City of New Bedford
Department of Planning, Housing & Community Development
608 Pleasant St, New Bedford, Massachusetts 02740
Telephone: (508) 979.1500 Facsimile: (508) 979.1575

PATRICK J. SULLIVAN
DIRECTOR

STAFF COMMENTS

PLANNING BOARD MEETING
February 10th, 2016

Case #04-16: **SITE PLAN REVIEW**
20 South Sixth Street
Renovations to the
YWCA of Southeastern
Massachusetts
Map 46, Lot 69

Applicant's Agent:
Atty. Marc Deshaies
Law Office of Marc
Deshaies, P.C.
115 Orchard Street
New Bedford, MA 02740

Owner: YWCA of Southeastern
Massachusetts, Inc.
20 South Sixth Street
New Bedford, MA 02740

Overview of Request
This is a request to consider Site Plan approval for new construction for expansion of an existing structure serving the YWCA of Southeastern Massachusetts, Inc., located at the northeast corner of South Sixth and School Streets in the Mixed Use Business and Downtown Business Overlay District (DBOD) zoning districts on a parcel consisting of 11, 925+/- SF. The edifice is recognized as the Levi Standish House. The objective of the proposal is to consolidate and unify the YWCA of Southeastern Massachusetts' administrative and program services at a single site in a state-of-the-art facility. The new addition, designed to preserve the historic character of the Levi Standish House, is estimated to take twelve (12) months to construct at a cost estimate of $2.5 million dollars.

Required Approvals
This request necessitates multiple approvals from the city's Comprehensive Zoning ordinance from both the Planning Board and Zoning Board of Appeals:

- **Section 2430** Non-Conforming Structures, Other than single/two-family structures. Given that the structure is a legal non-conforming building, additional relief in the form of a Special Permit from the ZBA is needed from**:**
  - **Section 2431.** Reconstructed, extended or structurally changed; and

- **Section 2432.** Altered to provide for a substantially different purpose or for the same purpose in a substantially different manner or to a substantially greater extent.

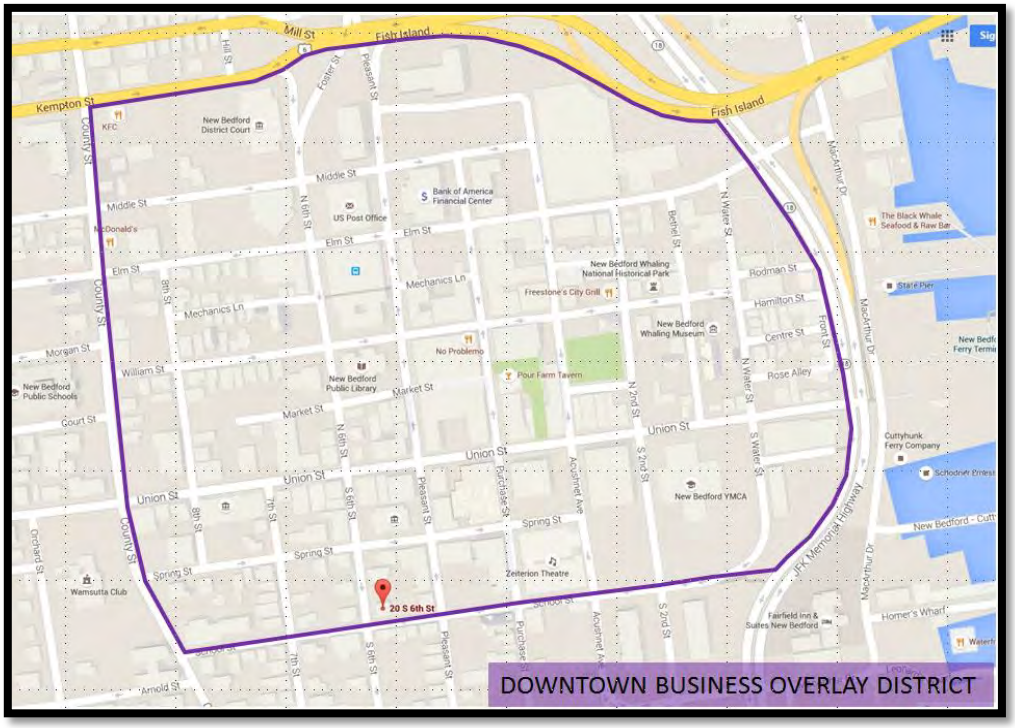
- **Section 4500.** Downtown Business Overlay District; Special Permit from the ZBA is needed for, specifically:
  - **Section 4553** Reductions in parking requirements for commercial use of pre-existing or new structures where the applicant is requesting a Special Permit for reduction in parking to include zero (0) spaces before the ZBA.
  - **Section 4552** Reductions in setbacks, density, green space and parking requirements to allow for the development of residential dwelling units on the upper level floors of new and pre-existing structures where the applicant is requesting a Special Permit from the ZBA.
- **Section 5400**: Site Plan Review from the Planning Board.

This case was originally placed before the ZBA in January at which time that body granted a continuance at the applicant's request to allow the Planning Board the opportunity to review and offer its Site Plan Review findings to the ZBA prior to the Zoning Board's meeting of February 18, 2016.

Existing Conditions

The Levi Standish House is a 3,872+/- SF Federal-Style brick structure constructed in 1830 which currently serves as administrative offices and designated program services for the YWCA. According to the applicant, "the grounds of the property are residential in nature for this urban area of New Bedford." Although the building is *not* located within the Historic District, it is protected by preservation restrictions

There is no off-street parking; the YWCA leases fifteen (15) off-site parking spaces for its current staff of 10-12 employees in a surface lot on the next block of South Sixth Street to meet current parking requirements. There is one off-street for handicap parking across the street from the building on South Sixth Street for which the YWCA petitioned for and received several years ago and the applicant has indicated they will again be petitioning the New Bedford Traffic Commission for additional on-street handicap parking around their building to accommodate visitors and staff.

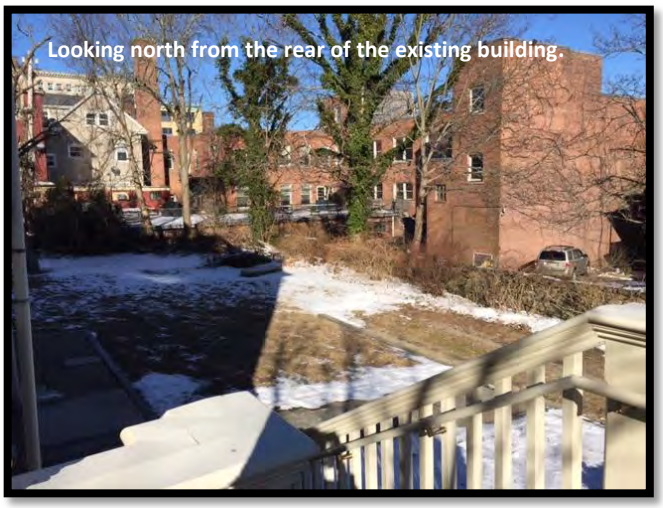


The site is within the southernmost edge of the City of New Bedford's Downtown Business Overlay District [DBOD] whose boundaries are described as located between the east side of County Street, north side of School Street, west side of Route 18 and south side of Kempton Street. The purpose of the DBOD is to provide adequate minimum standards and procedures for the construction of new, and rehabilitation of existing, structures so as to promote economic and cultural development in the downtown area.

Proposed Conditions
The petitioner states that the proposed expansion and alteration of the Levi Standish House will, to the extent possible, preserve the historical character of the property.

Context. The proposed location of the new construction is within the property's side yard facing South Sixth Street and located north of the existing structure. The wood-frame, new addition will feature a façade of lap siding and brick facing at the South Street elevation and is considered an extension of a non-conforming structure. The rear yard area adjacent to School Street will feature a playground area for children.

DBOD and the ZBA. The Planning Board may wish to note that although its own review is limited to Site Plan Review, the Zoning Board of Appeal's [ZBA] forthcoming hearing for a special permit in the DBOD later this month will necessitate its own review of many of the *same* items and considerations required through the Site Plan Review Process. Specifically, the ZBA will be required to determine [in accordance with Section 4570] whether "the proposed project does not cause substantial detriment to the neighborhood after considering the following potential consequences: noise during construction and operational phases, pedestrian and vehicular traffic, environmental harm, visual impact caused by the character and scale of the proposed structure(s)," and parking. In light of this, any findings/conditions the Planning Board may make in the context of any approval it issues with respect to these specific issues will have relevance to the ZBA during the course of its own deliberation.

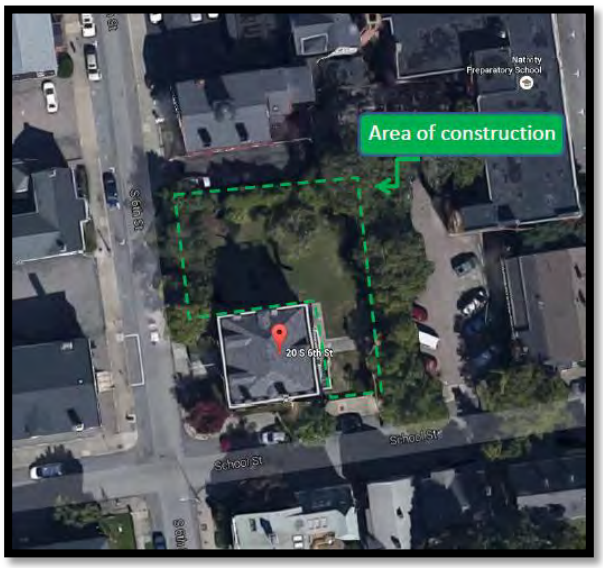


Historic Preservation. Because the Levi Standish House has preservation restrictions on it, the proposed plans must receive the approval of the Massachusetts Historical Commission [MHC]. It is the understanding of staff that those materials were sent to the MHC on January 18th of this year and that the MHC then has thirty [30] days in which to issue its findings. Given that their findings may come *after* the Planning Board's review, staff recommends that if it approves of the site plan, the Planning Board may wish to include a condition that acknowledges this decision.

Purpose/Occupancy. A passage-way corridor will connect the new and existing construction. The 6,550 +/- handicap compliant addition is comprised of two-stories. The first floor will host an after-school day care center, classroom/meeting spaces, employer kitchen facility, and three bathrooms. The second floor will offer congregate style housing, as defined under Section 310.1 (R-3) of the MA State Building Code governing use and occupancy classification, to feature eight (8) single-room occupancy housing units, or SRO's, a segment of the housing spectrum that permits individuals to reside in a community environment. The SROs will be solely occupied by adult single females, thereby mitigating impact on the City of New Bedford Schools. The applicant

states the residents will share common bathroom facilities and community space for dining and leisure activities.

The applicant anticipates the consolidation will permit the YWCA to increase their level of service from ten (10) to (30) clients per day by doubling staff size from ten (10) to twenty (20) employees and expanding the existing 9:00 a.m. to 4:00 p.m. Monday to Friday hours of operation by two hours to conclude at 6:00 p.m.



Landscaping. A landscape design is depicted on Landscape Plan sheet PB-L100. It appears twelve (12) mature trees of unknown caliper will be removed from the site. Three (3) new street trees are proposed along South Sixth Street within the existing right of way and two existing street trees are to be preserved along School Street; one (1) new street tree within that same right of way is proposed. Also illustrated on the Landscape Plan sheet is a 1,350 SF area dedicated for children's play that is surrounded by a four (4) foot high, vinyl coated chain link fence, which may be viewed from School Street. Staff finds that the details provided within the landscaping plan as presented are lacking and therefore recommends the board seek additional information be added to a revised landscaping plan and that such plan be subject to the city planner's review/approval.

Circulation. The proposed site does not include any vehicular parking or drives. There are multiple walkways including an accessibility ramp on the west [front] elevation, formal entry walkway into the connector between buildings and walkways in the rear yard (east side of building) along a proposed play area, to doorways, etc.

Lighting. No Lighting Plan has been submitted. However, the applicant states within the Development Impact Statement [DIS] lighting will be of "down draft design to minimize impact on abutting properties while being sufficient for the security of resident and YWCA staff." The Planning Board may desire to ask that lighting be shown on the Site Construction Layout Plan sheet C1.01 and Landscape Plan sheet PB – L100 and that final cut sheets/specifications be provided to the city planner before project sign off.

Trash. The applicant states in the DIS that refuse disposal for trash generated from the project site, when operational, will be disposed of through a dumpster via private trash removal. Site location for the dumpster should be illustrated on the Site Construction Layout Plan sheet C1.01.

Review Comments

As required under city ordinance, the case submittal documents were distributed to City Clerk, City Solicitor, Health Department, Inspectional Services, Engineering, Public Infrastructure, Conservation Commission, Fire Department and School Department.

Conservation Commission Agent Sarah Porter responded stating the proposed project is not in or within 100' of State or Local Wetland Resource Areas. Therefore, no permit is required from the Conservation Commission for this proposed activity.

The School Department had no comments to add for the Board's consideration.

The applicant has submitted a Project Notification Form to the Massachusetts Historical Commission (MHC) which is subject to a thirty day review period. While this project does not require a public hearing before the City of New Bedford Historical Commission as it is located outside of the Historic District, it is understood that the MHC will provide their findings to the city. In addition, the board may wish to note that typically the MHC seeks the input of the local historic preservation folks; in this case they may solicit input from the New Bedford Historical Commission, itself, of from the city's Preservation Planner.

A copy of the Preservation Restriction Agreement between the Commonwealth of Massachusetts by and through the Massachusetts Historical Commission and the YWCA of Southeastern Massachusetts, Inc., is attached for the Planning Board's information describing the preservation restrictions (Attachment 1).

For comments from the Department of Public Infrastructure, please see Attachment 2.

The Planning Department awaits other comments.

Plans submitted for consideration:
The submittal is shown as Renovations to YWCA Southeastern MA, 20 South Sixth Street, New Bedford, MA dated 01/15/2016, prepared by Davis Square Architects, 240A Elm Street, Somerville, MA 02144 and Garcia Galuska Desousa Consulting Engineers, 370 Faunce Corner Road, Dartmouth, MA 02747, with existing conditions site plan prepared by Boucher & Heureux, Inc., 648 American Legion Highway, Suite One, Westport, MA 0270, consisting of nineteen (19) sheets (Attachment 3). Within the submittal staff has found a number of areas requiring clarification and revision. A list of submitted sheets, along with staff recommendations as may be applicable, are as follows:

- **Cover Sheet - T1.01**
  1. Omission: Assessors Map and Lot number
- **Existing Conditions Site Plan**
- **Site Demolition & Preparation Plan - C1.00**
  1. The Notes on Site Demolition & Preparation Plan C1.00 should be revised to reflect the preservation of the wall, rather than removal and disposal of the stone wall remains.
  2. It appears twelve (12) trees of unknown caliper will be removed from the site.
- **Site Construction Layout Plan – C1.01**
  1. Site visit by staff finds the stone wall that would serve to screen the utility service location as shown on Site Construction Layout Plan C1.01 to be in disrepair. The wall must be maintained as stipulated under Section 3360 of the zoning ordinance.
- **Site Grading & Drainage Plan - C2.01**
- **Utility and Grading Plan – C3.01**
- **Site Erosion Control Plan – C4.01**
  1. The plan notes hay bales. Straw bales are to be used for erosion control measures. Please revise and note change at Detail C5.01.
- **Site Legend, Notes & Details - C5.01**
  1. See note regarding hay v. straw.
- **Site Details – C5.02**
- **Site Details – C5.03**
- **Site Details – C5.04**
- **Landscaping Plan - PB – L100**

1. A modest urban landscape design is proposed and exemplified by Landscape Plan sheet PB-L100. The Planning Board may desire a more robust landscaping design at this site, given the loss of twelve (12) mature trees. DPI may additionally require replacement of street trees.

- **Sign Plan – PB – L101**
- **Existing/Demo Floor Plans – PB – X100**
- **Ground Floor Plans – PB – A100**
- **First Floor Plan – PB – A101**
- **Second & Third Floor Plan – PB – A102**
- **Roof Plan – PB – A103**
- **Elevations PB - A200**

The DIS included in the case submittal packet is attached for the Planning Board's review and consideration (Attachment 4). Photos of the site are included at Attachment 5.

A Drainage Analysis for the Renovations to the YWCA Southeastern Massachusetts is included in the case submittal packet for review and consideration (Attachment 6). Staff recommends the board require minor typos to be corrected by the applicant. [See Page 1 identifying site soil classification as "Urban land per the USDA Natural Resources Conservation Commission Soil survey of Plymouth (rather than Bristol) County". See Page 4. Summary of peak run off rates for proposed catchment areas. The table identifies run-off as Existing Conditions Peak Runoff Rates.]

For Board Member Consideration

The proposal before the Planning Board for Site Plan Approval is consistent with the city's master plan goal to continue to shape the city as a metropolitan center of the Southcoast. This initiative for development will continue to strengthen the Downtown Business Overlay District by providing minimum standards and procedures for the construction and rehabilitation of existing structures, while protecting the neighborhood context, providing classroom and educational learning opportunities, and providing decent, safe and affordable housing for women who are single.

Having reviewed this request, the existing character of the surrounding properties and thresholds for approval of a site plan review, staff recommends the approval of this application with the following conditions:

- The applicant/owners shall comply with the stipulations set forth by the City of New Bedford Department of Public Infrastructure.
- Conditions placed upon the application for the proposed work by the Massachusetts Historic Commission shall be included as part of this decision only insofar as those conditions do not significantly alter the site plan proposed and hereby conditioned; significant alteration to the site plan being approved will necessitate the applicant's return before the Planning Board for a modification of site plan approval.
- The applicant/owners shall ensure proposed lighting is illustrated on the Site Construction Layout Plan sheet C1.01 and Landscape Plan sheet PB – L100 and that lighting style, specification tear sheets and specifications are to be reviewed for final acceptance by the city planner.
- Plans are to be revised to illustrate site location for dumpster on the Site Construction Layout Plan sheet C1.01.
- Mechanical equipment size is to be reviewed by staff for approval before final preparation of plan revisions for Roof Plan sheet PB A103 and Elevation plan sheet PB A200.
- The applicant shall repair and maintain the stone wall at School Street in keeping with Section 3360 of the city's zoning ordinance.

- Landscape plan design PB- L100 shall be approved by the city planner prior to the issuance of a project permit; all plantings shall be in good condition, in place and approved by the city planner prior to the issuance of a certificate of occupancy.
- Straw bales are to be used for erosion control measures. Please revise and note change at Site Erosion Control Plan C4.01 and Site Legend, Notes & Details & Details C5.01.

Attachments:

1. Preservation Restriction Agreement Between the Commonwealth of MA and YWCA
2. Review Comments
3. Plan Set
4. Submittal Packet from Applicant Containing:
    - Site Plan Application
    - Project Description & Narrative
    - Development Impact Statement
    - Quitclaim Deed-Bristol County Registry (S.D.) Book 1797, Page 835
    - Articles of Incorporation-Bristol County Registry (S.D.)Book 3770, Page 182
    - Exhibit A-Single Residency Occupancy Units
    - Certified Abutters List
    - Map of Historic Structures within 250 feet of site
5. Site Photos
6. Drainage Analysis

BK 8060 PG 67
03/27/06 11:23 DOC. 9028
Bristol Co. S.D.

PRESERVATION RESTRICTION AGREEMENT
between the COMMONWEALTH OF MASSACHUSETTS
by and through the MASSACHUSETTS HISTORICAL COMMISSION
and the YWCA of Southeastern Massachusetts, Inc.

The parties to this Agreement are the Commonwealth of Massachusetts, by and through the Massachusetts Historical Commission located at the Massachusetts Archives Building, 220 Morrissey Boulevard, Boston, Massachusetts 02125, hereinafter referred to as the Commission, and the YWCA of Southeastern Massachusetts, Inc., 20 South Sixth Street, New Bedford, Massachusetts 02740, hereinafter referred to as the Grantor.

WHEREAS, the Grantor is the owner in fee simple of certain real property with improvements known as the Levi Standish House thereon as described in a deed dated December 18, 1979, from the New Bedford Woman's Club to the New Bedford Young Women's Christian Association (as of 7/9/96, the YWCA of Southeastern Massachusetts, Inc.), recorded with the Bristol County (S. D.) Registry of Deeds, Book 1797, Page 835, and which is located at 20 South Sixth Street, New Bedford, Massachusetts 02740, hereinafter referred to as the Premises. The Premises are also shown as Parcel 69 on the Assessors Map, Map No. 46, Dated April 1968 attached as Exhibit A hereto and incorporated herein by reference.

WHEREAS, the Grantor wishes to impose certain restrictions, obligations and duties upon it as the owner of the Premises and on the successors to its right, title and interest therein, with respect to maintenance, protection, and preservation of the Premises in order to protect the architectural, archaeological and historical integrity thereof; and

WHEREAS, the preservation of the Premises is important to the public for the enjoyment and appreciation of its architectural, archaeological and historical heritage and will serve the public interest in a manner consistent with the purposes of M.G.L. chapter 184, section 32, hereinafter referred to as the Act; and

WHEREAS, the Premises is listed in the State Register of Historic Places as a contributing property to the County Street National Register Historic District; and

WHEREAS, the Commission is a government body organized under the laws of the Commonwealth of Massachusetts and is authorized to accept these preservation restrictions under the Act;

NOW, THEREFORE, for good and valuable consideration, the Grantor conveys to the Commission the following preservation restrictions, which shall apply in Perpetuity to the Premises.

PLANNING
JAN 21 2016
DEPARTMENT

ATTACHMENT 1

These preservation restrictions are set forth so as to ensure the preservation of those characteristics which contribute to the architectural, archaeological and historical integrity of the Premises which have been listed in the National and/or State Registers of Historic Places, under applicable state and federal legislation. Characteristics which contribute to the architectural, archaeological and historical integrity of the Premises include, but are not limited to, the artifacts, features, materials, appearance, and workmanship of the Premises, including those characteristics which originally qualified the Premises for listing in the National and/or State Registers of Historic Places.

The terms of the Preservation Restriction are as follows:

1. Maintenance of Premises: The Grantor agrees to assume the total cost of continued maintenance, repair and administration of the Premises so as to preserve the characteristics which contribute to the architectural, archaeological and historical integrity of the Premises in a manner satisfactory to the Commission according to the Secretary of the Interior's "Standards for the Treatment of Historic Properties." The Grantor may seek financial assistance from any source available to it. The Commission does not assume any obligation for maintaining, repairing or administering the Premises.

2. Inspection: The Grantor agrees that the Commission may inspect the Premises from time to time upon reasonable notice to determine whether the Grantor is in compliance with the terms of this Agreement.

3. Alterations: The Grantor agrees that no alterations shall be made to the Premises, including the alteration of any interior, unless (a) clearly of minor nature and not affecting the characteristics which contribute to the architectural, archaeological or historical integrity of the Premises, or (b) the Commission has previously determined that it will not impair such characteristics after reviewing plans and specifications submitted by the Grantor, or (c) required by casualty or other emergency promptly reported to the Commission. Ordinary maintenance and repair of the Premises may be made without the written permission of the Commission. For purposes of this section, interpretation of what constitutes alterations of a minor nature and ordinary maintenance and repair is governed by the Restriction Guidelines which are attached to this Agreement and hereby incorporated by reference.

4. Notice and Approval: Whenever approval by the Commission is required under this restriction, Grantor shall request specific approval by the Commission not less than (30) days prior to the date Grantor intends to undertake the activity in question. A request for such approval by the grantor shall be reasonably sufficient as a basis for the Commission to approve or disapprove the request. The notice shall describe the nature, scope, design, location, timetable and any other material aspect of the proposed activity

Bristol South Registry of Deeds Not for Official Use

in sufficient detail to permit the Commission to make an informed judgment as to its consistency with the purposes of this Preservation Restriction. Within (30) days of receipt of Grantor's reasonably sufficient request for said approval, the Commission shall, in writing, grant or withhold its approval, or request additional information relevant to the request and necessary to provide a basis for its decision. However, should the Commission determine that additional time is necessary in order to make its decision the Commission shall notify the Grantor. The Commission's approval shall not be unreasonably withheld, and shall be granted upon a reasonable showing that the proposed activity shall not materially impair the purpose of this Preservation Restriction. Failure of the Commission to make a decision within sixty (60) days from the date on which the request is accepted by the Commission or notice of a time extension is received by the Grantor shall be deemed to constitute approval of the request as submitted, so long as the request sets forth the provisions of this section relating to deemed approval after the passage of time.

5. Assignment: The Commission may assign this Agreement to another governmental body or to any charitable corporation or trust among the purposes of which is the maintenance and preservation of historic properties only in the event that the Commission should cease to function in its present capacity.

6. Validity and Severability: The invalidity of M.G.L. c. 184 or any part thereof shall not affect the validity and enforceability of this Agreement according to its terms. The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement.

7. Recording: The Grantor agrees to record this Agreement with the appropriate Registry of Deeds and file a copy of such recorded instrument with the Commission.

8. Other Provisions: None applicable.

The burden of these restrictions enumerated in paragraphs 1 through 8, inclusive, shall run with the land and is binding upon future owners of an interest therein.

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IN WITNESS WHEREOF, we have hereunto set our hands and seals this March 16 day of _____, 2006.

YWCA of Southeastern Massachusetts, Inc.

By: _____
Name: Patricia L. Andrade, MD
Title: President

COMMONWEALTH OF MASSACHUSETTS

Bristol, ss.

On this 16 day of March, 2006, before me, the undersigned notary public, personally appeared Patricia L. Andrade, proved to me through satisfactory evidence of identification, which was (a current driver's license) (a current U.S. passport) (my personal knowledge of the identity of the principal), to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purposes.

_____
Notary Public
My Commission Expires July 23, 2010

Bristol South Registry of Deeds Not for Official Use

RESTRICTION GUIDELINES

The purpose of the Restriction Guidelines is to clarify paragraph three of the terms of the preservation restriction, which deals with alterations to the premises. Under this section permission from the Massachusetts Historical Commission is required for any major alteration. Alterations of a minor nature, which are part of ordinary maintenance and repair, do not require MHC review.

In an effort to explain what constitutes a minor alteration and what constitutes a major change, which must be reviewed by the MHC, the following list has been developed. By no means is this list comprehensive: it is only a sampling of some of the more common alterations, which may be contemplated by building owners.

PAINT

Minor - Exterior or interior hand scraping and repainting of non-decorative and non-significant surfaces as part of periodic maintenance.

Major - Painting or fully stripping decorative surfaces or distinctive stylistic features including murals, stenciling, wallpaper, ornamental woodwork, stone, decorative or significant original plaster.

WINDOWS AND DOORS

Minor - Regular maintenance including caulking, painting and necessary reglazing. Repair or in-kind replacement of existing individual decayed window parts.

Major - Wholesale replacement of units; change in fenestration or materials; alteration of profile or setback of windows. The addition of storm windows is also considered a major change; however, with notification it is commonly acceptable.

EXTERIOR

Minor - Spot repair of existing cladding and roofing including in-kind replacement of clapboards, shingles, slates, etc.

Major - Large-scale repair or replacement of cladding or roofing. Change involving inappropriate removal or addition of materials or building elements (i.e. removal of chimneys or cornice detailing; installation of architectural detail which does not have a historical basis); altering or demolishing building additions; spot repointing of masonry. Structural stabilization of the property is also considered a major alteration.

LANDSCAPE/OUTBUILDINGS

Minor - Routine maintenance of outbuildings and landscape including lawn mowing, pruning, planting, painting, and repair.

Major - Moving or subdividing buildings or property; altering of property; altering or removing significant landscape features such as gardens, vistas, walks, plantings; ground disturbance affecting archaeological resources.

WALLS/PARTITIONS

Minor - Making fully reversible changes (i.e. sealing off doors in situ, leaving doors and door openings fully exposed) to the spatial arrangement of a non-significant portion of the building.

Major - Creating new openings in walls or permanently sealing off existing openings; adding permanent partitions which obscure significant original room arrangement; demolishing existing walls; removing or altering stylistic features; altering primary staircases.

HEATING/AIR CONDITIONING/ELECTRICAL/PLUMBING SYSTEMS

Minor - Repair of existing systems.

Major - Installing or upgrading systems which will result in major appearance changes (i.e. dropped ceilings, disfigured walls or floors, exposed wiring, ducts, and piping); the removal of substantial quantities of original plaster or other materials in the course of construction.

Changes classified as major alterations are not necessarily unacceptable. Under the preservation restriction, such changes must be reviewed by the MHC and their impact on the historic integrity of the premise assessed.

It is the responsibility of the property owner to notify the MHC in writing when any major alterations are contemplated. Substantial alterations may necessitate review of plans and specifications.

The intent of the preservation restriction is to enable the Commission to review proposed alterations and assess their impact on the integrity of the structure, not to preclude future change. MHC staff will attempt to work with property owners to develop mutually satisfactory solutions, which are in the best interests of the property.

Bristol South Registry of Deeds Not for Official Use

EXHIBIT A

BK 8060 PG 74

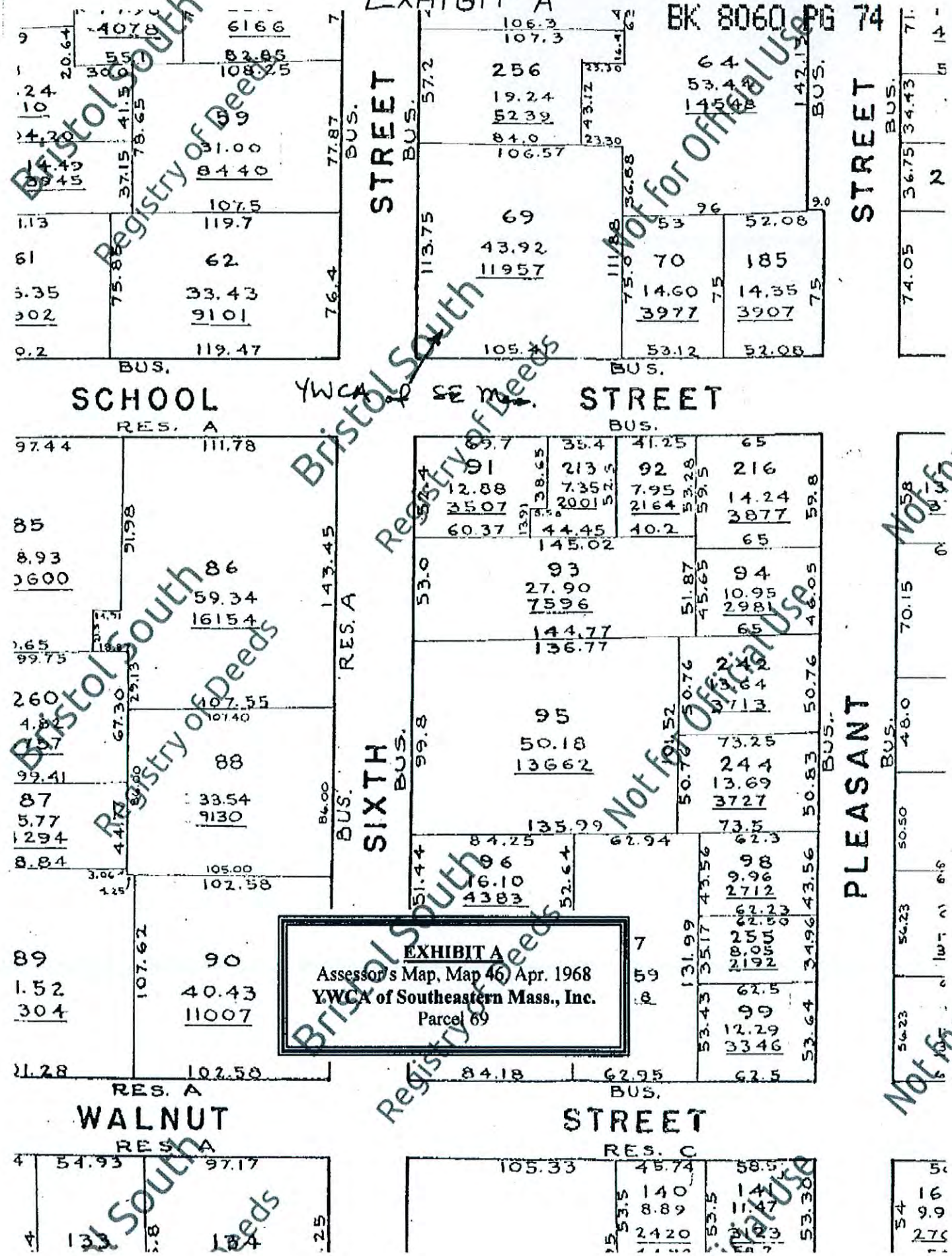


EXHIBIT A
Assessor's Map, Map 46, Apr. 1968
YWCA of Southeastern Mass., Inc.
Parcel 69

Bristol South Registry of Deeds Not for Official Use

Department of Public Infrastructure

Ronald H. Labelle
Commissioner

Water
Wastewater
Highways
Engineering
Cemeteries
Park Maintenance
Energy

CITY OF NEW BEDFORD
Jonathan F. Mitchell, Mayor

MEMORANDUM

To: City of New Bedford Planning Board

From: Ronald H. Labelle, Commissioner

Date: February 2, 2016

RE: YWCA Southeastern MA – Site Plan
South Sixth Street

The Department of Public Infrastructure has reviewed the proposed site plan referenced above and recommends approval with the following conditions:

1. Permits for sidewalk, sewer, drainage and water must be obtained from the Department of Public Infrastructure Engineering Division.

2. All cement sidewalk and wheelchair ramp work to be done in accordance with City of New Bedford Construction Standards and Specifications.

3. Owner to install thermoplastic pavement markings for the wheelchair ramps at the intersection of Sixth Street and School Street.

4. All utilities to be installed in accordance with City of New Bedford Construction Standards and Specifications.

5. Accessible ramp detail on page C5.02 must be revised to MDOT and City of New Bedford Standards.

6. Owner must contact DPI to assign a new address for the proposed building if needed.

PLANNING
FEB 03 2016
DEPARTMENT

ATTACHMENT 2

1105 Shawmut Avenue, New Bedford, MA 02746 Telephone 508-979-1550 Fax 1-508-961-3054
RONALDL@NEWBEDFORD-MA.GOV

7. The Department of Public Infrastructure requires that the owner or Engineer verify in writing that the proposed domestic and fire services will provide sufficient volume and pressure for the proposed building. Should there be a need for greater water pressure, booster pump(s) shall be installed.

8. Owner to submit fire supply backflow plan for department approval.

9. The Department of Public Infrastructure requires a final set of approval plans to be submitted that reflects all revisions made prior to the start of construction.

10. Developer and site contractor must schedule a pre-construction meeting with the Department of Public Infrastructure prior to the start of construction.

11. Upon completion, Engineer must submit "AS BUILT" drawings in CADD format prior to the certificate of occupancy being issued.

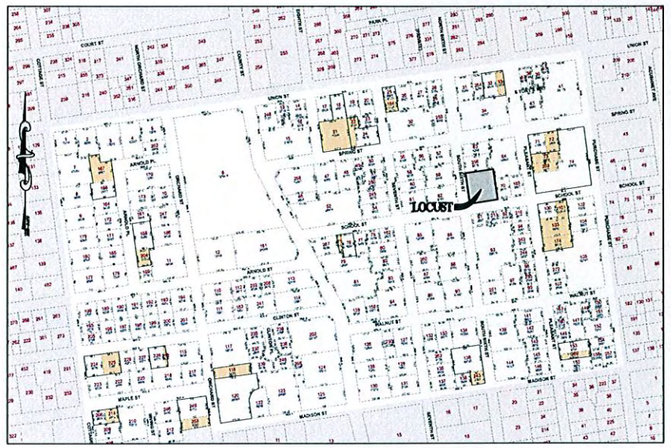
Cc: Department of Inspectional Services
Environmental Stewardship
Garcia Galuska DeSousa, Inc
YWCA of Southeastern Massachusetts

1105 Shawmut Avenue, New Bedford, MA 02746 Telephone 508-979-1550 Fax 1-508-961-3054
RONALDL@NEWBEDFORD-MA.GOV

YWCA Southeastern Massachusetts
Planning Board Submission

20 South Sixth Street
New Bedford, MA 02740
Deed Book 1797 Page 835

CITY CLERKS OFFICE
NEW BEDFORD, MA
2016 JAN 15 P 3:08
CITY CLERK



SITE LOCUS
SCALE: 1"=250'

MIXED USED BUSINESS (MUB) IN DOWNTOWN BUSINESS OVERLAY DISTRICT (DBOD) ZONING REQUIREMENT TABLE			
ITEM	EXISTING	REQUIRED	PROPOSED
LOT AREA (SF)	11,925 SF	N/A	11,925 SF
LOT FRONTAGE (FT)	113.73 FT	0 FT	113.73 FT
TOTAL GROSS FLOOR AREA (SF)	3,872 GSF ±	N/A	10,422 GSF ±
RESIDENTIAL GROSS FLOOR AREA (SF)	0 SF	N/A	2,925 SF (8 SRO) *
NON-RESIDENTIAL GROSS FLOOR AREA (SF)	3,872 GSF ±	N/A	7,497 GSF ±
BUILDING HEIGHT (FT)	49.0 FT	100.0 FT	49.0 FT
FRONT SETBACK (FT)	14.58 FT	20.0 FT	14.58 FT
SIDE SETBACK (FT)	6.72 FT	10.0 FT	6.72 FT
SIDE SETBACK (FT)	61.92 FT	12.0 FT	8.69 FT
REAR SETBACK (FT)	40.95 FT	10.0 SF	6.42 FT
LOT COVERAGE BY BUILDINGS (% OF LOT)	16.5%	40.0%	43.5%
PERMEABLE OPEN SPACE (% OF LOT)	76.3%	N/A	23.7%
GREEN SPACE (% OF LOT)	70.4%	35.0%	23.7%
OFF-STREET PARKING SPACES	0	51	0
COMPACT PARKING SPACES	0	N/A	0
ACCESSIBLE PARKING SPACES	0	3	0
VAN ACCESSIBLE PARKING SPACES	0	1	0
LONG-TERM BICYCLE PARKING SPACES	0	N/A	0
SHORT-TERM BICYCLE PARKING SPACES	0	N/A	0
LOADING BAYS	0	1	0

DRAWING LIST

T1.01	COVER SHEET
	EXISTING CONDITIONS SITE PLAN
C1.00	SITE DEMOLITION & PREPARATION PLAN
C1.01	SITE CONSTRUCTION/LAYOUT PLAN
C2.01	SITE GRADING & DRAINAGE PLAN
C3.01	SITE UTILITY & GRADING PLAN
C4.01	SITE EROSION CONTROL PLAN
C5.01	SITE LEGEND, NOTES & DETAILS
C5.02	SITE DETAILS
C5.03	SITE DETAILS
C5.04	SITE DETAILS
PB-L100	LANDSCAPE PLAN
PB-L101	SIGN PLAN
PB-X100	EXISTING/DEMO FLOOR PLANS
PB-A100	GROUND FLOOR PLAN
PB-A101	FIRST FLOOR PLAN
PB-A102	SECOND AND THIRD FLOOR PLAN
PB-A103	ROOF PLAN
PB-A200	ELEVATIONS

Date: January 15, 2016

NOTES

No.	REVISIONS/SUBMISSIONS	Date
1	PLANNING BOARD SUBMISSION	01/15/2016

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Project RENOVATONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Title TITLE SHEET

PLANNING SUBMISSION
PLANNING
JAN 15 2016
DEPARTMENT

Designed	NCK
Checked	CMG
Project No	16002
Scale	AS NOTED
Date	01/15/2016

T1.01

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\YWCA of Southeastern MA\73600100 YWCA of Southeastern MA\Drawings\CIV\LT1.01 Cover Sheet - Planning Board.dwg

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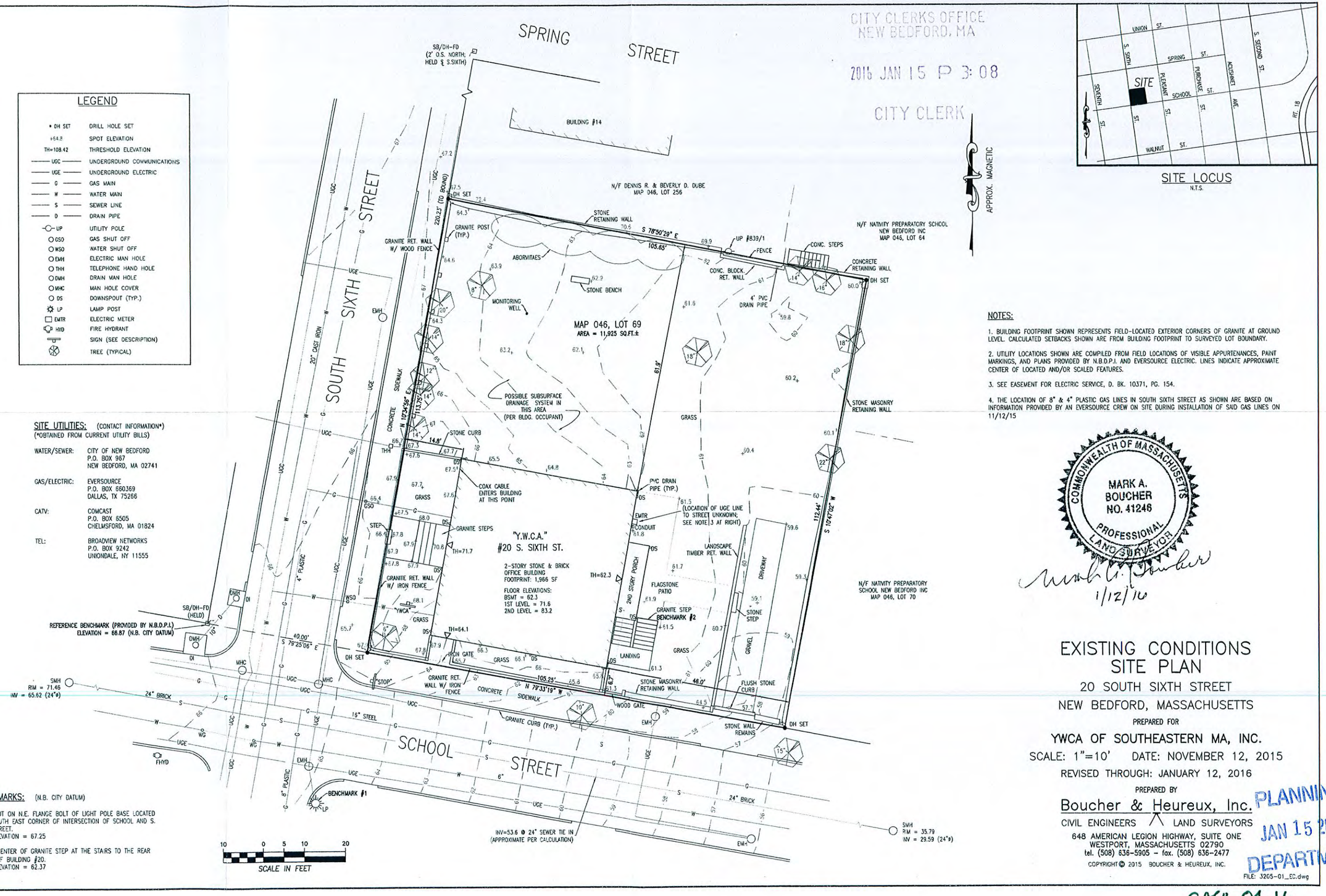
ATTACHMENT 3

CITY CLERKS OFFICE
NEW BEDFORD, MA

2016 JAN 15 P 3:08

CITY CLERK



LEGEND

• DH SET	DRILL HOLE SET
+64.8	SPOT ELEVATION
TH=108.42	THRESHOLD ELEVATION
—— UGC ——	UNDERGROUND COMMUNICATIONS
—— UGE ——	UNDERGROUND ELECTRIC
—— G ——	GAS MAIN
—— W ——	WATER MAIN
—— S ——	SEWER LINE
—— D ——	DRAIN PIPE
UP	UTILITY POLE
GSO	GAS SHUT OFF
WSO	WATER SHUT OFF
EMH	ELECTRIC MAN HOLE
THH	TELEPHONE HAND HOLE
DMH	DRAIN MAN HOLE
MHC	MAN HOLE COVER
DS	DOWNSPOUT (TYP.)
LP	LAMP POST
EMTR	ELECTRIC METER
HYD	FIRE HYDRANT
	SIGN (SEE DESCRIPTION)
	TREE (TYPICAL)

SITE UTILITIES: (CONTACT INFORMATION*)

(*OBTAINED FROM CURRENT UTILITY BILLS)

WATER/SEWER: CITY OF NEW BEDFORD
P.O. BOX 987
NEW BEDFORD, MA 02741

GAS/ELECTRIC: EVERSOURCE
P.O. BOX 660369
DALLAS, TX 75266

CATV: COMCAST
P.O. BOX 6505
CHELMSFORD, MA 01824

TEL: BROADVIEW NETWORKS
P.O. BOX 9242
UNIONDALE, NY 11555

BENCHMARKS: (N.B. CITY DATUM)

1. "X" CUT ON N.E. FLANGE BOLT OF LIGHT POLE BASE LOCATED NEAR SOUTH EAST CORNER OF INTERSECTION OF SCHOOL AND S. SIXTH STREET.
ELEVATION = 67.25

2. TOP CENTER OF GRANITE STEP AT THE STAIRS TO THE REAR PORCH OF BUILDING #20.
ELEVATION = 62.37

SITE LOCUS
N.T.S.

NOTES:

1. BUILDING FOOTPRINT SHOWN REPRESENTS FIELD-LOCATED EXTERIOR CORNERS OF GRANITE AT GROUND LEVEL. CALCULATED SETBACKS SHOWN ARE FROM BUILDING FOOTPRINT TO SURVEYED LOT BOUNDARY.

2. UTILITY LOCATIONS SHOWN ARE COMPILED FROM FIELD LOCATIONS OF VISIBLE APPURTENANCES, PAINT MARKINGS, AND PLANS PROVIDED BY N.B.D.P.I. AND EVERSOURCE ELECTRIC. LINES INDICATE APPROXIMATE CENTER OF LOCATED AND/OR SCALED FEATURES.

3. SEE EASEMENT FOR ELECTRIC SERVICE, D. BK. 10371, PG. 154.

4. THE LOCATION OF 8" & 4" PLASTIC GAS LINES IN SOUTH SIXTH STREET AS SHOWN ARE BASED ON INFORMATION PROVIDED BY AN EVERSOURCE CREW ON SITE DURING INSTALLATION OF SAID GAS LINES ON 11/12/15

COMMONWEALTH OF MASSACHUSETTS
MARK A. BOUCHER
NO. 41246
PROFESSIONAL LAND SURVEYOR

1/12/16

EXISTING CONDITIONS SITE PLAN

20 SOUTH SIXTH STREET

NEW BEDFORD, MASSACHUSETTS

PREPARED FOR

YWCA OF SOUTHEASTERN MA, INC.

SCALE: 1"=10' DATE: NOVEMBER 12, 2015

REVISED THROUGH: JANUARY 12, 2016

PREPARED BY

Boucher & Heureux, Inc.
CIVIL ENGINEERS / LAND SURVEYORS
648 AMERICAN LEGION HIGHWAY, SUITE ONE
WESTPORT, MASSACHUSETTS 02790
tel. (508) 636-5905 – fax. (508) 636-2477

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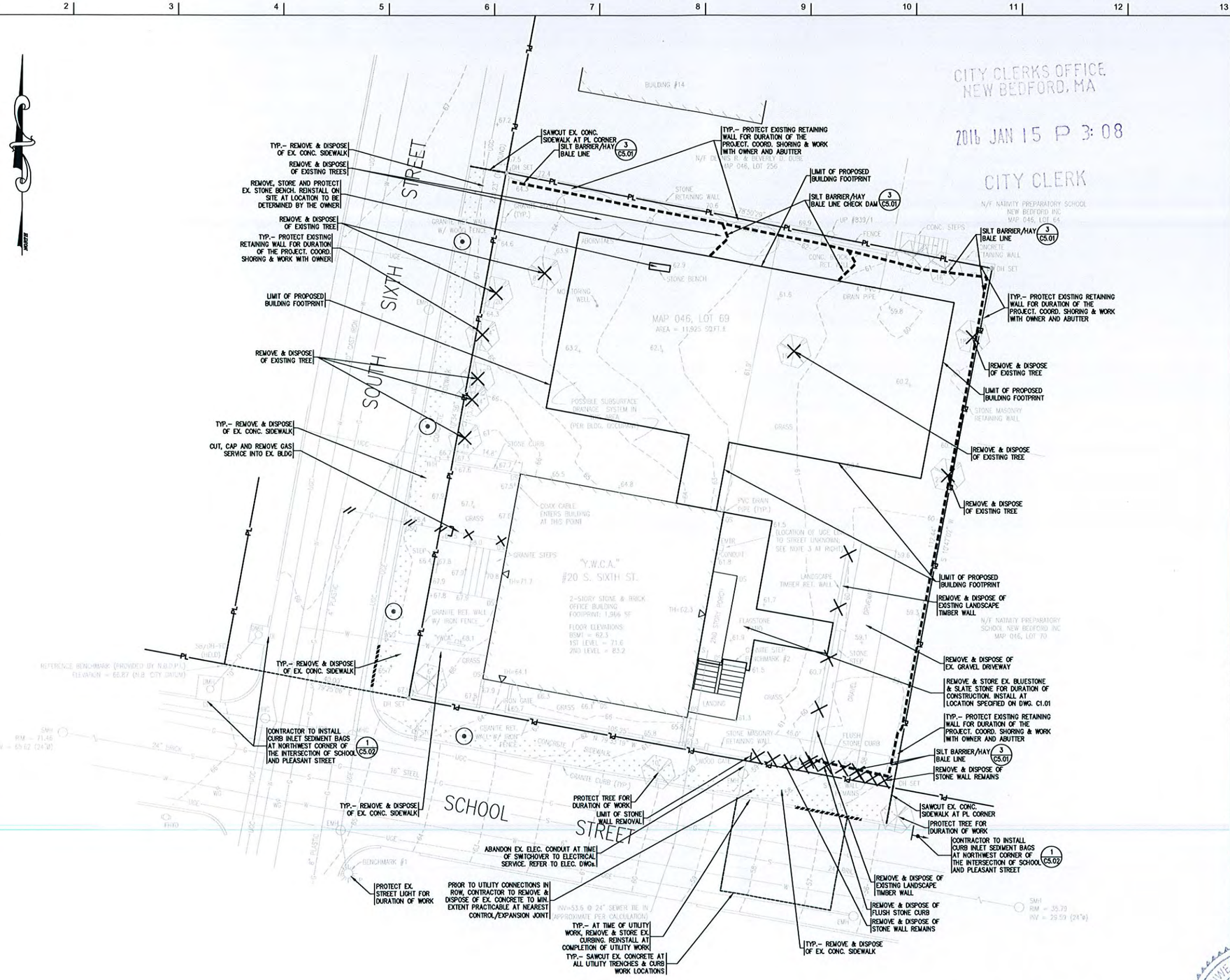

1 SITE DEMOLITION & PREPARATION PLAN
C1.00 SCALE: 1" = 10'

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

NOTES

No.	REVISIONS/SUBMISSIONS	Date
1	PLANNING BOARD SUBMISSION	01/15/2016

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Project RENOVATONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Title SITE DEMOLITION & PREPARATION PLAN

Designed NCK
Drawn CMG
Project No 16002
Scale AS NOTED
Date 01/15/2016

Drawing No. C1.00

COMMONWEALTH OF MASSACHUSETTS CHRISTOPHER M. GALUSKA CIVIL No. 45647 REGISTERED PROFESSIONAL ENGINEER

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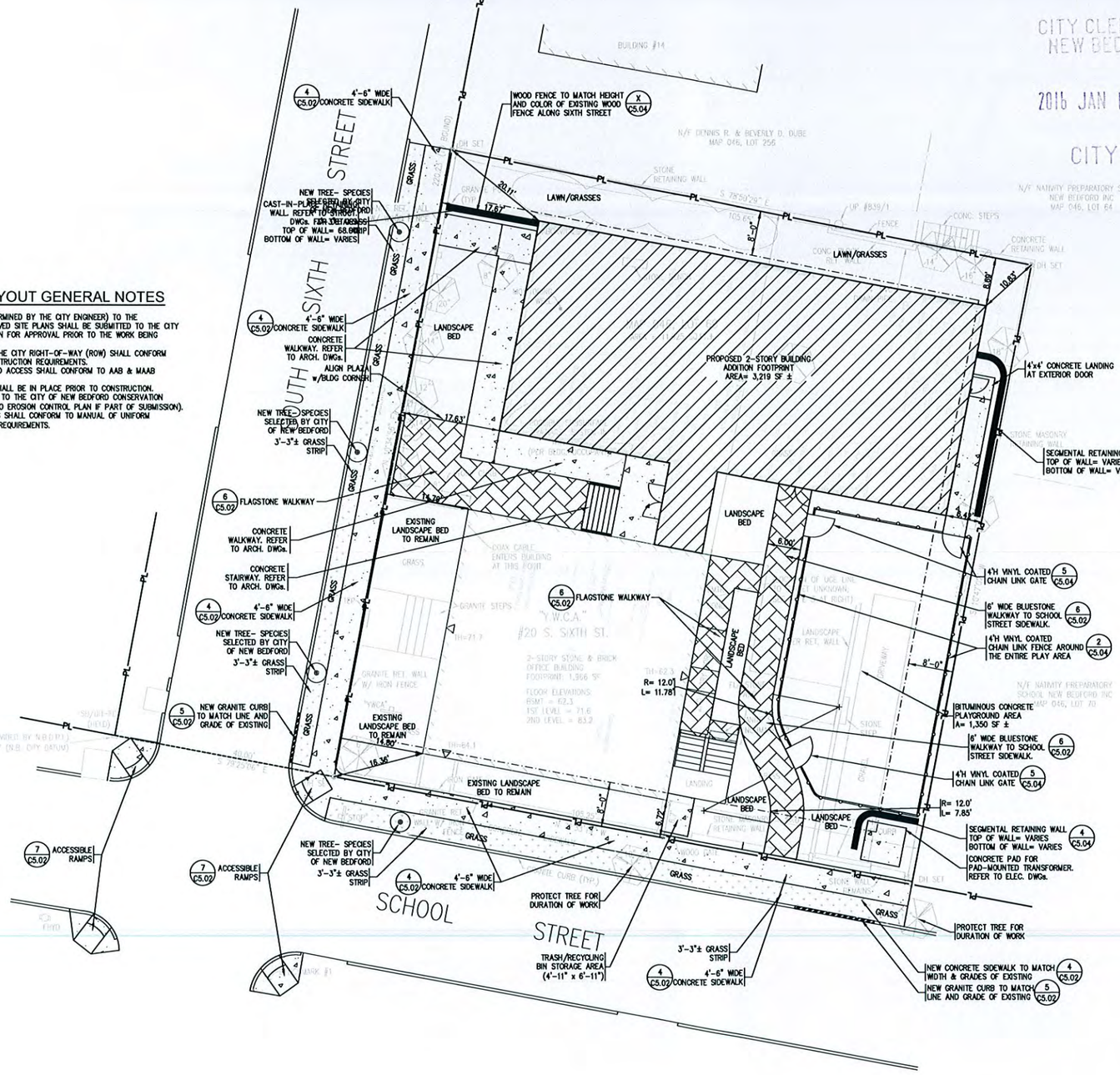

1 C1.01 SITE CONSTRUCTION LAYOUT PLAN
SCALE: 1" = 10'

CONSTRUCTION LAYOUT GENERAL NOTES

1. ANY MINOR MODIFICATIONS (AS DETERMINED BY THE CITY ENGINEER) TO THE INFORMATION SHOWN ON THE APPROVED SITE PLANS SHALL BE SUBMITTED TO THE CITY ENGINEER AS A MINOR PLAN REVISION FOR APPROVAL PRIOR TO THE WORK BEING PERFORMED.
2. ANY WORK AND MATERIALS WITHIN THE CITY RIGHT-OF-WAY (ROW) SHALL CONFORM TO THE CITY OF NEW BEDFORD CONSTRUCTION REQUIREMENTS.
3. ALL HANDICAP PARKING, RAMPS, AND ACCESS SHALL CONFORM TO AAB & MAAB REQUIREMENTS.
4. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO CONSTRUCTION. EROSION CONTROLS SHALL CONFORM TO THE CITY OF NEW BEDFORD CONSERVATION COMMISSION REQUIREMENTS. REFER TO EROSION CONTROL PLAN IF PART OF SUBMISSION).
5. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REQUIREMENTS.

