Planning and Zoning Department
Telephone (203) 452-5044
Fax (203) 452-5169

Town of Trumbull
CONNECTICUT

Town Hall
5866 Main Street
Trumbull, Connecticut 06611

PLANNING AND ZONING COMMISSION

To: MEMBERS OF THE PLANNING AND ZONING COMMISSION
RE: SPECIAL MEETING – **WEDNESDAY, July 15, 2020**

The Planning and Zoning Commission will hold a Special Meeting on Wednesday, July 15, 2020 at 7:00 p.m. via videoconferencing.

AGENDA

PUBLIC HEARING
7:00 P.M.

PLEDGE OF ALLEGIANCE

ROLL CALL

PUBLIC HEARING

SPECIAL PERMIT/SITE PLAN/ZONE CHANGE/OTHER

1. **5065 and 5085 Main Street:** Applicants, K&K Developers, Inc., Trumbull Shopping Center #2, LLC and WEA CT Houses LLC are requesting a Special Permit with a site plan to allow a proposed 260 unit multi-family residential community and associated site improvements pursuant to Art. II, Sec. 3.4, of the Town of Trumbull Zoning Regulations.

Join the meeting online:
https://zoom.us/j/98946202425?pwd=LzlQTlVXN3ZDRk1OTy9jL0poZEEzdz09
Webinar ID: 989 4620 2425
Password: 609914

Join by telephone: (301) 715-8592 or (888) 475-4499 (Toll Free)
Webinar ID: 989 4620 2425

Dated at Trumbull, CT this 2nd day of July, 2020.

By: Linda Finger, Clerk

Plans for the above listed application are on file for public inspection in the office of the Planning and Zoning Commission and online on the Town of Trumbull website.

COMMISSION MEMBERS: PLEASE NOTIFY Linda Finger, Clerk, AT 203-452-5044 or lfinger@trumbull-ct.gov, IF YOU ARE UNABLE TO ATTEND.

NARRATIVE OF COMPLIANCE WITH SPECIAL PERMIT CRITERIA AND PLAN OF CONSERVATION AND DEVELOPMENT

K&K Developers, Inc., Trumbull Shopping Center #2, LLC and WEA CT Houses LLC
July 1, 2020

Applicants K&K Developers, Inc. ("K&K"), Trumbull Shopping Center #2, LLC ("TSC") and WEA CT Houses LLC ("WEA") (collectively "Applicants") have applied for Special Permit and Site Plan Approval in connection with a proposed residential community and associated site improvements. TSC is the owner of the property located at 5065 Main Street, on which the mall is located ("Mall Property"), while WEA is the owner of the land at 5085 Main Street on which K&K as the ground tenant proposes to construct the residential development ("Residential Property"). The purpose of this narrative is to demonstrate how K&K's proposed community, The Residences on Main ("The Residences"), (i) complies with the special permit criteria found in the Trumbull Zoning Regulations ("Regulations"), (ii) complies with the Plan of Conservation and Development ("POCD") and (iii) is consistent with the themes outlined in Stantec's 2018 peer review of the Applicants' regulation amendment and zone change.

I. Compliance with Special Permit Criteria:

Article XV, Section 4 sets forth the findings the Commission must make in approving a special permit. The plan for The Residences and the site improvements on the Mall Property satisfy each of these requirements, as outlined by category below.

Site Design Issues:
(4.3 Frontage Improvements; 4.4 Traffic Access; 4.5 Emergency Access; 4.10 Water Supply)

The requirements for frontage improvements and traffic access are fully satisfied by this proposal. The Residences front on Main Street, a state road with multiple lanes in both directions. As required by this section, the pavement and shoulders will be improved in accordance with the existing street. Additionally, the proposed design and access will be subject to review and approval by the Connecticut Office of State Traffic Administration ("OSTA").

As depicted in the site plans, there are multiple points of access to the community, with ties into the adjacent Mall Property for both vehicles and pedestrians. The first access point is from the existing mall entrance road from Main Street; this will be a right turn only entrance/exit point at the center of the development. The second point of access is on Main Street in the approximate location of the former Whalburn Avenue, with full entrance and right only exit. The final access point is a full entrance/exit from the mall ring road along the western boundary of the new development. Pedestrian sidewalks, including safety features like flashing walk signals, are also included to facilitate pedestrian access and allow residents to utilize the mall's restaurants, shopping, and recreation options directly from the western portion of The Residences. These access points have been designed to accomplish the goals set forth in the

Regulations: interconnection of adjacent properties, minimization of curb cuts, and maximization of pedestrian access between adjoining sites.

To ensure adequate provision for emergency services, the site plan for The Residences feature fire lane areas 36 feet in length at the building lobbies. Fire hydrants are dispersed throughout the community, which combine with the building sprinkler system to enable firefighting. Additionally, areas for emergency vehicle parking are dispersed throughout the community, allowing easy access for first responders. The Applicants have worked closely with the Trumbull Fire Marshal, Police Department, and Emergency Medical Services and have modified the initial plan to address preliminary concerns. These revisions are outlined in a letter prepared by BL Companies dated June 30, 2020.

The Applicants have contacted the Trumbull Board of Education to coordinate school bus stop location. A copy of that communication is attached as Exhibit A.

Finally, the community will be served by public water and sewer, thus ensuring adequate water supply and waste disposal to the residents.

Construction Considerations:
(4.7 Erosion, Sediment, and Runoff Control Standards[1] & 4.9 Surface and Groundwater Protection)

The plans for The Residences include a robust erosion control plan designed to ensure there will be no erosion, sedimentation, or runoff during the construction phase. This plan meets the minimum requirements set forth by the Fairfield County Soil and Water Conservation District. As required by § 4.7, the application materials include a stormwater management plan demonstrating that there will be no increase in post-construction stormwater runoff.

Appropriateness of Use Considerations:
(4.11 Public Health and Safety; 4.12 Appropriateness of Use; 4.14 Uses In, Adjacent to, or Impacting Residential Areas)

The most broadly worded provisions for the Commission's evaluation - the issues regarding the appropriateness of the use, impacts on surrounding properties, and public health and safety - are all satisfied by the proposal for The Residences. The community will enhance the Mall Property, bringing new life to a retail center that faces significant and numerous challenges in a post-internet, post-Covid-19 environment. It also expands the housing options and opportunities in town.

Notably, The Residences will have a positive fiscal impact on Trumbull. As contained in the Fiscal Impact Study prepared by Realty Concepts ("Study"), The Residences will generate a combined $1.4 million in annual property and motor vehicle tax revenue. Adjusted for the projected demand on town services, the net fiscal impact to Trumbull will be approximately

[1] Sections 4.6 regarding sanitary waste disposal and 4.8 regarding wetland and watercourse protection are inapplicable to this application.

$910,000. Given the community design and expected rental rates, the development's residents are expected to be young professionals and seniors downsizing from single family homes in Trumbull and the surrounding towns. As a result, the projected school aged population in The Residences is 27 students, some of whom are expected to be existing students in the Trumbull school system.

The Residences are appropriately sized for the area and surrounding land uses, with easy access to the features of the Mall Property. Designed to fit into the scale of the neighborhood without any adverse impact on the nearby single-family homes, it features significant setbacks from Main Street and extensive landscaping. It provides a scaled transition from the large commercial development on the Mall Property to the surrounding residential neighborhood.

The Residences will create only a minimal traffic impact to the area road network, one likely to be imperceptible given the history volumes generated by the Mall Property. Peak hour trips are expected to occur in the weekday evenings and Saturday midday, with 110 trips and 100 trips, respectively during those peak hours; these trips include both entrances and exits to the residential development. In light of a daily volume on Main Street exceeding 20,000 trips, The Residences will not adversely affect surrounding roadways. Pedestrian movements are protected with the installation of sidewalks within the community and the Mall Property. Review by OSTA further ensures that there will be no adverse impact to the road network.

Finally, as noted above, satisfactory provision for public health and safety concerns, including fire and emergency access and utility services, have been made in the development proposal.

Architectural and Design Considerations:
(4.13 Architectural Character, Historic Preservation, Site Design; 5.1 Building Materials; 5.2 Lighting; 5.3 Site Plan; 5.4 Landscaping and Screening)

The architectural style will be an "updated traditional" look with a variety of materials and colors. The predominant building materials are cultured stone, cementitious horizontal siding, cementitious panels, and divided lite windows. The corner units will have living rooms located on the corners with glass on two sides. The pitched roofs and turned gables reinforce the traditional roots of these buildings. Private balconies are provided with decorative railings.

The Residences are designed with a suburban town center development concept in mind. Intended to be appropriate for a suburban scale, the units are situated in five (5) buildings, each a four (4) story mid-rise with elevators, constructed around a central, traffic-calming circle., Convenient access to the shared common space – a clubhouse and pool with numerous resident amenities – is also provided. Parking is dispersed throughout the community with 494 parking spaces to serve both residents and guests. A portion of those spaces (64) will be located in resident garages beneath each building.

Robust landscaping and a landscaped berm are proposed along Main Street to add year-round visual interest and appropriate screening, with additional landscaping proposed throughout

the community. Mechanical equipment is suitably screened from public view on the building roofs, as are the locations for rubbish disposal. Sidewalks have been provided as required.

II. Compliance with POCD:

The Residences achieve several of the objectives of the POCD with respect to housing options and opportunities. The POCD establishes the following goals:

> *"Key Recommendation 7 - Residential Development. Continue to protect Trumbull's residential character. Continue to provide housing opportunities and address changing housing needs."*
>
> *"As the population continues to age, it is anticipated that Trumbull will see increased interest for housing options attractive to older households (smaller, easy-to-maintain, etc.)." p. 10*
>
> *Residential Summary, Policy B.1 "Explore ways to address changing housing needs." p. 68*
>
> *Residential Summary, Policy C.1 "Maintain high standards for architecture and site design for residential developments." p. 68*

With its target demographic and operation as a rental community, the proposal expands opportunities for individuals looking to enter Trumbull or those residents who want to remain in town without the burden of a single-family home. The community is designed to be a best in class complex with high end finishes and amenities as evidenced by its high-quality architecture and site design.

III. Stantec 2018 Third Party Review Concepts:

As the Commission will recall, Stantec conducted a third-party review of the planning issues presented by the 2018 regulation amendment and zone change. The Residences implement those concepts and Stantec's findings (relevant presentation slides attached as Exhibit B) remain applicable nearly two years later. Stantec predicted that baby boomers "represent a growing share of the market" and that projected residents do not create a significant school impact. Stantec noted that multi-family housing built since 2000 generates 9.8 children per 100 units, but that would be offset by continuing declines in Trumbull's school-aged child population. As applied to The Residences, Stantec's figure would result in approximately 26 children added to the school system, a number consistent with the 27 students the Applicants' study has estimated.

EXHIBIT A

Subject: FW: Bus routes inquiry

From: Aimee Fischbeck <AimeeF@gardenhomes.com>
Sent: Wednesday, June 17, 2020 12:10 PM
To: Scott Loventhal <ScottL@gardenhomes.com>
Subject: FW: Bus routes inquiry

Confirmation of stop location.

From: Perkins, Dawn <DPerkins@trumbullps.org>
Sent: Wednesday, June 17, 2020 11:50 AM
To: Aimee Fischbeck <AimeeF@gardenhomes.com>
Subject: RE: Bus routes inquiry

Hi Aimee,

It was a pleasure speaking with you as well!

Do you have any idea of when the complex will be open for occupancy? We are just trying to determine which school district it will be in. in the meantime, however, I can confirm that bus transportation to and from school will be provided for students residing in the complex. The bus stop would be located on Main Street, at the entrance to the development.

Please let me know if I can be of any further assistance.

Best regards,
Dawn

Dawn Perkins
Transportation Manager
Trumbull Public Schools
6254 Main Street
Trumbull, CT 06611
Phone: 203-452-4321

Exhibit B

SUBURBAN REMIX

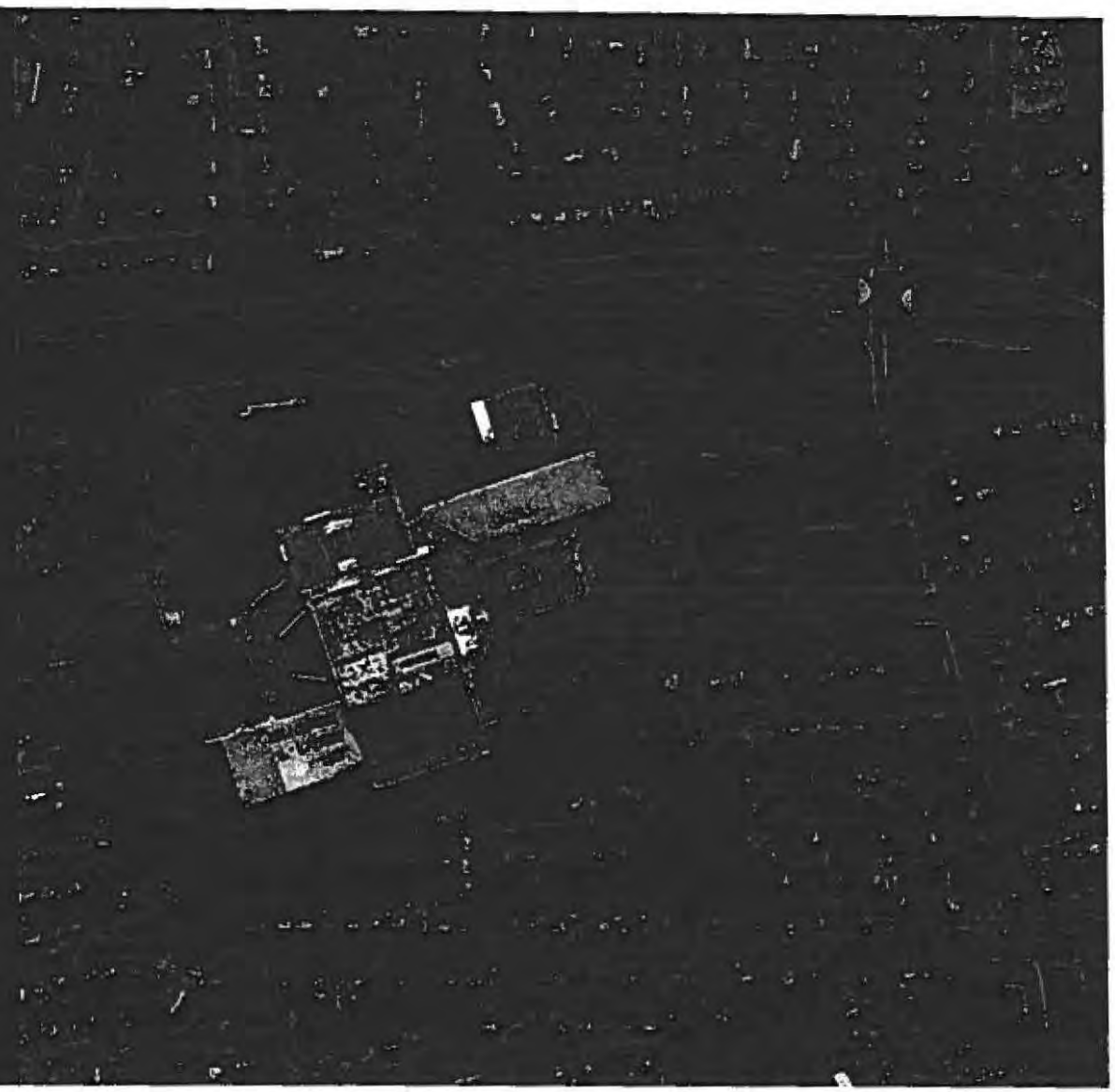
Trumbull, Connecticut . Stantec's Urban Places

David Dixon FAIA and Jeff Sauser, August 15, 2018

Stantec

Town of Trumbull
Westfield Mall proposal

Third-party zoning and development review



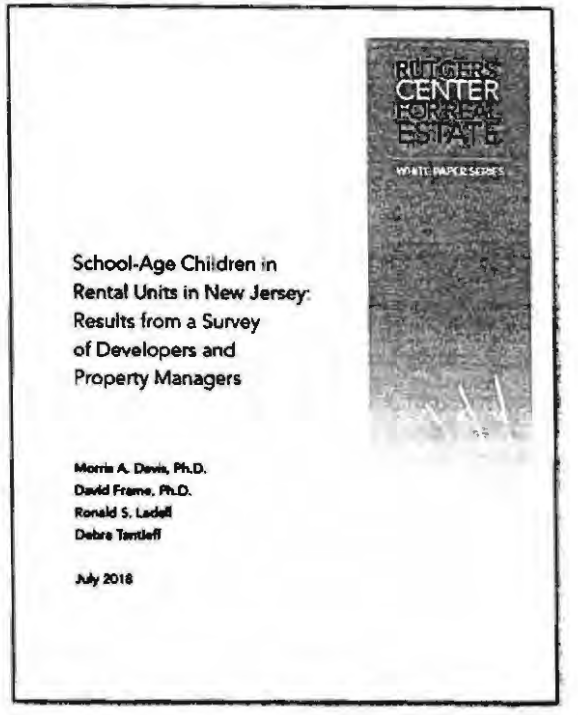
Proposal consistent with national trends

- **Malls across the country – even successful ones – are adapting** by, for example, diversifying land uses (housing, office, etc.), creating main streets and connections to surrounding communities, and focusing on experiential products and services.

- **This proposal to add multifamily at Westfield is consistent** with typical adaptations observed across the country.

School impacts placed in context

- **Today's market-rate multifamily developments attract many fewer families** with children than in the past.
- **Birth rates are down nationally**, especially among cohorts attracted to market-rate multifamily (relatively affluent millennials).
- **Baby boomers are downsizing in favor of multifamily housing** in walkable environments and represent a growing share of the market.
- According to the industry-standard Rutgers Center for Real Estate's periodic survey, **projects built before 2000 house 25.9 children per 100 units. Projects built since 2000 house 9.8 children per 100 units** (62% reduction).

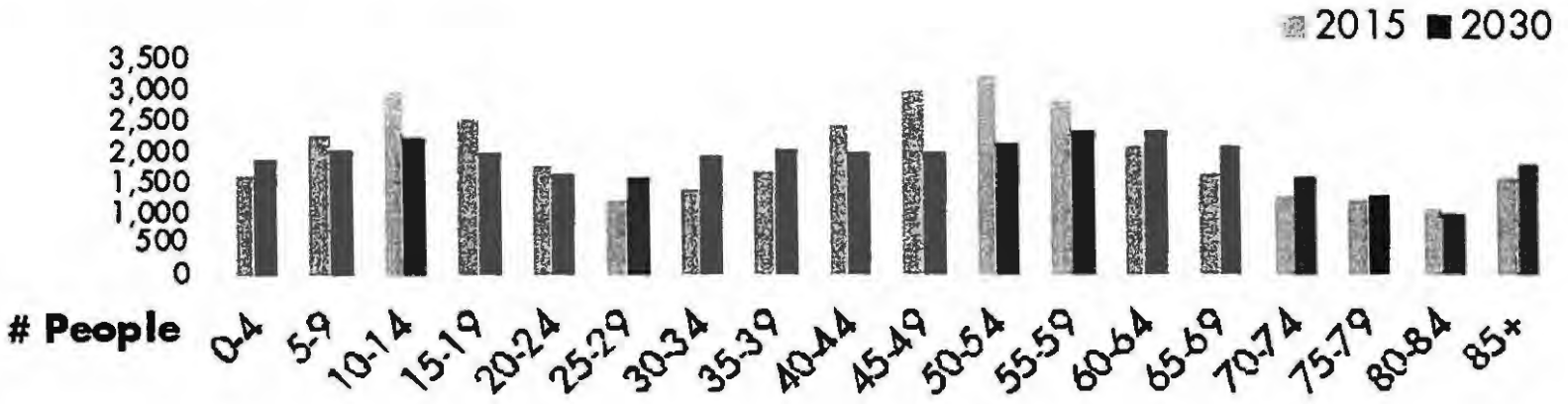


Enrollment is down (and will drop further)

- **Trumbull school enrollment has dropped by 3.8%** over the last 5-6 years (257 students).

- **Trumbull's school-age population is projected to decrease by 15%** by 2030 (about 1,200 children) according to the Partnership for Strong

- Even if the 660 units currently in the development pipeline matched Avalon's 43 children per 100 units (instead of the 9.8 Rutgers suggests), the resultant 284 children would **not come close to replacing those lost to demographic projections**.



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PLANNING AND ZONING DEPARTMENT

APPLICATION FOR SPECIAL PERMIT OR SITE PLAN APPROVAL

☒ **SPECIAL PERMIT**

☒ **SITE PLAN REVIEW**

ZONE:

☒ **Commercial Zone B-C, B-C LH, TH Node, MDD**

☐ **Industrial Zone I-L, I-L2, I-L3**

☐ **Residential Zone A, AA, AAA**

☐ **Overlay Zone** _____

Location of Property: 5065 Main Street and 5085 Main Street, Trumbull

Assessor's Map No.: _____ Parcel No.: _____ Lot No.: See attached

Trumbull Land Records: Volume: _____ Page: See attached

Applicant: K&K Developers, Inc., Trumbull Shopping Center #2, LLC and WEA CT Houses LLC

Address of Applicant: c/o John W. Knuff, Esq., 147 N. Broad Street, Milford, CT 06460

Telephone Number: Day c/o 203 877-8000 Evening _____

Email Address: c/o JKnuff@hssklaw.com

Owner of Record: Trumbull Shoping Center #2, LLC and WEA CT Houses LLC

Address of Owner of Record: c/o Westfield, LLC, 2049 Century Park East, 41st Floor, Los Angeles, CA 90067

Telephone Number: c/o 203 877-8000 Email c/o JKnuff@hssklaw.com

Party to be notified: JOHN W. KNUFF, ATTORNEY AGENT

Address of Attorney or Agent: 147 N. Broad Street, Milford, CT 06460

Telephone Number: 203 877-8000 Email: JKnuff@hssklaw.com

Site Engineer: BL Companies, 355 Research Pkwy, Meriden, CT 06450

Address of Owner of Record: c/o Westfield, LLC, 2049 Century Park East, 41st Floor, Los Angeles, CA 90067

Telephone Number: c/o 203 877-8000 Email: c/o JKnuff@hssklaw.com

Relevant Article(s) and Section(s) of the Regulations: (i.e. Art__, Sec __)

Article II, Section 3.4

Description of the proposed request, including specific use to be conducted:

See attached Narrative

Is the property within 500 feet of another municipality?

☒ YES ☐ NO

Does this proposal involve a structure that was built before 1940?

☐ YES ☒ NO

Does this proposal require the approval of the Inland Wetlands Agency?

☐ YES ☒ NO

Are there any deed restrictions on this property that may affect this application?

☐ YES ☒ NO

Has a previous application been filed for this property?

☒ YES ☐ NO

If yes, when? various dates Attach a copy of decision letter.

Project is to be started on _____ Completed on _____

List of Federal and State permits required and their status:

Submission to State DOT upon local approval

Certification

I/We certify that all of the above information and statements contained in any documentation submitted with the application are true to the best of my/our knowledge.

I/We fully understand that the Planning and Zoning Commission reserves the right to revoke any permit should the information contained herein not be true or that the information requested by the application has not been fully disclosed.

Signature of Owner
Trumbull Shoping Center #2, LLC and
WEA CT Houses LLC By: John W. Knuff

Date May 28, 2020

Signature of Applicant (if not property owner)
Trumbull Shoping Center #2, LLC, WEA CT Houses LLC
and K&K Developers, Inc. By: John W. Knuff

Date May 28, 2020

NOTICE: By signing this application, owner and applicant consent to site inspections by Town Staff and/or Commissioners.

A FEE IN ACCORDANCE WITH APPROVED FEE SCHEDULE MUST ACCOMPANY THIS APPLICATION. Make check payable to TOWN OF TRUMBULL.

FOR OFFICE USE ONLY

Date Application and Fee Received:_____ By:_____

Date of Public Hearing:_____ Date Action Taken:_____

List of Abutters Submitted:_____

Revised 2/25/2020

Application for Special Permit or Site Plan Review

K&K Developers, Inc., Trumbull Shopping Center #2, LLC and WEA CT Houses LLC
May 28, 2020

Assessor Information and Deeds for Subject Properties

5065 Main Street

Assessors Map No.: E/11/00014/000

Deeds:

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Volume 1796 Page 687

5085 Main Street

Assessor's Map No.: E/11/00170/000

Deeds:

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APPLICATION NARRATIVE
May 28, 2020

K&K Developers, Inc., Trumbull Shopping Center #2, LLC and WEA CT Houses LLC

Applicants K&K Developers, Inc. ("K&K"), Trumbull Shopping Center #2, LLC ("TSC") and WEA CT Houses LLC ("WEA") (collectively "Applicants") seek Special Permit and Site Plan Approval in connection with a proposed residential community and associated site improvements. TSC is the owner of the property located at 5065 Main Street, on which the mall is located ("Mall Property"), while WEA is the owner of the land at 5085 Main Street on which K&K as the ground tenant proposes to construct the residential development ("Residential Property").

The multi-family luxury residential community, to be known as The Residences on Main ("The Residences") will include 260 units (comprised of one and two bedroom units), as well as parking and amenity space, while the improvements on the Mall Property will facilitate greater pedestrian access between The Residences and the mall.

Background:

Over the course of more than two decades, WEA acquired numerous parcels located on the former Stuart Place and Whalburn Avenue with the intention of developing that area. However, due to a variety of factors, economic conditions, and changes in retail demand, other commercial development was not feasible. Those streets were formally discontinued in a process approved by the Town Council and signed by former First Selectman Herbst in 2016.

Simultaneously with the 2018 Amendment, the Commission approved a zone change for the Mall Property and the Residential Property to Mixed-Use Design District. After these approvals, TSC and WEA consolidated the various properties to create two parcels: the Mall Property now identified as 5065 Main Street and the Residential Property now identified as 5085 Main Street.

The requested approvals implement the concepts outlined in the Mixed-Use Design District regulation amendment adopted by the Planning and Zoning Commission in October 2018 (the "2018 Amendment"). The initial draft of the 2018 Amendment made a number of modifications designed to streamline certain changes at the mall including modifications to tenant signage and re-tenanting without full commission approval. The regulation also sought to add vitality and expanded opportunities at the mall by allowing multi-family residential units in addition to the commercial uses permitted in the zone. Although the regulation initially proposed up to 580 units in the zone, the final language substantially reduced that figure to a maximum of 260 residences on not less than seven (7) acres. Finally, the 2018 Amendment established certain criteria for future residential applications, including establishment of bulk criteria and submission of a fiscal impact study.

Residential Plan:

The Residences are designed with a suburban town center development concept in mind. The residential parcel is approximately 10 acres, which exceeds the regulatory seven (7) acre minimum. Intended to be appropriate for a suburban scale, the units are situated in five (5) buildings, each a four (4) story mid-rise with elevators, constructed around a central, traffic-calming circle. The architectural style will be an "updated traditional" look with a variety of materials and colors. The predominant building materials are cultured stone, cementitious horizontal siding, cementitious panels, and divided lite windows. The corner units will have living rooms located on the corners with glass on two sides. The pitched roofs and turned gables reinforce the traditional roots of these buildings. Private balconies are provided with decorative railings.

The two buildings closest to Main Street comply with the 50 foot front building setback, but with the bulk of the buildings set back more than 130 feet from Main Street. The development will include a 4,400 square foot clubhouse that will include a club room with fireplace, gym, stretching/yoga space, individual workspaces (places where residents can do office work), restrooms, and leasing center, as well as an outdoor pool and patio for residents' use. The clubhouse will also feature a generator to serve as a refuge point if needed for residents in the event of a weather or other disaster. While there are sidewalks throughout the community, there is no playground or extensive green space proposed. Robust landscaping and a landscaped berm are proposed along Main Street to add year-round visual interest and appropriate screening.

Parking is dispersed throughout the community with 494 parking spaces to serve both residents and guests. A portion of those spaces (64) will be located in resident garages beneath each building. As depicted in the site plans, there are multiple points of access to the community. The first access point is from the existing mall entrance road from Main Street; this will be a right turn only entrance/exit point at the center of the development. The second point of access is on Main Street in the approximate location of the former Whalburn Avenue, with full entrance and right only exit. The final access point is a full entrance/exit from the mall ring road along the western boundary of the new development.

Mall Site Improvements:

In addition to the proposed residential community, site improvements are proposed on the overall mall property. As conceptualized at the time of the 2018 Amendment, the Applications propose a new sidewalk to ensure connectivity between the mall buildings and The Residences. This sidewalk will facilitate pedestrian access and allow residents to utilize the mall's restaurants, shopping, and recreation options directly from the western portion of The Residences. Pedestrian safety features, including flashing walk signals, are also included.

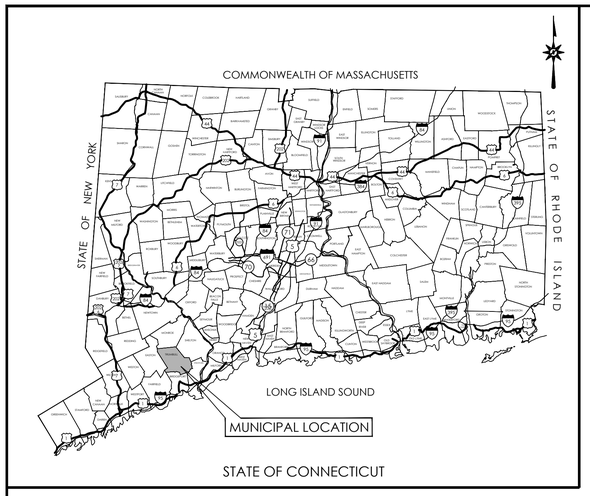
Development Impacts:

The Residences will have a positive fiscal impact on Trumbull. As contained in the Fiscal Impact Study prepared by Realty Concepts ("Study"), The Residences will generate approximately $1.2 million in annual property tax revenue, plus an additional $178,000 in

personal property taxes (specifically motor vehicle taxes). Obviously, any new development will create some demand on town services, but the expected cost for those services falls well below this additional revenue, creating a net fiscal impact to Trumbull of approximately $910,000.

Given the community design and expected rental rates, the development's residents are expected to be young professionals and seniors downsizing from single family homes in Trumbull and the surrounding towns. With a lack of active recreation area or playground, the development is unlikely to attract families with children, a finding consistent with K&K's experience in similarly designed communities. As the Study notes, the demographics and design of the development influence the number of school aged children that would reside in a residential complex. Here, the projected school aged population in The Residences is 27 students, some of whom are expected to be existing students in the Trumbull school system.

Traffic impacts from The Residences are also anticipated to be minimal. The Traffic Study, prepared by BL Companies, demonstrates that the traffic generated by The Residences will not create a significant impact on the area road network. Peak hour trips are expected to occur in the weekday evenings and Saturday midday, with 110 trips and 100 trips, respectively during those peak hours; these trips include both entrances and exits to the residential development. Given the overall volume of traffic entering the mall and the highly traveled Main Street (with a daily volume exceeding 20,000 trips), these additional cars are expected to be imperceptible on the road network. Moreover, Connecticut Department of Transportation data for Main Street shows a decline in the daily traffic volume since 2004, when the daily volume was nearly 29,000 trips, further supporting the lack of traffic impact from the proposed development.

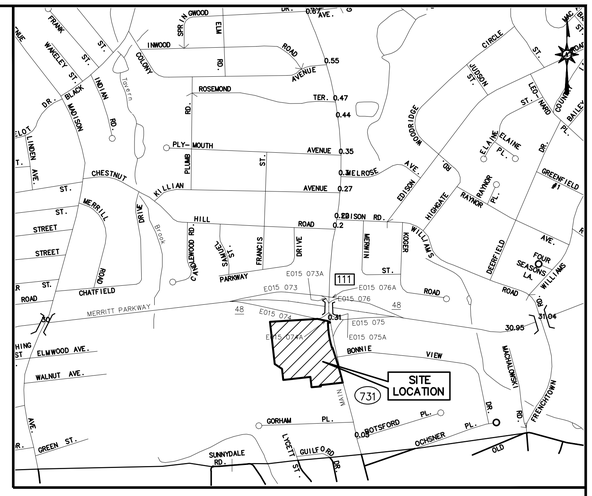


LOCATION MAP

N.T.S.

