September 10, 2020

Ms. Mary Savage-Dunham, AICP, Director of Community Planning
Hingham Planning Board
210 Central Street
Hingham, MA 02043

RE: Response to Engineering Review
Hingham Gas Development
19 & 27 Whiting Street
Hingham, Massachusetts

Dear Ms. Savage-Dunham:

On behalf of the Applicant, Merhej and Sons Realty, LLC, CHA Consulting, Inc. (CHA) is pleased to submit this correspondence to address and respond to the comments provided to the Planning Board by Mr. John Chessia, P.E. of Chessia Consulting. Mr. Chessias's comments were provided in a correspondence to the Town of Hingham and dated June 4, 2020. CHA attended a meeting arranged by yourself with Mr. Chessia to discuss the review.

Original comments provided by Mr. Chessia are indicated below in standard text followed by CHA responses in ***bold italic text***.

In the Stormwater Design Meeting with Mr. Chessia and staff from the Town of Hingham, several of the topics of the letter were discussed. These details will be discussed further in other sections for clarity as well as in the revised Stormwater Report.

Section I-I Site Plan Review:

1. Purpose:
   No comment required.

2. Procedures:

   It is assumed that the appropriate information has been submitted to initiate the review process. The Board should review the project relative to the specific subsections of this section.

   CHA Response: No response required.

3. Pre-Application Submittal.
   It is unknown if a pre-application submittal has been submitted or commented on by the Board.

   CHA Response: No response required.

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4. Submittal Requirements:
   a. The submittal includes a "Locus Plan" on the Cover Sheet. The Locus plan is listed as 1"=1000' scale. The Applicant is Merhej and Sons Realty, LLC. The property limits are indicated on the plans with descriptive data (metes and bounds) on the Existing Conditions Plans, as noted the property consist of two lots that would need to be combined to comply with setback requirements. Topography has been indicated for the locus and generally extends beyond the site at least 10 feet and more in most locations. Structures within 100 feet of the locus should be indicated on the plans. The Board may request data on curb cuts, etc. across the street from the site as this is a busy traffic area with many turning movements. There are references on the Existing Conditions Plan regarding easements and other rights that the Board may request be provided to demonstrate there are no conflicts between the plans and various rights or easements.

CHA Response: The intent of the Applicant is to combine the two lots under common ownership as part of the permitting of the project. Structures within 100 feet are indicated on the updated plans. Additional survey data was collected including curb cuts and signs on the same side and opposite side of Whiting Street, see the updated plans.

   b. The plans are drawn to scale. Building plans, including a floor plan, front and east elevations and a perspective view have not been provided. There were no plans provided for the existing gas station building, which is to be razed.

CHA Response: An architectural Concept Drawing was provided as the last sheet of the submitted plans.

   c. It is my understanding that Vanasse and Associates, Inc. are reviewing traffic issues. The existing site has no marked parking spaces but would has some limited parking. It is proposed to create 16 new marked parking spaces for the new building. The existing building would be razed and all connections associated with the existing gas pumps would be relocated to the new building. The plans indicate markings for traffic circulation and in general there would be two way traffic in all areas excepting the westerly curb cut would be one way out only. The Board should determine if a profile of the main access way will be required. Refer to comments under Section V-A Off Street Parking Requirements.

CHA Response: The layout has been modified and there are now 15 parking spaces proposed. Please see the updated Site Plan, Sheet C-101. VAI is reviewing the traffic issues and a Traffic Impact Study and response to reviewer comments are provided in the submittal.

   d. The Application requests relief from zoning requirements relative to parking grades but not building setbacks. As noted the lot would need to be combined to meet setback requirements. The site is in the Business B zoning district, excepting the far rear of #27 Whiting Street, which is in the Residence B district. The locus is also in the Accord Pond Watershed and Hingham Aquifer Protection District. The retail store is a permitted use the gas station is subject to an A-1 Permit. The gas station currently exists, I recommend that Town Counsel be consulted on the Applicants grandfathered provisions to allow the gas station to remain as this is not an engineering issue. There is also 2,000 square feet of storage proposed. This is nearly as much space as the retail portion of the building and should be reviewed by the Board as storage is not an allowed use in the district.

CHA Response: The intent of the Applicant is to combine the two lots under common ownership as part of the permitting of the project. With the lots combined, the project will meet the required setback requirements. The building for the project has been revised to have 1,000 square feet of accessory storage, 500 square feet of storage shall be associated

with the retail use, and a second 500 square feet of storage used for on-siteh maintenance equipment like ladders, lawnmowers, snowblowers, and plows. All storage shall be customary and incidental to the allowed used on the property and shall not be accessed by the public.

e. Detailed data on proposed utilities has been provided. Existing utilities, including those to be removed, should be indicated. As both lots have existing septic systems they would also have water service connections. It is also likely that there are gas services for heat, etc. Locations of these utilities should be indicated on the plans. It is proposed to install new connections for water and gas from Whiting Street to the new building. Electric and cable utilities would be overhead from an existing utility pole on the property east of the locus. Typically, underground utilities are required. There is a proposed new septic system that in the front of the site near Whiting Street. Proposed drainage features include a subsurface infiltration system between the proposed building and Whiting Street on the west side and an open basin along the westerly property line. The entire new system would discharge to the north. The existing gas station has no stormwater facilities and discharges into the state highway (Whiting Street).
Landscaping Plans and details have been included as required.
The plans indicate a new dumpster area at the northeast corner of the new building.

