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 REPORT

PLANNING BOARD MEETING
February 8, 2017
Amended March 2, 2017

Case #01-17: **SITE PLAN APPROVAL**
100 Duchaine Blvd
(Map 134, Lot 5)

Applicant: Farland Corp
401 County Street
New Bedford, MA 02745

Owners: LOGAL, LLC
c/o Eric Decosta
100 Duchaine Blvd
New Bedford, MA 02745

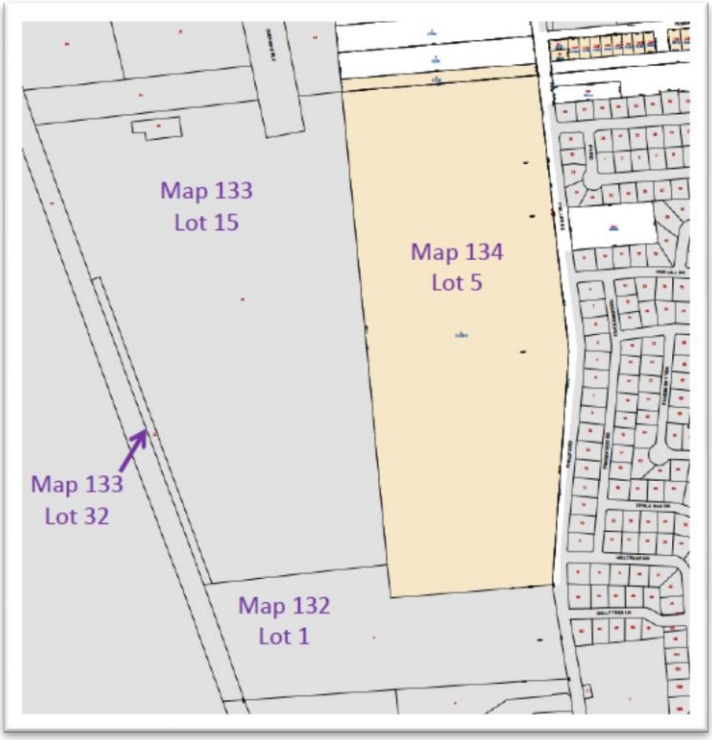

LOOKING WEST TOWARD THE PROPOSED CONSTRUCTION SITE

Overview of Request

Request to consider an application for Site Plan approval under Chapter 9 Comprehensive Zoning, Section 5400 for new construction of a 28,000+/- SF food packaging and distribution warehouse and office building located in New Bedford Business Park at 100 Duchaine Blvd (Map 134, Lot 5) on a 7.26 +/- acre site in the Industrial C (IC), Residence A (RA), and Mixed-Use Business (MUB) zoning districts. This project was originally scheduled to be heard by the Planning Board at its January 11, 2017 meeting but at the applicant's request, the Board voted to continue the hearing until their February 8, 2017 meeting.

The application before the Planning Board indicates the 7.26 +/- area of the land proposed under an ANR plan is the area of disturbance for new construction. The applicant included with submittal documents a proposed land plan for Approval Not Required (ANR) dated December 7, 2016 showing a lot line adjustment to create Lot 20, consisting of 7.26+/- acres, and Lot 21, consisting of 61.52 +/- acres from Lot 6 [as shown on **Land Court Plan 36318C]**. The December ANR plan was rejected by the Massachusetts Land Court when submitted for recording as it did not conform to the format required for **Land Court Case #36318** which governs this land area under the deed. Subsequently, a new plan was filed on February 17, 2017. At the time this report was compiled the plan prepared in accordance with Land Court instructions had not been available suitable for attachment. However, a letter of assurance from Farland Corp is provided for the Planning Board's information under Attachment 1. Of additional note, the land plan must be reviewed by the Greater New Bedford Industrial Foundation, as stipulated under the Foundation's regulations at Item 12 (Attachment 3).

The proposed 7.26+/- acre parcel is part of the former 127 +/- acre Polaroid site located at the terminus of Duchaine Boulevard bordering the Acushnet Cedar Swamp. Traffic circulation south of the Duchaine Boulevard terminus is served by an interior roadwork network. These adjacent parcels are currently known as 50 Duchaine and 100 Duchaine Boulevard. Two (2) Notices of Intent for these adjacent parcels describing the boundaries of the site and proposed work at this wetlands resource area are to be heard for consideration by the city of New Bedford Conservation Commission. Under current review is the NOI for 50 Duchaine Boulevard, for which the Planning Board conditionally granted a modification for site plan approval for **Case 37-16: Eversource** on January 11, 2017. At the time this report was written, the applicant had not submitted the NOI for 100 Duchaine Boulevard to Con Com. [For comments from the city's conservation agent, see **Review Comments**.]



A petition for variance for Polaroid Corporation at 100 Duchaine Boulevard (Map 132, Lot 1, Map 133, Lots 15 & 32 and Map 134, Lot 5) was granted by the Zoning Board of Appeals April 26, 1990 for **Case #3057** for parking reduction and off-street loading requirements under Section 9-207A of then City Ordinance (Attachment 4). Historical minutes from **Variance Case #3057** note the area to have a significantly high water table (Attachment 5). Site amenities at that time included a central utilities plant, cooling tower, electrical switchgear building and waste-water treatment facility designed for the unique Polaroid automated manufacturing operation.

Should the applicant intend to retain the parcel intact with no further subdivision proposed, case submittal documents and studies should be revised and resubmitted to reflect the area encompassing the 68.78 +/- parcel known as Assessors Map 134, Lot 5.

Existing Conditions

The site area within the Business Park is a wooded setting with certain improvements that have become derelict. A concrete foundation remains in the area where new construction is to occur. An adjacent parking area paved with bituminous concrete remains intact, with parking area lighting, and exterior pedestrian pathways.

The eastern boundary bordering Phillips Road is zoned Residential-A and Mixed Use Business. The topography of the land reflects a steep incline from Duchaine Boulevard to Philips Road with significant areas flagged as wetlands. There is no egress from Phillips Road to the site area.

Proposed Conditions

The applicant intends to construct a 28,000 SF insulated cooler warehouse with sixteen (16) loading areas for transportation vehicles. Forty (40) trailer parking spaces, dimensioned at 12 feet by 60 feet, are shown on the layout plan and nineteen (19) spaces at twelve (12) by twenty-five (25) feet are shown as proposed tractor parking spaces. Eight (8) parking spaces are reserved for employee parking with one (1) additional handicap van accessible parking area. It appears from plans that the entrance serving the handicap access is not at ground level.

The applicant should clarify for the Planning Board ADA accessibility to the building interior (Attachment 6).

By planning staff calculations, thirteen (13) spaces are needed for the 28,000+/- SF warehouse and distribution use. Under **521 CMR: Architectural Access Board** standards, one (1) ADA compliant space is required for less than 25 spaces. The applicant does not state how many vehicles will be used by the business. The proposed building consists of 220 linear feet; maximum number of loading platforms per fifteen (15) feet of dock is 15 loading spaces.

Zoning Data on the plan set Cover Sheet state the applicant has provided sixty-seven (67) parking spaces and two (2) ADA spaces. Loading docks are not counted as parking spaces. The Zoning Data is inconsistent with the municipal regulations, site layout plan, project Narrative, and staff calculations. Errors should be corrected on the plan sheets, Narrative, and application form (Attachment 7).

Appendix C-Table of Parking & Loading Regulations

USE	PARKING REQUIREMENTS	LOADING REQUIREMENTS
Businesses engaged in the warehousing and distribution of goods & materials including building & construction contractors, equipment & supplies on premises, motor freight terminal, facilities for storing & servicing of motor vehicles used in conducting a business or public transportation, industrial machinery & equipment, grain, petroleum products & junkyards.	One (1) space per 1500 sq. ft. of gross floor area up to 15,000 sq. ft. Thereafter, one (1) additional space for each 5,000 sq. ft. or portion thereof in excess of 15,000 sq. ft., plus one (1) space for each vehicle utilized in the business.	Two (2) loading spaces for each building containing 10,000 sq. ft. of gross floor area. Thereafter, one (1) additional loading space shall be required for each additional 25,000 sq. ft. of gross floor area or for each fifteen (15) feet of dock, platform or opening in the building where the loading or unloading of commodities is intended to occur, whichever is the greatest.

The applicant states in the Site Plan Review Application that previously developed existing features will be utilized. Excavation of the site and removal of existing vegetation is evidenced by the plan proposal. Given the sensitivity of the site, staff recommends the Planning Board condition approval upon the Order of Conditions issued by the Conservation Commission.

The storm water narrative contains omission of details (Attachment 8). Under **§5454** the site plan shall be accompanied by drainage calculations by a registered professional engineer as well as wetland delineations. Storm water drainage must conform to the city Stormwater Management ordinance **§16-131** (Attachment 9)**.**

In addition, staff suggests that the Planning Board may wish to seek clarification as to the use of the term "Wet Basin" as used in the abbreviated storm water report. The Utilities & Grading plan notes a Water Quality Basin. Is the applicant utilizing a retention pond or are they installing detention ponds? Staff recommends that the storm water mitigation/attenuation design on the Site Plan be called out.

No construction schedule or cost estimate have been included with the case submittal documents as required under §5452.

No landscaping plan has been included as similarly required under the city ordinance.

Demand and Operations

The applicant states number of employees, number of customers, hours of operation, days of operation, and hours and frequency of deliveries are to be determined. The absence of these details poses a challenge to a complete site plan review.

An above ground fuel tank and pump station is to be relocated to this site area from an adjacent site.

Site Plan

The plan is rotated 180 degrees with the North arrow direction orientated accordingly (Attachment 10).

Plans submitted for consideration:

The submittal is shown as the Site Plan for 100 Duchaine Boulevard (Assessors Map 134, Lot 5) New Bedford, MA dated January 13, 2017 prepared for Parallel Products of New England, 401 Industry Road, Louisville, KY 40208 by Thompson Corp., 401 County Street, New Bedford, MA 02740, consisting of seven (7) sheets:

- **Cover Sheet-Sheet 1 of 8**
  - Title Box notes that the plans were created for Parallel Products. Applicant shall update all plan sheets to reflect the current owner LOGAL, LLC (Certificate 23339, Book 134, Page 60).
- **Notes & Legend-Sheet 2 of 8**
  - Change Hay bales/Hay to Straw bales/Straw.
- **Existing Conditions-Sheet 3 of 8**
- **Layout-Sheet 4 of 8**
- **Utilities & Grading-Sheet 5 of 8**
  - Please clarify the use of the term Wet Basin as used in the abbreviated storm water report. The Utilities & Grading plan notes a Water Quality Basin. Is the applicant utilizing a retention pond or are they installing detention ponds? (Please call out the storm water mitigation/attenuation design on the Site Plan for approval by the PB as well as for historical reference.)
- **Detail –Sheet 7 of 8**
- **Detail-Sheet 8 of 8**

➢ *Sheet 6 omitted.*

- Landscape Plan omitted. The Planning Board will require a Landscape Plan and planting schedule, as stipulated under Municipal Code (Section 5451.e.) and the Business Park Regulations at restrictions #5, #7, #13c.

And

Layout Plan for 100 Duchaine Boulevard (Assessors Map 134, Lot 5) New Bedford, MA dated January 13, 2017 prepared for Parallel Products of New England, 401 Industry Road, Louisville, KY 40208 by Thompson Corp., 401 County Street, New Bedford, MA 02740, consisting of (1) sheet.

- Applicant to revise Title Box to read: Lighting Plan

And

Building Floor Plan for a 22,000+/- SF Insulated Cooler Warehouse

- Applicant to add Title Box with applicable information and Revision Box to plan.
- Architectural elevations have been omitted. The Planning Board will require architectural plans and elevations as stipulated under Municipal Code (Section 5451.d).

Review Comments

Plans were distributed to the City Clerk, City Solicitor, Health Department, Inspectional Services, Engineering, Public Infrastructure, Conservation Commission, Fire Department and School Department offices.

The Conservation Agent has submitted the following comments for the Planning Board's consideration:

1. **Case 01-17 100 Duchaine Boulevard (Map 134, Lot 5)**: The proposed project has the same address (100 Duchaine Blvd) as the existing trucking company on site. However at the time the Order of Conditions (SE49-0702) was issued for the trucking company, the property was identified as Map 135, Lot 15 and now it is identified as Map 134, Lot 5. Outstanding issues mainly related to the construction of the stormwater facilities were identified by the Conservation Commission for the trucking company, many of which were resolved. The Order on the trucking company project is still valid and the applicant's representative (Field Engineering) stated the outstanding drainage items, which include undersized stormwater basins, would be addressed when the Certificate of Compliance was applied for. No Certificate of Compliance application has been submitted.
2. The new site plan for a portion of Lot 5 (7.26 acres) requires an Order of Conditions for work proposed in the Buffer Zone. A Notice of Intent application was submitted on 2/23/2017 and a Hearing is scheduled for March 7, 2017. This portion of Lot 5 appears to be within the site layout of the original trucking company Order of Conditions.

The Department of Public Infrastructure memorandum may be reviewed at Attachment 11.

Outside of this, no further comments from city offices were received in this matter.

Master Plan Goal

The proposal for Site Plan Approval is consistent with the master plan's goal to expand workforce opportunities and communicates a positive message for business development.

Staff Recommendations

Based on the materials presented and available for review at the time of this report's preparation, staff therefore recommends approval with the following conditions:

- Because title box notes referenced plans that were created for Parallel Products, the applicant shall update all plan sheets to reflect the current owner LOGAL, LLC (Certificate 23339, Book 134, Page 60).

- Because warehouse and distribution facilities are uses permitted by right under zoning district I-C, but are not permitted under MUB or R-A zones, and given that the site is a combination of those three zoning districts, the applicant shall ensure that all such development be limited to the area of the project site within the I-C zoning district according to city zoning requirements.

- That the applicant ensures and maintains a landscaped buffer zone between the Business Park and residential neighborhood along Phillips Road.

- Inconsistencies detailing the number of parking spaces and ADA parking onsite between the Cover Sheet and the site layout plan shall be corrected and included in the final plans submitted to the Planning Board.

- Change Hay bales/Hay to Straw bales/Straw in plan Notes & Legend sheet 2 of 8.

- All requirements and stipulations of the city of New Bedford Conservation Commission including the Order of Conditions are to be honored and completed as a condition of project approval.

- A Landscape Plan and planting schedule, as stipulated under Municipal Code (Section 5451.e.) shall be provided to and approved by the city planner prior to Planning signing off on any permits.

- The storm water mitigation/attenuation design on the Site Plan shall be called out.

- Applicant to identify Lighting Plan sheet page 1 of 1 in Title Box.

- Applicant shall add a Title Box with applicable information and Revision Box to the Floor Plan.

- Architectural plans and elevations as stipulated under Municipal Code Section 5451.d shall be provided to the Planning Board prior to any permit sign-off.

- Should the applicant intend to retain the parcel intact with no further subdivision proposed, case submittal documents should be revised to reflect the area encompassing the 68.78 +/- parcel known as Map 134, Lot 5.

Attachments:

1. Letter of Assurance from Farland Corp regarding ANR plan of land.
2. Deed of Ownership - Bristol County (S.D) Registry of Deeds Cert #23339
3. Greater New Bedford Industrial Foundation Regulations
4. City of New Bedford Variance #3057
5. Minutes of April 26, 1990 Meeting of the ZBA
6. Floor Plan
7. Site Plan Review Application
8. Narrative& Stormwater Analysis
9. City of New Bedford Stormwater Ordinance
10. Plan Set
11. Department of Public Infrastructure Memoranda dated February 23, 2017 and January 30, 2017

FARLAND CORP.

ENGINEERING A BETTER TOMORROW

ENGINEERING / SITE WORK / LAND SURVEYING

February 16, 2017

New Bedford Planning Board
New Bedford City Hall
New Bedford, MA 02740

RE: A.N.R. Cover Letter
100 Duchaine Boulevard – New Bedford, MA

Dear Jennifer Clarke and board members:

This letter is to confirm that the enclosed "Approval Not Required Plan of Land" for Duchaine Boulevard and Phillips Road owned by LOGAL, LLC, dated January 25, 2017, has been prepared in accordance with the current Land Court Instructions of 2006 and was submitted to the court for Pre-File review and has been approved for the filing of the mylar plan.

The enclosed mylar plan varies from the previously approved Approval Not Required plan in format only. Lot configurations, frontages and areas are the same on both this and the previously approved plan.

Should you have any questions, please feel free to contact me.

Very truly yours,

FARLAND CORP., INC.

Brian J. Murphy, P.L.S.

cc. file

PLANNING
MAR 02 2017
DEPARTMENT

(MAIN OFFICE) 401 COUNTY STREET, NEW BEDFORD, MA 02740 P 508.717.3479 F 508.717.3481
ADDITIONAL OFFICES IN: TAUNTON • MARLBOROUGH • WARWICK, RI
WWW.FARLANDCORP.COM

ATTACHMENT 1

After recording return to:

Thomas J. Mathieu Esquire
Mathieu & Mathieu
168 Eighth Street
New Bedford, MA 02744

114700

Property Address: 100 Duchaine Boulevard, New Bedford Massachusetts

QUITCLAIM DEED WITH MEMORANDUM OF EASEMENT OPTION

MULTILAYER COATING TECHNOLOGIES, LLC, a Delaware limited liability company, (the "Grantor"), with an address c/o Watermill Ventures, Ltd., Watermill Center, 800 South Street, Waltham, MA 02453, for consideration of One Million Three Hundred Sixty Thousand Dollars ($1,360,000.00), grants to LOGAL, LLC, a Massachusetts limited liability company, (the "Grantee"), with an address c/o Eric DeCosta, 89 Blackmer Street, New Bedford, MA 02744,

with **quitclaim covenants**

the land known and numbered as 100 Duchaine Boulevard in the City of New Bedford, Bristol County, Massachusetts and as more particularly described on Exhibit A attached hereto, together with any improvements thereon,

subject to all matters of record so far as same are in force and applicable.

Grantor has an option to obtain an exclusive easement for parking over a portion of the land conveyed hereby pursuant to Section 43 of that certain Purchase and Sale Agreement dated January 14, 2014 by and between Grantor and Grantee, which option shall expire unless exercised within twelve (12) months of the date of this Deed. EXP. MARCH 20, 2015

For reference to Grantor's title, see Deed dated August 10, 2006 from Polaroid New Bedford Real Estate LLC, a Delaware limited liability company, which Deed was ~~recorded with the Bristol South District Registry of Deeds on August 10, 2006 at Book 8266, Page 278 and~~ filed with the Bristol South District of the Land Court on August 11, 2006 as Document No. 97784, as noted on Certificate No. 21272.

This conveyance is not the sale of all or substantially all of the assets of the Grantor located in the Commonwealth.

Return to:
MATHIEU & MATHIEU
168 Eighth Street
New Bedford, MA 02740

EXECUTED under seal as of the 20th day of March, 2014.

114700

MULTILAYER COATING TECHNOLOGIES, LLC

By: Watermill-MCT Partners, L.P.
~~Its Manager~~

~~By: Watermill-MCT Enterprises, LLC~~
Its General Partner

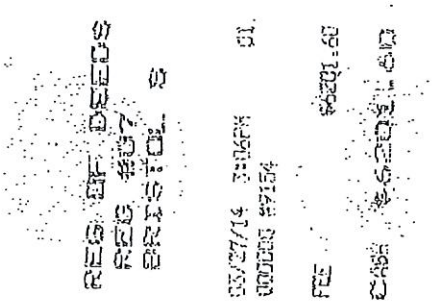
By: _____
Robert W. Ackerman
Authorized Signatory 114697

COMMONWEALTH OF MASSACHUSETTS

County of Middlesex, ss.

On this date, March 20, 2014, before me, the undersigned notary public, personally appeared Robert W. Ackerman, Authorized Signatory of Watermill-MCT Enterprises, LLC, the General Partner of Watermill-MCT Partners, LP being the Manager of Multilayer Coating Technologies, LLC, and proved to me through satisfactory evidence of identification, being (check whichever applies): ☐ driver's license or other state or federal governmental document bearing a photographic image, ☐ oath or affirmation of a credible witness known to me who knows the above signatory, or ☐ my own personal knowledge of the identity of the signatory, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he/she signed it voluntarily for its stated purpose.

Mary Delaney
Notary Public
My commission expires: 3.2.18



114700

Exhibit A
Legal Description

Being Lot 6 on Land Court Plan 36318C entitled "Plan of Land Being a Subdivision of Lot 1 Shown on Land Court Plan #36318-B Duchaine Boulevard and Phillips Road, New Bedford, Massachusetts Prepared for Multilayer Coating Technologies, LLC" drawn by Cullinan Engineering, dated January 6, 2009 and filed in the Land Registration Office at Boston, a copy of which has also been filed in the Bristol County (Southern District) Registry District of the Land Court.

LAND COURT, BOSTON. The land herein described will be shown on our approved plan to follow as
REFERRED TO
MAR 18 2014
Plan 36318C Lot 6
(EXAMINED AS DESCRIPTION ONLY)
T.C. PONTBRIAND
~~ACTING~~ CHIEF ENGINEER
JAV

27412374v.2

114700 (A)

So. Bristol Land Court

03/27/14 02:51

New ~~Noted on~~ Ctf. 23339 ✓

Book 134 Page 60

Noted on Ctf. 21272 B-120 P.93

8/11 06

Ctf. 21272, Reservation,

OB - Phillips Rd. (W) Weetamoe Blvd. (Quequechan)

Lot 6 P.P. 363180

Return to:

MATHIEU & MATHIEU

168 Eighth Street

New Bedford, MA 02740

(4)

Filed with Certificate of Title No. 22029 Book 125, Page 100.

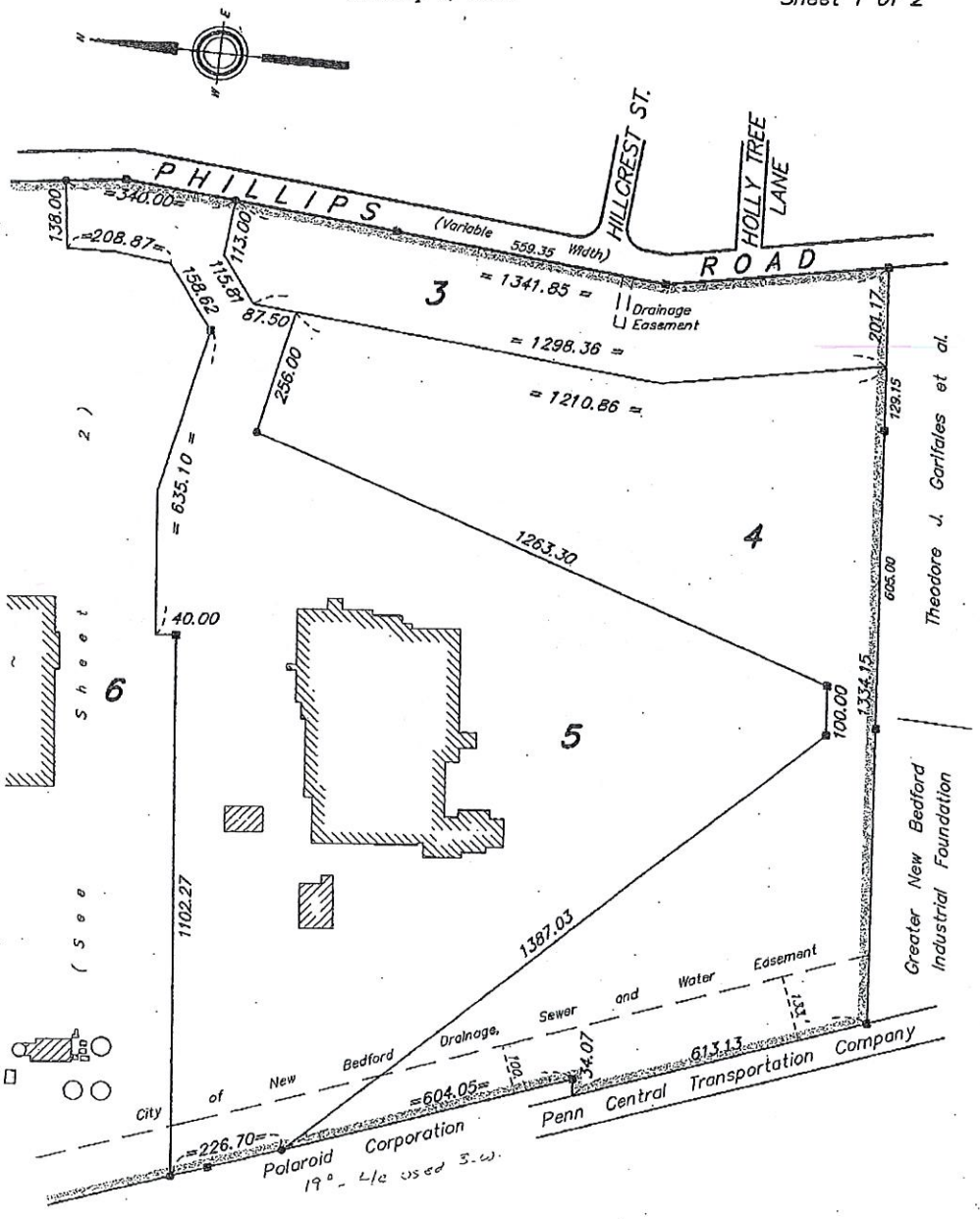
SUBDIVISION PLAN OF LAND IN NEW BEDFORD

Cullinan Engineering Co., Inc., Surveyors

January 6, 2009

36318C

Sheet 1 of 2



Subdivision of Lot 1
Shown on Plan 36318-B
Filed with Cert. of Title No. 18072
South Registry District of Bristol County

Separate certificates of title may be issued for land shown hereon and on Sheet 2 as Lots 3, 4, 5 and 6 By the Court.

Deborah J. Patterson
April 1, 2009 Recorder

SJK-0924

■ – denotes C.B.
● – denotes I.rod

Abutters are shown as on original decree plan.