THE RESIDENCES AT MAIN

THE RESIDENCES AT MAIN
TRUMBULL | CONNECTICUT



VICINITY MAP

SCALE: 1"=800'

5085 MAIN STREET, LOT E11-70, TRUMBULL, CONNECTICUT

PREPARED FOR:

K & K DEVELOPERS, INC.
C/O GARDEN HOMES DEVELOPMENT
820 MORRIS TURNPIKE,
NEW JERSEY 07078

Garden Homes

ROSE EQUITIES
Owner-Builders since 1949

MINNO WASKO
ARCHITECTS AND PLANNERS
80 LAMBERT LANE, SUITE 105, LAMBERTVILLE, NEW JERSEY 08530 MINNOWASKO.COM

GEI Consultants

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SU-1	SITE UTILITIES PLAN
EC-1	SEDIMENT AND EROSION CONTROL PLAN
EC-2	SEDIMENT AND EROSION CONTROL NOTES
EC-3, 4	SEDIMENT AND EROSION CONTROL DETAILS
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LL-2	LANDSCAPE NOTES AND DETAILS
LP-1	LIGHTING PLAN
GN-1	GENERAL NOTES
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PREPARED BY:

BL Companies
ARCHITECTURE
ENGINEERING
ENVIRONMENTAL
LAND SURVEYING

355 RESEARCH PARKWAY
MERIDEN, CONNECTICUT 06450
(203) 630-1406
(203) 630-2615 Fax

NOT FOR CONSTRUCTION
FOR PERMITTING PURPOSES ONLY

DEVELOPER:

K & K DEVELOPERS, INC.
820 MORRIS TURNPIKE
SHORT HILLS, NJ 07078

OWNER:

WEA CT HOUSES, LLC
2730 UNIVERSITY BLVD., SUITE 900
WHEATON, MD 20902

DATES

ISSUE DATE: MAY 28, 2020
REVISION:

CAD FILE: CV180051301
XREF(S): XXXXXXXX

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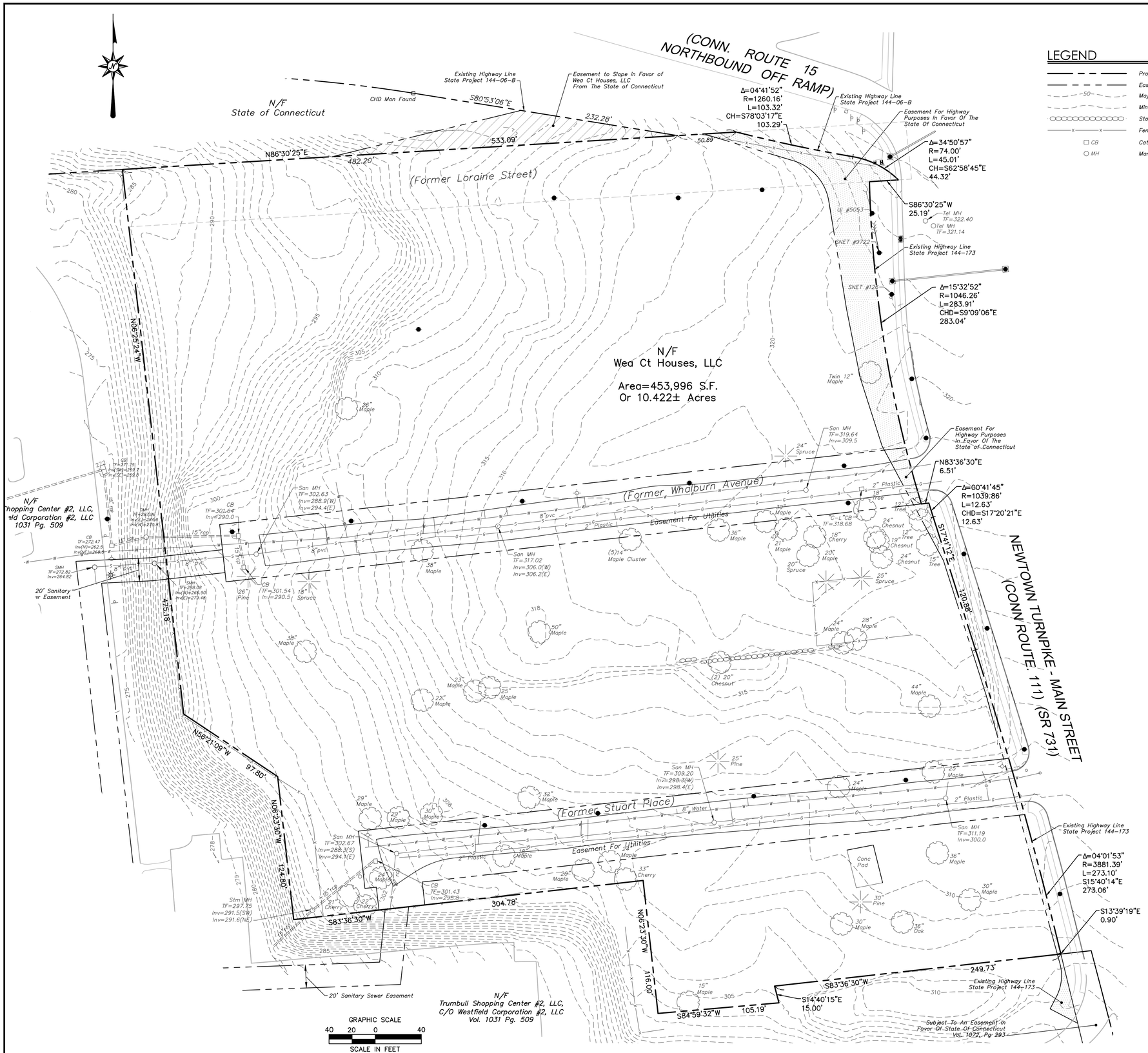
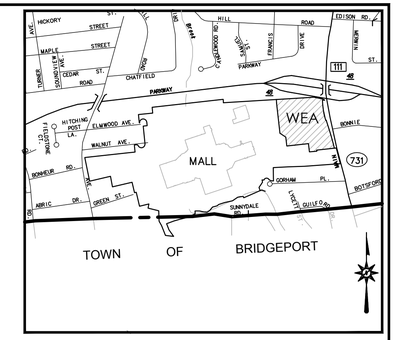


LEGEND

- Property Line
- Easement Line
- Major Contour
- Minor Contour
- Stone Wall
- Fence
- CB — Catch Basin
- MH — Manhole



LOCATION MAP

NOT TO SCALE

GENERAL NOTES

1. A) THIS MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20–300b–1 THROUGH 20–300b–20 AND THE "STANDARDS AND SUGGESTED METHODS AND PROCEDURES FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" PREPARED AND ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. AUGUST 29, 2019.

   B) THIS PLAN CONFORMS TO HORIZONTAL ACCURACY CLASS A–2 AND TOPOGRAPHIC ACCURACY CLASS T–2 AND T–3 (AERIAL TOPOGRAPHY).

   C) BOUNDARY DETERMINATION IS BASED UPON A RESURVEY.

   D) THE TYPE OF SURVEY PERFORMED IS A PROPERTY/TOPOGRAPHIC SURVEY AND IS INTENDED TO DEPICT THE POSITION OF THE BOUNDARIES WITH RESPECT TO MONUMENTATION FOUND, STRUCTURES, EASEMENTS, ENCROACHMENTS, VISIBLE UTILITIES, ROADWAYS AND CONTOURS.

2. NORTH ARROW AND BEARINGS REFER TO NAD 83 UTILIZING STATION 607X (USC&GS AND STATE SURVEY BRONZE DISK) WITH THE PUBLISHED COORDINATE VALUES OF: N:646207.592; E:870559.821, AND PUBLISHED BASELINE CONTROL POINTS BC–1, BC–2 & BC–3 OF THE ROUTE 111/15 INTERCHANGE PROJECT #144–173, DATED 2000..

3. ELEVATIONS REFER TO THE NORTH AMERICAN DATUM OF 1929 (NGVD 29).

4. PARCEL IS LOCATED IN A FLOOD AREA "X", (AREAS DETERMINED TO BE OUTSIDE THE 0.2% CHANCE FLOODPLAIN) AS DEPICTED ON F.I.R.M. COMMUNITY PANEL NO. 09001C0426F PANEL 426 OF 626 EFFECTIVE DATE JUNE 18, 2010.

5. THE UNDERGROUND UTILITIES DEPICTED HAVE BEEN PLOTTED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES DEPICTED COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES DEPICTED ARE IN THE EXACT LOCATION INDICATED THOUGH THEY ARE PLOTTED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY EXPOSED THE UNDERGROUND UTILITIES. PER CONNECTICUT STATE LAW THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF EXCAVATION. CALL BEFORE YOU DIG 1–800–922–4455.

6. THE TOWN OF TRUMBULL HAS ABANDONED ITS INTEREST IN AND DISCONTINUED ITS PUBLIC USE OF PORTIONS OF STUART PLACE AND LORRAINE STREET. SEE TRUMBULL TOWN COUNCIL RESOLUTION TC25–197, EFFECTIVE 10/7/2015, REFERENCE #4549.

7. THE TOWN OF TRUMBULL HAS ABANDONED ITS INTEREST IN AND DISCONTINUED ITS PUBLIC USE OF WHALBURN AVENUE. SEE VOLUME 1723 AT PAGE 424.

8. THE TOWN OF TRUMBULL HAS ABANDONED ITS INTEREST IN AND DISCONTINUED ITS PUBLIC USE OF STUART PLACE. SEE VOLUME 1701 AT PAGE 675.

MAP REFERENCES

A. "LOT CONSOLIDATION PLAN, LAND OF WEA CT HOUSES, LLC, NEWTOWN TURNPIKE – MAIN STREET (CONN ROUTE 111) TRUMBULL, CONNECTICUT" SCALE 1"=50', DATE 09/11/2019, SHEET NO. BS–1 PREPARED BY BL COMPANIES, MERIDEN, CONNECTICUT.

B. "BOUNDARY SURVEY MAP, LAND OF TRUMBULL SHOPPING CENTER #2, LLC, 5065 MAIN STREET (SR 731), TRUMBULL, CONNECTICUT" SCALE 1"=100', DATE 08/21/2019, SHEET NO. BS–2 PREPARED BY BL COMPANIES, MERIDEN, CONNECTICUT.

STATE OF CONNECTICUT · PATRICK J. CORLESS, JR. · No. 70015 · LICENSED LAND SURVEYOR

TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

5/27/2020

PATRICK J. CORLESS, JR. L.S. #70015

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE ORIGINAL SIGNATURE AND EMBOSSED SEAL OF THE ABOVE NAMED LAND SURVEYOR.

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LAND OF
WEA CT HOUSES, LLC
NEWTOWN TURNPIKE - MAIN STREET
(CONN ROUTE 111)
TRUMBULL, CONNECTICUT

No.	Date	Desc.
REVISIONS		

Surveyed	J.C./K.J.
Drawn	JS.
Reviewed	PJC
Scale	1"=40'
Project No.	1800513
Date	01/22/2020
Field Book	536
CAD File:	EX180051301

Title
BOUNDARY/ TOPOGRAPHIC SURVEY

Sheet No.
EX-1

May 27, 2020 4:56pm pcorless G:_JOBS\18-0A\1800513\DWG\EX180051301.dwg
Layout: EX-1 24X36 40sc

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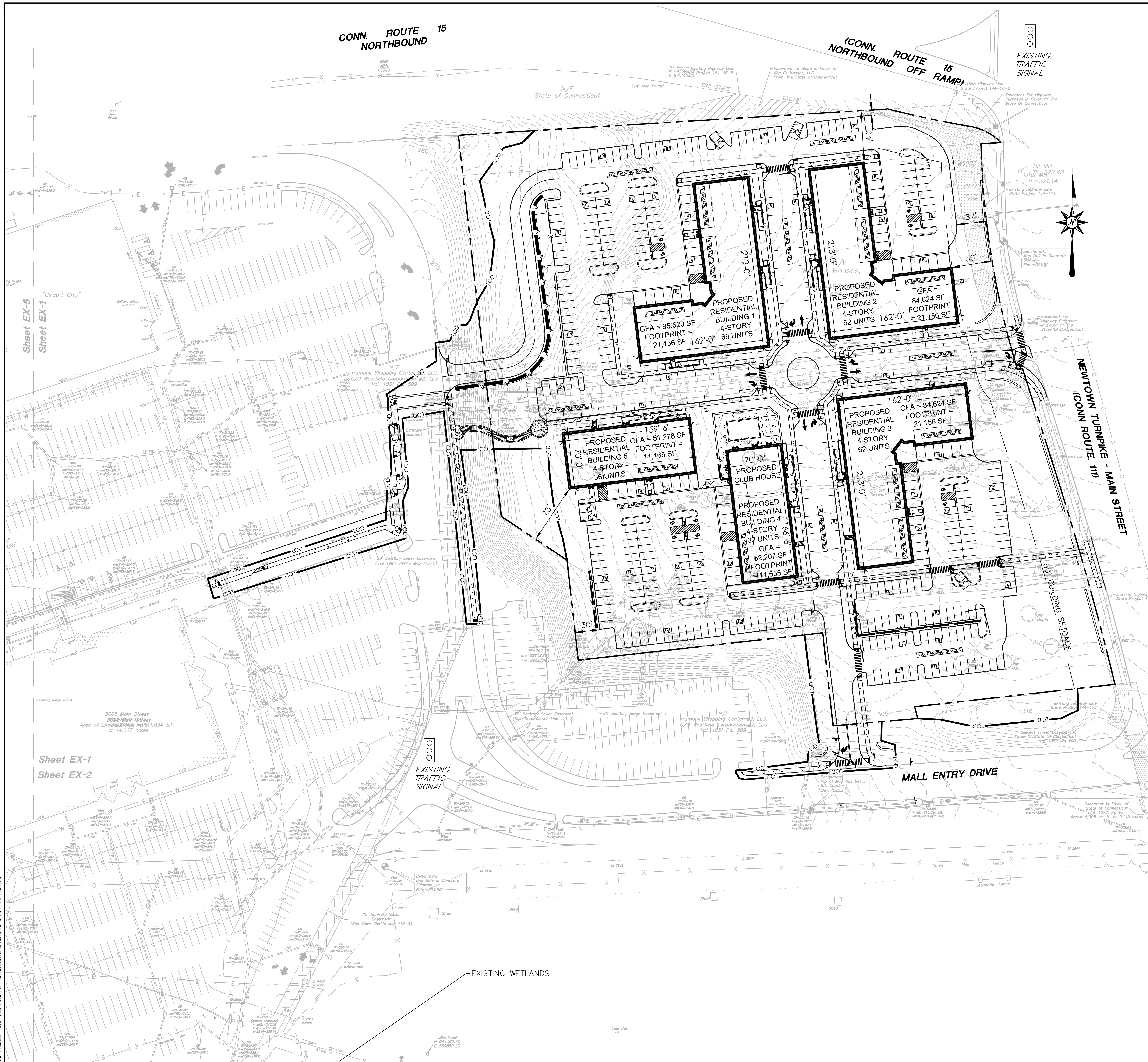
Xref (s): _XY180051302



ZONING INFORMATION

LOCATION: TRUMBULL, FAIRFIELD COUNTY				
ZONE: MDD (MIXED-USE DESIGN DISTRICT)				
USE: RESIDENTIAL (PERMITTED USE)				
ITEM #	ITEM	REQUIREMENTS	PROPOSED	VARIANCE
1	MINIMUM LOT AREA	7 ACRES	453,996 S.F. (10.422 AC.)	NO
2	MINIMUM LOT WIDTH	NONE REQUIRED	643 FEET	NO
3	MINIMUM LOT FRONTAGE	NONE REQUIRED	697 FEET	NO
4	MINIMUM FRONT SETBACK	50 FEET	50 FEET	NO
5	MINIMUM SIDE SETBACK	0 FEET	64 FEET	NO
6	MINIMUM REAR SETBACK	0 FEET	75 FEET	NO
7	MAXIMUM BUILDING HEIGHT	65 FEET	< 65 FEET	NO
8	MAXIMUM BUILDING COVERAGE	50 PERCENT	19 PERCENT	NO
9	MAXIMUM GROSS FLOOR AREA	100 PERCENT	82 PERCENT	NO
10	MAXIMUM IMPERVIOUS COVERAGE	85 PERCENT	58 PERCENT	NO
11	MAXIMUM PERMITTED UNITS	260 UNITS	260 UNITS	NO

PARKING INFORMATION

ITEM #	ITEM	REQUIREMENTS	PROPOSED	VARIANCE
1	BUILDING SIZE	NONE REQUIRED	SEE PLAN	NO
2	PARKING REQUIRED	MULTI-FAMILY HOMES: 1.9 SPACES PER UNIT REGARDLESS OF THE NUMBER OF BEDROOMS = 260 260 X 1.9 = 494 SPACES REQUIRED	430 SURFACE PARKING 64 GARAGE PARKING TOTAL = 494 SPACES	NO
3	MINIMUM HANDICAPPED PARKING SPACES REQUIRED	9 TOTAL ACCESSIBLE SPACES (MINIMUM OF 2 VAN ACCESSIBLE)	TOTAL = 10 SPACES	NO
4	MINIMUM PARKING DIMENSIONS	9 FEET X 18 FEET	9 FEET X 18 FEET	NO
5	MINIMUM AISLE WIDTH	24 FEET – 2-WAY 12 FEET – 1-WAY	24 FEET – 2-WAY	NO
6	MINIMUM FRONT SETBACK	NONE	37 FEET	NO
7	MINIMUM SIDE SETBACK	NONE	6 FEET	NO
8	MINIMUM REAR SETBACK	NONE	30 FEET	NO
9	MINIMUM INTERIOR LANDSCAPING	ONE TREE PER 20 OFF-STREET PARKING SPACES NOT LOCATED WITHIN A PARKING STRUCTURE, 429 SPACES (NOT INCLUDING GARAGE SPACES) = 22 TREES	> 22 INTERIOR TREES	NO

REFER TO SHEET GN-1 FOR SITEWORK GENERAL NOTES

NOT FOR CONSTRUCTION FOR PERMITTING PURPOSES ONLY

GRAPHIC SCALE
60 30 0 60
SCALE IN FEET

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ROSE EQUITIES
Owner-Builders since 1949

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS
No. Date Desc.

Designed A.T.K.
Drawn A.T.K.
Reviewed J.J.S.
Scale 1"=60'
Project No. 1800513
Date 05/28/2020
CAD File: SP180051301

Title
OVERALL SITE PLAN

Sheet No.
SP-0

Xref (s): ; BD180051301 ; XY180051301 ; XC180051301 ; XY05C133801 ; XY180051302

5/28/2020, KKLOSE, \\BLCOMPANIES.COM\DFS\PROJ\JOBS18\04\1800513\DWG\SP180051301.DWG,SP-0 24X36 60SC

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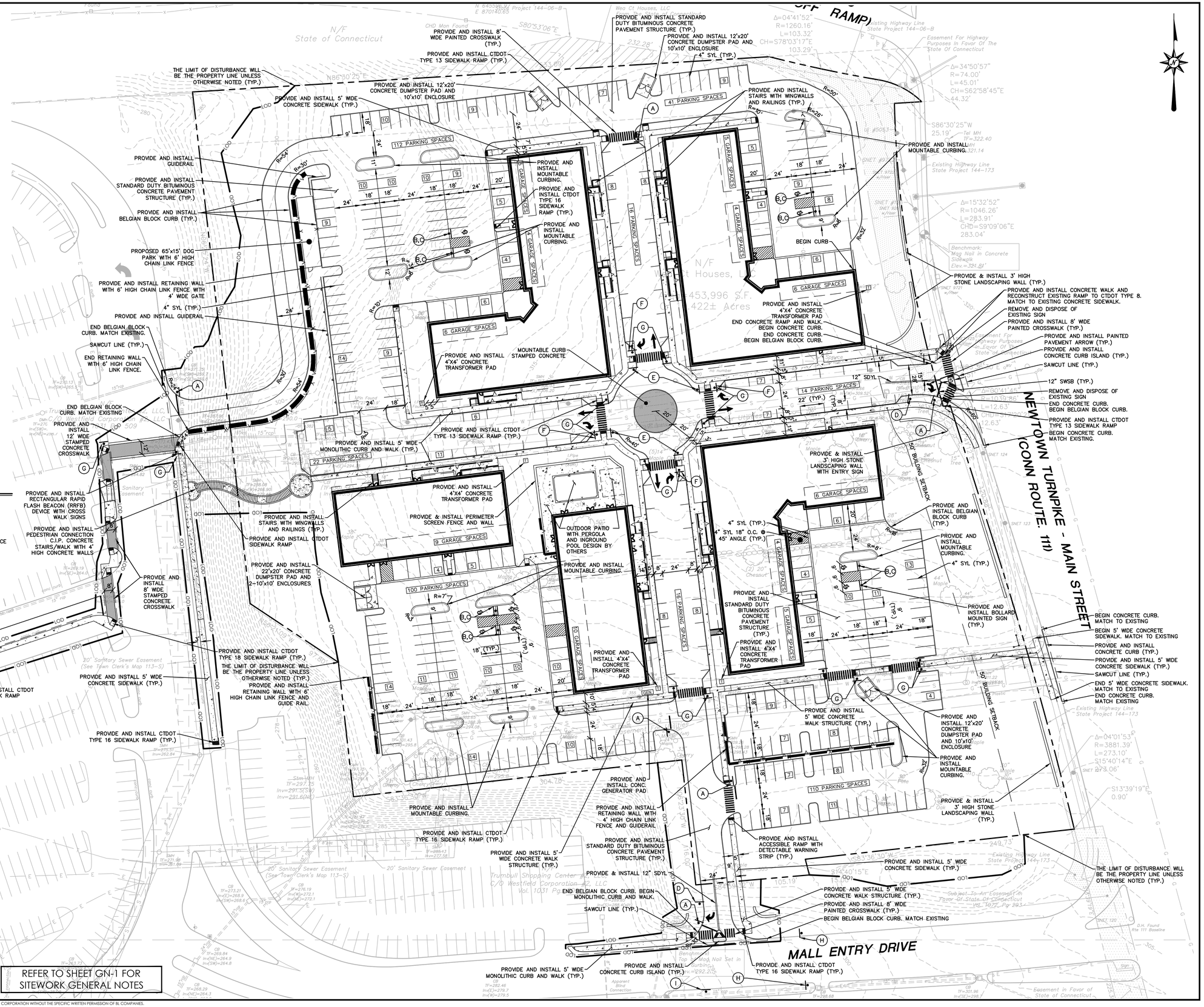
SIGN LEGEND

SIGN NO.	CT-DOT NO. OR MUTCD NO.	LEGEND
A	31-0552	STOP 30"
B	31-0629	HANDICAPPED PARKING
C	31-0648	VAN ACCESSIBLE
D	31-1619	NO LEFT TURN — BACKGROUND – SILVER; LEGEND – BLACK; CIRCLE & DIAGONAL – RED
E	31-0523	YIELD — BACKGROUND – SILVER; LEGEND – BLACK
F	41-4672 41-4670	TRAFFIC CIRCLE
G	41-4811	
H	31-1109	DO NOT ENTER — BACKGROUND – SILVER; LEGEND – SILVER; SIGN FACE – RED
I	31-1177	(R) ONE WAY

NOTE: HANDICAPPED SIGNS TO BE INSTALLED IN PIPE BOLLARDS (SEE DETAIL). ALL HANDICAP SIGNAGE TO CONFORM TO LATEST BUILDING CODE.

SITE LEGEND

- LOD — LIMIT OF DISTURBANCE
- PROPOSED CURB
- PROPOSED RETAINING WALL
- X — PROPOSED CHAIN LINK FENCE
- PROPOSED GUIDE RAIL
- PROPOSED CONCRETE
- PROPOSED SAWCUT LINE



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ROSE EQUITIES
Owner-Builders since 1949

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS

No.	Date	Desc.

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	1"=40'
Project No.	1800513
Date	05/28/2020
CAD File:	SP180051301

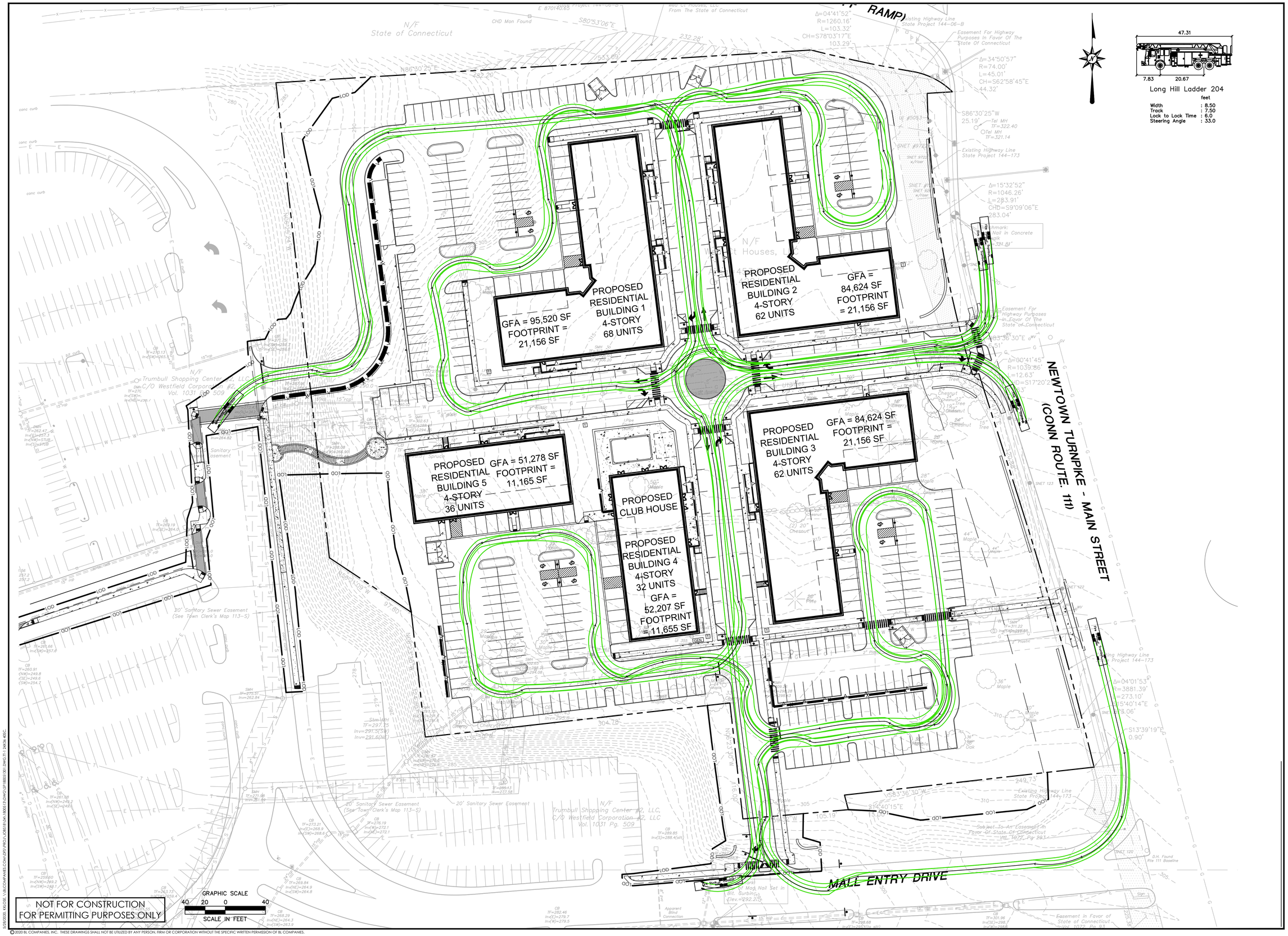
Title

SITE PLAN

Sheet No.

SP-1

Xref (s): B0180051301 ; XC180051301 ; XX05C13301 ; XY180051302



Long Hill Ladder 204

	feet
Width	: 8.50
Track	: 7.50
Lock to Lock Time	: 6.0
Steering Angle	: 33.0

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STATE OF CONNECTICUT
CHRISTOPHER D. ALLEN
No. 24278
LICENSED
PROFESSIONAL ENGINEER

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS

No.	Date	Desc.

Designed	A.T.K.
Drawn	J.S.D.
Reviewed	J.J.S.
Scale	1"=40'
Project No.	1800513
Date	05/28/2020
CAD File: SP180051301	

Title

TRUCK TURNING PLAN

Sheet No.

TT-1

Xref (s) : BD180051301 ; XC180051301 ; XY05C133801 ; XY180051302

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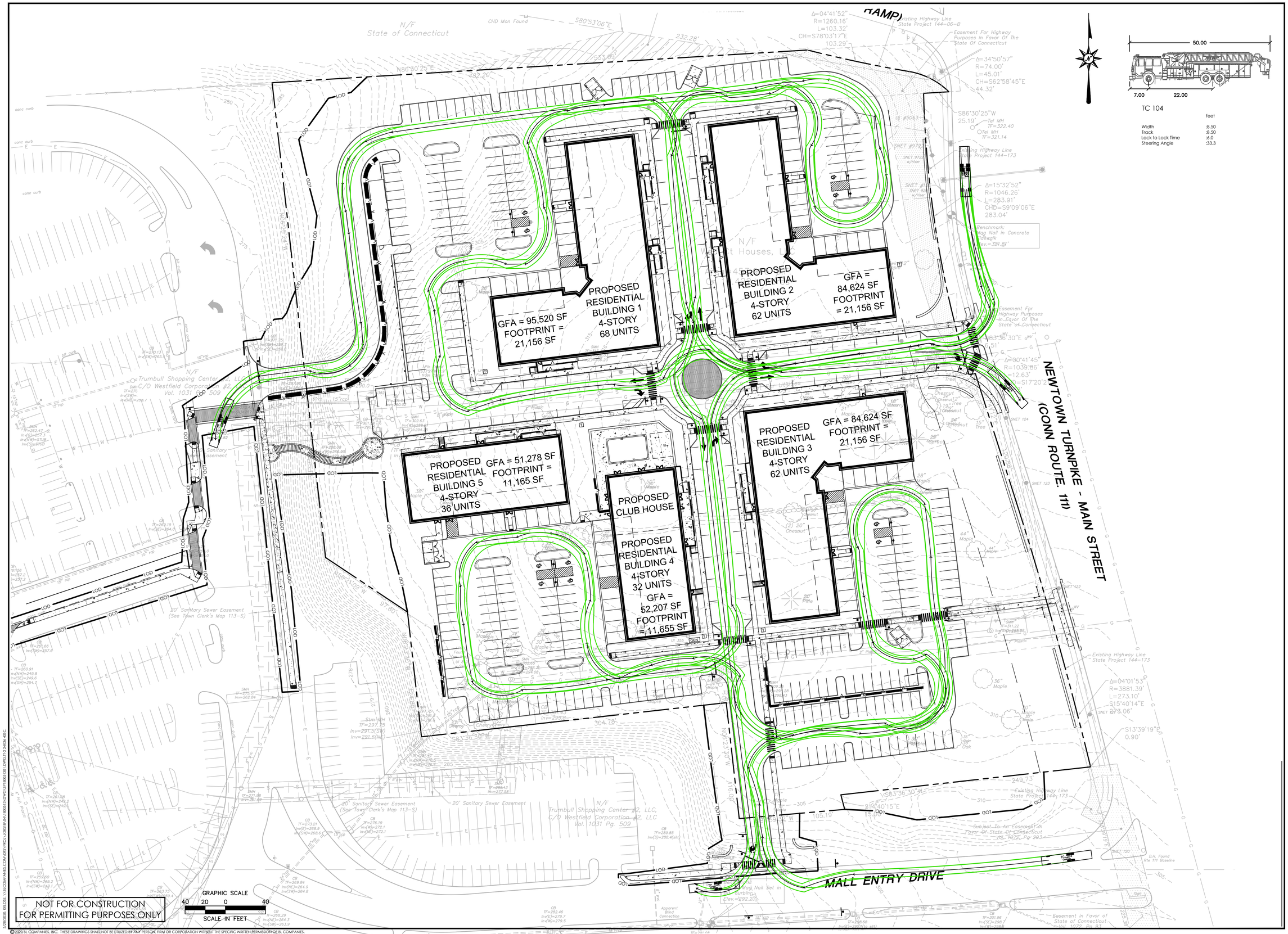

TC 104

	feet
Width	:8.50
Track	:8.50
Lock to Lock Time	:6.0
Steering Angle	:33.3

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STATE OF CONNECTICUT
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THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
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TRUMBULL, CONNECTICUT

REVISIONS No.	Date	Desc.

Designed	A.T.K.
Drawn	J.S.D.
Reviewed	J.J.S.
Scale	1"=40'
Project No.	1800513
Date	05/28/2020

CAD File: SP180051301

Title

TRUCK TURNING PLAN

Sheet No.