CHA Response: The single-family house located at 27 Whiting St was built in 1952. The Aquarion Water Company provided records for the water main but not for the water services. Research of the Board of Health records for the septic system resulted in an Application for Permit for Construction of Sewage Disposal System document which indicates the Contractor was E.L. Margetts in 1972. No further information was found. No covers indicating the location of the septic system were found by the surveyors or found during a site walk. The house has an oil fill connection on the side of the house (also noted in the Assessor's card), and no record for a gas service was found. The preference is to reuse the existing overhead electrical connection if possible due to the established connection and the coordination with the proposed drainage. We will coordinate with HMLP regarding the electrical service.

f. The submittal includes a grading plan and stormwater runoff analysis. Reportedly a Traffic Impact Study has been provided and is under review by others. Refer to comments under Stormwater Management Regulations below for drainage design. The existing conditions plan does not accurately depict conditions along the rear stonewall or indicate the intermittent stream channel within the wetlands on and off site. The grading along the rear of the existing gas station section should also be checked. The plans should include all curb cuts on the opposite side of Whiting Street as well as any other curb cuts on the same side. Limited off site information has been provided. The submittal does not include an estimate of net import/export of material. I recommend that earthwork volume calculations be provided.

CHA Response: Additional survey information was collected by the existing rear stone wall and the intermittent swale/stream as well as the curb cuts on both sides of Whiting Street and are presented on the plans. We respectfully request to provide the estimate of import/export of material as a Condition of Approval once grades are finalized.

g. This item requires information to assess the impact of the development on soil, water supply, ways and services. The submittal should address soil removal and/or import and identify if an earth removal permit will be required. The project proposes a new septic system for wastewater disposal.

There are two existing septic systems on the site. The plans should identify the location of the system at #27 Whiting Street and if it will be removed. The septic design will require review by the Board of Health and no testing has been performed at the location of the proposed system or reserve location at this time. A new gas line and water service are also proposed. Test pit data for six test locations has been provided; published data and soil logs indicate highly permeable soils in the south and east side of the site, which has been confirmed where testing has been performed. Groundwater varies with over five feet in depth below existing grades where tested in the southeast part of the site with shallow depth along the lower area to the west.

CHA Response: Research of the Board of Health records for the septic system located at 27 Whiting Street resulted in an Application for Permit for Construction of Sewage Disposal System document which indicates the Contractor was E.L. Margetts in 1972. No further information was found. No covers indicating the location of the septic system were found by the surveyors. During construction, the existing septic system will be decommissioned per Title 5 regulations. Additional soil testing was performed on August 28, 2020. The additional soil data is presented on the Test Pit Plan, Sheet G-001. The septic design has been modified from the original submittal due to the comments received regarding setbacks to tributaries to a public water supply. The proposed septic system for the Hingham Gas project is located approximately at the same location as the existing septic system for the existing gas station.

h. The regulations require compliance with DEP Stormwater Management Regulations as discussed below:

STORMWATER MANAGEMENT POLICY/EROSION AND SEDIMENT CONTROL:

Standard 1 – Untreated Stormwater

This standard requires that the project not result in point sources of untreated runoff and that runoff not result in erosion or sedimentation.

There are two new outlets proposed although they are both associated with the Bio-retention basin. There are also two new flared end inlets to the bioretention basin. The project proposes to direct runoff from half of the roof of the new building and the part of the new parking area to a new subsurface system. A portion of the proposed driveway would discharge to a bio-retention basin on the west side of the site. The remainder of the existing area and a portion of new pavement would flow into the state highway layout. The subsurface system would also flow into the bioretention basin.

Most of the runoff would receive some level of treatment except the portion of the site that discharges directly into the State Highway layout at the entrance to the site.

Sizing data for a "Preformed Scour Hole", which is proposed at pipe ends has been provided and demonstrates adequate protection from erosive forces.

Subject to approval by MassDOT for the proposed work in the State Highway this Standard would be met. I note comments under other Standards may alter this condition.

