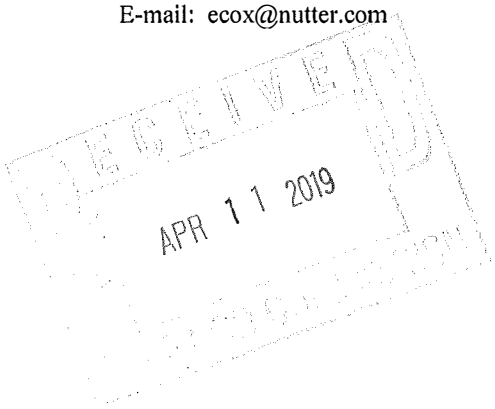
Nutter

Eliza Cox
Direct Line: (508) 790-5431
Fax: (508) 771-8079
E-mail: ecox@nutter.com

April 11, 2019
0119577-00001



By Hand Delivery

Jon Idman, Esq., Chief Regulatory Officer
Cape Cod Commission
3225 Main Street
Barnstable, MA 02630

Re: Clay Pond Acquisitions, LLC - True Storage Redevelopment
170 Clay Pond Road, Bourne (the "Property")
Application for Development of Regional Impact

Dear Jon:

This office represents Clay Pond Acquisitions, LLC (hereafter, the "Applicant"), which has the above Property under agreement to purchase. On behalf of the Applicant, I enclose a Development of Regional Impact application for the proposed redevelopment/re-use of the existing shopping center located on the Property to create approximately 141,260 square feet of self-storage while maintaining approximately 12,200 square feet of existing retail/shopping center use. In support of this filing, I enclose:

1. One (1) paper copy of the application materials;
2. A thumb drive containing an electronic copy of the application materials;
3. Check no. 49865 in the amount of $31,701 representing the filing fee;
4. One (1) full size copy of the project plans (reduced sized copies are contained in Tabs 11 and 16 of the application materials).

The certified abutters list has been requested and will forwarded to you under separate cover. We will also work with the Town of Bourne to obtain a referral for the project. Per Cape Cod Commission requirements, copies of this filing are simultaneously being provided to the Town of Bourne. We look forward to working with you on this filing. Please let me know if you have any questions, comments or should you require any additional information.

Thank you very much. With best regards, I remain,

Very truly yours,

Eliza Cox

EZC:
Enclosures

cc: Clay Pond Acquisitions, LLC (w/ application)
Coreen Moore, Town Planner, Town of Bourne (w/ application), certified mail, R/R/R
Town Clerk's Office, Town of Bourne (w/ application), certified mail, R/R/R
Roger LaPorte, Building Commissioner, Town of Bourne (w/ application), certified mail, R/R/R
Brian Kuchar, Horsley Witten Group, Inc. (w/ application)

4469323.1

Clay Pond Acquisitions, LLC
True Storage Redevelopment – 170 Clay Pond Road, Bourne

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15	Prior CCC Decisions
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Application Cover Sheet

Cape Cod Commission
3225 Main Street, PO Box 226
Barnstable, MA 02630
Tel: (508) 362-3828 • Fax: (508) 362-3136

CAPE COD COMMISSION

For Commission Use Only
Date Received:
Fee ($):
Check No:
File No:

A Type of Application (check all that apply)

- ☑ Development of Regional Impact (DRI)
- ☐ DRI Scoping
- ☐ DRI Exemption
- ☐ Hardship Exemption
- ☐ Jurisdictional Determination
- ☐ Request for Joint MEPA/DRI Review
- ☐ Decision Extension
- ☐ Decision Modification

B Project Information

Project Name: True Storage Redevelopment
Total Site Acreage: 16.17 AC
Project/Property Location: 170 Clay Pond Road, Bourne
Zoning: Business - 4

Brief Project Description:
Include total square footage of proposed and existing development, gross floor area, number of lots existing or to be created, specific uses, description of existing conditions, as applicable (attach additional sheets if necessary).
SEE ATTACHED

C Owner(s) of Record

List the following information for all involved parcels. Provide copies of each Deed and Purchase and Sale Agreement and/or evidence of leasehold interest, if applicable, for all involved parcels. Proof of ownership/legal rights for Applicant(s) to proceed with the proposed development must be documented prior to the Commission deeming any application complete. List the local, state, or federal agencies from which permits or other actions have been/will be filed (attach additional sheets if necessary).

Map/Parcel	Owner's Name	Lot & Plan	Land Court Certificate of Title #	Registry of Deeds Book/Page #
31.4/20	Claybourne Trust		489/57 Lot 1	22447/112

There **ARE/ARE NOT** (circle one) court claims, pending or completed, involving this property (if yes, please attach relevant information).

Is there an existing CCC Decision for the Property? ☑ yes ☐ no (if so, recording information for decision, please attach relevant information).

D Certification

I hereby certify that all information provided on this application form and in the required attachments is true and accurate to the best of my knowledge. I agree to notify the Cape Cod Commission of any changes on the information provided in this application, in writing, as soon as is practicable. I understand failure to provide the required information and any fees may result in a procedural denial of my project.
NOTE: For wireless communication facilities, a licensed carrier should be either an applicant or a co-applicant.

APPLICANT
Applicant(s) Name: Clay Pond Acquisitions, LLC Tel: 603-622-6223 Fax: 603-622-7342
Address: 670 N. Commercial Street, Manchester, NH 03101
Signature: N/A Date: 4/2/2019

CO-APPLICANT
Co-Applicant(s) Name: Tel: Fax:
Address:
Signature: Date:

CONTACT
Contact: Eliza Cox, Esq. Tel: 508-790-5431 Fax: 508-771-8079
Address: Nutter, McClennen & Fish, LLP, P.O. Box 1630, Hyannis, MA 02601
Signature: Date: 4/8/2019

PROPERTY OWNER
Property Owner: Drake Behrakis, Trustee Tel: Fax:
Address: 80 Hayden Ave., Suite 100, Lexington, MA 02421
Signature: Date:

BILLABLE ENTITY
Name: Eliza Cox, Esq. Tel: 508-790-5431 Fax: 508-771-8079
Address: Nutter, McClennen & Fish, LLP, P.O. Box 1630, Hyannis, MA 02601

The proposed redevelopment project consists of: (1.) a 2-story addition with an approximately 15,100 sf foot print to the existing building ; (2.) renovating a portion of the existing retail building, which together with the proposed expansion, will provide for approximately 105,660 square feet of interior, climate-controlled self-storage space in individual units while retaining approximately 12,200 square feet of existing retail/shopping center use; and (3.) the addition of approximately 35,600 square feet of exterior self-storage units within the existing parking lot area. In addition, the project proposes other improvements including storm-water management enhancements, additional landscaping and other streetscape improvements.

Clay Pond Acquisitions, LLC

True Storage Redevelopment – 170 Clay Pond Road, Bourne

Executive Summary

Clay Pond Acquisitions, LLC (the "Applicant") submits this development of regional impact application in connection with its proposed redevelopment of, and improvements to, the existing shopping center located at 170 Clay Pond Road, Bourne (the "Property"). As described in the application materials, the proposed redevelopment consists of three primary components: (1.) a 2-story addition within approximately 15,100 square foot footprint to the existing shopping center building; (2.) renovating a portion of the existing retail building, which together with the proposed expansion, will provide for approximately 105,660 square feet of interior, climate-controlled self-storage space in individual units while retaining approximately 12,200 square feet of existing retail/shopping center use; and (3.) the addition of approximately 35,600 square feet of exterior self-storage units within the shopping center's existing paved parking lot. In addition, the redevelopment also includes other improvements such as storm-water management enhancements, additional landscaping, and other streetscape improvements. Details regarding these proposed improvements are described in the Project Site Narrative prepared by Horsley Witten Group, Inc. attached as Exhibit 10 to these application materials.

Although the Applicant's proposed project exceeds Cape Cod Commission jurisdictional thresholds, it is important to note that the Property has the benefit of 1991 Cape Cod Commission development of regional impact approval which has been modified several times. Copies of the prior Cape Cod Commission decisions are included in Tab 15 of the application materials (hereafter, collectively, the "Existing CCC Decision"). The Existing CCC Decision permitted the construction of an approximately 74,500 square foot shopping center on the Property, with conditions requiring mitigation to off-set its impacts. Since its construction in the early 1990's, the shopping center has had various retail tenants. However, a significant portion of the existing building has been vacant for some time following the departure of a supermarket tenant.

The Applicant's proposed redevelopment provides for an adaptive redevelopment of the Property with far fewer land impacts than the use permitted in the Existing CCC Decision. These include, without limitation:

- Substantially reduced wastewater flow and enhanced treatment;
- Substantially reduced traffic generation;
- Improved storm-water management;
- Reduced impervious coverage;
- Reduced energy consumption;
- Additional pedestrian safety improvements; and
- Additional landscaping and streetscape improvements.

In addition, the redevelopment is economically positive by re-using a site that has been underutilized in recent years with a use where there is strong market demand. As noted in the response to Goal EC3 (see Tab 3), the Applicant's market study revealed that there is demand for

approximately 264,000 square feet of additional self-storage space within the market area. This project would address some of that deficiency with, as previously noted, a redevelopment that has minimal land impact.

Finally, in addition to fewer land impacts than the use permitted in the Existing CCC Decision, the redevelopment is also sited to minimize visual impact. The proposed building expansion utilizes the same architectural design as was approved by the Cape Cod Commission. And, with the existing natural buffer along MacArthur Boulevard, the large setbacks from Clay Pond Road, and the adjacent developed properties which also screen visual impacts, the proposed exterior self-storage units will have limited, if any, visibility from regional roadways, particularly given their low profile. This will be further mitigated by the additional plantings proposed along the vehicle interconnect to the adjacent housing development.

As detailed in the application materials, the redevelopment is consistent with the Goals and Objectives of the 2019 Regional Policy Plan and beneficially reuses any existing developed site with a less intense land use that is responsive to market demand. The redevelopment is appropriately sited, within the existing development footprint, and in a commercial area where the use is appropriately zoned. There are numerous project benefits with this redevelopment, including those listed in bullet points above.

4459743.1

REVIEW GOALS AND OBJECTIVES OF THE REGIONAL POLICY PLAN
CLAY POND ACQUISITIONS, LLC – TRUE STORAGE REDEVELOPMENT

NATURAL SYSTEMS	
Water Resources	
Goal: *To Maintain a sustainable supply of high quality untreated drinking water and protect, preserve, or restore the ecological integrity of Cape Cod's fresh and marine surface water resources.*	
Objectives	**Project Methodology**
WR1 - Protect and preserve groundwater quality	The project meets this objective by abandoning the existing Title 5 on-site septic system and connecting to the Canal Bluffs Wastewater Treatment Plant. This change in treatment was previously approved by the Cape Cod Commission (CCC) in its January 29, 2007 modification of the original 1991 DRI decision for this site. Both the 2007 modification and the current Water Resources Technical Bulletin support efforts, such as this, to use existing infrastructure to improve water quality. Moreover, the proposed changes will decrease the amount of wastewater (and thus, nitrogen) generated by the subject property. Included in Tab 15 of the application materials is a sample rental agreement, similar to what would be used in this redevelopment, that expressly prohibits the storage of hazardous materials or substances.
WR2 - Protect, preserve and restore fresh water resources	The project is consistent with this objective by substantially decreasing the wastewater flows as compared to the currently approved use and by connecting the reduced flows to the Canal Bluffs Wastewater Treatment Plant.
WR3 - Protect, preserve and restore marine water resources	The project is consistent with this objective by substantially decreasing the wastewater flows as compared to the currently approved use and by connecting the reduced flows to the Canal Bluffs Wastewater Treatment Plant.

WR4 - Manage and treat Stormwater to protect and preserve water quality	In its 1991 DRI, the CCC approved the site design, including storm-water infrastructure. Notwithstanding and consistent with this objective, the Applicant proposes new storm-water improvements as part of the redevelopment, including tree trenches and an overall reduction in impervious coverage.
WR5 - Manage groundwater withdrawals and discharges to maintain hydrologic balance and protect surface and groundwater resources	The redevelopment project is consistent with this objective in that it significantly reduces groundwater withdrawals and discharges as compared to the project originally approved by the CCC.
Ocean Resources	
Goal: *To protect, preserve or restore the quality and natural values and functions of ocean resources*	
Objectives	**Project Methodology**
OR 1 - Locate development away from sensitive resource areas and habitats	The project is consistent with this objective in that it is a redevelopment of an existing site, is not located within designated rare species habitat, and is not in an area identified on the Cape Cod Ocean Management Plan.
OR2 - Preserve and protect ocean habitat and the species it supports	Not applicable.
OR3 - Protect significant human use areas and vistas	The project is consistent with this objective in that it does not cause any adverse visual impacts to the Cape's cultural, historic or scenic resources.

Wetland Resources	
Goal: *To protect, preserve, or restore the quality and natural values and functions of inland and coastal wetlands and their buffers*	
Objectives	**Project Methodology**
WET1 - Protect wetlands and their buffers from vegetation and grade changes	Not applicable; there are no regulated wetlands on the property.
WET2 - Protect wetlands from changes in hydrology	Not applicable
WET3 - Protect wetlands from Stormwater discharges	Not applicable
WET4 - Promote the restoration of degraded wetland resource areas	Not applicable
Wildlife and Plant Habitat	
Goal: *To protect, preserve, or restore wildlife and plant habitat to maintain the region's natural diversity*	
Objectives	**Project Methodology**
WPH1 - Maintain existing plant and wildlife populations and species diversity	The project is consistent with this objective in that all proposed work is located on previously disturbed portions of the property and no new clearing is proposed.
WPH2 - Restore degraded habitats through use of native plant communities	Not applicable.
WPH3 - Protect and preserve rare species habitat, vernal pools, 350-foot buffers to vernal pools	Not applicable.
WPH4 - Manage invasive species	Not applicable
WPH5 - Promote best management practices to protect wildlife and plan habitat from the adverse impacts of development	The project is consistent with this objective in that it stays within the existing development envelope.
Open Space	
Goal: *To conserve, preserves or enhance a network of open space that contributes to the region's natural and community resources and systems*	
Objectives	**Project Methodology**
OS1 - Protect and preserve natural cultural and recreational resources	The project is consistent with this objective in that it is a redevelopment of an existing property that previously went through Cape Cod Commission review, and the limits of the

	proposed redevelopment stay within the existing, approved, developed envelope.
OS2 - Maintain or increase the connectivity of open space	Not applicable.
OS3 - Protect or provide open space appropriate to context	The project does not alter any existing undeveloped areas and, as such, no open space mitigation is required.
BUILT SYSTEMS	
Community Design	
Goal: *To protect and enhance the unique character of the region's built and natural environment based on the local context*	
Objectives	**Project Methodology**
CD1 - Promote context sensitive building and site design	The proposed expansion of the main building largely mimics the existing design in terms of form and materials, but with a reduced roof height to break up any sense of massing. In addition, due to the significant setbacks and buffering from landscaping and smaller buildings located on adjacent properties, the proposed redevelopment is well buffered from regional roadways. Further, the proposed streetscape improvements are also consistent with this objective.
CD2 - Minimize the amount of newly disturbed land and impervious surfaces	The project furthers this objective in that it is a redevelopment project that stays within the existing development footprint, proposes a multi-story addition, and reduces the total amount of impervious surfaces.
CD3 - Avoid adverse visual impacts from infrastructure to scenic resources	Not applicable as this is not an infrastructure project.
Coastal Resiliency	
Goal: *To prevent or minimize human suffering and loss of life and property or environmental damage resulting from storms, flooding, erosion, and relative sea level rise*	
CR1 - Minimize development in the floodplain	The project is not proposed within a floodplain.
CR2 - Plan for sea level rise, erosion, and floods	Not applicable as the project is not located within, or in the buffer to, a coastal resource area.

CR3 - Reduce vulnerability of built environment to coastal hazards	Not applicable as the project is not located within, or in the buffer to, a coastal resource area.
Capital Facilities and Infrastructure	
Goal: *to guide the development of capital facilities and infrastructure necessary to meet the region's needs while protecting regional resources*	
Objectives	**Project Methodology**
CAP1 - Ensure capital facilities and infrastructure promote long term sustainability and resiliency	Not applicable as the redevelopment is not a capital facility or infrastructure project.
CAP2 - Coordinate the siting of capital facilities and infrastructure to enhance the efficient provision of services and facilities that respond to the needs of the region	The redevelopment is not a capital facility or infrastructure project. Notwithstanding, and consistent with this objective, it is noted that as part of this redevelopment the project will connect to the Canal Bluffs Wastewater Treatment Plant.
Transportation	
Goal: *To provide and promote a safe, reliable, and multi-modal transportation system*	
Objectives	**Project Methodology**
TR1 - Improve safety and eliminate hazards for all users of Cape Cod's transportation system	As detailed in the transportation assessment (Tab 14), the project is consistent with this objective in that it represents a significant reduction in the volume and associated impacts and potential conflicts that may result from the addition of trips on the transportation system. Moreover, as part of the 1991 DRI decision, significant safety measures were completed to mitigate impacts from vehicles generated by development on this property.
TR2 - Provide and promote a balanced and efficient transportation system that includes healthy transportation options and appropriate connections for all users	The 1991 DRI, and subsequent modifications, required numerous significant improvements to support healthy transportation options and appropriate connections and these have been implemented. Notwithstanding, and consistent with this objective, as part of this proposed redevelopment, the Applicant proposes additional sidewalk, accessible curb ramps, painted crosswalks and tree plantings to define the streetscape.

TR3 - Provide an efficient and reliable transportation system that will serve the current and future needs of the region and its people	The redevelopment represents a significant reduction in the volume of traffic and associated impacts on the transportation system. Based on mitigation measures previously provided under the 1991 DRI decision for this property, which are outlined in the transportation assessment (Tab 14), there is a reserve capacity on the system that would have otherwise been allocated to the project site. This should be deemed a significant project benefit.
Energy	
Goal: *To provide an adequate, reliable and diverse supply of energy to serve the communities and economics of Cape Cod*	
Objectives	**Project Methodology**
EN1 - Support renewable energy development that is context-sensitive	The change of use from the approved grocery store to a self-storage facility will substantially decrease the amount of energy consumed on-site. Accordingly, consistent with the Energy Goal, the redevelopment will improve reliability by reducing demand.
EN2 - Increase resiliency of energy generation and delivery	The change of use from the approved grocery store to a self-storage facility will substantially decrease the amount of energy consumed on-site. Accordingly, consistent with the Energy Goal, the redevelopment will improve reliability by reducing demand.
EN3 - Minimize energy consumption through planning and design (energy efficient and conservation measures)	The change of use from the approved grocery store to a self-storage facility will substantially decrease the amount of energy consumed on-site. Accordingly, consistent with the Energy Goal, the redevelopment will improve reliability by reducing demand. In addition, the Applicant proposes LED fixtures with motion sensors so that the lighting is only on in the occupied spaces. Also, the proposed HVAC is temperature controlled only between 60 degrees in the winter and 80 degrees in the summer to minimize its usage.

Waste Management	
Goal: *To promote a sustainable solid waste management system for the region that protects public health, safety and the environment and supports the economy*	
Objectives	**Project Methodology**
WM1 - Reduce waste and waste disposal by promoting waste diversion and other Zero-Waste initiatives	Consistent with this objective, the change in use from the currently approved grocery store use to a self-storage will generate significantly less waste. Also consistent with this objective, the project proposes to re-use an existing building.
WM2 - Support an integrated solid waste management system	Unlike the currently approved use, a self-storage facility generates very little waste. Construction wastes and recyclables associated with the new buildings will be properly managed.
COMMUNITY SYSTEMS	
Cultural Heritage	
Goal: *To protect and preserve the significant cultural, historic, and archeological values and resources of Cape Cod*	
Objectives	**Project Methodology**
CH1 - Protect and reserve forms, layouts, scale, massing, and key character defining features of historic resources, including traditional development patterns of villages and neighborhoods	Not applicable. Project is not an historic structure and it is not located within an historic district.
CH2 - Protect and preserve archaeological resources and assets from alteration or relocation	Not applicable.
CH3 - Preserve and enhance public access and rights to and along the shore	Not applicable.

CH4 - Protect and preserve traditional agricultural and maritime development and uses	Not applicable.
Economy	
Goal: *To promote a sustainable regional economy comprised of a broad range of businesses providing employment opportunities to a diverse workforce*	
Objectives	**Project Methodology**
EC1 - Protect and build on the Cape's competitive advantages	Consistent with this objective, the project proposes to adaptively re-use an existing, vacant building which not only will address an unmet market demand (see response to EC3), but will enable improvements and expansions to the property which will likely result in increased tax revenue to the Town of Bourne. Also consistent with this objective, the project is a redevelopment in an area where there is adequate infrastructure and the proposed change will have less land and infrastructure impact than the currently approved use.
EC2 - Use resources and infrastructure efficiently	The project is consistent with this objective in that it is a redevelopment that re-uses an existing building and proposes shared infrastructure (access and wastewater) with abutting development. In addition, utilities are proposed to be located underground.
EC3 - Foster a balanced and diverse mix of business and industry	Consistent with this objective, the project retains approximately 12,200 square feet of shopping center space to accommodate different uses/tenants. Further, the Applicant studied the market for the proposed use based on a seven-mile radius. This study concluded that the total market size supports 431,904 square feet of self-storage use. Presently, within the market study, there is only 167,960 square feet of self-storage in the market (without consideration as to whether that space is presently available or occupied). Thus, there is demand for approximately 264,000 square feet of self-storage in this

	market area. This project will help meet that demand and, therefore, adds a use needed within the regional economy.
EC4 - Encourage industries that provide living wage jobs to a diverse workforce	Self-storage facilities do not create a significant number of jobs, but they do support local businesses which use the facility to store files and materials. Further, the change from grocery store to self-storage is not displacing a high-wage use.
EC5 - Expand economic activity and regional wealth through exports, value added, import substitution, and local ownership	The project is consistent with this objective in that it proposes a use that is in demand (self-storage) while also retaining approximately 12,200 square feet of space presently broken down to support small businesses. Moreover, as noted in the response in EC3, the proposed use helps to address an unmet economic demand which supports both residents and other businesses.
Housing	
Goal: *To promote the production of an adequate supply of ownership and rental housing that is safe, healthy and attainable for people with different income levels and diverse needs*	
Objectives	**Project Methodology**
HOU1 - Promote an increase in housing diversity and choice	Not applicable.
HOU2 - Promote an increase in year-round housing supply	Not applicable.
HOU3 - Protect and improve existing housing stock	Not applicable, although the interconnection through the site to the adjacent housing development, and the proposed provision of enhanced sidewalks along the interconnection furthers the objective by improving pedestrian safety and increasing the "accessibility or visitability of existing dwelling units."
HOU4 - Increase housing affordability	Not applicable.

Clay Pond Acquisitions, LLC

True Storage Redevelopment – 170 Clay Pond Road, Bourne

Anticipated Land Use Permits

1. Cape Cod Commission – Development of Regional Impact
2. Town of Bourne Planning Board – Site Plan-Special Permit
3. Town of Bourne Building Department – Building Permit

4458166.2

Clay Pond Acquisitions, LLC

True Storage Redevelopment – 170 Clay Pond Road, Bourne

Certified Abutters List

SUBMITTED UNDER SEPARATE COVER

4459743.1

Bk 22447 Pg 112 #63333
11-01-2007 @ 02:40p

QUITCLAIM DEED

BOURNE CLAY, LLC a Massachusetts limited liability company, having an address c/o Eastern Development, 120 Presidential Way, Suite 300, Woburn, Massachusetts 01801 ("Grantor"),

for consideration paid in the sum of Eight Million Dollars ($8,000,000.00),

grants to **DRAKE G. BEHRAKIS** and **DONALD P. QUINN**, Trustees of **CLAYBOURNE TRUST** under declaration of trust dated August 22, 2007 recorded with Barnstable Registry of Deeds (the "Registry") in Book 22417, Page 1, having an address c/o Marwick Associates, 80 Hayden Avenue, Suite 100, Lexington, Massachusetts 02421 ("Grantee")

with QUITCLAIM COVENANTS, a certain parcel of land more particularly described on **Exhibit A** attached hereto and made a part hereof.

Said premises are conveyed subject to real estate taxes assessed against said property which are not yet due and payable.

Said premises are hereby conveyed subject to and together with all easements, covenants, restrictions, and agreements of record, if any, insofar as they may be in force and applicable.

The Premises described above are conveyed subject to a Mortgage and Security Agreement dated May 5, 2004 from Grantor to Nationwide Life Insurance Company recorded with the Registry in Book 18552, Page 213, securing debt in the current outstanding principal balance of $4,846,233.26, which the Grantee has assumed and agreed to pay as set forth in an Assignment and Assumption Agreement of even date and delivery to be recorded herewith.

Being the same premises conveyed to Grantor by Quitclaim Deed dated February 6, 2004 and recorded with the Registry in Book 18204, Page 13.

[Signature appears on next page.]

1710 Clay Pond Road, Bourne

MASSACHUSETTS STATE EXCISE TAX
BARNSTABLE COUNTY REGISTRY OF DEEDS
Date: 11-01-2007 @ 02:40pm
Ctl#: 1273 Doc#: 63333
Fee: $27,360.00 Cons: $8,000,000.00

BARNSTABLE COUNTY EXCISE TAX
BARNSTABLE COUNTY REGISTRY OF DEEDS
Date: 11-01-2007 @ 02:40pm
Ctl#: 1273 Doc#: 63333
Fee: $18,240.00 Cons: $8,000,000.00

Executed under seal as of the 29th day of October, 2007.

GRANTOR:

Bourne Clay, LLC

By: _____
Name: _____
Title: Manager

COMMONWEALTH OF MASSACHUSETTS

Middlesex County, ss

On this 29 day of October, 2007, before me, the undersigned notary public, personally appeared Daniel J. Wherrett, proved to me through satisfactory evidence of identification, which consisted of personal knowledge to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he has signed it voluntarily for its stated purpose as Manager of Bourne Clay, LLC.

_____
Notary Public
Printed Name: _____
My commission expires: _____

A True Copy Attest
MELISSA S. NIGRO
NOTARY PUBLIC
My commission expires Oct. 16, 2009

EXHIBIT A

A certain parcel of land situated in Bourne, Barnstable County, Massachusetts, bounded and described as follows:

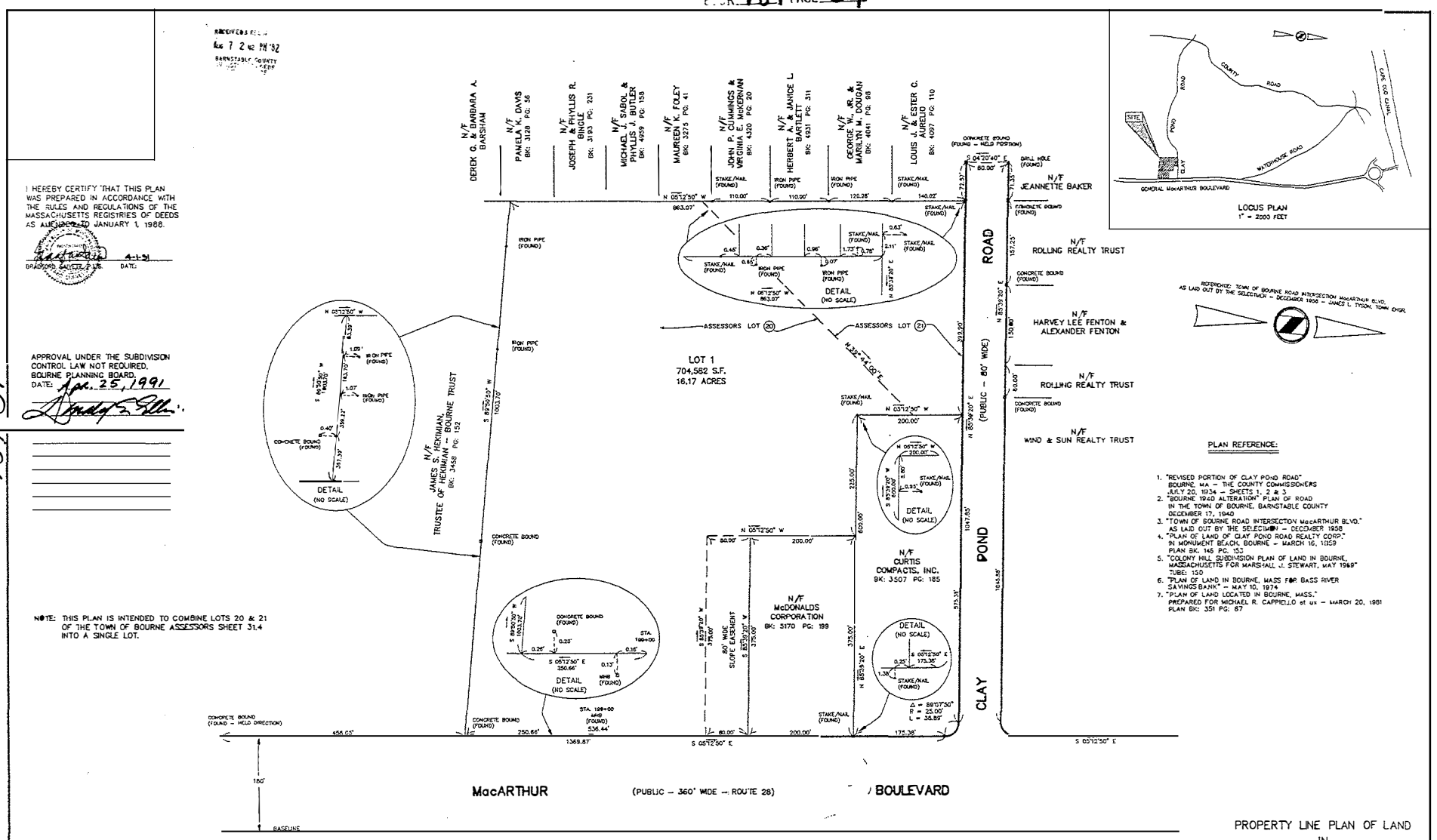
Beginning at a concrete bound located at the southeast corner of the herein described premises, said concrete bound being on the westerly sideline of MacArthur Boulevard, 250.66 feet south of a Massachusetts highway bound that is located at highway station 199+00; thence running S 89° -55'-50" W, 1003.70' by land now or formerly of James S. Hekimian, to a point; thence turning and running N 05° -12'-50" W, 863.07', by land now or formerly of Davis, Bingle, Butler, Foley, McKernan, Bartlett, Dougan and Aurelio to a point on the southerly sideline of Clay Pond Road; thence turning and running along the southerly sideline of Clay Pond Road, N 85° -39'-20" E, 399.90 to a point; thence turning and running S 05° 12'-50" E, 200.00' to a point; thence turning and running N 85° -39'-40" E, 225.00' to a point; the previous two lines being by land now or formerly of Curtis Compacts, Inc.; thence turning and running S 05° -12'-50" E, 200.00' to a point; thence turning and running N 85° -39'-20" E, 375.00' to a point on the westerly sideline of Macarthur Boulevard, the previous two lines being by land now or formerly of McDonald's Corporation; thence turning and running along the westerly sideline of Macarthur Boulevard S 05° -12'-50" E, 536.44' to the point of beginning.

The above described parcel is shown as Lot 1 on a plan entitled "Property Line Plan of Land in Bourne, Massachusetts" dated April 1, 1991, revised 4/23/91 by Bradford Saivetz & Associates, Inc., Braintree, Massachusetts recorded in Plan Book 489, Page 57.

Together with the benefit of rights and easement to erect, maintain, repair and replace a sign as set forth in Grant by Michael R. Cappiello et al Co-Partners D/B/A as Ro-CA Sue Realty Trust to Southern Acquisition Corporation dated August 6, 1992 recorded in Book 8149, Page 327 (the "Sign Easement").

BARNSTABLE REGISTRY OF DEEDS

BOOK 489 PAGE 57



489-57

March 7, 2019

Cape Cod Commission
3225 Main Street
Barnstable, MA 02630

RE: 170 Clay Pond Road, Bourne MA
Current Owner: Claybourne Trust, Drake G. Behrakis, Trustee

Dear Sir/Madam:

Please be advised that the above-referenced property is currently under contract to purchase by Clay Pond Acquisitions, LLC (the "Buyer") under contract dated December 6, 2018. As the current owner of the property, I hereby authorize Chris Lewis, NCARB, as representative on behalf of the Buyer, to attend any and all meetings and/or hearings and to sign, submit, and file any and all applications necessary to facilitate obtaining any and all permits, approvals and consents as may be required on behalf of the Buyer in connection with its contemplated purchase and use of the property.

Very truly yours,

CLAYBOURNE TRUST

By:

Drake G. Behrakis, Trustee

Clay Pond Acquisitions, LLC

True Storage Redevelopment – 170 Clay Pond Road, Bourne

Filing Fee Calculation

Area of New Building Construction: 66,600sf

- Addition to existing building: 31,000 sf (2-story structure with footprint of 15,500 sf)
- Outdoor units: 35,600 sf

Section 16(a)(i)[1](b) of the Enabling Regulations: $0.56 per sf

Section 16(a)(ii)[2] of the Enabling Regulations: 15% reduction for redevelopment

Fee Calculation: (66,600 x 0.56) x .85 = **$31,701**

4459740.1



SITE PHOTO KEY PLAN

170 CLAY POND ROAD BOURNE, MA



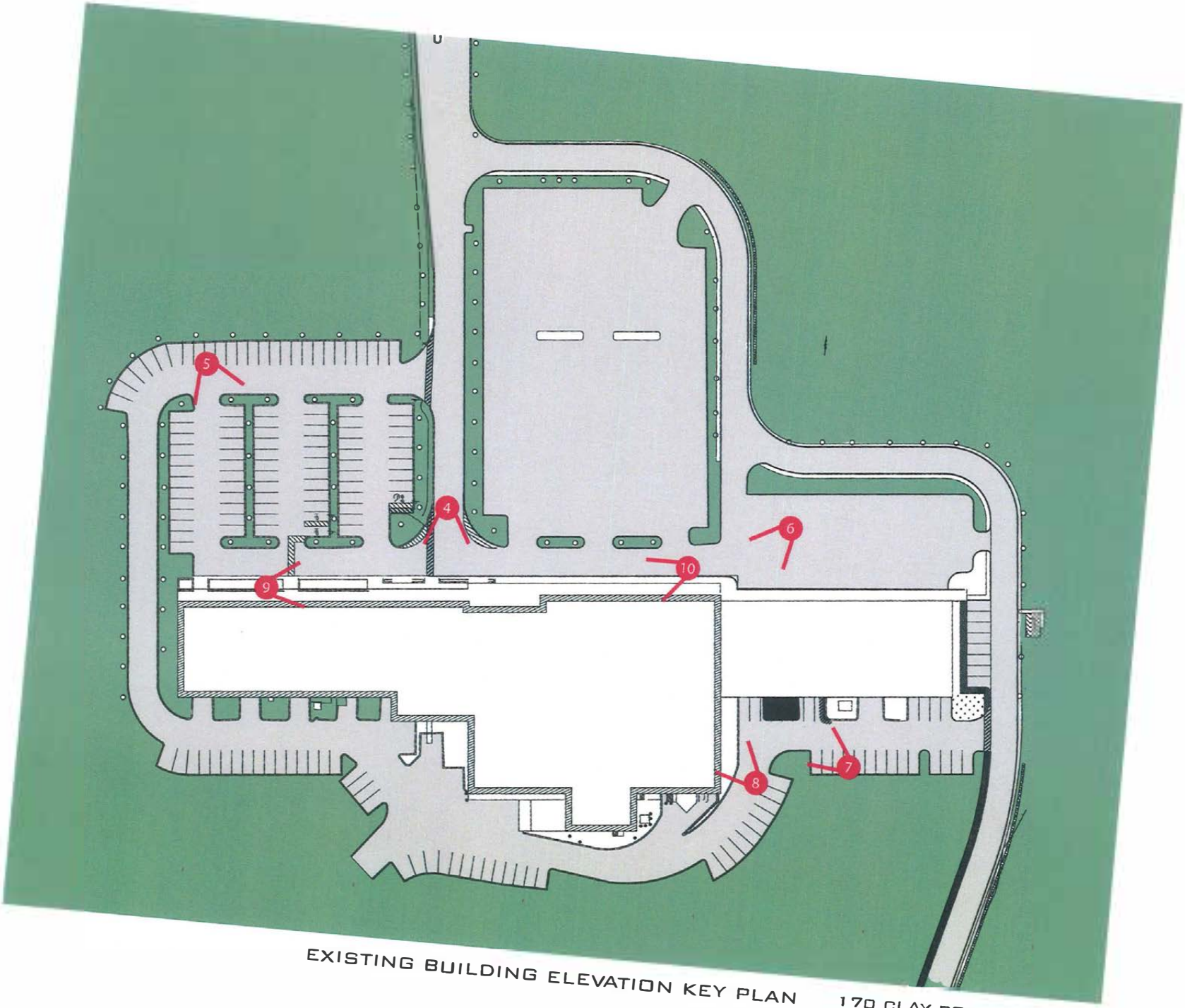
1. VIEW TOWARDS SITE FROM GENERAL MACARTHUR BLVD



2. VIEW TOWARDS SITE FROM THE CORNDER OF GENERAL MACARTHUR BLVD AND CLAY POND ROAD



3. VIEW OF SITE FROM CLAY POND ROAD
MAIN ENTRANCE TO SITE



EXISTING BUILDING ELEVATION KEY PLAN

170 CLAY POND ROAD BOURNE, MA



4. CLOSE VIEW OF BUILDING FROM MAIN ENTRANCE ON CLAY POND ROAD



5. VEIW OF EXISTING BUILDING FROM NORTH WEST CORNER OF PARKING LOT



6. EXISTING BUILDING - NORTHEAST CORNER



7. VEIW OF EAST FACADE OF EXISTING BUILDING



B. VEIW OF EAST FACADE OF EXISTING BUILDING

170 CLAY POND ROAD BOURNE, MA



9. VEIW ALONG EXISTING FACADE FACING EAST



10. VEIW ALONG EXISTING FACADE FACING WEST

170 CLAY POND ROAD BOURNE, MA

PROJECT SITE NARRATIVE

True Storage Development
170 Clay Pond Road
Assessor's Map 31.4 Parcel 20
Bourne, Massachusetts

March 2019

Prepared for:

Clay Pond Acquisitions, LLC
670 N. Commercial Street
Manchester, NH

Prepared by:

Horsley Witten Group, Inc.
90 Route 6A
Sandwich, MA 02563

PROJECT SITE NARRATIVE
Clay Pond Acquisitions, LLC

170 Clay Pond Road, Bourne, MA

Assessor's Map 31.4 Parcel 20

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2.0 GENERAL SITE DESCRIPTION 1

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2.2 Wetland Resources 2
2.3 Rare Species Habitat 2
2.4 Soil Survey 2

3.0 PROPOSED PROJECT 2

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3.3 Utilities 5
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Figure 2 – Flood Zones

Figure 3 – Site Constraints

Figure 4 - Soils

Figure 5 – Groundwater Elevations

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Appendix B - HydroCAD Pre and Post Development Calculations

Appendix C - MADEP Groundwater Discharge Permit

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PROJECT SITE NARRATIVE
Clay Pond Acquisitions, LLC

McArthur Boulevard, Bourne, MA

Assessor's Map 31.4, Parcel 20

1.0 INTRODUCTION

The Applicant, Clay Pond Acquisitions, LLC, proposes to convert a portion of the existing shopping plaza (the former Grand Central Supermarket) at 170 Clay Pond Road to climate controlled self-storage units. As part of the redevelopment, the Applicant is also proposing to construct a 15,000 sf +/- addition to the building, for additional self-storage, in the location of a previously approved building expansion (as indicated on the Site Layout plan) and to convert a portion of the existing parking lot to individual (non-climate controlled) self-storage units. The proposed redevelopment will result in an overall loss of 201 parking spaces on the current site, but the change in use from a supermarket to self-storage greatly reduces the necessary parking requirements (30 spaces will remain) as well as reduces the existing paved surfaces.

2.0 GENERAL SITE DESCRIPTION

The project area is located on a 16.17-acre parcel at 170 Clay Pond Road in Bourne, MA. The property is located along the south side of Clay Pond Road at Latitude: 41° 71' 55.23'' N Longitude: -70° 58' 65.30'' W. The property is defined by the Bourne Assessors Department as Map 31 Parcel 20 and is within the Business 4 zoning district under the Bourne Zoning Bylaw. Parcel 20 is abutted by Laura Lane (residential neighborhood) to the west including lots 22, 31, 32, 33, 34, & 35. Lots 80 (Rockland Trust) & 20.1 (McDonalds) abut the project area to the northeast. Lot 51 (affordable housing development) abuts the project area to the south (Figure 1).

The property is developed and includes an existing shopping plaza (the former Grand Central Supermarket) and associated parking. There are currently three businesses operating in the plaza- a pizza shop, liquor store and financial services consultant. The elevation across the property project area varies from 144 to 133 feet above mean sea level and the general topography of the site slopes from south to north (Figure 2).

There are three easements on the property including an access easement for an access drive (Harmony Hill Road -private road) to the abutting affordable housing development to the south, a water easement for the water connection the same development and a slope easement.

The perimeter of the property is undeveloped and comprised of previously disturbed, new growth vegetated buffers, which include three stormwater detention basins. The plant community is indicative of a typical Cape Cod pine/oak forest habitat. The tree canopy is primarily composed of pitch pine (*Pinus rigida*) and mixed oak species (*Quercus* spp.), with a patchy understory that ranges from densely vegetated to sparse with very little groundcover. The buffer provides sufficient screening of the existing development from both Clay Pond Road and MacArthur Boulevard. The buffer includes moderate to steep slopes to the south and east and more gentle slopes to the north and west.

The project area includes only proposed improvements to the vacant store space (former Grand Central Supermarket) and associated parking located in front (north side) of the store space (209 spaces between the main access drive and Harmony Hill Road). The total project area associated with the proposed construction is approximately 127,000 sf +/-.

2.1 Flood zone

The site is located entirely within the X-Zone as shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Community Panel Number 255210 0008F revised August 9, 1999 (Figure 2).

2.2 Wetland Resources

There are no Massachusetts Department of Environmental Protection (MADEP) regulated wetlands located on the property (Figure 3).

2.3 Rare Species Habitat

The project area is not located within critical habitat for endangered or threatened species.

2.4 Soil Survey

According to the Barnstable County Soil Survey, the soils underlying the site are classified as Barnstable sandy loam (BbB, BbC, and BbD), which are described as "very stony, well drained soils found on small hills and ridges in areas of ground moraine and ice-contact deposits". The hydrologic soil group for this soil is A with an estimated infiltration rate of 8.27 in/hr. A soils map is included in (Figure 4). Based upon the Cape Cod Commission GIS department groundwater contours (August 1998) the depth to water is estimated at approximately elevation 36 feet, which is 100 feet or greater below existing grade depending upon the specific location at the site (Figure 5).

3.0 PROPOSED PROJECT

The Applicant proposes to convert and expand the current facilities to self-storage units. A portion of the existing parking in front of the vacant Grand Central Supermarket will be converted to individual self-storage units. The existing building will be expanded incorporate climate -controlled indoor self-storage units. The Applicant also proposes to improve the

general streetscape appearance of Harmony Hill Road that connects Clay Pond Road to the Canal Bluffs housing development. The proposed streetscape improvements include a four-foot wide bituminous asphalt sidewalk, accessible handicapped curb ramps, painted crosswalks at all proposed driveway/roadway crossings, tree plantings and vegetated buffer and fence between the sidewalk and self-storage units.

BUILDINGS (Project Area Only – Does not include existing building renovation)	
Proposed Building Addition (within existing approved footprint)	= 15,100 sf
Proposed Self Storage Units (within parking areas)	= 35,600 sf
Total Proposed Building Area	**= 50,700 sf**

PARKING AND DRIVE AISLES (Project Area Only)	
Total Existing Pavement (removed)	= 63,600 sf
Total Proposed Pavement (proposed)	= 25,600 sf
Net Reduction **60 % Decrease**	**= 38,000 sf**

LAWN AND LANDSCAPE (Project Area Only)	
Total Existing Lawns and Landscape	= 11,800 sf
Total Proposed Lawns and Landscape	= 14,400 sf
Net Increase **22% Increase**	**= 2,600 sf**

All disturbed areas not called out to be paved or planted will be loam and seeded as indicated on the plans.

3.1 Stormwater Management

The existing stormwater management system includes catch basins with deep sumps connected to a closed pipe and drain manhole network discharging to three infiltration basins of various sizes located in the southeast, southwest and northwest corners of the property. The project area drains entirely via a closed pipe system to the infiltration basin in the northwest corner. The proposed redevelopment will reduce impervious pavement by approximately 38,000 sf, and increase the roof area (individual storage units) by 35,600 sf. This provides a net reduction in impervious cover of approximately of 2,400 sf. By reducing the existing impervious cover, we

ensure that the current capacity of the existing basin will be sufficient for the proposed improvements.

Table 1 : Study Point 1 (SP1) - Infiltration Basin (northwest corner)

DESIGN STORM	PRE-DEVELOPMENT		POST-DEVELOPMENT		PERCENT REDUCTION	
	PEAK FLOW (CFS)	VOLUME (AF)	PEAK FLOW (CFS)	VOLUME (AF)	PEAK FLOW	VOLUME
2 YR	7.94	0.565	7.63	0.536	4%	5%
10 YR	12.46	0.908	12.18	0.857	2%	6%
25 YR	15.92	1.176	15.66	1.141	2%	3%

As part of the proposed redevelopment, the stormwater management improvements are designed to meet the Cape Cod Commission and the Town of Bourne stormwater management requirements. Although this site does not fall within Massachusetts Department of Environmental Protection (MassDEP) wetland jurisdiction, the Massachusetts Stormwater Standards were applied to the stormwater management design to the greatest extent practicable. The proposed improvements include two enhanced stormwater tree trenches designed to treat or and infiltrate the water quality volume (first 1" of runoff). Overflow for both tree trenches will be connected to the existing closed pipe network and discharged to the existing infiltration basin (SP1). This will provide stormwater treatment of impervious pavement, which is not included in the original stormwater design. A portion of the existing drainage network will also be relocated to accommodate the proposed self-storage units.

Roof runoff from the individual self-storage units will be captured via gutter and downspouts and connected directly to the closed pipe system. The roof runoff from the proposed climate controlled self-storage addition will be connected into the roof downspout network from the existing buildings. Runoff from both the existing building and proposed building addition is discharged to the infiltration basin the southwest corner. This basin was originally designed and sized to accept runoff from an earlier proposed addition in the same location.

Additional design detail is included on the Grading and Drainage Plan.

3.2 Wastewater Management

The wastewater for the existing vacant building, along with the retail and restaurant establishments in the plaza currently discharges to a Title 5 on-site system (design details unknown). As part of an earlier agreement with the abutting affordable housing development (Canal Bluffs) to the south. Any proposed changes to the current system will require connection to the Canal bluffs Wastewater Treatment Plant (WWTP) system servicing the affordable housing development. An existing force main was constructed as part of the Canal Bluffs project and is located under Harmony Hill Road and within the Access Easement. As part of the proposed redevelopment, the existing Title 5 system will be abandoned, and the wastewater will be pumped by a new wastewater pumping station to the WWTP. The Canal

Bluffs WWTP is designed to accept up to 8,000 Gallons per Day (GPD) of flow from the 170 Clay Pond Road property.

The proposed self-storage storage units are expected to have a staff of 2 employees. Based on the Title 5 design criteria (310 CMR 15.203) the expected flow for a dry storage facility, without a cafeteria is 15 gallons per day (gpd) per person. Therefore, the Title 5 design flow for the proposed use is 30 gpd. For comparison, the previous 47,000 sf supermarket that occupied this space had an estimated Title 5 design flow of 4,559 gpd (97 gpd/sf for supermarket use). The total revised design flow for the plaza is 2,030 gpd including the proposed storage, retail restaurant uses. The 1992 permitted Title 5 design flow for the plaza is 7,748 gpd based on design plans on file at the Board of Health from 1992. This flow included the 15,000 sf building addition area.

Table 2: Wastewater Design Flow Comparison (based on Title 5)

Use	Existing WW	Units	Proposed WW	Units	Design Criteria (gpd per unit)	Existing Design Flow (gpd)*	Proposed Design Flow (gpd)
Supermarket	47,000	sf	0	sf	.097	4,559	0
Retails	20,000	sf	20,000	sf	.5	1,000	1,000
Restaurant	50	seats	50	seats	20	1,000	1,000
Dry Storage	0	people	2	people	15	0	30
					Design Flow	**6,559**	**2,030**
					Permitted Flow (Based on Board of Health Record)**	**7,748**	

* Wastewater Treatment Plant Flow

**Permitted Title 5 Flow

3.3 Utilities

The existing plaza is serviced by public water, gas and electricity. A portion of the existing water line and a fire hydrant will need to be relocated to accommodate the proposed individual self-storage units.

3.4 Landscaping

The project will also include improvements to the landscape to minimize the impacts of the proposed expansion. The overall design will emphasize the use of native plantings and strive to integrate the proposed development's needs into the site's surrounding environment. Dense vegetated buffers currently existing along Clay Pond Road and MacArthur Boulevard providing significant screening of the existing development.

The landscape design objective for the proposed facility improvements is to minimize the impacts of the proposed development through the creation of sustainable landscape islands

that buffers Harmony Hill Road streetscape from the interior self-storage use. The overall design emphasizes the use of native plantings and strives to integrate the proposed development's needs into the site's surrounding environment.

A continuous landscape buffer has been between Harmony Hill Road and the proposed self-storage units, with the exception of driveway access points. The proposed buffer will be planted with canopy trees and low-maintenance perennial grasses and native shrubs. A decorative fence will also be included within the vegetated buffer to provide site security and aesthetic appeal. Proposed plant species include:

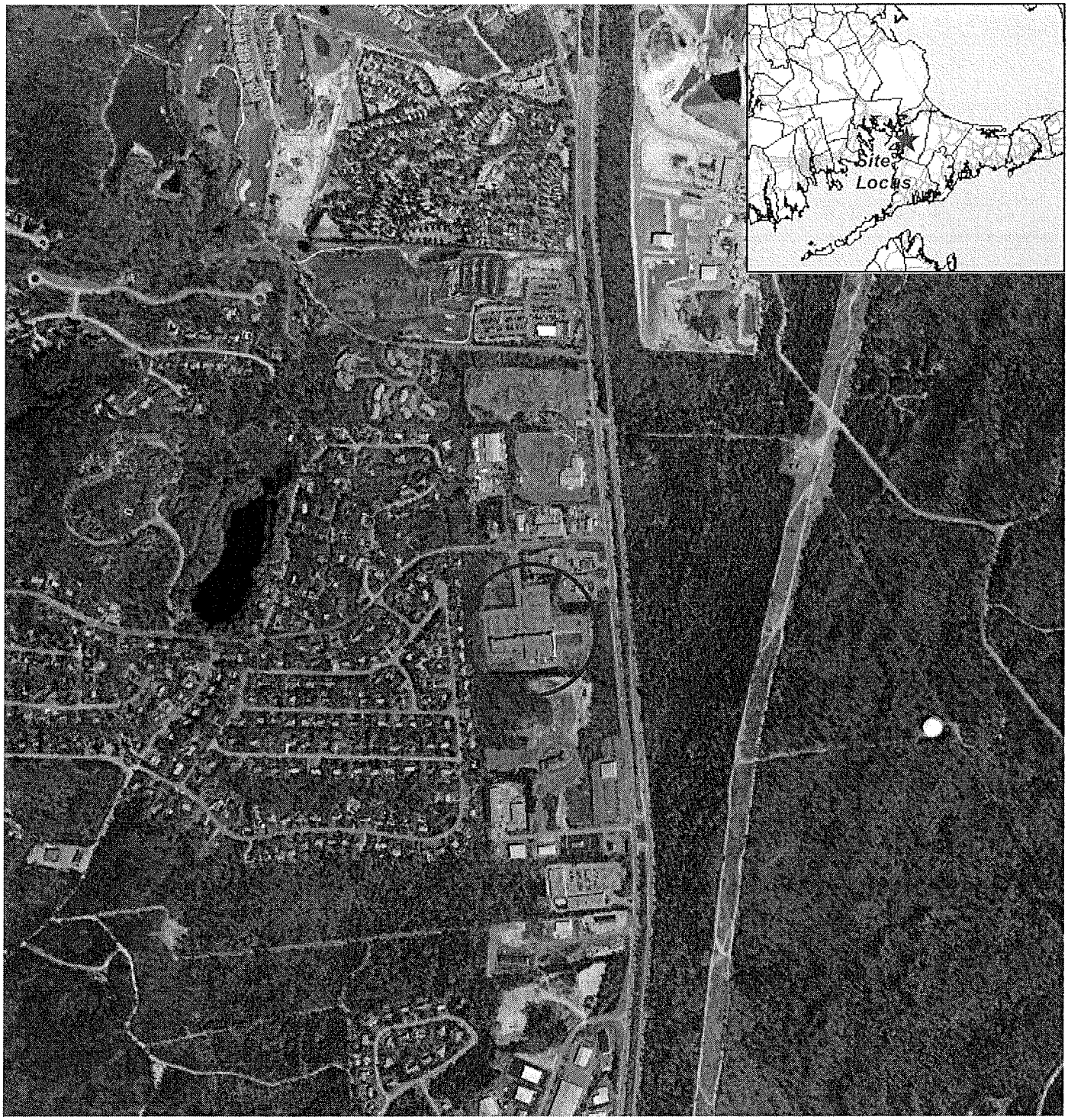
Trees	***Shrubs***	**Perennials and Grasses**
Serviceberry	Dwarf Fothergilla	Blue Star
Sweet Gum	Compact Inkberry	False Indigo
Tupelo	Sweetspire	Switch Grass
White Oak	Leucothoe	Feather Reed Grass
Red Oak	Rhododendron	Tufted Hair Grass
Japanese Tree Lilac	Spiraea	Coneflower
	Viburnum	Black-Eyed Susan

The proposed development will maintain healthy, existing vegetation to the greatest extent practicable. The existing buffer between the project area and Harmony Hill Road to the west will remain undisturbed and varies in width from 15' to 20' and will be supplemented and revegetated after the perimeter fence is installed as needed to restore the buffer.

3.5 Lighting

The existing overhead parking lot lighting will be removed and downlit lighting will be installed on the buildings and self-storage units to provide minimal lighting for safety. A lighting cut sheet will be provided by the architect.

FIGURES



Document Path: H:\Projects\2018\18170 170 Clay Pond Cove-Bourne\GIS\Maps\190313_AerialLocus.mxd

*Clarity World Imagery

Legend

Site Location

N

0 1,000

1" = 1,000 feet

Horsley Witten Group
Sustainable Environmental Solutions

Aerial Locus Map
170 Clay Pond Rd
Bourne, MA

Date: 3/14/2019 Figure 1



Document Path: H:\Projects\2018\18170 170 Clay Pond Cove-Bourne\GIS\Maps\190313_FEMA.mxd

**ESRI Clarity World Map*

Legend

Zone X (Area of Minimal Flood Hazard)

N

0 150

1" = 150 Feet

Horsley Witten Group
Sustainable Environmental Solutions

Flood Zones
170 Clay Pond Rd
Bourne, MA

Date: 3/14/2019 Figure 2



Document Path: H:\Projects\2018\18170 170 Clay Pond Cove-Bourne\GIS\Maps\190110_SoilMap.mxd

**ESRI Clarity World Map*

Legend

USDA Soil Classification*

Soil Type, Hydrologic Soil Group

- Sandy Loam, HSG A
- Udipsamments, HSG Unknown

N

0 150

1" = 150 Feet

Horsley Witten Group
Sustainable Environmental Solutions

Soils
170 Clay Pond Rd
Bourne, MA

Date: 3/14/2019 Figure 3

** Depth to Groundwater (USGS) >200cm for all soil types within this map.*



Document Path: H:\Projects\2018\18170 170 Clay Pond Cove-Bourne\GIS\Maps\190313_Constroints.mxd

Legend

- Areas of Critical Environmental Concern
- Non Potential Drinking Water Source Area - Medium Yield
- DEP Approved Zone II

**Clarity World Imagery*

N

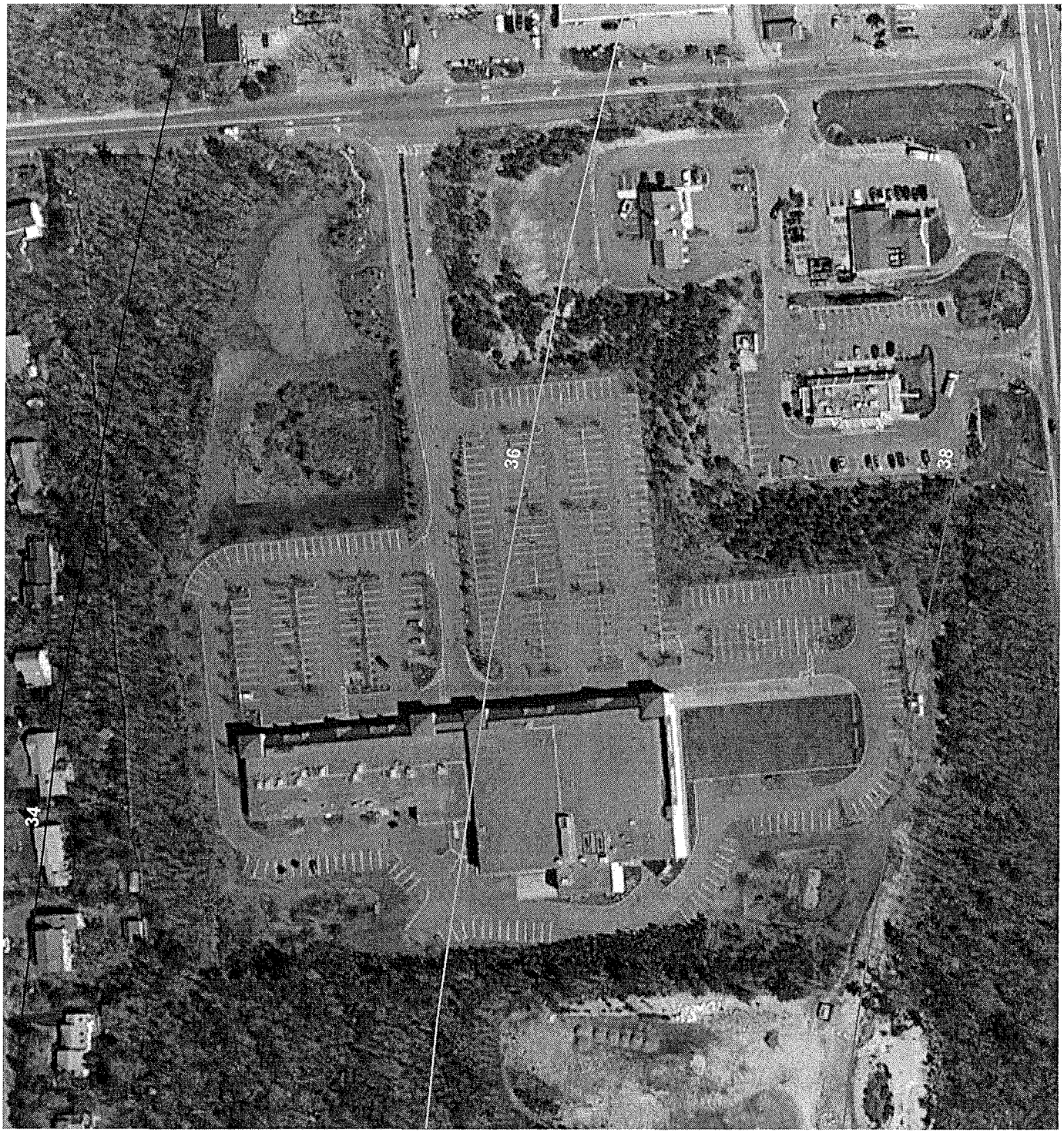
0 150

1" = 150 feet

Horsley Witten Group
Sustainable Environmental Solutions

Site Constraints
170 Clay Pond Road
Bourne, MA

Date: 3/14/2019 Figure 4



Document Path: H:\Projects\2018\18170 170 Clay Pond Cove-Bourne\GIS\Maps\190313_Groundwater.mxd

Legend

CCC Water Table Contours (2ft)

- 34
- 36
- 38

**Clarity World Imagery*

N

0 150

1" = 150 feet

Horsley Witten Group
Sustainable Environmental Solutions

Groundwater Elevations
170 Clay Pond Road
Bourne, MA

Date: 3/14/2019 Figure 5

APPENDIX A

Enhanced Tree Trench Sizing

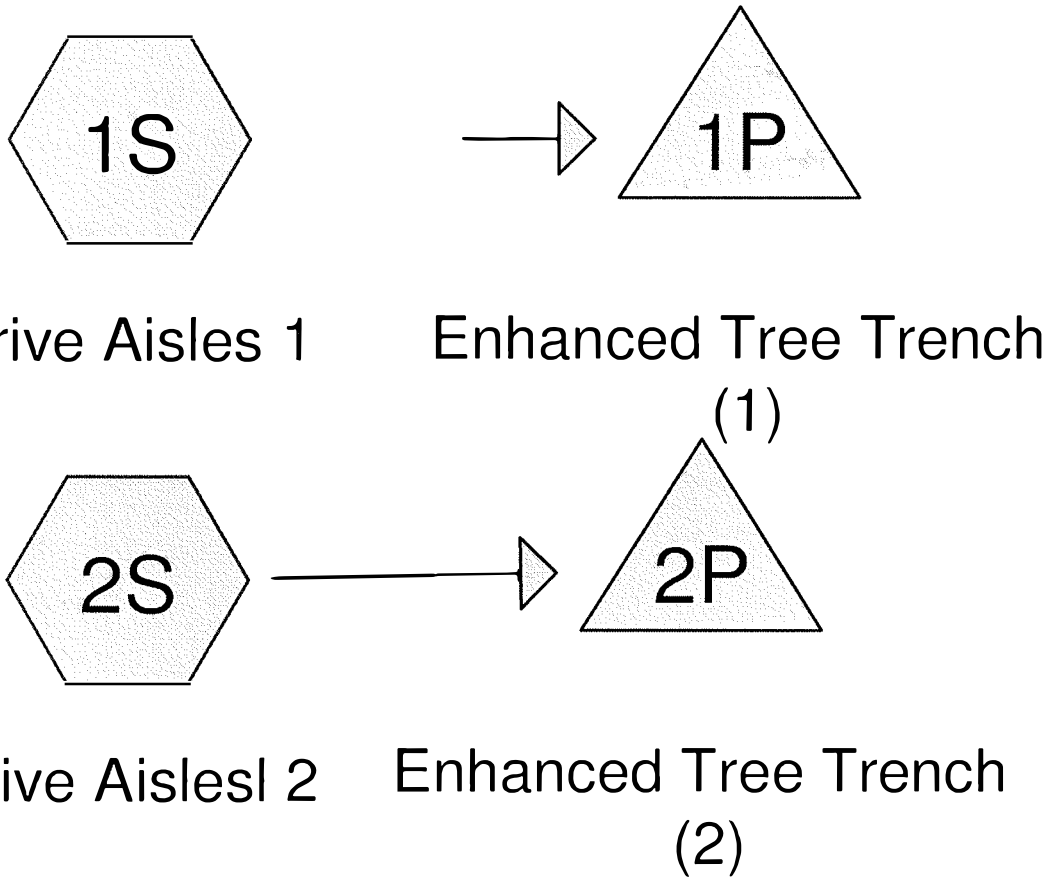
Horsley Witten Group
Sustainable Environmental Solutions

Project: Clay Pond Rd **Project No:** 18170
Project Location: 170 Clay Pond Rd, Bourne, MA
Calculated By: BAL
Checked By: BRK
Date : 3/14/2019

Storm Type: 1 ***Inch***

Tree Trench #	Location	Drainage Area	IC (sf)	WQV (cf)	Length (feet)	Width (feet)	Media Depth (feet)	% Voids (1.00)	Media Storage Volume (cubic feet)	Soil Type	Infiltration Rate (in/hr)
1	DA1	34814	18601	1,551	95	10	3.00	0.33	941	A -Sandy Loam	1.02
2	DA2	62598	31239	2,604	122	13	3.00	0.33	1,570	A -Sandy Loam	1.02

Total 49840



Subcat Reach Pond Link

Routing Diagram for 18170-Post
Prepared by Microsoft, Printed 3/19/2019
HydroCAD® 10.00-22 s/n 01445 © 2018 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Drive Aisles 1

Runoff = 0.49 cfs @ 12.07 hrs, Volume= 0.035 af, Depth= 1.00"

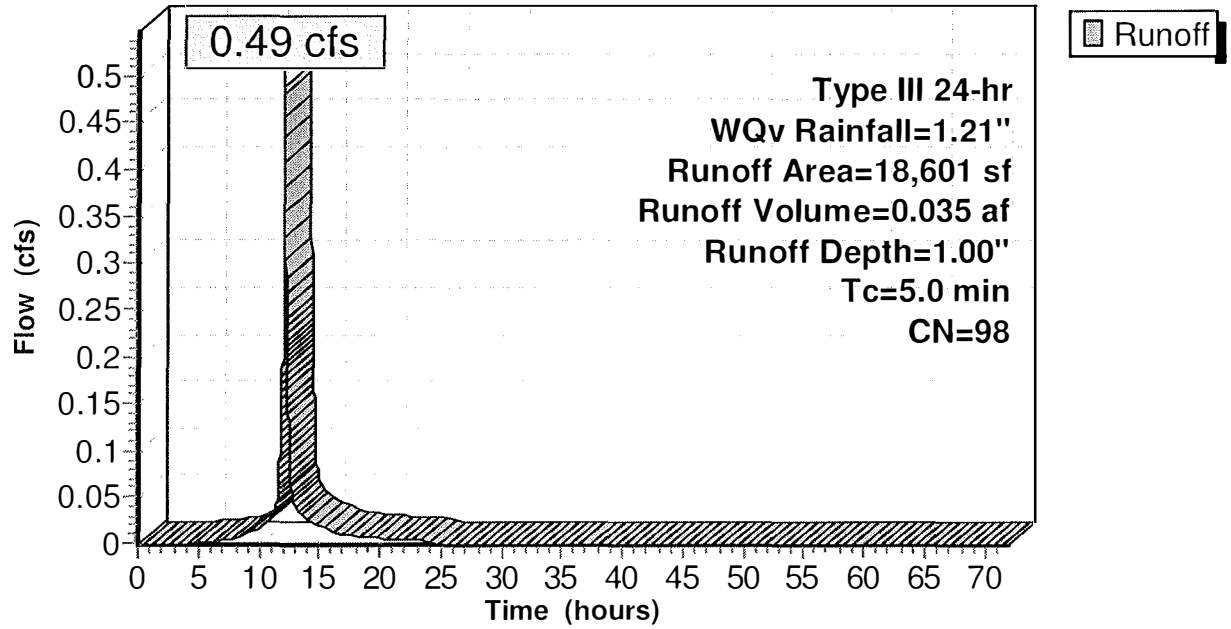
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr WQv Rainfall=1.21"

Area (sf)	CN	Description
18,601	98	Paved parking, HSG A
18,601		100.00% Impervious Area

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

Subcatchment 1S: Drive Aisles 1

Hydrograph



Summary for Subcatchment 2S: Drive Aislesl 2

Runoff = 0.82 cfs @ 12.07 hrs, Volume= 0.059 af, Depth= 1.00"

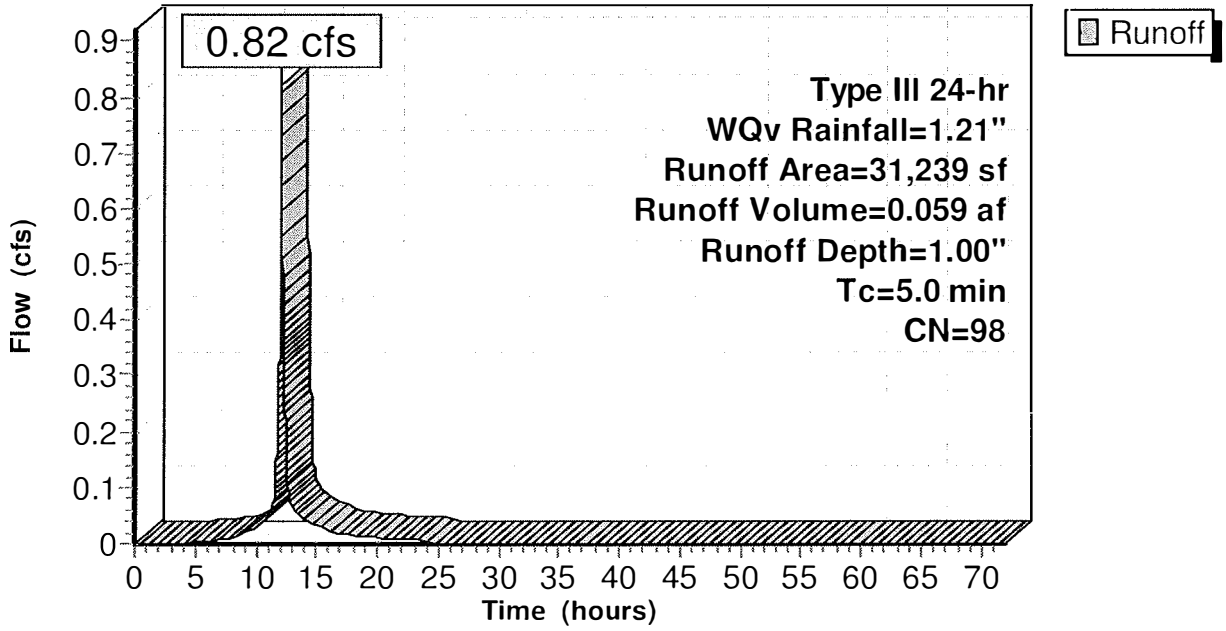
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr WQv Rainfall=1.21"

Area (sf)	CN	Description
31,239	98	Paved parking, HSG A
31,239		100.00% Impervious Area

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

Subcatchment 2S: Drive Aislesl 2

Hydrograph



Summary for Pond 1P: Enhanced Tree Trench (1)

Inflow Area = 0.427 ac,100.00% Impervious, Inflow Depth = 1.00" for WQv event
Inflow = 0.49 cfs @ 12.07 hrs, Volume= 0.035 af
Outflow = 0.02 cfs @ 10.55 hrs, Volume= 0.035 af, Atten= 95%, Lag= 0.0 min
Discarded = 0.02 cfs @ 10.55 hrs, Volume= 0.035 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 135.96' @ 14.48 hrs Surf.Area= 950 sf Storage= 750 cf

Plug-Flow detention time= 298.0 min calculated for 0.035 af (100% of inflow)
Center-of-Mass det. time= 298.0 min (1,078.8 - 780.8)

Volume	Invert	Avail.Storage	Storage Description
#1	133.57'	784 cf	**10.00'W x 95.00'L x 2.50'H Prismatoid** 2,375 cf Overall x 33.0% Voids