TT-2

Xref (s) : BD180051301 ; XC180051301 ; XY05C13380 1 ; XY180051302

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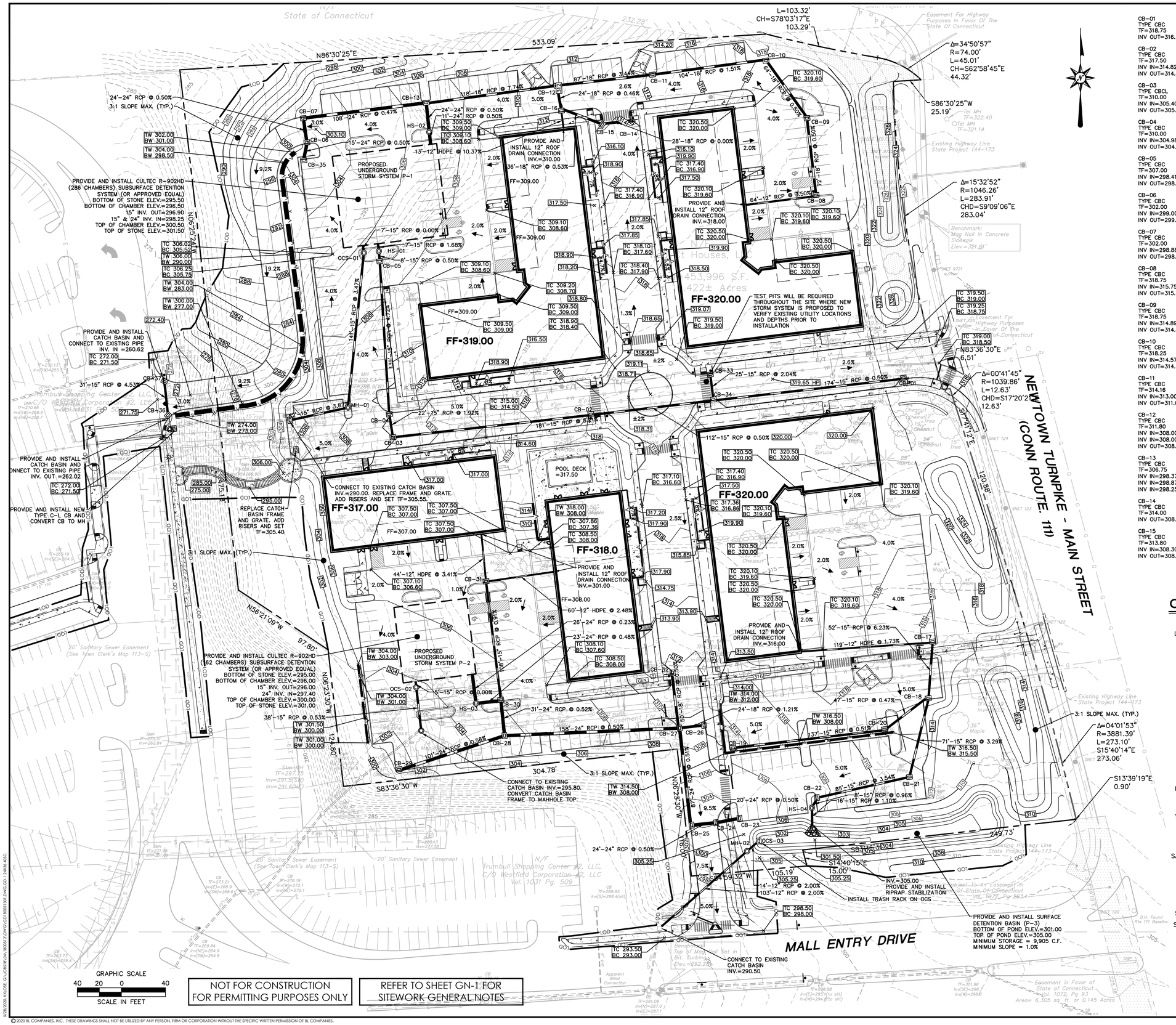

NOT FOR CONSTRUCTION FOR PERMITTING PURPOSES ONLY

REFER TO SHEET GN-1 FOR SITEWORK GENERAL NOTES

CB-01
TYPE CBC
TF=318.75
INV OUT=316.25(W)

CB-02
TYPE CBC
TF=317.50
INV IN=314.82(E)
INV OUT=314.82(W)

CB-03
TYPE CBCL
TF=310.00
INV IN=305.40(E)
INV OUT=305.40(N)

CB-04
TYPE CBC
TF=310.00
INV IN=304.98(S)
INV OUT=304.98(N)

CB-05
TYPE CBC
TF=307.00
INV IN=298.41(S)
INV OUT=298.41(N)

CB-06
TYPE CBC
TF=302.00
INV IN=299.00(S)
INV OUT=299.00(N)

CB-07
TYPE CBC
TF=302.00
INV IN=298.88(S)
INV OUT=298.88(E)

CB-08
TYPE CBC
TF=318.75
INV IN=315.75(W)
INV OUT=315.25(N)

CB-09
TYPE CBC
TF=318.75
INV IN=314.89(S)
INV OUT=314.89(NW)

CB-10
TYPE CBC
TF=318.25
INV IN=314.57(SE)
INV OUT=314.57(W)

CB-11
TYPE CBC
TF=314.16
INV IN=313.00(E)
INV OUT=311.00(W)

CB-12
TYPE CBC
TF=311.80
INV IN=308.00(E)
INV IN=308.00(S)
INV OUT=308.00(W)

CB-13
TYPE CBC
TF=306.75
INV IN=298.37(W)
INV IN=298.87(E)
INV IN=298.25(S)

CB-14
TYPE CBC
TF=314.00
INV OUT=308.30(W)

CB-15
TYPE CBC
TF=313.80
INV IN=308.30(E)
INV OUT=308.30(W)

CB-16
TYPE CBC
TF=311.80
INV IN=308.11(E)
INV IN=308.61(S)
INV OUT=308.11(N)

CB-17
TYPE CBC
TF=315.75
INV IN=313.93(W)
INV OUT=313.80(S)

CB-18
TYPE CBC
TF=316.00
INV IN=310.59(SW)
INV IN=310.59(N)
INV OUT=310.59(S)

CB-19
TYPE CBC
TF=313.75
INV OUT=311.50(E)

CB-20
TYPE CBC
TF=315.75
INV IN=310.81(W)
INV OUT=310.81(NE)

CB-21
TYPE CBCL
TF=312.53
INV IN=308.25(N)
INV OUT=308.25(W)

CB-22
TYPE CBC
TF=307.50
INV IN=305.25(E)
INV OUT=305.25(SW)

CB-23 (1)
TYPE CBC
TF=304.50

CB-23
TYPE CBC
TF=304.50
INV OUT=299.12(W)

CB-24
TYPE CBC
TF=302.06
INV IN=299.02(E)
INV OUT=299.02(W)

CB-25
TYPE CBC
TF=302.06
INV IN=298.90(E)
INV OUT=298.90(N)

CB-26
TYPE CBC
TF=309.30
INV OUT=299.25(W)

CB-27
TYPE CBC
TF=309.30
INV IN=298.96(E)
INV IN=298.46(S)
INV IN=298.96(N)
INV OUT=298.46(W)

CB-28
TYPE CBCL
TF=305.50
INV IN=297.67(W)
INV IN=297.67(E)
INV OUT=297.67(N)

CB-29
TYPE CBC
TF=301.50
INV OUT=298.25(E)

CB-30
TYPE CBC
TF=306.00
INV IN=298.26(N)
INV IN=297.51(S)
INV OUT=297.51(W)

CB-31
TYPE CBC
TF=306.50
INV IN=299.50(N)
INV IN=299.50(E)
INV OUT=299.25(S)

CB-32
TYPE CBC
TF=311.60
INV OUT=299.21(S)

CB-33
TYPE CBC
TF=318.50
INV OUT=315.88(S)

CB-34
TYPE CBC
TF=318.50
INV IN=315.38(E)
INV IN=315.38(N)
INV OUT=315.38(W)

CB-35
TYPE CBC
TF=303.00
INV OUT=299.07(N)

CB-36
TYPE CBCL
TF=271.75
INV OUT=262.02(N)

CB-37
TYPE CBCL
TF=271.75
INV IN=260.62(S)

HS-01
60" DIA. MH
TF=307.50
INV IN=298.37(S)
INV OUT=298.37(N)

HS-02
60" DIA. MH
TF=307.40
INV OUT=298.37(N)
INV OUT=298.25(S)

HS-03 (1)
60" DIA. MH
TF=305.00

HS-03
60" DIA. MH
TF=305.00
INV IN=297.40(E)
INV OUT=297.40(N)

HS-04
48" DIA. MH
TF=310.00
INV IN=305.18(NE)
INV OUT=305.18(S)

MH-01
60" DIA. MH
TF=308.50
INV IN=292.00(N)
INV OUT=292.00(W)

MH-02
60" DIA. MH
TF=305.00
INV IN=300.72(NE)
INV OUT=292.56(SW)

OCS-01
60" DIA. MH
TF=305.90
INV IN=296.90(N)
INV OUT=296.90(S)

GRADING AND DRAINAGE LEGEND

PROPERTY LINE	
LIMIT OF DISTURBANCE LINE AND CONTRACT LIMIT LINE	LOD
STORM LINE	
CATCH BASIN	
STORM MANHOLE	
FLARED END	
END WALL OR HEADWALL	
PROPOSED CONTOUR LINE	228
PROPOSED SPOT GRADE	x 100.00
ABBREVIATIONS – TC=TOP OF CURB – BC=BOTTOM OF CURB – TW=TOP OF WALL – BW=BOTTOM OF WALL	x TC=100.00 BC=99.50 x TW=108.00 BW=100.00
PROPOSED SURFACE SLOPE	2%
ELECTRIC LINE	E E
ELECTRIC AND TELECOMMUNICATIONS LINES	E/T
GAS LINE	G G
WATER LINE	W W
SANITARY SEWER LINE	S
SANITARY SEWER FORCE MAIN	SFM
OVERHEAD LINE	OH OH
TRANSFORMER	T
HYDRANT	
UTILITY POLE	
SANITARY/STORM MANHOLE	
SANITARY/STORM CLEANOUT	CO
WATER VALVE	WV
GATE VALVE	GV
THRUST BLOCK	
GREASE TRAP	

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Garden Homes

ROSE EQUITIES
Owner-Builders since 1949

STATE OF CONNECTICUT CHRISTOPHER D. FISHER No. 28799 LICENSED PROFESSIONAL ENGINEER

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS

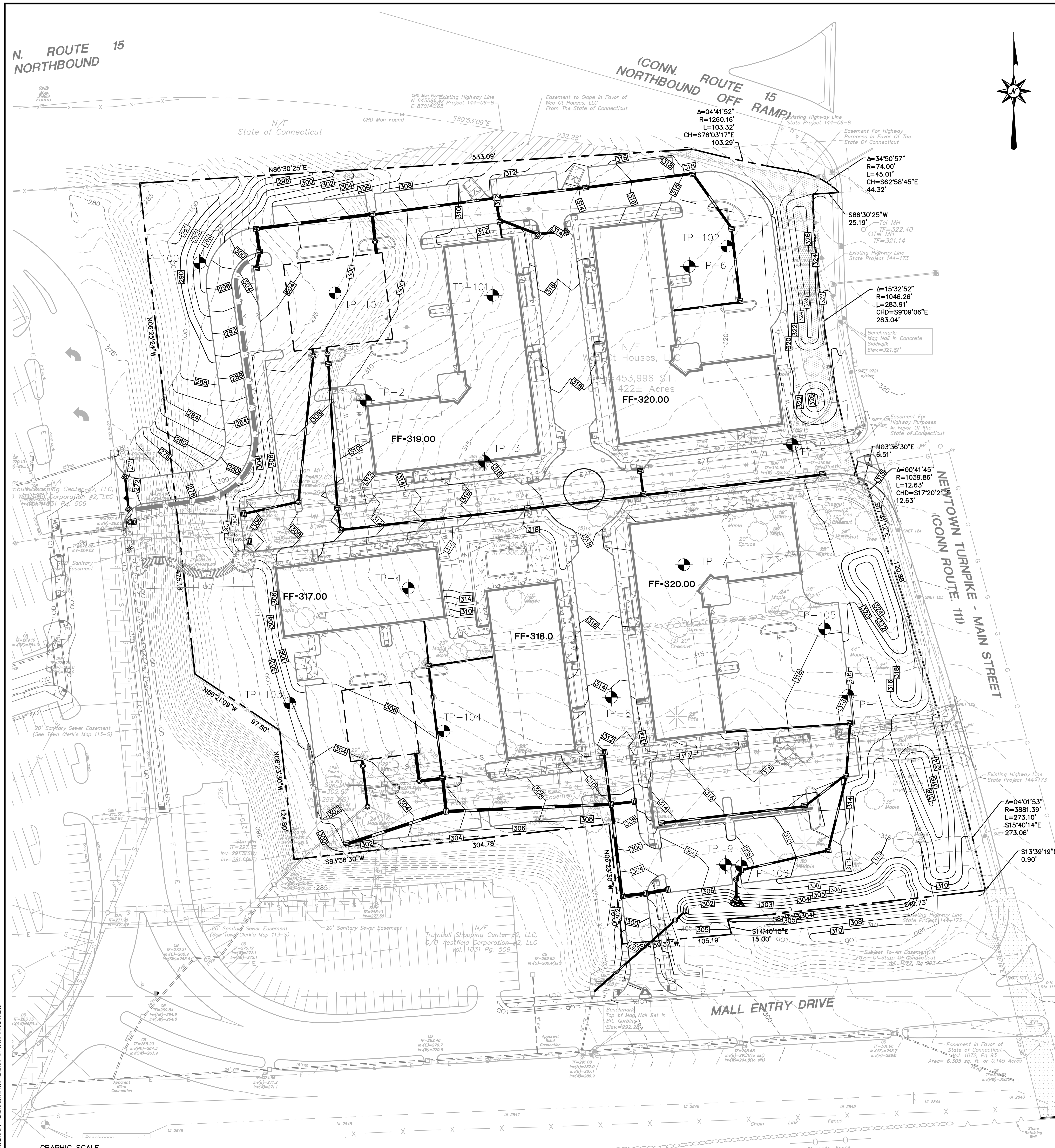
No.	Date	Desc.

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	1"=40'
Project No.	1800513
Date	05/28/2020
CAD File: GD180051301	

Title
GRADING AND DRAINAGE PLAN

Sheet No.
GD-1

Xref (s): - BD180051301 ; XY180051301 ; XV180051302 ; XC180051302 ; XC180051303



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REFER TO SHEET GN-1 FOR
SITEWORK GENERAL NOTES

GEOTECHNICAL TEST PITS
OCTOBER 21, 2019 - GEI CONSULTANTS

TP-1 SURFACE EL.=314.0 BOTTOM EL.=308.0 GROUNDWATER NOT ENCOUNTERED

DEPTH (FT)	DESCRIPTION
0-0.33	F-C SAND AND NP FINES, LITTLE F-C GRAVEL, SUBANGULAR UP TO 6" BROWN, DRY. TOPSOIL. CONTAINS COBBLES, METAL WIRES AND ORGANIC FIBERS
0.3-4.0	F-C SAND AND F-C GRAVEL AND COBBLES, ANGULAR UP TO 8" LITTLE NP FINES, LIGHT BROWN, DRY
4.0-6.0	F-C GRAVEL, ANGULAR TO SUBANGULAR UP TO 6" AND COBBLES AND F-C SAND LITTLE NP FINES, HARD, DENSE AND GRAVELLY, BROWN TO ORANGE-BROWN, DRY. SLIGHT MOTTLING AT 4.0 FT. GROUNDWATER NOT ENCOUNTERED

TP-2 SURFACE EL.=309.0 BOTTOM EL.=305.0 GROUNDWATER NOT ENCOUNTERED

DEPTH (FT)	DESCRIPTION
0-1.0	F-C SAND AND NP FINES, LITTLE F-C GRAVEL ANGULAR UP TO 6", BROWN, DRY. CONTAINS ORGANIC FIBERS. TOPSOIL.
1.0-4.0	F-C GRAVEL AND F-C SAND, LITTLE NP FINES. ORANGE-BROWN TO LIGHT BROWN, DRY COARSE ANGULAR COBBLES UP TO 3.0 FT. GROUNDWATER OR SOIL MOTTLING NOT ENCOUNTERED.

TP-3 SURFACE EL.=316.0 BOTTOM EL.=314 GROUNDWATER NOT ENCOUNTERED

DEPTH (FT)	DESCRIPTION
0-0.5	F-C SAND AND NP FINES, LITTLE F-C GRAVEL, SUBROUNDED UP TO 5", BROWN, DRY. CONTAINS ORGANIC FIBER AND BRICK FRAGMENTS. TOPSOIL.
0.5-2.0	F-C SAND AND F-C GRAVEL AND COBBLES, ANGULAR UP TO 1", LITTLE NP FINES, LIGHT BROWN, DRY
2.0-4.0	F-C SAND AND F-C GRAVEL AND COBBLES (POTENTIAL WEATHERED ROCK) ANGULAR UP TO 1", LITTLE NP FINES, BROWN TO LIGHT BROWN, DRY. BUCKET SCRAPING PROBABLE ROCK AT 4.0 FT. SLIGHT MOTTLING OBSERVED AT 3.0 FT. GROUNDWATER NOT ENCOUNTERED. BACKFILLED AT 4.0 FT.

TP-4 SURFACE EL.=312.0 BOTTOM EL.=305.0 GROUNDWATER NOT ENCOUNTERED

DEPTH (FT)	DESCRIPTION
0-2.0	F-C SAND AND NP FINES, LITTLE F-C GRAVEL, BROWN, DRY. CONTAIN ORGANIC FIBERS. TOPSOIL.
2.0-3.5	F-C SAND, LITTLE NP IFNES, LITTLE F- C GRAVEL ANGULAR, LIGHT ORANGE- BROWN, DRY
3.5-5.0	F-C SAND, SOME F-M GRAVEL AND COBBLES, ANGULAR, NP FINES, GRAYISH BROWN TO LIGHT BROWN, DRY
5.0-7.0	F-C SAND, SOME F-M GRAVEL AND COBBLES, ANGULAR, NP FINES, BROWN, DRY. LIKELY WEATHERED ROCK OBSERVED AT BASE OF PIT SOIL MOTTLING OR GROUNDWATER NOT ENCOUNTERED.

TP-5 SURFACE EL.=319.5 BOTTOM EL.=313.5 GROUNDWATER NOT ENCOUNTERED

DEPTH (FT)	DESCRIPTION
0-0.5	F-C SAND AND NP FINES, SOME F-C GRAVEL AND COBBLES, ANGULAR UP TO 6", BROWN, DRY. TOPSOIL.
0.5-2.0	C GRAVEL, TRACE NP FINES, TRACE F SAND, DRY STONE DRAINAGE TRENCH WITH PIPE
2.0-6.0	F-C SAND AND F-C GRAVEL AND COBBLES ANGULAR UP TO 2.0 FT, LITTLE NP FINES, GRAYISH BROWN TO LIGHT BROWN, SOME SLIGHT MOTTLING OBSERVED AT 4.0 FT GROUNDWATER NOT ENCOUNTERED.

TP-6 SURFACE EL.=318.0 BOTTOM EL.=310.75 GROUNDWATER NOT ENCOUNTERED

DEPTH (FT)	DESCRIPTION
0-0.33	F-C SAND AND NP FINES, LITTLE F-C GRAVEL, SUBANGULAR UP TO 1" BROWN, DRY
0.3-1.0	DEGRADED ASPHALT, F-C ANGULAR GRAVEL UP TO 2", LITTLE F-C SAND, LITTLE NP FINES, BLACK, DRY.
1.0-3.0	F-C SAND AND NP-LP FINES, F-C GRAVEL, BROWN, DRY. FORMER TOPSOIL.
3.0-5.0	F-C SAND, SOME F-C GRAVEL, SUBANGULAR UP TO 6", LITTLE NP FINES LIGHT BROWN, DRY.
5.0-7.25	M-C GRAVEL AND COBBLES (ANGULAR 6"- 12") AND F-C SAND, LITTLE NP -LP FINES, ORANGE-BROWN TO BROWN, DRY TO MOIST. SOME SOIL MOTTING AT 5.5 FT. POSSIBLE WEATHERED ROCK NEAR BASE OF PIT. GROUNDWATER NOT ENCOUNTERED

TP-7 SURFACE EL.=319.0 BOTTOM EL.=313.0 GROUNDWATER NOT ENCOUNTERED

DEPTH (FT)	DESCRIPTION
0-0.33	F-C SAND AND NP FINES, LITTLE F-C GRAVEL, SUBANGULAR UP TO 1" BROWN, DRY. CONTAINS BRICK FRAGMENTS. TOPSOIL.
0.3-1.0	F-C SAND AND F-C GRAVEL, LITTLE NP FINES, BROWN, DRY
1.0-6.0	F-C SAND AND ANGULAR F-C COBBLES AND GRAVEL, LITTLE NP FINES, LIGHT BROWN TO ORANGE-BROWN, DRY. SLIGHT MOTTLING OBSERVED AT 4.0 FT. GROUNDWATER NOT ENCOUNTERED

TP-8 SURFACE EL.=147.0 BOTTOM EL.=136.5 GROUNDWATER NOT ENCOUNTERED

DEPTH (FT)	DESCRIPTION
0-2.0	F-C SAND, SOME NP FINES, SOME F-C GRAVEL, 1 ANGULAR UP TO 6", BROWN, DRY, WITH ASPHALT DEBRIS. CONTAINS ORGANIC FIBERS. TOPSOIL.
2.0-4.0	F-C SAND, LITTLE NP FINES, SOME F-C GRAVEL AND COBBLES UP TO 6", LIGHT BROWN, DRY
4.0-6.0	F-C GRAVEL AND COBBLES, SUBANGULAR UP TO 6" AND F-C SAND, LITTLE NP FINES, DENSE MATRIX, BROWN, DRY. GROUNDWATER OR SOIL MOTTLING NOT ENCOUNTERED.

TP-9 SURFACE EL.=306.0 BOTTOM EL.=299.5 GROUNDWATER NOT ENCOUNTERED

DEPTH (FT)	DESCRIPTION
0-0.7	F-C SAND AND NP FINES, LITTLE F-C GRAVEL AND COBBLES, ANGULAR UP TO 6" BROWN, DRY. CONTAINS ORGANIC FIBERS.TOPSOIL.
0.7-3.5	F- M SAND, SOME NP FINES, SOME F-C GRAVEL AND COBBLES, SUBROUNDED UP TO 6", LIGHT BROWN, DRY.
3.5-5.0	F-C SAND, LITTLE NP IFNES, SOME F-C GRAVEL AND COBBLES, SUBANGULAR UP TO 6", GRAYISH BROWN TO LIGHT BROWN, DRY.
5.0-6.5	F-C GRAVEL AND COBBLES, ANGULAR UP TO 6" AND F-C SAND, LITTLE NP FINES DENSE MATRIX, BROWN TO REDDISH BROWN, DRY TO MOIST. SLIGHT MOTTLING OBSERVED AT 6.0 FT. GROUNDWATER NOT ENCOUNTERED.

GEOTECHNICAL INFILTRATION TESTING
FEBRUARY 28, 2020 - GEI CONSULTANTS

TP-100 SURFACE EL.=289.0 BOTTOM EL.=283.5 GROUNDWATER NOT ENCOUNTERED

DEPTH (FT)	DESCRIPTION
0-0.5	6" TOPSOIL
0.5-3.0	SILTY SAND (SM);~ 60% F-C SAND, ~20% F-C GRAVEL UP TO 1", ~20% NP TO LP FINES, DARK BROWN, WET. CONTAIN ORGANIC FIBERS, COBBLES, RED BRICK, AND SMALL BOULDERS. STRONG ORGANIC-LIKE ODOR. FILL
3.0-5.5	SILTY SAND WITH GRAVEL (SM); ~60% F-C SAND, ~20% F-C GRAVEL UP TO 1", ~20% NP TO LP FINES, DARK BROWN, WET. CONTAIN ORGANIC FIBERS, COBBLES, RED BRICK, BOULDERS, PLASTIC AND METALLIC DEBRIS, AND ROTTED TIMBER PIECES. STRONG ORGANIC-LIKE ODOR. SLIGHT MOTTLING AT 4.0 FT. GROUNDWATER NOT ENCOUNTERED

TP-101 SURFACE EL.=310.5 BOTTOM EL.=304.0 GROUNDWATER ENCOUNTERED AT EL.=304.0

DEPTH (FT)	DESCRIPTION
0-0.5	6" TOPSOIL
0.5-1.0	WIDELY GRADED SAND WITH SILT (SW-SM); ~80% F-C SAND, ~10% F-C GRAVEL UP TO 1", ~10% NP TO LP FINES, DARK BROWN, MOIST. CONTAINS ORGANIC FIBERS, MODERATE ORGANIC-LIKE ODOR.
1.0-4.0	WIDELY GRADED SAND WITH SILT (SW-SM); ~80% F-C SAND, ~10% NP FINES, ~10% F-C GRAVEL, DARK BROWN TO BROWN, MOIST. FILL CONTAIN COBBLES, BUILDING DEBRIS, FORMER FOUNDATION ENCOUNTERED AT 2.0 FT. ENCOUNTERED FULL FOUNDATION AT 4.0 FT. TEST PIT EXTENDED TO GO BENEATH.
4.0-6.5	WIDELY GRADED SAND WITH SILT (SW-SM); ~80% F-C SAND, ~10% F-C GRAVEL, UP TO 1", ~10% NP FINES, GRAYISH BROWN, MOIST. ~30% COBBLES BY VOLUME. GROUNDWATER INFILTRATION OBSERVED AT 6.5 FT
INFILTRATION RESULTS	TEST 1 = 3.8 IN/HOUR TEST 2 = INVALID

TP-102 SURFACE EL.=319.0 BOTTOM EL.=311.0 GROUNDWATER ENCOUNTERED AT EL.=315.0

DEPTH (FT)	DESCRIPTION
0-0.5	6" TOPSOIL
0.5-2.0	WIDELY GRADED SAND WITH SILT (SW-SM);~ 80% F-C SAND, ~10% F-C GRAVEL UP TO 1", ~10% NP- LP FINES, DARK BROWN, MOIST. CONTAINS ORGANIC FIBERS, MODERATE ORGANIC-LIKE ODOR. FILL
2.0-4.0	SILTY SAND WITH GRAVEL (SM); ~50% F-C SAND, ~30% LP TO MP FINES, ~20% F-C GRAVEL UP TO 1", BROWN, WET. CONTAINS ROOT FRAGMENTS AND COBBLES. FILL
4.0-8.0	SILTY SAND WITH GRAVEL (SM); ~50% F-M SAND, ~35% LP-MP FINES, ~15% F-C GRAVEL, LIGHT ORANGE-BROWN, MOIST TO WET. CONTAINS SMALL COBBLES.
INFILTRATION RESULTS	TEST 1 = 3.8 IN/HOUR TEST 2 = INVALID

TP-103 SURFACE EL.=301.0 BOTTOM EL.=296.0 GROUNDWATER NOT ENCOUNTERED

DEPTH (FT)	DESCRIPTION
0-1.0	SILTY SAND (SM); ~75% F-C SAND, ~15% NPFINES, ~10% F-C GRAVEL UP TO 1", DARK BROWN, MOIST. CONTAINS ORGANIC FIBERS AND COBBLES.
1.0-5.0	SILTY SAND WITH GRAVEL (SM); ~50% F-C SAND, ~30% NP TO LP FINES, ~20% F-C GRAVEL UP TO 1", GRAY-BROWN, MOIST. CONTAINS COBBLES. REFUSAL @ 5.0 FT. ON BOULDER OR WEATHERED ROCK
INFILTRATION RESULTS	TEST 1 = 5.9 IN/HOUR TEST 2 = 9.1 IN/HOUR

TP-104 SURFACE EL.=309.0 BOTTOM EL.=302.0 GROUNDWATER NOT ENCOUNTERED

DEPTH (FT)	DESCRIPTION
0-0.5	6" TOPSOIL
0.5-4.0	SANDY SILT (ML): ~55% LP-MP FINES, ~45% F SAND, ORANGE-BROWN, MOIST.
4.0-7.0	WIDELY GRADED SAND (SW); ~85% F-M SAND, ~10% F-C GRAVEL, ~5% NP FINES, DARK GRAY, MOIST.
INFILTRATION RESULTS	TEST 1 = 2.2 IN/HOUR TEST 2 = 3.8 IN/HOUR

TP-105 SURFACE EL.=313.0 BOTTOM EL.=304.0 GROUNDWATER ENCOUNTERED AT EL.=304.5

DEPTH (FT)	DESCRIPTION
0-1.0	SILTY SAND WITH GRAVEL (SM); 45% F-C SAND, 30% NP FINE, 25% F-C GRAVEL AND COBBLES UP TO 12", BROWN TO DARK BROWN, DRY. CONTAIN ORGANIC FIBERS, FRAGMENTS OF BRICK AND CONCRETE BLOCK.
1.0-2.5	SILTY SAND WITH GRAVEL (SM); 60% F-C SAND, 25% F-C GRAVEL AND COBBLES UP TO 12 IN., 15% NP FINES, BROWN TO ORANGE BROWN, DRY.
2.5-9.0	SILTY SAND WITH GRAVEL (SM); ~65% F-C SAND, ~ 25% F-C GRAVEL, ~20% NP -LP FINES, BROWN TO GRAYISH BROWN, DRY TO WET AT 8.5'. GROUNDWATER ENCOUNTERED AT 8.5 FT.

TP-106 SURFACE EL.=306.0 BOTTOM EL.=299.5 GROUNDWATER ENCOUNTERED AT EL.=299.5

DEPTH (FT)	DESCRIPTION
0-0.5	6" TOPSOIL
0.5-1.0	WIDELY GRADED SAND WITH SILT (SW-SM); ~80% F-C SAND, ~10% NP FINES, ~10% F-C GRAVEL, BROWN, MOIST. CONTAIN ORGANIC FIBERS.
1.0-6.5	WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~75% F-C SAND, 15% F-C GRAVEL UP TO 1", 10% NP-LP FINES, BROWN, MOIST. CONTAINS COBBLES/SMALL BOULDERS UP TO 30% BY VOLUME. CONCRETE DEBRIS BETWEEN 1.0 AND 4.0 FT. GROUNDWATER ENCOUNTERED AT 6.5 FT.
INFILTRATION RESULTS	TEST 1 = 9.9 IN/HOUR TEST 2 = INVALID

TP-107 SURFACE EL.=295.5 BOTTOM EL.=288.0 GROUNDWATER ENCOUNTERED AT EL.=288.0

DEPTH (FT)	DESCRIPTION
0-0.5	SILTY SAND WITH GRAVEL (SM); ~45% F-C SAND, ~35% NP FINES, ~20% F-C GRAVEL, DARK BROWN, DRY. CONTAIN ORGANIC FIBERS, COBBLES/BOULDERS, ASPHALT, CONCRETE DEBRIS.
0.5-3.0	SILTY SAND WITH GRAVEL (SM); ~45% F-C SAND, ~35% F-C GRAVEL AND COBBLES, ~20% NP FINES, BROWN, DRY. CONTAIN ORGANIC FIBERS, COBBLES/BOULDERS, ASPHALT, CONCRETE DEBRIS.
3.0-3.5	LAYER OF BROKEN ASPHALT
3.5-5.5	SILTY SAND WITH GRAVEL (SM); ~35% F-C SAND, ~35% F-C GRAVEL AND COBBLES UP TO 24 IN., ~30% NP FINES, BROWN, DRY TO MOIST.
5.5-7.5	SILTY SAND WITH GRAVEL (SM); ~50% F-C SAND, ~35% F-C GRAVEL AND COBBLES UP TO 24 IN., ~15% NP FINES, ORANGE TO BROWN, DRY TO MOIST. WITH WEATHERED ROCK FRAGMENTS NEAR BASE.

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REVISIONS
No. Date Desc.

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	1"=50'
Project No.	1800513
Date	05/28/2020
CAD File:	GD180051301

Title
GRADING AND DRAINAGE PLAN

Sheet No.
GD-2

Xref (s): ; BD180051301 ; XY180051301 ; XC180051301 ; XY05C133801 ; XY180051302 ; XC180051302 ; XC180051303

5/28/2020, KKLOSE, G:\JOBS18\04\1800513\DWG\GD180051301.DWG,GD-2 24X36 50SC.

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SITE UTILITIES LEGEND

PROPERTY LINE	
LIMIT OF DISTURBANCE LINE AND CONTRACT LIMIT LINE	LOD
ELECTRIC LINE	E E
ELECTRIC AND TELECOMMUNICATIONS LINES	E/T
GAS LINE	G G
WATER LINE	W W
SANITARY SEWER LINE	S
SANITARY SEWER FORCE MAIN	SFM
OVERHEAD LINE	OH OH
TRANSFORMER	T
HYDRANT	
UTILITY POLE	
SANITARY MANHOLE	
SANITARY CLEANOUT	CO
WATER VALVE	WV
GATE VALVE	GV
THRUST BLOCK	
GREASE TRAP	
OUTLET CONTROL STRUCTURE	
HYDRODYNAMIC SEPARATOR	
STORM LINE	
CATCH BASIN	
STORM MANHOLE	
FLARED END	
END WALL OR HEADWALL	
PROPOSED CONTOUR LINE	228
PROPOSED SPOT GRADE	100.00

ABBREVIATIONS
- TC=TOP OF CURB
- BC=BOTTOM OF CURB
- TW=TOP OF WALL
- BW=BOTTOM OF WALL

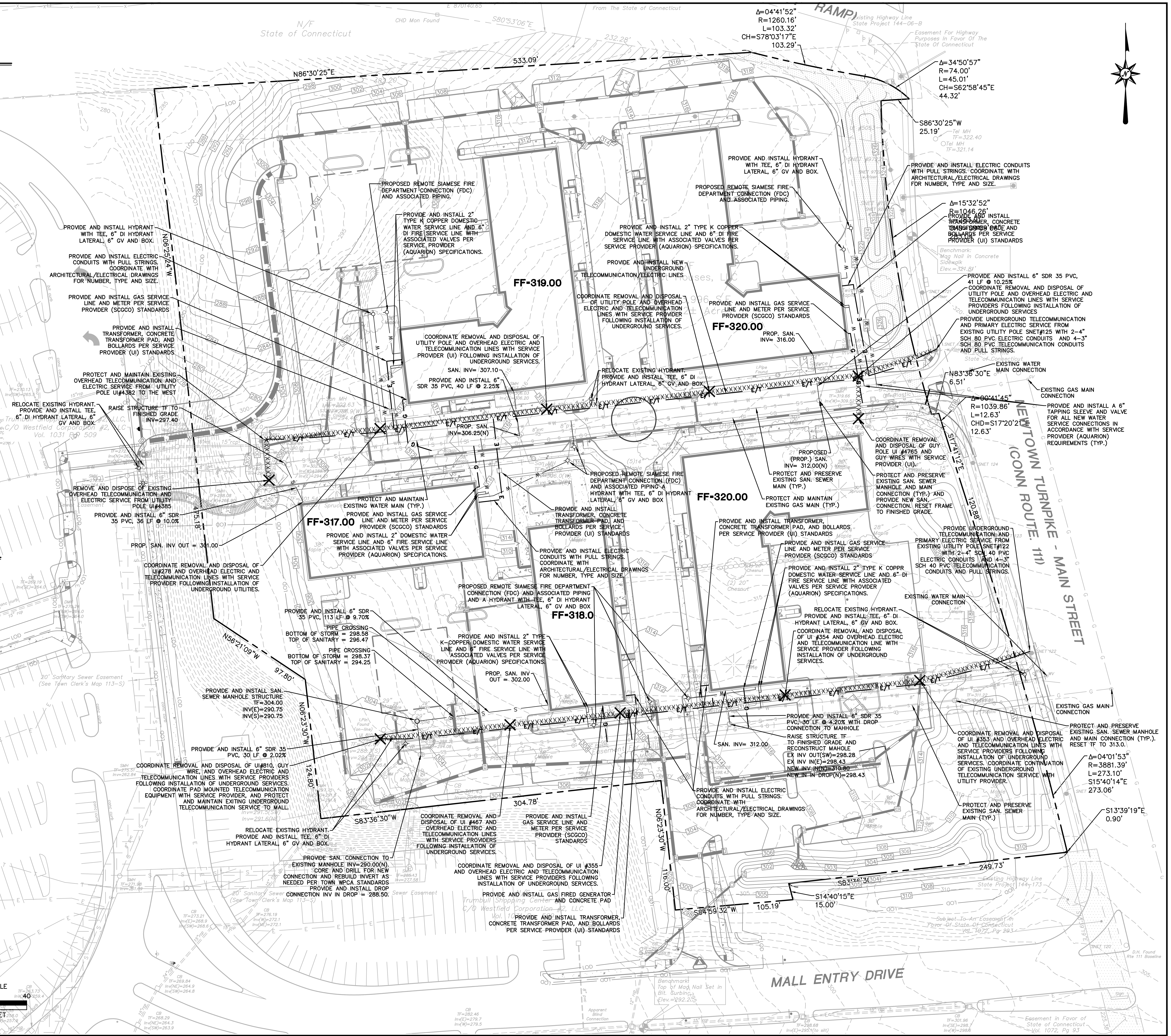
TC=100.00 BC=99.50

TW=108.00 BW=100.00

PROPOSED SURFACE SLOPE 2%

NOTES

1. CONTRACTOR SHALL CONFIRM LOCATION, SIZE, CONDITION AND ELEVATION OF ALL EXISTING UTILITY LATERAL STUBS, WATER MAINS, GAS MAINS AND ELECTRICAL SERVICES PRIOR TO CONSTRUCTION.
2. ALL SANITARY MANHOLES AND WATER AND GAS GATES/VALVES TO REMAIN ARE BE RESET TO FINISHED GRADE AS NEEDED.



REFER TO SHEET GN-1 FOR SITEWORK GENERAL NOTES

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GRAPHIC SCALE
40 20 0 40
SCALE IN FEET

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REVISIONS
No. Date Desc.