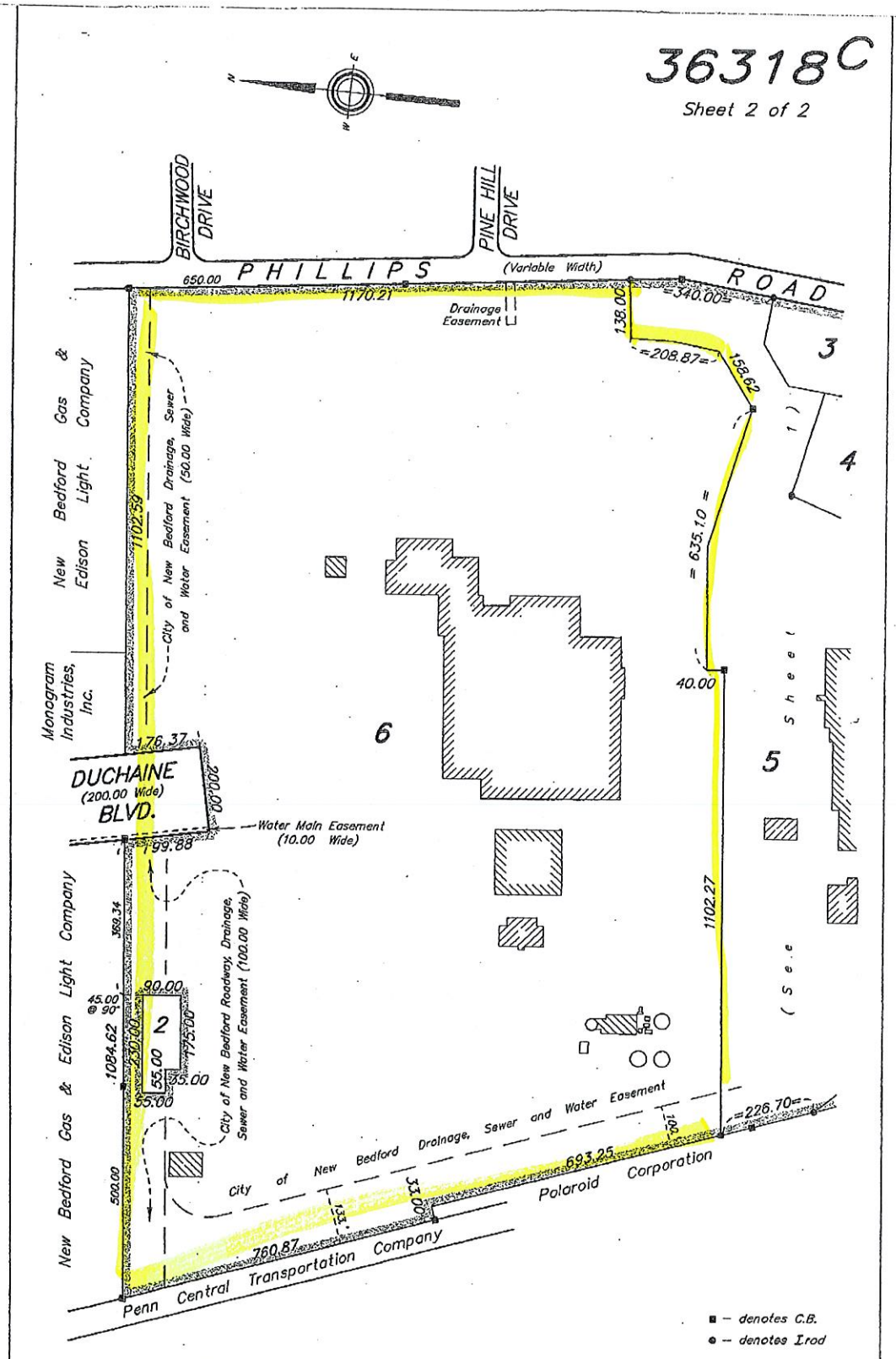
Copy of part of plan filed in LAND REGISTRATION OFFICE April 1, 2009

Scale of this plan 240 feet to an inch
T.C. Pontbriand, Acting Engineer for Court

Received N.B. Registry 12/18/2014

36318C

Sheet 2 of 2



SJK –0B9M

Scale of this plan 240 feet to an inch

The regulations for the Park were established by the Industrial Foundation to maintain high standards to protect private investment in the past, present and future.

Conveyance of said land is made subject to the following restrictions which shall run with the land, shall be binding upon successive owners thereof, and shall be for the benefit of and enforceable by the "Foundation" as follows: And subject to the Protective New Bedford Business Park Covenants, (sometimes herein referred to as the restrictions or restrictive covenants) imposed by the Foundation upon the Premises. These restrictions set forth below shall run with the land and be binding upon successive owners thereof, shall be for the benefit of and enforceable by (or waived in any particular instance by) the Foundation and shall be in effect for a period of 30 years from the execution date of the Deed and may be further extended for successive periods as provided herein:

1. The first floor square footage of all the buildings on the Premises shall not exceed 40% of the total area of the Premises.
2. All uses on a lot which include, but are not limited to, buildings, driveways, parking areas, impermeable surfaces etc. shall not cover more than 65% of the total area of the Premises.
3. The conveyed parcel of land shall not be used or occupied at any time for any purpose other than the purpose of: Corporate Headquarters; Offices; Service Industries; Research & Development and Testing Laboratories and Facilities; Manufacturing; Processing; Wholesaling; Distribution; and Warehousing, which is in connection with on-site manufacturing, processing, wholesaling and distribution. The conveyed parcel of land can also be used for a Hotel, Restaurant, Day-Care Facility and Health Club.
4. The architecture and type of construction, and the materials used therein, of all buildings and structures to be erected upon said land must be approved in writing by the Foundation. A certificate signed by the Chairman, Vice Chairman or Executive Director of the Foundation, in form suitable for recording, to the effect that these provisions have been complied with, duly recorded in the Registry, shall be conclusive evidence of such approval.
5. An important aspect of the Foundation's decision on whether or not to approve the new building plans or plans to expand an existing building of the applicant in Subsection "4" above shall be the attractiveness of the building and the associated landscaping plans including an initial and ongoing commitment for landscaping and upkeep to improve the appearance of the property such as special plantings and flowers, regular grass mowing and other maintenance actions to keep the appearance of the buildings and property in excellent condition..
6. No use shall be made of the Premises which would be obnoxious, or which would create a nuisance, or which would be hazardous per se to other occupants of the Park or owners of real estate abutting the Business Park, or which would violate applicable state, federal or local laws, regulations or by laws, or which would adversely impact on the quality of the atmosphere of aquifers therein or nearby. No project may go forward which poses any significant risks, hazards or problems to the land in the Park, other companies in the Park or nearby residents to the Park such as: Fire; Explosion; Dust; Noise; Smoke; Odor; Unhealthy Air Emissions; Ground Water Contamination; Soil Contamination; Adverse Wetlands Impacts; Adverse Endangered Species Impacts; or Unsightly Operations.
7. No building shall be erected within fifty (50) feet of any street line or lot line, and the area set back from the street line shall be kept appropriately landscaped and maintained in a professional and aesthetically pleasing manner.
8. Buyer shall provide on-site parking sufficient for all employees and visitors and shall not permit such parking on the public ways. All parking shall be confined to the rear and sides of the building and shall be set back 50 feet or more from property lines. All parking areas shall be properly paved with asphalt or concrete material maintained and screened from view in such manner, as the Foundation shall, in its sole discretion, from time to time determine.

9. All truck loading platforms or doors as well as rail-siding facilities shall be located at the rear of the building and screened from view in such manner as the Foundation shall, in its sole discretion, from time to time, determine.

10. AU outside storage must be appropriately screened on all sides.

11. No topsoil, sand, or gravel shall be removed from the said binds except for the purpose of building excavations and grading. Any topsoil, sand, or gravel removed for any purpose shall be disposed of in a lawful manner. Only borrow soil materials free of debris, roots and organic matter shall be permitted for use as fill. Topsoil shall be natural soil, typical of the locality, fertile and reasonably free from stones, weeds and clay.

12. The Premises shall not be hereafter subdivided or resold without the prior written consent of the Foundation.

13. No building, structure or any condition thereto, or any exterior alteration thereof, shall be erected or placed, and no parking area or driveway shall be constructed until the plans and specifications shall first have been approved in writing by Executive Director of the Foundation. The plans and specifications shall be prepared by a registered architect or engineer and shall include the following:

    a. Site plans showing existing and proposed contours, site drainage, site utilities, building locations, driveways, parking and loading areas, walks, lighting, landscaping, etc.

    b. Building plans, elevations and sections, including plans for all floor levels; general layout of interior spaces; elevations of all exterior facades (indicating heights, materials, finishes, and signs) typical building and wall sections showing nature of construction.

    c. Outline specifications noting materials of construction, including paving and landscaping; size and species of plant materials as well as building materials. Upon receipt of adequate and sufficient plans and specifications, the Foundation shall within one (1) week after such receipt, notify the Buyer in writing of its approval or disapproval of such plans. Such approval, however, will be conditional upon certification by the Buyer or its representative that the same plans and specifications as submitted to the Foundation for approval have also been or will be submitted to the building inspector in application for a building permit.

14. The building front must be primarily masonry and glass. The building sides must be masonry and glass or flat steel panels with concealed fasteners. The back of the building may be any material.

15. No billboards or advertising signs, other than those Identifying the main business and products of the firms occupying the premises shall be permitted in the New Bedford Business Park. All such signs shall be approved by the Foundation. No un-shaded, flashing or open lights shall be allowed on such signs.

16. To avoid further traffic congestion at the entrance to the Park around 7 a.m. and 3 p.m., the Company shall begin its first shift outside of the 6:50 -7:10 a.m. time window and end its first shift outside of the 2:50 - 3:10 p.m. time window.

17. The owner of the conveyed Parcel of land shall pay to the Greater New Bedford Industrial Foundation a quarterly payment of about $600, which is likely to increase in the future, to help cover the costs of the Park's Maintenance and Security Patrol Service.

18. By a date three (3) months after the closing, Buyer shall have commenced, and shall thereafter proceed with dispatch and use reasonable diligence in the construction of a building upon the Premises to be conveyed.

19. Subject to the foregoing, if Buyer shall not have completed construction of one proposed building on the premises to be conveyed by twelve (12) months after Closing, it shall, within thirty (30) days of said date, offer to re-convey said premises to the Foundation for the price of plus the actual cost of construction completed to date. If the Foundation within thirty (30) days after receipt of said offer, does not accept the same, Buyer may retain said premises free of the limitations and agreements contained in this paragraph and/or sell said premises to whomever it wishes.

20. Any re-conveyance of the Premises to the Foundation pursuant to the provisions hereof shall be by a good and sufficient quitclaim deed, conveying a good and clear record and marketable title to the same free from all encumbrances except those set forth herein and; and upon such re-conveyance, the restrictions and obligations imposed upon Buyer set forth herein shall lapse and be of no further force and effect.

21. The Foundation shall have the right to bring proceedings at law or equity against the party or parties violating or attempting to violate the conditions, covenants, restrictions and reservations contained herein, to enjoin them from so doing and to cause any such violation to be remedied, after written notice to the owner and mortgagees of record. Every act, omission to act, or condition which violates the terms of these Protective New Bedford Business Park Covenants shall constitute

a nuisance and every remedy available at law or in equity for the abatement of public or private nuisance shall be available to the Foundation.

22. These covenants and restrictions are intended to constitute a common scheme of restrictions running with the land of the Premises and to be effective and enforceable under the provisions of General Laws Chapter 184, Section 26 et seq., as same may be amended from time to time.

23. The Foundation and its successors and assigns reserve the right to extend the restrictions recited in Paragraphs 1-20 hereof for successive periods of not more than 20 years each from the execution date of the Deed contemplated herein (after the expiration of the initial 30 year period of restriction) so long as the same may be a benefit to the Foundation. Such extension of said restrictions shall be set forth on a Notice of Restrictions and shall:

    1. Be signed by the Chairman (or successor position), the Foundation being entitled of record to the benefit of the restrictions; and
    2. Describe the benefited land of the Foundation; and
    3. Describe the Premises; and
    4. Name the Foundation as having previously owned the Premises; and
    5. Specify the deed imposing the prior restrictions (as set forth herein and in said deed) and its place of record in the public records; and
    6. Be indexed and marginally referred as required by Massachusetts General Laws Chapter 184, Section 29; and
    7. Be recorded in the Registry before the expiration of 30 years of the private restrictions contemplated herein; and
    8. Thereafter, be recorded in said Registry before the expiration of 20 years preceding the filing of a further notice of restriction which is not to exceed 20 years.

This paragraph shall be deemed amended, from time to time, to the extent necessary, to comply with Association Title Standard No. 52 Extension of Restriction and Massachusetts General Laws Chapter 184, Sections 27 and 29, as same may be amended from time to time.

24. The Foundation may prosecute proceedings at law against Buyer for violating or attempting to violate the provisions hereof either to restrain violation or to recover damages. The failure of the Foundation to enforce any restrictions, regulations, covenants or provisions hereof shall not be deemed to be a waiver of the right to do so thereafter as to the same breach or to one occurring prior or subsequent thereto.

25. If any provision hereof or the application of any such provision to any person or circumstance shall be held invalid, the remainder of this Section 5 or the application of such provision to persons or circumstances other than those as to which it is held invalid, shall not be affected thereby.

26. The Foundation agrees for itself and its successors in interest to the Premises benefited by these restrictive covenants timely execute such documents and take such action, including the surrender of certificates of title, if any, for notation thereon as shall be necessary to cause such notices of restriction to be effective and enforceable under the applicable statutes.

27. These covenants and restrictions may be amended solely by the Foundation, its successors and assigns, at any time or from time to time and such amendment shall become effective upon recording. Any such subsequent amendment which would affect a parcel of land owned by a prior grantee, shall not be binding until said amendment has been assented to in writing by such prior grantee.

055464
10203

#3051

BK 2498 PG 0342

NOTICE OF ZONING VARIANCE

The Zoning Board of Appeals of the City of New Bedford, Massachusetts, on the 26 day of April 1990, granted a Zoning Variance (or Special Permit) in connection with the use of the following described parcel(s) of land in said New Bedford: -

Name of Owner POLAROID CORPORATION

Address of Owner 100 Duchaine Boulevard/Industrial Park, New Bedford

Location of Land Affected Vacant land in New Bedford

Reg.Land Ctf.12084

Assessors' Plot(s)	Lot(s)
133	15 and 32
132	1
134	5

Decision of the Zoning Board of Appeals is on file in the Office of the City Clerk.

REQUEST: Variance allowing petitioner to erect an addition of 275,000 sq.ft. to be used for manufacturing, storage and limited space and to grant relief sought by the petitioner from the zoning requirement of Section 9-207A (Parking and Loading Docks). By these requirements, the petitioner would require 487 additional spaces and 13 loading docks. The petitioner proposes to use existing parking lots and build 3 loading docks.

This is to certify that notice of the grant of this appeal was filed with City Clerk on May 7, 1990 and no appeal from the decision of the Board has been filed within the 21 day appeal period.

City Clerk

Certified by

Benedict J. Harrison
Chairman/Clerk of
Zoning Board of Appeals

VARIANCE GRANTED

6/1/90
(Date)

Joyce J. Dwyer
(Signature of Petitioner)

Received & Recorded June 1, 1990 at 2 hrs. 44 min. P.M.

John Lonergan Register

ATTACHMENT 4

Lis Pendens

10203 ✓ COMPARED
055464-2

REC'D & RECORDED
1990 JUN -1 PM 2:44
REGISTRY OF DEEDS
BRISTOL COUNTY
SOUTHERN DISTRICT

South Bristol Registry District
RECEIVED FOR REGISTRATION
JUNE 1, 1990
2 O'CLOCK 45 M P M
NOTED ON CERTIFICATE NO. 12084
IN REGISTRATION BOOK 65 PAGE 7

COMMONWEALTH OF MASSACHUSETTS
REGISTRY OF DEEDS
New Bedford, June 1 19 90
At 2 o'clock 44 min. P. M.
Received and Recorded in Bristol County,
Southern District
Book 3498 Page 342
Attest:
John Gomes
REGISTER

12084 & 65-7

(2)

CITY OF NEW BEDFORD

MASSACHUSETTS

BOARD OF APPEALS

May 1, 1990

TO: Janice A. Davidian
City Clerk
New Bedford, MA

Appeal No. 3057
Appellant: POLAROID CORPORATION
Locus: Relative to vacant land located off Duchaine Blvd. in the Industrial Park.

At an advertised public hearing of the Zoning Board of Appeals held on **Thursday, April 26, 1990,** the request of POLAROID CORPORATION for a **Variance relative to vacant land off Duchaine Boulevard** in the **Industrial Park, New Bedford, Assessors' Map, Plot 133, Lots 15 and Lot 32; Plot 132, Lot 1, and Plot 134, Lot 5,** in an **Industrial C Zone, except for a 200 ft. strip along the easterly boundary,** which is **zoned Residential A,** who proposes to erect an addition of 275,000 sq.ft. to be used for manufacturing, storage and limited office space. This use would be in violation of Article 2, Chapter 9, Section 9-207 A (Parking and Loading Docks). By these requirements, the Petitioner would require 487 additional spaces and 13 loading docks. Polaroid proposes to use existing parking lots and build 3 loading docks.

Gerald L.Hawthorne, Mgr., Acquisitions & Properties, Corporate Real Estate in Cambridge, representing Polaroid Corporation, began by introducing Trudy A. Ernst, Esq., with Goodwin, Procter & Hoar in Boston, representing Polaroid Corporation, who had submitted the petition for a Variance on behalf of Polaroid Corporation. Mr. Hawthorne noted he had with him Dean Burns who is in the New Bedford field, if anyone wished to ask him any questions about the project. Mario Gomez, the City Engineer, he noted, assisted them in the preparation of a proposed list of parties in interest which are certified by the New Bedford Tax Assessor. He also noted that Paul Khederian of their staff had prepared a letter to be sent to the abutters of their proposed plans to construct a new manufacturing facility on the southerly portion of the lot in the New Bedford Industrial park, on which its existing manufacturing facility is located.

Mr. Hawthorne noted that Polaroid owns two large parcels of land. (1) An 127-acre site originally acquired by Polaroid in 1968. The property has an unusually high water table. Polaroid property borders on the Acushnet Cedar Swamp and is affected by circumstances relating to soil conditions, location and existing structures on such land. Polaroid property is covered to an unusual extent with large areas of wetlands. 30% of the 55-acre undeveloped portion of the property is covered by wetlands. The undeveloped southerly portion of the site can be developed only

in conjunction with the northerly portion because the sole access is from Duchaine Boulevard located at the northern border of the Polaroid property. The entire easterly 200 feet of the site, which borders Phillips Road, is zoned residential. The 426,000 general square feet/62,600 gsf total for 3 support buildings are existing buildings. 275,000 gsf is for the proposed building. The present buildings are used for the manufacture of coated photographic negative and the proposed use of the premises will be for the manufacture of coated imaging web. Detailed documents of their planned project were presented to the Board which will be incorporated into the minutes of the hearing as part of the record.

Addressing Mr. Burns, Richard Fontaine questioned whether anyone could tell how many of the 350 employees used the parking spaces?

Mr. Burns replied that this parking lot is used for the day shift. At times there are always parking spaces in the lot. At another time, they are 20-25% full and the other is never full.

Clr. James Sullivan, 29 Waldo St., remarked that they all know Paul Khederian relative to the plans he supplied with the package of information. It did seem to him with these maximum numbers of cars and he understands the question - none of the employees drive more than one car . Employees come in same car (2 or 3) the maximum is reduced at least by 10-20 cars. They are getting a number of parking spaces available. Relative to loading trucks, he doesn't know where that Ordinance came from and the people from Polaroid certainly know how to run a plant of their size. It is recommended to grant them a variance.

Jim Oliveira, Director of Economic Development, speaking in favor of the petition noted that he has communicated person-to-person with Polaroid and has kept abreast of Polaroid's project for well over a year. He finds the project excellent and the people at Polaroid have been constructive in providing information and keeping them up-to-date with the plans and its progress. They are extremely responsible and have worked with the City Council to meet their requirements, and he would respectfully request the Board's consideration to grant the variance as requested. He has had the opportunity to go to the Polaroid facility and meet with the personnel and he has never had a problem finding a parking space during the peak of their operating hours and certainly there is not need for additional parking.

State Representative Robert M. Koczera expressed his support in writing for the two requests by the Polaroid Corporation at its New Bedford facility. Representative Koczera felt it would be of economic benefit to the City.

Since there appeared to be no further discussion, a motion was entertained.

Upon a motion made by Richard C. Fontaine, seconded by Jack Carvalho, it was UNANIMOUSLY VOTED to grant a Petition for a Variance to Polaroid Corporation, under the Provisions of Article 1, Chapter 9, Section 9-8, relative to vacant land in New Bedford, Assessor's Map, Plot 133, Lot 15 and Lot 32; Plot 132, Lot 1, and Plot 134, Lot 5, in an Industrial "C" Zone, except for a 200 ft. strip along the easterly boundary, which is zoned Residential A, who proposes to erect an addition of 275,000 sq.ft. to be used for manufacturing, storage and limited office space. Relief would be granted for the violation of Article 2, Chapter 9, Section 9-207A (Parking and Loading Docks). The variance would allow the Petitioner 3 loading docks and there are circumstances that relate to this particular building and this area and one must consider they are adjacent to wetlands and yet they don't want to pave over any unnecessary incompatible portions of the site. Evidence has been presented which indicates that there is more than adequate parking now and it certainly does not have a need for any additional spaces. Providing additional parking spaces would destroy many attractive and desirable natural features on the site and would result in large paved ares that would remain unused. Owing to circumstances relating to the soil conditions and topography of the site, which especially affect the land or structure in question, but which do not affect generally the zoning district in which the land and the unique structures on the site, would involve substantial hardship because the Zoning Bylaw has indicated, based on the number of parking spaces and square feet, you have high-intensive areas and it doesn't make sense, therefore the literal enforcement of the bylaws would involve substantial hardship and desirable relief may be granted without nullifying or substantially derogating from the intent or purpose of the zoning bylaws and without substantial detriment to the public good.

Jack Carvalho voted "Yes". He is very glad to see that they are considering a project of this magnitude which is very important to the City.

Benedict Harrison voted "Yes" - he agrees with Mr. Carvalho, that Polaroid is good for the City. He has driven into the area and the property is in excellent condition and they are doing a good job out there.

Donald Gomes voted "Yes."

Richard Fontaine voted "Yes" because his former boss would turn-over in his grave if he voted "No."

Murray Goldberg voted "Yes".

Very truly yours,

Benedict J. Harrison

BENEDICT J. HARRISON
Chairman/BOA

cc: Building Dept.

The petitioner was informed that within twenty (20) days of the date of the filing with the City Clerk, any person aggrieved by such decision may appeal in accordance with the procedures contained in Section 17 of Chapter 40A of the Massachusetts General Laws.

A copy of this decision was filed with the City Clerk of the City of New Bedford on May 2, 1990.

Appeal No.: 3057
Appellant: POLAROID CORPORATION
Locus: Vacant land off Duchaine Blvd. in the Industrial Park
Date: April 26, 1990
Action: VARIANCE GRANTED

PRESENT: Benedict J. Harrison, Chairman; Jack A. Carvalho, Clerk; Murray L. Goldberg, Vice Chairman; Richard A. Fontaine, and Donald Gomes, Members. Arthur Cabral, Deuty Comm. of the Bldg. Dept. was present, along with Paul A. Landreville, Commissioner & Inspector of Bldgs.

ABSENT: NONE

A communication from Paul A. Landreville, Commissioner & Inspector of Buildings, dated March 23,1990, which had been previously received and placed on file was read indicating that Polaroid Corporation had applied for a Petition for a Variance, relative to vacant land off Duchaine Boulevard in the Industrial Park, New Bedford, Assessor's Map, Plot 133, Lots 15 and Lot 32; Plot 132, Lot 1, and Plot 134, Lot 5, in an Industrial C Zone, except for a 200 ft. strip along the easterly boundary, which is zoned Residential A, who proposes to erect an addition of 275,000 sq.ft. to be used for manufacturing, storage and limited office space. This use would be in violation of Article 2, Chapter 9, Section 9-207 A (Parking and Loading Docks), of the City Code. By these requirements, the Petitioner would require 487 additional spaces and 13 loading docks. Polaroid proposes to use existing parking lots and build 3 loading docks.

An appeal from this decision by the petitioner which had also been previously filed by the Board was read seeking a variance under the provisions of Article 1, Chapter 9, Section 9-8 of the City Code.
A communication from the Office of the City Planner was received and placed on file. Plans were also submitted.

It was announced that a determination had been made that the owners of the following parcels, as they appear on the most recent tax list, were the parties to be affected by the petition:

Plot	132,	Lot	1	4	14	57						
Plot	133,	Lots	15	32	10	12	19	2	7	21	45	50
Plot	134,	Lots	4	2	3	4	367	5	16	318	342	
Plot	134D,	Lots	1	2	6	9	10	11	12	13	14	15
			82	83								
Plot	134E,	Lots	1	2	3	4	5	6	8	9	7	
Plot	134F,	Lots	29	30	31	32	and	68				

It was further announced that on April 12, 1990, written notice of the identity of the petitioner, the location of the area or premises which are the subject of the petition, together with the date and place of a public hearing was sent by mail postage prepaid to the petitioner

ATTACHMENT 5

and to the owners of all property deemed to be affected thereby. It was further announced that notices of the petition sufficient for identification were published in the New Bedford Standard-Times on April 11 and April 16, 1990, and that the publications contained in bold face type, the (a) name of the petitioner; (b) location of the area or premises which are the subject of the petition; and (c) date and place of the public hearing.

Thereupon with each member voting in the affirmative, the action of the Clerk in accepting the previously filed papers and causing the notification was ratified by the Board and the hearing was declared open for discussion.

APPEARANCES

PROPONENTS:

Gerald L. Hawthorne, Mgr., Acquisitions & Properties, Corporate Real Estate in Cambridge, representing Polaroid Corporation, began by introducing Trudy A. Ernst, Esq., with Goodwin, Procter & Hoar in Boston, representing Polaroid Corporation, had submitted the petition for a Variance on behalf of Polaroid Corporation. Mr. Hawthorne noted he had with him Dean Burns who is in the New Bedford field, if anyone wished to ask him any questions about the project. Mario Gomez, the City Engineer, he noted, assisted them in the preparation of a proposed list of parties in interest which are certified by the New Bedford Tax Assessor. He also noted that Paul Khederian of their staff had prepared a letter to be sent to the abutters of their proposed plans to construct a new manufacturing facility on the southerly portion of the lot in the New Bedford Industrial Park, on which its existing manufacturing facility is located.

