MAYOR
Caroline Simmons

CITY OF STAMFORD
ZONING BOARD
LAND USE BUREAU
888 WASHINGTON BOULEVARD
STAMFORD, CT 06904 -2152

DIRECTOR OF OPERATIONS
Matthew Quiñones

Land Use Bureau Chief
Ralph Blessing

Principal Planner
Vineeta Mathur
(203) 977-4716
vmathur@stamfordct.gov

Associate Planner
Lindsey Cohen
(203) 977-4388
lcohen@stamfordct.gov

RECEIVED
JUL 19 2023
PLANNING BOARD

July 19, 2023

Ms. Theresa Dell, Chair, Planning Board
Land Use Bureau, City of Stamford
888 Washington Blvd.
Stamford, CT 06904

RE: **223-34 -900 Long Ridge Road Property Owner LLC, 900 Long Ridge Road, Stamford, CT – Site and Architectural Plans and/or Requested Uses and a Special Permit** - Applicant is proposing a redevelopment to consist of 508 apartments, approximately 20,000 square feet of complementary nonresidential space, amenities, associated landscaping and a publicly accessible nature walk.

Dear Ms. Dell:

In accordance with Section C6-40-10 of the Charter of the City of Stamford, the above captioned Applications for a Site and Architectural Plans and/or Requested Uses and a Special Permit are hereby referred to the Planning Board of the City of Stamford for its advisory report.

A public hearing has not yet been scheduled. Referral comments should be filed with the Zoning Board Office by ***August 23, 2023.***

If you have any questions, please feel free to contact me at (203) 977-4716.

Sincerely,

Vineeta Mathur
Principal Planner

REDNISS & MEAD
LAND SURVEYING | CIVIL ENGINEERING | PLANNING & ZONING CONSULTING | PERMITTING

July 12, 2023

City of Stamford Zoning Board
c/o Ralph Blessing, Land Use Bureau Chief
888 Washington Boulevard
Stamford, CT 06901

Re: ***900 Long Ridge Road***
Special Permit & Final Site & Architectural Plans and/or requested uses applications

Dear Mr. Blessing and Board Members,

As discussed, on behalf of 900 Long Ridge Road Property Owner LLC (Owner & Applicant), enclosed please find applications and supportive materials for a Special Permit and Final Site Plan to facilitate a mixed-use development consisting of 508 dwelling units and approximately 20,000sf of complementary commercial space. Application details and design elements are described further in the attached Project Narrative and reflected in the enclosed plans.

In support of the applications, enclosed please find:

1. A check in the amount of $18,489.86 for:
    - Special Permit Fee: $17489.86;
    - Public Hearing Fee: $1,000
2. Special Permit Application;
3. FSP Application;
4. Project Narrative;
5. Drawing List;
6. General Property Description;
7. Zoning Data Chart;
8. Aerial Exhibit;
9. Property and Topographic Survey;
10. Architectural Plans;
11. Engineering Plans;
12. Landscape Plans;
13. Parking Management Plan;
14. Drainage Report;
15. Traffic Report;
16. Sustainability Score Card;
17. Letter of Authorization;

Please feel free to contact us with any questions or comments. We look forward to continuing to work with you and the Planning & Zoning Boards on this opportunity.

Sincerely,

Richard W. Redniss, FAICP

REDNISS & MEAD
LAND SURVEYING | CIVIL ENGINEERING | PLANNING & ZONING CONSULTING | PERMITTING

July 12, 2023

City of Stamford Planning Board
c/o Ralph Blessing, Land Use Bureau Chief
888 Washington Boulevard
Stamford, CT 06901

Re: ***900 Long Ridge Road***
Special Permit & Final Site & Architectural Plans and/or requested uses applications

Dear Mr. Blessing,

Please let this letter serve as our formal request for members of the consultant team to speak, should the Planning Board have any questions for the applicant at the forthcoming referral meeting on the proposed Special Permit and Final Site Plan applications. Please let us know if you have any questions or would like additional information.

Sincerely,

Richard W. Redniss, FAICP

Enclosures
CC: V. Mathur, Principal Planner

City of Stamford
Zoning Board · Land Use Bureau
Government Center · 888 Washington Boulevard · Stamford, CT 06904-2152
Phone: 203.977.4719 · Fax: 203.977.4100

APPLICATION FOR SPECIAL PERMIT

Complete, notorize, and forward **thirteen (13) hard copies and (1) electronic copy in PDF format** to Clerk of the Zoning Board with a **$1,000.00 Public Hearing Fee** and the required application filling fee **(see Fee Schedule below),** payable to the City of Stamford.

NOTE: Cost of required advertisements are payable by the Applicant and performance of required mailing to surrounding property owners is the sole responsibility of the applicant. **LAND RECORDS RECORDING FEE**: $60.00 for First page - $5.00 for each additional page)

Fee Schedule

Special Permit 20,000 sq. ft. or less	**$460.00**
Special Permit more than 20,000 sq. ft.	**$460.00 + $30 per 1,000 sq. ft. or portion thereof in excess of 20,000 sq. ft.**

APPLICANT NAME (S): 900 LONG RIDGE ROAD PROPERTY OWNER LLC

APPLICANT ADDRESS: c/o Redniss & Mead - 22 First Street Stamford, CT 06905

APPLICANT PHONE #: c/o 203-327-0500

IS APPLICANT AN OWNER OF PROPERTY IN THE CITY OF STAMFORD? Yes

LOCATION OF PROPERTY IN STAMFORD OWNED BY APPLICANT (S): 900 Long Ridge Road

ADDRESS OF SUBJECT PROPERTY: 900 Long Ridge Road

PRESENT ZONING DISTRICT: C-D

TITLE OF SITE PLANS & ARCHITECTURAL PLANS: Please see attached Drawing List

REQUESTED SPECIAL PERMIT: (Attach written statement describing request)

Please see attached Project Narrative

LOCATION: (Give boundaries of land affected, distance from nearest intersecting streets, lot depths and Town Clerk's Block Number)

Please see attached General Property Description

NAME AND ADDRESS OF OWNERS OF ALL PROPERTY INVOLVED IN REQUEST:

NAME & ADDRESS	LOCATION
900 LONG RIDGE ROAD PROPERTY OWNER LLC 595 MADISON AVE SUITE 1903 NEW YORK, NY 10022	900 LONG RIDGE ROAD Stamford, CT

DOES ANY PORTION OF THE PREMISES AFFECTED BY THIS APPLICATION LIE WITHIN 500 FEET OF THE BORDER LINE WITH GREENWICH, DARIEN OR NEW CANAAN? No (*If yes, notification must be sent to Town Clerk of neighboring community by registered mail within 7 days of receipt of application – PA 87-307*).

DOES THE PROJECT RESULT IN THE CREATION OF 10 OR MORE UNITS OR 10,000 SF OR MORE IN FLOOR AREA OR DISTURBANCE OF 20,000 SF OR MORE IN LAND AREA, THROUGH NEW DEVELOPMENT, RECONSTRUCTION, ENLARGEMENT OR SUBSTANTIAL ALTERATIONS? Yes (If yes, then complete the Stamford Sustainability Scorecard per Section 15.F).

City of Stamford
Zoning Board · Land Use Bureau
Government Center · 888 Washington Boulevard · Stamford, CT 06904-2152
Phone: 203.977.4719 · Fax: 203.977.4100

DATED AT STAMFORD, CONNECTICUT, THIS 11 DAY OF July 2023

SIGNED: _____

NOTE: Application cannot be scheduled for Public Hearing until 35 days have elapsed from the date of referral to the Stamford Planning Board. If applicant wishes to withdraw application, please notify the Zoning Board at least three (3) days prior to Public Hearing so that the Board may have sufficient time to publicize the withdrawal.

STATE OF CONNECTICUT

ss STAMFORD July 11 2023

COUNTY OF FAIRFIELD

Personally appeared Richard W. Redniss, signer of the foregoing application, who made oath to the truth of the contents thereof, before me.

DAVID PINTO
Notary Public, State of Connecticut
My Commission Expires Mar 31, 2026

_____
Notary Public ~~Commissioner of the Superior Court~~

FOR OFFICE USE ONLY

APPL. #: _____ Received in the office of the Zoning Board: *Date:* _____

By: _____

Revised 09/02/2020

City of Stamford
Zoning Board · Land Use Bureau
Government Center · 888 Washington Boulevard · Stamford, CT 06904-2152
Phone: 203.977.4719 · Fax: 203.977.4100

APPLICATION FOR APPROVAL OF SITE & ARCHITECTURAL PLANS AND / OR REQUESTED USES

Complete, notorize, and forward **thirteen (13) hard copies and one (1) electronic copy in PDF format** to Clerk of the Zoning Board with a **$1,000.00 Public Hearing Fee** and the required application filling fee **(see Fee Schedule below),** payable to the City of Stamford.

NOTE: Cost of required Public Hearing advertisements are payable by the Applicant and performance of required mailing to surrounding property owners is the sole responsibility of the applicant. **LAND RECORDS RECORDING FEE**: $60.00 for First page - $5.00 for each additional page)

Fee Schedule –WITHOUT GDP

Site Plans 20,000 sq. ft. or less of building area application fee –without GDP	**$460.00**
Site Plans more than 20,000 sq. ft. of building area-application Fee –without GDP	**$460.00 + $30 per 1,000 sq. ft. or portion thereof in excess of 20,000 sq. ft.**

Fee Schedule –WITH GDP

Site Plans 20,000 sq. ft. or less of building area application fee –with GDP.	**$260.00**
Site Plans more than 20,000 sq. ft. of building area-application Fee –with GDP.	**$260.00 + $10 per 1,000 sq. ft. or portion thereof in excess of 20,000 sq. ft.**

APPLICANT NAME (S): 900 LONG RIDGE ROAD PROPERTY OWNER LLC

APPLICANT ADDRESS: c/o Redniss & Mead - 22 First Street Stamford, CT 06905

APPLICANT PHONE #: c/o 203-327-0500

IS APPLICANT AN OWNER OF PROPERTY IN THE CITY OF STAMFORD? Yes

LOCATION OF PROPERTY IN STAMFORD OWNED BY APPLICANT (S): 900 Long Ridge Road

ADDRESS OF SUBJECT PROPERTY: 900 Long Ridge Road

PRESENT ZONING DISTRICT: C-D

TITLE OF SITE PLANS & ARCHITECTURAL PLANS: Please see attached Drawing List

REQUESTED USE: Please see attached Project Narrative

LOCATION: (Give boundaries of land affected, distance from nearest intersecting streets, lot depths and Town Clerk's Block Number)

Please see attached General Property Description

NAME AND ADDRESS OF OWNERS OF ALL PROPERTY INVOLVED IN REQUEST:

NAME & ADDRESS	**LOCATION**
900 LONG RIDGE ROAD PROPERTY OWNER LLC 595 MADISON AVE SUITE 1903 NEW YORK, NY 10022	900 LONG RIDGE ROAD Stamford, CT

DOES ANY PORTION OF THE PREMISES AFFECTED BY THIS APPLICATION LIE WITHIN 500 FEET OF THE BORDER LINE WITH GREENWICH, DARIEN OR NEW CANAAN? No *(If yes, notification must be sent to Town Clerk of neighboring community by registered mail within 7 days of receipt of application – PA 87-307).*

DOES THE PROJECT RESULT IN THE CREATION OF 10 OR MORE UNITS OR 10,000 SF OR MORE IN FLOOR AREA OR DISTURBANCE OF 20,000 SF OR MORE IN LAND AREA, THROUGH NEW DEVELOPMENT, RECONSTRUCTION, ENLARGEMENT OR SUBSTANTIAL ALTERATIONS? Yes *(If yes, then complete the Stamford Sustainability Scorecard per Section 15.F).*

City of Stamford
Zoning Board · Land Use Bureau
Government Center · 888 Washington Boulevard · Stamford, CT 06904-2152
Phone: 203.977.4719 · Fax: 203.977.4100

DATED AT STAMFORD, CONNECTICUT, THIS 11 DAY OF July 2023

SIGNED: _____

NOTE: The application cannot be scheduled for public hearing until 35 days have elapsed from the date of referral to the Stamford Planning Board. If applicant wishes to withdraw the application, this must be done in writing, and be received by the Zoning Board at least three (3) working days prior to public hearing in order to provide sufficient time to publicize the withdrawal. Applications withdrawn less than three (3) days prior to a schedule hearing date will not be rescheduled within 90 days.

STATE OF CONNECTICUT
ss STAMFORD July 11 2023
COUNTY OF FAIRFIELD

Personally appeared Richard W. Redniss, signer of the foregoing application, who made oath to the truth of the contents thereof, before me.

DAVID PINTO
Notary Public, State of Connecticut
My Commission Expires Mar 31, 2026

_____
Notary Public - ~~Commissioner of the Superior Court~~

FOR OFFICE USE ONLY

APPL. #: _____ Received in the office of the Zoning Board: *Date:* _____

By: _____

Revised 9/02/20

Project Narrative
900 Long Ridge Road
Special Permit & Final Site and Architectural and Requested Uses Applications
July 12, 2023

1. Introduction/Background

900 Long Ridge Road Property Owner LLC (Owner & Applicant), also known as Monday Properties, owns and operates the 36.5-acre property at 900 Long Ridge Road (the Site).

The site is located on the westerly side of Long Ridge Road in Master Plan Category 8 (Mixed-Use Campus) and the C-D (Designed Commercial) Zoning District. The site currently maintains approximately 230,000 square feet of office located in two 4-story buildings with surface parking and a standalone multi-level garage.

The original building, constructed in 1973, was home to Combustion Engineering after they moved their corporate offices out of New York City. The second, larger, building was completed in 1982. The property was purchased by Hyperion Software in 1995, which became part of Oracle USA. In 2010 it was announced that Nestle Waters would be moving their corporate headquarters to the property, leaving their former Greenwich location.

In November of 2020, Monday Properties purchased the site from Oracle America, Inc, which fully occupied the front building. Within a few months of the acquisition Oracle vacated its space, which now remains unoccupied. In February of 2021, Nestle Waters North America announced that it was

REDNISS & MEAD

being acquired by a private equity partnership. Shortly thereafter the new ownership of Nestle Waters North America rebranded itself to BlueTriton. As of now, BlueTriton remains the sole tenant at the property and occupies approximately 170,000± square feet.

One of the primary strategies for growth management stated in Stamford's Master Plan is to redevelop our office parks for mixed-use including housing. Since the 1970s Stamford's construction of office space has exponentially outpaced our housing stock. Decades of office development has had several effects on our city, the most pronounced of which are a surplus of unused office space, with vacancy rates exceeding 25%, and increased housing demand. Our suburban office parks, located further from the Central Business District and often with older building designs constructed for single occupant corporate headquarters, have been hit especially hard. The impact of these vacancies ripple across the City, as unused space decreases the value of property, and lowers the amount of tax dollars the City can collect and deploy to address pressing public policy concerns.

At the same time, the demand for housing has exponentially increased. Unfortunately, supply has not been able to keep pace with the increasing demand for homes within the City of Stamford and the State of CT, which is in the midst of what many consider a housing supply crisis. Over the last decade, Stamford has begun to correct this imbalance. The City has recognized the utility of converting underperforming (and unnecessary) office buildings and properties to uses that meet the needs of current and future City residents. Most recently, in December 2021, the Zoning Board took the important step of permitting multifamily residential communities in certain underperforming office parks, subject to careful municipal oversight and review.

Monday Properties is planning to help this process and build on the City's efforts by removing approximately 230,000 square feet of existing office space. The site is also zoned for an additional 330,000± square feet of commercial development. Rather than maintain or expand the existing office use, the Applicant is looking to propose a new mixed-use residential community to consist of 508 apartments and 20,000± square feet of complementary non-residential space with nearly 3 acres of the site to be maintained as a publicly accessible nature walk.

To facilitate the potential redevelopment, the applicant is submitting the following applications for:

A. Special Permit; and

B. General/Final Site and Architectural Plan and Requested uses.

2. Surrounding Area

The surrounding area consists of Master Plan Category 8 (Mixed Use-Campus) to south, Category 1 (Residential – Very Low Density Single-Family) to the west, Master Plan Category 2 (Residential – Low Density Single- Family) to the east (separated by Long Ridge Road), Category 14 (Open Space – Public Parks) to the north (Merritt Parkway). In a similar way, adjacent zoning districts include C-D RA-1, R-D, and R-10.

The Property is located just below the Merritt Parkway and is well served by local bus routes and connections to the surrounding community. The Property's frontage, Long Ridge Road, is an arterial road with a variety of uses including single-family, traditional office, medical office, senior living, institutional, religious, restaurant, and retail uses.

3. Project Area/Development Site

The site is 36.5 acres with frontage on Long Ridge Road (CT Route 104), a state road running from the Bulls Head section of Stamford to the NY state line. The site is currently improved with two 4-story office buildings, a standalone parking garage, and associated surface spaces and landscaping. The site slopes over 100' in elevation from the east (front) up to the west. The front half of the site is mostly vacant with a long driveway connecting the site's single curb cut on Long Ridge Road with the developed portion of the property. The front half does include a detention pond surrounded by a network of meandering walking paths that eventually connect to the driveway near the office buildings.

All of the office development and associated surface/structured parking is located within the western half of the property. The grade surrounding the rear building and improvements is minimally 30' below neighboring residential properties with the front building tucked into the grade another 20'+ downhill.

4. Proposed Development

A. Building Design/Overview

The proposed redevelopment consists of 508 apartments, approximately 20,000 square feet of complementary nonresidential space, indoor and outdoor amenities, structured and surface parking, and associated landscaping, situated among a 4-building residential complex.

The plan is to construct the site in two concurrent (and partially overlapping) phases. Phase 1 will include Buildings C and D located toward the northwest corner of the site closest to the existing parking structure. Phase 2 will be Buildings A and B located on the southwestern portion of the site with Building A slightly downhill. The buildings will be linked at various locations by pedestrian bridges to each other and to parking.

Amenity functions including leasing, study rooms, mail, fitness, and clubroom spaces will be provided along with external courtyard spaces with pool and communal activity areas located in Buildings A and C. Nonresidential space, as further described below, will also be included as part of each phase. Enhanced landscaping of trees, shrubs and plantings will be furnished around the site to provide a scenic buffer between the project and the neighboring community.

The buildings are positioned to terrace down the site to limit the exposure to the neighboring properties and to provide enhanced visual sight lines. Building massing, balcony locations and parapet lines vary to create a degree of architectural interest while maintaining a base commonality between the buildings. Select external building corners are enhanced with color, materials, and window treatment to emphasize important building edges. Exterior building materials will consist of various types of masonry, field stone, fiber cement, metal panels, glass, and precast trim. The overall design intent is to utilize material, scales and colors that are compatible with each other and that create a communal residential setting that fosters a sense of engagement with the surrounding landscape and an active cross interaction between the buildings.

B. Proposed Unit Mix

The buildings are comprised of a variety of unit types and sizes, including 56 studio, 235 one-bedroom, 202 two-bedroom, and 15 three-bedroom apartments ranging from 700 to 1,500 square feet in size. The proposed mix is intended to appeal to a broad range of individuals, couples and families. The exact unit size and mix may change slightly depending on market conditions, but in all cases adhering to the required parking.

C. Below Market Rate (BMR) Housing

The BMR requirement for the proposed development is 10% (50.8 units). The applicant is proposing to provide 51 BMR units onsite throughout all 4 buildings in a mix of unit types (bedroom mix) that is proportional to the market rate units and in compliance with §7.4 of the Zoning Regulations. The affordable units will provide much needed living opportunities for many people and families struggling to find an affordable home, which are even more scarce in suburban areas.

D. Nonresidential Uses

The nonresidential uses are distributed throughout both phases of the development, to be located within the lower levels of Buildings A and C. While the exact mix of uses is still being determined and will ultimately be subject to market conditions, the applicant is looking to provide a childcare center and/or preschool within Building A. The proposed space opens out to the child play area to be shared with residents, and could be coupled with a complementary educational use. Additional spaces within Building A are suitable for small professional and/or medical offices, or a sundry shop/café use open to the public and in support of the other onsite (residential and nonresidential) tenants.

The lower level of Building C is suited for slightly larger (8,000± sf) office and/or medical office users, but could also become a shared office space. This type of use could be attractive to both onsite residents and the surrounding suburban neighborhoods, for people looking to have a workspace outside the home but avoiding a commute.

To maintain maximum flexibility for the spaces, the applicant is requesting the full mix of allowable nonresidential uses. This flexibility will ultimately increase the viability of non-residential use of the Site.

E. Access and Parking

The site maintains the single, signalized, curb cut on Long Ridge Road. There are no proposed changes to site access. A traffic report prepared by Kimley-Horn is included and anticipates that vehicle trips will be reduced during both the morning and afternoon weekday peak hours.

Parking is provided in the garage levels beneath buildings A and C, as well as surface lots convenient to each of the buildings, and within the existing parking structure to remain. A total of 820 parking spaces are currently proposed – meeting the residential requirement of 779 and providing a large enough pool of parking so that sharing of spaces with the nonresidential uses is no issue. A shared parking analysis prepared by Kimley-Horn has been submitted herewith.

A total of 80 EV spaces are proposed within the garages, more than doubling the minimum requirement. A total of 126 bicycle parking spaces (including 63 Class A and 63 Class B bicycle spaces) are also proposed. Similar to the parking, EV and bicycle spaces are intended to be shared among both residential and nonresidential users of the site.

F. Landscaping and Open Space

Over 75% of the site is being maintained as open space (meaning natural/green space, patios, and walkways). In addition to maintaining existing planted buffers around the site perimeter, the developed areas will include a robust planting plan with over 240 new deciduous and evergreen trees, an additional 50+ ornamental trees and thousands of shrubs, grasses, and flowering plants.

Usable Open Space is provided through a mix of indoor and outdoor tenant amenity spaces, including the landscaped courtyards of Buildings A and C, as well as other outdoor seating, gathering, and garden spaces. In addition to the communal open space areas, approximately 70% of the residential units will have private balconies/patios. A 4,000+ sf child play area is provided near Building A, which may be shared if a daycare tenant is procured for the adjacent nonresidential space.

In addition to the open space areas within the development area, the eastern half of the site maintains a network of walking trails throughout the natural landscape and around the existing pond. Residents will be able to enjoy these trails, which are being enhanced and regularly maintained as part of the application. A portion of the trails will be made open to the public in satisfaction of the Publicly Accessible Amenity Space requirement. The applicant is proposing an area representing approximately 7.5% of the site to be open to the public (where 5% is required) and providing an additional 5 parking spaces in proximity to the trails (not included in the parking counts) to serve the public. Appropriate signage will be installed to delineate the public trails from those intended for tenants only.

G. Construction Timing

Pending approval of the submitted applications, the applicant plans to pursue a Building Permit and begin Phase 1 of construction as soon as market and tenant conditions will allow. The plan is to have Phases 1 and 2 overlap with an overall construction schedule ranging from 24 to 36 months.

H. Conformity with Stamford Master Plan and Zoning Regulations

Master Plan

Category 8 (Mixed-Use Campus) of the Master Plan contemplates "limited expansion and adaptive reuse of compatible office, research and development, residential, government, educational and medical uses." The proposed mixed-use residential community fulfills this goal by eliminating an oversupply of large-scale office and creating much needed housing with smaller-scale complementary nonresidential uses. Other Master Plan policy goals realized through this redevelopment include:

- **1.3B.1** Amend zoning to allow for redevelopment of office parks outside Downtown for mixed-use
- **3B.2** (states in part) "Redevelopment of underutilized office space in suburban-style office parks for mixed-use development should be encouraged."
- **3C.3:** Maintain the affordable housing stock to ensure that people who work in Stamford can afford to live in Stamford.
- **4E.4** Consider opportunities for mixed-use transit supportive redevelopment of underutilized office parks on High Ridge and Long Ridge Roads

  (further states in part) "Replacing office buildings with mixed-use developments may therefore be appropriate, since the addition of residential uses in this corridor would internalize some

traffic that otherwise would use the Merritt Parkway, and some of the traffic generated by the mixed-use developments would be in the off-peak direction and would tend to peak prior to the morning office traffic peak and after the evening office peak."

- **6A.1** Balance new development with preservation of existing residential communities
- **6B**: Preserve Existing and Create New Affordable Housing.
- **6C.2** Promote development of a variety of housing types

Zoning Regulations

The C-D zone was recently updated to include residential uses on certain eligible sites. The proposed development meets all of the requirements and standards of the C-D Zone and other applicable sections of the Zoning Regulations. Please refer to the Zoning Data Chart for additional information on zoning compliance.

5. Action Items

To facilitate the potential redevelopment and implement the many goals of Stamford's Master Plan, the Applicant has submitted the following applications.

- **Special Permit pursuant to the following sections of the Zoning Regulations**:
    - §9.G.3 Permitted Uses (within the C-D Zone)

      Pursuant to recent changes to the C-D Zone, all permitted uses are subject to Special Permit approval. The applicant is proposing a mixed-use residential community and is requesting all uses under subsections a, c (multi-family only), f, g, h, i, and j to be permitted. The multi-family residential use is essential to the redevelopment of the property. All other requested uses are to provide maximum flexibility for the nonresidential spaces totaling 20,000 square feet and intended to be occupied by a mix of different tenants and uses.
    - §9.G.4.g to permit the existing freestanding parking structure to remain exempt from the Building Coverage and Density calculations. This regulation was originally written for this site and this parking structure to encourage reduced development intensity, conservation of open space and effective use of topography to screen above-grade parking structures. These goals continue to be met by the redevelopment proposal in that total FAR is maintained below 0.35 – a reduction of nearly 80,000 sf (or 12%) from the otherwise permitted 0.4 FAR. Proposed Lot Coverage (i.e. impervious space) is also being maintained well below the permitted maximums – 27% proposed where 35% (plus exemptions totaling 40%) is allowed. This represents a conservation of over 4.7 acres of open space.
    - §12.D.1.g to permit the residential parking spaces to be 8.5' in width, as permitted in Parking Categories 1 and 2, instead of the 9' otherwise required. The proposed apartment complex is similar in its parking operation to the multi-family developments permitted in Parking Categories 1 and 2 and will be able to operate successfully under the same design standards. It is worth noting that Parking Category 3 requires a 44% increase (240 spaces) in the required parking for the same number and mix of

residential units than Category 1. The modest width reduction helps to reduce the increased pavement and enhance the conservation of open space on the site. This request has been previously discussed with both Land Use and TTP staff.

- **Site and Architectural Plans and Requested Uses (Final) –** The Applicant requests approval for the proposed 508-unit mixed-use residential complex with approximately 20,000 sf of nonresidential space as further described herein, including approval of the proposed location, height, coverage, relationships with buildings and property lines, parking, landscaping, open space, and building materials.

6. Conclusion

The proposed development embodies the applicable policy goals of the Mixed-Use Campus Master Plan Category and its vision for the future of the C-D Zone. The proposed buildings are appropriately scaled for the site's location within the surrounding topography, natural features, and greater neighborhood. The proposed development is anticipated to have a positive impact on weekday peak-hour traffic and provide much needed housing opportunities for the City of Stamford.

7. Statement of Findings

I. The above referenced specific Special Permit requests are integral to the development project as a whole. Thus, for purposes of demonstrating compliance with the standards and conditions below, the entire development proposal is considered. The Applicant submits that all applicable criteria contained in Stamford Zoning Regulations Section 19.C.2 are met for the following specific reasons:

a. Special Permits shall be granted by the reviewing board only upon a finding that the proposed use or Structure or the proposed extension or alteration of an existing use or Structure is in accord with the public convenience and welfare after taking into account, where appropriate:

1) the location and nature of the proposed site including its size and configuration, the proposed size, scale and arrangement of Structures, drives and parking areas and the proximity of existing dwellings and other Structures.

The proposed development is appropriately located within a mixed residential and commercial neighborhood and the Mixed-Use Campus Master Plan Category (Category #8). The proposed size and scale of the development is compatible in scale to other existing C-D sites and thoughtfully designed minimize any visual impacts to the surrounding neighborhood. Proposed buildings will maintain significant setbacks from all property lines.

2) the nature and intensity of the proposed use in relation to its site and the surrounding area. Operations in connection with Special Permit uses shall not be injurious to the neighborhood, shall be in harmony with the general purpose and intent of these Regulations and shall not be more objectionable to nearby properties by reason of noise, fumes, vibration, artificial lighting or other potential disturbances to the health, safety or peaceful enjoyment of property than the public necessity demands.

Category 8 (Mixed-Use Campus) of the Master Plan contemplates "limited expansion and

adaptive reuse of compatible office, research and development, residential, government, educational and medical uses. Housing is considered significantly less intense in terms of parking and traffic impact than similarly sized commercial/office uses. The development was designed to have the least impact possible on the sensitive portions of the site – with the buildings and parking generally located on already developed/disturbed portions of the site. The Applicant is also not proposing any new or modified curb-cuts at this time, minimizing any impact to the adjacent roadways. Thus, the Applicant submits that the proposed development is appropriate for the neighborhood, will increase property values and will not be objectionable to nearby properties.

3) *the resulting traffic patterns, the adequacy of existing Streets to accommodate the traffic associated with the proposed use, the adequacy of proposed off-street parking and loading, and the extent to which proposed driveways may cause a safety hazard, or traffic nuisance.*

As previously mentioned, office uses are generally considered to have the largest peak hour traffic impact when compared to other uses. Thus, the removal of approximately 230,000 square feet of existing office, and eliminating the potential for an additional 324,000 of permitted office space, in lieu of 508 apartments and 20,000 of mixed nonresidential uses represents a significant improvement in potential traffic impact. Further details regarding the traffic impact can be found in the accompanying traffic study prepared by Kimley-Horn.

4) *the nature of the surrounding area and the extent to which the proposed use or feature might impair its present and future Development.*

The surrounding area includes a variety of residential, commercial, institutional and retail uses. The proposed residential housing is compatible with these uses and will provide an additional opportunity for people that work in Stamford to live in Stamford. It is well-documented that our suburban office parks are struggling. Forgoing more potential office space with a use so desperately needed by our growing population will only increase our tax base, improve surrounding property values and create opportunities for future development.

5) *the Master Plan of the City of Stamford and all statements of the purpose and intent of these regulations.*

Category 8 (Mixed-Use Campus) of the Master Plan contemplates "limited expansion and adaptive reuse of compatible office, research and development, residential, government, educational and medical uses." The proposed mixed-use residential community fulfills this goal by eliminating an oversupply of large-scale office and creating much needed housing with smaller-scale complementary nonresidential uses. Other Master Plan policy goals realized through this redevelopment include:

- **1.3B.1** Amend zoning to allow for redevelopment of office parks outside Downtown for mixed-use
- **3B.2** (states in part) "Redevelopment of underutilized office space in suburban-style office parks for mixed-use development should be encouraged."
- **3C.3:** Maintain the affordable housing stock to ensure that people who work in Stamford can afford to live in Stamford.
- **4E.4** Consider opportunities for mixed-use transit supportive redevelopment of underutilized

office parks on High Ridge and Long Ridge Roads

(further states in part) "Replacing office buildings with mixed-use developments may therefore be appropriate, since the addition of residential uses in this corridor would internalize some traffic that otherwise would use the Merritt Parkway, and some of the traffic generated by the mixed-use developments would be in the off-peak direction and would tend to peak prior to the morning office traffic peak and after the evening office peak."

- **6A.1** Balance new development with preservation of existing residential communities
- **6B**: Preserve Existing and Create New Affordable Housing.
- **6C.2** Promote development of a variety of housing types.

The proposed redevelopment will help achieve some of the City's primary growth strategies by reducing the glut of office space, particularly outside the Central Business District, and providing much needed housing, including 51 units of affordable housing which is starkly missing from suburban areas. The proposed development will drastically increase the value and associated taxes of the property while reducing peak hour traffic generated from the site. For all of the reasons stated, the Applicant submits that the proposal and the associated Special Permit requests are in accord with the public convenience and welfare.

II. Pursuant to Section 19.D.4 Standards for Review the applicant submits that all applicable criteria are met for the following reasons:

In reviewing site plans the Zoning Board shall take into consideration the purpose of these Regulations, including the purpose of the applicable zoning district and the goals and policies of the Stamford Master Plan, the public health, safety and general welfare and convenience of the general public and the maintenance of property values. In its review the Board may modify a site plan or condition an approval to the extent necessary to conform the site plan to the following standards and objectives:

(1) Safe, adequate and convenient vehicular traffic circulation, operation, parking and loading, and pedestrian circulation, both within and without the site.

(a) The number, locations and dimensions of all vehicular and pedestrian access drives and walkways, parking spaces, drop-off and loading areas, and provisions for handicapped access shall conform to the standards of Section 12 of these Regulations, to the adopted design criteria and engineering practices of the Dept. of Traffic and Parking, and all other applicable standards. Such areas shall be constructed of suitable hard surface materials and maintained in good condition.

The proposed development generally makes use of existing access drives. All proposed internal drives, walks, and parking spaces are thoughtfully designed to be safe and convenient to each of the proposed buildings in the complex, and compliant with all standards of Section 12 of the Regulations.

(b) The number of vehicle access drives shall be minimized and shall be located and designed to provide safe and convenient turning movements and safe sightline as determined in accordance with the Geometric Highway Design Standards of the Conn. Dept. of

Transportation.

The single existing, signalized vehicle access drive is being maintained.

(c) Area streets and traffic controls shall be determined to have adequate capacity to service the site without causing undue congestion or hazardous conditions.

The existing access drive is signalized, and the proposed changes to the site are expected to have a net positive effect on traffic.

(2) The protection of environmental quality, landscaping of open space and harmony with existing development. The Board shall take into consideration the following features and standards:

(a) The location, height, design and materials of walls, fences, hedges and plantings shall be appropriate to the vicinity and shall suitably screen parking, loading, garbage collection facilities, outside storage areas, accessway drives, utility installations and other such features; such landscaping shall be appropriate to the general character of the vicinity and consider the proximity and nature of abutting uses and the level of use of adjoining public streets and walkways.

The existing planted buffers along the site perimeter are generally being maintained. The proposed buildings have been designed to utilize the natural topography of the site as another means of screening the development from neighboring properties. All loading and trash collection takes place well within the site, and not near any abutting property.

(b) All open space areas, exclusive of undisturbed natural areas, shall be suitably landscaped to the satisfaction of the Board. Site landscaping shall be performed at a minimum dollar value equivalent to one shade tree of 2.5 inch caliper for every two hundred (200) square feet of landscaped area. In multi-family developments, open space shall be designed to provide functional outdoor living and play areas meeting the needs of intended residents.

While maintaining much of the undisturbed natural areas, the applicant is proposing a robust planting plan including nearly 300 new trees and thousands of shrubs, grasses, and flowering plants. Open space is provided in a variety of forms and locations throughout the site including landscaped courtyards for recreation, swimming, socializing, as well as quiet enjoyment. The site also proposes both public and private nature trails for more active recreation.

(c) Soil erosion, sediment and the release of excessive dust shall be controlled through implementation of suitable short term and long term controls in accordance with the standards and procedures of Section 15-B.

A comprehensive Sedimentation and Erosion Control Plan has been prepared by Redniss and Mead, which ensures that the standards and procedures of Section 15-B of the Regulations are satisfied. A copy of this plan is enclosed herewith.

(d) Site development shall seek to preserve existing specimen trees, historic structures and other significant natural features of the site. Accordingly, the premature

demolition and site clearance of prospective development sites is specifically discouraged and may be taken into consideration in subsequent site plan reviews.

Much of the site's natural landscape is being maintained, and in some areas enhanced. The proposed redevelopment makes use of existing developed areas so as to minimize additional disturbance.

(e) *Artificial lighting, and site generated noise, odors, particles and other disturbances shall be controlled to avoid interference with the use and enjoyment of neighboring properties. The location, height, design and arrangement of outside lighting shall be consistent with safety such as to avoid glare on any other lot and to avoid hazards to traffic on any street.*

All artificial lighting is designed to be controlled and not interfere with the use and enjoyment of the neighboring properties. The proposed buildings and parking areas are hundreds of feet from the roadway. A photometric plan confirming appropriate site lighting is enclosed as part of the landscape plans.

(f) *Available public utilities shall be adequate in capacity to safely service the requirements of the site. Surface water drainage facilities shall be adequate to safely drain the site while minimizing the risk of downstream flooding and erosion. Where infrastructure capacity is judged not to be adequate the Board may accept a binding agreement to perform suitable improvements.*

Coordination with public utility companies to ensure adequate capacity has already commenced. A comprehensive drainage plan has been prepared by Redniss and Mead and is submitted with the enclosed materials. The plans illustrate the adequacy and availability of public utilities for the site.

(g) *Adequate provision shall be made for emergency vehicle access, fire lanes, and safe fire flows, upon the recommendation of the Fire Marshall and the public water utility.*

Emergency first responders will be able to access the Property safely and conveniently.

(h) *The arrangement, location, apparent bulk, architectural features, materials, texture and color of proposed buildings and structures shall establish an architectural character and overall site design compatible with the scale and general character of the vicinity.*

The proposed buildings are consistent with the height, bulk, and scale throughout the C-D zone, and have been designed to integrate with the sloping nature of the site. Architectural plans submitted herewith specify quality materials on all building facades.

(i) *Building setbacks and the configuration of open space shall be appropriate to the existing structures on adjoining properties and established patterns of use of side and rear yard areas, and to the existing physical conditions of the site.*

The proposed site design maintains over 70% of the site as either existing or newly planted "green" space. The proposed buildings are situated generally within the already developed

areas of the site and are set well below the elevation of the closest adjoining properties.

(j) No use shall be permitted that will cause or result in:
-dissemination of dust, smoke, observable gas or fumes, odor, noise or vibration beyond the immediate site of the building in which such use is conducted, or
-unusual hazard of fire or explosion or other physical hazard to any adjacent buildings, or
-harmful discharge of liquid materials, or
-unusual traffic hazard or congestion due to the type of vehicles required in the use or due to the manner in which traffic enters or leaves the site of the use.

No nuisance or hazardous conditions are anticipated, consistent with the engineering materials provided herein.

(k) All buildings and grounds and other structures shall be maintained in good repair and in safe, clean and sanitary condition. All landscaping required pursuant to an approved site plan shall be installed to the satisfaction of the Director of Parks and Recreation and shall thereafter be maintained in accordance with an agreement to be made part of the application of record, which agreement shall be enforced by the Zoning Enforcement Officer, upon advice of the Director.

The Applicants are amenable to a condition of approval requiring the execution of a Landscape Maintenance Agreement prior to the issuance of a Certificate of Occupancy.

Drawing List
Special Permit & Final Site & Architectural Plans and/or requested uses applications
900 Long Ridge Road
July 12, 2023

Sheet #	Title/Description	Prepared by	Date
Civil			
PSTS	Property and Topographic Survey	Redniss & Mead	05/19/2023
ZLS	Zoning Location Survey	Redniss & Mead	06/23/2023
SE-1	Site Development Plan	Redniss & Mead	06/30/2023
SE-2A	Phase 1 Site Plan	Redniss & Mead	06/30/2023
SE-2B	Phase 1 Grading Plan	Redniss & Mead	06/30/2023
SE-2C	Phase 1 Utility Plan	Redniss & Mead	06/30/2023
SE-2D	Phase 1 Pond Plan	Redniss & Mead	06/30/2023
SE-3A	Phase 2 Site Plan	Redniss & Mead	06/30/2023
SE-3B	Phase 2 Grading Plan	Redniss & Mead	06/30/2023
SE-3C	Phase 2 Utility Plan	Redniss & Mead	06/30/2023
SE-4A	Phasing Plan P1	Redniss & Mead	06/30/2023
SE-4B	Phasing Plan P1	Redniss & Mead	06/30/2023
SE-4C	Phasing Plan P2	Redniss & Mead	06/30/2023
SE-4D	Phasing Plan P2	Redniss & Mead	06/30/2023
SE-5	Notes & Drainage Tables	Redniss & Mead	06/30/2023
SE-6	Details	Redniss & Mead	06/30/2023
SE-7	Details	Redniss & Mead	06/30/2023
SE-8	Details	Redniss & Mead	06/30/2023
SE-9	Details	Redniss & Mead	06/30/2023
SE-10	Details	Redniss & Mead	06/30/2023
SE-11	Details	Redniss & Mead	06/30/2023
SE-12	Details	Redniss & Mead	06/30/2023
Architectural			
A001	Cover Sheet	BKV Group DC	06/23/2023

A100	Site Plan	BKV Group DC	06/23/2023
A101	Level 145’-0”	BKV Group DC	06/23/2023
A102	Level 161’-0”	BKV Group DC	06/23/2023
A103	Level 172’-0”	BKV Group DC	06/23/2023
A104	Level 183’-0”	BKV Group DC	06/23/2023
A105	Level 194’-0”	BKV Group DC	06/23/2023
A106	Level 205’-0”	BKV Group DC	06/23/2023
A107	Level 216’-0”	BKV Group DC	06/23/2023
A108	Level 227’-0”	BKV Group DC	06/23/2023
A400	Project Elevations	BKV Group DC	06/23/2023
A401	Project Perspectives	BKV Group DC	06/23/2023
A500	Sections	BKV Group DC	06/23/2023

Landscape

LS-100	Overall Landscape Plan	BKV Group DC	06/23/2023
LP-100	Overall Planting	BKV Group DC	06/23/2023
LP-101	Native Seed Mix Schedules	BKV Group DC	06/23/2023
LS-100	Overall Landscape Plan	BKV Group DC	06/23/2023
LP-501	Planting Details	BKV Group DC	06/23/2023
E011	Site Photometric	BKV Group DC	06/23/2023

July 12, 2023

General Property Description
Special Permit & and Final Site & Architectural Plans and/or requested uses applications
900 Long Ridge Road

Block #:	375	
Area:	C-D:	1,582,365SF
	RA-1:	11,255SF

All that parcel of land referred to as 900 Long Ridge Road (Assessor's Card #003-5275), located in the City of Stamford. Said property is located on the westerly side of Long Ridge Road, opposite Wire Mill Road, Vineyard Lane and Maltbie Avenue, and is generally bounded by the following:

Southerly:	1,348' ± by land n/f of Christopher Marino, Joanne Tsiahouridis, and 800 Long Ridge LLC each in part; and
Easterly:	1,141' ± by the westerly side of Long Ridge Road.
Northerly:	1,558'± by land n/f of State Of Connecticut;
Westerly:	1,724' ± by land n/f of Mcarther Park Condominium, Matthew & Cathy Lueders, Suma Nadella, Nikhil K. Gupta, and Michael Portanova.

7/12/2023

900 Long Ridge Road
Mixed-Use Residential Community
Zoning Data Chart - C-D Zone

	Required/Allowed	Proposed	Notes
Lot Area	15 acres	36.3 acres	**Complies.** Excludes 11,255 sf in the RA-1 Zone
Building Coverage	10%	9.1%	**Complies.**
Lot Coverage	35%	27%	**Complies.**
Floor Area Ratio	0.35	0.34	**Complies.**
Density	508 DU (14 DU/Acre)	508	**Complies.**
BMR	10% 50.8 DU	51	**Complies.** All BMRs to be onsite.
Building Stories	4	4	**Complies.**
Building Height	60'	54'	**Complies.**
Street Line Setback	50'	600'+	**Complies.**
All other Setbacks	50'	150'+	**Complies.**
Single-Fam Setback	100'	100'	**Complies.**
Usable Open Space	38,100 (75 sf/du)	39,035	**Complies.** Does not include private balconies or acres of walking trails.
PAAS	5%	7.5%	**Complies.**

Parking

Use Type	Amount	Rate	Required	Provided	Notes
Studio (market)	50	1.00	50		
1BR (market)	211	1.50	317		
2BR (market)	182	1.75	319		**Complies.** Non-residential parking demand to be accommodated by use of shared parking pursuant to §12.I. See accompanying shared parking analysis from Kimley-Horn.
3BR (market)	14	2.00	28		
Studio (BMR)	6	0.75	5		
1BR (BMR)	24	1.25	30		
2BR (BMR)	20	1.50	30		
3BR (BMR)	1	1.50	2		
TOTAL	-	-	**779**	**820**	

Bicycle Parking

	Required	Provided	Notes
Class A (residential)	57.2	63	**Complies.** Class A and B spaces to be shared among residential and non-residential uses.
Class A (non-res)	4		
Class B (residential)	51.2	63	
Class B (non-res)	10		
Total	122.4	126	

	Required	Provided	Notes
EV Spaces	32.2	80	**Complies.** Non-residential uses to share EV spaces as part of shared parking approval per §12.L.1 and §12.I

REDNISS & MEAD

AERIAL EXHIBIT

900 LONG RIDGE ROAD

STAMFORD, CT

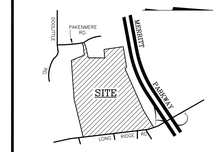
REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

COMM. NO.:	DATE:
1988	6/22/2023
	SCALE: 1"=250'

BLOCK: 375 ZONE: C-D RA-1



STAMFORD, CT.

ORIENTATION

NORTH — MAP4224_S.L.R.

NOTES:

1. *This survey has been prepared in accordance with Sections 20–300b–1 thru 20–300b–20 of the Regulations of Connecticut State Agencies and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. as a Property and Topographic Survey the Boundary Determination Category of which is a Resurvey conforming to Horizontal Accuracy Class A–2 and the locations and elevations of which conform to Topographic Accuracy Class T–2. It is intended to depict property boundaries, locations and elevations of improvements and topographic features.*

2. *This map has been compiled from several sources of information and is intended to depict physical features and surface elevations: 1) buildings, drives, other physical features and easements have been obtained from a Property Survey prepared by Redniss & Mead, Inc., dated February 12, 1997, updated April 2006, conforming to Horizontal Accuracy Class A–2; 2) contours and spot elevations depicted hereon were taken from aerial photogrammetric mapping titled "MAP SHOWING TOPOGRAPHY ON PROPERTY IN STAMFORD, CT. PREPARED FOR HINES INTERESTS LIMITED PARTNERSHIP" as revised to July 22, 1991 by Rocco V. D'Andrea, Inc. and conforming to Topographic Accuracy Class T–3; and 3) offsite buildings, features, drives, roads and contours taken from City of Stamford–LUIS Mapping System. This map conforms to Topographic Accuracy Class T–D.*

3. *Total area of the surveyed parcel = 36.5869 Acres.*

4. *Reference is made to the following maps of record: 2237, 6182, 6317, 9805, 9837, 9877, 9880, 10660, 10662, 10763, 12597 and 14224 of the Stamford Land Records (S.L.R).*

5. *Reference is made to deed of record found in Vol. 12519 Pg. 342 of the S.L.R.*

6. *Reference is made to the following instruments of record:*

VOLUME/BOOK	PAGE	COMMENT
397	511	No longer applicable
426	116	Drainage easement superseded by Vol. 1601 Page 227.
716	326	Easement re: "Future Road"
845	382	Right to drain – depicted hereon
1182	653	
1218	83	Electric service easement – depicted hereon
1601	227	Drainage, Slope & Trf. Ctrl – depicted hereon
1698	289 & 291	Sanitary sewer easements – depicted hereon
2016	149	
2074	282	Acquisition by State of Connecticut
4637	316	Traffic Appurtenance Easement to State of CT

Other documents of record itemized in the title report and referencing zone changes, approval plans and like actions are not mappable.

7. *Reference is made to a map titled "Right Of Way Survey – Town of Stamford Map showing Land Acquired From Hyperion Software Corporation by The State Of Connecticut Department Of Transportation Improvement Of Merrit Parkway Interchange #34 at Route 104" Project No. 135–230, Serial No. 1, Sheet 1 of 1, dated October 2004.*

8. *Elevations depicted hereon are based on the North American Vertical Datum of 1988 (NAVD–88).*

9. *Limits of wetlands depicted hereon were identified & flagged by Soils Science and Environmental Services and field located by this office in April 2006.*

10. *Subject property does not lie within a Special Flood Zone as depicted on Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency. Reference is made to Community Panel No. 09001C0502F, dated June 18, 2010.*

TREE LEGEND	
B	BIRCH
P	PINE
M	MAPLE
O	OAK
D	DOGWOOD
SY	SYCAMORE
T	TULIP
L	LOCUST
A	ASH
H	HICORY
S	SPRUCE
HE	HEMLOCK
AP	APPLE

PROPERTY & TOPOGRAPHIC SURVEY
DEPICTING
#900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.327.1218
www.rednissmead.com

Scale: 1"=60' (0, 60, 120)
Drawn By: TRM | Checked By: | Date: 05/19/2023

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

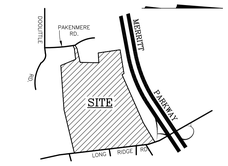
JORGE P. PEREIRA CT. L.S. #70179
5/19/2023
DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

Sheet No: PSTS
Comm. No.: 1985J–2

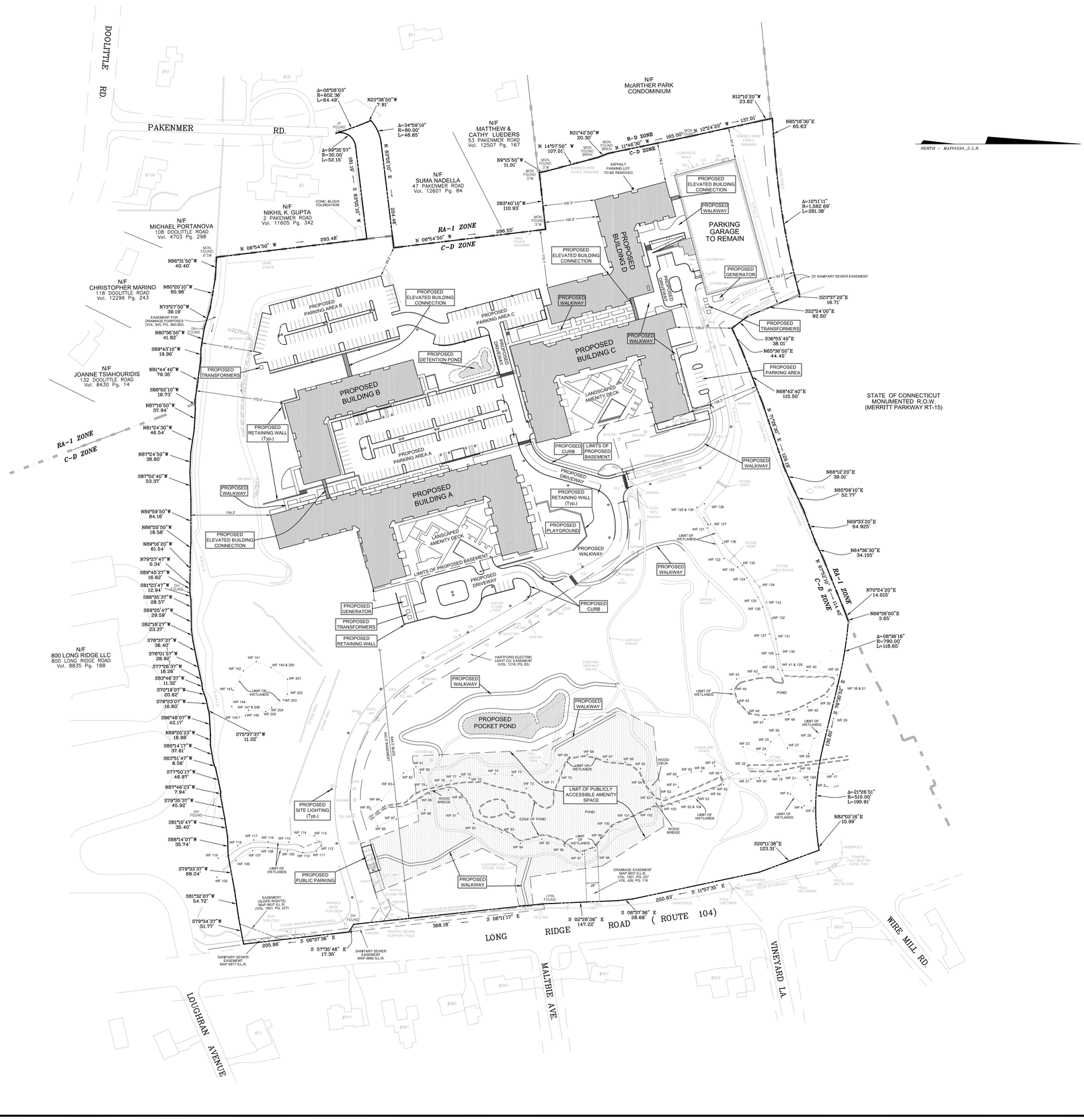
5/19/2023 11:19 AM G:\JOBFILES\1900\1985J\1985J-PSTS-900LRD-2023.dwg

BLOCK: 375 ZONE: C–D / RA–1



STAMFORD, CT.

ORIENTATION



NOTES:

1. This survey has been prepared in accordance with Sections 20-300b-1 thru 20-300b-20 of the Regulations of Connecticut State Agencies and the Standards for Surveys and Maps in the State of Connecticut as adopted by the Connecticut Association of Land Surveyors, Inc. as a Zoning Location Survey the Boundary Determination Category of which is a Resurvey conforming to Horizontal Accuracy Class A-2 and intended to be used for application for determination of zoning compliance and for building permit purposes.
2. Reference is hereby made to Maps 2237, 6182, 6317, 9805, 9837, 9877, 9880, 10660, 10662, 10763, 12597 and 14224 of the Stamford Land Records (S.L.R).
3. Reference is made to the deed of record found in Vol. 12519 Pg. 342 of the S.L.R.
4. Total area of the surveyed parcel = 36.5869 Acres
   RA-1 Zone = 0.2584 Acres
   C-D Zone = 36.3285 Acres
5. Reference is made to the following instruments of record:

VOLUME/BOOK	PAGE	COMMENT
397	511	No longer applicable
426	116	Drainage easement superseded by Vol. 1601 Page 227.
716	326	Easement re: "Future Road"
845	382	Right to drain - depicted hereon
1182	653	
1218	83	Electric service easement - depicted hereon
1601	227	Drainage, Slope & Trf. Ctrl - depicted hereon
1698	289 & 291	Sanitary sewer easements - depicted hereon
2016	149	
2074	282	Acquisition by State of Connecticut
4637	316	Traffic Appurtenance Easement to State of CT

   Other documents of record itemized in the title report and referencing zone changes, approval plans and like actions are not mappable.
6. Reference is made to a map titled "Right Of Way Survey - Town of Stamford Map showing Land Acquired From Hyperion Software Corporation by The State Of Connecticut Department Of Transportation Improvement Of Merrit Parkway Interchange #34 at Route 104" Project No. 135-230, Serial No. 1, Sheet 1 of 1, dated October 2004.
7. Reference is made to "Site Development Plan depicting 900 Long ridge Road, Stamford, CT, prepared for Monday Properties" dated June 23, 2023, prepared by Redniss & Mead.
8. Reference is made to "Property & Topographic Survey depicting #900 Long Riadge Road, Stamford, CT, prepared for Monday Properties" dated May 19, 2023, prepared by Redniss & Mead.
9. Reference is made to "Zoning Data Chart" dated June 22, 2023, prepared by Redniss & Mead.
10. Limits of wetlands depicted hereon were identified & flagged by Soils Science and Environmental Services and field located by this office in April 2006.
11. Subject property does not lie within a Special Flood Zone as depicted on Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency. Reference is made to Community Panel No. 09001C0502F, dated June 18, 2010.

ZONING LOCATION SURVEY

DEPICTING

PROPOSED IMPROVEMENTS #900 LONG RIDGE ROAD

STAMFORD, CT

PREPARED FOR

MONDAY PROPERTIES

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

Scale: 1"=80' (0 – 80 – 160)

Drawn By: TRM | Checked By: | Date: 06/23/2023

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

JORGE P. PEREIRA CT. L.S. #70179

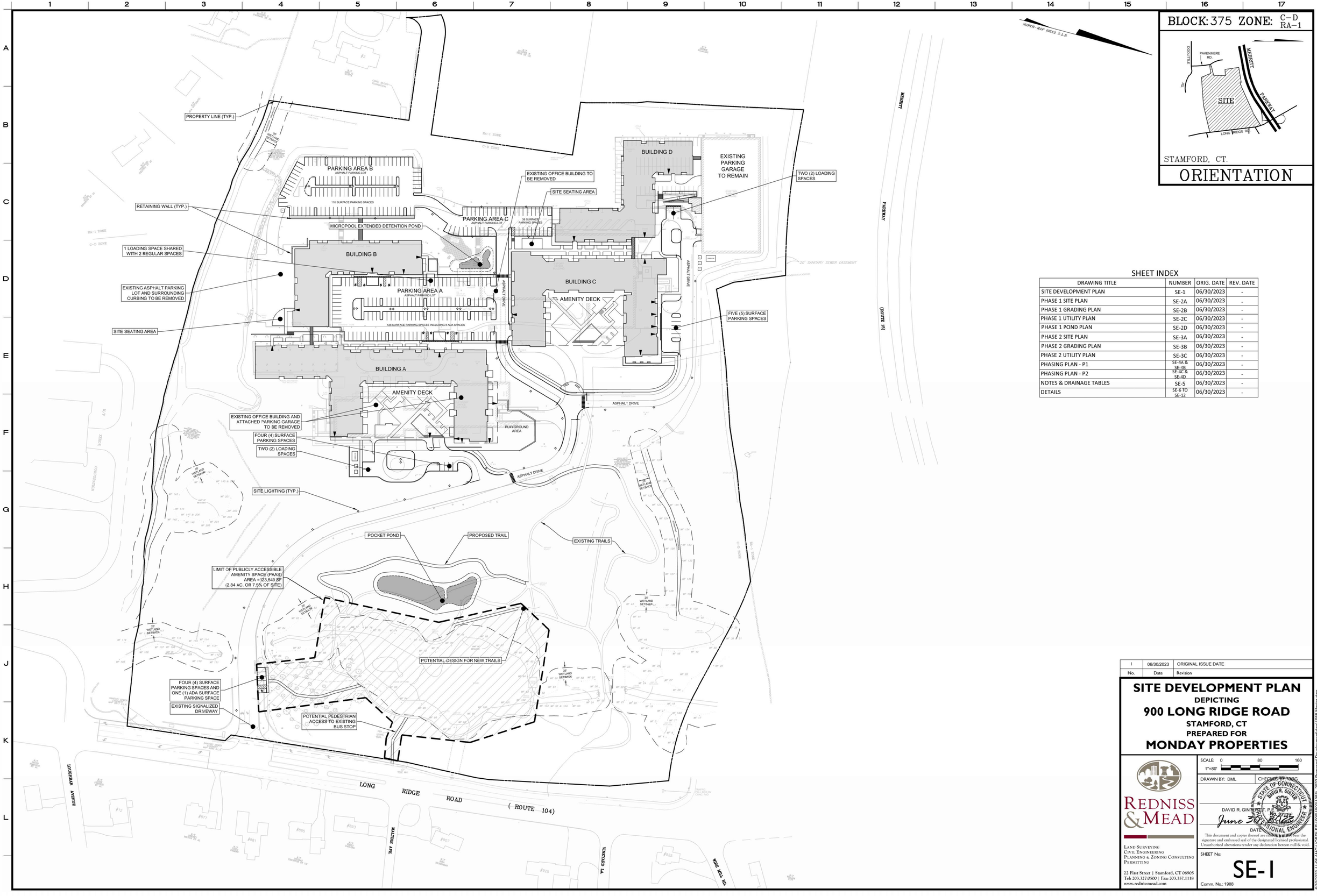
6/23/2023
DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

Sheet No: ZLS

Comm. No.: 1988

6/23/2023 10:31:20 AM G:\JobFiles\1900\1988\dwg\1988 ZLS 2023.dwg



NORTH - MAP BASED S.L.R.

BLOCK: 375 ZONE: C-D RA-1

STAMFORD, CT.

ORIENTATION

SHEET INDEX

DRAWING TITLE	NUMBER	ORIG. DATE	REV. DATE
SITE DEVELOPMENT PLAN	SE-1	06/30/2023	-
PHASE 1 SITE PLAN	SE-2A	06/30/2023	-
PHASE 1 GRADING PLAN	SE-2B	06/30/2023	-
PHASE 1 UTILITY PLAN	SE-2C	06/30/2023	-
PHASE 1 POND PLAN	SE-2D	06/30/2023	-
PHASE 2 SITE PLAN	SE-3A	06/30/2023	-
PHASE 2 GRADING PLAN	SE-3B	06/30/2023	-
PHASE 2 UTILITY PLAN	SE-3C	06/30/2023	-
PHASING PLAN - P1	SE-4A & SE-4B	06/30/2023	-
PHASING PLAN - P2	SE-4C & SE-4D	06/30/2023	-
NOTES & DRAINAGE TABLES	SE-5	06/30/2023	-
DETAILS	SE-6 TO SE-12	06/30/2023	-

No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

SITE DEVELOPMENT PLAN
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: 0 80 160
1"=80'

DRAWN BY: DML | CHECKED BY: DRG

STATE OF CONNECTICUT
DAVID R. GINTER
No. 21735
REGISTERED PROFESSIONAL ENGINEER

DAVID R. GINTER, P.E.
June 30, 2023
DATE

This document and copies thereof are invalid without the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:
SE-1
Comm. No.: 1988

6/30/2023 11:05 AMG:\JOB\FILES\1000\1900\1988_2022 Proposed Development\Dwg\1988 Master.dwg

PARKING AREA B

PARKING AREA C

PARKING AREA A

BUILDING D
4 STORY BUILDING

BUILDING C
MIXED-USE 4 STORY BUILDING

EXISTING
PARKING
GARAGE

4 STORY
OFFICE
BUILDING

3 1/2 STORY
OFFICE
BUILDING

PROPOSED AMENITY DECK
OVER UNDERGROUND PARKING
STRUCTURE

PAVER PATIO

PATIO

6" TALL CONCRETE CURB (TYP.)
6" WIDE PLANTERS (TYP.)
6" TALL CONCRETE CURB
MOUNTABLE CURB
LANDSCAPING
SITE LIGHT (TYP.)
10 PARKING SPACES
8 PARKING SPACES
STAIRS TO PARKING AREA C ABOVE
RETAINING WALL DESIGNED BY OTHERS
SEATING AREA
6' WIDE WALK
CROSSWALK (TYP.)
DETECTABLE WARNING STRIP (TYP.)
AREAS OF LANDSCAPING (TYP.)
AT GRADE PATIO (TYP.)
PEDESTRIAN BRIDGE AT LEVEL 194
PROPOSED BUILDING C GARAGE ENTRANCE
PORTION OF EXISTING DRIVEWAY TO BE REMOVED
LIMIT OF BUILDING FOUNDATION
6" TALL CONCRETE CURB (TYP.)
PROPOSED TRAIL HEAD
6' WIDE CONCRETE SIDEWALK
EXISTING DRIVE TO BE MILLED AND REPAVED WITH A CROWN
PORTION OF EXISTING DRIVEWAY TC BE REMOVED
EXISTING CONCRETE WALK AND PEDESRIAN ENTRANCE TO EXISTING GARAGE TO REMAIN
PEDESTRIAN BRIDGE AT LEVEL 205
PROPOSED WALK
EXISTING GARAGE ENTRANCE TO REMAIN
TWO (2) LOADING SPACES
EXISTING CONCRETE ISLAND TO REMAIN
PAVER WALK EMERGENCY ACCESS AREA
LIMIT OF MOUNTABLE CURB
GENERATOR
PROPOSED GENERATOR (TYP.)
PROPOSED TRANSFORMER (TYP.)
5' WIDE WALK
LANDSCAPING
LIMIT OF FLUSH CURB
FFE=194.0
FFE=183.0
FFE=181.0
FFE=171.0
LTPOLE (Typ.)
ASPHALT CURB
CONCRETE WALK
CONCRETE CURB
STONE WALL
STONE WEIR
SWALE
CHAIN LINK FENCE
WIRE FENCE REMAINS
GATE CONTROLS
COVERED ENTRANCE
NORTH MAP RIDES S.L.R.

OVERALL SITE INSET
SCALE: 1" = 150'

No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

PHASE 1 SITE PLAN
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

SCALE: 0 30 60
1"=30'

DRAWN BY: DML CHECKED BY: DRG

DAVID R. GINTER, P.E.
No. 21725
June 30, 2023
DATE

This document and copies thereof are valid only when bearing the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

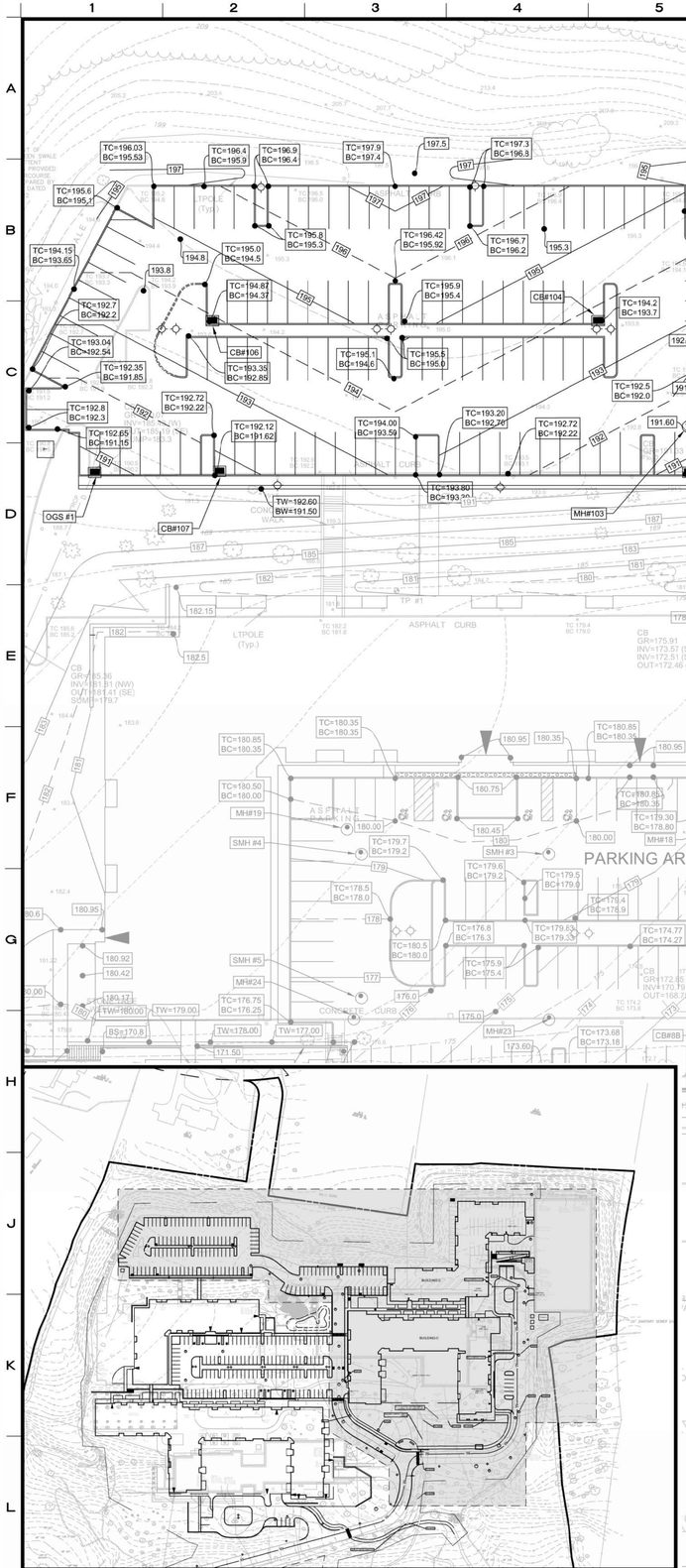
REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SHEET No:
SE-2A
Comm. No.: 1988

6/30/2023 11:06 AM G:\JOB\FILES\1000\1900\1988_2022 Proposed Development\dwg\1988 Master.dwg



1	06/30/2023	ORIGINAL ISSUE DATE
No.	Date	Revision

PHASE 1 GRADING PLAN
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: 0 30 60
1"=30'

DRAWN BY: DML | CHECKED BY:

STATE OF CONNECTICUT
DAVID R. GINGRICH
No. 22478
REGISTERED PROFESSIONAL ENGINEER

DAVID R. GINGRICH P.E.
DATE: June 30, 2023

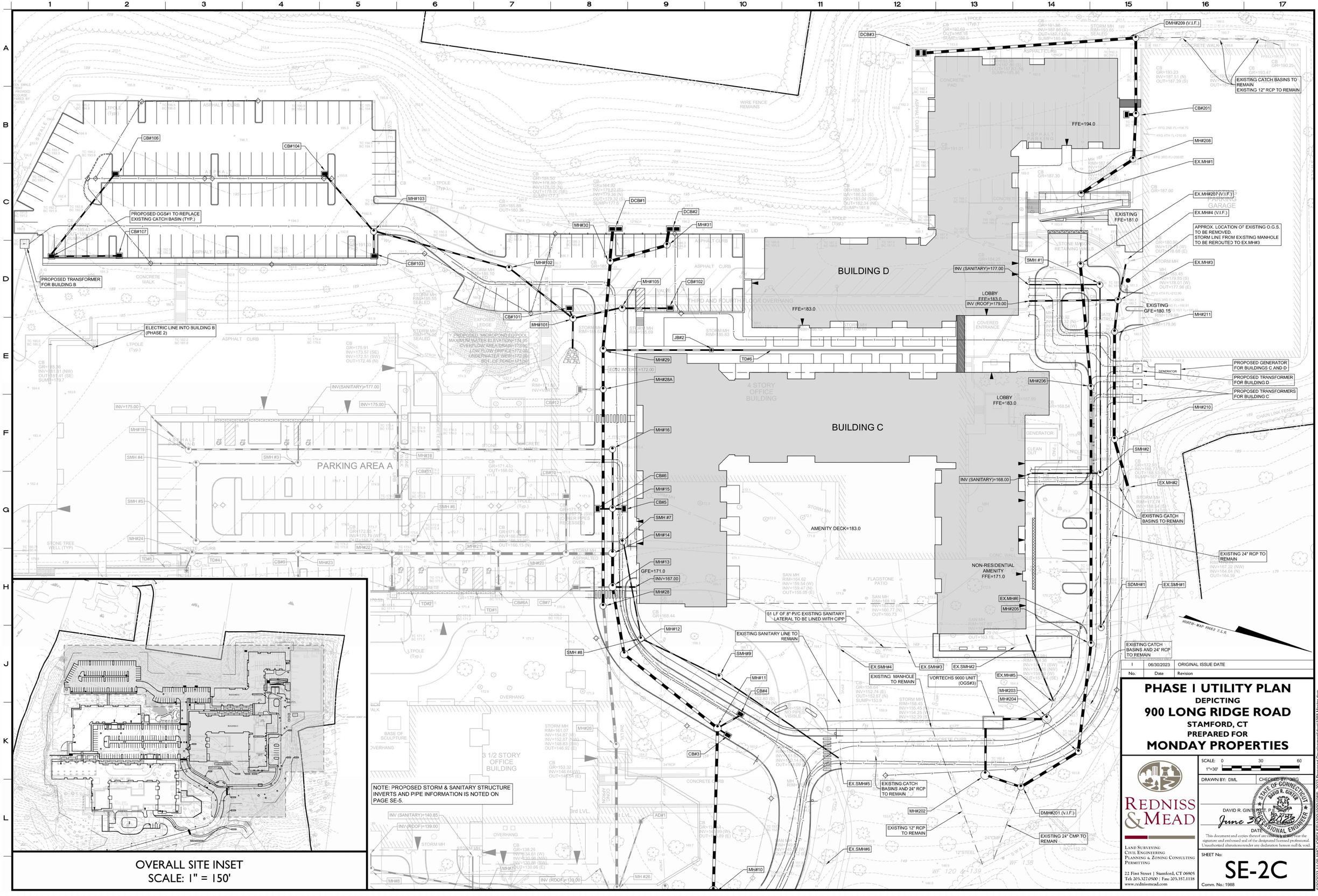
This document and copies thereof are invalid without the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:

SE-2B

Comm. No.: 1988

6/30/2023 11:08 AM G:\JOBFILES\1900\1900\1988_2022 Proposed Development\dwg\1988 Master.dwg



No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

PHASE I UTILITY PLAN
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

SCALE: 0 30 60
1"=30'

DRAWN BY: DML CHECKED BY:

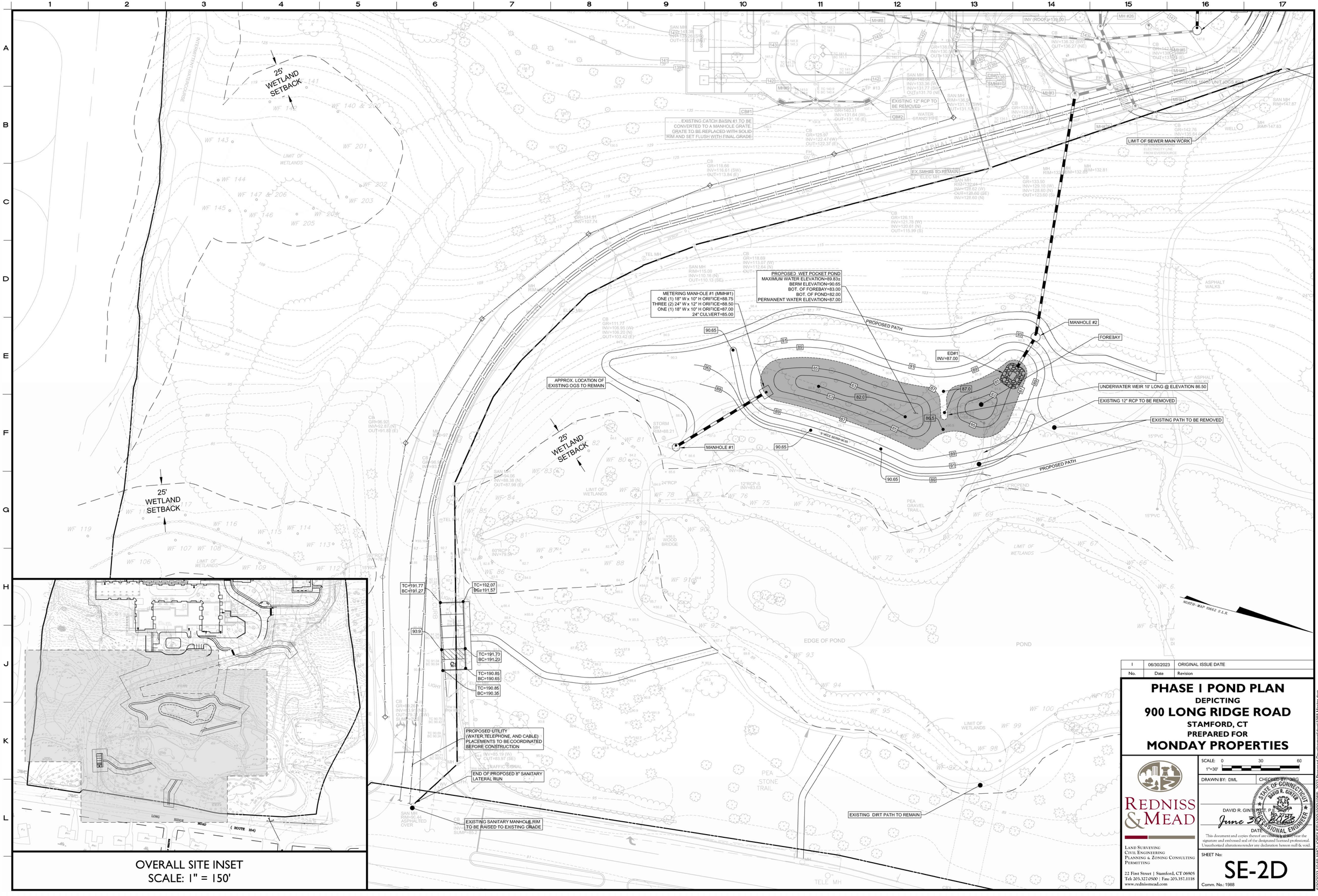
DAVID R. GINGERICH P.E. No. 21715
DATE: June 30, 2023

This document and copies thereof are not valid without the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SHEET No:
SE-2C
Comm. No.: 1988

6/30/2023 11:09 AM G:\JOBFILES\1000\1900\1968_2022 Proposed Development\dwg\1968 Master.dwg



OVERALL SITE INSET
SCALE: 1" = 150'

No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

PHASE 1 POND PLAN
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

SCALE: 1"=30' 0 30 60

DRAWN BY: DML | CHECKED BY: DRG

STATE OF CONNECTICUT
DAVID R. GINTER
No. 27251
PROFESSIONAL ENGINEER

DAVID R. GINTER, P.E.
June 30, 2023
DATE

This document and copies thereof are not valid without the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:
SE-2D
Comm. No.: 1988

6/30/2023 10:59 AM G:\JOB\FILES\1000\1900\1988_2022 Proposed Development\dwg\1988 Master.dwg

BUILDING B
4 STORY BUILDING

BUILDING A
MIXED-USE 4 STORY BUILDING

PARKING AREA A

BUILDING D

BUILDING C

4 STORY
OFFICE
BUILDING

3 1/2 STORY
OFFICE
BUILDING

PEDESTRIAN BRIDGE AT LEVEL 194 (TYP.)

OVERHEAD BRIDGE TO PARKING AREA B

EXTERNAL GARBAGE COMPACTOR

MICROPOOL EXTENDED DETENTION POND

FOUR (4) ADA SURFACE PARKING SPACES (TYP.)

TWO (2) LOADING SPACES

SITE SEATING AREA

6' WIDE WALK

5' WIDE WALK

LANDSCAPE

DETECTABLE WARNING STRIP (TYP.)

PEDESTRIAN BRIDGE AT LEVEL 183 (TYP.)

CONCRETE WALK

HIGH CONCRETE CURB

AREAS OF LANDSCAPING (TYP.)

AT GRADE PATIO (TYP.)

OVERHEAD BALCONIES (TYP.)

THIRD AND FOURTH FLOOR OVERHANG

FFE=183.0

LOBBY
FFE=183.0

COVERED ENTRANCE

AMENITY DECK=183.0

NON-RESIDENTIAL AMENITY
FFE=171.0

GFE=171.0

FLAGSTONE PATIO

PROPOSED AMENITY DECK
OVER UNDERGROUND PARKING
STRUCTURE

PROPOSED BUILDING A
GARAGE ENTRANCE

PROPOSED
PLAYGROUND

LIMIT OF BUILDING FOUNDATION

LANDSCAPE

6" TALL CONCRETE CURB (TYP.)

FOUR (4) SURFACE PARKING SPACES

TWO (2) LOADING SPACES

EXISTING TURNAROUND TO BE REMOVED

GENERATOR

6' WIDE WALK

HIGH CONCRETE CURB

ASPHALT DRIVE TO BE MILLED AND
REPAVED WITH CROWN

CROSSWALK (TYP.)

NORTH: MAP: 1962, S.L.R.

OVERALL SITE INSET
SCALE: 1" = 150'

No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

PHASE 2 SITE PLAN
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

SCALE: 1"=30' 0 30 60

DRAWN BY: DML | CHECKED BY: DRG

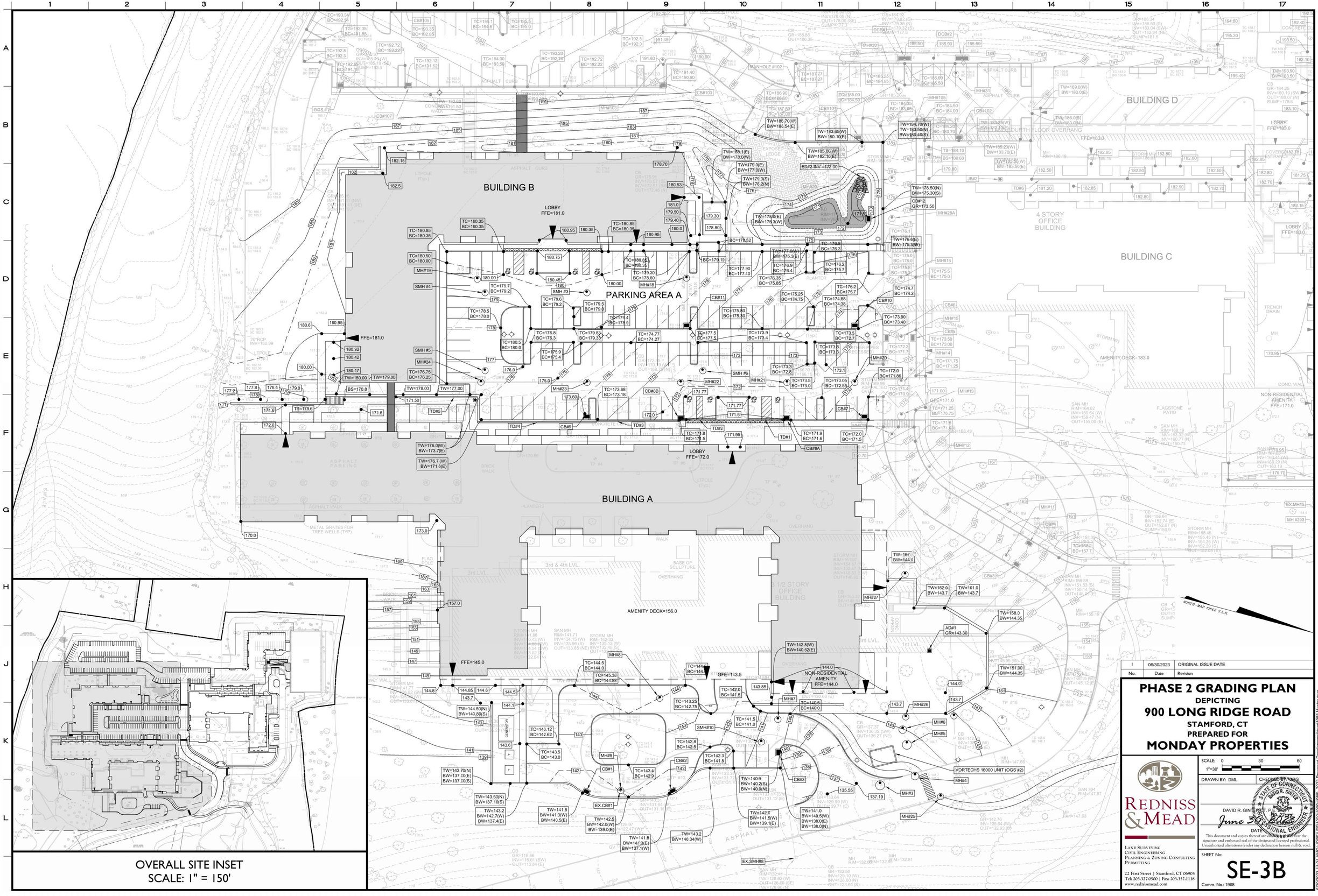
DAVID R. GINTER, P.E.
June 30, 2023
DATE

This document and copies thereof are not valid without the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:
SE-3A
Comm. No.: 1988

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

6/30/2023 10:53 AM G:\JOB\FILES\1000\1900\1988_2022 Proposed Development\dwg\1988 Master.dwg



OVERALL SITE INSET
SCALE: 1" = 150'

No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

PHASE 2 GRADING PLAN
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: 0 30 60
1"=30'

DRAWN BY: DML CHECKED BY:

STATE OF CONNECTICUT
DAVID R. GINTER
No. 21725
REGISTERED PROFESSIONAL ENGINEER

DAVID R. GINTER, P.E.
DATE: June 30, 2023

This document and copies thereof are copyrighted and may not be used without the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:
SE-3B
Comm. No.: 1988

6/30/2023 11:01 AM G:\JOB\FILES\1000\1900\1988_2022 Proposed Development\dwg\1988 Master.dwg

PROPOSED OGS#1 TO REPLACE EXISTING CATCH BASIN (TYP.)

BUILDING B

BUILDING A

BUILDING C

BUILDING D

4 STORY OFFICE BUILDING

3 1/2 STORY OFFICE BUILDING

PARKING AREA A

LOBBY FFE=181.0

LOBBY FFE=172.0

LOBBY FFE=183.0

NON-RESIDENTIAL AMENITY FFE=144.0

NON-RESIDENTIAL AMENITY FFE=171.0

AMENITY DECK=156.0

AMENITY DECK=183.0

PROPOSED MICROPOND ED POOL
MAXIMUM WATER ELEVATION=174.05
OVERFLOW AREA DRAIN=173.50
LOW FLOW ORIFICE=172.00
UNDERWATER WEIR=172.00
BOT. OF POND=171.00

ED#2 INVERT =172.00

INV(SANITARY)=177.00

INV=175.00

INV (SANITARY)=140.85

INV (ROOF)=139.00

INV (SANITARY)=168.00

FFE=181.0

FFE=145.0

GFE=143.5

GFE=171.0

THIRD AND FOURTH FLOOR OVERHANG

FFE=183.0

INV (ROOF)=179.00

61 LF OF 8" PVC EXISTING SANITARY LATERAL TO BE LINED WITH CIPP

EXISTING SANITARY LINE TO REMAIN

EXISTING MANHOLE TO REMAIN

EXISTING 12" RCP TO BE REMOVED

EXISTING CATCH BASIN #1 TO BE CONVERTED TO A MANHOLE GRATE. GRATE TO BE REPLACED WITH SOLID RIM AND SET FLUSH WITH FINAL GRADE

EX.SMH#8 TO REMAIN

LIMIT OF SEWER MAIN WORK

VORTECHS 9000 UNIT (OGS#3)

VORTECHS 16000 UNIT (OGS #2)

NOTE: PROPOSED STORM & SANITARY STRUCTURE INVERTS AND PIPE INFORMATION IS NOTED ON PAGE SE-5.

OVERALL SITE INSET
SCALE: 1" = 150'

No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

PHASE 2 UTILITY PLAN
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: 1"=30' (0, 30, 60)

DRAWN BY: DML | CHECKED BY: DRG

STATE OF CONNECTICUT · DAVID R. GINTER · 21317 · REGISTERED PROFESSIONAL ENGINEER

DAVID R. GINTER, P.E. NO. 21317

DATE: June 30, 2023

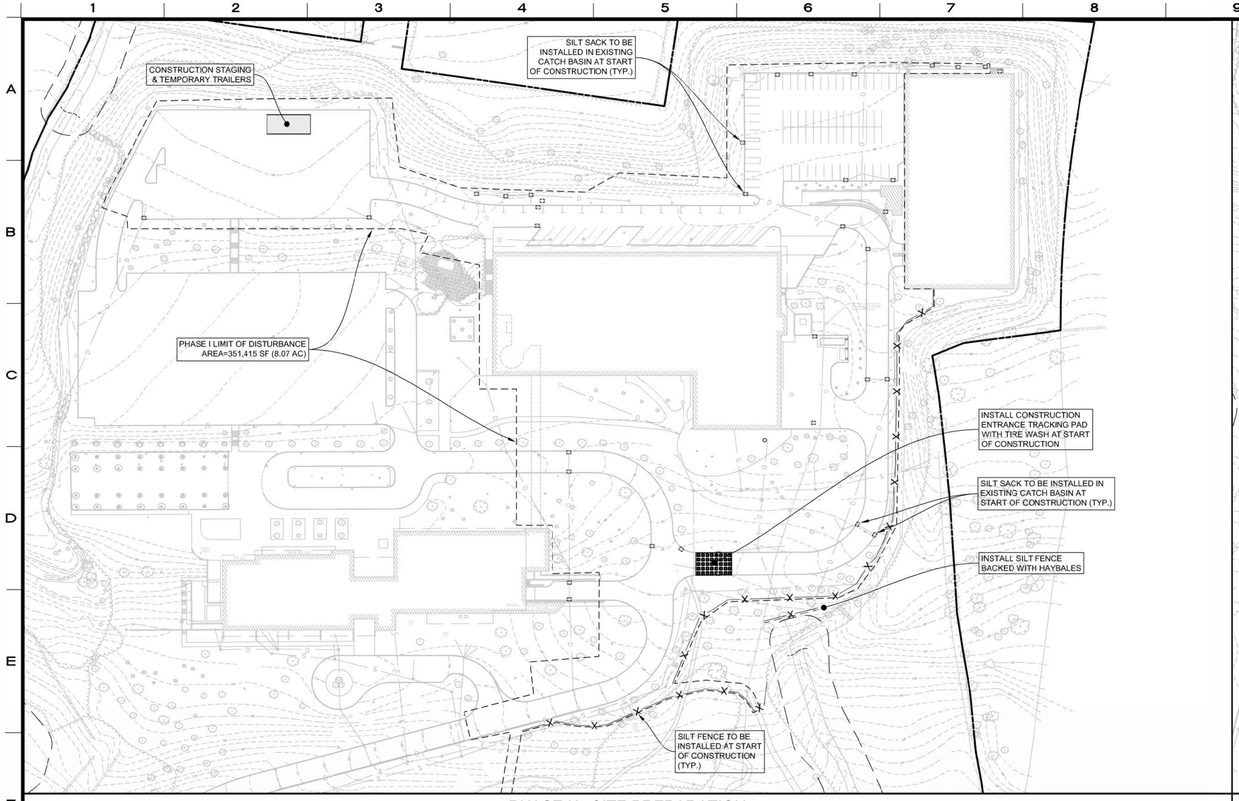
This document and copies thereof are valid only when bearing the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:

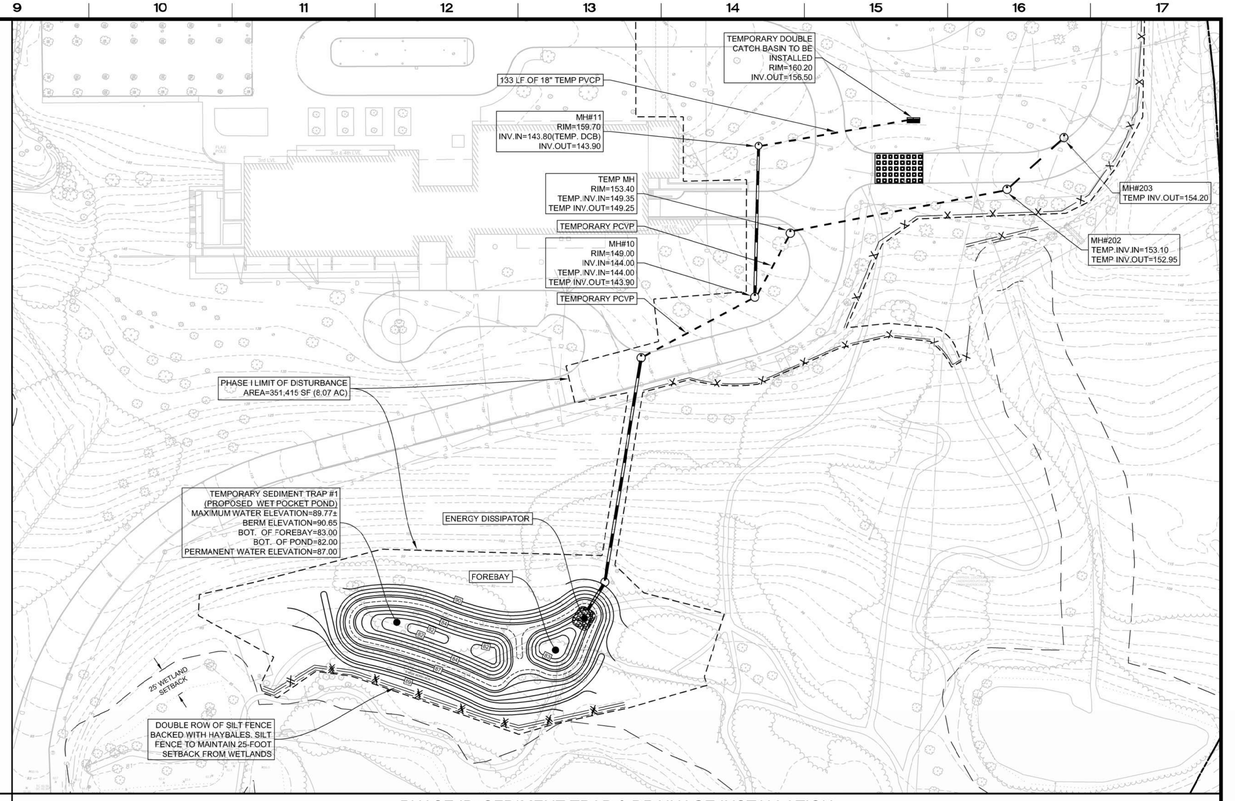
SE-3C

Comm. No.: 1988

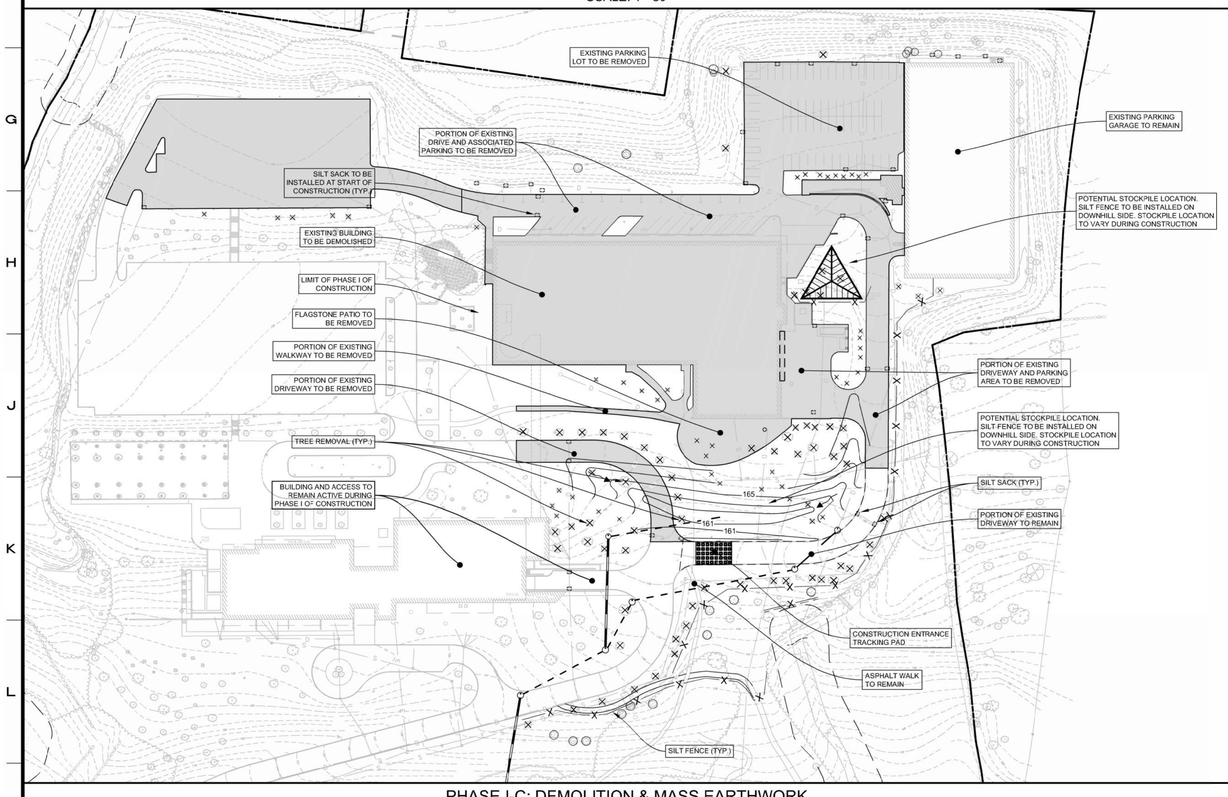
6/30/2023 11:03 AM G:\JOBFILES\1900\1900\1988_2022 Proposed Development\dwg\1988 Master.dwg



PHASE IA: SITE PREPARATION
SCALE: 1"=80'



PHASE IB: SEDIMENT TRAP & DRAINAGE INSTALLATION
SCALE: 1"=40'



PHASE I-C: DEMOLITION & MASS EARTHWORK
SCALE: 1"=80'

PHASE 1A - SITE PREPARATION & MASS EARTHWORK

- INSTALL TRACKING PADS FOR CONSTRUCTION ACCESS
- INSTALL SILT FENCE, CONSTRUCTION FENCE AND PERIMETER FENCE AS SHOWN ON PLANS. REMOVE EXISTING PAVEMENT ONLY AS NECESSARY TO PROCEED.
- INSTALL SILT SACKS IN EACH DRAINAGE INLET
- ESTABLISH STAGING AREA WITH TRAILERS AND TEMPORARY UTILITIES

PHASE 1B - SEDIMENT TRAP INSTALLATION

- INSTALL DRAINAGE STRUCTURES AS DEPICTED ON THIS PLAN.
- CUT TREES TO BE REMOVED AND GRUB AREAS TO BE CLEARED AS NECESSARY FOR THE INSTALLATION OF TEMPORARY SEDIMENT TRAPS AND DIVERSION CHANNELS
- CONSTRUCT TEMPORARY SEDIMENT TRAPS AND ASSOCIATED DIVERSION TRENCHES. INSTALL DRAINAGE STRUCTURES AS DEPICTED ON THIS PLAN.
- ••NOTE: SEDIMENT TRAPS AND OUTLET WORKS TO BE INSPECTED WEEKLY AND CLEANED OUT AS NEEDED. ANY ALTERATIONS TO DESIGN, PER FIELD CONDITIONS, SHALL BE REVIEWED W/TH SITE ENGINEER.

