MANSFIELD
CONNECTICUT

PZC Design Review Panel
January 8, 2020, 4:00 PM

Conference Room B | Audrey P. Beck Municipal Building
4 So. Eagleville Road, Mansfield, CT

Page

SPECIAL MEETING AGENDA

1. CALL TO ORDER AND ROLL CALL

2. APPROVAL OF MINUTES

a. October 2, 2018 Special Meeting Minutes 2 - 3

10-02-2018 Minutes

3. NEW BUSINESS

a. Site plan application of the Mansfield Nonprofit Housing Development Corporation (owner/applicant) for a 42 unit multi-family residential development at 113-121 So. Eagleville Road (Parcel ID 16.57.5) pursuant to Sec. 8-30g, C.G.S. (PZC File 1364-2) 4 - 284

P1364-2 Transmittal Letter
P1364-2 Site Plan Checklist
P1364-2 Site Plan Application
P1364-2 2019-11-25 Eagleville Green Plans
P1364-2 2019-11-25 Stormwater Management Report_Eagleville Green
P1364-2 Geotechnical Report
P1364-2 2019-11-25 Traffic Summary Report
P1364-2 Affordability Plan
P1364-2 CT Water Letter
P1364-2 Drainage Easement
P1364-2 Notification to Windham Water Works for Mansfield Projects
P1364-2 Statement of Use

4. FUTURE MEETINGS

5. ADJOURNMENT

MINUTES-NOT YET APPROVED

MANSFIELD PLANNING AND ZONING COMMISSION
DESIGN REVIEW PANEL SPECIAL MEETING

AUDREY P. BECK MUNICIPAL BUILDING ▪ 4 S. EAGLEVILLE RD ▪ COUNCIL CHAMBER

Tuesday October 2, 2018

Members present: J. Brown, R. Favretti, T. Wrubel
Staff: L. Painter, Director of Planning and Development; J. Woodmansee, Planning and Development Assistant

CALL TO ORDER

Painter called the meeting to order at 10:40 a.m. Painter noted that Peter Miniutti was unable to attend; however, he indicated that he would be providing written comments on the proposed plans.

REVIEW OF PENDING APPLICATIONS

A. Special Permit Application of North Frontage LLC for a multi-family residential development on property located on North Frontage Road, west of Storrs Road (Parcel ID 38.101.22-1)

Michael Yenke, Artisan Development/North Frontage LLC, introduced the following members of the project team: Bob Magi, Project Manager; Hans Hansen, Architect; Gerry Hardisty, P.E.; and Zach Perry, manager of Meadowbrook Gardens.

Yenke and the project team provided a brief presentation on the proposed project and answered questions from panel members regarding the design. Panel members provided the following feedback on the proposed design:

- Vehicular Access
  - Explore potential for a second access point on the eastern side of the parcel to improve access to and within the site.
    - Need to provide turning radii for different vehicle sizes to demonstrate how garbage trucks, emergency vehicles, etc. will turn around to exit without a second access point.
    - Combining vehicular circulation with parking is not a good design. While the site dimensions and topography limit options, the developer should explore other designs that provide vehicular circulation separate and distinct from parking areas
- Transit
  - Need to coordinate with Windham Regional Transit District with regard to transit service.
- Landscaping
  - Parking lots do not appear to comply with minimum landscaping requirements; additionally, installation of required islands and trees would conflict with current design of proposed stormwater system.
  - Favretti noted that more detail was needed with regard to ground plantings and requested a full-size set to review. Yenke noted that they would be happy to have their landscape architect coordinate with Favretti on revisions to the landscape plans
- Building Elevations
  - Five of the proposed 6 buildings will have a one story-façade facing North Frontage Road and a two-story façade facing the parking in the rear. Due to the depth of the building, the roof on the front façade of these buildings overwhelms the rest of the façade. Potential solutions discussed included: adding elements to break up the large roof mass such as false dormers; changing the pitch of the roof and revising the plans to eliminate this building type and instead use a two-story façade facing North Frontage with 3 floors facing the parking lot. The last option was preferred by members as reducing the roof pitch could have similar issues with proportion as well as negatively impact the overall design.
  - Members noted discrepancies between the elevations and the site plan that need to be addressed, particularly wings on the ends of the building that are not identified on the site plan.
  - Proposed design uses vinyl siding which is inconsistent with the Architectural and Design Standards. Members

strongly encouraged use of natural materials such as cedar shakes, stone, etc.
    - Members also noted that diversity in façade detailing is needed to avoid the cookie cutter appearance of having every building look exactly the same except for a difference in color. Suggestions also included eliminating the false shutters that are disproportionate in size to the windows.
- Recreation
    - Yenke noted that they are considering a trail connection to the first phase of Meadowbrook Gardens with a bridge over Sawmill Brook; however, that is not included in the plans at this point as they continue to work on design issues.
    - Yenke also noted the proximity of the site to the ECSU ballfields and Sunny Acres Park.

ADJOURNMENT

The meeting adjourned at approximately 11:50 a.m.

Respectfully submitted,
Linda M. Painter, AICP, Director of Planning and Development

BSC GROUP
Transportation ▪ Energy ▪ Land Development

300 Winding Brook Drive
Glastonbury, CT 06033

Tel: 860-652-8227
800-288-8123

www.bscgroup.com

November 25, 2019

Planning and Development Department
Mansfield Town Hall
4 South Eagleville Road
Stors, CT 06268

RE: Site Plan Application and Wetlands Application Submission

To Whom It May Concern:

We are pleased to submit this package for your review. Please find enclosed the following documents as part of this submission:

Application Package

- Site Plan Application Form
- Site Plan Checklist
- Geotechnical Report
- Wetland Characterization Report
- Affordability Plan
- Windham Water Works Notification
- CT State IWW Activity Reporting Form
- Drainage Easement
- Connecticut Water Letter
- Traffic Summary
- IWW Application (Submitted Online)
- IWW Checklist (Found Online)
- Stormwater Management Report

Drawing Package – 1 Full Size Set and 2 Full Size Copies

- T-1.0 Title Sheet
- Sheet 1 Survey
- Sheet 1of 1 Survey
- Sheet 2 of 2 Survey
- EC-1.0 Existing Conditions Plan
- OV-1.0 Overall Site Improvements
- G-1.0 General Notes
- C-1.0 Erosion and Sedimentation Control Plan
- C-2.0 Site Preparation Plan
- C-3.0 Layout and Materials Plan
- C-4.0 Grading and Drainage Plan
- C-5.0 Utility Plan
- C-5.1 Sanitary Sewer Plan and Profile
- C-6.0-6.5 Details
- C-7.0 Intersection Sight Distance Plan
- L-1.0 Planting Plan
- L-1.1 Planting Ratios
- L-1.2 Shade Study
- L-2.0 Photometrics Plan
- A-1.1 Site Plan
- A-1.1A Site Information
- A-1.2 Overall First Floor Plan
- A-1.3 Overall Second Floor Plan
- A-2-1-2,3 Unit Type Plans
- A-3-1-3,7 Exterior Elevations

Please do not hesitate to contact Rob Newton at rnewton@bscgroup.com or 617-896-4564 with any inquiries you may have.

Very truly yours,
BSC Group-Connecticut, Inc.

Rachel Salch, PLA

Engineers
Environmental Scientists
Custom Software Developers
Landscape Architects
Planners
Surveyors

PZC File Number: _____

SITE PLAN CHECKLIST

Department of Planning and Development ▪ 4 South Eagleville Road ▪ Storrs-Mansfield, CT 06268
planzonedept@mansfieldct.org ▪ 860.429.3330

Project Name (different from Project Address): Eagleville Green

Project Address: 113-121 South Eagleville Road

Applicant's Name: Mansfield Housing Authority

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
			1.	**GENERAL PLAN STANDARDS-ALL SHEETS**
			A.	**Plan Quality**
⊙	○	○	1.A.1	Plans shall be of sufficient detail and professional quality to enable comprehensive review.
			B.	**Print/Digital Submission Requirements**
○	⊙	○	1.B.1	Print Size of 8 ½" by 11" or 11" by 17" **(15 copies)**
⊙	○	○	1.B.2	Print Size of 24" by 36" **(3 copies)**
⊙	○	○	1.B.3	Digital files provided in pdf format and sized to no larger than 11" by 17". Please submit the pdf of the Site Plan as one single file (do not break out the individual pages)
			C.	**Plan Information**
⊙	○	○	1.C.1	Date the plan was prepared **and** last revised
⊙	○	○	1.C.2	Name, address, signature, and registration number of professional(s) preparing the plan on each sheet-all plans to be sealed by the appropriate professional
○	○	○	1.C.3	Approval Signature Block in Same Place on Each Sheet (Lower Left Corner)
⊙	○	○	1.C.4	Map Scale: All plans required by this checklist shall be prepared at the same scale as the Existing Conditions Map
⊙	○	○	1.C.5	Map Scale: Scale no less than 1": 40' with scale identified in the same place on each sheet; 1": 20' or 1": 30' preferred
⊙	○	○	1.C.6	Dimension Labels: Dimensions (including but not limited to buildings, structures, setbacks, driveways, parking spaces, and landscape areas)
⊙	○	○	1.C.7	Symbols: North point consistently shown in same direction on all plan sheets. North arrow pointing down is not acceptable.
⊙	○	○	1.C.8	Symbols: Legend of Symbols, patterns and abbreviations used

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
			2	**COVER SHEET**
			A.	**General Information**
⊙	○	○	2.A.1	Name and address of the developer and owner(s) of record
⊙	○	○	2.A.2	Location Map with the site shown in relation to the nearest intersection of two or more streets (Scale of 1" = 1,000 feet)
⊙	○	○	2.A.3	Sheet Index
○	⊙	○	2.A.4	Key to plan sheets if more than one sheet is needed to show the entire site
			3	**PROJECT INFORMATION** *Where a Development Impact Statement (DIS) is provided, this information may be provided as part of the DIS instead.*
			A.	**Area Tabulations (shown in square feet and acres)**
⊙	○	○	3.A.1	Total area of Parcel (acres)
⊙	○	○	3.A.2	Steep Slopes-15% or greater (acres)
⊙	○	○	3.A.3	Wetlands, watercourses and waterbodies (acres)
○	⊙	○	3.A.4	Special Flood Hazard Areas-100 Year Floodplain (acres)
○	⊙	○	3.A.5	Area subject to restrictions that prohibit development-i.e. conservation easements (acres)
⊙	○	○	3.A.6	Total Buildable Area (as defined in Regulations)
⊙	○	○	3.A.7	Volume of earth materials to be brought to the site (cubic yards)
⊙	○	○	3.A.8	Volume of earth materials to be removed from the site (cubic yards)
⊙	○	○	3.A.9	Volume of earth materials to be moved from one location to another on the site (cubic yards)
⊙	○	○	3.A.10	Existing and proposed impervious surface area (square feet or acres; percentage of total site)
⊙	○	○	3.A.11	Existing and proposed effective (connected) impervious cover (square feet or acres; percentage of total site)
⊙	○	○	3.A.12	Total area that will be disturbed during construction (square feet or acres; percentage of total site)
			B.	**Existing Permits/Approvals and Concurrent Applications**
○	⊙	○	3.B.1	List of all existing Special Permits, Site Plans, Variances and other local or state approvals that exist for the site
○	⊙	○	3.B.2	List of all Special Permits, Site Plans, Variances and other local or state approvals being requested
○	⊙	○	3.B.3	List of modifications requested to existing permit approvals

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			C.	**Zoning Data** *For each element, identify existing conditions, what is required by the Regulations, and what is proposed*
⊙	○	○	3.C.1	Zoning District(s) applicable to the property
⊙	○	○	3.C.2	Land Use(s)
⊙	○	○	3.C.3	Lot Area
⊙	○	○	3.C.4	Number of dwelling units (including bedrooms/unit)
⊙	○	○	3.C.5	Residential Density (dwelling units per buildable acre as defined by regulations)
⊙	○	○	3.C.6	Number and Type of Affordable and Workforce Housing Units
⊙	○	○	3.C.7	Gross Square Feet of Building Area (Total)
⊙	○	○	3.C.8	Gross Square Feet of Building Area-By Use
⊙	○	○	3.C.9	Open Space (Total and by Type)
⊙	○	○	3.C.10	Building Height
⊙	○	○	3.C.11	Building Setbacks
⊙	○	○	3.C.12	Lot Frontage
⊙	○	○	3.C.13	Parking Spaces (Total and by type-standard, accessible, motorcycle/scooter)
⊙	○	○	3.C.14	Parking Space Calculations for projects with multiple uses and proposed parking credits
⊙	○	○	3.C.15	Loading Spaces
			4.	**CONTEXT PLAN**
⊙	○	○	4.A	Clearly label project site
⊙	○	○	4.B	Display properties within 500 foot radius of project site
⊙	○	○	4.C	Identify names and addresses of all property owners within 500 feet of subject property
⊙	○	○	4.D	Identify any adjacent properties in the same ownership or under control of the applicant.
⊙	○	○	4.E	At minimum, display and label the following features: property lines, buildings, zoning districts, streets, transit stops and routes, open space and recreation areas, watercourses and Level A Aquifer Protection Areas.
			5.	**EXISTING CONDITIONS MAP**
			A.	**General Requirements**
⊙	○	○	5.A.1	Existing Conditions Map prepared in conformance with A-2 standards by Surveyor licensed in the State of CT
⊙	○	○	5.A.2	Existing easements, including but not limited to: conservation, drainage, access
			B.	**Access and Circulation**
⊙	○	○	5.B.1	Sidewalks and streets (show full width, curb lines and centerlines)

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⦿	○	○	5.B.2	Rights-of-Way-identify full right-of-way width of adjoining streets and required highway clearance setbacks pursuant to Zoning Regulations
⦿	○	○	5.B.3	Roadway and lane widths/designations (right turn, left turn, etc.)
⦿	○	○	5.B.4	Traffic and pedestrian controls including signs, marking and signals
○	⦿	○	5.B.5	Existing transit/bus stops adjacent to the property (including transit provider)
○	⦿	○	5.B.6	On-street parking locations and individual spaces when designated
⦿	○	○	5.B.7	Driveways, entrances, exits, fire lanes and emergency vehicle access, parking areas (show spaces by type-standard, accessible, motorcycle/scooter) and indicate number in each bay and total count. Dimensions shall exclude any obstructions such as columns or light poles.
			C.	**Property Information**
⦿	○	○	5.C.1	Property lines, including adjoining property lines
⦿	○	○	5.C.2	Course and distance of property lines
			D.	**Buildings and Structures**
⦿	○	○	5.D.1	Existing buildings and structures, including fences and walls
⦿	○	○	5.D.2	Building setbacks
			E.	**Cultural Features**
○	⦿	○	5.E.1	National, State or Local Historic Designations (site and adjacent parcels)
○	⦿	○	5.E.2	Historic features, including but not limited to old foundations, dams, sluiceways, mill races, rip-rapping, wells and other utility features, walks, paths, hitching posts and former gardens, arbors or enclosed areas.
○	⦿	○	5.E.3	Archaeological features, including whether the site is located within an area of sensitivity or pre-historic site area pursuant to Map 4.1 of the Mansfield Tomorrow POCD
			F.	**Utilities and Infrastructure**
⦿	○	○	5.F.1	Transformers, ground level mechanical units, switch boxes, cable boxes poles, telephone pedestals, valves, overhead lines and other surface features of utility systems
○	⦿	○	5.F.2	Wells-on-site and within 500 feet of the site
○	⦿	○	5.F.3	Septic system (including primary and reserve leaching fields)
⦿	○	○	5.F.4	Water mains, sanitary sewer systems, gas mains/lines, and stormwater systems indicating line sizes; direction of flow for storm and sanitary lines; and owner of each system
⦿	○	○	5.F.5	Other buried utilities (electric, cable, etc) including owner of each system

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
⦿	○	○	5.F.6	Underground and above-ground storage tanks
⦿	○	○	5.F.7	Fire hydrants and Fire Department connections
			G.	**Natural Systems**
⦿	○	○	5.G.1	Topography shown with no less than 5 foot contours on the subject property and on adjacent parcels for sufficient distance to indicate the relationship of the site to off-site terrain; highlight areas of slopes greater than 15% and label percent slope.
⦿	○	○	5.G.2	Slopes, terraces and retaining walls, including elevations of level areas and tops and bottoms of walls and exterior stairways and ramps
⦿	○	○	5.G.3	Significant Site Features (exposed ledge, areas shallow to bedrock, rock outcroppings, viewpoints, etc.) Depending on the nature of a proposal, an on-site soil survey by a registered soil scientist may be required.
○	⦿	○	5.G.4	Groundwater features including stratified drift aquifers
○	⦿	○	5.G.5	Level A Aquifer Protection Areas
⦿	○	○	5.G.6	Surface water features, including but not limited to: watercourses, bodies of water, wetlands (field delineated by soil scientist) and required upland review area; and limits of special flood hazard areas (100 year floodplain)
⦿	○	○	5.G.7	Major Trees (9“ or more in caliper) and shrubs (3 ft) or more in height, located and identified by species, including street trees on public rights-of-way along property frontage.
⦿	○	○	5. G.8	Soil types
			H.	**Open Space and Recreation**
⦿	○	○	5.H.1	Recreation areas, trails, and public access easements on site and adjoining properties
			I.	**Environmental Concerns**
⦿	○	○	5.I.1	Area of known or suspected contamination or narrative of site history if none expected
○	⦿	○	5.I.2	Areas located within 1,000 feet of a former landfill, dump or disposal area
○	⦿	○	5.I.3	Areas with potential of generating combustible gases
			6.	**PROPOSED SITE PLAN**
			A.	**General Requirements**
⦿	○	○	6.A.1	Include existing features to be retained and show location, dimension, size, height and elevation of proposed changes
⦿	○	○	6.A.2	Proposed easements, including but not limited to: conservation, drainage, access
⦿	○	○	6.A.3	Construction details and specifications

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
			B.	**Natural Systems, Proposed Grading and Drainage**
⦿	○	○	6.B.1	Limits of Disturbance
⦿	○	○	6.B.2	Surface water features, including but not limited to: watercourses, bodies of water, wetlands (field delineated by soil scientist) and required upland review area; and limits of special flood hazard areas (100 year floodplain)
⦿	○	○	6.B.3	Proposed grading shown with 2' contours on the subject property and on adjoining parcels for sufficient distance to indicate the relationship of the site to off-site terrain
⦿	○	○	6.B.4	Slopes, terraces and retaining walls, including elevations of level areas and tops and bottoms of walls and exterior stairways and ramps
⦿	○	○	6.B.5	Erosion and Sedimentation Control Measures (See Regulations for requirements)
○	⦿	○	6.B.6	Areas to be protected by conservation easements
			C.	**Proposed Buildings and Structures**
⦿	○	○	6.C.1	Required Building Setback lines
⦿	○	○	6.C.2	Proposed changes to buildings and structures, including decks and other projections such as canopies, bay projections, and roof overhangs (using outside dimensions)
⦿	○	○	6.C.3	Distances between buildings and adjoining property lines
⦿	○	○	6.C.4	Locations of building entrances and exits
○	⦿	○	6.C.5	Existing and proposed fences and walls, including details
			D.	**Proposed Access and Circulation**
⦿	○	○	6.D.1	Changes to roadway and lane widths/designations (right turn, left turn, bicycle, etc.)
⦿	○	○	6.D.2	Traffic and pedestrian controls including signs, marking and signals
○	⦿	○	6.D.3	Bus stops adjacent to the property (including transit provider) and bus stop amenities
○	⦿	○	6.D.4	On-street parking locations and individual spaces when designated
⦿	○	○	6.D.5	Driveways, entrances, and exits including slope (entrances/exits only), fire and emergency vehicle access and vehicle turning movements. Vehicle turning movements for loading areas shall be based on the largest vehicle that will access the site.
⦿	○	○	6.D.6	Sight distance per AASHTO at all driveways and street intersections
⦿	○	○	6.D.7	Curb radii at intersections, driveway entrances, and within parking lots; note AASHTO turning radii.

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
				Town can provide ladder truck specifications for projects where ladder truck access will be needed
⊙	○	○	6.D.8	Direction of traffic for all driveways and intersections
⊙	○	○	6.D.9	Traffic volumes at all site entrances, exits and intersections
⊙	○	○	6.D.10	Parking areas (show spaces by type-standard, accessible, motorcycle/scooter, bicycle) and indicate number in each bay and total count. Dimensions shall exclude any obstructions such as columns or light poles.
○	⊙	○	6.D.11	Details and specifications for bicycle parking
			E.	**Proposed Changes to Open Space and Recreation Areas**
⊙	○	○	6.E.1	Open space, recreation areas, recreation facilities/improvements, trails, and public access easements on site and adjoining properties
			F.	**Proposed Changes to Utilities and Infrastructure**
⊙	○	○	6.F.1	Transformers, ground level mechanical units, switch boxes, cable boxes poles, telephone pedestals, valves, overhead lines and other surface and subsurface features of utility systems
○	⊙	○	6.F.2	Well(s)
○	⊙	○	6.F.3	Septic system (including primary and reserve leaching fields), including locations and findings of all test pits, borings and percolation tests
⊙	○	○	6.F.4	Public water systems, sanitary sewer systems, natural gas, and stormwater systems indicating: owner of each system, mains and service lines; line sizes; direction of flow for storm and sanitary lines. Details and specifications for each system shall be provided in plan view.
⊙	○	○	6.F.5	Location, specifications and details for Low Impact Development (LID) stormwater management practices, including but not limited to: bioretention areas, bioswales, raingardens, roof leader drains, cisterns, permeable pavement, and green roofs.
⊙	○	○	6.F.6	Above-ground and underground utilities (electric, cable, etc) including owner of each system
○	⊙	○	6.F.7	Underground and above-ground storage tanks
⊙	○	○	6.F.8	Fire hydrants, water mains, service lines and Fire Department connections, with size of line and owner indicated
⊙	○	○	6.F.9	Waste recycling and disposal storage/pick-up areas including details regarding container size, pad, screening, drainage, and truck turning movements

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
			G.	**Lighting Plans**
⊙	○	○	6.G.1	Location of all existing and proposed lights, including street lights and building lights, relative to buildings, structures, property lines and landscape areas
⊙	○	○	6.G.2	Fixture Types and Details, including height
⊙	○	○	6.G.3	Calculations of Allowable and Proposed Total Light Output
⊙	○	○	6.G.4	Photometric plan identifying light distribution at property lines
			7	**LANDSCAPE PLAN**
			A.	**General Requirements**
⊙	○	○	7.A.1	All landscape documents, drawing submissions, specifications and as-built documents shall be prepared, signed, sealed and dated by a Landscape Architect licensed in the State of Connecticut pursuant to Article 5, Sec. A.3.d.3.
			B.	**Calculations**
⊙	○	○	7.B.1	Shade Coverage (including a graphic representation of trees included in the calculations)
⊙	○	○	7.B.2	Permeable Surface/Structural Soils
			C.	**Existing Conditions (Site and Adjoining Rights-of-Way)**
⊙	○	○	7.C.1	Limits of proposed disturbance
⊙	○	○	7.C.2	Existing vegetation including quantity, species, caliper size and height
⊙	○	○	7.C.3	Existing vegetation on adjacent sites that will be affected by proposed work/site disturbance
⊙	○	○	7.C.4	Existing vegetation to be removed including locations, size and species of all trees 9” or greater in caliper
⊙	○	○	7.C.5	Street trees and natural vegetation to be retained, including locations, approximate driplines, size and species of all trees greater than 9” in caliper
⊙	○	○	7.C.6	Location of existing and proposed fences and walls, including historic stone walls
⊙	○	○	7.C.7	Significant Site Features (rock outcroppings, viewpoints, etc.)
⊙	○	○	7.C.8	Trails (on-site and adjoining sites)
			D.	**Proposed Changes to Landscape**
⊙	○	○	7.D.1	Location and dimensions of areas to be landscaped (including within public rights-of-way), specifying the location, quantity, names, caliper and size of proposed individual trees, shrubs, and ground cover plants. (Indicate initial and final height for trees and shrubs, initial width for shrubs, and initial spread for groundcover plants)

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
⦿	○	○	7.D.2	Plant legend/index or schedule that indicates the species, whether the species is native to the Northeast US, character, height/spread, size and total quantity of all plantings at time of installation
⦿	○	○	7.D.3	Grass areas and limits, including identification of sod and/or seed areas
⦿	○	○	7.D.4	Slope areas in excess of four to one (4:1) or 25%
⦿	○	○	7.D.5	Drainage ways, yard inlets, area drains, overflow areas and LID stormwater practices
⦿	○	○	7.D.6	Existing and proposed location of above and below grade site utilities and service connections including Fire Department connections, easements and access requirements
⦿	○	○	7.D.7	Location and direction of service openings on above grade utilities such as transformers, telephone, air conditioning/heating units and cable boxes. Specifically indicate perimeter clearance/safety zone.
⦿	○	○	7.D.8	Location of landscape accessories and furnishings (i.e. tree grates, temporary/movable planters, benches, trash/recycling containers, street and site lighting, etc.)
⦿	○	○	7.D.9	Location of landscape irrigation system elements (above and below ground).
⦿	○	○	7.D.10	Sight-distance restrictions
⦿	○	○	7.D.11	Proposed streetscape, including street tree species, locations, separation distances between trees, and furnishings
⦿	○	○	7.D.12	Location of existing and proposed fences and walls
			E.	**Details**
⦿	○	○	7.E.1	Measures to protect existing vegetation to be preserved or relocated
⦿	○	○	7.E.2	Planting details including dimensioned design sections and specifications for all proposed work, including location, details and specifications for all ground-level work, tree wells, landscape strips, and plantings above structure (roof gardens).
⦿	○	○	7.E.3	Specifications and details for landscape accessories and furnishings
○	⦿	○	7.E.4	Specifications and details for landscape irrigation system
○	⦿	○	7.E.5	Fences and wall details

Waiver Requests

Pursuant to Article 5, Sections A.4 and B.4 of the Mansfield Zoning Regulations, the Planning and Zoning Commission may waive certain site plan requirements where they determine such information is not needed to determine compliance with the Regulations. Please complete the following information for any waiver requested. Attach additional pages as necessary.

Note: Waivers of requirement 4.A (survey prepared to A-2 standards) shall not be granted for applications involving new principal buildings or major additions or for applications where A-2 survey data is required to verify compliance with the Regulations.

Requirement Number	Justification for Waiver

Signature of professional certifying that the submission meets all requirements

I, _____ (print name), hereby certify that the drawings and other materials that accompany this checklist have met the requirements of this checklist, and the accompanying electronic copy is an exact duplicate of the hard copy submission.

Signature _____ Date _____

SITE PLAN APPLICATION

Mansfield Planning and Zoning Commission
(see Article V, Section A of the Zoning Regulations)

File #_____
Date 11/25/19

1. **Name of development** (where applicable) Eagleville Green

2. The **proposed use** of the property is Multifamily Residential
in accordance with Sec.(s)_____ of Article VII (Permitted Use provisions) of the Zoning Regulations

3. **Address/location** of subject property 113-121 South Eagleville Road, Storrs, CT 06268
Assessor's Map_____ Block 764 Lot(s)_____ Vol._____ Page 555

4. **Zone** of subject property South Eagleville Road Housing Zone Acreage of subject property 5.2

5. **Acreage** of adjacent land in same ownership (if any) N/A

6. **Applicant** Mansfield Nonprofit Housing Development Corporation
(please **PRINT**) Signature
Street Address 309 Maple Road Telephone 860-487-0693

Town Mansfield Zip code 06268

Interest in property: Owner x Optionee_____ Lessee_____ Other_____

(If "Other," please explain)_____

7. **Owner** of Record: Name Mansfield Nonprofit Housing Development Corporation Telephone 860-487-0693
(please **PRINT**)
Street Address 309 Maple Road Town Mansfield

Signature_____ Zip Code 06268

(OR attached Purchase Contract ____ OR attached letter consenting to application ____)

8. **Agent**(s) if any) representing the applicant who may be directly contacted regarding this application:
Name (PRINT) Kathy Dorgan St. Addr. 10 Eastwood Road
Town Storrs Zip Code 06268 Phone 860-487-6740
Involvement (legal, engineering, surveying, etc.) Architect

BSC Group, Inc.
Name (PRINT) c/o Robert Newton St. Addr. 300 Winding Brook Drive
Town Glastonbury Zip Code 06033 Phone 617-896-4564
Involvement (legal, engineering, surveying, etc,) Engineering

(over)

Posted 1/2007

9. The following items have been submitted as part of this application:

x Application fee in the amount of $ 3,210
x Statement of Use further describing the nature and extent of the proposed use, and proposed site improvements. To assist the Commission with its reviews, applicants are encouraged to be as detailed as possible and to address the approval criteria contained in Art. V, Sec. A.5.
x Site plan (6 copies) as per Art. V, Sec. A.3.C of the Zoning Regulations
x Site Plan Checklist, including any waiver requests (Art. V, Sec. A.4)
N/A Sanitation report as per Art. V, Sec. A.3.D of the Zoning Regulations
x Other information (see Art. V, Sec. A.3.F). Please list items submitted (if any)

Geotechnical Report	Plans and Elevations
Wetland Characterization Report	
Affordability Plan	Drainage Easement
Windham Water Works Notification	
CT State IWW Activity Reporting Form	Connecticut Water Letter
	Traffic Summary

10. Neighborhood notification: All site plan applicants must notify abutting property owners pursuant to Art. V, Section 3.C (utilize Neighborhood Notification Form.)

11. All applications, including maps and other submissions, must comply with all applicable sections of the Zoning Regulations, including, but not limited to, the following:

Art. X, Sec. E	Flood Hazard Areas, Areas Subject to Flooding
Art. V, Sec. A	Site Plan Requirements (includes procedure, application requirements, approval criteria, conditions of approval and revisions)
Art. VI, Sec. A	Prohibited Uses
Art. VI, Sec. C	Bonding
Art. VI, Sec. B	Performance Standards
Art. VII	Permitted Uses
Art. VIII	Dimensional Requirements/Floor Area Requirements
Art. X, Sec. A	Special Regulations for Designed Development Districts
Art. X, Sec. C	Signs
Art. X, Sec. D	Parking and Loading
Art. X, Sec. H	Regulations Regarding Filling and Removal of Materials

* * * * * * * *

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
MANSFIELD, CONNECTICUT

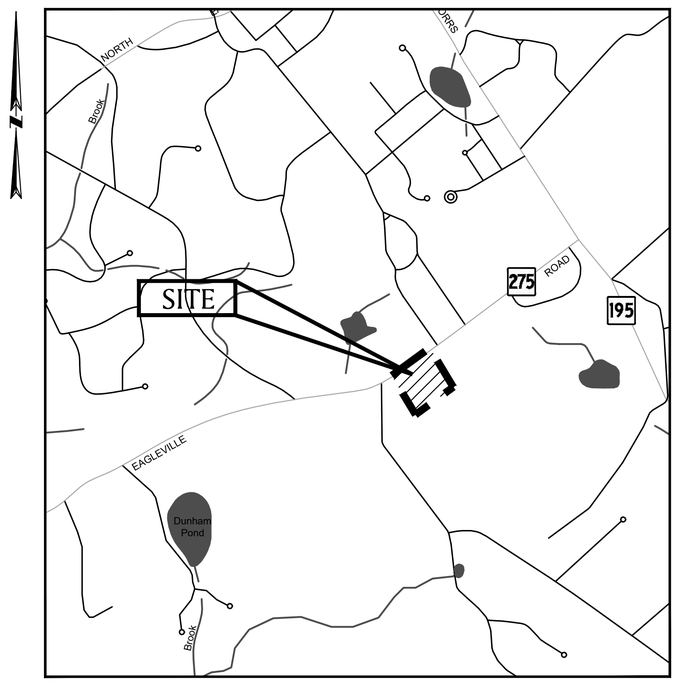
NOVEMBER 25, 2019

WETLAND DISTURBANCE = 0
UPLAND DISTANCE = 47,518 SF

ZONING TABLE

ZONE: SER–HO	REQUIRED	EXISTING	PROVIDED
MINIMUM LOT AREA/ACRES	5	5.2	5.2
MINIMUM LOT FRONTAGE (FT)	300	704	704
MINIMUM FRONT SETBACK[1] (FT)	25	44	30
MINIMUM SIDE SETBACK (FT)	5	272	16
MINIMUM STAIR SETBACK (FT)	2	48	2
MINIMUM REAR SETBACK (FT)	5	214	6
MAXIMUM HEIGHT (FT)	45	N/A	33 (WITHOUT CUPOLA) 38'–6" (WITH CUPOLA)
MAXIMUM BUILDING GROUND COVERAGE (%)	20	0.7	14.40
OFF–STREET PARKING	1/UNIT * 42 = 42	N/A	87
ACCESSIBLE PARKING SPACES	4	N/A	8
BUILDABLE AREA (AC)	N/A	N/A	3.2
DWELLING UNITS	–	N/A	42
RESIDENTIAL DENSITY	15	N/A	42/3.2 = 13.125
GROSS FLOOR AREA (SF)	–	N/A	40,198
OPEN SPACE (SF)	–	N/A	103,689

1. MEASURED FROM 30–FOOT HIGHWAY CLEARANCE SETBACK



SITE MAP

500 0 1000 2000 3000 feet
SCALE: 1"=1000'

ISSUED FOR PERMITTING

INDEX OF DRAWINGS

T-1.0	TITLE SHEET
1, 1-2	SITE SURVEYS
EC-1.0	EXISTING CONDITIONS PLAN
OV-1.0	OVERALL SITE IMPROVEMENTS
G-1.0	GENERAL NOTES
C-1.0	EROSION & SEDIMENTATION CONTROL PLAN
C-2.0	SITE PREPARATION PLAN
C-3.0	LAYOUT & MATERIALS PLAN
C-4.0	GRADING & DRAINAGE PLAN
C-5.0	UTILITY PLAN
C-5.1	SANITARY SEWER PLAN & PROFILE
C-6.0-6.5	DETAILS
C-7.0	INTERSECTION SIGHT DISTANCE PLAN
L-1.0	PLANTING PLAN
L-1.1	PLANTING RATIO
L-1.2	SHADE STUDY
L-2.0	PHOTOMETRICS PLAN
A1.1	SITE PLAN
A1.1a	SITE INFORMATION
A1.2	OVERALL FIRST FLOOR PLAN
A1.3	OVERALL SECOND FLOOR PLAN
A2.1-2.3	UNIT TYPE PLANS
A3.1-3.7	EXTERIOR ELEVATIONS

PREPARED FOR:

MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

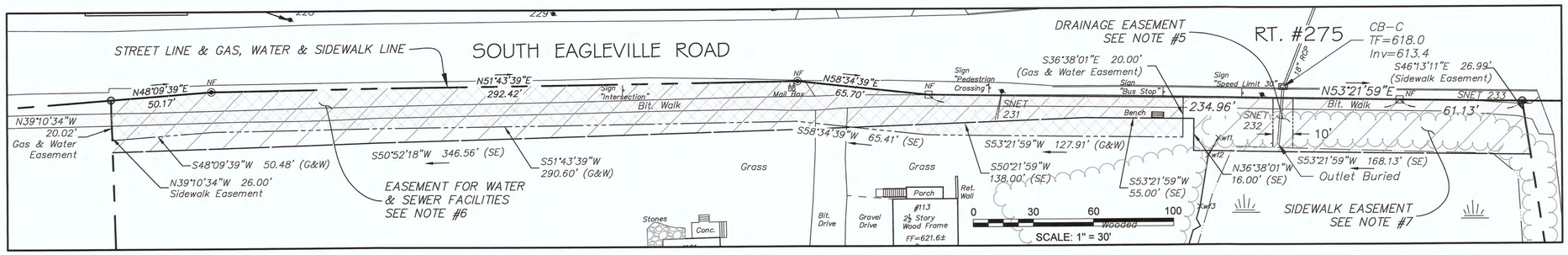
PREPARED BY:

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

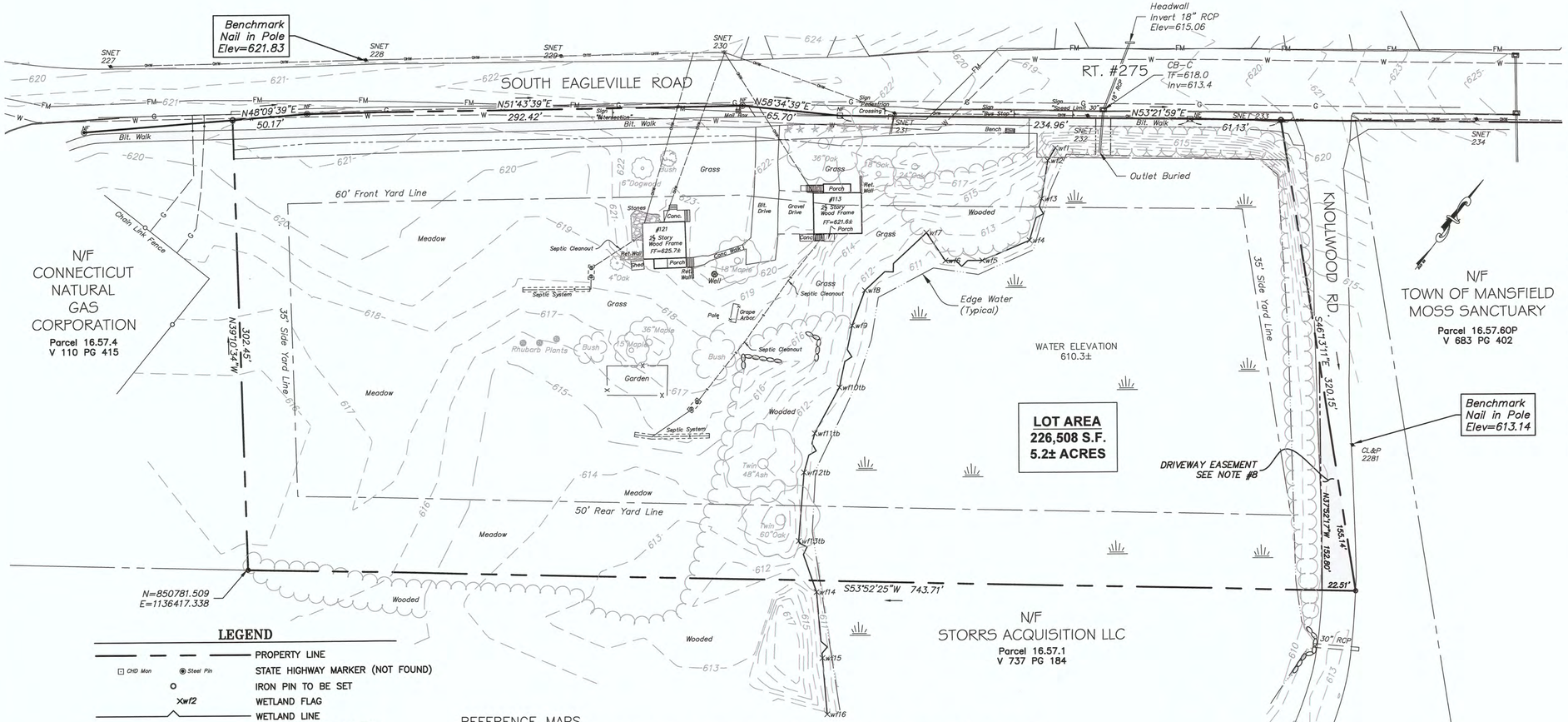
APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

JOB NO: 83749.00 DWG NO: SHEET T–1.0



DETAIL DEPICTING EASEMENTS
Scale 1"=30'



LEGEND

- PROPERTY LINE
- CHD Mon / Steel Pin — STATE HIGHWAY MARKER (NOT FOUND)
- IRON PIN TO BE SET
- Xwf2 — WETLAND FLAG
- WETLAND LINE
- 616 — EXISTING GROUND CONTOUR
- TREELINE
- GAS & WATER EASEMENT LINE
- SIDEWALK EASEMENT LINE
- ROADWAY EASEMENT LINE
- DRAINAGE EASEMENT
- SETBACK LINE
- G — GAS MAIN
- W — WATER MAIN
- FM — SEWER FORCE MAIN
- SANITARY SEWER LINE
- OHW — OVERHEAD ELECTRIC WIRE
- WELL

REFERENCE MAPS

1. Connecticut State Highway Department Town of Mansfield Route 275 Plan showing highway line on the south side of the South Eagleville Road, between Maple Road and Knollwood Road. July 1969 Scale 1"=40' Furnished by CDOT District 2 Office NOTE: Monumentation set at the time of this survey has apparently been destroyed by subsequent construction projects.

2. Algonquin Gas Transmission Company Boston, Massachusetts Map Showing Land to be Acquired By Connecticut Natural Gas Corp. July 16, 1969 Scale 1"=40' Nathan Rossman, RLS 4797 Book 9 P 14 Mansfield Land Records

3. Town of Mansfield Map Showing Land & Easement Acquired From J. Alfred Warren South Eagleville Road Scale 1"=40' Date: May 1955 Map #318 Mansfield Land Records

4. Map Showing Easement to be Acquired From Elsie Warren, Mildred Chak and Patricia Chak by the Town of Mansfield Scale: 1"=40' October 1979 Grant Meitzler, RLS Map Book 12 Page 92 Mansfield Land Records

5. Map Showing Easement to be Acquired From Mildred Chak and Patricia Chak by the Town of Mansfield Scale 1"=40' Date Feb. 1988 Rev. May 1988 Lenard Engineering, Inc. Map Book 18 Page 23 Mansfield Land Records

6. ALTA/ACSM Land Title Survey Plan Prepared For Knollwood Apartments LLC Of Knollwood Apartment Complex Mansfield, Ct. Scale 1"=100' Date 9-6-1996 Meehan & Goodin Engineers – Surveyors Map Book 26 Page 34 Mansfield Land Records

7. Resurvey Prepared For The University Of Connecticut South Eagleville Road & Storrs Road Mansfield, Connecticut. Scale 1"=100' Date Oct. 2005 Rev. 6/04/07 Design Professionals, Civil Engineers, Planners, Surveyors, Landscape Architects

8. Water And Sewer Services Mansfield Retirement Community, Mansfield Connecticut South Eagleville Road Sta. 11+00 to Sta. 25+70 sheets #2 & #3, Scale As Noted Date: Aug. 1979 Rev. As Built 10-22-80 Loureiro Engineering Associates.

SURVEY MAPS

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

2. THIS SURVEY IS A FIRST SURVEY. NO PREVIOUS PROPERTY SURVEY OF THE PARCEL WAS FOUND. MULTIPLE EASEMENT SURVEYS WERE FOUND. THIS PLAN REPRESENTS A COMPILATION OF EASEMENT PLANS AND PROPERTY SURVEYS OF ADJACENT PROPERTIES AS LISTED.

3. BEARINGS ON THIS PLAN ARE BASED ON NAD 1983 COORDINATES. ELEVATIONS ARE BASED ON NAVD 1988 DATUM. EXISTING GROUND CONTOURS ARE 1' INTERVAL.

4. CURRENT OWNER OF THIS PROPERTY IS THE MANSFIELD NONPROFIT HOUSING DEVELOPMENT CORPORATION 309 MAPLE ROAD, STORRS, CT. 06268. PARCEL 16.57.5 DEED VOL 764 PG 555 MANSFIELD LAND RECORDS AREA=226,508 S.F. 5.2± ACRES

5. THIS PARCEL IS SUBJECT TO A DRAINAGE EASEMENT IN FAVOR OF THE STATE OF CONNECTICUT VOL 83 PG 71 REF. MAP #3 AREA=180± S.F.

6. THIS PARCEL IS SUBJECT TO A WATER & SEWER LINE EASEMENT IN FAVOR OF THE TOWN OF MANSFIELD VOL 176 PG 200 REF. MAP #4. AREA=10,696± S.F.

7. THIS PARCEL IS SUBJECT TO A SIDEWALK EASEMENT IN FAVOR OF THE TOWN OF MANSFIELD VOL 271 PG 255 REF. MAP #5. AREA=16,250± S.F.

8. THIS PARCEL IS SUBJECT TO A ROADWAY EASEMENT IN FAVOR OF KNOLLWOOD APARTMENTS VOL 378 PG 285 REF. MAP #6. AREA=1,655± S.F.

9. PROPERTY IS LOCATED IN RURAL AGRICULTURAL RESIDENCE 90 ZONE (RAR-90) BUILDING #113 S EAGLEVILLE ROAD IS NON-CONFORMING TO FRONT YARD REQUIREMENT, BUILT PRIOR TO PRESENT ZONING REGULATIONS.

10. PROPERTY IS NOT LOCATED IN FLOOD ZONE – FIRM MAP TOWN OF MANSFIELD CONNECTICUT TOLLAND COUNTY COMMUNITY-PANEL NUMBER 090128 0005 C EFFECTIVE JAN. 2, 1981

11. WETLANDS WERE DELINEATED ON JUNE 8, 2016 BY IAN T. COLE, REGISTERED SOIL SCIENTIST/PROFESSIONAL WETLAND SCIENTIST #2006. WETLAND FLAGS LOCATED AS SHOWN BY LENARD ENGINEERING, INC. JUNE 13, 2016.

12. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON WERE HAVE BEEN COMPILED IN PART FROM RECORD MAPPING AND/OR OTHER SOURCES AND MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO LENARD ENGINEERING, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY APPROPRIATE AUTHORITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION CALL-BEFORE-YOU-DIG 1-800-922-4455.

13. THIS MAP & SURVEY CONFORMS TO CLASS A-2 HORIZONTAL ACCURACY AND CLASS T-2 TOPOGRAPHIC SURVEY ACCURACY.

To the best of my knowledge and belief this map is substantially correct as noted hereon.

KEVIN L. DaROS #13291 DATE 6/27/16

No certification is expressed or implied unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon.

Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: Basemap

Drawing date: June 27, 2016
Drawing Scale: 1"=40'

Rev.	Date	Revision	By

PROPERTY/BOUNDARY SURVEY

PREPARED FOR

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

113-121 SOUTH EAGLEVILLE ROAD
STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
19 Midstate Drive AUBURN, MA (508) 721-7000
140 Willow Street WINSTED, CT (860) 379-9669
2210 Main Street GLASTONBURY, CT (860) 659-3100

Drawing #: 1

Job #: 16-358

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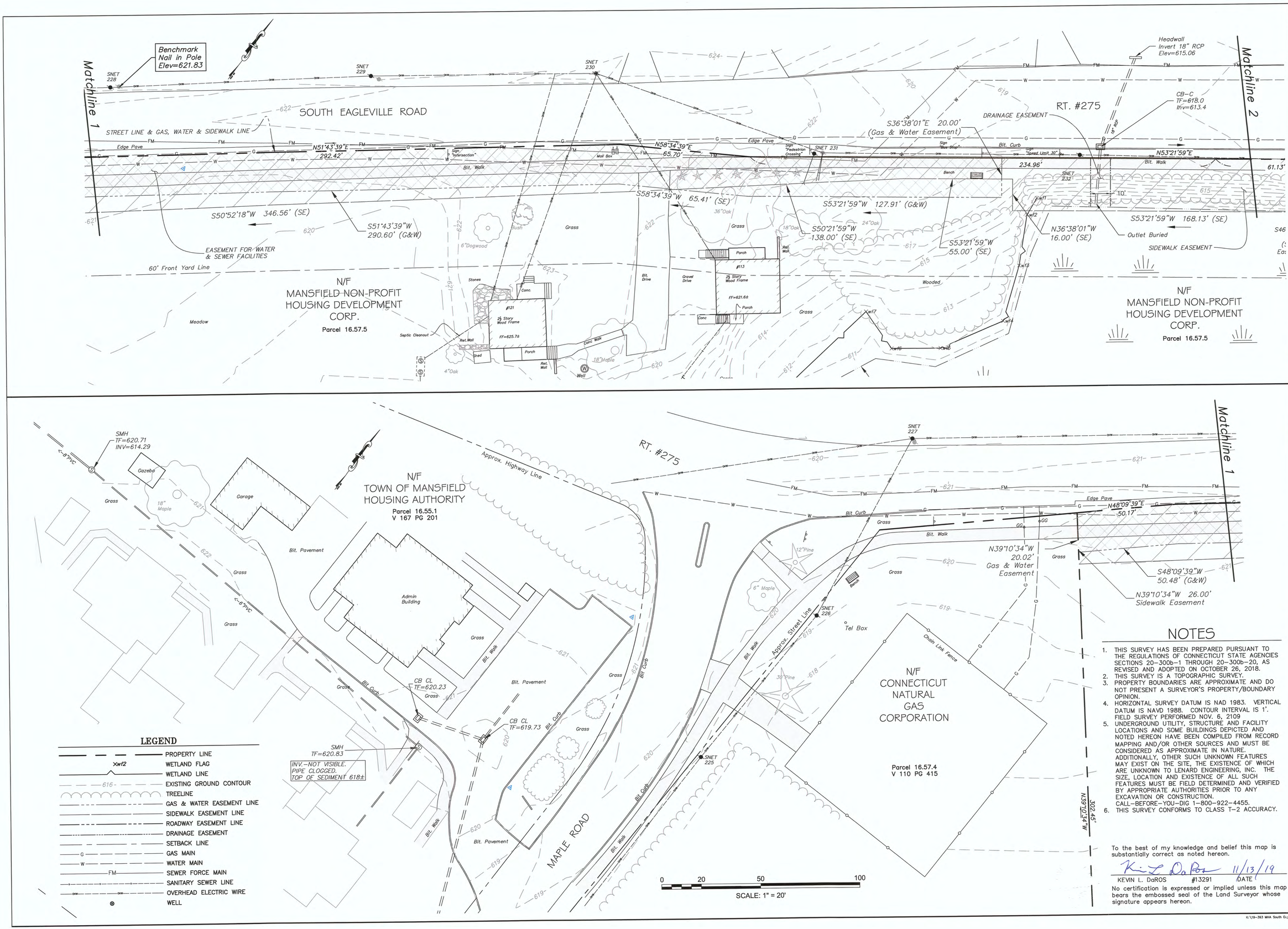

LEGEND

- PROPERTY LINE
- Xwf2 WETLAND FLAG
- WETLAND LINE
- 616 EXISTING GROUND CONTOUR
- TREELINE
- GAS & WATER EASEMENT LINE
- SIDEWALK EASEMENT LINE
- ROADWAY EASEMENT LINE
- DRAINAGE EASEMENT
- SETBACK LINE
- G GAS MAIN
- W WATER MAIN
- FM SEWER FORCE MAIN
- SANITARY SEWER LINE
- OHW OVERHEAD ELECTRIC WIRE
- WELL

NOTES

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20–300b–1 THROUGH 20–300b–20, AS REVISED AND ADOPTED ON OCTOBER 26, 2018.
2. THIS SURVEY IS A TOPOGRAPHIC SURVEY.
3. PROPERTY BOUNDARIES ARE APPROXIMATE AND DO NOT PRESENT A SURVEYOR'S PROPERTY/BOUNDARY OPINION.
4. HORIZONTAL SURVEY DATUM IS NAD 1983. VERTICAL DATUM IS NAVD 1988. CONTOUR INTERVAL IS 1'. FIELD SURVEY PERFORMED NOV. 6, 2109
5. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS AND SOME BUILDINGS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED FROM RECORD MAPPING AND/OR OTHER SOURCES AND MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH UNKNOWN FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO LENARD ENGINEERING, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY APPROPRIATE AUTHORITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION. CALL–BEFORE–YOU–DIG 1–800–922–4455.
6. THIS SURVEY CONFORMS TO CLASS T–2 ACCURACY.

To the best of my knowledge and belief this map is substantially correct as noted hereon.

Kevin L. DaRos 11/13/19

KEVIN L. DaROS #13291 DATE

No certification is expressed or implied unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon.

Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: Survey2

Drawing Scale: 1"=20'

Rev.	Date	Revision	By

Drawing date: Nov. 13, 2019

TOPOGRAPHIC SURVEY

PREPARED FOR

MANSFIELD NON–PROFIT HOUSING DEVELOPMENT CORP.

113–121 SOUTH EAGLEVILLE ROAD
STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2210 Main Street GLASTONBURY, CT (860) 659-3100
140 Willow Street WINSTED, CT (860) 379-6669
19 Midstate Drive AUBURN, MA (508) 721-7600

Drawing #: 1 of 2

Job #: 19–404

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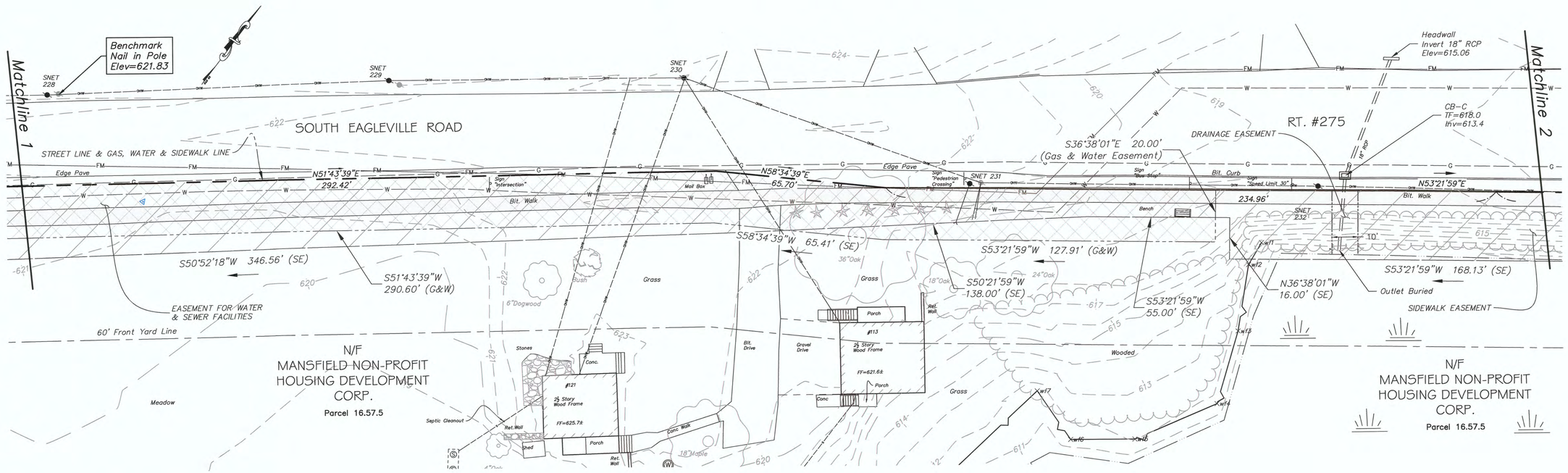

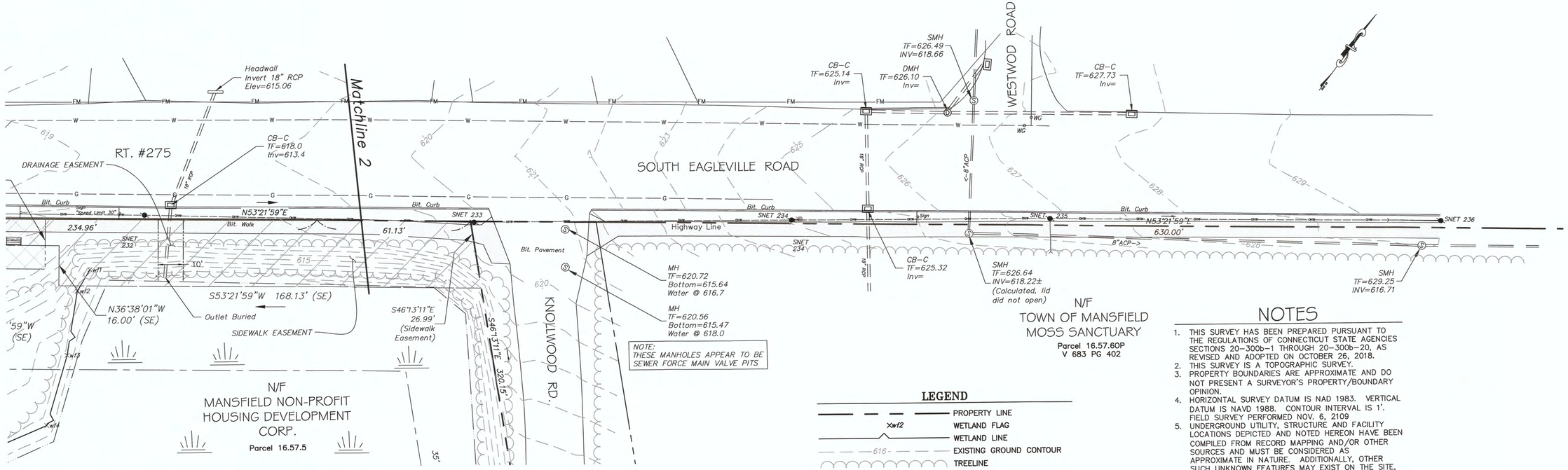

Reference Map:
Property Boundary Survey Prepared for Mansfield Non-Profit Housing Development Corp. 113-121 South Eagleville Road, Storrs, Connecticut. Date June 24, 2016 Scale: 1"=40' Class A-2 and Class T-2 Accuracy Lenard Engineering, Inc. 2210 Main St. Glastonbury, Connecticut

0 20 50 100
SCALE: 1" = 20'

LEGEND

- PROPERTY LINE
- WETLAND FLAG
- WETLAND LINE
- EXISTING GROUND CONTOUR
- TREELINE
- GAS & WATER EASEMENT LINE
- SIDEWALK EASEMENT LINE
- ROADWAY EASEMENT LINE
- DRAINAGE EASEMENT
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Kevin L. DaRos 11/13/19
KEVIN L. DaROS #13291 DATE

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Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: Survey2

Drawing Scale: 1"=20'
Drawing date: Nov. 13, 2019

Rev.	Date	Revision	By

TOPOGRAPHIC SURVEY

PREPARED FOR

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

113-121 SOUTH EAGLEVILLE ROAD
STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2210 Main Street, GLASTONBURY, CT (860) 659-3100
140 Willow Street, WINSTED, CT (860) 379-6669
19 Midstate Drive AUBURN, MA (508) 721-7600

Drawing #: 2 OF 2

Job #: 19-404

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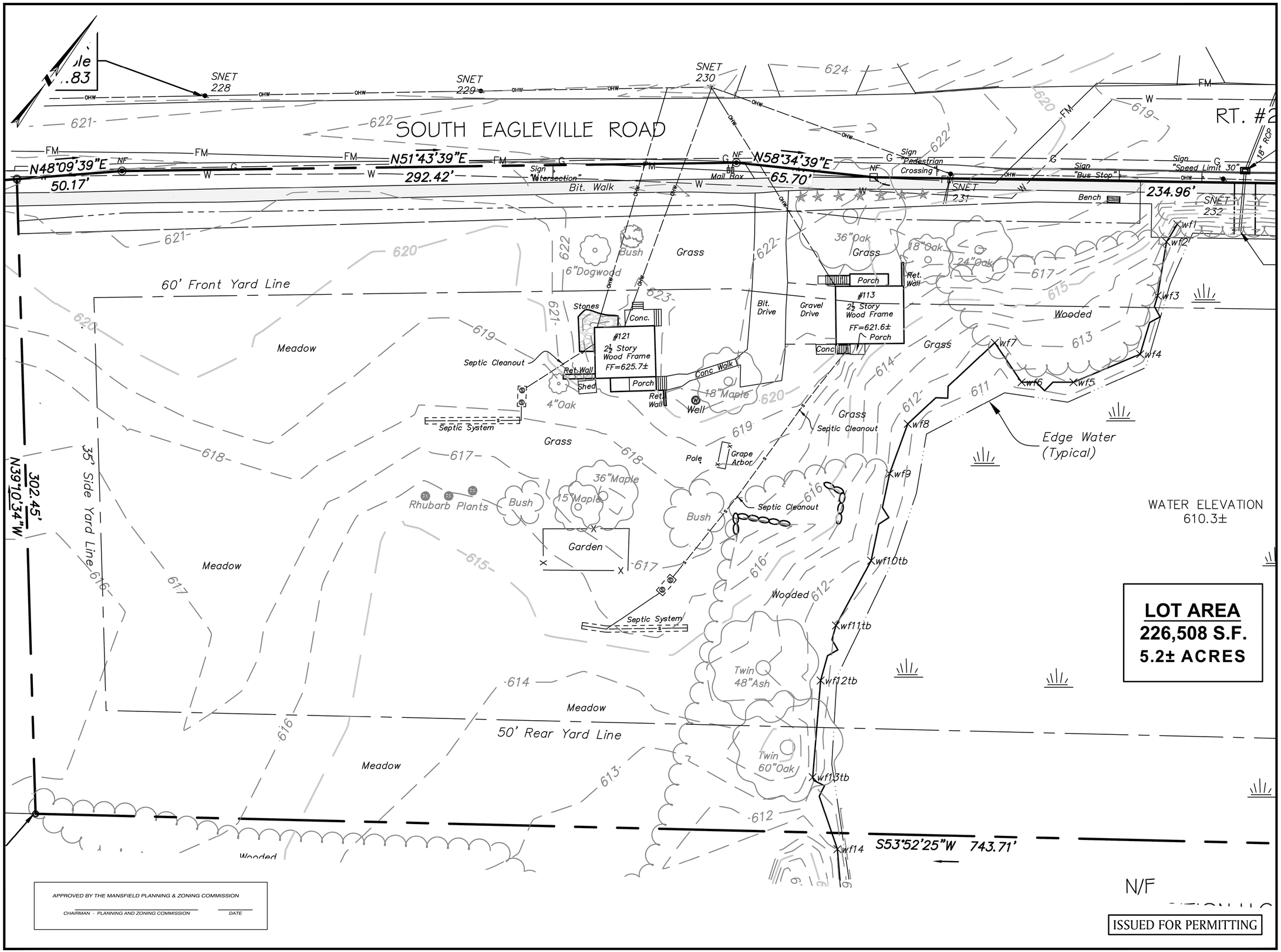


LOT AREA
226,508 S.F.
5.2± ACRES

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

EXISTING CONDITIONS PLAN

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

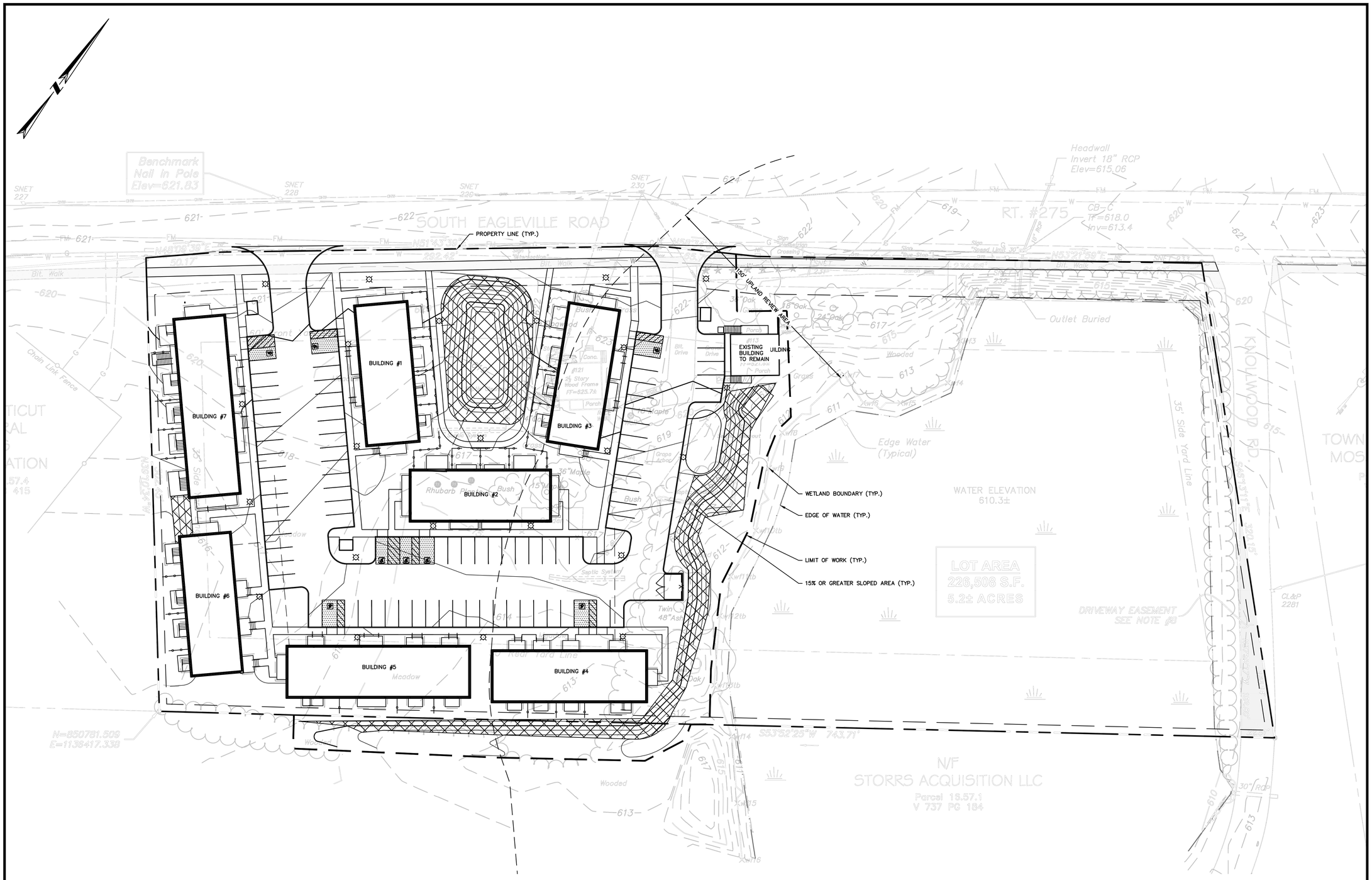
BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

© 2019 BSC GROUP, INC.

SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-EC.DWG
DWG. NO:
JOB. NO: 83749.00

EC-1.0



PROPOSED STEEP SLOPES–15% OR GREATER = 0.25 ACRES
WETLAND AREA = 1.75 ACRES
EARTHWORK FILL = 6,868 CUBIC YARDS
EARTHWORK CUT = 591 CUBIC YARDS
NET EARTHWORK = 6,277 CUBIC YARDS

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT FRANCIS J. VACCA 29098 LICENSED PROFESSIONAL ENGINEER

FRANCIS J. VACCA, PE No. 29098

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

OVERALL SITE IMPROVEMENTS

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

© 2019 BSC GROUP, INC.

SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900–SITE.DWG
DWG. NO:
JOB. NO: 83749.00

OV-1.0

EROSION AND SEDIMENTATION CONTROL NOTES:

1. DO NOT PROCEED WITH THE WORK UNTIL ALL E&S CONTROL MEASURES ARE IN-PLACE AND HAVE BEEN INSPECTED AND APPROVED BY THE ENGINEER.
2. THE MEASURES SPECIFIED ARE THE MINIMUM REQUIREMENTS FOR E&S CONTROL AND ARE SHOWN IN GENERAL SIZE AND LOCATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL E&S CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO ANY RESOURCE AREAS. PROVIDE ADDITIONAL E&S MEASURES AS REQUIRED TO CONTROL EROSION AND SILTATION THROUGHOUT THE DURATION OF THE CONSTRUCTION AS CONDITIONS DICTATE AND/OR AS DIRECTED BY THE OWNER OR THE ENGINEER.
3. MONITOR AND INSPECT ALL E&S MEASURES IN AN ONGOING MANNER THROUGHOUT THE WORK AND TAKE CORRECTIVE MEASURES, AS REQUIRED, TO MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO ANY RESOURCE AREAS.
4. ANY EROSION AND SEDIMENTATION MEASURE IMPLEMENTED BEYOND THAT SHOWN SHALL CONFORM TO APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT'S 2002 "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL."
5. ANY STOCKPILED MATERIAL SHALL BE SUBJECT TO EROSION CONTROL MEASURES THAT INCLUDE A MINIMUM OF SILT FENCE OR HAY BALE BARRIER. COVER STOCKPILES IF SIGNIFICANT RAINFALL IS PREDICTED.
6. PROVIDE TEMPORARY SEEDING WITH MULCH ON ALL EXPOSED SOIL AREAS WHERE WORK WILL BE SUSPENDED FOR LONGER THAN 30 DAYS. APPLY SEED AND MULCH WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK. WHEN SEEDING IS NOT POSSIBLE DUE TO SEASONAL WEATHER CONDITIONS OR OTHER FACTORS, PROVIDE TEMPORARY STRUCTURAL SOIL PROTECTION SUCH AS MULCH, WOODCHIPS, EROSION CONTROL MATTING, OR COMPOST.
7. ALL TEMPORARY SLOPES IN EXCESS OF 3 (HORIZONTAL) TO 1 (VERTICAL) SHALL BE STABILIZED WITH EROSION CONTROL MATTING OR APPROVED EQUIVALENT.
8. NO RUNOFF SHALL BE ALLOWED TO ENTER ANY STORMWATER SYSTEM OR EXIT THE SITE PRIOR TO TREATMENT FOR SEDIMENT REMOVAL.
9. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS. ALL TRASH SHALL BE CLEANED ON A DAILY BASIS AND THE SITE SHALL BE LEFT IN A NEAT CONDITION AT THE END OF EACH WORK DAY.
10. TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS AND ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION, CONTROL, AND RESPONSE.
11. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER AND MAINTAIN ADEQUATE MOISTURE LEVELS.
12. SWEEP ADJACENT ROADWAYS IF MUD OR SOIL IS TRACKED ON TO THEM, OR AS DIRECTED BY THE ENGINEER. SHOULD THE CONSTRUCTION ENTRANCE FAIL TO PREVENT THE TRACKING OF SOILS OR SEDIMENT OFF OF THE PROJECT SITE, A WASHING RACK SHALL BE INSTALLED ALONG WITH APPROPRIATE MEASURES TO COLLECT RESULTING WASTEWATER.
13. DRAINAGE STRUCTURE FILTER INSERTS SHALL BE INSTALLED AND CLEANED/CHANGED PER THE MANUFACTURER'S RECOMMENDATIONS. UNITS SHALL BE INSTALLED COMPLETELY AROUND INLETS OF EXISTING AND PROPOSED DRAINAGE STRUCTURES SUCH THAT NO RUNOFF IS ALLOWED TO ENTER DRAINAGE SYSTEMS WITHOUT FILTERING THROUGH THE DEVICE.

SUGGESTED CONSTRUCTION SEQUENCE:

1. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE OWNER AND ENGINEER PRIOR TO ANY CONSTRUCTION ACTIVITY.
2. INSTALL CONSTRUCTION ENTRANCE(S) AND PLACE FILTER INSERTS IN EXISTING CATCH BASINS.
3. INSTALL PERIMETER E&S CONTROLS AND REQUEST PRE-CONSTRUCTION INSPECTION FROM THE ENGINEER.
4. FOLLOWING THE ENGINEER'S APPROVAL OF INSTALLED E&S CONTROLS, COMMENCE CONSTRUCTION OPERATIONS.
5. AT THE CONCLUSION OF CONSTRUCTION, COMPLETE THE INSTALLATION OF POST-CONSTRUCTION SITE STABILIZATION MEASURES AS SHOWN ON THE DRAWINGS.

NOTE: THE CONTRACTOR MAY MODIFY THE SUGGESTED CONSTRUCTION SEQUENCE INDICATED ABOVE, PROVIDED A REVISED SEQUENCE IS SUBMITTED FOR REVIEW AND APPROVED BY THE OWNER AND ENGINEER.

TEMPORARY E&S MEASURES MAINTENANCE SCHEDULE

E&S MEASURE	MAINTENANCE MEASURES	SCHEDULE
FILTER INSERTS IN DRAINAGE SYSTEM	CLEAN CATCH BASIN GRATE, REMOVE SEDIMENT/DEBRIS FROM FILTER INSERTS	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE
TEMPORARY DIVERSION SWALES	REPAIR DAMAGED AREAS WITHIN 24 HRS OF OBSERVED FAILURE	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE. INSPECT DAILY WHEN CONSTRUCTION ACTIVITIES ARE IN CLOSE PROXIMITY
HAY BALES/ SILT FENCE BARRIER	REPAIR/REPLACE WHEN FAILURE OBSERVED, REMOVE SILT WHEN ACCUMULATION REACHES APPROX. HALF HEIGHT OF BARRIER	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE
TARP TEMPORARY STOCKPILES	ENSURE TARP IS SECURED OVER STOCKPILE AT THE END OF EACH DAY	DAILY
CONSTRUCTION ENTRANCE	SWEEP PAVED ROADWAY ADJACENT TO SITE ENTRANCE AS NECESSARY, REFRESH STONE AS NECESSARY, REMOVE SILTED GRAVEL	WEEKLY
MOISTEN EXPOSED SOILS	PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS AND KEEP TRAVELWAYS DAMP	DAILY

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

SITE PREPARATION NOTES:

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED.
3. NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
6. IMPLEMENTING WORKER SAFETY AND/OR HEALTH PROTOCOLS THAT ADDRESS COMPLIANCE WITH RULES, LAWS, AND REGULATIONS PERTAINING TO CONSTRUCTION SAFETY AND/OR THE POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE-SPECIFIC PHYSICAL OR CHEMICAL HAZARDS IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
7. ALL CONSTRUCTION FENCING AND WARNING SIGNS SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION. INSTALL CONSTRUCTION FENCING AT THE LIMIT OF WORK.
8. PRIOR TO THE TERMINATION, ABANDONMENT, OR REMOVAL OF ANY UTILITY, VERIFY THAT APPLICABLE NOTIFICATIONS HAVE BEEN MADE TO THE UTILITY OWNER/OPERATOR AND THAT THE UTILITY HAS BEEN PROPERLY TERMINATED, CAPPED, OR PLUGGED AS REQUIRED.
9. PROTECT ALL IMPROVEMENTS NOT INCLUDED IN THE SCOPE OF SITE DEMOLITION. ANY IMPROVEMENT WHICH IS DAMAGED SHALL BE REPAIRED OR REPLACED IN-KIND TO THE OWNER'S SATISFACTION.
10. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.

UTILITY NOTES:

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE PLANS MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED. VERIFY ALL TIE-IN POINTS, ROUTING, CONFLICTS, CROSSINGS, AND BUILDING CONNECTION POINTS TO FACILITATE THE COMPLETION OF THE WORK.
3. PERFORM EXPLORATORY EXCAVATIONS AS REQUIRED TO VERIFY THE AS-BUILT LOCATION OF EXISTING SUBSURFACE UTILITIES WHERE CROSSINGS OR OTHER POTENTIAL CONFLICTS ARE PRESENT.
4. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
5. THE TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) OF ALL UTILITY STRUCTURES THAT ARE TO REMAIN SHALL BE ADJUSTED TO MATCH FINAL GRADE IN A FLUSH CONDITION. ALL NEW UTILITY STRUCTURES SHALL BE INSTALLED WITH TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) TO FINAL GRADE IN A FLUSH CONDITION.
6. ALL LIGHTING ELECTRICAL SUPPLIES SHALL BE INSTALLED IN MINIMUM 1-INCH PVC CONDUIT PER APPLICABLE SPECIFICATIONS. PLASTIC MARKING TAPE SHALL BE USED ON ALL CONDUIT RUNS.
7. THE ROUTING OF LIGHTING ELECTRICAL SUPPLIES SHOWN IS CONCEPTUAL. CONTRACTOR SHALL DETERMINE THE SPECIFIC ROUTING OF ALL LIGHTING SYSTEMS BASED ON THE ACTUAL LOCATION OF TIE-IN(S) TO EXISTING LIGHTING FEEDS AND AS REQUIRED TO AVOID CONFLICTS WITH OTHER CONSTRUCTION OR SUBSURFACE FACILITIES. PRIOR TO INSTALLATION, PROVIDE SHOP DRAWING SHOWING THE ROUTING OF ALL CONDUIT, LOCATIONS OF HANDHOLES, AND DETAILS OF TIE-INS TO EXISTING SYSTEM.
8. CONDUIT: RIGID PVC ELECTRICAL CONDUIT, NEMA TC 2 AND UL -651; FITTINGS AND CONDUIT BODIES: PVC TO MATCH CONDUIT, NEMA TC-3. PRIMER/SOLVENT CEMENT: ASTM F656/ASTM D2564; PULL ROPE: 3/8-INCH DOUBLE BRAIDED, LOW STRETCH POLYESTER COMPOSITE ROPE.
9. TRACER WIRE REQUIRED FOR TELECOMMUNICATIONS AND ELECTRIC ONLY. PROVIDE APPROPRIATE WIRE ACCESS POINTS.
10. ALL UNDERGROUND TELECOMMUNICATIONS AND ELECTRIC CONDUITS SHALL BE ENCASED IN CONCRETE EXCEPT BRANCH DISTRIBUTION FOR LIGHTING. WORK CONCRETE TO REMOVE ALL TRAPPED AIR AND INSURE EACH CONDUIT IS COMPLETELY SURROUNDED BY A MINIMUM 2" OF CONCRETE. ALLOW CONCRETE TO CURE FOR AT LEAST ONE HOUR BEFORE BACKFILLING.
11. FOR TELECOMMUNICATIONS AND ELECTRIC, WARNING TAPE SHALL BE INSTALLED 12-INCHES BELOW GRADE.
12. SEAL ALL CONDUIT ENDS WITH BLANK DUCT PLUGS. SECURE PULL ROPE TO DUCT PLUG.
13. ALL WORK ASSOCIATED WITH FIRE PROTECTION AND DOMESTIC WATER SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE LOCAL WATER UTILITY.
14. ALL WORK ASSOCIATED WITH ELECTRICAL SERVICE SHALL CONFORM TO THE STANDARDS OF EVERSOURCE. IF THERE ARE ANY CONFLICTS BETWEEN THE REQUIREMENTS INDICATED AND EVERSOURCE STANDARDS, EVERSOURCE STANDARDS SHALL PREVAIL.
15. ALL WORK ASSOCIATED WITH TELECOMMUNICATIONS SHALL CONFORM TO THE STANDARDS OF THE LOCAL PROVIDER.
16. INSTALL CONDUIT, PULL ROPE, CAPS, WARNING TAPE, AND TRACER WIRE PER APPLICABLE SPECIFICATIONS, STANDARDS, AND CODES.
17. ALTHOUGH NOT SHOWN ON THE DRAWINGS, PROVIDE FOR THE INSTALLATION OF ALL JOINTS, COUPLINGS, RESTRAINTS, BENDS, ANGLES, AND OTHER APPURTENANCES TO ACHIEVE A COMPLETE, FUNCTIONAL WATER SUPPLY SYSTEM.

SEWER DESIGN NOTES:

1. SEWER DESIGN IN ACCORDANCE WITH CT PUBLIC HEALTH CODE ON-SITE SEWAGE DISPOSAL REGULATIONS AND TECHNICAL STANDARDS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEMS (SSDS), REVISED JANUARY 2018.
2. TOTAL NUMBER OF PROPOSED BEDROOMS = 42
3. PER SECTION IV.A, DESIGN FLOW = 150 GPD/BEDROOM
4. DESIGN FLOW = 150 GPD X 42 BEDROOMS = 6,300 GPD
5. MINIMUM PUMP CHAMBER SIZE = 6,300 GPD X 4 HOURS = 1,050 GALLONS
6. PUMP CHAMBER SIZE USED = 1,500 GALLONS

LAYOUT AND MATERIALS NOTES:

1. NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED.
3. NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
6. IMPLEMENTING WORKER SAFETY AND/OR HEALTH PROTOCOLS THAT ADDRESS COMPLIANCE WITH RULES, LAWS, AND REGULATIONS PERTAINING TO CONSTRUCTION SAFETY AND/OR THE POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE-SPECIFIC PHYSICAL OR CHEMICAL HAZARDS IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
7. ENGAGE A CONNECTICUT-LICENSED LAND SURVEYOR TO PERFORM LAND-SURVEYING SERVICES REQUIRED, INCLUDING, BUT NOT LIMITED TO VERIFICATION AND LAYOUT OF PROPOSED IMPROVEMENTS, DIMENSIONS, AND ELEVATIONS. REPORT DISCREPANCIES TO THE ENGINEER.
8. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
9. ALL CURBING IS BITUMINOUS CONCRETE UNLESS OTHERWISE INDICATED. WHERE CURBING IS CALLED-FOR ADJACENT TO SIDEWALKS, IT SHALL BE MONOLITHIC CONCRETE CURB AND SIDEWALK PER APPLICABLE DETAILS.
10. THE CROSS-SLOPE OF ANY SIDEWALK, WALKWAY, OR OTHER PEDESTRIAN SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
11. ACCESSIBLE ROUTES SHALL COMPLY WITH CONNECTICUT BUILDING CODE. THE RUNNING SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20 (5%). THE CROSS SLOPE OF A WALKING SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
12. RAMPS SHALL COMPLY WITH CT BUILDING CODE, REF. 2012 IBC SECTION 1010 AND ICC/ANSI A117.1 2009 CHAPTER 4, SECTION 405.
13. CONSTRUCTION JOINTS: REINFORCEMENT SHALL NOT CONTINUE THROUGH CONSTRUCTION JOINTS.
14. PRIOR TO INITIATION OF CONCRETE FLATWORK, SUBMIT PROPOSED CONSTRUCTION JOINT PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL. COORDINATE SUCH PLAN WITH THE JOINT PATTERNS DEPICTED ON THE DRAWINGS.
15. UNLESS OTHERWISE SPECIFIED, MISCELLANEOUS CONCRETE PADS SHALL BE CONSTRUCTED PER SIDEWALK DETAIL.
16. ALL NON-ACCESSIBLE PARKING SPACES ARE 9' X 18'. VERIFY OVERALL LAYOUT DIMENSIONS BASED ON THESE DIMENSIONS AND THE NUMBER OF SPACES INDICATED. FIELD-ADJUST OVERALL LAYOUT DIMENSION IN CONCERT WITH THE ENGINEER IF REQUIRED.
17. DIMENSIONS INDICATED ARE TO FACE OF CURB, PAVEMENT EDGE, EDGE OR CENTERLINE OF IMPROVEMENT, OR AS OTHERWISE NOTED.
18. PROVIDE FOR THE LAYOUT AND STAKING/MARKING OF THE PROPOSED LOCATION OF ALL PROPOSED SITE IMPROVEMENTS, INCLUDING FURNISHINGS. OBTAIN ENGINEER'S APPROVAL OF THE LAYOUT PRIOR TO PROCEEDING WITH THE WORK.
19. UNLESS OTHERWISE INDICATED, LINES ARE PARALLEL OR PERPENDICULAR TO LINE FROM WHICH THEY ARE MEASURED.

PLANTING NOTES:

1. THE CONTRACTOR SHALL CLEARLY MARK LIMITS OF CLEARING AND LIMITS OF TREE REMOVAL, SELECTIVE PRUNING AND THINNING FOR REVIEW BY THE LANDSCAPE ARCHITECT PRIOR TO ANY CLEARING OPERATIONS. ALL TREE WORK SHALL BE EXECUTED BY A LICENSED ARBORIST.
2. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO PROTECT EXISTING VEGETATION THAT IS DESIGNATED, "TO REMAIN".
3. ALL TREES TO BE SAVED SHALL BE PROTECTED. SEE SPECIFICATION FOR TREE PROTECTION REQUIREMENTS.
4. EXISTING ON SITE TOPSOIL MAY BE REUSED UPON APPROVAL BY THE LANDSCAPE ARCHITECT. EXISTING TOPSOIL SHALL BE TESTED AND AMENDED FOR NUTRIENTS, ORGANIC MATTER, PH, AND SOIL TEXTURE. – SEE SPECIFICATIONS.
5. REMOVE ALL ROCKS AND DEBRIS FROM SOIL SURFACE AND GRADE TO AN EVEN SURFACE. – SEE SPECIFICATIONS.
6. COMPLETE QUANTITIES OF PLANTS FOR EACH AREA TO BE AVAILABLE ON SITE AT THE TIME OF PLANTING FOR FIELD LAYOUT BY OWNER'S REPRESENTATIVE. NO PARTIAL LAYOUT AND PLANTING OF AREAS WILL BE ACCEPTABLE.
7. ALL PLANT MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED BY THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. – SEE SPECIFICATION FOR DETAILED REQUIREMENTS.
8. ANY PROPOSED SUBSTITUTIONS OF PLANT MATERIAL SHALL BE MADE WITH MATERIAL EQUIVALENT TO THE DESIRED MATERIAL IN OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE. NO SUBSTITUTION OF PLANT SPECIES OR VARIETIES WILL BE ACCEPTABLE WITHOUT LANDSCAPE ARCHITECT'S WRITTEN APPROVAL.
9. OWNER'S REPRESENTATIVE TO APPROVE PLANT MATERIAL PRIOR TO DELIVERY TO SITE AND AGAIN AT THE PROJECT SITE PRIOR TO PLANTING.
10. VERIFY ALL EXISTING UTILITY LINES PRIOR TO PLANTING AND REPORT ANY CONFLICTS TO THE OWNER OR HIS REPRESENTATIVE.
11. NO PLANTING SHALL OCCUR PRIOR TO ACCEPTANCE OF FINAL GRADING.
12. INSTALL PLANTS WITH ROOT FLARES FLUSH WITH GRADE. IMMEDIATELY REPLANT PLANTS WHICH SETTLE OUT OF PLUMB OR BELOW FINISH GRADE.
13. SEE SPECIFICATIONS FOR PLANTING MAINTENANCE AND GUARANTEE REQUIREMENTS.
14. THE LANDSCAPE ARCHITECT OR ENGINEER RESERVES THE RIGHT TO ADJUST FINAL GRADES IN THE FIELD TO SAVE EXISTING VEGETATION.
15. PLANT QUANTITIES NOTED IN THE PLANT SCHEDULE ARE APPROXIMATE AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING AND INSTALLATION OF ALL PLANT MATERIALS NOTED ON THE PLANTING PLAN.
16. CAUTION SHALL BE USED NOT TO EXTEND MULCH LAYER ABOVE SOIL LEVEL AT TRUNKS/STEMS OF INSTALLED PLANT MATERIAL.
17. PROVIDE FOUR (4) FOOT DIAMETER MULCH CIRCLE AROUND ALL INDIVIDUAL TREE PLANTINGS AND CONTINUOUS MULCH BED AROUND SHRUB, PERENNIAL AND GROUNDCOVER PLANTINGS, UNLESS OTHERWISE NOTED. DO NOT MOUND SOIL OR MULCH AT TRUNKS.
18. ALL PLANTING SHALL BE DONE UNDER FULL SUPERVISION OF CERTIFIED ARBORIST, NURSERYMAN, OR LICENSED LANDSCAPE ARCHITECT.
19. LOOSE OR CRACKED ROOTBALLS SHALL BE REJECTED.

GRADING AND DRAINAGE NOTES:

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK.
6. ENGAGE A CONNECTICUT-LICENSED LAND SURVEYOR TO PERFORM LAND-SURVEYING SERVICES REQUIRED, INCLUDING, BUT NOT LIMITED TO VERIFICATION AND LAYOUT OF PROPOSED IMPROVEMENTS, DIMENSIONS, AND ELEVATIONS. REPORT DISCREPANCIES TO THE ENGINEER.
7. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
8. COMPLY WITH CONNECTICUT BUILDING CODE FOR ALL SITE CONSTRUCTION, INCLUDING HANDICAPPED ACCESSIBILITY.
9. THE CROSS-SLOPE OF ANY SIDEWALK, WALKWAY, OR OTHER PEDESTRIAN SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
10. ACCESSIBLE ROUTES SHALL COMPLY WITH CONNECTICUT BUILDING CODE. THE RUNNING SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20 (5%). THE CROSS SLOPE OF A WALKING SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
11. RAMPS SHALL COMPLY WITH CT BUILDING CODE, REF. 2012 IBC SECTION 1010 AND ICC/ANSI A117.1 2009 CHAPTER 4, SECTION 405.
12. VERIFY ALL GRADES AND SLOPES PRIOR TO CONCRETE PLACEMENT. REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
13. PROPOSED GRADES INDICATE DESIGN INTENT. VERIFY ELEVATIONS AND MAKE ADJUSTMENTS TO MEET FIELD CONDITIONS. DO NOT PROCEED WITH ANY ADJUSTMENT OR FIELD MODIFICATION UNTIL APPROVED BY THE ENGINEER.
14. GRADE TRANSITION BETWEEN TOPOGRAPHIC LINES AND SPOT GRADES SHALL BE UNIFORM UNLESS OTHERWISE INDICATED.
15. UNLESS OTHERWISE INDICATED, BLEND TRANSITIONS IN ELEVATION BETWEEN NEW WORK AND AREAS TO REMAIN AT A MAXIMUM SLOPE OF 1V:2H AND RESTORE WITH FOUR (4) INCHES OF LOAM AND SEED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED. COORDINATE WITH ENGINEER IF DIMENSIONAL CONSTRAINTS REQUIRE STEEPER SLOPES.
16. UPON REACHING PROPOSED SUBGRADE ELEVATIONS WITHIN THE FIELD, ENGINEER WILL REVIEW SUBGRADE PRIOR TO INSTALLATION OF DRAINAGE SYSTEM. SEE SPECIFICATION SECTION 31 2310 – EARTHWORK.
17. ALL CATCH BASINS AND SHALLOW DROP INLETS SET AGAINST CURBS SHALL BE CONNDOT TYPE "C". ALL OTHERS SHALL BE CONNDOT TYPE "C-L"..
18. ALL UNDERDRAINS SHALL BE 6-INCH HDPE. SEE SPECIFICATIONS.
19. THE TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) OF ALL UTILITY STRUCTURES THAT ARE TO REMAIN SHALL BE ADJUSTED TO MATCH FINAL GRADE IN A FLUSH CONDITION. ALL NEW UTILITY STRUCTURES SHALL BE INSTALLED WITH TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) TO FINAL GRADE IN A FLUSH CONDITION.
20. AT THE CONCLUSION OF THE WORK, CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT MATERIAL FROM ALL PORTIONS OF THE STORM DRAINAGE SYSTEM, INCLUDING NEW WORK AND EXISTING WORK THAT REMAINS OR IS INCORPORATED INTO THE NEW SYSTEM.

