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Professional Engineering Solutions

November 14, 2022

Mr. Ryan Clapp, Conservation Agent
Holliston Conservation Commission
703 Washington Street
Holliston, MA 01746

RE: Peer Review of Notice of Intent Stormwater Management Design
1485 Washington Street, Holliston, MA

Dear Ryan,

McClure Engineering, Inc. (McClure) performed a review of the plans and supporting stormwater documentation for the Notice of Intent for AnyFence Co. located at 1485 Washington Street, Holliston, MA (Site).

McClure is in receipt of the following documents:

- Plan set entitled "AnyFence Co. 1485 Washington Street, Holliston, MA 01746", date August 9, 2022, revised October 18, 2022 prepared by CDW Consultants, Inc. (CDW)
- Stormwater Management Report prepared for "AnyFence Co. 1485 Washington Street, Holliston, MA 01746", date August 9, 2022, revised October 12, 2022 prepared by CDW Consultants, Inc. (CDW)
- Response to Comments letter dated October 20, 2022 prepared by CDW Consultants, Inc. (CDW)

The Plans and Stormwater Report were reviewed for conformance with the Town of Holliston Regulations for Stormwater Management and Land Disturbance, MassDEP Stormwater Management Standards, and good engineering practice. The project involves reworking of the existing parking areas, restoration of vegetated areas which were disturbed without a permit, an addition to the existing building, and a proposed stormwater management system.

McClure offers the following comments regarding the documents reviewed:

Initial Review Comments

1. In review of the site, it appears there was a gravel expansion in and adjacent to the Washington Street right-of-way on the southern side of the southern driveway entrance within the 100' buffer zone and potentially 50' buffer zone after the existing conditions survey was performed. This should be added to the plans and should likely be restored.

CDW Response: The plans have been revised to show the removal and restoration of the gravel expansion on the southern side of the southern driveway.

McClure Response: Acknowledged. The plans have been revised to indicate the removal of unpermitted gravel surface adjacent to Washington Street, however no longer indicate proposed gravel removal and restoration in the rear of the property. McClure respectfully defers to the Commission.

2. It appears there are no soil testing logs included with the plans or stormwater report. Soil testing should be conducted to ensure proper design of infiltration systems.

CDW Response: A soil test pit was conducted on 10/12/2022. The test pit was excavated approximately 8.7 feet, to elevation 253.8, with no sign of groundwater or mottling. The bottom of the stone for the infiltration system is at

257.29, approximately 3.4 feet above the bottom of the test pit. A soil log is now included with the Stormwater Narrative. The soil type has been confirmed as a type A loamy sand soil.

McClure Response: Addressed. No further comment.

3. A single catch basin and subsurface infiltration system is proposed for the site redevelopment which will capture a portion of the parking area. Although not required under the MA Stormwater Standards or Holliston Stormwater Management and Land Disturbance Regulations, it appears there may be opportunity for improvement of stormwater quality and possibly groundwater recharge for the rest of the site as well. See additional comments. McClure respectfully defers to the Commission.

CDW Response: Comment noted.

McClure Response: No further comment. McClure respectfully defers to the Commission.

MA Stormwater Standards Comments

1. Standard 1 - Computations to Show That Discharge Does Not Cause Scour or Erosion. No new untreated discharges are proposed therefore Standard 1 appears to be met.

CDW Response: Comment noted.

McClure Response: Acknowledged. Where the overflow structure is proposed within an area to be loamed and seeded adjacent to a steep embankment, McClure recommends additional stabilization measures adjacent to the outlet be provided to ensure there is no erosion or scour to downstream wetland (eg. erosion control blankets/matting, crushed stone, etc). The owner/applicant will need to monitor this outlet closely to ensure proper function and no erosion of the embankment and impact to the wetland as even a 2-year storm event is expected to overtop the system. McClure respectfully defers to the Commission.

2. Standard 2 - Peak Rate Attenuation. As a redevelopment project this standard needs to be met to the maximum extent practicable. Through review of the stormwater report and HydroCAD calculations, Standard 2 appears to be met.

CDW Response: Comment noted.

McClure Response: No further comment.