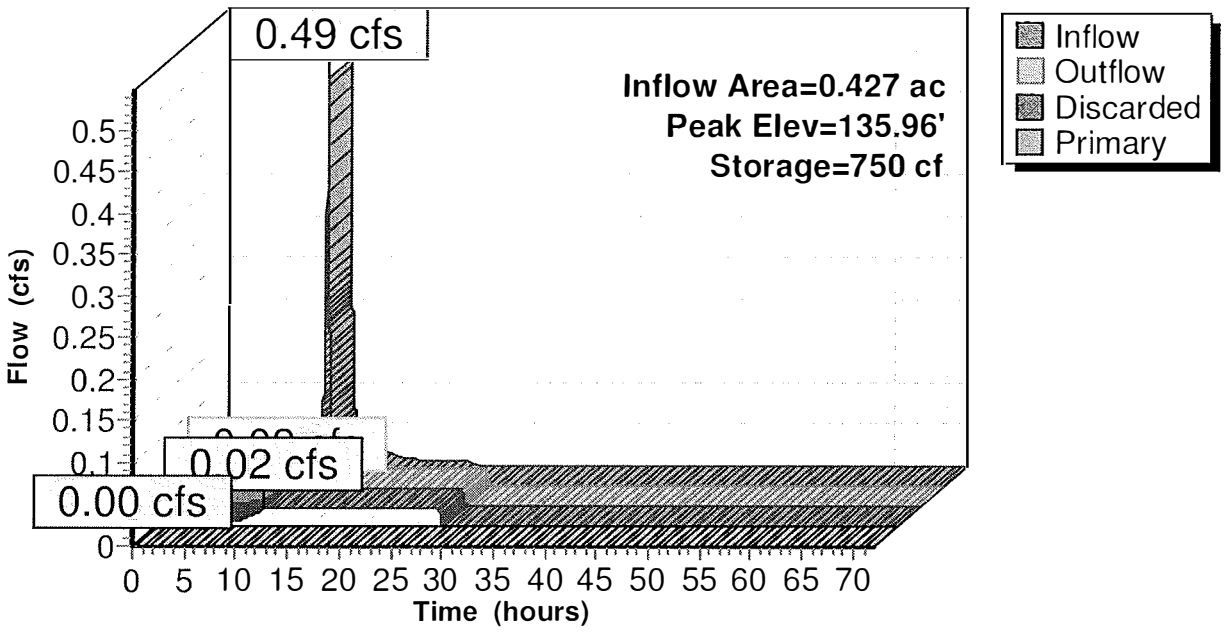
Device	Routing	Invert	Outlet Devices
#1	Discarded	133.57'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	136.07'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 136.07' / 135.97' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.02 cfs @ 10.55 hrs HW=133.61' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=133.57' (Free Discharge)
↑—**2=Culvert** (Controls 0.00 cfs)

Pond 1P: Enhanced Tree Trench (1)

Hydrograph



Summary for Pond 2P: Enhanced Tree Trench (2)

Inflow Area = 0.717 ac,100.00% Impervious, Inflow Depth = 1.00" for WQv event
Inflow = 0.82 cfs @ 12.07 hrs, Volume= 0.059 af
Outflow = 0.04 cfs @ 10.53 hrs, Volume= 0.059 af, Atten= 95%, Lag= 0.0 min
Discarded = 0.04 cfs @ 10.53 hrs, Volume= 0.059 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 131.03' @ 14.50 hrs Surf.Area= 1,586 sf Storage= 1,262 cf

Plug-Flow detention time= 300.8 min calculated for 0.059 af (100% of inflow)
Center-of-Mass det. time= 300.8 min (1,081.6 - 780.8)

Volume	Invert	Avail.Storage	Storage Description
#1	128.62'	1,308 cf	**13.00'W x 122.00'L x 2.50'H Prismatoid** 3,965 cf Overall x 33.0% Voids

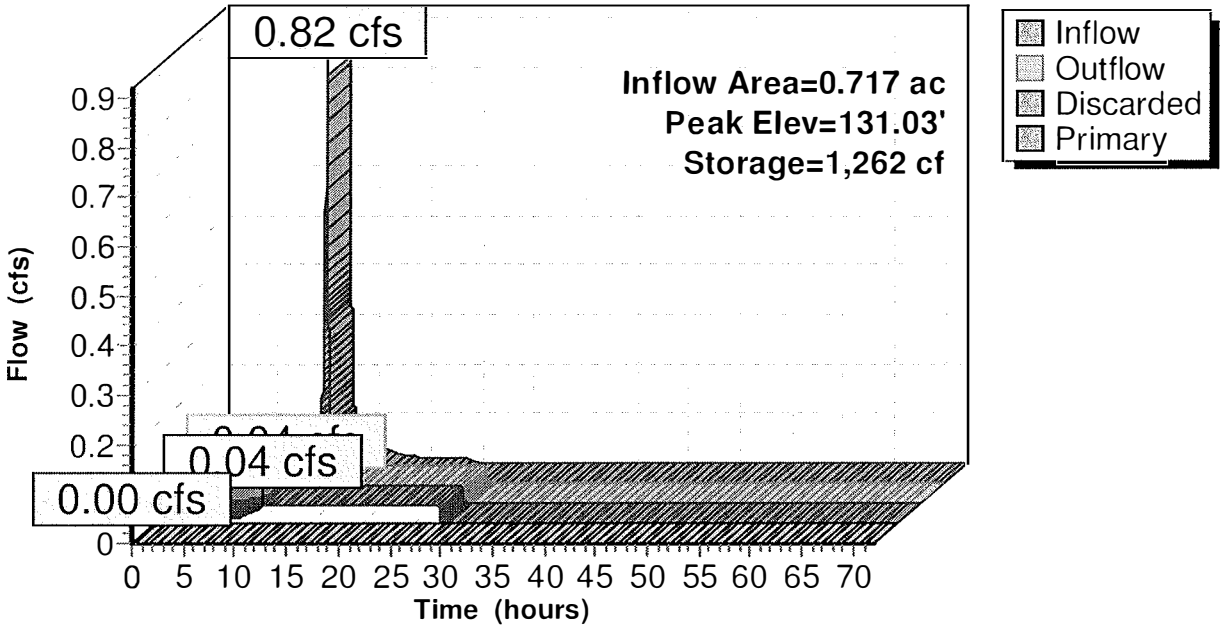
Device	Routing	Invert	Outlet Devices
#1	Discarded	128.62'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	131.12'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 131.12' / 131.02' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.04 cfs @ 10.53 hrs HW=128.66' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=128.62' (Free Discharge)
↑—**2=Culvert** (Controls 0.00 cfs)

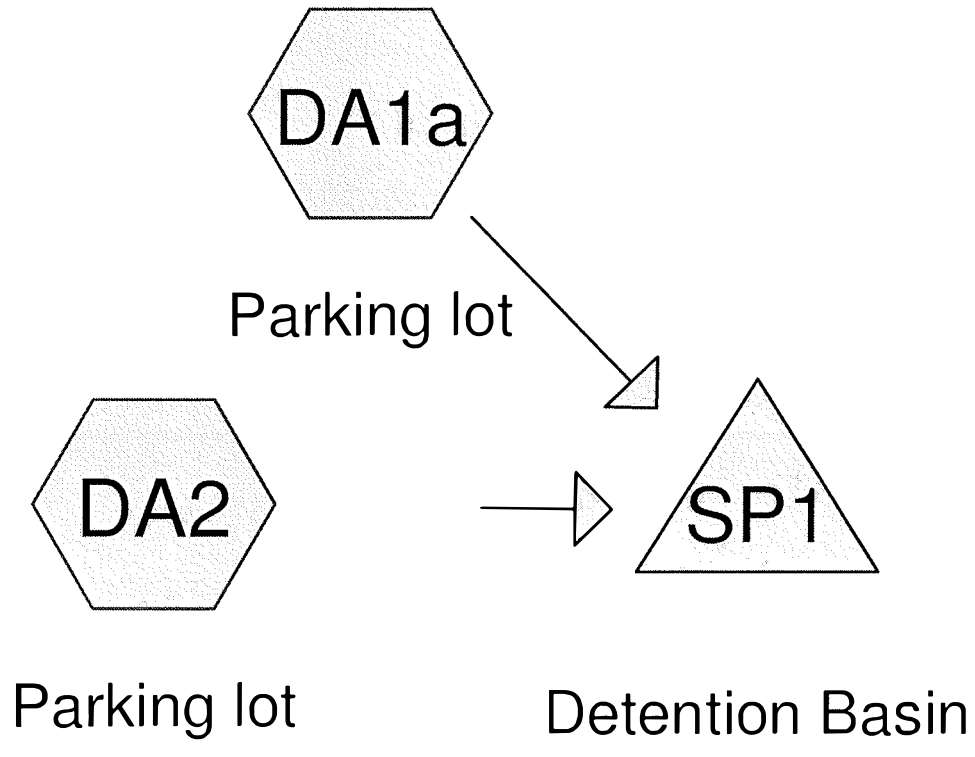
Pond 2P: Enhanced Tree Trench (2)

Hydrograph



APPENDIX B

HydroCAD Pre & Post Development



Subcat Reach Pond Link

Routing Diagram for 18170-Pre
Prepared by Microsoft, Printed 3/19/2019
HydroCAD® 10.00-22 s/n 01445 © 2018 HydroCAD Software Solutions LLC

Summary for Subcatchment DA1a: Parking lot

Runoff = 2.54 cfs @ 12.07 hrs, Volume= 0.187 af, Depth= 2.88"

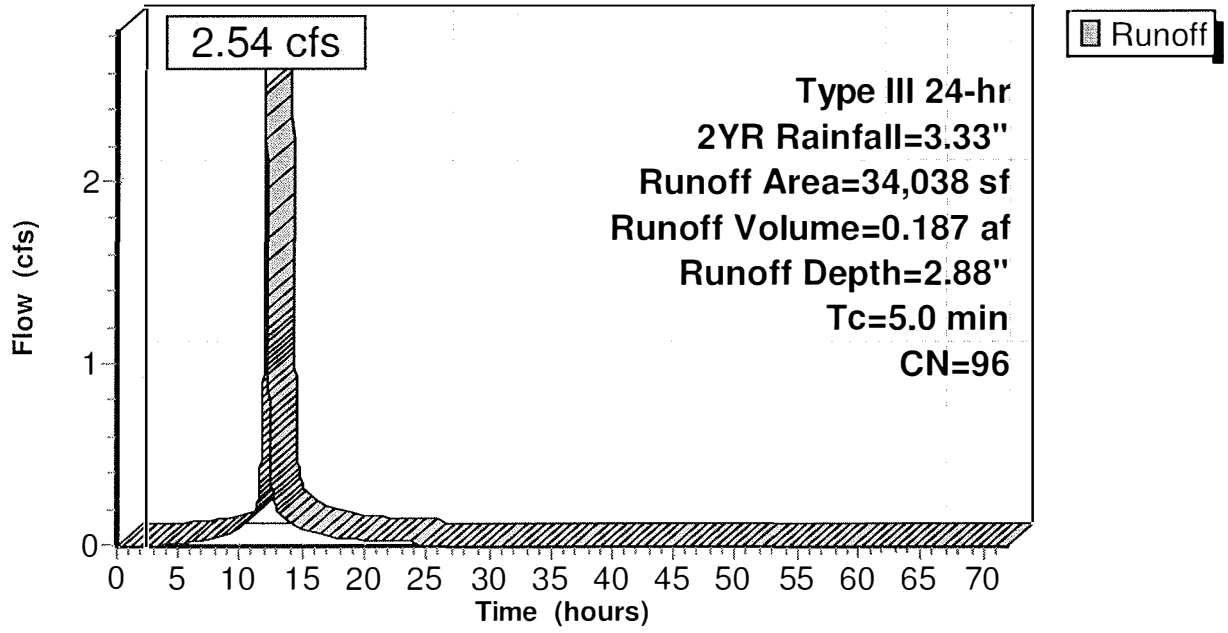
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2YR Rainfall=3.33"

Area (sf)	CN	Description
32,807	98	Paved parking, HSG A
0	98	Roofs, HSG A
1,231	39	>75% Grass cover, Good, HSG A
34,038	96	Weighted Average
1,231		3.62% Pervious Area
32,807		96.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5**

Subcatchment DA1a: Parking lot

Hydrograph



Summary for Subcatchment DA2: Parking lot

Runoff = 5.41 cfs @ 12.07 hrs, Volume= 0.378 af, Depth= 2.38"

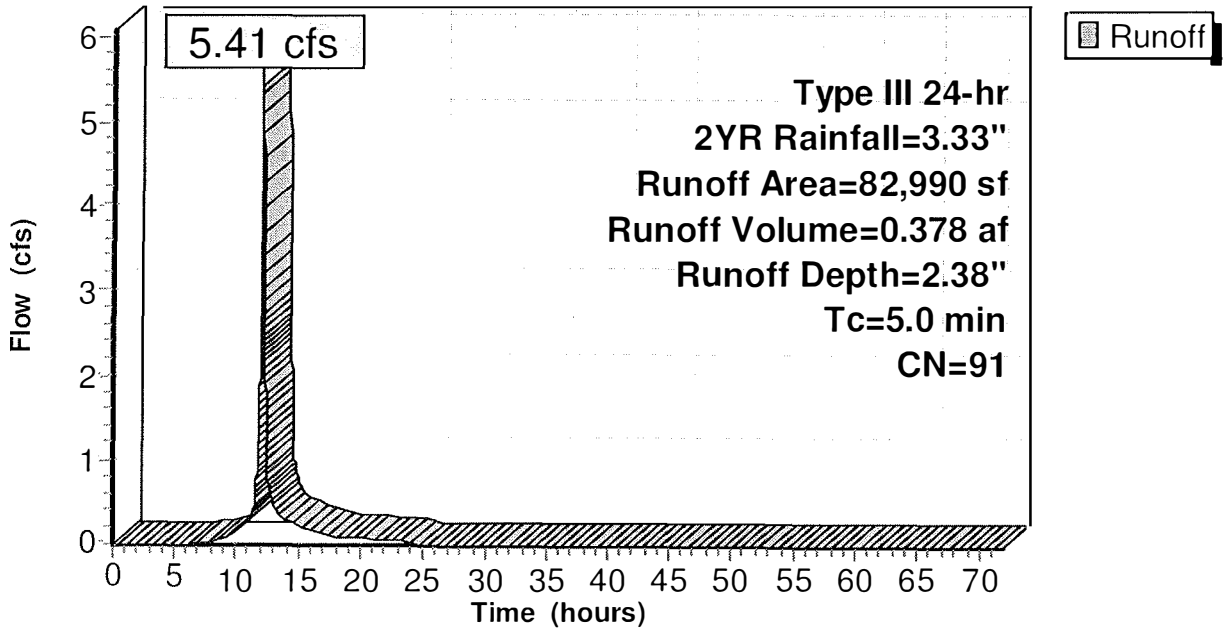
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2YR Rainfall=3.33"

Area (sf)	CN	Description
72,450	98	Paved parking, HSG A
0	98	Water Surface, 0% imp, HSG A
10,540	39	>75% Grass cover, Good, HSG A
82,990	91	Weighted Average
10,540		12.70% Pervious Area
72,450		87.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5**

Subcatchment DA2: Parking lot

Hydrograph



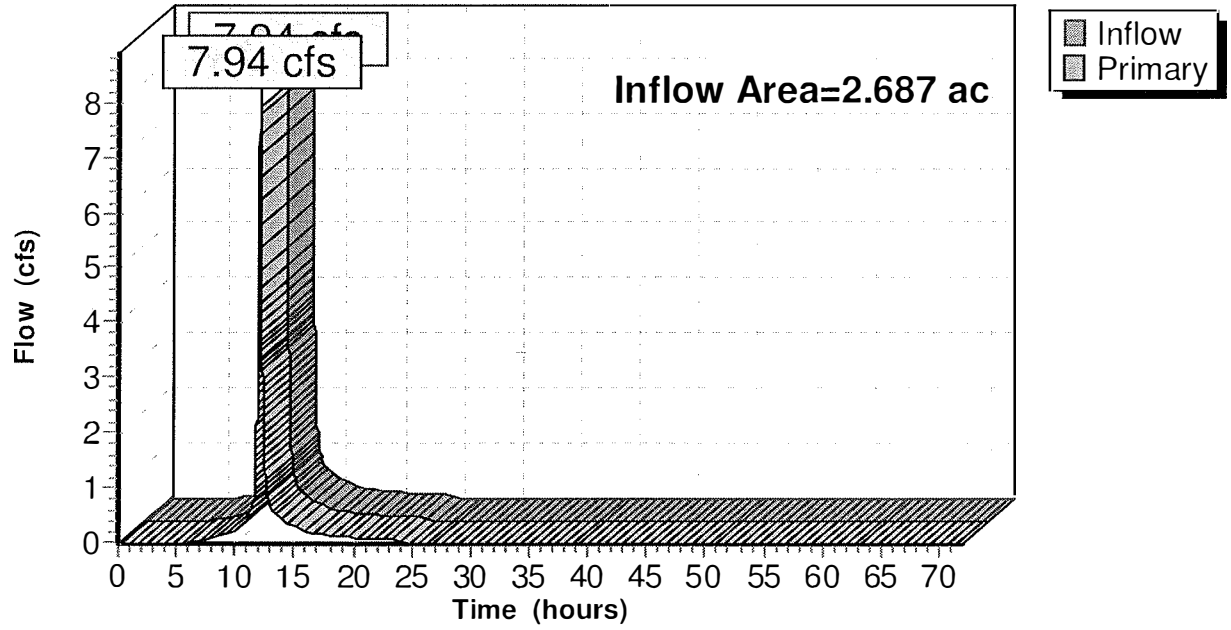
Summary for Pond SP1: Detention Basin

Inflow Area = 2.687 ac, 89.94% Impervious, Inflow Depth = 2.53" for 2YR event
Inflow = 7.94 cfs @ 12.07 hrs, Volume= 0.565 af
Primary = 7.94 cfs @ 12.07 hrs, Volume= 0.565 af, Atten= 0%, Lag= 0.0 min

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

Pond SP1: Detention Basin

Hydrograph



Summary for Subcatchment DA1a: Parking lot

Runoff = 3.82 cfs @ 12.07 hrs, Volume= 0.289 af, Depth= 4.44"

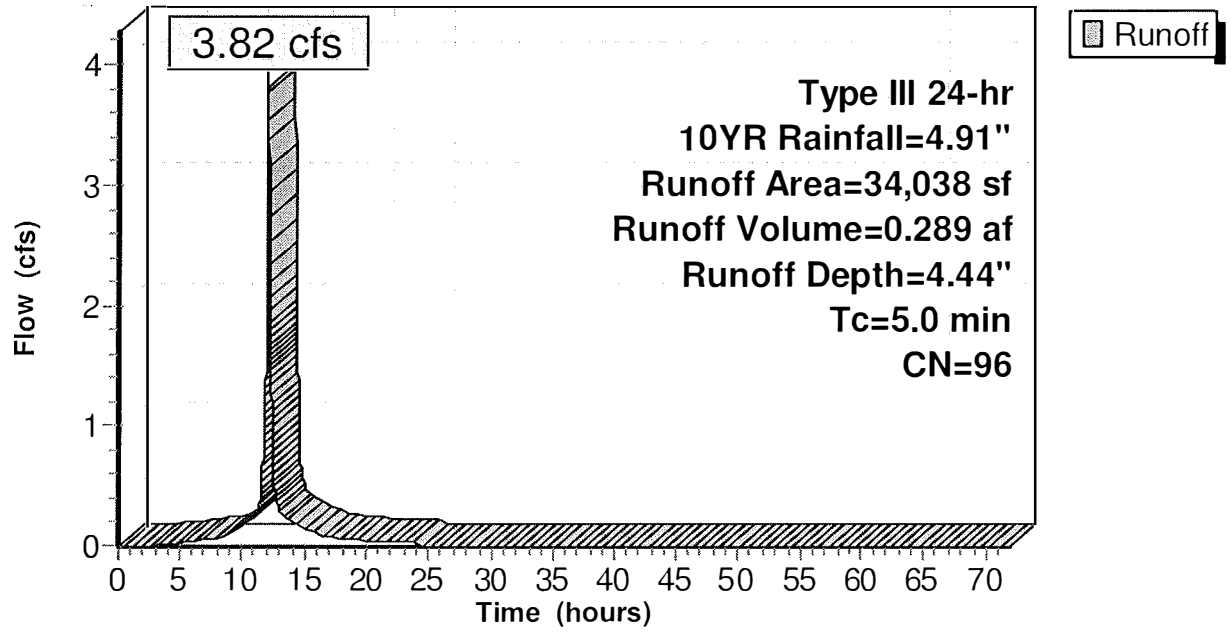
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YR Rainfall=4.91"

Area (sf)	CN	Description
32,807	98	Paved parking, HSG A
0	98	Roofs, HSG A
1,231	39	>75% Grass cover, Good, HSG A
34,038	96	Weighted Average
1,231		3.62% Pervious Area
32,807		96.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5**

Subcatchment DA1a: Parking lot

Hydrograph



Summary for Subcatchment DA2: Parking lot

Runoff = 8.64 cfs @ 12.07 hrs, Volume= 0.618 af, Depth= 3.89"

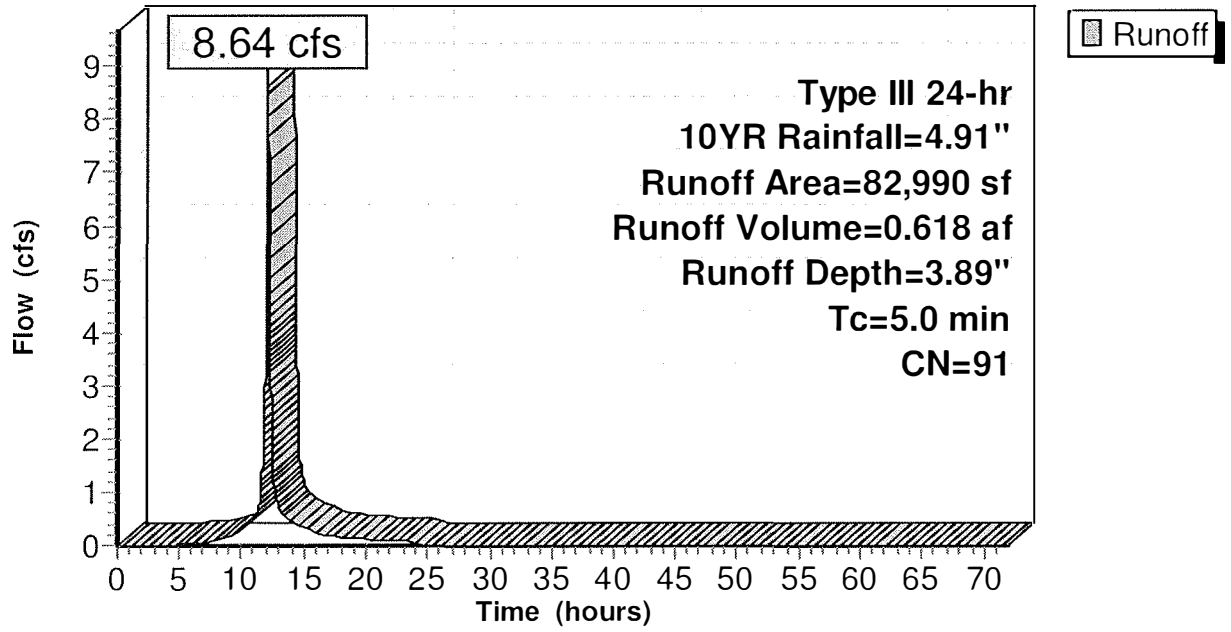
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YR Rainfall=4.91"

Area (sf)	CN	Description
72,450	98	Paved parking, HSG A
0	98	Water Surface, 0% imp, HSG A
10,540	39	>75% Grass cover, Good, HSG A
82,990	91	Weighted Average
10,540		12.70% Pervious Area
72,450		87.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5**

Subcatchment DA2: Parking lot

Hydrograph



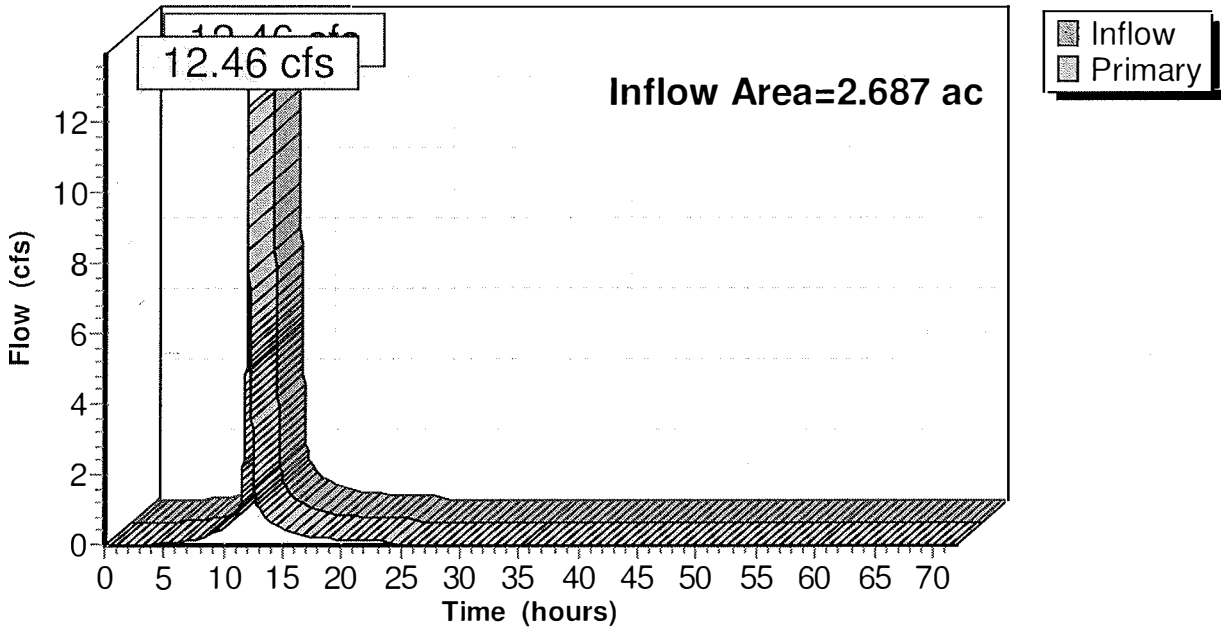
Summary for Pond SP1: Detention Basin

Inflow Area = 2.687 ac, 89.94% Impervious, Inflow Depth = 4.05" for 10YR event
Inflow = 12.46 cfs @ 12.07 hrs, Volume= 0.908 af
Primary = 12.46 cfs @ 12.07 hrs, Volume= 0.908 af, Atten= 0%, Lag= 0.0 min

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

Pond SP1: Detention Basin

Hydrograph



Summary for Subcatchment DA1a: Parking lot

Runoff = 4.81 cfs @ 12.07 hrs, Volume= 0.368 af, Depth= 5.66"

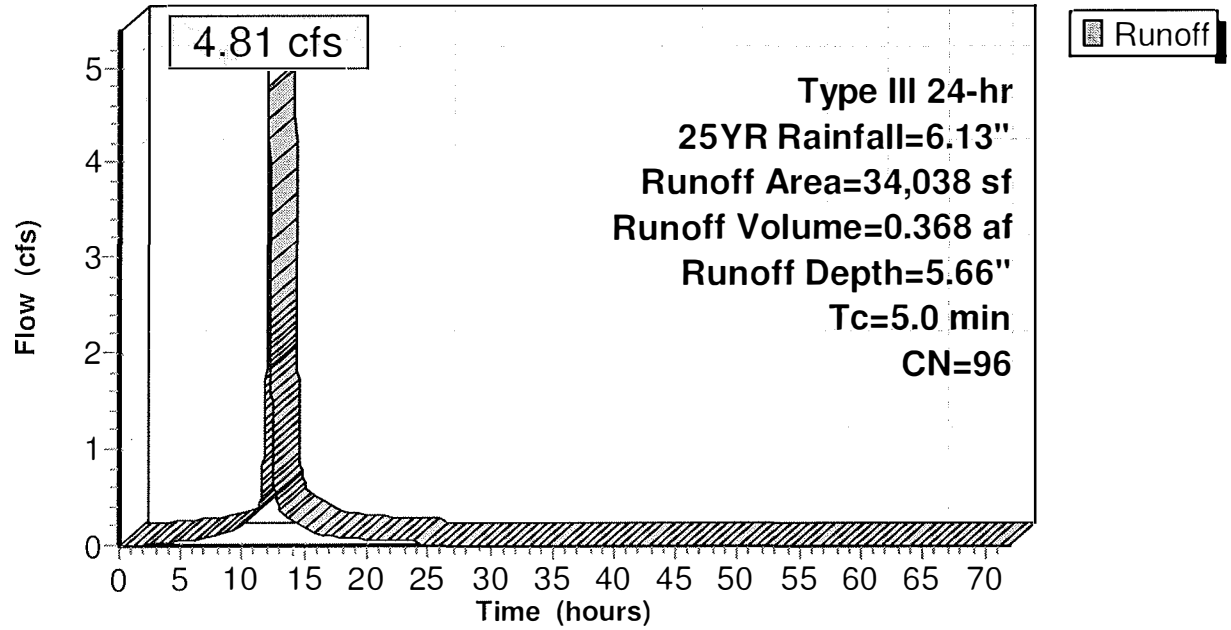
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25YR Rainfall=6.13"

Area (sf)	CN	Description
32,807	98	Paved parking, HSG A
0	98	Roofs, HSG A
1,231	39	>75% Grass cover, Good, HSG A
34,038	96	Weighted Average
1,231		3.62% Pervious Area
32,807		96.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5**

Subcatchment DA1a: Parking lot

Hydrograph



Summary for Subcatchment DA2: Parking lot

Runoff = 11.11 cfs @ 12.07 hrs, Volume= 0.807 af, Depth= 5.08"

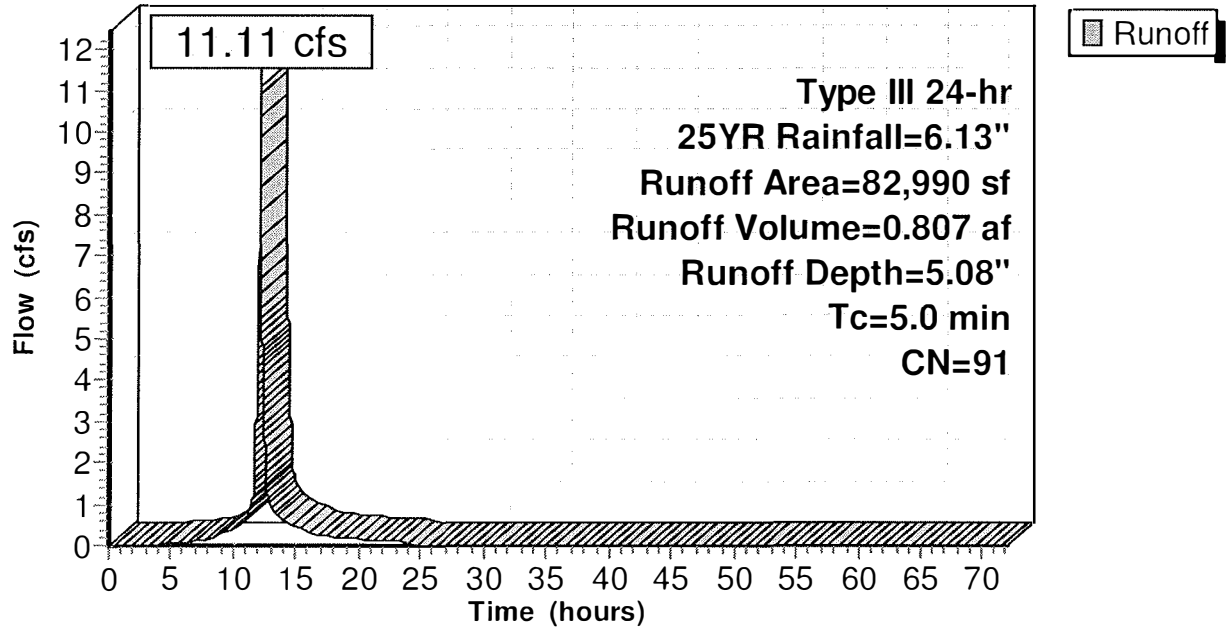
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25YR Rainfall=6.13"

Area (sf)	CN	Description
72,450	98	Paved parking, HSG A
0	98	Water Surface, 0% imp, HSG A
10,540	39	>75% Grass cover, Good, HSG A
82,990	91	Weighted Average
10,540		12.70% Pervious Area
72,450		87.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5**

Subcatchment DA2: Parking lot

Hydrograph



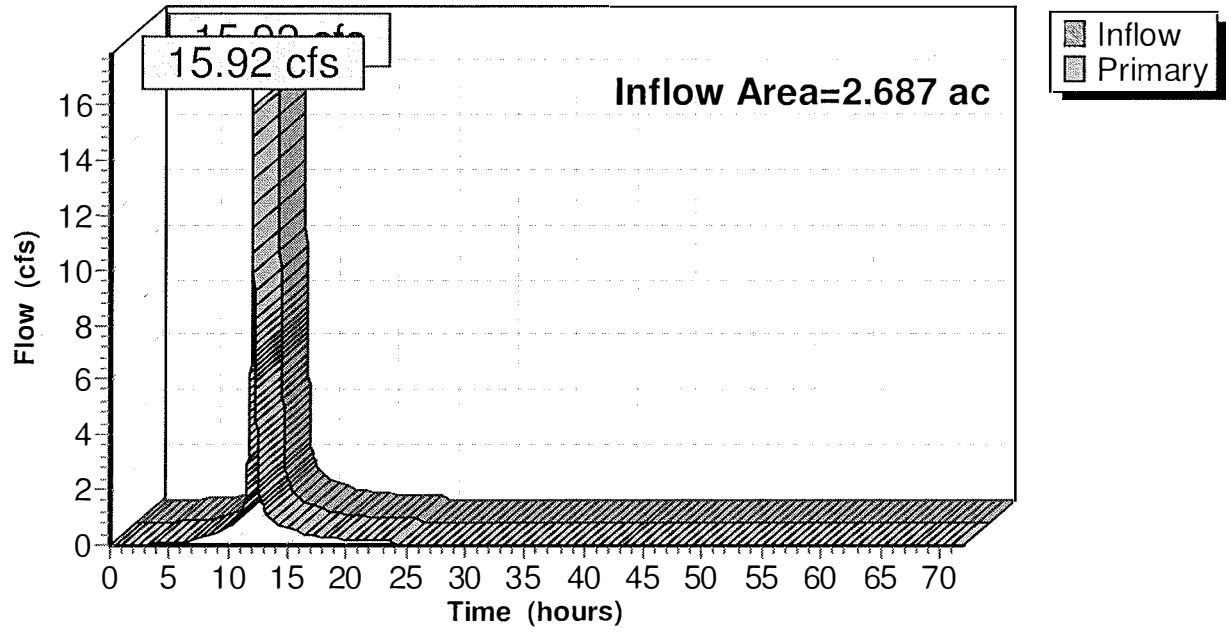
Summary for Pond SP1: Detention Basin

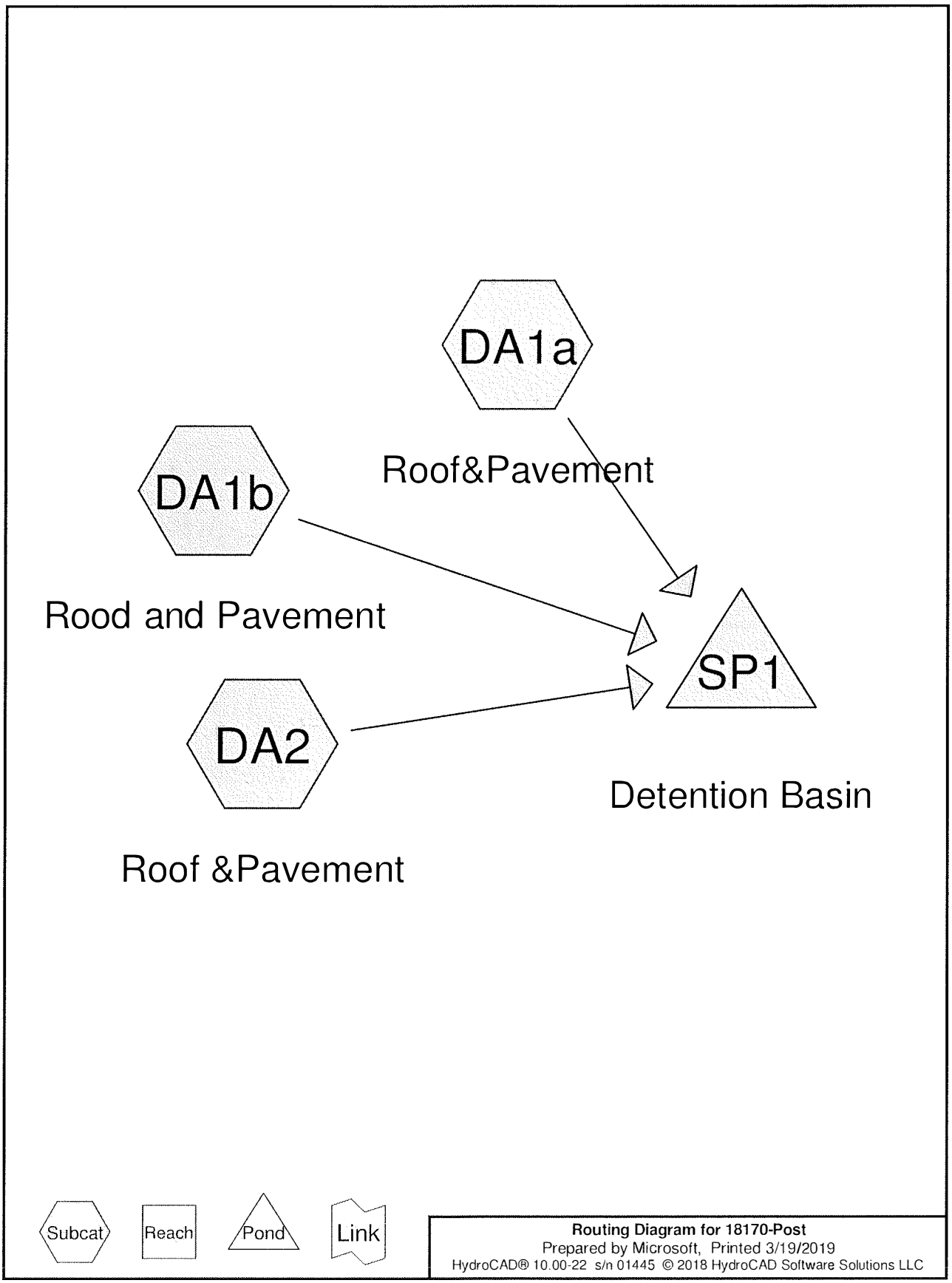
Inflow Area = 2.687 ac, 89.94% Impervious, Inflow Depth = 5.25" for 25YR event
Inflow = 15.92 cfs @ 12.07 hrs, Volume= 1.176 af
Primary = 15.92 cfs @ 12.07 hrs, Volume= 1.176 af, Atten= 0%, Lag= 0.0 min

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

Pond SP1: Detention Basin

Hydrograph





Routing Diagram for 18170-Post
Prepared by Microsoft, Printed 3/19/2019
HydroCAD® 10.00-22 s/n 01445 © 2018 HydroCAD Software Solutions LLC

Summary for Subcatchment DA1a: Roof&Pavement

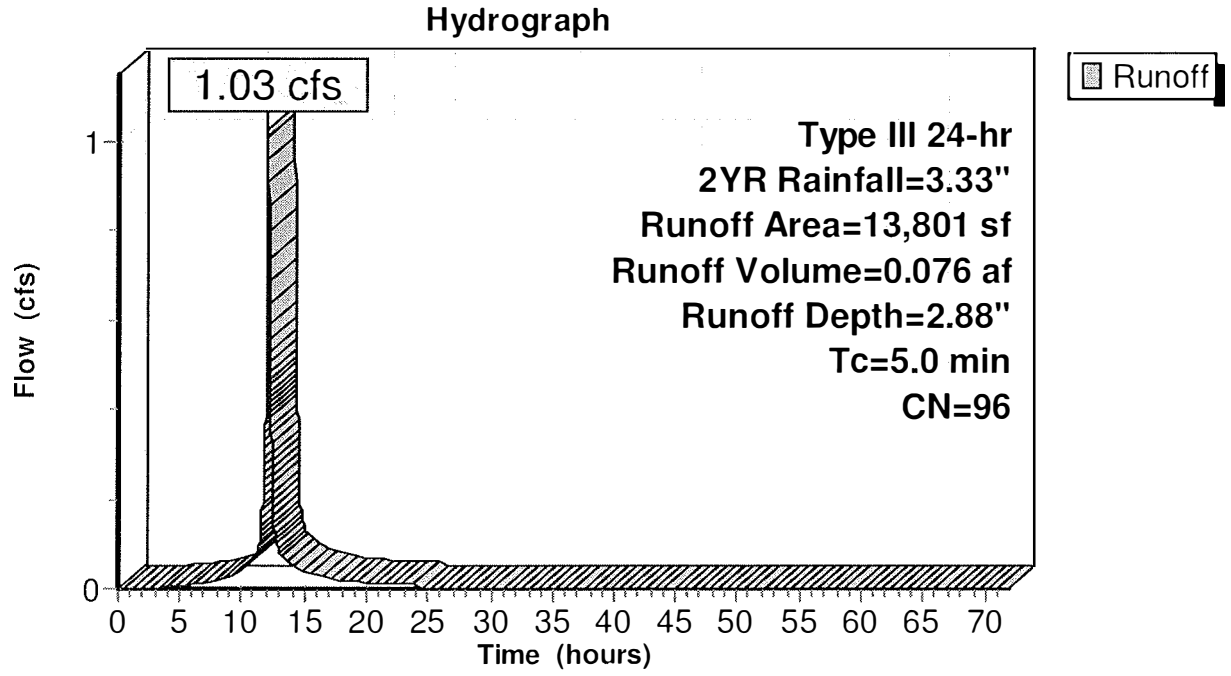
Runoff = 1.03 cfs @ 12.07 hrs, Volume= 0.076 af, Depth= 2.88"

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

Area (sf)	CN	Description
13,375	98	Paved parking, HSG A
0	98	Roofs, HSG A
426	39	>75% Grass cover, Good, HSG A
13,801	96	Weighted Average
426		3.09% Pervious Area
13,375		96.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5**

Subcatchment DA1a: Roof&Pavement



Summary for Subcatchment DA1b: Rood and Pavement

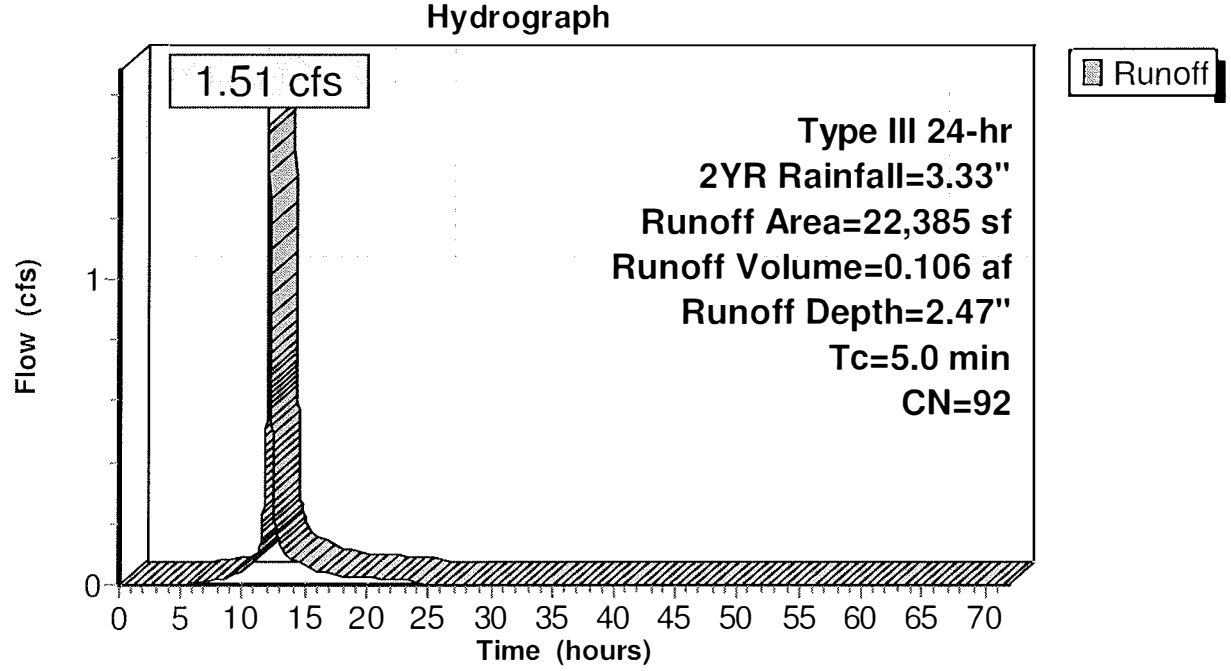
Runoff = 1.51 cfs @ 12.07 hrs, Volume= 0.106 af, Depth= 2.47"

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

Area (sf)	CN	Description
13,586	98	Paved parking, HSG A
6,400	98	Roofs, HSG A
2,399	39	>75% Grass cover, Good, HSG A
22,385	92	Weighted Average
2,399		10.72% Pervious Area
19,986		89.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5**

Subcatchment DA1b: Rood and Pavement



Summary for Subcatchment DA2: Roof &Pavement

Runoff = 5.10 cfs @ 12.07 hrs, Volume= 0.354 af, Depth= 2.29"

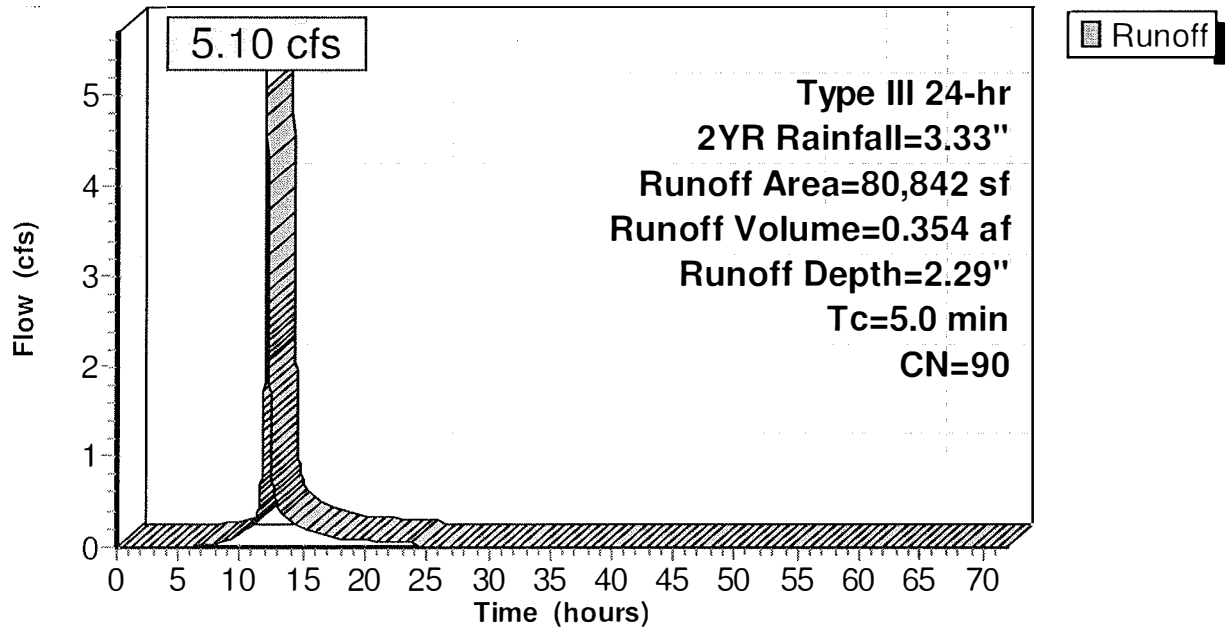
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2YR Rainfall=3.33"

Area (sf)	CN	Description
40,041	98	Paved parking, HSG A
29,228	98	Roofs, HSG A
11,573	39	>75% Grass cover, Good, HSG A
80,842	90	Weighted Average
11,573		14.32% Pervious Area
69,269		85.68% Impervious Area

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

Subcatchment DA2: Roof &Pavement

Hydrograph



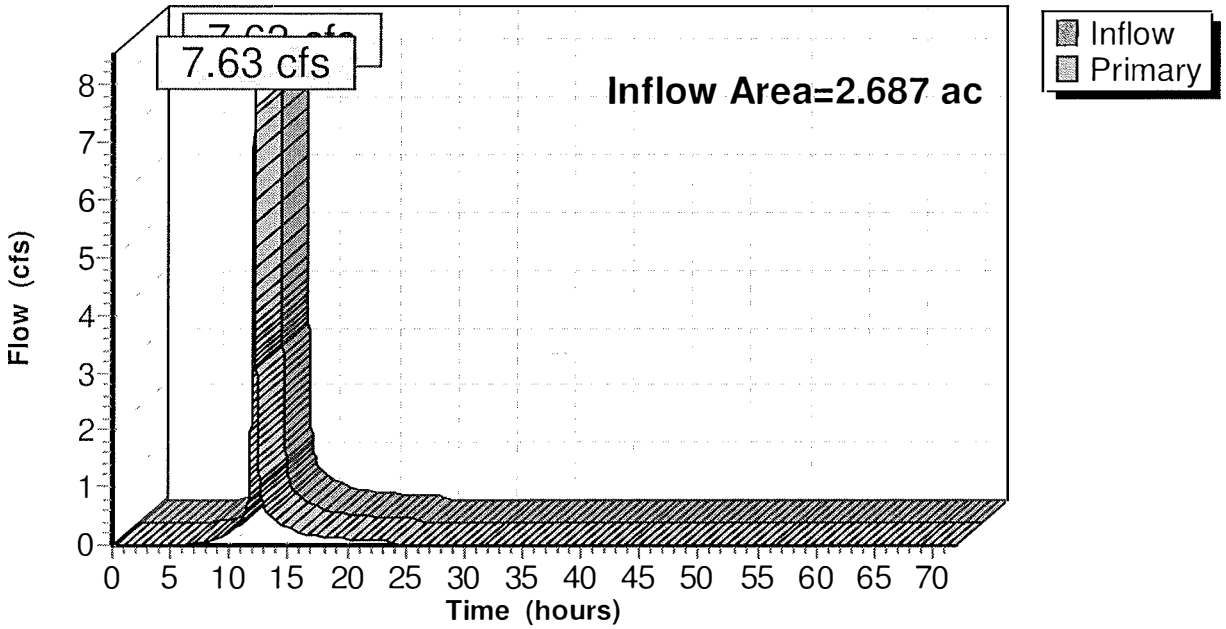
Summary for Pond SP1: Detention Basin

Inflow Area = 2.687 ac, 87.70% Impervious, Inflow Depth = 2.39" for 2YR event
Inflow = 7.63 cfs @ 12.07 hrs, Volume= 0.536 af
Primary = 7.63 cfs @ 12.07 hrs, Volume= 0.536 af, Atten= 0%, Lag= 0.0 min

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

Pond SP1: Detention Basin

Hydrograph



Summary for Subcatchment DA1a: Roof&Pavement

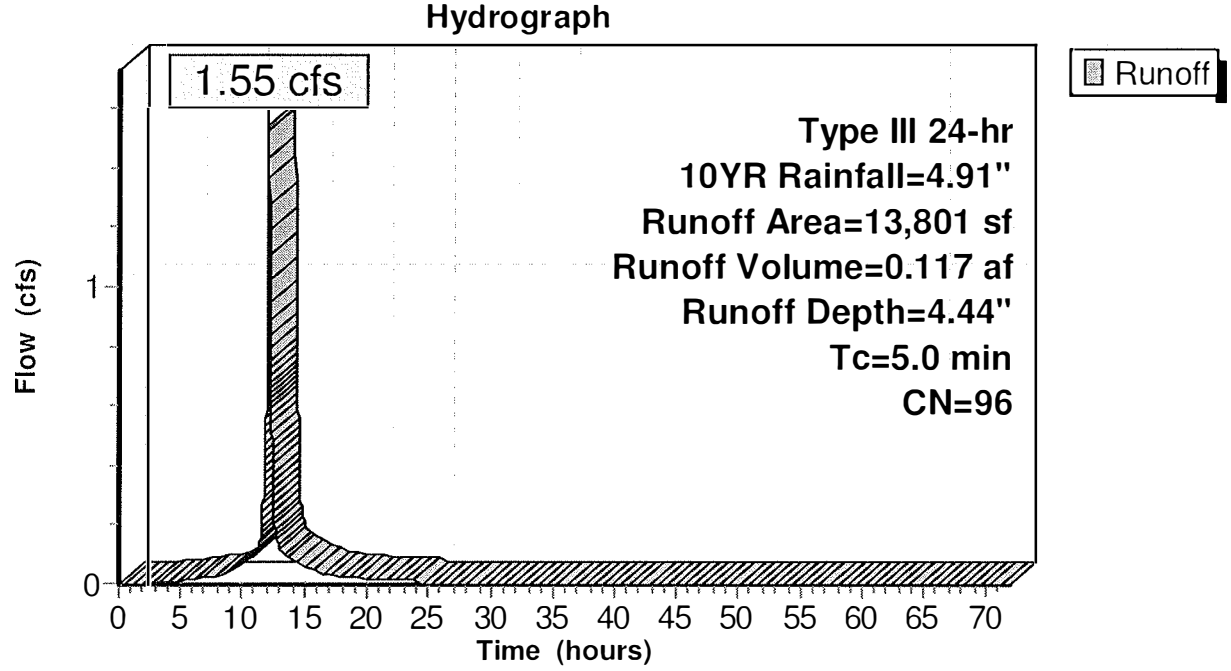
Runoff = 1.55 cfs @ 12.07 hrs, Volume= 0.117 af, Depth= 4.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YR Rainfall=4.91"

Area (sf)	CN	Description
13,375	98	Paved parking, HSG A
0	98	Roofs, HSG A
426	39	>75% Grass cover, Good, HSG A
13,801	96	Weighted Average
426		3.09% Pervious Area
13,375		96.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5**

Subcatchment DA1a: Roof&Pavement



Summary for Subcatchment DA1b: Rood and Pavement

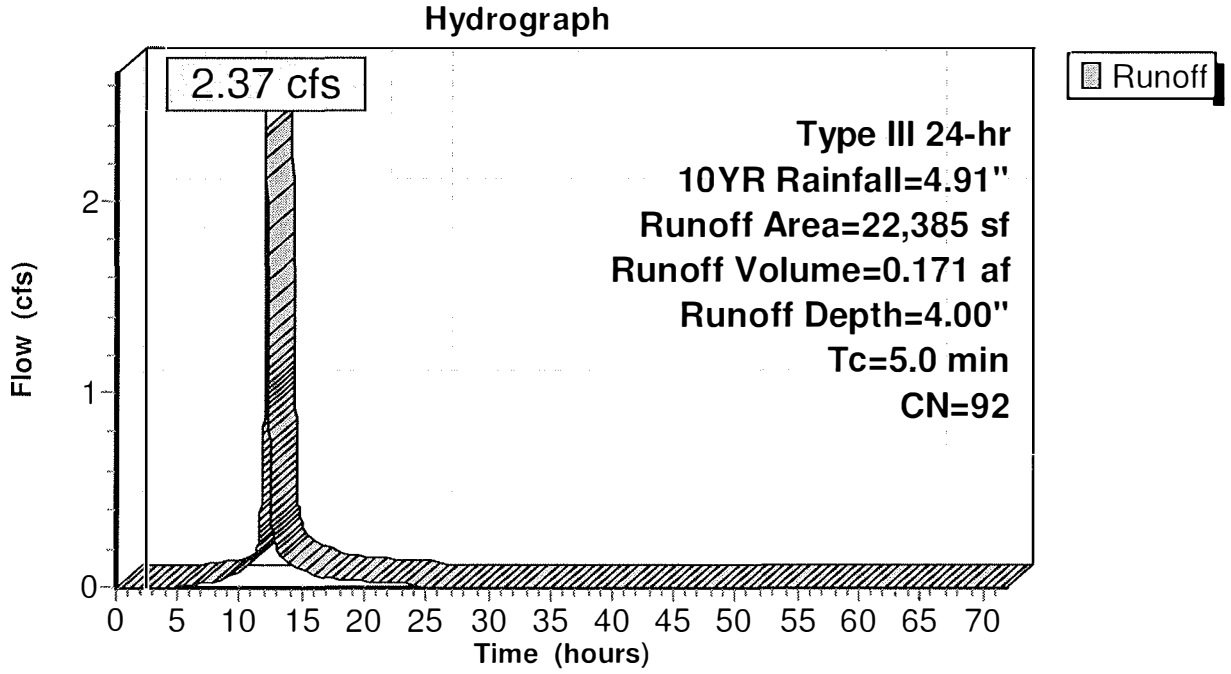
Runoff = 2.37 cfs @ 12.07 hrs, Volume= 0.171 af, Depth= 4.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YR Rainfall=4.91"

Area (sf)	CN	Description
13,586	98	Paved parking, HSG A
6,400	98	Roofs, HSG A
2,399	39	>75% Grass cover, Good, HSG A
22,385	92	Weighted Average
2,399		10.72% Pervious Area
19,986		89.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5**

Subcatchment DA1b: Rood and Pavement



Summary for Subcatchment DA2: Roof &Pavement

Runoff = 8.25 cfs @ 12.07 hrs, Volume= 0.586 af, Depth= 3.79"

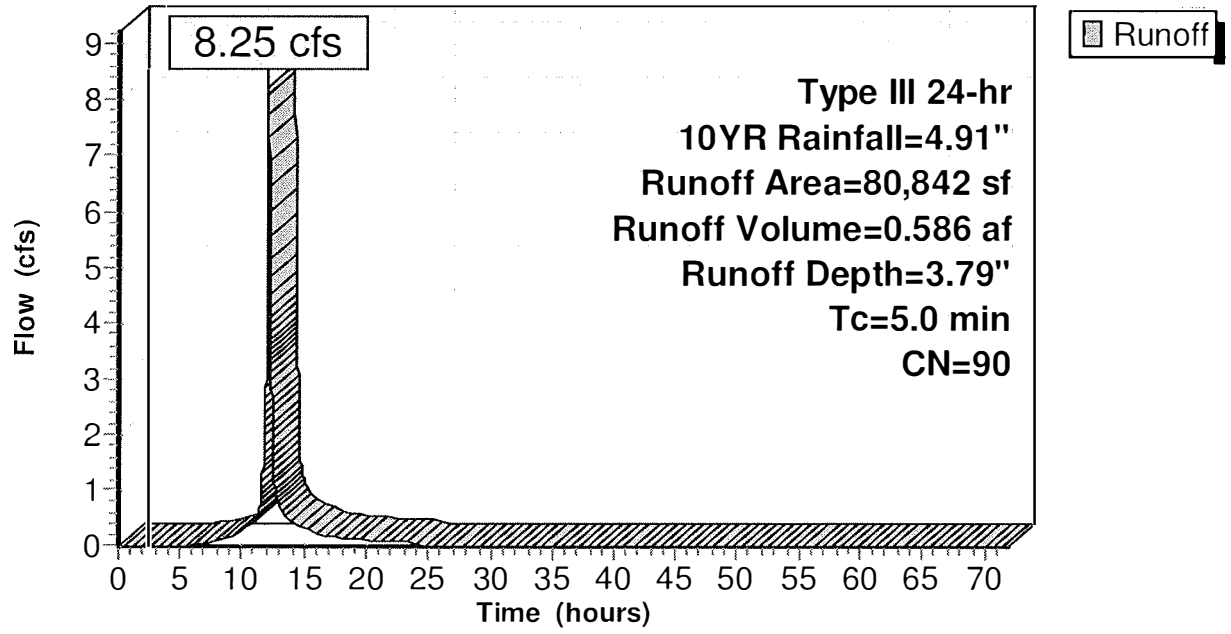
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10YR Rainfall=4.91"

Area (sf)	CN	Description
40,041	98	Paved parking, HSG A
29,228	98	Roofs, HSG A
11,573	39	>75% Grass cover, Good, HSG A
80,842	90	Weighted Average
11,573		14.32% Pervious Area
69,269		85.68% Impervious Area

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

Subcatchment DA2: Roof &Pavement

Hydrograph



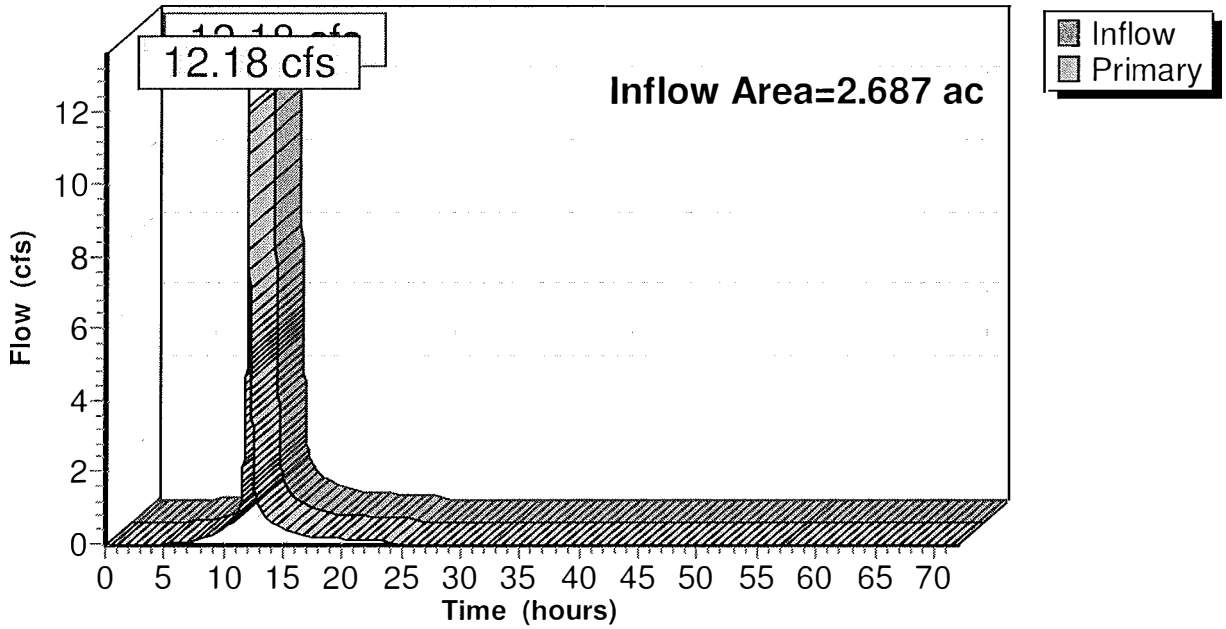
Summary for Pond SP1: Detention Basin

Inflow Area = 2.687 ac, 87.70% Impervious, Inflow Depth = 3.91" for 10YR event
Inflow = 12.18 cfs @ 12.07 hrs, Volume= 0.875 af
Primary = 12.18 cfs @ 12.07 hrs, Volume= 0.875 af, Atten= 0%, Lag= 0.0 min

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

Pond SP1: Detention Basin

Hydrograph



Summary for Subcatchment DA1a: Roof&Pavement

Runoff = 1.95 cfs @ 12.07 hrs, Volume= 0.149 af, Depth= 5.66"

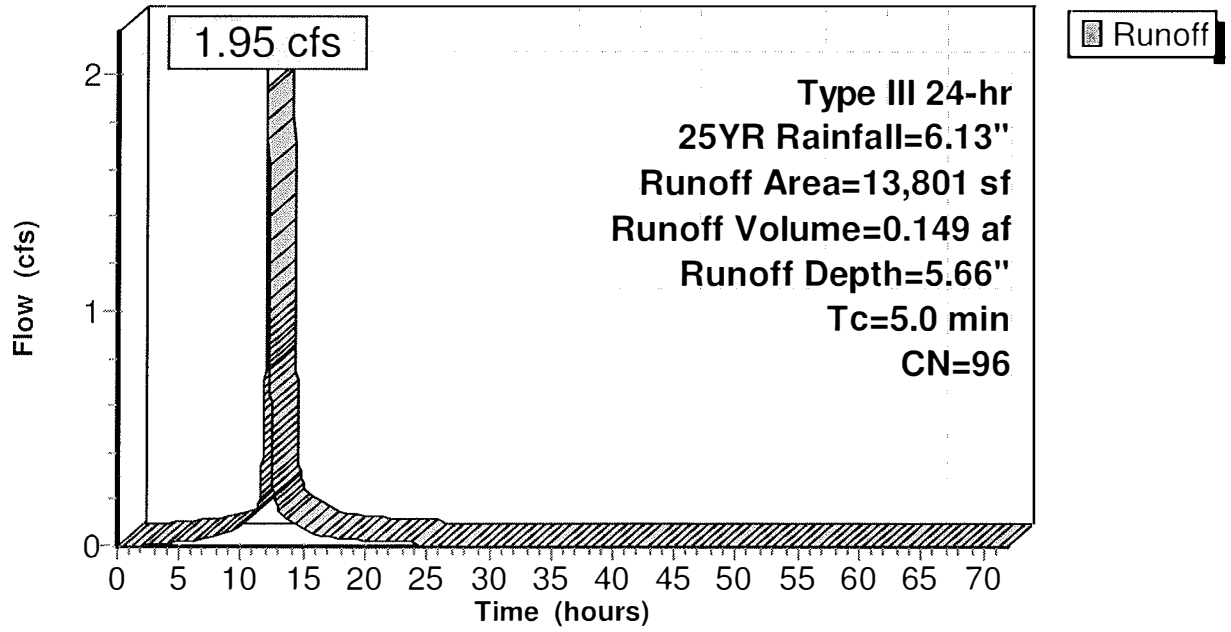
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25YR Rainfall=6.13"

Area (sf)	CN	Description
13,375	98	Paved parking, HSG A
0	98	Roofs, HSG A
426	39	>75% Grass cover, Good, HSG A
13,801	96	Weighted Average
426		3.09% Pervious Area
13,375		96.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5**

Subcatchment DA1a: Roof&Pavement

Hydrograph



Summary for Subcatchment DA1b: Rood and Pavement

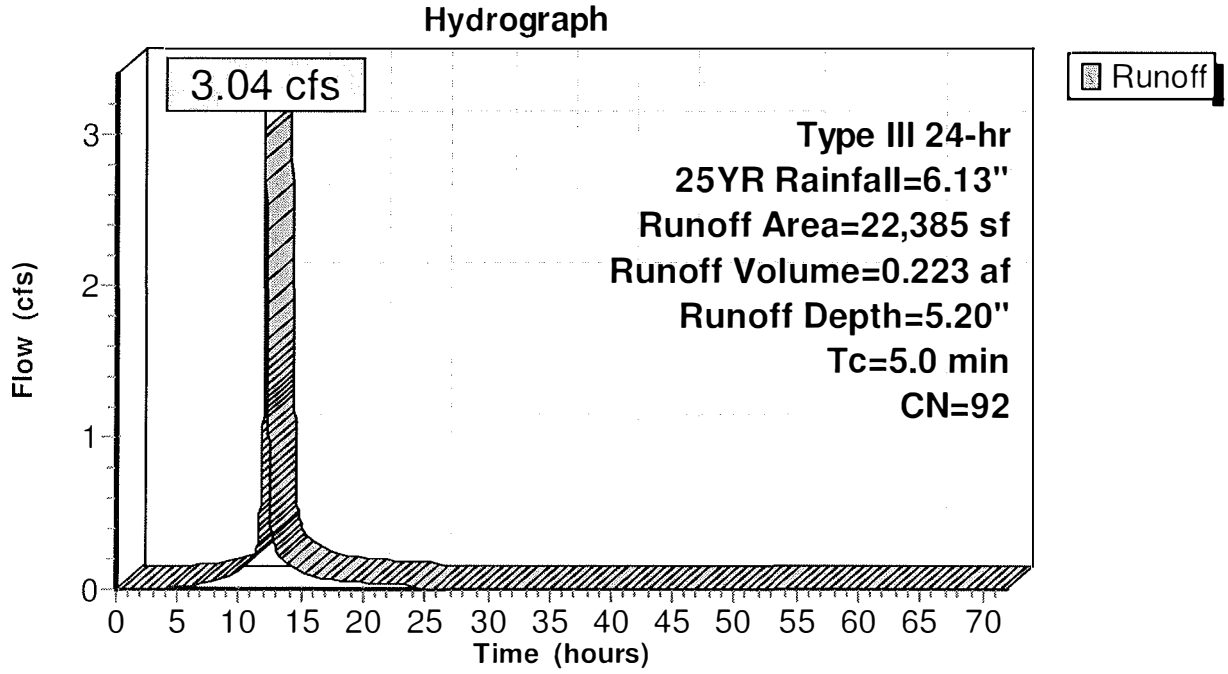
Runoff = 3.04 cfs @ 12.07 hrs, Volume= 0.223 af, Depth= 5.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25YR Rainfall=6.13"

Area (sf)	CN	Description
13,586	98	Paved parking, HSG A
6,400	98	Roofs, HSG A
2,399	39	>75% Grass cover, Good, HSG A
22,385	92	Weighted Average
2,399		10.72% Pervious Area
19,986		89.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 5**

Subcatchment DA1b: Rood and Pavement



Summary for Subcatchment DA2: Roof &Pavement

Runoff = 10.67 cfs @ 12.07 hrs, Volume= 0.769 af, Depth= 4.97"

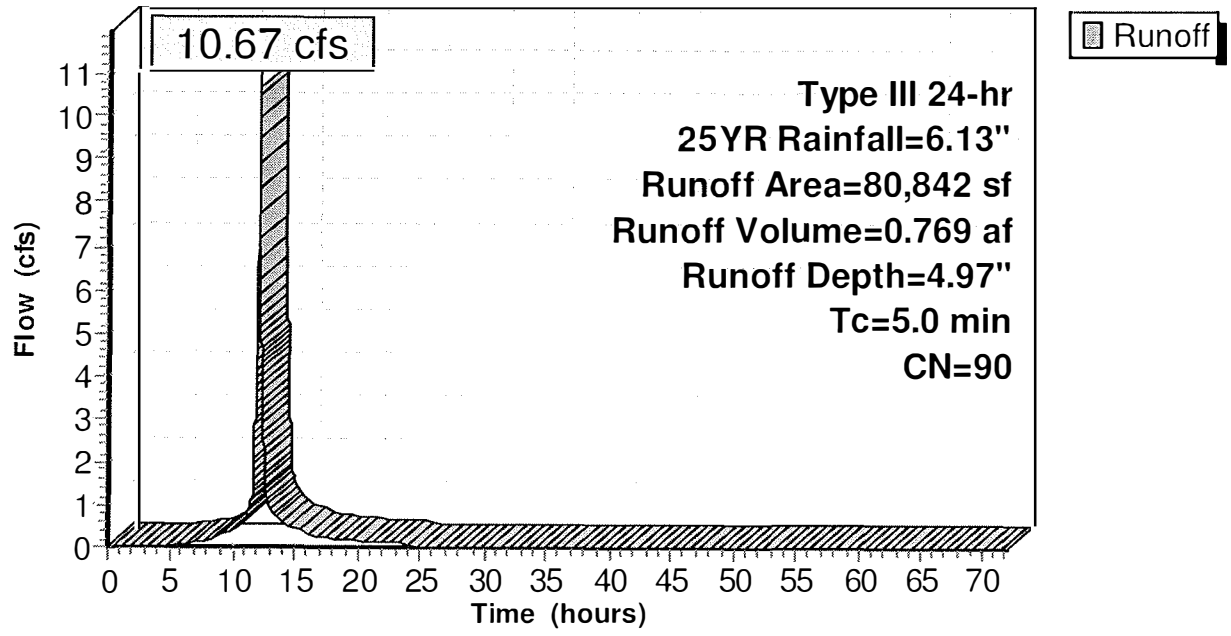
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25YR Rainfall=6.13"

Area (sf)	CN	Description
40,041	98	Paved parking, HSG A
29,228	98	Roofs, HSG A
11,573	39	>75% Grass cover, Good, HSG A
80,842	90	Weighted Average
11,573		14.32% Pervious Area
69,269		85.68% Impervious Area

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

Subcatchment DA2: Roof &Pavement

Hydrograph



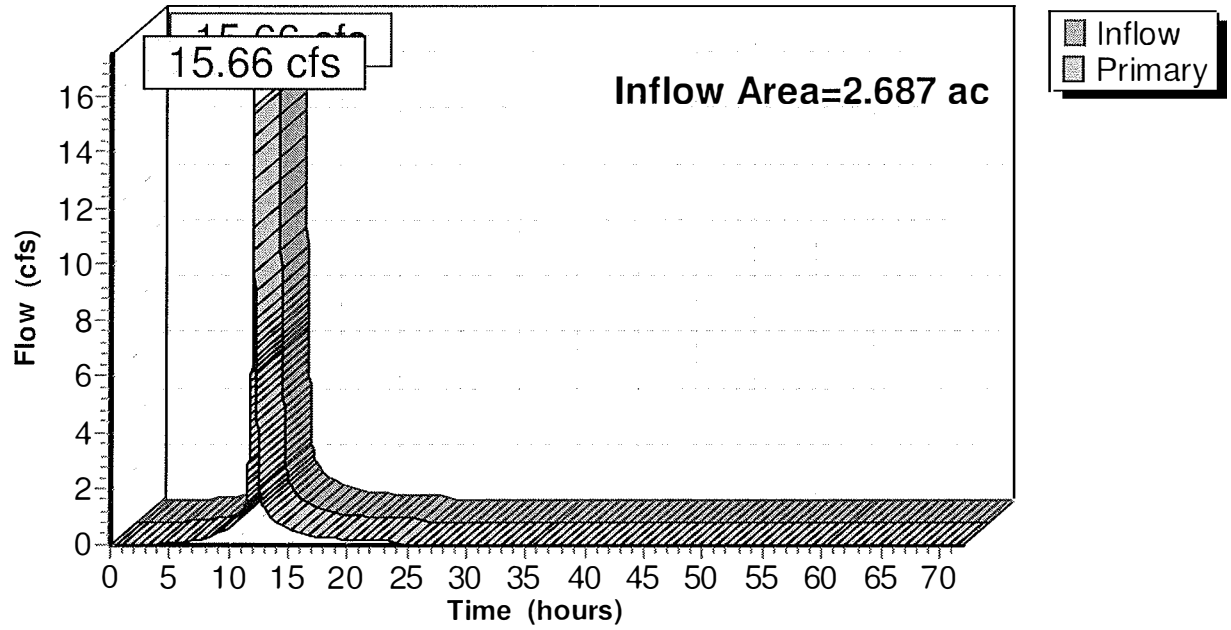
Summary for Pond SP1: Detention Basin

Inflow Area = 2.687 ac, 87.70% Impervious, Inflow Depth = 5.10" for 25YR event
Inflow = 15.66 cfs @ 12.07 hrs, Volume= 1.141 af
Primary = 15.66 cfs @ 12.07 hrs, Volume= 1.141 af, Atten= 0%, Lag= 0.0 min

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

Pond SP1: Detention Basin

Hydrograph



APPENDIX C

MADEP Groundwater Discharge Permit

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

RICHARD K. SULLIVAN JR.
Secretary

KENNETH L. KIMMELL
Commissioner

GROUNDWATER DISCHARGE PERMIT

Name and Address of Applicant: ***Housing Assistance Corporation, 460 West Main Street, Hyannis, MA 02601***

Date of Application:	***July 19, 2007***
Application/Permit No.	**852-0**
Date of Issuance:	***June 22, 2011***
Date of Expiration:	***July 22, 2016***
Effective Date:	***July 22, 2011***

AUTHORITY FOR ISSUANCE

Pursuant to authority granted by Chapter 21, Sections 26-53 of the Massachusetts General Laws, as amended, 314 CMR 2.00, and 314 CMR 5.00, the Massachusetts Department of Environmental Protection (the Department) hereby issues the following permit to: Housing Assistance Corporation (hereinafter called "the permittee") authorizing discharges from the on-site wastewater treatment facility to the ground to be located at Residences of Canal Bluffs, 6 Otis Park Drive, Bourne, Massachusetts 02532 (a 211 bedroom community with associated office space, and a 8,060 gallon per day (gpd) reserve for off-site nitrogen mitigation), such authorization being expressly conditional on compliance by the permittee with all terms and conditions of the permit hereinafter set forth.