PERCOLATION TEST RESULTS:

PERCOLATION TESTS PERFORMED ON 11/21/2019 BY BSC GROUP
SEE SHEET C-4.0 FOR LOCATIONS OF PERCOLATION TESTS

PT-A
DEPTH: ~30"
PRESOAK @ 11:30 AM
DRY @ 12:33 PM
BEGIN TEST @ 12:35 PM

TIME	DEPTH	CHANGE
12:35	9.5"	–
12:36	13.5"	4"
12:37	16.5"	3"
12:38	18.75"	2.25"
12:39	20.25"	1.5"
12:40	21.25"	1"
12:41	22.25"	1"
12:42	15.75"	REFILL
12:43	18"	2.25"
12:44	20"	2"
12:45	21.5"	1.5"
12:46	22.25"	0.75"
12:47	DRY	–

EFFECTIVE INFILTRATION RATE (FS=2) = 30 IN/HR

PT-B
DEPTH: ~30"
PRESOAK @ 12:00 PM
BEGIN TEST @ 2:00 PM

TIME	DEPTH	CHANGE
2:00	3"	–
2:05	5.25"	2.25"
2:10	7.25"	2"
2:15	8.75"	1.5"
2:20	10.25"	1.5"
2:25	11.50"	1.25"
2:30	12.50"	1"
2:35	13.50"	1"
2:40	14.50"	1"
2:45	15.50"	1"

EFFECTIVE INFILTRATION RATE (FS=2) = 6 IN/HR

PT-C
DEPTH: ~30"
PRESOAK @ 12:10 PM
DRY @ 12:54 PM
BEGIN TEST @ 1:00 PM

TIME	DEPTH	CHANGE
1:00	5.5"	–
1:01	7.25"	1.75"
1:02	8.25"	1"
1:03	9"	0.75"
1:04	9.75"	0.75"
1:06	11"	1.25"
1:08	12"	1"
1:10	13"	1"
1:12	14"	1"
1:14	14.75"	0.75"
1:16	15.50"	0.75"
1:18	16"	0.50"
1:20	16.5"	0.50"
1:22	17.25"	0.75"
1:24	DRY	–

EFFECTIVE INFILTRATION RATE (FS=2) =7.5 IN/HR

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

FRANCIS J. VACCA, PE No. 29098

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

GENERAL NOTES

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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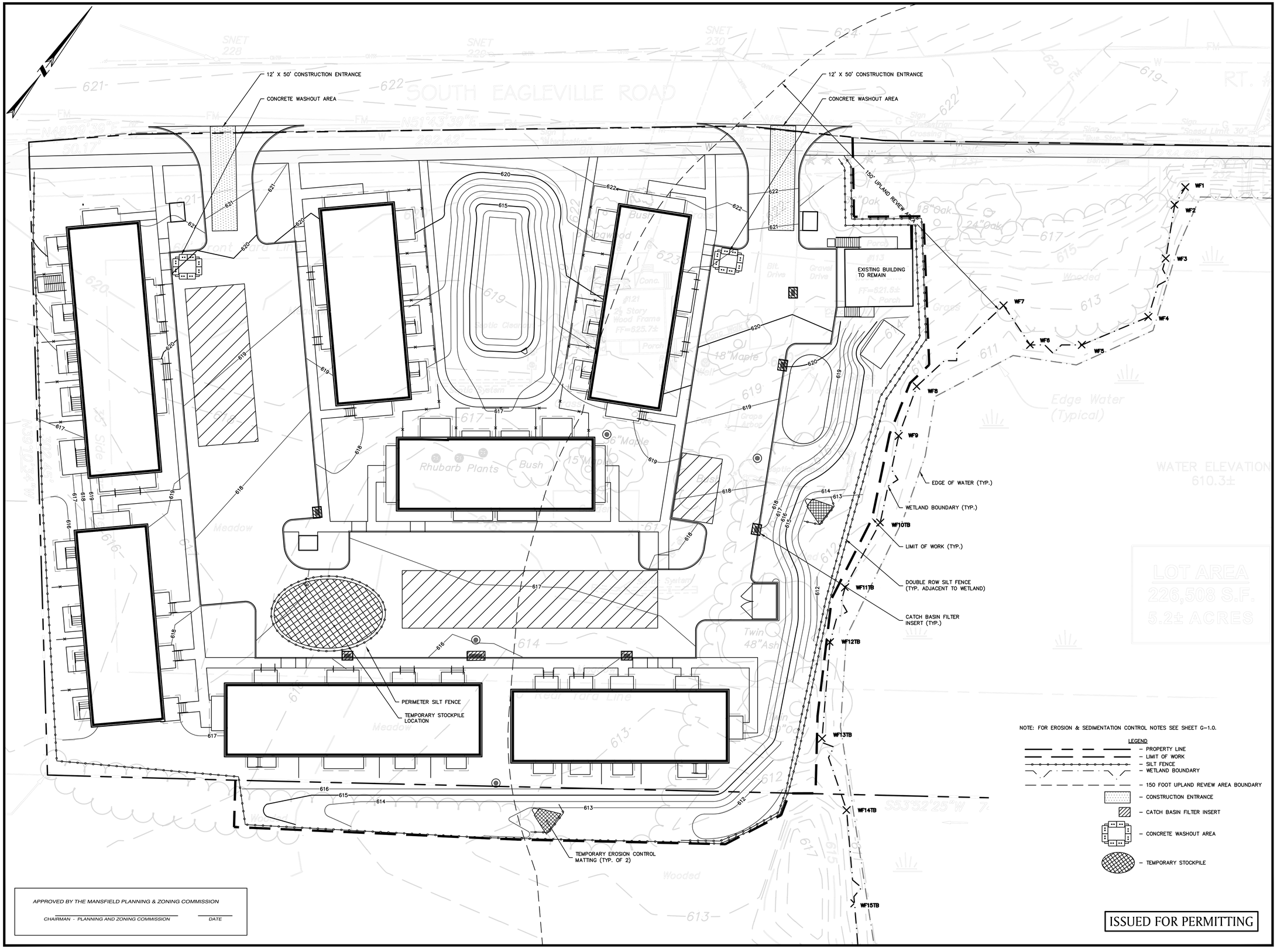
SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900-NOTES.DWG
DWG. NO:
JOB. NO: 83749.00
G-1.0



APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT FRANCIS J. VACCA 29098 LICENSED PROFESSIONAL ENGINEER

FRANCIS J. VACCA, PE No. 29098

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

EROSION & SEDIMENTATION CONTROL PLAN

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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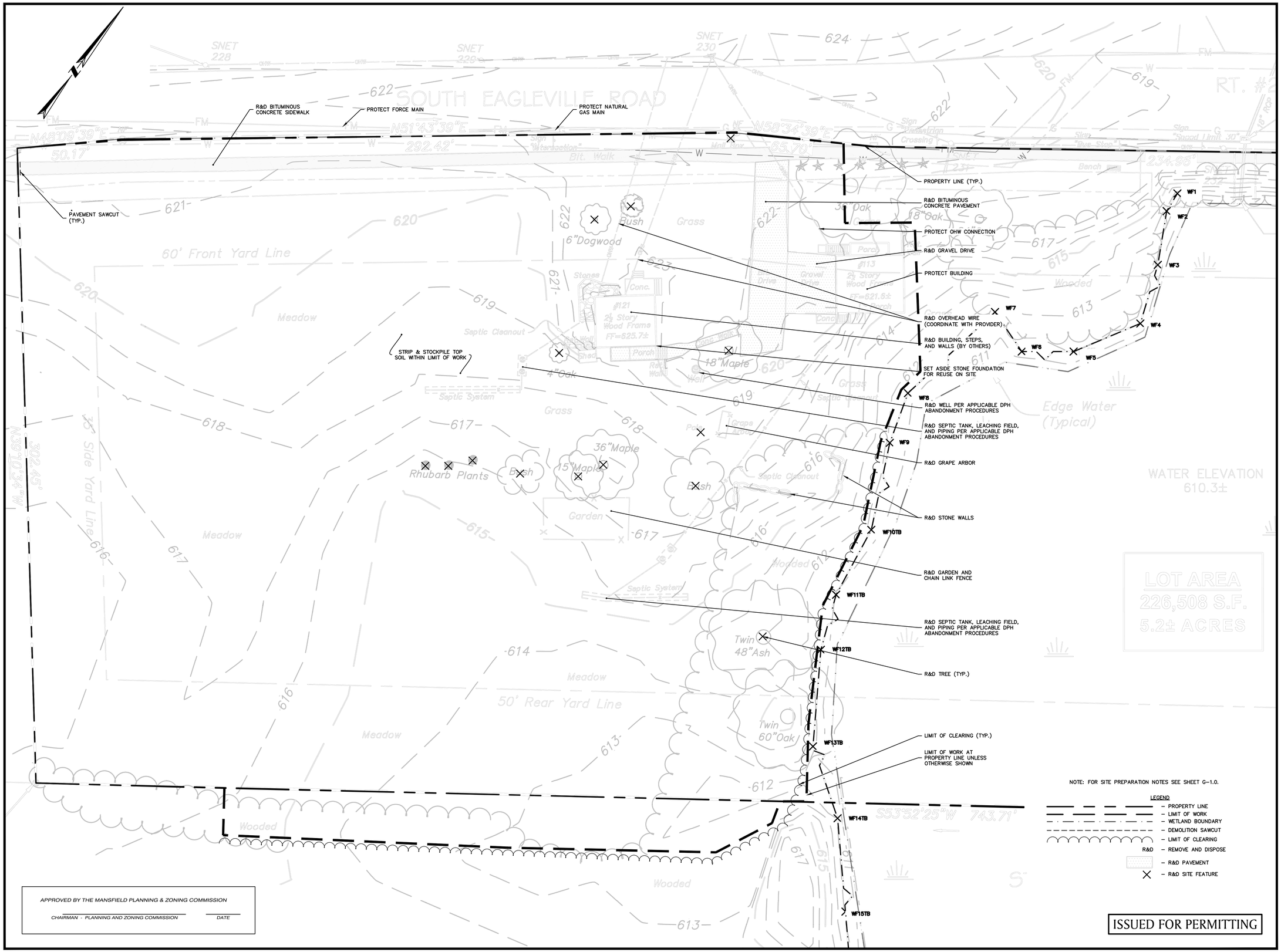
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-ES.DWG
DWG. NO:
JOB. NO: 83749.00

C-1.0



EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT FRANCIS J. VACCA 29098 LICENSED PROFESSIONAL ENGINEER

FRANCIS J. VACCA, PE No. 29098

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

SITE PREPARATION PLAN

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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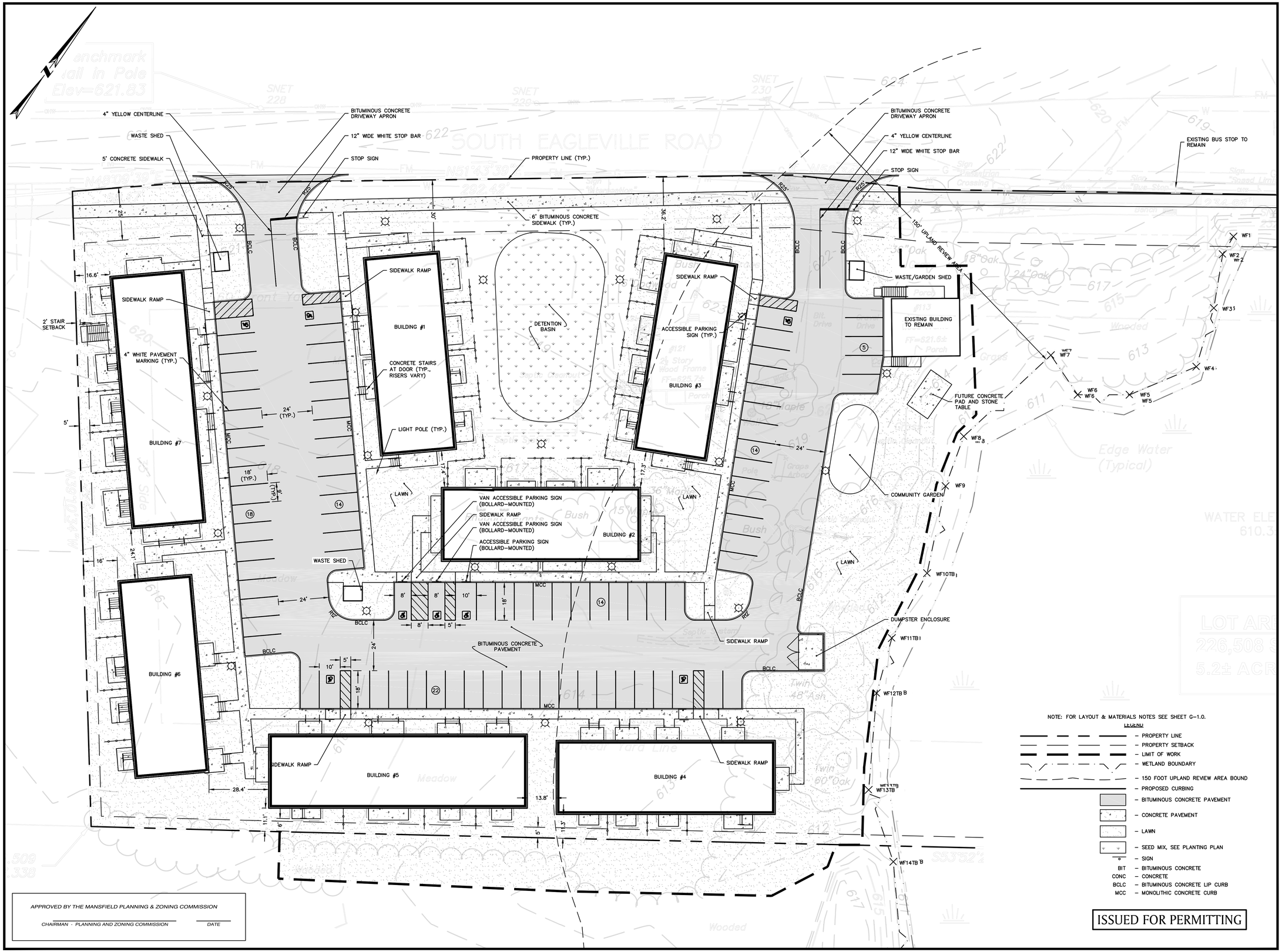
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-PREP.DWG
DWG. NO:
JOB. NO: 83749.00

C-2.0



APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

NOTE: FOR LAYOUT & MATERIALS NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- PROPERTY SETBACK
- LIMIT OF WORK
- WETLAND BOUNDARY
- 150 FOOT UPLAND REVIEW AREA BOUND
- PROPOSED CURBING
- BITUMINOUS CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- LAWN
- SEED MIX, SEE PLANTING PLAN
- SIGN
- BIT – BITUMINOUS CONCRETE
- CONC – CONCRETE
- BCLC – BITUMINOUS CONCRETE LIP CURB
- MCC – MONOLITHIC CONCRETE CURB

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT FRANCIS J. VACCA 29098 LICENSED PROFESSIONAL ENGINEER

FRANCIS J. VACCA, PE No. 29098

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

LAYOUT & MATERIALS PLAN

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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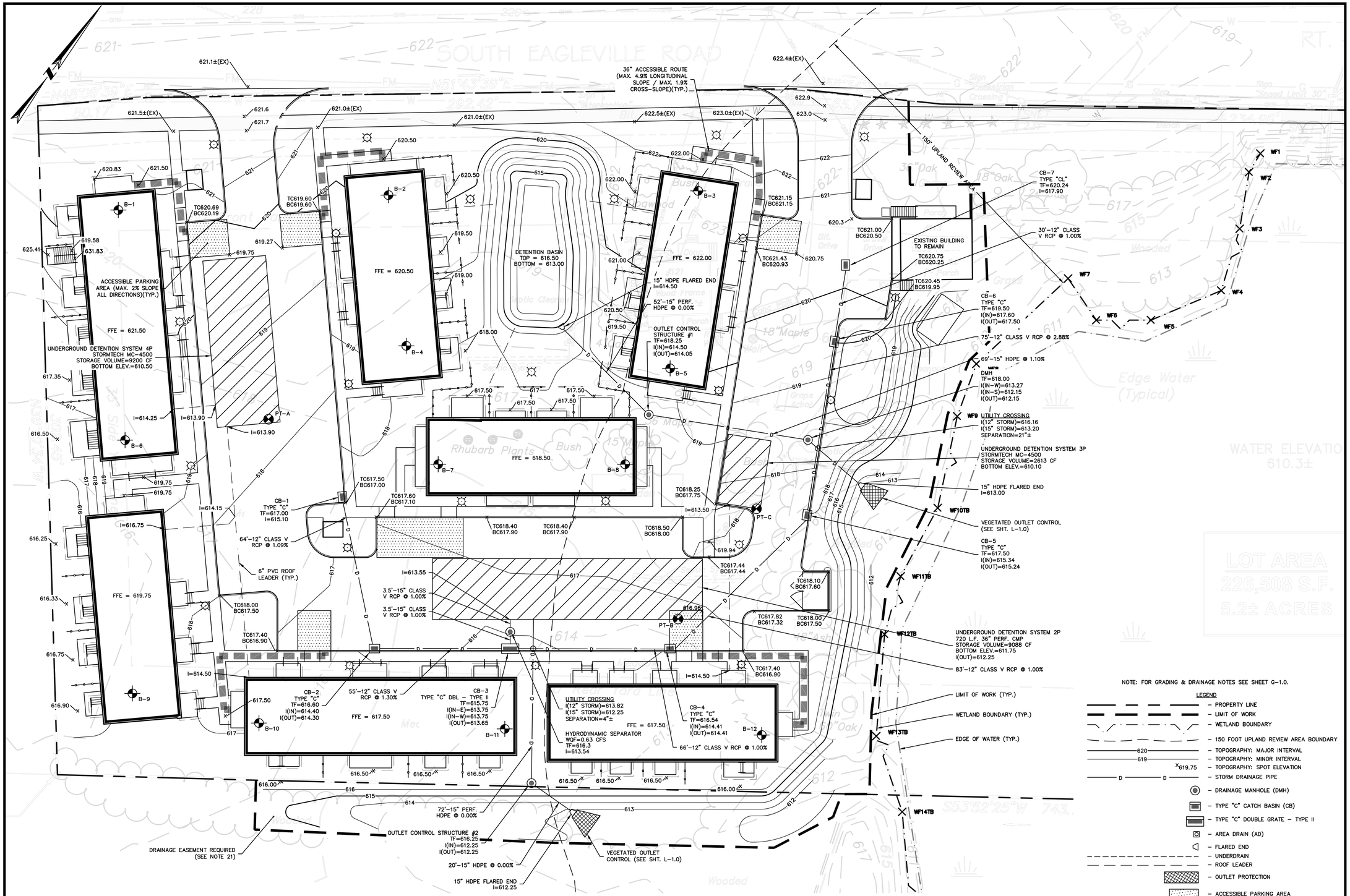
SCALE: 1" = 20'

0 10 20 40 FEET

FILE: 8374900-LM.DWG

DWG. NO: C-3.0

JOB. NO: 83749.00



NOTE: FOR GRADING & DRAINAGE NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- WETLAND BOUNDARY
- 150 FOOT UPLAND REVIEW AREA BOUNDARY
- 620 — TOPOGRAPHY: MAJOR INTERVAL
- 619 — TOPOGRAPHY: MINOR INTERVAL
- X619.75 — TOPOGRAPHY: SPOT ELEVATION
- D — D — STORM DRAINAGE PIPE
- DRAINAGE MANHOLE (DMH)
- TYPE "C" CATCH BASIN (CB)
- TYPE "C" DOUBLE GRATE - TYPE II
- AREA DRAIN (AD)
- FLARED END
- UNDERDRAIN
- ROOF LEADER
- OUTLET PROTECTION
- ACCESSIBLE PARKING AREA 2% MAX SLOPE ALL DIRECTIONS
- 36" ACCESSIBLE ROUTE 4.9% MAX SLOPE / 1.9% MAX X-SLOPE
- PERCOLATION TEST LOCATION
- GEOTECHNICAL BORING LOCATION

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT FRANCIS J. VACCA 29098 LICENSED PROFESSIONAL ENGINEER

FRANCIS J. VACCA, PE No. 29098

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

GRADING & DRAINAGE PLAN

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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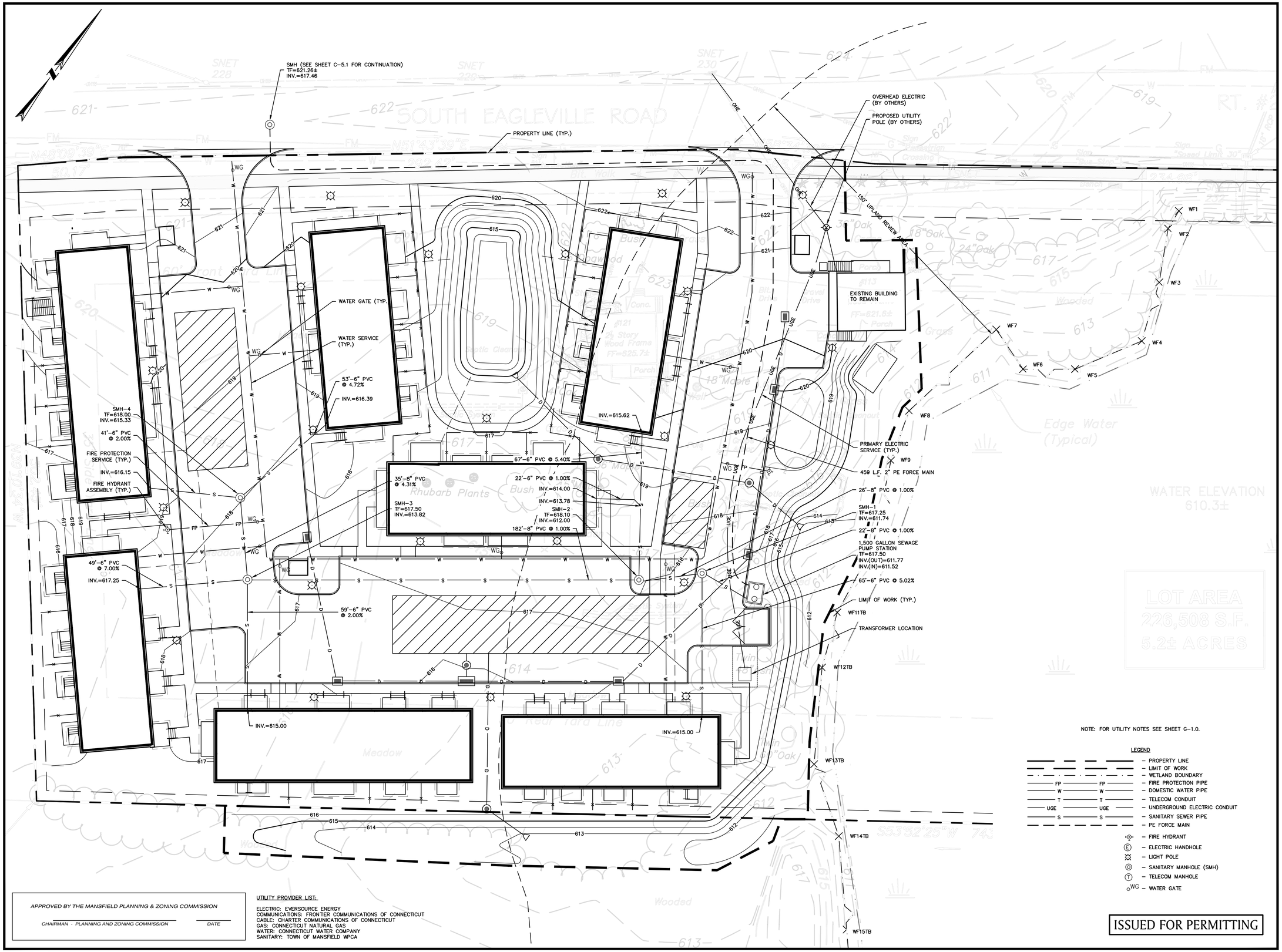
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-GRDR.DWG
DWG. NO:
JOB. NO: 83749.00

C-4.0



NOTE: FOR UTILITY NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- WETLAND BOUNDARY
- FIRE PROTECTION PIPE
- DOMESTIC WATER PIPE
- TELECOM CONDUIT
- UNDERGROUND ELECTRIC CONDUIT
- SANITARY SEWER PIPE
- PE FORCE MAIN
- FIRE HYDRANT
- ELECTRIC HANDHOLE
- LIGHT POLE
- SANITARY MANHOLE (SMH)
- TELECOM MANHOLE
- WATER GATE

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

UTILITY PROVIDER LIST:

ELECTRIC: EVERSOURCE ENERGY
COMMUNICATIONS: FRONTIER COMMUNICATIONS OF CONNECTICUT
CABLE: CHARTER COMMUNICATIONS OF CONNECTICUT
GAS: CONNECTICUT NATURAL GAS
WATER: CONNECTICUT WATER COMPANY
SANITARY: TOWN OF MANSFIELD WPCA

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT
FRANCIS J. VACCA
29098
LICENSED
PROFESSIONAL ENGINEER

FRANCIS J. VACCA, PE No. 29098

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

UTILITY PLAN

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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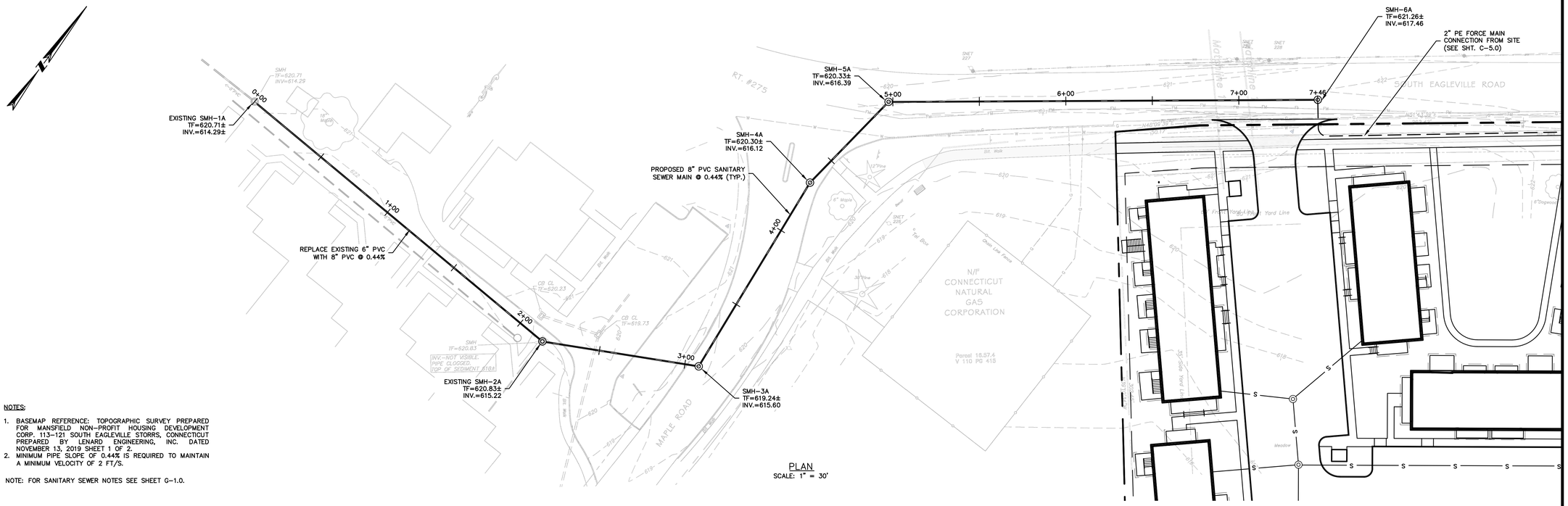
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-UT.DWG
DWG. NO:
JOB. NO: 83749.00

C-5.0



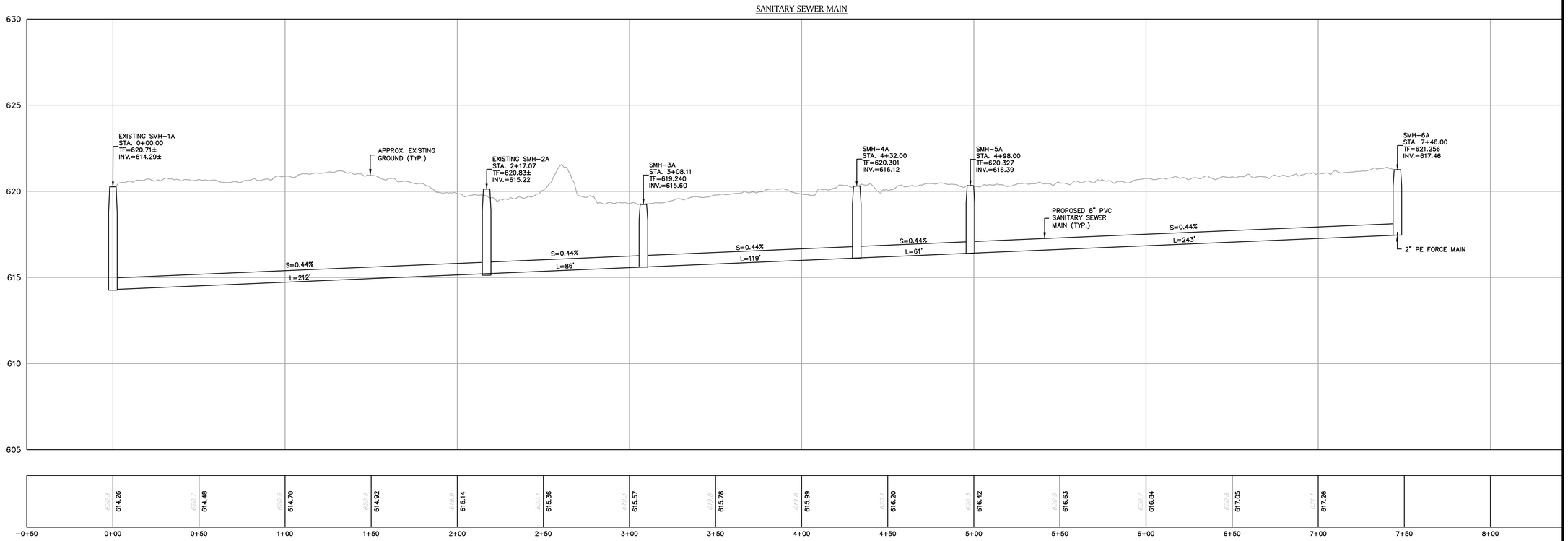
NOTES:

1. BASEMAP REFERENCE: TOPOGRAPHIC SURVEY PREPARED FOR MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP. 113-121 SOUTH EAGLEVILLE STORRS, CONNECTICUT PREPARED BY LENARD ENGINEERING, INC. DATED NOVEMBER 13, 2019 SHEET 1 OF 2.
2. MINIMUM PIPE SLOPE OF 0.44% IS REQUIRED TO MAINTAIN A MINIMUM VELOCITY OF 2 FT/S.

NOTE: FOR SANITARY SEWER NOTES SEE SHEET G-1.0.

PLAN
SCALE: 1" = 30'

SANITARY SEWER MAIN



PROFILE
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT
FRANCIS J. VACCA
29098
LICENSED
PROFESSIONAL ENGINEER

FRANCIS J. VACCA, PE No. 29098

EAGLEVILLE GREEN

113-121 SOUTH
EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

SANITARY SEWER PLAN & PROFILE

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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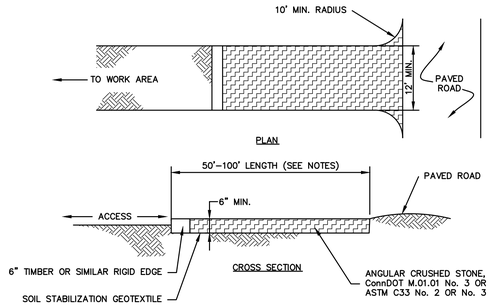
SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900-SEWER_ALT2.DWG
DWG. NO: C-5.1
JOB. NO: 83749.00

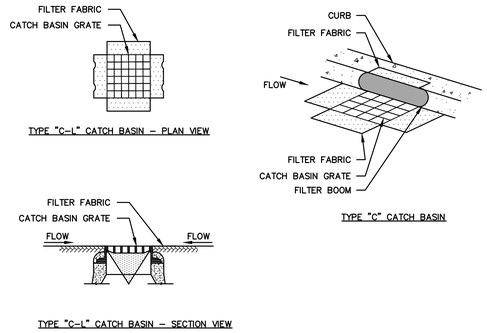


NOTES:

1. REMOVE TOPSOIL AND ORGANICS PRIOR TO CRUSHED STONE PLACEMENT.
2. INSTALL SUB-BASE OF FREE DRAINING BACKFILL OR ROAD STABILIZATION GEOTEXTILE AS NECESSARY ON UNSTABLE SOILS.
3. LENGTH SHALL BE 50 FOOT MINIMUM. WHERE TRACKED SEDIMENTS CONTAIN LESS THAN 80% SAND, LENGTH SHALL BE 100 FOOT MINIMUM.
4. IF THE GRADE OF THE CONSTRUCTION ENTRANCE DRAINS TO THE PAVED SURFACE AND IT EXCEEDS 2% SLOPE, CONSTRUCT ENTRANCE AT LEASE 15 FEET FROM ITS ENTRANCE ONTO THE PAVED SURFACE WHILE DIVERTING RUN-OFF WATER TO A SETTLING OR FILTERING AREA.
5. CONSTRUCT ANY DRAINAGE AND SETTLING FACILITIES REQUIRED TO ACCOMMODATE VEHICLE WASHING OPERATIONS. DIVERT ALL WASH WATER AWAY FROM ENTRANCE TO THE SETTLING AREA.
6. MAINTAIN ENTRANCE IS A CONDITION THAT WILL PREVENT WASHING OF SEDIMENT ONTO PAVED SURFACES.

CONSTRUCTION ENTRANCE

SCALE: NONE
EC-101-CT

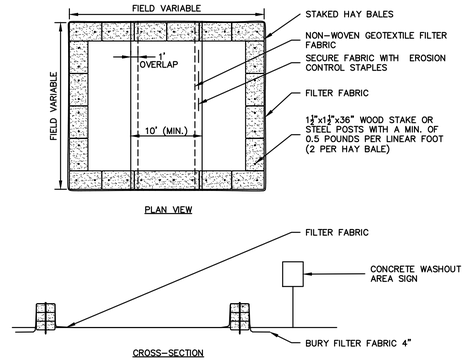


GENERAL NOTES

1. PROVIDE INLET PROTECTION TO ALL EXISTING CATCH BASINS IN THE VICINITY OF CONSTRUCTION. PROTECT NEW CATCH BASINS AS THEY ARE CONSTRUCTED.
2. GRATE TO BE PLACED OVER FILTER FABRIC.

CATCH BASIN FILTER INSERT

SCALE: NONE

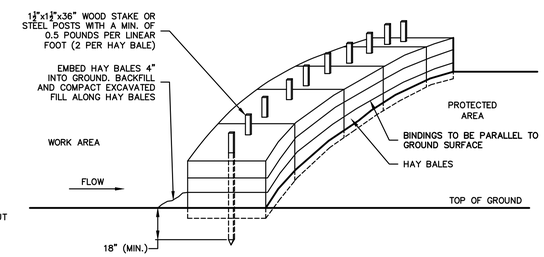


NOTES:

1. CONSTRUCT WASHOUT AREA LARGE ENOUGH TO ENSURE MATERIALS WILL BE CONTAINED WHERE WASTE CONCRETE CAN SOLIDIFY IN PLACE AND EXCESS WATER CAN SAFELY EVAPORATE.
2. WASHOUT AREA SHALL BE LARGE ENOUGH TO RETAIN ALL LIQUID AND WASTE CONCRETE MATERIALS FROM WASHOUT OPERATION.
3. WEEKLY INSPECTIONS OF WASHOUT AREAS SHALL BE CONDUCTED TO ASSESS THE HOLDING CAPACITY AND FUNCTIONALITY OF THE WASHOUT AREA.

TEMPORARY CONCRETE WASHOUT AREA

SCALE: NONE

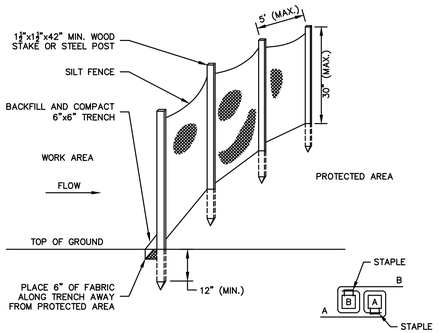


GENERAL NOTES

1. HAY BALES SHALL BE MADE OF HAY OR STRAW WITH 40 POUND MIN. WEIGHT AND 120 POUND MAX. WEIGHT HELD TOGETHER BY TWINE OR WIRE.
2. PLACE HAY BALES ON CONTOUR AND WING THE LAST HAY BALES UP SLOPE SO THAT THE TOP OF THE LAST SEVERAL HAY BALES ARE HIGHER THAN THE LINE OF HAY BALES.
3. DRIVE FIRST STAKE IN EACH BALE TOWARD THE PREVIOUSLY LAID BALE TO FORCE THEM TOGETHER.
4. PUT ONE HAY BALE PERPENDICULAR ALONG HAY BALE BARRIER EACH 100 FEET.

HAY BALE BARRIER

SCALE: NONE
EC-106-CT

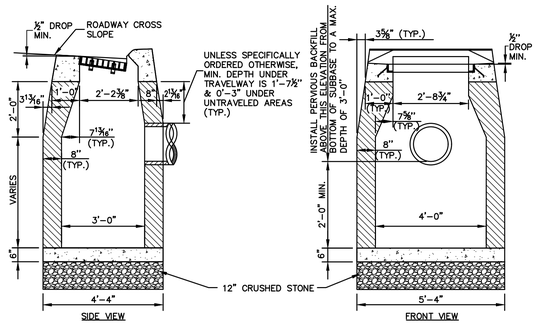


GENERAL NOTES

1. FOR SLOPE & SWALE INSTALLATIONS, EXTEND FENCE OP SLOPE SUCH THAT BOTTOM ENDS OF FENCE WILL BE HIGHER THAN THE TOP OF THE LOWEST PORTION OF FENCE.
2. FOR FENCE INSTALLED ON LEVEL TERRAIN INSTALL WING SECTIONS PERPENDICULAR TO MAIN BARRIER AT 50'-100' INTERVALS.

SILT FENCE BARRIER

SCALE: NONE
EC-107

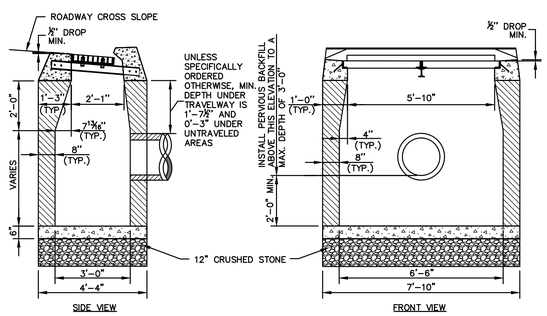


GENERAL NOTES

1. FRAME AND GRATE SHALL BE CONSTRUCTED PER SPECIFICATIONS.
2. ALL FACES OF STRUCTURES IN CONTACT WITH PAVEMENT SHALL BE COVERED WITH TAR PAPER OR APPROVED EQUAL.
3. TO CONVEY SUBSURFACE DRAINAGE, OPENINGS SHALL BE FORMED IN THE FOUR WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF PERVIOUS BACKFILL.
4. WALL THICKNESS OF ALL CB'S OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (12" THICKNESS WILL START AFTER THE FIRST 10').
5. USE APPROPRIATE CONCRETE TOP FOR CURBING SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.
6. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

TYPE "C" CATCH BASIN

SCALE: NONE
STM-101-CT

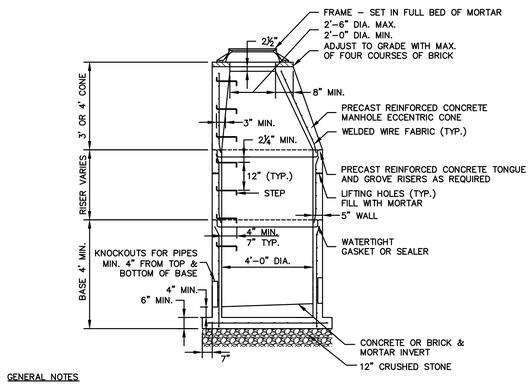


GENERAL NOTES

1. FRAME AND GRATE SHALL BE CONSTRUCTED PER SPECIFICATIONS.
2. ALL FACES OF STRUCTURES IN CONTACT WITH PAVEMENT SHALL BE COVERED WITH TAR PAPER OR APPROVED EQUAL.
3. TO CONVEY SUBSURFACE DRAINAGE, OPENINGS SHALL BE FORMED IN THE FOUR WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF PERVIOUS BACKFILL.
4. WALL THICKNESS OF ALL CB'S OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (12" THICKNESS WILL START AFTER THE FIRST 10').
5. USE APPROPRIATE CONCRETE TOP FOR CURBING SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.
6. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

TYPE "C" CATCH BASIN DOUBLE GRATE TYPE II

SCALE: NONE
STM-106-CT

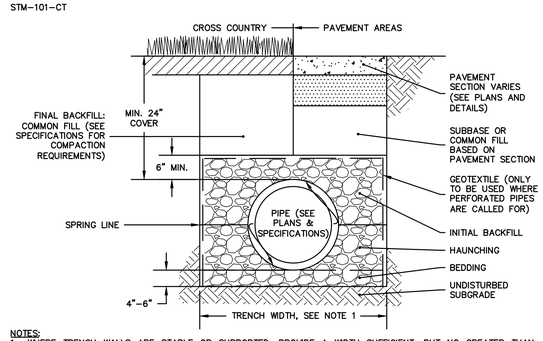


GENERAL NOTES

1. 5' OR 6' DIA. PRECAST BASES MAY BE USED WHEN REQUIRED DUE TO SIZE OR NUMBER OF PIPES AT THE MANHOLE. PRECAST REDUCERS WILL BE PLACED ABOVE THE 5' OR 6' BASES AS DIRECTED BY THE ENGINEER. WALL THICKNESS TO INCREASE 1" FOR EACH 1' OF INSIDE DIAMETER INCREASE.
2. FRAME DIAMETER OF 3'-3" WITH 4" FLANGE MUST BE USED WHEN THE TOP DIA. OF THE PRECAST CONE IS LESS THAN 3'-6". ALL OTHER FRAME DIMENSIONS ARE TO REMAIN THE SAME.
3. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

STORM DRAINAGE MANHOLE

SCALE: NONE
STM-109-CT

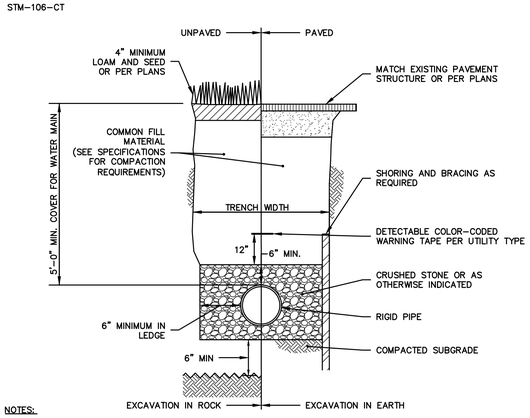


NOTES:

1. WHERE TRENCH WALLS ARE STABLE OR SUPPORTED, PROVIDE A WIDTH SUFFICIENT, BUT NO GREATER THAN NECESSARY, TO ENSURE WORKING ROOM TO PROPERLY PLACE AND COMPACT HAUNCHING AND OTHER EMBEDMENT MATERIALS. UNLESS OTHERWISE SPECIFIED BY THE PIPE MANUFACTURER, THE SPACE BETWEEN THE PIPE AND TRENCH WALL MUST BE WIDER THAN THE COMPACTION EQUIPMENT USED IN THE PIPE ZONE. MINIMUM WIDTH SHALL BE NOT LESS THAN THE GREATER OF EITHER THE PIPE OUTSIDE DIAMETER PLUS 16 INCHES OR THE PIPE OUTSIDE DIAMETER TIMES 1.25, PLUS 12 INCHES.
2. WHERE PERFORATED PIPES ARE CALLED-FOR, BEDDING, HAUNCHING, AND INITIAL BACKFILL SHALL BE CONNDOT NO. 6 CRUSHED STONE SHALL MEET THE REQUIREMENTS OF FORM 816 M.08.
3. WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL PER THE SPECIFICATIONS. AS AN ALTERNATIVE, AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL UNDER SOME CIRCUMSTANCES.
4. BEDDING, HAUNCHING, AND INITIAL BACKFILL SHALL BE CONNDOT NO. 6, NO. 67, OR NO. 8 AGGREGATE OR OTHER MATERIALS MEETING THE REQUIREMENTS OF ASTM D2321 FOR CLASS IA, IB, II, OR III UNLESS OTHERWISE INDICATED BY THE PIPE MANUFACTURER.

TYPICAL TRENCH SECTION - THERMOPLASTIC DRAINAGE PIPE

SCALE: NONE

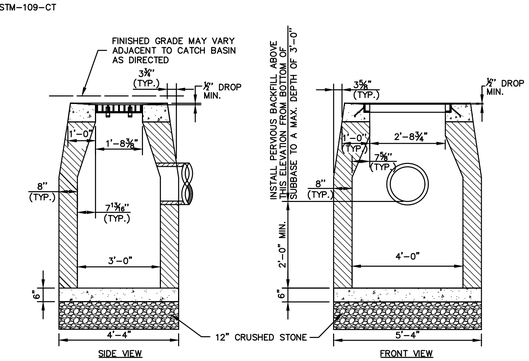


NOTES:

1. SHORING AND BRACING OF TRENCHES IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL SHORING AND BRACING SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS AND INTERPRETATIONS, TO ALL OTHER APPLICABLE CODES, RULES, AND REGULATIONS, OF FEDERAL STATE AND LOCAL AUTHORITIES, AND AS REQUIRED TO MAINTAIN SAFE WORKING CONDITIONS AT ALL TIMES.
2. ANY DISTURBED SUBGRADE SHALL BE WELL COMPACTED. EXCAVATION IN ROCK SHALL BE A MINIMUM 6-INCHES BELOW BOTTOM OF BEDDING AND BACKFILLED WITH GRANULAR FILL OR OTHER APPROVED MATERIAL.
3. IN CASE OF CONFLICT BETWEEN THIS DETAIL AND INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER, INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER WILL PREVAIL.

TYPICAL PIPE TRENCH - RIGID PIPE

SCALE: NONE



GENERAL NOTES

1. FRAME AND GRATE SHALL BE CONSTRUCTED PER SPECIFICATIONS.
2. ALL FACES OF STRUCTURES IN CONTACT WITH PAVEMENT SHALL BE COVERED WITH TAR PAPER OR APPROVED EQUAL.
3. TO CONVEY SUBSURFACE DRAINAGE, OPENINGS SHALL BE FORMED IN THE FOUR WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF PERVIOUS BACKFILL.
4. WALL THICKNESS OF ALL CB'S OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (12" THICKNESS WILL START AFTER THE FIRST 10').
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

TYPE "C-L" CATCH BASIN

SCALE: NONE
STM-102-CT

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION — DATE

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT · FRANCIS J. VACCA · 29098 · LICENSED PROFESSIONAL ENGINEER

FRANCIS J. VACCA, PE — No. 29098

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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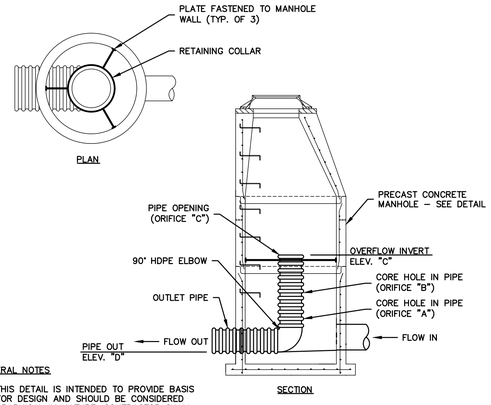
SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO:
JOB. NO: 83749.00

C-6.0



GENERAL NOTES

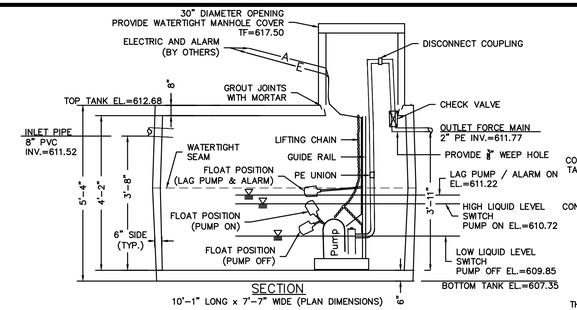
1. THIS DETAIL IS INTENDED TO PROVIDE BASIS FOR DESIGN AND SHOULD BE CONSIDERED GRAPHICAL IN NATURE. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF A COMPLETE DESIGN FOR APPROVAL PRIOR TO INSTALLATION.
2. RETAINING COLLAR AND PLATE SHALL BE TYPE 304 STAINLESS STEEL.

OUTLET CONTROL STRUCTURE	ORIFICE "A"		ORIFICE "B"		ELEV. "C"		ELEV. "D"	
	DIA.	INV.	DIA.	INV.	DIA.	INV.	DIA.	INV.
#1	6"	614.30'	15"	616.00'	N/A	N/A	15"	614.05'
#2	4"	612.97'	6"	613.75'	10"	615.25'	15"	612.25'

NOTES:
1. DESIGN TO CONFORM TO H-20 LOADING.
2. THE INLET PIPE CONNECTING THE OUTLET CONTROL STRUCTURE TO THE DETENTION SYSTEM SHALL BE SET AT 0.00% SLOPE.

OUTLET CONTROL STRUCTURE

SCALE: NONE

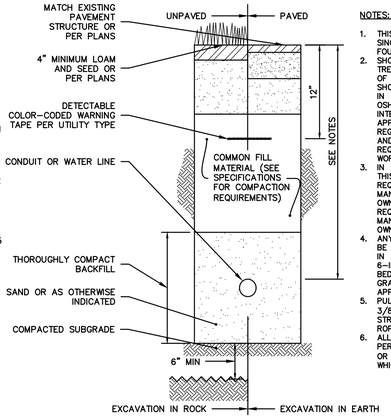


PRECAST CONCRETE PUMP CHAMBER NOTES:
1. TANK SIZE = 4 HOURS OF STORAGE = 6,300 GPD x 4 Hrs = 1,050. USE 1,500.
2. TANK DESIGN SHALL CONFORM TO LATEST ASTM DESIGNATION C913.
3. JOINT SEALANT: BUTYL RUBBER MASTIC TYPE SEAL THAT CONFORMS TO LATEST AASHTO SPECIFICATION M-198. MEETS FEDERAL SPECIFICATIONS SS-S-0021 (210-A).
4. PIPE INLET AND OUTLET LOCATIONS SHALL HAVE POLYLOK II PIPE SEALS.
5. TANK EXTERIOR SHALL BE COATED WITH BAY OIL, "EBONY" OR APPROVED EQUAL.
6. THE TANK INTERIOR SHALL BE COATED WITH FLOROK EPOXY OR EQUAL.
7. REINFORCING STEEL DEFORMED BARS SHALL CONFORM TO LATEST ASTM SPECIFICATION A615.
8. CONCRETE COMPRESSIVE STRENGHT – 4,000 PSI AT 28 DAYS.
9. METHOD OF MANUFACTURE: WET CAST.
10. SECTION SHALL BE MONOLITHIC.
11. CHAMBER TO BE DESIGNED FOR HS-20 LOADING.

PUMP DESIGN NOTES:
1. PUMPS SHALL BE LIBERTY PUMPS MODEL LE40 SEWAGE PUMP OR APPROVED EQUAL.
2. PUMP CYCLE DESIGNED FOR 10 MINUTES AT 50 GPM WITH 5 FEET OF HEAD.
3. PUMPS TO BE CONFIGURED WITH DUPLEX ELECTRICAL ALTERNATOR CONTROL PANEL.
4. ALL PUMPS AND APPURTENANCES TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS AND APPLICABLE BUILDING ELECTRICAL CODES.
5. PUMP AND FORCE MAIN SHALL BE CONFIGURED SUCH THAT THE FORCE MAIN WILL COMPLETELY DRAIN ONCE THE PUMP SHUTS OFF.
6. ROUTING OF ELECTRIC AND ALARM TO BE BY OTHERS.
7. CONTRACTOR SHALL SUBMIT A COMPLETE PUMPING SYSTEM SHOP DRAWING PACKAGE FOR REVIEW BY THE ENGINEER.

1,500 GALLON PUMP CHAMBER

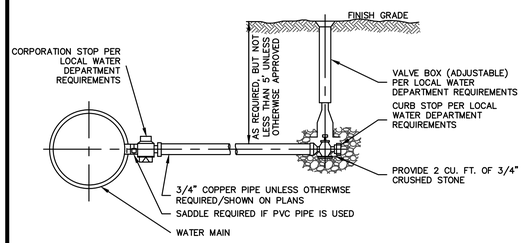
SCALE: NONE



NOTES:
1. THIS DETAIL IS APPLICABLE FOR SINGLE CONDUIT OR PIPE UP TO FOUR INCHES IN DIAMETER.
2. SHORING AND BRACING OF TRENCHES IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL SHORING AND BRACING SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS AND INTERPRETATIONS, TO ALL OTHER APPLICABLE CODES, RULES, AND REGULATIONS, OF FEDERAL STATE AND LOCAL AUTHORITIES, AND AS REQUIRED TO MAINTAIN SAFE WORKING CONDITIONS AT ALL TIMES.
3. IN CASE OF CONFLICT BETWEEN THIS DETAIL AND INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER, INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER WILL PREVAIL.
4. ANY DISTURBED SUBGRADE SHALL BE WELL COMPACTED. EXCAVATION IN ROCK SHALL BE A MINIMUM 6-INCHES BELOW BOTTOM OF BEDDING AND BACKFILLED WITH GRANULAR FILL OR OTHER APPROVED MATERIAL.
5. PULL-LINE IN ALL CONDUIT: 3/8-INCH DOUBLE-BRAIDED LOW STRETCH POLYESTER COMPOSITE ROPE.
6. ALL CONDUIT AND PIPE DEPTHS PER CONNECTICUT BUILDING CODE OR UTILITY OWNER'S REQUIREMENTS, WHICHEVER IS MORE STRINGENT.

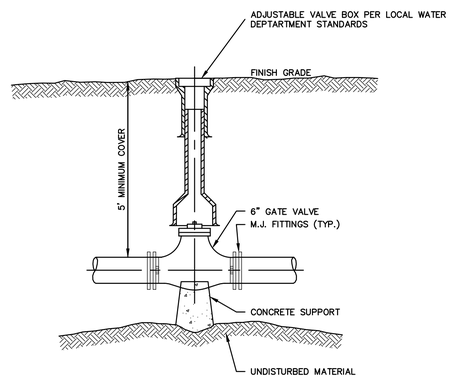
CONDUIT OR WATER SERVICE TRENCH

SCALE: NONE



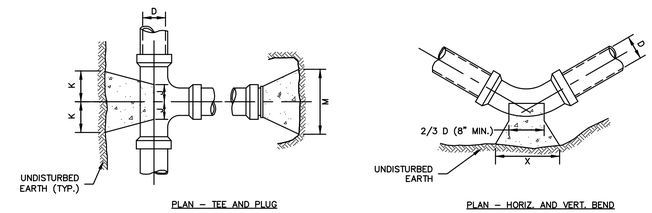
WATER SERVICE CONNECTION

SCALE: NONE
WTR-104-CT



GATE VALVE

SCALE: NONE
WTR-102-CT

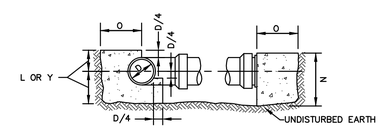


SIZE OF BRANCH	J	K	L	M	N	O
4" TO 8"	10"	10"	1'-0"	2'-0"	1'-6"	10"
10" TO 16"	1'-0"	1'-6"	1'-8"	3'-10"	2'-10"	1'-6"
24"	1'-4"	2'-0"	2'-6"	5'-0"	3'-6"	1'-8"

TEES AND PLUGS

	90° & 45°			22½° & 11¼°		
D	4" TO 8"	10" TO 16"	24"	4" TO 8"	10" TO 16"	24"
X	1'-8"	3'-4"	3'-6"	1'-4"	2'-0"	3'-6"
Y	1'-2"	1'-8"	2'-4"	1'-0"	1'-2"	2'-4"

BENDS



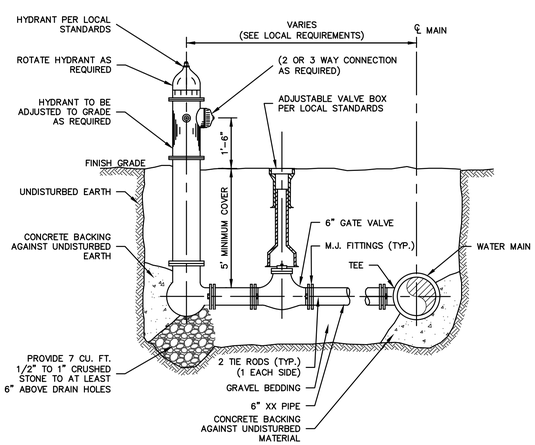
TYPICAL SECTION – TEES, BENDS AND PLUGS

GENERAL NOTES

1. PROVIDE CONCRETE THRUST BLOCKS AT ALL BENDS, DEAD ENDS, & TEES UNLESS OTHERWISE DIRECTED. CONCRETE FOR ALL THRUST BLOCKS TO BE PLACED AGAINST FIRM, UNDISTURBED EARTH. PROVIDE APPROVED ANCHOR HARNESS RODS AND SOCKET CLAMPS AS SPECIFIED AND IN ACCORDANCE WITH PIPE MANUFACTURERS RECOMMENDATIONS WHERE SOIL HAS BEEN DISTURBED OR THRUST BLOCKS CANNOT BE USED.
2. ALL SOCKET CLAMP METAL SHALL BE COATED WITH BLACK ASPHALTUM OR OTHER WATER DEPARTMENT APPROVED COATINGS.
3. CONCRETE THRUST BLOCKS POURED BEHIND 3-WAY TEE AND HYDRANT SHOE TO BE USED WITH SOCKET CLAMPS.
4. NO CONCRETE SHALL COVER PIPE JOINTS, FITTING JOINTS, BOLTS OR HYDRANT DRAINS.

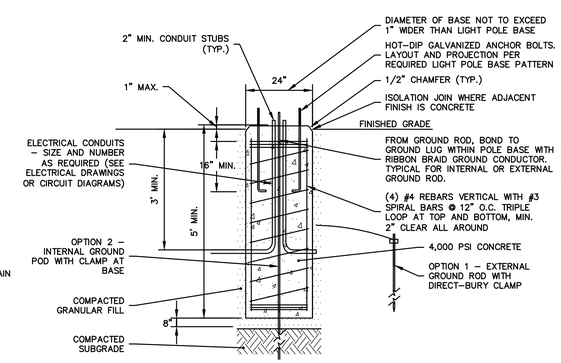
CONCRETE THRUST BLOCK FOR PRESSURE PIPE

SCALE: NONE
WTR-105-CT



FIRE HYDRANT & VALVE

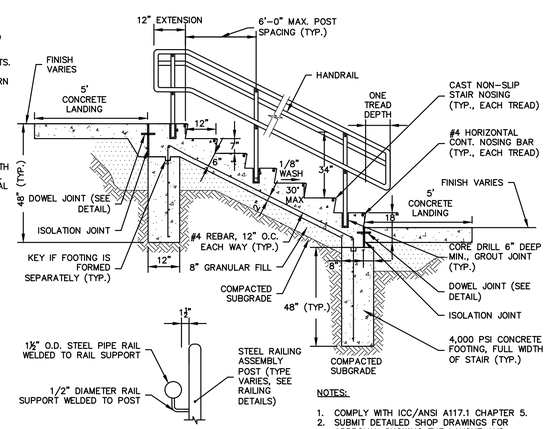
SCALE: NONE
WTR-103-CT



NOTES:
1. REINFORCING BARS SHALL BE DEFORMED BAR, ASTM A615 GRADE 60.
2. CONDUIT LOCATIONS SHOWN ARE CONCEPTUAL. REFER TO ELECTRICAL DRAWINGS OR CIRCUIT DIAGRAMS FOR THE NUMBER, SIZES, AND ORIENTATION REQUIRED.
3. ALL GROUND RODS SHALL BE COPPER-COATED. DIAMETER AND LENGTH PER APPLICABLE CODES. GROUNDING WIRE SHALL BE No. 4 AWG STRANDED COPPER WIRE UNLESS OTHERWISE SPECIFIED.
4. ANCHOR BOLTS SHOWN ARE CONCEPTUAL. ANCHOR BOLT SPECIFICATIONS SHALL MEET THE POLE MANUFACTURER'S REQUIREMENTS FOR SIZE, LENGTH, AND GRADE, BASED ON POLE TYPE, HEIGHT, AND FIXTURE(S).

LIGHT POLE BASE

SCALE: NONE



NOTES:
1. COMPLY WITH ICC/ANSI A117.1 CHAPTER 5.
2. SUBMIT DETAILED SHOP DRAWINGS FOR APPROVAL SHOWING THE LAYOUT AND DIMENSIONS OF ALL STAIR SYSTEM COMPONENTS.
3. EXPOSED SURFACES TO BE BRUSHED FINISH TROWELED EDGES.
4. MINIMUM WIDTH TO BE 48" CLEAR HANDRAIL TO HANDRAIL.
5. MAXIMUM RADIUS OF CURVATURE AT THE LEADING EDGE OF TREADS SHALL BE 1/2".
6. CONSTRUCT CONCRETE LANDINGS PER SIDEWALK DETAIL.

CONCRETE STAIRS

SCALE: NONE

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT FRANCIS J. VACCA 29098 LICENSED PROFESSIONAL ENGINEER

FRANCIS J. VACCA, PE No. 29098

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
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309 MAPLE ROAD
STORRS, CT 06268

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860 652 8227

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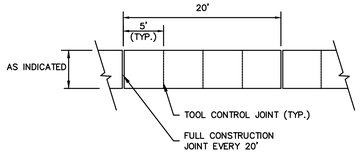
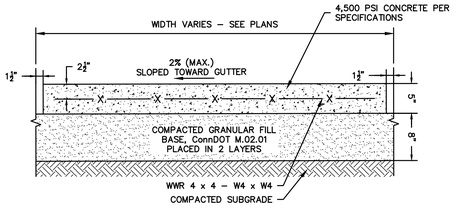
SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO:
JOB. NO: 83749.00
C-6.1



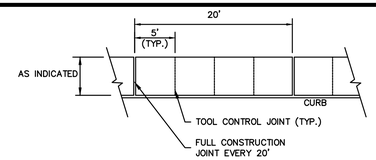


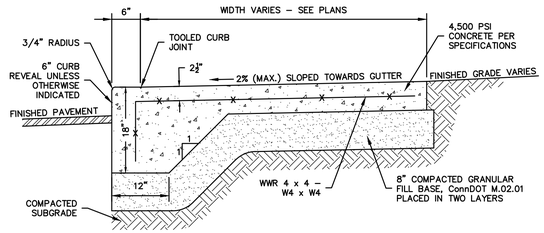
NOTES:

1. TOOLED CONTROL JOINTS SHALL BE 1/4 SLAB THICKNESS. TOOL JOINTS EARLY IN THE FINISHING PROCESS AND RE-RUN TO ENSURE GROOVE BOND HAS NOT OCCURRED.
2. FULL-DEPTH JOINTS SHALL INCORPORATE FULL-DEPTH JOINT FILLER PER SPECIFICATIONS AND DETAILS.
3. SIDEWALK SHALL HAVE LIGHT BROOM FINISH PERPENDICULAR TO THE DIRECTION OF TRAVEL.

CONCRETE SIDEWALK

SCALE: NONE



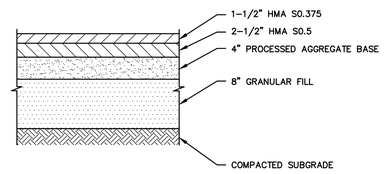


NOTES:

1. CURB REVEAL DIMENSION MAY VARY, SEE PLANS.
2. TOOLED CONTROL JOINTS SHALL BE 1/4 SLAB THICKNESS. TOOL JOINTS EARLY IN THE FINISHING PROCESS AND RE-RUN TO ENSURE GROOVE BOND HAS NOT OCCURRED.
3. TOOLED CURB JOINT SHALL BE 1/4-INCH DEEP MAX.
4. CONSTRUCTION JOINTS SHALL INCORPORATE FULL-DEPTH JOINT FILLER PER SPECIFICATIONS AND DETAILS.
5. SIDEWALKS SHALL HAVE LIGHT BROOM FINISH PERPENDICULAR TO THE DIRECTION OF TRAVEL.

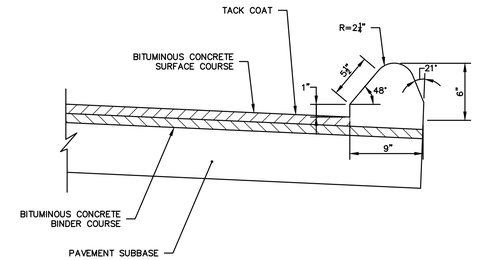
MONOLITHIC CONCRETE CURB AND SIDEWALK

SCALE: NONE



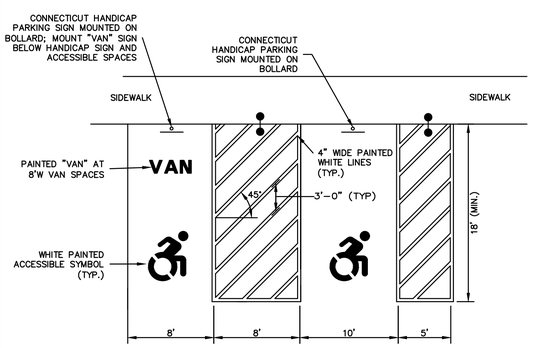
BITUMINOUS CONCRETE PAVEMENT

SCALE: NONE



6" BITUMINOUS CONCRETE LIP CURBING

SCALE: NONE
CRB-103-CT

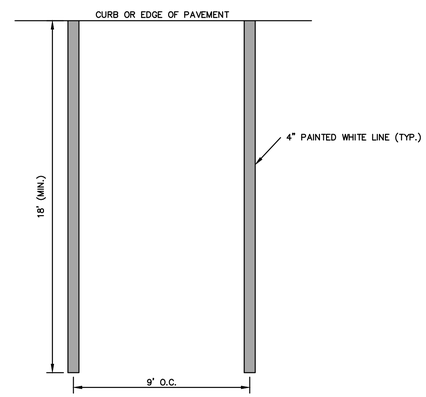


NOTES:

1. GRADING WITHIN HANDICAP SPACES SHALL BE LESS THAN 2.00% IN ALL DIRECTIONS
2. SIGN LOCATION VARIES – SEE PLAN

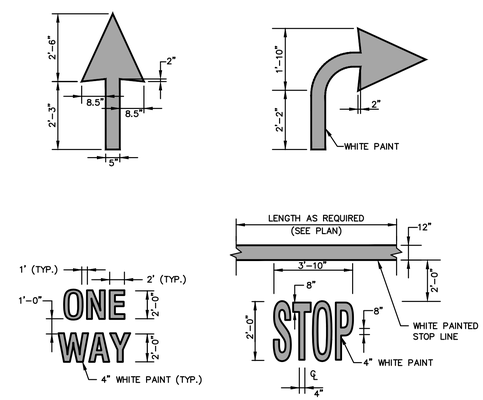
ACCESSIBLE PARKING SPACES

SCALE: NONE



STANDARD PAINTED PARKING MARKINGS

SCALE: NONE

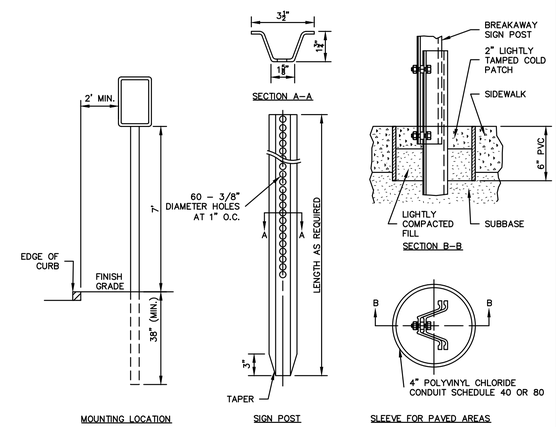


NOTES:

1. PAVEMENT MARKINGS SHOWN SHALL NOT BE INSTALLED ON PUBLIC ROADWAYS.

PAINTED PAVEMENT MARKINGS

SCALE: NONE
PVT-104-CT

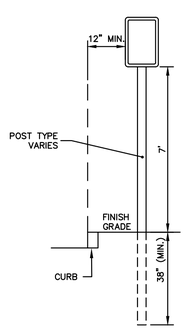


NOTES:

1. MOUNT SIGN TO POST PER CONNDOT 816 SPECIFICATIONS AND DETAILS.
2. PROVIDE SLEEVE FOR ALL SIGNS MOUNTED IN CONCRETE.

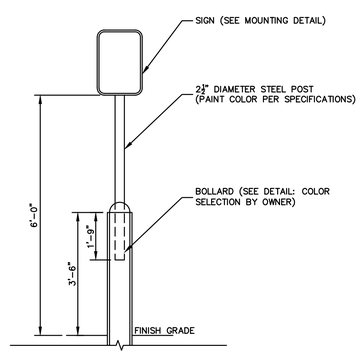
TYPICAL SIGN SUPPORT – BREAKAWAY TYPE II

SCALE: NONE



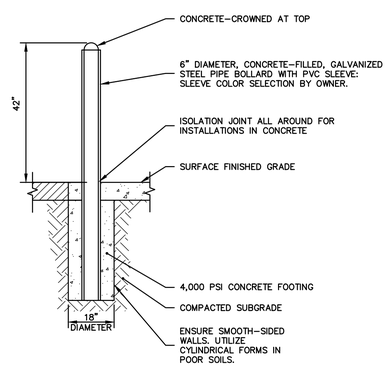
POST-MOUNTED SIGN

SCALE: NONE



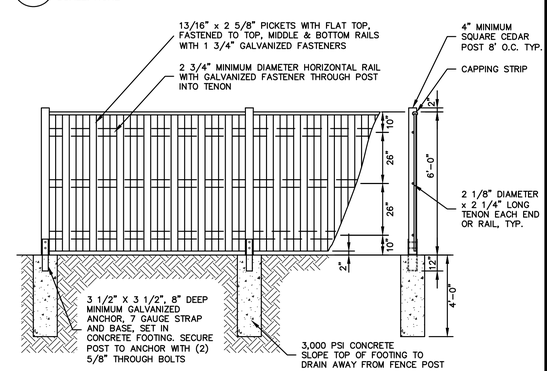
BOLLARD-MOUNTED SIGN

SCALE: NONE



CONCRETE-FILLED STEEL BOLLARD

SCALE: NONE



GENERAL NOTES

1. ALL FENCING MATERIAL SHALL BE TREATED NORTHERN WHITE CEDAR, TO THE DIMENSIONS SHOWN ON THE DRAWING.
2. LINE FENCE TOP AND BOTTOM SHALL BE INSTALLED STRAIGHT AND TRUE. ALL POSTS AND FACING BOARDS OR SLATS SHALL BE INSTALLED PARALLEL AND PLUMB. ALL RAILS SHALL BE INSTALLED PARALLEL AND TRUE.
3. ALL GATE HARDWARE SHALL BE DOUBLE DIP HOT GALVANIZED. THE CONTRACTOR SHALL SUBMIT GATE AND FENCE SHOP DRAWINGS TO THE ENGINEER FOR REVIEW.

6' SINGLE SIDED WOOD FENCE

SCALE: NONE
FSN-105-CT

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

EAGLEVILLE GREEN - NOVEMBER 25, 2019

FRANCIS J. VACCA, PE No. 29098

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
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SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO: C-6.2
JOB. NO: 83749.00

ADVANCED DRAINAGE SYSTEMS, INC.

STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-4500.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
   b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
   c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-4500 CHAMBER SYSTEM

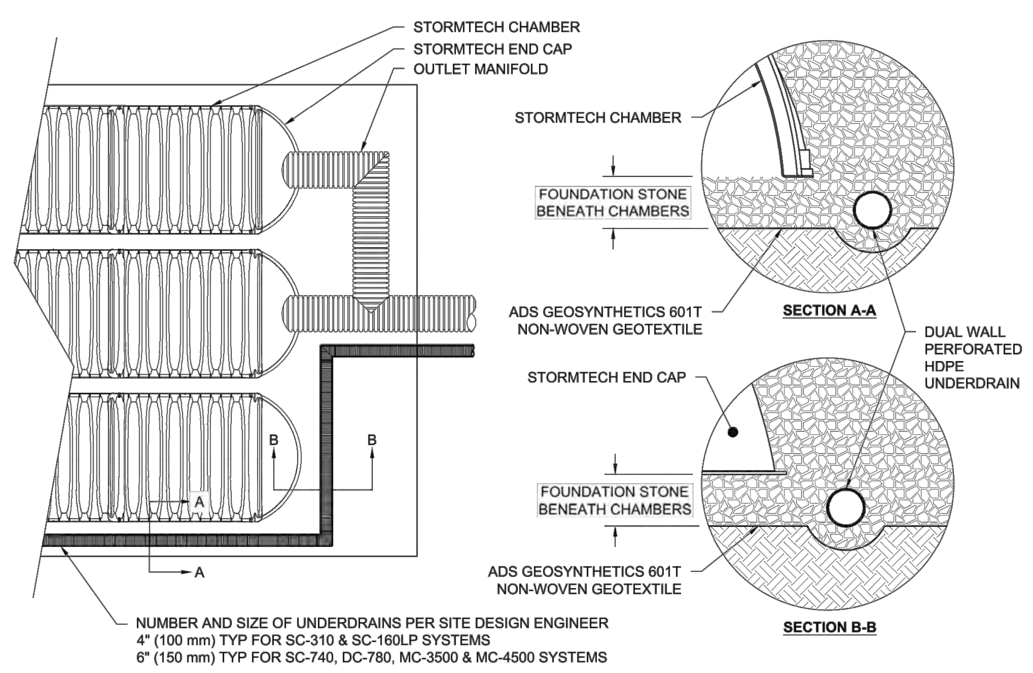
1. STORMTECH MC-4500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
10. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
11. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
12. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

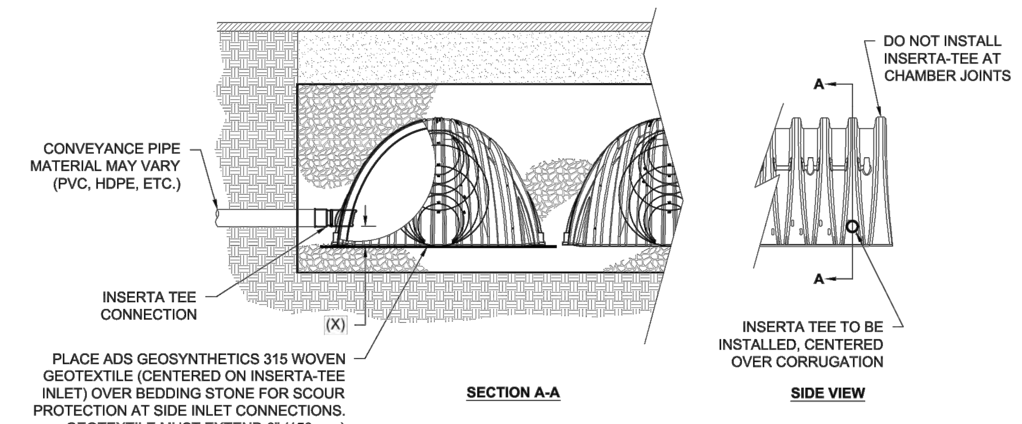
1. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-4500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



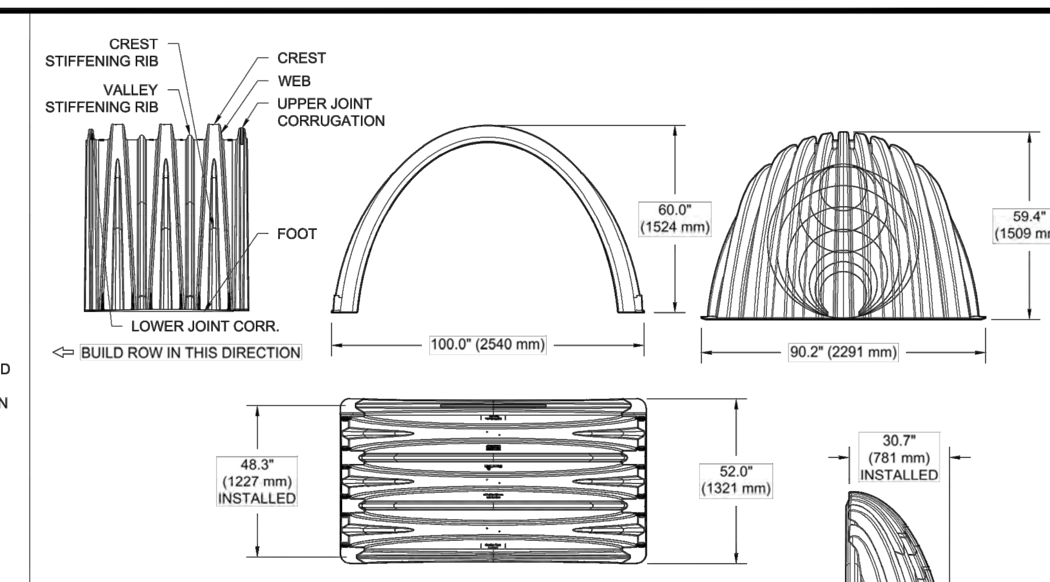
5 UNDERDRAIN DETAIL



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

6 INSERTA-TEE SIDE INLET DETAIL



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 48.3"	(2540 mm X 1524 mm X 1227 mm)
CHAMBER STORAGE	106.5 CUBIC FEET	($3.01\ m^3$)
MINIMUM INSTALLED STORAGE*	162.6 CUBIC FEET	($4.60\ m^3$)
WEIGHT	130.0 lbs.	(59.0 kg)

NOMINAL END CAP SPECIFICATIONS

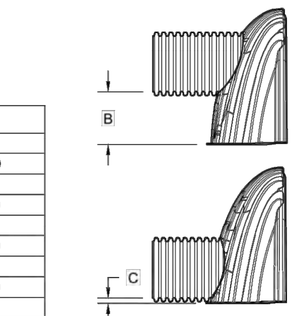
SIZE (W X H X INSTALLED LENGTH)	90.2" X 59.4" X 30.7"	(2291 mm X 1509 mm X 781 mm)
END CAP STORAGE	35.7 CUBIC FEET	($1.01\ m^3$)
MINIMUM INSTALLED STORAGE*	108.7 CUBIC FEET	($3.08\ m^3$)
WEIGHT	135.0 lbs.	(61.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

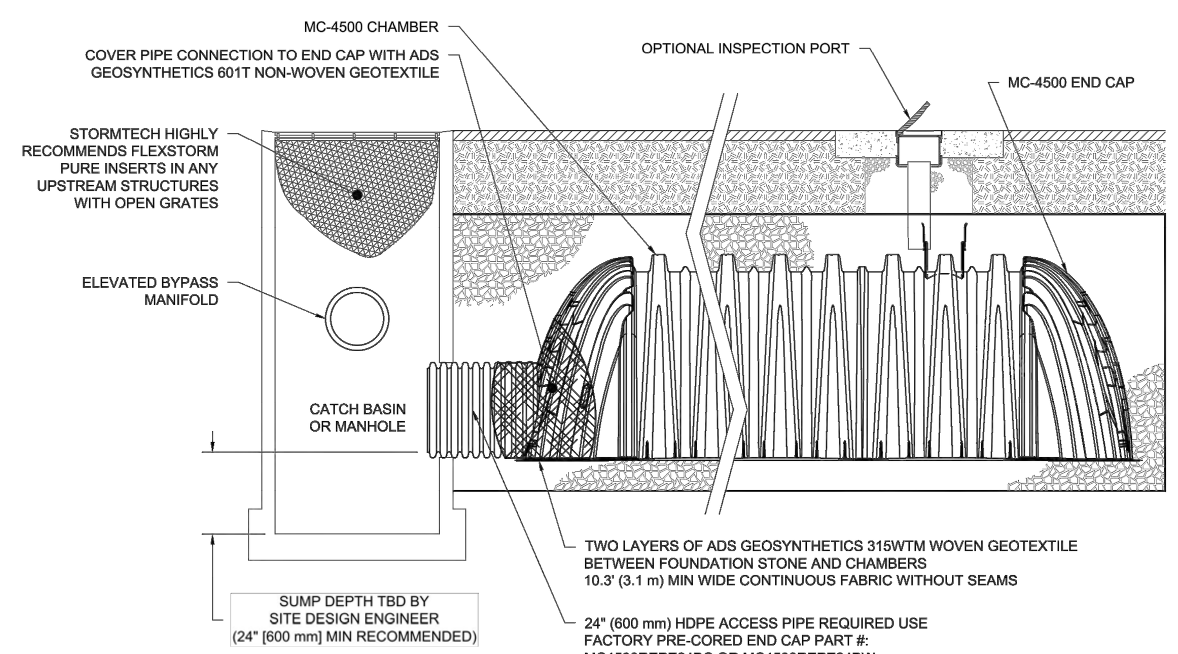
PART #	STUB	B	C
MC4500REPE06T	6" (150 mm)	42.54" (1.081 m)	---
MC4500REPE06B		---	0.86" (22 mm)
MC4500REPE08T	8" (200 mm)	40.50" (1.029 m)	---
MC4500REPE08B		---	1.01" (26 mm)
MC4500REPE10T	10" (250 mm)	38.37" (975 mm)	---
MC4500REPE10B		---	1.33" (34 mm)
MC4500REPE12T	12" (300 mm)	35.69" (907 mm)	---
MC4500REPE12B		---	1.55" (39 mm)
MC4500REPE15T	15" (375 mm)	32.72" (831 mm)	---
MC4500REPE15B		---	1.70" (43 mm)
MC4500REPE18TC	18" (450 mm)	29.36" (746 mm)	---
MC4500REPE18TW			
MC4500REPE18BC		---	1.97" (50 mm)
MC4500REPE18BW			
MC4500REPE24TC	24" (600 mm)	23.05" (585 mm)	---
MC4500REPE24TW			
MC4500REPE24BC		---	2.26" (57 mm)
MC4500REPE24BW			
MC4500REPE30BC	30" (750 mm)	---	2.95" (75 mm)
MC4500REPE36BC	36" (900 mm)	---	3.25" (83 mm)
MC4500REPE42BC	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-4500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

2 MC-4500 TECHNICAL SPECIFICATIONS



INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

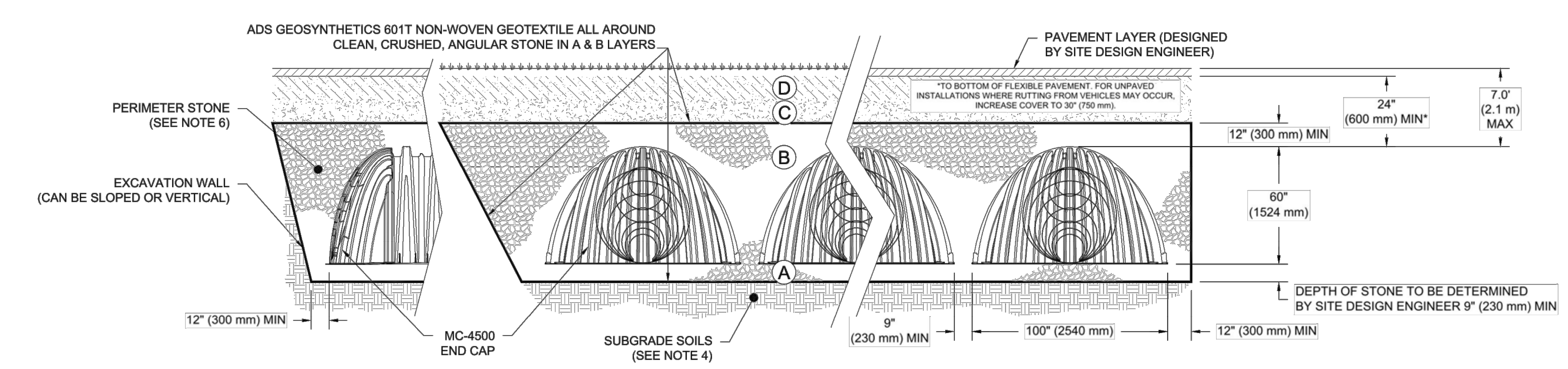
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

3 MC-4500 ISOLATOR ROW DETAIL

ACCEPTABLE FILL MATERIALS: STORMTECH MC-4500 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

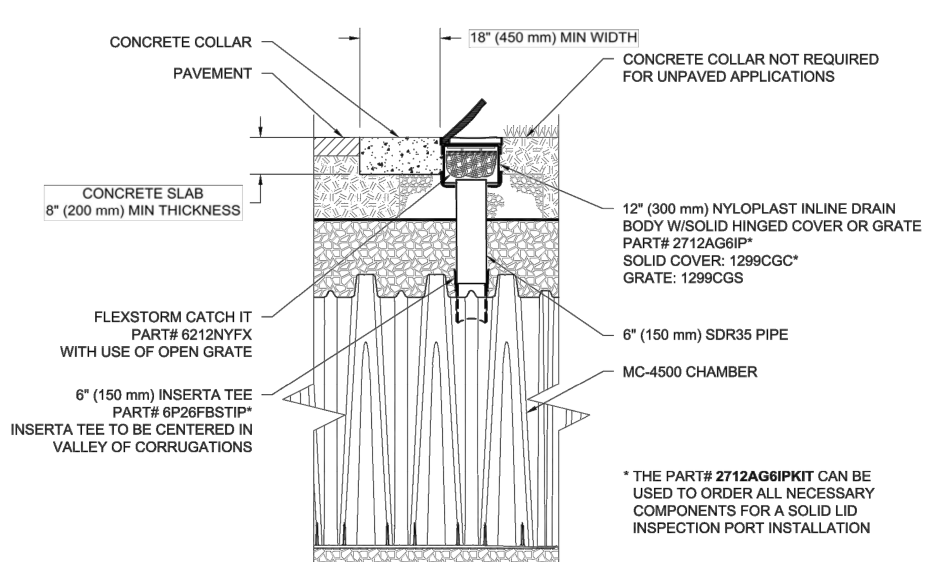
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



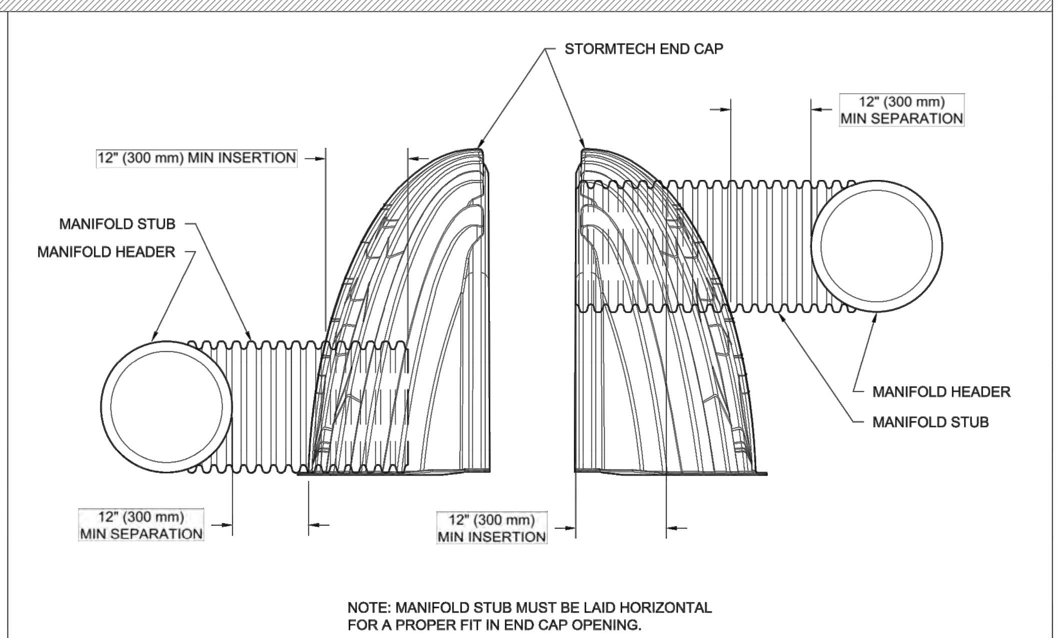
NOTES:

1. MC-4500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. MC-4500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
5. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
6. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.

1 MC-4500 CROSS SECTION DETAIL



4 MC-4500 6" (150 mm) INSPECTION PORT DETAIL



7 MC-SERIES END CAP INSERTION DETAIL

MC-4500 STANDARD DETAILS

DRAWN: JLM
REVIEWED: JLM
DATE: 08/28/18
PROJECT NO:
REV:
NOT TO SCALE

StormTech

4640 TRUEMAN BLVD HILLIARD, OH 43026

ADVANCED DRAINAGE SYSTEMS, INC.

SHEET 1 OF 1

FRANCIS J. VACCA, PE No. 29098

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD IN MANSFIELD CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO:
JOB. NO: 83749.00
C-6.3

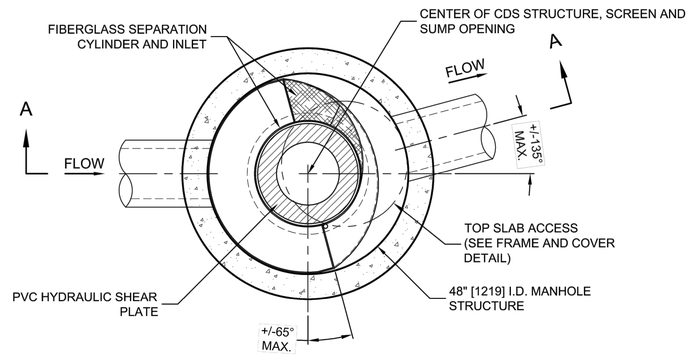
EAGLEVILLE GREEN - NOVEMBER 25, 2019

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

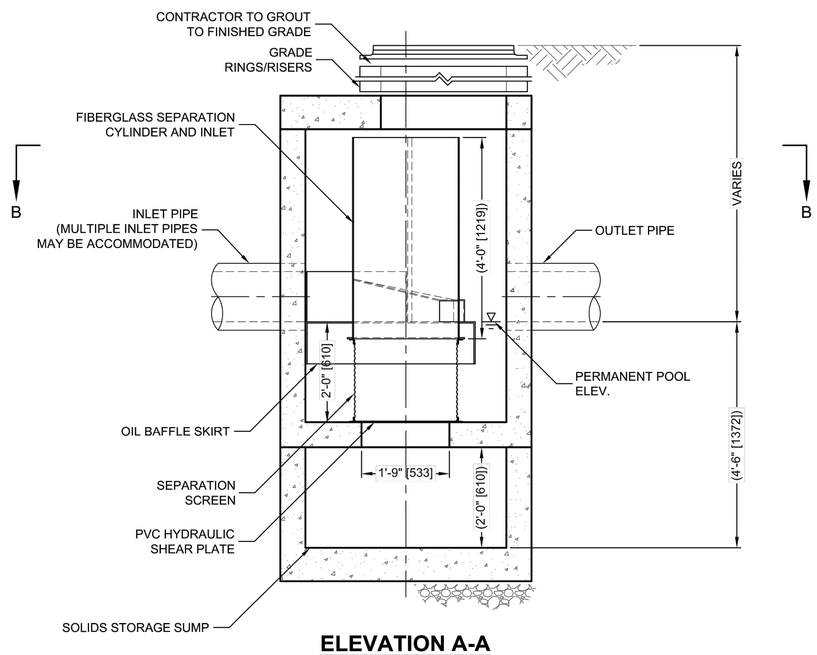
CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

ISSUED FOR PERMITTING

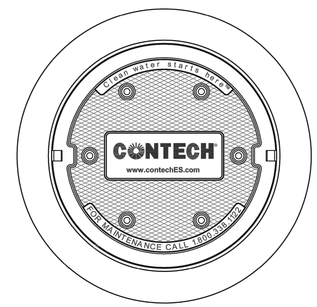
NOTES:
1. ADS STORMTECH MC-4500 USED AS BASIS FOR DESIGN. CONTRACTOR SHALL SELECT THIS PRODUCT OR APPROVED EQUAL AND SUBMIT A COMPLETE SHOP DRAWING PACKAGE FOR REVIEW AND APPROVAL BY THE ENGINEER.



PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

CDS2015-4-C DESIGN NOTES

THE STANDARD CDS2015-4-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	
WATER QUALITY FLOW RATE (CFS OR L/s)	*
PEAK FLOW RATE (CFS OR L/s)	*
RETURN PERIOD OF PEAK FLOW (YRS)	*
SCREEN APERTURE (2400 OR 4700)	*

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*

RIM ELEVATION	*

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH® ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2015-4-C
INLINE CDS
STANDARD DETAIL

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,788,846; 6,641,720; 6,511,595; 6,861,793; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

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EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT FRANCIS J. VACCA 29098 LICENSED PROFESSIONAL ENGINEER

FRANCIS J. VACCA, PE No. 29098

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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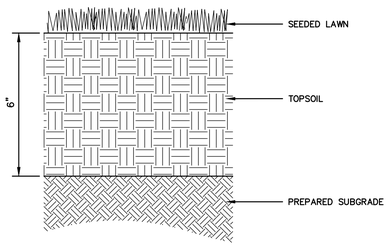
SCALE: AS SHOWN

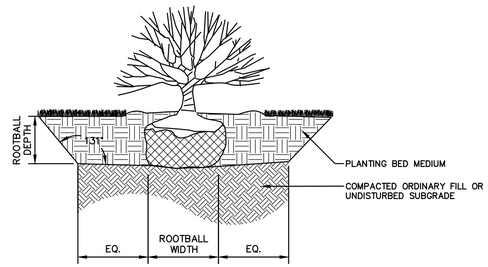
FILE: 8374900-DET.DWG
DWG. NO: C-6.4
JOB. NO: 83749.00



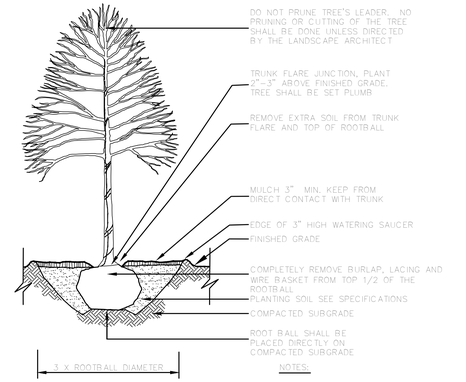
NOTES:
1. CONTRACTOR SHALL PREPARE SOILS IN ALL DISTURBED AREAS AND AREAS USED FOR EQUIPMENT ACCESS.

LAWN
SCALE: NONE

NOTES:
1. LOOSE OR CRACKED ROOT BALLS ARE UNACCEPTABLE.
2. EXCAVATE TO REQUIRED DEPTH AND DO NOT EXCAVATE BELOW ROOT BALL DEPTH.
3. SET SHRUBS PLUMB WITH ROOT FLARE 1" ABOVE FINISHED GRADE, BACKFILL WITH PLANTING MIX.
4. FLOOD WATERING SAUCER TWICE IN FIRST 24 HOURS AFTER PLANTING.
5. RAISE AND REPLANT ANY SHRUBS THAT SETTLE AFTER PLANTING & WATERING.
6. REMOVE 1/3 BURLAP PRIOR TO BACKFILL. SYNTHETIC BURLAP UNACCEPTABLE.
7. 2" DEPTH MULCH (KEEP MULCH 1" AWAY FROM SHRUB BASE) 3" HIGH EARTH WATERING SAUCER 1'-0" BEYOND ROOT BALL PLANTING MIXTURE.
8. FOR CONTAINERIZED PLANTS: REMOVE CONTAINER PRIOR TO PLANTING, SCARIFY ROOT BALL BELOW EDGE 1/2" DEEP IN FOUR LOCATIONS.

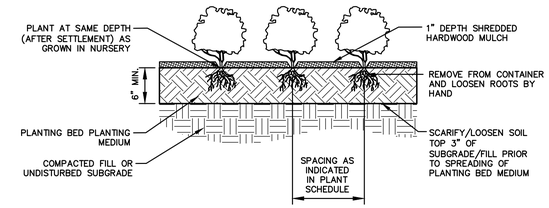


SHRUB PLANTING
SCALE: NONE



NOTES:
1. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. SAUCER SHALL BE FLOODED TWICE DURING THE FIRST 24 HOURS AFTER PLANTING.
3. DO NOT STAKE OR WRAP TREE UNLESS NOTED OTHERWISE.

DECIDUOUS TREE PLANTING
SCALE: NONE
PLNT-107-CT 11/05



GROUNDCOVER PLANTING TYP.
SCALE: NONE

1710LED VILLA SERIES

LED

EPA	7 YEAR WARRANTY	LUMEN RANGE	LIFE SPAN	UL LISTED	CLICK FOR FAQ's	IP RATING*
0.78 (ft²) WEIGHT 35 LBS	7	3,070 to 7,365	L70 MINIMUM 100,000 HOURS	UL	FAQ	IP66

*Optical module only

JOB NAME
FIXTURE TYPE
MEMO

*Fixture "A" shown above, additional styles on page 3.

BUILD A PART NUMBER

ORDERING EXAMPLE: PT-1710CLED-RA-1H1-R3-IL40TS-MDL07-SV2-MS-R5-PE/BKT

Mounting Config.	Fixture	Roof	Internal Housing	Fitter	LED	CCT	Type	Driver	Internal Lens	Option Mini Shade	Option External Rings	Option Control Recept.	Option Control	Option Fuse	Option Hangstraight	Option House Side Shield	Arm See Arm Spec Sheets	Pole See Pole Spec Sheets	Finish

Mounting Configuration
(Click here to view mounting configuration sheet)
• IW • 2A • 3A90 • 1AM • CAT
• PT • 2A90 • 3APT • 2AM
• 1A • 2APT • 4A • 450PB
• 1APT • 3A • 4APT • SH44[1]

W = Wall Mount; PT = Post Top; A = Arm Mount; AM = Arm Mid-Mount; PB = Pier Base; CAT = Catenary; SH = Stem Hung

[1] Include overall drop length in inches after designation for stem application (IE: SH44-48").

Fixture
• 1710ALED • 1710BLED • 1710CLED
• 1710ALEDH • 1710BLEDH • 1710CLEDH

H = Hanging Fixture

Roof
• RA (Deep shade w/ sloped top)
• RB (Deep shade w/ stepped top)
• RC[1] (Thin shade)
• RD (Shallow shade w/ flat top)
• RE[2] (No shade w/ flat top)

[1] Not for use with "A" or "B" style fixture
[2] Not for use with "B" style fixture

Internal Housing[7]
• IH1[4] (Stacked louvers)
• IH2[4] (Smooth cylinder)
• IH3[4] (Tapered cylinder)
• IH4[4] (4-vaned deco)
• IH5[4] (Ringed cylinder)
• IH6[4] (Low-rise cone)

[4] Not for use with "SV2RB" Internal Lens
[5] For use with "TS" optic only
[6] For use with "TSL" or "TAL" optic only
[7] Internal Housing offered with Silver finish only

Fitter
• R3 • R4 • NA[8]

[8] For use with hanging (H) fixture only

LED
• IL

CCT - Color Temperature (K)
• 27(00) • 30(00) • 40(00) • 50(00)

Distribution Type
• TS (Symmetric, behind internal lens)
• TSL[5] (Symmetric, with large optic)
• TAL[6] (Asymmetric, with large optic)

[9] Not for use with "RC" roof.

Driver
• MDL05 (120V-277V, 500mA)
• MDL07 (120V-277V, 700mA)
• MDL09 (120V-277V, 900mA)
• MDL11 (120V-277V, 1100mA)
• MDH07 (347V-480V, 700mA)
• MDH09 (347V-480V, 900mA)
• MDH11 (347V-480V, 1100mA)

Internal Lens
• SV2RB[10] (Soft Vue Moderate Diffused Ribbed Acrylic Vertical Lens)
• SV2[10] (Soft Vue Moderate Diffused Acrylic Vertical Lens)
• SV4[10] (Soft Vue Maximum Diffused Acrylic Vertical Lens)
• NIL[11] (No Internal Vertical Lens)

[10] For use with "TS" optic only.
[11] For use with "TSL" or "TAL" optic only.

Options (Click here to view accessories sheet)
• MS[12] Mini-Shade
• ERS[12] External Rings
• R[13] 3-Pin control receptacle only
• R5[13] 5-Pin control receptacle only
• R7[13] 7-Pin control receptacle only
• PE[14] Twist-Lock Photocontrol (120V-277V)
• PE3[14] Twist-Lock Photocontrol (347V)
• PE4[14] Twist-Lock Photocontrol (480V)
• SC[14] Shorting Cap
• FHD[12] Double Fuse and Holder
• HSHS[16] Standard Horizontal Hangstraight, Spike Finial
• HSHN[16] Standard Horizontal Hangstraight, No Finial
• HSHB[16] Standard Horizontal Hangstraight, Ball Finial
• EZ[16] Vertical Hangstraight, Large, "EZ" Mount
• HSV[16] Vertical Hangstraight, Standard
• HSS 120° House Side Shield

[12] For use with "C" style fixture only
[13] Cannot be used with SH44, CAT, EZ or HSV mounting style
[14] Requires control receptacle
[15] Ships loose for installation in base
[16] For use with hanging (H) fixture only

Arm (Click here to link to arm specification page)
See Arms & Wall Brackets specification sheets.
• DM5 • HM5 • VC5
• VF5 • VL5

Pole (Click here to link to pole specification page)
See Pole specification sheets.