3. Standard 3 - Ground Water Recharge Volume. As a redevelopment project this standard needs to be met to the maximum extent practicable. No soil testing was conducted to determine estimated seasonal high groundwater, soil classification, or hydraulic conductivity. Soil mapping indicates "Udorthents" soil types, which are typically associated with fill. If fill is found to be present, the system shall be designed per the MA Stormwater Standards Manual Volume 3: "When fill materials are present or are added prior to construction of the system, a soil textural analysis must be conducted in both the fill material and the underlying parent materials, and the Hydrologic Soil Group of the more restrictive layer shall be used to size the infiltration BMP. If fill is present that is composed of asphalt, brick, concrete, construction debris, or if materials classified as solid or hazardous waste are identified at the specific location where recharge is proposed, recharge elsewhere on site must be considered. Alternatively, the debris or waste may be removed in accordance with all applicable Solid and Hazardous Waste Regulations (see 310 CMR 19.000 and 40.0000) and replaced with clean material suitable for infiltration. Any solid or hazardous wastes present on the site must be managed in strict accordance with MassDEP Solid Waste Regulations, 310 CMR 19.000, Hazardous Waste Regulations, 310 CMR 30.00, and the Massachusetts Contingency Plan Regulations, 310 CMR 40.000." Soil testing should be performed to ensure proper design of the infiltration system including depth to groundwater, infiltration rate, and drawdown. The proposed system is sized for the required recharge volume for only the impervious

area directed to the system and not for the site. Although the proposal meets the standard for redevelopment and it is not required under the MA Stormwater Standards or Holliston Regulations, there is opportunity to bring the site into further compliance for required recharge of all impervious areas. The Holliston Land Disturbance regulations emphasize maximizing infiltration and groundwater recharge. A second story is proposed on a portion of the building and it is assumed a new roof drainage system will be constructed as part of this addition. This "clean" roof runoff could potentially be used to provide additional groundwater recharge without requiring pretreatment. McClure respectfully defers to the Commission.

CDW Response: A soil test was conducted on October 12, 2022 and a soil log is now included in the Stormwater Narrative. The test pit was excavated to a depth of 8.7 feet below ground surface. There was no presence of fill materials, and the soil type has been confirmed as a loamy sand. No groundwater or mottling was observed. Additionally, as an additional check of the underground system, the exfiltration rate for the chambers was modeled as 0.17 in/hr, equivalent to a Hydrological Group C, Sandy Clay Loam. Using the significantly lower infiltration rate, while there is a slight increase in the post development flow, it is still below the pre-existing runoff rates. The calculation using the lower infiltration rate for a 100-yr storm is included at the end of this letter, shows that the functioning of system is largely unaffected by the infiltration rate.

McClure Response: Addressed. No further comment, Standard 3 appears to now be met.

4. Standard 4 - Water Quality Volume. As a redevelopment project this standard needs to be met to the maximum extent practicable. The proposed treatment system involved a deep sump and hooded catch basin, along with the subsurface infiltration system with an "isolator" row which will treat the water quality volume. The report indicates the system will discharge (infiltrate) within soils with a rapid infiltration rate and therefore requires a 1" water quality volume depth as well as 44% TSS removal prior to infiltration. Once again soil testing should be conducted to ensure proper design of the infiltration system. Per the report, the required water quality volume for the impervious area which is directed to the infiltration system is 774 cubic feet (629 cubic feet per the Holliston regulations for redevelopment). The entire system as modeled provides for 776 cubic feet of volume, which is greater than the required water quality volume, however as the system is required to have 44% TSS removal pretreatment, the isolator row itself should be sized to handle the water quality volume of 774 cubic feet before bypass to the rest of the system, and therefore it does not appear that Standard 4 is met. McClure recommends separating the catch basin, manhole, and piping from the infiltration system in the HydroCAD model, as well as modeling the isolator row separately from the remainder of the infiltration system to ensure proper water quality volume treatment within the isolator row. Alternatively the model could be modified to separate the isolator row to show that the water quality volume is directed to and passed through the isolator row (infiltrated) during the water quality storm event (24-hr rainfall which produces 1" of runoff over the impervious area directed to the system). Separately a water quality unit could be proposed prior to the system which is sized for the water quality volume or equivalent water quality flow rate. As with Standard 3, as the site is a redevelopment, providing water quality treatment for the site as a whole is not required under the MA Stormwater Standards. In review of the Holliston Stormwater Regulations, it is not clear if the calculations must take into account the entire impervious area on site, and if so, the system would need to revised and expanded, and additional impervious area would likely need to be directed to water quality treatment device to ensure adequate treatment volume is directed to it. There is also likely additional opportunity to provide improvement of water quality to the maximum extent practicable from other impervious areas on site (gravel and pavement) which are currently directed to wetland resources without treatment by utilizing BMPs such as a pea stone diaphragm or filter berm at the edge of impervious areas, or other LID measures, especially in areas which are proposed to be repaved within the Town's 50' No Disturbance Buffer Zone. McClure respectfully defers to the Commission.