Brian A. Dudley
Bureau of Resource Protection

June 22, 2011
Date

This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751. TDD# 1-866-539-7622 or 1-617-574-6868
MassDEP Website: www.mass.gov/dep
Printed on Recycled Paper

I. SPECIAL CONDITIONS

A. Effluent Limits

The permittee is authorized to discharge into the ground from the wastewater treatment facilities for which this permit is issued a treated effluent whose characteristics within one month of startup of the wastewater treatment facility proposed for phase 3 and continuing thereafter shall not exceed the following values:

Effluent Characteristics	Discharge Limitations
Flow	31,994 GPD
Oil and grease	15 mg/l
Total Suspended Solids (TSS)	10 mg/l
Total Nitrogen ($NO_2 + NO_3 + TKN$)*	10 mg/l
Nitrate-Nitrogen	10 mg/l
Biochemical Oxygen Demand, 5-day @20°C (BOD_5)	30 mg/l
Turbidity	5 NTU
Total Organic Carbon (TOC)	5 mg/L
Fecal Coliform	200 organisms/100 mL

*Refer to Section E. "Nitrogen Offsets" and Appendices A and B.

a) The pH of the effluent shall not be less than 6.5 nor greater than 8.5 at any time or not more than 0.2 standard units outside the naturally occurring range.

b) The discharge of the effluent shall not result in any demonstrable adverse effect on the groundwater or violate any water quality standards that have been promulgated.

c) The monthly average concentration of BOD and TSS in the discharge shall not exceed 15 percent of the monthly average concentrations of BOD and TSS in the influent into the permittee's wastewater treatment facility.

d) When the average annual flow exceeds 80 percent of the permitted flow limitations, the permittee shall submit a report to the Department describing what steps the permittee will take in order to remain in compliance with the permit limitations and conditions, inclusive of the flow limitations established in this permit.

B. Monitoring and Reporting

1) INFLUENT:

The permittee shall monitor and record the quality of the **influent** waste stream to the facility according to the following schedule and other provisions:

Parameter	Minimum Frequency of Analysis	Sample Type
BOD_5	Monthly	24-Hour Composite
Total Suspended Solids	Monthly	24-Hour Composite
Total Solids	Monthly	24-Hour Composite
Ammonia Nitrogen	Monthly	24-Hour Composite
Volatile Organic Compounds (US EPA Method #624)	Annually	Grab

EFFLUENT:

The permittee shall monitor and record the quality and quantity of **effluent** at the effluent pump chamber to the leaching area according to the following schedule and other provisions:

Parameter	Minimum Frequency of Analysis	Sample Type
Flow	Daily	Meter reading Report: Min – Max - Average
pH	Daily	Grab
UV Intensity	Continuous	Continuous recording
Turbidity	Continuous	Continuous recording
Total Suspended Solids	Weekly	24-Hour Composite
Oil & Grease	Monthly	Grab

BOD_5	Weekly	24-Hour Composite
Nitrate Nitrogen	2/Weekly	24-Hour Composite
Ammonia Nitrogen	2/Weekly	24-Hour Composite
Total Nitrogen ($NO_2 + NO_3$ + TKN)	2/Weekly	24-Hour Composite
Total Organic Carbon (TOC)	2/Weekly	24-Hour Composite
Fecal Coliform	Weekly	Grab
Total Phosphorus[2] (as P)	Quarterly	Grab
Orthophosphate[2] (as P)	Quarterly	Grab
Volatile Organic Compounds[1]	Semi-annually	Grab

[1]USEPA Method #624
[2]After one full year of monitoring the Total Phosphorus and Orthophosphate results, the Department may determine, upon the request of the permittee, that the frequency of monitoring may be reduced if, in the judgment of the Department, the results of the sampling indicate that existing phosphorus levels will not adversely impact downgradient receptors. If the Department reduces the frequency of monitoring for Total Phosphorus and Orthophosphate, the Department reserves the right to resume more frequent monitoring if the Department determines that phosphorus levels are impacting downgradient receptors.

2) The permittee shall install a minimum of three (3) monitoring wells, one upgradient and two downgradient of the discharge. Detailed plans of the wells, the locations thereof and the method and means of sampling the wells shall be submitted to and approved by the Department prior to the proposed wastewater treatment facility accepting any flow. The plan shall also include provisions for labeling and security of monitoring wells.

The permittee shall install the approved monitoring wells at least 90 days prior to treatment facility start-up and shall monitor, record and report the quality of water in the monitoring wells according to the following schedule and other provisions:

Parameter	**Sample Type**	**Frequency of Analysis**
Static Water Level[1]	Measurement	Monthly
Specific Conductance	Grab	Monthly
pH	Grab	Monthly

Total Nitrogen (NO_2+NO_3+TKN)	Grab	Quarterly
Nitrate-Nitrogen	Grab	Quarterly
Total Organic Carbon (TOC)	Grab	Quarterly
Total Phosphorus[3] (as P)	Grab	Quarterly
Orthophosphate[3] (as P)	Grab	Quarterly
Volatile Organic Compounds[2]	Grab	Annually

[1]Static Water Level shall be expressed as an elevation and shall be referenced to the surveyed datum established for the site. It shall be calculated by subtracting the depth to the water table from the surveyed elevation of the top of the monitoring well's PVC well casing/riser.
[2]USEPA Method #624
[3]After one full year of monitoring the Total Phosphorus and Orthophosphate results, the Department may determine, upon the request of the permittee, that the frequency of monitoring may be reduced if, in the judgment of the Department, the results of the sampling indicate that existing phosphorus levels will not adversely impact downgradient receptors. If the Department reduces the frequency of monitoring for Total Phosphorus and Orthophosphate, the Department reserves the right to resume more frequent monitoring if the Department determines that phosphorus levels are impacting downgradient receptors.

3) Any grab sample or composite sample required to be taken less frequently than daily shall be taken during the period of Monday through Friday inclusive. All composite samples shall be taken over the operating day.

The permittee shall submit all monitoring reports within 30 days of the last day of the reporting month. Reports shall be on an acceptable form, properly filled and signed and shall be sent to the Department of Environmental Protection, Southeast Regional Office, 20 Riverside Drive, Lakeville, MA 02347, and to the Director of Watershed Permitting, Department of Environmental Protection, Watershed Permitting Group, One Winter Street, Boston, MA 02108, and to the Bourne Board of Health, 24 Perry Avenue, Buzzards Bay, Massachusetts 02542. Submission of monitoring reports in electronic format is available through eDEP and serves as data submission to both the Regional and Boston offices. To register for electronic submission go to: *http://www.mass.gov/dep/service/compliance/edeponlf.htm*

C. Nitrogen Offset

It has been determined that the Phinneys Harbor estuarine system is impaired due to nitrogen, and a Total Maximum Daily Load (TMDL) has been developed for this watershed. Based on surface water quality impacts within the watershed the permit includes the following measure which is expected to achieve a no net nitrogen load impact as a result of the discharge:

Based on the agreement with Claybourne Trust, as shown in Appendix A, and nitrogen offset calculations, as shown in Appendix B, the permittee has demonstrated that with the current elimination of a portion of wastewater load from the Claybourne property and capacity reserved for any proposed redevelopment of the Claybourne property, the project will not result in any increase in nitrogen load to the Phinneys Harbor watershed.

D. Financial Assurance Mechanisms

1.

a. The permittee shall establish and maintain a financial assurance mechanism that provides for the continued availability of an immediate repair and replacement account to be used by the permittee solely for the immediate repair and replacement of any failing components of the PWTF. To create an immediate repair and replacement account, the permittee shall deposit at least 15% of the estimated construction cost of the PWTF into an interest bearing escrow account in accordance with the financial assurance mechanism and 314 CMR 5.15.

b. The permittee shall also establish and maintain a financial assurance mechanism in accordance with 314 CMR 5.15 that provides for the accumulation in a capital reserve account of sufficient funds to make any necessary modifications to the PWTF and other related equipment within twenty years from the date the PWTF commenced operation or such other period determined to be appropriate by the Department based on the age and condition of the PWTF. The financial assurance mechanism shall provide for the accumulation in the capital reserve account of an amount equal to at least 25% of the estimated construction cost of the PWTF.

c. On or before January 31st of each year, the permittee shall submit an annual financial report identifying the initial and current balances in the immediate repair and replacement account and the capital reserve account and confirming the continuing availability of the funds in said account for the purposes specified in the permit and 314 CMR 5.15. Said report shall be prepared in accordance with generally accepted accounting principles. Reports pertaining to the required financial assurance mechanism(s) shall be sent to the Wastewater Management Section Chief at the appropriate Regional Office

2. The permittee shall meet the obligation to establish all required financial assurance mechanisms by using Department-approved form documents and shall submit said Department-approved form documents to the Department for its review and approval as follows:

a. A permittee that constructs the wastewater treatment facility after the issuance of the Individual permit may submit the financial assurance mechanism(s) to the Department for its review and approval no later than ninety (90) days prior to the start-up of the facility. Such a permittee shall not operate the facility unless and until the Department

has approved the required financial assurance mechanism(s), the financial assurance mechanisms are in full force and effect, and the permittee has made all contributions required thirty (30) days prior to the start-up of the facility.

b. A permittee with a wastewater treatment facility in existence prior to the submission of the individual permit renewal application may submit the financial assurance mechanisms to the Department for its review and approval no later than ninety (90) days from the date of submission of the individual permit renewal application. Said permittee shall be in compliance with the provision of each approved financial assurance mechanism requiring contributions to the immediate repair and replacement account and the capital reserve account no later than thirty (30) days prior to the date on which the renewal is issued.

3. The permittee shall maintain the current form documents evidencing all required financial assurance mechanisms approved by the Department. The permittee shall perform all its obligations under the required financial assurance mechanisms as approved by the Department.

4. For purpose of the financial assurance mechanism requirement, the estimated construction cost of the wastewater treatment facility shall include the cost of constructing the wastewater treatment plant, collection system, associated mechanical equipment, but not including the land, ground and disposal area.

E. Supplemental Conditions

1. The permittee shall notify the Department at least thirty (30) days in advance of the proposed transfer of ownership of the facility for which this permit is written. Said notification shall include a written agreement between the existing and new permittees containing a specific date for transfer of permit, responsibility, coverage and liability between them.

2. A staffing plan for the facility shall be submitted to the Department once every two years and whenever there are staffing changes. The staffing plan shall include the following components:

   a. The operator(s)'s name(s), operator grade(s) and operator license number(s);

   b. The number of operational days per week;

   c. The number of operational shifts per week;

   d. The number of shifts per day;

   e. The required personnel per shift;

   f. Saturday, Sunday and holiday staff coverage;

   g. Emergency operating personnel

3. The permittee is responsible for the operation and maintenance of all sewers, pump stations, and treatment units for the permitted facility, which shall be operated and maintained under the direction of a properly certified wastewater operator.

4. Operation and maintenance of the proposed facility must be in accordance with 314 CMR 12.00, "Operation and Maintenance and Pretreatment Standards for Wastewater Treatment

Works and Indirect Discharges", and, 257 CMR 2.00, "Rules and Regulations for Certification of Operators of Wastewater Treatment Facilities".

a. The facility has been rated (in accordance with 257 CMR 2.00), to be a Grade **4** facility. Therefore, the permittee shall provide for oversight by a Massachusetts Certified Wastewater Treatment plant operator (Chief Operator) Grade **4** or higher. The permittee will also provide for a backup operator who shall possess at least a valid Grade **3** license.

b. The date and time of the operator's inspection along with the operator's name and certification shall be recorded in the log book on location at the treatment facility. All daily inspection logs consistent with the O&M Manual requirements shall be kept at the facility for a period of three (3) years.

c. Records of operation of wastewater treatment facilities or disposal systems required by the Department shall be submitted on forms supplied by the Department or on other forms approved by the Department for such use. Monthly reports shall be certified by the wastewater treatment plant operator in charge and shall be included in the discharge monitoring reports submitted each month.

5. If the operation and maintenance of the facility is to be contracted to a private concern, the permittee shall submit a copy of the contract, consistent with what is required by the approved Operation & Maintenance manual and signed only by the contractor, to the appropriate MassDEP Regional Office for review and approval ninety (90) days **prior** to the start up of the facility. Along with the contract, a detailed listing of all contract operation obligations of the proposed contractor at other facilities shall also be submitted. The permittee shall not begin operation of the treatment facility until the Department approves the contract.

6. Any additional connections to the sewer system, beyond the facility as described on page 1 of this permit shall be approved by MassDEP and the local Board of Health prior to the connection.

7. All tests or analytical determinations to determine compliance with permit standards and requirements shall be done using tests and procedures found in the most recent version of *Standard Methods for the Examination of Water and Wastewater* and shall be performed by a Massachusetts Certified laboratory.

8. The permittee shall notify the appropriate MassDEP Regional Office, in writing, within thirty (30) days of the following events:

   a. The date of treatment plant start up.

   b. Any interruption of the treatment system operation, other than routine maintenance.

   c. Final shutdown of the treatment system.

9. The permittee shall contract to have any and all solids and sludges generated by the treatment system for which this permit is issued removed off site by a properly licensed waste hauler for disposal at an EPA/MassDEP approved facility. The name and license number of the hauler along with the quantity of wastes removed and the date(s) of removal shall be reported by the permittee in writing to the appropriate MassDEP Regional Office.

10. Simultaneously with the permit renewal application at year fifteen 2026 following the initiation of plant operations, the permittee shall submit two reports to the Department for its review and approval:
    a. An engineering report, prepared by a registered professional engineer, that outlines in sufficient detail what modifications (if any) to the facility or other changes are required to insure that the facility can remain in compliance with its GWDP and other applicable requirements through the next 5 year permit term (year 2031) and beyond; and
    b. A financial plan that contains the cost estimates for implementing the facility modifications or other changes identified in the engineering report, and describes and demonstrates, how and when the permittee will finance the needed facility modifications or other changes.
11. In the event that effluent limits are not met, or the discharge is determined to impair groundwater quality in accordance with 314 CMR 5.16(1), the permittee may be obligated to modify, supplement or replace the permitted treatment process so as to ensure that the discharge does not impair the ability of the groundwater to act as an actual or potential source of potable water.
12. The Cooperative Development Agreement ("CDA") between the permittee and Claybourne Trust shall be recorded in the chain of title for the Claybourne Trust. Proof of recording shall be submitted to the Department within thirty (30)days of issuance of this permit.

F. Appeal Rights

During the thirty (30) day period following issuance of this permit, a Notice of Claim for an Adjudicatory Appeal may be sent by any person aggrieved (the "Petitioner") by the issuance to:

Case Administrator
Office of Appeals and Dispute Resolution
Department of Environmental Protection
One Winter Street/2nd Floor
Boston, MA 02108

310 CMR 1.01(6)(b) requires the Notice of Claim to: include sufficient facts to demonstrate aggrieved person status; state the facts which are grounds for the appeal specifically, clearly and concisely; and, state relief sought. The permit shall become or remain effective at the end of the 30 day appeal period unless the person filing the Notice of Claim requests, and is granted, a stay of its terms and conditions. If a permit is modified under 314 CMR 2.10, only the modified terms and conditions may be subject to an Adjudicatory Appeal. All other aspects of the existing permit shall remain in effect during any such Adjudicatory Appeal.

Per 310 CMR 4.06, the hearing request to the Commonwealth will be dismissed if the filing fee is not paid. Unless the Petitioner is exempt or granted a waiver, a valid check payable to the Commonwealth to Massachusetts in the amount of $100.00 must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection

P.O. Box 4062
Boston, MA 02211

The filing fee is not required if the Petitioner is a city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority effective January 14, 1994, or any municipal housing authority; or, per MGL 161A s. 24, the Massachusetts Bay Transportation Authority. The Department may waive the adjudicatory hearing filing fee for a Petitioner who shows that paying the fee will create and undue financial hardship. A Petitioner seeking a waiver must file, along with the hearing request, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

II. GENERAL PERMIT CONDITIONS

The following conditions apply to all individual and general permits:

(1) No discharge authorized in the permit shall cause or contribute to a violation of the Massachusetts Surface Water Quality Standards (314 CMR 4.00) or any amendments thereto. Upon promulgation of any amended standard, this permit may be revised or amended in accordance with such standard and 314 CMR 2.10 and 3.13 or 5.12. Except as otherwise provided in 314 CMR 5.10 (3)(c), 310 CMR 5.10(4)(a)2. and 314 CMR 5.10(9), no discharge authorized in the permit shall impair the ability of the ground water to act as an actual or potential source of potable water. Evidence that a discharge impairs the ability of the ground water to act as an actual or potential source of potable water includes, without limitation, analysis of samples taken in a downgradient well that shows one or more exceedances of the applicable water quality based effluent limitations set forth in 314 CMR 5.10. In those cases where it is shown that a measured parameter exceeds the applicable water quality based effluent limitations set forth in 314 CMR 5.10 at the upgradient monitoring well, evidence that a discharge impairs the ability of the ground water to act as an actual or potential source of potable water is deemed to exist if a measured parameter in any downgradient well exceeds the level of that same measured parameter in the upgradient well for the same sampling period. . A statistical procedure approved by the Department shall be used in determining when a measured parameter exceeds the allowable level.

(2) Duty to Comply. The permittee shall comply at all times with the terms and conditions of the permit, 314 CMR 5.00, M.G.L. c. 21, §§ 26 through 53.

(3) Standards and Prohibitions for Toxic Pollutants. The permittee shall comply with effluent standards or prohibitions established under § 307(a) of the Federal Act, 33 U.S.C § 1317(a), for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

(4) Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and equipment installed or used to achieve compliance with the terms and conditions of the permit, and the regulations promulgated at 314 CMR 12.00: *Operation and Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Discharges*, and 257 CMR 2.00: *Rules and Regulations for Certification of Operators of Wastewater Treatment Facilities*.

(5) Duty to Halt or Reduce Activity. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production or discharges or both until the facility is restored or an alternative method of treatment is provided. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

(6) Power Failure. In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

(a) provide an alternative power source sufficient to operate the wastewater control facilities; or

(b) halt, reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

(7) Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any adverse impact on human health or the environment resulting from non-compliance with the permit.

(8) Duty to Provide Information. The permittee shall furnish to the Department within a reasonable time as specified by the Department any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine whether the permittee is complying with the terms and conditions of the permit.

(9) Inspection and Entry. The permittee shall allow the Department or its authorized representatives to:

(a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records required by the permit are kept;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(c) Inspect at reasonable times any facilities, equipment, practices, or operations regulated or required under the permit; and

(d) Sample or monitor at reasonable times for the purpose of determining compliance with the terms and conditions of the permit.

(9A) The permittee shall physically secure the treatment works and monitoring wells and limit access to the treatment works and monitoring wells to those personnel required to operate, inspect and maintain the treatment works and to collect samples.

(9B) The permittee shall identify each monitoring well by permanently affixing to the steel protective casing of the well a tag with the identification number listed in the permit.

(10) Monitoring. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136 unless other test procedures are specified in the permit.

(11) Recordkeeping. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and all records of all data used to complete the application for the permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time. Records of monitoring information shall include:

(a) The date, exact place, and time of sampling or measurements;

(b) The individual(s) who performed the sampling or measurement;

(c) The date(s) analyses were performed;

(d) The individual(s) who performed the analyses;

(e) The analytical techniques or methods used; and

(f) The results of such analyses.

(12) Prohibition of Bypassing. Except as provided in 314 CMR 5.19(13), bypassing is prohibited, and the Department may take enforcement action against a permittee for bypassing unless:

(a) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(c) The permittee submitted notice of the bypass to the Department:

1. In the event of an anticipated bypass, at least ten days in advance, if possible; or
2. In the event of an unanticipated bypass, as soon as the permittee has knowledge of the bypass and no later than 24 hours after its first occurrence.

(13) Bypass not Exceeding Limitations. The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if necessary for the performance of essential maintenance or to assure efficient operation of treatment facilities.

(14) Permit Actions. The permit may be modified, suspended, or revoked for cause. The filing of a request by the permittee for a permit modification, reissuance, or termination, or a notification of planned changes or anticipated non-compliance does not stay any permit condition.

(15) Duty to Reapply. If the permittee wishes to continue an activity regulated by the permit after the expiration date of the permit, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department in writing.

(16) Property Rights. The permit does not convey any property rights of any sort or any exclusive privilege.

(17) Other Laws. The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, and local laws and regulations.

(18) Oil and Hazardous Substance Liability. Nothing in the permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under § 311 of the Federal Act, 33 U.S.C. § 1321, and M.G.L. c. 21E.

(19) Removed Substances. Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed in a manner consistent with applicable Federal and State laws and regulations including, but not limited to, the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26 through 53 and the Federal Act, , 33 U.S.C. § 1251 *et seq*, the Massachusetts Hazardous Waste Management Act, M.G.L. c. 21C, and the Federal Resource Conservation and Recovery Act, 42 U.S.C. § 6901, *et seq*., 310 CMR 19.000 and 30.000. ,

(20) Reporting Requirements.

(a) Monitoring Reports. Monitoring results shall be reported on a Discharge Monitoring Report (DMR) at the intervals specified elsewhere in the permit. If the permittee monitors any pollutant more frequently than required by the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

(b) Compliance Schedules. Reports of compliance or non-compliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date.

(c) Planned Changes. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility or activity which could significantly change the nature or increase the quantity of pollutants discharged. Unless and until the permit is modified, any new or increased discharge in excess of permit limits or not specifically authorized by the permit constitutes a violation.

(d) Anticipated Non-compliance. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in non-compliance with permit requirements.

(e) 24 Hour Reporting. The permittee shall report any non-compliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the non-compliance, including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the non-compliance. The following shall be included as information which must be reported within 24 hours:

1. Any unanticipated bypass which exceeds any effluent limitation in the permit.
2. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit to be reported within 24 hours.

(f) Other Non-compliance. The permittee shall report all instances of non-compliance not reported under 314 CMR 5.19(20)(a), (b), or (e) at the time monitoring reports are submitted. The reports shall contain the information listed in 314 CMR 5.19(20)(e).

(g) Toxics. All manufacturing, commercial, mining, or silvicultural dischargers must notify the Department as soon as they know or have reason to believe:

1. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant listed in 314 CMR 3.17 which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
   a. 100 micrograms per liter (100 ug/l);
   b. 200 micrograms per liter (200 ug/l) for acrolein and acrylonitrile; 500 micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
   c. Five times the maximum concentration value reported for that pollutant in the permit application; or

2. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

(h) Indirect Dischargers. All Publicly Owned Treatment Works shall provide adequate notice to the Department of the following:

1. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to § 301 or 306 of the Federal Act, 33 U.S.C. §§ 1311 or 1316, if it were directly discharging those pollutants; and

2. Any substantial change in the volume or character of pollutants being introduced into the POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

(i) Information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

(21) Signatory Requirement. All applications, reports, or information submitted to the Department shall be signed and certified in accordance with 314 CMR 3.15 and 5.14.

(22) Severability. The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

(23) Reopener Clause. The Department reserves the right to make appropriate revisions to the permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26 through 53 or the Federal Act, 33 U.S.C. § 1251 *et seq* in order to bring all discharges into compliance.

(24) Approval of Treatment Works. All discharges and associated treatment works authorized herein shall be consistent with the terms and conditions of this permit. Any modification to the approved treatment works shall require written approval of the Department prior to the construction of the modification.

(25) Transfer of Permits.

(a) RCRA Facilities. Any permit which authorizes the operation of a RCRA facility which is subject to the requirements of 314 CMR 8.07 shall be valid only for the person to whom it is issued and may not be transferred.

(b) Transfers by Modification. Except as provided in 314 CMR 5.19(25)(a) and (c), a permit may be transferred by the permittee to a new owner or operator provided that the permit has been modified or revoked and reissued or a minor modification is made to identify the new permittee in accordance with 314 CMR 5.12(3) and (4).

(c) Automatic Transfers. For facilities other than Privately Owned Wastewater Treatment Facilities (PWTFs) that treat at least some sewage from residential uses, hospitals, nursing or personal care facilities, residential care facilities, and/or assisted living facilities, PWTFs that have been required to establish financial assurance mechanism(s) pursuant to 314 CMR 5.15(6), and RCRA facilities subject to the requirements of 314

CMR 8.07, a permit may be automatically transferred in accordance with 314 CMR 5.12(5).

(26) Permit Compliance Fees and Inspection Information. Except as otherwise provided, any permittee required to obtain a surface water or ground water discharge permit pursuant to M.G.L. c. 21, § 43 and 314 CMR 3.00 and 5.00, shall be required to submit the annual compliance assurance fee established in accordance with M.G.L. c. 21A, § 18 and 310 CMR 4.00 as provided in 314 CMR 2.12. The requirement to submit the annual compliance fee does not apply to any local government unit other than an authority. Any permittee required to obtain a surface water or ground water discharge permit pursuant to M.G.L. c. 21, § 43 and 314 CMR 3.00 and 5.00 may be required to submit inspection information annually as a condition of the permit as provided in 314 CMR 2.12.

Appendix A

THIRD AMENDMENT TO COOPERATIVE DEVELOPMENT AGREEMENT

This Third Amendment to Cooperative Development Agreement is entered into as of the ~day ofMarch, 2011 between HAC, LLC, a Massachusetts limited liability company with an address of c/o Housing Assistance Corporation 460 West Main Street, Hyannis, MA 02601 "HAC" and Drake G. Behrakis, Trustee of Claybourne Trust, under Declaration of Trust dated August 22, 2007, and recorded with the Barnstable County Registry ofDeeds in Book 22417, Page 1, having an address of c/o Marwick Associates, 80 Hayden Ave., Suite 100, Lexington, MA 02421 ("Claybourne").

WHEREAS, HAC owns the real property located at 6 Otis Park Drive, as more particularly described in a Deed recorded with the Barnstable County Registry of Deeds in Book 22185, Page 324, and which real property is shown as Parcell on a plan ofland recorded with the Barnstable County Registry of Deeds in Plan Book 561, Page 87 (the "HAC Parcel"); and WHEREAS, Claybourne owns the real property adjoining the northern edge of the HAC Parcel, being known as 170 Clay Pond Road and being more particularly described in a Deed recorded with the Barnstable County Registry of Deeds in Book 22447, Page 112, and which real property is shown as Lot 1 on a plan of land recorded with the Barnstable County Registry of Deeds in Plan Book 489, Page 57 (the "Claybourne Parcel"); and

WHEREAS, the Bourne Board of Appeals has issued a Comprehensive Permit to HAC authorizing the construction in three phases ofresidential rental apartments and residential condominiums on the HAC Parcel in a Decision recorded with the Barnstable County Registry of Deeds in Book 22543, Page 48, as amended in Book 22543, Page 78; Book 23078, Page 248; Book 23894, Page 122; and Book 23949, Page 187 (collectively, the "Canal Bluffs Development"); and

WHEREAS, the Cape Cod Commission issued a Minor Modification #2 to Claybourne's predecessor in title authorizing changes to the previously-approved and constructed retail development on the Claybourne Parcel (the"Retail Development") and specifically dealing with various cross arrangements concerning access, open space, water, and wastewater between the HAC Parcel and the Claybourne Parcel as regards ongoing and future development and redevelopment on both Parcels in a Decision recorded with the Barnstable County Registry of Deeds in Book 22019, Page 78, and FURTHER WHEREAS, HAC has agreed through such process to restrict certain portions of the HAC Parcel for various purposes related to future redevelopment of the Claybourne Parcel; and

WHEREAS, HAC and Claybourne's predecessor in title entered into a Cooperative Development Agreement dated June 26, 2007, as modified by Assignment and Amendment of Cooperative Development Agreement dated November 1, 2007 and Second Amendment to Cooperative Development Agreement dated December, 2007 (as amended, the "Cooperative Development Agreement") setting forth each party's desire to work together in connection with the build out of the Canal Bluffs Development on the HAC Parcel and further Retail Development on the Claybourne Parcel as regards, in part, shared access and wastewater treatment; and 1

WHEREAS, both the HAC Parcel and Claybourne Parcel are each located within the Phinneys Harbor watershed, for which the Massachusetts Department of Environmental Protection ("DEP") has established a Total Maximum Daily Load ("TMDL") for the discharge of nitrogen into such watershed; and FURTHER WHEREAS, as a consequence ofthis TMDL, DEP requires that any applicant for a new Groundwater Discharge Permit (the "GWDP") demonstrate an offset (i.e., the removal of another source of nitrogen in the watershed) that is sufficient to allow the new discharge to be approved with no net new total discharge of nitrogen into the watershed from the project; and

WHEREAS, the pending construction of the second building of the Canal Bluffs Development requires final permitting, construction, and operation of a sanitary wastewater treatment plant (the "WWTP") which will require a GWDP from the DEP; and FURTHER WHEREAS, the parties desire to memorialize their agreement providing the framework for the future shared treatment and disposal ofthe wastewater to be generated by both the HAC Parcel and Claybourne Parcel in compliance with the TMDL for parcels in the Phinneys Harbor watershed; and

WHEREAS, the ongoing vacancy of a portion of the Retail Development has resulted and continues to result in a significant reduction in the amount of nitrogen entering the Phinneys Harbor watershed which creates an ongoing offset that may be used by HAC in connection with the pending construction of the Canal Bluffs Development to meet DEP TMDL standards; and

WHEREAS, HAC's WWTP is being designed to accommodate the three phases of residential development on the HAC Parcel and the future connection of the wastewater and sewage to be generated by the Retail Development as well as a possible future redevelopment thereof on the Claybourne Parcel up to the maximum capacity of the WWTP as permitted by DEP through the GWDP, subject to DEP and other required regulatory approval; and

WHEREAS, HAC and Claybourne deem it to be in their mutual interest to amend and modify the Cooperative Development Agreement whereby the Parties establish the framework by which HAC, through HAC's WWTP on the HAC Parcel, will, subject to DEP approval, receive, treat, and dispose of the wastewater and sewage generated by the Retail Development on the Claybourne Parcel in the future when Claybourne connects to the HAC WWTP, as further specified herein; and FURTHER WHEREAS, such Amendment will allow for the potential future expansion of the Retail Development on the Claybourne Parcel up the maximum capacity of the WWTP as permitted by DEP as well as allow the pending construction of the second phase of the Canal Bluffs Development to be completed at this time by providing the required offset for the nitrogen to be generated by the Canal Bluffs Development in accordance with DEP regulations.

NOW THEREFORE, in consideration ofthe mutual covenants and agreements contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, HAC and Claybourne hereby agree to amend the Cooperative Development Agreement by deleting Section III thereof and inserting in its place the following paragraphs: 2

1. Design and Permitting ofWWTP. HAC shall be responsible for, and agrees to assume, the design and permitting ofthe WWTP, including the filing of an application with and obtaining a GWDP from the DEP and any other applications necessary to construct and operate the WWTP (collectively "Applications"). Claybourne agrees to cooperate reasonably with HAC in the process of seeking the Applications and to execute all necessary forms and documents for the submittal and processing of such Applications. The Applications shall request approval for one or more designs that provide for a residential capacity for the three phases ofresidential housing on the HAC Parcel up to a combined maximum design flow of23,884 gallons per day (the "Residential Capacity") as well as a retail capacity on the Claybourne Parcel up to a maximum design flow of8,061 gallons per day (the "Retail Capacity").. Claybourne shall have the right to approve the terms and conditions of any such GWDP, which approval shall not be unreasonably withheld. Claybourne need not consider for approval any GWDP that does not accommodate the Retail Capacity. Ifa GWDP that is satisfactory to both parties has not been obtained by January 17,2012, then either party shall have the right to terminate the obligations and rights ofthis Amendment, by written termination notice delivered by one party to the other, in which event the terms ofSection III ofthe Cooperative Development Agreement shall no longer be terminated and shall remain in full force and effect.

2. Construction ofWWTP and Retail Development Connection.

   A. HAC has already completed Phase I ofits development, consisting ofa septic field and a system which processes flows for 56 bedrooms in 28 housing units. Except as provided otherwise in Paragraph 2(B) below, HAC shall be responsible for, and agrees to assume, at HAC's expense, the construction of the WWTP on the HAC Parcel and in addition an additional connection line from the WWTP to the existing Claybourne pump chamber located in the supermarket parking lot to service the Residential Capacity on the HAC Parcel and the Retail Capacity on the Claybourne Parcel.. Such construction shall include, without limitation, (i) a force main extension from the WWTP to the existing Claybourne pump chamber located in the supermarket parking lot, and (ii) sufficient capacity and facilities to accommodate the collection, pretreatment, advanced treatment and disposal on the HAC Parcel of effluent from the Claybourne Parcel for the Retail Capacity. HAC's construction described above shall be consistent with the plan entitled "Marwick Properties Concept Plan" dated February 1,2011 prepared by the Horsley Witten Group, Inc. and related specifications which are attached hereto as Exhibit A and incorporated herein.

   B. Claybourne shall be responsible for, and agrees to assume, the costs described on Exhibit B attached hereto and incorporated herein, to be required at such time as the Claybourne Parcel connects to the WWTP in order for both Parcels to meet the DEP TMDL standards.

   C. The WWTP and all required connections and appurtenances shall be constructed, operated, and maintained in accordance with all applicable federal and state 3

guidelines and applicable Town of Bourne bylaws and regulations.

D. The Parties further agree to cooperate reasonably in advancing the construction and connections set forth above to completion, including without limitation, reasonable review and approval of the other Party's design plans and specifications, which approval will not be unreasonably withheld or delayed. The Parties further agree to work cooperatively to resolve any comments or obligations which either Party have with respect to such plans or specifications.

3. Reserve Funds. In connection with permitting the WWTP, HAC shall provide (i) a repair and replacement fund which will contain a DEP-agreed-upon percentage ofthe plant cost minus the previously-constructed leach field cost, and (ii) a long-term capital improvement fund which will also contain a DEP-agreed-upon percentage of the plant cost minus the previously-constructed leach field cost. At the time that the Claybourne Parcel connects to the WWTP, the two Parties agree as set forth on Exhibit C to the pro rata contributions to such ongoing reserve funds based on relative design flows. Ifallowed by DEP and approved by HAC, which approval shall not be unreasonably withheld, Claybourne shall be permitted to make its contributions to such funds in installments over time.

4. Operating Costs. At the time that Claybourne connects to the WWTP, the two Parties shall share the cost of the ongoing operation and maintenance (the "O&M Costs") of the entire WWTP, including without limitation, all connections, appurtenances, pumps, and the leach field, based on the following formula:

A. Until such time as the shopping center on the Claybourne Parcel has an anchor tenant in place occupying and operating in the former Grand Union supermarket space, Claybourne's pro rata share of the O&M Costs shall be based on the design flow of the tenants occupying and operating in the Retail Development as determined on an annual basis; and

B. Once the shopping center has an anchor tenant in place occupying and operating in the former Grand Union supermarket space, Claybourne's pro rata share of the O&M Costs shall be based on the total design flow of the Retail Capacity regardless ofvacancies from time to time thereafter in tenant space on the Claybourne Parcel.

—. Nitrogen Offset. HAC is hereby authorized, in connection with construction and operation of the WWTP, to use as an offset in compliance with DEP TMDL standards, the amount ofnitrogen that (i) has not been generated during the time that a portion ofthe Claybourne Parcel has been and continues to remain vacant and not generating sufficient wastewater and sewage to require connection to a WWTP and in addition (ii) the difference between the amount of nitrogen generated by untreated effluent on the Claybourne and HAC Parcels prior to the WWTP and that generated by the treated effluent from the WWTP.

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A. Notwithstanding the foregoing, nothing in this Amendment shall be deemed to limit Claybourne's right to lease to any tenant or operator any vacant space at the Retail Parcel, for any use permitted by applicable law, regardless ofthe amount of wastewater such tenant would generate, provided in all cases that such wastewater to be generated is no greater than the Retail Capacity. If Claybourne desires to modify the WWTP to accommodate greater wastewater generation on the Claybourne Parcel than the Retail Capacity, then Claybourne may, at Claybourne's sole cost and expense and with the approval of HAC, which approval will not be unreasonably withheld, seek to amend the GWDP to upgrade the WWTP to the extent possible, in accordance with DEP, Cape Cod Commission, and Town of Bourne requirements to handle such additional wastewater generation on the Claybourne Parcel; and

B. Once the WWTP is operational and, subject to DEP approval under the GWDP process, HAC reserves the right, but not the obligation, to determine whether DEP would accept historical actual wastewater flows for the residential uses on the HAC Parcel such that there may be determined to be an excess capacity in the WWTP at that time. If HAC undertakes such a determination and excess capacity acceptable to DEP is established, HAC may decide to utilize such excess capacity for the provision of additional housing on the HAC Parcel. If HAC decides not to utilize such excess capacity, HAC hereby grants to Claybourne a right of first refusal to claim such excess capacity for additional development on the Claybourne Parcel up to the new capacity determination of the WWTP, subject to DEP, Cape Cod Commission, and Town of Bourne approval. If Claybourne claims such excess capacity, Claybourne shall be responsible, at its sole cost and expense, to amend the GWDP with the DEP, and shall further be responsible for paying the additional O&M Costs in accordance with the formula set forth in Paragraph 4 above notwithstanding whether it actually utilizes the excess capacity that it claims, recognizing that HAC's percentage ofthe O&M Costs would decrease accordingly. If Claybourne does not exercise its right of first refusal to claim such excess capacity within 60 days of being offered in writing by HAC, then such right of first refusal shall be deemed to be declined, and HAC shall have the right to sell such excess capacity to a third party upon terms and conditions to be determined by HAC.

6. Guaranty of Sewage Disposal. At such time as the Claybourne Parcel connects to the WWTP on the HAC Parcel, HAC agrees to receive and treat the wastewater and sewage generated by the Claybourne Parcel up to the Retail Capacity as permitted by DEP through the GWDP, subject to DEP and other required regulatory approval. HAC also agrees to dispose of Claybourne's treated wastewater and sewage on the HAC Parcel, as set forth above and in Exhibit A and as allowed by DEP.

—. Further Documentation. The Parties agree to enter into and provide all necessary further documentation consistent with this Amendment and the Cooperative Development Agreement, subject to reasonable conditions, to allow construction, operation, and maintenance of and access to the WWTP and the connections ofthe HAC Parcel and Claybourne Parcel in accordance with the terms ofthis Amendment.

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Such documents may include without limitation, reciprocal easements, shared wastewater system agreements, repair and replacement escrow agreements, and operating agreements, the parties hereby acknowledging that such documents will likely require the prior consent and subordination of Claybourne's lender and any lender to HAC.

8. Certifications. Any signatory to this Agreement who signs in a representative capacity for a Party certifies that he or she has taken all steps necessary to obtain authorization to enter into this Agreement, and such signatory also certifies that he or she is fully authorized to enter into this Agreement and to bind legally the party so represented. Claybourne agrees that it shall promptly seek and use reasonable efforts to obtain all third party approvals (including lender approvals and any land use approvals and permits) required in order for Claybourne to effect its obligations under the Cooperative Development Agreement, as amended hereby.

9. No Consequential Damages. Notwithstanding anything in this Agreement to the contrary, HAC shall not under any circumstance be liable for any consequential damages of Claybourne, and Claybourne shall not under any circumstance be liable for any consequential damages of HAC.

10. Waiver or Breach. The failure of any Party to require the performance of the provisions herein by any other Party shall not affect the respective rights of any other Party to enforce those rights, nor shall waiver by any Party of any breach of any provision of the Cooperative Development Agreement be construed as an authorization or waiver of any succeeding breach or modification of the provisions of the Cooperative Development Agreement.

11. The following sentence is added to Paragraph 12 of the Agreement: Each Party shall have the right to assign all or any portion of its interests in the Cooperative Development Agreement, without the need for consent ofthe other Party, provided such consent is in connection with the bona fide sale of either the HAC parcel or the Claybourne Parcel.

12. Except as specifically modified hereby, the Cooperative Development Agreement is hereby ratified and confirmed in all respects.

[Continued Next Page for Signatures] 6

IN WITNESS WHEREOF, the HOUSING ASSISTANCE CORPORATION, acting by and through its duly authorized representative, and DRAKE G. BEHRAKIS, TRUSTEE OF CLAYBOURNE TRUST, have executed this Agreement as a sealed instrument as of the day and year first written above.

HOUSING ASSISTANCE CORPORATION
Frederic)J. Presbrey, CEO/President

CLAYBOURNE TRUST
Drake G. Behrakis, Trustee and not Individually

Appendix B

Draft Groundwater Discharge Permit 0-852
Residences at Canal Bluffs

Response to Comments

MassDEP issued a draft groundwater discharge permit (0-852) to the Housing Assistance Corporation (the "HAC") for its wastewater treatment facility (the "Facility") on June 22, 2011. A public notice was published in the Cape Cod Times on May 12, 2011. MassDEP received comments on the draft permit from the applicant and the Coalition for Buzzards Bay ("CBB"). This document provides background on the permit and addresses the specific comments received.

INTRODUCTION:

The HAC has proposed an affordable housing complex at 6 Otis Park Drive in Bourne, Massachusetts. It is located in the Phinneys Harbor watershed for which a nitrogen Total Maximum Daily Load (TMDL) has been approved by the US EPA. Accordingly, the project must offset any nitrogen load generated by the facility so that there is a net zero nitrogen discharge. HAC proposes to accommodate the required nitrogen offset by providing capacity for and treating wastewater generated by a neighboring shopping center (the "Claybourne Parcel") which formerly housed a supermarket.

As part of the offset calculations, the facility is given credit for historical nitrogen loads from the Claybourne Parcel. Therefore, HAC's obligation to treat the shopping center's wastewater commences once it exhausts the offset from the historical nitrogen load.

Phase 1 of the project has been constructed generating less than 10,000 gallons per day (gpd) of wastewater and has been served by a system constructed according to Title 5 (310 CMR 15.000) design criteria.

RESPONSE TO SPECIFIC COMMENTS:

<u>The Coalition for Buzzards Bay</u>

CBB's comments are primarily concerned with the calculation of flow and how it affects the nitrogen offset calculations. The offset calculations were carefully reviewed by MassDEP and its findings were that the nitrogen loads were developed consistent with the methodology employed by the Massachusetts Estuaries Project (MEP) in its report on the Phinney's Harbor system. CBB notes in its comment letter that in order for the offsets to be met the average daily flow cannot be greater than 16,828 gpd. HAC's consultant calculated the nitrogen loads based

on average daily flows whereas the 31,994 gpd flow limit in the groundwater discharge permit represents a maximum day load. The ratio between the permitted maximum day flow and the theoretical average day flow limit is 1.9 which is within reasonable limits.

CBB also requested that the Cooperative Development Agreement (the "CDA") between HAC and the Claybourne Trust (owners of the Claybourne Parcel) must be recorded on the deed for the property. MassDEP has added a condition (E. Supplemental Conditions, 12 on page 9) of the final permit which requires that the CDA to be recorded in Claybourne Trust's chain of title.

HAC

HAC requested the Total Organic Carbon (TOC) effluent limit of 10 mg/L rather than the 3 mg/L listed in the draft permit. MassDEP , exercising its discretion in accordance with 314 CMR 5.10 (4A), has amended the final permit to allow a TOC effluent limit of 5 mg/L.

CONCLUSION:

MassDEP has given careful consideration to all comments received and made changes to the permit as has been determined to be appropriate. The permit is consistent with the Groundwater Discharge Permit regulations (314 CMR 5.00) and will adequately protect affected resource as well as the public health and safety.

Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A • Sandwich, MA • 02563
Tel: 508-833-6600 • Fax: 508-833-3150 • www.horsleywitten.com



April 28, 2011

Mr. Brian Dudley
Department of Environmental Protection
Southeast Region
20 Riverside Drive
Lakeville, MA 02347

Re: Revised Nitrogen Offset Calculations for Canal Bluffs, Bourne, Massachusetts

Dear Mr. Dudley:

Thank you for meeting with me a few weeks ago to discuss the above referenced calculations. I have evaluated the questions you asked, and have prepared a revised set of calculations shown on the attached summary sheet and the individual nitrogen loading calculation sheets that are also attached. The changes I have made still demonstrate that the proposed nitrogen offset provided to Canal Bluffs is sufficient to achieve a no-net increase in nitrogen loading for this project. The changes I made to the calculations are summarized below;

You asked me to document why I used a flow rate of 10,936 gallons per day (gpd) for the average flow at Canal Bluffs at full buildout of the community. This is based on the following:

73 Apartments at 60 gpd average flow	=	4,380 gpd
44 Townhouse units at 149 gpd average flow	=	6,556 gpd
Total		**10,936 gpd**

The 60 gpd flow rate for the apartment buildings is based on measured flows from the 28 unit complex constructed in Phase I.

The nitrogen concentration for the supermarket complex was adjusted from 57 mg/l to 40.54 mg/l. This was based on removing an outlier data point from the data provided for the Yarmouth Shaw's Supermarket. Removing this outlier lowered the average concentration from the three supermarkets used as examples to 50.67 mg/l. Taking 80% of this value as you requested results in a nitrogen concentration of 40.54 mg/l.

The nitrogen concentration for the current use of the supermarket property was lowered from 35 mg/l to 23.63 mg/l as you requested. This lowers the current nitrogen loading from the site from 22 lbs N/year to 15 lbs N/year.

The changes do not alter the fact that the proposed nitrogen offsets allow the Canal Bluffs treatment plant to be built, while maintaining a no-net increase in nitrogen loading to the

Phinneys Harbor watershed. As the summary sheet shows, this is still the case even with the potential 15,000 square foot expansion at the supermarket site.

Thank you for your attention to this matter and please let me know if you have any questions or need additional information.

Sincerely,

HORSLEY WITTEN GROUP, INC.

Mark E. Nelson, P.G.
Principal

Cc: Gisele Gauthier, Housing Assistance Corporation
Julie Creamer, Housing Investments Inc.

Table 1: Summary of Nitrogen Loading Offsets at Canal Bluffs

CANAL BLUFFS NITROGEN LOADING		Units	Comments
Buildout			
Number of Units	117		
Design Flow	23,316	gpd	
Actual Flow (measured or estimated)	10,936	gpd	Assumes 60 gpd/unit for apartments
Buildout Nitrogen Load	364	lbs N/yr	and 149 gpd/unit for townhouses
Shopping Center Offset	547	lbs N/yr	WWTP Connection Offset
Amount Over/Under Offset	(183)	lbs N/yr	
SHOPPING CENTER NITROGEN LOADING		**Units**	**Comments**
Baseline - Full Occupancy (2003-2004)			
Design Flow			
Actual Flow	4,437	gpd	From 2003-4 Meter Readings
Effluent Nitrogen Concentration	40.54	mg/L	
Nitrogen Load	547	lbs N/yr	
Current Vacancy Offset			
Actual Flow	210	gpd	
Current Nitrogen Load	15	lbs N/yr	
Offset From Current Vacancies	532	lbs N/yr	
Full Occupancy with Sewer Connection			
Actual Flow	4,437	gpd	
Nitrogen Load with Treatment to 10 mg/L	135	lbs N/yr	
Offset Provided	412	lbs N/yr	
Additional Supermarket Occupancy Possible Prior to Sewer Connection			
Actual Flow	2,600	gpd	
Nitrogen Load	180	lbs N/yr	
Remaining Offset	367	lbs N/yr	
Supermarket Expansion Potential Following Sewer Connection			
Full Occupancy Flow	4,437	gpd	
15,000 sq ft Expansion Flow	1,455	gpd	
Total Load	179	lbs N/yr	
Remaining Offset	368	lbs N/yr	

Nitrogen Loading Calculations
The Residences of Canal Bluffs, Bourne, MA
Predevelopment Conditions

INPUT FACTORS	
Number of Residential units	0
Wastewater Treatment Plant Design Flow	0
Treatment Plant N-conc. in effluent (mg/l)	10
Lawn area (square feet)	0
Landscaped area (square feet)	0
Pavement (square feet)	0
Road area (square feet)	0
Road runoff N-conc. (mg/L)[1]	1.5
Roof area (square feet)	18,900
Roof runoff N-conc. (mg/L)[1]	0.75
Total recharge area (acres)	17.16
Recharge rate for pervious area (in/yr)1	27.25
Recharge rate for impervious area (in/yr)1	40

[1] From Cape Cod Commission Nitrogen Loading Technical Bulletin 91-001

INPUT	CALCULATIONS	RESULTS
Sewage (gal/day)		CALCULATED LOADING (LBS/YR)
0	x N-conc (mg/l) x 3.785 l/gal x 365 days/yr ÷ 454000 mg/lb	0
Lawn area (sq ft)		
0	x 0.00075 lb N/sq ft (3 lbs/1000 ft^2 x 0.25)	0
Pavement area (sq ft)		
0	x 40 in/yr ÷ 12 x 7.48 gal/ft^3 x N-conc (mg/l) x 3.785 l/gal ÷ 454000 mg/lb	0
Roof area (sq ft)		
18,900	x 40 in/yr ÷ 12 x 7.48 gal/ft^3 x N-conc (mg/l) x 3.785 l/gal ÷ 454000 mg/lb	3
Natural Area		
728,590		7
	TOTAL NITROGEN LOADING (LBS/YR)	10

PREPARED BY HORSLEY WITTEN GROUP, INC.
November 16, 2010

Nitrogen Loading Calculations
The Residences of Canal Bluffs, Bourne, MA
Residential Buildout
Treatment Plant Discharge at 10 mg/l

INPUT FACTORS

Number of Residential units	73
Wastewater Treatment Plant Average Design Flow	10,936
Treatment Plant N-conc. in effluent (mg/l)	10
Lawn area (square feet)	50,000
Landscaped area (square feet)	0
Pavement (square feet)	103,000
Road area (square feet)	0
Road runoff N-conc. (mg/L)[1]	1.0
Roof area (square feet)	56,096
Roof runoff N-conc. (mg/L)[1]	0.75
Total recharge area (acres)	17.16
Recharge rate for pervious area (in/yr)1	27.25
Recharge rate for impervious area (in/yr)1	40

[1] From Cape Cod Commission Nitrogen Loading
Technical Bulletin 91-001

INPUT	CALCULATIONS	RESULTS
Sewage (gal/day)		CALCULATED LOADING (LBS/YR)
10,936		333
Lawn area (sq ft)		
50,000	1.08 lbs/5,000 sq ft	11
Pavement area (sq ft)		
103,000	x 40 in/yr ÷ 12 x 7.48 gal/ft^3 x N-conc (mg/l) x 3.785 l/gal ÷ 454000 mg/lb	21
Roof area (sq ft)		
56,096	x 40 in/yr ÷ 12 x 7.48 gal/ft^3 x N-conc (mg/l) x 3.785 l/gal ÷ 454000 mg/lb	9
	TOTAL NITROGEN LOADING (LBS/YR)	374
	OFFSET REQUIRED	364

PREPARED BY HORSLEY WITTEN GROUP, INC.
November 16, 2010

Nitrogen Loading Calculations
Bourne Shopping Center, Bourne, MA
Septic System Discharge at 40.54 mg/l
Full Occupancy of Site Without Treatment

INPUT FACTORS

Number of Commercial units	1	
Septic System Title 5 Design Flow	4,437	Average of 2003 and 2004 Water Use
Treatment Plant N-conc. in effluent (mg/l)	40.54	
Lawn area (square feet)	0	
Landscaped area (square feet)	0	
Pavement (square feet)	0	
New road area (square feet)	0	
Road runoffN-conc. (mg/L)[1]	0.0	
Roof area (square feet)	0	
Roof runoff N-conc. (mg/L)[1]	0.00	
Total recharge area (acres)	0	
Recharge rate for pervious area (in/yr)1	0	
Recharge rate for impervious area (in/yr)1	0	

[1] From Cape Cod Commission Nitrogen Loading
Technical Bulletin 91-001

INPUT	CALCULATIONS	RESULTS
Sewage (gal/day)		CALCULATED LOADING (LBS/YR)
4,437	x N-conc (mg/l) x 3.785 l/gal x 365 days/yr ÷ 454000 mg/lb	547
Lawn area (sq ft)		
0	x 0.00075 lb N/sq ft (3 lbs/1000 ft^2 x 0.25)	0
Pavement area (sq ft)		
0	x 40 in/yr ÷ 12 x 7.48 gal/ft^3 x N-conc (mg/l) x 3.785 l/gal ÷ 454000 mg/lb	0
Roof area (sq ft)		
0	x 40 in/yr ÷ 12 x 7.48 gal/ft^3 x N-conc (mg/l) x 3.785 l/gal ÷ 454000 mg/lb	0
	TOTAL NITROGEN LOADING (LBS/YR)	547

PREPARED BY HORSLEY WITTEN GROUP, INC.
November 16, 2010

Nitrogen Loading Calculations
Bourne Shopping Center, Bourne, MA
Treatment Plant Discharge at 10 mg/l
Full Occupancy of Buildings

INPUT FACTORS

Number of Residential units	1
Wastewater Treatment Plant Design Flow	4,437
Treatment Plant N-conc. in effluent (mg/l)	10
Lawn area (square feet)	0
Landscaped area (square feet)	0
Pavement (square feet)	0
Road area (square feet)	0
Road runoff N-conc. (mg/L)[1]	0.0
Roof area (square feet)	0
Roof runoff N-conc. (mg/L)[1]	0.00
Total recharge area (acres)	0
Recharge rate for pervious area (in/yr)[1]	0
Recharge rate for impervious area (in/yr)[1]	0

[1] From Cape Cod Commission Nitrogen Loading Technical Bulletin 91-001

INPUT	CALCULATIONS	RESULTS
Sewage (gal/day)		CALCULATED LOADING (LBS/YR)
4,437	x N-conc (mg/l) x 3.785 l/gal x 365 days/yr ÷ 454000 mg/lb	135
Lawn area (sq ft)		
0	x 0.00075 lb N/sq ft (3 lbs./1000 ft^2 x 0.25)	0
Pavement area (sq ft)		
0	x 40 in/yr ÷ 12 x 7.48 gal/ft^3 x N-conc (mg/l) x 3.785 l/gal ÷ 454000 mg/lb	0
Roof area (sq ft)		
0	x 40 in/yr ÷ 12 x 7.48 gal/ft^3 x N-conc (mg/l) x 3.785 l/gal ÷ 454000 mg/lb	0
	TOTAL NITROGEN LOADING (LBS/YR)	135
	NITROGEN OFFSET PROVIDED	412

PREPARED BY HORSLEY WITTEN GROUP, INC.
November 16, 2010

Nitrogen Loading Calculations
Bourne Shopping Center, Bourne, MA
Treatment Plant Discharge at 35 mg/l
Offset Provided by Building Vacancy

INPUT FACTORS

Number of Commercial units	1	
Septic System Title 5 Design Flow	210	2010 Water Use
Treatment Plant N-conc. in effluent (mg/l)	23.63	
Lawn area (square feet)	0	
Landscaped area (square feet)	0	
Pavement (square feet)	0	
New road area (square feet)	0	
Road runoff N-conc. (mg/L)[1]	0.0	
Roof area (square feet)	0	
Roof runoff N-conc. (mg/L)[1]	0.00	
Total recharge area (acres)	0	
Recharge rate for pervious area (in/yr)l	0	
Recharge rate for impervious area (in/yr)l	0	

[1] From Cape Cod Commission Nitrogen Loading Technical Bulletin 91-001

INPUT	CALCULATIONS	RESULTS
Sewage (gal/day)		CALCULATED LOADING (LBS/YR)
210	x N-conc (mg/l) x 3.785 l/gal x 365 days/yr ÷ 454000 mg/lb	15
Lawn area (sq ft)		
0	x 0.00075 lb N/sq ft (3 lbs./1000 ft^2 x 0.25)	0
Pavement area (sq ft)		
0	x 40 in/yr ÷ 12 x 7.48 gal/ft^3 x N-conc (mg/l) x 3.785 l/gal ÷ 454000 mg/lb	0
Roof area (sq ft)		
0	x 40 in/yr ÷ 12 x 7.48 gal/ft^3 x N-conc (mg/l) x 3.785 l/gal ÷ 454000 mg/lb	0
	TOTAL NITROGEN LOADING (LBS/YR)	15
	NITROGEN OFFSET PROVIDED	532

PREPARED BY HORSLEY WITTEN GROUP, INC.
November 16, 2010

Nitrogen Loading Calculations
Bourne Shopping Center, Bourne, MA
Septic System Effluent at 23.62 mg/l
Additional Occupancy Prior to Sewer Connection

INPUT FACTORS	
Number of Commercial units	1
Septic System Title 5 Design Flow	2,500
Treatment Plant N-conc. in effluent (mg/l)	23.63
Lawn area (square feet)	0
Landscaped area (square feet)	0
Pavement (square feet)	0
New road area (square feet)	0
Road runoffN-conc. (mg/L)[1]	0.0
Roof area (square feet)	0
Roof runoff N-conc. (mg/L)[1]	0.00
Total recharge area (acres)	0
Recharge rate for pervious	0
Recharge rate for impervious area (in/yr)1	0

[1] From Cape Cod Commission Nitrogen Loading Technical Bulletin 91-001

INPUT	CALCULATIONS	RESULTS
Sewage (gal/day)		CALCULATED LOADING (LBS/YR)
2,500	x N-conc (mg/l) x 3.785 l/gal x 365 days/yr ÷ 454000 mg/lb	180
Lawn area (sq ft)		
0	x 0.00075 lb N/sq ft (3 lbs/1000 ft^2 x 0.25)	0
Pavement area (sq ft)		
0	x 40 in/yr ÷ 12 x 7.48 gal/ft^3 x N-conc (mg/l) x 3.785 l/gal ÷ 454000 mg/lb	0
Roof area (sq ft)		
0	x 40 in/yr ÷ 12 x 7.48 gal/ft^3 x N-conc (mg/l) x 3.785 l/gal ÷ 454000 mg/lb	0
	TOTAL NITROGEN LOADING (LBS/YR)	180
	NITROGEN OFFSET PROVIDED	367

572

PREPARED BY HORSLEY WITTEN GROUP, INC.
November 16, 2010

Nitrogen Loading Calculations
Bourne Shopping Center, Bourne, MA
Treatment Plant Discharge at 10 mg/l
Expansion of Site by 15,000 sq. ft.

INPUT FACTORS		
Number of Residential units	1	
Wastewater Treatment Plant Design Flow	5,892	4,437 gpd (full occupancy water use) plus 1,455 gpd for 15,000 sq ft expansion
Treatment Plant N-conc. in effluent (mg/l)	10	
Lawn area (square feet)	0	
Landscaped area (square feet)	0	
Pavement (square feet)	0	
Road area (square feet)	0	
Road runoff N-conc. (mg/L)[1]	0.0	
Roof area (square feet)	0	
Roof runoff N-conc. (mg/L)[1]	0.00	
Total recharge area (acres)	0	
Recharge rate for pervious area (in/yr)1	0	
Recharge rate for impervious area (in/yr)1	0	

[1] From Cape Cod Commission Nitrogen Loading Technical Bulletin 91-001

INPUT	CALCULATIONS	RESULTS
Sewage (gal/day)		CALCULATED LOADING (LBS/YR)
5,892	x N-conc (mg/l) x 3.785 l/gal x 365 days/yr ÷ 454000 mg/lb	179
Lawn area (sq ft)		
0	x 0.00075 lb N/sq ft (3 lbs./1000 ft^2 x 0.25)	0
Pavement area (sq ft)		
0	x 40 in/yr ÷ 12 x 7.48 gal/ft^3 x N-conc (mg/l) x 3.785 l/gal ÷ 454000 mg/lb	0
Roof area (sq ft)		
0	x 40 in/yr ÷ 12 x 7.48 gal/ft^3 x N-conc (mg/l) x 3.785 l/gal ÷ 454000 mg/lb	0
	TOTAL NITROGEN LOADING (LBS/YR)	179
	NITROGEN OFFSET PROVIDED	368

PREPARED BY HORSLEY WITTEN GROUP, INC.
November 16, 2010

Summary of Existing Influent Data for Comparable Supermarket Complexes
Canal Bluffs, Bourne, Massachusetts

SANDWICH STOP & SHOP PLAZA
Stop & Shop Supermarket with restaurant and a variety of retail stores

DATE	NITRITE		NITRATE		TKN		TOTAL N	
	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
01/26/09	0.025	0.14	0.01	0.01	68.3	7.14	68.34	7.29
2/19/2009	<0.05	<0.05	<0.02	<0.02	45.1	10.4	45.1	10.4
3/11/2009	<0.05	1.04	<0.02	<0.02	50.4	7.7	50.4	8.74
4/14/2009	<0.05	1.13	<0.02	0.695	58.8	5.74	58.8	7.57
5/15/2009	0.16	<0.05	<0.02	<0.02	69.7	4.48	69.86	4.48
6/29/2009	<0.05	0.32	<0.02	0.22	61	12.5	61	13.00
7/22/2009	<0.05	1.16	<0.02	<0.02	72	5.88	72	7.04
8/24/2009	<0.05	1.92	<0.02	0.205	68.3	6.02	68.3	8.15
9/16/2009	<0.05	3.22	<0.02	0.26	73.4	7	73.4	10.48
10/21/2009	<0.05	3.1	<0.02	0.28	71.7	4.76	71.7	8.14
11/17/2009	<0.05	6.44	<0.02	0.2	65.8	4.9	65.8	11.54
12/16/2009	0.2	4.38	<0.02	0.33	63.3	7	63.5	11.71

Averange Total Nitrogen 64.02

YARMOUTH SHAW'S SUPERMARKET
Stand alone supermarket

DATE	NITRITE		NITRATE		TKN		TOTAL N	
	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
Limit >								
1/24/2008	<0.06	<0.06	<0.05	<0.05	37.0	11.0	37.00	11.00
2/821/08	<0.02	<0.02	<0.05	<0.05	28.3	7.6	28.30	7.60
3/28/2008	<0.02	<0.02	<0.05	<0.05	27.4	5.70	27.40	5.70
4/24/2008	<0.02	0.4	<0.05	4.55	35	5.9	35.00	10.85
5/29/2008	<0.02	<0.02	<0.05	<0.05	31.1	4.2	31.10	4.20
6/26/2008	0.03	0.03	<0.02	0.02	44	7.8	44.03	7.85
7/24/2008	<0.02	<0.02	<0.05	2.67	34.7	2.9	34.70	5.57
8/28/2008	<0.02	<0.02	<0.05	1.74	33	2	33.00	3.74
9/23/2008	NT	0.07	NT	0.46	36	3.9	36.00	4.43
10/23/2008	0.07	0.03	<0.02	0.04	47	3.3	47.07	3.37
11/25/2008	<0.02	<0.02	1.23	7.39	272	10.8	273.23	18.19
12/17/2008	<0.02	<0.02	<0.05	0.14	29.4	4.06	29.40	4.20

After 2008 sampling was reduced to effluent total nitrogen only
Averange Total Nitrogen (outlier removed) 34.82

HARWICH SHAW'S SUPERMARKET
Stand alone Shaw's Supermarket

DATE	NITRITE		NITRATE		TKN		TOTAL N	
	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
Limit>				15				15
1/27/2009	0.19	<0.01	0.59	0.02	63.0	2.7	63.40	2.72
2/18/2009	<0.01	<0.01	0.05	1.4	50.0	3.3	50.05	4.70
3/18/2009	<0.01	0.12	0.04	7.7	56	2.5	56.04	10.32
4/2/2009	<0.01	0.39	<0.01	0.77	39	1.7	39.00	2.86
5/12/2009	<0.01	<0.01	0.04	0.14	42	2.6	42.04	2.74
6/16/2009	<0.01	<0.01	<0.01	2.5	54	2.9	54.00	5.40
7/29/2009	<0.01	<0.01	0.04	0.15	75	24	75.04	24.15
8/21/2009	<0.01	<0.01	<0.01	2	49	5.5	49.00	7.50
9/29/2009	<0.01	0.39	<0.01	0.23	48	2.6	48.00	3.22
10/20/2009	<0.01	<0.01	0.04	0.19	72	5.9	72.04	6.09
11/18/2009	<0.01	<0.01	0.17	3.3	54	1.9	54.17	5.20
12/2/2009	<0.01	<0.01	0.41	4.5	35	2.1	35.41	6.60

Averange Total Nitrogen 53.18

Average of Three Sites 50.67
80% of Average to reflect septic system discharge to GW 40.54

MERU Series

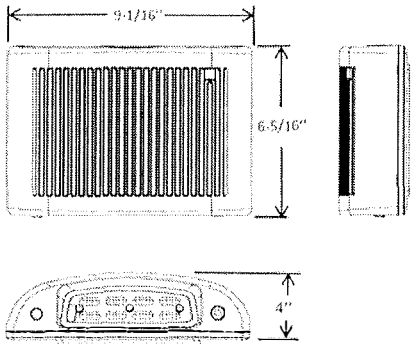
LED GENERAL & EMERGENCY LIGHTING

PROJECT:
FIXTURE TYPE:
LOCATION:
CONTACT/PHONE:

PRODUCT DESCRIPTION

The MERU Series is an architectural, low-profile outdoor light, offering "normally On" AC and emergency lighting with powerful LED illumination. The housing is fully sealed and gasketed, and has an IP65 rating. Designed for wall mounting with universal K/O pattern in back-plate for easy installation to most standard size junction boxes. Includes a single ½" NPT conduit entry in the top, center of the housing. Illumination provided by 8 high power LEDs which achieve 1,600 lumens in AC and 600 lumens in emergency. LED color at 4000K.