Finish (Click here to view paint finish sheet)
Standard Urban Finishes
• UGMT Gun Metal Textured
• UGM Gun Metal Matte
• UBT Urban Bronze Textured
• UB Urban Bronze Matte
• ULBT Urban Light Bronze Textured
• ULB Urban Light Bronze Matte
• USLT Urban Silver Textured
• USL Urban Silver Matte
• UWHT Urban White Textured
• UWH Urban White Matte
• UCHS Urban Champagne Satin Smooth
• BKT Black Textured

Custom Urban Finishes[17]
• CM Custom Match
• CHL Custom Highlights (consult factory for more information)

[17] Custom finish requires upcharge, consult factory for more information.

Specifications

Fixture
Fixture shall be cylindrical in form (straight or tapered lens as specified), and feature both a roof casting and internal housing manufactured via permanent mold tooling. The outer lens shall be one-piece, injection molded, non-yellowing acrylic, sealed top and bottom with seamless silicone gaskets to an IP66 rating. Set screws and related hardware shall be finish painted to match the fixture housing. The luminaire shall be UL listed in the U.S. and Canada.

Optional Mini-Shade / External Rings
Offered on fixture style **"C"** only.
(Mini-Shade) A small cast aluminum louvered shade measuring 17-1/2" OD x 1-1/2" tall, installed above the shade on roof style **RC**. Installed under shade on styles **RA, RB, RD & RE**
See next page

(External Rings) 2 flat cast aluminum rings measuring 13" OD, installed above the shade on roof style **RC**. Installed under shade on styles **RA, RB, RD & RE**

Fitter - Standard
Fixture shall house the driver and be provided with a heavy wall die cast aluminum fitter designed to slip-fit 3"OD (R3) or 4"OD (R4) x 3" tall tenons/poles. The fitter shall have three (3) stainless steel allen head screws to secure the connection between the fitter and tenon/pole. All external hardware shall be finish painted to match the rest of the fixture housing.

LEDs
The luminaire shall use high output, high brightness LED's, consisting of a two piece assembly complete with Chip on Board (COB) LED component and COB holder frame. The LED's and printed circuit boards shall be 100% recyclable; they shall also be protected from moisture and corrosion by a conformal coating of 1 to 3 mils. They shall not contain lead, mercury or any other hazardous substances and shall be RoHS compliant. The LED life rating data shall be determined in accordance with IESNA LM-80. The High Performance white LED's will have a life expectancy of approximately 100,000 hours with not less than 70% of original brightness (lumen maintenance), rated at 25°C. The High Brightness, High Output LED's shall be 4000K (2700K, 3000K or 5000K option) color temperature with a minimum of 70 CRI. Consult factory for custom color CCT. The luminaire shall have a minimum _____ (see table) delivered initial lumen rating when operated at steady state with an average ambient temperature of 25°C (77°F).

Optics
(TS Optic) The luminaire shall be provided with an individual, molded silicone refractor type optic applied to the COB (Chip On Board) LED assembly. An additional vertical diffused acrylic lens installed inside the unit allows for a high level of visual comfort. All testing shall be done in accordance with IESNA LM-79.
(TSL & TAL Optic) The luminaire shall be provided with an individual, large injection molded acrylic refractor type optic applied to the COB (Chip On Board) LED assembly. The optic visually spreads out size of the light source while creating a Symmetric **(TSL)** or asymmetric **(TAL)** light pattern. All testing shall be done in accordance with IESNA LM-79.

Electronic Drivers
The LED driver shall be U.L. Recognized. It shall be securely mounted inside the fixture, for optimized performance and longevity. It shall be supplied with a quick-disconnect electrical connector on the power supply, providing easy power connections and fixture installation. It shall have overload, overheat and short circuit protection, and have a DC voltage output, consistant current design, 50/60HZ. It shall be supplied with line-ground, line-neutral and neutral-ground electrical surge protection in accordance with IEEE/ANSI C62.41.2 guidelines. It shall be a high efficiency driver with a THD less than 20% and a high power factor greater than .9. It shall be dimming capable using a 0-10v signal, consult factory for more information.

Photocontrols
Twist-Lock Style: The photocontrol shall be mounted externally on the fixture and pre-wired to driver. The twist lock type photocontrol is instant on with a 3-6 second turn off, and shall turn on at 1.5 footcandles with a turn-off at 2-3 footcandles. Photocontrol is 120-277 volt and warranted for 6 years.

Wireless Controls
A 5-pin (R5) or 7-pin (R7) NEMA receptacle can be included on the unit for wireless control systems.

Warranty
Seven-year limited warranty. See product and finish warranty guide for details.

Finish
Refer to website for details.

Performance (based on "C" style fixture with "RD" roof)

MODEL #	TS DELIVERED LUMENS	EFFICACY (LPW)	TSL DELIVERED LUMENS	EFFICACY (LPW)	TAL DELIVERED LUMENS	EFFICACY (LPW)	WATTAGE
1L40T_-MDL11	7325	114.5	7365	115.1	7270	113.6	64
1L30T_-MDL11	7140	111.6	7175	112.1	7085	110.7	64
1L27T_-MDL11	6485	101.3	6520	101.9	6435	100.5	64
1L40T_-MDL09	6060	116.5	6130	117.9	6045	116.3	52
1L30T_-MDL09	5905	113.6	5975	114.9	5890	113.3	52
1L27T_-MDL09	5365	103.2	5425	104.3	5350	102.9	52
1L40T_-MDL07	4790	116.8	4845	118.2	4770	116.3	41
1L30T_-MDL07	4670	113.9	4720	115.1	4650	113.4	41
1L27T_-MDL07	4240	103.4	4290	104.6	4225	103.0	41
1L40T_-MDL05	3500	116.7	3540	118.0	3470	115.7	30
1L30T_-MDL05	3410	113.7	3450	115.0	3380	112.7	30
1L27T_-MDL05	3100	103.3	3135	104.5	3070	102.3	30

SternbergLighting
ESTABLISHED 1923 / EMPLOYEE OWNED
800-621-3376
555 Lawrence Ave., Roselle, IL 60172
info@sternberglighting.com
www.sternberglighting.com
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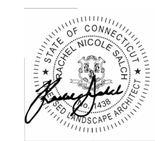
APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019



RACHEL N. SALCH, PLA No. 1438

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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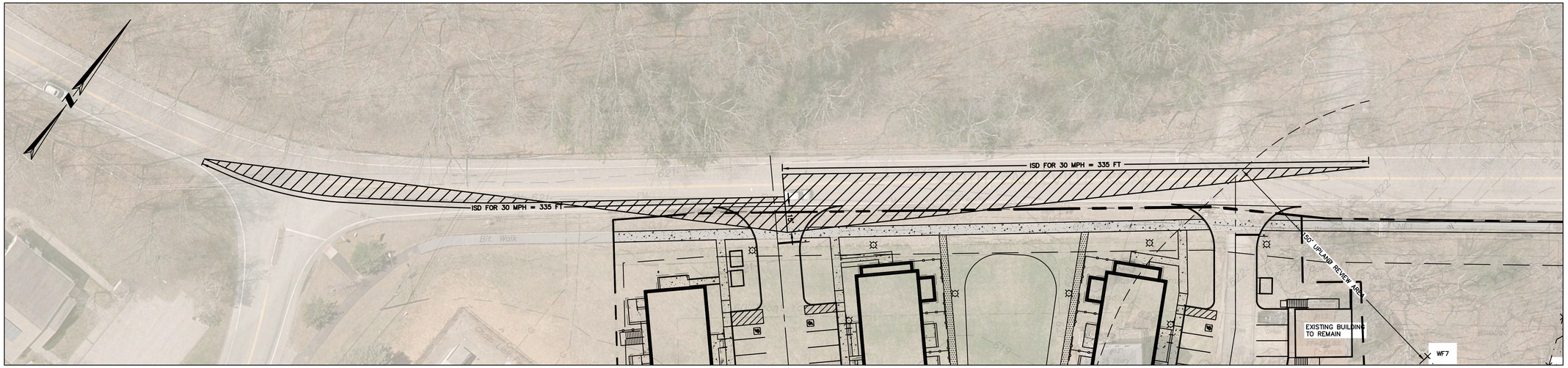
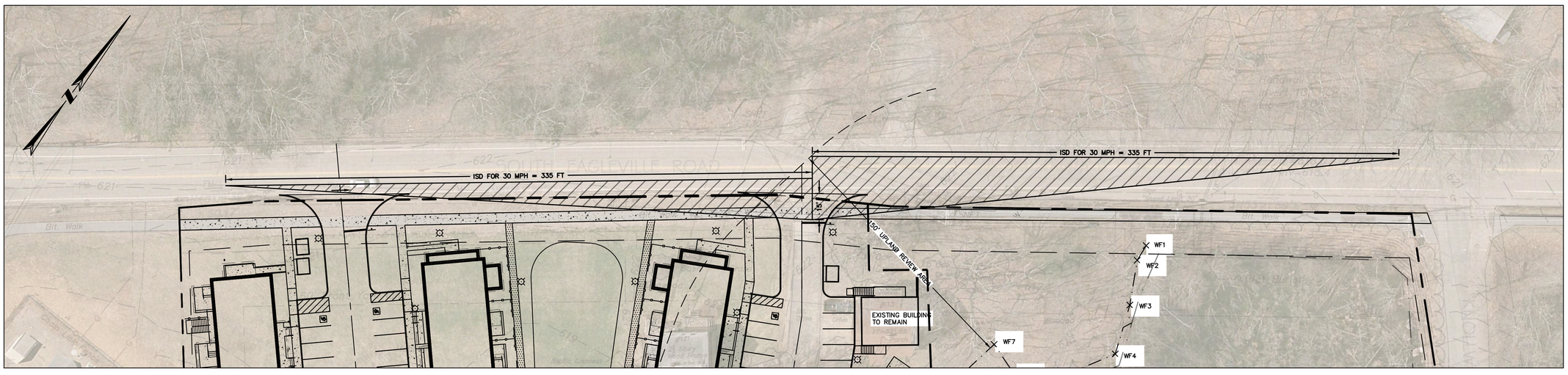
SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO: C-6.5
JOB. NO: 83749.00



WEST EXIT - INTERSECTION SIGHT DISTANCE
SCALE: 1" = 30'



EAST EXIT - INTERSECTION SIGHT DISTANCE
SCALE: 1" = 30'

NOTES:

1. INTERSECTION SIGHT DISTANCE IDENTIFIED ON THIS PLAN IS DESIGNED IN ACCORDANCE WITH THE CONNECTICUT HIGHWAY DESIGN MANUAL, CHAPTER 11 "INTERSECTIONS AT GRADE," SECTION 2.03.01 – FIGURE 11–2C "INTERSECTION SIGHT DISTANCES (TWO–LANE HIGHWAY OR STREET)."
2. THE POSTED SPEED LIMIT ON SOUTH EAGLEVILLE ROAD AT THE LOCATION OF THE SITE IS 30 MPH.
3. THE INTERSECTION SIGHT DISTANCE FOR A PASSENGER VEHICLE MAKING A LEFT TURN ONTO THE 30 MPH ROAD IS 335 FEET ALONG THE VEHICLE PATH.
4. THE INTERSECTION SIGHT DISTANCE LINE OF SIGHT IS MEASURED 15 FEET BACK OF THE GUTTER LINE AT THE CENTER OF THE EXIT LANE.
5. THE APPROACH GRADE AT BOTH INTERSECTIONS IS LESS THAN +3.0% SLOPE.

INTERSECTION DISTANCES (MINIMUM REQUIRED = 335 FEET):

WEST EXIT:
LEFT–TURN = GREATER THAN 1000 FEET
RIGHT–TURN = GREATER THAN 400 FEET

EAST EXIT:
LEFT–TURN = GREATER THAN 1000 FEET
RIGHT–TURN = GREATER THAN 600 FEET

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- WETLAND BOUNDARY
- PROPOSED CURBING
- INTERSECTION SIGHT DISTANCE TRIANGLE

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT
FRANCIS J. VACCA
29098
LICENSED
PROFESSIONAL ENGINEER

FRANCIS J. VACCA, PE No. 29098

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

INTERSECTION SIGHT DISTANCE PLAN

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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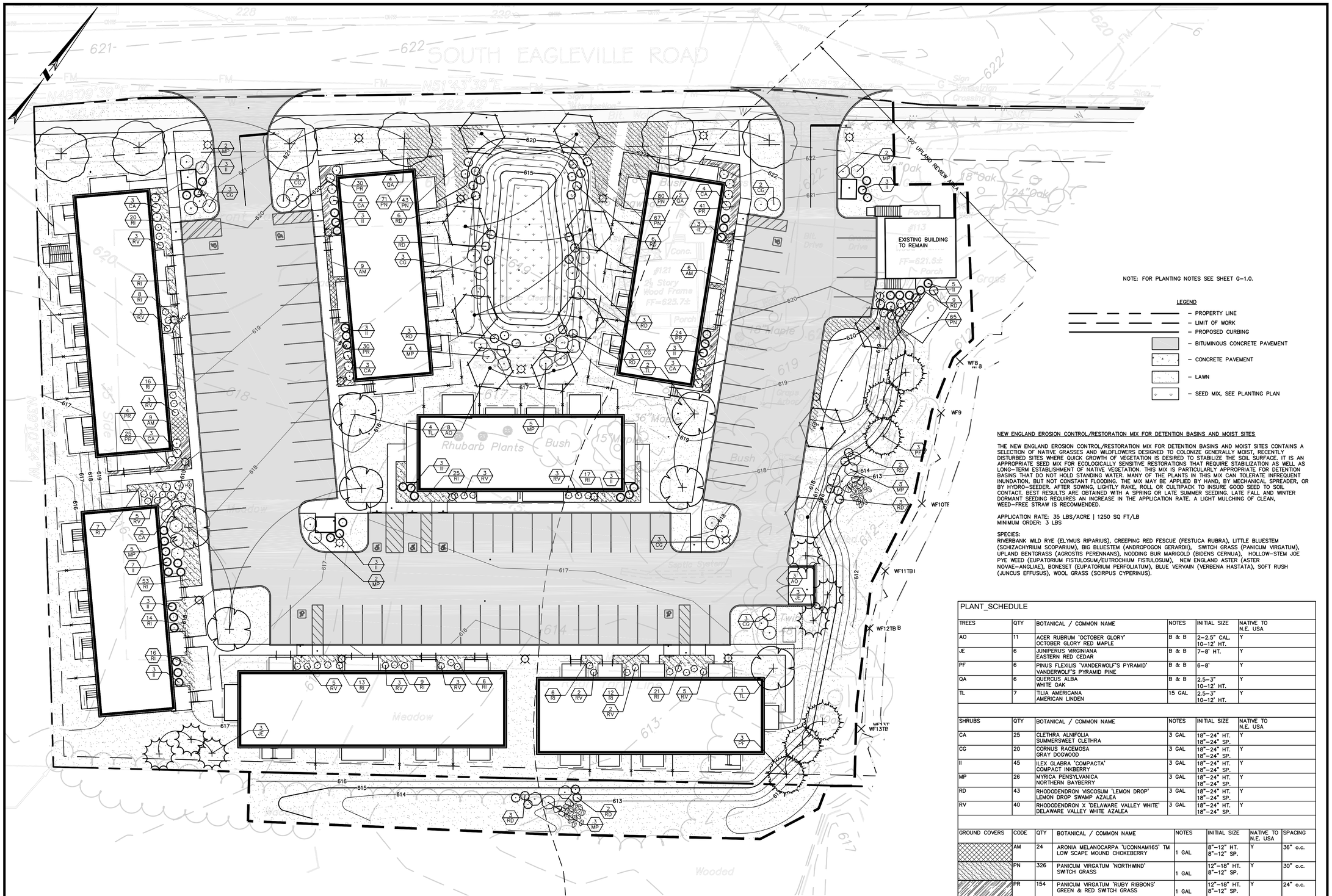
SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900–ISD.DWG
DWG. NO:
JOB. NO: 83749.00

C-7.0



NOTE: FOR PLANTING NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- PROPOSED CURBING
- BITUMINOUS CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- LAWN
- SEED MIX, SEE PLANTING PLAN

NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES

THE NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES CONTAINS A SELECTION OF NATIVE GRASSES AND WILDFLOWERS DESIGNED TO COLONIZE GENERALLY MOIST, RECENTLY DISTURBED SITES WHERE QUICK GROWTH OF VEGETATION IS DESIRED TO STABILIZE THE SOIL SURFACE. IT IS AN APPROPRIATE SEED MIX FOR ECOLOGICALLY SENSITIVE RESTORATIONS THAT REQUIRE STABILIZATION AS WELL AS LONG-TERM ESTABLISHMENT OF NATIVE VEGETATION. THIS MIX IS PARTICULARLY APPROPRIATE FOR DETENTION BASINS THAT DO NOT HOLD STANDING WATER. MANY OF THE PLANTS IN THIS MIX CAN TOLERATE INFREQUENT INUNDATION, BUT NOT CONSTANT FLOODING. THE MIX MAY BE APPLIED BY HAND, BY MECHANICAL SPREADER, OR BY HYDRO-SEEDER. AFTER SOWING, LIGHTLY RAKE, ROLL OR CULTIPACK TO INSURE GOOD SEED TO SOIL CONTACT. BEST RESULTS ARE OBTAINED WITH A SPRING OR LATE SUMMER SEEDING. LATE FALL AND WINTER DORMANT SEEDING REQUIRES AN INCREASE IN THE APPLICATION RATE. A LIGHT MULCHING OF CLEAN, WEED-FREE STRAW IS RECOMMENDED.

APPLICATION RATE: 35 LBS/ACRE | 1250 SQ FT/LB
MINIMUM ORDER: 3 LBS

SPECIES:
RIVERBANK WILD RYE (ELYMUS RIPARIUS), CREEPING RED FESCUE (FESTUCA RUBRA), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), SWITCH GRASS (PANICUM VIRGATUM), UPLAND BENTGRASS (AGROSTIS PERENNANS), NODDING BUR MARIGOLD (BIDENS CERNUA), HOLLOW-STEM JOE PYE WEED (EUPATORIUM FISTULOSUM/EUTROCHIUM FISTULOSUM), NEW ENGLAND ASTER (ASTER NOVAE-ANGLIAE), BONESET (EUPATORIUM PERFOLIATUM), BLUE VERVAIN (VERBENA HASTATA), SOFT RUSH (JUNCUS EFFUSUS), WOOL GRASS (SCIRPUS CYPERINUS).

PLANT_SCHEDULE

TREES	QTY	BOTANICAL / COMMON NAME	NOTES	INITIAL SIZE	NATIVE TO N.E. USA
AO	11	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	B & B	2-2.5" CAL. 10-12' HT.	Y
JE	6	JUNIPERUS VIRGINIANA EASTERN RED CEDAR	B & B	7-8' HT.	Y
PF	6	PINUS FLEXILIS 'VANDERWOLF'S PYRAMID' VANDERWOLF'S PYRAMID PINE	B & B	6-8'	Y
QA	6	QUERCUS ALBA WHITE OAK	B & B	2.5-3" 10-12' HT.	Y
TL	7	TILIA AMERICANA AMERICAN LINDEN	15 GAL	2.5-3" 10-12' HT.	Y

SHRUBS	QTY	BOTANICAL / COMMON NAME	NOTES	INITIAL SIZE	NATIVE TO N.E. USA
CA	25	CLETHRA ALNIFOLIA SUMMERSWEET CLETHRA	3 GAL	18"-24" HT. 18"-24" SP.	Y
CG	20	CORNUS RACEMOSA GRAY DOGWOOD	3 GAL	18"-24" HT. 18"-24" SP.	Y
II	45	ILEX GLABRA 'COMPACTA' COMPACT INKBERRY	3 GAL	18"-24" HT. 18"-24" SP.	Y
MP	26	MYRICA PENSYLVANICA NORTHERN BAYBERRY	3 GAL	18"-24" HT. 18"-24" SP.	Y
RD	43	RHODODENDRON VISCOSUM 'LEMON DROP' LEMON DROP SWAMP AZALEA	3 GAL	18"-24" HT. 18"-24" SP.	Y
RV	40	RHODODENDRON X 'DELAWARE VALLEY WHITE' DELAWARE VALLEY WHITE AZALEA	3 GAL	18"-24" HT. 18"-24" SP.	Y

GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	NOTES	INITIAL SIZE	NATIVE TO N.E. USA	SPACING
	AM	24	ARONIA MELANOCARPA 'UCONNAM165' TM LOW SCAPE MOUND CHOKEBERRY	1 GAL	8"-12" HT. 8"-12" SP.	Y	36" o.c.
	PN	326	PANICUM VIRGATUM 'NORTHWIND' SWITCH GRASS	1 GAL	12"-18" HT. 8"-12" SP.	Y	30" o.c.
	PR	154	PANICUM VIRGATUM 'RUBY RIBBONS' GREEN & RED SWITCH GRASS	1 GAL	12"-18" HT. 8"-12" SP.	Y	24" o.c.
	RI	250	RUDBECKIA FULGIDA 'INDIAN SUMMER' CONEFLOWER	1 GAL	8"-12" HT. 8"-12" SP.	Y	30" o.c.

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT · RACHEL NICOLE SALCH · LICENSED LANDSCAPE ARCHITECT · 1438

RACHEL N. SALCH, PLA No. 1438

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

PLANTING PLAN

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 20'
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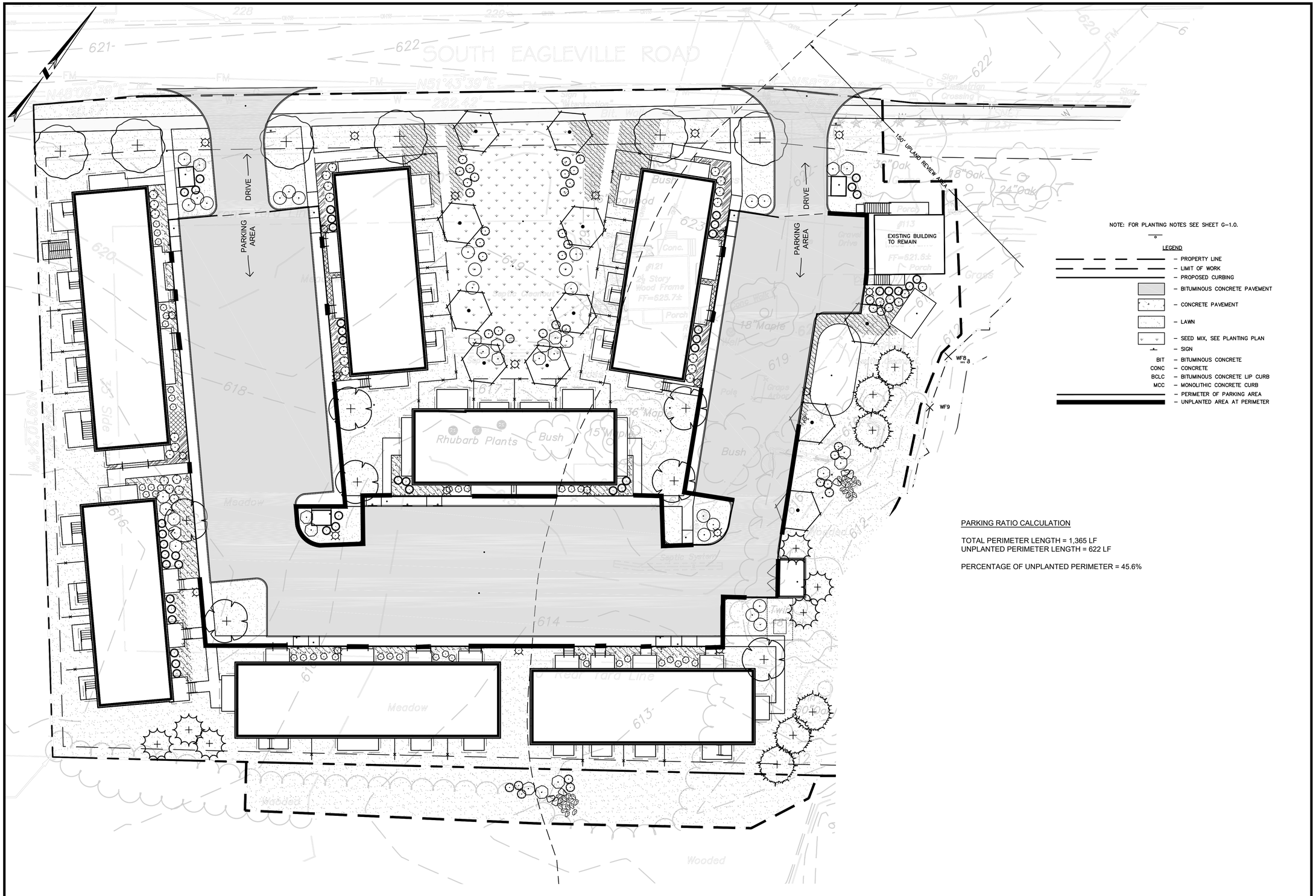
DWG. NO: L-1.0
JOB. NO: 83749.00



NOTE: FOR PLANTING NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- PROPOSED CURBING
- BITUMINOUS CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- LAWN
- SEED MIX, SEE PLANTING PLAN
- SIGN

BIT – BITUMINOUS CONCRETE
CONC – CONCRETE
BCLC – BITUMINOUS CONCRETE LIP CURB
MCC – MONOLITHIC CONCRETE CURB

- PERIMETER OF PARKING AREA
- UNPLANTED AREA AT PERIMETER

PARKING RATIO CALCULATION

TOTAL PERIMETER LENGTH = 1,365 LF
UNPLANTED PERIMETER LENGTH = 622 LF

PERCENTAGE OF UNPLANTED PERIMETER = 45.6%

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

RACHEL N. SALCH, PLA No. 1438

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

PLANTING RATIO

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

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300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 20'
0 10 20 40 FEET

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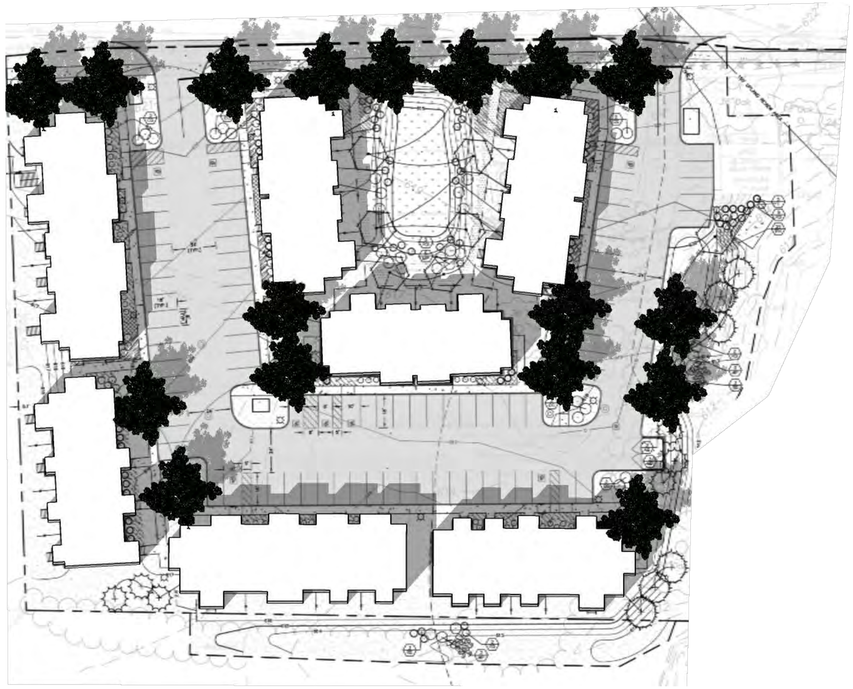
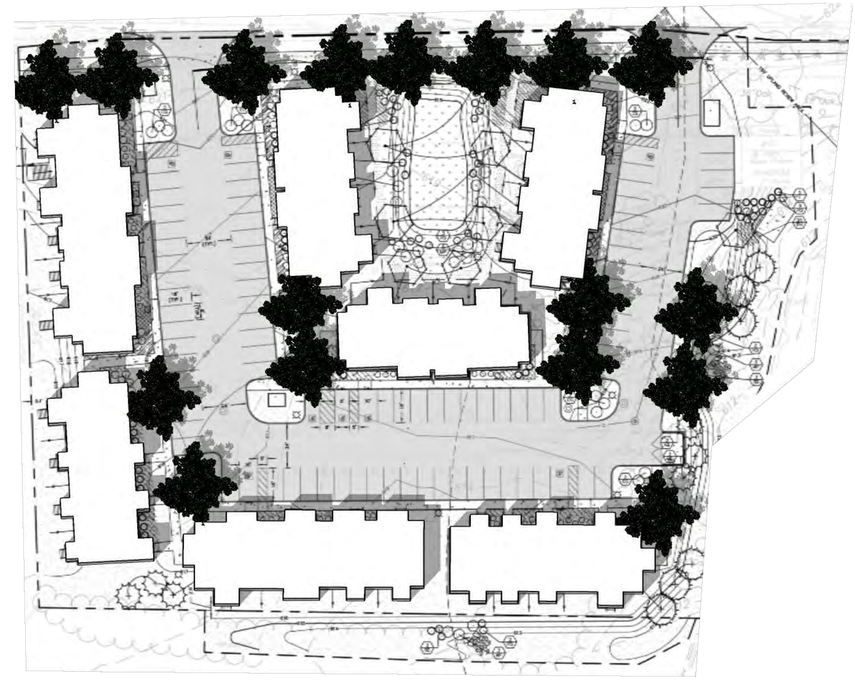
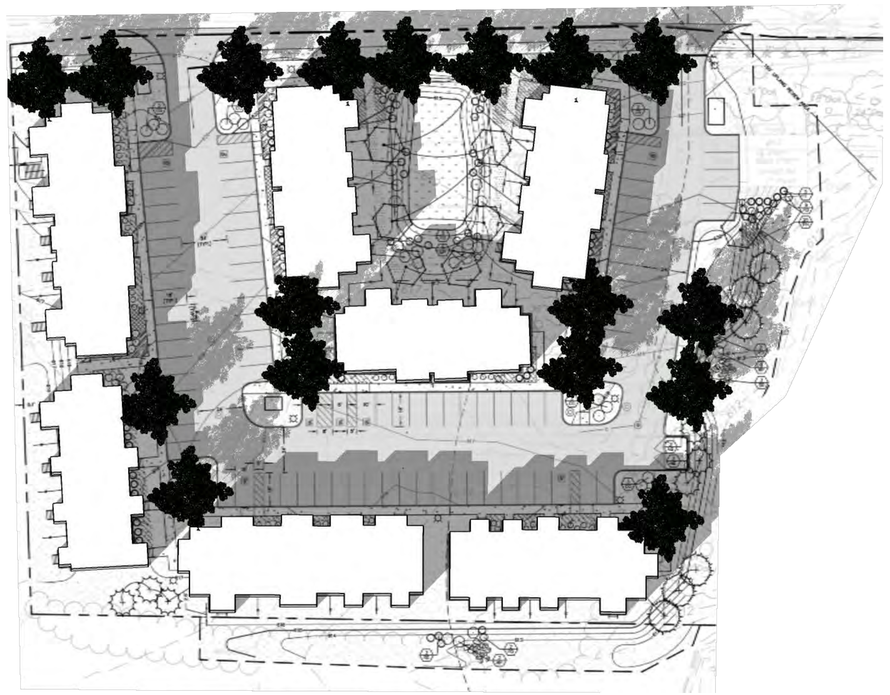
DWG. NO: L-1.1
JOB. NO: 83749.00



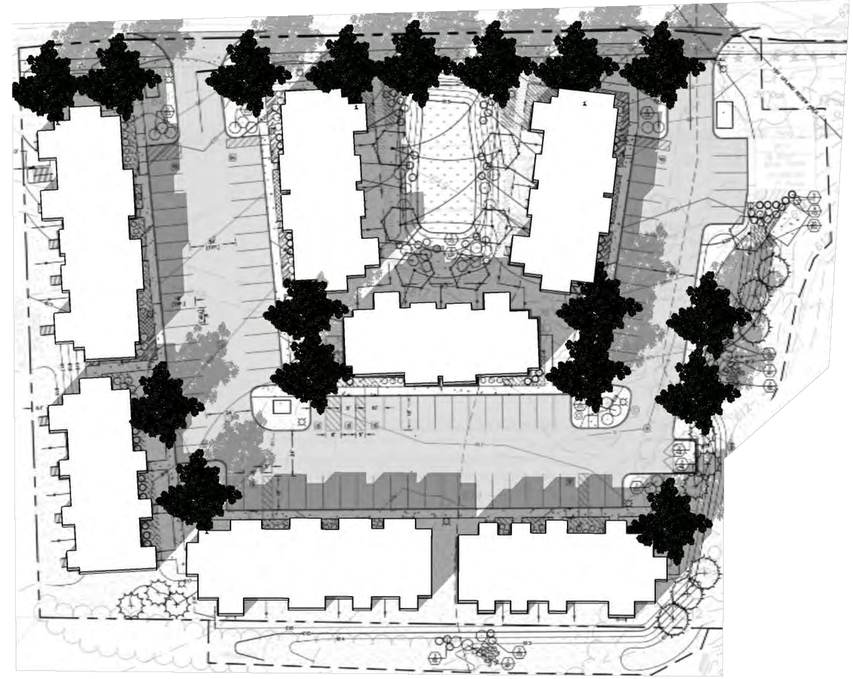
SHADE STUDY - SPRING



SHADE STUDY - SUMMER



SHADE STUDY - FALL



SHADE STUDY - WINTER

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH
EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

SHADE STUDY

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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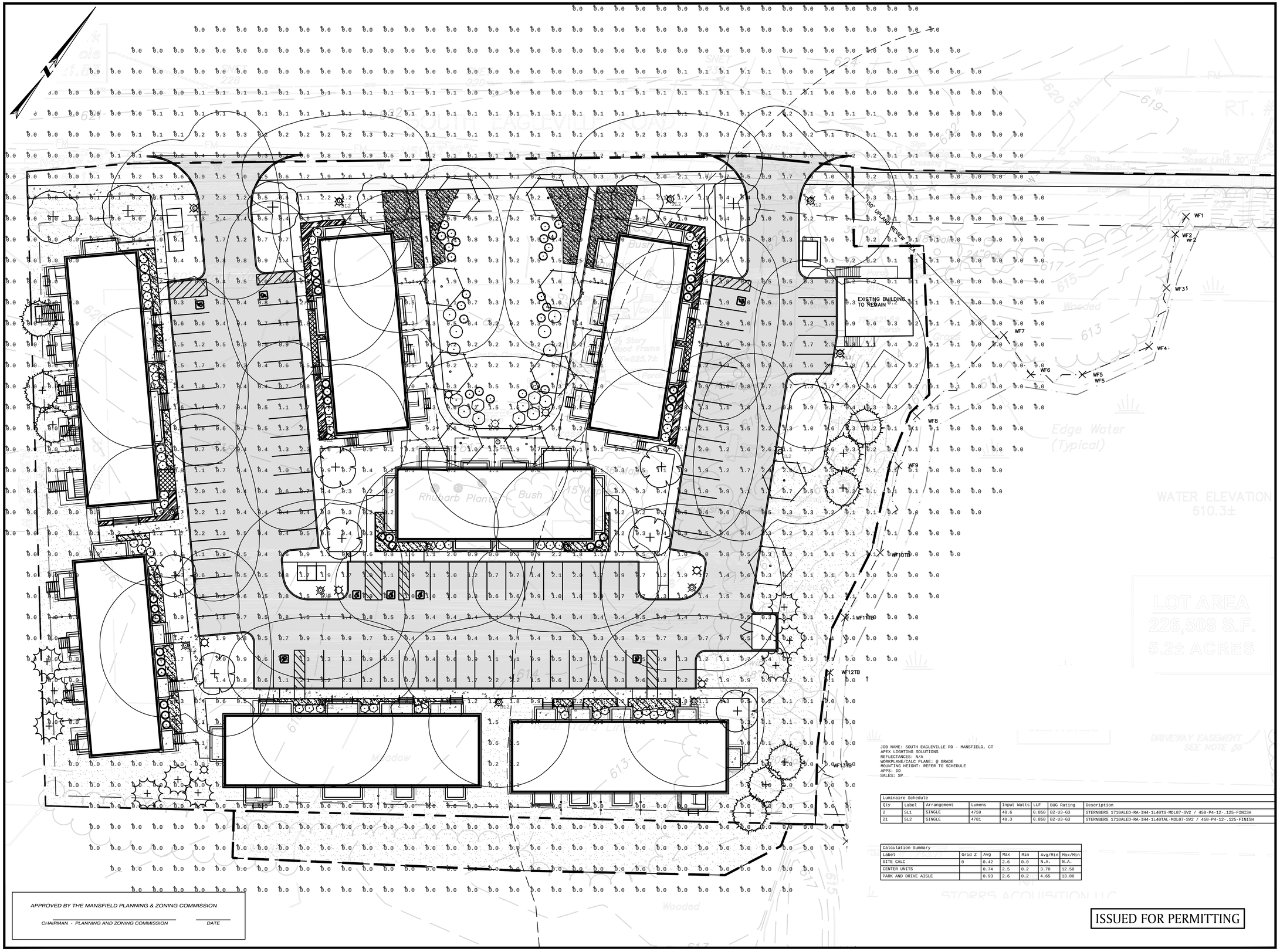
SCALE: NONE

FILE: 8374900–PLANT.DWG
DWG. NO: L-1.2
JOB. NO: 83749.00



JOB NAME: SOUTH EAGLEVILLE RD - MANSFIELD, CT
APEX LIGHTING SOLUTIONS
REFLECTANCES: N/A
WORKPLANE/CALC PLANE: @ GRADE
MOUNTING HEIGHT: REFER TO SCHEDULE
APPS: DD
SALES: SP

Luminaire Schedule							
Qty	Label	Arrangement	Lumens	Input Watts	LLF	BUG Rating	Description
2	SL1	SINGLE	4759	40.6	0.850	B2-U3-G3	STERNBERG 1710ALED-RA-IH4-1L40TS-MDL07-SV2 / 450-P4-12-.125-FINISH
21	SL2	SINGLE	4781	40.3	0.850	B2-U3-G3	STERNBERG 1710ALED-RA-IH4-1L40TAL-MDL07-SV2 / 450-P4-12-.125-FINISH

Calculation Summary						
Label	Grid Z	Avg	Max	Min	Avg/Min	Max/Min
SITE CALC	0	0.42	2.6	0.0	N.A.	N.A.
CENTER UNITS		0.74	2.5	0.2	3.70	12.50
PARK AND DRIVE AISLE		0.93	2.6	0.2	4.65	13.00

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

PHOTOMETRICS PLAN

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 20'
0 10 20 40 FEET

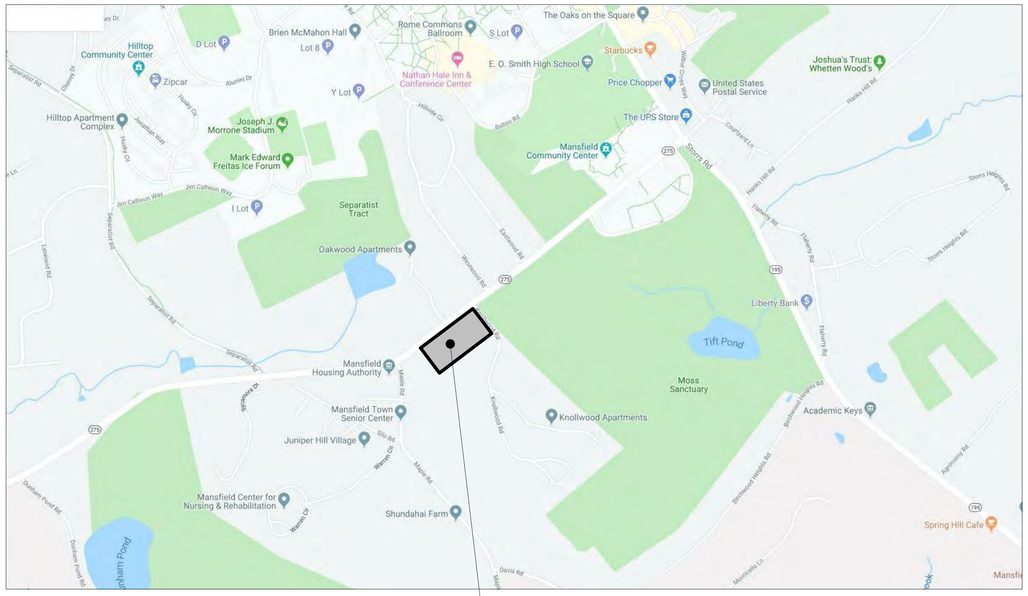
FILE: 8374900-PHOTO.DWG
DWG. NO:
JOB. NO: 83749.00

L-2.0

1
A1.1
CONCEPTUAL SITE PLAN
SCALE: 1" = 30'-0"

THESE DOCUMENTS ARE PROGRESS DRAWINGS PREPARED AS A SUPPLEMENT TO THE ZONING BOARD APPLICATION. THEY ARE NOT FOR CONSTRUCTION. IN THE CASE OF CONFLICTS THE ENGINEERING SET PREPARED BY BSC GROUP SHALL PREVAIL.

EAGLEVILLE GREEN	MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.	dorgan architecture & planning	REVISIONS:	SHEET TITLE: SITE PLAN PROJECT NAME: EAGLEVILLE GREEN PROJECT #: DRAWN BY: DATE: 11/25/19	SHEET NUMBER A1.1



1 A1.1a LOCATION PLAN
SCALE: 1" = 1'-0"

PARKING

(73) REGULAR SPACES
(8) ACCESSIBLE SPACES

(81) TOTAL SPACES

81 SPACES/ 42 DWELLING UNITS = 1.92 SPACES/ UNIT

UNITS PER ACRE

PROPERTY AREA = 226,508 SF = +/-5.2 ACRES

UNITS/ ACRE, TOTAL SITE = 8.08

PROPERTY AREA - WETLANDS AREA = 150,720 SF = +/-3.46 ACRES

UNITS/ ACRE, TOTAL SITE - WETLANDS = 12.14

BUILDING HEIGHT

MAXIMUM BUILDING HEIGHT
(WITHOUT CUPOLA) = 33'-0"
(WITH CUPOLA) = 38'-6"

UNIT BREAKDOWN

UNIT TYPE	UNIT QUANTITY.		AFFORDABLE UNITS*				BEDS		BATHS		1/2 BATHS		NET AREA		COMMENTS
	QTY.	TOTAL	80%	60%	TOTAL	RENT	PER UNIT	TOTAL	PER UNIT	TOTAL	PER UNIT	TOTAL	PER UNIT	TOTAL	
1 BEDROOM - TYPE #1	6		2	1			1	6	1	6	0	0	706	4,236	Typical 1st floor unit
1 BEDROOM - TYPE #2	8		1	2			1	8	1	8	0	0	780	6,240	Typical 2nd floor unit
1 BEDROOM - TYPE #3	1						1	1	1	1	0	0	780	780	2nd floor - stacked over 3 BR
1 BEDROOM - TYPE #4	1						1	1	1	1	0	0	750	750	2nd floor - stacked over 3 BR
1 BEDROOM - ACCESSIBLE	2						1	2	1	2	0	0	706	1,412	1st floor - accessible
Total 1 BEDROOM UNITS		**18**	3	3	**6**										
2 BEDROOM - TYPE #1	12		2	2			2	24	1	12	1	12	1,045	12,540	Typical 2 story unit
2 BEDROOM - TYPE #2 (ACCESSIBLE)	2						2	4	1	2	0	0	980	1,960	1st floor - accessible
2 BEDROOM - TYPE #3	2		1				2	4	1	2	0	0	1,060	2,120	2nd floor - stacked over 2 BR
2 BEDROOM - EXISTING BUILDING	1						2	2	1	1	1	1	1,200	1,200	Renovated exist. residence
Total 2 BEDROOM UNITS		**17**	3	2	**5**										
3 BEDROOM - TYPE #1	6		1	1			3	18	2	12	0	0	1,260	7,560	Typical 2 story unit
3 BEDROOM - TYPE #2 (ACCESSIBLE)	1						3	3	2	2	0	0	1,400	1,400	1st floor - accessible
Total 3 BEDROOM UNITS		**7**	1	1	**2**										
TOTAL		**42**	7	6	**13 (31%)**			73		49		13		40,198	

*** THIS PLAN ILLUSTRATES A TYPICAL DISTRIBUTION OF AFFORDABLE UNITS. THE LOCATION OF AFFORDABLE UNITS WILL FLOAT DEPENDING ON THE NEEDS AND PREFERENCES OF RESIDENTS.**

TOTAL PROPERTY AREA = 226,508 SF
BLDG. COVERAGE AREA = 31,680 SF
COVERAGE % = 13.99%

2 A1.1a SITE COVERAGE PLAN
SCALE: 1" = 50'-0"

PROJECT NORTH

3 A1.1a DWELLING UNIT BREAKDOWN
SCALE: 1" = 50'-0"

PROJECT NORTH

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EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

da&p dorgan architecture & planning

REVISIONS:

SHEET TITLE: SITE INFORMATION

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 11/25/19

SHEET NUMBER A1.1a

2 A1.2 1ST FLOOR OVERALL PLAN
SCALE: 1/16" = 1'-0"

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REVISIONS:

SHEET TITLE: OVERALL FIRST FLOOR PLAN

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 11/25/19

SHEET NUMBER

A1.2

1 / A1.3 2ND FLOOR OVERALL PLAN
SCALE: 1/16" = 1'-0"

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MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

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REVISIONS:

SHEET TITLE: OVERALL SECOND FLOOR PLAN

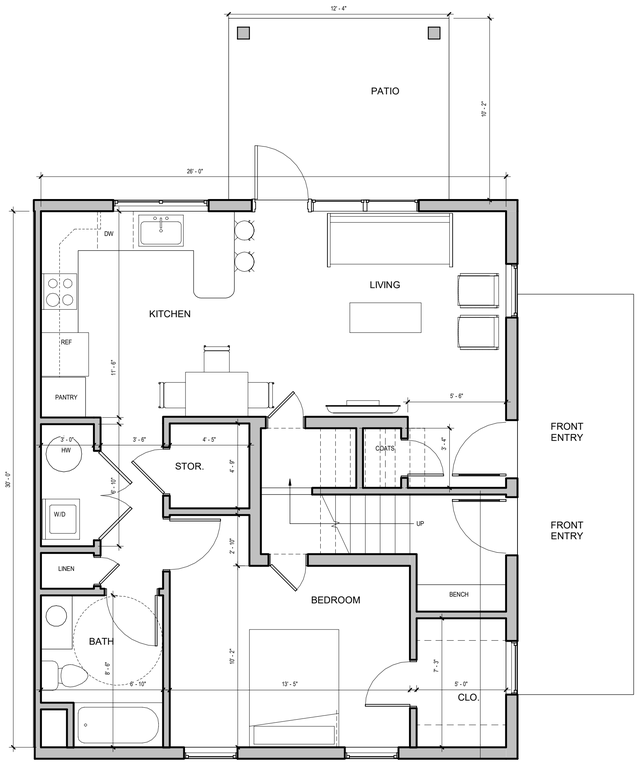
PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 11/25/19

SHEET NUMBER A1.3

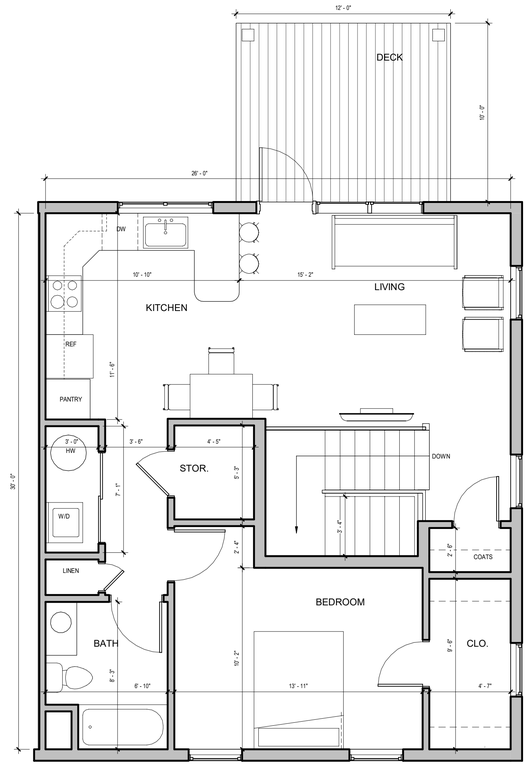


1ST FLOOR

STACKED
(ACCESSIBLE UNIT IS SIMILAR)

TOTAL AREA = 706 SF

2 A2.1 UNIT PLAN - 1 BR TYPE #1
SCALE: 1/4" = 1'-0"

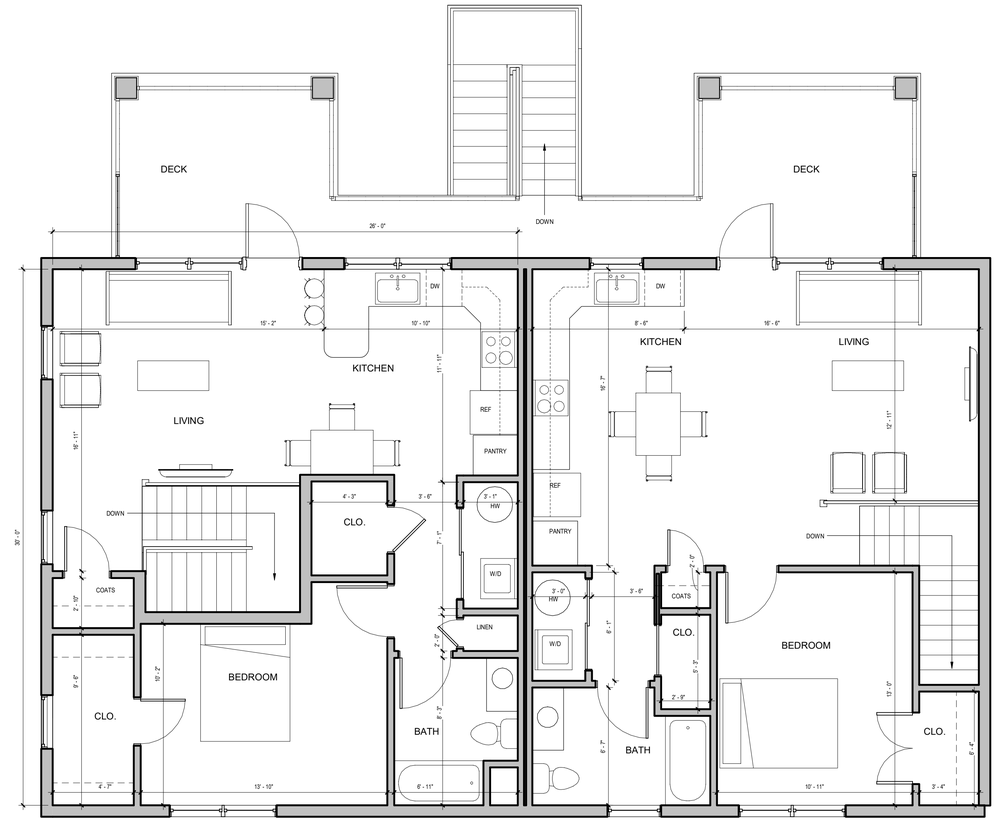


2ND FLOOR

STACKED

TOTAL AREA = 780 SF

1 A2.1 UNIT PLAN - 1 BR TYPE #2
SCALE: 1/4" = 1'-0"



TYPE 3

2ND FLOOR

OVER ACCESSIBLE UNIT

780 SF

TYPE 4

2ND FLOOR

OVER ACCESSIBLE UNIT

750 SF

3 A2.1 UNIT PLAN - 1 BR TYPES #3 AND #4
SCALE: 1/4" = 1'-0"

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REVISIONS:

SHEET TITLE: UNIT TYPE PLANS

PROJECT NAME: EAGLEVILLE GREEN

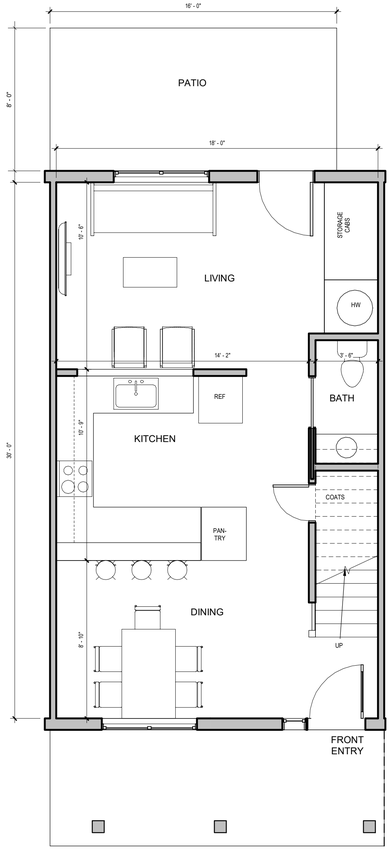
PROJECT #:

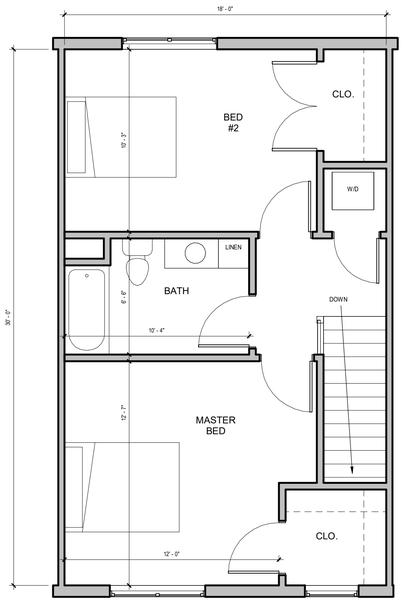
DRAWN BY:

DATE: 11/25/19

SHEET NUMBER

A2.1



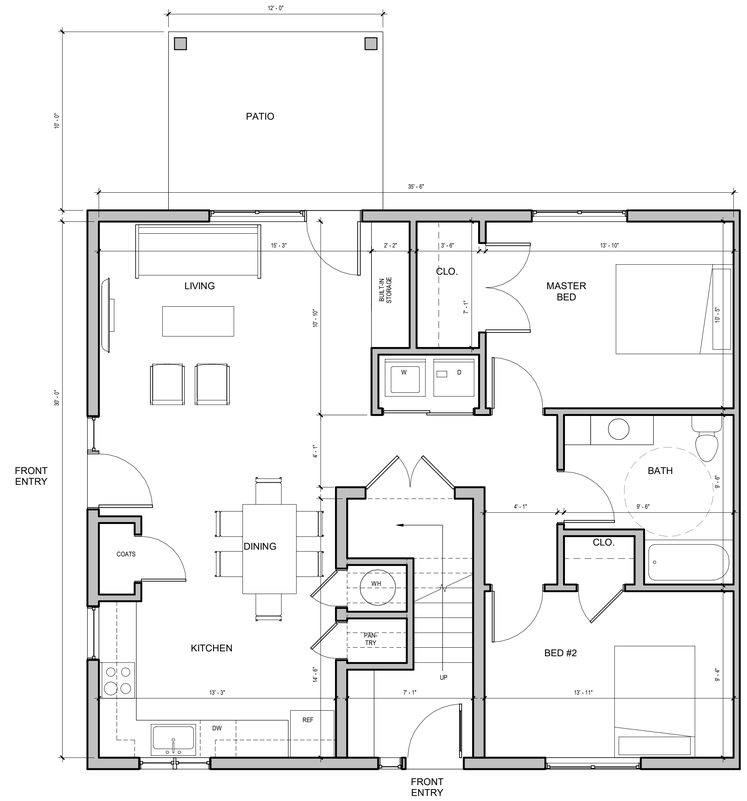


1ST FLOOR 540 SF

2ND FLOOR 505 SF

TOWNHOUSE TOTAL AREA = 1045 SF

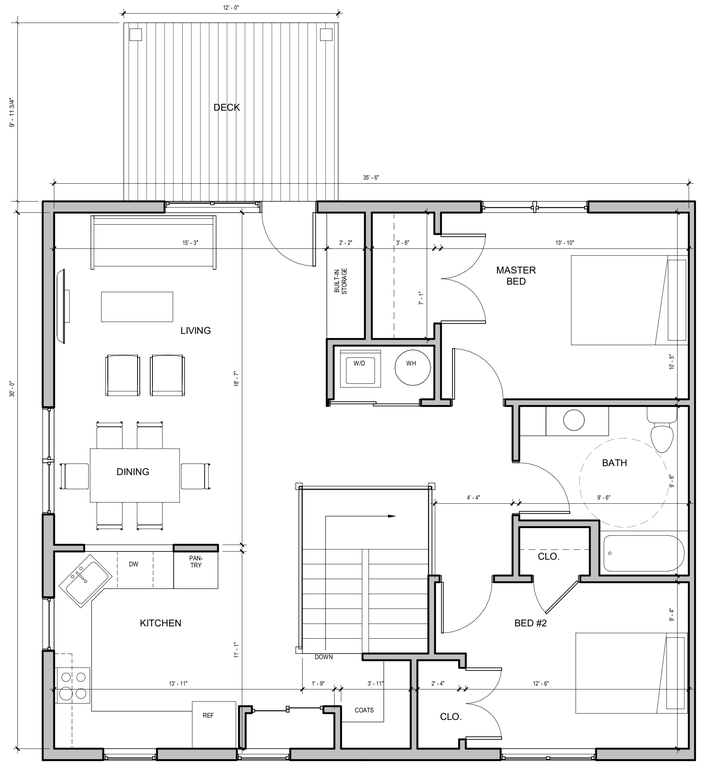
1 A2.2 UNIT PLAN - 2BR TYPE #1
SCALE: 1/4" = 1'-0"



1ST FLOOR

ACCESSIBLE TOTAL AREA = 980 SF

4 A2.2 UNIT PLAN - 2BR TYPE #2
SCALE: 1/4" = 1'-0"



2ND FLOOR

STACKED OVER ACCESSIBLE UNIT TOTAL AREA = 1,060 SF

3 A2.2 UNIT PLAN - 2BR TYPE #3
SCALE: 1/4" = 1'-0"

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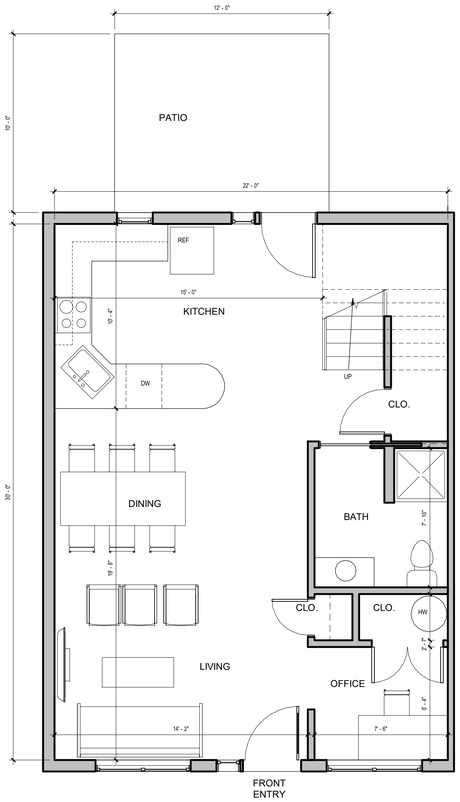
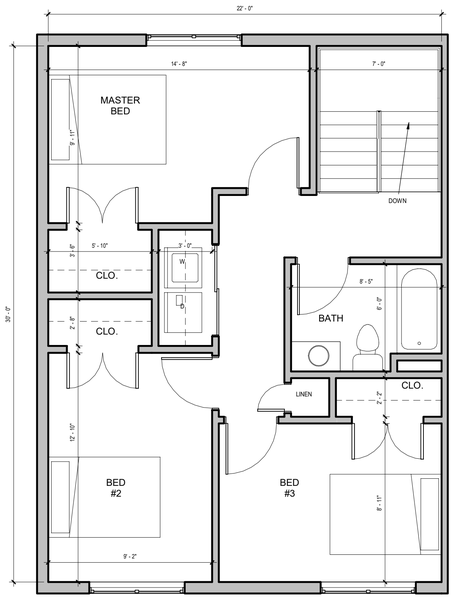
EAGLEVILLE GREEN	MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.	dorgan architecture & planning	REVISIONS:	SHEET TITLE: UNIT TYPE PLANS PROJECT NAME: EAGLEVILLE GREEN PROJECT #: DRAWN BY: DATE: 11/25/19	SHEET NUMBER A2.2



1ST FLOOR 660 SF

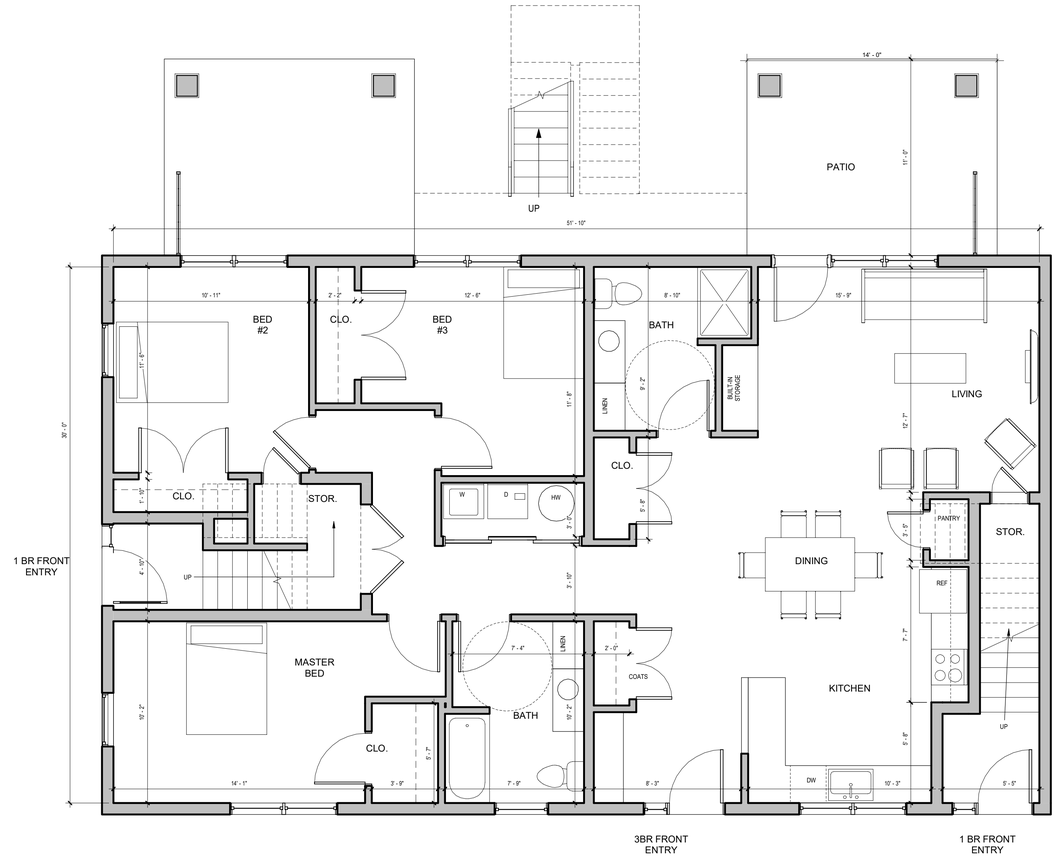
TOWNHOUSE



2ND FLOOR 600 SF

TOTAL AREA = 1,260 SF

1 UNIT PLAN - 3 BR TYPE #1
A2.3 SCALE: 1/4" = 1'-0"



1ST FLOOR

ACCESSIBLE 1400 SF

3 UNIT PLAN - 3BR TYPE #2
A2.3 SCALE: 1/4" = 1'-0"

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MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

dorgan architecture & planning

REVISIONS:

SHEET TITLE: UNIT TYPE PLANS

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 11/25/19

SHEET NUMBER

A2.3

1 A3.1 BUILDING 1 NORTH ELEVATION
SCALE: 1/8" = 1'-0"

2 A3.1 BUILDING 1 WEST ELEVATION
SCALE: 1/8" = 1'-0"

4 A3.1 BUILDING 1 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

3 A3.1 BUILDING 1 EAST ELEVATION
SCALE: 1/8" = 1'-0"

DRAFT

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EAGLEVILLE GREEN	MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.	da&p dorgan architecture & planning	REVISIONS:	SHEET TITLE: EXTERIOR ELEVATIONS - BUILDING 1 PROJECT NAME: EAGLEVILLE GREEN PROJECT #: DRAWN BY: DATE: 11/25/19	SHEET NUMBER A3.1

1 A3.2 BUILDING 2 NORTH ELEV
SCALE: 1/8" = 1'-0"

2 A3.2 BUILDING 2 EAST ELEV
SCALE: 1/8" = 1'-0"

3 A3.2 BUILDING 2 SOUTH ELEV
SCALE: 1/8" = 1'-0"

4 A3.2 BUILDING 2 WEST ELEV
SCALE: 1/8" = 1'-0"

DRAFT

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REVISIONS:

SHEET TITLE: EXTERIOR ELEVATIONS - BUILDING 2

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 11/25/19

SHEET NUMBER

A3.2

1 A3.3 BUILDING 3 NORTH ELEV
SCALE: 1/8" = 1'-0"

2 A3.3 BUILDING 3 EAST ELEV
SCALE: 1/8" = 1'-0"

3 A3.3 BUILDING 3 SOUTH ELEV
SCALE: 1/8" = 1'-0"

4 A3.3 BUILDING 3 WEST ELEV
SCALE: 1/8" = 1'-0"

DRAFT

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MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

da&p dorgan architecture & planning

REVISIONS:

SHEET TITLE: EXTERIOR ELEVATIONS - BUILDING 3

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

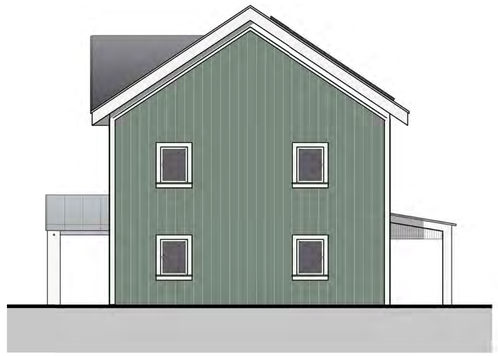
DATE: 11/25/19

SHEET NUMBER A3.3

1 A3.4 BUILDING 4 NORTH ELEV
SCALE: 1/8" = 1'-0"

2 A3.4 BUILDING 4 EAST ELEV
SCALE: 1/8" = 1'-0"

3 A3.4 BUILDING 4 SOUTH ELEV
SCALE: 1/8" = 1'-0"



4 A3.4 BUILDING 4 WEST ELEV
SCALE: 1/8" = 1'-0"

DRAFT

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MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

dorgan architecture & planning

REVISIONS:

SHEET TITLE: EXTERIOR ELEVATIONS - BUILDING 4

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 11/25/19

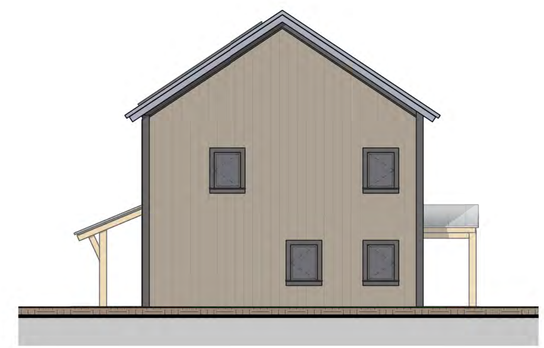
SHEET NUMBER

A3.4

1 A3.5 BUILDING 5 NORTH ELEV
SCALE: 1/8" = 1'-0"

2 A3.5 BUILDING 5 WEST ELEV
SCALE: 1/8" = 1'-0"

3 A3.5 BUILDING 5 SOUTH ELEV
SCALE: 1/8" = 1'-0"



4 A3.5 BUILDING 5 EAST ELEV
SCALE: 1/8" = 1'-0"

DRAFT

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EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

dorgan architecture & planning

REVISIONS:

SHEET TITLE: EXTERIOR ELEVATIONS - BUILDING 5

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

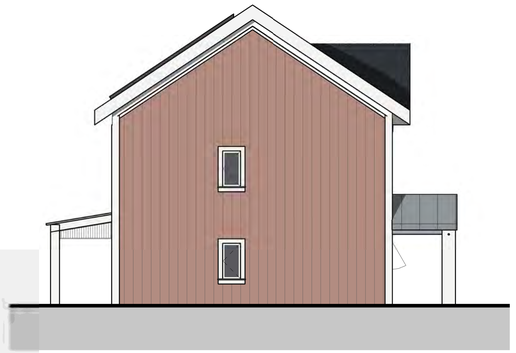
DATE: 11/25/19

SHEET NUMBER

A3.5

1 A3.6 BUILDING 6 NORTH ELEV
SCALE: 1/8" = 1'-0"

2 A3.6 BUILDING 6 EAST ELEV
SCALE: 1/8" = 1'-0"



3 A3.6 BUILDING 6 SOUTH ELEV
SCALE: 1/8" = 1'-0"

4 A3.6 BUILDING 6 WEST ELEV
SCALE: 1/8" = 1'-0"

DRAFT

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EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

da &p dorgan architecture & planning

REVISIONS:

SHEET TITLE: EXTERIOR ELEVATIONS - BUILDING 6

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 11/25/19

SHEET NUMBER

A3.6

1 A3.7 BUILDING 7 NORTH ELEV
SCALE: 1/8" = 1'-0"

2 A3.7 BUILDING 7 EAST ELEV
SCALE: 1/8" = 1'-0"

3 A3.7 BUILDING 7 SOUTH ELEV
SCALE: 1/8" = 1'-0"

4 A3.7 BUILDING 7 WEST ELEV
SCALE: 1/8" = 1'-0"

DRAFT

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EAGLEVILLE GREEN

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REVISIONS:

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STORMWATER MANAGEMENT REPORT

Eagleville Green
113-121 South Eagleville Road
Mansfield, Connecticut

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PREPARED FOR:

Mansfield Non-Profit Housing Development Corporation
309 Maple Road
Storrs, CT 06268

PREPARED BY:

BSC GROUP, INC.
300 Winding Brook Drive
Glastonbury, CT 06033
PHONE: 860-652-8227 FAX: 860-652-8229

TABLE OF CONTENTS

CONTENTS **PAGE**

1.0 INTRODUCTION 1
2.0 EXECUTIVE SUMMARY 1
3.0 PROJECT DESCRIPTION 1
3.1 Characteristics 2
3.2 Soil 2
3.3 Wetlands 2
3.4 Hydrology 3
4.0 STORMWATER MANAGEMENT 3
4.1 Design Objective 3
4.2 Design Criteria 3
4.3 Design Methodology 3
4.4 Existing Conditions 4
4.5 Proposed Conditions 4
4.6 Stormwater Detention 5
4.7 Pre- and Post-Comparison 7
5.0 STORMWATER DRAINAGE SYSTEM 8
5.1 Design Criteria 8
5.2 Design Methodology 8
6.0 STORMWATER QUALITY 8
6.1 Temporary Control of Sediment and Erosion 9
6.2 Permanent Control of Stormwater Quality 10
7.0 OPERATION AND MAINTENANCE PLAN 10
7.1 During Construction 10
7.2 After Construction 12
8.0 CONCLUSION 13

LIST OF DRAWINGS/FIGURES

Figure 1 Site Location Map
Figure 2 Existing Watershed Area Map
Figure 3 Proposed Watershed Area Map
Figure 4 Catchment Area Map

LIST OF APPENDICES

Appendix A Existing Stormwater Discharge Computations
Appendix B Proposed Stormwater Discharge Computations
Appendix C Proposed Hydraulic Sizing Computations
Appendix D Water Quality Computations

1.0 INTRODUCTION

This Stormwater Management Report contains the engineering design of the stormwater management systems for the proposed development of the Eagleville Green, located at 113-121 South Eagleville Road in Mansfield, Connecticut. (Figure 1 – Site Location Map). The development will consist of seven (7) multi-story housing buildings, surface parking for approximately 81 vehicle spaces, and other "typical" site improvements to support the proposed building program. The engineering design and report are prepared in accordance with Town of Mansfield Regulations, the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, the 2004 Connecticut Department of Energy & Environmental Protection (CT DEEP) Water Quality Manual, and the 2000 Connecticut Department of Transportation (ConnDOT) Drainage Manual.

2.0 EXECUTIVE SUMMARY

This report is prepared for Mansfield Housing Authority in support of the Eagleville Green proposed development. It addresses the impacts and drainage mitigation for the increase in site impervious caused by the new building complex and its appurtenances.

The following stormwater management facilities are designed in accordance with the Town of Mansfield in coordination with their engineering department, the Mansfield Zoning Regulations, CT DEEP, and ConnDOT Drainage Standards:

- As part of the construction, total site impervious area has been increased. Therefore, peak flows for the ,2-, 10-, 25-, and 100-year design storms have been mitigated.
- On-site stormwater collection and conveyance is accomplished by a series of catch basins, manholes, piping, above-ground detention pond, water quality units and underground detention facilities.
- Short-term erosion control is achieved through use of construction entrances, inlet protection, silt fence and hay bale barriers.
- A stormwater treatment train is provided, including parking lot sweeping, catch basins with two (2) foot sumps for sediment collection, hydrodynamic separator, above-ground dry detention basin, and open bottom infiltrating underground detention units. All stormwater runoff from the proposed development will be directed to the proposed site drainage and management system, where it will pass through detention systems before ultimately discharging to the adjacent wetland onsite.
- Stormwater drainage piping has been designed to convey the 10-year design storm in accordance with the 2000 ConnDOT Drainage Manual.

3.0 PROJECT DESCRIPTION

This project involves the construction of a residential development containing 7 residential buildings spread over a 5.2-acre parcel. In addition to the constructed building complex, the site will include access via two driveways, an exterior play area for increase in activity and an improved sense of community, and a stone dust walking path through the middle of the site. The total area of construction activity (disturbed area) is approximately 3.2 acres.

Storm drainage and runoff control will be accomplished by directing site overland runoff to a series of area drains and catch basins, then via underground piping to either the above-ground detention basin or the underground detention system. The discharge of the collected stormwater from the site will drain to the east, through outlet protection aprons, and into the adjacent onsite wetland. The roof runoff will be directed to roof leaders, then via underground piping to either the above-ground

detention basin or dedicated infiltration units designed to hold and infiltrate the 100-year storm. See Section 4.6 for a more detailed discussion.

EXISTING CONDITIONS

3.1 Characteristics

The project site consists of an approximately 5.2-acre parcel located off of South Eagleville Road in Mansfield, Connecticut, with two (2) existing single-family residential buildings developed at the front of the site with a paved driveway, and grass area/wetlands surrounding. The property is bound by South Eagleville Road to the north, Oakwood Apartments across South Eagleville Road, Knollwood Apartments to the south, Knollwood Road to the east, and an Eversource Natural Gas facility to the west. Existing property access is off South Eagleville Road.

The site generally slopes downward to the southeast throughout the entire property. The highest elevation onsite is at South Eagleville Road at elevation ±622, adjacent to 121 South Eagleville Road, at which point it begins to slope down toward elevation ±612 over approximately 310 feet.

3.2 Soil

Following research of the USDA-NRCS Web-soil Survey online database, approximately 90 percent of the site is recorded as Agawam Fine Sandy Loam, 0 to 3 Percent Slopes. Agawam Fine Sandy Loam is suited for community development. This nearly level, well-drained soil is found in areas of irregular shape. Typically, the surface layer is dark brown fine sandy loam about 7 inches thick. The subsoil is yellowish brown, reddish yellow and light yellowish brown sandy loam 25 inches thick. The substratum extends to a depth of 60 inches or more. It is pale brown sand to a depth of 31 inches and gravelly sand at a depth of more than 31 inches. Slopes of more that 3 percent make up 10 percent of this unit. According to the online database, Agawam Fine Sandy Loam, 0 to 3 percent slopes is generally considered a Hydrologic Soil Group B.

The remaining 10 percent of the site, located along the southeast border of the site, is identified as Sudbury Sandy Loam, 0 to 3 Percent Slope and Timakwa and Natchaug Soils, 0 to 2 Percent Slopes. This complex is identified to have a hydrologic soil group range between B and D. For the purposes of this analysis, the site will be considered hydrologic group B for consistency.

3.3 Wetlands

Upon review of the Mansfield Geographic Information System (GIS) Mapping, there are wetlands located on the property to the east, adjacent to Knollwood Road. The proximity of the wetlands to the project site will put a portion of the site (± 3.41 Ac – 65.5% of the property) located within a designated Upland Review Area. Approximately 1.09 acres of this Upland Review Area will be located within the limits of disturbance for the project. We do not anticipate that the site improvements will have any impact on the regulated areas on or off site. A detailed description of the onsite wetlands can be found in the Wetlands Report, dated September 13, 2019, prepared by BSC Group.

3.4 Hydrology

The existing conditions for the site were modeled as two (2) distinct discharges from the property:

1. Overland sheet flow runoff on the west portion of the site. This area sheet flows offsite before ultimately discharging to the southwest grassy area. The tributary area for this discharge will be modeled as Existing Subwatershed "E1".

2. Overland sheet flow runoff on the east portion of the site. This area sheet flows offsite before ultimately discharging to the onsite wetland. The tributary area for this discharge will be modeled as Existing Subwatershed "E2".

The Existing Watershed Area Map has been included as Figure 2.

4.0 STORMWATER MANAGEMENT

4.1 Design Objective

The intent of the project hydrologic study is to determine rates of runoff for maximum storm frequencies of two, ten, twenty-five, and one hundred-year intervals under existing and proposed conditions for the designated design points. From this analysis, the proposed stormwater collection and management system is designed to mitigate the post development increase in the peak rates of runoff for the above-mentioned storm events associated with the construction of new buildings, driveways, and sidewalks.

4.2 Design Criteria

This project has been designed in accordance with the Town of Mansfield requirements.

The following rainfall volumes for hydrologic analysis were used for each storm event for a 24-hour Type III distribution Storm:

2-year – 3.33 in
10-year – 5.05 in
25-year – 6.12 in
100-year – 7.78 in

* Source: NOAA Atlas 14 Point Precipitation Frequency/Volume Estimates

4.3 Design Methodology

This study was prepared using methods contained in the USDA Soil Conservation Service Publication TR-55 "Urban Hydrology for Small Watersheds". TR-55 outlines procedures for calculating peak rates of runoff resulting from precipitation events and procedures for developing runoff hydrographs.

The watershed was simulated as a series of contributing subcatchments, and inflow and outflow structures. A value for area, curve number (CN) and time of concentration (Tc) was calculated for each contributing subcatchment.

The curve number is a land sensitive coefficient that dictates the relationship between total rainfall depth and direct storm runoff. Based on the coverage of soil groups and land use in the watershed, an average CN was determined for each subcatchment under existing and proposed conditions.

The time of concentration is defined as the time for runoff to travel from the hydraulically most distant point in the watershed to a point of interest. Values for the time of concentration were determined for existing and proposed conditions based on land cover and slope of the flow path using methods described in TR-55.

Values for time of concentration (Tc) and curve numbers (CN) were then entered into the "HydroCAD 10.0" computer program (which is based on TR-20 and TR-55) where subcatchment hydrographs were calculated. The hydrological analysis consists of developing an existing conditions model to first establish existing peak rates of runoff for the various storm events mentioned above. Second, an evaluation is then conducted of the proposed condition to determine the effect of the development on the sites peak rates of runoff.

4.4 Existing Conditions

Area, Curve Number, and Tc of the existing subwatersheds can be seen in the table below:

Watershed	Area (ac)	C	Tc (min.)
E1	0.60	61	15
E2	2.96	59	15.3
TOTAL	**3.56**	**59.3**	**-**

Existing stormwater discharge computations are located in Appendix A.

4.5 Proposed Conditions

The intent of the hydrologic design was to maintain or reduce the peak flow rate exiting the site. To achieve mitigation of the peak flow rates, the proposed site was divided into four (4) subwatersheds.

P1: This subwatershed is composed of the western most exterior portion of the site. Runoff in this subwatershed bypasses the drainage system and discharges via overland sheet flow offsite.

P2-1: This subwatershed is composed of the interior portion of the site. Roof runoff from Buildings 1, 2, and 3, as well as runoff from the land surrounding these buildings is directed to the above ground detention basin. This runoff is directed into the new drainage system, which discharges out of a flared pipe, through a vegetated stabilized outlet, and ultimately to the wetland at the east of the site.

P2-2: This subwatershed comprises of the majority of the developed site and includes the contributing drainage area that is directed to the three underground detention systems. The roof runoff from buildings 4, 5, 6, and 7 drains to either detention 3P or 4P. These systems are infiltration units designed to hold and infiltrate the 100-year storm. The remanding runoff in this subwatershed is

directed into the new drainage system, flows to the underground detention system 2P, out of a flared pipe, through a vegetated stabilized outlet and ultimately off the property to the southeast.

P2-3: This subwatershed is composed of the northern and eastern exterior portions of the site. Runoff in this area bypasses the drainage system and discharges via overland sheet flow offsite.

Cover characteristics of each proposed subwatershed can be seen in the table below:

Subwatershed	Area (ac)	CN	Tc (min.)
P1	0.14	61	6.0
P2-1	0.60	79	6.0
P2-2	1.14	89	6.0
P2-3	1.26	56	6.0
BLDG 4	0.099	89	6.0
BLDG 5	0.118	89	6.0
BLDG 6	0.090	89	6.0
BLDG 7	0.120	89	6.0
Total	**3.56**	**63.9**	**-**

Proposed stormwater discharge computations are represented in Appendix A. The proposed subwatershed areas are depicted in Figure 3.

4.6 Stormwater Detention

Following completion of the analysis, the cumulative storage shall be ±22,600 cubic feet of available storage. A combination of above-ground and underground storage systems will be utilized to create this storage volume. Below is a detailed description of each system:

Detention P1

- Type: Above-ground dry pond
- Bottom Elevation: 613.00
- Approximate Groundwater Elevation: 609’ – 611’
- Top of Berm Elevation: 616.50
- Design Storm: 100-Year
- Design Stage Elevation: 615.83
- Required WQV: 788 cf
- Storage Provided Below Outlet: 1,664 cf

- Outlets: Low flow 6" orifice @ 614.30, high flow 15" pipe @ 616.00
- Description: The above-ground pond receives flow from Subcatchment Area P2-1, which includes Buildings 4 – 7, as well as the surrounding "inner" portion of the site. The discharge from the pond is controlled by Outlet Control Structure #1, which has a vertical riser pipe for high flows and an orifice cored into the side for lower flows. Based on the project boring logs, the receiving soils in the pond are mostly find sands with little silt. A permeability of approximately 6 in/hr is anticipated. Pond routing calculations do not account for infiltration, however it is anticipated that the pond will drain within a 72-hour period.

Detention P2

- Type: 36" Perforated Corrugated Metal Pipe
- Bottom of Stone Elevation: 611.25
- Approximate Groundwater Elevation: 610'
- Invert Elevation: 611.75
- Top of Pipe Elevation: 614.75
- Design Storm: 100-Year
- Design Stage Elevation: 615.32
- Required WQV: 2,246 cf
- Storage Provided Below Outlet: 2,541 cf
- Outlets: Low flow 6" orifice @ 612.60, high flow 8" orifice @ 613.33, overflow 10" pipe @ 615.00
- Description: The below-ground pipe storage receives flow from Subcatchment Area P2-2, which includes the site driveway, parking, and lawn areas. The discharge from the system is controlled by Outlet Control Structure #2, which has a vertical riser pipe for high flows, an orifice cored into the side for medium flows, and an orifice cored into the side for lower flows. Based on the project boring logs, the receiving soils under the stone base are mostly find sands with little silt. A permeability of approximately 6 in/hr is anticipated. An in-situ percolation test was performed (PT-B, see Plan Sheet G-1.0) and an effective infiltration rate of 6 in/hr was measured. Pond routing calculations do not account for infiltration, however it is anticipated that the system will drain within a 72-hour period.

Detention P3

- Type: 90"W x 60"H open-bottom plastic arch chambers
- Bottom of Stone Elevation: 610.00
- Approximate Groundwater Elevation: 609'
- Invert Elevation: 610.75
- Top of Chamber Elevation: 615.75
- Top of Stone Elevation: 616.75
- Design Storm: 100-Year
- Design Stage Elevation: 615.76
- Required WQV: None
- Outlets: None
- Description: The open-bottom plastic arch chamber storage receives flow from Building #4 Roof via underground roof leader piping. Based on the project boring logs, the receiving soils under the stone base are mostly find sands with little silt. A permeability of approximately 6 in/hr is anticipated. An in-situ percolation test was performed (PT-C, see Plan Sheet G-1.0) and an effective infiltration rate of 7.5 in/hr was measured. Pond routing calculations do not account for infiltration, however it is anticipated that the system will drain within a 72-hour period. A maintenance access manhole to grade will be provided for periodic cleaning.

Detention P4

- Type: 90”W x 60”H open-bottom plastic arch chambers
- Bottom of Stone Elevation: 610.50
- Approximate Groundwater Elevation: 611’
- Invert Elevation: 611.25
- Top of Chamber Elevation: 616.25
- Top of Stone Elevation: 617.25
- Design Storm: 100-Year
- Design Stage Elevation: 616.98
- Required WQV: None
- Outlets: None

Description: The open-bottom plastic arch chamber storage receives flow from Building #5, 6, 7, and 8 roofs via underground roof leader piping. Based on the project boring logs, the receiving soils under the stone base are mostly find sands with little silt. A permeability of approximately 6 in/hr is anticipated. An in-situ percolation test was performed (PT-A, see Plan Sheet G-1.0) and an effective infiltration rate of 30 in/hr was measured. Pond routing calculations do not account for infiltration, however it is anticipated that the system will drain within a 72-hour period. A maintenance access manhole to grade will be provided for periodic cleaning.

Pre- and Post-Development Comparison

Peak flows at the off-site analysis point are shown in the following table:

STORMWATER DISCHARGE COMPARISON				
Design Point	Storm Event	Existing (cfs)	Proposed (cfs)	Difference (cfs)
1 (Off-Site Flow, West)	2-year	0.18	0.05	-0.13
	10-year	0.67	0.21	-0.46
	25-year	1.05	0.33	-0.72
	100-year	1.71	0.53	-1.18
2 (Flow to On-Site Wetland)	2-year	0.66	0.80	0.14
	10-year	2.87	3.41	0.54
	25-year	4.65	5.21	0.56
	100-year	7.76	8.96	1.20
Total Site	2-year	0.83	0.83	0.00
	10-year	3.54	3.53	-0.01
	25-year	5.70	5.51	-0.19
	100-year	9.47	9.37	-0.10

The data summarized above indicates that the total peak stormwater discharge offsite will be reduced from the existing condition to the proposed conditions for all design storms.

5.0 STORMWATER DRAINAGE SYSTEM

5.1 Design Criteria

Design of the storm drainage system was performed in accordance with the standards and procedures specified in the 2000 ConnDOT Drainage Manual. The capacity within the site driveways and parking lots were designed to safely accommodate the 10-year, 24-hour design storm.

5.2 Design Methodology

The storm drain collection system was analyzed using the Rational Method for estimating runoff for a 10-year design storm. The project site was divided into catchment areas, with each contributing runoff to an individual catch basin or area drain inlet. A value for acreage area, time of concentration, and a runoff coefficient was calculated for each contributing catchment area.

Values for time of concentration were chosen based on land cover and slope of the flow path from the hydraulically most distant point in the sub-area to the appropriate inlet. Per Rational Method, the minimum time of concentration value is assumed to be 5 minutes for paved surfaces and 10 minutes for unpaved surfaces. Using the time of concentration, rainfall intensities were determined using the Rainfall-Duration-Frequency Relationships for Connecticut (NOAA Atlas 14 Precipitation Frequency Estimates).

The average runoff coefficient, which is the ratio of peak runoff rate to the average rainfall rate for the period known as the time of concentration, was chosen using the following values:

Condition	C
Grass/Landscaped Areas	0.30
Pavement/Impervious Areas	0.90

Storm drainage pipes were then sized based upon calculated flows using Manning's Equation and the pipe sizes verified by solving for the hydraulic grade line. The drainage pipe materials proposed for this project are high density polyethylene pipe (HDPE) and reinforced concrete pipe (RCP).

Per the ConnDOT Drainage Manual (Table 6.C.1), the friction factor (n) utilized in the design is 0.011 for HDPE pipe and 0.013 for RCP.

Detailed calculations for the on-site stormwater sizing are included in this report in Appendix C. A Catchment Area Map has also been included (Figure 4) to detail the tributary area for each drainage structure.

6.0 STORMWATER QUALITY

The project has been designed to address both the short-term and long-term storm water quality. During construction, stormwater runoff is a concern due to the excess amount of exposed areas that do not have vegetation or other cover to prevent the removal and transportation of sediment to resource areas. The project addresses the short-term concerns by providing erosion control measures in the form of Erosion & Sediment Control Plans and a "During Construction" Operation and Maintenance Plan (Section 8.0).

The primary function of erosion and sediment control, as defined by the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control is to "absorb erosional energies and reduce runoff velocities that force the detachment and transport of soil and/or encourage the deposition of eroded soil particles before they reach any sensitive area." The short-term project erosion measures were designed per the 2002 manual.

After construction, stormwater runoff is a concern because it may contain contaminants such as suspended solids, petroleum hydrocarbons, nutrients, heavy metals, and salts that may have adverse effects on water quality. The sources of the pollutants are generally associated with urban land use, including automobile exhaust, mechanical wear of vehicles, leaf litter, deicing salts and atmospheric deposition. The pollutants accumulate on the land surfaces and are washed off during storm events into the receiving waterways and wetlands.

The objective of the stormwater management system designed for the proposed development is to effectively remove the contaminant loading from the site runoff and to provide long-term protection of the quality and use of downstream water resources. The long-term stormwater quality measures were designed per the 2004 Connecticut Stormwater Quality Manual.

6.1 Temporary Control of Sediment and Erosion

The objective of temporary erosion control during construction is to minimize the area of exposed soil, control runoff rate and direction, and provide for rapid stabilization of exposed areas. Prior to any construction activity, trenched silt fence and/or staked hay bales will be placed down gradient of the proposed work areas. The fence/barrier will provide some sediment control, as well as provide a limit of construction activity.

Construction entrances will be utilized to remove sediment from construction vehicle tires and prevent it from being tracked onto adjoining paved roadway areas.

Any excavated and stockpiled topsoil will be contained within staked silt fence. Erosion-prone areas left exposed for extended periods (>30 days) will be mulched and seeded for temporary vegetative cover. After construction, all exposed areas will be graded, mulched and re-vegetated with appropriate ground cover. The silt fence and/or hay bales will remain in place until groundcover is established.

Catch basin filter inserts will be used to collect sediment that may be carried in the storm runoff during construction. Filter inserts will be placed in each existing catch basin, yard drain, and in each new catch basin, during construction and until all disturbed areas of the site have been stabilized. Replacement of the filter inserts shall be as often as necessary to prevent excessive ponding due to clogged fabric.

Dewatering settling basins will be utilized where groundwater is encountered in trenching, foundation excavation, or any other excavation. The dewatering wastewaters will be infiltrated into the ground or discharged, after filtration into the nearest catch basin.

Throughout all phases of construction, the erosion control measures will be routinely inspected and cleaned, repaired, and replaced as necessary by the Contractor. See Section 8.0 entitled "Operation and Maintenance Plan" for more details.

Throughout the construction process, extra stocks of hay bales and silt fence will be kept on-site to replace those that become damaged and/or deteriorated.

Any erosion and sediment control measures, which upon inspection are found to be damaged, deteriorated, or not functioning properly, will be repaired, replaced, and corrected immediately after inspection.

Areas mulched or seeded for temporary vegetative cover will be inspected for proper cover at the end of each workday if precipitation is forecast and also prior to weekends. Additional seeding or mulch will be placed as necessary.

The temporary erosion and sediment control systems will not be removed until all stormwater drainage system components are in place, cleaned and working properly and until permanent vegetative cover and other stabilization measures are established.

6.2 Permanent Control of Stormwater Quality

The design intent of the 2004 Connecticut Stormwater Quality Manual is to provide a "stormwater treatment train," where stormwater quality is achieved through a series of treatment measures. Harmful pollutants, such as sediment, pathogens, organic material, hydrocarbons, metals, synthetic organic chemicals and deicing compounds, are carried by the low-flow storms. Many of these pollutants are associated with vehicular exhaust, engine leaks and deicing, therefore key areas of on-site treatment include parking lots and access drives. Since pollutants typically attach themselves to solid particles, treatment practices are designed to remove suspended solids.

The treatment train for this site includes:

- Parking lot sweeping
- Catch basins with two (2) foot sumps
- Hydrodynamic Separator prior to the underground detention system.
- Stormwater infiltration within the open-bottom detention galleries

The hydrodynamic separator unit will be designed to treat the Water Quality Flow in accordance with the 2004 manual, effectively removing floatables, captured sediment solids, and hydrocarbons to achieve a TSS removal rate of 80% (and often 90% or better).

7.0 OPERATION AND MAINTENANCE PLAN

7.1 During Construction

The following maintenance procedures shall be followed by the Contractor for temporary and permanent erosion and sedimentation measures and stormwater treatment systems installed during the construction period:

a. Dust Control: Moisten disturbed soil areas with water periodically, or use a non-asphaltic soil tacifier to minimize dust.

b. Temporary Seeding: Inspect weekly and within 24 hours of a storm generating a discharge. Continue inspection until vegetation is firmly established.

c. Permanent Seeding: Inspect seeded areas weekly and within 24 hours after a storm generating a discharge. Continue inspection until vegetation is firmly established.

d. Temporary Soil Protection: Inspect seeded areas weekly and within 24 hours after a storm generating a discharge.

e. Temporary Erosion Control Mat: Inspect mats weekly and within 24 hours after a storm generating a discharge.

f. Catch Basin Filter Inserts: Inspect the fabric at least once a week and within 24 hours after the end of a storm generating a discharge. Check the fabric for structural soundness (i.e. tears), proper anchoring/alignment within the grate and ability to drain runoff (i.e. percent of clogging by sediment). Remove the sediment every week, or sooner if ponding is excessive. Each time the sediment is removed, replace the section of fabric removed with a new section. Do not remove the sediment and reuse the same section of fabric.

g. Hay Bale/ Silt Fence Barrier: Inspect the barrier at least once a week and within 24 hours after the end of a storm generating a discharge. For dewatering operations, inspect frequently before, during and after pumping operations. Remove the sediment deposits when the depth reaches one half the barrier heights. Repair or replace a barrier within 24 hours of observed failure. Maintain the barrier until the contributing disturbed area is stabilized.

h. Construction Entrance/Exit Pad: Maintain the pad in a condition that will prevent tracking and washing of sediment onto paved surfaces. Place additional clean gravel on top of gravel that has become silted, or remove the silted gravel and replace the gravel to the depth removed with clean gravel, as conditions warrant. Remove immediately all sediment spilled, dropped, washed or tracked onto paved surfaces. Roads adjacent to the construction site shall be cleaned at the end of each day by hand sweeping or sweeper truck.

i. Dewatering Settling Basin (if used): Inspect the basin at least every two hours during periods of use. Remove accumulated sediments when the volume equals one half the provided storage volume.

j. Existing Catch Basins and Sumps: Inspect the sediment traps as specified in “f” above. After final removal of the sediment traps at the end of construction, clean the sump of all silt and debris.

k. New Catch Basins and Sumps: As new catch basins are constructed, a filter insert shall be installed in the unit and a sediment barrier installed around the grate. Inspect the filter and barrier weekly and within 24 hours after a storm generating a discharge. After stabilization of the drainage area entering the catch basin, remove the filter and barrier and clean the basin sump of all silt and debris.

l. Stone or Hay Bale Check Dams: Inspect the check dam at least once a week and within 24 hours after the end of a storm generating a discharge. Remove the sediment deposits when the depth reaches one half the check dam heights. Repair or replace a check dam within 24 hours of observed failure. Maintain the check dam until the contributing disturbed area is stabilized.

m. Temporary Stockpiles: Inspect temporary stockpiles at the end of each workday to ensure that tarps are in place and secured. Temporary stockpiles that are expected to be inactive for more than 30 days should be temporarily seeded (see above).

n. Temporary Sediment Traps: Inspect monthly and within 24 hours after a storm generating a discharge. Sediment and oil shall be removed when the storage volume is reduced by one half, or at least every 6 months during construction.

