May 14, 2021

Ms. Karen Sherman
Town Planner
Town of Holliston
703 Washington Street
Holliston, MA 01746

Re: **2021 Definitive Site Plan Modification Civil Engineering Stormwater Peer Review 4**
555 Hopping Brook Road – Commercial Development
CMG ID 2020-002

Dear Karen,

CMG is providing this letter report detailing our fourth engineering peer review of the stormwater management system design for "555 Hopping Brook Road, Holliston, MA" commercial development project Site Plan Modification. The project is located within the Hopping Brook Business Park on the 72.73 +/- Acre parcel identified as Lot 4 (the "Site"). The project Applicant, *CRG Integrated Real Estate Solutions*, is proposing to construct an 800,000 +/- s.f. warehouse and distribution facility, associated parking, driveway, and utilities within an Industrial zoning district.

CMG is in receipt of the following documents:

- Site Plans entitled "555 Hopping Brook Road, A Modification of The Definitive Site Plan in Holliston Massachusetts" Sheets 1 – 35, prepared by Engineering Design Consultants, Inc., date 11/16/19, revise date April 13, 2021.

- "Stormwater Calculations" report for 555 Hopping Brook Road Holliston, MA prepared by Engineering Design Consultants, Inc., date 11/16/19, revise date April 13, 2021.

CMG is providing this letter summarizing our review comments for the above documents to evaluate the project's compliance with the State of Massachusetts Stormwater Management Standards and Holliston Planning Board Rules and Regulations.

General Engineering & Drainage Design Comments

1. CMG Comment #1: Contours and existing features shown on the Pre-Development Drainage Map don't appear to completely match the Existing Conditions Survey. CMG recommends Applicant's Engineer (EDC) review and make sure the information is consistent between both plans.

EDC Response: The Existing Conditions plan has been revised.

CMG Comment #2: EDC's 4/13/21 Revision 4 Site Plan set contains a different Existing Conditions plan than previously submitted. Pre-Development Drainage map should match the original 2/7/20 Existing Conditions Map and show all existing conditions and mapped wetland areas including the D-series flags.

2. Soil Types classifications and boundaries, existing soil test pits, existing wetlands and buffers zones, are not shown. These were provided on the previously approved 2/5/20 Plan Revision #2 "Pre-Developed Runoff Areas" plan prepared by EDC. Soil type and boundaries should be shown on the pre and post development drainage maps.

   EDC Response: The plan has been revised for all of the above.

   Comment addressed

3. CMG recommends cross culverts Reach 11R as-built information be provided. Statement that "they have more than enough capacity as designed" is not adequate. In addition, HydroCAD calculations define a 2'x 3' channel with angled side slopes and not a culvert.

   EDC Response: Both existing culverts are 11-feet wide by 4-feet high and will pass all of the storm events unrestricted, it is more appropriate to model the reach as the channel entering and exiting the culverts, as it is more restrictive and the existing culverts also handle all the storm event un-restrictively. EDC acknowledges that the label for the reach should have been labeled more appropriately, in support of the analysis the as-built information is attached.

   CMG Comment #2: No as-built information was provided. If being modeled as a reach, the model should reflect the actual dimensions of the culverts.

4. Off-site stormwater detention basin 10P, culvert 11R, culvert 12P & underground recharge system 22P located at 465 Hopping Brook Road are included in the calculations however, no as-built details or supporting reference information is provided.

   EDC Response: EDC designed and supported the initial construction of this project, however did not complete the final site inspections or as-built surveys. EDC has no reason to doubt that the stormwater improvements as specified for the 465 Hopping Brook were not constructed as designed since any occupancy permit was granted for this facility. The HydroCAD Model is of record and should be relied upon for the scale and scope of the current analysis. The detention basin expansion will be fully reconstructed as needed in order to achieve the design details that are outlined in this current plan set. This basin will continue to be a privately owned and maintained basin that will support both the privately held sites on Hopping Brook Road that contribute stormwater and Hopping Brook Road that will surely on day be accepted as a municipal public way.

   CMG Comment #2: Comment Remains. At a minimum Applicant's Engineer should provide a copy of the original "Stormwater Management Design" for the Hopping Brook Roadway Extension and a current as-built plan for the existing stormwater basin to confirm the assumptions provided in EDC's April 13, 2021 "Stormwater Calculations".

CMG understands the Applicant is requesting the Planning Board consider allowing the subdivision amendment process be complete prior to the start of project construction activities as a condition of approval.