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	1"=40'
Project No.	1800513
Date	05/28/2020
CAD File:	SU180051301

Title
SITE UTILITIES PLAN

Sheet No.
SU-1

Xref (s): : BD180051301 ; XY180051301 ; XC180051301 ; XY05C133801 ; XY180051302 ; XC180051302 ; XC180051303

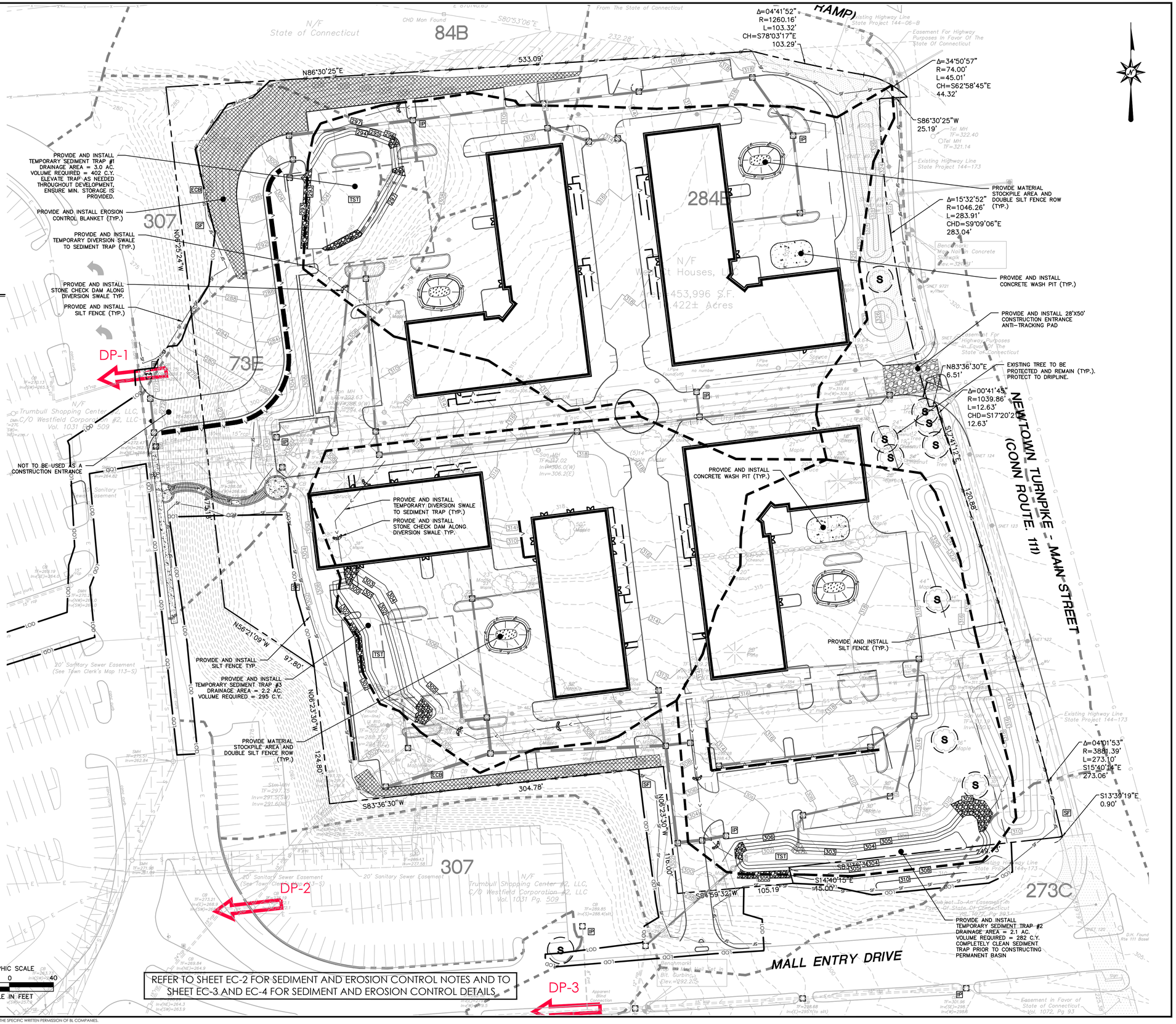
EROSION CONTROL LEGEND:

CONTROL MEASURE	ILLUSTRATION
INLET PROTECTION AT CATCH BASINS	IP
STONE CHECK DAM	
SILT FENCE	SF
CONSTRUCTION ENTRANCE	CE
LIMIT OF CLEARING	
LIMIT OF DISTURBANCE LINE AND CONTRACT LIMIT LINE	LOD
EROSION CONTROL BLANKET	ECB
STOCKPILE AREA WITH DOUBLE ROW OF SILT FENCE	
DIVERSION SWALE	
SOIL TYPE BOUNDARY	
SEDIMENT TRAP CONTRIBUTING AREA	
TEMPORARY SILT TRAP	TST
EXISTING TREE TO BE PROTECTED	S

SOIL TYPES

73E	CHARLTON–CHATFIELD COMPLEX (HSG B)
84B	PAXTON AND MONTAUK FINE SANDY LOAMS (HSG C)
273C	URBAN LAND–CHARLTON CHATFIELD COMPLEX (HSG B/D)
284B	PAXTON–URBAN LAND COMPLEX (HSG C/D)
307	URBAN LAND (HSG D)

NOTE: SOILS DATA REFERENCED FROM NRCS WEBSOIL SURVEY.



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REFER TO SHEET EC-2 FOR SEDIMENT AND EROSION CONTROL NOTES AND TO SHEET EC-3 AND EC-4 FOR SEDIMENT AND EROSION CONTROL DETAILS

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No.	Date	Desc.

Designed	A.T.K.
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Scale	1"=40'
Project No.	1800513
Date	05/28/2020
CAD File: EC180051301	

Title
SEDIMENT AND EROSION CONTROL PLAN

Sheet No.
EC-1

Xref (s): - BD180051301 | XY180051301 | XC180051301 | XV05C13380-1 | XY180051302 | XC180051302 | XC180051304 | ED180051301 | XC180051303
5/28/2020, KKLOSE, G:\JOBS\BDA\180051\DWG\EC180051301.DWG-EC-1 24X36, 40SC

SEDIMENT AND EROSION CONTROL NOTES

SEDIMENT AND EROSION CONTROL NOTES – CONNECTICUT

SEDIMENT & EROSION CONTROL NARRATIVE
THE SEDIMENT AND EROSION CONTROL PLAN WAS DEVELOPED TO PROTECT THE EXISTING ROADWAY AND STORM DRAINAGE SYSTEMS, ADJACENT PROPERTIES, AND ANY ADJACENT WETLAND AREA AND ANY ADJACENT WATER COURSE FROM SEDIMENT LADEN SURFACE RUNOFF AND EROSION. A CONSTRUCTION SEQUENCE IS PROVIDED TO PROVIDE SURFACE RUNOFF EROSION CONTROLS PRIOR TO THE BEGINNING OF PROJECT DEMOLITION AND/OR CONSTRUCTION.

CONSTRUCTION SCHEDULE
THE ANTICIPATED STARTING DATE FOR CONSTRUCTION IS SPRING 2021 WITH COMPLETION ANTICIPATED SPRING 2021 APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES AS DESCRIBED HEREIN SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF ALL DEMOLITION OR CONSTRUCTION ACTIVITY. SCHEDULE WORK TO MINIMIZE THE LENGTH OF TIME THAT BARE SOIL WILL BE EXPOSED.

CONTINGENCY EROSION PLAN
THE CONTRACTOR SHALL INSTALL ALL SPECIFIED SEDIMENT AND EROSION CONTROL MEASURES AND WILL BE REQUIRED TO MAINTAIN THEM IN THEIR INTENDED FUNCTIONING CONDITION. THE AGENTS OF THE MUNICIPALITY AND/OR CIVIL ENGINEER SHALL HAVE THE AUTHORITY TO REQUIRE SUPPLEMENTAL MAINTENANCE OR ADDITIONAL MEASURES IF FIELD CONDITIONS ARE ENCOUNTERED BEYOND WHAT WOULD NORMALLY BE ANTICIPATED.

CONSTRUCTION SEQUENCE
THE FOLLOWING CONSTRUCTION SEQUENCE IS RECOMMENDED:

1. CONTACT MUNICIPALITY AND THE PLANNING & ZONING COMMISSION AGENT AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF ANY DEMOLITION, CONSTRUCTION OR REGULATED ACTIVITY ON THIS PROJECT.
2. CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVED BY THE MUNICIPALITY AND/OR THEPLANNING & ZONING COMMISSION AGENT PRIOR TO THE START OF WORK ON THE SITE. INSTALL TREE PROTECTION AND PERIMETER SILT FENCE.
3. CONSTRUCT STONE CONSTRUCTION ENTRANCE ANTI-TRACKING PADS AT CONSTRUCTION ENTRANCES/EXITS AND INSTALL FILTER FABRIC AROUND GRATES OF CATCH BASINS OR INSTALL SILT SACKS ON CATCH BASIN INLETS AND ON OFF SITE ROADS. INSTALL SILT FENCE AND OTHER EROSION CONTROL DEVICES INDICATED ON THESE PLANS AT PERIMETER OF PROPOSED SITE DISTURBANCE AND INSTALL ALL EROSION CONTROL MEASURES AND TREE PROTECTION INDICATED ON THESE PLANS. INSTALL SEDIMENT BASINS AND SEDIMENT TRAPS IF REQUIRED AT LOW AREAS OF SITE OR AS ORDERED BY THE ENGINEER OR AS SHOWN ON THESE PLANS.
4. CLEAR AND GRUB SITE. STOCKPILE CHIPS. STOCKPILE TOPSOIL. INSTALL SEDIMENT AND EROSION CONTROLS AT STOCKPILES.
5. SITE DEMOLITION AND REMOVAL. PAVEMENT REMOVAL.
6. INSTALL SILT FENCE, CONSTRUCT DIVERSION SWALES AND SEDIMENT TRAPS. COMMENCE INSTALLATION OF STORM DRAINAGE SYSTEM.
7. COMMENCE EARTHWORK. CONSTRUCT FILL SLOPE, ROADWAY AND RETAINING WALLS. INSTALL ADDITIONAL SEDIMENT AND EROSION CONTROLS AS WORK PROGRESSES AND CONTINUE STORM DRAINAGE SYSTEM CONSTRUCTION, TOPSOIL AND SEED SLOPES WHICH HAVE ACHIEVED FINAL SITE GRADING.
8. CONSTRUCTION STAKING OF ALL BUILDING CORNERS, UTILITIES, ACCESS DRIVES, AND PARKING AREAS.
9. ROUGH GRADING AND FILLING OF SUBGRADES AND SLOPES.
10. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.
11. BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE CONTRACTOR MUST PROVIDE EVIDENCE THAT EACH SPOIL OR BORROW AREA HAS A SEDIMENT AND EROSION CONTROL PLAN APPROVED BY THE MUNICIPALITY AND/OR THE INLAND WETLANDS COMMISSION AND WHICH IS BEING IMPLEMENTED AND MAINTAINED. THE CONTRACTOR SHALL ALSO NOTIFY THE MUNICIPALITY AND/OR THE PLANNING & ZONING COMMISSION IN WRITING OF ALL RECEIVING SPOIL AND BORROW AREAS WHEN THEY HAVE BEEN IDENTIFIED.
12. CONTINUE INSTALLATION OF STORM DRAINAGE AS SUBGRADE ELEVATIONS ARE ACHIEVED.
13. BUILDINGS FOUNDATION SUBGRADE AND PAD SUBGRADE PREPARATION.
14. BUILDINGS FOUNDATION CONSTRUCTION. BEGIN BUILDING SUPERSTRUCTURE
15. THROUGHOUT CONSTRUCTION SEQUENCE, REMOVE SEDIMENT FROM BEHIND SILT FENCES, HAY BALES AND OTHER EROSION CONTROL DEVICES, AND FROM SEDIMENT BASINS AND SEDIMENT TRAPS AS REQUIRED. REMOVAL SHALL BE ON A PERIODIC BASIS (EVERY SIGNIFICANT RAINFALL OF 0.25 INCH OR GREATER). INSPECTION OF SEDIMENT AND EROSION CONTROL MEASURES SHALL BE ON A WEEKLY BASIS AND AFTER EACH RAINFALL OF 0.25 INCHES OR GREATER. SEDIMENT COLLECTED SHALL BE DEPOSITED AND SPREAD EVENLY UPLAND ON SLOPES DURING CONSTRUCTION.
16. INSTALL SANITARY LATERALS AND UTILITIES. COMPLETE STORM DRAINAGE SYSTEM.
17. INSTALL SITE LIGHTING AND CONCRETE PADS AND TRASH ENCLOSURES.
18. COMPLETE GRADING TO SUBGRADES AND CONSTRUCT PARKING AREA SUBGRADE.
19. CONSTRUCT CURBS, PAVEMENT STRUCTURE AND SIDEWALKS.
20. CONDUCT FINE GRADING.
21. PAVING OF PARKING AREAS AND ROADWAYS
22. FINAL FINE GRADING OF SLOPE AND NON-PAVED AREAS.
23. PLACE 4" TOPSOIL ON SLOPES AFTER FINAL GRADING IS COMPLETED. FERTILIZE SEED AND MULCH. SEED MIXTURE TO BE INSTALLED APRIL 15 – JUNE 1 OR AUGUST 15 – OCTOBER 1 USE EROSION CONTROL BLANKETS AS REQUIRED OR ORDERED FOR SLOPES 3:1 AND GREATER THAN 3:1 AND AS SHOWN ON LANDSCAPE PLANS OR EROSION CONTROL PLANS. FOR TEMPORARY STABILIZATION BEYOND SEEDING DATES USE ANNUAL RYE AT 4.0 LBS/1,000 S.F. FERTILIZE WITH 10-10-10 AT 1.0 LBS. OF NITROGEN PER 1,000 S.F. AND LIME AT 100 LBS/1,000 S.F. (MAX.).
24. LANDSCAPE ISLANDS, INTERIOR NON-PAVED AREAS, AND PERIMETER AREAS.
25. INSTALL SIGNING AND PAVEMENT MARKINGS
26. CLEAN STORM DRAINAGE PIPE STRUCTURES, DETENTION SYSTEMS AND WATER QUALITY DEVICES OF DEBRIS AND SEDIMENT.
27. UPON DIRECTION OF THE MUNICIPALITY AND/OR THE PLANNING & ZONING COMMISSION AGENT, SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED FOLLOWING STABILIZATION OF THE SITE.

OPERATION REQUIREMENTS

CLEARING AND GRUBBING OPERATIONS

1. ALL SEDIMENT AND EROSION CONTROL MEASURES, INCLUDING THE CONSTRUCTION OF ANY TEMPORARY SEDIMENTATION BASINS AND STONE CONSTRUCTION ENTRANCE ANTI-TRACKING PADS, WILL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.
2. FOLLOWING INSTALLATION OF ALL SEDIMENT AND EROSION CONTROL MEASURES, THE CONTRACTOR SHALL NOT PROCEED WITH GRADING, FILLING OR OTHER CONSTRUCTION OPERATIONS UNTIL THE ENGINEER HAS INSPECTED AND APPROVED ALL INSTALLATIONS.
3. THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CLEARING AND GRUBBING OPERATIONS SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR SEDIMENT AND EROSION CONTROL DEVICES.
4. FOLLOWING THE COMPLETION OF CLEARING AND GRUBBING OPERATIONS, ALL AREAS SHALL BE STABILIZED WITH TOPSOIL AND SEEDING OR CRUSHED STONE AS SOON AS PRACTICAL.

ROUGH GRADING OPERATIONS

1. DURING THE REMOVAL AND/OR PLACEMENT OF EARTH AS INDICATED ON THE GRADING PLAN, TOPSOIL SHALL BE STRIPPED AND APPROPRIATELY STOCKPILED FOR REUSE.
2. ALL STOCKPILED TOPSOIL SHALL BE SEEDED, MULCHED WITH HAY, AND ENCLOSED BY A SILTATION FENCE.

FILLING OPERATIONS

1. PRIOR TO FILLING, ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE PROPERLY IMPLEMENTED, MAINTAINED AND FULLY INSTALLED, AS DIRECTED BY THE ENGINEER AND AS SHOWN ON THIS PLAN.
2. ALL FILL MATERIAL ADJACENT TO ANY WETLAND AREAS, IF APPLICABLE TO THIS PROJECT, SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN), SHALL BE PLACED IN LIFT THICKNESSES NOT GREATER THAN THAT SPECIFIED IN PROJECT SPECIFICATIONS AND/OR THE PROJECT GEOTECHNICAL REPORT. LIFTS SHALL BE COMPACTED TO 95% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS OR IN THE GEOTECHNICAL REPORT.
3. AS GENERAL GRADING OPERATIONS PROGRESS, ANY TEMPORARY DIVERSION DITCHES SHALL BE RAISED OR LOWERED, AS NECESSARY, TO DIVERT SURFACE RUNOFF TO THE SEDIMENT BASINS OR SEDIMENT TRAPS.

PLACEMENT OF DRAINAGE STRUCTURES, UTILITIES, AND BUILDING CONSTRUCTION OPERATIONS.

1. SILT FENCES SHALL BE INSTALLED AT THE DOWNHILL SIDES OF BUILDING EXCAVATIONS, MUD PUMP DISCHARGES, AND UTILITY TRENCH MATERIAL STOCKPILES. HAY BALES/STRAW BALES MAY BE USED IF SHOWN ON THE SEDIMENT AND EROSION CONTROL PLANS OR IF DIRECTED BY THE CIVIL ENGINEER.

FINAL GRADING AND PAVING OPERATIONS

1. ALL INLET AND OUTLET PROTECTION SHALL BE PLACED AND MAINTAINED AS SHOWN ON SEDIMENT AND EROSION CONTROL PLANS AND DETAILS, AND AS DESCRIBED IN SPECIFICATIONS AND AS DESCRIBED HEREIN.
2. NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS, OR JUTE MESH AND VEGETATION. ALL SLOPES SHALL BE SEEDED, AND ANY ROAD OR DRIVEWAY SHOULDER AND BANKS SHALL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.
3. PAVEMENT SUB-BASE AND BASE COURSES SHALL BE INSTALLED OVER AREAS TO BE PAVED AS SOON AS FINAL SUB-GRADES ARE ESTABLISHED AND UNDERGROUND UTILITIES AND STORM DRAINAGE SYSTEMS HAVE BEEN INSTALLED.
4. AFTER CONSTRUCTION OF PAVEMENT, TOPSOIL, FINAL SEED, MULCH AND LANDSCAPING, REMOVE ALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES ONLY AFTER ALL AREAS HAVE BEEN PAVED AND/OR GRASS HAS BEEN WELL ESTABLISHED AND THE SITE IS STABLE AND HAS BEEN INSPECTED AND APPROVED BY THE MUNICIPALITY THE PLANNING & ZONING COMMISSION.

INSTALLATION OF SEDIMENTATION AND EROSION CONTROL MEASURES

I. SILTATION FENCE
A. DIG A SIX INCH TRENCH ON THE UPHILL SIDE OF THE DESIGNATED FENCE LINE LOCATION.

B. POSITION THE POST AT THE BACK OF THE TRENCH (DOWNHILL SIDE), AND HAMMER THE POST AT LEAST 1.5 FEET INTO THE GROUND.

C. LAY THE BOTTOM SIX INCHES OF THE FABRIC INTO THE TRENCH TO PREVENT UNDERMINING BY STORM WATER RUN-OFF.

D. BACKFILL THE TRENCH AND COMPACT.

II. HAY BALES/STRAW BALES
A. BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE, ORIENTED PARALLEL TO THE CONTOUR, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.

B. BALES SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER TO A MINIMUM DEPTH OF FOUR INCHES. AFTER THE BALES ARE STAKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AGAINST THE BARRIER.

C. EACH BALE SHALL BE SECURELY ANCHORED BY AT LEAST TWO (2) STAKES.

D. THE GAPS BETWEEN BALES SHALL BE WEDGED WITH STRAW TO PREVENT WATER LEAKAGE.

E. THE BARRIER SHALL BE EXTENDED TO SUCH A LENGTH THAT THE BOTTOMS OF THE END BALES ARE HIGHER IN ELEVATION THAN THE TOP OF THE LOWEST MIDDLE BALE, TO ENSURE THAT RUN-OFF WILL FLOW EITHER THROUGH OR OVER THE BARRIER, BUT NOT AROUND IT.

OPERATION AND MAINTENANCE OF SEDIMENT AND EROSION CONTROL MEASURES
I. SILTATION FENCE
A. ALL SILTATION FENCES SHALL BE INSPECTED AS A MINIMUM WEEKLY OR AFTER EACH RAINFALL. ALL DETERIORATED FABRIC AND DAMAGED POSTS SHALL BE REPLACED AND PROPERLY REPOSITIONED IN ACCORDANCE WITH THIS PLAN.

B. SEDIMENT DEPOSITS SHALL BE REMOVED FROM BEHIND THE FENCE WHEN THEY REACH A MAXIMUM HEIGHT OF ONE FOOT.

II. HAY BALES/STRAW BALES
A. ALL HAY BALE/STRAW BALE RINGS SHALL BE INSPECTED FOLLOWING EACH RAINFALL. REPAIR OR REPLACEMENT SHALL BE PROMPTLY MADE AS NEEDED.

B. DEPOSITS SHALL BE REMOVED AND CLEANED-OUT IF ONE HALF OF THE ORIGINAL HEIGHT OF THE BALES BECOMES FILLED WITH SEDIMENT.

III. SEDIMENT TRAPS
A. CONTRACTOR TO KEEP WEEKLY CHECKLIST LOGS FOR INSPECTIONS OF ALL SEDIMENT AND EROSION CONTROL DEVICES AND HAVE THEM READILY AVAILABLE ON-SITE AT ALL TIMES FOR INSPECTION BY CT DEEP, LOCAL AUTHORITIES OR ENGINEER.

B. ALL SEDIMENT BASINS AND/OR SEDIMENT TRAPS SHALL BE INSPECTED FOLLOWING EACH RAINFALL. REPAIR OF SLOPES SHALL BE PROMPTLY MADE AS NEEDED.

C. SEDIMENT DEPOSITS SHALL BE REMOVED FROM SEDIMENT BASINS AND/OR SEDIMENT TRAPS WHEN THEY REACH A MAXIMUM HEIGHT OF ONE FOOT UNLESS OTHERWISE INDICATED ON THE EROSION CONTROL PLANS AND DETAILS TO BE AT A SPECIFIC ELEVATION PER CLEAN OUT MARKERS.

D. SEDIMENT SHALL BE DISPOSED OF ON-SITE OR AS DIRECTED BY THE ENGINEER AND LOCAL GOVERNING OFFICIALS. SEE SEDIMENT AND EROSION CONTROL NOTES HEREIN REGARDING DISPOSAL REQUIREMENTS FOR OFF SITE SPOIL DISPOSAL.

SEDIMENT AND EROSION CONTROL PLAN

1. HAY BALE/STRAW BALE FILTERS WILL BE INSTALLED AT ALL CULVERT OUTLETS IF CULVERT OUTLETS ARE APPLICABLE TO THIS PROJECT AND SILTATION FENCE INSTALLED ALONG THE TOE OF ALL CRITICAL CUT AND FILL SLOPES.
2. CULVERT DISCHARGE AREAS WILL BE PROTECTED WITH RIP RAP CHANNELS. ENERGY DISSIPATORS WILL BE INSTALLED AS SHOWN ON THESE PLANS AND AS NECESSARY.
3. CATCH BASINS WILL BE PROTECTED WITH HAY BALE/STRAW BALE FILTERS, SILT SACKS, SILTATION FENCE, OR OTHER INLET PROTECTION DEVICES PER DETAILS, THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED.
4. ALL SEDIMENT AND EROSION CONTROL MEASURES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL OR LATEST EDITION.
5. SEDIMENT AND EROSION CONTROL MEASURES WILL BE INSTALLED PRIOR TO DEMOLITION AND/OR CONSTRUCTION WHENEVER POSSIBLE.
6. ALL CONTROL MEASURES WILL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE DEMOLITION AND CONSTRUCTION PERIOD UNTIL THE SITE IS DETERMINED TO BE STABILIZED BY THE AUTHORITY HAVING JURISDICTION.
7. ADDITIONAL CONTROL MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PERIOD, IF NECESSARY OR REQUIRED OR AS DIRECTED BY THE CIVIL ENGINEER OR BY THE AUTHORITY HAVING JURISDICTION.
8. SEDIMENT REMOVED FROM EROSION CONTROL STRUCTURES WILL BE DISPOSED IN A MANNER WHICH IS CONSISTENT WITH THE INTENT AND REQUIREMENTS OF THE SEDIMENT AND EROSION CONTROL PLANS, NOTES, AND DETAILS.
9. 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, NOTIFICATION OF THE MUNICIPALITY AND THE PLANNING & ZONING COMMISSION OFFICE OR AUTHORITY HAVING JURISDICTION OF ANY TRANSFER OF THIS RESPONSIBILITY AND FOR CONVEYING A COPY OF THE SEDIMENT AND EROSION CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.

SEDIMENT AND EROSION CONTROL NOTES

1. THE SEDIMENT AND EROSION CONTROL PLAN IS ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL TREATMENT FOR THIS SITE. SEE SEDIMENT AND EROSION CONTROL DETAILS AND CONSTRUCTION SEQUENCE. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.
2. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING THIS SEDIMENT AND EROSION CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE PROPER INSTALLATION AND MAINTENANCE OF SEDIMENT AND EROSION CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED WITH CONSTRUCTION ON THE SITE OF THE REQUIREMENTS AND OBJECTIVES OF THIS PLAN, INFORMING THE AUTHORITY HAVING JURISDICTION OR PLANNING & ZONING AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THE SEDIMENT & EROSION CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.
3. AN EROSION CONTROL BOND MAY BE REQUIRED TO BE POSTED WITH THE TOWN OF TRUMBULL TO ENSURE IMPLEMENTATION OF THE SEDIMENT AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE POSTING OF THIS BOND AND FOR INQUIRIES TO THE TOWN OF TRUMBULL FOR INFORMATION ON THE METHOD, TYPE AND AMOUNT OF THE BOND POSTING UNLESS OTHERWISE DIRECTED BY THE OWNER.
4. VISUAL SITE INSPECTIONS SHALL BE CONDUCTED WEEKLY, AND AFTER EACH MEASURABLE PRECIPITATION EVENT OF 0.25 INCHES OR GREATER BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN SEDIMENT AND EROSION CONTROL, TO ASCERTAIN THAT THE SEDIMENT AND EROSION CONTROL (E&S) BMPS ARE OPERATIONAL AND EFFECTIVE IN PREVENTING POLLUTION. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT, AND INCLUDE:
   A)A SUMMARY OF THE SITE CONDITIONS, E&S BMPS, AND COMPLIANCE; AND
   B)THE DATE, TIME, AND THE NAME OF THE PERSON CONDUCTING THE INSPECTION
   C)TURBIDITY TESTING AS REQUIRED BY THE CT DEEP CONSTRUCTION GENERAL PERMIT (NPDES)
5. THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL OR LATEST EDITION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE MUNICIPALITY AND THE PLANNING & ZONING COMMISSION. THE CONTRACTOR SHALL KEEP A COPY OF THE GUIDELINES ON-SITE FOR REFERENCE DURING CONSTRUCTION.
6. ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, SITE ENGINEER, MUNICIPALITY AND/OR THE PLANNING & ZONING COMMISSION, OR GOVERNING AGENCIES. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED.
7. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS BEFORE AND AFTER EACH STORM (0.25 INCHES OR GREATER RAINFALL), OR AT LEAST WEEKLY, TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS WHERE NECESSARY.
8. THE CONTRACTOR SHALL KEEP A SUPPLY OF SEDIMENT AND EROSION CONTROL MATERIAL (HAY BALES, SILT FENCE, JUTE MESH, RIP RAP, ETC.) ON-SITE FOR MAINTENANCE AND EMERGENCY REPAIRS.
9. PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING AT THE DRIP LINE OR AS SHOWN WITH SNOW FENCE, ORANGE SAFETY FENCE, OR EQUIVALENT FENCING. ANY LIMB TRIMMING SHOULD BE DONE BEFORE CONSTRUCTION BEGINS IN THAT AREA; FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.
10. INSTALL PERIMETER SEDIMENT AND EROSION CONTROLS PRIOR TO CLEARING OR CONSTRUCTION. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SILT FENCE UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE FENCE.
11. STONE CONSTRUCTION ENTRANCE ANTI-TRACKING PADS SHALL BE INSTALLED AT START OF CONSTRUCTION AND MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED.
12. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING. ALL EARTH STOCKPILES SHALL HAVE HAY BALES OR SILT FENCE AROUND THE LIMIT OF PILE. PILES SHALL BE TEMPORARILY SEEDED IF PILE IS TO REMAIN IN PLACE FOR MORE THAN ONE (1) MONTH.
13. SEDIMENT TRAPS SHALL PROVIDE 134 CUBIC YARDS OF SEDIMENT STORAGE PER ACRE CONTRIBUTING TO THE BASIN. PROVIDE BASIN VOLUMES FOR ALL DISTURBANCE ON SITE.
14. COMPLY WITH REQUIREMENTS OF CGS SECTION 22A 430B, FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES AND WITH CT DEEP RECORD KEEPING AND INSPECTION REQUIREMENTS.
15. STONE CONSTRUCTION ENTRANCE ANTI-TRACKING PADS SHALL BE INSTALLED PRIOR TO ANY ON SITE EXCAVATION AND SHALL BE MAINTAINED DURING ALL DEMOLITION, EXCAVATION AND CONSTRUCTION ACTIVITIES.
16. MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (ONE WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDED WITH TACKIFIER.
17. MAINTAIN EXISTING PAVED AREAS FOR CONSTRUCTION STAGING FOR AS LONG AS POSSIBLE.
18. SILT FENCE AND OTHER SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH CONTRACT DRAWINGS AND MANUFACTURER'S RECOMMENDATIONS PRIOR TO WORK IN ANY UPLAND AREAS.
19. EXCAVATED MATERIAL FROM TEMPORARY SILT TRAPS MUST BE STOCKPILED ON UPHILL SIDE OF SILT FENCE.
20. INSTALL SILT FENCE ACCORDING TO MANUFACTURER'S INSTRUCTION, PARTICULARLY, BURY LOWER EDGE OF FABRIC INTO GROUND. SILT FENCE SHALL BE TENCATE ENVIROFENCE, PROPEX GEOTEX OR EQUIVALENT APPROVED BY THE CIVIL ENGINEER. FILTER FABRIC USED SHALL BE TENCATE 140N OR 170N, OR APPROVED EQUIVALENT. SEE SPECIFICATIONS FOR FURTHER INFORMATION.
21. WHERE INDICATED ON SEDIMENT AND EROSION CONTROL PLANS USE NEW HAY/STRAW BALES AND REPLACE THEM WHENEVER THEIR CONDITION DETERIORATES BEYOND REASONABLE USABILITY. STAKE BALES SECURELY INTO GROUND AND BUTT TIGHTLY TOGETHER TO PREVENT UNDERCUTTING AND BYPASSING.
22. INSTALL TEMPORARY DIVERSION DITCHES, PLUNGE POOLS, SEDIMENT BASINS, SEDIMENT TRAPS, CONCRETE WASH PITS AND DEWATERING PITS AS SHOWN AND AS NECESSARY DURING VARIOUS PHASES OF CONSTRUCTION TO CONTROL RUNOFF UNTIL UPHILL AREAS ARE DETERMINED TO BE STABILIZED BY THE AUTHORITY HAVING JURISDICTION. LOCATION OF TEMPORARY SEDIMENT BASINS WILL REQUIRE REVIEW AND APPROVAL BY THE CIVIL ENGINEER AND AUTHORITY HAVING JURISDICTION.
23. DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE SUCH AS TEMPORARY PITS, SEDIMENT TRAP, SEDIMENT BASINS OR GRASS FILTERS WITHIN THE APPROVED LIMIT OF DISTURBANCE. DISCHARGE TO STORM DRAINAGE SYSTEM OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR.
24. BLOCK THE OPEN UPSTREAM ENDS OF DETENTION BASIN/SEDIMENT TRAP OUTLET CONTROL ORIFICE UNTIL SITE IS STABILIZED. BLOCK END OF STORM SEWERS IN EXPOSED TRENCHES WITH BOARDS AND SANDBAGS AT THE END OF EACH WORKING DAY WHEN RAIN IS EXPECTED.
25. SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. OTHER DUST CONTROL MEASURES TO BE USED AS NECESSARY INCLUDE WATERING DOWN DISTURBED AREAS, USING CALCIUM CHLORIDE, AND COVERING LOADS ON DUMP TRUCKS.
26. PERIODICALLY CHECK ACCUMULATED SEDIMENT LEVELS IN THE SEDIMENT BASINS AND SEDIMENT TRAPS DURING CONSTRUCTION AND CLEAN ACCUMULATED SILT WHEN NECESSARY OR WHEN ONE FOOT OF SEDIMENT HAS ACCUMULATED OR PER SPECIFIC CLEANOUT MARKER ELEVATION. CLEAN ACCUMULATED SEDIMENT FROM CATCH BASIN SUMPS AS NECESSARY AND AS DIRECTED BY THE CIVIL ENGINEER OR OWNER'S CONSTRUCTION REPRESENTATIVE. REMOVE ACCUMULATED SEDIMENT FROM BEHIND HAY/STRAW BALES AND SILT FENCE WHEN LEVEL REACHES HALF THE HEIGHT OF THE BALE OR ONE FOOT AT SILT FENCE. DISPOSE OF SEDIMENT LEGALLY EITHER ON OR OFF SITE.
27. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.
28. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG OR EQUIVALENT SEDIMENT REMOVAL FACILITY, OVER UNDISTURBED VEGETATED AREAS.
29. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF UTILITY AND STORM PIPE TRENCHES SO AS TO ALLOW THE TRENCH TO INTERCEPT ALL SILT LADEN RUNOFF.
30. CONTRACTOR SHALL ONLY EXCAVATE AS MUCH UTILITY AND STORM PIPE TRENCH WORK AS CAN BE COMPLETED, BACKFILLED AND STABILIZED IN ONE DAY SO AS TO LIMIT THE AMOUNT OF OPEN, DISTURBED TRENCHING.
31. ANY STOCKPILES OF STRIPPED MATERIALS ARE TO BE PERIODICALLY SPRAYED WITH WATER OR A CRUSTING AGENT TO STABILIZE POTENTIALLY WIND-BLOWN MATERIAL. HAUL ROADS BOTH INTO AND AROUND THE SITE ARE TO BE SPRAYED AS NEEDED TO SUPPRESS DUST. TRUCKS HAULING IMPORT FILL MATERIAL ARE TO BE TARPED TO AID IN THE CONTROL OF AIRBORNE DUST. DURING HIGH WIND EVENTS (20 TO 30 MPH SUSTAINED) CONSTRUCTION ACTIVITY SHALL BE LIMITED OR CEASED IF DUST CANNOT BE CONTROLLED BY WETTING.
32. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS UNLESS OTHERWISE DETERMINED BY THE AUTHORITY HAVING JURISDICTION.
33. MAINTAIN ALL PERMANENT AND TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP PARKING LOT AND REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROLS WHEN AUTHORIZED BY AUTHORITY HAVING JURISDICTION. FILE NOT (NOTICE OF TERMINATION) WITH AUTHORITY HAVING JURISDICTION RESPONSIBLE FOR REGULATING STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES PER NPDES.