During construction, the Contractor shall be required to remove accumulated sediment from sediment control measures and water quality measures. Sediment shall be disposed of off-site in a manner and location approved by local and state agencies. Temporary storage of sediment on-site is permissible if it is protected from erosion and stockpiled in a manner that will prevent it from being carried by erosion into adjacent properties or resource areas.

Temporary sediment traps may be removed if the contributing drainage area is stabilized. The area shall be re-graded to match original grades or proposed grades as shown on the plans. The disturbed area shall be temporarily, or permanently seeded and mulched if the area is not to be paved.

Upon the stabilization of the contributing drainage area, silt fence shall be inspected for sediment accumulation prior to removal. For sediment depths greater than 6", the sediment shall be re-graded or removed. The silt fence shall be removed by pulling the support posts and cutting the geotextile at the ground level. Re-grade or remove the sediment as necessary and stabilize the disturbed soils by placing temporary or permanent seeding and mulch.

When dewatering has been completed, remove the hay bale barrier, sediment and stone, as appropriate, and re-grade the area to original or proposed grade. Stabilize the disturbed area with temporary or permanent seed and mulch.

After the drainage areas to the new and existing catch basins have been stabilized, the Contractor shall be required to clean all sumps and hoods of debris and silt. In addition, within the limits of work, the Contractor shall clean all storm drain piping of collected silt and debris by flushing with water. If the storm system discharges to ground, a hay bale and silt fence barrier must remain in place at each outfall to capture any sediment or debris carried down by the flushing. If the storm drain system discharges into a public or private drainage collection system, the Contractor must install a means of collecting debris and filtering the sediment from the flushing water in the on-site storm system before discharge to the existing storm system.

7.2 After Construction

After construction is completed and accepted by the Owner, it shall be the responsibility of the Owner to maintain all drainage structures. In addition, the following inspection and maintenance guidelines shall be the responsibility of the Owner, or the Owner's representative, beginning the first year period following construction completion and acceptance, and shall be followed each year thereafter:

a) Parking Lot and Site Cleanup: Inspect on a regular basis not to exceed weekly for litter and debris.

b) Parking Lot and Driveway Sweeping: At least twice a year, with the first occurring as soon as possible after snowmelt and the second not less than 90 days following the first.

c) Catch Basin Sumps: Shall be inspected semi-annually and cleaned when the sump is one half full of silt and / or debris.

d) Hydrodynamic Separator: Shall be inspected and cleaned annually.

e) Landscaped Areas: Inspect semi-annually for erosion or dying vegetation. Repair and stabilize any bare or eroded areas and replace vegetation as soon as possible.

f) Above-ground Detention Basin: Shall be inspected semi-annually and cleaned of any sediment and/or debris. Shall be mowed annually.

g) Underground Detention Systems: Shall be inspected semi-annually and cleaned of any sediment and/or debris.

8.0 CONCLUSION

The project has been designed to meet Town and State requirements for stormwater management, drainage sizing, and stormwater quality. Peak flows generated by the site for the 2-, 10-, 25-, and 100-year design storms have been mitigated to less than peak flows under existing conditions. The drainage system has been designed to convey the 10-year design storm and stormwater quality has been provided which meets both the State erosion sedimentation guidelines and the State stormwater quality requirements. There are no anticipated negative impacts on any of the upland review areas identified on this property.

LIST OF FIGURES/DRAWINGS

Figure 1 – Site Location Map

Figure 2 – Existing Watershed Area Map

Figure 3 – Proposed Watershed Area Map

Figure 4 – Catchment Area Map

FIGURE 1
Site Location Map

Figure 1 – Site Location Map

Eagleville Green

113-121 South Eagleville Road

Mansfield, Connecticut

Scale = 1:24,000

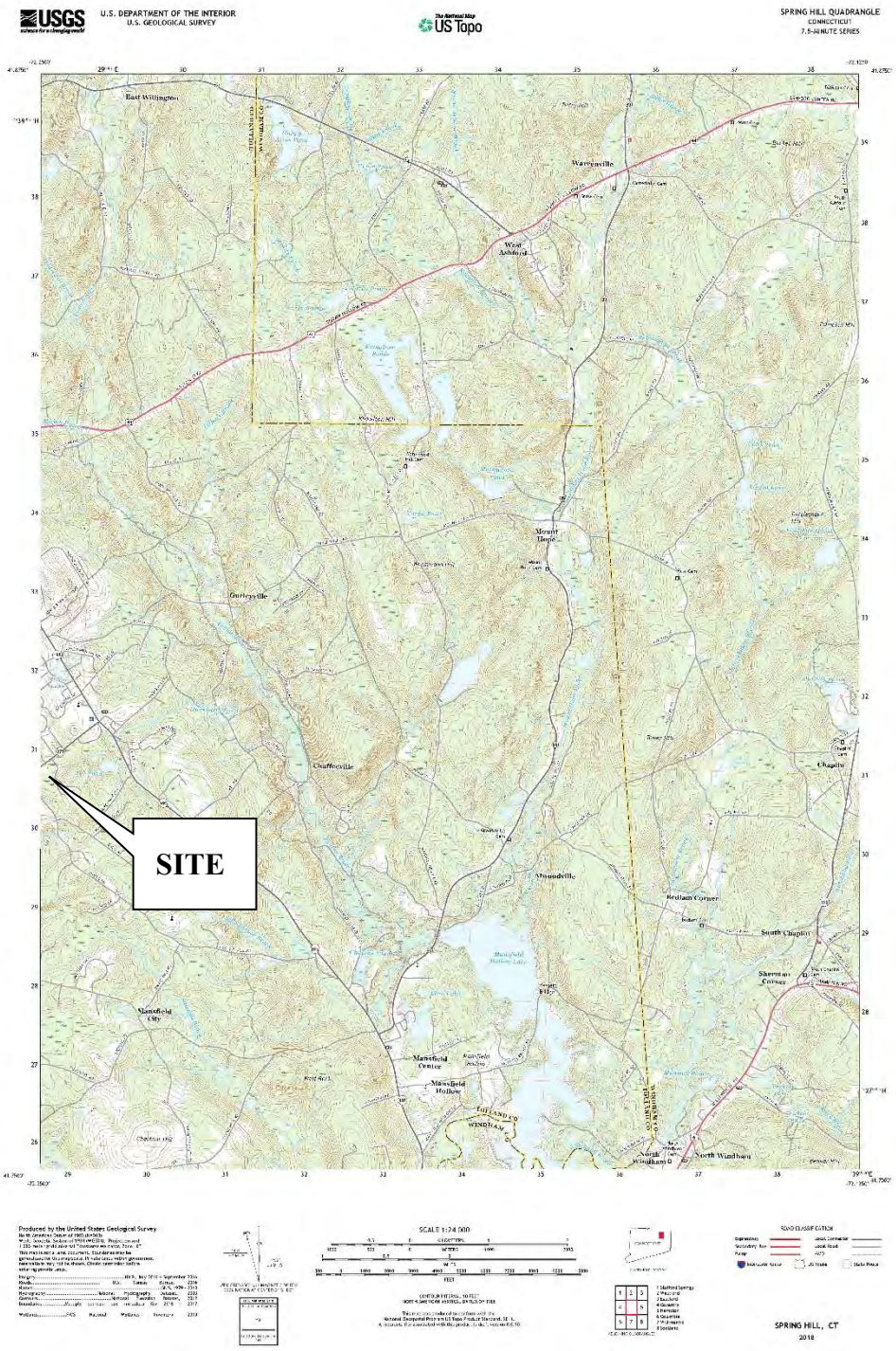
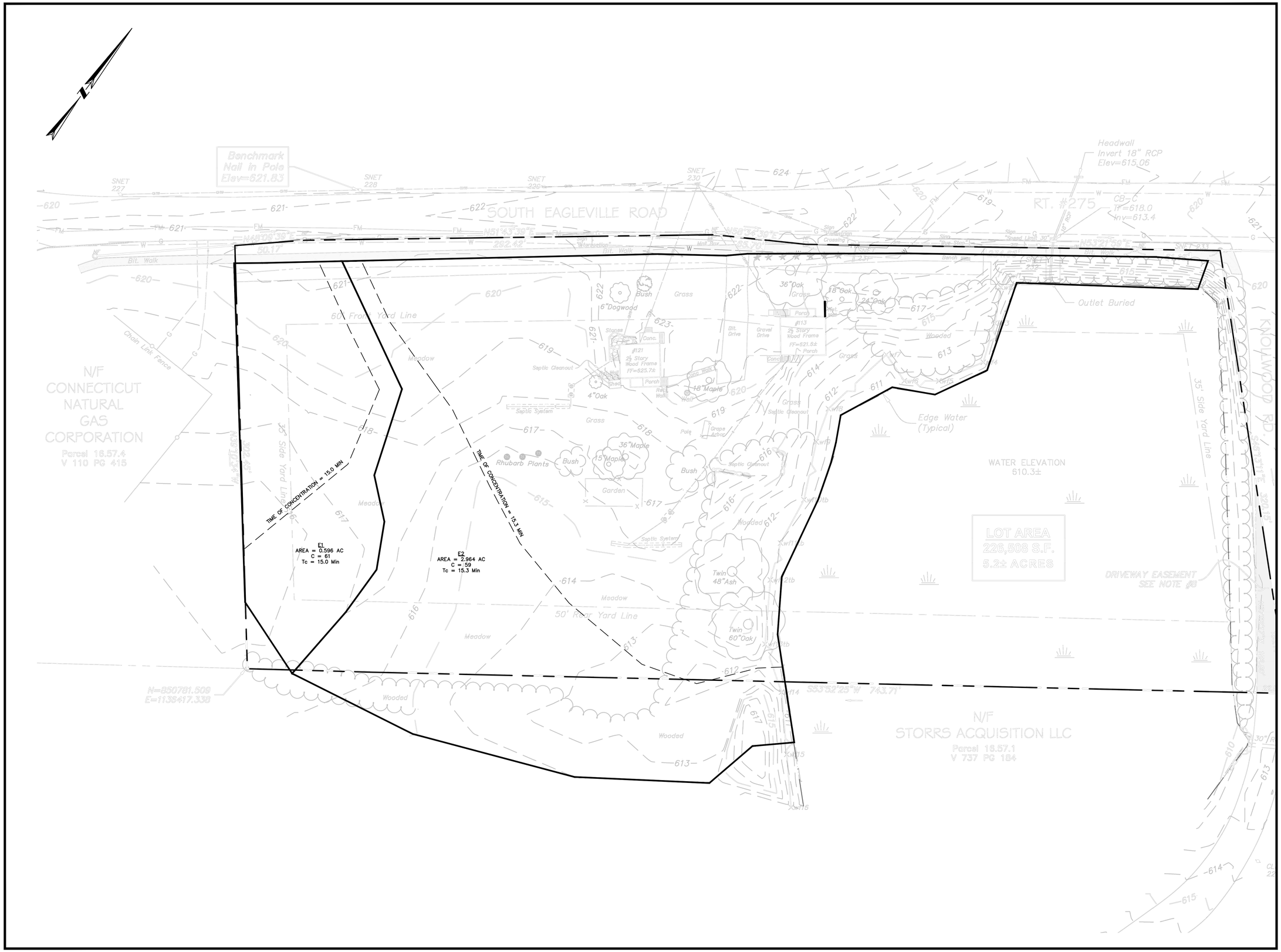


FIGURE 2
Existing Watershed Area Map



EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH
EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

EXISTING WATERSHED AREA MAP

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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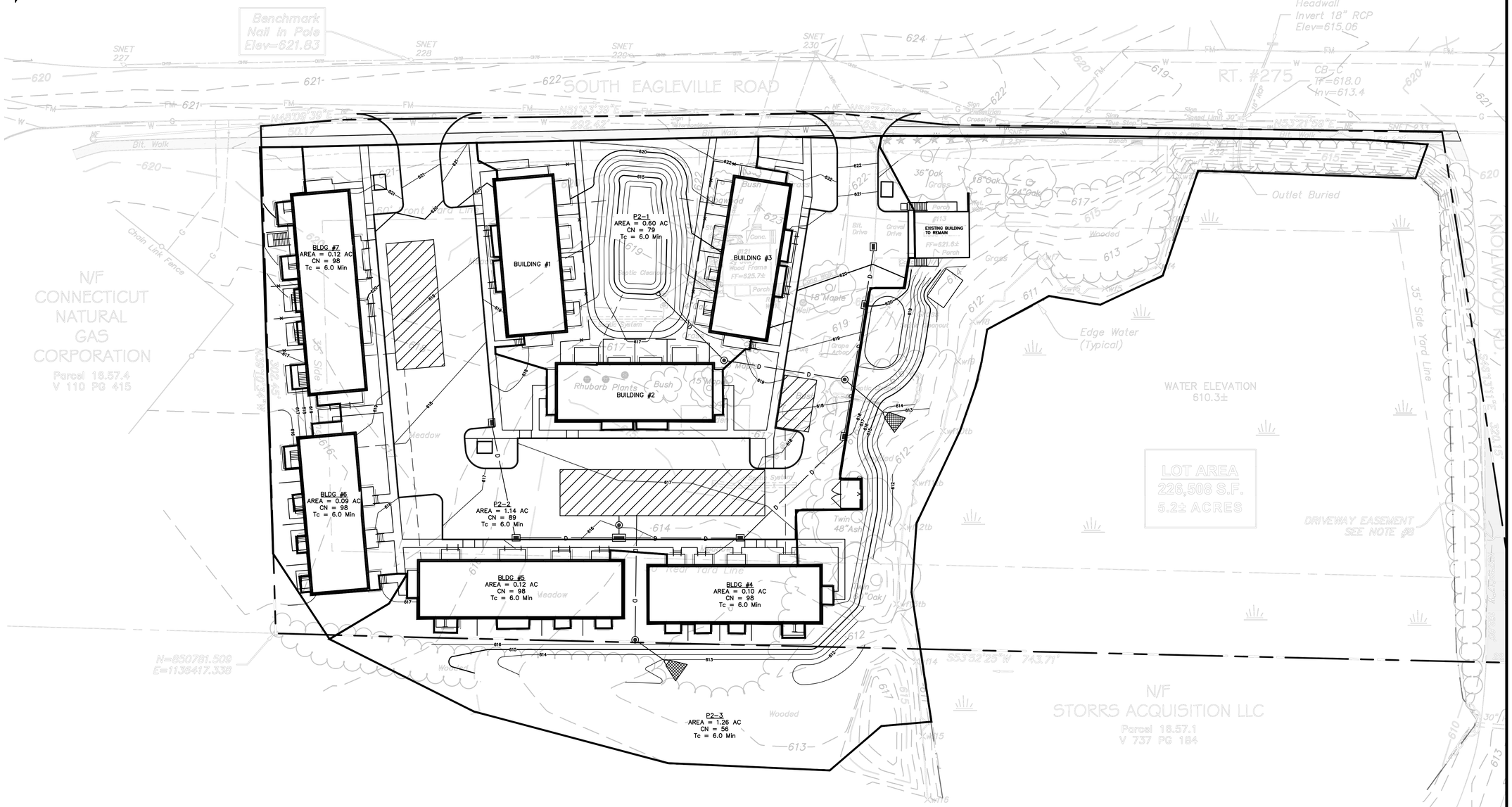
SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900-EWAM.DWG
DWG. NO:
JOB. NO: 83749.00

FIGURE 2

FIGURE 3
Proposed Watershed Area Map



EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

PROPOSED WATERSHED AREA MAP

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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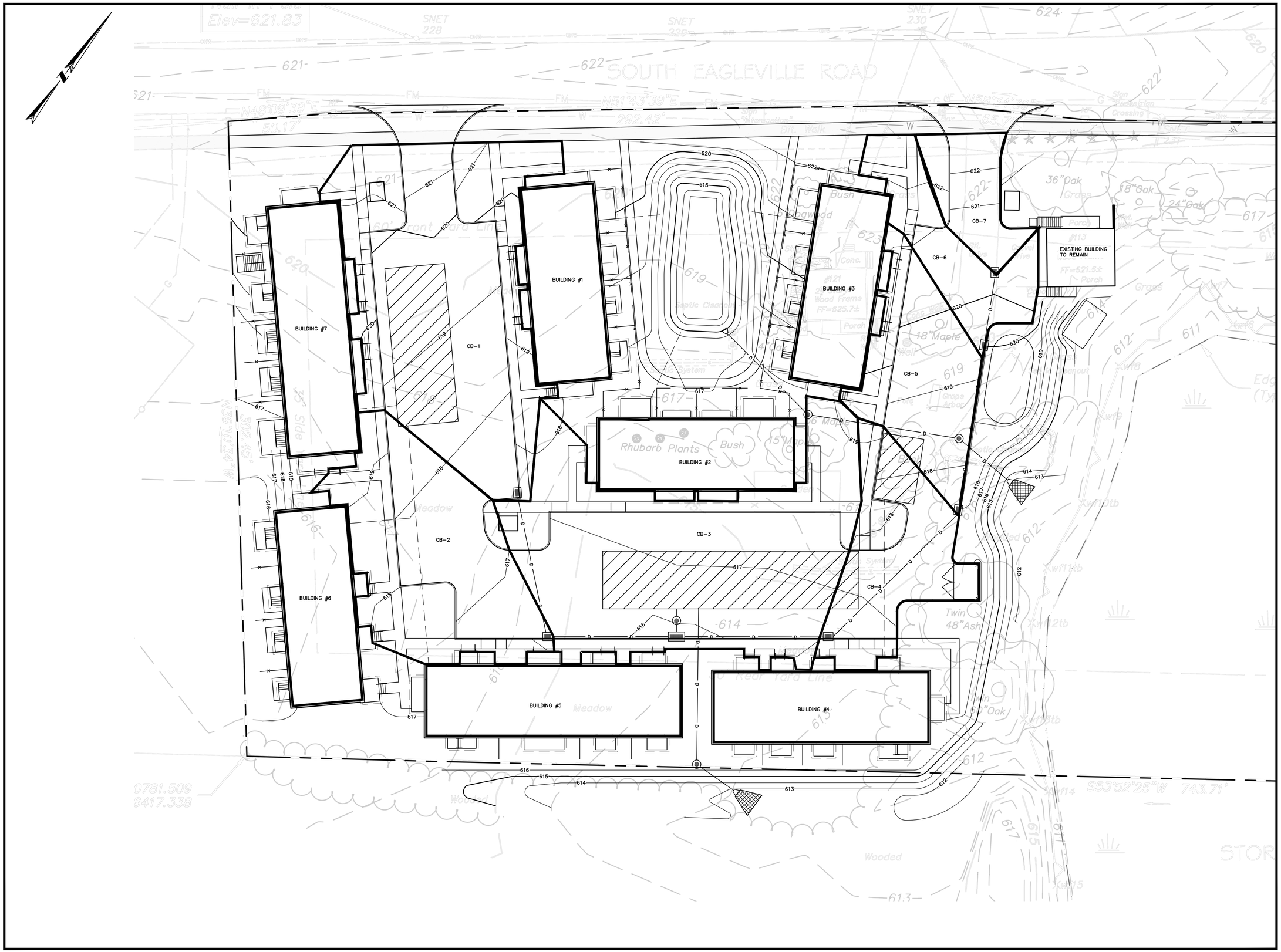
SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900-PWAM.DWG
DWG. NO:
JOB. NO: 83749.00

FIGURE 3

EAGLEVILLE GREEN - NOVEMBER 25, 2019

FIGURE 4
Catchment Area Map



EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

CATCHMENT AREA MAP

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 20'

0 10 20 40 FEET

FILE: 8374900-CAM.DWG
DWG. NO:
JOB. NO: 83749.00

FIGURE 4

LIST OF APPENDICES

Appendix A – Existing Stormwater Discharge Computations

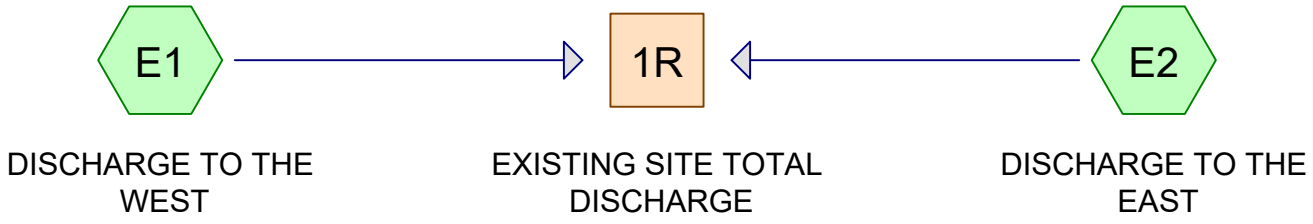
Appendix B – Proposed Stormwater Discharge Computations

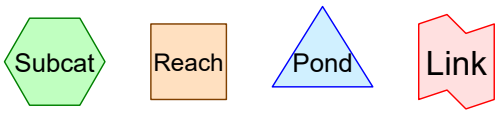
Appendix C – Proposed Hydraulic Sizing Computations

Appendix D – Water Quality Computations

APPENDIX A

Existing Stormwater Discharge Computations





Routing Diagram for 8374900-HYDRO
Prepared by {enter your company name here}, Printed 11/25/2019
HydroCAD® 10.00-22 s/n 00904 © 2018 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.580	61	>75% Grass cover, Good, HSG B (E1, E2)
0.870	48	Brush, Good, HSG B (E2)
0.110	98	Paved parking, HSG B (E2)
3.560	**59**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
3.560	HSG B	E1, E2
0.000	HSG C	
0.000	HSG D	
0.000	Other	
3.560		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	2.580	0.000	0.000	0.000	2.580	>75% Grass cover, Good	E1, E2
0.000	0.870	0.000	0.000	0.000	0.870	Brush, Good	E2
0.000	0.110	0.000	0.000	0.000	0.110	Paved parking	E2
0.000	**3.560**	**0.000**	**0.000**	**0.000**	**3.560**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DISCHARGE TO THE Runoff Area=0.600 ac 0.00% Impervious Runoff Depth>0.50"
Flow Length=251' Tc=15.0 min CN=61 Runoff=0.18 cfs 0.025 af

Subcatchment E2: DISCHARGE TO THE Runoff Area=2.960 ac 3.72% Impervious Runoff Depth>0.42"
Flow Length=457' Tc=15.3 min CN=59 Runoff=0.66 cfs 0.104 af

Reach 1R: EXISTING SITE TOTAL DISCHARGE Inflow=0.83 cfs 0.129 af
Outflow=0.83 cfs 0.129 af

Total Runoff Area = 3.560 ac Runoff Volume = 0.129 af Average Runoff Depth = 0.43"
96.91% Pervious = 3.450 ac 3.09% Impervious = 0.110 ac

Summary for Subcatchment E1: DISCHARGE TO THE WEST

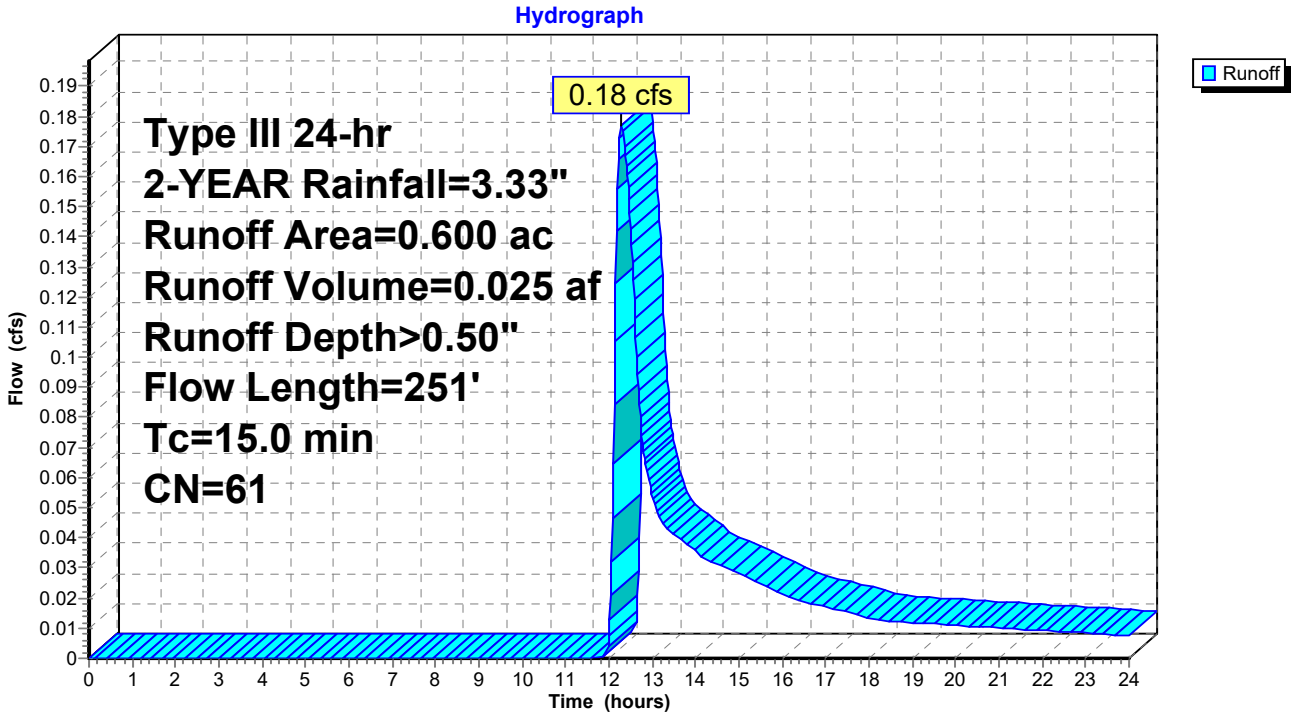
Runoff = 0.18 cfs @ 12.28 hrs, Volume= 0.025 af, Depth> 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.600	61	>75% Grass cover, Good, HSG B
0.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0200	0.12		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
1.0	151	0.0265	2.62		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.0	251	Total			

Subcatchment E1: DISCHARGE TO THE WEST



Summary for Subcatchment E2: DISCHARGE TO THE EAST

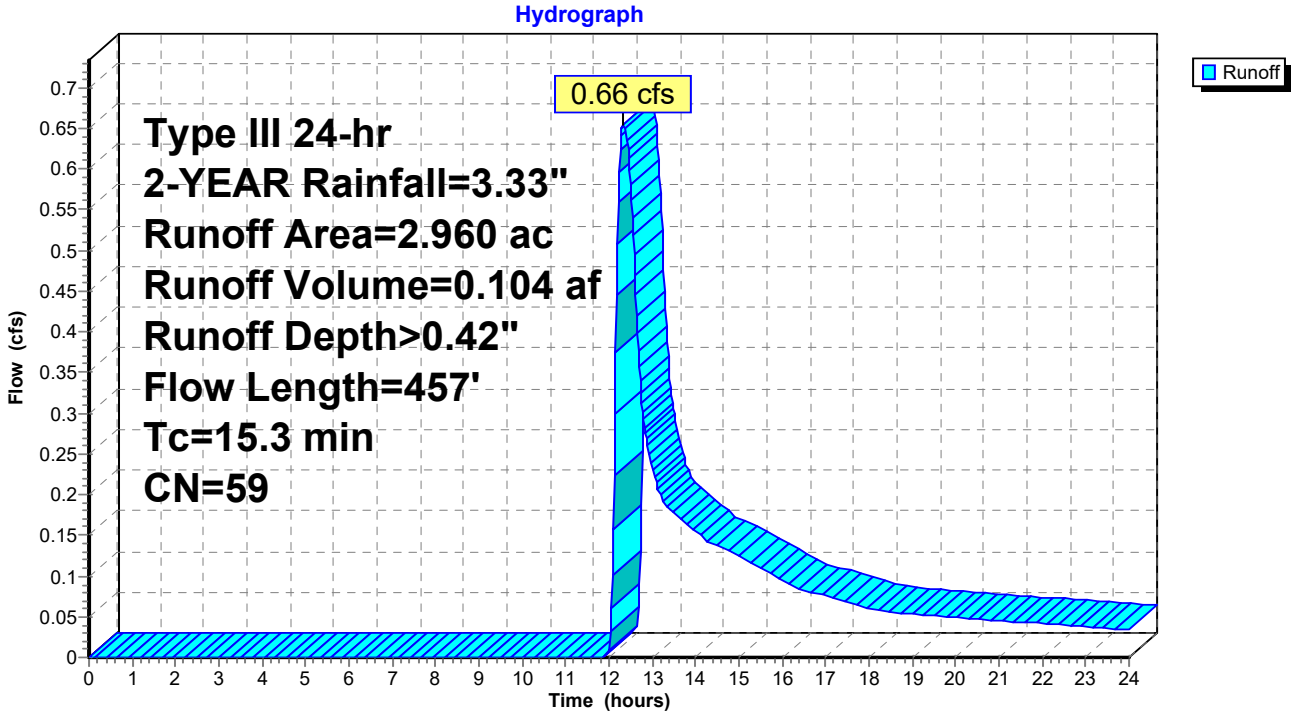
Runoff = 0.66 cfs @ 12.33 hrs, Volume= 0.104 af, Depth> 0.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
1.980	61	>75% Grass cover, Good, HSG B
0.870	48	Brush, Good, HSG B
0.110	98	Paved parking, HSG B
2.960	59	Weighted Average
2.850		96.28% Pervious Area
0.110		3.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0250	0.13		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
2.5	357	0.0224	2.41		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.3	457	Total			

Subcatchment E2: DISCHARGE TO THE EAST



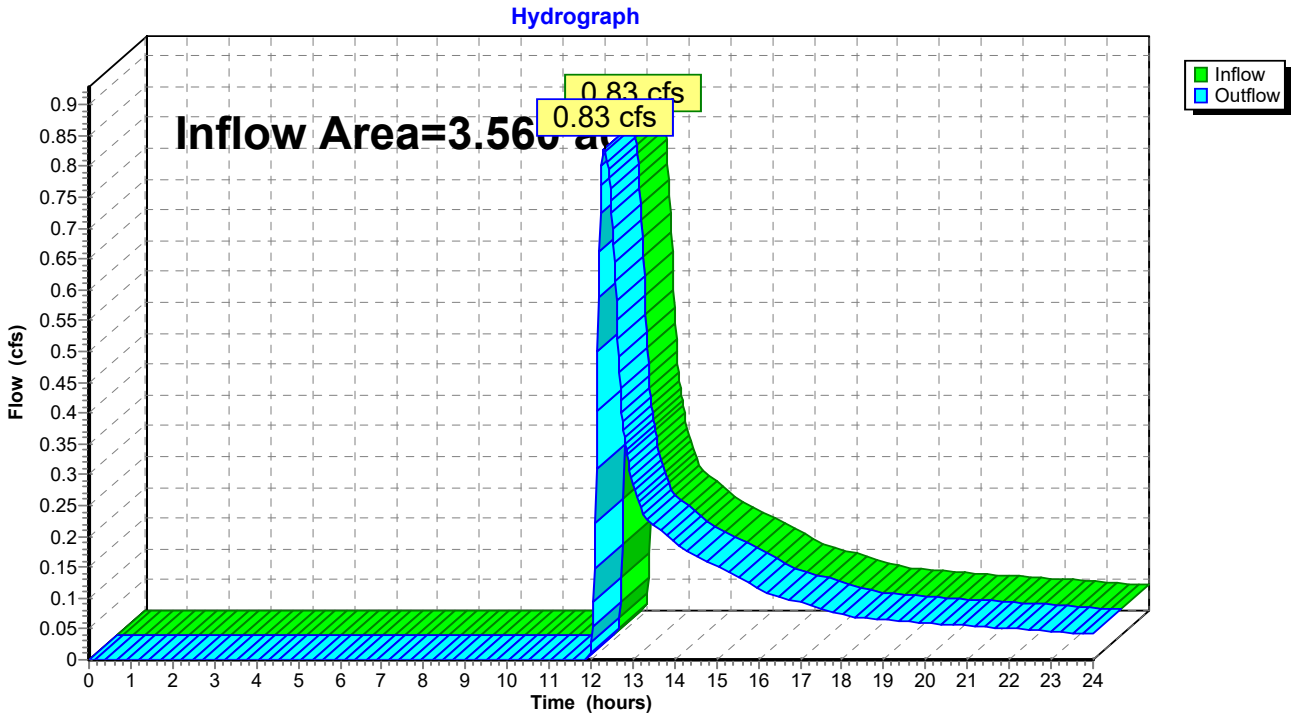
Summary for Reach 1R: EXISTING SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.560 ac, 3.09% Impervious, Inflow Depth > 0.43" for 2-YEAR event
Inflow = 0.83 cfs @ 12.32 hrs, Volume= 0.129 af
Outflow = 0.83 cfs @ 12.32 hrs, Volume= 0.129 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 1R: EXISTING SITE TOTAL DISCHARGE



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DISCHARGE TO THE Runoff Area=0.600 ac 0.00% Impervious Runoff Depth>1.39"
Flow Length=251' Tc=15.0 min CN=61 Runoff=0.67 cfs 0.070 af

Subcatchment E2: DISCHARGE TO THE Runoff Area=2.960 ac 3.72% Impervious Runoff Depth>1.26"
Flow Length=457' Tc=15.3 min CN=59 Runoff=2.87 cfs 0.310 af

Reach 1R: EXISTING SITE TOTAL DISCHARGE Inflow=3.54 cfs 0.380 af
Outflow=3.54 cfs 0.380 af

Total Runoff Area = 3.560 ac Runoff Volume = 0.380 af Average Runoff Depth = 1.28"
96.91% Pervious = 3.450 ac 3.09% Impervious = 0.110 ac

Summary for Subcatchment E1: DISCHARGE TO THE WEST

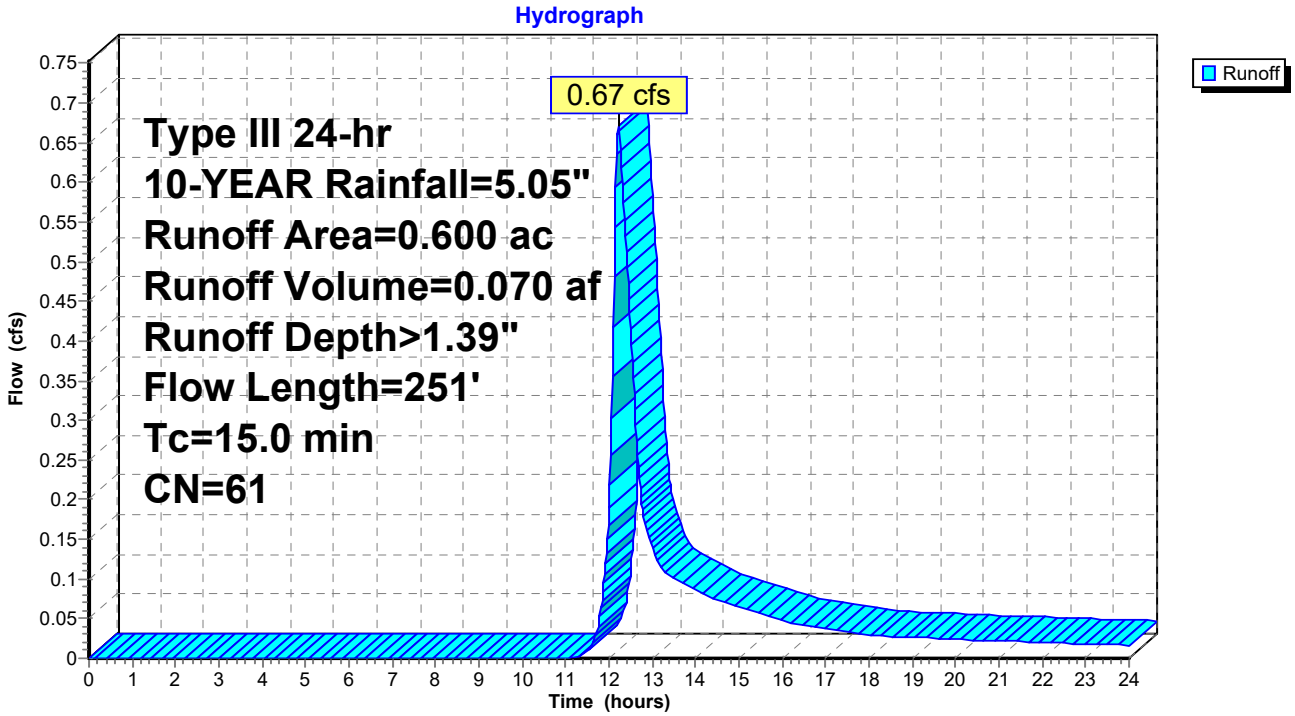
Runoff = 0.67 cfs @ 12.23 hrs, Volume= 0.070 af, Depth> 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.600	61	>75% Grass cover, Good, HSG B
0.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0200	0.12		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
1.0	151	0.0265	2.62		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.0	251	Total			

Subcatchment E1: DISCHARGE TO THE WEST



Summary for Subcatchment E2: DISCHARGE TO THE EAST

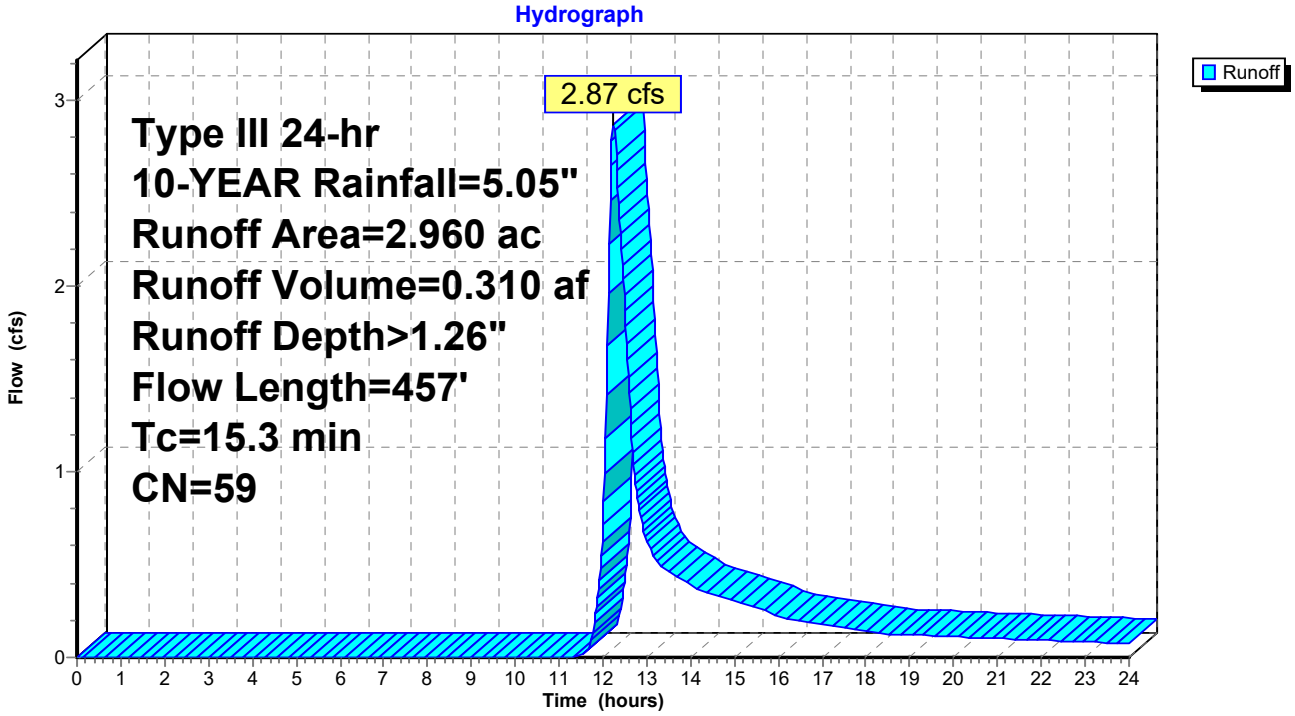
Runoff = 2.87 cfs @ 12.24 hrs, Volume= 0.310 af, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
1.980	61	>75% Grass cover, Good, HSG B
0.870	48	Brush, Good, HSG B
0.110	98	Paved parking, HSG B
2.960	59	Weighted Average
2.850		96.28% Pervious Area
0.110		3.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0250	0.13		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
2.5	357	0.0224	2.41		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.3	457	Total			

Subcatchment E2: DISCHARGE TO THE EAST



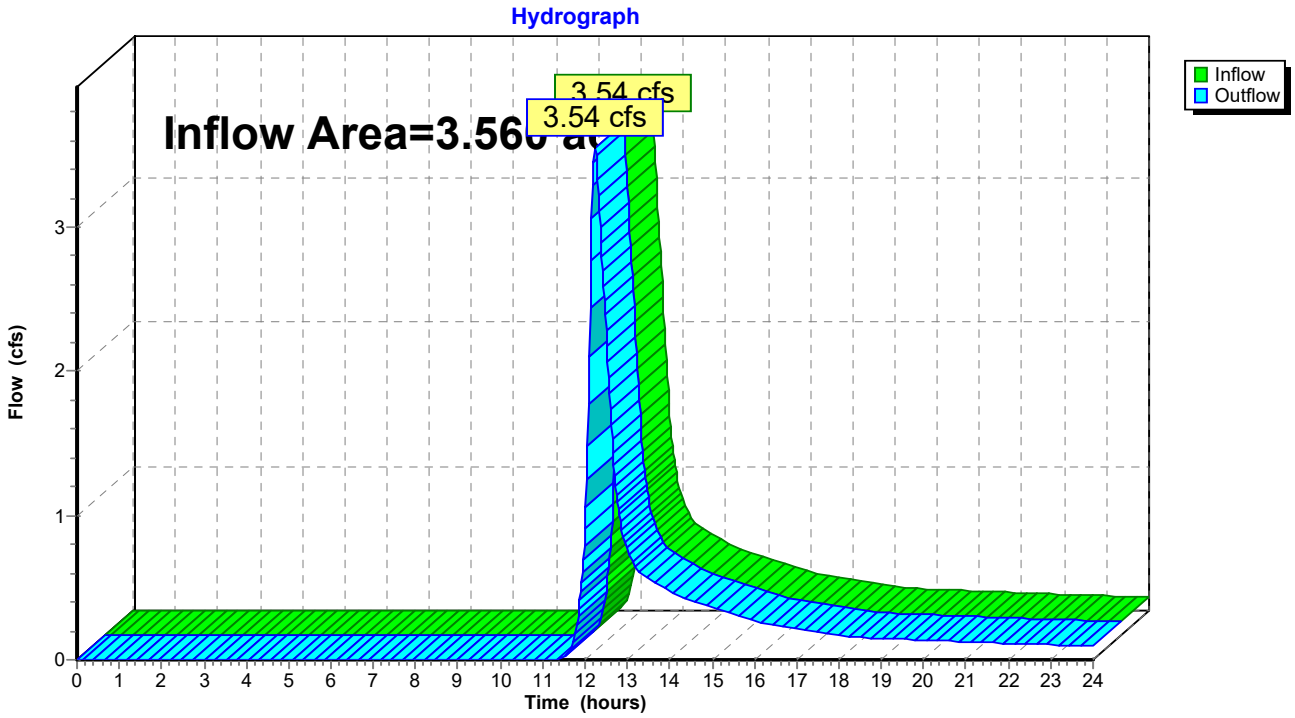
Summary for Reach 1R: EXISTING SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.560 ac, 3.09% Impervious, Inflow Depth > 1.28" for 10-YEAR event
Inflow = 3.54 cfs @ 12.24 hrs, Volume= 0.380 af
Outflow = 3.54 cfs @ 12.24 hrs, Volume= 0.380 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 1R: EXISTING SITE TOTAL DISCHARGE



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DISCHARGE TO THE Runoff Area=0.600 ac 0.00% Impervious Runoff Depth>2.08"
Flow Length=251' Tc=15.0 min CN=61 Runoff=1.05 cfs 0.104 af

Subcatchment E2: DISCHARGE TO THE Runoff Area=2.960 ac 3.72% Impervious Runoff Depth>1.91"
Flow Length=457' Tc=15.3 min CN=59 Runoff=4.65 cfs 0.471 af

Reach 1R: EXISTING SITE TOTAL DISCHARGE Inflow=5.70 cfs 0.575 af
Outflow=5.70 cfs 0.575 af

Total Runoff Area = 3.560 ac Runoff Volume = 0.575 af Average Runoff Depth = 1.94"
96.91% Pervious = 3.450 ac 3.09% Impervious = 0.110 ac

Summary for Subcatchment E1: DISCHARGE TO THE WEST

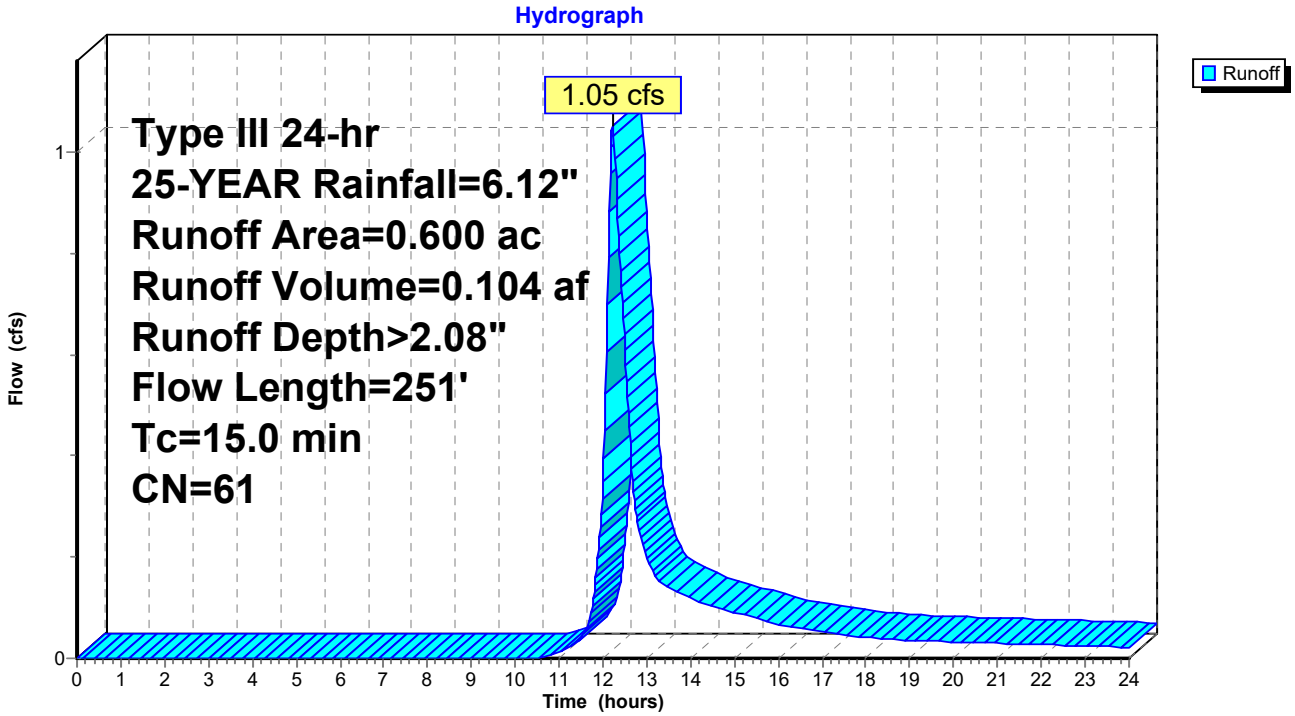
Runoff = 1.05 cfs @ 12.22 hrs, Volume= 0.104 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.600	61	>75% Grass cover, Good, HSG B
0.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0200	0.12		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
1.0	151	0.0265	2.62		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.0	251	Total			

Subcatchment E1: DISCHARGE TO THE WEST



Summary for Subcatchment E2: DISCHARGE TO THE EAST

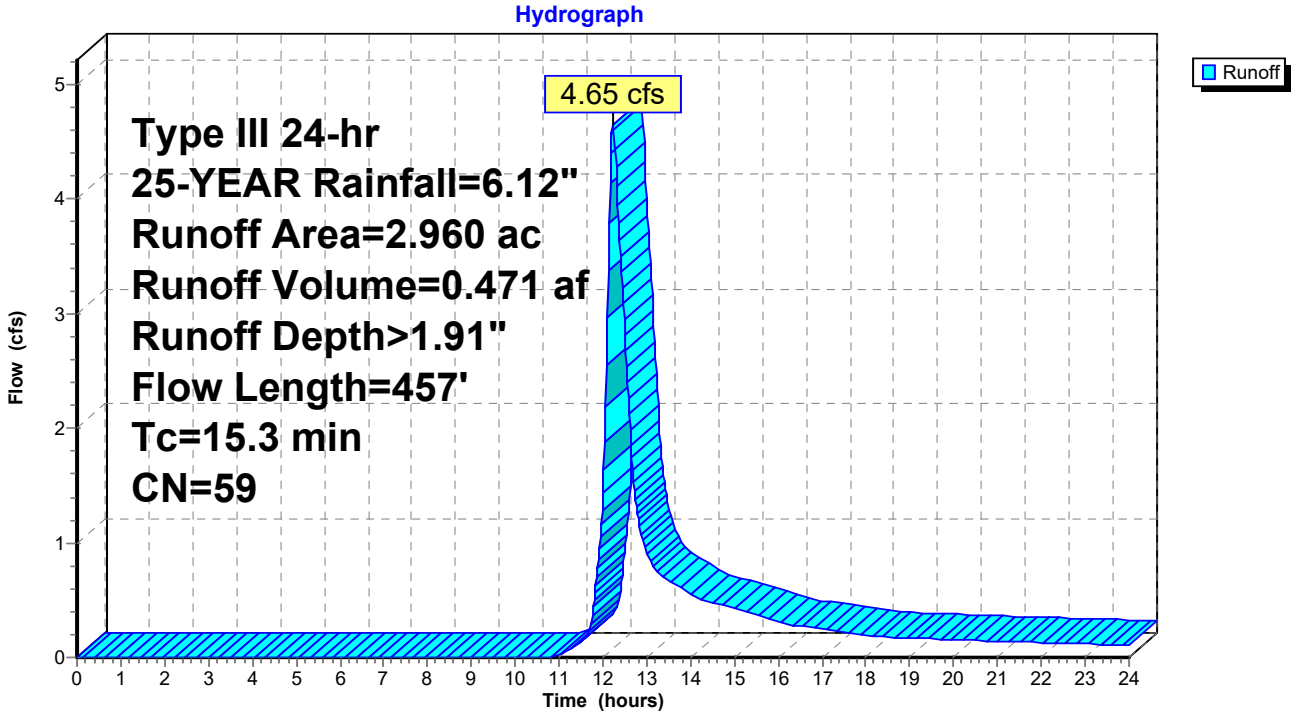
Runoff = 4.65 cfs @ 12.23 hrs, Volume= 0.471 af, Depth> 1.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
1.980	61	>75% Grass cover, Good, HSG B
0.870	48	Brush, Good, HSG B
0.110	98	Paved parking, HSG B
2.960	59	Weighted Average
2.850		96.28% Pervious Area
0.110		3.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0250	0.13		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
2.5	357	0.0224	2.41		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.3	457	Total			

Subcatchment E2: DISCHARGE TO THE EAST



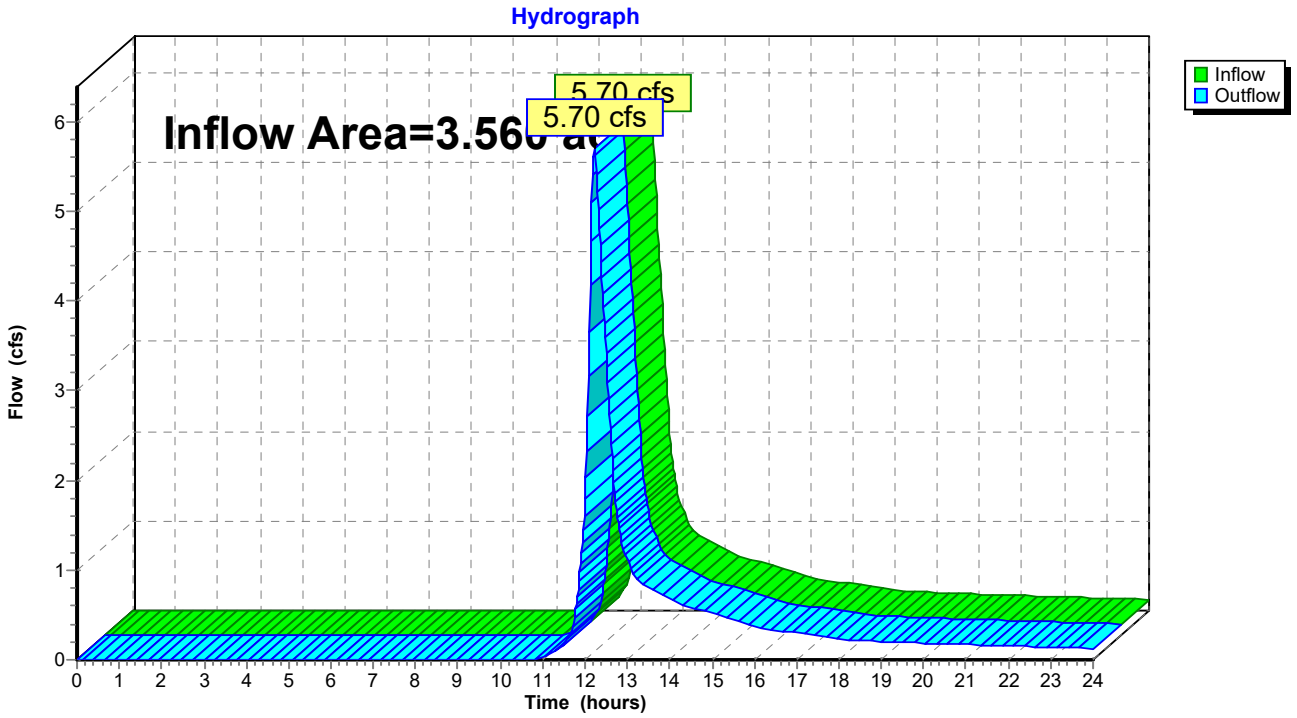
Summary for Reach 1R: EXISTING SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.560 ac, 3.09% Impervious, Inflow Depth > 1.94" for 25-YEAR event
Inflow = 5.70 cfs @ 12.23 hrs, Volume= 0.575 af
Outflow = 5.70 cfs @ 12.23 hrs, Volume= 0.575 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 1R: EXISTING SITE TOTAL DISCHARGE



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DISCHARGE TO THE Runoff Area=0.600 ac 0.00% Impervious Runoff Depth>3.27"
Flow Length=251' Tc=15.0 min CN=61 Runoff=1.71 cfs 0.163 af

Subcatchment E2: DISCHARGE TO THE Runoff Area=2.960 ac 3.72% Impervious Runoff Depth>3.05"
Flow Length=457' Tc=15.3 min CN=59 Runoff=7.76 cfs 0.752 af

Reach 1R: EXISTING SITE TOTAL DISCHARGE Inflow=9.47 cfs 0.916 af
Outflow=9.47 cfs 0.916 af

Total Runoff Area = 3.560 ac Runoff Volume = 0.916 af Average Runoff Depth = 3.09"
96.91% Pervious = 3.450 ac 3.09% Impervious = 0.110 ac

Summary for Subcatchment E1: DISCHARGE TO THE WEST

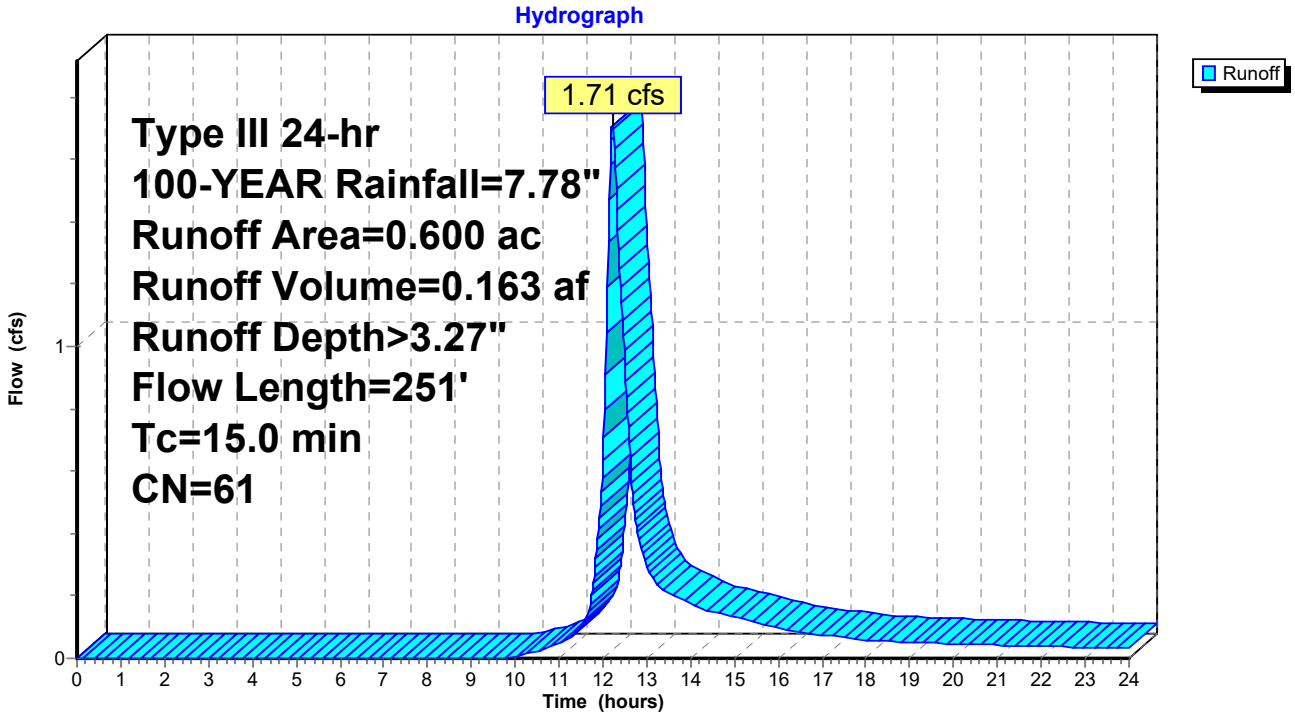
Runoff = 1.71 cfs @ 12.21 hrs, Volume= 0.163 af, Depth> 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.600	61	>75% Grass cover, Good, HSG B
0.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0200	0.12		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
1.0	151	0.0265	2.62		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.0	251	Total			

Subcatchment E1: DISCHARGE TO THE WEST



Summary for Subcatchment E2: DISCHARGE TO THE EAST

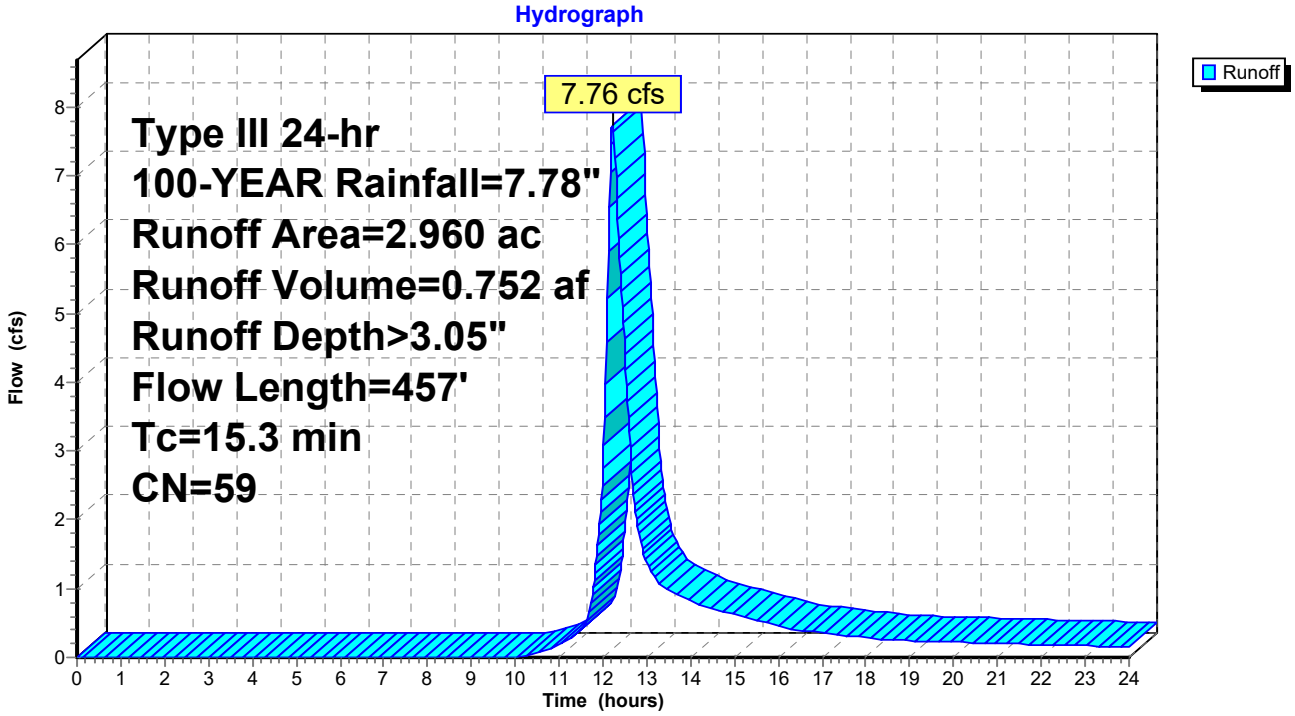
Runoff = 7.76 cfs @ 12.22 hrs, Volume= 0.752 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
1.980	61	>75% Grass cover, Good, HSG B
0.870	48	Brush, Good, HSG B
0.110	98	Paved parking, HSG B
2.960	59	Weighted Average
2.850		96.28% Pervious Area
0.110		3.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0250	0.13		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
2.5	357	0.0224	2.41		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.3	457	Total			

Subcatchment E2: DISCHARGE TO THE EAST



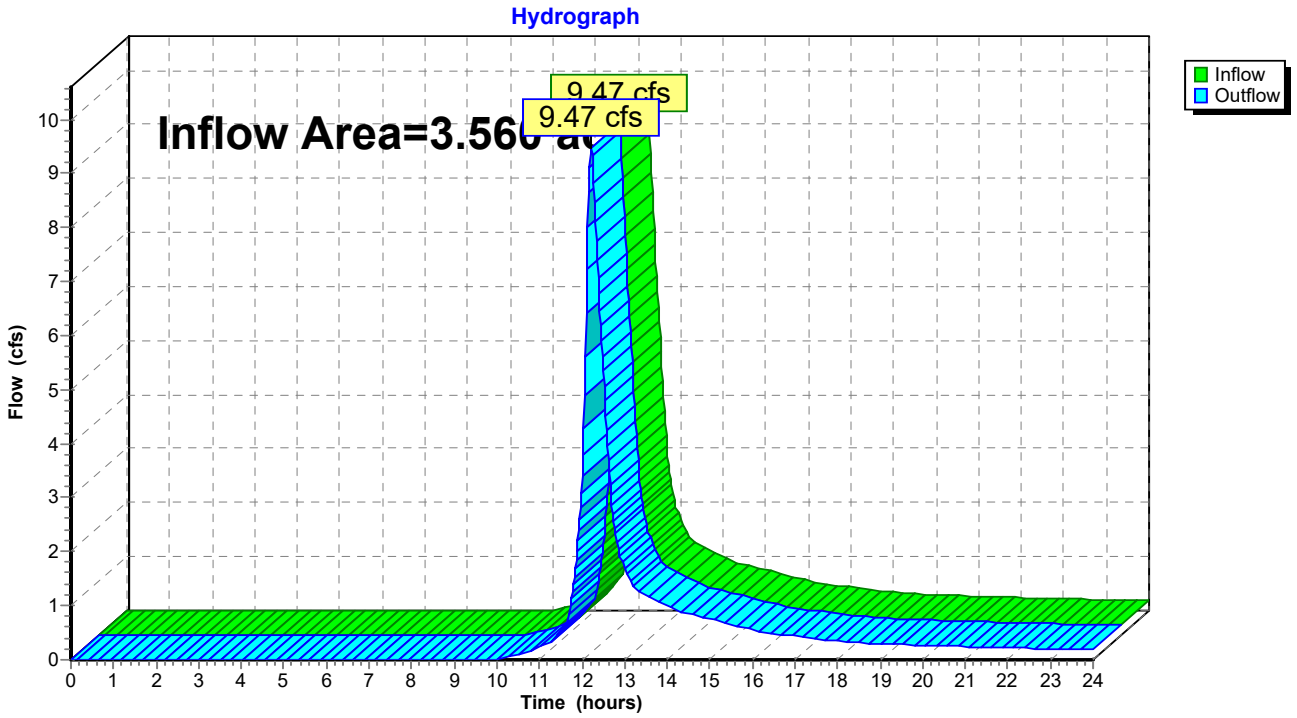
Summary for Reach 1R: EXISTING SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	3.560 ac,	3.09% Impervious,	Inflow Depth >	3.09"	for 100-YEAR event
Inflow =	9.47 cfs @	12.22 hrs,	Volume=	0.916 af	
Outflow =	9.47 cfs @	12.22 hrs,	Volume=	0.916 af,	Atten= 0%, Lag= 0.0 min

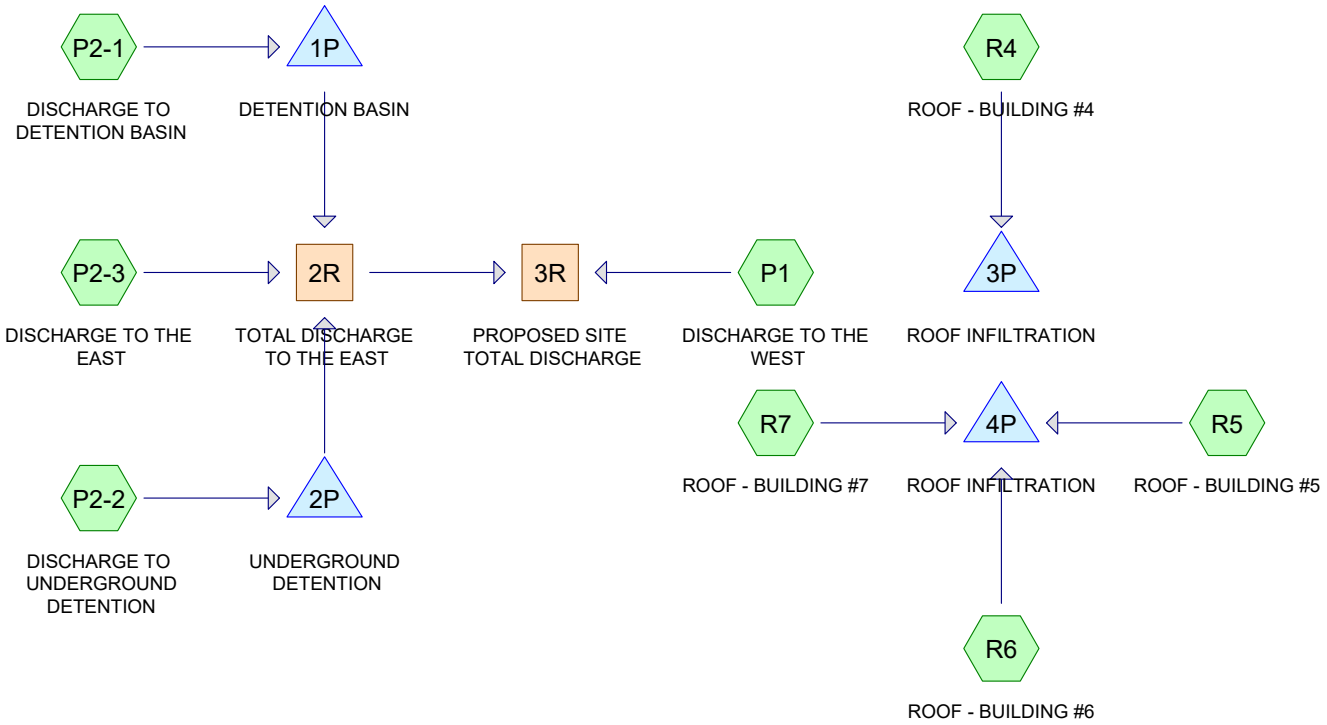
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

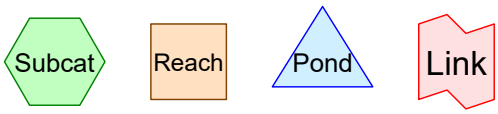
Reach 1R: EXISTING SITE TOTAL DISCHARGE



APPENDIX B

Proposed Stormwater Discharge Computations





Routing Diagram for 8374900-HYDRO
Prepared by {enter your company name here}, Printed 11/25/2019
HydroCAD® 10.00-22 s/n 00904 © 2018 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.400	61	>75% Grass cover, Good, HSG B (P1, P2-1, P2-2, P2-3)
0.550	48	Brush, Good, HSG B (P2-3)
1.180	98	Paved parking, HSG B (P2-1, P2-2, P2-3)
0.427	98	Unconnected roofs, HSG B (R4, R5, R6, R7)
3.557	**76**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
3.557	HSG B	P1, P2-1, P2-2, P2-3, R4, R5, R6, R7
0.000	HSG C	
0.000	HSG D	
0.000	Other	
3.557		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	1.400	0.000	0.000	0.000	1.400	>75% Grass cover, Good	P1, P2-1, P2-2, P2-3
0.000	0.550	0.000	0.000	0.000	0.550	Brush, Good	P2-3
0.000	1.180	0.000	0.000	0.000	1.180	Paved parking	P2-1, P2-2, P2-3
0.000	0.427	0.000	0.000	0.000	0.427	Unconnected roofs	R4, R5, R6, R7
0.000	**3.557**	**0.000**	**0.000**	**0.000**	**3.557**	**TOTAL AREA**	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1P	614.05	613.00	105.0	0.0100	0.011	15.0	0.0	0.0
2	2P	612.25	612.25	18.0	0.0000	0.011	15.0	0.0	0.0

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>0.50"
Tc=6.0 min CN=61 Runoff=0.05 cfs 0.006 af

Subcatchment P2-1: DISCHARGE TO Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>1.43"
Tc=6.0 min CN=79 Runoff=1.00 cfs 0.072 af

Subcatchment P2-2: DISCHARGE TO Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>2.20"
Tc=6.0 min CN=89 Runoff=2.91 cfs 0.209 af

Subcatchment P2-3: DISCHARGE TO THE Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>0.32"
Tc=6.0 min CN=56 Runoff=0.19 cfs 0.033 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.32 cfs 0.026 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.38 cfs 0.030 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.39 cfs 0.031 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=0.80 cfs 0.208 af
Outflow=0.80 cfs 0.208 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=0.83 cfs 0.214 af
Outflow=0.83 cfs 0.214 af

Pond 1P: DETENTION BASIN Peak Elev=614.45' Storage=1,915 cf Inflow=1.00 cfs 0.072 af
Outflow=0.07 cfs 0.031 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=613.32' Storage=4,460 cf Inflow=2.91 cfs 0.209 af
Outflow=0.64 cfs 0.144 af

Pond 3P: ROOF INFILTRATION Peak Elev=612.72' Storage=1,112 cf Inflow=0.32 cfs 0.026 af
Outflow=0.00 cfs 0.000 af

Pond 4P: ROOF INFILTRATION Peak Elev=612.96' Storage=0.085 af Inflow=1.06 cfs 0.085 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 3.557 ac Runoff Volume = 0.430 af Average Runoff Depth = 1.45"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

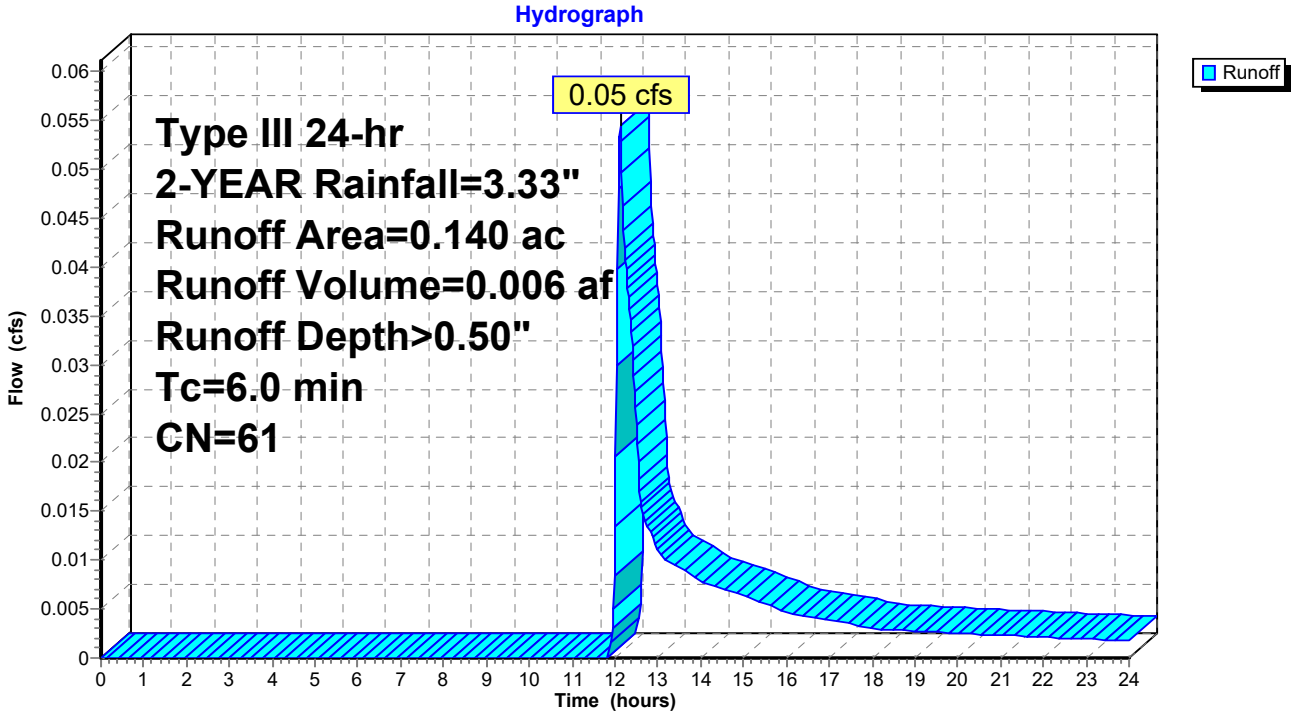
Runoff = 0.05 cfs @ 12.12 hrs, Volume= 0.006 af, Depth> 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

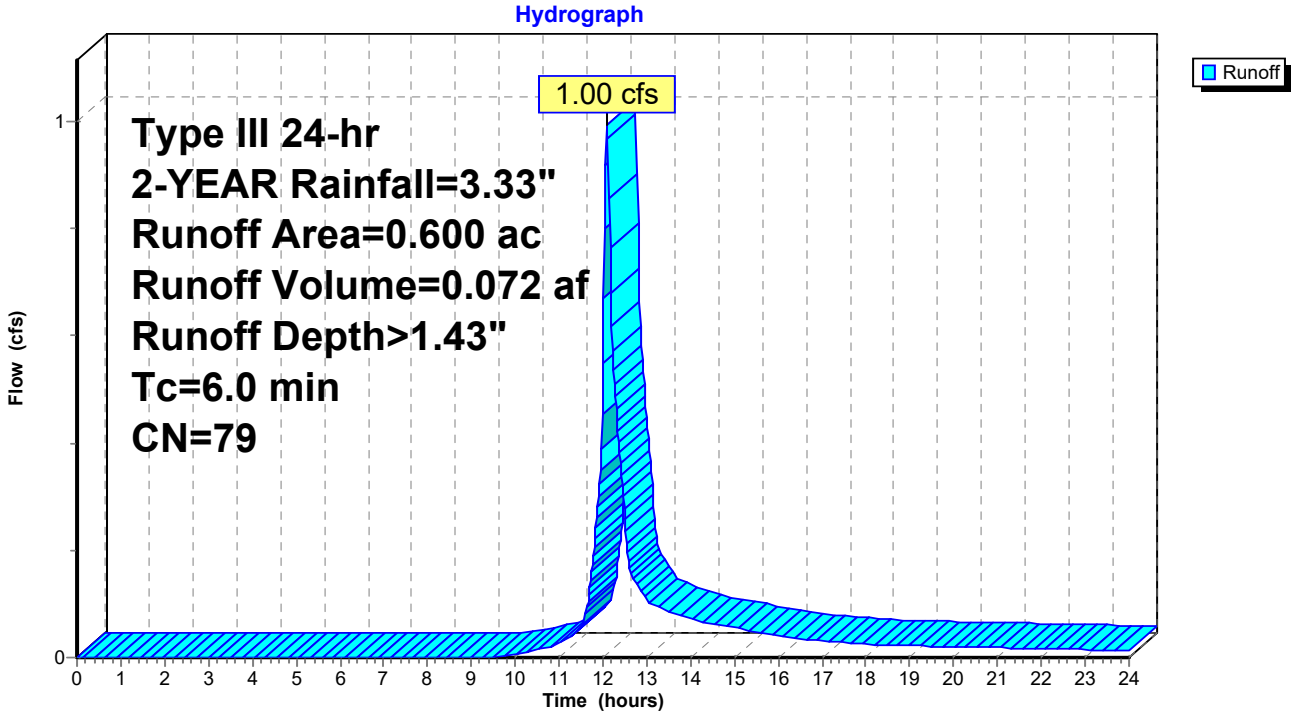
Runoff = 1.00 cfs @ 12.09 hrs, Volume= 0.072 af, Depth> 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

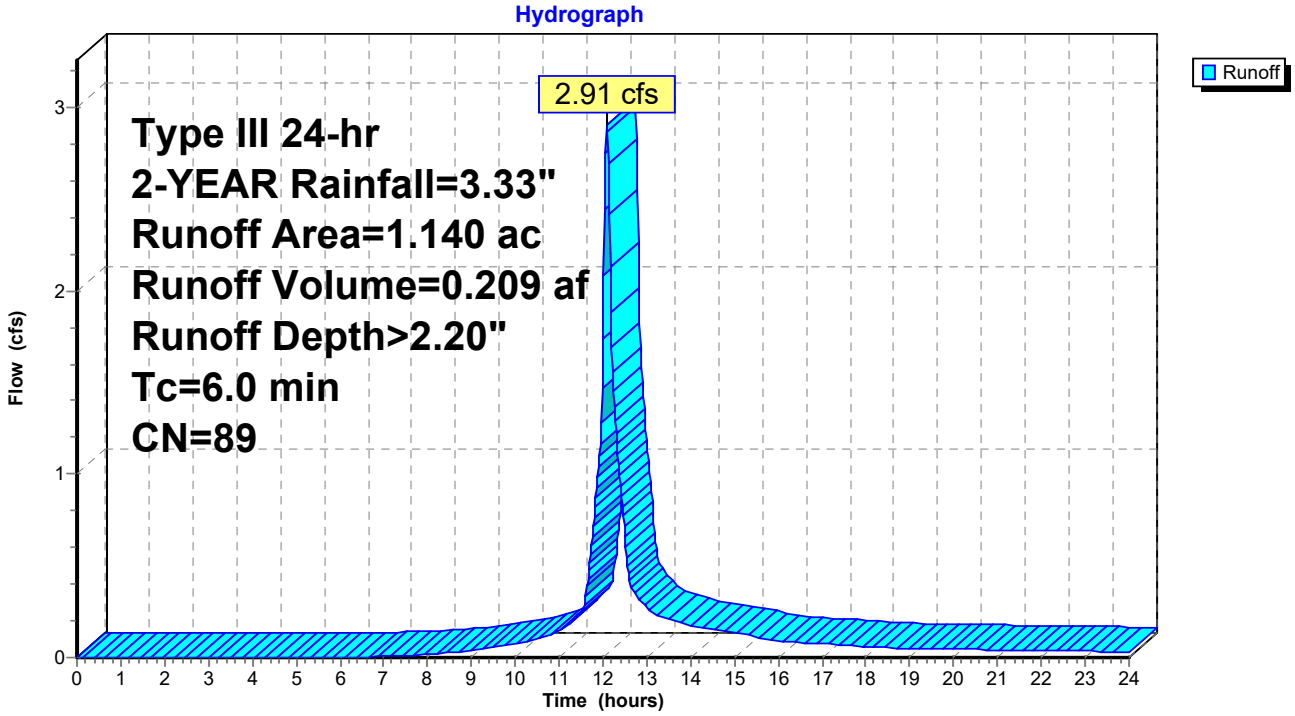
Runoff = 2.91 cfs @ 12.09 hrs, Volume= 0.209 af, Depth> 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

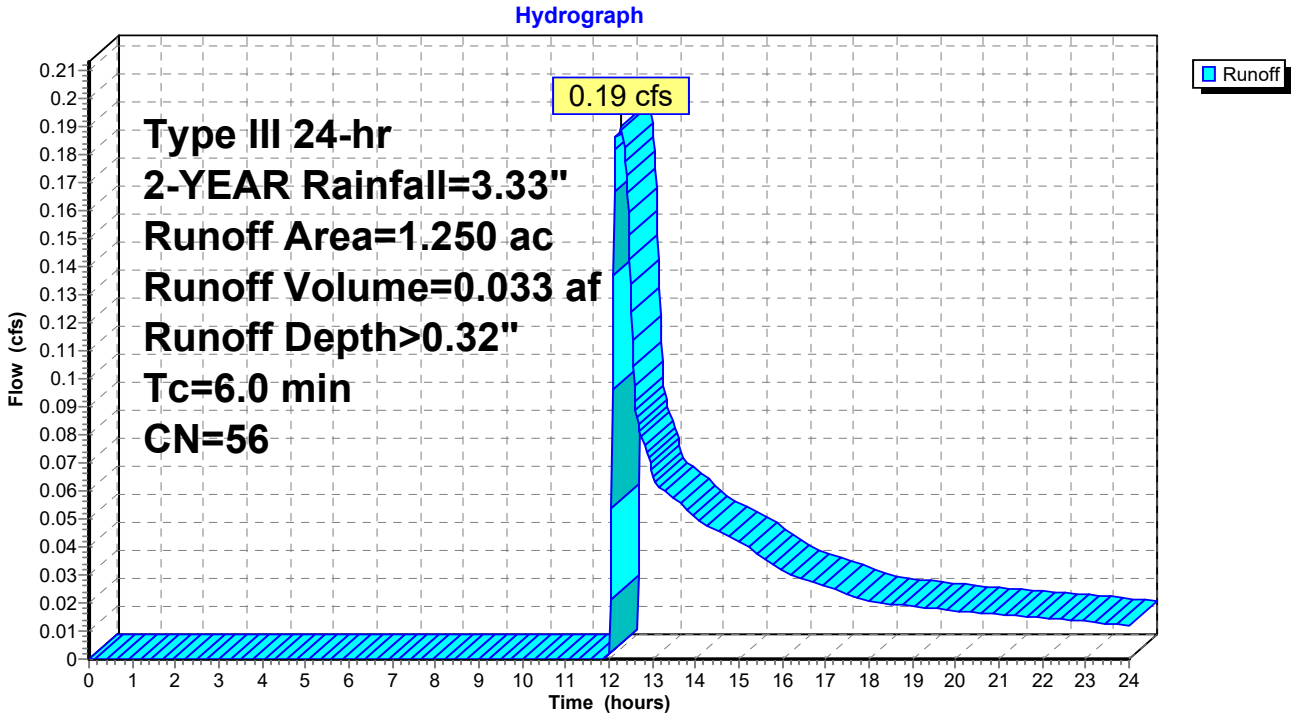
Runoff = 0.19 cfs @ 12.28 hrs, Volume= 0.033 af, Depth> 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

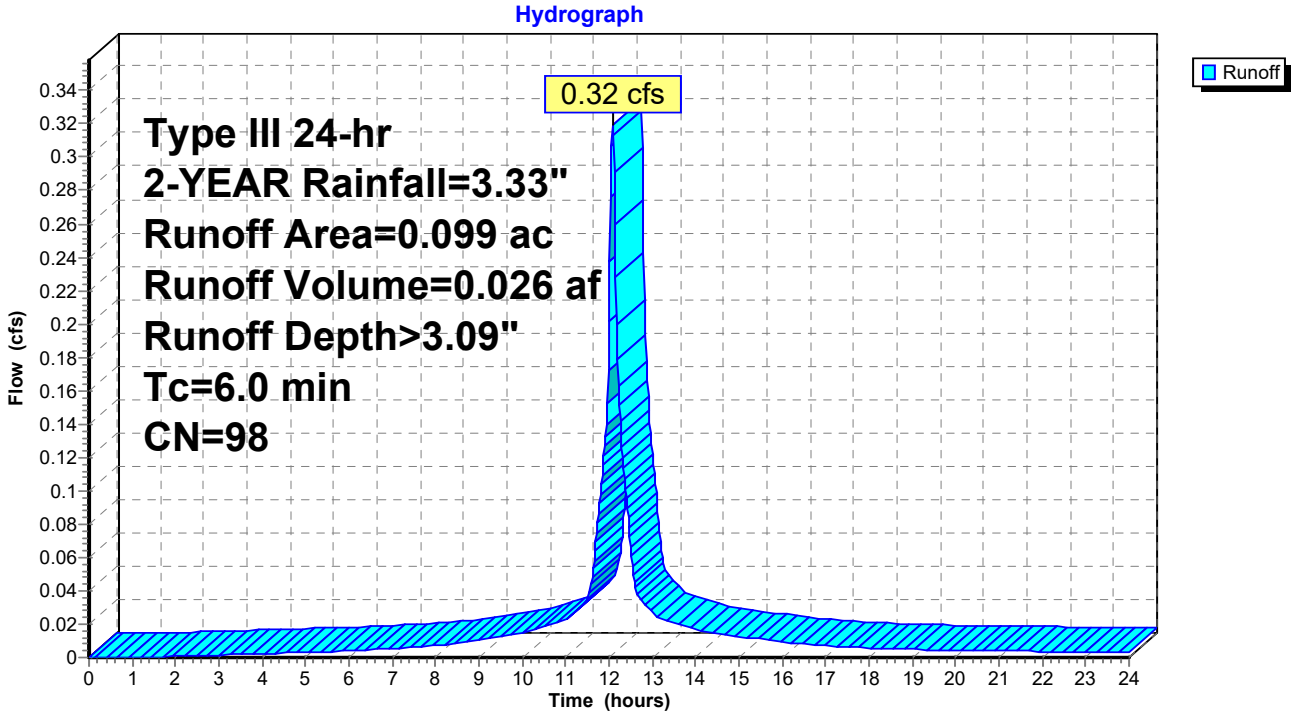
Runoff = 0.32 cfs @ 12.08 hrs, Volume= 0.026 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

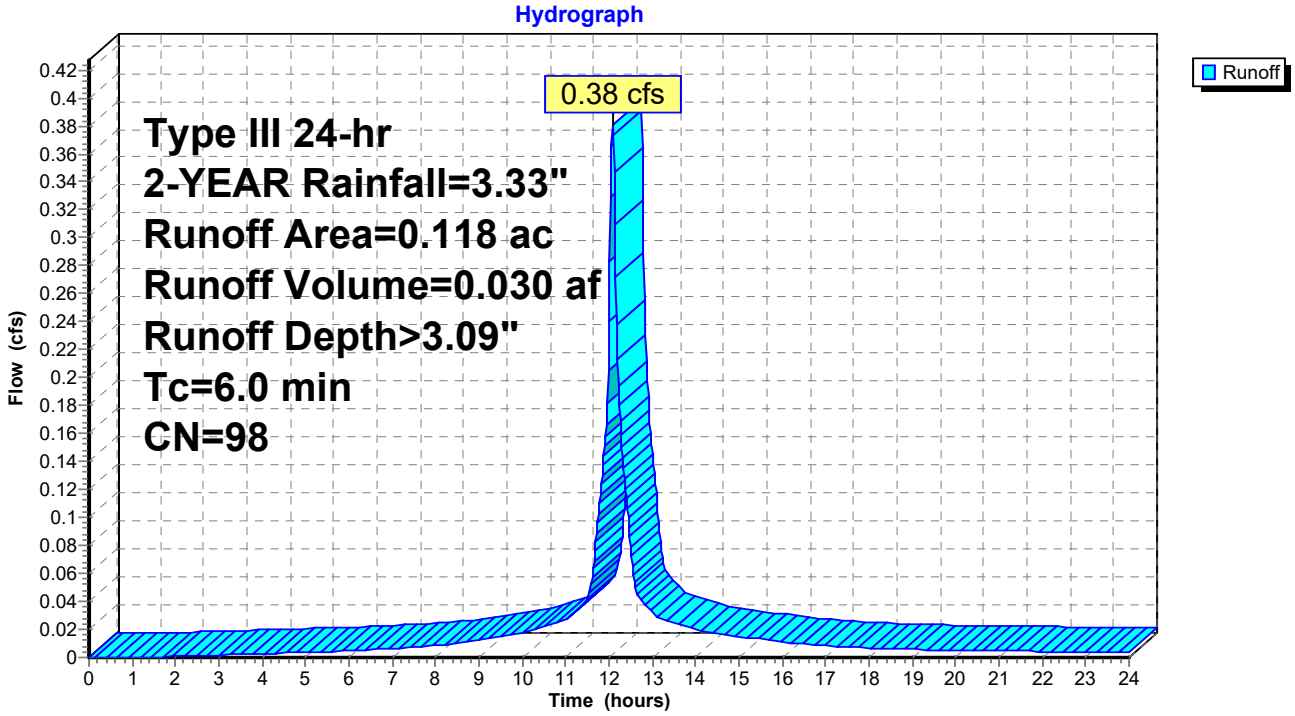
Runoff = 0.38 cfs @ 12.08 hrs, Volume= 0.030 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

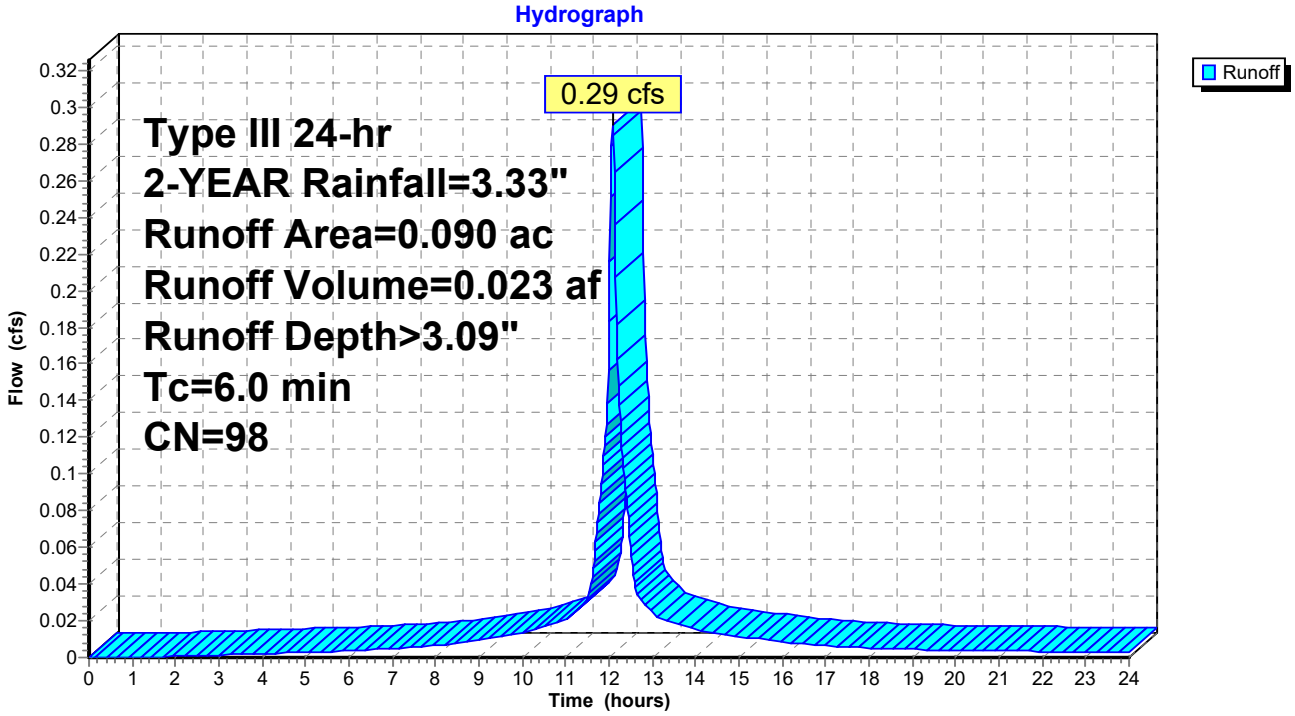
Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.023 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

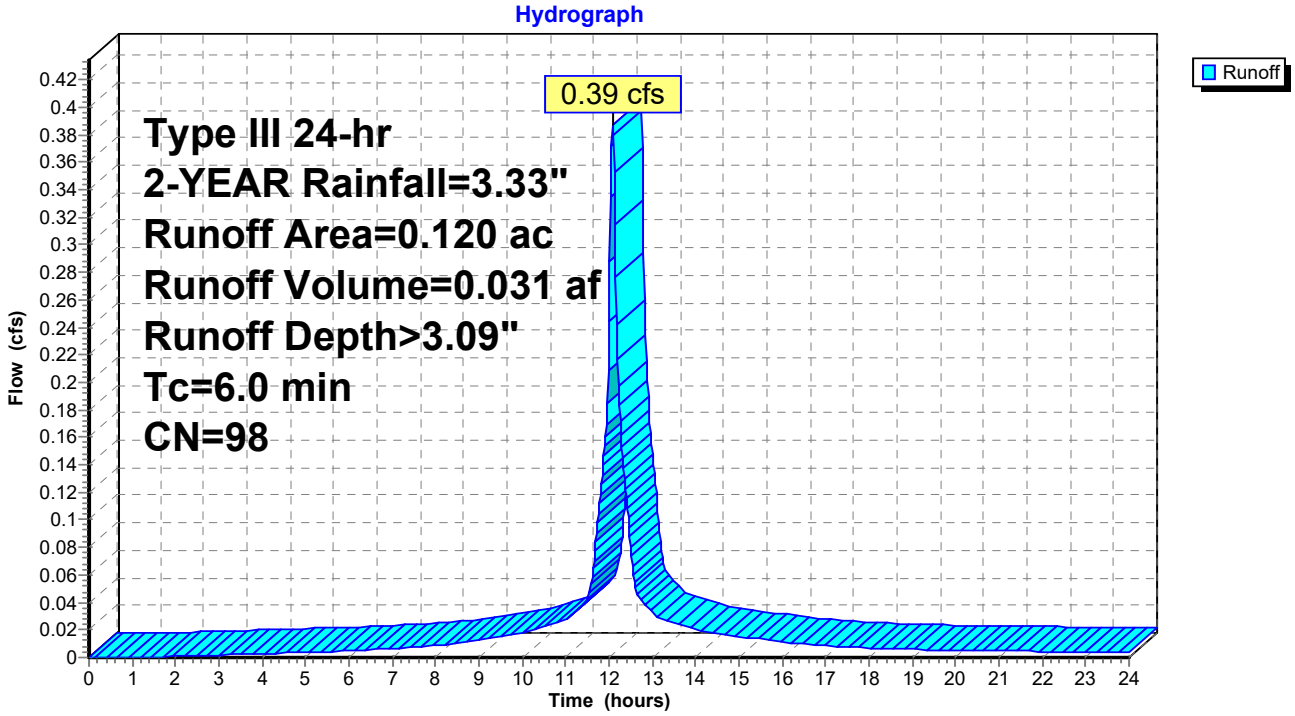
Runoff = 0.39 cfs @ 12.08 hrs, Volume= 0.031 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