5. Existing conditions and Site Plan should define existing vs. proposed layout / grading for Hopping Brook Road cul-de-sac as it differs from March 16, 2017 Certificate of Action for "Hopping Brook Business Park".

   CMG recommends the Planning Board make it a condition of approval that the "Hopping Brook Road" project revisions be submitted to the Planning Board for review and approval prior to issuance of a building permit to insure there are no discrepancies from the 555 Hopping Brook Site Plans and stormwater design.

   EDC Response: The Planning Board's original approval of Hopping Brook Road allowed for a terminus of the Roadway Station 66+25, however with the large acreage associated with the CRG Proposal the roadway can now easily be reduced to less than 58+00. Final roadway and infrastructure shall be managed with the Planning Board through definitive subdivision amendment process which we anticipate will be a condition of this Site Plan Approval.

   CMG Comment #2: Due to the proposed revision of the Hopping Brook Roadway layout, the site's existing property line is being altered in comparison to the existing conditions plan. A plan should be included in the plan set to concisely indicate property boundary changes and indicate full compliance with zoning and subdivision regulations.

   Please note, it also appears there may be wetland resource areas (D-series flags) in direct vicinity of the existing basin expansion area and proposed cul-de-sac. The proposed work may be located within the buffer areas to these resources and require additional permitting with the Holliston Conservation Commission.

6. Footing drain and building roof drain tie in locations, details, size, & type for the building are not provided.

   EDC Response: The site plan and stormwater computational analysis includes the provisions for the roof drain connections (no footing drain is necessary), however architectural plans which are not final will dictate the specific pipe connection details.

   CMG Comment #2: CMG understands the roof drain leader locations are not final due to architectural plans still being designed. However, the size and type of the roof drains adjacent to the building should be shown on the site plan and added to the Manning Pipe Sizing spreadsheet at a minimum.

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

7. Rip-rap lined waterway designs are provided for four (4) rock lined swales, however, the report should make it clear which calculations correspond to the design plan locations. The report doesn't make it clear where the proposed design flow (Q) values used for each swale correspond with the HydroCAD calculations.

EDC Response: The detail sheet 30 includes the location of the swales identified and the associated flows are the combination of outlet flows using the Manning's pipe flow and flow from the outlet control structure in the HydroCAD model, and this was inadvertently left off of the design sheets in the stormwater report.

CMG Comment #2: Location of swales do not appear to be clearly labelled on plans. It is still unclear where the Q values come from since they most likely correspond to specific runoff from a subcatchment in the HydroCAD model.

8. Dimension and sizing calculations should be provided for the swale along the bottom of the proposed 30~40 ft. height berm to insure adequate capacity and freeboard to prevent runoff towards the abutting residential properties along the Medway Town Line. A detail must be provided in the plan set.

   EDC Response: The calculations have been added to the stormwater report and the details have been added to Sheet 30 of the drawing set.

   CMG Comment #2: Earth Berm Section on Sheet 29 should reference swale details on Sheet 30.

Stormwater Standard 2: *Stormwater management systems shall be designed so that post development peak discharge rates do not exceed pre-development peak discharge rates.*

9. A reference for the higher design storm rainfall event values should be provided in the report. It appears EDC is using the more conservative NOAA extreme precipitation rainfall data for the design calculations.

   EDC Response: A reference has been added to the Stormwater Report.

   CMG Comment #2: Comment remains. Please provide a copy of the NOAA Extreme Precipitation Table as an Appendix to the Report.

10. No reference is provided for the infiltration rate of 0.27 in/hr rate. This value appears to be based on the 1982 Rawls rate table for a "silt loam" Type C soil type. Engineer should provide a reference in the report.

    EDC Response: The reference has been added to the stormwater report.

    CMG Comment #2: Comment remains. Please indicate where this reference was added, it does not appear to be in the stormwater report.

Stormwater Standard 3: *Loss of annual recharge of groundwater shall be eliminated or minimized.*

11. CMG believes the "Impervious flows to the west" value to the Hopping Brook Road Detention Basin 10P is incorrect based on a review of the HydroCAD calculations. Calculations note a larger impervious area being directed to this basin. Suggest EDC provide a summary table to document all on-site and off-site impervious areas for each subcatchment directed to each basin to clarify.