PRODUCT SPECIFICATIONS

CONSTRUCTION

Die cast aluminum housing with superior heat sink • Scratch resistant Polyester powder coat finish • UV resistant polycarbonate lens • Snap-fit housing and mounting plate are held together by four stainless steel clips • Universal mounting pattern molded into the back plate • 1/2" threaded top access for surface conduit installation • Silicone rubber seal with hollow center, shape adaptive design protects the electrical components • Junction box neoprene seal is attached to the back plate for a weather proof installation • Dark Bronze or White textured finish.

ELECTRICAL

Dual voltage 120/277VAC 60Hz input • Solid state charging and switching • Battery low voltage disconnect • AC power indicator and test switch at the bottom of the unit • Standard with Self Diagnostics to monitor proper operation.

LAMPS

Supplied with eight (8) LG SMD 4000K LED'S • L70 > 72,000hours • 17 Watts total (32 Watts with IH option) • 1600 Lumens in AC mode, 600 Lumens in Emergency mode • Full cut-off optics for Dark Sky compliance

BATTERY

Maintenance-free, long-life rechargeable NiCad battery will operate fixture for a minimum of 90 minutes in the event of a power outage • 24 hour recharge after 90 minute discharge.

CODE COMPLIANCE

UL924 • Listed for wet location applications (0°C-50°C) • Optional "IH" cold weather package for (-40°C-50°C) • IP65 Rated • NFPA 101 Life Safety Code compliant • NEC and OSHA compliant • DLC Listed • RoHS Compliant

WARRANTY

5-year warranty. Product specifications subject to change without notice.

ACEM Model (NiCad Battery Backup)

Integral photocell: Unit operates as a dusk to dawn luminaire and in the event of a power failure as an emergency light.
Remote Switched: The integral photocell can be defeated to allow remote switching for normal operation. In the event of a power failure unit operates as an emergency light.

INSTALLATION

MOUNTING

Suitable for indoor or outdoor wall mounting on junction box, or with surface conduit using the supplied 1/2" threaded top access • Mounting plate has molded universal mounting pattern for simple mounting over junction box.

ORDERING INFORMATION

model	operation mode	housing color	options
MERU-LED	ACEM = General & Emergency Lighting	DB = Dark Bronze	*Self-Diagnostics & Photocell (Included Standard)*
	AC = General Lighting	WH = White	IH = Internal Heater
		BK = Black	PIR = Passive Infra-Red Motion Sensor
Ordering Example: MERU-ACEM-DB		NK = Nickel	

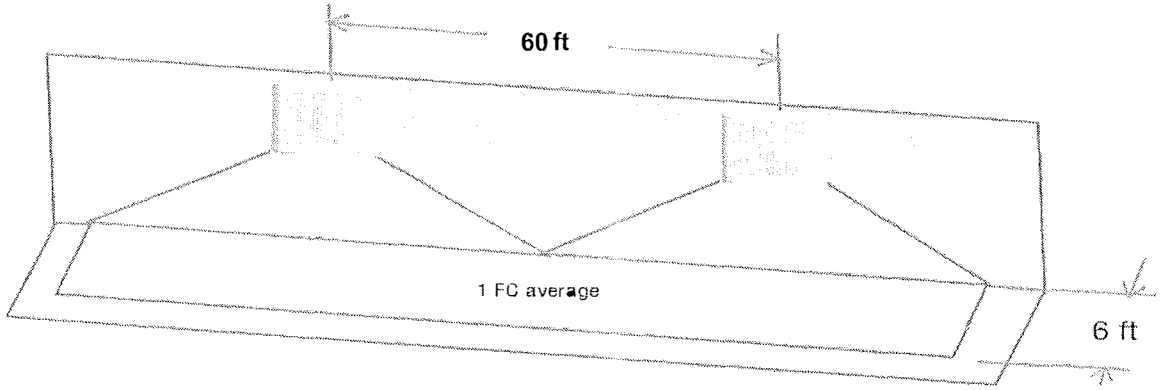
Mule Lighting, Inc. 46 Baker Street Providence, RI 02905 800 556-7690 P 401 941-2929 F www.mulelighting.com

MERU Series

LED GENERAL & EMERGENCY LIGHTING

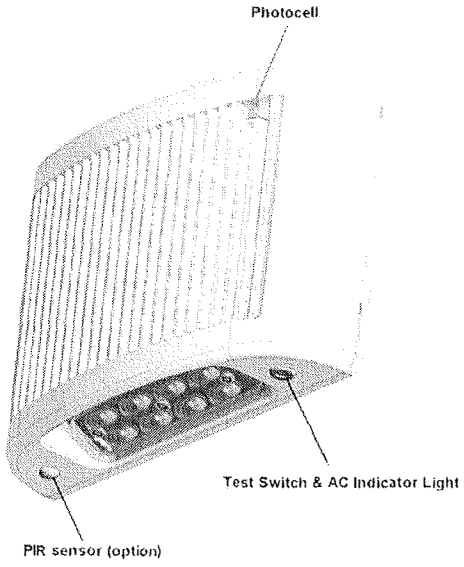
PROJECT:
FIXTURE TYPE:
LOCATION:
CONTACT/PHONE:

PHOTOMETRICS



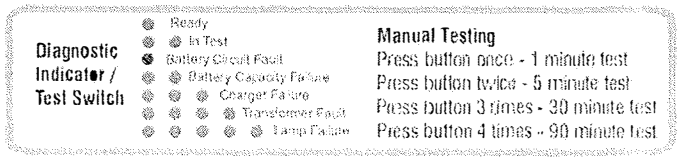
Note: Meets Life Safety Code standard minimum illuminance of 0.1 FC and average illuminance of 1.0 FC.
Illustration shown is a guideline for corridor center-to-center with 9 ft mounting height and Minimum 80-50-20 reflectance values.

Mounting Height	Center to center distance
7.2ft	45ft
9ft	60ft
10ft	65ft



SELF DIAGNOSTICS

Included Self Diagnostic



Full self-test, self-diagnostic system is standard in every unit, performs a monthly test as well as continuously monitoring all functions to ensure reliability, a manual test may be initiated at any time.

CLAY POND
ACQUISITIONS
LLC
670 N. COMMERCIAL ST.
MANCHESTER, NH 03101
P: 603.622.6223
F: 603.622.7342

MONUMENT BEACH MARKETPLACE

170 CLAY POND ROAD BOURNE, MA

THESE DRAWINGS ARE IN DESIGN DEVELOPMENT. THEY ARE PROGRESS DRAWINGS. THEY ARE NOT INTENDED TO BE CONSTRUCTION DOCUMENTS AND SHOULD NOT BE USED FOR CONSTRUCTION.

NO.	DESCRIPTION	DATE

PHOTOMETRIC SITE PLAN

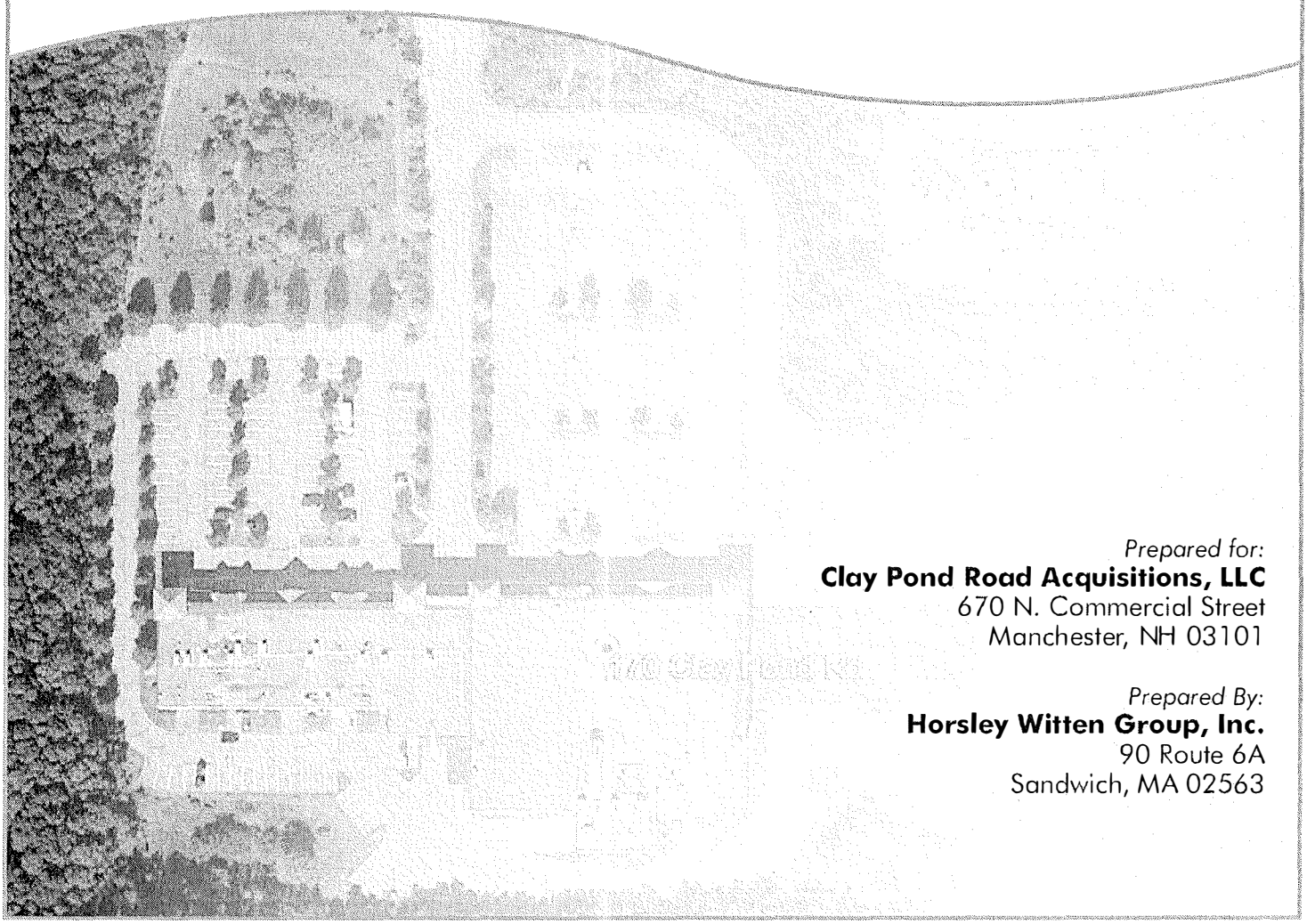
ISSUED FOR:	
DATE:	11/8/18
PROJECT NUMBER:	
APPROVED:	
AUTHOR:	

Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A, Unit 1 • Sandwich, MA • 02563
Phone - 508-833-6600 • Fax - 508-833-3150 • www.horsleywitten.com

Landscape and Stormwater Maintenance Guide

True Storage
170 Clay Pond Road

March 2019



Prepared for:
Clay Pond Road Acquisitions, LLC
670 N. Commercial Street
Manchester, NH 03101

Prepared By:
Horsley Witten Group, Inc.
90 Route 6A
Sandwich, MA 02563

Landscape and Stormwater Management
Maintenance Guide
True Storage
Clay Pond Road Acquisitions, LLC

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FIGURES

Figure 1 – Stormwater Management Area Locations 2

APPENDICES

Appendix A: Enhanced Tree Trench Maintenance Checklist

Appendix B: Infiltration Basin Checklist

Appendix C: Planting Plans

Landscape and Stormwater Management
Maintenance Guide
True Storage Self Storage Units

1.0 INTRODUCTION

This Guide provides a general description of the function and maintenance requirements for the Landscape and Stormwater Management Improvements for the True Storage Self Storage facilities located at 170 Clay Pond Cove.

The maintenance provider is required to familiarize themselves with this Guide and inspect and maintain the following practices (Figure 1) as outlined in this maintenance guide throughout the year.

- Enhanced Tree Trench -
  - Runoff from the parking lot is collected in the existing catch basin and directed to a diversion manhole structure, which is designed to divert runoff to the enhanced tree trench. A weir wall is set a specific elevation to divert runoff from small storms and allow larger storms to overflow into the existing drainage system. The diverted water is discharged to a perforated pipe embedded in gravel storage bed located beneath the trees. The stormwater infiltrates or filters through the gravel/soil matrix to remove phosphorus and reduce stormwater runoff prior to discharge to the storm drain system.
- Infiltration Basins
  - A green roof is provided on the small storage shed in the medicinal garden area. Stormwater runoff from the roof is collected and filtered through a planted soil on the roof. The roof is sloped to allow the filtered runoff drains to drain to the downspout. Overflow runoff from the roof is capture in a barrel cistern, which can be used to watering plants in the garden.

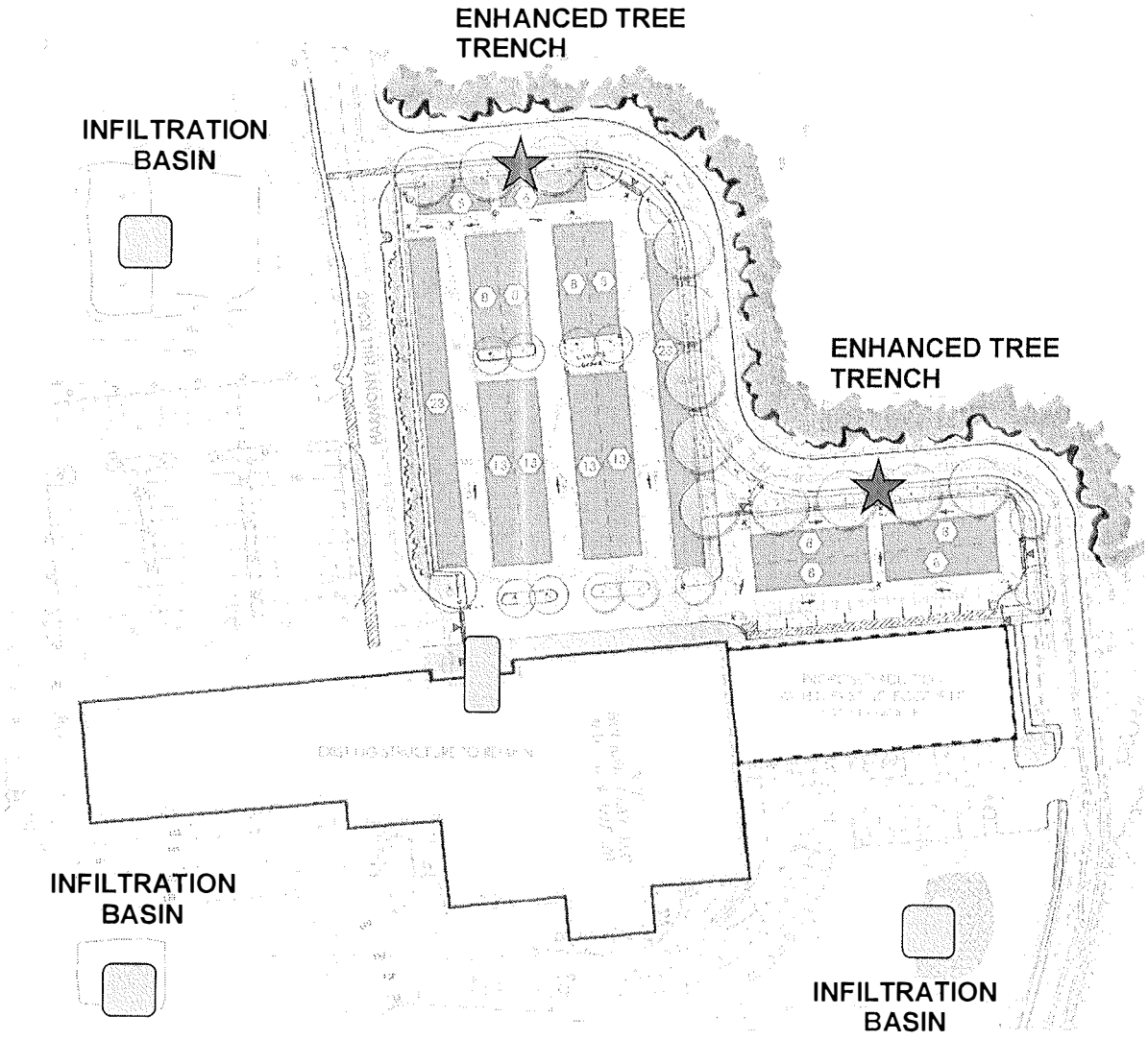


Figure 1 – Stormwater Locations

2.0 RESPONSIBILITY FOR MAINTENANCE

Owner: Clay Pond Road Acquisitions, LLC (CPRA)

Contact:
Name:
Email:
Ph:

CPRA is responsible for the continuous operation and maintenance of the stormwater BMPs and associated landscape areas for the facilities located at 170 Clay Pond Road in Bourne, MA.

3.0 STORMWATER FUNCTION & MAINTENANCE

This section provides a general description and the function and maintenance requirements for Green Stormwater Infrastructure (GSI) stormwater management system at the site. The areas to be maintained by the include the following as shown in Figure 1.

STORMWATER AREAS

- Enhanced Tree Trench
- Infiltration Basins
- Associated Catch Basins, Manholes and Drainage Pipes

How Does Green Infrastructure Work?

Green Stormwater Infrastructure (GSI) practices are incorporated into the overall site improvements and landscape. GSI is nature-based approach to stormwater treatment and management. These stormwater practices or "treatment areas" are designed to mimic nature and use the natural filtration properties of soil and plants to remove pollutants from stormwater runoff prior to discharging to the City owned municipal drainage system. GI relies on the following four basic steps to function properly. These four steps will be referenced throughout this Guide.



1. "Collect" the water
2. "Capture" sediment and debris
3. "Move & Filter" to clean the water
4. "Overflow" for larger storms

If one of these steps does not function properly, the entire system can be compromised and the area itself could be contributing to maintenance problems. This can lead to a landscape nuisances, more frequent maintenance and costly repairs/improvement.

What is required for Maintenance?

As these are nature-based systems that often rely on plant upkeep, the maintenance for GI typically falls under landscape and general site maintenance services. The regularly scheduled maintenance, as outlined in this guide, is critical to ensure proper function, maintain infiltration rates and storage capacity and preserve the pollutant removal capabilities as well as the visual integrity. Regularly scheduled maintenance can prevent deficiencies in the effectiveness of the systems, due to sediment build-up, damage, or deterioration.

General landscape and stormwater maintenance include the following:

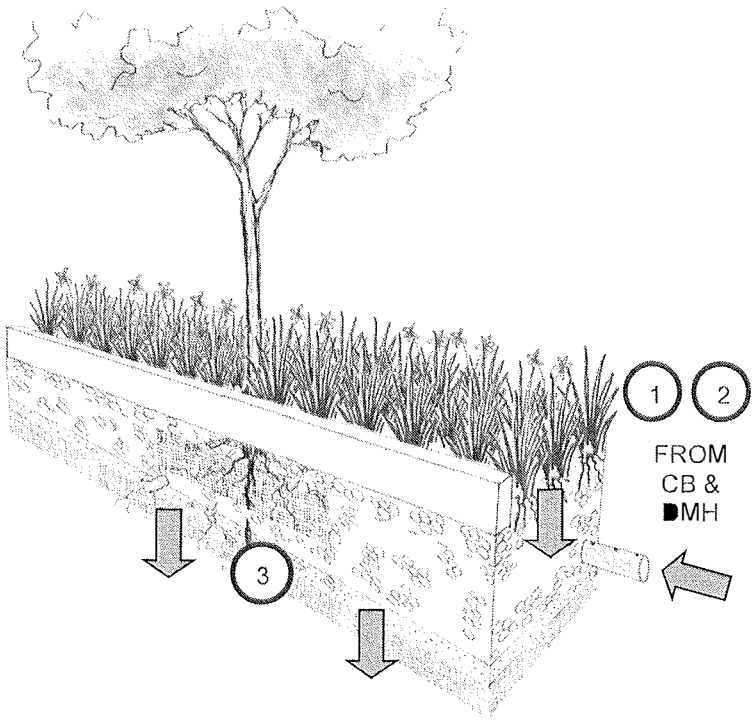
- Maintaining the drainage function and pollutant removal capacity of the systems
- Maintaining healthy native, tress, plants and vegetative ground cover as well as the removal of unwanted weeds.

This section describes the function and maintenance for each practice. Included in the appendices is a specific maintenance checklist for each area along with a plan showing the location of the items to be inspected and maintained.

It is recommended that all practices be inspected quarterly or at a minimum twice per year (Early Spring and Late Fall).

- Early Spring: during spring cleanup
- Late Spring : when plants are in bloom
- End of Summer: prior to the start of school)
- Late Fall: after the leaves have fallen
- After major storm events: 2" of rain or greater

3.1 Enhanced Tree Trench



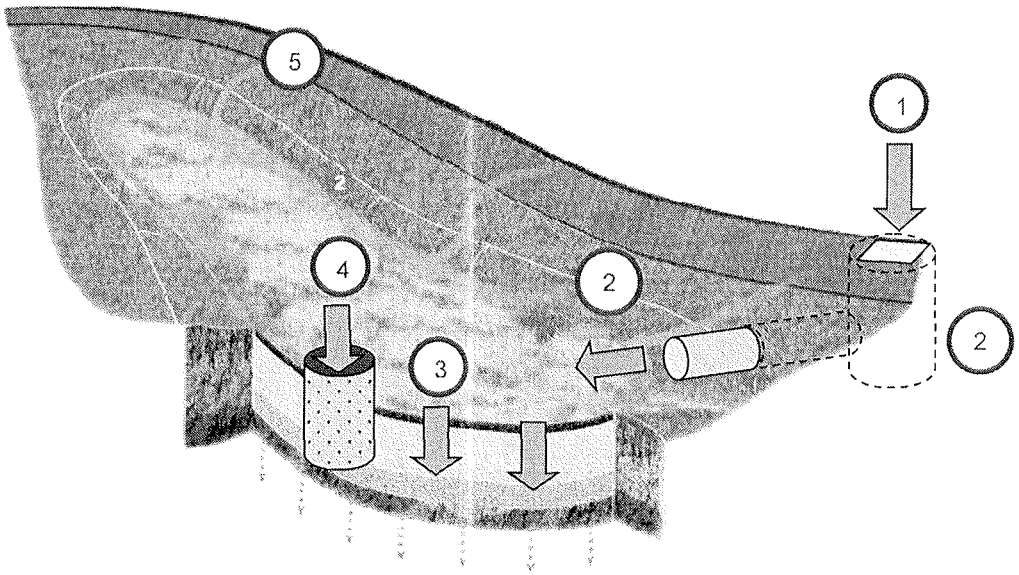
FUNCTION:

1. COLLECT – Catch Basin (parking lot)
   Stormwater runoff is collected from the paved parking surface via overland flow through the existing catch basins.
2. CAPTURE–Catch Basin and Drain Basin.

   Stormwater is directed from the catch basin to the drain basin through a 12" HDPE pipe . The catch basin capture sediment and debris in the sump prior to discharge to the tree trench and the Drain Basin diverts the "first flush" to the Enhanced Tree Trench.
3. MOVE & FILTER – Gravel and Subsoil
   Runoff if is infiltrated into the sub soils through the perforated pipe set in the gravel/soil bed within the tree trench.
4. OVERFLOW – Pipes
   When the capacity of the gravel/soil storage bed is exceeded the drain basin will direct the overflow runoff to the existing drainage system.
5. SURROUNDING AREA – Parking Lots and Paved Area
   Problems such as unstabilized soils, erosion, and over sanding during the winter can contribute to long-term maintenance problems. See Section 4.0

   See Appendix A for Maintenance Checklist

3.2 Infiltration Basin



FUNCTION:

1. COLLECT – Catch Basins (parking lot)
   Stormwater runoff is collected from the paved parking surface via overland flow through the existing catch basins.
2. CAPTURE–Outlet Pipe
   Stormwater is directed from the catch basin to the outlet pipe. The catch basin capture sediment and debris in the sump prior to discharge to the infiltration basin.
3. MOVE & FILTER – Topsoil and Subsoil
   Runoff if is infiltrated into the sub soils through the topsoil/gravel bottom.
4. OVERFLOW – Recharge Basins
   When the water level of the infiltration basin rises, overflow is discharged into the recharge basins to increase the storage and infiltration capacity. The Recharge basins also allow for drawdown during the winter months when the ground surface may be frozen.
5. SURROUNDING AREA – Parking Lots and side slopes
   Problems such as unstabilized soils, erosion, and over sanding during the winter can contribute to long-term maintenance problems. See Section 4.0

See Appendix A for Maintenance Checklist

4.0 LANDSCAPE FUNCTION & MAINTENANCE

By design, plants and trees in the enhanced tree trench and infiltration basin as well as the general landscape are selected help filter the stormwater as it passes through the soil and provide water to flourish throughout the growing season. The plants and grass within the stormwater management areas do not require regular fertilizing, watering and/or mowing. Remove and replace vegetation as necessary, using the appropriate species as shown on the Planting Plans, see Appendix C.

The additional landscape/vegetated areas beyond stormwater management include the following.

COMMON LANDSCAPE AREAS

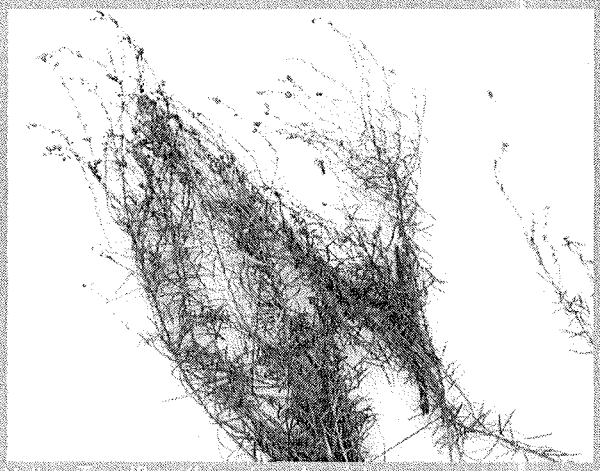
- Mowed Lawn
- Low Mow Lawn
- Street Trees and Screening
- Undisturbed Vegetated Buffers

Plants			
Task	**Frequency**	**Requirement**	**Time of Year**
Plant Cutting & Pruning	Annually	• Leave dry standing stalks during the dormant months and remove in the spring. • Cut back grasses, sedges, and rushes in the spring. • Prune trees to remove deadwood and low hanging branches.	• Early Spring
Plant Thinning	Once every 3 years	• Separation of herbaceous vegetation rootstock should occur when over-crowding is observed	• Early Spring or Late Fall
Plant Replacement	As required	• Replace/replant diseases, unhealthy or dead plans to maintain a healthy plant community	• Early Spring or Fall
Watering	First three months after planting or drought	• During establishment or drought conditions, plants should be watered a minimum of once every seven to ten days.	• June-Sept.
Mowing	NOT REQUIRED	• NONE	• NA
Fertilizing	NOT REQUIRED	• NONE	• NA
Mulch	NOT REQUIRED	• NONE	• NA

To reduce the level of effort, regular weeding should occur quarterly from April thru October.

Weeds			
Task	**Frequency**	**Requirement**	**Time of Year**
Weeding	Quarterly	• Weeding should be limited to invasive and exotic species, which can overwhelm the desired plant community. • Non-chemical methods including hand pulling and hoeing are recommended • Chemical herbicides should be avoided.	• Early Spring • Late Spring • Late Summer • Late Fall

4.1 Weed Guide



Yellow Toadflax *(Linaris vulgaris)*



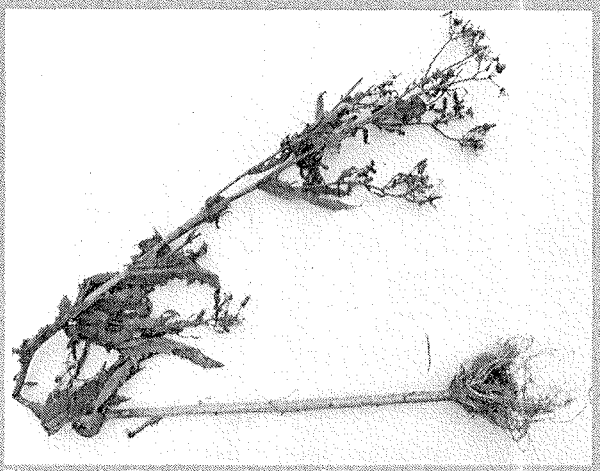
Redroot Pigweed *(Amaranthus retroflexus)*



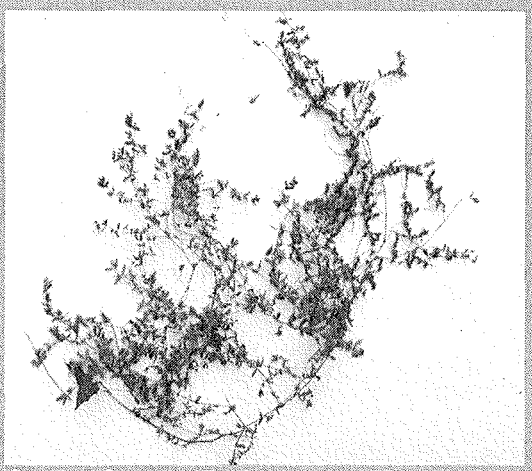
Smartweed *(Polygonum lapathifolium)*



Dandelion *(Taraxacum officinale)*



Fireweed *(Erechtites hieraciifolia)*



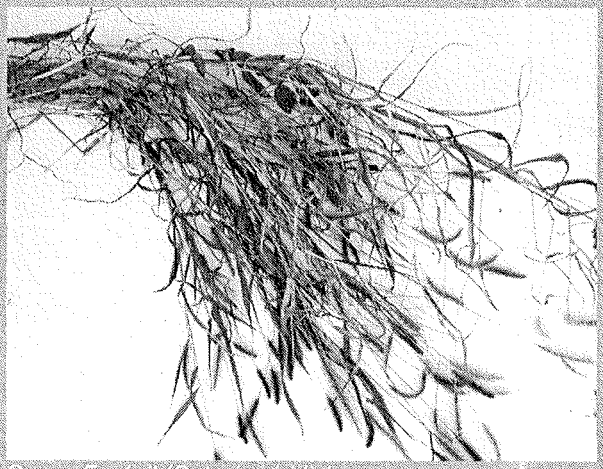
Spotted Spurge *(Euphorbia maculata)*



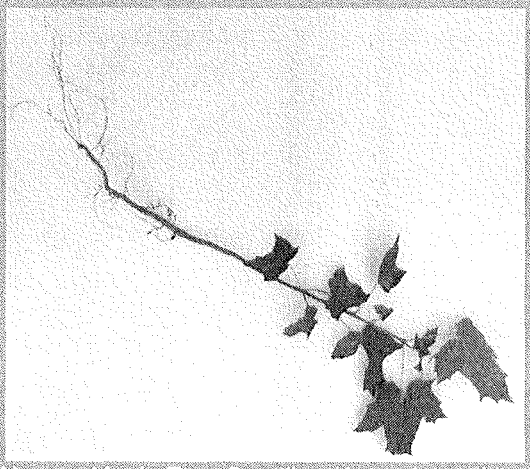
Catalpa Tree Seedling (Catalpa speciosa)



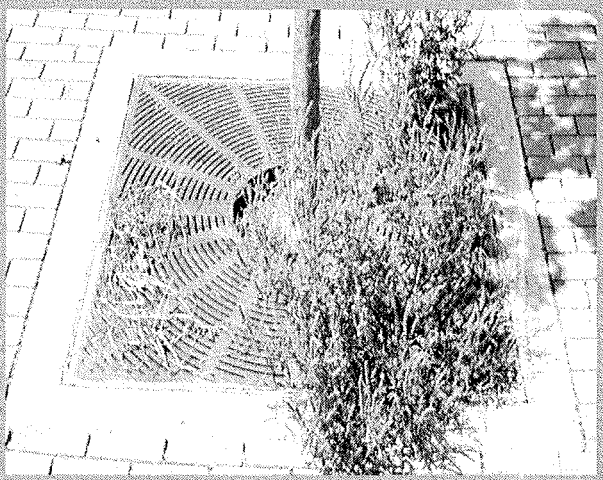
Crabgrass (*Digitaria ischaemum*)



Green Foxtail (*Setaria viridis*)



Norway Maple Tree Seedling (Acer platanoides)



Ragweed (*Ambrosia artemisiifolia*)



Japanese Knotweed (Polygonum cuspidatum)

4.2 Lawn Areas

Landscape maintenance of mowed lawn areas includes the following:

SEED

Loam and reseed bare spots with the specified seed mix as shown on the Construction Plan and seed mix in Appendix A & B.

MOWING

Mow once a week with a mulching mower or every other week during summer months. DO NOT bag grass clippings and dispose on site. Maintain a cutting height of 2 ½" to 3 ½". Leave the grass taller during hot, summer months, and cut shorter during cooler periods of the growing season.
Trim edges when necessary.

FERTILIZING

Soils samples should be sent to a soil-testing lab (UMass) or tested on site with a store bought kit each spring to identify soil deficiencies. To achieve a "greener" lawn, first check pH and apply lime, as necessary, during the spring and fall to raise the pH. Once nutrient levels are determined, use an organic fertilizer at the beginning of spring at the recommended application rate based upon the soil analysis.

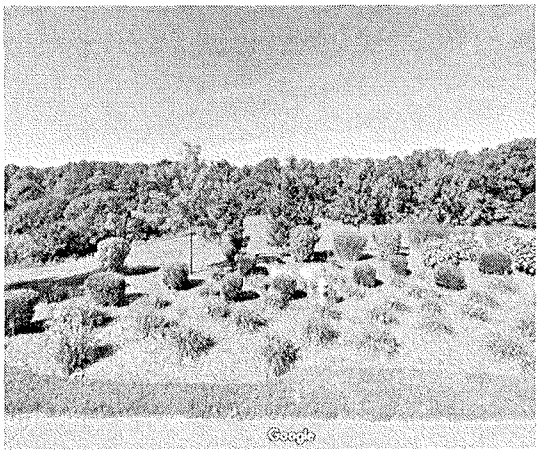
WEEDING

Weeding should be limited to invasive and exotic species. Non-chemical methods (hand pulling and hoeing) are preferable; chemical herbicides should be avoided

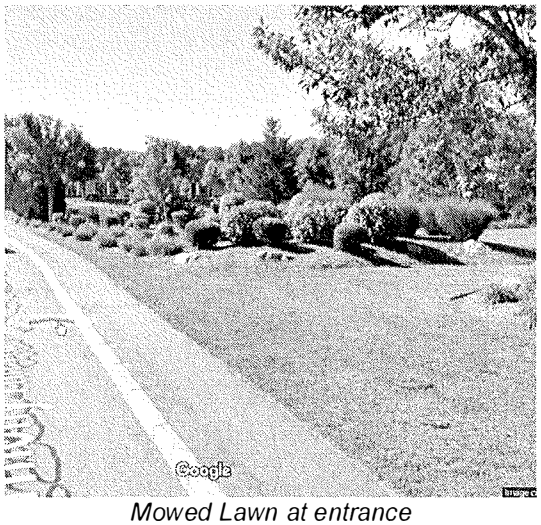
Properly remove and dispose off-site all invasive species as to prevent colonization elsewhere, this includes disposal on land beyond the project area.

DEBRIS & TRASH

Remove and properly dispose litter from all lawn areas prior to mowing.



Mowed Lawn at Entrance



Mowed Lawn at entrance



Mowed Laws - Islands

4.3 Low Mow Grass

Landscape maintenance of low mow grass areas includes the following:

SEED

Loam and reseed bare spots with the specified low mow seed mix as shown on the Construction Plan and seed mix in Appendix A & B.



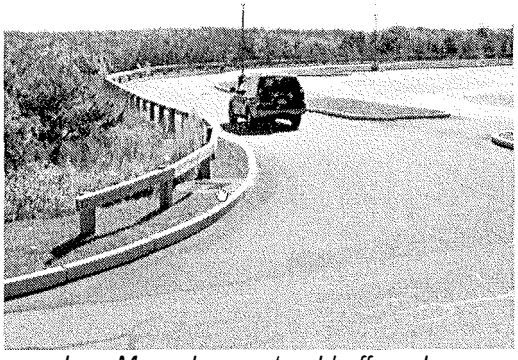
Low Mow at Infiltration Basins

MOWING

Recommend a minimum of two times per year in early spring and fall. Allow low mow lawn areas to grow up to 12"-36" as to maintain a meadow appearance. Low mow grass areas should be mowed no more than 4 times per growing season, 2 times is preferred. Do NOT cut area lower than 4". Depending on height of grass and the time of year, grass cuttings/stalks may need to be raked and removed from site.

WATERING

Allowing the low mow lawn areas to "brown" is desired. Water only during drought conditions or during reseeding establishment period.



Low Mow along natural buffer edge

FERTILIZING

Proper grass seed selection during establishment of vegetation should eliminate the need for fertilizers and pesticides. If fertilization is suspected to be needed, soil samples should sent to a soil-testing lab (UMass) or tested on site with a store bought kit to identify soil deficiencies. Once pH levels are determined, use an organic fertilizer at the beginning of spring at the appropriate application rate prescribed by the soil analysis.

WEEDING

Weeding should be limited to invasive and exotic species. Non-chemical methods (hand pulling and hoeing) are preferable; chemical herbicides should be avoided.

MONITORING

Walk the low mow grass areas monthly without the intent to mow, but to look for invasive species, bare spots and identify potential pest or disease problems. Properly remove and dispose all invasive species as to prevent colonization elsewhere, this includes disposal on land beyond the project area.

DEBRIS & TRASH

Remove and properly dispose litter from all low mow grass areas prior to mowing.

4.4 Street Trees and Screening

Landscape monitoring and maintenance of street trees and easement trees include the following:

WATERING

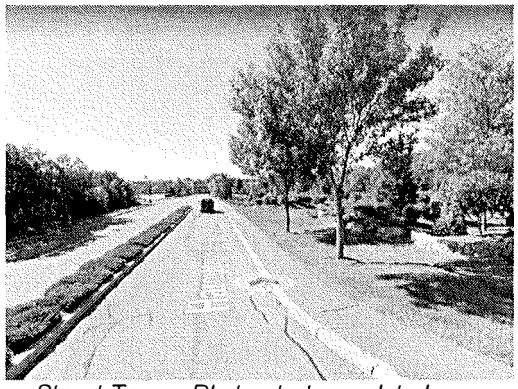
Regular watering is typically needed to encourage proper root growth and to discourage pathogens. Watering is to only be applied directly to the roots. Do NOT spray water on foliage, as this can cause scorch and leaf die back. Thoroughly soak rootballs when watering is needed. Saturate trees, shrubs, and other plants during one watering, as opposed to frequent watering with smaller amounts. Apply water until the top two inches of soil are moist. Do NOT over water. It's preferred to gently stress trees with lack of water opposed to too much water. Trees growing in heavy shade and cool areas will require substantially less water.



Street Trees – Photos to be updated upon completion of construction

Watering should be performed during the early morning to ensure tree roots have time to soak and dry before temperatures drop at night.

Rootballs should be checked for moisture and leaves should be observed on all tree species for wilting and other symptoms of stress. If stress is visible, add and adjust the watering schedule to include more days, opposed to more volume per watering.



Street Trees- Photos to be updated upon completion of construction

FERTILIZING

Proper tree selection during establishment of vegetation should eliminate the need for fertilizers and pesticides. Fertilizer only on an add needed basis after testing soils for deficiencies.

WEEDING

Remove saplings, suckers, and other volunteers at the root flare. Non-chemical methods (hand pulling and hoeing) are preferable; chemical herbicides should be avoided.

MONITORING

Walk the grounds monthly to observe and identify potential disease and insect/pest problems. Properly identify trouble spots and observe overall plant health including wilting, blight, insect damage, storm damage, drought and stress.

PRUNING

Remove limbs below 10 feet on street trees. Cut limbs at joints to promote re-growth. Never cut a leader.

DEBRIS & TRASH

Remove and properly dispose litter off all trees.

4.5 Natural Buffers

The surround9ing vegetated buffers provide screening and habitat and are not to be disturbed. Landscape maintenance of natural buffer areas include the following:

MONITORING

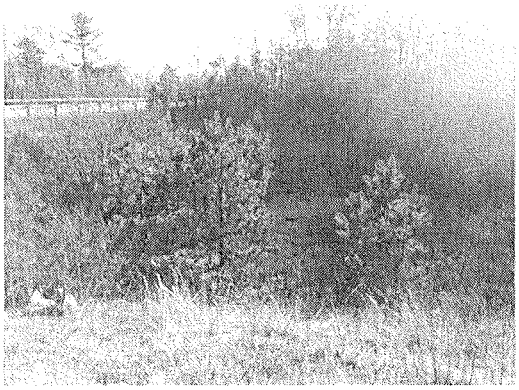
Walk the low buffers in the common areas to look for potential invasive species and identify potential disease. Properly remove and dispose all invasive species as to prevent colonization elsewhere, this includes disposal on land beyond the project area.

WEEDING

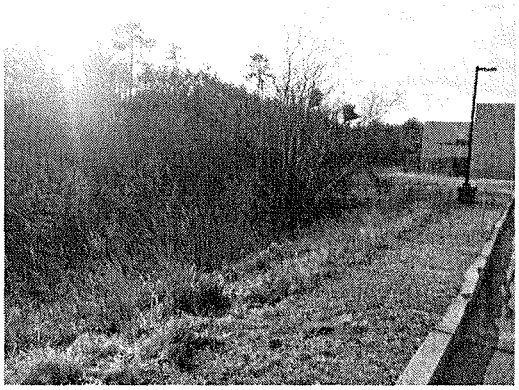
Weeding should be limited to invasive and exotic species. Non-chemical methods (hand pulling and hoeing) are preferable; chemical herbicides should be avoided.

DEBRIS & TRASH

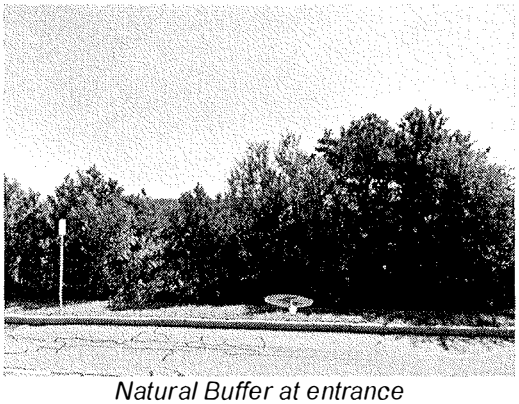
Remove and properly dispose litter from all natural areas.



Natural Buffer – Infiltration Basin



Natural Buffer



Natural Buffer at entrance

5.0 ROUTINE MAINTENANCE

Other routine maintenance should include the following:

- Removal of trash and litter from paved and perimeter areas.
- Check for erosions problems and sediment source(s) if excessive, frequent sediment accumulation occurs
- Parking Lot and Street sweeping:
    - Minimum of once per year after the spring thaw.
- Existing Catch Basin and Manholes
    - Inspect for sediment accumulation and cleaned annually to ensure proper function and prevent clogging.
- Existing drainage pipes:
    - Inspected annually for proper operation and sediment accumulation.

6.0 SNOW REMOVAL

Snow removal from the practice is not necessary Plowed or shoveled snow piles should not block the catch basin structure.

- De-Icing
    - Excessive salting of roads should be avoided. Use of large amounts of sand should also be avoided to avoid obstructing/clogging the conveyance system.

7.0 LONG-TERM POLLUTION PREVENTION PLAN

Long-term pollution prevention measures implemented at the each project site will further reduce pollutants in stormwater discharges after construction.

4.1 Lawn/Landscaping Maintenance

Lawn and landscaping maintenance will be conducted with minimal use of fertilizers and pesticides to protect the nearby wetland and water resources. The practices discharge to a phosphorus impaired water body and phosphate based fertilizers are not to be used.

4.5 Illicit Discharges

No illicit discharge connections will be made to the drainage network.

4.6 Personnel Training

All staff/ personnel responsible for maintaining the practices will be given a copy of this Plan and will receive training in the applicable practices and implementation described in the Plan.

8.0 ESTIMATED STORMWATER MAINTENANCE BUDGET

The estimated average annual operating and maintenance budget for the proposed system is shown below:

Enhanced Tree Trench ($1,000/each): **$ 2,000**

Infiltration Basin: **$ 100**

Other Routine Maintenance: **$ 2,000**

- Removal of trash and litter
- Annual parking lot sweeping
- Catchbasins and pipe network

It should be noted that the maintenance costs provided are estimates only and some of the maintenance will be completed during the routine park maintenance program and incorporated into the existing park maintenance budget.

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APPENDIX A

Enhanced Tree Trench Maintenance Checklist

Maintenance Checklist
True Storage – Enhanced Tree Trench

Date:

Time:

Inspector:

Maintenance Item	Description	Maintenance (Y/N)
1. COLLECT: Catch Basins and Pavement (parking lot)		
Surface Debris Cleaning	• Remove all trash, leaf litter and inlet clogging.	
Catch Basin	• Check for clogging and sediment accumulation that impacts inflow. Remove sediment accumulation of 6" or greater	
Actions to be taken:		
2. CAPTURE : Drain Basin (Diversion Structure)		
Sediment/Organic Debris Removal	• Remove sediment accumulation and properly dispose when accumulation is greater than or equal to 6 inches.	
Actions to be taken:		
3. MOVES & FILTERS: Enhanced Tree Trench and Porous Pavement		
Trash and Debris	• Remove all trash and leaf litter	
Tree Trench	• If not functioning properly and standing water observed in the catch basin or diversion manhole above the over flow pipe - check cleanouts. • Flush perforated pipes from the cleanout to remove sediment accumulation and blockage.	
Vegetation Maintenance & Replacement	• Prune deadwood and low hanging branches • Remove trash debris and any sediment accumulation in the tree pits • See also Landscape Maintenance	
Actions to be taken:		

Maintenance Item	Description	Maintenance (Y/N)
4. OVERFLOW: See Item 2 - Diversion Manhole		
5. SURROUNDING AREA: Storage Drive aisles, parking and associated landscape		
Debris Removal	• Remove trash from perimeter areas.	
Contributing drainage area	• Look for sediment sources from erosion in the surrounding play area.	
Drainage Network	• Ensure proper operation of all existing structures	
Pavement Sweeping	• Sweep parking lot minimum once a year after spring thaw.	
Actions to be taken:		

*Sediment shall be disposed of offsite in a pre-approved location.

APPENDIX B

Infiltration Basin Maintenance Checklist

Maintenance Checklist
True Storage – Infiltration Basin

Date:

Time:

Inspector:

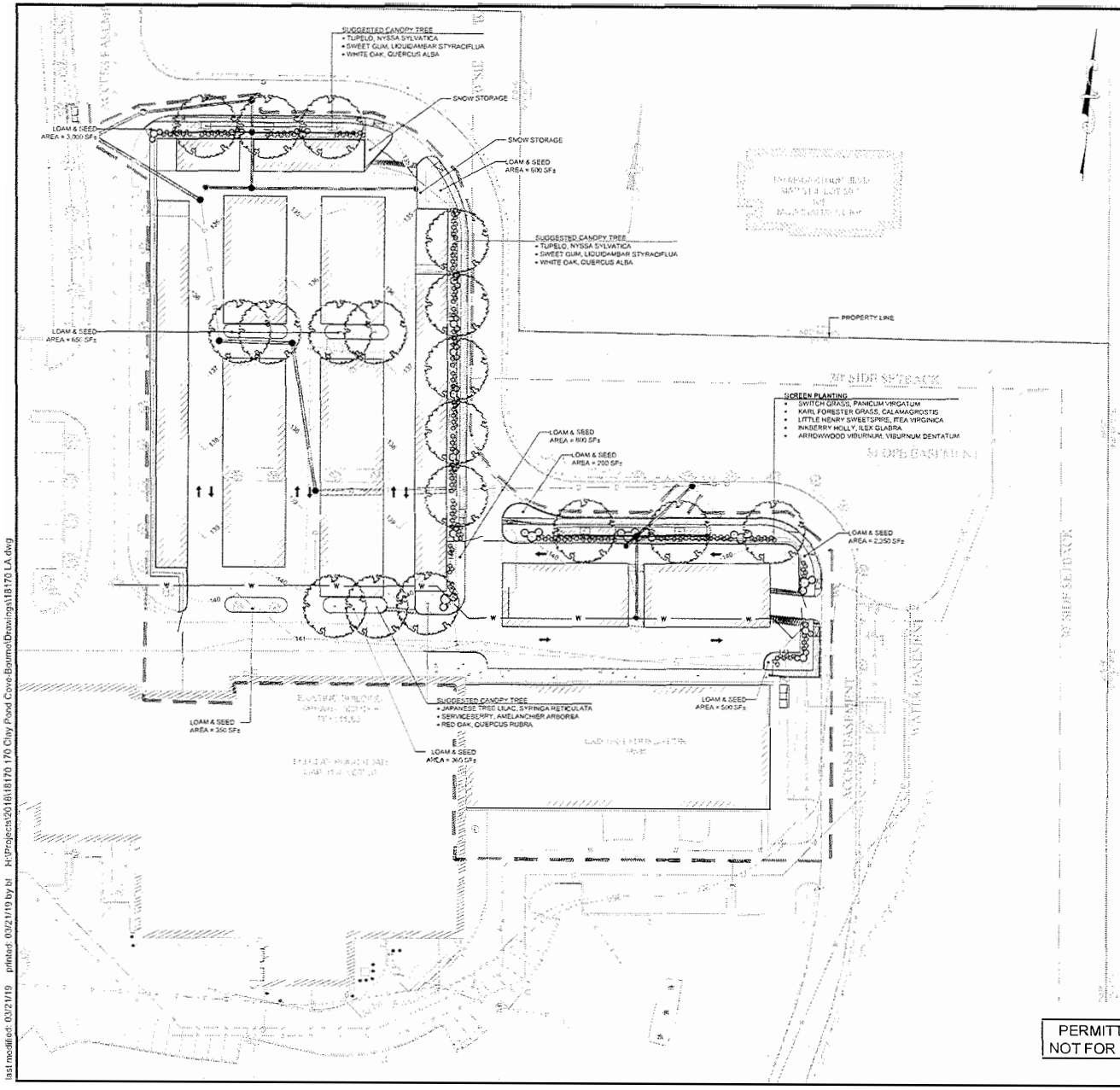
Maintenance Item	Description	Maintenance (Y/N)
1. COLLECT: Catch Basins and Pavement (parking lot)		
Surface Debris Cleaning	• Remove all trash, leaf litter and inlet clogging.	
Catch Basin	• Check for clogging and sediment accumulation that impacts inflow. Remove sediment accumulation of 6" or greater	
Actions to be taken:		
2. CAPTURE: Pipe inlet		
Sediment/Organic Debris Removal	• Remove sediment accumulation and properly dispose when accumulation is greater than or equal to 6 inches.	
Erosion and scouring	• Check for areas of erosion/ gullies out the outlet, particularly at the pipe outlet. • Repair/reseed/rip rap as necessary	
Actions to be taken:		
3. MOVES & FILTERS: Infiltration Basin		
Trash and Debris	• Remove all trash and leaf litter	
Side Slopes	• Signs of erosion gullies, animal burrowing, overtopping or slumping are observed. Repair as necessary.	

Maintenance Item	Description	Maintenance (Y/N)
Proper Drainage	• If not functioning properly and standing water observed in the basin above the over flow structure- check bottom of basin for sediment accumulation. • If standing water is observed for more than 48 hours after a storm event, rototill or aerate the bottom 6 inches to breakup any hard-packed sediment. • Remove sediment accumulation and re-seed.	
Vegetation Maintenance & Replacement	• Remove deadwood • Remove any sediment accumulation in the bottom and re-seed • Cut back grasses, sedges, and rushes annually in the spring. • See also Landscape Maintenance	
Actions to be taken:		
4. OVERFLOW: Recharge Basins and Emergency Spillway		
Trash & Debris Removal (at grate)	• Keep grates clear and remove trash and leaf litter accumulation.	
Recharge Basin	• If not functioning properly and standing water observed in the recharge basin - check bottom of basin for sediment accumulation. • Remove sediment accumulation annually	
Emergency Spillways	• Check for settling gulling, erosion damage, settling & clogging. Repair as necessary and return to design grades.	
5. SURROUNDING AREA: Storage Drive aisles, parking and associated landscape		
Debris Removal	• Remove trash from perimeter areas.	
Contributing drainage area	• Look for sediment sources from erosion in the surrounding side slopes. Immediately repair eroded side slopes and remove sediment accumulation.	
Drainage Network	• Ensure proper operation of all catch basins and structures	
Pavement Sweeping	• Sweep parking lot minimum once a year after spring thaw.	
Actions to be taken:		

*Sediment shall be disposed of offsite in a pre-approved location.

APPENDIX C

Landscape Plans (Reduced)



SUGGESTED STREET TREES

Botanical Name	Common Name	Size	Spacing
CANOPY TREES			
Amelanchier arborea	Downy Serviceberry	#15	As Shown
Liquidambar styraciflua	Sweet Gum	2-2.5" cal.	As Shown
Nyssa sylvatica	Tupelo	2-2.5" cal.	As Shown
Quercus alba	White Oak	2-2.5" cal.	As Shown
Quercus rubra	Red Oak	2-2.5" cal.	As Shown
Syringa reticulata	Japanese Tree Lilac	2-2.5" cal.	As Shown

SUGGESTED VEGETATED BUFFER

Botanical Name	Common Name	Size	Spacing
Shrubs			
Fothergilla gardenii 'Mt Airy'	Dwarf Fothergilla	#3	As Shown
Ilex glabra 'Compacta'	Compact Inkberry	#5	As Shown
Itea virginica 'Little Henry'	Little Henry Sweet Spire	#3	As Shown
Leucothoe fontanesiana 'Scarletta'	Calesbeer Drooping Leucothoe	#3	As Shown
Rhododendron 'PJM Elite'	PJM Elite Rhododendron	#5	As Shown
Spiraea x bumalda	Anthony Waterer Spirea	#3	As Shown
Viburnum dentatum 'Blue Muffin'	Blue Muffin Arrowwood Viburnum	#3	As Shown
Perennials & Grasses			
Amsonia 'Blue Ice'	Blue Ice Blue Star	#1	24" O.C.
Baptisia australis	Blue False Indigo	#1	36" O.C.
Calamagrostis x acutiflora 'Karl Foerster'	Feather Reed Grass	#1	18" O.C.
Deschampsia cespitosa 'Goldtau'	Goldtau Tufted Hair Grass	#1	24" O.C.
Echinacea purpurea 'Ruby Star'	Ruby Star Purple Coneflower	#1	18" O.C.
Panicum virgatum 'Shenandoah'	Shenandoah switch grass	#1	30" O.C.
Rudbeckia fulgida var. fulgida	Black-Eyed Susan	#1	18" O.C.
Sesleria autumnalis	Frosty Dropseed	#1	30" O.C.

PERMITTING SET ONLY
NOT FOR CONSTRUCTION

GRAPHIC SCALE
30 0 15 30 60 120
(in feet)
1 INCH = 30 FEET

Revisions

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Sustainable Environmental Solutions
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508.833.6600 voice
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Date: MARCH 2019 | Designed By: BHL | Drawn By: BHL | Checked By: HORSLEY

PERMITTING PLAN SET
TRUE STORAGE REDEVELOPMENT
170 CLAY POND ROAD BOURNE, MA

LANDSCAPE PLAN

Prepared For:
CLAY POND ACQUISITIONS LLC
MAYFLOWER TRADE CENTER
Phone: (603)422-1221
Fax: (603)422-1321

Survey Prepared By:
HORSLEY WITTEN GROUP INC.
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Phone: (508) 833-6600
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Date: JANUARY 2019

Project Number: 18170
Sheet: 11 of 12
Sheet Number: L - 11

last modified: 03/21/19 printed: 03/21/19 by bl H:\Projects\2016\18170 170 Clay Pond Cove-Bourne\Drawings\18170 LA.dwg

MEMORANDUM

TO: Clay Pond Acquisitions, LLC
c/o Mr. Christopher Lewis, NCARB
Director of Architecture & Design
Brady Sullivan Properties
670 North Commercial Street
Suite 303
Manchester, NH 03101

FROM: Mr. Jeffrey S. Dirk, P.E., PTOE, FITE JSD
Partner
Vanasse & Associates, Inc.
35 New England Business Center Drive
Suite 140
Andover, MA 01810-1066
(978) 269-6830
jdirk@rdva.com

DATE: April 4, 2019

RE: 8197

SUBJECT: Transportation Impact Assessment
Bourne Shopping Center Modifications – 170 Clay Pond Road
Bourne, Massachusetts

Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Assessment (TIA) in order to determine the potential impacts on the transportation infrastructure associated with the proposed modifications to the Bourne Shopping Center located at 170 Clay Pond Road in Bourne, Massachusetts (hereafter referred to as the "Project"). Specifically, this assessment summarizes the anticipated traffic characteristics of the Project and compares the resulting traffic volumes to those of the Development of Regional Impact (DRI) that was approved for the Project site by the Cape Cod Commission (CCC) on February 28, 1991 (TR 90057). In addition, a review of Project compliance with the Transportation Goal and Objectives of the 2019 Cape Cod Regional Policy Plan (the "2019 Cape Cod RPP") has also been completed.

Based on this assessment, we have concluded the following with respect to the Project:

1. The Project represents a significant reduction in traffic (up to 80 percent) on a daily and peak-hour basis over the approved development that was to occupy the Project site and, as such, will be less impactful on the transportation system; and

2. The Project meets each of the Transportation Objectives of the RPP as a result of the noted reduction in traffic coupled with the improvements to the transportation system that were completed in conjunction with the approved project that was to occupy the Project site.

Accordingly, the Project complies with the Transportation Goal of the 2019 Cape Cod RPP.

The following details our assessment of the Project.

PROJECT DESCRIPTION

The Project site was the subject of a DRI Decision that was issued by the CCC on February 28, 1991 (TR 90057) approving with conditions the construction of a 74,500± square foot (sf) shopping center that was to encompass a 72,000± sf building that would include a 36,235 sf grocery store and several small retail shops and a separate 2,500± sf retail building. On-site parking was to be provided for 430 parking

spaces. This Decision was subject to three (3) modifications that were approved in 1997, 2007 and 2008, none of which altered the size of the overall development or the uses that were to be contained therein, with the 2007 modification assigning a transportation credit to the Project site for the permanent protection of approximately 40,263 sf of vacant developable land off General MacArthur Boulevard (Route 28) and for the interconnection of access between adjoining properties.[1] Currently, the Project site encompasses a 55,600± sf retail building, of which approximately 52,400± sf is vacant, and a building pad has been cleared to support a 15,500± sf expansion to the existing building. Paved parking is provided for 408 vehicles.

As proposed, the Project will entail three (3) primary components: i) renovation and expansion of a portion of the existing retail building to provide 63,500± sf of interior self-storage space in individual units while retaining 12,200± sf of retail space; ii) completion of the expansion of the existing retail building by 15,500± sf within the footprint of the cleared building pad which will also accommodate interior self-storage units; and iii) the addition of 177 exterior self-storage units within the existing parking lot situated in the northeast corner of the Project site. On-site parking will continue to be provided for 183 vehicles. When complete, the Project site will contain 12,200± sf of retail space, 79,000± sf of interior self-storage space that will accommodate 770± individual storage units, and up to 177 exterior self-storage units.

Access to the Project site is and will continue to be provided by way of a full-access driveway that intersects the south side of Clay Pond Road approximately 600 feet west of Route 28 and a connector roadway to the adjoining property to the south that is known as Harmony Hill Road and provides access to Otis Park Drive and to Route 28 thereafter.

PROJECT-GENERATED TRAFFIC

In order to determine the traffic characteristics of the approved and proposed uses for the Project site, trip-generation methodologies established by the Institute of Transportation Engineers (ITE)[2] were used following the guidance provided in the CCC *Transportation Technical Bulletin* that supports the 2019 Cape Cod RPP. The ITE provides trip-generation information for various types of land uses developed as a result of scientific studies that have been conducted over the past 50 plus years, the most recent update of which was published in 2017. This data includes trip estimates for land uses that are similar to those that are currently, have been approved for and that will be located within the Project site. For the current and approved uses, ITE Land Use Codes (LUCs) 820, *Shopping Center*, and 850, *Supermarket*, were used. For the proposed uses, ITE LUCs 820, *Shopping Center*, and 151, *Mini-Warehouse*, were used. Table 1 summarizes and compares the traffic characteristics of the proposed and approved uses for the Project site.

[1] A transportation credit of 1,476 daily trips (including 134 weekday PM peak-hour trips and 154 Saturday peak-hour trips) and 11 afternoon peak-hour trips were allocated to the Project site pursuant to Condition T1 of the January 29, 2007 Minor Modification #2 to TR90057 that was approved by the CCC.

[2] Ibid 1.

Table 1
TRIP GENERATION SUMMARY AND COMPARISON

Time Period/Direction	Vehicle Trips (A) Proposed Uses[a]	(B) Approved Uses[b]	(A – B) Difference
Average Weekday Daily:			
Entering	804	3,499	
Exiting	804	3,499	
Total	1,608	6,998	-5,390
Weekday AM Peak Hour of Generator:			
Entering	73	225	
Exiting	60	200	
Total	133	425	-292
Weekday PM Peak Hour of Generator:			
Entering	73	284	
Exiting	74	274	
Total	147	558	-411
Saturday:			
Entering	1,286	5,675	
Exiting	1,286	5,675	
Total	2,572	11,350	-8,778
Saturday Peak-Hour of Generator:			
Entering	78	375	
Exiting	70	355	
Total	148	730	-582

[a]Based on ITE LUC 151, *Mini-Warehouse* (947 storage units), and LUC 820, *Shopping Center* (12,200 sf).
[b]Based on ITE LUC 820, *Shopping Center* (38,246 sf), and LUC 850, *Supermarket* (36,235 sf).

Project-Generated Traffic Summary

As can be seen in Table 1, after the completion of the Project, the Project site is expected to generate approximately 1,608 vehicle trips on an average weekday and 2,572 vehicle trips on a Saturday (both two-way, 24-hour volumes over the operational day of the uses that are to be located within the Project site), with 133 vehicle trips (73 vehicles entering and 60 exiting) expected during the weekday morning peak-hour, 147 vehicle trips (73 vehicles entering and 74 exiting) expected during the weekday evening peak-hour and 148 vehicle trips (78 vehicles entering and 70 exiting) expected during the Saturday midday peak-hour.

In comparison to the approved uses that were to occupy the Project site (38,246 sf of retail/restaurant space and a 36,235 sf supermarket), the proposed uses are expected to generate approximately 5,390 fewer vehicle trips on an average weekday and 8,778 fewer vehicle trips on a Saturday (a 77 percent reduction on both a weekday and a Saturday), with 292 fewer vehicle tips expected during the weekday morning peak-hour (a 69 percent reduction), 411 fewer vehicle trips expected during the weekday evening peak-hour (a 74 percent

reduction) and 582 fewer vehicle trips expected during the Saturday midday peak-hour (an 80 percent reduction).

Based on this comparative assessment, ***it is clear that the Project represents a significant reduction in traffic on a daily and peak-hour basis (up to 80 percent) over the approved uses that were to occupy the Project site and, as such, the Project will be less impactful on the transportation system.***

RPP TRANSPORTATION GOAL AND OBJECTIVES

The 2019 Cape Cod RPP outlines three (3) objectives that a project should meet to achieve the Transportation Goal of the RPP: *To provide and promote a safe, reliable, and multimodal transportation system*. The following summarizes the objectives to achieve the Transportation Goal of the RPP and demonstrates how the Project advances each of the objectives.

- ***Objective TR1*** – *Improve safety and eliminate hazards for all users of Cape Cod's transportation system.*

  The Project represents a significant reduction in the volume of traffic, the associated impacts and potential conflicts with motor vehicles, pedestrians and bicyclists that result from the addition of trips on the transportation system. Further, the approved project included specific safety improvements that have been completed and included:

  1. Sign, pavement marking and sight line improvements at the Beach Street/Shore Road and Beach Street/Clay Pond Road/County Road intersections.
  2. Relocation, design and construction of the U-turn area on Route 28 south of Clay Pond Road and monitoring of the U-turn area north of Clay Pond Road for a period of one-year after the opening of the retail plaza.
  3. Design and construction of a deceleration/acceleration lane on Route 28 approaching and departing Clay Pond Road.

  Based on the above, the Project meets the standards for Objective TR1.

- ***Objective TR2*** – *Provide and promote a balanced and efficient transportation system that includes healthy transportation options and appropriate connections for all users.*

  The approved project included the following improvements that have been completed to support healthy transportation options and appropriate connections for all users:

  1. A sidewalk was constructed along Clay Pond Road between the entrance to the shopping center and Small Street.
  2. A crosswalk was provided for crossing the shopping center driveway.
  3. A connector roadway was constructed to the adjoining property to the south that is known as Harmony Hill Road and affords opportunities for bicycle connectivity between Otis Park Drive and Clay Pond Road and accommodates bus access to the Project site and Harmony Hill by the Cape Cod Regional Transit Authority (CCRTA).

  Based on the above, the Project meets the standards for Objective TR2.

- ***Objective TR3*** – *Provide an efficient and reliable transportation system that will serve the current and future needs of the region and its people.*

  As stated previously, the Project represents a significant reduction in the volume of traffic and the associated impacts on the transportation system. This reduction in potential trips will afford reserve capacity on the transportation system that would have otherwise been allocated to the Project site thereby improving the efficiency and reliability of the transportation system to serve current and future needs. In addition, the construction of the connector roadway to Harmony Hill and the permanent protection of vacant developable land off Route 28 that were associated with the approved project provide additional benefits in the form of improved access (connector roadway) and reduced potential trips (vacant developable land) that serve to advance the efficiency and reliability of the transportation system at present and with consideration of future needs.

  Based on the above, the Project meets the standards for Objective TR3.

SUMMARY

VAI has prepared a detailed assessment of the potential impacts on the transportation infrastructure associated with the proposed modifications to the Bourne Shopping Center located at 170 Clay Pond Road in Bourne, Massachusetts. Specifically, this assessment has provided a summary of the anticipated traffic characteristics of the Project and comparison of the resulting traffic volumes to those of the DRI that was approved for the Project site (TR 90057). In addition, a review of Project compliance with the Transportation Goal and Objectives of the 2019 Cape Cod RPP has also been completed.

Based on this assessment, we have concluded the following with respect to the Project:

1. The Project represents a significant reduction in traffic (up to 80 percent) on a daily and peak-hour basis over the approved development that was to occupy the Project site and, as such, will be less impactful on the transportation system; and

2. The Project meets each of the Transportation Objectives of the RPP as a result of the noted reduction in traffic coupled with the improvements to the transportation system that were completed in conjunction with the approved project that was to occupy the Project site.

