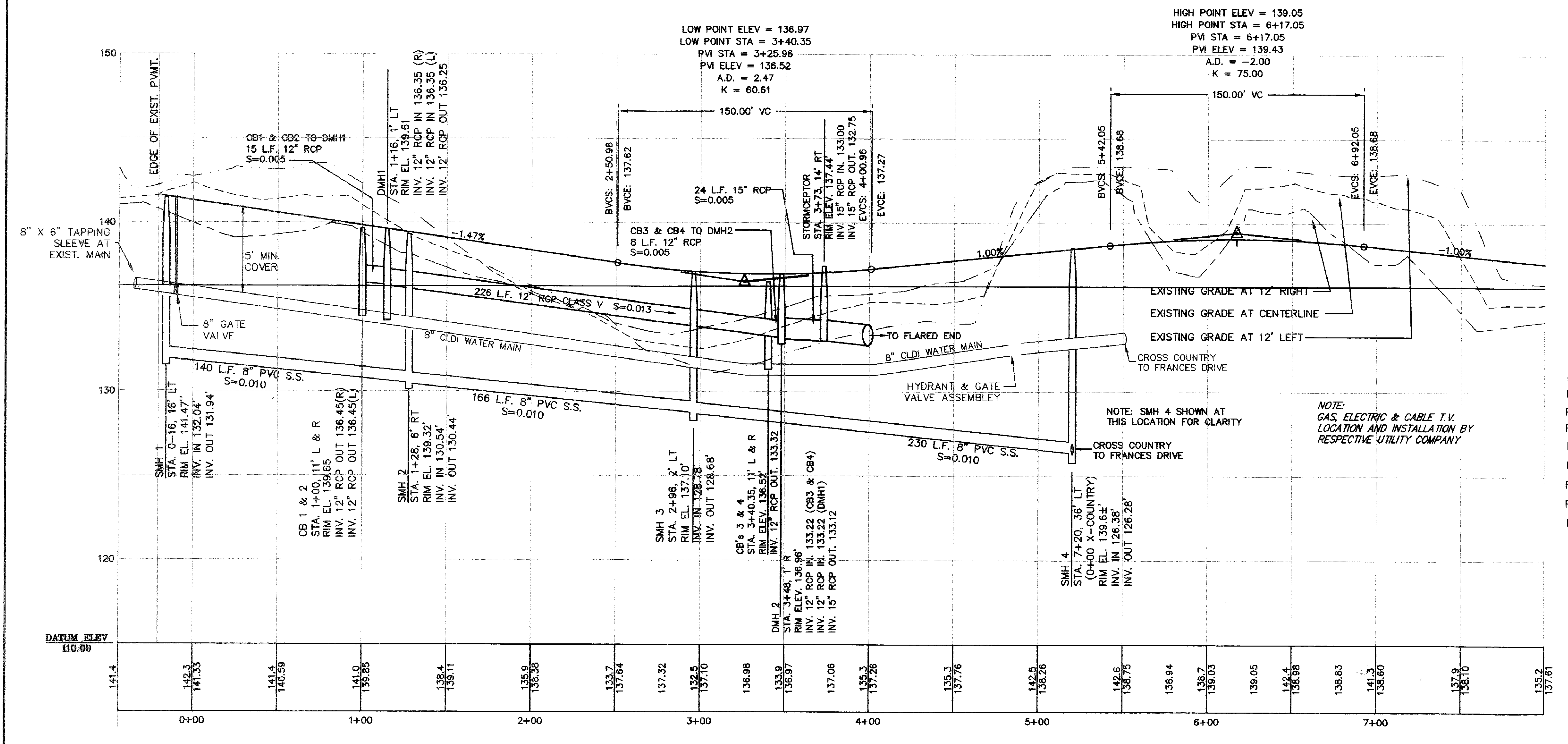
DATE	BY	DESCRIPTION
03/09/07	T.P.T.	LOTS RECONFIGURATION AND RELATED CHANGES
09/28/07	M.R.D.	EDIT FOR 4/27/07 GAMMETT ENGINEERING REVIEW
11/24/08	T.P.T.	PLOT ON W/PLAN AND FINAL REVISIONS

PAUL D. TURBIDE, PE/PLS  
 11/25/08  
 DATE

**PLAN AND PROFILE SHEET**  
**HOMESTEAD LANE**  
 DEFINITIVE SUBDIVISION PLAN  
 GROVELAND, MASSACHUSETTS  
 OWNER: BILLY H. & KATIE A. DARKE  
 53 MAIN STREET, GROVELAND, MA 01834  
 APPLICANT: CHRISTOPHER DARKE  
 48 KING STREET, GROVELAND, MA  
**PORT ENGINEERING ASSOCIATES, INC.**  
 ONE HARRIS ST., NEWBURYPORT, MA 01950  
 TELEPHONE: (978) 465-8594  
 DESIGNED BY: T.P.T. DRAWN BY: T.P.T. CHECKED BY: P.D.T. SCALE: 1"=40' JOB No. P2999 SHEET No. 4 OF 10

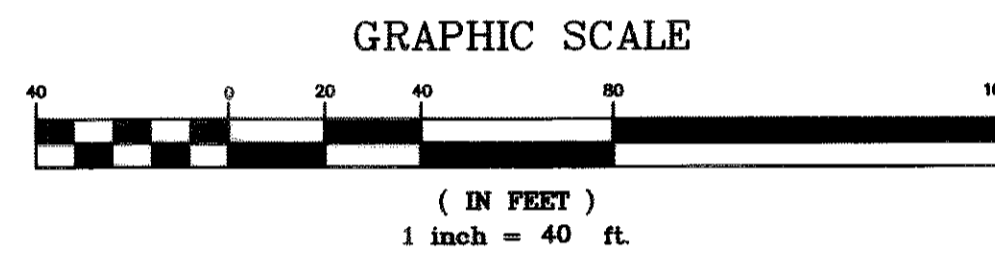
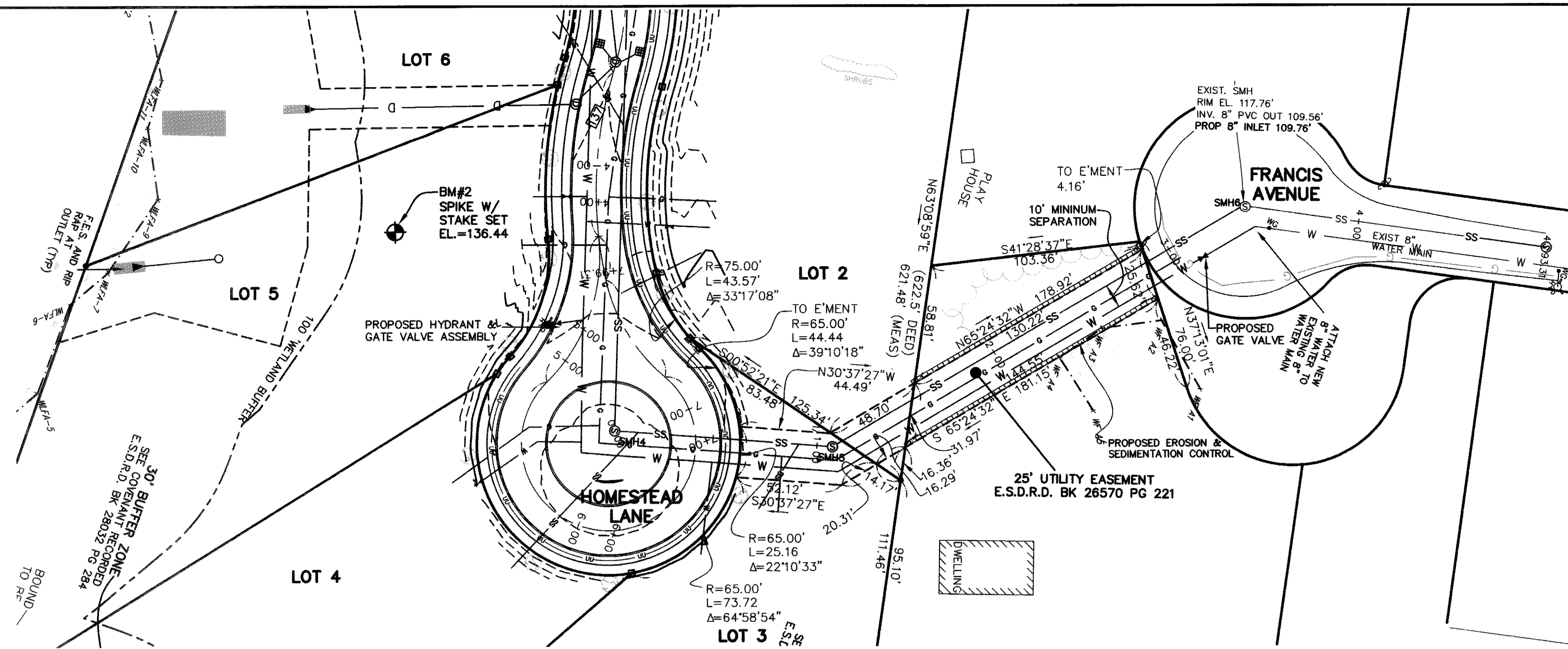


**PLAN**  
 SCALE: 1"=40'

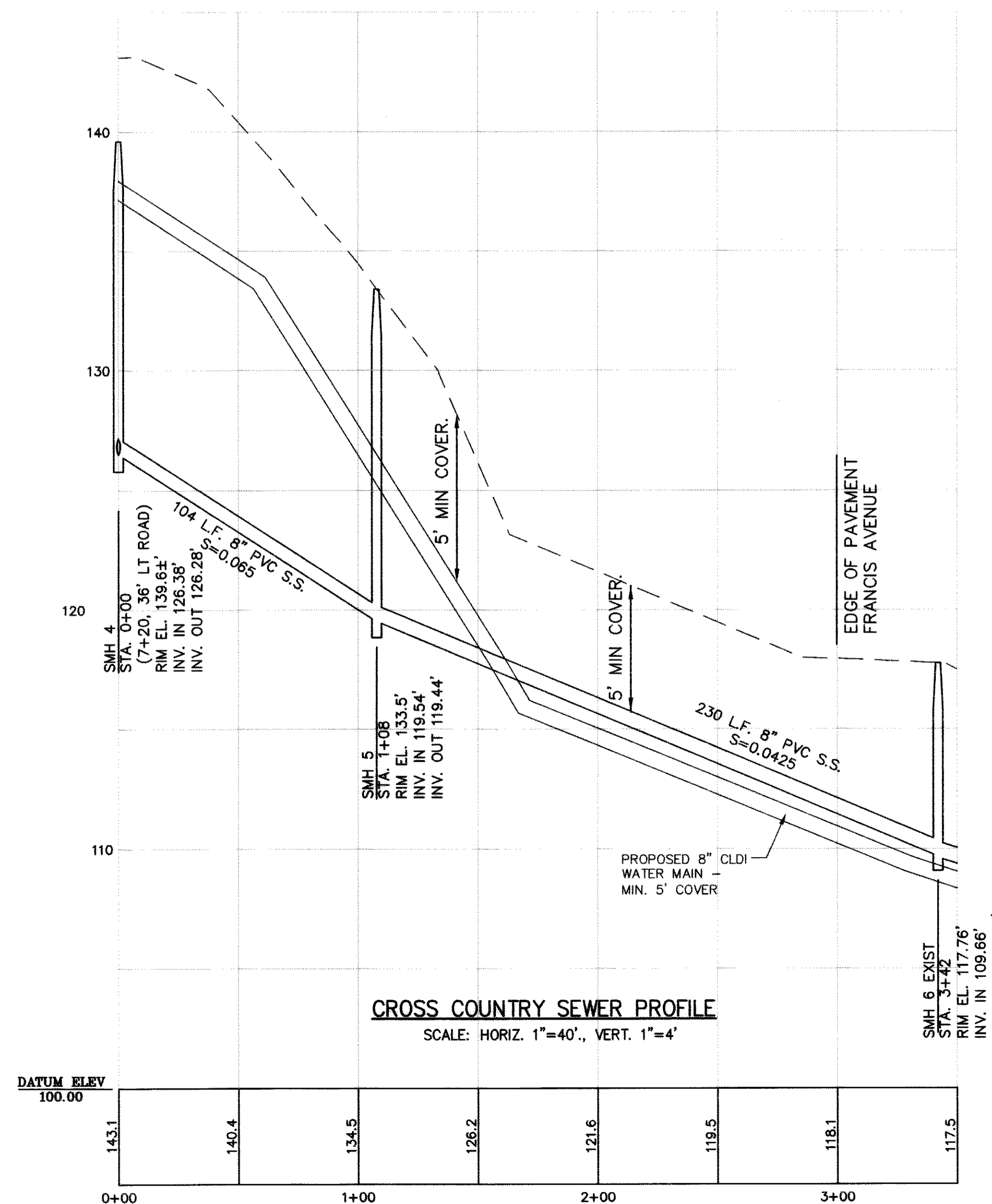


**ROAD PROFILE**  
 SCALE: 1"=40' HORIZ., 1"=4' VERT.





CROSS COUNTRY SEWER PLAN  
SCALE: 1"=40'



CROSS COUNTRY SEWER PROFILE  
SCALE: HORIZ. 1"=40', VERT. 1"=4'

LEGEND OF SYMBOLS

- EXISTING INDEX CONTOUR LINE
- EXISTING INTERMEDIATE CONTOUR LINE
- EXISTING TREE
- EXISTING PINE
- EXISTING WATER LINE
- EXISTING FIRE HYDRANT
- EXISTING DWELLING
- EXISTING TREE LINE
- EXISTING WETLAND
- PROPOSED CATCH BASIN
- EXISTING WATER GATE
- PROPOSED INDEX CONTOUR LINE
- PROPOSED INTERMEDIATE CONTOUR LINE
- PROPOSED FIRE HYDRANT
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER LINE
- PROPOSED WATER LINE
- PROPOSED DRAIN LINE
- PROPOSED DRAIN MANHOLE
- PROPOSED FLARED END

NOTES:

- DISTURBED AREA WITHIN EASEMENT TO BE RESTORED TO EXISTING GRADE
- SEE LOT LAYOUT PLAN FOR EASEMENT SURVEY DATA.
- PROPOSED GAS, TEL., CABLE AND ELECTRIC LOCATIONS AND INSTALLATION BY RESPECTIVE UTILITY COMPANY.

99  
437  
C.I.P.S.

PLAN BOOK 437 PLAN 99  
ESSEX REGISTER OF DEEDS 42 CASE  
SALEM MASS  
Received May 20, 2013  
with April, Billy H. +  
Katie A Darke  
Rec B 32482 p249  
J. S. B. R. (C.I.P.S.)  
Register of Deeds

FOR REGISTRY USE ONLY  
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS  
Paul D. Turbide PE/PLS 11/25/08  
DATE

TOWN OF GROVELAND, MA  
PLANNING BOARD APPROVAL UNDER THE SUBDIVISION CONTROL LAW, M.G.L. CH. 141, S. 81-U  
Carol Darke  
12-11-2008  
DATE

APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS STATED IN A MEMORANDUM OF DECISION DATED MAY 27, 2008 BETWEEN THE GROVELAND PLANNING BOARD, ON BEHALF OF THE TOWN OF GROVELAND, BILLY DARKE, AND CHRISTOPHER DARKE

A COPY OF WHICH DECISION IS RECORDED HERewith AND SUBJECT ALSO TO RECORDING OF THIS PLAN AND SAID DECISION IN THE SOUTH ESSEX REGISTRY OF DEEDS ON OR BEFORE SEPTEMBER 10, 2008 IN BOOK 28032 PAGE 275

APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS OF A COVENANT RECORDED IN ESSEX SOUTH DISTRICT REGISTRY OF DEEDS BOOK 28032 PAGE 284

DATE FILED:	2/13/07
PUBLIC HEARING OPENED:	3/13/07
SITWALK:	6/30/07
PUBLIC HEARING CLOSED:	1/22/08
DATE APPROVED:	6/10/08
DECISION FILED:	6/25/08

GROVELAND TOWN CLERK:  
I HEREBY CERTIFY THAT NO APPEAL HAS BEEN FILED WITHIN THE 20 DAYS AS PRESCRIBED BY M.G.L. CHAPTER 41, SECTION 81 B-B.  
Carol Darke 12/11/08  
TOWN CLERK DATE

CROSS COUNTRY SEWER PLAN AND PROFILE

HOMESTEAD LANE  
DEFINITIVE SUBDIVISION PLAN  
GROVELAND, MASSACHUSETTS  
OWNER: BILLY H. & KATIE A. DARKE  
53 MAIN STREET, GROVELAND, MA 01834  
APPLICANT: CHRISTOPHER DARKE  
48 KING STREET, GROVELAND MA

PORT ENGINEERING ASSOCIATES, INC.  
ONE HARRIS ST., NEWBURYPORT, MA. 01950  
TELEPHONE : (978) 465-8594

PAUL D. TURBIDE, PE/PLS 11/25/08  
DATE

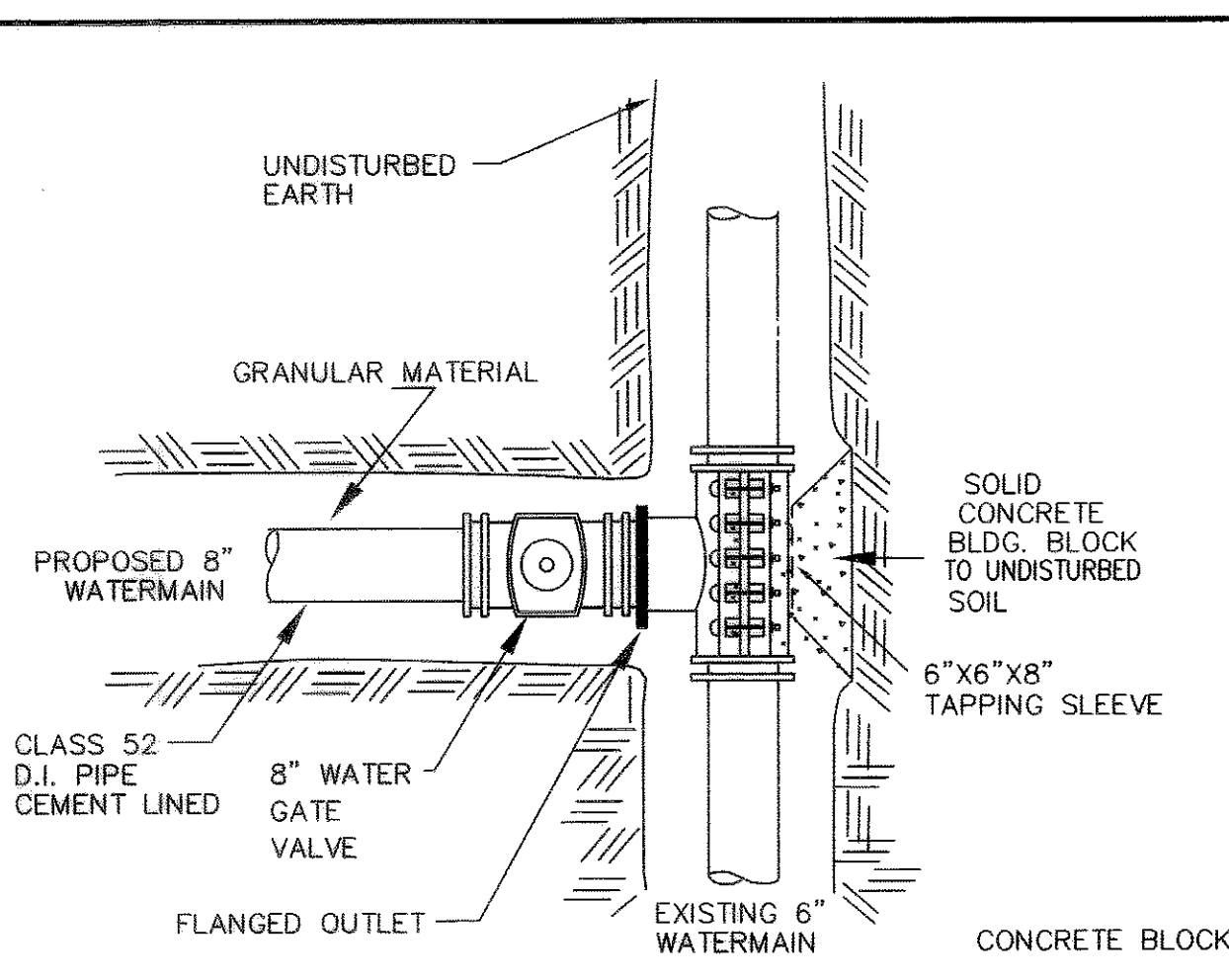
REVISIONS	
DATE	DESCRIPTION
03/09/07	T.P.T. LOTS RECONFIGURATION AND RELATED CHANGES
06/28/07	M.R.D. EDT PDR 4/27/07 CANNETT ENGINEERING REVIEW
10/08/07	M.R.D. EDT PER 10/01/07 CANNETT ENGINEERING REVIEW
11/24/08	T.P.T. PLOT ON MYLAR AND FINAL REVISIONS

PORT ENGINEERING

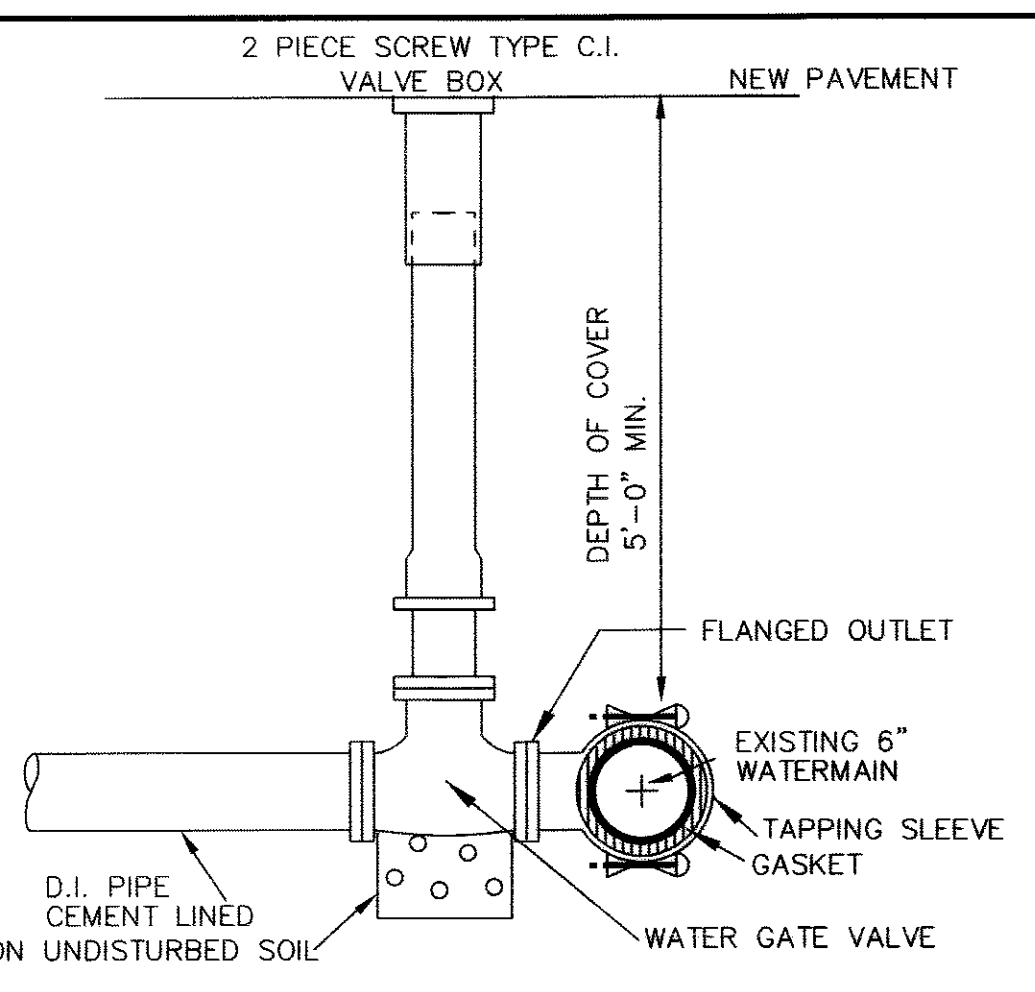
DATE	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	JOB No.	SHEET No.
02/12/07	D.T.D.	T.P.T.	P.D.T.	1"=40'	P2999	5 OF 10