    EDC Response: There is actually more impervious area that flows to the infiltration/detention basin 10P, however the 465 Hopping Brook Road project allowed for underground infiltration on-site, therefore the impervious areas were not added to the result. The number is the sum of sub catchments 10S, 11S, 12S, 15S, 21S, 27S, and 19S, and

is 774,170 s.f. impervious, less than the number used in the report because a change was made after the report was written.

CMG Comment #2: CMG understands the drywell design for the 465 Hopping Brook Road facility utilizes an overflow pipe to direct stormwater flows in excess of the drywell's design recharge capacity to Basin 10P. CMG would need to review the original Hopping Brook Road Extension stormwater management design report to confirm this information. CMG recommends EDC provide a summary table to clarify all on and off-site impervious areas from each Subcatchment directed to each basin for clarity and to confirm the provided recharge calculations.

12. While the required recharge volume is calculated, the "actual" calculated recharge volumes for Basin 30P and 10P are not provided. Report states simple dynamic method was used but no supporting calculations are provided.

    EDC Response: The supporting calculations were provided in the Stormwater Report on pages 85 thru 87. The "simple dynamic" method explained in Chapter 3 of the "Massachusetts Stormwater Management Standards" was used. By adjusting the rainfall to get the required inflow volume equal to the required recharge for the hours 10 to 13, and the results show that there is no outflow through the primary outlet device, therefore the required storage volume is adequate. However, we have revised the plans and calculations based on the "Static" method to provide storage based on the greater 1-inch over impervious surfaces.

    Comment addressed

13. The 6" low flow drain outlet should be modeled for both outlet control structures in the HydroCAD calculations to ensure adequate recharge volume is obtained within each basin. If the 6" pipe is to be used as an underdrain, a valve or other flow limiting device must be incorporated into the design details to allow adequate ponding within the basin.

    EDC Response: Valves have been added to the outlet control structure.

    CMG Comment #2: Detail should be revised to label drain as "maintenance underdrain" instead of "low flow". Note should be added to clarify valve to be set in "closed position" except for maintenance activities.

14. Pond 30P primary outlet invert= 303.00 in HydroCAD calculations does not match the detail provided.

    EDC Response: The plans and calculations have been revised.

    CMG Comment #2: Basin 10P (OCS-1) and Basin 30P (OCS-2) details still contain discrepancies for both basins and do not appear to match the design or HydroCAD model.

15. Proposed elevations and spot elevations on the maintenance berm should be clearly depicted on the plans. 10 FT wide maintenance berm for both on-site Pond 30P and off-site 10P are not labeled on the plans.

    EDC Response: Proposed spot elevations have been added to the center of the 10-foot-wide berms for each basin, 304.5 for basin 10P and 308.5 for basin 30P on sheet 13.

CMG Comment #2: Basin 10P berm elevation = 284.5 should match the HydroCAD calculations which show 284.0.

16. Pond cross sections for both on-site Pond 30P and Off-site Pond 10P with storm events peak elevations would be useful to clearly define compliance, materials, and construction standards for each basin design.

    EDC Response: Tables for the two basins have been added to the report that indicate elevations at various rainfall events with the tops of berm indicated.

    CMG Comment #2: Detention basin cross section detail not provided to clearly define compliance, materials, and construction standards for each basin.

17. Top of Berm Pond 30P elevation is listed as 309 in HydroCAD calculations while the plan only shows elevation 308. Therefore, it is slightly under the 1 ft of freeboard required (Peak 100-year Elev = 307.04).

    EDC Response: The spot elevations for the top of berm have been added to the plans, for basin 30P it is 308.5 for the top of berm.

    Comment addressed

18. Stormwater Basin 10P peak elevations listed on page 2 of the Stormwater Report do not match the HydroCAD calculations. Basin 10P does not have 1 ft. of freeboard during the 100-year storm event based on the values shown in the HydroCAD calculations.

    EDC Response: The elevations have been revised in 17 and 18 above, and the report has been revised, there is over 1-foot of freeboard.

    Comment addressed

19. Existing Hopping Brook Road Stormwater Basin 10P is proposed to be enlarged and the berm increased 1 ft. in height to Elev. = 284. However, it is unclear if existing contours shown represent as-built conditions. Stormwater report notes "Berm Elev: 283.50 +/- which does not match the design plan or calculations.

    EDC Response: The detention basin expansion will be constructed as needed in order to achieve the design details that are outlined in this current plan set. This basin will continue to be a privately owned and maintained basin that will support both the privately held sites on Hopping Brook Road that contribute storm water and Hopping Brook Road that will surely one day be accepted as a municipal public way.