PHASE 1C - DEMOLITON & MASS EARTHWAORK

- CUT TREES TO BE REMOVED AND GRUB AREAS TO BE CLEARED
- REMOVE/DEMOLISH EXISTING WALLS. REMOVE EXISTING PAVEMENT, UTILITIES, AND STORM & SANITARY STRUCTURES AND CONNECTIONS AS PER THE PLANS (SEE SHEETS SE-1 THROUGH SE-3).
- AFTER REMOVAL, PROPERLY CAP ALL DRAIN LINES TO BE ABANDONED.
- ROUGH GRADE SITE. GENERAL EARTHWORK. EXCAVATE FOR BUILDING FOUNDATION. INSTALL CONSTRUCTION DEWATERING AND TEMPORARY FILTERING SYSTEM IF NECESSARY. (NOTE: MANAGEMENT OF EXCAVATED MATERIALS DURING THIS PROCESS SHALL BE ACHIEVED BY TEMPORARILY STOCKPILING ONSITE TO THE EXTENT OF CONSTRUCTION S"AGING W:LL ALLOW AND BY HAULING MATERIAL OFFSITE AS EXCAVATED).
- ESTABLISH STOCK PILE LOCATIONS
- REMOVE/DEMOLISH EXISTING BUILDINGS AND ACCESSORY STRUCTURES. REMOVE EXISTING PAVEMENT ONLY AS NECESSARY TO PROCEED WITH EACH PHASE OF CONSTRUCTION

LEGEND
SEDIMENT & EROSION CONTROLS

- SILT FENCE
- HAYBALES @ INLET (OR)
- TRACKING PAD
- STOCKFILE AREA
- TREE TO BE REMOVED
- TREE PROTECTION

NORTH: MAP 16622 S.L.R.

No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

PHASING PLAN - P1
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: AS NOTED
DRAWN BY: MJL
CHECKED BY: DRG

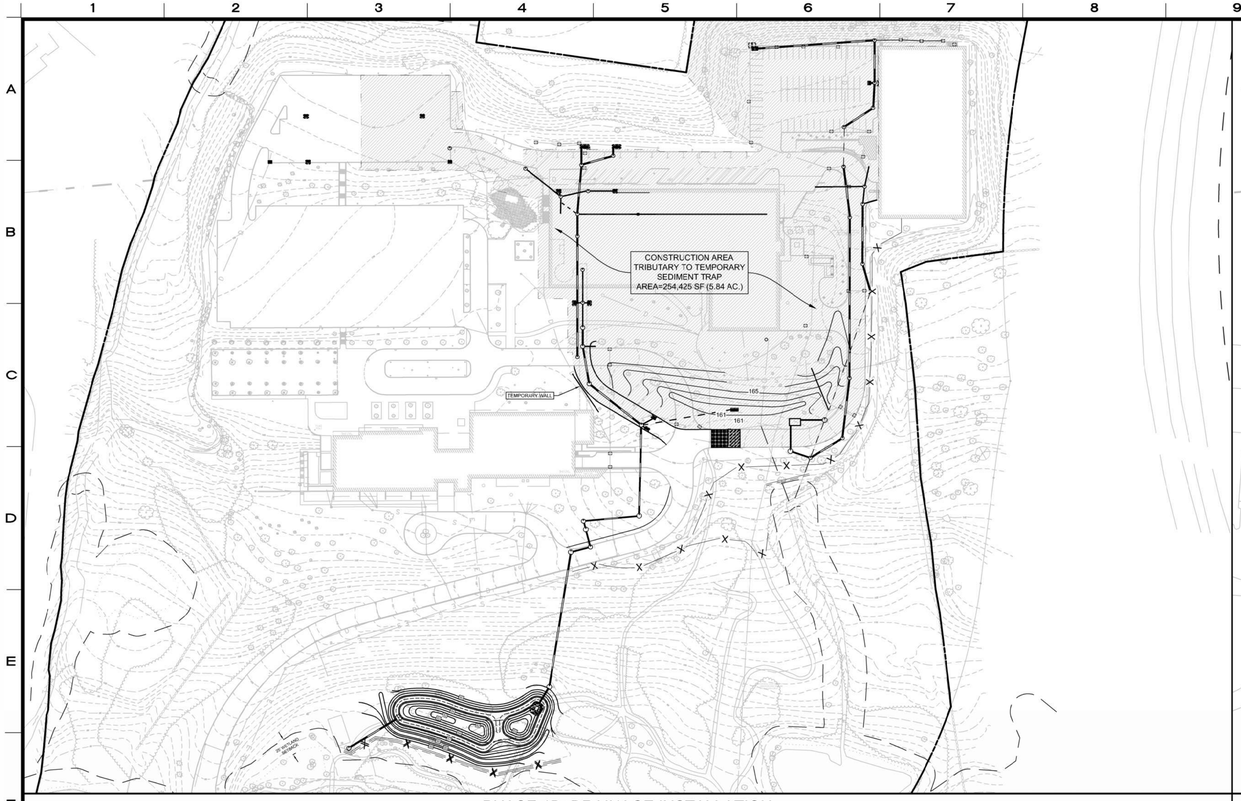
STATE OF CONNECTICUT DAVID R. GINTER No. 21728 REGISTERED PROFESSIONAL ENGINEER

DAVID R. GINTER, P.E.
June 30, 2023
DATE:

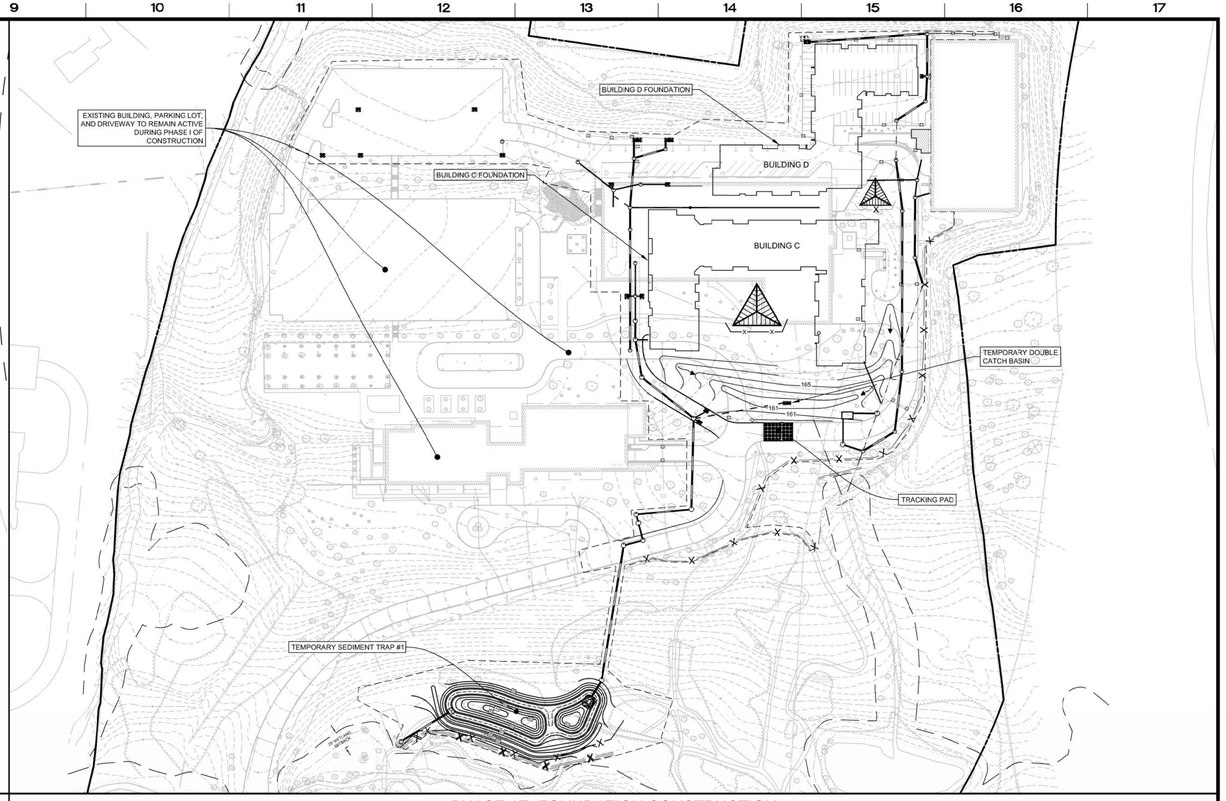
This document and copies thereof are valid only when bearing the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:
SE-4A
Comm. No.: 1988

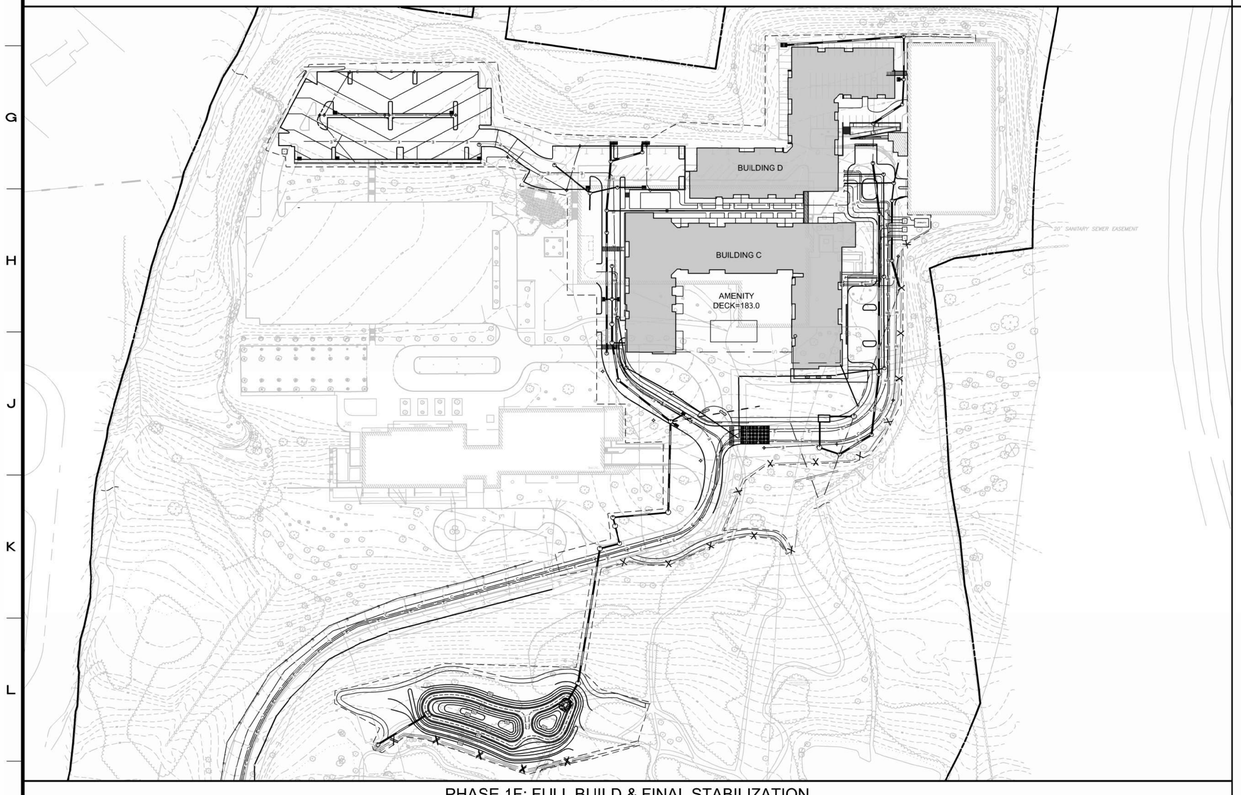
6/30/2023 11:11 AMG:\JOB\FILES\1000\1900\1988_2022 Proposed Development\dwg\1988 Master 2 (2023)_Details.dwg



PHASE 1D: DRAINAGE INSTALLATION
SCALE: 1"=100'



PHASE 1E: FOUNDATION CONSTRUCTION
SCALE: 1"=100'



PHASE 1F: FULL BUILD & FINAL STABILIZATION
SCALE: 1"=100'

PHASE 1D - DRAINAGE INSTALLATION
- INSTALL PROPOSED STORM STRUCTURES AND CONNECTIONS AS PER THE PLANS (SEE SHEETS SE-1 THROUGH SE-3).
- AFTER REMOVAL, PROPERLY CAP ALL DRAIN LINES TO BE ABANDONED.

PHASE 1E - FOUNDATION
- CONSTRUCT BUILDING FOUNDATIONS

PHASE 1F - FULL BUILD
- INSTALL SITE RETAINING WALLS
- INSTALL UNDERGROUND UTILITIES
- INSTALL DETENTION AND STORM INFILTRATION SYSTEMS
- REMOVE TEMPORARY SEDIMENT TRAP
- CONSTRUCT WET POND (SEE SHEET SE-2)
- CONSTRUCT BUILDING
- INSTALL RAIN GARDENS
- INSTALL PAVING
- INSTALL LANDSCAPING
- STRIPE ALL PARKING AREAS AND INSTALL SITE SIGNAGE
- REMOVE SEDIMENT AND EROSION CONTROLS AND CLEAN OIL/GRIT UNITS, INFILTRATION/DETENTION SYSTEMS, RAIN GARDENS, AND CATCH BASIN SUMPS

LEGEND
SEDIMENT & EROSION CONTROLS

SILT FENCE
HAYBALES @ INLET OR
TRACKING PAD
STOCKFILE AREA
TREE TO BE REMOVED
TREE PROTECTION

NORTH - MAP 19662 S.L.R.

No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

PHASING PLAN - P1
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: AS NOTED
DRAWN BY: MJL CHECKED BY: DRG

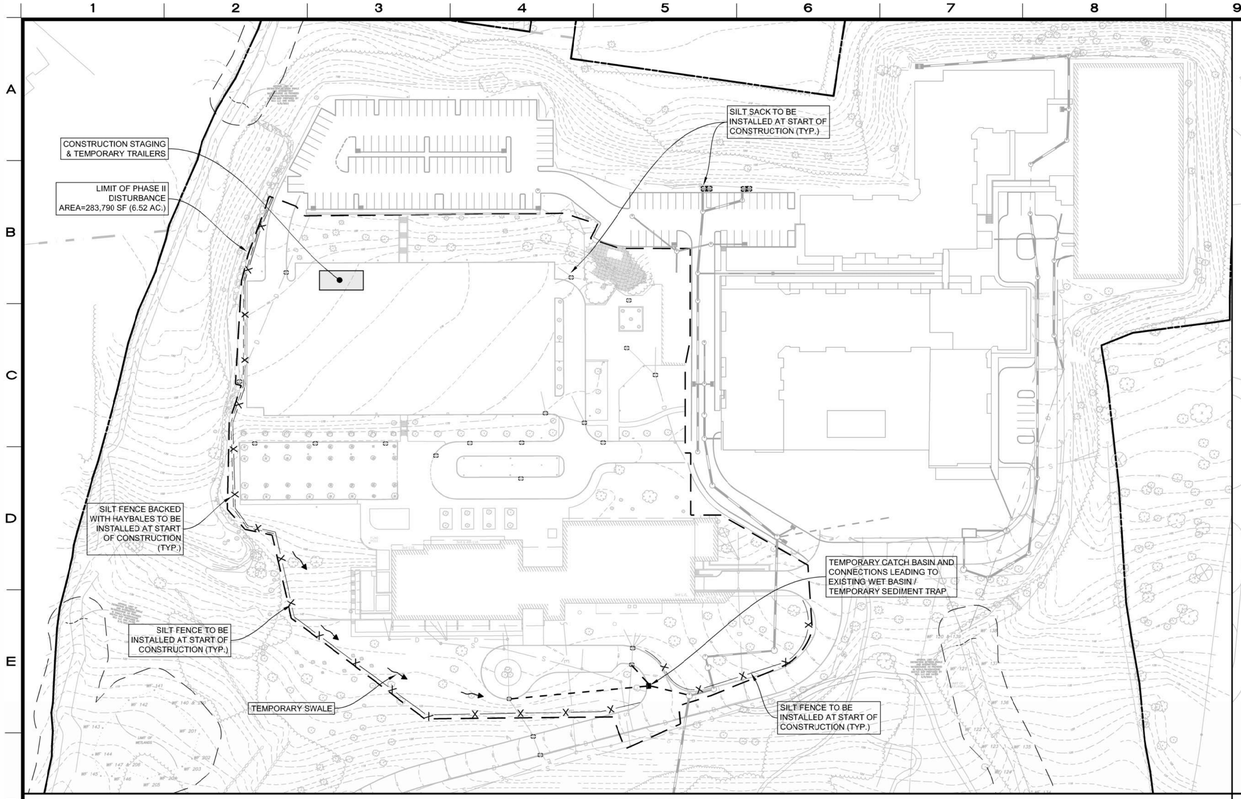
STATE OF CONNECTICUT DAVID R. GINTER No. 27278 REGISTERED PROFESSIONAL ENGINEER

DAVID R. GINTER, P.E.
June 30, 2023
DATE:

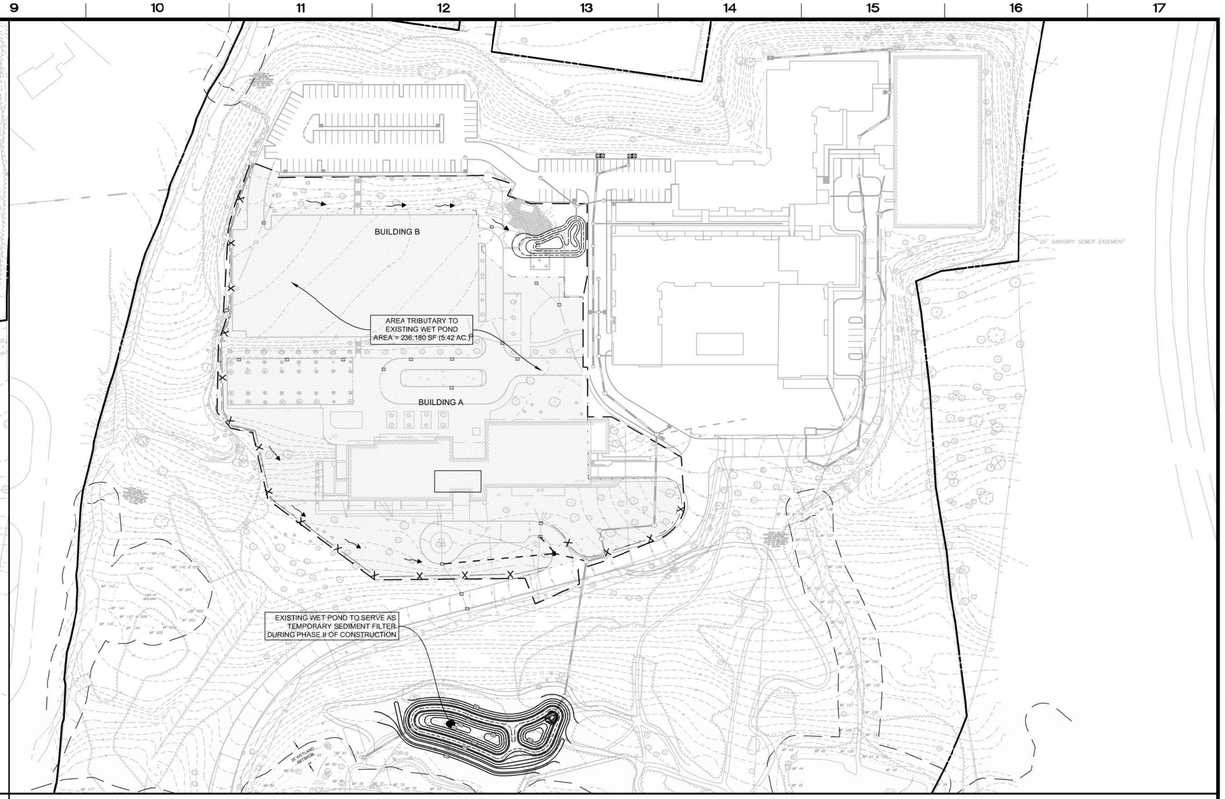
This document and copies thereof are valid only when bearing the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:
SE-4B
Comm. No.: 1988

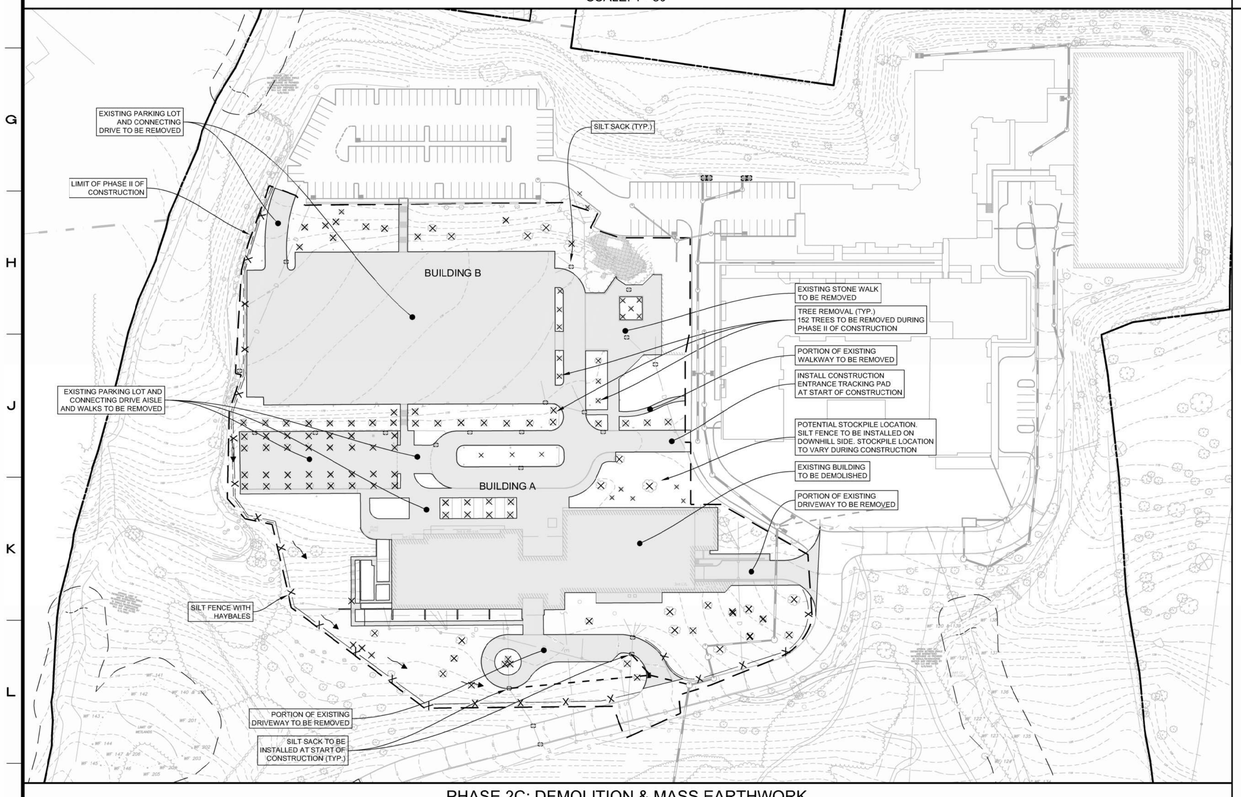
6/30/2023 11:13 AMG:\JOB\FILES\1000\1900\1988_2022 Proposed Development\dwg\1988 Master 2 (2023)_Details.dwg



PHASE 2A: SITE PREPARATION
SCALE: 1"=80'



PHASE 2B: SEDIMENT TRAP REHABILITATION
SCALE: 1"=100'



PHASE 2C: DEMOLITION & MASS EARTHWORK
SCALE: 1"=80'

PHASE 2A - SITE PREPARATION & MASS EARTHWORK

- INSTALL TRACKING PADS FOR CONSTRUCTION ACCESS
- INSTALL SILT FENCE, CONSTRUCTION FENCE AND PERIMETER FENCE AS SHOWN ON PLANS. REMOVE EXISTING PAVEMENT ONLY AS NECESSARY TO PROCEED.
- INSTALL SILT SACKS IN EACH DRAINAGE INLET
- ESTABLISH STAGING AREA WITH TRAILERS AND TEMPORARY UTILITIES

PHASE 2B - SEDIMENT TRAP REHABILITATION

- INSTALL DRAINAGE STRUCTURES AS DEPICTED ON THIS PLAN
- CUT TREES TO BE REMOVED AND GRUB AREAS TO BE CLEARED AS NECESSARY FOR THE INSTALLATION OF TEMPORARY SEDIMENT TRAPS AND DIVERSION CHANNELS
- CONSTRUCT TEMPORARY SEDIMENT TRAPS AND ASSOCIATED DIVERSION TRENCHES. INSTALL DRAINAGE STRUCTURES AS DEPICTED ON THIS PLAN.
- ••NOTE: SEDIMENT TRAPS AND OUTLET WORKS TO BE INSPECTED WEEKLY AND CLEANED OUT AS NEEDED. ANY ALTERATIONS TO DESIGN, PER FIELD CONDITIONS, SHALL BE REVIEWED W/TH SITE ENGINEER.

PHASE 2C - DEMOLITON & MASS EARTHWAORK

- CUT TREES TO BE REMOVED AND GRUB AREAS TO BE CLEARED
- REMOVE/DEMOLISH EXISTING WALLS. REMOVE EXISTING PAVEMENT, UTILITIES, AND STORM & SANITARY STRUCTURES AND CONNECTIONS AS PER THE PLANS (SEE SHEETS SE-1 THROUGH SE-3).
- AFTER REMOVAL, PROPERLY CAP ALL DRAIN LINES TO BE ABANDONED.
- ROUGH GRADE SITE. GENERAL EARTHWORK. EXCAVATE FOR BUILDING FOUNDATION. INSTALL CONSTRUCTION DEWATERING AND TEMPORARY FILTERING SYSTEM IF NECESSARY. (NOTE: MANAGEMENT OF EXCAVATED MATERIALS DURING THIS PROCESS SHALL BE ACHIEVED BY TEMPORARILY STOCKPILING ONSITE TO THE EXTENT OF CONSTRUCTION STAGING W/LL ALLOW AND BY HAULING MATERIAL OFFSITE AS EXCAVATED).
- ESTABLISH STOCK PILE LOCATIONS
- REMOVE/DEMOLISH EXISTING BUILDINGS AND ACCESSORY STRUCTURES. REMOVE EXISTING PAVEMENT ONLY AS NECESSARY TO PROCEED WITH EACH PHASE OF CONSTRUCTION

LEGEND
SEDIMENT & EROSION CONTROLS

- SILT FENCE
- HAYBALES @ INLET (OR)
- TRACKING PAD
- STOCKFILE AREA
- TREE TO BE REMOVED
- TREE PROTECTION

NORTH- MAP VIEWS S.L.R.

No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

PHASING PLAN - P2
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: AS NOTED
DRAWN BY: MJL

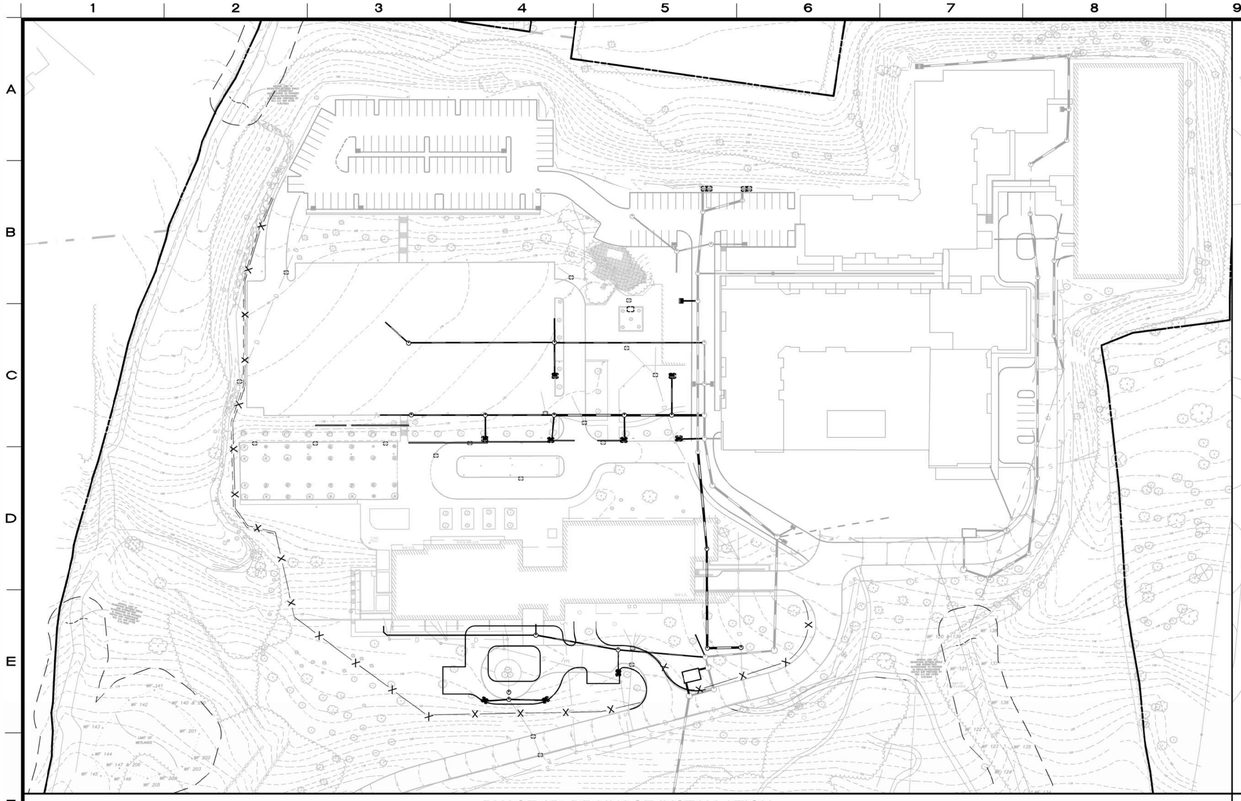
STATE OF CONNECTICUT · DAVID R. GINTER · No. 22171 · REGISTERED PROFESSIONAL ENGINEER

DAVID R. GINTER, P.E.
June 30, 2023
DATE

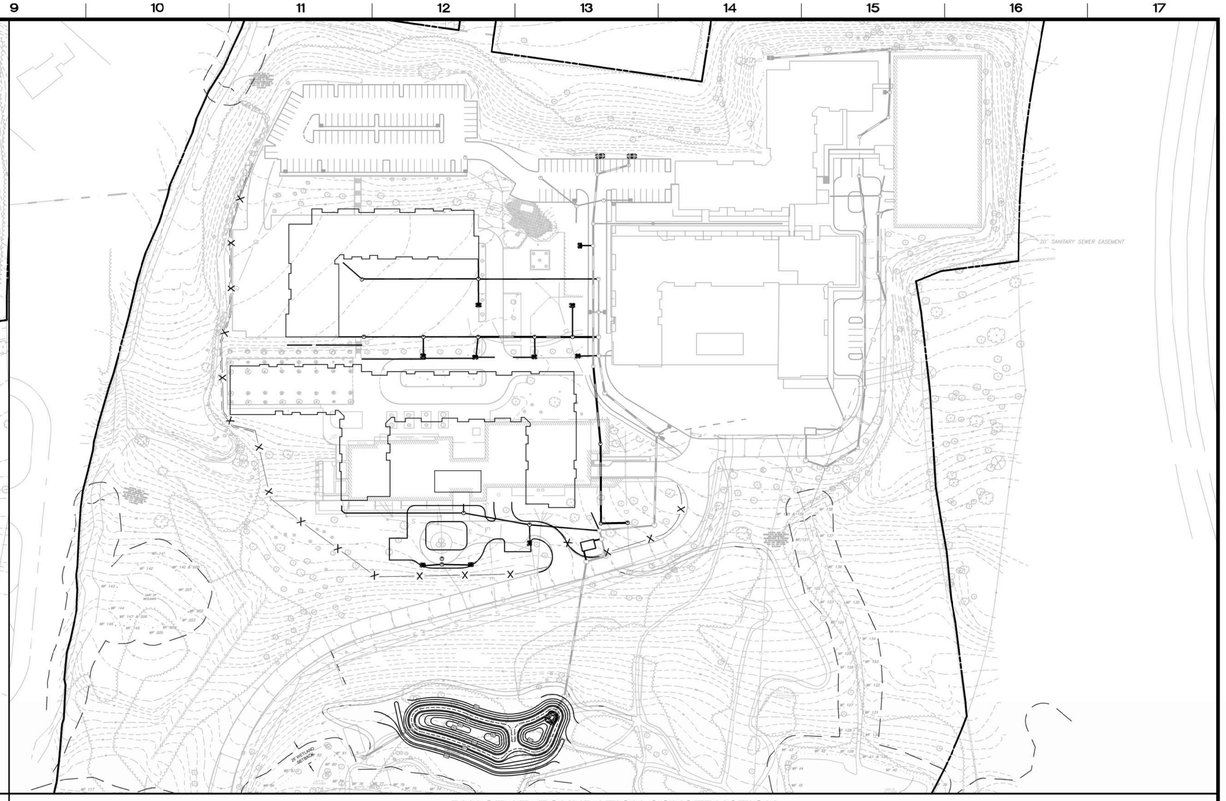
This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:
SE-4C
Comm. No.: 1988

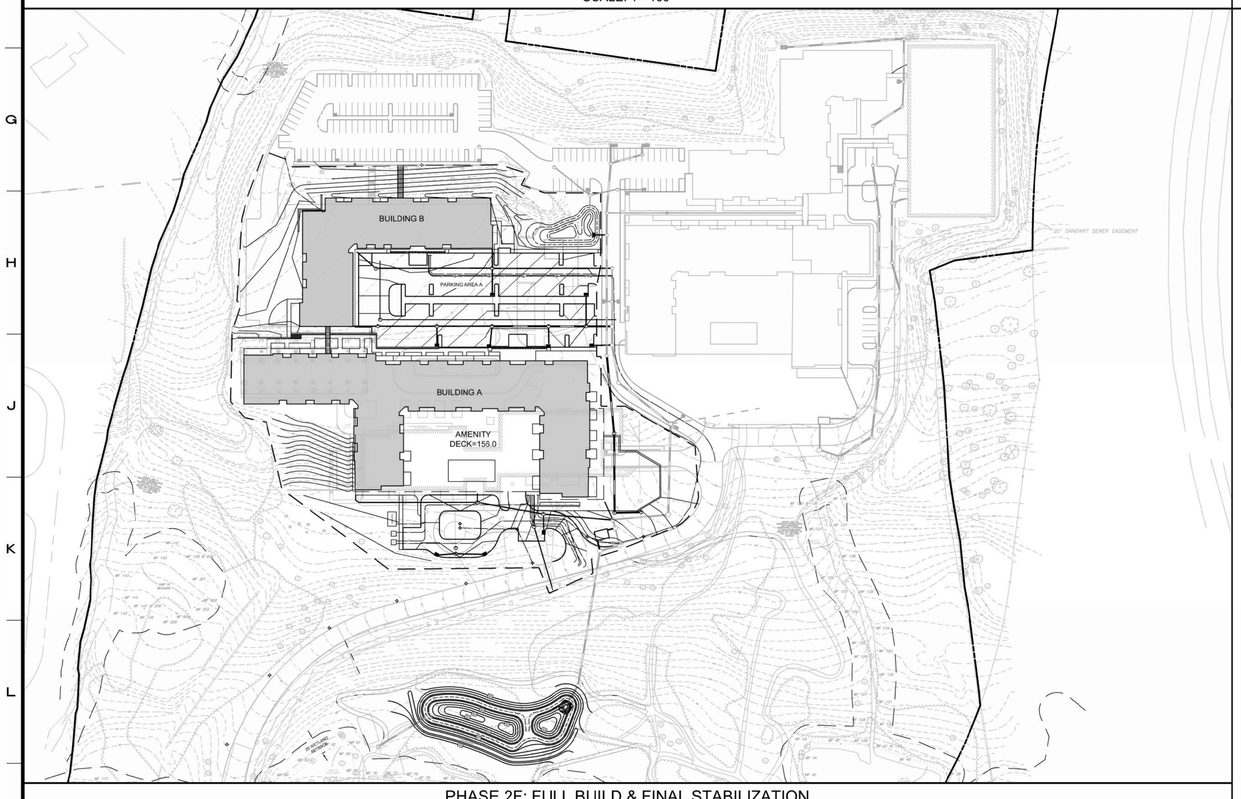
6/30/2023 11:30 AM G:\JOB\FILES\1900\1900\1988_2022 Proposed Development\dwg\1988 Master 2 (2023)_Details.dwg



PHASE 2D: DRAINAGE INSTALLATION
SCALE: 1"=100'



PHASE 2E: FOUNDATION CONSTRUCTION
SCALE: 1"=100'



PHASE 2F: FULL BUILD & FINAL STABILIZATION
SCALE: 1"=100'

PHASE 2D - DRAINAGE INSTALLATION
- INSTALL PROPOSED STORM STRUCTURES AND CONNECTIONS AS PER THE PLANS (SEE SHEETS SE-1 THROUGH SE-3).
- AFTER REMOVAL, PROPERLY CAP ALL DRAIN LINES TO BE ABANDONED.

PHASE 2E - FOUNDATION
- CONSTRUCT BUILDING FOUNDATIONS

PHASE 2F - FULL BUILD
- INSTALL SITE RETAINING WALLS
- INSTALL UNDERGROUND UTILITIES
- INSTALL DETENTION AND STORM INFILTRATION SYSTEMS
- REMOVE TEMPORARY SEDIMENT TRAP
- CONSTRUCT WET POND (SEE SHEET SE-2)
- CONSTRUCT BUILDING
- INSTALL RAIN GARDENS
- INSTALL PAVING
- INSTALL LANDSCAPING
- STRIPE ALL PARKING AREAS AND INSTALL SITE SIGNAGE
- REMOVE SEDIMENT AND EROSION CONTROLS AND CLEAN OIL/GRIT UNITS, INFILTRATION/DETENTION SYSTEMS, RAIN GARDENS, AND CATCH BASIN SUMPS

LEGEND
SEDIMENT & EROSION CONTROLS

SILT FENCE
HAYBALES @ INLET OR
TRACKING PAD
STOCKFILE AREA
TREE TO BE REMOVED
TREE PROTECTION

NORTH- MAP VIEWS S.L.R.

No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

PHASING PLAN - P2
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: AS NOTED
DRAWN BY: MJL

STATE OF CONNECTICUT
DAVID R. GINTER
No. 22177
REGISTERED PROFESSIONAL ENGINEER

DAVID R. GINTER, P.E. #22177
June 30, 2023
DATE

"This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void."

SHEET No:
SE-4D
Comm. No.: 1988

6/30/2023 11:31 AM G:\JOBFILES\1900\1900\1988_2022 Proposed Development\dwg\1988 Master 2 (2023)_Details.dwg

GENERAL NOTES:

1. These drawings are intended only to depict the design of site grading, drainage, sanitary, utilities, and sediment & erosion controls. These drawings are for approval purposes only. No construction may begin prior to obtaining all necessary permits and approvals.
2. All survey data, boundary lines, topography, building locations and area calculations are from a survey prepared by Redniss & Mead, In. entitled Property and Topographic Survey dated May 19, 2023. Elevations depicted or labeled are based on NAVD-88.
3. Limit of Wetlands, depicted hereon, was identified and flagged by Soils Science and Environmental Service Inc. in June 1990 and field located by Redniss & Mead, Inc. in April 2006.
4. Refer to drawings by BKV Group for information regarding landscape architecture plans.
5. Refer to plans prepared by BKV Group for information and design of the proposed buildings. These drawings depict site plans corresponding to the latest architectural plans received from BKV Group received on May 3, 2023.
6. Refer to soils report prepared by Soil Science and Environmental Services, Inc. for a description of site soils. There are wetland soil types on the property or within 100' of the property.
7. Property lies in a CD zone.
8. The property does not lie within a FEMA Special Flood Zone as shown on the Flood Insurance Rate Map Community No. 090015 Panel 0502 Suffix F, effective date June 18, 2010.
9. All construction shall comply with the City of Stamford requirements, the State of Connecticut Basic Building Code, Americans with Disabilities Act (ADA), the Connecticut Guidelines for Soil and Erosion and Sediment Control, OSHA, CT DOT Form 818 (latest edition).
10. All development activities to be undertaken within the street right-of-way and other public lands shall comply fully with City standards unless approved deviation is specifically set forth as part of this application. All work within the State right-of-way will comply with the CT DOT Form 818 with the latest special Provisions and Typical State Standard Details.
11. Contractor shall supply complete shop drawings including manufacturer's product data sheets to the Site Engineer, for all construction material used in conjunction with these drawings. Contractor shall allow a 5 day review period, prior to fabrication and installation.
12. Information on existing utilities has been compiled from various sources including utility company records, municipal record maps and field survey and is not guaranteed to be correct or complete. The contractor is solely responsible for determining actual locations and elevations of all utilities including underground services.
13. The property shall be served by public water and sewers.
14. Prior to any excavation the Contractor and/or Applicant, in accordance with Public Act 77-350, shall be required to contact "Call Before You Dig" at 1-800-922-4455 for mark-out of underground utilities. Dig test pit(s) at utility crossing(s) to check actual clearances with new utilities prior to construction. If conflicts are found the contractor shall notify the engineer, at which time the sewer in question shall be redesigned. If such redesign it not possible, the existing pipes or utilities shall be relocated to avoid the conflict. Such relocation shall be done with knowledge of and in accordance with the owner of the utility.
15. It shall be the responsibility of the contractor to provide any excavation safeguards, necessary barricades, flagmen, etc., for traffic control and site safety. All work shall be done in accordance with OSHA requirements. The contractor shall be responsible for compliance with OSHA requirements.
16. When preparing the existing site for the proposed development, all materials removed shall be disposed of in conformance with all governing agencies.
17. Remove stumps and brush from site, or chip and use during landscaping. Do not bury stumps on site.
18. Building elevations are subject to change and shall be finalized prior to building permit.
19. Special attention of the contractor is called to the required type and compaction of pipe bedding and backfill specified on these drawings. These requirements will be strictly enforced.
20. Prior to issuance of a Certificate of Occupancy, the Engineering Bureau may require a certification letter stating that the development was constructed in accordance to the approved plans, and an "as-built" drawing shall be submitted
21. The Contractor is responsible for coordinating with a licensed surveyor to prepare an "as-built" plan. The Contractor is responsible to coordinate with a site engineer 48 hours prior to any inspections.
22. The Engineering Bureau and the inspecting engineer shall be notified by the contractor three (3) days prior to the commencement of each phase of construction.
23. The work shall be done in conformance with the contract documents/plans unless changes have been approved in writing by the design engineer prior to the work being done.
24. No pool back wash water may be discharged into or adjacent to inland wetland and watercourse areas per the Health Department regulations.

STANDARD CITY OF STAMFORD NOTES:

25. A Street Opening Permit is required for all work within the City of Stamford Right-of-Way.
26. All work within the City of Stamford Right-of-Way shall be constructed to City of Stamford requirements, the State of Connecticut Basic Building Code and the Connecticut Guidelines for Soil Erosion and Sedimentation Control.
27. The Engineering Bureau of the City of Stamford shall be notified three days prior to any commencement of construction work within the City of Stamford Right-of-Way.
28. Trees within the City of Stamford Right-of-Way to be removed shall be posted in accordance with the Tree Ordinance.
29. Prior to any excavation the Contractor and/or Applicant/Owner, in accordance with Public Act 77-350, shall be required to contact "Call Before You Dig" at 1-800-922-4455 for mark our of underground utilities.
30. All retaining walls three (3) feet or higher measured from finished grade at the bottom of the wall to finished grade at the top of the wall and retaining walls supporting a surcharge or impounding Class I, II, or III-A liquids are required to have a Building Permit. Retaining walls shall be designed and inspected during construction by a Professional Engineer licensed in the State of Connecticut. Prior to the issuance of a Certificate of Occupancy, retaining walls shall be certified by a Professional Engineer licensed in the State of Connecticut.
31. Certification will be required by a professional engineer licensed in the State of Connecticut that work has been completed in compliance with the approved drawings.
32. A Final Improvement Location Survey will be required by a professional land surveyor licensed in the State of Connecticut.
33. Connection to a city-owned storm sewer shall required the Waver Covering Storm Connection to be filed with the City of Stamford Engineering Bureau.
34. Granite block or other decorative stone or brick depressed curb, driveway apron, and curbing within the City of Stamford Right-of-Way shall require the Waiver Covering Granite Block Depressed Curb and Driveway Aprons to be filed with the City of Stamford Engineering Bureau.
35. Sediment and erosion controls shall be maintained and repaired as necessary throughout construction until the site is stabilized.
36. To obtain a Certificate of Occupancy, submittal must include all items outlined in the Checklist for Certificate of Occupancy (Appendix D of the City of Stamford Drainage Manual).

RETAINING WALLS:

37. All retaining walls greater than three feet are required to be designed, and inspected during construction by a Professional Engineer registered in the State of Connecticut. A Retaining Wall Certification Sign-Off and Retaining Wall Field Inspection Record form shall be submitted prior to issuance of a Certificate of Occupancy.
38. Retaining walls with a grade difference equal to or greater than 2.5 feet may require a safety barrier on the top of the wall. Retaining walls and barriers are to be designed by others.
39. Retaining walls are shown for schematic purposes only, and shall be designed by the structural engineer. All structural work shall conform to the requirements of the basic building code of the State of Connecticut, latest edition and the City of Stamford requirements.
40. Refer to plans prepared by the structural engineer for information regarding the design any retaining walls

PAVEMENT AND PAVEMENT MARKINGS:

41. Areas of new asphalt shall follow the details on Sheet SE-6.
42. Areas of asphalt pavement that are disturbed by the construction of this project shall be replaced in accordance with the asphalt pavement repair detail. The finished grade of asphalt paving shall blend to existing grade and the edge of the concrete pavement smoothly with no slopes exceeding 4%.
43. Existing features such as but not limited to walks, curbs, and pavement damaged by construction activities shall be repaired at no additional cost to the owner.
44. Bituminous curbs damaged by the project shall be replaced with the new bituminous curbing machine laid Class 3 as described in Sections 8.15 and M.04 of the CT DOT Form 818.
45. Saw cut perimeter of area to be excavated. Saw cut shall be straight and vertical.
46. Contractor shall engage a testing lab who shall verify the base course material by means of a sieve analysis and perform compaction testing of the base and each course of pavement. Site Engineer shall review with the contractor the required testing. Site Engineer shall approve base course prior to placement of each layer of pavement.
47. The Contractor shall engage a qualified independent testing agency to perform field inspections and tests and to prepare test reports. Testing agency will conduct and interpret tests and state in each report whether tested work complies with or deviates from specified requirements.
48. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected work with specific requirements. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements as directed by the Site Engineer.
49. Contractor is responsible to place the hot-mix asphalt mix as required in the drawings, details and the applicable Section of the CT DOT FORM 818 (latest edition).
50. Compaction shall be constructed as specified in the CT DOT FORM 818 (latest edition), Section 4.06 specification, the drawings and the details. Testing lab shall verify compaction of each course of pavement as directed by the Ste Engineer.
51. After the asphalt pavement has cured sufficiently to support the weight of a water truck without marking the newly installed pavement, it shall be water tested for low spots, areas of little or no drainage, etc. A water truck shall spray a sufficient amount of water on all pavement sections to observe the drainage of water. There shall be positive drainage on all areas of the pavement. Any visible low spots where significant water (greater than or equal to 3/16" in depth) is left standing, shall be clearly marked for the Contractor to repair prior to final acceptance. These areas must be sawcut and removed down to the base course prior to replacement with asphalt mixture as per the original approved design. The base course and edges of sawcut asphalt must be treated with tack oil prior to new section of asphalt being installed. The Owner's Representative or inspecting A/E shall be notified 48 hours in advance of water test so that he may be present during the test.
52. The inspecting engineer and contractor will review the testing requirements. Samples to be tested and compaction testing protocol will be discussed. Testing and approval of the subgrade, base course and asphalt layers prior to the installation of the next layer to determine if the work complies or deviates from the specified requirements. Prior to installation of the base course, contractor shall contact inspecting engineer to determine the suitability of the subgrade material, base course and asphalt. Additional excavation or base course may be required.
53. Finished paving shall be free of "bird baths" and be smooth at the slopes specified on the plans.
54. Finished grade shall be within 1/2 inch of that noted on the drawings.
55. The pavement shall be protected from vehicular traffic of any kind with the use of barricades, etc. for a minimum period of 24 hours after final rolling. Maintain and protect asphalt surface from scrapes, sears, spills, hydraulic leaks, and any other construction damage for the remainder of construction until Owner's Representative acceptance. Contractor is responsible for clearing, repairing, seal coating, patching, and re-striping as necessary to obtain Owner's Representative's final approval/acceptance.
56. Thicknesses of all layers shown are after compaction. Compact all layers to 95% per ASTM D 1557 (Modified Proctor Method).
57. Removal of pavement markings along state road ways shall be completed by non-destructive method in compliance with the CT DOT Form 818 Section 12.11 as revised.
58. New pavement markings shall be painted with epoxy resin paint in compliance with the CT DOT Form 818 Section 12.10 as revised.
59. New sign material and sheeting shall be made of retroreflective material in compliance with CT DOT Form 818 Section 12.08 as revised.
60. All signs and pavement markings installed along the state road must conform to the "Manual on Uniform Traffic Control Devices," the latest State of Connecticut Catalog of Signs and standard as revised.
61. All pavement striping and replacement shall conform to the City of Stamford standards and the latest edition of AASHTO Highway Design Manual.

EARTHWORK & GRADING:

62. Grade away from building walls at 2% minimum (typical).
63. Earth slopes shall be no steeper than 2:1 (horz.:vert.)
64. No work shall commence until erosion controls have been inspected and approved by the EPB or their designee(s).
65. General fill beyond paved areas shall be free of brush rubbish, stumps and stones larger than 8". Fill shall be placed in compacted layers not to exceed 8" in thickness. The dry density after compaction shall not be less than 95% of the Standard Proctor Test and done in accordance with the requirements of ASTM D698. After compacting, the fill shall be 4" below the required grade as shown on the plan.
66. General fill may be till, loam, sand or gravel mixture classified as SP, SW, SM, GP, GM, ML per the United Soil Classification System. It shall have not more than 40% fines passing the #100 sieve, not more than 8% passing the #200 sieve, and no stones larger than 8".
67. Subgrade and fill shall be uniformly compacted by the use of equipment manufactured for that purpose. Rollers shall deliver a ground pressure of not less than 300 pounds per linear inch of contact width and weigh not less than 10 tons. Vibratory units shall have a static weight of not less than 4 tons. The amount of compactive effort shall be as directed by the Engineer, but in no case shall be less than 4 complete passes of the compacting equipment being used.
68. Disturbed areas shall be top soiled, seeded with grass and mulched in a manner conforming to the recommendations of the "Guidelines for Soil Erosion and Sediment Control", published by The Connecticut Council on Soil and Water Conservation, May 2002.
69. After the areas to be topsoiled have been brought to grade, the subgrade shall be loosened by scarifying to a depth of at least 2" to ensure bonding of the topsoil and subsoil.
70. Topsoil shall be friable and loamy with high organic content. It shall be free of debris, rocks larger than 2" and roots. Topsoil shall have at least 1.5 percent by weight of fine textured stable organic material and no greater than 6 percent. Topsoil shall not have less than 20% fine textured material (passing the No, 200 sieve) and not more than 15% clay. pH range shall be 6.0-7.5 and soluble salts shall not exceed 500ppm.
71. Fill or topsoil shall not be placed nor compacted while in a frozen or muddy condition or while subgrade is frozen.
72. Excavation for pipes or concrete pavement repair may require either a braced excavation or open cut designed according to the requirements of OSHA, 29 CFR Part 1926. The lateral support systems and slopes should also be designed such that building footings, slabs on grade, adjacent pavement and existing ut ilities are protected and supported and not allowed to settle. The contractor shall be responsible for having a Professional Engineer, registered in the State of Connecticut design the excavation support method. The designs shall be submitted to the owner or his geotechnical engineer for review. The contractor shall submit plans showing the type, limits, design and sequence of construction for the lateral support system.
73. During the excavation, it is anticipated that existing utilities and sewers may be exposed. The contractor shall provide protection and support of these facilities and repair any damage caused by the work in a manner satisfactory to the owner. The condition of the existing facilities shall be observed by the owner's representative who shall determine if the facilities shall be replaced. Replacement of the facilities shall be done in a manner satisfactory to the owner and in compliance with applicable Codes.
74. Approximately [X] cu. yds. of fill and [X] cu. yds. of cut is anticipated throughout the course of construction. This will equate to a net [CUT/FILL] of approximately [X] cu. yds. Excavation for the [STRUCTURE] is anticipated to yield approximately [X] cu. yds. of cut. If this material is satisfactory, it may be used onsite for a net fill of [X] cu. yds.

STORM AND SANITARY SEWER SYSTEMS:

75. All pipe shall be installed straight and at the vertical and horizontal alignment shown. Pipes shall have a uniform slope as specified.
76. Minimum cover on all pipes shall be two feet (2') unless otherwise noted.
77. All storm pipe specified as Poly Vinyl Chloride Pipe (PVCP) shall be SDR 35 with rubber gasketed joints and meet the requirements of ASTM D3034 and D3212.
78. All RCP to be Class V, Wall B in accordance with ASTM C-76. Joints shall be push-on rubber gasket type.
79. All High Density Polyethylene Pipe (HDPE) for the stormwater system shall be ADS N-12 or equivalent with O-Ring joints (Pro-series) suitable for water tight installations.
80. All Ductile Iron Pipe (D.I.P.) shall be AWWA C150, C151, with cement mortar lining complying with AWWA C104; class 51 with push on gasketed joints and furnished in minimum normal 18 foot length.
81. All sanitary sewer pipe shall be Poly Vinyl Chloride Pipe (PVCP) and shall be Schedule 40 with solvent weld joints.
82. Dig test pits at utility and sewer crossings to check actual clearances with these facilities prior to construction. Dig test pits at the connection points to existing sanitary sewer pipes to confirm that the elevation of the proposed gravity sewer is appropriate. If conflicts are found the contractor shall notify the engineer at which time the sewer in question shall be redesigned. If such redesign is not possible, the existing pipes or utilities shall be relocated to avoid conflict.
83. All catch basins and area drains shall have a two foot (2') sump with bell traps or 90° PVC elbows.
84. Manhole diameters listed are minimum sizes and are assumed to be 4' inside diameter. If precast manholes are used, larger manholes must be used if recommended by the manufacturer.
85. All existing and proposed catch basins, area drains, junction boxes, manhole rims and utility facilities shall be raised or lowered to be flush with finished grade.
86. Locate and abandon existing sanitary laterals at the property line with the end capped and mortared. Other existing utilities shall be abandoned in accordance with the requirements of the utility owner(s).
87. When connecting new pipes to existing structures such as manholes and catch basins, the structure shall be completely cleaned out. The hole made in the structure shall be made as small as possible. The structure shall be repaired to match its original type of construction. The joint between the structure and the pipe shall be made watertight by filling the joint with mortar.
88. Flow in existing sewer system must not be interrupted. Any temporary routing of this sewer flow must be done in conformance with all applicable rules and regulations.
89. Under no circumstances shall trench water be allowed to drain off through sanitary sewer lines.
90. All crushed stone shall be Gradation No. 4 as per CT DOT Form 818, Article M.01.02. Stone shall consist of sound, tough, durable particles free from soft, thin, elongated, laminated, friable, micaceous, or disintegrated pieces of mud, dirt or other deleterious material.
91. The storm and sanitary sewer shall be encased in concrete for a distance of 10 feet on either side of any intersection between the sanitary sewer and storm sewer. Where concrete encasement is required, temporarily support the pipes in place. Use sufficient concrete to encase piping not less than 6 inches at all points. The encasement shall be adequately supported with a stone base and shall be keyed into the foundation wall to prevent damage from settlement.
92. Sanitary Sewer Testing: The sanitary sewer line shall be Low Pressure Air Tested, at the expense of the contractor; Testing to be in accordance with recommended procedure in "Unibell's" "Recommended Practice for Low Pressure Air Testing of Installed Sewer Pipe" UNI B-6. The minimum starting pressure for the test is 3.5 P.S.I. (in excess of the groundwater pressure at the top of the pipe) and there shall be no more than 0.5 P.S.I. drop in five (5) minutes. Manholes to be visually inspected. Lateral plugs shall be airtight to allow proper testing. Inspecting Engineer and the Engineering Bureau shall be informed of testing schedule three days in advance so they can witness the testing.
93. At the end of construction, after the site has be fully stabilized, all new and previously existing storm sewer facilities including, but not limited to, catch basins, area drains, manholes, junction boxes, flow control structures, pipes, oil grit separators, permeable pavers and porous pavement shall be fully cleaned with equipment designed for that purpose to the satisfiction of the inspecting engineer.

UTILITIES:

94. Utilities shown on these plans are "not guaranteed" to be complete or correct. Prior to any site activities, the contractor shall be responsible for verification of clearances of proposed utilities from existing utilities. This verification shall include physical observation by means of test pits of the locations of affected utilities. The contractor shall notify the site engineer immediately of any conflict.
95. Easements may be required in favor of the various utility companies.
96. Electric, telephone, cable, gas, and water services shall be installed in conformance to the requirements of the governing utility companies.
97. It is the contractor's responsibility to install utilities as shown on this sheet. The contractor shall work with the utility companies and site engineer to insure the installation is in conformance to the requirements of the governing utility company. All conduits shall be concrete encased as may be required by the governing utility company. Proposed electric, telephone, cable, gas and water services are shown for schematic purposes only and are subject to change pending utility company review. These utilities shall be designed by others and installed in conformance to the requirements of the governing utility companies.
98. All proposed utility facilities shall be raised or lowered to be flush with finished grade.
99. Where necessary, existing utilities shall be reinstalled to meet all minimum coverage requirements.
100. Utility connections at building face shall be coordinated with the building contractors.
101. The contractor must supply and install drig lines with all conduits.
102. Assume one 2" PVCP conduit for all site lighting. Service location to be determined.
103. In general, each utility shall have a minimum clearance of three feet to any other underground utility.
104. Any and all utilities abandoned shall be capped or removed in accordance with utility companies' requirements.
105. The electric transformer and generator shall be located to meet all applicable Zoning setbacks.
106. All utilities shall be installed per FEMA regulations for food protection. All utilities (i.e., HVAC condensers, electric transformers, etc.) must be set one foot above the Base Flood Elevation (BFE) or waterproofed.
107. Gas service to the meter room shall be installed by the utility company.
108. Detectable Tape shall be used to mark piping listed below. The identification tape shall be located at least 6-inches to 10-inches below final grade but no closer than 12-inches to the buried utility piping or service.

Electric	Red	Caution Electric Line Buried Below
Telephone & Control	Orange	Caution Telephone Line Buried Below
Natural Gas	Yellow	Caution Gas Line Buried Below
Water Systems	Blue	Caution Water Line Buried Below
Fire Protection Systems	Blue	Caution Fire Line Buried Below Sprinkler
Mains	Blue	Caution Sprinkler Line Buried Below Sewer
System	Green	Caution Sewer Line Buried Below
IS & S Communication Conduit	Orange	Conc. N/A

109. Underground-Type Plastic Line Marker; Manufacturer's standard permanent, bright-colored detectable tape, continuous-printed plastic tape, inteaded for direct-burial service; not less than 6" wide X 4 mils thick.

DETENTION BERM NOTES:

110. In the area of the berm, remove all topsoil, organic matter, trees, stumps, roots, shrubs and other unsuitable material. Exposed sub-grade to be approved by the inspecting engineer, who may require that it be proof-rolled.
111. Compact impervious core material in 9" lifts to 95% maximum dry density as per ASTM D1557. Impervious core material shall be a soil such as clayey gravel, silty sand and soils classified GM, GC, SM, SC, CL using the Unified Soil Classification System. Core should meet the following graduation:

SIEVE NUMBER	% PASSING BY WEIGHT
4	70 - 95
10	60 - 85
40	50 - 75
200	20 - 65

SEDIMENT AND EROSION CONTROL NOTES:

1. Sheet SE-5A-5B is intended to describe the soil sediment and erosion control treatment of this site only. For other details with respect to construction, see appropriate drawings.
2. All sediment and erosion controls shall be done in conformance with the "Connecticut Guidelines for Soil Erosion and Sediment Control" dated May 2002 prepared by The Connecticut Council on Soil and Water Conservation.
3. The contractor is assigned the responsibility for implementing this sediment and erosion control plan. This responsibility includes the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of the plan notifying the Zoning Department of any transfer of this responsibility, and EPB that construction is to begin three (3) days prior to commencing work.
4. Temporary sediment control measures and tree protection must be installed in accordance with drawings and manufacturer recommendations prior to work in any upland areas.
5. No construction or construction equipment or storage of materials will be allowed on the downhill side of the silt fence or within fenced off areas, except during construction of the proposed facilities shown beyond the fences.
6. Where existing trees are to be saved, trees shall be protected with trunk armoring where shown. Tree limbs shall be trimmed as needed to protect the trees from damage by construction operations. Such trimming shall be minimized. Armoring and any limb trimming should be done before construction begins. Tree protection should be maintained during construction. Equipment Trafficking and materials storage over the tree roots shall be avoided.
7. Anti-tracking pads shall be installed at start of construction and maintained in an effective condition throughout the duration of construction. Pads consist of 2" - 4" crushed stone, 6" minimum thickness and extend the width of the construction access. The length of the access shall be sufficient to prevent dirt from being tracked onto off site roads (minimum length of 50').
8. The location of each stockpile will vary throughout the construction period. Excavated silt and earth stockpiles shall be stored on site. Silt fence shall be placed at the base of the stockpile to prevent sediment from leaving the site and to protect storm drains, wetlands and watercourses.
9. Silt fence shall be Mirafi enviroFence, Amoco siltstop or equivalent approved by Site Engineer. Filter fabric used shall be Mirafi 100x or equivalent. Install silt fence according to manufacturer's instruction, particularly, bury lower edge of fabric into ground.
10. All roof leader downspouts shall temporarily discharge onto splash pads measuring at least 8" wide by 18" long, or approved equal.
11. Land disturbance shall be kept to a minimum. All disturbed area shall be planted in where permanent plantings are called for as soon as practicable. Seed and mulch disturbed areas with grass seed where permanent plantings are not called for, as soon as practicable. Prepare seedbed (4" thick minimum) with topsoil. Seed, rake, roll, water and mulch areas according to mixes below. Water as often as necessary (up to 3 times per day) to establish cover. Mulch seeded areas at 1 to 2 tons/acre with salt hay. Maintain mulch and watering until grass is 3" high with 85% cover. Reseed or overseed if necessary.

Temporary Seed Mix:
Perennial ryegrass 40 lbs/ac. (1 lb/1000 sf.)

Permanent Lawns:
Kentucky Bluegrass 20 lbs/ac.
Creeping Red Fescue 20 lbs/ac.
Perennial Ryegrass 5 lbs/ac.
45 lbs/ac. (1 lb/1000 sf.)

Optimum Seeding Dates:
April 15 through June 15
August 15 through October 1

12. Any disturbed area shall be restored to the preconstruction condition. Existing shrubs shall be carefully dug up, stored in a temporary nursery during the project and replanted as directed by the Owner. The time during which these bushes are out of the ground must be minimized. The contractor shall keep the shrubs watered and out of the direct sun during this time.
13. If disturbed areas can not be seeded immediately due to the time of year, mulch area until seeding can occur; remove mulch and seed and remulch when season permits.
14. Mulch shall be replaced with erosion control blankets where specified on the plan. Blankets shall be jute netting installed as per the details. Additional areas may have to be covered with blankets as directed by the Site Engineer. Other blankets and methods may be used if approved by the site engineer.
15. If excavation dewatering is required, all dewatering pumping must have sediment and erosion control provisions to maintain clear water discharge (not muddy). Such provisions shall be approved by governing agencies. All pump discharge from dewatering shall be clear at the point where it flows off the property.
16. If excessive groundwater is encountered during construction, the site and/or Geotechnical Engineer may require that the pump discharge shall pass through a settlement basin of adequate size to further clarify the discharge prior to entering the storm drainage system. Such basin could be made from an excavated pit or by using a sealed trash dumpster. The basin would have a piped overflow leading into the storm drainage system. Alternative methods may be used, such as well points, other types of pump intake filters and settlement basins, if approved by the inspecting engineer and governing agencies. All pump discharge from dewatering shall be clear at the point where it flows off the property.
17. All runoff from dewatering activities shall be filtered through 2 rows of silt fence backed with haybales and directed towards a temporary sediment trap.
18. Upon installation of each catch basin and area drain, immediately surround it with haybales as per sediment filter detail.
19. Haybales shall be new and are to be replaced whenever their condition deteriorates beyond reasonable usability.
20. Temporarily block pipes leading into the storm water infiltration system until upland areas are thoroughly stabilized. Under no circumstances shall sediment or silty water be allowed to enter the infiltration system.
21. Install permanent rip rap with the construction of headwalls. Immediately install haybales until the site is thoroughly stabilized.
22. Pavement and curbing should be placed as soon as possible after drainage is installed.
23. Loaded trucks shall be covered as required to keep down dust.
24. Affected portions of off site roads and sidewalks must be swept clean when required to keep down dust and prevent safety hazards or at least once a week during construction and as directed by Site Engineer.
25. Dust control to be achieved with watering down disturbed areas as required.
26. After each storm event or once bi-weekly, all sediment and erosion controls shall be inspected. Any corrective actions to mitigate environmental concerns will be ordered by the site engineer or environmental engineer. It is the Owner's responsibility to retain such consultant.
27. Additional sediment and erosion control measures may be installed during the construction period if found necessary by the inspecting engineer or any Governing Agency.
28. All permanent and temporary sediment control devices will be maintained in effective condition throughout the construction period until upland disturbed areas are thoroughly stabilized. Upon completion of work and stabilization of all upland areas, all temporary sediment control devices and tree protection should be removed from the site and any silt disposed of legally.
29. Excavated material from temporary silt traps must be stockpiled on uphill side of silt fence.
30. Excavated silt and earth stockpiles shall not be permitted to be stored on site. Excess material shall be disposed of legally.
31. Floc Logs manufactured by [TBD] shall be installed in the upper third to half of any temporary diversion channel or swale or as recommended by the manufacturer.
32. Periodically and upon completion of the job, clean silt from any effected storm sewer systems including pipes and inlets. Use silt during final landscaping or dispose off-site legally.

STORM SEWER — STRUCTURE INFORMATION (TABLE 1/2)

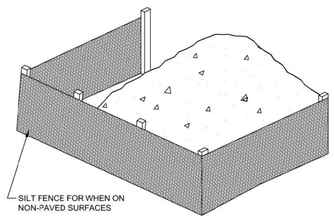
STRUCT.	RIM/ GRATE	INV.IN	INV.OUT
MH#1	87.00	EXIST (V.I.F.)	83.40 (EX.V.I.F.)
		83.50 (MMH#1)	
MH#2	95.00	89.20 (MH#3)	87.20 (ED#1)
MH#3	138.00	132.20 (MH#4)	132.10 (MH#2)
		132.20 (OGS#2)	
MH#4	140.50	133.40 (MH#5)	133.30 (MH#3)
MH#5	139.00	132.90 (MH#6)	133.90 (MH#4)
			132.80 (OGS#2)
MH#6	139.00	136.70 (ROOF-W)	133.05 (MH#5)
		133.10 (MH#7)	
		135.00 (MH#10)	
MH#7	140.50	136.30 (CB#3)	134.60 (MH#6)
		134.70 (MH#8)	
MH#8	144.30	138.50 (ROOF-W)	134.60 (MH#6)
		136.20 (ROOF-S)	
MH#9	REMOVED	REMOVED	REMOVED
MH#10	149.00	144.00 (MH#11)	143.90 (MH#6)
MH#11	159.70	155.60 (CB#3)	143.90 (MH#6)
		155.60 (CB#4)	
		155.60 (MH#12)	
MH#12	167.30	162.70 (MH#13)	162.60 (MH#11)
MH#13	170.80	166.50 (ROOF)	163.50 (MH#12)
		167.80 (CB#7)	
		163.60 (MH#14)	
MH#14	171.50	166.80 (MH#15)	163.90 (MH#13)
		164.00 (MH#20)	
MH#15	173.70	170.00 (CB#5)	167.40 (MH#14)
		170.00 (CB#6)	
		167.50 (MH#16)	
MH#16	175.00	168.40 (MH#18)	168.30 (MH#15)
MH#17	-	REMOVED	-
MH#18	178.50	173.80 (ROOF)	171.35 (MH#16)
		171.40 (MH#19)	
		173.80 (CB#11)	
MH#19	179.60	174.30 (ROOF)	174.20 (MH#18)
MH#20	172.00	169.00 (CB#10)	164.50 (MH#14)
		164.60 (MH#21)	
MH#21	172.10	168.00 (CB#8A)	165.30 (MH#20)
		165.40 (MH#22)	
MH#22	172.10	168.00 (CB#8B)	166.50 (MH#21)
		166.60 (MH#23)	
MH#23	174.20	168.00 (MH#24)	167.70 (MH#22)
		168.80 (CB#9)	
MH#24	176.50	169.20 (JB#1)	169.10 (MH#23)
		173.00 (ROOF)	
MH#25	141.00	133.00 (MH#26)	132.26 (EX)
MH#26	143.70	137.50 (MH#27)	137.40 (MH#25)
		137.60 (AD#1)	
MH#27	163.00	159.00 (MH#28)	139.70 (MH#26)
MH#28	170.50	164.60 (MH#28A)	164.10 (MH#27)
MH#28A	177.40	173.52 (MH#29)	170.00 (MH#28)
		170.30 (CB#12)	
MH#29	175.60	177.80 (JB#2)	175.60 (MH#28A)
		175.70 (MH#30)	
MH#30	184.80	180.00 (DCB#1)	177.00 (MH#29)
		180.00 (MH#31)	
MH#31	185.20	181.30 (DCB#2)	181.20 (MH#30)
MH#101	180.00±	177.00 (CB#101)	172.25 (ED#2)
		177.00 (MH#102)	
		177.00 (MH#105)	
MH#102	186.20	182.20 (MH#103)	182.10 (MH#101)
MH#103	191.60	187.50 (CB#103)	187.50 (MH#102)
MH#105	183.00	179.80 (CB#102)	179.70 (MH#101)
OGS#1	190.50	186.50 (CB#106)	185.20 (EX)
		186.50 (CB#107)	
OGS#2	138.00	132.50 (MH#5)	132.50 (MH#3)
JB#1	171.50	169.40 (TD#5)	169.30 (MH#24)
JB#2	182.50	179.50 (TD#6)	179.40 (MH#29)
CB#1	141.30	-	136.30 (EXCB#1)
CB#2	141.30	-	136.30 (EXCB#1)
CB#3	140.20	-	137.20 (MH#7)

STORM SEWER — STRUCTURE INFORMATION (TABLE 2/2)

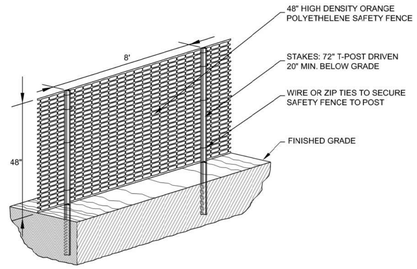
STRUCT.	RIM/ GRATE	INV.IN	INV.OUT
CB#4	159.00	-	156.00 (MH#11)
CB#5	173.50	-	170.50 (MH#15)
CB#6	173.50	-	170.50 (MH#15)
CB#7	171.50	-	168.50 (MH#13)
CB#8A	171.50	169.40 (TD#2)	168.50 (MH#21)
CB#8B	171.50	169.40 (TD#3)	168.50 (MH#22)
CB#9	173.60	169.40 (TD#4)	169.30 (MH#23)
CB#10	173.40	-	170.40 (MH#20)
CB#11	177.50	-	174.50 (MH#18)
CB#12	173.60	172.00 (8" ORIFICE)	170.60 (MH#17)
CB#101	184.00	-	178.00 (MH#101)
CB#102	183.85	-	180.50 (MH#105)
CB#103	190.90	-	187.90 (MH#103)
CB#104	193.70	-	190.70 (MH#103)
CB#106	194.40	-	191.20 (OGS#1)
CB#107	191.60	-	188.60 (OGS#1)
EX.CB#1	142.00	134.80 (CB#1)	131.16 (EX)
		134.80 (CB#2)	
DCB#1	185.50	-	181.50 (MH#30)
DCB#2	185.50	-	181.50 (MH#31)
TD#1	171.50	-	169.50(CB#8A)
TD#2	171.50	-	169.50 (CB#8A)
TD#3	171.50	-	169.50 (CB#8B)
TD#4	171.60	-	169.50 (CB#9)
TD#5	171.50	-	169.50 (JB#1)
TD#6	182.50	-	180.00 (JB#2)
DCB#3	193.00	-	189.70 (DMH#209)
DMH#209	193.00	186.60(DCB#3)	184.00 (MH#208)
		185.56(EX.CB#2)	
CB#201	191.00	-	185.10 (MH#208)
MH#208	191.10	185.00(CB#201)	182.90 (EX.MH#1)
		183.00(DMH#209)	
EX.MH#1	187.68	180.03 (MH#208)	178.60 (EX.MH#207)
EX.MH#207	183.45	178.00 (EX.MH#1)	177.50 (MH#206)
MH#206	178.70	173.85 (EX.MH#207)	172.00 (MH#205)
MH#205	167.40	164.03 (MH#206)	162.40 (MH#204)
MH#204	163.40	159.23 (MH#205)	158.00 (DMH#201)
DMH#201	160.00	156.60 (MH#204)	151.12 (EX.24"CMP)
		152.45 (MH#202)	
EX.MH#3	180.00	177.30 (ROOF)	175.00 (MH#211)
		V.I.F. (EX.MH#4)	
MH#211	179.80	178.15 (EX.TD)	173.60 (MH#206)
		174.60(EX.MH#3)	
MH#210	175.50	172.0 (MH#211)	178.60 (EX.MH#2)
MH#203	163.00	157.61' (EX.MH#5)	155.08 (DMH#201)
			154.23 (OGS#3)
OGS#3	159.30	153.95(MH#203)	153.95 (MH#202)
MH#203	163.00	157.61' (EX.MH#5)	155.08 (DMH#201)

STORM SEWER — PIPE INFORMATION (TABLE 1/3)

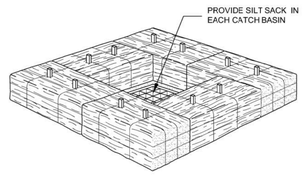
DOWN– STREAM	LENGTH, MATERIAL, SLOPE	UP– STREAM
MH#1	75LF 24" PVCP @ 0.020 FPF	MMH#1
ED#1	20LF 24" PVCP @ 0.010 FPF	MH#2
MH#2	184LF 24" PVCP @ 0.264 FPF	MH#3
MH#3	22LF 24" PVCP @ 0.050 FPF	MH#4
MH#3	12LF 24" PVCP @ 0.025 FPF	OGS#2
MH#4	19LF 24" PVCP @ 0.026 FPF	MH#5
OGS#2	7LF 24" PVCP @ 0.043 FPF	MH#5
MH#5	6LF 24" PVCP @ 0.025 FPF	MH#6
MH#6	92LF 12" PVCP @ 0.016 FPF	MH#7
MH#7	88LF 12" PVCP @ 0.016 FPF	MH#8
MH#8	171LF 8" PVCP @ 0.016 FPF	ROOF-S
MH#7	21LF 12" PVCP @ 0.043 FPF	CB#3
MH#8	10LF 8" PVCP @ 0.050 FPF	ROOF-W
MH#6	25LF 8" PVCP @ 0.052 FPF	ROOF
EX CB



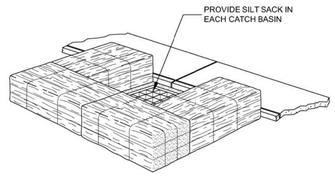
SEDIMENT FILTER FOR STOCK PILE
N.T.S.



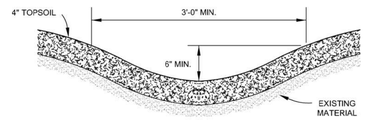
FABRIC & POST CONSTRUCTION FENCE
N.T.S.



SEDIMENT FILTER FOR CATCH BASINS
N.T.S.

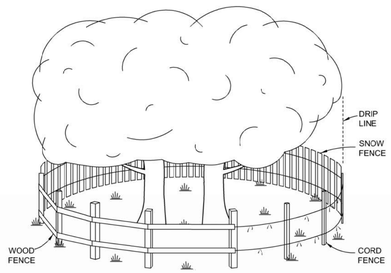


SEDIMENT FILTER FOR CATCH BASINS AT CURB
N.T.S.

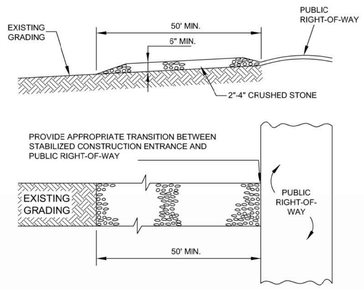


NOTE: SWALES ARE TO BE GRASS LINES. GRASS MIXTURE TO CONSIST OF:
30% PERENNIAL RYE
30% KENTUCKY 31 TALL FESCUE
40% KENTUCKY BLUE GRASS APPLIED AT A RATE OF 120lbs. PER ACRE.

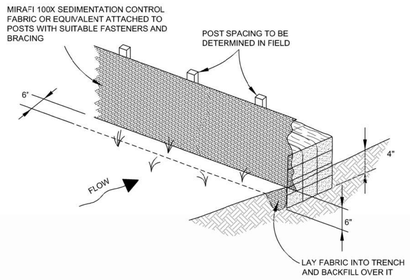
GRASS SWALE
N.T.S.



TREE PROTECTION
(SHOWING ACCEPTABLE TYPES OF FENCING)
N.T.S.

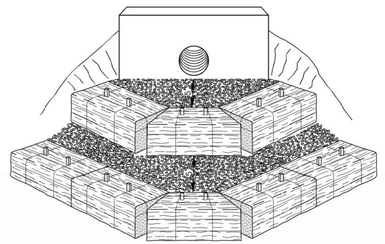


STABILIZED CONSTRUCTION ENTRANCE
(TRACKING PAD)
N.T.S.

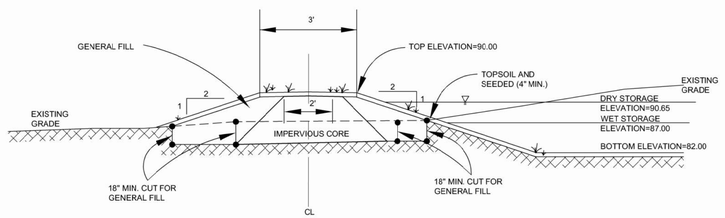


FABRIC & POST SILTATION BARRIER W/ HAY BALES
(SILT FENCE)
N.T.S.

``SAW-TOOTH" SILTATION BARRIER
N.T.S.



OUTLET PROTECTION
N.T.S



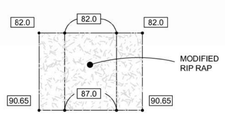
SEDIMENT TRAP BERM
N.T.S.

DETENTION BERM NOTES:

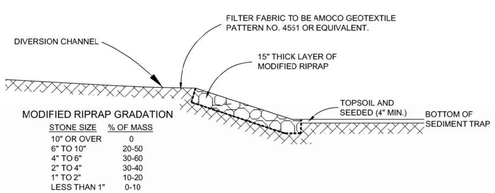
1. In the area of the berm, remove all topsoil, organic matter and other unsuitable material. Remove roots except as indicated on the detail. Exposed sub-grade to be approved by the inspecting engineer, who may require that it be proof-rolled or lowered.
2. Compact impervious core material in 9" lifts to 95% maximum dry density as per ASTM D1557. Impervious core material shall be a soil such as clayey gravel, silty sand and soils classified GM GC SM SC CL using the Unified Soil Classification System. It shall be free of organic matter, frost, debris and other unsuitable materials. Core should meet the following gradation:

SIEVE NUMBER	% PASSING BY WEIGHT
3/4"	100 - 95
#10	95 - 80
#40	80 - 55
#100	55 - 30
#200	30 - 15

3. Prior to placement of berm, core material shall be sieve tested and approved by the design engineer.



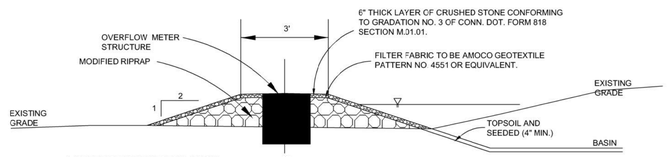
PLAN VIEW OF DIVERSION CHANNEL SPILLWAY



MODIFIED RIPRAP GRADATION

STONE SIZE	% OF MASS
10" OR OVER	0
6" TO 10"	20-50
4" TO 6"	30-60
2" TO 4"	30-40
1" TO 2"	10-20
LESS THAN 1"	0-10

DIVERSION CHANNEL SPILLWAY
N.T.S.



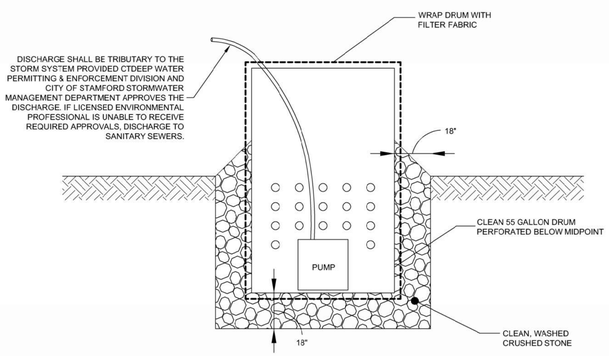
MODIFIED RIPRAP GRADATION

STONE SIZE	% OF MASS
10" OR OVER	0
6" TO 10"	20-50
4" TO 6"	30-60
2" TO 4"	30-40
1" TO 2"	10-20
LESS THAN 1"	0-10

STRUCTURE No.	``TOP OF BERM' ELEV.	MMH OVERFLOW ELEV.
TST #1	90.65	REFERENCE DETAIL ON SE-10

TEMPORARY SEDIMENT TRAP SPILLWAY
N.T.S.

TEMPORARY SEDIMENT TRAP #1 DETAIL
N.T.S.



DEWATERING PUMP INTAKE DETAIL
N.T.S.