99/437

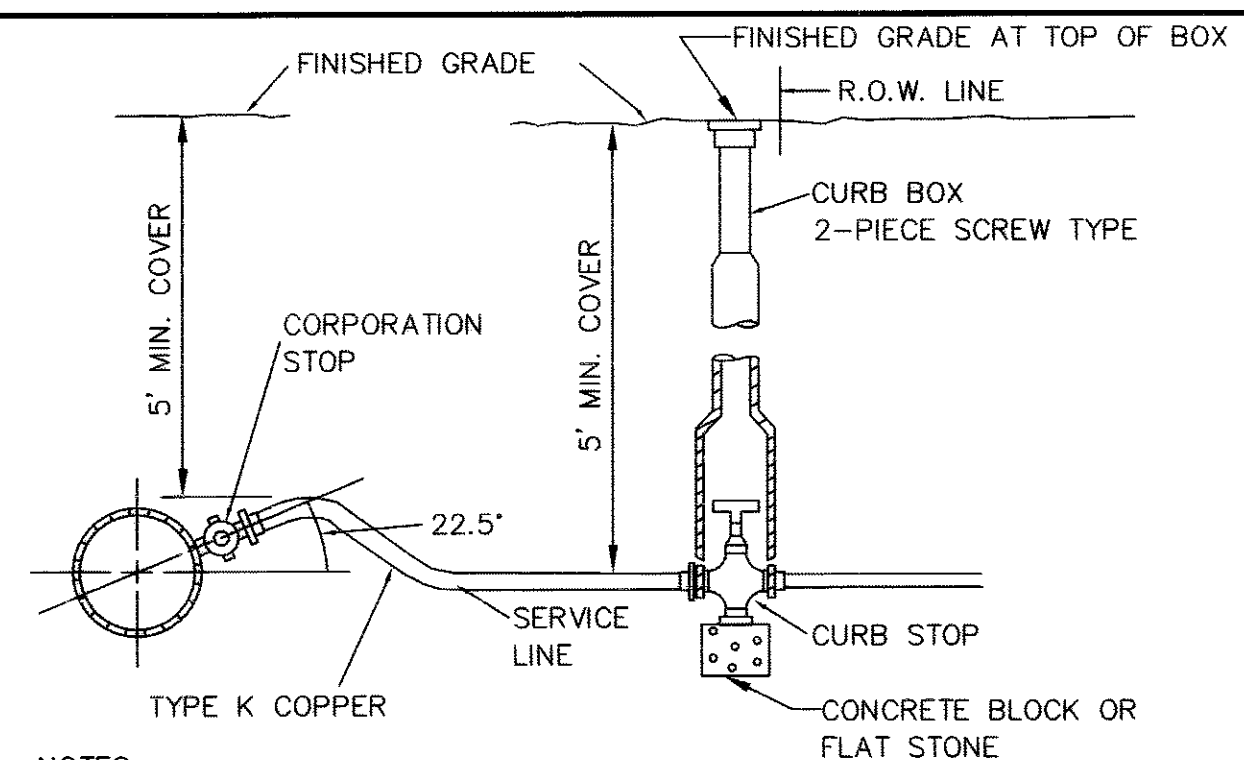
PLAN BOOK 437 PLAN 99  
 Received MAY 20 2013  
 with APVL Billy H + Katie A Darke  
 Rec 231989 249  
 J. D. Turbide (11 PLS)  
 Register of Deeds



PLAN VIEW  
 TAPPING SLEEVE & GATE VALVE ASSEMBLY  
 (NOT TO SCALE)

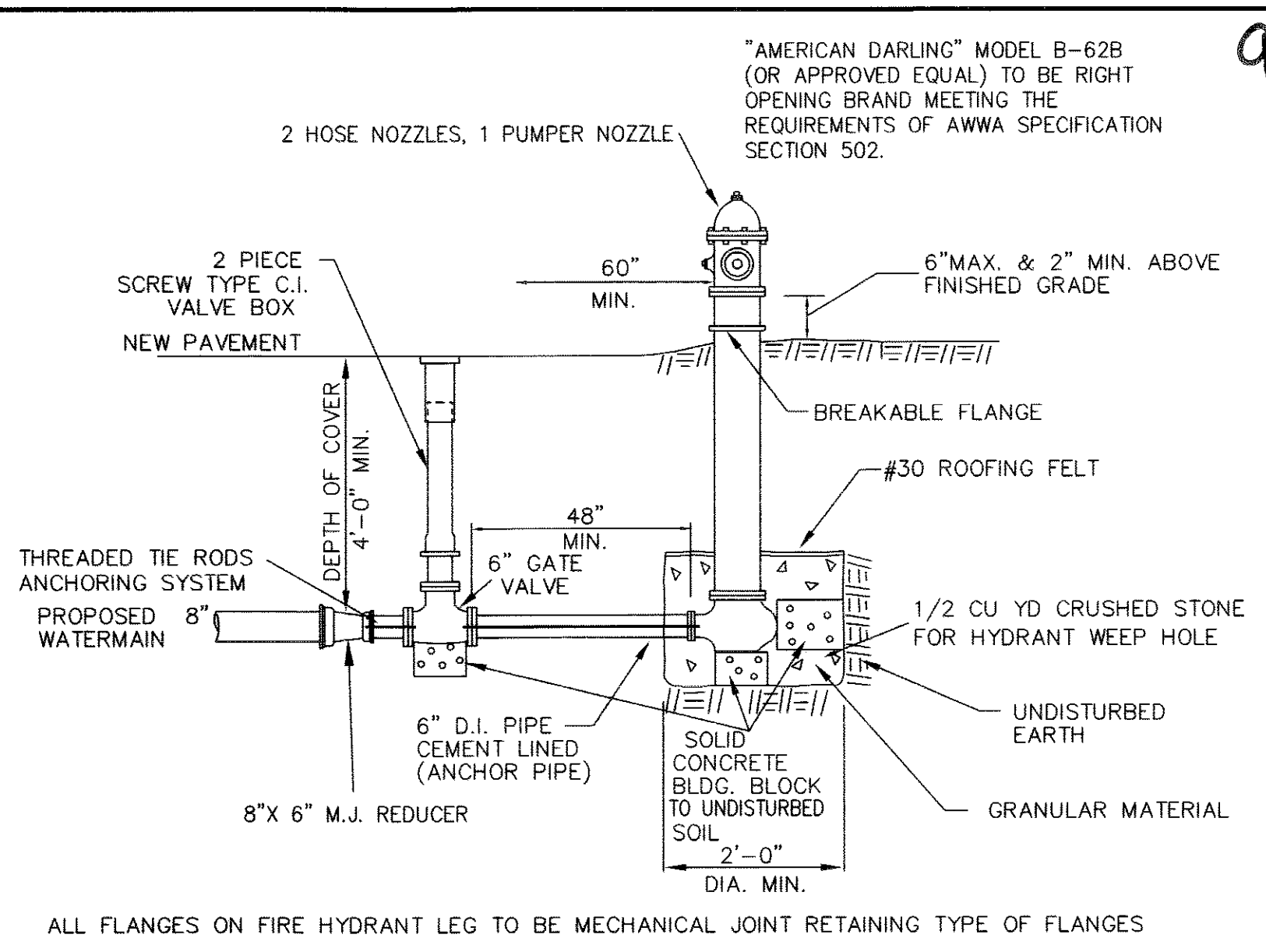


CROSS SECTION VIEW



NOTES:  
 1. FOR SERVICES 1 1/2" AND LARGER, USE BRASS 2 1/2" BEND WITH COMPRESSION COUPLING TO SERVICE LINE.  
 2. NO CURB BOXES SHALL BE PERMITTED TO BE LOCATED IN DITCHES OR DRAINAGE SWALES.  
 SERVICE SADDLES:  
 THE CONTRACTOR SHALL USE SERVICE SADDLES WITH A SERVICE TAP WHEN THE TAP SIZE EXCEEDS THE FOLLOWING:  
 MAIN SIZE      MAXIMUM TAP SIZE  
 6"                1"  
 8"                1 1/2"

TYPICAL WATER SERVICE  
 (NOT TO SCALE)



FIRE HYDRANT ASSEMBLY COMPLETE  
 (NOT TO SCALE)

WATER SYSTEM INSTALLATION NOTES

- ALL WATER SYSTEM VALVES SHALL OPEN "RIGHT"
- ALL WATER MAIN PIPING SHALL BE CLASS 52 CEMENT LINED DUCTILE IRON.
- WATER SERVICE TAPS SHALL BE MADE BY THE TOWN OF GROVELAND WATER DEPARTMENT OR OTHER CONTRACTOR APPROVED BY THE DEPARTMENT.
- DOMESTIC WATER SERVICE TO BE TYPE 'K' ANNEALED COPPER TUBING.
- WATER MAINS ARE TO BE PRESSURE TESTED IN ACCORDANCE WITH THE APPROPRIATE ASTM METHODS AND TOWN OF GROVELAND WATER DEPARTMENT REQUIREMENTS.
- THE CONTRACTOR SHALL PRESENT A CONSTRUCTION SCHEDULE TO THE TOWN OF GROVELAND WATER DEPARTMENT SEVEN (7) DAYS PRIOR TO THE START OF CONSTRUCTION FOR THE PURPOSE OF SCHEDULING INSPECTIONS AND OVERSIGHT.

FOR REGISTRY USE ONLY  
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS  
 PAUL D. TURBIDE PE/PLS      4/25/08  
 DATE

TOWN OF GROVELAND, MA  
 PLANNING BOARD APPROVAL UNDER THE SUBDIVISION CONTROL LAW, M.G.L. CH. 141, S. 81-U  
 Carol H.      12-11-2008  
 DATE

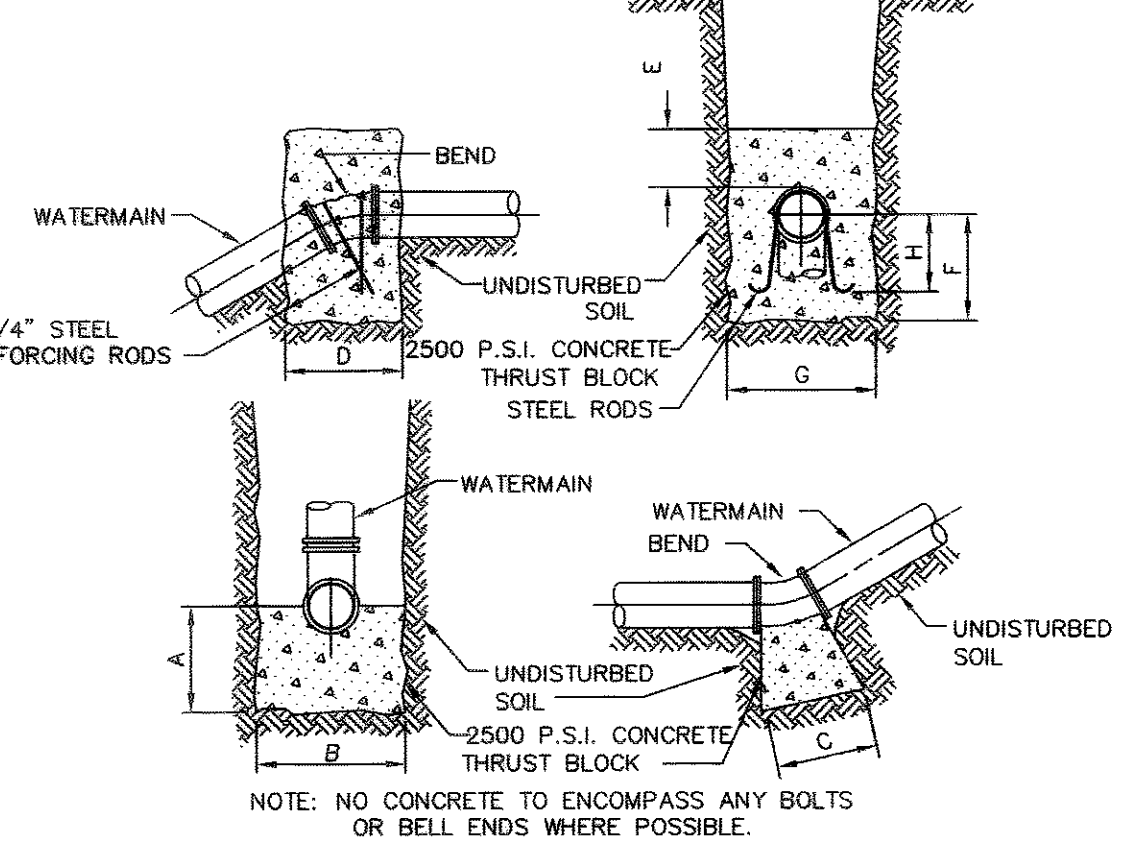
DATE FILED: 2/13/07  
 PUBLIC HEARING OPENED: 3/13/07  
 SITEMARK: 6/30/07  
 PUBLIC HEARING CLOSED: 1/22/08  
 DATE APPROVED: 6/10/08  
 DECISION FILED: 6/25/08

GROVELAND TOWN CLERK:  
 I HEREBY CERTIFY THAT NO APPEAL HAS BEEN FILED WITHIN THE 20 DAYS AS PRESCRIBED BY M.G.L. CHAPTER 41, SECTION 81 B-B.  
 Carol Burden 12/10/08  
 TOWN CLERK      DATE

APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS STATED IN A MEMORANDUM OF DECISION DATED MAY 27, 2008 BETWEEN THE GROVELAND PLANNING BOARD, ON BEHALF OF THE TOWN OF GROVELAND, BILLY DARKE, AND CHRISTOPHER DARKE  
 A COPY OF WHICH DECISION IS RECORDED HEREWIT AND SUBJECT ALSO TO RECORDING OF THIS PLAN AND SAID DECISION IN THE SOUTH ESSEX REGISTRY OF DEEDS ON OR BEFORE SEPTEMBER 10, 2008 IN BOOK 28032 PAGE 275  
 APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS OF A COVENANT RECORDED IN ESSEX SOUTH DISTRICT REGISTRY OF DEEDS BOOK 28032 PAGE 284  
 GROVELAND PLANNING BOARD

BEND	Min. Volume of Concrete For Block dimensions D,E,F,G	A	B	C	D	E	F	G	ROD LENGTH H
6" 11 1/4"	.2 Cu. Yd.	1.0	2.5	1.0	2.0	0.5	1.0	2.0	0.5
22 1/2"	.4 Cu. Yd.	1.0	2.5	1.5	2.0	1.0	2.0	2.0	1.5
45"	.8 Cu. Yd.	1.5	2.5	1.5	2.5	1.5	2.0	2.5	1.5
90"	1.5 Cu. Yd.	1.5	2.5	2.0	4.0	1.5	2.0	3.0	1.5
6" 11 1/4"	.35 Cu. Yd.	1.0	2.5	1.5	2.0	1.0	1.5	2.0	1.0
22 1/2"	.7 Cu. Yd.	1.5	2.5	1.5	2.5	1.0	2.0	2.5	1.5
45"	1.4 Cu. Yd.	1.5	2.5	2.0	4.0	1.5	2.0	3.0	1.5
90"	2.8 Cu. Yd.	2.0	2.5	2.0	4.0	2.0	3.0	3.5	2.5
12" 11 1/4"	.8 Cu. Yd.	1.5	3.0	1.5	2.5	1.5	2.0	2.5	1.5
22 1/2"	1.6 Cu. Yd.	1.5	3.0	2.0	4.0	2.0	3.0	3.0	1.5
45"	3.2 Cu. Yd.	2.0	3.0	2.0	5.0	2.0	3.0	3.5	2.5
90"	6.0 Cu. Yd.	2.0	3.0	2.5	5.5	2.5	3.5	3.5	3.0

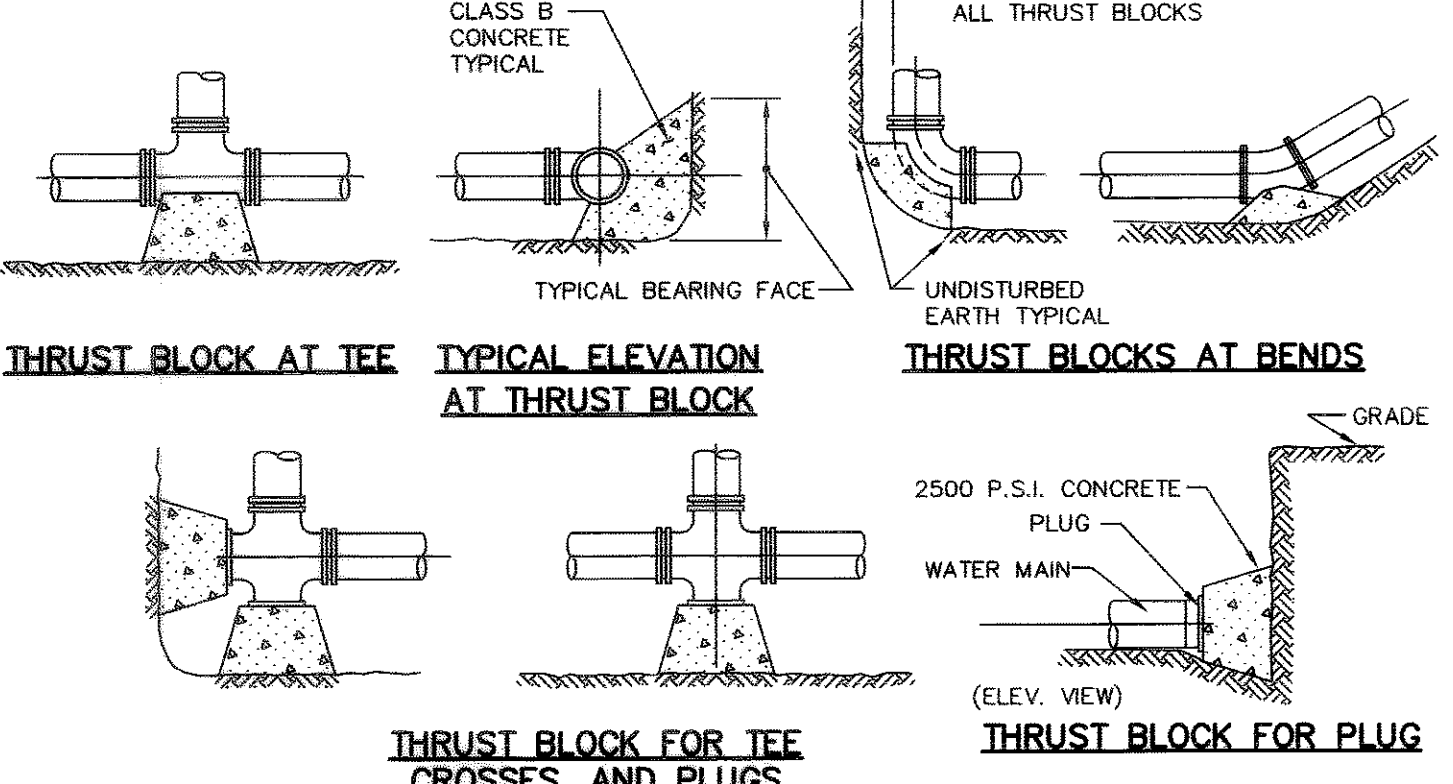
NOTE: THE DEVELOPER MAY ELECT TO USE REINFORCING RODS AS OPPOSED TO CONCRETE THRUST BLOCKS FOR VERTICAL BENDS. ALL THRUST RESTRAINT BY ROD SHALL BE APPROVED BY THE CITY OF TEWKSBURY WATER DEPARTMENT PRIOR TO INSTALLATION.



VERTICAL THRUST BLOCK DETAIL  
 N.T.S.

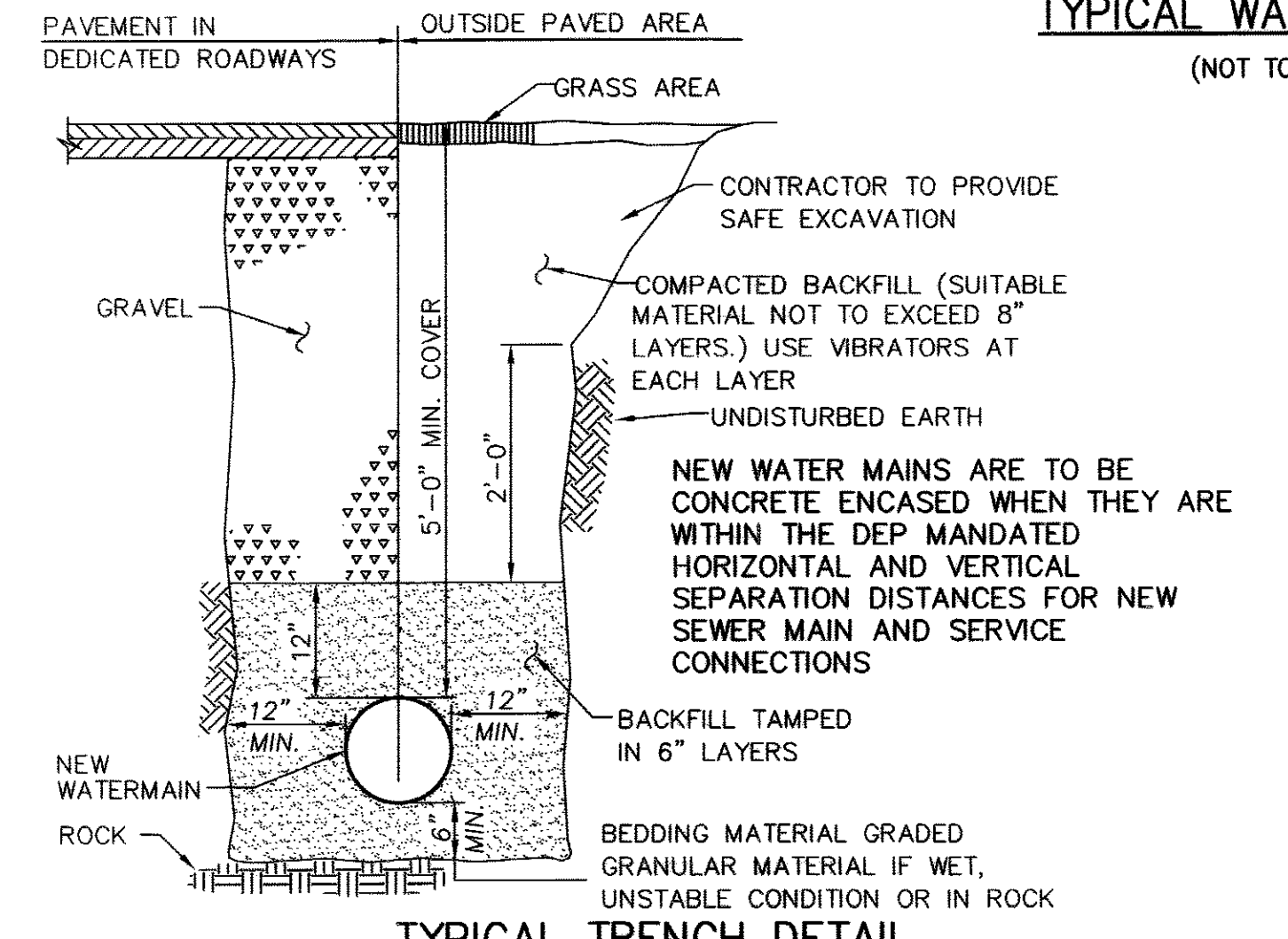
PIPE SIZE	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND	TEE OR BEND	TEE OR BEND
4" 6"	6	3	3	3	4	5
8"	10	6	3	3	8	8
12"	22	12	6	3	16	16
16"	24	13	7	3	19	19
20"	37	20	10	5	28	28

AREAS BASED ON AN INTERNAL PRESSURE OF 150 P.S.I.G. AND A SOIL BEARING PRESSURE OF 2000 P.S.F.