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Reviewed	J.J.S.
Scale	NONE
Project No.	1800513
Date	05/28/2020
CAD File:	EC180051301

Title
SEDIMENT AND EROSION CONTROL NOTES

Sheet No.
EC-2

Xref (s): ; BD180051301 ; XY180051301 ; XC180051301 ; XY05C133801 ; XY180051302 ; XC180051302 ; XC180051304 ; ED180051301 ; XC180051303
5/28/2020, KKLOSE, G:\JOBS18\04\1800513\DWG\EC180051301.DWG,EC-2 24X36.

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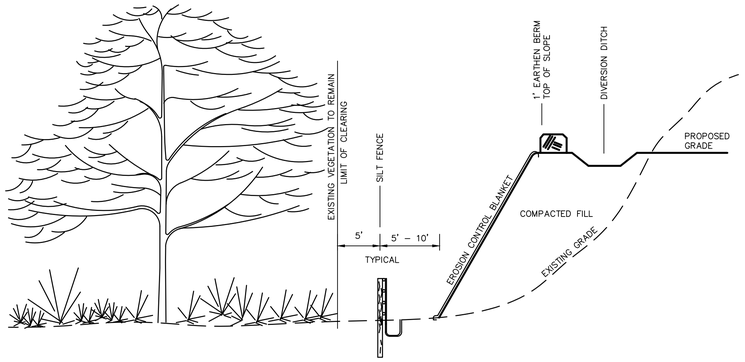
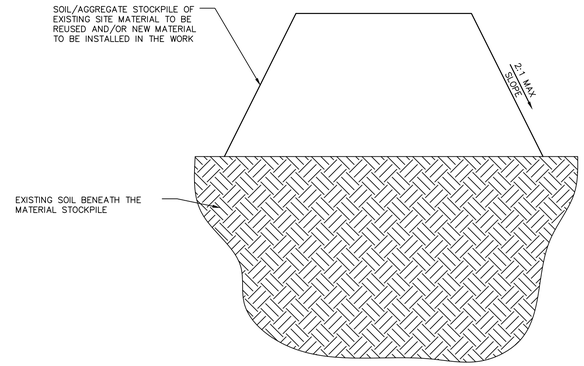
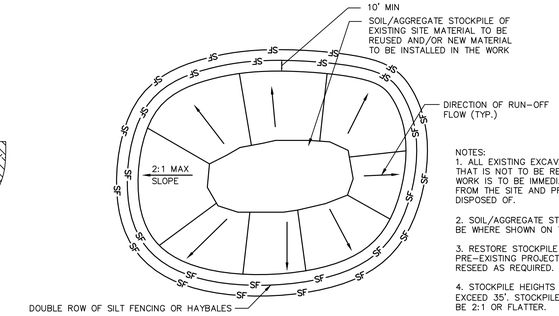


TYPICAL EROSION CONTROL ON SLOPES

N.T.S. BLEC–011





NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.

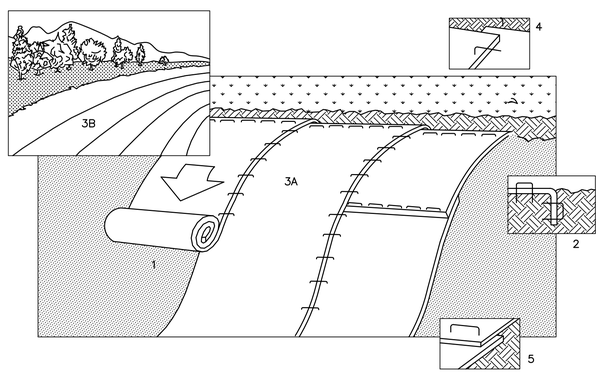
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.

3. RESTORE STOCKPILE SITES TO PRE–EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

4. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

MATERIALS STOCKPILE DETAIL

N.T.S. BLEC–006



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER,AND SEED.

2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

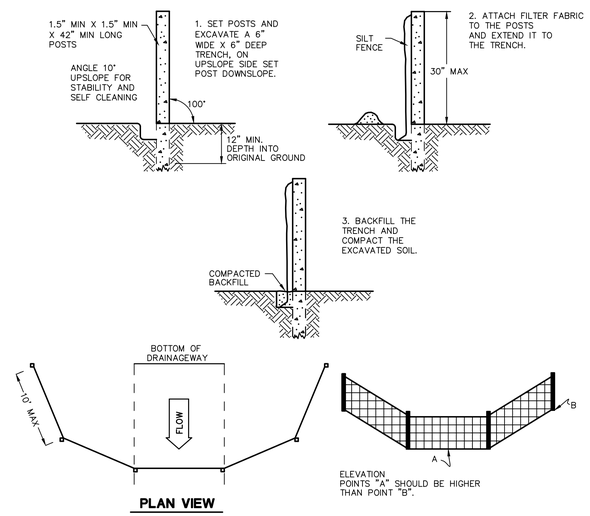
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE.

4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.

5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.

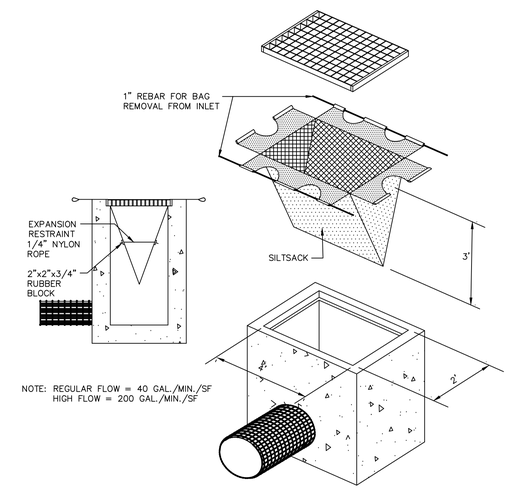
SLOPE STABILIZATION DETAIL

N.T.S. BLEC–010



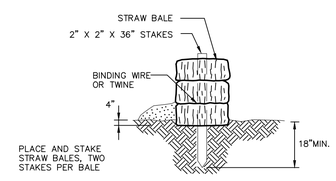
SILT FENCE BARRIER

N.T.S. CTEC–003



SILTSACK DETAIL

N.T.S. BLEC–005



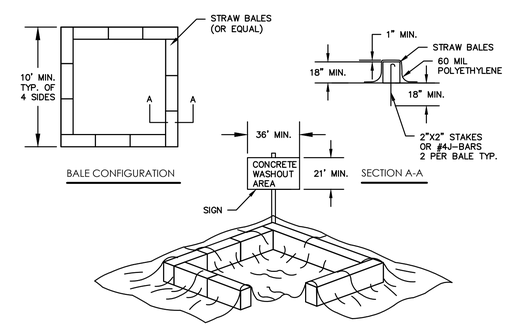
STRAW BALE BARRIERS SHOULD NOT BE USED FOR MORE THAN 3 MONTHS

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE ABOVE GROUND HEIGHT OF THE BARRIER.

ANY SECTION OF STRAW BALE BARRIER WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET.

STRAW BALE DETAIL

N.T.S. BLEC–007



CONCRETE WASH PIT

N.T.S.

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Garden Homes

ROSE EQUITIES
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STATE OF CONNECTICUT
CHRISTOPHER D. ATWOOD
No. 24799
LICENSED PROFESSIONAL ENGINEER

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS

No.	Date	Desc.

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	NONE
Project No.	1800513
Date	05/28/2020
CAD File: EC180051301	

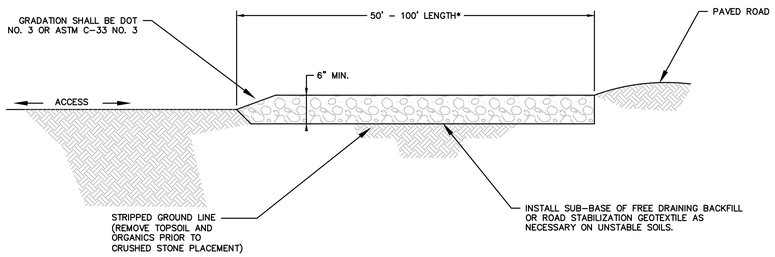
Title
SEDIMENT AND EROSION CONTROL DETAILS

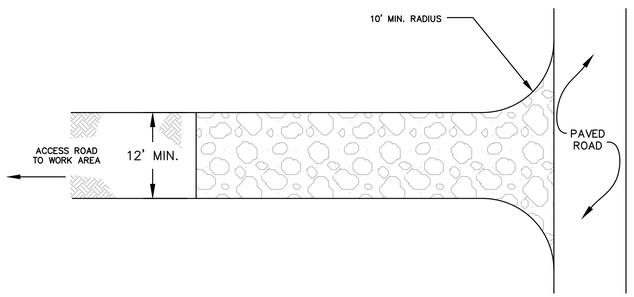
Sheet No.
EC-3

Xref (s): BD180051301; XY180051301; XC180051301; XY05C13380I; XY180051302; XC180051302; XC180051304; ED180051301; XC180051303

5/28/2020, KKLOSE, G:\CIVIL\DRAWINGS\180051301\DWG\EC-3.DWG

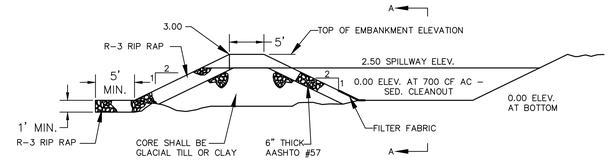
* WHERE SEDIMENTS CONTAIN LESS THAN 80% SAND, A 100 FT MINIMUM IS REQUIRED.





TYPICAL CONSTRUCTION ENTRANCE

N.T.S. CT DEEP CE-2



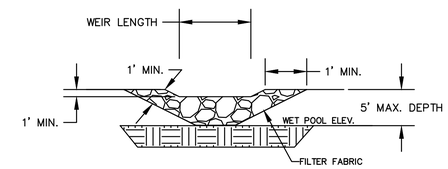
NOTE:
THE OUTLET EMBANKMENT SHELL IS TO BE ENTIRELY OF ROCK. THE DOWNSTREAM SLOPE SHOULD BE LARGER ROCK (R-3) WITH AN UPSTREAM LAYER OF SMALLER STONE (AASHTO #57)

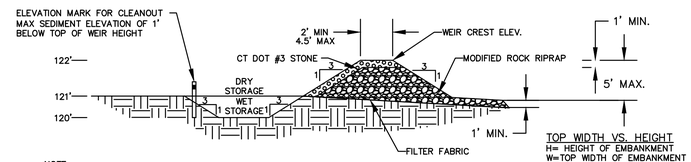
SECTION THROUGH SEDIMENT TRAP EMERGENCY SPILLWAY OUTLET

N.T.S. BLEC-004

SILTSACK DETAIL

N.T.S. BLEC-005





NOTE:
1. ALL DETAIL INFORMATION SHOULD BE USED AS A GUIDELINE. ALL TEMPORARY SEDIMENT TRAPS MUST CONFORM TO THE CT DEEP 2002 GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL.
2. THE VOLUME OF THE WET STORAGE SHALL BE AT LEAST TWICE THE VOLUME OF THE SEDIMENT STORAGE VOLUME AND SHALL BE DESIGNED TO A MINIMUM DEPTH OF 2 FEET, PER CT DEEP 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL.

TOP WIDTH VS. HEIGHT
H= HEIGHT OF EMBANKMENT
W=TOP WIDTH OF EMBANKMENT

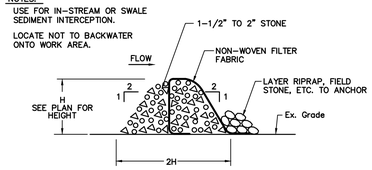
H(ft)	W (ft)
1.5	2.0
2.0	2.0
2.5	2.5
3.0	2.5
3.5	3.0
4.0	3.0
4.5	4.0
5.0	4.5

TEMPORARY SEDIMENT TRAP

N.T.S. BLEC-002

NOTES:
USE FOR IN-STREAM OR SWALE SEDIMENT INTERCEPTION.

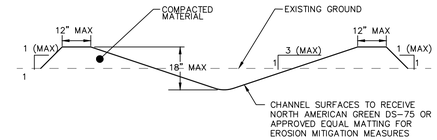
LOCATE NOT TO BACKWATER ONTO WORK AREA.



CROSS SECTION

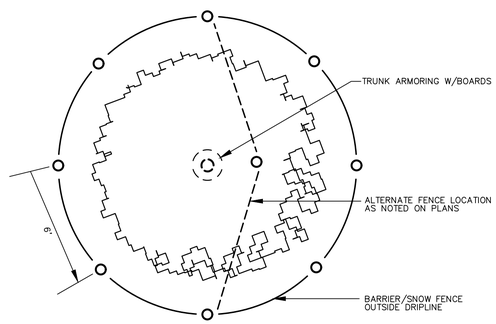
STONE CHECK DAM WITH FILTER FABRIC

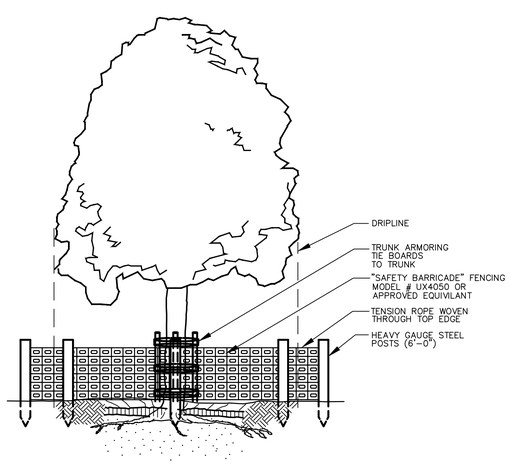
N.T.S.



NON-ENGINEERED TEMPORARY DIVERSION DITCH DETAIL

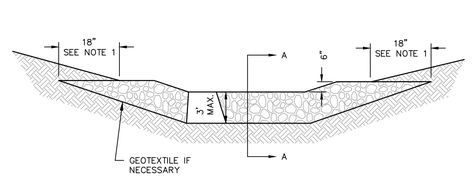
N.T.S.



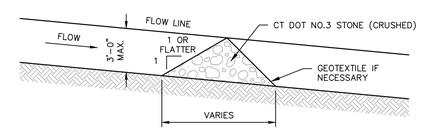


TREE PROTECTION

N.T.S. BLLD-001



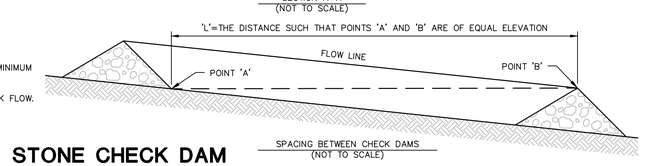
VIEW LOOKING UPSTREAM
(NOT TO SCALE)



SECTION A–A
(NOT TO SCALE)

NOTES:
1) KEY STONE INTO THE DITCH BANKS AND EXTEND INTO THE ABUTMENTS A MINIMUM OF 18" TO PREVENT FLOW FROM FLANKING THE CHECK DAM.

2) THE MINIMUM DESIGN CAPACITY SHALL CONVEY A 2 YEAR – 24 HOUR PEAK FLOW.



SPACING BETWEEN CHECK DAMS
(NOT TO SCALE)

STONE CHECK DAM INSTALLATION IN DRAINAGEWAYS

N.T.S. FIGURE SCD-2

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STATE OF CONNECTICUT
CHRISTOPHER D. ROSE
No. 24799
LICENSED PROFESSIONAL ENGINEER

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS

No.	Date	Desc.

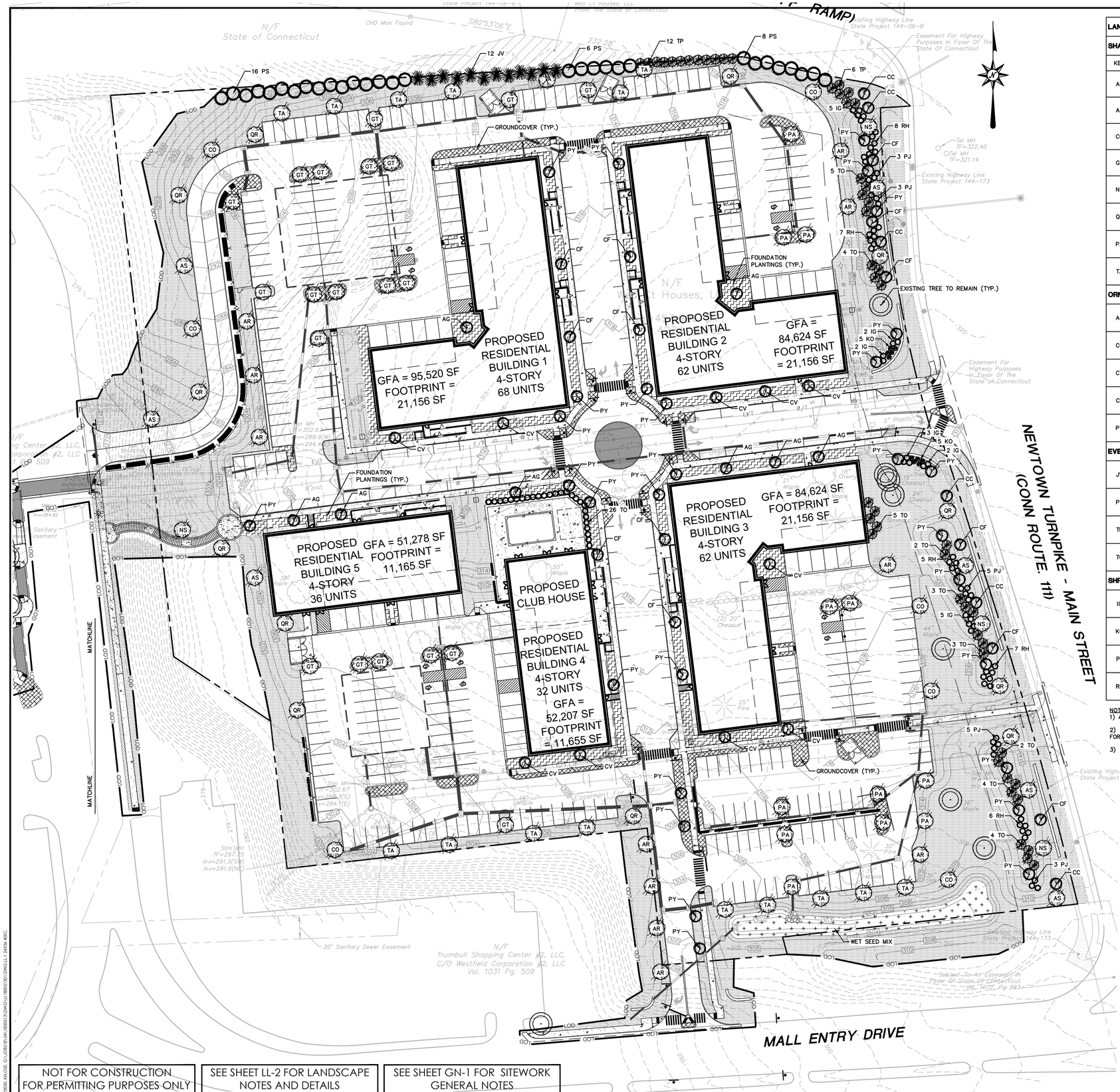
Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	NONE
Project No.	1800513
Date	05/28/2020
CAD File: EC180051301	

Title
SEDIMENT AND EROSION CONTROL DETAILS

Sheet No.
EC-4

Xref (s): : BD180051301 ; XY180051301 ; XC180051301 ; XYDSC153801 ; XY180051302 ; XC180051302 ; XC180051304 ; ED180051301 ; XC180051303

5/28/2020, EAC/DE, G:\JOBS\BRIDA\180051\DWG\EC180051301.DWG\EC-4 (LAYOUT)

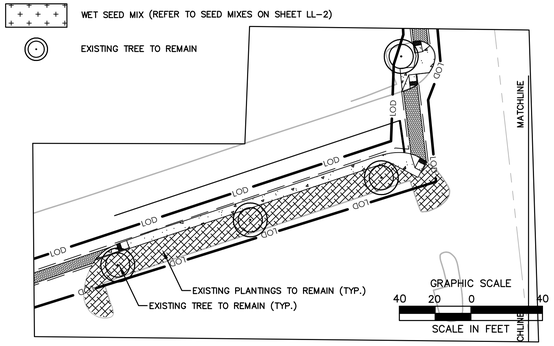


LANDSCAPE PLANT SCHEDULE						
SHADE TREES						
KEY	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	COMMENTS
AR	11	Acer rubrum 'Franksred'	RED SUNSET RED MAPLE	B&B OR CONT.	3" CAL. MIN.	6' MIN. BRANCH HT.
AS	7	Acer saccharum 'Green Mountain'	GREEN MOUNTAIN SUGAR MAPLE	B&B	3" CAL. MIN.	6' BRANCH HT. MIN.
CO	7	Celtis occidentalis	HACKBERRY	B&B	3" CAL. MIN.	6' BRANCH HT. MIN.
GT	20	Gleditsia triacanthos var. inermis 'Shademaster'	SHADEMASTER HONEYLOCUST	B&B	3" CAL. MIN.	6' BRANCH HT. MIN.
NS	6	Nyssa sylvatica	BLACK GUM	B&B	3" CAL. MIN.	6' BRANCH HT. MIN.
QR	12	Quercus rubra	RED OAK	B&B	3" CAL. MIN.	6' BRANCH HT. MIN.
PA	12	Platanus x acerifolia 'Morton's Circle'	EXCLAMATION! PLANETREE	B&B	3" CAL. MIN.	6' BRANCH HT. MIN.
TA	16	Tilia americana 'Redmond'	AMERICAN LINDEN	B&B	3" CAL. MIN.	6' BRANCH HT. MIN.
ORNAMENTAL FLOWERING TREES						
AG	8	Amelanchier x grandiflora 'Autumn Brilliance'	APPLE SERVICEBERRY	B&B	8" HT. MIN.	MULTI-STEM
CC	6	Cercis canadensis	EASTERN REDBUD	B&B	2" CAL. MIN.	5' BRANCH HT. MIN.
CV	10	Chionanthus virginicus	WHITE FRINGE TREE	B&B	2" CAL. MIN.	5' BRANCH HT. MIN.
CF	13	Cornus florida 'Cherokee Princess'	FLOWERING DOGWOOD	B&B	2" CAL. MIN.	5' BRANCH HT. MIN.
PY	30	Prunus x yedoensis 'Akebono'	YOSHINO CHERRY	B&B	2" CAL. MIN.	5' BRANCH HT. MIN.
EVERGREEN TREES						
JV	12	Juniperus virginiana 'Canaertii'	EASTERN RED CEDAR	B&B	6' HT. MIN.	PLANT 10' O.C.
PS	30	Pinus strobus	EASTERN WHITE PINE	B&B	6' HT. MIN.	PLANT 10' O.C.
TP	18	Thuja plicata 'Green Giant'	GREEN GIANT ARBORVITAE	B&B	6' HT. MIN.	PLANT 10' O.C.
TO	58	Thuja occidentalis 'Techny'	TECHNY ARBORVITAE	B&B OR CONT.	6' HT. MIN.	PLANT 6' O.C.
SHRUBS						
IG	19	Ilex glabra 'Compacta'	COMPACT INKBERRY	CONT.	30" HT. MIN.	PLANT 4' O.C.
KO	10	Rosa x 'KNOCK OUT'	KNOCK OUT ROSE	CONT.	30" HT. MIN.	PLANT 4' O.C.
PJ	19	Pieris japonica 'Mountain Fire'	MOUNTAIN FIRE ANDROMEDA	CONT.	30" HT. MIN.	PLANT 5' O.C.
RH	33	Rhododendron 'Janet Blair'	JANET BLAIR RHODODENDRON	CONT.	30" HT. MIN.	PLANT 5' O.C.

NOTES:
1) ALL SUBSTITUTIONS MUST RECEIVE APPROVAL FROM THE LANDSCAPE ARCHITECT PRIOR TO DELIVERY TO SITE.
2) PROVIDE AND INSTALL ALL PLANTS SHOWN ON THE PLANTING PLAN DRAWINGS; THE QUANTITIES IN THE PLANT LIST ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. IF DISCREPANCIES OCCUR, THE LARGER QUANTITY SHALL APPLY.
3) IF THERE IS A DISCREPANCY BETWEEN BOTANICAL AND COMMON NAME, BOTANICAL NAME PREVAILS.

LEGEND

PATTERN	DESCRIPTION
	LAWN SEED MIX (REFER TO SEED MIXES ON SHEET LL-2)
	FOUNDATION PLANTINGS
	GROUNDCOVER PLANTINGS
	WET SEED MIX (REFER TO SEED MIXES ON SHEET LL-2)
	EXISTING TREE TO REMAIN



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SEE SHEET LL-2 FOR LANDSCAPE NOTES AND DETAILS

SEE SHEET GN-1 FOR SITEWORK GENERAL NOTES

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Owner-Builders since 1949

STATE OF CONNECTICUT CHRISTOPHER D. MAYNARD No. 28789 LICENSED PROFESSIONAL ENGINEER

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

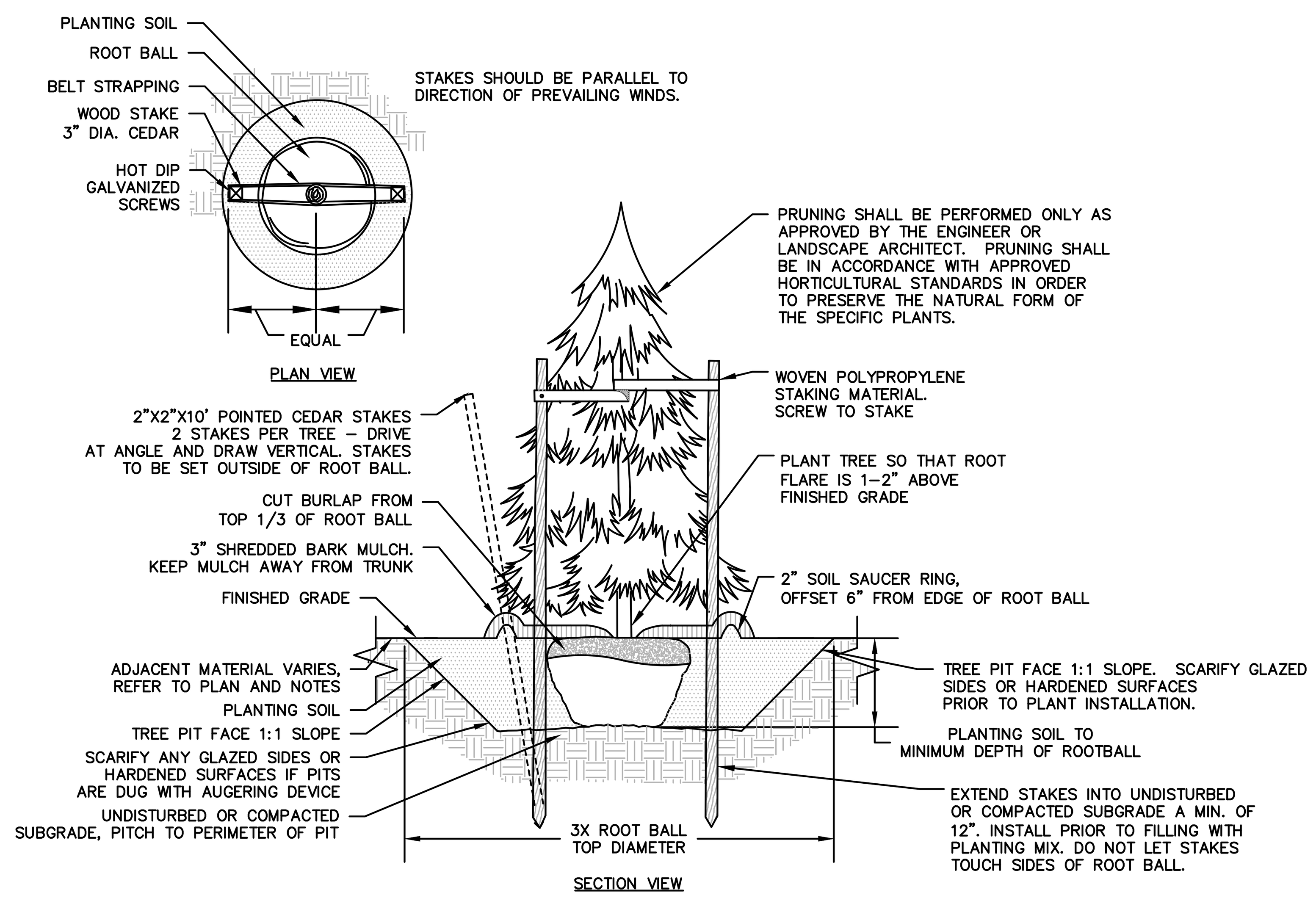
REVISIONS		
No.	Date	Desc.

Designed	L.M.W.
Drawn	L.M.W.
Reviewed	J.J.S.
Scale	1"=40'
Project No.	1800513
Date	05/28/2020
CAD File: LL180051301	

Title
LANDSCAPE PLAN

Sheet No.
LL-1

Xref (s): : TB180051301 ; XV180051301 ; XC180051301 ; XC180051302 ; XC180051303 ; XL180051301 ; XC180051301-COLOR



NOTES:
1. STAKING FOR TREES ON 4:1 SLOPES OR LESS TO BE PERFORMED AT CONTRACTOR'S DISCRETION.
2. WOVEN POLYPROPYLENE STAKING MATERIAL SHALL BE DEEPROOT ARBORTIE (GREEN) OR APPROVED EQUIVALENT. MATERIAL SHALL BE LOOPED AROUND TREE THROUGH EACH OTHER, TWISTED, AND SECURED TO THE STAKE. INSTALL SPECIFIED MATERIAL IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS.
3. BEFORE IN HOLE, REMOVE BOTTOM OF CAGE. ONCE IN HOLE, REMOVE REST OF CAGE FROM ROOT BALL. REMOVE TWINE AND BURLAP FROM TOP 1/3 OF ROOT BALL – SCORE REMAINING 2/3 OF BURLAP. IF BURLAP IS SYNTHETIC OR HAS BEEN TREATED WITH ANTI-DESSICENT, COMPLETELY REMOVE IT FROM ROOT BALL.

EVERGREEN TREE PLANTING

N.T.S

SEED MIX NOTES

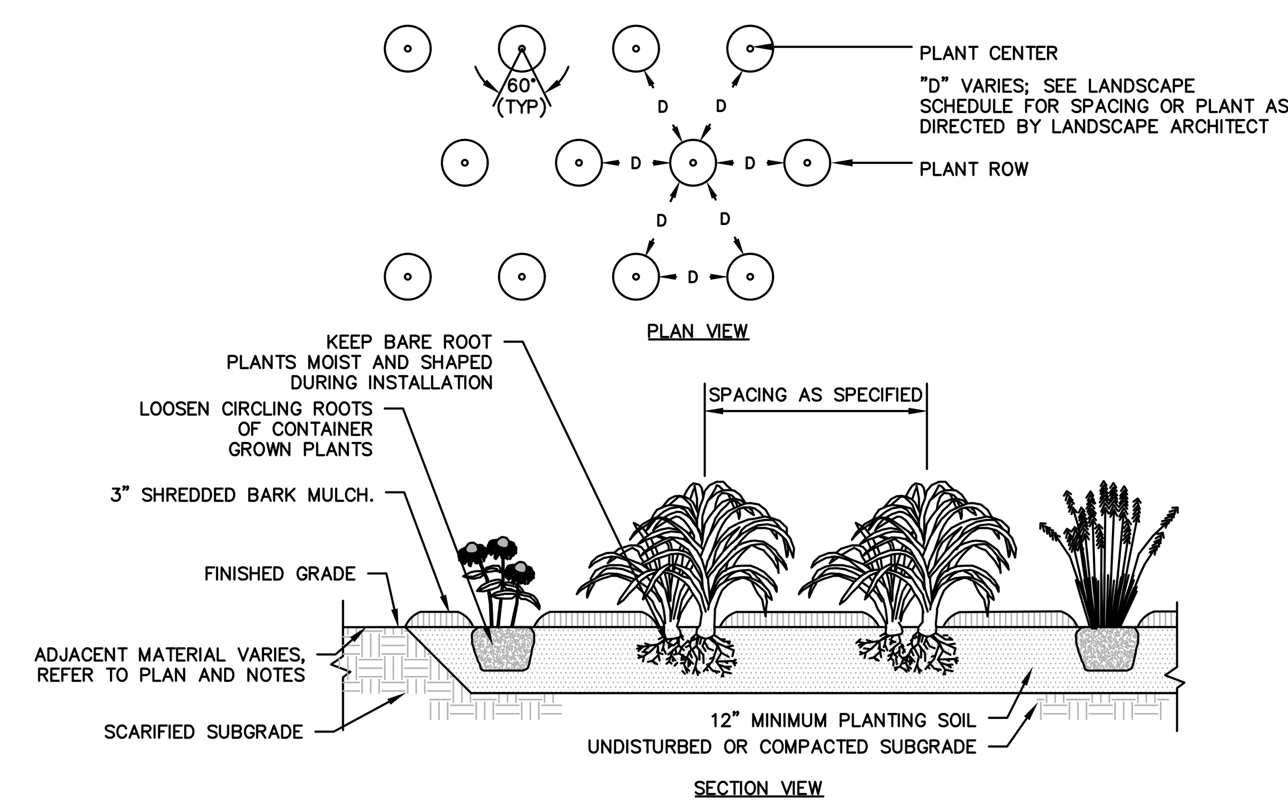
A. LAWN SEEDING MIX:
15 % PERENNIAL RYEGRASS (BLEND OF 3 IMPROVED HYBRIDS)
25 % FINE LEAF OR CREEPING FESCUE (BLEND OF 3 IMPROVED HYBRIDS)
60 % KENTUCKY BLUEGRASS (BLEND OF 3 IMPROVED HYBRIDS)
SEEDING RATE: 5 LBS/1,000 S.F.
SEEDING DATES: AUGUST 15 – OCTOBER 1 AND APRIL 15 – JUNE 30 UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.

B. WET SEED MIX –
NEW ENGLAND WETMIX (WET SEED MIX)
NEW ENGLAND WETLAND PLANTS INC. OR APPROVED EQUAL

SPECIES: FOX SEDGE (CAREX VULPINOIDEA), LURID SEDGE (CAREX LURIDA), BLUNT BROOM SEDGE (CAREX SCOPARIA), BLUE VERVAIN (VERBENA HASTATA), FOWL BLUEGRASS (POA PALUSTRUS), HOP SEDGE (CAREX LUPULINA), GREEN BULRUSH (SCIRPUS ATROVIRENS), CREEPING SPIKE RUSH (ELEOCHARIS PALUSTRIS), FRINGED SEDGE (CAREX CRINITA), SOFT RUSH (JUNCUS EFFUSUS), SPOTTED JOE PYE WEED (EUPATORIUM MACULATUM), RATTLESNAKE GRASS (GLYCERIA CANADENSIS), SWAMP ASTER (ASTER PUNICEUS), BLUEFLAG (IRIS VERSICOLOR), SWAMP MILKWEED (ASCLEPIAS INCARNATA), MONKEY FLOWER (MIMULUS RINGENS).