Mr. Hawthorne noted that Polaroid owns two large parcels of land. (1) An 127-acre site originally acquired by Polaroid in 1968. The property has an unusually high water table. Polaroid property borders on the Acushnet Cedar Swamp and is affected by circumstances relating to soil conditions, location and existing structures on such land. Polaroid property is covered to an unusual extent with large areas of wetlands. Thirty per cent (30%) of the 55-acre undeveloped portion of the property is covered by wetlands. The undeveloped southerly portion of the site can be developed only in conjunction with the northerly portion because the sole access is from Duchaine Boulevard, located at the northern border of the Polaroid property. The other parcel, 390 acres of the undeveloped southerly portion of the site, can be developed only in conjunction with the northerly portion because the sole access is from Duchaine Boulevard located at the northern border of the site. The entire easterly 200 feet of the site, which borders Phillips Road, is zoned residential. The 426,000 general square feet/62,600 gsf total for 3 support buildings are existing buildings. 275,000 gsf is for the proposed building. The present buildings are used for the manufacture of coated photographic negative and the proposed use of the premises will be for the manufacture of coated imaging web. Detailed documents of their planned project are explained in the attached summary of statistics of parking and employees and they are also exhibited in the upper right-hand corner of the plan. there will be 466 parking spaces on these two lots. The maximum employees on site with new building construction would be 410. Every one of new employees will be provided with their parking spaces and they would still have 54 spaces left for visitors.

They have held meetings with different commissions and committees about the constraints of wetlands. The met with the Conservation Commission and filed a Determination of Applicability; they met with the City Council, and they have just signed a Notice of Intent with the Conservation Commission.

For the record, the Petitioner's Memorandum is hereby recorded:

I. **INTRODUCTION** - This Memorandum is submitted in support of the petition of POLAROID CORPORATION ("Polaroid") requesting the following relief in order to construct a new 11X web-coating facility on a portion of the Polaroid property in the New Bedford Industrial Park (the "Property") zoned Industrial C, shown on the accompanying plan.

A. **Variance from Off-Street Parking Requirements - Section 9-207A**

Section 9-207A of the City of New Bedford Zoning Ordinance provides that businesses engaged in manufacturing must provide one (1) parking space for each 350 square feet of gross floor area plus one (1) parking space for each vehicle used in conducting the business. Warehousing and space used for industrial machinery and equipment require one (1) parking space per 1,500 sq.ft. of gross floor area up to 15,000 sq.ft. one (1) additional parking space for each 5,000 sq.ft. thereafter, plus one (1) parking space for each vehicle used in conducting the business. If a building is used for combined purposes, as with the proposed Polaroid facility, the number of off-street parking spaces shall be determined as the sum of the required number of spaces in each component of the combined use.

Section 9-207A would require 487 parking spaces at the proposed Polaroid web-coating facility. This number reflects approximately 160,000 gross square feet designated for manufacturing use (which includes approx. 33,000 sq.ft. of office, lab and control room manufacturing support functions) and approx. 11,500 gross sq.ft. to be used as warehouse space and for industrial machinery and equipment, for a total of approximately 275,000 gross sq.ft., as shown on the accompanying plan V-1, dated February 15, 1990 by John G. Crowe Associates, Inc., entitled "Proposed Site Plan, Polaroid Corporation 11X Facility, New Bedford, Massachusetts," and the enclosed chart entitled "Variance Statistics". Because the new facility is projected to employ a maximum of 60 employees on the site at the same time, and usage of the existing parking facilities on the site presently results in 116 unused parking spaces at peak shift, no additional parking spaces will be needed to accommodate Polaroid employees at the new facility. At peak periods, over 50 parking spaces will remain unused, even assuming that each employee will require a parking space.

B. Variance from Off-Street Loading Requirements - Section 9-207A

Section 9-207A of the Ordinance provides that businesses engaged in manufacturing, warehousing and/or distribution of goods must provide two (2) loading spaces for each building containing 10,000 sq.ft. of gross floor area and one (1) additional space for each additional 25,000 sq.ft. of gross floor area thereafter. In order to comply with the Ordinance, the proposed Polaroid facility would be required to provide 13 loading docks. Only 3 loading docks are necessary to meet the Polaroid facility's needs, based on Polaroid's experience at its existing plant.

II. FACTS SUPPORTING ISSUANCE OF REQUESTED RELIEF.

A Variance from the parking requirements and off-street loading requirements of Section 9-207A of the Ordinance is required to allow reasonable development of the approx. 55-acre undeveloped portion of the Polaroid property. A variance is appropriate for the reasons set forth below:

The Polaroid property borders on the Acushnet Cedar Swamp and is affected by circumstances relating to the soil conditions, location and existing structures on such land, which conditions especially affect the Polaroid property but do not generally affect the Zoning District in which the land is located. As the attached plan shows, the Polaroid property is covered to an unusual extent with large areas of wetlands. A total of approx. 39% of the approx. 55-acre undeveloped portion of the property is covered by wetlands. The property also has an unusually high water table. This 127-acre site was originally acquired by Polaroid in 1968. Restrictions on development of wetlands have increased in intervening years, severely limiting permissible alteration of wetlands and resulting in a great reduction and difficult configuration of the remaining developable land.

The undeveloped southerly portion of the site can be developed only in conjunction with the northerly portion because the sole access is from Duchaine Boulevard located at the northern border of the Polaroid property. The entire easterly 200 ft. of the site, which borders Phillips Rd., is zoned Residential. The construction of a building other than a highly automated facility on the southerly portion of the site would increase traffic flow and unduly burden access over the northerly portion.

The northerly portion of the site has been developed with a large, special-purpose coating building used to manufacture Polaroid photographic negative. The site also contains a roadway network, parking areas and supporting infrastructure, including a central utilities plant, cooling tower, electrical switchgear building and wastewater treatment facility, designed for the unique Polaroid operations on the site. The site infrastructure was developed in anticipation of the need for an additional large footprint, highly automated, special purpose manufacturing building, which Polaroid now proposes to build. The proposed development of the southerly portion of the site is one of the few that is compatible with the existing building and infrastructure.

Coating requries a large building footprint. Providing the parking and loading required by Zoning would result in an untenable drainage situation. A very large area on the southerly portion of the site would need to be paved in order to provide required parking and loading. The elevation of the developable area is only roughly 3 feet above the existing water table. Accordingly, there is not enough absorption capacity above the water table to accommodate the additional runoff from the large paved area. Although constructing an effective drainage system (or changing the project to make such construction possible) might be technically possible, it would require altering the hydrologic regime of the existing wetlands, which may or may not be permissible under existing wetlands regulations. Further, the additional cost of such a drainage system or project change would be likely to make the project economically unfeasible.

The additional drainage flow from runoff from the planned building can be contained and released into the wetlands at a rate that will not alter the hydrologic regime at a reasonable cost. In addition, building runoff is relatively clean compared to runoff from parking and loading areas. The volume of runoff from the required parking and loading areas would be too great to be contained in such a way, and would require extensive mitigation to prevent the dirtier water from flowing into the wetlands.

In addition, providing the required loading docks would entail a substantial increase in building size. An additional ten loading docks would require that the building footprint be increased by approx. 7,000 sq.ft., at significant cost to Polaroid and with attendant site impacts. Approximately 13,000 sq.ft. of paved area would be required for 10 additional loading docks.

A literal enforcement of Section 9-207A would involve substantial hardship, financial and otherwise, to Polaroid, because it will virtually prevent compatible development of the large remaining portion of the site. A variance from parking and off-street loading requirements is necessary if Polaroid is to make reasonable use of the remaining land area. If Polaroid were required to construct the proposed web-coating facility on another site, it would have to duplicate the supporting infrastructure that is in place on the current site. In addition, it would be burdensome for Polaroid to be unable to take advantage of the experienced personnel already on the site with expertise in coating technology and support of coating operations.

A variance from Section 9-207A may be granted without substantial detriment to the public good and without nullifying or substantially derogating from the intent or purpose of the Zoning Ordinance. Section 9-207A wou require 487 new parking spaces and 13 loading docks for the new building. The purpose of Section 9-207A is to ensure tht there are sufficient parking and loading spaces for actual uses. There are already more than sufficient parking spaces on the Polaroid property to provide parking for the additional employees who would be employed at the new facility. The number of parking spaces already existing on the site (466) comfortably exceeds the number of spaces needed to support the peak shift employees projected for both the existing building and the proposed new building. As shown on the enclosed chart entitled "Employee Statistics", a maximum of 350 employees are on the site at the same time at the existing Polaroid NB-1 facility. The new plant will be largely automated, and a maximum of 60 employees are projected to be employed on the site at the same time. This will leave over 50 excess parking spaces at peak periods, even assuming that each employee will use a parking space. The planned loading docks (3) are adequate for the proposed new building, based on Polaroid's experience.

The use of both buildings is process-oriented and highly automated, with a low density of employees, unlike many manufacturing uses, which have a high density of employees. The parking and loading requirements of the Zoning Ordinance are based on building size, without taking into sufficient consideration, the range of density of employees or the extent to which a manufacturing use may be automated. The number of Polaroid employees at either of the plants is not likely to increase substantially, given the increasing use of automation. Because of the unique nature of the Polaroid buildings, building use is not likely

to change to make additional parking spaces or additional loading docks necessary in the future without extensive structural alteration that would require renewed compliance with the Zoning Ordinance.

Development of the property with a new highly automated coating plant would have no detrimental impact on neighboring properties which are either industrial or area residences already located near a coating facility. In fact, the low density traffic and the minimal parking required by the proposed highly-automated Polaroid facility is extremely compatible with the closest residential uses, and would much less impact than many other industrial uses permitted by zoning.

Finally, providing superfluous parking and loading areas would result in large paved areas that would remain unused, destroying substantial natural vegetation, while development pursuant to the requested variance would leave much of the property in its natural state.

For the reasons set forth above, it is entirely appropriate, and necessary to avoid depriving Polaroid of the use of the subject property, to grant to Polaroid the modest dimensional variances which it has requested.

.....

Addressing Mr. Dean Burns, Richard Fontaine questioned whether anyone could tell how many of the 350 employees used the parking spaces?

Mr. Burns replied that this parking lot is used for the day shift. At times, there are always parking spaces in the lot. At another time, they are 20-25% full and the other is never full.

Clr. James Sullivan, 29 Waldo St., began by stating that they all know Paul Khederian, relative to the plans he supplied with the package of information. It did seem to him with these maximum number of cars, and he understands the question, none of the employees drive more than one car at once. Employees come in the same car (2 or 3) the maximum is reduced at least by 10-20 cars. They are getting a number of parking spaces available. Relative to loading trucks, he doesn't know where that Ordinance came from and the people from Polaroid certainly know how to run a plant of their size. It is recommended to grant them a Variance.

Jim Oliveira, Director or Economic Development, speaking in favor of the petition, noted that he has communicated person-to-person with Polaroid and has kept abreast of Polaroid's project for well over a year. He finds the project excellent and the people at Polaroid have been constructive in providing information and keeping them up-to-date with the plans and its progress. They are extremely responsible and have worked with the City Council to meet their requirements, and he would respectfully request the Board's consideration to grant the variance as requested. He has had the opportunity of going to the Polaroid facility and meet with the personnel and he has never had a problem finding a parking space during the peak of their operating hours and certainly there is no need for additional parking.

State Representative Robert M. Koczera expressed his support in writing for the two requests by the Polaroid Corporation at its New Bedford facility. Representative Koczera felt it would be of economic benefit to the City.

There being no further questions and no opposition to be heard or recorded, the hearing was declared closed.

Upon a motion made by Richard C. Fontaine, seconded by Jack Carvalho, it was UNANIMOUSLY VOTED to GRANT the petition for a VARIANCE to POLAROID CORPORATION, under the Provisions of Article 1, Chapter 9, Section 9-8, relative to vacant land in New Bedford, Assessors' Map, Plot 133, Lot 15 and Lot 32; Plot 132, Lot 1, and Plot 134, Lot 5, in an Industrial "C Zone, except for a 200 ft. strip along the easterly boundary, which is zoned Residential A, who proposes to erect an addition of 275,000 sq.ft. to be used for manufacturing, storage and limited office space. Relief to be granted for the violation of Article 2, Chapter 9, Section 9-207A (Parking and Loading Docks). The variance would allow the petitioner three (3) loading docks and there are circumstances that relate to this particular building and this area and one must consider they are adjacent to wetlands and yet they don't want to pave over any unnecessary incompatible portions of the site.

Evidence has been presented which indicates that there is more than adequate parking now and it certainly does not have a need for any additional spaces. Providing additional parking spaces would destroy many attractive and desirable natural features on the site and would result in large paved areas that would remain unused. Owing to circumstances relating to the soil conditions and topography of the site, which especially affect the land or structure in question, but which do not affect generally the zoning district in which the land and the unique structures on the site, would involve substantial hardship because the Zoning Bylaw has indicated, based on the number of parking spaces and square feet, you have high-intensive areas and it doesn't make sense, therefore the literal enforcement of the bylaws would involve substantial hardship and desirable relief may be granted without nullifying or substantially derogating from the intent or purpose of the Zoning Bylaws and without substantial detriment to the public good.

Jack Carvalho voted "Yes". He is very glad to see that they are considering a project of this magnitude which is very important to the City.

Benedict J. Harrison voted "Yes." He agrees with Mr. Carvalho that Polaroid is good for the City. He has driven into the area and the property is in excellent condition and they are going to do a good job out there.

Donald Gomes voted "Yes."

Richard Fontaine voted "Yes" because his former boss would turn-over in his grave if he voted "No."

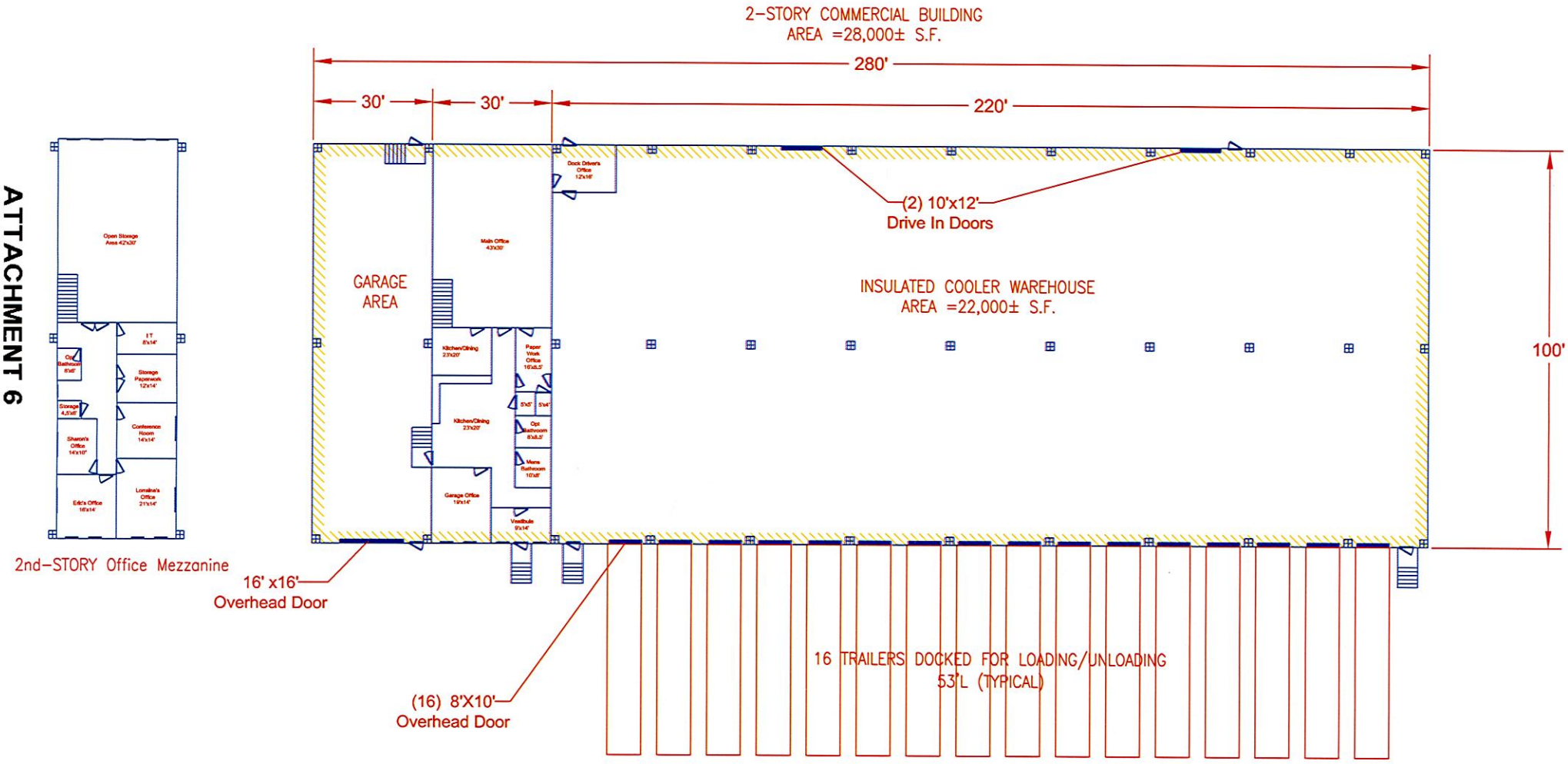
Murray Goldberg voted "Yes".

The petitioner was informed that within twenty (20) days of the date of the filing with the City Clerk, any person aggrieved by such decision may appeal in accordance with the procedures contained in Section 17 of Chapter 40A of the Massachusetts General Laws.

A copy of this decision was filed with the City Clerk of the City of New Bedford on May 2, 1990.

JACK A. CARVALHO, Clerk

ATTACHMENT 6



Case 01-17
01/13/2017

PLANNING BOARD

CITY OF NEW BEDFORD
JONATHAN F. MITCHELL, MAYOR

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

SITE PLAN REVIEW APPLICATION

The undersigned, being the Applicant, seeks Site Plan Approval for property depicted on a plan entitled: Site Plan - 100 Duchaine Boulevard by: Farland Corp. dated: 1/13/17

1. Application Information

Street Address: 100 Duchaine Boulevard

Assessor's Map(s): 134 Lot(s) 5

Registry of Deeds Book: LC BK 120 134 Page: PG 93 (LC Cert# 23339) 60

Zoning District: Industrial C / Residential A / MUB

Applicant's Name (printed): Logal, LLC

Mailing Address: 100 Duchaine Blvd. (Street) New Bedford (City) MA (State) 02745 (Zip)

Contact Information: _____
Telephone Number Email Address

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

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

Site Plan - 100 Duchaine Boulevard (Assessor's Map 134 Lot 5) New Bedford, MA; Dated: 1/13/17; By: Farland Corp.

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.

1/13/17 _____
Date Signature of Applicant

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

Category

- [ ] Residential
- [ ] Commercial
- [x] Industrial
- [ ] 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

3. Zoning Classifications

Present Use of Premises: Unoccupied

Proposed Use of Premises: Warehouse & Distribution Facility

Zoning Relief Previously Granted (Variances, Special Permits, with Dates Granted):

---

4. Briefly Describe the Proposed Project:

The applicant is seeking permission to construct a 28,000 S.F. Warehouse & Office building with associated parking, loading & other site improvements that are consistent with this type of development. They will utilize much of the previously developed existing features.

5. Please complete the following:

	Existing	Allowed/Required	Proposed
Lot Area (sq ft)	7.26+/- Ac	0	7.26+/- Ac
Lot Width (ft)	312.83	0	312.83
Number of Dwelling Units	N/A	N/A	N/A
Total Gross Floor Area (sq ft)	N/A	158,123	28,000
Residential Gross Floor Area (sq ft)	N/A	N/A	N/A
Non-Residential Gross Floor Area (sq ft)	N/A	158,123	28,000
Building Height (ft)	<100	100	<100
Front Setback (ft)	N/A	25	602.2+/-
Side Setback (ft)	N/A	25	28.9+/-
Side Setback (ft)	N/A	25	118.4+/-

Rear Setback (ft)	N/A	25	30.0+/-
Lot Coverage by Buildings (% of Lot Area)	N/A	50	11.3+/-
Permeable Open Space (% of Lot Area)	58.5+/-	20	41.6+/-
Green Space (% of Lot Area)	Same	As	Above
Off-Street Parking Spaces	N/A	33	71
Long-Term Bicycle Parking Spaces	0	0	0
Short-Term Bicycle Parking Spaces	0	0	0
Loading Bays	N/A	16	16

6. Please complete the following:

	Existing	Proposed
a) Number of customers per day:	0	To Be Determined
b) Number of employees:	0	TBD
c) Hours of operation:	0	TBD
d) Days of operation:	0	TBD
e) Hours of deliveries:	0	TBD

f) Frequency of deliveries: ☐ Daily ☐ Weekly ☐ Monthly ☐ Other: TBD

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.

_____

_____

_____

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

_____ _____

_____ _____

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

Specify zoning code section & title

_____ _____

_____ _____

CITY CLERKS OFFICE
NEW BEDFORD, MA

2017 JAN 13 P 3:42

CITY CLERK

9. OWNERSHIP VERIFICATION

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

I hereby authorize the following Applicant: Farland Corp.

at the following address: 401 County Street - New Bedford, MA 02740

to apply for: Site Plan Review

on premises located at: 100 Duchaine Boulevard

in current ownership since: March 20, 2014

whose address is: 100 Duchaine Boulevard - New Bedford, MA 02745

for which the record title stands in the name of: Logal, LLC (c/o Eric Decosta)

whose address is: 100 Duchaine Boulevard - New Bedford, MA 02745

by a deed duly recorded in the:

Registry of Deeds of County: _____ Book: _____ Page: _____

OR Registry District of the Land Court, Certificate No.: 23339 Book: 120 Page: 93

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.

1/13/17

Date

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

FARLAND CORP.

ENGINEERING A BETTER TOMORROW

ENGINEERING | SITE WORK | LAND SURVEYING

January 10, 2016

New Bedford Planning Board
New Bedford City Hall
133 William Street
New Bedford, MA 02740

RE: Letter of Authorization for Representation
100 Duchaine Boulevard – New Bedford, MA (Map 134 Lot 5)

To whom it concerns:

This letter is to certify that I authorize Christian A. Farland, P.E. of Farland Corp. to represent me in regards to the submission of the Site Plan Review and accompanying application(s) for the property located at 100 Duchaine Boulevard (Map 134 Lot 5).

If you should have any questions, please feel free to contact me.

Very truly yours,

LOGAL, LLC

Authorized Agent

FARLAND CORP., INC.

Christian A. Farland

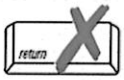
Christian A. Farland, P.E., LEED AP
Principal Engineer and President

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

ATTACHMENT 8

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

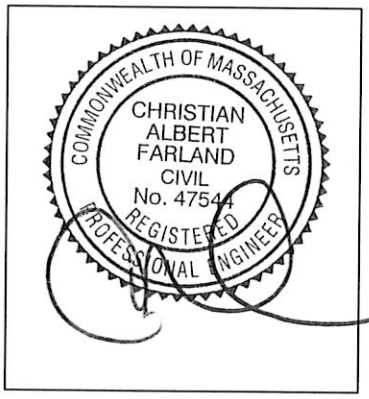
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



2/14/17

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☐ New development

☐ Redevelopment

☒ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- ☒ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☐ Reduced Impervious Area (Redevelopment Only)
- ☒ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
  - ☐ Credit 1
  - ☐ Credit 2
  - ☐ Credit 3
- ☐ Use of "country drainage" versus curb and gutter conveyance and pipe
- ☐ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☐ Grass Channel
- ☐ Green Roof
- ☐ Other (describe): _____

Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☒ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☒ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☒ Soil Analysis provided.

☒ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☒ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☒ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☒ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☒ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☒ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☒ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☒ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☒ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☒ The BMP is sized (and calculations provided) based on:

- ☒ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☒ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☐ Bike Path and/or Foot Path
- ☐ Redevelopment Project
- ☒ Redevelopment portion of mix of new and redevelopment.

☐ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☐ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☐ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☒ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☒ Schedule for implementation of routine and non-routine maintenance tasks;
- ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☐ Description and delineation of public safety features;
- ☐ Estimated operation and maintenance budget; and
- ☐ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☒ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☒ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

STORMWATER MANAGEMENT REPORT AND HYDROLOGIC ANALYSIS

Proposed Site Plan
100 Duchaine Boulevard (Assessors Map 134 Lot 5)
New Bedford, Massachusetts 02745

Project Summary

The project area associated with this proposed development is located at the southern terminus of Duchaine Boulevard in the New Bedford Business Park in northern New Bedford. The site is comprised tax parcel Lot 5 on Assessor's Map 134, and consists of approximately 7.26+/- acres. The proposed project area is comprised of the majority of the total parcel area, but does not include the steeply inclined portion of land leading to the western side of Phillips Road. Much of the parcel area, including the entire proposed project area, is located in the city's Industrial C zoning district. The site currently contains a large concrete foundation that is the remains of a warehouse style building with associated parking, loading, and landscaped areas. Access to the site is gained from a looped road off of Duchaine Boulevard, over which access easements have been provided.

The applicant is seeking permission to provide parking, loading, and drainage improvements to the project site, in addition to a newly constructed 28,000 S.F. warehouse and distribution building. The applicant is proposing to install sixteen (16) loading docks on the east side of the proposed building, and to provide an additional forty (40) trailer parking spaces throughout the site. Proposed improvements also include twenty-seven (27) new employee parking spaces. In order to attenuate the increased stormwater runoff generated by the proposed impervious site coverage and to provide the appropriate level of water quality treatment, additional stormwater management practices have been proposed. Proposed structural BMP's include sediment forebays, detention basin and subsurface recharge system.

Methodology

Drainage computations were performed using the Natural Resources Conservation Services (NRCS) TR-20 method and HydroCAD® Drainage Calculation Software to determine the change in the existing and post-development runoff rates from each drainage area for the 2-, 10-, and 100-year 24 hour storm events. The limits of the work proposed to complete the project fall within an area subject to protection by the Wetlands Protection Act, therefor, compliance with DEP Stormwater Management Standards is required. Sketches of the existing and proposed watershed areas, HydroCAD® Report, and copies of the calculation sheets are included as appendices to this report.

Existing Conditions

The soils underlying the site are identified in the Natural Resources Conservation Service (NRCS) Soil Survey of Bristol County ***(see Exhibit D)***. The site soils are classified as 306C (Paxton fine sandy loam, 8-15 percent slopes, very stony, Hydrologic Soil Group: "C") and 602 (Urban Land, HSG: "Unranked")

Stormwater Management Overview

Existing Conditions:

The project site has been divided into eleven existing subcatchment drainage areas, which discharge to three design points. The design points chosen for this site are the limit of the bordering vegetated wetlands located within the east central portion of the site and the BVW to the northern edge of the site. A number of depressions located inside the site parking lot, which discharge runoff through culverts either directly toward the BVW or toward an existing stormwater "wet basin" at the south end of the site via a piped drainage system, have been incorporated into the existing drainage model. Although these basins are wetland resource areas, they do provide peak rate attenuation for runoff which is directed to them. Existing outlet controls within the wet basin have been incorporated into the model, and the outflow from the pond is combined with the runoff toward the BVW to provide a total flow to the design points.