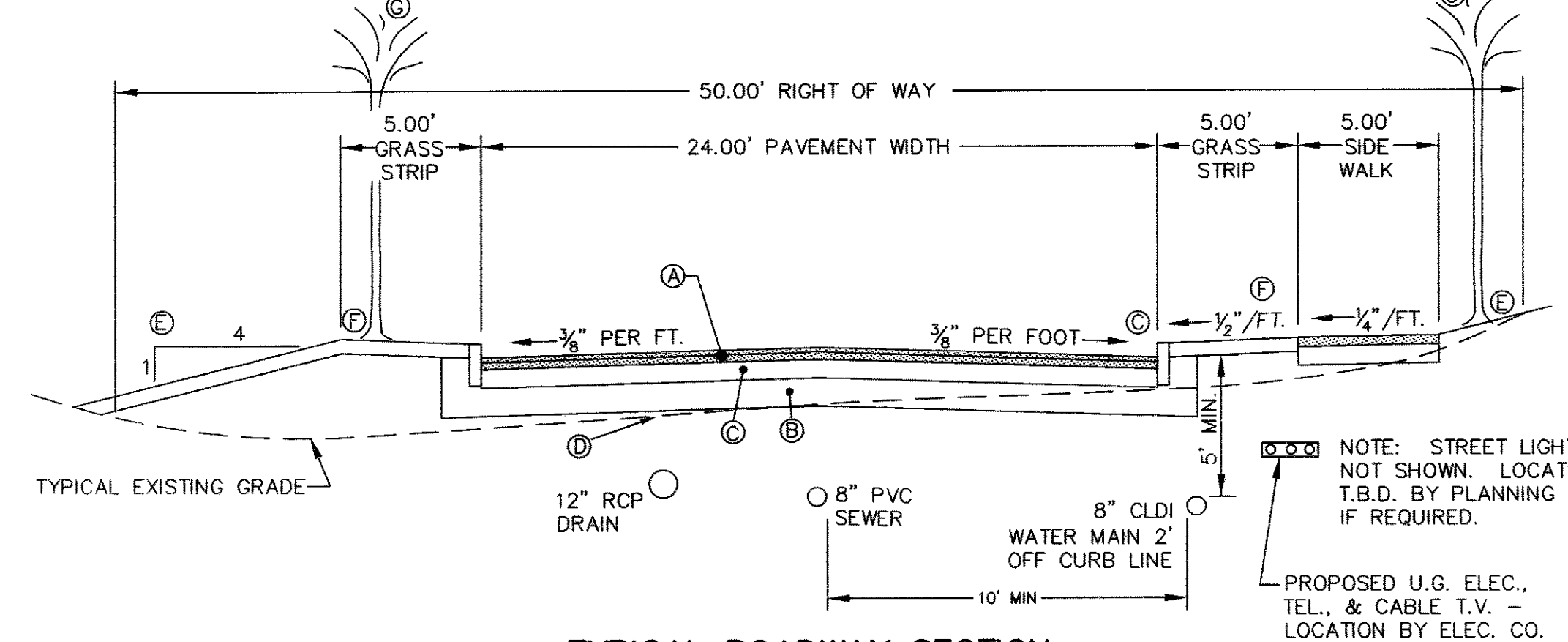


THRUST BLOCK AT TEE  
 TYPICAL BEARING FACE  
 THRUST BLOCKS AT BENDS  
 THRUST BLOCK FOR TEE CROSSES AND PLUGS  
 THRUST BLOCK FOR PLUG  
 HORIZONTAL THRUST BLOCK FOR BENDS  
 (NOT TO SCALE)

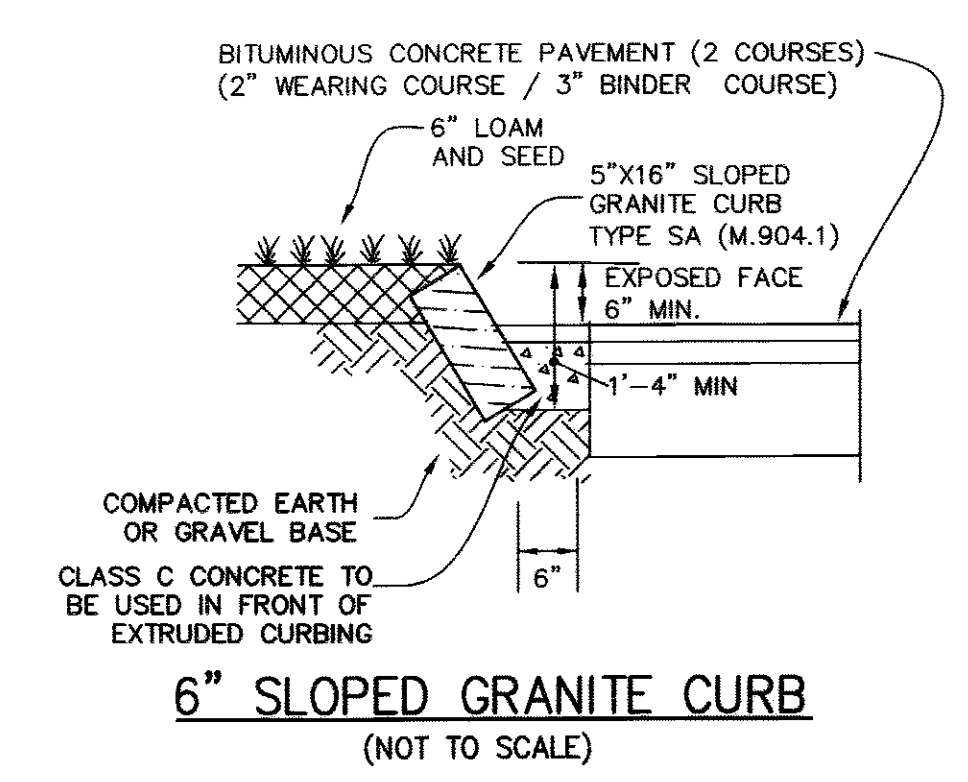
- NOTES:  
 1. THRUST BLOCKS SHALL BE PLACED AT ALL BENDS.  
 2. THRUST BLOCKS SHALL BE PLACED AT ALL TAPPING SLEEVE AND VALVE CONNECTIONS AS SHOWN ABOVE FOR TEE.  
 3. WHERE POSSIBLE, CONCRETE FOR THRUST BLOCKS SHALL NOT COVER BOLTS OR BELLS.



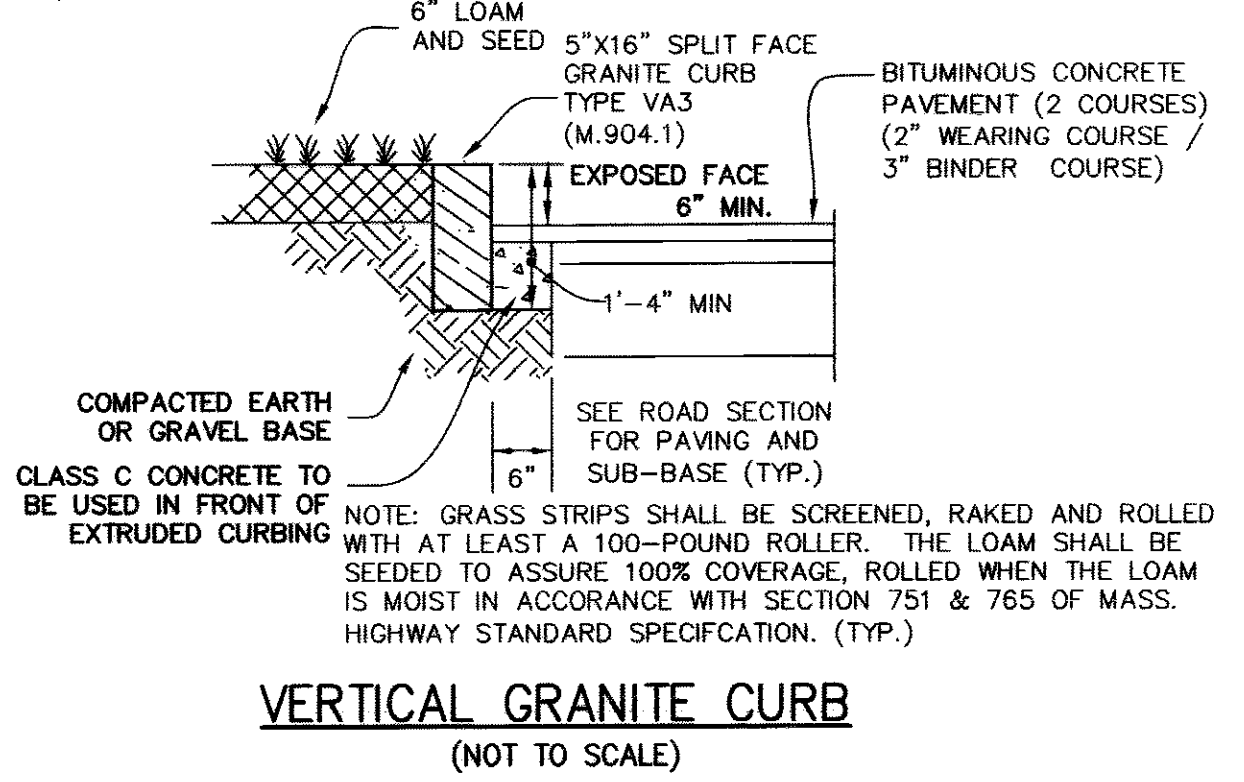
TYPICAL TRENCH DETAIL  
 (NOT TO SCALE)



TYPICAL ROADWAY SECTION  
 (NOT TO SCALE)



6" SLOPED GRANITE CURB  
 (NOT TO SCALE)

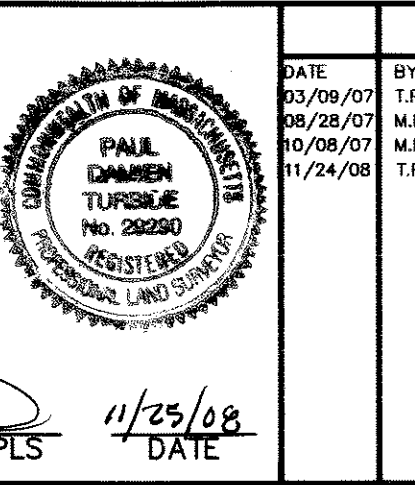
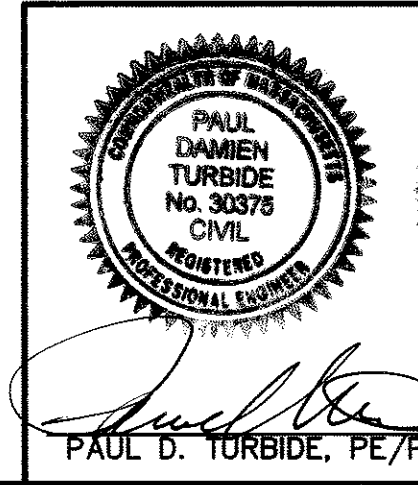


VERTICAL GRANITE CURB  
 (NOT TO SCALE)

PAVEMENT NOTES.

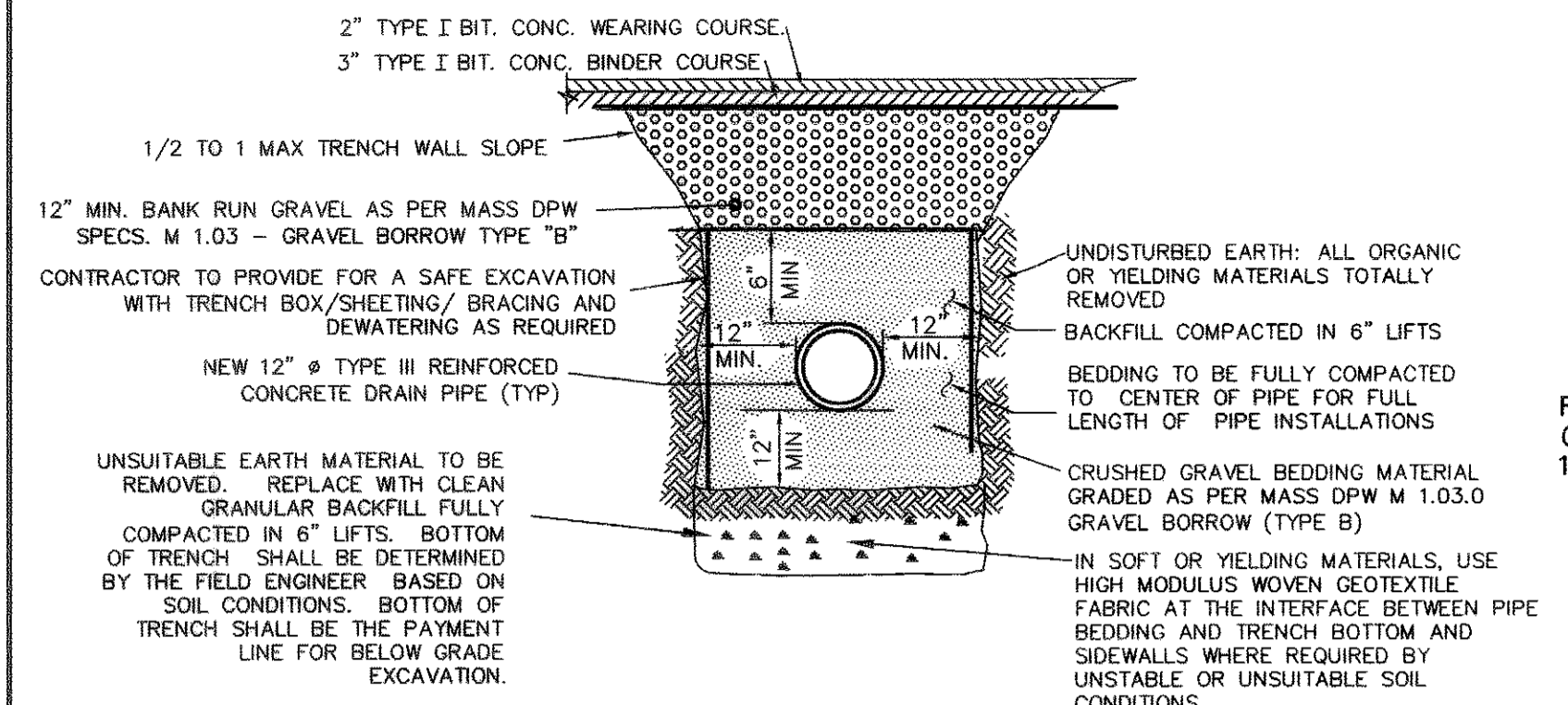
- A. TOTAL 5" BITUMINOUS CONCRETE PAVEMENT IN (THREE) 3 COURSES SPREAD AND FINISHED BY A MECHANICAL SELF POWERED PAVING MACHINE WHICH IS CAPABLE OF SPREADING AND FINISHING THE MIXTURE TRUE TO LINE AND GRADE. 2" TYPE I-1 BITUMINOUS CONCRETE WEARING COURSE AFTER ROLLING IN ACCORDANCE WITH MHD SPECIFICATIONS M3.11.03 TABLE A. 3" TYPE I-1 BITUMINOUS CONCRETE BINDER COURSE AFTER ROLLING IN ACCORDANCE WITH MHD SPECIFICATIONS M3.11.03 TABLE A
- B. 12" BASE OF RUN SELECT GRAVEL AS PER MHD SPECIFICATIONS TYPE (M 1.03.0) - GRAVEL BORROW, TYPE B. TO BE PLACED IN 6" LIFTS COMPACTED WITH A MINIMUM 12 TON VIBRATORY ROLLER TO 95% COMPACTION USING AASHTO T-99 METHOD C. BASE SHALL EXTEND MIN. 2' BEYOND EDGE OF BINDER COURSE.
- THE GRAVEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:  

SIEVE	PERCENT PASSING
3 INCH	100%
1/2 INCH	50-85%
NO.4	40-75%
NO.50	8-28%
NO.200	0-10%
- C. 8" PROCESSED GRAVEL SUB-BASE; TOP AS PER MHD SPECIFICATIONS M1.03.1 AND COMPACTED TO 95% COMPACTION.
- D. PREPARED SUB GRADE SURFACE, 21" BELOW FINISH GRADE, TRUE TO LINE AND GRADE AND CROSS SECTION. COMPACT WITH VIBRATORY ROLLER TO ACHIEVE 95% COMPACTION. PROOF ROLL WITH COMBINED WEIGHT OF 70,000 POUNDS. SOFT MATERIAL BELOW SUBGRADE SURFACE SHALL BE REMOVED AND REPLACED WITH SPECIAL BORROW (M1.02.0) PER MHD SPECIFICATIONS.
- E. TYPICAL EXISTING GRADE WITH LOAM, TOPSOIL, PEAT, AND OTHER ORGANIC, WEAK OR UNSUITABLE SOIL MATERIALS COMPLETELY REMOVED.
- F. GRASS STRIP- 6" LOAM AND SEED
- G. TREES 3"+CALIPER

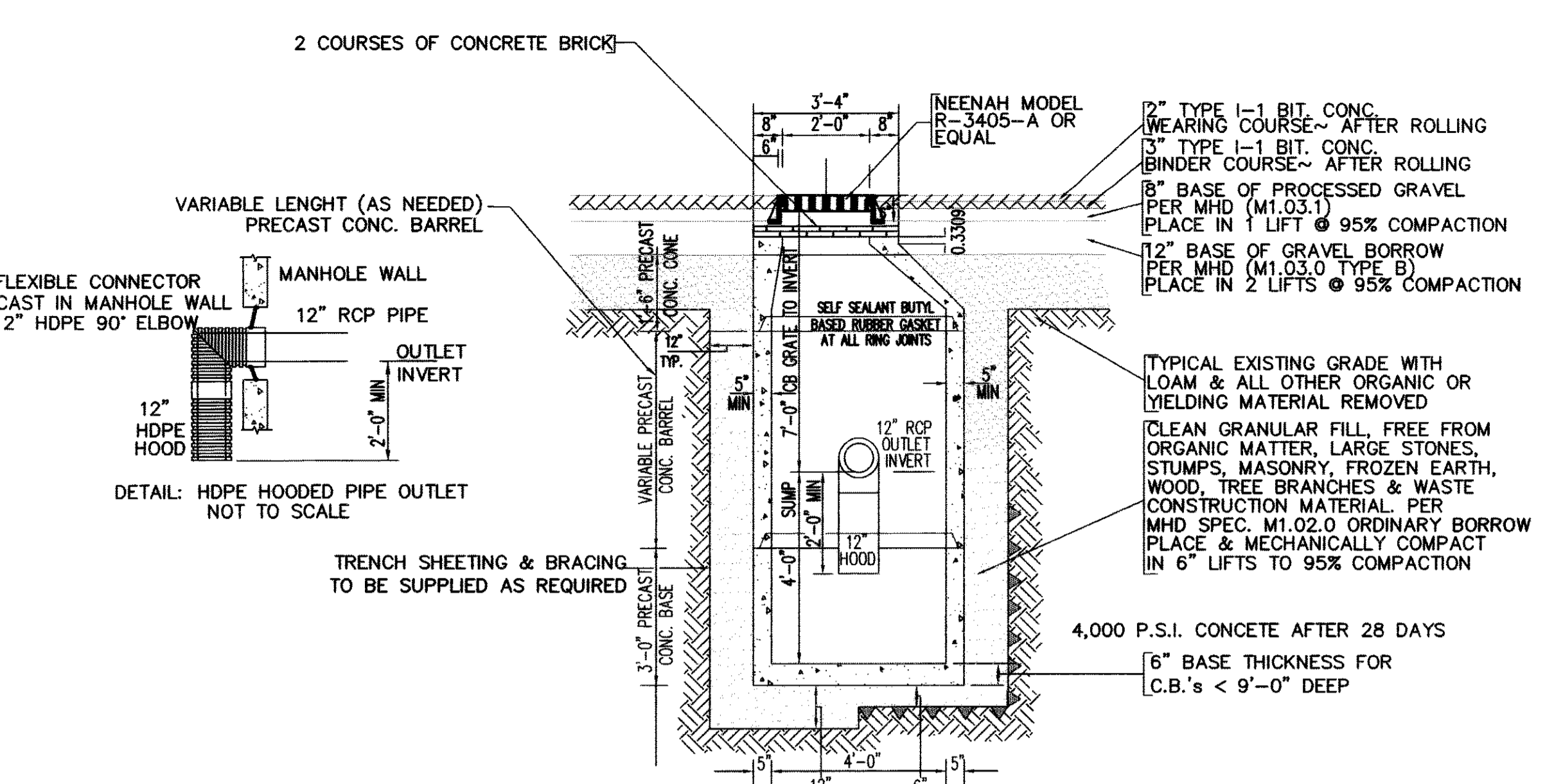


REVISIONS	
DATE	DESCRIPTION
03/09/07	T.P.T.
08/28/07	M.R.D.
10/08/07	M.R.D.
11/24/08	T.P.T.

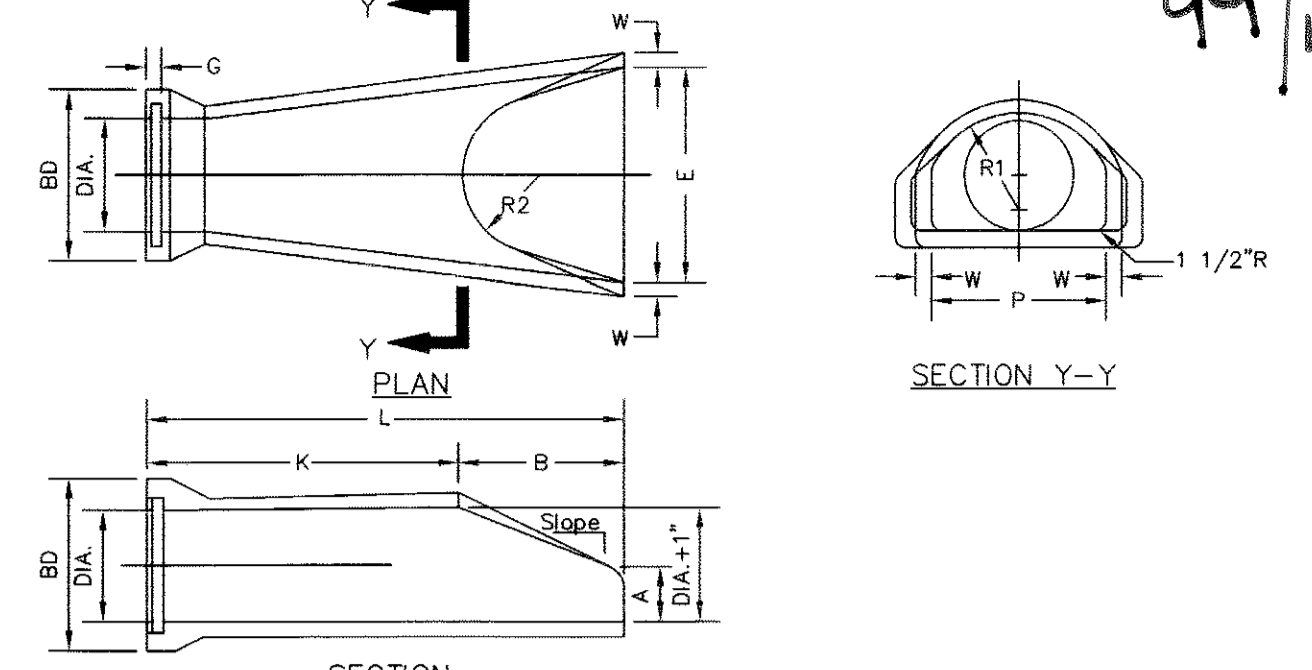
PORT ENGINEERING  
 53 MAIN STREET, GROVELAND, MA 01834  
 APPLICANT: CHRISTOPHER DARKE  
 48 KING STREET, GROVELAND, MA  
 PORT ENGINEERING ASSOCIATES, INC.  
 ONE HARRIS ST., NEWBURYPORT, MA 01950  
 TELEPHONE : (978) 465-8594  
 DATE: 02/12/07  
 DESIGNED BY: T.P.T.  
 DRAWN BY: T.P.T.  
 CHECKED BY: P.D.T.  
 SCALE: 1"=40'  
 JOB NO.: P2999  
 SHEET NO.: 6 OF 10