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

CITY CLERKS OFFICE
NEW BEDFORD, MA
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Project RENOVATONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Title SITE CONSTRUCTION LAYOUT PLAN

PLANNING
JAN 15 2016
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Designed NGK
Drawn CMG
Project No. 16002
Scale AS NOTED
Date 01/15/2016
Drawing No. C1.01

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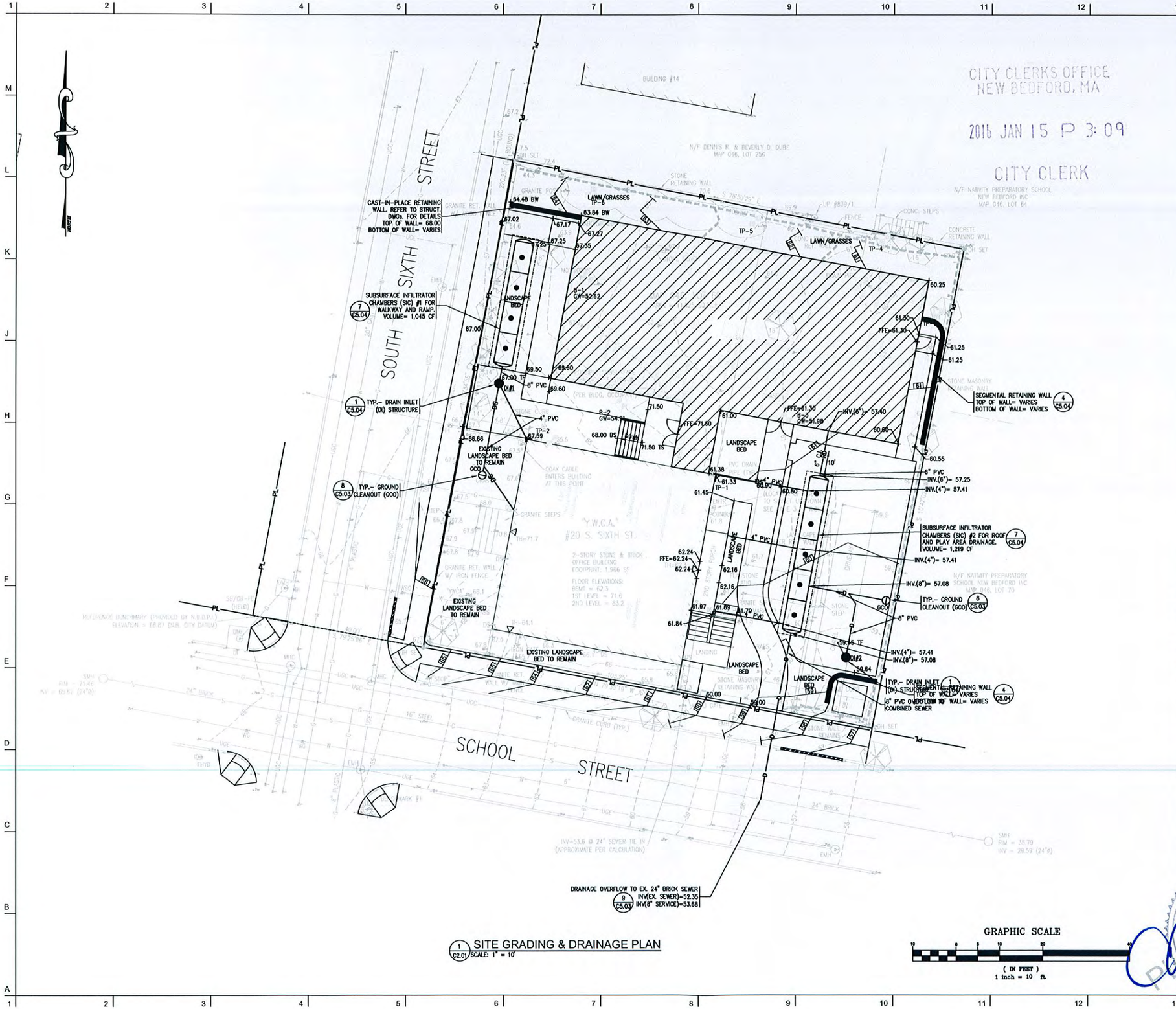

1 SITE GRADING & DRAINAGE PLAN
C2.01 SCALE: 1" = 10'

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Project RENOVATONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Title
SITE GRADING & DRAINAGE PLAN

Designed	NCK
Checked	
Approved	
Project No.	16002
Scale	AS NOTED
Date	01/15/2016
Drawing No.	C2.01

PLANNING BOARD SUBMISSION
JAN 15 2016
DEPARTMENT

CHRISTOPHER M. GARCIA
No. 43
REGISTERED PROFESSIONAL ENGINEER

CAse 04-16

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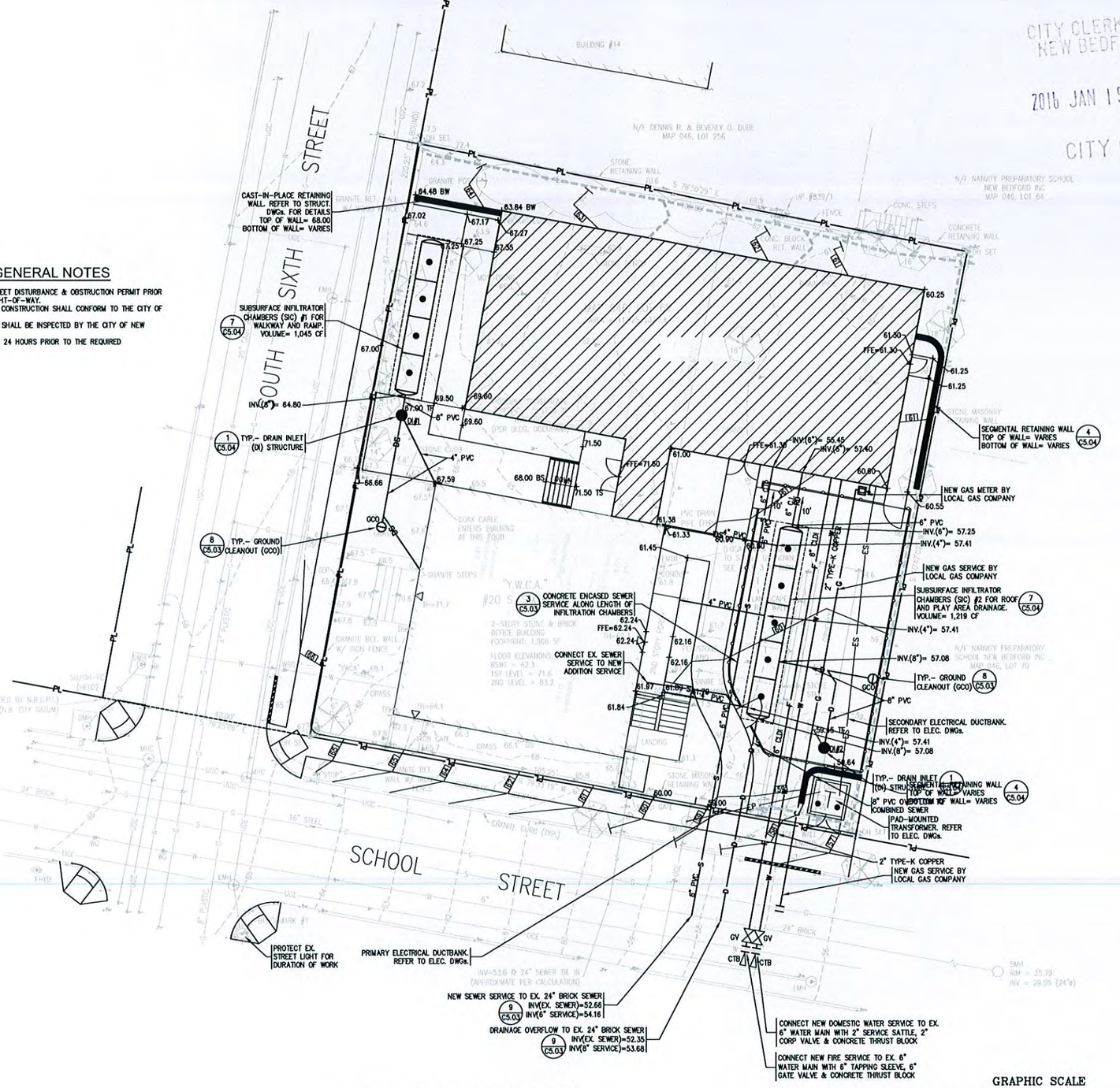
UTILITY & GRADING GENERAL NOTES

1. THE CONTRACTOR SHALL OBTAIN A STREET DISTURBANCE & OBSTRUCTION PERMIT PRIOR TO ANY CONSTRUCTION WITHIN THE RIGHT-OF-WAY.
2. ALL WATER AND SEWER MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE CITY OF NEW BEDFORD REQUIREMENTS.
3. ALL WATER AND SEWER CONSTRUCTION SHALL BE INSPECTED BY THE CITY OF NEW BEDFORD BEFORE BEING BACKFILLED.
4. THE CITY SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO THE REQUIRED INSPECTIONS.



1 C3.01 SITE UTILITY & GRADING PLAN
SCALE: 1" = 10'

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Project RENOVATONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Title SITE UTILITY & GRADING PLAN

Designed NCK
Drawn GMG
Project No. 16002
Scale AS NOTED
Date 01/15/2016

Drawing No. C3.01

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JAN 15 2016
PLANNING DEPARTMENT

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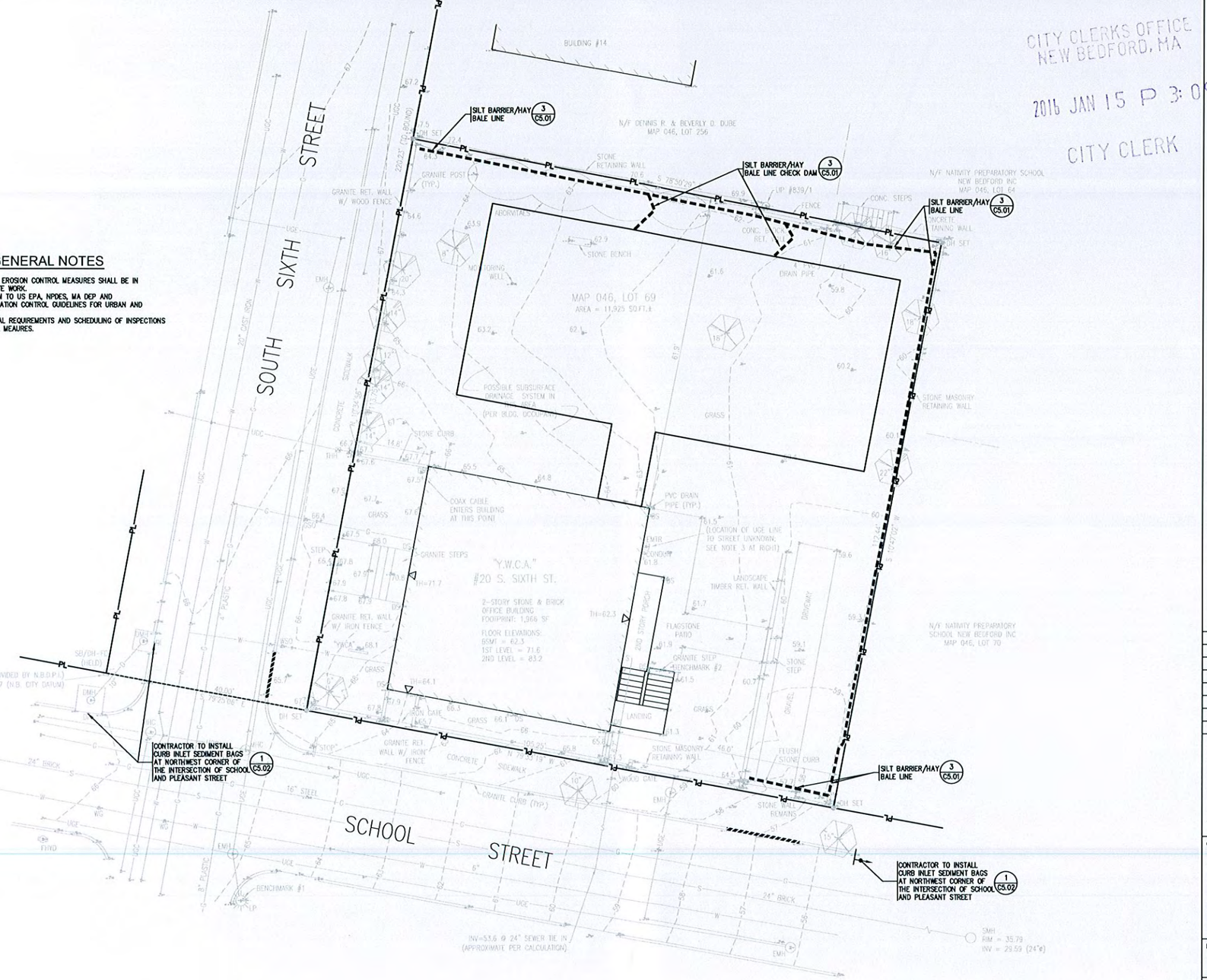
EROSION CONTROL GENERAL NOTES

1. ALL BEST MANAGEMENT PRACTICE (BMP) EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO DEMOLITION OR ANY SITE WORK.
2. EROSION CONTROL BMP's SHALL CONFORM TO US EPA, NPDES, MA DEP AND MASSACHUSETTS EROSION AND SEDIMENTATION CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS.
3. REFER TO DRAWING C5.01 FOR ADDITIONAL REQUIREMENTS AND SCHEDULING OF INSPECTIONS AND MAINTENANCE OF EROSION CONTROL MEAURES.



1 C4.01 SITE EROSION CONTROL PLAN
SCALE: 1" = 10'

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

CITY CLERKS OFFICE
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Project RENOVATONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Title SITE EROSION CONTROL PLAN

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Job No 16002
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Date 01/15/2016

C4.01

PLANNING BOARD SUBMISSION
JAN 15 2016
PLANNING DEPARTMENT

CABR 04-16

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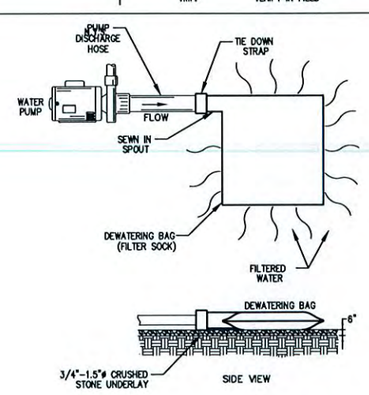
SITE LEGEND

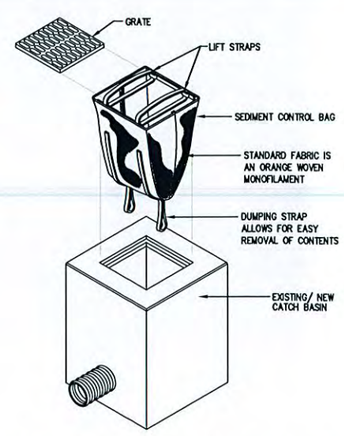
EXISTING	NEW	DESCRIPTION
	B	BASELINE (LAYOUT)
	℄	CENTERLINE (LAYOUT)
	D	STORM DRAIN
	E	ELECTRIC (UNDERGROUND)
	F	FIRE SERVICE
	FD	FOOTING DRAIN
	RD	ROOF DRAIN
	DS	DOWNSPOUT DRAIN
	G	GAS
	OHW	OVERHEAD WIRE
	PL	PROPERTY LINE
	S	SANITARY SEWER
	W	WATER
	EP	UNDERGROUND ELECTRIC PRIMARY SERVICE
	ES	UNDERGROUND ELECTRIC SECONDARY SERVICE
	T	UNDERGROUND TELEPHONE SERVICE
	CTV/F	UNDERGROUND CABLE TV & FIBER OPTIC
	SL	UNDERGROUND SITE LIGHTING SERVICE
	FA	UNDERGROUND FIRE ALARM SERVICE
64	64	CONTOUR
SGC	SGC	SLOPED GRANITE CURB
VGC	VGC	VERTICAL GRANITE CURB
x64.75	x64.75	SPOT GRADE
		CHAINLINK FENCE
		CONSTRUCTION CHAINLINK FENCING
	DMH	DRAIN MANHOLE
	FES	FLARED END STRUCTURE
	SMH	SEWER MANHOLE
	CB	CATCH BASIN
	CB(DG)	DOUBLE GRATE CATCH BASIN
		WATER SERVICE
	PIV	POST INDICATOR VALVE
		UTILITY POLE
	CTB	CONCRETE THRUST BLOCK
		FIRE HYDRANT
	GV	GATE VALVE AND CURB BOX
		HANDICAP SYMBOL (PRKG. SPACE)
		ELECTRIC MANHOLE
		TELEPHONE MANHOLE
	PB	ELECTRIC PULL BOX
		SIGHT LIGHT POLE
	FDC	FIRE DEPARTMENT CONNECTION
		BORING LOCATION
	TP	TEST PIT LOCATION
	C.T.E.	POINT OF CONNECTION TO EXISTING
	E.T.R.	EXISTING TO REMAIN
	F.F.E.	FINISH FLOOR ELEVATION (FIRST FLOOR)
	F&I	FURNISH AND INSTALL
	GCO	GROUND CLEANOUT
	INV.	INVERT ELEVATION
	N.T.S.	NOT TO SCALE
	WQS	WATER QUALITY STRUCTURE
	V.I.F.	VERIFY IN FIELD



1 C5.01 DETAIL OF DEWATERING BAG
SCALE: N.T.S.

GENERAL NOTES

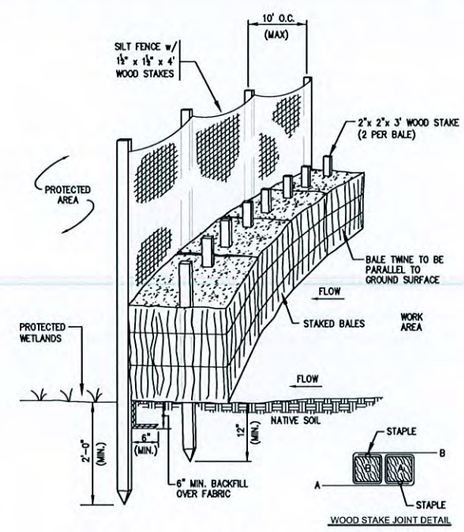
1. EXISTING CONDITIONS SHOWN HERE TAKEN FROM EXISTING CONDITIONS PLAN PREPARED BY BOUCHER & HEUREUX, INC. FOR YMCA OF SOUTHEASTERN MA, INC. DATED 11/20/2015.
2. CONTRACTOR SHALL RETAIN THE SERVICES OF A REGISTERED LAND SURVEYOR TO LAYOUT ON THE GROUND ALL NEW ELEMENTS OF WORK. THE NEW WORK IS TO BE COMPLETED, MARKED, AND LAID OUT ON THE GROUND, REVIEWED AND APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION. IF ANY WORK IS INSTALLED PRIOR TO THE ABOVE REQUIREMENT BEING MET, AND IF THE WORK IS NOT SATISFACTORY IN LAYOUT TO THE ARCHITECT, CONTRACTOR SHALL REPLACE THE WORK AT NO COST.
3. PRIOR TO ANY EXCAVATION, IN ADDITION TO "DIG SAFE", NOTIFY APPROPRIATE UTILITY COMPANY OR AUTHORITY TO VERIFY EXACT DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES. LOCATIONS AND DEPTHS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND PROTECT UTILITIES IN THE FIELD WHETHER OR NOT SHOWN ON THE DRAWINGS.
4. THE DOCUMENTS MAY INDICATE RESULTS OF BORINGS AND/OR TEST PITS. THESE INVESTIGATIONS AND RESULTANT INTERPRETATIONS WERE MADE FOR THE SOLE PURPOSE OF PROVIDING DESIGN DATA FOR THE USE OF THE DESIGN TEAM ONLY. INTERPRETATION OF THE DATA FOR PURPOSES OF CONSTRUCTION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. DURING THE COURSE OF CONSTRUCTION, ALL INTERPRETATIONS OF SOIL SUITABILITY SHALL BE MADE BY THE ARCHITECT. THE DECISION OF THE ARCHITECT SHALL BE FINAL AND BINDING ON THE CONTRACTOR.
5. REFER TO THE SPECIFICATIONS. IN ADDITION TO THOSE REQUIREMENTS, SITE PREPARATION SHALL ALSO INCLUDE THE FOLLOWING:
   A. IN THE COURSE OF INSTALLING THE UNDERGROUND UTILITIES, REMOVE ANY ABANDONED FOUNDATION, UTILITY STRUCTURES, ETC., ENCOUNTERED WHICH INTERFERE WITH THE UTILITY WORK. ALL SUCH STRUCTURES SHALL BE COMPLETELY REMOVED AND SHALL BE BACKFILLED WITH GRAVEL COMPACTED IN 9" LIFTS TO 95% COMPACTION TO 6" BELOW THE BOTTOM OF THE PIPE AND UTILITY.
   B. IF DURING EXCAVATION THE TRENCH WIDTH EXCEEDS THE SUM OF THE PIPE O.D. PLUS 2'-0", PLACE AND COMPACT THE FILL TO 12" ABOVE THE PIPE AND RE-EXCAVATE TO REQUIRED GRADES.
   C. AT THE POINT WHERE BULK EARTH MOVING HAS BEEN COMPLETED TO THE SUBGRADE LEVEL AND PRIOR TO PLACING UTILITIES, CURBING, OR PAVING, PROOF ROLL THE ENTIRE AREA IN THE PRESENCE AND UNDER THE SUPERVISION OF THE SOILS LABORATORY. PROOF- ROLLING SHALL CONSIST OF MAKING NOT LESS THAN (5) PASSES OVER THE AREA WITH A VIBRATOR DRUM ROLLER WEIGHING AT LEAST 10,000 lbs. THE SOILS LAB WILL CONDUCT FIELD DENSITY TESTS AND WILL DETERMINE CORRECTIVE MEASURES TO BE DONE, IF ANY, BASED ON THE PROOF-ROLLING.
6. ALL UTILITY WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE ZONING AND PLANNING BOARD DECISIONS AND THE NEW BEDFORD DEPARTMENT OF PUBLIC WORKS SPECIFICATIONS.
7. WATER AND FIRE SERVICE PIPING SHALL BE CLASS 52 DOUBLE CEMENT LINED DUCTILE IRON WITH TYTON JOINTS. FITTINGS SHALL BE 350 LB. GREY IRON CASTINGS WITH MECHANICAL JOINT ENDS. ALL BENDS, TEES, ETC., SHALL BE JOINT RESTRAINED BY THE USE OF CONCRETE THRUST BLOCKS.
8. GATE VALVES SHALL BE CAST IRON BODY BRONZE MOUNTED, 200 PSI, COMPLETE WITH ROAD BOX AND CONFORMING IN EVERY RESPECT TO LOCAL SPECIFICATIONS.
9. STORM DRAINS 12" AND OVER SHALL BE ADS N-12 WT HDPE PIPE (H-20) WITH WATER TIGHT RUBBER GASKET JOINT UNLESS NOTED OTHERWISE. JOINTS SHALL MEET OR EXCEED ASTM D3212 LAB TEST AND ASTM F1417 WATERTIGHT FIELD TEST.
10. SEWER PIPING AND STORM DRAINS 10" AND UNDER SHALL BE MANVILLE ASTM D-3034 SDR-35 P.V.C. SEWER PIPE WITH PUSH-ON RUBBER RING JOINTS.
11. CONTRACTOR SHALL REFER TO SPECIFICATIONS AND DRAWINGS FOR PHASING OF PROJECT.
12. SEWER LINES SHALL BE INSTALLED AT MINIMUM 10 FOOT HORIZONTAL SEPARATION FROM ANY PROPOSED OR EXISTING WATER LINES.
13. WHENEVER SEWER LINES MUST CROSS WATER LINES THE SEWER SHALL BE INSTALLED SO THAT THE TOP OF THE SEWER IS AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN. WHERE 18 INCH VERTICAL SEPARATION & 10 FEET HORIZONTAL SEPARATION CAN NOT BE MET AT WATER AND SEWER CROSSINGS, BOTH THE WATER AND SEWER PIPE SHALL BE CONSTRUCTED OF MECHANICAL JOINT CEMENT-LINED DUCTILE IRON PIPE FOR A DISTANCE OF 10 FEET ON EACH SIDE OF CROSSING. BOTH PIPES SHALL BE PRESSURE TESTED BY AN APPROVED METHOD TO ASSURE WATERTIGHTNESS.
14. WHENEVER NEW SEWER LINES CONNECT INTO EXISTING SEWER MANHOLES THE CONTRACTOR SHALL REBUILD THE SEWER MANHOLE CHANNEL TO ACCOMMODATE THE NEW CONNECTION.
15. WHENEVER UTILITIES OR STRUCTURES ARE TO BE INSTALLED WITHIN CITY/TOWN PUBLIC OR PRIVATE LAYOUT, THE EXCACATION SHALL BE BACKFILLED WITH FLOWABLE FILL. ALL AREAS OF ROADWAY PAVEMENT & WALKWAYS DISTURBED DURING CONSTRUCTION SHALL BE RE-PAVED PER NEW BEDFORD DEPARTMENT OF INFRASTRUCTURE STANDARDS.
16. WHENEVER ELECTRIC DUCT BANKS/CONDUITS MUST CROSS ANY UTILITY LINE SERVICE THE ELECTRIC DUCT BANKS/CONDUITS SHALL BE INSTALLED SO THAT THE BOTTOM OF THE ELECTRIC DUCT BANKS/CONDUITS ARE AT LEAST 12" ABOVE THE TOP OF THE UTILITY SERVICE. WHERE 12 INCH VERTICAL SEPARATION CAN NOT BE MET ABOVE THE TOP OF THE UTILITY SERVICE, THE ELECTRIC DUCT BANKS/CONDUITS SHALL BE RUN 12" BELOW THE BOTTOM OF THE UTILITY SERVICE.
17. CONTRACTOR SHALL MAKE PROVISIONS TO PROVIDE EXCAVATION AND BACKFILL SERVICES TO THE LOCAL GAS COMPANY FOR THE INSTALLATION OF NEW GAS SERVICE AND/OR THE THE REMOVAL OF EXISTING GAS SERVICES. COORDINATE ALL INSTALLATIONS AND REMOVAL OF GAS SERVICES WITH LOCAL GAS CO.



2 C5.01 SEDIMENT CONTROL BAG - CATCH BASIN
N.T.S.

EROSION & SEDIMENT CONTROL NARRATIVE

1. EROSION CONTROL MEASURES SHOWN HEREIN ARE A MINIMUM. CONTRACTOR SHALL FURNISH THE SERVICES OF AN INDEPENDENT PROFESSIONAL ENGINEER OR A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL TO PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP). PRIOR TO COMMENCEMENT OF DEMOLITION SITE PREPARATION OR EARTHWORK SAID PLAN SHALL BE IMPLEMENTED. THE INITIAL METHOD OUTLINED IS INTENDED TO ROUTE ALL PRACTICABLE SURFACE WATER FROM THE EXCAVATION AREA INTO EROSION CONTROL FACILITIES. THE CONTRACTOR SHALL INSTALL ANY ADDITIONAL PROTECTIVE MEASURES AS MAY BE REQUIRED TO CONTROL EROSION AND SEDIMENT RUNOFF FROM THE SITE DURING CONSTRUCTION.
2. STAKE THE LIMIT OF WORK TO ENSURE THAT ALL WORK WILL BE INSIDE THE EROSION CONTROL FACILITY. THE LIMIT OF WORK WILL BE INDICATED BY ORANGE CONSTRUCTION MESH. THE MESH WILL INCLUDE BUILDINGS, PARKING FACILITIES, ACCESS ROADS, DETENTION/RETENTION BASINS, EQUIPMENT STAGING AREAS AND ALL MATERIAL STOCKPILE AND HANDLING AREAS.
3. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES ON SITE, A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD ON SITE TO ESTABLISH SUPERVISORY AND INSPECTION PROCEDURES FOR SEDIMENT AND EROSION CONTROL MEASURES. THIS MEETING SHALL BE ATTENDED BY THE CONTRACTOR, APPLICANT/OWNER, ARCHITECT/ENGINEER AND THE LOCAL EROSION CONTROL AGENT.
4. THE CONTRACTOR SHALL BE TOTALLY RESPONSIBLE FOR PROTECTION OF ANY LANDS OR PROPERTIES AS MAY BE SUBJECT TO ANY AFFECT OR BY-PRODUCT OF HIS DEMOLITION/CONSTRUCTION EFFORT. SPECIAL CARE SHALL BE TAKEN TO AVOID EROSION OF FILL OR CUT SLOPES ONTO ADJACENT PROPERTIES OR DOWNSTREAM SILTATION OF DIVERSION OF EXISTING DRAINAGE. ANY DAMAGE IS TO BE CORRECTED IMMEDIATELY BY THE CONTRACTOR AT NO COST TO THE OWNER.
5. THE WORK IS TO BE PHASED. CONSTRUCT THE PROJECT IN PHASES AS DIRECTED BY THE ARCHITECT/ENGINEER TO SUIT THE PROJECT SCHEDULE.
6. GENERAL SEQUENCE SHALL BE AS FOLLOWS:
   A. ESTABLISH HAYBALE/SILT BARRIER & CONSTRUCTION FENCE PRIOR TO ANY EARTHWORK
   B. INSTALL SITE ENTRANCE MATS AT SITE CONSTRUCTION ENTRANCES AS DETAILED.
   C. CONSTRUCT TEMPORARY SETTLING BASINS AND INSTALL EROSION CONTROL DEVICES.
   D. CLEAN AND GRUB VEGETATION AS REQUIRED. REMOVE AND DISPOSE OF ALL STUMPS FROM SITE.
   E. PERFORM MASS EARTHWORK AND ROCK EXCAVATION FOR THE SITE.
   F. PROTECT ALL EXISTING AND PROPOSED DRAINAGE STRUCTURES FROM SEDIMENT BY THE USE OF DANDY BAGS AND HAY BALES AT CATCH BASIN AS DETAILED.
7. AT NO TIME SHALL SILT LADEN WATER BE ALLOWED TO ENTER ENVIRONMENTALLY SENSITIVE AREAS AND EXISTING OR NEW DRAINAGE SYSTEMS. RUNOFF FROM DISTURBED SURFACES SHALL BE DIRECTED THROUGH SETTLING BASINS AND EROSION CONTROL MEASURES PRIOR TO ENTERING ANY ENVIRONMENTALLY SENSITIVE AREAS OR THE DRAINAGE SYSTEM.
8. DEWATER ALL EXCAVATIONS AND TRENCHES, AS REQUIRED, WITH DEWATERING BAGS AND OUTFALLS AT CONTROLLED TEMPORARY SETTLING BASINS.
9. INSTALL STONE REINFORCED SILT BARRIER AROUND STOCKPILE AREAS, TRUCK WASH DOWN AREAS AND VEHICLE FUELING AREAS.
10. INSTALL TEMPORARY SEED OR MULCH AND EROSION CONTROL BLANKETS (ECB) TO ALL AREAS IMMEDIATELY UPON FORMATION OF GRADES.
11. SURFACE STABILIZATION MUST BE IMPLEMENTED WITHIN 14 DAYS AFTER CONSTRUCTION ACTIVITY IN A PORTION OF THE SITE THAT HAS CEASED OR IS TEMPORARILY HALTED.
12. TRUCK WASH DOWN AREA SHALL BE 20'(L)X20'(W) AT A MINIMUM SURROUNDED BY STONE REINFORCED SILT BARRIER. ACCUMULATED CONCRETE SHALL BE EITHER RECYCLED ON SITE OR DISPOSED OF AT AN APPROVED OFF-SITE LOCATION.
13. CONTRACTOR REFUELING AREA SHALL BE 20'(L)X20'(W) AT A MINIMUM SURROUNDED BY STONE REINFORCED SILT BARRIER. AREA SHALL BE SCRAPED AND REDRESSED MONTHLY. THE DEPTH SHALL BE DETERMINED IN THE FIELD. SCRAPED MATERIAL SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED OFF-SITE LOCATION.
14. AS SOON AS PAVING OF DRIVES IS COMPLETED, ALL DRAINAGE STRUCTURES SHALL BE CLEANED OF ANY ACCUMULATED SEDIMENT. THEREAFTER, CLEAN UP SHOULD FOLLOW LONG TERM MAINTENANCE PLAN.
15. CONTINUALLY MONITOR ALL SILT BARRIER AND EROSION CONTROL DEVICES ON A WEEKLY BASIS, REPAIR ANY DAMAGED AREAS IMMEDIATELY. REMOVE ALL CAPTURED SEDIMENT AS REQUIRED AND DISPOSE OF. INSTALL ADDITIONAL MEASURES AS DIRECTED BY THE OWNER, LOCAL DPW, CONSERVATION OFFICER AND THE ARCHITECT/ENGINEER.
16. CONTRACTOR SHALL REDUCE SURFACE AND AIR MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES AS REQUIRED BY CONSTRUCTION ACTIVITIES. CONSTRUCTION ACTIVITIES SHALL BE SO SCHEDULED SO THAT THE LEAST AREA OF DISTURBED SOIL IS EXPOSED AT ONE TIME. IN DISTURBED AREAS NOT SUBJECT TO TRAFFIC, CONTRACTOR SHALL USE TEMPORARY SEEDING AND MULCHING OPERATIONS. IN DISTURBED AREAS SUBJECT TO TRAFFIC, CONTRACTOR SHALL SPRINKLE SURFACE WITH WATER TO MINIMIZE DUST. DUST CONTROL MEASURES SHALL BE MAINTAINED THROUGH DRY WEATHER PERIODS UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
17. REMOVE CONSTRUCTION FENCE, SILT BARRIER AND EROSION CONTROL MEASURES ONLY AFTER ESTABLISHMENT OF PERMANENT VEGETATION.



3 C5.01 DETAIL OF HAYBALE & SILT BARRIER
N.T.S.

NOTES

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1	PLANNING BOARD SUBMISSION	01/15/2016

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Project RENOVATONS TO
YWCA SOUTHEASTERN, MA
20 SOUTH SIXTH STREET, NEW BEDFORD, MA

Title SITE LEGEND, NOTES & DETAILS

PLANNING BOARD SUBMISSION
JAN 15 2016
PLANNING DEPARTMENT

Drawn by	NCK
Checked by	DJG
Project No.	16002
Scale	AS NOTED
Date	01/15/2016
Drawing No.	C5.01

CASE 04-16

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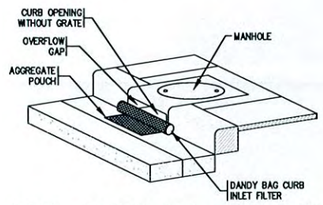
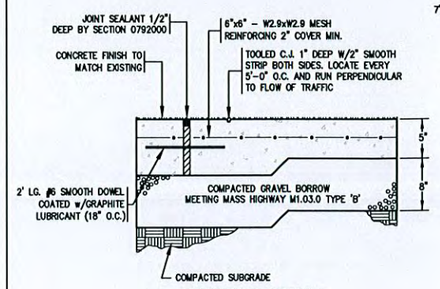
DANDY CURB™ (SAFETY ORANGE)

MECHANICAL PROPERTIES	TEST METHOD	UNITS	MARV
GRAB TENSILE STRENGTH	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
GRAB TENSILE ELONGATION	ASTM D 4632	%	24 X 10
PUNCTURE STRENGTH	ASTM D 4833	kN (lbs)	0.40 (90)
MULLEN BURST STRENGTH	ASTM D 3786	kPa (psi)	3097 (450)
TRAPEZOID TEAR STRENGTH	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV RESISTENCE	ASTM D 4355	%	90
APPARENT OPENING SIZE	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
FLOW RATE	ASTM D 4491	l/min/m² (gal/min/ft)²	5907 (145)
PERMITTIVITY	ASTM D 4491	Sec^{-1}	2.1

*NOTE: ALL DANDY CURBS TO BE ORDERED WITH OPTIONAL OIL ABSORBENTS



1 C5.02 SEDIMENT CONTROL BAG - CURB INLET
N.T.S.



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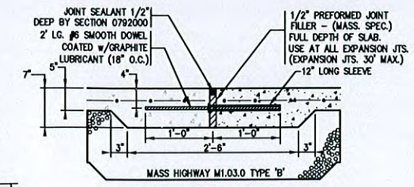

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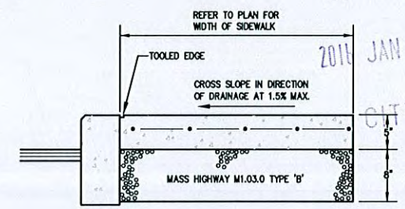
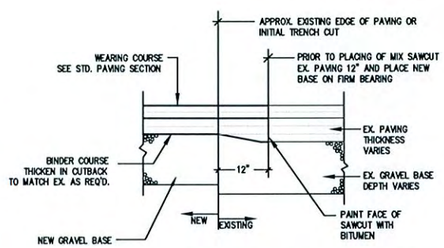
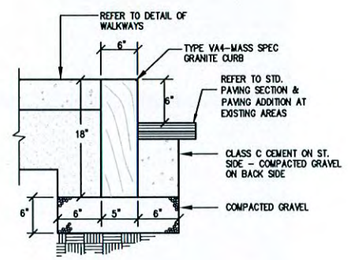


CROSS SECTION

4 C5.02 CONCRETE SIDEWALK DETAIL
NTS



2 C5.02 DETAIL OF PAVING ADDITION AT EXISTING AREAS
N.T.S.



5 C5.02 DETAIL OF VERTICAL GRANITE CURB
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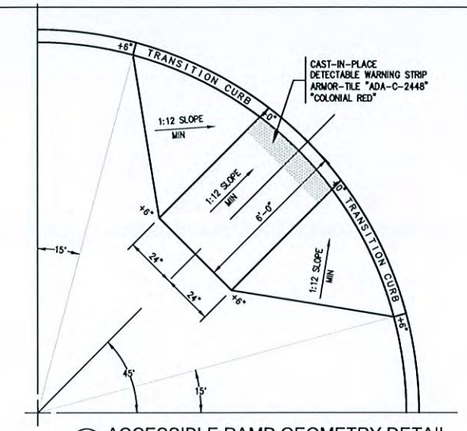
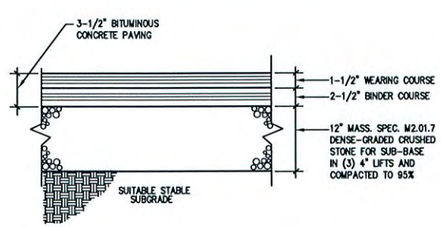
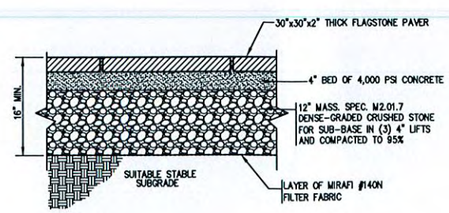


7 C5.02 ACCESSIBLE RAMP GEOMETRY DETAIL
N.T.S.



3 C5.02 STANDARD PAVING SECTION
N.T.S.



6 C5.02 FLAGSTONE WALKWAY DETAIL
N.T.S.
NOTE: DURING INSTALLATION, THE CONTRACTOR SHALL MONITORING THAT ALL STONES PLACED IN MORTAR BED MEET THE REQUIREMENTS OF MAAB.

8 C5.02 BLANK
N.T.S.

NOTES

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Project RENOVATONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Title SITE DETAILS

Designed RCK
Checked CMG
Project No. 16002
Scale AS NOTED
Date 01/15/2016
Drawing No. C5.02

PLANNING BOARD SUBMISSION
JAN 15 2016
PLANNING DEPARTMENT

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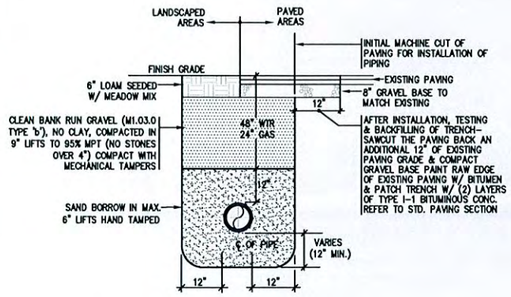
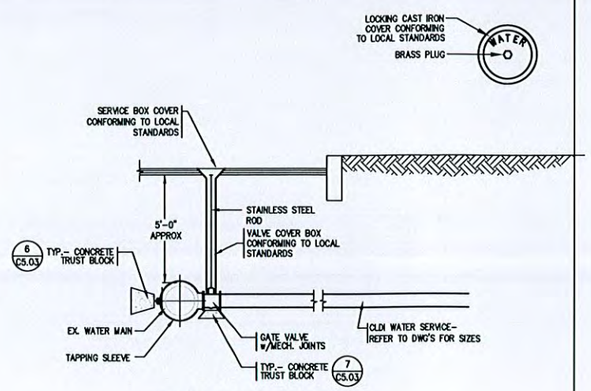


1 C5.03 TYP. TRENCH SECTION FOR WATER & GAS
N.T.S.



4 C5.03 FIRE SERVICE DETAIL
N.T.S.

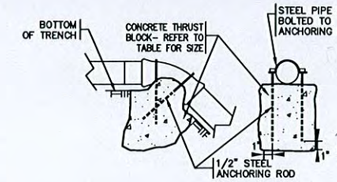
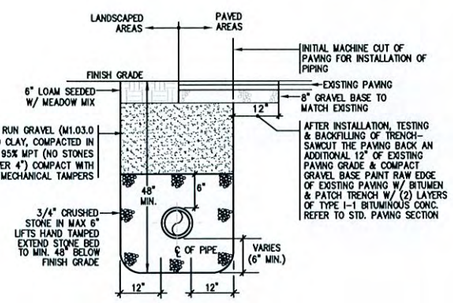
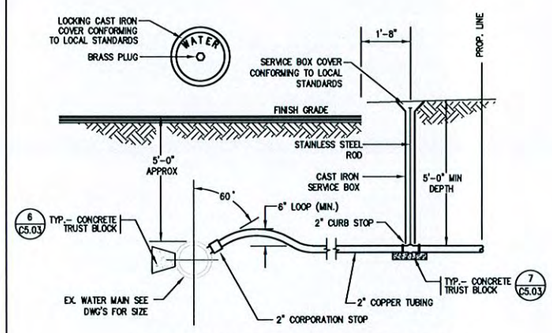


TABLE OF MIN. VOLUME (c.y.)			
SIZE OF MAIN (in.)	BENDS		
	45°	22-1/2°	11-1/4°
≤ 4"	0.56	0.29	0.29
6"	1.25	0.63	0.63
8"	2.21	1.13	1.13
≥ 10"	3.45	1.76	1.76

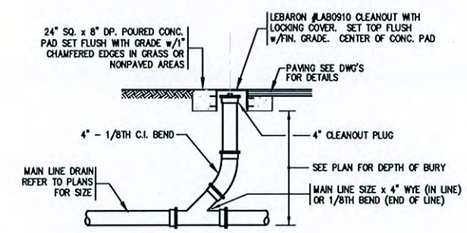
7 C5.03 VERTICAL CONCRETE THRUST BLOCK DETAIL
N.T.S.
- CONCRETE SHALL BE 2500# TYPE BEARING ON UNDISTURBED EARTH
- CONCRETE SHALL NOT RUN INTO PIPE JOINTS
- 6 MIL. PLASTIC TO BE PLACED BETWEEN THRUST BLOCK AND FITTINGS.
- THRUST BLOCK SHALL BE POURED AGAINST UNDISTURBED EARTH.



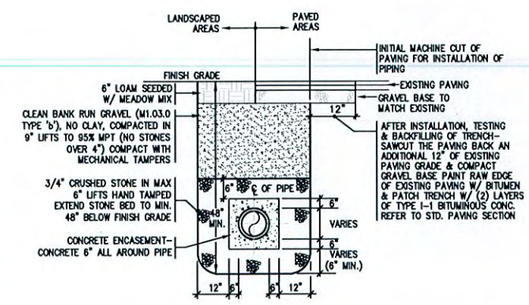
2 C5.03 TYPICAL TRENCH SECTION FOR DRAINAGE
N.T.S.



5 C5.03 DOMESTIC WATER SERVICE DETAIL
N.T.S.



8 C5.03 GROUND CLEANOUT DETAIL



3 C5.03 TYPICAL TRENCH SECTION FOR CONCRETE ENCASED SEWER
N.T.S.

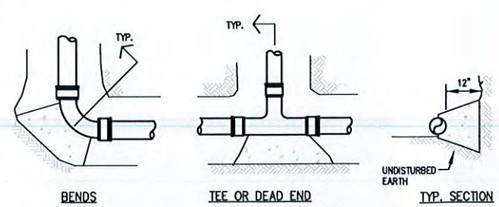
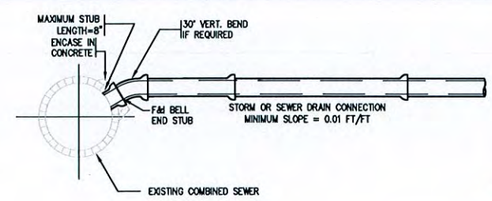


TABLE OF BEARING AREAS (s.f.)						
SIZE OF MAIN (in.)	TEES & PLUGS	VALVES	BENDS			
			90°	45°	22-1/2°	11-1/4°
≤ 4"	2	1	2	1	1	1
6"	3	2	3	2	2	2
8"	4	3	5	3	2	2
≥ 10"	9	4	10	6	4	3

6 C5.03 HORIZONTAL CONCRETE THRUST BLOCK DETAIL
N.T.S.
- CONCRETE SHALL BE 2500# TYPE BEARING ON UNDISTURBED EARTH
- CONCRETE SHALL NOT RUN INTO PIPE JOINTS
- ALL BLOCKS SHALL BE MIN. 1'-0" HIGH
- 6 MIL. PLASTIC TO BE PLACED BETWEEN THRUST BLOCK AND FITTINGS.
- THRUST BLOCK SHALL BE POURED AGAINST UNDISTURBED EARTH.



9 C5.03 TYPICAL CONNECTION TO COMBINED SEWER
N.T.S.

NOTE:
CONNECTION TO CLAY, PVC, CONCRETE AND IRON PIPES SHALL BE MADE BY CORING EXISTING CONDUIT AS INDICATED ABOVE OR USING AN APPROVED GASKET SADDLE.

NOTES

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No.	REVISIONS/SUBMISSIONS	Date
1	PLANNING BOARD SUBMISSION	01/15/2016

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Project RENOVATONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Title SITE DETAILS

PLANNING BOARD SUBMISSION
JAN 15 2016
PLANNING DEPARTMENT

Designed NJ
Drawn CMG
Project No 18002
Scale AS NOTED
Date 01/15/2016
Drawing No C5.03

CASE 09-16

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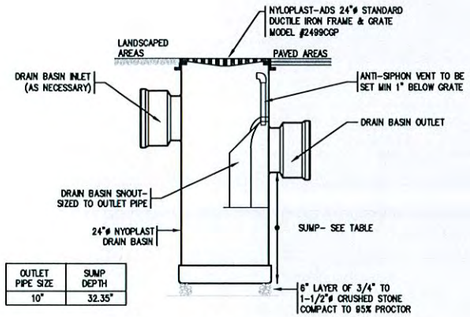
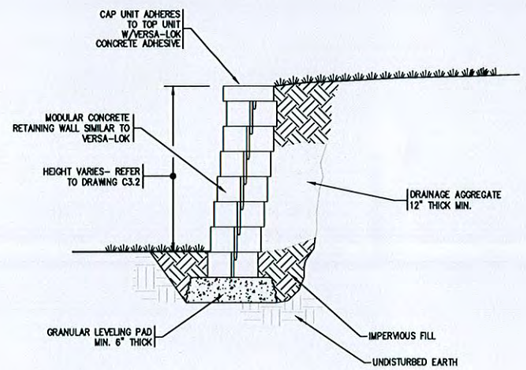
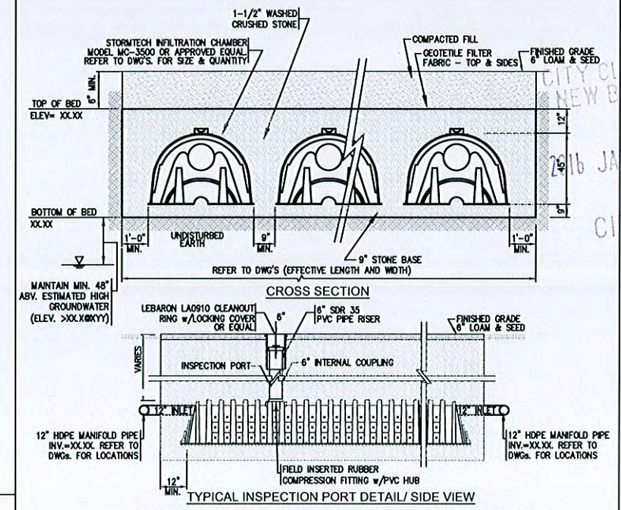


OUTLET PIPE SIZE	SUMP DEPTH
10"	32.35"

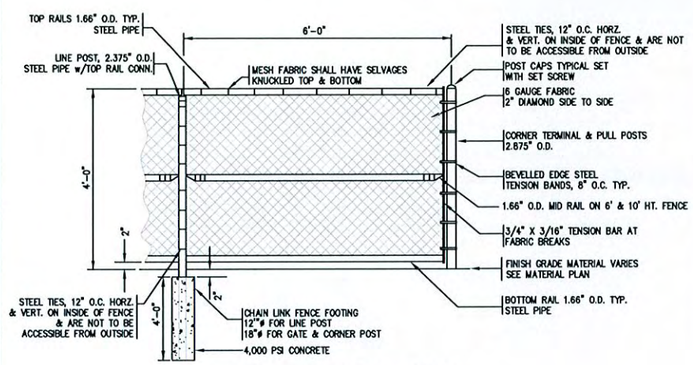
1 C5.04 NYLOPLAST DRAIN BASIN DETAIL
N.T.S.



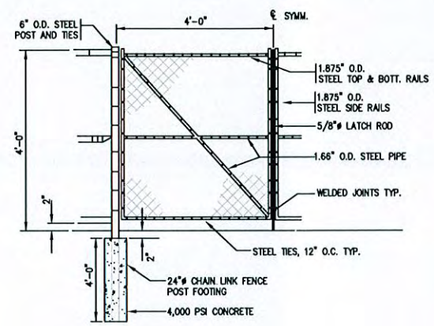
4 C5.04 SEGMENTAL RETAINING WALL DETAIL
N.T.S.