CDW Response: To simplify the water quality design, the isolator row has been removed from the underground infiltration system and a water quality structure (Stormceptor STC 450i) with a grate has been provided, replacing the deep sump catch basin. The 450i will capture and treat the surface runoff prior to entering the infiltration system. The water quality structure was sized based on an equivalent water quality flow rate (calculations are shown on Stormwater Management Report; Management Standards; Standard #4: Required Water Quality Volume). A Cape

Cod Berm has also been added to the plans along the left side of the proposed pavement in the front. The surface runoff of the proposed repaved area will then flow to the Stormceptor STC 450i, decreasing the amount of impervious area flowing directly to the wetlands.

McClure Response: Addressed. No further comment, Standard 4 appears to now be met.

5. Standard 5 - Land Uses with Higher Potential Pollutant Loads. As a redevelopment project this standard needs to be met to the maximum extent practicable. Site is not a LUHPPL and Standard 5 appears to be met.

CDW Response: Comment noted.

McClure Response: No further comment.

6. Standard 6 - Critical Areas. As a redevelopment project this standard needs to be met to the maximum extent practicable. The stormwater report indicates that the site is no within a Zone II wellhead protection area which is correct. The wetland system to the west is identified as a potential vernal pool by the NHESP. Although only certified vernal pools at this time are considered critical areas, this area should be identified in the report as being a potential critical area. As a redevelopment project, and a project with a water quality volume depth of 1" and 44% required pretreatment prior to infiltration due to soils with a rapid infiltration rate, Standard 6 will be met. See Standard 4.

CDW Response: Standard 6 on the Stormwater Management Report has been revised to identify the area as a potential critical area. The water quality structure has been sized based on an equivalent water quality flow and offers a pretreatment of at least 44% prior to infiltrating to soils with rapid infiltration rate.

McClure Response: Addressed. No further comment, Standard 6 appears to now be met.

7. Standard 7 – Redevelopment. As a redevelopment project certain standard only need to be met to the maximum extent practicable other than Standards 1, 8, 9, 10 which are required to be and appear to be fully met.

CDW Response: Comment noted.

McClure Response: No further comment.

8. Standard 8 - Construction Period Controls. The stormwater report includes a Long Term Pollution Prevention Plan. Site plans include construction period erosion controls, notes, and details. Standard 8 appears to be met.

CDW Response: Comment noted.

McClure Response: No further comment.

9. Standard 9 - Operation and Maintenance Plan. The stormwater report includes an Operation and Maintenance Plan. Standard 9 appears to be met. Some changes to the O&M are required per the Holliston stormwater regulations.

CDW Response: Comment noted. See comments under Holliston regulations for the changes to the O&M Plan.

McClure Response: Acknowledged. No further comment.

10. Standard 10 – Illicit Discharges to Drainage System. The stormwater report includes a signed illicit discharge compliance statement. Standard 10 appears to be met.

CDW Response: Comment noted.

McClure Response: No further comment.

Holliston Regulations for Stormwater Management and Land Disturbance Comments

1. The plans should be revised per the following section of the Holliston Regulations for Stormwater Management and Land Disturbance:

    a. §11.4.3.a – Addition of a locus map.

CDW Response: A locus map is present on the existing conditions plan by Alpha Survey Group, LLC entitled Existing Conditions & Boundary Survey 1485 Washington Street, Holliston, MA 01746. We have also added a locus map to sheets C-1.0 (Demolition and Erosion Control Plan), C-2.0 (Layout and Materials Plan), and C-3.0 (Grading and Drainage Plan).

McClure Response: Addressed. No further comment.

    b. §11.4.3.h – Identification of who delineated on-site wetlands.

CDW Response: Identification of who delineated on-site wetlands is shown on Note # 4 of the Existing Conditions & Boundary Survey Plan. Note #3 was added under Existing Conditions/Survey Notes to sheets C-1.0 (Demolition and Erosion Control Plan), C-2.0 (Layout and Materials Plan), and C-3.0 (Grading and Drainage Plan) to identify that the wetland delineation was performed by Applied Ecological Sciences on April 26, 2022.

McClure Response: Addressed. No further comment.

    c. §11.4.3.j – Estimated seasonal high groundwater in area of proposed infiltration which should be determined by on-site soil testing.

CDW Response: On-site soil testing was performed on 10/12/2022. The pit was excavated to a depth of 8.7 feet and no groundwater or mottling was observed. Soils logs are now included in the Stormwater Report.