Proposed Conditions:

Under proposed conditions, eleven subcatchment areas have been included in the drainage model. New paved areas to be added to the existing parking area direct runoff towards two proposed infiltration basins, located between the existing driveway and the proposed paved area. The runoff from the new building will be recharged through a subsurface infiltration cultec system.

The proposed infiltration basins have been designed in accordance with the DEP Stormwater Handbook. In accordance with the Stormwater Handbook, the rate mitigation facilities have been engineered to reduce post-development runoff rates from pre-development conditions.

Stormwater Management Standards

Standard 1:

- Under proposed conditions, there will be no new untreated discharges or erosion in wetland areas. Drainage outfalls from the two infiltration basins which discharge toward the existing BVW are provided with rip-rap spillways to help control velocity and erosion at the outlet. Stormwater discharges have been held below erodible velocities. This standard has been met.

Standard 2:

- The design of the stormwater system was designed for the post-development conditions to handle all storms' peak discharges and runoff

volume to include the 2 and 10-year storm events. An evaluation of peak discharges from the 100-year storm 24-hour storm event demonstrates that although a small increase in the peak discharge rate occurs, the discharge will not result in increased off-site flooding due to the short duration of increased rate and the overall reduced volume of runoff. The site drainage system was designed in consideration of the structural standards and techniques of the Best Management Practices (BMP) and Low Impact Development (LID) outlined in the "Stormwater Management Handbook".

The results of site drainage calculations are presented in the following Tables. The results are based upon evaluation of Pre-development conditions and the design of proposed surface drainage systems for the Post-development condition. These results show the Post-Development offsite runoff rates are reduced to less than the Pre-development conditions for the two-year and ten-year storm events, thus meeting the BMP guidelines for this site development.

Table 1 - Comparison of Pre- versus Post-Development Offsite Runoff toward Southerly BVW

Frequency Storm	2-Year		10-Year		100-Year	
	Rate (cfs)	Volume (af)	Rate (cfs)	Volume (af)	Rate (cfs)	Volume (af)
Pre-Development	6.84	1.028	11.01	1.671	18.01	2.748
Post-Development	5.26	0.918	7.64	1.512	13.86	2.564

Table 2 - Comparison of Pre- versus Post-Development Offsite Runoff toward Northerly BVW

Frequency Storm	2-Year		10-Year		100-Year	
	Rate (cfs)	Volume (af)	Rate (cfs)	Volume (af)	Rate (cfs)	Volume (af)
Pre-Development	3.29	0.242	5.31	0.392	8.56	0.639
Post-Development	2.99	0.222	4.84	0.360	7.84	0.587

Table 3 - Comparison of Pre- versus Post-Development Offsite Runoff

Frequency Storm	2-Year		10-Year		100-Year	
	Rate (cfs)	Volume (af)	Rate (cfs)	Volume (af)	Rate (cfs)	Volume (af)
Pre-Development	2.43	0.186	3.49	0.274	5.16	0.412
Post-Development	1.12	0.087	1.60	0.127	2.35	0.190

*See ***Exhibit F*** for supporting hydrologic calculations

Standard 3:

- The proposed infiltration basins have been designed to recharge some of the anticipated stormwater runoff from all of the new impervious area and from some of the existing impervious area. The required Recharge Volume has been calculated using the Static Method and calculations are provided in ***Exhibit G***. We note that the required Recharge Volume was calculated for the entire impervious area on-site, including existing paved areas as well as the newly proposed paved and roof areas. As a partial re-development project, this Standard is required to be met to the maximum extent practicable for these existing areas. The proposed design, however, provides the required recharge volume within the proposed basins. Drawdown Calculations have also been provided in ***Exhibit H***. This standard has been met.

Standard 4:

- The proposed stormwater management systems for this project have been designed to remove 80% of the average annual post construction load of Total Suspended Solids in accordance with this standard, as shown in calculations provided in ***Exhibit J***. Suitable practices for source control and pollution prevention have been identified in a long-term pollution prevention plan in ***Exhibit M***. Structural BMPs have been designed to capture the required water quality volume (***Exhibit I***) determined in accordance with the Stormwater Handbook. We again note that a significant amount of the total on-site post-development impervious area is from existing impervious ground cover. As a partial redevelopment project, runoff from these areas is required to be treated to the maximum extent practicable. Although the water quality volume provided in the proposed infiltration BMPs exceeds the required volume based upon the new impervious area, it does not fully comply with the required volume based on the total impervious site area. Given the existing drainage system elevation and the groundwater conditions on-site, providing additional water quality volume for the runoff from the existing impervious areas is not practicable. This standard has been met.

Standard 5:

- Stormwater discharges are proposed to be treated by the specific structural BMPs determined to be suitable for treating runoff from such land uses. Sediment Forebays and Infiltration Basins are appropriate BMPs for use with Land Uses with Higher Potential Pollutant Load. Stormwater treatment has been designed to provide 44% TSS removal prior to discharge to the infiltration BMPs, and BMPs have been designed to treat 1.0 inch of runoff times the total new impervious are at the post-development site. This standard has been met

Standard 6:

- The site does not discharge within the Zone II or IWPA of a public water supply, nor does it discharge near or to any critical areas. This standard does not apply.

Standard 7:

- This project is a partial re-development project. Much of the site is currently paved or covered with impervious cover. Those areas where new impervious coverage is proposed have been designed to meet all of the required Stormwater Standards. Those areas where existing impervious is proposed to remain will be allowed to maintain existing drainage patterns, where much of the runoff from the existing parking lot area is directed through an existing piped drainage system to several existing stormwater basin resource areas throughout the site, which attenuates the runoff prior to discharge to the BVW. Due to the water table present on-site, it is not feasible to fully meet all Standards for the existing impervious conditions.

Standard 8:

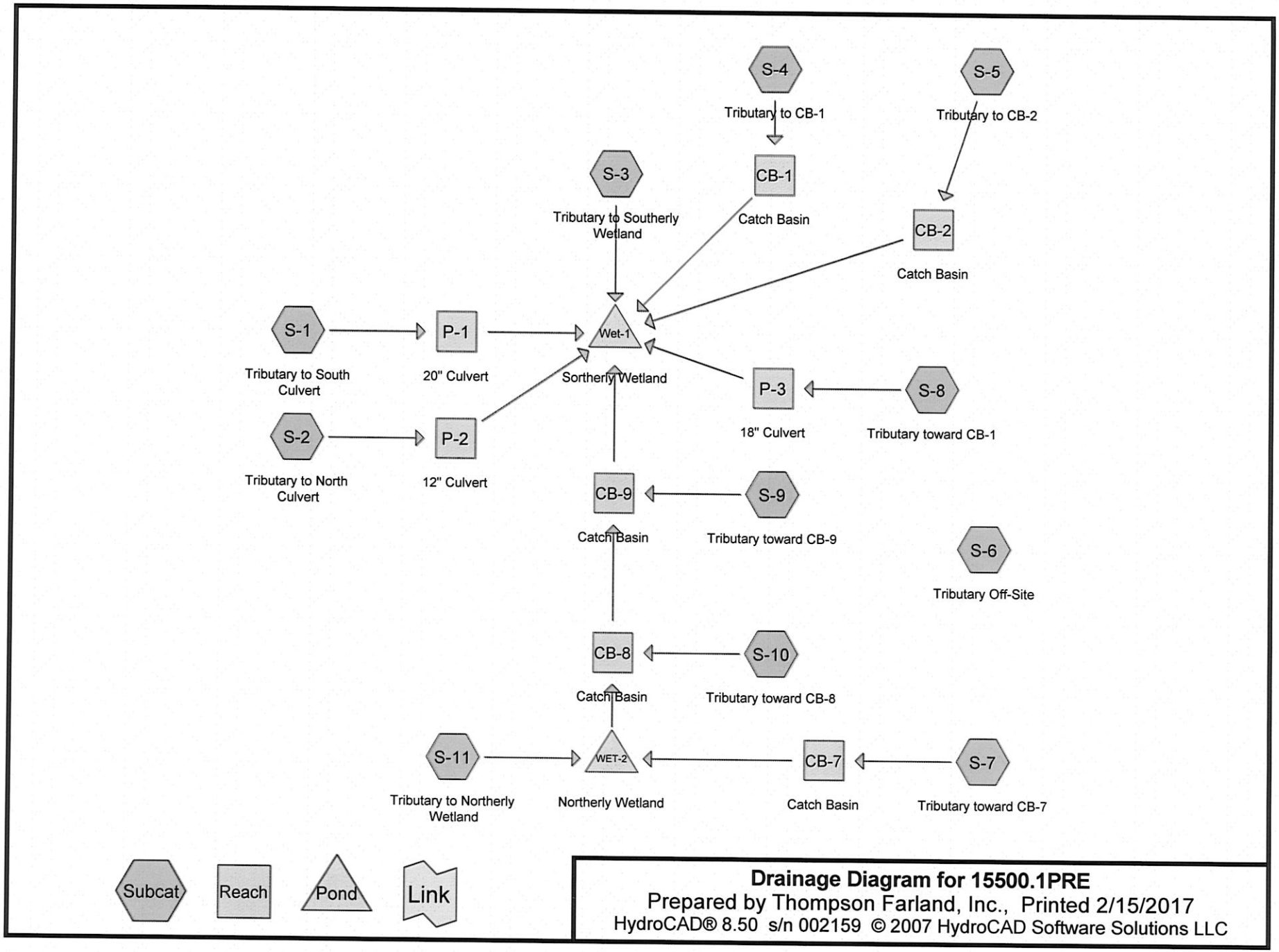
- We have provided for Construction Period Pollution in accordance with the regulations. A formal Construction Period Pollution Prevention Plan will be submitted prior to construction.

Standard 9:

- A long-term operation and maintenance plan has been prepared to ensure that stormwater management systems function as designed. ***(Exhibit L)***

Standard 10:

- We are not proposing any illicit discharges as defined in the Stormwater Management Regulations. See attached letter in ***Exhibit N***



Drainage Diagram for 15500.1PRE

Prepared by Thompson Farland, Inc., Printed 2/15/2017

Summary for Subcatchment S-1: Tributary to South Culvert

Runoff = 0.75 cfs @ 12.14 hrs, Volume= 0.064 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
	25,975	70	Woods, Good, HSG C
	3,300	74	>75% Grass cover, Good, HSG C
*	2,300	98	Roadway
	31,575	72	Weighted Average
	29,275		Pervious Area
	2,300		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.1360	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
3.5	220	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.1	270	Total			

Summary for Subcatchment S-10: Tributary toward CB-8

Runoff = 2.43 cfs @ 12.08 hrs, Volume= 0.194 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	31,200	98	Paved Parking
	850	86	<50% Grass cover, Poor, HSG C
	32,050	98	Weighted Average
	850		Pervious Area
	31,200		Impervious Area

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

Summary for Subcatchment S-11: Tributary to Northerly Wetland

Runoff = 1.95 cfs @ 12.09 hrs, Volume= 0.139 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	1,175	98	Roadway
*	15,750	98	Wetland
	27,675	70	Woods, Good, HSG C
	44,600	81	Weighted Average
	27,675		Pervious Area
	16,925		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	14	0.0200	0.96		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
4.7	36	0.1100	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.1	70	0.0420	1.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.0	120	Total			

Summary for Subcatchment S-2: Tributary to North Culvert

Runoff = 0.81 cfs @ 12.12 hrs, Volume= 0.065 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
	24,350	70	Woods, Good, HSG C
	3,875	74	>75% Grass cover, Good, HSG C
*	2,425	98	Roadway
	30,650	73	Weighted Average
	28,225		Pervious Area
	2,425		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1100	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.8	170	0.0940	1.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.9	220	Total			

Summary for Subcatchment S-3: Tributary to Southerly Wetland

Runoff = 1.80 cfs @ 12.14 hrs, Volume= 0.146 af, Depth= 1.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	9,475	98	Wetland
*	7,775	98	Roadway
	31,750	70	Woods, Good, HSG C
	49,000	80	Weighted Average
	31,750		Pervious Area
	17,250		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0360	1.41		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
2.1	20	0.2450	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
7.1	300	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.6	350	Total			

Summary for Subcatchment S-4: Tributary to CB-1

Runoff = 0.15 cfs @ 12.08 hrs, Volume= 0.012 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	1,950	98	Roadway
	1,950		Impervious Area

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

Summary for Subcatchment S-5: Tributary to CB-2

Runoff = 0.08 cfs @ 12.08 hrs, Volume= 0.006 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
1,000	98	Paved parking & roofs
1,000		Impervious Area

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

Summary for Subcatchment S-6: Tributary Off-Site

Runoff = 2.43 cfs @ 12.08 hrs, Volume= 0.186 af, Depth= 2.95"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	28,050	98	Paved Parking
	4,125	86	<50% Grass cover, Poor, HSG C
	825	89	Gravel roads, HSG C
	33,000	96	Weighted Average
	4,950		Pervious Area
	28,050		Impervious Area

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

Summary for Subcatchment S-7: Tributary toward CB-7

Runoff = 1.35 cfs @ 12.08 hrs, Volume= 0.103 af, Depth= 2.95"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	15,000	98	Paved Parking
	3,350	86	<50% Grass cover, Poor, HSG C
	18,350	96	Weighted Average
	3,350		Pervious Area
	15,000		Impervious Area

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

Summary for Subcatchment S-8: Tributary toward CB-1

Runoff = 1.70 cfs @ 12.09 hrs, Volume= 0.121 af, Depth= 1.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	1,050	98	Paved Parking
	20,000	86	<50% Grass cover, Poor, HSG C
	16,100	77	Woods, Poor, HSG C
	37,150	82	Weighted Average
	36,100		Pervious Area
	1,050		Impervious Area

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

Summary for Subcatchment S-9: Tributary toward CB-9

Runoff = 2.78 cfs @ 12.08 hrs, Volume= 0.217 af, Depth= 3.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	33,416	98	Paved Parking
	3,684	86	<50% Grass cover, Poor, HSG C
	37,100	97	Weighted Average
	3,684		Pervious Area
	33,416		Impervious Area

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

Summary for Subcatchment S-1: Tributary to South Culvert

Runoff = 1.54 cfs @ 12.13 hrs, Volume= 0.124 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
	25,975	70	Woods, Good, HSG C
	3,300	74	>75% Grass cover, Good, HSG C
*	2,300	98	Roadway
	31,575	72	Weighted Average
	29,275		Pervious Area
	2,300		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.1360	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
3.5	220	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.1	270	Total			

Summary for Subcatchment S-10: Tributary toward CB-8

Runoff = 3.45 cfs @ 12.08 hrs, Volume= 0.280 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	31,200	98	Paved Parking
	850	86	<50% Grass cover, Poor, HSG C
	32,050	98	Weighted Average
	850		Pervious Area
	31,200		Impervious Area

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

Summary for Subcatchment S-11: Tributary to Northerly Wetland

Runoff = 3.37 cfs @ 12.09 hrs, Volume= 0.240 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	1,175	98	Roadway
*	15,750	98	Wetland
	27,675	70	Woods, Good, HSG C
	44,600	81	Weighted Average
	27,675		Pervious Area
	16,925		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	14	0.0200	0.96		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
4.7	36	0.1100	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.1	70	0.0420	1.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.0	120	Total			

Summary for Subcatchment S-2: Tributary to North Culvert

Runoff = 1.62 cfs @ 12.12 hrs, Volume= 0.125 af, Depth= 2.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
	24,350	70	Woods, Good, HSG C
	3,875	74	>75% Grass cover, Good, HSG C
*	2,425	98	Roadway
	30,650	73	Weighted Average
	28,225		Pervious Area
	2,425		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1100	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.8	170	0.0940	1.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.9	220	Total			

Summary for Subcatchment S-3: Tributary to Southerly Wetland

Runoff = 3.18 cfs @ 12.13 hrs, Volume= 0.255 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	9,475	98	Wetland
*	7,775	98	Roadway
	31,750	70	Woods, Good, HSG C
	49,000	80	Weighted Average
	31,750		Pervious Area
	17,250		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0360	1.41		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
2.1	20	0.2450	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
7.1	300	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.6	350	Total			

Summary for Subcatchment S-4: Tributary to CB-1

Runoff = 0.21 cfs @ 12.08 hrs, Volume= 0.017 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	1,950	98	Roadway
	1,950		Impervious Area

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

Summary for Subcatchment S-5: Tributary to CB-2

Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
	1,000	98	Paved parking & roofs
	1,000		Impervious Area

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

Summary for Subcatchment S-6: Tributary Off-Site

Runoff = 3.49 cfs @ 12.08 hrs, Volume= 0.274 af, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	28,050	98	Paved Parking
	4,125	86	<50% Grass cover, Poor, HSG C
	825	89	Gravel roads, HSG C
	33,000	96	Weighted Average
	4,950		Pervious Area
	28,050		Impervious Area

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

Summary for Subcatchment S-7: Tributary toward CB-7

Runoff = 1.94 cfs @ 12.08 hrs, Volume= 0.152 af, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	15,000	98	Paved Parking
	3,350	86	<50% Grass cover, Poor, HSG C
	18,350	96	Weighted Average
	3,350		Pervious Area
	15,000		Impervious Area

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

Summary for Subcatchment S-8: Tributary toward CB-1

Runoff = 2.90 cfs @ 12.09 hrs, Volume= 0.206 af, Depth= 2.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	1,050	98	Paved Parking
	20,000	86	<50% Grass cover, Poor, HSG C
	16,100	77	Woods, Poor, HSG C
	37,150	82	Weighted Average
	36,100		Pervious Area
	1,050		Impervious Area

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

Summary for Subcatchment S-9: Tributary toward CB-9

Runoff = 3.97 cfs @ 12.08 hrs, Volume= 0.316 af, Depth= 4.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	33,416	98	Paved Parking
	3,684	86	<50% Grass cover, Poor, HSG C
	37,100	97	Weighted Average
	3,684		Pervious Area
	33,416		Impervious Area

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

Summary for Subcatchment S-1: Tributary to South Culvert

Runoff = 2.93 cfs @ 12.13 hrs, Volume= 0.231 af, Depth= 3.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
	25,975	70	Woods, Good, HSG C
	3,300	74	>75% Grass cover, Good, HSG C
*	2,300	98	Roadway
	31,575	72	Weighted Average
	29,275		Pervious Area
	2,300		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.1360	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
3.5	220	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.1	270	Total			

Summary for Subcatchment S-10: Tributary toward CB-8

Runoff = 5.05 cfs @ 12.08 hrs, Volume= 0.415 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	31,200	98	Paved Parking
	850	86	<50% Grass cover, Poor, HSG C
	32,050	98	Weighted Average
	850		Pervious Area
	31,200		Impervious Area

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

Summary for Subcatchment S-11: Tributary to Northerly Wetland

Runoff = 5.70 cfs @ 12.09 hrs, Volume= 0.410 af, Depth= 4.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	1,175	98	Roadway
*	15,750	98	Wetland
	27,675	70	Woods, Good, HSG C
	44,600	81	Weighted Average
	27,675		Pervious Area
	16,925		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	14	0.0200	0.96		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
4.7	36	0.1100	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.1	70	0.0420	1.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.0	120	Total			

Summary for Subcatchment S-2: Tributary to North Culvert

Runoff = 3.04 cfs @ 12.11 hrs, Volume= 0.231 af, Depth= 3.94"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
	24,350	70	Woods, Good, HSG C
	3,875	74	>75% Grass cover, Good, HSG C
*	2,425	98	Roadway
	30,650	73	Weighted Average
	28,225		Pervious Area
	2,425		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1100	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.8	170	0.0940	1.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.9	220	Total			

Summary for Subcatchment S-3: Tributary to Southerly Wetland

Runoff = 5.44 cfs @ 12.13 hrs, Volume= 0.440 af, Depth= 4.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	9,475	98	Wetland
*	7,775	98	Roadway
	31,750	70	Woods, Good, HSG C
	49,000	80	Weighted Average
	31,750		Pervious Area
	17,250		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0360	1.41		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
2.1	20	0.2450	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
7.1	300	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.6	350	Total			

Summary for Subcatchment S-4: Tributary to CB-1

Runoff = 0.31 cfs @ 12.08 hrs, Volume= 0.025 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	1,950	98	Roadway
	1,950		Impervious Area

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

Summary for Subcatchment S-5: Tributary to CB-2

Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.013 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

Area (sf)	CN	Description
1,000	98	Paved parking & roofs
1,000		Impervious Area

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

Summary for Subcatchment S-6: Tributary Off-Site

Runoff = 5.16 cfs @ 12.08 hrs, Volume= 0.412 af, Depth= 6.52"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	28,050	98	Paved Parking
	4,125	86	<50% Grass cover, Poor, HSG C
	825	89	Gravel roads, HSG C
	33,000	96	Weighted Average
	4,950		Pervious Area
	28,050		Impervious Area

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

Summary for Subcatchment S-7: Tributary toward CB-7

Runoff = 2.87 cfs @ 12.08 hrs, Volume= 0.229 af, Depth= 6.52"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	15,000	98	Paved Parking
	3,350	86	<50% Grass cover, Poor, HSG C
	18,350	96	Weighted Average
	3,350		Pervious Area
	15,000		Impervious Area

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

Summary for Subcatchment S-8: Tributary toward CB-1

Runoff = 4.84 cfs @ 12.09 hrs, Volume= 0.349 af, Depth= 4.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	1,050	98	Paved Parking
	20,000	86	<50% Grass cover, Poor, HSG C
	16,100	77	Woods, Poor, HSG C
	37,150	82	Weighted Average
	36,100		Pervious Area
	1,050		Impervious Area

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

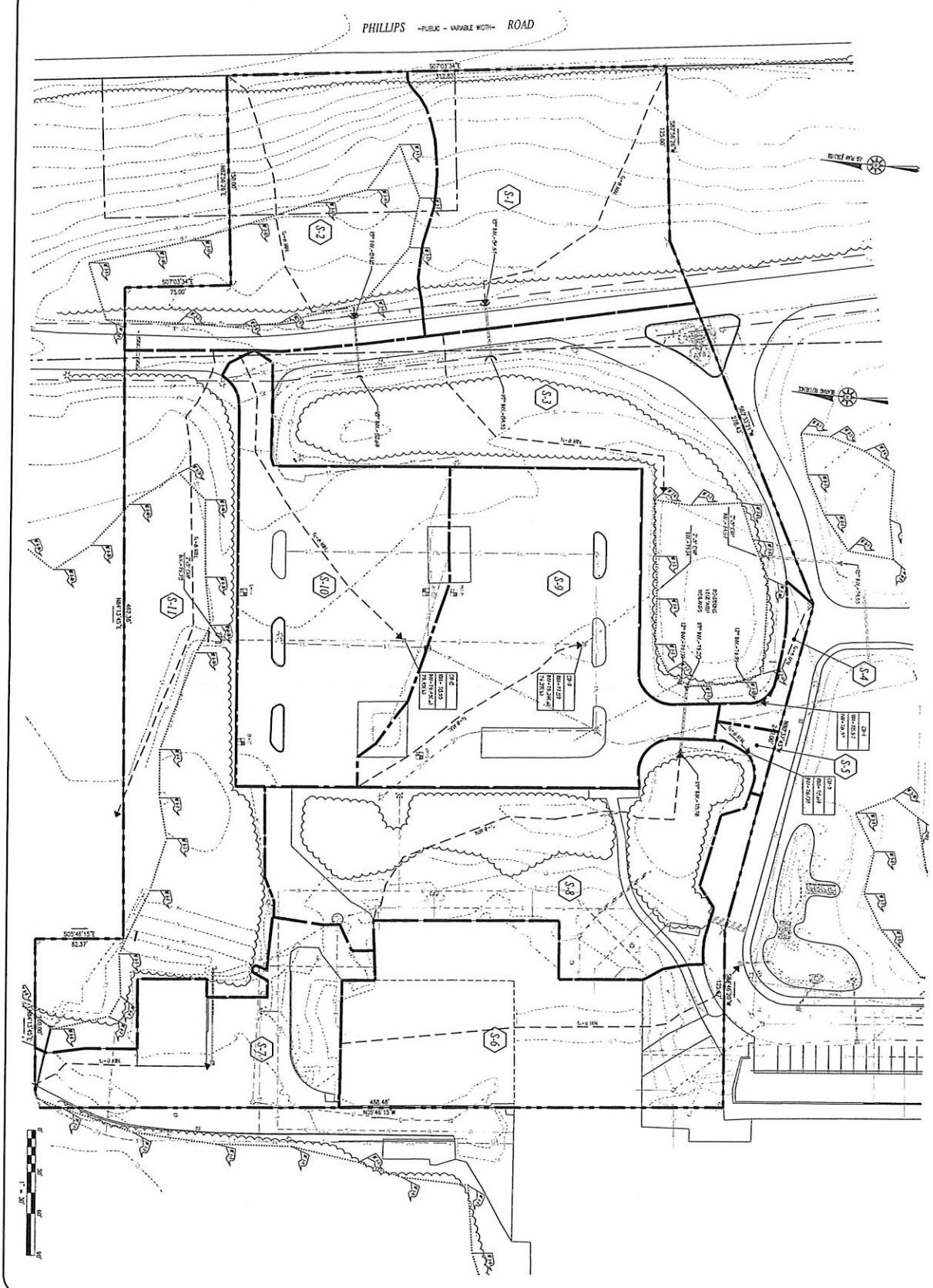
Summary for Subcatchment S-9: Tributary toward CB-9

Runoff = 5.83 cfs @ 12.08 hrs, Volume= 0.471 af, Depth= 6.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	33,416	98	Paved Parking
	3,684	86	<50% Grass cover, Poor, HSG C
	37,100	97	Weighted Average
	3,684		Pervious Area
	33,416		Impervious Area