7 C5.04 SUBSURFACE INFILTRATION CHAMBER DETAIL
N.T.S.
NOTES:
REFER TO DRAWING C2.01 FOR LOCATIONS OF INSPECTION PORTS. CONTRACTOR TO FURNISH ALL MATERIAL AND LABOR TO CONNECT 6" PVC INSPECTION RISERS TO CHAMBERS

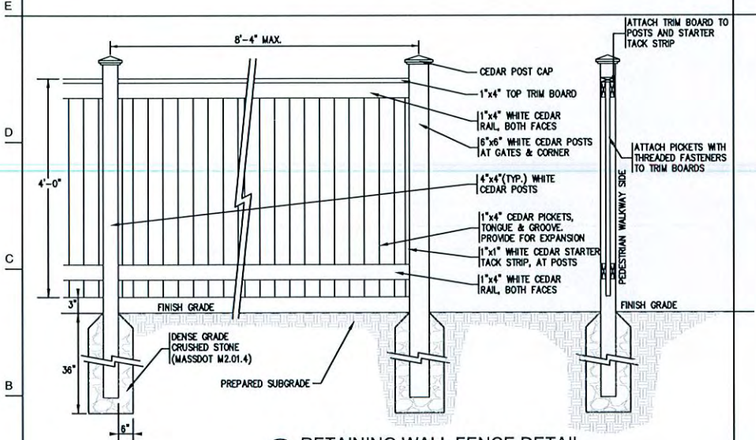


2 C5.04 CHAIN-LINK FENCE DETAIL
N.T.S.
NOTE:
FENCING AND ALL COMPONENTS SHALL BE BLACK VINYL COATED.



5 C5.04 GATE DETAIL
N.T.S.
NOTE:
FENCING AND ALL COMPONENTS SHALL BE BLACK VINYL COATED.

8 C5.04 BLANK
N.T.S.



3 C5.04 RETAINING WALL FENCE DETAIL
N.T.S.

6 C5.04 BLANK
N.T.S.

9 C5.04 BLANK
N.T.S.

NOTES

CITY CLERKS OFFICE NEW BEDFORD, MA
2016 JAN 15 P 3:09
CITY CLERK

No.	REVISIONS/SUBMISSIONS	Date
1	PLANNING BOARD SUBMISSION	01/15/2016

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240A Elm St.,
Somerville, MA 02144
617.628.5700
www.davissquarearchitects.com

Consultant
GARCIA GALUSKA DESOUSA
CONSULTING ENGINEERS INC.
370 Faunce Corner Road, Dartmouth, MA 02747-1271
508-998-5700 FAX 508-998-0883 E-MAIL info@ggd-eng.com

Project RENOVATONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Title SITE DETAILS

PLANNING BOARD SUBMISSION
JAN 15 2016
CITY CLERK'S DEPARTMENT

Designed NCK
Checked CMG
Job No. 1606
Scale AS NOTED
Date 01/15/2016

C5.04

CASE 04-16

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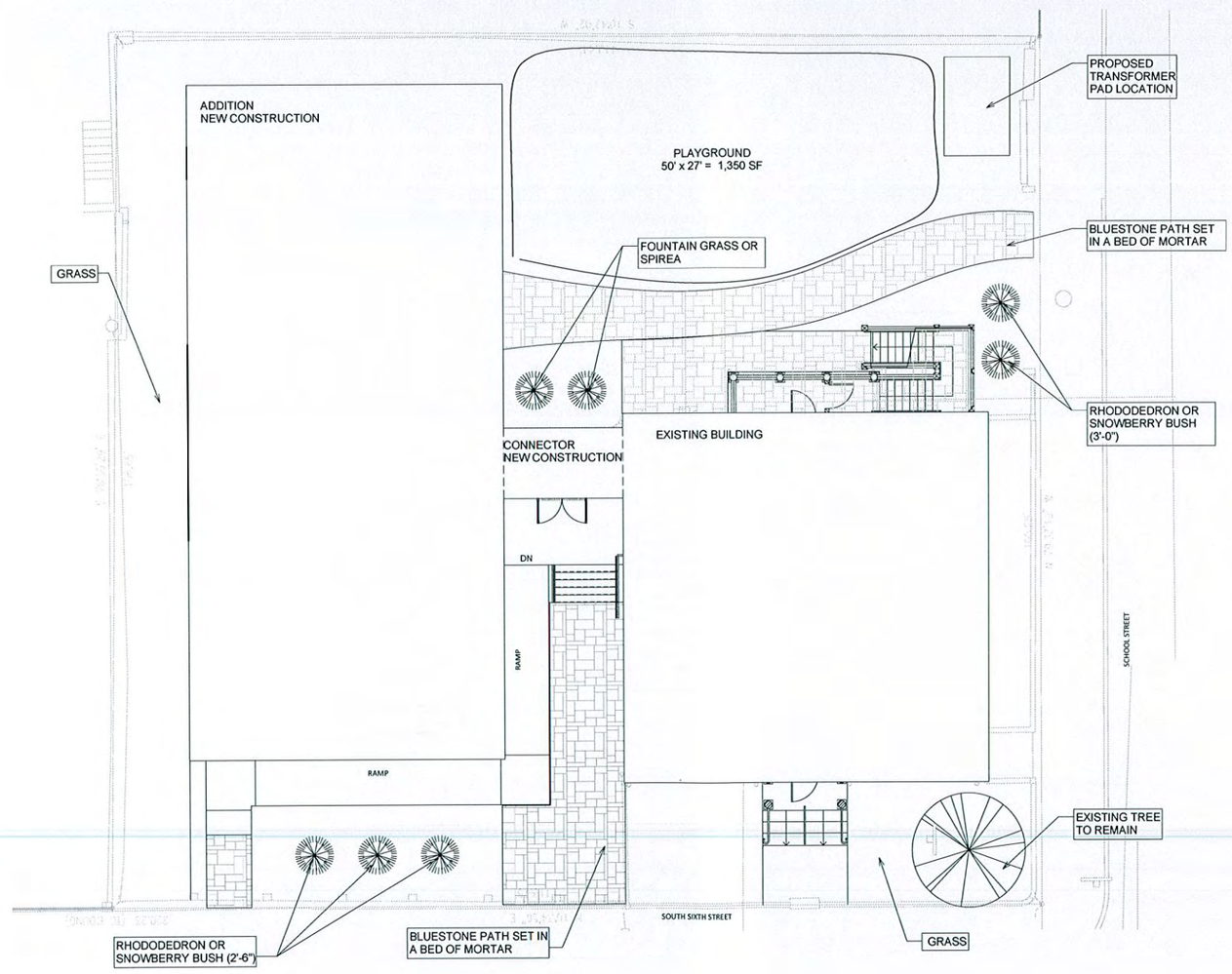
M:\YWCA of Southeastern MA\7850\100 YWCA of Southeastern MA\Drawings\CIVIL\C5.04 Site Details.dwg



NOTES

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PLANNING BOARD
JAN 15 2016
PLANNING DEPARTMENT

Project RENOVATIONS TO
YMCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

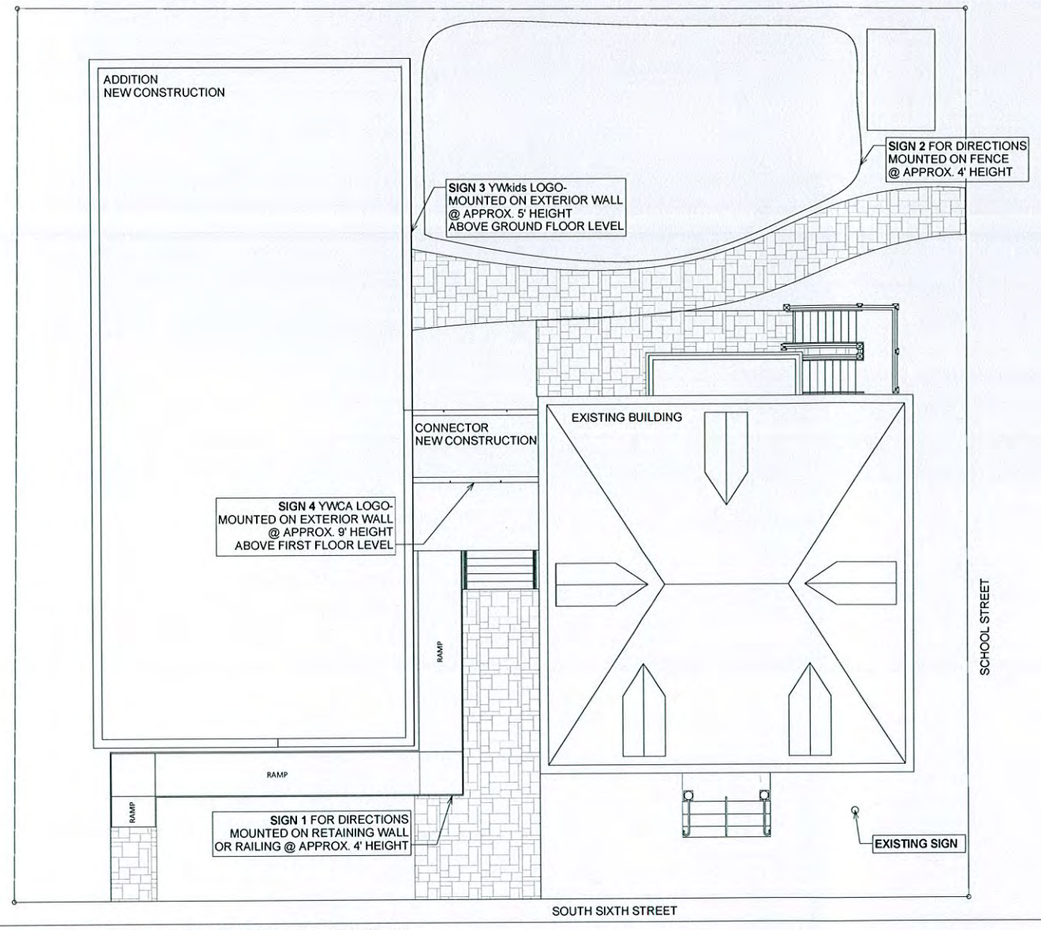
LANDSCAPING PLAN

REGISTERED PROFESSIONAL ENGINEER
GUILLERMO JAIME BOEHMWALD
No. 10697
CAMBRIDGE
MA
COMMONWEALTH OF MASSACHUSETTS

Drawing No.
PB - L100

A-1 | LANDSCAPING PLAN
1/8" = 1'-0"

CASE 04-16



E-1 | SITE PLAN WITH INDICATION OF SIGNAGE LOCATION
1/8" = 1'-0"

EXISTING SIGN
LOCATION: EXISTING YWCA OFFICES ENTRANCE (ACCESS FROM SOUTH SIXTH STREET)
SIZE: 36"x18"x1.5"

J-10 | EXISTING SIGN
12" = 1'-0"

TOTAL SQUARE FOOTAGE OF EXISTING SIGN
36"x18" = 648 square inch / **4.5 SF**

TOTAL SQUARE FOOTAGE OF PROPOSED SIGNAGE
sign 1: approx.18"x14" = 252 square inch / 1.75 SF
sign 2: approx.18"x14" = 252 square inch / 1.75 SF
sign 3: approx.44"x30" = 1320 square inch / 9.16 SF
sign 4: approx.66"x28" = 1848 square inch / 12.83 SF

total (approx.) = 3672 square inch / **25.49 SF**

E-10 | SIGNAGE SQUARE FOOTAGE
12" = 1'-0"

NOTES
DO NOT SCALE DRAWINGS

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NEW BEDFORD, MA
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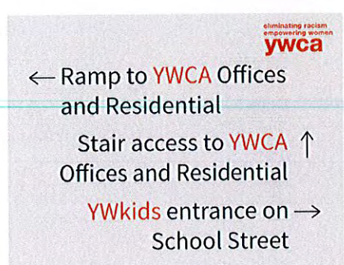
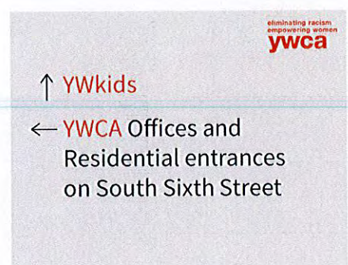
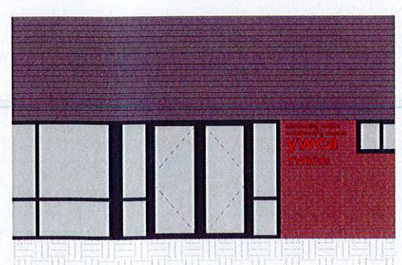
CITY CLERK



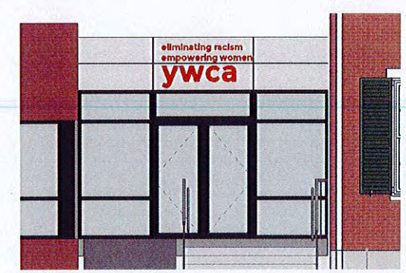
SIGN 1
LOCATION: CLOSE TO SOUTH SIXTH STREET
SIZE: APPROX. 18"x14"
MATERIAL: METAL PLATE WITH ENGRAVING OR PLASTIC PLATE WITH PRINT
TEXT: TO BE FINALIZED



SIGN 2
LOCATION: CLOSE TO SCHOOL STREET
SIZE: APPROX. 18"x14"
MATERIAL: METAL PLATE WITH ENGRAVING OR PLASTIC PLATE WITH PRINT
TEXT: TO BE FINALIZED



SIGN 3
LOCATION: YWCA RESIDENTIAL AND OFFICES ENTRANCE (ACCESS FROM SCHOOL STREET)
SIZE: APPROX. 44"x30"x3" (OUTLINE OF ALL LETTERS)
MATERIAL: METAL LETTERS OR SIMILAR, ILLUMINATED FROM BEHIND



SIGN 4
LOCATION: YWCA RESIDENTIAL AND OFFICES ENTRANCE (ACCESS FROM SOUTH SIXTH STREET)
SIZE: APPROX. 66"x28"x3" (OUTLINE OF ALL LETTERS)
MATERIAL: METAL LETTERS OR SIMILAR, ILLUMINATED FROM BEHIND

A-1 | PROPOSED SIGNS MOUNTED ON FENCING, RAILINGS AND SIM.
1/4" = 1'-0"

A-7 | PROPOSED SIGNS MOUNTED ON EXTERIOR WALLS AT NEW CONSTRUCTION
1/4" = 1'-0"

No.	REVISIONS/SUBMISSIONS	Date

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Consultant

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JAN 15 2016
DEPARTMENT

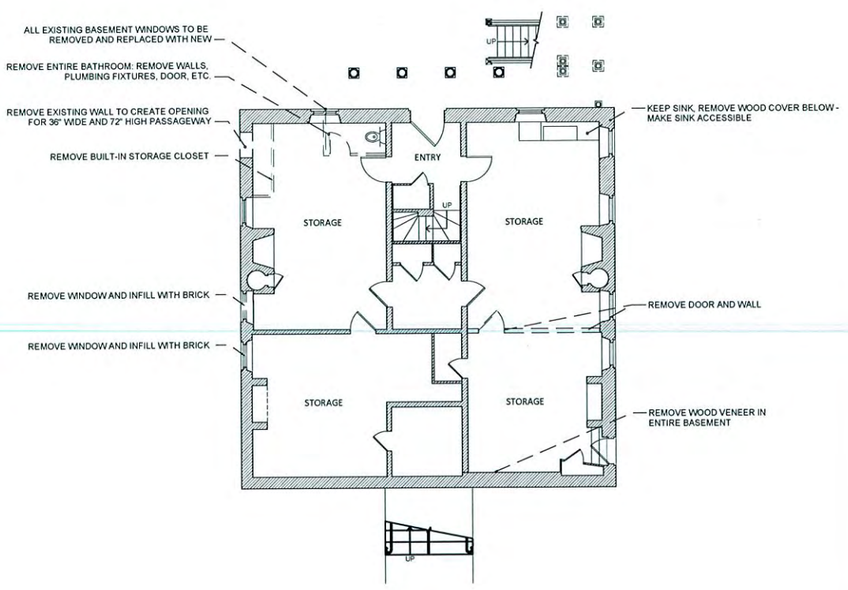
Project RENOVATIONS TO
YWCA SOUTHEASTERN MA
29 SOUTH SIXTH STREET, NEW BEDFORD MA

SIGN PLAN

REGISTERED PROFESSIONAL ENGINEER
JOHN E. BOEHM
No. 10697
CAMBRIDGE MA
COMMONWEALTH OF MASSACHUSETTS

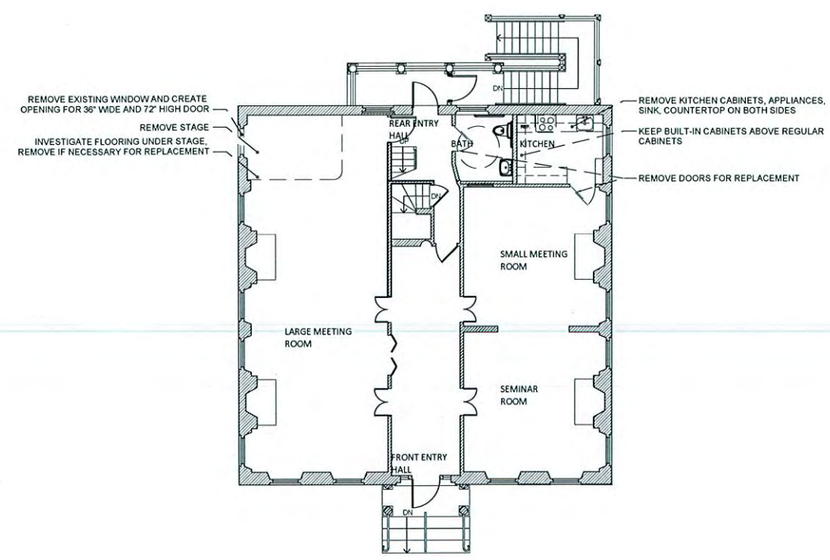
Drawing No.
PB - L101

CASE 04-16



A-1 EXISTING BUILDING - DEMO BASEMENT PLAN

1/8" = 1'-0"



A-7 EXISTING BUILDING - DEMO FIRST FLOOR PLAN

1/8" = 1'-0"

NOTES

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Project RENOVATIONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Title EXISTING / DEMO FLOOR PLANS

Drawing No. PB - X100

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REGISTERED ARCHITECT
CLIFFORD JEROME BOTELHO
No. 10697
CAMBRIDGE
MA 16002
COMMONWEALTH OF MASSACHUSETTS

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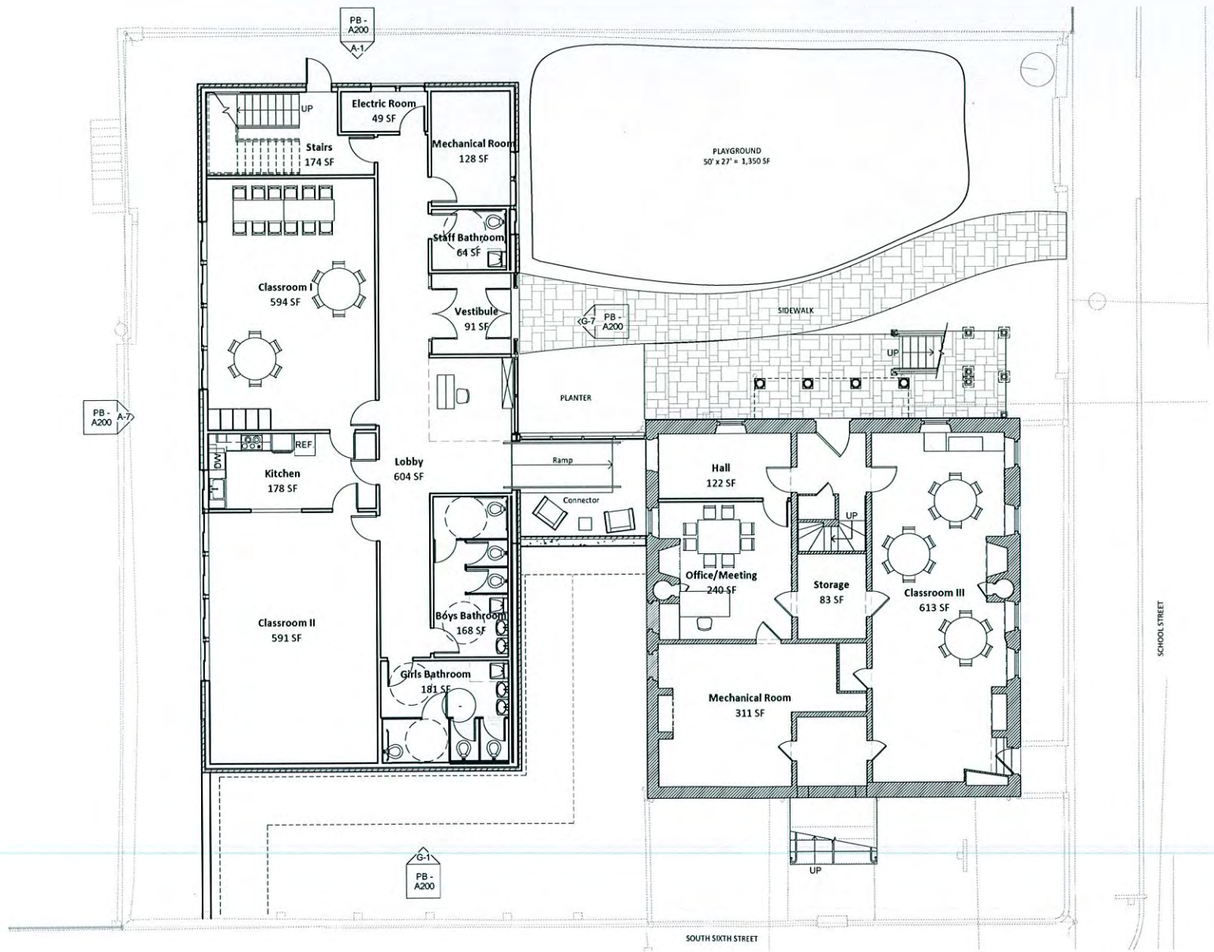

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Project: RENOVATIONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

GROUND FLOOR PLAN

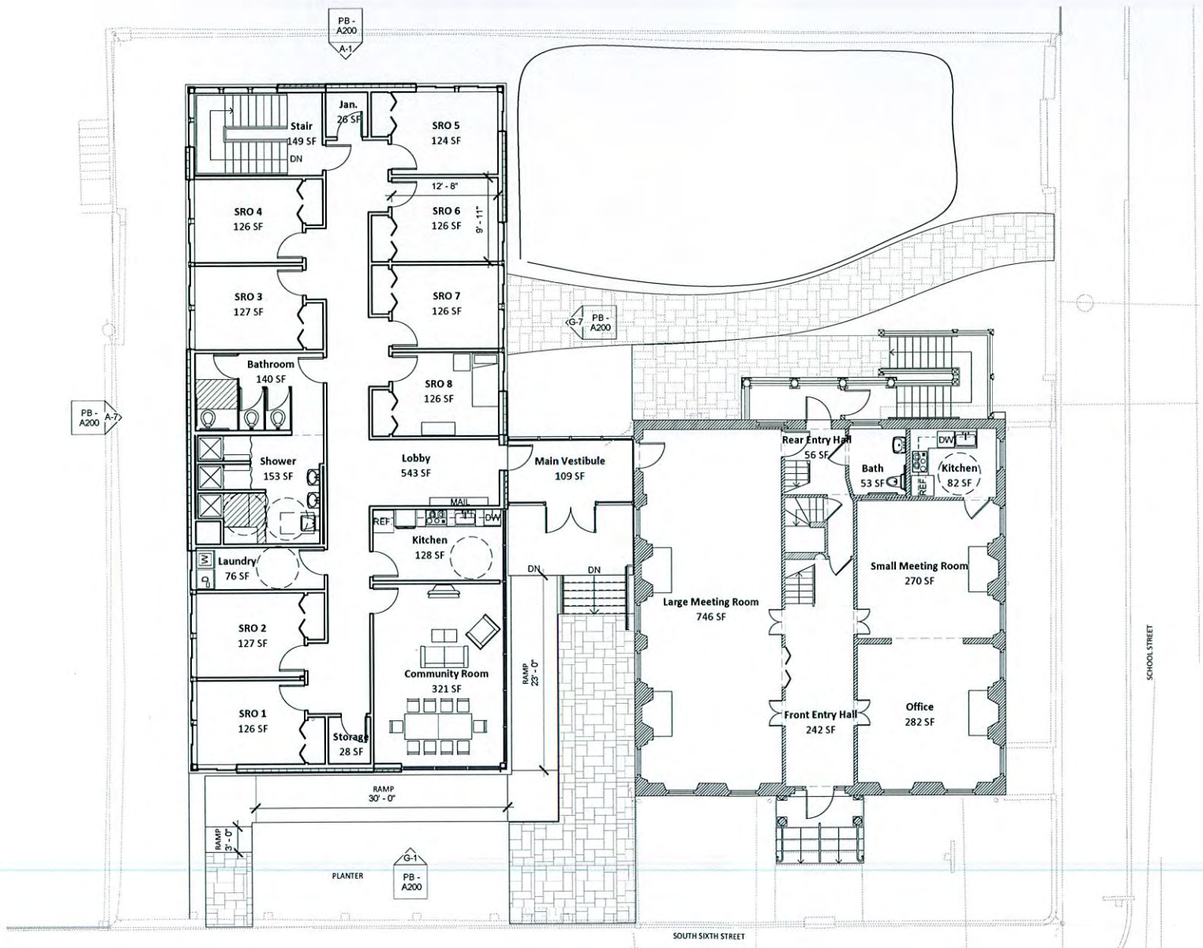
REGISTERED PROFESSIONAL ENGINEER
No. 10697
CAMBRIDGE, MA
COMMONWEALTH OF MASSACHUSETTS

PLANNING BOARD
JAN 15 2016
PLANNING DEPARTMENT

Scale: 1/8" = 1'-0"
Date: 1/15/2016
Drawing No.: PB - A100

CASE 04-16

A-1 GROUND FLOOR PLAN
1/8" = 1'-0"



A-1	FIRST FLOOR PLAN
1/8" = 1'-0"	

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JAN 15 2016
DEPARTMENT

Project RENOVATIONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Title FIRST FLOOR PLAN

REGISTERED PROFESSIONAL ENGINEER
NEW BEDFORD
COMMONWEALTH OF MASSACHUSETTS
CAMBRIDGE, MA

Drawing No.
PB - A101

CASE 04-16

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NEW BEDFORD, MA

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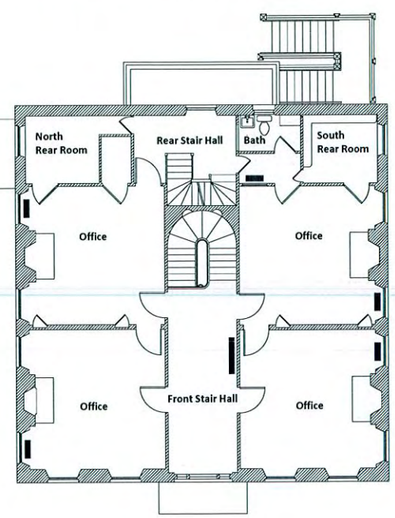
CITY CLERK

ROOF
ADDITION
NEW CONSTRUCTION

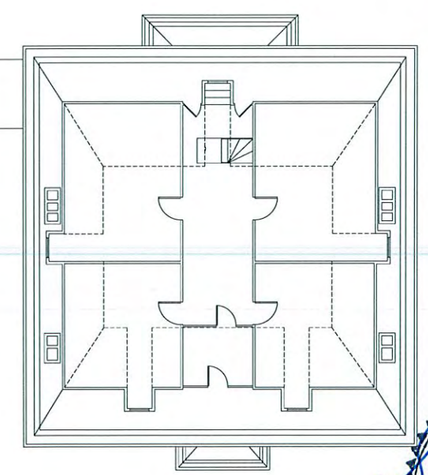
EXISTING BUILDING - SECOND FLOOR
NO WORK EXCEPT INSTALLATION OF NEW SPRINKLER SYSTEM



A-1 | EXISTING BUILDING - SECOND FLOOR PLAN
1/8" = 1'-0"

ROOF
ADDITION
NEW CONSTRUCTION

EXISTING BUILDING - ATTIC FLOOR
NO WORK EXCEPT INSTALLATION OF NEW SPRINKLER SYSTEM



A-7 | EXISTING BUILDING - ATTIC PLAN
1/8" = 1'-0"

NOTES
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No.	REVISIONS/SUBMISSIONS	Date

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Somerville, MA 02144
617.628.5700
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Consultant

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JAN 15 2016
PLANNING DEPARTMENT

Project
YWCA SOUTHEASTERN MA
120 SOUTH SIXTH STREET, NEW BEDFORD MA

SECOND AND THIRD FLOOR PLAN

REGISTERED PROFESSIONAL ENGINEER
No. 10697
CAMBRIDGE
MA
COMMONWEALTH OF MASSACHUSETTS

Drawing No.
PB - A102

Scale 1/8" = 1'-0"
Date 1/15/2016

Case 04-16

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NEW BEDFORD, MA

2016 JAN 15 P 3:09

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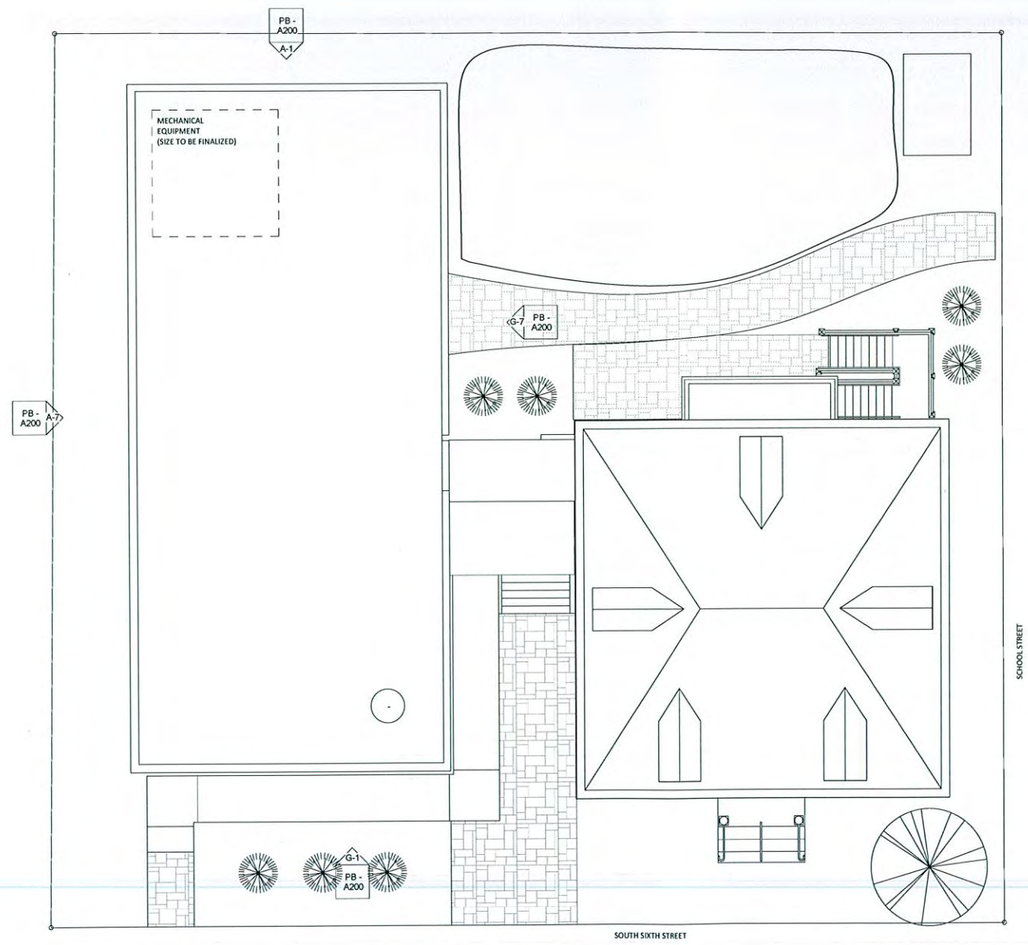

NOTES

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617.628.5700
www.davissqarearchitects.com

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JAN 15 2016
DEPARTMENT
PLANNING BOARD

Project Title and Address
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Drawing Title
ROOF PLAN

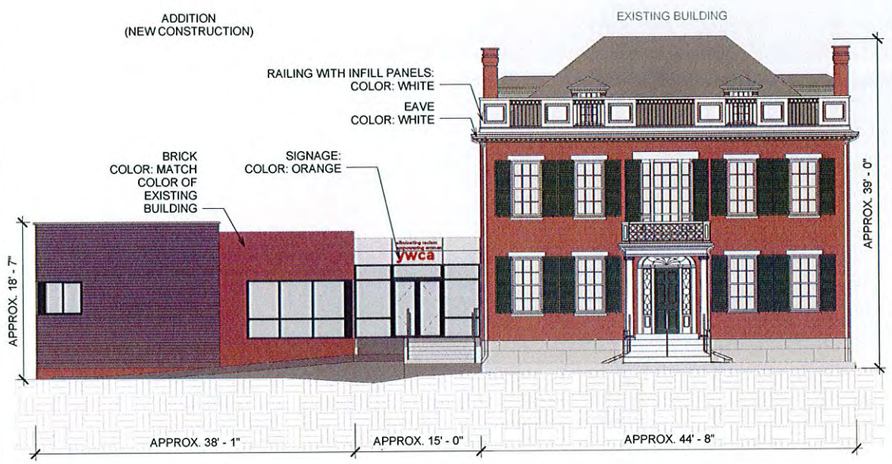
REGISTERED ARCHITECT
CLIFFORD J. TOCHER
No. 10697
CAMBRIDGE
MA
COMMONWEALTH OF MASSACHUSETTS

Drawn
Designer
Checked
Author
Project No.
15002
Scale
1/8" = 1'-0"
Date
1/15/2016

Drawing No.
PB - A103

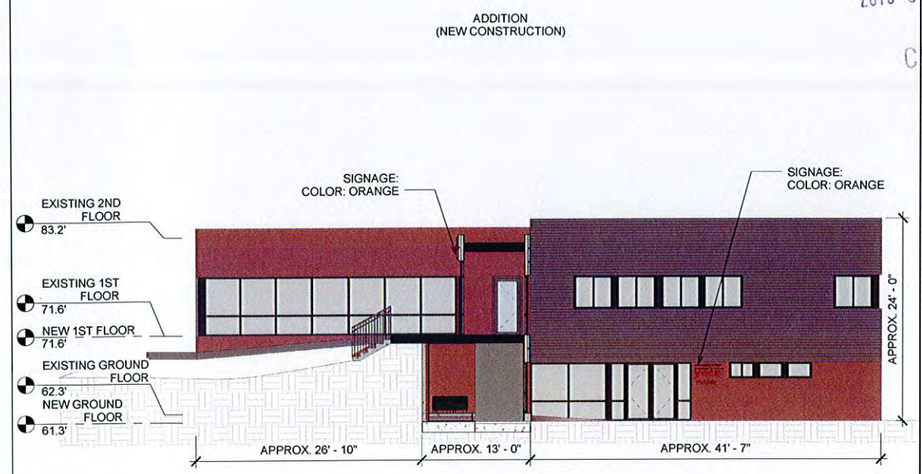
A-1	ROOF PLAN
1/8" = 1'-0"	

Case 04-16



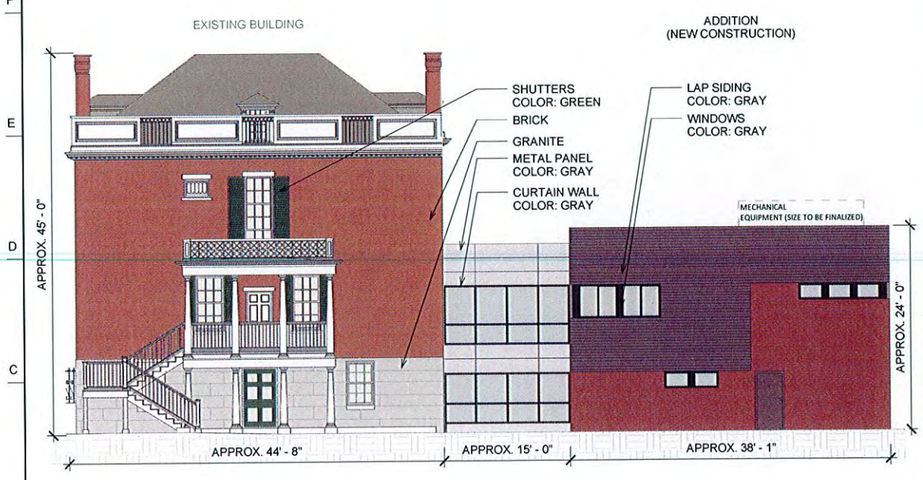
G-1 | WEST (SOUTH SIXTH STREET)

1/8" = 1'-0"



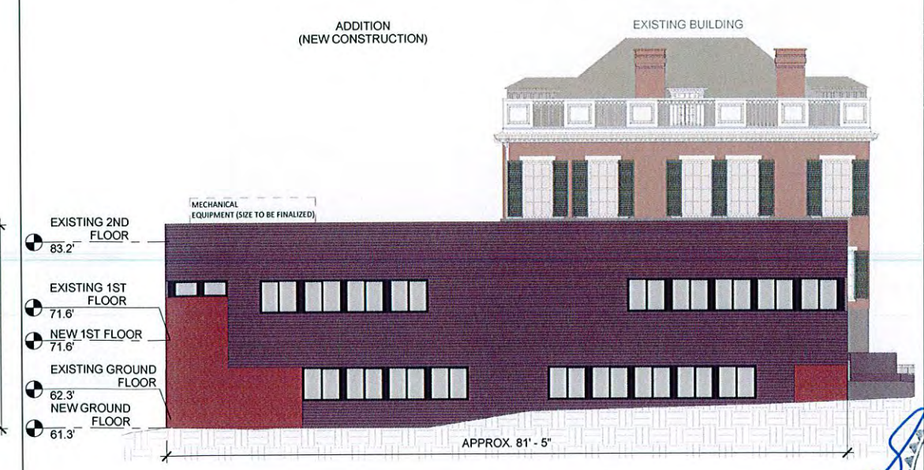
G-7 | SOUTH (SCHOOL STREET)

1/8" = 1'-0"



A-1 | EAST (REAR)

1/8" = 1'-0"



A-7 | NORTH

1/8" = 1'-0"

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Project: RENOVATIONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Title: ELEVATIONS

COMMONWEALTH OF MASSACHUSETTS
No. 10697
CAMBRIDGE MA
PLANNING BOARD

Drawing No.

PB - A200

Case 04-16

CITY CLERKS OFFICE
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LEVI STANDISH HOUSE EXPANSION-ALTERATION

20 South Sixth Street
New Bedford, Massachusetts

SITE PLAN REVIEW APPLICATION

New Bedford City Ordinance §9-5400

PREPARED FOR:

YWCA of Southeastern Massachusetts, Inc.
20 South Sixth Street
New Bedford, MA 02740
Applicant and Owner

PREPARED BY:

Marc R. Deshaies, Esq.
Law Office of Marc R. Deshaies, P.C.
115 Orchard Street
New Bedford, MA 02740
Tel: 508-993-2300
Fax: 508-993-8696

Christopher Garcia, P.E.
Nathan Ketchel, EIT
Garcia, Galuska, DeSousa
North Dartmouth, MA
Tel: 508-998-5700
Fax: 508-998-0883

Eric D. Chamberlain, RA
Maria Baudler
David Square Architects
240A Elm Street
Somerville, MA 02144
Tel: 617-273-2511
Fax: 617-273-2511

Maura Camosse Tsongas
Women's Institute for Housing & Economic Development
15 Court Square – Suite 210
Boston, MA 02108
Tel: 617-273-251

PLANNING
JAN 15 2016
DEPARTMENT
Ck# 04-16

ATTACHMENT 4

SITE PLAN APPLICATION

CITY CLERKS OFFICE
NEW BEDFORD, MA

2016 JAN 15 P 2:40

CITY CLERK

PLANNING BOARD

SUBMIT TO:
Planning Department
133 William Street
Room 303
New Bedford, MA 0274

CITY OF NEW BEDFORD
JONATHAN F. MITCHELL, MAYOR

SITE PLAN REVIEW APPLICATION

The undersigned, being the Applicant, seeks Site Plan Approval for property depicted on a plan entitled: C 1.01 "Site Construction and Layout Plan" by: Garcia, Galuska, DeSousa dated: January 15, 2016

1. Application Information

Street Address: 20 South Sixth Street

Assessor's Map(s): 46 Lot(s) 69

Registry of Deeds Book: 1797 Page: 835

Zoning District: Mixed Use Business (MUB) with Downtown Business Overlay District (DBOD)

Applicant's Name (printed): YWCA of Southeastern Massachusetts, Inc.

Mailing Address: 20 South Sixth Street (Street) New Bedford (City) MA (State) 02740 (Zip)

Contact Information: Marc R. Deshaies, Esq. (508) 993-2300 marc@marcdeshaieslaw.com
Telephone Number Email Address

Applicant's Relationship to Property: ☐ Owner ☐ Contract Vendee ☑ Other Attorney

List all submitted materials (include document titles & volume numbers where applicable) below:

Site Plan Application; Existing Conditions Plan; Site Plans; Architectural Plans; Project Description and Appendices.

By signing below, I/we acknowledge that all information presented herein is true to the best of my/our knowledge. I/we further understand that any false information intentionally provided or omitted is grounds for the revocation of the approval (s). I/we also give Planning Department staff and Planning Board Members the right to access the premises (both interior and exterior) at reasonable times and upon reasonable notice for the purpose of taking photographs and conducting other visual inspections.

1-14-16
Date

Signature of Applicant Lenca Pires, Board President

PLANNING
JAN 15 2016
DEPARTMENT

Case 04-16

2. **Review Applicability** (Check All That Apply to Your Proposal)

Category

- [ ] Residential **
- [x] Commercial
- [ ] Industrial
- [x] Mixed (Check all categories that apply)

Construction

- [x] New Construction
- [x] Expansion of Existing
- [ ] Conversion
- [ ] Rehabilitation

Scale

- [ ] < 2,000 gross sq feet
- [x] > 2,000 gross sq feet
- [ ] 3 or more new residential units
- [ ] 1 or more new units in existing res. multi-unit
- [ ] Drive Thru Proposed
- [ ] Ground Sign Proposed
- [ ] Residential Driveway With > 1 curbcut

**Single Resident Occupancy Units See Exhibit "A"

3. **Zoning Classifications**

Present Use of Premises: Administrative and Program Offices of YWCA of Southeastern Massachusetts, Inc.

Proposed Use of Premises: Administrative and Program Offices, meeting rooms, after school day care and single resident occupancy units.

Zoning Relief Previously Granted (Variances, Special Permits, with Dates Granted):
Pending Petition to the Zoning Board of Appeals of Special Permit and Variances.

4. **Briefly Describe the Proposed Project:**

Applicant seeks to expand its prior non-conforming structure with 6,550 SF of new construction as an alteration to existing 1830 structure to provide a single site for administrative and program services including an after school day care center, additional office space for administrative and program service personnel, meeting rooms, employee lunch area on the lower floor with eight single resident occupancy units on the upper level to be serviced by a common bathroom facility, community dining area and resident lounge/community room.

5. **Please complete the following:**

	Existing	Allowed/Required	Proposed
Lot Area (sq ft)	11,925	n/a	11,925
Lot Width (ft)	113.75	75.00	11,925
Number of Dwelling Units	n/a	see	Exhibit "A"
Total Gross Floor Area (sq ft)	3,872	n/a	10,422
Residential Gross Floor Area (sq ft)	0	n/a	2,925 (8 SRO)
Non-Residential Gross Floor Area (sq ft)	3,872	n/a	7,497
Building Height (ft)	49.00	100.00	49.00
Front Setback (ft)	14.58	20	14.58
Side Setback (ft)	6.72	10	6.72
Side Setback (ft)	61.92	12	8.69

MHC + Sec 4540 FRONT YARD
4542

Rear Setback (ft)	40.95	10.00	6.42
Lot Coverage by Buildings (% of Lot Area)	16.55	40%	43.55
Permeable Open Space (% of Lot Area)	76.3%	n/a	23.7%
Green Space (% of Lot Area)	70.4%	35.0%	23.7%
Off-Street Parking Spaces	0	51	0
Long-Term Bicycle Parking Spaces	n/a	n/a	n/a
Short-Term Bicycle Parking Spaces	n/a	n/a	n/a
Loading Bays	0	1	0

6. Please complete the following:

	Existing	Proposed
a) Number of customers per day:	10	30
b) Number of employees:	10	20
c) Hours of operation:	9-4	9-6
d) Days of operation:	M-F	M-F
e) Hours of deliveries:	0	0

f) Frequency of deliveries: ☐ Daily ☐ Weekly ☐ Monthly ☑ Other: n/a

7. Planning Board Special Permits:

☑ The applicant is also requesting a Special Permit from the Planning Board.

Specify the requested Special Permit(s) below, and set forth within attached Development Impact Statement how the request meets approval criteria listed in §5320 of the zoning code.

The applicant is seeking a Special Permit from the Planning Board to waive compliance with the off street parking requirements contained in Appendix "B" of Chapter 9 of the City Ordinance governing Comprehensive Zoning.

THRU ZBA UNDER 4553

8. ZBA Variances and Special Permits:

NOTICE: Checking below does not constitute application for a special permit or a variance. The applicant must also file the proper application form and fee with the Zoning Board of Appeals.

☑ The applicant is also requesting a special permit from the ZBA:

Specify zoning code section & title

2430 ~~2340~~	Non-Conforming Structures
4500	DBOD

☑ The applicant is also requesting a variance from the ZBA:

Specify zoning code section & title

2430 ~~2340~~	Non-Conforming Structures Variances
4550	DBOD (Reductions)

4550 / 4553 REDUCTION IN PARKING REQUIREMENTS FOR COMMERCIAL USE OF PRE EXISTING OL NEW STRUCTURE.

9. OWNERSHIP VERIFICATION

This section is to be completed & signed by the property owner:

I hereby authorize the following Applicant: YWCA of Southeastern Massachusetts, Inc.

at the following address: 20 South Sixth Street, New Bedford, Massachusetts

to apply for: Site Plan Review and a Special Permit

on premises located at: 20 South Sixth Street, New Bedford, Massachusetts

in current ownership since: 1979

whose address is: 20 South Sixth Street, New Bedford, Massachusetts

for which the record title stands in the name of: YWCA of Southeastern, Massachusetts, Inc.

whose address is: 20 South Sixth Street, New Bedford, Massachusetts

by a deed duly recorded in the:

Registry of Deeds of County: Bristol Book: 1797 Page: 835

OR Registry District of the Land Court, Certificate No.: _____ Book: _____ Page: _____

I/we acknowledge that all information presented herein is true to the best of my/our knowledge. I/we further understand that any false information intentionally provided or omitted is grounds for the revocation of the approval(s). I/we also give Planning Department staff and Planning Board Members the right to access the premises (both interior and exterior) at reasonable times and upon reasonable notice for the purpose of taking photographs and conducting other visual inspections.

1-14-16

Date

Signature of Land Owner (If authorized Trustee, Officer or Agent, so identify)

Lena Pires, Board President

APPLICANT'S AGENT: ATTY MARC DESHAIES
THE CAPT. HENRY C. TABER HOUSE
115 ORCHARD ST
NEW BEDFORD MA 02740
508 993-2300
MARC@MARCDESHAIESLAW.COM

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Site Plan Application Form (§9-5400) i

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- **A. Existing Site Conditions** 4
- **B. Summary of Project** 4
- **C. Estimated Cost and Duration of Project** 6
- **D. Development Impact Statement** 6
- **E. Traffic** 7
- **F. Support Systems** 7
- **G. Phasing** 8

Appendices:

Locus Deed	**"A"**
Certified Abutter's List	**"B"**
Map of Historic Buildings	**"C"**

Exhibit **"A"**

Plans filed herewith:

I. EXISTING CONDITIONS PLAN:

EXISTING CONDITIONS PLAN" 20 SOUTH SIXTH STREET, NEW BEDFORD, MASSACHUSETTS, PREPARED FOR YWCA OF SOUTHEASTERN, MA., INC. SCALE:1" =10', DATED NOVEMBER 12, 2015 AND REVISED THROUGH JANUARY 12, 2015, PREPARED BY PLAN PREPARED BY BOUCHER & HEUREUX.

II. SITE PLANS:

RENOVATIONS TO YWCA OF SOUTHEASTERN MA, INC., SITE PLANS FOR 20 SOUTH SIXTH STREET, NEW BEDFORD, MASSACHUSETTS, PREPARED BY GARCIA, GALUSKA, DESOUSA, NORTH DARTMOUTH, MASSACHUSETTS DATED JANUARY 15, 2016 CONSISTING OF (10) SHEETS

III. Architectural Plans:

RENOVATIONS TO YWCA OF SOUTHEASTERN MA, INC. ARCHITECTURAL PLANS PREPARED BY DAVIS SQUARE ARCHITECTS, INC., FOR 20 SOUTH SIXTH STREET, NEW BEDFORD, MASSACHUSETTS, DATED JANUARY 15, 2016 CONSISTING OF (8) SHEETS

PLANNING
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Case 04-16

SITE PLAN INDEX:

SHEET	DESCRIPTION	PREPARED BY
T1.01	Cover Sheet Existing Conditions Site Plan	
C1.00	Site Demolition & Preparation Plan	
C1.01	Site Construction/Layout Plan	
C2.01	Grading & Drainage Plan	Christopher Garcia, P.E. Nathan Ketchel, EIT Garcia, Galuska, DeSousa North Dartmouth, MA 02747 Tel: 508-998-5700 Fax: 508-998-0883
C3.01	Site Utility & Grading Plan	
C4.01	Site Erosion Control Plan	
C5.01	Site Legend Notes & Details	
C5.02	Site Details	
C5.03	Site Details	
C5.04	Site Details	

ARCHITECTURAL PLAN INDEX:

SHEET	DESCRIPTION	PREPARED BY
PB-X100	Existing/Demo Floor Plans	
PB-A100	Ground Floor Plan	Eric D. Chamberlain, RA David Square Architects 240A Elm Street Somerville, MA 02144 Tel: 617-273-2511 Fax: 617-273-2511
PB-A101	First Floor Plan	
PB-A102	Second and Third Floor Plan	
PB-A103	Roof Plan	
PB-A200	Elevations	
PB-L100	Landscaping Plan	
PB.L101	Sign Plan	

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PROJECT DESCRIPTION

And

NARRATIVE

PROJECT DESCRIPTION

A. Site Description

1. **Applicant:** YWCA of Southeastern Massachusetts, Inc.
20 South Sixth Street
New Bedford, Massachusetts 02740

2. **Owner:** YWCA of Southeastern Massachusetts, Inc.
20 South Sixth Street
New Bedford, Massachusetts 02740

3. **Location:** ES South Sixth Street and School Street
New Bedford, Massachusetts,
Assessor's Map 46 Lot 69

4. **Zoning:** Mixed Use Business
Downtown Business Overlay District

5. **Existing Site Conditions:**

The Levi Standish House is located on the easterly side of South Sixth Street and the northerly side of School Street, Assessor's Map 46 Lot 69 (the "Project Site"). The Levi Standish House was constructed in approximately 1830 according to the City of New Bedford, and as such is a prior nonconforming structure for zoning purposed. The Project Site is approximately 11,925 square feet in land area improved with a 2 story federal style structure commonly known as the "Levi Standish House" thereon. The Levi Standish House consists of approximately 3,872 gross square feet on two floors. The Project Site slopes from west to east from South Sixth Street. The Levi Standish House is a brick edifice and is currently utilized for the administrative offices of the YWCA of Southeastern Massachusetts, Inc. (the "YWCA"). The YWCA also provides a portion of its program services at the Levi Standish House. Currently, the YWCA has a staff of 10 -12 employees working at the Levi Standish House. The is no off-street parking. The grounds of the property, are while in the urban area of the City of New Bedford, somewhat residential in nature with a lawn and several maple trees.

B. Summary of Project

The purpose of the Project is to consolidate and unify the YWCA's many administrative and program services at a single site, in a state of the art facility. This will enhance

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managerial oversight over both administrative and program service functions for both employee and clients.

The proposed project calls for the alteration and expansion of the Levi Standish House with the construction of a 2 story addition containing approximately 6,550 gross square feet. The expansion of the Levi Standish House will be utilized for additional administrative and program offices, meeting\classrooms for enhanced program services including the creation and an after school daycare center on the first floor with 8 single resident occupancy units (SRO) for women on the second floor. The SROs will be serviced by single unisex bathroom facility with a common cooking area and a community room for residents (the "Project"). The Project will consist of the following:

1. The first floor of approximately 3,275 gross square feet will have the lobby, reception area, lounge, and café kitchen for employees, bathroom facilities and three (3) program service areas including the meeting\classrooms and after school day care enter.

2. The second floor of again approximately 3,275 square feet will house the SRO component of the Project. The second floor will have eight (8) bedrooms for women only, serviced by a common unisex bathroom facility and a single community dining area and a community room\lounge for occupants at the site.

3. There will also be a stair well for egress between the floors and for emergency access. The Project will be handicapped compliant.

4. The structure will be constructed with wood frame with a westerly façade of lap siding and brick facing South Sixth Street. The entire Project will consist of new materials. The expansion and alteration of the Levi Standish House with the new construction will, to the extent possible, be designed to preserve the historical character of the Levi Standish House.

5. The exterior grounds of the Project Site will be modestly landscaped for a structure in an urban environment in accordance with the plans submitted herewith.

6. Parking: There will be no off-street parking at the Project Site. The applicant will petition the New Bedford Traffic Commission for on street handicapped parking. The YWCA already has one off street handicapped site on 6th Street.