    CMG Comment #2: Comment remains (Also See Comment #4)

20. Depth to seasonal high groundwater (ESHGW) shown on test pit information provided on the Existing Conditions Plan conflicts with test pit information shown on the Septic System Design Plan submitted to the Board of Health. Test pits performed for the septic system note ESHGW based on soil mottling at 36" below grade. This is consistent with the NRCS soil descriptions which note the depth to water table between 18" ~ 30" in the Woodbridge fine sandy loam Type C soils.

    Therefore, CMG recommends at least one additional soil test pit be conducted within on-site Basin 30P with soil logs prepared by a licensed State of Massachusetts Soil Evaluator

to confirm ESHGW based on soil mottling. CMG recommends the test pit be witnessed by a representative of the Town of Holliston.

EDC Response: EDC is in support of this recommendation and would anticipate that it will be included as a condition of approval of the Site Plan and Special Permit.

CMG Comment #2: Comment remains.

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

21. Water quality volume of 1 in. is not used for the design as required for land uses with higher potential pollutant load (LUHHPL - See additional Standard 5 comments below)

    EDC Response: Contech stormwater management structures for water quality treatment have been included and the site design package continues to provide infiltration/detention based on 1-inch over the impervious surface area for extra treatment. Greater than 80% TSS removal is achieved.

    CMG Comment #2: Stormwater report still provides Water Quality Volume calculations based on 0.5". Report should detail how the stormwater design meets the 1 in. Water Quality Volume requirement.

22. 44% pre-treatment must be achieved prior to discharge to each stormwater infiltration basin and supporting information included in the calculations.

    EDC Response: See the TSS removal spreadsheets in the stormwater report, greater than 44% pretreatment is provided.

    CMG Comment #2: No TSS removal spreadsheets are provided.

23. Stage-storage-volume tables for each stormwater basin should be provided along with supporting calculations to illustrate the actual WQV provided for each basin.

    EDC Response: The stage storage volume tables are provided in the HydroCAD output tables.

    Comment addressed

24. The 6" low flow drain outlet should be modeled for both outlet control structures in the HydroCAD calculations to insure adequate WQV is obtained within each basin. If the 6" pipe is to be used as an underdrain, a valve or other flow limiting device must be incorporated into the design details to allow adequate ponding within the basin to achieve the required WQV.

    EDC Response: A valve has been added to each of the outlet control structures.

    Comment addressed

25. No forebay or forebay berm construction details are provided in the plan set to correspond to the calculations provided in the Stormwater Calculations.

    EDC Response: A detail has been added to the plan set.

CMG Comment #2: Forebay detail provided does not specify rip-rap sizing or berm construction material details.

Stormwater Standard 5: *Land uses with higher potential pollutant loads (LUHPPL), 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.*

26. CMG believes this project is considered a LUHPPL as it appears there are > 1,000 vehicle trips per day proposed and is considered a high intensity parking lot. Therefore, the Stormwater Report must provide supporting information to verify compliance with Standard 5.

    EDC Response: Contech Stormwater Treatment structures have been included in the site design package along with Infiltration Basins for 1-inch of runoff over the impervious areas.

    CMG Comment #2: Calculations in Stormwater Report appear to still be using 0.5" of stormwater runoff for WQV.

27. Stormwater checklist notes the proposed use is covered under the EPA NPDES Multi-sector Industrial Stormwater permit, also identified as a LUHPPL. CMG recommends additional information be provided regarding the type of multi-sector use and any additional BMP requirements for this use.

    EDC Response: CRG has not identified a tenant, however provisions have been made to properly protect and treat storm water from the subject property including providing both proprietary treatment units and conventional sediment traps. EDC is in support of this recommendation and would anticipate that it will be included as a condition of approval of the Site Plan and Special Permit.

    CMG Comment #2: Stormwater Checklist should also check the LUHPPL box. LUHPPL requirements are based on traffic volumes and not necessarily the proposed tenant.

    Planning Board should consider a condition requiring the Applicant provide a copy of each tenant's EPA NPDES Multi-sector Industrial Stormwater General Permit (MSGP) registration prior to occupancy or documentation this additional MSGP is not required.

28. CMG recommends proof of EPA Multi-Sector Permit authorization and a copy of the project's SWPPP be submitted to the Planning Board prior to discharge of the Site's stormwater runoff to the post-construction BMPs.