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



SITE PLAN

100 DUCHAINE BOULEVARD

ASSESSORS MAP 134 LOT 5

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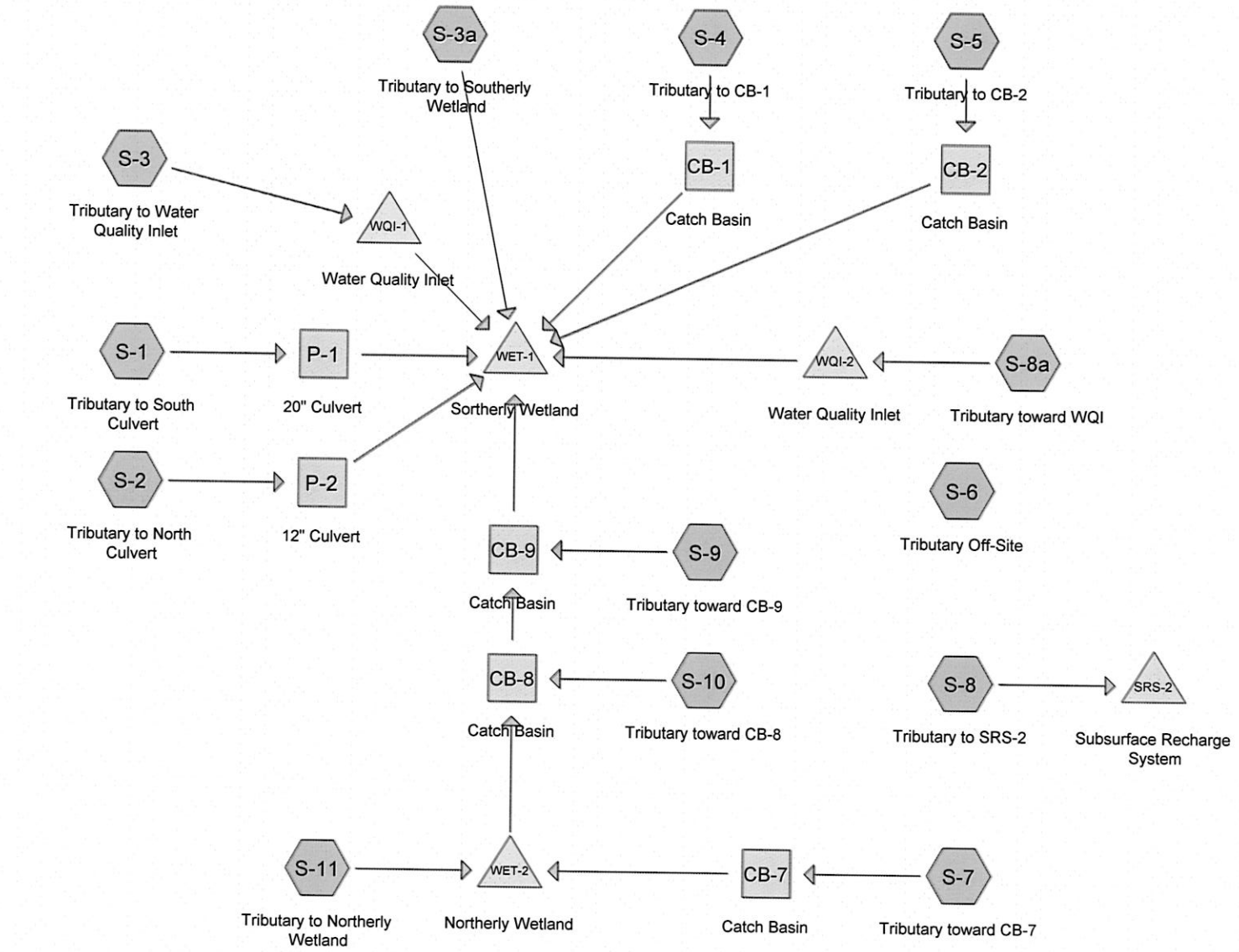
PRE-SUBCATCHMENT
SHEET 5A OF 8



Drainage Diagram for 15500.1POST

Prepared by Thompson Farland, Inc., Printed 2/15/2017

Summary for Subcatchment S-1: Tributary to South Culvert

Runoff = 0.75 cfs @ 12.14 hrs, Volume= 0.064 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
	25,975	70	Woods, Good, HSG C
	3,300	74	>75% Grass cover, Good, HSG C
*	2,300	98	Roadway
	31,575	72	Weighted Average
	29,275		Pervious Area
	2,300		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.1360	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
3.5	220	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.1	270	Total			

Summary for Subcatchment S-10: Tributary toward CB-8

Runoff = 2.83 cfs @ 12.08 hrs, Volume= 0.226 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	37,250	98	Paved Parking
	37,250		Impervious Area

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

Summary for Subcatchment S-11: Tributary to Northerly Wetland

Runoff = 1.92 cfs @ 12.09 hrs, Volume= 0.137 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	1,175	98	Roadway
*	15,750	98	Wetland
	27,025	70	Woods, Good, HSG C
	43,950	81	Weighted Average
	27,025		Pervious Area
	16,925		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	14	0.0200	0.96		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
4.7	36	0.1100	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.1	70	0.0420	1.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.0	120	Total			

Summary for Subcatchment S-2: Tributary to North Culvert

Runoff = 0.81 cfs @ 12.12 hrs, Volume= 0.065 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
	24,350	70	Woods, Good, HSG C
	3,875	74	>75% Grass cover, Good, HSG C
*	2,425	98	Roadway
	30,650	73	Weighted Average
	28,225		Pervious Area
	2,425		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1100	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.8	170	0.0940	1.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.9	220	Total			

Summary for Subcatchment S-3: Tributary to Water Quality Inlet

Runoff = 2.03 cfs @ 12.09 hrs, Volume= 0.145 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	7,500	98	Water Quality Inlet
*	14,700	98	Roadway
	11,350	70	Woods, Good, HSG C
	33,550	89	Weighted Average
	11,350		Pervious Area
	22,200		Impervious Area

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

Summary for Subcatchment S-3a: Tributary to Southerly Wetland

Runoff = 1.06 cfs @ 12.09 hrs, Volume= 0.076 af, Depth= 1.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	9,465	98	Wetland
*	1,527	98	Roadway
	9,498	70	Woods, Good, HSG C
	20,490	85	Weighted Average
	9,498		Pervious Area
	10,992		Impervious Area

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

Summary for Subcatchment S-4: Tributary to CB-1

Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	1,450	98	Roadway
	1,450		Impervious Area

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

Summary for Subcatchment S-5: Tributary to CB-2

Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.008 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
1,400	98	Paved parking & roofs
1,400		Impervious Area

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

Summary for Subcatchment S-6: Tributary Off-Site

Runoff = 1.12 cfs @ 12.08 hrs, Volume= 0.087 af, Depth= 3.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	14,625	98	Paved Parking
	335	74	>75% Grass cover, Good, HSG C
	14,960	97	Weighted Average
	335		Pervious Area
	14,625		Impervious Area

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

Summary for Subcatchment S-7: Tributary toward CB-7

Runoff = 1.07 cfs @ 12.08 hrs, Volume= 0.086 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	14,125	98	Paved Parking
	14,125		Impervious Area

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

Summary for Subcatchment S-8: Tributary to SRS-2

Runoff = 2.12 cfs @ 12.08 hrs, Volume= 0.170 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	28,000	98	Rooftop
	28,000		Impervious Area

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

Summary for Subcatchment S-8a: Tributary toward WQI

Runoff = 0.99 cfs @ 12.08 hrs, Volume= 0.076 af, Depth= 2.95"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	10,000	98	Paved Parking
	940	74	>75% Grass cover, Good, HSG C
*	2,535	98	Water Quality Inlet
	13,475	96	Weighted Average
	940		Pervious Area
	12,535		Impervious Area

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

Summary for Subcatchment S-9: Tributary toward CB-9

Runoff = 3.46 cfs @ 12.08 hrs, Volume= 0.276 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	45,550	98	Paved Parking
	45,550		Impervious Area

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

Summary for Subcatchment S-1: Tributary to South Culvert

Runoff = 1.54 cfs @ 12.13 hrs, Volume= 0.124 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
	25,975	70	Woods, Good, HSG C
	3,300	74	>75% Grass cover, Good, HSG C
*	2,300	98	Roadway
	31,575	72	Weighted Average
	29,275		Pervious Area
	2,300		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.1360	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
3.5	220	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.1	270	Total			

Summary for Subcatchment S-10: Tributary toward CB-8

Runoff = 4.01 cfs @ 12.08 hrs, Volume= 0.325 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	37,250	98	Paved Parking
	37,250		Impervious Area

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

Summary for Subcatchment S-11: Tributary to Northerly Wetland

Runoff = 3.32 cfs @ 12.09 hrs, Volume= 0.236 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	1,175	98	Roadway
*	15,750	98	Wetland
	27,025	70	Woods, Good, HSG C
	43,950	81	Weighted Average
	27,025		Pervious Area
	16,925		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	14	0.0200	0.96		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
4.7	36	0.1100	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.1	70	0.0420	1.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.0	120	Total			

Summary for Subcatchment S-2: Tributary to North Culvert

Runoff = 1.62 cfs @ 12.12 hrs, Volume= 0.125 af, Depth= 2.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
	24,350	70	Woods, Good, HSG C
	3,875	74	>75% Grass cover, Good, HSG C
*	2,425	98	Roadway
	30,650	73	Weighted Average
	28,225		Pervious Area
	2,425		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1100	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.8	170	0.0940	1.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.9	220	Total			

Summary for Subcatchment S-3: Tributary to Water Quality Inlet

Runoff = 3.15 cfs @ 12.09 hrs, Volume= 0.230 af, Depth= 3.58"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	7,500	98	Water Quality Inlet
*	14,700	98	Roadway
	11,350	70	Woods, Good, HSG C
	33,550	89	Weighted Average
	11,350		Pervious Area
	22,200		Impervious Area

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

Summary for Subcatchment S-3a: Tributary to Southerly Wetland

Runoff = 1.74 cfs @ 12.09 hrs, Volume= 0.125 af, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	9,465	98	Wetland
*	1,527	98	Roadway
	9,498	70	Woods, Good, HSG C
	20,490	85	Weighted Average
	9,498		Pervious Area
	10,992		Impervious Area

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

Summary for Subcatchment S-4: Tributary to CB-1

Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.013 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	1,450	98	Roadway
	1,450		Impervious Area

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

Summary for Subcatchment S-5: Tributary to CB-2

Runoff = 0.15 cfs @ 12.08 hrs, Volume= 0.012 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

Area (sf)	CN	Description
1,400	98	Paved parking & roofs
1,400		Impervious Area

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

Summary for Subcatchment S-6: Tributary Off-Site

Runoff = 1.60 cfs @ 12.08 hrs, Volume= 0.127 af, Depth= 4.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	14,625	98	Paved Parking
	335	74	>75% Grass cover, Good, HSG C
	14,960	97	Weighted Average
	335		Pervious Area
	14,625		Impervious Area

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

Summary for Subcatchment S-7: Tributary toward CB-7

Runoff = 1.52 cfs @ 12.08 hrs, Volume= 0.123 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	14,125	98	Paved Parking
	14,125		Impervious Area

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

Summary for Subcatchment S-8: Tributary to SRS-2

Runoff = 3.02 cfs @ 12.08 hrs, Volume= 0.244 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	28,000	98	Rooftop
	28,000		Impervious Area

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

Summary for Subcatchment S-8a: Tributary toward WQI

Runoff = 1.43 cfs @ 12.08 hrs, Volume= 0.112 af, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	10,000	98	Paved Parking
	940	74	>75% Grass cover, Good, HSG C
*	2,535	98	Water Quality Inlet
	13,475	96	Weighted Average
	940		Pervious Area
	12,535		Impervious Area

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

Summary for Subcatchment S-9: Tributary toward CB-9

Runoff = 4.91 cfs @ 12.08 hrs, Volume= 0.398 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

	Area (sf)	CN	Description
*	45,550	98	Paved Parking
	45,550		Impervious Area

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

Summary for Subcatchment S-1: Tributary to South Culvert

Runoff = 2.93 cfs @ 12.13 hrs, Volume= 0.231 af, Depth= 3.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
	25,975	70	Woods, Good, HSG C
	3,300	74	>75% Grass cover, Good, HSG C
*	2,300	98	Roadway
	31,575	72	Weighted Average
	29,275		Pervious Area
	2,300		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.1360	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
3.5	220	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.1	270	Total			

Summary for Subcatchment S-10: Tributary toward CB-8

Runoff = 5.87 cfs @ 12.08 hrs, Volume= 0.482 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	37,250	98	Paved Parking
	37,250		Impervious Area

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

Summary for Subcatchment S-11: Tributary to Northerly Wetland

Runoff = 5.61 cfs @ 12.09 hrs, Volume= 0.404 af, Depth= 4.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	1,175	98	Roadway
*	15,750	98	Wetland
	27,025	70	Woods, Good, HSG C
	43,950	81	Weighted Average
	27,025		Pervious Area
	16,925		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	14	0.0200	0.96		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
4.7	36	0.1100	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.1	70	0.0420	1.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.0	120	Total			

Summary for Subcatchment S-2: Tributary to North Culvert

Runoff = 3.04 cfs @ 12.11 hrs, Volume= 0.231 af, Depth= 3.94"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
	24,350	70	Woods, Good, HSG C
	3,875	74	>75% Grass cover, Good, HSG C
*	2,425	98	Roadway
	30,650	73	Weighted Average
	28,225		Pervious Area
	2,425		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1100	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.8	170	0.0940	1.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.9	220	Total			

Summary for Subcatchment S-3: Tributary to Water Quality Inlet

Runoff = 4.90 cfs @ 12.08 hrs, Volume= 0.366 af, Depth= 5.71"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	7,500	98	Water Quality Inlet
*	14,700	98	Roadway
	11,350	70	Woods, Good, HSG C
	33,550	89	Weighted Average
	11,350		Pervious Area
	22,200		Impervious Area

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

Summary for Subcatchment S-3a: Tributary to Southerly Wetland

Runoff = 2.82 cfs @ 12.09 hrs, Volume= 0.206 af, Depth= 5.25"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	9,465	98	Wetland
*	1,527	98	Roadway
	9,498	70	Woods, Good, HSG C
	20,490	85	Weighted Average
	9,498		Pervious Area
	10,992		Impervious Area

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

Summary for Subcatchment S-4: Tributary to CB-1

Runoff = 0.23 cfs @ 12.08 hrs, Volume= 0.019 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	1,450	98	Roadway
	1,450		Impervious Area

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

Summary for Subcatchment S-5: Tributary to CB-2

Runoff = 0.22 cfs @ 12.08 hrs, Volume= 0.018 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

Area (sf)	CN	Description
1,400	98	Paved parking & roofs
1,400		Impervious Area

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

Summary for Subcatchment S-6: Tributary Off-Site

Runoff = 2.35 cfs @ 12.08 hrs, Volume= 0.190 af, Depth= 6.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	14,625	98	Paved Parking
	335	74	>75% Grass cover, Good, HSG C
	14,960	97	Weighted Average
	335		Pervious Area
	14,625		Impervious Area

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

Summary for Subcatchment S-7: Tributary toward CB-7

Runoff = 2.23 cfs @ 12.08 hrs, Volume= 0.183 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	14,125	98	Paved Parking
	14,125		Impervious Area

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

Summary for Subcatchment S-8: Tributary to SRS-2

Runoff = 4.41 cfs @ 12.08 hrs, Volume= 0.362 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	28,000	98	Rooftop
	28,000		Impervious Area

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

Summary for Subcatchment S-8a: Tributary toward WQI

Runoff = 2.11 cfs @ 12.08 hrs, Volume= 0.168 af, Depth= 6.52"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	10,000	98	Paved Parking
	940	74	>75% Grass cover, Good, HSG C
*	2,535	98	Water Quality Inlet
	13,475	96	Weighted Average
	940		Pervious Area
	12,535		Impervious Area

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

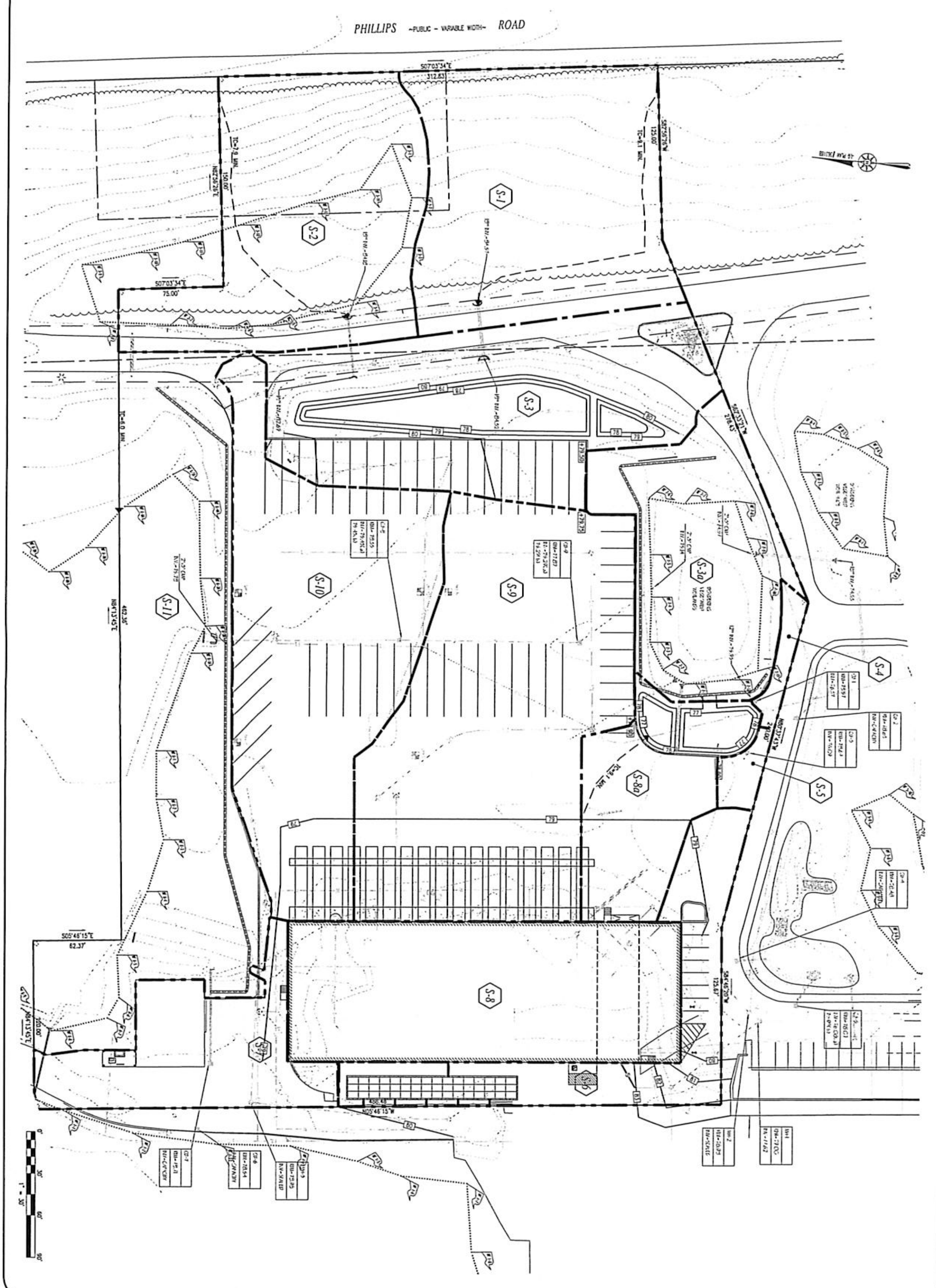
Summary for Subcatchment S-9: Tributary toward CB-9

Runoff = 7.18 cfs @ 12.08 hrs, Volume= 0.589 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

	Area (sf)	CN	Description
*	45,550	98	Paved Parking
	45,550		Impervious Area

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



SITE PLAN

100 DUCHAINE BOULEVARD

ASSESSORS MAP 134 LOT 5

NEW BEDFORD, MASSACHUSETTS

PREPARED FOR: PARALLEL PRODUCTS OF NEW ENGLAND
401 INDUSTRY ROAD
LOUISVILLE, KY 40208

DRAWN BY: MJW
DESIGNED BY: CAF
CHECKED BY: CAF

FARLAND CORP.

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REVISIONS

FEBRUARY 14, 2017
SCALE: 1"=30'
JOB NO. 15-500.1
LATEST REVISION:

POST-SUBCATCHMENT

SHEET 5B OF 8

RECHARGE CALCULATIONS
SITE PLAN – 100 DUCHAINE BOULEVARD

REQUIRED:

Recharge Volume Required ("C" Soils) = [Impervious Area x (Recharge Depth/12)]
= [174,501 sf x (0.25"/12)]
= 3,635 cf (Required Volume)

Total Required Recharge Volume = 3,635 cf

STATIC METHOD:

- Assume the entire Required Recharge Volume is discharged to the infiltration device before infiltration begins.

PROVIDED:

Subsurface Recharge System:

- Cumulative Volume below the lowest outlet (elev=78.0) = 3,702 c.f.

Water Quality Basin #1:

- Cumulative Volume below the lowest outlet (elev=79.0) = 5,890 c.f.

Water Quality Basin #2:

- Cumulative Volume below the lowest outlet (elev=77.9) = 1,963 c.f.

Total Recharge Volume Provided = 11,555 cf

$$Time_{drawdown} = \frac{Rv}{(K)(Bottom\ Area)}$$

Where:

Rv = Required Storage Volume = (F)(impervious area)

K = Saturated Hydraulic Conductivity For "Static" and "Simple Dynamic" Methods, use Rawls Rate (see Table 2.3.3).

For "Dynamic Field" Method, use 50% of the in-situ saturated hydraulic conductivity.

$$Time_{drawdown} = \frac{Rv}{(K)(Bottom\ Area)} = 20.71 \text{ hours}$$

Rv = 3,635 C.F.
K = 0.27 inch/hr.
BA = 7,802 S.F.

A	sand	**0.6-inch**
B	loam	**0.35-inch**
C	silty loam	**0.25-inch**
D	clay	**0.1-inch**

Texture Class	NRCS Hydrologic Soil Group (HSG)	Infiltration Rate Inches/Hour
Sand	A	8.27
Loamy Sand	A	2.41
Sandy Loam	B	1.02
Loam	B	0.52
Silt Loam	C	0.27
Sandy Clay Loam	C	0.17
Clay Loam	D	0.09
Silty Clay Loam	D	0.06
Sandy Clay	D	0.05
Silty Clay	D	0.04
Clay	D	0.02

WATER QUALITY VOLUME CALCULATIONS
SITE PLAN – 100 DUCHAINE BOULEVARD

REQUIRED VOLUME:

*Water Quality Volume Required = (0.5"/12) x (Total Impervious Area)
*Water Quality Volume Required = (0.5"/12) x (174,501 sf) = 7,271 c.f.

PROVIDED:

Subsurface Recharge System:

- Cumulative Volume below the lowest outlet (elev=78.0) = 3,702 c.f.

Water Quality Basin #1:

- Cumulative Volume below the lowest outlet (elev=79.0) = 5,890 c.f.

Water Quality Basin #2:

- Cumulative Volume below the lowest outlet (elev=77.9) = 1,963 c.f.

Total Water Quality Volume Provided = 11,555 c.f.

11,555 c.f. (Provided) >>> 7,271 c.f. (Required)

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: Infiltration Basin (Same for all infiltration basins)

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Sediment Forebay	0.25	1.00	0.25	0.75
Infiltration Basin	0.80	0.75	0.60	0.15
	0.00	0.15	0.00	0.15
	0.00	0.15	0.00	0.15
	0.00	0.15	0.00	0.15

Total TSS Removal = 85%

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: Nstar Energy Company

Prepared By: Christian A. Farland, P.E.

Date: 2/14/2017

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed

1. From MassDEP Stormwater Handbook Vol. 1

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: Subsurface Recharge System

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Dry Well	0.80	1.00	0.80	0.20
	0.00	0.20	0.00	0.20
	0.00	0.20	0.00	0.20
	0.00	0.20	0.00	0.20
	0.00	0.20	0.00	0.20

Total TSS Removal = 80%

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: Nstar Energy Company

Prepared By: Christian A. Farland, P.E.

Date: 2/14/2017

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed

1. From MassDEP Stormwater Handbook Vol. 1

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SEDIMENT FOREBAY SIZING CALCULATIONS

CONTRIBUTING AREA TO FOREBAY AT WATER QUALITY BASIN #1

Impervious Area = 14,700 s.f.

REQUIRED VOLUME OF SEDIMENT FOREBAY = VOLUME PRODUCED BY 0.25" RUNOFF/IMPERVIOUS ACRE

= 0.25 "/ACRE x $\frac{1 \text{ ACRE}}{43{,}560 \text{ S.F.}}$ X 14,700 S.F.

= 0.084 INCHES OF RUNOFF

TOTAL VOLUME PRODUCED = 0.084 INCHES X $\frac{1 \text{ FT}}{12 \text{ IN}}$ X 14,700 S.F.

= 103 C.F.

PROVIDED VOLUME OF SEDIMENT FOREBAY

BOTTOM FOREBAY EL. =	78.00	AREA =	423 S.F.
FOREBAY BERM EL. =	79.00	AREA =	797 S.F.

VOLUME PROVIDED = 610 C.F.

CONTRIBUTING AREA TO FOREBAY AT WATER QUALITY BASIN #2

Impervious Area = 10,000 s.f.

REQUIRED VOLUME OF SEDIMENT FOREBAY = VOLUME PRODUCED BY 0.25" RUNOFF/IMPERVIOUS ACRE

= 0.25 "/ACRE x $\frac{1 \text{ ACRE}}{43{,}560 \text{ S.F.}}$ X 10,000 S.F.

= 0.057 INCHES OF RUNOFF

TOTAL VOLUME PRODUCED = 0.057 INCHES X $\frac{1 \text{ FT}}{12 \text{ IN}}$ X 10,000 S.F.

= 48 C.F.

PROVIDED VOLUME OF SEDIMENT FOREBAY

BOTTOM FOREBAY EL. =	77.00	AREA =	510 S.F.
FOREBAY BERM EL. =	78.00	AREA =	826 S.F.

VOLUME PROVIDED = 668 C.F.

City of New Bedford Stormwater Ordinance

Sec. 16-131. - Purpose and intent.