**SHALLOW STORM DRAIN TRENCH DETAIL**  
(NOT TO SCALE)



**STANDARD DEEP SUMP HOODED CATCH BASIN**  
(NOT TO SCALE)



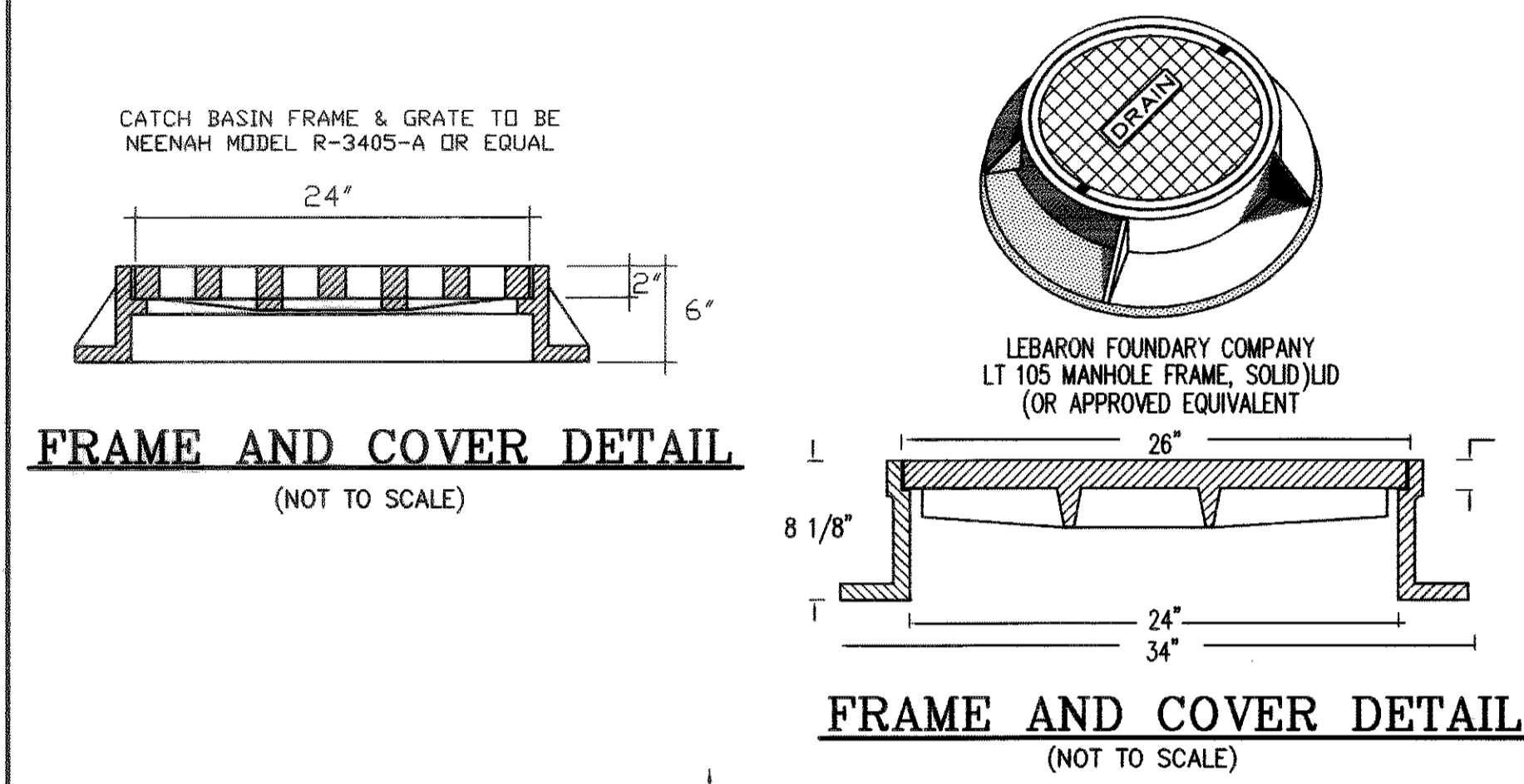
**REINFORCED CONCRETE PIPE FLARED END FOR BELL & SPIGOT PIPE**  
(NOT TO SCALE)

DIA.	W	A	B	C	D	E	BD	K	L	P	DIA. ±1"	R1	R2	S	G	Slope
12"	2"	4"	2'-0"	4'-0 1/8"	6'-1 3/8"	2'-0"	20"	4'-8 1/8"	4'-6 1/8"	19 15/16"	13"	10 1/8"	9"	4"	2 1/2"	3:1
15"	2 1/4"	6"	2'-3"	3'-10 1/2"	6'-1 1/2"	2'-6"	24"	4'-3 11/16"	4'-4 11/16"	24 5/16"	16"	12 1/2"	11"	4"	2 1/2"	3:1
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	28"	4'-3 7/8"	4'-6 7/8"	29"	19"	15 1/2"	12"	4"	2 3/4"	3:1
21"	2 3/4"	9"	2'-11"	3'-2"	6'-1"	3'-6"	32"	3'-8 5/16"	4'-7 5/16"	31 5/8"	22"	16 1/8"	13"	4"	2 3/4"	3:1
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1"	4'-0"	36"	3'-8 1/2"	4'-8"	33 3/16"	25"	18 1/16"	14"	4"	3"	3:1

**Hydro Conduit**  
STC 450i Precast Concrete Stormceptor®  
(450 US Gallon Capacity)

FOR REGISTRY USE ONLY  
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS  
PAUL D. TURBIDE PE/PLS 11/25/08 DATE

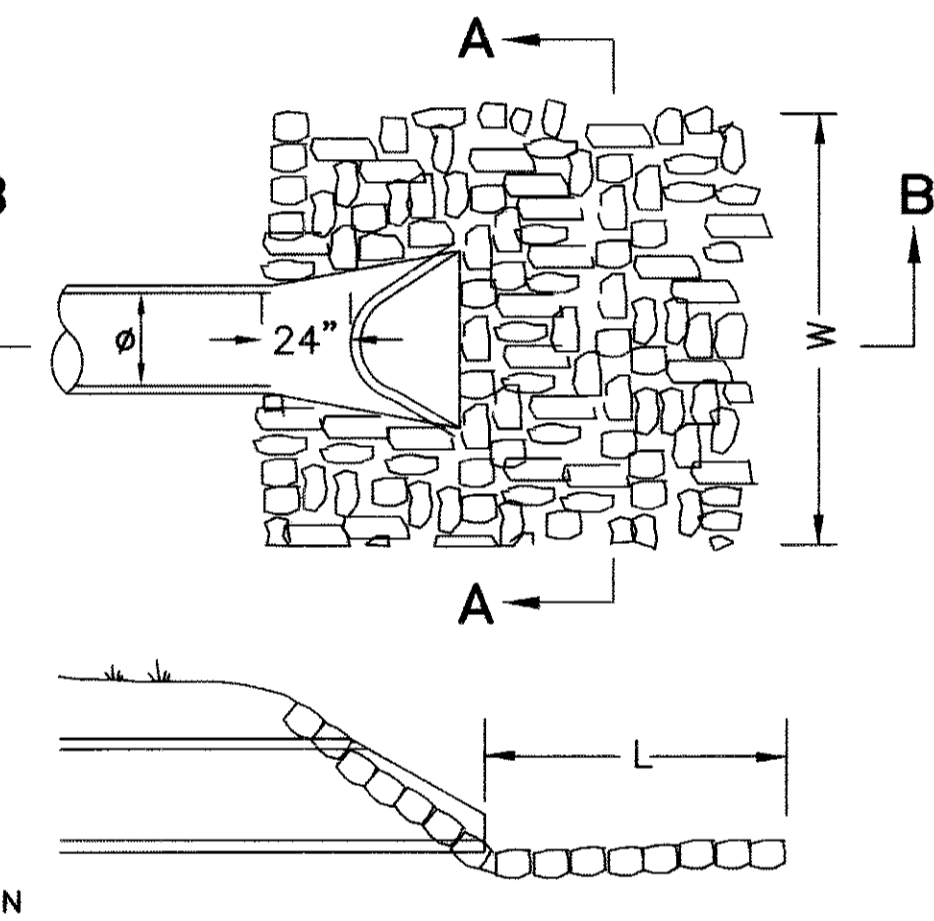
TOWN OF GROVELAND, MA  
PLANNING BOARD APPROVAL UNDER THE SUBDIVISION CONTROL LAW, M.G.L. CH. 41, S. 81-U  
APPROVED: 12-11-2008 DATE



**FRAME AND COVER DETAIL**  
(NOT TO SCALE)

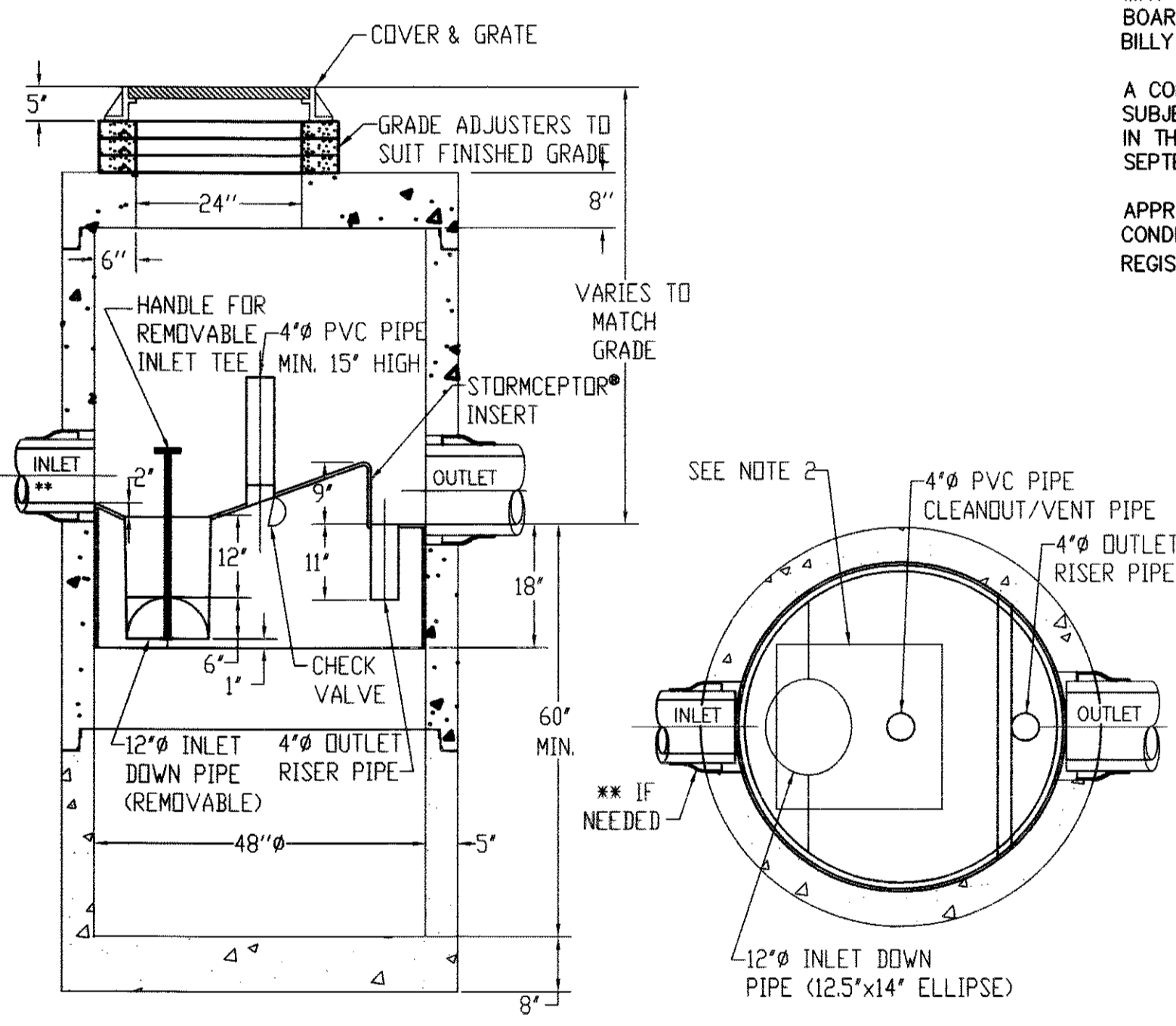
**FRAME AND COVER DETAIL**  
(NOT TO SCALE)

**RIP-RAP SPECIFICATIONS:**  
STONE QUALITY - STONE FOR RIP - RAP SHALL CONSIST OF FIELD STONE OF ROUGH UNHEWN QUARRY STONE. THE STONE SHALL BE HARD AND ANGULAR AND OF A QUALITY THAT WILL NOT DISINTEGRATE UPON EXPOSURE TO WATER OR WEATHERING. THE WEIGHT OF INDIVIDUAL STONES SHALL BE 50# MIN.  
FILTER - A FILTER SHALL BE PLACED UNDER RIP - RAP. THE FILTER CAN BE OF TWO TYPES: A GRAVEL LAYER OR A FILTER CLOTH. A GRAVEL LAYER SHALL CONSIST OF A 6 INCH BED OF SAND AND GRAVEL.



**RIP - RAP APRON DIMENSIONS**

STRUCTURE	W (MIN.)	L (MIN.)
12" PIPES	3'	10'
15" PIPES	4'	13'
18" PIPES	5'	15'
24" PIPES	6'	20'



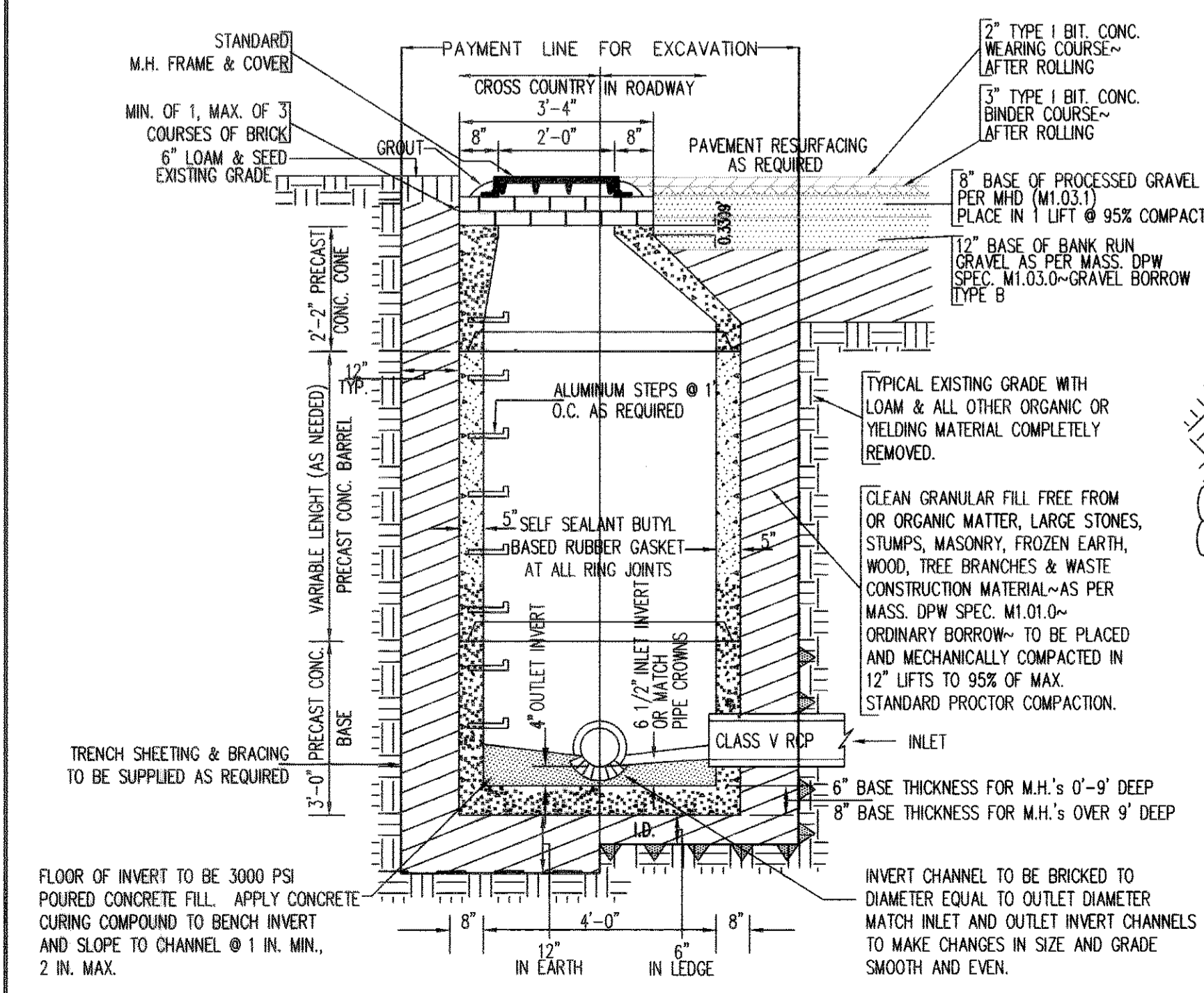
**'STORMCEPTOR' DETAIL**  
(NOT TO SCALE)

APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS STATED IN A MEMORANDUM OF DECISION DATED MAY 27, 2008 BETWEEN THE GROVELAND PLANNING BOARD, ON BEHALF OF THE TOWN OF GROVELAND, BILLY DARKE, AND CHRISTOPHER DARKE  
A COPY OF WHICH DECISION IS RECORDED HERewith AND SUBJECT ALSO TO RECORDING OF THIS PLAN AND SAID DECISION IN THE SOUTH ESSEX REGISTRY OF DEEDS ON OR BEFORE SEPTEMBER 10, 2008 IN BOOK 28032 PAGE 275

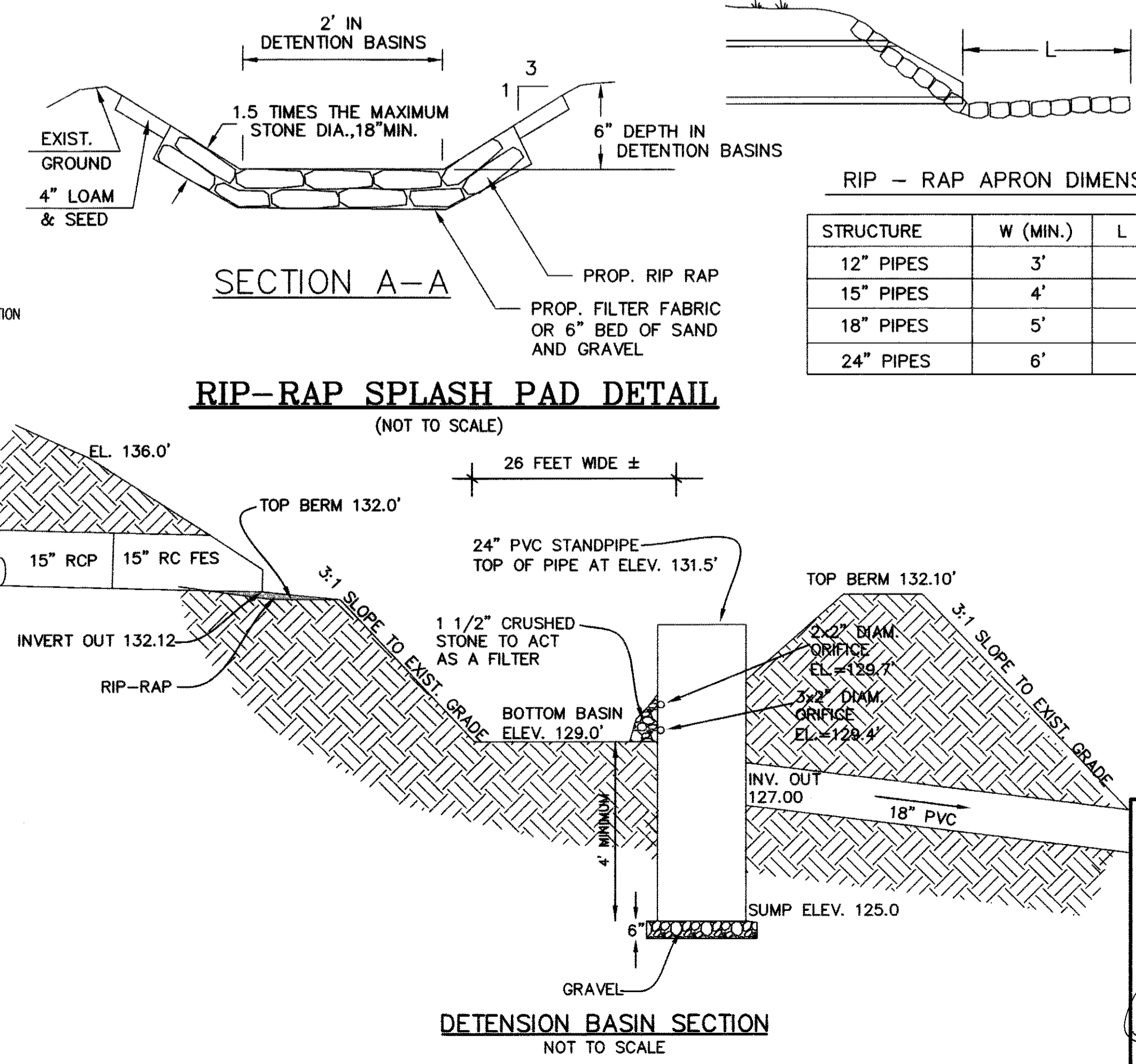
APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS OF A COVENANT RECORDED IN ESSEX SOUTH DISTRICT REGISTRY OF DEEDS BOOK 28032 PAGE 284  
GROVELAND PLANNING BOARD

DATE FILED: 2/13/07  
PUBLIC HEARING OPENED: 3/13/07  
SITEWALK: 6/30/07  
PUBLIC HEARING CLOSED: 1/22/08  
DATE APPROVED: 6/10/08  
DECISION FILED: 6/25/08

GROVELAND TOWN CLERK: I HEREBY CERTIFY THAT NO APPEAL HAS BEEN FILED WITHIN THE 20 DAYS AS PRESCRIBED BY M.G.L. CHAPTER 41, SECTION 81 B-B.  
TOWN CLERK DATE



**STANDARD STORM DRAIN MANHOLES**  
(NOT TO SCALE)



**DETENTION BASIN SECTION**  
NOT TO SCALE

PAUL DAMEN TURBIDE No. 30375 CIVIL REGISTERED PROFESSIONAL ENGINEER  
PAUL DAMEN TURBIDE No. 28990 REGISTERED PROFESSIONAL ENGINEER

**REVISIONS**

DATE	BY	DESCRIPTION
03/09/07	T.P.T.	LOTS RECONFIGURATION AND RELATED CHANGES
08/28/07	M.R.D.	EDIT PER 4/27/07 CANNETT ENGINEERING REVIEW
10/08/07	M.R.D.	EDIT PER 10/01/07 CANNETT ENGINEERING REVIEW
11/24/08	T.P.T.	PLOT ON MYLAR AND FINAL REVISIONS

**DRAINAGE DETAILS**  
HOMESTEAD LANE  
DEFINITIVE SUBDIVISION PLAN  
GROVELAND, MASSACHUSETTS  
OWNER: BILLY H & KATIE A. DARKE  
53 MAIN STREET, GROVELAND, MA 01834  
APPLICANT: CHRISTOPHER DARKE  
48 KING STREET, GROVELAND, MA  
PORT ENGINEERING ASSOCIATES, INC.  
ONE HARRIS ST., NEWBURYPORT, MA. 01950  
TELEPHONE : (978) 465-8594

DATE: 02/12/07  
DESIGNED BY: T.P.T.  
DRAWN BY: T.P.T.  
CHECKED BY: P.D.T.  
SCALE: 1"=40'  
JOB No.: P2999  
SHEET No.: 7 OF 10

**SANITARY SEWER NOTES:**

SANITARY SEWER CONSTRUCTION SHALL MEET ALL REQUIREMENTS OF THE TOWN OF GROVELAND SEWER DEPARTMENT SPECIFICATIONS. NO SEWER CONSTRUCTION SHALL TAKE PLACE UNTIL THE OWNER AND/OR CONTRACTOR HAVE RECEIVED WRITTEN APPROVAL OF THIS PLAN FROM THE SUPERINTENDENT OF THE SEWER DEPARTMENT. THE CONTRACTOR SHALL VERIFY WITH THE SEWER DEPARTMENT THAT THE SPECIFICATIONS BELOW ARE CURRENT.

**PIPE AND FITTINGS:**

ALL GRAVITY PVC SANITARY SEWER PIPE AND FITTINGS SHALL BE TYPE PSM, PVC SDR 35 WITH FULL DIAMETER DIMENSIONS AND SHALL CONFORM TO ASTM D3034, OR TYPE PS-46 PVC CONFORMING TO ASTM F789. WYES SHALL BE FURNISHED IN LENGTHS OF NOT MORE THAN THREE (3) FEET. SADDLE WYES SHALL NOT BE USED. PIPE SHALL HAVE BELL AND SPIGOT PUSH ON JOINTS. BELL SHALL CONSIST OF AN INTEGRAL WALL SECTION WITH A SOLID CROSS SECTION ELASTOMERIC GASKET SECURELY LOCKED IN PLACE TO PREVENT DISPLACEMENT DURING ASSEMBLY. ELASTOMERIC GASKET SHALL CONFORM TO ASTM F477. ALL FITTINGS AND ACCESSORIES SHALL HAVE BELL AND SPIGOT CONFIGURATIONS COMPATIBLE WITH THE PIPE.