Accordingly, the Project complies with the Transportation Goal of the 2019 Cape Cod RPP.

cc: E. Cox, Esquire – Nutter McClennen & Fish LLP
File

ATTACHMENTS

TRIP-GENERATION CALCULATIONS

Approved Uses

Shopping Center
(820)

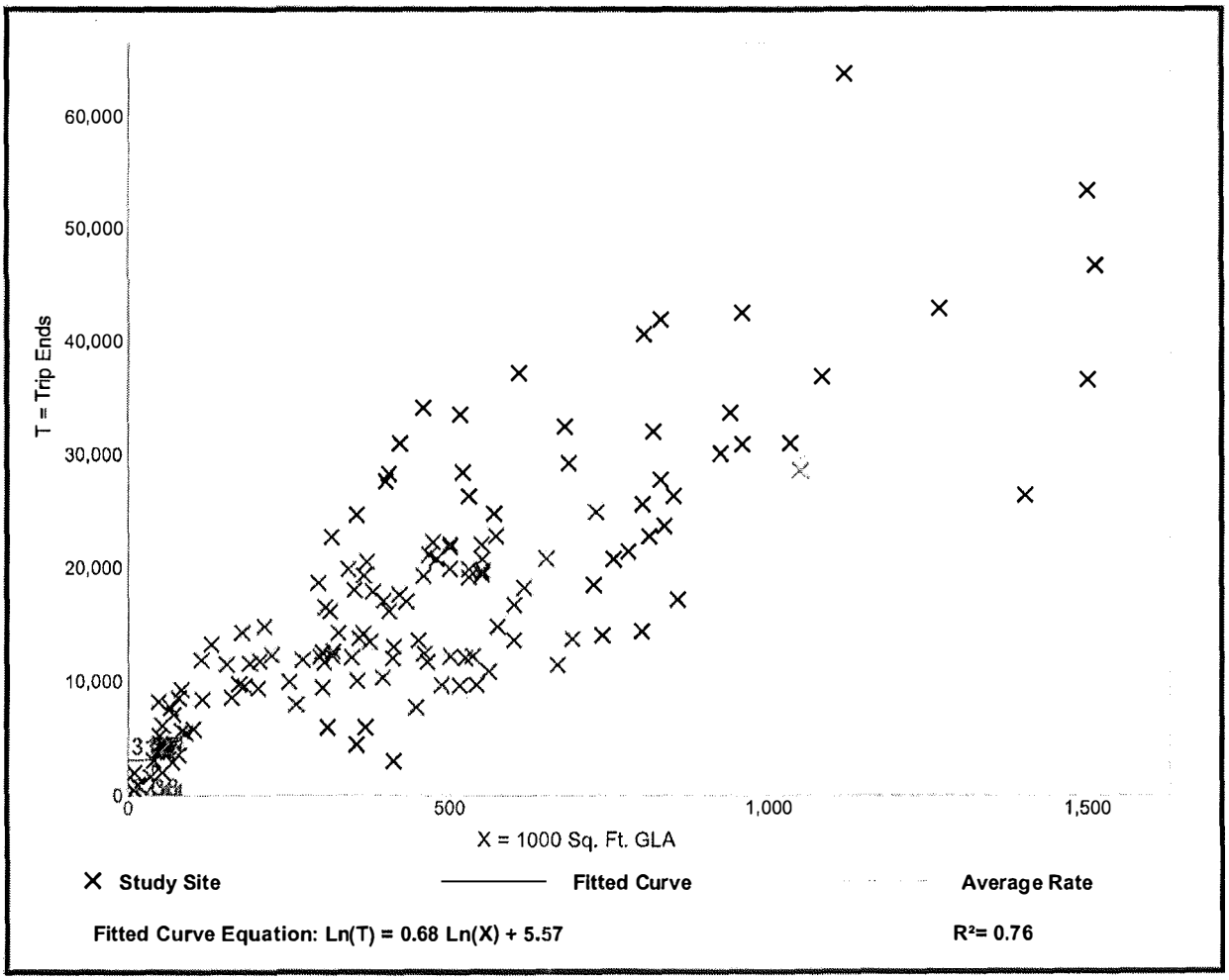
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 147
Avg. 1000 Sq. Ft. GLA: 453
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
37.75	7.42 - 207.98	16.41

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

$T = 3,128$ VEHICLE TRIPS
(1,564 ENTERING / 1,564 EXITING)

Shopping Center
(820)

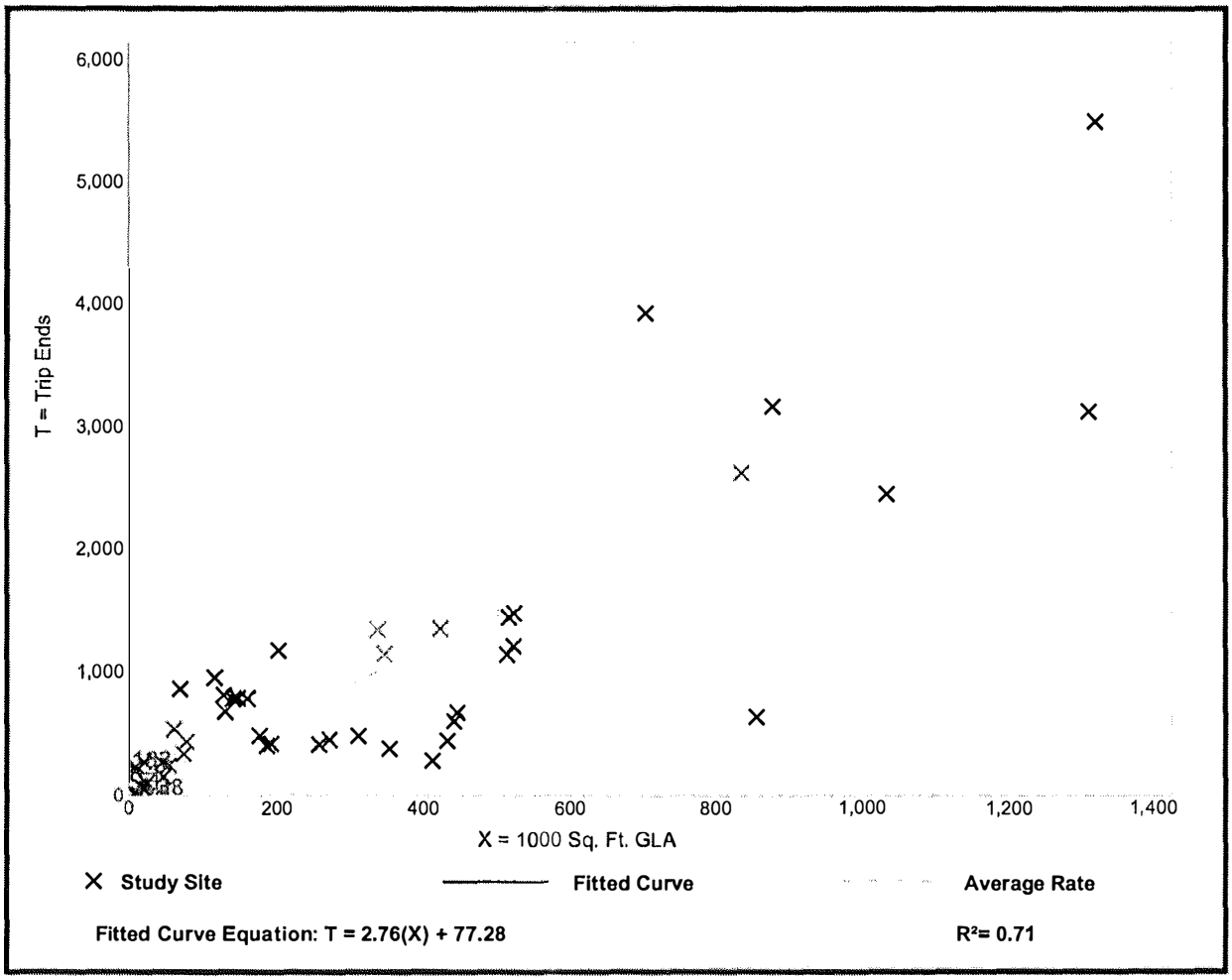
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
AM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 47
Avg. 1000 Sq. Ft. GLA: 323
Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.00	0.70 - 23.74	1.85

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 183 VEHICLE TRIPS
(99 ENTERING / 84 ENTERING)

Shopping Center
(820)

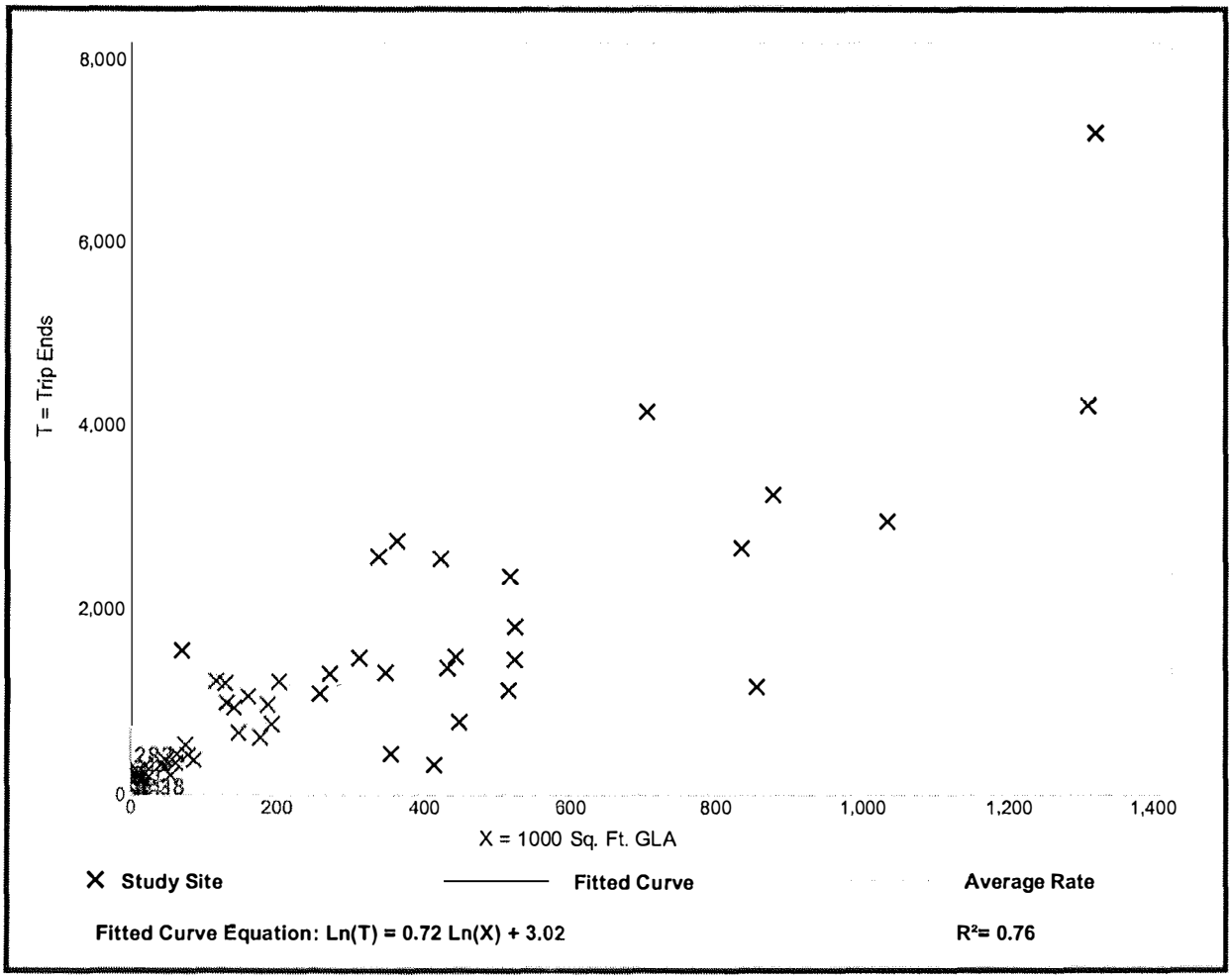
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
PM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 53
Avg. 1000 Sq. Ft. GLA: 298
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.21	0.78 - 27.27	2.47

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 283 VEHICLE TRIPS
(141 ENTERING / 142 EXITING)

Shopping Center
(820)

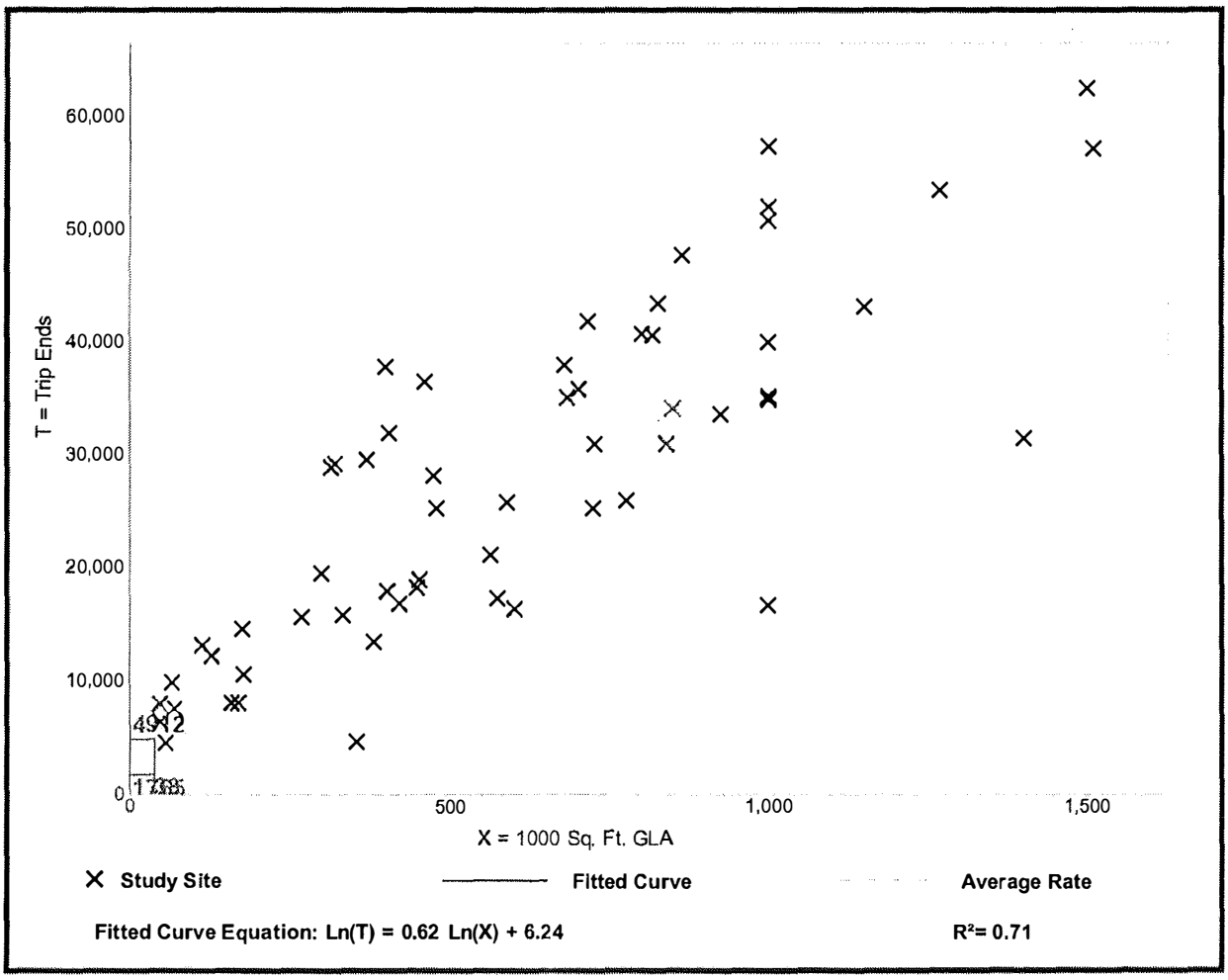
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Saturday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 58
Avg. 1000 Sq. Ft. GLA: 602
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
46.12	13.01 - 167.89	17.91

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 4,914 VEHICLE TRIPS
(2,457 ENTERING / 2,457 EXITING)

Shopping Center
(820)

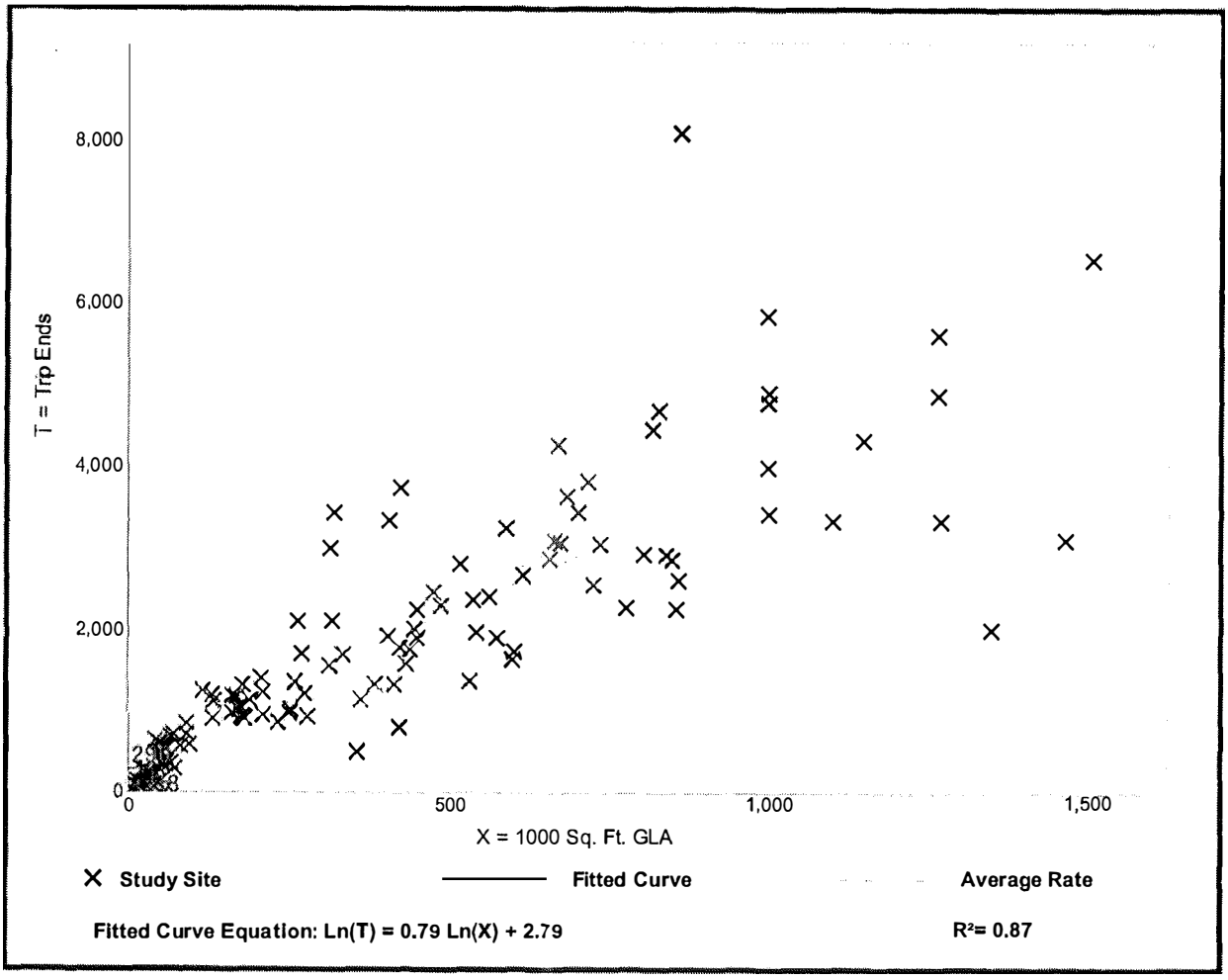
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 119
Avg. 1000 Sq. Ft. GLA: 416
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.50	1.42 - 15.10	1.88

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 290 VEHICLE TRIPS
(151 ENTERING / 139 EXITING)

Supermarket
(850)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

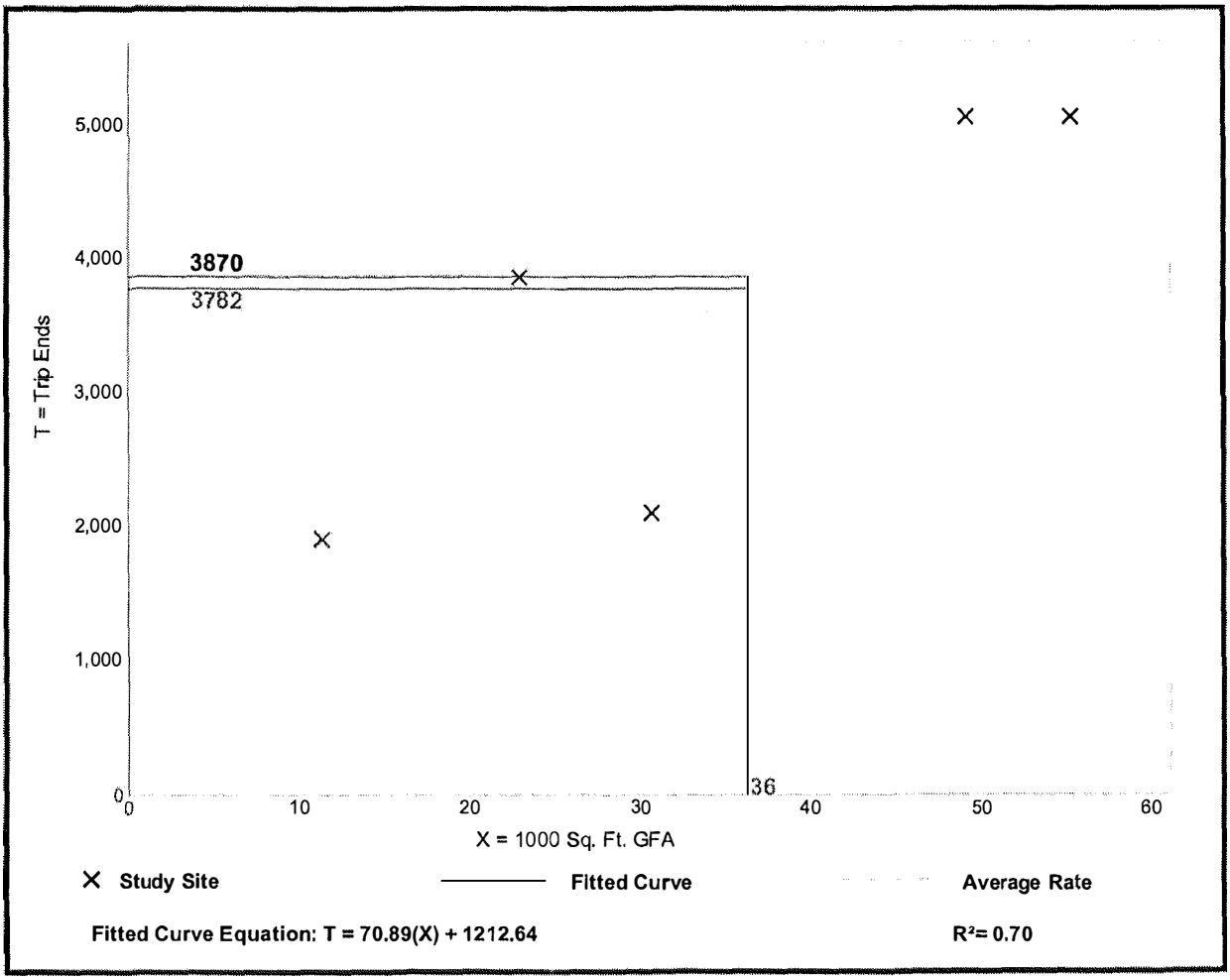
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. 1000 Sq. Ft. GFA: 34
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
106.78	68.67 - 170.24	37.56

Data Plot and Equation

Caution – Small Sample Size



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 3,870 VEHICLE TRIPS
(1,935 ENTERING / 1,935 EXITING)

Supermarket
(850)

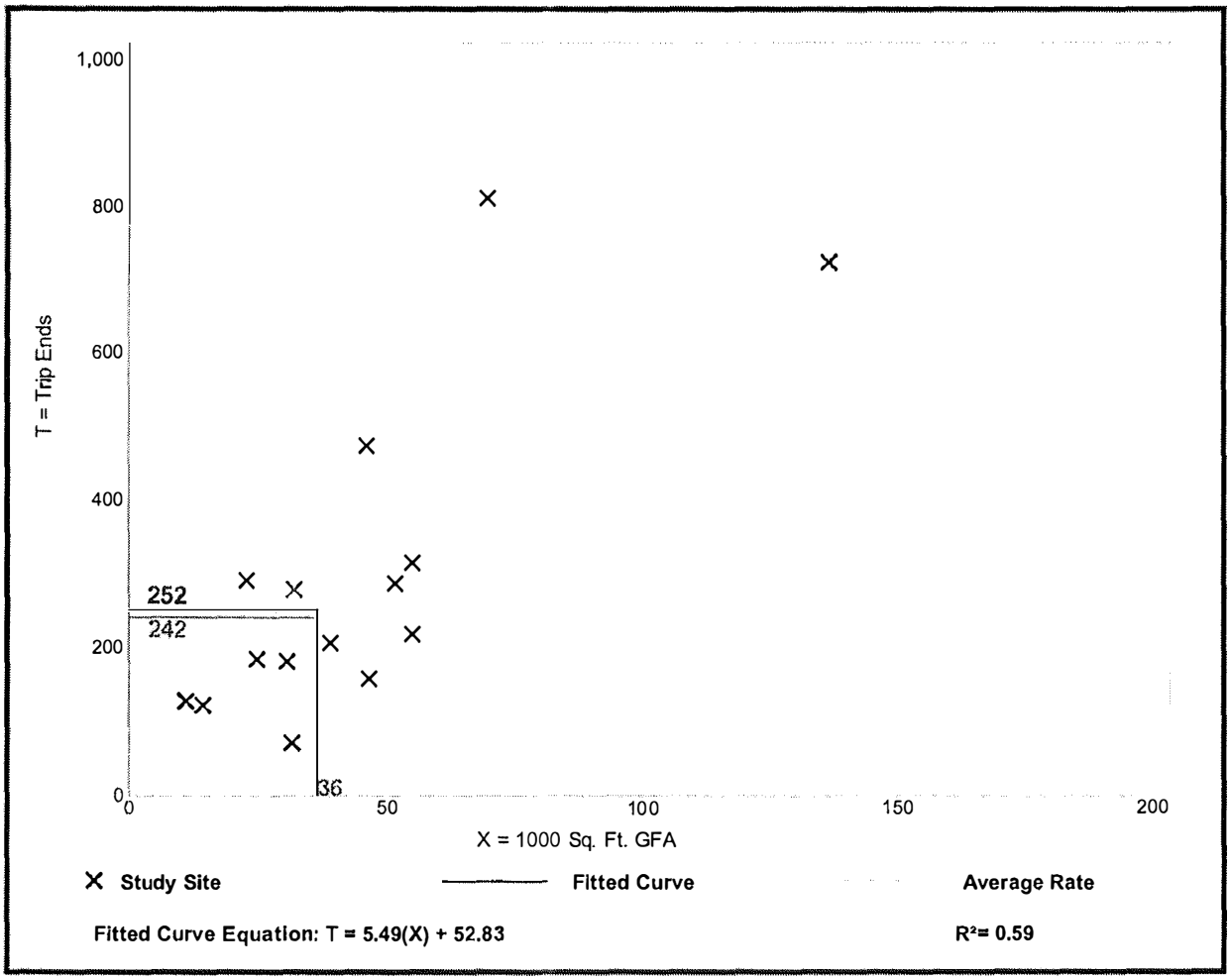
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
AM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 15
Avg. 1000 Sq. Ft. GFA: 45
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
6.67	2.28 - 12.68	2.98

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 242 VEHICLE TRIPS
(126 ENTERING / 116 EXITING)

Supermarket
(850)

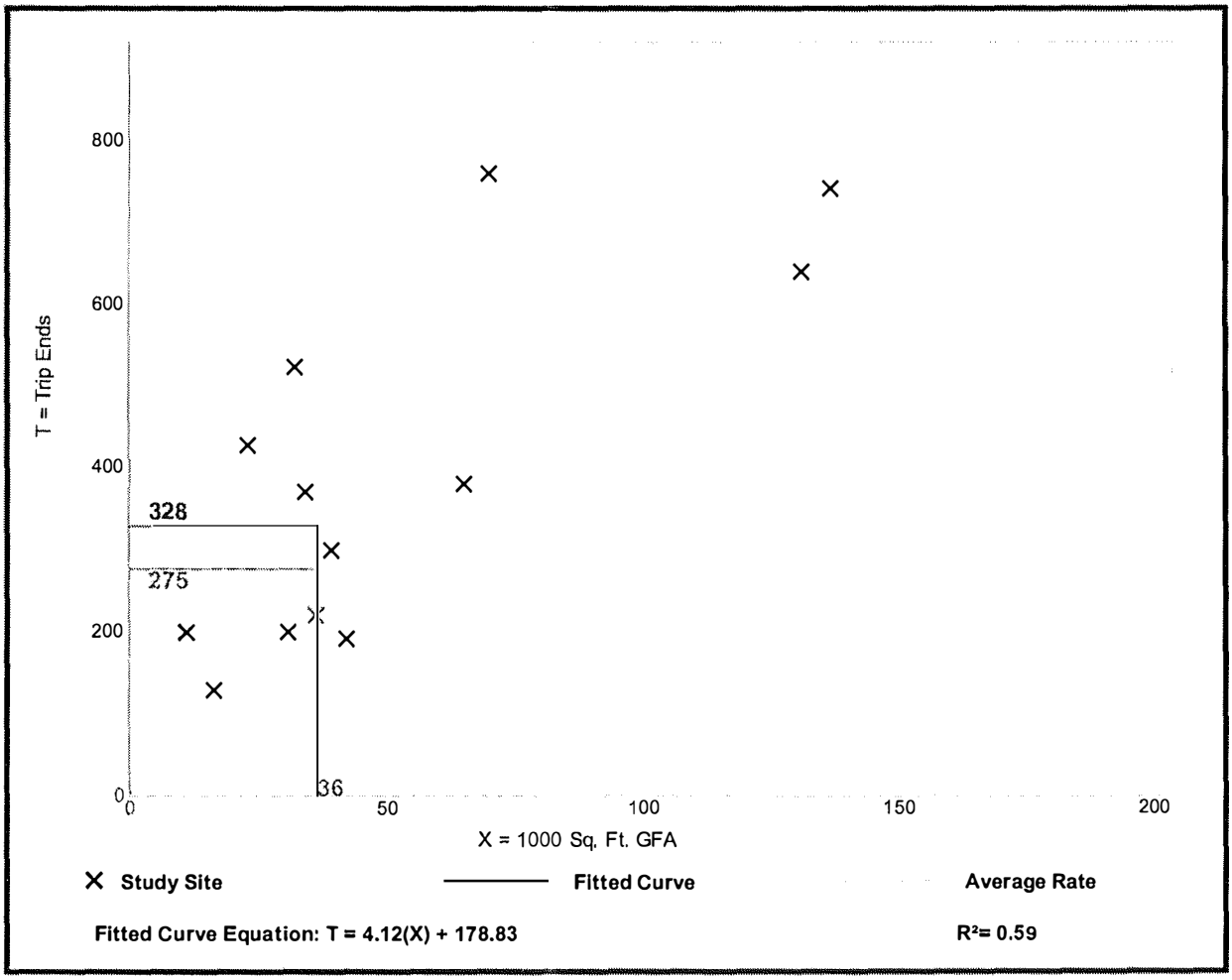
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
PM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 13
Avg. 1000 Sq. Ft. GFA: 51
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
7.60	4.55 - 18.63	3.98

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 275 VEHICLE TRIPS
(143 ENTERING / 132 EXITING)

Supermarket
(850)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday**

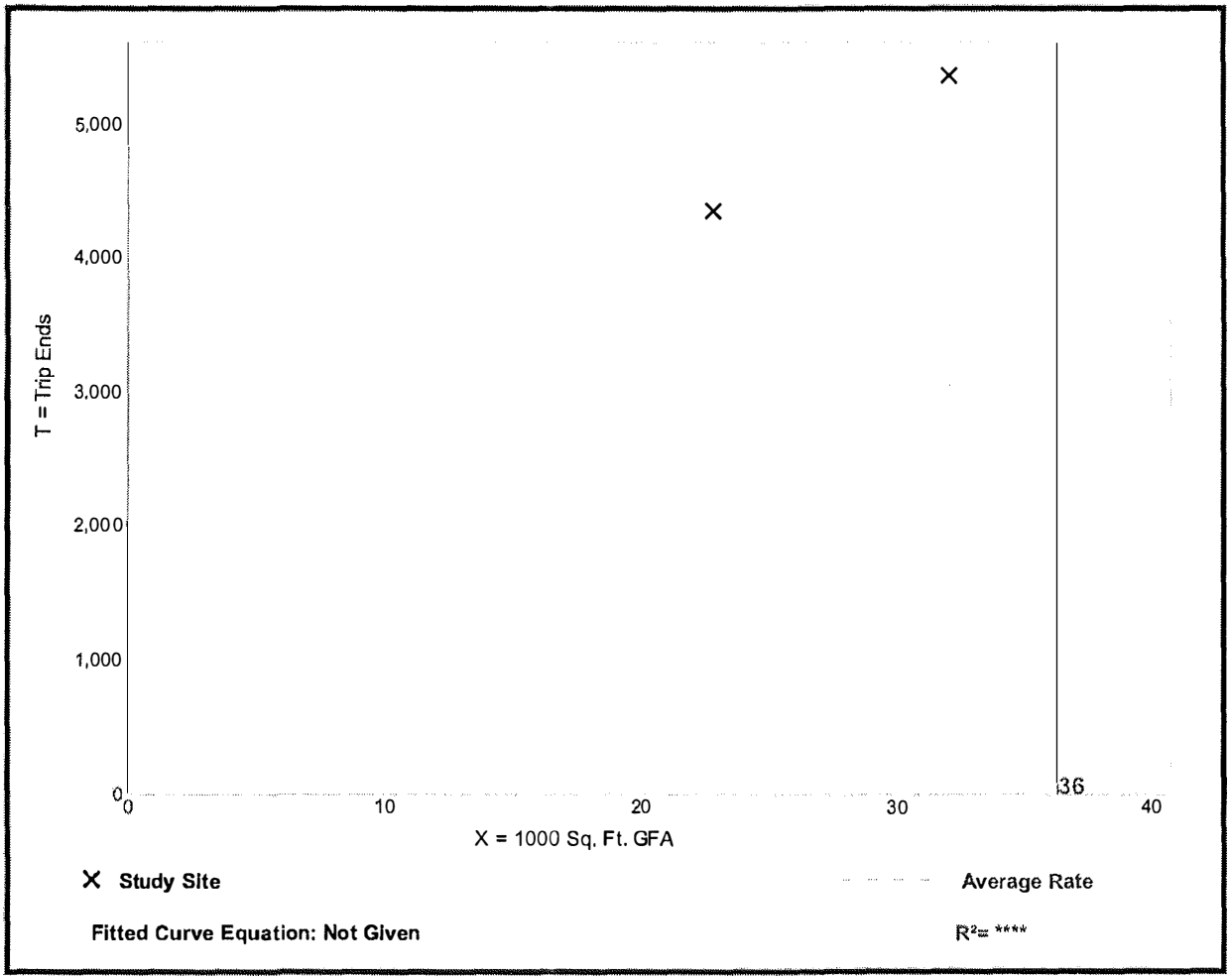
Setting/Location: **General Urban/Suburban**
Number of Studies: 2
Avg. 1000 Sq. Ft. GFA: 27
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
177.62	168.41 - 190.51	*

Data Plot and Equation

Caution – Small Sample Size



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T = 6,436 VEHICLE TRIPS
(3,218 ENTERING / 3,218 EXITING)

Supermarket
(850)

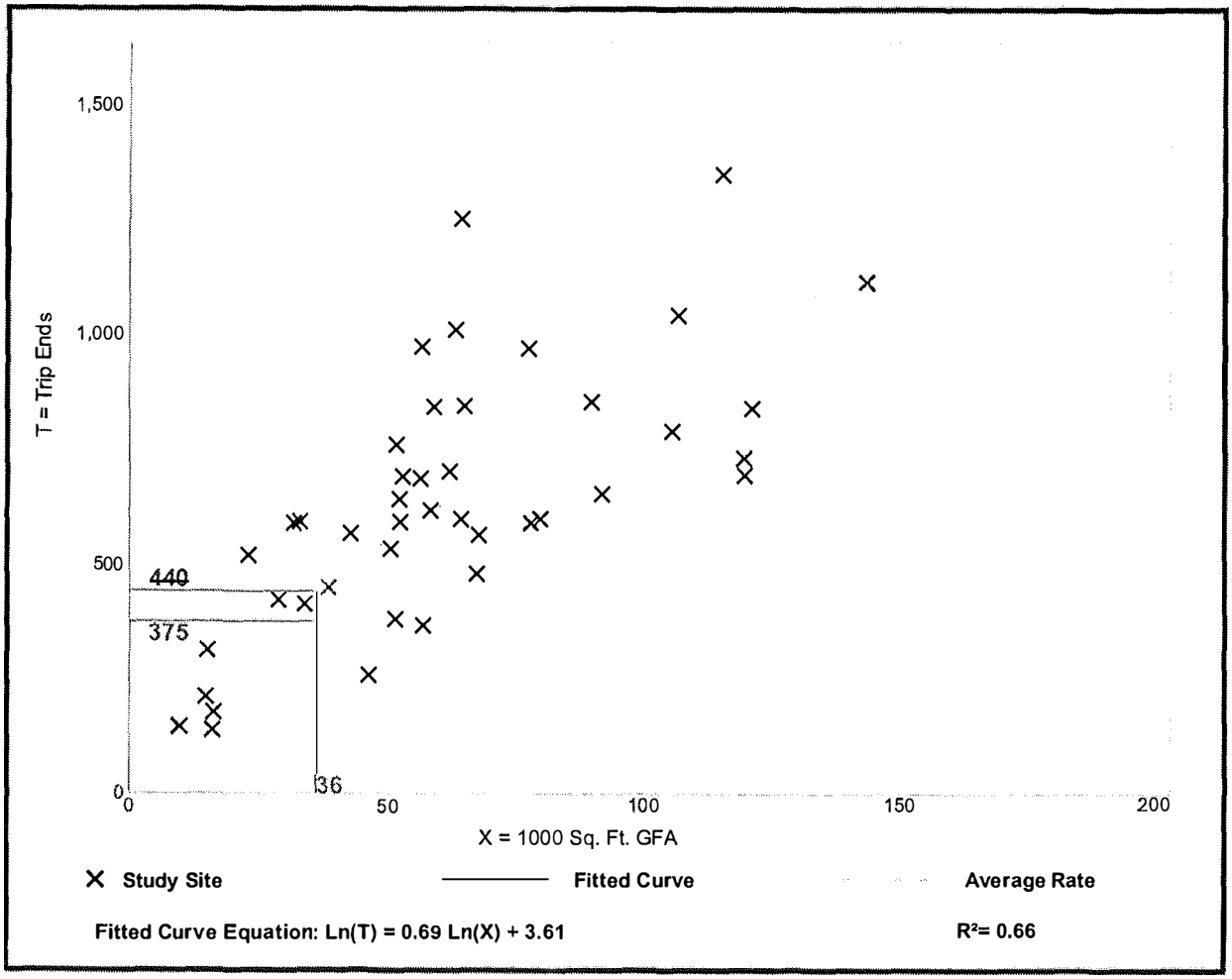
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 43
Avg. 1000 Sq. Ft. GFA: 62
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
10.34	5.59 - 22.61	3.80

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.69 Ln(X) + 3.61 **R^2= 0.66**

Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 440 VEHICLE TRIPS
(224 ENTERING/216 EXITING)

Proposed Uses

Shopping Center
(820)

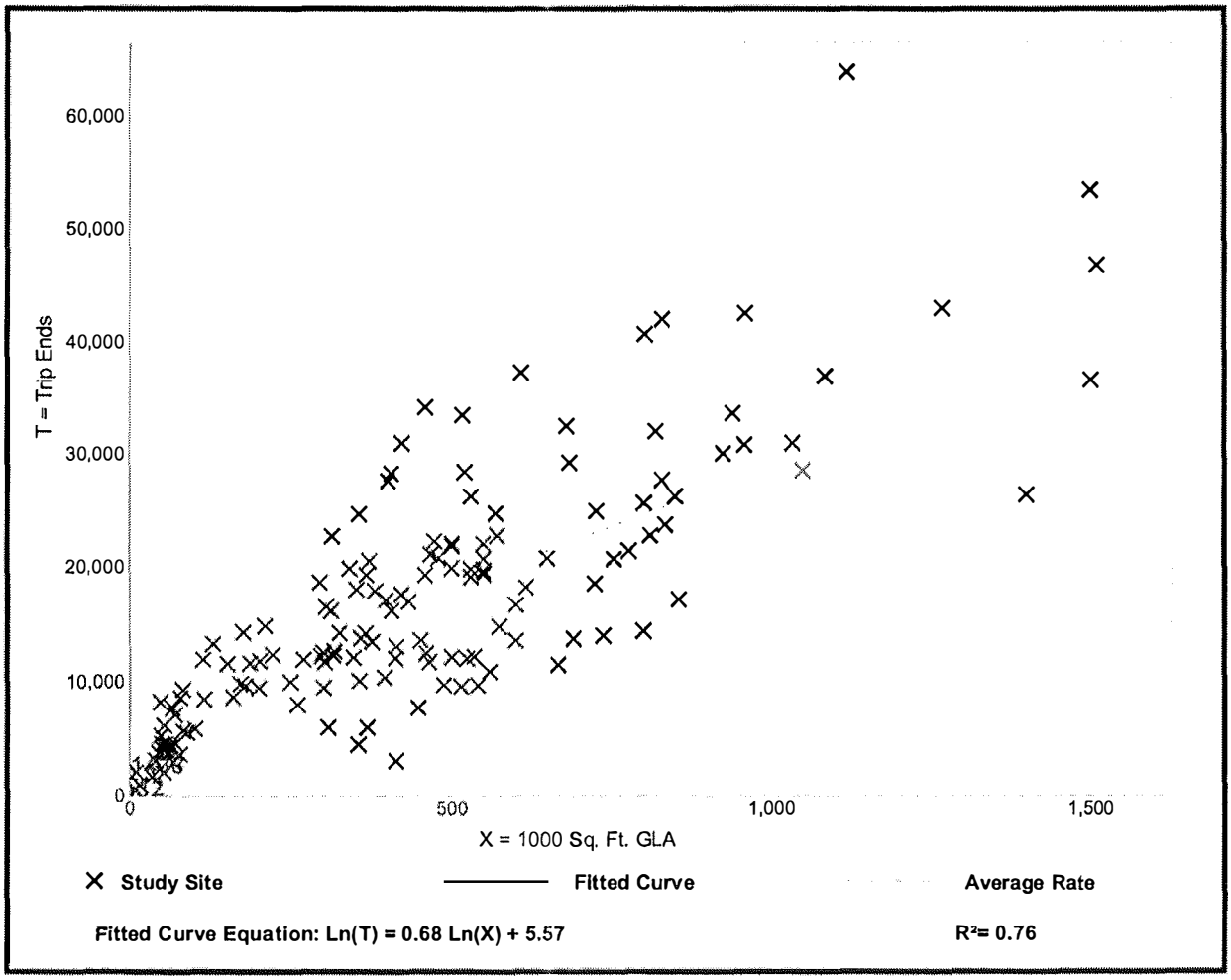
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 147
Avg. 1000 Sq. Ft. GLA: 453
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
37.75	7.42 - 207.98	16.41

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 1,438 VEHICLE TRIPS
(719 ENTERING / 719 EXITING)

Shopping Center
(820)

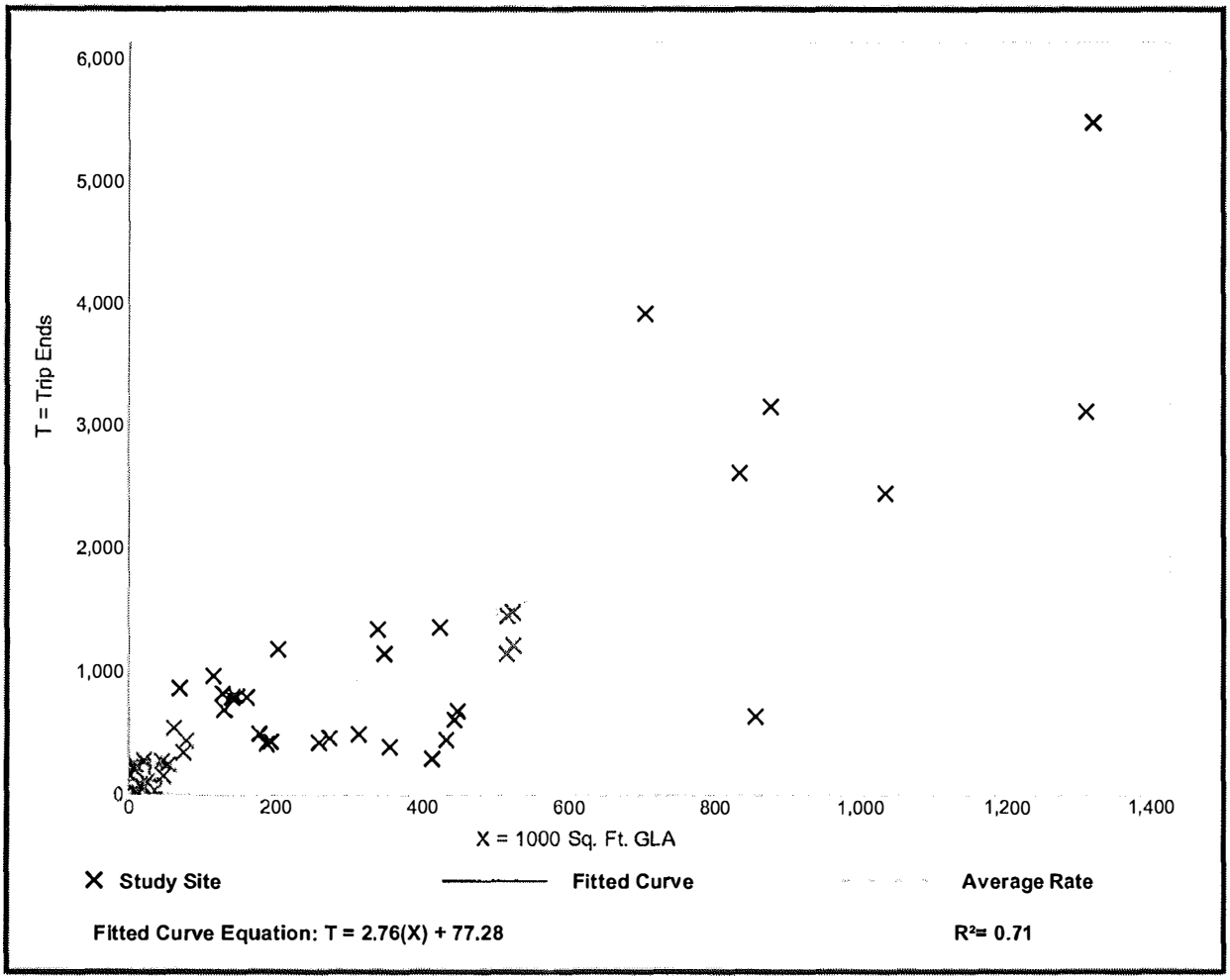
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
AM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 47
Avg. 1000 Sq. Ft. GLA: 323
Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.00	0.70 - 23.74	1.85

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 111 VEHICLE TRIPS
(60 ENTERING/51 EXITING)

Shopping Center
(820)

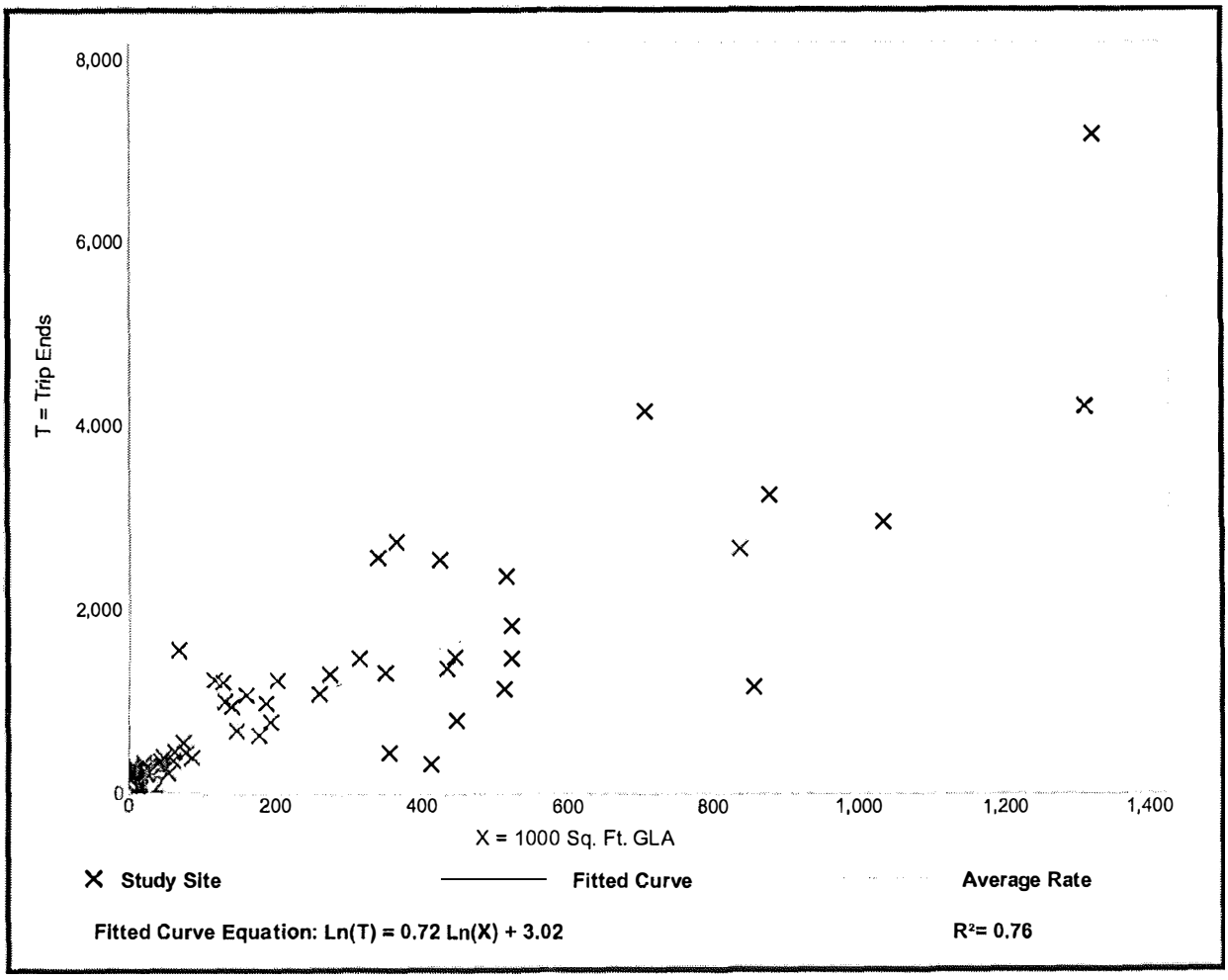
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
PM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 53
Avg. 1000 Sq. Ft. GLA: 298
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.21	0.78 - 27.27	2.47

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 124 VEHICLE TRIPS
(62 ENTERING / 62 EXITING)

Shopping Center
(820)

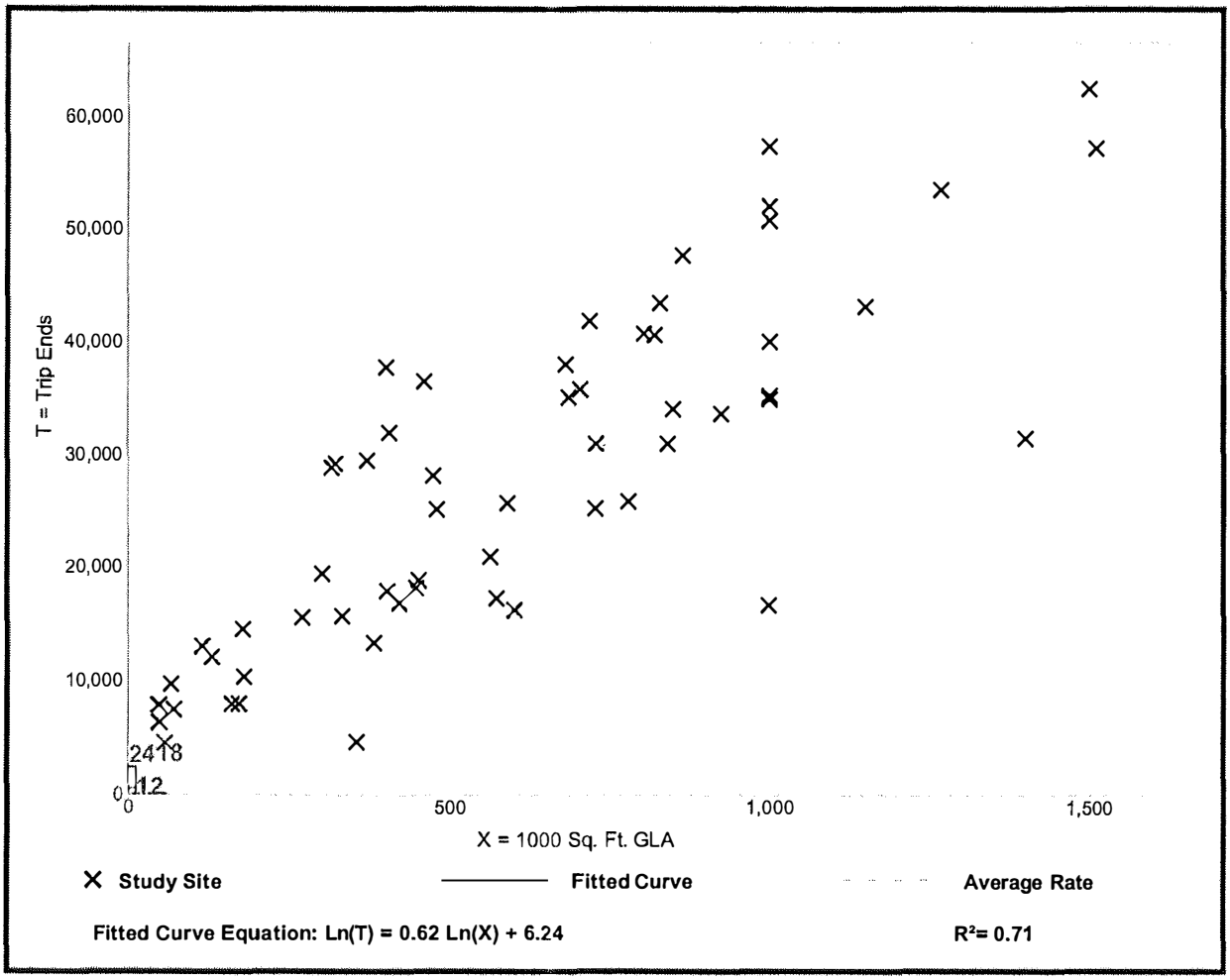
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Saturday

Setting/Location: General Urban/Suburban
Number of Studies: 58
Avg. 1000 Sq. Ft. GLA: 602
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
46.12	13.01 - 167.89	17.91

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 2,418 VEHICLE TRIPS
(1,209 ENTERING / 1,209 EXITING)

Shopping Center
(820)

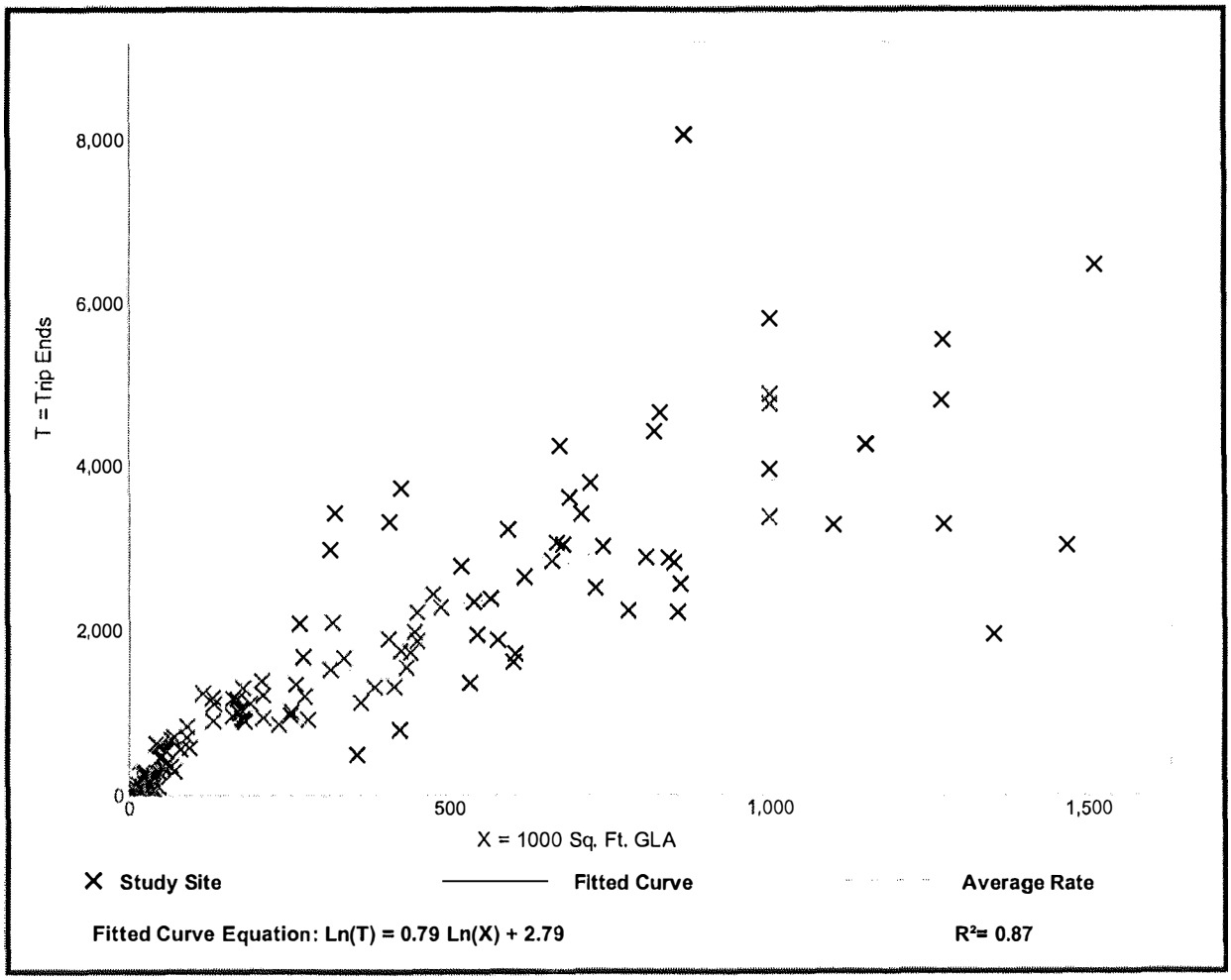
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 119
Avg. 1000 Sq. Ft. GLA: 416
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.50	1.42 - 15.10	1.88

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 117 VEHICLE TRIPS
(61 ENTERING / 56 EXITING)

Mini-Warehouse
(151)

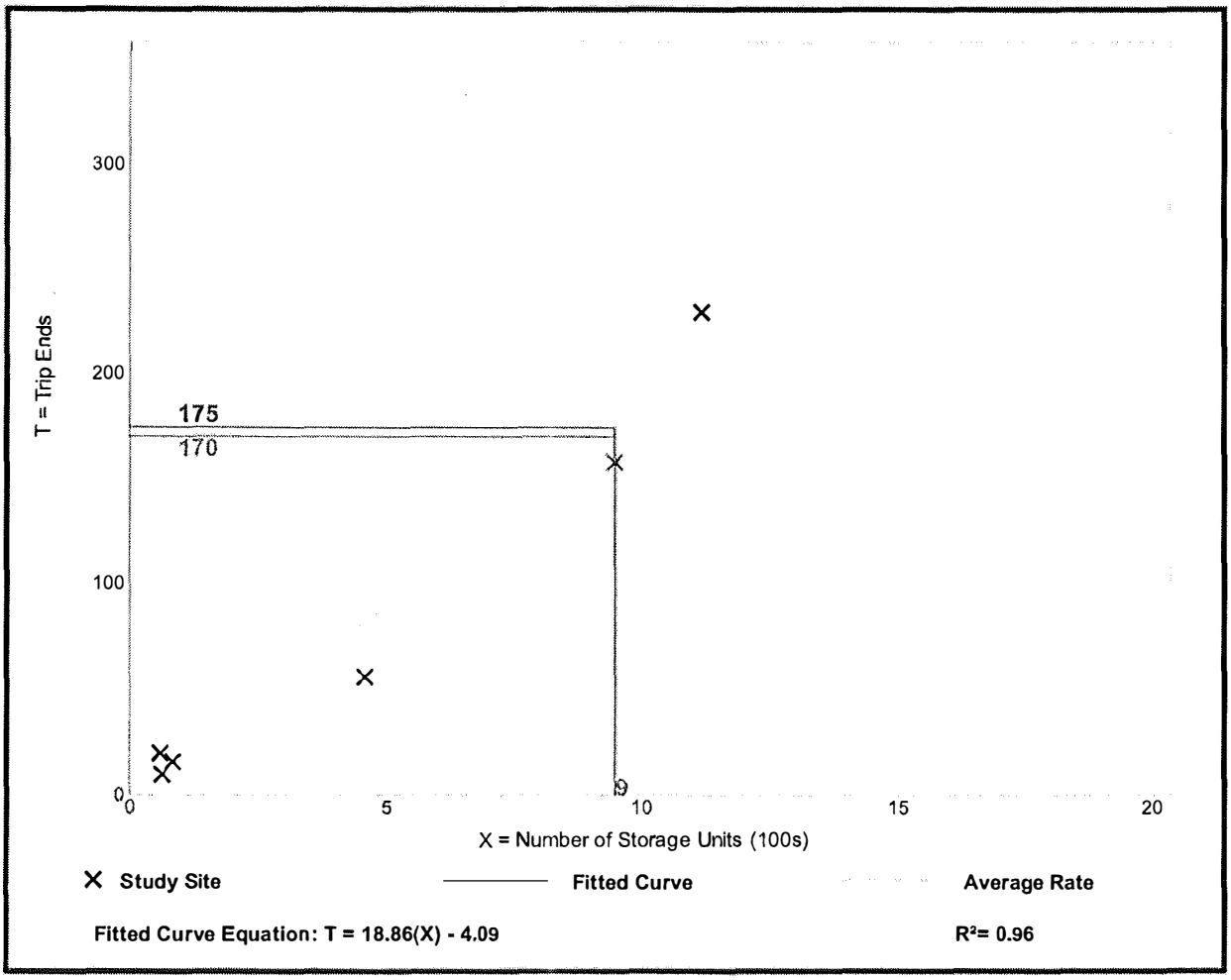
Vehicle Trip Ends vs: Storage Units (100s)
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 6
Avg. Num. of Storage Units (100s): 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
17.96	12.25 - 33.33	4.13

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 170 VEHICLE TRIPS
(85 ENTERING / 85 EXITING)

Mini-Warehouse
(151)

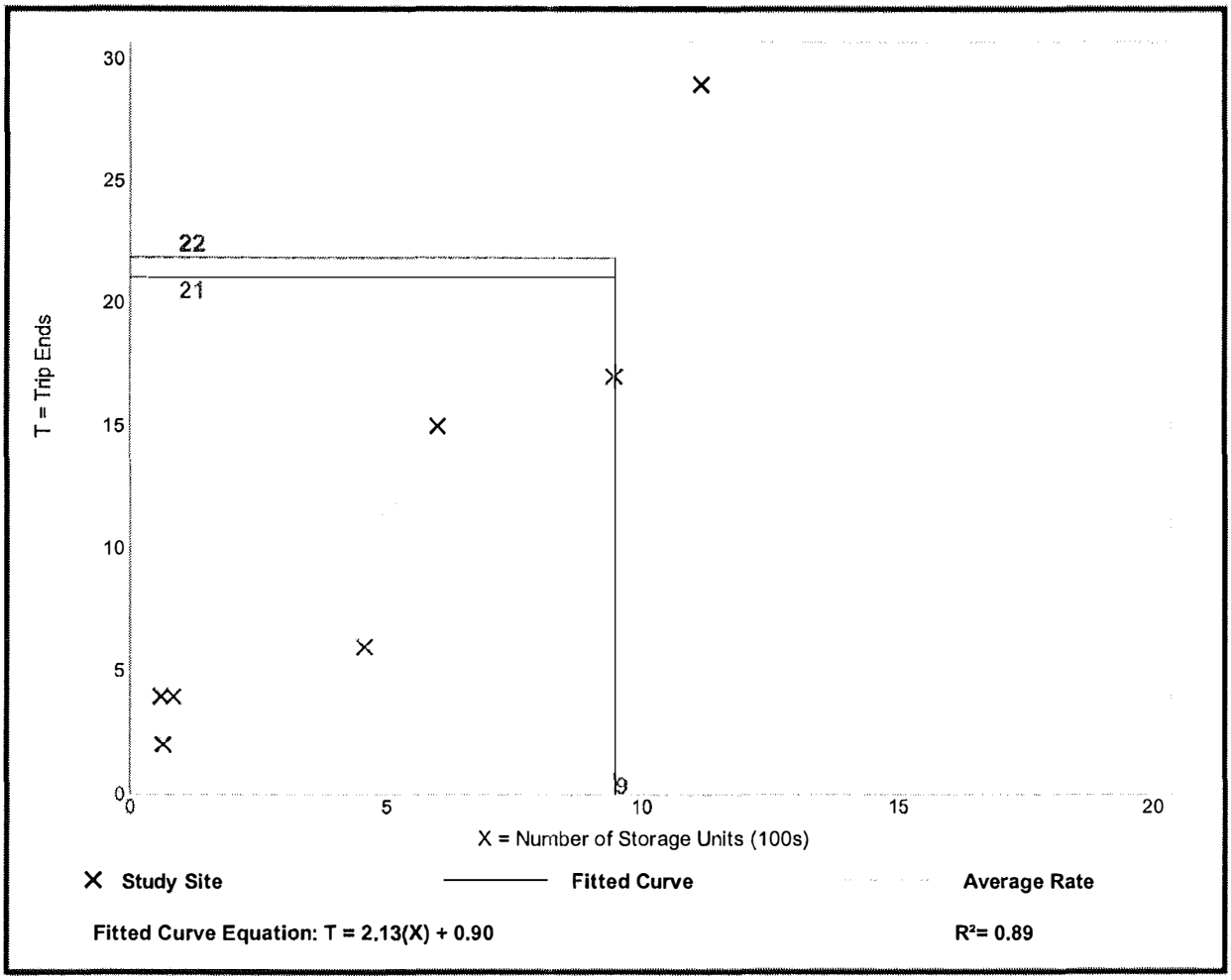
Vehicle Trip Ends vs: **Storage Units (100s)**
On a: **Weekday,**
AM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. Num. of Storage Units (100s): 5
Directional Distribution: 58% entering, 42% exiting

Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
2.31	1.31 - 6.67	0.94

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T= 22 VEHICLE TRIPS
(13 ENTERING/9 EXITING)

Mini-Warehouse
(151)

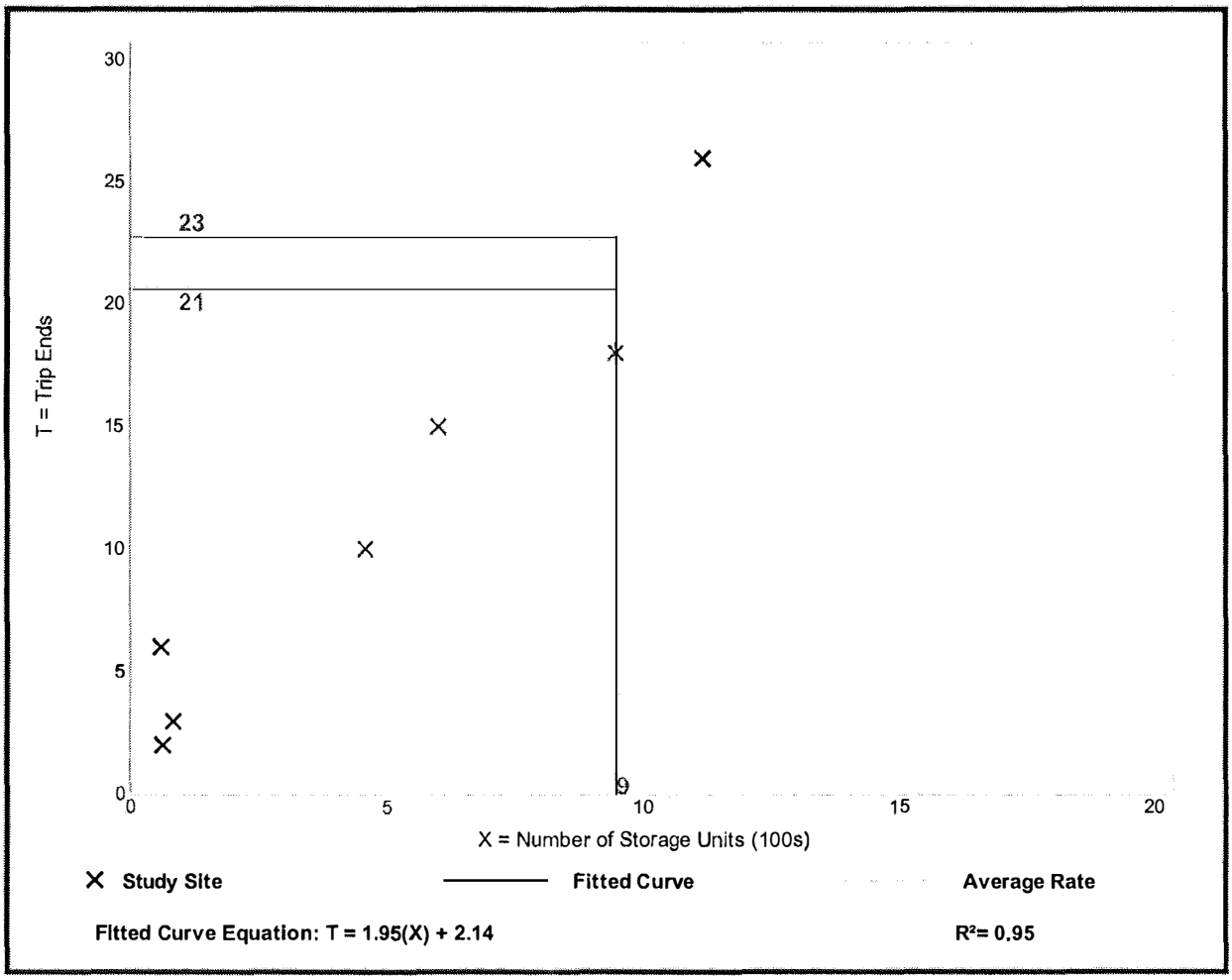
Vehicle Trip Ends vs: **Storage Units (100s)**
On a: **Weekday,**
PM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. Num. of Storage Units (100s): 5
Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
2.40	1.90 - 10.00	1.17

Data Plot and Equation



Fitted Curve Equation: T = 1.95(X) + 2.14

R^2= 0.95

Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 23 VEHICLE TRIPS
(11 ENTERING/12 EXITING)

Mini-Warehouse
(151)

Vehicle Trip Ends vs: **Storage Units (100s)**
On a: **Saturday**

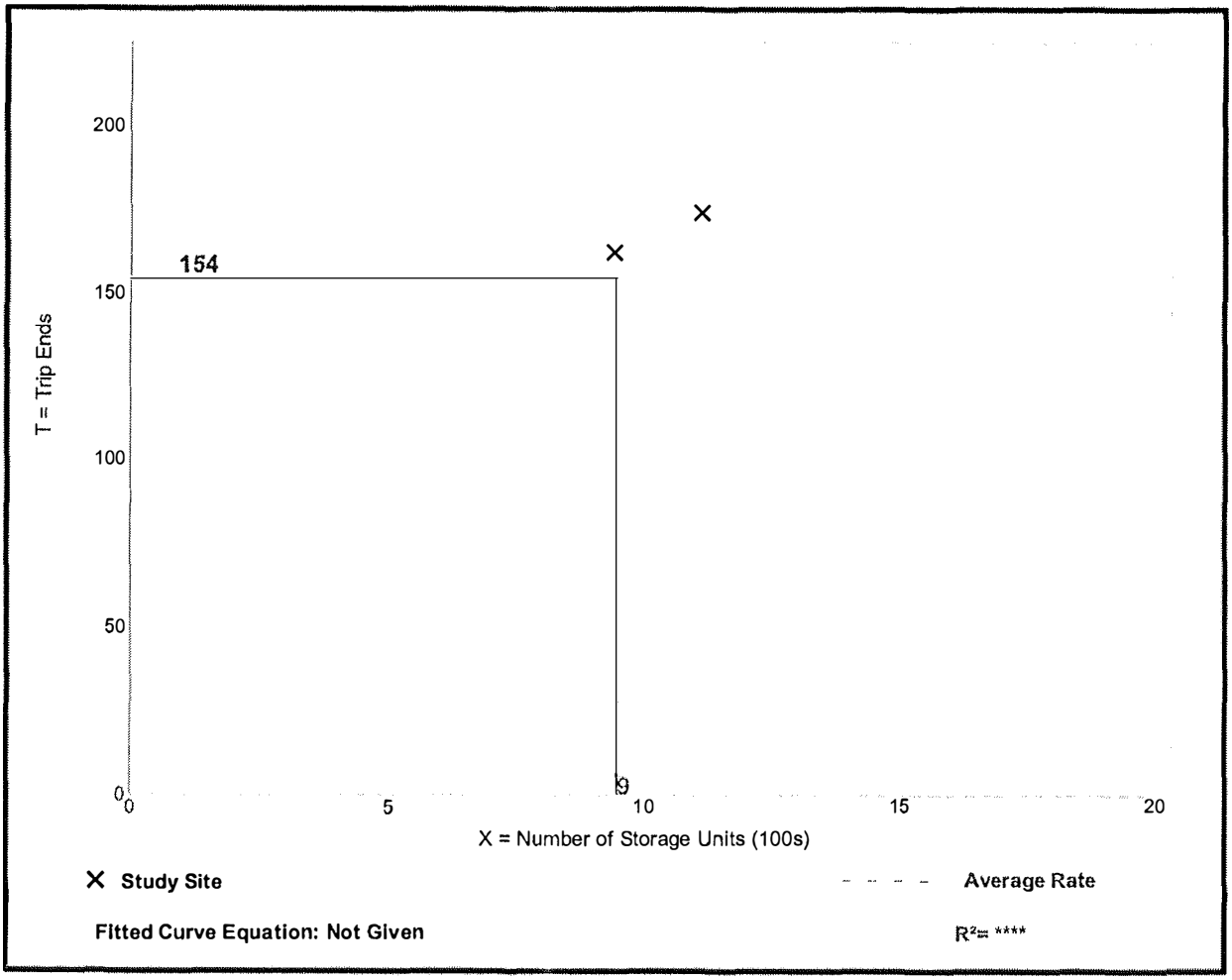
Setting/Location: **General Urban/Suburban**
Number of Studies: 2
Avg. Num. of Storage Units (100s): 10
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
16.29	15.58 - 17.12	*

Data Plot and Equation

Caution – Small Sample Size



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 154 VEHICLE TRIPS
(77 ENTERING / 77 EXITING)

Mini-Warehouse
(151)

Vehicle Trip Ends vs: Storage Units (100s)
On a: Saturday, Peak Hour of Generator

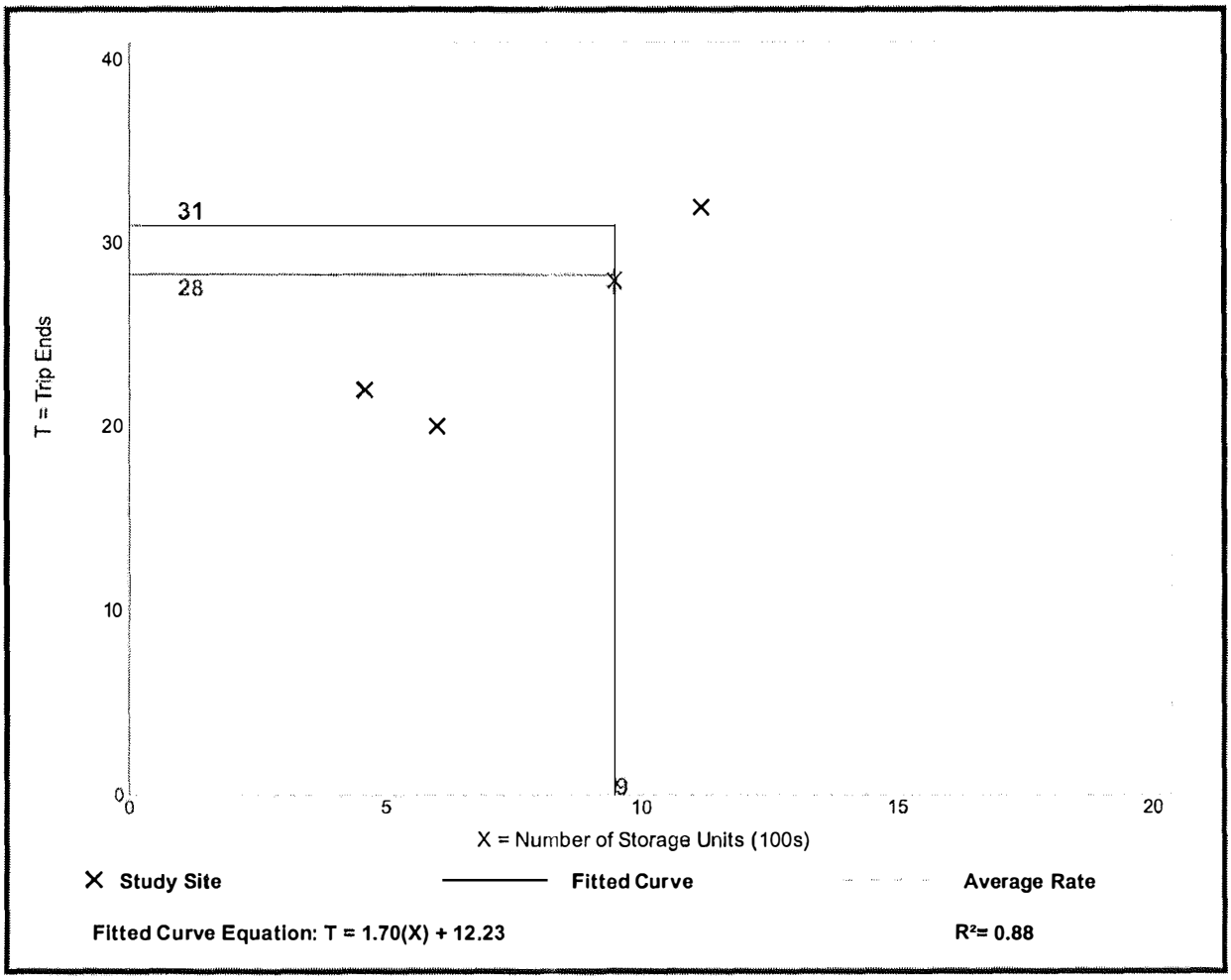
Setting/Location: General Urban/Suburban
Number of Studies: 4
Avg. Num. of Storage Units (100s): 8
Directional Distribution: 56% entering, 44% exiting

Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
3.27	2.86 - 4.81	0.76

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: T = 1.70(X) + 12.23

R^2= 0.88

Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

T = 31 VEHICLE TRIPS
(17 ENTERING / 14 EXITING)

AGREEMENT FOR RENTAL OF STORAGE SPACE

SAMPLE

Office Hours: 9 am – 4:30 pm Monday – Friday, Closed Weekends.
Storage Access Hours: 7 am – 9 pm, 7 days a week, including all holidays.

