# Town of East Granby
# Proposed Recreational Courts

## North Main Street
## Site Description & Storm Water Narrative
(June 1, 2024)

The applicant, Town of East Granby, is proposing to construct new basketball courts, pickleball courts with a gravel parking area at East Granby Farms located at 79-85 North Main Street in East Granby Connecticut.

The parcel is located in the PRD Zone along the westerly side of North Main Street, and contains a total of 72.8 acres.

The proposed recreational courts are located in the northeast corner of the parcel. The area of the proposed development is an open field currently utilized for agricultural purposes.

The balance of the parcel is developed with various recreational uses and recreational buildings.

There are Inland wetlands soils on the property. A portion exists westerly and southerly of the proposed development. There is a total of 21.9 acres of inland wetlands soil on the property.

The parcel area has four natural watershed regions, which were considered in the design. The four regions are as follows:

Westerly: Flow in a westerly direction to inland wetlands.
Northeasterly: Flow northeasterly to a cross-culvert pipe across North main Street.
Southeasterly: Flow southeasterly to an existing cross-culvert crossing the existing access drive to East Granby Farms.
Southerly: Natural flow in a southerly direction over and across the existing gravel/RAP access drive to East Granby Farms.

The applicant is proposing one basketball court and four pickle ball courts. A new D.O.T. Milling parking area is proposed with direct access off the existing East Granby Farms access drive. A maintenance shed and bituminous walks are proposed for pedestrian and handicap accessibility. Future courts are considered within the stormwater management study.

The proposed courts, walkways and parking areas result in an increase of impervious coverage:

New roof = 640 sf;
Bituminous Concrete = 4,384 sf;
Recreational Courts = 17,850 sf;
D.O.T. Millings = 13,830 sf;

To manage the increase in storm-water run-off created by the proposed improvements, two formal storm water management detention ponds are proposed with a forebay for pre-treatment; a southerly pond and northerly pond.

The southerly detention pond will have a capped 15" HDPE outlet pipe with an orifice to control the rate of flow trough the pipe. Stormwater shall be retained in the forebay for initial sediment collection, and infiltration. The detention

basin will have an emergency overflow type CL catch basin to protect against the possibility of stormwater backing up into the proposed parking area.

The northerly detention pond will have a capped 12" HDPE outlet pipe with an orifice to control the rate of flow trough the pipe. Stormwater shall be retained in the forebay for initial sediment collection, and infiltration. The detention basin will have an emergency overflow spillway to protect against the possibility of stormwater backing up into the proposed recreational courts.

A forebay system is proposed for initial sediment collection, and infiltration. The forebay is created by means of a rip-rap berm across the detention basin. The forebay is sized to treat 90% of the first 1.3" of rainfall of the increased Water Quality Volume (WQV).

**Water Quality Volume (WQV) Calculation**

PROJECT **East Granby Rec, North Main Street, East Granby**
DATE 6/1/2024

NOTES: **Southerly Trench - Forebay**

TREATMENT AREA (A)

| | | | |
|---|---|---|---|
| = | 25,520 | **0.59** | acres |

DRAINAGE AREAS

| Drainage Area | Impervious Area | sf |
|---|---|---|
| Incr. Roof | **0.00** | - |
| Incr. Pavement | **0.05** | 2,340 |
| Incr. Millings | **0.21** | 9,296 |
| Incr. Courts | **0.02** | 756 |
| Total Impervious | **0.28** | |

**WATER QUALITY VOLUME (WQV) CALCULATION**

| | | |
|---|---|---|
| Design Precipitation (P) = | 1.3 | inch |
| % Impervious Cover (I) = | 49 | |
| Volumetric Runoff Coefficient (R) = | 0.487 | |
| **WQV =** | **0.031** | **ac-ft** |
| | **1346** | **cu-ft** |
| **90 % WQV=** | **0.028** | **ac-ft** |
| **=** | **1212** | **cu-ft** |
| **1/2 WQV=** | **0.015** | **ac-ft** |
| **=** | **673** | **cu-ft** |
| ***REQUIRED WQV:*** | ***1346*** | ***cu-ft*** |
| ***PROVIDED WQV:*** | ***2510*** | ***cu-ft*** |

**Water Quality Volume (WQV) Calculation**

| | |
|---|---|
| PROJECT | **East Granby Rec, North Main Street, East Granby** |
| DATE | 6/1/2024 |

NOTES: **Northerly Trench - Forebay**

| TREATMENT AREA (A) = | | | |
|---|---|---|---|
| | 28,993 | **0.67** | acres |

DRAINAGE AREAS

| Drainage Area | Impervious Area | sf |
|---|---|---|
| Incr. Roof | **0.00** | - |
| Incr. Pavement | **0.05** | 2,044 |
| Incr. Millings | **0.00** | - |
| Incr. Courts | **0.21** | 9,345 |
| Total Impervious | **0.26** | |

**WATER QUALITY VOLUME (WQV) CALCULATION**

| | | |
|---|---|---|
| Design Precipitation (P) = | 1.3 | inch |
| % Impervious Cover (I) = | 39 | |
| Volumetric Runoff Coefficient (R) = | 0.404 | |
| **WQV =** | **0.029** | **ac-ft** |
| | **1267** | **cu-ft** |
| **90 % WQV=** | **0.026** | **ac-ft** |
| **=** | **1141** | **cu-ft** |
| **1/2 WQV=** | **0.015** | **ac-ft** |
| **=** | **634** | **cu-ft** |
| ***REQUIRED WQV:*** | ***1267*** | ***cu-ft*** |
| ***PROVIDED WQV:*** | ***3230*** | ***cu-ft*** |

The attached study utilizes SCS TR20 methodology and HYDROCADD software to determine the rates of storm water flow pre-development and post-development conditions. The drainage areas considered in this study include the areas draining to the existing catch basin in Russell Road, Russell Road and the existing inland wetlands. A computer model of existing and proposed conditions was created and the 25 year design storm event was routed through the model to determine the pre-development and post-development rates of storm water flows to the existing catch basin, Russell Road and the inland wetlands. The results are as follows:

**25-Year Storm Event**

| Watershed | Existing Flow (cfs) | Proposed Flow (cfs) | Difference Flow (cfs) |
|---|---|---|---|
| West: Wetlands | 4.48 | 0.84 | -3.64 |
| Northeast: Route 187 Cross-Culvert | 3.04 | 1.54 | -1.50 |
| Southeast: Cross-Culvert Access Drive | 2.36 | 0.88 | -1.48 |
| South: Access Drive | 1.57 | 0.61 | -0.96 |

**CONCLUSIONS:**

The Forebay's are adequately sized to satisfy the requirements of the March 26, 2024 Connecticut Stormwater Quality Manual which references the 2004 Connecticut Stormwater Quality Manual for WQV.

The post development flow to the four natural watershed regions shows no increase in the flow rates compared to what exists. The proposed detention basins and controlled outlets are adequately sized to manage the run-off from the proposed development.

Sincerely,

Barresi Associates LLC

T. J. Barresi, P.E., L.S.