MINIMUM DIAMETER FOR A GRAVITY MAIN SHALL BE 8 INCHES AND MINIMUM SLOPE FOR AN 8 INCH SEWER SHALL BE 0.004. MINIMUM SLOPE FOR ALL SERVICE CONNECTIONS SHALL BE 0.02. SERVICE CONNECTIONS ARE TO BE INTO SEWER LINES AND NOT SEWER MANHOLES.

**SANITARY SEWER MANHOLES:**

SANITARY SEWER MANHOLES SHALL BE ASSEMBLED IN THE FIELD USING PRECAST CONCRETE BASE CONE AND BARREL SECTIONS FABRICATED USING 5,000 PSI CONCRETE, REINFORCED TO WITHSTAND STANDARD H-20 LOADING.

THE EXTERIOR OF THE MANHOLES SHALL BE ASPHALT COATED AND SHALL HAVE SHIPLAP JOINTS SEALED WITH A SINGLE STRIP OF 1" DIAMETER BUTYL RUBBER SEALANT TO INSURE A MANHOLE THAT IS WATERTIGHT.

BASE BARREL SECTIONS SHALL HAVE LOCK JOINT PIPE SLEEVES CAST IN AS APPROPRIATE FOR EACH MANHOLE AND THE MANHOLE SHALL BE LABELED AS NOTED ON THE FINAL PLANS.

ALL SECTIONS SHALL HAVE LIFTING HOLES CAST IN AT THE PLANT AND BARREL AND BASE SECTIONS SHALL BE EQUIPPED WITH WALL-MOUNTED RUNGS AT 12" O.C. RUNGS TO BE FABRICATED OF ALUMINUM, PLASTIC COVERED STEEL OR GALVANIZED STEEL. SHAPE THE INVERT CHANNELS TO BE SMOOTH AND SEMI-CIRCULAR, CONFORMING TO THE INSIDE OF THE ADJACENT SEWER SECTION. INVERTS SHALL ALSO BE BUILT TO THE WASTEWATER TREATMENT DEPARTMENT'S REQUIREMENTS.

MAKE CHANGES IN DIRECTION OF FLOW WITH A SMOOTH CURVE OF AS LARGE A RADIUS AS THE SIZE OF THE MANHOLE WILL PERMIT.

MAKE CHANGES IN SIZE AND GRADE OF CHANNELS SMOOTHLY AND EVENLY. FORM THE INVERT CHANNELS IN THE MANHOLES BY INSERTING A LENGTH OF PIPE THE SAME DIAMETER AS THE SEWER LINE BEING INSTALLED AND POUR CONCRETE UNDER AND TO THE CENTER LINE OF THE PIPE BUILDING A FLOOR TO THE WALL OF THE MANHOLE OUTSIDE THE CHANNELS AT NOT LESS THAN 1" PER FOOT NOR MORE THAN 2" PER FOOT.

INLET INVERTS SHALL BE 0.10' ABOVE OUTLET FOR THROUGH CHANNELS. INLET INVERTS SHALL BE 0.20' ABOVE OUTLET FOR CHANNELS WHERE DIRECTION CHANGES.

PREVENT FREE DROP INSIDE THE MANHOLES EXCEEDING 18" MEASURED FROM THE INVERT OF THE INLET PIPE TO THE TOP OF THE FLOOR OF THE MANHOLE OUTSIDE THE CHANNELS.

CONSTRUCT DROP MANHOLES WHENEVER THE FREE DROP OTHERWISE WOULD BE GREATER THAN 18" AND FLOW SHALL BE DIRECTED SO THAT NO OBSTRUCTION OR BUILD-UP WILL FORM.

MANHOLE COVERS SHALL BE PROPERLY LABELED WITH THE WORD "SEWER" IN 3-INCH LETTERS AND SHALL BE LEBARON FOUNDRY (MODEL NO. LA246), MECHANICS IRON FOUNDRY, NEEHAN FOUNDRY, OR EQUAL.

**CONSTRUCTION:**

SEWER PIPE SHALL BE BEDDED IN 3/4"-1 1/2" STONE, 8 INCHES ON BOTTOM, AROUND THE PIPE AND 12 INCHES ON TOP. THERE SHALL BE AT LEAST FIVE (5) FEET OF COVER OVER SEWER LINES AND SERVICE CONNECTIONS.

EXISTING SANITARY SEWER ASSUMED TO BE 8" I.D. MATERIAL ASSUMED TO BE ASBESTOS CEMENT TRANSITE PIPE.

CONTRACTOR SHALL VERIFY ACTUAL SIZE AND PROVIDE APPROPRIATE ELASOMETRIC FLEXIBLE PVC SLEEVE CONNECTION MATERIALS. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS STATED IN THE SEWER CONNECTION PERMIT.

NEW WATER MAINS AND SERVICES ARE TO BE CONCRETE ENCASED WHERE THEY LIE WITHIN THE MINIMUM MASS DEP REQUIRED HORIZONTAL AND VERTICAL SEPARATION DISTANCES BETWEEN WATER AND SEWER MAINS AND SERVICES. (REF. MASS. DEP 1996 GUIDELINES AND POLICIES FOR PUBLIC WATER SYSTEMS)

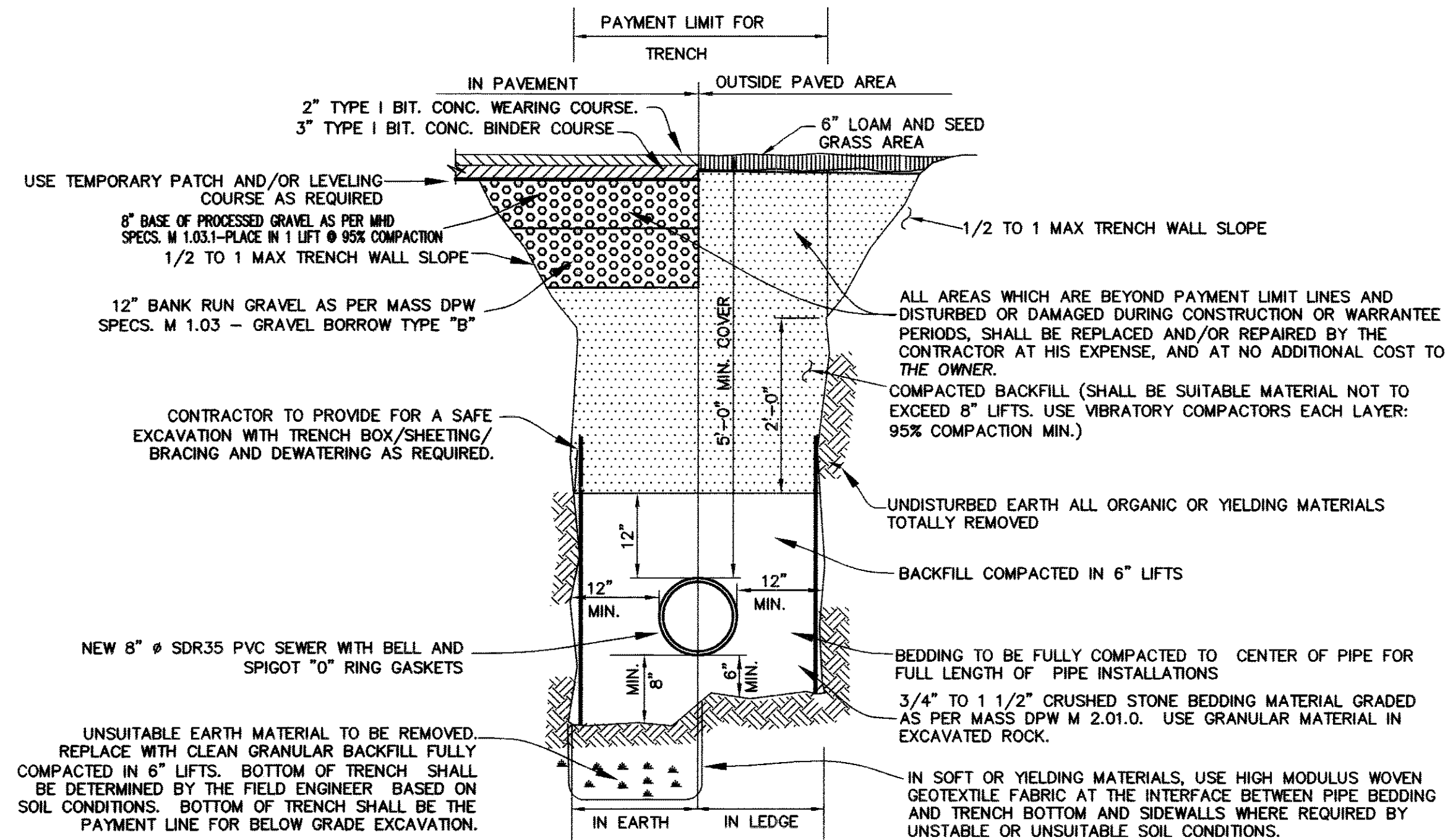
**TESTING AND INSPECTION:**

SANITARY SEWER LINES, FORCE MAINS, AND MANHOLES ARE TO BE PRESSURE TESTED IN ACCORDANCE WITH THE APPROPRIATE ASTM METHODS AND TOWN OF GROVELAND REQUIREMENTS. PVC PIPE IS TO BE TESTED BY ASTM METHOD C828-80. NEW MANHOLES ARE TO BE VACUUM TESTED. THE CONTRACTOR SHALL NOTIFY THE GROVELAND SEWER DEPARTMENT TWENTY-FOUR (24) HOURS PRIOR TO PERFORMING PRESSURE/VACUUM TESTS IN ORDER THAT A REPRESENTATIVE OF THE DEPARTMENT MAY BE PRESENT. TEST RESULTS SHALL BE PRESENTED TO THE SEWER DEPARTMENT UPON COMPLETION OF TESTING.

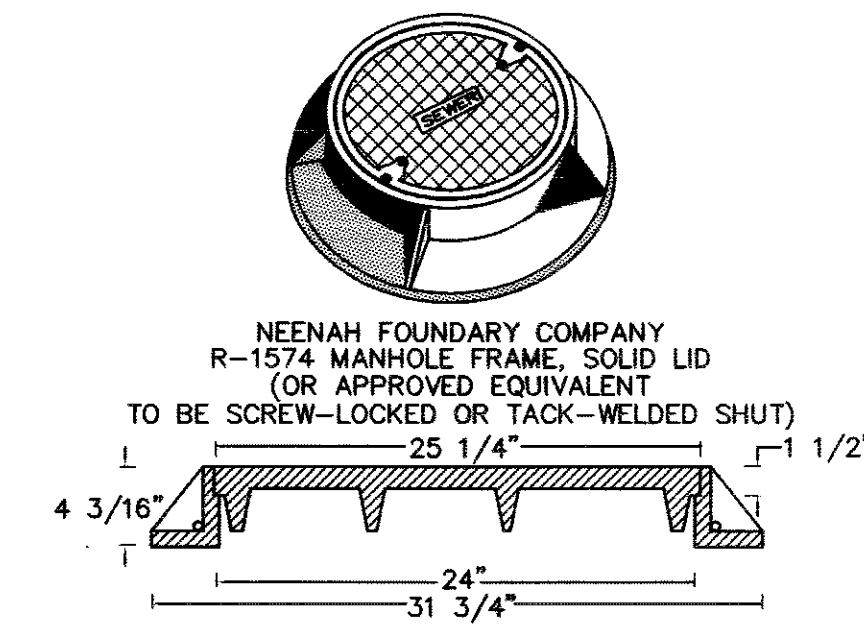
THE CONTRACTOR SHALL PRESENT A CONSTRUCTION SCHEDULE TO THE TOWN OF GROVELAND WASTEWATER TREATMENT DEPARTMENT SEVEN (7) DAYS PRIOR TO THE START OF CONSTRUCTION FOR THE PURPOSE OF SCHEDULING INSPECTIONS AND OVERSIGHT. THE CONTRACTOR SHALL SUBMIT CATALOG CUTS / SHOP DRAWINGS TO THE GROVELAND WASTEWATER TREATMENT DEPARTMENT FOURTEEN (14) DAYS PRIOR TO CONSTRUCTION TO ALLOW FOR PROPER DEPARTMENTAL REVIEW. PIPES SHALL BE MANDREL TESTED PRIOR TO ACCEPTANCE BY THE SEWER DEPARTMENT. THE GROVELAND CONSERVATION COMMISSION SHALL BE NOTIFIED A MINIMUM OF FOURTEEN DAYS PRIOR TO THE START OF CONSTRUCTION TO ALLOW FOR PROPER REVIEW OF WETLANDS FLAGGING AND SILTATION CONTROL MEASURES PRIOR TO CONSTRUCTION.

**AS-BUILTS:**

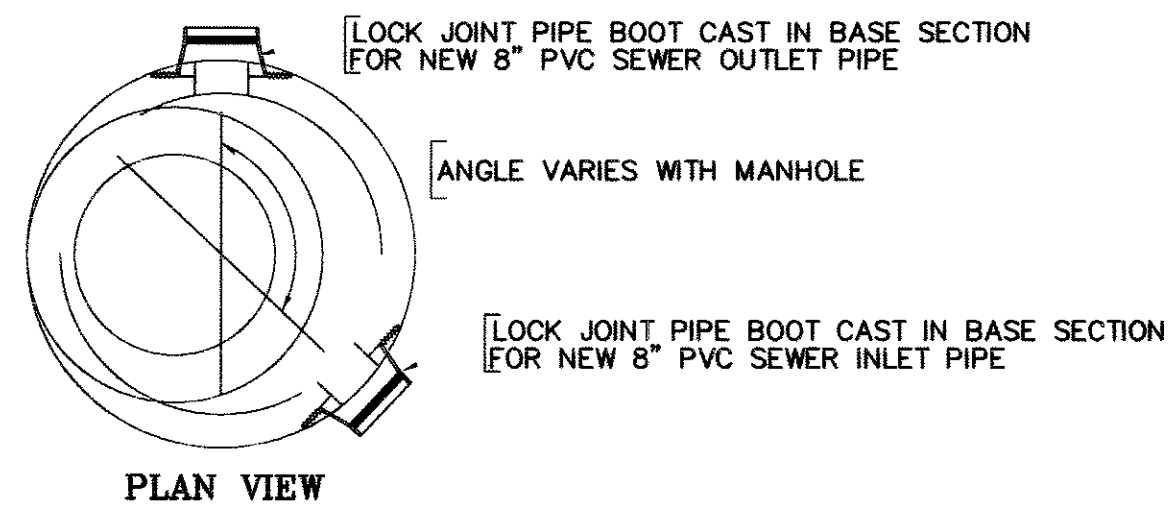
THE DEVELOPER SHALL PROVIDE THE SEWER DEPARTMENT WITH AS-BUILT DRAWINGS AT COMPLETION OF THE PROJECT. AS-BUILT DRAWINGS SHALL INDICATE ALL UNDERGROUND LINES AND STRUCTURES AND ANY SURFACE COMPONENTS WITH A MINIMUM OF THREE (3) TIES TO PHYSICAL PERMANENT OBJECTS.



**TYPICAL TRENCH DETAIL**  
(NOT TO SCALE)



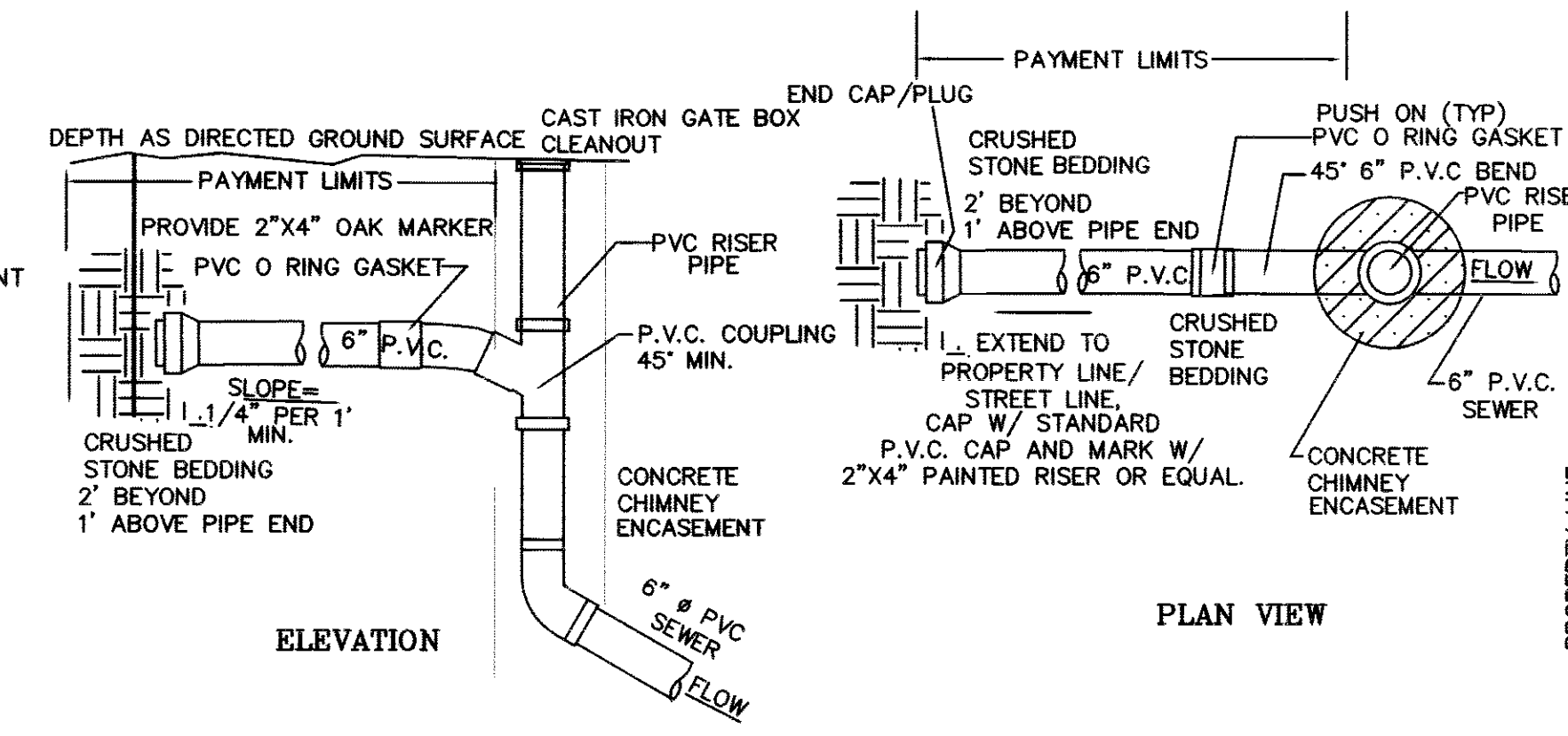
**FRAME & COVER DETAIL**  
(NOT TO SCALE)



**ELEVATION**

**PLAN VIEW**

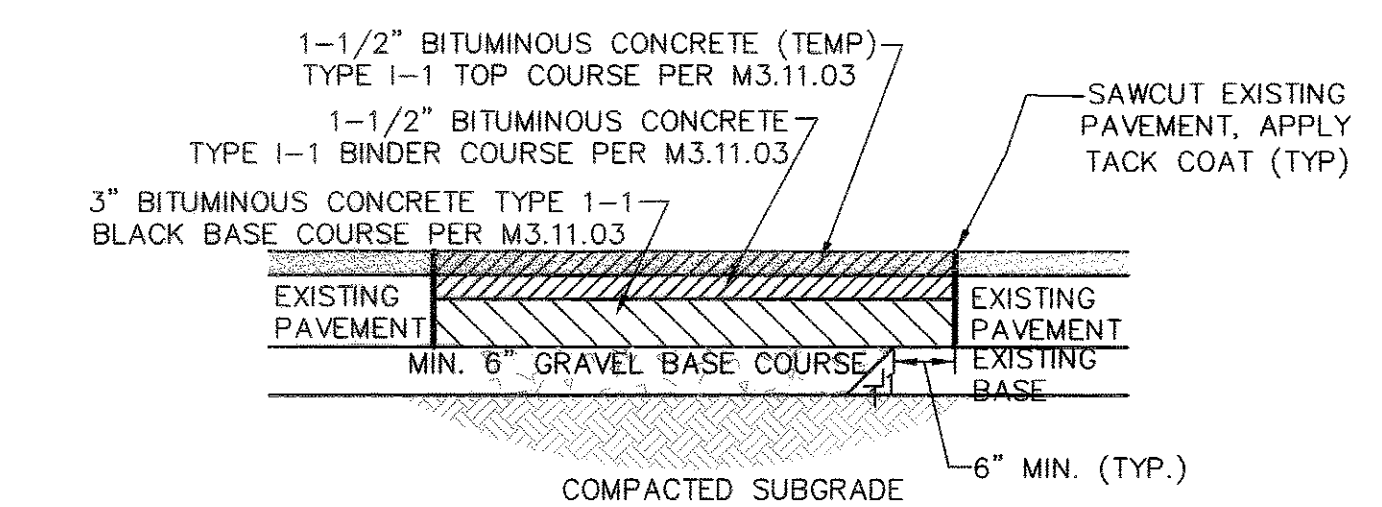
**TYPICAL HOUSE SEWER CONNECTION**  
(NOT TO SCALE)



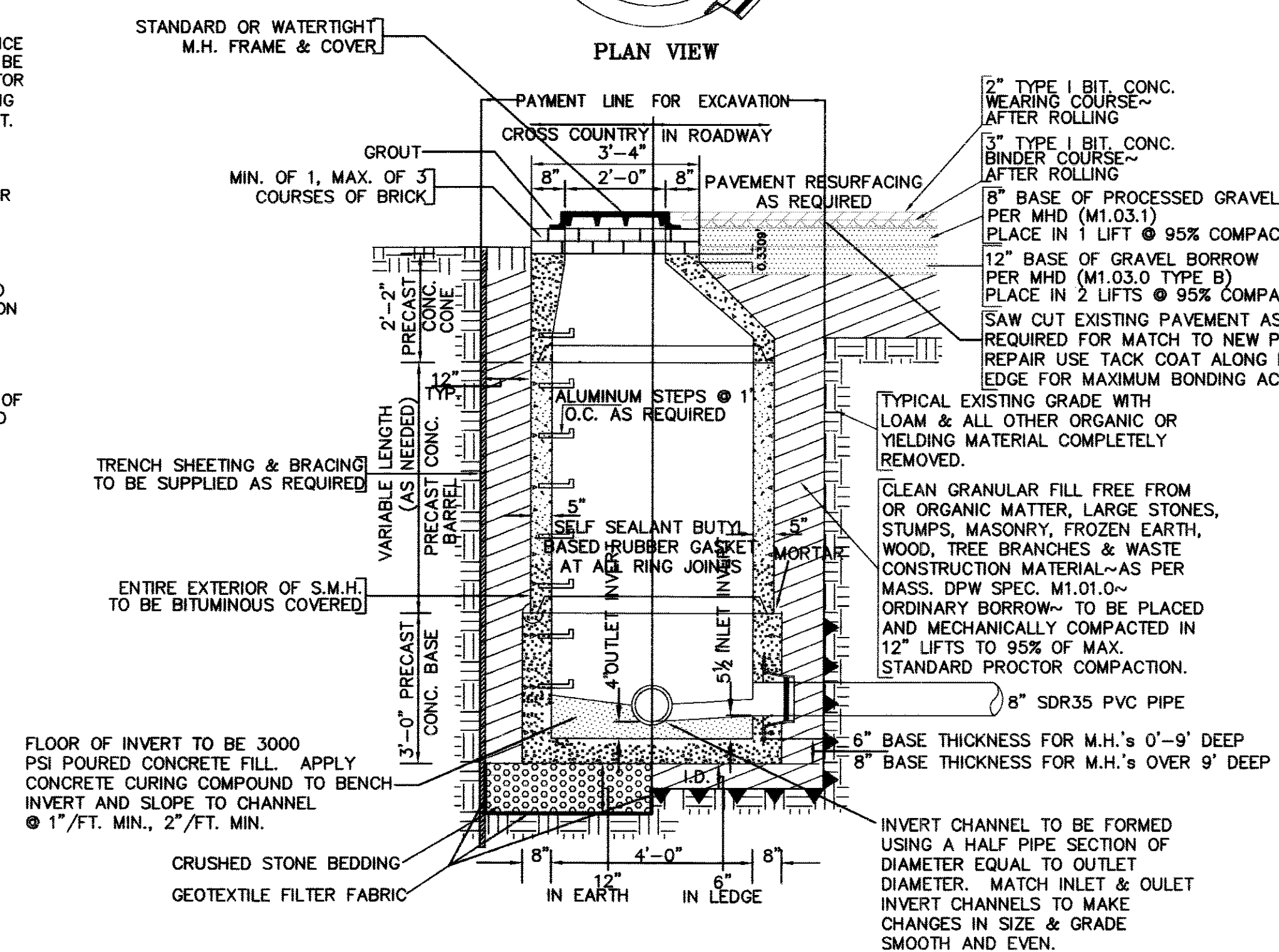
**ELEVATION**

**PLAN VIEW**

**TYPICAL HOUSE CLEANOUT CHIMNEY**  
(NOT TO SCALE)



**PAVEMENT PATCH WITHIN LIMITS OF ROADWAY**  
(NOT TO SCALE)



**STANDARD SANITARY SEWER MANHOLES**  
(NOT TO SCALE)

99 / 437  
01P18

PLAN BOOK 437 PLAN 99  
ESSEX SOUTH DISTRICT  
Received MAY 23 2008  
with APPROVAL of Billy H. + Katie A. DARKE  
Rec 03/24/08 p249  
Attest: Paul D. Turbide (11P18)  
Register of Deeds

FOR REGISTRY USE ONLY

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS

PAUL D. TURBIDE PE/PLS 11/25/08 DATE

**TOWN OF GROVELAND, MA**

PLANNING BOARD APPROVAL UNDER THE SUBDIVISION CONTROL LAW, M.G.L. CH. 141, S. 81-U

Approved: [Signature]  
[Signature]  
[Signature]

12-11-2008 DATE

APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS STATED IN A MEMORANDUM OF DECISION DATED MAY 27, 2008 BETWEEN THE GROVELAND PLANNING BOARD, ON BEHALF OF THE TOWN OF GROVELAND, BILLY DARKE, AND CHRISTOPHER DARKE

A COPY OF WHICH DECISION IS RECORDED HERewith AND SUBJECT ALSO TO RECORDING OF THIS PLAN AND SAID DECISION IN THE SOUTH ESSEX REGISTRY OF DEEDS ON OR BEFORE SEPTEMBER 10, 2008 IN BOOK 28032 PAGE 275

APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS OF A COVENANT RECORDED IN ESSEX SOUTH DISTRICT REGISTRY OF DEEDS BOOK 28032 PAGE 284

GROVELAND PLANNING BOARD

DATE FILED:	2/13/07
PUBLIC HEARING OPENED:	3/13/07
SITING:	6/30/07
PUBLIC HEARING CLOSED:	1/22/08
DATE APPROVED:	6/10/08
DECISION FILED:	6/25/08

GROVELAND TOWN CLERK:  
I HEREBY CERTIFY THAT NO APPEAL HAS BEEN FILED WITHIN THE 20 DAYS AS PRESCRIBED BY M.G.L. CHAPTER 41, SECTION 81 B-B.

