CELEBRATING 55 YEARS
GALE

T E C H N I C A L M E M O R A N D U M

TO: Ms. Stephanie Crampton, Assistant City Engineer

FROM: Bree D. Sullivan, P.E.

RE: 718460 The Caravela Apartments
SS Union Street (fka 278 Union St.)
Plot 46, Lots 18 & 21

DATE: September 27, 2021

General

This memo has been prepared to respond to a memorandum issued by Jamie Ponte, Department of Infrastructure (DPI), dated August 10, 2021.

Site Review Comments

Comment 1 – The existing project contains only one parcel, there is no need or plan to subdivide the parcel to construct the proposed building.

Comment 2 - Driveway permits will be submitted after approval of the site plan. The existing east driveway will be reconstructed for use as the parking entrance. The existing west driveway will be closed. The driveway on Eighth Street will be reconstructed as part of the Union Street Reconstruction project but will not provide access to the site. The curb cut provides access to Map 46, Lot 17 trash receptacle(s).

Comment 3 – The construction entrance will be moved to an existing curb cut on Spring Street.

Comment 4 – Permits for sidewalk, driveway, water, sewer and storm drain will be obtained from DPI once the site plan is approved. All utilities will be installed in accordance with the City of New Bedford standards. ***Please provide a copy of the New Bedford Standard Details and Specifications for inclusion on the drawings.***

Comment 5 – The gasoline, oil and sand separator is proposed to accept accidental non-stormwater discharges from within the garage. Separators are required to be connected to the sanitary sewer as indicated in the Massachusetts State Plumbing code 248 CMR section 10.09 and 10.22 – Figure 15 (attached).

Comment 6 – Existing water and sewer services will be replaced under the Union Street Reconstruction project currently in construction. Proposed services on the site plan have been coordinated with and will be installed as part of the reconstruction project.

Comment 7 – All existing services will be terminated as part of the Union Street Reconstruction project (see response to comment 6).

Comment 8 – Sheet G003 shows record information as provided on the survey plan by others. The base plan used on the civil site plans (C001, C002, C101, C201, C301) is from the Union Street Reconstruction Plans, and therefore presumed accurate.

Comment 9 – The existing catch basin will be labeled as cut and plugged at the lot line. There are no plans to reuse the pipe.

Comment 10 – Coal chutes were filled as part of the existing building construction in accordance with the record architectural plans (attached).

Comment 11 – The security fencing will be updated as indicated in the comments, including notes to indicate screening opacity requirements.

Comment 12 – A traffic and pedestrian plan will be submitted in accordance with City regulations after site plan approval.

Comment 13 – The existing curb cut on Eighth Street will remain as is, though it will not provide access to the site. The curb cut provides access to the trash receptacles behind the building on Map 46, Lot 17.

Comment 14 – All roadway markings will comply with city standards. ***Please provide a copy of the City pavement marking standards.***

Comment 15 – A dewatering plan will submitted prior to construction as required. If dewatering discharge to the drainage system is required, a permit will be obtained in accordance with EPA requirements. All permits will be submitted to the City.

Comment 16 – A note will be added to the plans to exclude hauling operations on Eighth Street.

Comment 17 - Prior to construction a dust control plan will be submitted to the City in accordance with the comment.

Comment 18 – Because the site is concave, erosion and sedimentation controls are not required at the perimeter of the site. Inlet protection (silt) sacks are included in the details for catch basin protection on and off site.

Comment 19 – The plans will be updated to include a new concrete base for DPI luminaire installation. ***Please provide concrete base standard or drawing for incorporation into the plans.***

Comment 20 – Existing handicap parking signs and ornamental street sign will be incorporated into the plan set as indicated. ***Please provide ornamental street sign City Standards pr detail for incorporation into the plans.***

Comment 21 – The trees will be removed and reset or new trees will be provided. Plans will include a note indicating a one year guarantee for all plantings on the project.