(a) *Purpose.* The purpose of this ordinance is to protect, maintain and enhance the public health, safety, environment and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased post-development stormwater runoff, nonpoint source pollution associated with new development and redevelopment, and erosion and sedimentation associated with construction. Utilizing better site design and proper management of post-development stormwater runoff will minimize damage to public and private property and infrastructure, safeguard the health, safety, environment and general welfare of the public, protect water and aquatic resources, and promote groundwater recharge to protect surface and groundwater drinking supplies. This ordinance seeks to meet that purpose through the following objectives:

(1) Establish decision-making processes surrounding land alteration activities that protect the integrity of the watershed and preserve the health of water resources;

(2) Require that new development, redevelopment and all land alteration activities maintain or, to the maximum extent technically feasible, restore the natural hydrologic characteristics of the land to reduce flooding, stream bank erosion, siltation, nonpoint source pollution, property damage, and to improve the integrity of stream channels and aquatic habitats;

(3) Establish minimum post-development stormwater management standards and design criteria to control stormwater runoff quantity and quality;

(4) Establish minimum design criteria for the protection of properties and aquatic and groundwater resources downstream from land development and land alteration activities and to minimize nonpoint source pollution from stormwater runoff, which would otherwise degrade water quality;

(5) Establish design and application criteria for the construction and use of structural stormwater control facilities that can be used to meet the minimum post-development stormwater management standards, as established by the Massachusetts Department of Environmental Protection and by Site Plan Review Requirements of the City of New Bedford Planning Department;

(6) Encourage the use of low impact development (LID) practices that reduce runoff volume, such as reducing impervious cover and the preservation of green space and other natural areas;

(7) Prohibit illicit connections and illicit discharges to the municipal storm drain systems and require the removal of all such illicit connections;

(8) Establish provisions for the long-term responsibility and maintenance of structural stormwater control facilities and non-structural stormwater management practices to ensure that they continue to function as designed, are maintained, and pose no threat to public safety;

(9) Establish provisions to ensure there is an adequate funding mechanism, including surety, for the proper review, inspection and long-term maintenance of stormwater facilities implemented as part of this ordinance;

(10) Establish administrative procedures for the submission, review, approval or disapproval of stormwater management plans and for the inspection of approved active projects and long-term follow up;

(11) Establish certain administrative procedures and fees for the submission, review, approval, or disapproval of stormwater plans, and the inspection of approved projects;

(12) Establish enforcement mechanisms for failure to comply with provisions of this ordinance; and

(13) Establish a mechanism by which the city can meet requirements of its National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s).

(b) *Compatibility with other permit and ordinance requirements.* This ordinance is not intended to interfere with, abrogate, or annul any other ordinance, rule or regulation, statute, or other provision of law. The requirements of this ordinance shall be considered minimum requirements and where any provision of this ordinance imposes restrictions different from those imposed by any other ordinance, rule, regulation or other provision of law, whichever provisions are more restrictive or impose higher protective standards for human health or the environment shall be considered to take precedence.

(Ord. of 11-4-15, § 1)

Sec. 16-132. - Administration.

(a) *Department of public infrastructure.* The commissioner of the department of public infrastructure shall be the stormwater authority and shall be responsible to administer, implement and enforce this ordinance. Any powers granted to or duties imposed upon the commissioner may be delegated in writing by the commissioner to his or her employees or agents.

(b) *Stormwater rules and regulations.* After conducting a public hearing, the department of public infrastructure shall adopt rules and regulations, relating to the terms, conditions, definitions, enforcement, fees (including application, inspection, and/or consultant fees), procedures, and administration of this Stormwater Ordinance in accordance with the objectives set forth herein. The department of public infrastructure may periodically amend said rules and regulations after conducting a public hearing to receive comments on any proposed revisions. After public notice and public hearing, the department of public infrastructure may promulgate rules and regulations to effectuate the purposes of this ordinance. The adoption and amendment of regulations shall comply with the provisions of the New Bedford Code of Ordinances, section 2-9, as amended. Failure of the department of public infrastructure to promulgate such rules and regulations or a legal declaration of their invalidity by a court shall not act to suspend or invalidate the effect of this ordinance.

(c) *Stormwater management manual.* The department of public infrastructure will utilize the policies, criteria and information, including specifications and standards, of the latest edition of the Massachusetts Stormwater Management Handbook for the execution of the provisions of this ordinance, unless noted within the Ordinance or regulations. Unless specifically provided for in this ordinance or the New Bedford Stormwater Regulations, stormwater management practices that are designed, constructed, and maintained in accordance with the Massachusetts Stormwater Management Handbook design and sizing criteria will be presumed to be protective of Massachusetts water quality standards and the requirements of this ordinance.

(d) *Urban stormwater management guidebook.* The department of public infrastructure shall within one (1) year of adopting rules and regulations, prepare a City of New Bedford Urban Stormwater Management Guidebook, which will be available to the public for assistance in meeting the requirements of this ordinance. This guidebook will include guidance regarding permit eligibility, preferred stormwater best management practices, recommended "better site design" practices, and general design guidelines for urban stormwater management. The Guidebook will be updated and expanded periodically by the department of public infrastructure, based on improvements in engineering, science, monitoring, and local maintenance experience.

(e) *Actions by the department of public infrastructur*e. The department of public infrastructure may take any of the following actions as a result of an application for a stormwater permit: approval, approval with conditions, disapproval, or disapproval without prejudice. These actions are specifically defined as part of the stormwater rules and Regulations promulgated as part of this ordinance.

(f) *Appeals of action by the department of public infrastructure.* A decision of the department of public infrastructure shall be final. Further relief of a decision by the department of public infrastructure made under this ordinance shall be reviewable in the Superior Court in an action filed within sixty (60) days thereof, in accordance with M.G.L.A. c. 249 § 4.

(Ord. of 11-4-15, § 1)

Sec. 16-133. - Definitions.

The definitions contained herein apply to the interpretation and implementation of this ordinance. Terms not defined in this section shall be construed according to their customary and usual meaning unless the context indicates a special or technical meaning. Additional definitions may be adopted by separate regulation.

Alter: Any activity, which will measurably change the ability of a ground surface area to absorb water or will change existing surface drainage patterns. Alter may be similarly represented as "alteration of drainage characteristics," and "conducting land disturbance activities."

Applicant: A property owner or duly designated agent who has filed an application for a stormwater management permit with the department of public infrastructure.

Better site design: Site design approaches and techniques that can reduce a site's negative impact on water quality and the natural environment through the use of nonstructural stormwater management practices. "Better site design" includes conserving and protecting natural areas and green space, reducing impervious cover, disconnecting impervious cover, and using natural features for stormwater management.

Conveyance: Any structure or device, including pipes, drains, culverts, curb breaks, paved swales or man-made swales of all types designed or utilized to move or direct stormwater runoff or existing water flow.

Department of public infrastructure: The commissioner of the department of public infrastructure or a designee authorized in writing by the commissioner.

Development: The modification of land to accommodate a new use or expansion of use, usually involving construction.

Emergency repair: A condition that poses a threat to public health and/or safety. Such conditions include, but are not limited to, a utility gas leak, electric problem, collapsed or blocked drain, water leak, etc.

Illicit connection: Any drain or conveyance, whether on the surface or subsurface, which allows an illicit discharge to enter the municipal storm drain system, including, but not limited to, any conveyance which allows any non-stormwater discharge such as sewage, process wastewater and other wastewater products to enter the municipal storm drain system and any connections to the municipal storm drain system from indoor drains and sinks, regardless of whether said drain or connection has been previously allowed, permitted, or approved by an authorized enforcement agency.

Illicit discharge: Any direct or indirect non-stormwater discharge to the storm drain system, except as exempted in the stormwater rules and regulations.

Impervious cover: Any material or structure on or above the ground that prevents water from infiltrating through the underlying soil. Impervious cover includes, without limitation, paved parking lots, sidewalks, rooftops, driveways, patios, compacted gravel, and compacted bare soil- surfaced roads.

Low impact development (LID): The incorporation of non-structural and natural approaches to new and redevelopment projects to reduce adverse effects on water quality and the natural environment by conserving natural areas, reducing impervious cover, and better integrating stormwater treatment.

Massachusetts Stormwater Management Standards (MASWMS): The standards issued by the Department of Environmental Protection (DEP), and as amended, that coordinate the requirements prescribed by state regulations promulgated under the authority of the Massachusetts Wetlands Protection Act, M.G.L.A c. 131, § 40, Massachusetts Wetland Protection Regulations 310 CMR 10.00, and the Massachusetts Clean Water Act, M.G.L.A. c. 21, §§ 23—56. The standards address stormwater impacts through implementation of performance standards to reduce or prevent pollutants from reaching water bodies and control the quantity of runoff from a site.

Municipal storm drain system: The system of conveyances designed or used for collecting or conveying stormwater, including any road with a drainage system, street, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, natural or man-made or altered drainage channel, reservoir, and other drainage structure that together comprise the storm drainage system owned or operated by the City of New Bedford.

New development: Any construction or land disturbance of a parcel of land, including all projects requiring planning board site plan review, that is currently in a natural vegetated state and does not currently contain alteration by man-made activities at the location of the proposed land disturbance.

Nonpoint source pollution: Pollution from many diffuse sources caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and man-made pollutants, finally depositing them into water resource areas.

Non-stormwater discharge: Discharge to the City of New Bedford municipal storm drain system not composed entirely of stormwater.

Person: Includes any individual, group of individuals, association, partnership, corporation, company, business organization, trust, estate, the Commonwealth or political subdivision thereof to the extent subject to city ordinances, administrative agency, public or quasi-public corporation or body, the City of New Bedford, and any other legal entity, its legal representatives, agents, or assigns.

Point source: Any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, or container from which pollutants are or may be discharged.

Post-development: The condition that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific site or tract of land. Post-development refers to the phase of a new development or redevelopment project after completion, and does not refer to the construction phase of a project.

Redevelopment: Any construction, alteration, or improvement on existing land that contains impervious cover, including all projects requiring planning board site plan review, and provided that the activity does not involve an increase in the net amount of impervious cover.

Site: Any lot or parcel of land or area of property where land-disturbing activities are, were, or will be performed.

Stormwater authority: The commissioner of the department of public infrastructure for the City of New Bedford or and employee or agent designated by the commissioner in writing.

Stormwater management: The use of structural and/or non-structural practices that are designed to reduce stormwater runoff pollutant loads, discharge volumes, and/or peak flow discharge rates.

Stormwater management permit (SMP): A permit issued by the stormwater authority, after review of an application, plans, calculations, and other supporting documents, which is designed to protect the environment of the city from the deleterious effects of uncontrolled and untreated stormwater runoff.

(Ord. of 11-4-15, § 1)

Sec. 16-134. - Scope and applicability.

(a) No person shall alter land within the City of New Bedford without having obtained a stormwater management permit (SMP). The storm water authority may seek input from city departments during the review of a storm water permit application. City departments shall provide input to the storm water authority, upon request.

(1) *New development.*

a. Except as expressly provided herein, stormwater runoff from all industrial, commercial, institutional, office, residential, roadway, and transportation projects, including site

preparation, construction, and additions/expansions, and all point source and nonpoint source stormwater discharges from said projects shall be managed according to the stormwater rules and regulations and shall require a SMP.

b. Linear projects, including those not more than ten (10) feet in width, including footpaths, bikepaths, and other paths for pedestrian and/or non-motorized vehicle access, shall also meet the stormwater rules and regulations and shall require a SMP.

(2) *Redevelopment.*

a. Except as expressly provided herein, stormwater from all redevelopment projects as defined in section 16-133. Definitions of this ordinance shall be managed according to the stormwater rules and regulations and shall require a SMP.

(b) *Exemptions.* No person shall alter land within the City of New Bedford without having obtained a SMP with the following exceptions:

(1) Normal maintenance and improvement of land in agricultural use as defined by the Wetlands Protection Act 310 CMR 10.04 and M.G.L.A. c. 40A § 3;

(2) Maintenance of existing landscaping, gardens or lawn areas;

(3) Any work or projects for which all necessary approvals and permits have been issued before the effective date of this ordinance;

(4) Repair or replacement of an existing roof, if said roof contains four thousand (4,000) square feet or less;

(5) The construction or repair of any fence or wall that will not alter the existing terrain or drainage patterns;

(6) Construction of a garage, addition, pool, or accessory building/structure (e.g. shed) of five hundred (500) square feet or less on parcels that contain up to six-family dwelling units.

(7) Construction of utilities (gas, water, electric, telephone, etc.) other than drainage, which will not permanently alter terrain, ground cover, or drainage patterns;

(8) Emergency repairs (as defined in section 16-133, Definitions) that pose a threat to public health, safety, the environment, provided notification is given to the stormwater authority within twenty-four (24) hours of said repair and all required environmental protection, while performing said repair, is followed; or as deemed necessary by the City of New Bedford; provided that the original design location, size, and technology of such facility remain the same. Any work conducted beyond that necessary to abate the emergency shall require the filing of a SMP. No work may be authorized beyond thirty (30) business days from the date of notification to the stormwater authority without written approval from the stormwater authority.

(9) Work performed by the City of New Bedford;

(10) New residential driveways that are constructed with porous asphalt, permeable pavers, and pervious concrete or existing residential driveways that are repaved within the same footprint.

(Ord. of 11-4-15, § 1)

Sec. 16-135. - Fees.

At the time of an application, the applicant shall pay a filing fee pursuant to a fee schedule, which shall be determined by the commissioner of the department of public infrastructure and approved by the city council. Any subsequent changes to the fee schedule shall be submitted to the city council for approval.

Pursuant to rules and regulations promulgated by the commissioner of the department of public infrastructure, reasonable fees may be imposed upon applicants for the purpose of securing outside

consultants including, engineers or other experts, in order to aid in the review of proposed projects. Such funds shall be deposited into a revolving fund, which shall be established specifically for this purpose. Additional consultant fees may be requested where the requisite review is more expensive than originally calculated or where new information requires additional consultant services.

Only costs relating to consultant work done in connection with a project for which a consultant fee has been collected shall be paid from this account and expenditures may be made at the sole discretion of the department of public infrastructure. Any consultant hired under this provision shall be selected by and report exclusively to the department of public infrastructure. The department of public infrastructure shall provide applicants with written notice of the selection of a consultant, identifying the consultant, the amount of the fee to be charged to the applicant, and a request for payment of that fee. Notice shall be deemed to have been given on the date it is mailed or delivered. The applicant may withdraw the application or request within five (5) business days of the date notice is given without incurring any costs or expenses.

(Ord. of 11-4-15, § 1)

Sec. 16-136. - Permit procedures.

Permit procedures and requirements, including right-of-entry, and fee schedule, shall be defined and included as part of the stormwater rules and regulations.

(Ord. of 11-4-15, § 1)

Sec. 16-137. - Performance standards.

Criteria for stormwater performance standards shall be defined and included as part of the stormwater rules and regulations.

(Ord. of 11-4-15, § 1)

Sec. 16-138. - Performance guarantee.

The department of public infrastructure may require the applicant to post a surety bond, cash, or other acceptable security, approved by the commissioner of the department of public infrastructure.

(Ord. of 11-4-15, § 1)

Sec. 16-139. - Enforcement.

The department of public infrastructure, its agents, officers, and employees shall have authority to enter upon privately owned land for the purpose of performing their duties under this ordinance and may make or cause to be made such examinations, surveys, or sampling as the department of public infrastructure deems necessary, subject to the constitutions and laws of the United States and the Commonwealth.

The department of public infrastructure shall enforce this ordinance; any rules and regulations, orders, violation notices, and enforcement orders issued pursuant thereto, and may pursue all civil and criminal remedies for such violations. Enforcement shall be further defined and included as part of any stormwater regulations promulgated as permitted under section 16-132, subsection (b) of this ordinance.

The department of public infrastructure may seek remedies under the ordinance, and the regulations promulgated hereunder, including instituting a civil action to obtain an injunction, criminal enforcement up

to three hundred ($300.00) dollars per violation per day, and/or non-criminal citations, up to three hundred ($300.00) dollars per violation per day pursuant to M.G.L.A. c. 40, § 21D and M.G.L.A. c. 40U.

(Ord. of 11-4-15, § 1)

Sec. 16-140. - Severability.

The invalidity of any section, provision, paragraph, sentence, or clause of this ordinance shall not invalidate any other section, provision, sentence, or clause thereof, nor shall it invalidate any permit or determination that previously has been issued.

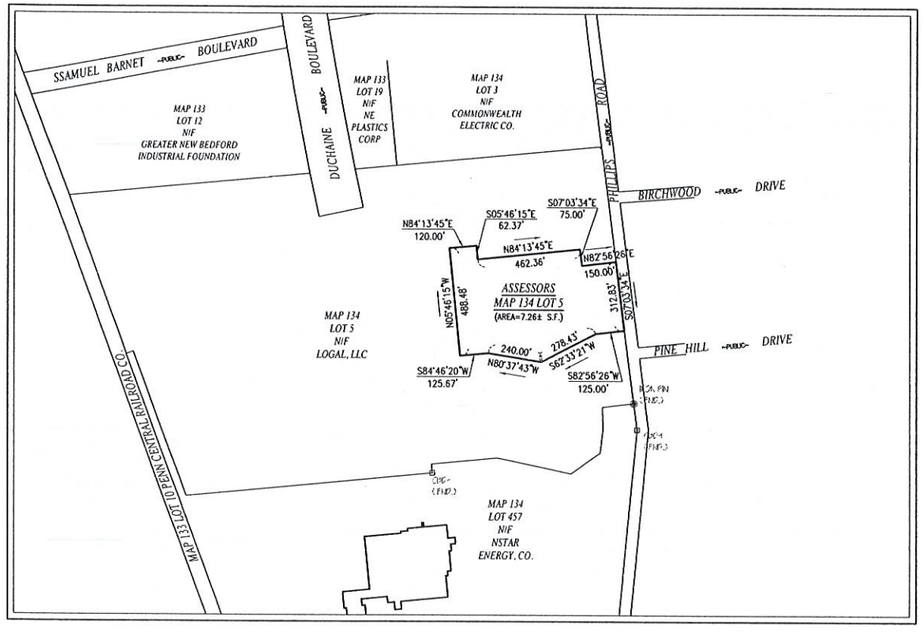
(Ord. of 11-4-15, § 1)

CITY CLERKS OFFICE
NEW BEDFORD, MA

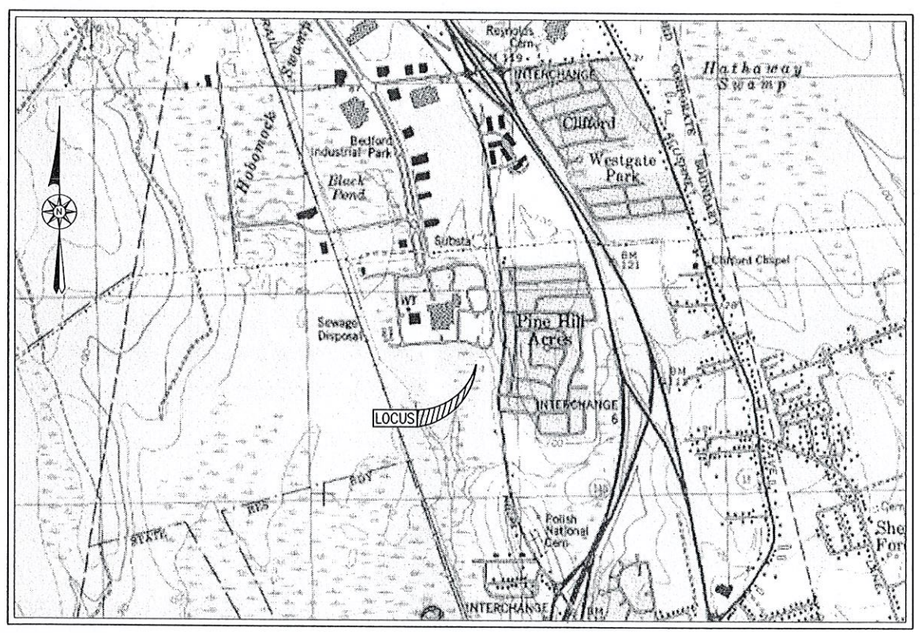
2017 JAN 13 P 3:42

CITY CLERK

SITE PLAN
DUCHAINE BOULEVARD
ASSESSORS MAP #134 LOT #5
NEW BEDFORD, MASSACHUSETTS



— OVERALL SITE MAP —
SCALE: 1"=300'



—AREA MAP—
SCALE: 1"=1,000'±

— ZONING DATA —
DISTRICT: INDUSTRIAL C

DESCRIPTION	REQUIRED	EXISTING	PROVIDED
LOT AREA	0 S.F.	7.26± AC	7.26± AC
LOT FRONTAGE	0 FT	312.83 FT	312.83 FT
FRONT SETBACK	25 FT	N/A FT	602± FT
SIDE SETBACK	25 FT	N/A FT	28.9± FT
REAR SETBACK	25 FT	N/A FT	30.0± FT
BUILDING HEIGHT (MAXIMUM)	100 FT	N/A FT	<100 FT
BUILDING COVERAGE (MAXIMUM)	50 %	N/A %	11.3± %
LOT COVERAGE (MAXIMUM)	80 %	41.5± %	58.4± %

— PARKING & LOADING REQUIREMENTS —
PRINCIPAL USE: FOOD PACKAGING & DISTRIBUTION
(FOR PARKING REGULATION PURPOSES: BUSINESS ENGAGED IN WAREHOUSING & DISTRIBUTION)

REQUIREMENT	REQUIRED	PROVIDED
1 SPACE PER 1,500 S.F. OF G.F.A. UP TO 15,000 S.F. THEREAFTER, ON ADDITIONAL SPACE FOR EACH 5,000 S.F. OR PORTION THEREOF IN EXCESS OF 15,000 S.F., PLUS ONE SPACE FOR EACH VEHICLE UTILIZED IN THE BUSINESS.	33 SPACES	67 SPACES (13)
WHEN 26-50 TOTAL PARKING SPACES ARE PROVIDED, 2 MUST BE ACCESSIBLE SPACES. ONE IN EVERY EIGHT ACCESSIBLE SPACES, BUT NOT LESS THAN ONE, SHALL BE VAN ACCESSIBLE	2 ACCESSIBLE, 1 VAN ACCESSIBLE	2 ACCESSIBLE, 1 VAN ACCESSIBLE (1)
TWO (2) LOADING SPACES FOR EACH BUILDING CONTAINING 13,000 S.F. OF GROSS FLOOR AREA. THEREAFTER, ONE (1) ADDITIONAL LOADING SPACE SHALL BE REQUIRED FOR EACH FIFTEEN (15) FEET OF DOCK, PLATFORM, OR OPENING IN THE BUILDING WHERE THE LOADING OR UNLOADING OF COMMODITIES IS INTENDED TO OCCUR.	16 LOADING DOCKS	16 LOADING DOCKS (15)

— INDEX —

RECORD OWNER:
ASSESSORS MAP 134 LOT 5
LOGAL, LLC
C/O ERIC DACOSTA
100 DUCHAINE BOULEVARD
NEW BEDFORD, MA 02745
LC CERT# 23339 ✓
LC PLAN# 36318C ✓

REVISIONS

FARLAND CORP.
www.FarlandCorp.com
401 COUNTY STREET
NEW BEDFORD, MA 02740
P.508.717.3479
OFFICES IN:
•TAUNTON
•MARLBOROUGH
•WARWICK, RI

DRAWN BY: MJW
DESIGNED BY: CAF
CHECKED BY: CAF

SITE PLAN
100 DUCHAINE BOULEVARD
ASSESSORS MAP 134 LOT 5
NEW BEDFORD, MASSACHUSETTS

PREPARED FOR: PARALLEL PRODUCTS OF NEW ENGLAND
401 INDUSTRY ROAD
LOUISVILLE, KY 40208

JANUARY 13, 2017
SCALE: AS NOTED
JOB NO. 15-500.1
LATEST REVISION:

COVER
SHEET 1 OF 8

ATTACHMENT 10

Case 01-17
01/13/2017

GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIG SAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLAN.
2. PROPERTY LINE INFORMATION TAKEN FROM:
   - PLAN ENTITLED: "PLAN OF LAND IN NEW BEDFORD, MASS., SURVEYED FOR POLAROID CORPORATION", DATED JUNE 10, 1969 BY TIBBETS ENGINEERING CORP. (PLAN BOOK 81, PAGE 78), AND
   - LAND COURT PLAN 36318C, ENTITLED "SUBDIVISION PLAN OF LAND IN NEW BEDFORD", BY CULLINAN ENGINEERING CO., INC., SURVEYORS, DATED JANUARY 6, 2009 (LAND COURT CERTIFICATE OF TITLE NO. 22029).
3. TOPOGRAPHIC SURVEY PERFORMED BY THOMPSON FARLAND, INC. IN SEPTEMBER 2015.
4. WETLAND DELINEATION BY FARLAND CORP. IN JANUARY 2016.
5. VERTICAL ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 AND HORIZONTAL LOCATIONS REFER TO THE NORTH AMERICAN DATUM (NAD) OF 1983.
6. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL STANDARDS AND REGULATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCH MARKS NECESSARY FOR THE WORK.
8. WHERE PROPOSED PAVEMENT AND WALKS ARE TO MEET EXISTING, THE CONTRACTOR SHALL SAWCUT A NEAT LINE AND MATCH GRADE. SEAL ALL JOINTS WITH HOT BITUMINOUS ASPHALT JOINT SEALER.
9. CURBING TO BE AS INDICATED ON THE PLANS.
10. ALL EXISTING TREES, SHRUBS AND GROUND COVER WHERE NATURAL GRADE IS TO BE RETAINED SHALL BE KEPT IN THEIR EXISTING STATE UNLESS REMOVAL IS REQUIRED FOR CONSTRUCTION PURPOSES.
11. ALL AREAS DISTURBED BY CONSTRUCTION AND NOT TO BE PAVED OR OTHERWISE TREATED AS NOTED ON PLAN SHALL BE TREATED WITH 4" OF LOAM, SEEDED AND HAY MULCHED FOR EROSION CONTROL.
12. SITE IMPROVEMENTS SHALL CONFORM TO A.D.A. SPECIFICATIONS.
13. LIGHTING SHALL BE DIRECTED ON SITE AND AWAY FROM TRAFFIC INTERFERENCE.
14. TEST PITS AND/OR BORINGS WERE TAKEN FOR THE PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY. THEY DO NOT NECESSARILY SHOW THE NATURE OF ALL MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
15. THE CONTRACTOR SHALL PROTECT AND/OR CAP OFF ALL EXISTING ON-SITE UTILITY SERVICES ACCORDING TO THE LOCAL AUTHORITY'S SPECIFICATIONS. SERVICES SHALL BE CAPPED OFF WHERE SAME ENTER THE PERIMETER OF THE PROPERTY LINE.
16. CONTRACTOR SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL CONSTRUCTION DOCUMENTS, SPECIFICATIONS AND SITE CONDITIONS PRIOR TO BIDDING AND PRIOR TO CONSTRUCTION.
17. ANY DISCREPANCIES BETWEEN DRAWINGS, SPECIFICATIONS AND SITE CONDITIONS SHALL BE REPORTED IMMEDIATELY TO THE OWNER'S REPRESENTATIVE FOR CLARIFICATION AND RESOLUTION PRIOR TO BIDDING OR CONSTRUCTION.
18. THESE PLANS ARE PERMITTING PLANS AND SHALL NOT TO BE USED FOR CONSTRUCTION. A FINAL SET OF STAMPED PLANS FOR CONSTRUCTION WILL BE ISSUED AFTER RECEIVING FINAL APPROVAL FROM THE LOCAL AND/OR STATE DEPARTMENTS.
19. ANY MINOR MODIFICATIONS (AS DETERMINIED 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 WORK BEING PERFORMED.
20. ANY WORK AND MATERIAL WITHIN THE CITY RIGHT-OF-WAY SHALL CONFORM TO THE CITY OF NEW BEDFORD REQUIREMENTS.
21. ALL HANDICAP PARKING, RAMPS, AND ACCESS SHALL CONFORM TO AAB & MAAB REQUIREMENTS.
22. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO CONSTRUCTION. EROSION CONTROL SHALL CONFORM TO CITY OF NEW BEDFORD CONSERVATION COMMISSION REQUIREMENTS AS STATED IN THE ORDER OF CONDITIONS.
23. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO MUTCD REQUIREMENTS.
24. THE CONTRACTOR SHALL OBTAIN A STREET DISTURBANCE & OBSTRUCTION PERMIT PRIOR TO ANY CONSTRUCTION WITHIN THE RIGHT OF WAY.
25. ALL WATER AND SEWER MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE CITY OF NEW BEDFORD REQUIREMENTS.
26. ALL WATER AND SEWER CONSTRUCTION SHALL BE INSPECTED BY THE CITY OF NEW BEDFORD BEFORE BEING BACKFILLED.
27. THE CITY SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO THE REQUIRED INSPECTIONS.