Christie Bunker 12/12/08  
TOWN CLERK DATE

**SANITARY SEWER SYSTEM DETAILS**

HOMESTEAD LANE  
DEFINITIVE SUBDIVISION PLAN  
GROVELAND, MASSACHUSETTS  
OWNER: BILLY H. & KATIE A. DARKE  
53 MAIN STREET, GROVELAND, MA 01884  
APPLICANT: CHRISTOPHER DARKE  
48 KING STREET, GROVELAND, MA

PORT ENGINEERING ASSOCIATES, INC.  
ONE HARRIS ST., NEWBURYPORT, MA 01950  
TELEPHONE : (978) 465-8594

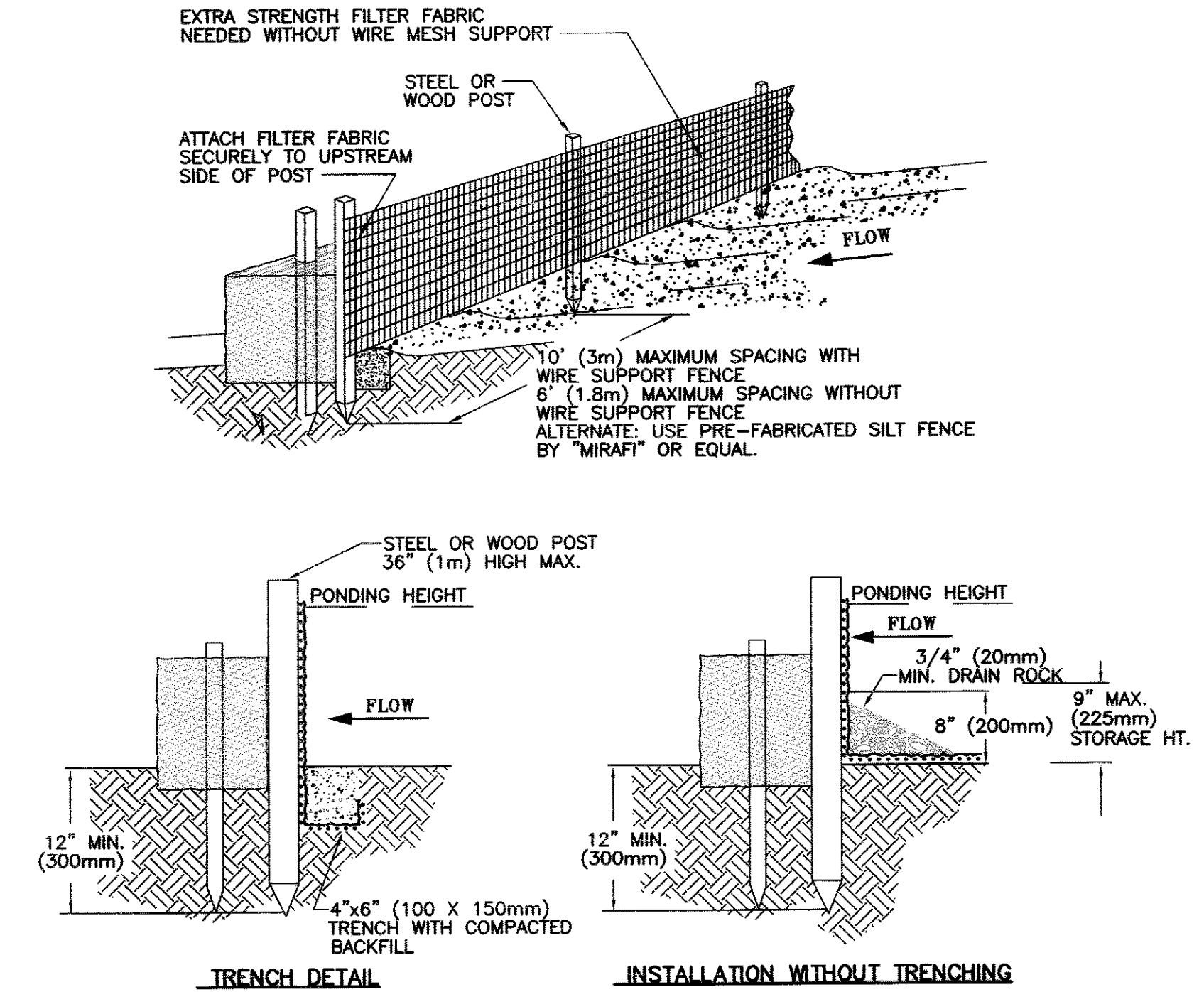
PAUL DAMIEN TURBIDE No. 30375 CIVIL ENGINEER  
PAUL DAMIEN TURBIDE No. 29690 RESIDENTIAL ENGINEER  
DATE: 11/25/08

REVISIONS	
DATE	DESCRIPTION
05/09/07	T.P.T.
08/28/07	M.R.D.
10/09/07	EDT PER 4/27/07 CAMMETT ENGINEERING REVIEW
11/24/08	M.R.D. EDIT PER 10/01/07 CAMMETT ENGINEERING REVIEW
	PLOT OR W/LAN AND FINAL REVISIONS

DATE	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	JOB No.	SHEET No.
02/12/07	T.P.T.	M.R.D.	P.D.T.	AS NOTED	P2999	8 OF 10

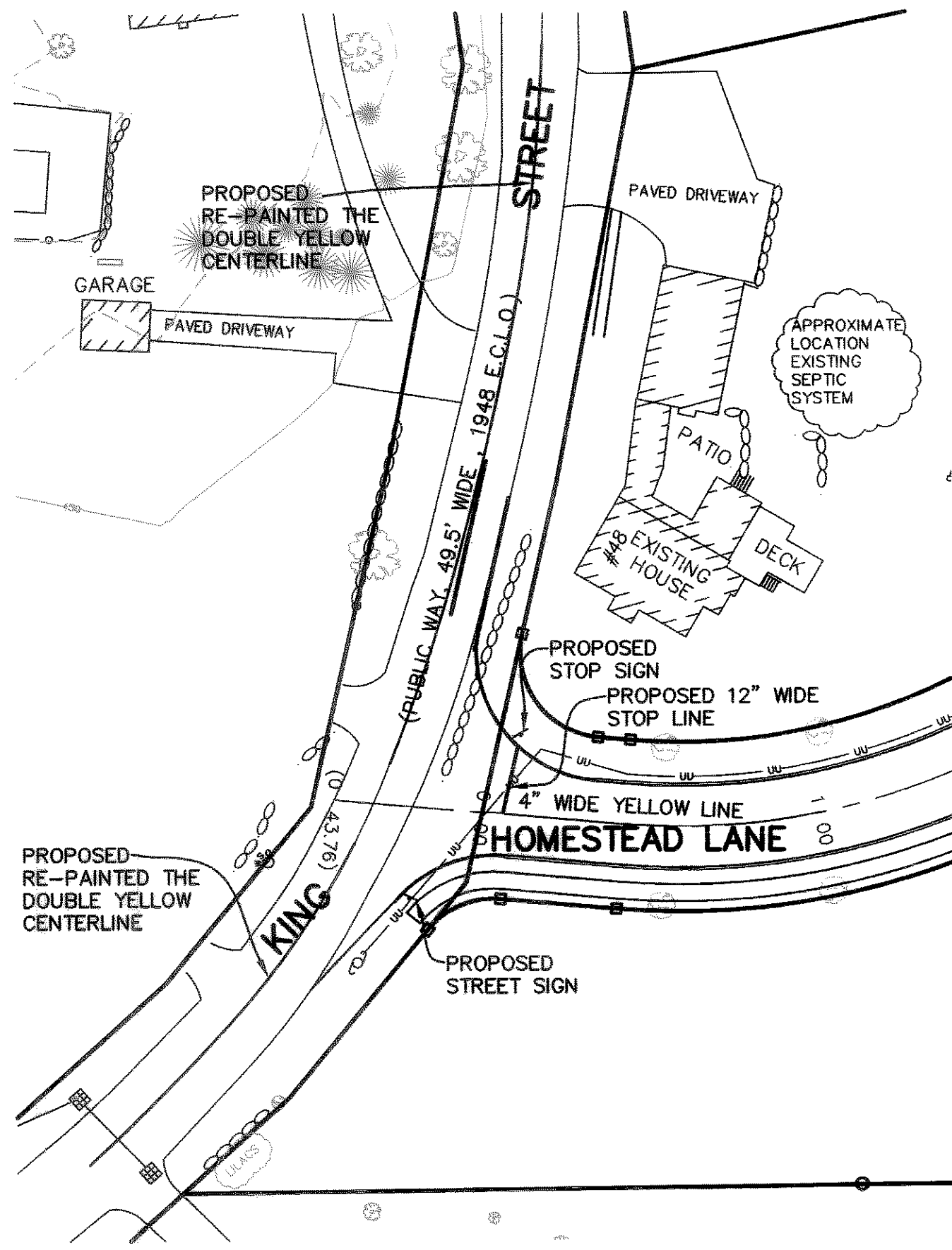
**DOUBLE SILT BARRIER CONSTRUCTION SPECIFICATIONS:**

- \* THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED 36 INCHES (0.9 M). STORAGE HEIGHT AND PONDING HEIGHT SHALL NEVER EXCEED 18 INCHES (0.5 M).
- \* THE SILT FENCE LINE SHALL FOLLOW THE CONTOUR AS CLOSELY AS POSSIBLE.
- \* IF POSSIBLE, THE FILTER FABRIC SHALL BE CUT FROM A CONTINUOUS ROLL TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED ONLY AT A SUPPORT POST, WITH A MINIMUM 6 INCH (0.2 M) OVERLAP AND BOTH ENDS SECURELY FASTENED TO THE POST.
- \* POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET (3.1 M) APART AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 12 INCHES (0.3 M)). WHEN EXTRA-STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET (1.8 M).
- \* TURN THE ENDS OF THE FENCE UPHILL.
- \* A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES (101 MM) WIDE AND 6 INCHES (0.2 M) DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
- \* WHEN STANDARD-STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH (25.4 MM) LONG, THE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES (51 MM) AND SHALL NOT EXTEND MORE THAN 36 INCHES (0.9 M) ABOVE THE ORIGINAL GROUND SURFACE.
- \* WHEN EXTRA-STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS.
- \* THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE TOE OF THE FILTER FABRIC.
- \* SILT FENCES PLACED AT THE TOE OF A SLOPE SHALL BE SET AT LEAST 6 FEET (1.8 M) FROM THE TOE IN ORDER TO INCREASE PONDING VOLUME.
- \* SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED AND ANY SEDIMENT STORED BEHIND THE SILT FENCE HAS BEEN REMOVED.



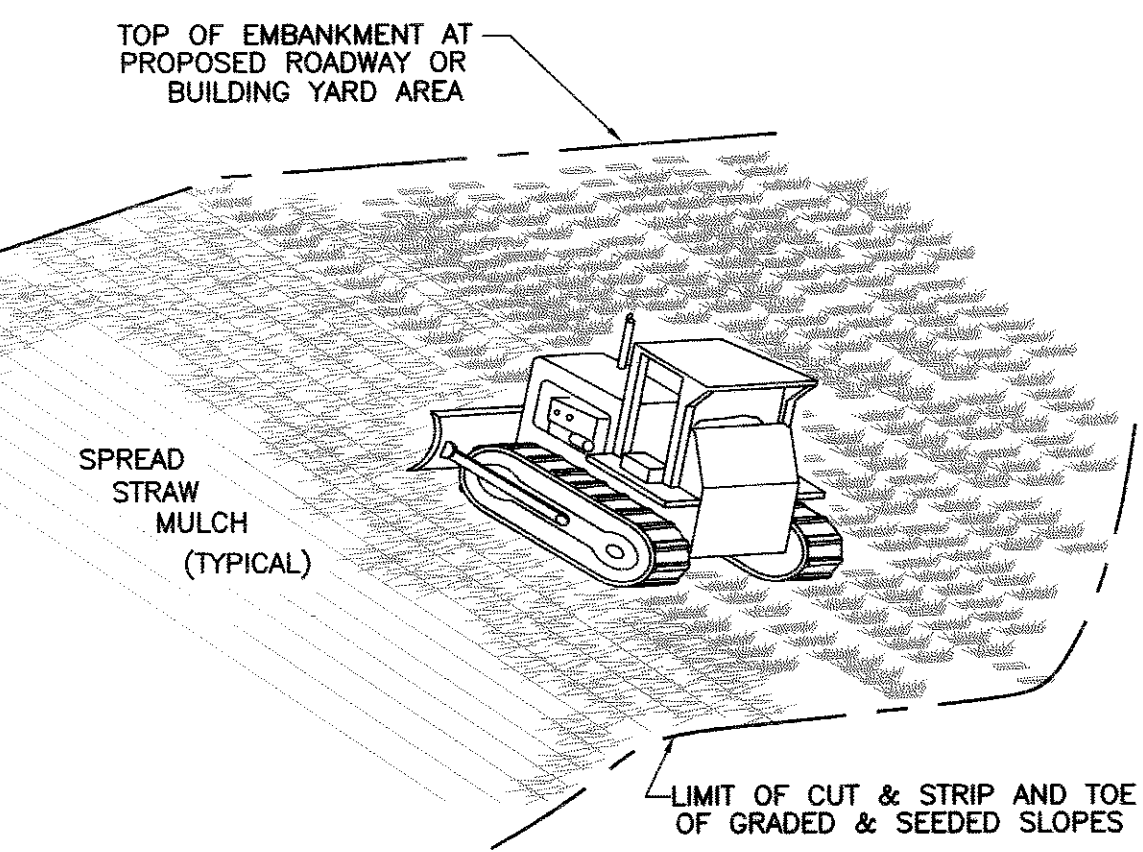
- NOTES:**
- SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
  - PLACE HAYBALES ON DOWNSTREAM SIDE OF SILT FENCE. EMBED THE BALES 4" (MIN.) INTO THE SOIL.
  - INSPECT AND REPAIR FENCE AND HAYBALES AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" (225mm) MAXIMUM RECOMMENDED STORAGE HEIGHT.
  - REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

**DOUBLE SILT BARRIER SILT FENCE & STRAWBALES**  
NOT TO SCALE



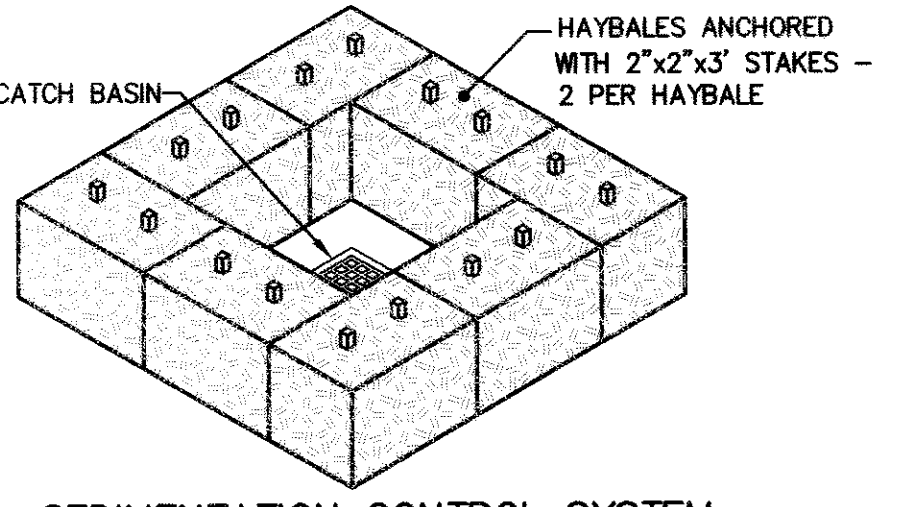
**STOP SIGN, STREET SIGN AND YELLOW LINE**  
SCALE: 1"=40'

- NOTES:**
- INSTALL STOP SIGN AND STOP BAR ON HOMESTEAD LANE
  - PAINT YELLOW CENTERLINE ALONG A CONTINUOUS 100 FOOT DISTANCE OF HOMESTEAD LANE, FROM A BEGINNING POINT AT THE AFOREMENTIONED STOP BAR
  - RE-Paint THE DOUBLE YELLOW CENTERLINE ON KING STREET 150' MIN. IN EACH DIRECTION
  - VEGETATION MAINTENANCE ALONG KING STREET TO MAXIMIZE STOPPING SIGHT
  - INSTALL NEW STOP SIGN AND STOP LINE AT OUTLOOK DRIVE FOR CARS EXITING

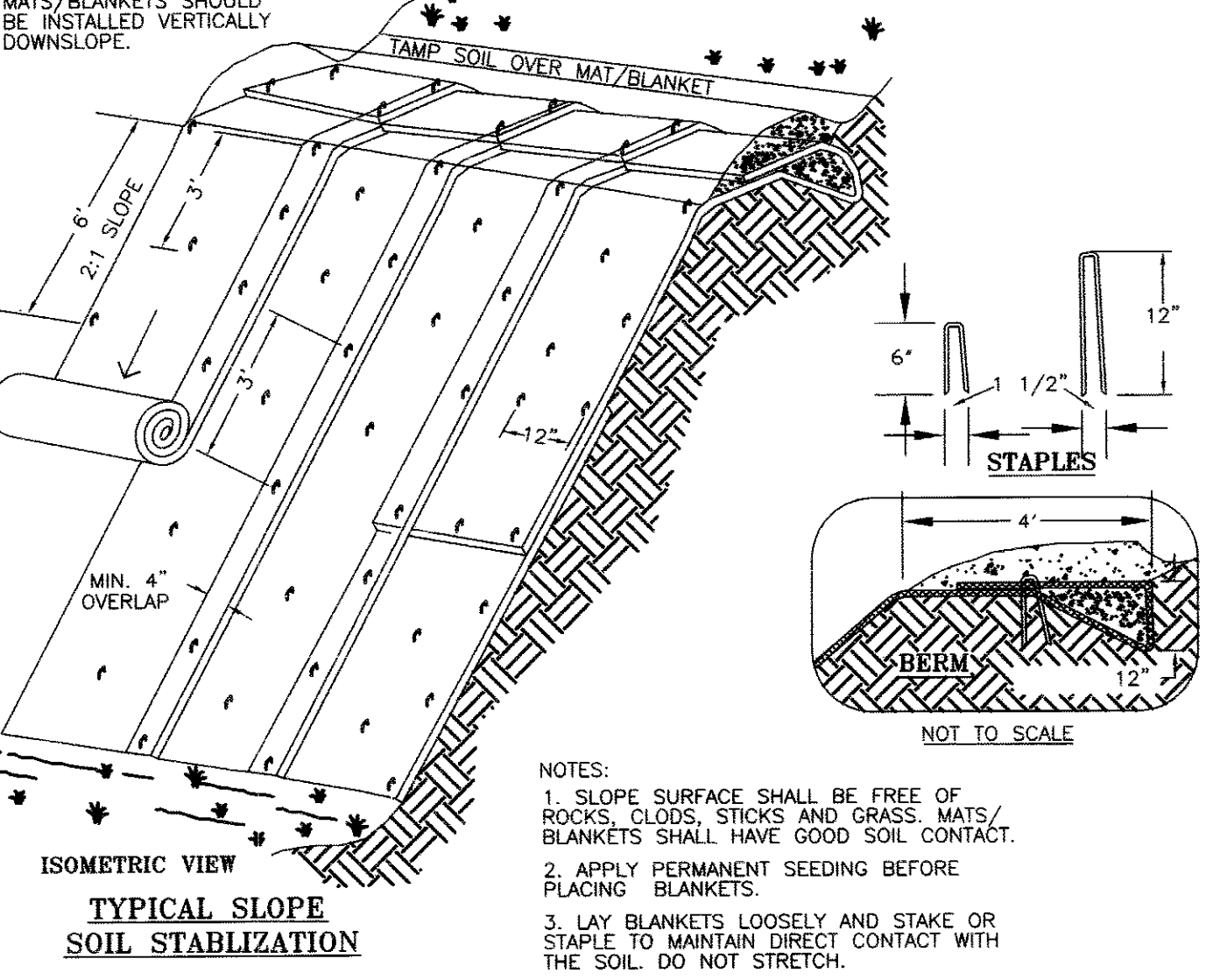


- NOTES:**
- ROUGHEN SLOPE WITH BULLDOZER
  - BROADCAST SEED AND FERTILIZER OR HYDROSEED.
  - SPREAD STRAW MULCH 3" (76mm) THICK. (2 1/2 TONS PER ACRE)
  - PUNCH STRAW MULCH INTO SLOPE BY RUNNING BULLDOZER UP AND DOWN SLOPE.
  - ALTERNATE: SPRAY ALL GRADED SLOPES WITH HYDROUS SLOPE EMULSION.