Comment 22 – The driveway curb cut will be updated to City Standards. ***Please provide a copy of the New Bedford Standard Details and Specification for inclusion on the drawings.***

Comment 23 – A new ADA compliant wheelchair ramp on the northwest corner Spring and Eighth Street will be added to the plans. ***Please provide a copy of the New Bedford Wheelchair Ramp Styles and Specifications for inclusion on the drawings.***

Comment 24 – An additional tree on Eighth Street will be provided. Tree species will be referenced to the City street tree list.

Comment 25 – Grading was prepared after reviewing the Union Street plans. Grading will be verified prior to plan resubmittal.

Comment 26 – The meter size will be coordinated to correspond with the domestic water service size.

Comment 27 - Excavation support and craning plans will be provided prior to construction. The Foundation Engineering Report by McPhail Associates, LLC dated August 22, 2017 is attached for your records. The report includes reference to excavation support and underpinning.

Comment 28 – The stormwater system improvements are limited to connection of the roof leaders to the municipal drainage system. Because the site is concave, there will be no

discharge of sediment over the lot lines. Catch basin silt sack monitoring interval will be updated on Sheet C003 will be updated in accordance with the comment.

Comment 29 – Site security will be maintained throughout construction.

Comment 30 – The legal address number for the site will be obtained in accordance with the comment.

Comments 31 and 32 – Site details will be revised to comply with the City standards and in accordance with the comments. ***Please provide a copy of the New Bedford Standard Details and Specification for inclusion on the drawings.***

Comment 33 – Fiber roles [sic] will be provided in lieu of silt socks around catch basins and stockpiles.

Comments 34 and 35 – see response to comment 30 and 31, above.

Stormwater Management Comment Responses

Comment 1 – The existing Catch Basin pipe will be cut and plugged at the lot line, and the catch basin removed.

Comment 2 – Capacity Calculations for the 10" drain line are attached.

Comment 3 – Section 3.2.13 is a presumptive conformance provision of the regulations; it does not specify that redevelopments *must* meet this standard. It provides a simple path to conformance without the need to show compliance with each of the performance standards. Since the proposed project cannot meet the presumptive compliance section 3.2.13 standard, the following details how the project, as submitted, complies to the maximum extent practicable with the New Bedford Stormwater Management Rules and Regulations performance standards (Section 3):

3.1.1 General Criteria:

A. Measures are provided on the plans to control erosion within the project area.
B. The existing site is 95% impervious. Existing tree and groundcover represent 5% of the lot area, and has well-compacted soils and is overgrown with "volunteer" vegetation. The post-development site will be 97% impervious. Use of this area is necessary to complete the project goals.
C. The site is concave, so there are no downslope property edges. Perimeter barriers at the lot line are not necessary.

D. Site stabilization will be used where needed. Since the entire site will be covered by the proposed building, loss of soil will not be a concern.
E. Soil stockpiles will be seeded and protected with fiber rolls if kept onsite. Since the entire site will be covered by a building this will likely be unnecessary.
F. The project is not adjacent to wetland resource areas.
G. Sediment-laden runoff will be kept on-site during construction. Though not necessary, sediment trapping devices will be included in the adjacent off-site catch basins for additional protection.
H. There are no stormwater construction conveyance channels on the site
I. There are no sediment basins on the site.
J. The project is not a linear project.

3.1.2 NPDES Construction General Permit

The project is 0.37 acres, so it does not require an EPA NPDES Construction General Permit.

3.1.3 NPDES General Permit for Dewatering Activity

The project will require a NPDES General Permit for Dewatering Activity. The permit will be obtained prior to construction commencement. A copy of the permit will be provided to the DPI.

3.2 Post-development Stormwater Management Criteria

The project complies in all aspects to the Massachusetts Stormwater Management Standards (see attached Stormwater Checklist and MASWS compliance comments)

3.2.1 - The project does not include any stormwater management basins.

3.2.2 – Site Planning Process

A – There are no critical resources on or adjacent to the site
B – There are no environmental resource areas on the site
C – The existing site is 95% impervious; the proposed site is 97% and located in a down-town urban district.