No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

DETAILS
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

SCALE: N.T.S.
DRAWN BY: MJL

STATE OF CONNECTICUT
DAVID R. GINTER
No. 27177
REGISTERED PROFESSIONAL ENGINEER
DAVID R. GINTER, P.E.
June 30, 2023
DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No: SE-6
Comm. No.: 1988

6/30/2023 11:17 AM G:\JOB\FILES\1000\1900\1988\ 2022 Proposed Development\dwg\1988 Master 2 (2023)_Details.dwg

TEST PIT DATA

Subsurface Soil Investigation
Soil Profile

Test Pit #: 1 — Date: 10/05/2022
Inspector: 37 — Sanitarian: N/A
Ledge at: 37" — Mottling at: 12"
Water at: N/A — Roots at: 12"

Depth: 37"	Soil Description
0"-4"	topsoil
4"-12"	brown loam
12"-37"	hardpan

Subsurface Soil Investigation
Soil Profile

Test Pit #: 2 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: 57" — Mottling at: 38"
Water at: N/A — Roots at: N/A

Depth: 57"	Soil Description
0"-18"	topsoil, fill, brown loam
18"-57"	hardpan

Subsurface Soil Investigation
Soil Profile

Test Pit #: 4 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: 63" — Mottling at: N/A
Water at: N/A — Roots at: N/A

Depth: 63"	Soil Description
0"-37"	fill material
37"-63"	compact light brown sand with bankrun gravel

Subsurface Soil Investigation
Soil Profile

Test Pit #: 5 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: 86" — Mottling at: N/A
Water at: N/A — Roots at: N/A

Depth: 86"	Soil Description
0"-36"	fill material
36"-86"	compact light brown sand with bankrun gravel

Subsurface Soil Investigation
Soil Profile

Test Pit #: 6 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: 18" — Mottling at: N/A
Water at: N/A — Roots at: N/A

Depth: 18"	Soil Description
0"-18"	fill material

Subsurface Soil Investigation
Soil Profile

Test Pit #: 7 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: N/A — Mottling at: N/A
Water at: N/A — Roots at: N/A

Depth: 79"	Soil Description
0"-69"	fill material
69"-79"	bankrun gravel
	*top of RCP

Subsurface Soil Investigation
Soil Profile

Test Pit #: 8 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: N/A — Mottling at: N/A
Water at: N/A — Roots at: N/A

Depth: 28"	Soil Description
0"-28"	fill material
	*top of underground tunnel

Subsurface Soil Investigation
Soil Profile

Test Pit #: 9 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: 53" — Mottling at: N/A
Water at: N/A — Roots at: N/A

Depth: 53"	Soil Description
0"-31"	fill material *farmer's drain found at 31"
31"-53"	hardpan

Subsurface Soil Investigation
Soil Profile

Test Pit #: 10 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: 68" — Mottling at: 30"
Water at: N/A — Roots at: N/A

Depth: 68"	Soil Description
0"-4"	asphalt
4"-19"	roadbase
19"-30"	fill
30"-40"	hardpan
40"-68"	dark brown bankrun gravel

Subsurface Soil Investigation
Soil Profile

Test Pit #: 11 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: 36" — Mottling at: N/A
Water at: N/A — Roots at: N/A

Depth: 36"	Soil Description
0"-36"	fill material

Subsurface Soil Investigation
Soil Profile

Test Pit #: 12 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: 72" — Mottling at: N/A
Water at: 62" (Water caused by rain) — Roots at: N/A

Depth: 72"	Soil Description
0"-72"	fill material

Subsurface Soil Investigation
Soil Profile

Test Pit #: 13 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: 120" — Mottling at: N/A
Water at: N/A (Water caused by rain) — Roots at: N/A

Depth: 120"	Soil Description
0"-91"	fill material
91"-120"	gray fine sand

Soil Profile

Test Pit #: 14 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: 46" — Mottling at: N/A
Water at: N/A (Water caused by rain) — Roots at: N/A

Depth: 46"	Soil Description
0"-46"	fill material (compacted)

Subsurface Soil Investigation
Soil Profile

Test Pit #: 15 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: 54" — Mottling at: N/A
Water at: N/A (Water caused by rain) — Roots at: N/A

Depth: 54"	Soil Description
0"-54"	fill material

Subsurface Soil Investigation
Soil Profile

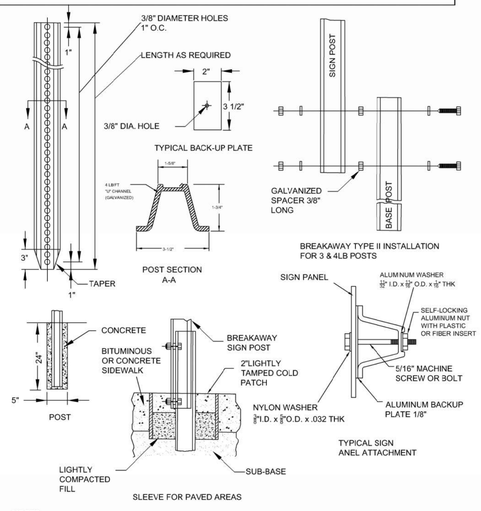
Test Pit #: 16 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: 24" — Mottling at: N/A
Water at: N/A (Water caused by rain) — Roots at: N/A

Depth: 24"	Soil Description
0"-24"	fill material

Subsurface Soil Investigation
Soil Profile

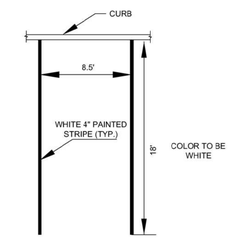
Test Pit #: 17 — Date: 10/05/2022
Inspector: DRG — Sanitarian: N/A
Ledge at: 96" — Mottling at: N/A
Water at: N/A (Water caused by rain) — Roots at: N/A

Depth: 96"	Soil Description
0"-52"	fill material (compacted)
52"-96"	gray fine sand (moderately compacted)

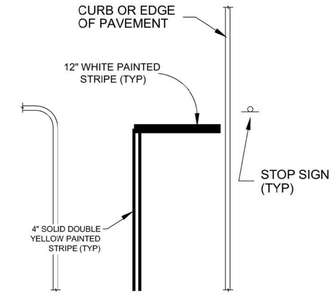


NOTES:
1. STEEL FOR POSTS SHALL CONFORM TO THE MECHANICAL REQUIREMENTS OF ASTM A 499-81 GRADE 50 AND TO THE CHEMICAL REQUIREMENTS OF ASTM A1-76 CARBON STEEL TEE RAIL HAVING NOMINAL WEIGHT OF 91 LBS. OR GREATER PER LINEAR YARD. STEEL FOR DELINEATOR POSTS SHALL BE ASTM A36 STEEL.
2. AFTER FABRICATION, ALL STEEL POSTS SHALL BE GALVANIZED TO MEET THE REQUIREMENTS OF ASTM A 123.
3. ALL SIGN POSTS SHALL HAVE "BREAKAWAY" FEATURES THAT MEET AASHTO REQUIREMENTS CONTAINED IN "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS - 1985." THE "BREAKAWAY" FEATURES SHALL BE STRUCTURALLY ADEQUATE TO CARRY THE SIGNS SHOWN IN THE PLANS AT 60 MPH WIND LOADINGS. INSTALLATIONS SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
4. TYPE A POSTS - 3 LB/FT TYPE B POSTS - 4 LB/FT
5. PLEASE REFER TO THE STATE OF CONNECTICUT DOT "TYPICAL METAL SIGN POSTS AND SIGN MOUNTING DETAILS" SHEET NO. 39 (1999) FOR MORE INFORMATION.

METAL SIGN POST
N.T.S.

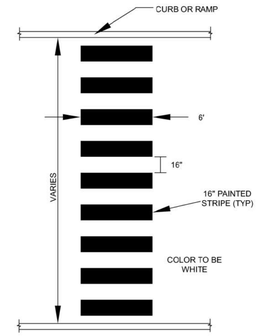


REGULAR PARKING SPACE
N.T.S.



NOTE:
ALL PAINT SHALL CONFORM TO CT DOT FORM 818, ARTICLE M.07.17.

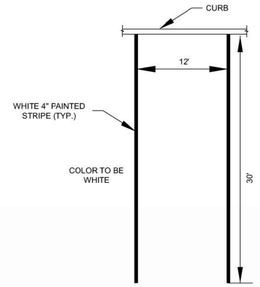
STOP BAR STRIPING
N.T.S.



CROSSWALK
N.T.S.

CONN. D.O.T. SERIES R1-1
31-0552
(30" STOP SIGN)

STOP SIGN DETAIL
N.T.S

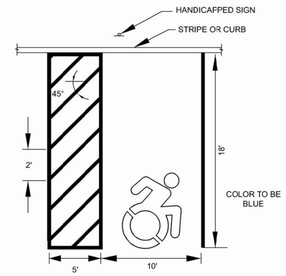


LOADING SPACE
N.T.S.

CONN. D.O.T. SERIES 30 #31-0629

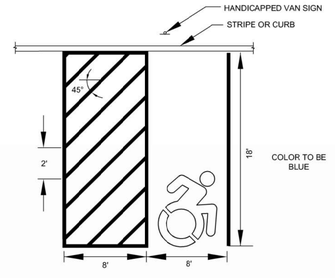
CONN. D.O.T. SERIES 30 #31-0648

HANDICAPPED PARKING SIGN DETAIL
N.T.S.



NOTE:
HANDICAPPED PARKING SHALL BE GRADED NO GREATER THAN 2% IN ANY DIRECTION.

HANDICAPPED PARKING
N.T.S.



NOTE:
HANDICAPPED PARKING SHALL BE GRADED NO GREATER THAN 2% IN ANY DIRECTION.

HANDICAPPED VAN PARKING
N.T.S.

No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

DETAILS
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

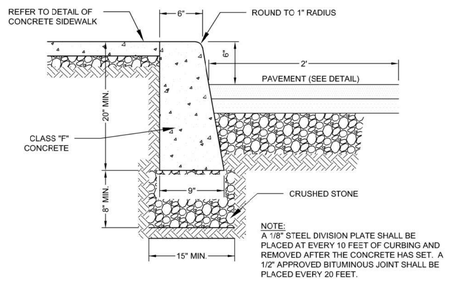
REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: N.T.S.
DRAWN BY: MJL
STATE OF CONNECTICUT — DAVID R. GINTER — No. 27177 — REGISTERED PROFESSIONAL ENGINEER
DAVID R. GINTER, P.E. No. 27177
June 30, 2023
DATE

"This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void."

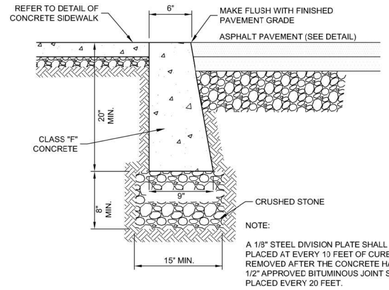
SHEET No:
SE-7
Comm. No.: 1988

6/30/2023 11:19 AM G:\JOBFILES\1900\1900\1988_2022 Proposed Development\dwg\1988 Master 2 (2023)_Details.dwg



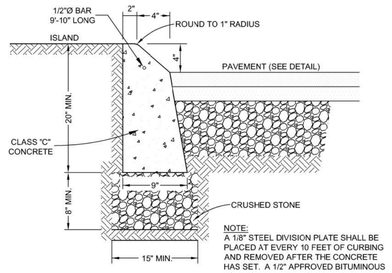
NOTE:
A 1/8" STEEL DIVISION PLATE SHALL BE PLACED AT EVERY 10 FEET OF CURBING AND REMOVED AFTER THE CONCRETE HAS SET. A 1/2" APPROVED BITUMINOUS JOINT SHALL BE PLACED EVERY 20 FEET.

CONCRETE CURB
N.T.S.



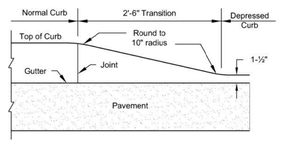
NOTE:
A 1/8" STEEL DIVISION PLATE SHALL BE PLACED AT EVERY 10 FEET OF CURBING AND REMOVED AFTER THE CONCRETE HAS SET. A 1/2" APPROVED BITUMINOUS JOINT SHALL BE PLACED EVERY 20 FEET.

FLUSH CONCRETE CURB
N.T.S.



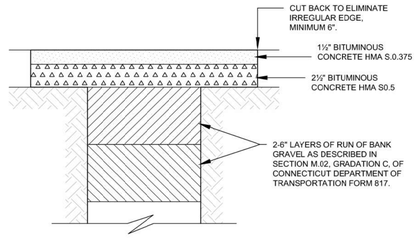
NOTE:
A 1/8" STEEL DIVISION PLATE SHALL BE PLACED AT EVERY 10 FEET OF CURBING AND REMOVED AFTER THE CONCRETE HAS SET. A 1/2" APPROVED BITUMINOUS JOINT SHALL BE PLACED EVERY 20 FEET.

MOUNTABLE CONCRETE CURB
N.T.S.

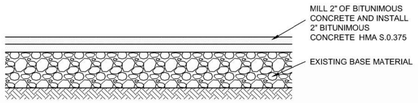


TRANSITION DETAIL

DEPRESSED CURB DETAIL
N.T.S.

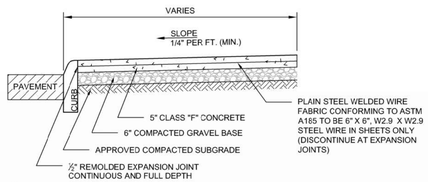


ASPHALT TRENCH REPAIR
N.T.S.



NOTES:
1. TACK COAT PRIOR TO INSTALLING TOP COURSE OF ASPHALT. TACK COAT SHALL BE APPLIED TO ALL SURFACES THAT HAVE BEEN MILLED. APPLY UNIFORMLY TO EXISTING SURFACES OF PREVIOUSLY CONSTRUCTED ASPHALT OR PORTLAND CEMENT CONCRETE PAVING AND TO SURFACE ABUTTING OR PROJECTING INTO NEW, HOT-MIX ASPHALT PAVEMENT. APPLY AT A UNIFORM RATE OF 0.5 TO 0.15 GAL/SQ.YD. OF SURFACE.
   1.1. ALLOW TACK COA" TO CURE JNDISTURBED BEFORE PAVING.
   1.2. AVOID SMEARING OR STAINING ADJOINING SURFACES, APPURTENANCES, AND SURROUNDINGS. REMOVE SPILLAGES AND CLEAN AFFECTED SURFACES.
2. EXISTING PAVEMENT DAMAGED DURING THE CONSTRUCTION DUE TO CONSTRUCTION ACTIVITIES MUST BE REPLACED AS PER THE PAVEMENT REPAIR DETAIL AT NO ADDITIONAL COST TO THE OWNER.
3. A REPUTABLE TESTING LAB SHALL PERFORM COMPACTION TESTING AS REQUIRED BY THE SITE ENGINEER PRIOR TO THE PLACEMENT OF PAVEMENT. COMPACTION TESTING SHALL OCCUR AT THE SUBBASE, BASE AND EACH LAYER OF PAVEMENT.
4. ALL THICKNESSES SHOWN ARE AFTER COMPACTION.
5. PRIOR TO PLACEMENT OF ASPHALT BASE MATERIAL SHALL BE OBSERVED AND UNSUITABLE AREAS SHALL BE REPLACED.

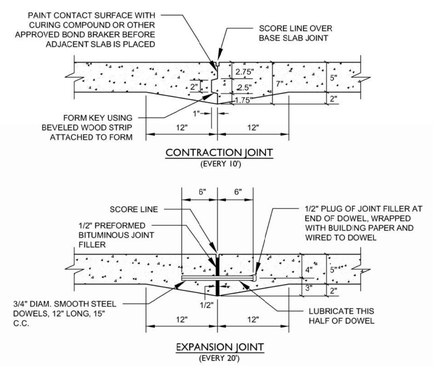
MILL & PAVE DETAIL
N.T.S.



*WITHIN LIMIT OF REINFORCED CONCRETE DRIVEWAY, USE 8" THICK CONCRETE SIDEWALK SET OVER 12" OF COMPACTED GRAVEL (REFER TO REINFORCED CONCRETE DRIVEWAY ENTRANCE DETAIL FOR FURTHER INFORMATION).

NOTES:
1. CONCRETE TO BE CLASS 'F' CONFORMING TO CT DOT FORM 817 SECTION M.03.01.
2. GRAVEL BASE SHALL CONFORM TO GRADATION A AS DEFINED IN ConnDOT FORM 817 SECTION M. 02.01 INSTALLED AS PER SECTION 2.14.
3. INSTALL AS PER THE AMERICAN CONCRETE INSTITUTE CODE.
4. THE AREA SHALL BE COMPACTED TO AT LEAST 95% OF THE DRY DENSITY ACHIEVED BY ASTM D1557.
5. CONTRACTION JOINTS PLACED IN A SQUARE PATTERN AS PER DETAIL.
6. DRAW A SOFT BRISTLED BROOM ACROSS FLOAT-FINISHED CONCRETE SURFACE PERPENDICULAR TO LINE OF TRAFFIC TO PROVIDE A UNIFORM, FINE LINE TEXTURE.

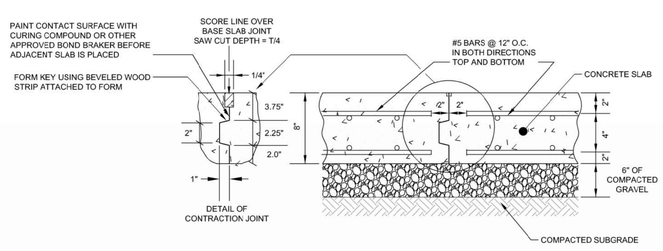
CONCRETE SIDEWALK
N.T.S.



CONTRACTION JOINT
(EVERY 10')

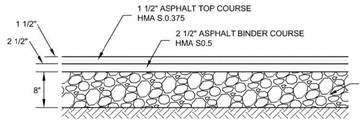
EXPANSION JOINT
(EVERY 20')

CONCRETE SIDEWALK JOINT DETAILS
N.T.S.



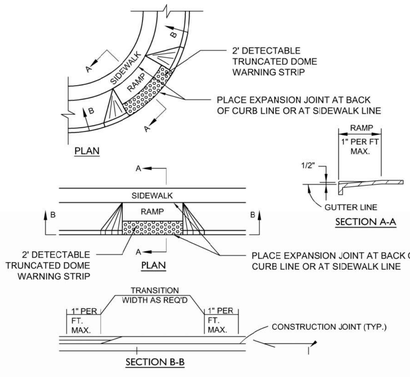
NOTES:
1. CONCRETE TO BE 5,000 PSI, NWC, 5.5% AIR ENTRAINED, 1 ½" MAX AGGREGATE, 0.45 W/C.
2. REINFORCED WITH #5@12" EPOXY COATED REBAR EACH WAY TOP AND BOTTOM AND 2" CLEAR COVER TOP AND BOTTOM.
3. GRAVEL BASE SHALL CONFORM TO GRADATION A AS DEFINED IN CONNDOT FORM 818 SECTION M. 02.01.
4. INSTALL AS PER THE AMERICAN CONCRETE INSTITUTE CODE.
5. THE AREA SHALL BE COMPACTED TO AT LEAST 95% OF THE DRY DENSITY ACHIEVED BY AASHTO T180, METHOD D.
6. CONTRACTION JOINT TO BE PLACED SO REMAINING SECTIONS OF CONCRETE ARE GENERALLY SQUARE OR AT LEAST EVERY 9'.
7. EDGES OF CONCRETE TO BE TOOLED TO A 1/2" RADIUS.
8. SIZE OF PAD TO BE VERIFIED PRIOR TO CONSTRUCTION.

CONCRETE PAD DETAIL
N.T.S.



NOTE:
1. REFER TO PLANS PREPARED BY OTHERS FOR DESIGN AND DETAILS OF PAVEMENT WITHIN BUILDING.
2. PRIOR TO ANY FILL PLACEMENT, ALL EXPCSED SUBGRADES SHALL BE PROOF-ROLLED. PROOF ROLLING TO CONSIST OF A 10 WHEEL TANDEM AXLE TRUCK WEIGHING NO LARGER THAN 15 TONS WITH A SPEED OF NOT MORE THAN 3 MPH PASSING OVER AREA SEVERAL TIMES TO VERFY THERE ARE NO POCKETS OF UNSUITABLE MATERIAL, SHALL BE DONE UNDER THE SUPERVISION OF THE SITE ENGINEER OR THE GEOTECHNICAL ENGINEER. ANY EXISTING FILL THAT PUMPS OR HEAVES UNDER THE INFLUENCE OF THE ROLLER MUST BE REMOVED AND REPLACED WITH CONTROLLED FILL.
3. ALL IMPORTED FILL SHALL CONSIST OF WELL-GRADED SAND AND GRAVEL HAVING NOT MORE THAN 10% BY DRY WEIGHT PASS THE No. 200 SIEVE AND SHALL BE CERTIFIED CLEAN MATERIAL PER THE REQUIREMENTS OF THE STATE OF CONNECTICUT. THE MAXIMUM PARTICLE SIZE SHALL BE 4 INCHES.
4. CONTROLLED FILL SHALL BE PLACED IN UNIFORM 12-INCH-THICK LOOSE LIFTS AND COMPACTED TO AT LEAST 95% OF ITS MAXIMUM DRY UNIT WEIGHT AS SPECIFIED BY ASTM D1557-93. IN RESTRICTED AREAS WHERE ONLY HAND-OPERATED COMPACTORS CAN BE USED, THE MAXIMUM LIFT THICKNESS SHOULD BE LIMITED TO 8-INCHES.
5. SITE CIVIL ENGINEER OR GEOTECHNICAL ENGINEER SHALL TAKE SAMPLES TO OBTAIN SIEVE ANALYSIS AND CONFIRM MATERIAL MEETS SPECIFICATION. CONTRACTOR SHALL ALLOW 5 DAYS FOR MATERIAL TESTING. ANY CORRECTIVE MEASURES SHALL BE DONE AT NOT COST TO THE OWNER.
6. A REPUTABLE TESTING LAB SHALL PERFORM COMPACTION TESTING AS REQUIRED BY THE SITE ENGINEER PRIOR TO THE PLACEMENT OF PAVEMENT. COMPACTION TESTING SHALL OCCUR AT THE SUBBASE, BASE AND EACH LAYER OF PAVEMENT.
7. ALL THICKNESSES SHOWN ARE AFTER COMPACTION
8. SPECIAL ATTENTION OF THE CONTRACTOR IS CALLED TO FOR THE REMOVAL OF UNSUITABLE MATERIAL, REPLACEMENT FILL MATERIAL AND COMPACTION SHALL FOLLOW GEOTECHNICAL ENGINEERING REQUIREMENTS. THESE REQUIREMENTS WILL BE STRICTLY ENFORCED.
9. REFER TO PROJECT WRITTEN SPECIFICATIONS FOR FURTHER INFORMATION.
10. IN FILL AREAS SUBBASE SHALL BE RAISED USING IMPORTED FILL. IMPORTED FILL SHALL BE CONTROLLED FILL MATERIAL TO CONFORM TO SECTION M.02.06 GRADATION A AND SHALL BE WELL-GRADED SAND AND GRAVEL HAVING NOT MORE THEN 10% BY DRY WEIGHT PASSING THE NO. 200 SIEVE. THE MAXIMUM PARTICLE SIZE SHOULD BE 4 INCHES. REFER TO NOTES FOR FURTHER INFORMATION.

ASPHALT PAVEMENT DETAIL
N.T.S.



PEDESTRIAN RAMP
N.T.S.

NOTES:
1. SIDEWALK RAMPS SHALL BE CONSTRUCTED AT ALL PEDESTRIAN CROSSWALK IN ALL NEW DESIGNS AND AT PEDESTRIAN CROSSWALK LOCATIONS WHERE AN EXISTING CURB OR WALL IS TO BE DISTURBED BY CONSTRUCTION.
2. DRAINAGE DESIGN IN THE VICINITY OF SIDEWALK RAMPS SHALL BE CONSIDERED AN INTEGRAL PART OF THE DESIGN OF THESE RAMPS. NO DRAINAGE STRUCTURES SHALL BE PLACED WITHIN THE LIMITS OF A SIDEWALK RAMP ON NEW DESIGNS.
3. REGARDLESS OF THE TYPE OF PAVEMENT OF ADJACENT SIDEWALK, ALL SIDEWALK RAMPS SHALL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE.
4. ALL SIDEWALK RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS FOR 5' CONCRETE SIDEWALK EXCEPT THAT THE FINAL TEXTURE OF THE CONCRETE SURFACE BE A COARSE BROOM FINISH TRANSVERSE TO THE SLOPE OF THE RAMP.
5. CARE SHALL BE TAKEN TO ASSURE A UNFORM GRADE ON THE RAMP, FREE OF SAGS AND SHORT GRADE CHANGES.
6. MINIMUM WIDTH OF SIDEWALK RAMP SHALL BE 4 FEET.
7. THE BOTTOM OF THE RAMP (GLTTER LINE) SHALL BE BEVELED.
8. RAMP SHALL INCLUDE DETECTABLE WARNINGS AS PER AMERICANS WITH DISABILITIES ACT (ADA) SECTION 4.29.2, CONSISTING OF RAISED TRUNCATED DOMES WITH NOMINAL DIAMETER 0.9", NOMINAL HEIGHT 0.2", AND NOMINAL SPACING 2.35" ON-CENTER, AND PROVIDING A VISUAL CONTRAST WITH ADJOINING SURFACES.

Best Management Practices	Action/Activity	Frequency
Catch Basin Unit	• Inspect grate and remove sediment, oil and grease, litter and debris • Inspect catch basin sump. when the sediment has reached a level eight (8) inches below the pipe invert	First year: quarterly Second year onward: twice per year (once in spring and once in fall after leaf cleanup is complete)
Detention Pond	Inspect the detention ponds three (3) days following a rain event greater than three (3) inches to ensure the system has fully drained. The detention ponds shall be inspected and cleaned as necessary. An inspection and maintenance log shall be completed after each inspection and cleaning.	First year: quarterly and following any rain event greater than 3 inches Second year onward: twice per year (once in spring and once in fall after leaf cleanup is complete) and following any rain event greater than 3 inches.
Outdoor Litter and Waste Management	• Inspect grounds for residual litter and properly remove. • Inspect grounds for spilled liquids, and properly contain and clean-up • Ensure FOG recycling and/or, non-recycling units; and, dumpster are closed a: all times and properly maintained.	Monthly
Sweeping Impervious Areas	Inspect impervious areas; sweep and remove sediment	Monthly: as needed with signs of sediment build-up
Roof Run-off Management	Using appropriate safety measures/procedures, inspect roof areas and drainage connections; make necessary repairs; and, properly remove bird fecal matter, seciment, litter and/or debris.	April & October
Winter Sanding/De-icing Agents	Properly calibrate application equipment to ensure uniform coverage; stockpiling materials onsite require proper cover and containment.	Each use
Snow Removal	Snow removal shall occur as necessary to maintain safe passage.	As necessary
Maintaining Street Trees and Plantings	• Inspect and replace damaged, deac and diseased plant material. Plant shapes and branching patterns should remain natural looking. Maintain plant size according to the presence of structure limits, i.e. sidewalks, buildings, and/or plant maturity size. • Remove fallen plant bicmass materials, i.e. leaves, twigs, branches, etc.	Once per year As needed

STORM SYSTEM MAINTENANCE
N.T.S.

No.	Date	Revision
I	06/30/2023	ORIGINAL ISSUE DATE

DETAILS
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: N.T.S.
DRAWN BY: MJL
CHECKED BY: DRG

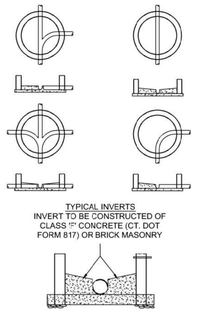
STATE OF CONNECTICUT
DAVID R. GINTER
No. 27177
REGISTERED PROFESSIONAL ENGINEER

DAVID R. GINTER, P.E. No. 27177
June 30, 2023
DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

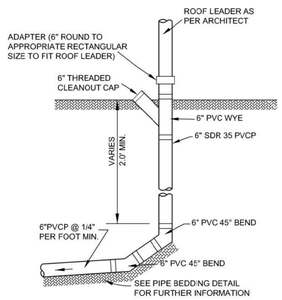
SHEET No:
SE-8
Comm. No.: 1988

6/30/2023 11:21 AMG:\JOBFILES\1000\1900\1988_2022 Proposed Development\dwg\1988 Master 2 (2023)_Details.dwg

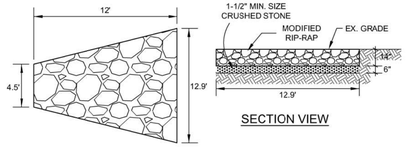


TYPICAL INVERTS
INVERT TO BE CONSTRUCTED OF CLASS 'F' CONCRETE (CT. DOT FORM 817) OR BRICK MASONRY

MANHOLE INVERT
N.T.S.



ROOF LEADER CLEANOUT DETAIL
N.T.S.

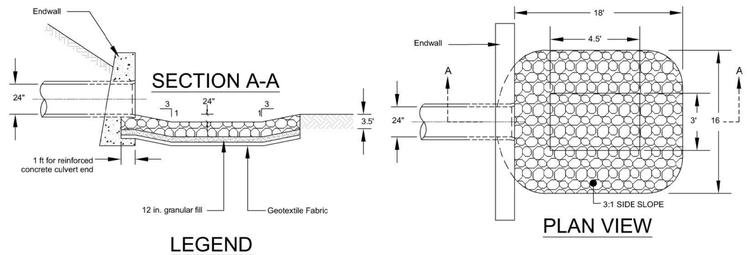


Rip rap shall consist of sound, tough, durable, and angular rock, free from decomposed stones or other defects impairing its durability. Broken concrete or roundec stones are not acceptable. Refer to CT DOT Form 818 Section 7.03 for further information.

MODIFIED RIP-RAP SHALL CONFORM TO THE FOLLOWING GRADATION:

STONE SIZE	% OF THE MASS
10" OR OVER	0
6" TO 10"	20-50
4" TO 6"	30-60
2" TO 4"	30-40
1" TO 2"	10-20
LESS THAN 1"	0-10

RIP-RAP SPLASH PAD (ED#2)
N.T.S.



LEGEND

RIP RAP SHALL BE STANDARD GRADATION & CONSIST OF SOUND, TOUGH, DURABLE, AND ANGULAR ROCK, FREE FROM DECOMPOSED STONE OR OTHER DEFECTS IMPAIRING ITS DURABILITY. BROKEN CONCRETE OR ROUNDED STONES ARE NOT ACCEPTABLE. REFER TO CONNECTICUT DOT FORM 817 SECTION 7.03 FOR FURTHER INFORMATION.

PREFORMED SCOUR HOLE (ED#1)
N.T.S.

WATER STOP: 10' UPSTREAM CF STRUCTURES AND WHERE SHOWN, FOUNDATION MATERIAL, BEDDING, HAUNCHING, INITIAL BACKFILL, AND THE BOTTOM FOOT OF GENERAL BACKFILL TO BE REPLACED WITH SM, SC, OR ML SOIL AS PER UNIFIED SOIL CLASSIFICATION SYSTEM" WITH MAXIMUM PARTICLE SIZE OF 1-1/2", FOR 3 LINEAR FEET OF TRENCH. WATER STOP TO BE KEYED INTO TRENCH BOTTOM AND WALLS A MINIMUM OF ONE FOOT. NO STONES LARGER THAN 6" SHALL BE WITHIN 12" OF THE PIPE.

ALL FOUNDATION, INITIAL BACKFILL & BACKFILL MATERIAL TO BE APPROVED BY THE INSPECTING ENGINEER.

ANY DEVIATION FRCM THESE METHODS & MATERIALS MUST BE APPROVED IN WRITING BY THE INSPECTING ENGINEER.

ALL MATERIAL TO BE COMPACTED TO 95% OF THE MAX. DRY DENSITY AS DETERMINED BY ASTM D1557, EXCEPT COMPACTED BACKFILL" NOT UNOER PAVEMENT WHICH SHALL BE COMPACTED TO A DENSITY AT ,LEAST' EQUAL TO THAT OF THE ADJACENT UNDISTURBED MATERIAL.

COMPACTED BACKFILL, SHALL BE WELL GRADED MATERIAL FREE OF ORGANICS, FROZEN MATERIAL & PARTICLES LARGER THAN 12".

BACKFILL MUST 3E PLACED & COMPACTED IN SIX INCH (6") LAYERS (AFTER COMPACTION).

INITIAL BACKFILL SHALL BE WELL GRADED GRANULAR MATERIAL WITH STONES NO LARGER THAN 2". STONES TO BE KEPT FROM TOUCHING PIPE.

BEDDING MATERIAL AS PER CONN. D.C.T. FORM 817, ARTICLE M 08.03. BEDDING MATERIAL SHALL BE SAND OR SANDY SOIL, ALL OF WHICH PASSES A 3/8 INCH SIEVE AND NOT MORE THAN 10% PASSES A No. 200 SIEVE. IF GROUND WATER IS ENCOUNTERED, ENGINEER SHAL, BE NOTIFIED FOR PCSSIBLE MODIFICATION. IF THE INSPECTING ENGINEER DETERMINES THAT THE MATERIAL BELOW THE FOUNDATION IS UNACCEPTABLE, MATERIAL SHALL BE REMOVED TC A DEPTH DETERMINED BY THE INSPECTING ENGINEER AND REPLACED WITH MATERIAL COMPLYING WITH THE INITIAL BACKFILL SPECIFICATION. THIS MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557.

PVC/RCP PIPE TRENCH BEDDING DETAIL
(48" DIA. & UNDER)
N.T.S.

NOTES:
1. ALL CATCH BASIN COMPONENTS TO BE PRE-CAST REINFORCED CONCRETE, ABLE TO WITHSTAND THE APPLIED EARTH LOADS WITH AN H-20 TRUCK LOAD.
2. ALL JOINTS TO 3E MORTARED.
3. CATCH BASIN SHALL CONFORM TO ASTM C478.
4. ALL CRUSHED STONE SHA,L BE GRADATION NO. 4 AS PER CT DOT FORM 817, ARTICLE M.01.01. STONE SHALL CONSIST OF SCUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.
5. IF CRUSHED STONE IS TO BE PLACED ON FILL. ALL FILL BELOW THE CB SHALL BE COMPACTED TO 95% OF THE MAX/MUM PRT DENSITY AS PER ASTM D.1557.

CATCH BASIN DETAIL
N.T.S.

NOTES:
1. ALL CATCH BASIN COMPONENTS TO BE PRE-CAST REINFORCED CONCRETE, ABLE TO WITHSTAND THE APPLIED EARTH LOADS WITH AN H-20 TRUCK LOAD.
2. ALL JOINTS TO BE MORTARED.
3. AREA DRAIN SHALL CONFORM TO ASTM C478.
4. ALL CRUSHED STONE SHALL BE GRADATION NO. 4 AS PER CT D.O.T. FORM 817, ARTICLE M.01.01. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMNATED, FRIABLE, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.

24" AREA DRAIN
N.T.S.

NOTES:
1. ALL JUNCTION BOX COMPONENTS TO BE FRE-CAST REINFORCED CONCRETE, ABLE TO WITHSTAND THE APPLIED EARTH LOADS WITH AN H-20 TRUCK LOAD.
2. ALL JOINTS TO BE MORTARED.
3. JUNCTION BOX SHALL CONFORM TO ASTM C478.
4. ALL CRUSHED STONE SHALL BE GRADATION NO. 4 AS PER CT D.Q.T. FORM 818, ARTICLE M.01.01. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMNATED, FRIABLE, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.

JUNCTION BOX
N.T.S.

APPROXIMATE WEIGHTS		
	STEEL	IRON
COVER	157.54 LBS.	144.53 LBS.
FRAME	327.98 LBS.	300.90 LBS.
TOTAL	485.52 LBS.	445.43 LBS.

MANHOLE FRAME & COVER
N.T.S.

PLACE MANHOLE ON A 6" LAYER OF CRUSHED STONE. IF CRUSHED STONE IS TO BE PLACED ON FILL, ALL FILL. BELOW THE MANHOLE SHALL BE COMPACTED TO 95% OF THE MAXIMUM PRT DENSITY AS PER ASTM D-1557. ALL CRUSHED STONE SHALL BE GRADATION NO. 4 AS PER CT DOT FORM 817, ARTICLE M.01.01. STONE SHALL CONSIS" OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.

STORM MANHOLE DETAIL
N.T.S.

PLACE MANHOLE ON A 6" LAYER OF CRUSHED STONE. IF CRUSHED STONE IS TO BE PLACED ON FILL, ALL FILL BELOW THE MANHOLE SHALL BE COMPACTED TO 95% OF THE MAXIMUM PRT DENSITY AS PER ASTM D-1557. ALL CRUSHED STONE SHALL BE GRADATION NO. 4 AS PER CT DOT FORM 817, ARTICLE M.01.01. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.

SANITARY MANHOLE DETAIL
N.T.S.

NOTE:
IF PRECAST TOPS ARE USED, INSIDE DIMENSIONS SHALL BE 7'-9" x 3'-0" AND THE SUPPORTING BEAMS SHALL BE PLACED UNDER PRECAST TOPS.

SECTION A-A

DOUBLE CATCH BASIN DETAIL
N.T.S.

BEAM CONSTRUCTION

SECTION B-B

No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

DETAILS
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: N.T.S.

DRAWN BY: MJL

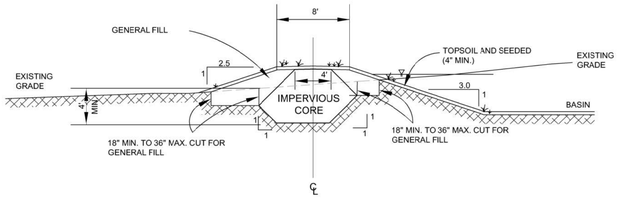
STATE OF CONNECTICUT
DAVID R. GINTER
No. 27177
REGISTERED PROFESSIONAL ENGINEER

DAVID R. GINTER, P.E.
June 30, 2023
DATE

"This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void."

SHEET No:
SE-9
Comm. No.: 1988

6/30/2023 11:23 AMG:\JOB\FILES\1000\1900\1988_2022 Proposed Development\dwg\1988 Master 2 (2023)_Details.dwg



DETENTION BERM NOTES:

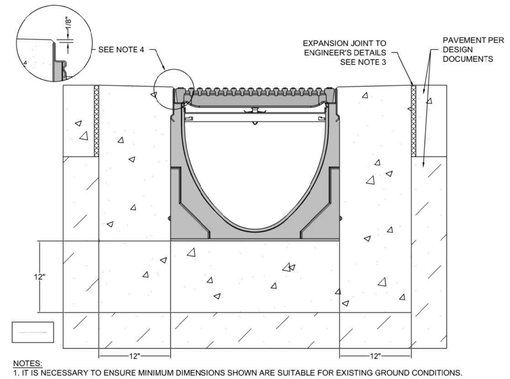
1. In the area of the berm, remove all topsoil, organic matter and other unsuitable material. Remove roots except as indicated on the detail. Exposed sub-grade to be approved by the inspecting engineer, who may require that it be proof-rolled or lowered.

2. Compact impervious core material in 9" lifts to 95% maximum dry density as per ASTM D1557. Impervious core material shall be a soil such as clayey gravel, silty sand and soils classified GM GC SM SC CL. It shall be free of organic using the Unified Soil Classification System. matter, frost, debris and other unsuitable materials. Core should meet the following gradation.

SIEVE NUMBER	% PASSING BY WEIGHT
3/4"	100 - 95
#10	95 - 80
#40	80 - 55
#100	55 - 30
#200	30 - 15

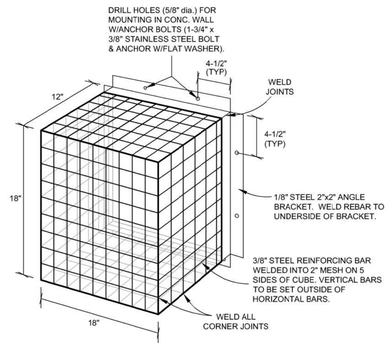
3. Prior to placement of berm, core material shall be seive tested and approved by the design engineer.

DETENTION BERM
N.T.S.



NOTES:
1. IT IS NECESSARY TO ENSURE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR EXISTING GROUND CONDITIONS. *ENGINEERING ADVICE MAY BE REQUIRED.*
2. MINIMUM CONCRETE STRENGTH OF 4,000 PSI IS RECOMMENDED. CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. EXPANSION AND CONTRACTION CONTROL JOINTS AND REINFORCEMENT ARE RECOMMENDED TO PROTECT CHANNEL AND CONCRETE SURROUND. *ENGINEERING ADVICE MAY BE REQUIRED.*
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" [3mm] ABOVE THE TOP OF THE CHANNEL EDGE.
5. CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS. ENGINEERING ADVICE MAY BE REQUIRED TO DETERMINE PROPER LOAD CLASS.
6. REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.

K300 - KLASSIKDRAIN - LOAD CLASS: E
(EXPOSED CONCRETE PAVEMENT)
N.T.S.



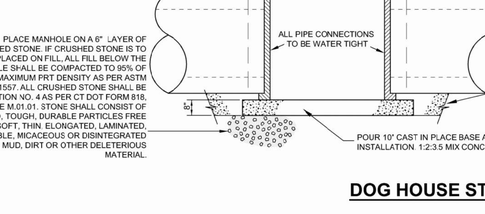
NOTES:
1. Need approx. 60 LF of #3 rebar and 100 welds.
2. Aluminum may be used in place of galvanized steel.
3. Completed trash rack shall be galvanized in accordance with ASTM A123.

TRASH RACK DETAIL
N.T.S.

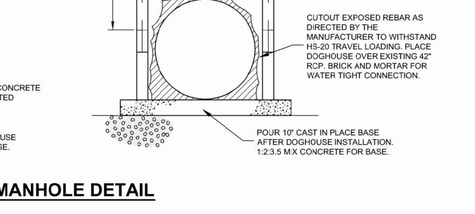
SANITARY
STRUCTURE INFORMATION

STRUCT.	RIM/ GRATE	INV.IN	INV.OUT
SMH#1	180.00±	175.00 (FOOTING)	173.70 (SMH#2)
SMH#2	173.00±	169.00 (SMH#1)	166.45 (SDMH#1)
		166.88 (FOOTING)	
SDMH#1	168.00±	164.18 (SMH#2)	164.12 (EX SMH#2)
		164.18 (EX SMH#1)	
SMH#3	179.70±	176.30 (FOOTING)	175.70 (SMH#4)
SMH#4	179.20±	174.20 (SMH#3)	174.00 (SMH#5)
SMH#5	176.70±	172.80 (SMH#4)	172.70 (SMH#6)
SMH#6	172.50±	167.20 (SMH#5)	167.10 (SMH#7)
SMH#7	171.40±	163.10 (SMH#6)	163.00 (SMH#8)
SMH#8	168.00±	161.20 (SMH#7)	161.10 (SMH#9)
SMH#9	162.90±	159.00 (SMH#8)	158.90 (EX.SMH#5)
SMH#10	140.75±	139.60 (FOOTING)	132.00 (EX.SMH#8)

DOWN-STREAM	SANITARY PIPE INFORMATION	UP-STREAM
SMH#1	69 LF 8" PVCP @ 0.029 FPF	FOOTING
SMH#2	147 LF 8" PVCP @ 0.032 FPF	SMH#1
SMH#2	56 LF 8" PVCP @ 0.02 FPF	FOOTING
SDMH#1	120 LF 8" PVCP @ 0.02 FPF	SMH#2
SMH#3	32 LF 8" PVCP @ 0.022 FPF	FOOTING
SMH#4	75 LF 8" PVCP @ 0.02 FPF	SMH#3
SMH#5	56 LF 8" PVCP @ 0.021 FPF	SMH#4
SMH#6	165 ,F 8" PVCP @ 0.033 FPF	SMH#5
SMH#7	158 LF 8" PVCP @ 0.025 FPF	SMH#6
SMH#8	72 LF 8" PVCP @ 0.025 FPF	SMH#7
SMH#9	63 LF 8" PVCP @ 0.033 FPF	SMH#8
EX.SMH#5	110 LF 8" PVCP @ 0.036 FPF	SMH#9
SMH#10	41 LF 8" PVCP @ 0.030 FPF	FOOTING
EX.SMH#8	90 LF 8" PVCP @ 0.038 FPF	SMH#10

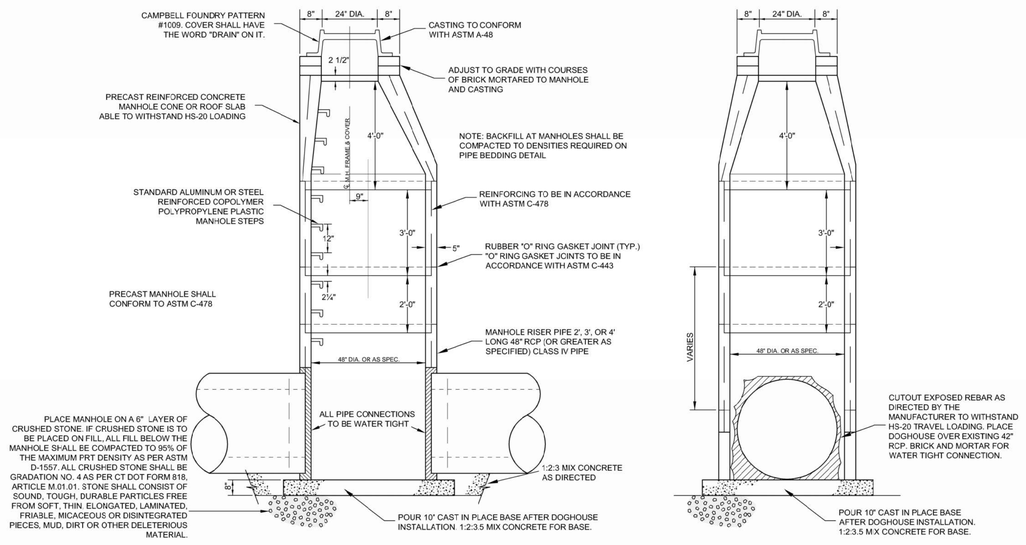


PROFILE VIEW



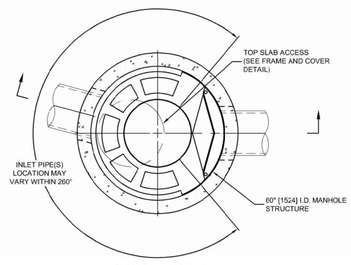
TOP VIEW

METERING MANHOLE STRUCTURE DETAIL
(MMH#I)
N.T.S.

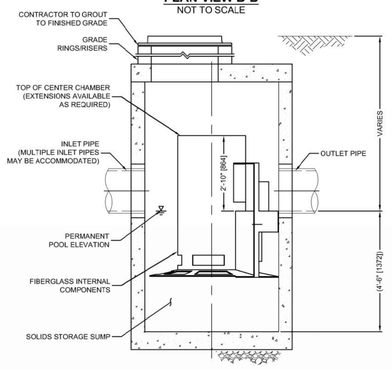


DOG HOUSE STORM MANHOLE DETAIL
N.T.S.

SANITARY SEWER TABLES
N.T.S.

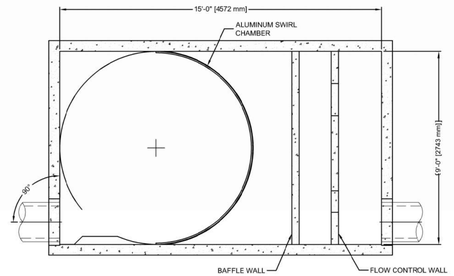


PLAN VIEW B-B
NOT TO SCALE

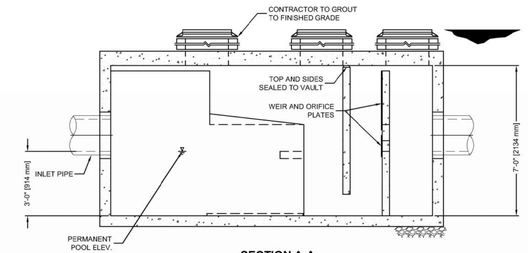


ELEVATION A-A
NOT TO SCALE

CASCADE OGS
N.T.S.

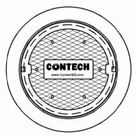


SECTION B-B



SECTION A-A

VORTECHS OGS
N.T.S.



FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

No.	Date	Revision
I	06/30/2023	ORIGINAL ISSUE DATE

DETAILS
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

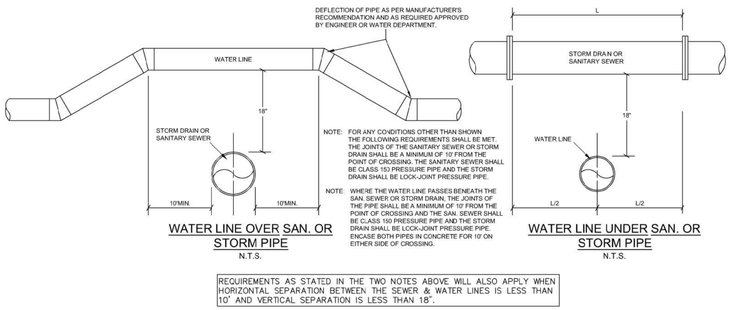
SCALE: N.T.S.
DRAWN BY: MJL
CHECKED BY: DRG

STATE OF CONNECTICUT
DAVID R. GINTER
No. 27177
REGISTERED PROFESSIONAL ENGINEER
DAVID R. GINTER, P.E. No. 27177
June 30, 2023
DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:
SE-10
Comm. No.: 1988

6/30/2023 11:24 AM G:\JOB\FILES\1900\1900\1988_2022 Proposed Development\dwg\1988 Master 2 (2023)_Details.dwg



WATER LINE OVER SAN. OR STORM PIPE
N.T.S.

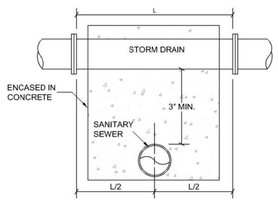
WATER LINE UNDER SAN. OR STORM PIPE
N.T.S.

REQUIREMENTS AS STATED IN THE TWO NOTES ABOVE WILL ALSO APPLY WHEN HORIZONTAL SEPARATION BETWEEN THE SEWER & WATER LINES IS LESS THAN 10' AND VERTICAL SEPARATION IS LESS THAN 18".

CROSSING OF WATER LINE AND SANITARY OR STORM PIPES
N.T.S.

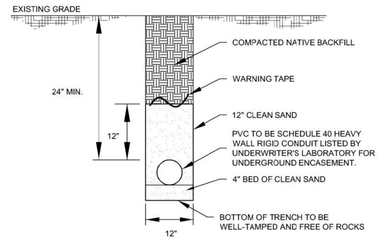
NOTE:

THE JOINTS OF THE PIPE SHALL BE A MINIMUM OF 10' FROM THE POINT OF CROSSING. THE SANITARY SEWER SHALL BE CLASS 150 PRESSURE PIPE. THE STORM DRAIN SHALL BE LOCK-JOINT PRESSURE PIPE.



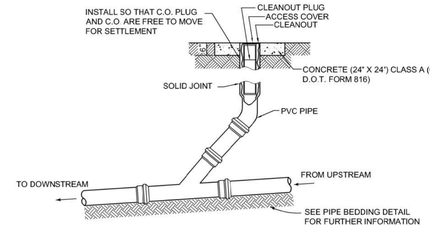
REQUIREMENTS AS STATED ABOVE WILL APPLY WHEN HORIZONTAL SEPARATION BETWEEN THE STORM & SANITARY LINES ARE LESS THAN 10' AND VERTICAL SEPARATION IS LESS THAN 18".

CROSSINGS OF SANITARY PIPES AND STORM PIPES
N.T.S.



NOTES:
1. IF 24" OF COVER CANNOT BE OBTAINED OVER THE CONDUIT, CONDUIT SHALL BE CONCRETE ENCASED.
2. ALL BACKFILL MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557.

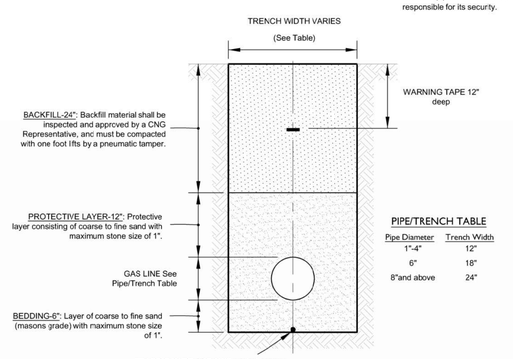
CONDUIT TRENCH DETAIL (SAND BEDDING)
N.T.S.



BURIED SANITARY CLEANOUT DETAIL
N.T.S.

Notes:

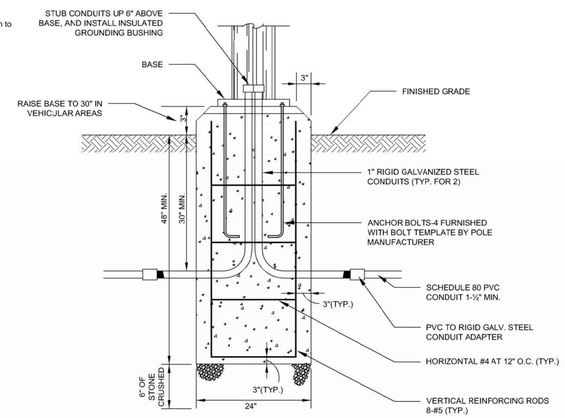
1. A minimum of 1'0" vertical clearance and 5'0" horizontal clearance will be maintained between the gas line and all other structures.
2. Minimum cover for mains shall be 3'0" from finished grade as measured from gutter line.
   a. In the traveled portion of the road - from the top of the pipe to the top o/ the trench using the shallow side for measurement.
   b. Off the traveled portion when section is at a higher elevation than the traveled way - elevation to be taken from gutter line.
   c. Off the traveled portion when section is at a lower elevation than the traveled way from the top of the pipe to the top of the trench using the shallow side for measurement.
3. Minimum cover of service lines in private property shall be 2'0" only when approved by the CNG inspector or designee.
4. The bottom of the trench must be free of rocks, debris, or water that could damage the pipe or its coating.
5. Tracing Wire is a #12 AWS coated copper tracing wire to be installed in the center of the trench prior to 6" of sand padding. (Connection will be made by a CNG Representative).
6. Exposed piping will be backfilled with a minimum of 12" o/ sand prior to leaving the job site each day and witnessed by a CNG Representative or CNG Contractor.
7. Only personnel qualified by CNG will be allowed to install gas lines.
8. The builder will supply a suitable location to store the pipe anc materials and will be responsible for its securty.



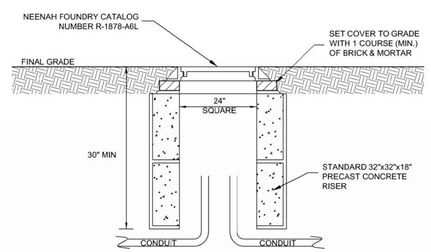
PIPE/TRENCH TABLE

Pipe Diameter	Trench Width
1"-4"	12"
6"	18"
8"and above	24"

GAS LINE TRENCH DETAIL
N.T.S.

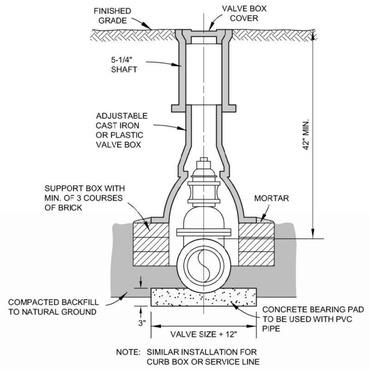


LIGHT FIXTURE BASE DETAIL
N.T.S.



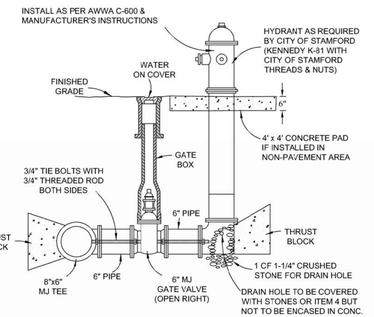
NOTES:
1. STRUCTURE SHALL BE OPEN BOTTOMED
2. STRUCTURE SHALL BE ABLE TC WITHSTAND HS-20 LOADING

PULL BOX DETAIL
N.T.S.



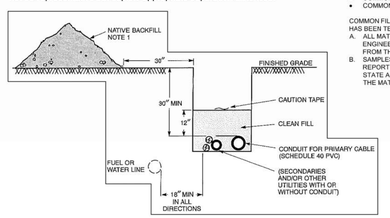
NOTE: SIMILAR INSTALLATION FOR CURB BOX OR SERVICE LINE

WATER SERVICE VALVE BOX INSTALLATION
N.T.S.



HYDRANT INSTALLATION
N.T.S.

This detail is a generic detail obtained by the utility company and may not be representative but depicts appropriare separation distances.



BACKFILL:
MATERIAL FOR BACKFILLING SHALL BE EARTH MATERIALS ENTIRELY FREE FROM VEGETATION, TRASH, LUMBER, FROZEN, SOFT OR ORGANIC MATERIALS. NO STONES OR ROCK LARGER THAN THE SIZES LISTED BELOW WILL BE PERMITTED IN THE BACKFILL:
- COMMON FILL-TYPE A: NO STONES OR ROCKS LARGER THAN 1"
- COMMON FILL-TYPE B: NO STONES OR ROCKS LARGER THAN 4"

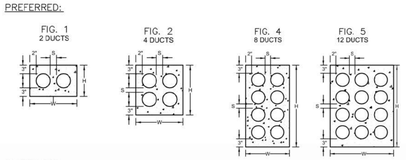
COMMON FILL MATERIAL MAY BE OBTAINED FROM THE TRENCH EXCAVATION PROVIDED IT HAS BEEN APPROVED BY THE ENGINEER AND HAS BEEN TESTED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

A. ALL MATERIALS TO BE USED FOR BACKFILL, INCLUDING COMMON FILL AND BEDDING MATERIALS, SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACING THE MATERIALS IN THE PIPE TRENCH. ALL BACKFILL AND BEDDING MATERIALS WHETHER OBTAINED FROM THE TRENCH EXCAVATION OR FROM AN OFF-SITE SOURCE MUST BE TESTED AS DIRECTED BY THE ENGINEER.

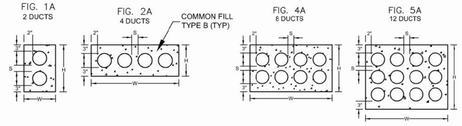
B. SAMPLES OF THE MATERIALS SHALL BE SUBMITTED TO AN APPROVED TESTING AGENCY FOR ANALYSIS. THE TEST RESULTS AND REPORT STATING THAT THE MATERIALS MEET THE REQUIREMENTS THESE SPECIFICATIONS AND THE SPECIFICATIONS OF FEDERAL, STATE AND LOCAL AUTHORITIES (WHERE APPLICABLE) SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PLACING THE MATERALS IN THE PIPE TRENCH.

NOTES
1. Minimum cover from top of a conduit bank to the pavement or earth surface to be 36".
2. Duct bank shall extend beyond the property line and capped. Exact location o/ termination are per field direction. Allow for 20' deviation from locations shown on this plan.
3. Ducts shall be Schedule 40 pvc. Use premanufactured spacers between conduits as necessary. Bends shall be sweeps, 4" "C" Duct telephone bends meeting GTE 8343, United CHS-71 and NEMA TC-10 Specifications.
4. Slope all conduit to drain toward manholes and away from structures.
5. All work shall be performed according to utility company requirements.
6. Ensure that the bottom of the trench is well-tamped and free of rocks
7. Install the conduit, gluing and all couplings
8. Install secondaries and other utility cables or conduits in the trench.
9. Backfill with 12 inches clean fill not to contain stones larger than 4 inches in maximum diameter.
10. Install cable warning.
11. Fill in the remainder of the trench with native backfill
12. Install pull line including 10 feet of slack, and secure to conduit plug at sach end of conduit run.
13. All underground conduit to schedule 40 PVC conduit.
14. Actual utility layout may vary depending on final utility company coordination. Coordination of final layout shall be the contractor's responsibility.
15. All underground utilities crossing a roadway shall 'e concrete encased.
16. Concrete encasement shall be color red within the limits of the state right-of-way.

PREFERRED:



ALTERNATE:
(SEE NOTE 4)



DUCT BANK DIMENSIONS (ALL DIMENSIONS IN INCHES)

	2" DUCT			3" DUCT			4" DUCT			5" DUCT		
FIG	W	H	S	W	H	S	W	H	S	W	H	S
1	10½	8½	1½	12½	9½	1½	14½	10½	1½	16½	11½	1½
1A	6½	12½	1½	7½	14½	1½	8½	16½	1½	9½	18½	1½
2	10½	12½	1½	12½	14½	1½	14½	16½	1½	16½	18½	1½
2A	18½	8½	1½	22½	9½	1½	26½	10½	1½	30½	11½	1½
4	10½	20½	1½	12½	24½	1½	14½	28½	1½	16½	32½	1½
4A	18½	12½	1½	22½	14½	1½	26½	16½	1½	30½	18½	1½
5	14½	20½	1½	17½	24½	1½	20½	28½	1½	23½	32½	1½
5A	18½	16½	1½	22½	19½	1½	26½	22½	1½	30½	25½	1½

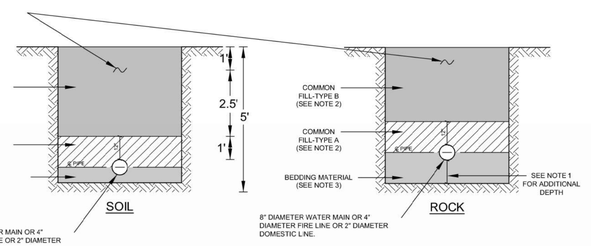
CONDUIT BANK CONSTRUCTION
N.T.S.

WATER SERVICE:

UTILITY CONNECTIONS.
THIS CONTRACTOR SHALL PROVIDE ALL UTILITY CONNECTIONS REQUIRED AND INDICATED ON THE DRAWINGS; AND ALL INTERIOR OR EXTERIOR CONNECTIONS TO "MAINS" AND EXISTING SERVICE LINES SHALL BE INSTALLED COMPLETE AND IN STRICT COMPLIANCE WITH THE RE-QUIREMENTS OF THE CODES HAVING JURISDICTION AND THE SERVING UTILITY INVOLVED. ALL SERVICE LINES AND CONNECTION POINTS SHALL BE VERIFIED IN THE FIELD BY THIS CON-TRACTOR, AND HE SHALL WORK IN CONJUNCTION WITH THE UTILITY INVOLVED IN THE INSTALLA-TION OF ALL SERVICES. THIS CONTRACTOR SHALL PROVIDE ALL SERVICE PIPING AND ACCES-SORIES REQUIRED TO COMPLETE CONNECTION AND NOT FURNISHED BY THE SERVING UTILITY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE SERVING UTILITY COMPANY REGARDING THE ITEMS FURNISHED, THE WORK PERFORMED, INSPECTIONS RE-QUIRED, AND ANY ASSOCIATED FEES, CHARGES, OR PERMITS.

EXCAVATION, BACKFILLING, CUTTING, PATCHING, AND ROUGH-IN WORK. DO ALL EXCAVATION OF ALL MATERIALS ENCOUNTERED INCLUDING ROCK REQUIRED FOR WORK UNDER THIS SECTION. BACKFILL ALL TRENCHES, TAMPING WELL IN 6" LAYERS. SYSTEM SHALL BE TESTED, MADE TIGHT AND ACCEPTED BEFORE BACKFILL. REMOVE FROM PREMISES ALL EXCESS MATERIAL NOT USED IN BACKFILLING. REPAIR ALL STREETS, SIDEWALKS, DRIVES, PAVING, ETC. DAMAGED. REPAIR MATERIALS SHALL GENERALLY MATCH EXISTING CONSTRUCTION. ALL BACK-FILLING AND REPAIRING SHALL MEET ALL REQUIREMENTS OF THE CITY AND OTHERS HAVING JU-RISDICTION. REPAIR WORK SHALL BE THOROUGHLY FIRST CLASS. CONFORM TO ALL REQUIRE-MENTS OF DIVISION TWO OF THIS SPECIFICATION.

THIS CONTRACTOR SHALL DO ALL CUTTING OF WALLS, FLOORS, CEILINGS, ETC. AS REQUIRED TO INSTALL WORK UNDER THIS SECTION. CONTRACTOR SHALL OBTAIN PERMISSION OF THE AR-CHITECT BEFORE DOING ANY CUTTING. ALL HOLES SHALL BE CUT AS SMALL AS POSSIBLE. GENERAL CONTRACTOR SHALL PATCH WALLS, FLOORS, ETC. AS REQUIRED BY WORK UNDER THIS SECTION. ALL PATCHING SHALL BE THOROUGHLY FIRST CLASS AND SHALL MATCH THE ORIGINAL MATERIAL AND CONSTRUCTION. COORDINATE WITHOUT DELAY ALL ROUGHING-IN WITH GENERAL CONSTRUCTION. ALL PIPING, CONDUIT, ROUGH-IN SHALL BE CONCEALED EX-CEPT IN UNFINISHED AREAS AND WHERE OTHERWISE SHOWN.



WATER SERVICE TRENCH BACKFILL MATERIALS
N.T.S.

NOTES:

1. THE TRENCH SHALL BE EXCAVATED TO THE DEPTH REQUIRED, SO AS TO PROVIDE A UNIFORM AND CONTINUOUS BEARING AND SUPPORT FOR THE PIPE BARREL ON SOLID AND UNDISTURBED GROUND AT EVERY POINT BETWEEN JOINTS, EXCEPT THAT IT WILL BE PERMISSIBLE TO DISTURB THE FINISHED TRENCH BOTTOM OVER A MAXIMUM LENGTH OF 18" NEAR THE MIDDLE OF EACH LENGTH OF PIPE BY THE WITHDRAWAL OF PIPE SLINGS OR OTHER LIFTING TACKLE. WHEN REQUIRED, BELL HCLES SHALL BE PROVIDED. THE FINISHED TRENCH BOTTOM SHALL BE ACCURATELY PREPARED BY MEANS OF HAND TOOLS.

2. MATERIAL FOR BACKFILLING SHALL BE EARTH MATERIALS ENTIRELY FREE FROM VEGETATION, TRASH, LUMBER, FROZEN, SOFT OR ORGANIC MATERIALS. NO STONES OR ROCK LARGER THAN THE SIZES LISTED BELOW WILL BE PERMITTED IN THE BACKFILL:

   COMMON FILL-TYPE A: NO STONES OR ROCKS LARGER THAN 1"
   COMMON FILL-TYPE B: NO STONES OR ROCKS LARGER THAN 4"

   COMMON FILL MATERIAL MAY BE OBTAINED FROM THE TRENCH EXCAVATION PROVIDED IT HAS BEEN APPROVED BY THE ENGINEER AND HAS BEEN TESTED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

   A. ALL MATERIALS TO BE USED FOR BACKFILL, INCLUDING COMMON FILL AND BEDDING MATERIALS, SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACING THE MATERIALS IN THE PIPE TRENCH. ALL BACKFILL AND BEDDING MATERIALS WHETHER OBTAINED FROM THE TRENCH EXCAVATION OR FROM AN OFF-SITE SOURCE MUST BE TESTED AS DIRECTED BY THE ENGINEER.

   B. SAMPLES OF THE MATERIALS SHALL BE SUBMITTED TO AN APPROVED TESTING AGENCY FOR ANALYSIS. THE TEST RESULTS AND REPORT STATING THAT THE MATERIALS MEET THE REQUIREMENTS THESE SPECIFICATIONS AND THE SPECIFICATIONS OF FEDERAL, STATE AND LOCAL AUTHORITIES (WHERE APPLICABLE) SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PLACING THE MATERALS IN THE PIPE TRENCH.

3. MATERIALS USED FOR BEDDING AND THE HAUNCH AROUND THE PIPE SHALL BE A COARSE TO FINE SANDY MATERIAL WITH MAXIMUM STONE SIZE OF 1 INCH. THE MATERIAL SHALL CONFORM TO ASTM D2487 "STANDARD METHOD FOR CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES" USING THE UNIFIED SOIL CLASSIFICATION SYSTEM", EXCEPT WHERE A HIGHER STANDARD IS REQUIRED ELSEWHERE IN THE CONTRACT DOCUMENTS OR BY RULES OR REGULATIONS OF FEDERAL, STATE OR LOCAL GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE OF THE WORK.

   THE MATERIAL SHALL MEET A CLASS II DESIGNATION. SOIL TYPES GW, GP, SW AND SP, NON-COHESIVE, MIXED AND GRADED AND CONTAINING SOME FINES ARE INCLUDED IN THIS CLASS. WHERE VOIDS, FINER GRAINED SOILS OR MOVEMENT MAY ALLOW MIGRATION OF THIS MATERIAL, A FILTER FABRIC AS DIRECTED BY THE ENGINEER WILL BE USED IN THE TRENCH BOTTOM AND SIDES BEFORE THE SELECT TILL BEDDING IS PLACED.

   BEDDING MATERIAL MAY BE OBTAINED FROM THE TRENCH EXCAVATION PROVIDED IT HAS BEEN TESTED IN ACCORDANCE WITH THE REQUIRE- MENTS STATED ABOVE AND APPROVED BY THE ENGINEER. IF THE APPROVED MATERIAL OBTAINED FROM THE TRENCH EXCAVATION IS INSUFFICIENT TO COMPLETE THE BEDDING, THE CONTRACTOR SHALL OBTAIN THE NECESSARY TESTED AND APPROVED BEDDING MATERIALS FROM AN OFF-SITE SOURCE.

4. REFER TO AQUARICN WATER COMPANY SPECIFICATIONS

5. THE BEDDING AND BACKFILLING SHOWN ARE COMPLIANT WITH SECTION 7.1 (FLOOD PRONE AREA REGULATIONS) OF THE CITY OF STAMFORD ZONING REGULATIONS AND IS CAPABLE OF WITHSTANDING THE FLOOD DEPTHS, VELOCITIES, IMPACT AND UPLIFT FORCES AND OTHER FACTORS ASSOCIATED WITH THE BASE FLOOD.

No.	Date	Revision
I	06/30/2023	ORIGINAL ISSUE DATE

DETAILS
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: N.T.S.
DRAWN BY: MJL

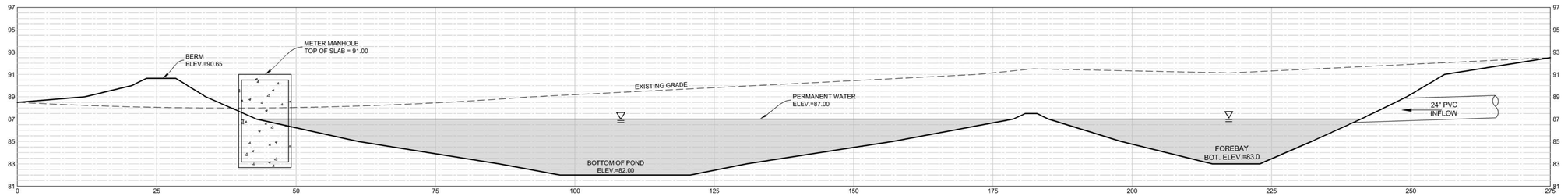
STATE OF CONNECTICUT · DAVID R. GINTER · NO. 27177 · REGISTERED PROFESSIONAL ENGINEER

DAVID R. GINTER
June 30, 2023
DATE

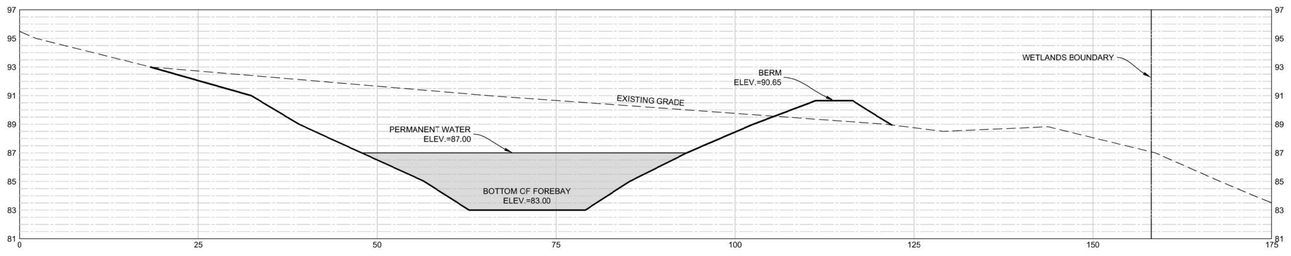
This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:
SE-11
Comm. No.: 1988

6/30/2023 11:25 AM G:\JOBFILES\1000\1900\1988_2022 Proposed Development\dwg\1988 Master 2 (2023)_Details.dwg

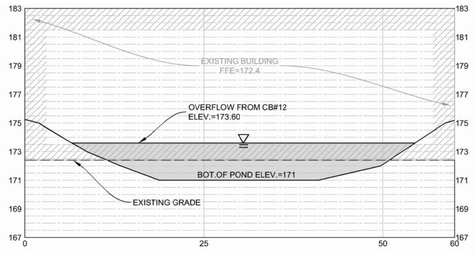


CROSS-SECTION A-A' - PROPOSED POCKET POND
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 5'

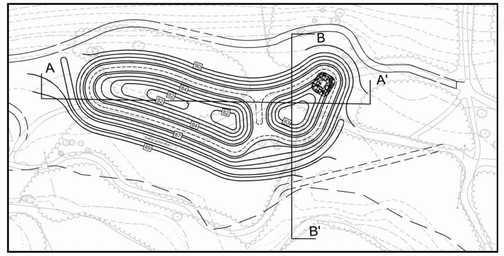


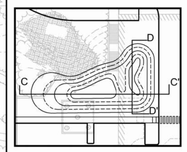
CROSS-SECTION B-B' - PROPOSED POCKET POND
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 5'

CROSS-SECTION C-C' - PROPOSED MICRO POND
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 5'

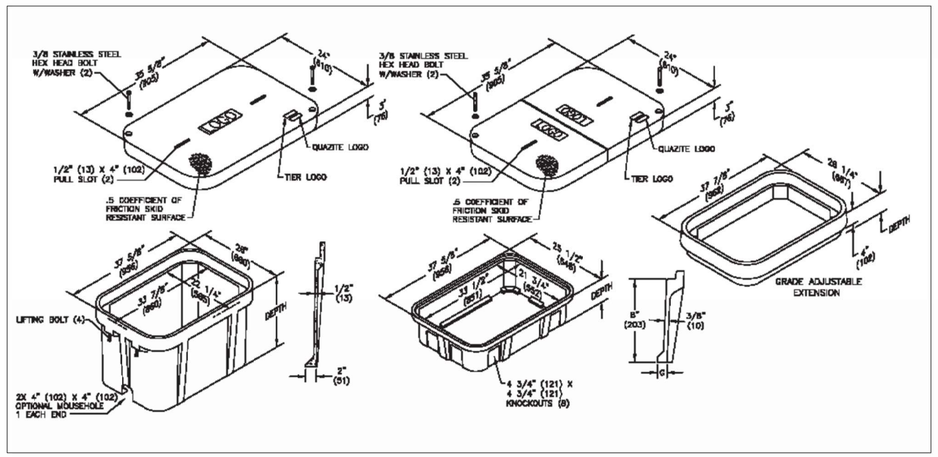


CROSS-SECTION D-D' - PROPOSED MICRO POND
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 5'





PROPOSED POND CROSS SECTIONS
SCALE: 1" = 60'



*PROVIDE EXTENSIONS AS REQUIRED TO BE FLUSH WITH FINISHED GRADE.

24" x 36" QUAZITE BOX DETAIL
N.T.S.

GENERAL

1. The customer (contractor) shall be responsible for service trench, conduit, concrete encasement and conduit inspections.
2. NU shall be responsible for sealing the inside of the conduit.
3. NU shall not be responsible for any leak between the conduit and the wall.

SERVICE TRENCH – Trench location, as specified by NU, shall be in as direct a line as possible without reverse curves from the distribution facility to the customer service entrance.

Trench shall be excavated and backfilled by the customer.

Corrosive fill such as cinders shall not be used.

The backfill within 6 inches of conduit shall not contain any large or sharp rocks or other objects that might damage conduit.

The trench shall have a 24-inch minimum cover over supply conduit to finish grade, except where ledge is encountered, then the cover may be reduced to 18 inches if steel is used.

The trench shall have a 4-inch-per-100-foot downward pitch toward distribution facility, if physically possible.

Maintain a 12-inch minimum separation from other facilities except for communication conduit which may have 3 inches of concrete separation.

CONDUIT – Conduit shall be as specified by NU but supplied and installed by customer.

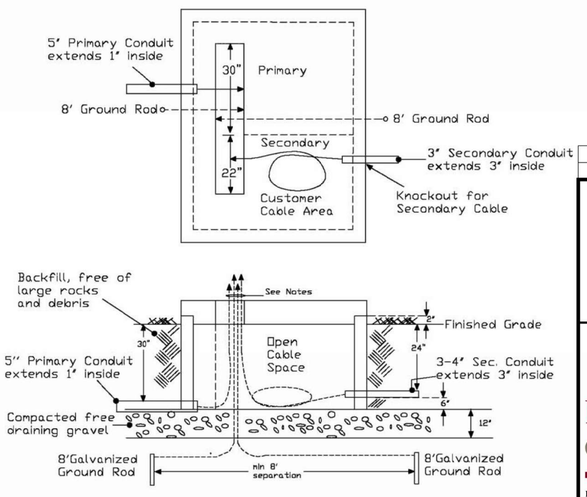
	Steel Galv	IMC	PVC Schedule 40	PVC Type EB*
Direct-Buried (DB)	X	X	X	X
Disturbed Earth (i.e., Filled Area)	X	X	–	X
Delta Primary (i.e., 4.8 kV)	X	X	–	X
*Must be encased in concrete				

For a discussion of the types of conduit and their applications, see **DTR 44.351**.

Sweeps in the conduit run, achieved by forcing a gradual bend in a length of Type EB PVC conduit, shall have a minimum radius of 15 feet. Manufactured bends in the conduit run shall have a minimum radius of 48 inches. This requirement does not include the bends used at riser poles or equipment pads where the bend radius shall be a minimum of 24 inches, with 36 inches preferred.

There must be a seal between conduit and building wall.

EVERSOURCE CONDUIT INSTALLATION DETAIL
N.T.S.



CONCRETE TRANSFORMER PAD
N.T.S.

No.	Date	Revision
1	06/30/2023	ORIGINAL ISSUE DATE

DETAILS
DEPICTING
900 LONG RIDGE ROAD
STAMFORD, CT
PREPARED FOR
MONDAY PROPERTIES

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

SCALE: N.T.S.
DRAWN BY: MJL

STATE OF CONNECTICUT
DAVID R. GINTER
No. 27177
REGISTERED PROFESSIONAL ENGINEER

DAVID R. GINTER, P.E. No. 27177
DATE: June 30, 2023

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No: SE-12
Comm. No.: 1988

6/30/2023 11:26 AM G:\JOBFILES\1000\1900\1988_2022 Proposed Development\dwg\1988 Master 2 (2023)_Details.dwg

900 LONG RIDGE ROAD

SITE PLAN SUBMISSION

06/23/2023

BKV GROUP DC

Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
1	06/23/2023	SITE PLAN SUBMISSION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	Project Number

SHEET TITLE

COVER SHEET

SHEET NUMBER

A001

© 2021 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/900 LRR 3D.rvt
7/11/2023 4:04:31 PM

BKV GROUP DC

Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
1	06/23/2023	SITE PLAN SUBMISSION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	Project Number

SHEET TITLE

SITE PLAN

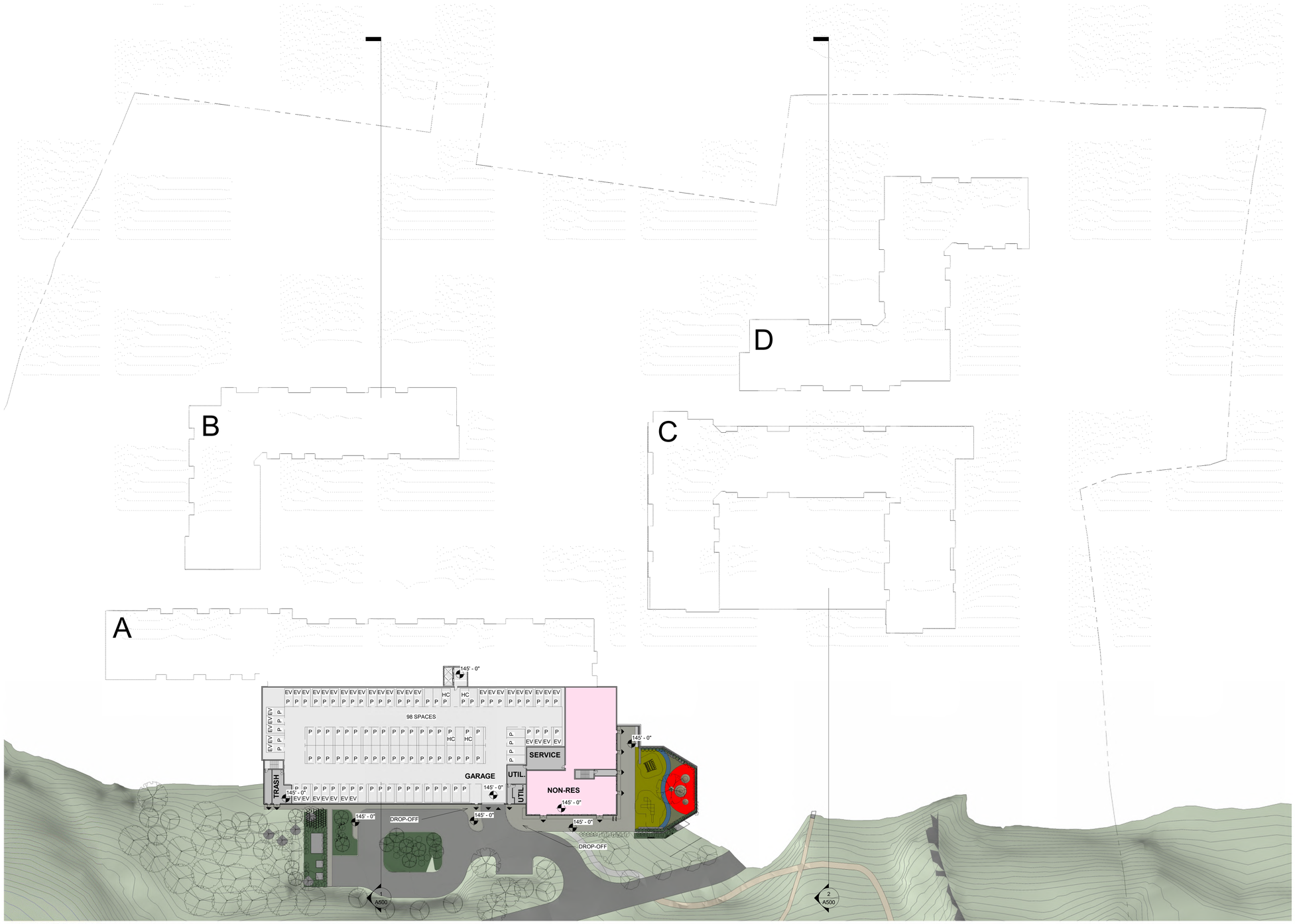
SHEET NUMBER

A100

TRUE NORTH PLAN NORTH

© 2021 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/900 LRR 3D.rvt
7/11/2023 4:04:35 PM



1 145' - 0"
1" = 40'-0"

BKV GROUP DC

Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
1	06/23/2023	SITE PLAN SUBMISSION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	Project Number

SHEET TITLE

LEVEL 145'-0"

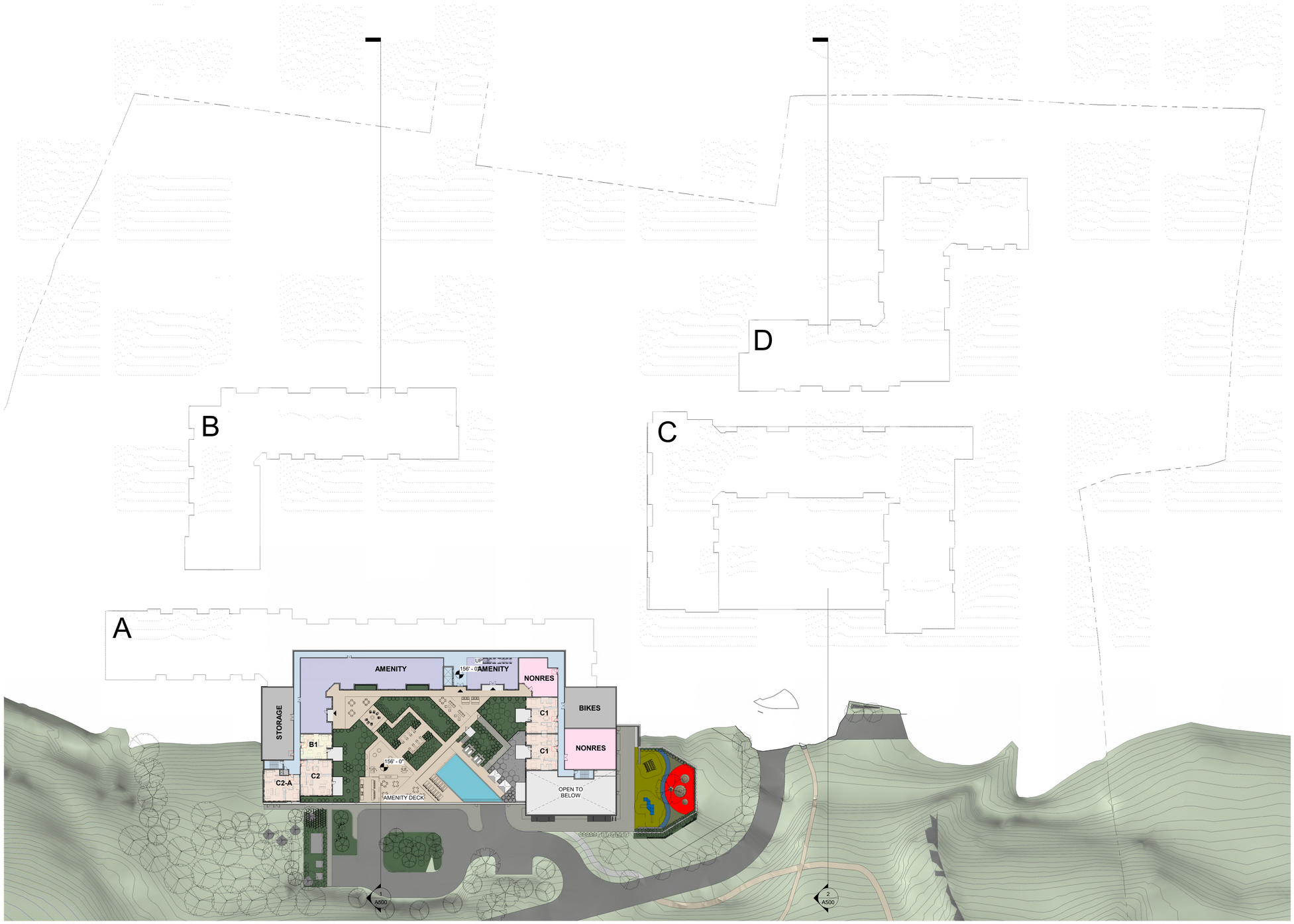
SHEET NUMBER

A101

TRUE NORTH PLAN NORTH

© 2021 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/900 LRR 3D.rvt
7/11/2023 4:04:40 PM



1 156' - 0"
1" = 40'-0"

BKV GROUP DC

Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
1	06/23/2023	SITE PLAN SUBMISSION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	Project Number

SHEET TITLE

LEVEL 161'-0"

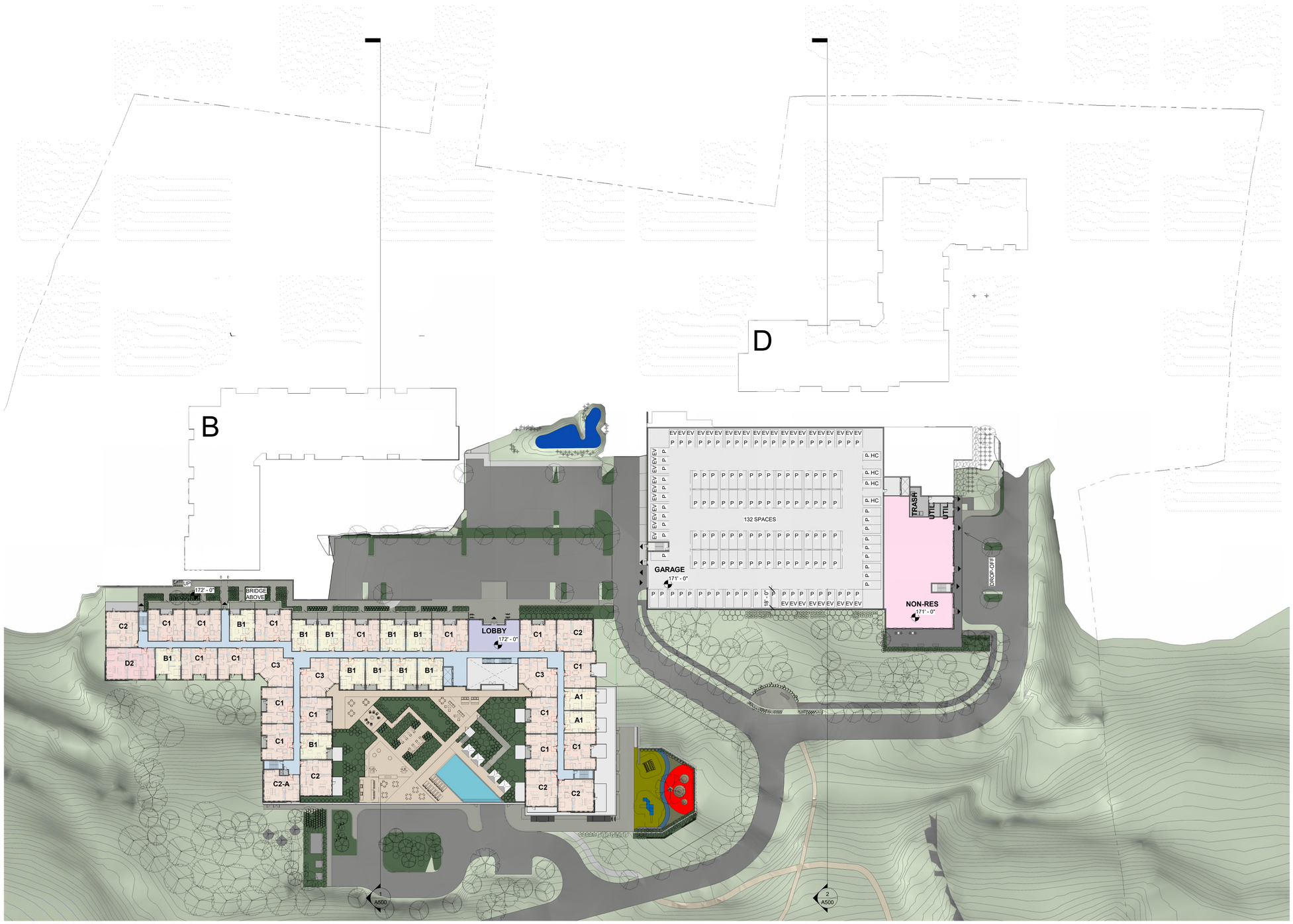
SHEET NUMBER

A102

TRUE NORTH PLAN NORTH

© 2021 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/900 LRR 3D.rvt
7/11/2023 4:04:53 PM


B
D
B
B
B

1 183' - 0"
1" = 40'-0"

BKV GROUP DC

Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
1	06/23/2023	SITE PLAN SUBMISSION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	Project Number

SHEET TITLE

LEVEL 183'-0"

SHEET NUMBER

A104

TRUE NORTH PLAN NORTH

© 2021 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/900 LRR 3D.rvt
7/11/2023 4:05:38 PM

1 194' - 0"
1" = 40'-0"

BKV GROUP DC

Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
1	06/23/2023	SITE PLAN SUBMISSION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	Project Number

SHEET TITLE

LEVEL 194'-0"

SHEET NUMBER

A105

TRUE NORTH PLAN NORTH

© 2021 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/900 LRR_3D.rvt
7/11/2023 4:06:16 PM

1 205' - 0"
1" = 40'-0"

BKV GROUP DC
Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
1	06/23/2023	SITE PLAN SUBMISSION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	Project Number

SHEET TITLE

LEVEL 205'-0"

SHEET NUMBER

A106

TRUE NORTH PLAN NORTH

© 2021 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/900 LRR 3D.rvt
7/11/2023 4:06:59 PM

1 216' - 0"
1" = 40'-0"

BKV GROUP DC
Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
1	06/23/2023	SITE PLAN SUBMISSION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	Project Number

SHEET TITLE

LEVEL 216'-0"

SHEET NUMBER

A107

TRUE NORTH PLAN NORTH

© 2021 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/900 LRR 3D.rvt
7/11/2023 4:07:46 PM

1 227' - 0"
1" = 40'-0"

BKV GROUP DC

Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
1	06/23/2023	SITE PLAN SUBMISSION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	Project Number

SHEET TITLE

LEVEL 227'-0"

SHEET NUMBER

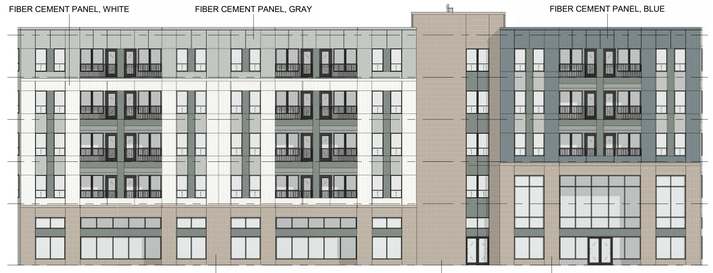
A108

TRUE NORTH PLAN NORTH

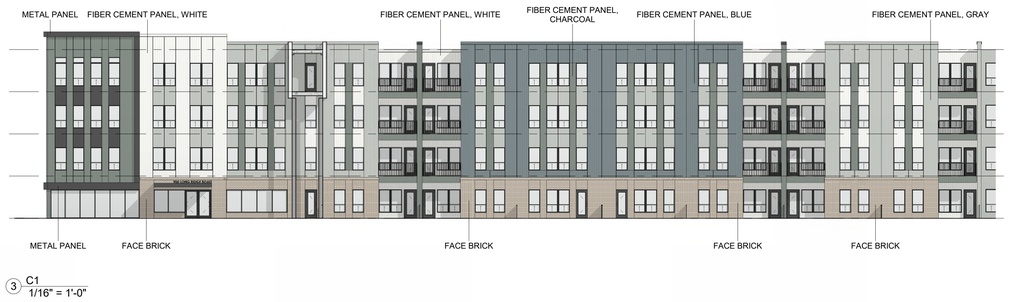
© 2021 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/900 LRR 3D.rvt
7/11/2023 4:08:31 PM