**STRAW ANCHORING**  
NOT TO SCALE

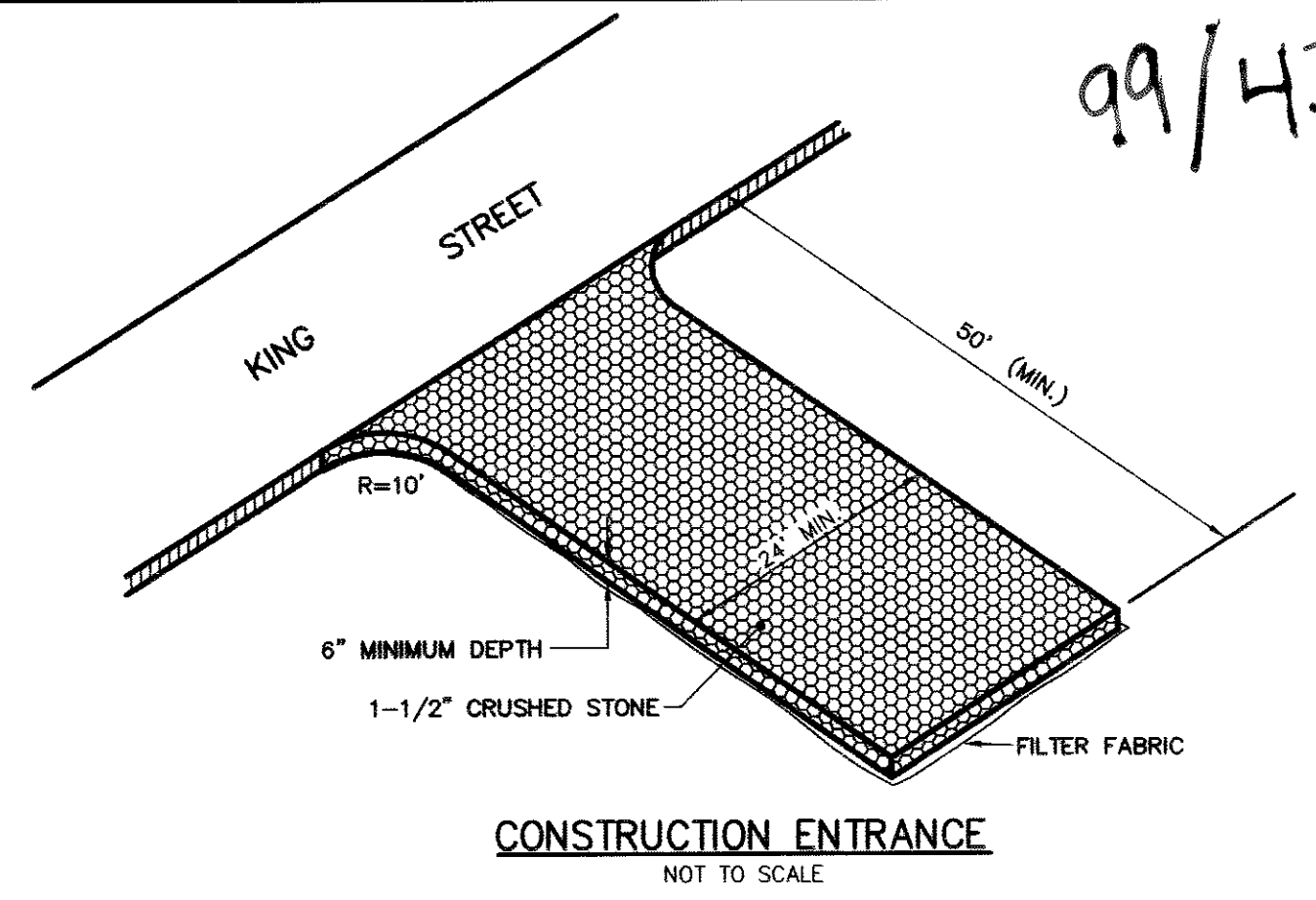


**SEDIMENTATION CONTROL SYSTEM FOR CATCH BASIN**  
NOT TO SCALE



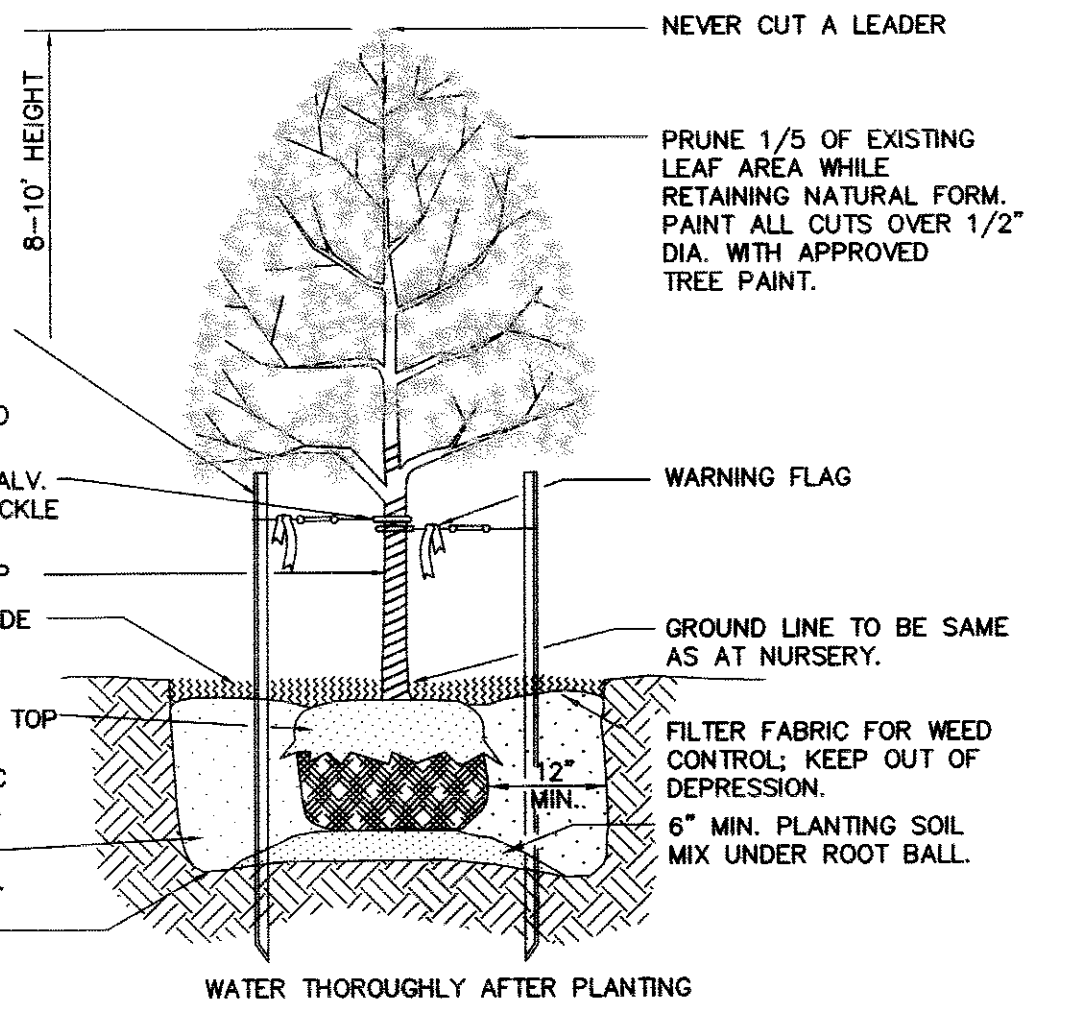
**EROSION BLANKETS & TURF REINFORCEMENT MATS SLOPE INSTALLATION**  
NOT TO SCALE

- CONSTRUCTION SPECIFICATIONS:**
- \* PROPER SITE PREPARATION IS ESSENTIAL TO ENSURE COMPLETE CONTACT OF THE PROTECTION MATTING WITH THE SOIL.
  - \* GRADE AND SHAPE AREA OF INSTALLATION.
  - \* REMOVE ALL ROCKS, CLOUDS, VEGETATIVE OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED BLANKETS, OR MATS WILL HAVE DIRECT CONTACT WITH THE SOIL.
  - \* PREPARE SEEDBED BY LOOSENING 2-3 INCHES (50.8-76.2 MM) OF TOPSOIL ABOVE FINAL GRADE.
  - \* INCORPORATE AMENDMENTS, SUCH AS LIME AND FERTILIZER, INTO SOIL ACCORDING TO SOIL TEST AND THE SEEDING PLAN.
- SEEDING:**
- \* SEED AREA BEFORE BLANKET INSTALLATION FOR EROSION CONTROL AND RE-VEGETATION. SEEDING AFTER MAT INSTALLATION IS OFTEN SPECIFIED FOR TURF REINFORCEMENT APPLICATION. WHEN SEEDING PRIOR TO BLANKET INSTALLATION, ALL CHECK SLOTS AND OTHER AREAS DISTURBED DURING INSTALLATION MUST BE RESEEDING.
  - \* WHERE SOIL FILLING IS SPECIFIED, SEED THE MATTING AND THE ENTIRE DISTURBED AREA AFTER INSTALLATION AND PRIOR TO FILLING THE MAT WITH SOIL.
  - \* ANCHORING: U-SHAPED WIRE STAPLES, METAL GEOTEXILE STAKE PINS, OR TRIANGULAR WOODEN STAKES CAN BE USED TO ANCHOR MATS TO THE GROUND SURFACE. WIRE STAPLES SHOULD BE A MINIMUM OF 11 GAUGE. METAL STAKE PINS SHOULD BE 3/16 INCH (4.8 MM) DIAMETER STEEL WITH A 1/2 INCH (38.1 MM) STEEL WASHER AT THE HEAD OF THE PIN. WIRE STAPLES AND METAL STAKES SHOULD BE DRIVEN FLUSH TO THE SOIL SURFACE. ALL ANCHORS SHOULD BE 6-8 INCHES (0.2-0.5 M) LONG AND HAVE SUFFICIENT GROUND PENETRATION TO RESIST PULLOUT. LONGER ANCHORS MAY BE REQUIRED FOR LOOSE SOILS.
  - \* BEGIN AT THE TOP OF THE SLOPE AND ANCHOR ITS BLANKET IN A 6 INCH (0.2 M) DEEP X 6 INCH (0.2 M) WIDE TRENCH. BACKFILL TRENCH AND TAMP EARTH FIRMLY.
  - \* UNROLL BLANKET DOWNSLOPE IN THE DIRECTION OF THE WATER FLOW. THE EDGES OF ADJACENT PARALLEL ROLLS MUST BE OVERLAPPED 2-3 INCHES (51-76 MM) AND BE STAPLED EVERY 3 FEET (0.9 M).
  - \* WHEN BLANKETS MUST BE SPLICED, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH 6 INCH (0.2 M) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12 INCHES (0.3 M) APART.
  - \* LAY BLANKETS LOOSELY AND MAINTAIN DIRECT CONTACT WITH THE SOIL - DO NOT STRETCH.
  - \* BLANKETS SHALL BE STAPLED SUFFICIENTLY TO ANCHOR BLANKET AND MAINTAIN CONTACT WITH THE SOIL. STAPLES SHALL BE PLACED DOWN THE CENTER AND STAPLES WITH THE STAPLES PLACED ALONG THE EDGES. STEEP SLOPES, 1:1 TO 2:1, REQUIRE 2 STAPLES PER SQUARE YARD. MODERATE SLOPES, 2:1 TO 3:1, REQUIRE 1-2 STAPLES PER SQUARE YARD (1 STAPLE 3' O.C.). GENTLE SLOPES REQUIRE 1 STAPLE PER SQUARE YARD.
  - \* INSTALLATION IN CHANNELS:
    - \* DIG INITIAL ANCHOR TRENCH 12 INCHES (0.3 M) DEEP AND 6 INCHES (0.2 M) WIDE ACROSS THE CHANNEL AT THE LOWER END OF THE PROJECT AREA.
    - \* EXCAVATE INTERMITTENT CHECK SLOTS, 6 INCHES (0.2 M) DEEP AND 6 INCHES (0.2 M) WIDE ACROSS THE CHANNEL AT 25-30 FOOT (7.6-9.1 M) INTERVALS ALONG THE CHANNEL.
    - \* CUT LONGITUDINAL CHANNEL ANCHOR SLOTS 4 INCHES (101 MM) DEEP AND 4 INCHES (101 MM) WIDE ALONG EACH SIDE OF THE INSTALLATION TO BURY EDGES OF MATTING. WHENEVER POSSIBLE EXTEND MATTING 2-3 INCHES (51-76 MM) ABOVE THE CREST OF CHANNEL SIDE SLOPES.
    - \* BEGINNING AT THE DOWNSTREAM END AND IN THE CENTER OF THE CHANNEL, PLACE THE INITIAL END OF THE FIRST ROLL IN THE ANCHOR TRENCH AND SECURE WITH FASTENING DEVICES AT 1 FOOT (0.3 M) INTERVALS. NOTE: MATTING WILL INITIALLY BE UPSIDE DOWN IN ANCHOR TRENCH.
    - \* IN THE SAME MANNER, POSITION ADJACENT ROLLS IN ANCHOR TRENCH, OVERLAPPING THE PRECEDING ROLL A MINIMUM OF 3 INCHES (7.6 CM).
    - \* SECURE THESE INITIAL ENDS OF MATS WITH ANCHORS AT 1 FOOT (0.3 M) INTERVALS, BACKFILL AND COMPACT SOIL.
    - \* UNROLL CENTER STRIP OF MATTING UPSLOPE. STOP AT NEXT CHECK SLOT OR TERMINAL ANCHOR TRENCH.
    - \* UNROLL ADJACENT MATS UPSLOPE IN SIMILAR FASHION, MAINTAINING A 3 INCH (76 MM) OVERLAP.
    - \* FOLD AND SECURE ALL ROLLS OF MATTING SNUGLY INTO ALL TRANSVERSE CHECK SLOTS. LAY MAT IN THE BOTTOM OF THE SLOT THEN FOLD BACK AGAINST ITSELF. ANCHOR THROUGH BOTH LAYERS OF MAT AT 1 INCH (25.4 MM) INTERVALS, THEN BACKFILL AND COMPACT SOIL. CONTINUE ROLLING ALL MAT WIDTHS UPSLOPE TO THE NEXT CHECK SLOT OR TERMINAL ANCHOR TRENCH.
    - \* ALTERNATE METHOD FOR NONCRITICAL INSTALLATIONS: PLACE TWO ROWS OF ANCHORS ON 6 INCH (0.2 M) CENTERS AT 25-30 FEET (7.6-9.1 M) INTERVALS IN LIEU OF EXCAVATED CHECK SLOTS.
    - \* SHINGLE-LAP SPLICED ENDS BY A MINIMUM OF 1 FOOT (0.3 M) WITH UPSLOPE MAT ON TOP TO PREVENT UPLIFTING BY WATER OR BEGIN NEW ROLLS IN A CHECK SLOT. ANCHOR OVERLAPPED AREA BY PLACING TWO ROWS OF ANCHORS, 1 FOOT (0.3 M) APART ON 1 FOOT (0.3 M) INTERVALS.
    - \* PLACE EDGES OF OUTSIDE MATS IN PREVIOUSLY EXCAVATED LONGITUDINAL SLOTS, ANCHOR USING PRESCRIBED STAPLE PATTERN, BACKFILL AND COMPACT SOIL.
    - \* ANCHOR, FILL AND COMPACT UPSLOPE END OF MAT IN A 12 INCH (0.3 M) X 6 INCH (0.2 M) TERMINAL TRENCH.
    - \* SECURE MAT TO GROUND SURFACE USING U-SHAPED WIRE STAPLES GEOTEXILE PINS OR WOODEN STAKES.
    - \* SEED AND FILL TURF REINFORCEMENT MATTING WITH SOIL, IF SPECIFIED. SOIL FILLING IF SPECIFIED FOR TURF REINFORCEMENT:
      - \* AFTER SEEDING, SPREAD AND LIGHTLY RAKE 1/2-3/4 INCHES (12.7-19.1 MM) OF FINE TOPSOIL INTO THE MAT APERTURES TO COMPLETELY FILL MAT THICKNESS. USE BACKSIDE OF RAKE OR OTHER FLAT IMPLEMENT.
      - \* SPREAD TOPSOIL USING LIGHTWEIGHT LOADER, BACKHOE, OR OTHER POWER EQUIPMENT. AVOID SHARP TURNS WITH EQUIPMENT.
      - \* DO NOT DRIVE TRACKED OR HEAVY EQUIPMENT OVER MAT.
      - \* AVOID ANY TRAFFIC OVER MATTING IF LOOSE OR WET SOIL CONDITIONS EXIST.
      - \* USE SHOVELS, RAKES OR BROOMS FOR FINE GRADING AND TOUCH UP.
      - \* SMOOTH OUT SOIL FILLING, JUST EXPOSING TOP NETTING OF MATRIX.
- INSPECTION AND MAINTENANCE:**
- \* ALL BLANKET AND MATS SHOULD BE INSPECTED PERIODICALLY FOLLOWING INSTALLATION.
  - \* INSPECT INSTALLATION AFTER SIGNIFICANT RAINSTORMS TO CHECK FOR EROSION AND UNDERMINING. ANY FAILURE SHOULD BE REPAIRED IMMEDIATELY.
  - \* IF WASHOUT OR BREAKAGE OCCURS, RE-INSTALL THE MATERIAL AFTER REPAIRING THE DAMAGE TO THE SLOPE OR DRAINAGEWAY.



**CONSTRUCTION ENTRANCE**  
NOT TO SCALE

- CONSTRUCTION ENTRANCE MAINTENANCE AND CONSTRUCTION SPECIFICATIONS**
- MAINTENANCE**
- MUD AND SOIL PARTICLES WILL EVENTUALLY CLOG THE VOIDS IN THE GRAVEL AND THE EFFECTIVENESS OF THE GRAVEL PAD WILL NOT BE SATISFACTORY. WHEN THIS OCCURS, THE PAD SHOULD BE TOPDRESSED WITH NEW STONE. COMPLETE REPLACEMENT OF THE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.
- IF WASHING FACILITIES ARE USED, THE SEDIMENT TRAPS SHOULD BE CLEANED OUT AS OFTEN AS NECESSARY TO ASSURE THAT ADEQUATE TRAPPING EFFICIENCY AND STORAGE VOLUME IS AVAILABLE. VEGETATIVE FILTER STRIPS SHOULD BE MAINTAINED TO INSURE A VIGOROUS STAND OF VEGETATION AT ALL TIMES.
- CONSTRUCTION SPECIFICATIONS**
- STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
  - THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
  - THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
  - THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICHEVER IS GREATER.
  - GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
  - ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
  - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC-OF-WAY MUST BE REMOVED PROMPTLY.
  - WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.



**TREE PLANTING DETAIL**  
3"+ CALIPER  
NOT TO SCALE

99/437 (11/15)  
**PLAN BOOK 437 PLAN 99**  
Approved by Board of Selectmen  
Received MAY 20, 2013  
with 49VLS Billy H & Katie A Darke  
Ac 22483 p. 249  
Jep for Board (11/15)  
Copy of deed

FOR REGISTRY USE ONLY  
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS  
Paul D. Turbide PE/PLS 11/29/08 DATE

**TOWN OF GROVELAND, MA**  
PLANNING BOARD APPROVAL UNDER THE SUBDIVISION CONTROL LAW, M.G.L. CH. 141, S. 81-U  
Approved by Planning Board  
12-11-2008 DATE

APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS STATED IN A MEMORANDUM OF DECISION DATED MAY 27, 2008 BETWEEN THE GROVELAND PLANNING BOARD, ON BEHALF OF THE TOWN OF GROVELAND, BILLY DARKE, AND CHRISTOPHER DARKE  
A COPY OF WHICH DECISION IS RECORDED HERewith AND SUBJECT ALSO TO RECORDING OF THIS PLAN AND SAID DECISION IN THE SOUTH ESSEX REGISTRY OF DEEDS ON OR BEFORE SEPTEMBER 10, 2008 IN BOOK 28032 PAGE 275  
APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS OF A COVENANT RECORDED IN ESSEX SOUTH DISTRICT REGISTRY OF DEEDS BOOK 28032 PAGE 284  
GROVELAND PLANNING BOARD

DATE FILED: 2/13/07  
PUBLIC HEARING OPENED: 3/13/07  
SITEWALK: 6/30/07  
PUBLIC HEARING CLOSED: 1/22/08  
DATE APPROVED: 6/10/08  
DECISION FILED: 6/25/08

GROVELAND TOWN CLERK:  
I HEREBY CERTIFY THAT NO APPEAL HAS BEEN FILED WITHIN THE 20 DAYS AS PRESCRIBED BY M.G.L. CHAPTER 41, SECTION 81 B-B.  
Caryn Prade 12/12/08  
TOWN CLERK DATE

**EROSION & SEDIMENTATION CONTROL**  
HOMESTEAD LANE  
DEFINITIVE SUBDIVISION PLAN  
GROVELAND, MASSACHUSETTS  
OWNER: BILLY H. & KATIE A. DARKE  
55 MAIN STREET, GROVELAND, MA 01834  
APPLICANT: CHRISTOPHER DARKE  
48 KING STREET, GROVELAND, MA

**PORT ENGINEERING ASSOCIATES, INC.**  
ONE HARRIS ST., NEWBURYPORT, MA. 01950  
TELEPHONE: (978) 465-8594  
DATE: 02/12/07  
DESIGNED BY: D.T.D. DRAWN BY: T.P.T. CHECKED BY: P.D.T. SCALE: AS NOTED JOB No.: P2999 SHEET No.: 9 OF 10

**REVISIONS**

DATE	BY	DESCRIPTION
03/09/07	T.P.T.	LOTS RECONFIGURATION AND RELATED CHANGES
09/28/07	M.R.D.	EDIT PER 4/27/07 CHAMMETI ENGINEERING REVIEW
11/24/08	T.P.T.	PLOT ON MYLAR AND FINAL REVISIONS

PAUL DAMEN TURBIDE No. 30376 CIVIL ENGINEER  
PAUL DAMEN TURBIDE No. 22999 PROFESSIONAL LAND SURVEYOR

PAUL D. TURBIDE, PE/PLS 11/25/08 DATE

99/437  
(11 PB)

PLAN BOOK 437 PLAN 99  
Essex County Registry of Deeds  
Salem, Mass  
Recorded MAY 20 2008  
with ABVE Billy H. Darke  
& KATIE A. DARKE  
Rec B 32482 p 299  
Noted Paul D. Turbide  
Register of Deeds

THE GROVELAND PLANNING BOARD HAS DECIDED TO GRANT APPROVAL UNDER THE SUBDIVISION CONTROL LAW WITH THE TERMS AND CONDITIONS STATED BELOW:

- PRIOR TO ISSUANCE OF BUILDING PERMITS THE APPLICANT WILL PROVIDE DOCUMENTATION THAT THE MEMORANDUM OF DECISION, FORMS F, G OR SUBSTITUTION PERFORMANCE GUARENTEE AS OUTLINE IN M.G.L. CHAPTER 41, SECTION 81-U AND SUBJECT DEFINITIVE PLANS ARE RECORDED IN THE ESSEX COUNTY DEED OFFICE. NO WORK SHALL BEGIN ON THIS PROJECT PRIOR TO THIS RECORDING; THIS INCLUDES THE CLEARING OF ANY TREES.
- NO ROADWAY CONSTRUCTION TO BE EXECUTED WITHOUT PERMISSION FROM THE ROAD COMMISSIONER AND THE TOWN OF GROVELAND PLANNING BOARD AND ITS AGENTS. NOTIFICATION MUST BE NO LESS THAN 10 DAYS, PRIOR TO BEGINNING CONSTRUCTION OR AS REQUIRED BY GROVELAND BY-LAWS.
- DUE TO THE UNIQUE GEOGRAPHICAL FEATURES OF THIS PARCEL, TO ADJACENT WETLANDS, AND TO PROTECT PRESENT INHABITANTS/ABUTTER'S HEALTH, SAFETY AND WELFARE; THE PLANNING BOARD REQUIRES THAT THE ACTUAL USE OF THE LOTS CONTAINED THEREIN AND THE SUBJECT PARCEL SHALL CONFORM TO THE INTENDED USE OF THESE LOTS AS PRESENTED BY THE APPLICANT TO THE PLANNING BOARD. ALL BUILDABLE LOTS CONTAINED IN THE SUBJECT PARCEL OF LAND ARE APPROVED FOR SINGLE FAMILY DWELLINGS ONLY. IT IS THE DETERMINATION OF THE PLANNING BOARD THAT THE SPIRIT AND INTENT OF THE TOWN OF GROVELAND ZONING BY LAWS AND APPLICABLE MASSACHUSETTS GENERAL LAWS WOULD BE VIOLATED BY ANY USE OTHER THAN RESIDENTIAL SINGLE FAMILY DWELLINGS.
- ALL ELECTRIC AND UTILITY SERVICE TO THE LOTS SHALL BE UNDERGROUND. A PLAN OF UNDERGROUND UTILITIES SHALL BE PROVIDED TO THE PLANNING BOARD AND INCLUDE ON THE DEFINITIVE PLAN THE LOCATION OF ALL UTILITIES AS REQUIRED BY THE TOWN OF GROVELAND BY-LAWS, PLANNING BOARD RULES AND REGULATIONS PRIOR TO BEGINNING CONSTRUCTION.
- IN LIEU OF SHADE TREES, THE PLANNING BOARD REQUIRES THAT THE DEVELOPER SHALL COMPLY WITH SECTION 4.14 AND SECTION 5.12 OF THE TOWN OF GROVELAND SUBDIVISION RULES AND REGULATIONS. IN THE EVENT THAT THE REMAINING TREES ARE NOT DEEMED SUITABLE BY THE PLANNING BOARD THE DEVELOPER SHALL PROVIDE SHADE TREES THAT ARE ACCEPTABLE TO THE BOARD.
- THIS DECISION SHALL BE BINDING UPON THE EXECUTORS, HEIRS, ADMINISTRATORS, DEVISEES, SUCCESSORS, AND ASSIGNS OF THE APPLICANT.
- STREET LIGHTING SHALL BE OF A TYPE, AND SET AT A DISTANCE AS DETERMINED BY THE TOWN OF GROVELAND MUNICIPAL LIGHT DEPARTMENT.
- THE OWNER/APPLICANT/DEVELOPER SHALL OBTAIN GENERAL LIABILITY INSURANCE COVERING THE DEVELOPMENT IN THE AMOUNT OF ONE MILLION DOLLARS (\$1,000,000.00), AND FURTHER THAT THE OWNER APPLICANT DEVELOPER SHALL INDEMNIFY AND HOLD HARMLESS THE TOWN OF GROVELAND AND THEIR CONSULTANTS FROM ANY AND ALL CLAIMS WHICH MAY ARISE FROM THE DEVELOPMENT AND CONSTRUCTION RELATING THERETO, PRIOR TO BEGINNING CONSTRUCTION.
- THE PLANNING BOARD SHALL AT THE OWNER/APPLICANT/DEVELOPER'S EXPENSE HIRE AN INDEPENDENT THIRD PARTY TO OVERSEE AND VERIFY FOR THE PLANNING BOARD THE IMPORTANT CONSTRUCTION MILESTONE EVENTS OF THIS DEVELOPMENT. SAID THIRD PARTY SHALL BE RESPONSIBLE TO, AND REPORT TO THE PLANNING BOARD; SHALL FILE WRITTEN REPORTS AS DEEMED NECESSARY BY THE PLANNING BOARD, TO THE PLANNING BOARD AND OTHER TOWN BOARDS, AS REQUIRED. IT IS THE APPLICANT'S RESPONSIBILITY TO NOTIFY THE SAID 3RD PARTY AND OTHER TOWN OFFICIALS TO ARRANGE THESE REQUIRED OBSERVATIONS, WHICH ARE DETAILED IN THE SUBDIVISION REGULATIONS. THE ACCOUNT SHALL BE ESTABLISHED WITH AN INITIAL DEPOSIT OF \$10,000 AND SHALL MAINTAIN A BALANCE OF \$5,000. THE PLANNING BOARD SHALL NOTIFY THE DEVELOPER WHEN ADDITIONAL FUNDS ARE REQUIRED. FAILURE OF THE DEVELOPER TO SUSTAIN THE MINIMUM BALANCE SHALL RESULT IN AUTOMATIC RECESION OF THE PLAN APPROVAL UPON THIRTY (30) DAYS NOTICE BY THE PLANNING BOARD TO THE DEVELOPER.
- VIOLATION OF ANY TERMS OF THIS DECISION OR COVENANTS RELATING THERETO SHALL BE JUST CAUSE FOR RECISSION, MODIFICATION OR AMENDMENT PURSUANT TO MASSACHUSETTS GENERAL LAW, CHAPTER 41 SECTION 81W.
- THIS DECISION IS BASED ON THE ACCEPTANCE OF THE DEFINITIVE PLAN BY THE TOWN OF GROVELAND BOARD OF HEALTH, AND THE TOWN OF GROVELAND CONSERVATION COMMISSION. ANY OBJECTION BY THE PREVIOUSLY MENTIONED TOWN BOARDS TO THE DEFINITIVE PLAN, OR LOTS CONTAINED THEREIN SHALL NEGATE THE ACCEPTANCE BY THE PLANNING BOARD FOR THE DEFINITIVE PLAN, OR THE LOTS AFFECTED BY THE AFOREMENTIONED DECISION, OR REQUIRE A MODIFICATION TO THE DEFINITIVE PLAN.
- THE SUBJECT ROADWAY SHALL HAVE A CROSS SECTION COMPRISING OF 12" COMPACTED GRAVEL SUBBASE, 8" BASE OF COMPACTED PROCESSED GRAVEL, IN LIFTS AS OUTLINED IN MASSACHUSETTS HIGHWAY DEPARTMENT SPECIFICATIONS, A 3 INCH COMPACTED BITUMINOUS CONCRETE BINDER AND A 2 INCH COMPACTED BITUMINOUS CONCRETE OVERLAY/TOPCOAT, ALL HOT APPLICATION. THE PLANS SHALL BE REVISED TO REFLECT THIS CROSS-SECTION PRIOR TO ENDORSEMENT.

- SUBMISSION OF AN AS BUILT PLAN OF THE SUBDIVISION, ROADWAY ACCEPTANCE PLAN, AND PETITION FOR ROAD ACCEPTANCE SHALL BE COMPLETED AND FILED WITH THE PLANNING BOARD, BY THE APPLICANT, PRIOR TO CONVEYANCE OF THE LAST LOT IN THE SUBDIVISION OR PRIOR TO THE RELEASE OF THE PERFORMANCE GUARENTEE, WHICH EVER OCCURS FIRST. THE ROAD ACCEPTANCE REQUEST SHALL INCLUDE ACCEPTANCE OF ALL UTILITY EASEMENTS AS SHOWN ON THE APPROVED PLANS.
- ALL OTHER TOWN OF GROVELAND BY-LAWS NOT MENTIONED, BUT RELEVANT TO THE DECISION, SHALL BE ADHERED TO, OTHERWISE THIS DECISION SHALL BECOME NULL AND VOID.
- THE OWNER/APPLICANT AND DEVELOPER SHALL COMPLETE GROVELAND SUBDIVISION RULES AND REGULATIONS FORMS F OR G, FOR THE COMPLIANCE OF THE PERFORMANCE GUARENTEE AS REQUIRED BY MASSACHUSETTS GENERAL LAWS, CHAPTER 41.
- THE APPLICANT SHALL ALSO POST THE FOLLOWING SIGNS:
  - "SLOW CHILDREN PLAYING" SIGNS (2) LOCATED ON THE PROPOSED SUBDIVISION ROAD.
  - "STOP" SIGN AT THE INTERSECTION OF THE PROPOSED DEVELOPMENT AND KING STREET.
  - STREET SIGN WITH THE NAME OF THE PROPOSED STREET FOR THE SUBDIVISION AT KING STREET.
- ALL BUILDABLE LOTS CONTAINED IN THE SUBJECT PARCEL OF LAND ARE APPROVED FOR SINGLE FAMILY DWELLINGS ONLY.
- ALL ENGINEERING DEFICIENCIES, AS STATED PER PEER REVIEW ENGINEER, W.C. CAMMETT ENGINEERING, INC., IN REPORTS DATED OCTOBER 2, 2007 AND OCTOBER 18, 2007 SHALL BE CORRECTED TO THE PLANNING BOARD AND PEER REVIEW ENGINEERS APPROVAL PRIOR TO PLAN ENDORSEMENT.
- ALL TERMS AND CONDITIONS OF THIS APPROVAL, ITEMS 1-31 LISTED IN THIS DECISION, SHALL BE LISTED ON THE FINAL PLANS PRIOR TO ENDORSEMENT, INCLUDING THE LIST OF WAIVERS AS GRANTED OR DENIED BY THE BOARD.
- VITAL ACCESS MUST BE MAINTAINED AT ALL TIMES AND IS THE SOLE RESPONSIBILITY OF THE DEVELOPER. THE ACCESS INCLUDES PLOWING, SANDING AND GENERAL UP KEEP UNTIL ROAD ACCEPTANCE BY THE TOWN OF GROVELAND.
- DRIVEWAYS MUST BE ACCESSIBLE FOR EMERGENCY VEHICLES AND APPROVED BY THE GROVELAND FIRE AND POLICE CHIEFS, AND AND THE GROVELAND ROAD COMMISSIONER.
- THE PLANNING BOARD SHALL AT THE OWNER/APPLICANT/DEVELOPER'S EXPENSE HIRE THE ROAD PREPAREDNESS COMMISSIONER TO OVERSEE AND VERIFY FOR THE PLANNING BOARD THE IMPORTANT CONSTRUCTION MILESTONE EVENTS OF THIS DEVELOPMENT. SAID R.P.C. SHALL BE RESPONSIBLE TO, AND REPORT TO THE PLANNING BOARD; SHALL FILE WRITTEN REPORTS AS DEEMED NECESSARY BY THE PLANNING BOARD TO THE PLANNING BOARD AND OTHER TOWN BOARDS, AS REQUIRED. IT IS THE APPLICANTS RESPONSIBILITY TO NOTIFY THE SAID R.P.C. AND OTHER TOWN OFFICIALS TO ARRANGE THESE REQUIRED INSPECTIONS, WHICH ARE DETAILED IN THE SUBDIVISION CONTROL REGULATIONS.
- THE REQUIREMENTS OF THE GROVELAND ROAD COMMISSIONER MUST BE MET FOR CONSTRUCTION OF THE SUBDIVISION ROAD.
- THE GROVELAND BOARD OF HEALTH APPROVAL AND A COPY OF THEIR DECISION SHALL BE FILED WITH THE PLANNING BOARD CONCERNING INDIVIDUAL LOTS MEETING MUNICIPAL WATER SUPPLY AND WATER PRESSURE REQUIREMENTS AND ANY APPROVAL NECESSARY FOR SEWER CONNECTIONS.
- COPIES OF THE FOLLOWING DOCUMENTS, PLANS, AND APPLICATIONS SHALL BE SUBMITTED TO THE PLANNING BOARD AND THEIR ENGINEERING CONSULTANT FOR REVIEW PRIOR TO BEGINNING CONSTRUCTION:
  - COPY OF THE GROVELAND ORDER OF CONDITIONS WITH SUBMITTED PLANS OF RECORD
  - NPDES PHASE II PERMIT APPLICATION, EROSION CONTROL/SEDIMENT PLANS, AND WEEKLY OBSERVATION REPORTS (DURING CONSTRUCTION)
  - SIX COPIES OF THE ENTIRE DEFINITIVE PLAN AS CERTIFIED RECORDED BY THE ESSEX COUNTY REISTRY OF DEEDS
  - COPY OF STORMWATER MANAGEMENT AND LAND DISTURBANCE BYLAW APPLICATION AND APPROVAL
- THE APPLICANT SHALL COMPLY WITH ALL MITIGATION MEASURES AS DETAILED IN THE TRAFFIC IMPACT AND ACCESS STUDY (TIASRC) PREPARED BY HAJEC ASSOCIATES AND FURTHER DETAILED IN THE PLANNING BOARD'S DELIBERATIONS
  - STOP SIGN AND STOP BAR ON HOMESTEAD LANE
  - STOP SIGN AND STOP BAR ON OUTLOOK DRIVE
  - A YELLOW CENTERLINE ALONG A CONTINUOUS 100 FOOT DISTANCE OF HOMESTEAD LANE, FROM A BEGINNING POINT AT THE AFOREMENTIONED STOP BAR.
  - RE-PAINTING THE DOUBLE YELLOW CENTERLINE ON KING STREET
  - VEGETATION MAINTENANCE ALONG KING STREET TO ENSURE MAXIMUM STOPPING SIGHT DISTANCES ARE MAINTAINED FOR THE PROPOSED INTERSECTION
  - THE RECOMMENDED SIGN INSTALLATIONS AS SHOWN ON ATTACHMENT 8 (NOT RECEIVED BY CAMMETT ENGINEERING)

- DURING CONSTRUCTION OF THE ROADWAY, THE ROAD PREPAREDNESS COMMISSIONER SHALL DETERMINE THE LOCATION OF SUBDRAIN, IF REQUIRED.
  - PRIOR TO THE ISSUANCE OF BUILDING PERMITS, A SITE PLAN FOR EACH LOT INDICATING THE PROPOSED HOUSE, DRIVEWAY, METHOD OF INFILTRATION AND PROPOSED GRADING TO INSURE THE ASSUMPTIONS MADE IN THE STORMWATER ANALYSIS SHALL BE SUBMITTED TO THE PLANNING BOARD FOR REVIEW BY THEIR CONSULTING ENGINEER.
  - PRIOR TO THE SALE OF ANY LOTS, THE OWNER/APPLICANT SHALL APPLY FOR AND OBTAIN THE SPECIAL PERMIT RELATIVE TO SECTION 950 OF THE GROVELAND ZONING BY LAW, AFFORDABLE HOUSING REQUIREMENTS. COVENANTS AND OTHER DOCUMENTS NECESSARY TO ENSURE COMPLIANCE WITH THIS SECTION SHALL BE EXECUTED AND, IF APPLICABLE, RECORDED PRIOR TO AND AS A CONDITION OF THE ISSUANCE OF ANY BUILDING PERMIT OR CERTIFICATE OF OCCUPANCY, AS THE SPGA SHALL DEEM APPROPRIATE.
  - THE OWNER/APPLICANT SHALL OBTAIN AN OPINION FROM THE ZONING ENFORCEMENT OFFICER REGARDING THE EXISTING TENNIS COURT FENCE PROPERTY LINE SET BACKS ON LOT 1 AT LEAST 90 DAYS PRIOR TO THE ISSUANCE OF ANY BUILDING PERMITS.
  - PRIOR TO ENDORSEMENT, PLANS SHALL INDICATE ALL "NO CUT/NO DITURB AND NO-BUILD" ZONES ON ALL LOTS SUBJECT TO THE LOCAL WETLAND PROTECTION BYLAW AND REFERENCE THE COVENANT DESCRIBING/DEFINING THESE AREAS. THE OWNER/APPLICANT SHALL PROVIDE A COPY OF THE RESTRICTIVE COVENANT FOR REVIEW BY THE BOARD PRIOR TO RECORDING OF THE COVENANT AT THE REGISTRY OF DEEDS.
  - THE OWNER/APPLICANT SHALL RECORD AND ABIDE BY THE COVENANT FOR CANNON HILL, NO CUT, BUILD, NO DISTURB BUFFER AS INDICATED IN SAID COVENANT AND SHALL BE PLACED AND RECORDED ON ALL PLANS TO RUN WITH THE LAND. SAID BUFFER ZONE IS 30 FEET ALONG THE REAR PORTIONS OF THE SITE AS SHOWN ON THE PLAN. SEE ATTACHED AND RECORDED BUFFER ZONE COVENANT.
- WAIVERS:
- THE FOLLOWING WAIVERS FROM THE SUBDIVISION CONTROL LAW HAVE BEEN CONSIDERED BY THE PLANNING BOARD. THE PLANNING BOARD HAS APPROVED THESE WAIVERS FINDING IT IS IN THE BEST INTEREST OF THE PUBLIC HEALTH, WELFARE, AND SAFETY.
- SECTION 4.3.8.3** - TO ALLOW LESS THAN A 150 FOOT TANGENT BETWEEN REVERSE CURVES
- SECTION 4.3.8.5** - TO ALLOW LESS THAN 400 FEET SEPARATION BETWEEN INTERSECTIONS OF MINOR STREETS. A DISTANCE OF APPROXIMATELY 275 FEET BETWEEN HOMESTEAD LANE AND OUTLOOK DRIVE IS PROVIDED
- SECTION 4.9.3** - TO ALLOW A SIDEWALK ON ONE SIDE OF THE ROADWAY ONLY
- SECTION 303.6 (2) ZONING BY LAW** - TO ALLOW THE EXISTING DRIVEWAY ON LOT 1 TO REMAIN ON KING STREET
- THE FOLLOWING WAIVER REQUEST HAS BEEN DENIED:  
- TO ALLOW CAPE COD BERM CURBING IN LIEU OF GRANITE CURBING

FOR REGISTRY USE ONLY  
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS  
*Paul D. Turbide*  
PAUL D. TURBIDE PE/PLS  
12/9/08  
DATE

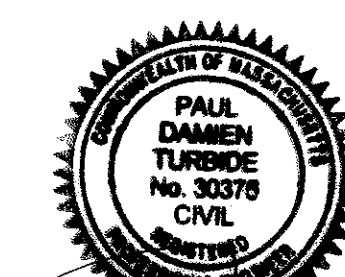
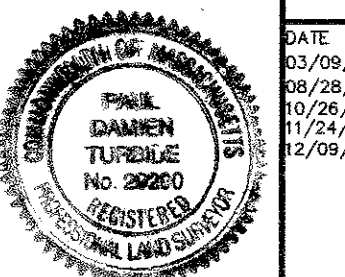
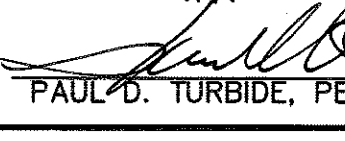

TOWN OF GROVELAND, MA  
PLANNING BOARD APPROVAL UNDER THE SUBDIVISION CONTROL LAW, M.G.L. CH. 41, S. 81-U  
*Carol Darke*  
Carol Darke  
12-11-2008  
DATE

APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS STATED IN A MEMORANDUM OF DECISION DATED MAY 27, 2008 BETWEEN THE GROVELAND PLANNING BOARD, ON BEHALF OF THE TOWN OF GROVELAND, BILLY DARKE, AND CHRISTOPHER DARKE  
A COPY OF WHICH DECISION IS RECORDED HERewith AND SUBJECT ALSO TO RECORDING OF THIS PLAN AND SAID DECISION IN THE SOUTH ESSEX REGISTRY OF DEEDS ON OR BEFORE SEPTEMBER 10, 2008 IN BOOK 28032 PAGE 275  
APPROVED JUNE 10, 2008 SUBJECT TO TERMS AND CONDITIONS OF A COVENANT RECORDED IN ESSEX SOUTH DISTRICT REGISTRY OF DEEDS BOOK 28032 PAGE 284  
GROVELAND PLANNING BOARD

DATE FILED: 2/13/07  
PUBLIC HEARING OPENED: 3/13/07  
SITEWALK: 6/30/07  
PUBLIC HEARING CLOSED: 1/22/08  
DATE APPROVED: 6/10/08  
DECISION FILED: 6/25/08

GROVELAND TOWN CLERK:  
I HEREBY CERTIFY THAT NO APPEAL HAS BEEN FILED WITHIN THE 20 DAYS AS PRESCRIBED BY M.G.L. CHAPTER 41, SECTION 81 B-B.  
*Carol Darke*  
TOWN CLERK  
12/10/08  
DATE

PLANNING BOARD DECISION AND WAIVERS

 		DATE: 02/09/07 BY: T.P.T. DESCRIPTION: LOTS RECONFIGURATION AND RELATED CHANGES DATE: 08/28/07 BY: M.R.D. DESCRIPTION: EDIT PER 4/27/07 CAMMETT ENGINEERING REVIEW DATE: 10/28/07 BY: M.R.D. DESCRIPTION: EDIT PER 10/08/07 CAMMETT ENGINEERING REVIEW DATE: 11/24/08 BY: T.P.T. DESCRIPTION: PLOT ON W/LAWS AND FINAL REVISIONS DATE: 12/09/08 BY: T.P.T. DESCRIPTION: EDIT TYPES AND RE-PLLOT		OWNER: BILLY H. & KATIE A. DARKE 53 MAIN STREET, GROVELAND, MA. 01804 APPLICANT: CHRISTOPHER DARKE 48 KING STREET, GROVELAND, MA	
 		PORT ENGINEERING ASSOCIATES, INC. ONE HARRIS ST., NEWBURYPORT, MA. 01950 TELEPHONE : (978) 465-8594		DATE: 02/12/07 DESIGNED BY: D.T.D. DRAWN BY: T.P.T. CHECKED BY: P.D.T. SCALE: 1"=40' JOB No.: P2999 SHEET No.: 10 OF 10	

Ms. Annie Schindler  
Town Planner & Environmental Program Coordinator  
Town of Groveland  
183 Main Street  
Groveland, MA 01834

January 30, 2024

Re: 929-931 Salem Street, Groveland, MA  
Engineering Peer Review - #2

Dear Ms. Schindler and Members of the Planning Board:

On behalf of the Town of Groveland, TEC, Inc. reviewed documents as part of the civil engineering peer review for the proposed concrete vault to be located at 929-931 Salem Street. ANFEH, LLC submitted the following documents which were reviewed by TEC for conformance with the Town of Groveland Zoning Bylaw and industry standards and best management practices:

- Vault Plans, prepared by CM Kirby Engineering, PLLC, dated September 25, 2023 with revisions dated December 20, 2023.
- Peer Review Response Letter prepared by CM Kirby Engineering, PLLC, dated December 20, 2023.
- Vault Design, calculations prepared by Christopher M. Kirby PE, dated August 28, 2023.

Upon review of the plans, TEC has compiled the following comments for the Board's consideration:

### **Vault Plans**

1. The project proposes fuel storage tanks within a water-tight concrete vault located at 929-931 Salem Street.

**CM Kirby: Agreed.**

*TEC: Comment addressed.*

2. TEC did not check the vault for structure adequacy and is not responsible for structural design. There are no attached structural calculations for the design of the vault with assumed loading and design of reinforcement. There is no information on soil conditions and bearing capacities. TEC requests this information to be provided.

**CM Kirby: The wall design and steel beam design calculations are attached. The soil bearing pressures are shown on Sheet T5 of the Structural Plans.**

*TEC: Comment partially addressed. The wall design and steel beam design calculations were attached and reviewed however, there are follow up comments on the calculations. The sketch on sheet 12 of 17 in the Vault Calcs was not considered due to lack of clarity and the prior calculation sheets were used to check rebar the design plans (sheets 9-11).*

- *The walls were designed as cantilever retaining walls, However, there is vertical loading from the top slab and steel beams which are not considered the wall design. Was this examined in the design process or other calculations?*
- *There is reinforcing provided in the bottom mat for the top slab, but top mat reinforcing is not provided. Was top mat reinforcing considered in the top slab?*
- *There are no calculations for the center wall / column. How was the center wall / column designed?*
- *Heel reinforcing is not called out on the plans as stated in the calculations. Please provide callout on the plans.*

3. The tanks are placed 6" off the ground and can be fully visually inspected.

**CM Kirby: Agreed.**

*TEC: Comment addressed.*

4. The vault plans note ground water elevation of 103.00±. TEC recommends adding a note that states where the information is referencing from.

**CM Kirby: The high ground water elevation was taken from the contract documents (CEG Drawings Page 6 of 9).**

*TEC: Comment addressed.*

5. There are waterstops in the plans preventing water infiltration along the base slab and walls. Is there a water infiltration system for the top of walls and top slab to ensure the vault is water-tight?

**CM Kirby: Waterstops will be installed on the intersection between the top of wall and tank top slab.**

*TEC: Comment addressed.*

6. The stamped plans of the concrete vault do not state that the tank is to be constructed water-tight. TEC requests that this note be added to the plans.

**CM Kirby: This note is added.**

*TEC: Comment addressed.*

7. TEC recommends on-site testing of the tank (after initial placement/construction) to confirm the structure is water-tight. The results should be provided to the Board.

**CM Kirby: Agreed.**

*TEC: Comment addressed.*

8. The vault capacity calculation computes a percentage of the tanks storage capacity. The containment capacity shall be greater than or equal to what percentage of the volume of liquid? Please state in the plans to confirm this calculation passes.



**CM Kirby: The vault capacity calculation is provided on Sheet T4 of the Structural Plans.**

*TEC: Comment addressed.*

9. The Applicant should confirm that an Operations & Maintenance Plan exists for the proposed ASTs. A copy should be submitted to Board for documentation and future inspection reports should be provided to the Board for review.

**CM Kirby: Agreed.**

*TEC: TEC defers to the Board to ensure that an Operations & Maintenance Plan is submitted to them for future inspection.*

10. The vault buoyancy calculation considered a 1-foot strip across the vault in one direction. Is this the worst case scenario? TEC recommends doing a check with the entire structure instead of a 1-foot strip.

**CM Kirby: The calculation was revised as requested and is shown on Sheet T4 of the Structural Drawings.**

*TEC: Comment addressed.*

11. The vault buoyancy calculation for volume of water displaced does not have the variables used to determine the 193 CF. TEC recommends stating where this number comes from in the calculation.

**CM Kirby: The calculation was revised as requested and is shown on Sheet T4 of the Structural Drawings.**

*TEC: Comment addressed.*

Please do not hesitate to contact me directly if you have any questions concerning our peer review at 978-593-0984. Thank you for your consideration.

Sincerely,  
TEC, Inc.  
"The Engineering Corporation"



Kasey Provost, PE  
Assistant Project Manager