C. Estimated Cost and Duration of Project

The YWCA estimates that the expansion and alteration of the Levi Standish House will take 12 months from ground breaking to the completion of on-site construction at a projected cost of 2.5 million dollars.

D. Development Impact Statement

1. Physical Environment

The expansion and alteration of the Levi Standish will be new construction consisting of the build out described above. The new structure was designed to preserve the historic character of the Levi Standish House to the extent possible, The Site will be improved by, among other things, a new storm drainage system where none existed before and will be handicapped accessible.

The Project will introduce a modest landscaping design of a lawn and of plantings and/or shrubbery selected for their urban tolerance and character.

Lighting will be of a down draft design to minimize impact on abutting properties while being sufficient for the security of residents and YWCA staff alike.

2. Surface Water and Subsurface Conditions

a. The location, extent, and type of existing water and wetlands, including existing surface drainage characteristics, both within and adjacent to the site.

There are no wetlands at the Project Site.

There are existing roadways adjacent to the Project Site with curbing, curb inlets, manholes and storm drains in South Sixth and School Streets. Streets. The storm water drainage analysis and calculations and modeling for the site are included in the report of Garcia, Galuska, DeSousa attached hereto and incorporated herein by reference.

3. Proposed alterations of shore lines, marshes, or seasonal wet area.

There are no shore areas, marshes or resource areas at the Project Site.

4. Limitations imposed on the project by the site's soil and water conditions.

There are no known limitations imposed by soil conditions.

5. **Impact upon ground and surface water quality and recharge, including estimated phosphate and nitrate loading on groundwater and surface water from septic tanks, lawn fertilizer, and other activities within the site.**

There will be a no impact on ground and surface water quality. There will be no on-site parking and as such no oil, grease or suspended solids need be addressed. The drain catch basins to be installed will contain storm water on site to the maximum extent possible. There is no need for catch basins designed for oil and water separation.

E. Traffic Impact and On-Site Traffic

The applicant believes that while the alterations and expansion to the Levi Standish House are significant in square gross footage there will be no significant impact on traffic flow either on South Sixth or School Streets. The applicant will retain existing off- site parking for staff. There is no on-site off street parking and thus there is no traffic circulation plans are required. The Applicant currently rents 15 parking spaces in a nearby parking facility in close proximity to the Levi-Standish House

F. Support Systems

1. Water Distribution

The Project Site will be serviced by municipal water service.

2. Sewer Disposal

The Project Site will be connected to and obtain sewer disposal from the existing municipal sewer service system of the City of New Bedford.

3. Public Utilities

Proposed utilities to service the Project Site will be installed underground.

4. Refuse Disposal

The refuse generated from the Project Site when operational will be disposed of through a dumpster with private trash removal.

5. Fire Protection

The Project Site and the Levi Standish House will be serviced by a fire suppression system compliant with the State Building and Fire Code as applicable to the expansion and alterations contemplated.

6. Recreation

The Project Site is within walking distance of the National Park Service's designated Historic District in New Bedford, the New Bedford Whaling Museum and the New Bedford public library. In the vicinity of the Site, there are nearby parks. Beaches at, East Rodney French Beach, West Rodney French Beach Boulevards within close proximity of the Project Site and will be available to residents via public transportation if desired.

7. Schools

The eight (8) SROs on the second floor of the Project Site will each be occupied by a solely by single female residents. There will be no demand placed on the New Bedford School System for educational services.

G. Phasing

This expansion and alteration of the Levi Standish House will be a single phased project to be completed in 12 months.

APPENDIX "A"

CASE 04-16

Right of First Refusal
11-15-96
3770-208

MASSACHUSETTS QUITCLAIM DEED SHORT FORM (INDIVIDUAL) 681

14279

NEW BEDFORD WOMAN'S CLUB,

of 20 South Sixth Street, New Bedford, Bristol County, Massachusetts,

~~being unmarried~~, for consideration paid, and in full consideration of Forty thousand (40,000.00) Dollars

grants to NEW BEDFORD YOUNG WOMEN'S CHRISTIAN ASSOCIATION,

of 66 Spring Street, New Bedford, Bristol County, Mass. with quitclaim covenants

the land in said New Bedford, with any buildings thereon and more particularly described as follows:

[Description and encumbrances, if any]

Release
4/8/02
5466-146

Beginning at the southwest corner thereof at a point formed by the intersection of the north line of School Street and the east line of Sixth Street;

thence NORTHERLY in said east line of Sixth Street one hundred thirteen and 75/100 (113.75) feet to land now or formerly of Abbie H. Weeden;

thence EASTERLY in line of last named land one hundred six and 57/100 (106.57) feet to land now or formerly of Isaac L. Ashley;

thence SOUTHERLY in line of last named land and in line of land formerly of Francis and Horatio Hathaway one hundred eleven and 88/100 (111.88) feet to the said north line of School Street and

thence WESTERLY in said north line of School Street one hundred five and 41/100 (105.41) feet to the place of beginning. Containing Forty-three and 92/100 (43.92) square rods, more or less.

Subject to the right of Seller to hold certain meetings and to maintain certain furnishings at the subject premises, all as more particularly described in an Agreement between the parties dated December 17, 1979.

For Seller's title, see deed of Katherine L. Standish and Emma L. Eaton to New Bedford Woman's Club dated March 4, 1916 and recorded in Bristol County Registry of Deeds, (S.D.) in Book 433, Page 497.

IN WITNESS WHEREOF the NEW BEDFORD WOMAN'S CLUB has caused this instrument to be signed and its common seal to be hereunto affixed, (it having no corporate seal) by Ellen L. Matthews, its President and by Helen C. Bauer, its Treasurer, hereunto duly authorized, this 18th day of December 1979.

~~Witness hand and seal this ..... day of ..... 19.....~~

NEW BEDFORD WOMAN'S CLUB

By Ellen L. Matthews, Pres.
Ellen L. Matthews, Pres.

By Helen C. Bauer Treas.
Helen C. Bauer, Treas.

The Commonwealth of Massachusetts

Bristol, ss. December 18, 1979

Then personally appeared the above named Ellen L. Matthews, President and Helen C. Bauer, Treasurer, and acknowledged the foregoing instrument to be the free act and deed, before me

Robert T. Moses
Notary Public ~~Justice of the Peace~~

My commission expires Dec. 21, 1984

(Common — Tenants by the Entirety.)

BY CHAPTER 497 OF 1969

t the full name, residence and post office address of the grantee the nature of the other consideration therefor, if not delivered price for the conveyance without deduction for liens, orsements and recitals shall be recorded as part of the deed. No register of deeds shall accept a deed for recording unless

COMMONWEALTH OF MASSACHUSETTS
DEEDS & EXCISE
DEC 18 '79
91.20

BRISTOL COUNTY REGISTRY OF DEEDS
2 9 0 7 0 6 2

BOOK 1797 PAGE 835

PLANNING
JAN 15 2016
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BK 3770 PG 182
11/15/96 04:26 DOC. 24889
Bristol Co. S.D.

The Commonwealth of Massachusetts

Secretary of the Commonwealth

State House, Boston, Massachusetts 02133

William Francis Galvin
Secretary of the
Commonwealth

July 9, 1996

TO WHOM IT MAY CONCERN:

I hereby certify that the records of this office show that

New Bedford Young Women's Christian Association

was incorporated under the General Laws of this Commonwealth on

May 8, 1911 (Chapter 180)

I further certify that by articles of amendment filed on January 5, 1996 the name of said corporation was changed to

YWCA of Southeastern Massachusetts, Inc.

and said corporation still has legal existence.

In testimony of which,
I have hereunto affixed the
Great Seal of the Commonwealth
on the date first above written.

William Francis Galvin

Secretary of the Commonwealth

jbm

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EXHIBIT "A"

CASE 04-16

Exhibit "A"

The proposal by the petitioner is for alterations and the extension proposed to prior nonconforming structure known as the Levi Standish House located at 20 South Sixth Street implicate §§ 2340 and 4550 of Chapter 9 of the City Ordinance. The petitioner is seeking relief from the Chapter 9, Comprehensive Zoning of the City Ordinance (hereafter the "Ordinance").

Single Resident Occupancy Rooms (SRO)

And

§ 4500 of Chapter 9 of the City Ordinance –

The property owned by the petitioner is located within the Downtown Business Overlay District (DBOD) on the City of New Bedford Zoning Map. § 4500 provides that residential dwelling units can be permitted under a Special Permit by the Zoning Board of Appeals on upper floors of a structure within the DBOD. The petitioner has advanced in this application a right to have eight single resident occupancy rooms (SRO's) on the upper floor of the expanded nonconforming structure at 20 South Sixth Street under the provisions and standards set forth in §4500 of the Ordinance as set forth herein.

The proposed SRO units will each contain one bed and bureau but ***will not*** be serviced by any plumbing or utilities and appliances for cooking meals within the actual the SROs. The SRO's will be serviced by a single common unisex handicapped accessible bathroom shared among all 8 of the SROs. The residents of the SROs will also share a community room where a community kitchen will also be located.

The SROs are neither "dwelling units" or a "group home" or "boarding house" as those terms are defined in § 1200 of Chapter 9 of the City Ordinance. The Ordinances does not define residential units that only have bed and no other room as are required in residential dwelling units. The SRO's are "congregate" housing units as set forth in the Use and Occupancy Classification of Section 310.1 – R-3 of the State Building Code.

§ 1200 of Chapter 9 of the Ordinance provides in pertinent part: "Terms and words not defined herein [congregate housing or SROs] but defined in the Commonwealth of Massachusetts State Building Code shall have the meaning given therein unless a contrary intention is clearly evidenced in this Ordinance (emphasis supplied). Chapter 9 of Ordinance governing Comprehensive zoning is silent on rooms without a bath or cooking facilities such as the SROs proposed by the petitioner. Thus, the State Building Code must be applied to such units for purpose of Chapter 9 of the City Ordinance.

The property at 20 South Sixth Street owned by the petitioner is situated in the DBOD. The DBOD at § 4531 provides: (1) that residential dwelling units on upper levels are permissible with a Special Permit from the Zoning Board of Appeals. However, absence the definition of an SRO

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in the Ordinance and whether the same is permitted or prohibited implies that, an SRO as set forth in the State Building Code can be sanctioned by the Special Permit granting authority the ZBA. The petitioner is seeking this in its proposal to the ZBA. Thus, the SRO may be permitted by the ZBA by way of the award of a Special Permit. Additionally, § 4550 of Chapter 9 of the Ordinance governing the DBOD allows reduction in setbacks, density, green space, onsite parking requirements for the residences on upper floor of structures within the DBOD by Special Permit.

APPENDIX "B"

CASE CA-16

City of New Bedford

REQUEST *for a* CERTIFIED ABUTTERS LIST

2016 JAN 15 P 2:40

CITY CLERK

This information is needed so that an official abutters list as required by MA General Law may be created and used in notifying abutters. You, as applicant, are responsible for picking up and paying for the certified abutters list from the assessor's office (city hall, room #109).

SUBJECT PROPERTY			
MAP #	46	LOT(S)#	69
ADDRESS: 20 SOUTH SIXTH STREET			
OWNER INFORMATION			
NAME: YWCA OF SE MASSACHUSETTS			
MAILING ADDRESS: 20 SOUTH SIXTH ST NB 02740			
APPLICANT/CONTACT PERSON INFORMATION			
NAME (IF DIFFERENT): ATTY MARC DESHAIES			
MAILING ADDRESS (IF DIFFERENT): THE CAPT. HENRY C TABER HOUSE 115 ORCHARD ST NB 02740			
TELEPHONE #	508 993 - 2300		
EMAIL ADDRESS:	MARC @ MARCDESHAIES LAW. COM		

REASON FOR THIS REQUEST: *Check appropriate*	
	ZONING BOARD OF APPEALS APPLICATION
X	PLANNING BOARD APPLICATION
	CONSERVATION COMMISSION APPLICATION
	LICENSING BOARD APPLICATION
	OTHER (*Please explain*):

PLANNING
JAN 11 2016
DEPARTMENT

Once obtained, the Certified List of Abutters must be attached to this Certification Letter.

Submit this form to the Planning Division Room 303 in City Hall, 133 William Street. You, as applicant, are responsible for picking up and paying for the certified abutters list from the assessor's office (city hall, room #109).

Official Use Only:

As Administrative Assistant to the City of New Bedford's Board of Assessors, I do hereby certify that the names and addresses as identified on the attached "abutters list" are duly recorded and appear on the most recent tax.

Carlos Amado	Carlos Amado	1/11/2016
Printed Name	Signature	Date

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DEPARTMENT
CAL 04-16

January 11, 2016
Dear Applicant,

Please find below the List of Abutters within 300 feet of the property known as 20 So. Second Street (46-69). The current ownership listed herein must be checked and verified by the City of New Bedford Assessor's Office. Following said verification, the list shall be considered a Certified List of Abutters.

CITY CLERK'S OFFICE NEW BEDFORD, MA

2016 JAN 15 P 2:40

Please note that multiple listed properties with identical owner name and mailing address shall be considered duplicates, and shall require only 1 mailing. Additionally, City of New Bedford-Owned properties shall not require mailed notice.

CITY CLERK

Parcel	Location	Owner and Mailing Address
46-256	14 S SIXTH ST	DUBE DENNIS R, DUBE BEVERLY D 28 MARION ROAD MATTAPOISETT, MA 02739 ✓1/27
46-92	106 SCHOOL ST	BREVARD LEROY F JR, 74 COLORADO STREET MATTAPAN, MA 02126
46-86	23 S SIXTH ST	~~N B LODGE 73 B P O E, C/O WAREHAM-NEW BEDFORD LODGE 73~~ ~~P O BOX 566~~ James B. Grinnell Jr. 23 S. Sixth St. ~~E WAREHAM, MA 02538~~ New Bedford, MA 02740 ✓ 1/26
46-91	22 S SIXTH ST	HILLCORP LLC, 11 CLEVELAND ST SOUTH DARTMOUTH, MA 02748
46-213	108 SCHOOL ST	NATIVITY PREPARATORY SCHOOL NEW BEDFORD INC, 66 SPRING STREET NEW BEDFORD, MA 02740 ✓
46-69	20 S SIXTH ST	YWCA OF SOUTHEASTERN MASSACHUSETTS, INC., 20 SOUTH SIXTH STREET NEW BEDFORD, MA 02740
46-64	66 SPRING ST	NATIVITY PREPARATORY SCHOOL NEW BEDFORD INC, 66 SPRING STREET NEW BEDFORD, MA 02740 ✓
46-62	21 S SIXTH ST	SOUTH COASTAL COUNTIES LEGAL, SERVICES, INC P O BOX 2507 FALL RIVER, MA 02722 1/25/16
46-70	103 SCHOOL ST	NATIVITY PREPARATORY SCHOOL NEW BEDFORD INC, 1/25/16 66 SPRING STREET NEW BEDFORD, MA 02740
46-185	101 SCHOOL ST	NATIVITY PREPARATORY SCHOOL / NEW BEDFORD INC, 66 SPRING STREET NEW BEDFORD, MA 02740 ✓
46-59	17 S SIXTH ST	ZEMAN MICHAEL "TRUSTEE", DONALD ZEMAN LIVING TRUST ✓1-26 ~~58 TOBEY LANE~~ 26413 Doverstone St ~~DARTMOUTH, MA 02747~~ Bonita Springs, FL 34135
46-63	72 SPRING ST 74	AGUIAR LOUIS F "TRUSTEE", N B REALTY TRUST 1/25/16 12 SO SIXTH ST NEW BEDFORD, MA 02740

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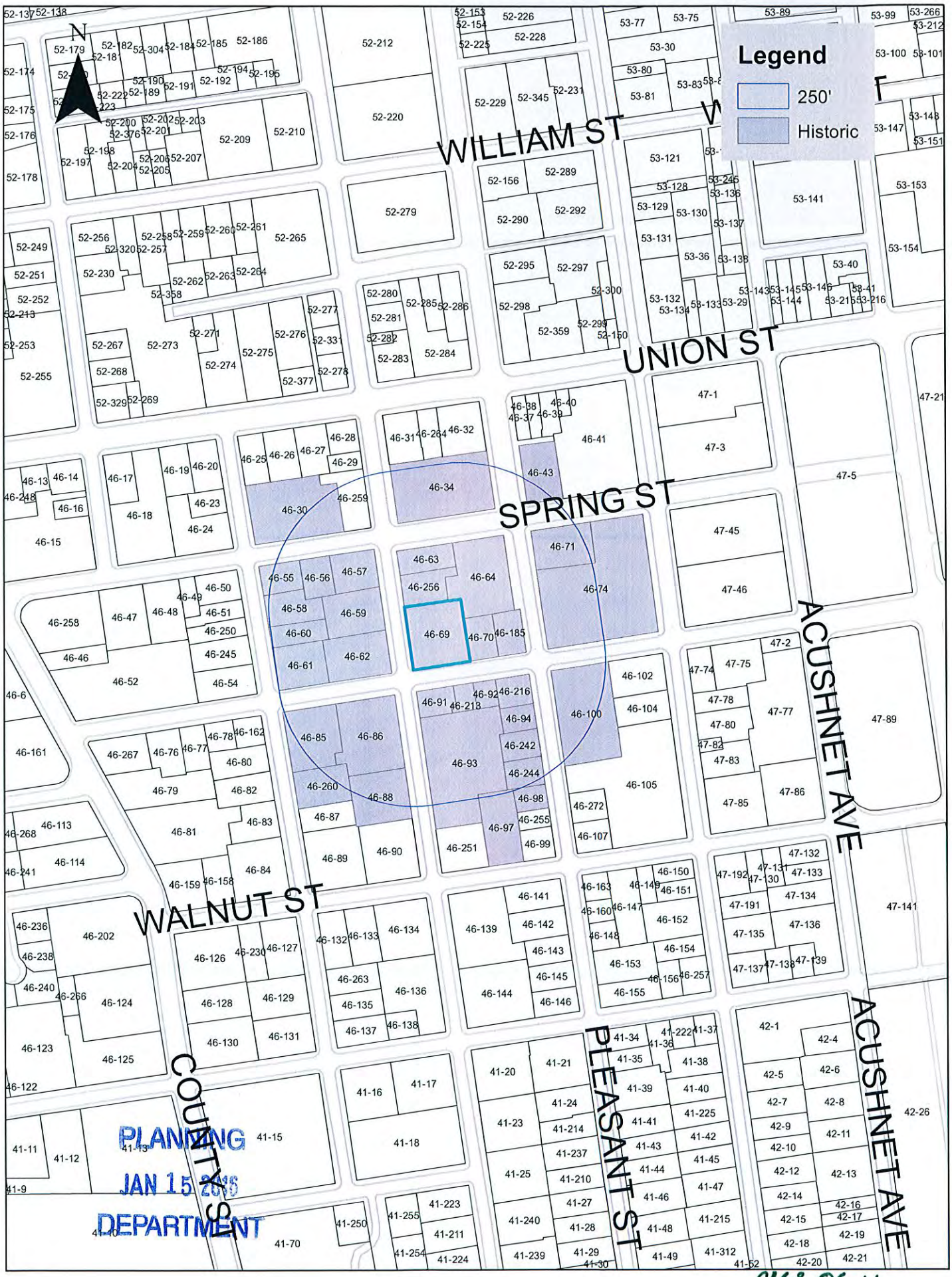
APPENDIX "C"

CASE 04-16



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West (South Sixth Street) Elevation

South (School Street) Elevation

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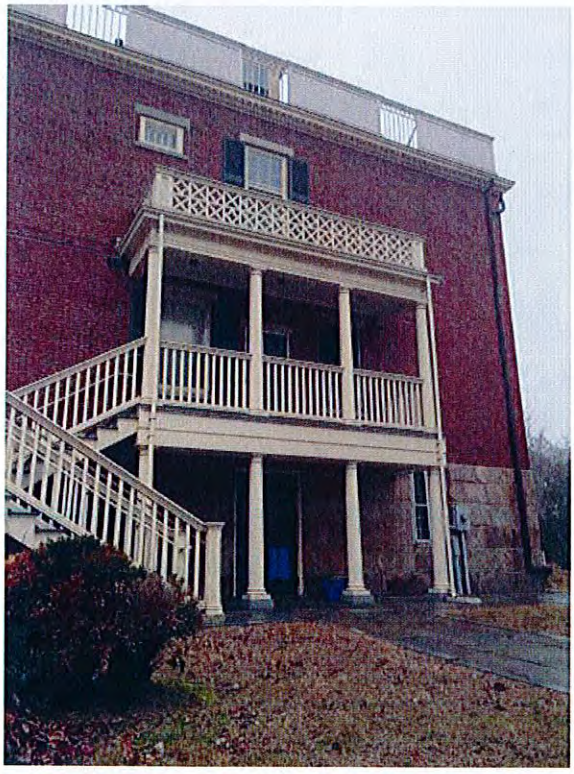
DEPARTMENT

North Elevation



Ease (Rear) Elevation

CITY CLERKS OFFICE
NEW BEDFORD, MA
2016 JAN 15 P 2: 52
CITY CLERK

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1/15/2016
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PLANNING BOARD SITE PLAN REVIEW APPLICATION: EXISTING CONDITIONS PHOTOS
YWCA Southeastern MA
20 South Sixth Street
New Bedford, MA

Aerial View

CITY CLERKS OFFICE
NEW BEDFORD, MA
2016 JAN 15 P 2:50
CITY CLERK

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Case 04-16

Drainage Analysis
for the

Renovations to YWCA Southeastern Massachusetts
20 South Sixth Street
New Bedford, MA
Map 046 / Lot 69

Applicant/Owner:

YWCA of Southeastern Massachusetts
20 South Sixth Street
New Bedford, MA

Architect:

Davis Square Architects
240A Elm Street
Somerville, MA 02144
(617) 628-5700 fax(617) 628-1717

Engineer:

GARCIA•GALUSKA•DESOUSA
Consulting Engineers Inc.
370 Faunce Corner Road, Dartmouth, MA 02747-1217
(508) 998-5700 Fax: (508) 998-0883 Email: info@g-g-d.com

Date:
January 15, 2016

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ATTACHMENT 6

Drainage Analysis
For The Renovations of the YWCA Southeastern MA

Description of Project

The existing site is located at the northeast corner of the intersection of South Sixth and School Street in New Bedford, MA, and sits on approximately 0.273 acres of privately owned land. The site is located at 20 South Sixth Street.

The project scope includes the renovation of the existing building, referred to as the Myles Standish House and the construction of a 2 story addition on the northern portion of the site in an area of existing lawn. New construction will include the construction of the new two story facility with an approximate footprint of 3,275 square feet, construction of new site access walkways and the creation of a fenced-in outdoor play area. New utilities on the site include electrical, storm drainage, natural gas, water and sewer connection on the site. The existing impervious coverage on the site is approximately 2,826 square feet; the proposed construction will result in a total impervious cover of approximately 9,098 square feet.

Drainage improvements for surface runoff include the installation of drain inlets and infiltration chambers for groundwater recharge and treatment. Where disturbance is to occur, existing downspouts will be routed to the infiltration chambers, as well as all roof area from the building addition.

Study Area

The subject site lies northeast of the intersection of South Sixth and School Street. The entire site slopes to the east towards the harbor.

The area encompassed by this analysis and design includes all onsite areas that will be disturbed by the proposed construction.

Runoff rates and storm volumes for both the existing and developed conditions were calculated utilizing the SCS TR-20 method and analyzed for the 2, 25, 50, and 100 year storm frequencies utilizing HydroCAD 10.00. Rainfall distribution is based on the 1993 Atlas of Precipitation Extremes for the Northeastern United States and Southeastern Canada, published by Cornell University and corrected for the 24-Hour Storm event. The HydroCAD stormwater modeling associated with the subject site is based on the Dynamic Storage Indicator method, which is capable of analyzing upstream and downstream effect of the modeled system.

The site soils are classified as Urban land per the USDA Natural Resources Conservation Commission Soil Survey of Plymouth County. Based on the geotechnical report test pits, the soil is described as "dry, very dense, light brown, fine sand, some silt, some medium coarse sand, some fine to coarse gravel." The proponents have classified the soils as a Hydrologic Soil Group 'C' material with low recharge capacity. The total proposed impervious area is 9,098 square feet within the limits of the site area. The prescribed recharge volume from the MassDEP Stormwater Handbook for a HSG 'C' soil is 2,274 cubic feet, based on 0.25 inches of runoff to be infiltrated. The proposed drainage system will infiltrate approximately 1,568 cubic feet of runoff. Due to site constraints, the volume of runoff infiltrate and site soil conditions, the volume provided represents a maximum extent practicable approach.

Why not Bretty Cty?

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As indicated in the attached Geotechnical Report prepared by Paul B. Aldinger & Associates, Inc. dated September 2011, groundwater was observed in Borings B-1, B-2 and B-3 at elevations ranging from 52.0 to 54.9, or approximately 10 to 14 feet below grade.

Existing Condition

The site is divided into two (2) sub-catchment areas corresponding to abutting properties to which the site drains. A description of each sub-catchment is as follows:

Sub-catchment E1

This area is approximately 0.266 acres in size and consists of the majority of the site. Runoff falls on the existing lawn surfaces and sheet flows to the east through the lawn area. The runoff transitions to shallow concentrated flow and is directed to the south when it reaches the retaining wall along the eastern property line. The runoff is then directed off site to the gutter of School Street. The runoff then flows approximately one block east to the intersection of Pleasant and School Street where it is intercepted by municipal catch basins. The catch basins connect to a brick combined sewer.

Sub-catchment E2

This area is approximately .10 acres in size and consists landscaped and impervious walkway surfaces at the southwest corner of the site. Runoff from the sub-catchment sheet flows to South Sixth Street and flows easterly in the gutter of School Street. The runoff then flows approximately one block east to the intersection of Pleasant and School Street where it is intercepted by municipal catch basins. The catch basins connect to a brick combined sewer.

Design Point 1 represents the Southeast corner of the property at the curb line where the two subcatchments combine and flow to the intersection of Pleasant and School Street.

Summary of peak runoff rates for the existing catchment areas are as follows:

Existing Condition Peak Runoff Rates					
Catchment		2-yr	10-yr	25-yr	100-yr
E1	Rate (cfs)	0.41	0.80	1.12	1.77
E2	Rate (cfs)	0.02	0.03	0.04	0.06
DP1	Rate (cfs)	0.43	0.83	1.16	1.84

Proposed Condition

The post construction site was divided into four (4) sub-catchment areas. For the purpose of analysis, cumulative design points have been established for comparison to the existing conditions. Design Point (DP)1, which consists of sub-catchments N1A, N1B, N1C and N2 corresponds to the existing condition sub-catchment DP#1 (E1 and E2).

A description of each sub-catchment is as follows:

Sub-catchment N1A

This area is approximately 0.050 acres in size and consists of portions of the South Sixth Street ramp to the addition, walkways, landscaped areas and portion of the roof drainage from the existing building. Runoff is captured by a drain inlet structure in the walkway area that discharges to one of the two subsurface infiltration chamber beds. The Infiltration chamber bed provides groundwater recharge and attenuates the stormwater discharge. The system in this area is design to fully recharge the 25-year stormwater event. During the 100 year event, runoff beyond the capacity of the system will discharge to South Sixth Street from the drain inlet.

Sub-catchment N1B

This area is approximately 0.161 acres in size and consists of new walkways, lawn areas, the new playground area, the roof from the addition, roof from the existing building, walkways and landscape areas. Runoff is captured by a drain inlet structure in the playground area that discharges to one of the two subsurface infiltration chamber beds. The Infiltration chamber bed provides groundwater recharge and attenuates the stormwater discharge. The system in this area also directly connects to the building addition's roof drainage system. This system has an overflow to the brick municipal combined sewer system in School Street.

Sub-catchment N1C

This area is approximately 0.055 acres in size and consists of existing roofs, lawn and hardscapes on the south side of the existing building. Similar to the existing condition, lawn and downspout runoff is directed to the landscape area for infiltration and evapotranspiration. Runoff that flows beyond this area discharges to the gutter of School Street. The runoff then flows approximately one block east to the intersection of Pleasant and School Street where it is intercepted by municipal catch basins. The catch basins connect to a brick combined sewer.

Sub-catchment N2

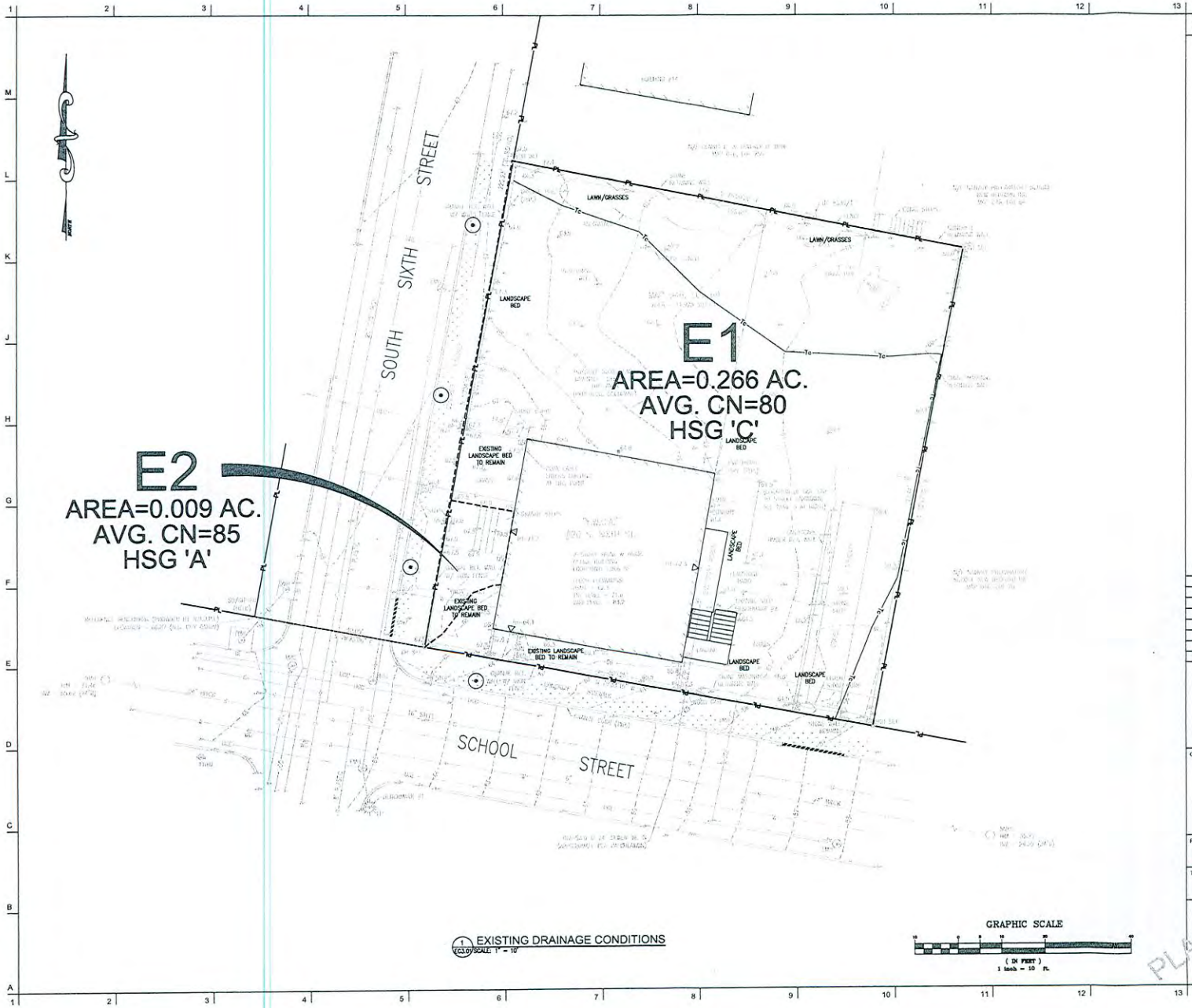
This area is approximately .10 acres in size and consists landscaped and impervious walkway surfaces at the southwest corner of the site. Runoff from the sub-catchment sheet flows to South Sixth Street and flows easterly in the gutter of School Street. The runoff then flows approximately one block east to the intersection of Pleasant and School Street where it is intercepted by municipal catch basins. The catch basins connect to a brick combined sewer.

Typo.

Summary of peak runoff rates for the proposed catchment areas are as follows:

Existing Condition Peak Runoff Rates					
Catchment		2-yr	10-yr	25-yr	100-yr
N1A	Rate (cfs)	0.00	0.00	0.00	0.02
N1B	Rate (cfs)	0.20	0.66	0.84	1.19
N1C	Rate (cfs)	0.14	0.23	0.30	0.43
N2	Rate (cfs)	0.02	0.03	0.04	0.06
DP1	Rate (cfs)	0.27	0.90	1.15	1.64

The analysis indicates that the runoff rates associated with each respective design point will be reduced. The redevelopment of the site will result in a reduction of runoff peak flow rates to the municipal combined sewer while providing direct recharge on the site.



1 EXISTING DRAINAGE CONDITIONS
EC1.01 SCALE: 1" = 10'

NOTES

No.	REVISIONS/SUBMISSIONS	Date
1	PLANNING BOARD SUBMISSION	01/15/2016

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Project RENOVATONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Title EXISTING DRAINAGE CONDITIONS PLAN

Designed NCK
Checked CMG
Project No. 16002
Scale AS NOTED
Date 01/15/2016
Drawing No. EC1.01

PLANNING BOARD SUBMISSION

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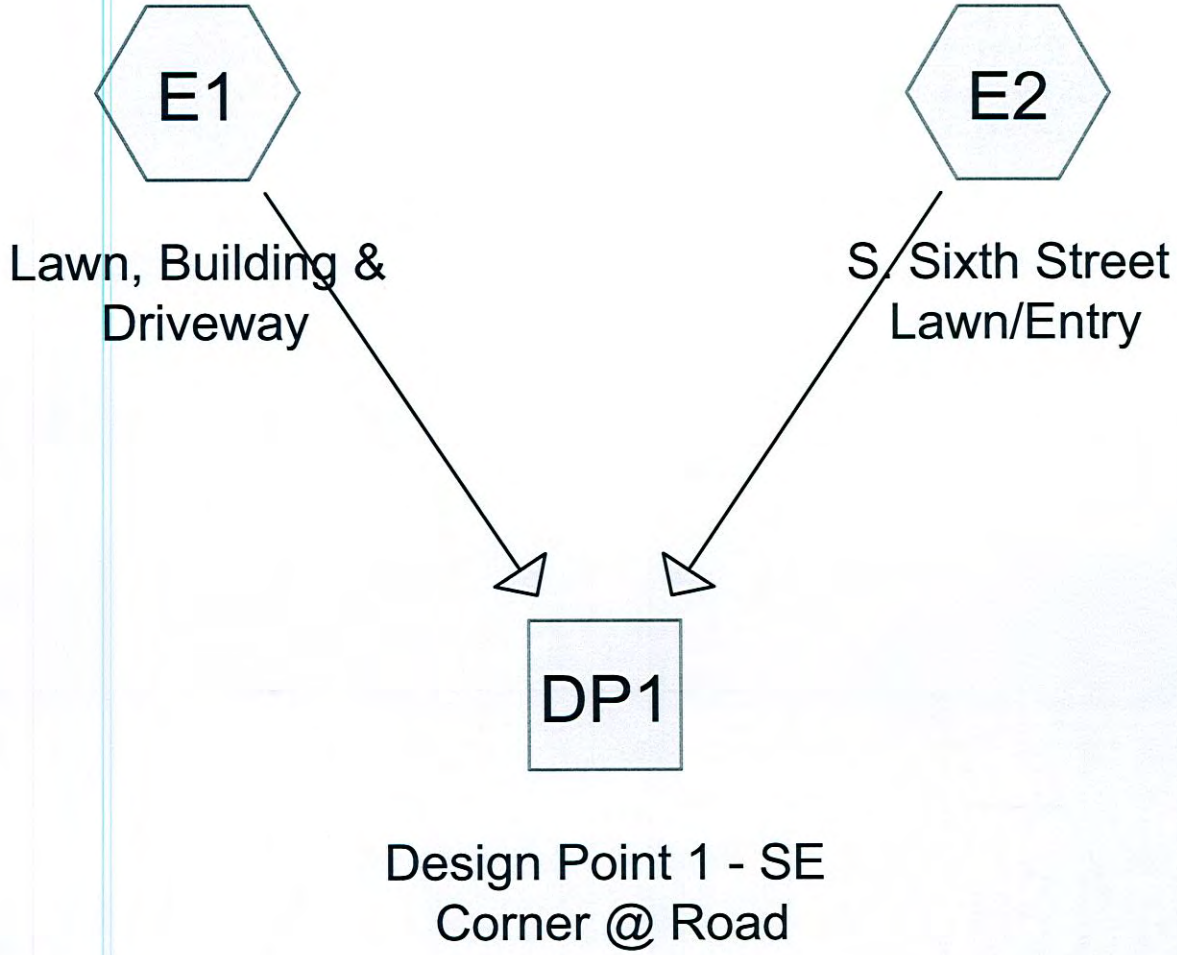
GARCIA • GALUSKA • DESOUSA
Consulting Engineers Inc.

Project: Renovation to YWCA of Southeastern Massachusetts
Location: New Bedford, MA

Drainage Calculations
Existing Conditions

TEL 508-998-5700 FAX 508-998-0883 email: info@g-g-d.com



Routing Diagram for Existing Drainage
Prepared by Garcia, Galuska, DeSousa, Inc., Printed 1/15/2016
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Existing Drainage
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Summary for Subcatchment E1: Lawn, Building & Driveway

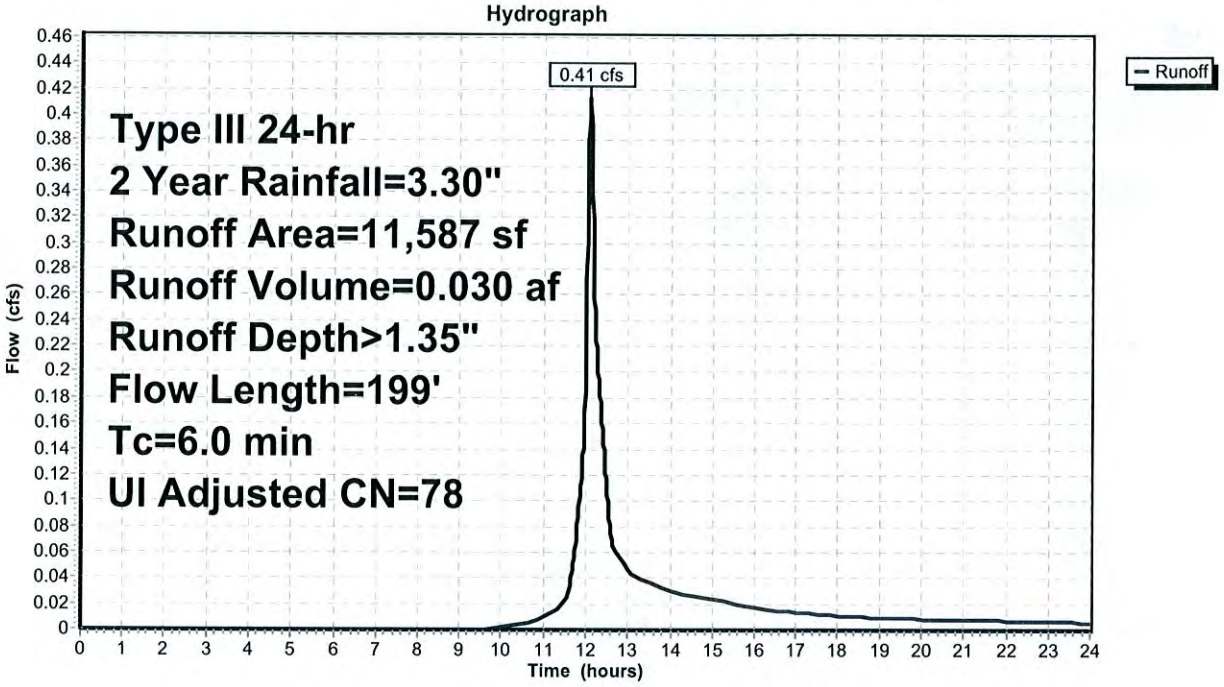
Runoff = 0.41 cfs @ 12.09 hrs, Volume= 0.030 af, Depth> 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 Year Rainfall=3.30"

	Area (sf)	CN	Adj	Description
	357	96		Gravel surface, HSG C
	2,185	98		Unconnected roofs, HSG C
*	350	89		Flagstone walkway, HSG C
	8,695	74		>75% Grass cover, Good, HSG C
	11,587	80	78	Weighted Average, UI Adjusted
	9,402			81.14% Pervious Area
	2,185			18.86% Impervious Area
	2,185			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0588	0.16		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
0.3	61	0.0354	3.03		**Shallow Concentrated Flow, B to C** Unpaved Kv= 16.1 fps
0.5	88	0.0284	2.71		**Shallow Concentrated Flow, C to D** Unpaved Kv= 16.1 fps
6.0	199	Total			

Subcatchment E1: Lawn, Building & Driveway



Existing Drainage
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Summary for Subcatchment E2: S. Sixth Street Lawn/Entry

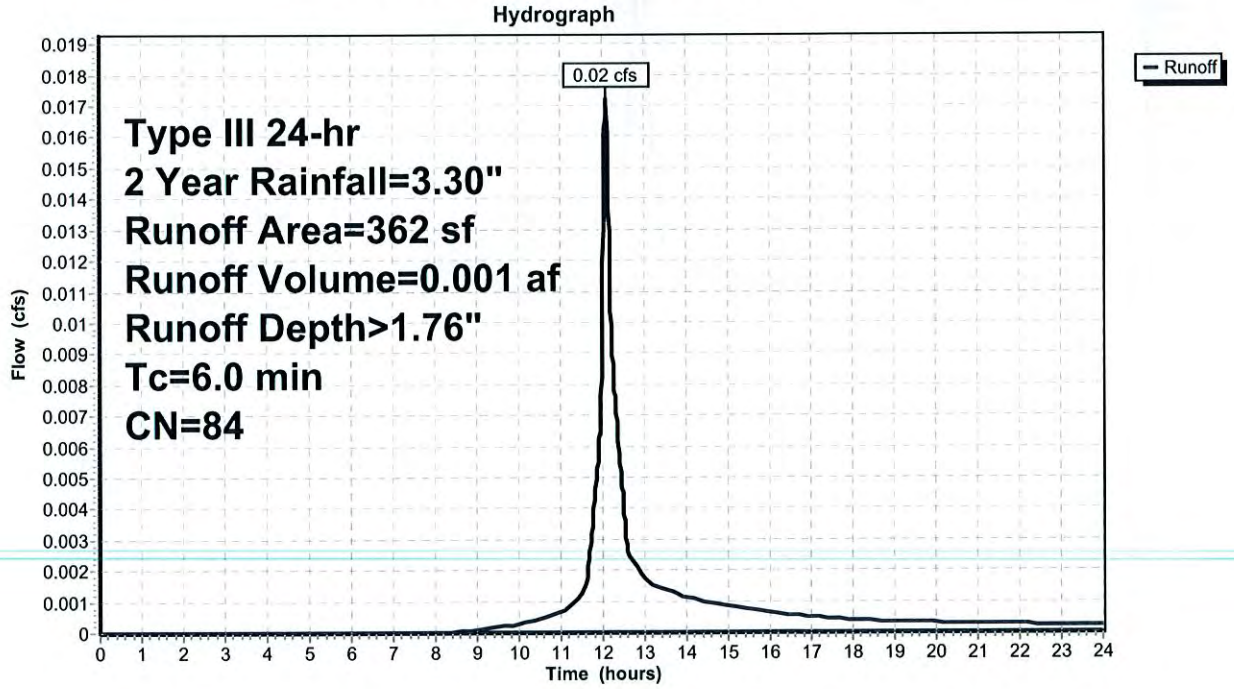
Runoff = 0.02 cfs @ 12.09 hrs, Volume= 0.001 af, Depth> 1.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 Year Rainfall=3.30"

Area (sf)	CN	Description
156	98	Unconnected pavement, HSG C
206	74	>75% Grass cover, Good, HSG C
362	84	Weighted Average
206		56.91% Pervious Area
156		43.09% Impervious Area
156		100.00% Unconnected

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

Subcatchment E2: S. Sixth Street Lawn/Entry

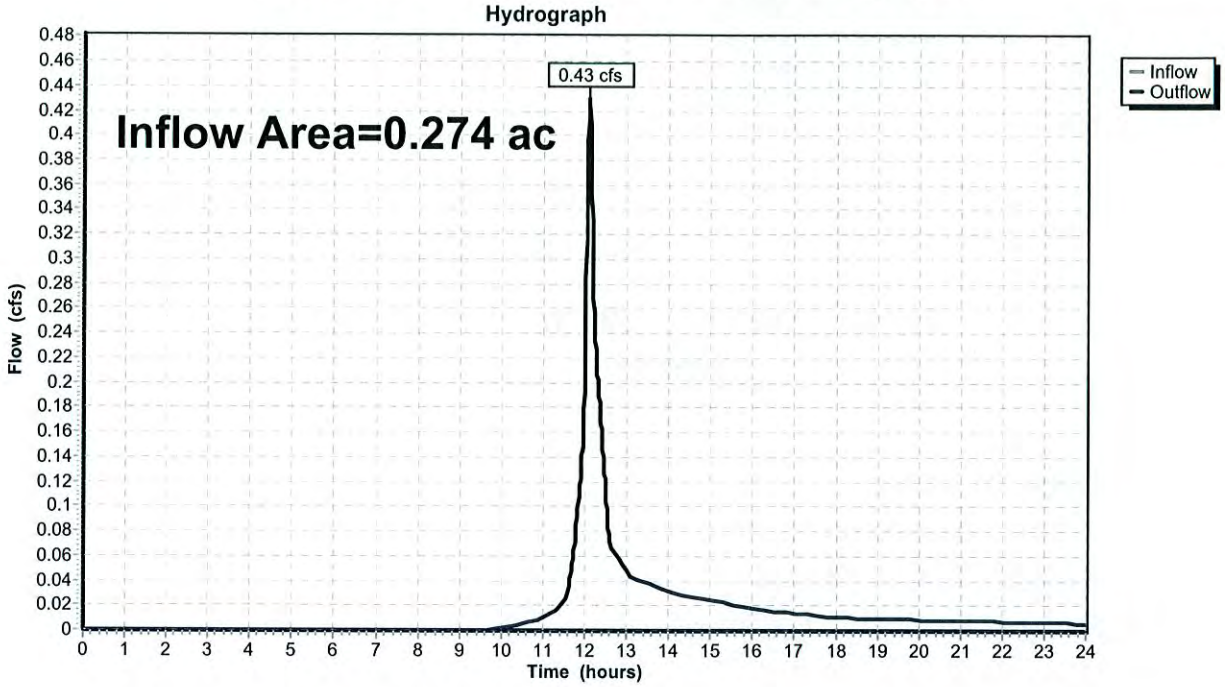


Summary for Reach DP1: Design Point 1 - SE Corner @ Road

Inflow Area = 0.274 ac, 19.59% Impervious, Inflow Depth > 1.36" for 2 Year event
Inflow = 0.43 cfs @ 12.09 hrs, Volume= 0.031 af
Outflow = 0.43 cfs @ 12.09 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP1: Design Point 1 - SE Corner @ Road



Existing Drainage
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Summary for Subcatchment E1: Lawn, Building & Driveway

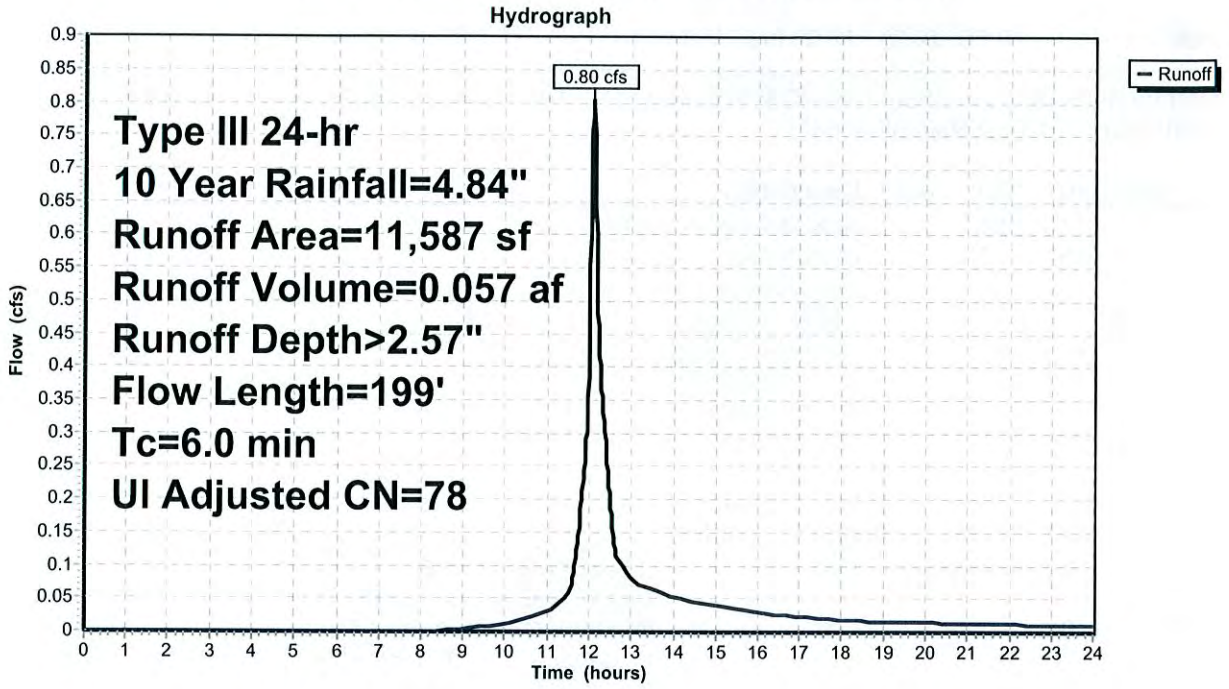
Runoff = 0.80 cfs @ 12.09 hrs, Volume= 0.057 af, Depth> 2.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=4.84"

	Area (sf)	CN	Adj	Description
	357	96		Gravel surface, HSG C
	2,185	98		Unconnected roofs, HSG C
*	350	89		Flagstone walkway, HSG C
	8,695	74		>75% Grass cover, Good, HSG C
	11,587	80	78	Weighted Average, UI Adjusted
	9,402			81.14% Pervious Area
	2,185			18.86% Impervious Area
	2,185			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0588	0.16		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
0.3	61	0.0354	3.03		**Shallow Concentrated Flow, B to C** Unpaved Kv= 16.1 fps
0.5	88	0.0284	2.71		**Shallow Concentrated Flow, C to D** Unpaved Kv= 16.1 fps
6.0	199	Total			

Subcatchment E1: Lawn, Building & Driveway



Existing Drainage
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Summary for Subcatchment E2: S. Sixth Street Lawn/Entry

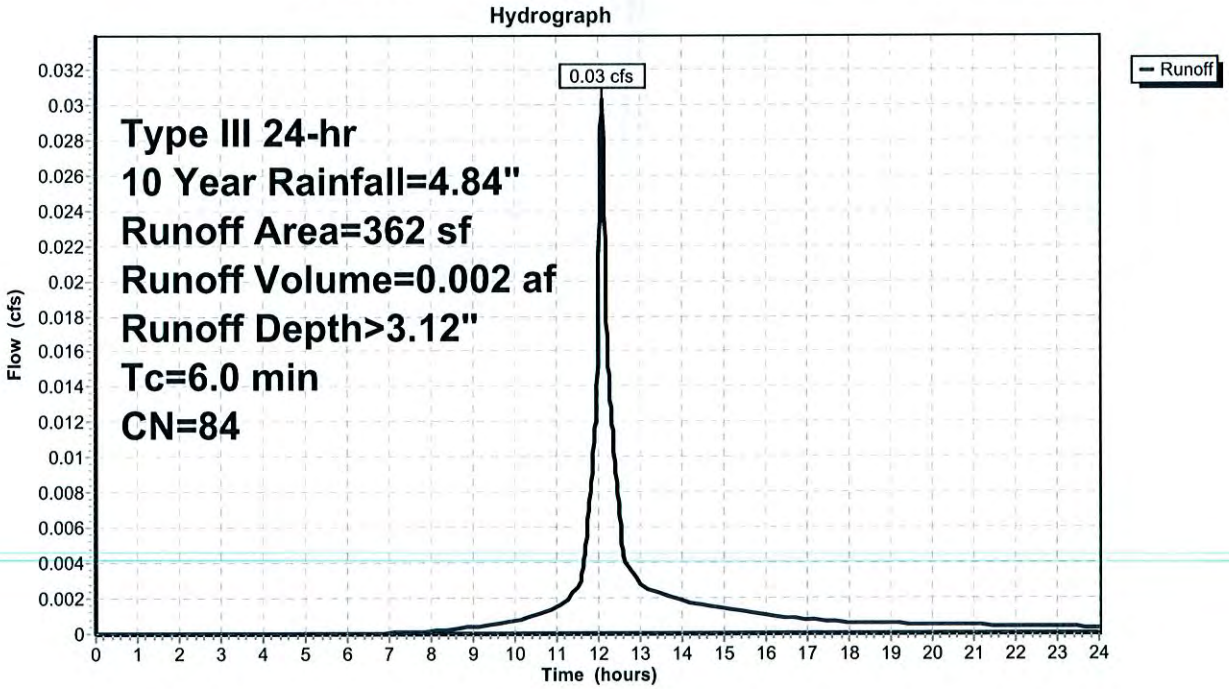
Runoff = 0.03 cfs @ 12.09 hrs, Volume= 0.002 af, Depth> 3.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=4.84"