CONSTRUCTION SEQUENCING NOTES

1. CONSTRUCT TEMPORARY AND PERMANENT EROSION CONTROL FACILITIES. EROSION CONTROL FACILITIES SHALL BE INSTALLED PRIOR TO ANY EARTH MOVING.
2. TREE PROTECTION FENCE SHALL BE INSTALLED AND APPROVED BY THE OWNER REPRESENTATIVE PRIOR TO ANY EARTH MOVING.
3. ALL PERMANENT DITCHES AND SWALES ARE TO BE STABILIZED WITH VEGETATION OR RIP RAP PRIOR TO DIRECTING RUNOFF TO THEM.
4. CLEAR CUT, DEMOLISH AND DISPOSE OF EXISTING SITE ELEMENTS NOT TO REMAIN.
5. STORMWATER SHALL NOT BE DIRECTED TOWARDS THE INFILTRATION BASINS UNTIL THE ENTIRE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.
6. GRADE AND GRAVEL ALL PAVED AREAS. ALL PROPOSED PAVED AREAS SHALL BE STABILIZED IMMEDIATELY AFTER GRADING.
7. BEGIN ALL PERMANENT AND TEMPORARY SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED IMMEDIATELY AFTER THEIR CONSTRUCTION.
8. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT FENCES AND MULCH AND SEED AS REQUIRED.
9. FINISH PAVING ALL HARD SURFACE AREAS.
10. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES.
11. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
12. REMOVE TEMPORARY EROSION CONTROL MEASURES.
13. THE CONSTRUCTION SEQUENCE SHALL BE CONFINED TO THE LIMIT OF WORK AS SHOWN ON THE DRAWINGS.
14. UPON COMPLETION OF CONSTRUCTION THE OWNER SHALL AGREE TO MAINTAIN AND CLEAN ALL DRAINAGE STRUCTURES AS REQUIRED.

SITE PREPARATION NOTES

1. WITHIN THE LIMIT OF WORK LINE AS NOTED ON THE SITE PLANS, REMOVE AND DISCARD ALL CONCRETE PAVEMENT, BITUMINOUS CONCRETE PAVEMENT, BRICK PAVEMENT, TOP SOIL, MULCH, TRASH, DEAD TREES AND STUMPS, SHRUBBERY, CHAIN LINK FENCE POSTS, RAILS, FABRIC, GATES, FOOTINGS AND ALL APPURTENANCES, BOLLARDS, POSTS, CONCRETE FOOTINGS AND FOUNDATIONS, WALLS AND CURBS UNLESS OTHERWISE NOTED.
2. THE OWNER'S REPRESENTATIVE SHALL BE CONSULTED AND WILL REVIEW THE WORK ON SITE WITH THE CONTRACTOR BEFORE ANY WORK SHALL COMMENCE.
3. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES BETWEEN PLANS AND ACTUAL CONDITIONS TO THE OWNER'S REPRESENTATIVE PRIOR TO STARTING WORK.
4. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING CONDITIONS TO REMAIN THAT ARE DUE TO CONTRACTOR OPERATIONS.
5. ALL ITEMS TO BE REMOVED THAT ARE NOT STOCKPILED FOR LATER REUSE ON THE PROJECT OR DELIVERED TO THE OWNER SHALL BE LEGALLY DISPOSED OF OFF SITE BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS EFFORTS OF THE DEMOLITION WITH ALL TRADES.
7. THE CONTRACTOR SHALL COORDINATE ALL ADJUSTMENT OR ABANDONMENT OF UTILITIES WITH THE RESPECTIVE UTILITY COMPANY.
8. THE CONTRACTOR SHALL MAINTAIN OR ADJUST TO NEW FINISH GRADES AS NECESSARY ALL UTILITY AND SITE STRUCTURES SUCH AS LIGHT POLES, SIGN POLES, MANHOLES, CATCH BASINS, HAND HOLES, WATER AND GAS GATES, HYDRANTS, ETC., FROM MAINTAINED UTILITY AND SITE SYSTEMS UNLESS OTHERWISE NOTED OR DIRECTED BY THE OWNER'S REPRESENTATIVE.

UTILITY AND GRADING NOTES

1. ALL ON-SITE STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE) OR RCP, UNLESS NOTED OTHERWISE.
2. HDPE PIPE SHALL CONFORM WITH AASHTO DESIGNATIONS M294 AND M252, SHALL BE MANUFACTURED WITH HIGH DENSITY POLYETHYLENE PLASTIC AND SHALL BE ADS N-12 PIPE AS MANUFACTURED BY ADVANCE DRAINAGE SYSTEM, INC. OR HANCOR HI Q PIPE AS MANUFACTURED BY HANCOR, INC. OR APPROVED EQUAL UNLESS OTHERWISE NOTED OR DETAILED.
3. BEFORE THE DEVELOPMENT SITE IS GRADED, THE AREA OF THE DRAINAGE BASINS SHOULD BE FENCED OFF TO PREVENT HEAVY EQUIPMENT FROM COMPACTING THE UNDERLYING SOIL.
4. WHERE PROPOSED GRADES MEET EXISTING GRADES, CONTRACTOR SHALL BLEND GRADES TO PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING AND NEW WORK. PONDING AT TRANSITION AREAS WILL NOT BE ALLOWED.
5. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING FOUNDATIONS AND STRUCTURES.
6. MAXIMUM SLOPE IN DISTURBED AREAS SHALL NOT EXCEED 3:1 , UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL VERIFY EXISTING GRADES AND NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES.
8. CONTRACTOR SHALL ADJUST UTILITY ELEMENT MEANT TO BE FLUSH WITH GRADE THAT IS AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT.
9. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE OWNER'S REPRESENTATIVE FOR RESOLUTION OF THE CONFLICT.
10. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF ALL GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
11. THE LOCATION, SIZE, DEPTH AND SPECIFICATIONS FOR CONSTRUCTION OF PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY AND APPROVED BY THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE AND ELECTRICAL). FINAL DESIGN AND LOCATIONS AT THE BUILDING WILL BE PROVIDED BY THE ARCHITECT. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE UTILITY CONNECTIONS WITH THE RESPECTIVE COMPANIES PRIOR TO ANY UTILITY CONSTRUCTION.

LAYOUT AND MATERIAL NOTES

1. CONTRACTOR SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL CONSTRUCTION DOCUMENTS, SPECIFICATIONS AND SITE CONDITIONS PRIOR TO BIDDING AND PRIOR TO CONSTRUCTION.
2. ANY DISCREPANCIES BETWEEN DRAWINGS, SPECIFICATIONS AND SITE CONDITIONS SHALL BE REPORTED IMMEDIATELY TO THE OWNER'S REPRESENTATIVE FOR CLARIFICATION AND RESOLUTION PRIOR TO BIDDING OR CONSTRUCTION.
3. SEE ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS AND ALL DETAILS CONTIGUOUS TO THE BUILDING INCLUDING SIDEWALKS, RAMPS, UTILITY ENTRANCE LOCATIONS, WALL PACKS, CONCRETE DOOR PADS, ROOF DRAINS, ETC.
4. ACCESSIBLE CURB RAMPS SHALL BE PER THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD AND THE AMERICANS WITH DISABILITIES ACT ACCESSIBLITY GUIDELINES, WHICHER IS MORE STRINGENT.
5. THE FOLLOWING LAYOUT CRITERIA SHALL CONTROL UNLESS OTHERWISE NOTED ON THE PLAN:
   ALL DIMENSIONS ARE TO OUTSIDE FACE OF BUILDING.
   ALL DIMENSIONS ARE TO FACE OF CURB AT GUTTER LINE.
   ALL DIMENSIONS ARE TO CENTER OF PAVEMENT MARKINGS.
   ALL TIES TO PROPERTY LINES ARE PERPENDICULAR TO THE PROPERTY LINE UNLESS OTHERWISE NOTED.

GENERAL PLANTING NOTES

1. ALL PLANT MATERIAL SHALL CONFORM TO THE STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN OR THE PLANT MATERIAL WILL BE UNACCEPTABLE. ALL PLANT MATERIAL SHALL BE TRUE TO SPECIES, VARIETY, SIZE AND BE CERTIFIED DISEASE AND INSECT FREE. THE OWNER AND/OR THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO APPROVE ALL PLANT MATERIAL ON SITE PRIOR TO INSTALLATION.
2. ALL PLANT MATERIAL SHALL BE PROPERLY GUYED, STAKED, WRAPPED, AND PLANTED IN CONFORMANCE WITH THE TYPICAL PLANTING DETAILS. GUY WIRES SHALL BE ATTACHED TO THE TREE AT A HEIGHT OF TWO-THIRDS THE HEIGHT OF THE TREE AND SHOULD BE LOCATED AT POINTS SO AS NOT TO SPLIT THE TRUNK OF MULTI-STEMMED TREES. PROVIDE THREE STAKES PER TREE UNLESS NOTED OTHERWISE INSTALL ALL PLANT MATERIAL ON UNDISTURBED GRADE. PROVIDE BURLAP WRAPPING WITH A 50% OVERLAP. CUT AND REMOVE BURLAP FROM TOP ONE-THIRD OF THE ROOT BALL.
3. PROVIDE PLANTING PITS AS INDICATED ON PLANTING DETAILS. BACKFILL PLANTING PITS WITH ONE PART EACH OF TOP SOIL, PEAT MOSS, AND PARENT MATERIAL. IF WET SOIL CONDITIONS EXIST THEN PLANTING PITS SHALL BE EXCAVATED AN ADDITIONAL 12" AND FILLED WITH SAND.
4. NEWLY INSTALLED PLANT MATERIAL SHALL BE WATERED AT THE TIME OF INSTALLATION AND SHALL BE SUBSEQUENTLY FLOODED TWICE WITHIN TWENTY-FOUR (24) HOURS OF PLANTING. REGULAR WATERING SHALL BE PROVIDED TO ENSURE THE ESTABLISHMENT, GROWTH AND SURVIVAL OF ALL PLANTS.
5. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR ONE YEAR AFTER THE DATE OF FINAL ACCEPTANCE. ANY PLANT MATERIAL THAT DIES WITHIN THAT TIME PERIOD SHALL BE REMOVED, INCLUDING THE STUMP, AND REPLACED WITH MATERIAL OF SIMILAR SIZE AND SPECIES AT THE EXPENSE OF THE DEVELOPER. THE REPLACED PLANT MATERIAL SHALL BE GUARANTEED FOR ONE YEAR AFTER THE REPLACEMENT DATE.
6. THE LANDSCAPE CONTRACTOR SHALL PROVIDE A MINIMUM 4" LAYER OF TOPSOIL IN ALL LAWN AREAS AND A MINIMUM OF 6" OF TOPSOIL IN ALL PLANTING AREAS. A FULL SOIL ANALYSIS SHALL BE CONDUCTED AFTER CONSTRUCTION AND PRIOR TO PLANTING TO DETERMINE THE EXTENT OF SOIL AMENDMENT REQUIRED.
7. ALL DISTURBED LAWN AREAS SHALL BE STABILIZED WITH EITHER SOD OR SEED AS INDICATED ON THE LANDSCAPE PLANS. SEED SHALL CONSIST OF THE MIXTURE LISTED IN THE GENERAL SEEDING NOTES. ALL DISTURBED LAWN AREAS SHALL BE TOP SOILED, LIMED, FERTILIZED, AND FINE GRADED PRIOR TO LAWN INSTALLATION.
8. ALL PLANTING BEDS SHALL RECEIVE 3" OF SHREDDED PINE, CEDAR OR HEMLOCK BARK.
9. ALL SHRUB MASSES SHALL BE PLANTED IN CONTINUOUS MULCHED BEDS.
10. ALL TREES ARE TO BE GUYED, 3 EACH, UNLESS OTHERWISE NOTED ON PLAN.
11. ALL DECIDUOUS TREES ARE TO BE WRAPPED, WITH TREE WRAP, UP TO THE FIRST BRANCHING AND SECURED.
12. THE LANDSCAPE CONTRACTOR IS TO PERFORM ALL CONTRACTED WORK IN A REASONABLE PERIOD OF CONTINUOUS WORK.
13. THE LANDSCAPE CONTRACTOR IS TO MAINTAIN PLANT MATERIAL WHILE THE PROJECT IS UNDERWAY AND FOR A PERIOD OF TWO WEEKS AFTER THE COMPLETION OF THE PROJECT UNLESS OTHERWISE SPECIFIED.
14. THE CONTRACTOR IS TO CLEAN UP AND REMOVE ANY DEBRIS FROM THE SITE, CAUSED BY THE LANDSCAPE CONTRACTOR.

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE CONSERVATION COMMISSION SHALL BE NOTIFIED, AT LEAST 72 HOURS PRIOR TO ANY LAND DISTURBANCE.
2. A COPY OF THE SOIL EROSION AND SEDIMENT CONTROL PLAN MUST BE MAINTAINED ON THE PROJECT SITE DURING CONSTRUCTION.
3. SOIL EROSION AND SEDIMENT CONTROL PRACTICES IN THE PLAN SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
4. ALL APPLICABLE SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN PLACE PRIOR TO ANY DEMOLITION GRADING OPERATIONS AND/OR INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES.
5. ALL APPLICABLE SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE LEFT IN PLACE UNTIL CONSTRUCTION IS COMPLETED AND/OR THE AREA IS STABILIZED.
6. ALL SOIL EROSION AND SEDIMENT CONTROL STRUCTURES SHALL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS AND AFTER EVERY STORM EVENT.
7. THE MAINTENANCE OF SOIL EROSION AND SEDIMENT CONTROL MEASURES AND FACILITIES DURING AND IMMEDIATELY AFTER CONSTRUCTION RESTS WITH THE GENERAL CONTRACTOR. UPON ACCEPTANCE OF THE PROJECT, THE OWNER SHALL BECOME RESPONSIBLE FOR MAINTENANCE OF ANY REMAINING MEASURES AND FACILITIES.
8. OFF SITE SEDIMENT DISTURBANCE MAY REQUIRE ADDITIONAL CONTROL MEASURES TO BE DETERMINED BY THE ENGINEER.
9. THE CONSERVATION COMMISSION AND/OR ENGINEER MAY REQUIRE ADDITIONAL SOIL EROSION MEASURES TO BE INSTALLED, AS DIRECTED BY THE DISTRICT INSPECTOR.
10. ADJOINING PROPERTIES SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS AT ALL TIMES.
11. THE CONTRACTOR SHALL UTILIZE ALL METHODS NECESSARY TO PREVENT BLOWING AND MOVEMENT OF DUST FROM THE EXPOSED SOIL SURFACES.
12. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
13. A CRUSHED STONE TIRE CLEANING PAD WILL BE INSTALLED WHEREVER A CONSTRUCTION ENTRANCE EXISTS. SEE LOCATION DETAIL ON PLAN.
14. ALL CATCH BASIN INLETS SHALL BE PROTECTED DURING CONSTRUCTION AS DETAILED ON THE PLAN, IF APPLICABLE.
15. ALL STORM DRAINAGE OUTLETS SHALL BE PROTECTED AS REQUIRED HEREON BEFORE DISCHARGE POINTS BECOME OPERATIONAL.
16. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT ALL STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
17. LAND AREAS EXPOSED AT ANY ONE TIME AND THE LENGTH OF EXPOSURE SHALL BE KEPT TO A PRACTICAL MINIMUM. THEY SHALL BE LEFT IN A NEAT AND FINISHED APPEARANCE AND PROTECTED FROM EROSION.
18. ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN SIXTY (60) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING AND FERTILIZATION. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTRIBUTED AREAS SHALL BE MULCHED.
19. ALL CRITICAL AREAS SUBJECT TO EROSION SHALL RECEIVE A TEMPORARY SEEDING AND BE MULCHED IN ACCORDANCE WITH THE SPECIFICATIONS IMMEDIATELY FOLLOWING ROUGH GRADING.
20. IMMEDIATELY AFTER COMPLETION OF STRIPPING AND STOCKPILING OF TOPSOIL, SEED THE STOCKPILE WITH ANNUAL RYE GRASS. STABILIZE TOPSOIL STOCKPILES WITH STRAW MULCH FOR PROTECTION IF THE SEASON DOES NOT PERMIT THE APPLICATION AND ESTABLISHMENT OF TEMPORARY SEEDING.
21. SOIL STOCKPILES ARE NOT TO BE LOCATED WITHIN FIFTY (50) FEET OF WETLANDS, THE FLOODPLAIN, SLOPE, ROADWAY OR DRAINAGE FACILITIES. THE BASE OF ALL STOCKPILES SHALL BE PROTECTED BY A HAY BALE BARRIER OR SEDIMENT FENCE. LOCATIONS ARE DELINEATED ON THE PLAN.
22. MAXIMUM SIDE SLOPES OF ALL EXPOSED SURFACES SHALL NOT BE CONSTRUCTED STEEPER THAN 3:1 UNLESS OTHERWISE APPROVED BY THE DISTRICT.
23. ALL AREAS NOT STABILIZED BY CONSTRUCTION, SODDING OR LANDSCAPING SHALL BE SEEDED AND STABILIZED IN ACCORDANCE WITH THE SEEDING AND MULCHING SPECIFICATIONS.
24. MULCHING IS REQUIRED ON ALL SEEDED AREAS TO INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED TO PROMOTE EARLIER VEGETATIVE COVER.
25. ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTRATION DEVICE. THE SEDIMENT FILTER MUST BE CAPABLE OF FILTERING THE SEDIMENT AND BE PLACED SO AS NOT TO CAUSE EROSION OF THE DOWNSTREAM AREA.

LEGEND

EXISTING		PROPOSED
	CONTOUR LINE	101
	SPOT GRADE	+101.1
	EDGE OF PAVEMENT	EOP
	VERTICAL GRANITE CURB	VGC
	SLOPED GRANITE CURB	SGC
VCC	VERTICAL CONCRETE CURB	VCC
	BITUMINOUS CONCRETE CURB	BCC
	CAPE COD BERM	CCB
	STONE WALL	
	CHAIN LINK FENCE	
	IRON FENCE	
	POST & RAIL FENCE	
	STOCKADE FENCE	
	GUARD RAIL	
	HAY BALES	
	WATER LINE	—W— — — —W— — — —
	FIRE HYDRANT	
	POST INDICATOR VALVE	
	WATER GATE	
	WATER METER PIT	
	IRRIGATION HAND HOLE	
	WELL	
	SEWER LINE	
	SEWER MANHOLE	
	GAS LINE	
	GAS METER	
	GAS GATE	
	DRAIN LINE	
	DRAIN MANHOLE	
	CATCH BASIN	
	OVERHEAD WIRES	
	ELECTRIC, TELEPHONE & CABLE	
	UTILITY POLE	
	GUY WIRE	

DETAIL NUMBER
1
2
SAMPLE DETAIL
NOT TO SCALE
NUMBER REFERENCES WHAT SHEET THE DETAIL IS ON

REVISIONS

COMMONWEALTH OF MASSACHUSETTS
CHRISTIAN ALBERT FARLAND
No. 47544
CIVIL
REGISTERED PROFESSIONAL ENGINEER

FARLAND CORP.

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P.508.717.3479
OFFICES IN:
•TAUNTON
•MARLBOROUGH
•WARWICK, RI

DRAWN BY: MJW
DESIGNED BY: CAF
CHECKED BY: CAF

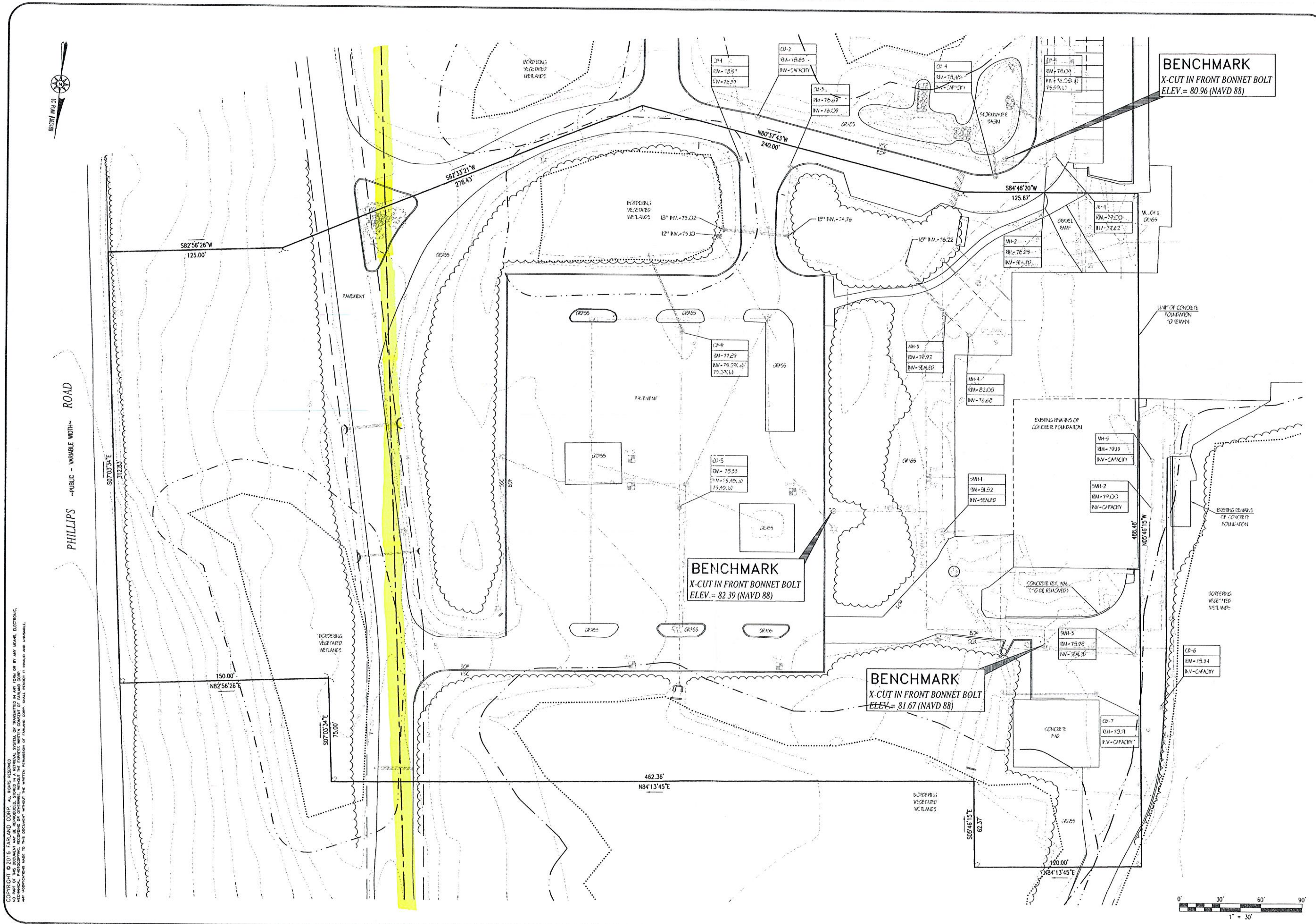
SITE PLAN
— 100 DUCHAINE BOULEVARD —
ASSESSORS MAP 134 LOT 5
NEW BEDFORD, MASSACHUSETTS

PREPARED FOR: PARALLEL PRODUCTS OF NEW ENGLAND
401 INDUSTRY ROAD
LOUISVILLE, KY 40208

JANUARY 13, 2017
SCALE: N.T.S.
JOB NO. 15-500.1
LATEST REVISION:

NOTES & LEGEND
SHEET 2 OF 8

Case 01-17
01/13/2017


LC PLAN 13631BB
PHILLIPS ~PUBLIC - VARIABLE WIDTH~ ROAD
S82°56'26"W
125.00'
S62°33'21"W
278.43'
N80°37'43"W
240.00'
S84°46'20"W
125.67'
S07°03'34"E
312.83'
150.00'
N82°56'26"E
S07°03'34"E
75.00'
462.36'
N84°13'45"E
N05°46'15"W
488.48'
S05°46'15"E
62.37'
120.00'
N84°13'45"E
PAVEMENT
GRASS
BORDERING VEGETATED WETLANDS
STORMWATER BASIN
GRAVEL RAMP
MULCH & GRASS
18" INV.=75.02
12" INV.=75.10
18" INV.=74.76
18" INV.=76.22
CB-1
RIM=78.57
INV=76.37
CB-2
RIM=78.63
INV=CAPACITY
CB-3
RIM=75.69
INV=76.09
CB-4
INV=CAPACITY
MH-1
RIM=77.00
INV=77.62
MH-2
RIM=76.93
INV=SEALED
MH-3
RIM=78.92
INV=SEALED
MH-4
RIM=82.06
INV=76.62
MH-5
RIM=79.13
INV=CAPACITY
CB-9
RIM=77.29
INV=75.29(a) 75.29(b)
CB-5
RIM=75.55
INV=75.45(a) 75.45(b)
SMH-1
RIM=81.52
INV=SEALED
SMH-2
RIM=79.00
INV=CAPACITY
SMH-3
RIM=75.98
INV=SEALED
CB-6
RIM=75.54
INV=CAPACITY
CB-7
RIM=75.71
INV=CAPACITY
LIMIT OF CONCRETE FOUNDATION TO REMAIN
EXISTING REMAINS OF CONCRETE FOUNDATION
EXISTING REMAINS OF CONCRETE FOUNDATION
CONCRETE RET. WALL (TO BE REMOVED)
CONCRETE PAD
EOP
VGC
BENCHMARK
X-CUT IN FRONT BONNET BOLT
ELEV.= 80.96 (NAVD 88)
BENCHMARK
X-CUT IN FRONT BONNET BOLT
ELEV.= 82.39 (NAVD 88)
BENCHMARK
X-CUT IN FRONT BONNET BOLT
ELEV.= 81.67 (NAVD 88)
0' 30' 60' 90'
1" = 30'