3.2.3 – There are no untreated discharges on the site.

3.2.4 – The proposed site development will not include any structural stormwater management or LID measures.

3.2.5 – The project contains no channels

3.2.6 – The project does not require overbank protection

3.2.7 – The 100-year flood will be safely conveyed by the 10-inch rooftop leader connection to the municipal stormwater system (calculation attached)

3.2.8 – High groundwater, lack of space, underground structural building elements and glacial till make it difficult to provide infiltration for the 210 s.f. increase in impervious area at the site. Not providing the required infiltration recharge volume of 6.2 cubic feet would result in a *de minimis* impact to groundwater recharge (refer to attached waiver request).

3.2.9 – The project does not require any structural water quality practices.

3.2.10 – The entire runoff volume will be from the roof and will contain no TSS.

3.2.11, 3.2.12 – The project is not located in a sensitive area nor is a LUHPPL, as defined in the MASWMS

3.2.13 – See Comment 3 under the Stormwater Management Comment Responses.

3.2.14 – The project is less than 1 acre and meets the MASWMS TSS removal standard by discharging only roof runoff from the site.

10.09: Interceptors, Separators and Holding Tanks

(1) Interceptors, Separators and Holding Tanks.

(a) Interceptors Required.

1. Interceptors separators, and holding tanks shall be provided to prevent the discharge of oil, gasoline, grease, sand, and other substances that are harmful or hazardous to the building drainage system, the public sewer, sewage treatment plant, sewage treatment processes, or other environmentally sensitive areas.

2. No wastes other than those requiring treatment or separation shall be discharged into any interceptor, separator, or holding tank.

(b) Separation or Containment of Gas, Oil, and Other Petroleum Distillates. For purposes of 248 CMR 10.09(1)(b), a motor vehicle shall be considered a self-propelled road vehicle, commonly wheeled, that include cars, buses, and trucks.

1. Required Locations. A separation or containment system shall be required for any building or structure containing:

a. Motor vehicle parking, repair/maintenance, washing, and storage areas; or

b. Other spaces which are sufficiently large to allow access by motor vehicles.

2. Exceptions. A separation or containment system shall not be required for:

a. Single family residential garages;

b. Multi-family, condominium, and apartment garages which are sufficiently small that they could only hold a maximum of six motor vehicles;

c. Buildings or structures whose floor is unfinished or paved such that the surface is sufficiently porous that any gas, oil, or other petroleum distillates would be absorbed by the surface prior to reaching any separation or containment systems;

d. Buildings or structures that are exclusively classified as a storage group pursuant to 780 CMR: *State Board of Building Regulations and Standards* which are sufficiently small that they could only hold a single motor vehicle and there is no other plumbing;

e. Showrooms used for the purpose of selling used or new motor vehicles which are located within a structure classified by 248 CMR 10.10(18): *Table 1*, as a mall (covered) or retail (mercantile) that is open to and used by the public; and

f. Installations where outside permanent bollards or other devices are spaced in front of entrances to the building or structure so as to prevent the entrance of a motor vehicle.

3. Rules for Separation Systems. For use when connecting to a sewer system

a. In general, one of the following separation systems must be utilized:

i. A system meeting the design specifications outlined in 248 CMR 10.22: *Figure 15* or such other specifications approved by the Board;

ii. A product accepted separation system;

iii. A separation system designed by a registered professional engineer whereby the engineer prepares all plans and specifications and certifies in writing to the inspector that the installation complies with these plans and specifications; or

iv. for smaller installations involving a maximum of two vehicle bays, a pump connected to a double walled tank, both of which are rated by the manufacturer to hold volatile chemicals, meeting the requirements in 248 CMR 10.09(1)(b)3.a.iv.(i) through (iii):

(i) The tank must hold a minimum of 60 gallons per vehicle;

(ii) The tank must be equipped with a liquid sensor to detect leaks; and

(iii) The tank must be vented through a roof.