Area (sf)	CN	Description
156	98	Unconnected pavement, HSG C
206	74	>75% Grass cover, Good, HSG C
362	84	Weighted Average
206		56.91% Pervious Area
156		43.09% Impervious Area
156		100.00% Unconnected

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

Subcatchment E2: S. Sixth Street Lawn/Entry

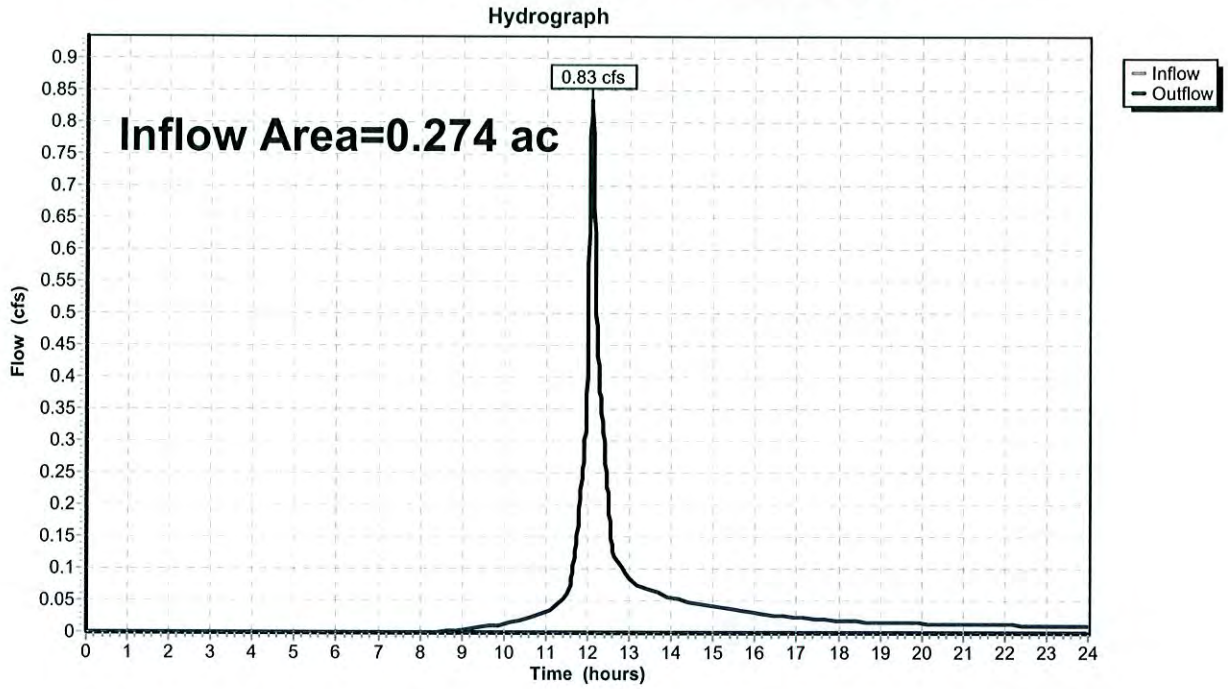


Summary for Reach DP1: Design Point 1 - SE Corner @ Road

Inflow Area =	0.274 ac,	19.59% Impervious,	Inflow Depth >	2.59"	for 10 Year event
Inflow =	0.83 cfs @	12.09 hrs, Volume=	0.059 af		
Outflow =	0.83 cfs @	12.09 hrs, Volume=	0.059 af,	Atten= 0%,	Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP1: Design Point 1 - SE Corner @ Road



Existing Drainage
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Summary for Subcatchment E1: Lawn, Building & Driveway

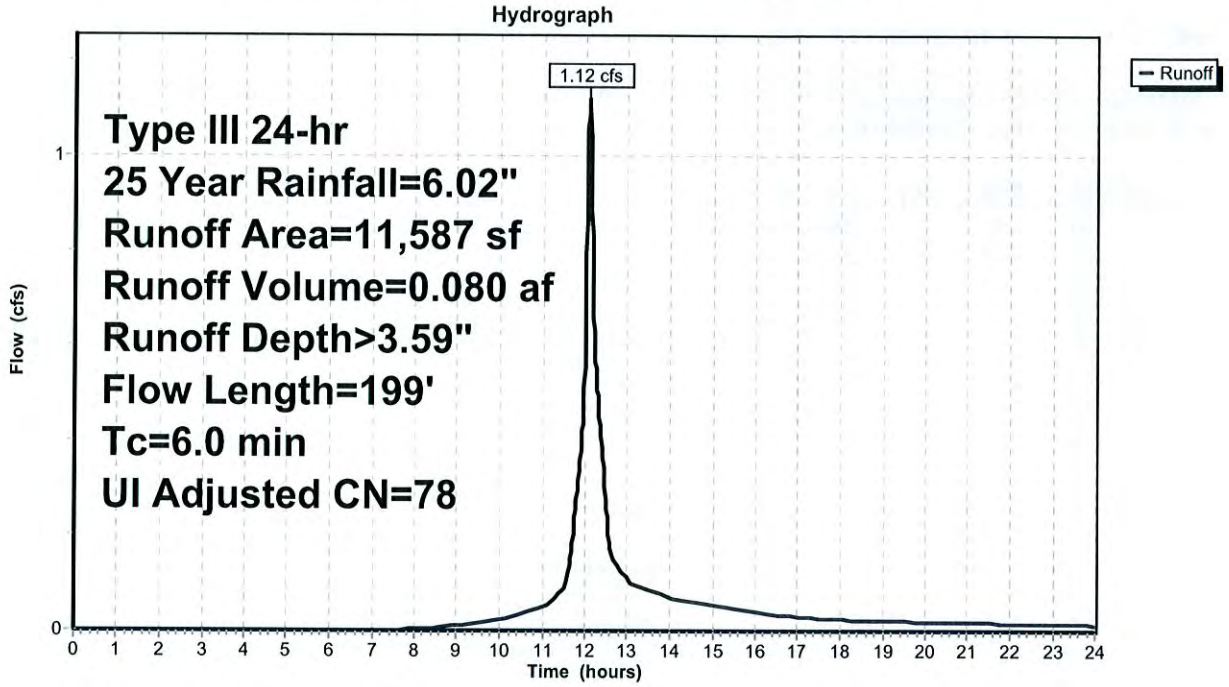
Runoff = 1.12 cfs @ 12.09 hrs, Volume= 0.080 af, Depth> 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=6.02"

	Area (sf)	CN	Adj	Description
	357	96		Gravel surface, HSG C
	2,185	98		Unconnected roofs, HSG C
*	350	89		Flagstone walkway, HSG C
	8,695	74		>75% Grass cover, Good, HSG C
	11,587	80	78	Weighted Average, UI Adjusted
	9,402			81.14% Pervious Area
	2,185			18.86% Impervious Area
	2,185			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0588	0.16		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
0.3	61	0.0354	3.03		**Shallow Concentrated Flow, B to C** Unpaved Kv= 16.1 fps
0.5	88	0.0284	2.71		**Shallow Concentrated Flow, C to D** Unpaved Kv= 16.1 fps
6.0	199	Total			

Subcatchment E1: Lawn, Building & Driveway



Existing Drainage
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Summary for Subcatchment E2: S. Sixth Street Lawn/Entry

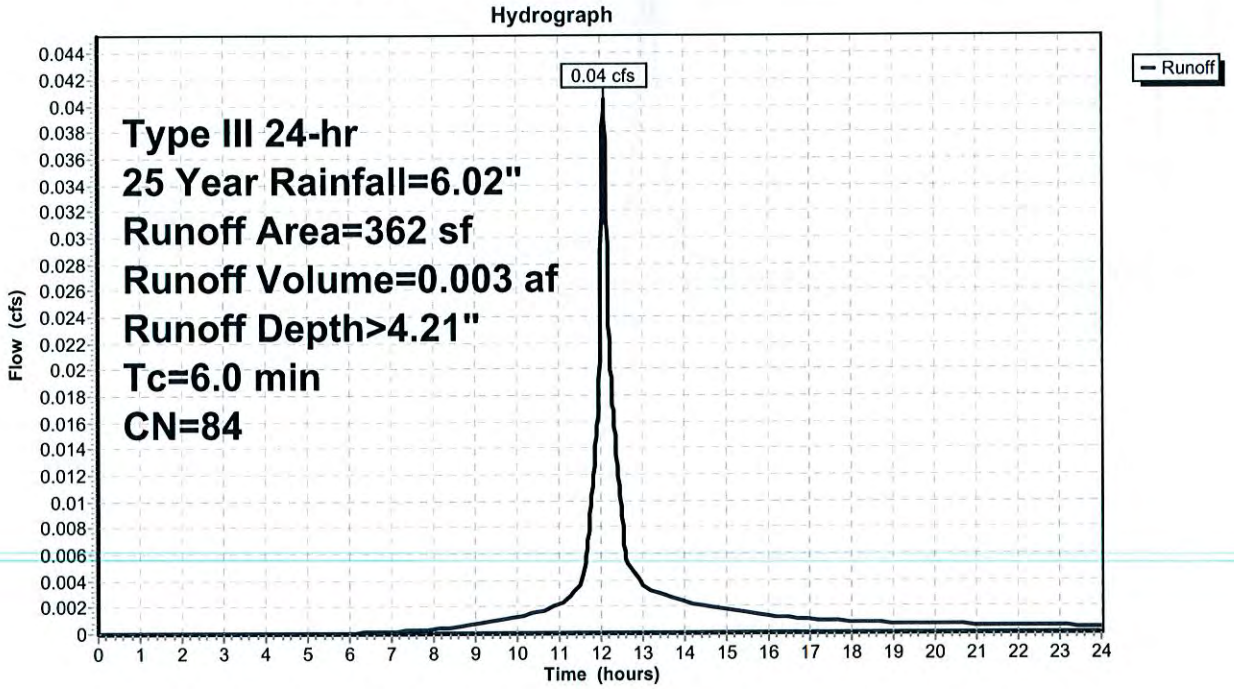
Runoff = 0.04 cfs @ 12.09 hrs, Volume= 0.003 af, Depth> 4.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=6.02"

Area (sf)	CN	Description
156	98	Unconnected pavement, HSG C
206	74	>75% Grass cover, Good, HSG C
362	84	Weighted Average
206		56.91% Pervious Area
156		43.09% Impervious Area
156		100.00% Unconnected

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

Subcatchment E2: S. Sixth Street Lawn/Entry

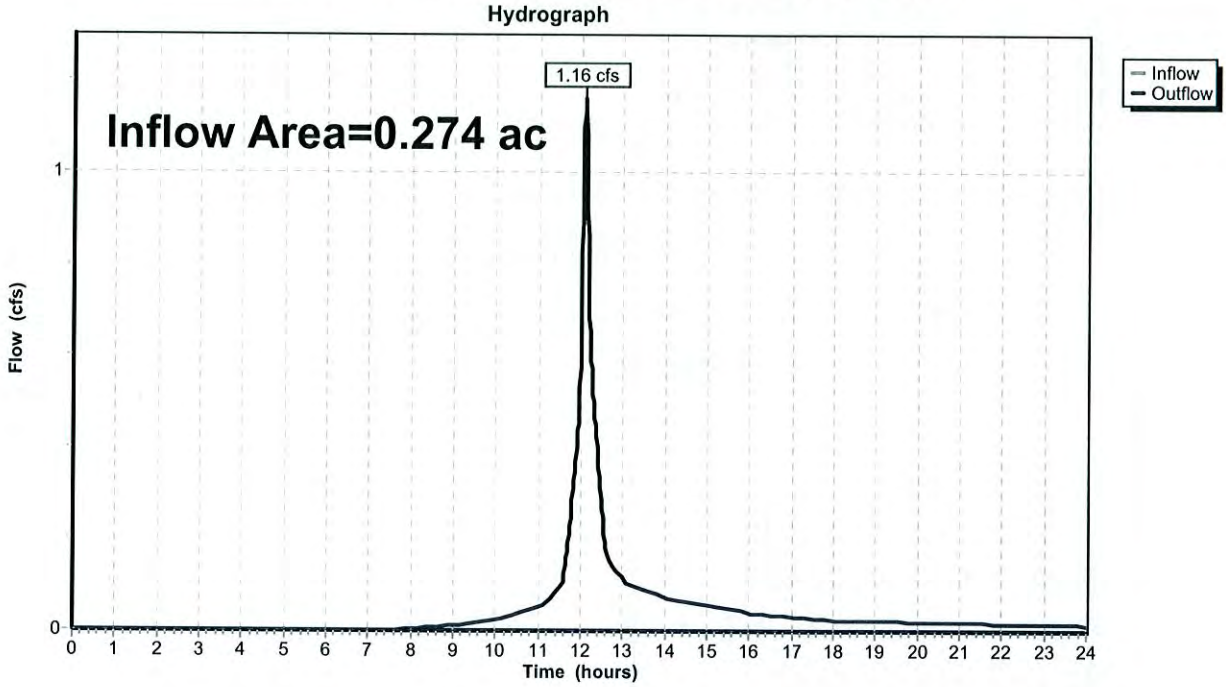


Summary for Reach DP1: Design Point 1 - SE Corner @ Road

Inflow Area =	0.274 ac, 19.59% Impervious, Inflow Depth > 3.61"	for 25 Year event		
Inflow =	1.16 cfs @ 12.09 hrs, Volume=	0.083 af		
Outflow =	1.16 cfs @ 12.09 hrs, Volume=	0.083 af, Atten= 0%, Lag= 0.0 min		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP1: Design Point 1 - SE Corner @ Road



Summary for Subcatchment E1: Lawn, Building & Driveway

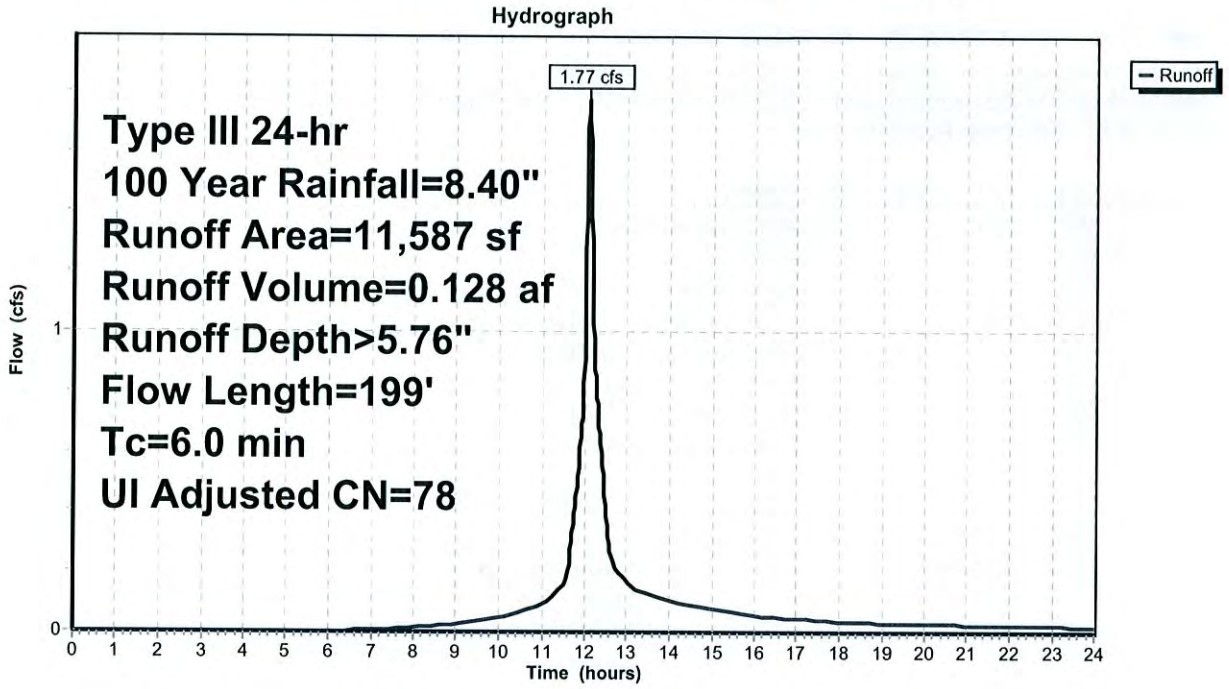
Runoff = 1.77 cfs @ 12.09 hrs, Volume= 0.128 af, Depth> 5.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 Year Rainfall=8.40"

	Area (sf)	CN	Adj	Description
	357	96		Gravel surface, HSG C
	2,185	98		Unconnected roofs, HSG C
*	350	89		Flagstone walkway, HSG C
	8,695	74		>75% Grass cover, Good, HSG C
	11,587	80	78	Weighted Average, UI Adjusted
	9,402			81.14% Pervious Area
	2,185			18.86% Impervious Area
	2,185			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0588	0.16		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
0.3	61	0.0354	3.03		**Shallow Concentrated Flow, B to C** Unpaved Kv= 16.1 fps
0.5	88	0.0284	2.71		**Shallow Concentrated Flow, C to D** Unpaved Kv= 16.1 fps
6.0	199	Total			

Subcatchment E1: Lawn, Building & Driveway



Existing Drainage
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Summary for Subcatchment E2: S. Sixth Street Lawn/Entry

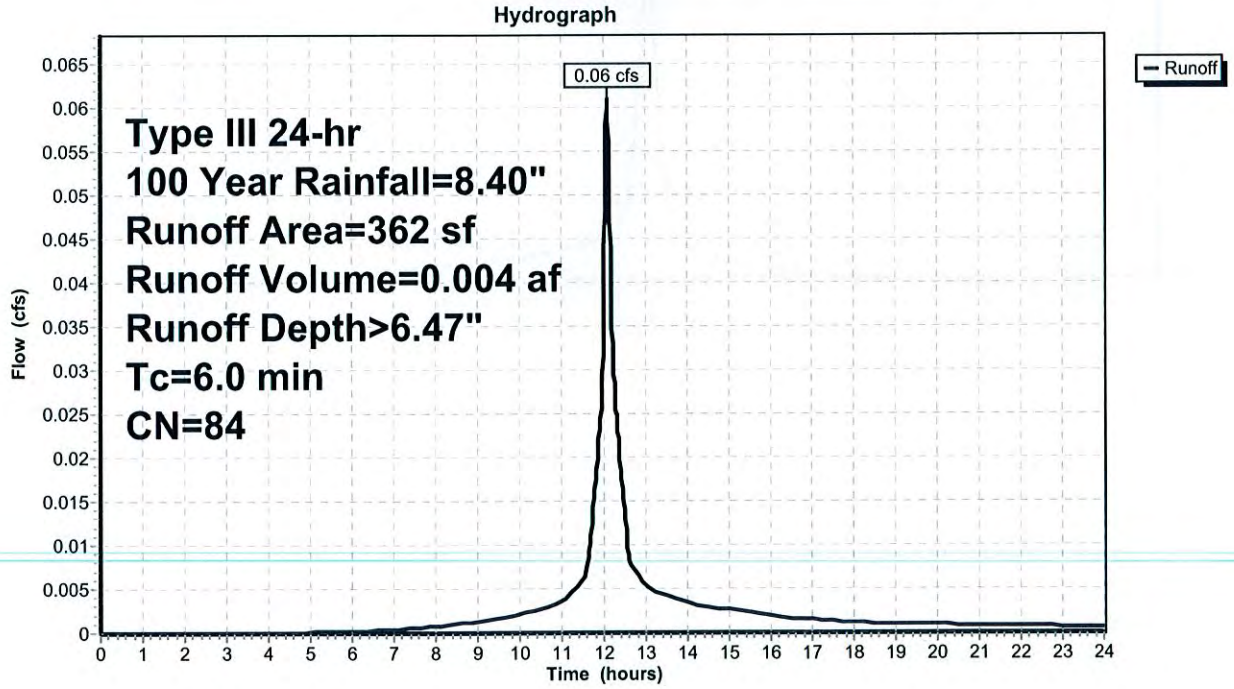
Runoff = 0.06 cfs @ 12.09 hrs, Volume= 0.004 af, Depth> 6.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 Year Rainfall=8.40"

Area (sf)	CN	Description
156	98	Unconnected pavement, HSG C
206	74	>75% Grass cover, Good, HSG C
362	84	Weighted Average
206		56.91% Pervious Area
156		43.09% Impervious Area
156		100.00% Unconnected

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

Subcatchment E2: S. Sixth Street Lawn/Entry

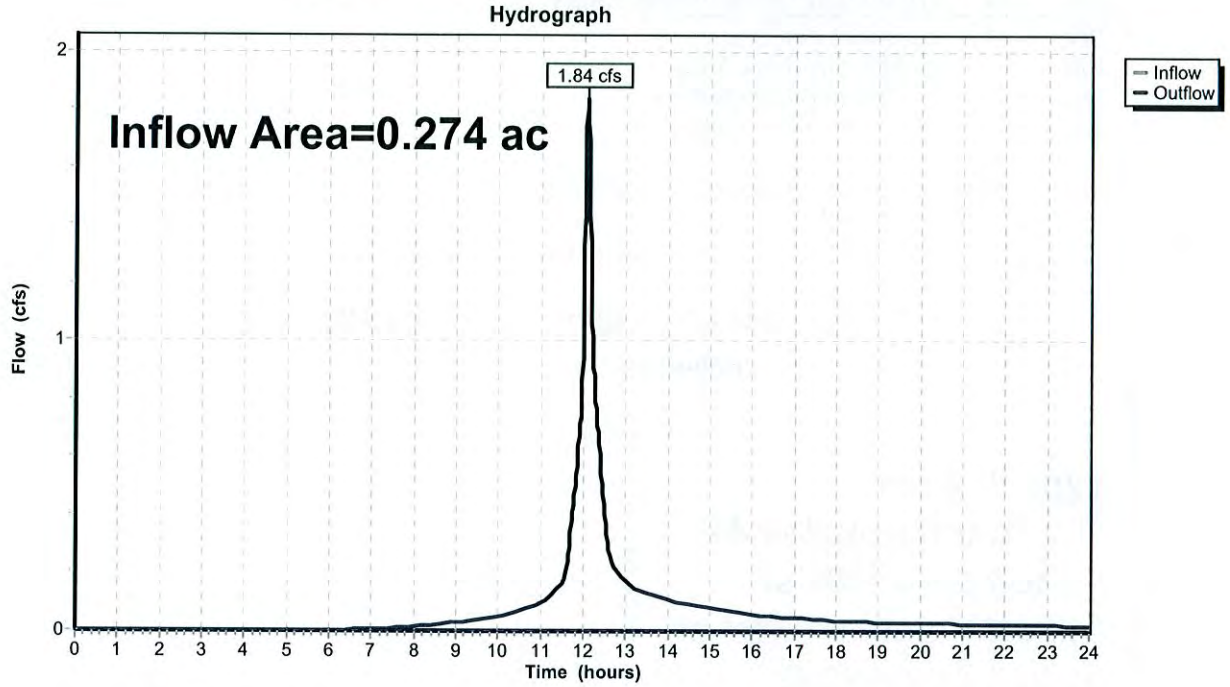


Summary for Reach DP1: Design Point 1 - SE Corner @ Road

Inflow Area = 0.274 ac, 19.59% Impervious, Inflow Depth > 5.78" for 100 Year event
Inflow = 1.84 cfs @ 12.09 hrs, Volume= 0.132 af
Outflow = 1.84 cfs @ 12.09 hrs, Volume= 0.132 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP1: Design Point 1 - SE Corner @ Road

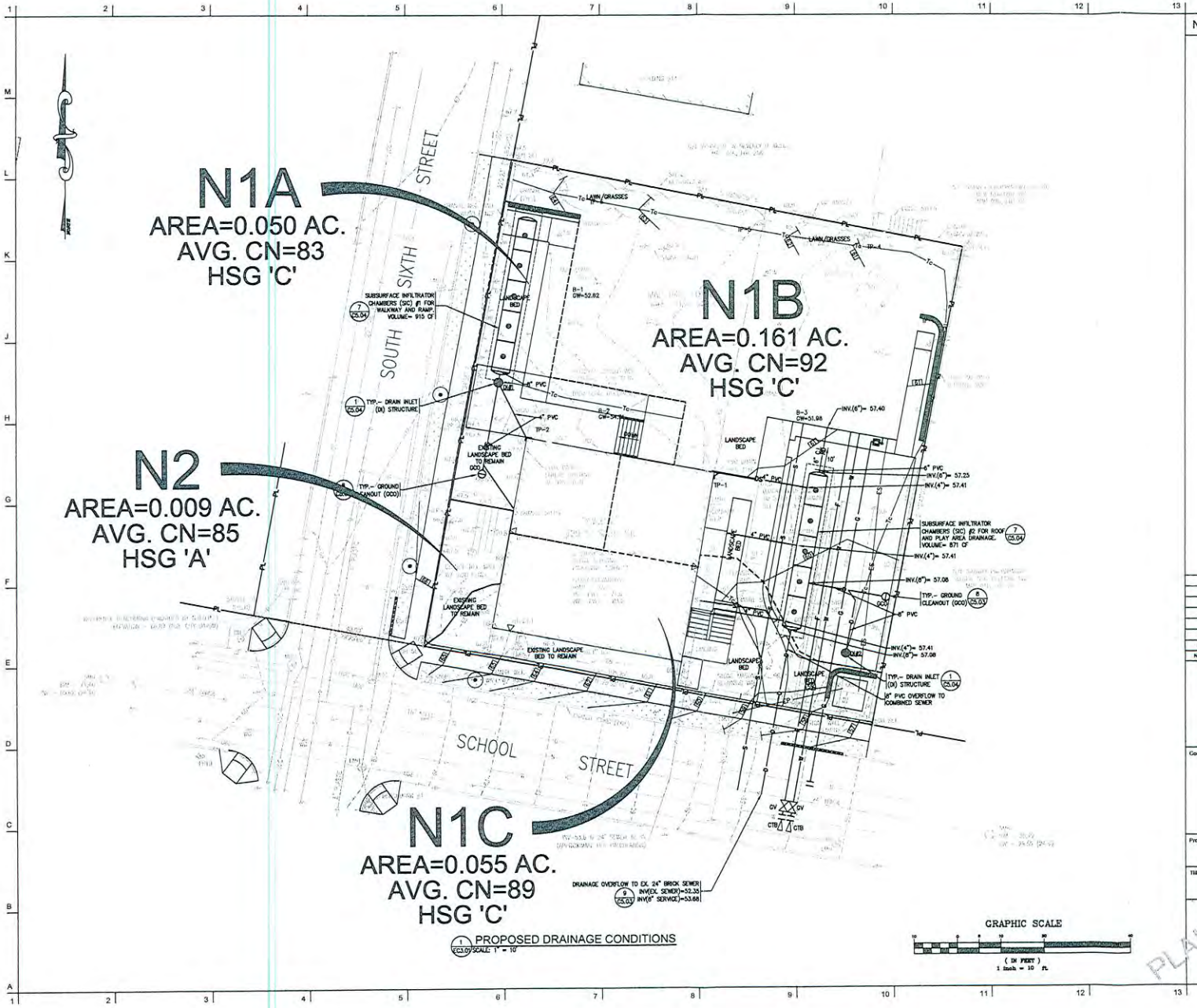


GARCIA • GALUSKA • DESOUSA
Consulting Engineers Inc.

Project: Renovation to YWCA of Southeastern Massachusetts
Location: New Bedford, MA

Drainage Calculations
Developed Conditions

TEL 508-998-5700 FAX 508-998-0883 email: info@g-g-d.com



PROPOSED DRAINAGE CONDITIONS
SCALE: 1" = 10'

NOTES

No.	REVISIONS/SUBMISSIONS	Date
1	PLANNING BOARD SUBMISSION	01/15/2016

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Project RENOVATONS TO
YWCA SOUTHEASTERN MA
20 SOUTH SIXTH STREET, NEW BEDFORD MA

Title PROPOSED DRAINAGE CONDITIONS PLAN

Designed NCK
Checked CMG
Project No. 16002
Scale AS NOTED
Date 01/15/2016

Drawing No. PC1.01

PLANNING SUBMISSION

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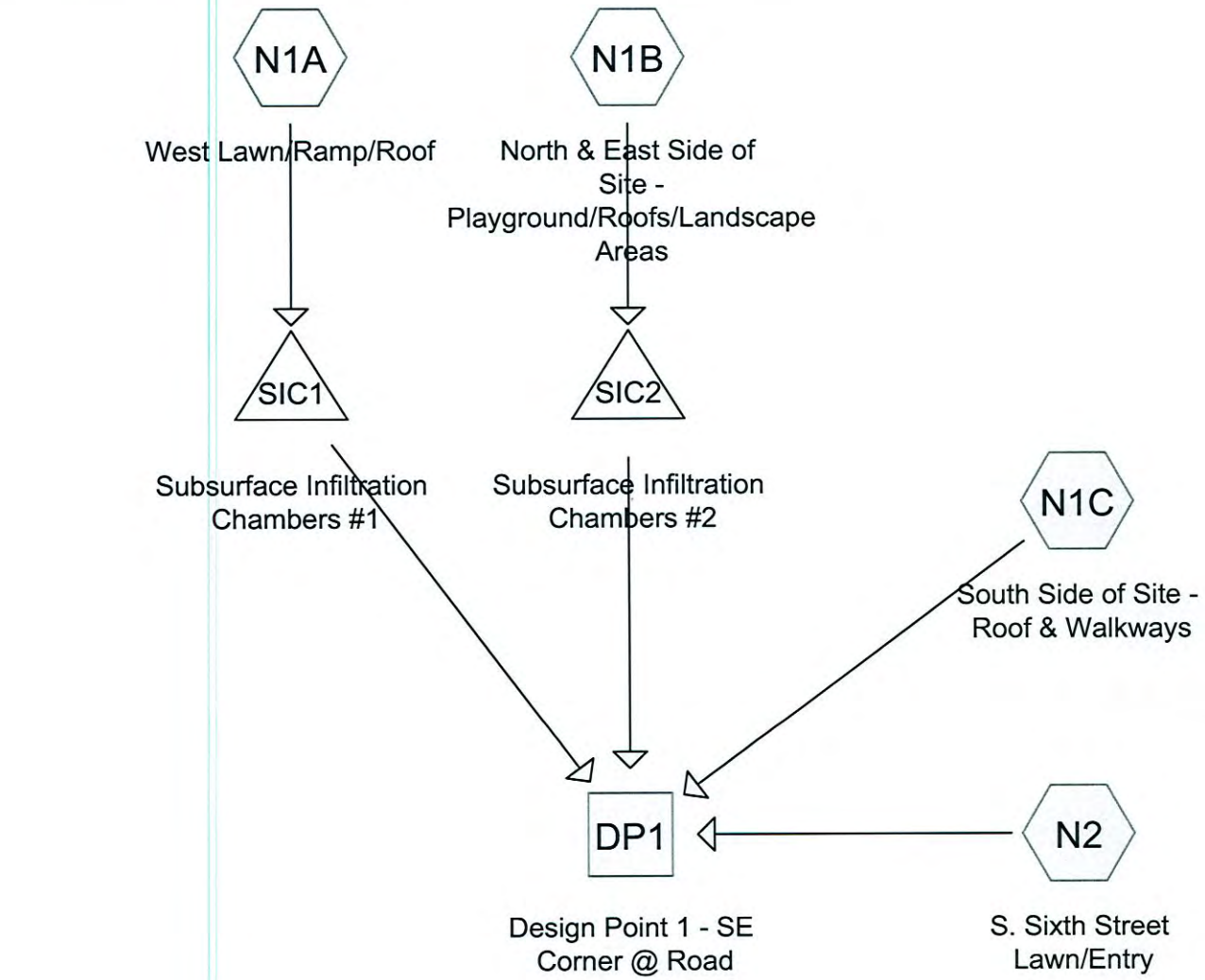

Subcat Reach Pond Link

Routing Diagram for Proposed Drainage
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Proposed Drainage
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Summary for Subcatchment N1A: West Lawn/Ramp/Roof

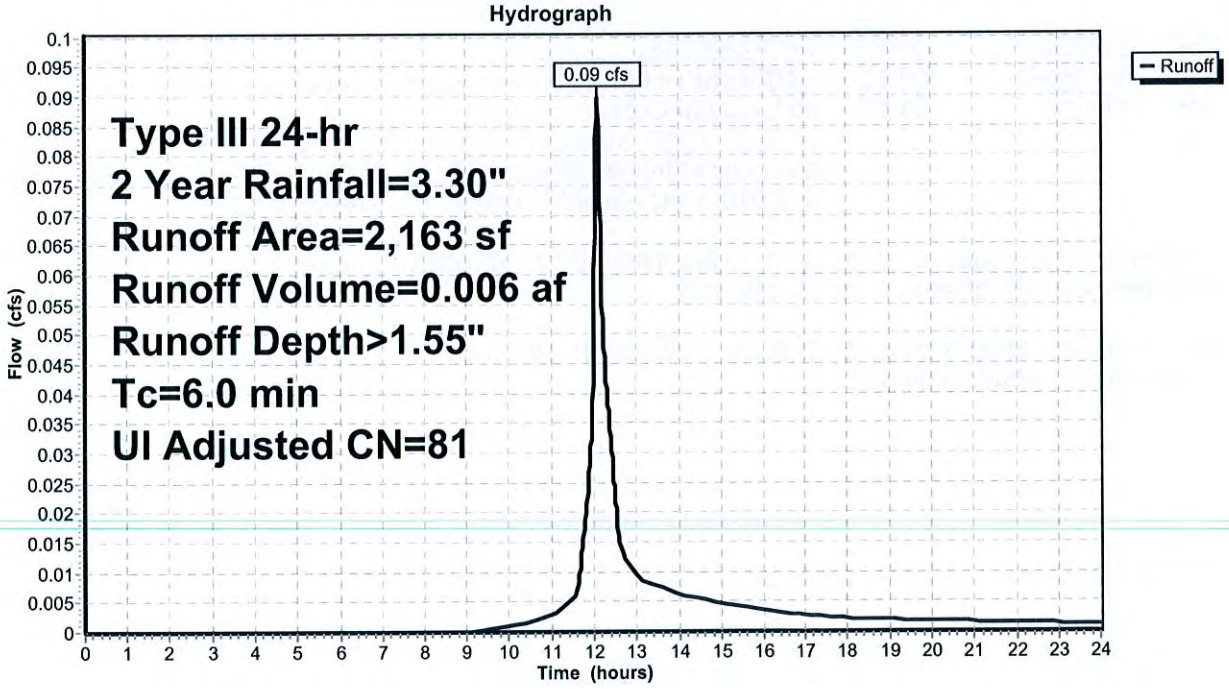
Runoff = 0.09 cfs @ 12.09 hrs, Volume= 0.006 af, Depth> 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 Year Rainfall=3.30"

	Area (sf)	CN	Adj	Description
	489	98		Unconnected roofs, HSG C
*	549	89		Flagstone walkway, HSG C
	1,125	74		>75% Grass cover, Good, HSG C
	2,163	83	81	Weighted Average, UI Adjusted
	1,674			77.39% Pervious Area
	489			22.61% Impervious Area
	489			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct Entry Tc < 6 min.**

Subcatchment N1A: West Lawn/Ramp/Roof



Summary for Pond SIC1: Subsurface Infiltration Chambers #1

Inflow Area =	0.050 ac, 22.61% Impervious, Inflow Depth > 1.55" for 2 Year event			
Inflow =	0.09 cfs @ 12.09 hrs, Volume=	0.006 af		
Outflow =	0.00 cfs @ 11.50 hrs, Volume=	0.002 af, Atten= 98%, Lag= 0.0 min		
Discarded =	0.00 cfs @ 11.50 hrs, Volume=	0.002 af		
Primary =	0.00 cfs @ 0.00 hrs, Volume=	0.000 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 51.41' @ 21.02 hrs Surf.Area= 0.006 ac Storage= 0.005 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 178.2 min (1,015.4 - 837.2)

Volume	Invert	Avail.Storage	Storage Description
#1	50.11'	0.007 af	**6.25'W x 39.75'L x 5.50'H Prismatoid** 0.031 af Overall - 0.013 af Embedded = 0.018 af x 40.0% Voids
#2	50.86'	0.013 af	**ADS_StormTech MC-3500 c +Cap** x 5 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap Cap Storage= +15.6 cf x 2 x 1 rows = 31.2 cf
		0.021 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	50.11'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	54.28'	**4.0" Round Culvert** L= 10.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 54.28' / 54.18' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.00 cfs @ 11.50 hrs HW=50.17' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.11' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Controls 0.00 cfs)

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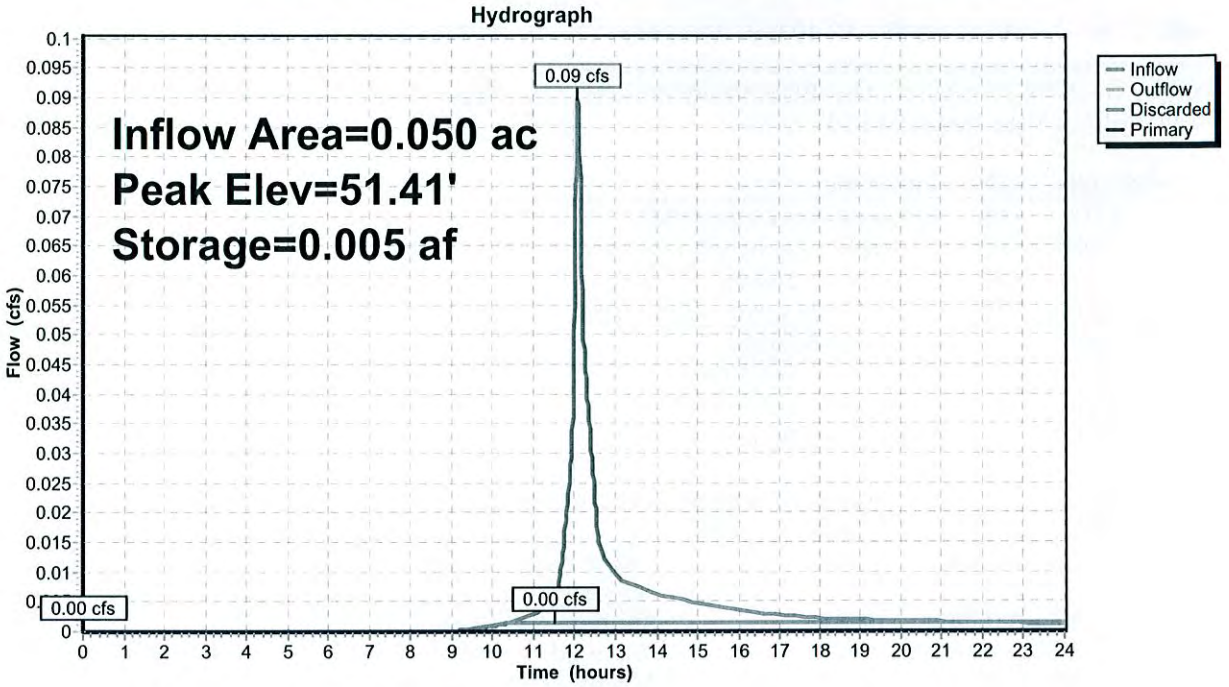
Pond SIC1: Subsurface Infiltration Chambers #1



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Summary for Subcatchment N1B: North & East Side of Site - Playground/Roofs/Landscape Areas

Runoff = 0.43 cfs @ 12.10 hrs, Volume= 0.033 af, Depth> 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 Year Rainfall=3.30"

	Area (sf)	CN	Description
	3,702	98	Unconnected roofs, HSG C
*	1,444	98	Concrete Walkway & Play Area, HSG C
*	335	89	Flagstone walkway, HSG C
	1,541	74	>75% Grass cover, Good, HSG C
	7,022	92	Weighted Average
	1,876		26.72% Pervious Area
	5,146		73.28% Impervious Area
	3,702		71.94% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0400	0.14		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
0.7	97	0.0206	2.31		**Shallow Concentrated Flow, B to C** Unpaved Kv= 16.1 fps
0.3	48	0.0220	3.01		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
7.1	195	Total			

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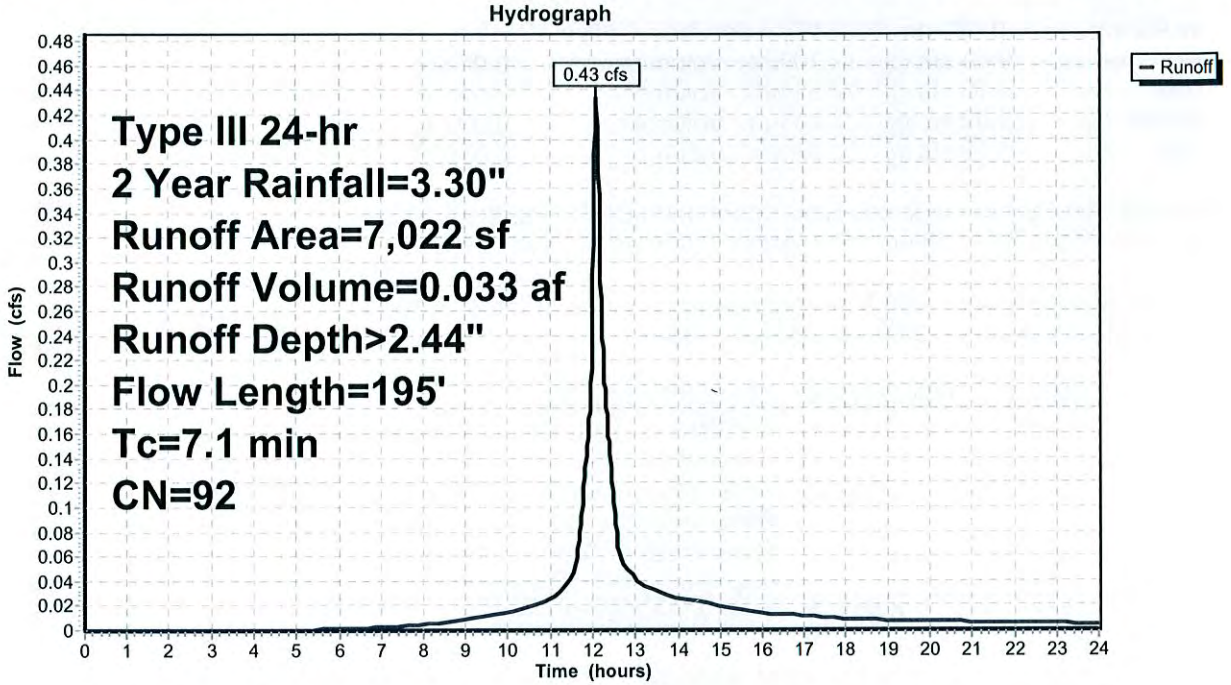
Subcatchment N1B: North & East Side of Site - Playground/Roofs/Landscape Areas



Summary for Pond SIC2: Subsurface Infiltration Chambers #2

Inflow Area =	0.161 ac, 73.28% Impervious, Inflow Depth > 2.44" for 2 Year event			
Inflow =	0.43 cfs @	12.10 hrs, Volume=	0.033 af	
Outflow =	0.18 cfs @	12.33 hrs, Volume=	0.018 af, Atten= 58%, Lag= 13.9 min	
Discarded =	0.00 cfs @	7.78 hrs, Volume=	0.002 af	
Primary =	0.18 cfs @	12.33 hrs, Volume=	0.016 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.33' @ 12.33 hrs Surf.Area= 0.006 ac Storage= 0.016 af

Plug-Flow detention time= 200.5 min calculated for 0.018 af (55% of inflow)
Center-of-Mass det. time= 93.0 min (890.0 - 796.9)

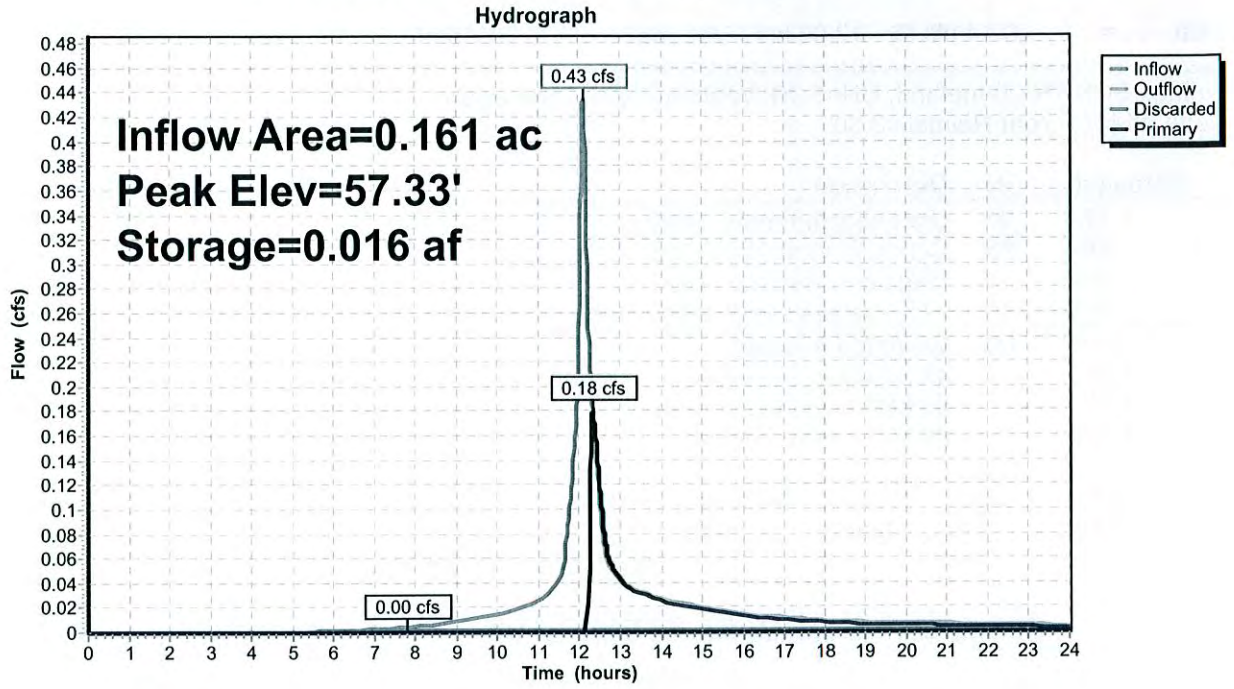
Volume	Invert	Avail.Storage	Storage Description
#1	53.66'	0.007 af	**6.25'W x 39.75'L x 5.50'H Prismatoid** 0.031 af Overall - 0.013 af Embedded = 0.018 af x 40.0% Voids
#2	54.41'	0.013 af	**ADS_StormTech MC-3500 c +Cap** x 5 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap Cap Storage= +15.6 cf x 2 x 1 rows = 31.2 cf
		0.021 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	57.08'	**8.0" Round Culvert** L= 45.8' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 57.08' / 51.68' S= 0.1179 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf
#2	Discarded	53.66'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 7.78 hrs HW=53.72' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.18 cfs @ 12.33 hrs HW=57.33' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.18 cfs @ 1.50 fps)

Pond SIC2: Subsurface Infiltration Chambers #2



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Summary for Subcatchment N1C: South Side of Site - Roof & Walkways

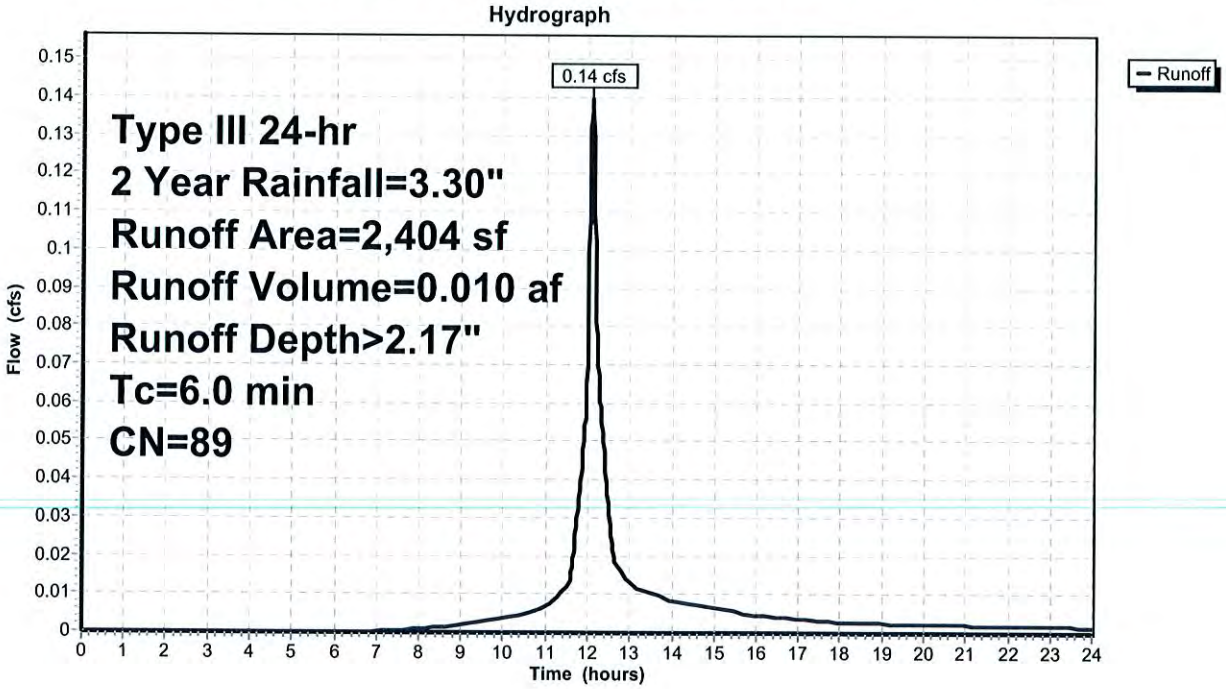
Runoff = 0.14 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 Year Rainfall=3.30"

	Area (sf)	CN	Description
	1,173	98	Unconnected roofs, HSG C
*	189	98	Concrete Walkway & Play Area, HSG C
*	203	89	Flagstone walkway, HSG C
	839	74	>75% Grass cover, Good, HSG C
	2,404	89	Weighted Average
	1,042		43.34% Pervious Area
	1,362		56.66% Impervious Area
	1,173		86.12% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct Entry Tc < 6 mins**

Subcatchment N1C: South Side of Site - Roof & Walkways



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Summary for Subcatchment N2: S. Sixth Street Lawn/Entry

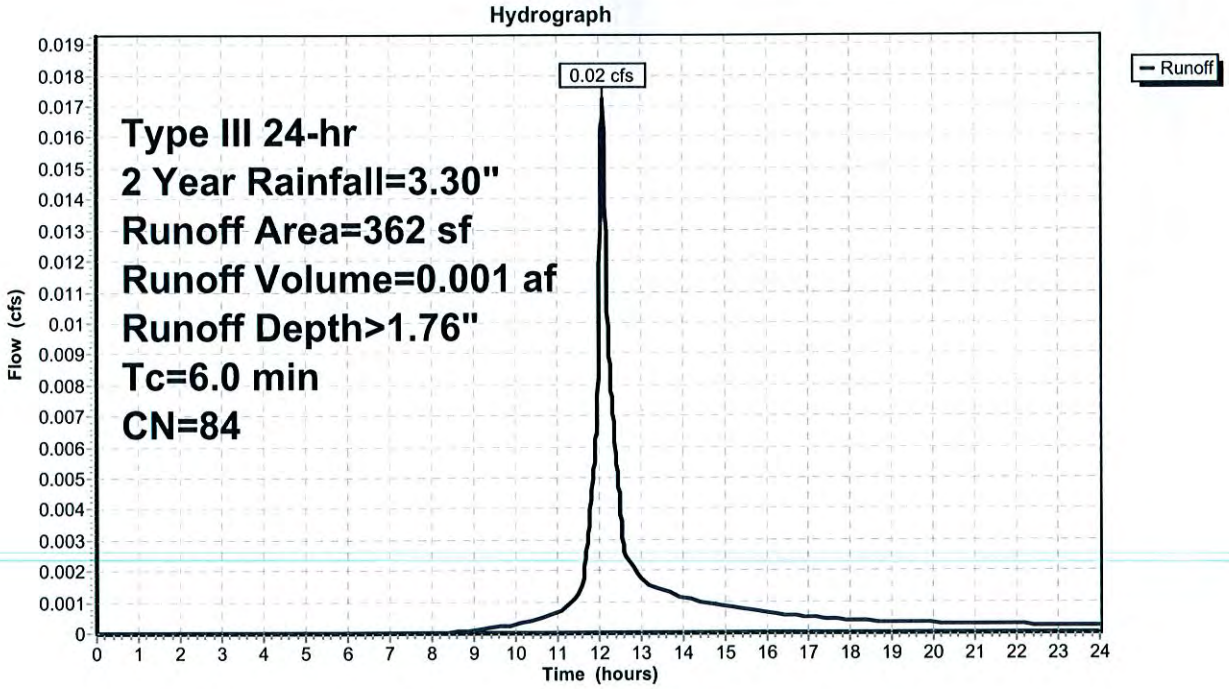
Runoff = 0.02 cfs @ 12.09 hrs, Volume= 0.001 af, Depth> 1.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 Year Rainfall=3.30"

Area (sf)	CN	Description
156	98	Unconnected pavement, HSG C
206	74	>75% Grass cover, Good, HSG C
362	84	Weighted Average
206		56.91% Pervious Area
156		43.09% Impervious Area
156		100.00% Unconnected