REVISIONS

CHRISTIAN ALBERT FARLAND No. 47544 CIVIL

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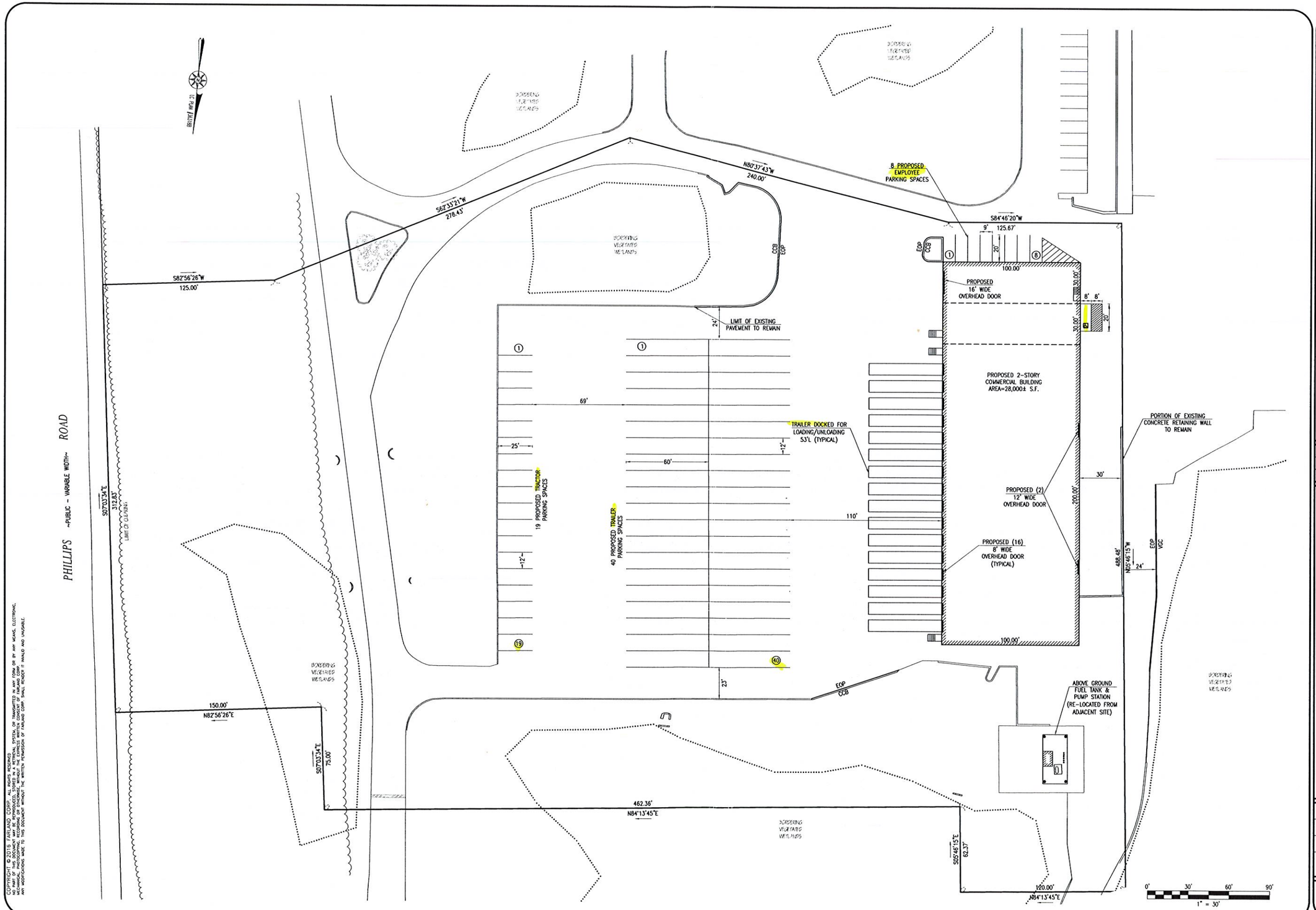
100 DUCHAINE BOULEVARD
ASSESSORS MAP 134 LOT 5
NEW BEDFORD, MASSACHUSETTS

PREPARED FOR: PARALLEL PRODUCTS OF NEW ENGLAND
401 INDUSTRY ROAD
LOUISVILLE, KY 40208

JANUARY 13, 2017
SCALE: 1"=30'
JOB NO. 15-500.1
LATEST REVISION:

EXISTING CONDITIONS
SHEET 3 OF 8

Case 01-17
01/13/2017



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ASSESSORS MAP 134 LOT 5
NEW BEDFORD, MASSACHUSETTS

PREPARED FOR: PARALLEL PRODUCTS OF NEW ENGLAND
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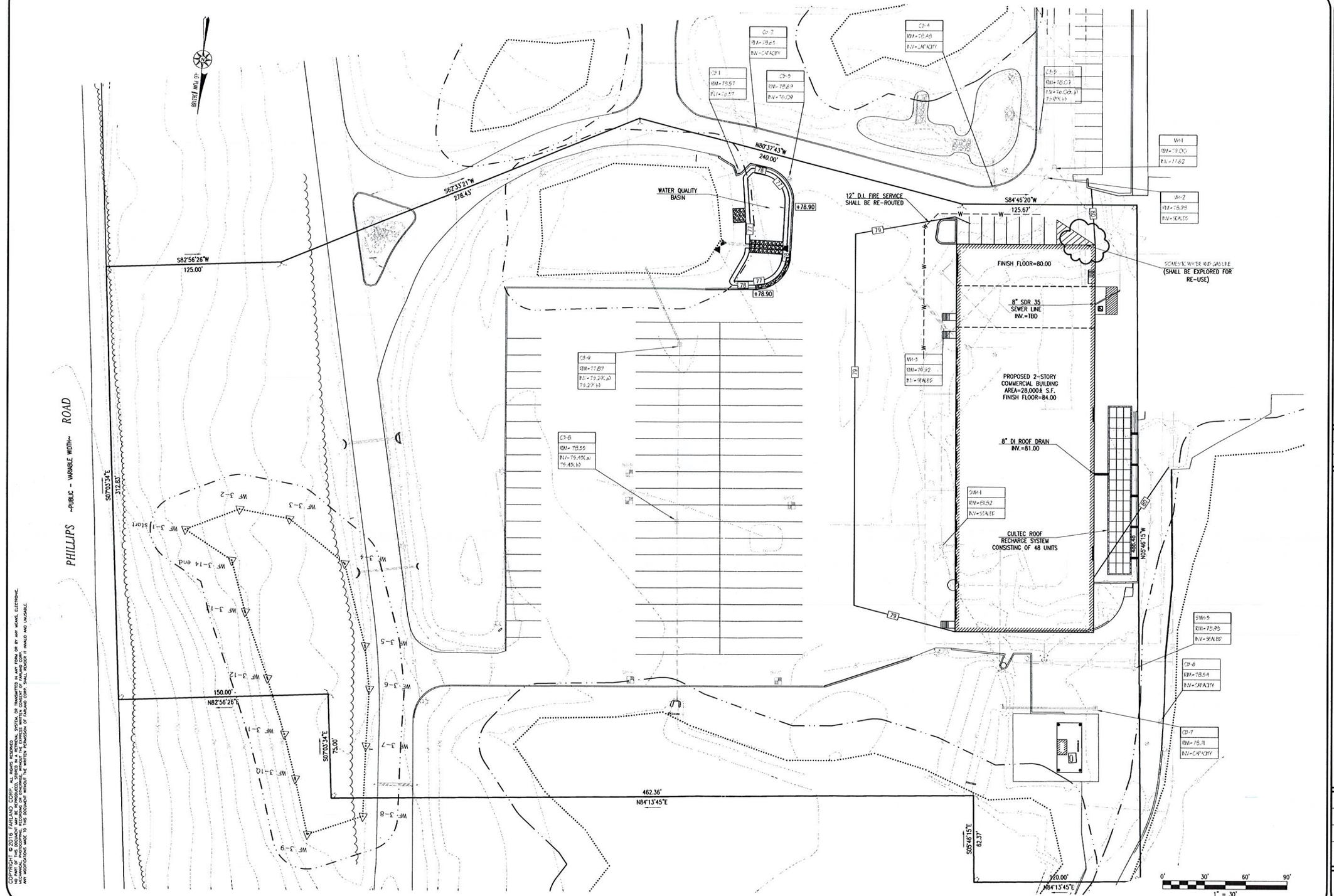
LOUISVILLE, KY 40208

JANUARY 13, 2017
SCALE: 1"=30'
JOB NO. 15-500.1
LATEST REVISION:

LAYOUT

SHEET 4 OF 8

Case 01-17
01/13/2017



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SITE PLAN

100 DUCHAINE BOULEVARD

ASSESSORS MAP 134 LOT 5

NEW BEDFORD, MASSACHUSETTS

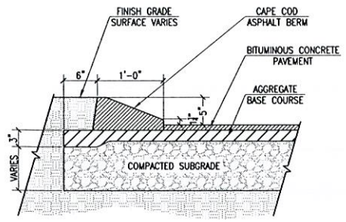
PREPARED FOR: PARALLEL PRODUCTS OF NEW ENGLAND
401 INDUSTRY ROAD
LOUISVILLE, KY 40208

JANUARY 13, 2017
SCALE: 1"=30'
JOB NO. 15-500.1
LATEST REVISION:

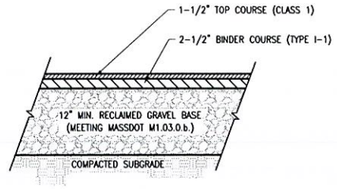
UTILITIES & GRADING

SHEET 5 OF 8

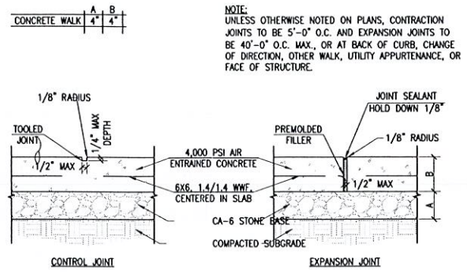
Case 01-17
01/13/2017



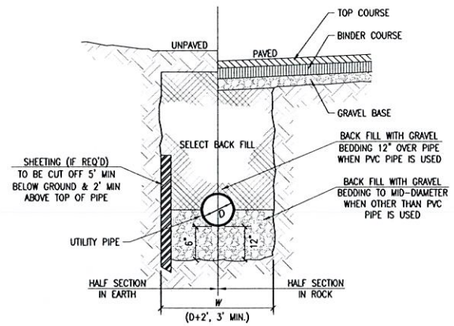
2/6 BITUMINIOUS CONCRETE CAPE COD BERM
NOT TO SCALE



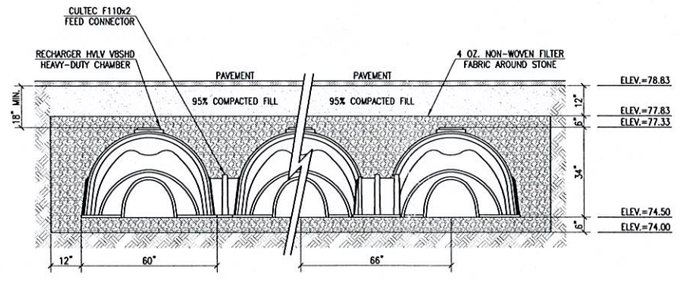
3/6 BITUMINOUS CONCRETE PAVEMENT – RECLAIMED
NOT TO SCALE



4/6 CONCRETE PAVEMENT SIDEWALK
NOT TO SCALE



5/6 UTILITY TRENCH
NOT TO SCALE



8/6 CULTEC RECHARGER V8HD HEAVY DUTY CROSS SECTION
NOT TO SCALE

REVISIONS

CHRISTIAN ALBERT FARLAND No. 47544 CIVIL COMMONWEALTH OF MASSACHUSETTS

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•WARWICK, RI

DRAWN BY: MJW
DESIGNED BY: CAF
CHECKED BY: CAF

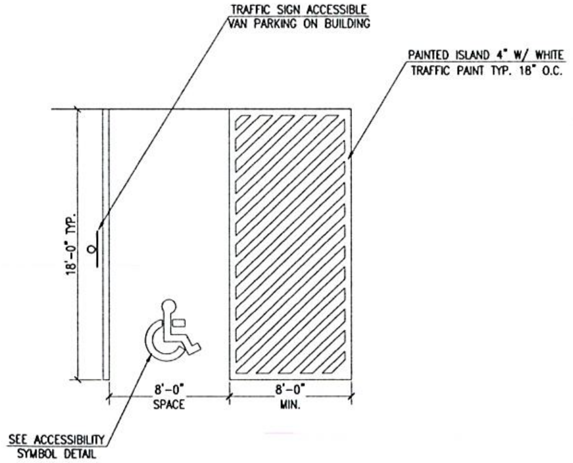
SITE PLAN
100 DUCHAINE BOULEVARD
ASSESSORS MAP 134 LOT 5
NEW BEDFORD, MASSACHUSETTS

PREPARED FOR:
PARALLEL PRODUCTS OF NEW ENGLAND
401 INDUSTRY ROAD
LOUISVILLE, KY 40208

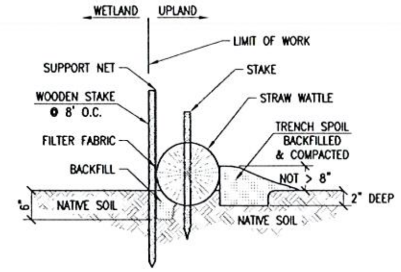
JANUARY 13, 2017
SCALE: N.T.S.
JOB NO. 15-500.1
LATEST REVISION:

DETAIL
SHEET 7 OF 8

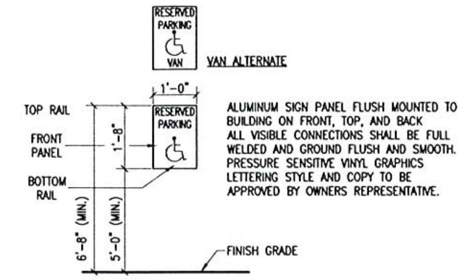
Case 01-17
01/13/2017



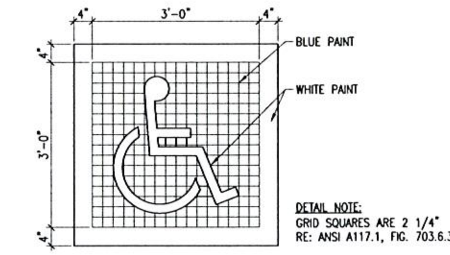
10/7 ACCESSIBLE PARKING LAYOUT
NOT TO SCALE



15/7 STAKED STRAW WATTLE WITH SILT FENCE
NOT TO SCALE

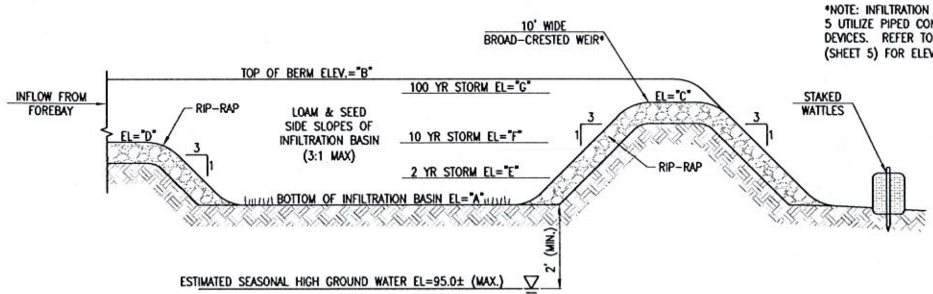


12/7 ACCESSIBLE PARKING SIGN
NOT TO SCALE



13/7 ACCESSIBLE PARKING SYMBOL
NOT TO SCALE

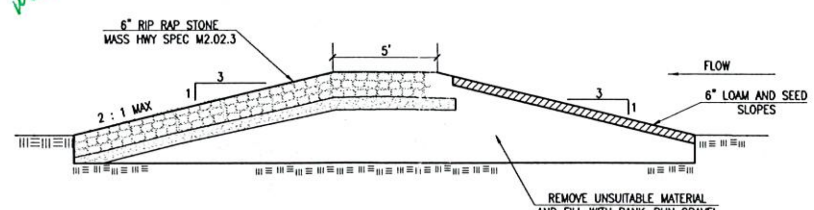
*NOTE: INFILTRATION BASINS 1B, 1D, 3, 4, AND 5 UTILIZE PIPED CONDUIT OUTLET CONTROL DEVICES. REFER TO GRADING & UTILITY PLAN (SHEET 5) FOR ELEVATION DETAILS.



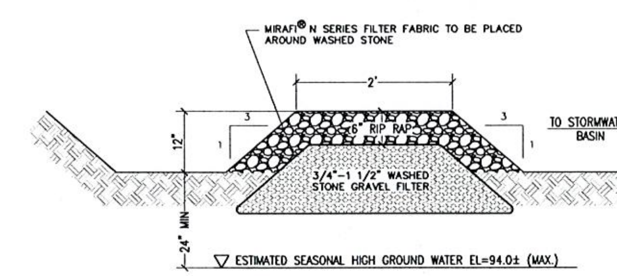
DETENTION BASIN	"A"	"B"	"C"	"D"	"E"	"F"	"G"
1	77.00	78.50	78.20	78.90	77.19	77.42	77.78

OK IS THIS A RETENTION BASIN AS DESCRIBED IN STORMWATER MGT OVERVIEW?

18/7 DETENTION BASIN
NOT TO SCALE



19/7 OVERFLOW SPILLWAY DETAIL
NOT TO SCALE



16/7 SEDIMENT FOREBAY W/ GRAVEL FILTER
NOT TO SCALE

REVISIONS

CHRISTIAN ALBERT FARLAND No. 47544 CIVIL

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OFFICES IN:
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•WARWICK, RI

DRAWN BY: MJW
DESIGNED BY: CAF
CHECKED BY: CAF

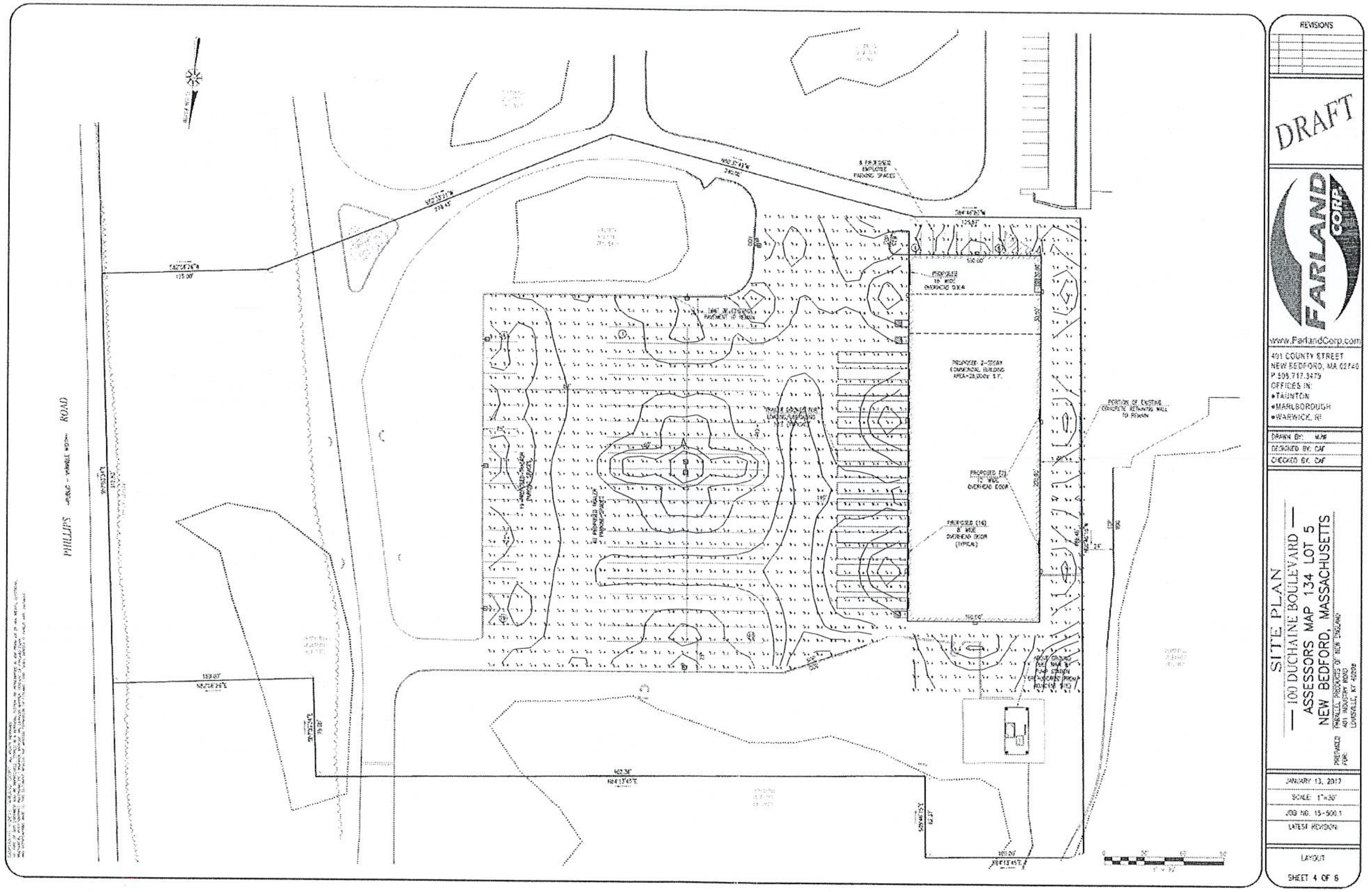
SITE PLAN
— 100 DUCHAINE BOULEVARD —
ASSESSORS MAP 134 LOT 5
NEW BEDFORD, MASSACHUSETTS

PREPARED FOR: PARALLEL PRODUCTS OF NEW ENGLAND
401 INDUSTRY ROAD
LOUISVILLE, KY 40208

JANUARY 13, 2017
SCALE: N.T.S.
JOB NO. 15-500.1
LATEST REVISION:

DETAIL
SHEET 8 OF 8

Case 01-17
01/13/2017



Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
—□	6	GLEON-AF-04-LED-E1-T4W-7060	SINGLE	McGraw-Edison- GLEON-AF-04-LED-E1-T4W-7060
□—□	1	GLEON-AF-04-LED-E1-T4W-7060-D	BACK-BACK	McGraw- Edison- GLEON-AF-04-LED-E1-T4W-7060
□	8	GWC-AF-02-LED-E1-T4FT-7050-12	SINGLE	McGraw Edison- GWC-AF-02-LED-E1-T4FT-7050-1200

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Back and Side of Building	Illuminance	Fc	1.90	4.5	0.1	19.00	45.00
Parking Lot	Illuminance	Fc	1.99	7.2	0.3	6.63	24.00

25' Poles 2.5' Base

Wall Packs- 20' MH

REFLEXLIGHTING

NOTES:
Calculated light levels and visualizations are based on specific information that has been supplied to Reflex Lighting. Any differences in luminaire installation, lighted area geometry and obstructions in the lighted area may produce different results from the predicted values. Normal tolerances of voltage, lamp output, and ballast and luminaire manufacture will affect results.

Drawn By: Ryan Thomson
Checked By:
Date:1/13/2017
Scale:

10 Duhaine Blvd New Bedford, MA

Case 01-17
01/13/2017

Department of Public Infrastructure

Euzebio Arruda
Commissioner

Water
Wastewater
Highways
Engineering
Cemeteries
Park Maintenance

CITY OF NEW BEDFORD
Jonathan F. Mitchell, Mayor

MEMORANDUM

TO: City of New Bedford Planning Board

FROM: Euzebio Arruda, Commissioner, D.P.I

DATE: February 23, 2017

PLANNING
FEB 28 2017
DEPARTMENT

RE: Site Plan- Duchaine Boulevard
Plot 134 L 5

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

1. That all conditions from the memorandum of January 30, 2017 are still valid.

/ct

Cc: Department of Inspectional Services
Environmental Stewardship
Farland Corp
Logal, LLC

ATTACHMENT 11

1105 Shawmut Avenue, New Bedford, MA 02746 Telephone 508-979-1550 Fax 1-508-961-3054

CMSB 01.17
Rec'd 2/20/17

Department of Public Infrastructure

Euzebio Arruda
Commissioner

Water
Wastewater
Highways
Engineering
Cemeteries
Park Maintenance
Forestry
Energy

CITY OF NEW BEDFORD
Jonathan F. Mitchell, Mayor

MEMORANDUM

To: City of New Bedford Planning Board

From: Euzebio Arruda, Commissioner,D.P.I

Date: January 30, 2017

RE: Site Plan- Duchaine Boulevard
Plot 134 Lot 5

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

1. All utilities to be installed in accordance with City of New Bedford standards.
2. Permits for sewer, water and drainage must be obtained from the Department of Public Infrastructure Engineering Division.
3. Drainage design must comply with phase II Mass Department Storm water Management standards.
4. Owner must contact DPI to assign a new address for the proposed building.
5. Truck traffic to stay away from using Phillips Road
6. Install gate valve at location of capped domestic service.
7. Install gate valve on fire supply at reroute point on main.
8. Install gate valve on fire supply entering the building.
9. Install water meter at point of entry into the building.
10. Install backflow preventer on fire supply.

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

11. The owner or owner's engineer to verify in writing that the existing fire and domestic services will provide sufficient volume and pressure for proposed building.
12. The Department of Public Infrastructure requires a final set of approval plans to be submitted that reflect all revisions made prior to the start of construction.
13. Developer and site contractor must schedule a pre- construction meeting with the Department of Public Infrastructure prior to the start of construction.
14. 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
Farland Corp.
Logal, LLC

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