McClure Response: Addressed. No further comment.

    d. §11.4.4.3.p – Description on fueling of vehicles.

CDW Response: Vehicles will not be fueled on site.

McClure Response: Addressed. No further comment.

    e. §11.10.1.7 – Indicate minimum 6" loam depth on areas to be seeded.

CDW Response: A 6" min. depth has been specified on all callouts for loam in sheet C-2.0 Layout and Materials Plan.

McClure Response: Addressed. No further comment.

    f. §11.10.2.2.f. – Note 5 under Stabilization Practices on sheet C-4.0 should be revised or removed.

CDW Response: Note 5 under Stabilization Practices has been removed.

McClure Response: Addressed. No further comment.

    g. §11.10.2.3. – The plan should be revised to indicate re-vegetation is to take place no more than 7 days after final grading.

CDW Response: Indication that re-vegetation is to take place no more than 7 days after final grading has been added as Note #18 to C-2.0 Layout and Materials plan.

McClure Response: Partially addressed. Stabilization Practices notes on sheet C-4.0 should be revised as well.

2. The O&M should be revised to include the following:

    a. §11.5.2.2.e – The signature of the owner.

CDW Response: The Appendix B - O&M have been revised to include the owners' signature.

McClure Response: Partially addressed. A signature line has been added to the first page of the O&M however an actual signature is not present (at least on the electronic copy provided to McClure). McClure recommends the Commission ensure the O&M is signed by the owner prior to construction activities.

    b. §11.5.2.2.f – The estimated operation and maintenance budget.

CDW Response: An estimated operation and maintenance budget has been included on the Appendix B - O&M Plan.

McClure Response: Addressed. No further comment.

    c. §11.5.2.2.g.1 – Indicate logs must be kept for 3 years

CDW Response: A statement indicating that logs must be kept for 3 years has been added under section Documentation on the Appendix B - O&M Plan.

McClure Response: Addressed. No further comment.

    d. §11.5.2.2.g.2 – Indicate the logs are to be made available to the town.

CDW Response: A statement indicating that logs are to be made available to the Town of Holliston upon request had been added under section Documentation on the Appendix B - O&M Plan.

McClure Response: Addressed. No further comment.

    e. §11.5.2.2.g.3 – Indicate the town is allowed to inspect BMPs.

CDW Response: A statement indicating that the Town of Holliston is allowed to inspect the BMPs has been added to the section Documentation on the Appendix B - O&M Plan.

McClure Response: Addressed. No further comment.

    f. §11.5.3 – Future changes to the O&M.

CDW Response: A section called Changes to O&M has been added to Appendix B – O&M Plan with instructions on how the owner will proceed in case of changes to the ownership or assignment of financial responsibility, as well as amendments to the O&M.

McClure Response: Addressed. No further comment.

    g. §11.5.4 – Annual certification to the Conservation Commission and Planning Board.

CDW Response: A section called Annual Certification has been added to Appendix B – O&M Plan, showing that the owner will submit a signed annual certification to both the Conservation Commission and Planning Board documenting the work that has been done over the past 12 months.

McClure Response: Addressed. No further comment.

3. The applicant should comment on whether LID site planning and design was considered per §11.10.1 and 2. McClure respectfully defers to the Commission.

CDW Response: As an existing developed site, along with its configuration, there is little to no room to provide a low-impact- design, at least not without encroaching even closer to the wetlands than the existing site is already. Portions of the existing pavement at the front of the site are roughly 20-ft off the wetland edge. An underground infiltration system beneath the paved areas, will reduce the impacts to the adjacent wetland and buffer zone.

McClure Response: Acknowledged. No further comment. McClure respectfully defers to the Commission.

Plan Review and General Engineering Comments

1. Information on who conducted the wetland delineation and when the wetland delineation was performed should be added to the existing conditions plan.

CDW Response: Note # 4 of the Existing Conditions & Boundary Survey Plan identifies that the wetlands were delineated by Applied Ecological Sciences on April 26, 2022, and field located by Alpha Survey Group on April 28, 2022. Note #3 was added under Existing Conditions/Survey Notes to sheets C-1.0 (Demolition and Erosion Control Plan), C-2.0 (Layout and Materials Plan), and C-3.0 (Grading and Drainage Plan).

McClure Response: Addressed. No further comment.

2. Existing and proposed clearing limits should be added to the plans.

CDW Response: There is no tree clearing being proposed, all work will be within the existing limits of clearing. If the new outlet structure by the left driveway appears as if it might impact an existing tree, the outlet can be moved towards the existing pavement a necessary.