    EDC Response: Again, CRG has not identified a tenant, however provisions have been made to properly protect and treat stormwater from the subject property including providing both proprietary treatment units and conventional sediment traps. EDC is in support of this recommendation and would anticipate that it will be included as a condition of approval of the Site Plan and Special Permit.

    CMG Comment #2: See Comment #27

29. Water Quality Volume (WQV) = 1.0" rainfall must be utilized for the stormwater design. The current design only provides for a WQV = 0.5".

    EDC Response: Contech stormwater management structures have been included in the site design package and are based on an equivalent 1.0" of runoff, as well as, the 1.0" for basin infiltration that was included in the original submittal package.

    CMG Comment #2: CMG acknowledges the proposed Contech water quality units provide treatment for the 1 in. Water Quality Flow volume based on information provided by EDC. Narrative and /or calculations in Stormwater Report appear to still be using 0.5" of stormwater runoff for WQV and should be revised to clarify.

30. Engineer must document how all of the LUHPPL requirements are being met including but not limited to the addition of oil / grit separators to the BMP treatment train.

    EDC Response: CRG has not identified a tenant, however provisions have been made to properly protect and treat stormwater from the subject property including providing both proprietary treatment units and conventional sediment traps. EDC is in support of this recommendation and would anticipate that it will be included as a condition of approval of the site Plan and Special Permit.

    CMG Comment #2: Oil / Grit separators are not provided as part of the stormwater treatment train. Oil / Grit separators should be provided to contain the largest expected volume of a potential release at the Site (i.e. tractor trailer saddle tanks, portable fuel containers, etc.).

31. TSS summary should be revised to include LUHPPL best management practices and pre-treatment requirements.

    EDC Response: CRG has not identified a tenant, however provisions have been made to properly protect and treat stormwater from the subject property including providing both proprietary treatment units and conventional sediment traps. EDC is in support of this recommendation and would anticipate that it will be included as a condition of approval of the Site Plan and Special Permit.

    CMG Comment #2: Stormwater report does not adequately document how all of the LUHPPL requirements are being met for this Site.

Stormwater Standard 6: *Stormwater discharges within a Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area.*

32. Not applicable – Site does not discharge stormwater to or near a critical area.

    EDC Response: No Comment required.

Stormwater Standard 7: *Redevelopment Projects*

33. Not Applicable – Site is not a redevelopment project.

    EDC Response: No Comment required.

Stormwater Standard 8: *Construction period erosion and sedimentation control*

34. The Site is > 1 Acre therefore an NPDES SWPPP is required to be submitted prior to construction. Applicant's Engineer (EDC) previously submitted a 12/10/20 NPDES SWPPP and supporting materials to the Planning Board for review and comment.

    EDC Response: No Comment required.

35. CMG recommends the Applicant update the 12/10/20 SWPPP to correspond to the current 2021 Definitive Site Plan Modification plan set and address any remaining comments from CMG's January 7, 2021 NPDES CGP SWPPP Peer Review Letter #2.

    EDC Response: EDC is in support of this recommendation and would anticipate that it will be included as a condition of approval of the Site Plan and Special Permit.

    CMG Comment #2: The 12/10/20 SWPPP should be addressed prior to approval of the Site Plan and Special Permit inorder to close out an item brought in front of the Planning Board.

Stormwater Standard 9: *Long term operation and maintenance plan*

36. A long-term operation and maintenance plan is not provided in the 2/5/21 Stormwater Calculations report.

    EDC Response: The Construction Long-Term O & M provision are included on the SWPPP Sheet 33.

    CMG Comment #2: Comment remains. A Long-Term O & M Plan consistent with standard engineering practice and in accordance with the Stormwater Management Standards is not provided in the Stormwater Report. A site specific sample inspection form for both the site's on and off-site Stormwater Management System is not provided.

Stormwater Standard 10: *Illicit discharges*

37. An illicit discharge statement is not provided in the 2/5/21 Stormwater Calculations report.

    EDC Response: The Illicit Discharge Statement is included on the SWPPP sheet 33.

    CMG Comment #2: A signed Illicit Discharge Statement should be included in the Stormwater Report and not in the Plan Set.

CMG is available to meet with the Applicant's Engineer upon request to review the above comments in more detail to insure all items are adequately addressed. If you have any questions or need additional information please contact me at (508) 864-6802.

Sincerely,

CMG ENVIRONMENTAL, INC.

David T. Faist, PE
Principal Engineer – Engineering Services