1 A1 1/16" = 1'-0"



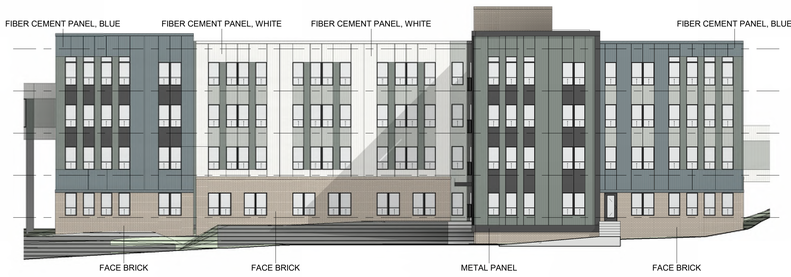
2 A5 1/16" = 1'-0"



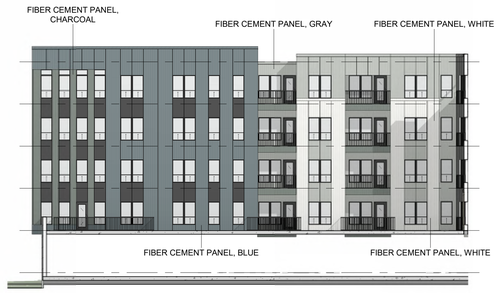
3 C1 1/16" = 1'-0"

4 C2 1/16" = 1'-0"

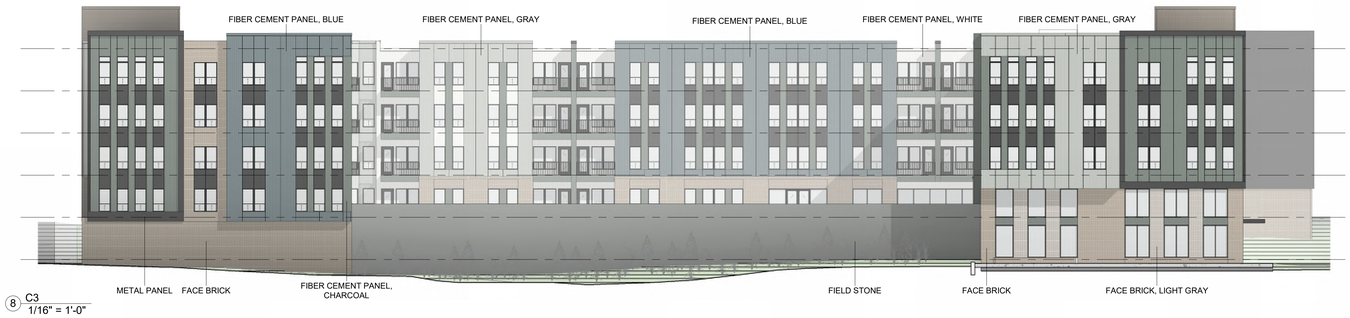
5 C5 1/16" = 1'-0"



6 B2 1/16" = 1'-0"



7 C6 1/16" = 1'-0"



8 C3 1/16" = 1'-0"

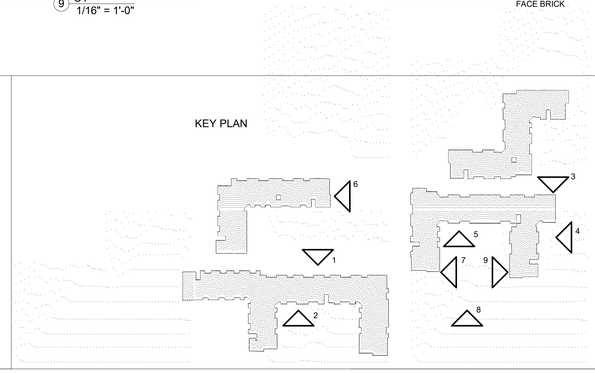
9 C4 1/16" = 1'-0"

EXTERIOR MATERIAL LEGEND

FIBER CEMENT, WHITE | FIBER CEMENT, GRAY | FIBER CEMENT, BLUE | FIBER CEMENT, CHARCOAL | FACE BRICK, TAN | FIELD STONE, GRAY

NOTE: FINAL MATERIALS MAY VARY BASED ON AVAILABILITY AND SCHEDULE

KEY PLAN



BKV GROUP DC
Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
1	06/23/2023	SITE PLAN SUBMISSION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	Project Number

SHEET TITLE

PROJECT ELEVATIONS

SHEET NUMBER

A400

© 2021 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/900 LRR 3D.rvt
7/11/2023 4:09:01 PM

BKV GROUP DC

Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
1	06/23/2023	SITE PLAN SUBMISSION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	Project Number

SHEET TITLE

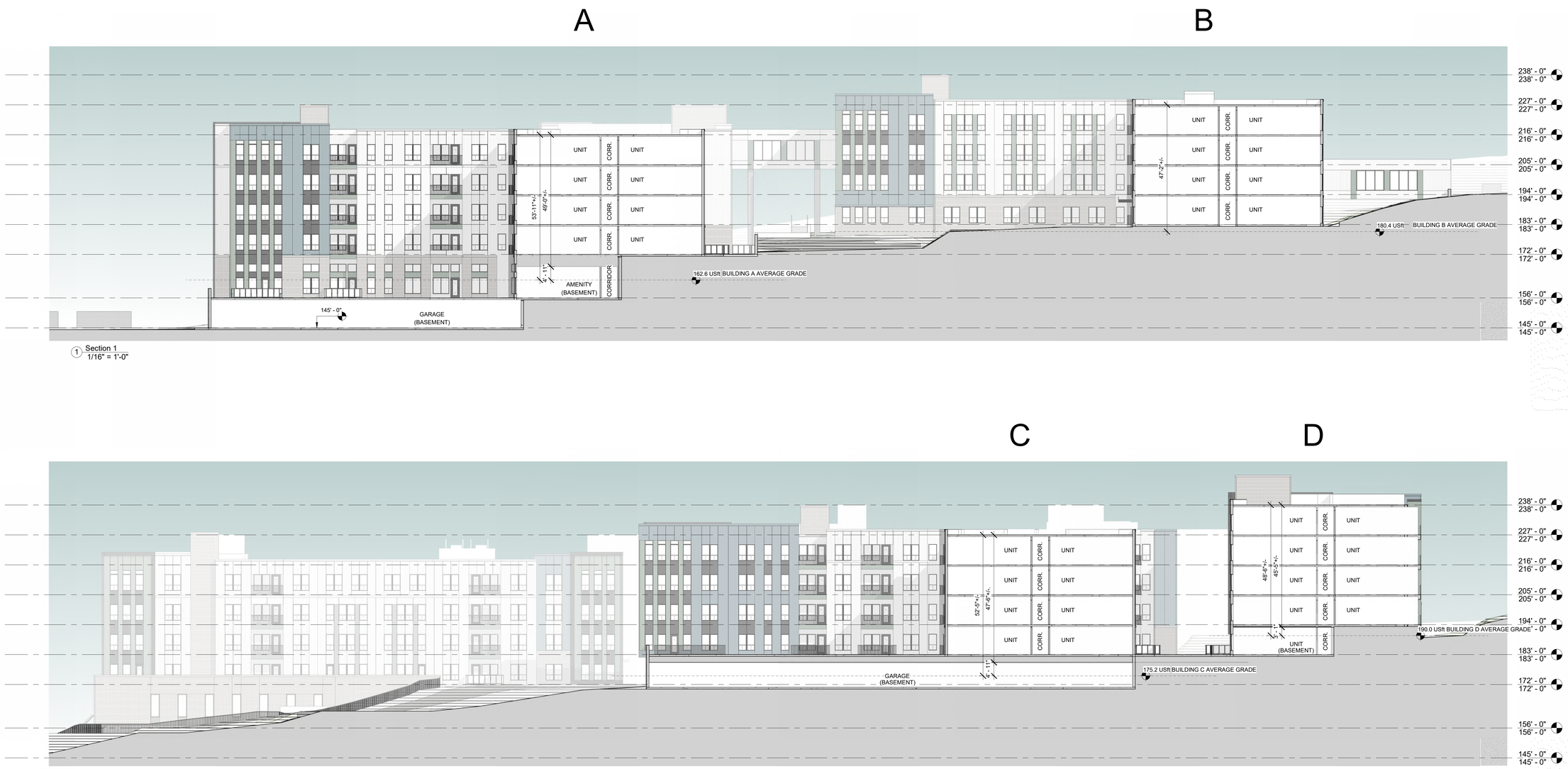
PROJECT PERSPECTIVES

SHEET NUMBER

A401

© 2021 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/900 LRR 3D.rvt
7/11/2023 4:09:10 PM



1 Section 1
1/16" = 1'-0"

2 Section 2
1/16" = 1'-0"

BIM 360://2291-03 Monday-900 Long Ridge Rd/900 LRR 3D.rvt
7/11/2023 4:09:35 PM

BKV GROUP DC

Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
1	06/23/2023	SITE PLAN SUBMISSION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	Project Number

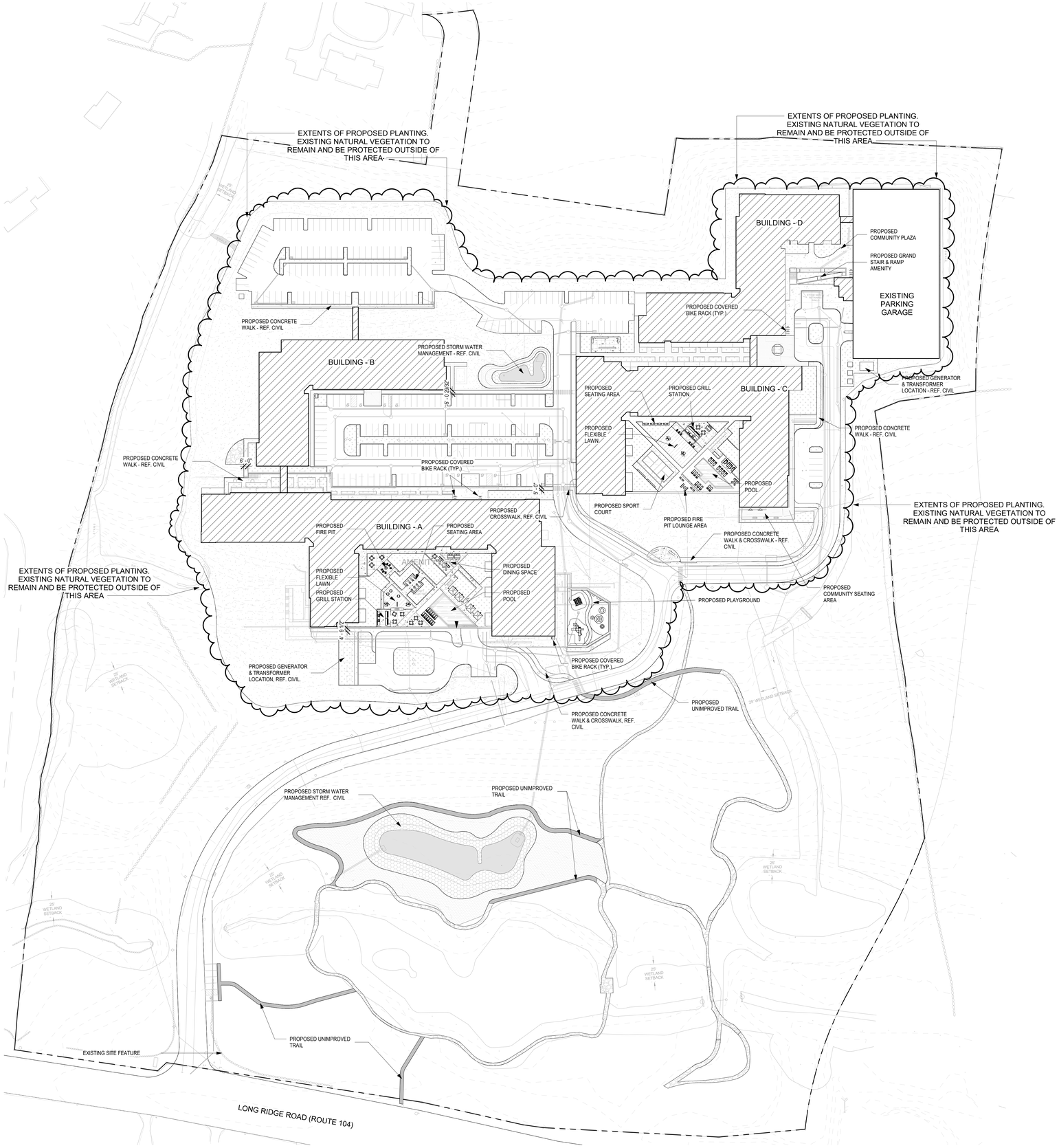
SHEET TITLE

SECTIONS

SHEET NUMBER

A500

© 2021 BKV Group



1 -LS-100 -OVERALL LANDSCAPE PLAN
1" = 60'-0"

GENERAL NOTES:

1. EXISTING TOPOGRAPHIC AND UTILITY INFORMATION WAS PROVIDED BY REDNESS AND MEAD INC., 22 FIRST STREET, STAMFORD CONNECTICUT. CONTRACTOR WILL VERIFY ALL ELEVATIONS IN THE FIELD AND NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
2. EXISTING UTILITY INFORMATION IS BASED ON AVAILABLE INFORMATION AND ALL UTILITIES MAY NOT BE SHOWN. CONTRACTOR WILL DIAL 811 FOR "CALL BEFORE YOU DIG" AND HAVE ALL UTILITIES MARKED ON THE GROUND PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES.
3. REFER TO CIVIL ENGINEER'S DRAWINGS FOR ADDITIONAL INFORMATION.
4. EXISTING NATURAL VEGETATION TO REMAIN AND BE PROTECTED. SEE PROPOSED EXTENTS OF DISTURBANCE ON PLANS.

GRAPHIC LEGEND:

- CONCRETE, TYP. (SEE SPEC)
- PLANTING AREAS: (SEE LP SERIES)
- GRAVEL/ RIVER ROCK (SEE MAT. SCHEDULE)
- PAVER (SEE MAT. SCHEDULE)
- TURFGRASS (SEE SPEC)
- SYNTHETIC TURF: (SEE MAT. SCHEDULE)

0' 15' - 0" 30' - 0" 60' - 0" 120' - 0"

TRUE NORTH

BKV GROUP

Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
	06/23/2023	SITE DEVELOPMENT PLAN

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	EN
CHECKED BY	CK
COMMISSION NUMBER	2291.03

SHEET TITLE

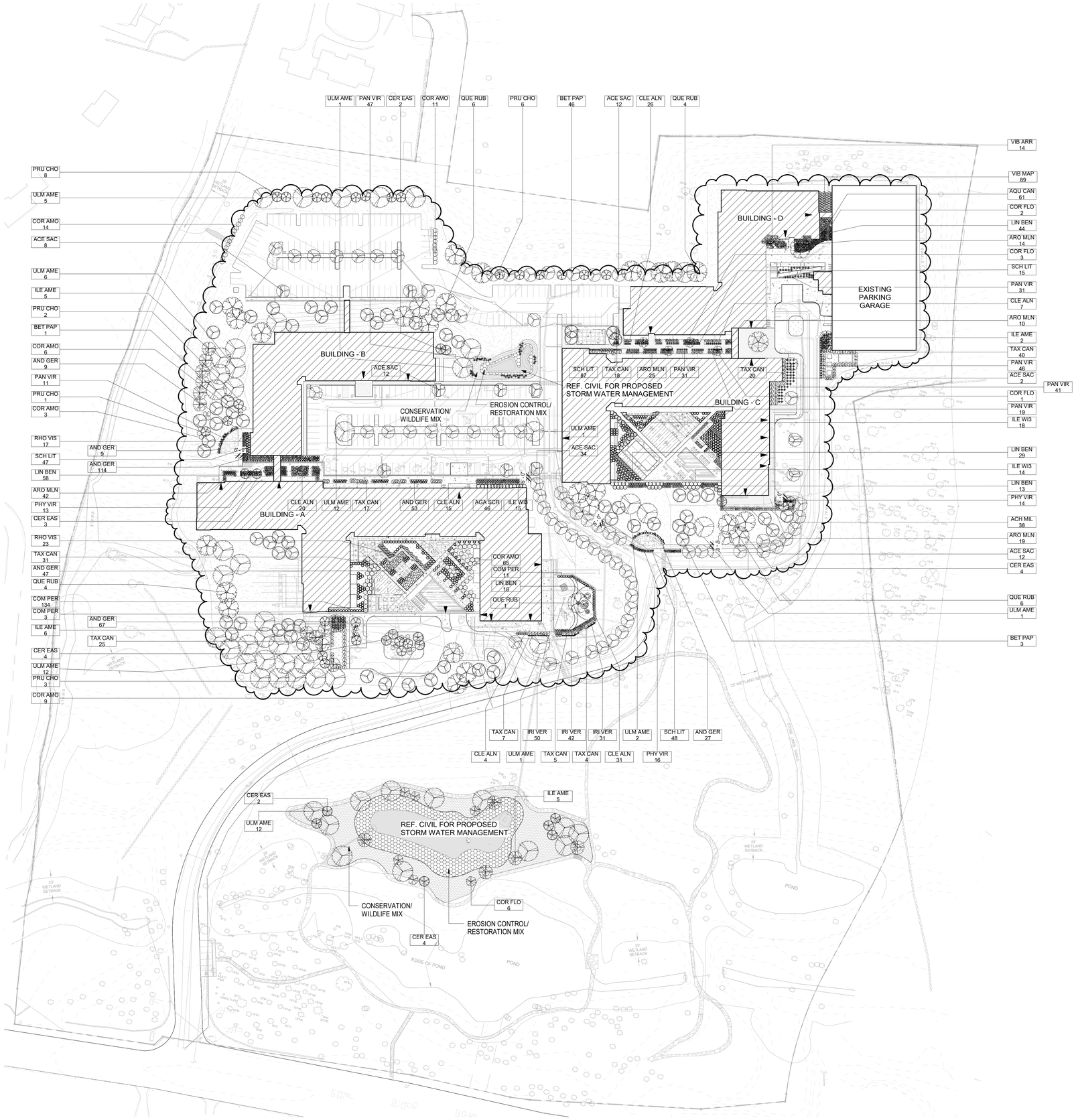
OVERALL LANDSCAPE PLAN

SHEET NUMBER

-LS-100

© 2019 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/2291-03 Monday_900 Long Ridge Rd_LAND_2021.rvt
7/10/2023 9:26:55 AM



1 -LP-100 -OVERALL PLANTING PLAN
1" = 60'-0"

Plant Schedule						
Plant Code	Botanical Name	Common Name	Size	Container	Remarks	Count
DECIDUOUS SHRUBS						
ARO MLN	ARONIA MELANOCARPA	BLACK CHOKEBERRY	3 gal. MIN. 18" HT. MIN. AT PLANTING	Pot	MATURE HT. 6'	110
CLE ALN	CLETHRA ALNIFOLIA	SUMMERSWEET	3 gal. MIN. 18" HT. MIN. AT PLANTING	Pot	MATURE HT. 6'	102
COM PER	COMPTONIA PEREGRINA	SWEET FERN	3 gal. MIN. 18" HT. MIN. AT PLANTING	Pot	MATURE HT. 4'	316
COR AMO	CORNUS AMOMUM	SILKY DOGWOOD	3 gal. MIN. 18" HT. MIN AT PLANTING	Pot	MATURE HT. 10'	111
LIN BEN	LINDERA BENZOIN	SPICEBUSH	3 gal. MIN. 18" HT. MIN. AT PLANTING	Pot	MATURE HT. 8'	154
RHO VIS	RHODODENDRON VISCOSUM	SWAMP AZALEA	5 gal. MIN. 24" HT. MIN. AT PLANTING	Pot	MATURE HT. 5'	40
VIB ARR	VIBURNUM DENTATUM	VIBURNUM	3 gal. MIN. 18" HT. MIN. AT PLANTING	Pot	MATURE HT. 10'	14
VIB MAP	VIBURNUM ACERIFOLIUM	MAPLELEAF VIBURNUM	5 gal. MIN. 24" HT. MIN. AT PLANTING	Pot	MATURE HT. 6'	67
DECIDUOUS TREES						
ACE SAC	ACER SACCHARUM	SUGAR MAPLE	3" Cal. MIN.	B&B	FULL & MATCHED	80
BET PAP	BETULA PAPYRIFERA	PAPER BIRCH	3" Cal. MIN. 12' HT. MIN. AT PLANTING	B&B	FULL & MATCHED, MATURE HT. 50'	65
QUE RUB	QUERCUS RUBRA	RED OAK	3" Cal. MIN. 12' HT. MIN. AT PLANTING	B&B	FULL & MATCHED, MATURE HT. 60'	28
ULM AME	ULMUS AMERICANA	AMERICAN ELM	3" Cal. MIN. 12' HT MIN. AT PLANTING	B&B	FULL & MATCHED, MATURE HT. 60'	53
EVERGREEN SHRUBS						
ILE WI3	ILEX VERTICILLATA	WINTERBERRY	5 gal. MIN. 24" HT. MIN. AT PLANTING	Pot	MATURE HT. 10'	73
TAX CAN	TAXUS CANADENSIS	CANADA YEW	5 gal. MIN. 24" HT. MIN AT PLANTING	Pot	MATURE HT. 5'	164
EVERGREEN TREES						
ILE AME	ILEX OPACA	AMERICAN HOLLY	3" Cal. MIN. 12' HT. MIN. AT PLANTING	B&B	FULL & MATCHED, MATURE HT. 30'	18
GRASSES						
AND GER	ANDROPOGON GERARDII	BIG BLUESTEM	3 gal. MIN. 18" HT. MIN. AT PLANTING	Pot	MATURE HT. 8'	436
PAN VIR	PANICUM VIRGATUM	SWITCH GRASS	5 gal. MIN. 24" HT. MIN. AT PLANTING	Pot	MATURE HT. 6'	226
SCH LIT	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	3 gal. MIN. 18" HT. MIN. AT PLANTING	Pot	MATURE HT. 4'	377
ORNAMENTAL TREES						
CER EAS	CERCIS CANADENSIS	EASTERN REDBUD MULTI-TRUNK	2" Cal. MIN. 6' - 8' HT. MIN. AT PLANTING	B&B OR CONTAINER	MATURE HT. 25'	19
COR FLO	CORNUS FLORIDA	FLOWERING DOGWOOD	2" Cal. MIN. 6' - 8' HT. AT PLANTING	B&B OR CONTAINER	MATURE HT. 25'	12
PRU CHO	PRUNUS VIRGINIANA	CHOKECHERRY	2" Cal. MIN. 6' - 8' HT. MIN. AT PLANTING	B&B OR CONTAINER	MATURE HT. 20'	25
PERENNIALS						
ACH MIL	ACHILLEA MILLEFOLIUM	COMMON YARROW	1 gal. MIN. 12" HT. MIN. AT PLANTING	Pot	MATURE HT. 3'	38
AGA SCR	AGASTACHE SCROPHULARIFOLIA	PURPLE GIANT HYSSOP	3 gal. MIN. 12" HT. MIN. AT PLANTING	Pot	MATURE HT. 6'	84
AQU CAN	AQUILEGIA CANADENSIS	EASTERN COLUMBINE	3 gal. MIN. 12" HT. MIN. AT PLANTING	Pot	MATURE HT. 3'	58
IRI VER	IRIS VERSICOLOR	BLUE FLAG	1 gal. MIN. 12" HT. MIN. AT PLANTING	Pot	MATURE HT. 3'	123
PHY VIR	PHYSOSTEGIA VIRGINIANA	OBEDIENT PLANT	3 gal. MIN. 12" HT. MIN. AT PLANTING	Pot	MATURE HT. 4'	43
Grand total						2836

NOTE: CONTRACTOR RESPONSIBLE FOR QUANTITIES PER DRAWINGS AND SPECIFICATIONS. QUANTITIES PROVIDED BY THE LANDSCAPE ARCHITECT ARE FOR CONVENIENCE ONLY. CONTRACTORS SHALL BID THEIR OWN VERIFIED QUANTITIES. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.

PROPOSED STORMWATER EMBANKMENTS SHALL RECEIVE NATIVE SEED HYDROMULCH TREATMENT.

GRAPHIC LEGEND:

CONCRETE, TYP. (SEE SPEC)

PLANTING AREAS: (SEE LP SERIES)

GRAVEL/ RIVER ROCK (SEE MAT. SCHEDULE)

PAVER (SEE MAT. SCHEDULE)

TURFGRASS (SEE SPEC)

SYNTHETIC TURF: (SEE MAT. SCHEDULE)

0' 15' - 0" 30' - 0" 60' - 0" 120' - 0"

TRUE NORTH

BKV GROUP

Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
	06/23/2023	SITE DEVELOPMENT PLAN

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	EN
CHECKED BY	CK
COMMISSION NUMBER	2291.03

SHEET TITLE

OVERALL PLANTING PLAN

SHEET NUMBER

-LP-100

© 2019 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/2291-03 Monday_900 Long Ridge Rd_LAND_2021.rvt
7/10/2023 9:26:30 AM

NEW ENGLAND WETMIX (WETLAND SEED MIX)

BOTANICAL NAME	COMMON NAME	INDICATOR
CAREX VULPINOIDEA	FOX SEDGE	OBL
CAREX SCOPARIA	BLUNT BROOM SEDGE	FACW
CAREX LURIDA	LURID SEDGE	OBL
CAREX LUPULINA	HOP SEDGE	OBL
POA PALUSTRIS	FOWL BLUEGRASS	FACW
BIDENS FRONDOSA	BEGGAR TICKS	FACW
SCIRPUS ATROVIRENS	GREEN BULRUSH	OBL
ASCLEPIAS INCARNATA	SWAMP MILKWEED	OBL
CAREX CRINITA	FRINGED SEDGE	OBL
VERNAONIA NOVEBORACENSIS	NEW YORK IRONWEED	FACW+
JUNCUS EFFUSUS	SOFT RUSH	FACW+
ASTER LATERIFLORUS (SYMPHYOTRICHUM LATERIFLORUM)	STARVED/CALICO ASTER	FACW
IRIS VERSICOLOR	BLUE FLAG	OBL
GLYCERIA GRANDIS	AMERICAN MANNAGRASS	OBL
MIMULUS RINGENS	SQUARE STEMMED MONKEY FLOWER	OBL
EUPATORIUM MACULATUM (EUTROCHIUM MACULATUM)	SPOTTED JOE PYE WEED	OBL

The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas. The mix is well suited for detention basin borders and the bottom of detention basins not generally under standing water. The seeds will not germinate under inundated conditions. If planted during the fall months, the seed mix will germinate the following spring. During the first season of growth, several species will produce seeds while other species will produce seeds after the second growing season. Not all species will grow in all wetland situations. This mix is comprised of the wetland species most likely to grow in created/restored wetlands and should produce more than 75% ground cover in two full growing seasons.

The wetland seeds in this mix can be sown by hand, with a hand held spreader, or hydro-seeded on large or hard to reach sites. Lightly rake to insure good seed to soil contact. Seeding can take place on frozen soil, as the freezing and thawing weather of late fall and late winter will work the seed into the soil. If spring conditions are drier than usual watering may be required. If sowing during the summer months supplemental watering will likely be required until germination. A light mulch of clean, weed free straw is recommended.

1 -LP-101 WETLAND SEED MIX
3/4" = 1'-0"

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

BOTANICAL NAME	COMMON NAME	INDICATOR
ELYMUS RIPARIUS	RIVERBANK WILD RYE	FACW
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	FACU
FESTUCA RUBRA	RED FESCUE	FACU
ANDROPOGON GERARDII	BIG BLUESTEM	FAC
PANICUM VIRGATUM	SWITCH GRASS	FAC
VERNONIA NOVEBORACENSIS	NEW YORK IRONWEED	FACW+
AGROSTIS PERENNANS	UPLAND BENTGRASS	FACU
BIDENS FRONDOSA	BEGGAR TICKS	FACW
EUPATORIUM MACULATUM (EUTROCHIUM MACULATUM)	SPOTTED JOE PYE WEED	OBL
EUPATORIUM PERFOLIATUM	BONESET	FACW
ASTER NOVAE-ANGLIAE (SYMPHYOTRICHUM NOVAE-ANDLIA)	NEW ENGLAND ASTER	FACW-
SCIRPUS CYPERINUS	WOOL GRASS	FACW
JUNCUS EFFUSUS	SOFT RUSH	FACW+

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 the 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.

2 -LP-101 EROSION CONTROL/ RESTORATION MIX
3/4" = 1'-0"

NEW ENGLAND CONSERVATION (WILDLIFE MIX)

BOTANICAL NAME	COMMON NAME	INDICATOR
ELYMUS RIPARIUS	VIRGINIA WILD RYE	FACW-
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	FACW
ANDROPOGON GERARDII	BIG BLUESTEM	FAC
FESTUCA RUBRA	RED FESCUE	FACU
SORGHASTRUM NUTANS	INDIAN GRASS	UPL
PANICUM VIRGATUM	SWITCH GRASS	FAC
CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	FACU
DESMODIUM CANADENSE	SHOWY TICK TREFOIL	FAC
ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	NI
BIDENS FRONDOSAILATUM (EUTROCHIUM MACULATUM)	BEGGAR TICKS	FACW
EUPATORIUM MACULATUM (EUTROCHIUM MACULATUM)	PURPLE JOE PYE WEED	FAC
RUDBECKIA HIRTA	BLACK EYED SUSAN	FACU-
ASTER PILOSUS (SYMPHYOTRICHUM PILOSUM)	HEATH (OR HAIRY) ASTER	UPL
SOLIDAGO JUNCEAYMPHYOTRICHUM PILOSUM)	EARLY GOLDENROD	

The New England Conservation/Wildlife Mix provides a permanent cover of grasses, wildflowers, and legumes. For both good erosion control and wildlife habitat value. The mix is designed to be a no-maintenance seeding, and is appropriate for cut and fill slopes, detention basin side slopes, and disturbed areas adjacent to commercial and residential projects.

3 -LP-101 CONSERVATION MIX
3/4" = 1'-0"

BKV GROUP

Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	2291.03

SHEET TITLE

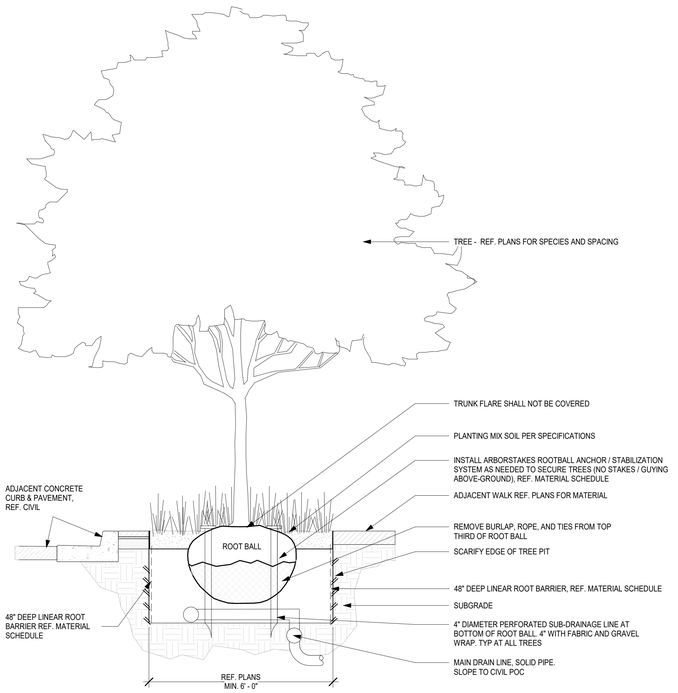
NATIVE SEED MIX SCHEDULES

SHEET NUMBER

-LP-101

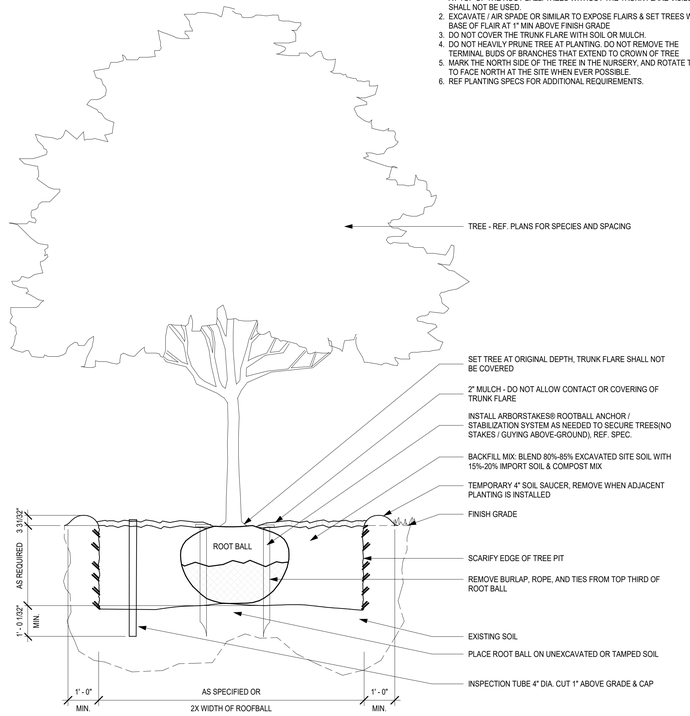
© 2019 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/2291-03 Monday_900 Long Ridge Rd_LAND_2021.rvt
7/10/2023 9:26:31 AM

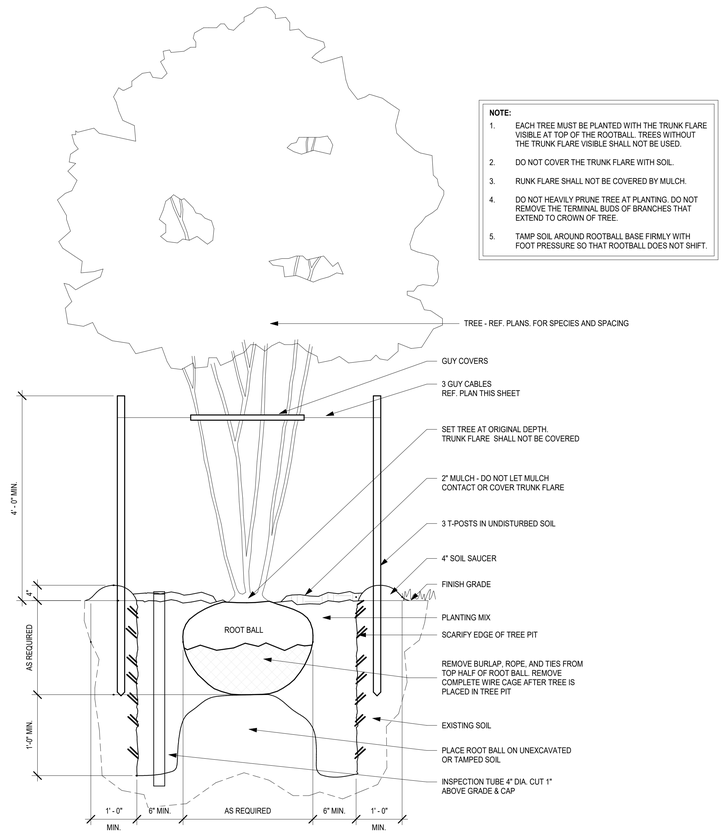


7 LP-501 SHADE TREE AT HARDSCAPE, TYP.
1/2" = 1'-0"

NOTE:
1. EACH TREE MUST BE PLANTED WITH THE TRUNK FLARE EXPOSED / VISIBLE AT TOP OF THE ROOT BALL. TREES WITHOUT THE TRUNK FLARE VISIBLE SHALL NOT BE USED.
2. EXCAVATE / AIR SPADE OR SIMILAR TO EXPOSE FLAIRS & SET TREES WITH BASE OF FLAIR AT 1" MIN ABOVE FINISH GRADE
3. DO NOT COVER THE TRUNK FLARE WITH SOIL OR MULCH.
4. DO NOT HEAVILY PRUNE TREE AT PLANTING. DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO CROWN OF TREE
5. MARK THE NORTH SIDE OF THE TREE IN THE NURSERY, AND ROTATE TREE TO FACE NORTH AT THE SITE WHEN EVER POSSIBLE.
6. REF PLANTING SPECS FOR ADDITIONAL REQUIREMENTS.

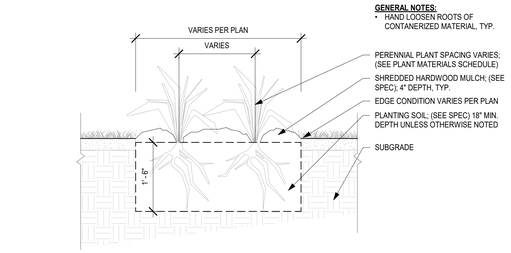


6 LP-501 SHADE TREE PLANTING DETAIL, TYP.
1/2" = 1'-0"

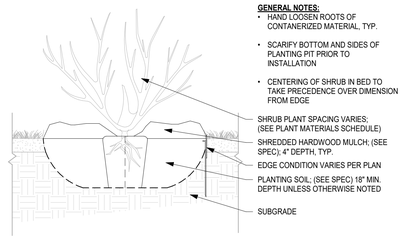


NOTE:
1. EACH TREE MUST BE PLANTED WITH THE TRUNK FLARE VISIBLE AT TOP OF THE ROOTBALL. TREES WITHOUT THE TRUNK FLARE VISIBLE SHALL NOT BE USED.
2. DO NOT COVER THE TRUNK FLARE WITH SOIL.
3. RUNK FLARE SHALL NOT BE COVERED BY MULCH.
4. DO NOT HEAVILY PRUNE TREE AT PLANTING. DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO CROWN OF TREE.
5. TAMP SOIL AROUND ROOTBALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOTBALL DOES NOT SHIFT.

4 LP-501 SMALL/ORNAMENTAL TREE PLANTING DETAIL TYP.
3/4" = 1'-0"

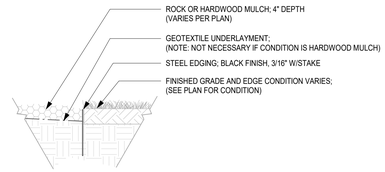


GENERAL NOTES:
- HAND LOOSEN ROOTS OF CONTANERIZED MATERIAL, TYP.

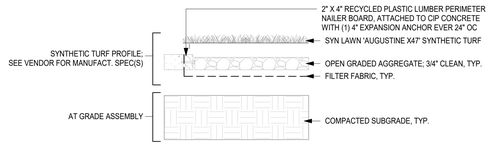


GENERAL NOTES:
- HAND LOOSEN ROOTS OF CONTANERIZED MATERIAL, TYP.
- SCARIFY BOTTOM AND SIDES OF PLANTING PIT PRIOR TO INSTALLATION
- CENTERING OF SHRUB IN BED TO TAKE PRECEDENCE OVER DIMENSION FROM EDGE

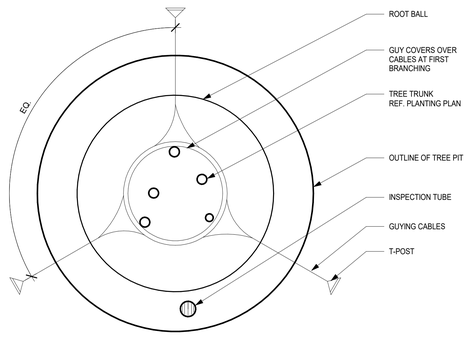
1 LP-501 SHRUB AND PERENNIAL PLANTING DETAILS-TYP.
3/4" = 1'-0"



2 LP-501 STEEL EDGER DETAIL
3/4" = 1'-0"



3 LP-501 SYNTHETIC TURF DETAIL PROFILE - TYP.
3/4" = 1'-0"



NOTE:
1. TIGHTEN CABLE ONLY ENOUGH TO KEEP GUY FROM SLIPPING. ALLOW FOR TRUNK MOVEMENT. GUY COVER SHALL BE LONG ENOUGH TO ACCOMMODATE 2 INCH OF GROWTH AND BUFFER ALL BRANCHES FROM WIRE.
2. TUCK ANY LOOSE ENDS OF CABLE INTO THE GUY COVER SO THAT NO SHARP WIRE ENDS ARE EXPOSED.
3. REMOVE ALL STAKING AS SOON AS THE TREE HAS GROWN ROOTS SUFFICIENT TO OVERCOME THE TREE MOVEMENT AT THE ROOTS. STAKES SHALL BE REMOVED NO LATER THAN THE END OF THE FIRST GROWING SEASON AFTER PLANTING

5 LP-501 SMALL/ORNAMENTAL TREE PLANTING PLAN TYP.
3/4" = 1'-0"

BKV GROUP

Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

900 LONG RIDGE ROAD, STAMFORD, CT

ISSUE #	DATE	DESCRIPTION
	06/23/2023	SITE DEVELOPMENT PLAN

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	EN
CHECKED BY	CK
COMMISSION NUMBER	2291.03

SHEET TITLE

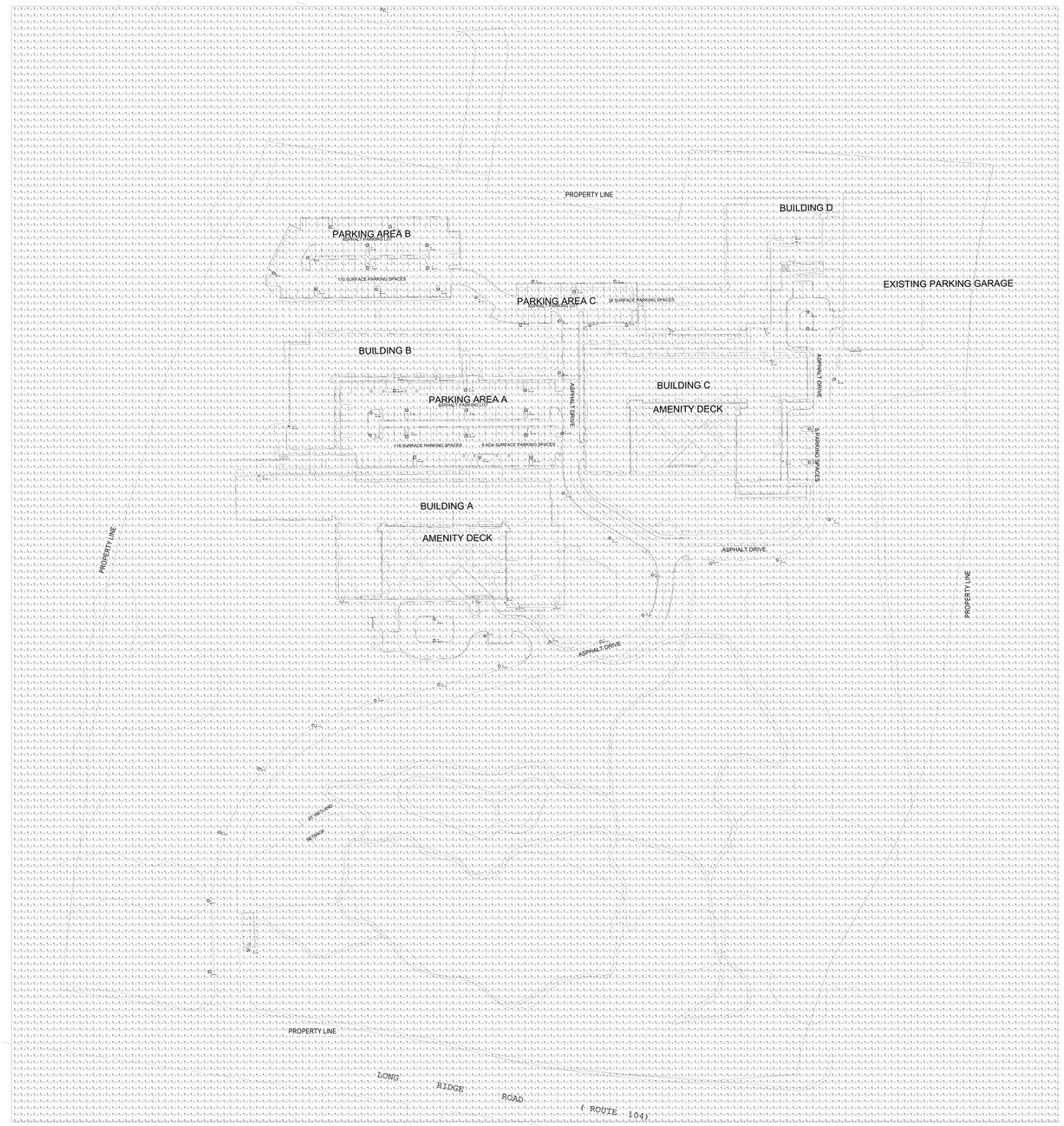
PLANTING DETAILS

SHEET NUMBER

LP-501

© 2019 BKV Group

BIM 360://2291-03 Monday-900 Long Ridge Rd/2291-03 Monday_900 Long Ridge Rd_LAND_2021.rvt
7/10/2023 9:26:56 AM



Luminaire Schedule							
Tag	Symbol	Qty	Label	Arrangement	LLF	Lum. Watts
AP		31	RFFSH_ARIA_1ES	Single	1.000	35
AW		14	WAL_ARL_RT_SM2_30K_MVOLT	Single	1.000	29.17

Calculation Summary					
Label	Units	Avg	Max	Min	
Site_Top_1	Fc	0.31	8.2	0.0	
Parking - East	Fc	1.07	3.5	0.1	
Parking - West	Fc	1.47	3.9	0.1	
Parking - North	Fc	1.38	3.9	0.1	
Parking - South	Fc	1.41	3.8	0.0	

1 SITE PHOTOMETRIC
E011 NOT TO SCALE

BKV GROUP

Architecture
Interior Design
Landscape Architecture
Engineering

1054 31st Street NW
Canal Square
Suite 410
Washington, DC
20007
202.595.3173

www.bkvgroup.com

CONSULTANTS

PROJECT TITLE

MONDAY - 900
LONG RIDGE RD

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	TL
CHECKED BY	KS
COMMISSION NUMBER	2291.03

SHEET TITLE

SITE PHOTOMETRIC

SHEET NUMBER

E011

© 2021 BKV Group

\\Egnyte\Drive\bkvgroup\Shared\Projects\2291-03 Monday-900 Long Ridge Rd-Stamford-CT\01-Disciplines and Consultants\09-Electrical\Lighting\FC Calc
Revit 2022
6/5/2023 8:17:44 AM

SITE ENGINEERING REPORT

Prepared For

Monday Properties
900 Long Ridge Road
Stamford, CT 06902

Prepared by

Redniss & Mead, Inc.
22 First Street
Stamford, CT
(203) 327-0500

Issued on
June 30, 2023

David Ginter, P.E.
CT Lic. No. 27177

Table of Contents

Orientation Map ..... **Error! Bookmark not defined.**
Project Description 4
Existing Conditions: 4
Proposed Conditions 5
Compliance with Stormwater Management Standards 6
Standard 1. Runoff and Pollutant Reduction 6
Standard 2. Peak Flow Control 7
Standard 3. Construction Erosion and Sediment Control 8
Standard 4. Operation and Maintenance 9
Standard 5. Stormwater Management Report 9

Appendices

Appendix A: Existing and Proposed Drainage Basin Maps, Offsite Watershed Map, Existing Steep Slopes Exhibit, OGS Treatment Map

Appendix B: Water Quality Volume Calculations, Total Suspended Solids /Oil Grit Separator Sizing, Pond Sizing, Temporary Sediment Trap Calculations

Appendix C: HydroCAD Report

Appendix D: Conveyance Calculations, Energy Dissipator Sizing

Appendix E: Site Observation Report for Northern Pond/Swale

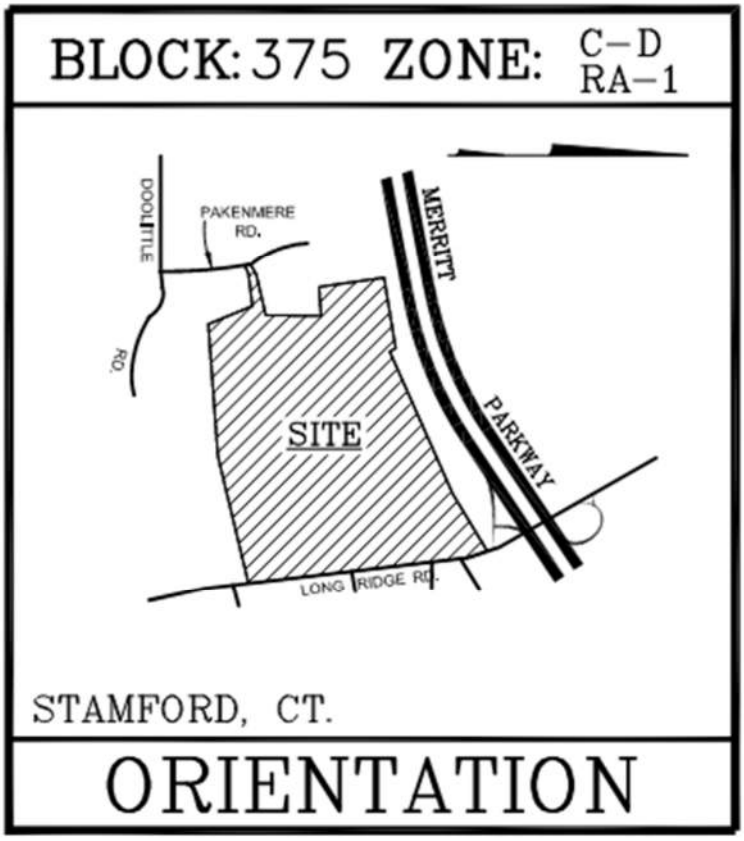
Appendix F: LID Review Map

Appendix G: Operation and Maintenance Agreement

Appendix H: DCIA Tracking Spreadsheets

Appendix I: Checklist for Stormwater Management Report

Appendix J: NRCS Websoil Survey, NOAA-Atlas 14 Volume 10 – Precipitation Frequency


BLOCK: 375 ZONE: C–D RA–1
DOOLITTLE
RD.
PAKENMERE RD.
MERRITT
PARKWAY
SITE
LONG RIDGE RD.
STAMFORD, CT.
ORIENTATION

Narrative

Project Description:

The owner of 900 Long Ridge Road, Monday Properties, is seeking approval to construct four (4) multi-family residential buildings. Included with the development will be the demolition of the two (2) existing office buildings and one surface parking lot and the construction of four (4) multi-family residential buildings, parking and circulation around the buildings the reconfiguration of one existing parking lot and upgrades to the existing trail network in the eastern portion of the property. The size of the property is 36.5869 acres and is primarily located in the CD zone on the western side of Long Ridge Road. The property is served by public water supply and connected into the public sewer system on Oaklawn Avenue.

Existing Conditions:

900 Long Ridge Road is currently developed with two office buildings, parking garage, multiple surface parking lots, walks and patios and other improvements typical of a large office complex. The development is primarily located in the western portion of the property, while the eastern portion of the property is a mixture of meadow, woods and watercourses. A total of 9.0± acres of impervious, hardscape area exists on the property. Elevations range from elevation 220± at the western property boundary to elevation 90± at the eastern property boundary. Areas of steep slopes exist along the western property boundary and between the main entry drive and the meadow in the eastern portion of the site.

Stormwater runoff generally flows west to east on the property, via sheet flow, swales or conventional conveyance systems before discharging into a watercourse that runs north to the south through the property. Ultimately, all stormwater from the property discharges at the southeastern corner. The watercourse continues to travel in a southerly direction before crossing under Long Ridge Road in front of 800 Long Ridge Road and draining into the Rippowam River. A total of 542± acres of offsite area is tributary to the primary watercourse within the property.

There are two stormwater management practices that have been installed as part of an expansion in 1980. First was the creation of a stone lined swale and detention pond located in the northern portion of the site. This swale and detention pond collect runoff from the parking garage, a portion of the northern office building, drives and 2.5± acres of offsite area. The pond was designed to store 6 inches of stormwater before discharging through a 12" pipe into the main watercourse. The remaining area within the pond is used for detention purposes with a 50-foot-wide weir within an earthen berm. The swale is a stone lined swale with one (1) stone check dam. A site inspection was performed of both on May 24, 2023 and a report is included in Appendix E.

The second stormwater management practice consists of a grit separator with nearly 7,000 cubic feet of treatment. This unit is located in the central portion of the property and treats runoff from the two buildings, central parking areas and the majority of the main drive coming into the campus, in addition to

3.6± acres of offsite area. It discharges through a 24" pipe into the wetland just upstream of the culvert crossing under the main driveway.

Soil testing, consisting of a series of deep test pits, were performed on-site to identify any sub-grade restrictive soil conditions (ledge, groundwater, etc.) and to confirm the hydrologic soil classification. A total of 17 deep test pits were performed. Ledge was encountered in the majority of the test pits with depths ranging from 18" to 120". Evidence of high seasonal groundwater was observed in three of the holes at depths ranging from 12" to 38". The USDA Web Soil Survey classifies the on-site soils as hydraulic soil group class B and D. Refer to Appendix J for locations. Test pit results and locations can be reviewed on site plan sheet SE-7.

Proposed Conditions:

General Design Criteria & Project Classification

The proposed development includes the construction of four (4) multi-family residential buildings, new parking areas and drives, the expansion of the existing western most parking area, and the installation of various walks and pathways throughout the site. The proposed improvements disturb 14.7± acres of the property and will increase impervious coverage by 41,034± sf when compared to existing site conditions. The additional coverage will increase the volume and peak rates of stormwater runoff without providing proper on-site mitigation. The proposed development is classified as a redevelopment project with more than ½ an acre of disturbance and directly connected impervious area being increased, therefore must comply with Standards 1 through 5 of the Stamford Drainage Manual. To comply with Standard 1, this project must provide at least the Water Quality Volume (WQV) via non-structural practices OR infiltration best management practices (BMP's).

Proposed Stormwater Treatment Practices

To satisfy Standard 1 of the Stamford Drainage Manual, two stormwater detention ponds are designed to treat the water quality volume tributary to each. Additionally, three oil grit separators are proposed to provide further treatment. Each system is described in detail below.

- A **Micropool Extended Detention Basin** is located in the western portion of the property just north of Building B. It has been designed, per the 2004 Connecticut Stormwater Quality Manual (Page 11-P1-1) to treat the water quality volume tributary to it from portions of both parking lots located on the western side of the development. A total of 4,245 cubic feet of water quality treatment is provided within this pond (2,540 cubic feet required). This pond also provides peak flow attenuation. Refer to Appendix B for the HydroCAD model.
- A **Pocket Pond** is located in the central portion of the property, north of the existing grit separator. It too has been designed per the 2004 Connecticut Stormwater Quality Manual (Page 11-P1-1) to treat the water quality volume tributary to it from the roof of Building A, B and portions of C and D as well as parking and drives. A total of 38,508 cubic feet of water quality treatment is provided within this

pond (16,827 cubic feet required). This pond also provides peak flow attenuation and has been designed to ensure stream channel protection to the discharge of the existing 24" pipe entering the watercourse.

- **Hydrodynamic Separators** are proposed in three locations. The first, a Contech Cascade CS-5 unit is proposed to be installed inline within the existing conveyance network to collect and treat the runoff from a portion of the western parking lot (Parking Area B). The southern half of this parking lot currently discharges to a swale along the southern property line and we are maintaining the flow to this swale, however providing the enhanced treatment. The second proposed unit is a Contech Vortech 16000, and is located to the east of Building A. This unit treats all the onsite runoff conveyed from the developed portion of the property to the proposed pocket pond and adds an additional level of treatment prior to entering the pond. The third proposed unit is a Contech Vortech 9000, and is located east of Building C. This unit treats all the onsite runoff conveyed to the existing swale and pond in the northern portion of the property. Currently, there is no water quality treatment provided in the swale and pond.

Compliance with Stormwater Management Standards

Standard 1. Runoff and Pollutant Reduction

A. Due to soil conditions, the development will not retain the water quality volume onsite, however all treatment practices provide the requisite water quality volume treatment.
B. Due to the soil conditions (shallow ledge and steep slopes) and the total required water quality volume for a campus of this size, it is not feasible to retain the water quality volume. This report shall serve as the required report detailing the measures taken to maximize runoff reduction from the development.
C. The proposed development has been designed to minimize site disturbance by primarily staying within already disturbed limits of development. Silt fence and construction fence will be installed to limit disturbance outside of the intended areas. At the end of construction, all disturbed areas are required to be stabilized with grass seed or erosion control blankets/hay.
D. Noted
E. The proposed stormwater treatment practices provide a minimum removal rate of 80% of the average annual post-construction load of Total Suspended Solids (TSS) and floatable debris. See TSS Removal Rate calculations in Appendix B.
F. The proposed development project will work within already disturbed and improved areas of the property which will minimize over compaction, and to the extent able, existing paved surfaces will remain as long as possible minimizing the potential impact of erosive soils on the downstream drainage systems. Additionally, natural areas are preserved and enhanced with this development. Work within steep slope areas has been minimized to the greatest extent practicable.

Standard 2. Peak Flow Control

A. Stream channel protection has been provided for the discharge located in the center of property, where the majority of the onsite stormwater runoff is tributary. Given the existing land features and amount of offsite area tributary to the property, stream channel protection is not provided for the northern swale nor and discharge locations studied along the southern property line. Refer to Table 2 for further information regarding discharge to the existing 24" pipe.

B. The proposed stormwater system is designed to adequately pass flows leading to, from and through it up to and including the 25-year design storm event as required in Section 3 of the Drainage Manual. Refer to pipe conveyance calculations in Appendix D.

C. The post-development peak flow rates from the 1-year, 2-year, 5-year, 10-year, 25-year and 50-year, 24-hour storms are controlled to the corresponding pre-development peak discharge rates at various points of interest. Reference is made to the HydroCAD report found in Appendix C. Pre-development vs. post-development peak flow rates for both study points are tabulated below:

Table 1. Existing V.S. Proposed Peak Flows

Return Period (years)	Existing Peak Flow Rate (cfs)	Proposed Peak Flow Rate (cfs)	Change (cfs)	Percent Change (%)
1	35.34	30.58	-4.76	-13.5%
2	52.27	45.62	-6.65	-12.7%
5	82.38	75.22	-7.16	-8.7%
10	109.08	102.09	-6.99	-6.4%
25	147.50	140.13	-7.37	-5.0%
50	177.06	169.28	-7.78	-4.4%
100	208.78	200.79	-7.99	-3.8%

Table 2. Existing V.S. Proposed Peak Flows to 24" Discharge

Return Period (years)	Existing Peak Flow Rate (cfs)	Proposed Peak Flow Rate (cfs)	Change (cfs)	Percent Change (%)
1	16.56	11.37	-5.19	-31.3%
2	23.13	16.26	-6.87	-29.7%
5	34.42	27.60	-6.82	-19.8%
10	44.10	38.57	-5.53	-12.5%
25	57.68	53.43	-4.25	-7.4%
50	67.93	63.98	-3.98	-5.8%
100	78.80	73.70	-5.10	-6.5%

Table 3. Existing V.S. Proposed Peak Flows to Northern Swale

Return Period (years)	Existing Peak Flow Rate (cfs)	Proposed Peak Flow Rate (cfs)	Change (cfs)	Percent Change (%)
1	10.24	9.98	-0.26	-2.5%
2	14.06	13.31	-0.75	-5.3%
5	20.58	19.51	-1.07	-5.2%
10	26.16	24.82	-1.34	-5.1%
25	33.99	32.28	-1.71	-5.0%
50	39.92	37.94	-1.98	-5.0%
100	46.23	43.95	-2.28	-4.9%

D. The outlets from both ponds have been designed to convey the runoff from the 100-year storm event. Refer to project HydroCAD report in Appendix C for information on each BMP's outlet and pipe conveyance calculations in Appendix B.

E. The two detention ponds meet the requirements set for in Section 4.11 of the City of Stamford Drainage Manual. The ponds meet all required setbacks and provides the minimum 12 inches of freeboard. The outlet works have been designed to pass the 100 year storm event through a conveyance network and not overland. The overall watershed through the main watercourse on the property is 542 acres, making our property less than 7% of the overall watershed. It should be noted that the separation distances to ledge and groundwater may not be me for both ponds. The micropool extended detention basin is designed to use an existing ledge outcrop as a feature and wall of the pond. A pond liner may be used to ensure a minimum of 1 foot of stormwater remains in the pond at all times. The pocket pond has been designed with a wet pool up to 5 feet deep and, per the guidelines of the CT Stormwater Quality Manual, is anticipated to be within groundwater to ensure the water level stays constant. Test pits will be dug and testing performed during construction to ensure this is the case. A pond line may be necessary at the completion of construction.

Standard 3: Construction Erosion and Sediment Control

A. Site plan sheets SE-4A through SE-4D depicts erosion control measures to be implemented to control construction related impacts during the various construction phases. Sediment and erosion controls such as silt fencing, stone tracking pads at construction zone entrance/exit points, hay bale & insert catch basin protection, tree protection and sediment traps are proposed. It should be noted that due to the amount of disturbance anticipated, registration with CT DEEP for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities will be required.

Standard 4: Operation and Maintenance

A. A Standard City of Stamford Drainage Maintenance Agreement will be executed with the Environmental Protection Board. A draft maintenance agreement has been prepared and is included in Appendix E.
B. The construction plans will include notes describing the long-term maintenance requirements for the site-specific drainage system(s) including routine and non-route inspection and maintenance tasks to be undertaken after construction is completed as well as the schedule for implementing these tasks. This information will be added to the plan set prior to filing for a building permit.

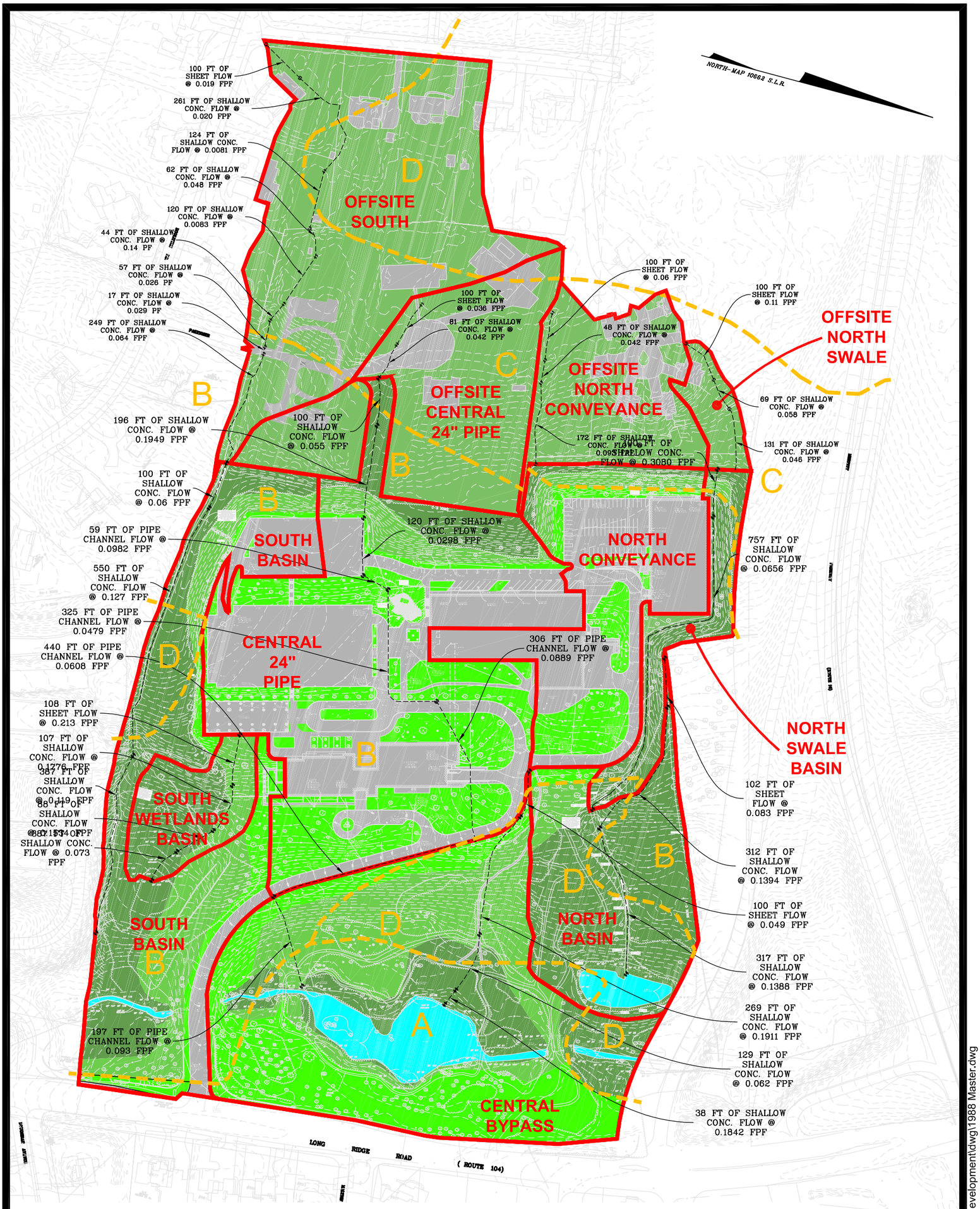
Standard 5: Stormwater Management Report

A. This document and its associated appendices serve as the required Stormwater Management Report.
B. (See below)

Based on the above information, the proposed improvements are designed in accordance with the City of Stamford Stormwater Drainage Manual and will not adversely impact adjacent or downstream properties or City-owned drainage facilities.

Appendix A

Existing and Proposed Drainage Basin Maps
Offsite Watershed Map
Existing Steep Slopes Exhibit
OGS Treatment Map



LEGEND

- DRAINAGE BASIN BOUNDARY
- SOIL CLASSIFICATION BOUNDARY
- LAWN AREA
- MEADOW AREA
- GENERAL PERVIOUS AREA
- WOODS AREA
- IMPERVIOUS AREA
- WATER

EXISTING OFFSITE DRAINAGE BASIN MAP

900 LONG RIDGE ROAD

STAMFORD, CT

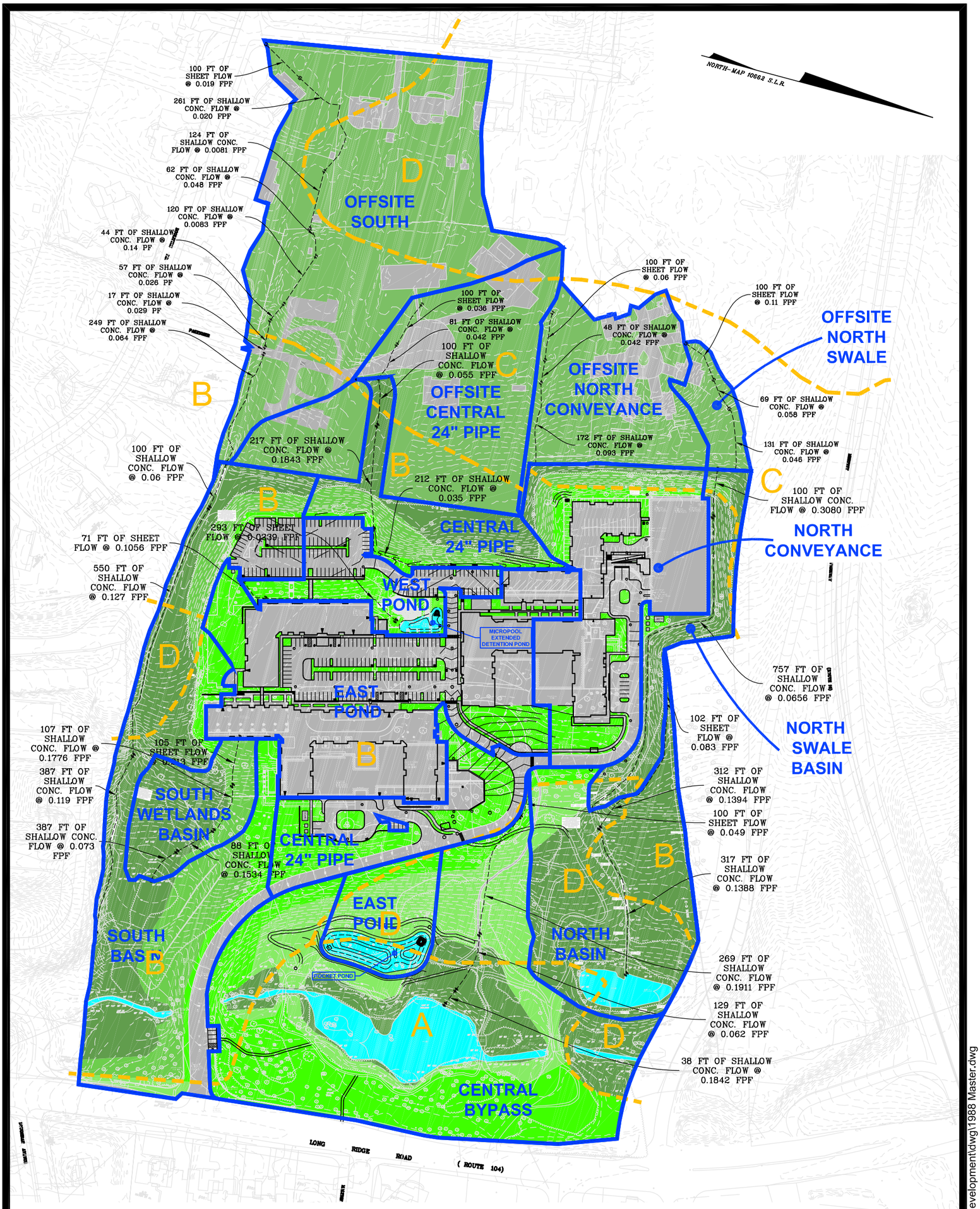
REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

COMM. NO.:	DATE:
1988	06/23/2023
	SCALE: 1"=200'

6/22/2023 2:24 PM G:\JOBFILES\10001\19001\1988_2022 Proposed Development\dwg\1988 Master.dwg



LEGEND

DRAINAGE BASIN BOUNDARY	
SOIL CLASSIFICATION BOUNDARY	
LAWN AREA	
MEADOW AREA	
GENERAL PERVIOUS AREA	
WOODS AREA	
IMPERVIOUS AREA	
WATER	

PROPOSED DRAINAGE BASIN MAP

900 LONG RIDGE ROAD

STAMFORD, CT

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

COMM. NO.:	DATE:
1988	06/23/2022
	SCALE: 1"=200'

6/22/2023 2:28 PM G:\JOBFILES\10001\19001\19881_2022 Proposed Developmentdwg\19881 Master.dwg

OFFSITE TRIBUTARY WATERSHED
AREA=542.4± AC (23,626,762± SF)

SUBJECT PARCEL WATERSHED
AREA=36.58 AC (1,593,585± SF)
6.7% OF TOTAL WATERSHED AREA.

NORTH

APPENDIX A

OFFSITE WATERSHED MAP

900 LONG RIDGE ROAD
STAMFORD, CT

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

COMM. NO.:	DATE:
1988	6/1/2023
	SCALE: 1"=600'

6/1/2023 12:27 PM G:\JOBFILES\10000\19000\19881_2022 Proposed Development\dwg\1988 Stamford GIS2.dwg

EXISTING STEEP SLOPES EXHIBIT

900 LONG RIDGE ROAD

STAMFORD, CT

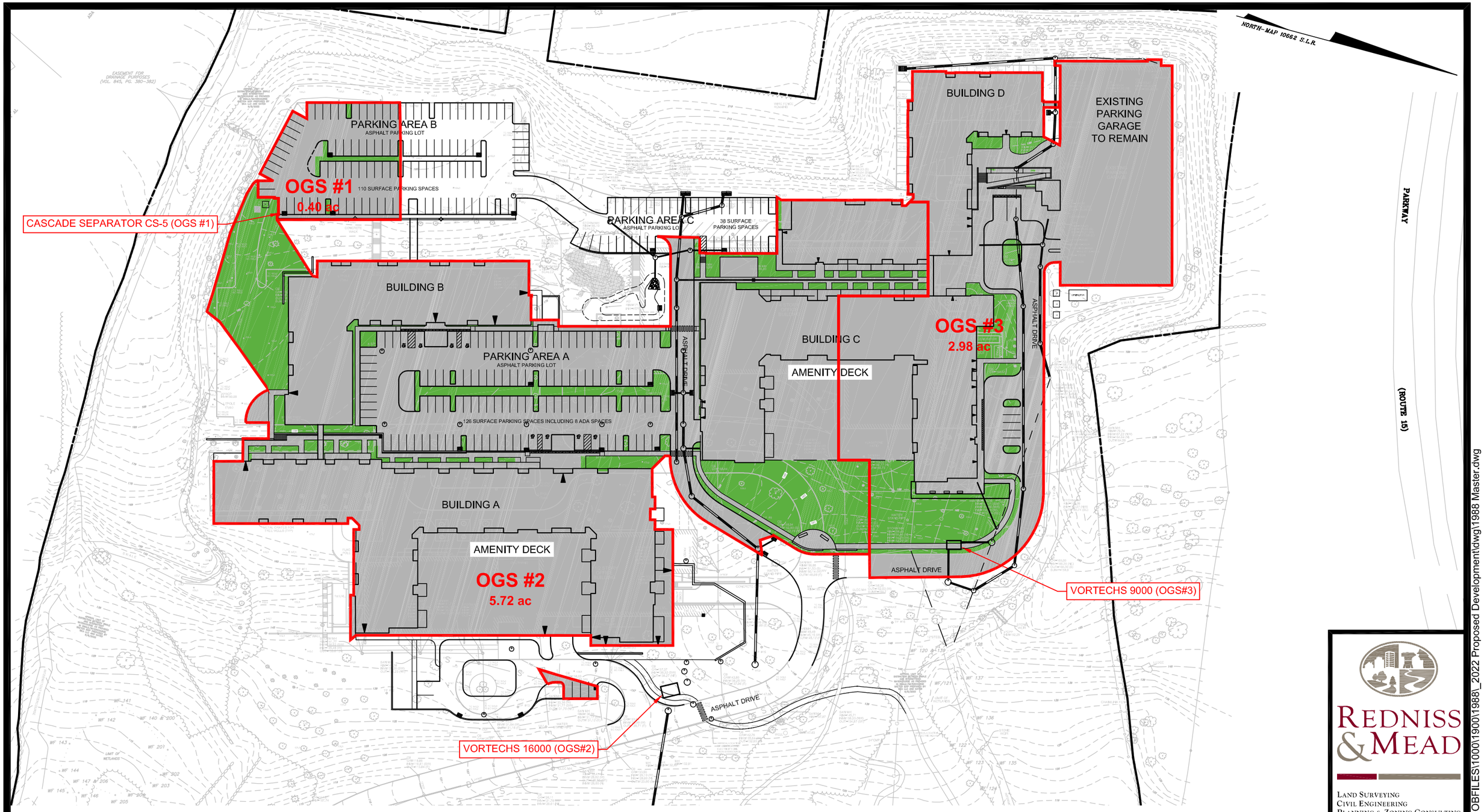
REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

COMM. NO.:	DATE:
1988	6/1/2023
	SCALE: 1"=150'

6/1/2023 12:13 PM G:\JOBFILES\1000\1900\1988_2022 Proposed Development\dwg\1988 Master 2 (2023) JWB.dwg



PROPOSED WATERSHED MAP FOR OIL/GRIT SEPARATORS

900 LONG RIDGE ROAD

STAMFORD, CT

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

COMM. NO.:	DATE:
1988	06/22/2023
	SCALE: 1" = 100'

6/22/2023 3:01 PM G:\JOBFILES\1000\1900\1988_2022 Proposed Development\dwg\1988 Master.dwg

Appendix B

Water Quality Volume Calculations
TSS/OGS Sizing
Pocket Pond and Micropool ED Pond Sizing
Temporary Sediment Trap Calculations

Water Quality Volume Calculations

Project: *900 Long Ridge Road*	**Project #:** *1988*	**Date:** *6/23/2023*
Location: *Stamford, CT*	**By:** *DML*	**Checked:** *DRG*

Pocket Pond

East Pond Basin

Basin Area=	6.813	acres
Impervious Area=	4.772	acres
I=	0.700	[a]
R=	0.680	[b]
WQV=	0.386	ac. ft. [c]

WQV=	**16,826.66**	**ft.^{3}**
WQV PROVIDED=	**38,508**	**ft.^{3}** [d]
WQV 50% REQUIRED=	**8,413.33**	**ft.^{3}** [e]
WQV 50% PROVIDED=	**19,636**	**ft.^{3}** [f]
WQV 10% REQUIRED=	**841.33**	**ft.^{3}**
WQV 10% PROVIDED=	**4,488**	**ft.^{3}** [g]

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

[c] WQV=(1"xRxA)/12; Water Quality Volume, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

[d] Provided by Pocket Pond High Overflow Devices at elevation 88.75' (Appendix C HydroCAD Report)

[e] Table 11-P1-2 Water Quality Volume Distribution in Pond Designs from 2004 Connecticut Stormwater Quality Manual section 11.P1

[f] WQV provided by Pocket Pond below 18" W x 10" H Orifice (lowest outlet) at elevation 87.00' (Appendix C HydroCAD Report)

[g] WQV provided by Forebay (Appendix B Pocket Pond Sizing)

Water Quality Volume Calculations

Project: *900 Long Ridge Road*	**Project #:** *1988*	**Date:** *6/23/2023*
Location: *Stamford, CT*	**By:** *DML*	**Checked:** *DRG*

Micropool Extended Detention Pond

West Pond Basin

Basin Area=	1.336	acres
Impervious Area=	0.703	acres
I=	0.526	[a]
R=	0.524	[b]
WQV=	0.058	ac. ft. [c]

WQV=	**2540.42 ft.^{3}**	
WQV PROVIDED=	**4245.00 ft.^{3}**	[d]
WQV 20% REQUIRED=	**508.08 ft.^{3}**	[e]
WQV 20% PROVIDED=	**947.00 ft.^{3}**	[f]

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

[c] WQV=(1"xRxA)/12; Water Quality Volume, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

[d] Provided by Micropool below Overflow Area Drain at elevation 173.6' (Appendix C HydroCAD Report)

[e] Provided by Pocket Pond High Overflow Devices at elevation 88.75' (Appendix C HydroCAD Report)

[f] Provided by Micropool below 8" Orifice (lowest outlet) at elevation 172.0' (Appendix C HydroCAD Report)

Total Suspended Solids Removal (TSS)

Project:	*900 Long Ridge Road*	**Project #:**	*1988*	**Date:**	*6/23/2023*
Location:	*Stamford, CT*	**By:**	*DML*	**Checked:**	*DRG*

Treatment Train - Pocket Pond

	A	B	C	D	E
	BMP[a]	TSS removal Rate[a]	Starting TSS Load[b]	Amount Removed (B x C)	Remaining Load (C - D)
1	Oil Grit Separator	25.0%	100.0%	25.0%	75.0%
2	Sediment Forebays	25.0%	75.0%	18.8%	56.3%
3	Wet Basins	80.0%	56.3%	45.0%	11.3%

[a] Refer to Table 5-6 from February 2014 Town of Greenwich Drainage Manual section 5.6.3

[b] Equal to the remaining load from the previous BMP

Note, additional treatment is realized via area drains with 2' sumps.

Total Suspended Solids Removal (TSS)

Project:	*900 Long Ridge Road*	**Project #:**	*1988*	**Date:**	*6/23/2023*
Location:	*Stamford, CT*	**By:**	*DML*	**Checked:**	*DRG*

Treatment Train - OGS#1

	A	B	C	D	E
	BMP[a]	TSS removal Rate[a]	Starting TSS Load[b]	Amount Removed (B x C)	Remaining Load (C - D)
1	Oil Grit Separator	25.0%	100.0%	25.0%	75.0%

[a] Refer to Table 5-6 from February 2014 Town of Greenwich Drainage Manual section 5.6.3

[b] Equal to the remaining load from the previous BMP

Note, additional treatment is realized via area drains with 2' sumps.

Total Suspended Solids Removal (TSS)

Project:	*900 Long Ridge Road*	**Project #:**	*1988*	**Date:**	*6/23/2023*
Location:	*Stamford, CT*	**By:**	*DML*	**Checked:**	*DRG*

Treatment Train - OGS #3

	A	B	C	D	E
	BMP[a]	TSS removal Rate[a]	Starting TSS Load[b]	Amount Removed (B x C)	Remaining Load (C - D)
1	Oil Grit Separator	25.0%	100.0%	25.0%	75.0%

[a] Refer to Table 5-6 from February 2014 Town of Greenwich Drainage Manual section 5.6.3

[b] Equal to the remaining load from the previous BMP

Note, additional treatment is realized via area drains with 2' sumps.

Total Suspended Solids Removal (TSS)

Project:	*900 Long Ridge Road*	**Project #:**	*1988*	**Date:**	*6/23/2023*
Location:	*Stamford, CT*	**By:**	*DML*	**Checked:**	*DRG*

Treatment Train - Micropool ED Pond

	A	B	C	D	E
	BMP[a]	TSS removal Rate[a]	Starting TSS Load[b]	Amount Removed (B x C)	Remaining Load (C - D)
1	Sediment Forebays	25.0%	100.0%	25.0%	75.0%
2	Wet Basins	80.0%	75.0%	60.0%	15.0%

[a] Refer to Table 5-6 from February 2014 Town of Greenwich Drainage Manual section 5.6.3

[b] Equal to the remaining load from the previous BMP

Note, additional treatment is realized via area drains with 2' sumps.