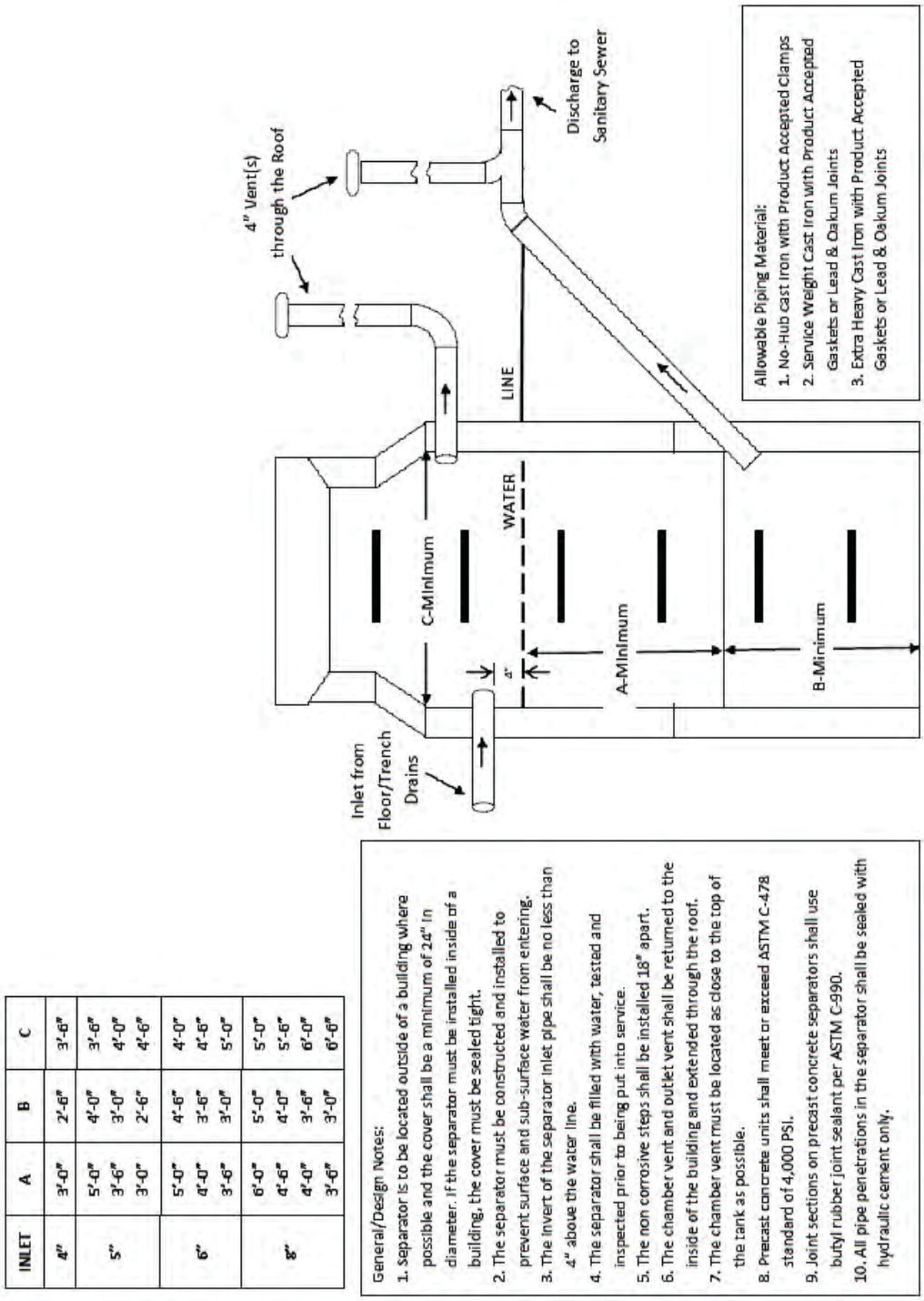
b. Approvals of Other Agencies.

i. Where specifically noted, the approval of other agencies may be required in order to complete the installation of a separation system, however, said approvals shall not be deemed to supersede the requirements for a Permit as well as full inspection by the Inspector of all components and connections of a separation system. If the approval of another agency would necessitate a violation of 248 CMR 10.00, 248 CMR 10.00 must be followed unless a variance is granted by the Board.