Facility: _____ Size: _____ Unit #:_____ Rent: $_____ Date:_____

First Month:$_____ Security Deposit:$_____ Total Due: $_____
Late Charge: $15.00 Returned Check Charge: $20.00 Access Code: 1 ___ ___ ___ ___

Tenant_____ Phone ( )_____ Alt. Phone ( )_____

Address _____ City_____ State_____ Zip_____

Email_____ Employer _____ Phone ( ) _____

Auto Make _____ Model _____ Year_____ Color_____ License Plate _____ State _____

Emergency Contacts: Name _____ _____

Phone ( )_____ ( )_____

Description of personal property to be stored: _____

****NO RENT REFUNDS****

☐ RENTAL OF SPACE:

INT A-Z Storage Rentals, Inc. (hereinafter referred to as "Owner") hereby leases to Tenant and Tenant hereby leases from Owner the Storage Space(s) set forth above (hereinafter referred to as "Storage Space") at the rate of rental set forth above, and subject to all terms and conditions of the rental Agreement as contained herein. Owner is not in the warehouse business, nor in the business of storing personal property for a fee. Under no circumstances shall Owner be deemed to be a bailee or other type of custodian of Tenant's personal property. Owner's employees are unauthorized to provide any services on behalf of Owner. Should Owner's employees provide services to Tenant at Tenant's request, Owner's employees shall be deemed to be acting as agents of Tenant.

☐ PERIOD OF OCCUPANCY:

INT The period of Occupancy created by this Rental Agreement shall begin as of the date of this Rental Agreement and shall continue from **month to month** thereafter. **Rent is not pro-rated for early move out.** Owner or Tenant may terminate the Period of Occupancy created hereunder by delivering written notice to the other party of its intention to do so **at least fifteen (15) days prior to the last day of the month** in which the Period of Occupancy shall terminate. Any property left in the Storage Space after the last day of the month in which the Period of Occupancy terminates shall be deemed abandoned by Tenant. After said date, Owner may retake possession of the Storage Space and dispose of the contents therein without notice or liability to the Tenant. Owner may terminate this Rental Agreement by any means provided by law.

☐ RENT:

INT Tenant shall pay to owner on the first day of the Period of Occupancy, and on the **first day of every month** thereafter until the Period of Occupancy is terminated, **withont notice or demand**, the amount of rental set forth above (herein after known as "Rent") due for that month. All rental payments shall be made to Owner at the address set forth above, or at such other address as may be hereinafter designated by Owner in writing to Tenant, in lawful money of the United States of America. Tenant agrees to pay the Late Charge for Rent received **after 4:30 p.m. on the 10th** day of the month for which it is due. Notwithstanding the above, Owner may accept cash, money order, debit, Visa, Mastercard, Discover, or properly drawn checks for payment of Rent. If a check is returned uncollected, payments represented by it shall be considered delinquent on the date originally due and shall be subject to the Returned Check Charge set forth above. If rent is received **after 4:30 on the 17th** day of the month, the unit will be over-locked and a certified letter fee will be applied. Once rent and fees have been received, the unit will be unlocked on **the next business day by 4:30 p.m.** A-Z Storage reserves the right to refuse a personal check after the 17th or delay unlocking until the check has cleared. Owner my increase the Rent by notifying Tenant in writing of the increase at least thirty (30) days prior to the first day of the month for which increased Rent is due. Tenant shall pay the increased Rent from the date it becomes effective. If tenant is unwilling to pay the increased Rent it may terminate this Rental Agreement as provided in the Paragraph entitled PERIOD OF OCCUPANCY. **NOTICE: All personal property stored in the storage space(s) will be sold or otherwise disposed of if no rental payment has been received for a continuous 30-day period.** Two legal notices containing the public auction date will appear in the Daily Hampshire Gazette at the expense of the Tenant. **Tenants who are schednled for auction more than twice will receive a 30-day notice to vacate their unit(s).**

☐ LIEN:

INT A. The property stored, or to be stored **is NOT insured** by the operator against loss or damage. B. The operator, in accordance with Massachusetts General Laws, Chapter 105A shall have lien against the property stored in the unit. C. The property stored in the leased space may be sold in accordance with said law, to satisfy the lien if you, the Occupant, are in default.

☐ SECURITY DEPOSIT:

INT The security deposit paid by you shall be held by Operator, without interest, and shall be refunded to you within two weeks after you have vacated the storage unit. Any unpaid charges, cleaning fees, costs of repair or other reasonable charges shall be deducted from the security deposit. It shall be mailed to you at the address specified in the written notice or the last known address on file. In order to receive full security deposit refund, tenant must deliver written notice of its intend to vacate the unit by the 15th of the month, **leave the unit empty and broom clean by 9:00 p.m. on the last day of the month, and remove the padlock.** Failure to give proper notice will result in a **half-month's deduction from the security deposit.** If the unit is not empty and clean, a minimum of $50.00 cleaning fee will be deducted from the security deposit.

☐ TENANT HAS READ THE FOREGOING RENTAL AGREEMENT, INCLUDING THE TERMS ON THE REVERSE SIDE HEREOF.
INT TENANT HAS RECEIVED A COMPLETE AND SIGNED COPY OF THIS AGREEMENT.

TENANT DATE

OWNER'S RESIDENT MANAGER DATE

☐ RISK OF LOSS OR DAMAGE:

INT **Owner shall have no liability for damage to or loss** of property place in Tenant's Storage Space caused by heat, cold, theft, vandalism, fire, water, winds, dust, rain, explosion, rodents, insects or any other cause whatsoever. Owner carries no insurance covering damage to or loss of Tenant's property. Tenant shall maintain a policy of fire and extended coverage insurance with theft, vandalism and malicious mischief to the extent of 100% of the replacement value of Tenant's property. To the extent Tenant does not maintain such insurance, Tenant agrees to "self insure" Tenant's property to the same extent as such a policy would have provided. Owner shall not be deemed to either expressly or impliedly provide any security protection to the Tenant's property stored in the Storage Space. Any security devices which Owner may maintain are for Owner's convenience only. Owner may discontinue its use of any security device in whole or in part at any time without notice to Tenant. Owner shall not be liable to Tenant or Tenant's invitees for personal injuries or damage to Tenant's property caused by any act or negligence of Owner or any other person on the premises. Tenant hereby agrees to indemnity and to hold harmless Owner from any and all claims, including claims for which Owner is or is alleged to be negligent, for damages to property or personal injury and costs, including attorneys' fees, arising from Tenant's use of the Storage Space.

☐ USE OF STORAGE SPACE:

INT The Storage Space shall not be used for any unlawful purpose and shall be kept in good condition by Tenant. **Tenant shall not use the Storage Space to store any flammable, combustible, explosive, corrosive, chemical, odorous, perishable, noxious, or other inherently dangerous materials. Tenant shall not use the storage space for residential purposes. Tenant shall not use the storage space for active storage, i.e., manufacture, fabrication or maintenance. Tenant warrants that all items placed by Tenant in the storage space shall be Tenant's own property or property which tenant is legally entitled to possess. Tenant must keep Tenant's storage space locked and provide his own lock and key.** Tenant may place only one lock on the storage space and hereby authorized owner to remove any additional locks on the storage space. Tenant shall not place any property or material outside the Storage Space. **Any property or material found outside the Storage Space shall be conclusively presumed to be abandoned** and may be disposed of by Owner without notice or liability to Tenant. Tenant shall not make any alterations to the Storage Space nor post any signs without the express written consent of Owner.

☐ OWNER'S RIGHT TO ENTER, INSPECT, REPAIR:

INT Upon the request of Owner, its agent or employees, Tenant shall provide the Owner, its agents or employees, access to the Storage Space for the purpose of inspection, repair, alteration, improvement, or to supply necessary or agree services. **In case of an emergency, owner, its agents or employees may enter Tenant's storage space for any of the above stated purposes without notice to or consent from Tenant and Owner retains the right to remove the property in the storage space to another space or facility.** For the purpose of this Paragraph, the term "emergency" means any sudden, unexpected occurrence or circumstance which demands immediate action.

☐ DELIVERY OF NOTICE:

INT Any notice provided under the Rental Agreement, or under Massachusetts General Laws, Chapter 105A, or as amended, shall be given in writing by mailing the same by certified mail, return receipt requested, first class postage prepaid, to Owner or Tenant at their respective addresses set forth above, or at such other address or addresses as may hereafter be designated by like notice.

☐ DEFAULT BY TENANT:

INT Owner shall have a lien on all property stored by Tenant in the Storage Space for all Rent, labor charges, or other charges, present or future, including attorney's fees and costs, in relation to the Storage Space or property and for all expenses necessary for its preservation, or expenses reasonably incurred in its sale or other disposition pursuant to Massachusetts General Laws, Chapter 105A, or as amended hereafter. In the event that the Rent or other charges set forth in this Rental Agreement are not paid within ten (10) days after becoming due. Owner shall have, in addition to all other remedies provided by law, all rights and remedies set forth under Massachusetts General Laws, Chapter 105A "Self-Storage Facilities".

☐ ATTORNEYS' FEES AND COSTS:

INT Tenant agrees to pay Owner all costs and expenses, including reasonable attorneys' fees and court costs, incurred by Owner in enforcing any of the terms or conditions of this Rental Agreement, or any of its rights and remedies under Massachusetts General Laws, Chapter 105A, or as amended hereafter.

☐ EXCLUSIONS OF ALL WARRANTIES:

INT Tenant agrees that Owner, its agents and employees have not made and make no representations of warranties of any kind or nature, directly or indirectly, expressed or implied, as to any matter whatsoever related to the Storage Space and facility. Owner's, its agents', and employees' oral statements do not constitute warranties, and shall not be relied upon by the Tenant, nor shall any of said statements be considered a part of this Rental Agreement. The entire agreement and understanding of the parties is hereto embodied in this writing and **no other warranties** are given beyond those set forth herein. It is further understood and agreed that Tenant has been give an opportunity to inspect and has inspected the Storage Space, and that **Tenant accepts the Storage Space as is and with all faults.**

☐ MISCELLANEOUS:

INT

A. **Tenant is aware that office staff is not available outside of normal office hours and all inquiries, issues, or questions can be addressed during those hours ONLY.**
B. **The access code for the main gate is private. To retrieve the code after originally assigned, a valid photo ID must be presented to management at the office during normal office hours. No exceptions will be made. Tenant is aware that under no circumstances is it considered an emergency if Tenant's code does not open the gate and office staff is not available to retrieve the correct code.**
C. **Storage access hours are 7:00 am to 9:00 pm every day of the year. Access to storage units after hours is strictly prohibited.** If already inside the facility, you may exit through the pedestrian gate, however any vehicles inside the facility will remain until the following morning.
D. If any provision of the Rental Agreement is declared illegal, unenforceable, or otherwise invalid, such declaration shall not affect the validity of the remaining provisions of the Rental Agreement.
E. All the provisions herein shall apply to, bind and obligate the heirs, personal representatives, successors, assigns, agents and representatives of the parties hereto. The provision of the Rental Agreement, and the rights of the parties hereto, shall be construed in accordance with the applicable laws of the State of Massachusetts, including but not limited to Massachusetts General Laws, Chapter 105A or as amended hereafter.
F. No express or implied waiver by Owner of any breach or default by Tenant shall constitute a waiver of any additional or subsequent breach or default by Tenant, nor shall it be waiver of any of Owner's rights hereunder.
G. No subletting of the Storage Space or any portion thereof or assignment of this Rental Agreement by Tenant is permitted.
H. The captions appearing in this Rental Agreement have been included only as matter of convenience, and shall in no way be interpreted to define, limit, construe or describe the scope or intent of any of the provisions of this Rental Agreement, nor in any way to affect this Rental Agreement.
I. This Rental Agreement contains the entire agreement between the parties hereto and supersedes any prior written or oral agreements. No amendment or alteration hereto shall be binding unless set forth in writing and signed by both Owner and Tenant.
J. Tenant hereby waives trial by jury in any action, proceeding or counterclaim brought on any and all matters arising out of this Rental Agreement or the use of occupancy of the Storage Space.

16181

CAPE COD COMMISSION

3225 MAIN STREET
PO Box 226
BARNSTABLE, MA 02630
508-362-3828
FAX: 508-362-3136

DATE: February 28, 1991
TO: Lloyd Geisinger, President, Thorndike Development Corporation
FROM: Cape Cod Commission
RE: Development of Regional Impact Request
Cape Cod Commission Act, Section 12 and 13

APPLICANT: Thorndike Development Corporation
PROJECT#: TR 90057
PROJECT: Bourne Shopping Center
Route 28 (Mac Arthur BLVD.) and Clay Pond Road
Bourne, Ma.
MAP#: 31.4; Lots 20 and 21

DECISION OF THE CAPE COD COMMISSION

SUMMARY

The Cape Cod Commission (Commission) hereby approves with conditions the application of Thorndike Development Corporation for a DRI approval under Sections 12 and 13 of the Cape Cod Commission Act (Act), c. 716 of the Acts of 1989, as amended, for the proposed Thorndike Development Corporation Bourne Shopping Center. This decision is rendered pursuant to the vote of the Commission on February 7, 1991.

PROJECT DESCRIPTION

The proposed shopping center is located on a 16.17 acre site on the southwest corner of the intersection of Mac Arthur Boulevard (Route 28) and Clay Pond Road. It consists of two one-story buildings, with a combined square footage of 74,500 square feet. The final plans represent that one structure shall contain 72,000 square feet (including a 36,235 square feet grocery store and several smaller shops) and the other structure shall contain 2,500 square feet. There will be 430 parking spaces. Forty percent of the site will be covered by impervious surfaces (buildings and pavement). Thirty percent of the site will be retained in a natural undisturbed state (predominantly in two buffer areas, one along Mac Arthur Blvd., the other adjoining an adjacent residential subdivision). The remainder of the site will include extensive landscaping and drainage areas. Access to the shopping center will be via Clay Pond Road.

ORIGINAL PRINTED ON RECYCLED PAPER

Thorndike Development Decision (Bourne A&P)

PROCEDURAL HISTORY

This project was referred to the Commission by the Bourne Planning Board on June 8, 1990. A duly noticed public hearing was conducted by the Commission pursuant to Section 5 of the Act on August 2, 1990 in rooms 11 and 12 of the Superior Court House on Route 6A in Barnstable. The public hearing was continued to September 26, 1990 at the Bourne Town Hall in Buzzards Bay. This hearing and the subsequent hearings and meetings were conducted by an authorized subcommittee of the Commission. The hearing was continued to October 17, 1990 at the Weary Traveler's Club in Monument Beach. The hearing was closed on October 17, 1990 and the record remained open until October 26, 1990 for the petitioner and November 2, 1990 for all other interested parties. The subcommittee held a public meeting after the close of the public hearing to deliberate on this project on November 15, 1990. The petitioner and the Commission agreed to extend the filing date of the decision on this project and hold another public hearing. A duly noticed public hearing was conducted by the Commission pursuant to Section 5 of the Act by the authorized subcommittee of the Commission on December 21, 1990 at the Bourne Memorial Community Building in Buzzards Bay. The Public Hearing was closed that day with the record being left open for the submission of written materials until February 1, 1991. The subcommittee held public meetings after the close of the Public Hearing to deliberate on this project on January 22, 1991 and February 4, 1991.

MATERIALS SUBMITTED FOR THE RECORD

A). Materials submitted for the record from the applicant:

1. Cover letter from Robert C. Davis on DRI application	July 13, 1990
2. DRI Application Form and Certified Abutters List	July 24, 1990
3. Letter from Robert C. Davis on Planning Board Concern	July 31, 1990
4. Preliminary Drainage from Bradford Saivetz + Associates, Inc.	September 13,1990
5. Letter from Robert C. Davis on abutters list (Faxed)	September 21, 1990
6. Traffic information from Robert Vanasse	September 21, 1990
7. Information on staff concerns from Bradford Saivetz + Ass., Inc.	September 25, 1990
8. Memo from Robert C. Davis	October 17, 1990
9. MEPA Review Memo from Robert C. Davis	October 23, 1990
10. Application Fee Paid	October 29, 1990
11. Letter on MEPA from Lloyd Geisinger	November 12, 1990
12. Building Elevations	November 17, 1990
13. Site Plan revision from Lloyd Geisinger (Faxed)	December 19, 1990
14. Additional information from Lloyd Geisinger	December 19, 1990
15. Stormwater calculations from Bradford Saivetz + Assoc., Inc.	December 19, 1990
16. Traffic information from Robert Vanasse	December 21, 1990

Thorndike Development Decision (Bourne A&P)

17. Additional traffic information from Robert Vanasse	January 8, 1991
18. Concept traffic improvement plan from R. Vanasse	January 8, 1991
19. Revised Site Plan	January 14, 1991
20. Drainage information from Braford Saivetz + Assoc., Inc.	January 16, 1991
21. Letter from Lloyd Geisinger	January 17, 1991
22. Letter from Robert C. Davis (Faxed)	January 31, 1991

B). Materials submitted for the record by the staff:

1. Notice of Public Hearing #1	July 19, 1990
2. Letter from Donald L. Connors	August 13, 1990
3. Letter from Dorr Fox	September 20, 1990
4. Staff Report #1	September 24, 1990
5. Addendum to Staff Report #1	September 25, 1990
6. Notice of Public Hearing #1(con.)	October 12, 1990
7. Project update to Commission Members	October 17, 1990
8. Notice of Public Hearing #1 (2nd con.)	November 3, 1990
9. Staff Report #2	November 15, 1990
10. Letter of extension	November 29,1990
11. Notice of Public Hearing #2	December 21,1990
12. Updated transportation comments	December 11, 1990
13. Topics for discussion on outstanding issues	December 13, 1990
14. Letter to Commission on Status of project	December 20, 1990
15. Progress Report#1	January 3, 1991
16. Progress Report#2	January 10, 1991
17. Draft Conditions#1	January 22, 1991
18. Letter of extension	January 22, 1991
19. Draft Conditions#2	January 31, 1991

C). Materials submitted for the record by the Town:

1. Letter from Bourne Public Schools	April 25, 1990
2. DRI referral form and cover letter from Planning Board	June 8, 1990
3. Abutters list from Board Assessors Town of Bourne	September 6, 1990
4. Minutes of the Planning Board regarding Thorndike Development	September 26, 1990
5. Letter from Board of Selectmen	September 29, 1990
6. Letter from Bourne Water District	October 1, 1990
7. Information on Heritage Park from Board of Selectmen	October 26, 1990

D). Materials submitted for the record by the public:

1. An unsigned letter on concerns of the elderly	March 13, 1990
2. A letter from Ms. Sabol	March 19, 1990
3. A letter from Ms. Hougan	March 27, 1990
4. A letter from Lester Levenbaum	May 26,1990

Thorndike Development Decision (Bourne A&P)

5. A letter from Jane LeGraco	June 8, 1990
6. A petition of 292 people not in favor of project	June 8, 1990
7. A letter from Mr. &Mrs. Reniou	June 13, 1990
8. A letter from Mr. & Mrs. Bartlett	June 26, 1990
9. A letter from Stephen Mealy	September 24, 1990
10. A letter from Ms. Dougan	September 24, 1990
11. A unsigned letter on traffic	September 24, 1990
12. A letter from Mr. & Mrs. Adams	September 24, 1990
14. A letter from Ms. O'Hara	September 24, 1990
15. A letter from Mr. & Mrs. Loring	September 24, 1990
16. A letter from Mr.& Mrs. Costello (with 52 signatures)	September 25, 1990
17. A letter from Mr. Mrs. Baillie	September 25, 1990
18. A letter from Mrs. Tresca	September 25, 1990
19. A letter from Mrs. LeGraco	September 26, 1990
20. A letter from Ms. King	September 26, 1990
21. A letter from Mr. Aurelio	September 26, 1990
22. A letter from Mr. & Mrs. Bartlett	September 26, 1990
23. A letter from Mr. O'Hara	September 27, 1990
24. A letter from D. Stockley	September 29, 1990
25. A letter from B. Costello to J. DeVillars	October 11,1990
26. A letter from T. & J. Moore	October 13, 1990
27. A letter from R. & K. Weller	October 15, 1990
28. A petition in favor of project	October 17, 1990
29. A letter from A. & J. Knutila	October 17, 1990
30. A letter from W. & B. Costello	October 17, 1990
31. A letter from K. Janulewicz	October 17, 1990
32. A letter from K. Paulsen	October 17, 1990
33. A letter from M. Herron	October 22, 1990
34. A letter from D. Reagan	October 22, 1990
35. A letter and supporting documentation from A.W. Wilson Assoc.	October 22, 1990
36. A letter from D. Stockley	October 22, 1990
37. A letter from C. Keely	October 24, 1990
38. A letter from C. & D. Cahill	October 29, 1990
39. A letter from M. Cappiello	October 30, 1990
40. A letter from P. & C. Baillie	October 31, 1990
41. A letter from J. Bartlett	October 31, 1990
42. A letter from T. Bautz	November 2, 1990
43. A letter from B. Costello	November 2, 1990
44. A letter from D. O'Hara	November 2, 1990
45. A letter from D. Junkett	November 2, 1990
46. A letter from D. Marcucci	November 5, 1990
47. A letter from M. Steele	December 18, 1990
48. A letter from H. & J. Bartlett	December 21, 1990
49. A letter from K. Paulsen	December 21, 1990
50. A letter from B. Calin	December 21, 1990

51. A letter from B. Farley	January 16, 1991
52. A letter from H. & J. Bartlett	January 18, 1991
53. A letter from T .Bautz	January 18, 1991
54. A letter to D. Foster from D. & B. Barsham	January 28, 1991
55. A letter to D. Ellis from J. Nolan	February 8, 1991

The application and notices of public hearings relative thereto, the Commission's staff notes, exhibits and correspondence, the transcript and minutes of meetings and hearing and all written submissions received in the course of the proceedings are incorporated into the record by reference.

TESTIMONY

At the September 26, 1990 hearing, the Commission heard testimony from Lloyd Geisinger, representing Thorndike Development, Robert Davis, attorney for Thorndike Development, Donald Springetti, site engineer for the proposal, and Mr. Gibbs, representing A & P. These men explained their proposal for a 96,150 square foot shopping center on a 16 acre site at Clay Pond Road and Route 28 in Bourne. They stated that the project would create an economic benefit to the town by generating new tax dollars and providing jobs. In addition, it filled the community need for a supermarket. They believed that they had sufficiently mitigated the detriments of the project, which were the increase in traffic and concerns related to ground water quality.

The staff presented its' report, focusing on traffic, water quality and visual issues. However, all resources protected or encouraged by the Act were discussed.

Marie Oliva, Bourne Selectman, stated that the project would be beneficial to the economy but had concerns related to traffic, water quality, and neighborhood buffers. Tom Barlow, Bourne Selectmen, had a similar perspective.

Representative Tom Cahir spoke on his concerns over water quality, earth removal, and increased traffic. He also stated that a MEPA review would be necessary.

Wayne Duchemin, Mass DPW, stated concerns over the increase in traffic on Route 28 and impacts on the highway's, U-turns.

Twelve members of the public spoke in opposition to the project. Their concerns included degradation of the quality of the Town's public water supply, the increase in traffic, and the destruction of the high quality of life in the neighborhood.

Thorndike Development Decision (Bourne A&P)

The hearing was continued to October 17, 1990 at the Weary Traveler's Club in Bourne. More than two hundred people attended the hearing. Further testimony on the project's description was taken from the proponent.

State Representative Tom Cahir reiterated his concerns over traffic and aquifer protection. He emphasized MEPA's role in the review of the project.

Seventeen members of the public spoke in opposition to the project. Ten people spoke in favor of the project. Two made comments but did not state a position. Major issues included increased traffic, changes to the character of the neighborhood, and protection of the ground water supply.

The staff of the Commission presented a report stating concerns over visual impacts, increased traffic, and the projects location in a water resource district.

The hearing was closed on October 17, 1990.

The subcommittee had a public meeting on November 19, 1990 in Rooms 11 & 12 of the Barnstable Superior Court House, Barnstable, MA. At this meeting, the subcommittee voiced concerns over traffic impacts, the design of the project, and ground water pollution. The subcommittee could not support the project as proposed. However, they could possibly re-consider their position if the proposal was smaller. The Commission and the project proponent agreed to extend the filing deadline of the decision to February 15, 1990 to accommodate a revision to the plans and a second public hearing.

A public hearing was held on December 21, 1990 at the Bourne Memorial Building in Bourne, MA at 2:00 p.m.

Lloyd Gelsinger described the revisions to the project which now consisted of a shopping center containing 74,500 square feet. Bob Vannasse, traffic consultant for the proponent, explained traffic mitigation measures. CCC Staff members, Bob Mumford and Greg Guimond, raised several concerns regarding the new proposal and the proposed mitigation. Twelve members of the public spoke in opposition to the project. Four members of the public voiced concerns but did not state a position. One person supported the project. The public hearing was closed.

The subcommittee held a public meeting on January 22, 1991. The subcommittee and staff discussed the issues brought up at the public hearing and mitigation options. The filing deadline of the decision was extended until March 1, 1991 by mutual agreement of the Commission and the proponent.

The subcommittee had a public meeting on February 4, 1991. The subcommittee voted to recommend approval of the project to the full Commission. The subcommittee discussed and revised conditions to the approval.

The subcommittee recommended approval of the project with conditions to the full Commission at the CCC meeting of February 7, 1991.

Thorndike Development Decision (Bourne A&P)

JURISDICTION

The proposed Bourne Shopping Center qualifies as a Development of Regional Impact (DRI) under Section 12 (c)(6) of the Act. Section 12 (c)(6)requires review of any proposed retail or wholesale business, office or industrial development, as well as any private, health, recreational or educational development which has a floor area greater than ten thousand square feet for new construction. The project was referred by the Bourne Planning Board on June 8, 1990.

FINDINGS

The Commission has considered the application of Thorndike Development for the proposed shopping center and based on consideration of such application and upon the information presented at the public hearing, makes the following findings pursuant to Section 12 and 13 of the Act:

1. The proposed 74,500 sq. ft. shopping center will provide a benefit of new employment opportunities to the local and regional economy.

2. The proposed shopping center with a supermarket fills a need of residents of Bourne south of the Canal for convenient shopping activities.

3. The proposed shopping center will create significant traffic impacts to the local and regional roadways. The proponent will provide substantial roadway improvements which will mitigate the regional traffic impacts.

4. The development will have a significant visual impact on the Route 28 corridor and adjacent residential community to the west. The proponent will provide migitation through landscaping, natural buffers, an opaque fence, limitations on signage, and limitations on lighting.

5. The site is within a water resource district. The applicant has agreed to limit the size of the project, restrict permitted uses and limit the amount of waste water discharged which mitigates potential impacts on water resources.

6. The applicants waste management program provides for recycling.

7. The site is zoned business under the Bourne zoning by-law. The proposal is consistent with the by-law, provided that a special permit is granted by the Bourne Planning Board.

CONCLUSION

Based on the findings above, the Cape Cod Commission hereby concludes:

The benefits of the proposed project outweigh the detriments resulting from the development. This conclusion is supported by Findings #1-6 listed above.

The project is consistent with local development regulations and by-laws. This conclusion is supported by Finding #7.

The Commission hereby approves the application of Thorndike Development for a Development of Regional Impact pursuant to Section 13 of the Act with the following conditions:

CONDITIONS:

A. PROCEDURAL:

1). The applicant shall obtain all necessary state and local permits, including MEPA sign off, and shall agree to perform any additional mitigation required though the MEPA process prior to the commencement of any construction activity.

2). The Applicant shall obtain a Certificate of Compliance from the Commission or its designee for any portion of the proposed development before the local official responsible for issuing Certificates of Occupancy may issue a permanent or temporary Certificate of Occupancy for the Thorndike Shopping Plaza. All mitigation measures (including those required by condition #1 above) shall be completed prior to the issuance of the Certificate of Compliance.

3). The final revised site plan (1/14/91) shall become part of the decision and any changes must be approved by the Commission.

B. SOLID WASTE/RECYCLING:

1). The applicant shall be required to separate cardboard from all other wastes generated by the development and provide contracted removal to material brokers for eventual recycling, thus avoiding land disposal and incineration. The applicant shall have the right to apply for relief from this condition in the event that market conditions do not permit compliance.

2). All dumpsters shall be surrounded by evergreen vegetation or opaque fencing as a visual screen. Details of this visual screen shall be specified by the Bourne Planning Board.

3). Businesses that sell oil shall be required to collect and dispose of used oil in accordance with the requirements of state and local laws.

C. LANDSCAPING/PARKING:

1). All trees in the parking areas and along interior roadways shall be at least 2.5" - 3" caliper (DBH) in size.

2). Plantings in addition to the landscaping shown on the revised site plans dated (1/14/91) may be specified by the Planning Board through the local review process.

3). Light fixtures in the parking areas shall be no greater than twenty feet (20') in height. Cut off fixtures that limit the intensity of lighting to 15 degrees below horizontal shall be used.

D. WATER RESOURCES:

1). The impervious surface of the site shall not exceed forty percent (40%) and at least thirty percent (30%) of the site shall remain undisturbed.

2). Pervious parking areas shall be allowed subject to local special permit approval.

3). Pervious parking areas shall not use supportive materials (underneath) that would compromise pervious characteristics.

4). No commercial laundering shall be allowed on-site. Only drop service shall be allowed for dry cleaners. Coin operated laundries may be allowed provided that total wastewater flows generated on the site shall be limited to 7,748 gallons per day for total site (see condition D, #6).

5). No storage or generation of toxic or hazardous materials shall be allowed on-site except for the storage or display of products in sealed packages or containers offered for sale on the premises and the storage and application of products used in the maintenance of the property in accordance with the requirements of applicable law.

6). Total wastewater flows generated on-site shall be limited to 7,748 gallons per day.

7). The applicant shall provide a detailed maintenance program (including salt substitute) for the parking areas and drainage system prior to Commission issuance for the Certificate of Compliance.

8). Concrete encased trench drains or some other design acceptable to the Commission shall be provided along all edges of pervious parking areas and roadways.

E. TRAFFIC:

1). The applicant shall provide police officer control at the intersection of Clay Pond Road and the shopping plaza site drive when the level of service for left hand turns drops below "D". The specifics of the police officer control shall be finalized by the Bourne Police Chief. The lane configurations of the site drive and Clay Pond Road as shown in the revised site plan of 1/14/91, shall be constructed. The geometrics of these improvements shall be refined through the MEPA process. The refinements shall include providing taper lengths which meet current MDPW highway design standards.

2). The applicant shall provide safety improvements at the Beach Street/Shore Road and Beach Street/Clay Pond Road/County Road intersections. These improvements shall deal with safety concerns including the provision of striping, stop bars and the removal of vegetation to ensure safe stopping sight distance. The improvements noted above shall be finalized by the Bourne Surveyor of Highways or Bourne Department of Public Works. The applicant shall also provide other improvements as specified by MEPA.

3). The applicant shall be responsible for the cost of the relocation, redesign and construction of the U-turn south of Clay Pond Road. The location of southern U-turn shall be determined through the MEPA process. The U-turn north of Clay Pond Road shall be monitored by the applicant's traffic consultant for a period of one year after the opening of the plaza. The applicant shall be responsible for mitigation as required by the Commonwealth of Massachusetts Department of Public Works.

4). The applicant shall install a continuous deceleration/acceleration lane (with separation) on Route 28 in the vicinity of the Clay Pond Road intersection as shown on the Conceptual Plan Route 28 Improvements, prepared by Robert D. Vanasse & Associates, Inc. (dated 7 January 1990) and received January 8, 1991. The plan shall be finalized through the MEPA process.

5). The applicant shall provide a crosswalk across Clay Pond Road near the entrance of the proposed shopping center. The location of said crosswalk shall be specified by the Bourne Surveyor of Highways or Bourne Department of Public Works.

6). The applicant shall provide a sidewalk along Clay Pond Road from the entrance of the shopping center west to either Westerly Drive or Small Street (depending on the location of the sidewalk). The location of said sidewalk (either the north or south side of Clay Pond Road) shall be finalized by the Bourne Planning Board. The construction standards of said sidewalk shall be finalized by the Bourne Surveyor of Highways or Bourne Department of Public Works.

7). Any changes to the traffic conditions listed above as a result of the MEPA review which are judged substantial by the Commission shall require Commission approval.

Thorndike Development Decision (Bourne A&P)

E. ARCHITECTURAL DESIGN:

1). The applicant shall use natural building materials on the exterior of the structures (clapboard, cedar shingles, etc.) or the materials shown on the perspective drawing submitted (10/17/90 Exterior Elevations).

2). The building heights (27'-4" for the main supermarket building and 24'-4" for the remaining building) shall be as shown on the perspective drawing submitted (10/17/90 Exterior Elevations).

3). No roof signs shall be permitted. Wall signs shall be limited to the signband as shown on the perspective drawing submitted (10/17/90 Exterior Elevations).

4). One overhead sign for identification of each business shall be allowed under the overhang.

5). Only externally illuminated signs (including both wall signs and the free standing sign) shall be permitted.

6). The height of the free standing sign shall be limited to 15'.

Richard S. Armstrong, Chair — Date 3/1/91

COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss.

Subscribed and sworn to before me this 1st day of March 19 91.

Katharine L. Peters
NAME, Notary
My Commission Expires: 8/5/97

KATHARINE L. PETERS NOTARY PUBLIC COMMONWEALTH OF MASSACHUSETTS U.S.A.

RECORDED APR 18 91

CAPE COD COMMISSION

3225 MAIN STREET
P.O. BOX 226
BARNSTABLE, MA 02630
(508) 362-3828
FAX (508) 362-3136
E-mail: 74260.3152@compuserve.com

DATE: June 18, 1997 TR# 90057

TO: Attorney Barbara D. Sullivan
58 Sagamore Road
P.O. Box 383
Sagamore Beach, MA 02562

FROM: Cape Cod Commission

RE: Modification of a Development of Regional Impact Decision, Section 7,(d),(ii), Cape Cod Commission Administrative Regulations 4/14/97

PROJECT: Thorndike - Bourne Shopping Plaza (A&P)

MODIFICATION OF DEVELOPMENT OF REGIONAL IMPACT DECISION

The February 28, 1991 DRI Decision issued for the Thorndike - Bourne Shopping Plaza (A&P), pursuant to Section 12 of the Cape Cod Commission Act, by the Regulatory Committee of the Cape Cod Commission on April 26, 1993 and May 10, 1993 for the above referenced project is hereby modified as follows:

1). By adding the following language to the end of conditions F1 and F2; " and revised with the front elevation # 13-140, dated 4/20/93.

2). By adding the following sentence to the end of condition C3 " The applicant may install Contra/ Cline lighting fixtures in the parking lot."

Greg Silverman, Chairman 6/19/97 Date

COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss.
Subscribed and sworn to before me this 19th day of June 1997

Katharine L Peters
NAME, Notary
My Commission expires: My Commission Expires December 5, 1997

CAPE COD COMMISSION

3225 MAIN STREET
P.O. BOX 226
BARNSTABLE, MA 02630
(508) 362-3828
FAX (508) 362-3136
E-mail: frontdesk@capecodcommission.org

Date:	January 29, 2007
From:	Cape Cod Commission
Re:	Development of Regional Impact Cape Cod Commission Act, Sections 12 and 13
Applicant:	Bourne Clay, LLC c/o James Lamp, Eastern Development 120 Presidential Way Suite 300 Woburn, MA 01801
Project #:	TR90057
Project:	Bourne Shopping Center Route 28 (MacArthur Blvd.) and Clay Pond Road Bourne, MA
Book/Page:	Book 18704, Page 13

Decision of the Cape Cod Commission

The February 28, 1991 DRI Decision issued to Thorndike Development Corporation is hereby amended as a Minor Modification #2 by a vote of the Regulatory Committee on December 11, 2006. All findings and conditions attached to the February 28, 1991 decision continue to apply except as modified herein.

General Findings:

Finding G1: In 1991, the Cape Cod Commission issued a DRI approval to Thorndike Development Corporation for the construction of the Bourne Shopping Center. An A&P grocery store was primary tenant of the project, succeeded by a Grand Union that is currently in operation. Since more than 7 years have elapsed since the original DRI permit was issued and such permit was never extended, no local development permit may be issued subject to the expired DRI permit unless the project returns to the CCC for modification review and approval. The current owner of the Bourne Shopping Center is Bourne Clay, LLC.

Finding G2: In 2006, Housing Assistance Corporation and Housing Investments (HAC LLC) received a Town of Bourne ZBA comprehensive permit to construct 117 residential units (known as Canal Bluffs) on the parcel adjacent to the Bourne Shopping Center. Cape Cod Commission staff recommended that HAC LLC work with Bourne Clay LLC to provide a

second access drive to the residential development through the shopping center site, and continue to make this recommendation.

Finding G3: Bourne Clay LLC was approached by HAC LLC to explore the granting of an easement across the Bourne Grand Union site for the construction of a road to provide secondary access to residents of the affordable housing development known as Canal Bluffs. As consideration for this easement, HAC LLC agreed to record a conservation easement on a portion of its land and ask the Cape Cod Commission to grant the transportation credits from the donation of vacant developable land to the Bourne Grand Union project.

Finding G4: Cape Cod Commission staff worked with HAC and Bourne Clay, LLC to develop a second access drive plan that would meet the needs of both entities. In addition, transferring open space and transportation credits from HAC to the Bourne Shopping Center project to be credited toward future development and sharing a wastewater treatment plant were also discussed.

Finding G5: On December 4, 2006, Bourne Clay LLC submitted a request to modify the original permit to memorialize their agreement in the event Bourne Clay LLC seeks to redevelop the Bourne Shopping Center property in the future, including a site plan entitled "Figure 1 – Conceptual Access Road with Existing Grand Union Site", prepared by Horsley Witten Group, Inc, dated 11/29/06. The modification request includes provisions for open space credits, a secondary access road and transportation credits, and possible collaboration in consolidating water mains/pumps and sharing of HAC's wastewater treatment facility.

On December 12, 2006, the Commission received a letter from Coreen V. Moore, Bourne Town Planner, expressing the Town's support for a secondary access road through the Bourne Shopping Center site.

Finding G6: Increased open space, secondary access for the residential project and possible sharing of water supply infrastructure would be advantageous.

Condition G1: The applicant shall obtain a Preliminary Certificate of Compliance from the Cape Cod Commission certifying compliance with the conditions so required by this decision prior to the construction of the new access road.

Condition G2: The applicant, Bourne Clay LLC, shall construct the new access road within 5 years of the date of this decision. Bourne Clay LLC shall have 10 years from the date of this decision in which to exercise the credits allowed by this decision.

Water Resources Findings

Finding WR 1: Utilizing existing infrastructure to improve water quality is a major goal of the Water Resource section of the Regional Policy Plan. Bourne Clay LLC and HAC LLC have discussed the possibility of utilizing additional capacity at the Canal Bluffs project wastewater treatment facility for Grand Union flow if the Grand Union project were to expand or be redeveloped. Additional modifications to the treatment plant needed to accommodate flow from the supermarket (or redevelopment) should take into account the increased wastewater strength and other toxins present in the commercial effluent. The Canal Bluffs wastewater

facility is being permitted through DEP for a groundwater discharge permit. This concern would be addressed by DEP in the modification for the groundwater discharge permit.

Finding WR2: Bourne Clay LLC and HAC LLC have discussed the sharing of water main and booster pump infrastructure, which, if it were to occur, would provide increased redundancy in water circulation for area residents and would be a public benefit.

Finding WR3: The drainage from the proposed road should incorporate bioretention in order to minimize the input of nutrients from stormwater. Drainage techniques might include vegetated swales alongside the road or vegetated bioretention units where additional capacity may be required.

Open Space Findings and Conditions

Finding OS1: 0.5 acres of the open space reserved on the Bourne Shopping Center site as part of the 1991 DRI approval of the Thorndike Development project will be utilized for a new access road between the Canal Bluffs site and the shopping center. Bourne Clay LLC and HAC LLC have agreed that the 0.5 acres of open space removed for the road will be replaced on the Canal Bluffs site next door. In addition, another 2.5 acres on the Canal Bluffs site will be reserved to be used as open space in the future in the event that the Bourne Shopping Center site is redeveloped and additional open space may be required as part of that DRI review process. This finding acknowledges that up to 2.5 acres of remaining land on the Canal Bluffs site may be used as open space for future development on the Bourne Shopping Center site. Any open space provided on the Canal Bluffs site as part of this modification will be permanently protected through a non-statutory restriction, or other mechanism that the Cape Cod Commission may approve.

Condition OS1: In order to offset the loss of open space on the Bourne Shopping Center site to accommodate an access road, HAC LLC shall permanently protect 0.5 acres on the Canal Bluffs site (map 35/parcel 51). Prior to issuance of a Preliminary Certificate of Compliance, Bourne Clay LLC/Eastern Development shall provide the Cape Cod Commission with a non-statutory conservation restriction of a form and substance satisfactory to the Commission or its designee and consistent with Massachusetts General Laws Chapter 184, § 31 – 33 and accompanying plan which provides that 0.5 acres located on the Canal Bluffs 40B site and identified as open space on the plan entitled "Figure 1 – Conceptual Access Road with Existing Grand Union Site" as prepared by Horsley Witten Group and dated 11/29/06, shall be preserved as permanent open space. The restriction and site plan shall be approved by Commission counsel, executed and recorded at the Registry of Deeds or Registry District of the Land Court, and proof of recording shall be provided to the Commission prior to the receipt of the Preliminary Certificate of Compliance.

Transportation Findings and Conditions:

Finding T1: HAC LLC (Canal Bluffs) proposes to permanently protect approximately 40,263 square feet of vacant developable land off MacArthur Boulevard in Bourne. The parcel of land is identified on a plan entitled "Figure 2 – Conceptual Convenience Store Site Plan" as prepared by Horsley Witten Group and dated 11/29/06. This vacant developable land has the ability to support a 2,000 s.f. convenience store. A convenience store on MacArthur Boulevard has the potential to generate 1,476 daily trips, 134 weekday PM peak hour trips, and 154 Saturday

peak hour trips. The permanent protection of vacant developable land in excess of open space requirements as an offset to the trip reduction requirements of the RPP is allowable under MPS 4.1.2.7 (a). In order to receive these credits, the parcel must remain undeveloped and have no Route 28 access in perpetuity.

Finding T2: The vehicle interconnection between the Bourne Grand Union and the Canal Bluffs residential development will also remove vehicle trips from the regional roadway system. HAC LLC has requested that the vehicle interconnect credits also be awarded to the Bourne Grand Union site for compensation for the secondary access. The Cape Cod Commission allows a traffic credit for this interconnection as stated in Technical Bulletin 96-003 Part 5. As calculated by the applicant, the traffic credit allowed is 11 afternoon peak hour trips.

Condition T1: HAC LLC shall permanently protect approximately 40,263 s.f. of vacant developable land on the Canal Bluffs site off MacArthur Boulevard in Bourne as described in Condition OS1. The parcel of land is identified on a plan entitled "Figure 2 – Conceptual Convenience Store Site Plan" as prepared by Horsley Witten Group and dated 11/29/06. This parcel shall remain undeveloped and without Route 28 access in perpetuity. Bourne Clay LLC shall grant to the Housing Assistance Corporation and Housing Investments, Inc. an easement across the Bourne Grand Union site for the construction of a road to provide secondary access and egress for the affordable housing development known as Canal Bluffs. The Bourne Grand Union parcel shall be granted a traffic credit of 1,476 daily trips (including 134 weekday PM peak hour trips, and 154 Saturday peak hour trips) and 11 afternoon peak hour trips as stated in Findings T1 and T2.

Jay Cavala, Regulatory Committee Vice-Chairman Date 2/20/2007

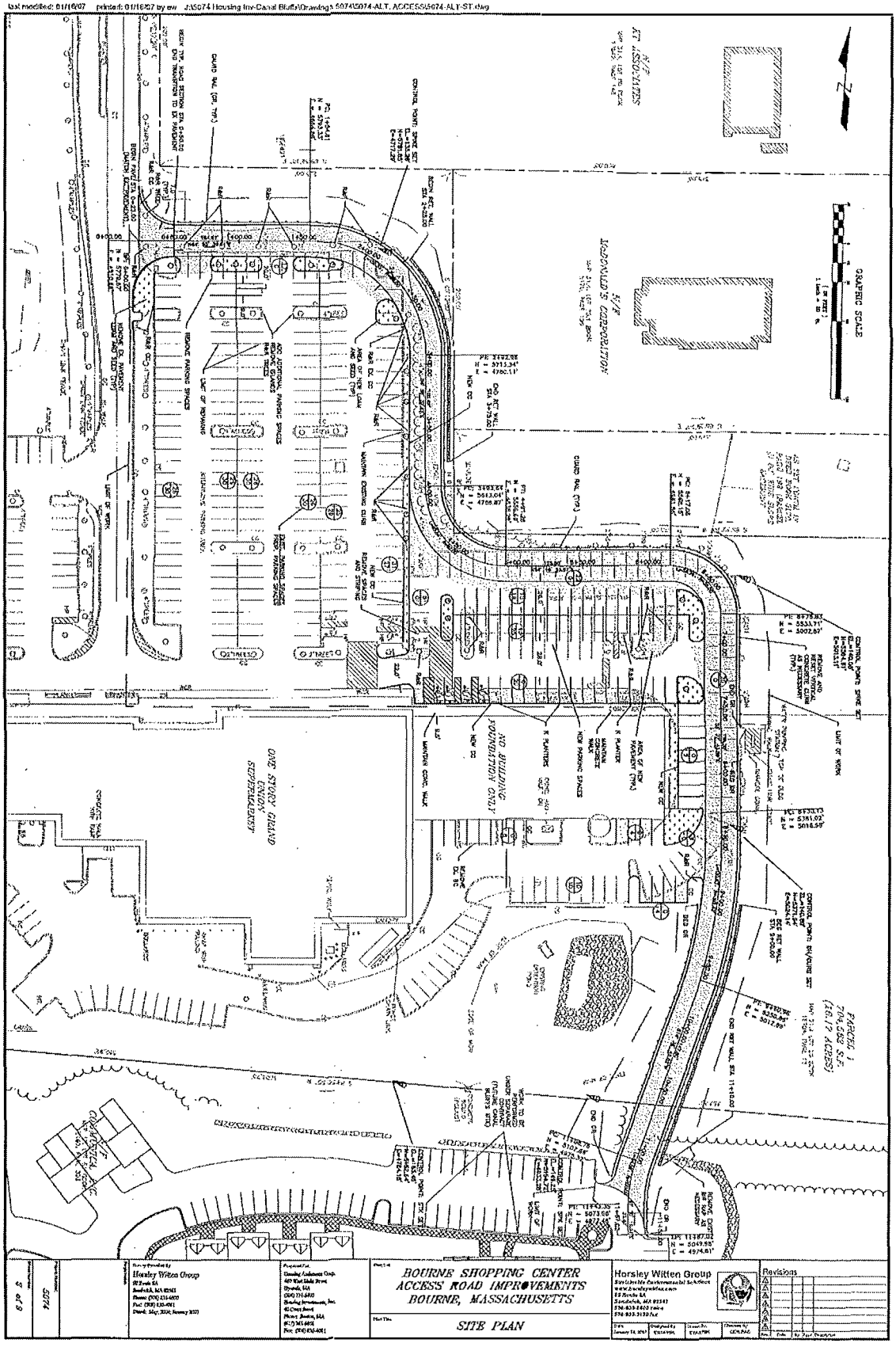
COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss 2/20, 2007

Before me, the undersigned notary public, personally appeared JAY CAVALA in his/~~her~~ capacity as Regulatory Committee Vice-Chair of the Cape Cod Commission, whose name is signed on the preceding document, and such person acknowledged to me that he/~~she~~ signed such document voluntarily for its stated purpose. The identity of such person was proved to me through satisfactory evidence of identification, which was [ ] photographic identification with signature issued by a federal or state governmental agency, [ ] oath or affirmation of a credible witness, or [✓] personal knowledge of the undersigned.

Dorr Steven Fox
Notary Public
My Commission Expires:

OFFICIAL SEAL
DORR STEVEN FOX
NOTARY PUBLIC - MASS.
BARNSTABLE COUNTY
My Comm. Expires April 11, 2008


last modified: 01/16/07 printed: 01/16/07 by ew J:\5074 Housing Inv-Canal Bluffs\Drawings\5074\5074-ALT. ACCESS\5074-ALT-ST.dwg
GRAPHIC SCALE
BOURNE SHOPPING CENTER
ACCESS ROAD IMPROVEMENTS
BOURNE, MASSACHUSETTS
SITE PLAN
Horsley Witten Group
Revisions
PARCEL I
704,552 S.F.
(16.17 ACRES)

CAPE COD COMMISSION

3225 MAIN STREET
P.O. BOX 226
BARNSTABLE, MA 02630
(508) 362-3828
FAX (508) 362-3136
E-mail: frontdesk@capecodcommission.org

Date: May 29, 2008

From: Cape Cod Commission

RE: Modification of a Development of Regional Impact
Cape Cod Commission Act, Sections 12 and 13

Applicant: Bourne Clay, LLC
c/o John Sisk, Marwick Associates
80 Hayden Avenue, Suite 800
Lexington, MA 02421

Project: Bourne Shopping Center
Route 28 (MacArthur Blvd.) and Clay Pond Road
Bourne, MA

Project #: TR90057

Book/Page: Book 18704, Page 13

Background
The applicant has requested that the February 28, 1991 DRI Decision issued to Thorndike Development Corporation for the Bourne Shopping Center, modified January 29, 2007, be further amended to incorporate revised exterior elevation drawings by RESCOM Architectural, Inc., dated 3-7-08 and entitled Monument Beach Marketplace Elevations Sheet (A3.0) and New Floor Plan Layout (A1.1).

Determination
The Executive Director of the Cape Cod Commission has determined that the revised exterior elevation drawings, and the conditions of the original decision that address these drawings, constitute *de minimus* changes and are approved as Type 1 Minor Modifications. The following changes shall be made to the findings and conditions of the original DRI Decision to reflect the revised elevation drawings as described above.

Architectural Design Conditions:

Condition F1: The project shall be constructed in accordance with exterior elevation drawings and floor plans prepared by RESCOM Architectural, Inc., dated 3-7-08 and entitled Monument Beach Marketplace Elevations Sheet (A3.0) and New Floor Plan Layout (A1.1). The applicant

shall use natural building materials on the exterior of the structure as indicated on the Elevations Sheet (A3.0).

Condition F2: The height of various building elements shall be as shown on the elevation drawings prepared by RESCOM Architectural, Inc., dated 3-7-08 and entitled Monument Beach Marketplace Elevations Sheet (A3.0). The proposed towers shall be 35 feet 9 1/2 inches at their highest point. The remainder of the building shall be approximately 27 feet high on the western side and approximately 24 feet high on the eastern side.

Condition F3: One roof sign shall be permitted in the center of the primary façade, and wall signs shall be limited to the signband as shown on the Monument Beach Marketplace Elevation Sheet (A3.0), prepared by RESCOM Architectural, Inc., dated 3-7-08.

Executive Director

5/29/08
Date

COMMONWEALTH OF MASSACHUSETTS

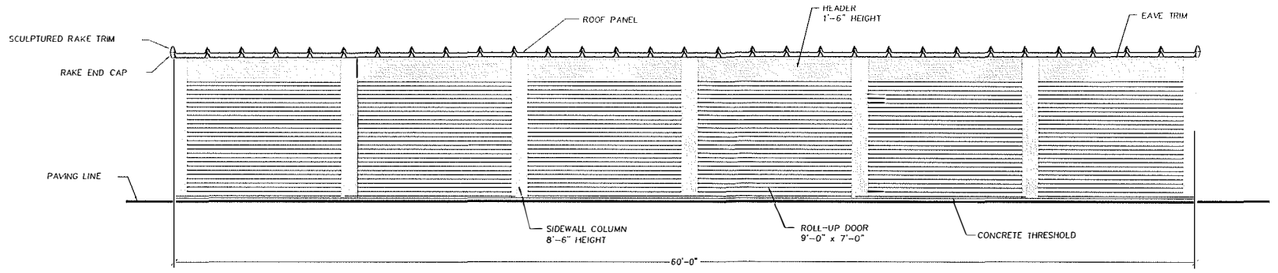
Barnstable, ss

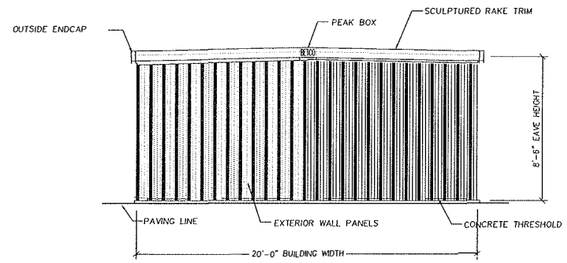
5/29, 2008

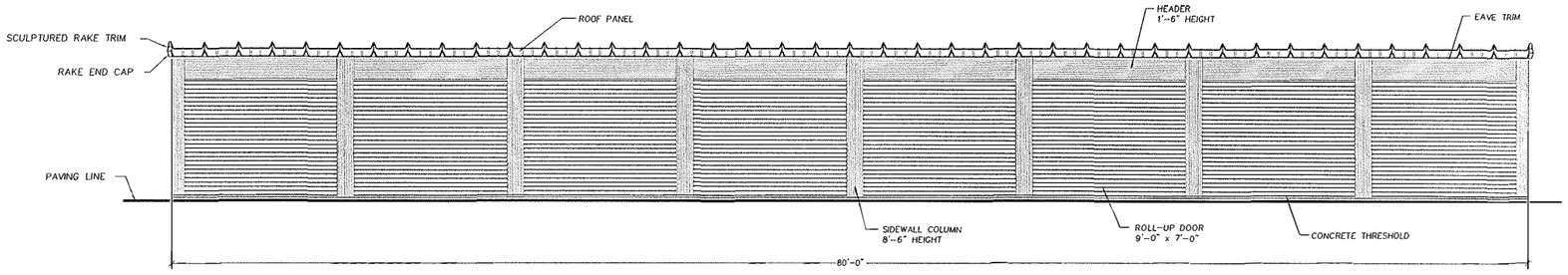
Before me, the undersigned notary public, personally appeared Paul Niedzwiecki, ~~in her~~ his capacity as Executive Director of the Cape Cod Commission, whose name is signed on the preceding document, and such person acknowledged to me that ~~she~~ he signed such document voluntarily for its stated purpose. The identity of such person was proved to me through satisfactory evidence of identification, which was personal knowledge of the undersigned.

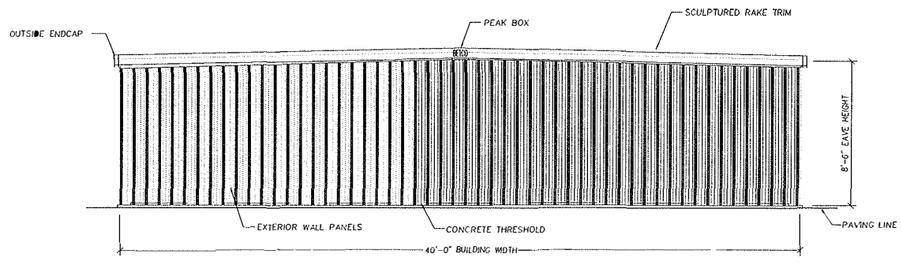
Gail P. Hanley
Notary Public

My Commission expires: 10/13/11









1 NORTH ELEVATION AT ADDITION
1/16" = 1'-0"

0' 8' 16' 32' 64'

CLAY POND ACQUISITIONS LLC
670 N. COMMERCIAL ST.
MANCHESTER, NH 03101
P: 603.622.6223
F: 603.622.7342

MONUMENT BEACH MARKETPLACE

170 CLAY POND ROAD BOURNE, MA

THESE DRAWINGS ARE IN DESIGN DEVELOPMENT. THEY ARE PROGRESS DRAWINGS. THEY ARE NOT INTENDED TO BE CONSTRUCTION DOCUMENTS AND SHOULD NOT BE USED FOR CONSTRUCTION.

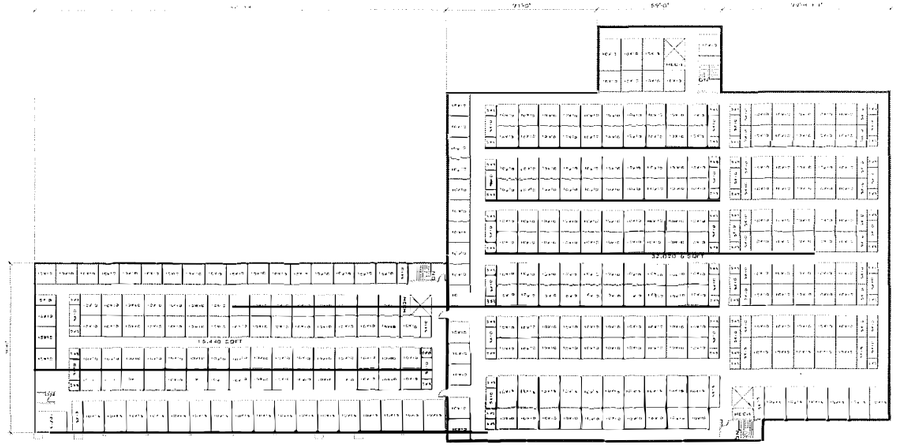
NO.	DESCRIPTION	DATE

PROPOSED ELEVATIONS OF EXTERIOR STORAGE OUTBUILDINGS

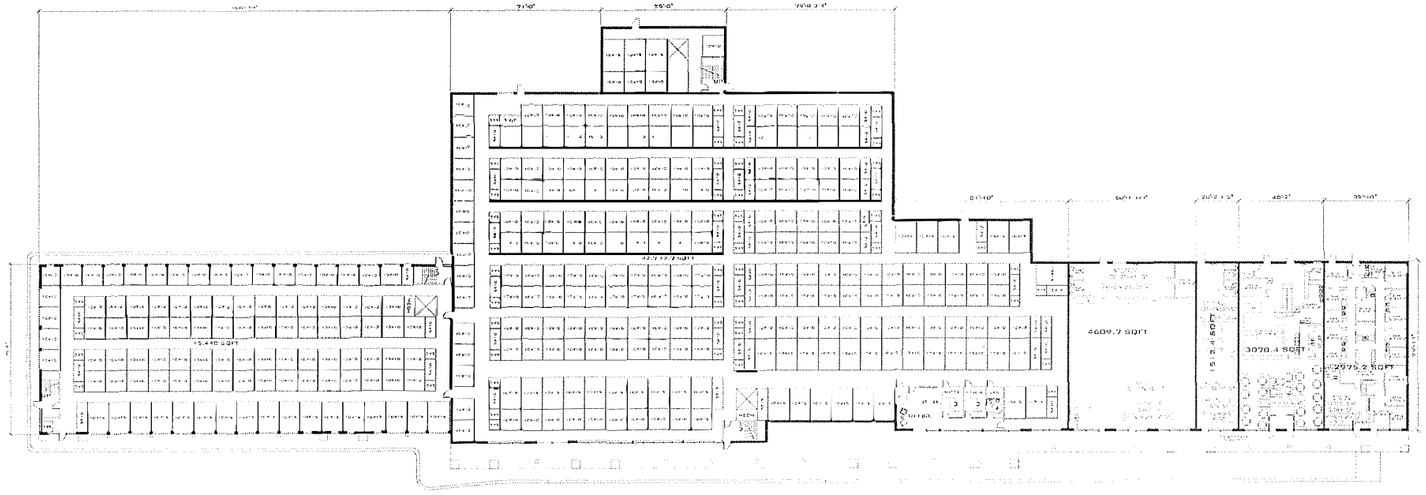
DRAWING DATE:	11/19/13
PROJECT NO:	PROJECT NUMBER
APPROVED BY:	APPROVER
DRAWN BY:	AUTHOR
SCALE:	AS INDICATED

A2-2

CLAY POND
ACQUISITIONS
LLC
670 N. COMMERCIAL ST.
MANCHESTER, NH 03101
P: 603.622.6223
F: 603.622.7342



② Second Floor Plan
1/32" = 1'-0"



① First Floor Plan
1/32" = 1'-0"

0' 8' 16' 32' 64'

MONUMENT BEACH MARKETPLACE

170 CLAY POND ROAD BOURNE, MA

THESE DRAWINGS ARE IN DESIGN DEVELOPMENT. THEY ARE PROGRESS DRAWINGS. THEY ARE NOT INTENDED TO BE CONSTRUCTION DOCUMENTS AND SHOULD NOT BE USED FOR CONSTRUCTION.

NO.	DESCRIPTION	DATE

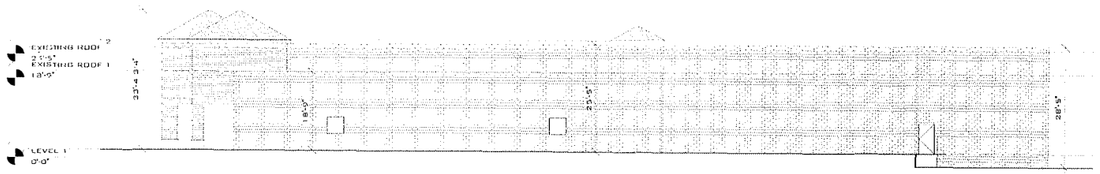
PROPOSED FLOOR PLANS

Date (Plot Date): 11/21/18
Project No: PROJECT NUMBER
Approved By: ApprovedBy
Drawn By: Author

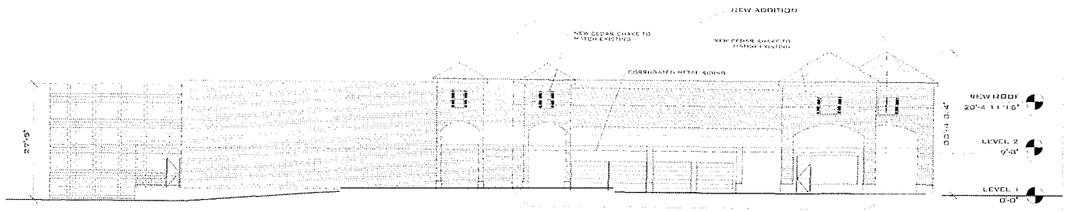
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Scale: AS INDICATED

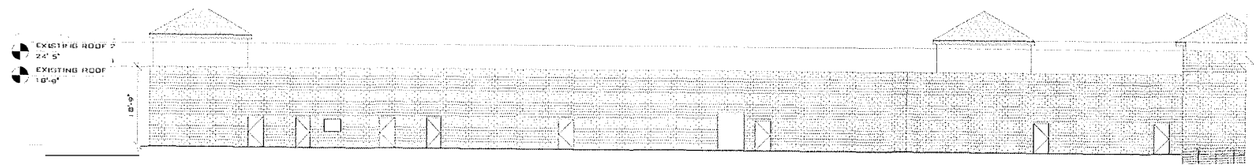
CLAY POND
ACQUISITIONS
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670 N. COMMERCIAL ST.
MANCHESTER, NH 03101
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F: 603.622.7342



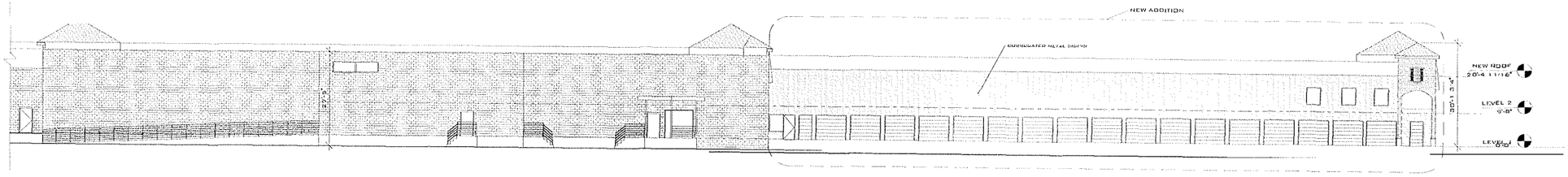
6 WEST ELEVATION
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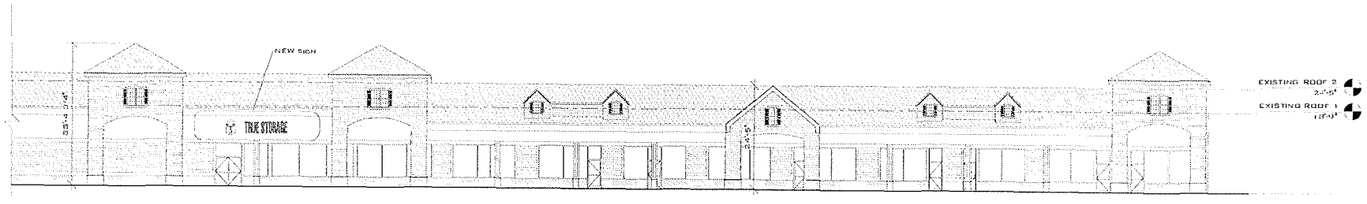
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1/16" = 1'-0"



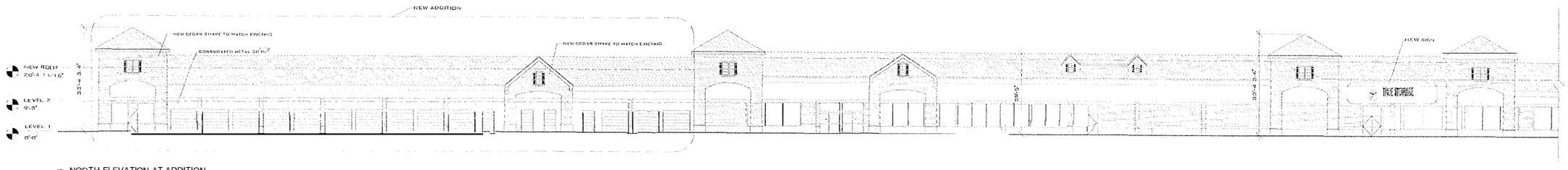
4 SOUTH ELEVATION CONT.
1/16" = 1'-0"



3 SOUTH ELEVATION AT ADDITION
1/16" = 1'-0"



2 NORTH ELEVATION CONT.
1/16" = 1'-0"



1 NORTH ELEVATION AT ADDITION
1/16" = 1'-0"

0' 8' 16' 32' 64'

MONUMENT BEACH
MARKETPLACE
CLAY POND ROAD BOURNE, MA
1 70

THESE DRAWINGS ARE IN DESIGN DEVELOPMENT. THEY ARE PROGRESS DRAWINGS. THEY ARE NOT FINALIZED DOCUMENTS AND SHOULD NOT BE USED FOR CONSTRUCTION.