Estimated Net Annual Solids Load Reduction
Based on the Rational Rainfall Method

CONTECH ENGINEERED SOLUTIONS

CASCADE separator™

900 Long Ridge Rd

Stamford, CT

OGS #1

AREA	0.40	acres	**CASCADE MODEL**	CS-5
WEIGHTED C	0.95			
TC	5.00	minutes	**RAINFALL STATION**	35

Rainfall Intensity[1] (in/hr)	Percent Rainfall Volume[1]	Hydraulic Loading Rate (gpm/ft2)	Removal Efficiency (%)	Incremental Removal (%)
0.08	41.6%	0.69	100.0	41.6
0.16	21.0%	1.39	100.0	21.0
0.24	11.1%	2.08	100.0	11.1
0.32	6.6%	2.78	100.0	6.6
0.40	3.6%	3.47	100.0	3.6
0.48	2.5%	4.17	100.0	2.5
0.56	1.8%	4.86	100.0	1.8
0.64	1.1%	5.56	100.0	1.1
0.72	1.4%	6.25	100.0	1.4
0.80	1.5%	6.95	100.0	1.5
1.00	1.7%	8.69	100.0	1.7
1.20	1.4%	10.42	100.0	1.4
1.40	1.4%	12.16	100.0	1.4
1.60	0.6%	13.90	98.8	0.6
1.80	0.7%	15.64	97.2	0.6
2.00	0.4%	17.37	95.6	0.4
3.00	1.3%	26.06	87.4	1.2
4.00	0.4%	34.75	79.2	0.3
				99.7
			Removal Efficiency Adjustment[2] =	0.0%
			Predicted % Annual Rainfall Treated =	100.0%
			Predicted Net Annual Load Removal Efficiency =	**99.7%**

1 - Based on 14 years of 15-minute precipitation data from NCDC station 5445, Norfolk 2 SW, Litchfield County, CT

2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

VORTECHS SYSTEM® ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON AN AVERAGE PARTICLE SIZE OF 50 MICRONS
900 LONG RIDGE ROAD
STAMFORD, CT
MODEL NAME VORTECHS 16000
SITE DESIGNATION OGS 2

Design Ratio[1] = $\frac{\text{(4.57 acres) x (0.9) x (449 gpm/cfs)}}{\text{(113.1 sf)}}$ **= 16.3**

Bypass occurs at an elevation of 135.4' (at approximately 50 gpm/sf)

Rainfall Intensity "/hr	Operating Rate[2] gpm/sf	Treated Flow cfs	% Total Rainfall Volume[3]	Rmvl. Effcy[4] (%)	Rel. Effcy (%)
0.02	0.3	0.08	9.7%	100.0%	9.7%
0.04	0.7	0.16	9.7%	100.0%	9.7%
0.06	1.0	0.24	9.8%	100.0%	9.8%
0.08	1.3	0.33	7.7%	98.0%	7.5%
0.10	1.6	0.41	8.0%	98.0%	7.9%
0.12	2.0	0.49	5.4%	98.0%	5.3%
0.14	2.3	0.57	4.7%	97.0%	4.5%
0.16	2.6	0.65	5.5%	97.0%	5.3%
0.18	2.9	0.73	3.5%	97.0%	3.4%
0.20	3.3	0.82	4.1%	95.8%	3.9%
0.25	4.1	1.02	6.5%	94.1%	6.1%
0.30	4.9	1.22	5.5%	94.1%	5.1%
0.35	5.7	1.43	4.0%	92.6%	3.7%
0.40	6.5	1.63	2.0%	91.2%	1.8%
0.45	7.3	1.83	2.1%	90.0%	1.9%
0.50	8.2	2.04	2.0%	88.3%	1.8%
0.75	12.2	3.06	5.1%	82.2%	4.2%
1.00	16.3	4.08	2.5%	75.8%	1.9%
1.50	24.5	6.11	1.8%	64.2%	1.1%
2.00	32.6	8.15	0.5%	55.0%	0.3%
					95.0%
				% rain falling at >2"/hr or bypassing treatment =	0.0%
				Assumed removal efficiency for bypassed flows =	0.0%
				Estimated reduction in efficiency[5] =	6.5%
				Predicted Net Annual Load Removal Efficiency =	**89%**

1 - Design Ratio = (Total Drainage Area) x (Runoff Coefficient) x (cfs to gpm conversion) / Grit Chamber Area
2 - Operating Rate (gpm/sf) = intensity ("/hr) x Design Ratio.
3 - Based on 10 years of hourly precipitation data from NCDC station 806, Bridgeport WSO ARPT, Fairfield County, CT
4 - Based on Contech Construction Products laboratory verified removal of an average particle size of 50 microns (see Technical Bulletin #1).
5- Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

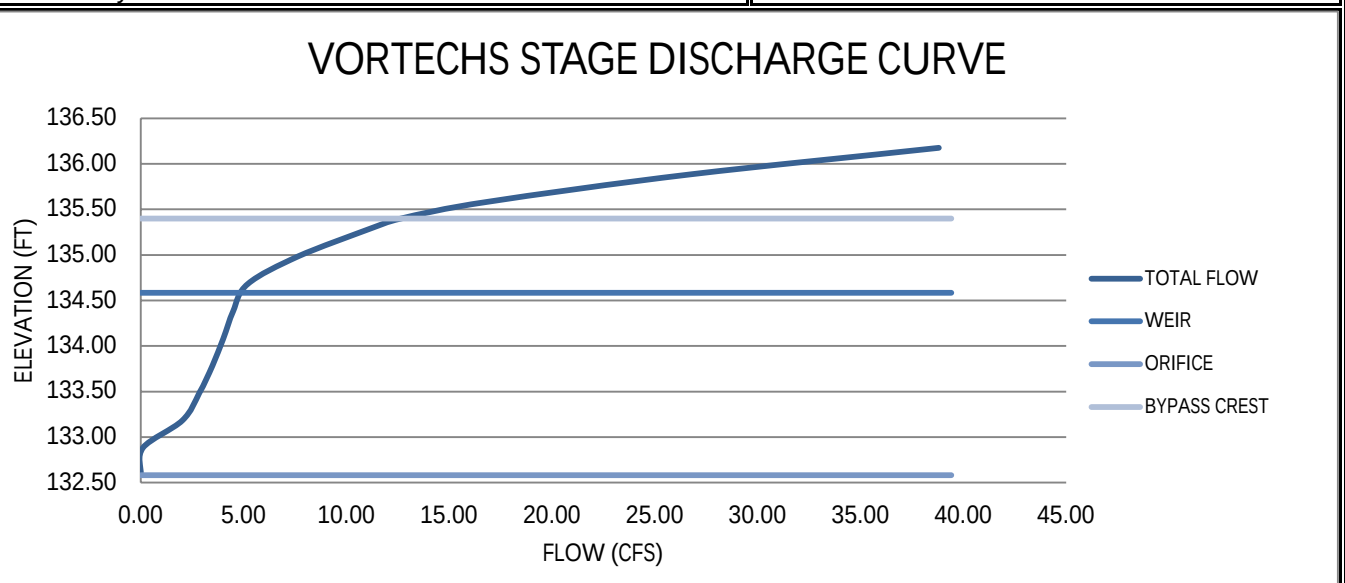
Calculated by: DRA 5/31/2023

VORTECHS SYSTEM® FLOW CALCULATIONS
900 LONG RIDGE ROAD
STAMFORD, CT
MODEL NAME VORTECHS 16000
SITE DESIGNATION OGS 2

Vortechs Orifice	**Vortechs Weir**	**Bypass Weir**
Cd = 0.56	Cd = 3.37	Cd = 3.3
A (ft^2) = 0.81	Weir Crest Length (ft) = 2.75	Crest Length (ft) = 6
Crest Elevation (ft) = 132.58	Crest Elevation (ft) = 134.58	Crest Elev. (ft) = 135.40

Head (ft)	Elevation (ft)	Orifice Flow (cfs)	Weir Flow (cfs)	Bypass Flow (cfs)	Total Flow (cfs)
0.00	132.58	0.00	0.00	0.00	0.00
0.30	132.88	0.11	0.00	0.00	0.11
0.60	133.18	2.03	0.00	0.00	2.03
0.90	133.48	2.85	0.00	0.00	2.85
1.20	133.78	3.48	0.00	0.00	3.48
1.50	134.08	4.02	0.00	0.00	4.02
1.80	134.38	4.49	0.00	0.00	4.49
2.10	134.68	4.92	0.29	0.00	5.21
2.40	134.98	5.31	2.34	0.00	7.65
2.70	135.28	5.67	5.42	0.00	11.10
2.82	135.40	5.81	6.84	0.00	12.65
3.00	135.58	6.02	9.26	1.55	16.83
3.30	135.88	6.34	13.73	6.65	26.72
3.59	136.18	6.64	18.63	13.53	38.81

Calculated by: DRA | 5/31/2023



VORTECHS SYSTEM® ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON AN AVERAGE PARTICLE SIZE OF 50 MICRONS
900 LONG RIDGE ROAD
STAMFORD, CT
MODEL NAME VORTECHS 9000
SITE DESIGNATION OGS 3

CONTECH ENGINEERED SOLUTIONS

Design Ratio[1] = $\frac{\text{(2.67 acres) x (0.9) x (449 gpm/cfs)}}{\text{(63.6 sf)}}$ **= 17**

Bypass occurs at an elevation of 157.1' (at approximately 62 gpm/sf)

Rainfall Intensity "/hr	Operating Rate[2] gpm/sf	Treated Flow cfs	% Total Rainfall Volume[3]	Rmvl. Effcy[4] (%)	Rel. Effcy (%)
0.02	0.3	0.05	9.7%	100.0%	9.7%
0.04	0.7	0.10	9.7%	100.0%	9.7%
0.06	1.0	0.14	9.8%	98.0%	9.6%
0.08	1.4	0.19	7.7%	98.0%	7.5%
0.10	1.7	0.24	8.0%	98.0%	7.9%
0.12	2.0	0.29	5.4%	97.0%	5.3%
0.14	2.4	0.33	4.7%	97.0%	4.5%
0.16	2.7	0.38	5.5%	97.0%	5.3%
0.18	3.1	0.43	3.5%	95.8%	3.3%
0.20	3.4	0.48	4.1%	95.8%	3.9%
0.25	4.3	0.60	6.5%	94.1%	6.1%
0.30	5.1	0.71	5.5%	92.6%	5.1%
0.35	6.0	0.83	4.0%	92.6%	3.7%
0.40	6.8	0.95	2.0%	91.2%	1.8%
0.45	7.7	1.07	2.1%	90.0%	1.9%
0.50	8.5	1.19	2.0%	88.3%	1.8%
0.75	12.8	1.79	5.1%	82.2%	4.2%
1.00	17.0	2.38	2.5%	74.0%	1.8%
1.50	25.5	3.57	1.8%	63.0%	1.1%
2.00	34.0	4.76	0.5%	52.4%	0.3%
					94.6%
				% rain falling at >2"/hr or bypassing treatment =	0.0%
				Assumed removal efficiency for bypassed flows =	0.0%
				Estimated reduction in efficiency[5] =	6.5%
				Predicted Net Annual Load Removal Efficiency =	**88%**

1 - Design Ratio = (Total Drainage Area) x (Runoff Coefficient) x (cfs to gpm conversion) / Grit Chamber Area
2 - Operating Rate (gpm/sf) = intensity ("/hr) x Design Ratio.
3 - Based on 10 years of hourly precipitation data from NCDC station 806, Bridgeport WSO ARPT, Fairfield County, CT
4 - Based on Contech Construction Products laboratory verified removal of an average particle size of 50 microns (see Technical Bulletin #1).
5- Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

Calculated by: DRA 5/31/2023

VORTECHS SYSTEM® FLOW CALCULATIONS
900 LONG RIDGE ROAD
STAMFORD, CT
MODEL NAME VORTECHS 9000
SITE DESIGNATION OGS 3

Vortechs Orifice
Cd = 0.56
A (ft^2) = 0.46
Crest Elevation (ft) = 154.03

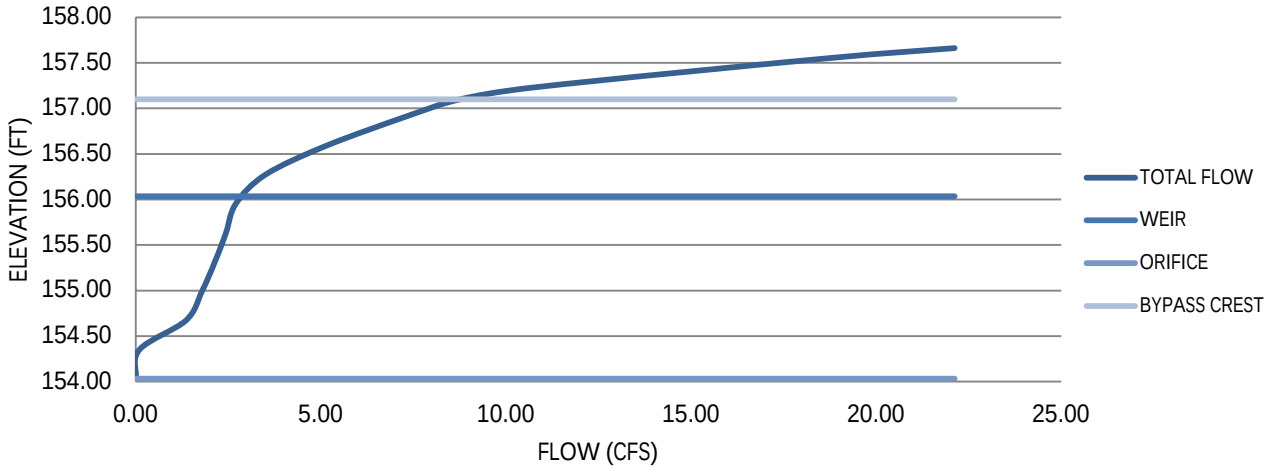
Vortechs Weir
Cd = 3.37
Weir Crest Length (ft) = 1.42
Crest Elevation (ft) = 156.03

Bypass Weir
Cd = 3.3
Crest Length (ft) = 6
Crest Elev. (ft) = 157.10

Head (ft)	Elevation (ft)	Orifice Flow (cfs)	Weir Flow (cfs)	Bypass Flow (cfs)	Total Flow (cfs)
0.00	154.03	0.00	0.00	0.00	0.00
0.32	154.35	0.10	0.00	0.00	0.10
0.64	154.67	1.36	0.00	0.00	1.36
0.96	154.99	1.79	0.00	0.00	1.79
1.28	155.31	2.14	0.00	0.00	2.14
1.60	155.63	2.44	0.00	0.00	2.44
1.92	155.95	2.70	0.00	0.00	2.70
2.24	156.27	2.94	0.56	0.00	3.51
2.56	156.59	3.17	2.00	0.00	5.17
2.88	156.91	3.38	3.95	0.00	7.33
3.07	157.10	3.49	5.27	0.00	8.76
3.20	157.23	3.57	6.29	0.96	10.82
3.52	157.55	3.76	8.96	6.04	18.76
3.63	157.66	3.82	9.95	8.35	22.12

Calculated by: DRA | 5/31/2023

VORTECHS STAGE DISCHARGE CURVE



Elevation-Volume Storage Calculations

Project: *900 Long Ridge Road*	**Project #:** *1988*	**Date:** *6/23/2023*
Location: *Stamford CT*	**By:** *DML*	**Checked:** *DRG*

EAST POCKET POND STORAGE

FULL POND

Elevation (feet)	Δ Elevation (feet)	Area (ft^2)	Avg. Area (ft^2)	Δ Storage (ft^3)	Σ Storage (ft^3)	Σ Storage (ac-ft)
82	0	2,846	2,846	-	-	0
83	1	1,790	2,318	2,318	2,318	0.053
84	1	2,880	2,335	2,335	4,653	0.107
85	1	4,153	3,516	3,516	8,170	0.188
86	1	5,575	4,864	4,864	13,033	0.299
86.5	0.5	6,289	5,932	2,966	15,999	0.367
87	0.5	8,259	7,274	3,637	19,636	0.451
87.5	0.5	10,182	9,220	4,610	24,246	0.557
88	0.5	11,063	10,622	5,311	29,557	0.679
89	1	12,808	11,935	11,935	41,493	0.953
90	1	14,541	13,674	13,674	55,167	1.266
90.65	0.65	15,757	15,149	9,847	65,014	1.493

FOREBAY

Elevation (feet)	Δ Elevation (feet)	Area (ft^2)	Avg. Area (ft^2)	Δ Storage (ft^3)	Σ Storage (ft^3)	Σ Storage (ac-ft)
83	0	346.6	347	-	-	0
84	1	642.1	494	494	494	0.0113487
85	1	1,028.6	835	835	1,330	0.0305257
86	1	1,520.0	1,274	1,274	2,604	0.0597796
86.5	0.5	1,764.8	1,642	821	3,425	0.0786318
87	0.5	2,485.9	2,125	1,063	4,488	0.1030274
88	1	1,520.0	2,003	2,003	6,491	0.1490088
89	1	3,779	2,650	2,650	9,140	0.209833
90	1	4,512	4,146	4,146	13,286	0.3050006
91	1	5,301	4,907	4,907	18,192	0.4176383

Stage-Area-Storage for Pond 12P: Pr. Pocket Pond

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
82.00	0	84.60	6,763	87.20	21,480
82.05	116	84.65	6,938	87.25	21,941
82.10	232	84.70	7,114	87.30	22,402
82.15	348	84.75	7,290	87.35	22,863
82.20	464	84.80	7,466	87.40	23,324
82.25	580	84.85	7,642	87.45	23,785
82.30	695	84.90	7,817	87.50	24,246
82.35	811	84.95	7,993	87.55	24,777
82.40	927	85.00	8,169	87.60	25,308
82.45	1,043	85.05	8,412	87.65	25,839
82.50	1,159	85.10	8,655	87.70	26,370
82.55	1,275	85.15	8,899	87.75	26,902
82.60	1,391	85.20	9,142	87.80	27,433
82.65	1,507	85.25	9,385	87.85	27,964
82.70	1,623	85.30	9,628	87.90	28,495
82.75	1,739	85.35	9,871	87.95	29,026
82.80	1,854	85.40	10,115	88.00	29,557
82.85	1,970	85.45	10,358	88.05	30,154
82.90	2,086	85.50	10,601	88.10	30,750
82.95	2,202	85.55	10,844	88.15	31,347
83.00	2,318	85.60	11,087	88.20	31,944
83.05	2,435	85.65	11,331	88.25	32,541
83.10	2,551	85.70	11,574	88.30	33,137
83.15	2,668	85.75	11,817	88.35	33,734
83.20	2,785	85.80	12,060	88.40	34,331
83.25	2,902	85.85	12,303	88.45	34,928
83.30	3,018	85.90	12,547	88.50	35,525
83.35	3,135	85.95	12,790	88.55	36,121
83.40	3,252	86.00	13,033	88.60	36,718
83.45	3,369	86.05	13,330	88.65	37,315
83.50	3,486	86.10	13,626	88.70	37,912
83.55	3,602	86.15	13,923	88.75	38,508
83.60	3,719	86.20	14,219	88.80	39,105
83.65	3,836	86.25	14,516	88.85	39,702
83.70	3,953	86.30	14,813	88.90	40,299
83.75	4,069	86.35	15,109	88.95	40,895
83.80	4,186	86.40	15,406	89.00	41,492
83.85	4,303	86.45	15,702	89.05	42,176
83.90	4,420	86.50	15,999	89.10	42,859
83.95	4,536	86.55	16,363	89.15	43,543
84.00	4,653	86.60	16,726	89.20	44,227
84.05	4,829	86.65	17,090	89.25	44,911
84.10	5,005	86.70	17,454	89.30	45,594
84.15	5,180	86.75	17,818	89.35	46,278
84.20	5,356	86.80	18,181	89.40	46,962
84.25	5,532	86.85	18,545	89.45	47,645
84.30	5,708	86.90	18,909	89.50	48,329
84.35	5,884	86.95	19,272	89.55	49,013
84.40	6,059	87.00	19,636	89.60	49,696
84.45	6,235	87.05	20,097	89.65	50,380
84.50	6,411	87.10	20,558	89.70	51,064
84.55	6,587	87.15	21,019	89.75	51,748

Stage-Area-Storage for Pond 12P: Pr. Pocket Pond (continued)

Elevation (feet)	Storage (cubic-feet)
89.80	52,431
89.85	53,115
89.90	53,799
89.95	54,482
90.00	55,166
90.05	55,923
90.10	56,681
90.15	57,438
90.20	58,196
90.25	58,953
90.30	59,711
90.35	60,468
90.40	61,226
90.45	61,983
90.50	62,741
90.55	63,498
90.60	64,256
90.65	**65,013**

Elevation-Volume Storage Calculations

Project: *900 Long Ridge Road*	**Project #:** *1988*	**Date:** *6/20/2023*
Location: *Stamford CT*	**By:** *DML*	**Checked:** *DRG*

MICROPOOL EXTENDED DETENTION POND STORAGE

FULL POND

Elevation (feet)	Δ Elevation (feet)	Area (ft^2)	Avg. Area (ft^2)	Δ Storage (ft^3)	Σ Storage (ft^3)	Σ Storage (ac-ft)
171	0	606	606	-	-	0
172	1	1,288	947	947	947	0.0217401
173	1	2,188	1,738	1,738	2,685	0.0616414
174	1	3,013	2,600	2,600	5,285	0.1213372
175	1	4,048	3,531	3,531	8,816	0.2023875

FOREBAY

Elevation (feet)	Δ Elevation (feet)	Area (ft^2)	Avg. Area (ft^2)	Δ Storage (ft^3)	Σ Storage (ft^3)	Σ Storage (ac-ft)
171	0	177	177	-	-	0
172	1	508	342	342	342	0.0078535

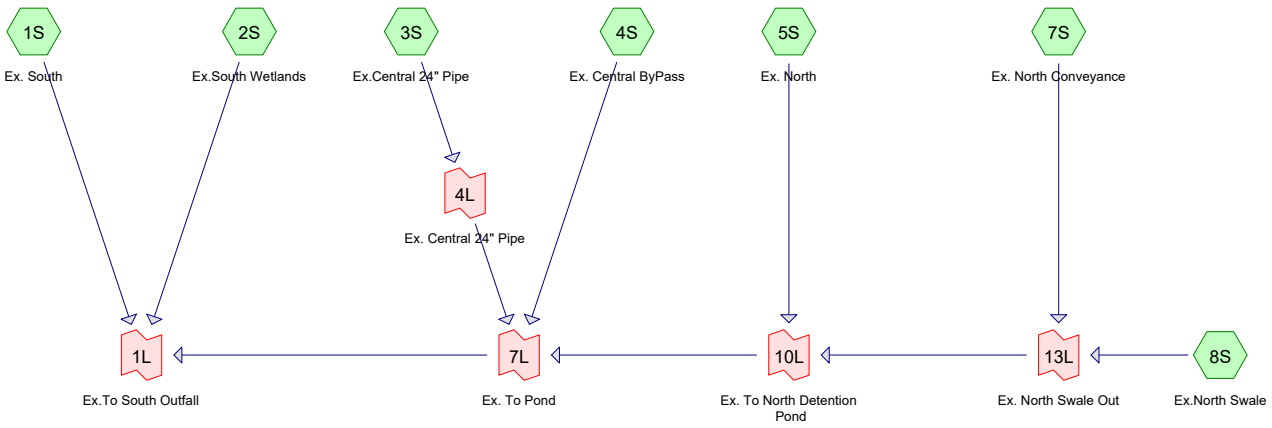
Stage-Area-Storage for Pond 13P: Pr. MicroPool ED Pond

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
171.00	0	173.60	4,245	176.20	8,816
171.05	47	173.65	4,375	176.25	8,816
171.10	95	173.70	4,505	176.30	8,816
171.15	142	173.75	4,635	176.35	8,816
171.20	189	173.80	4,765		
171.25	237	173.85	4,895		
171.30	284	173.90	5,025		
171.35	331	173.95	5,155		
171.40	379	174.00	5,285		
171.45	426	174.05	5,462		
171.50	474	174.10	5,638		
171.55	521	174.15	5,815		
171.60	568	174.20	5,991		
171.65	616	174.25	6,168		
171.70	663	174.30	6,344		
171.75	710	174.35	6,521		
171.80	758	174.40	6,697		
171.85	805	174.45	6,874		
171.90	852	174.50	7,051		
171.95	900	174.55	7,227		
172.00	947	174.60	7,404		
172.05	1,034	174.65	7,580		
172.10	1,121	174.70	7,757		
172.15	1,208	174.75	7,933		
172.20	1,295	174.80	8,110		
172.25	1,382	174.85	8,286		
172.30	1,468	174.90	8,463		
172.35	1,555	174.95	8,639		
172.40	1,642	175.00	**8,816**		
172.45	1,729	175.05	8,816		
172.50	1,816	175.10	8,816		
172.55	1,903	175.15	8,816		
172.60	1,990	175.20	8,816		
172.65	2,077	175.25	8,816		
172.70	2,164	175.30	8,816		
172.75	2,251	175.35	8,816		
172.80	2,337	175.40	8,816		
172.85	2,424	175.45	8,816		
172.90	2,511	175.50	8,816		
172.95	2,598	175.55	8,816		
173.00	2,685	175.60	8,816		
173.05	2,815	175.65	8,816		
173.10	2,945	175.70	8,816		
173.15	3,075	175.75	8,816		
173.20	3,205	175.80	8,816		
173.25	3,335	175.85	8,816		
173.30	3,465	175.90	8,816		
173.35	3,595	175.95	8,816		
173.40	3,725	176.00	8,816		
173.45	3,855	176.05	8,816		
173.50	3,985	176.10	8,816		
173.55	4,115	176.15	8,816		

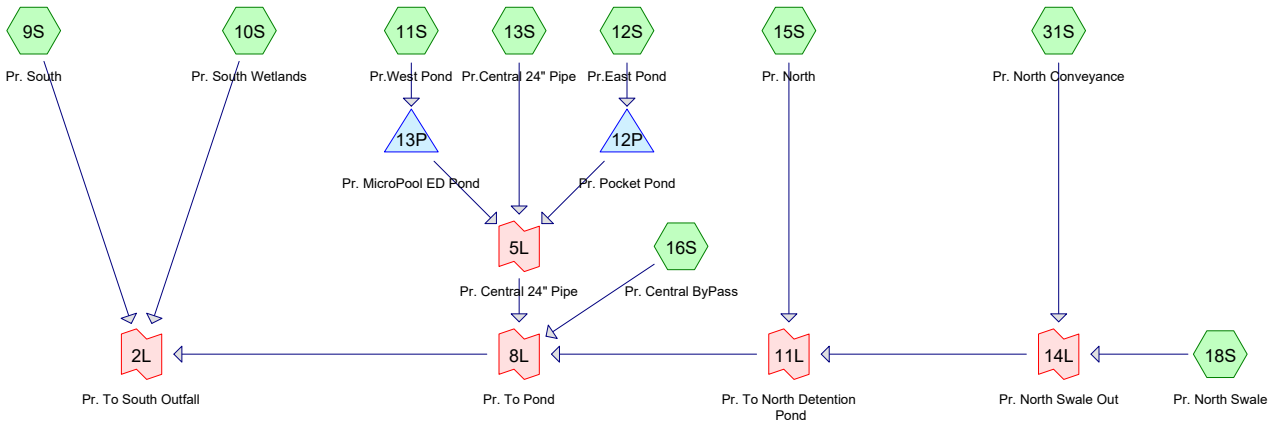
Appendix C

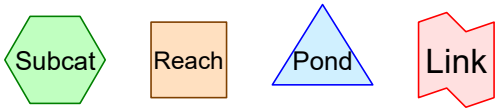
HydroCAD Report

EXISTING CONDITIONS



PROPOSED CONDITIONS





Routing Diagram for 1988 HydroCAD (2023-06-23)
Prepared by Redniss & Mead, Inc, Printed 6/22/2023
HydroCAD® 10.20-3c s/n 08721 © 2023 HydroCAD Software Solutions LLC

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Ex. South Runoff Area=609,337 sf 15.57% Impervious Runoff Depth>0.88"
Flow Length=2,071' Tc=26.8 min CN=73 Runoff=7.94 cfs 44,441 cf

Subcatchment2S: Ex.South Wetlands Runoff Area=55,451 sf 0.00% Impervious Runoff Depth>0.41"
Flow Length=385' Tc=5.5 min CN=62 Runoff=0.39 cfs 1,911 cf

Subcatchment3S: Ex.Central 24" Pipe Runoff Area=602,842 sf 42.50% Impervious Runoff Depth>1.28"
Flow Length=1,924' Tc=12.4 min CN=80 Runoff=16.56 cfs 64,117 cf

Subcatchment4S: Ex. Central ByPass Runoff Area=415,307 sf 10.64% Impervious Runoff Depth>0.41"
Flow Length=536' Tc=13.7 min CN=62 Runoff=2.24 cfs 14,263 cf

Subcatchment5S: Ex. North Runoff Area=159,775 sf 7.18% Impervious Runoff Depth>0.88"
Flow Length=731' Tc=24.4 min CN=73 Runoff=2.16 cfs 11,661 cf

Subcatchment7S: Ex. North Conveyance Runoff Area=294,527 sf 47.83% Impervious Runoff Depth>1.54"
Flow Length=424' Tc=14.4 min CN=84 Runoff=9.42 cfs 37,907 cf

Subcatchment8S: Ex.North Swale Runoff Area=76,744 sf 1.70% Impervious Runoff Depth>0.60"
Flow Length=1,170' Tc=11.4 min CN=67 Runoff=0.83 cfs 3,854 cf

Subcatchment9S: Pr. South Runoff Area=612,302 sf 14.65% Impervious Runoff Depth>0.88"
Flow Length=2,071' Tc=26.8 min CN=73 Runoff=7.98 cfs 44,657 cf

Subcatchment10S: Pr. South Wetlands Runoff Area=54,807 sf 0.00% Impervious Runoff Depth>0.41"
Flow Length=300' Tc=5.0 min CN=62 Runoff=0.39 cfs 1,889 cf

Subcatchment11S: Pr.West Pond Runoff Area=58,199 sf 57.82% Impervious Runoff Depth>1.41"
Flow Length=364' Tc=5.8 min CN=82 Runoff=2.21 cfs 6,832 cf

Subcatchment12S: Pr.East Pond Runoff Area=296,757 sf 74.36% Impervious Runoff Depth>2.02"
Tc=5.0 min CN=90 Runoff=16.62 cfs 49,931 cf

Subcatchment13S: Pr.Central 24" Pipe Runoff Area=311,194 sf 21.80% Impervious Runoff Depth>0.83"
Flow Length=710' Tc=17.2 min CN=72 Runoff=4.50 cfs 21,467 cf

Subcatchment15S: Pr. North Runoff Area=159,775 sf 7.18% Impervious Runoff Depth>0.88"
Flow Length=731' Tc=24.4 min CN=73 Runoff=2.16 cfs 11,661 cf

Subcatchment16S: Pr. Central ByPass Runoff Area=367,117 sf 12.09% Impervious Runoff Depth>0.38"
Flow Length=536' Tc=13.7 min CN=61 Runoff=1.70 cfs 11,573 cf

Subcatchment18S: Pr. North Swale Runoff Area=76,739 sf 2.20% Impervious Runoff Depth>0.60"
Flow Length=1,170' Tc=11.4 min CN=67 Runoff=0.83 cfs 3,854 cf

Subcatchment31S: Pr. North Conveyance Runoff Area=277,093 sf 49.34% Impervious Runoff Depth>1.54"
Flow Length=424' Tc=14.4 min CN=84 Runoff=8.87 cfs 35,663 cf

Pond 12P: Pr. Pocket Pond	Peak Elev=88.35' Storage=33,777 cf Inflow=16.62 cfs 49,931 cf Outflow=5.77 cfs 48,894 cf
Pond 13P: Pr. MicroPool ED Pond	Peak Elev=172.80' Storage=2,337 cf Inflow=2.21 cfs 6,832 cf Outflow=1.15 cfs 6,677 cf
Link 1L: Ex.To South Outfall	Inflow=35.34 cfs 178,153 cf Primary=35.34 cfs 178,153 cf
Link 2L: Pr. To South Outfall	Inflow=30.58 cfs 186,335 cf Primary=30.58 cfs 186,335 cf
Link 4L: Ex. Central 24" Pipe	Inflow=16.56 cfs 64,117 cf Primary=16.56 cfs 64,117 cf
Link 5L: Pr. Central 24" Pipe	Inflow=11.37 cfs 77,038 cf Primary=11.37 cfs 77,038 cf
Link 7L: Ex. To Pond	Inflow=30.12 cfs 131,802 cf Primary=30.12 cfs 131,802 cf
Link 8L: Pr. To Pond	Inflow=24.01 cfs 139,789 cf Primary=24.01 cfs 139,789 cf
Link 10L: Ex. To North Detention Pond	Inflow=11.79 cfs 53,422 cf Primary=11.79 cfs 53,422 cf
Link 11L: Pr. To North Detention Pond	Inflow=11.23 cfs 51,178 cf Primary=11.23 cfs 51,178 cf
Link 13L: Ex. North Swale Out	Inflow=10.24 cfs 41,761 cf Primary=10.24 cfs 41,761 cf
Link 14L: Pr. North Swale Out	Inflow=9.68 cfs 39,517 cf Primary=9.68 cfs 39,517 cf

Total Runoff Area = 4,427,966 sf Runoff Volume = 365,680 cf Average Runoff Depth = 0.99"
73.92% Pervious = 3,272,938 sf 26.08% Impervious = 1,155,028 sf

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Ex. South Runoff Area=609,337 sf 15.57% Impervious Runoff Depth>1.28"
Flow Length=2,071' Tc=26.8 min CN=73 Runoff=12.04 cfs 64,960 cf

Subcatchment2S: Ex.South Wetlands Runoff Area=55,451 sf 0.00% Impervious Runoff Depth>0.69"
Flow Length=385' Tc=5.5 min CN=62 Runoff=0.83 cfs 3,191 cf

Subcatchment3S: Ex.Central 24" Pipe Runoff Area=602,842 sf 42.50% Impervious Runoff Depth>1.76"
Flow Length=1,924' Tc=12.4 min CN=80 Runoff=23.13 cfs 88,386 cf

Subcatchment4S: Ex. Central ByPass Runoff Area=415,307 sf 10.64% Impervious Runoff Depth>0.69"
Flow Length=536' Tc=13.7 min CN=62 Runoff=4.68 cfs 23,835 cf

Subcatchment5S: Ex. North Runoff Area=159,775 sf 7.18% Impervious Runoff Depth>1.28"
Flow Length=731' Tc=24.4 min CN=73 Runoff=3.29 cfs 17,044 cf

Subcatchment7S: Ex. North Conveyance Runoff Area=294,527 sf 47.83% Impervious Runoff Depth>2.07"
Flow Length=424' Tc=14.4 min CN=84 Runoff=12.64 cfs 50,759 cf

Subcatchment8S: Ex.North Swale Runoff Area=76,744 sf 1.70% Impervious Runoff Depth>0.94"
Flow Length=1,170' Tc=11.4 min CN=67 Runoff=1.44 cfs 6,000 cf

Subcatchment9S: Pr. South Runoff Area=612,302 sf 14.65% Impervious Runoff Depth>1.28"
Flow Length=2,071' Tc=26.8 min CN=73 Runoff=12.10 cfs 65,276 cf

Subcatchment10S: Pr. South Wetlands Runoff Area=54,807 sf 0.00% Impervious Runoff Depth>0.69"
Flow Length=300' Tc=5.0 min CN=62 Runoff=0.83 cfs 3,155 cf

Subcatchment11S: Pr.West Pond Runoff Area=58,199 sf 57.82% Impervious Runoff Depth>1.91"
Flow Length=364' Tc=5.8 min CN=82 Runoff=3.03 cfs 9,279 cf

Subcatchment12S: Pr.East Pond Runoff Area=296,757 sf 74.36% Impervious Runoff Depth>2.60"
Tc=5.0 min CN=90 Runoff=21.17 cfs 64,194 cf

Subcatchment13S: Pr.Central 24" Pipe Runoff Area=311,194 sf 21.80% Impervious Runoff Depth>1.22"
Flow Length=710' Tc=17.2 min CN=72 Runoff=6.99 cfs 31,670 cf

Subcatchment15S: Pr. North Runoff Area=159,775 sf 7.18% Impervious Runoff Depth>1.28"
Flow Length=731' Tc=24.4 min CN=73 Runoff=3.29 cfs 17,044 cf

Subcatchment16S: Pr. Central ByPass Runoff Area=367,117 sf 12.09% Impervious Runoff Depth>0.64"
Flow Length=536' Tc=13.7 min CN=61 Runoff=3.71 cfs 19,675 cf

Subcatchment18S: Pr. North Swale Runoff Area=76,739 sf 2.20% Impervious Runoff Depth>0.94"
Flow Length=1,170' Tc=11.4 min CN=67 Runoff=1.44 cfs 6,000 cf

Subcatchment31S: Pr. North Conveyance Runoff Area=277,093 sf 49.34% Impervious Runoff Depth>2.07"
Flow Length=424' Tc=14.4 min CN=84 Runoff=11.89 cfs 47,755 cf

Pond 12P: Pr. Pocket Pond Peak Elev=88.66' Storage=37,459 cf Inflow=21.17 cfs 64,194 cf
Outflow=7.94 cfs 63,014 cf

Pond 13P: Pr. MicroPool ED Pond Peak Elev=173.07' Storage=2,859 cf Inflow=3.03 cfs 9,279 cf
Outflow=1.44 cfs 9,102 cf

Link 1L: Ex.To South Outfall Inflow=52.27 cfs 254,176 cf
Primary=52.27 cfs 254,176 cf

Link 2L: Pr. To South Outfall Inflow=45.62 cfs 262,691 cf
Primary=45.62 cfs 262,691 cf

Link 4L: Ex. Central 24" Pipe Inflow=23.13 cfs 88,386 cf
Primary=23.13 cfs 88,386 cf

Link 5L: Pr. Central 24" Pipe Inflow=16.26 cfs 103,786 cf
Primary=16.26 cfs 103,786 cf

Link 7L: Ex. To Pond Inflow=43.83 cfs 186,024 cf
Primary=43.83 cfs 186,024 cf

Link 8L: Pr. To Pond Inflow=35.34 cfs 194,260 cf
Primary=35.34 cfs 194,260 cf

Link 10L: Ex. To North Detention Pond Inflow=16.50 cfs 73,804 cf
Primary=16.50 cfs 73,804 cf

Link 11L: Pr. To North Detention Pond Inflow=15.75 cfs 70,799 cf
Primary=15.75 cfs 70,799 cf

Link 13L: Ex. North Swale Out Inflow=14.06 cfs 56,759 cf
Primary=14.06 cfs 56,759 cf

Link 14L: Pr. North Swale Out Inflow=13.31 cfs 53,754 cf
Primary=13.31 cfs 53,754 cf

Total Runoff Area = 4,427,966 sf Runoff Volume = 518,223 cf Average Runoff Depth = 1.40"
73.92% Pervious = 3,272,938 sf 26.08% Impervious = 1,155,028 sf

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Ex. South Runoff Area=609,337 sf 15.57% Impervious Runoff Depth>2.01"
Flow Length=2,071' Tc=26.8 min CN=73 Runoff=19.46 cfs 102,157 cf

Subcatchment2S: Ex.South Wetlands Runoff Area=55,451 sf 0.00% Impervious Runoff Depth>1.24"
Flow Length=385' Tc=5.5 min CN=62 Runoff=1.70 cfs 5,717 cf

Subcatchment3S: Ex.Central 24" Pipe Runoff Area=602,842 sf 42.50% Impervious Runoff Depth>2.60"
Flow Length=1,924' Tc=12.4 min CN=80 Runoff=34.42 cfs 130,636 cf

Subcatchment4S: Ex. Central ByPass Runoff Area=415,307 sf 10.64% Impervious Runoff Depth>1.23"
Flow Length=536' Tc=13.7 min CN=62 Runoff=9.67 cfs 42,711 cf

Subcatchment5S: Ex. North Runoff Area=159,775 sf 7.18% Impervious Runoff Depth>2.01"
Flow Length=731' Tc=24.4 min CN=73 Runoff=5.32 cfs 26,803 cf

Subcatchment7S: Ex. North Conveyance Runoff Area=294,527 sf 47.83% Impervious Runoff Depth>2.96"
Flow Length=424' Tc=14.4 min CN=84 Runoff=18.05 cfs 72,697 cf

Subcatchment8S: Ex.North Swale Runoff Area=76,744 sf 1.70% Impervious Runoff Depth>1.57"
Flow Length=1,170' Tc=11.4 min CN=67 Runoff=2.59 cfs 10,055 cf

Subcatchment9S: Pr. South Runoff Area=612,302 sf 14.65% Impervious Runoff Depth>2.01"
Flow Length=2,071' Tc=26.8 min CN=73 Runoff=19.56 cfs 102,654 cf

Subcatchment10S: Pr. South Wetlands Runoff Area=54,807 sf 0.00% Impervious Runoff Depth>1.24"
Flow Length=300' Tc=5.0 min CN=62 Runoff=1.71 cfs 5,651 cf

Subcatchment11S: Pr.West Pond Runoff Area=58,199 sf 57.82% Impervious Runoff Depth>2.78"
Flow Length=364' Tc=5.8 min CN=82 Runoff=4.40 cfs 13,495 cf

Subcatchment12S: Pr.East Pond Runoff Area=296,757 sf 74.36% Impervious Runoff Depth>3.56"
Tc=5.0 min CN=90 Runoff=28.59 cfs 87,934 cf

Subcatchment13S: Pr.Central 24" Pipe Runoff Area=311,194 sf 21.80% Impervious Runoff Depth>1.94"
Flow Length=710' Tc=17.2 min CN=72 Runoff=11.48 cfs 50,281 cf

Subcatchment15S: Pr. North Runoff Area=159,775 sf 7.18% Impervious Runoff Depth>2.01"
Flow Length=731' Tc=24.4 min CN=73 Runoff=5.32 cfs 26,803 cf

Subcatchment16S: Pr. Central ByPass Runoff Area=367,117 sf 12.09% Impervious Runoff Depth>1.17"
Flow Length=536' Tc=13.7 min CN=61 Runoff=7.97 cfs 35,810 cf

Subcatchment18S: Pr. North Swale Runoff Area=76,739 sf 2.20% Impervious Runoff Depth>1.57"
Flow Length=1,170' Tc=11.4 min CN=67 Runoff=2.59 cfs 10,055 cf

Subcatchment31S: Pr. North Conveyance Runoff Area=277,093 sf 49.34% Impervious Runoff Depth>2.96"
Flow Length=424' Tc=14.4 min CN=84 Runoff=16.98 cfs 68,394 cf

Pond 12P: Pr. Pocket Pond	Peak Elev=88.99' Storage=41,341 cf Inflow=28.59 cfs 87,934 cf Outflow=14.64 cfs 86,525 cf
Pond 13P: Pr. MicroPool ED Pond	Peak Elev=173.47' Storage=3,914 cf Inflow=4.40 cfs 13,495 cf Outflow=1.79 cfs 13,285 cf
Link 1L: Ex.To South Outfall	Inflow=82.38 cfs 390,776 cf Primary=82.38 cfs 390,776 cf
Link 2L: Pr. To South Outfall	Inflow=75.22 cfs 399,457 cf Primary=75.22 cfs 399,457 cf
Link 4L: Ex. Central 24" Pipe	Inflow=34.42 cfs 130,636 cf Primary=34.42 cfs 130,636 cf
Link 5L: Pr. Central 24" Pipe	Inflow=27.60 cfs 150,091 cf Primary=27.60 cfs 150,091 cf
Link 7L: Ex. To Pond	Inflow=68.06 cfs 282,902 cf Primary=68.06 cfs 282,902 cf
Link 8L: Pr. To Pond	Inflow=59.08 cfs 291,152 cf Primary=59.08 cfs 291,152 cf
Link 10L: Ex. To North Detention Pond	Inflow=24.64 cfs 109,555 cf Primary=24.64 cfs 109,555 cf
Link 11L: Pr. To North Detention Pond	Inflow=23.58 cfs 105,251 cf Primary=23.58 cfs 105,251 cf
Link 13L: Ex. North Swale Out	Inflow=20.58 cfs 82,752 cf Primary=20.58 cfs 82,752 cf
Link 14L: Pr. North Swale Out	Inflow=19.51 cfs 78,449 cf Primary=19.51 cfs 78,449 cf

Total Runoff Area = 4,427,966 sf Runoff Volume = 791,852 cf Average Runoff Depth = 2.15"
73.92% Pervious = 3,272,938 sf 26.08% Impervious = 1,155,028 sf

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Ex. South Runoff Area=609,337 sf 15.57% Impervious Runoff Depth>2.67"
Flow Length=2,071' Tc=26.8 min CN=73 Runoff=26.07 cfs 135,616 cf

Subcatchment2S: Ex.South Wetlands Runoff Area=55,451 sf 0.00% Impervious Runoff Depth>1.76"
Flow Length=385' Tc=5.5 min CN=62 Runoff=2.53 cfs 8,133 cf

Subcatchment3S: Ex.Central 24" Pipe Runoff Area=602,842 sf 42.50% Impervious Runoff Depth>3.33"
Flow Length=1,924' Tc=12.4 min CN=80 Runoff=44.10 cfs 167,497 cf

Subcatchment4S: Ex. Central ByPass Runoff Area=415,307 sf 10.64% Impervious Runoff Depth>1.76"
Flow Length=536' Tc=13.7 min CN=62 Runoff=14.46 cfs 60,774 cf

Subcatchment5S: Ex. North Runoff Area=159,775 sf 7.18% Impervious Runoff Depth>2.67"
Flow Length=731' Tc=24.4 min CN=73 Runoff=7.14 cfs 35,580 cf

Subcatchment7S: Ex. North Conveyance Runoff Area=294,527 sf 47.83% Impervious Runoff Depth>3.73"
Flow Length=424' Tc=14.4 min CN=84 Runoff=22.61 cfs 91,556 cf

Subcatchment8S: Ex.North Swale Runoff Area=76,744 sf 1.70% Impervious Runoff Depth>2.16"
Flow Length=1,170' Tc=11.4 min CN=67 Runoff=3.65 cfs 13,817 cf

Subcatchment9S: Pr. South Runoff Area=612,302 sf 14.65% Impervious Runoff Depth>2.67"
Flow Length=2,071' Tc=26.8 min CN=73 Runoff=26.20 cfs 136,276 cf

Subcatchment10S: Pr. South Wetlands Runoff Area=54,807 sf 0.00% Impervious Runoff Depth>1.76"
Flow Length=300' Tc=5.0 min CN=62 Runoff=2.55 cfs 8,039 cf

Subcatchment11S: Pr.West Pond Runoff Area=58,199 sf 57.82% Impervious Runoff Depth>3.54"
Flow Length=364' Tc=5.8 min CN=82 Runoff=5.56 cfs 17,145 cf

Subcatchment12S: Pr.East Pond Runoff Area=296,757 sf 74.36% Impervious Runoff Depth>4.37"
Tc=5.0 min CN=90 Runoff=34.73 cfs 107,972 cf

Subcatchment13S: Pr.Central 24" Pipe Runoff Area=311,194 sf 21.80% Impervious Runoff Depth>2.59"
Flow Length=710' Tc=17.2 min CN=72 Runoff=15.49 cfs 67,100 cf

Subcatchment15S: Pr. North Runoff Area=159,775 sf 7.18% Impervious Runoff Depth>2.67"
Flow Length=731' Tc=24.4 min CN=73 Runoff=7.14 cfs 35,580 cf

Subcatchment16S: Pr. Central ByPass Runoff Area=367,117 sf 12.09% Impervious Runoff Depth>1.68"
Flow Length=536' Tc=13.7 min CN=61 Runoff=12.09 cfs 51,357 cf

Subcatchment18S: Pr. North Swale Runoff Area=76,739 sf 2.20% Impervious Runoff Depth>2.16"
Flow Length=1,170' Tc=11.4 min CN=67 Runoff=3.64 cfs 13,816 cf

Subcatchment31S: Pr. North Conveyance Runoff Area=277,093 sf 49.34% Impervious Runoff Depth>3.73"
Flow Length=424' Tc=14.4 min CN=84 Runoff=21.27 cfs 86,136 cf

Pond 12P: Pr. Pocket Pond	Peak Elev=89.20' Storage=44,207 cf Inflow=34.73 cfs 107,972 cf Outflow=20.72 cfs 106,379 cf
Pond 13P: Pr. MicroPool ED Pond	Peak Elev=173.66' Storage=4,403 cf Inflow=5.56 cfs 17,145 cf Outflow=3.46 cfs 16,916 cf
Link 1L: Ex.To South Outfall	Inflow=109.08 cfs 512,972 cf Primary=109.08 cfs 512,972 cf
Link 2L: Pr. To South Outfall	Inflow=102.09 cfs 521,599 cf Primary=102.09 cfs 521,599 cf
Link 4L: Ex. Central 24" Pipe	Inflow=44.10 cfs 167,497 cf Primary=44.10 cfs 167,497 cf
Link 5L: Pr. Central 24" Pipe	Inflow=38.57 cfs 190,395 cf Primary=38.57 cfs 190,395 cf
Link 7L: Ex. To Pond	Inflow=89.36 cfs 369,224 cf Primary=89.36 cfs 369,224 cf
Link 8L: Pr. To Pond	Inflow=80.92 cfs 377,284 cf Primary=80.92 cfs 377,284 cf
Link 10L: Ex. To North Detention Pond	Inflow=31.67 cfs 140,953 cf Primary=31.67 cfs 140,953 cf
Link 11L: Pr. To North Detention Pond	Inflow=30.34 cfs 135,533 cf Primary=30.34 cfs 135,533 cf
Link 13L: Ex. North Swale Out	Inflow=26.16 cfs 105,373 cf Primary=26.16 cfs 105,373 cf
Link 14L: Pr. North Swale Out	Inflow=24.82 cfs 99,953 cf Primary=24.82 cfs 99,953 cf

Total Runoff Area = 4,427,966 sf Runoff Volume = 1,036,394 cf Average Runoff Depth = 2.81"
73.92% Pervious = 3,272,938 sf 26.08% Impervious = 1,155,028 sf

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Ex. South Runoff Area=609,337 sf 15.57% Impervious Runoff Depth>3.63"
Flow Length=2,071' Tc=26.8 min CN=73 Runoff=35.66 cfs 184,411 cf

Subcatchment2S: Ex.South Wetlands Runoff Area=55,451 sf 0.00% Impervious Runoff Depth>2.56"
Flow Length=385' Tc=5.5 min CN=62 Runoff=3.80 cfs 11,818 cf

Subcatchment3S: Ex.Central 24" Pipe Runoff Area=602,842 sf 42.50% Impervious Runoff Depth>4.38"
Flow Length=1,924' Tc=12.4 min CN=80 Runoff=57.68 cfs 220,077 cf

Subcatchment4S: Ex. Central ByPass Runoff Area=415,307 sf 10.64% Impervious Runoff Depth>2.55"
Flow Length=536' Tc=13.7 min CN=62 Runoff=21.78 cfs 88,331 cf

Subcatchment5S: Ex. North Runoff Area=159,775 sf 7.18% Impervious Runoff Depth>3.63"
Flow Length=731' Tc=24.4 min CN=73 Runoff=9.76 cfs 48,380 cf

Subcatchment7S: Ex. North Conveyance Runoff Area=294,527 sf 47.83% Impervious Runoff Depth>4.81"
Flow Length=424' Tc=14.4 min CN=84 Runoff=28.93 cfs 118,178 cf

Subcatchment8S: Ex.North Swale Runoff Area=76,744 sf 1.70% Impervious Runoff Depth>3.04"
Flow Length=1,170' Tc=11.4 min CN=67 Runoff=5.21 cfs 19,429 cf

Subcatchment9S: Pr. South Runoff Area=612,302 sf 14.65% Impervious Runoff Depth>3.63"
Flow Length=2,071' Tc=26.8 min CN=73 Runoff=35.83 cfs 185,308 cf

Subcatchment10S: Pr. South Wetlands Runoff Area=54,807 sf 0.00% Impervious Runoff Depth>2.56"
Flow Length=300' Tc=5.0 min CN=62 Runoff=3.82 cfs 11,682 cf

Subcatchment11S: Pr.West Pond Runoff Area=58,199 sf 57.82% Impervious Runoff Depth>4.60"
Flow Length=364' Tc=5.8 min CN=82 Runoff=7.19 cfs 22,324 cf

Subcatchment12S: Pr.East Pond Runoff Area=296,757 sf 74.36% Impervious Runoff Depth>5.50"
Tc=5.0 min CN=90 Runoff=43.15 cfs 135,907 cf

Subcatchment13S: Pr.Central 24" Pipe Runoff Area=311,194 sf 21.80% Impervious Runoff Depth>3.54"
Flow Length=710' Tc=17.2 min CN=72 Runoff=21.28 cfs 91,714 cf

Subcatchment15S: Pr. North Runoff Area=159,775 sf 7.18% Impervious Runoff Depth>3.63"
Flow Length=731' Tc=24.4 min CN=73 Runoff=9.76 cfs 48,380 cf

Subcatchment16S: Pr. Central ByPass Runoff Area=367,117 sf 12.09% Impervious Runoff Depth>2.46"
Flow Length=536' Tc=13.7 min CN=61 Runoff=18.43 cfs 75,193 cf

Subcatchment18S: Pr. North Swale Runoff Area=76,739 sf 2.20% Impervious Runoff Depth>3.04"
Flow Length=1,170' Tc=11.4 min CN=67 Runoff=5.21 cfs 19,428 cf

Subcatchment31S: Pr. North Conveyance Runoff Area=277,093 sf 49.34% Impervious Runoff Depth>4.81"
Flow Length=424' Tc=14.4 min CN=84 Runoff=27.22 cfs 111,182 cf

Pond 12P: Pr. Pocket Pond Peak Elev=89.45' Storage=47,647 cf Inflow=43.15 cfs 135,907 cf
Outflow=29.22 cfs 134,094 cf

Pond 13P: Pr. MicroPool ED Pond Peak Elev=173.83' Storage=4,849 cf Inflow=7.19 cfs 22,324 cf
Outflow=5.30 cfs 22,069 cf

Link 1L: Ex.To South Outfall Inflow=147.50 cfs 690,623 cf
Primary=147.50 cfs 690,623 cf

Link 2L: Pr. To South Outfall Inflow=140.13 cfs 699,050 cf
Primary=140.13 cfs 699,050 cf

Link 4L: Ex. Central 24" Pipe Inflow=57.68 cfs 220,077 cf
Primary=57.68 cfs 220,077 cf

Link 5L: Pr. Central 24" Pipe Inflow=53.43 cfs 247,877 cf
Primary=53.43 cfs 247,877 cf

Link 7L: Ex. To Pond Inflow=119.94 cfs 494,394 cf
Primary=119.94 cfs 494,394 cf

Link 8L: Pr. To Pond Inflow=111.42 cfs 502,060 cf
Primary=111.42 cfs 502,060 cf

Link 10L: Ex. To North Detention Pond Inflow=41.61 cfs 185,987 cf
Primary=41.61 cfs 185,987 cf

Link 11L: Pr. To North Detention Pond Inflow=39.90 cfs 178,990 cf
Primary=39.90 cfs 178,990 cf

Link 13L: Ex. North Swale Out Inflow=33.99 cfs 137,607 cf
Primary=33.99 cfs 137,607 cf

Link 14L: Pr. North Swale Out Inflow=32.28 cfs 130,610 cf
Primary=32.28 cfs 130,610 cf

Total Runoff Area = 4,427,966 sf Runoff Volume = 1,391,742 cf Average Runoff Depth = 3.77"
73.92% Pervious = 3,272,938 sf 26.08% Impervious = 1,155,028 sf

Summary for Subcatchment 1S: Ex. South

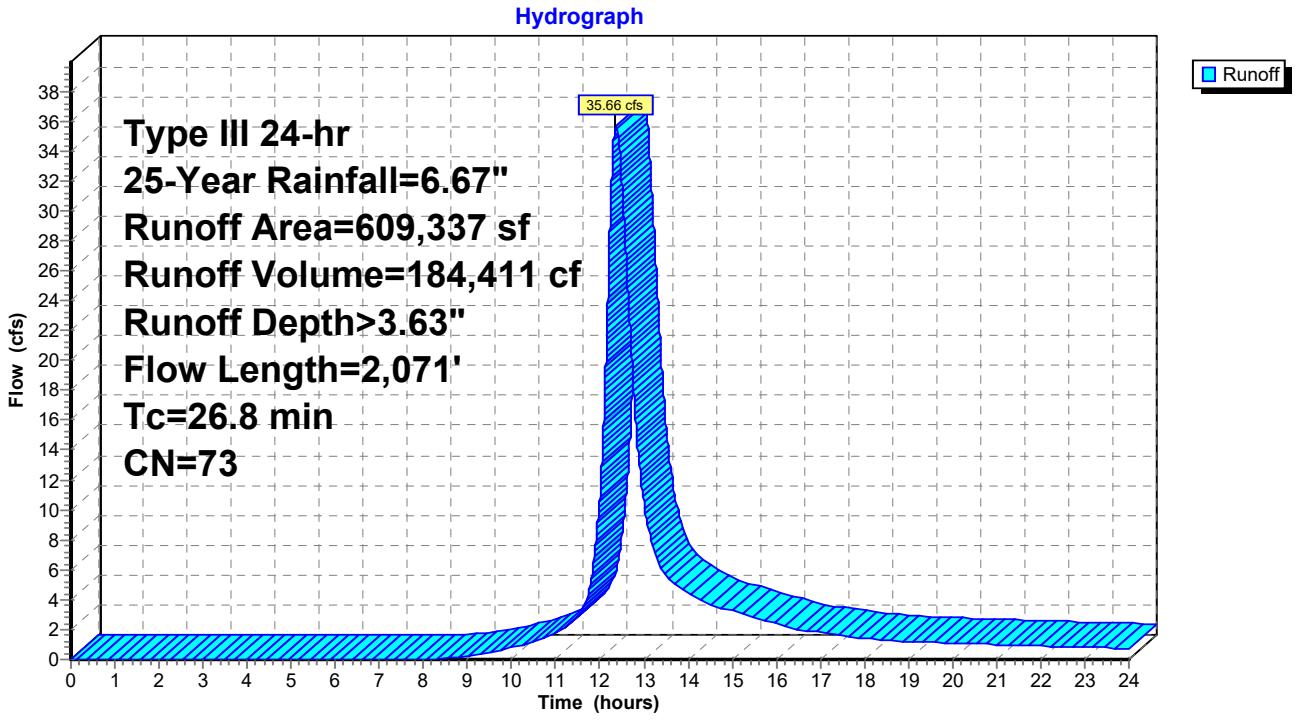
Runoff = 35.66 cfs @ 12.36 hrs, Volume= 184,411 cf, Depth> 3.63"
Routed to Link 1L : Ex.To South Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

	Area (sf)	CN	Description
	5,651	49	50-75% Grass cover, Fair, HSG A
	27,114	69	50-75% Grass cover, Fair, HSG B
	99,283	60	Woods, Fair, HSG B
	2,110	78	Meadow, non-grazed, HSG D
	73,246	58	Meadow, non-grazed, HSG B
*	2,467	98	Impervious, HSG A
*	38,005	98	Impervious, HSG B
	26,495	79	Woods, Fair, HSG D
	1,904	98	Water Surface, HSG D
*	11,709	98	Offsite Impervious, HSG B
*	44,408	61	Offsite Pervious, Good, HSG B
*	21,250	98	Offsite Impervious, HSG C
*	123,737	74	Offsite Pervious, Good, HSG C
*	19,521	98	Offsite Impervious, HSG D
*	112,437	80	Offsite Pervious, HSG D
	609,337	73	Weighted Average
	514,481		84.43% Pervious Area
	94,856		15.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0190	0.17		**Sheet Flow, Offsite** Grass: Short n= 0.150 P2= 3.45"
4.4	261	0.0200	0.99		**Shallow Concentrated Flow, Offsite** Short Grass Pasture Kv= 7.0 fps
3.3	124	0.0081	0.63		**Shallow Concentrated Flow, Offsite** Short Grass Pasture Kv= 7.0 fps
0.7	62	0.0480	1.53		**Shallow Concentrated Flow, Offsite** Short Grass Pasture Kv= 7.0 fps
3.1	120	0.0083	0.64		**Shallow Concentrated Flow, Offsite** Short Grass Pasture Kv= 7.0 fps
0.3	44	0.1400	2.62		**Shallow Concentrated Flow, Offsite** Short Grass Pasture Kv= 7.0 fps
0.8	57	0.0260	1.13		**Shallow Concentrated Flow, Offsite** Short Grass Pasture Kv= 7.0 fps
0.1	17	0.0290	3.46		**Shallow Concentrated Flow, Offsite** Paved Kv= 20.3 fps
1.1	249	0.0640	3.79		**Shallow Concentrated Flow, Offsite** Grassed Waterway Kv= 15.0 fps
0.5	100	0.0600	3.67		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.7	550	0.1272	5.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.2	387	0.1189	5.17		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
26.8	2,071	Total			

Subcatchment 1S: Ex. South



Summary for Subcatchment 2S: Ex.South Wetlands

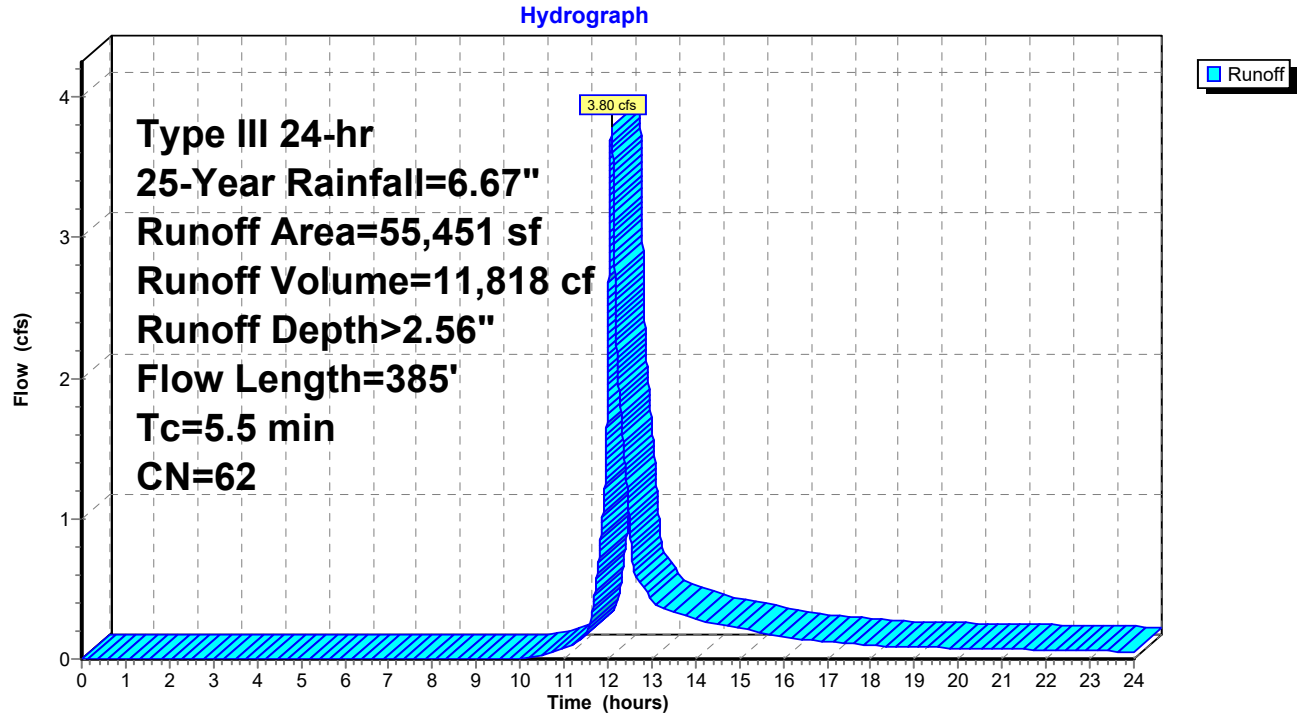
Runoff = 3.80 cfs @ 12.08 hrs, Volume= 11,818 cf, Depth> 2.56"
Routed to Link 1L : Ex.To South Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

Area (sf)	CN	Description
16,612	58	Meadow, non-grazed, HSG B
30,928	60	Woods, Fair, HSG B
7,911	79	Woods, Fair, HSG D
55,451	62	Weighted Average
55,451		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	108	0.2130	0.46		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.45"
0.6	107	0.1776	2.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	88	0.1534	1.96		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	82	0.0730	4.05		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.5	385	Total			

Subcatchment 2S: Ex.South Wetlands



Summary for Subcatchment 3S: Ex.Central 24" Pipe

[47] Hint: Peak is 437% of capacity of segment #6
[47] Hint: Peak is 103% of capacity of segment #9

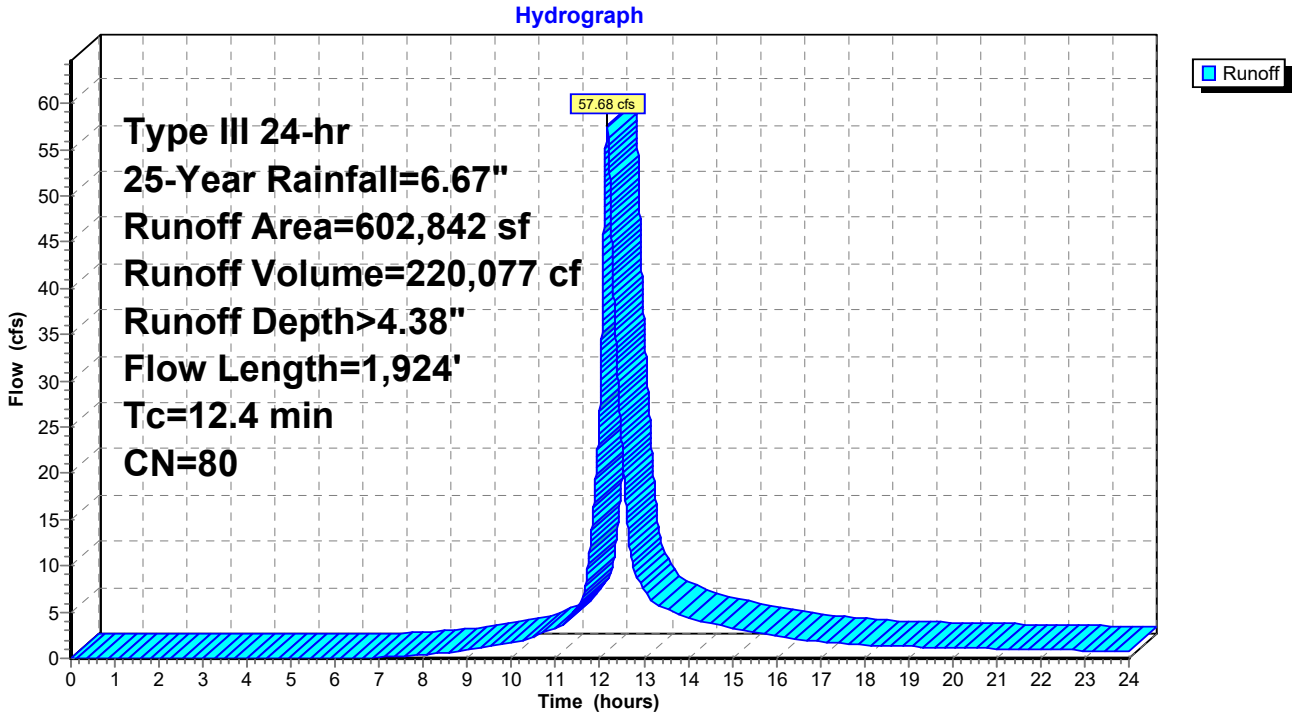
Runoff = 57.68 cfs @ 12.17 hrs, Volume= 220,077 cf, Depth> 4.38"
Routed to Link 4L : Ex. Central 24" Pipe

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

	Area (sf)	CN	Description
	37,023	60	Woods, Fair, HSG B
	22,575	58	Meadow, non-grazed, HSG B
	156,883	69	50-75% Grass cover, Fair, HSG B
*	230,998	98	Impervious, HSG B
*	44,031	61	Offsite Pervious, HSG B
*	25,185	98	Offsite Impervious, HSG C
*	86,147	74	Offsite Pervious, HSG C
	602,842	80	Weighted Average
	346,659		57.50% Pervious Area
	256,183		42.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.0360	0.22		**Sheet Flow, Offsite** Grass: Short n= 0.150 P2= 3.45"
0.3	81	0.0420	4.16		**Shallow Concentrated Flow, Offsite** Paved Kv= 20.3 fps
1.4	100	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.5	196	0.1923	2.19		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	120	0.0298	3.50		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	59	0.0982	16.80	13.19	**Pipe Channel, CMP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.3	325	0.0479	18.63	58.51	**Pipe Channel, RCP_Round 24"** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
0.2	306	0.0889	25.37	79.72	**Pipe Channel, RCP_Round 24"** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
0.4	440	0.0608	17.76	55.78	**Pipe Channel, RCP_Round 24"** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Concrete pipe, bends & connections
0.1	197	0.0930	21.96	68.99	**Pipe Channel, RCP_Round 24"** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Concrete pipe, bends & connections
12.4	1,924	Total			

Subcatchment 3S: Ex.Central 24" Pipe



Summary for Subcatchment 4S: Ex. Central ByPass

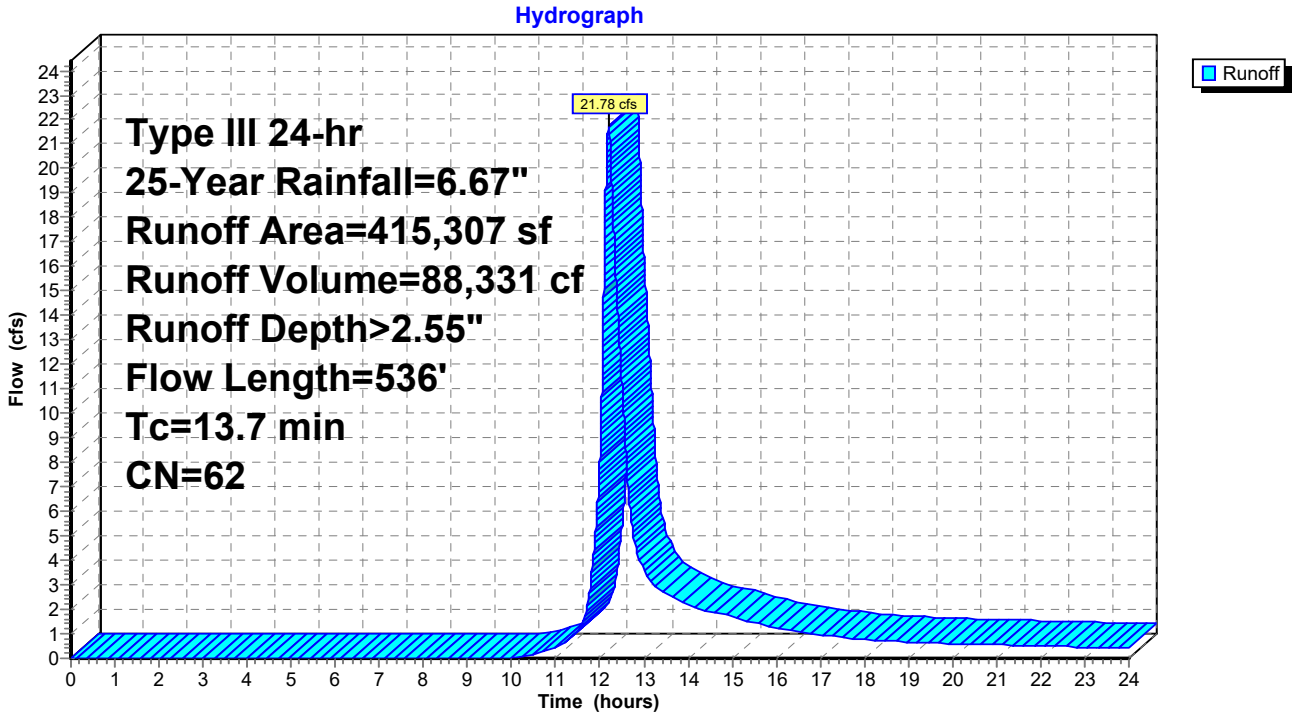
Runoff = 21.78 cfs @ 12.19 hrs, Volume= 88,331 cf, Depth> 2.55"
Routed to Link 7L : Ex. To Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

	Area (sf)	CN	Description
	110,546	49	50-75% Grass cover, Fair, HSG A
	50,991	30	Meadow, non-grazed, HSG A
	38,457	36	Woods, Fair, HSG A
	33,170	69	50-75% Grass cover, Fair, HSG B
	14,434	58	Meadow, non-grazed, HSG B
	12,255	84	50-75% Grass cover, Fair, HSG D
	65,547	78	Meadow, non-grazed, HSG D
	45,705	79	Woods, Fair, HSG D
*	1,527	98	Impervious, HSG D
	42,634	98	Water Surface, HSG D
	41	98	Water Surface, HSG B
	415,307	62	Weighted Average
	371,105		89.36% Pervious Area
	44,202		10.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0490	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.45"
2.1	269	0.1911	2.19		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.7	129	0.0620	1.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	38	0.1842	2.15		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.7	536	Total			

Subcatchment 4S: Ex. Central ByPass



Summary for Subcatchment 5S: Ex. North

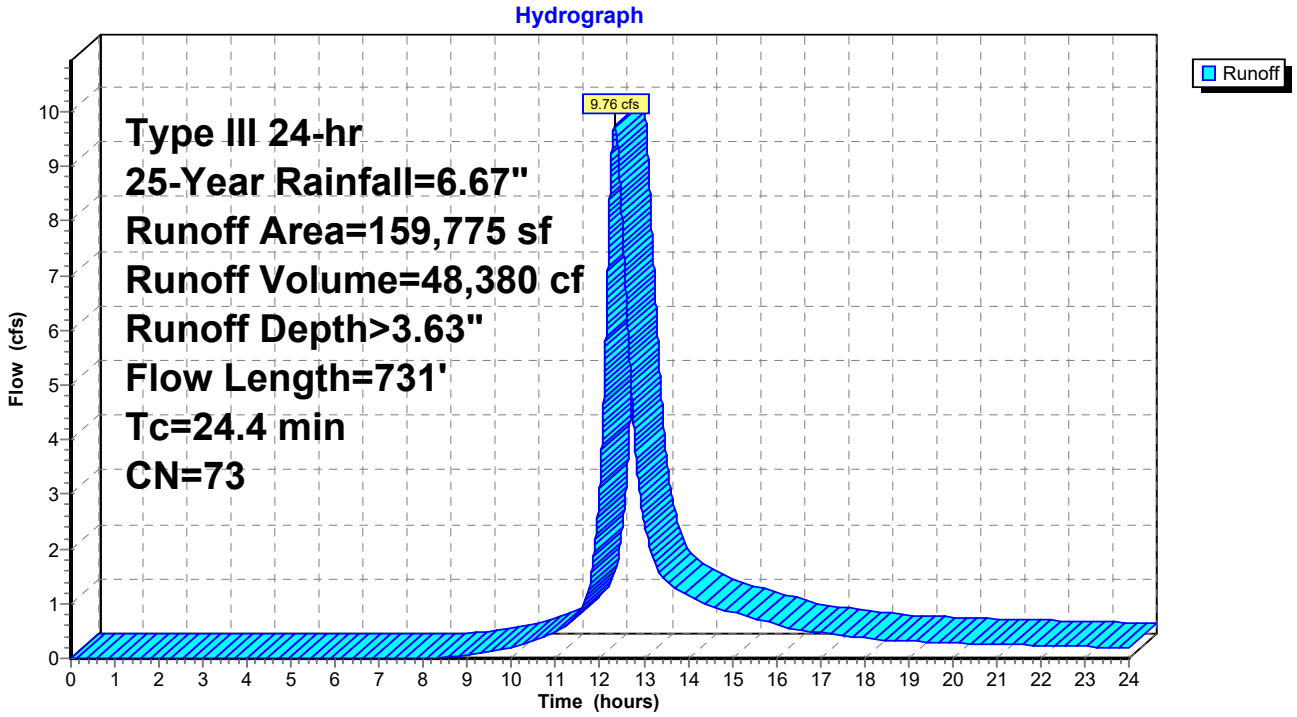
Runoff = 9.76 cfs @ 12.34 hrs, Volume= 48,380 cf, Depth> 3.63"
Routed to Link 10L : Ex. To North Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

	Area (sf)	CN	Description
	6,335	36	Woods, Fair, HSG A
	4,614	69	50-75% Grass cover, Fair, HSG B
	47,495	60	Woods, Fair, HSG B
	10,996	78	Meadow, non-grazed, HSG D
	78,856	79	Woods, Fair, HSG D
*	447	98	Impervious, HSG D
*	159	98	Impervious. HSG B
	10,873	98	Water Surface, HSG D
	159,775	73	Weighted Average
	148,296		92.82% Pervious Area
	11,479		7.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.7	102	0.0833	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.45"
2.8	312	0.1394	1.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.9	317	0.1388	5.59		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
24.4	731	Total			

Subcatchment 5S: Ex. North



Summary for Subcatchment 7S: Ex. North Conveyance

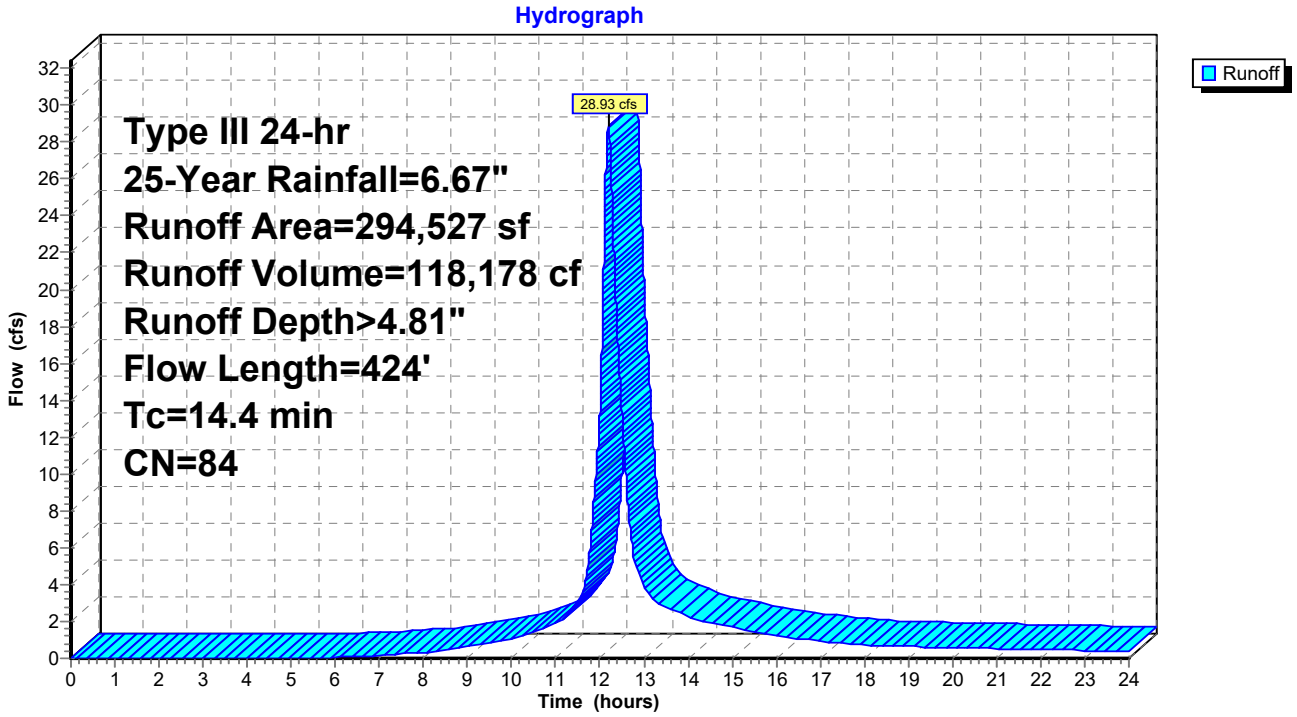
Runoff = 28.93 cfs @ 12.19 hrs, Volume= 118,178 cf, Depth> 4.81"
Routed to Link 13L : Ex. North Swale Out

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

	Area (sf)	CN	Description
	6,257	73	Woods, Fair, HSG C
	10,310	71	Meadow, non-grazed, HSG C
	3,086	60	Woods, Fair, HSG B
	4,641	58	Meadow, non-grazed, HSG B
	42,939	69	50-75% Grass cover, Fair, HSG B
*	117,862	98	Impervious, HSG B
*	22,965	98	Offsite Impervious, HSG C
*	86,344	74	Offsite Pervious, HSG C
*	45	98	Offsite Impervious, HSG D
*	78	80	Offsite Pervious, HSG D
	294,527	84	Weighted Average
	153,655		52.17% Pervious Area
	140,872		47.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		**Sheet Flow, Offsite**
					Grass: Short n= 0.150 P2= 3.45"
0.8	48	0.0420	1.02		**Shallow Concentrated Flow, Offsite**
					Woodland Kv= 5.0 fps
1.9	172	0.0930	1.52		**Shallow Concentrated Flow, Offsite**
					Woodland Kv= 5.0 fps
0.6	104	0.2880	2.68		**Shallow Concentrated Flow,**
					Woodland Kv= 5.0 fps
5.0					**Direct Entry,**
14.4	424	Total			

Subcatchment 7S: Ex. North Conveyance



Summary for Subcatchment 8S: Ex.North Swale

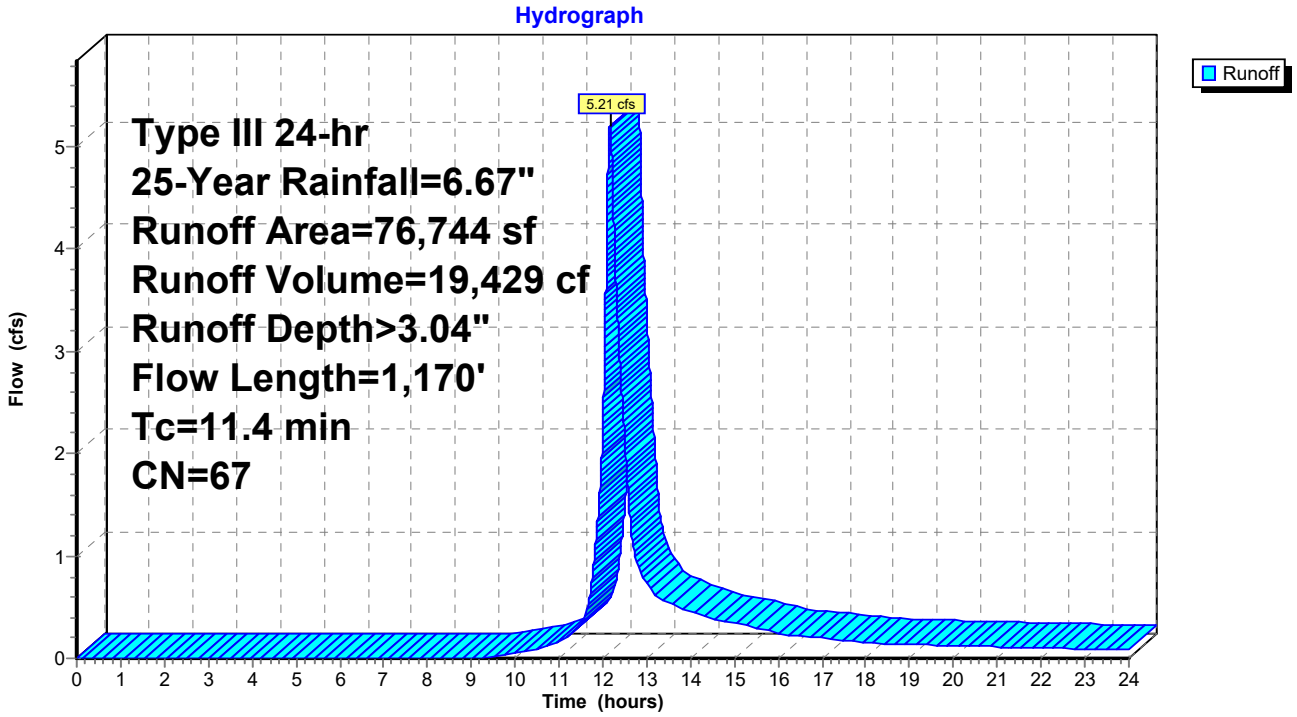
Runoff = 5.21 cfs @ 12.16 hrs, Volume= 19,429 cf, Depth> 3.04"
Routed to Link 13L : Ex. North Swale Out

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

	Area (sf)	CN	Description
	3,345	69	50-75% Grass cover, Fair, HSG B
	38,080	60	Woods, Fair, HSG B
	1,854	71	Meadow, non-grazed, HSG C
	6,228	73	Woods, Fair, HSG C
	4,696	79	Woods, Fair, HSG D
*	1,301	98	Offsite Impervious, HSG C
*	21,240	74	Offsite Pervious, HSG C
	76,744	67	Weighted Average
	75,443		98.30% Pervious Area
	1,301		1.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	100	0.1100	0.35		**Sheet Flow, Offsite** Grass: Short n= 0.150 P2= 3.45"
0.7	69	0.0580	1.69		**Shallow Concentrated Flow, Offsite** Short Grass Pasture Kv= 7.0 fps
2.0	131	0.0460	1.07		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	80	0.3750	3.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	790	0.0630	3.76		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.4	1,170	Total			

Subcatchment 8S: Ex.North Swale



Summary for Subcatchment 9S: Pr. South

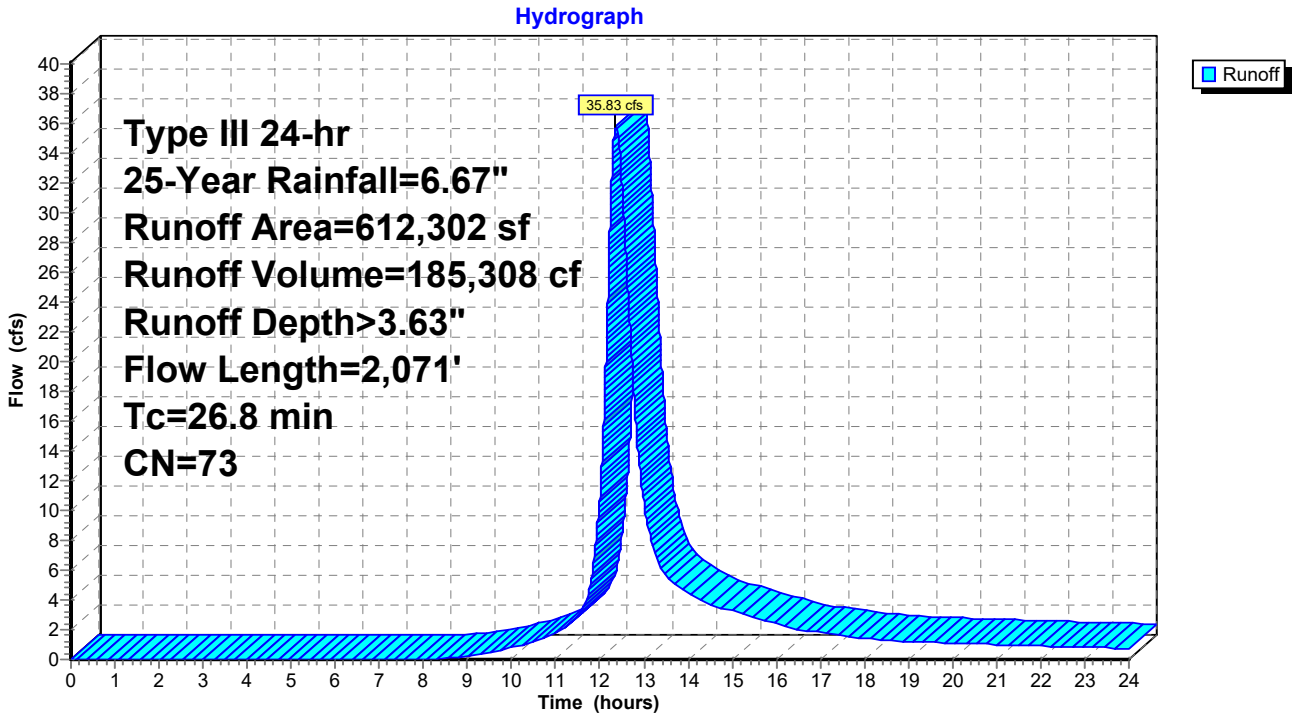
Runoff = 35.83 cfs @ 12.36 hrs, Volume= 185,308 cf, Depth> 3.63"
Routed to Link 2L : Pr. To South Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

	Area (sf)	CN	Description
*	2,467	98	Impervious, HSG A
*	32,847	98	Impervious, HSG B
	5,648	49	50-75% Grass cover, Fair, HSG A
	14,134	69	50-75% Grass cover, Fair, HSG B
	22,111	61	>75% Grass cover, Good, HSG B
	72,383	58	Meadow, non-grazed, HSG B
	99,141	60	Woods, Fair, HSG B
	2,110	78	Meadow, non-grazed, HSG D
	26,495	79	Woods, Fair, HSG D
	1,904	98	Water Surface, HSG D
*	11,709	98	Offsite Impervious, HSG B
*	44,408	61	Offsite Pervious, HSG B
*	21,250	98	Offsite Impervious, HSG C
*	123,737	74	Offsite Pervious, HSG C
*	19,521	98	Offsite Impervious, HSG D
*	112,437	80	Offsite Pervious, HSG D
	612,302	73	Weighted Average
	522,604		85.35% Pervious Area
	89,698		14.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0190	0.17		**Sheet Flow, Offsite** Grass: Short n= 0.150 P2= 3.45"
4.4	261	0.0200	0.99		**Shallow Concentrated Flow, Offsite** Short Grass Pasture Kv= 7.0 fps
3.3	124	0.0080	0.63		**Shallow Concentrated Flow, Offsite** Short Grass Pasture Kv= 7.0 fps
0.7	62	0.0480	1.53		**Shallow Concentrated Flow, Offsite** Short Grass Pasture Kv= 7.0 fps
3.1	120	0.0083	0.64		**Shallow Concentrated Flow, Offsite** Short Grass Pasture Kv= 7.0 fps
0.3	44	0.1400	2.62		**Shallow Concentrated Flow, Offsite** Short Grass Pasture Kv= 7.0 fps
0.8	57	0.0260	1.13		**Shallow Concentrated Flow, Offsite** Short Grass Pasture Kv= 7.0 fps
0.1	17	0.0290	3.46		**Shallow Concentrated Flow, Offsite** Paved Kv= 20.3 fps
1.1	249	0.0640	3.79		**Shallow Concentrated Flow, Offsite** Grassed Waterway Kv= 15.0 fps
0.5	100	0.0600	3.67		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.7	550	0.1270	5.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.2	387	0.1190	5.17		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
26.8	2,071	Total			

Subcatchment 9S: Pr. South



Summary for Subcatchment 10S: Pr. South Wetlands

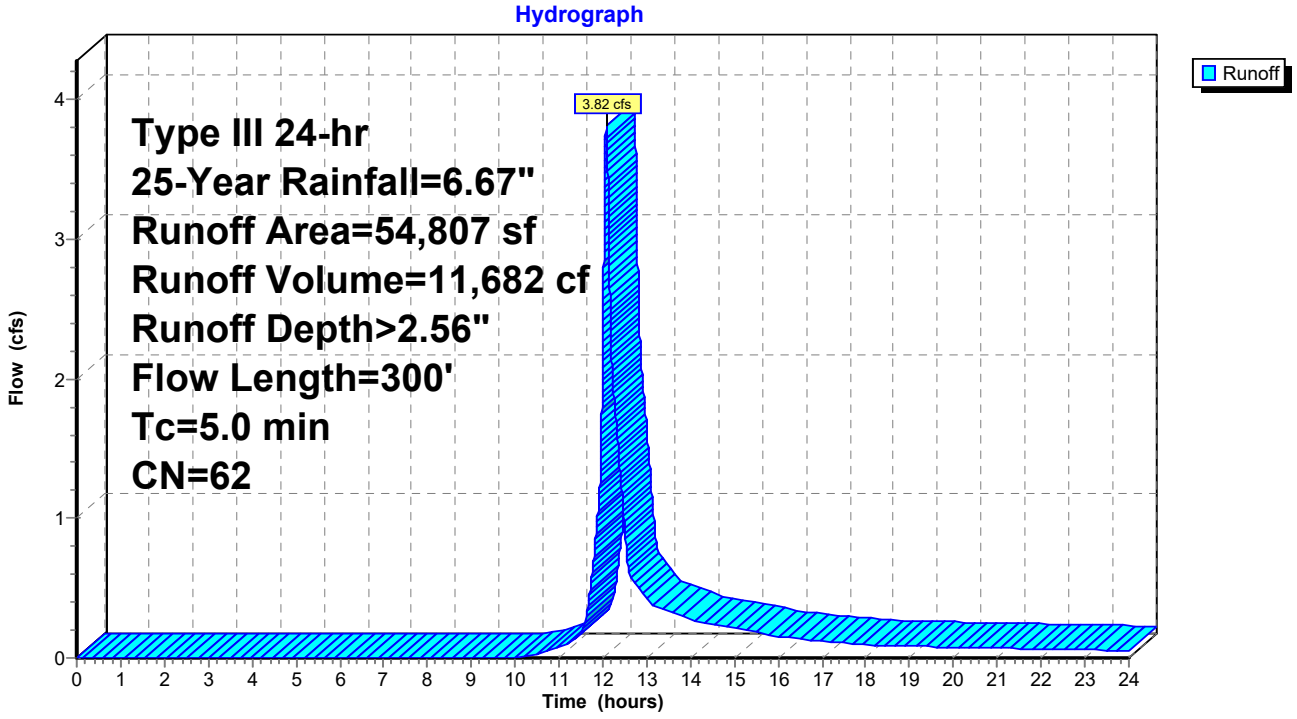
Runoff = 3.82 cfs @ 12.08 hrs, Volume= 11,682 cf, Depth> 2.56"
Routed to Link 2L : Pr. To South Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

Area (sf)	CN	Description
15,963	58	Meadow, non-grazed, HSG B
30,933	60	Woods, Fair, HSG B
7,911	79	Woods, Fair, HSG D
54,807	62	Weighted Average
54,807		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	105	0.2255	0.47		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.45"
0.6	107	0.1776	2.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	88	0.1534	1.96		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.0	300	Total			

Subcatchment 10S: Pr. South Wetlands



Summary for Subcatchment 11S: Pr.West Pond

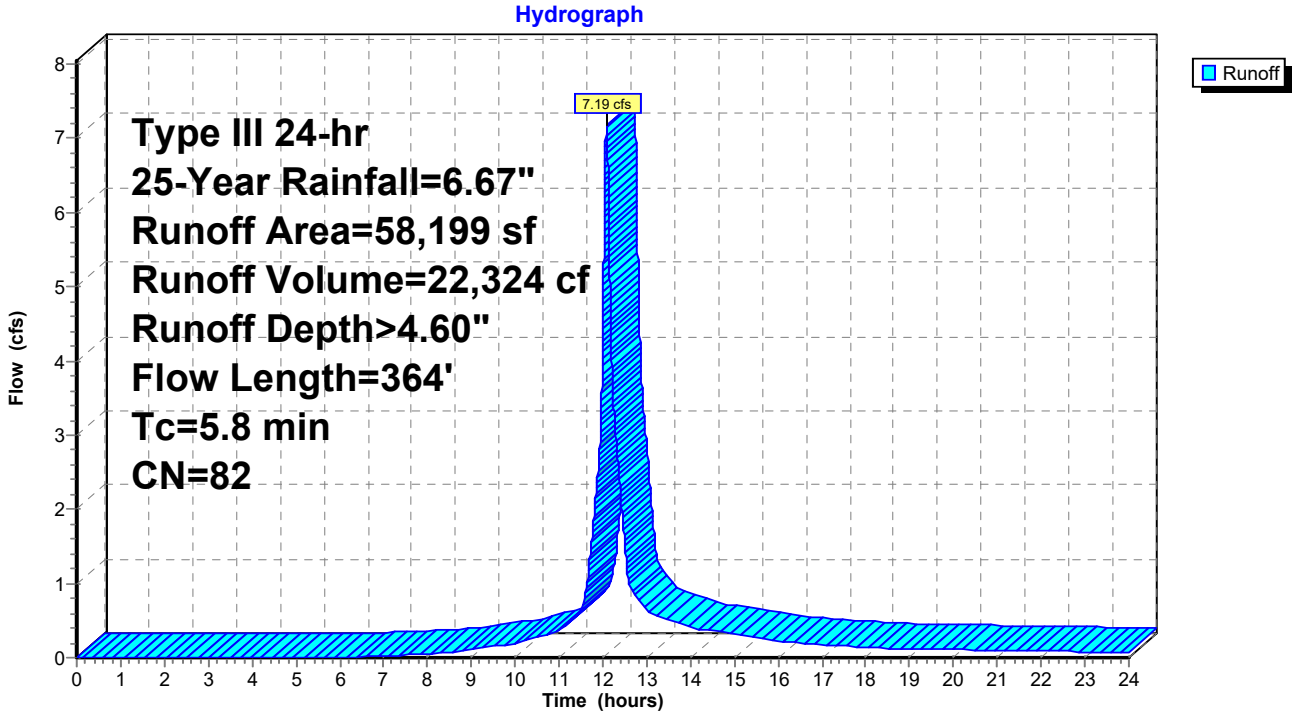
Runoff = 7.19 cfs @ 12.08 hrs, Volume= 22,324 cf, Depth> 4.60"
Routed to Pond 13P : Pr. MicroPool ED Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

	Area (sf)	CN	Description
	24,548	61	>75% Grass cover, Good, HSG B
*	30,639	98	Impervious, HSG B
*	3,012	98	Water Surface, HSG B
	58,199	82	Weighted Average
	24,548		42.18% Pervious Area
	33,651		57.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	71	0.1056	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.45"
2.1	293	0.0239	2.32		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.8	364	Total			

Subcatchment 11S: Pr.West Pond



Summary for Subcatchment 12S: Pr.East Pond

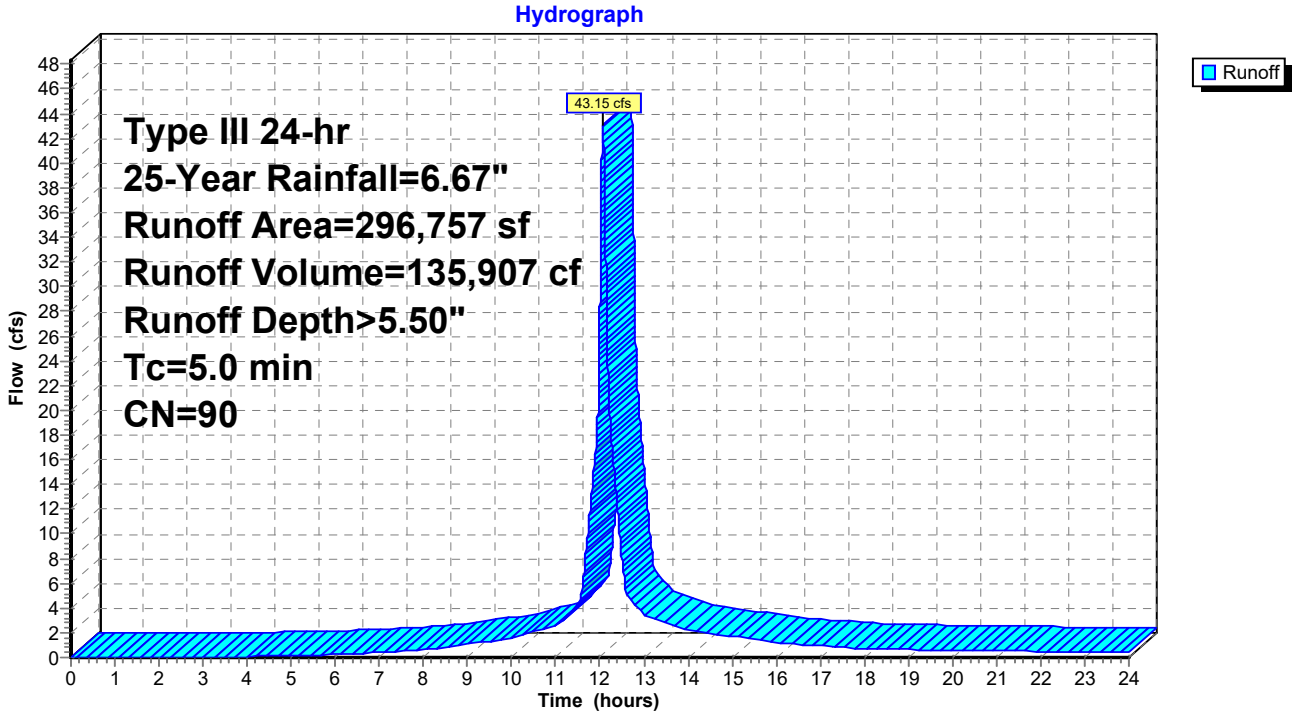
Runoff = 43.15 cfs @ 12.07 hrs, Volume= 135,907 cf, Depth> 5.50"
Routed to Pond 12P : Pr. Pocket Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