CHA Response: The stormwater systems for the site have been redesigned based on the Stormwater Handbook for Gas Stations and LUHPPL (Land Use with Higher Potential Pollutant Load) and in response to comments received, including the addition of oil/water separators and removal of the

bioretention area and water quality swale as part of the treatment train. Deep sump catch basins and underground recharge/detention systems with isolator rows remain part of the treatment train. A single discharge is proposed from the system, located outside of the 50-ft buffer to wetland, equipped with a plunge pool energy dissipater for scour protection. The proposed stormwater system design continues to capture and treat much of the site generated runoff that currently flows directly into Whiting Street and discharges to Accord Brook, uncontrolled and untreated. Please see additional information presented on the Site Plans and in the Stormwater Report.

Standard 2 – Post Development Peak Discharge Rates

This Standard requires that the peak rate of discharge does not exceed pre-development conditions and that the design would not result in off-site flooding during the 100-year storm. System designs should comply with the DEP Handbook for stormwater management systems.

General:
It is proposed to install a subsurface infiltration/detention system (infiltration has not been credited for rate control although the system is proposed to infiltrate the required volume under Standard 3) and a bio-retention basin to control peak rates of runoff. A bio-retention basin is not listed as a suitable BMP for peak rate control and an alternate design should be considered.

CHA Response: The subsurface recharge/detention systems have been designed within the hydrology model with no stone base to prevent confusion regarding the stone base being utilized for detention. The 6" of stone base for the chambers is being utilized for recharge. Additional information on the recharge is provided in Section 4 of the Stormwater Report. The bioretention area and water quality swale have been removed from the stormwater design and replaced with oil/water separator units and expanded subsurface recharge/detention systems. The oil/water separator units' primary function is treatment while the subsurface systems provide treatment and peak rate control. The intent of the design is to be as environmentally conscious as possible and avoid encroaching within the 50' buffer to wetland except to remove existing impervious structures and pavement.

Existing Conditions:

The drainage divides are partially based on assumptions for runoff into the site from abutting properties. The plans should include more contour information to define these divides. More runoff could enter the site from the east side and it is unclear if runoff from the westerly abutter would flow into the site. The portion of land sloping into the locus from the easterly abutter to the rear of the site may not be required in the analysis, as the rear of the site and the associated off-site tributary area is not being altered.

CHA Response: The drainage divides on the western property side, Hingham Jewelers, was based on a site inspection. The Hingham Jewelers parking lot flows down the pavement and discharges through a break in the stone wall just prior to the edge of the property line. The drainage divides on the eastern property side closer to Whiting Street were adjusted based on new surveyed topography and a site inspection. As noted by the reviewer, the stormwater runoff from the easterly abutting parcel to the rear of 19 Whiting Street which drains to the rear of 27 Whiting St flows directly to the wetland resource and will not impact the proposed drainage systems.

The soil conditions should match test pit data. In the south are sandy soils or loamy sands percolation rates were generally 2 min./in. or less and these would be Hydrologic Soil Group (HSG) A. The rear and west side have wetlands and filled wetlands that would be HSG D soils. The assumption that all soils are HSG B is not a conservative assumption as most of the change is in the HSG A soils where conversion to impervious area has a greater impact on runoff.

CHA Response: The HSG's have been updated to A for the soils agreed to during the online meeting with Mr. Chessia. All other soils on the site have been modeled as HSG C soils.

The time of concentration (Tc) across the gas station is likely 5 minutes as estimated but the remainder of the site would likely be longer and should be calculated.

CHA Response: The Tc for the remainder of the site has been modified and is presented on the Hydrology Plans.

Proposed Conditions:

Aspects of comments under Existing Conditions would also apply to Proposed Conditions.

It is unclear that the landscaped area between Whiting Street and the parking lot would flow to Whiting Street as it currently flows to the north. The grade changes do not appear to redirect this runoff into Whiting Street and it is unclear MassDOT would accept redirecting runoff into the roadway.

CHA Response: The landscaped area has been regraded to create a swale and direct the water to the catch basin located at the western exit onto Whiting Street. Please see the updated Site Plans.

The plans should include design of gutters, downspouts and roof drain piping for the new building. The front of the building is directed into the subsurface system but only the tie in pipe is indicated. It is unclear how the rear of the building would be directed into the bio-retention basin. Grades indicate runoff behind the building would flow to the north not west.

CHA Response: The drainage has been redesigned to indicate the entire roof being collected by a roof drain header. The gutter and downspout system will be coordinated with the roof drain header which runs around nearly the entire building. Please see the updated Site Plans.

The bio-retention basin, if to remain an open basin, should use a Curve Number (CN) of 98 as it would be flooded during most of the storms modeled. As noted a bio-retention area should not be used for rate control according to the DEP Handbook. The design of a stormwater basin should include a wider berm, as designed the top would be a point. Typically, stormwater basins have an accessible berm all the way around them for maintenance and stability.

CHA Response: The bio-retention system has been removed from the stormwater design. Please see the updated Site Plans.