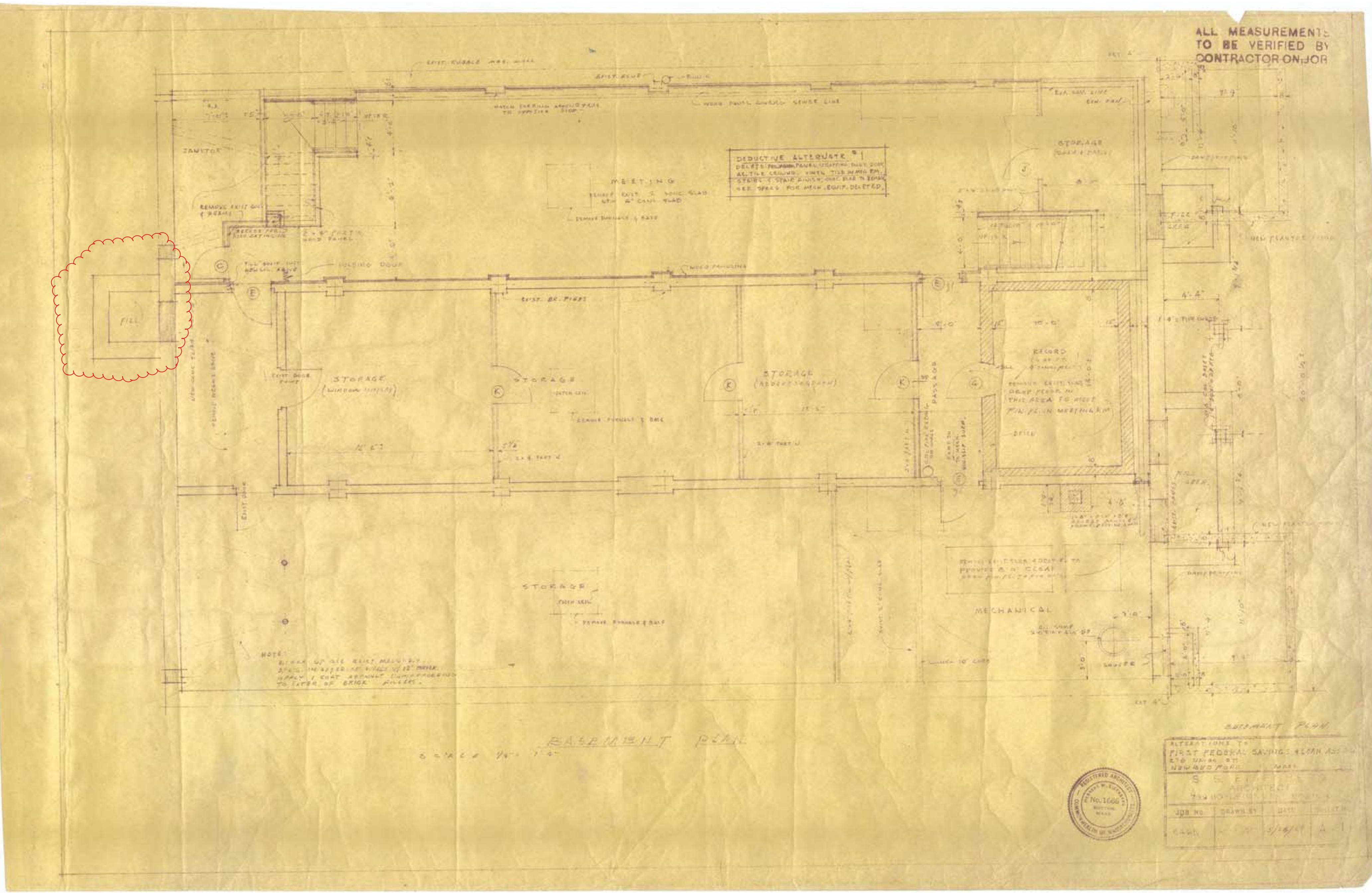
ii. Connection of a separation system to a sewer shall adhere to Massachusetts Department of Environmental Protection rules located at 314 CMR 7.00: *Sewer System Extension and Connection Permit Program*.