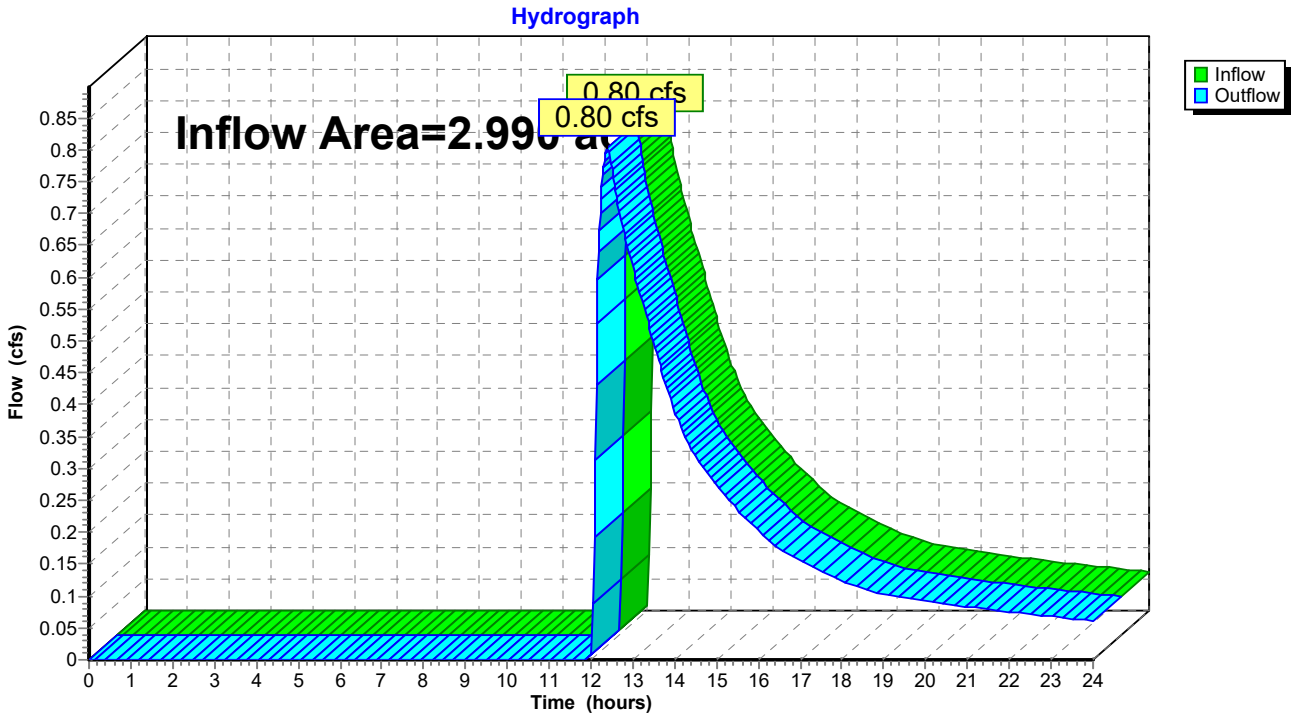
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.990 ac, 39.46% Impervious, Inflow Depth > 0.84" for 2-YEAR event
Inflow = 0.80 cfs @ 12.40 hrs, Volume= 0.208 af
Outflow = 0.80 cfs @ 12.40 hrs, Volume= 0.208 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



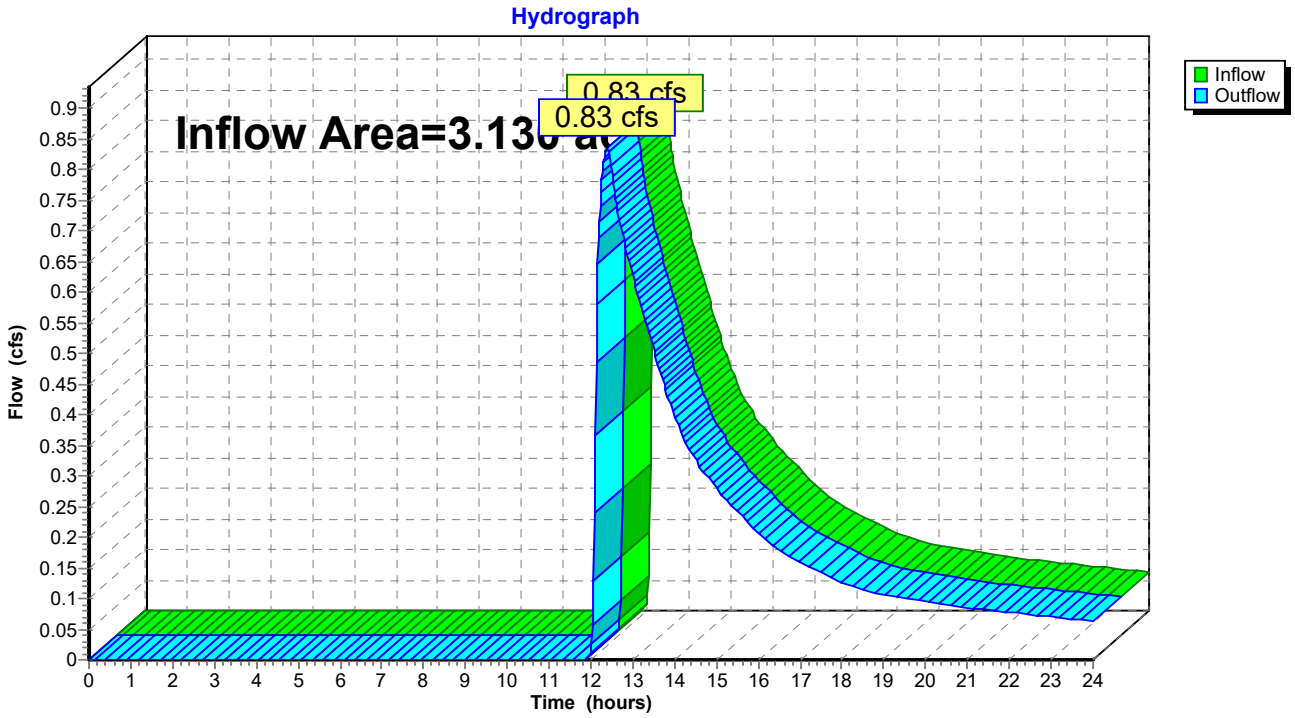
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.130 ac, 37.70% Impervious, Inflow Depth > 0.82" for 2-YEAR event
Inflow = 0.83 cfs @ 12.39 hrs, Volume= 0.214 af
Outflow = 0.83 cfs @ 12.39 hrs, Volume= 0.214 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 1.43" for 2-YEAR event
Inflow = 1.00 cfs @ 12.09 hrs, Volume= 0.072 af
Outflow = 0.07 cfs @ 14.13 hrs, Volume= 0.031 af, Atten= 93%, Lag= 122.0 min
Primary = 0.07 cfs @ 14.13 hrs, Volume= 0.031 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.45' @ 14.13 hrs Surf.Area= 1,679 sf Storage= 1,915 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 306.2 min calculated for 0.031 af (43% of inflow)
Center-of-Mass det. time= 180.6 min (1,023.7 - 843.1)

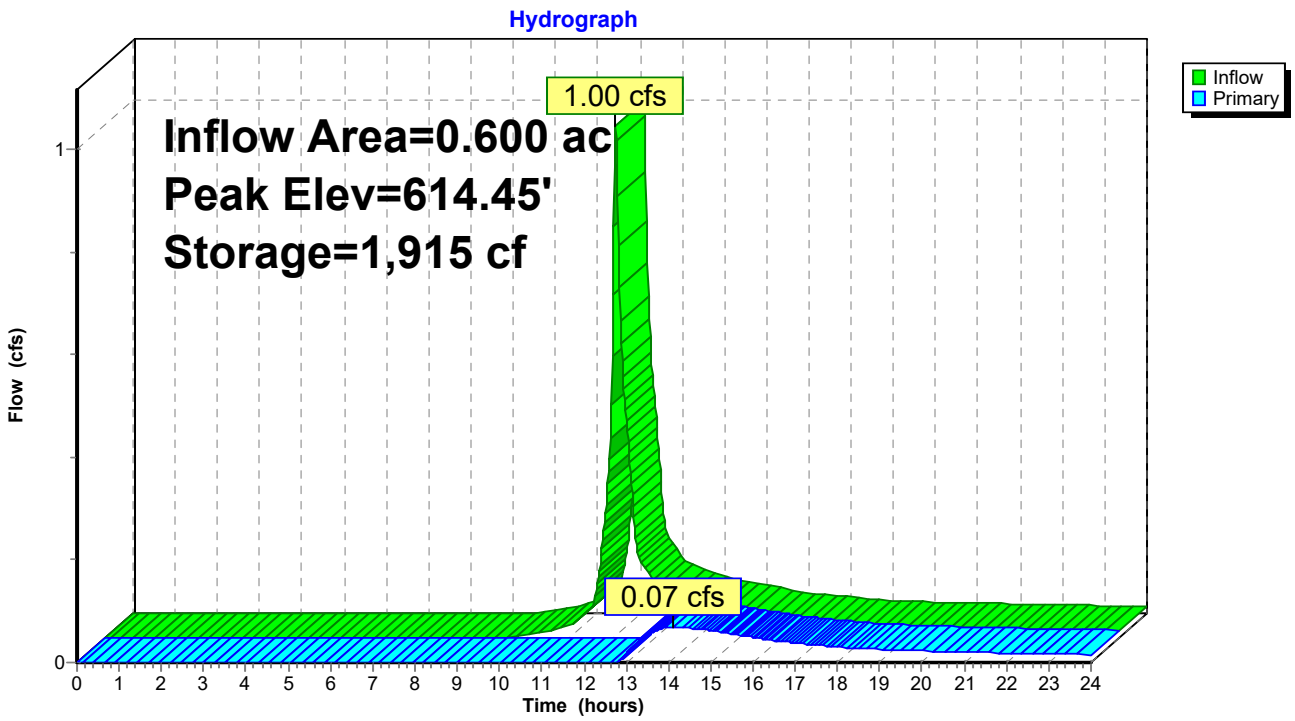
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

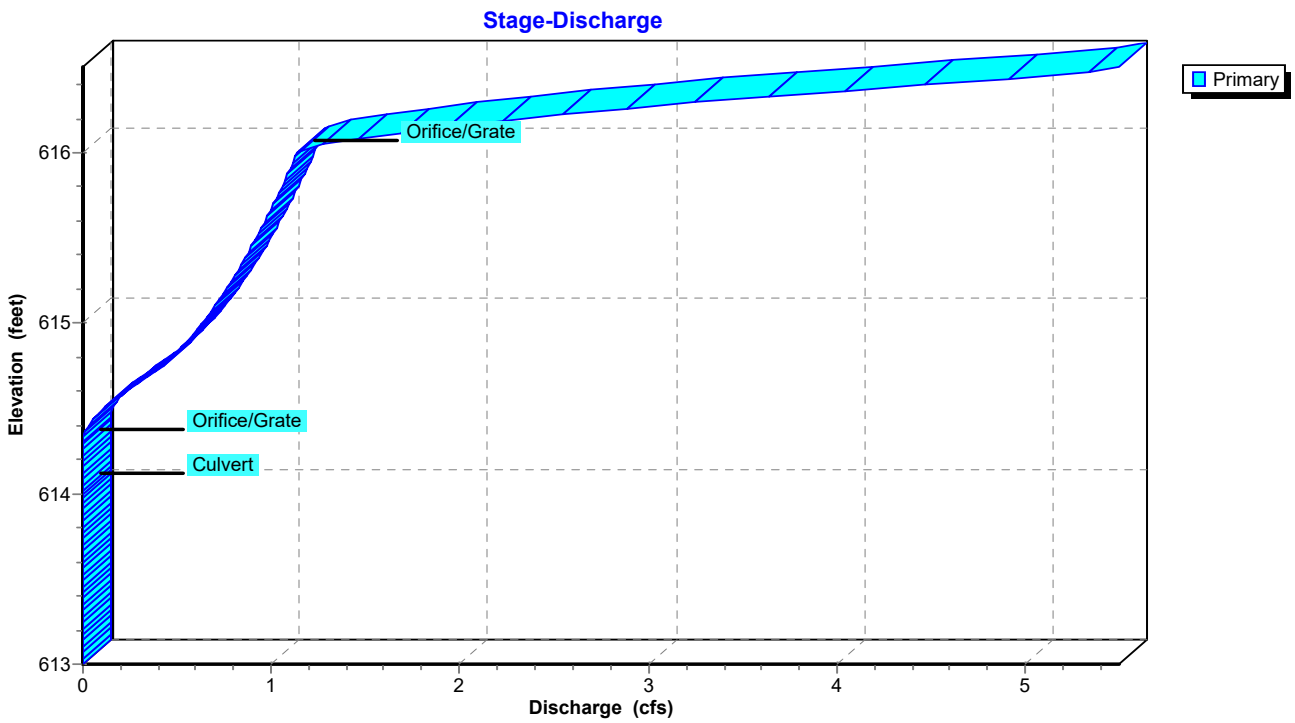
Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.07 cfs @ 14.13 hrs HW=614.45' (Free Discharge)
└─**1=Culvert** (Passes 0.07 cfs of 0.74 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.07 cfs @ 1.33 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

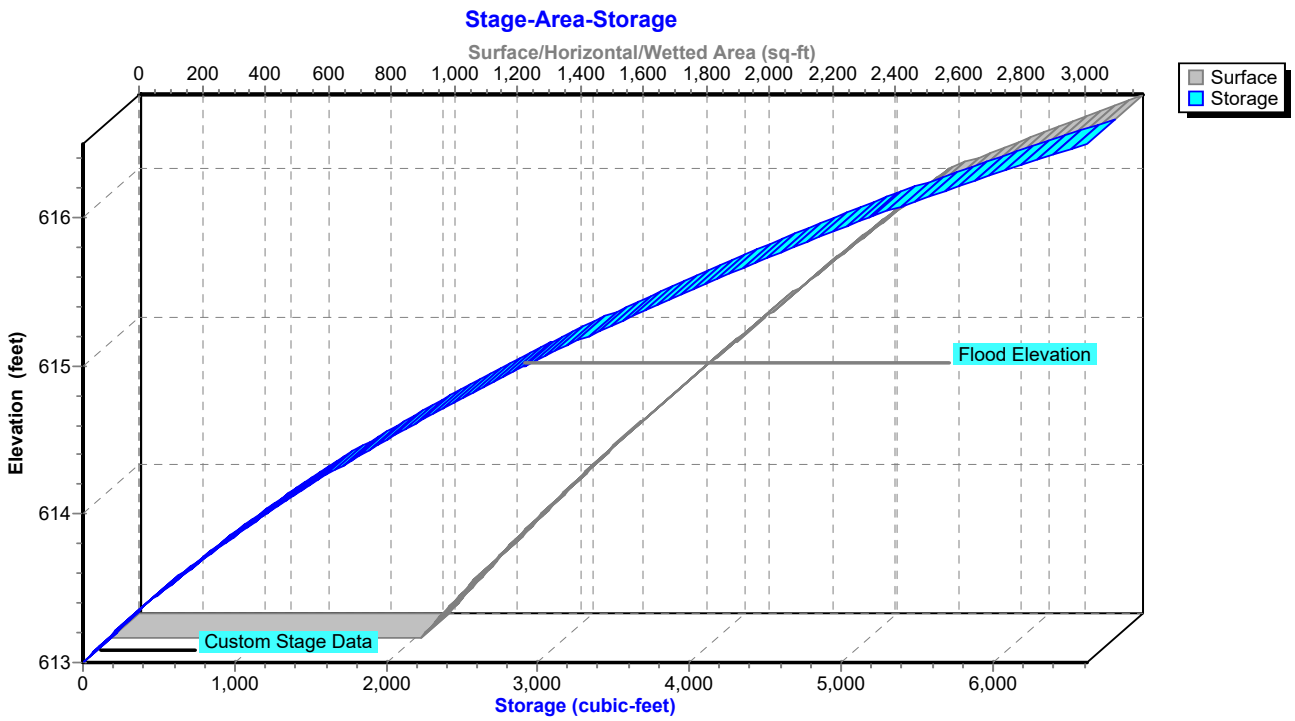
Pond 1P: DETENTION BASIN



Pond 1P: DETENTION BASIN



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

[58] Hint: Peaked 0.35' above defined flood level

Inflow Area = 1.140 ac, 75.44% Impervious, Inflow Depth > 2.20" for 2-YEAR event
Inflow = 2.91 cfs @ 12.09 hrs, Volume= 0.209 af
Outflow = 0.64 cfs @ 12.50 hrs, Volume= 0.144 af, Atten= 78%, Lag= 25.1 min
Primary = 0.64 cfs @ 12.50 hrs, Volume= 0.144 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 613.32' @ 12.50 hrs Surf.Area= 3,419 sf Storage= 4,460 cf
Flood Elev= 612.97' Surf.Area= 3,444 sf Storage= 3,524 cf

Plug-Flow detention time= 188.8 min calculated for 0.144 af (69% of inflow)
Center-of-Mass det. time= 94.3 min (903.2 - 808.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.25'	4,007 cf	**27.50'W x 122.00'L x 4.50'H Field A** 15,098 cf Overall - 5,081 cf Embedded = 10,017 cf x 40.0% Voids
#2A	611.75'	5,081 cf	**CMP Round- 36** x 36 Inside #1 Effective Size= 36.0"W x 36.0"H => 7.06 sf x 20.00'L = 141.1 cf Overall Size= 36.0"W x 36.0"H x 20.00'L 6 Rows of 6 Chambers
#3	612.25'	88 cf	**15.0" Round Pipe Storage** L= 72.0'
		9,176 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	612.25'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 612.25' / 612.25' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	612.60'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	613.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	615.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.64 cfs @ 12.50 hrs HW=613.31' (Free Discharge)
└─**1=Culvert** (Passes 0.64 cfs of 2.59 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.64 cfs @ 3.28 fps)
  ├─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round- 36 (Round Corrugated Metal Pipe)
Effective Size= 36.0"W x 36.0"H => 7.06 sf x 20.00'L = 141.1 cf
Overall Size= 36.0"W x 36.0"H x 20.00'L

36.0" Wide + 18.0" Spacing = 54.0" C-C Row Spacing

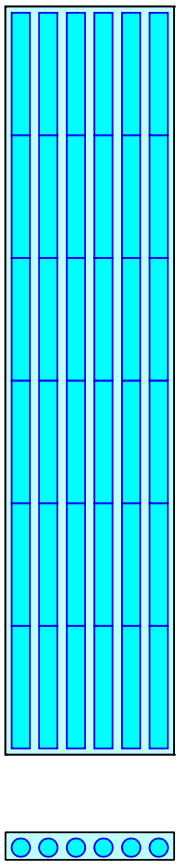
6 Chambers/Row x 20.00' Long = 120.00' Row Length +12.0" End Stone x 2 = 122.00' Base Length
6 Rows x 36.0" Wide + 18.0" Spacing x 5 + 12.0" Side Stone x 2 = 27.50' Base Width
6.0" Base + 36.0" Chamber Height + 12.0" Cover = 4.50' Field Height

36 Chambers x 141.1 cf = 5,080.8 cf Chamber Storage

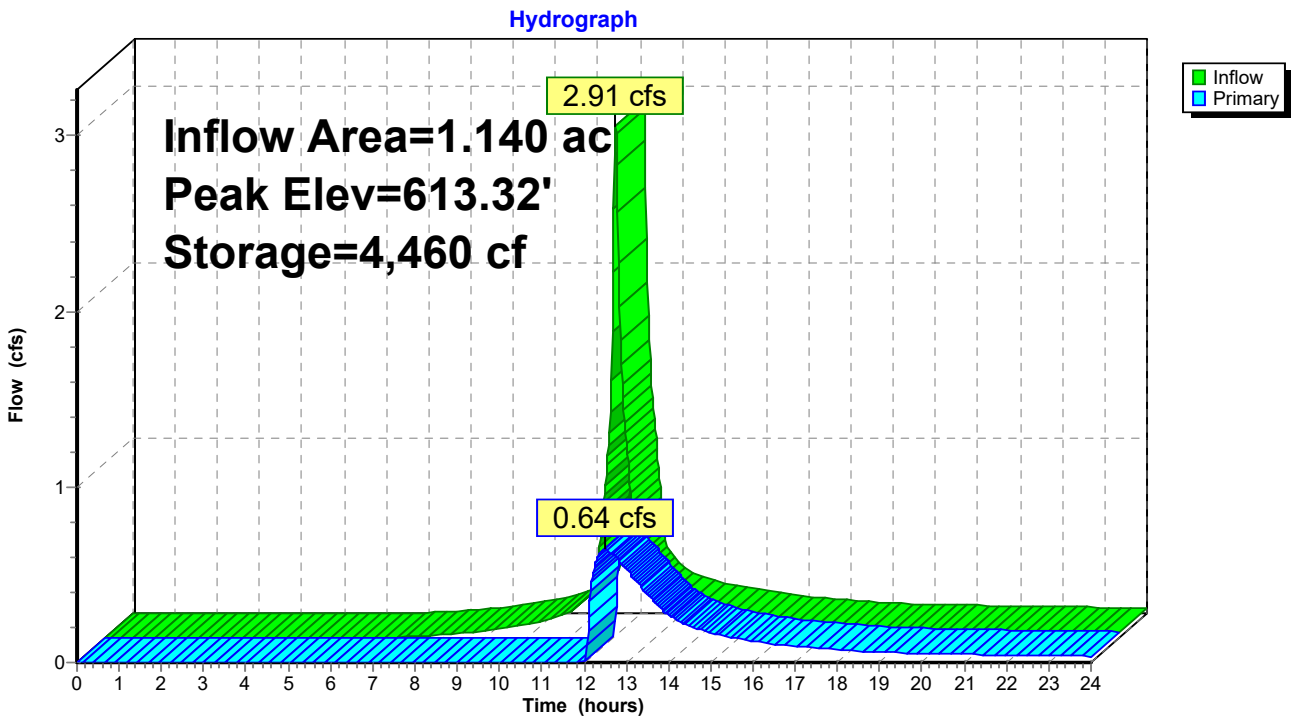
15,097.5 cf Field - 5,080.8 cf Chambers = 10,016.7 cf Stone x 40.0% Voids = 4,006.7 cf Stone Storage

Chamber Storage + Stone Storage = 9,087.5 cf = 0.209 af
Overall Storage Efficiency = 60.2%
Overall System Size = 122.00' x 27.50' x 4.50'

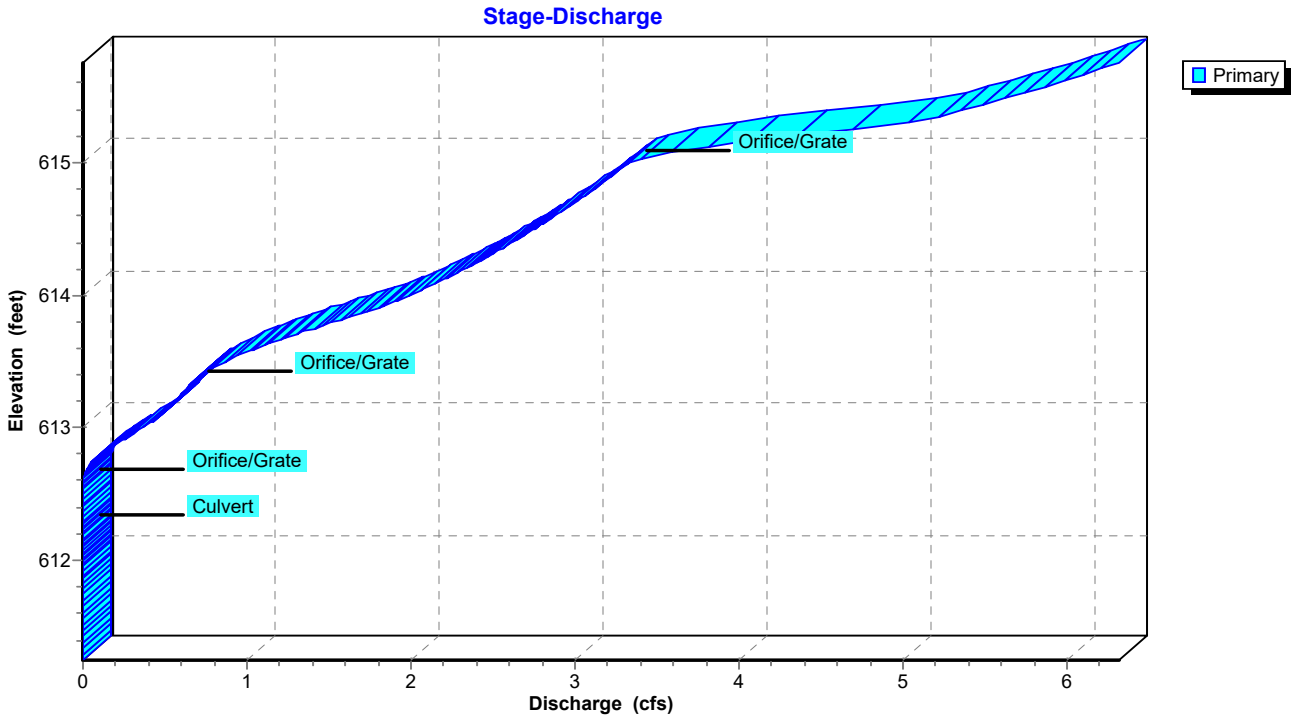
36 Chambers
559.2 cy Field
371.0 cy Stone



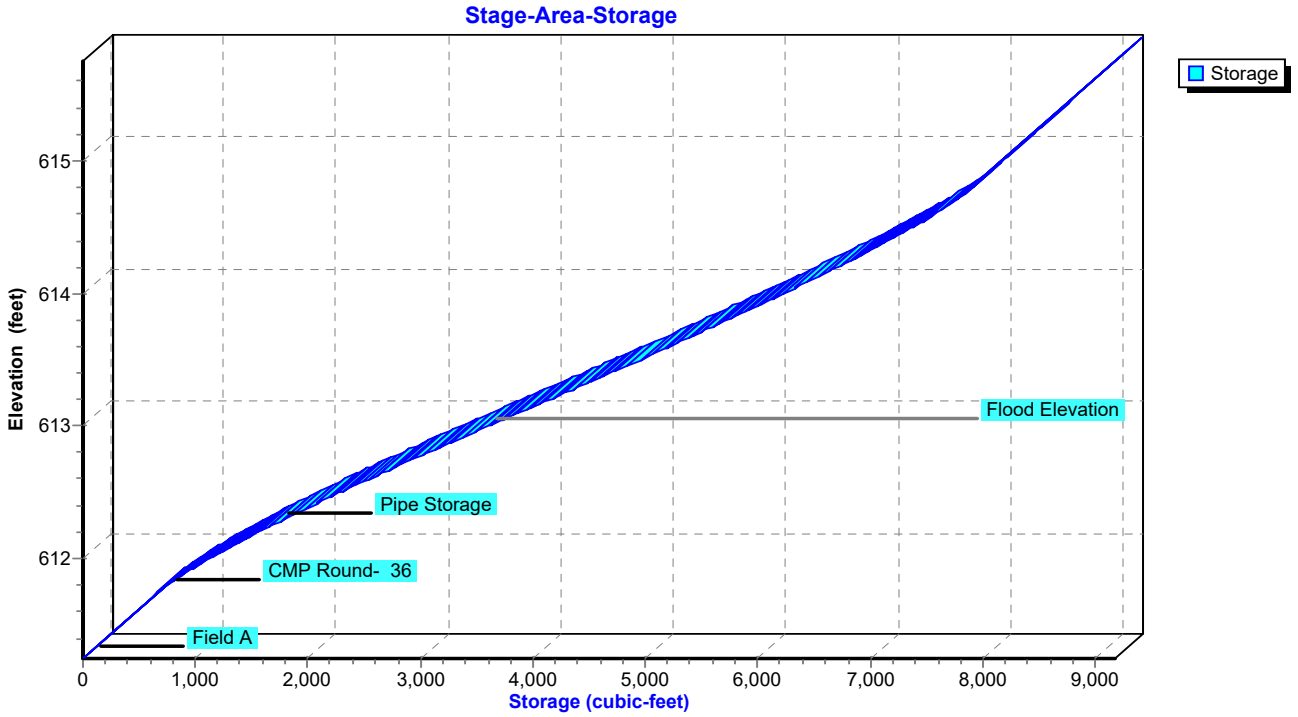
Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 3.09" for 2-YEAR event
Inflow = 0.32 cfs @ 12.08 hrs, Volume= 0.026 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 612.72' @ 24.00 hrs Surf.Area= 607 sf Storage= 1,112 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	610.00'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	610.75'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	615.75'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=610.00' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

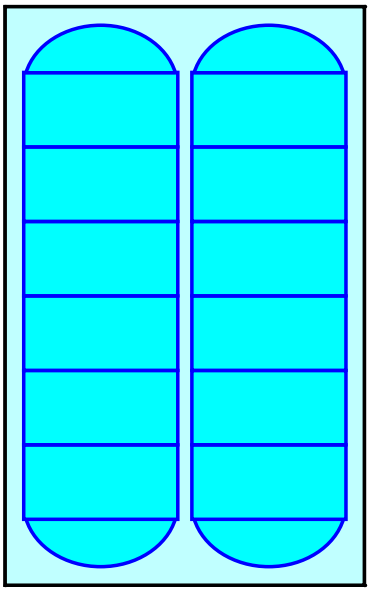
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

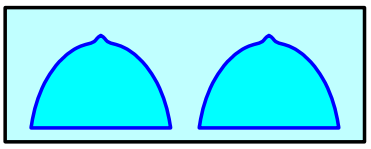
12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

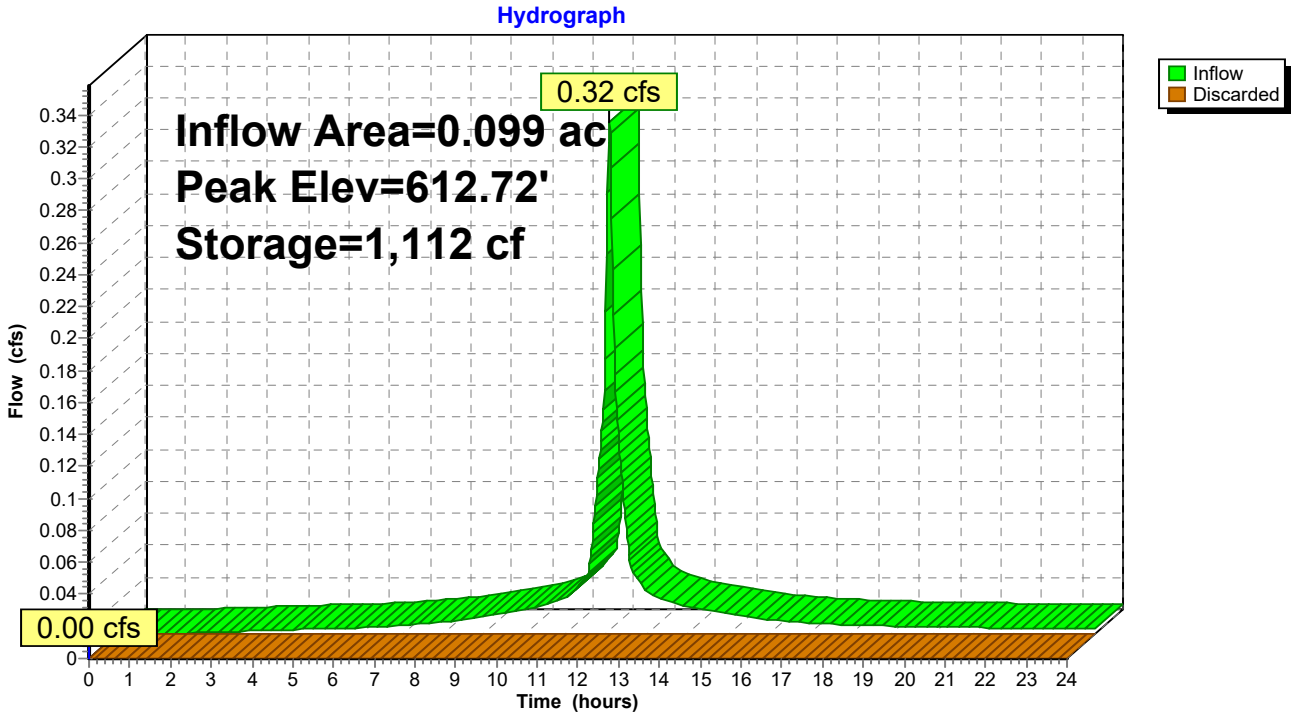
Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

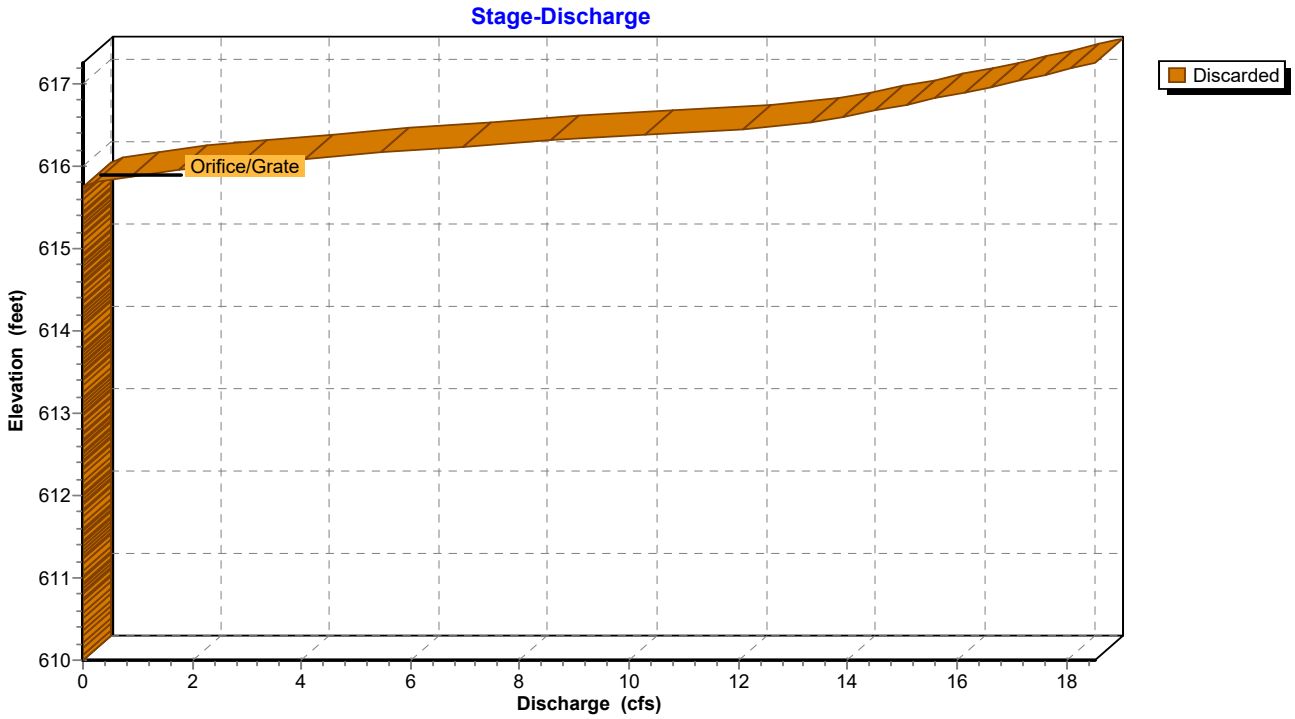




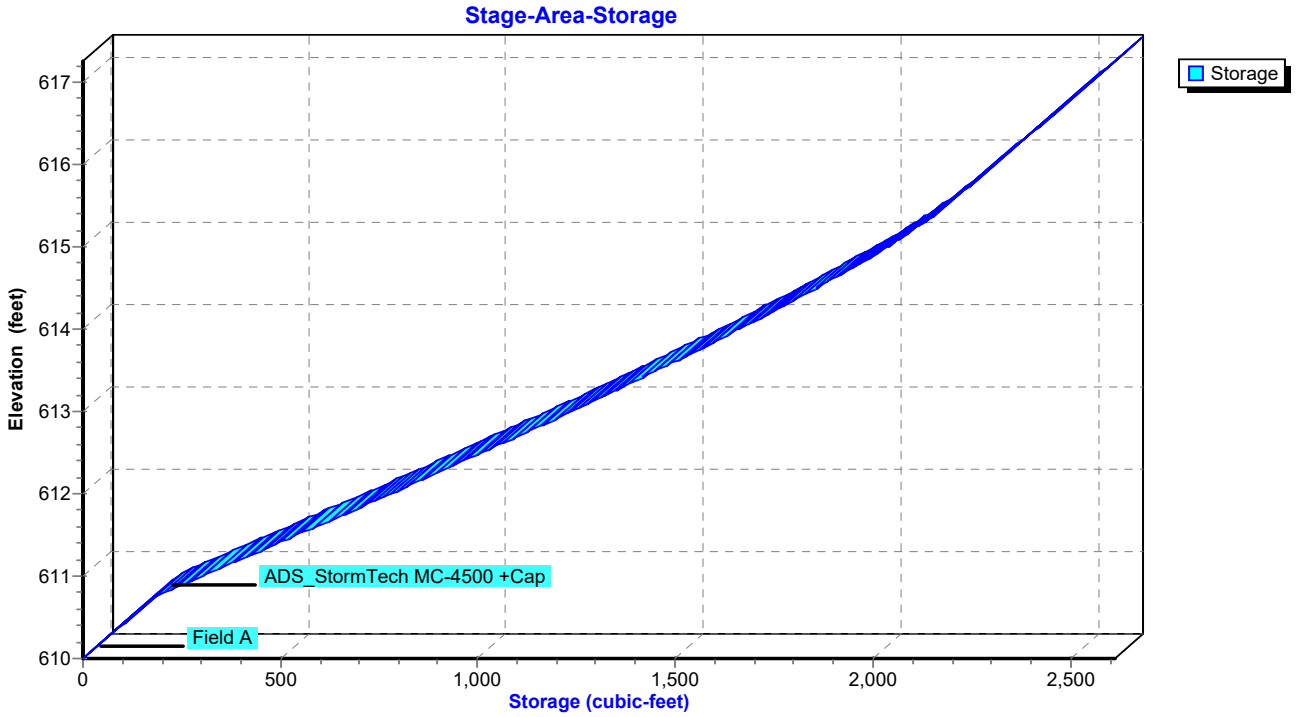
Pond 3P: ROOF INFILTRATION



Pond 3P: ROOF INFILTRATION



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 3.09" for 2-YEAR event
Inflow = 1.06 cfs @ 12.08 hrs, Volume= 0.085 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 612.96' @ 24.00 hrs Surf.Area= 0.049 ac Storage= 0.085 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	610.50'	0.082 af	**28.50'W x 75.54'L x 6.75'H Field A** 0.334 af Overall - 0.130 af Embedded = 0.204 af x 40.0% Voids
#2A	611.25'	0.130 af	**ADS_StormTech MC-4500 +Cap** x 51 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 3 Rows of 17 Chambers Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf
		0.211 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	618.25'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=610.50' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

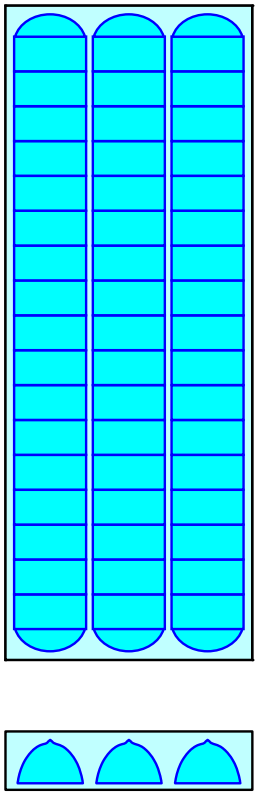
17 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 73.54' Row Length +12.0" End Stone x 2 = 75.54' Base Length
3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width
9.0" Base + 60.0" Chamber Height + 12.0" Cover = 6.75' Field Height

51 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 3 Rows = 5,645.2 cf Chamber Storage

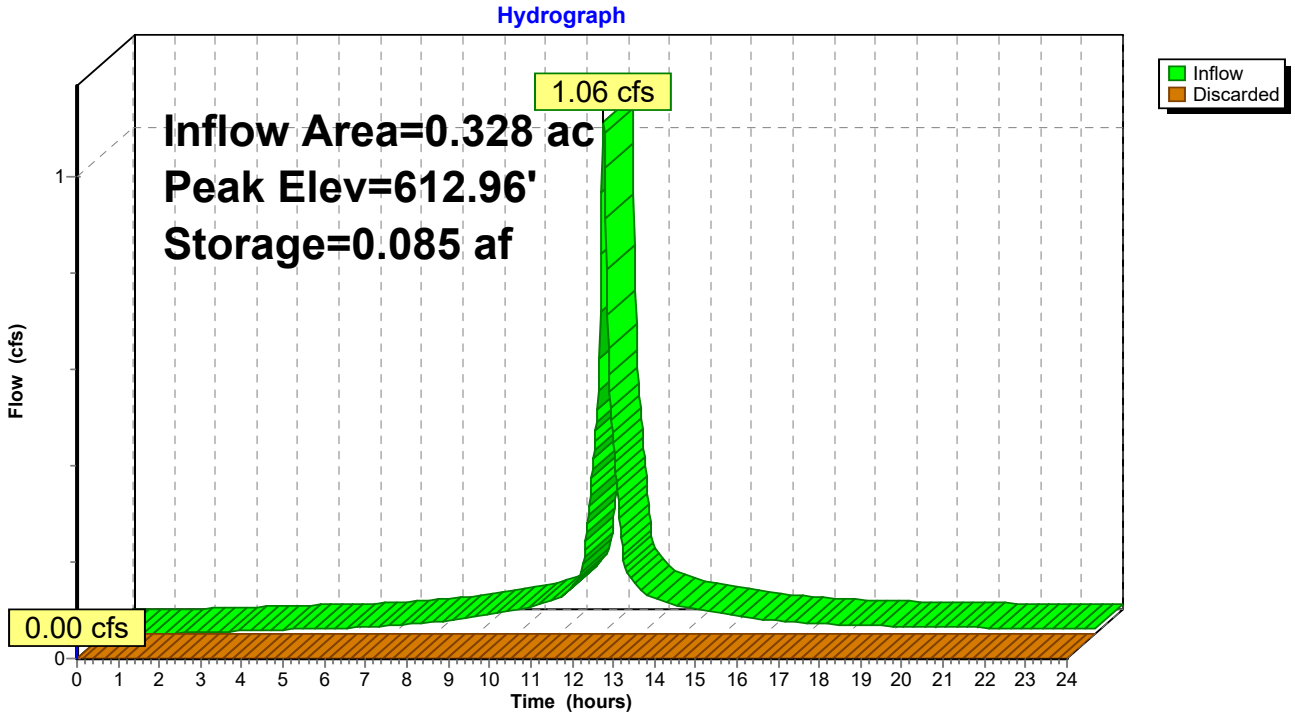
14,532.3 cf Field - 5,645.2 cf Chambers = 8,887.1 cf Stone x 40.0% Voids = 3,554.8 cf Stone Storage

Chamber Storage + Stone Storage = 9,200.1 cf = 0.211 af
Overall Storage Efficiency = 63.3%
Overall System Size = 75.54' x 28.50' x 6.75'

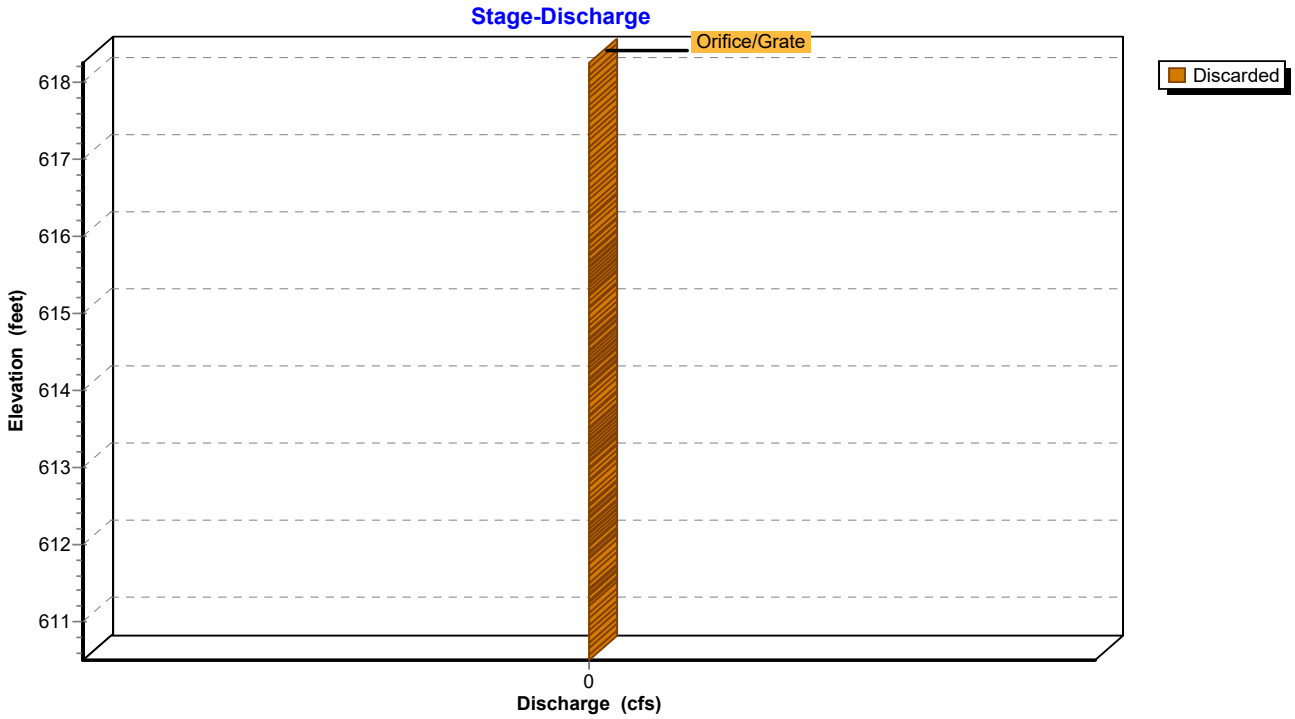
51 Chambers
538.2 cy Field
329.2 cy Stone



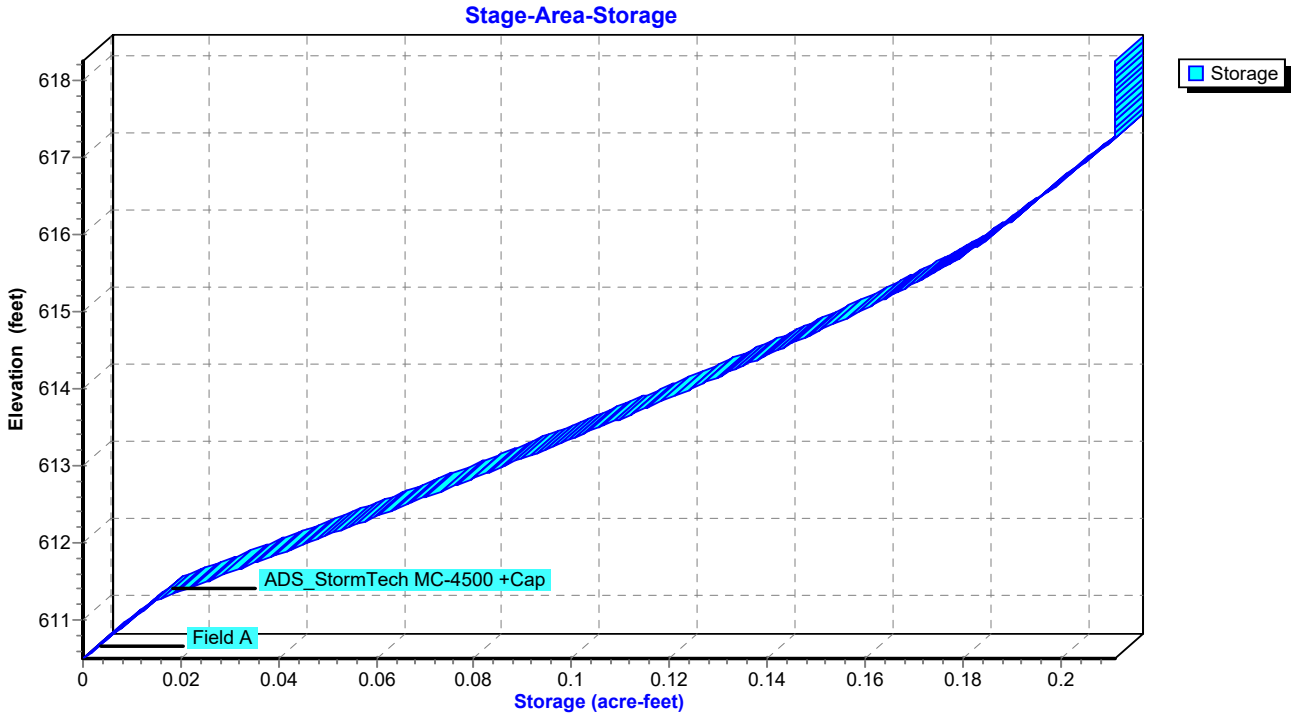
Pond 4P: ROOF INFILTRATION



Pond 4P: ROOF INFILTRATION



Pond 4P: ROOF INFILTRATION



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>1.40"
Tc=6.0 min CN=61 Runoff=0.21 cfs 0.016 af

Subcatchment P2-1: DISCHARGE TO Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>2.84"
Tc=6.0 min CN=79 Runoff=2.00 cfs 0.142 af

Subcatchment P2-2: DISCHARGE TO Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>3.82"
Tc=6.0 min CN=89 Runoff=4.95 cfs 0.363 af

Subcatchment P2-3: DISCHARGE TO THE Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>1.07"
Tc=6.0 min CN=56 Runoff=1.29 cfs 0.111 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.49 cfs 0.040 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.58 cfs 0.047 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.44 cfs 0.036 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.59 cfs 0.048 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=3.41 cfs 0.508 af
Outflow=3.41 cfs 0.508 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=3.53 cfs 0.524 af
Outflow=3.53 cfs 0.524 af

Pond 1P: DETENTION BASIN Peak Elev=614.89' Storage=2,704 cf Inflow=2.00 cfs 0.142 af
Outflow=0.55 cfs 0.101 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=614.07' Storage=6,416 cf Inflow=4.95 cfs 0.363 af
Outflow=2.12 cfs 0.296 af

Pond 3P: ROOF INFILTRATION Peak Elev=614.16' Storage=1,728 cf Inflow=0.49 cfs 0.040 af
Outflow=0.00 cfs 0.000 af

Pond 4P: ROOF INFILTRATION Peak Elev=614.19' Storage=0.131 af Inflow=1.62 cfs 0.131 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 3.557 ac Runoff Volume = 0.803 af Average Runoff Depth = 2.71"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

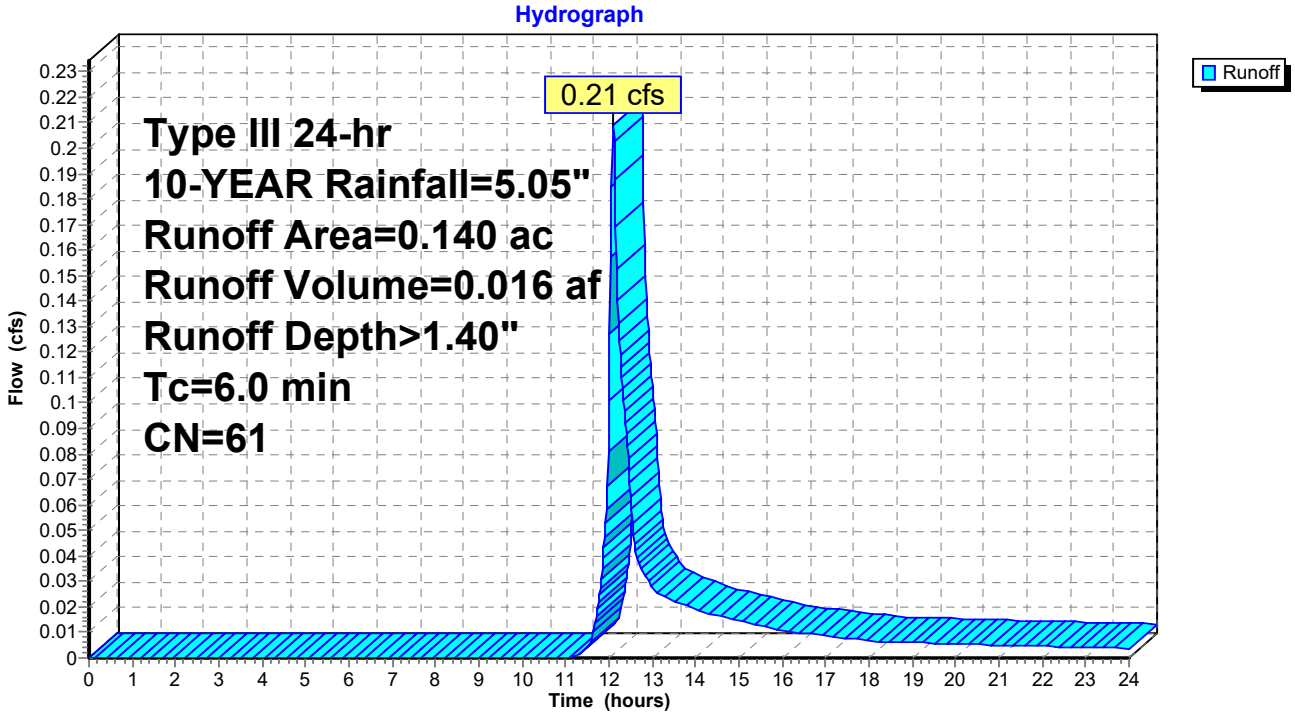
Runoff = 0.21 cfs @ 12.10 hrs, Volume= 0.016 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

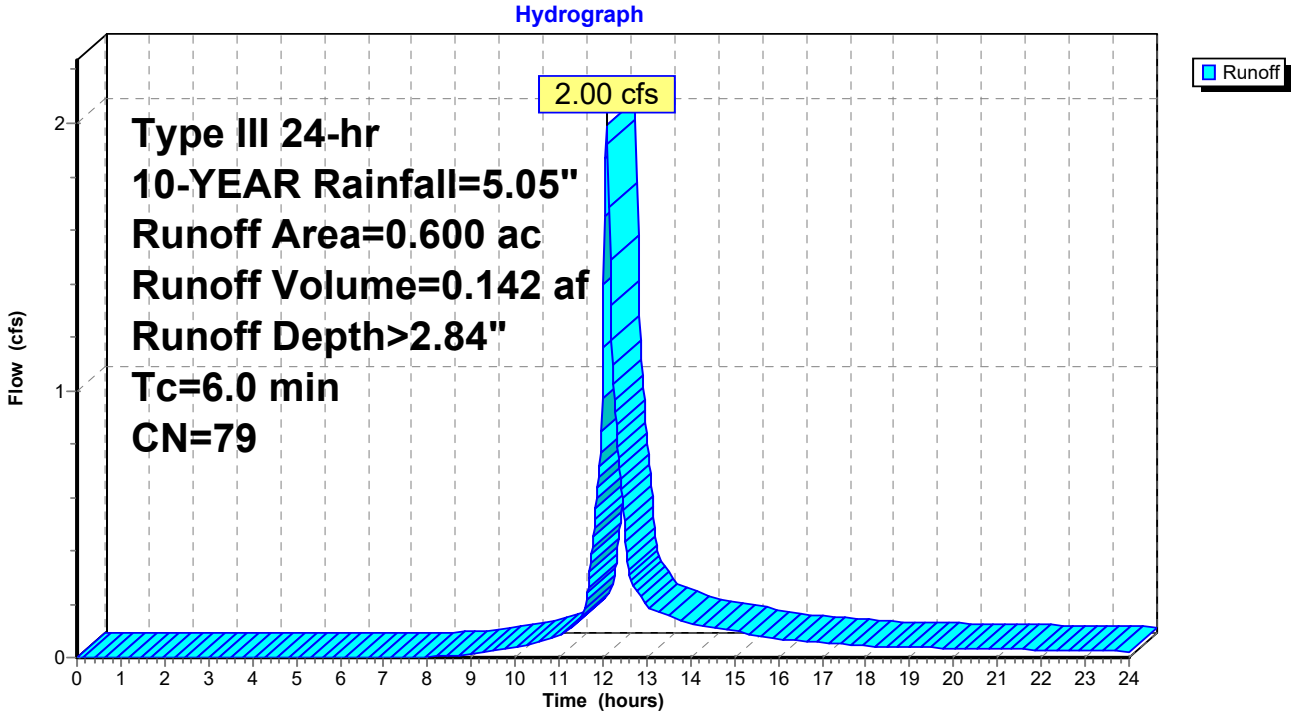
Runoff = 2.00 cfs @ 12.09 hrs, Volume= 0.142 af, Depth> 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

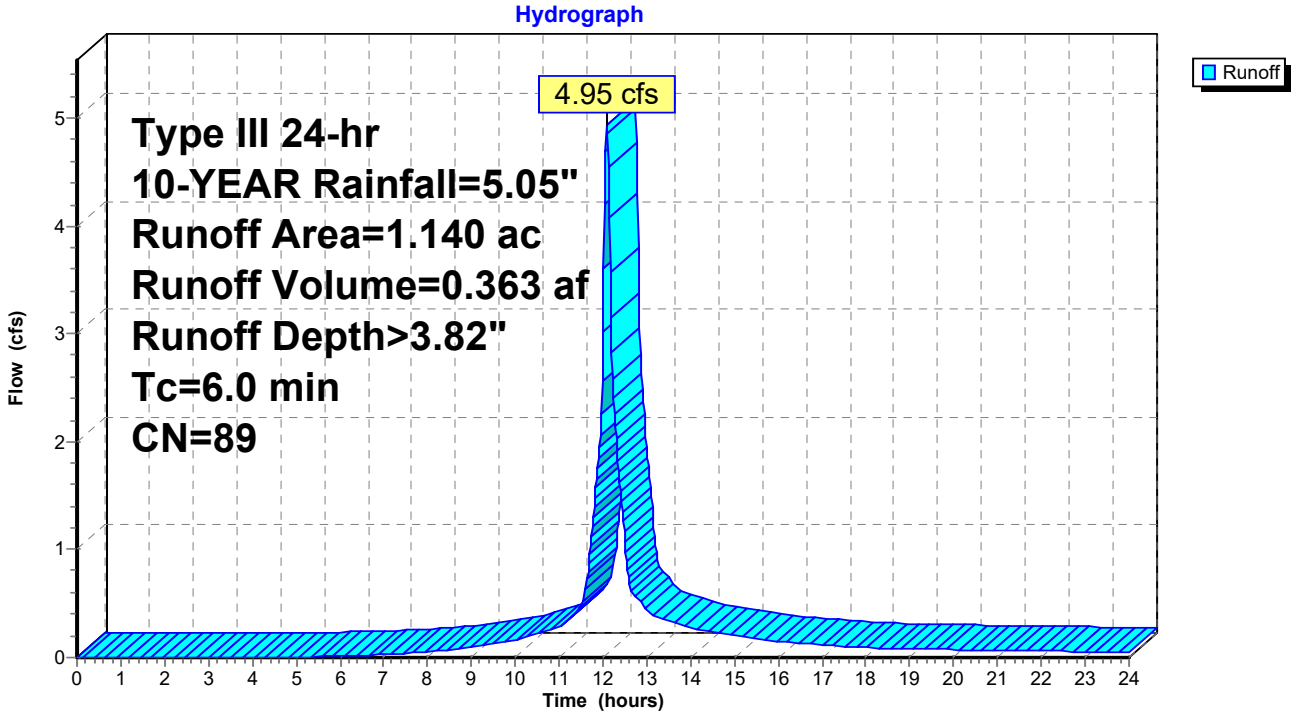
Runoff = 4.95 cfs @ 12.09 hrs, Volume= 0.363 af, Depth> 3.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

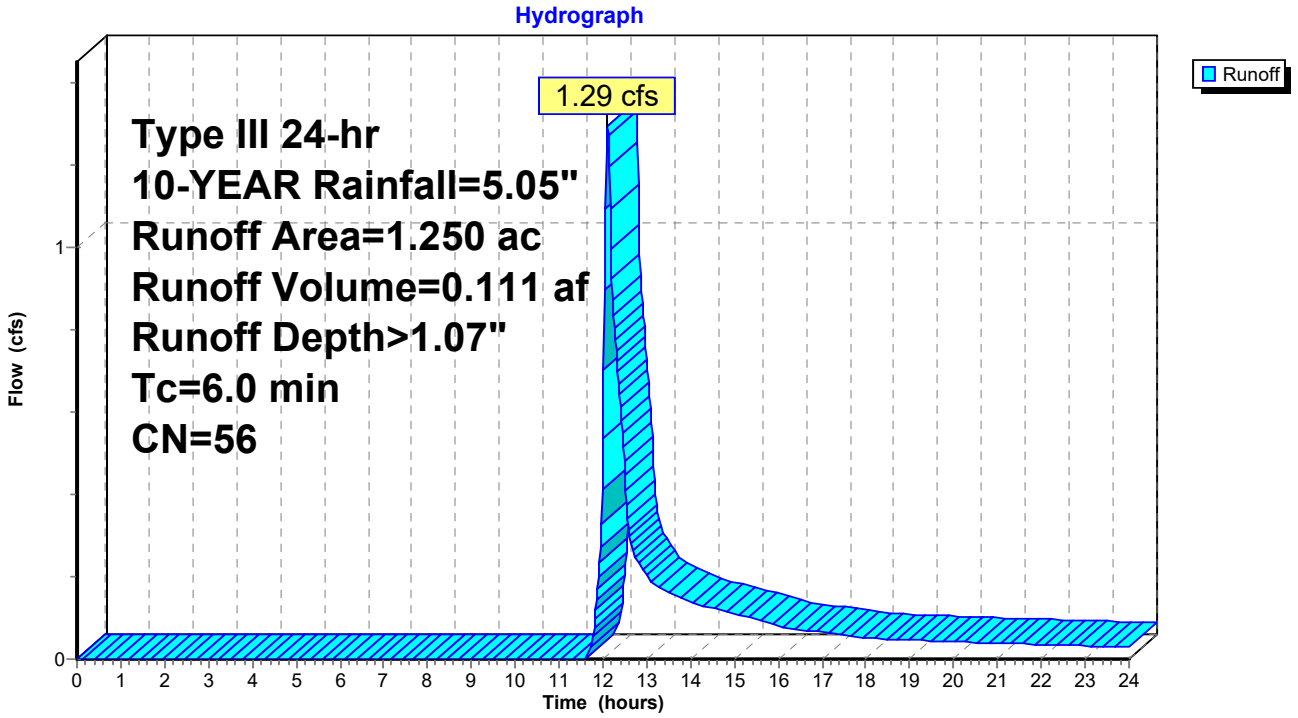
Runoff = 1.29 cfs @ 12.11 hrs, Volume= 0.111 af, Depth> 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

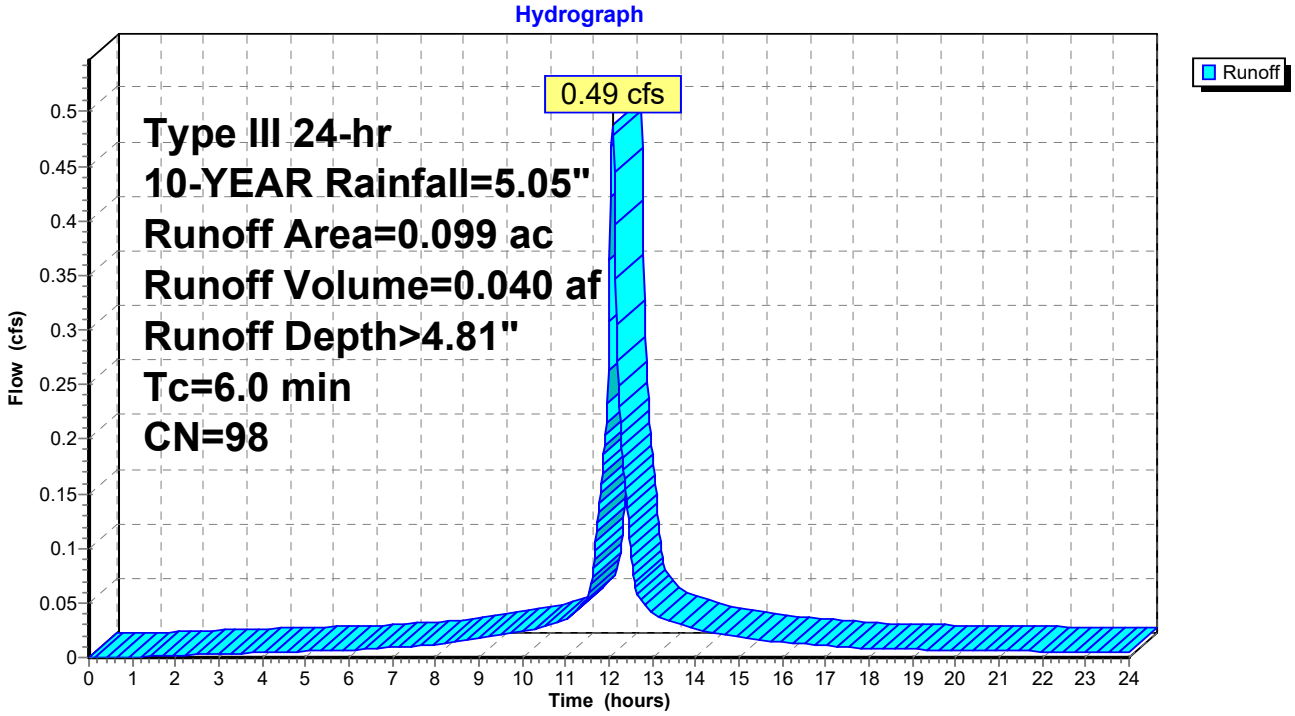
Runoff = 0.49 cfs @ 12.08 hrs, Volume= 0.040 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

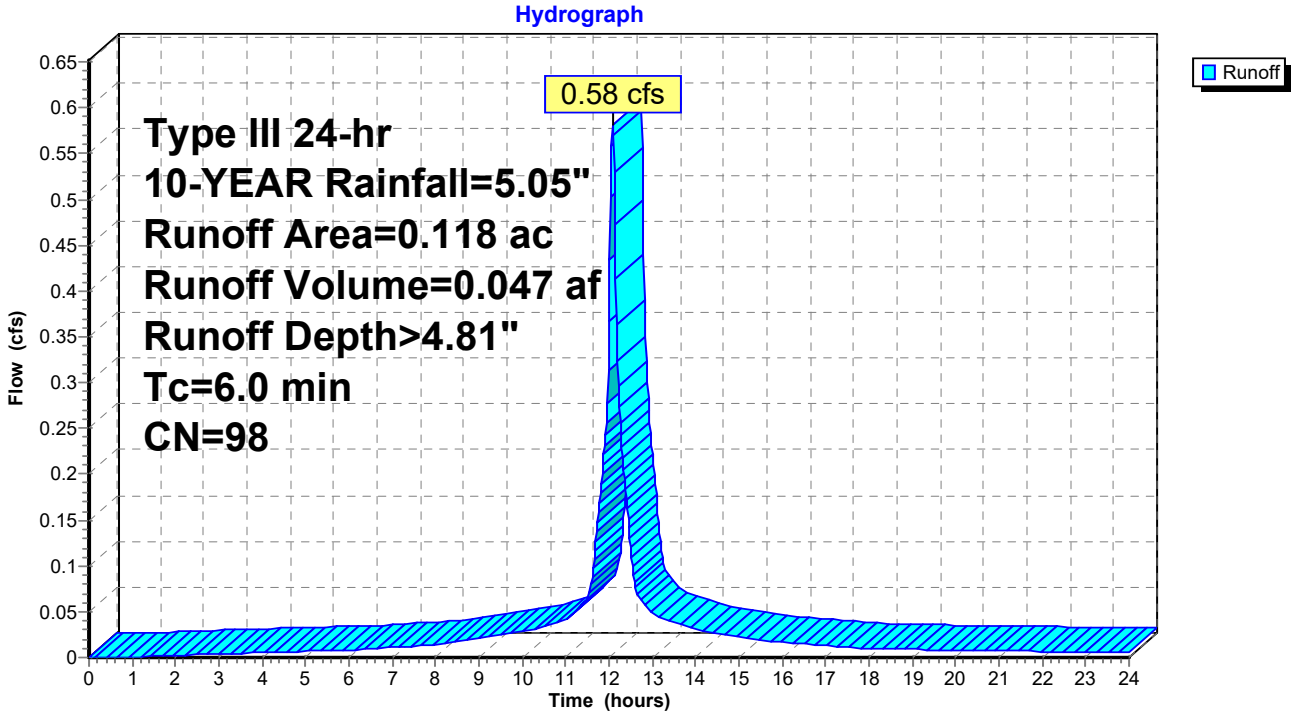
Runoff = 0.58 cfs @ 12.08 hrs, Volume= 0.047 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

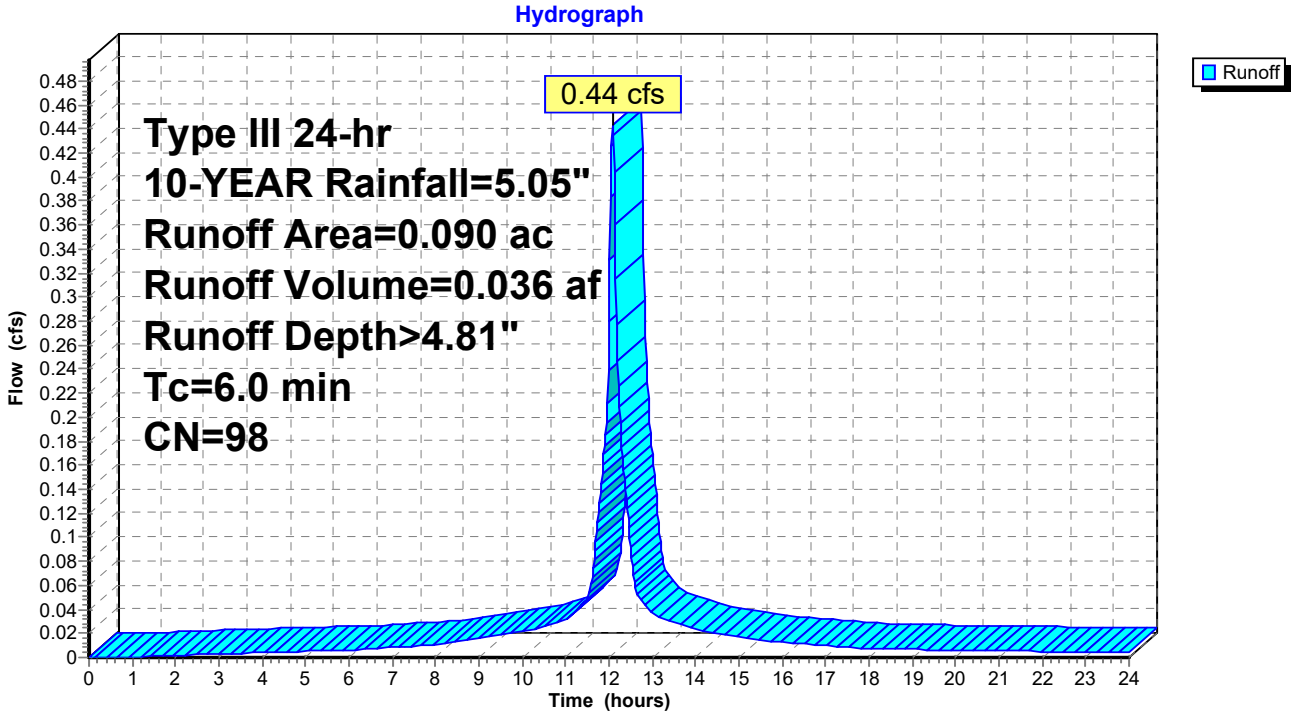
Runoff = 0.44 cfs @ 12.08 hrs, Volume= 0.036 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

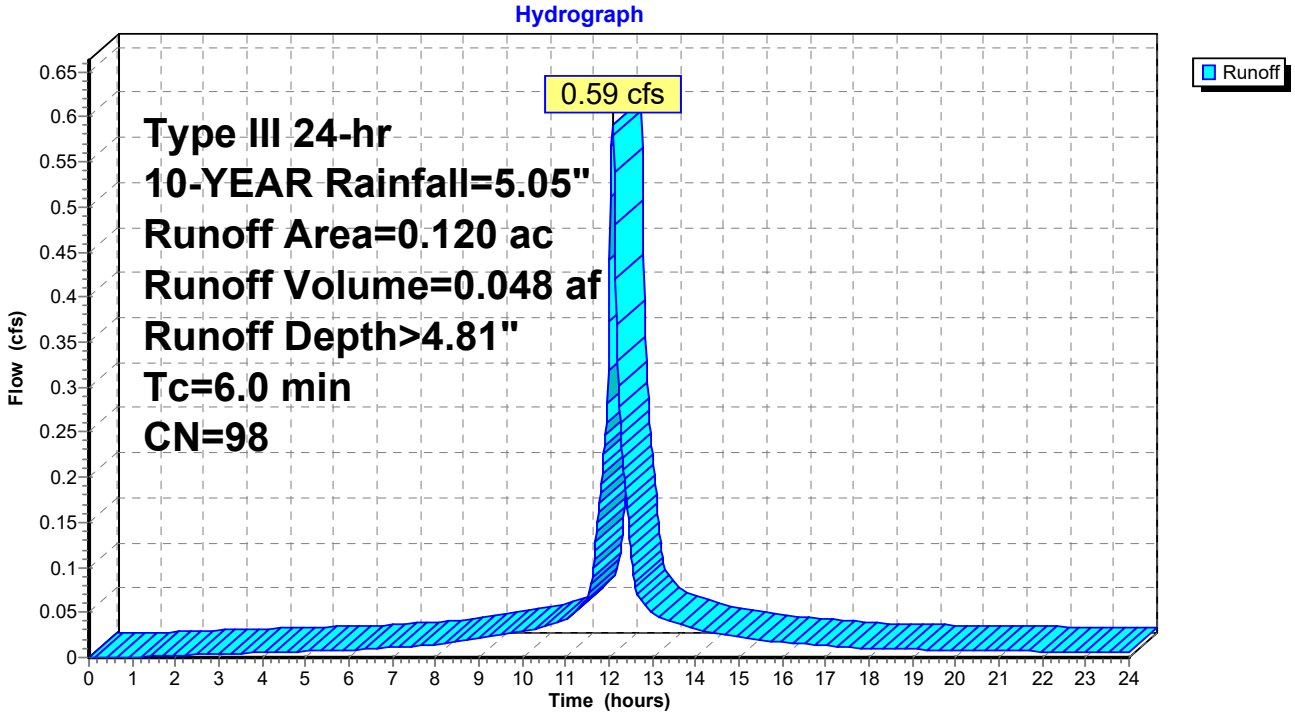
Runoff = 0.59 cfs @ 12.08 hrs, Volume= 0.048 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



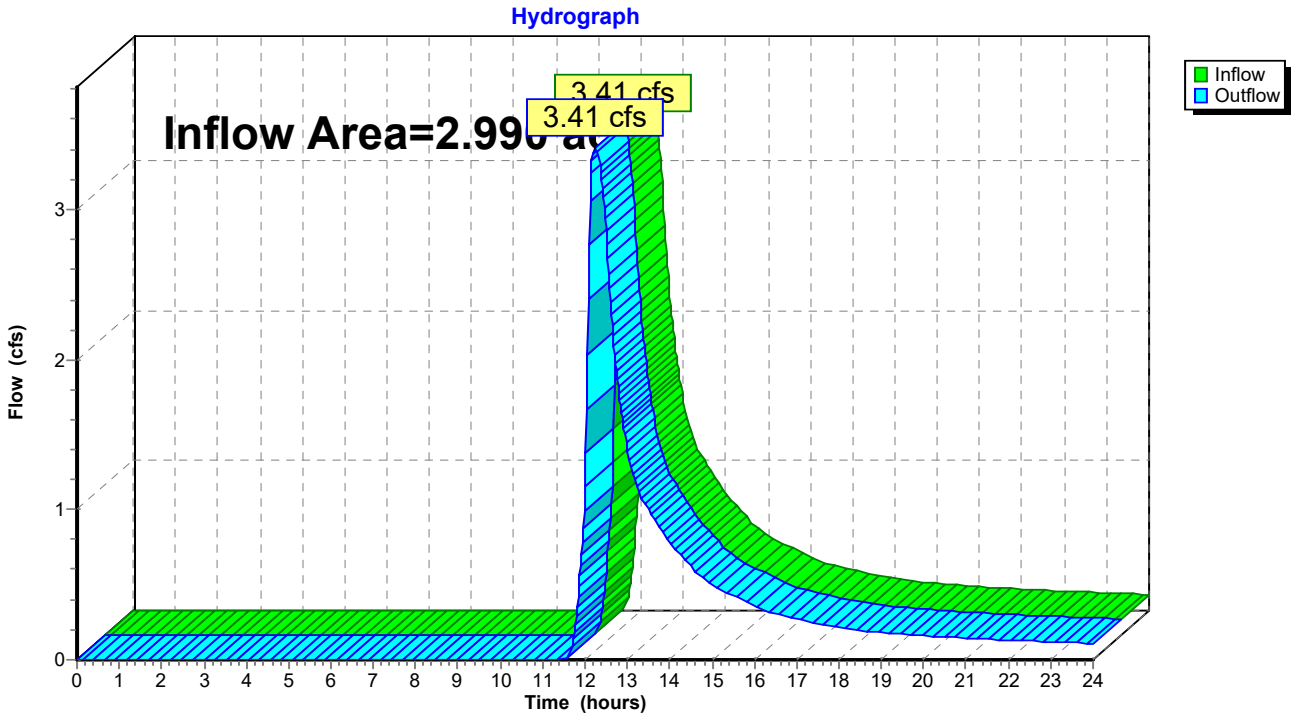
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.990 ac, 39.46% Impervious, Inflow Depth > 2.04" for 10-YEAR event
Inflow = 3.41 cfs @ 12.24 hrs, Volume= 0.508 af
Outflow = 3.41 cfs @ 12.24 hrs, Volume= 0.508 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



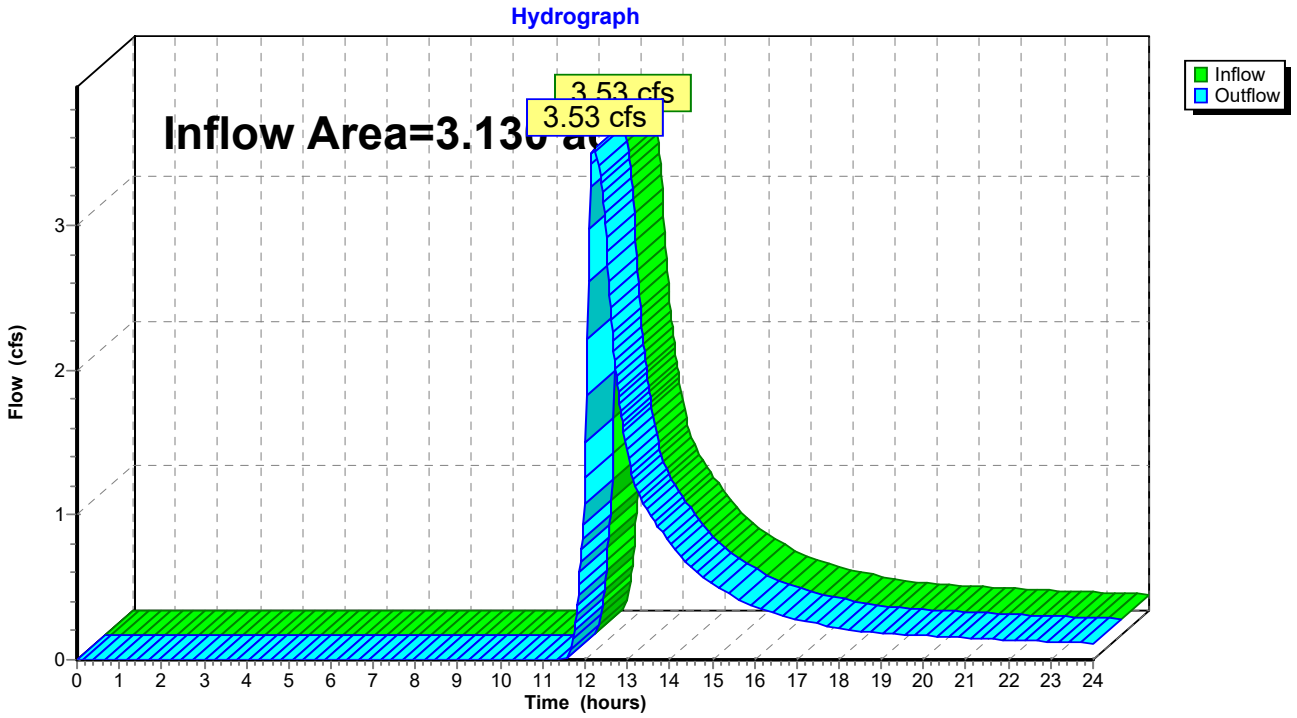
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.130 ac, 37.70% Impervious, Inflow Depth > 2.01" for 10-YEAR event
Inflow = 3.53 cfs @ 12.23 hrs, Volume= 0.524 af
Outflow = 3.53 cfs @ 12.23 hrs, Volume= 0.524 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 2.84" for 10-YEAR event
Inflow = 2.00 cfs @ 12.09 hrs, Volume= 0.142 af
Outflow = 0.55 cfs @ 12.46 hrs, Volume= 0.101 af, Atten= 72%, Lag= 22.3 min
Primary = 0.55 cfs @ 12.46 hrs, Volume= 0.101 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.89' @ 12.46 hrs Surf.Area= 1,921 sf Storage= 2,704 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 172.5 min calculated for 0.101 af (71% of inflow)
Center-of-Mass det. time= 78.2 min (901.5 - 823.4)

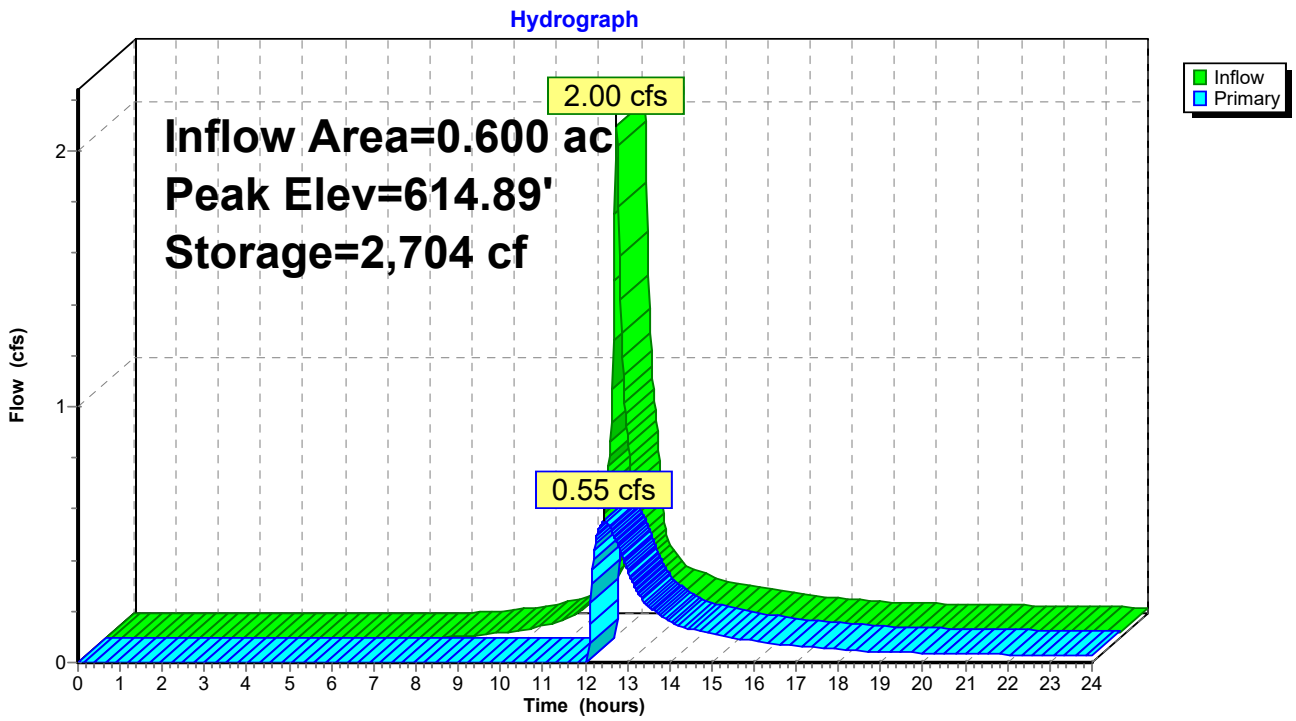
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

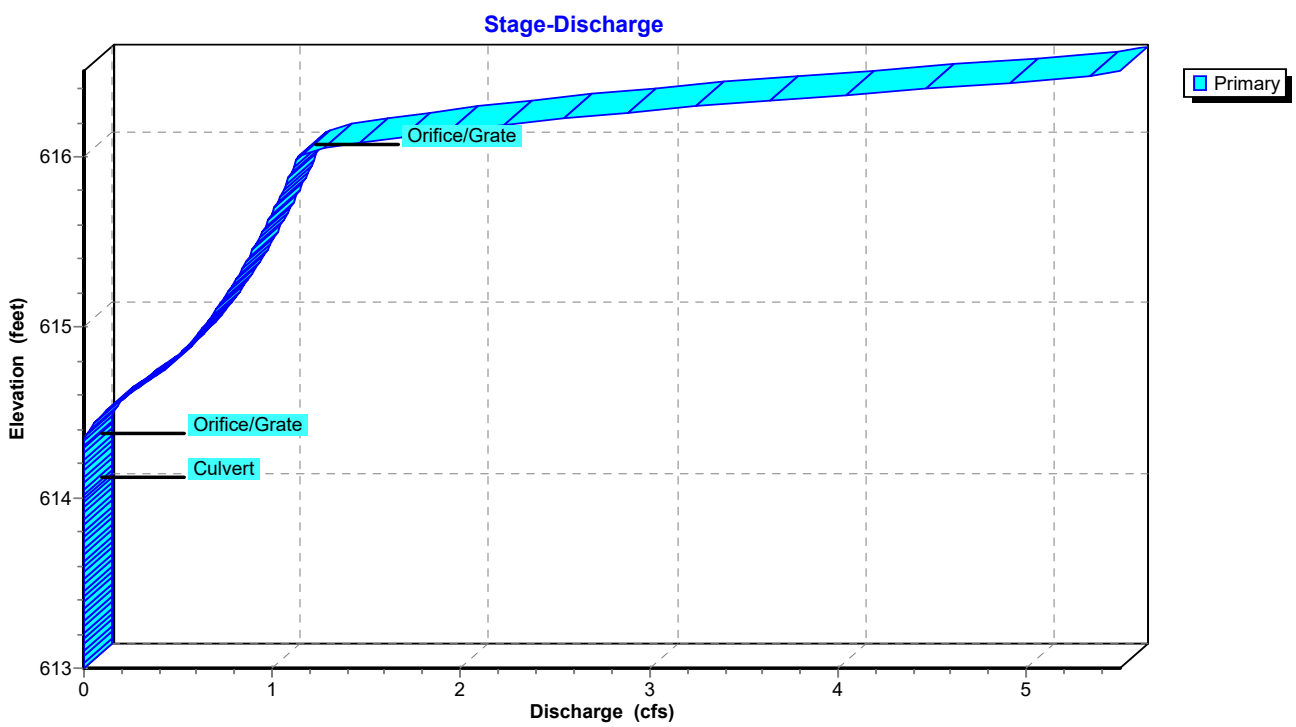
Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.55 cfs @ 12.46 hrs HW=614.89' (Free Discharge)
└─**1=Culvert** (Passes 0.55 cfs of 2.74 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.55 cfs @ 2.81 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

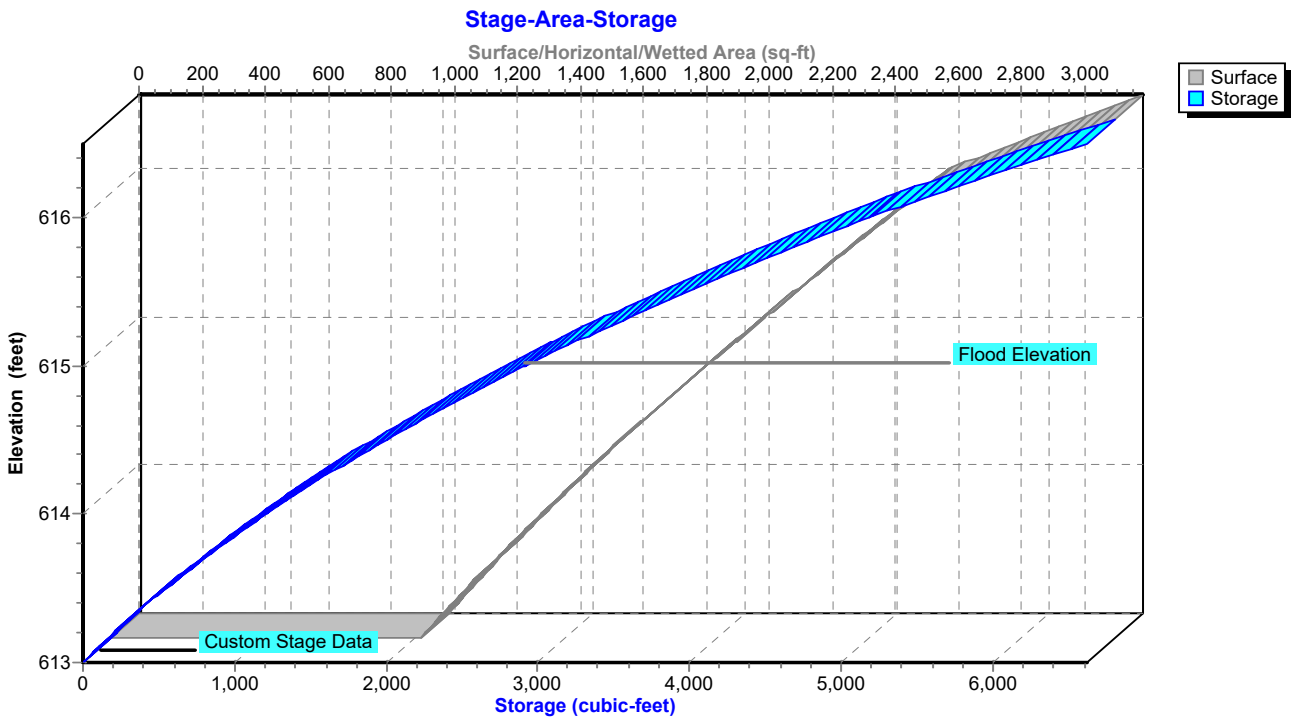
Pond 1P: DETENTION BASIN



Pond 1P: DETENTION BASIN



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

[58] Hint: Peaked 1.10' above defined flood level

Inflow Area = 1.140 ac, 75.44% Impervious, Inflow Depth > 3.82" for 10-YEAR event
Inflow = 4.95 cfs @ 12.09 hrs, Volume= 0.363 af
Outflow = 2.12 cfs @ 12.28 hrs, Volume= 0.296 af, Atten= 57%, Lag= 11.9 min
Primary = 2.12 cfs @ 12.28 hrs, Volume= 0.296 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.07' @ 12.28 hrs Surf.Area= 3,355 sf Storage= 6,416 cf
Flood Elev= 612.97' Surf.Area= 3,444 sf Storage= 3,524 cf

Plug-Flow detention time= 142.8 min calculated for 0.296 af (82% of inflow)
Center-of-Mass det. time= 71.4 min (864.9 - 793.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.25'	4,007 cf	**27.50'W x 122.00'L x 4.50'H Field A** 15,098 cf Overall - 5,081 cf Embedded = 10,017 cf x 40.0% Voids
#2A	611.75'	5,081 cf	**CMP Round- 36** x 36 Inside #1 Effective Size= 36.0"W x 36.0"H => 7.06 sf x 20.00'L = 141.1 cf Overall Size= 36.0"W x 36.0"H x 20.00'L 6 Rows of 6 Chambers
#3	612.25'	88 cf	**15.0" Round Pipe Storage** L= 72.0'
		9,176 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	612.25'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 612.25' / 612.25' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	612.60'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	613.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	615.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.12 cfs @ 12.28 hrs HW=614.07' (Free Discharge)
└─**1=Culvert** (Passes 2.12 cfs of 5.56 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.05 cfs @ 5.33 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.08 cfs @ 3.09 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round- 36 (Round Corrugated Metal Pipe)
Effective Size= 36.0"W x 36.0"H => 7.06 sf x 20.00'L = 141.1 cf
Overall Size= 36.0"W x 36.0"H x 20.00'L

36.0" Wide + 18.0" Spacing = 54.0" C-C Row Spacing

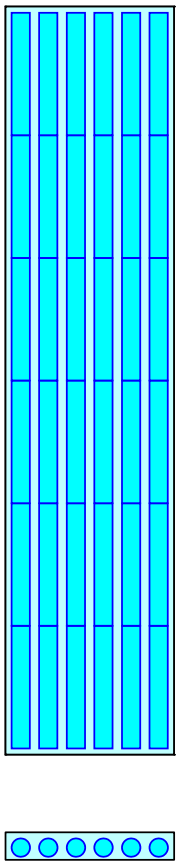
6 Chambers/Row x 20.00' Long = 120.00' Row Length +12.0" End Stone x 2 = 122.00' Base Length
6 Rows x 36.0" Wide + 18.0" Spacing x 5 + 12.0" Side Stone x 2 = 27.50' Base Width
6.0" Base + 36.0" Chamber Height + 12.0" Cover = 4.50' Field Height