Additional soil testing may be required depending on the final design.

The project proposes an increase in stormwater volume to a flood zone. The downstream wetland does not appear to be restricted by a nearby culvert and the volume from the site is small compared to the entire system but some documentation of the potential impact of an increase in runoff volume to the wetlands should be provided to demonstrate that flooding would not be exacerbated by this project.

CHA Response: It should be noted that the stormwater from the site currently drains to the Accord Brook by the 49 Whiting Street parcel further west on Whiting Street via the MassDOT stormwater system. Therefore, the entire volume of stormwater runoff is discharged to the same flood zone, although it will be from slightly different locations along Accord Brook. The on-site stormwater system treats and detains the stormwater prior to discharge to the wetland resource.

It is not clear that this Standard has been met by the design. Additional information is required to demonstrate compliance with this Standard.

Standard 3 – Recharge to Groundwater

The design would result in an increase in impervious area. The difference in impervious area over the existing conditions should be infiltrated in accordance with the standard.

I note that there is a discrepancy in the impervious area calculations between the HydroCAD model and the Recharge Calculations in the Report. The difference is approximately 260 square feet.

CHA Response: The stormwater design has been modified from the initial design, please see the updated Stormwater Report.

Infiltration would only occur in the subsurface system below the outlet of the system. There appears to be just 2 feet of groundwater separation based on testing although the closest test just outside the system on the east side had a higher groundwater than used in the design of 0.1 foot. It is also unclear if suitable soils exist at the far west end of the system as soils next to the existing driveway were not suitable and the location of the change in soil conditions has not been determined. I note that the peak runoff rate calculation under Standard 2 did not include an infiltration component in any of the storms modeled.

Not all of the impervious area has been captured. The impervious area directed to the infiltration system does exceed the overall increase and an adjustment calculation would not be required.

The design assumes HSG B soils which have a lower requirement than HSG A soils. In this case most of the area would be in HSG A soils although further testing would be necessary to determine the limits on the westerly side. If all of the new impervious area is in HSG A soils including adding in the difference in area as noted above a total of 446 cubic feet of recharge would be required and only 327 cubic feet is provided.

CHA Response: The extent of HSG soils has been updated in the model and the recharge calculations. As noted previously, it is proposed to utilize the stone base under the underground recharge/detention systems as volume for recharge. It is proposed to provide greater than the minimum of 2 feet required for offset to groundwater. Please see Section 4 of the updated Stormwater Report.

Additional information to demonstrate that this Standard would be met is required. I also note that design considerations under other Standards could alter the design, and additional testing to confirm the entire area is suitable for infiltration and groundwater separation should be performed.

Standard 4 – 80% TSS Removal

This standard requires that runoff be treated to remove 80% of total suspended solids (TSS) prior to discharge. Since it is assumed that portions of the site lie in highly permeable soils pretreatment prior to infiltration of 44% TSS removal is required. The site is also located in a Critical Area Zone II, and Tributary to a Surface Water Supply both of which require 44% pretreatment. Refer also to Standard 5 as this site is listed as a Land Use with Higher Potential Pollutant Loads.

Although portions of the area proposed for the project are currently developed, it is required to have some improvement in TSS removal if feasible. At a minimum, documentation to demonstrate that no improvement relative to treatment of existing flows into the State Highway Layout are infeasible should be provided.

The following BMP's are proposed:

- Catch basins - One double grate catch basin is proposed. The submittal quantifies the impervious area tributary to the catch basin to document that it would comply with DEP requirements for credit

of 25%. DEP only credits TSS removal for catch basins with ¼ acre or less impervious area tributary. The proposed catch basin would meet this requirement. This catch basin discharges to the subsurface system.

CHA Response: No response required.

- Infiltration/Detention Chambers with Isolator Row - The submittal credits the isolator row with 80% TSS removal. This has not been fully documented and as a proprietary system is only credited with a removal rate acceptable to the Board. I do not recommend a removal rate of 80% for this component of the system. An infiltration system with an isolator row would receive 80% as would just an infiltration system, if properly sized. The submittal does not demonstrate that the system is sized appropriately and based on my calculations the system is not sized for TSS credits. The calculations use a water quality volume to flow conversion but it is not clear that this is appropriate in this case. To receive TSS credit in highly pervious soils as well as in a critical area 44% TSS removal is required for pretreatment the isolator row is within the subsurface system and not necessarily a pretreatment unit. I note that the roof does not require pretreatment.

CHA Response: Section 4.2 of the Stormwater Report includes a form indicating that Testing of the Isolator Row completed by Tennessee Tech has been verified by NJCAT and it has shown to have a TSS removal efficiency of 84% for SIL-CO-SIL 250.