10.22: continued

FIGURE 15: Illustration of Gasoline, Oil and Sand Separator



INLET	A	B	C
4"	3'-0"	2'-6"	3'-6"
5"	5'-0"	4'-0"	3'-6"
	3'-6"	3'-0"	4'-0"
	3'-0"	2'-6"	4'-6"
6"	5'-0"	4'-6"	4'-0"
	4'-0"	3'-6"	4'-6"
	3'-6"	3'-0"	5'-0"
8"	6'-0"	5'-0"	5'-0"
	4'-6"	4'-0"	5'-6"
	4'-0"	3'-6"	6'-0"
	3'-6"	3'-0"	6'-6"


ALL MEASUREMENTS
TO BE VERIFIED BY
CONTRACTOR ON JOB
JANITOR
MEETING
DEDUCTIVE ALTERNATE #1
STORAGE
STORAGE
STORAGE
STORAGE
STORAGE
RECORD
PASSAGE
MECHANICAL
FILL
BASEMENT PLAN
SCALE 1/4" = 1'-0"
BASEMENT PLAN
ALTERATIONS TO
FIRST FEDERAL SAVINGS & LOAN ASS'N
NEW BEDFORD MASS.
ARCHITECT
JOB NO.
DRAWN BY
DATE
A-1
REGISTERED ARCHITECT
No. 1666

Summary for Reach 1R: 10" Discharge Pipe

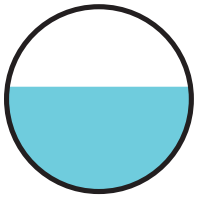
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.369 ac,100.00% Impervious, Inflow Depth > 6.76" for 100-Year event
Inflow = 2.47 cfs @ 12.09 hrs, Volume= 0.208 af
Outflow = 2.47 cfs @ 12.09 hrs, Volume= 0.208 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.75 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.70 fps, Avg. Travel Time= 0.1 min

Peak Storage= 8 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.47' , Surface Width= 0.83'
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 4.03 cfs

10.0" Round Pipe
n= 0.010 PVC, smooth interior
Length= 24.0' Slope= 0.0200 '/'
Inlet Invert= 74.24', Outlet Invert= 73.76'



STORMWATER STANDARDS

The following provides a brief explanation of how the proposed project will meet the ten established performance standards of the DEP Stormwater Management Policy to the maximum extent possible.

1. No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

There are no new untreated stormwater outfalls proposed as part of this project.

2. Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.

Post-development peak discharge rates do not exceed pre-development peak discharge rates.

3. Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

Rv = F x Increased Impervious Area (redevelopment standard)

B soils: Rv = 0.35 inch/12 inches/ft X 210 s.f. = 6.2 c.f.

Rv = 6.2 c.f.

4. Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:

a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;

b. Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and
c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

TSS removal is unnecessary; all stormwater runoff from the site will be from the roof.

5. For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated there under at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

The project is not a Land use with higher pollutant loading (LUHPPL).

6. Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

There are no stormwater discharges to critical areas in this project.

7. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall

comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

The entire project is a redevelopment. The project includes improvements to the existing stormwater discharges at the site. All runoff under proposed conditions will be from the building roof(s). With respect to recharge to groundwater, lack of space, underground structural building elements and glacial till make it difficult to provide infiltration for the 210 s.f. increase in impervious area at the site. Not providing the required infiltration recharge volume of 6.2 cubic feet would result in a *de minimis* impact to groundwater recharge.