	Area (sf)	CN	Description
*	207,874	98	Impervious, HSG B
	46,040	61	>75% Grass cover, Good, HSG B
	3,517	80	>75% Grass cover, Good, HSG D
	26,518	78	Meadow, non-grazed, HSG D
	12,808	98	Water Surface, HSG B
	296,757	90	Weighted Average
	76,075		25.64% Pervious Area
	220,682		74.36% Impervious Area

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

Subcatchment 12S: Pr.East Pond



Summary for Subcatchment 13S: Pr.Central 24" Pipe

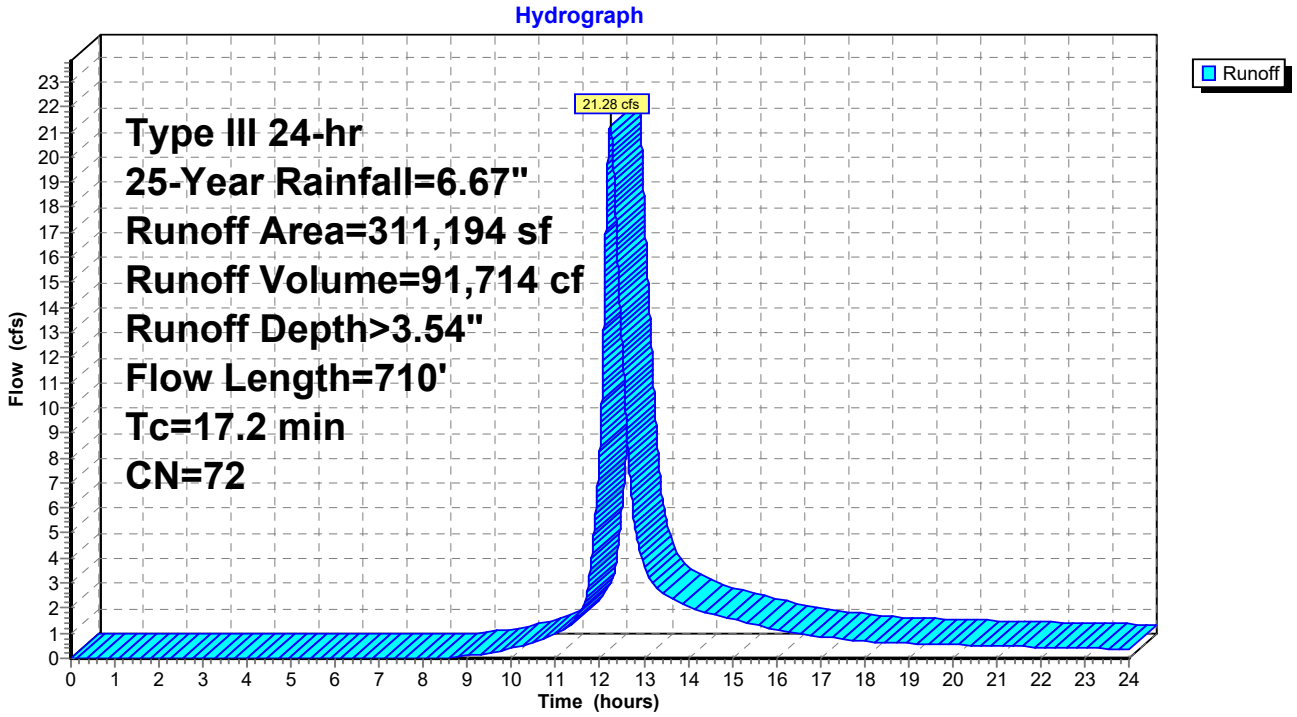
Runoff = 21.28 cfs @ 12.25 hrs, Volume= 91,714 cf, Depth> 3.54"
Routed to Link 5L : Pr. Central 24" Pipe

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

	Area (sf)	CN	Description
	37,208	60	Woods, Fair, HSG B
	21,842	58	Meadow, non-grazed, HSG B
	54,130	61	>75% Grass cover, Good, HSG B
*	42,651	98	Impervious, HSG B
*	44,031	61	Offsite Pervious, HSG B
*	25,185	98	Offsite Impervious, HSG C
*	86,147	74	Offsite Pervious, HSG C
	311,194	72	Weighted Average
	243,358		78.20% Pervious Area
	67,836		21.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.0360	0.22		**Sheet Flow, Offsite** Grass: Short n= 0.150 P2= 3.45"
0.3	81	0.0420	4.16		**Shallow Concentrated Flow, Offsite** Paved Kv= 20.3 fps
1.4	100	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.7	217	0.1843	2.15		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	212	0.0350	2.81		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.0					**Direct Entry,**
17.2	710	Total			

Subcatchment 13S: Pr.Central 24" Pipe



Summary for Subcatchment 15S: Pr. North

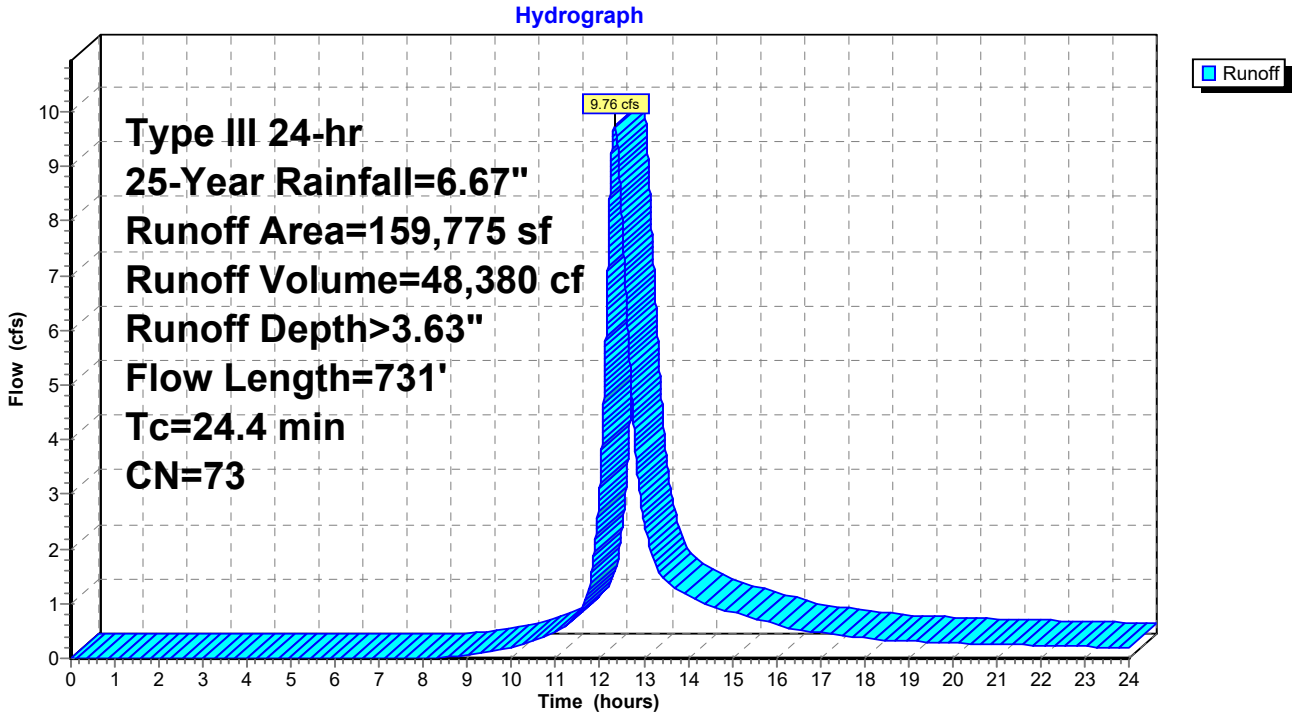
Runoff = 9.76 cfs @ 12.34 hrs, Volume= 48,380 cf, Depth> 3.63"
Routed to Link 11L : Pr. To North Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

	Area (sf)	CN	Description
	6,335	36	Woods, Fair, HSG A
	4,614	69	50-75% Grass cover, Fair, HSG B
	47,495	60	Woods, Fair, HSG B
	10,996	78	Meadow, non-grazed, HSG D
	78,856	79	Woods, Fair, HSG D
*	10,873	98	Water Surface, HSG D
*	159	98	Impervious, HSG B
*	447	98	Impervious, HSG D
	159,775	73	Weighted Average
	148,296		92.82% Pervious Area
	11,479		7.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.7	102	0.0833	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.45"
2.8	312	0.1394	1.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.9	317	0.1388	5.59		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
24.4	731	Total			

Subcatchment 15S: Pr. North



Summary for Subcatchment 16S: Pr. Central ByPass

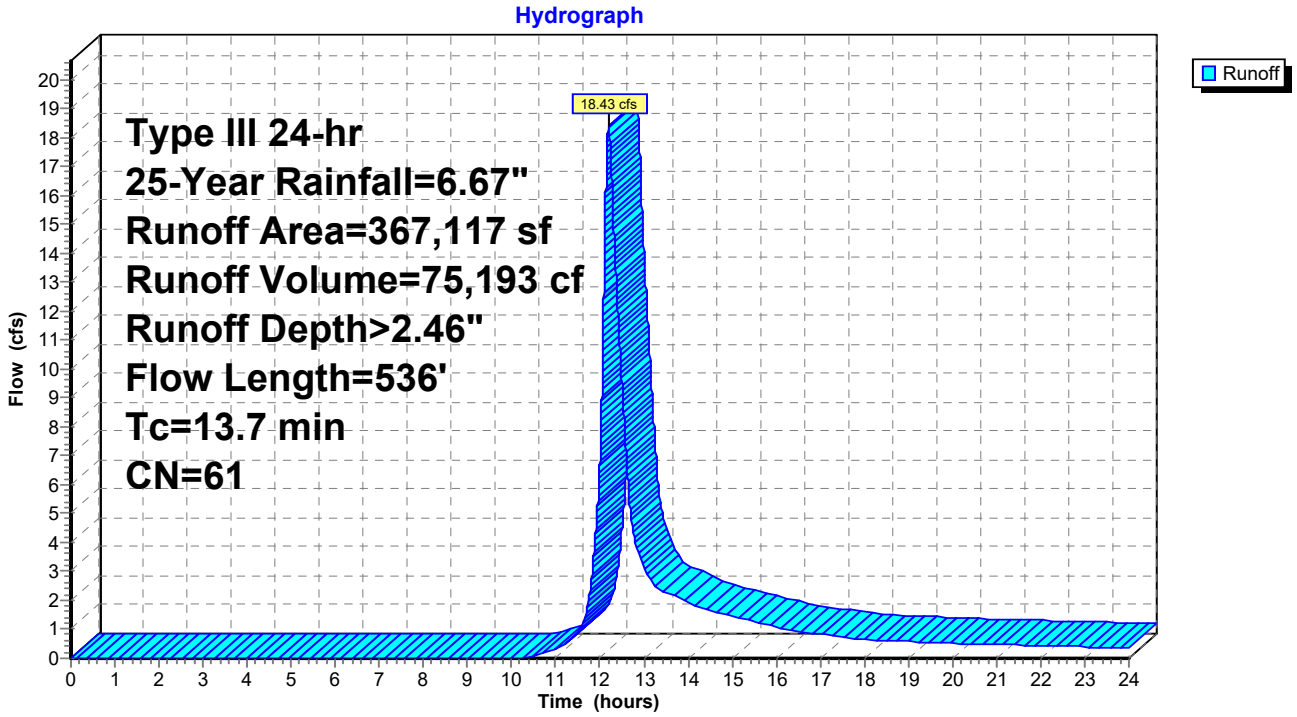
Runoff = 18.43 cfs @ 12.19 hrs, Volume= 75,193 cf, Depth> 2.46"
Routed to Link 8L : Pr. To Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

	Area (sf)	CN	Description
	110,601	49	50-75% Grass cover, Fair, HSG A
	41,118	30	Meadow, non-grazed, HSG A
	36,850	36	Woods, Fair, HSG A
	27,052	69	50-75% Grass cover, Fair, HSG B
	14,208	58	Meadow, non-grazed, HSG B
	8,870	84	50-75% Grass cover, Fair, HSG D
	38,996	78	Meadow, non-grazed, HSG D
	45,032	79	Woods, Fair, HSG D
*	1,327	98	Impervious, HSG D
	43,022	98	Water Surface, HSG D
	41	98	Water Surface, HSG B
	367,117	61	Weighted Average
	322,727		87.91% Pervious Area
	44,390		12.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0490	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.45"
2.1	269	0.1911	2.19		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.7	129	0.0620	1.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	38	0.1842	2.15		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.7	536	Total			

Subcatchment 16S: Pr. Central ByPass



Summary for Subcatchment 18S: Pr. North Swale

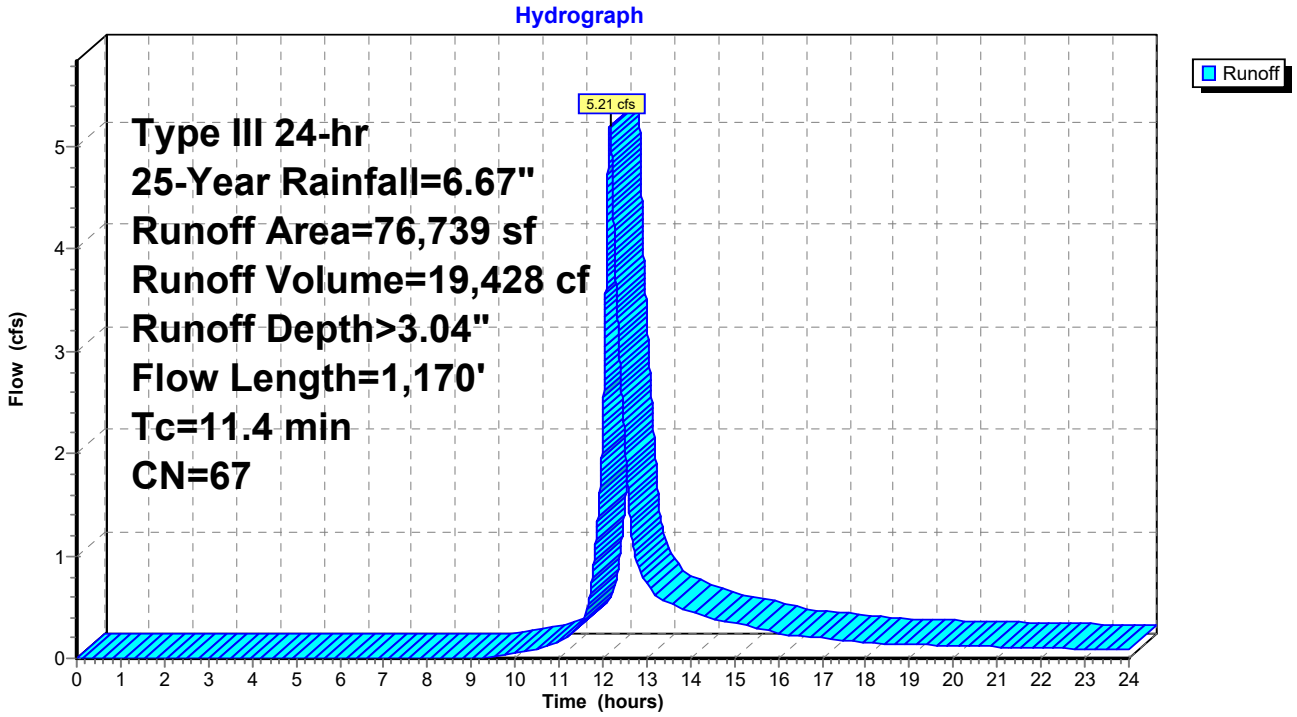
Runoff = 5.21 cfs @ 12.16 hrs, Volume= 19,428 cf, Depth> 3.04"
Routed to Link 14L : Pr. North Swale Out

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

	Area (sf)	CN	Description
	2,958	61	>75% Grass cover, Good, HSG B
	38,080	60	Woods, Fair, HSG B
	1,854	71	Meadow, non-grazed, HSG C
	6,228	73	Woods, Fair, HSG C
	4,691	79	Woods, Fair, HSG D
*	387	98	Impervious, HSG B
*	1,301	98	Offsite Impervious, HSG C
*	21,240	74	Offsite Pervious. HSG C
	76,739	67	Weighted Average
	75,051		97.80% Pervious Area
	1,688		2.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	100	0.1100	0.35		**Sheet Flow, Offsite** Grass: Short n= 0.150 P2= 3.45"
0.7	69	0.0580	1.69		**Shallow Concentrated Flow, Offsite** Short Grass Pasture Kv= 7.0 fps
2.0	131	0.0460	1.07		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	80	0.3750	3.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	790	0.0630	3.76		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.4	1,170	Total			

Subcatchment 18S: Pr. North Swale



Summary for Subcatchment 31S: Pr. North Conveyance

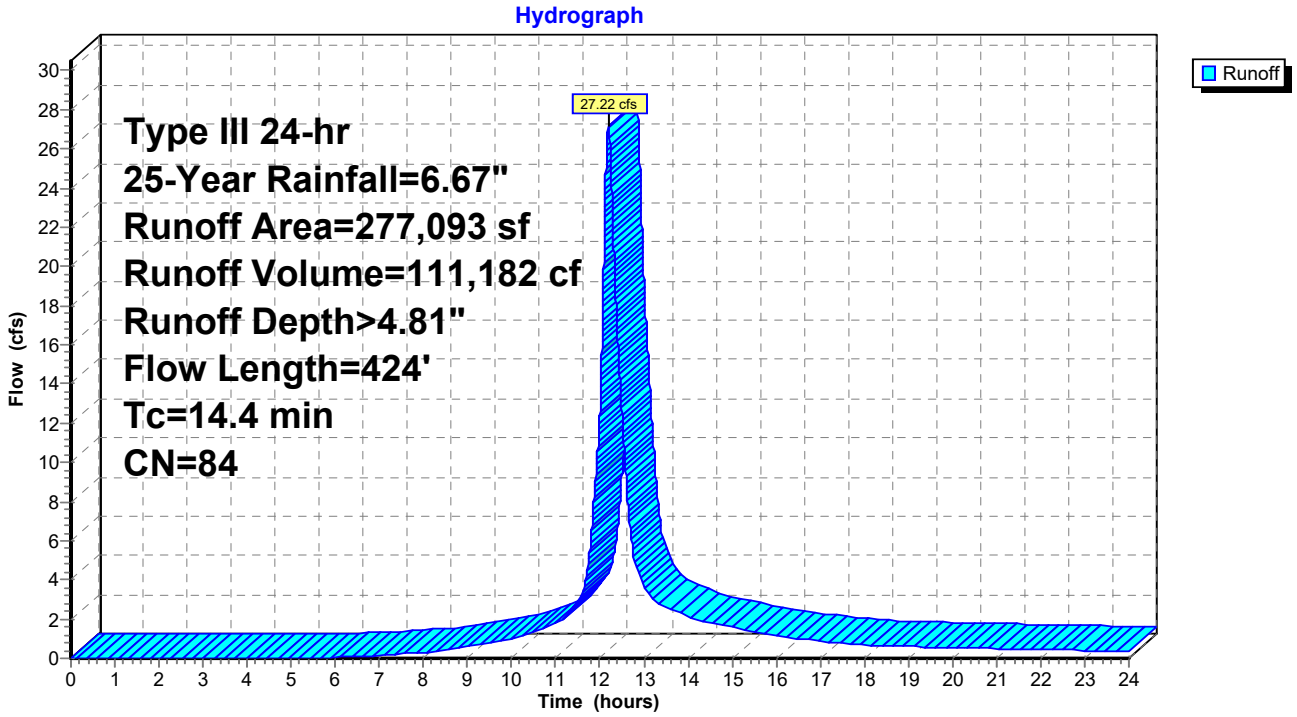
Runoff = 27.22 cfs @ 12.19 hrs, Volume= 111,182 cf, Depth> 4.81"
Routed to Link 14L : Pr. North Swale Out

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.67"

	Area (sf)	CN	Description
*	113,701	98	Impervious, HSG B
	29,666	61	>75% Grass cover, Good, HSG B
	4,641	58	Meadow, non-grazed, HSG B
	3,086	60	Woods, Fair, HSG B
	10,310	71	Meadow, non-grazed, HSG C
	6,257	73	Woods, Fair, HSG C
*	22,965	98	Offsite Impervious, HSG C
*	86,344	74	Offsite Pervious, HSG C
*	45	98	Offsite Impervious, HSG D
*	78	80	Offsite Pervious, HSG D
	277,093	84	Weighted Average
	140,382		50.66% Pervious Area
	136,711		49.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		**Sheet Flow, Offsite** Grass: Short n= 0.150 P2= 3.45"
0.8	48	0.0420	1.02		**Shallow Concentrated Flow, Offsite** Woodland Kv= 5.0 fps
1.9	172	0.0930	1.52		**Shallow Concentrated Flow, Offsite** Woodland Kv= 5.0 fps
0.6	104	0.2880	2.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.0					**Direct Entry,**
14.4	424	Total			

Subcatchment 31S: Pr. North Conveyance



Summary for Pond 12P: Pr. Pocket Pond

Inflow Area = 296,757 sf, 74.36% Impervious, Inflow Depth > 5.50" for 25-Year event
Inflow = 43.15 cfs @ 12.07 hrs, Volume= 135,907 cf
Outflow = 29.22 cfs @ 12.15 hrs, Volume= 134,094 cf, Atten= 32%, Lag= 4.6 min
Primary = 29.22 cfs @ 12.15 hrs, Volume= 134,094 cf
Routed to Link 5L : Pr. Central 24" Pipe

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs / 2
Starting Elev= 87.00' Storage= 19,636 cf
Peak Elev= 89.45' @ 12.15 hrs Storage= 47,647 cf (28,011 cf above start)

Plug-Flow detention time= 131.6 min calculated for 114,458 cf (84% of inflow)
Center-of-Mass det. time= 29.5 min (809.5 - 779.9)

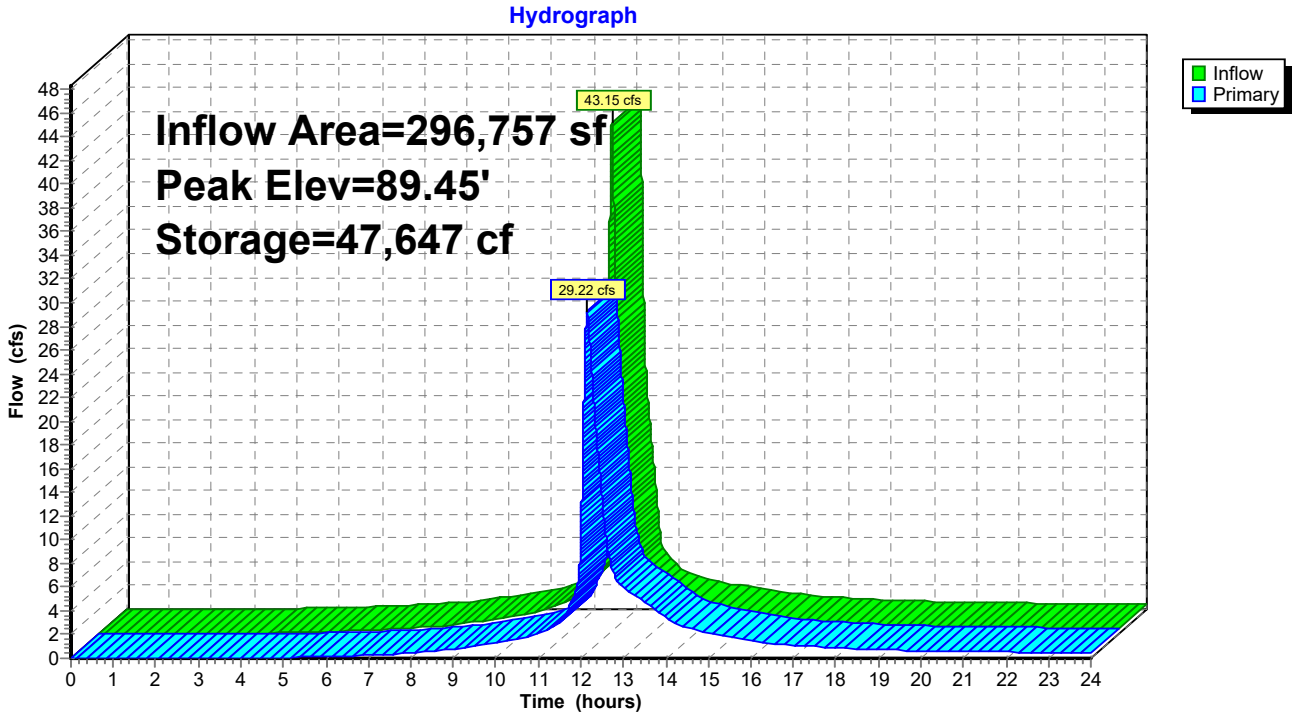
Volume	Invert	Avail.Storage	Storage Description
#1	82.00'	65,013 cf	**Custom Stage Data**Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.00	0	0
83.00	2,318	2,318
84.00	2,335	4,653
85.00	3,516	8,169
86.00	4,864	13,033
86.50	2,966	15,999
87.00	3,637	19,636
87.50	4,610	24,246
88.00	5,311	29,557
89.00	11,935	41,492
90.00	13,674	55,166
90.65	9,847	65,013

Device	Routing	Invert	Outlet Devices
#1	Device 4	87.00'	**18.0" W x 10.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	88.50'	**24.0" W x 12.0" H Vert. Orifice/Grate X 3.00** C= 0.600 Limited to weir flow at low heads
#3	Device 4	88.75'	**18.0" W x 10.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	85.00'	**24.0" Round Culvert** L= 75.0' RCP, groove end w/headwall, Ke= 0.200 Inlet / Outlet Invert= 85.00' / 83.50' S= 0.0200 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=29.22 cfs @ 12.15 hrs HW=89.45' (Free Discharge)
└**4=Culvert** (Passes 29.22 cfs of 35.12 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 8.57 cfs @ 6.85 fps)
  ├**2=Orifice/Grate** (Orifice Controls 17.84 cfs @ 3.13 fps)
  └**3=Orifice/Grate** (Orifice Controls 2.82 cfs @ 2.69 fps)

Pond 12P: Pr. Pocket Pond



Stage-Discharge for Pond 12P: Pr. Pocket Pond

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
82.00	0.00	84.60	0.00	87.20	0.43	89.80	36.86
82.05	0.00	84.65	0.00	87.25	0.60	89.85	37.10
82.10	0.00	84.70	0.00	87.30	0.79	89.90	37.34
82.15	0.00	84.75	0.00	87.35	1.00	89.95	37.58
82.20	0.00	84.80	0.00	87.40	1.22	90.00	37.82
82.25	0.00	84.85	0.00	87.45	1.45	90.05	38.05
82.30	0.00	84.90	0.00	87.50	1.70	90.10	38.29
82.35	0.00	84.95	0.00	87.55	1.96	90.15	38.52
82.40	0.00	85.00	0.00	87.60	2.24	90.20	38.75
82.45	0.00	85.05	0.00	87.65	2.52	90.25	38.98
82.50	0.00	85.10	0.00	87.70	2.82	90.30	39.21
82.55	0.00	85.15	0.00	87.75	3.13	90.35	39.44
82.60	0.00	85.20	0.00	87.80	3.45	90.40	39.66
82.65	0.00	85.25	0.00	87.85	3.76	90.45	39.89
82.70	0.00	85.30	0.00	87.90	4.03	90.50	40.11
82.75	0.00	85.35	0.00	87.95	4.27	90.55	40.33
82.80	0.00	85.40	0.00	88.00	4.49	90.60	40.55
82.85	0.00	85.45	0.00	88.05	4.69	90.65	**40.77**
82.90	0.00	85.50	0.00	88.10	4.89		
82.95	0.00	85.55	0.00	88.15	5.08		
83.00	0.00	85.60	0.00	88.20	5.26		
83.05	0.00	85.65	0.00	88.25	5.43		
83.10	0.00	85.70	0.00	88.30	5.60		
83.15	0.00	85.75	0.00	88.35	5.76		
83.20	0.00	85.80	0.00	88.40	5.92		
83.25	0.00	85.85	0.00	88.45	6.08		
83.30	0.00	85.90	0.00	88.50	6.22		
83.35	0.00	85.95	0.00	88.55	6.59		
83.40	0.00	86.00	0.00	88.60	7.12		
83.45	0.00	86.05	0.00	88.65	7.77		
83.50	0.00	86.10	0.00	88.70	8.51		
83.55	0.00	86.15	0.00	88.75	9.33		
83.60	0.00	86.20	0.00	88.80	10.27		
83.65	0.00	86.25	0.00	88.85	11.32		
83.70	0.00	86.30	0.00	88.90	12.46		
83.75	0.00	86.35	0.00	88.95	13.67		
83.80	0.00	86.40	0.00	89.00	14.96		
83.85	0.00	86.45	0.00	89.05	16.32		
83.90	0.00	86.50	0.00	89.10	17.74		
83.95	0.00	86.55	0.00	89.15	19.22		
84.00	0.00	86.60	0.00	89.20	20.75		
84.05	0.00	86.65	0.00	89.25	22.34		
84.10	0.00	86.70	0.00	89.30	23.99		
84.15	0.00	86.75	0.00	89.35	25.68		
84.20	0.00	86.80	0.00	89.40	27.43		
84.25	0.00	86.85	0.00	89.45	29.22		
84.30	0.00	86.90	0.00	89.50	31.06		
84.35	0.00	86.95	0.00	89.55	32.73		
84.40	0.00	87.00	0.00	89.60	34.25		
84.45	0.00	87.05	0.05	89.65	35.64		
84.50	0.00	87.10	0.15	89.70	36.37		
84.55	0.00	87.15	0.28	89.75	36.62		

Stage-Area-Storage for Pond 12P: Pr. Pocket Pond

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
82.00	0	84.60	6,763	87.20	21,480
82.05	116	84.65	6,938	87.25	21,941
82.10	232	84.70	7,114	87.30	22,402
82.15	348	84.75	7,290	87.35	22,863
82.20	464	84.80	7,466	87.40	23,324
82.25	580	84.85	7,642	87.45	23,785
82.30	695	84.90	7,817	87.50	24,246
82.35	811	84.95	7,993	87.55	24,777
82.40	927	85.00	8,169	87.60	25,308
82.45	1,043	85.05	8,412	87.65	25,839
82.50	1,159	85.10	8,655	87.70	26,370
82.55	1,275	85.15	8,899	87.75	26,902
82.60	1,391	85.20	9,142	87.80	27,433
82.65	1,507	85.25	9,385	87.85	27,964
82.70	1,623	85.30	9,628	87.90	28,495
82.75	1,739	85.35	9,871	87.95	29,026
82.80	1,854	85.40	10,115	88.00	29,557
82.85	1,970	85.45	10,358	88.05	30,154
82.90	2,086	85.50	10,601	88.10	30,750
82.95	2,202	85.55	10,844	88.15	31,347
83.00	2,318	85.60	11,087	88.20	31,944
83.05	2,435	85.65	11,331	88.25	32,541
83.10	2,551	85.70	11,574	88.30	33,137
83.15	2,668	85.75	11,817	88.35	33,734
83.20	2,785	85.80	12,060	88.40	34,331
83.25	2,902	85.85	12,303	88.45	34,928
83.30	3,018	85.90	12,547	88.50	35,525
83.35	3,135	85.95	12,790	88.55	36,121
83.40	3,252	86.00	13,033	88.60	36,718
83.45	3,369	86.05	13,330	88.65	37,315
83.50	3,486	86.10	13,626	88.70	37,912
83.55	3,602	86.15	13,923	88.75	38,508
83.60	3,719	86.20	14,219	88.80	39,105
83.65	3,836	86.25	14,516	88.85	39,702
83.70	3,953	86.30	14,813	88.90	40,299
83.75	4,069	86.35	15,109	88.95	40,895
83.80	4,186	86.40	15,406	89.00	41,492
83.85	4,303	86.45	15,702	89.05	42,176
83.90	4,420	86.50	15,999	89.10	42,859
83.95	4,536	86.55	16,363	89.15	43,543
84.00	4,653	86.60	16,726	89.20	44,227
84.05	4,829	86.65	17,090	89.25	44,911
84.10	5,005	86.70	17,454	89.30	45,594
84.15	5,180	86.75	17,818	89.35	46,278
84.20	5,356	86.80	18,181	89.40	46,962
84.25	5,532	86.85	18,545	89.45	47,645
84.30	5,708	86.90	18,909	89.50	48,329
84.35	5,884	86.95	19,272	89.55	49,013
84.40	6,059	87.00	19,636	89.60	49,696
84.45	6,235	87.05	20,097	89.65	50,380
84.50	6,411	87.10	20,558	89.70	51,064
84.55	6,587	87.15	21,019	89.75	51,748

Stage-Area-Storage for Pond 12P: Pr. Pocket Pond (continued)

Elevation (feet)	Storage (cubic-feet)
89.80	52,431
89.85	53,115
89.90	53,799
89.95	54,482
90.00	55,166
90.05	55,923
90.10	56,681
90.15	57,438
90.20	58,196
90.25	58,953
90.30	59,711
90.35	60,468
90.40	61,226
90.45	61,983
90.50	62,741
90.55	63,498
90.60	64,256
90.65	**65,013**

Summary for Pond 13P: Pr. MicroPool ED Pond

Inflow Area = 58,199 sf, 57.82% Impervious, Inflow Depth > 4.60" for 25-Year event
Inflow = 7.19 cfs @ 12.08 hrs, Volume= 22,324 cf
Outflow = 5.30 cfs @ 12.15 hrs, Volume= 22,069 cf, Atten= 26%, Lag= 4.2 min
Primary = 5.30 cfs @ 12.15 hrs, Volume= 22,069 cf
Routed to Link 5L : Pr. Central 24" Pipe

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs / 2
Starting Elev= 172.00' Storage= 947 cf
Peak Elev= 173.83' @ 12.15 hrs Storage= 4,849 cf (3,902 cf above start)

Plug-Flow detention time= 60.3 min calculated for 21,122 cf (95% of inflow)
Center-of-Mass det. time= 19.5 min (823.5 - 804.0)

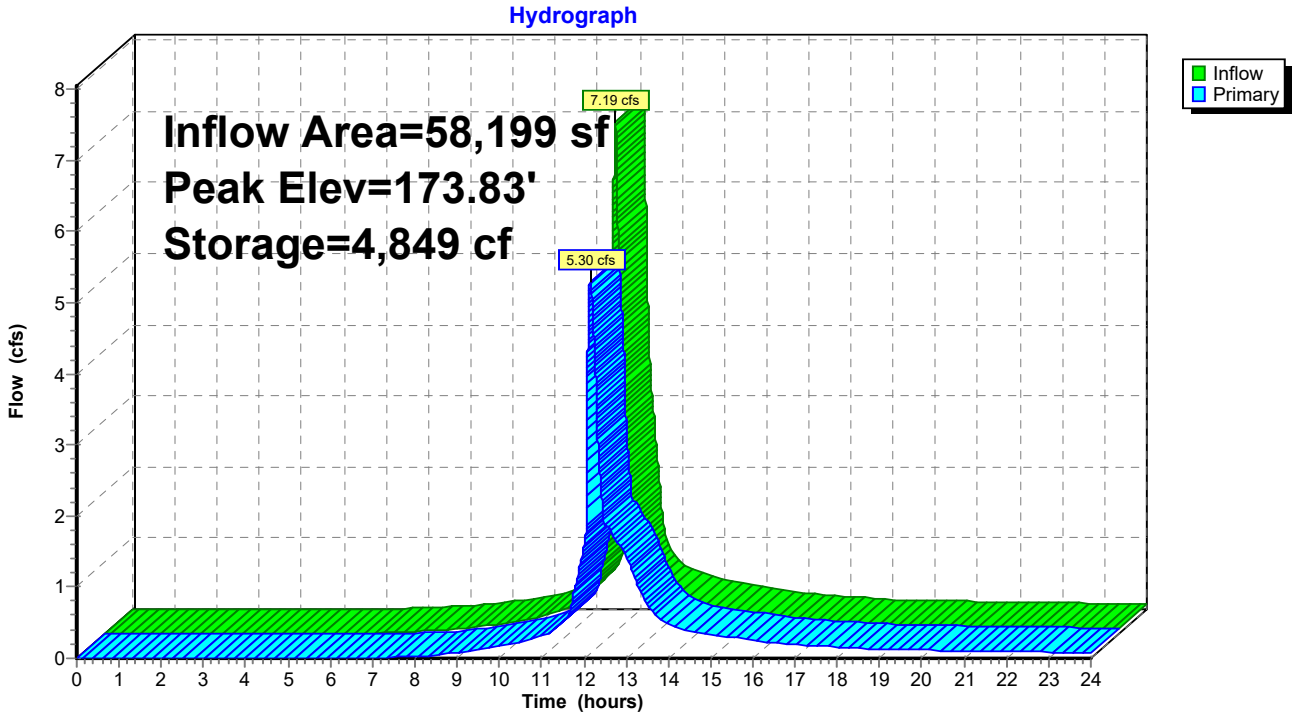
Volume	Invert	Avail.Storage	Storage Description
#1	171.00'	8,816 cf	**Custom Stage Data**Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
171.00	0	0
172.00	947	947
173.00	1,738	2,685
174.00	2,600	5,285
175.00	3,531	8,816

Device	Routing	Invert	Outlet Devices
#1	Primary	173.60'	**Special & User-Defined** Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 2.75 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700 5.000
#2	Primary	172.00'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.30 cfs @ 12.15 hrs HW=173.83' (Free Discharge)
1=Special & User-Defined (Custom Controls 3.25 cfs)
2=Orifice/Grate (Orifice Controls 2.06 cfs @ 5.90 fps)

Pond 13P: Pr. MicroPool ED Pond



Stage-Discharge for Pond 13P: Pr. MicroPool ED Pond

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
171.00	0.00	173.60	1.89	176.20	8.28
171.05	0.00	173.65	3.18	176.25	8.31
171.10	0.00	173.70	4.12	176.30	8.34
171.15	0.00	173.75	4.54	176.35	**8.37**
171.20	0.00	173.80	5.00		
171.25	0.00	173.85	5.47		
171.30	0.00	173.90	5.75		
171.35	0.00	173.95	6.07		
171.40	0.00	174.00	6.44		
171.45	0.00	174.05	6.71		
171.50	0.00	174.10	6.93		
171.55	0.00	174.15	6.97		
171.60	0.00	174.20	7.01		
171.65	0.00	174.25	7.05		
171.70	0.00	174.30	7.08		
171.75	0.00	174.35	7.12		
171.80	0.00	174.40	7.16		
171.85	0.00	174.45	7.19		
171.90	0.00	174.50	7.23		
171.95	0.00	174.55	7.26		
172.00	0.00	174.60	7.30		
172.05	0.01	174.65	7.33		
172.10	0.04	174.70	7.37		
172.15	0.08	174.75	7.40		
172.20	0.13	174.80	7.43		
172.25	0.20	174.85	7.47		
172.30	0.28	174.90	7.50		
172.35	0.37	174.95	7.53		
172.40	0.47	175.00	7.56		
172.45	0.57	175.05	7.60		
172.50	0.68	175.10	7.63		
172.55	0.78	175.15	7.66		
172.60	0.87	175.20	7.69		
172.65	0.95	175.25	7.72		
172.70	1.02	175.30	7.75		
172.75	1.08	175.35	7.79		
172.80	1.15	175.40	7.82		
172.85	1.21	175.45	7.85		
172.90	1.27	175.50	7.88		
172.95	1.32	175.55	7.91		
173.00	1.37	175.60	7.94		
173.05	1.42	175.65	7.97		
173.10	1.47	175.70	8.00		
173.15	1.52	175.75	8.03		
173.20	1.56	175.80	8.06		
173.25	1.61	175.85	8.09		
173.30	1.65	175.90	8.11		
173.35	1.69	175.95	8.14		
173.40	1.74	176.00	8.17		
173.45	1.78	176.05	8.20		
173.50	1.82	176.10	8.23		
173.55	1.85	176.15	8.26		

Stage-Area-Storage for Pond 13P: Pr. MicroPool ED Pond

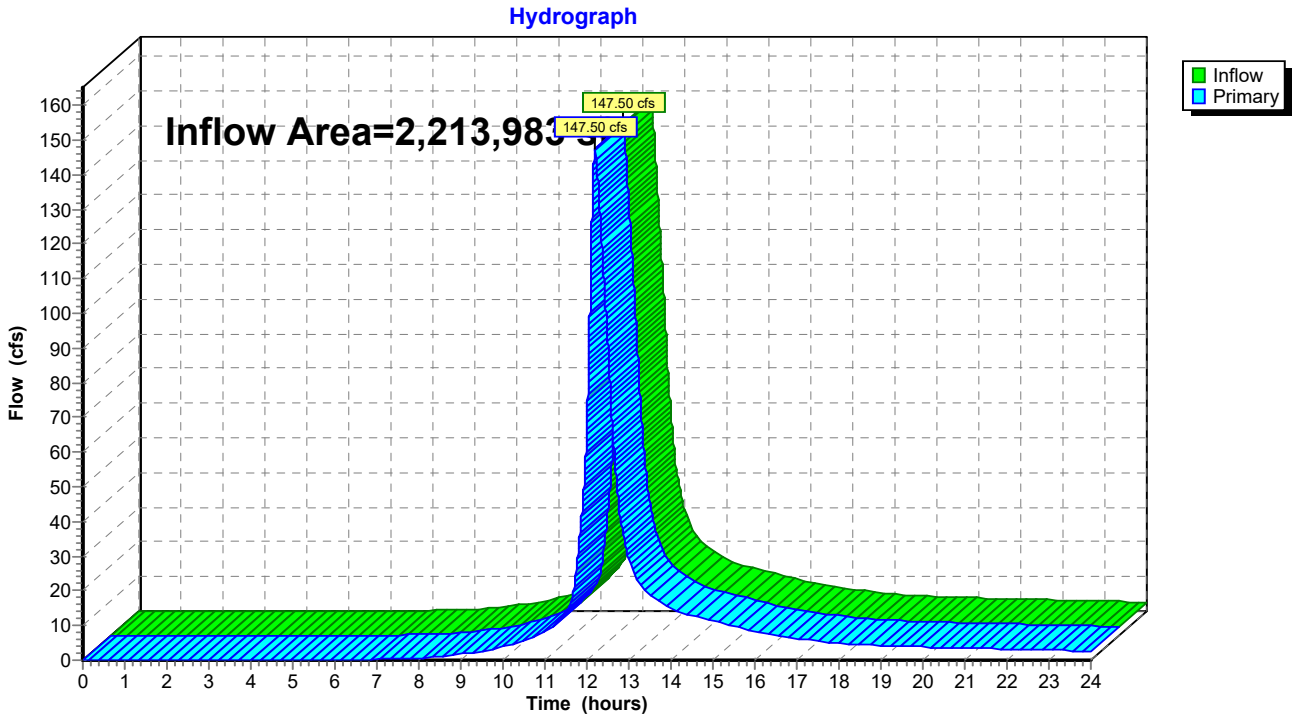
Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
171.00	0	173.60	4,245	176.20	8,816
171.05	47	173.65	4,375	176.25	8,816
171.10	95	173.70	4,505	176.30	8,816
171.15	142	173.75	4,635	176.35	8,816
171.20	189	173.80	4,765		
171.25	237	173.85	4,895		
171.30	284	173.90	5,025		
171.35	331	173.95	5,155		
171.40	379	174.00	5,285		
171.45	426	174.05	5,462		
171.50	474	174.10	5,638		
171.55	521	174.15	5,815		
171.60	568	174.20	5,991		
171.65	616	174.25	6,168		
171.70	663	174.30	6,344		
171.75	710	174.35	6,521		
171.80	758	174.40	6,697		
171.85	805	174.45	6,874		
171.90	852	174.50	7,051		
171.95	900	174.55	7,227		
172.00	947	174.60	7,404		
172.05	1,034	174.65	7,580		
172.10	1,121	174.70	7,757		
172.15	1,208	174.75	7,933		
172.20	1,295	174.80	8,110		
172.25	1,382	174.85	8,286		
172.30	1,468	174.90	8,463		
172.35	1,555	174.95	8,639		
172.40	1,642	175.00	**8,816**		
172.45	1,729	175.05	8,816		
172.50	1,816	175.10	8,816		
172.55	1,903	175.15	8,816		
172.60	1,990	175.20	8,816		
172.65	2,077	175.25	8,816		
172.70	2,164	175.30	8,816		
172.75	2,251	175.35	8,816		
172.80	2,337	175.40	8,816		
172.85	2,424	175.45	8,816		
172.90	2,511	175.50	8,816		
172.95	2,598	175.55	8,816		
173.00	2,685	175.60	8,816		
173.05	2,815	175.65	8,816		
173.10	2,945	175.70	8,816		
173.15	3,075	175.75	8,816		
173.20	3,205	175.80	8,816		
173.25	3,335	175.85	8,816		
173.30	3,465	175.90	8,816		
173.35	3,595	175.95	8,816		
173.40	3,725	176.00	8,816		
173.45	3,855	176.05	8,816		
173.50	3,985	176.10	8,816		
173.55	4,115	176.15	8,816		

Summary for Link 1L: Ex.To South Outfall

Inflow Area = 2,213,983 sf, 24.79% Impervious, Inflow Depth > 3.74" for 25-Year event
Inflow = 147.50 cfs @ 12.19 hrs, Volume= 690,623 cf
Primary = 147.50 cfs @ 12.19 hrs, Volume= 690,623 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 1L: Ex.To South Outfall

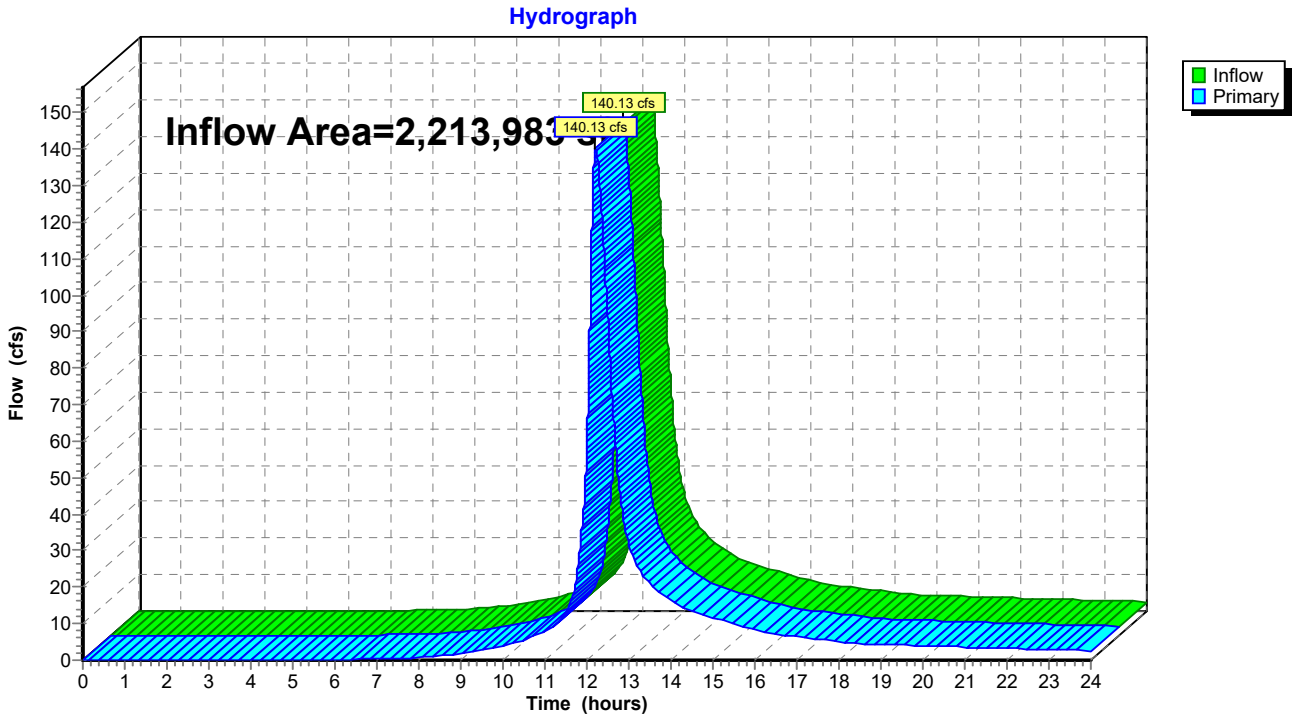


Summary for Link 2L: Pr. To South Outfall

Inflow Area = 2,213,983 sf, 27.38% Impervious, Inflow Depth > 3.79" for 25-Year event
Inflow = 140.13 cfs @ 12.21 hrs, Volume= 699,050 cf
Primary = 140.13 cfs @ 12.21 hrs, Volume= 699,050 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 2L: Pr. To South Outfall

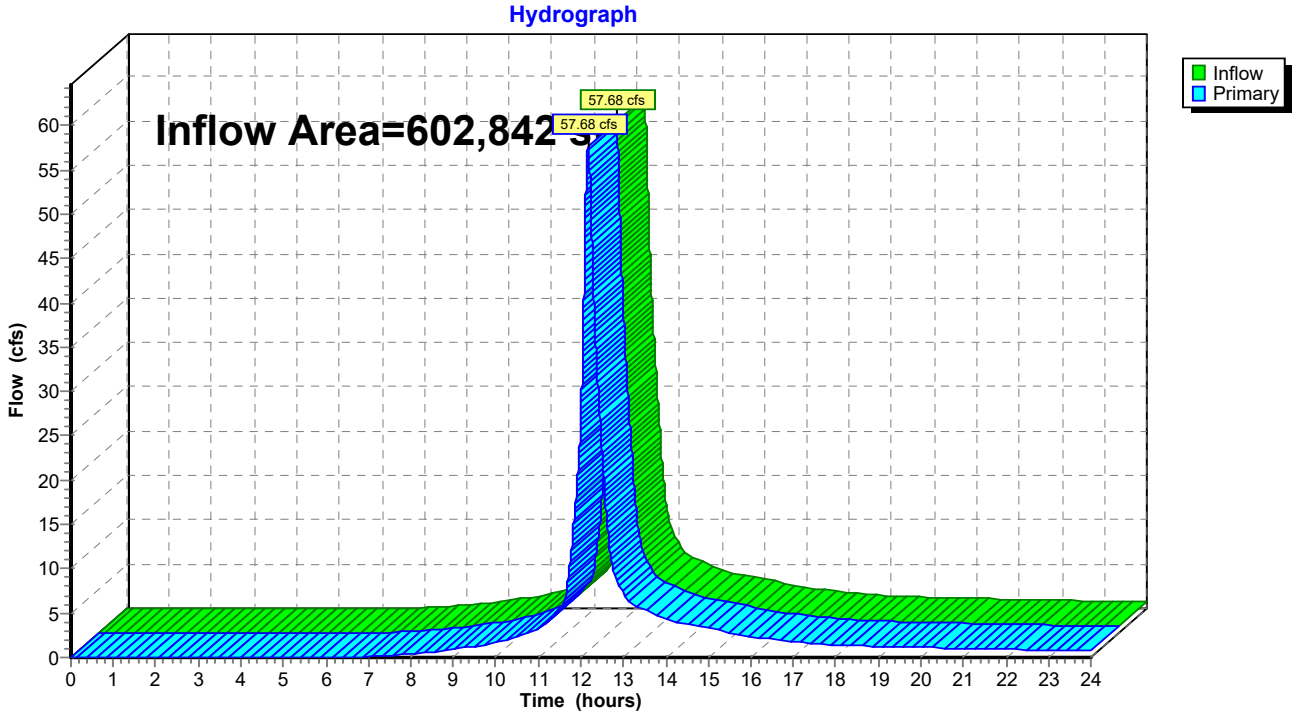


Summary for Link 4L: Ex. Central 24" Pipe

Inflow Area = 602,842 sf, 42.50% Impervious, Inflow Depth > 4.38" for 25-Year event
Inflow = 57.68 cfs @ 12.17 hrs, Volume= 220,077 cf
Primary = 57.68 cfs @ 12.17 hrs, Volume= 220,077 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 7L : Ex. To Pond

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 4L: Ex. Central 24" Pipe

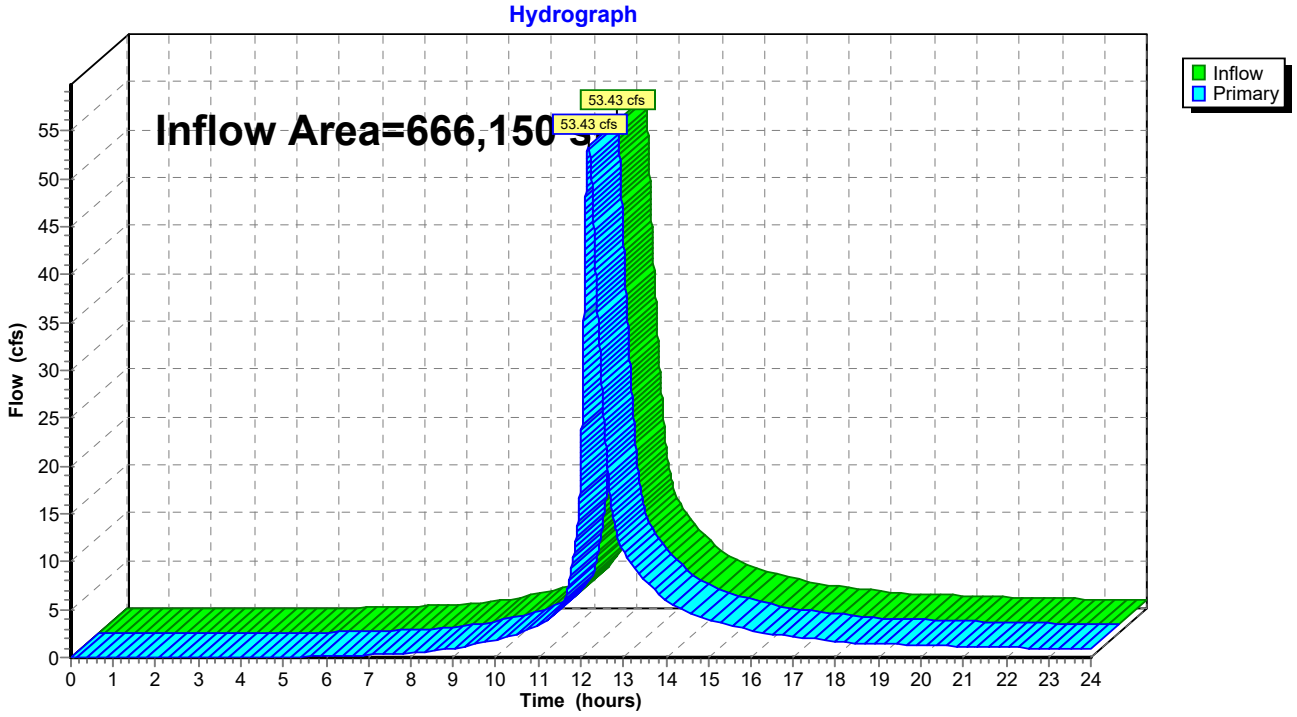


Summary for Link 5L: Pr. Central 24" Pipe

Inflow Area = 666,150 sf, 48.36% Impervious, Inflow Depth > 4.47" for 25-Year event
Inflow = 53.43 cfs @ 12.17 hrs, Volume= 247,877 cf
Primary = 53.43 cfs @ 12.17 hrs, Volume= 247,877 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 8L : Pr. To Pond

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 5L: Pr. Central 24" Pipe

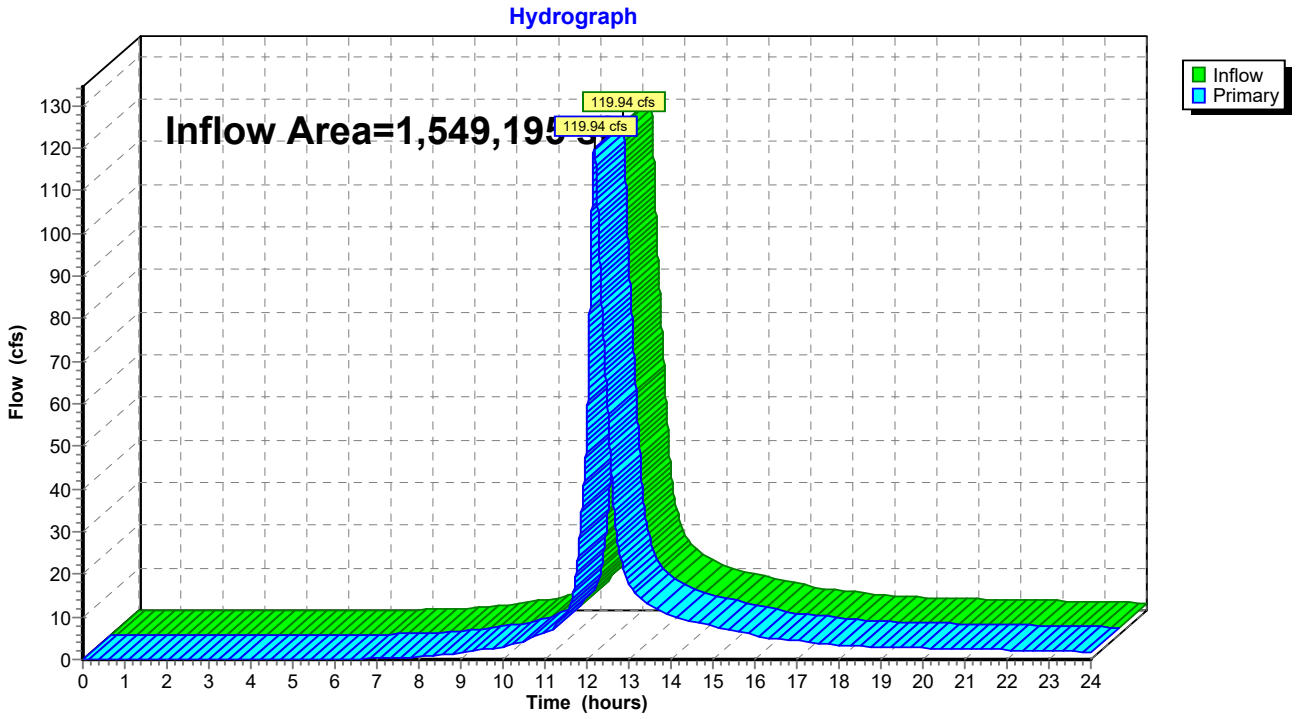


Summary for Link 7L: Ex. To Pond

Inflow Area = 1,549,195 sf, 29.31% Impervious, Inflow Depth > 3.83" for 25-Year event
Inflow = 119.94 cfs @ 12.18 hrs, Volume= 494,394 cf
Primary = 119.94 cfs @ 12.18 hrs, Volume= 494,394 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 1L : Ex.To South Outfall

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 7L: Ex. To Pond

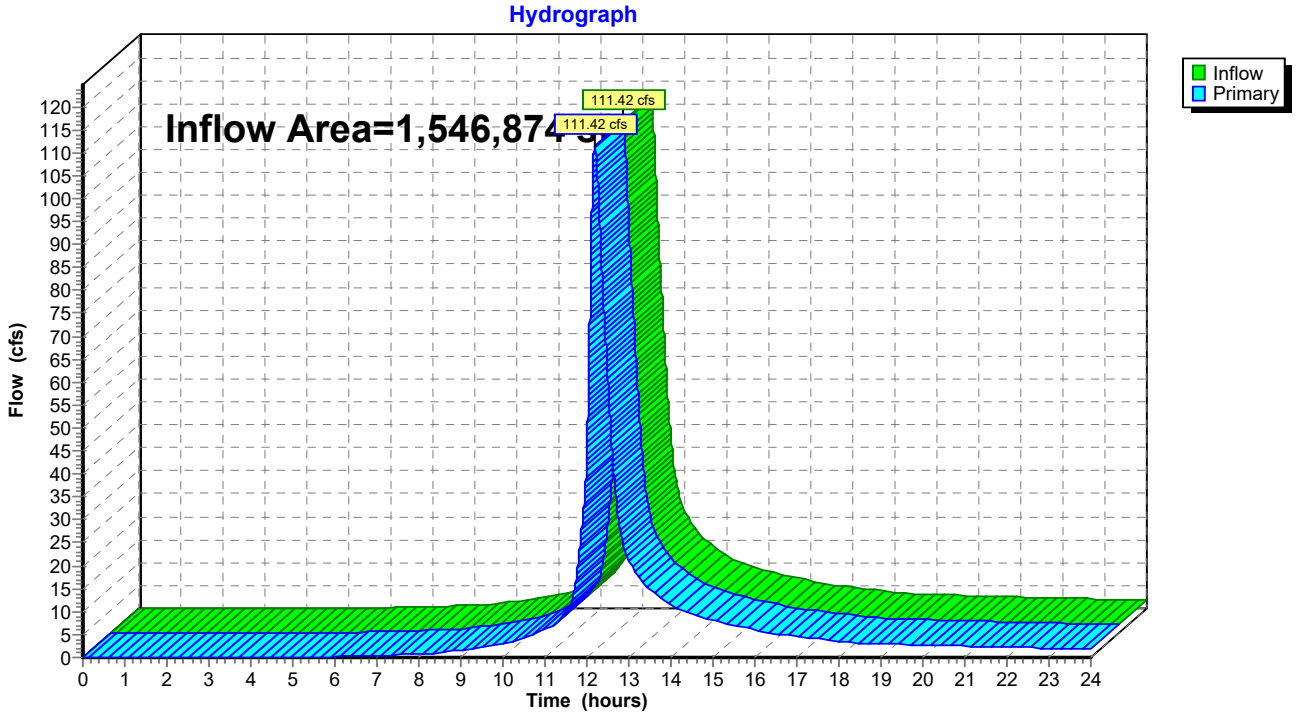


Summary for Link 8L: Pr. To Pond

Inflow Area = 1,546,874 sf, 33.39% Impervious, Inflow Depth > 3.89" for 25-Year event
Inflow = 111.42 cfs @ 12.19 hrs, Volume= 502,060 cf
Primary = 111.42 cfs @ 12.19 hrs, Volume= 502,060 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 2L : Pr. To South Outfall

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 8L: Pr. To Pond

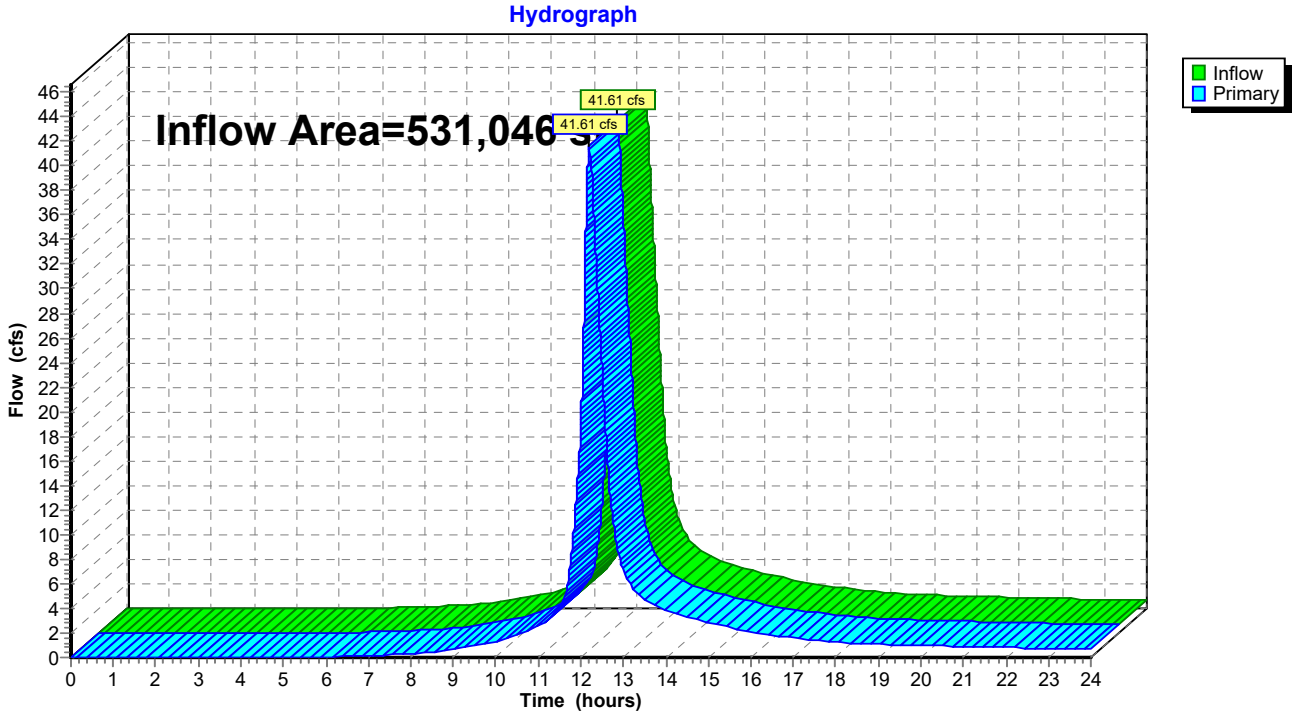


Summary for Link 10L: Ex. To North Detention Pond

Inflow Area = 531,046 sf, 28.93% Impervious, Inflow Depth > 4.20" for 25-Year event
Inflow = 41.61 cfs @ 12.21 hrs, Volume= 185,987 cf
Primary = 41.61 cfs @ 12.21 hrs, Volume= 185,987 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 7L : Ex. To Pond

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 10L: Ex. To North Detention Pond

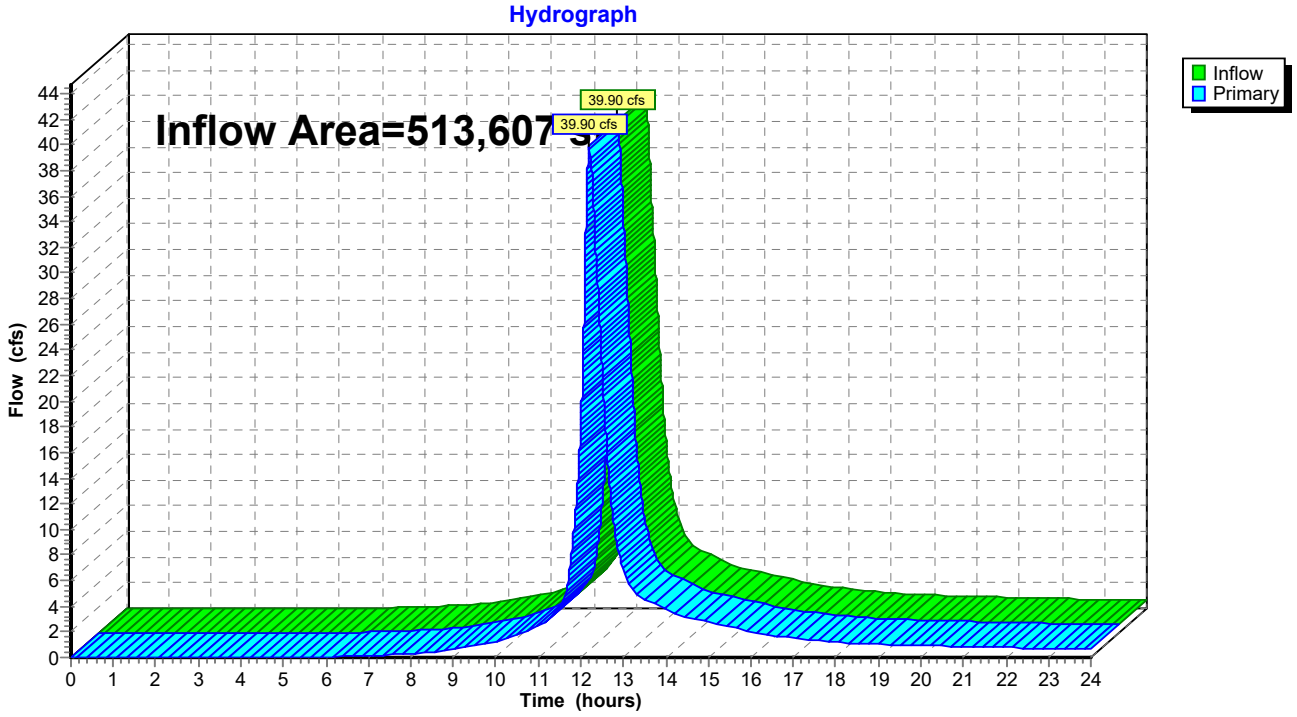


Summary for Link 11L: Pr. To North Detention Pond

Inflow Area = 513,607 sf, 29.18% Impervious, Inflow Depth > 4.18" for 25-Year event
Inflow = 39.90 cfs @ 12.21 hrs, Volume= 178,990 cf
Primary = 39.90 cfs @ 12.21 hrs, Volume= 178,990 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 8L : Pr. To Pond

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 11L: Pr. To North Detention Pond

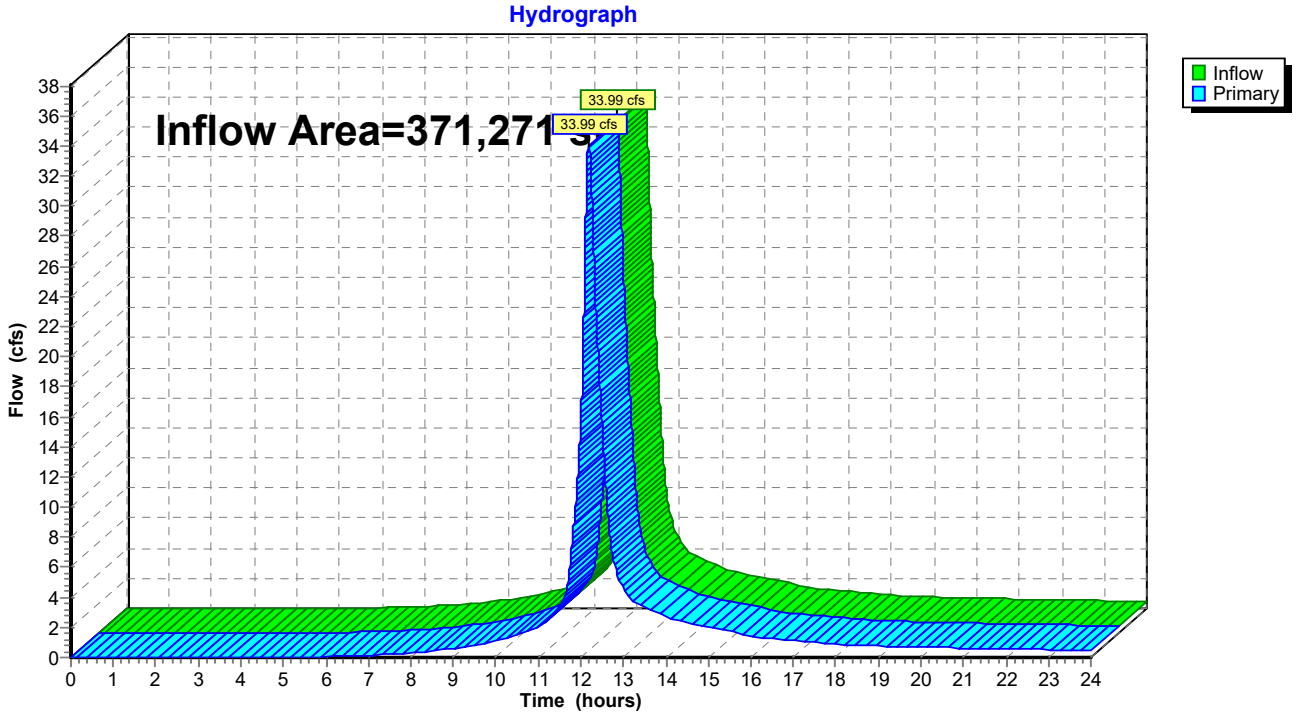


Summary for Link 13L: Ex. North Swale Out

Inflow Area = 371,271 sf, 38.29% Impervious, Inflow Depth > 4.45" for 25-Year event
Inflow = 33.99 cfs @ 12.19 hrs, Volume= 137,607 cf
Primary = 33.99 cfs @ 12.19 hrs, Volume= 137,607 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 10L : Ex. To North Detention Pond

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 13L: Ex. North Swale Out

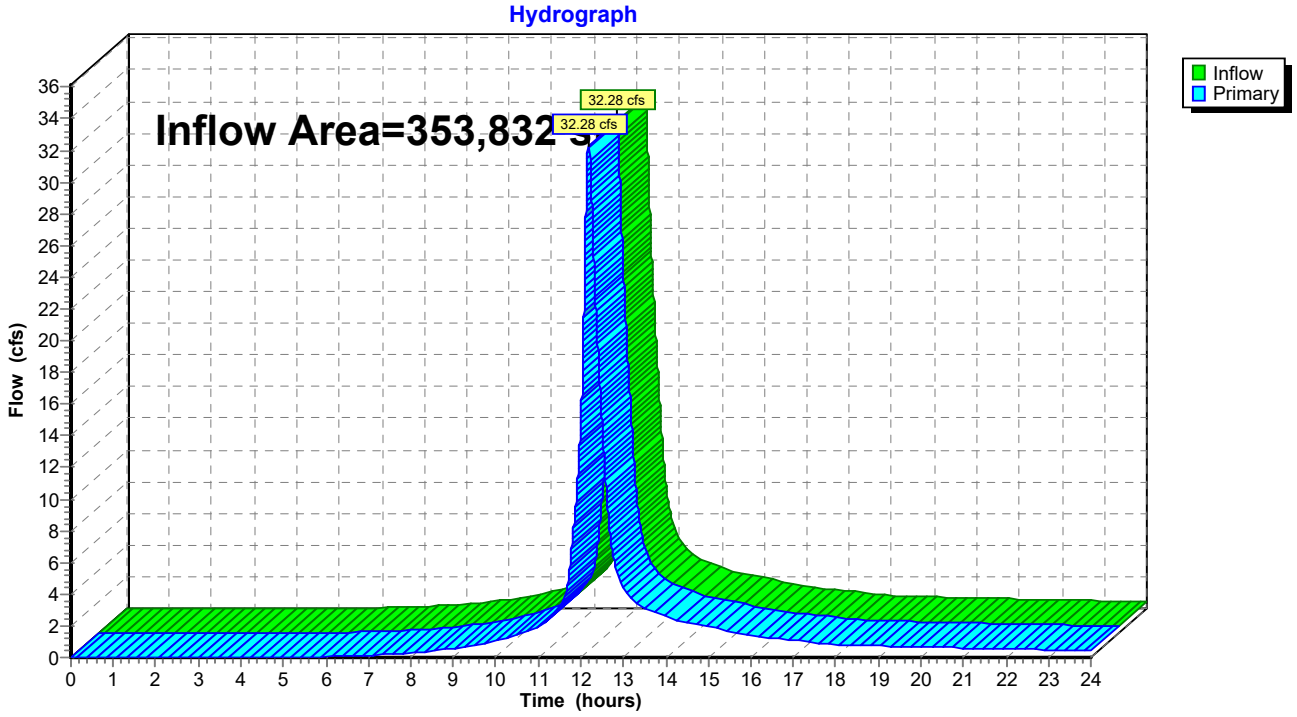


Summary for Link 14L: Pr. North Swale Out

Inflow Area = 353,832 sf, 39.11% Impervious, Inflow Depth > 4.43" for 25-Year event
Inflow = 32.28 cfs @ 12.19 hrs, Volume= 130,610 cf
Primary = 32.28 cfs @ 12.19 hrs, Volume= 130,610 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 11L : Pr. To North Detention Pond

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 14L: Pr. North Swale Out



Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Ex. South Runoff Area=609,337 sf 15.57% Impervious Runoff Depth>4.38"
Flow Length=2,071' Tc=26.8 min CN=73 Runoff=43.05 cfs 222,440 cf

Subcatchment2S: Ex.South Wetlands Runoff Area=55,451 sf 0.00% Impervious Runoff Depth>3.20"
Flow Length=385' Tc=5.5 min CN=62 Runoff=4.81 cfs 14,787 cf

Subcatchment3S: Ex.Central 24" Pipe Runoff Area=602,842 sf 42.50% Impervious Runoff Depth>5.18"
Flow Length=1,924' Tc=12.4 min CN=80 Runoff=67.93 cfs 260,405 cf

Subcatchment4S: Ex. Central ByPass Runoff Area=415,307 sf 10.64% Impervious Runoff Depth>3.19"
Flow Length=536' Tc=13.7 min CN=62 Runoff=27.63 cfs 110,529 cf

Subcatchment5S: Ex. North Runoff Area=159,775 sf 7.18% Impervious Runoff Depth>4.38"
Flow Length=731' Tc=24.4 min CN=73 Runoff=11.77 cfs 58,356 cf

Subcatchment7S: Ex. North Conveyance Runoff Area=294,527 sf 47.83% Impervious Runoff Depth>5.64"
Flow Length=424' Tc=14.4 min CN=84 Runoff=33.68 cfs 138,445 cf

Subcatchment8S: Ex.North Swale Runoff Area=76,744 sf 1.70% Impervious Runoff Depth>3.73"
Flow Length=1,170' Tc=11.4 min CN=67 Runoff=6.44 cfs 23,876 cf

Subcatchment9S: Pr. South Runoff Area=612,302 sf 14.65% Impervious Runoff Depth>4.38"
Flow Length=2,071' Tc=26.8 min CN=73 Runoff=43.26 cfs 223,522 cf

Subcatchment10S: Pr. South Wetlands Runoff Area=54,807 sf 0.00% Impervious Runoff Depth>3.20"
Flow Length=300' Tc=5.0 min CN=62 Runoff=4.84 cfs 14,617 cf

Subcatchment11S: Pr.West Pond Runoff Area=58,199 sf 57.82% Impervious Runoff Depth>5.42"
Flow Length=364' Tc=5.8 min CN=82 Runoff=8.41 cfs 26,281 cf

Subcatchment12S: Pr.East Pond Runoff Area=296,757 sf 74.36% Impervious Runoff Depth>6.35"
Tc=5.0 min CN=90 Runoff=49.43 cfs 156,991 cf

Subcatchment13S: Pr.Central 24" Pipe Runoff Area=311,194 sf 21.80% Impervious Runoff Depth>4.28"
Flow Length=710' Tc=17.2 min CN=72 Runoff=25.77 cfs 110,945 cf

Subcatchment15S: Pr. North Runoff Area=159,775 sf 7.18% Impervious Runoff Depth>4.38"
Flow Length=731' Tc=24.4 min CN=73 Runoff=11.77 cfs 58,356 cf

Subcatchment16S: Pr. Central ByPass Runoff Area=367,117 sf 12.09% Impervious Runoff Depth>3.09"
Flow Length=536' Tc=13.7 min CN=61 Runoff=23.52 cfs 94,463 cf

Subcatchment18S: Pr. North Swale Runoff Area=76,739 sf 2.20% Impervious Runoff Depth>3.73"
Flow Length=1,170' Tc=11.4 min CN=67 Runoff=6.44 cfs 23,875 cf

Subcatchment31S: Pr. North Conveyance Runoff Area=277,093 sf 49.34% Impervious Runoff Depth>5.64"
Flow Length=424' Tc=14.4 min CN=84 Runoff=31.68 cfs 130,250 cf

Pond 12P: Pr. Pocket Pond	Peak Elev=89.62' Storage=49,950 cf Inflow=49.43 cfs 156,991 cf Outflow=34.73 cfs 155,027 cf
Pond 13P: Pr. MicroPool ED Pond	Peak Elev=173.99' Storage=5,247 cf Inflow=8.41 cfs 26,281 cf Outflow=6.33 cfs 26,006 cf
Link 1L: Ex.To South Outfall	Inflow=177.06 cfs 828,838 cf Primary=177.06 cfs 828,838 cf
Link 2L: Pr. To South Outfall	Inflow=169.28 cfs 837,060 cf Primary=169.28 cfs 837,060 cf
Link 4L: Ex. Central 24" Pipe	Inflow=67.93 cfs 260,405 cf Primary=67.93 cfs 260,405 cf
Link 5L: Pr. Central 24" Pipe	Inflow=63.98 cfs 291,978 cf Primary=63.98 cfs 291,978 cf
Link 7L: Ex. To Pond	Inflow=143.44 cfs 591,611 cf Primary=143.44 cfs 591,611 cf
Link 8L: Pr. To Pond	Inflow=134.29 cfs 598,921 cf Primary=134.29 cfs 598,921 cf
Link 10L: Ex. To North Detention Pond	Inflow=49.15 cfs 220,677 cf Primary=49.15 cfs 220,677 cf
Link 11L: Pr. To North Detention Pond	Inflow=47.17 cfs 212,481 cf Primary=47.17 cfs 212,481 cf
Link 13L: Ex. North Swale Out	Inflow=39.92 cfs 162,322 cf Primary=39.92 cfs 162,322 cf
Link 14L: Pr. North Swale Out	Inflow=37.94 cfs 154,125 cf Primary=37.94 cfs 154,125 cf

Total Runoff Area = 4,427,966 sf Runoff Volume = 1,668,137 cf Average Runoff Depth = 4.52"
73.92% Pervious = 3,272,938 sf 26.08% Impervious = 1,155,028 sf

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Ex. South Runoff Area=609,337 sf 15.57% Impervious Runoff Depth>5.19"
Flow Length=2,071' Tc=26.8 min CN=73 Runoff=50.98 cfs 263,646 cf

Subcatchment2S: Ex.South Wetlands Runoff Area=55,451 sf 0.00% Impervious Runoff Depth>3.91"
Flow Length=385' Tc=5.5 min CN=62 Runoff=5.93 cfs 18,074 cf

Subcatchment3S: Ex.Central 24" Pipe Runoff Area=602,842 sf 42.50% Impervious Runoff Depth>6.04"
Flow Length=1,924' Tc=12.4 min CN=80 Runoff=78.80 cfs 303,649 cf

Subcatchment4S: Ex. Central ByPass Runoff Area=415,307 sf 10.64% Impervious Runoff Depth>3.90"
Flow Length=536' Tc=13.7 min CN=62 Runoff=34.07 cfs 135,115 cf

Subcatchment5S: Ex. North Runoff Area=159,775 sf 7.18% Impervious Runoff Depth>5.19"
Flow Length=731' Tc=24.4 min CN=73 Runoff=13.93 cfs 69,165 cf

Subcatchment7S: Ex. North Conveyance Runoff Area=294,527 sf 47.83% Impervious Runoff Depth>6.52"
Flow Length=424' Tc=14.4 min CN=84 Runoff=38.68 cfs 160,076 cf

Subcatchment8S: Ex.North Swale Runoff Area=76,744 sf 1.70% Impervious Runoff Depth>4.50"
Flow Length=1,170' Tc=11.4 min CN=67 Runoff=7.78 cfs 28,748 cf

Subcatchment9S: Pr. South Runoff Area=612,302 sf 14.65% Impervious Runoff Depth>5.19"
Flow Length=2,071' Tc=26.8 min CN=73 Runoff=51.23 cfs 264,929 cf

Subcatchment10S: Pr. South Wetlands Runoff Area=54,807 sf 0.00% Impervious Runoff Depth>3.91"
Flow Length=300' Tc=5.0 min CN=62 Runoff=5.96 cfs 17,866 cf

Subcatchment11S: Pr.West Pond Runoff Area=58,199 sf 57.82% Impervious Runoff Depth>6.29"
Flow Length=364' Tc=5.8 min CN=82 Runoff=9.70 cfs 30,513 cf

Subcatchment12S: Pr.East Pond Runoff Area=296,757 sf 74.36% Impervious Runoff Depth>7.25"
Tc=5.0 min CN=90 Runoff=56.04 cfs 179,371 cf

Subcatchment13S: Pr.Central 24" Pipe Runoff Area=311,194 sf 21.80% Impervious Runoff Depth>5.08"
Flow Length=710' Tc=17.2 min CN=72 Runoff=30.61 cfs 131,818 cf

Subcatchment15S: Pr. North Runoff Area=159,775 sf 7.18% Impervious Runoff Depth>5.19"
Flow Length=731' Tc=24.4 min CN=73 Runoff=13.93 cfs 69,165 cf

Subcatchment16S: Pr. Central ByPass Runoff Area=367,117 sf 12.09% Impervious Runoff Depth>3.79"
Flow Length=536' Tc=13.7 min CN=61 Runoff=29.13 cfs 115,857 cf

Subcatchment18S: Pr. North Swale Runoff Area=76,739 sf 2.20% Impervious Runoff Depth>4.50"
Flow Length=1,170' Tc=11.4 min CN=67 Runoff=7.78 cfs 28,746 cf

Subcatchment31S: Pr. North Conveyance Runoff Area=277,093 sf 49.34% Impervious Runoff Depth>6.52"
Flow Length=424' Tc=14.4 min CN=84 Runoff=36.39 cfs 150,601 cf

Pond 12P: Pr. Pocket Pond	Peak Elev=89.83' Storage=52,786 cf Inflow=56.04 cfs 179,371 cf Outflow=36.98 cfs 177,248 cf
Pond 13P: Pr. MicroPool ED Pond	Peak Elev=174.13' Storage=5,728 cf Inflow=9.70 cfs 30,513 cf Outflow=6.95 cfs 30,218 cf
Link 1L: Ex.To South Outfall	Inflow=208.78 cfs 978,473 cf Primary=208.78 cfs 978,473 cf
Link 2L: Pr. To South Outfall	Inflow=200.79 cfs 986,447 cf Primary=200.79 cfs 986,447 cf
Link 4L: Ex. Central 24" Pipe	Inflow=78.80 cfs 303,649 cf Primary=78.80 cfs 303,649 cf
Link 5L: Pr. Central 24" Pipe	Inflow=73.70 cfs 339,283 cf Primary=73.70 cfs 339,283 cf
Link 7L: Ex. To Pond	Inflow=168.61 cfs 696,752 cf Primary=168.61 cfs 696,752 cf
Link 8L: Pr. To Pond	Inflow=157.39 cfs 703,652 cf Primary=157.39 cfs 703,652 cf
Link 10L: Ex. To North Detention Pond	Inflow=57.18 cfs 257,989 cf Primary=57.18 cfs 257,989 cf
Link 11L: Pr. To North Detention Pond	Inflow=54.90 cfs 248,511 cf Primary=54.90 cfs 248,511 cf
Link 13L: Ex. North Swale Out	Inflow=46.23 cfs 188,824 cf Primary=46.23 cfs 188,824 cf
Link 14L: Pr. North Swale Out	Inflow=43.95 cfs 179,346 cf Primary=43.95 cfs 179,346 cf

Total Runoff Area = 4,427,966 sf Runoff Volume = 1,967,338 cf Average Runoff Depth = 5.33"
73.92% Pervious = 3,272,938 sf 26.08% Impervious = 1,155,028 sf

Appendix D

Conveyance Calculations
Energy Dissipator Sizing

Conveyance Protection Calculations

Project:	*900 Long Ridge Road*	**Project #:**	*1988*	**Date:**	6/23/2023
Location:	*900 Long Ridge Road, Stamford, CT*	**By:**	*DML*	**Checked:**	*DRG*

25 Year Storm: Pocket Pond

Pipe From MH#6 to MH#5

Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description			
4.788	0.95	Impervious	4.548							
0.942	0.30	Pervious	0.283							
5.730		**Total**	**4.831**					**5**	**8.53**	**41.21**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	
41.21	24	6	0.011	PVC	0.025	42.39	97.2%	Flow Q is Tributary Area to MH#6

Pipe From MH#5 to MH#4

Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description			
	0.95	Impervious	0.000							
	0.30	Pervious	0.000							
0.000		**Total**	**0.000**					**5**	**8.53**	**41.21**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	
41.21	24	19	0.011	PVC	0.026	43.23	95.3%	Flow Q is Tributary Area to MH#6

Pipe From MH#4 to MH#3

Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description			
4.788	0.95	Impervious	4.548							
0.942	0.30	Pervious	0.283							
5.730		**Total**	**4.831**					**5**	**8.53**	**41.21**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	
41.21	24	12	0.011	PVC	0.050	59.94	68.7%	Flow Q is Tributary Area to MH#6

REDNISS & MEAD

Conveyance Protection Calculations

Project:	*900 Long Ridge Road*	**Project #:**	*1988*	**Date:**	6/23/2023
Location:	*900 Long Ridge Road, Stamford, CT*	**By:**	*DML*	**Checked:**	*DRG*

25 Year Storm: Pocket Pond

Pipe From MH#3 to MH#2

Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	**C**	**Description**	**AC**	**Length (ft)**	**ΔH**	**Slope (%)**	**Description**			
	0.95	Impervious	0.000							
	0.30	Pervious	0.000							
0.000		**Total**	**0.000**					**5**	**8.53**	**41.21**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)
41.21	24	184	0.011	PVC	0.264	137.74	29.9%

Flow Q is Tributary Area to MH#6

Pipe From MMH#1 to MH#1

Basin Description				Drainage Path				Time (min)	100yr. Rainfall Storm	Q = ACI (cfs)
Acres	**C**	**Description**	**AC**	**Length (ft)**	**ΔH**	**Slope (%)**	**Description**			
0.000	0.95	Impervious	0.000							
0.000	0.30	Pervious	0.000							
0.000		**Total**	**0.000**					**-**	**-**	**37.00**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)
37.00	24	75	0.011	PVC	0.020	37.91	97.6%

Flow Q is total Outflow of Pr.Pocket Pond in HydroCAD during 100 Year Storm

REDNISS & MEAD

Conveyance Protection Calculations

Project:	*900 Long Ridge Road*	**Project #:**	*1988*	**Date:**	6/23/2023
Location:	*900 Long Ridge Road, Stamford, CT*	**By:**	*DML*	**Checked:**	*DRG*

25 Year Storm: Micropool ED Pond

Pipe From MH#102 to MH#101

Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description			
0.365	0.95	Impervious	0.347							
0.024	0.30	Pervious	0.007							
0.389		**Total**	**0.354**					**5**	**8.53**	**3.02**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	
3.02	12	62	0.011	PVC	0.088	12.52	24.1%	Flow Q is Tributary Area to MH#103

Pipe From CB#101 to MH#101

Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description			
0.186	0.95	Impervious	0.176							
	0.30	Pervious	0.000							
0.186		**Total**	**0.176**					**5**	**8.53**	**1.50**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	
1.50	12	12	0.011	PVC	0.250	21.11	7.1%	Flow Q is Tributary Area to CB#101

Pipe From MH#105 to MH#101

Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description			
0.128	0.95	Impervious	0.122							
0.006	0.30	Pervious	0.002							
0.135		**Total**	**0.124**					**5**	**8.53**	**1.06**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	
1.06	12	36	0.011	PVC	0.080	11.94	8.9%	Flow Q is Tributary Area to CB#102

REDNISS & MEAD

Conveyance Protection Calculations

Project:	*900 Long Ridge Road*	**Project #:**	*1988*	**Date:**	6/23/2023
Location:	*900 Long Ridge Road, Stamford, CT*	**By:**	*DML*	**Checked:**	*DRG*

25 Year Storm: Micropool ED Pond

Pipe From MH#101 to ED#2

Basin Description				Drainage Path						
Acres	**C**	**Description**	**AC**	**Length (ft)**	**ΔH**	**Slope (%)**	**Description**	**Time (min)**	**25yr. Rainfall Intensity (in/hr)**	**Q = ACI (cfs)**
0.000	0.95	Impervious	0.000							
0.000	0.30	Pervious	0.000							
0.000		**Total**	**0.000**					**5**	**8.53**	**5.58**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)
5.58	15	15	0.011	PVC	0.012	8.39	66.6%

Flow Q is sum of Flow to MH#101

Pipe From CB#12 to MH#28A

Basin Description				Drainage Path						
Acres	**C**	**Description**	**AC**	**Length (ft)**	**ΔH**	**Slope (%)**	**Description**	**Time (min)**	**25yr. Rainfall Intensity (in/hr)**	**Q = ACI (cfs)**
0.000	0.95	Impervious	0.000							
0.000	0.30	Pervious	0.000							
0.000		**Total**	**0.000**					**-**	**-**	**6.95**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)
6.95	18	14	0.011	PVC	0.020	17.60	39.5%

Flow Q is total Outflow of Pr.MicroPool ED Pond in HydroCAD during 100 Year Storm

Conveyance Protection Calculations

Project:	*900 Long Ridge Road*	**Project #:**	*1988*	**Date:**	6/23/2023
Location:	*900 Long Ridge Road, Stamford, CT*	**By:**	*DML*	**Checked:**	*DRG*

25 Year Storm: North Conveyance

Pipe From MH#210 to EX.MH#2

Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description			
1.079	0.95	Impervious	1.025							
0.000	0.30	Pervious	0.000							
1.079		**Total**	**1.025**					**5**	**8.53**	**8.74**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	
8.74	24	79	0.011	PVC	0.020	37.91	23.1%	Flow Q is Tributary Area from Ex. Garage Roof Area and a portion of Building D Roof Area

Pipe From EX.MH#2 to EX.MH#6

Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description			
0.456	0.95	Impervious	0.433							
0.059	0.30	Pervious	0.018							
0.515		**Total**	**0.451**					**5**	**8.53**	**3.85**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	
12.59	24	110	0.012	RCP	0.048	53.84	23.4%	Flow Q is sum of Ex. Garage Roof Area, a portion of Building D Roof Area, and tributary area to CBs that flow into EX.MH#6

Pipe From EX.MH#6 TO EX.MH#5

Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description			
0.000	0.95	Impervious	0.000							
0.000	0.30	Pervious	0.000							
0.000		**Total**	**0.000**					**0**	**0.00**	**0.00**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	
12.59	24	61	0.011	PVC	0.029	45.65	27.6%	Flow Q is sum of Ex. Garage Roof Area, a portion of Building D Roof Area, and tributary area to CBs that flow into EX.MH#6

REDNISS & MEAD

Conveyance Protection Calculations

Project:	*900 Long Ridge Road*	**Project #:**	*1988*	**Date:**	6/23/2023
Location:	*900 Long Ridge Road, Stamford, CT*	**By:**	*DML*	**Checked:**	*DRG*

25 Year Storm: North Conveyance

Pipe From EX.MH#5 TO MH#203

Basin Description				Drainage Path						
Acres	**C**	**Description**	**AC**	**Length (ft)**	**ΔH**	**Slope (%)**	**Description**	**Time (min)**	**25yr. Rainfall Intensity (in/hr)**	**Q = ACI (cfs)**
0.973	0.95	Impervious	0.924							
0.031	0.30	Pervious	0.009							
1.004		**Total**	**0.933**					**5**	**8.53**	**7.96**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	
20.55	24	9	0.011	PVC	0.037	51.57	39.9%	Flow Q is sum of all Tributary Area to EX.MH#6, Tributary Area to CBs that flow to EX.MH#5, and a portion of Building C roof/amenity areas.