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

Subcatchment N2: S. Sixth Street Lawn/Entry

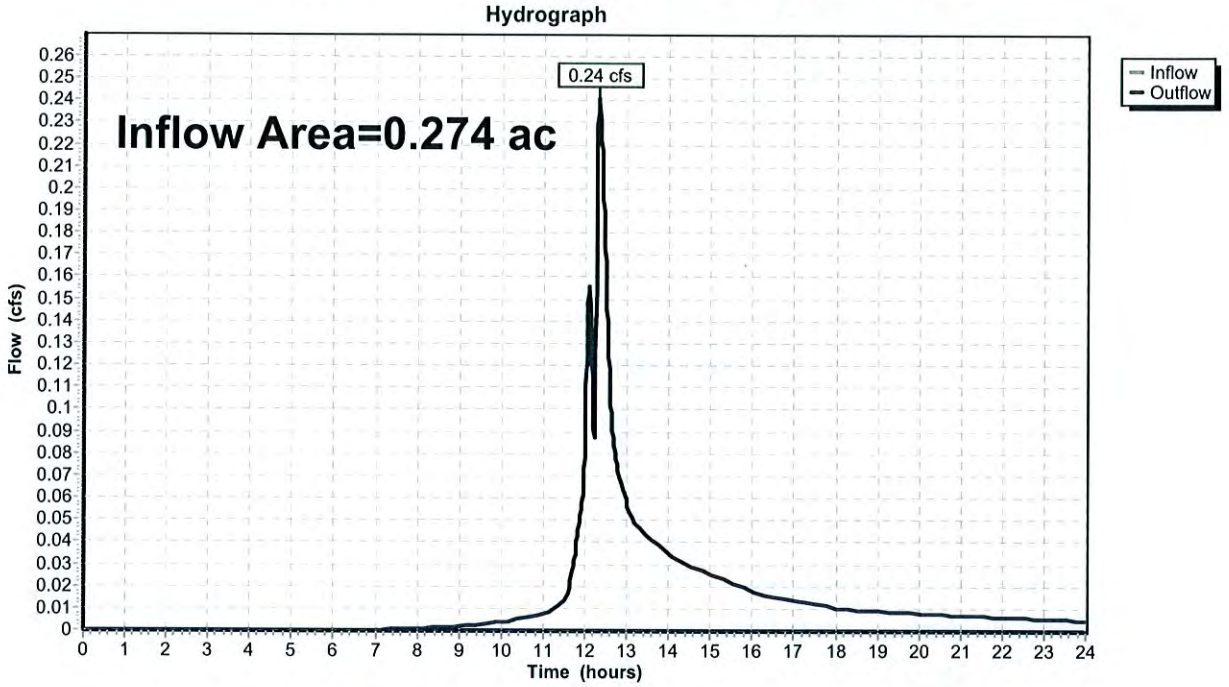


Summary for Reach DP1: Design Point 1 - SE Corner @ Road

Inflow Area =	0.274 ac, 59.85% Impervious, Inflow Depth > 1.17" for 2 Year event			
Inflow =	0.24 cfs @ 12.32 hrs, Volume=	0.027 af		
Outflow =	0.24 cfs @ 12.32 hrs, Volume=	0.027 af, Atten= 0%, Lag= 0.0 min		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP1: Design Point 1 - SE Corner @ Road



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Summary for Subcatchment N1A: West Lawn/Ramp/Roof

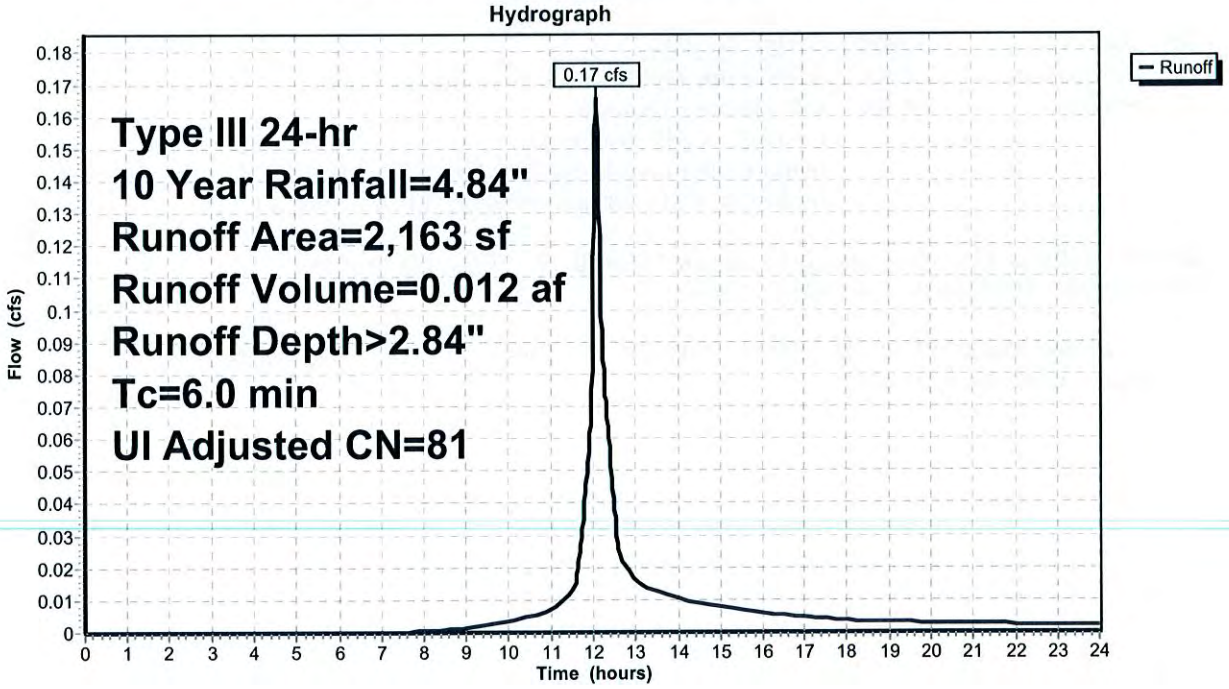
Runoff = 0.17 cfs @ 12.09 hrs, Volume= 0.012 af, Depth> 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=4.84"

	Area (sf)	CN	Adj	Description
	489	98		Unconnected roofs, HSG C
*	549	89		Flagstone walkway, HSG C
	1,125	74		>75% Grass cover, Good, HSG C
	2,163	83	81	Weighted Average, UI Adjusted
	1,674			77.39% Pervious Area
	489			22.61% Impervious Area
	489			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct Entry Tc < 6 min.**

Subcatchment N1A: West Lawn/Ramp/Roof



Summary for Pond SIC1: Subsurface Infiltration Chambers #1

Inflow Area =	0.050 ac, 22.61% Impervious, Inflow Depth > 2.84" for 10 Year event				
Inflow =	0.17 cfs @	12.09 hrs, Volume=	0.012 af		
Outflow =	0.00 cfs @	10.35 hrs, Volume=	0.002 af, Atten= 99%, Lag= 0.0 min		
Discarded =	0.00 cfs @	10.35 hrs, Volume=	0.002 af		
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 52.42' @ 24.00 hrs Surf.Area= 0.006 ac Storage= 0.010 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 151.8 min (971.6 - 819.7)

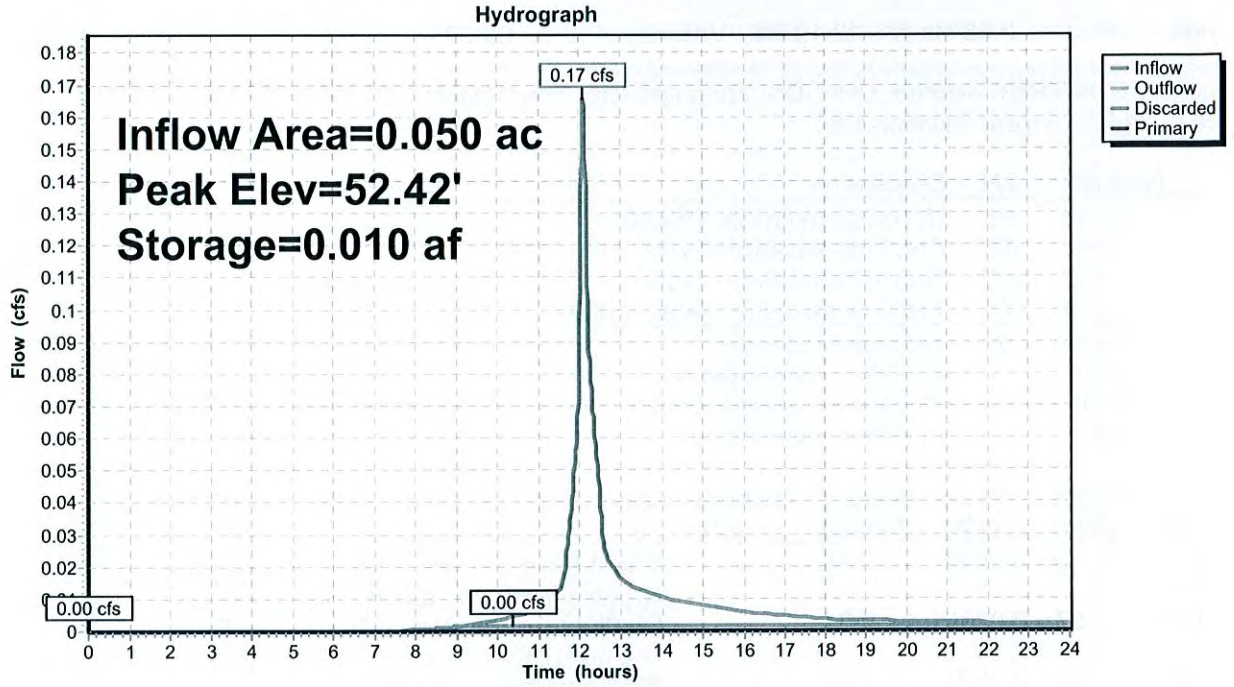
Volume	Invert	Avail.Storage	Storage Description
#1	50.11'	0.007 af	**6.25'W x 39.75'L x 5.50'H Prismatoid** 0.031 af Overall - 0.013 af Embedded = 0.018 af x 40.0% Voids
#2	50.86'	0.013 af	**ADS_StormTech MC-3500 c +Cap** x 5 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap Cap Storage= +15.6 cf x 2 x 1 rows = 31.2 cf
		0.021 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	50.11'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	54.28'	**4.0" Round Culvert** L= 10.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 54.28' / 54.18' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.00 cfs @ 10.35 hrs HW=50.17' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.11' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Controls 0.00 cfs)

Pond SIC1: Subsurface Infiltration Chambers #1



Summary for Subcatchment N1B: North & East Side of Site - Playground/Roofs/Landscape Areas

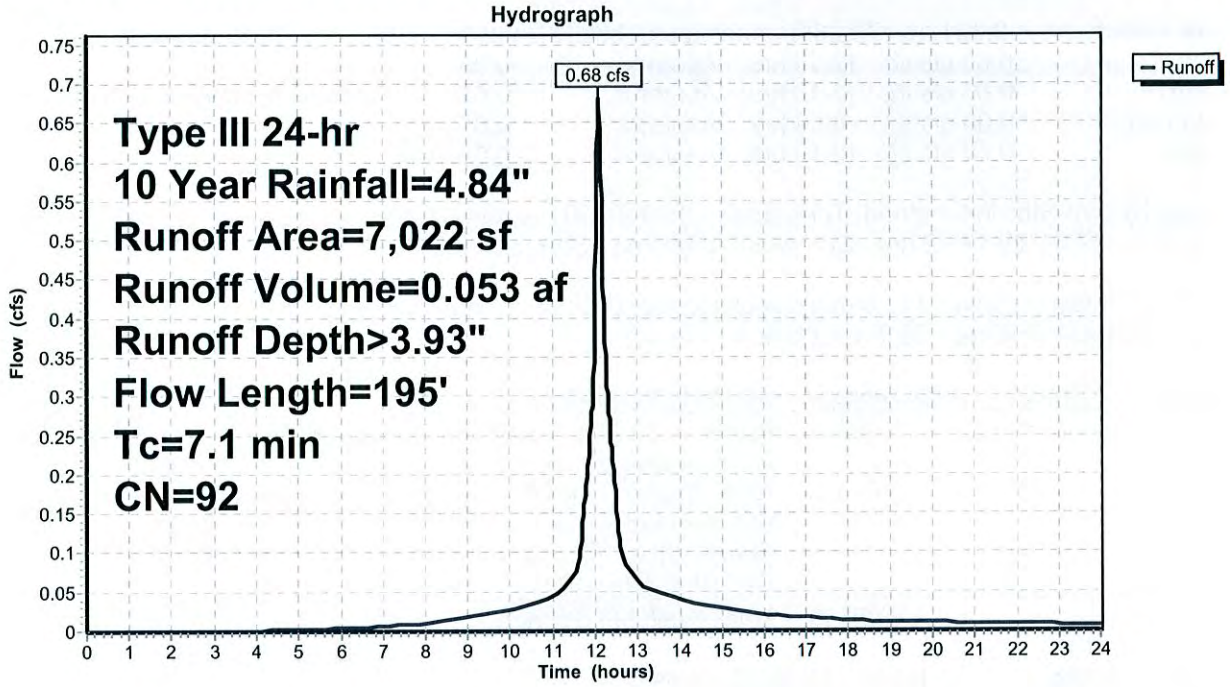
Runoff = 0.68 cfs @ 12.10 hrs, Volume= 0.053 af, Depth> 3.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=4.84"

	Area (sf)	CN	Description
	3,702	98	Unconnected roofs, HSG C
*	1,444	98	Concrete Walkway & Play Area, HSG C
*	335	89	Flagstone walkway, HSG C
	1,541	74	>75% Grass cover, Good, HSG C
	7,022	92	Weighted Average
	1,876		26.72% Pervious Area
	5,146		73.28% Impervious Area
	3,702		71.94% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0400	0.14		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
0.7	97	0.0206	2.31		**Shallow Concentrated Flow, B to C** Unpaved Kv= 16.1 fps
0.3	48	0.0220	3.01		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
7.1	195	Total			

Subcatchment N1B: North & East Side of Site - Playground/Roofs/Landscape Areas



Summary for Pond SIC2: Subsurface Infiltration Chambers #2

Inflow Area =	0.161 ac, 73.28% Impervious, Inflow Depth > 3.93" for 10 Year event			
Inflow =	0.68 cfs @	12.10 hrs, Volume=	0.053 af	
Outflow =	0.66 cfs @	12.12 hrs, Volume=	0.038 af, Atten= 3%, Lag= 1.4 min	
Discarded =	0.00 cfs @	6.06 hrs, Volume=	0.003 af	
Primary =	0.66 cfs @	12.12 hrs, Volume=	0.035 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.61' @ 12.12 hrs Surf.Area= 0.006 ac Storage= 0.017 af

Plug-Flow detention time= 147.8 min calculated for 0.038 af (72% of inflow)
Center-of-Mass det. time= 58.8 min (842.9 - 784.0)

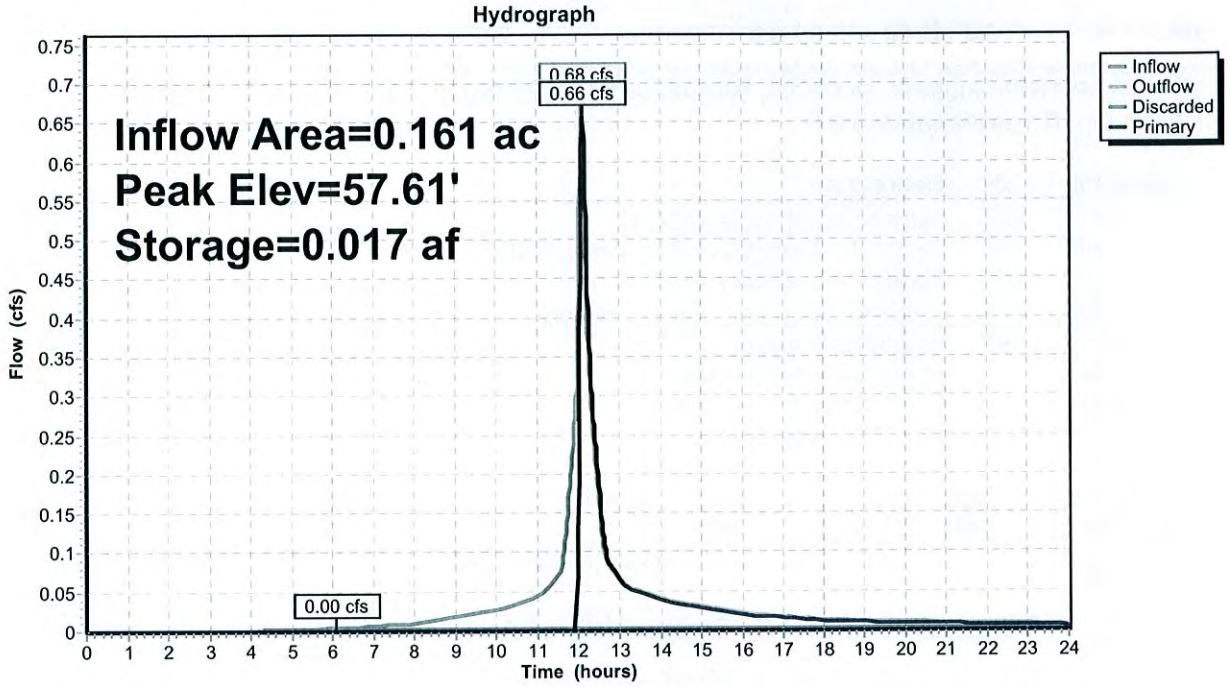
Volume	Invert	Avail.Storage	Storage Description
#1	53.66'	0.007 af	**6.25'W x 39.75'L x 5.50'H Prismatoid** 0.031 af Overall - 0.013 af Embedded = 0.018 af x 40.0% Voids
#2	54.41'	0.013 af	**ADS_StormTech MC-3500 c +Cap** x 5 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap Cap Storage= +15.6 cf x 2 x 1 rows = 31.2 cf
		0.021 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	57.08'	**8.0" Round Culvert** L= 45.8' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 57.08' / 51.68' S= 0.1179 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf
#2	Discarded	53.66'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 6.06 hrs HW=53.72' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.66 cfs @ 12.12 hrs HW=57.61' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.66 cfs @ 2.19 fps)

Pond SIC2: Subsurface Infiltration Chambers #2



Summary for Subcatchment N1C: South Side of Site - Roof & Walkways

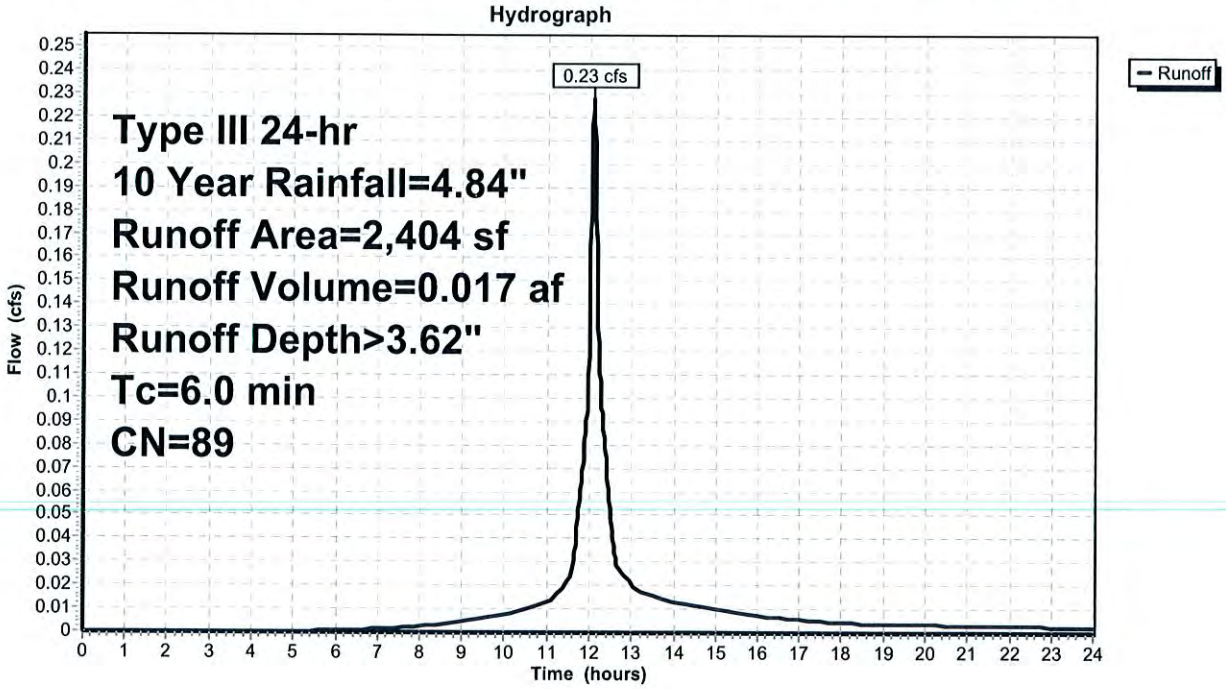
Runoff = 0.23 cfs @ 12.09 hrs, Volume= 0.017 af, Depth> 3.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=4.84"

	Area (sf)	CN	Description
	1,173	98	Unconnected roofs, HSG C
*	189	98	Concrete Walkway & Play Area, HSG C
*	203	89	Flagstone walkway, HSG C
	839	74	>75% Grass cover, Good, HSG C
	2,404	89	Weighted Average
	1,042		43.34% Pervious Area
	1,362		56.66% Impervious Area
	1,173		86.12% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct Entry Tc < 6 mins**

Subcatchment N1C: South Side of Site - Roof & Walkways



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Summary for Subcatchment N2: S. Sixth Street Lawn/Entry

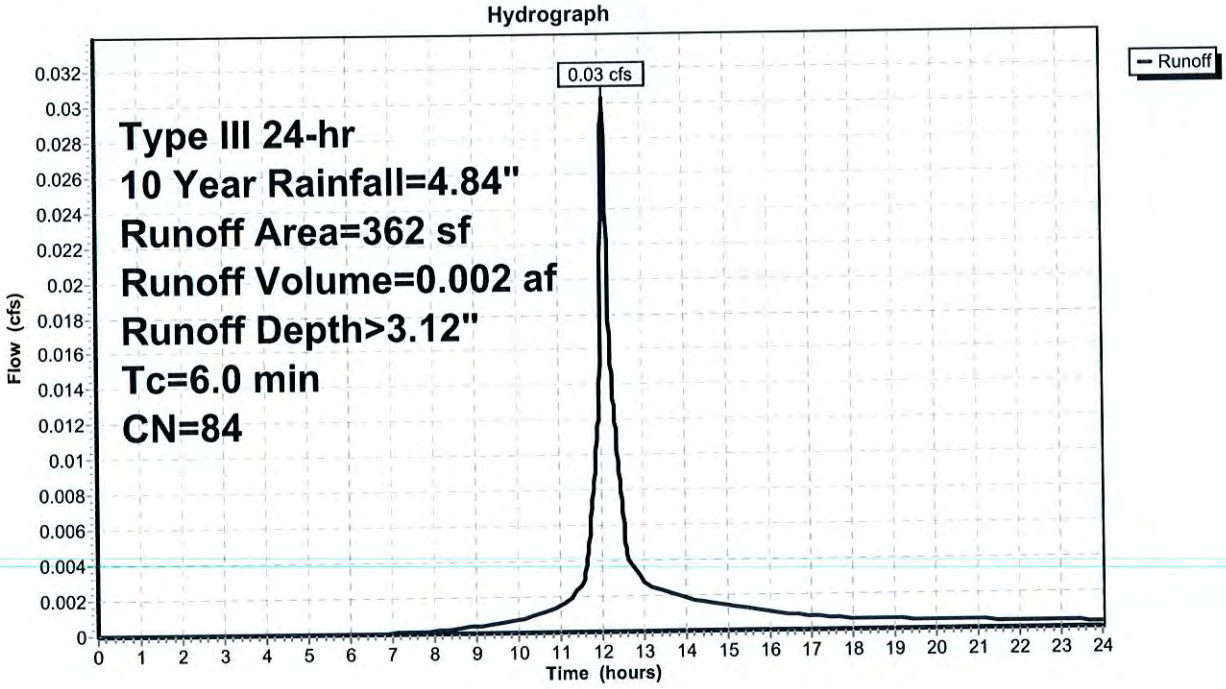
Runoff = 0.03 cfs @ 12.09 hrs, Volume= 0.002 af, Depth> 3.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=4.84"

Area (sf)	CN	Description
156	98	Unconnected pavement, HSG C
206	74	>75% Grass cover, Good, HSG C
362	84	Weighted Average
206		56.91% Pervious Area
156		43.09% Impervious Area
156		100.00% Unconnected

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

Subcatchment N2: S. Sixth Street Lawn/Entry

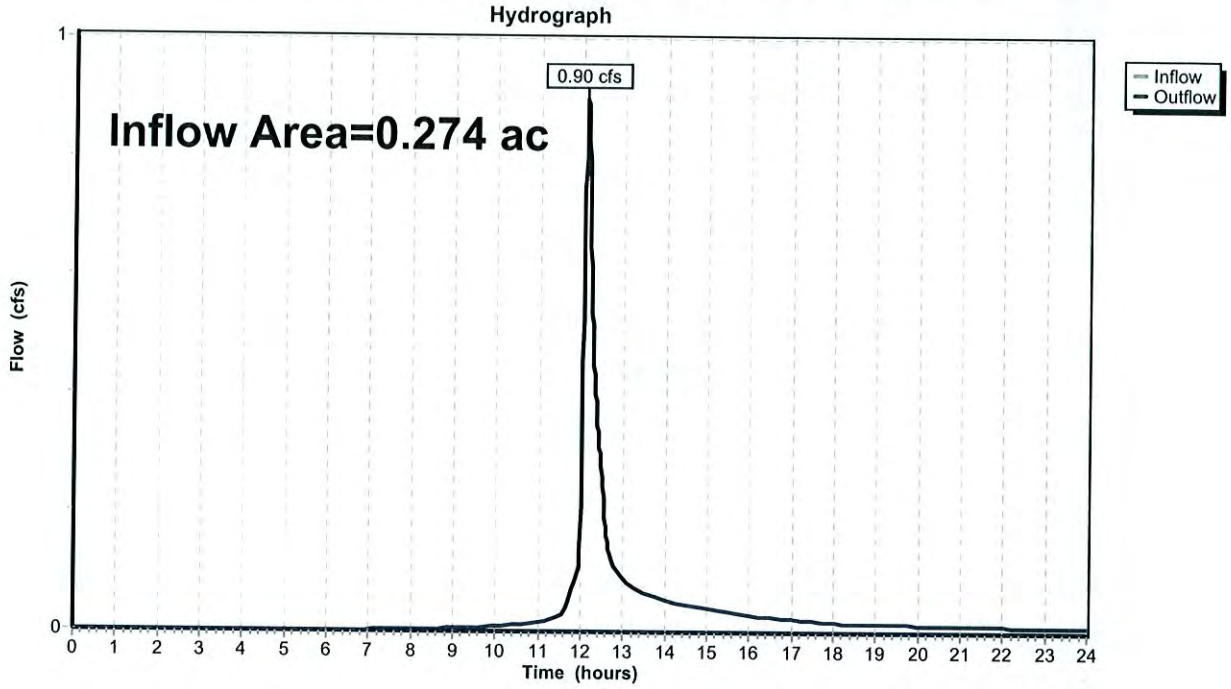


Summary for Reach DP1: Design Point 1 - SE Corner @ Road

Inflow Area = 0.274 ac, 59.85% Impervious, Inflow Depth > 2.37" for 10 Year event
Inflow = 0.90 cfs @ 12.11 hrs, Volume= 0.054 af
Outflow = 0.90 cfs @ 12.11 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP1: Design Point 1 - SE Corner @ Road



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Summary for Subcatchment N1A: West Lawn/Ramp/Roof

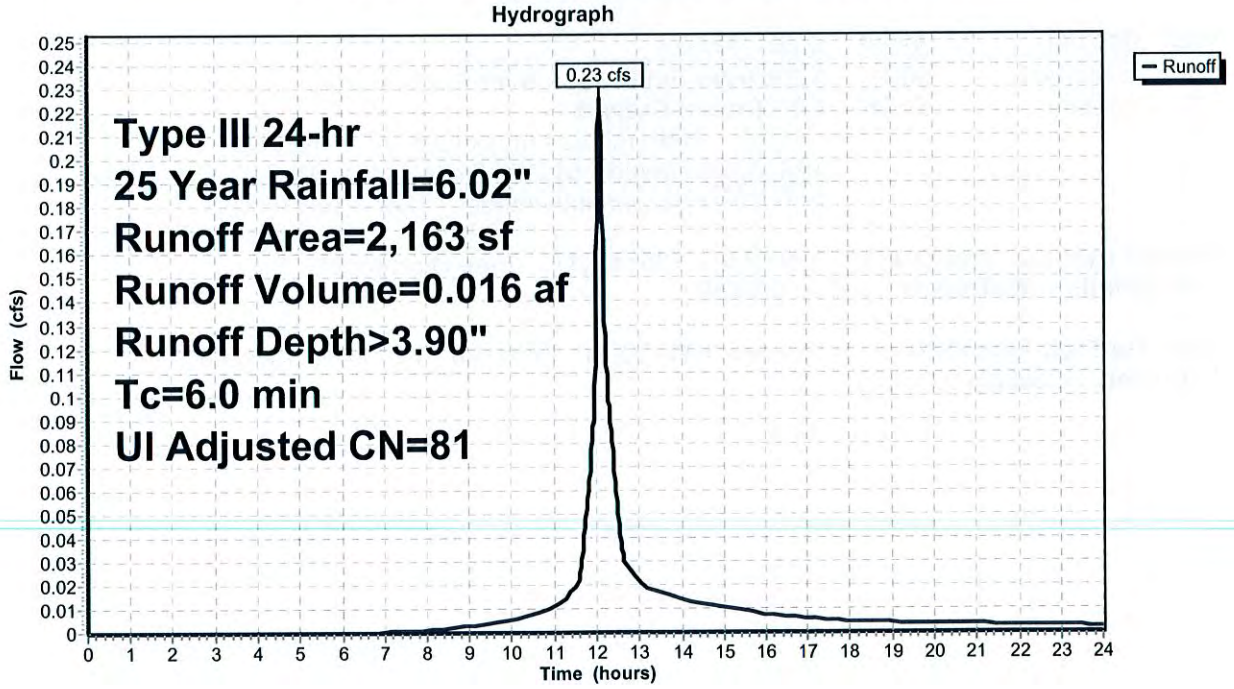
Runoff = 0.23 cfs @ 12.09 hrs, Volume= 0.016 af, Depth> 3.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=6.02"

	Area (sf)	CN	Adj	Description
	489	98		Unconnected roofs, HSG C
*	549	89		Flagstone walkway, HSG C
	1,125	74		>75% Grass cover, Good, HSG C
	2,163	83	81	Weighted Average, UI Adjusted
	1,674			77.39% Pervious Area
	489			22.61% Impervious Area
	489			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct Entry Tc < 6 min.**

Subcatchment N1A: West Lawn/Ramp/Roof



Summary for Pond SIC1: Subsurface Infiltration Chambers #1

Inflow Area =	0.050 ac, 22.61% Impervious, Inflow Depth > 3.90" for 25 Year event			
Inflow =	0.23 cfs @	12.09 hrs, Volume=	0.016 af	
Outflow =	0.00 cfs @	9.54 hrs, Volume=	0.002 af, Atten= 99%, Lag= 0.0 min	
Discarded =	0.00 cfs @	9.54 hrs, Volume=	0.002 af	
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 53.35' @ 24.00 hrs Surf.Area= 0.006 ac Storage= 0.014 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 134.4 min (945.1 - 810.8)

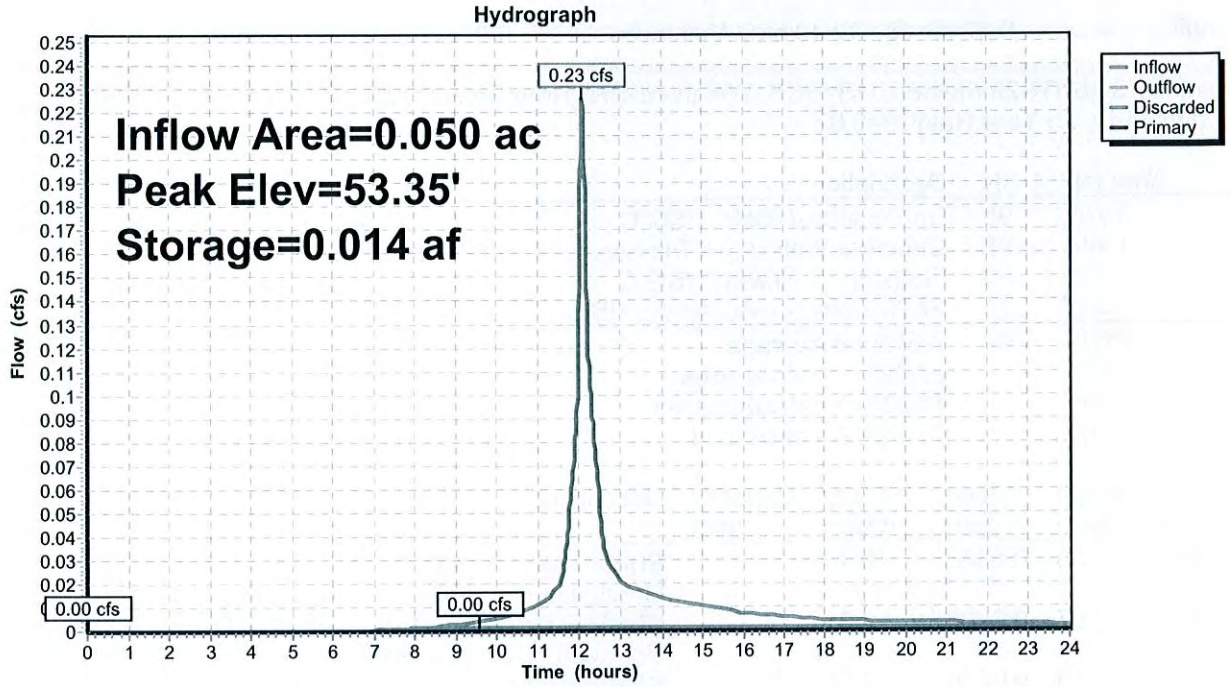
Volume	Invert	Avail.Storage	Storage Description
#1	50.11'	0.007 af	**6.25'W x 39.75'L x 5.50'H Prismatoid** 0.031 af Overall - 0.013 af Embedded = 0.018 af x 40.0% Voids
#2	50.86'	0.013 af	**ADS_StormTech MC-3500 c +Cap** x 5 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap Cap Storage= +15.6 cf x 2 x 1 rows = 31.2 cf
		0.021 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	50.11'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	54.28'	**4.0" Round Culvert** L= 10.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 54.28' / 54.18' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.00 cfs @ 9.54 hrs HW=50.17' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.11' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Controls 0.00 cfs)

Pond SIC1: Subsurface Infiltration Chambers #1



Summary for Subcatchment N1B: North & East Side of Site - Playground/Roofs/Landscape Areas

Runoff = 0.87 cfs @ 12.10 hrs, Volume= 0.068 af, Depth> 5.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=6.02"

	Area (sf)	CN	Description
	3,702	98	Unconnected roofs, HSG C
*	1,444	98	Concrete Walkway & Play Area, HSG C
*	335	89	Flagstone walkway, HSG C
	1,541	74	>75% Grass cover, Good, HSG C
	7,022	92	Weighted Average
	1,876		26.72% Pervious Area
	5,146		73.28% Impervious Area
	3,702		71.94% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0400	0.14		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
0.7	97	0.0206	2.31		**Shallow Concentrated Flow, B to C** Unpaved Kv= 16.1 fps
0.3	48	0.0220	3.01		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
7.1	195	Total			

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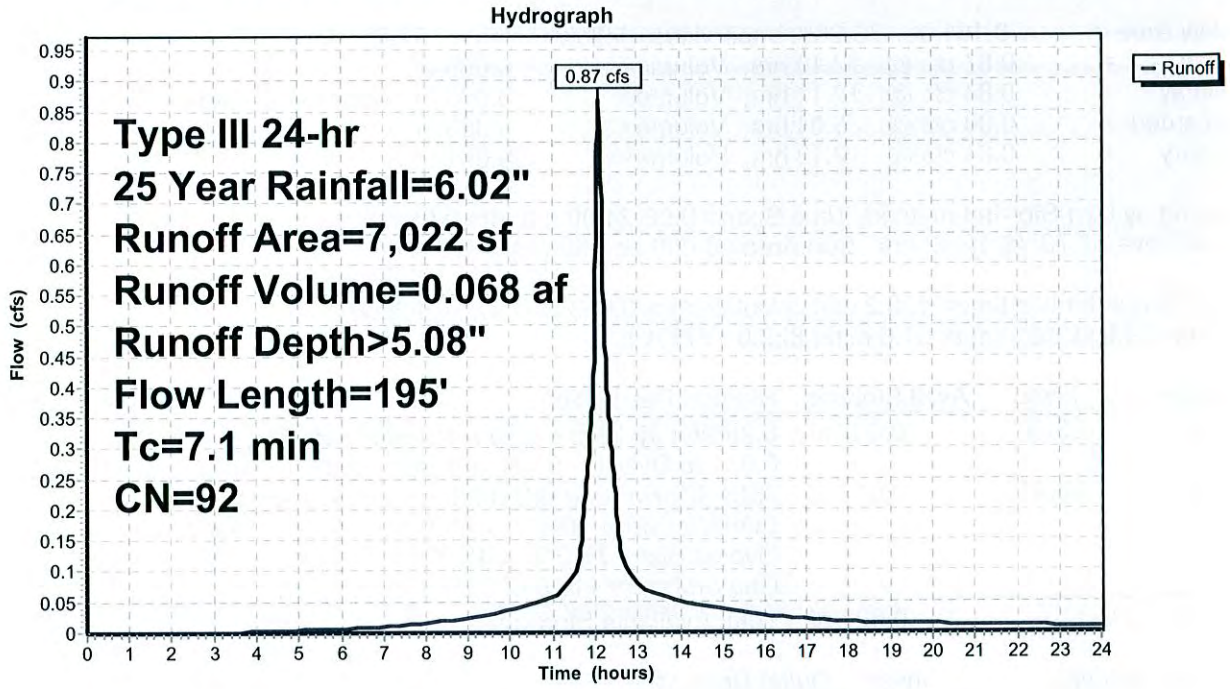
Subcatchment N1B: North & East Side of Site - Playground/Roofs/Landscape Areas



Summary for Pond SIC2: Subsurface Infiltration Chambers #2

Inflow Area =	0.161 ac,	73.28% Impervious,	Inflow Depth >	5.08"	for 25 Year event
Inflow =	0.87 cfs @	12.10 hrs,	Volume=	0.068 af	
Outflow =	0.84 cfs @	12.12 hrs,	Volume=	0.053 af,	Atten= 4%, Lag= 1.4 min
Discarded =	0.00 cfs @	5.04 hrs,	Volume=	0.003 af	
Primary =	0.84 cfs @	12.12 hrs,	Volume=	0.051 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.73' @ 12.12 hrs Surf.Area= 0.006 ac Storage= 0.017 af

Plug-Flow detention time= 130.2 min calculated for 0.053 af (78% of inflow)
Center-of-Mass det. time= 51.6 min (829.0 - 777.4)

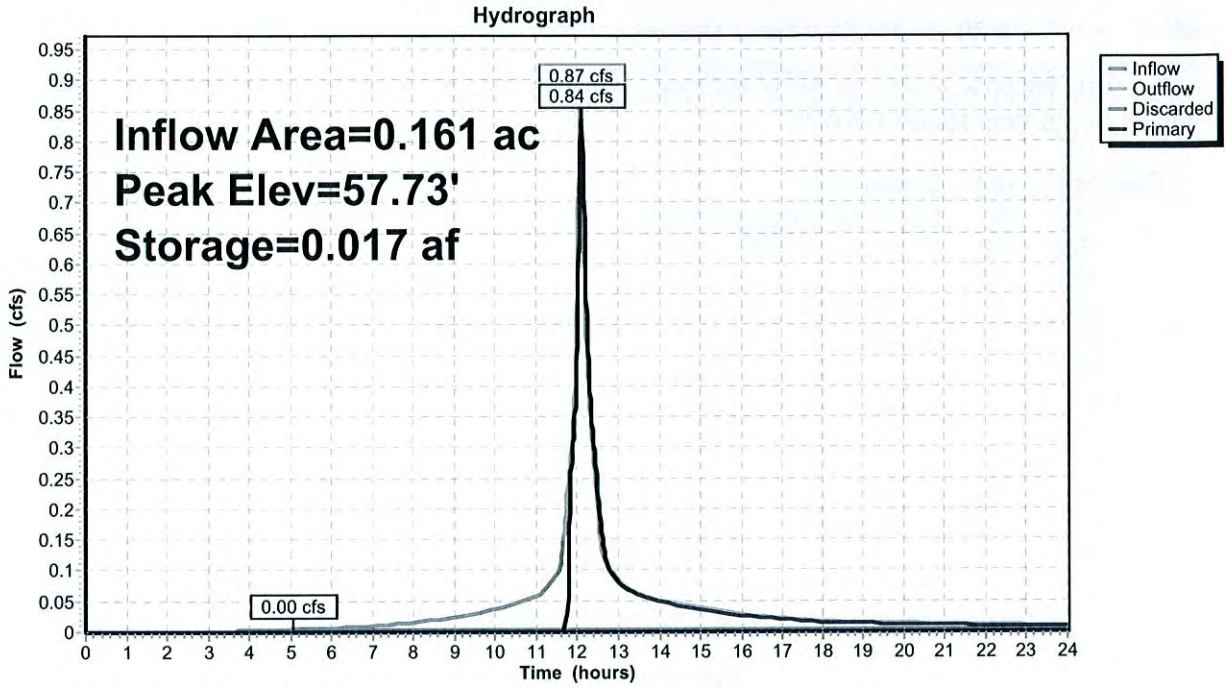
Volume	Invert	Avail.Storage	Storage Description
#1	53.66'	0.007 af	**6.25'W x 39.75'L x 5.50'H Prismatoid** 0.031 af Overall - 0.013 af Embedded = 0.018 af x 40.0% Voids
#2	54.41'	0.013 af	**ADS_StormTech MC-3500 c +Cap** x 5 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap Cap Storage= +15.6 cf x 2 x 1 rows = 31.2 cf
		0.021 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	57.08'	**8.0" Round Culvert** L= 45.8' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 57.08' / 51.68' S= 0.1179 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf
#2	Discarded	53.66'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 5.04 hrs HW=53.72' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.83 cfs @ 12.12 hrs HW=57.73' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.83 cfs @ 2.41 fps)

Pond SIC2: Subsurface Infiltration Chambers #2



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Summary for Subcatchment N1C: South Side of Site - Roof & Walkways

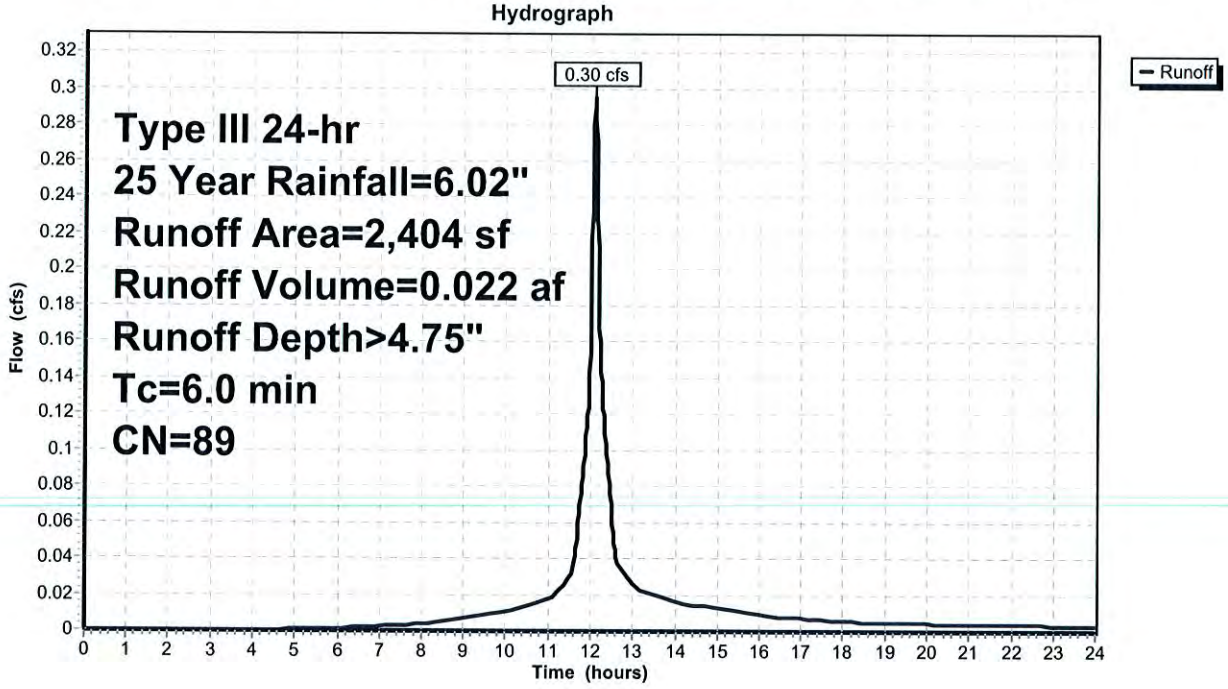
Runoff = 0.30 cfs @ 12.08 hrs, Volume= 0.022 af, Depth> 4.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=6.02"

	Area (sf)	CN	Description
	1,173	98	Unconnected roofs, HSG C
*	189	98	Concrete Walkway & Play Area, HSG C
*	203	89	Flagstone walkway, HSG C
	839	74	>75% Grass cover, Good, HSG C
	2,404	89	Weighted Average
	1,042		43.34% Pervious Area
	1,362		56.66% Impervious Area
	1,173		86.12% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct Entry Tc < 6 mins**

Subcatchment N1C: South Side of Site - Roof & Walkways



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Summary for Subcatchment N2: S. Sixth Street Lawn/Entry

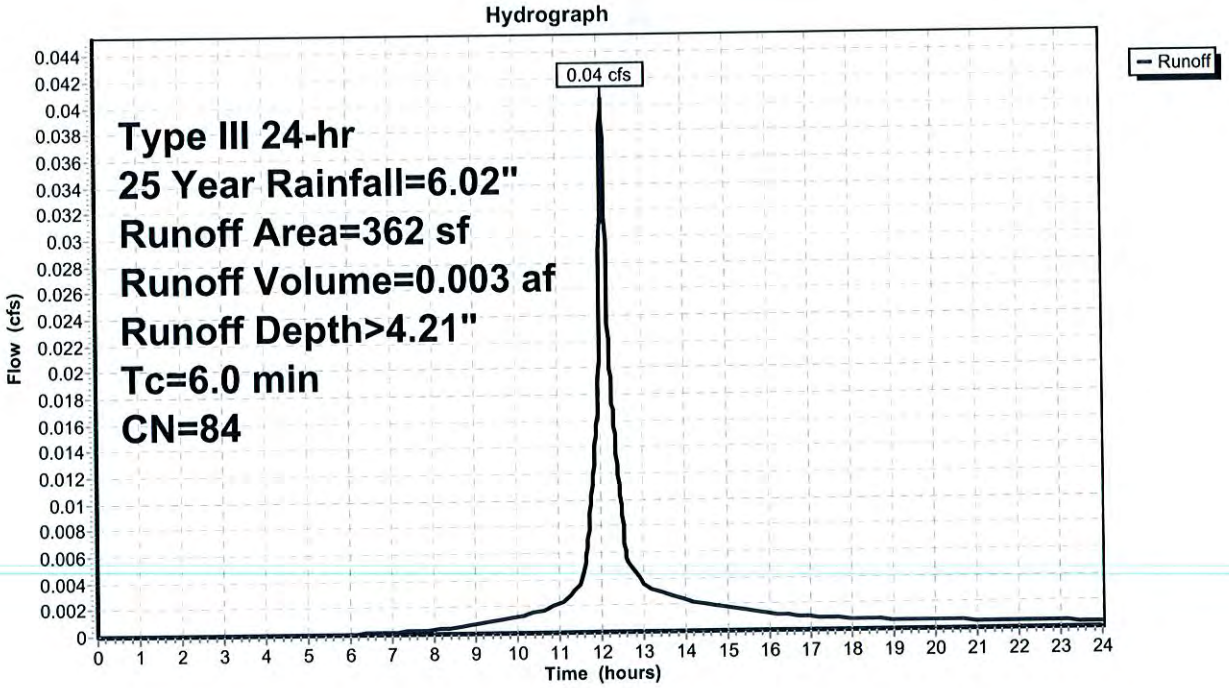
Runoff = 0.04 cfs @ 12.09 hrs, Volume= 0.003 af, Depth> 4.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=6.02"

Area (sf)	CN	Description
156	98	Unconnected pavement, HSG C
206	74	>75% Grass cover, Good, HSG C
362	84	Weighted Average
206		56.91% Pervious Area
156		43.09% Impervious Area
156		100.00% Unconnected

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

Subcatchment N2: S. Sixth Street Lawn/Entry

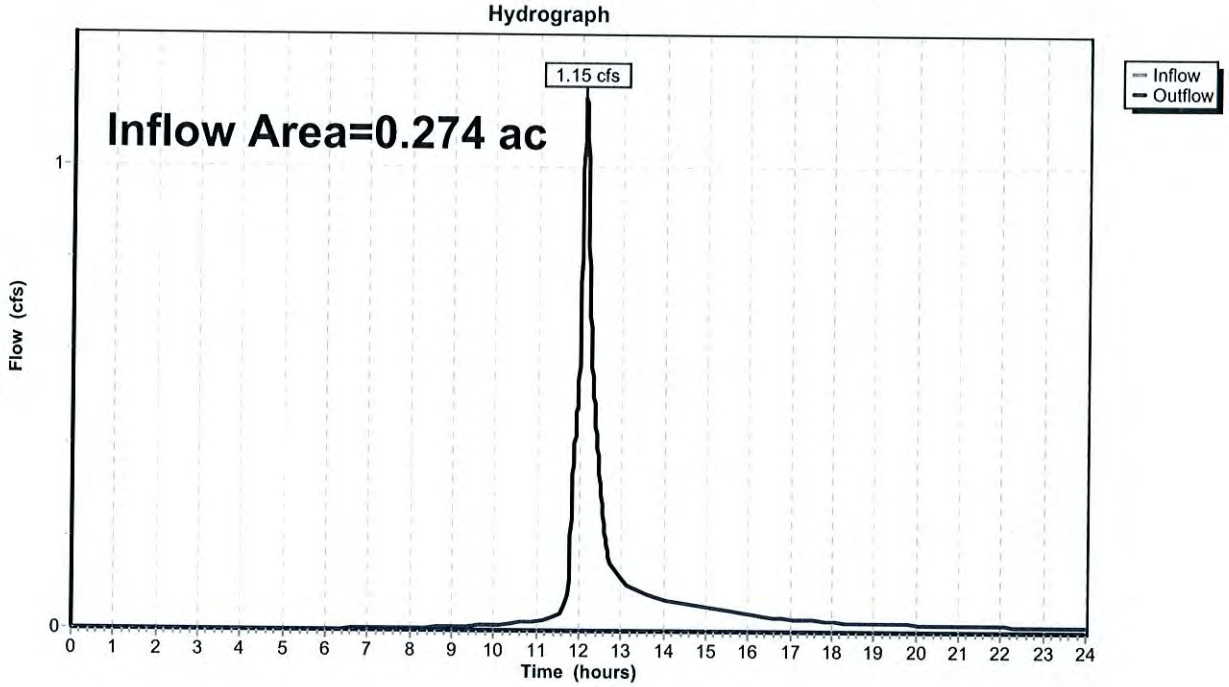


Summary for Reach DP1: Design Point 1 - SE Corner @ Road

Inflow Area =	0.274 ac,	59.85% Impervious,	Inflow Depth >	3.30"	for 25 Year event
Inflow =	1.15 cfs @	12.11 hrs, Volume=	0.075 af		
Outflow =	1.15 cfs @	12.11 hrs, Volume=	0.075 af,	Atten= 0%,	Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP1: Design Point 1 - SE Corner @ Road



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Summary for Subcatchment N1A: West Lawn/Ramp/Roof

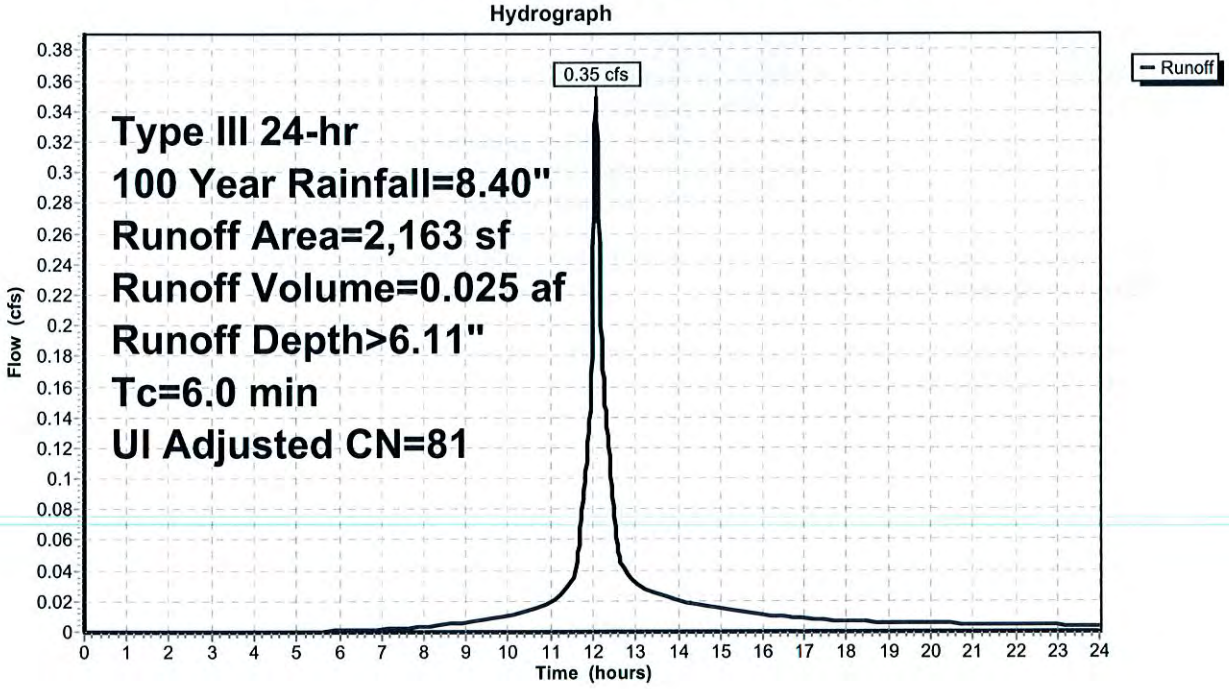
Runoff = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af, Depth> 6.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 Year Rainfall=8.40"