Note that the Isolator Row and Stormtech Chambers were utilized in the 141 Derby Street drainage design as a field change. The change to the Stormtech Chambers and Isolator Row was reviewed and approved by the Planning Board. The approval review document confirmed and noted that the University of New Hampshire stormwater center test site studied the Isolator Row and found an estimated removal efficiency of 80%. Note that the design change allowed for the removal of the upstream stormwater treatment units.

A portion of the 2009 report was included in the Stormwater Report in Section 4.2 and the full report can be found here:

https://www.unh.edu/unhsc/sites/unh.edu.unhsc/files/pubs_specs_info/2009_unhsc_report.pdf.

- Bioretention area - Bio-retention areas can receive 90% TSS removal credit subject to proper design and pre-treatment. Insufficient documentation for the bio-retention system has been provided to demonstrate that it would meet requirements.

CHA Response: The bio-retention system has been removed from the stormwater design.

- Water Quality Swale - The rear paved access to the lower level storage area reportedly flows to a water quality swale (WQS) prior to discharge to the bio-retention area. This system has not been credited with any removal and has no design data to demonstrate any removal of TSS.

CHA Response: The water quality swale has been removed from the stormwater design.

More detailed data on the proposed systems is required to demonstrate that the required TSS removal would be achieved. In particular pretreatment in many locations is inadequate for the next downgradient system to receive removal credits.

CHA Response: The proposed stormwater system has been redesigned. The updated design includes an oil/water separator as part of the treatment train after collection by catch basins and prior to discharge to the underground recharge/detention systems which utilize an isolator row for treatment.

Refer also to comments on these systems under Standards 2, 3 and 5.
It does not appear that this Standard would be met.

Standard 5 – Higher Potential Pollutant Loads

The project is considered a Land Use with Higher Potential Pollutant Loads (LUHPPL) as it is a gasoline fueling station.

LUHPPL's have specific requirements for BMP's that can be used on sites of this type. I have listed the specifics for each proposed BMP relative to applicability and special design considerations as listed in the DEP Handbook.

- Catch basins – Catch basins are an acceptable pretreatment device.

CHA Response: No response required.

- Infiltration/Detention Chambers with Isolator Row – Since the isolator row is part of the infiltration system it is not a pretreatment device. In addition, it is not clear that the system has been verified for this application by DEP as a proprietary system. In general, an oil/grit separator is required as part of the treatment train for a gas station, in particular prior to an infiltration system. The subsurface structure itself (the Stormtech chambers) are also a proprietary system and would need documentation to be used at this location.

CHA Response: The Stormtech Chambers have been previously approved for the project located at 141 Derby Street for use on a LUHPPL. The isolator rows were utilized as part of the pretreatment prior to recharge as well. The stormwater treatment device, CDS units, proposed on that project were removed and replaced with the Stormtech Chambers with Isolator Row. The current stormwater design utilizes the same design principle utilized for that approval.

- Proprietary Units – The inlet the intersection of the proposed egress at Whiting Street is a proprietary unit. The unit proposed is commonly used. The appropriate SEP or TARP data for the unit should be provided. I believe other project have previously provided this data to the Board for this type of unit.

CHA Response: The stormwater system design has been modified and this unit is no longer a treatment unit. Please see the updated Site Plans.

- Bioretention area – Bio-retention areas can be used if proper pretreatment has been provided and the system is lined and sealed. The proposed system does not have a liner as required.

CHA Response: The bioretention area has been removed from the stormwater design.

- Water Quality Swale – Dry water quality swales can be used but should have some pretreatment. In this case the WQS is not credited with treatment.

CHA Response: The water quality swale has been removed from the stormwater design.

This Standard would not be met.

Standard 6 – Protection of Critical Areas

The site is located in a critical area as the area is within a Zone II of water supply wells and is tributary to a surface water supply.

Critical areas have specific requirements for BMP's that can be used on sites of this type. The applicability varies depending on the type of critical area. I have listed the specifics for each proposed BMP relative to applicability and special design considerations as listed in the DEP Handbook.

- Catch basins – Catch basins are an acceptable pretreatment device for both surface water supply tributaries and Zone II's.

- Infiltration/Detention Chambers with Isolator Row – Since the isolator row is part of the infiltration system it is not a pretreatment device. In addition, it is not clear that the system has been verified for this application by DEP as a proprietary system. The subsurface structure itself (the Stormtech chambers) are also a proprietary system and would need documentation to be used in both a Zone II and any area that discharges to a surface water supply.

CHA Response: The Stormtech Chambers have been previously approved for the project located at 141 Derby Street for use on a LUHPPL. The isolator rows were utilized as part of the pretreatment prior to recharge as well. The stormwater treatment device, CDS units, proposed on that project were removed and replaced with the Stormtech Chambers with Isolator Row. The current stormwater design utilizes the same design principle utilized for that approval.

- Proprietary Units – The inlet the intersection of the proposed egress at Whiting Street is a proprietary unit. The unit proposed is commonly used. The appropriate SEP or TARP data for the unit should be provided. I believe other project have previously provided this data to the Board for use of this product as a pretreatment unit.