Pipe From MH#203 to DMH#201

Basin Description				Drainage Path						
Acres	**C**	**Description**	**AC**	**Length (ft)**	**ΔH**	**Slope (%)**	**Description**	**Time (min)**	**25yr. Rainfall Intensity (in/hr)**	**Q = ACI (cfs)**
0.000	0.95	Impervious	0.000							
0.000	0.30	Pervious	0.000							
0.000		**Total**	**0.000**					**0**	**0.00**	**0.00**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	
20.55	24	50	0.020	CMP	0.035	27.58	74.5%	Flow Q is sum of all Tributary Area to EX.MH#6, Tributary Area to CBs that flow to EX.MH#5, and a portion of Building C roof/amenity areas.

REDNISS & MEAD

TYPE 2 PREFORMED SCOUR HOLE SIZING

Project: *900 Long Ridge Road*	**Project #:** *1988*	**Date:** *6/23/2023*
Location: *Stamford, CT*	**By:** *DML*	**Checked:** *DRG*

ED#1: Pocket Pond

Flow (Q)	41.9 cfs
Tail Water (TW)	89.83 ft
Pipe Size (Sp)	2.00 ft
d50=	0.01 ft
Required RipRap	Modified
Basin Depression (F)	2.00 ft
Basin Length (C)	18 ft
Basin Width (B)	16 ft
Depression Length	6 ft
Depression Width	4 ft

[a] d50=(0.0082xSp2/Tw)(Q/Sp2.5)1.333=Equation 11.35 from Section 11.13.6 of the Connecticut Department of Transportation Drainage Manual

[b] From the table on Page 11.13-5 of the Connecticut Department of Transportation Drainage Manual

[c] Basin Depression (F)=Sp=Equation 11.37 from Section 11.13.6 of the Connecticut Department of Transportation Drainage Manual

[d] Basin Length (C)=3Sp+6F=Equation 11.37 from Section 11.13.6 of the Connecticut Department of Transpor

[e] Basin Width (B)=2Sp+6F=Equation 11.37 from Section 11.13.6 of the Connecticut Department of Transportation Drainage Manual

[f] Depression Length=3Sp=Equation from Page 11.13-19 of the Connecticut Department of Transportation Drainage Manual

[g] Depression Width=2Sp=Equation from Page 11.13-19 of the Connecticut Department of Transportation Drainage Manual

RIPRAP SIZING

Project: *900 Long Ridge Road*	**Project #:** *1988*	**Date:** *6/23/2023*
Location: *Stamford, CT*	**By:** *DML*	**Checked:** *DRG*

ED#2: MicroPool Pond

Downstream channel	No
Tail Water (TW)	TW < 0.5 Rp
RipRap Type	A

Velocity	2.00	fps
Discharge (Q)	7.1	cfs
Pipe Diameter	18	in
Pipe Diameter (R_p)	2	ft
Inside Diameter (S_p)	2	ft
Length (L_a)	12	ft[a]
Riprap Specification	Modified [b]	
Start Width (W1)	4.5	ft[c]
End Width (W2)	12.9	ft

[a] From Table 11-12.1 from Page 11.13-7 and Table 11-13.1 from Page 11.13.9 of the Connecticut Department of Transportation Drainage Manual

[b] From Table 11.11 on Page 11.13-2 of the Connecticut Department of Transportation Drainage Manual

[c] W1=3Sp and W2=3Sp + 0.7La from Equation 11.33 from Page 11.13.3 of the Connecticut Department of Transportation Drainage Manual

Appendix E

Site Observation Report for Northern Pond /Swale

Site Observation Report for Northern Pond/ Swale

Monday Properties
900 Long Ridge Road, Stamford, CT
June 23, 2023

One of the existing stormwater management practices at 900 Long Ridge Road consists of a stoned lined swale and detention pond located in the northern portion of the site. A site visit was conducted on May 24, 2023, to observe how the existing swale and detention pond are currently performing. Both the swale and existing detention pond show signs of extreme overgrowth and little landscaping maintenance (Photos 9-10). Photos 1-3 show the existing 24" corrugated metal pipe with flow at the western end of the swale. The adjacent 12" reinforced concrete pipe was not located during this site visit. The stone lined swale and watercourse exhibits little to no signs of erosion as indicated by the original stones still in place and an abundance of vegetation. The stone weir wall was located (Photos 4-6) during this site visit and was noted as being filled with sediment. The detention pond was also observed with pictures being taken at upstream (Photo 14) and downstream (Photo 15) towards the mouth of the pond. Excessive sediment accumulation was noted. The existing detention pond was observed to be almost entirely filled with sediment. There was not a lot of visible water, but rather a meadow/grass combination growing inside the pond footprint (Photos 16-20). A clear, defined berm was observed on the eastern portion of the detention pond (Photos 21-22) and the outlet structure, a 12" reinforced concrete pipe, was located (Photo 23). There were no signs of erosion on the berm or at the outlet of the 12" pipe.

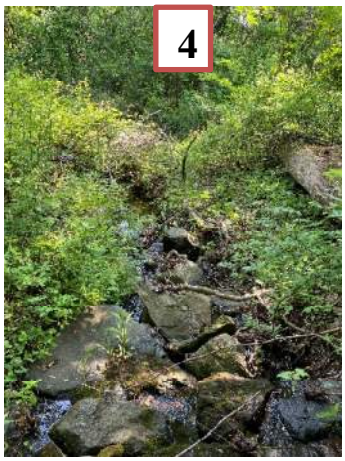
Site Photos of Northern Pond/Swale

1

2

3

4



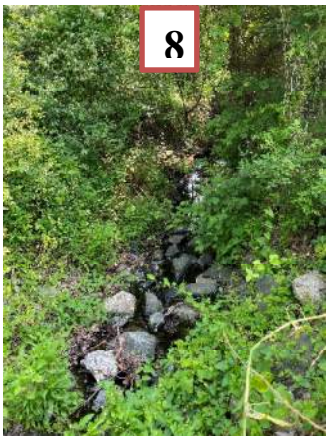
5

6

REDNISS & MEAD

7

8



9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

NORTH - MAP 10662 S.L.R.

PHOTO EXHIBIT

900 LONG RIDGE ROAD

STAMFORD, CT

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

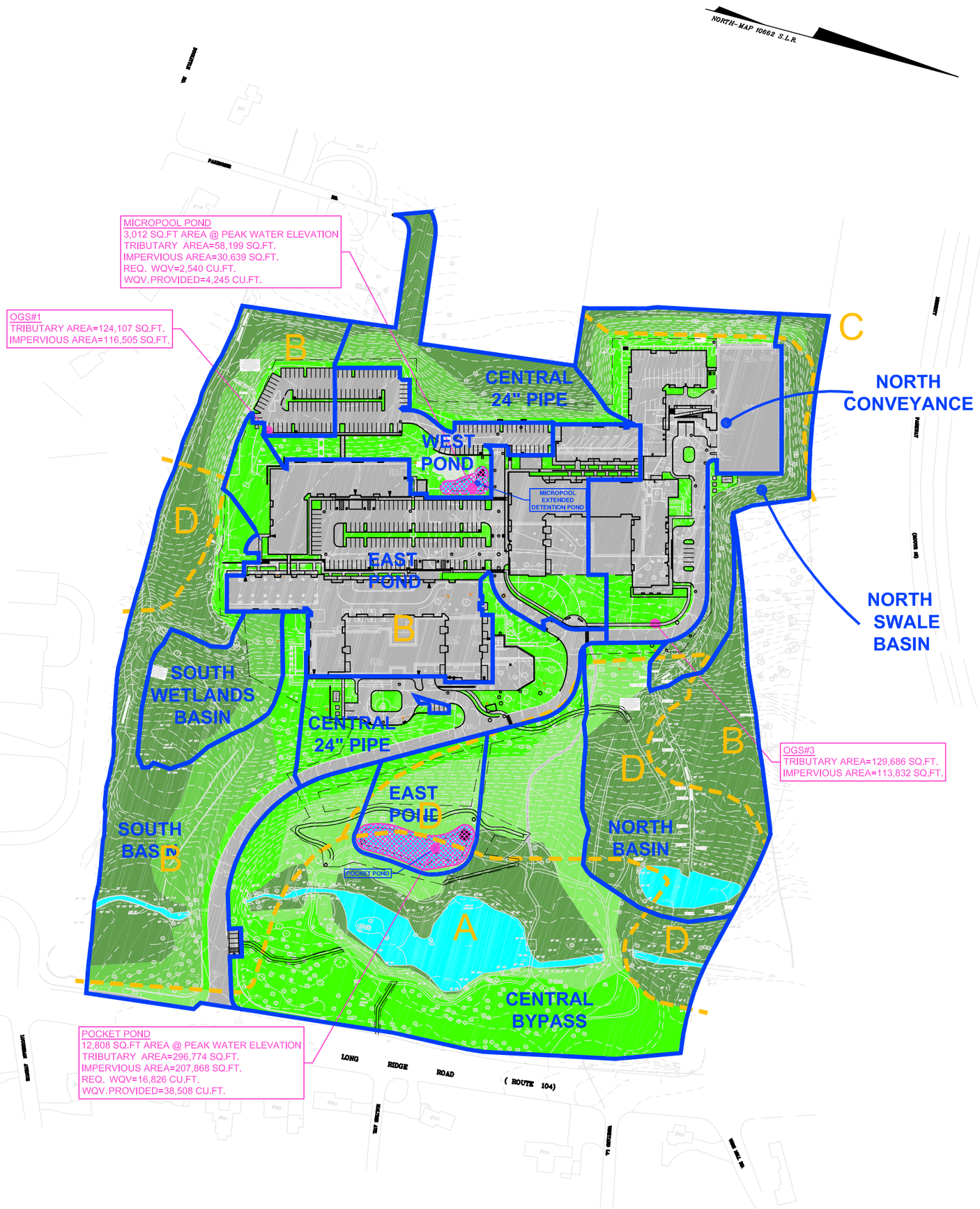
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

COMM. NO.:	DATE:
1988	06/01/2023
	SCALE: 1"=150'

6/1/2023 8:57 AM G:\JOBFILES\1000\1900\1988_2022 Proposed Development\dwg\1988 Master 2 (AS).dwg

Appendix F

LID Review Map



LEGEND:

- BUILDINGS, ASPHALT PARKING, DRIVES & HARDSCAPE
- PERVIOUS
- WATER
- STORMWATER BMP
- LIMIT OF DISTURBANCE
- SOIL CLASSIFICATION BOUNDARY
- B — SOIL TYPE CLASSIFICATION

LID REVIEW MAP

900 LONG RIDGE ROAD

STAMFORD, CT

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

COMM. NO.:	DATE:
1988	06/23/2023
	SCALE: 1"=200'

6/22/2023 4:22 PM G:\JOBFILES\10001\19001\1988_2022 Proposed Development\dwg\1988 Master.dwg

Appendix G

Operation and Maintenance Agreement

Block _____

AGREEMENT COVENANT

AGREEMENT made this _____ by and between _____ and the **CITY OF STAMFORD,** a municipal corporation lying within the County of Fairfield and State of Connecticut, acting herein by its duly authorized Mayor, Caroline Simmons (hereinafter referred to as the "City"), and the **ENVIRONMENTAL PROTECTION BOARD OF THE CITY OF STAMFORD,** acting herein by its duly authorized Chairman, Gary H. Stone (hereinafter referred to as the "EPB").

WITNESSETH:

WHEREAS, OWNER has commenced the planning and construction of _____ on a parcel of land owned by them and as more particularly described on Schedule "A", attached hereto and made a part hereof (the "Property").

WHEREAS, certain drainage facilities ("Drainage Facilities"), including but not limited to _____ as more particularly described on Schedule "B" attached (the "Construction Plans") shall be installed in connection with the aforesaid construction and in accordance with the Construction Plans and _____ issued therefore, (the "Permit") and;

WHEREAS, OWNER, the CITY and EPB share a joint concern that the Drainage Facilities be maintained in a functioning condition so as to avoid pollution of surface and groundwaters, flooding and/or improper drainage.

NOW, THEREFORE, in consideration of ten dollars and other good and valuable consideration receipt of which is hereby acknowledged by the OWNER, it is hereby agreed as follows:

1) OWNER shall clean the drainage facilities or cause such facilities to be cleaned by periodic removal of accumulated sediment and debris in a good and workman-like manner, at least two (2) times during every twelve (12) month period, which times shall be in the period between April and June and between October and December and more often as the City may determine to be necessary.

2) OWNER shall sweep, or cause to be swept, garage facilities, driveways and roadway surfaces located on the Property at least once per calendar quarter.

3) OWNER shall utilize only sand or calcium chloride in connection with the de-icing of areas within the Property meaning and intending that road salt (Sodium Chloride) shall not be used for said purpose.

4) OWNER shall repair or replace any defects or defective drainage facilities so as to maintain the drainage facilities, at all times, in a fully functional capacity.

5) OWNER shall file as-built drainage plans with the EPB immediately upon the completion of work. Said plans shall be prepared by a professional engineer/surveyor registered in the State of Connecticut.

6) OWNER grants the CITY and/or EPB, its agents, and employees, the right to enter the Property at all reasonable times upon twenty-four (24) hours notice to the OWNER for the purpose of inspecting the Property to determine if OWNER is complying with the requirements hereunder. A representative of the Owner shall have the right to accompany the City and/or EPB on their inspection of the Property.

7) If, after an inspection is made pursuant to Paragraph Six (6) hereof, the CITY and/or EPB determines that the owner has failed to comply with the aforesaid undertakings, then the CITY and/or EPB shall give written notice of said determination to the then OWNER of the Property which notice shall also specify the said failure. Said notice shall be sent by registered or certified mail to the last known address of said Owner. If the Owner disputes the claim, he shall give written notice thereof to City and/or EPB within ten (10) days of receipt of said notice, and the EPB shall hold a hearing as promptly as possible to decide the merits of the disputed claim. If the claim is not disputed within said ten (10) days, the OWNER shall have thirty (30) days from the receipt of said notice to correct said failure, unless it is impossible to cure said defect within said time, in which case, the necessary repairs shall be immediately commenced and diligently pursued to completion within a reasonable time.

8) If the said failure is not remedied within the time frame herein stated, the CITY and/or EPB may proceed to cure the same and charge the actual cost thereof to the OWNER of the Property.

9) OWNER agrees to reimburse the CITY and/or EPB for reasonable legal fees and court costs if it becomes necessary for the CITY and/or EPB to sue for reimbursement of sums expended by the CITY and/or EPB in performance of OWNER'S obligation.

10) OWNER agrees and covenants to indemnify and save harmless the CITY and the EPB against any and all claims, suits, actions or judgments arising out of the delay in the performance of any of their obligations pursuant to this Agreement.

11) OWNER agrees that this covenant and restriction shall apply to and run with the land. It shall be binding on all future owners, administrators, executors, successors and assigns.

12) The OWNER hereby represents to the CITY and EPB that he/she is the owner, in fee simple, of all of the property described in "Schedule A" attached hereto and made a part hereof.

13) OWNER agrees that this Agreement and restrictive covenant upon execution of the same, shall be recorded on the land records at the OWNER'S expense at the time that a permit is issued for the Property herein and while the OWNER is in title.

14) OWNER agrees not to assert the invalidity of this document.

15) OWNER agrees that nothing herein shall be construed to be a limitation upon the right of the EPB to assert and enforce any rights it may have under federal, state or City statute, ordinance or regulation.

16) This agreement shall be governed by the laws of the State of Connecticut.

IN WITNESS WHEREOF, the said parties hereto have hereunto set their hands and seals, the day and year first above written.

WITNESSED:

_____ **THE CITY OF STAMFORD**

_____ BY:_____

Caroline Simmons
Its duly authorized Mayor

_____ **THE ENVIRONMENTAL PROTECTION BOARD**

_____ BY: _____

Gary H. Stone
Its duly authorized Chairman

_____ **OWNER**

BY:_____

_____ _____

(Owner's Name)

(Acknowledgement on the Following Page)

STATE OF CONNECTICUT}
} ss: STAMFORD Date: _____
COUNTY OF FAIRFIELD }

Personally appeared Caroline Simmons, Mayor of the City of Stamford, signer and sealer of the foregoing Instrument, and acknowledged the same to be his free act and deed and the free act and deed of said City, before me.

_____
Commissioner of the Superior
Court or Notary Public

STATE OF CONNECTICUT}
} ss: STAMFORD Date: _____
COUNTY OF FAIRFIELD }

Personally appeared Gary H. Stone, Chairman of the Environmental Protection Board of the City of Stamford, signer and sealer of the foregoing Instrument, and acknowledged the same to be his free act and deed and the free act and deed of said Commission, before me.

_____
Commissioner of the Superior Court
or Notary Public

STATE OF CONNECTICUT}
} ss: STAMFORD Date: _____
COUNTY OF FAIRFIELD }

Personally appeared_____signer and sealer of the foregoing instrument, and acknowledged the same to be____free act and deed, before me.

_____
Commissioner of the Superior Court
or Notary Public

SCHEDULE "A"

SCHEDULE "B"

Appendix H

DCIA Tracking Spreadsheets

Directly Connected Impervious Area Tracking Worksheet
City of Stamford Drainage Manual

Note to user: complete all cells of this color *only*

Part 1: General Information	
Project Name	900 Long Ridge
Project Address	900 Long Ridge Road, Stamford, CT
Project Applicant	David R. Ginter, P.E. , Redniss & Mead, Inc.
Date of Submittal	6/30/2023
Tax Account Number	003-5275

Part 2: Project Details		
1. What type of development is this? (choose from dropdown)	Redevelopment	
2. What is the total area of the project site?	1,593,585	ft^2
3. What is the total area of land disturbance for this project?	640,821	ft^2
4. Does project site drain to High Quality Waters, a Direct Waterfront, or within 500 ft. of Tidal Wetlands? (Yes/No)	No	
5. What is the current ***DCIA*** for the site?	391,465	ft^2
6. Will the proposed development increase ***DCIA*** (without consideration of proposed stormwater management)? (Yes/No)	Yes	
7. What is the proposed-development ***total impervious area*** for the site?	432,499	ft^2

Part 3: Water Quality Target Total		
Does Standard 1 apply based on information above?	**Yes**	
Water Quality Volume (WQV)	**39077.4**	ft^3
Standard 1 requirement	**Retain WQV on-site**	
Required retention volume	**39077.4**	ft^3
Provided retention volume for proposed development	0.0	ft^3

Part 4: Proposed DCIA Tracking		
Pre-development ***total impervious area***	391,465	ft^2
Current ***DCIA***	**391,465**	ft^2
Proposed-development ***total impervious area***	**432,499**	ft^2
Proposed-development ***DCIA*** (after stormwater management)	432,499	ft^2
Net change in ***DCIA*** from pre-development to proposed-development	**41,034**	ft^2

Part 5: Post-Development (As-Built Certified) DCIA Tracking		
Post-development (per as-built) ***total impervious area***		ft^2
Post-development (per as-built) ***DCIA*** (after stormwater management)		ft^2
Net change in ***DCIA*** from pre-development to post-development		ft^2

Certification Statement

I hereby certify that the information contained in this worksheet is true and correct.

STATE OF CONNECTICUT
DAVID R. GINTER
No. 27177
LICENSED
PROFESSIONAL ENGINEER

Engineer's Signature David R Ginter Date 6/30/2023 Engineer's Seal

Appendix I

Checklist for Stormwater Management Report

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

CHECKLISTS

Project Name: 900 Long Ridge Road

Project Address 900 Long Ridge Road, Stamford, CT

Property Owner(s) 900 Long Ridge Road Property Owner LLC

Tax Account Number(s) 003-5275

Engineer's Signature David R Gnt Date: 06/30/2023

All checklists must be completed and submitted. Provide a brief explanation for any items not provided. Check boxes as completed or N/A as not applicable.

✔	**Existing Conditions Plan**
✔	**Stormwater Management Report**
✔	**Stormwater Management Plan / Construction Plan**
	Certificate of Occupancy

Checklist for Existing Conditions Plan

I. General Information

✔	Site address
✔	Orientation, block, zone, City, street name
✔	Applicant name and legal address
✔	Surveyor name, address, contact information
✔	North arrow, bar scale, horizontal and vertical datum
✔	24" x 36" sheet size unless otherwise approved
✔	Existing conditions survey shall be prepared in accordance with the Minimum Standards for Surveys and Maps in the State of Connecticut. The class of survey shall be A-2 and T-2 and shall be represented as such on the map. The base map shall be sealed and signed by a Professional Land Surveyor licensed in the State of Connecticut.
✔	Drawing scale shall be set at 1" = 20' or 1" = 40' when possible

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

II. Existing Conditions Plan Elements

✔	Show and label all property boundaries with linear bearing / distances and curve information
✔	Required zoning setbacks
✔	Show and label monument information
✔	Show and label at least one permanent benchmark on the parcel with northing, easting and elevation
✔	Label adjacent property ownership information
✔	Existing contours based on NAVD 88 (no exceptions) at 2 foot contour interval or 1 foot contour interval when slope is flatter than 2 percent at a minimum of 20 ft. beyond the property boundaries of the subject parcel
✔	Show spot elevations at low points, high points, and where topography is flatter than 2 percent
✔	All buildings and structures (label current use and finished floor elevations)
✔	All pavement, parking, driveways, property access points
✔	All roadways, streets, and rights-of-way. Label streets as public or private with street name
✔	All patios, decks, walkways, sidewalks, curb ramps (both adjacent to and opposite and existing roadways or intersections)
✔	Show and label (size, material, inverts) all existing utilities (overhead and underground) within the right-of-way and the project site (label ownership) including but not limited to water, gas and electrical services, wells, storm sewers, sanitary sewers and subsurface sewerage disposal systems.
✔	Show and label existing conveyance systems (swales, ditches, storm drains) including dimensions, elevations, sizes, slopes, and direction of flow
✔	Show and label boundaries of all easements, both public and private, with type, owner, and width
✔	Show and label all other existing features and improvements (e.g. light poles, mature trees of 8" (dbh) diameter or greater, vegetation, walls with top and bottom elevations, fences, pavement markings)

III. Resource Areas

	✔	Show and label limits of inland wetlands, tidal wetlands and any associated setbacks.
	✔	Show and label existing natural site features including tree canopy, outcroppings, permanent and intermittent watercourses, waterbodies, streams
N/A		Show and label limits of floodplain and floodway along with FIRM references (Community Number, Panel, Suffix, and Date) including any effective Letters of Map Revision/Amendment, zone designation and elevation.
N/A		Show and label any Conservation Easement Areas
N/A		Show and label Connecticut Coastal Jurisdiction Line (CJL)
	✔	Show and label existing steep slopes (25% and greater)

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

Checklist for Stormwater Management Report

I. Project Report

A. Applicant / Site Information

✔	Applicant name, legal address, contact information (email & phone)
✔	Engineers name, legal address, contact information (email & phone)
✔	Site address and legal description
✔	Current / proposed zoning and land use
✔	Site vicinity map (8.5" x 11")

B. Project Description and Purpose

✔	Project description including proposed project elements and anticipated construction schedule

C. Existing Conditions Description

✔	Site area, ground cover, vegetation, features (roads, buildings, utilities, etc.)
✔	Site topography, slopes, drainage patterns, conveyances systems (swales, storm drains, etc.), stormwater discharge locations
✔	Receiving waterbody information including stormwater impairments and TMDL information (See the most recent State of Connecticut Integrated Water Quality Report)
✔	Site soils information including soil types, hydrologic soil group, bedrock / outcroppings, groundwater elevation, significant geologic features
✔	Provide NRCS Soils Mapping
✔	Resource protection areas (wetlands, streams, lakes, etc.), buffers, floodplains, floodways

D. Summary of Applicable General Design Criteria

✔	Methodology, design storm frequency
✔	Hydrologic design criteria
✔	Hydraulic design criteria
N/A	Flood hazard areas

	Applying under "Lite" Stormwater Management: Skip to Section I (Refer to Flow Chart on page vii of the City of Stamford Stormwater Drainage Manual)

E. Project Type in Accordance with Standard 1 Definitions

✔	Area of disturbance, receiving waterbody classification (High Quality, Tidal Wetlands, Direct Waterfront)
✔	Project type (development, redevelopment, linear development)
✔	Pollutant reduction standard per flowchart Section 2.4

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

F. Summary of LID Site Constraints

✔	Description of sensitive areas for protection
✔	Mature tree inventory, which shall include 8-inch (dbh) diameter trees or greater
✔	Steep slopes
✔	Ledge and bedrock depth
✔	Seasonal high groundwater elevation
	Pollutant hotspots
	Summary of infiltration rates

G. Summary of Proposed Stormwater Treatment Practices

✔	Proposed LID controls (i.e. minimize impervious, minimize DCIA, minimize disturbance, increase time of concentrations, other LID controls and strategies)
✔	Location, size, types
✔	Design criteria and references
✔	Stormwater treatment practice, drainage area characteristics / details

H. Summary of Compliance with Standards 1

✔	Required pollutant reduction criteria
✔	Provided pollutant reduction (WQV) by stormwater treatment practice
✔	Summary of compliance with Standard 1

I. Summary of Compliance with Standards 2, 3, and 4

✔	Description of proposed stormwater management system
✔	Pre-development site hydrology with delineation of each watershed area and sub-basin
✔	Post-development site hydrology with delineation of each watershed area and sub-basin
✔	Comparison table of pre- and post-development hydrology, peak flow, volume, and percent difference
✔	Summary table of watershed areas and sub-basin areas, time of concentration and runoff coefficients
✔	Summary table demonstrating the 2-year, 24-hour post development peak flow rate is less than or equal to the lowest of either: - The pre-development 1-year, 24-hour storm peak flow rate - 50 percent of the pre-development 2-year, 24-hour storm peak flow rate
✔	Conveyance protection, emergency outlet sizing
✔	Hydraulic grade line summary and tail water elevation used in analysis
✔	Construction erosion and sediment control description, Standard 3
✔	Operation and Maintenance, maintenance tasks and schedule on construction plans per Standard 4

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

J. Summary of Compliance with Applicable Drainage Facility Design Requirements

✔	Description of applicable design requirements and compliance
✔	Description of proposed drainage facilities and compliance

K. Stormwater Management Report

✔	Signed and stamped by professional engineer licensed in the State of Connecticut
✔	Drainage impact statement in accordance with Standard 5B.

II. Supporting Calculations (as appendix to Project Report)

	Applying under "Lite" Stormwater Management: Skip to Section N

L. Water Quality Volume / Water Quality Flow Calculations

✔	Calculations demonstrating the total Water Quality Volume generated by the post-development site and the required retention/treatment volume per Standard 1 in cubic feet.
✔	Calculations demonstrating the total Water Quality Volume retained/treated by each stormwater treatment practice and the total Water Quality Volume generated by the post-development contributing drainage area to each stormwater treatment practice

M. Stormwater Treatment Practice Sizing Calculations

✔	Calculations demonstrating how each stormwater treatment practice has been designed and sized in accordance with the Structural Stormwater BMP Design references in Appendix B. Calculations will vary by stormwater treatment practice, but a minimum, applicants shall provide calculations in accordance with design criteria from the Connecticut Stormwater Quality Manual.

N. Hydrologic and Hydraulic Design Calculations

✔	Stream channel protection, Standard 2A
✔	Conveyance protection, Standard 2B
✔	Peak flow control (1-year, 2-year, 5-year, 10-year, 25-year, and 50-year storms), Standard 2C
	Inlet analysis
	Gutter flow (Site by site basis as requested by Engineering Bureau)
✔	Storm sewers and culverts (velocities, capacity, hydraulics)
✔	Hydraulic grade line required when pipe is flowing at full capacity o Provide existing and proposed summary table o Provide existing and proposed mapping, label structures
✔	Detention facilities (outlet structure, stage/storage, freeboard)
✔	Emergency outlet sizing, safely pass the 100 year storm, Standard 2D
✔	Outlet protection calculations, based on conveyance protection (i.e. riprap, energy dissipater)

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

O. Hydrologic and Hydraulic Model, Existing and Proposed

✔	Drainage routing diagram
✔	Summary
✔	Storage pond input

P. Downstream analysis (Site by site basis as required by the Engineering Bureau)

✔	Downstream analysis, Standard 2E

III. Supporting Mapping (as appendix to Project Report)

Q. Pre-Development Drainage Basin Area Mapping

✔	11" x 17" or 8.5" x 11" sheet size
✔	Topography, drainage patterns, drainage area boundaries and sub basins, flow paths, times of concentration
✔	Locations of existing stormwater discharges
✔	Perennial and intermittent streams, wetlands, and floodplain / floodways
✔	NRCS soil types, locations, boring locations, infiltration testing locations
✔	Vegetation and groundcover
✔	Existing roads, buildings, driveways, parking areas, walks, patios, pools and other impervious surfaces, decks and other structures
✔	Location, size, type of existing structural stormwater controls, facilities and conveyance systems

R. Post-Development Drainage Basin Area Mapping

✔	11" x 17" or 8.5" x 11" sheet size
✔	Topography, drainage patterns, drainage area boundaries and sub basins, flow paths, times of concentration
✔	Locations of proposed stormwater discharges
✔	Perennial and intermittent streams, wetlands, and floodplain / floodways
✔	NRCS soil types, locations, boring locations, infiltration testing locations
✔	Vegetation, ground cover and proposed limits of clearing/disturbance
✔	Proposed, roads, buildings, driveways, parking areas, walks, patios, pools and other impervious surfaces, decks and other structures
✔	Location, size, type of proposed structural stormwater controls, facilities and conveyance systems

IV. DCIA Tracking Worksheet (as appendix to Project Report)

✔	DCIA Tracking Worksheet (Use form found in Appendix E)

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

V. Proposed LID Review Map

	Applying under "Lite" Stormwater Management - Proposed LID Review Map NOT required.

A. General

✔	Site address
✔	Applicant name, legal address, contact information
✔	Engineers name, address, contact information
✔	North arrow, bar scale, horizontal and vertical datum
✔	Drawing scale shall be set at 1"=20' or 1"=40' when possible
✔	Signed and stamped by a Licensed Professional Engineer in the State of Connecticut
✔	11" x 17" or 24" x 36" sheet size unless otherwise approved
✔	Existing and proposed contours based on NAVD 88 at 2 foot contour interval or 1 foot contour interval when slope is flatter than 2 percent
✔	Locations of existing stormwater discharges
✔	Roads, buildings, driveways, parking areas, walks, patios, pools and other impervious surfaces, and decks and other structures
✔	Location, size, ownership of stormwater conveyance systems (swales, pipes, etc.)

B. LID Constraints:

✔	Boring / test pit locations
	Infiltration testing locations and results
✔	Vegetation and proposed limits of clearing / disturbance
✔	NRCS soils mapping
✔	Steep slopes
✔	Surface waters / Perennial and intermittent streams
✔	Resource protection areas and buffers, wetlands, floodplain / floodways
✔	Existing vegetation and mature trees, which shall include 8-inch (dbh) diameter trees or greater
✔	Poor soils (HSG C & D)
✔	Shallow bedrock / ledge
✔	Seasonal high groundwater elevation
	Other site constraints (e.g. brownfield caps)

C. Proposed Stormwater Treatment Measures:

✔	Location, size, type, limits, and WQV provided by each proposed stormwater treatment practices
✔	Drainage area to each proposed stormwater treatment practice (total area, impervious area, WQV)

D. Site Summary Table:

✔	Total site area, disturbed area, pre- and post-development impervious areas
✔	Required pollutant reduction volume (retention or detention)
✔	Provided pollutant reduction volume (retention or detention)

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

Checklist for Stormwater Management Plan / Construction Plans

A. General

✔	Site orientation, address and legal description
✔	Applicant name, legal address, contact information
✔	Engineers name, address, contact information
✔	North arrow, bar scale, horizontal and vertical datum
✔	Drawing scale shall be set at 1"=20' or 1"=40' when possible
✔	Stamped by a Licensed Professional Engineer in the State of Connecticut
✔	24" x 36" sheet size unless otherwise approved

B. Site Development Plans

✔	City of Stamford Standard Notes
✔	As required by the Drainage Maintenance Agreement, provide a written narrative describing the nature of the proposed development activity and the program for operation and maintenance of drainage facilities and control measures throughout the life of the project.
✔	Existing and proposed contours based on NAVD 88 at 2 foot contour interval or 1 foot contour interval when slope is flatter than 2 percent
✔	All required spot elevations to clearly depict positive pitch
✔	Top and bottom elevation of all walls
✔	Roads, buildings, driveways, parking areas, walks, patios, pools and other impervious surfaces, and decks and other structures
✔	All utilities and easements
✔	Location, size, maintenance access, type of proposed structural stormwater controls and facilities with elevations and inverts
✔	Location, size, maintenance access, type of proposed non-structural stormwater controls and facilities with elevations and inverts
✔	Location, size, type of proposed stormwater infrastructure, inlets, manholes, infiltration and detentions systems, control structures with elevations and inverts
✔	Location, size, ownership of stormwater conveyance systems (swales, pipes, etc.) with elevations and inverts
✔	Identify roof leaders, curtain drains and foundation drains with elevations and inverts
✔	Proposed water quality treatment systems, size and model type
✔	Final stabilization measures which may include slope stabilization

C. Erosion and Sedimentation Control Plan

✔	Phasing and schedule
✔	Construction access and staging and stock pile areas
✔	Operation and maintenance of erosion and sedimentation controls
✔	Tree protection
✔	Downstream protection such as location of silt fencing
✔	Limit of disturbance
✔	Construction fencing

City of Stamford
Engineering Bureau
888 Washington Boulevard, 7th Floor Stamford, CT 06901
Phone 203-977-4189

D. Construction Details

✔	Standard City of Stamford details
	Infiltration system details
✔	Control structure details
✔	Water quality treatment details
	Infiltration testing results

Checklist for Certificate of Occupancy

	Final Improvement Location Survey
	Stormwater Management Certification Form
	Final DCIA Tracking Worksheet
	Standard City of Stamford Drainage Maintenance Agreement (Agreement Covenant)

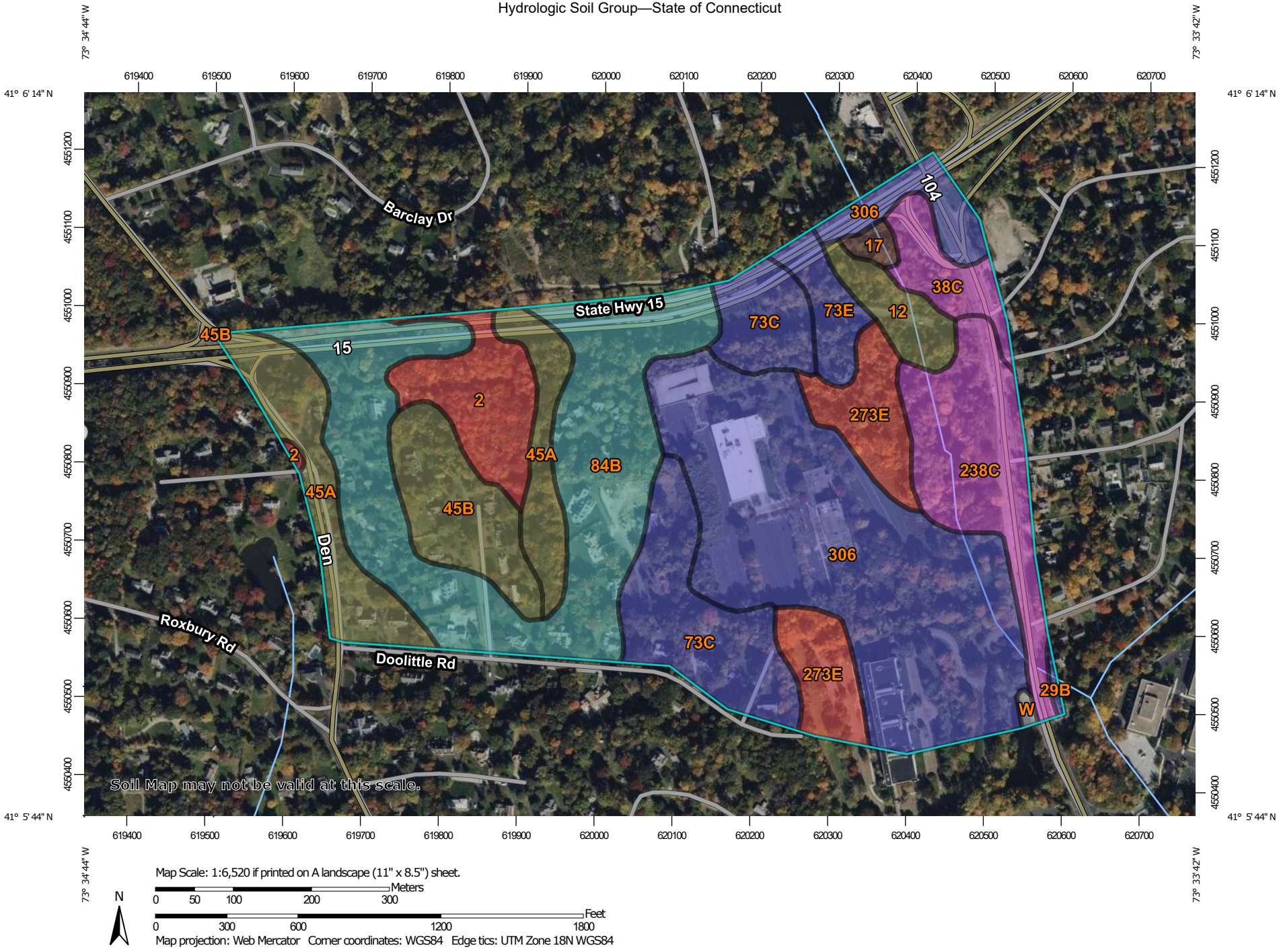
Other Certifications at the discretion of the Engineering Bureau and/or EPB

	Wall Certification
	Landscape Certification
	Landscape Maintenance Agreement
	Waiver Covering Storm Sewer Connection
	Waiver Covering Granite Block, Depressed Curb, and Driveway Aprons
	Flood Certification

Appendix G

NRCS Websoil Survey
NOAA-Atlas 14 Volume 10-Precipation Frequency

Hydrologic Soil Group—State of Connecticut



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 22, Sep 12, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2022—Oct 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2	Ridgebury fine sandy loam, 0 to 3 percent slopes	D	6.2	4.9%
12	Raypol silt loam	C/D	2.9	2.3%
17	Timakwa and Natchaug soils, 0 to 2 percent slopes	B/D	0.7	0.5%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	B	0.2	0.2%
38C	Hinckley loamy sand, 3 to 15 percent slopes	A	3.4	2.7%
45A	Woodbridge fine sandy loam, 0 to 3 percent slopes	C/D	11.2	8.9%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	6.8	5.4%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	12.9	10.2%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	B	2.7	2.2%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	C	26.4	21.0%
238C	Hinckley-Urban land complex, 3 to 15 percent slopes	A	10.4	8.3%
273E	Urban land-Charlton-Chatfield complex, rocky, 15 to 45 percent slopes	D	7.7	6.1%
306	Udorthents-Urban land complex	B	34.4	27.3%
W	Water		0.2	0.2%
Totals for Area of Interest			**126.1**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

NOAA Atlas 14, Volume 10, Version 3
Location name: Stamford, Connecticut, USA*
Latitude: 41.0992°, Longitude: -73.5675°
Elevation: 152.67 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.367** (0.279-0.470)	**0.426** (0.323-0.545)	**0.522** (0.394-0.670)	**0.602** (0.452-0.776)	**0.711** (0.520-0.945)	**0.794** (0.570-1.07)	**0.880** (0.615-1.22)	**0.973** (0.651-1.38)	**1.10** (0.712-1.60)	**1.21** (0.763-1.78)
10-min	**0.520** (0.395-0.665)	**0.603** (0.457-0.772)	**0.739** (0.559-0.949)	**0.852** (0.641-1.10)	**1.01** (0.736-1.34)	**1.13** (0.807-1.52)	**1.25** (0.871-1.73)	**1.38** (0.922-1.95)	**1.56** (1.01-2.27)	**1.71** (1.08-2.52)
15-min	**0.612** (0.464-0.783)	**0.710** (0.538-0.909)	**0.870** (0.658-1.12)	**1.00** (0.754-1.29)	**1.19** (0.866-1.58)	**1.32** (0.950-1.79)	**1.47** (1.02-2.03)	**1.62** (1.08-2.29)	**1.84** (1.19-2.67)	**2.01** (1.27-2.97)
30-min	**0.858** (0.651-1.10)	**0.995** (0.754-1.27)	**1.22** (0.922-1.57)	**1.41** (1.06-1.81)	**1.66** (1.21-2.21)	**1.86** (1.33-2.50)	**2.06** (1.44-2.85)	**2.27** (1.52-3.21)	**2.56** (1.66-3.72)	**2.80** (1.77-4.12)
60-min	**1.10** (0.837-1.41)	**1.28** (0.970-1.64)	**1.57** (1.19-2.02)	**1.81** (1.36-2.33)	**2.14** (1.56-2.84)	**2.39** (1.72-3.22)	**2.65** (1.85-3.66)	**2.92** (1.95-4.13)	**3.29** (2.13-4.78)	**3.58** (2.27-5.28)
2-hr	**1.42** (1.09-1.81)	**1.67** (1.27-2.12)	**2.07** (1.58-2.64)	**2.40** (1.82-3.08)	**2.86** (2.10-3.78)	**3.21** (2.32-4.30)	**3.57** (2.51-4.92)	**3.96** (2.66-5.56)	**4.51** (2.92-6.50)	**4.94** (3.14-7.25)
3-hr	**1.64** (1.26-2.08)	**1.94** (1.48-2.45)	**2.42** (1.85-3.07)	**2.81** (2.14-3.59)	**3.36** (2.48-4.43)	**3.77** (2.73-5.05)	**4.20** (2.97-5.79)	**4.68** (3.15-6.55)	**5.35** (3.48-7.69)	**5.90** (3.75-8.61)
6-hr	**2.08** (1.61-2.61)	**2.46** (1.90-3.10)	**3.10** (2.38-3.91)	**3.62** (2.77-4.59)	**4.34** (3.23-5.69)	**4.88** (3.56-6.50)	**5.45** (3.88-7.48)	**6.09** (4.12-8.48)	**7.02** (4.58-10.0)	**7.78** (4.96-11.3)
12-hr	**2.58** (2.01-3.22)	**3.07** (2.39-3.84)	**3.88** (3.01-4.86)	**4.55** (3.51-5.73)	**5.47** (4.10-7.13)	**6.16** (4.53-8.16)	**6.89** (4.93-9.41)	**7.73** (5.24-10.7)	**8.94** (5.85-12.7)	**9.95** (6.36-14.3)
24-hr	**3.04** (2.38-3.77)	**3.66** (2.86-4.54)	**4.67** (3.65-5.82)	**5.51** (4.28-6.89)	**6.67** (5.03-8.65)	**7.54** (5.58-9.94)	**8.46** (6.11-11.5)	**9.54** (6.50-13.1)	**11.1** (7.31-15.7)	**12.5** (8.01-17.9)
2-day	**3.41** (2.69-4.20)	**4.17** (3.29-5.14)	**5.41** (4.26-6.69)	**6.45** (5.04-8.00)	**7.87** (5.98-10.2)	**8.92** (6.66-11.7)	**10.1** (7.33-13.7)	**11.4** (7.81-15.6)	**13.5** (8.90-18.9)	**15.3** (9.85-21.7)
3-day	**3.69** (2.93-4.53)	**4.52** (3.58-5.56)	**5.89** (4.65-7.25)	**7.02** (5.51-8.68)	**8.57** (6.54-11.0)	**9.72** (7.29-12.7)	**11.0** (8.03-14.9)	**12.5** (8.55-17.0)	**14.8** (9.76-20.6)	**16.8** (10.8-23.7)
4-day	**3.96** (3.15-4.84)	**4.84** (3.84-5.92)	**6.27** (4.97-7.71)	**7.47** (5.88-9.21)	**9.11** (6.97-11.7)	**10.3** (7.75-13.5)	**11.6** (8.53-15.7)	**13.2** (9.08-17.9)	**15.7** (10.3-21.8)	**17.7** (11.4-25.0)
7-day	**4.73** (3.79-5.76)	**5.69** (4.55-6.94)	**7.27** (5.79-8.87)	**8.57** (6.79-10.5)	**10.4** (7.96-13.2)	**11.7** (8.81-15.2)	**13.1** (9.63-17.6)	**14.8** (10.2-20.0)	**17.4** (11.5-24.0)	**19.5** (12.6-27.4)
10-day	**5.49** (4.41-6.66)	**6.50** (5.22-7.89)	**8.16** (6.53-9.94)	**9.54** (7.59-11.7)	**11.4** (8.81-14.5)	**12.9** (9.70-16.6)	**14.4** (10.5-19.1)	**16.1** (11.1-21.6)	**18.7** (12.4-25.7)	**20.8** (13.5-29.1)
20-day	**7.74** (6.26-9.32)	**8.89** (7.18-10.7)	**10.8** (8.67-13.0)	**12.3** (9.87-15.0)	**14.5** (11.2-18.1)	**16.1** (12.2-20.4)	**17.8** (13.0-23.2)	**19.6** (13.6-26.0)	**22.0** (14.7-30.1)	**24.0** (15.6-33.3)
30-day	**9.58** (7.79-11.5)	**10.8** (8.79-13.0)	**12.9** (10.4-15.5)	**14.5** (11.7-17.6)	**16.9** (13.1-21.0)	**18.7** (14.1-23.5)	**20.4** (14.9-26.4)	**22.3** (15.5-29.5)	**24.7** (16.5-33.6)	**26.5** (17.3-36.7)
45-day	**11.8** (9.67-14.1)	**13.2** (10.8-15.8)	**15.4** (12.5-18.5)	**17.2** (13.9-20.7)	**19.8** (15.4-24.4)	**21.7** (16.5-27.2)	**23.6** (17.3-30.3)	**25.5** (17.9-33.6)	**27.9** (18.7-37.8)	**29.7** (19.4-40.9)
60-day	**13.7** (11.2-16.3)	**15.1** (12.4-18.1)	**17.5** (14.3-20.9)	**19.4** (15.8-23.3)	**22.1** (17.3-27.2)	**24.2** (18.4-30.2)	**26.3** (19.2-33.4)	**28.2** (19.8-37.0)	**30.6** (20.6-41.3)	**32.3** (21.1-44.4)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

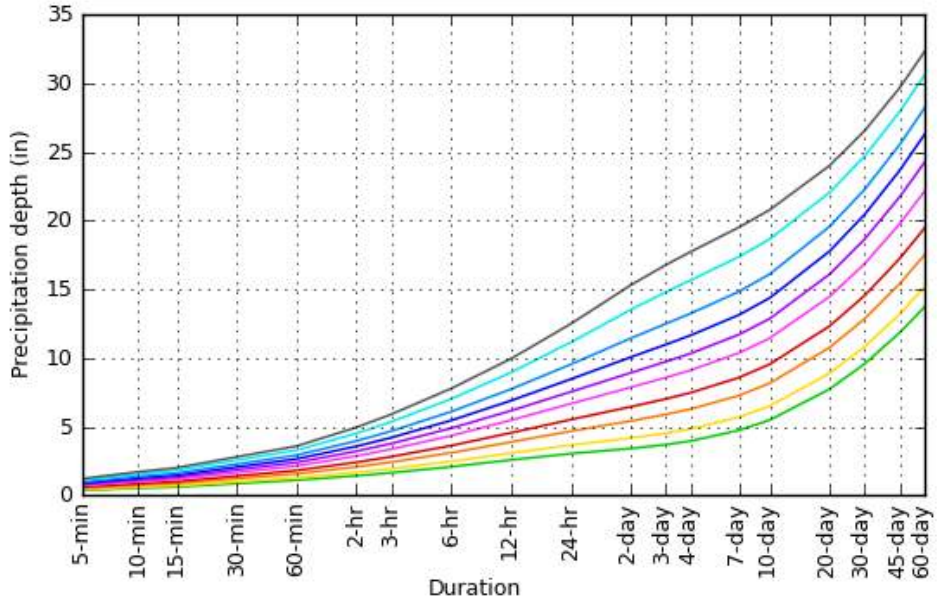
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

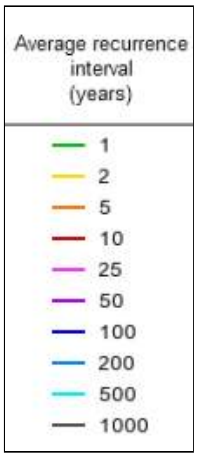
Please refer to NOAA Atlas 14 document for more information.

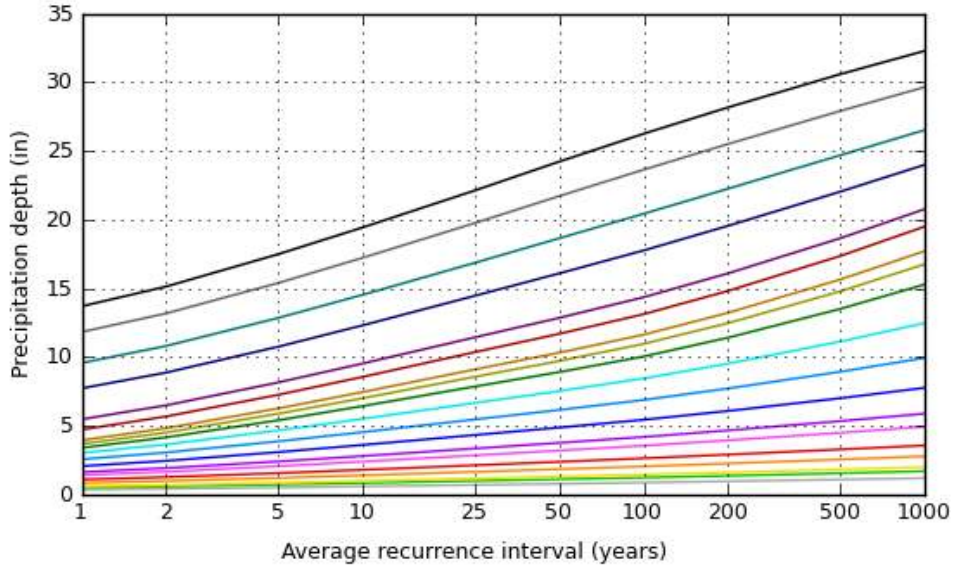
Back to Top

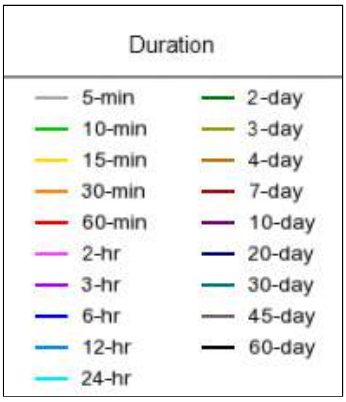
PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 41.0992°, Longitude: -73.5675°









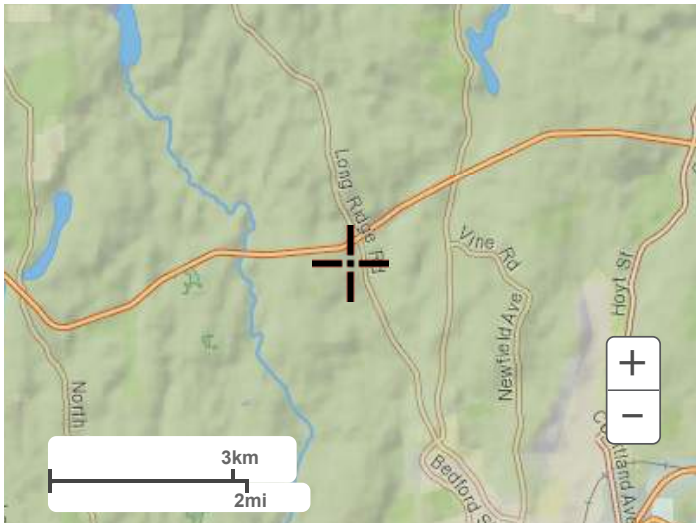
NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Wed Aug 31 19:53:13 2022

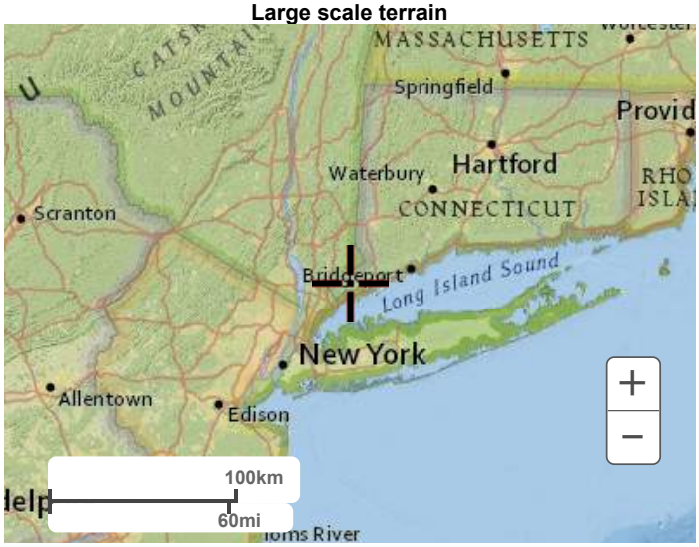
Back to Top

Maps & aerials

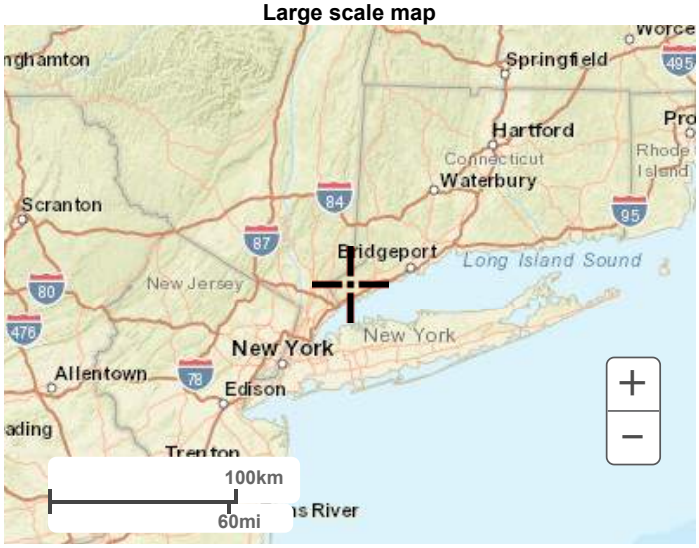
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

PARKING & TRANSPORTATION DEMAND MANAGEMENT PLAN
PROPOSED RESIDENTIAL / MIXED-USE DEVELOPMENT

900 Long Ridge Road
Stamford, CT
July 12, 2023

This plan has been prepared in support of a proposed redevelopment of an existing suburban office park. The overall site encompasses 36.5 acres within the Mixed-Use Campus Master Plan Category and the C-D (Designed Commercial) Zoning district. The site maintains approximately 230,000 sf of commercial office in 2 buildings with structured and surface parking.

PROJECT OVERVIEW

The Applicant proposes to redevelop the existing office buildings with a new multifamily community featuring 508 apartments and 20,000± sf of complementary nonresidential space which may include daycare, professional/medical office and/o small scale convenience services. Apartments will be comprised of 56 studio, 235 one-bedroom, 202 two-bedroom, and 15 three-bedroom units. The new buildings will include lower-level garages as well as surface spaces, and will maintain the existing stand-alone garage structure. In total, the site will provide 820 spaces to support the mix of proposed uses, and utilize a shared parking arrangement to maximize the efficiency of the provided parking. A total of 80 EV charging stations and 126 bicycle parking spaces (63 Class A and B) are being provided. The proposed development will include modern tenant amenities, landscaped courtyards, and natural walking trails (some of which will be publicly accessible). , onsite and publicly accessible bicycle storage areas, and electric vehicle charging stations.

EXISTING DATA

Section 12 requires a total of 779 spaces for the proposed number and bedroom mix residential units. Depending on the mix of nonresidential uses occupying the proposed 20,000 square feet, another 40-60 space could be required.

Proposed onsite parking will meet and exceed the minimum requirements for residential and is expected to easily accommodate the total demand by sharing the pool of parking with the non-residential uses. A shared parking analysis prepared by Kimley-Horn has been provided with the application.

PARKING OPERATIONS

Residential

Parking operations will be actively supervised by the onsite property management employees. A total of 820 self-parking spaces are proposed for the residential buildings. Garage spaces are provided within the lower levels of Buildings A and C. Additional surface spaces area conveniently located between Buildings A, B, and C as well as adjacent to Buildings B and Building D. The existing multi-level garage is also proximate to both Buildings D and C.

To comply with code, 17 handicapped-accessible spaces are proposed. A total of 80 electric vehicle charging spaces are proposed, representing more than 10% of the required parking. These spaces are conveniently located within the garages of Buildings A and C. A total of 63 Class A and 63 Class B bicycle parking spaces are also proposed.

Non-residential

The proposed nonresidential uses are located within Buildings A and C and will utilize parking withing the respective garages of each building. The applicant is anticipating 40 spaces in each garage to be shared with the residential uses. This amount and location are subject to change based on the needs of the tenants. A shared parking analysis has been prepared by Kimley-Horn and shows that the overall pool of parking is more than sufficient to support a wide range of nonresidential uses.

All parking will be self-park and actively monitored by onsite management.

ADDITIONAL PARKING CAPACITY

The offset peak demand times of residential (typically late evening and overnight) and nonresidential uses (typically weekdays late morning to early evening) create an ideal situation for sharing of spaces. If additional parking is needed, the site maintains acres of unused site coverage for additional parking areas, as well as several other parking strategies permitted and further outlined in Section 12, which states that up to 20% of required parking may be provided using tandem, stackers, and/or other parking management techniques.

DEMAND MANAGEMENT STRATEGIES

Unbundled Parking

The rent structure of the residential units is proposed to be "unbundled" with regard to parking. Apartments will not automatically include a "free" parking space (which has been demonstrated to encourage vehicle ownership and usage). The separate charge for spaces provides an incentive for residents to consider an alternative to individual car ownership and usually results in lower demand. It also allows those residents without cars to enjoy a lower cost of living (rather than pay for parking they do not need).

Bicycle Parking

To encourage ridership, and in satisfaction of the Zoning Regulations bicycle parking is provided throughout the site. Over the last several years, Stamford has made efforts to create a more bike-friendly road system. This has included new bike lanes, sharrows, bicycle parking, and other traffic calming measures throughout the City. The number of people biking to work in the US has gone up by 43% since 2000. [1] With the continued efforts of the City to make Stamford a more bike-friendly community, this trend may continue and be realized locally.

Public Transportation

The proposed development is located approximately 3.7 miles from the Stamford Transportation Center, which provides access to both Amtrak and Metro North Railroad services, as well as Greyhound and Peter Pan buses.

A CT Transit stop (336) is located along the site frontage which runs from Rock Rimmon to the Stamford Transportation Center with stops near the Merritt Parkway, Bulls Head, and Downtown Stamford.

Additionally, Uber, Lyft, Metro Pool and NuRide provide corporate and personal ride sharing programs that are currently utilized by residents in the area.

LOADING

Loading spaces are provided in locations convenient to each of the buildings. Two spaces are situated near the main pedestrian entrances of Buildings C and D. Two more spaces are located along the drop-off driveway of Building A. Finally, two spaces near the northeast corner of Building B will operate as shared parking/loading spaces and managed accordingly.

REPORTING

Reporting will be submitted annually pursuant to Section 19.F.5 and 19.G.5 of the Zoning Regulations. If demand is not being met, the parking methods mentioned above, or alternate solutions, can be explored. Similarly, if the demand management goals of the regulations are not being met, the Applicant will submit proposals for increasing the tenant use of transportation means other than single occupancy vehicles.

[1] Complete TRI "Cycling and Biking Statistics" 3/4/23 (https://completetri.com/cycling-and-biking-statistics.)

MEMORANDUM

To: Mr. Shahin Yavari, Director of Development
Monday Properties

From: John Canning, P.E
Andrea Connell, RSP
William Slater, E.I.T

Date: July 11, 2023

Subject: **Traffic Assessment for Proposed Residential Development**
900 Long Ridge Road
City of Stamford, CT

Kimley-Horn and Associates, Inc. ("Kimley-Horn") has prepared this Memorandum to provide an assessment of potential impacts associated with the proposed redevelopment of an existing office development located at 900 Long Ridge Road in the City of Stamford, Connecticut.

The subject property is located on the west side of Long Ridge Road (CT Route 104), to the south of the Merritt Parkway (CT 15) and is currently developed with two office buildings, totaling 230,000 square-feet (sf), and associated parking (surface parking lots and a parking garage). Existing access to the property is provided by one (1) signalized driveway on Long Ridge Road. The Project location is shown on **Figure 1**, appended. A recently approved zoning text amendment permits residential multi-family development on the property.

It is proposed to demolish the existing office buildings and construct a mixed-use multifamily residential development (the "Project") consisting of up to 508 residential units (457 market rate and 51 affordable units). The ground floor of the development will have approximately 20,000 square feet of commercial space. A total of 820 parking spaces are proposed in a combination of structured parking and surface parking lots, which meets the Code-required parking of 779 spaces for the proposed residential units. The existing access driveway will remain unchanged.

This Memorandum evaluates existing conditions, as well as future conditions without the Project ("No-Build") and with the Project ("Build") at the site driveway intersection with Long Ridge Road. The No-Build condition is the benchmark against which the potential impacts of the proposed Project are compared. As detailed below, the change in use from office to mixed-use commercial and residential will reduce traffic and generally improve traffic operating conditions.

Existing Traffic Conditions

Description of Study Area

Long Ridge Road is a north/south oriented State highway (CT Route 104) that is classified as a "Principal Arterial Other" and travels from the New York State line in the north to High Ridge Road (CT

Route 137) in the south. In the study area, Long Ridge Road provides two 11-foot wide through lanes and a 2-foot-wide paved shoulder in each direction and has a posted speed limit of 40 mph. To the north of the study intersection, a third northbound through lane is added. The pavement is in generally good condition and there are no sidewalks provided along Long Ridge Road. The CTDOT reports a 2017 estimated AADT volume of 26,300 on Long Ridge Road in the vicinity of the site.

The study intersection is a signalized, four-way, offset intersection with the site driveway forming the west leg, Long Ridge Road forming the north and south legs and a private driveway to a day care center forming the east leg. The day care center generates minimal traffic, and its driveway is offset approximately 50 feet to the south of the site driveway. The northbound approach of Long Ridge Road provides one exclusive left-turn lane and two through lanes, while the southbound approach provides a left-through lane, a through lane and an exclusive right-turn lane. The site driveway provides one exclusive left-turn lane and one shared left-turn/right-turn lane and the day care center driveway provides one shared left-turn/through/right-turn lane. All approaches to the intersection are controlled by a three-phase traffic signal.

Public Transportation

Public transportation in the area is provided by CT Transit which operates Route #336 on weekdays and Saturdays along Long Ridge Road between Rock Rimmon Road to the north and the Stewart B. McKinney Transportation Center in downtown Stamford to the south. Route #336 runs 30 buses each weekday (15 northbound and 15 southbound buses) and 4 buses on Saturdays (2 northbound, 2 southbound buses). Connections to other CT Transit bus routes and commuter rail service at the Stamford station of Metro-North Railroad are available from the McKinney Transportation Center. Bus stops are provided to the south of the site driveway, near the adjacent Loughran Avenue intersection.

Existing Traffic Volumes

To assess existing traffic conditions at the intersection of Long Ridge Road with the site driveway and day care center driveway, turning movement counts were conducted on a typical weekday, Wednesday, September 21st, 2022, from 7:00 to 9:00 a.m. and from 4:00 to 6:00 p.m. The counts were tabulated which revealed that the weekday morning peak hour occurred from 7:45 to 8:45 a.m. and the weekday evening peak hour occurred from 4:45 to 5:45 p.m.

The counted peak hour traffic volumes were submitted to the Connecticut Department of Transportation (CTDOT) to determine if any adjustments would be required due to the Covid-19 pandemic. The CTDOT determined that no adjustments to the counted volumes would be needed.

The Existing traffic volumes are provided on **Figures 2A and 2P** for the weekday AM and PM peak hours, respectively.

Crash Analysis

An accident analysis was conducted along Long Ridge Road using crash records obtained from the *UCONN Connecticut Crash Data Repository* for the period from January 2017 through October 2022. There was a total of 11 crashes that occurred along Long Ridge Road within 500' of the site driveway intersection, however, only one (1) crash was associated with the study intersection. That crash was a

rear end collision involving two northbound vehicles on Long Ridge Road with one vehicle hitting another vehicle that was stopped in traffic. The crash occurred in the afternoon on a wet road and there were no injuries reported. Based on a review of the crash history, the Project is not anticipated to result in a change in the number of crashes at the subject intersection.

Future Traffic Volumes

No-Build Traffic Volumes

The future No-Build traffic volumes are the forecast traffic conditions that are expected to occur in the year 2026 without the proposed Project. This includes background traffic growth, traffic associated with any other planned/approved developments and traffic that could be expected from full occupancy of the office buildings on the site.

Background traffic growth represents typical traffic growth not associated with any planned development. CTDOT recommended that a 0.70% annual growth rate be applied to the traffic volumes along Long Ridge Road. Therefore, the Existing volumes were grown to the year 2026 by total of 2.83% (4 years x 0.70%). The Grown traffic volumes are shown on **Figures 2A and 2P** for the AM and PM peak hours, respectively.

Per the CTDOT, there are no vicinity developments proposed in the study area. Kimley-Horn also contacted the City of Stamford Planning and Zoning Department to confirm that there are no developments that have received approval or are under review, and have not yet received a response.

The property is currently develop with 230,000 sf of office space which was duly reviewed and approved by all agencies having jurisdiction, which is believed to have constructed transportation infrastructure to accommodate its current and former traffic activity at considerable expense[1], and the owner of which has the right to lease out the entire 230,000 sf of space without the need for any discretional approval from governmental agencies.

As the building is only partially occupied, the future action without the Project assumes full occupancy of the current office space[2]. To account for this, traffic generated by the full 230,000 sf of office space was determined based on trip rates provided in the Institute of Transportation Engineers' (ITE) publication, *Trip Generation Manual*, 11th Edition. The trip generations were calculated using ITE rates for Land Use Code 710 "General Office Building". The vacant space trips were determined by subtracting the counted driveway trips from the calculated ITE full-occupancy trips, as shown in **Table**

[1] Traffic signal and turn lanes at Site driveway.

[2] The property owner has a vested interest in the fact that the building is approved, built, mitigated, and certified, and that, therefore, the baseline future condition would be full occupancy of the building's current permitted use. The alternative would be an abrogation of the owner's vested interest in the property. This approach was shared with and reviewed by the Office of the State Traffic Administration (correspondence provided in the appendix).

1, below. The vacant space trips were distributed to the study intersection based on the existing driveway counts and are shown on **Figures 2A and 2P**.

Table 1 – Office Vacant Space Trip Calculation						
Land Use	Weekday AM Peak Hour			Weekday PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
Existing Occupied Office (Counted Driveway Trips)	73	10	83	6	66	72
Fully occupied Office Trips (ITE rates)	307	42	349	56	274	330
Vacant space Office trips	***234***	***32***	***266***	***50***	***208***	***258***

The vacant space trips were added to the 2026 Grown volumes to obtain the 2026 No-Build volumes, which are also shown on Figures 2A and 2P.

Build Traffic Volumes

The future Build traffic volumes are the forecast traffic conditions that are expected to occur in the year 2026 with the proposed Project. The Project is to consist of 508 residential apartments (457 market rate and 51 affordable units) and 20,000 square feet of commercial space[3]. ITE *Trip Generation Manual*, 11th Edition, was utilized to determine the number of vehicle trips generated by the proposed multifamily residential development. This widely utilized reference source contains trip generation rates for the related uses: "Multifamily Housing - Mid Rise" (Land Use Code "LUC" 221), "Small Office Building" (LUC 712), "Medical-Dental Office Building" (LUC 720), Day Care Center (LUC 565), "Variety Store" (LUC 814), "Fast Casual Restaurant" (LUC 930) and "High-Turnover (Sit-Down) Restaurant" (LUC 932).

Approximately 9.5% of trips were removed as an internal trip credit between the office, café/restaurant, retail, day care, and residences[4]. Approximately 17.4% of the remaining commercial trips were removed as a conservative estimate of pass-by trips, or trips that exist on the road today that will stop-in at the proposed development once operational. The 20% pass-by credit applied to the day care and café/restaurant is lower than the ITE recommended values of 44% (Day Care) and 43% (café/restaurant). Pass-By trips were based on traffic patterns as observed in turning movement counts. Although it is expected that some trips to the site will use the nearby CT Transit bus service on Long Ridge Road, no credits were taken for public transit usage.

[3] The commercial space is proposed to have uses including Small Office Building (3,500 SF), Medical/Dental Office Building (4,000 SF), Day-Care Center (8,000 SF), Sundries Shop (3,500 SF), and a Café/Restaurant (1,200 SF)

[4] Residential, Retail, and Café/Restaurant internal trip credits were calculated using the ITE Internal Capture Calculation spreadsheet, appended. Day Care internal trip credits were assumed to be approximately 5%. See appended worksheet.

Table 2 below highlights the trip generations for each proposed use, and the internal trip and pass-by credits taken.

Table 2 - Trip Generation Summary						
Land Use	Weekday AM Peak Hour			Weekday PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
Multifamily Residential 508 units	43	145	188	121	77	198
Internal Trips Credit	*-1*	*-4*	*-5*	*-6*	*-5*	*-11*
New Residential Trips	**42**	**141**	**183**	**115**	**72**	**187**
Small Office Building 3,500 sf	5	1	6	3	5	8
Med./Dental Office Building 4,000 sf	10	2	12	5	11	16
Day Care Center 8,000 sf	47	41	88	42	47	89
Sundries Shop 3,500 sf	6	5	11	12	11	23
Café/Restaurant 1,200 sf	6	5	11	8	7	15
Internal Trips Credit	*-12*	*-9*	*-21*	*-13*	*-14*	*-27*
Pass-By Credit	*-10*	*-9*	*-19*	*-10*	*-11*	*-21*
New Commercial Trips	**51**	**36**	**87**	**47**	**56**	**103**
New Mixed-Use Trips	93	177	270	162	128	290

Note: Multifamily residential based on ITE LUC 221, "Multifamily Housing (Mid-Rise)". Proposed office trips based on ITE LUC 712, "Small Office Building". Medical-Dental office trips based on ITE LUC 720, "Medical Dental Office Building". Sundries Shop based on ITE LUC 814, "Variety Store". The restaurant/café trip generations used the higher value of either ITE LUC 932, "High-Turnover (Sit-Down) Restaurant or ITE LUC 930, "Fast Casual Restaurant" (AM Peak Hour trips based on ITE LUC 932; PM Peak Hour trips based on LUC 930).

As shown in Table 1, the proposed mixed-use development is projected to generate 270 trips during the weekday AM peak hour and 290 trips during the weekday PM peak hour. The trip generation calculations have been shared with and reviewed by the Office of the State Traffic Administration (OSTA). A copy of the correspondence is provided in the appendix.

Table 3, below, provides a comparison of the projected peak-hour traffic that would be generated by the 230,000-sf existing office space and the proposed development.

Table 3 - Trip Generation Comparison						
Land Use	Weekday AM Peak Hour			Weekday PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
Existing Office 230,000 sf	**307**	**42**	**349**	**56**	**274**	**330**
New Residential Trips	42	141	183	115	72	187
New Commercial Trips	51	36	87	47	56	103
Total Mixed-Use Trips 508 DU + 20 ksf comm.	**93**	**177**	**270**	**162**	**128**	**290**
Change in Trips						
Mixed-Use – Office	***-214***	***+135***	***-79***	***+106***	***-146***	***-40***

Note: Existing office trips based on ITE LUC 710, "General Office Building"

As shown in Table 3, the existing office development, when fully occupied, generates 349 trips during the AM peak hour and 330 trips during the PM peak hour. Thus, replacement of the existing office buildings with the proposed development will result in 79 fewer trips being added to the surrounding roadways during the weekday AM peak hour and 40 fewer trips during the weekday PM peak hour. The methodology used to determine the change in trip generations for the subject property for the existing and proposed uses was submitted to and approved by OSTA (see Appendix for correspondence).

The Project trips were distributed to the turning movements at the site driveway intersection with Long Ridge Road based on existing traffic patterns along Long Ridge Road. The trip distribution for the project trips is forecast to be 60% to/from the south and 40% to/from the north on Long Ridge Road.

The trip distributions for all of the Project's new primary-purpose trips are shown on **Figure 3**, as are the new residential project trips for the AM and PM peak hours. The new commercial primary-purpose trips, pass-by trips, total commercial trips, and total Project trips (residential and commercial) are shown on **Figures 4A and 4P** for the AM and PM peak hours, respectively. The Project trips were added to the No-Build volumes (less the existing office trips) resulting in the 2026 Build traffic volumes, shown on **Figure 5**.

Intersection Capacity Analysis

An intersection capacity analysis was conducted with the Existing, No-Build and Build peak-hour traffic volumes to assess the quality of the traffic flow at the site driveway intersection with Long Ridge Road.

The criteria used to analyze the study intersections is based on the evaluation criteria contained in the Transportation Research Board's Highway Capacity Manual ("HCM") 6th Edition. The term "level of

service" ("LOS") is used to denote the different operating conditions that occur at an intersection under various traffic volume loads. It is a qualitative measure that considers a number of factors including roadway geometry, speed, travel delay, and freedom to maneuver. LOS designations are based on delay, and range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. For signalized intersections, LOS is based on the average control delay per vehicle for the various lane group movements within the intersection. LOS can be reported for individual turning movements, approaches, or for the intersection as a whole.

Synchro 11 software was used to model the study intersections based on the parameters mentioned above. Synchro 11 software is widely used by traffic engineering professionals, and is consistent with the procedures in the HCM. The LOS delay criteria for signalized intersections are shown below in **Table 4.**

Table 4 – LOS Criteria for Signalized Intersections

Level-of-Service (LOS)	Control Delay Per Vehicle
A	≤ 10.0 seconds
B	>10.0 and ≤ 20.0 seconds
C	>20.0 and ≤ 35.0 seconds
D	>35.0 and ≤ 55.0 seconds
E	>55.0 and ≤ 80.0 seconds
F	>80.0 seconds

Source: Transportation Research Board. *Highway Capacity Manual.*

The results of the intersection analysis for the Existing, No-Build and the Build volume conditions for the peak hours are summarized in **Tables 5 and 6** below. The traffic signal timings used in the analysis were based on signal timing plans provided by CTDOT. The Synchro worksheets are provided in the Appendix.

Table 5 – Level of Service Summary - Weekday AM Peak Hour

Intersection	Approach		Existing Conditions		No-Build Conditions		Build Conditions	
			Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS
Long Ridge Road & Site Driveway / Day-Care Facility (Signalized)	Site Driveway	EB L	40.0	D	41.0	D	63.7	E
		EB LTR	0.5	A	3.5	A	35.0	C
	Day Care Drwy	WB LTR	0.5	A	0.6	A	1.0	A
	Long Ridge Road	NB L	0.9	A	3.9	A	3.0	A
		NB TR	1.0	A	2.1	A	2.9	A
		SB LT	3.6	A	7.8	A	9.3	A
		SB R	1.0	A	1.0	A	1.3	A
		INT	**2.5**	**A**	**5.2**	**A**	**8.9**	**A**

LOS = Level of Service. Delay is expressed in seconds per vehicle.

Table 6 – Level of Service Summary - Weekday PM Peak Hour								
Intersection	Approach		Existing Conditions		No-Build Conditions		Build Conditions	
			Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS
Long Ridge Road & Site Driveway / Day-Care Facility (Signalized)	Site Driveway	EB L	43.6	D	59.4	E	43.4	D
		EB LTR	4.5	A	36.1	D	22.2	C
	Day Care Drwy	WB LTR	0.6	A	0.3	A	0.5	A
	Long Ridge Road	NB L	1.7	A	2.9	A	4.2	A
		NB TR	4.4	A	7.3	A	5.1	A
		SB LT	5.6	A	10.8	B	9.7	A
		SB R	0.0	A	1.0	A	1.6	A
		INT	**5.3**	**A**	**12.0**	**B**	**7.9**	**A**

LOS = Level of Service. Delay is expressed in seconds per vehicle.

A description of the analysis results for the intersection of Long Ridge Road with the site driveway and day care center driveway is provided below.

Existing Traffic Conditions – Under Existing conditions, the overall intersection currently operates at Level of Service ("LOS") "A" during the peak hours. All individual movements operate at LOS "A" except for the site driveway's eastbound left-turn movement which operates at LOS "D" during the AM and PM peak hours.

No-Build Traffic Conditions - In the future under No-Build conditions (without the proposed Project, but with forecast increases in existing traffic volumes and traffic from the full preoccupancy of the existing office buildings at the site) the overall intersection will continue to operate acceptably, at Existing LOS "A" during the AM peak hour, however, a 6.7 second increase in delay will result in a threshold change in overall LOS from "A" to "B" during the PM peak hour. All individual movements will continue to operate at Existing levels except for two (2) movements during the PM peak hour.

The eastbound shared left-turn/through/right-turn lane exiting the site driveway will see a 31.6 second increase in delay during the PM peak hour resulting in the LOS dropping from "LOS A" under Existing conditions to LOS "D." This increase in delay is associated with the additional traffic that would be generated by the re-occupancy of the office buildings, which would be leaving the site during this hour. The southbound Long Ridge Road shared left-turn/through lane will see a drop from LOS "A" to LOS "B" due to a 5.2 second increase in delay. This increase in delay is also associated with the additional traffic that would be generated by the re-occupancy of the office buildings, as the exiting traffic would require more of the traffic signal's green time, reducing the green time available for the Long Ridge Road traffic.

Build Traffic Conditions - In the future under Build conditions (with the replacement of the office trips with trips generated by the Project) the intersection and individual movements will continue to operate at generally acceptable levels. Compared to No-Build conditions, the overall intersection will continue to operate at LOS "A" during the AM peak hour and a 4.1 second reduction in delay during the PM peak hour will see the overall LOS improve from No-Build LOS "B" to Build LOS "A." During the PM peak hour, the eastbound site driveway movements will see a significant reduction in delay (ranging from 13.0 to 20.2 seconds) with the shared lane improving from No-Build LOS "D" to Build LOS "C" and the eastbound left improving from No-Build LOS "E" to Build LOS "D." During the AM peak hour, all movements will continue to operate at No-Build levels with the exception of the eastbound left, which will operate at a LOS "E" and the eastbound shared left-turn/through/right-turn lane, which will operate at LOS "C" due to the increase in exiting traffic associated with the change from office to mixed-use. While these delays are not optimal, they are limited to movements exiting the site-driveway and, therefore, are not an impact to the general traveling public. The eastbound left will operate with a v/c ratio of 0.53, indicating adequate capacity is available on the driveway. In comparison to the No-Build LOS "E" in the PM peak hour on the eastbound left, which operates with a v/c of 0.70.

Shared Parking Analysis

The Urban Land Institute ("ULI") has developed a shared-use parking methodology that is a widely recognized, data-based methodology to evaluate the effectiveness of the joint/shared use parking[6]. Shared parking is defined as a parking space that can be used to serve two (2) or more individual land uses without conflict or encroachment. Peak parking accumulations for individual land uses in a mixed-land use development can occur at different times during the day. This is also true for weekdays versus weekends and seasonal (monthly) variations.

The proposed mixed-use Project will have residential, general office, medical-dental office, restaurant, day care center and retail uses that would be conducive to application of shared parking principles. A shared parking analysis was conducted to determine the maximum parking demand for the Project by applying the shared parking factors from the Third Edition of ULI's *Shared Parking* to the Code-required parking. The results of the analysis (provided in the Appendix) reveal that the peak parking demand will occur on a weekend night in December at 12 AM (midnight) with a total demand of 781 parked vehicles. During this hour, there will be 779 residential vehicles (734 residents and 45 visitors) and 2 café/restaurant vehicles parked (1 customer/1 employee). Peak parking demand for the commercial component of the development will occur on a weekday in December at 4 PM when 62 customer or employee vehicles are parked. For the residential parking demand during this hour, there will be 343 vehicles parked (331 residents and 12 visitors), for a total peak parking demand of 405 spaces.

It is proposed to provide parking for commercial users in Buildings A and C (40 spaces will be set aside in each garage for sharing with residential users). As shown in the shared parking analysis, during the

[6] Section 12.I of the City's Code states that "the shared use of parking may be permitted by administrative approval of the Zoning Board…".

peak commercial parking demand period, there will be at least 80 spaces set aside (and 397 other available spaces) for use by the 62 commercial parkers.

Conclusions

Based on the analysis provided herein, it is concluded that the change in use from office to mixed-use development will generally have a positive, not an adverse impact, on traffic conditions in the public domain. The Project will generate fewer trips than the current office use on the property and the analysis reveals that the intersection of Long Ridge Road and the site driveway will operate acceptably and with generally similar delays during the peak hours.

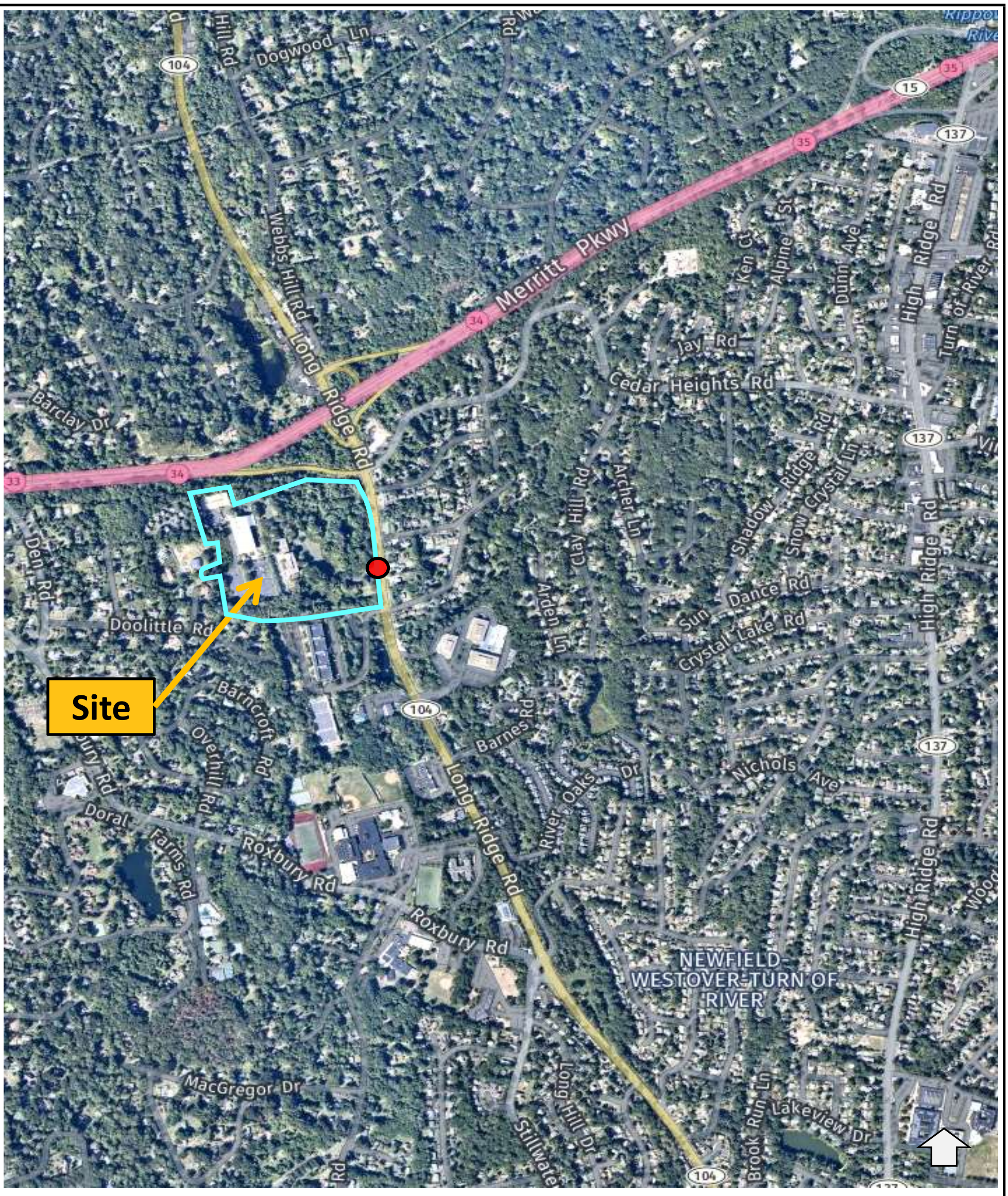
The shared parking analysis reveals that the Project will have sufficient parking to accommodate the anticipated peak parking demand.