	Area (sf)	CN	Adj	Description
	489	98		Unconnected roofs, HSG C
*	549	89		Flagstone walkway, HSG C
	1,125	74		>75% Grass cover, Good, HSG C
	2,163	83	81	Weighted Average, UI Adjusted
	1,674			77.39% Pervious Area
	489			22.61% Impervious Area
	489			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct Entry Tc < 6 min.**

Subcatchment N1A: West Lawn/Ramp/Roof



Summary for Pond SIC1: Subsurface Infiltration Chambers #1

Inflow Area =	0.050 ac, 22.61% Impervious, Inflow Depth > 6.11" for 100 Year event			
Inflow =	0.35 cfs @ 12.09 hrs, Volume=	0.025 af		
Outflow =	0.02 cfs @ 14.03 hrs, Volume=	0.008 af, Atten= 94%, Lag= 116.8 min		
Discarded =	0.00 cfs @ 8.30 hrs, Volume=	0.002 af		
Primary =	0.02 cfs @ 14.03 hrs, Volume=	0.005 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 54.37' @ 14.03 hrs Surf.Area= 0.006 ac Storage= 0.018 af

Plug-Flow detention time= 325.1 min calculated for 0.008 af (31% of inflow)
Center-of-Mass det. time= 187.2 min (985.3 - 798.1)

Volume	Invert	Avail.Storage	Storage Description
#1	50.11'	0.007 af	**6.25'W x 39.75'L x 5.50'H Prismatoid** 0.031 af Overall - 0.013 af Embedded = 0.018 af x 40.0% Voids
#2	50.86'	0.013 af	**ADS_StormTech MC-3500 c +Cap** x 5 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap Cap Storage= +15.6 cf x 2 x 1 rows = 31.2 cf
		0.021 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	50.11'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	54.28'	**4.0" Round Culvert** L= 10.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 54.28' / 54.18' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.00 cfs @ 8.30 hrs HW=50.17' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.02 cfs @ 14.03 hrs HW=54.37' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Inlet Controls 0.02 cfs @ 0.91 fps)

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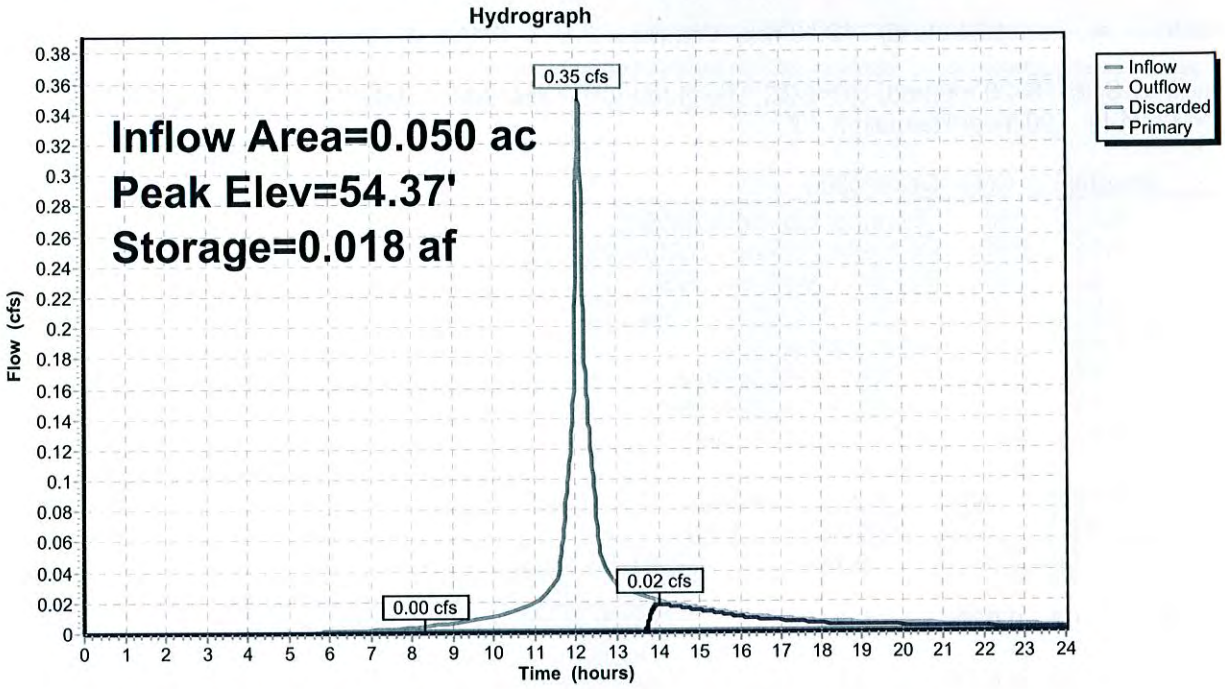
Pond SIC1: Subsurface Infiltration Chambers #1



Summary for Subcatchment N1B: North & East Side of Site - Playground/Roofs/Landscape Areas

Runoff = 1.24 cfs @ 12.10 hrs, Volume= 0.100 af, Depth> 7.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 Year Rainfall=8.40"

	Area (sf)	CN	Description
	3,702	98	Unconnected roofs, HSG C
*	1,444	98	Concrete Walkway & Play Area, HSG C
*	335	89	Flagstone walkway, HSG C
	1,541	74	>75% Grass cover, Good, HSG C
	7,022	92	Weighted Average
	1,876		26.72% Pervious Area
	5,146		73.28% Impervious Area
	3,702		71.94% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0400	0.14		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
0.7	97	0.0206	2.31		**Shallow Concentrated Flow, B to C** Unpaved Kv= 16.1 fps
0.3	48	0.0220	3.01		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
7.1	195	Total			

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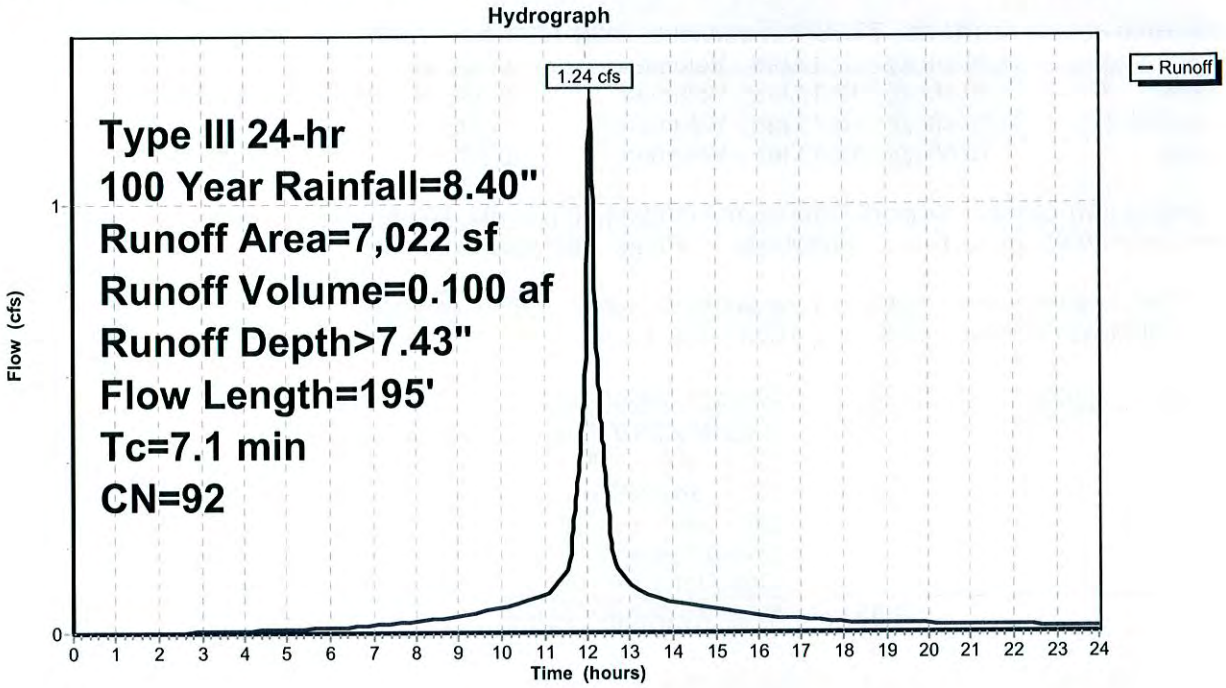
Subcatchment N1B: North & East Side of Site - Playground/Roofs/Landscape Areas



Summary for Pond SIC2: Subsurface Infiltration Chambers #2

Inflow Area =	0.161 ac, 73.28% Impervious, Inflow Depth > 7.43" for 100 Year event			
Inflow =	1.24 cfs @	12.10 hrs, Volume=	0.100 af	
Outflow =	1.19 cfs @	12.13 hrs, Volume=	0.085 af, Atten= 5%, Lag= 1.6 min	
Discarded =	0.00 cfs @	3.75 hrs, Volume=	0.003 af	
Primary =	1.18 cfs @	12.13 hrs, Volume=	0.082 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 58.05' @ 12.13 hrs Surf.Area= 0.006 ac Storage= 0.018 af

Plug-Flow detention time= 108.5 min calculated for 0.085 af (85% of inflow)
Center-of-Mass det. time= 45.0 min (813.1 - 768.1)

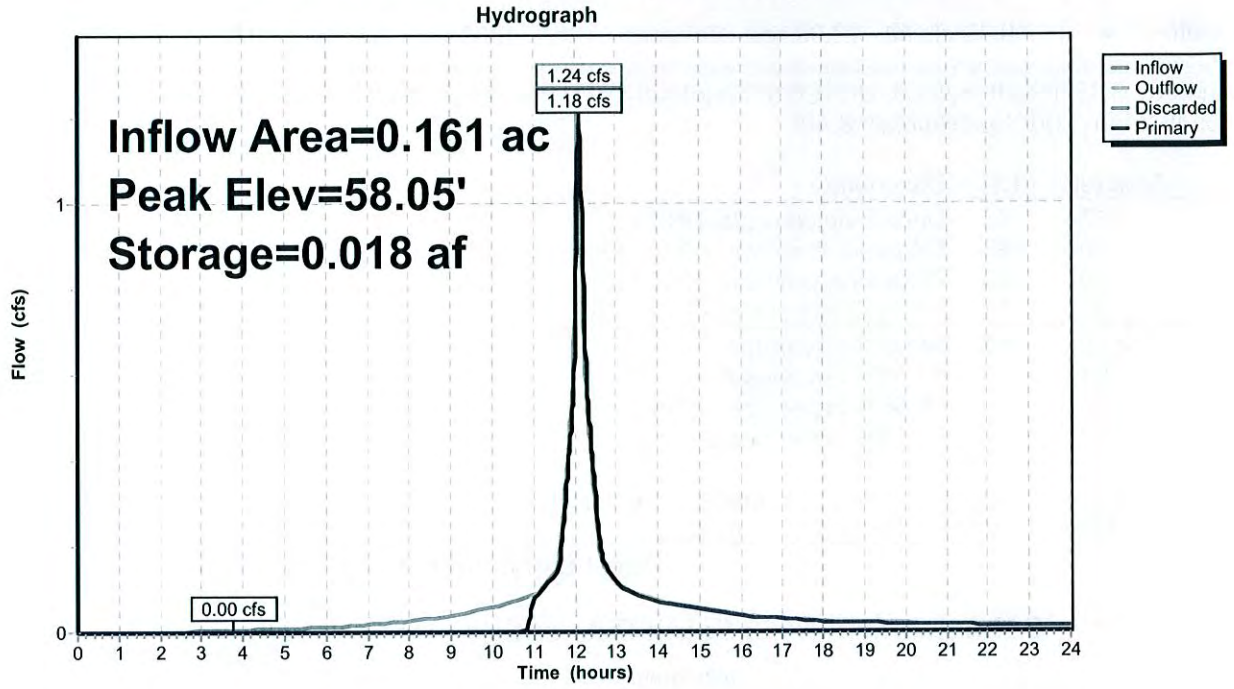
Volume	Invert	Avail.Storage	Storage Description
#1	53.66'	0.007 af	**6.25'W x 39.75'L x 5.50'H Prismatoid** 0.031 af Overall - 0.013 af Embedded = 0.018 af x 40.0% Voids
#2	54.41'	0.013 af	**ADS_StormTech MC-3500 c +Cap** x 5 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap Cap Storage= +15.6 cf x 2 x 1 rows = 31.2 cf
		0.021 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	57.08'	**8.0" Round Culvert** L= 45.8' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 57.08' / 51.68' S= 0.1179 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf
#2	Discarded	53.66'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 3.75 hrs HW=53.72' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=1.18 cfs @ 12.13 hrs HW=58.05' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.18 cfs @ 3.39 fps)

Pond SIC2: Subsurface Infiltration Chambers #2



Summary for Subcatchment N1C: South Side of Site - Roof & Walkways

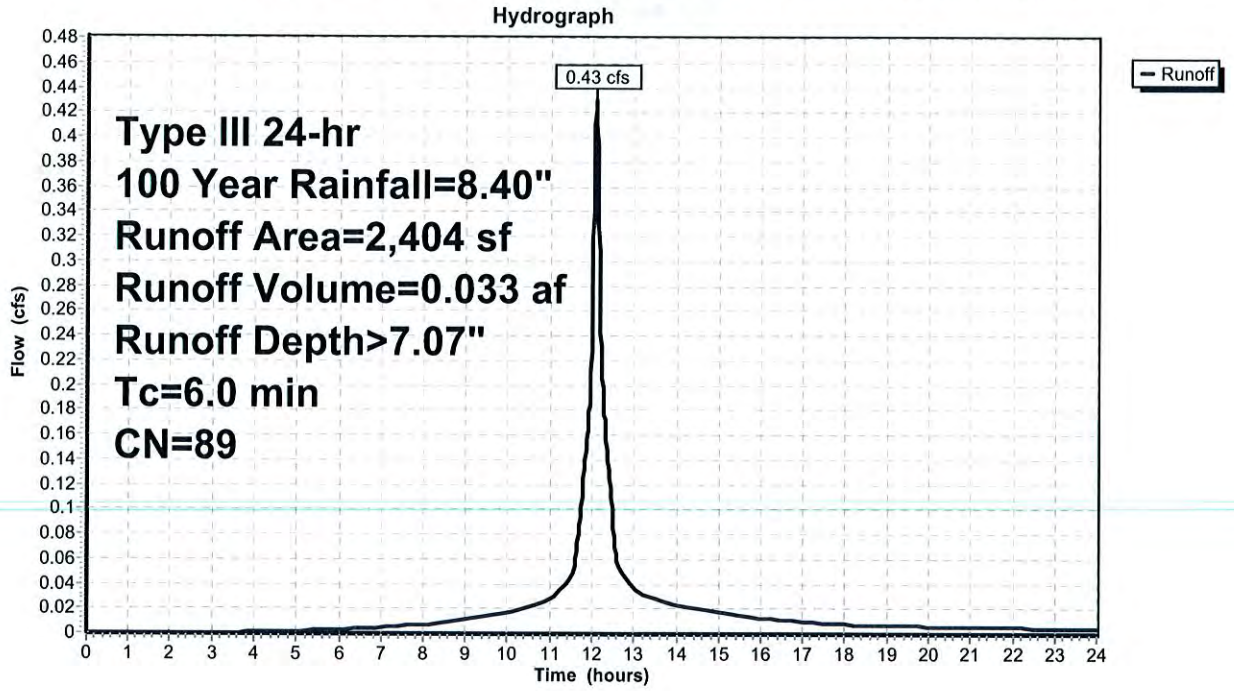
Runoff = 0.43 cfs @ 12.08 hrs, Volume= 0.033 af, Depth> 7.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 Year Rainfall=8.40"

	Area (sf)	CN	Description
	1,173	98	Unconnected roofs, HSG C
*	189	98	Concrete Walkway & Play Area, HSG C
*	203	89	Flagstone walkway, HSG C
	839	74	>75% Grass cover, Good, HSG C
	2,404	89	Weighted Average
	1,042		43.34% Pervious Area
	1,362		56.66% Impervious Area
	1,173		86.12% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct Entry Tc < 6 mins**

Subcatchment N1C: South Side of Site - Roof & Walkways



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Summary for Subcatchment N2: S. Sixth Street Lawn/Entry

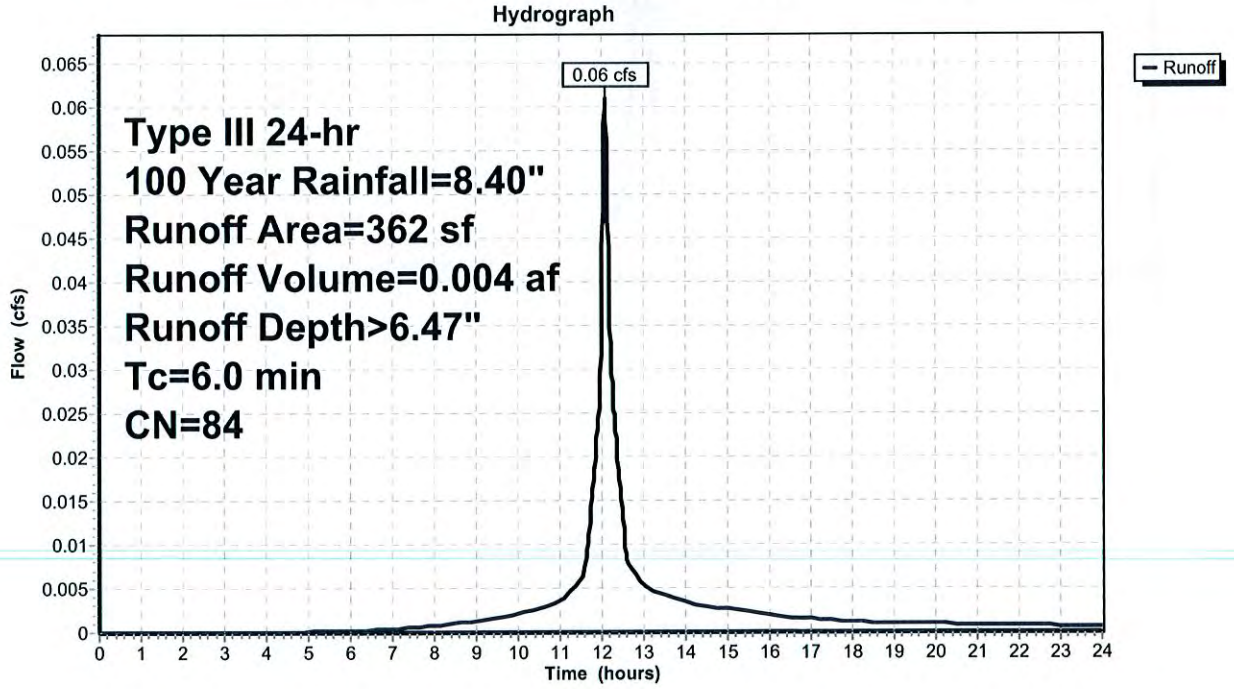
Runoff = 0.06 cfs @ 12.09 hrs, Volume= 0.004 af, Depth> 6.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 Year Rainfall=8.40"

Area (sf)	CN	Description
156	98	Unconnected pavement, HSG C
206	74	>75% Grass cover, Good, HSG C
362	84	Weighted Average
206		56.91% Pervious Area
156		43.09% Impervious Area
156		100.00% Unconnected

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

Subcatchment N2: S. Sixth Street Lawn/Entry

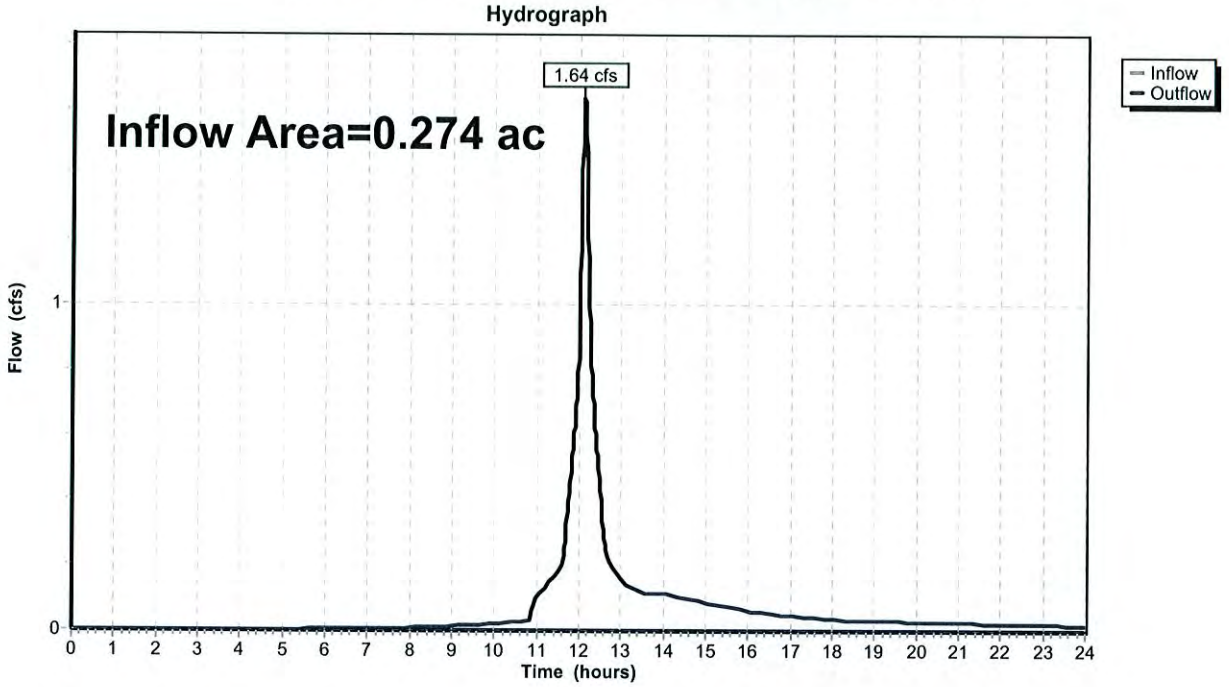


Summary for Reach DP1: Design Point 1 - SE Corner @ Road

Inflow Area =	0.274 ac, 59.85% Impervious, Inflow Depth > 5.45" for 100 Year event			
Inflow =	1.64 cfs @ 12.11 hrs, Volume=	0.125 af		
Outflow =	1.64 cfs @ 12.11 hrs, Volume=	0.125 af, Atten= 0%, Lag= 0.0 min		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP1: Design Point 1 - SE Corner @ Road



Attached Figures

- Figure 1: Quadrangle Map
- Figure 2: FEMA Flood Insurance Rate Map
- Figure 3: Water Supply Protection Areas Map
- Figure 4: Natural Resources Conservation Service Soil Map

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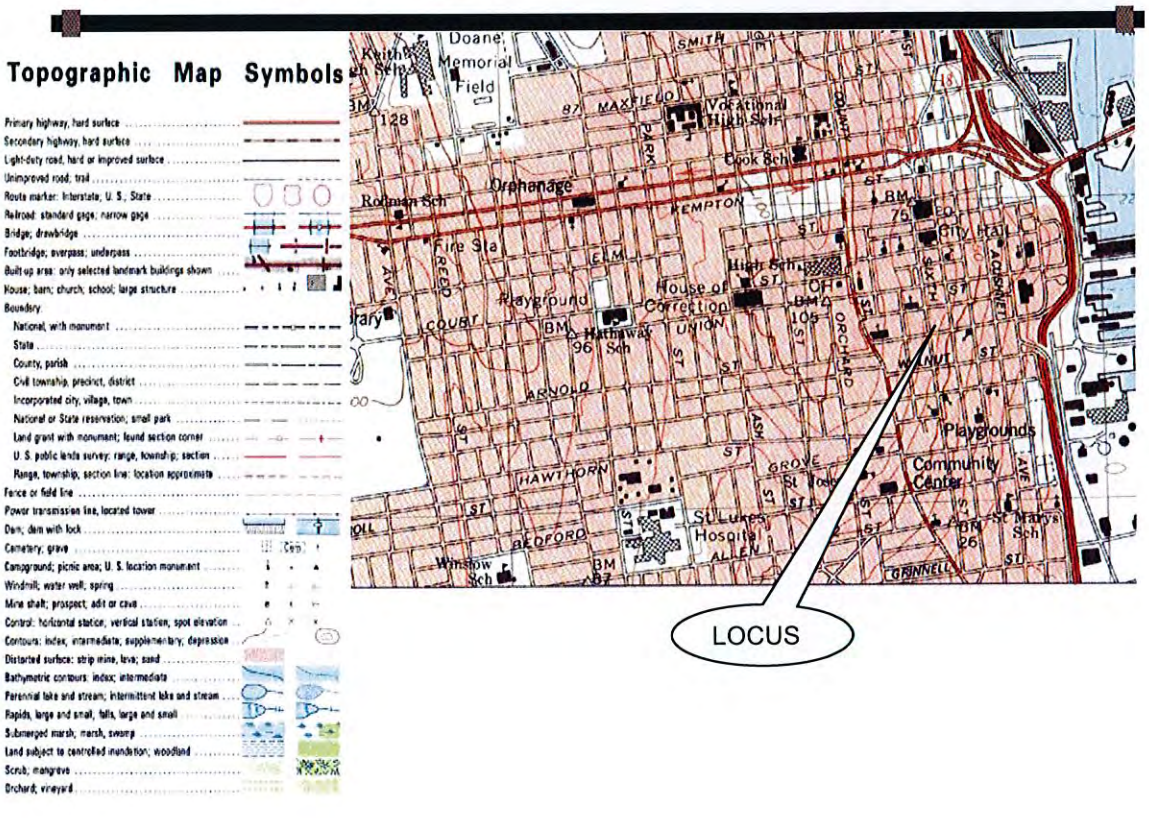
Figure 1

USGS Topographic Map

New Bedford North Quad 1984

New Bedford, Massachusetts

Source: TopoScout CD-ROM USGS Quadrangle Map



TEL 508-998-5700 FAX 508-998-0883 email: info@g-g-d.com

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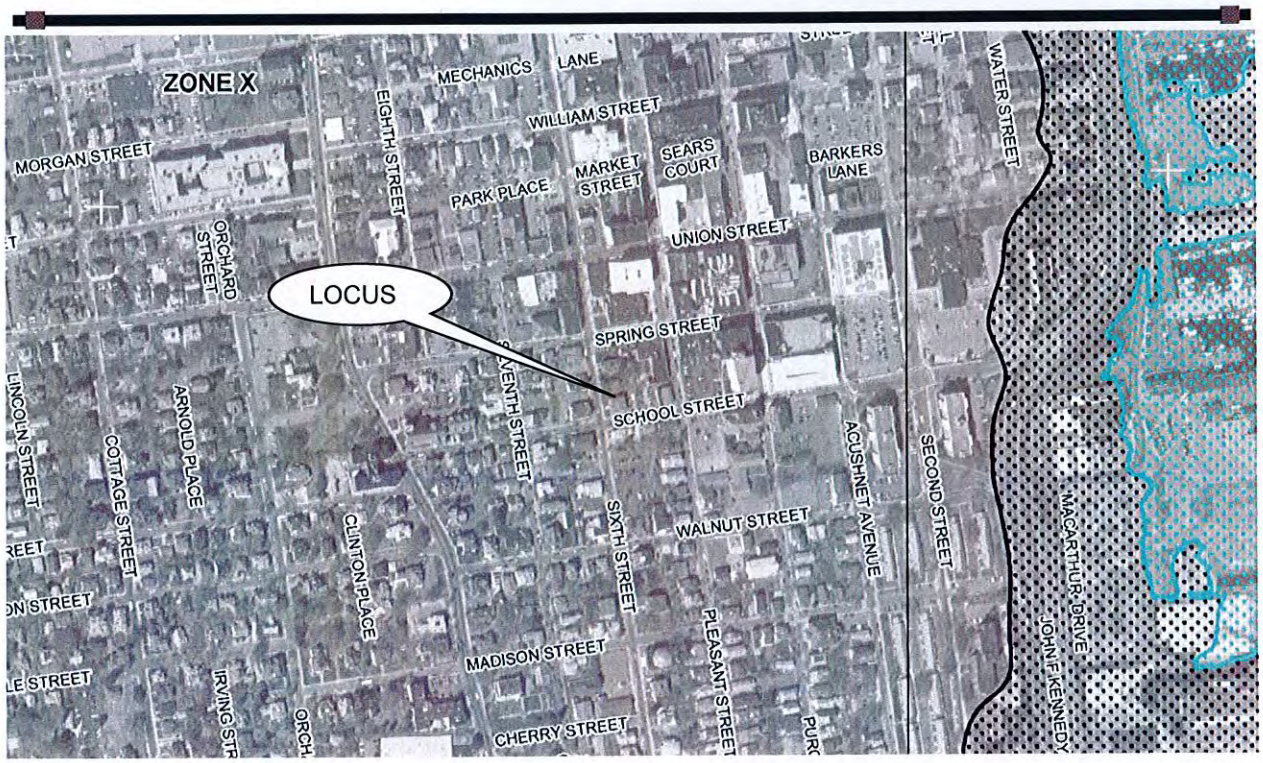
Figure 2

Flood Insurance Rate Map
City of New Bedford, MA
Bristol County
Community Panel Number: 25005C 0393 G **Effective Date: July 16, 2014**



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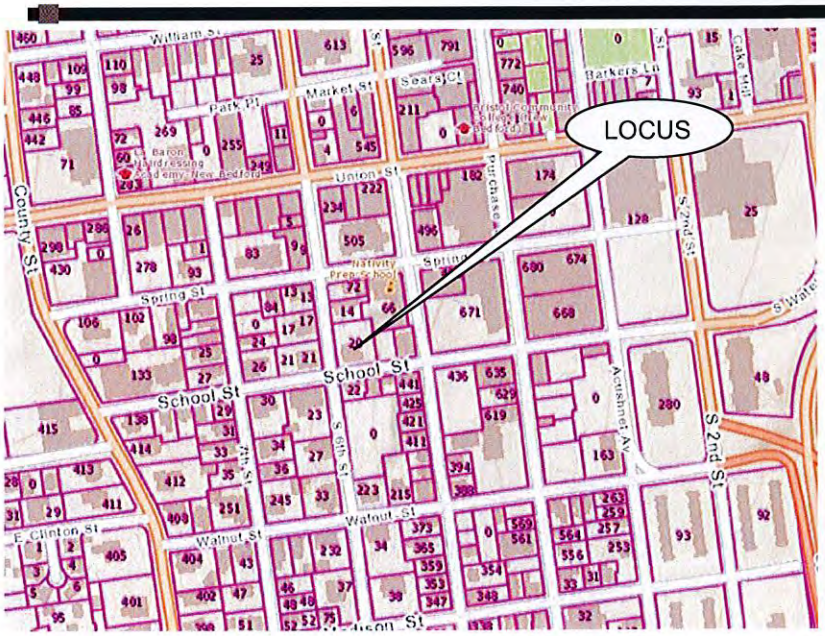
Consulting Engineers Inc.

Figure 3

Water Supply Protection Areas Map
New Bedford, MA
Source: Mass GIS



MassDOT Roads by Road Type
Interstate Shields
Limited Access Highway
U.S. Route Shields
Multi-lane Hwy, Not Limited Access
State Route Shields
Other Numbered Highway
Major Road, Collector
Minor Road, Arterial
Ramp
Tunnel
Tunnel (Limited Access Hwy)
Tunnel (Multi-lane Hwy)
Tunnel (Other Numbered Hwy)

2005 Color Orthos

IWPAs

Zone IIs

Public Water Supplies
Communtiy Groundwater Well
Non-Communtiy Groundwater Well
Surface Water Intake
Emergency Surface Water Intake
Community Labels
Non-Community Labels

Massachusetts Towns Black Labels

Major MassDOT Routes
Interstate
US Highway
State Route

Massachusetts Towns Survey Boundaries Muted Colors
Interstate
Coast
Town

States Bordering MA plus ME

Ocean

TEL 508-998-5700 FAX 508-998-0883 email: info@g-g-d.com

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Figure 4

Natural Resources Conservation Service Soil Map **Effective Date: September 28, 2015**

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Bristol County, Massachusetts, Southern Part
Survey Area Data: Version 9, Sep 28, 2015

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

Date(s) aerial images were photographed: Mar 30, 2011—Oct 8, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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Inc.

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Map Unit Legend

Bristol County, Massachusetts, Southern Part (MA603)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
602	Urban land	64.5	100.0%
Totals for Area of Interest		**64.5**	**100.0%**

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Project: Renovation to YWCA of Southeastern Massachusetts
Location: New Bedford, MA

Geotechnical Data

TEL 508-998-5700 FAX 508-998-0883 email: info@g-g-d.com

GEOTECHNICAL ENGINEERING REPORT
FOR THE PROPOSED
YWCA BUILDING ADDITION
NEW BEDFORD, MASSACHUSETTS

Prepared for:

Litman Architecture
Rhode Island Studio
259 Water Street, Suite 1L
Warren, RI 02885

Prepared by:

Paul B. Aldinger & Associates, Inc.
860A Waterman Avenue
Suite 9
East Providence, Rhode Island 02914

PBA No. 11040
September 2011

PAUL B. ALDINGER & ASSOCIATES, INC.
Consulting in Geotechnical Engineering & Groundwater Hydrology
860A Waterman Avenue Suite 9 East Providence, Rhode Island 02914 (401) 435-5570

September 16, 2011

Mr. Jay J.Litman, AIA, Principal
Litman Architecture
Rhode Island Studio
259 Water Street, Suite 1L
Warren, RI 02885

Re: Geotechnical Engineering Report
YWCA Building Addition
New Bedford, Massachusetts
PBA No. 11040

Dear Mr. Litman:

Paul B. Aldinger & Associates, Inc. (PBA) is pleased to provide Litman Architure (LA) with this geotechnical engineering report for the above referenced project in accordance with our proposal dated April 20, 2011. This report is subject to the limitations that are outlined in Appendix A.

1.00 INTRODUCTION/PROJECT DESCRIPTION

The project site is located at 20 South 6th Street in New Bedford, Massachusetts. The project consists of the construction of a proposed addition to the existing YWCA building. It is our understanding that the building will be three stories in height and a partial basement with a footprint of approximately 3,250 square feet. VS 3275 see p. 1 of G.G.D. Review

To develop this proposal, we reviewed "Boring and Test Pit Location Plan" dated March 24, 2011 developed by Odeh Engineers, Inc. The plan indicates the size, layout and location of the existing YWCA building and the proposed addition. In addition, site contours, sidewalks, some utilities, proposed exploration locations as well as other site features are included on the plan. We also reviewed an electronic PDF set of plans received from LA that indicate the floor footprints, and the extent of the proposed partial basement.

The objectives of our engineering services were to plan and monitor a subsurface exploration program, perform geotechnical engineering analyses, and develop an engineering report with specific earthwork and foundation design recommendations for the proposed addition.

2.00 GEOLOGY

Surficial Geology - The 1992 US Geological Survey Surficial Geology Map of Buzzards Bay Drainage Basin compiled by B. Stone, indicates that the surficial geology of the area consists of glacial till characterized as a compact unsorted deposit of sand, gravel and silt.

Bedrock Geology - The 1983 US Geological Survey Bedrock Geology Map of Massachusetts compiled by Zen, Goldsmith, Richards and others, indicates that the bedrock underlying the project site is classified as part of the Milford-Dedham zone. The bedrock within the southern part of this formation consists of predominantly feldspathic gneiss and amphobolite with few indicators of metamorphic grade.

3.00 SUBSURFACE INVESTIGATION PROGRAM

The subsurface exploration program consisted of three test borings (B-1 through B-3) drilled by Subsurface Remediation of Tiverton, Rhode Island on July 8, 2011 and six test pits (TP-1 through TP-6) completed by Modern Tractor and Truck, Inc. of Seekonk, MA on June 17, 2011. The location of the explorations were taped from the existing site features and are provided on Figure 2, Subsurface Exploration Plan. The test borings and test pits were observed and logged by an engineering technician from PBA and the logs are included in Appendix B. The elevations provided on the test borings were inferred based on the contours provided on the project site plan. The elevations provided on the test pits were surveyed by PBA.

Test borings B-1 and B-2 were drilled with a 4-1/4 inch hollow stem auger and B-3 was drilled with steel casing using the wash and drive method. The test borings extended to depths between 20.8 and 24 feet below the ground surface. Standard split spoon soil samples were obtained at intervals of 5 feet using a 1⅜-inch inside diameter split spoon sampler in substantial conformance with ASTM D1586, the Standard Penetration Test (SPT). The standard ASTM method of driving the sampler was employed using a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler for each 6 inches of penetration was recorded. The number of blows required to drive the sampler from 6 to 18 inches of penetration is the SPT blow count (N-value), a commonly-used indicator of soil density.

A two-inch pvc observation well was installed in test boring B-1 at a depth of approximately 20 feet with 10 feet of slotted screen and 10 feet of riser. The well screen was backfilled with filter sand and a 2-foot thick bentonite seal was placed above the screen section. The remainder of the hole was backfilled with drill cuttings.

The test pits were excavated with a backhoe to approximately 7 to 13 feet below the existing grade. The purpose of the test pits were to collect representative soil samples and observe the existing building and retaining wall foundations.

4.00 SUBSURFACE CONDITIONS

Generalized soil conditions encountered in the subsurface explorations include the following strata from the ground surface downward. Actual conditions between the subsurface explorations will likely vary. Refer to the logs in Appendix B for more detailed descriptions of the conditions encountered.

4.10 Soil Conditions

- **Asphalt/Topsoil** Approximately 3 to 4 inches of asphalt was encountered at the ground surface in borings B-2 and B-4. Approximately 10 inches of topsoil was encountered at boring B-1. Where encountered, these layers were underlain by;

- **Non-Engineered Miscellaneous Fill** - Miscellaneous fill was encountered in all the explorations and typically consisted of loose to medium dense fine to coarse sand and gravel with varying amounts of silt, trace amounts of brick and some cobbles and boulders. Within the tests pits completed adjacent to the existing site retaining walls, the fill also contained varying amounts of concrete, sections of granite slabs and cinders. The miscellaneous fill was typically encountered to approximately a depth of 1.5 to 4 feet below the ground surface.

  It should be noted that deeper deposits of fill should be anticipated in the areas adjacent to the existing retaining wall structures. Test pits TP-3 and TP-4 were stopped prior to reaching the wall inverts because of concern for the stability of the masonry wall. As a result, the bottom of the miscellaneous fill was not determined. Considering the wall is approximately 5 to 7 feet high, we would anticipate that this fill would likely extend approximately 7 to 8 feet below grade (approximately elevation +56 to +57). Where encountered, this stratum was underlain by;

- **Subsoil** - Subsoil consisting of loose to medium dense orange-brown silty fine sand with trace roots was encountered to a depth of 3.5 to 4.5 feet below the ground surface in borings B-2 and B-3 as well as in the bottom of test pits TP-1 and TP-2. Where encountered, this stratum was underlain by;

- **Glacial Till** - Dense to very dense unsorted, compact deposits of sand, silt and gravel with cobbles and boulders were encountered in all of the test borings and extended to approximately 12.5 to13.5 feet below the existing grade. This stratum was underlain by:

- **Weathered Bedrock** - Gray to brown weathered bedrock was encountered in all of the test boring explorations at a depth of approximately 12.5 to 13.5 feet and extending to the bottom of the explorations. The bedrock was classified predominantly as gneiss and granite.

4.20 Groundwater Conditions

Groundwater levels were recorded at the time of completion of each boring and recorded within the observation well installed in test boring B-1. Groundwater was observed in all of the test borings ranging from approximately 9.3 to 10.45 feet below the ground surface, approximately between elevations +53 to +55 feet. It should be noted that fluctuations in the levels of the groundwater, especially within the glacial till, will likely occur due to variations in rainfall, temperature, and other factors occurring since the time measurements were made. It is not uncommon for groundwater levels to rise to near the surface of glacial till during the spring season.

5.00 EXISTING BUILDING & RETAINING WALL FOUNDATION CONDITIONS

Test Pits TP-1 through TP-6 were completed to assess the foundation of the existing building as well as the site retaining walls which will border the new addition on the north and east sides. Test pits TP-1 and TP-2 were completed along the north and northeast corner of the existing building. The foundation consisted of loose fieldstone with a granite facade masonry wall which extend down to just below the ground surface. The invert of the foundation varied from approximately elevation +61.7 to +64.1. The foundation was supported either on a thin layer of sand overlying topsoil and subsoil or placed directly on subsoil.

The retaining wall along the east side of the site consisted of stone masonry and appeared to be partially mortared along the outer facing (east side) with very little mortar observed along the interior side (west side). Test pits TP-3 and TP-4 were performed adjacent to this wall along the northeast portion of the site. The explorations extended approximately 4 feet below existing grade (approx. elevation +58), however, due to the concern for the large trees and potential for impacting the stability of the existing wall, the explorations were halted prior to reaching the bottom of the footing. The backfill behind the wall appeared to consist of miscellaneous fill with bricks, concrete, granite, and cinders. Although the bottom of the miscellaneous fill was not determined, considering the wall is approximately 5 to 7 feet high in this wall, we would anticipate that this fill would likely extend approximately 7 to 8 feet below grade (approximately elevation +56 to +57).

Along the north side of the site, the retaining wall consisted of concrete, concrete block and stone masonry. TP-5 and TP-6 were performed in the area of the stone masonry wall and indicated that

the foundation consisted of loose fieldstones extending to an invert of approximately elevation +62.

6.00 GEOTECHNICAL EVALUATION & RECOMMENDATIONS

It is our understanding that the new building addition will be three stories in height with a footprint of approximately 3,250 square feet and a basement is planned. It is our understanding that the proposed finish floor elevation of the basement is +53.90 and that excavations for footings will likely extend several feet below that elevation. For areas of the building that do not have a basement level, the proposed finish floor elevation is +63.90. The soils encountered at the site consisted of non-engineered miscellaneous fill and subsoil overlying glacial till soils and weathered Gneiss bedrock. The glacial till is the uppermost stratum capable of supporting the proposed building.

Based on the results of our geotechnical investigation and evaluation, it is recommended that the proposed building be supported on a shallow spread footing foundation bearing on compacted structural fill placed on the naturally deposited glacial till soils or weathered Gneiss bedrock . The following design recommendations have been developed.

6.10 Building Foundation Design

It is recommended that the new structure be supported on spread footings supported on compacted structural fill placed upon the natural glacial till or weathered Gneiss bedrock following removal of all unsuitable soil. Any topsoil, subsoil, non-engineered granular fill, organics and any unsuitable deleterious material should be removed from beneath the footings and the building addition footprint. We would recommend that all footings be supported on a minimum 12-inches of compacted structural fill. All exterior footings supported on soil should be a minimum of 4 feet below finished grade for protection from frost, as specified by the Massachusetts State Building Code. Interior footings should penetrate a minimum of 2 feet below the bottom of the slab to develop sufficient bearing capacity. Minimum footing dimensions regardless of loads or embedment depths should not be less than 24 inches for either continuous wall footings or individual column footings.

Based on computed ultimate bearing capacities with appropriate factors of safety, the allowable soil bearing pressures should not exceed 6 kips per square foot for footings below the basement areas (finish floor elevation +53.90) and allowable soil bearing pressures should not exceed 4 kips per square foot for footings in areas below the ground level floor (finish floor elevation +63.90). These estimates assume complete removal of any topsoil, subsoil, non-engineered granular fill, organics and any unsuitable deleterious material from below the structure and support on a minimum of 12-inches of compacted structural fill. Estimated total settlement of the footings

is anticipated to be less than one inch, and it is expected that this settlement will occur rapidly as the building is constructed. Long term consolidation of the underlying soils is not anticipated.

It is recommended that the new footings be set to at or below the existing building or onsite retaining wall footing elevations. If the footings for the new addition are set above the level of the footings of the existing building or existing retaining walls, then they may impart loads upon the existing footings and/or foundation wall which must be taken into consideration during design of the structure.

6.20 Site Preparation

It has been recommended that the proposed building be supported on a spread footing foundation bearing on compacted structural fill placed on the naturally deposited glacial till soils or weathered Gneiss bedrock. All topsoil, subsoil, and non-engineered miscellaneous fill should be removed from areas where buildings, pavement or other structures are to be constructed. Based on the subsurface explorations, it is anticipated that approximately 1.5 to 4 feet of unsuitable soil will need to be stripped from below most of the building footprint. Deeper deposits of non-engineered fill may be encountered adjacent to the existing site retaining walls, particularly at test pit locations TP-3 and TP-4 where the bottom of the retaining wall was not reached. Considering the wall is approximately 5 to 7 feet high, we would anticipate that this fill would likely extend approximately 7 to 8 feet below grade (approximately elevation +56 to +57). It should be noted that the approximations of miscellaneous fill thickness are based on widely spaced explorations and sampling intervals. Figure 3, Typical Foundation Detail, indicates the typical limits of non-engineered fill removal from below buildings.

6.30 Retaining wall Design

The table below indicates the engineering parameters for use in the design of retaining walls.

Parameter	Recommended Value
Base Coefficient of Sliding (concrete on soil) Compacted Structural Fill	0.40
Soil - Wall Friction Angle (concrete against soil) Compacted Structural Fill	0.40
Passive Pressure Coefficient (Kp) Naturally deposited Glacial Till Compacted Structural Fill	 3.54 3.39

Parameter	Recommended Value
Active Pressure Coefficient (Ka)	
Naturally deposited Glacial Till	0.28
Compacted Structural Fill	0.29
At Rest Pressure Coefficient (Ko)	
Naturally deposited Glacial Till	0.44
Compacted Structural Fill	0.46

6.40 Temporary Slopes, Excavation Support and Underpinning

All temporary excavation slopes in soil should be constructed not steeper than 1.5 horizontal to 1 vertical and in accordance with the requirements of the latest OSHA standards. Temporary excavation support will be required for steeper slopes. A fabric placed on the slope may be required to prevent soil erosion. Surface water should be diverted away from these slopes.

Based on the results of the subsurface exploration program, the excavation for the new foundation will require over-excavation to remove the miscellaneous fill, particularly along the areas close to the existing retaining walls and may extend up to 15 feet below the existing ground surface in the proposed basement areas. This excavation will extend in close proximity to the existing retaining walls. Along the north side of the site, it appears there may be sufficient room to open-cut excavation for the removal of non-engineered fill and foundation construction. However, along the east side of the site, it appears that the excavation would encroach on the existing masonry stone wall. Given the condition of this wall and the close proximity of the excavation, there will likely be a need for excavation support or, if permission can be attained, a temporary easement to remove to allow construction of the new building foundation and then reconstruct this wall.

Common methods of excavation support utilized on projects such as this one are H-piles and lagging and steel sheet piling. Typically steel sheet piling is driven with a vibratory hammer whereas the H-piles for the alternative system may be installed by driving, or if necessary, by pre-drilling large diameter holes and then installing H-piles in the holes to the required depths. Pre-drilling would also serve to mitigate vibrations and the potential for damage to nearby structures. The lagging is placed from the top down as the excavation proceeds. The design of temporary excavation support system should be completed by a Massachusetts registered Professional Engineer retained by the contractor or by the architect or engineer.

6.50 Underpinning

Based on the results of the test pits and review of the plans received from LA it is our

understanding that excavations for foundation construction of the proposed addition will be in close proximity and extend below the elevation of the existing building foundations. In areas where excavations extend deeper than and adjacent to the existing building foundations, underpinning in addition to excavation support will be required to support the existing foundation. Figure 4 presents a sketch which indicates the conditions where excavation support and underpinning of the foundations of existing structures are required. If the foundations of the existing structures fall within zone A, underpinning and excavation support is required. If the foundations of the existing structures fall within zone B, then excavation support is required. Typically excavation support would also be recommended if the existing structure falls within a 1.5H to 1V slope from the base of the excavation. The design of an underpinning support system should be completed by a Massachusetts registered Professional Engineer retained by the contractor or by the architect or engineer.

6.60 Subgrade Protection, Backfill, & Compaction Requirements

Due to the large amount of fines, the natural glacial till soils are very susceptible to disturbance once excavated and exposed to the elements. Once removal of unsuitable soil is complete, the exposed surface of the glacial till should then be surface compacted. Any disturbed or yielding areas should be over-excavated and replaced with compacted structural fill. In no case should excavation work be completed during a precipitation event nor when the excavation cannot be backfilled the same day.

Filling of the site should be accomplished with structural fill beneath all structures, roadways and parking areas. All structural fill should be placed in horizontal lifts and compacted. Within building areas, structural fill should be placed and compacted in lifts to the elevation of the bottom of the foundations and slabs.

We recommend that a minimum of 12 inches of compacted structural fill be placed below footing locations and below slabs-on-grade to provide an adequate base coarse. A geotechnical engineer familiar with the site geotechnical conditions should observe the footing bearing surfaces and the surface on which structural backfill is to be placed to ensure an adequate foundation subgrade.

Compacted structural fill should be bank-run gravel conforming to the gradation requirements presented in the table on the following page.

U.S. Standard Sieve Size	Structural Fill Percent Passing, by Weight
2-inch	100
½-inch	50-85
3/8 -inch	45-80
No. 4	40-75
No. 40	0-45
No. 200	0-8

Compaction of all fill within building areas should be to a minimum of 95 percent of the maximum dry density as determined by ASTM D-1557, the modified Proctor density test. Under paved areas, fill and backfill should be compacted to 90 percent of the maximum material dry density, except the top foot supporting pavement, which should be compacted to 95 percent. For other areas not supporting buildings, structures, or pavements, compaction should be 85 percent of maximum dry density. Lift thickness should be appropriate for the compaction equipment being utilized. Specifications should require that the Contractor adjust lift thickness to meet required compaction. In no case should lift thickness exceed 12 inches.

6.70 Reuse of on-site Soils

The non-engineered fill encountered onsite contained a varied amount of construction and miscellaneous debris (i.e. bricks, concrete, cinders) and is not recommended for reuse. In addition, the subsoil and glacial till soil likely contain excessive amounts of fines and are not recommended for reuse as structural fill. Soils with greater than 8 percent fines will not meet our specification for structural fill. Soils with elevated percentages of fines drain slowly and the control of the water content and compaction becomes difficult. When the moisture content exceeds the optimum compaction moisture content, the water in the pore spaces of the soil tends to absorb the compaction energy rather than the soil particles. During cooler, wet weather, soils with an elevated percentage of fines tend to remain saturated or near saturation for long periods of time, and adequate compaction is not achieved.

Any soil considered for reuse as structural fill should first be tested to ensure that it meets the recommended gradation requirement for structural fill. On-site granular soil and the glacial till soil which does not meet the recommended gradation requirement for use as structural fill, could be considered for reuse in areas not intended for the support of buildings, pavements, or other structures.

6.80 Liquefaction Potential and Seismic Design Requirements

We have considered seismic design requirements in accordance with the requirements of the eighth edition of The Massachusetts State Building Code. Based on the subsurface data collected, it is our opinion that the site soils are not susceptible to earthquake liquefaction. Based on our interpretation of the building code, we recommend that a site class of C be utilized for design. The seismic site coefficients for New Bedford are $S_s = 0.23$ and $S_1 = .058$.

6.90 Dewatering & Control of Surface Runoff

All excavations and backfilling should be conducted in the dry. Groundwater was encountered at approximately 9.3 to 10.45 feet below the ground surface, approximately between elevations +53 to 56.7 feet, at the times the borings were completed. Based on the anticipated depth of excavation for the installation of footings, it is anticipated that dewatering will be required for the basement foundation excavations. We anticipate the use of sump pumps and pits in combination with ditching should provide adequate dewatering. The design of a dewatering system should be completed by a Massachusetts registered Professional Engineer retained by the contractor or by the architect or engineer.

Specifications should require that the contractor provide for proper diversion of surface water runoff away from any excavations so that structures, embankments, and compacted fill are not undermined. During periods of heavy rainfall, diversion of trapped surface water may also be a significant problem.

6.100 Underdrains

Due to the poor drainage characteristic of the native site soils and the likelihood of the groundwater table rising above the proposed finish floor elevations we would recommend installing a subdrain below the slab and a perimeter drain completely around the building addition set below slab areas. It is recommended that twelve inches of compacted structural gravel bedding and PVC subdrains be installed under slabs with a good hydraulic connection to the building perimeter drains so that the under-slab gravel has an outlet, and groundwater cannot build up in this layer. We recommend that the building perimeter and subdrains consist of 4-inch diameter slotted or perforated pipe enveloped in crushed stone and a geotextile filter fabric (Mirafi 1100N or equivalent). The pipe can discharge either to a sump pit with a pump or by gravity to a storm drain. Gravity drainage is the preferable method.