McClure Response: Acknowledged. No further comment. McClure respectfully defers to the Commission.

3. The pipes in the HydroCAD model do not match those on the plan set. McClure recommends separating the catch basin, manhole, and pipes from the infiltration basin storage in the model. The exfiltration discharge is applied to the wetted area so these items are technically being modeled as providing infiltration as well as the chambers.

CDW Response: HydroCAD model has been revised to match the pipes on the plan set. HydroCAD offers an option, via a check box, to allow exfiltration for each volume modeled as storage. The exfiltration box is unchecked for the catch basin, manhole, and pipes modeled as storage. Exfiltration only occurs through the underground infiltration chambers.

McClure Response: Addressed. No further comment.

4. The model indicates that even during a 2-year storm event, the system will overtop the proposed catch basin inlet grate. This would allow for trapped oil/grease/hydrocarbons which are afloat and trapped within the catch basin to leave the catch basin and be directed into the wetlands. McClure recommends either an overflow discharge be proposed from the infiltration system to prevent overtopping of the catch basin grate, or resizing of the system so as to eliminate overtopping of the catch basin grate.

CDW Response: The proposed stormwater system has been revised to include a separate outlet structure within the grassed area next to CB-1 (STC-450i), avoiding overtopping of CB-1 itself.

McClure Response: Acknowledged. Where the overflow structure is proposed within an area to be loamed and seeded adjacent to a steep embankment, McClure recommends additional stabilization measures adjacent to the outlet be provided to ensure there is no erosion or scour to downstream wetland (eg. erosion control blankets/matting, crushed stone, etc). The owner/applicant will need to monitor this outlet closely to ensure proper function and no erosion of the embankment and impact to the wetland as even a 2-year storm event is expected to overtop the system. McClure respectfully defers to the Commission.

5. The infiltration system should include a monitoring well per the MassDEP Stormwater Handbook.

CDW Response: A monitoring well has been added within the footprint of the underground infiltration system, shown on Grading and Drainage Plan sheet C-3.0, and Construction Details C-4.2

McClure Response: Addressed. No further comment.

6. CULTEC recommends a 24" minimum sump within the manhole directly upstream of the system for maintenance purposes (sediment accumulation during jetting of isolator row). No sump is currently proposed.

CDW Response: A 24" minimum sump has been added to the manhole detail, as well as a note to the manhole itself on the Grading and Drainage Plan sheet C-3.0.

McClure Response: Addressed. No further comment.

7. CULTEC recommends the maximum diameter inlet pipe to the isolator row possible or the unit type. R-280HD chambers can accept an 18" pipe. A 12" is proposed.

CDW Response: The isolator row has been removed, therefore the 12" diameter pipe will remain.

McClure Response: Acknowledged. No further comment.

8. CULTEC recommends at least (1) inspection port in the separator row and (1) inspection port in overflow chamber section for inspection and maintenance. A detail should be provided.

CDW Response: Detail #8 Cultec R- 280HD Inspection Port has been added to sheet C-4.1 at the center of the system. Only one inspection port has been provided as there is no longer an isolator row.

McClure Response: Addressed. No further comment.

9. The CULTEC cross-section detail on sheet C-4.1 should be revised to eliminate the feed connector from the isolator row to the overflow chambers. The isolator row should be identified as well.

CDW Response: The isolator row has been removed from the system. The detail containing the isolator row has been removed from the details sheet C-4.1.

McClure Response: Acknowledged. No further comment.

10. The O&M Plan should be revised to include CULTEC specific inspection and maintenance recommendations for the subsurface infiltration system.

CDW Response: The Operation and Maintenance Guidelines for CULTEC Stormwater Systems has been included at the end of the O&M Plan.

McClure Response: Addressed. No further comment.

11. Areas in which unpermitted gravel expansion has taken place and where such gravel will be removed and restored to vegetated areas should be tilled and the soil should be amended as necessary as to restore the infiltrative capacity of the area which has likely been reduced or eliminated through compaction.

CDW Response: Note #19 under Layout and Materials Notes has been added to C-2.0 Layout and Materials Plan. The callouts of the two areas of gravel expansion also have been modified to show that the area should be tilled to restore infiltrative capacity.

McClure Response: Acknowledged, however the revised plans only indicate gravel removal and restoration along Washington Street and no longer indicates gravel removal and restoration in the rear of the property. McClure respectfully defers to the Commission.

Upon review, please feel free to contact the undersigned with any questions or comments at 508.248.2005.

Sincerely,

Peter C. Engle, P.E.
Senior Engineer