Appendix

- Traffic Volume Figures
- OSTA Approved Trip Generation Table & Correspondence
- Internal Trip Worksheet
- Synchro Analysis Reports
- Shared Parking Analysis

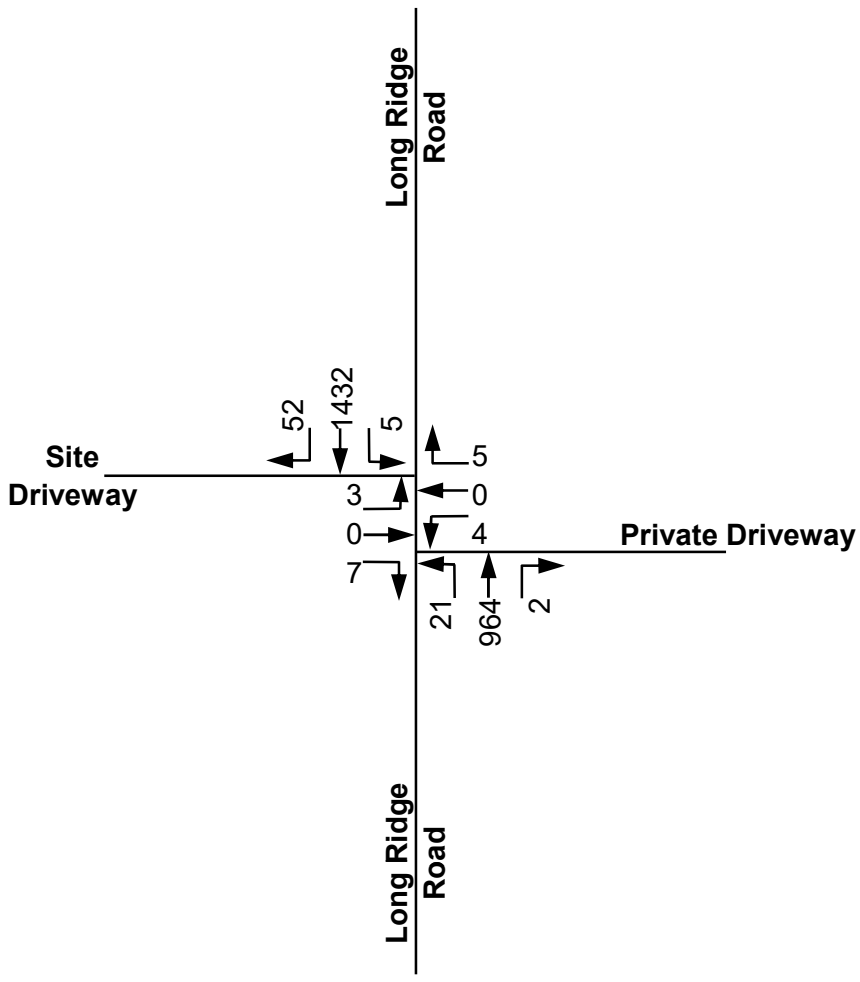
Kimley»Horn

Traffic Volume Figures

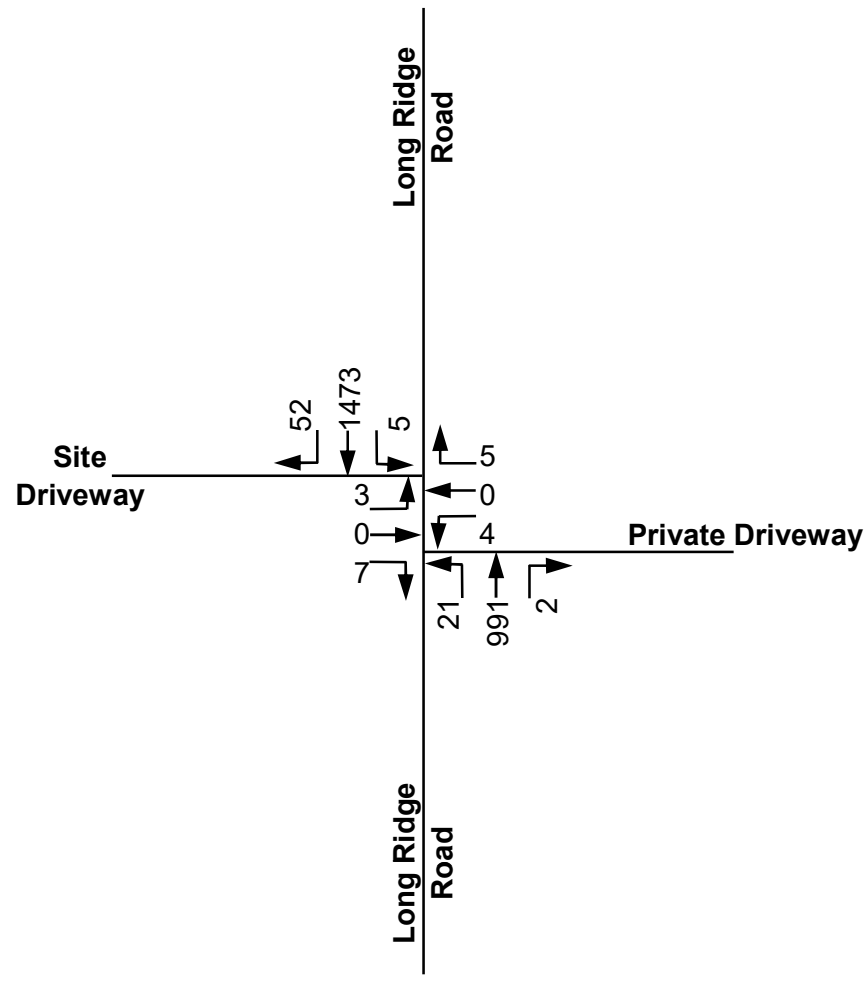


Kimley»Horn	**Proposed Residential Development** **City of Stamford, Connecticut**	**Site Location**	**Figure** **1**

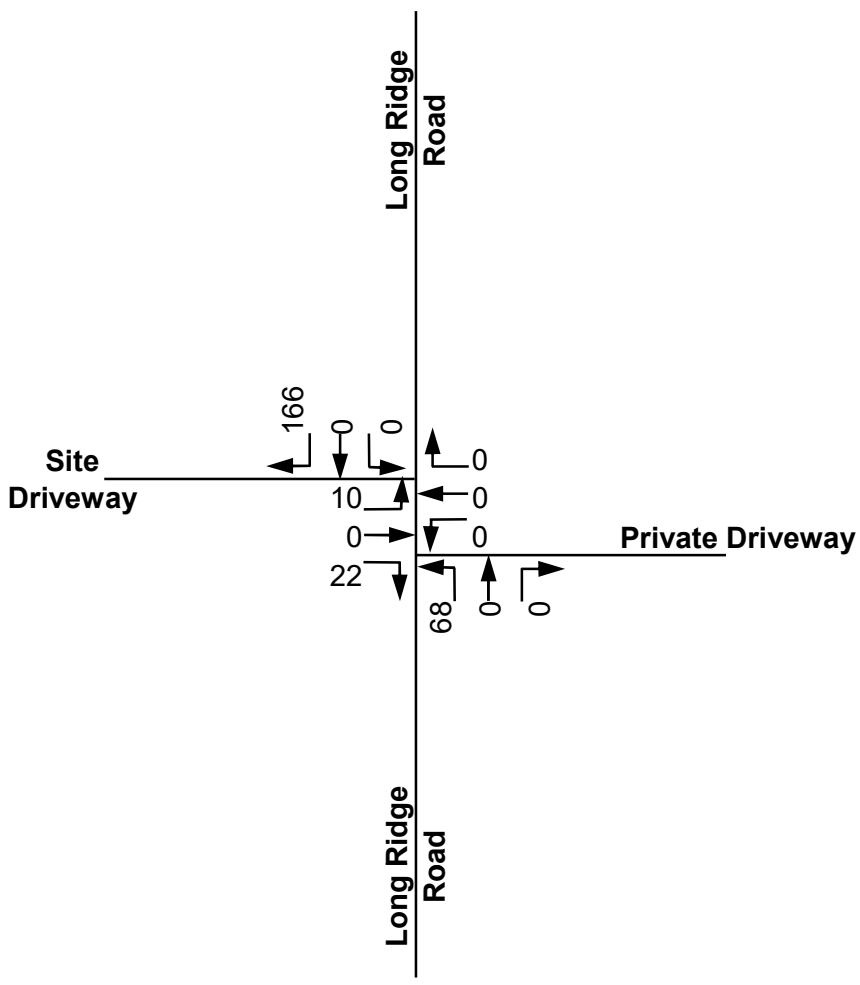
Existing Traffic Volumes



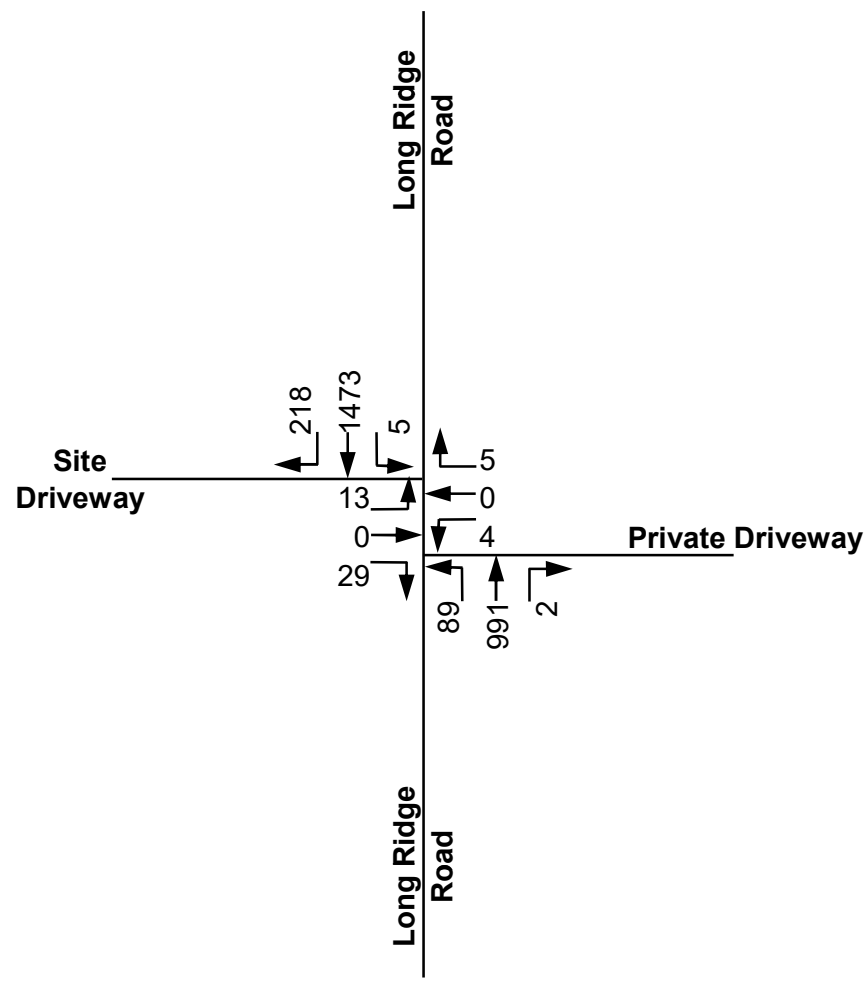
Grown Traffic Volumes



Vacant Office Trips



No-Build Traffic Volumes



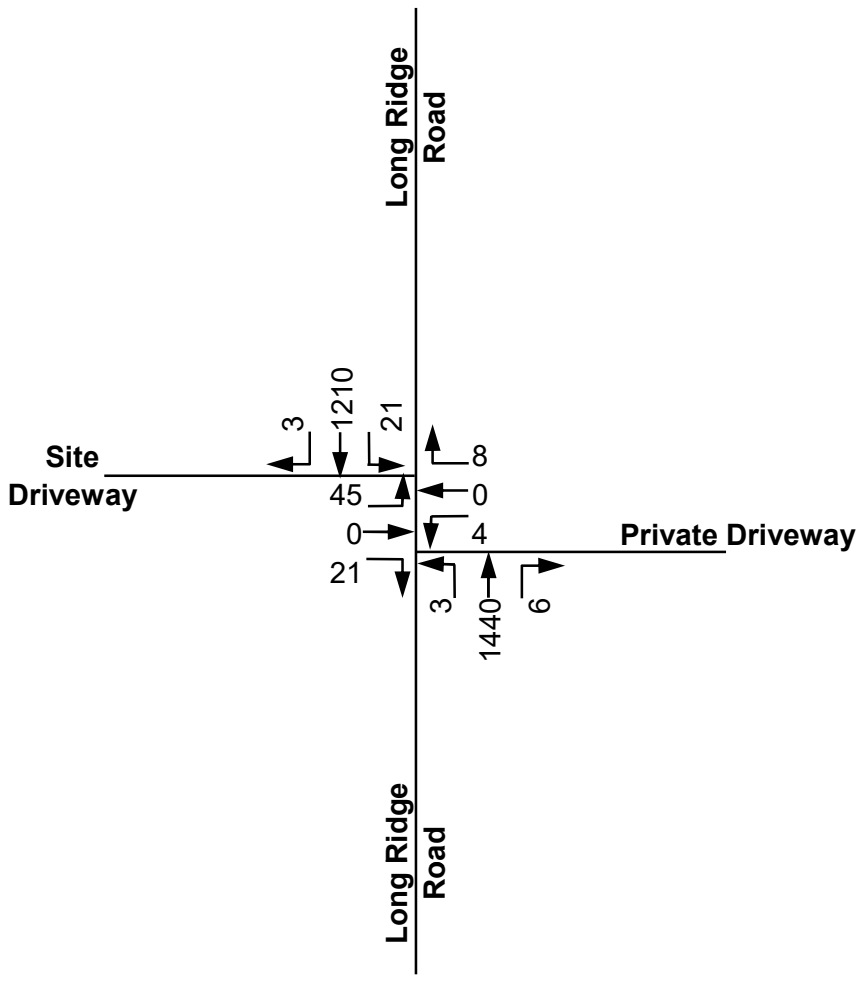
Kimley»Horn

Proposed Residential Development
City of Stamford, Connecticut

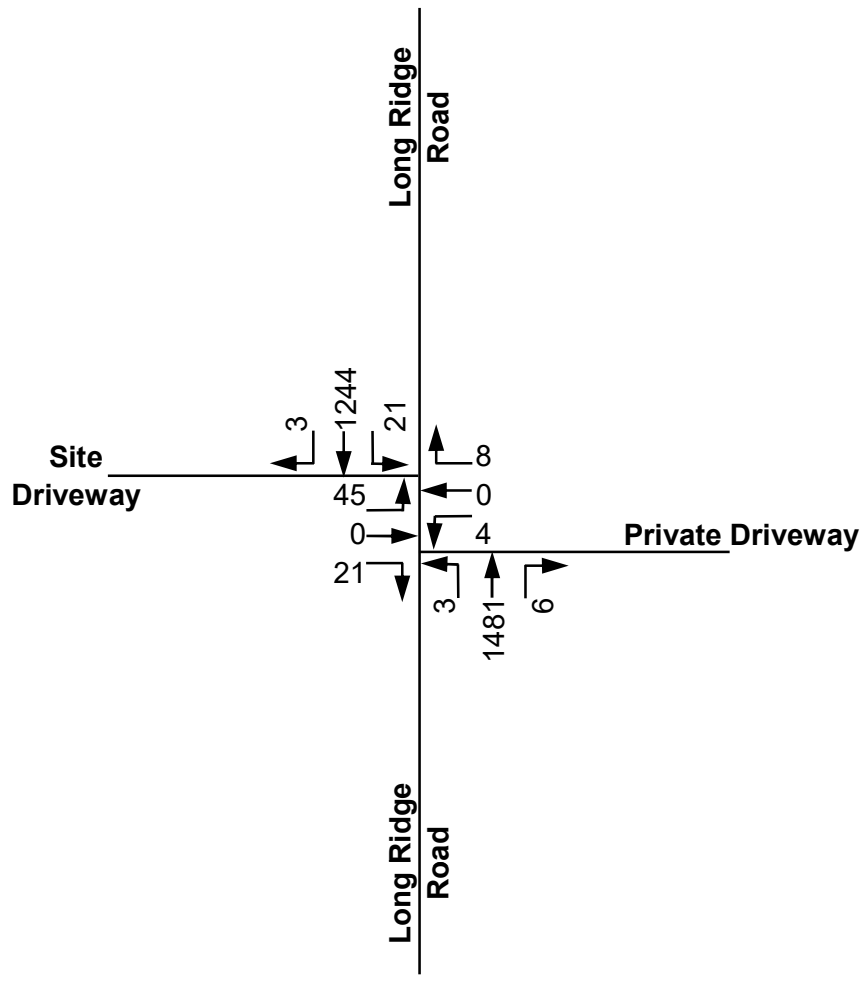
Weekday AM Peak Hour
Non-Project Traffic Volumes

Figure
2A

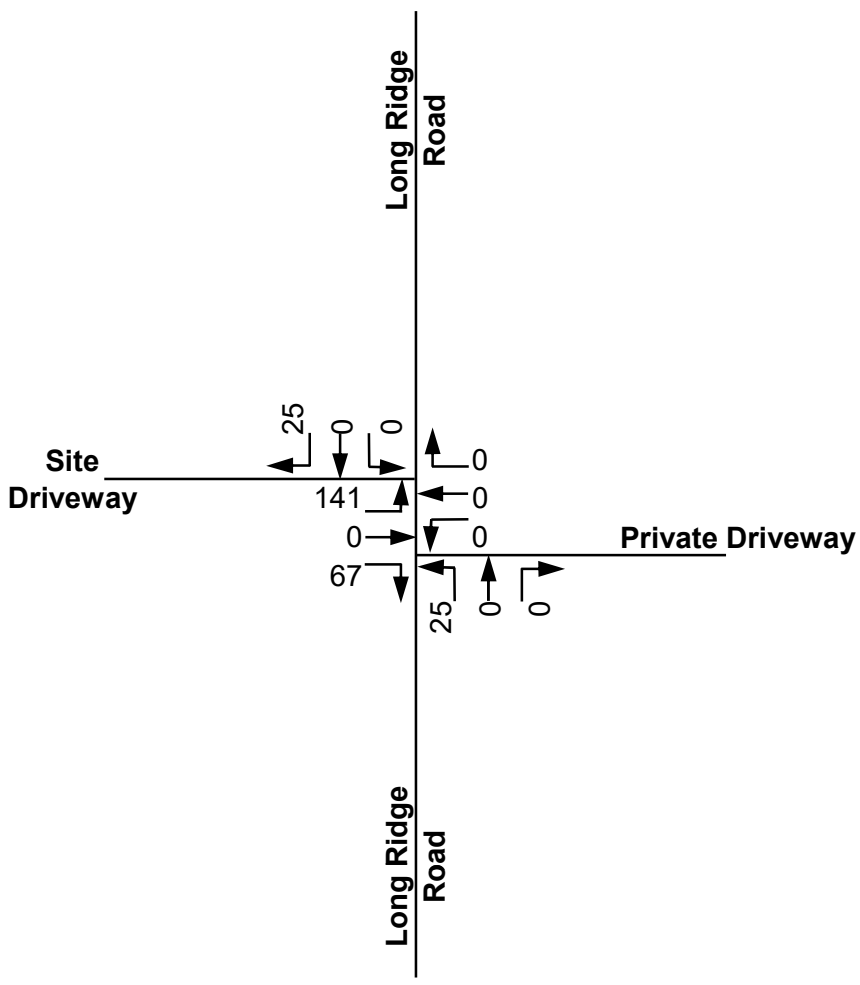
Existing Traffic Volumes



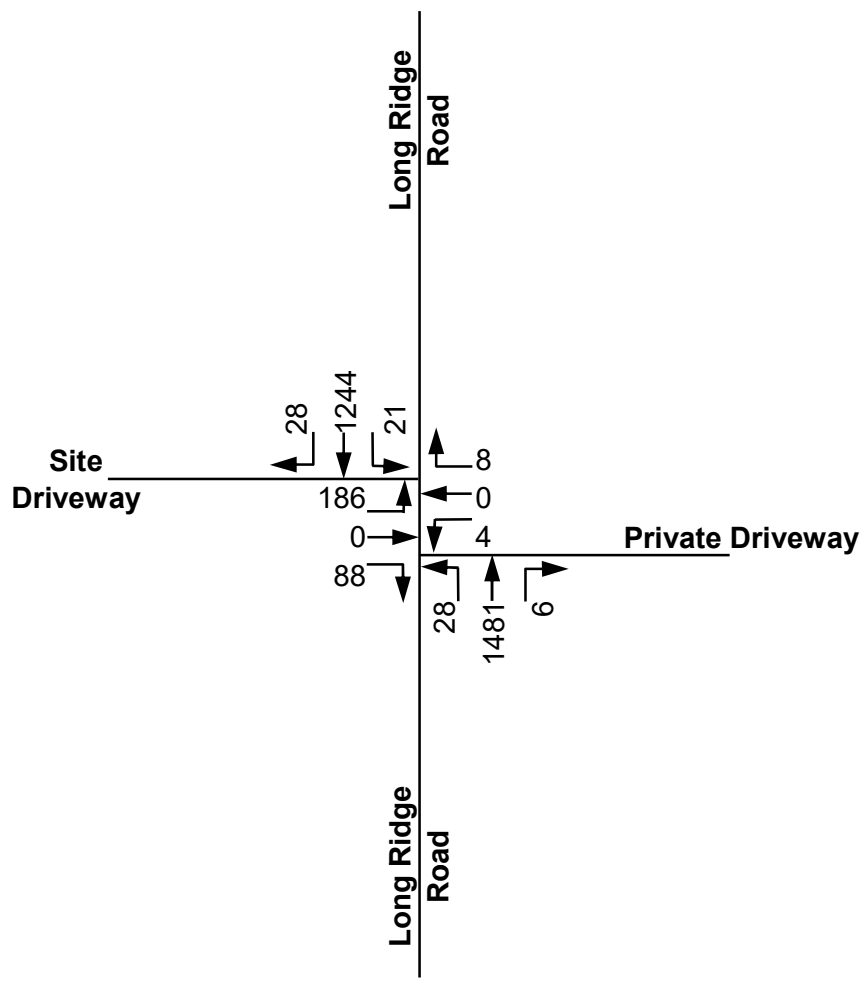
Grown Traffic Volumes



Vacant Office Trips



No-Build Traffic Volumes



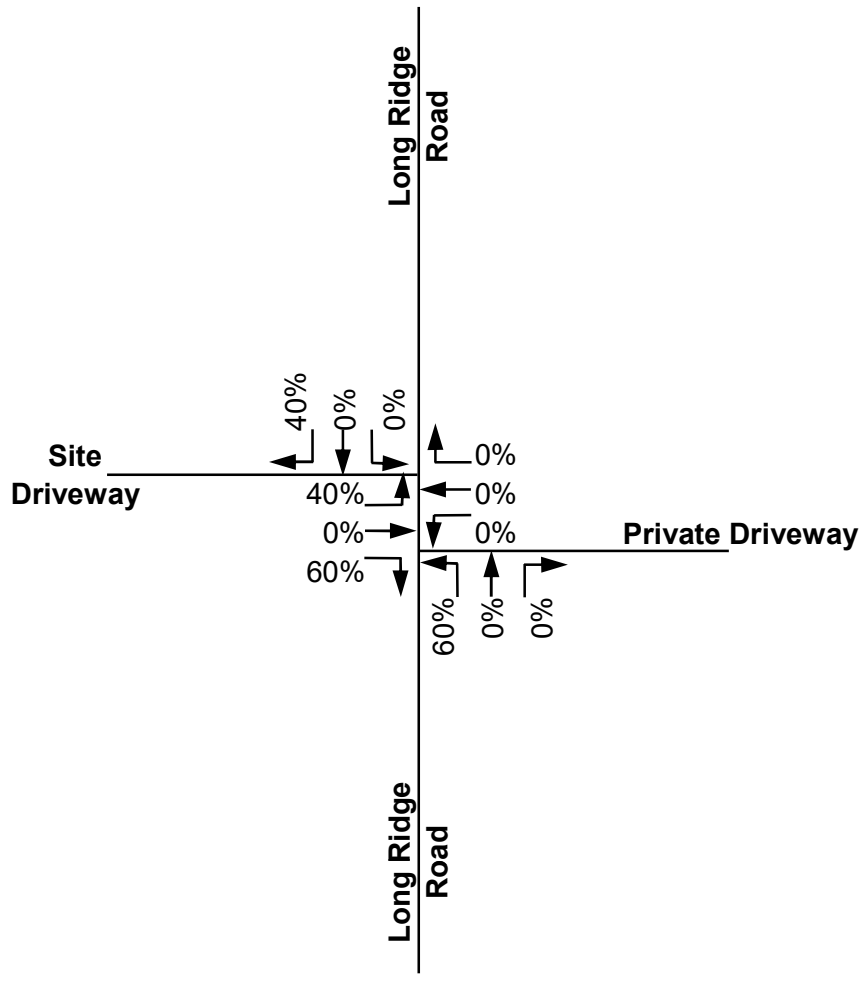
Kimley»Horn

Proposed Residential Development
City of Stamford, Connecticut

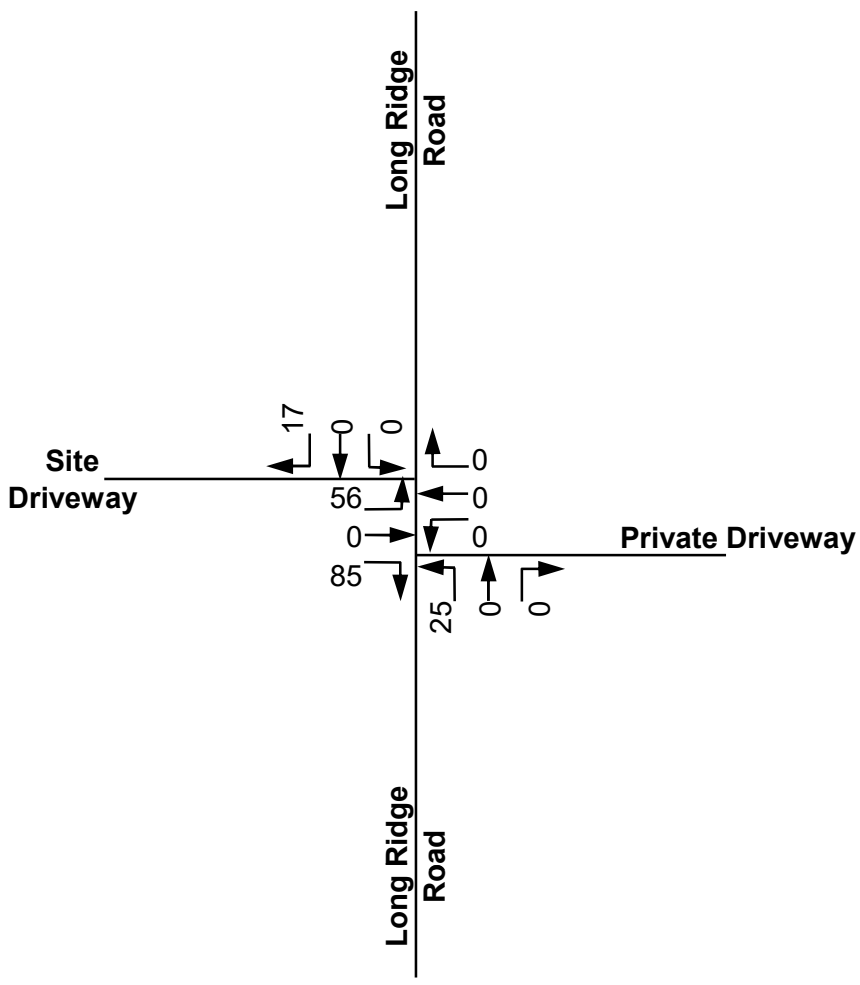
Weekday PM Peak Hour
Non-Project Traffic Volumes

Figure
2P

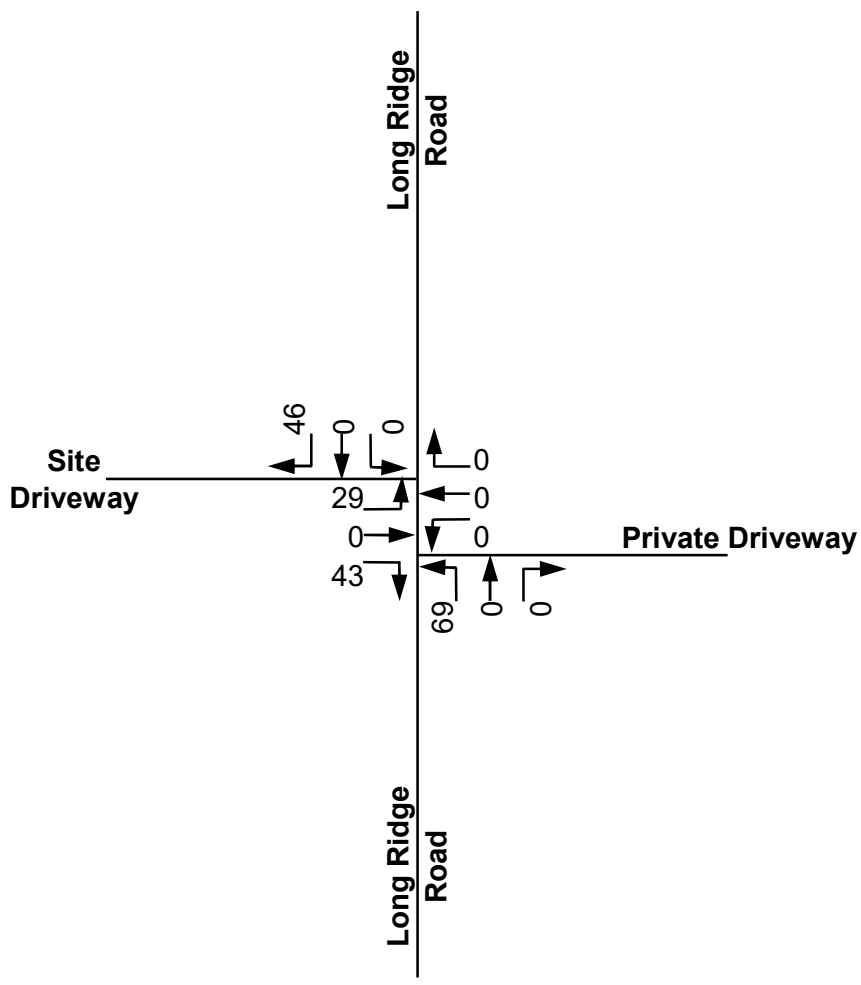
Trip Distributions



Residential Project Trips (AM)

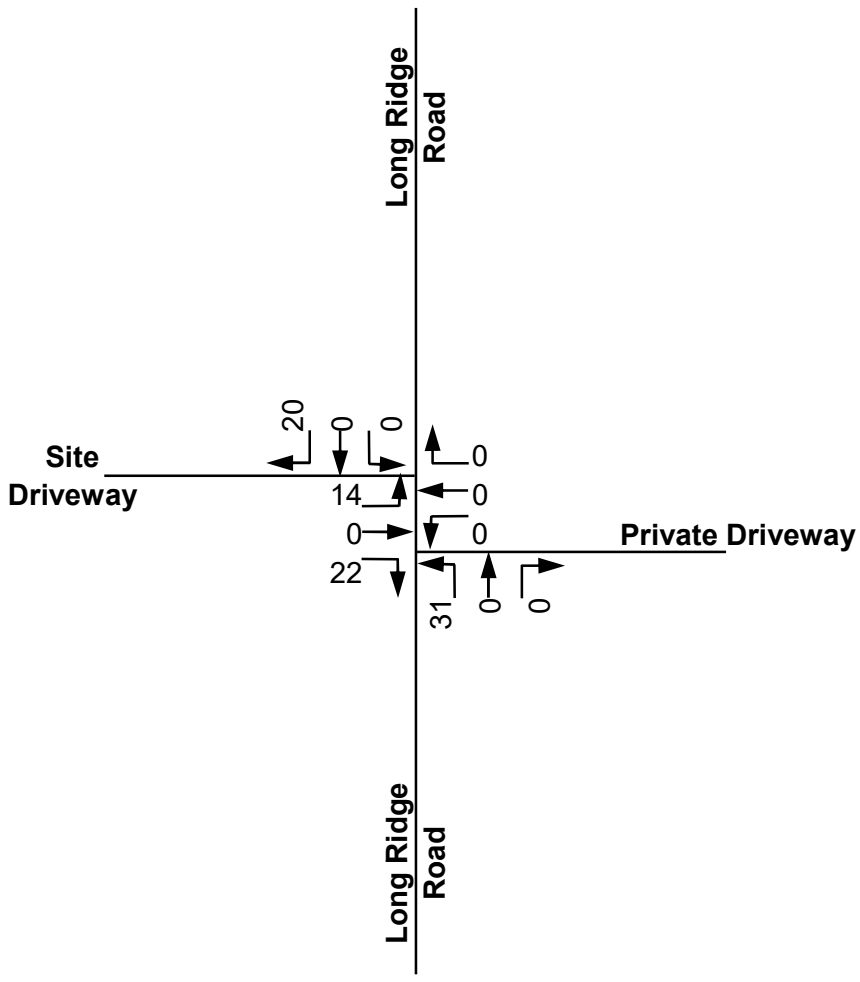


Residential Project Trips (PM)

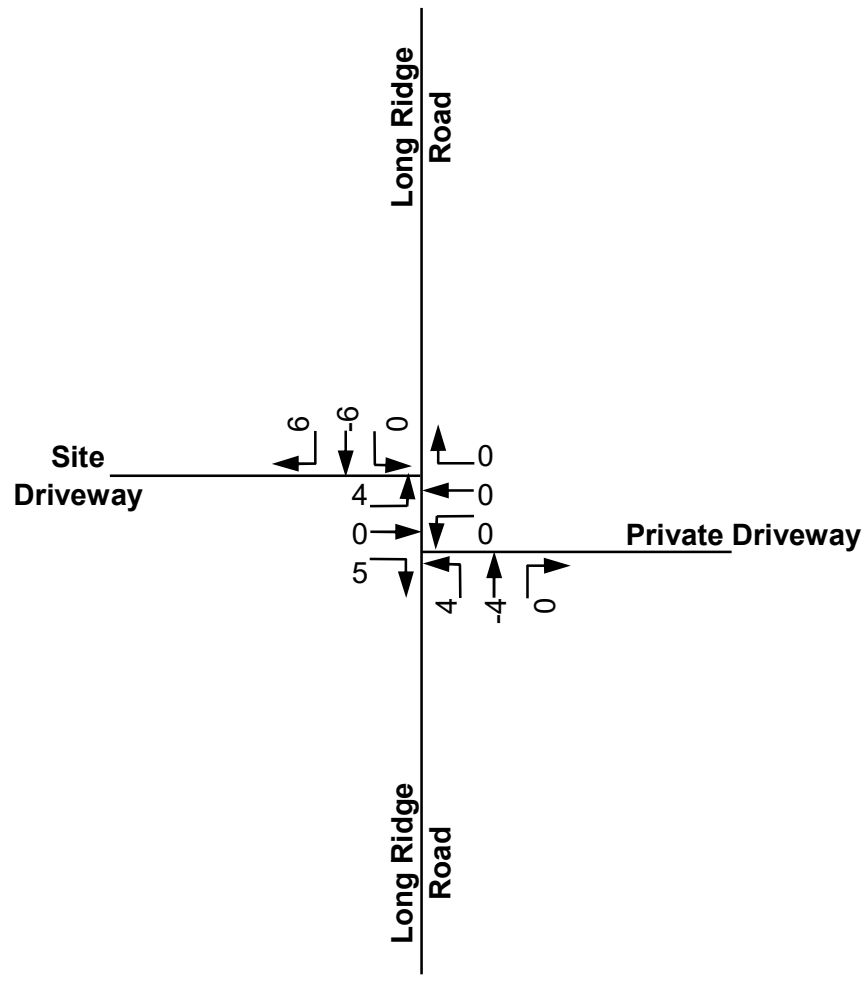


Kimley»Horn	Proposed Residential Development City of Stamford, Connecticut	Trip Distribution Percentages & Residential Project Trips	Figure 3

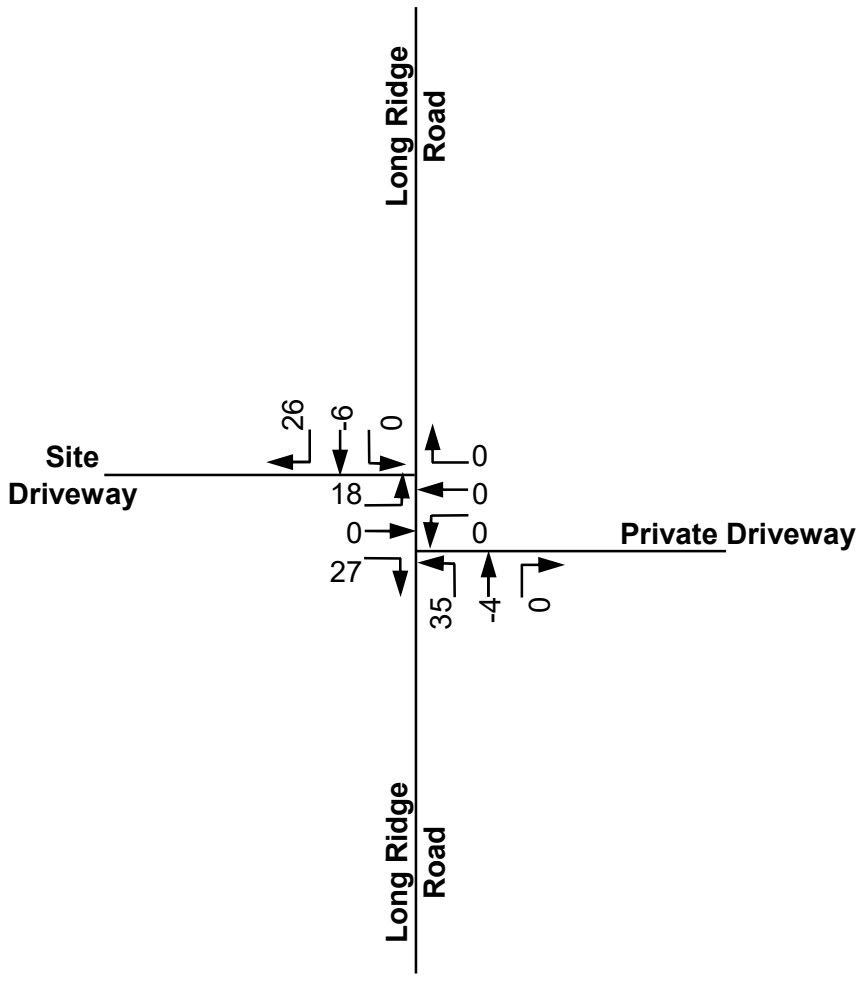
Primary Purpose Commercial Trips



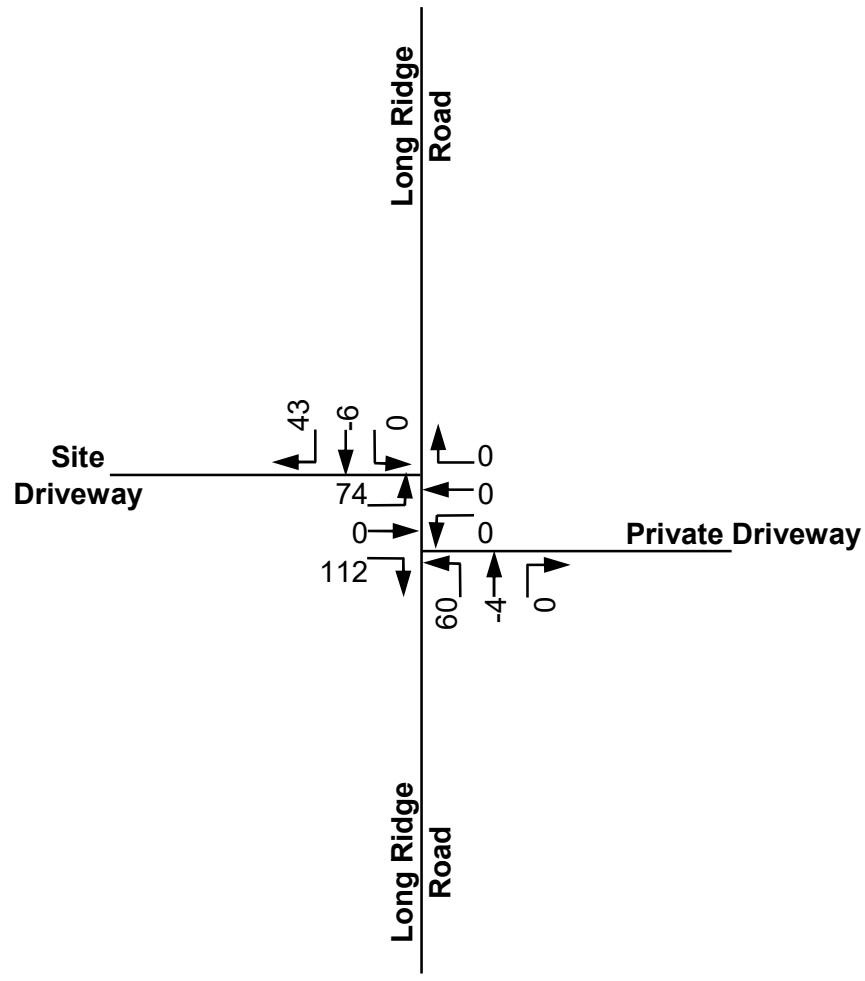
Pass-By Commercial Trips



Total New Commercial Trips

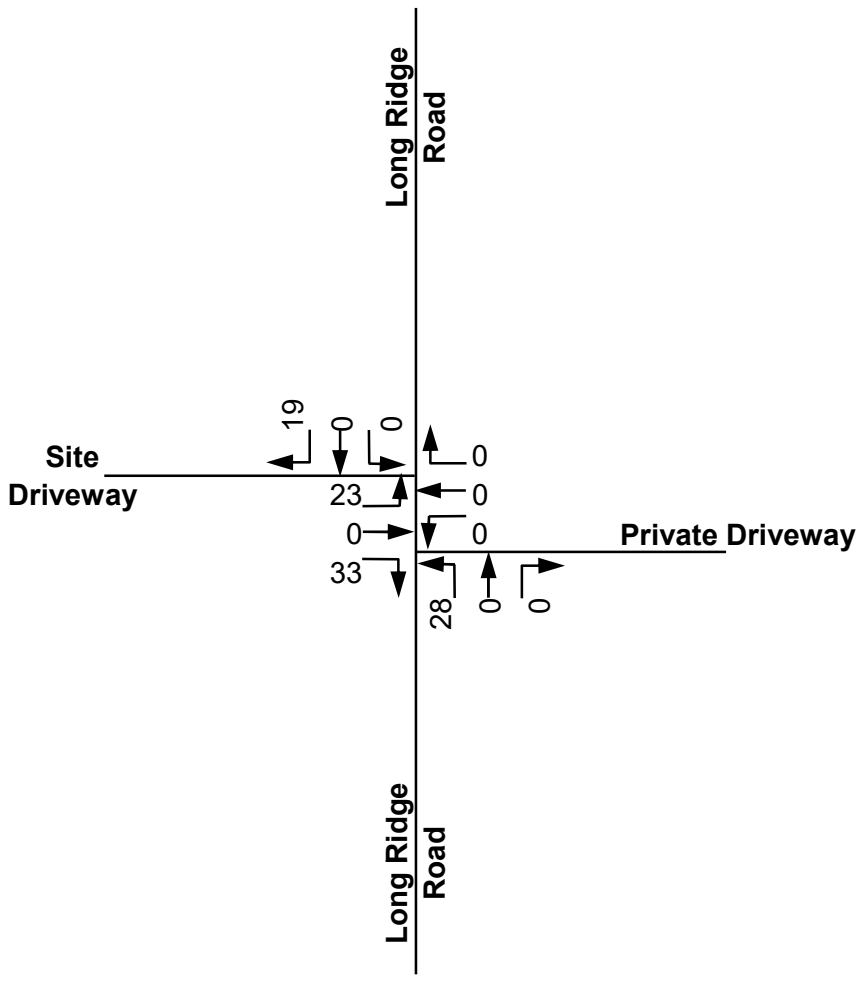


Total Project Trips

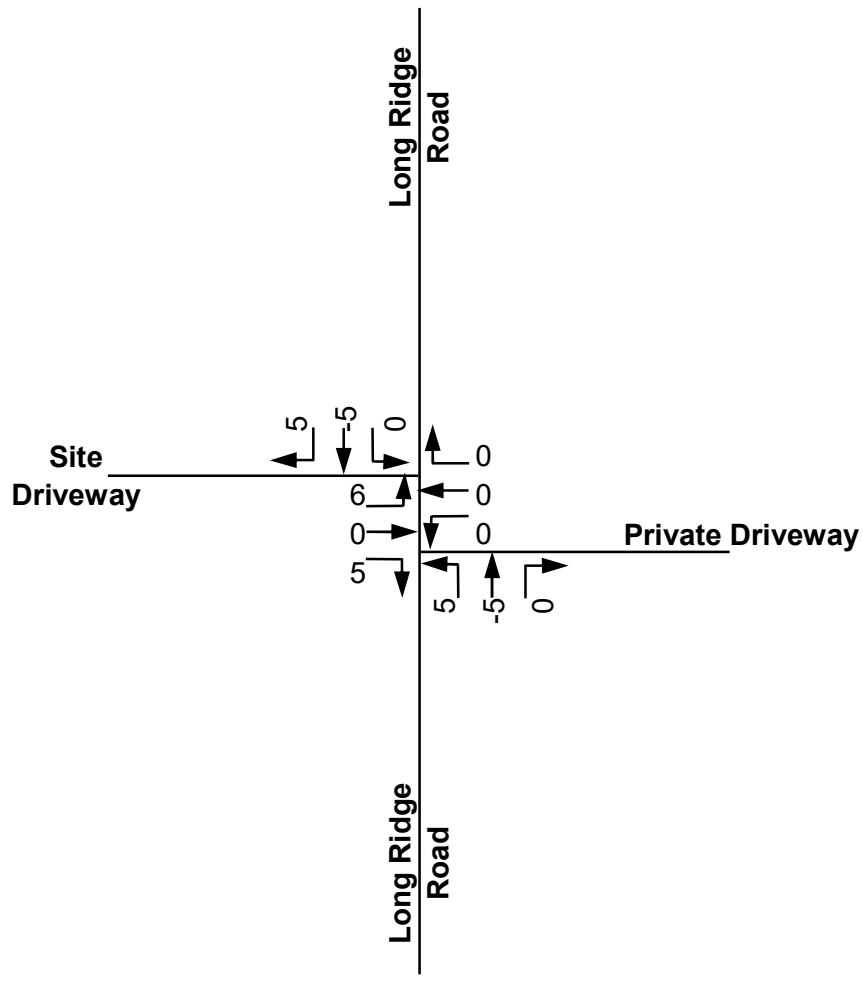


Kimley»Horn	Proposed Residential Development City of Stamford, Connecticut	Weekday AM Peak Hour Commercial Project Trips	Figure **4A**

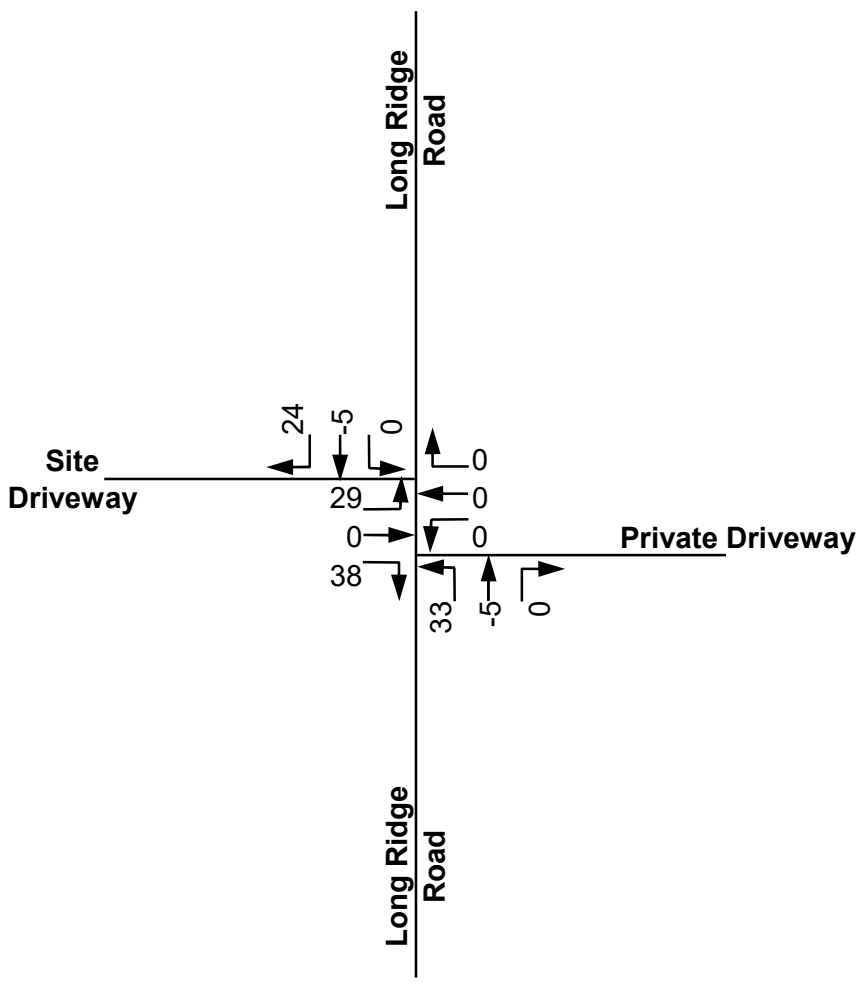
Primary Purpose Commercial Trips



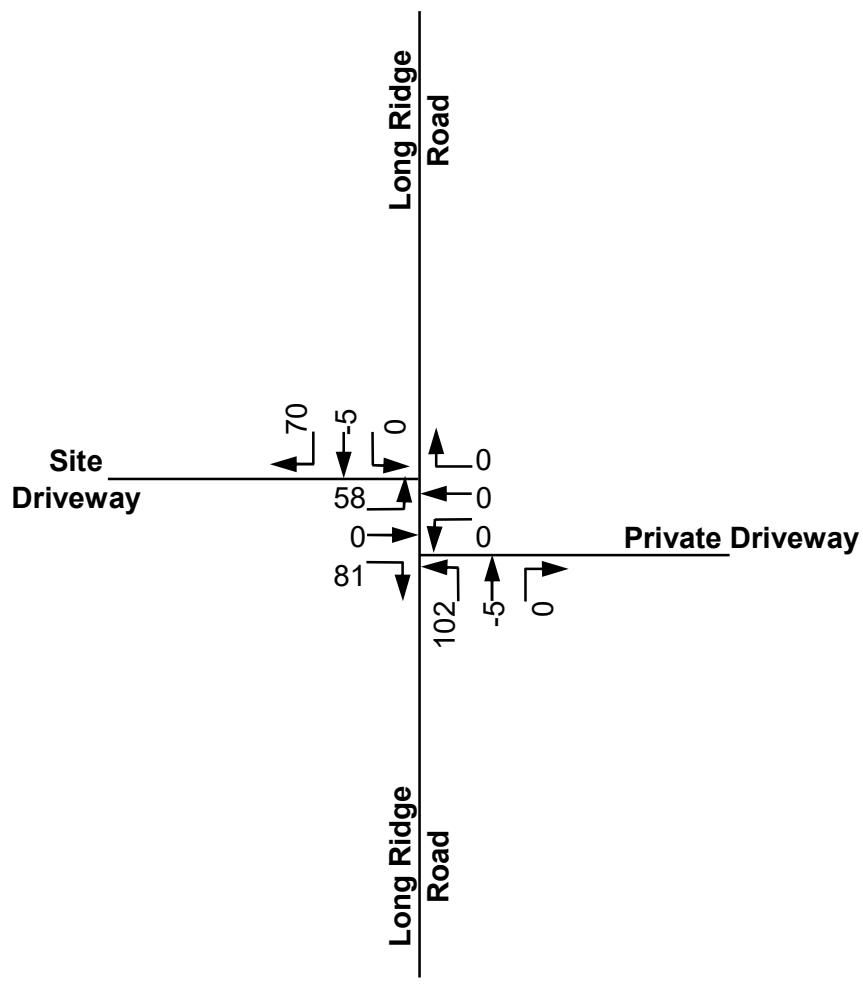
Pass-By Commercial Trips



Total New Commercial Trips

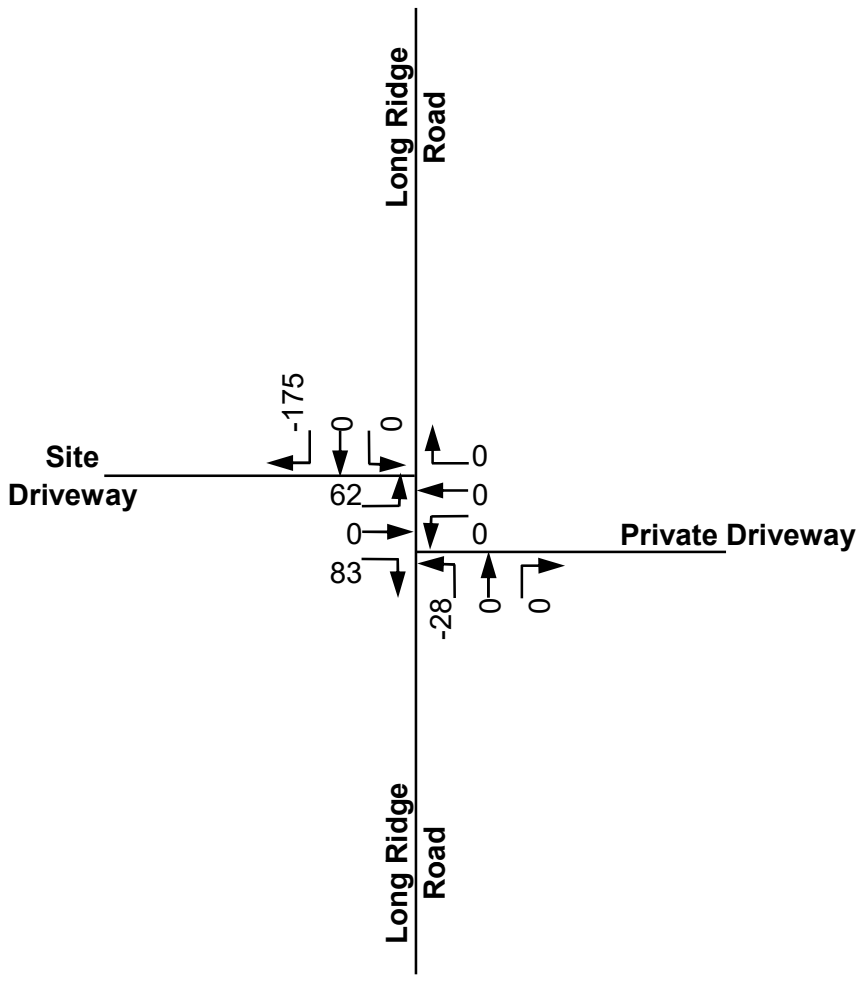


Total Project Trips

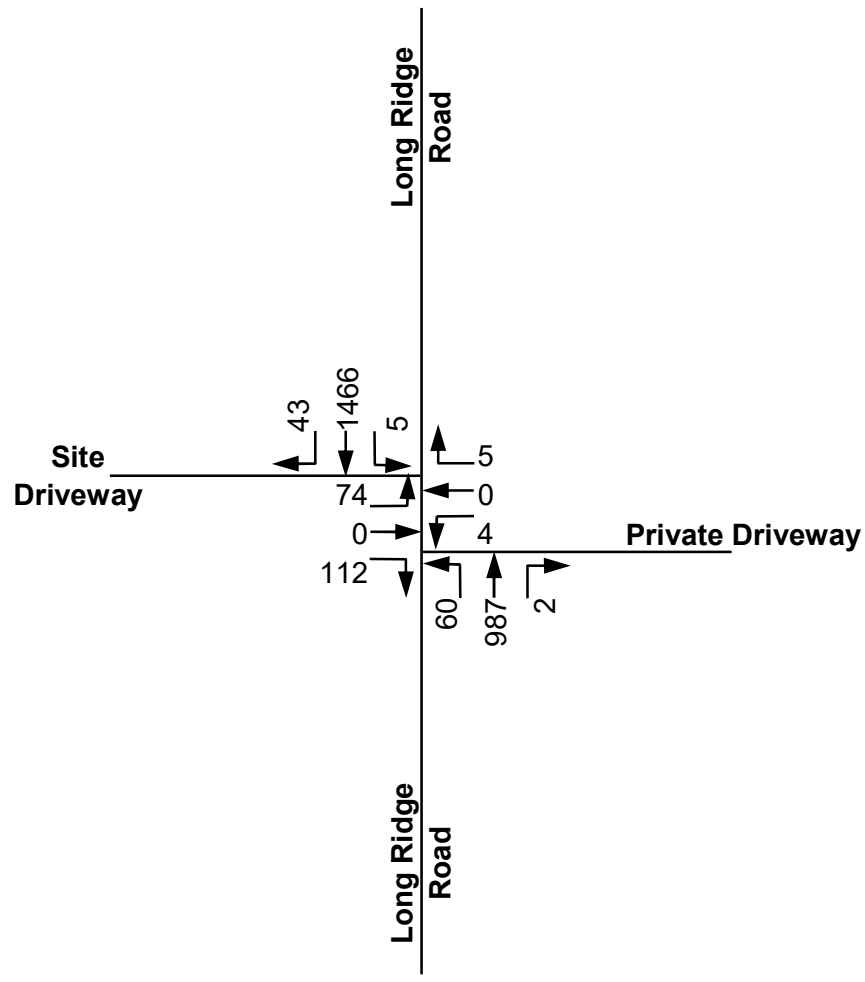


Kimley»Horn	Proposed Residential Development City of Stamford, Connecticut	Weekday PM Peak Hour Commercial Project Trips	Figure **4P**

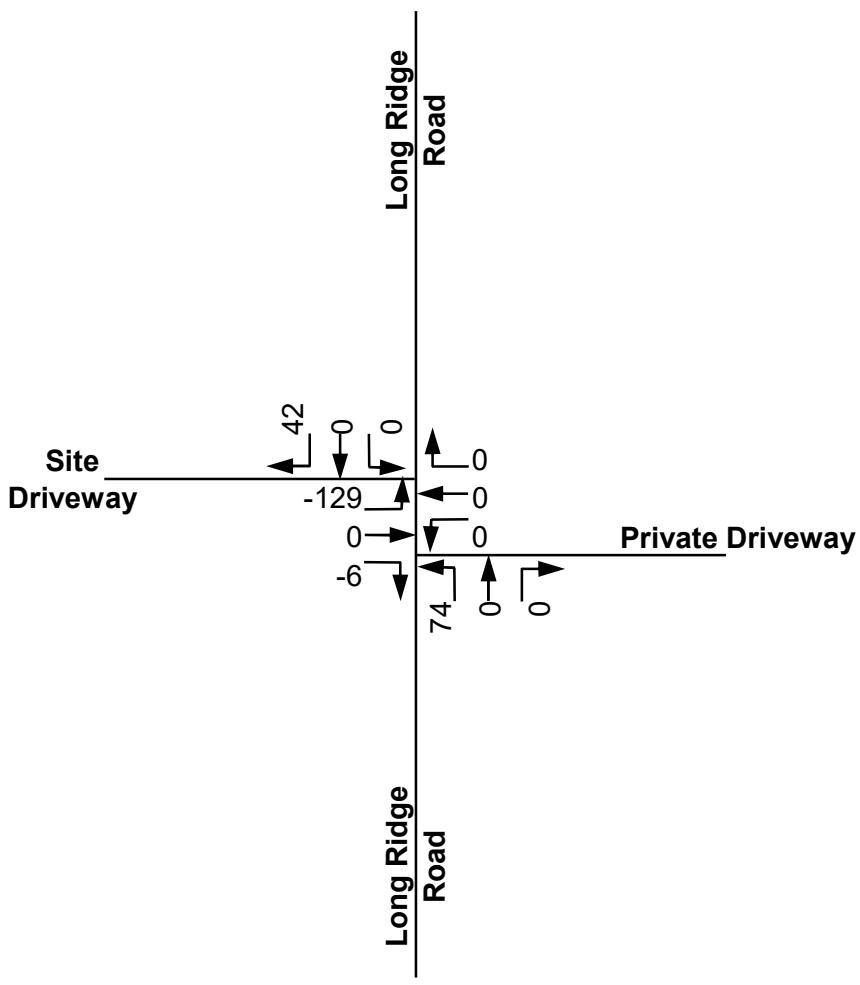
Net Change in Site Trips (AM)



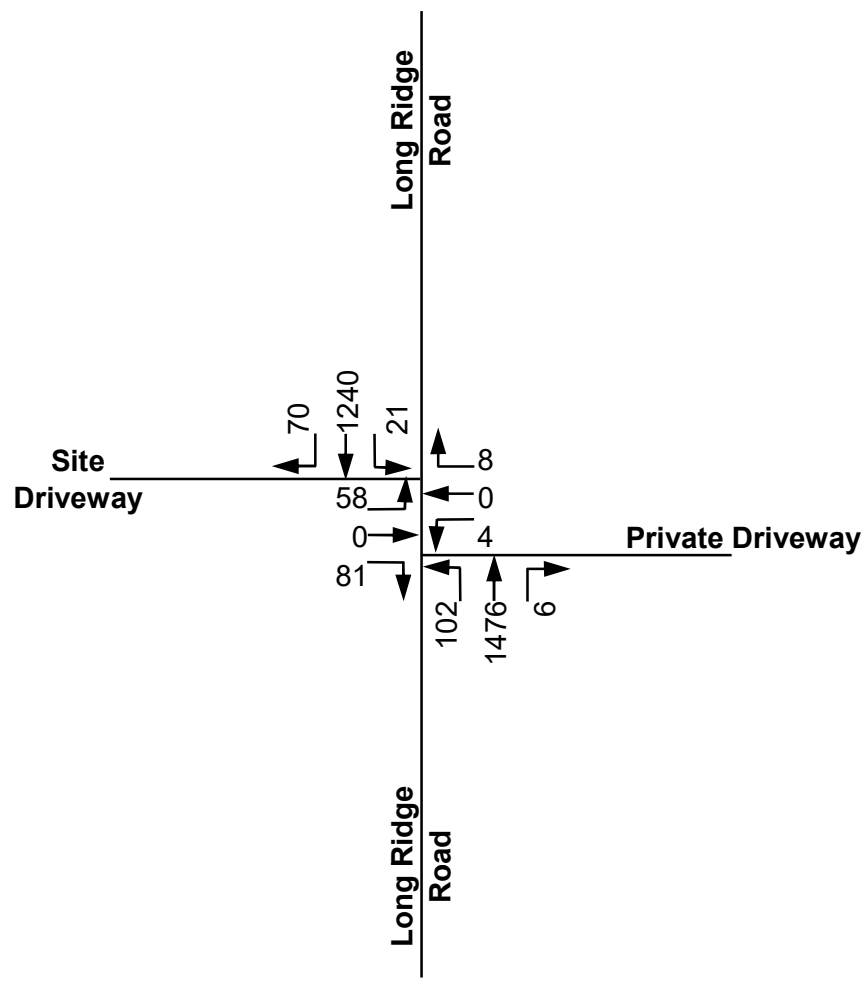
Build Traffic Volumes (AM)



Net Change in Site Trips (PM)



Build Traffic Volumes (PM)



Kimley»Horn	Proposed Residential Development City of Stamford, Connecticut	Net Change in Site Trips & Build Traffic Volumes	Figure 5

Kimley»Horn

OSTA Approved Trip Generation Table & Correspondence

From: Sojka, Gary J <Gary.Sojka@ct.gov>
Sent: Friday, June 23, 2023 9:31 AM
To: Connell, Andrea
Cc: Pothering, Ryan J; Padlo, Pat; Canning, John
Subject: RE: OSTA Trip generation methodology for land use change

Categories: External

Yes Andrea the trip gen table is acceptable.

Gary J. Sojka
Transportation Supervising Planner
Connecticut Department of Transportation
Bureau of Policy and Planning
2800 Berlin Turnpike
Newington, CT 06111
Email: gary.sojka@ct.gov
telephone: (860) 594-2025

From: Connell, Andrea <Andrea.Connell@kimley-horn.com>
Sent: Friday, June 23, 2023 9:27 AM
To: Sojka, Gary J <Gary.Sojka@ct.gov>
Cc: Pothering, Ryan J <Ryan.Pothering@ct.gov>; Padlo, Pat <Pat.Padlo@ct.gov>; Canning, John <John.Canning@kimley-horn.com>
Subject: RE: OSTA Trip generation methodology for land use change

Some people who received this message don't often get email from andrea.connell@kimley-horn.com. Learn why this is important

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Good morning, Gary,

Just checking in to see if you've had a chance to review the attached trip generation table (as described in my email below) that compares the trips generated by the existing and proposed uses of the property at 900 Long Ridge Road in Stamford.
Please let me know if you need anything further.

Best regards,
Andrea

Andrea M. Connell, Road Safety Professional, LEED Green Associate
Kimley-Horn Engineering and Landscape Architecture of New York, P.C.
1 North Lexington Avenue, Suite 505, White Plains, NY 10601
Direct: 914 368 9191 Main: 914 368 9200

Peak Hour Trip Generations					
			Devt Program	AM	PM
SF	DU	ITE Code			
3.500		712	Small Office Building	6	8
4.000		720	Med-Dental Office Bldg	12	16
8.000		565	Day Care Center	88	89
	4	220	Guest Lodging*	2	2
1.200		932	High-Turnover (Sit-Down) Restaurant	11	15
16.700			**TOTAL Commercial***	**120**	**130**
	512	**221**	**Multifamily Housing (Mid-Rise)**	189	200
Total DU	**516**		**TOTAL Res + Comm**	**309**	**330**

Notes: ITE 11th Ed. Rates. No internal credit applied.

229.294		710	**Existing Office** (based on ITE rates)	**349**	**330**
			Net Change in Trips (Existing - Proposed)	**-40**	**0**

* Guest Lodging has been replaced by 3,500 sf sundry shop.
New Trips: 280 AM at Driveway, 270 AM beyond Driveway
300 PM at Driveway, 290 PM beyond Driveway

Kimley»Horn

Internal Trip Worksheet

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY

GROSS TRIP GENERATION

INPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office			15	3	8	16
Retail			6	5	12	11
Restaurant			6	5	8	7
Day Care			47	41	42	47
Residential			43	145	121	77
Hotel						
	0	0	117	199	191	158

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	5	2	3	3
Retail	0	0	2	3	5	5
Restaurant	0	0	3	2	3	4
Day Car	0	0	2	2	2	2
Residential	0	0	1	4	6	5
Hotel	0	0	0	0	0	0
	0	0	13	13	19	19
% Reduction	0.0%		8.2%		10.9%	

EXTERNAL TRIPS

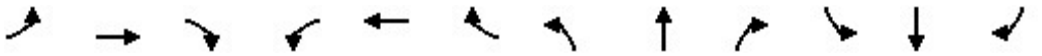
OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	10	1	5	13
Retail	0	0	4	2	7	6
Restaurant	0	0	3	3	5	3
Day Care	0	0	45	39	40	45
Residential	0	0	42	141	115	72
Hotel	0	0	0	0	0	0
	0	0	104	186	172	139

Kimley»Horn

Synchro Analysis Reports

Existing, No-Build and Build

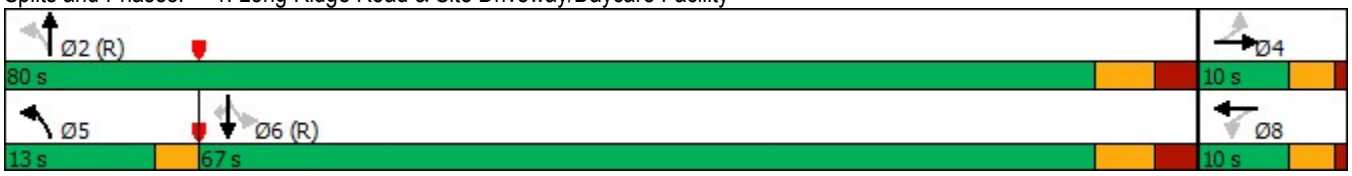


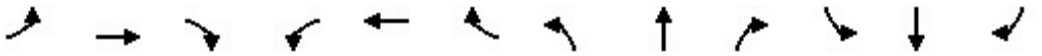
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	7	4	0	5	21	964	2	5	1432	52
Future Volume (vph)	3	0	7	4	0	5	21	964	2	5	1432	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		-1%			0%			1%			0%	
Storage Length (ft)	180		0	0		0	85		0	0		325
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1673	1518	0	0	1719	0	1686	3276	0	0	3293	1516
Flt Permitted							0.140				0.952	
Satd. Flow (perm)	1761	1527	0	0	1758	0	248	3276	0	0	3135	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		85			85			1				57
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		314			164			580			623	
Travel Time (s)		8.6			4.5			9.9			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	6%	0%	0%	6%	3%
Shared Lane Traffic (%)	41%											
Lane Group Flow (vph)	2	9	0	0	9	0	23	1050	0	0	1562	57
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		5.0	5.0	5.0
Minimum Split (s)	5.0	5.0		5.0	5.0		4.0	26.0		26.0	26.0	26.0
Total Split (s)	10.0	10.0		10.0	10.0		13.0	80.0		67.0	67.0	67.0
Total Split (%)	11.1%	11.1%		11.1%	11.1%		14.4%	88.9%		74.4%	74.4%	74.4%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		0.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0			4.0		3.0	7.0			7.0	7.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)	5.7	5.7			5.6		85.0	86.6			81.7	81.7
Actuated g/C Ratio	0.06	0.06			0.06		0.94	0.96			0.91	0.91
v/c Ratio	0.02	0.05			0.05		0.07	0.33			0.55	0.04
Control Delay	40.0	0.5			0.5		0.9	1.0			3.6	1.0
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	40.0	0.5			0.5		0.9	1.0			3.6	1.0
LOS	D	A			A		A	A			A	A
Approach Delay		7.7			0.5			1.0			3.5	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	1	0			0		0	0			0	0
Queue Length 95th (ft)	8	0			0		3	81			298	9
Internal Link Dist (ft)		234			84			500			543	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)	180						85					325
Base Capacity (vph)	117	181			196		393	3152			2846	1382
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.02	0.05			0.05		0.06	0.33			0.55	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 11 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 2.5		Intersection LOS: A	
Intersection Capacity Utilization 56.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: Long Ridge Road & Site Driveway/Daycare Facility



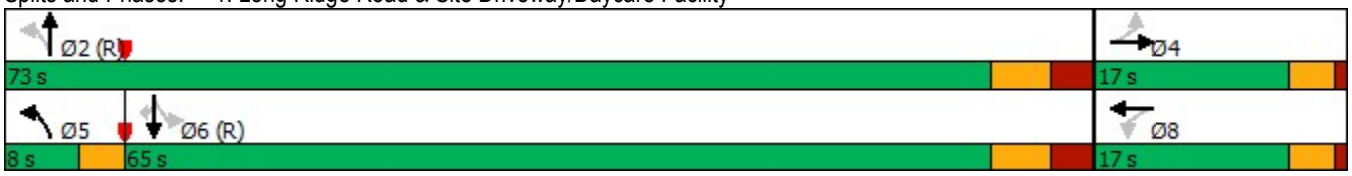


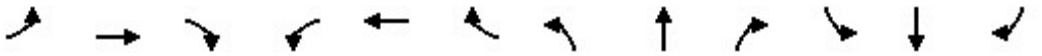
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	21	4	0	8	3	1440	6	21	1210	3
Future Volume (vph)	45	0	21	4	0	8	3	1440	6	21	1210	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		-1%			0%			1%			0%	
Storage Length (ft)	180		0	0		0	85		0	0		325
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1673	1583	0	0	1697	0	1686	3273	0	0	3292	1516
Flt Permitted	0.749	0.845			0.903		0.179				0.896	
Satd. Flow (perm)	1319	1369	0	0	1556	0	318	3273	0	0	2953	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		85			85			1				48
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		314			164			580			623	
Travel Time (s)		8.6			4.5			9.9			10.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	6%	0%	0%	6%	3%
Shared Lane Traffic (%)	41%											
Lane Group Flow (vph)	28	43	0	0	13	0	3	1554	0	0	1324	3
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		5.0	5.0	5.0
Minimum Split (s)	5.0	5.0		5.0	5.0		4.0	26.0		26.0	26.0	26.0
Total Split (s)	17.0	17.0		17.0	17.0		8.0	73.0		65.0	65.0	65.0
Total Split (%)	18.9%	18.9%		18.9%	18.9%		8.9%	81.1%		72.2%	72.2%	72.2%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		0.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0			4.0		3.0	7.0			7.0	7.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)	7.5	7.5			7.5		77.4	74.8			73.1	73.1
Actuated g/C Ratio	0.08	0.08			0.08		0.86	0.83			0.81	0.81
v/c Ratio	0.26	0.22			0.06		0.01	0.57			0.55	0.00
Control Delay	43.6	4.5			0.6		1.7	4.4			5.6	0.0
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	43.6	4.5			0.6		1.7	4.4			5.6	0.0
LOS	D	A			A		A	A			A	A
Approach Delay		19.9			0.6			4.4			5.6	
Approach LOS		B			A			A			A	
Queue Length 50th (ft)	15	0			0		0	133			108	0
Queue Length 95th (ft)	43	8			0		1	212			276	0
Internal Link Dist (ft)		234			84			500			543	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)	180						85					325
Base Capacity (vph)	190	270			297		357	2720			2397	1240
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.15	0.16			0.04		0.01	0.57			0.55	0.00

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 6 (7%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 5.3		Intersection LOS: A	
Intersection Capacity Utilization 62.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: Long Ridge Road & Site Driveway/Daycare Facility



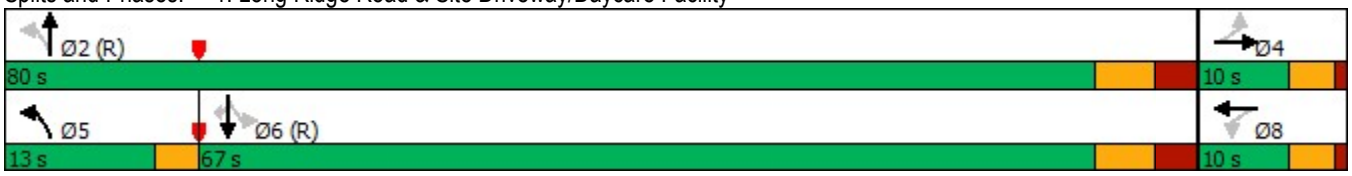


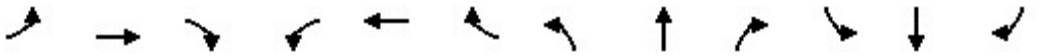
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	0	29	4	0	5	89	991	2	5	1473	218
Future Volume (vph)	13	0	29	4	0	5	89	991	2	5	1473	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		-1%			0%			1%			0%	
Storage Length (ft)	180		0	0		0	85		0	0		325
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1673	1527	0	0	1719	0	1686	3276	0	0	3293	1516
Flt Permitted		0.942			0.838		0.120				0.952	
Satd. Flow (perm)	1761	1450	0	0	1473	0	213	3276	0	0	3135	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		85			85			1				237
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		314			164			580			623	
Travel Time (s)		8.6			4.5			9.9			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	6%	0%	0%	6%	3%
Shared Lane Traffic (%)	41%											
Lane Group Flow (vph)	8	38	0	0	9	0	97	1079	0	0	1606	237
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		5.0	5.0	5.0
Minimum Split (s)	5.0	5.0		5.0	5.0		4.0	26.0		26.0	26.0	26.0
Total Split (s)	10.0	10.0		10.0	10.0		13.0	80.0		67.0	67.0	67.0
Total Split (%)	11.1%	11.1%		11.1%	11.1%		14.4%	88.9%		74.4%	74.4%	74.4%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		0.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0			4.0		3.0	7.0			7.0	7.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)	5.8	5.8			5.8		81.0	79.8			71.0	71.0
Actuated g/C Ratio	0.06	0.06			0.06		0.90	0.89			0.79	0.79
v/c Ratio	0.07	0.22			0.05		0.33	0.37			0.65	0.19
Control Delay	41.0	3.5			0.6		3.9	2.1			7.8	1.0
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	41.0	3.5			0.6		3.9	2.1			7.8	1.0
LOS	D	A			A		A	A			A	A
Approach Delay		10.0			0.6			2.2			6.9	
Approach LOS		B			A			A			A	
Queue Length 50th (ft)	4	0			0		5	64			243	0
Queue Length 95th (ft)	18	4			0		10	84			334	19
Internal Link Dist (ft)		234			84			500			543	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)	180						85					325
Base Capacity (vph)	117	176			177		355	2905			2471	1245
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.07	0.22			0.05		0.27	0.37			0.65	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 11 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 5.2		Intersection LOS: A	
Intersection Capacity Utilization 87.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Long Ridge Road & Site Driveway/Daycare Facility



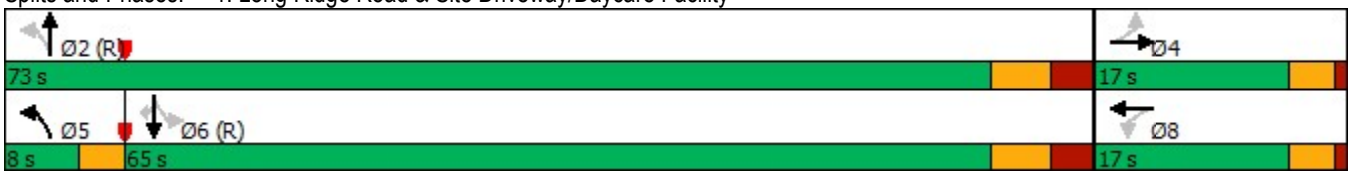


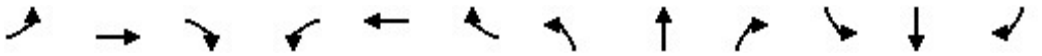
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	186	0	88	4	0	8	28	1481	6	21	1244	28
Future Volume (vph)	186	0	88	4	0	8	28	1481	6	21	1244	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		-1%			0%			1%			0%	
Storage Length (ft)	180		0	0		0	85		0	0		325
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1673	1581	0	0	1697	0	1686	3273	0	0	3292	1516
Flt Permitted	0.749	0.846			0.909		0.153				0.894	
Satd. Flow (perm)	1319	1369	0	0	1566	0	271	3273	0	0	2946	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		85			85			1				48
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		314			164			580			623	
Travel Time (s)		8.6			4.5			9.9			10.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	6%	0%	0%	6%	3%
Shared Lane Traffic (%)	41%											
Lane Group Flow (vph)	118	177	0	0	13	0	30	1598	0	0	1361	30
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		5.0	5.0	5.0
Minimum Split (s)	5.0	5.0		5.0	5.0		4.0	26.0		26.0	26.0	26.0
Total Split (s)	17.0	17.0		17.0	17.0		8.0	73.0		65.0	65.0	65.0
Total Split (%)	18.9%	18.9%		18.9%	18.9%		8.9%	81.1%		72.2%	72.2%	72.2%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		0.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0			4.0		3.0	7.0			7.0	7.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)	11.6	11.6			11.6		71.4	67.4			62.6	62.6
Actuated g/C Ratio	0.13	0.13			0.13		0.79	0.75			0.70	0.70
v/c Ratio	0.70	0.71			0.05		0.10	0.65			0.66	0.03
Control Delay	59.4	36.1			0.3		2.9	7.3			10.8	1.0
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	59.4	36.1			0.3		2.9	7.3			10.8	1.0
LOS	E	D			A		A	A			B	A
Approach Delay		45.4			0.3			7.3			10.6	
Approach LOS		D			A			A			B	
Queue Length 50th (ft)	67	51			0		3	205			240	0
Queue Length 95th (ft)	#142	#140			0		8	267			320	6
Internal Link Dist (ft)		234			84			500			543	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)	180						85					325
Base Capacity (vph)	190	270			298		297	2452			2050	1069
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.62	0.66			0.04		0.10	0.65			0.66	0.03

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 6 (7%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 12.0		Intersection LOS: B	
Intersection Capacity Utilization 73.0%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Long Ridge Road & Site Driveway/Daycare Facility



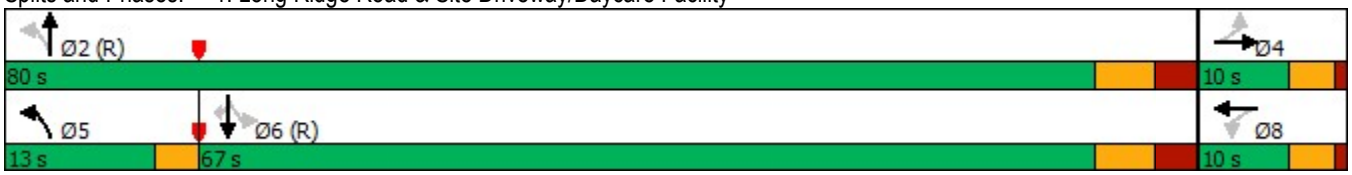


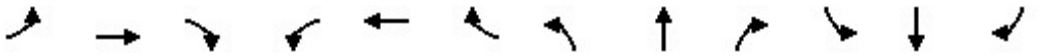
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	0	112	4	0	5	60	987	2	5	1466	43
Future Volume (vph)	74	0	112	4	0	5	60	987	2	5	1466	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		-1%			0%			1%			0%	
Storage Length (ft)	180		0	0		0	85		0	0		325
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1673	1536	0	0	1719	0	1686	3276	0	0	3293	1516
Flt Permitted	0.752	0.924			0.481		0.116				0.952	
Satd. Flow (perm)	1324	1435	0	0	845	0	206	3276	0	0	3135	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		122			85			1				48
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		314			164			580			623	
Travel Time (s)		8.6			4.5			9.9			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	6%	0%	0%	6%	3%
Shared Lane Traffic (%)	41%											
Lane Group Flow (vph)	47	155	0	0	9	0	65	1075	0	0	1598	47
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		5.0	5.0	5.0
Minimum Split (s)	5.0	5.0		5.0	5.0		4.0	26.0		26.0	26.0	26.0
Total Split (s)	10.0	10.0		10.0	10.0		13.0	80.0		67.0	67.0	67.0
Total Split (%)	11.1%	11.1%		11.1%	11.1%		14.4%	88.9%		74.4%	74.4%	74.4%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		0.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0			4.0		3.0	7.0			7.0	7.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)	6.0	6.0			6.0		77.0	73.0			65.7	65.7
Actuated g/C Ratio	0.07	0.07			0.07		0.86	0.81			0.73	0.73
v/c Ratio	0.53	0.74			0.07		0.24	0.40			0.70	0.04
Control Delay	63.7	35.0			1.0		3.0	2.9			9.3	1.3
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	63.7	35.0			1.0		3.0	2.9			9.3	1.3
LOS	E	C			A		A	A			A	A
Approach Delay		41.7			1.0			2.9			9.1	
Approach LOS		D			A			A			A	
Queue Length 50th (ft)	27	18			0		3	64			238	0
Queue Length 95th (ft)	#77	#117			0		7	84			322	9
Internal Link Dist (ft)		234			84			500			543	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)	180						85					325
Base Capacity (vph)	88	209			135		340	2657			2289	1119
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.53	0.74			0.07		0.19	0.40			0.70	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 11 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 65.8%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Long Ridge Road & Site Driveway/Daycare Facility



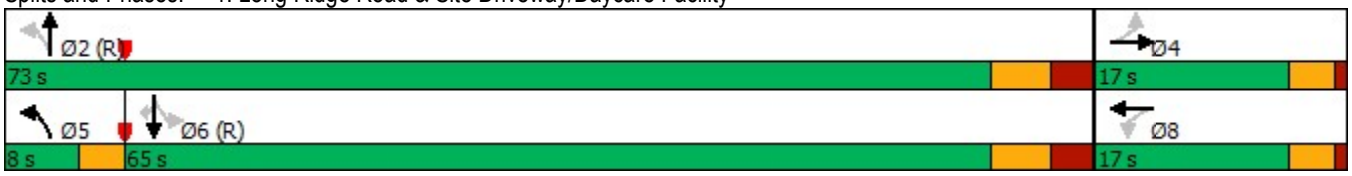


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	0	81	4	0	8	102	1476	6	21	1240	70
Future Volume (vph)	58	0	81	4	0	8	102	1476	6	21	1240	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		-1%			0%			1%			0%	
Storage Length (ft)	180		0	0		0	85		0	0		325
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1673	1538	0	0	1697	0	1686	3273	0	0	3292	1516
Flt Permitted	0.749	0.919			0.893		0.161				0.894	
Satd. Flow (perm)	1319	1429	0	0	1539	0	286	3273	0	0	2946	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		87			85			1				75
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		314			164			580			623	
Travel Time (s)		8.6			4.5			9.9			10.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	6%	0%	0%	6%	3%
Shared Lane Traffic (%)	41%											
Lane Group Flow (vph)	37	112	0	0	13	0	110	1593	0	0	1356	75
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		5.0	5.0	5.0
Minimum Split (s)	5.0	5.0		5.0	5.0		4.0	26.0		26.0	26.0	26.0
Total Split (s)	17.0	17.0		17.0	17.0		8.0	73.0		65.0	65.0	65.0
Total Split (%)	18.9%	18.9%		18.9%	18.9%		8.9%	81.1%		72.2%	72.2%	72.2%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		0.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0			4.0		3.0	7.0			7.0	7.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)	8.4	8.4			8.4		76.5	73.9			66.5	66.5
Actuated g/C Ratio	0.09	0.09			0.09		0.85	0.82			0.74	0.74
v/c Ratio	0.30	0.53			0.06		0.33	0.59			0.62	0.07
Control Delay	43.4	22.2			0.5		4.2	5.1			9.7	1.6
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	43.4	22.2			0.5		4.2	5.1			9.7	1.6
LOS	D	C			A		A	A			A	A
Approach Delay		27.5			0.5			5.1			9.2	
Approach LOS		C			A			A			A	
Queue Length 50th (ft)	21	13			0		7	146			206	0
Queue Length 95th (ft)	50	64			0		21	258			317	14
Internal Link Dist (ft)		234			84			500			543	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)	180						85					325
Base Capacity (vph)	190	280			295		338	2689			2177	1140
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.19	0.40			0.04		0.33	0.59			0.62	0.07

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 6 (7%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 7.9		Intersection LOS: A	
Intersection Capacity Utilization 96.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Long Ridge Road & Site Driveway/Daycare Facility



Shared Parking Analysis

Project: **900 Long Ridge Road**
Description: Shared Parking Analysis

Monthly Comparison Summary								
Month	Weekday							
	Overall Pk		AM Peak Hr		PM Peak Hr		Eve Peak Hr	
	Time	Demand	Time	Demand	Time	Demand	Time	Demand
January	12 AM	767	6 AM	701	5 PM	443	12 AM	767
February	12 AM	767	6 AM	701	5 PM	444	12 AM	767
March	11 PM	768	6 AM	702	5 PM	446	11 PM	768
April	11 PM	768	6 AM	702	5 PM	445	11 PM	768
May	11 PM	768	6 AM	702	5 PM	446	11 PM	768
June	11 PM	768	6 AM	702	5 PM	446	11 PM	768
July	11 PM	730	6 AM	667	5 PM	424	11 PM	730
August	11 PM	730	6 AM	667	5 PM	667	11 PM	730
September	11 PM	767	6 AM	701	5 PM	444	11 PM	767
October	11 PM	768	6 AM	702	5 PM	445	11 PM	768
November	11 PM	768	6 AM	701	5 PM	446	11 PM	768
December	10 PM	769	6 AM	702	5 PM	449	10 PM	769
Late December	11 PM	768	6 AM	702	5 PM	440	11 PM	768

Monthly Comparison Summary								
Month	Weekend							
	Overall Pk		AM Peak Hr		PM Peak Hr		Eve Peak Hr	
	Time	Demand	Time	Demand	Time	Demand	Time	Demand
January	12 AM	780	6 AM	736	5 PM	594	12 AM	780
February	12 AM	780	6 AM	736	5 PM	595	12 AM	780
March	12 AM	780	6 AM	736	5 PM	596	12 AM	780
April	12 AM	780	6 AM	736	5 PM	596	12 AM	780
May	12 AM	780	6 AM	737	5 PM	597	12 AM	780
June	12 AM	780	6 AM	736	5 PM	596	12 AM	780
July	12 AM	741	6 AM	700	5 PM	567	12 AM	741
August	12 AM	741	6 AM	700	5 PM	568	12 AM	741
September	12 AM	780	6 AM	736	5 PM	595	12 AM	780
October	12 AM	780	6 AM	736	5 PM	596	12 AM	780
November	12 AM	780	6 AM	736	5 PM	596	12 AM	780
December	12 AM	781	6 AM	737	5 PM	600	12 AM	781
Late December	12 AM	781	6 AM	737	5 PM	598	12 AM	781

Devt Program:

Gen'l Office	3500 sf
Medical Office	4000 sf
Day Care Center	8000 sf
Retail (sundry shop)	*3500 sf*
Family Restaurant	1200 sf
Residential	508 units (457 market rate, 51 BMR)

Copyright © 2020 The Urban Land Institute, International Council of Shopping Centers, and National Parking Association. All rights reserved.

December																					
Weekday Estimated Peak-Hour Parking Demand																					
Land Use	Monthly Adjustment	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	12 AM	Overall Pk 10 PM
Retail																					
Retail (<400 ksf)	100%	0	1	2	3	6	8	9	10	10	10	8	9	9	9	9	5	3	1	0	3
Employee	100%	0	0	1	1	2	3	3	3	3	3	3	3	3	3	3	2	1	1	0	1
Food and Beverage																					
Family Restaurant	100%	3	6	7	9	10	11	12	11	6	5	5	9	10	10	10	7	7	6	3	7
Employee	100%	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1
Entertainment and Institutions																					
Hotel and Residential																					
Residential, Suburban																					-
Studio Efficiency	100%	54	46	38	31	29	26	23	23	23	23	26	29	34	40	46	48	54	55	57	54
1 Bedroom	100%	234	197	166	135	123	111	98	98	98	98	111	123	148	172	197	209	234	239	246	234
2 Bedrooms	100%	369	310	262	213	194	175	155	155	155	155	175	194	233	272	310	330	369	376	388	369
3+ Bedrooms	100%	41	34	29	24	22	19	17	17	17	17	19	22	26	30	34	37	41	42	43	41
Reserved	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Visitor	100%	0	6	12	12	12	12	12	12	12	12	12	24	36	60	60	60	60	48	30	60
Office																					
Office <25 ksf	100%	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Reserved	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Employee	100%	0	1	3	5	6	6	5	5	6	6	5	4	2	1	0	0	0	0	0	0
Medical/Dental Office	100%	0	0	7	7	8	8	2	7	8	8	7	6	5	2	1	0	0	0	0	0
Employee	100%	0	1	4	4	4	4	4	4	4	4	4	4	3	1	1	0	0	0	0	0
Day Care Center	100%	0	0	3	10	3	3	3	3	3	3	13	7	3	1	0	0	0	0	0	0
Employee	100%	0	8	11	14	14	14	14	14	14	15	15	15	9	6	2	0	0	0	0	0
Additional Land Uses																					
	Customer/Visitor	3	13	31	42	39	41	38	43	40	38	46	55	63	82	79	72	70	55	33	70
	Employee/Resident	699	598	516	430	395	359	321	321	322	323	359	395	458	527	594	627	700	714	735	700
	Reserved	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		702	611	548	471	434	400	359	364	361	361	404	449	521	608	674	700	769	769	768	769

December																					
Weekend Estimated Peak-Hour Parking Demand																					
Land Use	Monthly Adjustment	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	12 AM	Overall Pk 12 AM
Retail																					
Retail (<400 ksf)	100%	0	1	1	4	7	9	11	11	11	11	10	9	7	7	6	6	4	2	0	0
Employee	100%	0	0	1	2	3	3	3	3	3	3	3	3	3	2	2	2	1	0	0	0
Food and Beverage																					
Family Restaurant	100%	1	3	5	8	11	11	12	10	8	5	5	7	8	8	8	4	3	2	1	1
Employee	100%	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1
Entertainment and Institutions																					
Hotel and Residential																					
Residential, Suburban																					
Studio Efficiency	100%	57	54	50	46	43	40	39	37	37	39	40	42	44	46	47	49	51	52	57	57
1 Bedroom	100%	246	234	216	197	185	172	167	160	160	167	175	182	189	197	204	212	219	226	246	246
2 Bedrooms	100%	388	369	341	310	291	272	264	252	252	264	275	287	299	310	322	334	345	357	388	388
3+ Bedrooms	100%	43	41	38	34	32	30	29	28	28	29	31	32	33	34	36	37	38	40	43	43
Reserved	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Visitor	100%	0	18	18	18	18	18	18	18	18	18	18	36	53	89	89	89	89	71	45	45
Office																					
Office <25 ksf	100%	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
Reserved	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Employee	100%	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
Medical/Dental Office	100%	0	0	2	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Employee	100%	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Additional Land Uses																					
	Customer/Visitor	1	22	27	33	38	41	42	40	37	34	33	52	69	104	103	98	96	75	46	46
	Employee/Resident	735	700	651	593	557	521	506	483	483	504	526	548	570	592	613	635	656	677	735	735
	Reserved	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		737	721	677	626	595	562	548	523	520	538	559	600	639	696	716	733	752	752	781	781

Shared Parking
Peak Month Table

June 22, 2023

City of Stamford Planning & Zoning Boards
c/o Ralph Blessing, Land Use Bureau Chief
888 Washington Boulevard
Stamford, CT 06901

Re: 900 Long Ridge Road (003-5275) - Stamford, CT

Dear Mr. Blessing:

This letter serves to authorize Redniss & Mead, Inc. (with offices at 22 First Street in Stamford, CT) and Carmody Torrance Sandak & Hennessey, LLP (with offices at 1055 Washington Blvd in Stamford, CT) to act as our agent in connection with the preparing, filing, and processing of applications required for Planning and Zoning approvals relating to the above referenced property.

Thank you for your acknowledgement of said authority.

Sincerely,

Timothy Helmig
Vice President
900 Long Ridge Road
Property Owner LLC