CHA Response: The stormwater system design has been modified and this unit is no longer a treatment unit.

- Bioretention area – Bio-retention areas can be used if proper pretreatment has been provided and the system is lined and sealed in a Zone II. The proposed system does not have a liner as required in a Zone II.

CHA Response: The bioretention area has been removed from the stormwater design.

- Water Quality Swale – Water quality swales are not listed for use in either a Zone II or an area tributary to a surface water supply.

CHA Response: The water quality swale has been removed from the stormwater design.

This Standard would not be met.

Standard 7 – Redevelopment Projects

The project proposed would be a partial redevelopment project. I note that no improvements are proposed for much of the existing gas station lot, including some of the expanded pavement area.

It is required to demonstrate that no improvement to this area can be accomplished. No data on why improvements are not feasible has been provided.

More information is required to demonstrate compliance with this Standard.

CHA Response: The project is providing a significant benefit to the existing wetland resources by moving existing impact located within the 50-ft. buffer. The cost to make these improvements is significant. It is proposed to minimize disturbance of the existing filling station and execute the modifications that

improve the proposed stormwater on the site. Setback issues for drainage from the proposed septic system and the existing steep grade towards Whiting Street, do present limitations.

Standard 8 – Erosion/Sediment Control

This Standard requires development of plans and narrative data to control erosion and sedimentation resulting from the removal of vegetation, etc. as a result of construction. In this case the work area is less than the one acre of disturbance threshold and an EPA NPDES Permit and SWPPP will not be required.

This Standard requires the following data. I reference the Stormwater Report Checklist. Some of this information could be provided prior to construction:

- Narrative – The Report includes an Executive Summary that provides a general narrative description of the project.

- Construction Period Operation and Maintenance Plan – A Construction Period O&M has not been provided. The plans should also include the location of temporary basins, if proposed, stockpile and staging areas, etc. and discussion of maintenance of these areas. This is a small site with a requirement to maintain operation of the gas station during construction and limited space for stockpiles, staging, etc. is available. This information should all be indicated on the plans.

- Names of Persons or Entity Responsible for Plan Compliance – It is unclear who will be responsible for the construction and operation phase of the work. The Application should address responsibilities for both construction and inspections. There should be someone experienced in erosion and sediment controls responsible for this aspect of the project.

- Construction Period Pollution Prevention Measures – Some data is provided on the plans, primarily a mulch sock to be installed at the rear of the property and a tracking pad. I recommend that the plans and construction sequence in the Report also requires protection of subsurface infiltration structures, the septic system area, etc. The Conservation Commission may have additional requirements as the work is proposed within the 50 foot buffer on a steep slope, including drainage outlets.

- Erosion and Sediment Control Drawings – There is a Demolition & Sediment Control Plan in the set. A complete Erosion and Sediment Control Plan responsive to all of the requirements should be provided. Also refer to other comments.

- Detail Drawings and specifications for erosion control BMPs, including sizing calculations. – There are details for a 12" mulch sock, tracking pad, stockpile protection, catch basin silt sack and a temporary basin. I recommend that the temporary basin have a floating skimmer outlet and that the sizing data be included together with the location and tributary area. Other details may be required depending on any revisions to the plans.

- Vegetation Planning – Typically planting periods for successful growth should be included. There is a Landscape Plan with a listing of trees and specification for grass and topsoil.

- Site Development Plan – This requirement would be satisfied with the Plans.
- Construction Sequencing Plan – The submittal includes a sequence of construction (Section 1.10 of the Report). I recommend references to straw bales be removed and that the plans identify the proposed location of various temporary BMP's. The plans indicate a filter sock for sediment control and the Sequence discusses silt fence and straw bales, the data should be consistent. I recommend a double row barrier be provided where work is within the 50 foot no-disturb zone.

The sequence should include appropriate time periods for various vegetative measures and stabilization for winter conditions.

- Sequencing of Erosion and Sediment Controls – The Application lists that sediment controls would be installed first as required.

- Operation and Maintenance of Erosion and Sediment Controls – The submittal should include a separate Construction Phase Operation and Maintenance Plan.

- Inspection Schedule – A schedule for inspection of various erosion and sediment controls should be included.

- Maintenance Schedule - A schedule for maintenance of erosion and sediment controls should be included.

- Inspection and Maintenance Log Form – A construction phase log form was not included with the submittal.

Additional data is required under this Standard.

CHA Response: A Construction Period Operation and Maintenance Plan has been added to the Stormwater Report in Section 2. The CPOM provides much of the information/data cited in this comment.

Standard 9 – Operation and Maintenance Plan

An Operation and Maintenance Plan (O&M) was provided in the Report. For all projects a comprehensive O&M is required for the entire site, including areas not proposed to be altered.