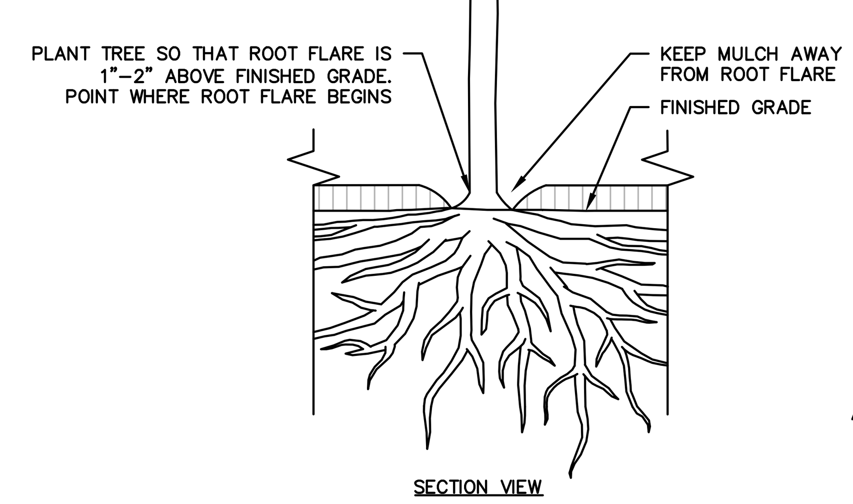
APPLICATION RATE: 20 LBS/ACRE AT STORMWATER PONDS
SEEDING DATES: AUGUST 15 – OCTOBER 1 AND APRIL 15 – JUNE 30
UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.

SEEDING DATES: AUGUST 15 – OCTOBER 1 AND APRIL 15 – JUNE 30
UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.



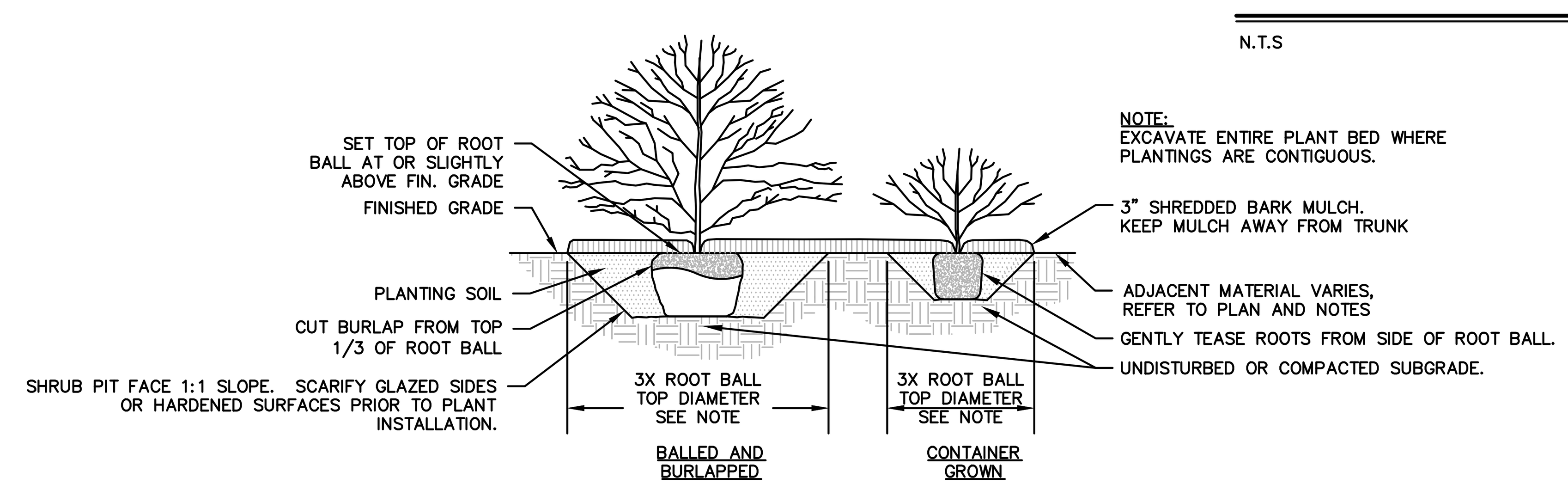
GROUNDCOVER PLANTING

N.T.S



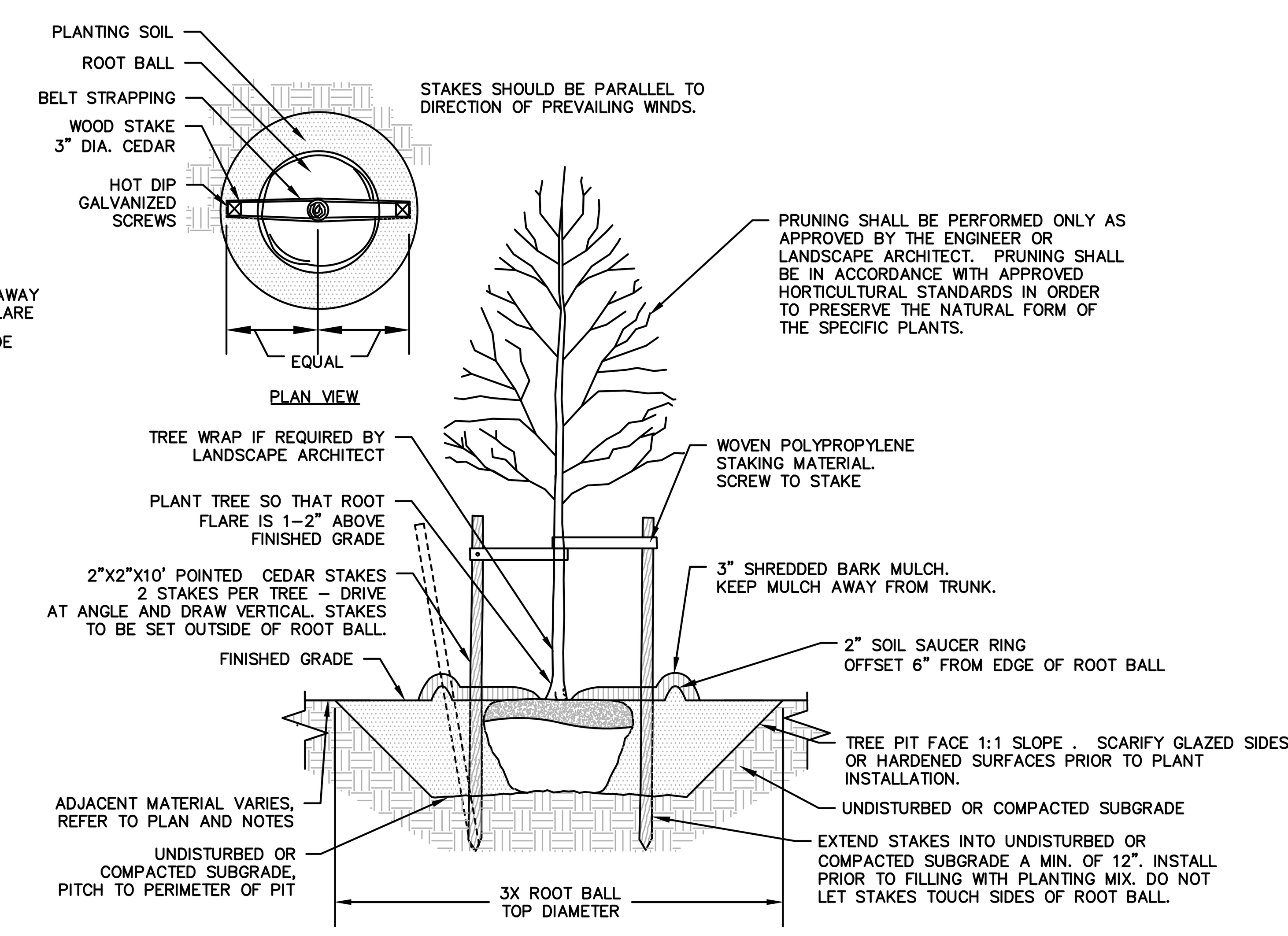
ROOT FLARE DIAGRAM

N.T.S



SHRUB PLANTING

N.T.S



NOTES:
1. STAKING FOR TREES ON 4:1 SLOPES OR LESS THAN 3" CALIPER TO BE PERFORMED AT CONTRACTORS DISCRETION.
2. WOVEN POLYPROPYLENE STAKING MATERIAL SHALL BE DEEPROOT ARBORTIE (GREEN) OR APPROVED EQUIVALENT. MATERIAL SHALL BE LOOPED AROUND TREE THROUGH EACH OTHER, TWISTED, AND SECURED TO THE STAKE. INSTALL SPECIFIED MATERIAL IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS.
3. BEFORE IN HOLE, REMOVE BOTTOM OF CAGE. ONCE IN HOLE, REMOVE REST OF CAGE FROM ROOT BALL. REMOVE TWINE AND BURLAP FROM TOP 1/3 OF ROOT BALL – SCORE REMAINING 2/3 OF BURLAP. IF BURLAP IS SYNTHETIC OR HAS BEEN TREATED WITH ANTI-DESSICANT, COMPLETELY REMOVE IT FROM ROOT BALL.

DECIDUOUS TREE PLANTING

N.T.S

LANDSCAPE NOTES

1. THE LANDSCAPE PLAN AND DETAIL SHEET ARE FOR LANDSCAPING INFORMATION ONLY. REFER TO THE OTHER PLANS FOR ALL OTHER INFORMATION.

2. COORDINATE PLANT MATERIAL LOCATIONS WITH SITE UTILITIES. UTILITY LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. EXERCISE CARE WHEN DIGGING IN AREAS OF POTENTIAL CONFLICT WITH UNDERGROUND OR OVERHEAD UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE DUE TO CONTRACTOR'S NEGLIGENCE AND SHALL REPLACE OR REPAIR ANY DAMAGE AT CONTRACTOR'S EXPENSE. PRIOR TO DIGGING AND INSTALLATION OF PLANT MATERIAL, THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" 72 HOURS BEFORE COMMENCEMENT OF WORK AT "(800)922–4455" AND VERIFY ALL UTILITY SYSTEM LOCATIONS.

3. THE LOCATIONS FOR PLANT MATERIAL ARE APPROXIMATE AND ARE SUBJECT TO FIELD ADJUSTMENT DUE TO UTILITY LOCATIONS AND SITE CONDITIONS. THE CONTRACTOR SHALL ACCURATELY STAKE OUT THE LOCATIONS FOR ALL PLANTS FOR THE REVIEW, ADJUSTMENT, AND APPROVAL BY OWNER OR LANDSCAPE ARCHITECT PRIOR TO PLANTING.

4. THE CONTRACTOR SHALL GUARANTEE THAT ALL PLANTS SHALL BE HEALTHY AND FREE OF DISEASE FOR A PERIOD OF ONE YEAR OR JUNE 1ST OF THE YEAR FOLLOWING INSTALLATION, WHICHEVER IS LONGER, AFTER SUBSTANTIAL COMPLETION AND ACCEPTANCE BY OWNER OR LANDSCAPE ARCHITECT. CONTRACTOR SHALL REPLACE ANY DEAD OR UNHEALTHY PLANTS AT CONTRACTOR'S EXPENSE. PLANT MATERIAL REPLACEMENTS SHALL BE GUARANTEED FOR ONE FULL YEAR FROM DATE OF REPLACEMENT. REPLACEMENT PLANTS SHALL BE THE SAME AS SPECIFIED FOR THE ORIGINAL PLANTING. REPLACEMENTS SHALL BE MADE AS MANY TIMES AS NECESSARY TO ENSURE HEALTHY PLANTS. FINAL ACCEPTANCE SHALL BE MADE IF ALL PLANTS MEET THE GUARANTEE REQUIREMENTS INCLUDING MAINTENANCE. MAINTENANCE RESPONSIBILITIES INCLUDE CULTIVATING, SPRAYING, WEEDING, WATERING, TIGHTENING GUYS, PRUNING, FERTILIZING, MULCHING, AND ANY OTHER OPERATIONS NECESSARY TO MAINTAIN PLANT VIABILITY. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING AND CONTINUE UNTIL THE END OF THE GUARANTEE PERIOD. DURING THE LANDSCAPE MAINTENANCE PERIOD (GUARANTEE) THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF ANY SITE CONSTRAINTS (PHYSICAL, ENVIRONMENT, ETC.) OR MAINTENANCE DEFICIENCIES THAT MAY AFFECT LANDSCAPE VEGETATION ESTABLISHMENT.

5. THE CONTRACTOR SHALL SUPPLY ALL LABOR, PLANTS, AND MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND LISTED IN THE PLANT SCHEDULE. IN THE EVENT OF A DISCREPANCY BETWEEN QUANTITIES SHOWN IN THE PLANT SCHEDULE AND THOSE REQUIRED BY THE DRAWINGS, THE LARGER SHALL APPLY. ALL PLANTS SHALL BE ACCLIMATED BY THE SUPPLY NURSERY TO THE LOCAL HARDINESS ZONE AND BE CERTIFIED THAT THE PLANTING MATERIAL HAS BEEN GROWN FOR A MINIMUM OF TWO YEARS AT THE SOURCE AND OBTAINED WITHIN 200 MILES OF PROJECT SITE UNLESS OTHERWISE APPROVED BY OWNER OR LANDSCAPE ARCHITECT.

6. PLANTS SHALL HAVE TAGS THAT IDENTIFY PLANT GENUS, SPECIES, CULTIVAR (IF APPLICABLE), PLANT COMMON NAME, NAME OF SOURCE NURSERY, AND SIZE OF PLANT FOR REVIEW OF OWNER OR LANDSCAPE ARCHITECT.

7. NO PLANT SHALL BE PLACED IN THE GROUND BEFORE ROUGH GRADING HAS BEEN COMPLETED AND APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT. STAKING THE LOCATION OF ALL TREES AND SHRUBS SHALL BE COMPLETED PRIOR TO PLANTING FOR APPROVAL BY THE OWNER OR LANDSCAPE ARCHITECT.

8. FINAL GRADES SHALL BLEND SMOOTHLY WITH EXISTING GRADES, AND TOP AND BOTTOM OF SLOPES SHALL BE ROUNDED.

9. ALL TREE AND SHRUB MASSINGS SHALL BE MULCHED TO A DEPTH OF 3". ANNUAL AND PERENNIAL BEDS SHALL BE MULCHED TO A DEPTH OF 2". MULCH SHALL BE UNCOLORED TRIPLE–SHREDDED HARDWOOD BARK MULCH, AGED AT LEAST 6 MONTHS.

10. IF TREE STAKING IS PROPOSED, TREE STAKING MUST BE COMPLETED THE SAME DAY AS THE TREE IS INSTALLED. ALL TREES SHALL BE STAKED OR GUYED PER DETAIL.

11. LANDSCAPE PLANTING AREAS MUST BE FREE DRAINING. PAVEMENT, COMPACTED SUBGRADE, DEAD OR DYING PLANT MATERIAL, BLASTED ROCK, STONES GREATER THAN 1" IN DIAMETER, AND ANY OTHER MATERIAL HARMFUL TO PLANT GROWTH AND DEVELOPMENT SHALL BE REMOVED FROM AREAS TO BE LANDSCAPED AS REQUIRED BY PLANTING DETAILS OR SPECIFICATIONS.

12. PLANTING SOIL:

DEPTH: PLANTING SOIL SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4" OR AS NOTED IN THE LANDSCAPE DETAILS. PLANTING SOIL SHALL BE UTILIZED IN ALL PLANTING AREAS INCLUDING SEEDED AREAS.

TESTING: CONTRACTOR SHALL SUBMIT (2) SOIL SAMPLES PER SOIL STOCKPILE TO A CERTIFIED TESTING LABORATORY TO DETERMINE ACIDITY, ORGANIC CONTENT, MECHANICAL ANALYSIS, AVAILABLE NUTRIENTS (N,P,K,Ca,Mg,S,Fe,Mn,Zn,Cu,B,Al,Pb) AND NECESSARY AMENDMENTS TO SOIL. THE CONTRACTOR SHALL SUBMIT THE TEST RESULTS TO THE OWNER OR LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL. TEST RESULTS SHALL RECOMMEND AMENDMENTS THAT WILL ALTER THE SOIL CHARACTERISTICS SUCH THAT THE CHARACTERISTICS DESCRIBED BELOW ARE ACHIEVED AND THE SPECIFIED PLANTS (CONTRACTOR TO PROVIDE LIST TO TESTING LABORATORY) WILL ACHIEVE PROPER GROWTH THAT IS NEITHER DEFICIENT NOR EXCESSIVE. THE CONTRACTOR SHALL INCORPORATE THESE AMENDMENTS AT NO INCREASE IN CONTRACT PRICE.

CHARACTERISTICS: PLANTING SOIL MAY CONSIST OF EXISTING ON–SITE SOILS, AMENDED ON–SITE SOILS, OR IMPORTED SOILS MEETING THE FOLLOWING CRITERIA:

A. NOT TO CONTAIN MATERIALS HARMFUL TO PLANT LIFE, TO BE CLEAN, FERTILE, FRIABLE, AND WELL DRAINING. ALL PLANTING SOIL SHALL BE FREE OF ANY SUBSOIL EARTH CLODS, SODS, STONES OVER 1" IN ANY DIMENSION, STICKS, ROOTS, WEEDS, LITTER AND OTHER DELETERIOUS MATERIAL. PLANTING SOIL SHALL BE UNIFORM IN QUALITY AND TEXTURE.
B. PLANTING SOIL SHALL HAVE THE FOLLOWING OPTIMUM RANGES UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.

ORGANIC CONTENT 3% – 6% FOR LAWN OR GRASS AREAS.
4% – 8% FOR TREE AND SHRUB PLANTERS.
8%–16% FOR RETENTION OR DETENTION BASINS.
(BY LOSS OF IGNITION AT 375 C METHOD OF TESTING)

PH 6.0 – 7.3

C. NUTRIENT LEVELS SHALL BE ACHIEVED BY THE CONTRACTOR'S ADDITION OF AMENDMENTS TO THE PLANTING SOIL TO MEET THE OPTIMUM NUTRIENT LEVELS SPECIFIED IN THE TESTING LABORATORY REPORT FOR EACH OF PLANTS TO BE INSTALLED.
D. SOIL SHALL BE COMPACTED TO A SURFACE PENETRATION RESISTANCE OF 75–125 LBS/SQ.IN.
E. SOIL MAY BE TREATED FOR WEEDS WITH PRE–EMERGENT OR POST–EMERGENT HERBICIDE, AS NEEDED AND AS APPROPRIATE FOR THE APPLICATION SEASON OR LOCATION, OR ELIMINATE GROWTH OF UNWANTED PLANT MATERIAL. APPLY HERBICIDES IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. HERBICIDE APPLICATOR MUST BE LICENSED IN THE STATE OF CONNECTICUT, AND PERFORM APPLICATIONS IN ACCORDANCE WITH LOCAL REQUIREMENTS, PERMITTING STIPULATIONS, AND ANY OTHER RESTRICTIONS INCLUDING AND IN EXCESS OF STATE AND FEDERAL REGULATIONS.
F. PROPOSED TOPSOIL SHALL MEET THE USDA SOILS TEXTURAL PERCENTAGES OF SAND, SILT, AND CLAY FOR FOLLOWING CLASSIFICATIONS:
– LOAM
– SANDY LOAM WHERE SAND DOES NOT EXCEED 70% AND CLAY IS NOT LESS THAN 5%.
– SANDY CLAY LOAM WHERE SAND DOES NOT EXCEED 70% AND CLAY IS LESS THAN 28%.
G. BIORETENTION SOILS: SOIL TO BE INSTALLED IN RETENTION BASINS, PONDS, OR OTHER STORMWATER MANAGEMENT ENVIRONS SHALL MEET THE ABOVE DESCRIBED CHARACTERISTICS AND AS FOLLOWS:
– SOIL SHALL NOT CONTAIN MORE THAN 20% CLAY AND LESS THAN 40% SILT.
– SOIL SHALL HAVE AN INFILTRATION RATE BETWEEN 1/2" AND 3" PER HOUR.
H. MODIFICATION TO THE PLANTING SOIL CHARACTERISTICS DESCRIBED ABOVE MAY BE SUBMITTED FOR APPROVAL BY THE LANDSCAPE ARCHITECT. CONTRACTOR MUST DEMONSTRATE PROPOSED CHARACTERISTICS ARE EQUAL TO OR SUPERIOR TO THE SPECIFIED CHARACTERISTICS WITH RESPECT TO SUPPORTING PLANT GROWTH, AND STORMWATER MANAGEMENT.

12. PLANTING AMENDMENTS:
APPLY FERTILIZER AND OTHER AMENDMENTS AS RECOMMENDED FOR EACH PLANTING AREA BY SOIL ANALYSIS. APPLY AMENDMENTS IN A MANNER CONSISTENT WITH MANUFACTURER'S RECOMMENDATIONS. ANY ORGANIC AMENDMENTS SHALL HAVE A pH BETWEEN 4.5 AND 5.5 UNLESS OTHERWISE RECOMMENDED.

13. PLANT REQUIREMENTS: ALL PLANTS SHALL CONFORM IN SIZE AND GRADE TO THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1 (LATEST EDITION). ALL PLANTS SHALL MEET THE ADDITIONAL REQUIREMENTS SET FORTH BELOW AND IN WRITTEN SPECIFICATIONS AS APPLICABLE. ALL TREES AND SHRUBS SHALL HAVE BEEN GROWN AT A COMMERCIAL NURSERY WITHIN 200 MILES OF THE PROJECT SITE UNLESS OTHERWISE APPROVED BY OWNER OR LANDSCAPE ARCHITECT. THEY SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY. THEY SHALL BE HEALTHY, SYMMETRICAL, EVENLY AND DENSELY BRANCHED, AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL BE FREE OF BARK INJURY, DISEASE, AND INSECT PESTS. ALL TREES SHALL HAVE A STRAIGHT TRUNK WITH A SINGLE MAIN LEADER UNLESS OTHERWISE CHARACTERISTIC OF THE SPECIES OR VARIETY. THE OWNER OR LANDSCAPE ARCHITECT WILL ALLOW SUBSTITUTIONS ONLY UPON WRITTEN APPROVAL. SIZES SHALL CONFORM TO THE MEASUREMENT SPECIFIED ON THE DRAWINGS. PLANTS LARGER THAN SPECIFIED MAY BE USED IF APPROVED, BUT THE USE OF SUCH PLANTS SHALL NOT INCREASE THE CONTRACT PRICE. ALL OVERSTORY TREES PLANTED ALONG PARKING AREAS, SIDEWALKS AND PEDESTRIAN ACCESSES SHALL NOT BRANCH BELOW 7' FEET IF THE TREE CALIPER IS 3" INCHES OR GREATER. ALL PLANT MATERIALS ARE SUBJECT TO INSPECTION AND ACCEPTANCE BY THE OWNER OR LANDSCAPE ARCHITECT AT THE NURSERY SOURCE. THE CONTRACTOR SHALL COORDINATE SOURCE VISITS WITH THE LANDSCAPE ARCHITECT AND SHALL ACCOMPANY THE OWNER AND/OR LANDSCAPE ARCHITECT FOR ALL INSPECTIONS. CERTIFICATES OF COMPLIANCE WITH SPECIFICATIONS ARE REQUIRED FOR ALL PLANTS.

14. INSPECTION AND REVIEW:
ALL PLANT MATERIAL SHALL BE SUBJECT TO INSPECTION AND ACCEPTANCE BY THE OWNER OR LANDSCAPE ARCHITECT AT THE NURSERY SOURCE OR PLACE OF GROWTH. THE CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE ARCHITECT ON A SCHEDULE FOR SOURCE VISITS AND ACCOMPANY THE OWNER OR LANDSCAPE ARCHITECT FOR ALL SOURCE INSPECTIONS. CERTIFICATES OF COMPLIANCE ARE REQUIRED FOR ALL PLANT MATERIALS.
PHOTOGRAPHIC REVIEW OF PLANT MATERIAL IS ACCEPTABLE IF APPROVED BY LANDSCAPE ARCHITECT. PHOTOGRAPHS MUST BE PROVIDED IN QUANTITY AND VARIETY TO ALLOW LANDSCAPE ARCHITECT SUFFICIENT INFORMATION TO MAKE A REASONABLE DETERMINATION AS TO THE PLANTS' QUALITY. OWNER AND LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT PLANT MATERIAL DELIVERED TO THE SITE BUT PREVIOUSLY ACCEPTED IF DAMAGED OR NOT PROPERLY MAINTAINED DURING THE DELIVERY PROCESS.

15. PLANTING SEASONS (UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT)

	SPRING	FALL
EVERGREEN TREES AND SHRUBS	APRIL 1 TO JUNE 15	SEPTEMBER 1 TO OCTOBER 15
DECIDUOUS TREES AND SHRUBS	APRIL 1 TO JUNE 15	SEPTEMBER 15 TO NOVEMBER 15
GROUNDCOVERS	APRIL 1 TO JUNE 15	SEPTEMBER 1 TO OCTOBER 15
PERENNIALS	MAY 15 TO JUNE 15	SEPTEMBER 1 TO OCTOBER 15
BULBS	N/A	SEPTEMBER 15 TO NOVEMBER 15
SEED MIXES	PER MANUFACTURERS RECOMMENDATIONS OR AS LISTED IN SEED MIX NOTES	

16. SEEDING MIXTURES: REFER TO SEED MIX NOTES. SEEDED AREA SHALL BE ACCEPTED WHEN SEED AREA ACHIEVES 90% COVERAGE.

17. ALL SLOPES 3:1 OR STEEPER RECEIVING A SEED MIX SHALL BE COVERED WITH AN EROSION CONTROL BLANKET OF STRAW FIBER AND BIODEGRADABLE OR PHOTODEGRADABLE NETTING.

18. UNLESS OTHERWISE NOTED IN DRAWING SET, NEW TREELINES SHALL EQUAL CLEARING AND GRUBBING LIMIT FOR CONSTRUCTION.

19. ALL DISTURBED AREAS NOT OTHERWISE DEVELOPED SHALL BE SEEDED WITH THE LAWN SEED MIX.

20. ALL SHADE TREE, BUFFER YARD AND OTHER LANDSCAPING INCLUDING WALLS AND FENCES REQUIRED BY LOCAL ORDINANCE OR ZONING SHALL BE PERPETUALLY MAINTAINED BY THE PROPERTY OWNER. ANY LANDSCAPING NEEDED TO MEET AN ORDINANCE OR ZONING REQUIREMENT THAT DIES, IS REMOVED, OR IS SEVERELY DAMAGED SHALL BE REPLACED BY THE CURRENT PROPERTY OWNER AS SOON AS IS PRACTICAL CONSIDERING GROWING SEASONS, WITH A MAXIMUM OF 150 DAYS.

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TRUMBULL, CONNECTICUT

REVISIONS
No. Date Desc.

Designed	L.M.W.
Drawn	L.M.W.
Reviewed	J.J.S.
Scale	NONE
Project No.	1800513
Date	05/28/2020
CAD File:	LL180051301

Title
LANDSCAPE NOTES AND DETAILS

Sheet No.
LL-2

Xref (s): ; BD180051301 ; XY180051301 ; XC180051301 ; XY05C133801 ; XY180051302 ; XC180051302 ; XC180051303 ; XL180051301 ; XC180051301-COLOR

5/28/2020, KKLOSE, G:\JOBS18\04\1800513\DWG\LL180051301.DWG,LL-2 24X36 NTS.

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GENERAL DISCLAIMER:

Calculations have been performed according to IES standards and good practice Some differences between measured values and calculated results may occur due to tolerances in calculation methods, testing procedures, component performance, measurement techniques and field conditions such as voltage and temperature variations. Input data used to generate the attached calculations such as room dimensions, reflectances, furniture and architectural elements significantly affect the lighting calculations. If the real environment conditions do not match the input data, differences will occur between measured values and calculated values.

* LLF Determined Using Current Published Lamp Data

NOTE TO REVIEWER:

Total Light Loss Factor (LLF) applied at time of design is determined by applying the Lamp Lumen Depreciation (LLD) from current lamp manufacturer's catalog, a Luminaire Dirt Depreciation Factor (LDD) based on IES recommended values and a Ballast Factor (BF) from current ballast specification sheets. Application of an incorrect Light Loss Factor (LLF) will result in forecasts of performance that will not accurately depict actual results.

For proper comparison of photometric layouts, it is essential that you insist all designers use correct Light Loss Factors.

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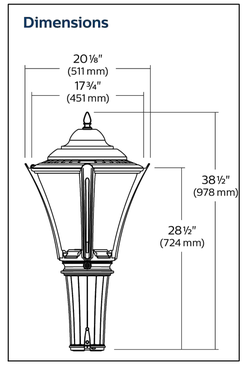
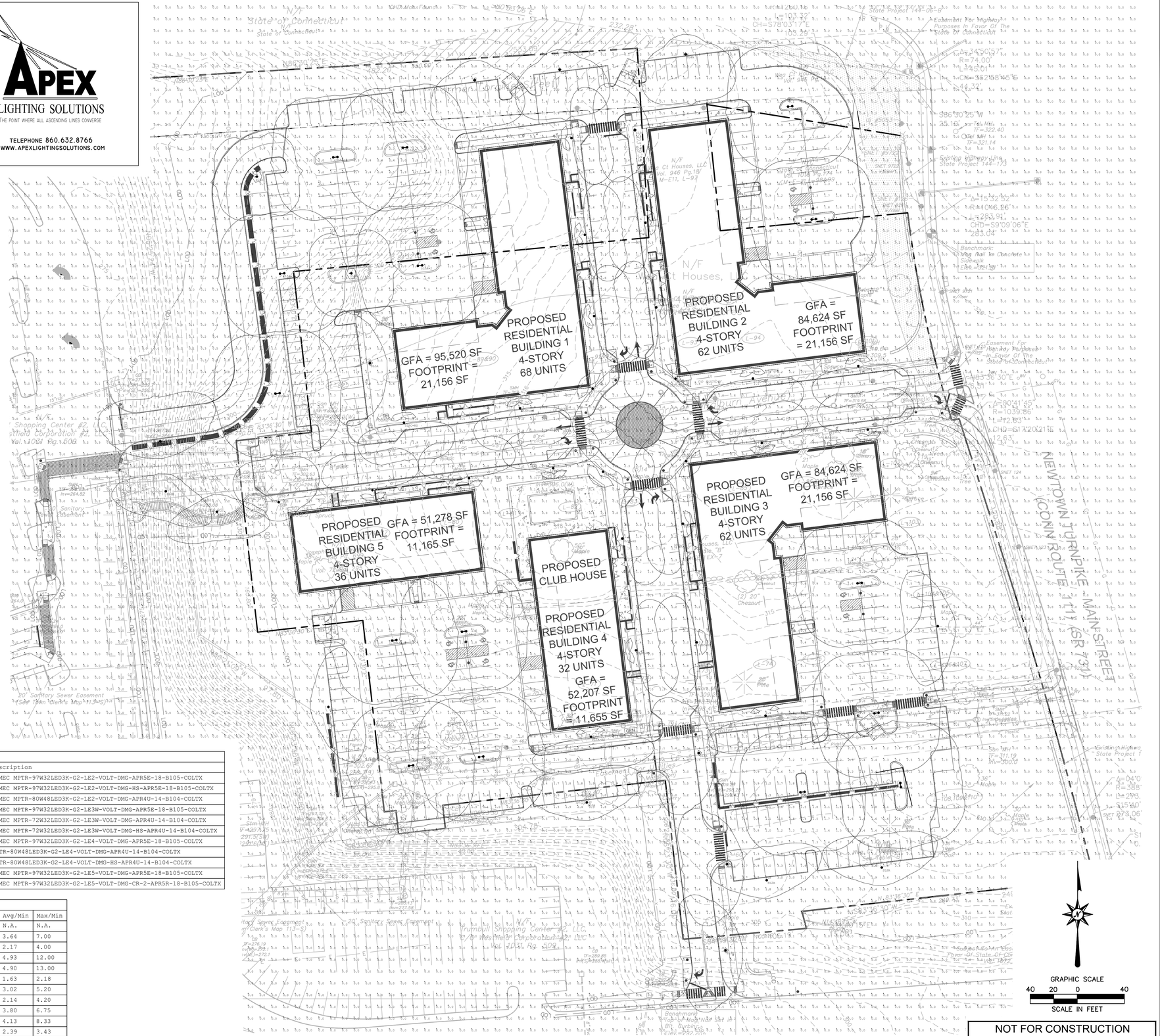


NOTES
1. LUMEC METROSCAPE FIXTURE
2. LED
3. FULL CUT-OFF FIXTURE
4. 14-18 FOOT POLE HEIGHT

TYPICAL LUMINAIRE

N.T.S



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Luminaire Schedule							
Qty	Label	Arrangement	Lumens	Input Watts	LLF	BUG Rating	Description
5	SL2A	SINGLE	7172	104.3	0.850	B1-U0-G1	LUMEC MPTR-97W32LED3K-G2-LE2-VOLT-DMG-APR5E-18-B105-COLTX
2	SL2A-H	SINGLE	5958	104.3	0.850	B1-U0-G1	LUMEC MPTR-97W32LED3K-G2-LE2-VOLT-DMG-HS-APR5E-18-B105-COLTX
2	SL2B	SINGLE	6186	81.3	0.850	B1-U0-G1	LUMEC MPTR-80W48LED3K-G2-LE2-VOLT-DMG-APR4U-14-B104-COLTX
5	SL3A	SINGLE	7353	104.3	0.850	B1-U0-G2	LUMEC MPTR-97W32LED3K-G2-LE3W-VOLT-DMG-APR5E-18-B105-COLTX
1	SL3C	SINGLE	5333	70.3	0.850	B1-U0-G2	LUMEC MPTR-72W32LED3K-G2-LE3W-VOLT-DMG-APR4U-14-B104-COLTX
18	SL3C-H	SINGLE	4510	70.3	0.850	B1-U0-G2	LUMEC MPTR-72W32LED3K-G2-LE3W-VOLT-DMG-HS-APR4U-14-B104-COLTX
3	SL4A	SINGLE	7216	104.3	0.850	B1-U0-G2	LUMEC MPTR-97W32LED3K-G2-LE4-VOLT-DMG-APR5E-18-B105-COLTX
1	SL4B	SINGLE	6224	81.3	0.850	B1-U0-G2	MPTR-80W48LED3K-G2-LE4-VOLT-DMG-APR4U-14-B104-COLTX
4	SL4B-H	SINGLE	5453	81.3	0.850	B1-U0-G2	MPTR-80W48LED3K-G2-LE4-VOLT-DMG-HS-APR4U-14-B104-COLTX
2	SL5A	SINGLE	7751	104.3	0.850	B3-U0-G2	LUMEC MPTR-97W32LED3K-G2-LE5-VOLT-DMG-APR5E-18-B105-COLTX
15	SL5A-2	BACK-BACK	7751	104.3	0.850	B3-U0-G2	LUMEC MPTR-97W32LED3K-G2-LE5-VOLT-DMG-CR-2-APR5R-18-B105-COLTX

Calculation Summary						
Label	Grid Height	Avg	Max	Min	Avg/Min	Max/Min
CalcPts_1	0	0.28	4.2	0.0	N.A.	N.A.
CONNECTOR PATH	0	2.55	4.9	0.7	3.64	7.00
EAST DRIVE LANE		1.52	2.8	0.7	2.17	4.00
LOWER LEFT PARKING LOT		1.48	3.6	0.3	4.93	12.00
LOWER RIGHT PARKING LOT		1.47	3.9	0.3	4.90	13.00
NORTH DRIVE LANE		1.79	2.4	1.1	1.63	2.18
SOUTH DRIVE LANE		1.51	2.6	0.5	3.02	5.20
UPPER LEFT DRIVE LANE		1.07	2.1	0.5	2.14	4.20
UPPER LEFT PARKING LOT		1.52	2.7	0.4	3.80	6.75
UPPER RIGHT PARKING LOT		1.24	2.5	0.3	4.13	8.33
WEST DRIVE LANE		1.67	2.4	0.7	2.39	3.43

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5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS

No.	Date	Desc.