6.110 Preconstruction Survey & Vibration Monitoring

Vibrations caused by the installation of the excavation support system and the compaction of soil

with a vibratory roller could result in densification of fill beneath nearby structures and subsequent settlement. In addition, lateral movement of this support system could result in settlement of the existing adjacent building. We would recommend that PBA be hired to conduct a pre-construction survey of the nearby structures (within 200 feet of the excavation limits) prior to installation of the underpinning and excavation support system and soil compaction procedures. The purpose of the survey is to document the existing conditions in the event that the structure is alleged to have been damaged due to the excavation or compaction work. The survey should consist of photographs, a video recording, and sketches where appropriate.

The Contractor should be required by the specifications to conduct their operations without causing damage to adjacent structures. In addition, they should limit vibrations to levels which are not likely to cause damage to nearby structures. We typically recommend a peak particle velocity of 0.5 inch per second for single event vibrations and 0.3 inch per second for continuous vibrations (assuming non-residential structures) or a lower level depending on site specific structures or sensitive equipment. During construction, we would recommend that PBA be hired to monitor construction vibrations. The specifications should also require that if the vibration levels measured at the adjacent structures exceed these threshold values, then the excavation support installation or the soil compaction procedures causing the vibrations should be suspended until it has been modified to decrease vibrations.

7.00 FINAL DESIGN & CONSTRUCTION MONITORING

It is recommended that PBA be provided the opportunity to review foundation design plans and prepare or review project earthwork specifications to ensure that our recommendations have been properly interpreted. The Massachusetts State Building Code requires that the subgrade preparation and fill compaction be monitored and tested for compliance within its special inspections requirements. Accordingly we recommend that PBA provide a geotechnical engineer or qualified engineering technician, qualified by training and experience to be present during construction to perform the following:

- monitor excavation of the non-engineered fill to assess the completeness of the removal of soils unsuitable for support of shallow spread footing foundation construction and the adequacy of the exposed bearing stratum;
- monitor the fill placement and compaction of fill materials beneath footings and slabs;
- conduct a preconstruction survey of structures within 200 feet of construction activities which may cause vibrations in order to document their existing conditions prior to construction;

- review contractor submittals such as excavation support, underpinning and dewatering prior to performing the work,

- monitoring services for the excavation support system including setting up and monitoring horizontal and vertical monitoring points on the existing structure along the edge of the excavation to provide an early warning of potential wall movement and settlement, and

- the monitoring of vibrations with a seismograph during soil compaction and excavation support installation activities.

- In addition, the PBA geotechnical engineer or qualified engineering technician would observe compliance with the design concepts, specifications and recommendations, and assist in developing design or construction changes in the event that subsurface conditions or excavation support installation performance differs from those anticipated prior to start of construction.

We appreciate the opportunity to have been of service to Litman Architecture and we trust that the information contained in this report is adequate for your needs at this time. Please contact the undersigned if there are questions on these recommendations or if you need additional information.

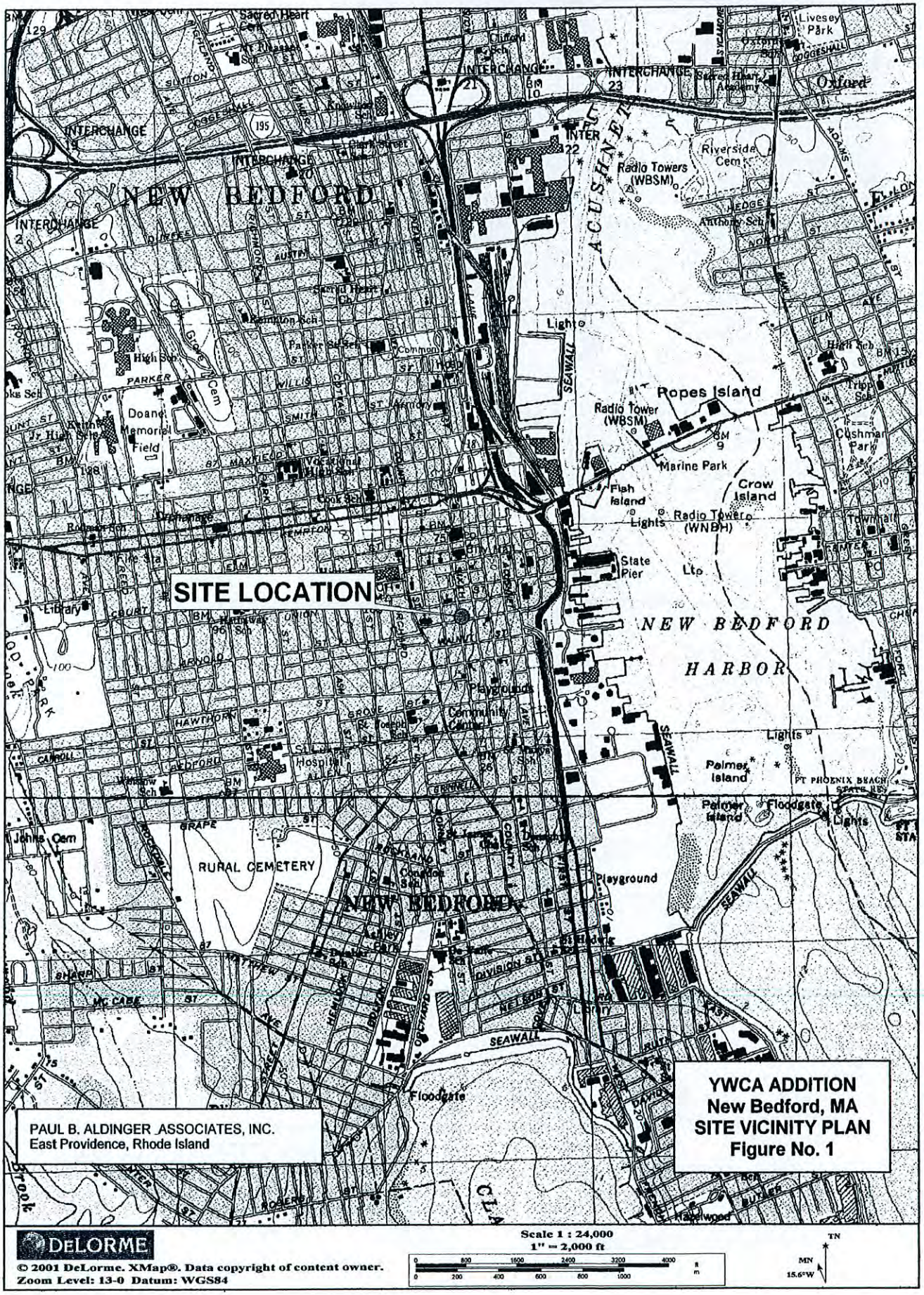
Very truly yours,

PAUL B. ALDINGER & ASSOCIATES, INC.

Paul B. Aldinger, Ph.D., P.E.
Chief Engineer

PAUL B. ALDINGER
NO. 3449
REGISTERED
PROFESSIONAL ENGINEER

FIGURES



PAUL B. ALDINGER ASSOCIATES, INC.
East Providence, Rhode Island

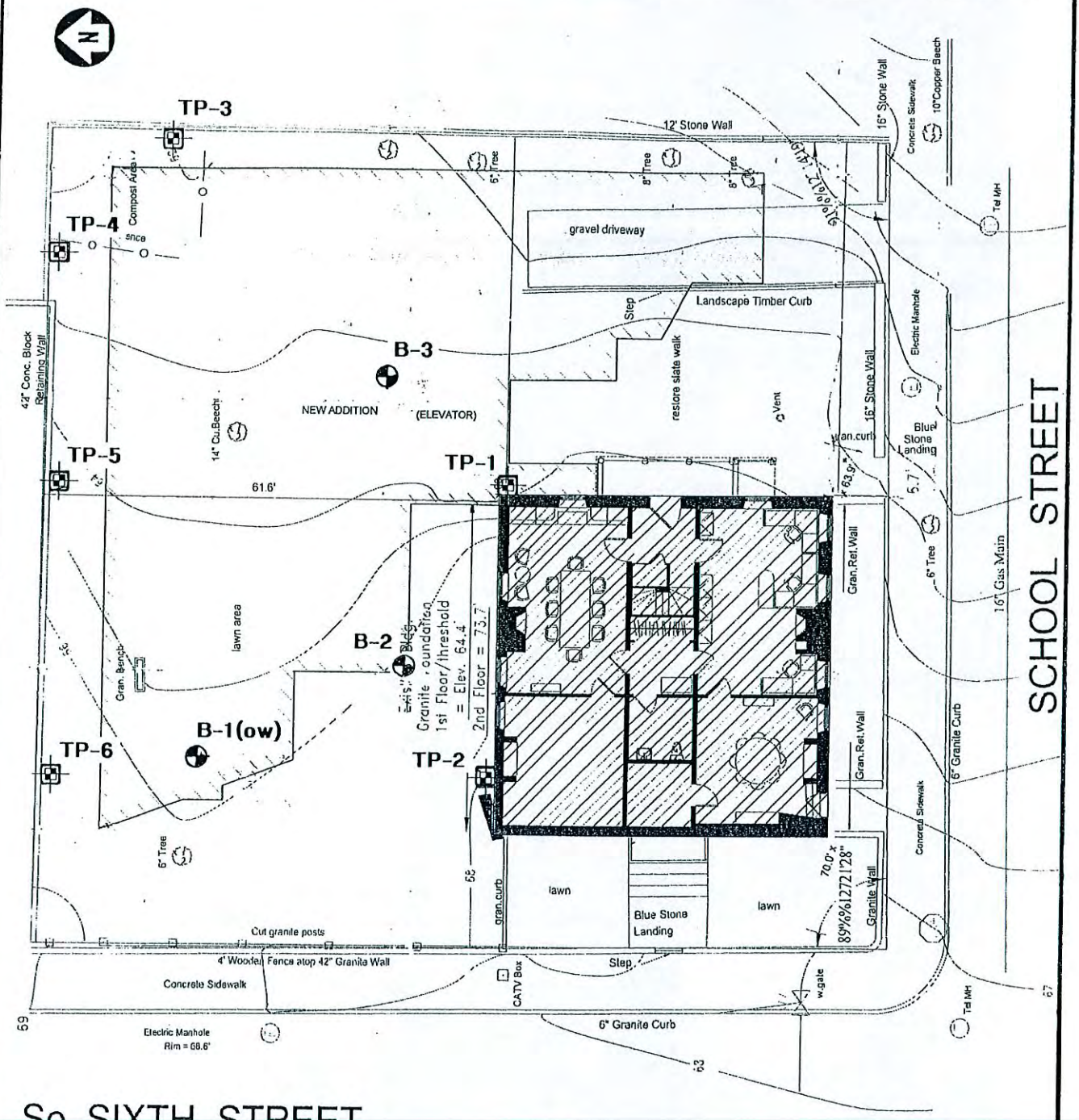
YWCA ADDITION
New Bedford, MA
SITE VICINITY PLAN
Figure No. 1

DeLORME

Scale 1 : 24,000
1" = 2,000 ft

© 2001 DeLorme. XMap®. Data copyright of content owner.
Zoom Level: 13-0 Datum: WGS84

TN
MN
15.6°W



NOTE

1. BASE PLAN DEVELOPED FROM PLAN TITLED " BORING AND TEST PIT LOCATION PLAN", BY LITMAN ARCHITECTURE, DATED 3/24/2011.

LEGEND

B-1 — BORING BY SUBSURFACE DRILLING & REMEDIATION, INC. MONITORED BY PAUL B. ALDINGER & ASSOCIATES, INC. ON JULY 8, 2011.

(ow) — GROUNDWATER OBSERVATION WELL INSTALLED.

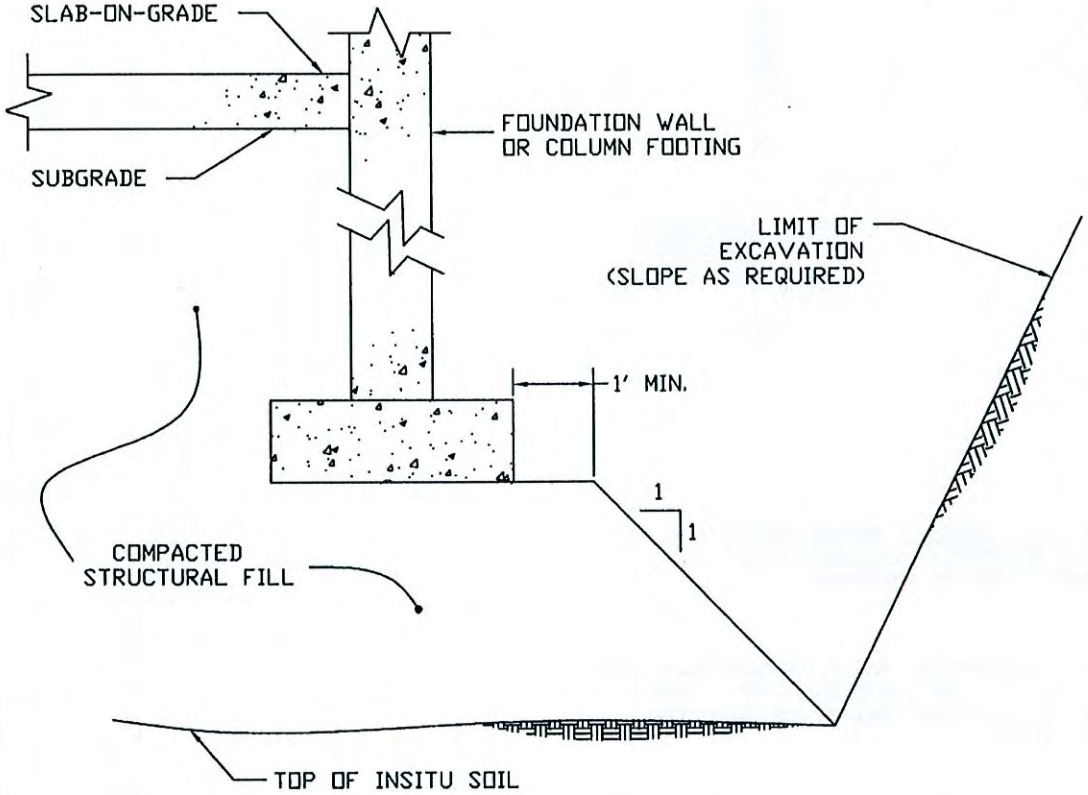
TP-1 — TEST PIT BY MODERN TRACTOR & TRUCK SERVICE, INC. MONITORED BY PAUL B. ALDINGER & ASSOCIATES, INC. ON JUNE 17, 2011.

NEW BEDFORD YWCA ADDITION

SUBSURFACE EXPLORATION PLAN

PAUL B. ALDINGER AND ASSOCIATES, INC.
Consulting In Geotechnical Engineering and Geohydrology

SCALE:	DATE:	FIGURE NO.
1"= 20'	July 2011	2



Paul B. Aldinger
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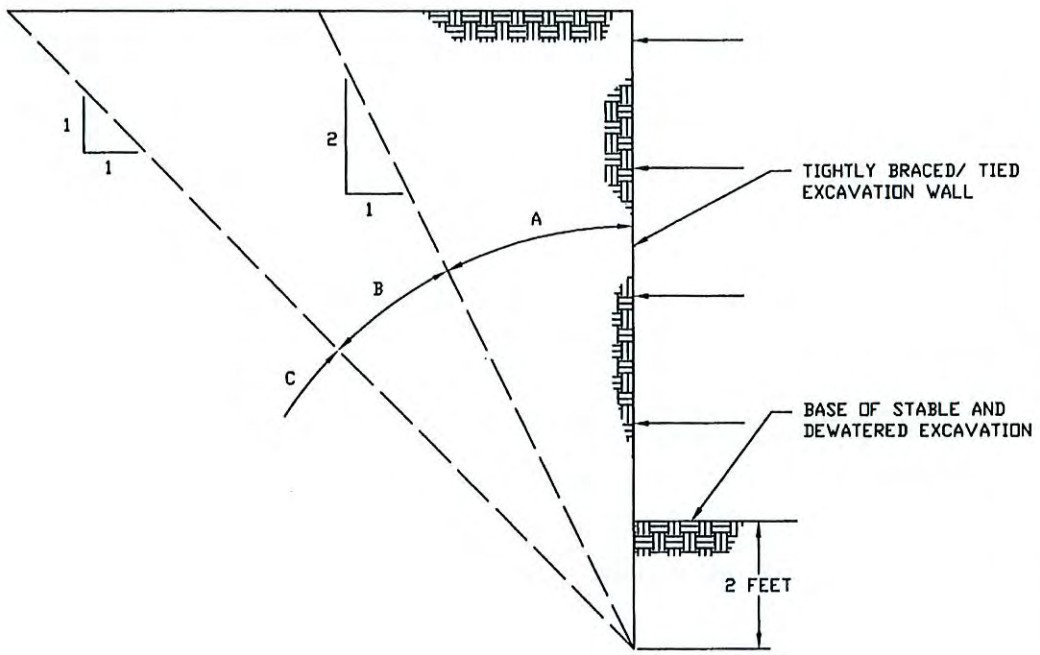
YWCA
BUILDING ADDITION
NEW BEDFORD, MA

LITMAN ARCHITECTURE
259 WATER STREET, SUITE 1L, WARREN, RI

TYPICAL FOUNDATION
DETAIL

PBA JOB NO.: 11040 DRAWN BY:
DATE: 7/15/11 DESIGNED BY:
N.T.S. CHECKED BY:

Figure No. 3



ZONE A:

FOUNDATIONS WITHIN THIS ZONE GENERALLY REQUIRES UNDERPINNING. HORIZONTAL AND VERTICAL PRESSURES ON EXCAVATION WALL OF NON-UNDERPINNED FOUNDATIONS MUST BE CONSIDERED.

ZONE B:

FOUNDATIONS WITHIN THIS ZONE GENERALLY MAY NOT REQUIRE UNDERPINNING DEPENDING ON TYPE OF STRUCTURE AND LOADING CONDITIONS. HORIZONTAL AND VERTICAL PRESSURES ON EXCAVATION WALL OF NON-UNDERPINNED FOUNDATIONS MUST BE CONSIDERED.

ZONE C:

UNDERPINNING IF USED MUST BE FOUNDED IN THIS ZONE TO APPROPRIATE DEPTHS ESTABLISHED BY EXPLORATIONS AND ANALYSIS. LATERAL PRESSURES FROM UNDERPINNING IS NOT NORMALLY CONSIDERED.

NOTE: THE DRAWING IS REFERENCED FROM: THE NAVAL FACILITIES ENGINEERING COMMAND (MAY 1982), 'FOUNDATIONS AND EARTH STRUCTURES', DESIGN MANUAL 7.2, p. 7.2-20

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YWCA
BUILDING ADDITION
NEW BEDFORD, MA

LITMAN ARCHITECTURE
259 WATER STREET, SUITE 1L, WARREN, RI

TYPICAL UNDERPINNING DETAIL

PBA JOB NO.: 11040	DRAWN BY:
DATE: 9/14/11	DESIGNED BY:
N.T.S.	CHECKED BY:

Figure No. 4

APPENDIX A

LIMITATIONS

APPENDIX A

LIMITATIONS

A. Explorations

1. The analyses and recommendations submitted in this report are based in part upon the data obtained from subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.

2. The generalized soil profiles described in the text and shown on the figures are intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more erratic. For specific information, refer to the boring logs.

3. Water level readings have been made in the drill holes at times and under conditions stated on the boring logs. These data have been reviewed and interpretations have been made in the text of this report; however, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, tide and other factors occurring since the time measurements were made.

B. Review

1. In the event that any changes in the nature, design, or location of the proposed structures are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report are modified or verified in writing by Paul B. Aldinger & Associates, Inc. It is recommended that this firm be provided the opportunity for a general review of final design and specifications, in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications.

C. Construction

1. It is recommended that this firm be retained to provide soil engineering services during construction of the excavation and foundation phases of the work. This is to observe compliance with the design concepts, specifications, or recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.

D. Use of Report

1. This report has been prepared for the exclusive use of Litman Architecture, for specific application to the proposed YWCA Building Addition in New Bedford, Massachusetts in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.

2. This report may contain comparative cost estimates for the purpose of evaluating alternative construction schemes. These estimates may also involve approximate quantity evaluations. It should be noted that quantity estimates may not be accurate enough for construction bids. Since Paul B. Aldinger & Associates, Inc. has no control over labor and materials cost and design, the estimates of construction costs have been made on the basis of experience. We cannot guarantee the accuracy of cost estimates as compared to contractors' bids for construction costs.

APPENDIX B

TEST BORING AND TEST PIT LOGS

BORING CONTRACTOR: Subrurface Drilling & Remediation	PAUL B. ALDINGER & ASSOCIATES, INC. 860A WATERMAN AVENUE, SUITE 9 EAST PROVIDENCE, RI BORING LOG	SHEET 1 OF 1 LOCATION: HOLE NO.: B-1 (ow)
LOG PREPARED BY: PBA E. H. Dessert	PROJECT NAME: YWCA ADDITION TOWN, STATE New Bedford, MA PBA NO.: 11040 OFFICE:	BORING TYPE: Auger LINE & STA.: OFFSET:

GROUND WATER OBSERVATIONS
AT 10.45 FT AFTER 6 HRS
AT ____ FT AFTER ___ HRS

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		S/S	
SIZE, I.D	41/2"		1 3/8"	
HAMMER WT.	300#		140#	BIT
HAMMER FALL	24"		30"	

SURFACE ELEV + - 65.5'
DATE STARTED 7/8/11
DATE FINISHED 7/8/11
FOREMAN: P. Thornsbury
INSPECTOR E. Dessert

LOCATION OF BORING:

DEPTH BELOW SURFACE	CASING BLOWS/ FOOT	SAMPLE DEPTH FROM - TO	TYPE OF SAMPLE	BLOWS PER 6" ON SAMPLER FROM-TO 0-6	6-12	12-18	18-24	STRATA CHANGE DEPTH	FIELD IDENTIFICATION OF SOIL & ROCK INCL. COLOR, LOSS OF WASH WATER, JOINTS IN ROCK, ETC.	SAMPLE NO.	PEN.	REC.
		0 - 2'	D	2	4	5	8		6" Topsoil/ Brown, Fine to Coarse SAND and GRAVEL, trace Cobbles and Boulders (FILL)	1	24	8
								4.0'				
5												
		5' - 7'	D	26	81	73	79		Dry, very dense, light brown, Fine SAND, some Silt, some medium to coarse Sand, some fine to Coarse Gravel. (TILL)	2	24	18
10												
		10' - 12'	D	7	16	19	14		Moist, dense, light brown, Fine SAND, some medium to coarse Sand, little Gravel, little Silt. (TILL)	3	24	12
								13.5'				
15												
		15' - 16.5'	D	16	46	100			Wet, decomposed, gray/ brown, Gneiss BEDROCK	4	18	12
20												
		20' - 20.8'	D	32	100	/4"			Wet, decomposed, gray/ brown, Gneiss BEDROCK Refusal on Spoon at 20.8'	5	10	8
									Bottom of Boring 20.8'			
25												
30									**NOTE:** Installed 2" PVC Observation Well 10' Screened Section / 10' Solid Riser Bottom of well at -20 feet.			
35												
40												

GROUND SURFACE TO ____ FT., USED ____ " CASING:
THEN ____

TYPE OF SAMPLE
D=DRY W=WASHED C=CORED
TP=TEST PIT A=AUGER V=VANE TEST
UP=UNDISTURBED, PISTON
US=UNDISTURBED, SHELBY

PROPORTIONS USED:
TRACE=0-10%
LITTLE=10-20%
SOME=20-35%
AND=35-50%

COHESIONLESS DENSITY:
0-4 VERY LOOSE
5-9 LOOSE
10-29 MED. DENSE
30-49 DENSE
50 + VERY DENSE

FOOTAGE IN EARTH:
FOOTAGE IN ROCK:
WELL FOOTAGE:
NO. OF SAMPLES:
HOLE NO.: B-1 (ow)
TYPE:

BORING CONTRACTOR: Subrurface Drilling & Remediation	**PAUL B. ALDINGER & ASSOCIATES, INC.** 860A WATERMAN AVENUE, SUITE 9 EAST PROVIDENCE, RI BORING LOG	SHEET 1 OF 1
LOG PREPARED BY:	PROJECT NAME: YWCA ADDITION	LOCATION:
PBA E. H. Dessert	TOWN, STATE New Bedford, MA	HOLE NO.: B - 2
	PBA NO.: 11040 OFFICE:	BORING TYPE: Auger
		LINE & STA.:
		OFFSET:

GROUND WATER OBSERVATIONS						
AT 9.3 FT AFTER 0 HRS		AUGER	CASING	SAMPLER	CORE BAR.	SURFACE ELEV + - 66.0'
AT ___ FT AFTER ___ HRS	TYPE	HSA		S/S		DATE STARTED 7/8/11
	SIZE, I.D	41/2"		1 3/8"		DATE FINISHED 7/8/11
	HAMMER WT.	300#		140#	BIT	FOREMAN: P. Thornsbury
	HAMMER FALL	24"		30"		INSPECTOR E. Dessert

LOCATION OF BORING:

DEPTH BELOW SURFACE	CASING BLOWS/ FOOT	SAMPLE DEPTH FROM - TO	TYPE OF SAMPLE	BLOWS PER 6" ON SAMPLER FROM-TO 0-6	6-12	12-18	18-24	STRATA CHANGE DEPTH	FIELD IDENTIFICATION OF SOIL & ROCK INCL. COLOR, LOSS OF WASH WATER, JOINTS IN ROCK, ETC.	SAMPLE NO.	PEN.	REC.
		0 - 2'	D	2	3	4	4		6" Topsoil/ Brown, Fine to Coarse SAND and GRAVEL,	1	24	12
								1.5'	(FILL)			
									Orange brown, silty Fine SAND (SUBSOIL)			
								3.5'				
5												
		5' - 7'	D	23	31	33	43		Dry, very dense, light brown, Fine SAND, some Silt,	2	24	14
									little medium to coarse Sand, little fine to Coarse Gravel,			
									few Cobbles (TILL)			
10												
		10' - 10.9'	D	64	100	/5"			Moist, very dense, light brown, Fine to Coarse SAND	3	11	8
									and Gravel, little Silt, few Cobbles (TILL)			
								13.0'	Refusal on Spoon at 10.9' (Cobble)			
15												
		15' - 17'	D	10	13	21	24		Wet, decomposed, gray/ brown, Gneiss BEDROCK	4	24	16
20												
		20' - 21'	D	24	100				Wet, decomposed, gray/ brown, Gneiss BEDROCK	5	12	12
									Refusal on Spoon at 21.0'			
									Bottom of Boring 20.8'			
25												
30												
35												
40												

GROUND SURFACE TO ___ FT., USED ___ " CASING:
THEN ___

TYPE OF SAMPLE
D=DRY W=WASHED C=CORED
TP=TEST PIT A=AUGER V=VANE TEST
UP=UNDISTURBED, PISTON
US=UNDISTURBED, SHELBY

PROPORTIONS USED:
TRACE=0-10%
LITTLE=10-20%
SOME=20-35%
AND=35-50%

COHESIONLESS DENSITY:
0-4 VERY LOOSE
5-9 LOOSE
10-29 MED. DENSE
30-49 DENSE
50 + VERY DENSE

FOOTAGE IN EARTH:
FOOTAGE IN ROCK:
WELL FOOTAGE:
NO. OF SAMPLES:
HOLE NO.: B - 2
TYPE:

BORING CONTRACTOR: Subrurface Drilling & Remediation	PAUL B. ALDINGER & ASSOCIATES, INC. 860A WATERMAN AVENUE, SUITE 9 EAST PROVIDENCE, RI	SHEET 1 OF 1
	BORING LOG	LOCATION:
	PROJECT NAME: YWCA ADDITION	HOLE NO.: B - 3
LOG PREPARED BY:	TOWN, STATE New Bedford, MA	BORING TYPE: Cased
PBA E. H. Dessert	PBA NO.: 11040 OFFICE:	LINE & STA.:
		OFFSET:

GROUND WATER OBSERVATIONS		AUGER	CASING	SAMPLER	CORE BAR.	
AT 9.9 FT AFTER 0 HRS	TYPE		HW	S/S		SURFACE ELEV + - 63.2'
AT ___ FT AFTER ___ HRS	SIZE, I.D.		4"	1 3/8"		DATE STARTED 7/8/11
	HAMMER WT.		300#	140#	BIT	DATE FINISHED 7/8/11
	HAMMER FALL		24"	30"		FOREMAN: P. Thornsbury
						INSPECTOR E. Dessert

LOCATION OF BORING:

DEPTH BELOW SURFACE	CASING BLOWS/ FOOT	SAMPLE DEPTH FROM - TO	TYPE OF SAMPLE	BLOWS PER 6" ON SAMPLER FROM-TO 0-6	6-12	12-18	18-24	STRATA CHANGE DEPTH	FIELD IDENTIFICATION OF SOIL & ROCK INCL. COLOR, LOSS OF WASH WATER, JOINTS IN ROCK, ETC.	SAMPLE NO.	PEN.	REC.
	Casing	0 - 2'	D	5	10	8	7		6" Topsoil/ Brown, Fine to Coarse SAND and GRAVEL,	1	24	10
	to 14'								some Silt, trace Brick			
									(FILL)	1A		
								3.5'				
5		4' - 4.5'	D	100	/6"			4.5'	Orange- Brown, silty Fine SAND (SUBSOIL)	2	6	3
									Refusal on Spoon, Roller Bit through 12" Boulder			
10		9' - 10'	D	69	100	/6"			Moist, very dense light brown, Fine SAND, some Silt,	3	12	8
									some fine to coarse Gravel, little medium to coarse Sand,			
									few Cobbles. (TILL)			
								12.5'				
15	Open	14' - 16'	D	21	32	29	28		Very dense, light brown, decomposed Granite BEDROCK	4	24	10
	Hole											
20		19' - 21'	D	14	10	11	12		Medium dense, lt.brown decomposed, Granite BEDROCK	5	24	10
									Roller Bit into decomposed ROCK			
25		24'	D	100	/0"				Refusal on Spoon, No Recovery	6	0	0
									Bottom of Boring 24'			
30												
35												
40												

GROUND SURFACE TO ___ FT., USED ___ " CASING:

THEN ___

TYPE OF SAMPLE	PROPORTIONS USED:	COHESIONLESS DENSITY:
D=DRY W=WASHED C=CORED	TRACE=0-10%	0-4 VERY LOOSE
TP=TEST PIT A=AUGER V=VANE TEST	LITTLE=10-20%	5-9 LOOSE
UP=UNDISTURBED, PISTON	SOME=20-35%	10-29 MED. DENSE
US=UNDISTURBED, SHELBY	AND=35-50%	30-49 DENSE
		50 + VERY DENSE

FOOTAGE IN EARTH:
FOOTAGE IN ROCK:
WELL FOOTAGE:
NO. OF SAMPLES:
HOLE NO.: B - 3
TYPE:

TEST PIT FIELD LOG

Paul B. Aldinger & Associates, Inc.
860A Waterman Avenue
East Providence, RI 02914
(401) 435-5570

ENGINEER/ TECH
E. H. Dessert

PROJECT

DESCRIPTION: YWCA ADDITION
LOCATION: New Bedford, MA

EXCAVATION EQUIPMENT

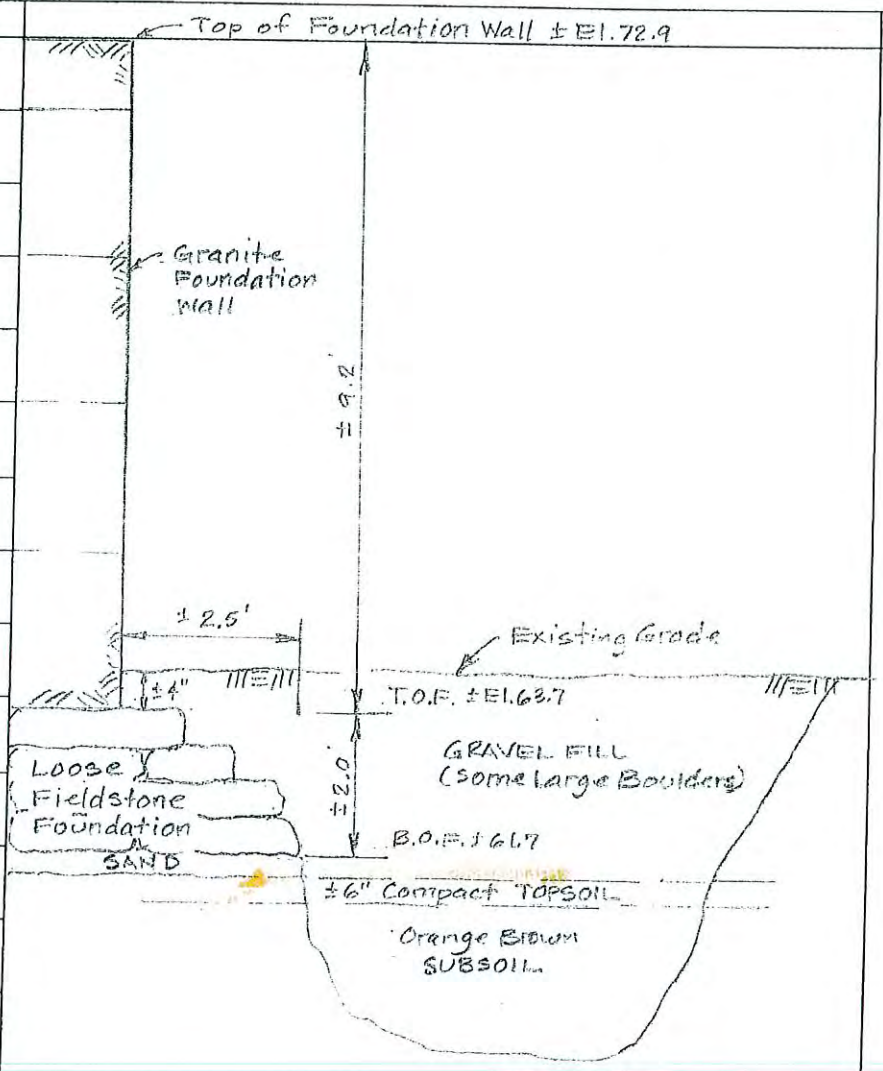
CONTRACTOR: Modern Tractor & Truck Service, Inc.
OPERATOR: Bob Fernandes
MAKE: J. Deere MODEL: 410 G
CAPACITY: 1/2 yard REACH: 15'

TEST PIT NO. TP- 1
FILE NO. 11040
DATE 6/17/11

GROUND ELEV. ± 64.0
TIME STARTED
TIME COMPLETED

SOIL DESCRIPTION

DEPTH		EXC. EFFORT	BOULDER COUNT	REMARK NO.
1'				
2'				
3'				
4'				
5'				
6'				
7'				
8'				
9'				
10'				
11'				
12'				
13'				
14'				
15'				



REMARKS:

TEST PIT PLAN	LEGEND: BOULDER COUNT	PROPORTIONS USED:	ABBREVIATIONS:	EXCAVATION EFFORT:
A I V <---------->	SIZE RANGE / CLASSIFICATION / LETTER DESIGNATION: 6"-18" A; 18"-36" B; 36"+ C	TRACE (tr) 0-10%; LITTLE (li) 10-20%; SOME (so) 20-35%; AND 35-50%	F FINE; M MEDIUM; C COARSE; F/M FINE TO MED; F/C FINE TO COARSE; V VERY; GR GREY; BR BROWN	E EASY; M MODERATE; D DIFFICULT
VOLUME = cu yds				GROUNDWATER: None FT. AT HRS.

TEST PIT FIELD LOG

Paul B. Aldinger & Associates, Inc.
860A Waterman Avenue
East Providence, RI 02914
(401) 435-5570

ENGINEER/ TECH
E. H. Dessert

PROJECT

DESCRIPTION: YWCA ADDITION
LOCATION: New Bedford, MA

TEST PIT NO. TP-2
FILE NO. 11040
DATE 6/17/11

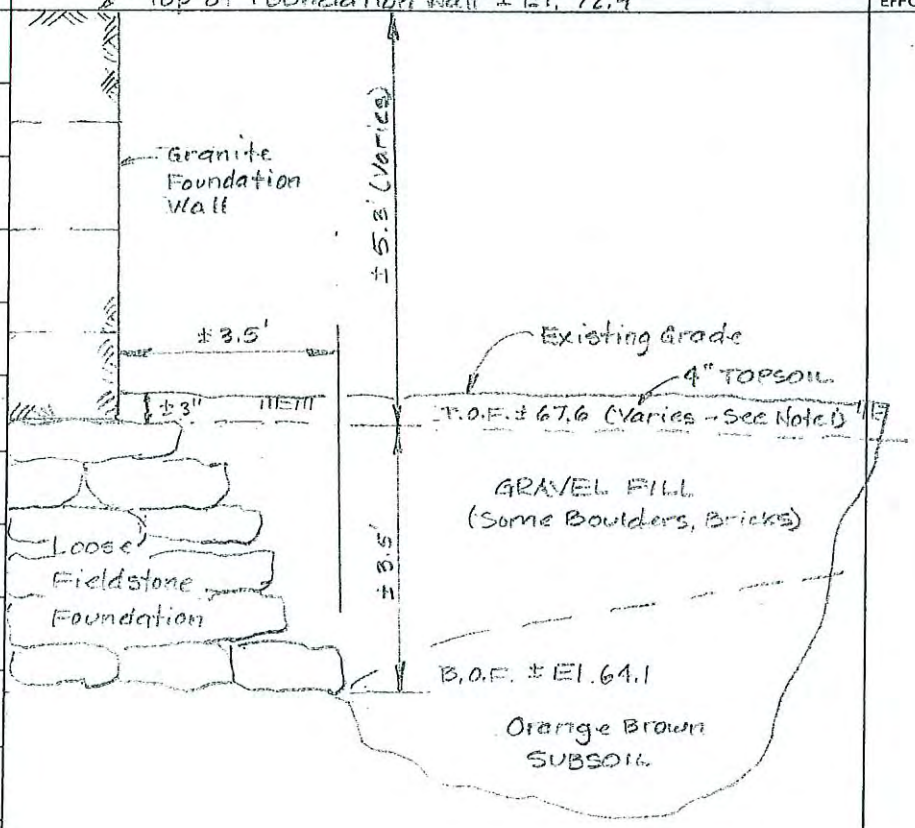
EXCAVATION EQUIPMENT

CONTRACTOR: Modern Tractor & Truck Service, Inc.
OPERATOR: Bob Fernandes
MAKE: J. Deere MODEL: 410 G
CAPACITY: 1/2 yard REACH: 15'

GROUND ELEV. ± 68.0
TIME STARTED
TIME COMPLETED

SOIL DESCRIPTION

DEPTH		EXC. EFFORT	BOULDER COUNT	REMARK NO.



REMARKS:

1. Bottom of wall (T.O.F.) slopes downward from NW building corner to NE corner.

TEST PIT PLAN	LEGEND:	PROPORTIONS USED:	ABBREVIATIONS:	EXCAVATION EFFORT:
N I V <----------> VOLUME = _____ cu yds	BOULDER COUNT SIZE RANGE / LETTER CLASSIFICATION / DESIGNATION 6"-18" A 18"-36" B 36" + C	TRACE (tr) 0-10% LITTLE (li) 10-20% SOME (so) 20-35% AND 35-50%	F FINE M MEDIUM C COARSE F/M FINE TO MED F/C FINE TO COARSE V VERY GR GREY BR BROWN	E EASY M MODERATE D DIFFICULT GROUNDWATER None FT. AT HRS.

TEST PIT FIELD LOG

Paul B. Aldinger & Associates, Inc.
860A Waterman Avenue
East Providence, RI 02914
(401) 435-5570

ENGINEER/ TECH
E. H. Dessert

PROJECT

DESCRIPTION: YWCA ADDITION
LOCATION: New Bedford, MA

TEST PIT NO. TP-3
FILE NO. 11040
DATE 6/17/11

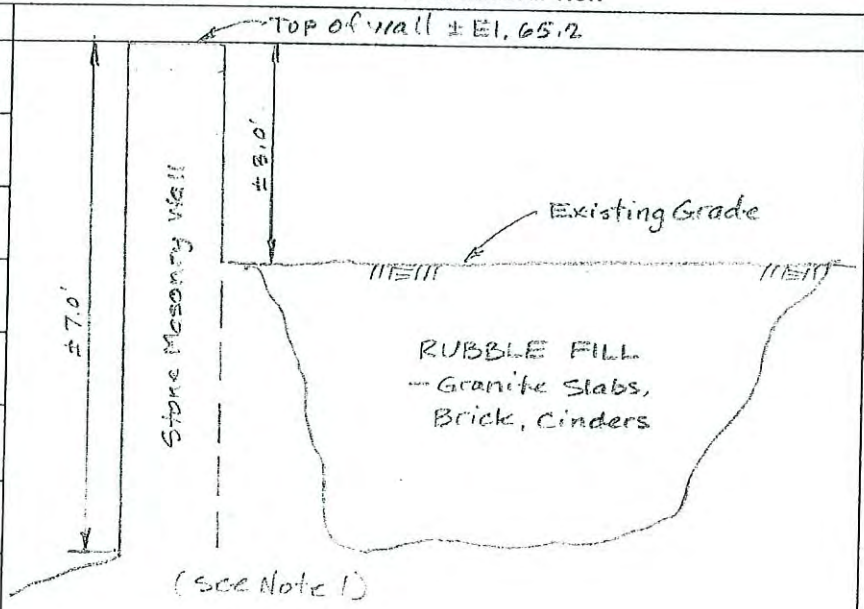
EXCAVATION EQUIPMENT

CONTRACTOR: Modern Tractor & Truck Service, Inc.
OPERATOR: Bob Fernandes
MAKE: J. Deere MODEL 410 G
CAPACITY: 1/2 yard REACH 15'

GROUND ELEV. ±62.0
TIME STARTED
TIME COMPLETED

SOIL DESCRIPTION

DEPTH		EXC. EFFORT	BOULDER COUNT	REMARK NO.
1'				
2'				
3'				
4'				
5'				
6'				
7'				
8'				
9'				
10'				
11'				
12'				
13'				
14'				
15'				



REMARKS:

1. Did not reach footing. Contractor concerned over stability of wall.

TEST PIT PLAN	LEGEND: BOULDER COUNT	PROPORTIONS USED:	ABBREVIATIONS:	EXCAVATION EFFORT:
^	SIZE RANGE / CLASSIFICATION / LETTER DESIGNATION	TRACE (tr) 0-10%	F FINE	E EASY
I	6"-18" A	LITTLE (li) 10-20%	M MEDIUM	M MODERATE
V	18"-36" B	SOME (so) 20-35%	C COARSE	D DIFFICULT
<---------->	36" + C	AND 35-50%	F/M FINE TO MED	
VOLUME = cu yds			F/C FINE TO COARSE	GROUNDWATER
			V VERY	None FT.
			GR GREY	AT HRS.
			BR BROWN	

TEST PIT FIELD LOG

Paul B. Aldinger & Associates, Inc.
860A Waterman Avenue
East Providence, RI 02914
(401) 435-5570

ENGINEER/ TECH
E. H. Dessert

PROJECT

DESCRIPTION: YWCA ADDITION
LOCATION: New Bedford, MA

TEST PIT NO. TP-4
FILE NO. 11040
DATE 6/17/11

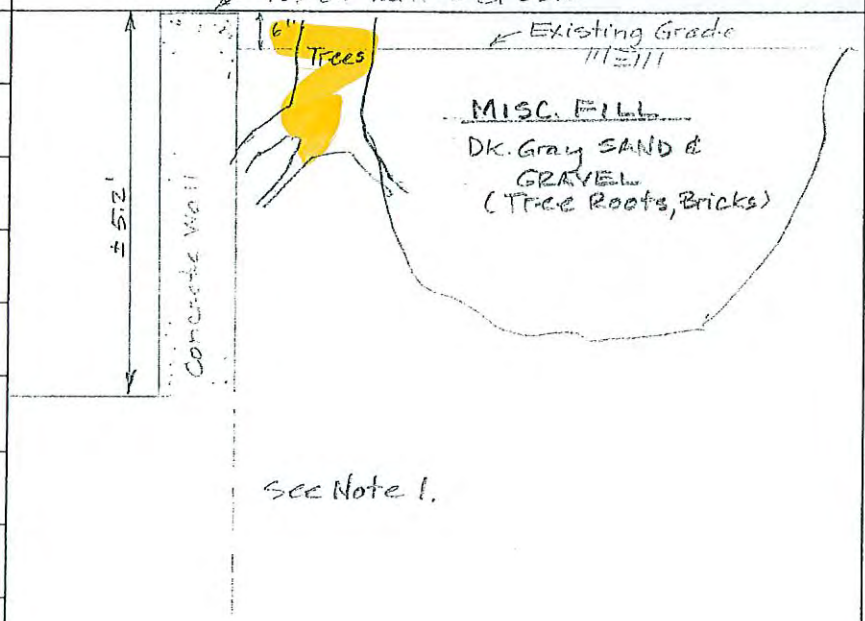
EXCAVATION EQUIPMENT

CONTRACTOR: Modern Tractor & Truck Service, Inc.
OPERATOR: Bob Fernandes
MAKE: J. Deere MODEL: 410 G
CAPACITY: 1/2 yard REACH: 15'

GROUND ELEV. ±62.5
TIME STARTED
TIME COMPLETED

SOIL DESCRIPTION

DEPTH		EXC. EFFORT	BOULDER COUNT	REMARK NO.
	← Top of Wall ± El 63.0			
1'				
2'				
3'				
4'				
5'				
6'				
7'				
8'				
9'				
10'				
11'				
12'				
13'				
14'				
15'				



REMARKS:

1. Did not reach footing. Contractor concerned that large trees near wall may fall onto adjacent property.

TEST PIT PLAN	LEGEND:	PROPORTIONS USED:	ABBREVIATIONS:	EXCAVATION EFFORT:
N I V <----------> VOLUME = _____ cu yds	BOULDER COUNT SIZE RANGE / LETTER CLASSIFICATION / DESIGNATION 6"-18" A 18"-36" B 36" + C	TRACE (tr) 0-10% LITTLE (li) 10-20% SOME (so) 20-35% AND 35-50%	F FINE M MEDIUM C COARSE F/M FINE TO MED F/C FINE TO COARSE V VERY GR GREY BR BROWN	E EASY M MODERATE D DIFFICULT GROUNDWATER None FT. AT HRS.

TEST PIT FIELD LOG

Paul B. Aldinger & Associates, Inc.
860A Waterman Avenue
East Providence, RI 02914
(401) 435-5570

ENGINEER/ TECH
E. H. Dessert

PROJECT

DESCRIPTION: YWCA ADDITION
LOCATION: New Bedford, MA

TEST PIT NO. TP-5
FILE NO. 11040
DATE 6/17/11

EXCAVATION EQUIPMENT

CONTRACTOR: Modern Tractor & Truck Service, Inc.
OPERATOR: Bob Fernandes
MAKE: J. Deere MODEL: 410 G
CAPACITY: 1/2 yard REACH: 15'

GROUND ELEV. ± 65.0
TIME STARTED
TIME COMPLETED

SOIL DESCRIPTION

DEPTH		EXC. EFFORT	BOULDER COUNT	REMARK NO.
1'	Top of wall ± El. 73			
2'				
3'	(Driveway) ± 5.0'			
4'				
5'	Stone Masonry Wall			
6'				
7'	± 8.0'			
8'	6" ± Existing Grade			
9'				
10'	± 8.0' GRAVEL FILL (Few Boulders)			
11'	B.O.F. ± El 62.0			
12'	Lt. Brown Compact SAND & GRAVEL; Loose Fieldstone Footing			
13'				
14'				
15'				

REMARKS:

TEST PIT PLAN

N
I
V

<----------->

VOLUME = _____ cu yds

LEGEND:

BOULDER COUNT

SIZE RANGE CLASSIFICATION	LETTER DESIGNATION
6"-18"	A
18"-36"	B
36" +	C

PROPORTIONS USED:

TRACE (tr)	0-10%
LITTLE (li)	10-20%
SOME (so)	20-35%
AND	35-50%

ABBREVIATIONS:

F	FINE
M	MEDIUM
C	COARSE
F/M	FINE TO MED
F/C	FINE TO COARSE
V	VERY
GR	GREY
BR	BROWN

EXCAVATION EFFORT:

E	EASY
M	MODERATE
D	DIFFICULT

GROUNDWATER
None FT.
AT HRS.

TEST PIT FIELD LOG

Paul B. Aldinger & Associates, Inc.
860A Waterman Avenue
East Providence, RI 02914
(401) 435-5570

ENGINEER/ TECH
E. H. Dessert

PROJECT

DESCRIPTION: YWCA ADDITION
LOCATION: New Bedford, MA

TEST PIT NO. TP- 6
FILE NO. 11040
DATE 6/17/11

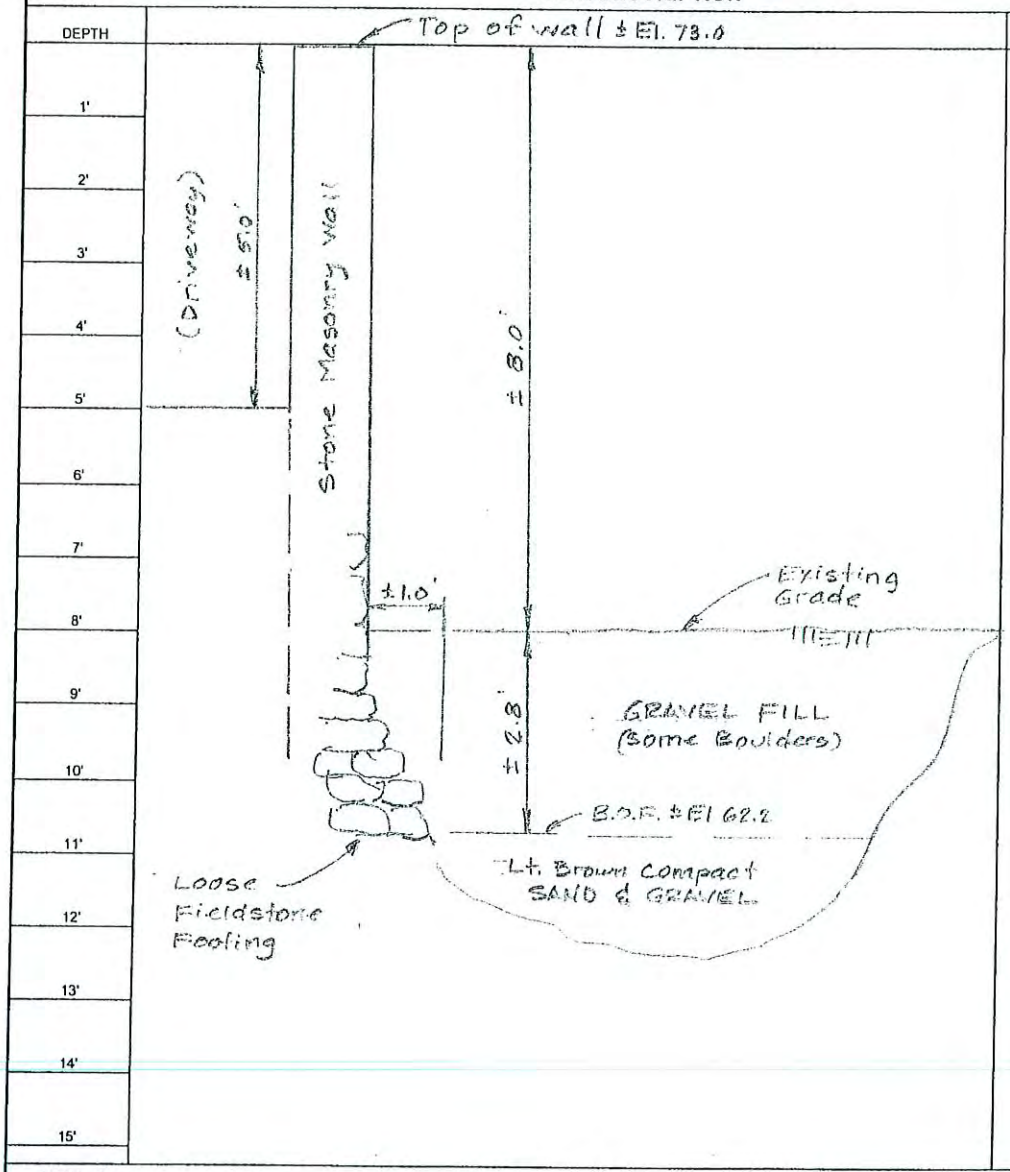
EXCAVATION EQUIPMENT

CONTRACTOR: Modern Tractor & Truck Service, Inc.
OPERATOR: Bob Fernandes
MAKE: J. Deere MODEL: 410 G
CAPACITY: 1/2 yard REACH: 15'

GROUND ELEV. ± 66.0
TIME STARTED
TIME COMPLETED

SOIL DESCRIPTION

DEPTH		EXC. EFFORT	BOULDER COUNT	REMARK NO.



REMARKS:

TEST PIT PLAN	LEGEND: BOULDER COUNT	PROPORTIONS USED:	ABBREVIATIONS:	EXCAVATION EFFORT:
N I V <----------> VOLUME = _____ cu yds	SIZE RANGE / CLASSIFICATION / LETTER DESIGNATION 6"-18" A 18"-36" B 36" + C	TRACE (tr) 0-10% LITTLE (li) 10-20% SOME (so) 20-35% AND 35-50%	F FINE M MEDIUM C COARSE F/M FINE TO MED F/C FINE TO COARSE V VERY GR GREY BR BROWN	E EASY M MODERATE D DIFFICULT GROUNDWATER None FT. AT HRS.