The (O&M) includes a description of general non-structural BMP's that is consistent with DEP requirements. The westerly snow storage area should be relocated away from the basin. There is limited area for snow storage on the site.

CHA Response: The westerly snow storage area.

The following structural BMP's are proposed.

Catch basins – The maintenance is consistent with DEP requirements.

Subsurface Infiltration System – The proposed subsurface infiltration/detention system includes an isolator row and the manufacturer's maintenance manual is included as required by DEP. Maintenance is consistent with DEP requirements. I recommend that the details on the plans be site specific, and include data on inverts, system elevations, soil removal/replacement notes and specifications, etc.. The observation port should not be listed as optional.

CHA Response: The text on the observation port on Site Details, C-603 has been changed to remove "optional". We request that final details of the systems be confirmed by the manufacturer and if required, provided to the Town and reviewer prior to installation.

Bio-Retention Area – Bioretention area maintenance should include more data on frequency of soil testing as listed in the O&M. Snow is proposed to be stored on the system slope, counter to the proposed O&M requirements. The plans should include more data on specific plantings proposed. Refer also to issues listed under other Standards.

CHA Response: The bioretention system has been removed from the stormwater design.

Water Quality Swale – The submittal lists a water quality swale with the bioretention basin but not specific design data has been included and the design does not meet DEP Handbook requirements for a water quality swale.

CHA Response: The water quality swale has been removed from the stormwater design.

Proprietary Hydrodynamic Separator – One unit is proposed and the manufacturer's maintenance manual is included as required by DEP.

CHA Response: The proprietary hydrodynamic separator has been removed from the stormwater design.

The O&M also includes maintenance of the outlet control structures and outlet protection. The O&M is acceptable for these systems.

CHA Response: No response necessary

I recommend roof drain gutters be included and required to be cleaned twice a year once in the fall after leaf drop and again in the spring after snow melt. It is unclear if a roof gutter/downspout system is proposed for the rear of the building.

CHA Response: A Roof Drain Gutters and Downspouts section has been added to the O&M Manual. Please see Section 2 of the Stormwater Report.

Additional data is required to comply with this Standard.

Standard 10 Illicit Discharge

A signed statement has been provided.

i. The plans do not include any data on proposed lighting. I recommend that the submittal include photogrammetric plans for the proposed lighting.

CHA Response: No additional site lighting is proposed. The sidewalk is adjacent to the building and lighting for the pedestrian access will be provided off the building. If photometric plans are required, we request that a Condition of Approval include photometric plans (building related) be provided prior to construction.

j. It is unclear if the Board requires or requests and other materials not identified above regarding the project.

The Board should review the comments and determine if all of the information required under Section 6. Review Standards and Approval have been addressed by the Applicant prior to arriving at a decision.

Section V-A Off Street Parking Requirements

1. The site is currently used as fueling facility and a residential dwelling. Existing on-site parking is currently provided for the dwelling including a garage. There is some parking but no marked spaces at the gas station. An A3 Special Permit is requested.

CHA Response: No response required.

2. There is a Parking Calculation Table on Sheet C-101. The site includes spaces for the retail use and for a storage use. As noted Storage is not an allowed use in this district. It is proposed to have in excess of the required number of spaces as the calculations indicate 15 are required and 16 are proposed.

   CHA Response: The parking calculation has been updated due to the reduction in the building. It is proposed to provide 15 spaces. The storage use component is accessory to the retail and gas station uses.

3. Parking Dimension Requirements:
   The proposed parking spaces are 18 feet long by 9 feet wide except for handicap spaces. There is no overhang as the spaces abut a concrete curb and sidewalk. The spaces do not comply with requirements for length and should be 20 feet long as designed. The spaces comply with width requirements as all are proposed to be 9 feet in width.

   CHA Response: We respectfully request a waiver of the parking dimension requirements to provide 9-foot by 18-foot parking spaces.

   There is a 15.5 foot wide by 20 foot long loading space in front of the dumpster areas. I recommend that the application discuss how trucks will maneuver into and out of this space.

   CHA Response: The proposed deliveries would be by single-unit box truck which would enter the site through the center curb cut off Whiting St. The preferred route would be between the gas station and retail building and would be the same for the trucks accessing the dumpster area. Refer to Sheet C-903 Vehicle Turning Plan.

   Aisle widths vary and are not all identified on the Plans. I recommend that the plans clearly identify the space allocated for vehicles at pumps and circulation aisles around the pumps.

4. The plan is drawn at 1"=20' as required. The plans are stamped as required.

   CHA Response: No response required

   a. Details of proposed monolithic curb, concrete sidewalks, curb stops (although not specified on the plans), paving, etc. have been provided. Sign details, and landscaping data have also been provided. No data has been provided regarding proposed site lighting.