Designed	L.M.W.
Drawn	L.M.W.
Reviewed	J.J.S.
Scale	1"=40'
Project No.	1800513
Date	05/28/2020
CAD File: LP180051301	

Title

SITE LIGHTING PLAN

Sheet No.

LP-1

5/28/2020, XREFS: C:\-OBS\BRIAN\1800513\DWG\LP180051301.DWG,LP-1,

Xref (s) : XYTOSC13360 : XC180051301 : XY180051302 : SL-1 TRUMBULL LUXURY RESIDENCES - TRUMBULL CT 04-24-2020 LED bat180051301

SITE WORK GENERAL NOTES

1. THESE PLANS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT FOR CONSTRUCTION.
2. ALL CONSTRUCTION SHALL COMPLY WITH THE PROJECT SPECIFICATION MANUAL; K&K DEVELOPER STANDARDS, MUNICIPAL STANDARDS AND SPECIFICATIONS, CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS, 2010 ADA STANDARDS, AND STATE BUILDING CODE IN THE ABOVE REFERENCED INCREASING HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
3. REFER TO OTHER PLANS BY OTHER DISCIPLINES, DETAILS AND PROJECT MANUAL FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE AND BUILDING CONDITIONS IN THE FIELD AND CONTACT THE CIVIL ENGINEER AND ARCHITECT IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS, SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE OWNER'S CONSTRUCTION MANAGER PRIOR TO BIDDING.
4. DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER AND THE LOCAL MUNICIPALITIES. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
5. THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORD DRAWINGS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES AND STORMWATER SYSTEM) TO THE OWNER AT THE END OF CONSTRUCTION.
7. THE ARCHITECT OR ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ARCHITECT AND ENGINEER HAVE NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OR TO SUPERVISE SAFETY AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
8. THE CONTRACTOR SHALL COMPLY WITH CFR 29 PART 1926 FOR EXCAVATION, TRENCHING, AND TRENCH PROTECTION REQUIREMENTS.
9. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY AND MUNICIPAL OR STATE RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UNDERGROUND AND OVERHEAD UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT CT CALL BEFORE YOU DIG (CBYD) 72 HOURS BEFORE COMMENCEMENT OF WORK AT CT (800) 922-4455 OR AT 811 AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS. THE CONTRACTOR SHALL EMPLOY THE USE OF A UTILITY LOCATING COMPANY TO PROVIDE SUBSURFACE UTILITY ENGINEERING CONSISTING OF DESIGNATING UTILITIES AND STORM PIPING ON PRIVATE PROPERTY WITHIN THE CONTRACT LIMIT AND CONSISTING OF DESIGNATING AND LOCATING WHERE PROPOSED UTILITIES AND STORM PIPING CROSS EXISTING UTILITIES AND STORM PIPING WITHIN THE CONTRACT LIMITS.
10. DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN OVER SCALED DIMENSIONS.
11. IF PLANS AND OR SPECIFICATIONS ARE IN CONFLICT, THE MOST COSTLY SHALL APPLY.
12. ALL CONTRACTORS AND SUBCONTRACTORS SHALL OBTAIN COMPLETE DRAWING PLAN SETS FOR BIDDING AND CONSTRUCTION. PLAN SETS OR PLAN SET ELECTRONIC POSTINGS SHALL NOT BE DISASSEMBLED INTO PARTIAL PLAN SETS FOR USE BY CONTRACTORS AND SUBCONTRACTORS OF INDIVIDUAL TRADES. IT SHALL BE THE CONTRACTOR'S AND SUBCONTRACTOR'S RESPONSIBILITY TO OBTAIN COMPLETE PLAN SETS OR COMPLETE PLAN SET ELECTRONIC POSTINGS FOR USE IN BIDDING AND CONSTRUCTION.
13. ALL NOTES AND DIMENSIONS DESIGNATED 'TYPICAL' APPLY TO ALL LIKE OR SIMILAR CONDITIONS THROUGHOUT THE PROJECT.
14. CONTRACTOR(S) TO TAKE AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE WORK AND BE RESPONSIBLE FOR COORDINATION OF SAME. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF WORK.
15. BL COMPANIES WILL PREPARE FINAL CONSTRUCTION DOCUMENTS SUITABLE FOR BIDDING AND CONSTRUCTION. PROGRESS SETS OF THESE DOCUMENTS ARE NOT SUITABLE FOR THOSE PURPOSES. IF CLIENT ELECTS TO SOLICIT BIDS OR ENTER INTO CONSTRUCTION CONTRACTS UTILIZING CONSTRUCTION DOCUMENTS THAT ARE NOT YET FINAL, CONSULTANT SHALL NOT BE RESPONSIBLE FOR ANY COSTS OR DELAY ARISING AS A RESULT.
16. NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.
17. THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY ZONING PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT AND OBTAIN FROM MUNICIPAL SOURCES AND STATE SOURCES ALL CONSTRUCTION PERMITS, INCLUDING ANY STATE DOT PERMITS, SEWER AND WATER CONNECTION PERMITS, AND ROADWAY CONSTRUCTION PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK EXCEPT CTDOT ENCROACHMENT PERMIT BOND.
18. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS AND MATERIALS PER PLANS AND SPECIFICATIONS TO THE OWNER AND CIVIL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
19. THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE SEDIMENT AND EROSION CONTROL NOTES SHEET.
20. THE CONTRACTOR SHALL REFERENCE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS AND CONSTRUCTION DETAILS OF BUILDING, AND THE RAISED CONCRETE SIDEWALKS, LANDINGS, RAMPS, AND STAIRS.
21. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED, EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE CIVIL ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
22. ALL SITE DIMENSIONS ARE REFERENCED TO THE FACE OF CURBS OR EDGE OF PAVING AS APPLICABLE UNLESS OTHERWISE NOTED. ALL BUILDING DIMENSIONS ARE REFERENCED TO THE OUTSIDE FACE OF THE STRUCTURE.
23. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES, TEMPORARY WALKWAYS, TRAFFIC CONTROLLERS AND UNIFORMED TRAFFIC OFFICERS AS REQUIRED OR AS ORDERED BY THE ENGINEER OR AS REQUIRED BY THE LOCAL GOVERNING AUTHORITIES OR AS REQUIRED BY PERMIT STIPULATIONS OR AS REQUIRED BY THE OWNER. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC LANES AND PEDESTRIAN WALKWAYS FOR USE AT ALL TIMES UNLESS WRITTEN APPROVAL FROM THE APPROPRIATE GOVERNING AGENCY IS GRANTED.
24. TRAFFIC CONTROL SIGNAGE SHALL CONFORM TO THE STATE DOT STANDARD DETAIL SHEETS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. SIGNS SHALL BE INSTALLED PLUMB WITH THE EDGE OF THE SIGN 2' OFF THE FACE OF THE CURB, AND WITH 7' VERTICAL CLEARANCE UNLESS OTHERWISE DETAILED OR NOTED.
25. REFER TO DETAIL SHEETS FOR PAVEMENT, CURBING, AND SIDEWALK INFORMATION.
26. THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE CONTRACT DRAWINGS.
27. THE CONTRACTOR SHALL SUBMIT A SHOP DRAWING OF THE PAVEMENT MARKING PAINT MIXTURE PRIOR TO STRIPING.
28. PAVEMENT MARKING KEY:

    4" SYDL 4" SOLID YELLOW DOUBLE LINE
    4" SYL 4" SOLID YELLOW LINE
    4" SWL 4" SOLID WHITE LINE
    12" SWSB 12" SOLID WHITE STOP BAR
    4" BWL 4" BROKEN WHITE LINE 10' STRIPE 30' SPACE

29. PARKING SPACES SHALL BE STRIPED WITH 4" SYL; HATCHED AREA SHALL BE STRIPED WITH 4"SYL AT A 45° ANGLE, 2' ON CENTER. HATCHING, SYMBOLS, AND STRIPING FOR HANDICAPPED SPACES SHALL BE PAINTED WHITE AND BLUE. OTHER MARKINGS SHALL BE PAINTED WHITE OR AS NOTED.
30. ALL PARKING SPACES AND HATCHED AREAS SHALL HAVE TWO COATS OF PAVEMENT MARKINGS APPLIED TO STRIPING.
31. PAVEMENT MARKINGS SHALL BE HOT APPLIED TYPE IN ACCORDANCE WITH STATE DOT SPECIFICATIONS, UNLESS WHERE EPOXY RESIN PAVEMENT MARKINGS ARE INDICATED.
32. THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, DRAINAGE STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, LANDSCAPED AREAS, SWALE, PAVEMENT MARKINGS, OR SIGNAGE DISTURBED DURING DEMOLITION AND/OR CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE CIVIL ENGINEER, AND TO THE SATISFACTION OF THE OWNER AND TOWN OF TRUMBULL.
33. EXISTING BOUNDARY AND TOPOGRAPHY IS BASED ON DRAWING TITLED "BOUNDARY/TOPOGRAPHIC SURVEY, LAND OF WEA CT HOUSES, LLC, NEWTOWN TURNPIKE - MAIN STREET (CONN ROUTE 111), TRUMBULL, CONNECTICUT" SCALE 1"=40', DATED 01/22/2020, BY BL COMPANIES INC.
34. ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, CIVIL ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING PROCESS.
35. CTDOT ENCROACHMENT PERMIT SHALL BE OBTAINED BY CONTRACTOR WHO SHALL PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC PROTECTION NECESSARY FOR THE WORK. THE OWNER SHALL POST CTDOT ENCROACHMENT PERMIT BOND.
36. AN EROSION CONTROL BOND MAY BE REQUIRED TO BE POSTED BY THE CONTRACTOR BEFORE THE START OF ANY ACTIVITY ON OR OFF SITE. THE AMOUNT OF THE EROSION CONTROL BOND WILL BE DETERMINED BY THE AUTHORITY HAVING JURISDICTION.
37. THE SITE IS CURRENTLY SERVICED BY PUBLIC WATER.
38. NO PART OF THE PROJECT PARCEL IS LOCATED WITHIN ANY FEMA DESIGNATED FLOOD HAZARD AREAS.
39. THERE ARE NO WETLANDS LOCATED ON THE SITE AS INDICATED BY THE NATIONAL WETLANDS INVENTORY ONLINE MAPPING.
40. THERE MAY BE EXISTING STRUCTURES ON SITE TO BE DEMOLISHED. THE CONTRACTOR SHALL SECURE THE NECESSARY PERMITS AND PAY ALL FEES AS APPLICABLE. ALL BUILDING FOOTINGS, FOUNDATION, STRUCTURES, AND BUILDING UTILITY SERVICES SHALL BE REMOVED. CAP UTILITIES AT THE MAIN IN ACCORDANCE WITH UTILITY PROVIDER REQUIREMENTS. COORDINATE WORK WITH UTILITY PROVIDERS. INSTALL TEMPORARY SHEETING AND SHORING TO PROTECT UTILITIES TO REMAIN FROM DAMAGE.
41. 12" SWSB (STOP BAR) AND 4" SYDL AND SWL PAVEMENT MARKINGS LOCATED IN DRIVEWAYS AND IN STATE HIGHWAY SHALL BE EPOXY RESIN TYPE ACCORDING TO CONNDOT SPECIFICATIONS.
42. FIRE LANES SHALL BE ESTABLISHED AND PROPERLY DESIGNATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FIRE DISTRICT FIRE MARSHAL.
43. THE CONTRACTOR SHALL REMOVE CONFLICTING PAVEMENT MARKINGS IN THE ROADWAY BY METHOD APPROVED BY THE AUTHORITY HAVING JURISDICTION OR DOT AS APPLICABLE FOR THE LOCATION OF THE WORK.
44. ALL ADA DESIGNATED PARKING STALLS, ACCESS AISLES AND PEDESTRIAN WALKWAYS SHALL CONFORM TO THE CURRENT VERSION OF THE AMERICANS WITH DISABILITIES ACT STANDARDS FOR ACCESSIBLE DESIGN AND ANSI STANDARDS AND AS MAY BE SUPERCEDED BY THE STATE BUILDING CODE.
45. CONSTRUCTION OCCURRING ON THIS SITE SHALL COMPLY WITH NFPA 241 STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION AND DEMOLITION OPERATIONS, AND OF NFPA 1 FIRE CODE.
46. CONTRACTOR SHALL SECURE ANY PERMITS, PAY ALL FEES AND PERFORM CLEARING AND GRUBBING AND DEBRIS REMOVAL PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.
47. SEDIMENT AND EROSION CONTROLS AS SHOWN ON THE SEDIMENT AND EROSION CONTROL PLAN AND/OR DEMOLITION PLAN SHALL BE INSTALLED BY THE DEMOLITION CONTRACTOR PRIOR TO START OF DEMOLITION AND CLEARING AND GRUBBING OPERATIONS.
48. REMOVE AND DISPOSE OF ANY SIDEWALKS, FENCES, STAIRS, WALLS, DEBRIS AND RUBBISH REQUIRING REMOVAL FROM THE WORK AREA IN AN APPROVED OFF SITE LANDFILL, BY AN APPROVED HAULER. HAULER SHALL COMPLY WITH ALL REGULATORY REQUIREMENTS.
49. THE CONTRACTOR SHALL SECURE ALL PERMITS FOR THE DEMOLITION AND DISPOSAL OF THE DEMOLITION MATERIAL TO BE REMOVED FROM THE SITE. THE CONTRACTOR SHALL POST BONDS AND PAY PERMIT FEES AS REQUIRED. CONTRACTOR SHALL BE RESPONSIBLE FOR PERMITS AND DISPOSAL OF ALL BUILDING DEMOLITION DEBRIS IN AN APPROVED OFF SITE LANDFILL.
50. ASBESTOS OR HAZARDOUS MATERIAL, IF FOUND ON SITE, SHALL BE REMOVED BY A LICENSED HAZARDOUS MATERIAL ABATEMENT CONTRACTOR.
51. THE CONTRACTOR SHALL PREPARE ALL MANIFEST DOCUMENTS AS REQUIRED PRIOR TO COMMENCEMENT OF DEMOLITION.
52. THE CONTRACTOR SHALL CUT AND PLUG, OR ARRANGE FOR THE APPROPRIATE UTILITY PROVIDER TO CUT AND PLUG ALL SERVICE PIPING AT THE AT THE MAIN, AS REQUIRED BY THE UTILITY PROVIDER, OR AS OTHERWISE NOTED OR SHOWN ON THE CONTRACT DRAWINGS. ALL SERVICES MAY NOT BE SHOWN ON THIS PLAN. THE CONTRACTOR SHALL INVESTIGATE THE SITE PRIOR TO BIDDING TO DETERMINE THE EXTENT OF SERVICE PIPING TO BE REMOVED, CUT OR PLUGGED. THE CONTRACTOR SHALL PAY ALL UTILITY PROVIDER FEES FOR ABANDONMENTS AND REMOVALS.
53. THE CONTRACTOR SHALL PROTECT ALL IRON PINS, MONUMENTS AND PROPERTY CORNERS DURING DEMOLITION AND CONSTRUCTION ACTIVITIES. ANY CONTRACTOR DISTURBED PINS, MONUMENTS, AND OR PROPERTY CORNERS, ETC. SHALL BE RESET BY A LICENSED LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
54. THE DEMOLITION CONTRACTOR SHALL STABILIZE THE SITE AND KEEP EROSION CONTROL MEASURES IN PLACE UNTIL THE COMPLETION OF HIS WORK OR UNTIL THE COMMENCEMENT OF WORK BY THE SITE CONTRACTOR, WHICHEVER OCCURS FIRST, AS REQUIRED OR DEEMED NECESSARY BY THE ENGINEER OR OWNER'S REPRESENTATIVE. THE SITE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE MAINTENANCE OF EXISTING EROSION AND SEDIMENTATION CONTROLS AND FOR INSTALLATION OF ANY NEW SEDIMENT AND EROSION CONTROLS AS PER THE SEDIMENT AND EROSION CONTROL PLAN, AT THAT TIME.
55. THE CONTRACTOR SHALL PUMP OUT BUILDING FUEL AND WASTE OIL TANKS (IF ANY ARE ENCOUNTERED) AND REMOVE FUEL TO AN APPROVED DISPOSAL AREA BY A LICENSED WASTE OIL HANDLING CONTRACTOR IN STRICT ACCORDANCE WITH STATE REQUIREMENTS.
56. IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT.
57. EXISTING WATER SERVICES SHALL BE DISCONNECTED AND CAPPED AT MAIN IN ACCORDANCE WITH THE REQUIREMENTS OF THE WATER UTILITY PROVIDER.
58. EXISTING SANITARY LATERAL SHALL BE PLUGGED WITH NON-SHRINK GROUT AT MAIN CONNECTION IN ACCORDANCE WITH THE SANITARY UTILITY PROVIDER REQUIREMENTS. REMOVE EXISTING LATERAL PIPING FROM SITE UNLESS OTHERWISE SHOWN ON DEMOLITION PLANS OR AS REQUIRED BY THE SANITARY UTILITY PROVIDER.
59. DOMESTIC GAS SERVICES SHALL BE CAPPED AND SERVICE LINES PURGED OF RESIDUAL GAS IN ACCORDANCE WITH THE GAS UTILITY PROVIDER REQUIREMENTS. WORK TO BE COORDINATED BY AND PAID FOR BY THE CONTRACTOR. REMOVE EXISTING SERVICE PIPING ON SITE. ANY PROPANE TANKS SHALL BE PURGED OF RESIDUAL GAS BY PROPANE SUPPLIER. CONTRACTOR SHALL COORDINATE THIS WORK AND PAY NECESSARY FEES.
60. THE CONTRACTOR SHALL PROVIDE DISCONNECT NOTIFICATION TO THE MUNICIPALITY ENGINEERING DEPARTMENT, TELECOMMUNICATIONS UTILITY PROVIDER, GAS UTILITY PROVIDER, ELECTRIC UTILITY PROVIDER, SANITARY UTILITY PROVIDER, AND WATER UTILITY PROVIDER AT LEAST THREE WEEKS PRIOR TO BEGINNING DEMOLITION.
61. THE CONTRACTOR IS RESPONSIBLE FOR SECURING A DEMOLITION PERMIT FROM THE TOWN OF TRUMBULL BUILDING DEPARTMENT AND MUST FURNISH THE REQUIRED APPLICATION MATERIAL AND PAY ALL FEES.
62. BACK FILL DEPRESSIONS, FOUNDATION HOLES AND REMOVED DRIVEWAY AREAS IN LOCATIONS NOT SUBJECT TO FURTHER EXCAVATION WITH SOIL MATERIAL APPROVED BY THE OWNER'S GEOTECHNICAL ENGINEER AND COMPACT, FERTILIZE, SEED AND MULCH DISTURBED AREAS NOT SUBJECT TO FURTHER SITE CONSTRUCTION. DEMOLISHED BUILDING FOUNDATION AREA AND BASEMENT IF PRESENT TO BE BACKFILLED WITH GRAVEL FILL OR MATERIAL SPECIFIED IN THE PROJECT GEOTECHNICAL REPORT IN LIFT THICKNESS SPECIFIED IN THE GEOTECHNICAL REPORT. COMPACT TO 95% MAX. DRY DENSITY PER ASTM D1557 AT MOISTURE CONTENT SPECIFIED IN GEOTECHNICAL REPORT AND EARTHWORK SPECIFICATION. EMPLOY WATERING EQUIPMENT FOR DUST CONTROL.
63. THE CONTRACTOR SHALL REPAIR PAVEMENTS BY INSTALLING TEMPORARY AND PERMANENT PAVEMENTS IN PUBLIC RIGHTS OF WAYS (IF APPLICABLE) AS REQUIRED BY LOCAL GOVERNING AUTHORITIES AND THE CT DOT AND PER PERMIT REQUIREMENTS DUE TO DEMOLITION AND PIPE REMOVAL ACTIVITIES.
64. NO WORK ON THIS SITE SHALL BE INITIATED BY THE CONTRACTOR UNTIL A PRE-CONSTRUCTION MEETING WITH OWNER AND THE CIVIL ENGINEER IS PERFORMED. THE CONTRACTOR SHOULD BE AWARE OF ANY SITE INFORMATION AVAILABLE SUCH AS GEOTECHNICAL AND ENVIRONMENTAL REPORTS. THE CONTRACTOR SHALL HAVE CT CALL BEFORE YOU DIG MARK OUTS OF EXISTING UTILITIES COMPLETED PRIOR TO MEETING.
65. THE CONTRACTOR SHALL ARRANGE FOR AND INSTALL TEMPORARY OR PERMANENT UTILITY CONNECTIONS WHERE INDICATED ON PLAN OR AS REQUIRED. MAINTAIN UTILITY SERVICES TO BUILDINGS OR TO SERVICES TO REMAIN. CONTRACTOR TO COORDINATE WITH UTILITY PROVIDERS FOR INSTALLATION AND PAY UTILITY PROVIDER FEES.
66. THE CONTRACTOR SHALL NOT COMMENCE DEMOLITION OR UTILITY DISCONNECTIONS UNTIL AUTHORIZED TO DO SO BY THE OWNER.
67. THE CONTRACTOR OR DEMOLITION CONTRACTOR SHALL INSTALL TEMPORARY SHEETING OR SHORING AS NECESSARY TO PROTECT EXISTING AND NEW BUILDINGS, STRUCTURES AND UTILITIES DURING CONSTRUCTION AND DEMOLITION. SHEETING OR SHORING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER, LICENSED IN THIS STATE AND EVIDENCE OF SUCH SUBMITTED TO THE OWNER PRIOR TO INSTALLATION.
68. NO SALVAGE SHALL BE PERMITTED UNLESS PAID TO THE OWNER AS A CREDIT.
69. ANY EXISTING POTABLE WELL AND ANY EXISTING SEPTIC TANKS/ABSORPTION AREAS SHALL BE ABANDONED AND REMOVED PER THE TRUMBULL HEALTH DEPARTMENT AND HEALTH CODE REQUIREMENTS.
70. THE CONTRACTOR SHALL PRESERVE EXISTING VEGETATION WHERE POSSIBLE AND/OR AS NOTED ON DRAWINGS. REFER TO SEDIMENT AND EROSION CONTROL PLAN FOR LIMIT OF DISTURBANCE AND EROSION CONTROL NOTES, SHEET.
71. TOPSOIL SHALL BE STRIPPED AND STOCKPILED ON SITE FOR USE IN FINAL LANDSCAPING.
72. FILL WITHIN FORMER BUILDING FOUNDATIONS SHALL BE CHECKED BY TEST PIT AND PROOF-ROLLING AND SHALL BE OBSERVED BY THE OWNER'S GEOTECHNICAL ENGINEER. SUBGRADE SHALL BE FORMED WITH REMOVAL AND REPLACEMENT OF FILL AND REMOVAL AND REPLACEMENT OF UNSUITABLE AND SOFT SUBGRADE MATERIAL AS REQUIRED BY THE GEOTECHNICAL ENGINEER. SEE GEOTECHNICAL REPORT AND EARTHWORK SPECIFICATIONS FOR FURTHER DESCRIPTION.
73. THE CONTRACTOR SHALL COMPACT FILL IN LIFT THICKNESS PER THE GEOTECHNICAL REPORT UNDER ALL PARKING, BUILDING, DRIVE, AND STRUCTURE AREAS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 (MODIFIED PROCTOR TEST), OR AS REQUIRED BY THE GEOTECHNICAL ENGINEER.
74. UNDERDRAINS SHALL BE ADDED, IF DETERMINED NECESSARY IN THE FIELD BY THE OWNER/GEOTECHNICAL ENGINEER, AFTER SUBGRADE IS ROUGH GRADED.
75. VERTICAL DATUM IS NGVD 29.
76. CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVED BY THE TOWN OF TRUMBULL AGENT PRIOR TO THE START OF WORK ON THE SITE.
77. PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR WETLANDS IN ACCORDANCE WITH THE REGULATIONS OF THE CT DEEP AND THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION. IN ADDITION, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE SEDIMENT AND EROSION CONTROL PLAN CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY THE LOCAL MUNICIPALITIES, OR SOIL THE PLANNING AND ZONING COMMISSION WHICH WOULD GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.
78. ALL SITE WORK, MATERIALS OF CONSTRUCTION, AND CONSTRUCTION METHODS FOR EARTHWORK AND STORM DRAINAGE WORK SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS MANUAL. OTHERWISE THIS WORK SHALL CONFORM TO THE CT STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND PROJECT GEOTECHNICAL REPORT IF THERE IS NO PROJECT SPECIFICATIONS MANUAL. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL BE PER THE ABOVE STATED APPLICABLE SPECIFICATIONS, AND/OR PROJECT GEOTECHNICAL REPORT, AND SHALL BE PLACED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. MATERIAL SHALL BE COMPACTED IN LIFT THICKNESSES PER THE PROJECT GEOTECHNICAL REPORT TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 AT MOISTURE CONTENT INDICATED IN PROJECT GEOTECHNICAL REPORT.
79. ALL DISTURBANCE INCURRED TO MUNICIPAL, AND STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE MUNICIPALITY AND STATE AS APPLICABLE FOR THE LOCATION OF THE WORK.
80. ALL CONSTRUCTION WITHIN A DOT RIGHT OF WAY SHALL COMPLY WITH ALL DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.
81. THE UTILITY PLAN DETAILS SITE INSTALLED PIPES UP TO 5' FROM THE BUILDING FACE. REFER TO ARCHITECTURAL DRAWINGS FOR BUILDING CONNECTIONS. SITE CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT.
82. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE PROPOSED SANITARY SEWERS AND WHERE PROPOSED STORM PIPING WILL CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE CIVIL ENGINEER IN THE EVENT OF ANY DISCOVERED OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED SANITARY SEWERS, STORM PIPING AND UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
83. UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY PROVIDER AND GOVERNING AUTHORITY STAFF REVIEW.
84. THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY PROVIDERS AND GOVERNING AUTHORITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY PROVIDER.
85. THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY PROVIDERS FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY PROVIDERS AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATIONS MANUAL AND/OR GENERAL CONDITIONS OF THE CONTRACT.
86. ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT. AFTER UTILITY INSTALLATION IS COMPLETED, THE CONTRACTOR SHALL INSTALL TEMPORARY AND/OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE DRAWINGS OR AS REQUIRED BY THE OWNER HAVING JURISDICTION.
87. ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
88. SANITARY LATERAL SHALL MAINTAIN (10' MIN. HORIZONTAL 1.5' VERTICAL MIN.) SEPARATION DISTANCE FROM WATER LINES, OR ADDITIONAL PROTECTION MEASURES WILL BE REQUIRED WHERE PERMITTED, WHICH SHALL INCLUDE CONCRETE ENCASEMENT OF PIPING UNLESS OTHERWISE DIRECTED BY THE UTILITY PROVIDERS AND CIVIL ENGINEER.
89. RELOCATION OF UTILITY PROVIDER FACILITIES SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY PROVIDER.
90. THE CONTRACTOR SHALL COMPACT THE PIPE BACKFILL IN 8" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED PER THE TRENCH DETAILS AND IN AREAS OF ROCK EXCAVATION. STORM DRAINAGE SYSTEM AND UTILITIES ARE TO BE INSTALLED IN 'CUT' CONDITIONS AFTER FINAL SUBGRADE HAS BEEN ESTABLISHED.
91. CONTRACTOR TO PROVIDE STEEL SLEEVES AND ANNULAR SPACE SAND FILL FOR UTILITY PIPE AND CONDUIT CONNECTIONS UNDER FOOTINGS.
92. BUILDING UTILITY PENETRATIONS AND LOCATIONS ARE SHOWN FOR THE CONTRACTOR'S INFORMATION AND SHALL BE VERIFIED WITH THE BUILDING MEP, STRUCTURAL, AND ARCHITECTURAL DRAWINGS AND WITH THE OWNER'S CONSTRUCTION MANAGER.
93. ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY PROVIDER REQUIREMENTS.
94. A ONE-FOOT MINIMUM VERTICAL CLEARANCE BETWEEN WATER, GAS, ELECTRICAL, AND TELECOMMUNICATION LINES AND STORM PIPING SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM PIPING AND SANITARY SEWER WITH A CONCRETE ENCASEMENT. AN 18-INCH TO 6-INCH VERTICAL CLEARANCE BETWEEN SANITARY SEWER PIPING AND STORM PIPING SHALL REQUIRE CONCRETE ENCASEMENT OF THE PROPOSED PIPING.
95. GRAVITY SANITARY SEWER PIPING AND PRESSURIZED WATERLINES SHALL BE LOCATED IN SEPARATE TRENCHES AT LEAST 10 FEET APART WHENEVER POSSIBLE. WHEN INSTALLED IN THE SAME TRENCH, THE WATER PIPE SHALL BE LAID ON A TRENCH BENCH AT LEAST 18 INCHES ABOVE THE TOP OF THE SANITARY SEWER PIPE AND AT LEAST 12 INCHES (PREFERABLY 18 INCHES) FROM THE SIDE OF THE SANITARY SEWER PIPE TRENCH.
96. SITE CONTRACTOR SHALL PROVIDE ALL BENDS, FITTINGS, ADAPTERS, ETC., AS REQUIRED FOR PIPE CONNECTIONS TO BUILDING STUB OUTS, INCLUDING ROOF DRAIN CONNECTIONS TO ROOF LEADERS AND TO STORM DRAINAGE SYSTEM, AND FOOTING DRAIN CONNECTIONS TO STORM DRAINAGE SYSTEM.
97. MANHOLE RIMS AND CATCH BASIN GRATES SHALL BE SET TO ELEVATIONS SHOWN. SET ALL EXISTING MANHOLE RIMS AND VALVE COVERS TO BE RAISED OR LOWERED FLUSH WITH FINAL GRADE AS NECESSARY.
98. SITE CONTRACTOR SHALL COORDINATE INSTALLATION OF CONDUIT AND CABLES FOR SITE LIGHTING WITH THE BUILDING ELECTRICAL CONTRACTOR.
99. CONTRACTOR SHALL COORDINATE INSTALLATION FOR ELECTRICAL SERVICES TO ENTRY SIGN AND SITE LIGHTING WITH THE BUILDING ELECTRICAL CONTRACTOR.
100. THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY PROVIDERS FOR WORK TO BE PERFORMED BY UTILITY PROVIDERS. THE CONTRACTOR SHALL PAY ALL UTILITY FEES UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATION MANUAL AND GENERAL CONDITIONS, AND REPAIR PAVEMENTS AS NECESSARY.
101. ELECTRIC, AND TELECOMMUNICATIONS SERVICES SHALL BE INSTALLED UNDERGROUND FROM SERVICE POLE SNET#125 AND SNET#122. THE CONTRACTOR SHALL PROVIDE AND INSTALL AND BACKFILL 4-3" PVC CONDUITS FOR TELECOMMUNICATIONS SERVICE, 2-4" PVC CONDUITS FOR ELECTRIC SERVICE PRIMARY, PVC CONDUITS FOR ELECTRICAL SECONDARY PER BUILDING ELECTRICAL PLANS, (SCHEDULE 80 UNDER PAVEMENT, SCHEDULE 40 IN NON PAVEMENT AREAS). SERVICES MAY BE INSTALLED IN A COMMON TRENCH WITH 12" CLEAR SPACE BETWEEN. MINIMUM COVER IS 36" ON ELECTRIC CONDUITS, AND 24" ON TELECOMMUNICATIONS CONDUITS. SERVICES SHALL BE MARKED WITH MAGNETIC LOCATOR TAPE AND SHALL BE BEDDED, INSTALLED, AND BACKFILLED IN ACCORDANCE WITH ELECTRIC UTILITY PROVIDER, AND TELECOMMUNICATIONS COMPANY STANDARDS. GALVANIZED STEEL ELECTRICAL CONDUIT SHALL BE USED AT POLE AND TRANSFORMER LOCATIONS. INSTALL HANDHOLES AS REQUIRED TO FACILITATE INSTALLATION AND AS REQUIRED BY UTILITY PROVIDER. INSTALL TRAFFIC LOAD QUALIFIED HANDHOLES IN VEHICULAR AREAS. INSTALL CONCRETE ENCASEMENT ON PRIMARY ELECTRIC CONDUITS IF REQUIRED BY ELECTRIC UTILITY PROVIDER.
102. ALL WATER LINES TO HAVE A MINIMUM COVER OF 4 FEET. ALL LINES SHALL BE BEDDED IN 6" SAND AND INITIALLY BACKFILLED WITH 12" SAND.
103. ALL WATER MAINS, WATER SERVICES AND SANITARY SEWER LATERALS SHALL CONFORM TO THE APPLICABLE WATER UTILITY PROVIDER SPECIFICATIONS, AND TO THE APPLICABLE SANITARY SEWER PROVIDER SPECIFICATIONS, AS WELL AS TO OTHER APPLICABLE INDUSTRY CODES (AWWA) AND PROJECT SPECIFICATIONS FOR POTABLE WATER SYSTEMS, AND FOR SANITARY SEWER SYSTEMS.
104. THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED TO DISCONNECT BY THE OWNERS, THE CIVIL ENGINEER, UTILITY PROVIDERS AND GOVERNING AUTHORITIES.
105. THE CONTRACTOR MAY SUBSTITUTE MASONRY STRUCTURES FOR PRECAST STRUCTURES IF APPROVED BY THE CIVIL ENGINEER AND ALLOWED BY THE GOVERNING AUTHORITY ENGINEER OR OTHER GOVERNING AUTHORITY.
106. PIPING SHALL BE LAID FROM DOWNGRADIENT END OF PIPE RUN IN AN UPGRADIENT DIRECTION WITH BELL END FACING UPGRADE IN THE DIRECTION OF PIPE LAYING.
107. POLYVINYL CHLORIDE PIPE (PVCP) FOR STORM PIPING SHALL HAVE BUILT-IN RUBBER GASKET JOINTS. PVCP SHALL CONFORM TO ASTM D-3034 (SDR35) WITH COMPRESSION JOINTS AND MOLDED FITTINGS. PVCP SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS; ASTM-D2321 AND MANUFACTURERS RECOMMENDED PROCEDURE.
108. ALL RCP SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-76; ALL RCP SHALL BE CLASS IV UNLESS OTHERWISE SHOWN. JOINTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-443.
109. MANHOLE SECTIONS AND CONSTRUCTION SHALL CONFORM TO ASTM C-478.
110. HIGH DENSITY POLYETHYLENE (HDPE) STORM SEWER 12" OR GREATER IN DIAMETER SHALL BE N 12 WT PIPE AS MANUFACTURED BY ADS OR APPROVED EQUAL. HDPE PIPE SHALL HAVE SMOOTH INTERIOR AND CORRUGATED EXTERIOR AND SHALL MEET THE REQUIREMENTS OF AASHTO M294, TYPE S. PIPE SECTIONS SHALL BE JOINED WITH BELL-AND-SPIGOT JOINT MEETING THE REQUIREMENTS OF AASHTO M294. THE BELL SHALL BE AN INTEGRAL PART OF THE PIPE AND PROVIDE A MINIMUM PULL-APART STRENGTH OF 400 POUNDS. THE JOINT SHALL BE WATERTIGHT ACCORDING TO THE REQUIREMENTS OF ASTM D3212. GASKETS SHALL BE MADE OF POLYISOPRENE MEETING THE REQUIREMENTS OF ASTM F477. ALTERNATIVE HDPE PIPE MAY BE USED IF APPROVED BY THE ENGINEER AND OWNER'S CONSTRUCTION MANAGER PRIOR TO ORDERING.
111. HIGH DENSITY POLYETHYLENE (HDPE) STORM SEWER LESS THAN 12" IN DIAMETER SHALL BE N12 AS MANUFACTURED BY ADS OR APPROVED EQUAL. HDPE PIPE SHALL HAVE SMOOTH INTERIOR AND CORRUGATED EXTERIOR AND SHALL MEET THE REQUIREMENTS OF AASHTO 252, TYPE S. PIPE SECTIONS SHALL BE JOINED WITH COUPLING BANDS OR EXTERNAL SNAP COUPLERS COVERING AT LEAST 2 FULL CORRUGATIONS ON EACH END OF THE PIPE. SOIL-TIGHT (GASKET) CONNECTIONS SHALL INCORPORATE A CLOSED SYNTHETIC EXPANDED RUBBER GASKET. MEETING THE REQUIREMENTS OF ASTM F477. GASKETS SHALL BE INSTALLED ON THE CONNECTION BY THE PIPE MANUFACTURER. WATERTIGHT PIPE SHALL BE ADS N12 WT OR APPROVED EQUAL. ALTERNATIVE HDPE PIPE MAY BE USED IF APPROVED BY THE ENGINEER AND OWNER'S CONSTRUCTION MANAGER PRIOR TO ORDERING.
112. COPPER PIPE SHALL BE TYPE K TUBING WITH COMPRESSION FITTINGS.
113. GAS PIPE MATERIAL SHALL BE PER GAS COMPANY REQUIREMENTS.
114. POLYVINYL CHLORIDE PIPE (PVCP) FOR SANITARY PIPING SHALL HAVE BUILT-IN RUBBER GASKET JOINTS. PVCP SHALL CONFORM TO ASTM D3034 (SDR35) WITH COMPRESSION JOINTS AND MOLDED FITTINGS. PVCP SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS, ASTM D2321 AND MANUFACTURER'S RECOMMENDED PROCEDURE.
115. DUCTILE IRON PIPE SHALL CONFORM TO AWWA C151 FOR CLASS 52 WITH CEMENT LINING IN ACCORDANCE WITH ANSI A21.4 FOR WATER MAINS AND SERVICES 3" ID AND LARGER. JOINTS SHALL BE MADE WITH CONCRETE THRUST BLOCKS OR WITH MEGAULUG RETAINER GLANDS OR WITH RODDING IN ACCORDANCE WITH PROJECT MANUAL SPECIFICATIONS AND IN ACCORDANCE WITH WATER UTILITY PROVIDER REQUIREMENTS TO EXTEND A MINIMUM OF 2 PIPE LENGTHS IN EITHER DIRECTION FROM FITTINGS AND ELBOWS (40 FT MINIMUM). ALL OTHER JOINTS SHALL BE PUSH-ON WITH RUBBER GASKETS (TYTON). USE OF OTHER TYPES OF RETAINER GLANDS SHALL REQUIRE USE WITH CLASS 53 OR GREATER DUCTILE IRON PIPE.

