

STORM WATER DRAINAGE INFORMATION & SUMMARY
 The majority of proposed roof and parking lot storm runoff will be directed south to roof leader pipes, storm sewer piping and a grass detention basin that ultimately discharges via a control outflow pipe to storm structure to an existing road side ditch. The north portion catchment area will convey water to the existing drainage pattern to the north. Both south and north drainage catchment areas will limit discharge flow rates and to detain water volumes that are the difference between the twenty-five-year (25 yr.) post-developed runoff and the ten-year (10 yr.) pre-developed runoff.

Refer to drawing C-102 for detailed Drainage & Grading Plan and the 'Site Engineering Design and Storm Water Drainage Design Report'. This report includes the hydrographs & tables based on HydroCAD software computer modeling for the detention facilities.

PROPOSED STORM WATER MANAGEMENT DRAINAGE SYSTEM
 Based on Town Engineering and Planning Department requirements, storm water detention is necessary to limit additional flows from the proposed redevelopment where applicable due to an increase impervious surfaces. Existing wooded and brush areas will be preserved and natural grades / drainage patterns along the property lines shall be remain undisturbed beyond the project limit lines. Existing pavement and stone base areas will remain and be re-compact to accept additional stone fill in pavement and floor slab grades to new design elevations. The total site work of new disturbance area will be designed to 0.97 acres limit.

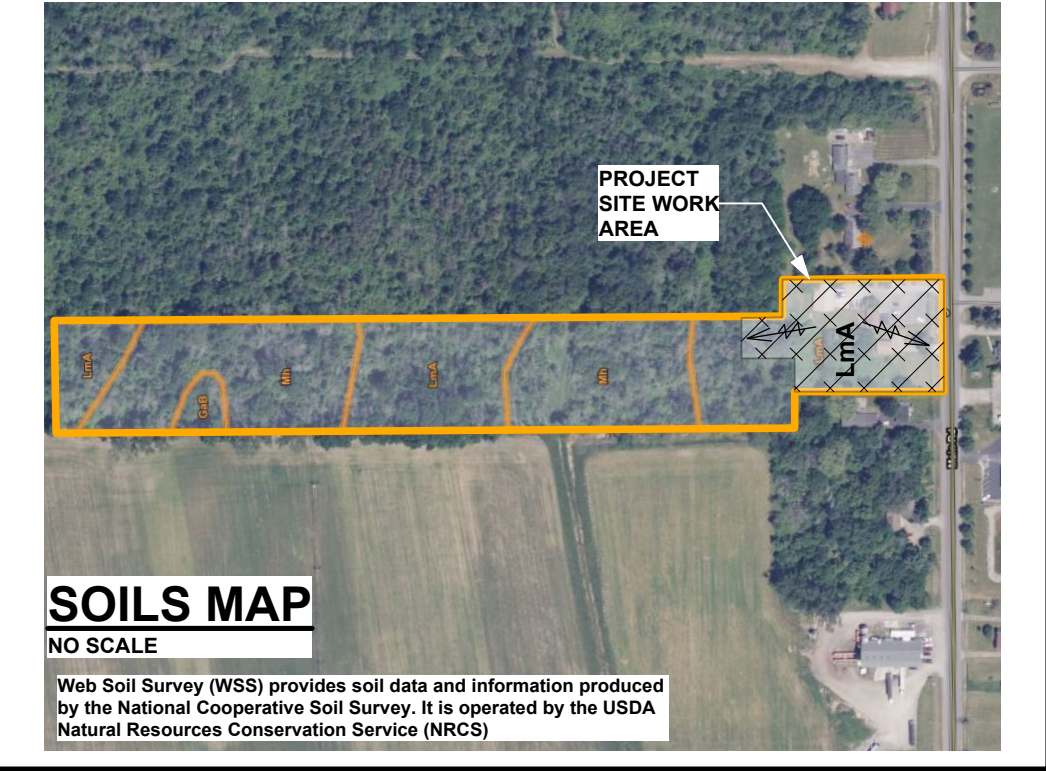
As is the case with many sites, natural lower grades along the perimeter lines may not allow positive drainage / gravity flow from every sub catchment area to be collected via swales, yard drains and storm pipes in the proposed new storm water management system. The undeveloped preserved land areas of very flat topography (0%-1.5% slope) rely on a combination of very slow overland flow, evaporation and soil percolation to serve as a natural recharge to the atmosphere and subsurface water table.

The basic premise is to design and construct on-site storm water detention that sufficiently accounts for the addition development impact on the existing private storm system and municipal highway storm water facilities. The primary purpose of on-site detention is to detain a portion of the runoff so that the peak rate of runoff (25 year rainfall event) is achieved thereby reducing the effects on the downstream conveyance system for the designated storm events.