NO.	DESCRIPTION	DATE

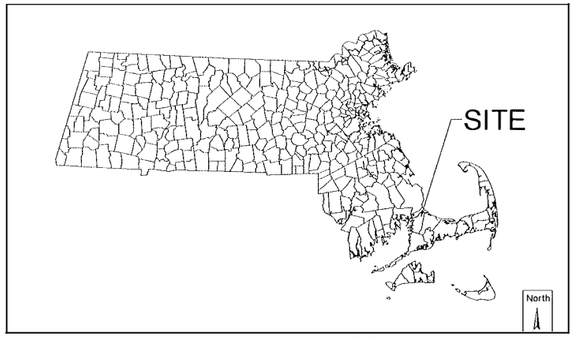
PROPOSED
ELEVATIONS

DRAWING ISSUE DATE:	11/8/10
PROJECT NO:	PROJECT NUMBER
APPROVED BY:	APPROVER
DRAWN BY:	AUTHOR

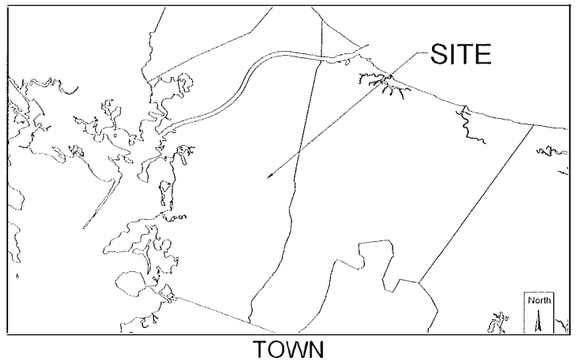
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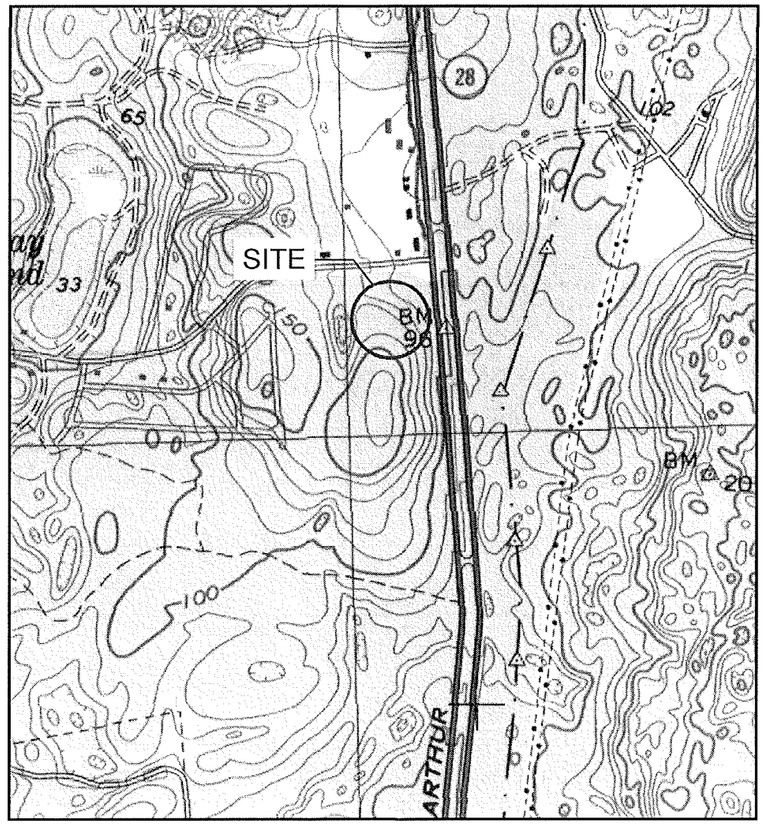
PERMITTING PLAN SET
TRUE STORAGE REDEVELOPMENT
170 CLAY POND ROAD BOURNE, MA
MARCH 2019



MASSACHUSETTS
Graphic Scale
0 150000
SCALE IN FEET
1:150000



TOWN
Graphic Scale
0 12000
SCALE IN FEET
1:12000



VICINITY MAP
Graphic Scale
1-inch = 500-feet

Sheet List Table	
Sheet Number	Sheet Title
1	COVER PAGE
2	EXISTING CONDITIONS
3	CONSTRUCTION NOTES
4	DEMO AND ESC
5	SITE LAYOUT
6	GRADING AND DRAINAGE
7	UTILITY PLAN
8	CONSTRUCTION DETAILS (1)
9	CONSTRUCTION DETAILS (2)
10	CONSTRUCTION DETAILS (3)
11	LANDSCAPE PLAN
12	LANDSCAPE DETAILS

GENERAL NOTES:
1. THIS PLAN SET IS FOR PERMITTING ONLY AND NOT FOR CONSTRUCTION.
2. SURVEY CONDUCTED BY HORSLEY WITTEN GROUP (HWG) IN JANUARY, 2019. ELEVATION DATUM IS NORTH AMERICAN VERTICAL DATUM (NAVD) 1988.
3. PROPERTY LINES APPROXIMATE ONLY.
4. ABUTTER INFORMATION FROM ASSESSOR'S MAP.
5. SITE INFORMATION:
   - PLAT: 31.4
   - PARCEL: 20
   - ADDRESS: CLAY POND ROAD
   - ZONING DISTRICT: BUSINESS 4 (B4)

Plan Set:

PERMITTING PLAN SET
TRUE STORAGE REDEVELOPMENT
170 CLAY POND ROAD BOURNE, MA

Prepared For

CLAY POND ACQUISITIONS LLC
670 N. COMMERCIAL STREET
MANCHESTER, NH 03101
(603) 622 - 6223

Prepared By

Horsley Witten Group, Inc.
Sustainable Environmental Solutions
www.horsleywitten.com

Headquarters
90 Route 6A
Sandwich, MA 02563
(508) 833-6600 voice
(508) 833-3150 fax

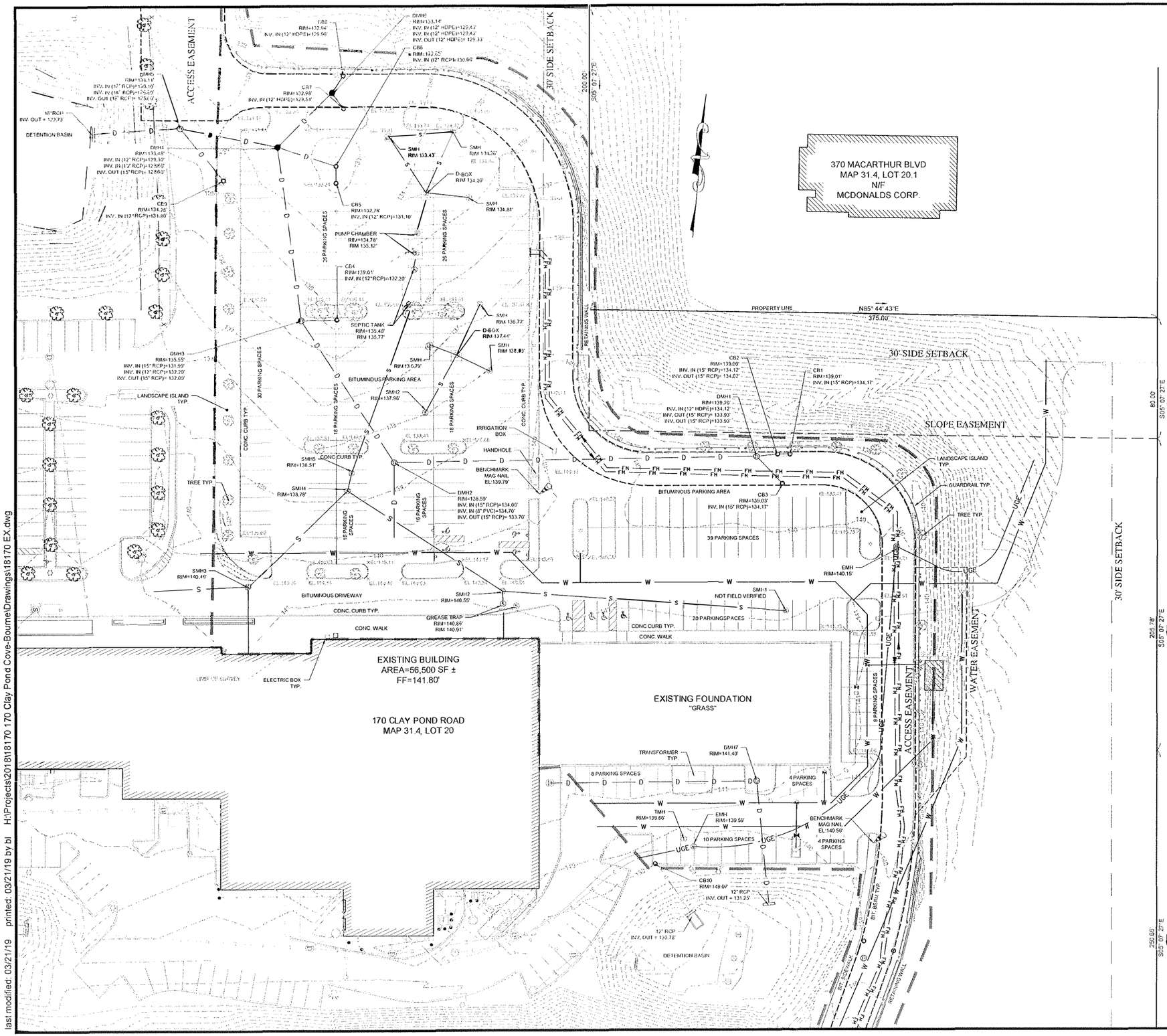
294 Washington Street Suite 801
Boston, MA 02108
(857) 263-8193 voice
(617) 574-4799 fax

55 Dorrance Street
Suite 403
Providence, RI 02903
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Date Issued: MARCH 2019	Registration:	Revisions	Project Number: 18170
Designed By: BAL			Sheet Number: 1 of 12
Drawn By: BAL			
Checked By: RAC/BRK		Rev. Date By Appr. Description	Drawing Number: C - 1

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LEGEND:

GENERAL

- BUILDING
- CONTOUR - MINOR (44)
- CONTOUR - MAJOR (50)
- FENCE - CHAIN LINK
- FENCE - WIRE
- FENCE - WOOD
- GUARD RAIL

PROPERTY INFORMATION

- ABUTTING LOT
- EASEMENT LINE
- SETBACK LINE
- PROPERTY, LOT, OR ROW

UTILITIES

- DRAIN PIPE
- GAS LINE
- OVERHEAD WIRE
- SANITARY SEWER
- SEWER FORCE MAIN
- UNDERGROUND E/T/C
- UNDERGROUND ELEC.
- CABLE LINE
- TELEPHONE LINE
- WATER LINE

SYMBOLS

- BENCHMARK
- BOUNDARY
- SIGN
- EXISTING TREE
- SEWER MANHOLE
- ELECTRIC MANHOLE
- MANHOLE
- METERPIT
- DRAIN MANHOLE
- CATCHBASIN
- FLARED END OUTLET
- STONE APRON
- WATER VALVE
- SEWER VALVE
- GAS VALVE
- PIPE STUB
- UTILITY BOX
- HYDRANT
- UTILITY POLE W/GUY
- UTILITY POLE
- LIGHT POST
- HANDICAP SYMBOL

SURVEY NOTES

1. THE TOPOGRAPHY AND EXISTING SITE CONDITIONS WITHIN THE LIMIT OF SURVEY AREA ARE THE RESULT OF AN ON THE GROUND FIELD SURVEY CONDUCTED BY THE HORSLEY WITTEN GROUP, INC. JANUARY 25, 2019. AREAS SHOWN OUTSIDE OF THAT AREA HAVE BEEN DETERMINED TO BE UNCHANGED AND ARE TAKEN FROM A PLAN TITLED "ALTA/ACSM LAND TITLE SURVEY GRAND UNION SUPERMARKET PLAZA" PREPARED BY VHB DATED JULY 10, 2004.
2. HORIZONTAL DATUM IS ASSUMED.
3. THE ELEVATIONS DEPICTED HEREON WERE BASED ON AN ASSUMED DATUM.
4. THE PROPERTY LINES AND RIGHTS OF WAYS DEPICTED HAVE BEEN ESTABLISHED BY FIELD SURVEY AND DEEDS AND PLANS OF RECORD.
5. THIS PLAN DOES SHOW RECORDED OR UNWRITTEN EASEMENTS WHICH MAY EXIST, HOWEVER, THIS DOES NOT CONSTITUTE A GUARANTEE THAT THIS PLAN PROVIDES A FULL LIST OF EASEMENTS ON THE PROPERTY.
6. THE ACCURACY OF MEASURED PIPE INVERTS AND PIPE SIZES IS SUBJECT TO FIELD CONDITIONS. THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS AND OTHER CONDITIONS.
7. THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF VARIOUS UTILITY COMPANIES, AND WHEREVER POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY IN THE TOWN OF BOURNE, AND "DIGSAFE" (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK IN PREVIOUSLY UNALTERED AREAS TO REQUEST EXACT FIELD LOCATION OF UTILITIES.
8. THE PROPERTY IS LOCATED WITHIN FIRM ZONE X AS SHOWN ON COMMUNITY PANEL NO. 25001C0504J DATED JULY 16, 2014.
9. REFERENCE PLANS: BARNSTABLE COUNTY REGISTRY OF DEEDS PLAN BOOK 485 PAGE 57

GRAPHIC SCALE

30 0 15 30 60 120

(in feet)

1 INCH = 30 FEET

Revisions

No.	Date	By	Approved

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Designed By: BAL
Drawn By: BAL
Checked By: PAG/BRK
Date: MARCH 2019

Plan Set: PERMITTING PLAN SET
TRUE STORAGE REDEVELOPMENT
170 CLAY POND ROAD BOURNE, MA

Plan Title: EXISTING CONDITIONS

Prepared For:
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Dated: JANUARY 2019

Registration

DANIEL M. MACKENZIE
No. 49167
COMMONWEALTH OF MASSACHUSETTS
REGISTERED PROFESSIONAL LAND SURVEYOR

Project Number: 18170
Sheet: 2 of 12

Sheet Number: C - 2

last modified: 03/21/19 printed: 03/21/19 by bl H:\Projects\2018\18170 Clay Pond Cove-Bourne\Drawings\18170 EX.dwg

GENERAL CONSTRUCTION NOTES

1. ALL SITE PREPARATION NECESSARY TO COMPLETE THIS PROJECT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR
2. ALL NECESSARY POLICE DETAIL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL COORDINATE WITH THE LOCAL POLICE DEPARTMENT
3. THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS. PAY ALL FEES INCLUDING POLICE DETAILS AND POST ALL BONDS, IF NECESSARY, ASSOCIATED WITH THE SAME, AND COORDINATE WITH THE OWNER AND THE ENGINEER
4. ALL EXISTING CONDITIONS SHOWN SHALL BE CONSIDERED APPROXIMATE AND ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER PRIOR TO INSTALLING ANY PORTION OF THE SITE WORK WHICH WOULD BE AFFECTED
5. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHEREVER POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY IN THE TOWN OF BOURNE, AND "DIGSAFE" (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK IN PREVIOUSLY UNALTERED AREAS TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE CONFLICTS BETWEEN THE PROPOSED UTILITIES AND FIELD LOCATED UTILITIES AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED, INCOMPLETELY OR INACCURATELY SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCURATE RECORDS OF THE LOCATION AND ELEVATION OF ALL WORK INSTALLED AND EXISTING UTILITIES FOUND DURING CONSTRUCTION FOR THE PREPARATION OF THE AS-BUILT PLAN.
6. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EXISTING UTILITIES IN WORKING ORDER AND FREE FROM DAMAGE DURING THE ENTIRE DURATION OF THE PROJECT. ALL COST RELATED TO THE REPAIR OF UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. EXCAVATION REQUIRED WITHIN THE PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER
7. THE CONTRACTOR SHALL UTILIZE ALL PRECAUTIONS AND MEASURES TO ENSURE THE SAFETY OF THE PUBLIC, ALL PERSONNEL AND PROPERTY DURING CONSTRUCTION IN ACCORDANCE WITH OSHA STANDARDS, INCLUDING BARRICADES, SAFETY LIGHTING, CONES, POLICE DETAIL AND OR FLAG MEN AS DETERMINED NECESSARY BY THE ENGINEER AND/OR TOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF POLICE DETAIL AND FOR COORDINATING WITH THE LOCAL OR STATE POLICE DEPARTMENT FOR ALL REQUIRED POLICE DETAIL.
8. ALL TRENCHING WORK WITHIN A ROADWAY SHALL BE COORDINATED WITH THE PROPER LOCAL & STATE AGENCY. TRENCH SAFETY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR INCLUDING ANY LOCAL AND/OR STATE PERMITS REQUIRED FOR THE TRENCH WORK. THIS WORK MAY BE REQUIRED TO TAKE PLACE OUTSIDE OF NORMAL HOURS OF OPERATION FOR THE FACILITY. THE CONTRACTOR SHALL PLAN ACCORDINGLY
9. ALL TRENCH WORK WITHIN EXISTING PAVEMENT SHALL BE SAW CUT PER THE APPLICABLE DETAILS. TRENCH WORK BACKFILL AND COMPACTION SHALL HAVE MAX. 8 INCH LIFTS. CONTRACTOR SHALL BE REQUIRED TO REMOVE PATCH AND REPAVE AFTER ONE COMPLETE 12-MONTH CYCLE IF SETTLEMENT OCCURS DUE TO INADEQUATE COMPACTION AS DETERMINED BY THE ENGINEER WITHIN THE WARRANTY PERIOD.
10. THE CONTRACTOR SHALL MAKE ALL CONNECTION ARRANGEMENTS WITH UTILITY COMPANIES, AS REQUIRED.
11. ALL IMPORTED MATERIAL SHALL BE CLEAN.
12. ANY SITE LAYOUT SURVEY REQUIRED FOR CONSTRUCTION WILL BE PROVIDED BY THE CONTRACTOR AND SHALL BE CONDUCTED BY A MASSACHUSETTS REGISTERED PROFESSIONAL LAND SURVEYOR. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE SURVEYOR FOR ALL SITE SURVEY WORK
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCHMARKS DURING CONSTRUCTION INCLUDING BENCHMARK LOCATIONS AND ELEVATIONS AT CRITICAL AREAS. THE LOCATION OF ALL CONTROL POINTS AND BENCHMARKS SHALL BE COORDINATED WITH THE ENGINEER
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL GRADE STAKES SET BY THE SURVEYOR. GRADE STAKES SHALL REMAIN UNTIL A FINAL INSPECTION OF THE ITEM HAS BEEN COMPLETED BY THE ENGINEER. ANY RE-STAKING OF PREVIOUSLY SURVEYED SITE FEATURES SHALL BE THE RESPONSIBILITY (INCLUDING COST) OF THE CONTRACTOR.
15. UNLESS OTHERWISE SPECIFIED ON THE PLANS AND DETAILS/SPECIFICATIONS, ALL SITE CONSTRUCTION MATERIALS AND METHODOLOGIES ARE TO CONFORM TO THE MOST RECENT VERSION OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
16. CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS REGARDING NOISE, VIBRATION, DUST, SEDIMENTATION CONTAINMENT, AND TRENCH WORK.
17. SOLID WASTES SHALL BE COLLECTED AND STORED IN A SECURED DUMPSTER. THE DUMPSTER SHALL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS.
18. THE CONTRACTOR SHALL RESTORE ALL SURFACES EQUAL TO THEIR ORIGINAL CONDITION AFTER CONSTRUCTION IS COMPLETE. AREAS NOT DISTURBED BY CONSTRUCTION SHALL BE LEFT NATURAL. THE CONTRACTOR SHALL TAKE CARE TO PREVENT DAMAGE TO SHRUBS, TREES, OTHER LANDSCAPING AND/OR NATURAL FEATURES. WHEREAS THE PLANS DO NOT SHOW ALL LANDSCAPE FEATURES, EXISTING CONDITIONS MUST BE VERIFIED BY THE CONTRACTOR IN ADVANCE OF THE WORK.
19. ALL UNPAVED AREAS DISTURBED BY THE WORK SHALL HAVE A MINIMUM OF 4-INCHES OF LOAM INSTALLED AND BE SEEDED WITH GRASS SEED AS SHOWN ON THE PLAN AND/OR DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING ANY LOAM AND SEEDED AREAS UNTIL LAWN GROWTH IS ESTABLISHED AND APPROVED BY THE ENGINEER AND/OR OWNER.
20. ALL PROPOSED STRUCTURES SHALL BE DESIGNED BY THEIR MANUFACTURERS FOR AASHTO H-20 LOADING. PRECAST CONCRETE SHALL HAVE A MINIMUM 28-DAY STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED HEREIN.
21. ALL WHEELCHAIR RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS AND CONSTRUCTION AND TRAFFIC STANDARD DETAILS (1996) DRAWING NUMBER 107.1, AND 107.2.0. RAMPS SHALL HAVE AN 8% MAX. SLOPE AND 2% CROSS SLOPE.
21. A HIGH WATER TABLE IS NOT ANTICIPATED. IF THE WATER TABLE IS ENCOUNTERED DURING EXCAVATION, THE WATER TABLE SHALL BE TEMPORARILY LOWERED BY PUMPING. THE CONTRACTOR INSTALL A DEWATERING BAG/BASIN AND PROVIDE A DEWATERING PLAN DEPICTING PROPOSED DEWATERING LOCATION TO THE ENGINEER. THE PUMP DISCHARGE SHALL BE DIRECTED TO THIS BASIN TO PREVENT SEDIMENTS FROM LEAVING THE CONSTRUCTION AREA. THE CONTRACTOR SHALL INSTALL ADDITIONAL BASINS IF REQUIRED. INSTALL THE BASIN(S) WITHIN THE LIMIT OF DISTURBANCE.
22. THE CONTRACTOR SHALL REGULARLY INSPECT THE PERIMETER OF THE PROPERTY TO CLEAN UP AND REMOVE LOOSE CONSTRUCTION DEBRIS BEFORE IT LEAVES THE SITE. ALL DEMOLITION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE SITE TO AN APPROVED DUMP SITE. ALL TRUCKS LEAVING THE SITE SHALL BE COVERED.
23. CONCRETE TRUCKS SHALL NOT BE WASHED ONSITE. ANY CEMENT OR CONCRETE DEBRIS LEFT IN THE DISTURBED AREA SHALL BE REMOVED BY HAND AT THE CONTRACTOR'S EXPENSE.
24. BURIAL OF ANY STUMPS, SOLID DEBRIS, AND/OR STONES/BOULDERS ONSITE IS PROHIBITED. NO ROAD SALT OR OTHER DE-ICING CHEMICALS SHALL BE USED ON THE ACCESS ROADWAY.
25. IF ANY DEVIATION OR ALTERATION OF THE WORK PROPOSED ON THESE DRAWINGS IS REQUIRED, THE CONTRACTOR IS TO IMMEDIATELY CONTACT AND COORDINATE WITH THE ENGINEER AND OWNER.
26. AT THE END OF CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS AND SURPLUS MATERIALS FROM THE SITE. A THOROUGH INSPECTION OF THE WORK PERIMETER IS TO BE MADE AND ALL DISCARDED MATERIALS, BLOWN OR WATER CARRIED DEBRIS, SHALL BE COLLECTED, AND REMOVED FROM THE SITE.

GENERAL GRADING AND DRAINAGE NOTES

1. ALL CUT AND FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
2. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT.
3. PROPOSED GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT
4. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
5. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
6. PROPOSED ELEVATIONS ARE SHOWN TO FINISH PAVEMENT OR GRADE UNLESS NOTED OTHERWISE.
7. ALL EARTHWORK AND SITE PREPARATION SHALL BE DONE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF ANY SUBSURFACE INVESTIGATION OR GEOTECHNICAL REPORTS PREPARED FOR THIS SITE.
8. ROADS AND PARKING AREAS ARE NOT TO BE PAVED UNTIL THE ENTIRE PERMANENT DRAINAGE SYSTEM HAS BEEN INSTALLED AND ALL PIPE CONNECTIONS COMPLETE.

EROSION & SEDIMENT CONTROL NOTES

1. THE SITE CONSTRUCTION FOREMAN SHALL BE DESIGNATED AS THE ON-SITE PERSONNEL RESPONSIBLE FOR THE DAILY INSPECTION AND MAINTENANCE OF ALL SEDIMENT AND EROSION CONTROLS AND SHALL IMPLEMENT ALL NECESSARY MEASURES TO CONTROL EROSION AND PREVENT SEDIMENT FROM LEAVING THE SITE
2. THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT CONTROL (ESC) MEASURES AS SHOWN ON THE DESIGN PLANS IN CONSULTATION WITH THE TOWN AND AS DETERMINED NECESSARY IN THE FIELD BY THE ENGINEER BEFORE ANY CONSTRUCTION ACTIVITIES ARE TO BEGIN. THESE MEASURES SHALL BE CHECKED, MAINTAINED/REPLACED AS NECESSARY DURING THE ENTIRE CONSTRUCTION PERIOD OF THE PROJECT. SUCH MEASURES SHALL REPRESENT THE LIMIT OF WORK. WORKERS SHALL BE INFORMED THAT NO CONSTRUCTION ACTIVITY IS TO OCCUR BEYOND THE LIMIT OF WORK AT ANY TIME THROUGH THE CONSTRUCTION PERIOD.
3. A MINIMUM SURPLUS OF 50 FEET OF EROSION CONTROL BARRIER (SILT FENCE, STRAWBALE, &/OR SILT SOCK) SHALL BE STOCKPILED ONSITE AT ALL TIMES.
4. A CONSTRUCTION EXIT SHALL BE CONSTRUCTED AS SHOWN IN THE DETAILS TO SHED DIRT FROM CONSTRUCTION VEHICLE TIRES. THE CRUSHED STONE PAD WILL BE REPLACED/CLEANED AS NEEDED TO MAINTAIN ITS EFFECTIVENESS.
5. THE LIMIT OF ALL CLEARING, GRADING AND DISTURBANCES SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. THE CONTRACTOR SHALL PHASE THE SITE WORK IN A MANNER TO MINIMIZE AREAS OF EXPOSED SOIL. THE REQUIRED SEDIMENTATION CONTROL FACILITIES MUST BE PROPERLY ESTABLISHED, CLEARLY VISIBLE AND IN OPERATION PRIOR TO INITIATING ANY LAND CLEARING ACTIVITY AND/OR OTHER CONSTRUCTION RELATED WORK.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MONITOR LOCAL WEATHER REPORTS DURING CONSTRUCTION AND PRIOR TO SCHEDULING EARTHMOVING OR OTHER CONSTRUCTION ACTIVITIES WHICH WILL LEAVE LARGE DISTURBED AREAS UNSTABILIZED. IF INCLEMENT WEATHER IS PREDICTED, THE CONTRACTOR SHALL USE THEIR BEST PROFESSIONAL JUDGEMENT WHEN SCHEDULING CONSTRUCTION ACTIVITIES AND SHALL BE RESPONSIBLE FOR ENSURING THE NECESSARY EROSION CONTROL DEVICES ARE INSTALLED AND FUNCTIONING PROPERLY TO MINIMIZE EROSION FROM ANY IMPENDING WEATHER EVENTS.
7. ESC MEASURES SHALL BE INSPECTED AND MAINTAINED ON A WEEKLY BASIS AND AFTER EACH RAINFALL EVENT OF 0.25 INCH OR GREATER DURING CONSTRUCTION TO ENSURE THAT THE EROSION AND SEDIMENTATION CONTROL MEASURES ARE INTACT AND FUNCTIONING PROPERLY. IDENTIFIED DEFICIENCIES SHALL BE CORRECTED IMMEDIATELY NO LATER THAN 24 HOURS AFTER IDENTIFICATION.
8. SOIL STOCKPILES LEFT OVERNIGHT SHALL BE SURROUNDED ON THEIR PERIMETERS WITH SILT SOCK, SILT FENCE, STRAWBALES, OR A COMBINATION OF SILT FENCE WITH STRAWBALE, AS DETERMINED NECESSARY.
9. DISTURBED AREAS AND SLOPES SHALL NOT BE LEFT UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME SUCH AS THE INACTIVE WINTER SEASON. THE CONTRACTOR SHOULD PROVIDE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE BUT NOT MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY AREAS HAVING A SLOPE GREATER THAN 3:1 SHALL BE REINFORCED WITH EROSION BLANKETS OR APPROVED EQUAL UNTIL THE SITE IS PROPERLY STABILIZED. TEMPORARY SWALES MAY ALSO BE REQUIRED IF DETERMINED NECESSARY IN THE FIELD BY THE ENGINEER.
10. THE CONTRACTOR SHALL INSTALL A SILT SACK OR APPROVED EQUIVALENT IN EACH EXISTING CATCHBASIN RECEIVING RUNOFF FROM THE SITE. UPON THE INSTALLATION OF EACH CATCH BASIN, THE CONTRACTOR SHALL INSTALL A SILT SACK OR APPROVED EQUIVALENT. THESE ARE TO BE INSPECTED AFTER EACH SIGNIFICANT STORM EVENT AND REMOVED AND EMPTIED AS NEEDED DURING THE ENTIRE CONSTRUCTION PERIOD.
11. SMALL SEDIMENTATION BASINS MAY BE CONSTRUCTED ON AN AS-NEEDED BASIS DURING CONSTRUCTION TO AID IN THE CAPTURE OF SITE RUNOFF AND SEDIMENT. IT WILL BE THE RESPONSIBILITY OF THE SITE CONTRACTOR, IN CONSULTATION WITH THE ENGINEER, TO SIZE AND CREATE THESE BASINS IN APPROPRIATE LOCATIONS.
12. THE CONTRACTOR SHALL CONTAIN ALL SEDIMENT ONSITE. ALL EXITS FROM THE SITE WILL BE SWEPT AS NECESSARY INCLUDING ANY SEDIMENT TRACKING. PAVED AREAS SHALL BE SWEPT AS NEEDED TO REMOVE SEDIMENT AND POTENTIAL POLLUTANTS WHICH MAY ACCUMULATE DURING SITE WORK.
13. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM ALL TEMPORARY PRACTICES AND DISPOSED OF IN A PRE-APPROVED LOCATION BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.
14. THE CONTRACTOR SHALL PROVIDE ON SITE OR MAKE READILY AVAILABLE THE NECESSARY EQUIPMENT AND SITE PERSONNEL DURING CONSTRUCTION HOURS FOR THE DURATION OF THE PROJECT TO ENSURE ALL ESC DEVICES ARE PROPERLY MAINTAINED AND REPAIRED IN A TIMELY AND RESPONSIBLE MANNER. IF SITE WORK IS SUSPENDED DURING THE WINTER MONTHS, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE PERSONNEL AND EQUIPMENT EITHER ON SITE OR MAKE READILY AVAILABLE TO ENSURE ALL ESC DEVICES ARE PROPERLY MAINTAINED AND REPAIRED IN A TIMELY AND RESPONSIBLE MANNER
15. PROPER MEASURES SHALL BE IMPLEMENTED BY THE CONTRACTOR IF DEWATERING IS NECESSARY DURING CONSTRUCTION. THESE MEASURES SHALL INCLUDE DEWATERING BAGS, TEMPORARY STRAWBALES, SILT FENCES, SILT SOCKS AND/OR OTHER APPROVED DEVICES. THE DEWATERING SETUP SHALL BE APPROVED BY THE ENGINEER.
16. ALL SEDIMENT COLLECTED IN THE TEMPORARY PARTIALLY CONSTRUCTED BIORETENTION AREAS WILL BE REMOVED AND DISPOSED OF PROPERLY PRIOR TO FILTER FABRIC AND/OR MEDIA INSTALLATION WITHIN THE BIORETENTION AREAS. PARTIALLY CONSTRUCTED BIORETENTION AREAS WILL HAVE A SURFACE ELEVATION AT A MINIMUM 1-FOOT ABOVE THE BOTTOM OF MEDIA ELEVATION AS SHOWN IN THE BIORETENTION SCHEDULE. THIS WILL ALLOW AN OVER-DIG OF THE COLLECTED SEDIMENT FROM WITHIN THE BIORETENTION AREA PRIOR TO MEDIA/FABRIC INSTALLATION.
17. DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE ENGINEER AT NO EXTRA COST TO THE OWNER.
18. THE CONTRACTOR IS RESPONSIBLE FOR THE INSPECTION AND MAINTENANCE DURING CONSTRUCTION OF ALL STORMWATER FACILITIES INSTALLED OR AFFECTED BY THE PROJECT. ANY SEDIMENT OR DEBRIS COLLECTED WITHIN THESE FACILITIES FROM THE PROJECT WORK SHALL BE REMOVED PRIOR TO THE OWNER'S ACCEPTANCE.

BASIC CONSTRUCTION SEQUENCE

THE FOLLOWING CONSTRUCTION SEQUENCE IS TO BE USED AS A GENERAL GUIDELINE. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER, ENGINEERS, AND ARCHITECT AND SUBMIT A PROPOSED CONSTRUCTION SCHEDULE FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

1. SURVEY AND MARK IN THE FIELD THE PROPOSED LIMIT OF DISTURBANCE AND LIMIT OF SEDIMENTATION BARRIERS.
2. PLACE SEDIMENTATION BARRIERS (SILT SOCK, INLET PROTECTION, ETC.) AS SHOWN ON THE PLANS AND STAKED OUT IN THE FIELD. IN NO CASE IS THE LIMIT OF WORK TO EXTEND BEYOND THE SEDIMENTATION BARRIERS/LIMIT OF DISTURBANCE AS SHOWN ON THE PROJECT PLANS.
3. INSTALL TEMPORARY CONSTRUCTION ENTRANCES IN LOCATIONS SHOWN ON PLANS. NO OTHER ENTRANCES SHALL BE USED TO GAIN ACCESS TO THE SITE BY ANY CONSTRUCTION OR DELIVERY VEHICLES MATS.
4. BEGIN CLEARING THE SITE AND DEMOLITION AS REQUIRED.
5. SURVEY AND STAKE THE PROPOSED FOUNDATIONS AND STORMWATER BMP'S.
6. BEGIN FOUNDATION CONSTRUCTION.
7. EXCAVATE AND ROUGH GRADE THE PROPOSED DRAINAGE BASINS AND ANY ADDITIONAL TEMPORARY BASINS NECESSARY TO CONTROL SITE RUNOFF AND SEDIMENTS. PERMANENT DRAINAGE BASINS SHALL BE TEMPORARILY SEEDED. PERMANENT DRAINAGE BASIN SEEDING AND PLANTING SHALL BE COMPLETED AFTER THE CONTRIBUTING AREA TO THE BASIN HAS REACHED A MINIMUM OF 80% STABILIZATION AND IS NO LONGER REQUIRED TO BE USED AS A CONSTRUCTION SEDIMENTATION BASIN.
8. INSTALL TEMPORARY CONVEYANCE DEVICES (SWALES, CHECK DAMS, PIPES, ETC.) AS NECESSARY TO CONVEY RUNOFF TO TREATMENT AREAS.
9. BEGIN ROUGH GRADING AREAS FOR ROADS AND PARKING. BRING ROUGH GRADING TO PROPER ELEVATIONS AS SOON AS PRACTICABLE. WORK SHALL PROGRESS DILIGENTLY TO MINIMIZE TIME SOILS ARE UN-STABILIZED.
10. INSTALL ONSITE STORMWATER BMPS. THE EXISTING DRAINAGE BASIN(S) AND DRAINAGE NETWORK ARE TO BE PROTECTED FROM SEDIMENTATION UNTIL ALL UN-STABILIZED AREAS ARE STABILIZED WITH STONE SUB-BASE OR VEGETATION. INSTALL SEDIMENT BARRIERS AT ALL POINTS OF ENTRY INTO THE DRAINAGE NETWORK.
11. PERMANENTLY PLANT AND/OR SEED ALL DISTURBED AREAS OUTSIDE OF THE AREA TO BE PAVED.
12. BEGIN ROAD AND PARKING CONSTRUCTION PER SITE PLANS AND IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL REGULATIONS. ROADS AND PARKING AREAS ARE NOT TO BE PAVED UNTIL THE ENTIRE PERMANENT DRAINAGE SYSTEM HAS BEEN INSTALLED AND ALL PIPE CONNECTIONS COMPLETE.
13. FINISH PERMANENT STABILIZATION. SWEEP THE ROADWAY TO REMOVE ALL SEDIMENTS. REPAIR DRAINAGE OUTLETS AND BASINS AS REQUIRED. THE CONTRACTOR SHALL CLEAN AND FLUSH THE DRAINAGE STRUCTURES AND PIPES AT THE END OF CONSTRUCTION AND ALL ACCUMULATED SEDIMENTS IN THE DRAINAGE BASINS SHALL BE REMOVED. CONTRACTOR SHALL INSPECT THE DRAINAGE NETWORK AND REPAIR ANY DAMAGE IMMEDIATELY.
14. COMPLETE ALL REMAINING PLANTING AND SEEDING.
15. REMOVAL OF ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES FOLLOWING VEGETATIVE ESTABLISHMENT OF ALL DISTURBED AREAS SHALL BE APPROVED BY THE ENGINEER AND WHEN THE CONTRIBUTING AREA HAS REACHED A MINIMUM OF 80% STABILIZATION.

STORMWATER FACILITY OPERATION & MAINTENANCE:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSPECTION AND MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES UNTIL SUCH TIME THAT THE ROADWAYS AND ASSOCIATED UTILITIES ARE ACCEPTED BY THE OWNER AND THE ENGINEER.
2. THE CONTRACTOR SHALL INSPECT AND RESTORE/CLEAN ALL FACILITIES (INLETS, MANHOLES, INFILTRATION BASINS, ETC.) OF SEDIMENT AND DEBRIS PRIOR TO THE OWNER'S ACCEPTANCE.
3. ALL SEDIMENT AND DEBRIS SHALL BE DISPOSED OF PROPERLY IN A PRE-APPROVED LOCATION AS APPROVED BY THE TOWN.
4. ALL STORMWATER FACILITIES SHALL BE INSPECTED BY THE CONTRACTOR AFTER EVERY MAJOR RAINFALL EVENT FOR THE ENTIRE DURATION OF THE CONSTRUCTION PROJECT AND THE FIRST 3 MONTHS AFTER CONSTRUCTION TO ENSURE PROPER STABILIZATION AND CONSTRUCTION.
5. SPECIFIC DURING CONSTRUCTION MAINTENANCE SHALL BE AS FOLLOWS:
   A. DRAINAGE STRUCTURES (INLETS, MANHOLES & CATCH BASINS): ALL DRAINAGE STRUCTURES WILL BE INSPECTED ANNUALLY TO ASSESS FOR PROPER OPERATION, COLLECTION OF LITTER OR TRASH, AND STRUCTURAL DETERIORATION. THE BASINS WILL BE CLEANED OF SEDIMENT (INCLUDING SUMPS) AS NECESSARY, AND REPAIRED WHEN REQUIRED.
   B. ENHANCED STORMWATER TREE TRENCH: THE TREE TRENCH SYSTEMS WILL BE INSPECTED TWICE ANNUALLY FOR THE FIRST YEAR OF OPERATION AND ANNUALLY AFTER THE FIRST YEAR, AND AFTER STORM EVENTS GREATER THAN OR EQUAL TO THE 1-YEAR, 24-HOUR PRECIPITATION EVENT. GENERAL MAINTENANCE OF TREE TRENCH SYSTEMS FALLS UNDER LANDSCAPING PRACTICES. THE PLANTING SOIL BED WILL BE MONITORED FOR PROPER PH, EROSION, AND AERATION. MULCH WILL BE REPLACED BI-ANNUALLY, AND ILL-ESTABLISHED, DEAD OR SEVERELY DISEASED PLANTS WILL BE REMOVED AND REPLACED ANNUALLY. SEDIMENT BUILD-UP FROM THE INLET STRUCTURE WILL BE REMOVED AS NEEDED. UNDERDRAINS WILL BE FLUSH THROUGH THE CLEAN-OUT PORTS AS NEEDED AND THE GRAVEL BASE ITSELF WILL BE REPLACED IF COMPROMISED.
   C. ROUTINE MAINTENANCE: OTHER ROUTINE MAINTENANCE WILL INCLUDE REMOVAL OF TRASH AND LITTER FROM PAVED AND PERIMETER AREAS, AND ANNUAL STREET AND PARKING LOT SWEEPING AFTER THE SPRING THAW TO AVOID EXCESSIVE ACCUMULATION OF SEDIMENT IN THE DRAINAGE SYSTEM. THE PIPES DRAINING THE PROJECT WILL BE INSPECTED ANNUALLY FOR PROPER FLOW.

NOTE: OPERATION AND MAINTENANCE CHECKLIST AVAILABLE UPON REQUEST

LEGEND:

GENERAL

PROPOSED

- BERM
- BERM CUT
- BUILDING
- CENTERLINE
- 44 CONTOUR - MINOR
- 50 CONTOUR - MAJOR
- CURB
- CURB CUT
- EDGE OF PAVEMENT
- FENCE - CHAIN LINK
- X — X FENCE - WIRE
- FENCE - WOOD
- GUARD RAIL
- LIMIT OF WORK
- STONE
- SIDEWALK
- STORMWATER AREA
- TREE LINE
- WALL - RETAINING
- WALL - STONE
- CONCRETE
- CROSSWALK

PROPERTY INFORMATION

- ABUTTING LOT
- EASEMENT LINE
- PROPERTY, LOT, OR ROW
- SETBACK LINE

UTILITIES

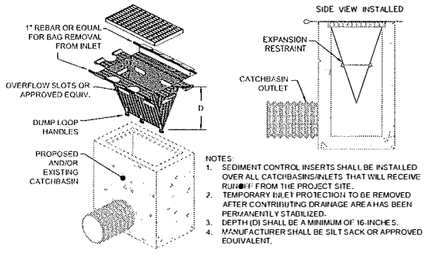
- DRAIN PIPE
- G GAS LINE
- OHW OVERHEAD WIRE
- S SANITARY SEWER
- FM SEWER FORCE MAIN
- ET/C UNDERGROUND ET/C
- UGE UNDERGROUND ELEC.
- C CABLE LINE
- T TELEPHONE LINE
- W WATER LINE

EROSION & SEDIMENT CONTROL

- SS SILT SOCK

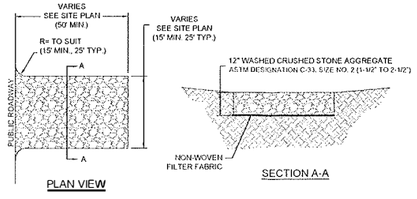
SYMBOLS

- BENCHMARK
- SIGN
- EXISTING TREE
- SEWER MANHOLE
- ELECTRIC MANHOLE
- DRAIN MANHOLE
- CATCHBASIN
- INLET PROTECTION
- WATER VALVE
- GAS VALVE
- CLEAN OUT
- PIPE STUB
- ROOF DOWN SPOUT WITH SPLASH PAD
- THRUST BLOCK
- UTILITY BOX
- HYDRANT
- TP TEST PIT
- HANDICAP SYMBOL
- 10 NUMBER OF PARKING SPACES



NOTES:
1. SEDIMENT CONTROL INSERTS SHALL BE INSTALLED OVER ALL CATCHBASINS/INLETS THAT WILL RECEIVE RUNOFF FROM THE PROJECT SITE.
2. TEMPORARY INLET PROTECTION TO BE REMOVED AFTER CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.
3. DEPTH (D) SHALL BE A MINIMUM OF 16-INCHES.
4. MANUFACTURER SHALL BE SILT SACK OR APPROVED EQUIVALENT.

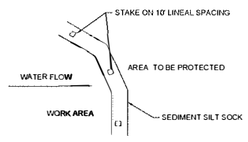
TEMPORARY CATCHBASIN INSERT (INLET PROTECTION)
NOT TO SCALE



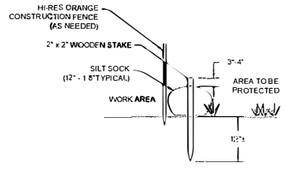
PLAN VIEW — SECTION A-A

NOTE:
1. STONE CONSTRUCTION ENTRANCE(S) TO REMAIN UNTIL INSTALLATION OF PAVEMENT SUB-BASE IS TO BEGIN.
2. SEE SITE PLAN FOR LOCATION & ACTUAL DIMENSIONS

CONSTRUCTION ENTRANCE MAT
NOT TO SCALE



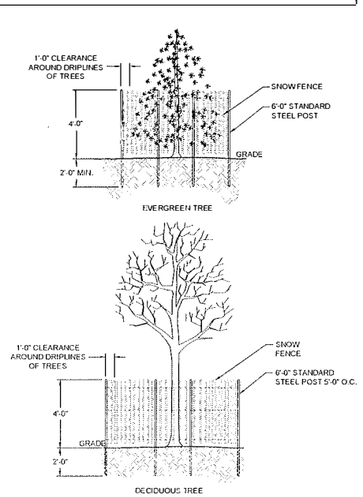
PLAN VIEW



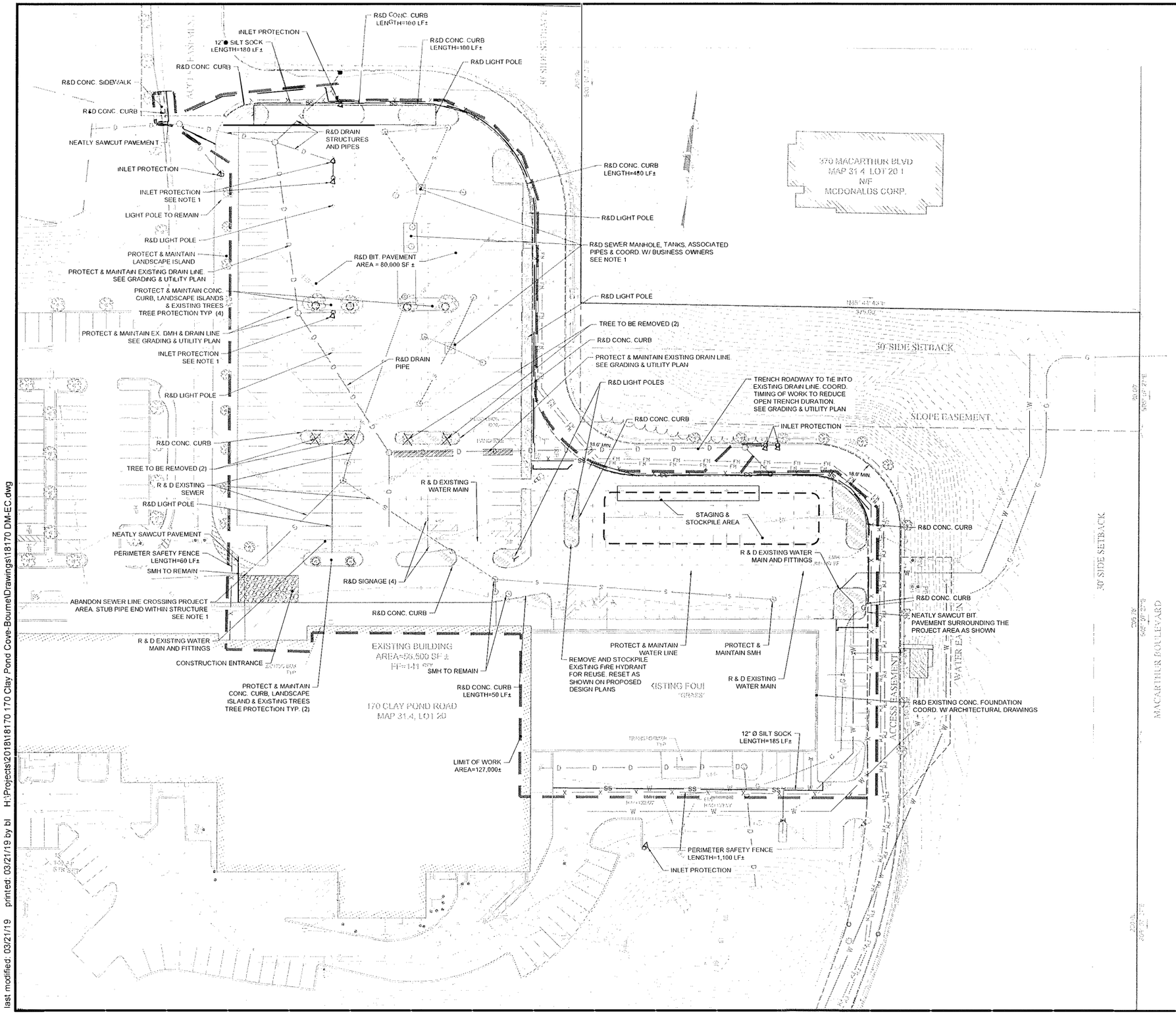
SECTION

NOTES:
1. SILT SOCK MANUFACTURER SHALL BE SILT SOXX OR ENGINEER APPROVED EQUAL.
2. ALL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS.
3. SEDIMENT SILT SOCK TO BE FILLED WITH COMPOST AND/OR WOODY MULCH PER MANUFACTURER'S REQUIREMENTS.
4. FOLLOWING CONSTRUCTION AND SITE STABILIZATION COMPOST MATERIAL SHALL BE REMOVED OR DISPERSED ON SITE, AS APPROVED BY THE ENGINEER.

SEDIMENT SILT SOCK
NOT TO SCALE



NOTES:
1. FENCING SHALL BE ORANGE, REGNET SM99 BARRIER FENCE "SNOW FENCE" OR APPROVED EQUIVALENT.
2. POST SHALL BE HOT ROLLED RAIL STEEL AND FORMED INTO A "T" DIMENSIONS OF "T" POST SECTION: APPROXIMATELY 1 7/16



GENERAL DEMOLITION NOTES:

THIS PLAN SET DOES NOT INCLUDE DETAILS & SPECIFICATIONS FOR ALL DEMOLITION WORK REQUIRED WITHIN THE PROPOSED CONSTRUCTION LIMITS. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE WITH THE OWNER, PROJECT ARCHITECT, MECHANICAL ENGINEERS AND OTHER PROJECT ENGINEERS INVOLVED WITH THE PROPOSED NEW CONSTRUCTION TO DEVELOP A SUITABLE DEMOLITION PLAN, WHICH WILL ALLOW THE FACILITIES TO REMAIN IN OPERATION DURING THE ENTIRETY OF CONSTRUCTION

1. UNLESS OTHERWISE NOTED, THE CONTRACTOR IS RESPONSIBLE FOR THE RELOCATION, DEMOLITION, REMOVAL AND DISPOSAL IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES, OF ALL EXISTING SITE ELEMENTS AND STRUCTURES INCLUDING, BUT NOT LIMITED TO, BUILDINGS, ROADWAYS, PARKING AREAS, PARKING ISLANDS, BITUMINOUS CONCRETE, CEMENT CONCRETE, GRAVEL, CURBS, WALKWAYS, SIDEWALKS, BERMS, FENCES, BOLLARDS, POSTS, PLANTING BEDS, TREES, SHRUBS, UTILITIES, DRAINAGE STRUCTURES AND ALL OTHER STRUCTURES SHOWN AND NOT SHOWN WITHIN CONSTRUCTION LIMITS, AND WHERE NEEDED, TO ALLOW FOR NEW CONSTRUCTION. ALL FACILITIES TO BE REMOVED ARE TO BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER SPECIFICATIONS.
2. REMOVE ALL DEBRIS FROM THE SITE AND DISPOSE OF THE DEBRIS IN A PROPER AND LEGAL MANNER.
3. OBTAIN ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
4. ALL UTILITIES WITHIN THE LIMIT OF WORK ARE TO BE REMOVED UNLESS OTHERWISE NOTED. INLET PROTECTION IS REQUIRED WITHIN ALL CATCH BASINS AS SHOWN UNTIL THE STRUCTURES ARE REMOVED. COORD. & PHASE THE ABANDONMENT & INSTALLATION OF PROPOSED SEWER INFRASTRUCTURE AS TO PROVIDE SERVICE AT ALL TIMES.
5. COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. COORDINATE WITH THE UTILITY COMPANIES CONCERNING PORTIONS OF THE WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
6. REFER TO MECHANICAL AND UTILITY PLANS AND SPECIFICATIONS FOR ALL WORK WHICH REQUIRES UTILITIES TO BE REMOVED, RELOCATE OR ABANDONED AND LEFT IN PLACE.
7. PROVIDE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL UTILITY LINES, AS REQUIRED, BEFORE PROCEEDING WITH THE WORK.
8. MAINTAIN CONTINUOUS ACCESS AND OPERATION FOR SURROUNDING FACILITIES, AS DEEMED BY THE OWNER, AT ALL TIMES DURING DEMOLITION OF THE EXISTING FACILITIES.
9. PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED.

ABBREVIATIONS:
R&D - REMOVE & DISPOSE
R&R - REMOVE & REINSTALL (INCLUDES RESET & FASTEN)
R&S - REMOVE & STACK FOR OWNER

LEGEND

R&D BITUMINOUS PAVEMENT

R&D EXISTING LANDSCAPE ISLANDS (CURB, VEGETATION & FILL MATERIAL)

— x — PERIMETER SAFETY FENCING (SHOWN FOR REFERENCE. SITE SECURITY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR)

PERMITTING SET ONLY
NOT FOR CONSTRUCTION

GRAPHIC SCALE
30 0 15 30 60 120
(in feet)
1 INCH = 30 FEET

Revisions

Rev.	Date	By	Description

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Designed By: BAL
Drawn By: BAL
Checked By: RAC/BRK
Date: MARCH 2019

Plan Set: PERMITTING PLAN SET
TRUE STORAGE REDEVELOPMENT
170 CLAY POND ROAD BOURNE, MA

Plan Title: DEMO AND ESC

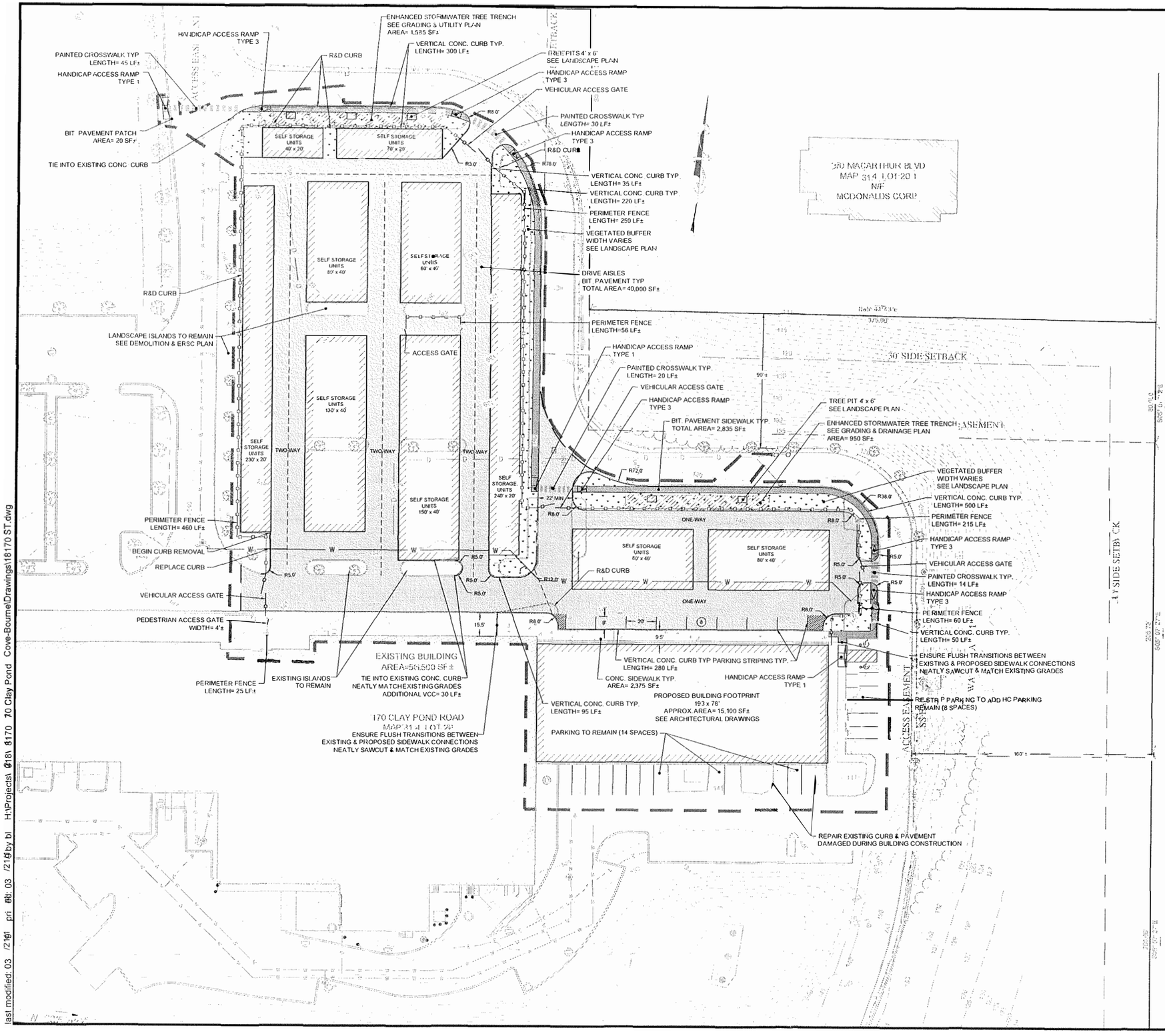
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Dated: JANUARY 2019

Registration:
REGISTERED LAND SURVEYOR
ROBERT A. CANNON
No. 49078
3-20-19

Project Number: 18170
Sheet: 4 of 12
Sheet Number: C - 4

last modified: 03/21/19 printed: 03/21/19 by bl H:\Projects\2018\18170 170 Clay Pond Cove-Bourne\Drawings\18170 DM-EC.dwg



Revisions

No.	Date	By	Appr	Description

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Designed By: BAL | Drawn By: BAL | Checked By: RAC/BRK | Date: MARCH 2019

Plan Set: PERMITTING PLAN SET
TRUE STORAGE REDEVELOPMENT
170 CLAY POND ROAD BOURNE, MA

Plan Title: SITE/LAYOUT PLAN

Prepared For:
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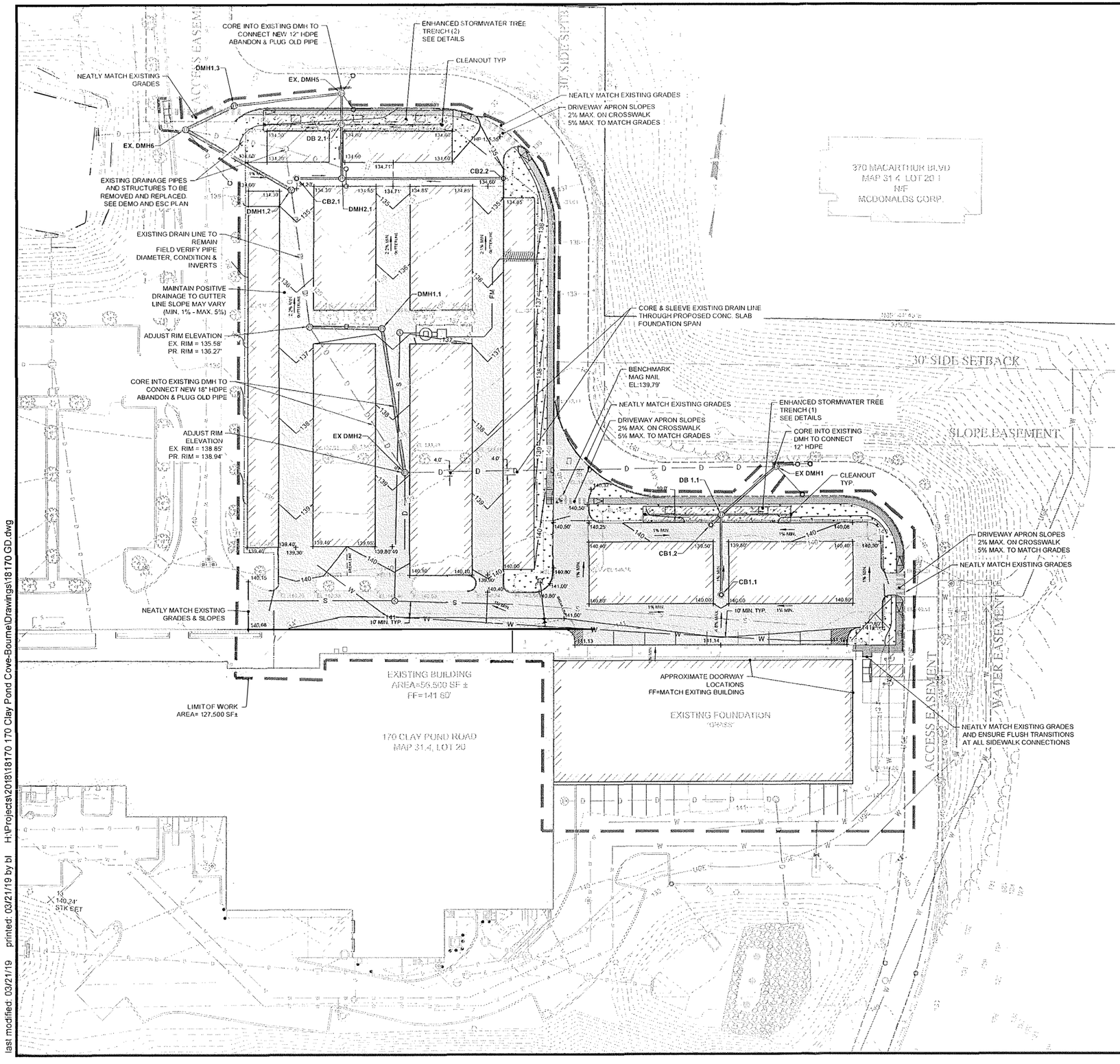
Registration

3-22-19

Project Number: 18170 | Sheet: 5 of 12

Sheet Number: C - 5

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STRUCTURE SCHEDULE CLAY POND PR			
NAME	TYPE	RIM	INVERTS
CB1.1	CATCH BASIN	139.90	12" INV OUT = 135.90 TO DB 1.1
CB1.2	CATCH BASIN	139.20	12" INV OUT = 136.20 TO
CB2.1	CATCH BASIN	134.00	12" INV OUT = 131.10 TO DMH2.1
CB2.2	CATCH BASIN	134.20	12" INV OUT = 131.40 TO DMH2.1
DB 1.1	24" DIA. NYLOPAST DRAIN BASIN	139.70	12" INV IN = 136.17 FROM 12" INV IN = 136.41 FROM CB1.1 6" INV OUT = 136.00 TO 12" INV OUT = 137.50 TO EX DMH1 6" INV OUT = 36.00 TO CB1.1
DB 2.1	24" DIAM NYLOPLAST DRAIN BASIN	134.40	12" INV IN = 130.62 FROM DMH2.1 6" INV OUT = 130.50 TO 6" INV OUT = 130.50 TO 12" INV OUT = 131.00 TO EX. DMH5
DMH1.1	DRAIN MANHOLE	138.40	18" INV IN = 132.77 FROM EX. DMH2 18" INV OUT = 132.67 TO EX. DMH3
DMH1.2	DRAIN MANHOLE	134.27	18" INV OUT = 128.60 TO EX. DMH6
DMH1.3	DRAIN MANHOLE	136.15	12" INV IN = 128.64 FROM EX. DMH5 18" INV OUT = 127.50 TO EX. DMH6
DMH2.1	DRAIN MANHOLE	134.40	12" INV IN = 130.96 FROM CB2.1 12" INV IN = 130.88 FROM CB2.2 12" INV OUT = 130.79 TO DB 2.1
EX DMH1	EX. DRAIN MANHOLE	139.20	12" INV IN = 136.20 FROM DB 1.1
EX DMH2	EX. DRAIN MANHOLE	138.90	18" INV OUT = 133.70 TO DMH1.1
EX. DMH3	EX. DRAIN MANHOLE	138.07	18"INV IN = 132.45 FROMDMH1.1
EX. DMH5	EX. DRAIN MANHOLE	133.12	12" INV IN = 130.10 FROM DB 2.1 12" INV OUT = 129.33 TO DMH1.3
EX. DMH6	EX. DRAIN MANHOLE	134.05	18" INV IN = 127.15 FROM DMH1.3 18" INV IN = 128.21 FROM DMH1.2

PERMITTING SET ONLY
NOT FOR CONSTRUCTION

GRAPHIC SCALE
30 0 15 30 60 120
(in feet)
1 INCH = 30 FEET

Revisions

Rev.	Date:	By:	App'd	Description

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Designed By: BAL | Drawn By: BAL | Checked By: RAC/BKH

Date: MARCH 2019

Plan Set: PERMITTING PLAN SET
TRUE STORAGE REDEVELOPMENT
170 CLAY POND ROAD BOURNE, MA

Plan Title: GRADING AND DRAINAGE

Prepared For:
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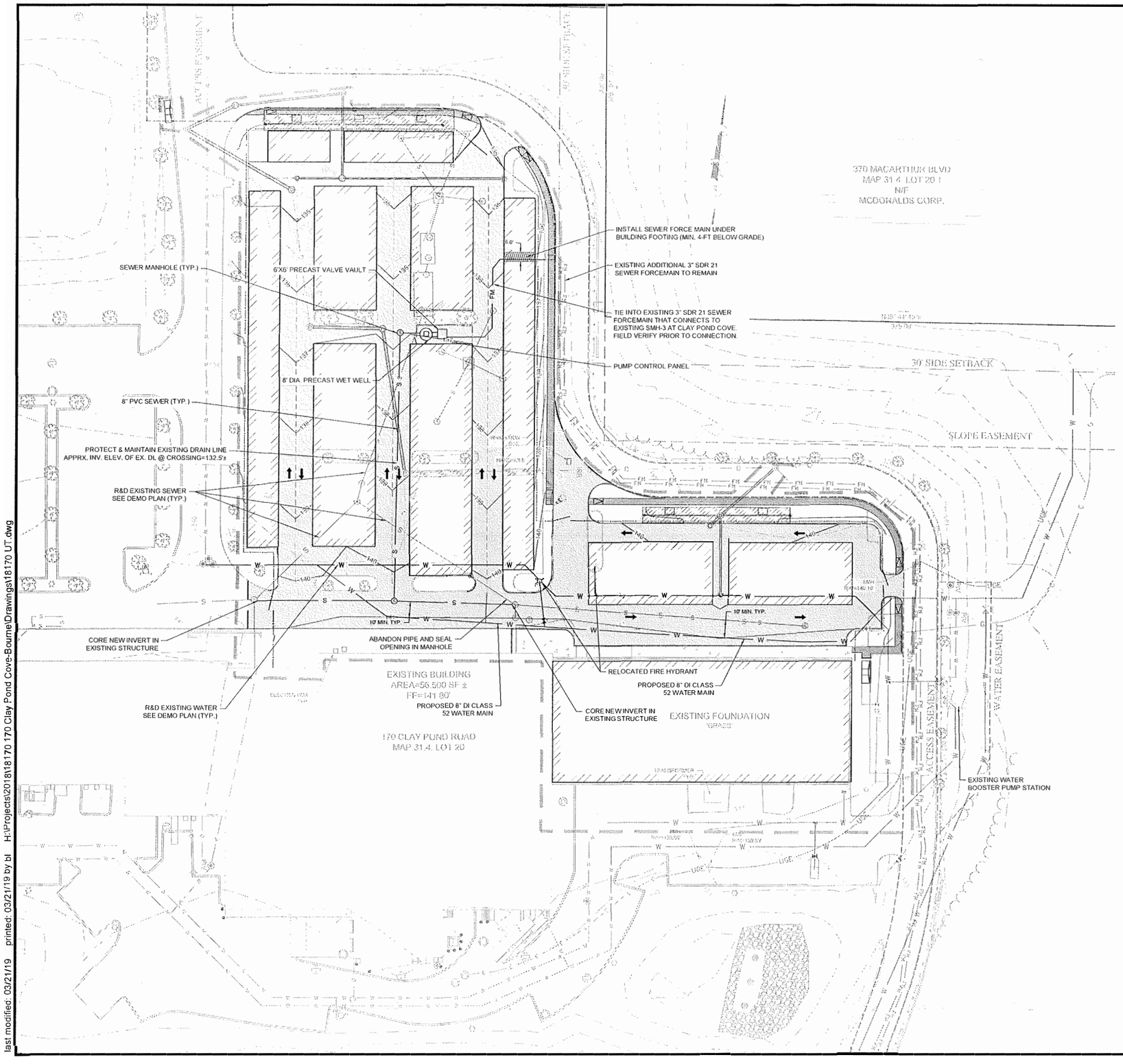
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Dated: JANUARY 2019

Registration:
3-27-19

Project Number: 18170 | Sheet: 6 of 12

Sheet Number: C - 6

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WATER & SEWER INSTALLATION NOTES

1. INSTALL SEWER AND WATER MAINS ACCORDING TO THE FOLLOWING GUIDELINES TO PREVENT FREEZING OF THE MAIN OR SEWER.

UTILITY TYPE	MIN. COVER OVER TOP OF PIPE	MIN. HORIZONTAL DISTANCE TO DRAIN STRUCTURE
SANITARY FORCEMAIN	5'	3'
GRAVITY FORCEMAIN	4'	2'
WATER MAIN	5'	2'

2. INSULATE SANITARY FORCE MAINS, WATER MAINS, HYDRANT PIPING AND DEAD-END WATER LINES WHERE SOIL COVER OR HORIZONTAL SEPARATION TO PRECAST STRUCTURES IS LESS THAN THE DISTANCE SPECIFIED ABOVE AND OR WHERE SHOWN ON PLANS.
3. INSULATION: 2" THICK POLYURETHANE INSULATION WITH PVC JACKET PLACED AROUND PIPE OR DESIGNER APPROVED EQUAL.
4. WATER AND SEWER SEPARATION IS TYPICALLY 10 FEET MINIMUM HORIZONTAL AND 18 INCHES VERTICAL WITH SEWER MAINS BELOW THE WATER MAINS (SEE DETAIL). IF SITE CONDITIONS REQUIRE LESS, THEN INSTALL UTILITIES AS INDICATED ON DETAILS.