36 Chambers x 141.1 cf = 5,080.8 cf Chamber Storage

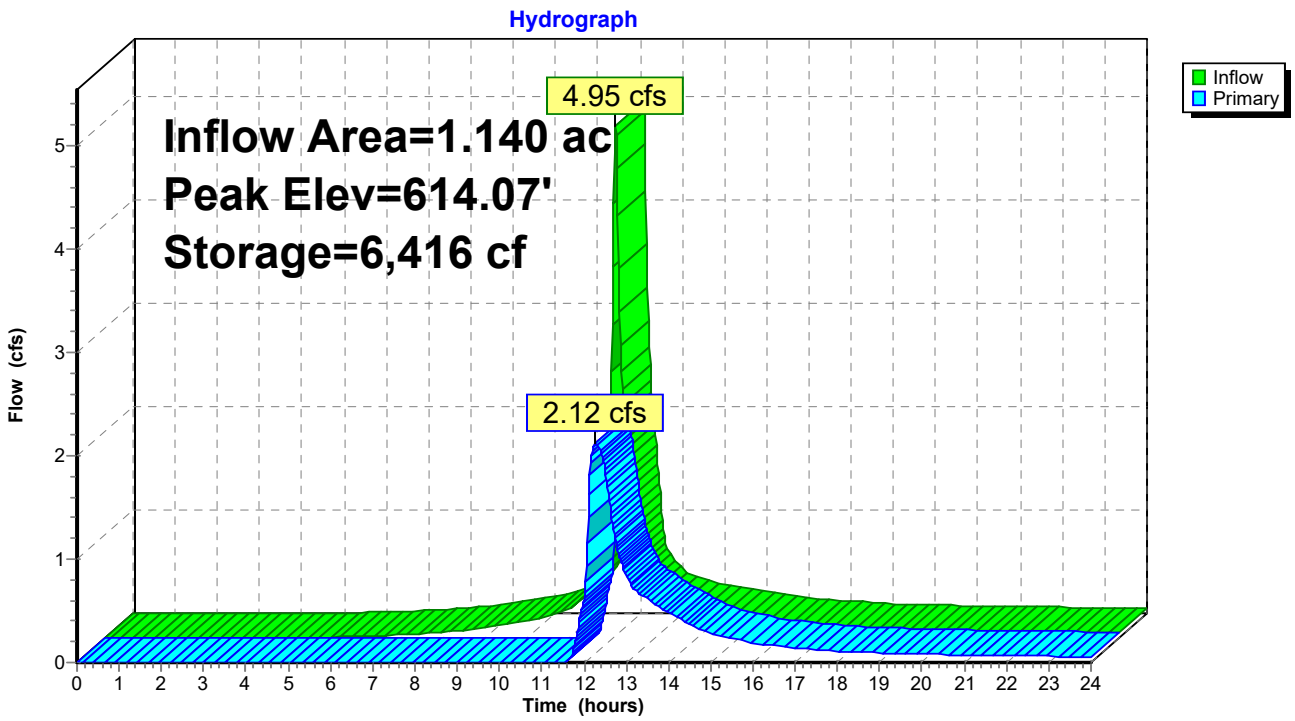
15,097.5 cf Field - 5,080.8 cf Chambers = 10,016.7 cf Stone x 40.0% Voids = 4,006.7 cf Stone Storage

Chamber Storage + Stone Storage = 9,087.5 cf = 0.209 af
Overall Storage Efficiency = 60.2%
Overall System Size = 122.00' x 27.50' x 4.50'

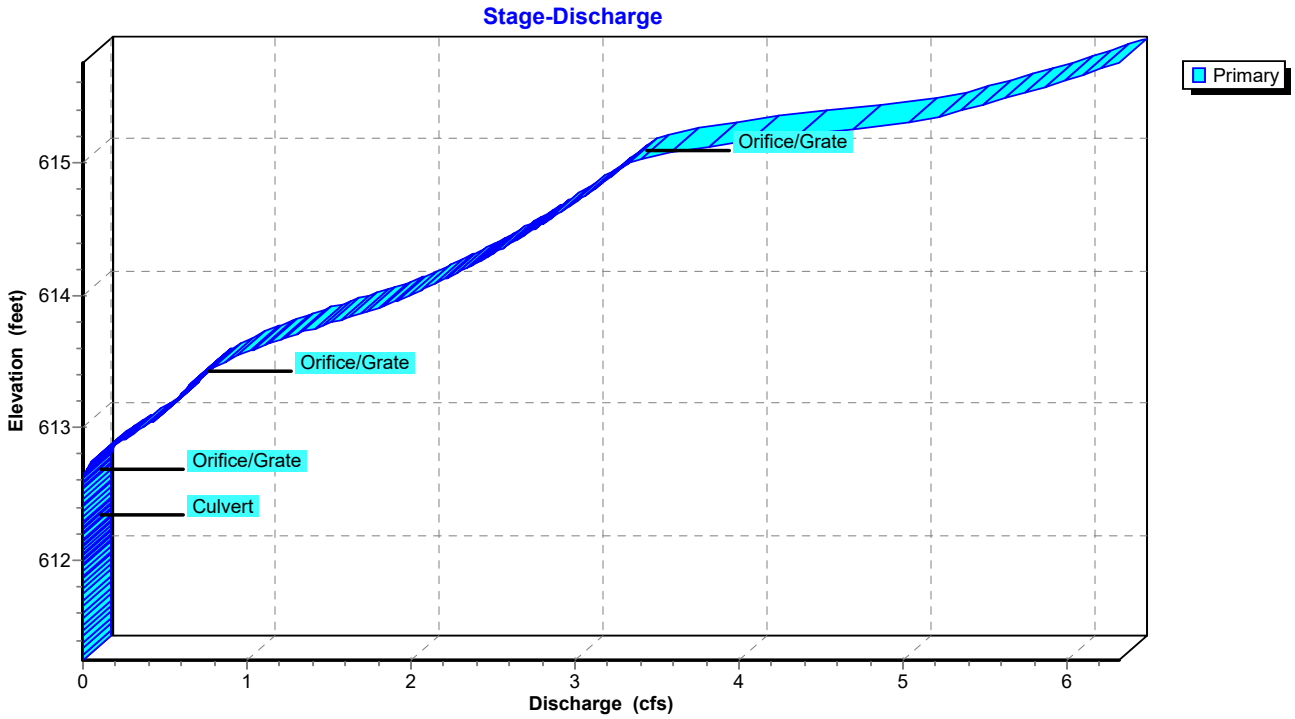
36 Chambers
559.2 cy Field
371.0 cy Stone



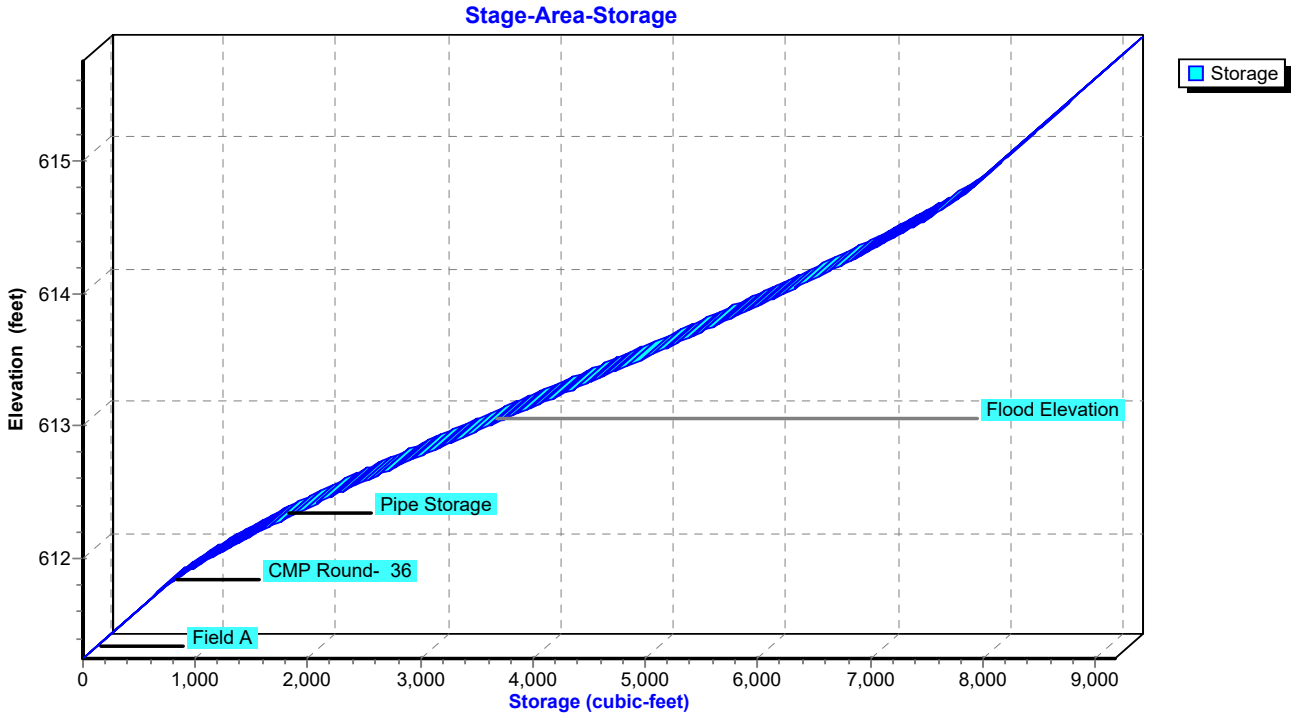
Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 4.81" for 10-YEAR event
Inflow = 0.49 cfs @ 12.08 hrs, Volume= 0.040 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.16' @ 24.00 hrs Surf.Area= 607 sf Storage= 1,728 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	610.00'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	610.75'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	615.75'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=610.00' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

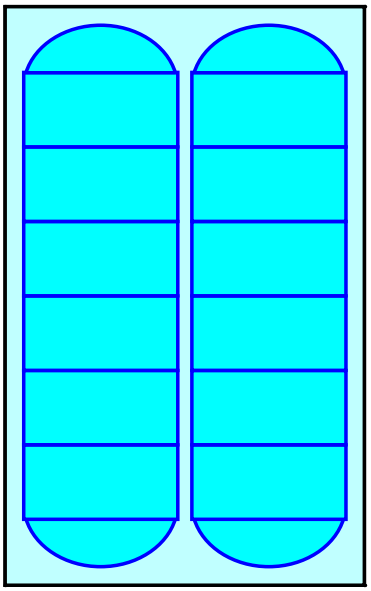
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

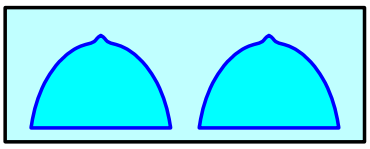
12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

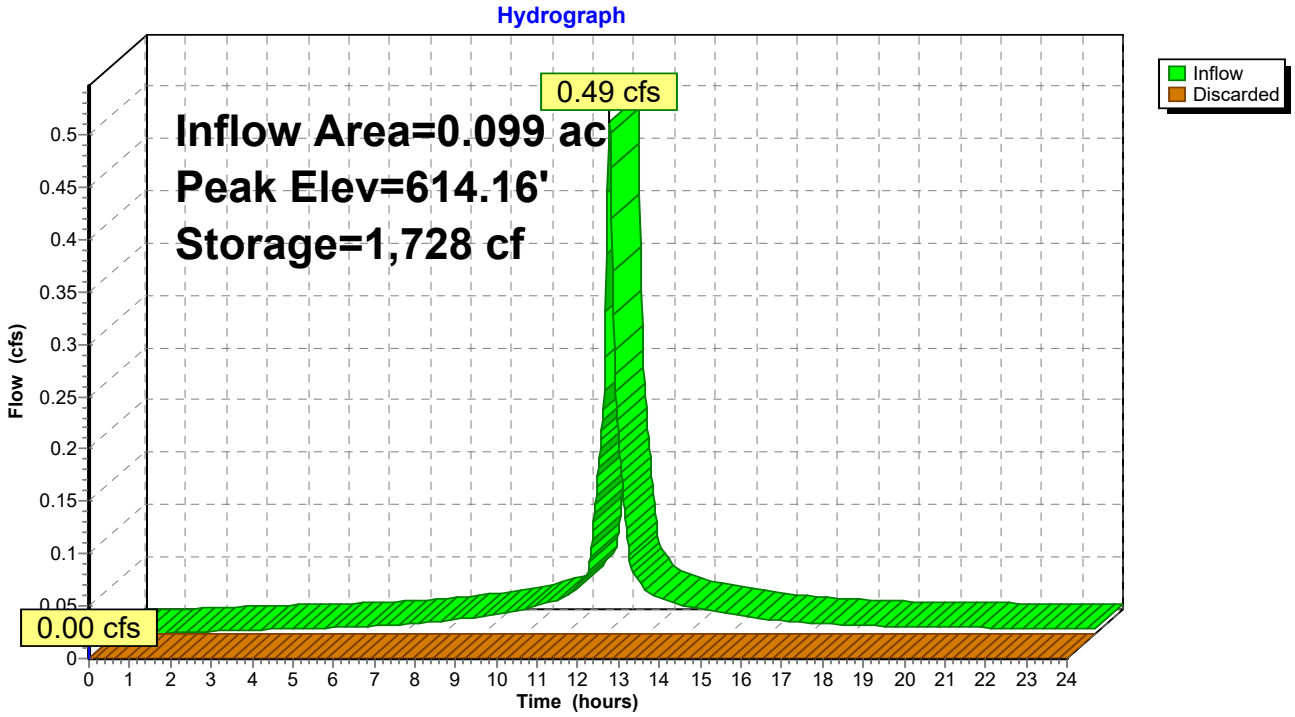
Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

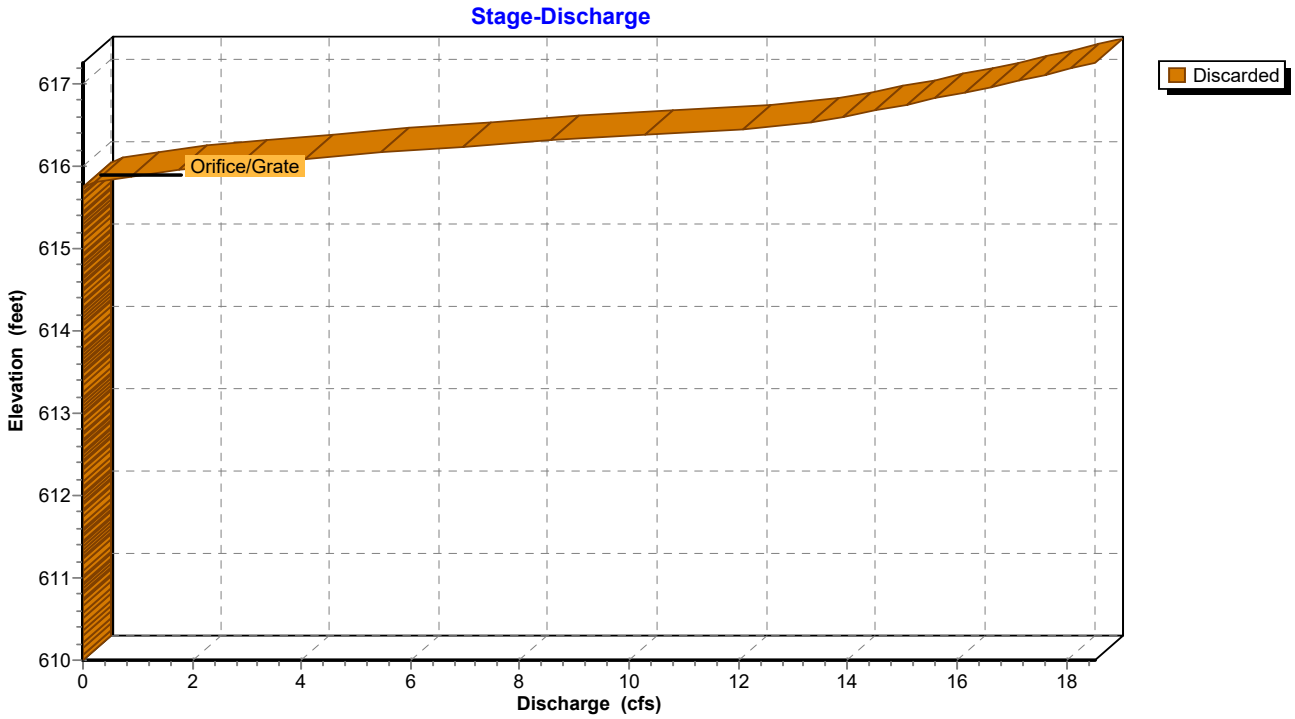




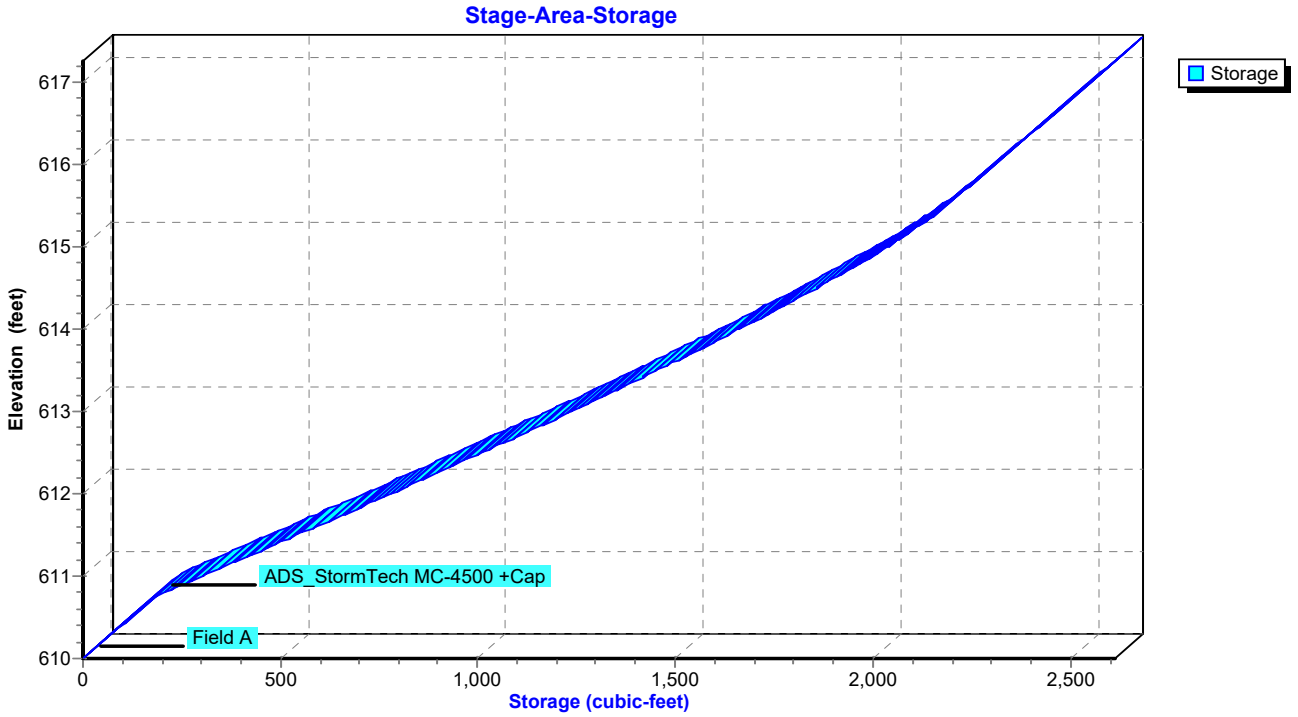
Pond 3P: ROOF INFILTRATION



Pond 3P: ROOF INFILTRATION



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 4.81" for 10-YEAR event
Inflow = 1.62 cfs @ 12.08 hrs, Volume= 0.131 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.19' @ 24.00 hrs Surf.Area= 0.049 ac Storage= 0.131 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	610.50'	0.082 af	**28.50'W x 75.54'L x 6.75'H Field A** 0.334 af Overall - 0.130 af Embedded = 0.204 af x 40.0% Voids
#2A	611.25'	0.130 af	**ADS_StormTech MC-4500 +Cap** x 51 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 3 Rows of 17 Chambers Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf
		0.211 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	618.25'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=610.50' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

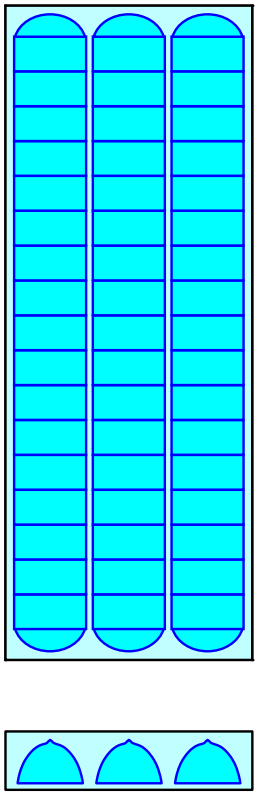
17 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 73.54' Row Length +12.0" End Stone x 2 = 75.54' Base Length
3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width
9.0" Base + 60.0" Chamber Height + 12.0" Cover = 6.75' Field Height

51 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 3 Rows = 5,645.2 cf Chamber Storage

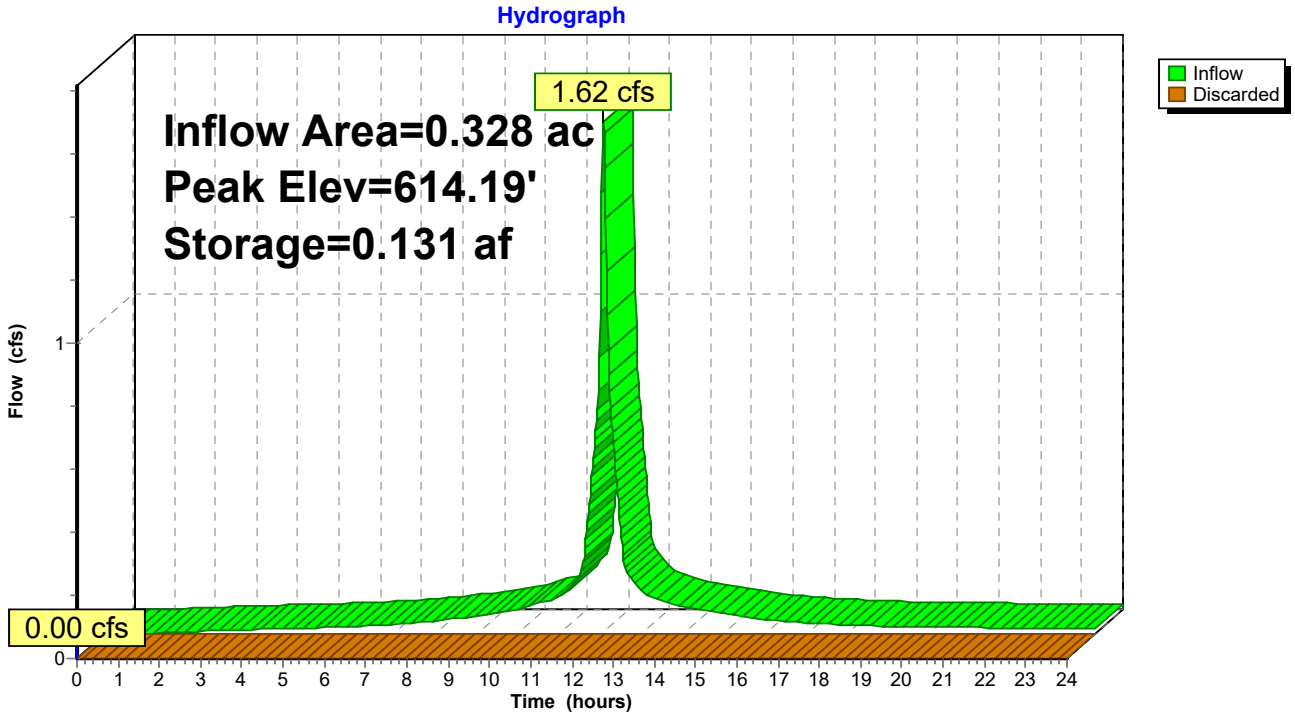
14,532.3 cf Field - 5,645.2 cf Chambers = 8,887.1 cf Stone x 40.0% Voids = 3,554.8 cf Stone Storage

Chamber Storage + Stone Storage = 9,200.1 cf = 0.211 af
Overall Storage Efficiency = 63.3%
Overall System Size = 75.54' x 28.50' x 6.75'

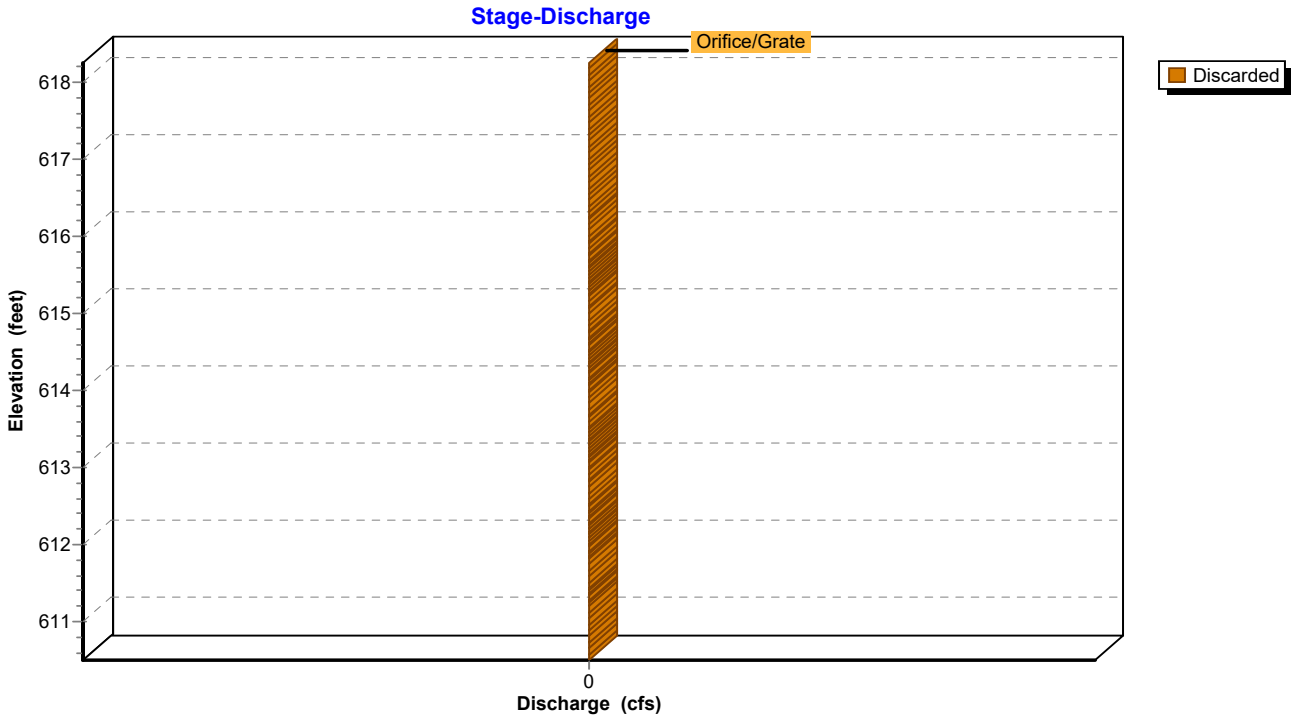
51 Chambers
538.2 cy Field
329.2 cy Stone



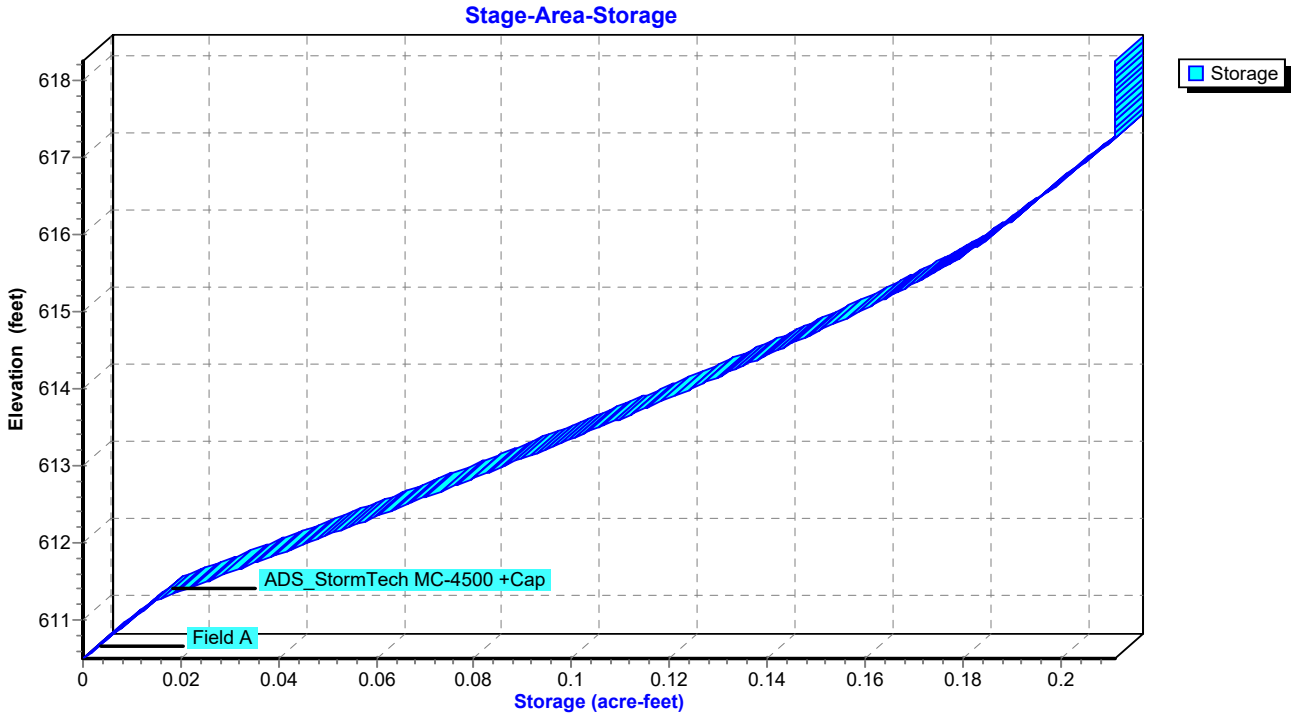
Pond 4P: ROOF INFILTRATION



Pond 4P: ROOF INFILTRATION



Pond 4P: ROOF INFILTRATION



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>2.08"
Tc=6.0 min CN=61 Runoff=0.33 cfs 0.024 af

Subcatchment P2-1: DISCHARGE TO Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>3.78"
Tc=6.0 min CN=79 Runoff=2.65 cfs 0.189 af

Subcatchment P2-2: DISCHARGE TO Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>4.85"
Tc=6.0 min CN=89 Runoff=6.21 cfs 0.461 af

Subcatchment P2-3: DISCHARGE TO THE Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>1.67"
Tc=6.0 min CN=56 Runoff=2.22 cfs 0.173 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.59 cfs 0.048 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.71 cfs 0.058 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.54 cfs 0.044 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.72 cfs 0.059 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=5.21 cfs 0.714 af
Outflow=5.21 cfs 0.714 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=5.51 cfs 0.738 af
Outflow=5.51 cfs 0.738 af

Pond 1P: DETENTION BASIN Peak Elev=615.27' Storage=3,461 cf Inflow=2.65 cfs 0.189 af
Outflow=0.80 cfs 0.147 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=614.56' Storage=7,496 cf Inflow=6.21 cfs 0.461 af
Outflow=2.83 cfs 0.393 af

Pond 3P: ROOF INFILTRATION Peak Elev=615.23' Storage=2,112 cf Inflow=0.59 cfs 0.048 af
Outflow=0.00 cfs 0.000 af

Pond 4P: ROOF INFILTRATION Peak Elev=615.06' Storage=0.161 af Inflow=1.96 cfs 0.161 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 3.557 ac Runoff Volume = 1.057 af Average Runoff Depth = 3.56"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

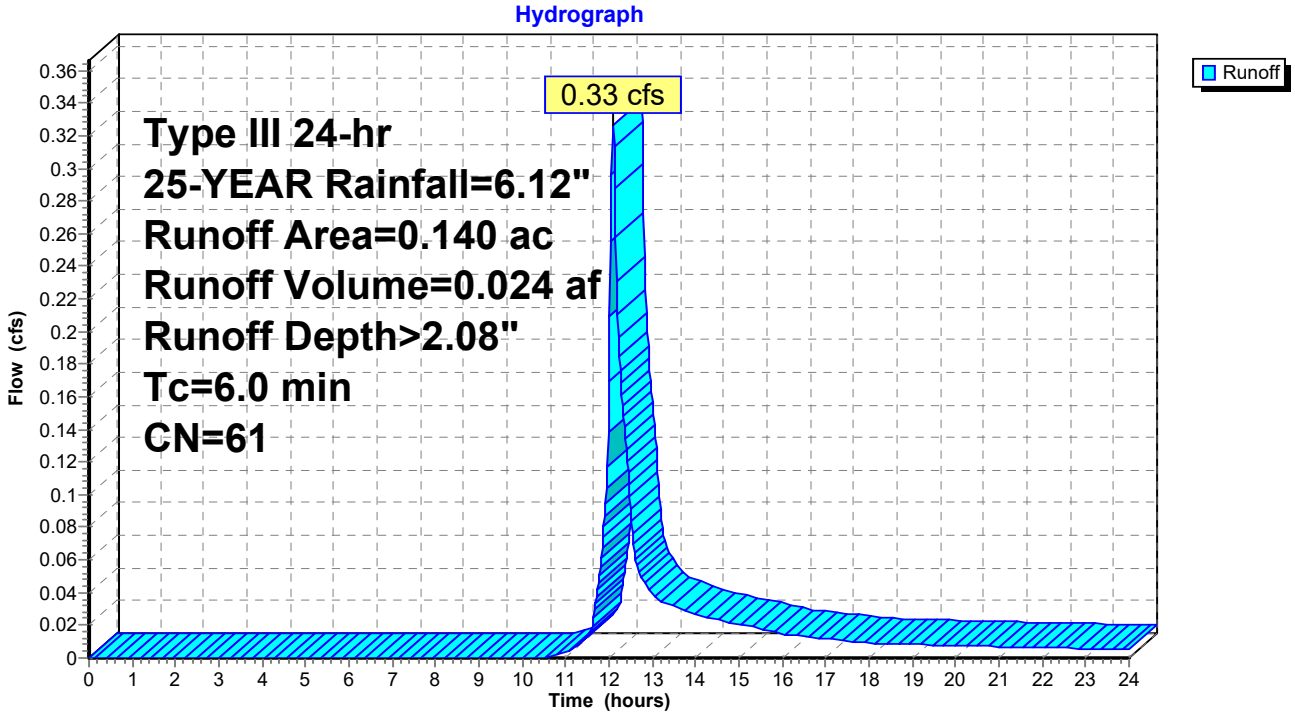
Runoff = 0.33 cfs @ 12.10 hrs, Volume= 0.024 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

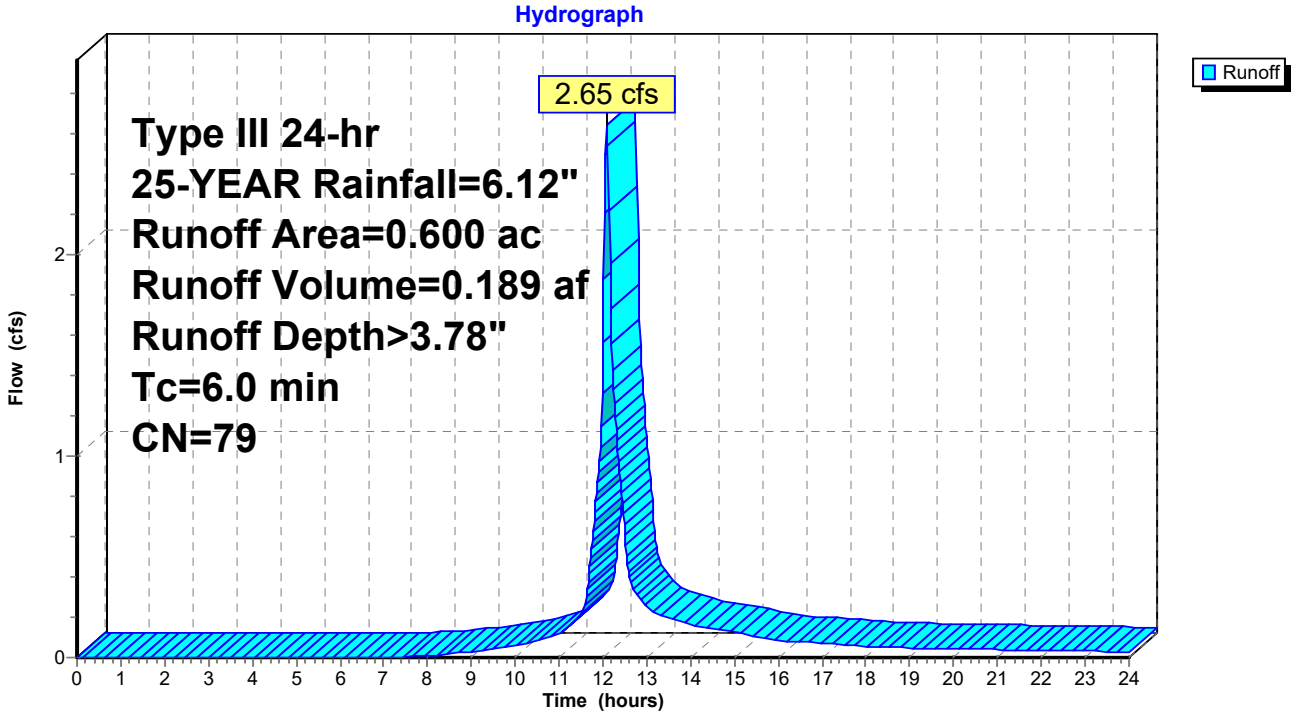
Runoff = 2.65 cfs @ 12.09 hrs, Volume= 0.189 af, Depth> 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

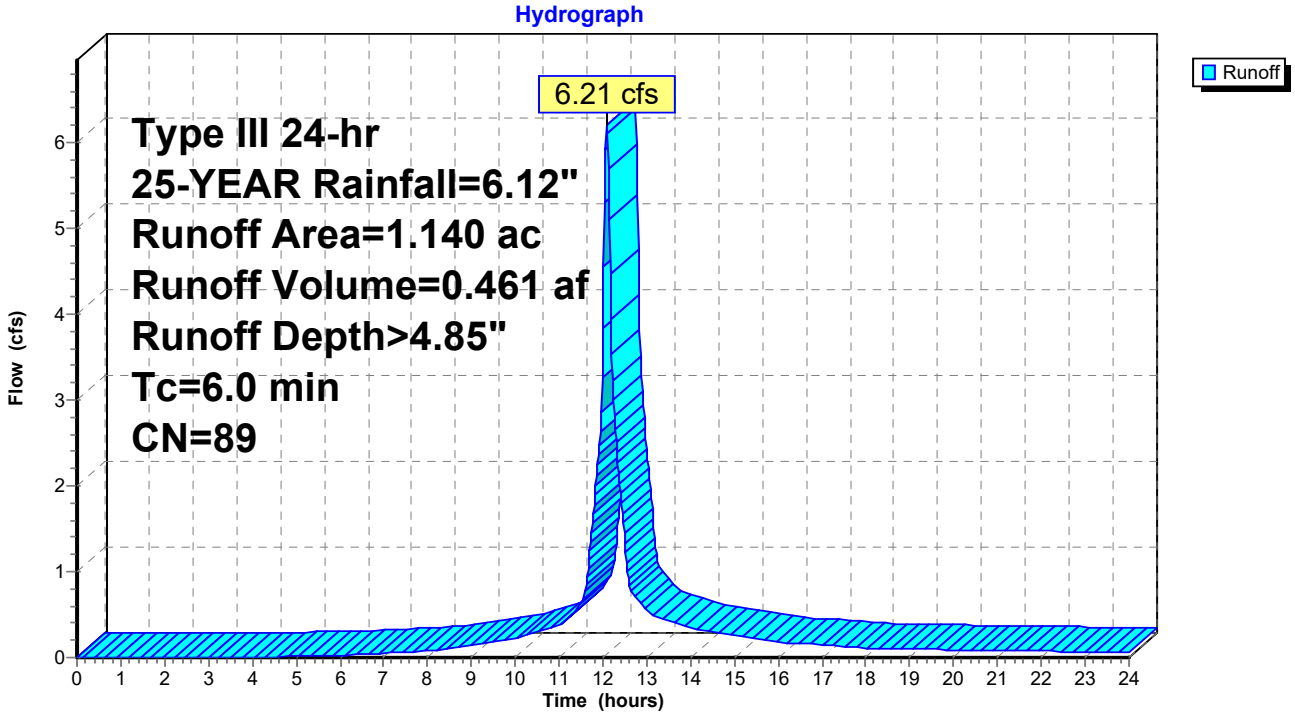
Runoff = 6.21 cfs @ 12.08 hrs, Volume= 0.461 af, Depth> 4.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

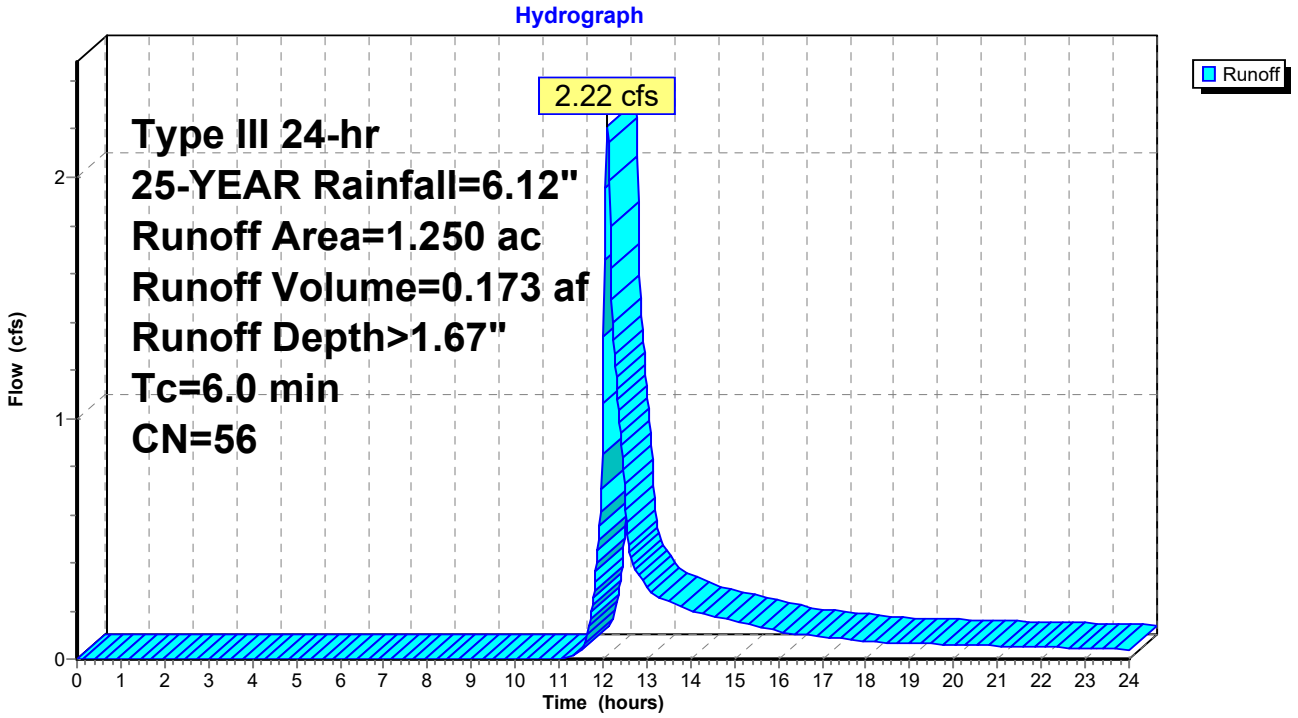
Runoff = 2.22 cfs @ 12.10 hrs, Volume= 0.173 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

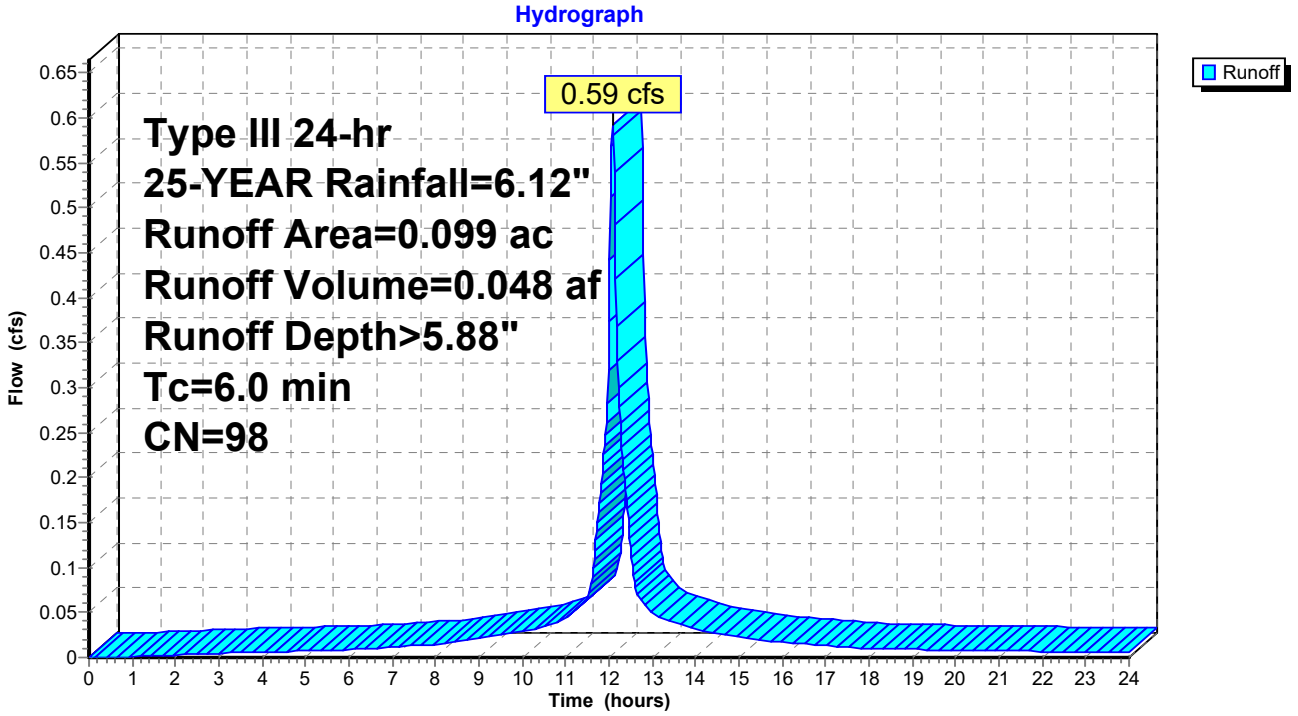
Runoff = 0.59 cfs @ 12.08 hrs, Volume= 0.048 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

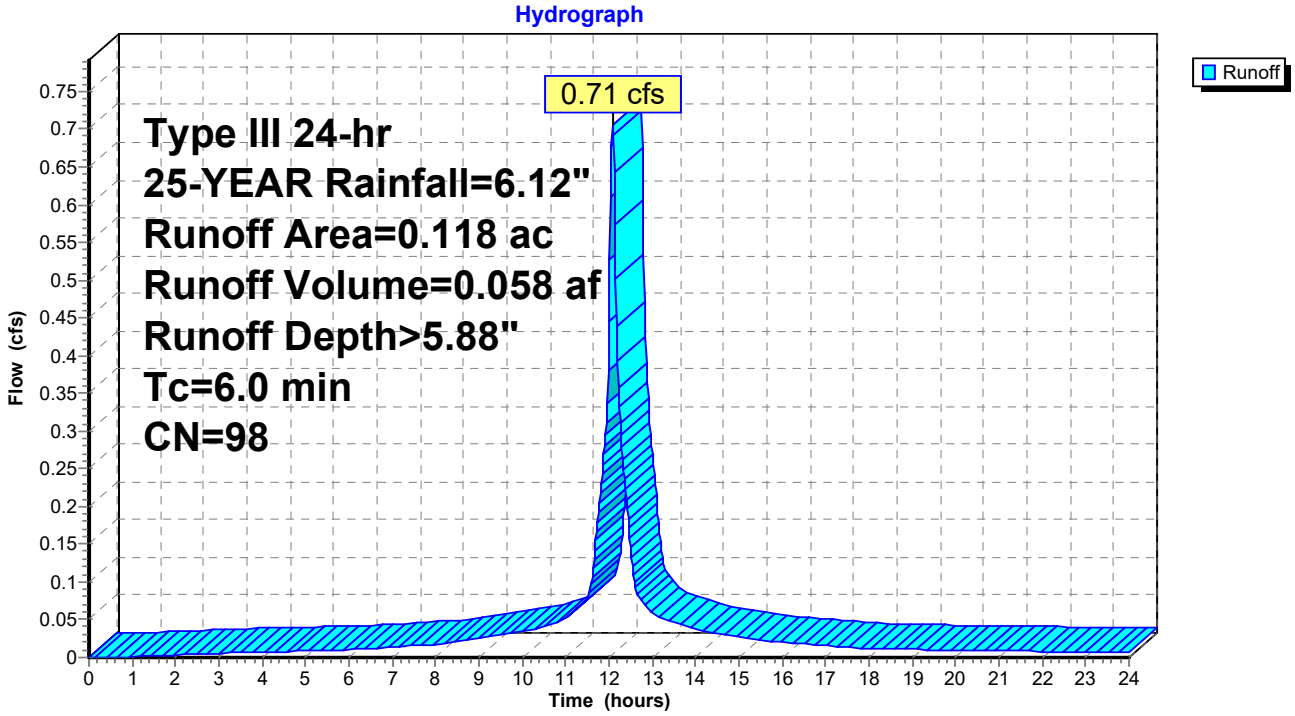
Runoff = 0.71 cfs @ 12.08 hrs, Volume= 0.058 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

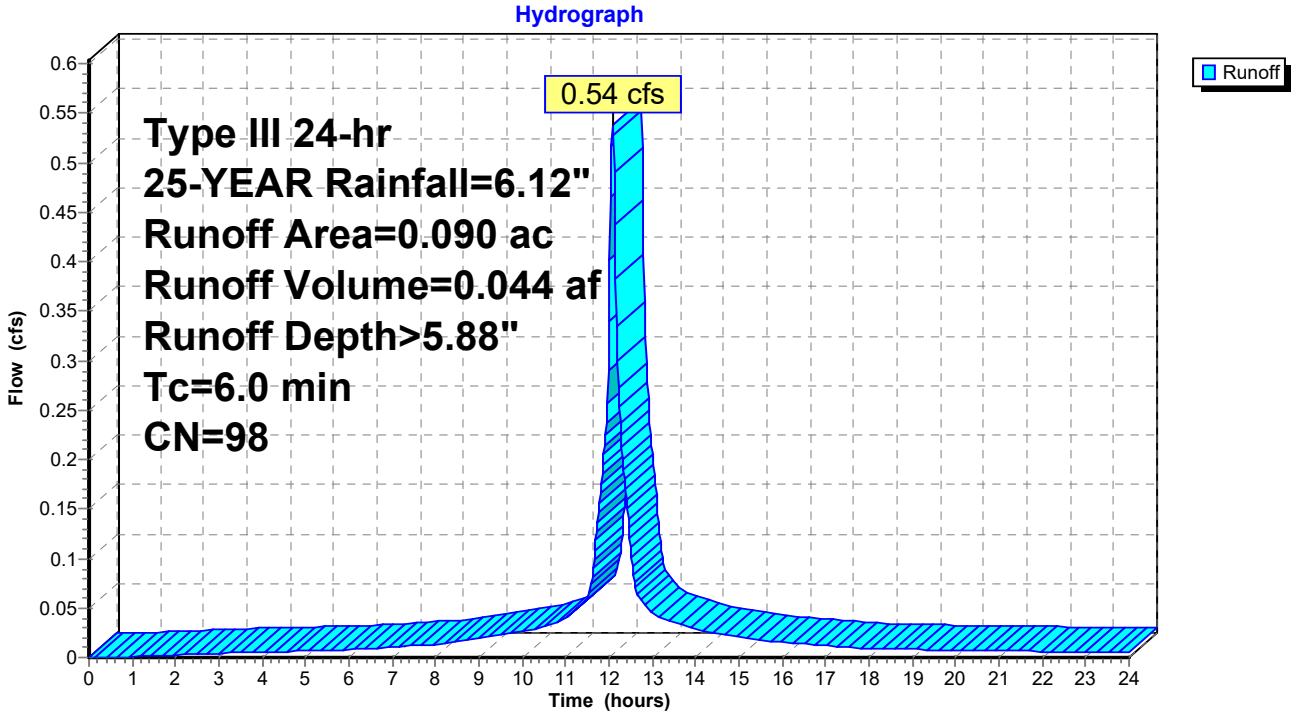
Runoff = 0.54 cfs @ 12.08 hrs, Volume= 0.044 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

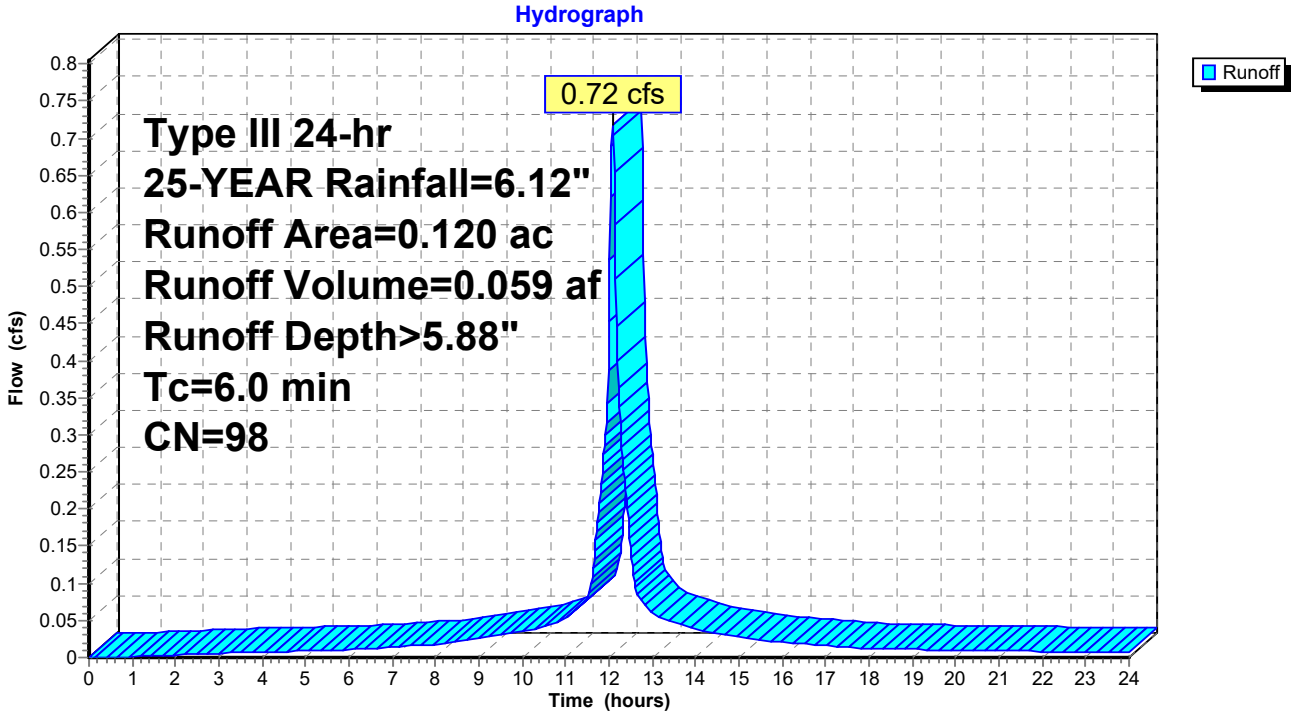
Runoff = 0.72 cfs @ 12.08 hrs, Volume= 0.059 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



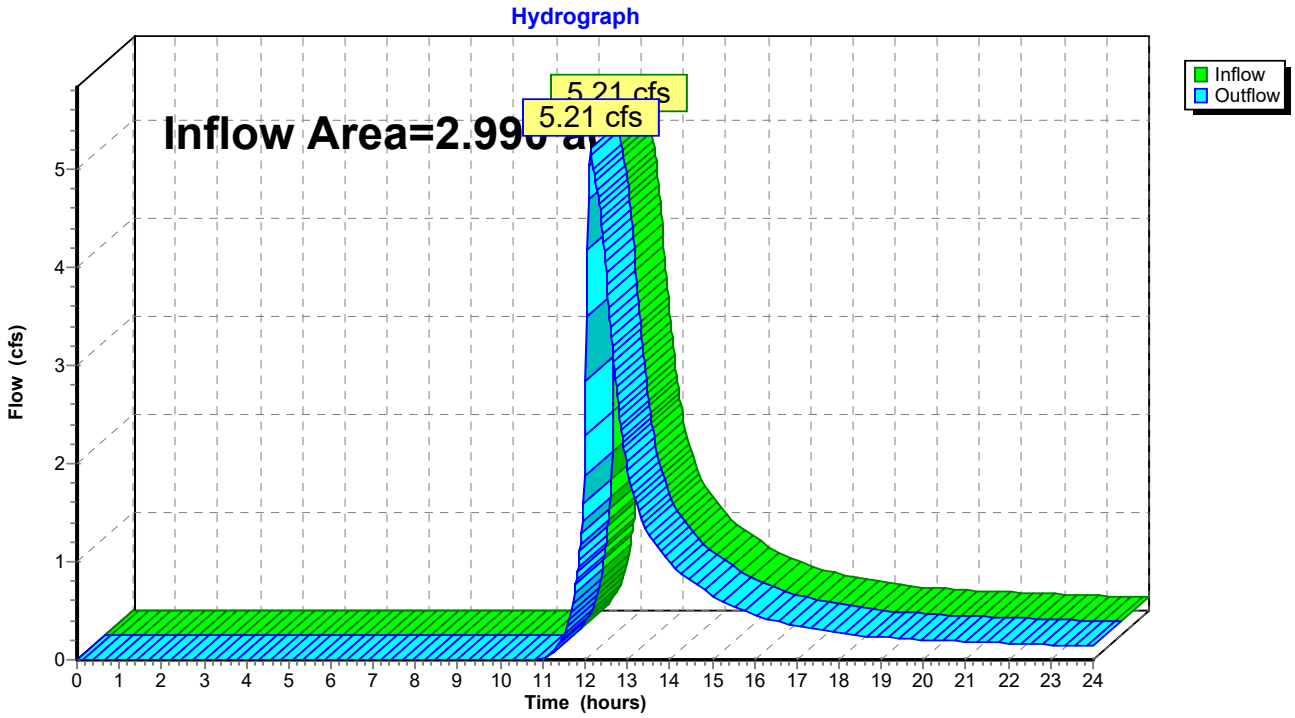
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.990 ac, 39.46% Impervious, Inflow Depth > 2.86" for 25-YEAR event
Inflow = 5.21 cfs @ 12.13 hrs, Volume= 0.714 af
Outflow = 5.21 cfs @ 12.13 hrs, Volume= 0.714 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



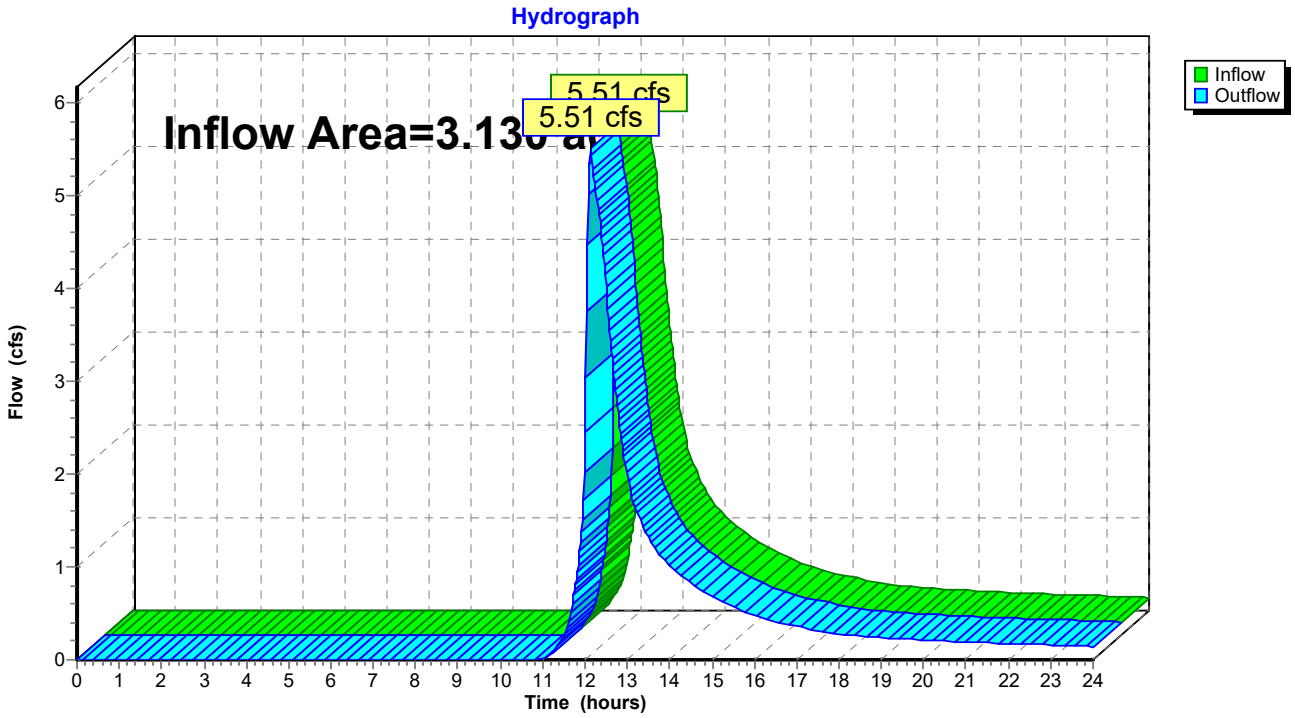
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.130 ac, 37.70% Impervious, Inflow Depth > 2.83" for 25-YEAR event
Inflow = 5.51 cfs @ 12.13 hrs, Volume= 0.738 af
Outflow = 5.51 cfs @ 12.13 hrs, Volume= 0.738 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

[58] Hint: Peaked 0.33' above defined flood level

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 3.78" for 25-YEAR event
Inflow = 2.65 cfs @ 12.09 hrs, Volume= 0.189 af
Outflow = 0.80 cfs @ 12.43 hrs, Volume= 0.147 af, Atten= 70%, Lag= 20.4 min
Primary = 0.80 cfs @ 12.43 hrs, Volume= 0.147 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.27' @ 12.43 hrs Surf.Area= 2,131 sf Storage= 3,461 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 147.6 min calculated for 0.147 af (78% of inflow)
Center-of-Mass det. time= 66.7 min (881.9 - 815.2)

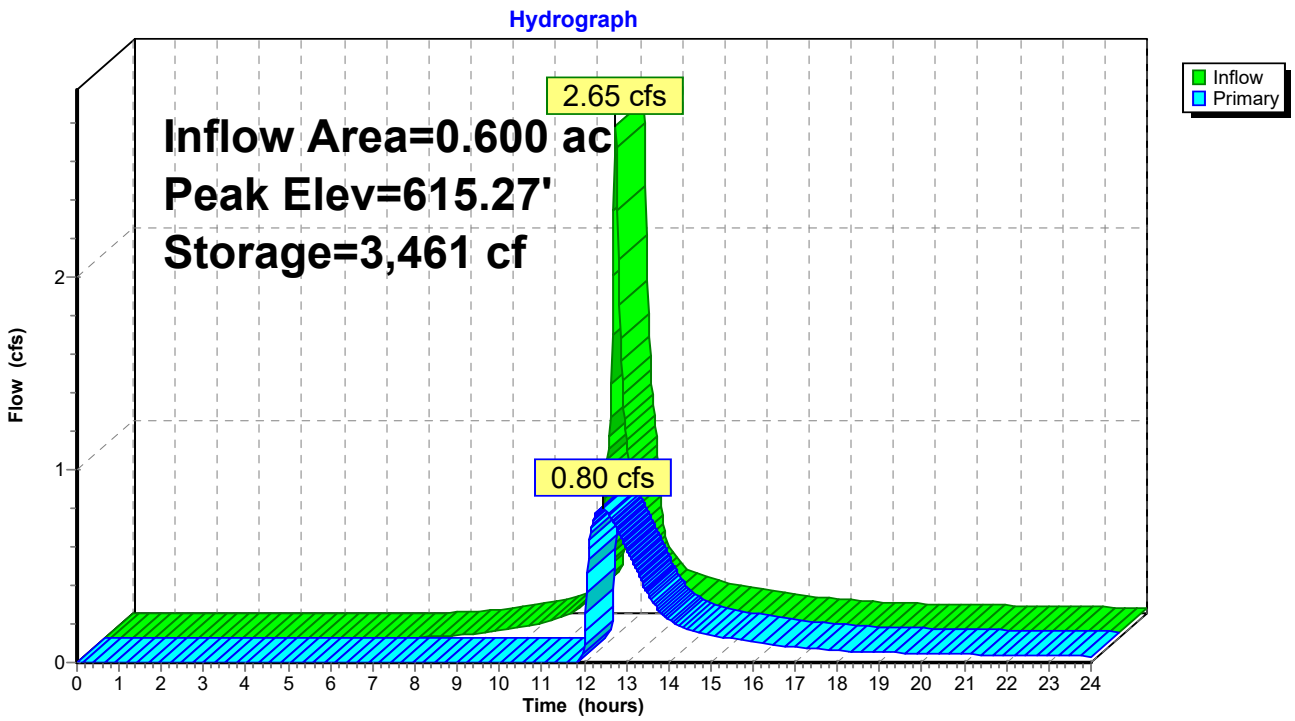
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

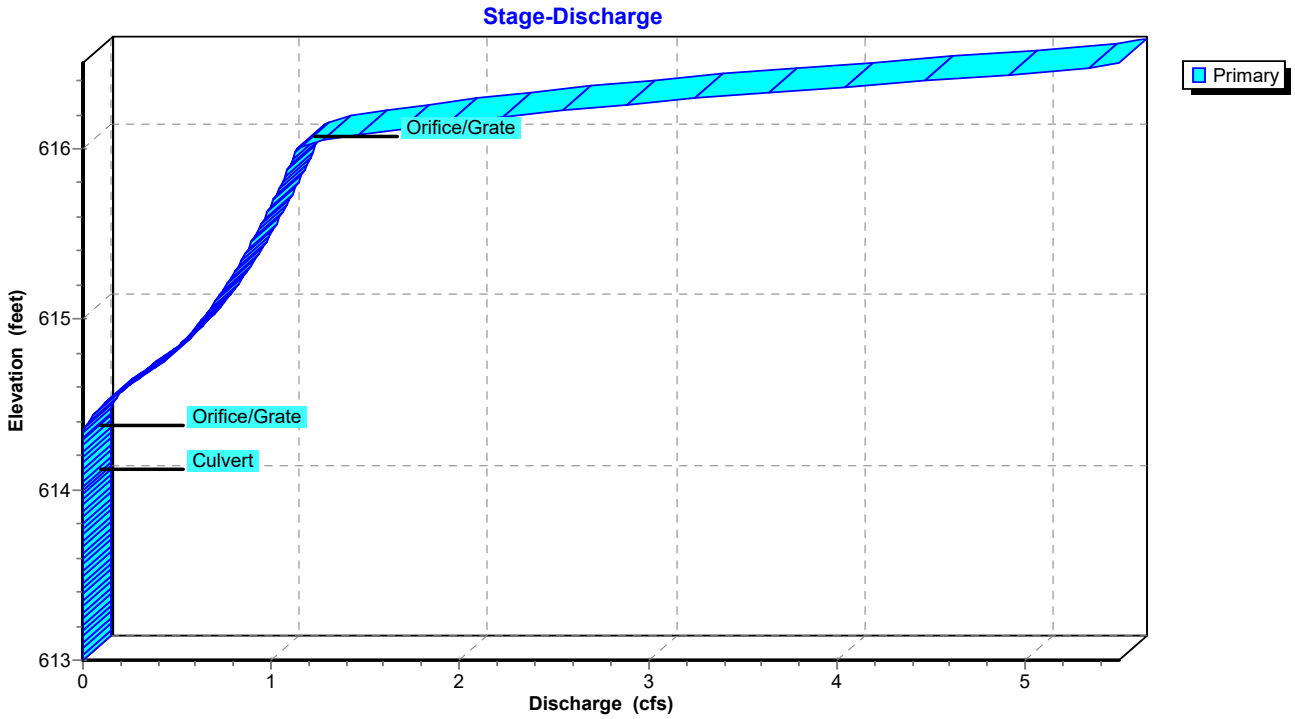
Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.80 cfs @ 12.43 hrs HW=615.27' (Free Discharge)
└─**1=Culvert** (Passes 0.80 cfs of 4.57 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.80 cfs @ 4.07 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

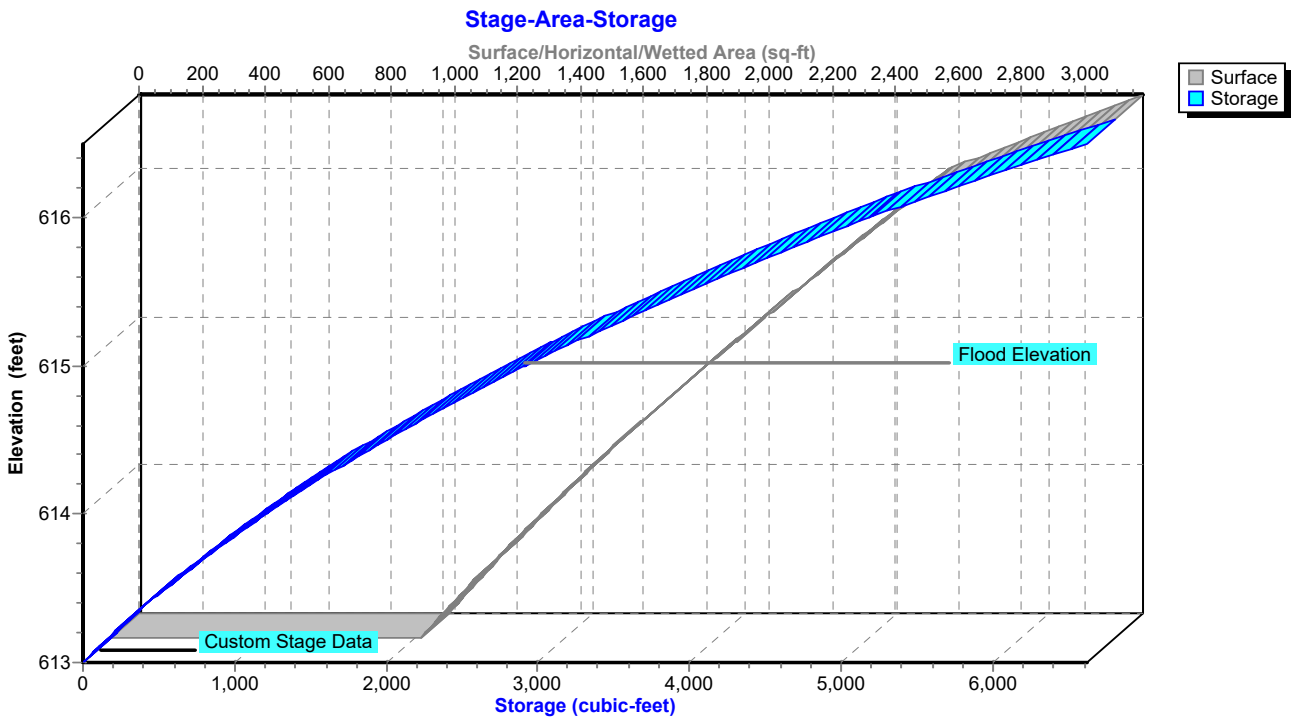
Pond 1P: DETENTION BASIN



Pond 1P: DETENTION BASIN



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

[58] Hint: Peaked 1.59' above defined flood level

Inflow Area = 1.140 ac, 75.44% Impervious, Inflow Depth > 4.85" for 25-YEAR event
Inflow = 6.21 cfs @ 12.08 hrs, Volume= 0.461 af
Outflow = 2.83 cfs @ 12.26 hrs, Volume= 0.393 af, Atten= 54%, Lag= 10.5 min
Primary = 2.83 cfs @ 12.26 hrs, Volume= 0.393 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.56' @ 12.26 hrs Surf.Area= 3,355 sf Storage= 7,496 cf
Flood Elev= 612.97' Surf.Area= 3,444 sf Storage= 3,524 cf

Plug-Flow detention time= 128.2 min calculated for 0.393 af (85% of inflow)
Center-of-Mass det. time= 66.0 min (852.9 - 787.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.25'	4,007 cf	**27.50'W x 122.00'L x 4.50'H Field A** 15,098 cf Overall - 5,081 cf Embedded = 10,017 cf x 40.0% Voids
#2A	611.75'	5,081 cf	**CMP Round- 36** x 36 Inside #1 Effective Size= 36.0"W x 36.0"H => 7.06 sf x 20.00'L = 141.1 cf Overall Size= 36.0"W x 36.0"H x 20.00'L 6 Rows of 6 Chambers
#3	612.25'	88 cf	**15.0" Round Pipe Storage** L= 72.0'
		9,176 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	612.25'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 612.25' / 612.25' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	612.60'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	613.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	615.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.83 cfs @ 12.26 hrs HW=614.56' (Free Discharge)
└─**1=Culvert** (Passes 2.83 cfs of 7.55 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.24 cfs @ 6.29 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.59 cfs @ 4.55 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round- 36 (Round Corrugated Metal Pipe)
Effective Size= 36.0"W x 36.0"H => 7.06 sf x 20.00'L = 141.1 cf
Overall Size= 36.0"W x 36.0"H x 20.00'L

36.0" Wide + 18.0" Spacing = 54.0" C-C Row Spacing

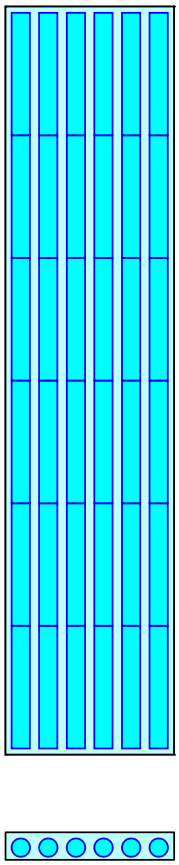
6 Chambers/Row x 20.00' Long = 120.00' Row Length +12.0" End Stone x 2 = 122.00' Base Length
6 Rows x 36.0" Wide + 18.0" Spacing x 5 + 12.0" Side Stone x 2 = 27.50' Base Width
6.0" Base + 36.0" Chamber Height + 12.0" Cover = 4.50' Field Height

36 Chambers x 141.1 cf = 5,080.8 cf Chamber Storage

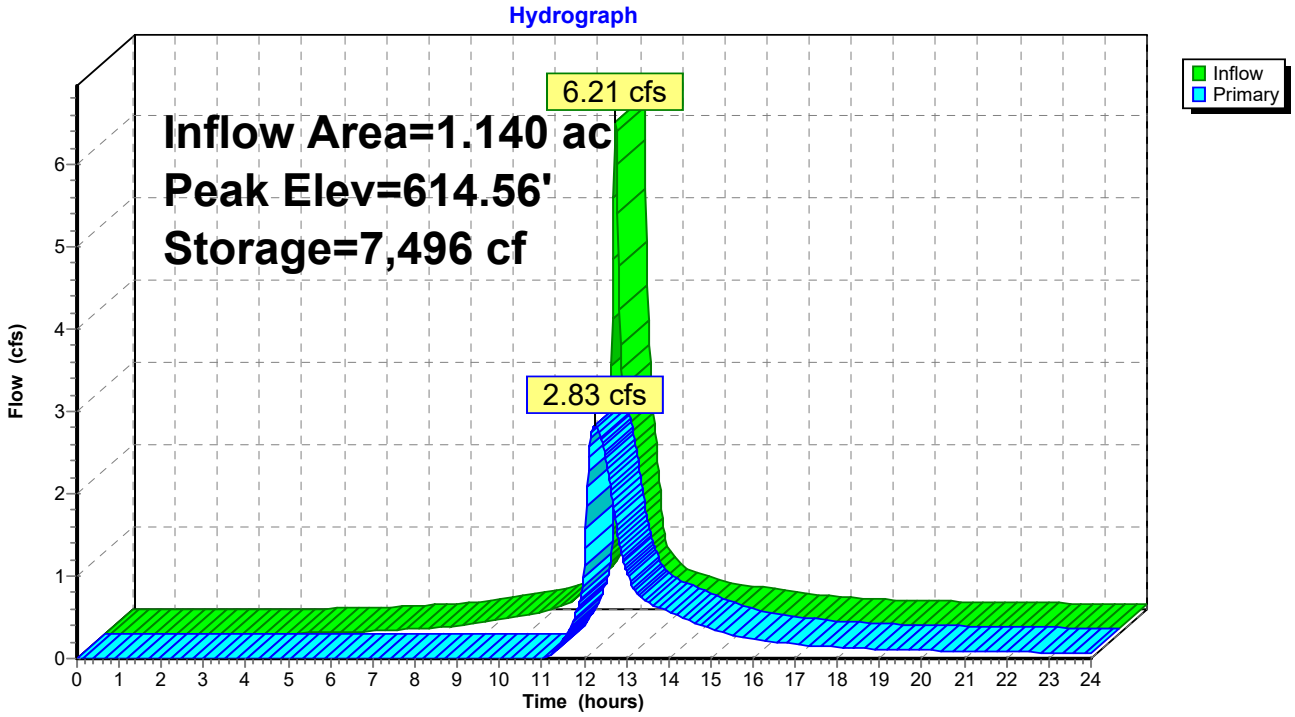
15,097.5 cf Field - 5,080.8 cf Chambers = 10,016.7 cf Stone x 40.0% Voids = 4,006.7 cf Stone Storage

Chamber Storage + Stone Storage = 9,087.5 cf = 0.209 af
Overall Storage Efficiency = 60.2%
Overall System Size = 122.00' x 27.50' x 4.50'

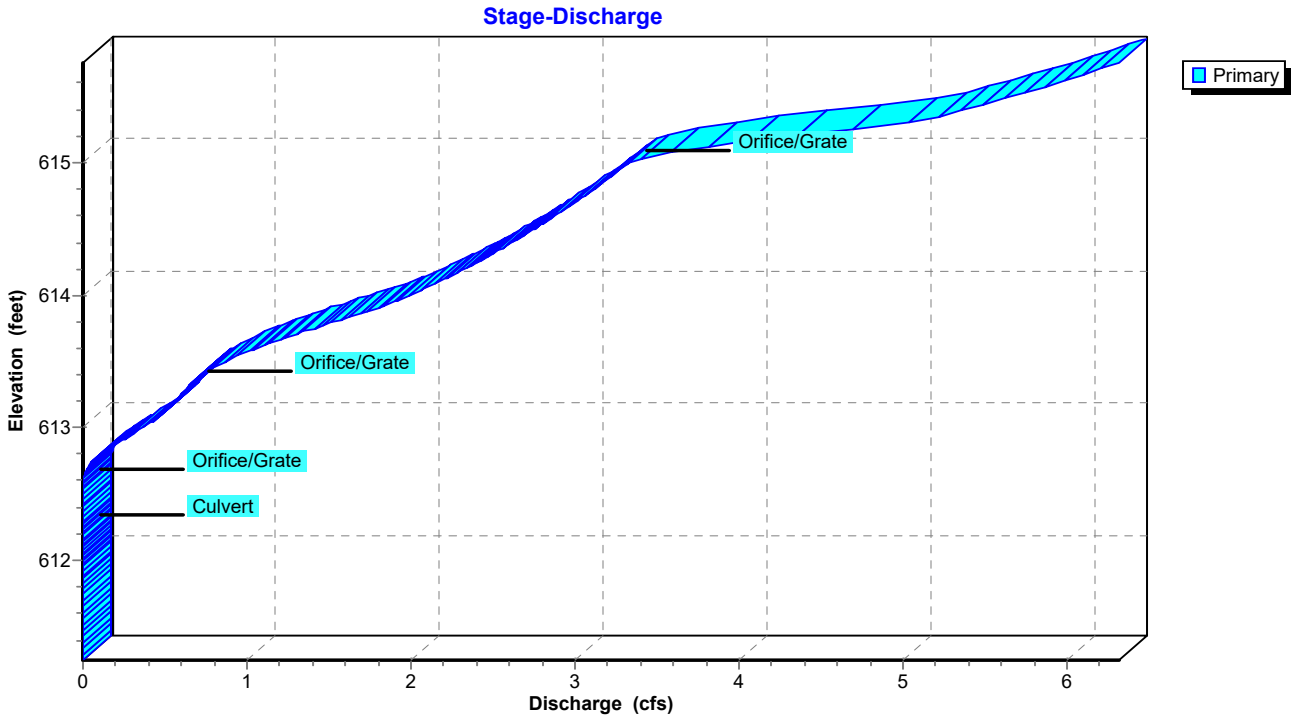
36 Chambers
559.2 cy Field
371.0 cy Stone



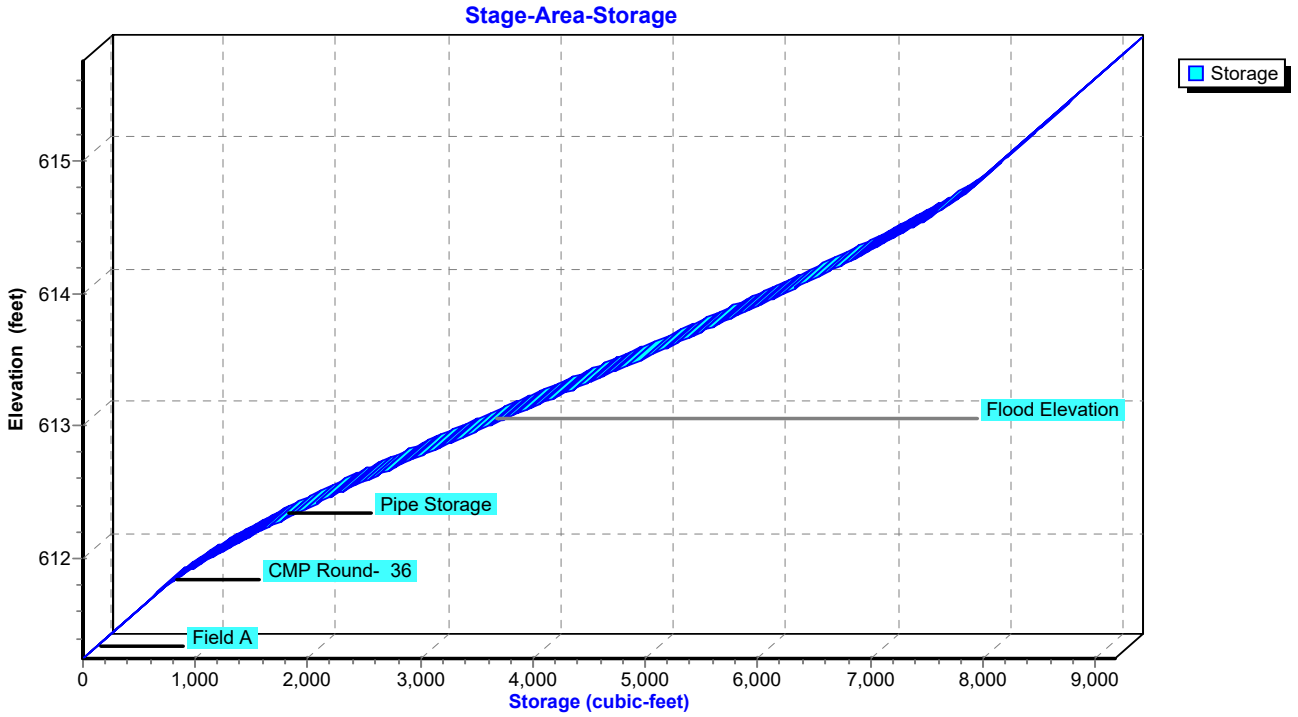
Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 5.88" for 25-YEAR event
Inflow = 0.59 cfs @ 12.08 hrs, Volume= 0.048 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.23' @ 24.00 hrs Surf.Area= 607 sf Storage= 2,112 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	610.00'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	610.75'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	615.75'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=610.00' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

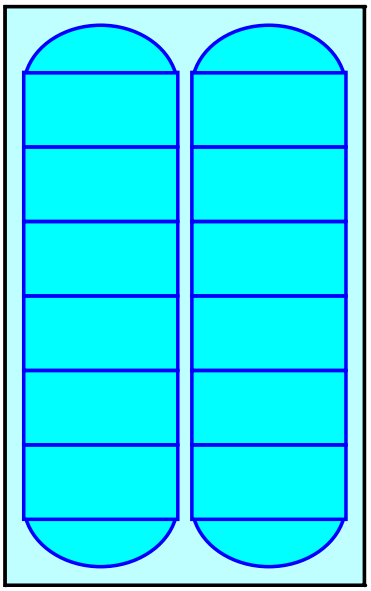
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

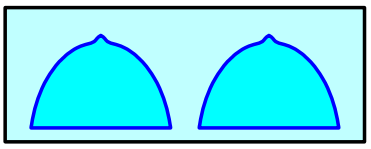
12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

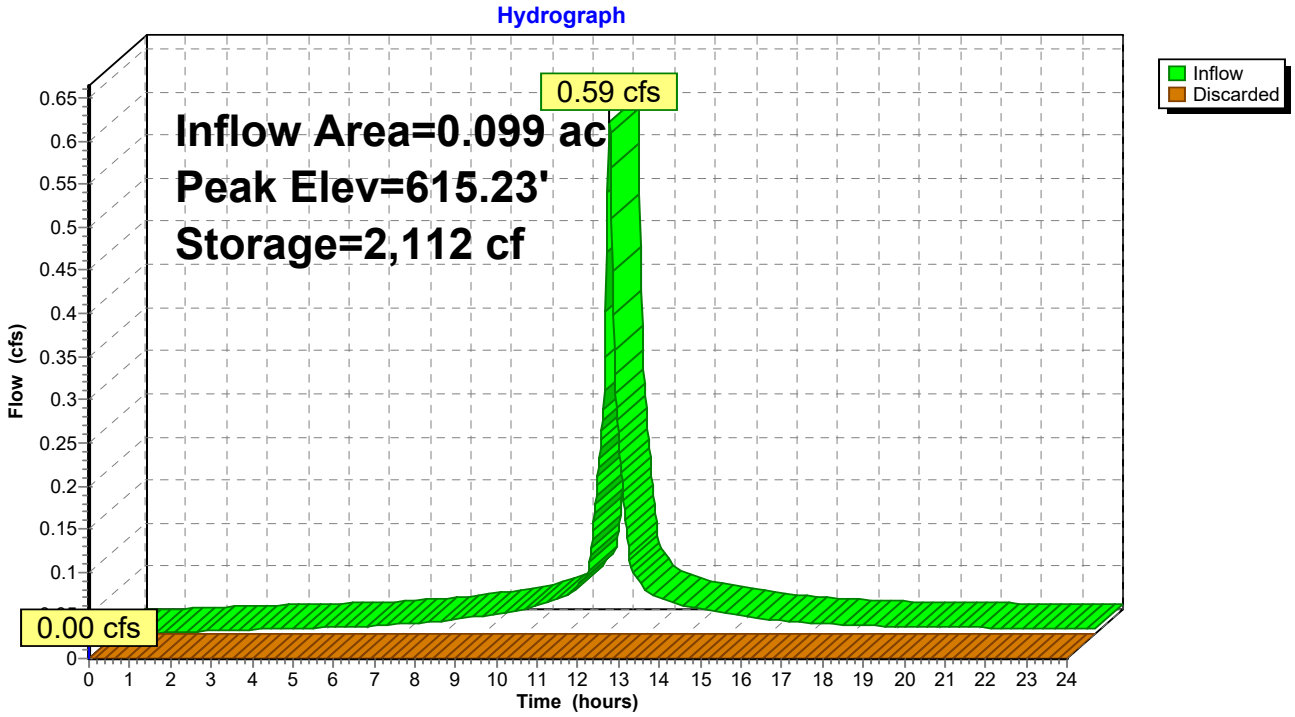
Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

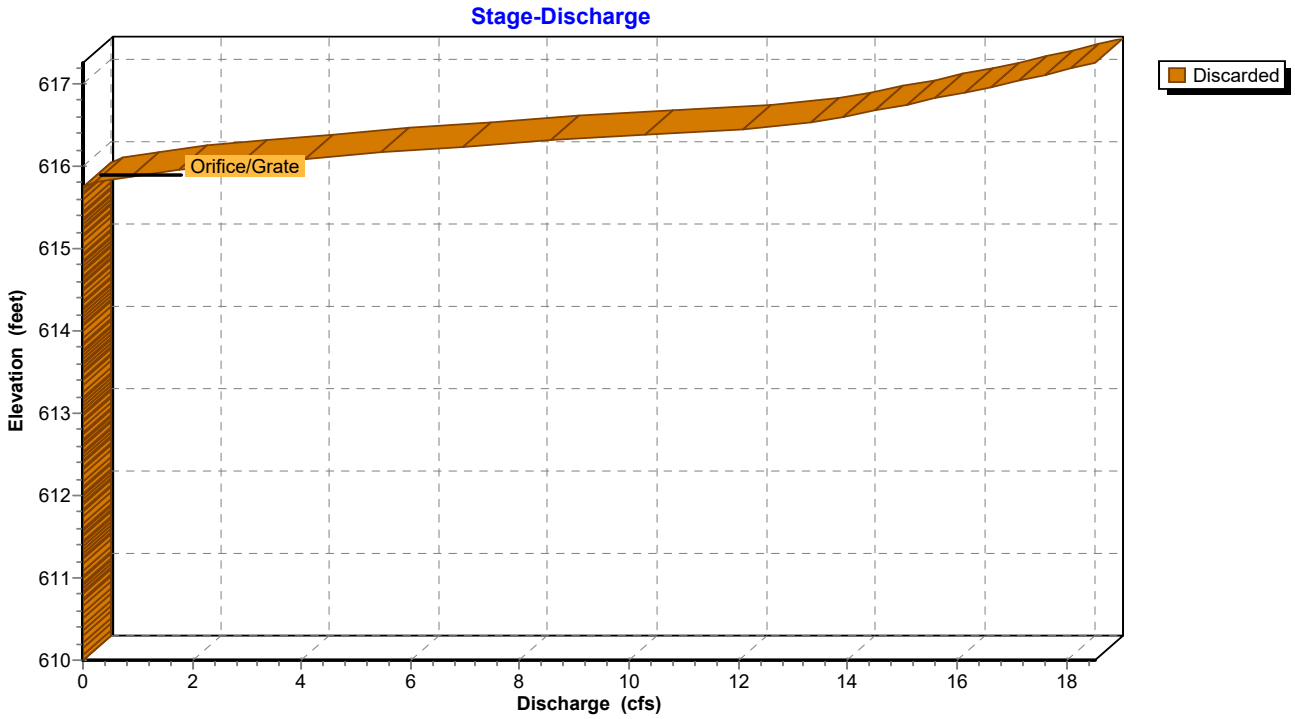




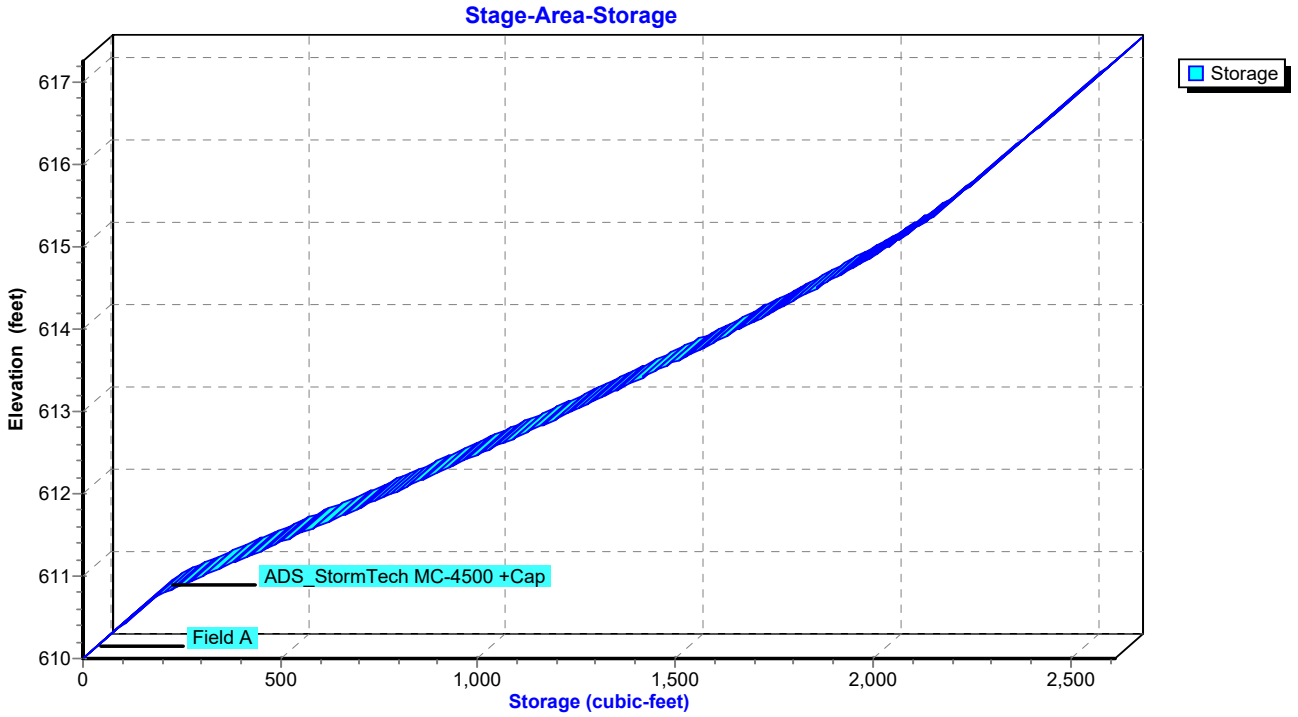
Pond 3P: ROOF INFILTRATION



Pond 3P: ROOF INFILTRATION



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 5.88" for 25-YEAR event
Inflow = 1.96 cfs @ 12.08 hrs, Volume= 0.161 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.06' @ 24.00 hrs Surf.Area= 0.049 ac Storage= 0.161 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	610.50'	0.082 af	**28.50'W x 75.54'L x 6.75'H Field A** 0.334 af Overall - 0.130 af Embedded = 0.204 af x 40.0% Voids
#2A	611.25'	0.130 af	**ADS_StormTech MC-4500 +Cap** x 51 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 3 Rows of 17 Chambers Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf
		0.211 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	618.25'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=610.50' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

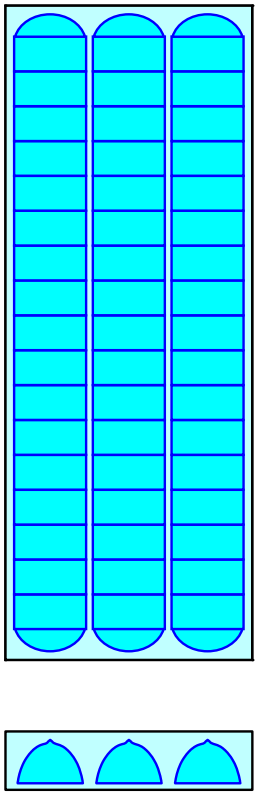
17 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 73.54' Row Length +12.0" End Stone x 2 = 75.54' Base Length
3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width
9.0" Base + 60.0" Chamber Height + 12.0" Cover = 6.75' Field Height

51 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 3 Rows = 5,645.2 cf Chamber Storage