      CHA Response: There is no site lighting proposed for the project currently. If photometric plans are required, we request that a Condition of Approval include photometric plans (building related) be provided prior to construction.

   b. The required building location, lot lines, etc. have been indicated. A zoning table is provided on Sheet C-101.

      CHA Response: No response required

   c. A Landscaping Plan has been provided. The Board should review the plans. The plans include a list of species and sizes as required.

      CHA Response: No response required.

5. Design standards
   a. This section addresses general safety and access convenience. This aspect of the project has been reviewed by Vanasse and Associates.

      CHA Response: No response required

b. It is proposed to retain three of the existing access points and close one existing curb cut. There are minimal changes to the access locations. I note that the easterly entrance is partially in an easement. The plans indicate available clear sight lines at the proposed intersections, although it is unclear if there would be vegetation or grade issues impacting sight lines. I recommend that the plans also indicate roadway grades within Whiting Street. The central curb cut is at approximately a 6% grade. The existing openings in the center and east side are 40 feet wide, which exceeds typical opening sizes. The Board should review this aspect of the project.

CHA Response: The access locations have been updated for the design. The central curb cut has been redesigned to meet MassDOT's 30-foot width and 30-foot radius. The curb cut from the easement has been modified to reduce the conflict so that anyone entering will be required to take a left-hand turn into the easement and then another left-hand turn onto the site. These design changes have been preliminarily discussed with the Traffic Reviewer.

c. One loading space has been identified on the plan. An enclosed dumpster area is also identified on the plans. This aspect of site operation should be discussed by the Board, in particular maneuverability of trucks for deliveries and loading dumpsters.

CHA Response: The location of the dumpster is limited to the specific location due to the gas station configuration, and the requirement of the dumpster to be located outside the 100-ft. buffer. As previously discussed, it is anticipated that deliveries will be a single-unit box truck which will enter the central curb cut and then drive between the gas station and retail building to the loading space. Access to the dumpster will be similar. Additional dimensions have been added to the plans for clarity. Please refer to Sheet C-903 Vehicle Turning Plan.

d. No loading or service doors are included on the plans or identified in this submittal.

CHA Response: The deliveries are to be hand-truck or pallet through the entrance doors.

e. Spaces do not require backing into a way or the movement of another vehicle to access the space and would comply with this requirement.

CHA Response: No response required.

f. All of the spaces would overhang the sidewalk. The design does not comply with this section of the Bylaw.

CHA Response: We respectfully request a waiver of the parking dimension requirements to provide 9-foot by 18- foot parking spaces.

g. I recommend that the plans clarify the location of proposed curb stops. The plans indicate that there would be a curb and sidewalk at the end of each space. The details for handicap spaces indicate a curb stop.

CHA Response: The curb stop detail has been removed and the reference to curb stops removed from the handicap spaces.

h. Photogrammetric plans and lighting details have not been provided. This aspect of the Bylaw should be addressed.

CHA Response: No additional site lighting is proposed. Lighting for the parking spaces proximate to the building will be provided from the building.

i. The plan specifies white pavement markings as required for parking.

CHA Response: No response required

j. There are 2 handicap spaces proposed. Based on 521 CMR one handicap space would be required and the plans comply.

CHA Response: No response required

k. The Site Plan indicates proposed snow storage areas. One of the areas should not be utilized for snow storage as it is the side of the bio-retention basin. The plan should be revised. There is minimal storage space for snow.

CHA Response: The snow storage area provided at the western edge of the paved area is acceptable as the bioretention system has been removed, and the slope drains to a pervious "swale" created by the proposed grading. The O&M Plan indicates that snow would be removed should it be too great for the area indicated on the site.

l. Portions of the parking lot area do not comply with grade requirements as grades exceed 4%. A waiver has been requested from this requirement. Refer to comments under Section 4. h. regarding stormwater design.

CHA Response: No response required

m. The parking lot would have 15 total spaces and be subject to this requirement for landscaping. Three trees are located in the front landscape island between Whiting Street and the parking area. These trees are of the required size. There is a mix of plantings but I recommend that the Board review the proposed tree locations relative to this requirement.

CHA Response: No response required

n. This section addresses shared parking spaces and would not apply.

CHA Response: No response required

o. This section is not applicable no land banked spaces are proposed.

CHA Response: No response required

Section V-B Signs

The Board should address signage. There appears to be a large identification sign proposed at the entrance. Other signs for handicap and a stop sign are included on the plans.

CHA Response: The only sign on the project is the existing sign proposed to be retained.

We trust that the responses provided above along with the attached plans and materials address each of Mr. Chessia's comments. We greatly appreciate your time and consideration. Should you have any questions or require any additional information, please don't hesitate to contact me at drose@chacompanies.com or (781) 792-2238.

Sincerely,
CHA Consulting, Inc.

Donald Rose, P.E.
Senior Engineer