8. A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

The proposed design will include erosion and sediment controls to minimize the potential for offsite discharge of sediment. An overview of the construction operations pollution prevention plan is included in the O&M manual. Construction-period erosion control drawings are included with the plans. Additionally, this project involves disturbance of less than 1 acre of land, and therefore is not covered by an EPA Construction General Permit. A construction-period dewatering permit will be submitted prior to construction commencement.

9. A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

A copy of the Operation and Maintenance Plan has been attached this document.

10. All illicit discharges to the stormwater management system are prohibited.

No known illicit discharges exist or are proposed on the site.

OPERATION AND MAINTENANCE AND POLLUTION PREVENTION PLAN

Construction Operations

The operation and maintenance plan for construction operations outlines the installation, inspection, cleaning, and upkeep necessary to keep the siltation and erosion control system in good repair and operating efficiently. It is a critical component to the success of the stormwater best management practices designed for construction work on the site. Construction erosion controls minimize the potential for sedimentation in downstream gradient resource areas and abutting properties.

Construction erosion controls cover a wide range of practices, including stabilizing the construction entrance roadway, installing straw bales and silt fences, and controlling erosion at catch basins. The guiding principle for construction erosion control for this development is to minimize the volume of runoff and to minimize contact of stormwater with potential pollutants. Accepted construction management practices can reduce these stormwater pollutant loads and quantities.

The following construction best management practices (BMPs) for sediment and erosion control are included in this operation and maintenance plan.

1. Install fiber rolls as shown on the plans and as required in the field to prevent sediment from leaving the limits of work.
2. Install silt sacks in all existing catch basins within the project limits.
3. Material stockpiles shall be stabilized with erosion control matting or temporary seeding whenever necessary.
4. Inspect and maintain BMPs at least weekly and after every major rainfall event.
5. Erosion control measures shall be maintained, repaired or replaced as required or at the direction of the resident engineer or City Engineer.
6. During periodic inspections, if sediment is found to be exiting the site, measures shall be taken to ensure sediment does not reach the resource areas.
7. The contractor shall comply with the General and Erosion Control Notes show on the plans and in the contract documents.
8. Measures shall be taken to control dust during construction.
9. Stabilize unvegetated areas, particularly slopes, which may be prone to erosion by using matting or an erosion control seed mixture.
10. Sediment shall be removed from barriers periodically. Silt fence, straw bales and/or filter tubes shall not be used as *de facto* retaining walls.
11. Remove and properly dispose of straw bales, silt fencing, and accumulated sediment following construction operations.

Developed Facilities

The owner is responsible for the maintenance and upkeep of the stormwater best management practices.

The operation and maintenance plan outlines the regular inspection and cleaning schedule necessary to keep the system in good repair and operating efficiently, and is a critical component of the success of the stormwater runoff erosion control best management practice designed for the proposed development.

Source controls reduce the types and concentrations of contaminants in stormwater runoff, which, in turn, improve water quality. Source controls cover a wide range of practices, including local bylaws and regulations, fertilizer management in residential areas, reduced road salting in winter, erosion and sediment controls at construction sites, and comprehensive snow management. The guiding principle for pollution prevention and control is to minimize the volume of runoff and to minimize contact of stormwater with potential pollutants. The Town will be responsible for the proper execution of the operation and maintenance plan after the completion of construction activities.

Source Control

Sweeping

Street/floor sweeping are an effective source control, and are implemented on an annual basis. Sweeping efforts are performed during the period immediately following winter snowmelt, when road sand and other accumulated sediment are washed off. The Town shall incorporate roadway sweeping as part of their normal roadway maintenance schedule.

Snow and Snow Melt Management

Proper management of snow and snow melt, snow removal and storage, use of deicing compounds, and other practices can minimize major runoff and pollutant loading impacts. Use of alternative deicing compounds, such as calcium chloride and calcium magnesium acetate, can be investigated to further reduce the pollutant loading impacts.