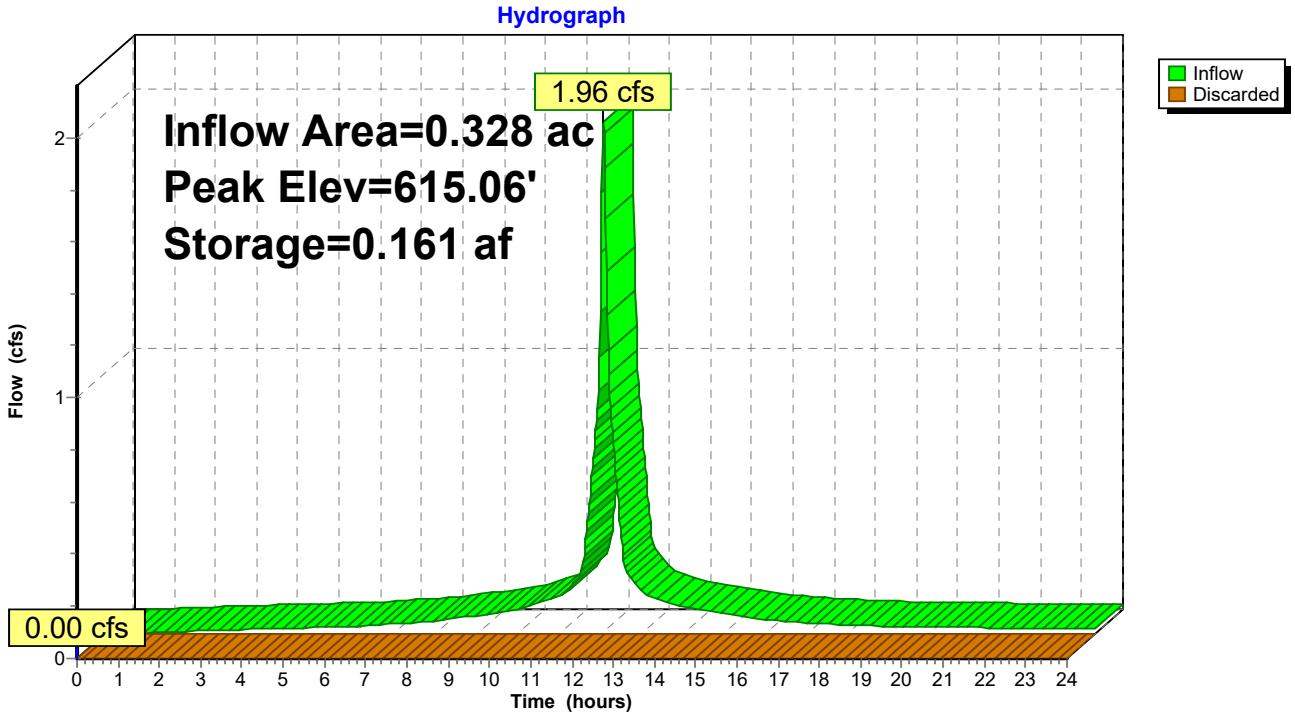
14,532.3 cf Field - 5,645.2 cf Chambers = 8,887.1 cf Stone x 40.0% Voids = 3,554.8 cf Stone Storage

Chamber Storage + Stone Storage = 9,200.1 cf = 0.211 af
Overall Storage Efficiency = 63.3%
Overall System Size = 75.54' x 28.50' x 6.75'

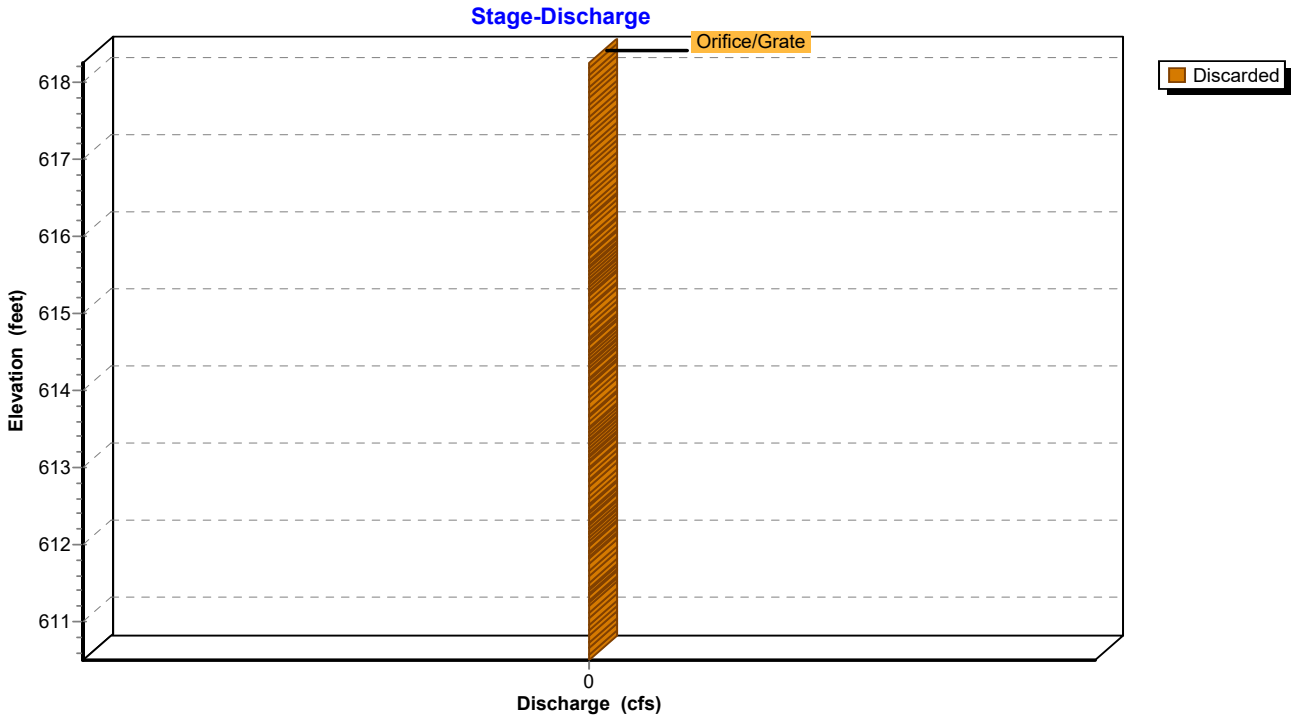
51 Chambers
538.2 cy Field
329.2 cy Stone



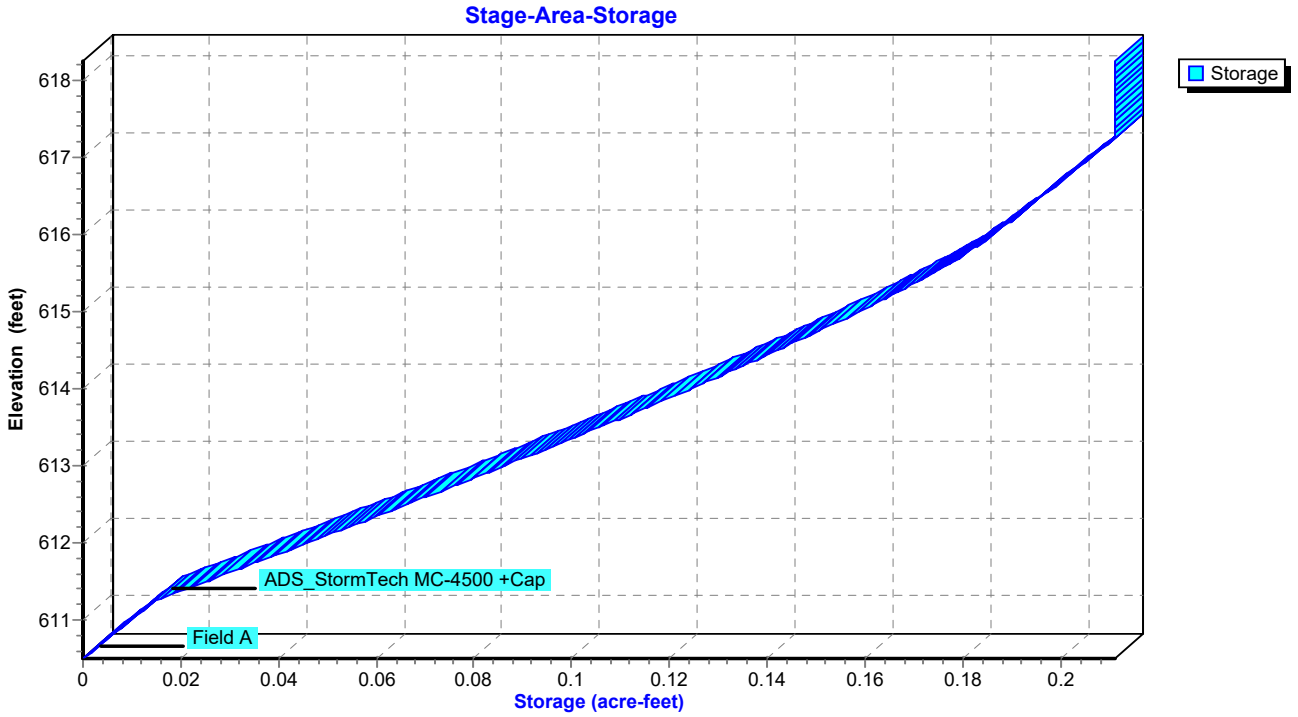
Pond 4P: ROOF INFILTRATION



Pond 4P: ROOF INFILTRATION



Pond 4P: ROOF INFILTRATION



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>3.27"
Tc=6.0 min CN=61 Runoff=0.53 cfs 0.038 af

Subcatchment P2-1: DISCHARGE TO Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>5.30"
Tc=6.0 min CN=79 Runoff=3.68 cfs 0.265 af

Subcatchment P2-2: DISCHARGE TO Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>6.47"
Tc=6.0 min CN=89 Runoff=8.15 cfs 0.614 af

Subcatchment P2-3: DISCHARGE TO THE Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>2.74"
Tc=6.0 min CN=56 Runoff=3.86 cfs 0.285 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.76 cfs 0.062 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.90 cfs 0.074 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.69 cfs 0.057 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.92 cfs 0.075 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=8.96 cfs 1.053 af
Outflow=8.96 cfs 1.053 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=9.37 cfs 1.091 af
Outflow=9.37 cfs 1.091 af

Pond 1P: DETENTION BASIN Peak Elev=615.83' Storage=4,750 cf Inflow=3.68 cfs 0.265 af
Outflow=1.07 cfs 0.222 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=615.32' Storage=8,593 cf Inflow=8.15 cfs 0.614 af
Outflow=5.10 cfs 0.546 af

Pond 3P: ROOF INFILTRATION Peak Elev=615.76' Storage=2,250 cf Inflow=0.76 cfs 0.062 af
Outflow=0.03 cfs 0.011 af

Pond 4P: ROOF INFILTRATION Peak Elev=616.98' Storage=0.206 af Inflow=2.50 cfs 0.206 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 3.557 ac Runoff Volume = 1.471 af Average Runoff Depth = 4.96"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

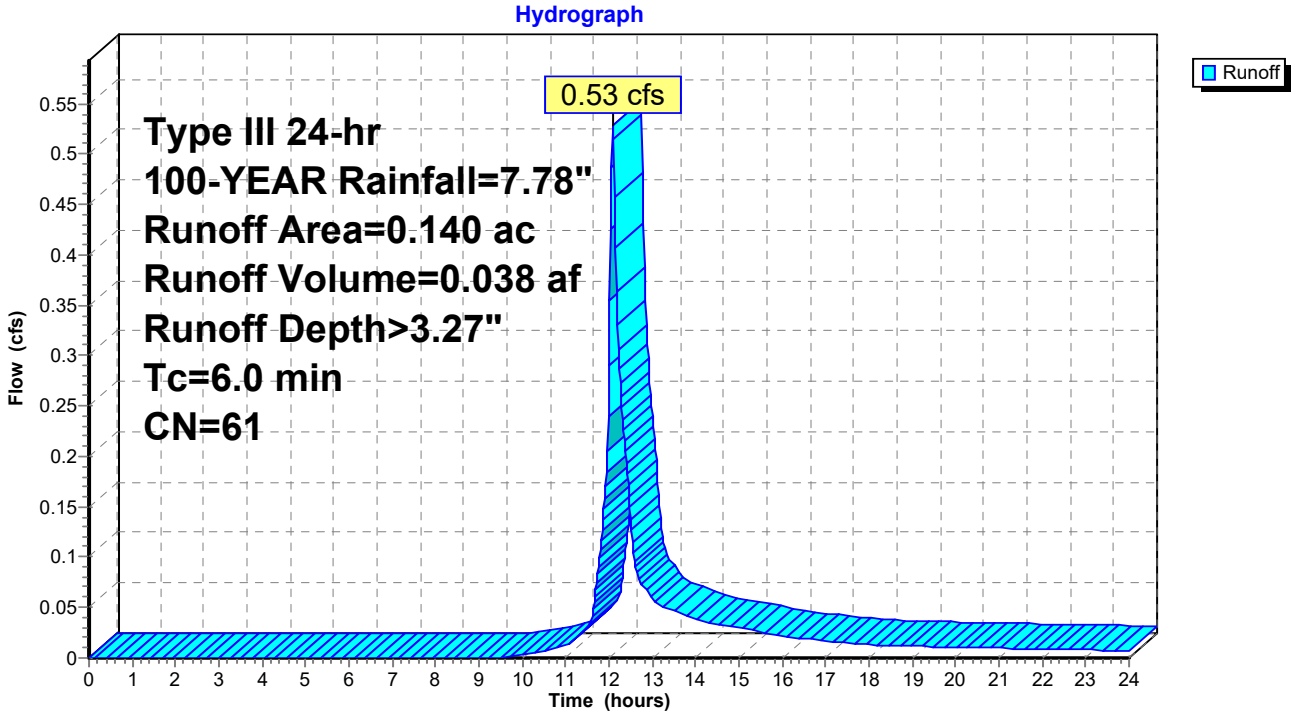
Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af, Depth> 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

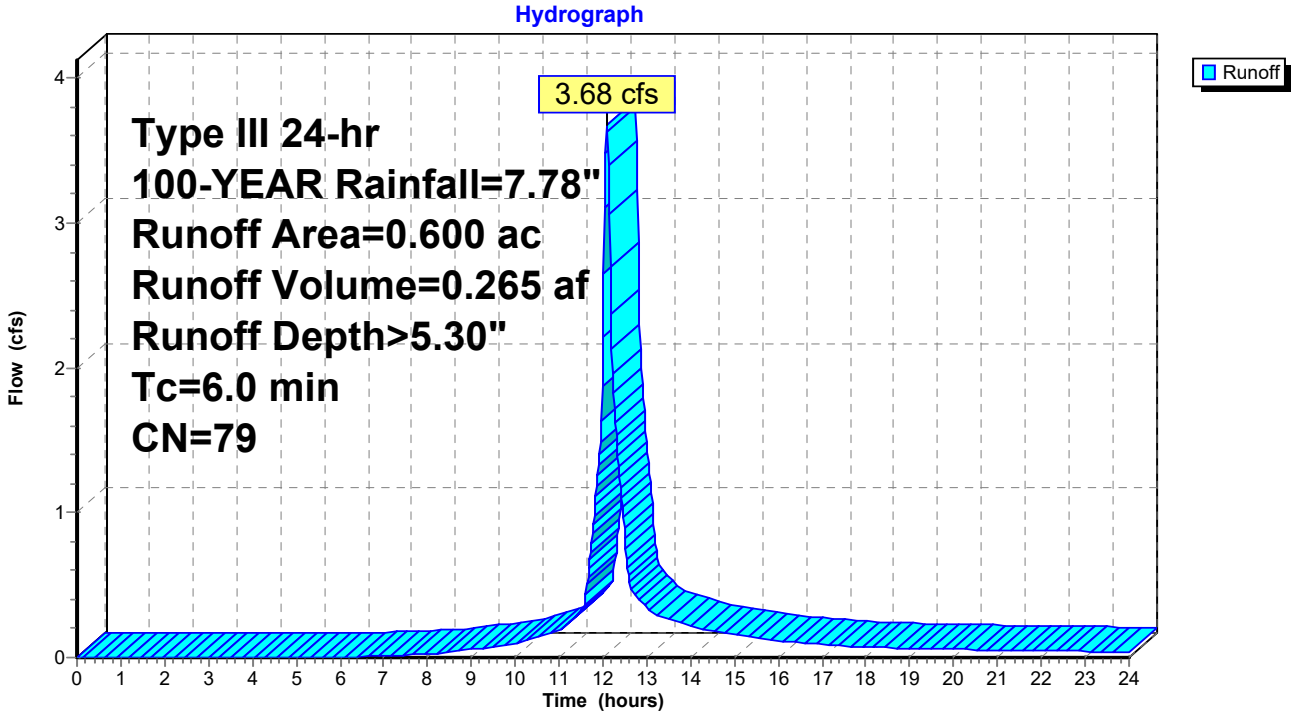
Runoff = 3.68 cfs @ 12.09 hrs, Volume= 0.265 af, Depth> 5.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

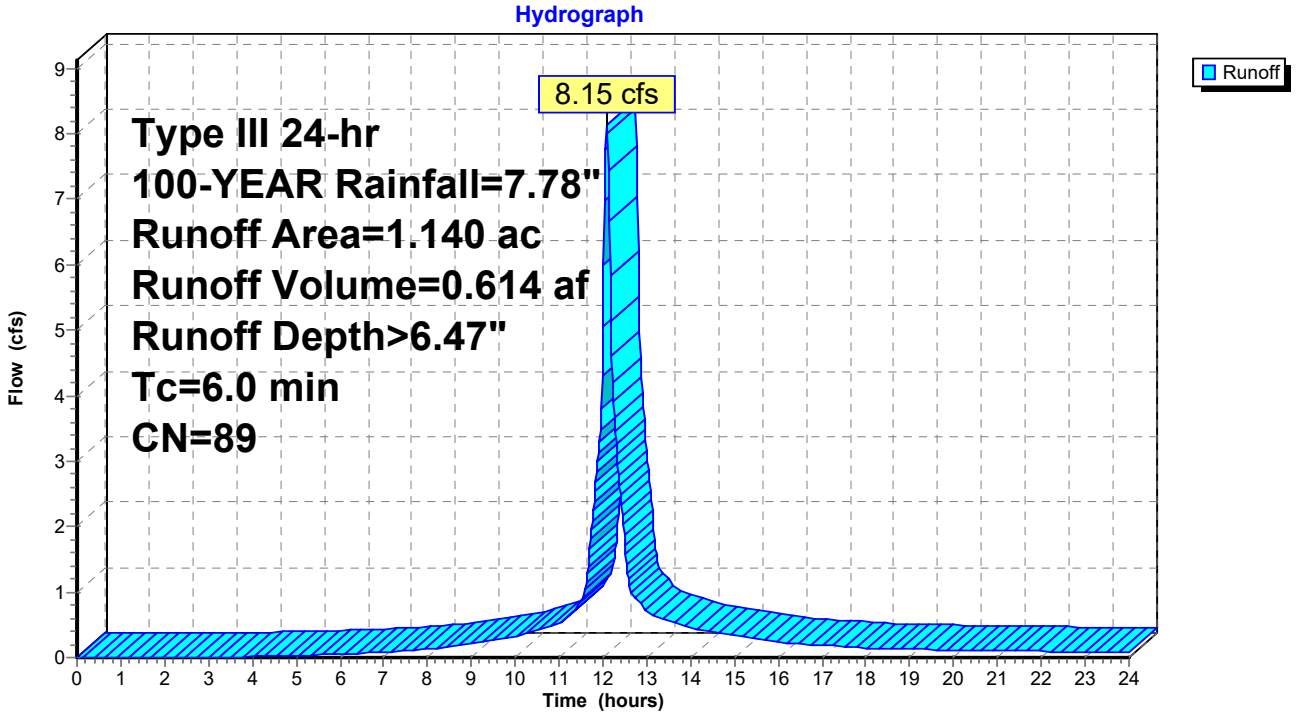
Runoff = 8.15 cfs @ 12.08 hrs, Volume= 0.614 af, Depth> 6.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

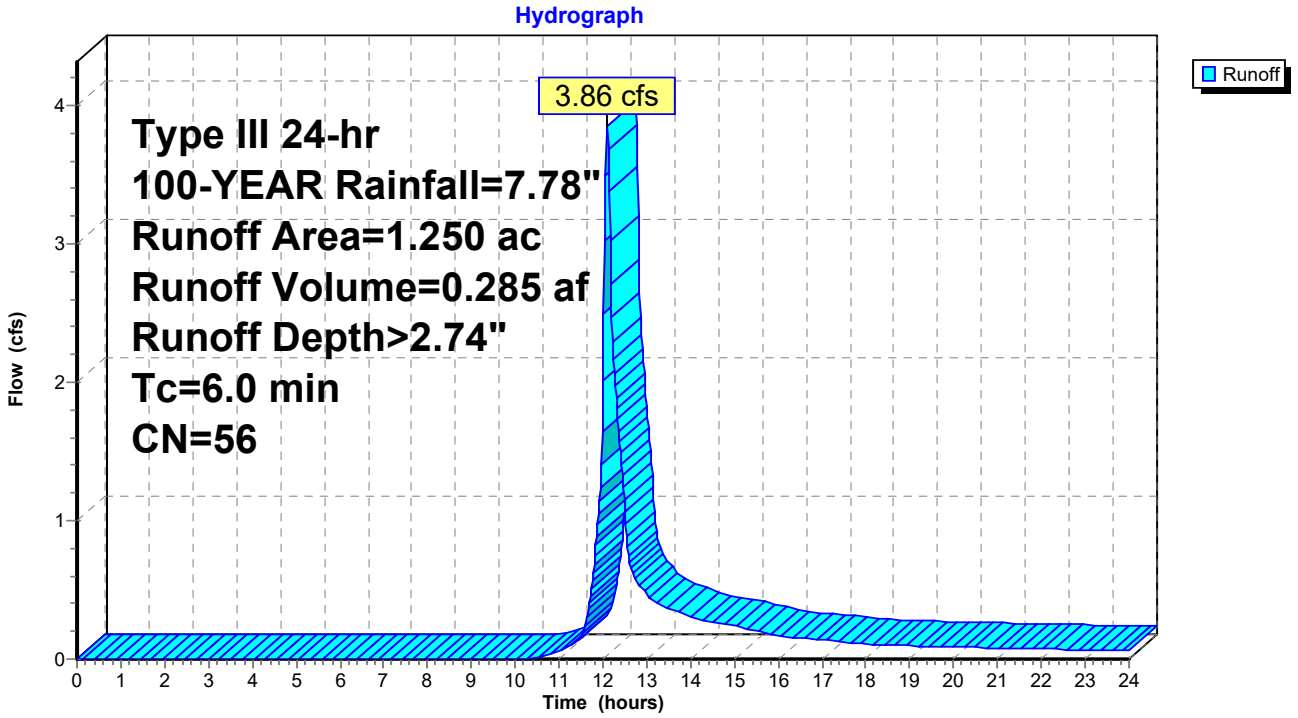
Runoff = 3.86 cfs @ 12.09 hrs, Volume= 0.285 af, Depth> 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

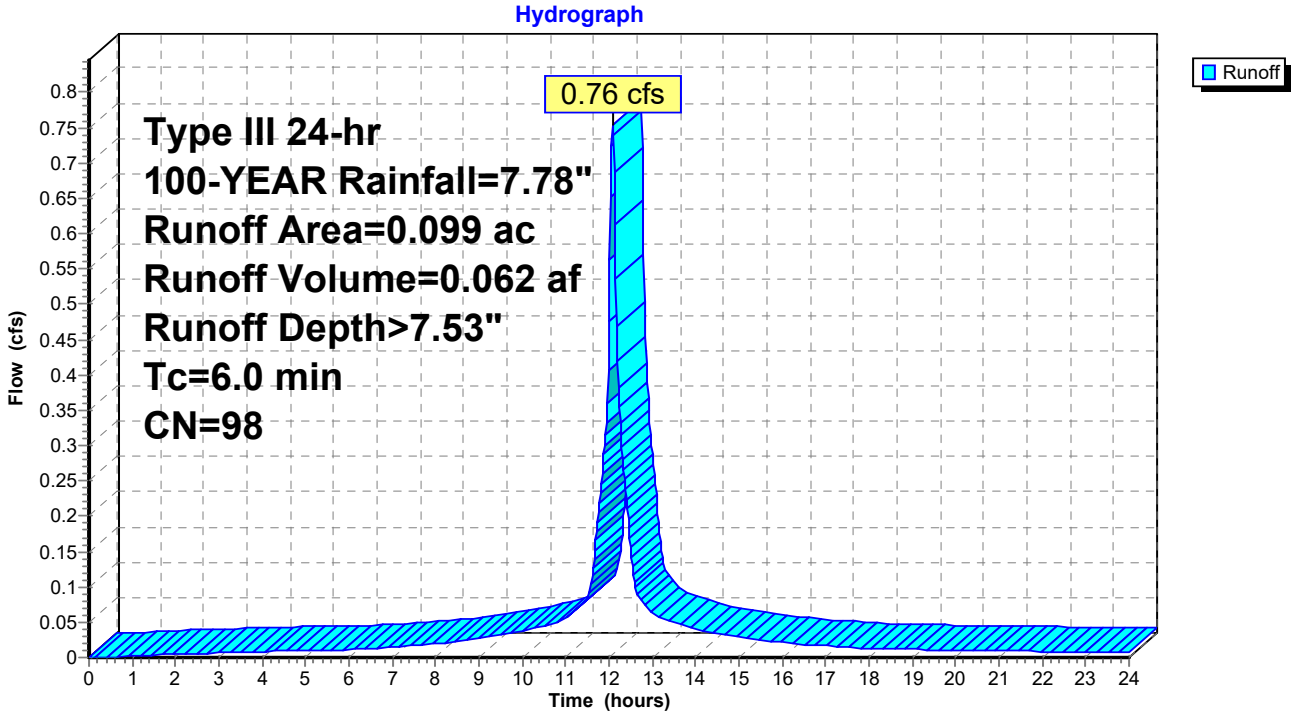
Runoff = 0.76 cfs @ 12.08 hrs, Volume= 0.062 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

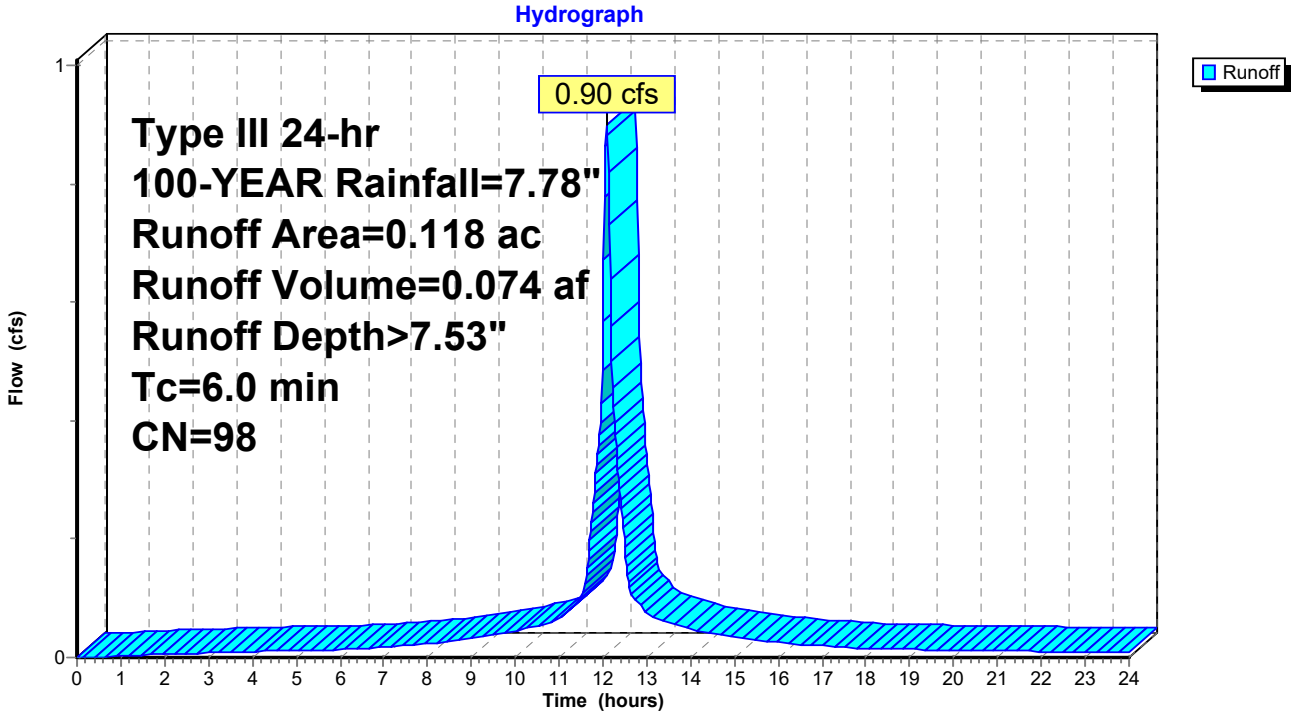
Runoff = 0.90 cfs @ 12.08 hrs, Volume= 0.074 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

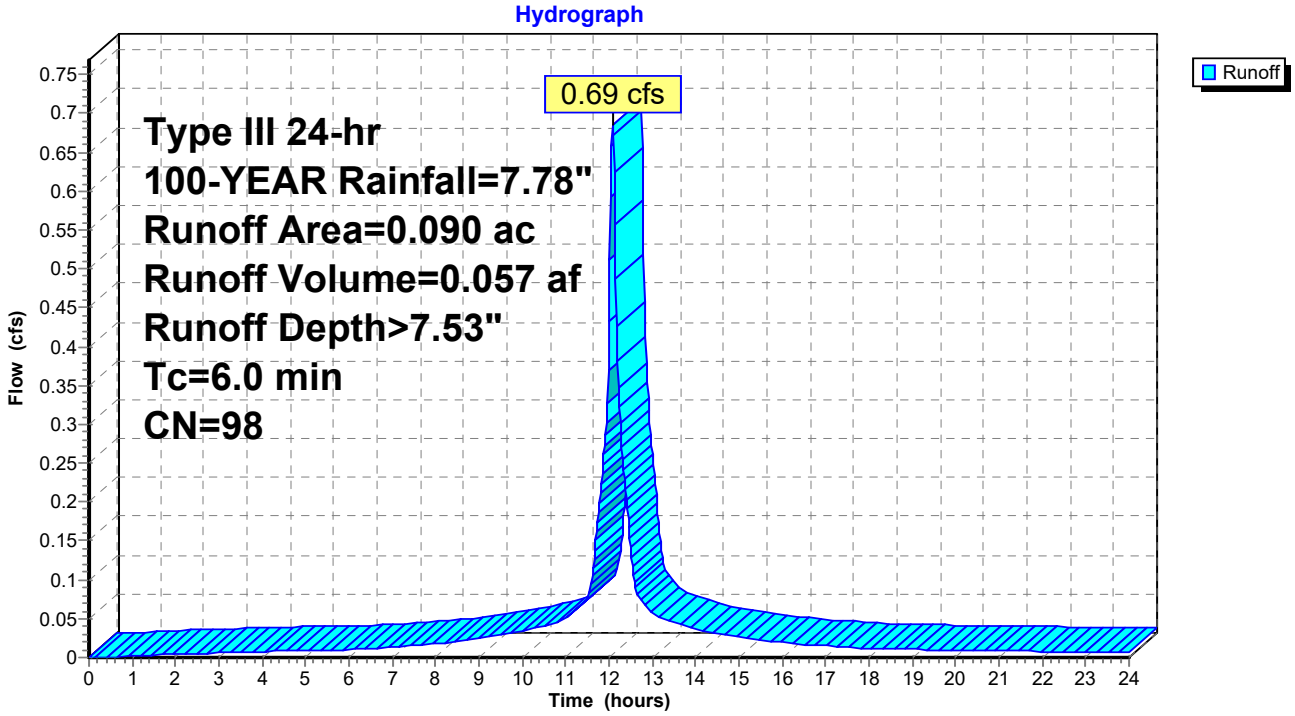
Runoff = 0.69 cfs @ 12.08 hrs, Volume= 0.057 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

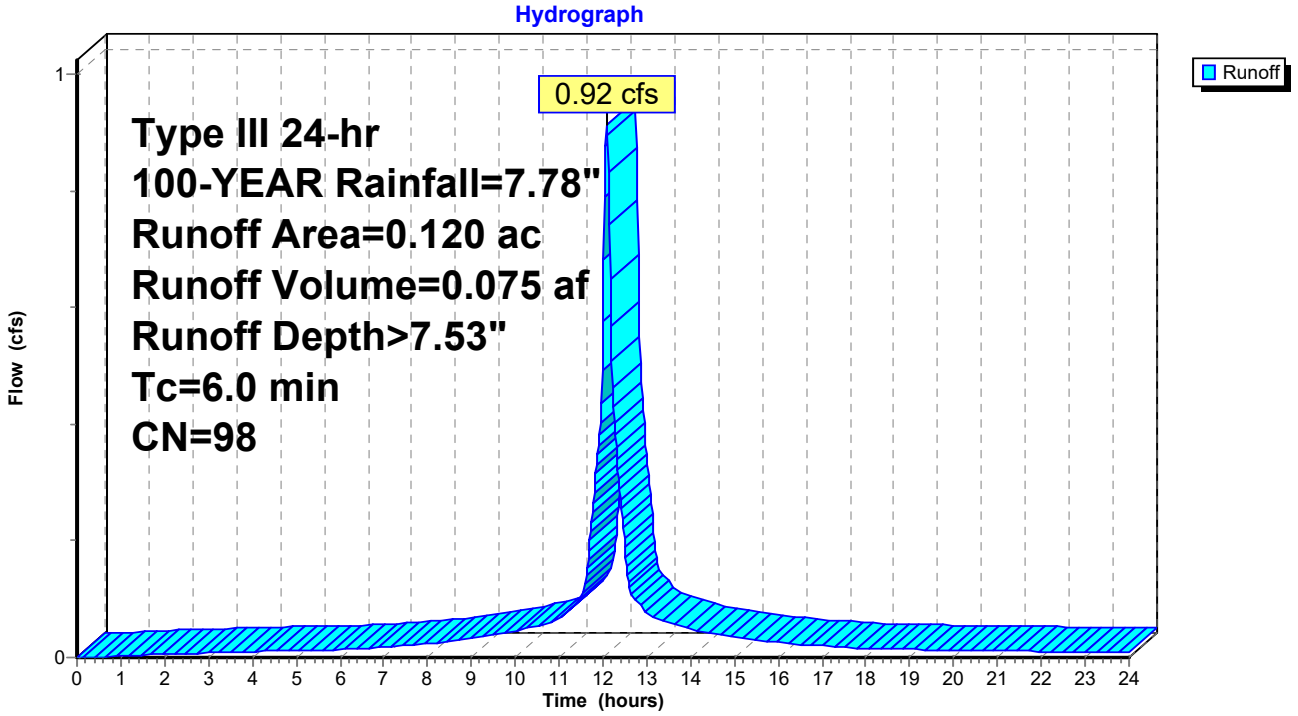
Runoff = 0.92 cfs @ 12.08 hrs, Volume= 0.075 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



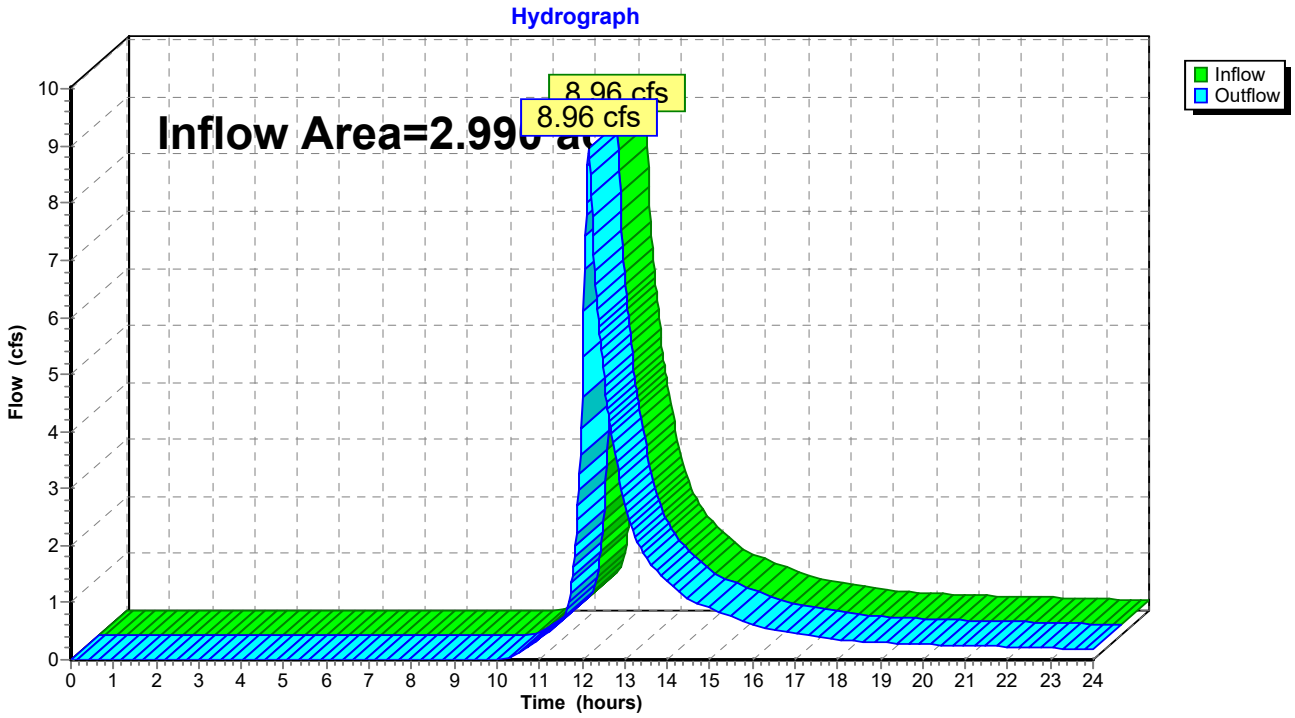
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.990 ac, 39.46% Impervious, Inflow Depth > 4.23" for 100-YEAR event
Inflow = 8.96 cfs @ 12.16 hrs, Volume= 1.053 af
Outflow = 8.96 cfs @ 12.16 hrs, Volume= 1.053 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



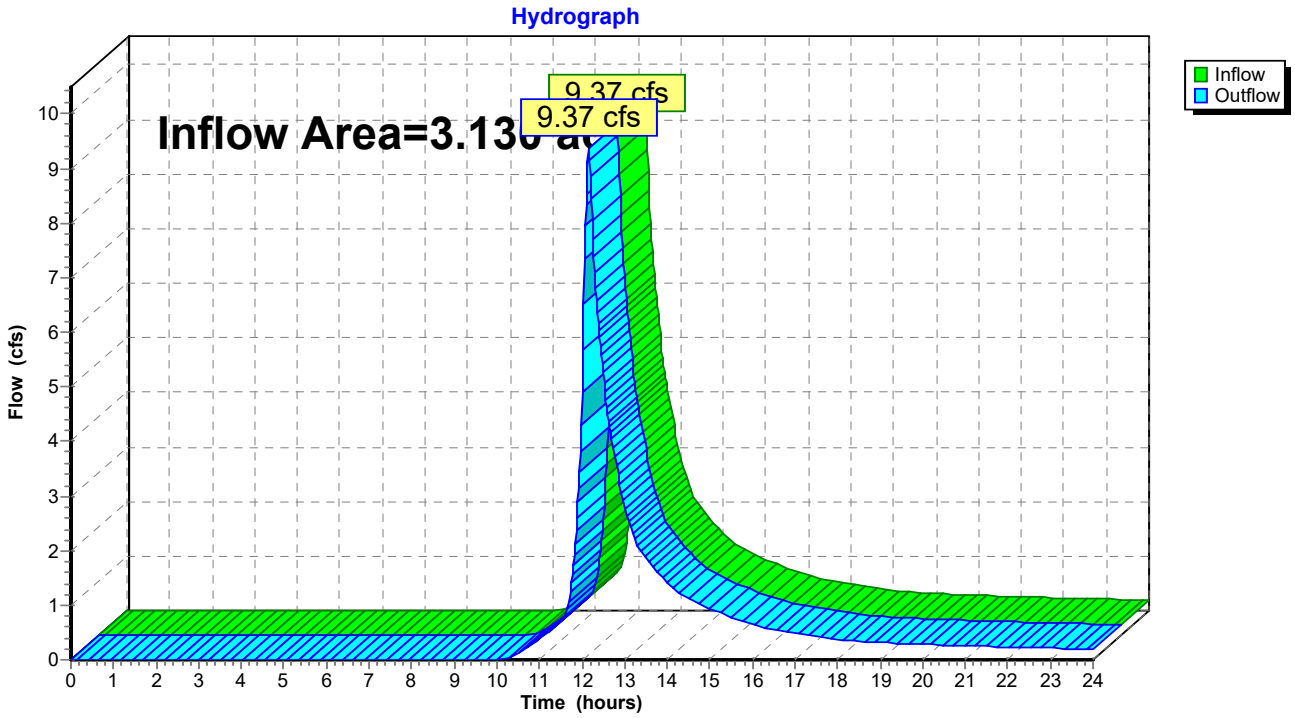
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.130 ac, 37.70% Impervious, Inflow Depth > 4.18" for 100-YEAR event
Inflow = 9.37 cfs @ 12.16 hrs, Volume= 1.091 af
Outflow = 9.37 cfs @ 12.16 hrs, Volume= 1.091 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

[58] Hint: Peaked 0.89' above defined flood level

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 5.30" for 100-YEAR event
Inflow = 3.68 cfs @ 12.09 hrs, Volume= 0.265 af
Outflow = 1.07 cfs @ 12.43 hrs, Volume= 0.222 af, Atten= 71%, Lag= 20.7 min
Primary = 1.07 cfs @ 12.43 hrs, Volume= 0.222 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.83' @ 12.43 hrs Surf.Area= 2,463 sf Storage= 4,750 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 128.9 min calculated for 0.222 af (84% of inflow)
Center-of-Mass det. time= 62.8 min (868.5 - 805.7)

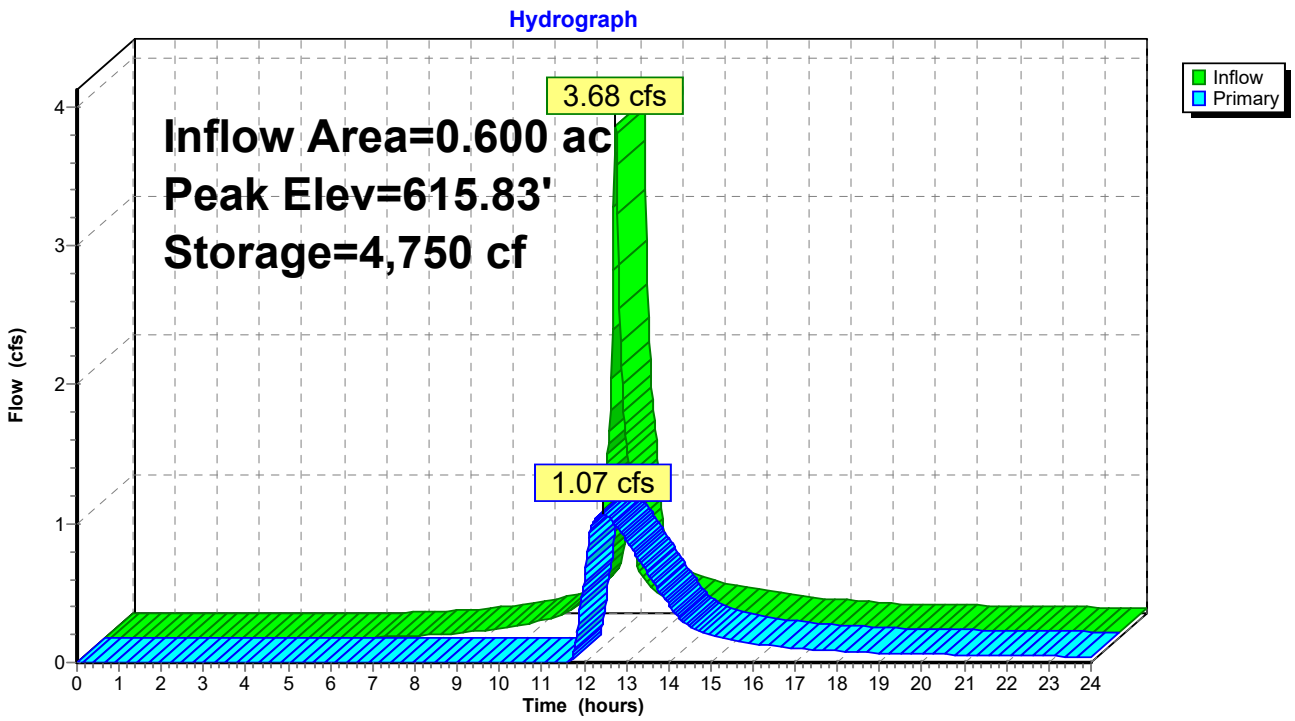
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

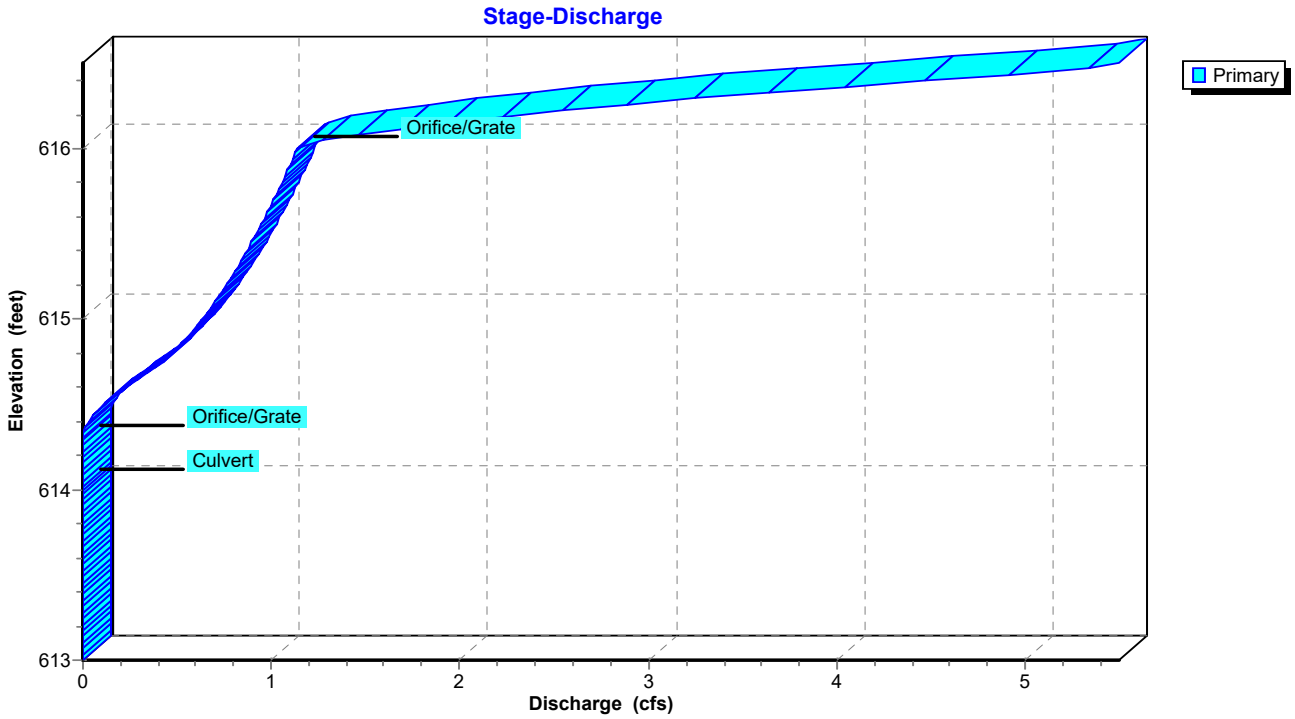
Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.07 cfs @ 12.43 hrs HW=615.83' (Free Discharge)
└─**1=Culvert** (Passes 1.07 cfs of 6.34 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.07 cfs @ 5.44 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

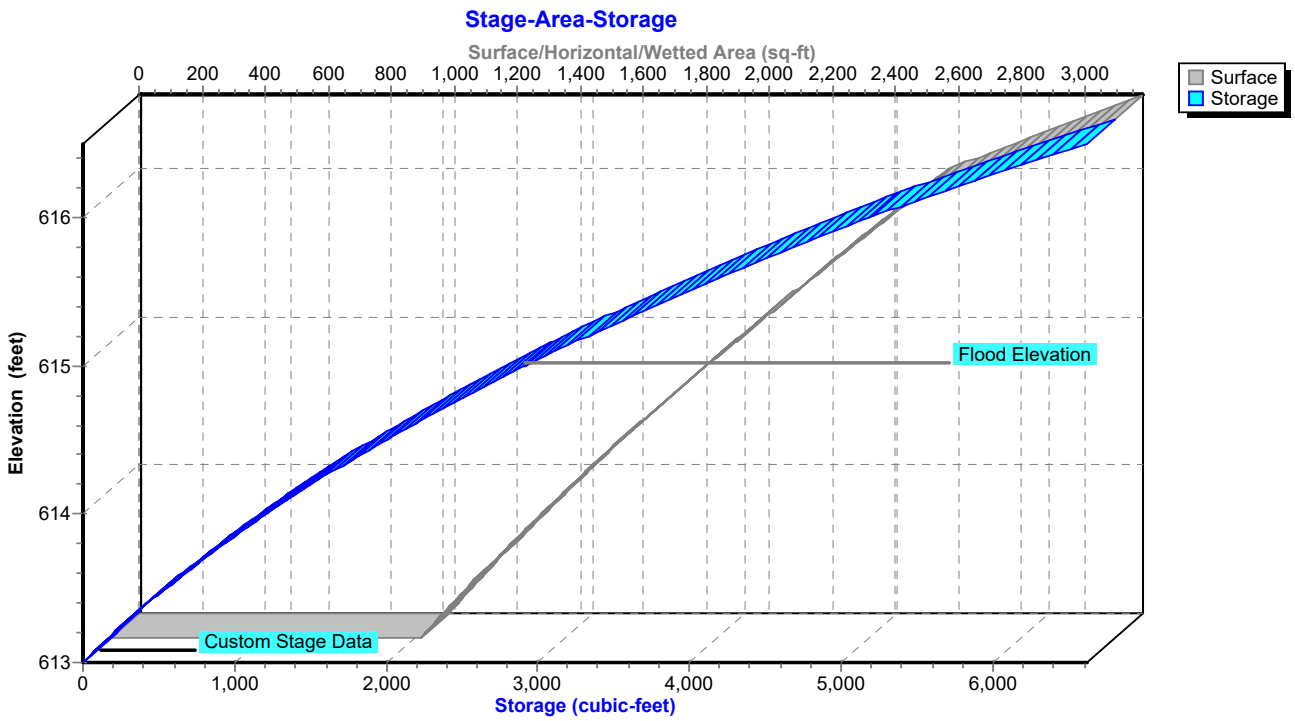
Pond 1P: DETENTION BASIN



Pond 1P: DETENTION BASIN



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

[58] Hint: Peaked 2.35' above defined flood level

Inflow Area = 1.140 ac, 75.44% Impervious, Inflow Depth > 6.47" for 100-YEAR event
Inflow = 8.15 cfs @ 12.08 hrs, Volume= 0.614 af
Outflow = 5.10 cfs @ 12.18 hrs, Volume= 0.546 af, Atten= 37%, Lag= 6.0 min
Primary = 5.10 cfs @ 12.18 hrs, Volume= 0.546 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.32' @ 12.18 hrs Surf.Area= 3,355 sf Storage= 8,593 cf
Flood Elev= 612.97' Surf.Area= 3,444 sf Storage= 3,524 cf

Plug-Flow detention time= 111.8 min calculated for 0.545 af (89% of inflow)
Center-of-Mass det. time= 59.8 min (839.2 - 779.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.25'	4,007 cf	**27.50'W x 122.00'L x 4.50'H Field A** 15,098 cf Overall - 5,081 cf Embedded = 10,017 cf x 40.0% Voids
#2A	611.75'	5,081 cf	**CMP Round- 36** x 36 Inside #1 Effective Size= 36.0"W x 36.0"H => 7.06 sf x 20.00'L = 141.1 cf Overall Size= 36.0"W x 36.0"H x 20.00'L 6 Rows of 6 Chambers
#3	612.25'	88 cf	**15.0" Round Pipe Storage** L= 72.0'
		9,176 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	612.25'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 612.25' / 612.25' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	612.60'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	613.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	615.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.11 cfs @ 12.18 hrs HW=615.31' (Free Discharge)
└─**1=Culvert** (Passes 5.11 cfs of 9.23 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.48 cfs @ 7.56 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 2.16 cfs @ 6.18 fps)
  └─**4=Orifice/Grate** (Orifice Controls 1.47 cfs @ 2.69 fps)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round- 36 (Round Corrugated Metal Pipe)
Effective Size= 36.0"W x 36.0"H => 7.06 sf x 20.00'L = 141.1 cf
Overall Size= 36.0"W x 36.0"H x 20.00'L

36.0" Wide + 18.0" Spacing = 54.0" C-C Row Spacing

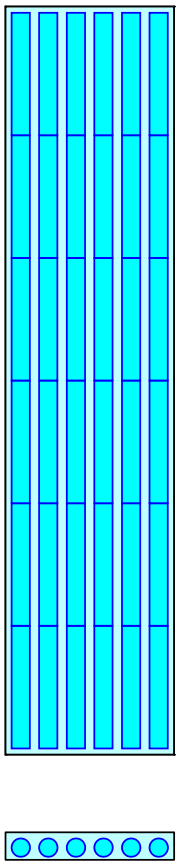
6 Chambers/Row x 20.00' Long = 120.00' Row Length +12.0" End Stone x 2 = 122.00' Base Length
6 Rows x 36.0" Wide + 18.0" Spacing x 5 + 12.0" Side Stone x 2 = 27.50' Base Width
6.0" Base + 36.0" Chamber Height + 12.0" Cover = 4.50' Field Height

36 Chambers x 141.1 cf = 5,080.8 cf Chamber Storage

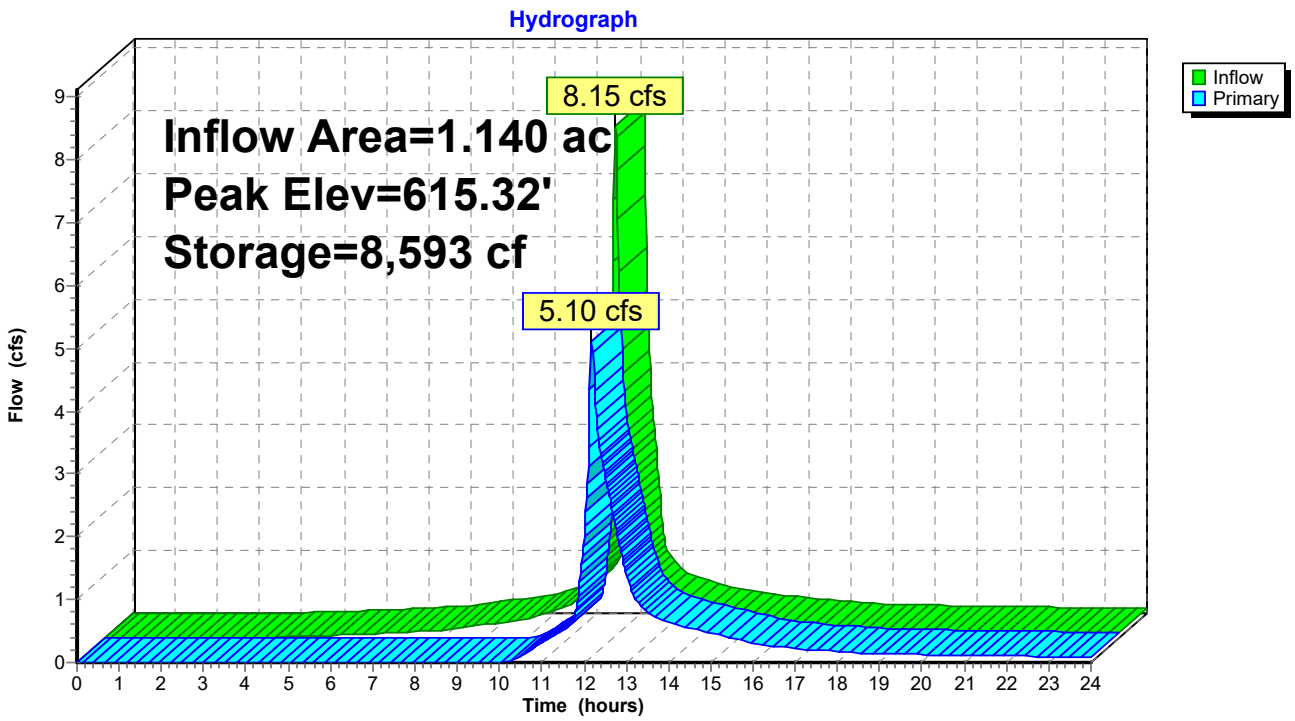
15,097.5 cf Field - 5,080.8 cf Chambers = 10,016.7 cf Stone x 40.0% Voids = 4,006.7 cf Stone Storage

Chamber Storage + Stone Storage = 9,087.5 cf = 0.209 af
Overall Storage Efficiency = 60.2%
Overall System Size = 122.00' x 27.50' x 4.50'

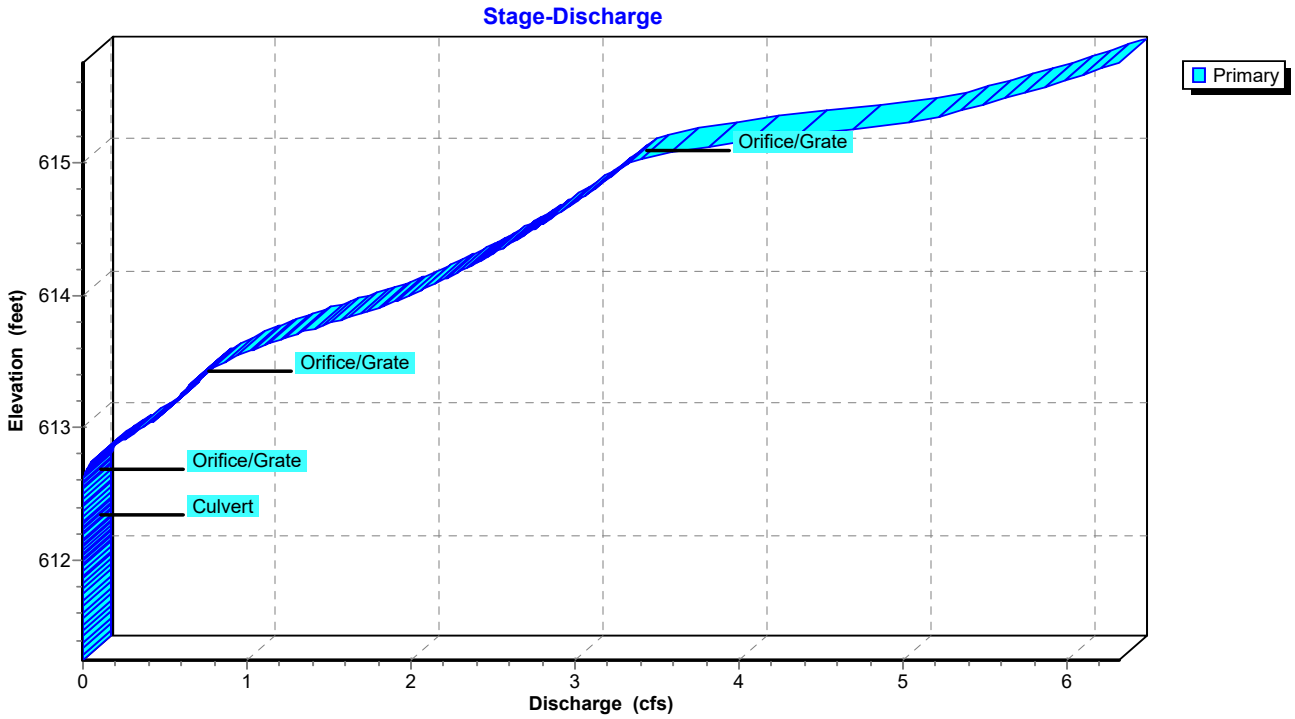
36 Chambers
559.2 cy Field
371.0 cy Stone



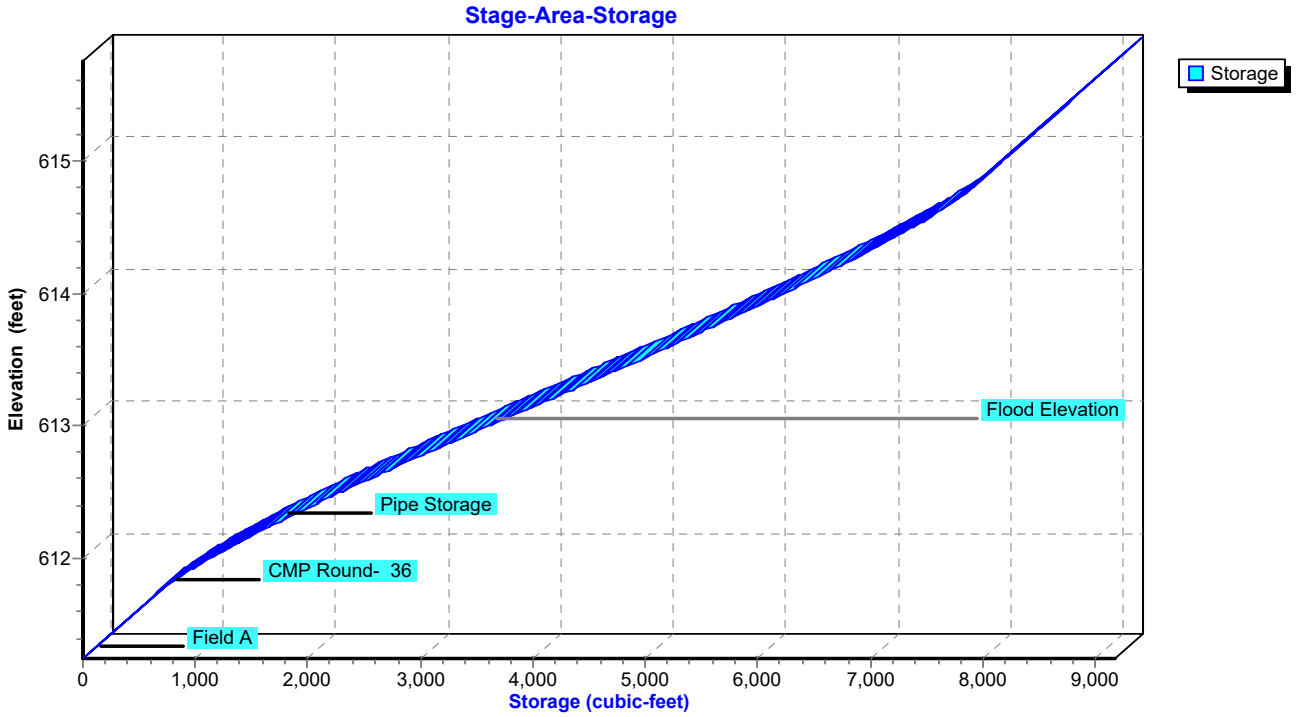
Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 7.53" for 100-YEAR event
Inflow = 0.76 cfs @ 12.08 hrs, Volume= 0.062 af
Outflow = 0.03 cfs @ 14.70 hrs, Volume= 0.011 af, Atten= 96%, Lag= 156.9 min
Discarded = 0.03 cfs @ 14.70 hrs, Volume= 0.011 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.76' @ 14.70 hrs Surf.Area= 607 sf Storage= 2,250 cf

Plug-Flow detention time= 652.9 min calculated for 0.011 af (17% of inflow)
Center-of-Mass det. time= 345.7 min (1,086.7 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	610.00'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	610.75'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	615.75'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.01 cfs @ 14.70 hrs HW=615.76' (Free Discharge)
└**1=Orifice/Grate** (Weir Controls 0.01 cfs @ 0.28 fps)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

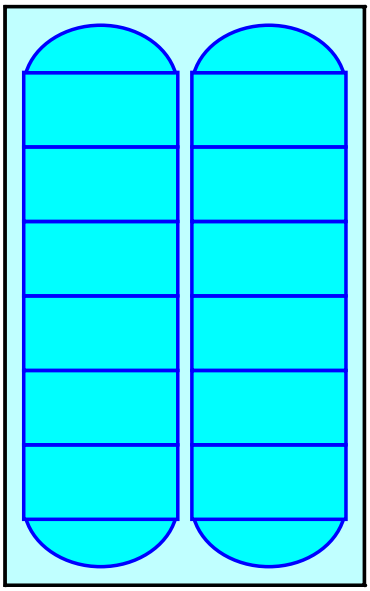
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

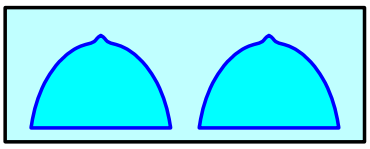
12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

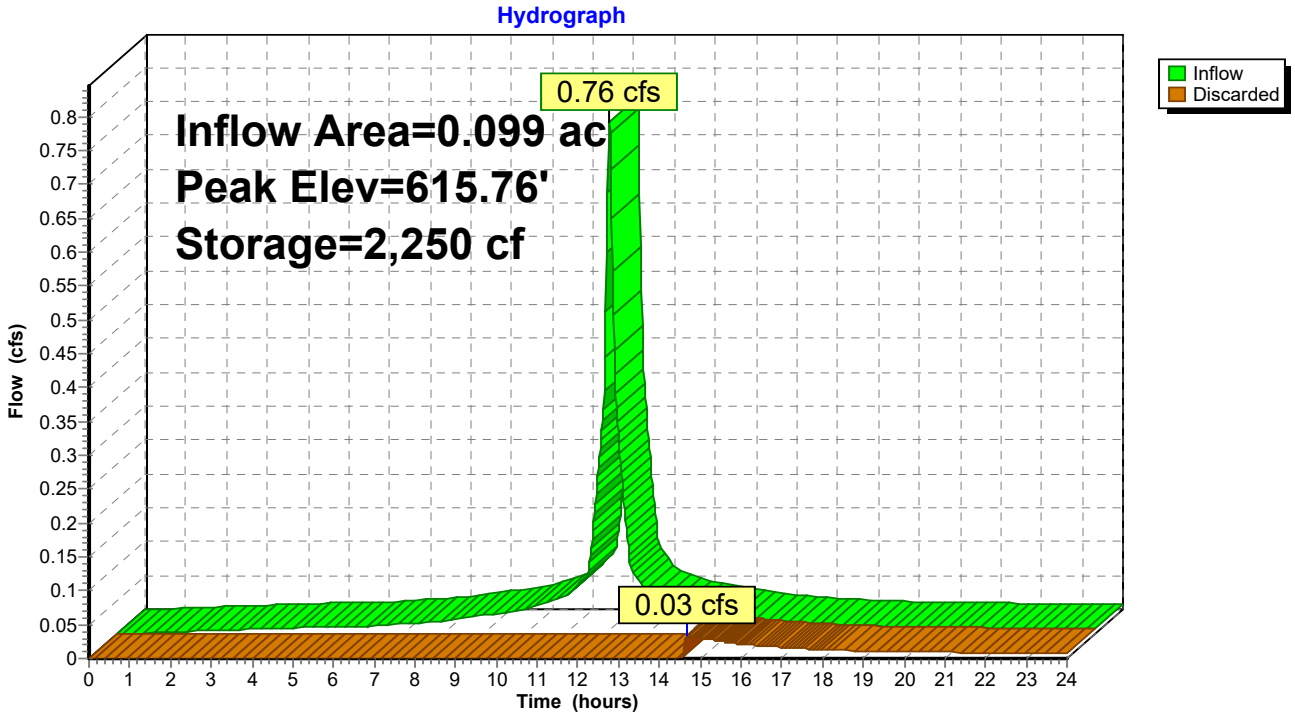
Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

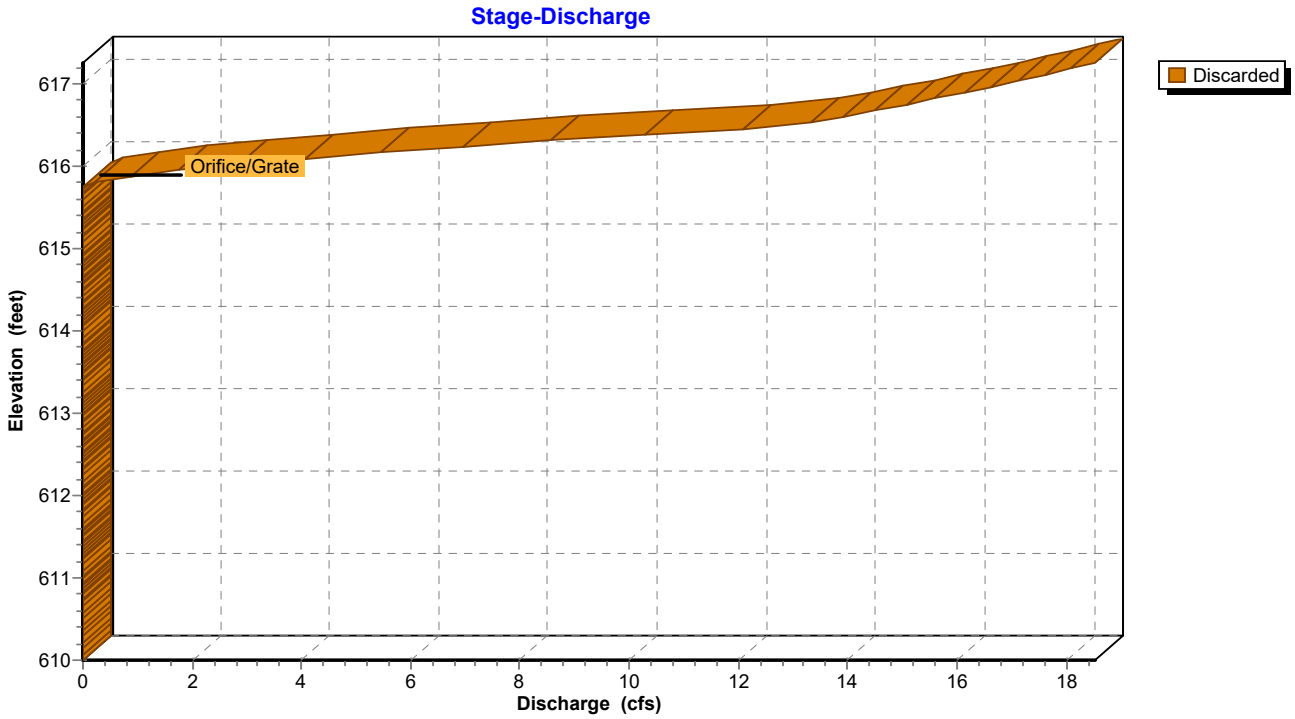




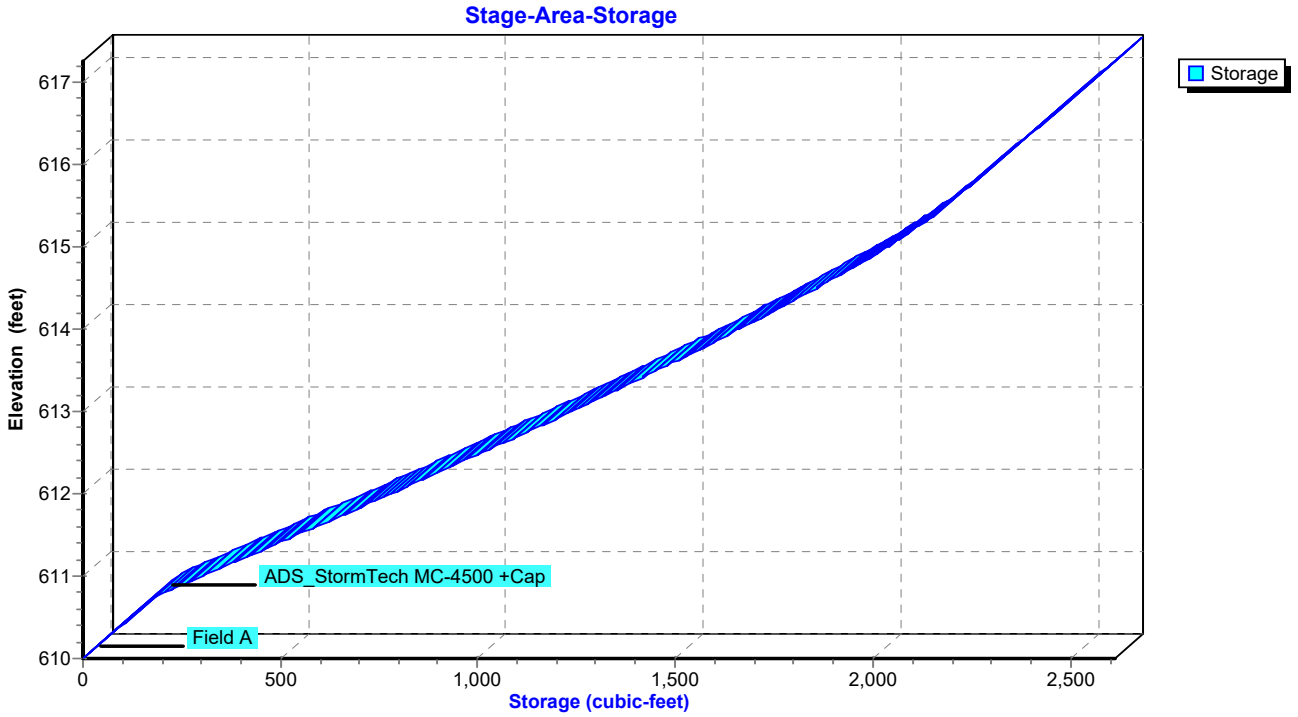
Pond 3P: ROOF INFILTRATION



Pond 3P: ROOF INFILTRATION



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 7.53" for 100-YEAR event
Inflow = 2.50 cfs @ 12.08 hrs, Volume= 0.206 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 616.98' @ 24.00 hrs Surf.Area= 0.049 ac Storage= 0.206 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	610.50'	0.082 af	**28.50'W x 75.54'L x 6.75'H Field A** 0.334 af Overall - 0.130 af Embedded = 0.204 af x 40.0% Voids
#2A	611.25'	0.130 af	**ADS_StormTech MC-4500 +Cap** x 51 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 3 Rows of 17 Chambers Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf
		0.211 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	618.25'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=610.50' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

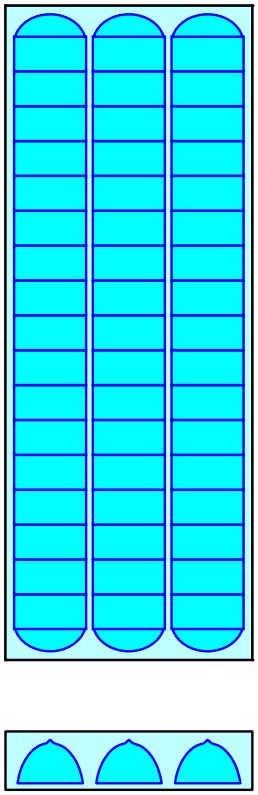
17 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 73.54' Row Length +12.0" End Stone x 2 = 75.54' Base Length
3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width
9.0" Base + 60.0" Chamber Height + 12.0" Cover = 6.75' Field Height

51 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 3 Rows = 5,645.2 cf Chamber Storage

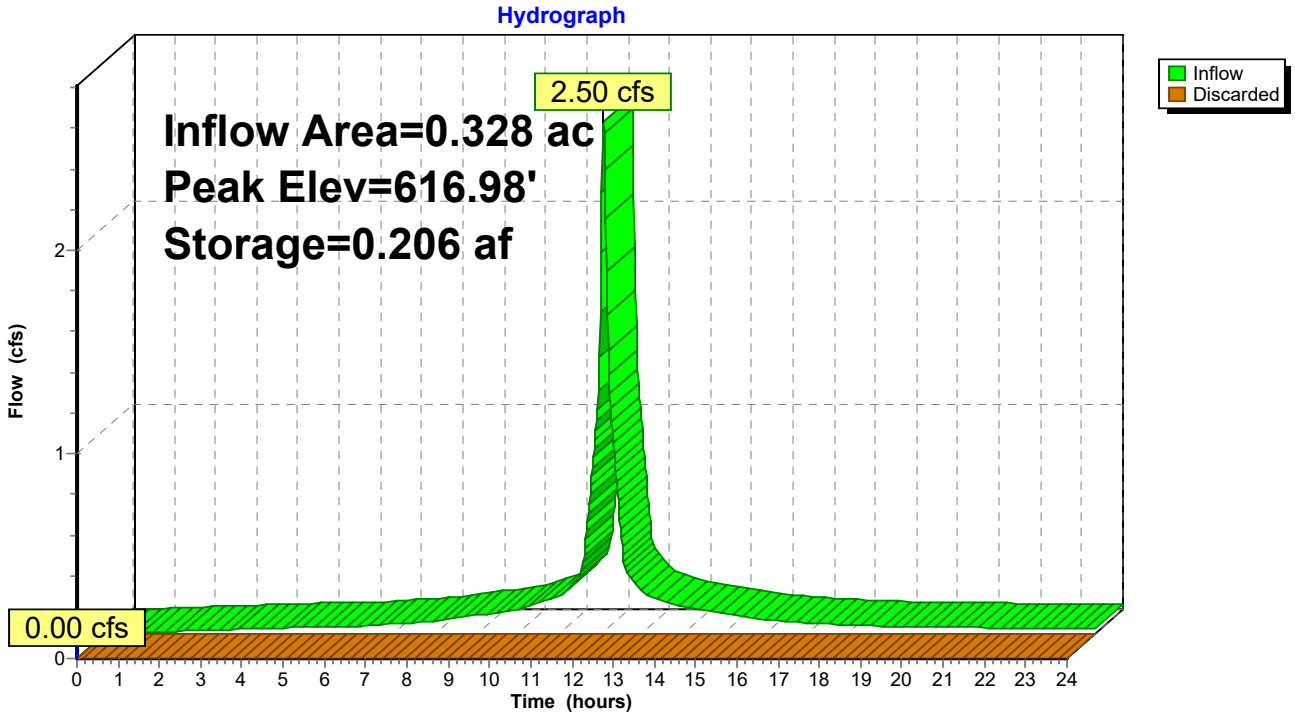
14,532.3 cf Field - 5,645.2 cf Chambers = 8,887.1 cf Stone x 40.0% Voids = 3,554.8 cf Stone Storage

Chamber Storage + Stone Storage = 9,200.1 cf = 0.211 af
Overall Storage Efficiency = 63.3%
Overall System Size = 75.54' x 28.50' x 6.75'

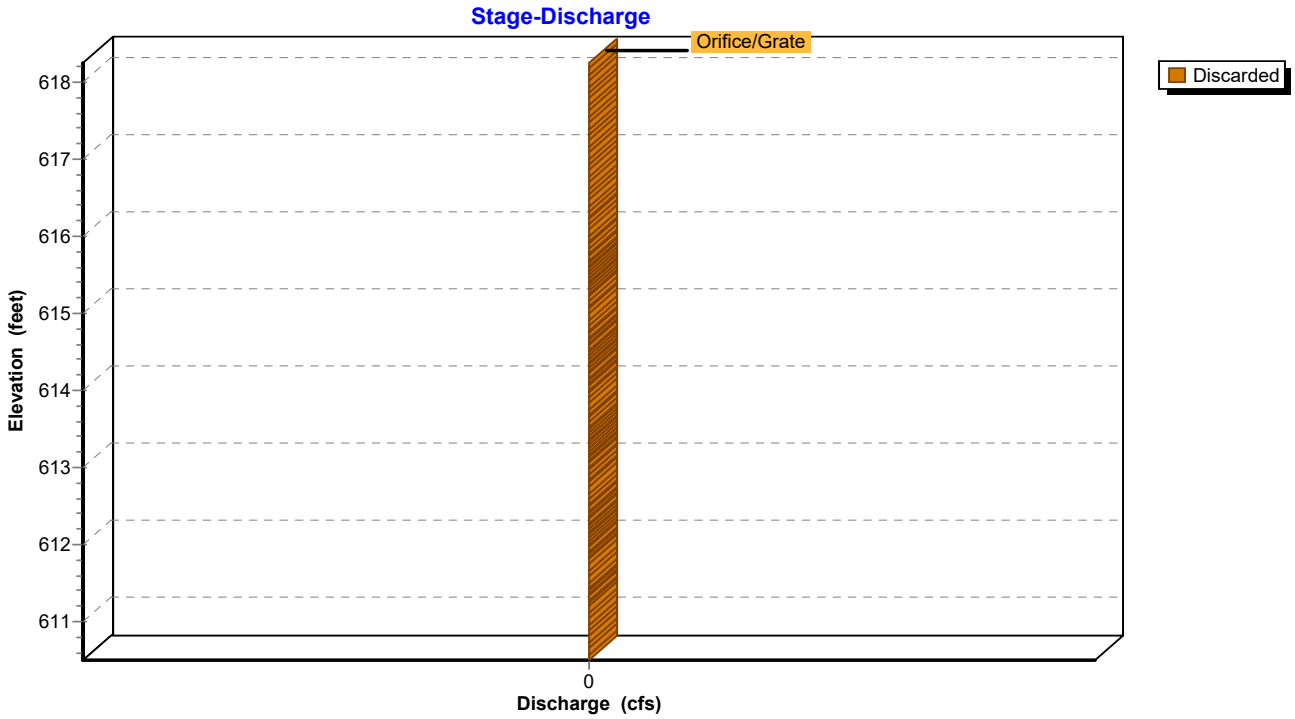
51 Chambers
538.2 cy Field
329.2 cy Stone



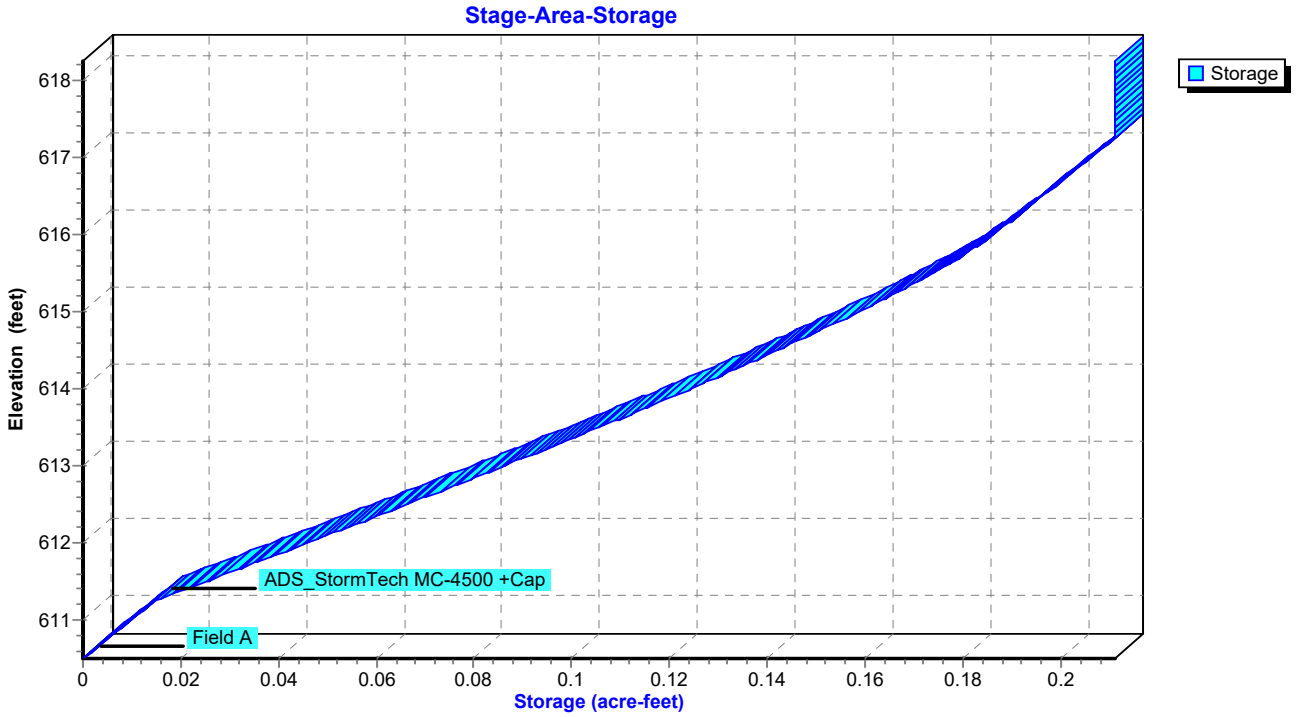
Pond 4P: ROOF INFILTRATION



Pond 4P: ROOF INFILTRATION



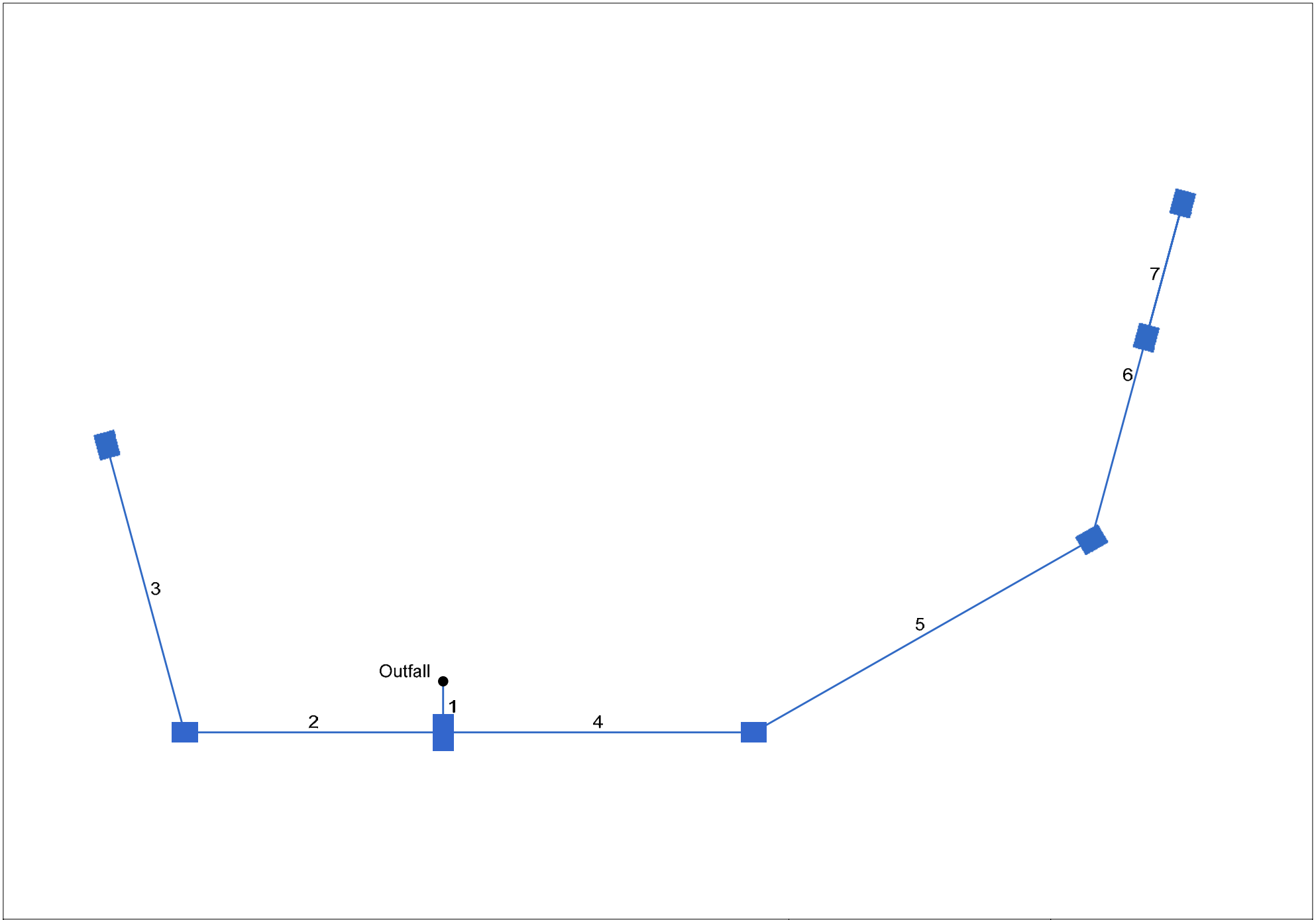
Pond 4P: ROOF INFILTRATION



APPENDIX C

Proposed Hydraulic Sizing Computations

Hydraflow Storm Sewers Extension for Autodesk® AutoCAD® Civil 3D® Plan



Project File: HydraFlow.stm	Number of lines: 7	Date: 11/25/2019

Storm Sewers v10.514

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	CB-3	4.46	15	Cir	11.000	613.54	613.65	1.000	614.30	614.51	0.87	614.51	End	Combination
2	CB-2	2.38	12	Cir	55.000	613.75	614.47	1.309	614.51	615.13	n/a	615.13 j	1	Combination
3	CB-1	1.59	12	Cir	64.000	614.10	614.80	1.094	615.13	615.34	n/a	615.34 j	2	Combination
4	CB-4	1.41	12	Cir	66.000	613.75	614.41	1.000	614.51	614.91	n/a	614.91 j	1	Combination
5	CB-5	0.99	12	Cir	83.000	614.41	615.24	1.000	614.91	615.66	n/a	615.66 j	4	Combination
6	CB-6	0.57	12	Cir	75.000	615.34	617.50	2.880	615.66	617.81	n/a	617.81 j	5	Combination
7	CB-7	0.27	12	Cir	30.000	617.60	617.90	1.000	617.81	618.11	0.08	618.11	6	Grate

Project File: HydraFlow.stm | Number of lines: 7 | Run Date: 11/25/2019

NOTES: Return period = 10 Yrs. ; j - Line contains hyd. jump.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	11.000	0.31	1.12	0.76	0.24	0.85	5.0	9.4	5.3	4.46	6.46	5.33	15	1.00	613.54	613.65	614.30	614.51	0.00	615.75	CB-3
2	1	55.000	0.18	0.48	0.70	0.13	0.35	5.0	5.5	6.8	2.38	4.07	4.03	12	1.31	613.75	614.47	614.51	615.13	615.75	616.15	CB-2
3	2	64.000	0.30	0.30	0.75	0.23	0.23	5.0	5.0	7.1	1.59	3.72	2.87	12	1.09	614.10	614.80	615.13	615.34	616.15	617.00	CB-1
4	1	66.000	0.11	0.33	0.80	0.09	0.26	5.0	8.9	5.4	1.41	3.56	2.89	12	1.00	613.75	614.41	614.51	614.91	615.75	616.54	CB-4
5	4	83.000	0.10	0.22	0.82	0.08	0.17	5.0	8.0	5.7	0.99	3.56	2.84	12	1.00	614.41	615.24	614.91	615.66	616.54	617.50	CB-5
6	5	75.000	0.07	0.12	0.74	0.05	0.09	5.0	6.4	6.3	0.57	6.04	2.69	12	2.88	615.34	617.50	615.66	617.81	617.50	619.50	CB-6
7	6	30.000	0.05	0.05	0.77	0.04	0.04	5.0	5.0	7.1	0.27	3.56	2.21	12	1.00	617.60	617.90	617.81	618.11	619.50	620.24	CB-7

Project File: HydraFlow.stm | Number of lines: 7 | Run Date: 11/25/2019

NOTES:Intensity = 32.36 / (Inlet time + 3.60) ^ 0.71; Return period =Yrs. 10 ; c = cir e = ellip b = box

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	CB-3	1.67	0.00	1.67	0.00	Comb	5.0	2.73	6.24	4.62	1.35	Sag	12.00	0.023	0.023	0.000	0.11	8.18	0.36	8.18	3.0	Off
2	CB-2	0.89	0.00	0.89	0.00	Comb	5.0	2.73	0.00	2.31	1.35	0.010	12.00	0.013	0.013	0.013	0.11	8.36	0.25	0.01	3.0	1
3	CB-1	1.59	0.00	1.59	0.00	Comb	5.0	2.73	3.12	2.31	1.35	Sag	12.00	0.017	0.017	0.000	-0.05	5.36	0.20	5.36	3.0	Off
4	CB-4	0.62	0.00	0.62	0.00	Comb	5.0	2.73	0.00	2.31	1.35	0.010	12.00	0.016	0.016	0.013	0.10	6.42	0.25	0.01	3.0	1
5	CB-5	0.58	0.00	0.58	0.00	Comb	5.0	2.73	0.00	2.31	1.35	0.009	12.00	0.024	0.024	0.013	0.12	4.95	0.25	0.00	3.0	4
6	CB-6	0.37	0.13	0.49	0.00	Comb	5.0	2.73	0.00	2.31	1.35	0.027	12.00	0.010	0.010	0.013	0.07	6.56	0.25	0.01	3.0	5
7	CB-7	0.27	0.00	0.14	0.13	Grate	0.0	0.00	0.00	2.31	1.35	0.010	12.00	0.011	0.011	0.013	0.07	5.95	0.30	4.48	3.0	6

Project File: HydraFlow.stm | Number of lines: 7 | Run Date: 11/25/2019

NOTES: Inlet N-Values = 0.016; Intensity = 32.36 / (Inlet time + 3.60) ^ 0.71; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

APPENDIX D
Water Quality Computations

PROJECT NAME: EAGLEVILLE GREEN
DATE: 11/25/2019
CALCS BY: MS
CHECKED BY: RN

P2-1

WATER QUALITY VOLUME	
IMPERVIOUS AREA (ac) =	0.29
IMPERVIOUS AREA (%) =	48.35%
TOTAL AREA (ac) =	0.60
R =	0.49
WQV (ac-ft) =	0.024
WQV (cf) =	1,049

GROUNDWATER RECHARGE VOLUME	
IMPERVIOUS AREA =	0.48
SOIL GROUP =	B
RECHARGE DEPTH (D) =	0.25
TOTAL AREA =	0.60
GRV (ac-ft) =	0.01
GRV (cf) =	261

EFFECTIVE WQV = 788 cf
0.018 ac-ft

WATER QUALITY VOLUME PROVIDED IN POND = 1,664 cf

WATER QUALITY FLOW	
RUNOFF DEPTH (in) =	0.364
DESIGN PRECIPITATION (in) =	1.0
RUNOFF CURVE NUMBER =	91
I_a (in) =	0.198
I_a/P =	0.2
T_c (min) =	
T_c (hr) =	0.0
q_u (cfs/mi^2/in) =	
A (mi^2) =	0.00093
WQF (cfs) =	0.00

P2-2

WATER QUALITY VOLUME	
IMPERVIOUS AREA (ac) =	0.86
IMPERVIOUS AREA (%) =	75.71%
TOTAL AREA (ac) =	1.14
R =	0.73
WQV (ac-ft) =	0.070
WQV (cf) =	3,030

GROUNDWATER RECHARGE VOLUME	
IMPERVIOUS AREA =	0.76
SOIL GROUP =	B
RECHARGE DEPTH (D) =	0.25
TOTAL AREA =	1.14
GRV (ac-ft) =	0.02
GRV (cf) =	784

WATER QUALITY FLOW	
RUNOFF DEPTH (in) =	0.542
DESIGN PRECIPITATION (in) =	1.0
RUNOFF CURVE NUMBER =	95
I_a (in) =	0.105
I_a/P =	0.1
T_c (min) =	6.0
T_c (hr) =	0.1
q_u (cfs/mi^2/in) =	650
A (mi^2) =	0.00178
WQF (cfs) =	0.63

EFFECTIVE WQV =	2,246 cf 0.052 ac-ft

WATER QUALITY VOLUME PROVIDED IN DETENTION = 2,541 cf

WELTI GEOTECHNICAL, P.C.

227 Williams Street · P.O. Box 397
Glastonbury, CT 06033-0397

(860) 633-4623 / FAX (860) 657-2514

October 4, 2019

Ms. Rebecca M. Fields
Executive Director
Mansfield Housing Authority
309 Maple Road
Storrs, CT 06268

Re: Geotechnical Study for Proposed Housing, 113-121 South Eagleville Road, Storrs, CT

Dear Ms. Fields:

1.0 Herewith are the boring data pertaining to the above. Twelve borings were drilled to maximum depth of 26.5 feet or to auger refusal if above 26.5 feet. The boring locations are shown on the attached plan. *The borings were drilled by Clarence Welti Associates, Inc. and sampling was conducted by this firm solely to obtain indications of subsurface conditions as part of a geotechnical exploration program. No services were performed to evaluate subsurface environmental conditions.* Grain size gradation tests and water content tests were performed on six representative soil samples taken from the borings. The results of those tests are included in the Appendix.