HydroCAD 10.18 (HydroCAD Software Solutions) Computer Aided Design software program was used for modeling the hydrology and hydraulics of project storm water runoff. The program uses techniques to generate hydrographs throughout the project watershed sub-catchment areas for a given rainfall event. It is based largely on the hydrology techniques developed by the Soil Conservation Service (SCS/NRCS), combined with other hydrology and hydraulics calculations.

The detention basin contains a control orifice culvert pipe to limit the outflow from a 25 year rainfall event (post developed site) to the same pre-developed conditions of a 10 year 24 hr. storm rainfall event. The redevelopment activities of this small scale project along with existing soil conditions allow for the drainage design to demonstrate a decrease in the discharge rate from the existing developed site. The proposed grass detention basin selected for this project connects to the existing ditch along Main Road.

Report - Map Unit Description
 Erie County, New York
 LMA - Lima loam, 0 to 3 percent slopes
 Map Unit Setting
 National map unit symbol: 2w3jv
 Elevation: 470 to 1,190 feet
 Mean annual precipitation: 31 to 57 inches
 Mean annual air temperature: 41 to 50 degrees F
 Frost-free period: 100 to 190 days
 Farmland classification: All areas are prime farmland
 Map Unit Composition
 Lima and similar soils: 85 percent
 Minor components: 15 percent
 Estimates are based on observations, descriptions, and transects of the mapunit.
 Description of Lima
 Setting
 Landform: Till plains, ridges, drumlins
 Landform position (two-dimensional): Summit
 Landform position (three-dimensional): Crest
 Down-slope shape: Linear
 Across-slope shape: Convex
 Parent material: Calcareous loamy lodgment till derived from limestone, sandstone, and shale
 Typical profile
 Ap - 0 to 9 inches: loam
 B0/E - 9 to 12 inches: loam
 B2 - 12 to 16 inches: loam
 B2 - 16 to 25 inches: gravelly loam
 C - 25 to 79 inches: gravelly loam
 Properties and qualities
 Slope: 0 to 3 percent
 Depth to restrictive feature: More than 80 inches
 Drainage class: Moderately well drained
 Runoff class: Low
 Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
 Depth to water table: About 18 to 24 inches
 Frequency of flooding: None
 Frequency of ponding: None
 Calcium carbonate, maximum content: 40 percent
 Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)
 Interpretive groups
 Land capability classification (irrigated): None specified
 Land capability classification (nonirrigated): 2w
 Hydrologic Soil Group: B/D
 Ecological site: F11XV0131NY - Moist Till
 Hydric soil rating: No



NOTE:
 Storm water detention basin site location, design and configuration shall comply with storm water quality and detention volume requirements, building roof, parking area and developed greenspace areas shall be collected via downslopes, yard drains, catch basins, grass swales and ditches that will be conveyed to the stormwater swales & detention basin along the south at Main Road.
 It is assumed that existing green areas along the building's north side will be conveyed to the owner's grass field and wooded area to maintain natural flow characteristics at flow rates equal to pre-development flow rates.
 Detention requirements: Detention of stormwater will be provided so the detention will result in a decrease increase of the peak flow downstream. Detention facilities must be designed to meet the New York State stormwater management design standards, and also must be designed to detain the difference between the twenty-five-year (25 yr.) post-developed runoff and the ten-year (10 yr.) pre-developed runoff.