WATER SYSTEM INSTALLATION NOTES:

1. CONSTRUCT THE WATER MAIN AND ITS APPURTENANCE IN ACCORDANCE WITH THE LOCAL WATER DEPARTMENT'S STANDARDS AND SPECIFICATIONS AND PAY FOR ALL ASSOCIATED FEES AS REQUIRED BY THE WATER DEPARTMENT.
2. ALL PROPOSED WATER MAIN 4-INCHES AND GREATER IN DIAMETER ARE DUCTILE IRON CLASS 52. ONLY USE HOPE SEWER AS INDICATED ON DRAWINGS OR AS APPROVED BY THE ENGINEER.
3. SUPPLY TWO COPIES OF SWORN CERTIFICATES TO PROVE THAT ALL PIPES AND FITTINGS ARE INSPECTED AND TESTED AS REQUIRED BY THE STANDARD SPECIFICATIONS TO WHICH THE MATERIAL IS MANUFACTURED.
4. GATE VALVES: MUELLER (A 2360 SERIES), CLOW (AWWA STANDARD C509 SERIES), AMERICAN DARLING (RESILIENT WEDGE) OR APPROVED EQUAL.
5. PROVIDE GATE VALVES ON ALL HYDRANT BRANCHES AND WATER MAIN. THE GATE VALVE TO TURN TO THE RIGHT TO OPEN (CLOCKWISE). ALL BOLTS AND NUTS MUST BE RUST PROOF STEEL.
6. CLEAR ALL NEWLY INSTALLED WATER SYSTEM COMPONENTS OF ALL FOREIGN MATERIALS SUCH AS DIRT AND MISCELLANEOUS DEBRIS PRIOR TO SYSTEM TESTING. NO TESTING IS ALLOWED WITHOUT REMOVAL OF ALL FOREIGN MATERIALS.
7. CONTRACTOR IS RESPONSIBLE FOR CONDUCTING A PRESSURE TEST AND DISINFECTION TEST OF ALL WATER MAINS. THE TESTS MUST WITNESSED BY THE APPROVED INSPECTOR OR THE ENGINEER. THE CONTRACTOR MUST PROVIDE A MINIMUM OF 48-HOUR ADVANCE NOTICE TO THE LOCAL WATER DEPARTMENT PRIOR TO THE PRESSURE AND DISINFECTION TESTS. THE CONTRACTOR MUST PROVIDE ALL NECESSARY EQUIPMENT AND CHEMICALS TO PROPERLY CONDUCT THE TESTS.
8. INSTALL AND REMOVE ALL NECESSARY BLOWOFFS REQUIRED FOR THIS PROJECT AT NO EXTRA COST TO THE OWNER.
9. COLLECT ALL BACTERIOLOGICAL SAMPLES AND PAY FOR ALL RELATED LABORATORY FEES.
10. MAINTAIN UP-TO-DATE AS-BUILT DRAWINGS AND NOTES INDICATING THE HORIZONTAL AND VERTICAL LOCATION WITH TWO TIES OF ALL SYSTEM COMPONENTS INSTALLED. AS-BUILT DRAWINGS AND NOTES TO BE UTILIZED BY THE ENGINEER FOR THE PREPARATION OF RECORD PLANS.

SEWER SYSTEM OPERATION & MAINTENANCE:

1. CLEAN ALL NEWLY INSTALLED FACILITIES, INCLUDING SEWER COLLECTION SYSTEM OF ALL FOREIGN MATERIALS SUCH AS DIRT AND MISCELLANEOUS DEBRIS PRIOR TO SYSTEM TESTING. TESTING MUST BE WITNESSED AND INSPECTED BY THE ENGINEER. NO TESTING IS ALLOWED WITHOUT REMOVAL OF ALL FOREIGN MATERIALS.
2. CONDUCT A LEAKAGE TEST OF ALL SEWER MAINS. TEST MUST BE WITNESSED BY THE ENGINEER. THE CONTRACTOR MUST PROVIDE THE ENGINEER WITH A MINIMUM OF 48-HOURS ADVANCE NOTICE TO THE TIME OF THE PRESSURE TEST.
3. TEST SEWER PIPES FOR LEAKAGE WITH THE FOLLOWING PROCEDURE.
   INTRODUCE LOW PRESSURE AIR INTO THE SEAL LINE (WITH PNEUMATIC PLUGS) UNTIL THE INTERNAL AIR PRESSURE REACHES 4 psi GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUNDWATER THAT MAY BE OVER THE PIPE.
   ALLOW AT LEAST 2 MINUTES FOR AIR PRESSURE TO STABILIZE.
   AFTER THE STABILIZATION PERIOD (3.5 psi MINIMUM PRESSURE IN THE PIPE), THE PORTION OF PIPE TESTED IS ACCEPTABLE IF THE TIME REQUIRED IN MINUTES FOR THE PRESSURE TO DECREASE FROM 3.5 TO 3 psi IS NOT LESS THAN TWO TIMES THE LENGTH OF PIPE BEING TESTED.
4. VACUUM TEST ALL SEWER MANHOLES. TESTS MUST BE WITNESSED BY THE ENGINEER UNLESS THE SEASONAL GROUNDWATER LEVEL IS MORE THAN 10 FEET FROM THE BOTTOM OF THE MANHOLE.
5. MANDREL TEST ALL SEWER MAINS AFTER 30 DAYS. TESTS MUST BE WITNESSED BY A TOWN REPRESENTATIVE OR THE ENGINEER.

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GRAPHIC SCALE
30 0 15 30 60 120
(in feet)
1 INCH = 30 FEET

Revisions

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Designed By: JH | Drawn By: JH | Checked By: RAC/BRK
Date: MARCH 2019

Plan Set: PERMITTING PLAN SET
TRUE STORAGE REDEVELOPMENT
170 CLAY POND ROAD BOURNE, MA

Plan Title: UTILITY PLAN

Prepared For:
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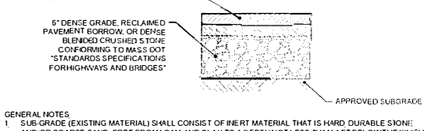
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Date: JANUARY 2018

Registration:
ROSSIA CRAIGHTON CIVIL No. 49784 REGISTERED PROFESSIONAL ENGINEER
3-22-19

Project Number: 18170 | Sheet: 7 of 12

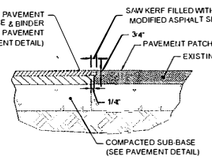
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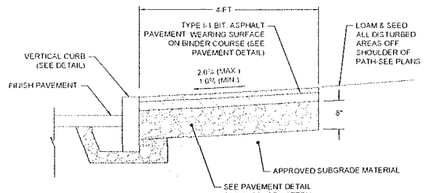


GENERAL NOTES:
1. SUB-GRADE (EXISTING MATERIAL) SHALL CONSIST OF INERT MATERIAL THAT IS HARD, DURABLE STONE AND/OR COARSE SAND, FREE FROM LOAM AND CLAY TO A DEPTH NOT LESS THAN 4'-FT BELOW THE FINISH PAVEMENT SURFACE. EXCAVATE SANDY LOAM AND/OR LOAMY SAND TOPSOIL MATERIAL FROM ALL PAVED AREAS PRIOR TO SUB-BASE INSTALLATION.
2. PLACE SUB-BASE IN MAXIMUM 8" LIFTS (COMPACTED TO 95%).
3. COMPACT SUB-GRADE FILL TO 95% COMPACTION.
4. SEE SITE LAYOUT PLAN FOR PAVEMENT WIDTH AND LOCATION.
5. SEE GRADING PLANS FOR PAVEMENT SLOPE AND CROSS SLOPE.
6. SWEEP CLEAN THE EXISTING BINDER COURSE SURFACE PRIOR TO INSTALLING THE WEARING COURSE. BY A STREET SWEEPING MACHINE. APPLY A TACK COAT PER SPECIFICATIONS.

BITUMINOUS PAVEMENT
NOT TO SCALE

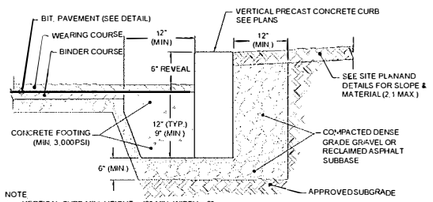


NOTES:
1. EXISTING BITUMINOUS PAVEMENT SHALL BE REMOVED TO A CLEAN STRAIGHT EDGE VIA SAW CUTTING. THE SAW CUT SHALL BE COMPLETED PERPENDICULAR TO THE ROADWAY/SIDEWALK.
2. PRIOR TO INSTALLING THE WEARING COURSE THE EXISTING VERTICAL PAVEMENT SURFACE SHALL BE SWEPT COMPLETELY CLEAN.
3. AFTER PROPER COMPACTION (SEE PAVEMENT DETAIL) SAW CUT NEW PAVEMENT ABUTMENT 3/4" DEEP AND FILL WITH FIBER MODIFIED ASPHALT SEALER AS SHOWN.



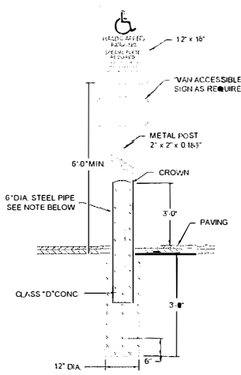
NOTES
1. ROADWAY SIDEWALK CROSS SLOPES WILL BE 1.5%. A CONSTRUCTION TOLERANCE OF +0.5% IS ACCEPTABLE ON ROADWAY SIDEWALKS
2. AN UNOBSTRUCTED PATH OF TRAVEL WITH A MINIMUM WIDTH OF 3'-3" SHALL BE MAINTAINED PAST ALL OBSTRUCTIONS (UTILITY POLES, SIGNS, SIGNAL FOUNDATIONS AND MASTS, MAILBOXES, ALONG DRIVE OPENINGS, ETC.

BITUMINOUS PAVEMENT SIDEWALK
NOT TO SCALE



NOTE
1. VERTICAL CURB MIN. HEIGHT = 15" MIN. WIDTH = 6"
2. VERTICAL CURBING TO BE INSTALLED AS SHOWN ON THE SITE PLAN.
3. PROVIDE CURB EXPANSION JOINTS AT 9'-0" TO 9'-0" O.C.
4. CURB REPLACEMENT IN EXISTING PAVEMENT - SAWCUT EDGE MIN. 12" FROM CURB.
5. CONCRETE CURB - PROVIDE 1" CHAMFER OF EDGE ALONG PAVEMENT SIDE FACE FOR CONCRETE CURB.
6. CONCRETE CURB - TO HAVE A MINIMUM CONCRETE STRENGTH OF 4,000 PSI.
7. CEMENT MORTAR JOINTS & INSTALL PREFORMED (1/2") EXPANSION JOINT WHERE REQUIRED.

HANDICAPPED RESERVED PARKING SIGN



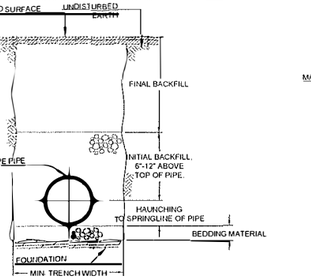
ELEVATION

NOTE
1. SIGN LAYOUT, COLORS, SYMBOL AND LETTERING SHALL BE STANDARD.
2. TO BE LOCATED ON SITE AS DIRECTED.
3. METAL POST TO BE PAINTED 2 COATS OF EXTERIOR GREEN ENAMEL (SEE SPECS.).
4. TO BE LOCATED AT APPROPRIATE SPACES.
5. STEEL PIPE TO BE USED WHERE SIGN IS INSTALLED ON PAVED AREA.

NOTES:
1. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR TO EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL AS DEFINED IN ASTM D2321, "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS," LATEST EDITION, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A WOVEN GEOTEXTILE FABRIC.
2. BEDDING, HAUNCHING AND INITIAL BACKFILL: SUITABLE MATERIAL TO CONSIST OF CLEAN, HARD, PARTICLES OF GRAVEL MEETING THE FOLLOWING SIEVE SIZES PASSING
   3/8" 85-95
   NO. 4 5-15
   NO. 8 0-2
   MATERIAL TO BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

   MINIMUM BEDDING THICKNESS TO BE 4" (100mm) FOR 4"-24" (100-600mm) AND 42"-48" (1050-1200mm) CORRUGATED POLYETHYLENE PIPE (CPEP); 6" (150mm) FOR 30"-36" (750-900mm) CPEP.
3. MINIMUM TRENCH WIDTHS TO BE AS FOLLOWS:

NOMINAL O in (mm)	MIN. RECOMMENDED TRENCH WIDTH, in (mm)
8 (200) 10	25 (630)
(250) 12	28 (710)
(300) 15	31 (790)
(375) 18	34 (860)
(450)	39 (990)

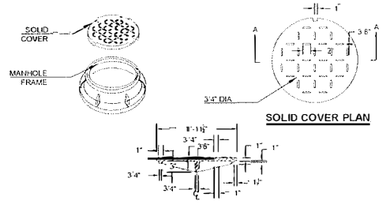


DETAIL PROVIDED BY ADVANCED DRAINAGE SYSTEMS, INC.

4. MINIMUM COVER: MINIMUM RECOMMENDED DEPTHS OF COVER FOR VARIOUS LIVE LOADING CONDITIONS ARE SUMMARIZED IN THE FOLLOWING TABLE, UNLESS OTHERWISE NOTED. ALL DIMENSIONS ARE TAKEN FROM THE TOP OF PIPE TO THE GROUND SURFACE.

SURFACE LIVE LOADING CONDITION	MINIMUM RECOMMENDED COVER, in (mm)
H25 (FLEXIBLE PAVEMENT)	12 (300)
H25 (RIGID PAVEMENT) E60	12 (300)
RAILWAY HEAVY CONSTRUCTION	24(610) 48 (1220)

* TOP OF PIPE TO BOTTOM OF BITUMINOUS PAVEMENT. THE MINIMUM COVER FOR A HDPE PIPE IS 1'-0" FOR H-20 TRAFFIC LOADS IF INSTALLED IN ACCORDANCE WITH AASHTO SECTION 30. THIS IS BASED ON EMPIRICAL CALCULATION OF LOAD RESPONSE, MANUFACTURERS TESTING AND FIELD EXPERIENCE WITH THE PIPE. AASHTO SPECIFICATIONS SECTION 18.4.1.5 DEFINES THE MINIMUM COVER AS "D-6 BUT NOT LESS THAN 12 INCHES". THIS COVER IS MEASURED FROM THE PIPE OD TO THE TOP OF A RIGID (CONCRETE) PAVEMENT OR THE BOTTOM OF A FLEXIBLE (BITUMINOUS) PAVEMENT. BOTH AASHTO AND ASTM, AS WELL AS MOST MANUFACTURERS, REQUIRE ADDITIONAL (TEMPORARY COVER, MOUNDED OVER THE PIPE AND REMOVED FOR FINAL GRADING AND PAVING, IS SUFFICIENT FOR LARGE CONSTRUCTION VEHICLE LOADS.

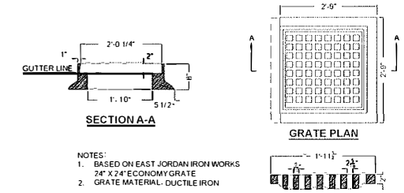


SOLID COVER PLAN

SECTION A-A

NOTES:
FRAME AND COVER TO CONFORM TO MASSACHUSETTS STANDARDS (LEBARON FOUDRY, MODEL LK 110A, OR APPR. EQUIV.)

DRAINAGE STRUCTURE FRAME AND COVER
NOT TO SCALE



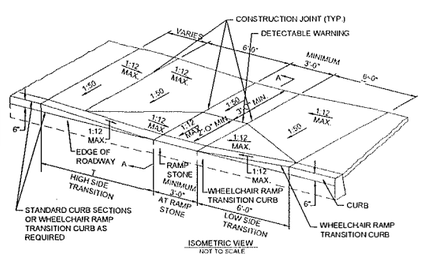
SECTION A-A

GRATE PLAN

NOTES:
1. BASED ON EAST JORDAN IRON WORKS 24" X 24" ECONOMY GRATE
2. GRATE MATERIAL: DUCTILE IRON

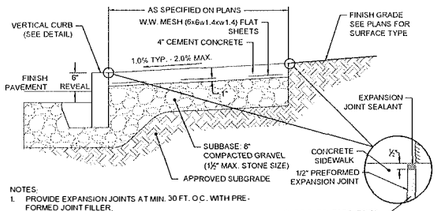
DRAINAGE STRUCTURE FRAME AND GRATE
NOT TO SCALE

PAVEMENT PATCH
NOT TO SCALE



ISOMETRIC VIEW
NOT TO SCALE

CONCRETE CURB
NOT TO SCALE

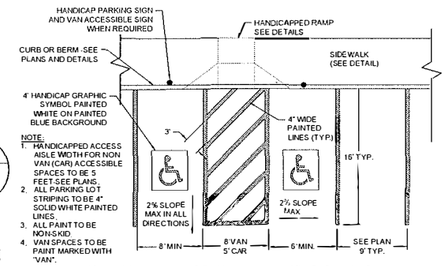


NOTES:
1. PROVIDE EXPANSION JOINTS AT MIN. 30 FT. O.C. WITH PRE-FORMED JOINT FILLER.
2. PROVIDE TOOLED CONTROL JOINTS AT 5' O.C. TYP. - 6' MAX.
3. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB.
4. CEMENT CONCRETE: 4,000 PSI-TYPE II
5. IF APPLICABLE, MATCH ALL EXISTING SIDEWALK WIDTHS.
6. SUBBASE: COMPACTED TO 95%.

CONCRETE SIDEWALK
NOTTO SCALE

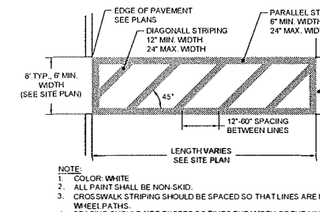
EXPANSION JOINT DETAIL

HANDICAP SIGN
NOT TO SCALE



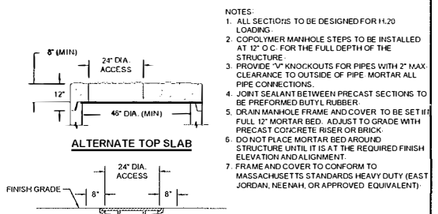
NOTE
1. HANDICAPPED ACCESS AISLE WIDTH FOR NON VAN (CAR) ACCESSIBLE SPACES TO BE 5 FEET-SEE PLANS.
2. ALL PARKING LOT STRIPING TO BE 4" SOLID WHITE PAINTED LINES.
3. ALL PAINT TO BE NON-SKID.
4. VAN SPACES TO BE PAINT MARKED WITH "VAN".

HANDICAPPED & STANDARD PARKING SPACES
NOT TO SCALE



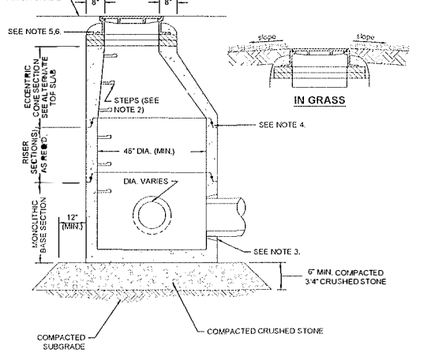
NOTE:
1. COLOR: WHITE
2. ALL PAINT SHALL BE NON-SKID.
3. CROSSWALK STRIPING SHOULD BE SPACED SO THAT LINES ARE NOT IN WHEEL PATHS.
4. SPACING SHOULD NOT EXCEED 2.5 TIMES THE WIDTH OF THE LINE.
5. ALL OTHER ROAD OR PARKING STRIPING TO BE 6" SOLID WHITE PAINTED LINES, UNLESS NOTED OTHERWISE

PAINTED CROSSWALK STRIPING
NOT TO SCALE



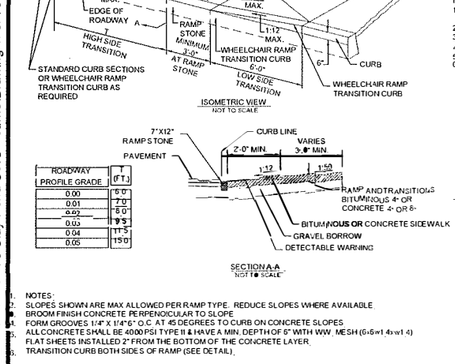
ALTERNATE TOP SLAB

NOTES:
1. ALL SECTIONS TO BE DESIGNED FOR H-20 LOADING.
2. COPOLYMER MANHOLE STEPS TO BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
3. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS TO BE PREFORMED BUTYL RUBBER.
5. DRAIN MANHOLE FRAME AND COVER TO BE SET IN FULL 12" MORTAR BED. ADJUST TO GRADE WITH PRECAST CONCRETE RISER OR BRICK.
6. DO NOT PLACE MORTAR BED AROUND STRUCTURE UNTIL IT IS AT THE REQUIRED FINISH ELEVATION AND ALIGNMENT.
7. FRAME AND COVER TO CONFORM TO MASSACHUSETTS STANDARDS HEAVY DUTY (EAST JORDAN, NEENAH, OR APPROVED EQUIVALENT)



IN GRASS

PRECAST DRAIN MANHOLE (DMH)
NOT TO SCALE

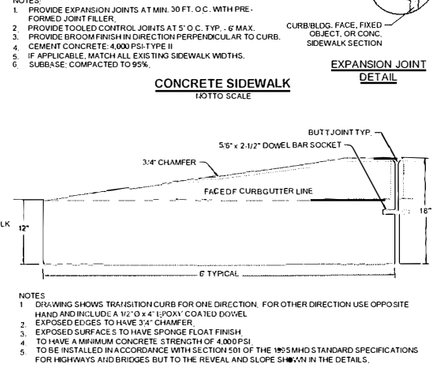


ROADWAY PROFILE GRADE	T (FT.)
0.00	6'0
0.01	7'0
0.02	8'0
0.03	9'5
0.04	11'5
0.05	15'0

SECTION A-A
NOTTO SCALE

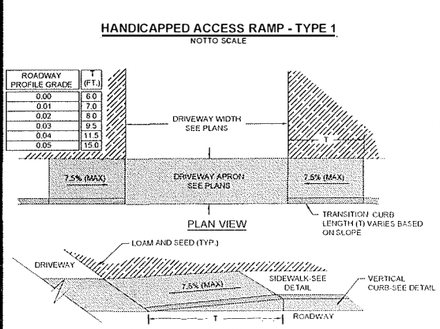
NOTES:
1. SLOPES SHOWN ARE MAX. ALLOWED PER RAMP TYPE. REDUCE SLOPES WHERE AVAILABLE.
2. BROOM FINISH CONCRETE PERPENDICULAR TO SLOPE.
3. FORM GROOVES 1/4" X 1/4"6" O.C. AT 45 DEGREES TO CURB ON CONCRETE SLOPES.
4. ALL CONCRETE SHALL BE 4000 PSI TYPE II & HAVE A MIN. DEPTH OF 6" WITH WW. MESH (6x6w1.4xw1.4) FLAT SHEETS INSTALLED 2" FROM THE BOTTOM OF THE CONCRETE LAYER.
5. TRANSITION CURB BOTH SIDES OF RAMP (SEE DETAIL).

HANDICAPPED ACCESS RAMP - TYPE 1
NOTTO SCALE



NOTES
1. DRAWING SHOWS TRANSITION CURB FOR ONE DIRECTION. FOR OTHER DIRECTION USE OPPOSITE HAND AND INCLUDE A 1/2" O x 4" EPOXY COATED DOWEL
2. EXPOSED EDGES TO HAVE 3/4" CHAMFER.
3. EXPOSED SURFACES TO HAVE SPONGE FLOAT FINISH.
4. TO HAVE A MINIMUM CONCRETE STRENGTH OF 4,000 PSI.
5. TO BE INSTALLED IN ACCORDANCE WITH SECTION 501 OF THE 1995 MHD STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES BUT TO THE REVEAL AND SLOPE SHOWN IN THE DETAILS.

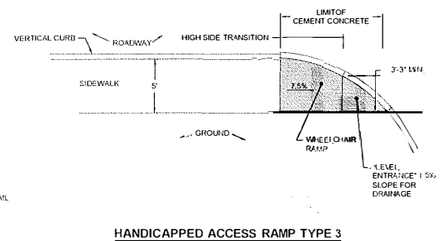
CONCRETE TRANSITION CURB
NOT TO SCALE



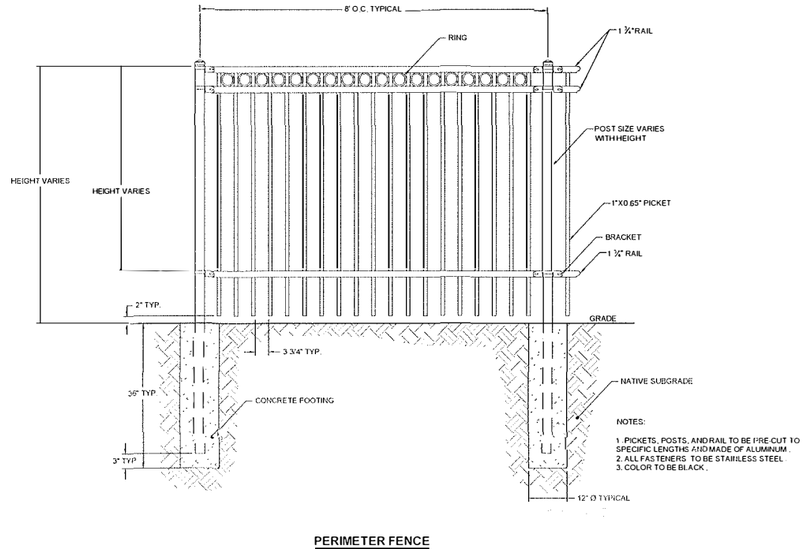
ROADWAY PROFILE GRADE	T (FT.)
0.00	6.0
0.01	7.0
0.02	8.0
0.03	9.5
0.04	11.5
0.05	15.0

PLAN VIEW

HANDICAPPED ACCESS RAMP - TYPE 2
NOT TO SCALE



HANDICAPPED ACCESS RAMP TYPE 3
NOT TO SCALE



NOTES:
1. PICKETS, POSTS, AND RAIL TO BE PRE-CUT TO SPECIFIC LENGTHS AND MADE OF ALUMINUM.
2. ALL FASTENERS TO BE STAINLESS STEEL.
3. COLOR TO BE BLACK.

PERIMETER FENCE
NOTTO SCALE

Revisions

No.	Date	By	Description

Horsley Witten Group, Inc.
Sustainable Environmental Solutions
www.horsleywitten.com
90 Route 6A
Sandwich, MA 02563
508-833-6600 voice
508-833-3150 fax

Date: MARCH 2019 | Designed By: BAL | Drawn By: BAL | Checked By: ANDREW

PERMITTING PLAN SET
TRUE STORAGE REDEVELOPMENT
170 CLAY POND ROAD BOURNE, MA

Plan Set:

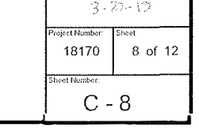
CONSTRUCTION DETAILS (1)

Plan Title:

Prepared For:
CLAY POND ACQUISITIONS LLC
670 N. COMMERCIAL STREET
MANCHESTER, NH 03101
Phone: (603) 622 - 6223
Fax: (603) 622 - 7342

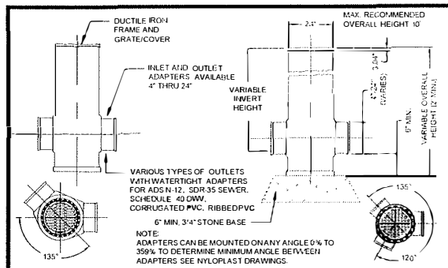
Survey Provided By:
HORSLEY WITTEN GROUP INC.
90 ROUTE 6A
SANDWICH, MA 02563
Phone: (508) 833-6600
Fax: (508) 833-3150
Dated: JANUARY 2019

Registration:



Project Number: 18170
Sheet: 8 of 12
Sheet Number: C - 8

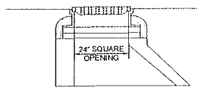
last modified 03/21/19 plotted: 03/21/19 by bl H:\Projects\2018\1801701 70 Clay Pond Cove\Bourne\Drawings\1 81 70 DEdwg



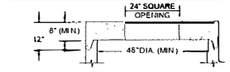
NOTE:
ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0% TO 359% TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE NYLOPLAST DRAWINGS.

DRAIN BASIN (NYLOPLAST)
NOT TO SCALE

BY "NYLOPLAST" OR APPROVED EQUIVALENT

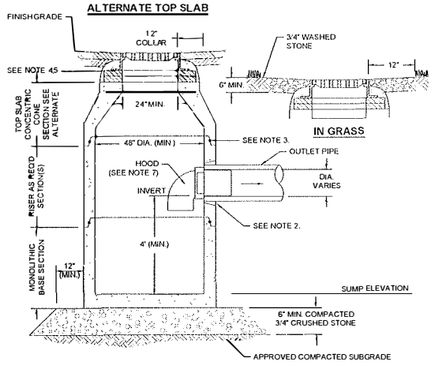


ALTERNATE ECCENTRIC CONE SECTION

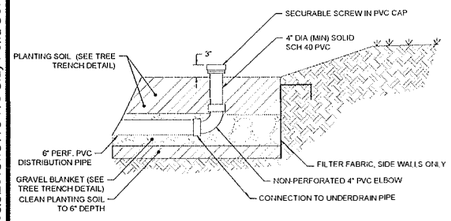


ALTERNATE TOP SLAB

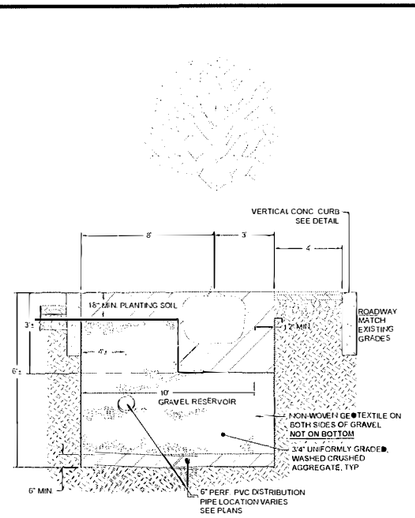
NOTES:
1. ALL SECTIONS TO BE DESIGNED FOR H-20 LOADING.
2. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
3. JOINT SEALANT BETWEEN PRECAST SECTIONS TO BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE TO BE SET IN FULL 12" WIDE MORTAR BED. ADJUST TO GRADE WITH PRECAST CONCRETE RISER OR BRICK.
5. DO NOT PLACE MORTAR BED AROUND STRUCTURE UNTIL IT IS AT THE REQUIRED FINISH ELEVATION AND ALIGNMENT.
6. FRAME AND COVER TO CONFORM TO MASSACHUSETTS STANDARDS HEAVY DUTY (EAST JORDAN, NEENAH, OR APPROVED EQUIVALENT)
7. HDPE PIPE HOOD TO BE 90° BEND FASTENED TO PIPE WITH SEALANT. BEND TO HAVE 1 INCH PURGE HOLE DRILLED INTO TOP OF ELBOW.



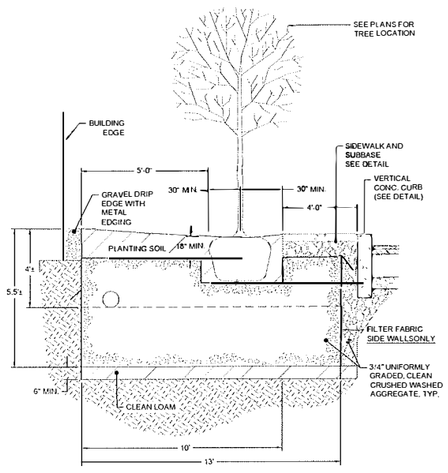
PRECAST CONCRETE CATCH BASIN (CB) WITH HOOD
NOT TO SCALE



CLEANOUT
NOT TO SCALE

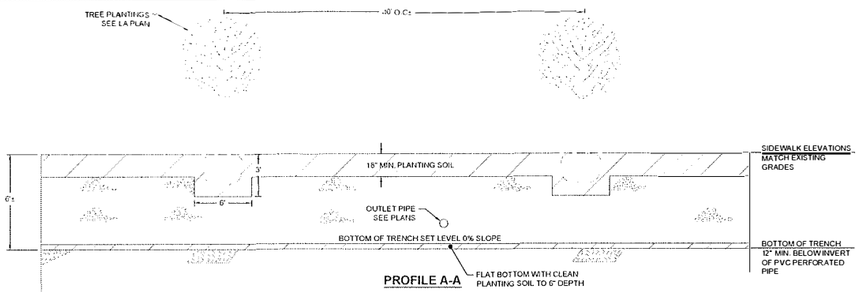


SECTION B-B

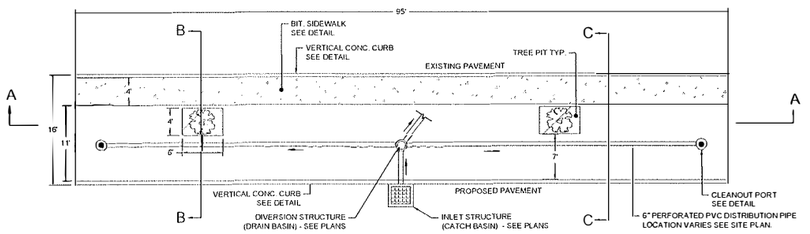


NOTES:
1. PLANTING SOIL DEPTH VARIES BASED UPON TOP OF ¾" GRAVEL AND SIDEWALK GRADES.
2. ¾" GRAVEL DEPTH VARIES BASED UPON INLET PIPE INVERT, PIPE SLOPE AND PIPE COVER REQUIREMENTS.

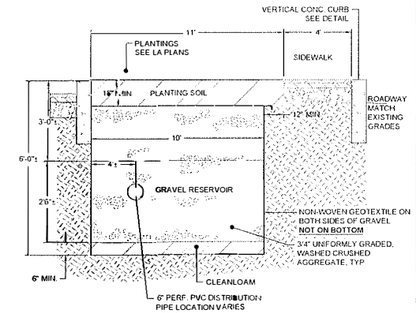
CROSS SECTION B-B'
NOT TO SCALE



PROFILE A-A

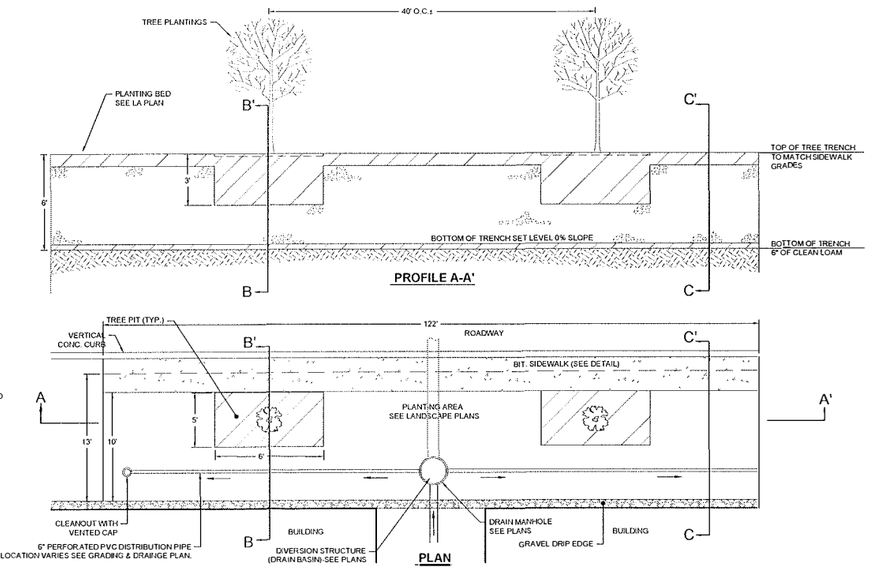


ENHANCED STORMWATER TREE TRENCH (1) PLAN
NOT TO SCALE



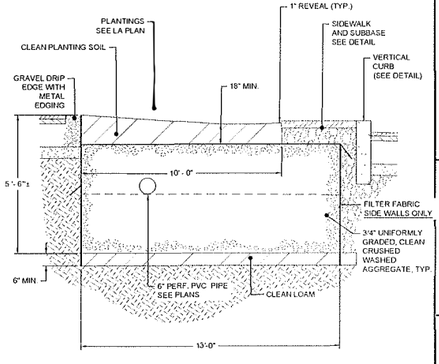
NOTES:
1. ¾" GRAVEL DEPTH VARIES BASED UPON INLET PIPE INVERT, PIPE SLOPE AND PIPE COVER REQUIREMENTS.

SECTION C-C



PLAN

ENHANCED STORMWATER TREE TRENCH (2)
NOT TO SCALE



NOTES:
1. PLANTING SOIL DEPTH VARIES BASED UPON TOP OF ¾" GRAVEL AND SIDEWALK GRADES.
2. ¾" GRAVEL DEPTH VARIES BASED UPON INLET PIPE INVERT, PIPE SLOPE AND PIPE COVER REQUIREMENTS.

CROSS SECTION C-C'
NOT TO SCALE

Revisions

Rev.	Date	By	App'r	Description

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Sustainable Environmental Solutions
www.horsleywitten.com
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Sandwich, MA 02563
508-833-6600 voice
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Designed By: BAL
Drawn By: BAL
Checked By: RC/DPH
Date: MARCH 2019

PERMITTING PLAN SET
TRUE STORAGE REDEVELOPMENT
170 CLAY POND ROAD BOURNE, MA

CONSTRUCTION DETAILS (2)

Prepared For:
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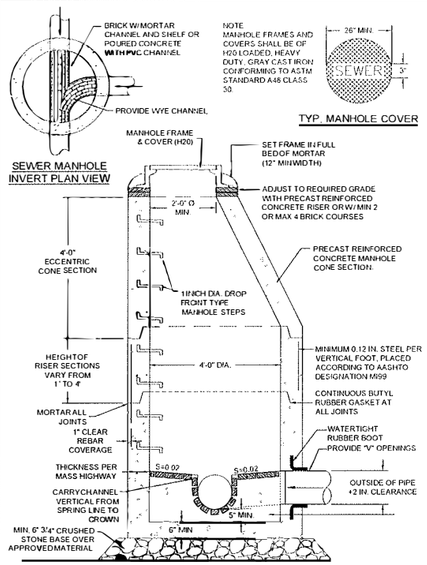
Survey Prepared By:
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Dated: JANUARY 2019

Registration:

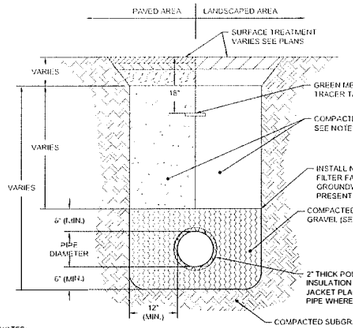


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last modified: 03/21/19 printed: 03/21/19 by bl H:\Projects\2018\18170 Clay Pond Cove-Bourne\Drawings\18170 DE.dwg



PRECAST CONCRETE SEWER MANHOLE (SMH)
NOT TO SCALE

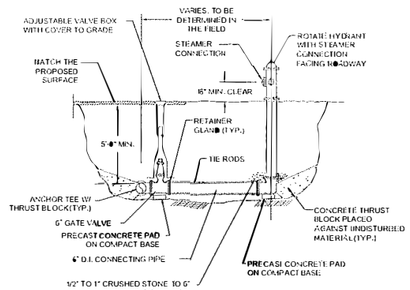


NOTES:
1. GRAVITY SEWER AND FORCE MAIN SHALL BE INSULATED WHEN VERTICAL OR HORIZONTAL SOIL COVER IS LESS THAN 4 FEET AND WHERE SHOWN ON PLANS.
2. TRACER TAPE FOR NON-FERROUS PIPE SHALL BE CONSTRUCTED OF A METALLIC CORE BONDED TO PLASTIC LAYERS. THE METALLIC TRACER TAPE SHALL BE A MINIMUM 5mm THICK AND MUST BE LOCATABLE AT A DEPTH OF 18 INCHES WITH ORDINARY PIPE LOCATORS.
3. TRENCH BACKFILL:
   BENEATH PAVEMENT: BACKFILL SHALL BE ROAD BASE AND COMPACTED TO PAVEMENT SUBBASE REQUIREMENTS-SEE DETAIL.
   OUTSIDE PAVEMENT: GRAVEL BORROW TYPE B (3" MINUS) COMPACTED IN MAXIMUM 8 INCH LIFTS TO TO 95% COMPACTION.
4. BACKFILL PLACED IN UTILITY TRENCHES INCLUDING DISTURBED AREAS SURROUNDING UTILITY TRENCHES SHALL BE PLACED AND COMPACTED IN 6" (MAX.) VERTICAL LIFTS.
5. CONTRACTOR SHALL ACHIEVE 95% COMPACTION FOR THE BEDDING.
6. PEA GRAVEL SHALL CONSIST OF CLEAN, HARD, ROUND PARTICLES OF GRAVEL MEETING THE FOLLOWING:

SIEVE SIZE	PERCENT PASSING
3/8"	85-95
NO. 4	5-15
NO. 8	0-2

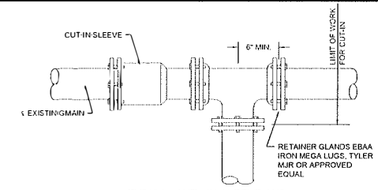
7. UTILITY SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE UTILITY COMPANY STANDARDS THAT MAY BE MORE STRINGENT THAN THIS DETAIL.

SEWER TRENCH DETAIL
NOT TO SCALE

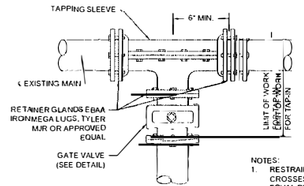


NOTES:
1. DEPTH OF HYDRANT BURY TO SUIT INSTALLED DEPTH OF COVER OVER WATERMAIN.
2. THRUST BLOCKS SHALL BE A MINIMUM OF 3-CY1 IN VOLUME.
3. LARGE FLAT ROCKS MAY REPLACE CONCRETE PADS.
4. ROOFING FELT SHALL BE INSTALLED BETWEEN THE CONCRETE PAD AND THE WATERMAIN FITTINGS WHERE NECESSARY.
5. SEE TABLE FOR CONCRETE THRUST BLOCK REQUIREMENTS.

HYDRANT ASSEMBLY DETAIL
NOT TO SCALE



TYPICAL CUT - IN SLEEVE AND FITTING DETAIL



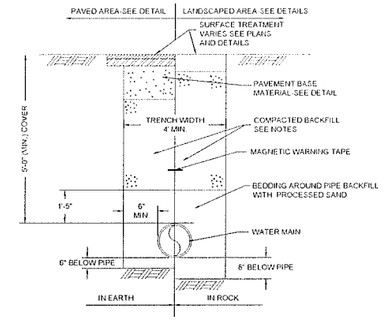
TYPICAL TAPPING SLEEVE AND VALVE DETAIL

NOTES:
1. RESTRAINED LENGTH FOR TEES, CROSSES, VALVES AND PLUGS SHALL EQUAL RESTRAINED LENGTH FOR 90° BENDS.
2. THE SCHEDULE SHOWN IS FOR THE FOLLOWING SERVICE CONDITIONS 150 psig INTERNAL PRESSURE; SOIL TYPE: SAND-SILT; 36 INCHES OF COVER AND TYPE 2 LAYING CONDITIONS.
3. RESTRAINED LENGTHS SHOWN IN TABLE ARE MINIMUM LENGTHS (IN FEET) AND ARE REQUIRED IN EACH DIRECTION FROM FITTINGS OR VALVES.

RESTRAINED JOINT SCHEDULE

PIPE SIZE	90°	45°	22 1/2°	11 1/4°
	D. I.	D. I.	D. I.	D. I.
12"	82'	38'	18'	9'
10"	76'	35'	16'	8'
8"	69'	27'	13'	7'
6"	51'	21'	10'	5'
4"	38'	16'	8	4

WATERMAIN CONNECTIONS
NOT TO SCALE

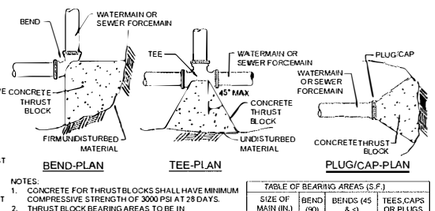


NOTES:
1. TRENCH BACKFILL:
   BENEATH PAVEMENT WITHIN EX. ROADWAY RIGHT OF WAY: BACKFILL SHALL BE EXCAVATABLE FLOWABLE FILL.
   BENEATH PAVEMENT: BACKFILL SHALL BE ROAD BASE AND COMPACTED TO PAVEMENT SUBGRADE REQUIREMENTS- SEE DETAIL.
   OUTSIDE PAVEMENT: GRAVEL BORROW TYPE B (3" MINUS) COMPACTED IN MAXIMUM 8 INCH LIFTS TO TO 95% COMPACTION.
2. TRACER TAPE FOR NON-FERROUS PIPE SHALL BE CONSTRUCTED OF A METALLIC CORE BONDED TO PLASTIC LAYERS. THE METALLIC TRACER TAPE SHALL BE A MINIMUM 5mm THICK AND MUST BE LOCATABLE AT A DEPTH OF 18 INCHES WITH ORDINARY PIPE LOCATORS.
3. CONTRACTOR SHALL ACHIEVE 95% COMPACTION FOR THE BEDDING.
4. PROCESSED SAND: CLEAN, HARD, MEDIUM GRAIN. FREE OF FINE MATERIAL OR DEBRIS.
5. UTILITY SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE UTILITY COMPANY STANDARDS THAT MAY BE MORE STRINGENT THAN THIS DETAIL.

WATER TRENCH DETAIL
NOT TO SCALE



FALL PROTECTION ANCHOR DETAIL
NOT TO SCALE



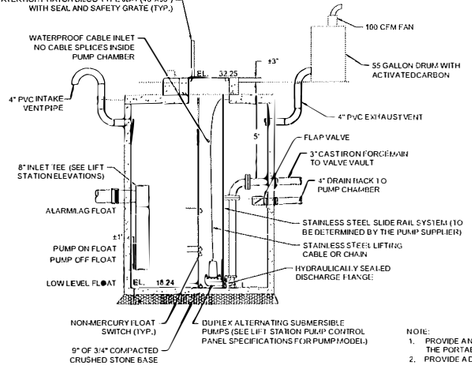
BEND-PLAN | TEE-PLAN | PLUG/CAP-PLAN

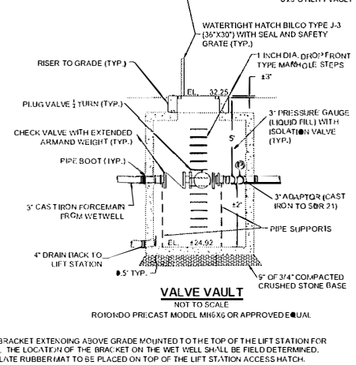
NOTES:
1. CONCRETE FOR THRUST BLOCKS SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.
2. THRUST BLOCK BEARING AREAS TO BE IN ACCORDANCE WITH TABLE, UNLESS DETERMINED OTHERWISE BY THE ENGINEER BECAUSE OF SOIL CONDITIONS.
3. THRUST BLOCK SHALL BE PRECAST OR CAST-IN PLACE W/ SIDES FORMED WITH PLYWOOD.

TABLE OF BEARING AREAS (S.F.)

SIZE OF MAIN (IN.)	BEND (90)	BENDS (45 & <)	TEES,CAPS OR PLUGS
8 & <	6	3	4
10 & 12	12	7	9
16 & >	18	10	14

THRUST BLOCK DETAIL
NOT TO SCALE





VALVE VAULT
NOT TO SCALE
ROTONDO PRECAST MODEL MH6X6 OR APPROVED EQUAL

NOTE:
1. PROVIDE AN UPRIGHT BRACKET EXTENDING ABOVE GRADE MOUNTED TO THE TOP OF THE LIFT STATION FOR THE PORTABLE CRANE. THE LOCATION OF THE BRACKET ON THE WET WELL SHALL BE FIELD DETERMINED.
2. PROVIDE A DIAMOND PLATE RUBBER MAT TO BE PLACED ON TOP OF THE LIFT STATION ACCESS HATCH.

SEWAGE LIFT STATION
NOT TO SCALE

Revisions

Rev.	Date	By	Appr.	Description

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Designed By: JH
Drawn By: JH
Checked By: RC/SBK
Date: MARCH 2019

PERMITTING PLAN SET
TRUE STORAGE REDEVELOPMENT
170 CLAY POND ROAD BOURNE, MA

Plan Set:

CONSTRUCTION DETAILS (3)

Plan Title:

Prepared For:
CLAY POND ACQUISITIONS LLC
670 N. COMMERCIAL STREET
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Dated: JANUARY 2019

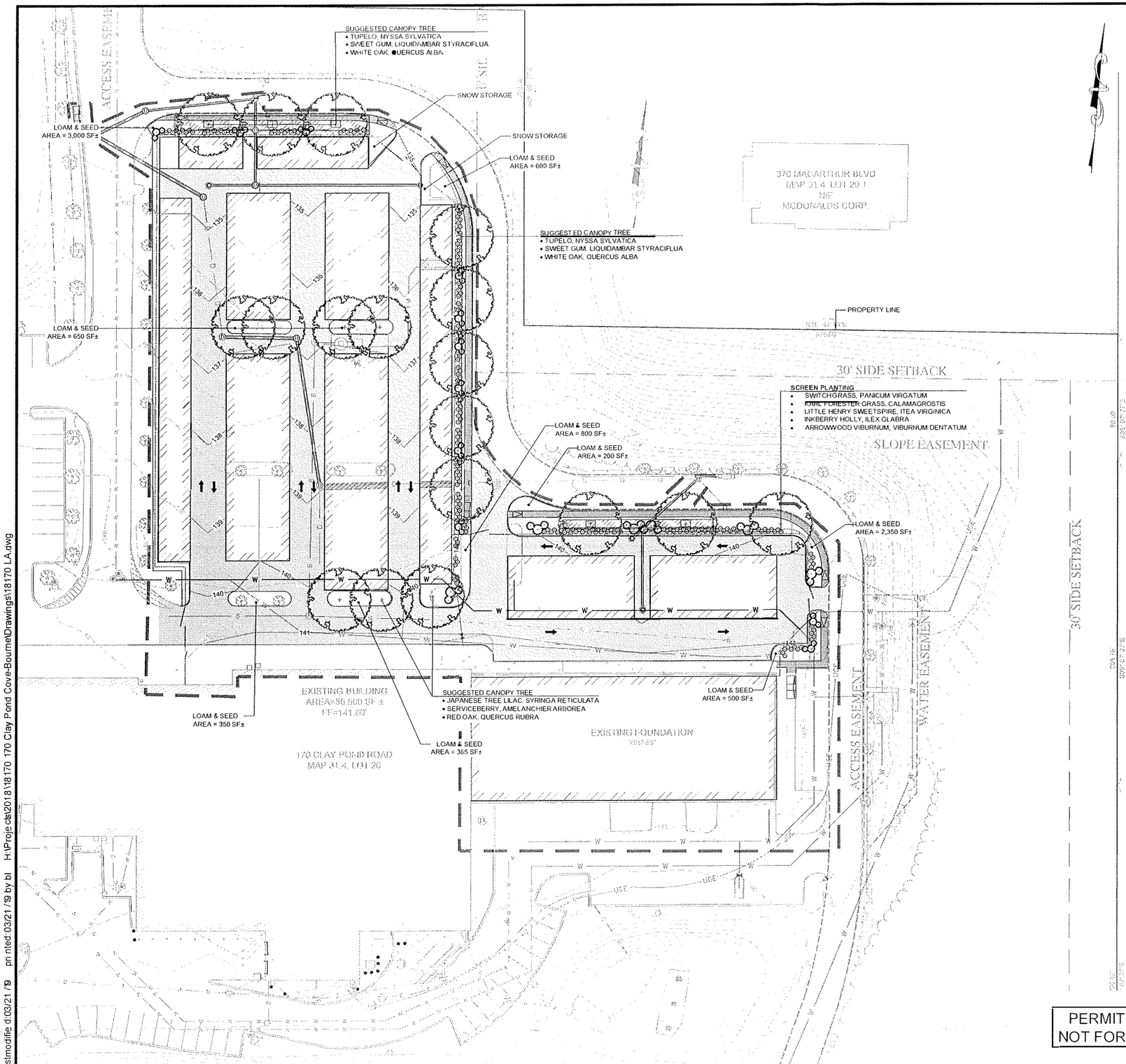
Registration:

3.22.19

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SYMBOL LEGEND:

EXISTING CANOPY TREE

PROPOSED CANOPY TREE

PROPOSED ORNAMENTAL TREE

PROPOSED SHRUB MASSING

PROPOSED PERENNIAL MASSING

SEED MIX 1 - LOW MOW
COLONIAL SEED - HARMONY MIX

PILGRIM COASTAL HAIR GRASS
QUATRO SHEEP FESCUE
BLUE HERON FESCUE
BRIGAD HARD FESCUE
LITTLE BIG HORN BLUE X HARD

SUGGESTED STREET TREES

Botanical Name	**Common Name**	**Size**	**Spacing**
CANOPY TREES			
Amelanchier arborea	Downy Serviceberry	#15	As Shown
Liquidambar styraciflua	Sweet Gum	2-2.5" cal.	As Shown
Nyssa sylvatica	Tupelo	2-2.5" cal.	As Shown
Quercus alba	White Oak	2-2.5" cal.	As Shown
Quercus rubra	Red Oak	2-2.5" cal.	As Shown
Syringa reticulata	Japanese Tree Lilac	2-2.5" cal.	As Shown

SUGGESTED VEGETATED BUFFER

Botanical Name	**Common Name**	**Size**	**Spacing**
Shrubs			
Fothergilla gardenii	Dwarf Fothergilla	#3	As Shown
Ilex glabra 'Compacta'	Compact Inkberry	#5	As Shown
Itea virginica 'Little Henry'	Little Henry Sweet Spire	#3	As Shown
Leucothoe fontanesiana 'Catesbaei'	Catesbaei Drooping Leucothoe	#3	As Shown
Rhododendron 'PJM Elite'	PJM Elite Rhododendron	#5	As Shown
Spiraea x. bumalda	Anthony Waterer Spiraea	#3	As Shown
Viburnum dentatum 'Blue Muffin'	Blue Muffin Arrowwood Viburnum	#3	As Shown
Perennials & Grasses			
Amsonia 'Blue Ice'	Blue Ice Blue Star	#1	24" O.C.
Baptisia australis	Blue False Indigo	#1	36" O.C.
Calamagrostis x acutiflora 'Karl Foerster'	Feather Reed Grass	#1	18" O.C.
Deschampsia cespitosa 'Goldtau'	Goldtau Tufted Hair Grass	#1	24" O.C.
Echinacea purpurea 'Ruby Star'	Ruby Star Purple Coneflower	#1	18" O.C.
Panicum virgatum 'Shenandoah'	Shenandoah Switch grass	#1	30" O.C.
Rudbeckia fulgida var. fulgida	Black-Eyed Susan	#1	18" O.C.
Sporobolus heterolepis	Prairie Dropseed	#1	30" O.C.

PERMITTING SET ONLY
NOT FOR CONSTRUCTION

GRAPHIC SCALE
30 0 15 30 60 120
(in feet)
1 INCH = 30 FEET

Revisions

Rev.	Date	By	Description

Horsley Witten Group, Inc.
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Checked By: RC+SMK
Approved By: BL
Designed By: BL
Date: MARCH 2019

PERMITTING PLAN SET
TRUE STORAGE REDEVELOPMENT
170 CLAY POND ROAD BOURNE, MA

Plan Set:

Plan Title: LANDSCAPE PLAN

Prepared For:
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670 N. COMMERCIAL STREET
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Phone: (603) 622-6223
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Dated: JANUARY 2019

Registration:

3/22/19

Project Number: 18170
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Sheet Number: L - 11

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GENERAL PLANTING NOTES:

1. THE FOLLOWING NOTES ARE PROVIDED AS GENERAL PLANTING GUIDELINES ONLY. THOROUGHLY REVIEW THE PROJECT SPECIFICATIONS FOR ALL LANDSCAPE REQUIREMENTS PRIOR TO THE COMMENCEMENT OF ANY LANDSCAPE WORK. SUBMIT IN WRITING TO THE LANDSCAPE ARCHITECT ANY QUESTIONS OR CLARIFICATIONS REQUIRED AT A MINIMUM OF 30 DAYS PRIOR TO ORDERING ANY MATERIALS OR BEGINNING ANY LANDSCAPE CONSTRUCTION.

2. SUBMIT TO THE LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL ALL REQUIRED LANDSCAPE SUBMITTALS AS DESCRIBED IN THE SPECIFICATIONS INCLUDING A PLANT LIST WITH PLANT SIZE AND QUANTITIES TO BE ORDERED PRIOR TO DELIVERY TO THE PROJECT SITE.

3. FURNISH AND INSTALL ALL PLANTS AS SHOWN ON THE DRAWINGS AND IN THE SIZE AND QUANTITIES SPECIFIED ON THE PLANTING SCHEDULE. PLANT SUBSTITUTION SELECTION MUST BE APPROVED BY BIOLOGIST OR LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

4. ALL PLANTS TO COMPLY WITH APPLICABLE REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK" LATEST EDITION, PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION INC.

5. PLANTS TO BE GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT FOR AT LEAST TWO (2) YEARS. USE HEALTHY NURSERY GROWN PLANTS, FREE OF DISEASE, INSECTS, AND PESTS. EGGS OR LARVAE, AND HAVE A WELL DEVELOPED ROOT SYSTEM.

6. INSTALL PLANTS WITHIN ONE (1) WEEK OF PURCHASE. IF PLANTS ARE TO BE STORED AT THE SITE PRIOR TO PLANTING, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THEY ARE PROPERLY MAINTAINED, WATERED, AND REMAIN HEALTHY.

7. PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT. SUBMIT TO THE LANDSCAPE ARCHITECT IN WRITING THE PROPOSED PLANTING SCHEDULE. OBTAIN APPROVAL OF PLANTING SCHEDULE FROM THE LANDSCAPE ARCHITECT PRIOR TO PERFORMING ANY WORK.

8. SEASONS FOR PLANTING:

SPRING:	DECIDUOUS:	APRIL 1 TO JUNE 15
	EVERGREEN:	APRIL 1 TO JUNE 15
	PERENNIALS:	APRIL 15 TO JUNE 1
	GROUNDCOVERS:	APRIL 15 TO JUNE 1
FALL:	DECIDUOUS:	SEPTEMBER 15 TO NOVEMBER 15
	EVERGREEN:	SEPTEMBER 15 TO NOVEMBER 15
	PERENNIALS:	SEPTEMBER 15 TO NOVEMBER 15
	GROUNDCOVERS:	SEPTEMBER 15 TO NOVEMBER 15

9. PLANTING UNDER FROZEN CONDITIONS IN EITHER THE SPRING OR FALL WILL NOT BE PERMITTED. PLANTING BEFORE OR AFTER THE ABOVE REFERENCED PLANTING DATES WILL INCREASE THE LIKELIHOOD OF PLANT OR GRASS SEED ESTABLISHMENT FAILURE. ANY DEVIATION FROM THE ABOVE REFERENCED PLANTING DATES IS UNDERTAKEN AT SOLE RISK OF THE CONTRACTOR AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ANY ADDITIONAL MAINTENANCE AND WATERING WHICH MAY BE REQUIRED TO ENSURE SATISFACTORY PLANT AND SEED ESTABLISHMENT.

10. FURNISH ONE YEAR MANUFACTURER WARRANTY FOR TREES, PLANTS, AND GROUND COVER AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM LACK OF ADEQUATE MAINTENANCE, NEGLECT, OR ABUSE BY OWNER, OR ABNORMAL WEATHER CONDITIONS UNUSUAL FOR WARRANTY PERIOD. THE DATE OF FINAL ACCEPTANCE OF ALL COMPLETED PLANTING WORK ESTABLISHES THE END OF INSTALLATION AND INITIAL MAINTENANCE PERIOD AND THE COMMENCEMENT OF THE GUARANTEE PERIOD.

11. ALL TREES WITHIN 5'-0" OF WALKWAYS AND SIDEWALKS TO HAVE A 6'-8" STANDARD BRANCHING HEIGHT.

12. INSPECT ALL AREAS TO BE PLANTED OR SEEDED PRIOR TO STARTING ANY LANDSCAPE WORK. REPORT ANY DEFECTS SUCH AS INCORRECT GRADING, INCORRECT SUBGRADE ELEVATIONS OR DRAINAGE PROBLEMS, ETC. TO THE LANDSCAPE ARCHITECT AND ENGINEER PRIOR TO BEGINNING WORK. COMMENCEMENT OF WORK INDICATES ACCEPTANCE OF SUBGRADE AREAS TO BE PLANTED, AND THE LANDSCAPE CONTRACTOR ASSUMES RESPONSIBILITY FOR ALL LANDSCAPE WORK.

13. PROVIDE PROPER PREPARATION OF ALL PROPOSED PLANTED AND SEEDED AREAS PER THE NOTES AND SPECIFICATIONS.

14. ALL PLANT LAYOUT AND ACTUAL PLANTING LOCATIONS ARE TO BE FIELD VERIFIED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING. NOTIFY THE LANDSCAPE ARCHITECT AT A MINIMUM OF 48 HOURS IN ADVANCE PRIOR TO SCHEDULING ANY FIELD INSPECTIONS.

15. BALL AND BURLAP. REMOVE BURLAP AND WIRE BASKETS FROM TOPS OF BALLS AND FROM TOP HALF OF ROOTBALL AS INDICATED ON DRAWINGS. REMOVE PALLETS, IF ANY, BEFORE SETTING.

16. POTTED PLANTS. REMOVE THE PLANT FROM THE POT AND LOOSEN OR SCORE THE ROOTS BEFORE PLANTING TO PROMOTE OUTWARDS ROOT GROWTH INTO THE SOIL.

17. PLUGS. PLANT UPRIGHT AND NOT AT AN ANGLE. DIG PLANTING HOLES LARGE ENOUGH AND DEEP ENOUGH TO ACCOMMODATE THE ENTIRE ROOT MASS. PLANT PLUGS WITH NO TWISTED OR BALLED ROOTS AND WITH NO ROOTS EXPOSED ABOVE THE GRADE LINE. HAND PACK THE SOIL AROUND THE ENTIRE PLUG ROOT MASS.

18. DIG THE THE PLANTING HOLE TO THE SAME DEPTH AS THE ROOT BALL AND TWO TO THREE TIMES WIDER. SCORE ALL SIDES OF THE HOLE, PLACE THE PLANT IN THE HOLE SO THE TOP OF ROOT BALL IS EVEN WITH SOIL SURFACE. FILL THE HOLE HALFWAY AND THEN ADD WATER ALLOWING IT TO SEEP INTO BACK FILLED MATERIAL. BE SURE TO REMOVE ALL AIR POCKETS FROM BACK FILLED SOIL. DO NOT SPREAD SOIL ON TOP OF THE ROOTBALL. IF SOIL IS EXTREMELY POOR, REPLACE BACK FILL WITH GOOD QUALITY TOP SOIL. AMEND THE SOIL, AS NECESSARY.

19. CREATE A 2" TO 4" BERM AROUND THE EDGE OF PLANTING HOLE WITH REMAINING SOIL TO RETAIN WATER.

20. REMOVE ALL PLANT TAGS AND FLAGS FROM THE PLANTS.

21. MULCH ALL PLANTING BEDS AS INDICATED ON DRAWINGS. UNLESS NOTED OTHERWISE, ALL PLANTS TO RECEIVE 2-3 INCHES OF MULCH. DO NOT PILE OR MOUND MULCH AROUND THE PLANT STEMS OR TRUNK.

22. TRIM BROKEN AND DEAD BRANCHES FROM TREES AND SHRUBS AFTER PLANTING. NEVER CUT A LEADER.

GENERAL SEEDING NOTES:

1. SEND A REPRESENTATIVE SAMPLE OF THE TOPSOIL TO A TESTING LABORATORY FOR STANDARD SOIL ANALYSIS AS DESCRIBED IN THE SPECIFICATIONS. SUBMIT TO THE LANDSCAPE ARCHITECT AND ENGINEER TEST RESULTS WITH RECOMMENDED SOIL TREATMENTS TO PROMOTE PLANT AND GRASS GROWTH. CORRECT DEFICIENCIES IN THE LOAM AND STOCKPILED TOPSOIL AS DIRECTED BY THE TESTING AGENCY.

2. ALL AREAS THAT ARE DISTURBED AND/OR GRADED DURING CONSTRUCTION ARE TO BE BROUGHT TO FINISHED GRADE WITH AT LEAST 4" MINIMUM DEPTH OF GOOD QUALITY LOAM AND SEEDED WITH A QUICK GERMINATING GRASS SEED SUCH AS NEW ENGLAND EROSION CONTROL RESTORATION MIX OR AS SPECIFIED ON THE PLANS.

3. PRIOR TO THE PLACEMENT OF TOP SOIL, LOOSEN THE SUBGRADE OF ALL PROPOSED SEEDED AREAS TO A DEPTH OF 6" AND RAKE TO REMOVE STONES LARGER THAN 1 INCH, STICKS, ROOTS, RUBBISH AND OTHER EXTRANEOUS MATTER AND LEGALLY DISPOSE TO AN OFF SITE LOCATION.

4. DO NOT SPREAD TOPSOIL IF THE SUBGRADE IS FROZEN, EXCESSIVELY WET, COMPACTED OR NOT PROPERLY PREPARED PER THE NOTES AND SPECIFICATIONS.

WATERING NOTES:

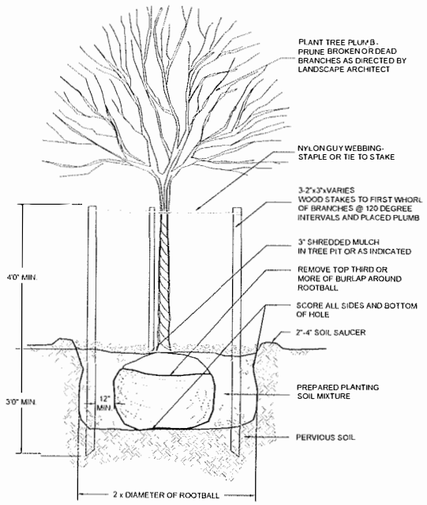
1. PROVIDE PROPER PLANT CARE, MAINTENANCE AND WATERING ON SITE UNTIL SUCH TIME AS THE LANDSCAPING IS ACCEPTED BY THE PROPERTY OWNER AS SATISFACTORY PER THE SPECIFICATIONS OR AS DETERMINED BY ANY WRITTEN AGREEMENTS BETWEEN THE CONTRACTOR AND PROPERTY OWNER.

2. ESTABLISH AN APPROPRIATE WATERING SCHEDULE FOR ALL PLANT MATERIAL BASED UPON PLANT SPECIES REQUIREMENTS AND PROVIDE IN WRITING TO THE LANDSCAPE ARCHITECT AND OWNER FOR REVIEW AND APPROVAL. ADHERE TO THE APPROVED SCHEDULE UNTIL PLANTS ARE FULLY ESTABLISHED.

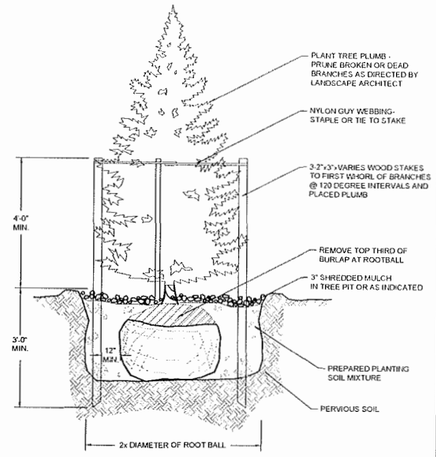
3. AT A MINIMUM THE NEWLY SEEDED AND/OR HYDROSEEDED LAWNS SHOULD BE WATERED DAILY DURING DROUGHT CONDITIONS. SPECIAL CARE SHOULD BE TAKEN TO ENSURE THAT THE LAWN IS NOT SATURATED DURING WATERING. IF AN IRRIGATION SYSTEM IS NOT PROVIDED, A TEMPORARY IRRIGATION SYSTEM OR HANDHELD GARDEN HOSE SHALL BE USED FOR WATERING SEEDED AREAS. THE AREA MUST BE MAINTAINED CONSISTENTLY MOIST FOR THE BEST GERMINATION RESULTS. ADDITIONAL WATERING WILL BE REQUIRED IF PLANTING AND SEEDING OCCUR OUTSIDE OF THE RECOMMENDED PLANTING SEASONS.

PLANTING LAYOUT NOTES

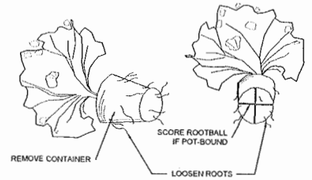
1. HATCHED AREAS - DO NOT PLANT LARGE AREAS OF THE SAME SPECIES RANDOMLY PLANT AS INDICATED ON THE PLANTING PLANS INTO SMALL GROUPINGS OF THE SAME SPECIES TO CREATE A MORE NATURALISTIC APPEARANCE. PLANT THE SAME PLANT SPECIES IN GROUPS OF 3-7 AND NOT LARGER THAN 7, DEPENDING ON THE OVERALL NUMBER OF PLANTINGS.



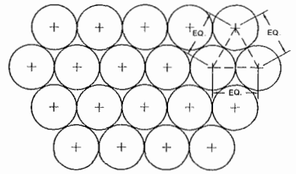
TREE PLANTING
NOT TO SCALE



EVERGREEN TREE PLANTING
NOT TO SCALE

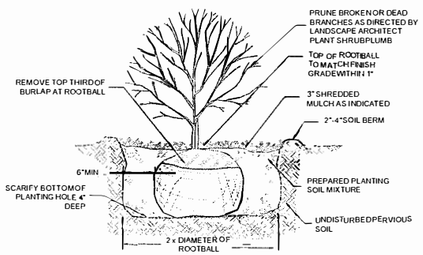


CONTAINER PLANT ROOTBALL TREATMENT
NOT TO SCALE

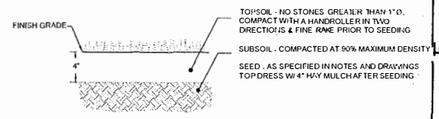


USE EQUIDISTANT TRIANGULAR SPACING FOR PLANTS - FOR ACTUAL SPACING SEE PLANS OR PLANTING SCHEDULE

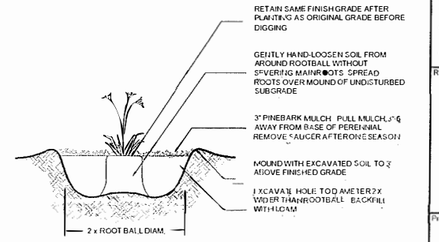
PLANTING SPACING
NOT TO SCALE



SHRUB PLANTING
NOT TO SCALE



LOAM AND SEED
NOT TO SCALE



PERENNIAL PLANTING
NOT TO SCALE

Revisions

No.	Date	By	Description
1	3/22/19	BAL	Per Conservation

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Checked By: RAC BR
Date: MARCH 2019

PERMITTING PLAN SET
TRUE STORAGE REDEVELOPMENT
170 CLAY POND ROAD BOURNE, MA

Plan Set:

LANDSCAPE DETAILS

Plan Title:

Survey Prepared By:
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Project Number: 18170
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