2.0 The **Subject Project** will include the construction of a seven two story slab on grade housing structures with a total of 42 apartment units. The site development will include pavements for 72 regular spaces and 8 handicapped accessible spaces. The existing grades in the proposed developed area range from about Elev.622 to about Elev.612. There are two existing 2 ½ story residences on the site. At least one would be removed based on the proposed apartment building configuration. The site abuts a large wetland to the east of the developed area. A proposed grading plan was not available for this study.

3.0 The **Geologic Origin** of the natural inorganic soils consist generally of glacial lake deposits atop glacial moraine deposit. The lake deposits consist generally of medium compact to loose sand with trace to silt and gravel; or silt and fine sand.

3.1 The **Soils Cross Section** from the borings is generally as follows:

Topsoil to 6" to 12"

Locally Subsoil; fine to medium SAND, little to some Silt, trace Roots to 1.5 to 3 feet, loose

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3.0 The **Geologic Origin** of the natural inorganic soils consist generally of glacial lake deposits atop glacial moraine deposit. The lake deposits consist generally of medium compact to loose sand with trace to silt and gravel; or silt and fine sand.

3.1 The **Soils Cross Section** from the borings is generally as follows:

Topsoil to 6" to 12"

Locally Subsoil; fine to medium SAND, little to some Silt, trace Roots to 1.5 to 3 feet, loose

Glacial Lake Soils: Stratified fine to fine to coarse SAND, trace to little Silt and Gravel; or SILT and fine SAND to 4.5 to 26+ feet, medium compact to about 8 feet and loose to medium compact below 8 feet

Moraine Soils: fine to medium SAND, some Silt, little Gravel and Cobbles to auger refusal on probable bedrock at 9.5 feet to 26+ feet, dense to very dense

3.2 The **ground water** in the boreholes was at 2 to 10 feet below the existing grades at the completion of the borings (Elev. 610 to Elev.612). It is possible with heavy spring rains the water table could rise locally for short periods to 2 to 3 feet above the wetlands water level of Elev. 610. This mounding of the water table would normally be some distance from the wetland and could possibly be atop low permeability soil. Building slabs on grade should be kept above Elev. 616 and foundations should if possible be kept above Elev. 614.

4.0 The **Criteria for Foundation Type and Loading** are as follows:

1. The maximum total settlement should not exceed 3/4" and the maximum differential settlement shall not exceed ½ the maximum settlement.

2. The Foundations and Structures must address the seismic section of the building code

3. The Slab at Grade floors must not settle differentially more than ½" in excess of the main structure subsidence.

4.1 Regarding item 2 (above), the seismic site soil profile classification can be **"D"**. The mapped MCE spectral response acceleration values for Mansfield, CT are $\mathbf{S_1 = 0.062}$ for one second period and $\mathbf{S_S = 0.173}$ for short period. For transfer of ground shear into the soil the ultimate friction factor can be **0.60.**

5.0 Regarding the **Foundation Type,** the building can be supported on spread footings. The footing sub grades can be on the natural inorganic soils, or on a controlled fill placed after the removal of any existing fills, topsoil and locally frost disturbed subsoils (assume frost disturbed soil to at least 2.5 feet below the existing grades). There should be minimum 4" layer of processed base or 3/8" crushed stone on a geotextile beneath the footings on the natural soils. Controlled fills should conform to section 6.0 below and should extend horizontally beyond the footings for a distance equal to at least the depth of fill beneath the footings.

5.1 The **Allowable Bearing Pressure** for spread footings on the crushed stone layer atop the natural soils or on the controlled fill can be 4,000 psf. The allowable loading can be increased by 1/3 for seismic or wind loading. At retaining walls the maximum pressure on the toe can be 50% higher than the average pressure, cited above.

5.2 The static **Lateral Soil Loading** on retaining walls that are part of the building (if any), should be based on at-rest pressure using the coefficient $\mathbf{K_O = 0.45}$ as cited in the table below. Lateral soil loading on retaining walls apart from the building can be designed with active pressure using the coefficient $\mathbf{K_A = 0.28}$ for level backfill. The ultimate sliding coefficient for concrete cast on crushed stone or on controlled fill is **0.60.**

5.3 The **Frost Protection Depth** is 3.5 feet below the finish grades in areas, which are exposed to weather.

5.4 Summary of Foundation Design Parameters:

Parameter	Value
Allowable Bearing Pressure	4,000 psf
Soil Unit Weight (Backfill) *	125 pcf
Internal Friction Angle (Backfill) *	34°
At-Rest Pressure Coefficient, K_O	0.45
Active Pressure Coefficient, K_A (level backfill)	0.28
Ultimate Sliding Coefficient, concrete on crushed stone over soil	0.60
Seismic Site Soil Profile Classification	D
Mapped MCE Spectral Response Acceleration for one second period, S_1	0.062
Mapped MCE Spectral Response Acceleration for short period, S_S	0.173
Frost Protection Depth	3.5 feet

* Backfill material conforming to section 6.0 below

6.0 Regarding **Controlled Fill, Backfill for Retaining Walls and Excavations at Columns and Walls, plus Slab at Grade Underlayment** (to 4" below the slab bottom) the material should conform to the following or be 3/8" crushed stone:

Percent Passing	Sieve Size
100	3.5"

50 - 100	3/4"
25 - 75	No.4

The fraction, passing the No.4 sieve should have less than 15%, passing the No. 200 sieve.

All backfill and fill must be compacted to at least 95% of modified optimum density.

6.1 All existing fill, topsoil and subsoils should be removed beneath the building floor and replaced with controlled fill conforming to section 6.0 above. There should be at least 18" of controlled fill beneath the floor slabs. The final 4" layer beneath the floor slab should be 3/8" crushed stone or 3/4"minus processed base. A vapor retarder is required beneath the slab at grade floors.

7.0 Regarding **Earthwork,** excavations in the natural soils will fall in OSHA Class C. This will require sloping of excavations, which are unshored and exceed 5 feet in height, to be cut back to slopes less than 34° from the horizontal (1.5H:1V).

8.0 Regarding **New Pavements,** there should be at least 10" of CTDOT gravel subbase or material conforming to section 6.0 above placed beneath the pavement sections. If the sub grades are on wet subsoils, the subsoils would probably have to be removed to provide a stable sub grade for placement of fills and the pavement sections. The recommended pavement sections above the subbase are as follows:

For main access road; 4" of bituminous concrete (1.5" Class 2 over 2.5" Class 1) on 6" of processed stone base

For car parking areas; 3" of bituminous concrete on 6" of processed stone base

For concrete pavements; (1) truck access; 7" concrete over 8" of processed stone base, (2) for passenger vehicles; 5" of concrete on 8" processed stone base.

For pavers: below sand bedding over 8" of processed stone base

8.1 ***For concrete aprons contiguous to the building there should be free draining material, either gravel subbase or controlled fill conforming to section 6.0 above, to 18" below grade. This is to avoid movement of the slab at flush doorways.*** The modulus of sub grade reaction atop the subbase would be at least 200 pci.

9.0 This report has been prepared for specific application to the subject project in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made. In the event that any changes in the nature, design and location of structures are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing.

The analyses and recommendations submitted in this report are based in part upon data obtained from referenced explorations. The extent of variations between explorations may not become evident until construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report.

Welti Geotechnical, P.C., should perform a general review of the final design and specifications in order that geotechnical design recommendations may be properly interpreted and implemented as they were intended.

If you have any questions, please call our office.

Very truly yours,

Max Welti, P.E.
President, Welti Geotechnical, P.C.

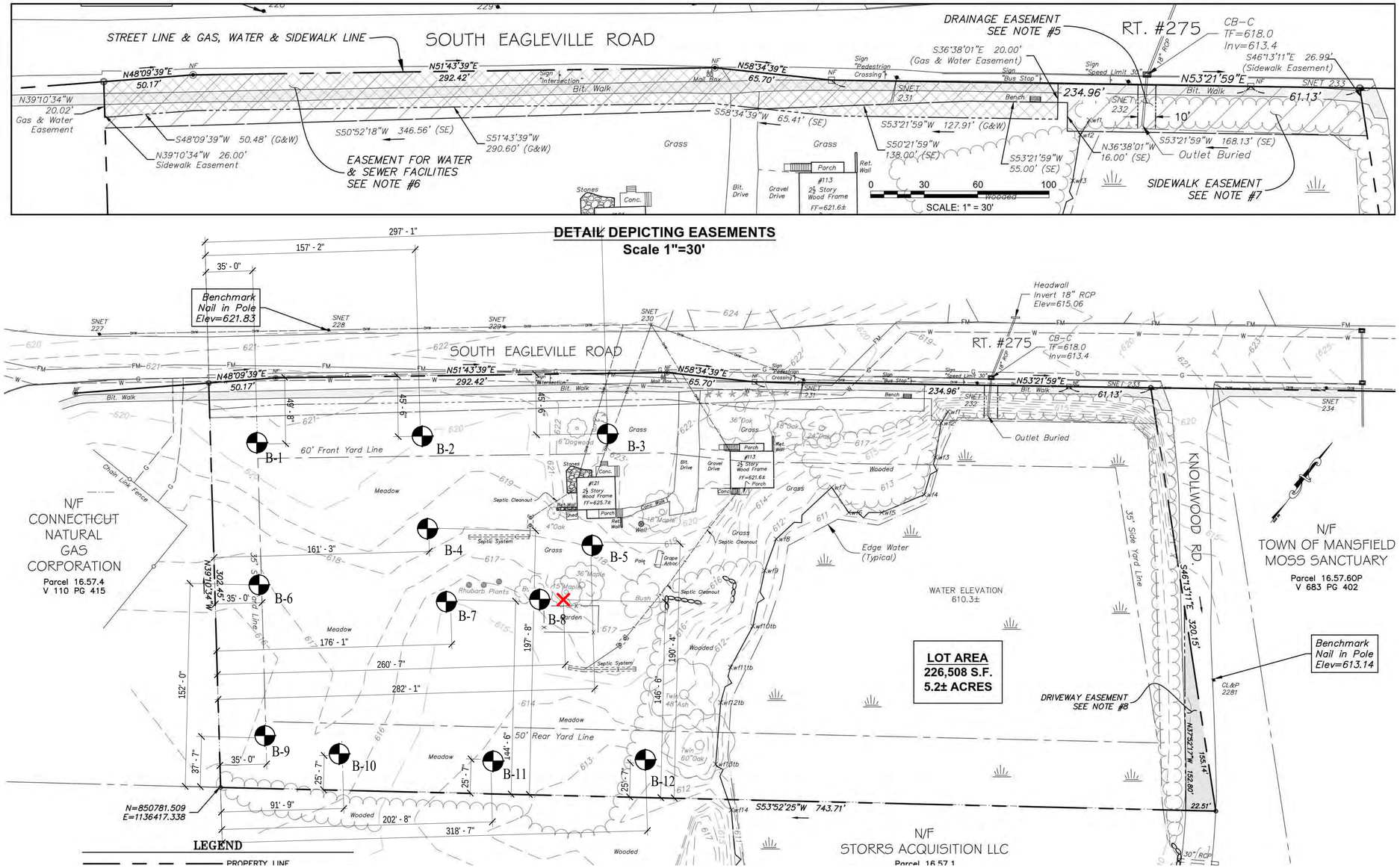
Clarence Welti Ph.D., P. E.

APPENDIX

Boring Location Plan

Boring Data

Laboratory Test Results



TEST BORING LOCATIONS
CLARENCE WELTI ASSOCIATES, INC.
9/26/19

1 A1.1 CONCEPTUAL SITE PLAN
SCALE: 1" = 30'-0"

PARKING

(73) REGULAR SPACES
(8) ACCESSIBLE SPACES

(81) TOTAL SPACES

81 SPACES/ 42 DWELLING UNITS = 1.92 SPACES/ UNIT

BUILDING HEIGHT

MAXIMUM BUILDING HEIGHT
(WITHOUT CUPOLA) = 33'-0"
(WITH CUPOLA) = 38'-6"

UNITS PER ACRE

PROPERTY AREA = 226,508 SF = +/-5.2 ACRES

UNITS/ ACRE, TOTAL SITE = 8.08

PROPERTY AREA - WETLANDS AREA = 150,720 SF = +/-3.46 ACRES

UNITS/ ACRE, TOTAL SITE - WETLANDS = 12.14

2 A1.1 DWELLING UNIT BREAKDOWN
SCALE: 1" = 60'-0"

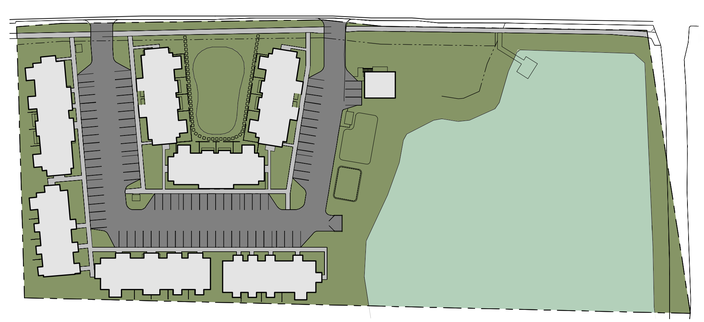
LEGEND

- 1 BED
- 2 BED
- 3 BED

(A) = ACCESSIBLE GROUND FLOOR UNIT

ACCESSIBLE & 1 BED UNITS ARE 1 STORY/ STACKED.
ALL OTHER UNITS ARE 2 STORIES

PROJECT NORTH



TOTAL PROPERTY AREA = 226,508 SF
BLDG. COVERAGE AREA = 32,620 SF
COVERAGE % = 14.40%

3 A1.1 SITE COVERAGE PLAN
SCALE: 1" = 80'-0"

UNIT BREAKDOWN

SOUTH EAGLEVILLE RD. HOUSING
MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

UNIT TYPE	UNIT QTY.	BEDS		BATHS		1/2 BATHS		NET AREA	
		PER UNIT	TOTAL	PER UNIT	TOTAL	PER UNIT	TOTAL	PER UNIT	TOTAL
1 BEDROOM - TYPE #1	6	1	6	1	6	0	0	706	4,236
1 BEDROOM - TYPE #2	8	1	8	1	8	0	0	780	6,240
1 BEDROOM - TYPE #3	1	1	1	1	1	0	0	780	780
1 BEDROOM - TYPE #4	1	1	1	1	1	0	0	750	750
1 BEDROOM - ACCESSIBLE	2	1	2	1	2	0	0	706	1,412
2 BEDROOM - TYPE #1	12	2	24	1	12	1	12	1,045	12,540
2 BEDROOM - TYPE #2 (ACCESSIBLE)	2	2	4	1	2	0	0	980	1,960
2 BEDROOM - TYPE #3	2	2	4	1	2	0	0	1,060	2,120
2 BEDROOM - EXISTING BUILDING	1	2	2	1	1	1	1	1,200	1,200
3 BEDROOM - TYPE #1	6	3	18	2	12	0	0	1,260	7,560
3 BEDROOM - TYPE #2 (ACCESSIBLE)	1	3	3	2	2	0	0	1,400	1,400
TOTAL	42		73		49		13		40,198

S. EAGLEVILLE RD. HOUSING

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

da &p dorgan architecture & planning

REVISIONS:

SHEET TITLE: SITE PLAN

PROJECT NAME: S. EAGLEVILLE RD. HOUSING

PROJECT #:

DRAWN BY:

DATE: 5/17/19

SHEET NUMBER

A1.1

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 620.5 | HOLE NO. **B-1**

GROUND WATER OBSERVATIONS
AT 10.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/24/19
FINISH DATE 9/24/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-2-1-10	0.0'-2.0'		TOPSOIL	0.50	620
					BR.FINE-MED.SAND, LITTLE SILT, TRACE GRAVEL		
	2	9-15-20-15	2.0'-4.0'		LIGHT BR. FINE-CRS.SAND, LITTLE SILT & GRAVEL	2.0	
	3	9-11-11-13	4.0'-6.0'				
5							615
10	4	3-3-4	10.0'-11.5'		BR.FINE SAND, LITTLE SILT	10.0	610
15	5	2-3-4	15.0'-16.5'		GREY/BR.SILT, TRACE FINE SAND	15.0	605
20	6	3-3-3	20.0'-21.5'				600
					GREY FINE-MED.SAND, SOME SILT, LITTLE GRAVEL	24.0	
25	7	60	25.0'-25.3'		BOTTOM OF BORING @ 25.4'	25.4	595
30							590
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-1**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 620.0 | HOLE NO. **B-2**

GROUND WATER OBSERVATIONS
AT 10.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/24/19
FINISH DATE 9/24/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0	1	1-0-1-0	0.0'-2.0'		TOPSOIL 0.50	620
					BR.FINE-MED.SAND, SOME SILT, TRACE GRAVEL	
	2	1-2-2-4	2.0'-4.0'		3.0	
					LIGHT BR.FINE SAND, LITTLE SILT	
	3	4-7-8-8	4.0'-6.0'			
5						615
					8.0	
					GREY FINE-MED.SAND, SOME SILT & GRAVEL, FEW COBBLES	
10	4	60	10.0'-10.3'			610
15	5	4-24-32	15.0'-16.5'			605
					19.5	
20					BOTTOM OF BORING @ 19.5' (AUGER REFUSAL)	600
25						595
30						590
35						585

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-2**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 622.6
HOLE NO. **B-3**

GROUND WATER OBSERVATIONS
AT none FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/24/19
FINISH DATE 9/24/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-2-4-3	0.0'-2.0'		TOPSOIL	0.50	
					BR.FINE-MED.SAND, SOME SILT, TRACE GRAVEL		
	2	2-3-2-12	2.0'-4.0'			2.5	620
					LIGHT BR.FINE-MED.SAND, LITTLE SILT, TRACE GRAVEL		
	3	10-28-60	4.0'-5.1'			4.5	
5					GREY/BR. FINE-CRS.SAND, LITTLE TO SOME SILT & GRAVEL		
							615
						9.5	
10					BOTTOM OF BORING @ 9.5' (AUGER REFUSAL)		
							610
15							
							605
20							
							600
25							
							595
30							
							590
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 HOLE NO. **B-3**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 618.5

HOLE NO. **B-4**

GROUND WATER OBSERVATIONS
AT 8.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/25/19
FINISH DATE 9/25/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-0-1-3	0.0'-2.0'		TOPSOIL	0.57	
					BR.FINE-MED.SAND, SOME SILT, TRACE ROOTS		
	2	3-7-7-7	2.0'-4.0'				
					LIGHT BR.FINE-CRS.SAND, TRACE SILT & FINE GRAVEL	3.0	615
	3	5-6-7-8	4.0'-6.0'				
5							
							610
10	4	2-3-3	10.0'-11.5'		GREY/BR.FINE-MED.SAND, LITTLE SILT, TRACE GRAVEL	10.0	
							605
15	5	1-3-15	15.0'-16.5'				
					GREY FINE-MED.SAND, SOME SILT, LITTLE GRAVEL	16.0	
							600
					BOTTOM OF BORING @ 19.0' (AUGER REFUSAL)	19.0	
20							
							595
25							
							590
30							
							585
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 HOLE NO. **B-4**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 618.3 | HOLE NO. **B-5**

GROUND WATER OBSERVATIONS
AT 8.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/26/19
FINISH DATE 9/26/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0	1	1-1-1-1	0.0'-2.0'		TOPSOIL	
					BR.FINE-CRS.SAND, LITTLE SILT, TRACE GRAVEL & ROOTS (1.0)	
	2	6-10-10-8	2.0'-4.0'		BR.FINE-CRS.SAND, LITTLE GRAVEL, TRACE SILT (2.5)	615
	3	6-6-9-9	4.0'-6.0'			
5					LIGHT BR.FINE-MED.SAND, TRACE SILT (5.0)	
					GREY/BR. FINE-CRS.SAND, SOME SILT, LITTLE GRAVEL (8.0)	610
10	4	60	10.0'-10.5'			
					BOTTOM OF BORING @ 11.0' (AUGER REFUSAL) (11.0)	
						605
15						
						600
20						
						595
25						
						590
30						
						585
35						

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-5**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 616.8 | HOLE NO. **B-6**

GROUND WATER OBSERVATIONS
AT 6.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/24/19
FINISH DATE 9/24/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-1-1-2	0.0'-2.0'		TOPSOIL	0.66	
					BR.FINE-CRS.SAND, SOME SILT, TRACE GRAVEL		615
	2	2-3-3-4	2.0'-4.0'		LIGHT BR. FINE-MED.SAND, TRACE TO LITTLE SILT	2.5	
	3	4-5-6-6	4.0'-6.0'				
5					GREY/BR.FINE SAND, TRACE TO LITTLE SILT	5.0	
							610
10	4	3-2-2	10.0'-11.5'				
							605
15	5	1-2-2	15.0'-16.5'				
							600
20	6	2-1-2	20.0'-21.5'				
							595
25	7	2-3-4	25.0'-27.0'				
					BOTTOM OF BORING @ 26.5'	26.5	590
30							
							585
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-6**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 615.0 | HOLE NO. **B-7**

GROUND WATER OBSERVATIONS
AT 6.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/25/19
FINISH DATE 9/25/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-1-1-1	0.0'-2.0'		TOPSOIL	0.56	615
					BR.FINE-MED.SAND, LITTLE TO SOME SILT		
	2	1-0-2-4	2.0'-4.0'			3.0	
					BR.FINE-CRS.SAND, LITTLE SILT		
	3	2-4-4-5	4.0'-6.0'			4.5	
5					BR. FINE-CRS.SAND, LITTLE SILT, TRACE GRAVEL		610
						8.0	
					GREY/BR.FINE-CRS.SAND, TRACE SILT & FINE GRAVEL		
10	4	1-2-2	10.0'-11.5'				605
15	5	2-3-3	15.0'-16.5'				600
20	6	15-26-24	20.0'-21.5'			20.0	595
					GREY/BR.FINE-MED.SAND, SOME SILT, LITTLE GRAVEL		
						23.0	
					BOTTOM OF BORING @ 23.0' (AUGER REFUSAL)		
25							590
30							585
35							580

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-7**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 616.0 | HOLE NO. **B-8**

GROUND WATER OBSERVATIONS
AT 5.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/26/19
FINISH DATE 9/26/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-0-1-2	0.0'-2.0'		TOPSOIL	0.56	
					BR.FINE-CRS.SAND, SOME SILT, TRACE GRAVEL		615
	2	1-2-3-2	2.0'-4.0'			3.0	
					BR.FINE-MED.SAND, TRACE SILT		
	3	2-4-4-5	4.0'-6.0'			4.5	
5					GREY/BR.SILT, SOME FINE SAND		
							610
10	4	17-20-17	10.0'-11.5'			10.0	
					GREY/BR.FINE-CRS.SAND, SOME SILT & GRAVEL		605
						13.5	
					BOTTOM OF BORING @ 13.5' (AUGER REFUSAL)		
15							600
20							595
25							590
30							585
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-8**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 616.4 | HOLE NO. **B-9**

GROUND WATER OBSERVATIONS
AT 4.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/25/19
FINISH DATE 9/25/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0	1	1-1-1-1	0.0'-2.0'		TOPSOIL 0.50	
					BR.FINE-MED.SAND, SOME SILT, TRACE GRAVEL	615
	2	4-6-6-6	2.0'-4.0'		3.0	
					BR.FINE-MED. SAND, TRACE SILT & GRAVEL	
	3	4-5-5-6	4.0'-6.0'			
5					6.0	
					GREY/BR.FINE-MED.SAND, LITTLE SILT	610
10	4	2-2-2	10.0'-11.5'			
						605
15	5	3-3-4	15.0'-16.5'			
						600
20	6	2-3-3	20.0'-21.5'			
						595
25	7	4-6-7	25.0'-26.5'			
					26.5	590
					BOTTOM OF BORING @ 26.5'	
30						585
35						

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-9**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 616.5 | HOLE NO. **B-10**

GROUND WATER OBSERVATIONS
AT 5.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/25/19
FINISH DATE 9/25/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0	1	1-1-0-2	0.0'-2.0'		TOPSOIL 0.56	
					BR.FINE-MED.SAND, LITTLE TO SOME SILT, TRACE GRAVEL	615
	2	1-3-5-5	2.0'-4.0'		3.0	
					BR.FINE-CRS.SAND, TRACE SILT & GRAVEL	
	3	3-5-6-6	4.0'-6.0'			
5						610
10	4	2-2-2	10.0'-11.5'		10.0	
					GREY/BR.FINE-MED.SAND, LITTLE SILT, TRACE GRAVEL	605
15	5	2-1-2	15.0'-16.5'			600
20	6	2-2-2	20.0'-21.5'			595
25	7	5-8-8	25.0'-26.5'		26.5	590
					BOTTOM OF BORING @ 26.5'	
30						585
35						

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-10**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 613.7
HOLE NO. **B-11**

GROUND WATER OBSERVATIONS
AT 3.5 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/26/19
FINISH DATE 9/26/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-2-4-5	0.0'-2.0'		TOPSOIL	0.56	
					LIGHT BR.FINE-CRS.SAND, TRACE TO LITTLE SILT		
	2	5-5-6-4	2.0'-4.0'				
					BR.FINE-CRS.SAND, TRACE SILT	3.5	610
	3	3-4-5-4	4.0'-6.0'				
5							
						9.0	605
					GREY/BR. FINE-CRS.SAND, SOME SILT, LITTLE GRAVEL, EW COBBLES		
10	4	24-32-60	10.0'-11.3'				
						14.0	600
					BOTTOM OF BORING @ 14.0' (AUGER REFUSAL)		
15							
							595
20							
							590
25							
							585
30							
							580
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 HOLE NO. **B-11**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 612.8 | HOLE NO. **B-12**

GROUND WATER OBSERVATIONS
AT 2.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/26/19
FINISH DATE 9/26/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-3-6-5	0.0'-2.0'		TOPSOIL	0.50	
					GREY/BR.FINE-MED.SAND, TRACE TO LITTLE SILT		
	2	4-6-5-5	2.0'-4.0'				610
	3	3-3-5-5	4.0'-6.0'				
5							
							605
10	4	8-9-15	10.0'-11.5'		GREY FINE-MED.SAND, SOME SILT & GRAVEL	10.0	
							600
15	5	7-12-13	15.0'-16.5'				
							595
20					BOTTOM OF BORING @ 20.0' (AUGER REFUSAL)	20.0	
							590
25							
							585
30							
							580
35							

LEGEND: COL. A:

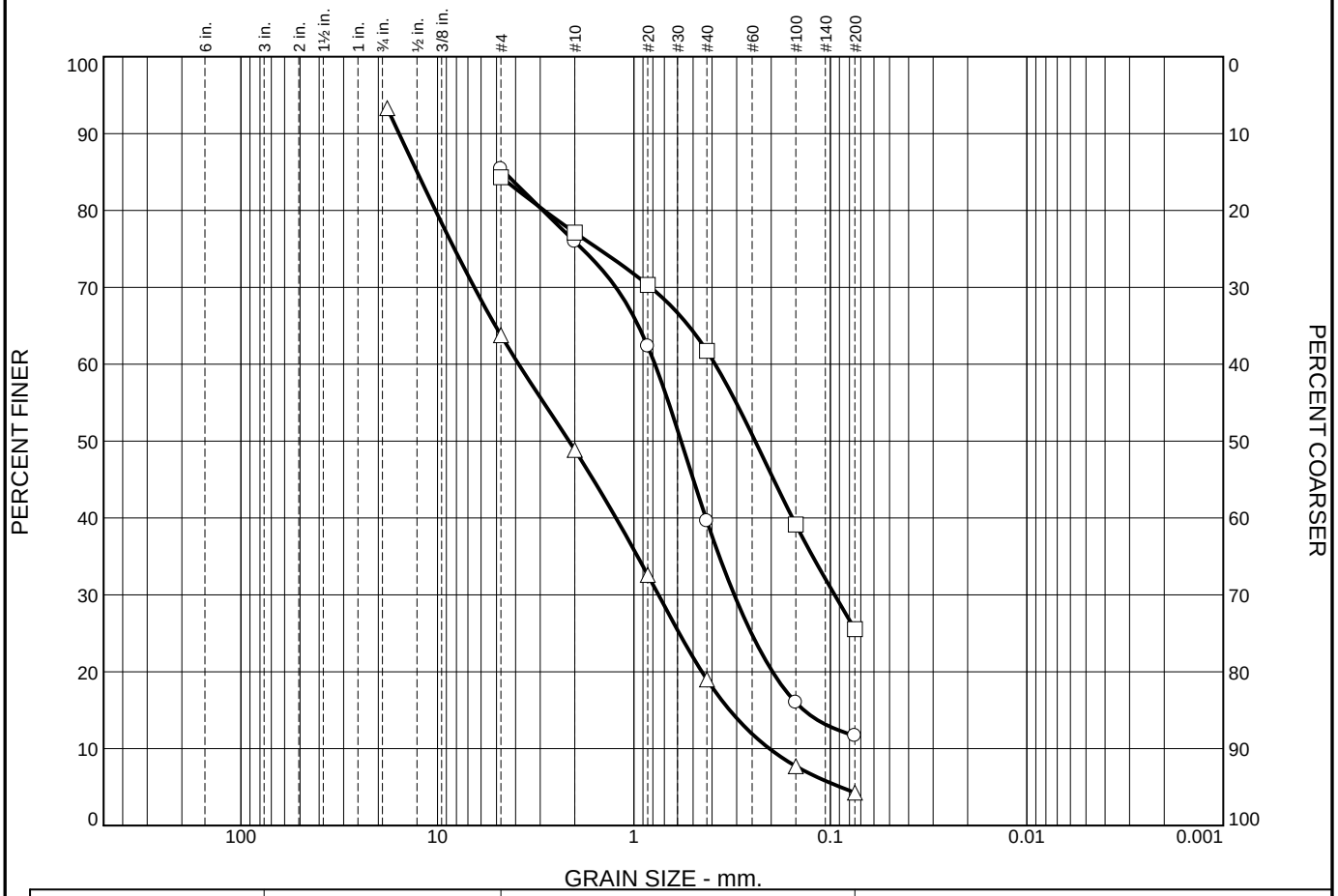
SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-12**

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○				9.4	36.4	27.9	11.7	
□				7.2	15.4	36.2	25.5	
△				14.9	29.9	14.7	4.3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.5758	0.7815	0.5748	0.3083	0.1364			
□				0.3857	0.2412	0.0952				
△			12.6836	3.8573	2.1377	0.7497	0.3251	0.2043	0.71	18.88

	Material Description	USCS	AASHTO
○			
□			
△			

Project No. **Client:** MANSFIELD HOUSING AUTHORITY

Project: PROPOSED HOUSING

○ **Source of Sample:** B-1 **Depth:** 0.50

□ **Source of Sample:** B-3 **Depth:** 2.0 **Sample Number:** 2

△ **Source of Sample:** B-5 **Depth:** 2.0 **Sample Number:** 2

Remarks:

○water content = 7.5%

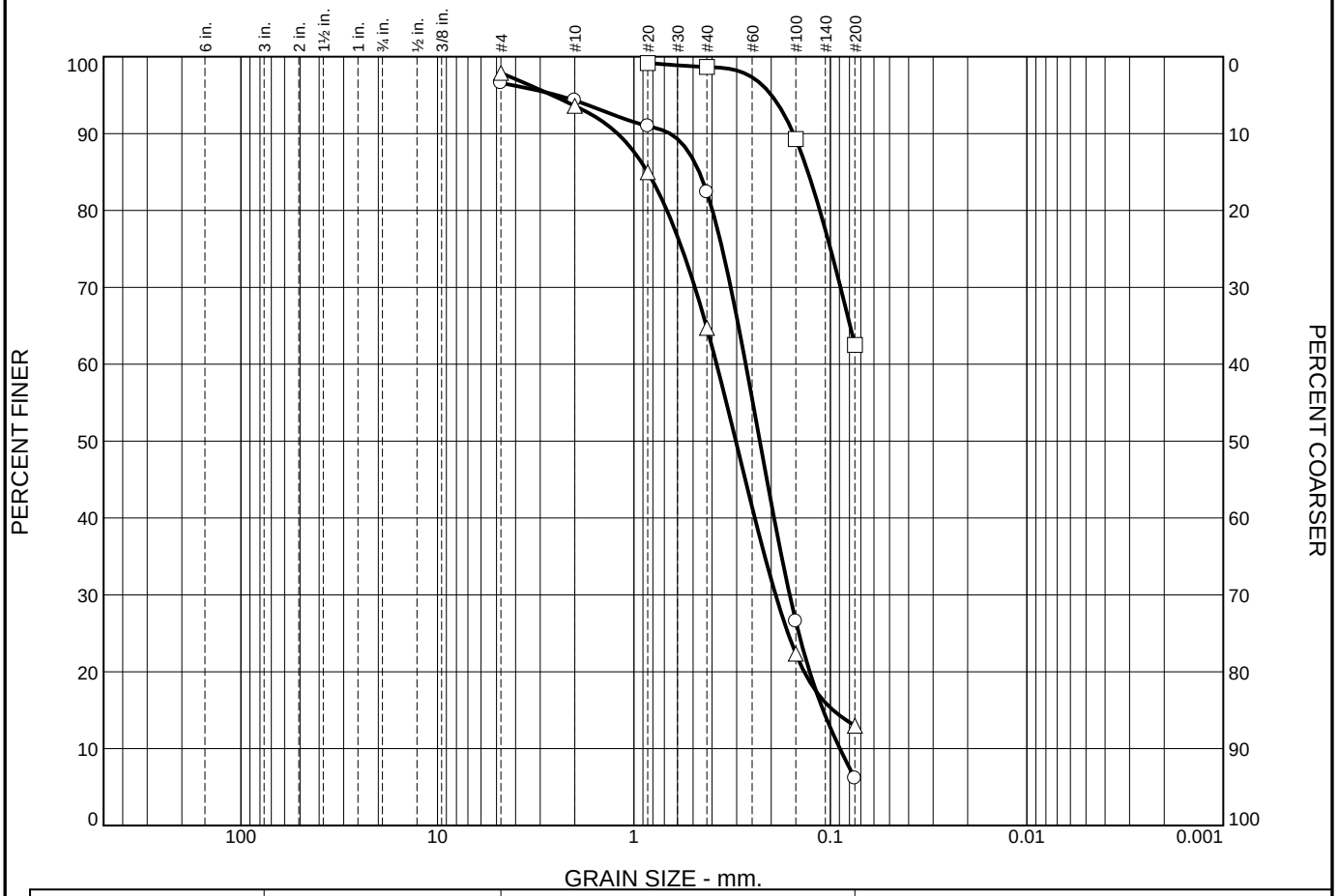
□water content = 11.3%

△water content = 3.0%

CLARENCE WELTI ASSOCIATES, INC.

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○				2.3	11.9	76.3	6.1	
□						36.2	62.5	
△				4.3	28.9	51.7	13.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4646	0.2695	0.2286	0.1612	0.1090	0.0895	1.08	3.01
□			0.1301							
△			0.8513	0.3790	0.3026	0.1900	0.0968			

	Material Description	USCS	AASHTO
○			
□			
△			

Project No. **Client:** MANSFIELD HOUSING AUTHORITY

Project: PROPOSED HOUSING

○ **Source of Sample:** B-6 **Depth:** 2.0 **Sample Number:** 2

□ **Source of Sample:** B-8 **Depth:** 4.5

△ **Source of Sample:** B-10 **Depth:** 0.56

Remarks:

○water content = 8.5%

□water content = 25.6%

△water content = 11.9%

CLARENCE WELTI ASSOCIATES, INC.

Figure

BSC GROUP
Transportation ▪ Energy ▪ Land Development

300 Winding Brook Drive
Glastonbury, CT 06033

Tel: 860-652-8227
800-288-8123
Fax: 860-652-8229

www.bscgroup.com

November 25, 2019

Ms. Kathleen A. Dorgan, FAIA, LEED-AP
Principal
Dorgan Architecture & Planning
10 Eastwood Road
Storrs, CT 06268

RE: Traffic Summary
Mansfield Nonprofit Housing Development Corporation
Traffic Summary - Eagleville Green
113-121 South Eagleville Road
Mansfield, Connecticut

Dear Ms. Dorgan:

BSC Group-Connecticut, Inc. (BSC) is pleased to submit this summary of traffic-related considerations associated with *Mansfield Nonprofit Housing Development Corporation's* proposed Eagleville Green housing project located at 113-121 South Eagleville Road (S.R. 275) in the Town of Mansfield (the "Town"), Connecticut.

1.0 INTRODUCTION

The Eagleville Green development is located on a 5.2-acre parcel and will consist of seven (7) new multi-story housing buildings, accommodating 42 dwelling units, renovation of an existing house, surface parking for 87 vehicles, and other "typical" site improvements to support the proposed building program. In addition to the constructed building complex, the site will include access via two driveways intersection S.R. 275, an exterior play area for increase in activity and an improved sense of community, and a stone dust walking path through the middle of the site.

2.0 REGULATORY SUMMARY

2.1 Local Regulations

The project is located in the South Eagleville Road Housing Zone. Local regulations were used as the standard for the site design.

2.2 State Regulations

Office of the State Traffic Administration - Pursuant to Sections 14-311 and 14-311c of the Connecticut General Statutes, major traffic generators (MTG) are regulated as to their traffic impact on the state highway system in Connecticut by the Office of the State Traffic Administration (OSTA). A MTG is defined by Section 14-312-1 of the OSTA regulations as any development of 100,000 square feet or more of gross floor area or 200 or more parking spaces. The OSTA authority under these statutes applies to new MTGs as well as expansions or land use changes to those already in existence. However, entirely residential developments of 100 units or less are exempt from OSTA regulation under these statutes. The regulation of MTGs by the OSTA is accomplished via either an Administrative Decision (AD) or certification process (Certificate).

Engineers
Environmental Scientists
GIS Consultants
Landscape Architects
Planners
Surveyors

Although located on a State Highway (Route 275), the project does not require a MTG as it does not include 100,000 square feet or more of gross floor area, 200 or more parking spaces, and is an entirely residential development less than 100 units.

Encroachment Permit - The regulations associated with encroachments on the State highway system are defined in Section 13b-17 ("Encroachment Permit Regulations") of the Connecticut General Statutes. The proposed development includes two (2) driveways that will encroach on the state highway system (intersecting the S.R. 275 right-of-way) and therefore will require an Encroachment Permit from CTDOT District 2. Project plans depicting the proposed improvements will be submitted to CTDOT District 2 for their review following issuance of local land-use approvals. In accordance with the Encroachment Permit process, the contractor will secure the actual Encroachment Permit when the work has been scheduled.

Driveway Permit - Section 13a-143a (Driveway Permits) of the Connecticut General Statutes, requires a permit from the Commissioner of Transportation to construct a new driveway or relocate an existing driveway leading onto a state highway. In determining the advisability of issuing such permit, the commissioner shall include, in his consideration, the location of the driveway with respect to its effect on highway drainage, highway safety, the width and character of the highway affected, the density of traffic thereon and the character of such traffic.

3.0 DEVELOPMENT SUMMARY

Ingress/Egress - Ingress/egress for the project is accommodated with two (2) driveways intersection S.R. 275. S.R. 275 (South Eagleville Road) is classified by CTDOT as a two-lane bi-directional minor arterial. Each driveway is comprised of a 12-foot entrance lane and a 12-foot exit lane. The exit lanes are stop-controlled with a stop sign (MUTCD R1-1/CTDOT 31-0536) and a 12-inch wide white stop bar. The curb radius of each driveway is 25-feet. The intersection site distance at each driveway has been assessed at over 335-ft., which exceeds the minimum sight distance required for the posted limit of 30mph on S.R. 275 in the vicinity of both driveways.

Circulation and Parking - The parking area is configured as a single, continuous loop with a 24-foot drive isle that meets each driveway at S.R. 275. Parking fields are generally laid-out in three (3) primary areas, accommodating a total of 87 spaces (79 standard spaces and 8 handicapped parking spaces). Standard parking spaces are configured 90-degrees to the curb, and are 9 feet wide by 20-feet deep, delineated with 4-inch white lines. Handicapped parking spaces are configured 90-degrees to the curb, and consist of passenger car spaces (10-foot wide with a 5-foot access isle) and van spaces (8-foot wide with an 8-foot access isle). Handicapped parking signs are in accordance with the 2018 Connecticut State Building Code.

We appreciate the opportunity to be part of your team for this project. Please contact me at 860-652-8227 (extension 4558) if you have any questions or comments.

Sincerely,
BSC Group – Connecticut, Inc.

Dale L. Spencer, P.E. for

Kurt A. Prochorena, PE, LEED AP
Principal

THE MANSFIELD NONPROFIT HOUSING DEVELOPMENT CORPORATION

Eagleville Green
113-121 SOUTH EAGLEVILLE ROAD
MANSFIELD, CONNECTICUT

Affordability Plan

Zoning Submission Draft
November 2019

Submitted by The Mansfield Nonprofit Housing Development Corporation

PREPARED BY:

Shipman & Goodwin LLP
One Constitution Plaza
Hartford, CT 06103-1919
(860) 251-5000

<u>NOTE</u>: This Affordability Plan is necessarily in draft form because income data changes from year to year, and because the Developer does not have the exact financing mix in place at this time. Therefore, all tenant selection, application, income verification and annual recertification procedures will comply with the requirements of the lending program, as that may change from time to time.

<u>DEFINITIONS</u>:

"**Community**" – means Eagleville Green, a multi-family rental development at 113-121 South Eagleville Road approved as a South Eagleville Road-Housing Opportunity District ("SER-HO") in **Schedule A**. The site plan is on file with the Commission. All units within the Community shall be constructed in compliance with the minimum specifications set forth in **Schedule B**. The initial location, design and features of the income-restricted housing units in the Community are set forth in **Schedule C**. The Community shall have 42 dwelling units, a minimum of thirty percent (30%) of which shall be income restricted. The specific location of the income-restricted units within the Community may be subject to change; however, the required number and mix of income-restricted units shall be maintained at all times, and all units, market and income-restricted, shall be comparable in design and amenities.

"**Developer**" – means The Mansfield Nonprofit Housing Development Corporation, of Mansfield, Connecticut, or its successors and assigns.

I. Designation as "Assisted Housing."

The Community will qualify as "assisted housing" within the meaning of § 8-30g(a)(3) of the Connecticut General Statutes.

II. Affordability Period.

The SER-HO units shall be designated as affordable for the period set forth in state law. The affordability period shall be calculated separately for each SER-HO unit, and the period shall begin on the date of initial rental of such SER-HO unit to an eligible tenant household.

III. Entity Responsible for Administration and Compliance.

This Affordability Plan will be administered by the Mansfield Housing Authority or its successors and assigns, and in such role is hereafter referred to as "Administrator." The point of contact for the Administrator shall be Executive Director Rebecca Fields or her successor, who can be reached at (860) 487-0693. The Administrator shall submit a status report, in the format required by the Commission, to the Town on compliance with this Affordability Plan annually by January 31 to show the prior year's activity.

IV. Notices of Availability for Rental of SER-HO Units.

The Developer shall provide notice of the availability of each SER-HO unit for rental. Such notices shall be provided in accordance with the Affirmative Fair Housing Marketing Plan as outlined in Section VI. The Administrator shall direct Applicants to a website for an application and more information. All such notices shall comply with the federal Fair Housing Act, 42 U.S.C. §§ 3601 *et seq.* and the Connecticut Fair Housing Act, §§ 46a-64b, 64c of the Connecticut General Statutes (together, the "Fair Housing Acts").

V. Household Income Limitation.

For the duration of the time period set forth in Section II above, all SER-HO units will qualify as "Assisted Housing" within the meaning of Connecticut General Statutes § 8-30g(a)(3).

VI. Affirmative Fair Housing Marketing Plan.

The rental of SER-HO units in the Community shall be publicized, using State regulations for affirmative fair housing marketing programs as guidelines. The Developer shall have responsibility for compliance with this section. Notices of initial availability of units shall be provided, at a minimum, by advertising in a newspaper of general circulation in such identified municipalities and at www.cthcvp.org. The Administrator shall also provide such notices to the Mansfield Planning and Zoning Commission and the local housing authority. Such notices shall direct Applicants to a website for more information and an application.

All notices shall comply with the Fair Housing Acts.

VII. Application Process.

A family or household seeking to rent one of the SER-HO Units ("Applicant") must complete an application to determine eligibility. The application form and process shall comply with the Fair Housing Acts.

A. Applications.

The application form shall be provided by the Administrator and shall collect information required for complying with the requirements of § 8-30g of the Connecticut General Statutes.

B. Application Review.

The Administrator shall review all applications for completeness and eligibility of the Applicant. Applicants shall be informed of the requirements for eligibility, income verification procedures including the need to provide signed release forms, and the penalties for supplying false information. The Administrator's review shall verify that all sources of family income and

family assets have been listed in the application. The term "family" shall be as defined by the Zoning Regulations of the Town of Mansfield. The Administrator shall not certify the eligibility of an Applicant until the application is deemed complete.

If applicable, the Applicant shall provide the documentation listed on **Schedule E** attached hereto, to the Administrator. This list is not exclusive, and the Administrator may require any other verification or documentation, as the Administrator deems necessary.

C. Application and Tenant Selection Process.

The following application and tenant selection process will be used initially and until or unless any changes are made, by the Developer or the Administrator, which will be in compliance with applicable law.

Applications

1. All applications are accepted and retained in the computer software system.
2. Applicants will not be screened at the time of application.
3. It is the Applicant's responsibility to inform the Administrator, in writing, of any changes to their personal information.
4. Applicant screening criteria will be applied to all Applicants on a uniform basis.
5. There will be no limit on the number of Applicants placed on the waiting list ("General Waiting List").
6. The General Waiting List will be purged from time to time, as determined by the Administrator.
7. The General Waiting List will be subdivided into three (3) separate General Waiting Lists based on number of bedrooms.
8. Applicants can be placed on more than one waiting list depending on number of bedrooms.
9. An Applicant on a General Waiting List for a specific number of bedrooms which is more than the Applicant requires shall be skipped if another Applicant meets the income requirements and minimum family composition for the unit size.
10. A receipt is available upon completion of the online application or in the event a paper application is submitted, a letter is sent to the Applicant informing them that they have been placed on the waiting list.
11. All waiting lists will be kept for five (5) years.
12. All waiting lists are available for public inspection under the Freedom of Information Act.

Tenant Selection Process

Three general waiting lists will be created based on number of bedrooms. All Applicants will be placed on the appropriate General Waiting List based on their family composition.

(a). Unit Waiting List Creation Process

1. When a unit vacancy is anticipated, a waiting list will be created by lottery using the Administrator's housing software program ("Unit Waiting List").

    (i) The General Waiting List may be purged, at the discretion of the Administrator, prior to the lottery. See Section (c). Purging the General Waiting List below.

    (ii) A Unit Waiting List will be created for each anticipated opening.

    (iii) No Applicant will be income qualified and no background or credit report will be completed prior to the Lottery.

    (iv) Generally, only those Applicants whose family composition meets the bedroom requirement for the anticipated vacancy will be considered.

    (v) If no eligible family requiring the number of bedrooms is available, a larger or smaller unit can be offered to a family provided their income supports the current base rent or it would not result in overcrowding, respectively.

2. Once the lottery has been completed, the anticipated opening will be filled using the Unit Waiting List. The Administrator will start with the first Applicant(s) and move through the Unit Waiting List sending a notice letter or email ("Notice") informing Applicant(s) that

    (i) there is an anticipated opening and the Applicant must respond, in writing within five (5) business days if Applicant wants to be considered or the Applicant will be removed from the Waiting List; or

    (ii) the Applicant may decline to be considered and request, in writing, within five (5) business days to remain on the Waiting List; or

    (iii) Applicant's gross income does not support the Base Rent for the unit or exceeds 80% of Area Median Income; the Applicant is being removed from the Waiting List; and Applicant has the right to appeal the decision by requesting, in writing, a hearing within ten (10) days of the Notice. See Section (d) Hearing Procedure below.

(b). Unit Waiting List Tenant Selection Process

1. EXCEPTION: For Accessible Units Only *(Number 1 and 2 should be completed concurrently to prevent vacancies)*

    (i) The Administrator will take reasonable, nondiscriminatory steps to maximize the use of accessible units by eligible individuals whose

disability requires the accessibility feature of a particular unit. The Administrator will assign the available accessible unit to tenants/Applicants in the following order:

A. Administrator will first offer the unit to a tenant with disabilities currently residing in a non-accessible unit who requires the feature(s) of the unit and has requested to be placed on the Transfer List (See Transfer Policy dated 10-20-2011).

- A letter ("Transfer Notice") will be sent to the tenant requiring the feature(s) stating that the tenant must accept the unit, in writing, within five (5) business days or they may remain on the Transfer List.

B. If no current tenant accepts the special feature, the Administrator must then offer the unit to the highest positioned Applicant on the Unit Waiting List with a family member who requires and has requested the feature(s) of the accessible unit.

C. If no current tenant or Unit Waiting List Applicant requires the special feature(s), then the process will continue as outlined below.

2. The Transfer List will be checked to determine if any current tenant has requested a transfer to a unit with features which matches the available unit.

   (i) A letter ("Transfer Notice") will be sent to the tenant requesting the transfer stating that the tenant must accept the unit with the required fees as stated in the Transfer Policy, in writing, within five (5) business days or the tenant may remain on the Transfer List.

3. Beginning with the highest positioned Applicant requesting to be considered and whose household composition best fits the number of bedrooms in the available unit, the Administrator will perform a credit and background report on the Applicant for the anticipated opening.

4. A background and credit report will be completed on any household member 18 years of age or older. Applicant and all Applicant's household members 18 years of age or older (hereafter collectively referred to as "Applicant") must have an acceptable credit and background report.

   (i) If an Applicant is an eligible noncitizen, and does not have a social security number, but has valid U.S. entry documentation, no background or credit report will be completed and the Administrator will deem the federal government's issuance of entry documents as acceptable.

(ii) An acceptable credit report must meet the following:

A. The Applicant's credit report must show no debt being placed in collections within the prior twelve (12) month period. The Administrator, at its sole discretion, may waive this for small amounts and may require they be paid in full prior to signing a lease.

B. The Applicant's credit report must show no eviction within the last five (5) years and no unpaid judgements in favor of past landlords. The Administrator, at its sole discretion, may allow the Applicant to pay the amount in full prior to lease up.

(iii) An acceptable background report must meet the following:

A. No Applicant has a felony conviction within the last five (5) years for drug-related or violent criminal activity. *Violent criminal activity* is defined as any activity that may threaten the health or safety of tenants, property owners, management staff, and persons performing contract administration functions, or other responsibilities on behalf of the Administrator.

B. No Applicant may be subject to a lifetime registration requirement under a state sex offender registration program;

C. The Administrator may determine the background report of Applicant unacceptable, if it has reasonable cause to believe based on the background report that any household member's current use or pattern of use of illegal drugs, or current abuse or pattern of abuse of alcohol, may threaten the health, safety, or right to peaceful enjoyment of the premises by other residents.

(iv) Any Applicant whose background or credit report provided grounds for rejection has the right to request a copy of the report.

(v) Where there is more than one adult on the application and the background and credit report for one of the adults disqualified the application, the background and credit report will **ONLY** be provided to the name of the adult on the report and will not be shared with any other household member.

(vi) Any Applicant who has been rejected has a right to request an appeal, in writing, within ten (10) days of the date of the denial letter. (See IV Hearing Procedures)

(vii) The tenant selection process will continue during the process of the appeal request, hearing and decision by the hearing officer.

5. If Applicant does not pass the background and credit report, the next highest position numbered Applicant on the Unit Waiting List requesting to be considered for the anticipated opening will be contacted and the above will be repeated until an Applicant with an acceptable background and credit report is determined.

6. The acceptable Applicant will be sent a formal offer letter for the available unit.

7. The Applicant will provide the Administrator with all the required documentation to income qualify the Applicant for the anticipated opening. The Applicant must have adequate income to pay base rent and utilities, not to exceed thirty percent (30%) of Applicant's adjusted income. The Applicant's income must not be more than eighty percent (80%) of area median income adjusted for family size.

8. In the event the Applicant chooses not to lease the unit or fails to provide the required documentation within the required time frame as set forth in the formal offer letter, the Administrator will move to the next Applicant on the Unit Waiting List and begin the process again.

(c). Purging the General Waiting List

1. The General Waiting List will be purged when, in the sole opinion of the Administrator, the list is exceptionally long; has many Applicants that appear to have insufficient income; or has not been done within twelve months and the Administrator believes it would be in its best interest to purge the list.

2. A purge letter or email ("Purge Notice") will be sent to each Applicant on the waiting list confirming their desire to remain on the General Waiting List and requesting updated information.

   (i) The Purge Notice will be sent to the last mailing or email address that the Administrator has on record for the Applicant.

   (ii) The Purge Notice will require the Applicant's response to be in writing and received in the Administrator office no later than seven (7) business days from the date of the Purge Notice and failure to respond within the time frame will result in the Applicant being removed from the General Waiting List.

   (iii) If the Purge Notice is returned by the post office within seven (7) business days, the Administrator will check for a Form HUD 92006 Optional and Supplemental Contact Information. If an alternate contact for "unable to contact" is checked, the Administrator will re-send the update Purge

Notice via first class mail or email to the alternate contact. If the alternate contact or Applicant fails to respond within seven (7) business days, the Applicant will be removed from the General Waiting List without further notice.

(iv) If an Applicant is removed from the General Waiting List for failure to respond, the Executive Director may reinstate the Applicant if the lack of response was due to Administrator error.

(d) Hearing Procedure

1. Any Applicant who has been deemed ineligible for any reason(s) shall be notified in writing, of their right to appeal the decision.

   (i) The Applicant must appeal, in writing, within ten (10) days of the date of the denial letter.

   (ii) The Administrator will endeavor to hear the appeal within five (5) business days of the request.

   (iii) The hearing officer will issue a decision within five (5) days of the hearing.

   (iv) The tenant selection process will continue during the process of the appeal request, hearing and decision by the hearing officer.

2. The Administrator will use the concept of preponderance of the evidence as the standard for making all admission decisions.

   (i) *Preponderance of the evidence* is defined as evidence which is of greater weight or more convincing than the evidence which is offered in opposition to it; that is, evidence which as a whole shows that the fact sought to be proved is more probable than not. Preponderance of the evidence may not be determined by the number of witnesses, but by the greater weight of all evidence.

3. If an Applicant prevails at the hearing, the Applicant will be placed back on the General Waiting List.

4. If the Applicant does not prevail and is still aggrieved, Applicant will be informed of their right to appeal to the DOH's affirmative action office and that such appeal must be made, in writing, within ten (10) days of the adverse decision.

VIII. Prioritization of Applicants for Initial Rental.

If, after publication of the Notice of Initial Rental as described in Section IV hereof, the number of qualified Applicants exceeds the number of SER-HO units, then, for the purposes of fairness and equity, Eagleville Green will use the random selection method (lottery) to select waiting list Applicants. This method serves to provide all Applicants with the same housing opportunity.

IX. Maximum Rent.

For the duration of the time period set forth in Section II above, the maximum rent shall conform to the rules and regulations of the applicable government assistance program.

Calculation of the maximum rental price for an affordable apartment home shall satisfy General Statutes § 8-30g. The maximum rental price shall be calculated as follows:

ONE BEDROOM RENTAL UNIT FOR FAMILY EARNING LESS THAN 80 PERCENT OF STATEWIDE MEDIAN INCOME	SAMPLE COMPUTATIONS BASED ON FY 2019 DATA
1. Determine lower of relevant year (2019) area median income for Hartford-West Hartford-East Hartford, CT HMFA ($97,900) or statewide median income ($100,400), adjusted for family size (family of 4), as published by HUD	$97,900
2. Determine adjusted income for a household of 1.5 persons by calculating 75 percent of Item 1	$73,425
3. Calculate 80 percent of Item 2	$58,740
4. Calculate 30 percent of Item 3, representing maximum portion of a family's income that may be used for housing	$17,622
5. Divide Item 4 by 12 to determine maximum monthly housing expense	$1,469
6. Compare HUD 2019 Fair Market Rents for Hartford-West Hartford-East Hartford, CT HMFA ($960) times 120 percent	$1,152
7. Use lesser of calculated maximum monthly expense (Item 5) and HUD fair market rent (Item 6)	$1,152
8. Determine by reasonable estimate monthly expenses for heat and utility costs, excluding telephone and cable television but including any fee required for all tenants (tenant responsible for such expenses)	$125
9. Subtract reasonable monthly expenses (Item 8) from maximum housing expense (Item 7) to determine maximum amount available for rent	$1,027

ONE BEDROOM RENTAL UNIT FOR FAMILY EARNING LESS THAN 60 PERCENT OF STATEWIDE MEDIAN INCOME	SAMPLE COMPUTATIONS BASED ON FY 2019 DATA
1. Determine lower of relevant year (2019) area median income for Hartford-West Hartford-East Hartford, CT HMFA ($97,900) or statewide median income ($100,400), adjusted for family size (family of 4), as published by HUD	$97,900
2. Determine adjusted income for a household of 1.5 persons by calculating 75 percent of Item 1	$73,425
3. Calculate 60 percent of Item 2	$44,055
4. Calculate 30 percent of Item 3, representing maximum portion of a family's income that may be used for housing	$13,217
5. Divide Item 4 by 12 to determine maximum monthly housing expense	$1,101
6. Compare HUD 2019 Fair Market Rents for Hartford-West Hartford-East Hartford, CT HMFA	$960
7. Use lesser of calculated maximum monthly expense (Item 5) and HUD fair market rent (Item 6)	$960
8. Determine by reasonable estimate monthly expenses for heat and utility costs, excluding telephone and cable television but including any fee required for all tenants (tenant responsible for such expenses)	$125
9. Subtract reasonable monthly expenses (Item 8) from maximum housing expense (Item 7) to determine maximum amount available for rent	$835

TWO BEDROOM RENTAL UNIT FOR FAMILY EARNING LESS THAN 80 PERCENT OF STATEWIDE MEDIAN INCOME	SAMPLE COMPUTATIONS BASED ON FY 2019 DATA
1. Determine lower of relevant year (2019) area median income for Hartford-West Hartford-East Hartford, CT HMFA ($97,900) or statewide median income ($100,400), adjusted for family size (family of 4), as published by HUD	$97,900
2. Determine adjusted income for a household of 3 persons by calculating 90 percent of Item 1	$88,110
3. Calculate 80 percent of Item 2	$70,488
4. Calculate 30 percent of Item 3, representing maximum portion of a family's income that may be used for housing	$21,146
5. Divide Item 4 by 12 to determine maximum monthly housing expense	$1,762
6. Compare HUD 2019 Fair Market Rents for Hartford-West Hartford-East Hartford, CT HMFA ($1,194) times 120 percent	$1,433
7. Use lesser of calculated maximum monthly expense (Item 5) and HUD fair market rent (Item 6)	$1,433
8. Determine by reasonable estimate monthly expenses for heat and utility costs, excluding telephone and cable television but including any fee required for all tenants (tenant responsible for such expenses)	$150
9. Subtract reasonable monthly expenses (Item 8) from maximum housing expense (Item 7) to determine maximum amount available for rent	$1,283

TWO BEDROOM RENTAL UNIT FOR FAMILY EARNING LESS THAN 60 PERCENT OF STATEWIDE MEDIAN INCOME	SAMPLE COMPUTATIONS BASED ON FY 2019 DATA
1. Determine lower of relevant year (2019) area median income for Hartford-West Hartford-East Hartford, CT HMFA ($97,900) or statewide median income ($100,400), adjusted for family size (family of 4), as published by HUD	$97,900
2. Determine adjusted income for a household of 3 persons by calculating 90 percent of Item 1	$88,110
3. Calculate 60 percent of Item 2	$52,866
4. Calculate 30 percent of Item 3, representing maximum portion of a family's income that may be used for housing	$15,860
5. Divide Item 4 by 12 to determine maximum monthly housing expense	$1,322
6. Compare HUD 2019 Fair Market Rents for Hartford-West Hartford-East Hartford, CT HMFA	$1,194
7. Use lesser of calculated maximum monthly expense (Item 5) and HUD fair market rent (Item 6)	$1,194
8. Determine by reasonable estimate monthly expenses for heat and utility costs, excluding telephone and cable television but including any fee required for all tenants (tenant responsible for such expenses)	$150
9. Subtract reasonable monthly expenses (Item 8) from maximum housing expense (Item 7) to determine maximum amount available for rent	$1,044

THREE BEDROOM RENTAL UNIT FOR FAMILY EARNING LESS THAN 80 PERCENT OF STATEWIDE MEDIAN INCOME	SAMPLE COMPUTATIONS BASED ON FY 2019 DATA
1. Determine lower of relevant year (2019) area median income for Hartford-West Hartford-East Hartford, CT HMFA ($97,900) or statewide median income ($100,400), adjusted for family size (family of 4), as published by HUD	$97,900
2. Determine adjusted income for a household of 4.5 persons by calculating 104 percent of Item 1	$101,816
3. Calculate 80 percent of Item 2	$81,453
4. Calculate 30 percent of Item 3, representing maximum portion of a family's income that may be used for housing	$24,436
5. Divide Item 4 by 12 to determine maximum monthly housing expense	$2,036
6. Compare HUD 2019 Fair Market Rents for Hartford-West Hartford-East Hartford, CT HMFA ($1,496) times 120 percent	$1,795
7. Use lesser of calculated maximum monthly expense (Item 5) and HUD fair market rent (Item 6)	$1,795
8. Determine by reasonable estimate monthly expenses for heat and utility costs, excluding telephone and cable television but including any fee required for all tenants (tenant responsible for such expenses)	$150
9. Subtract reasonable monthly expenses (Item 8) from maximum housing expense (Item 7) to determine maximum amount available for rent	$1,645

THREE BEDROOM RENTAL UNIT FOR FAMILY EARNING LESS THAN 60 PERCENT OF STATEWIDE MEDIAN INCOME	SAMPLE COMPUTATIONS BASED ON FY 2019 DATA
1. Determine lower of relevant year (2019) area median income for Hartford-West Hartford-East Hartford, CT HMFA ($97,900) or statewide median income ($100,400), adjusted for family size (family of 4), as published by HUD	$97,900
2. Determine adjusted income for a household of 4.5 persons by calculating 104 percent of Item 1	$101,816
3. Calculate 60 percent of Item 2	$61,090
4. Calculate 30 percent of Item 3, representing maximum portion of a family's income that may be used for housing	$18,327
5. Divide Item 4 by 12 to determine maximum monthly housing expense	$1,527
6. Compare HUD 2019 Fair Market Rents for Hartford-West Hartford-East Hartford, CT HMFA	$1,496
7. Use lesser of calculated maximum monthly expense (Item 5) and HUD fair market rent (Item 6)	$1,496
8. Determine by reasonable estimate monthly expenses for heat and utility costs, excluding telephone and cable television but including any fee required for all tenants (tenant responsible for such expenses)	$150
9. Subtract reasonable monthly expenses (Item 8) from maximum housing expense (Item 7) to determine maximum amount available for rent	$1,346

X. Principal Residence.

SER-HO units shall be occupied only as a tenant's principal residence. Subleasing of SER-HO units shall be prohibited.

XI. Requirement to Maintain Condition.

All tenants are required to maintain their units. The tenant shall not destroy, damage or impair the unit, allow the unit to deteriorate, or commit waste on the unit. When a SER-HO unit is offered for re-rental, the Administrator may cause the unit to be inspected.

XII. Enforcement.

A violation of this Affordability Plan shall not result in a forfeiture of title, but the Mansfield Planning and Zoning Commission or its designated agent shall otherwise retain all enforcement powers granted by the Connecticut General Statutes, including § 8-12, which powers include, but are not limited to, the authority, at any reasonable time, to inspect the property and to examine the books and records of the Administrator to determine compliance of SER-HO units with the affordable housing regulations.

XIII. Binding Effect.

This Affordability Plan shall be binding on the successors and assigns of the Developer and may be amended as set forth herein.

XIV. General.

A. Calculation of the maximum monthly payment for affordable apartment homes, so as to satisfy C.G.S. § 8-30g, shall utilize the median income data as published by the U.S. Department of Housing and Urban Development in effect on the day a lease is executed.

B. The maximum monthly payment that the owner of an affordable apartment home shall pay shall not be greater than the amount that will preserve such unit as defined in C.G.S. § 8-30g.

C. Each lease for an affordable apartment home will contain substantially the following provision:

"This apartment home is an affordable housing unit and is therefore subject to a limitation at the date of leasing and occupancy on the maximum annual income of the

household that may occupy the apartment home, and is subject to a limitation on the maximum monthly rent. These limitations shall be strictly enforced."

D. The affordability period shall be calculated separately for each affordable apartment home in the Community, and the period shall begin on the date, as stated in the lease, of occupancy of the affordable apartment home. The designation of an affordable unit may change over time due to an affordability tenant becoming ineligible and for other reasons in compliance with fair housing requirements.

E. In the event a tenant who occupies an affordable apartment home becomes ineligible due to an increase in income, the next available apartment in the Community would become an affordable apartment home. A temporary lapse in compliance with affordability requirements shall not result in a forfeiture or reversion of title, but the Commission or its designated agent shall otherwise retain all enforcement powers granted by the Connecticut General Statutes, including the authority under C.G.S. § 8-12 to issue notices of violation, to impose fines, and to seek injunctive relief.

SCHEDULE A

PROPERTY DESCRIPTION

A certain piece or parcel of land situated in the Town of Mansfield, County of Tolland and State of Connecticut, and shown on a map or plan entitled, "PROPERTY/BOUNDARY SURVEY PREPARED FOR MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP. 113-121 SOUTH EAGLEVILLE ROAD STORRS, CONNECTICUT Drawing date: June 27, 2016 Drawing Scale: 1" = 40'," prepared by Lenard Engineering, Inc., 2210 Main Street, Glastonbury, Connecticut. Said parcel is more particularly bounded and described as follows:

Beginning at a point on the easterly side of South Eagleville Road (Rt. #275), which point is the northeasterly corner of now or formerly Connecticut Natural Gas Corporation and the northwesterly corner of the property herein described, said point being the POINT OF BEGINNING;

thence N 48° 09' 39" E, along South Eagleville Road a distance of 50.17 feet;

thence N 51° 43' 39" E., along South Eagleville Road a distance of 292.42 feet;

thence N 58° 34' 39" E, along South Eagleville Road a distance of 65.70 feet;

thence N 53° 21' 59" E, along South Eagleville Road a distance of 234.96 feet;

thence N 53° 21' 59" E, along South Eagleville Road a distance of 61.13 feet;

thence S 46° 13' 11" E, along land now or formerly Storrs Acquisition LLC a distance of 320.15 feet;

thence S 53° 52' 25" W, along land now or formerly N/F Storrs Acquisition LLC a distance of 743.71 feet;

thence N 39° 10' 34" W, along land now or formerly Connecticut Natural Gas Corporation a distance of 302.45 feet to the POINT OF BEGINNING.

SCHEDULE B

dorgan architecture & planning

10 Eastwood Road, Storrs, CT 06268 01.518.469.6464 Registered Architect NCARB

Draft Outline Specifications Eagleville Green 11/2/19

Please note that all units will be constructed to the same standard.

Structure

- Reinforced concrete footings set on gravel over undisturbed soil.
- Concrete slab on grade
- Wood frame

Building Envelope

- Energy Star Rated Windows
- Continuous air barrier including high performance caulking
- Continuous moisture barrier
- Architectural roof shingle (25 year)
- Insulation to exceed code requirements
- Fiber cement siding

Interior

- Water Saver Rated plumbing fixtures
- Energy Star Rated appliances
- North America sourced gypsum wallboard
- Cement board in bathrooms
- Low VOC caulk
- Low VOC paint
- Low VOC mastic
- Washer dryer connections
- Solid surface countertops
- Energy Star Rated mechanical equipment
- Energy Star Rated ventilation equipment
- Smoke and CO2 detectors
- Durable cabinets and flooring

Site

- Night sky protective lighting
- Native and natively adapted plantings
- Private outdoor patio or deck for all units
- Asphalt paving

SCHEDULE C

LOCATION, DESIGN AND FEATURES OF INCOME-RESTRICTED HOUSING UNITS

Low-income, affordable and workforce housing units in the Community shall:

a. Be situated within the Community so as not to be in less desirable locations than market-rate units, and shall, on average, be no less accessible to public amenities, such as open space and recreational facilities, than the market rate units.

b. Be integrated with the rest of the Community and be compatible in size, number of bedrooms, design, appearance, exterior features, construction, and quality of materials to the market rate units. Interior features and mechanical systems shall conform to the same specifications as market rate units.

c. Use building materials that have a compatible exterior style to other units in the Community.

d. Be ready for occupancy no later than the date of the initial occupancy of the market-rate portion of the Community. If the project is developed in phases, the affordable residential units shall be developed in proportion to the phases.

As set forth in the approved site plan on file with the Commission, the affordable and market-rate units will all be comparable in terms of construction, amenities and bedroom sizes. The following will be the initially-designated affordable units. The unit designation may change due to the needs or preferences of the resident households or other reasons compliant with fair housing requirements.

EAGLEVILLE GREEN AFFORDABLE HOUSING UNITS

UNIT TYPE	UNIT QUANTITY		AFFORDABLE UNITS			MARKET UNITS
	#	Subtotal	60%	80%	Total	
1 BEDROOM - Type #1	6		1	2		3
1 BEDROOM - Type #2	8		2	1		5
1 BEDROOM - Type #3	1					1
1 BEDROOM - Type #4	1					1
1 BEDROOM - Accessible	2					2
TOTAL 1 BEDROOM UNITS		**18**	**3**	**3**	**6**	**12**
2 BEDROOM - Type #1	12		2	2		8
2 BEDROOM - Type #2 (Accessible)	2					2
2 BEDROOM - Type #3	2		1			1
2 BEDROOM - Existing Building	1					1
TOTAL 2 BEDROOM UNITS		**17**	**3**	**2**	**5**	**12**
3 BEDROOM - Type #1	6		1	1		4
3 BEDROOM - Type #2 (Accessible)	1					1
TOTAL 3 BEDROOM UNITS		**7**	**1**	**1**	**2**	**5**
TOTAL UNITS		**42**	**7**	**6**	**13**	**29**
PERCENTAGE oF TOTAL UNITS					31%	69%

LEGEND
1 BED
2 BED
3 BED
SUPPORT
(A) = ACCESSIBLE GROUND FLOOR UNIT
(60%) = 60% OF MEDIAN INCOME AFFORDABLE UNIT
(80%) = 80% OF MEDIAN INCOME AFFORDABLE UNIT
ACCESSIBLE & 1 BED UNITS ARE 1 STORY/ STACKED. ALL OTHER UNITS ARE 2 STORIES

SCHEDULE D

DEFINITIONS AND ELEMENTS OF ANNUAL FAMILY INCOME

1. Annual income shall be calculated with reference to 24 C.F.R. § 5.609, and includes, but is not limited to, the following:

a. The full amount, before any payroll deductions, of wages and salaries, overtime pay, commissions, fees, tips, bonuses and other compensation for personal services.

b. The net income from operations of a business or profession, before any capital expenditures but including any allowance for depreciation expense. Any withdrawal of cash or assets from the operation of a business or profession will be included in income, except to the extent the withdrawal is reimbursement of cash or assets invested in the operation by the family.

c. Interest, dividends, and other net income of any kind from real or personal property, before any capital expenditures but including any allowance for depreciation expense. Any withdrawal of cash or assets from an investment will be included in income, except to the extent the withdrawal is reimbursement of cash or assets invested by the family. Where the family has net family assets in excess of $5,000, annual income shall include the greater of the actual income derived from all net family assets or a percentage of the value of such assets based on the current passbook savings rate, as determined by HUD.

d. The full amount of periodic payments received from social security, annuities, insurance policies, retirement funds, pensions, disability or death benefits, or other similar types of periodic payments; including a lump-sum amount or prospective monthly amounts for the delayed start of a periodic amount, except as permitted in 2q, below.

e. Payments in lieu of earnings, such as unemployment and disability compensation, worker's compensation, and severance pay, except as permitted in 2c, below.

f. Welfare assistance payments.

(1) Welfare assistance payments made under the Temporary Assistance for Needy Families ("TANF") program are included in annual income only to the extent such payments:

(a) Qualify as assistance under the TANF program definition at 45 C.F.R. § 260.31; and

(b) Are not otherwise excluded under Section 2, below.

(2) If the welfare assistance payments include an amount specifically designated for shelter and utilities that is subject to adjustment by the welfare assistance agency

in accordance with the actual cost of shelter and utilities, the amount of welfare assistance to be included as income consists of the following:

(a) The amount of the allowance or grant exclusive of the amounts designated for shelter or utilities, plus

(b) The maximum amount that the welfare assistance agency could in fact allow the family for shelter and utilities. If the family's welfare assistance is ratably reduced from the standard of need by applying a percentage, the amount calculated under this paragraph shall be the amount resulting from one application of the percentage.

g. Periodic and determinable allowances, such as alimony and child support payments, and regular contributions or gifts received from organizations or persons not residing with the Applicant (*e.g.*, periodic gifts from family members, churches, or other sponsored group, even if the gifts are designated as rental or other assistance).

h. All regular pay, special pay and allowances of a member of the Armed Forces, except combat pay as in 2g, below.

i. For section 8 programs only and as provided in 24 C.F.R. § 5.612, any financial assistance, in excess of amounts received for tuition and any other required fees and charges, that an individual receives under the Higher Education Act of 1965 (20 U.S.C. §§ 1001 *et seq.*), from private sources, or from an institution of higher education (as defined under the Higher Education Act of 1965 (20 U.S.C. § 1002)), shall be considered income to that individual, except that financial assistance described in this paragraph is not considered annual income for persons over the age of 23 with dependent children. For purposes of this paragraph, "financial assistance" does not include loan proceeds for the purpose of determining income.

2. Excluded from the definition of family annual income are the following:

a. Income from employment of children under the age of 18 (including foster children).

b. Payments received for the care of foster children or foster adults.

c. Lump-sum additions to family assets, such as inheritances, insurance payments (including payments under health and accident insurance and worker's compensation), capital gains and settlement for personal or property losses, except as proved in 1e, above.

d. Amounts received by the family that are specifically for, or in reimbursement of, the cost of medical expenses for any family member.

e. Income of a live-in aide, as defined in 24 C.F.R. § 5.403.

f. Subject to 1i, above, the full amount of student financial assistance paid directly to the student or to the educational institution.

g. The special pay to a family member serving in the Armed Forces who is exposed to hostile fire.

h. Amounts received under training programs funded by HUD.

i. Amounts received by a person with a disability that are disregarded for a limited time for purposes of Supplemental Security Income eligibility and benefits because they are set aside for use under a Plan to Attain Self–Sufficiency ("PASS").

j. Amounts received by a participant in other publicly assisted programs which are specifically for or in reimbursement of out-of-pocket expenses incurred (special equipment, clothing, transportation, child-care, etc.) and which are made solely to allow participation in a specific program.

k. Amounts received under a resident service stipend. A resident service stipend is a modest amount (not to exceed $200 per month) received by a resident for performing a service for the PHA or owner, on a part-time basis, that enhances the quality of life in the development. Such services may include, but are not limited to, fire patrol, hall monitoring, lawn maintenance, resident initiatives coordination, and serving as a member of the PHA's governing board. No resident may receive more than one such stipend during the same period of time.

l. Incremental earnings and benefits resulting to any family member from participation in qualifying State or local employment training programs (including training programs not affiliated with a local government) and training of a family member as resident management staff. Amounts excluded by this provision must be received under employment training programs with clearly defined goals and objectives, and are excluded only for the period during which the family member participates in the employment training program.

m. Temporary, nonrecurring or sporadic income (including gifts that are not regular or periodic).

n. Reparation payments paid by a foreign government pursuant to claims filed under the laws of that government by persons who were persecuted during the Nazi era.

o. Earnings in excess of $480 for each full-time student 18 years old or older (excluding the head of household and spouse).

p. Adoption assistance payments in excess of $480 per adopted child.

q. Deferred periodic amounts from supplemental security income and social security benefits that are received in a lump sum amount or in prospective monthly amounts, or any deferred Department of Veterans Affairs disability benefits that are received in a lump sum amount or in prospective monthly amounts.

r. Amounts received by the family in the form of refunds or rebates under State or local law for property taxes paid on the dwelling unit.

s. Amounts paid by a State agency to a family with a member who has a developmental disability and is living at home to offset the cost of services and equipment needed to keep the developmentally disabled family member at home.

t. Amounts specifically excluded by any other Federal statute from consideration as income for purposes of determining eligibility or benefits under a category of assistance programs that includes assistance under any program to which the exclusions set forth in 24 C.F.R. § 5.609(c) apply. *See* Exhibit 5-1 at pp. 4-5 to HUD Handbook 4350.3: Occupancy Requirements of Subsidized Multifamily Housing Programs, revised as of November 2013, for a listing of income sources that apply for the exclusion.

3. Net family assets for purposes of imputing annual income include the following:[1]

a. Cash held in savings and checking accounts, safety deposit boxes, homes, etc.

b. The current market value of a trust for which any household member has an interest.

c. The current market value of any rental property or other capital investments, less (i) any unpaid balance on any loans secured by the property and (ii) reasonable costs that would be incurred in selling the asset (*e.g.*, penalties, broker fees, etc.).

d. The current market value of all stocks, bonds, treasury bills, certificates of deposit, mutual funds, and money market accounts.

e. The current value of any individual retirement, 401K or Keogh account.

f. The cash value of a retirement or pension fund which the family member can withdraw without terminating employment or retiring.

g. Periodic or lump-sum receipts from pension and retirement funds at retirement, termination of employment or withdrawal.

h. The cash value of life insurance policies available to the individual before death.

[1] What is included and excluded from Net Family Assets is derived with reference to Exhibit 5-2 to HUD Handbook 4350.3: Occupancy Requirements of Subsidized Multifamily Housing Programs, revised as of November 2013.

i. Any lump-sum receipts not otherwise included in income (*e.g.*, inheritances, capital gains, one-time lottery winnings, victim's restitution and settlement on insurance claims).

j. The current market value of any personal property held for investment (*e.g.*, gems, jewelry, coin collections).

k. Interest payments on a mortgage or deed of trust held by an Applicant.

4. Net family assets do not include the following:

a. Necessary personal property (*e.g.* clothing, furniture, cars, jewelry not held for personal investment etc.).

b. Interest in Indian Trust Land.

c. Equity in a cooperative unit in which the family lives.

d. Term life insurance policies.

e. Assets which are part of an active business, not including rental properties.

f. Assets that are not effectively owned by the Applicant because, although held in the Applicant's name, the assets and any income accrue to the benefit of someone else who is not a member of the family and the other person is responsible for income taxes incurred.

g. Assets that are not accessible to the Applicant and provide no income to the Applicant.

SCHEDULE E

DOCUMENTATION OF INCOME

The following documents shall be provided, where applicable, to the Administrator to determine income eligibility:

1. Employment Income.

Verification forms must request the employer to specify the frequency of pay, the effective date of the last pay increase, and the probability and effective date of any increase during the next twelve (12) months. Acceptable forms of verification (of which at least one must be included in the Applicant file) include:

a. An employment verification form completed by the employer.

b. Check stubs or earnings statement showing Applicant's gross pay per pay period and frequency of pay.

c. W-2 forms if the Applicant has had the same job for at least two years and pay increases can be accurately projected.

d. Notarized statements, affidavits or income tax returns signed by the Applicant describing self-employment and amount of income, or income from tips and other gratuities.

2. Social Security, Pensions, Supplementary Security Income, Disability Income.

a. Benefit verification form completed by agency providing the benefits.

b. Award or benefit notification letters prepared and signed by the authorizing agency. (Since checks or bank deposit slips show only net amounts remaining after deducting SSI or Medicare, they may be used only when award letter cannot be obtained.)

c. If a local Social Security Administration ("SSA") office refuses to provide written verification, the Administrator should meet with the SSA office supervisor. If the supervisor refuses to complete the verification forms in a timely manner, the Administrator may accept a check or automatic deposit slip as interim verification of Social Security or SSI benefits as long as any Medicare or state health insurance withholdings are included in the annual income.

3. Unemployment Compensation.

a. Verification form completed by the unemployment compensation agency.

b. Records from unemployment office stating payment dates and amounts.

4. Government Assistance.

a. All Government Assistance Programs. Agency's written statements as to type and amount of assistance Applicant is now receiving, and any changes in assistance expected during the next twelve (12) months.

b. Additional Information for "As-paid" Programs: Agency's written schedule or statement that describes how the "as-paid" system works, the maximum amount the Applicant may receive for shelter and utilities and, if applicable, any factors used to ratably reduce the Applicant's grant.

5. Alimony or Child Support Payments.

a. Copy of a separation or settlement agreement or a divorce decree stating amount and type of support and payment schedules.

b. A letter from the person paying the support.

c. Copy of latest check. The date, amount, and number of the check must be documented.

d. Applicant's notarized statement or affidavit of amount received or that support payments are not being received and the likelihood of support payments being received in the future.

6. Net Income from a Business.

The following documents show income for the prior years. The Administrator must consult with Applicant and use this data to estimate income for the next twelve (12) months.

a. IRS Tax Return, Form 1040, including any:

(1) Schedule C (Small Business).

(2) Schedule E (Rental Property Income).

(3) Schedule F (Farm Income).

b. An accountant's calculation of depreciation expense, computed using straight-line depreciation rules. (Required when accelerated depreciation was used on the tax return or financial statement.)

c. Audited or unaudited financial statement(s) of the business.

d. A copy of a recent loan application listing income derived from the business during the previous twelve (12) months.

e. Applicant's notarized statement or affidavit as to net income realized from the business during previous years.

7. Recurring Gifts.

a. Notarized statement or affidavit signed by the person providing the assistance. Must give the purpose, dates and value of gifts.

b. Applicant's notarized statement or affidavit that provides the information above.

8. Scholarships, Grants, and Veterans Administration Benefits for Education.

a. Benefactor's written confirmation of amount of assistance, and educational institution's written confirmation of expected cost of the student's tuition, fees, books and equipment for the next twelve (12) months. To the extent the amount of assistance received is less than or equal to actual educational costs, the assistance payments will be excluded from the Applicant's gross income. Any excess will be included in income.

b. Copies of latest benefit checks, if benefits are paid directly to student. Copies of canceled checks or receipts for tuition, fees, books, and equipment, if such income and expenses are not expected to change for the next twelve (12) months.

c. Lease and receipts or bills for rent and utility costs paid by students living away from home.

9. Family Assets Currently Held.

For non-liquid assets, collect enough information to determine the current cash value (*i.e.*, the net amount the Applicant would receive if the asset were converted to cash).

a. Verification forms, letters, or documents from a financial institution, broker, etc.

b. Passbooks, checking account statements, certificates of deposit, bonds, or financial statements completed by a financial institution or broker.

c. Quotes from a stock broker or realty agent as to net amount Applicant would receive if Applicant liquidated securities or real estate.

d. Real estate tax statements if tax authority uses approximate market value.

e. Copies of closing documents showing the selling price, the distribution of the sales proceeds and the net amount to the borrower.

f. Appraisals of personal property held as an investment.

g. Applicant's notarized statements or signed affidavits describing assets or verifying the amount of cash held at the Applicant's home or in safe deposit boxes.

10. Assets Disposed of for Less Than Fair Market Value ("FMV") During Two Years Preceding Application Date.

a. Applicant's certification as to whether it has disposed of assets for less than FMV during the two (2) years preceding the Application Date.

b. If the Applicant states that it did dispose of assets for less than FMV, then a written statement by the Applicant must include the following:

(1) A list of all assets disposed of for less than FMV;

(2) The date Applicant disposed of the assets;

(3) The amount the Applicant received; and

(4) The market value to the asset(s) at the time of disposition.

11. Savings Account Interest Income and Dividends.

a. Account statements, passbooks, certificates of deposit, etc., if they show enough information and are signed by the financial institution.

b. Broker's quarterly statements showing value of stocks or bonds and the earnings credited the Applicant.

c. If an IRS Form 1099 is accepted from the financial institution for prior year earnings, the Administrator must adjust the information to project earnings expected for the next twelve (12) months.

12. Rental Income from Property Owned by Applicant.

The following, adjusted for changes expected during the next twelve (12) months, may be used:

a. IRS Form 1040 with Schedule E (Rental Income).

b. Copies of latest rent checks, leases, or utility bills.

c. Documentation of Applicant's income and expenses in renting the property (tax statements, insurance premiums, receipts for reasonable maintenance and utilities, bank statements or amortization schedule showing monthly interest expense).

d. Lessee's written statement identifying monthly payments due the Applicant and Applicant's affidavit as to net income realized.

13. Full-Time Student Status.

a. Written verification from the registrar's office or appropriate school official.

b. School records indicating enrollment for sufficient number of credits to be considered a full-time student by the school.

Connecticut Water Company
93 West Main Street
Clinton, CT 06413-1600
Office: 860.669.8636
Customer Service: 800.286.5700

April 3, 2019

Kathy Dorgan
Dorgan Architecture & Planning
10 Eastwood Road
Storrs, CT 06268

Re: Water Feasibility
113-121 South Eagleville Road
Mansfield, Connecticut

Dear Ms. Dorgan:

This letter is in response to your recent inquiry regarding the Connecticut Water Company's interest in providing water service to the subject property. Domestic and fire protection water is available to the property from the 8" water main in South Eagleville Road. To provide such service, a properly engineered main extension may be required in accordance with the Regulations of Connecticut State Agencies. To meet the overall needs of your project, additional infrastructure improvements may be required at your expense.

Should a Customer Agreement for service not be executed within one year of the date of this letter, Connecticut Water reserves the right to reevaluate its ability to service this project.

As an alternative, you may be considering an on-site, domestic well. Please be advised that the Public Health Code prohibits the local Director of Health from issuing a water supply well permit for any premise located, or that will be located, on property whose boundary is within 200 feet of an existing community water system, when such distance is measured along a street, alley or easement. While the Code does provide for certain exceptions to this restriction, any such exception must be granted by the State Department of Public Health.

If you have questions, please feel free to call me at (860) 664-6137.

Respectfully,

Kevin Schwabe
Developer Services Coordinator

Record and return to:
Shipman & Goodwin LLP
One Constitution Plaza
Hartford, CT 06103
Attn: Mary Jo Andrews, Esq.

DRAINAGE EASEMENT

KNOW ALL PERSONS BY THESE PRESENTS, that **CT LIBERTY GROUP LLC,** a Connecticut limited liability company with a place of business in the Town of Prospect, Connecticut (the "Grantor") for the consideration of One Dollar ($1.00) and other valuable consideration received to its full satisfaction of **THE MANSFIELD NONPROFIT HOUSING DEVELOPMENT CORPORATION**, a Connecticut corporation with a place of business in the Town of Mansfield, Connecticut (the "Grantee") does hereby give, grant, bargain, sell and confirm unto the Grantee, its successors and assigns forever, the perpetual right, privilege and easement to construct, build, install, maintain, alter, repair, replace, clean, reconstruct and inspect at all times drains, pipes, and other improvements or appurtenances customary or useful in connection with drainage rights, upon, over, under and across the easement area on land of the Grantor commonly known as 101 South Eagleville Road, Mansfield, Connecticut, which easement area is more particularly described on Schedule A attached hereto and made a part hereof (the "Easement Area").

Together with the right to drain and discharge storm and surface waters onto and from the Easement Area and to flow said waters over and across the surface of land adjacent to the Easement Area in order to maintain an unobstructed flow of said waters from the Easement Area.

Together with the right to regrade the Easement Area and keep the Easement Area free of trees, bushes and other obstructions and to perform all work necessary for such drainage purposes.

Together with the right to use the Easement Area for construction and maintenance of buildings and improvements along the southerly boundary of the adjacent parcel of land owned by Grantee and commonly known as 113-121 South Eagleville Road, Mansfield, Connecticut.

Grantee shall notify Grantor in writing at least three (3) days (but not more than seven (7) days) prior to commencing any work within the Easement Area and shall make every effort to perform such work in a fashion which will be least intrusive to Grantor as possible.

Grantee shall indemnify, defend, and hold Grantor harmless from and against any and all losses, costs, damages, liens, claims, liabilities, or expenses (including, but not limited to, reasonable attorneys' fees, court costs, and disbursements), including third party claims, incurred by Grantor arising from or by reason of Grantee's access to, or use of the Easement Area or Grantee's exercise of the easement rights herein granted.

The Grantor, for itself and its successors and assigns, covenants and agrees that no structures or other improvements shall be erected or installed within the limits of the Easment Area and that there shall be no filling, flooding, grading or excavating within the Easement Area.

The Grantor reserves to itself and its successors and assigns the right to use the Easement Area for any use and purpose which does not in any way interfere with the use of the Easement Area by the Grantee, its successors and assigns, in the exercise of the easement rights herein granted.

By the acceptance of this grant the Grantee covenants and agrees, for itself and its successors and assigns, to restore the Easement Area to substantially the same condition the Easement Area was in prior to the time of the exercise of any of the easement rights herein granted, exclusive of such changes as are permitted to be made by Grantee by the terms hereof.

The above-granted easement rights are contingent on the Mansfield Planning and Zoning Commission voting as a condition of site plan approval for a 42 dwelling unit development at 113-121 South Eagleville Road, Mansfield, that the use of the Easement Area for drainage purposes will not impair the future designation of the Easement Area as open space in any development application for 101 South Eagleville Road, Mansfield.

TO HAVE AND TO HOLD the above-granted easement unto the Grantee and its successors and assigns forever, to its and their own proper use and behoof.

[signature page follows]

IN WITNESS WHEREOF, the Grantor has caused this easement to be executed as of the 13 day of Nov, 2019.

Signed, sealed and delivered
in the presence of:

Sherry VanHaaften

CT LIBERTY GROUP LLC

By: _____
Yitz Rabinowitz
Its Manager

STATE OF CONNECTICUT)
) ss. Waterbury
COUNTY OF New Haven

The foregoing Instrument was acknowledged before me, this 13th day of November, 2019, by Yitz Rabinowitz, Manager of CT Liberty Group LLC, a Connecticut limited liability company, on behalf of said limited liability company.

Sherry G. VanHaaften

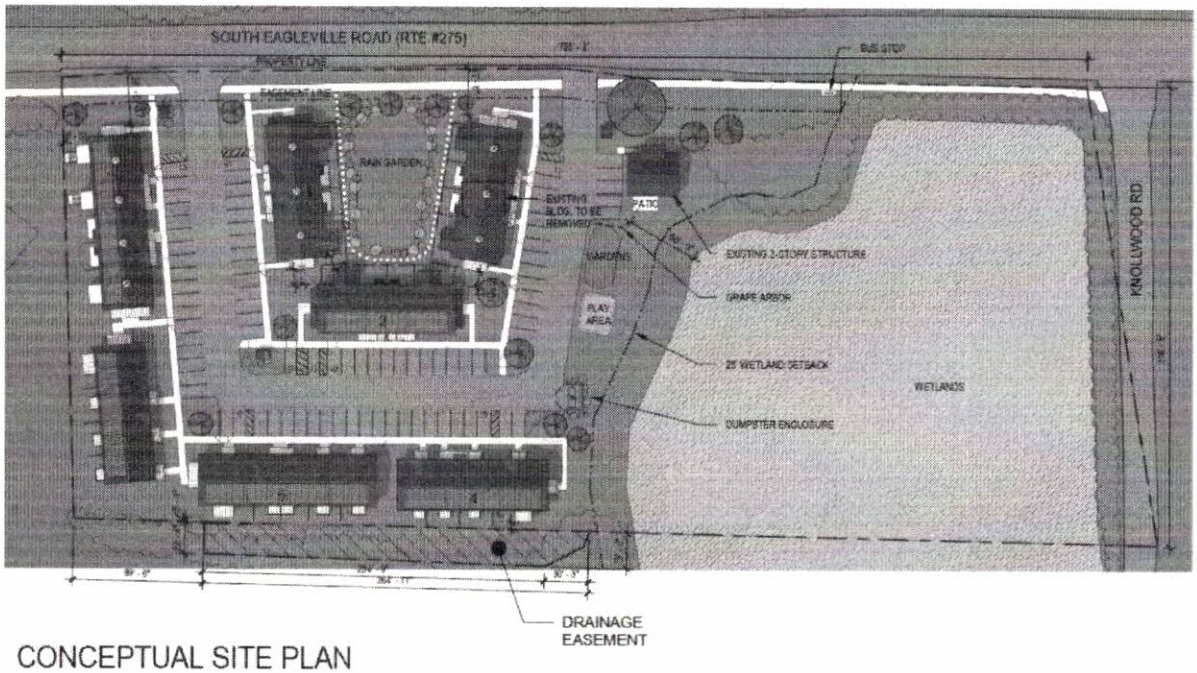
Commissioner of the Superior Court
Notary Public
My Commission Expires:

SHERRY G. VAN HAAFTEN
NOTARY PUBLIC
CONNECTICUT
MY COMMISSION
EXPIRES MAY 31, 2024

8047389v5

SCHEDULE A

[Attached drawing to be replaced by legal description based on survey of Easement Area.]



CONCEPTUAL SITE PLAN
SCALE: 1"=80'-0"

8047389v5

Town File Number: WEB-42708917

NOTIFICATION TO WINDHAM WATER WORKS

For Mansfield Projects within the Willimantic Reservoir Watershed

Sections 8-3i and 22a-42f of the State Statutes require applicants to provide to all water companies written notice of an application, petition, request or plan if the proposed project is located within the watershed of their public drinking supply. **The applicant must mail such notice within seven (7) days of the date of the application, by certified mail, return receipt requested.** To meet this requirement, this form shall be used by applicants in Mansfield for projects within the Willimantic Reservoir Watershed. To determine if a project is within the reservoir watershed, please consult map(s) on file in the Planning Office. **Failure of an applicant to comply with this statutory requirement may be grounds for a claim of procedural error ad a successful legal challenge of the decision rendered on the application.**

Application Submitted to:
(Check one or more)

- [x] Inland Wetlands Agency
- [x] Planning and Zoning Commission
- [ ] Zoning Board of Appeals

Type of Application:

- [x] Zone Change
- [ ] Subdivision
- [ ] Variance
- [ ] Special Exception/Permit
- [x] Inland Wetland/Watercourses License
- [ ] Other (Describe)

Applicant Mansfield Non-Profit Housing Dev Corp
(please **PRINT**)

Signature

Street Address 309 Maple Road

Telephone (860) 487-0693

Town Storrs, CT

Zip code 06268

Project Street Location/Nearest Utility Pole 113-121 S. Eagleville Rd, Storrs, CT

Contact Person Rebecca Fields

Telephone (860) 487-0693 x5

Brief description of application (For example: 10 lot subdivision of single family homes with on-site septic systems and wells)

New housing development that includes 42 units within 7 new buildings and the renovation of one existing building. New access drives and off-street parking to support the units. Connections to public water and sewer facilities.

Public Hearing Date: _____
(If Applicable)

Commission/Agency Meeting Date(s) 12/3/2019

Enclose a copy of the application submitted to the Town and a full set of project plans. Mail this completed form by certified mail, return receipt requested, to:

Windham Water Works-Superintendent
174 Storrs Road
Mansfield Center, CT 06250

Statement of Use

The Mansfield Non-Profit Housing Development Corporation is proposing a project located at 113-121 South Eagleville Road in Mansfield, CT. This project involves the construction of a residential development containing 42 mixed-family residential units in 7 multi-story buildings spread over a 5.2-acre parcel. In addition to the constructed building complex, the site will include access via two driveway entrances, paved surface parking for approximately 87 vehicle spaces, and a community garden area that will improve the sense of community. The total area of construction activity (disturbed area) is approximately 3.2 acres.

Approximately 47,518 square feet of construction will be performed within the 150-foot wetland buffer zone and therefore the proposed activities are under the jurisdiction of the Mansfield Inland Wetland Agency (IWA). The IWA license application has been received by the Town of Mansfield and is currently under review. The IWA and Planning & Zoning Commission will be meeting on December 2, 2019 at 6:30pm to set a date for the public hearing.