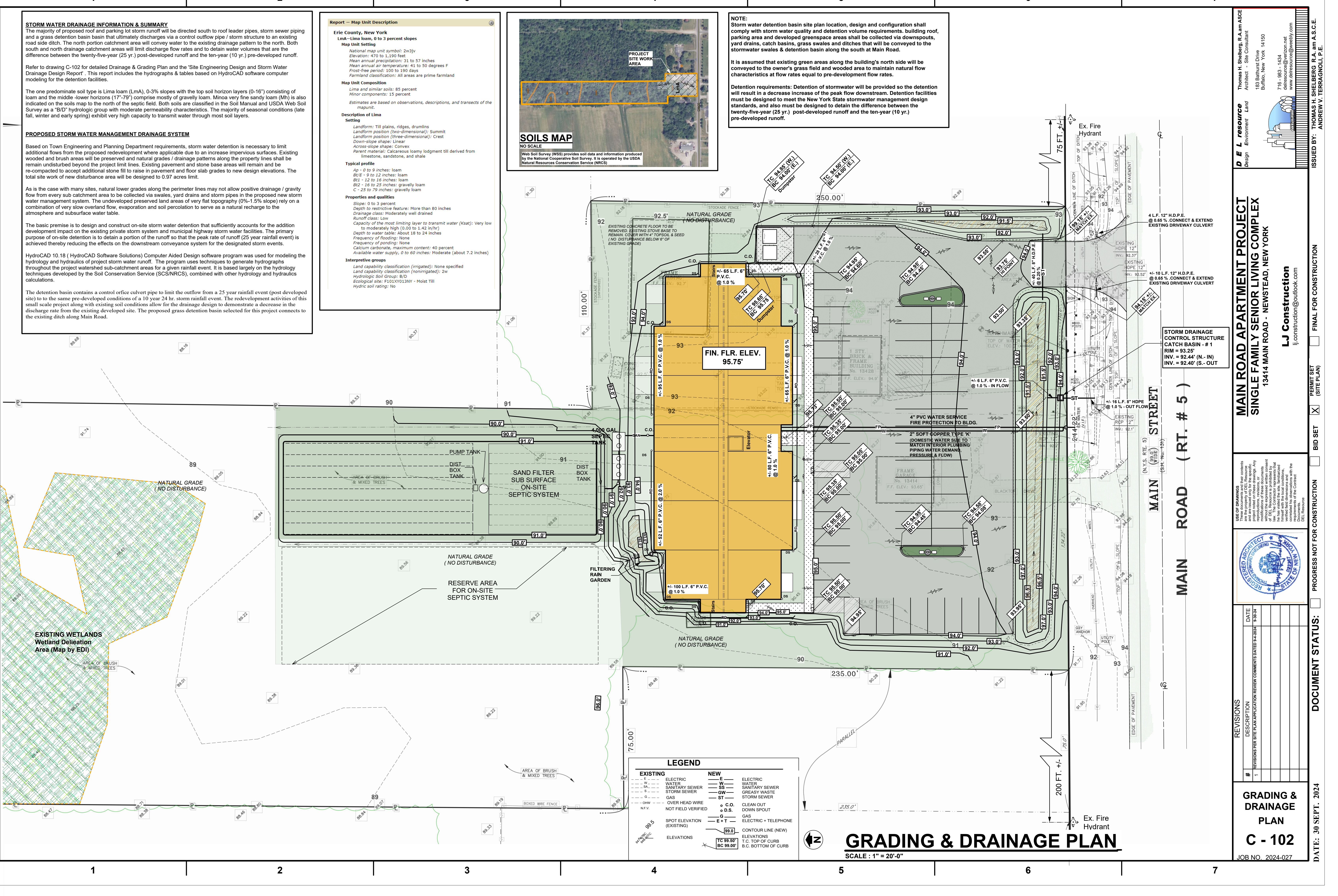
A

B

C

D

E



LEGEND

EXISTING	NEW	EXISTING
W - WATER	E - ELECTRIC	W - WATER
SS - SANITARY SEWER	SS - SANITARY SEWER	SS - SANITARY SEWER
S - STORM SEWER	GW - GREASY WASTE	S - STORM SEWER
G - GAS	ST - STORM SEWER	G - GAS
OHW - OVER HEAD WIRE	C.O. - CLEAN OUT	OHW - OVER HEAD WIRE
N.F.V. - NOT FIELD VERIFIED	D.S. - DOWN SPOUT	N.F.V. - NOT FIELD VERIFIED
	G - GAS	
	E + T - ELECTRIC + TELEPHONE	
	99.0 - CONTOUR LINE (NEW)	
	99.0 - ELEVATIONS	
	TC 99.50 - T.C. TOP OF CURB	
	BC 99.00 - B.C. BOTTOM OF CURB	

GRADING & DRAINAGE PLAN
 SCALE: 1" = 20'-0"

DEL resource
 Thomas H. Shelberg, R.A. am ASCE
 Architect - Site Consultant
 183 Bathurst Drive
 Buffalo, New York 14203
 716.883.4484
 delresource@verizon.net
 www.delresource.com

MAIN ROAD APARTMENT PROJECT
SINGLE FAMILY SENIOR LIVING COMPLEX
 13414 MAIN ROAD - NEWSTEAD, NEW YORK
LJ Construction
 lj.construction@outlook.com

REVISIONS

#	DESCRIPTION	DATE
1	REVISIONS PER SITE PLAN APPLICATION REVIEW COMMENTS DATED 9-20-24	9-30-24

DOCUMENT STATUS:
 PROGRESS NOT FOR CONSTRUCTION
 BID SET
 PERMIT SET (SITE PLAN)
 FINAL FOR CONSTRUCTION

DATE: 30 SEPT. 2024
JOB NO.: 2024-027

ISSUED BY: THOMAS H. SHELBURG, R.A. am ASCE, ANDREW V. TERRANOLI, P.E.