DEFINITIONS

MUNICIPALITY SHALL MEAN TOWN OF TRUMBULL

COUNTY SHALL MEAN FAIRFIELD COUNTY

STATE SHALL MEAN STATE OF CONNECTICUT

WATER UTILITY PROVIDER SHALL MEAN AQUARION WATER COMPANY

SANITARY UTILITY PROVIDER SHALL MEAN THE TOWN OF TRUMBULL WATER POLLUTION CONTROL AUTHORITY

GAS UTILITY PROVIDER SHALL MEAN SOUTHERN CONNECTICUT GAS

TELECOMMUNICATIONS UTILITY PROVIDER SHALL MEAN CHARTER

ELECTRIC UTILITY PROVIDER SHALL MEAN UNITED ILLUMINATING COMPANY

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K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS
No. Date Desc.

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	NONE
Project No.	1800513
Date	05/28/2020
CAD File: GN180051301	

Title
GENERAL NOTES

Sheet No.
GN-1

Xref (s): : BD180051301

5/28/2020, KKLOSE, G:\JOBS18\04\1800513\DWG\GN180051301.DWG,GN-1 24X36.

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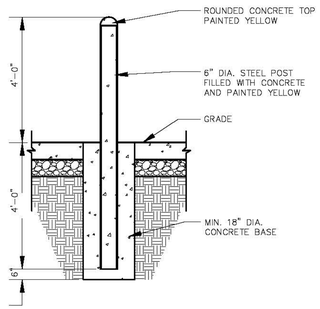
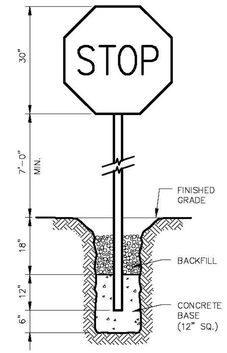


PROTECTIVE POST (BOLLARD) DETAIL

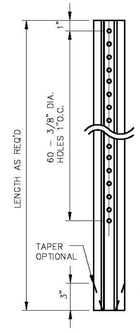
N.T.S. BLSE-005



NOTE:
CONSTRUCT SIGN IN ACCORDANCE WITH DOT SPECIFICATIONS.

TYPICAL SIGN MOUNTING

N.T.S.

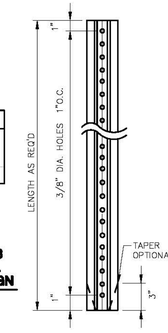


DETAIL A HOLE LOCATION

WT.	A	B	C
3 LB. OR 3 LB.	1-5/8"	1-3/4"	3-1/2"
4 LB.	1-5/8"	1-3/4"	3-1/2"

DETAIL A TYPICAL METAL SIGN

DETAIL B TYPICAL METAL SIGN



DETAIL B HOLE LOCATION

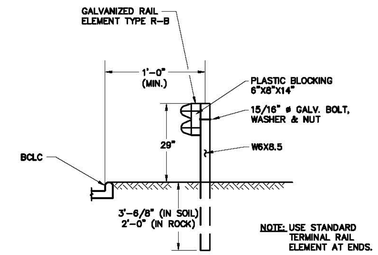
NOTES:
STEEL FOR POSTS SHALL CONFORM TO THE MECHANICAL REQUIREMENTS OF ASTM A 499-81 GRADE 60 AND TO THE CHEMICAL REQUIREMENTS OF ASTM AI-78 CARBON STEEL TEE RAIL HAVING NOMINAL WEIGHT OF "51 LBS OR GREATER PER LINEAR YARD.

AFTER FABRICATION ALL STEEL POSTS SHALL BE GALVANIZED TO MEET THE REQUIREMENTS OF ASTM A-123.

SIGN MOUNTING HEIGHT TO BE APPROVED BY THE ENGINEER.

TYPICAL METAL SIGN POSTS

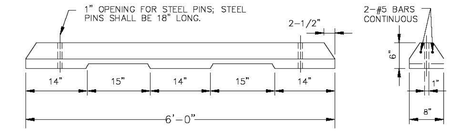
N.T.S. BLSD-001



NOTE: USE STANDARD TERMINAL RAIL ELEMENT AT ENDS.

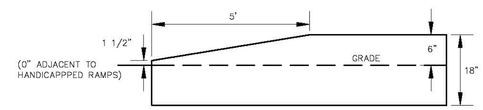
RB-350 METAL BEAM RAIL

N.T.S. ZGR-004



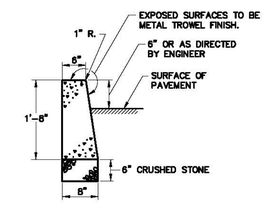
CONCRETE CURB STOP

N.T.S. BLPC-001



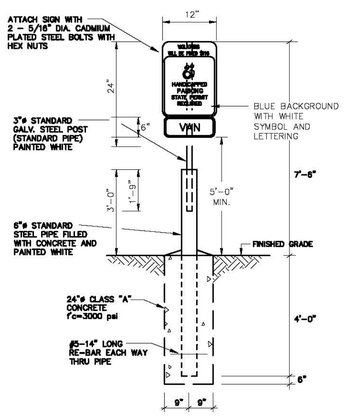
TRANSITION CURB

N.T.S.



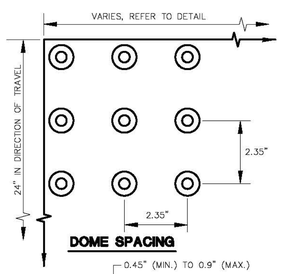
CONCRETE CURB DETAIL

N.T.S. ZPC-014

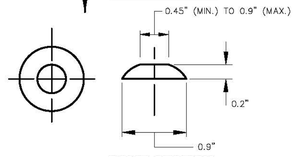


HANDICAP SIGN BOLLARD DETAIL

N.T.S.



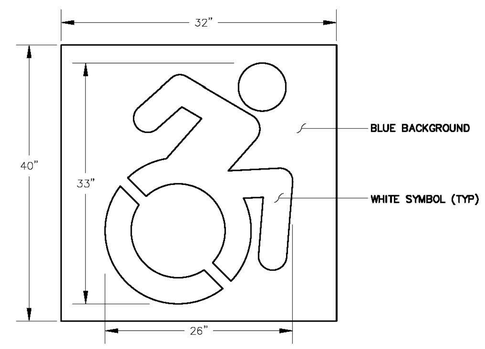
DOME SPACING



DOME SECTION

DETECTABLE WARNING

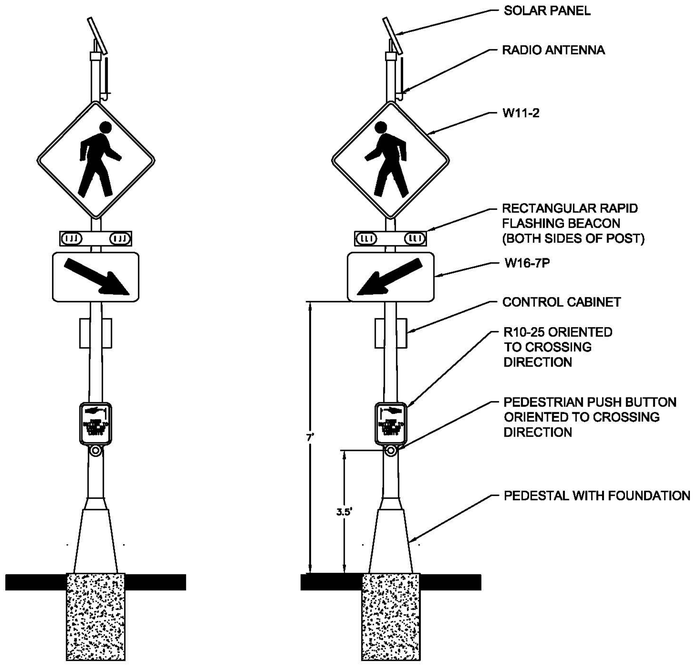
N.T.S.



NOTE: HANDICAP SYMBOL TO ADHERE TO STATE BUILDING CODE, LATEST EDITION

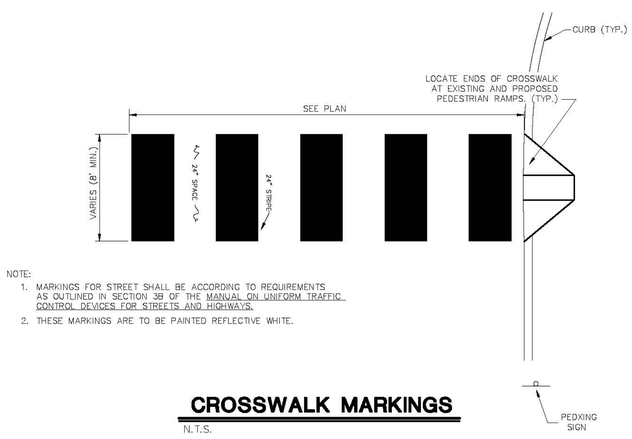
CONNECTICUT SYMBOL OF ACCESSIBILITY

N.T.S.



RECTANGULAR RAPID FLASHING BEACON

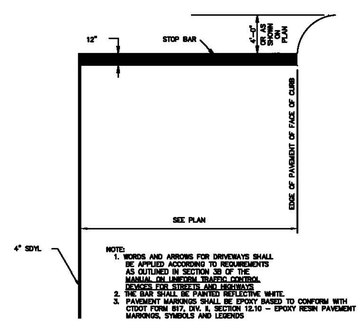
N.T.S.



NOTE:
1. MARKINGS FOR STREET SHALL BE ACCORDING TO REQUIREMENTS AS OUTLINED IN SECTION 3B OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.
2. THESE MARKINGS ARE TO BE PAINTED REFLECTIVE WHITE.

CROSSWALK MARKINGS

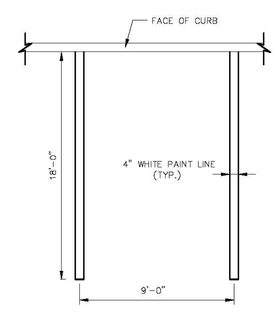
N.T.S.



NOTE:
1. WORDS AND ARROWS FOR DRIVEWAYS SHALL BE APPLIED ACCORDING TO REQUIREMENTS AS OUTLINED IN SECTION 3B OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS
2. THE BAR SHALL BE PAINTED REFLECTIVE WHITE.
3. PAVEMENT MARKINGS SHALL BE EPOXY BASED TO CONFORM WITH CTDOT FORM 817, DIV. 1, SECTION 12.10 – EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS

STOP BAR PAVEMENT MARKING

N.T.S.



NOTE:
1. PROVIDE 2 COATS OF PAINT ON ALL SURFACES.
2. SEE PLAN FOR ACTUAL SPACE LOCATION AND DIMENSIONS.

TYPICAL PARKING SPACE DETAIL

N.T.S. BLPC-003

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K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS

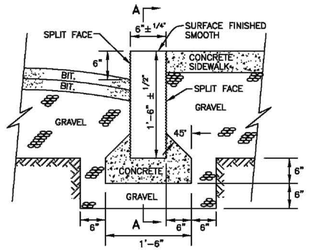
No.	Date	Desc.

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	NONE
Project No.	1800513
Date	05/28/2020
CAD File: DN180051301	

Title
DETAILS SHEET

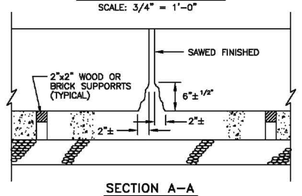
Sheet No.
DN-1

Xref (s) : BD180051301

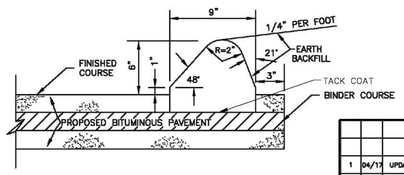


GRANITE STONE CURB

SCALE: 3/4" = 1'-0"

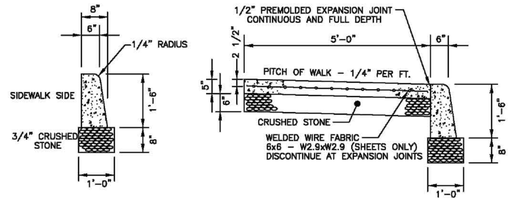


SECTION A–A



BITUMINOUS CONCRETE LIP CURBING

MACHINED FORMED

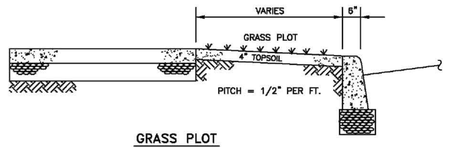


NOTE: A 1/8" STEEL DIVISION PLATE SHALL BE PLACED AT EVERY 10 FEET OF CURBING & REMOVED AFTER CONCRETE HAS SET. A 1/2" APPROVED BITUMINOUS JOINT SHALL BE PLACED AT A MAX. OF EVERY 20 FEET COINCIDING WITH EXPANSION JOINT IN SIDEWALK

CONTRACTOR TO CONSTRUCT 2" BATTER ON CONCRETE CURBING (STREET SIDE ONLY)

STANDARD CURB & SIDEWALK

SCALE: 1/2" = 1'-0"



GRASS PLOT

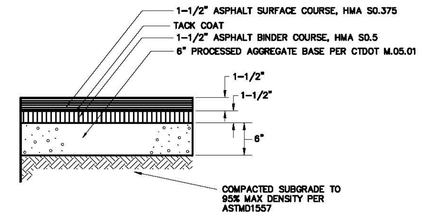
NOTES:
1. ALL REINFORCING SHALL BE SUPPORTED ON CHAIRS OR OTHER POSITIVE TYPE SUPPORTS APPROXIMATELY ONE PER 25 SQ.FT.
2. CONCRETE SHALL BE CLASS "C" CEMENT TYPE II, 3000 PSI
3. AIR ENTRAINMENT SHALL BE BETWEEN 6 – 7%.

NO.	DATE	DESCIPTION	CK.
1	04/13	UPDATED DETAILS	FS

REVISIONS

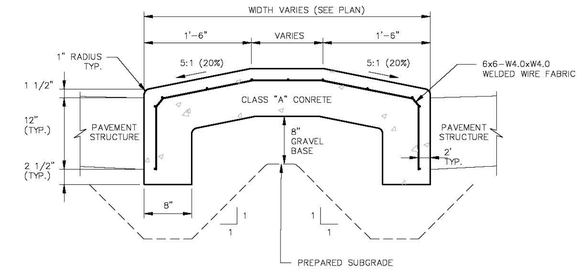
TOWN OF TRUMBULL
ENGINEERING DEPARTMENT
SKETCHES & CALCULATIONS

Project No. & Name STANDARDS
Subject SIDEWALKS & CURBING
Made by FMS Date 8/13/14
Chk. by FMS Date 8/13/14
SW–1 Sheet No. 1 of 2



STANDARD DUTY BITUMINOUS CONCRETE PAVEMENT STRUCTURE

N.T.S. ZPC–029

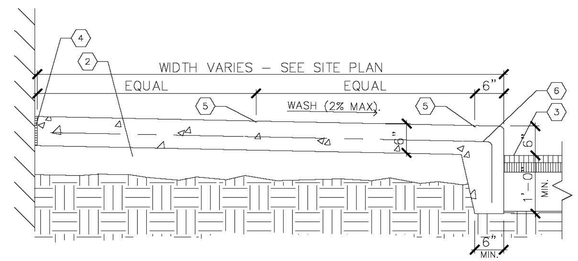


NOTES:
1. MAINTAIN 1'–6" WIDE SLOPED CONCRETE ALL AROUND ISLAND INCLUDING AT ISLAND NOSES (ENDS).

2. INSTALL PREFORMED EXPANSION JOINT FILLER MATERIAL TRANSVERSE TO ISLAND AT 30' O.C.

MOUNTABLE CONCRETE ISLAND

N.T.S. CTPC–013



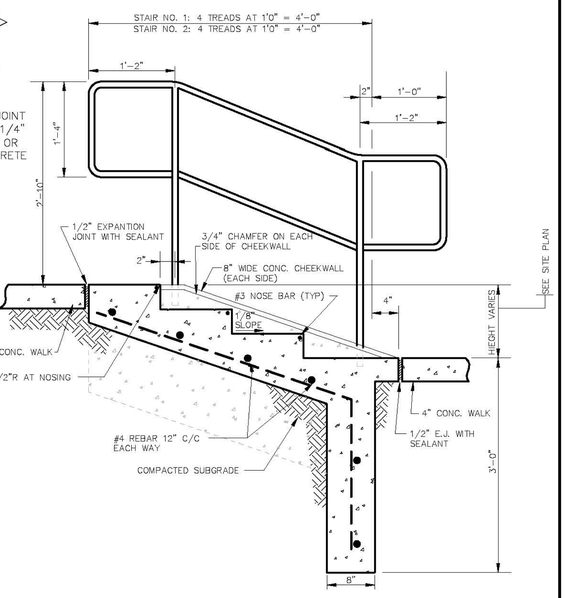
KEYED NOTES

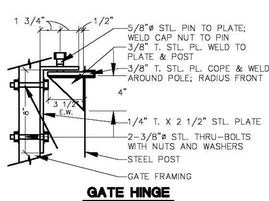
1. N/A
2. 4" COMPACTED GRAVEL BASE
3. PAVEMENT.
4. COMPRESSIBLE FILLER (3/4" MAXIMUM). CUT BACK AND PROVIDE SEALANT, TYPICAL, AT ALL JOINTS WITH FILLER.
5. 1/4" TOOLED JOINT
6. 6" X 6" W 2.1X2.1

NOTE: EXPANSION JOINT 20' O.C. MAXIMUM. 1/4" TOOL JOINT 4' O.C. OR AS DIRECTED. CONCRETE TO BE 4000 P.S.I.

MONOLITHIC CONCRETE CURB AND SIDEWALK DETAIL (ONSITE)

N.T.S. WAG

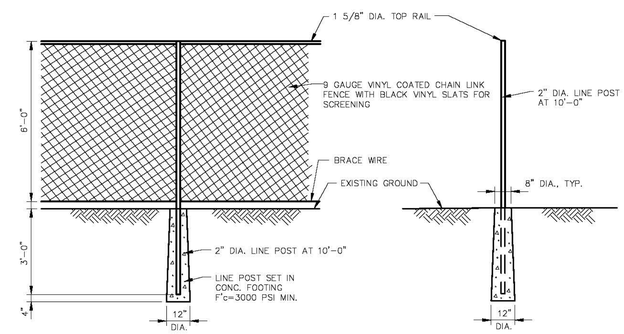




GATE HINGE

TRASH ENCLOSURE GATE (HALF SECTION)

N.T.S. BLSE–001



FRONT VIEW SIDE VIEW

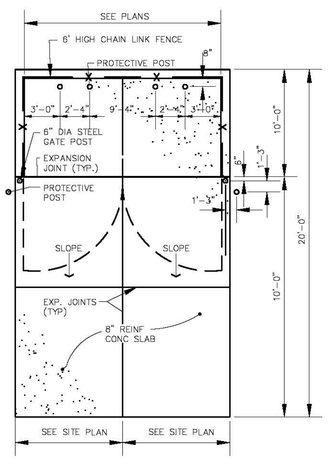
CHAIN LINK FENCE DETAIL

N.T.S. BLFD–001

SECTION VIEW

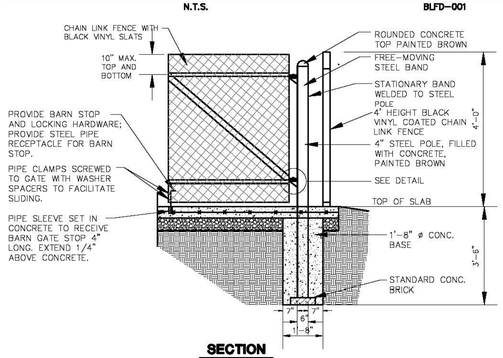
CONCRETE PAD

N.T.S. BLPC–002



TRASH ENCLOSURE PLAN

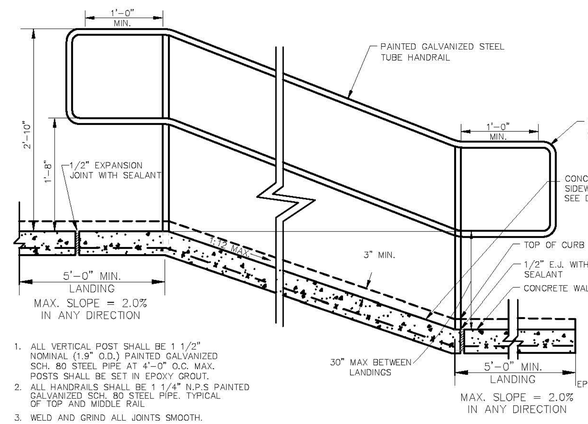
N.T.S. BLSE–004



SECTION

TRASH ENCLOSURE DETAIL

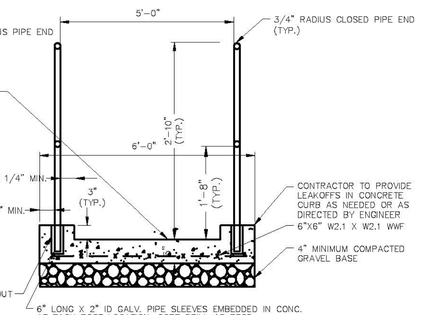
N.T.S. BLFD–001



1. ALL VERTICAL POST SHALL BE 1 1/2" NOMINAL (1.9" O.D.) PAINTED GALVANIZED SCH. 80 STEEL PIPE AT 4'–0" O.C. MAX. POSTS SHALL BE SET IN EPOXY GROUT.
2. ALL HANDRAILS SHALL BE 1 1/4" N.P.S PAINTED GALVANIZED SCH. 80 STEEL PIPE. TYPICAL OF TOP AND MIDDLE RAIL
3. WELD AND GRIND ALL JOINTS SMOOTH.

CONCRETE SIDEWALK RAMP DETAIL

N.T.S.



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ROSE EQUITIES
Owner-Builders since 1949

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

No.	Date	Desc.

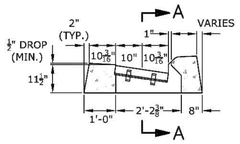
REVISIONS

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	NONE
Project No.	1800513
Date	05/28/2020
CAD File: DN180051301	

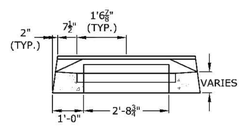
Title
DETAILS SHEET

Sheet No.
DN-2

Xref (s): : BD180051301

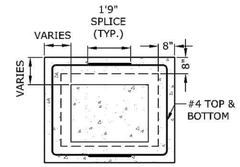


CROSS SECTION

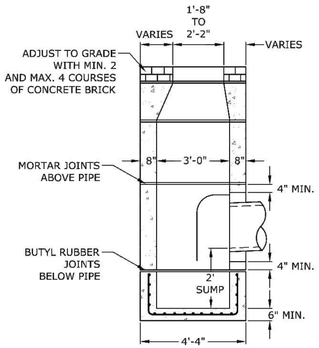


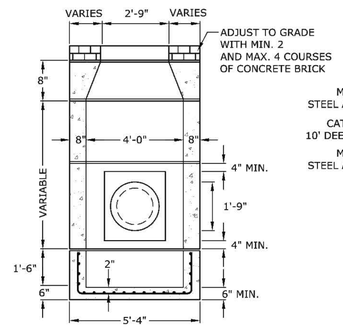
SECTION A-A

USE GALVANIZED GRATE & FRAME

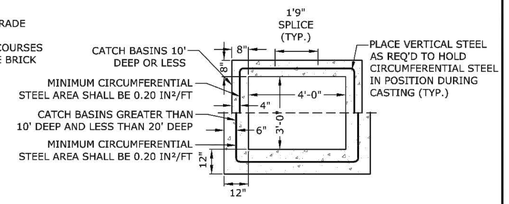


REDUCER SECTION (TYP.)





INSTALL BELL TRAP ON PIPE OUTLET



RISER SECTION (TYP.)

CONNECTICUT DEPARTMENT OF TRANSPORTATION

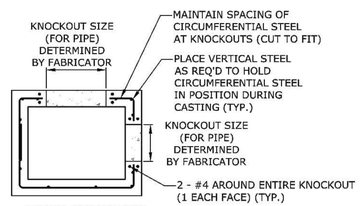
TYPE "C" CATCH BASIN

NO SCALE

OFFICE OF THE TOWN ENGINEER TOWN OF TRUMBULL 5866 Main Street (203) 452-5050	
TYPE "C" CATCH BASIN DETAIL TRUMBULL, CONNECTICUT	
Scale: NTS	Date: 8/15/2014
Drawn by:	Grid:
Approved by:	Sheet: ST-01A

NOTES:

1. REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60.
2. DETAILS ON THIS SHEET SHOW STANDARD REINFORCEMENT. WELDED WIRE FABRIC WITH AN AREA EQUAL TO OR GREATER THAN THE REINFORCING SHOWN MAY BE SUBSTITUTED.
3. ALL LAP SPLICES, DEVELOPMENT LENGTHS, BENDS FOR REINFORCEMENT, AND WELDED WIRE FABRIC SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
4. ALL REINFORCEMENT SHALL HAVE A MINIMUM CLEAR COVER OF 2", EXCEPT FOR BENEATH BOTTOM REINFORCEMENT IN TOP SLABS, WHERE THE MINIMUM MAY BE $1\frac{1}{2}$"
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH FC'=4,000PSI SHALL BE OBTAINED BEFORE SHIPPING.
6. BASES AND RISERS AT A DEPTH OF 20' AND GREATER SHALL BE DESIGNED BY THE CONTRACTOR AND WORKING DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
7. SEE STANDARD CTDOT DRAWING 507-K FOR CATCH BASIN FRAMES AND GRATES.
8. FOR DOT MAINTENANCE PERSONNEL, RISERS MAY BE PREFABRICATED WITH PIPE OPENINGS IN ALL FOUR WALLS. ADEQUATE REINFORCING AROUND PIPE OPENINGS TO CONFORMING TO THESE PLANS SHALL BE PROVIDED. ANY RISERS USED WHERE A PIPE OPENING IS TO REMAIN IN PLACE MUST BE FORMED UP WITH BRICK AS DIRECTED BY THE ENGINEER.
9. RISERS SHALL NEVER HAVE CORNER PIPE ENTRIES. WHERE THE ALIGNMENT OF THE PIPE WITH RESPECT TO THE CORNER OF THE CATCH BASIN CANNOT BE CHANGED, A ROUND STRUCTURE CONFORMING TO ASTM C478 SHALL BE USED. REINFORCING FOR THE ROUND TOP SLAB WITH A RECTANGULAR OPENING SHALL CONFORM TO DETAILS SHOWN HERE.
10. ALL PIPE OPENINGS SHALL BE CLOSED USING MATERIALS WHICH CONFORM TO STATE OF CONNECTICUT STANDARD SPECIFICATIONS SECTION M.08.02. IF THE ENGINEER DETERMINES THAT THE CLOSURE OF ANY PIPE OPENING IS UNSATISFACTORY, THE CONTRACTOR SHALL RECLOSE SAID OPENING AT NO ADDITIONAL COST TO THE STATE. KNOCKOUTS FOR PIPE OPENINGS SHALL NOT RESULT IN A REDUCED WALL THICKNESS.
11. THE LATEST STATE OF CONNECTICUT STANDARD SPECIFICATIONS AND SUPPLEMENTAL SHALL GOVERN.
12. FOR ADDITIONAL DETAILS, SEE OTHER CATCH BASIN SHEETS.
13. WALL THICKNESS OF ALL CB'S OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (THE 12" THICKNESS SHALL START AFTER THE FIRST 10")
14. BUTYL RUBBER JOINT SEAL SHALL CONFORM TO AASHTO M-198 AND MORTAR SHALL CONFORM TO THE LATEST STATE OF CONNECTICUT STANDARD SPECIFICATIONS MATERIAL SECTION M11.04.
15. SHRINKAGE AND TEMPERATURE REINFORCEMENT SHALL BE PROVIDED IN THE TOPS OF SLABS. THE TOTAL AREA OF REINFORCEMENT PROVIDED SHALL BE AT LEAST 0.125 IN²/FT IN EACH DIRECTION. THE MAXIMUM SPACING OF THIS REINFORCEMENT SHALL NOT EXCEED 18 INCHES.
16. THE DETAILS SHOWN IN THE PLAN VIEW FOR THE PRECAST CONCRETE ROUND STRUCTURES SHALL ALSO BE USED FOR CONVERTING MANHOLES TO CATCH BASINS.
17. SET CATCH BASIN TOPS ON 6" MINIMUM BRICK OR BLOCK LEVELING COURSE.
18. AFFIX PLAQUE TO ALL CATCH BASINS STATING "DUMP NO WASTE - DRAINS TO LONG ISLAND SOUND". COST FOR PLAQUE SHALL BE INCLUDED IN THE CONTRACT UNIT COST FOR CATCH BASINS.



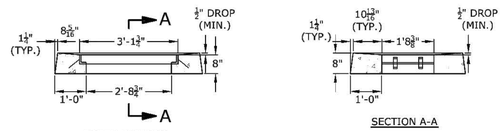
TYPICAL SECTION THRU RISER WITH KNOCKOUTS

CONNECTICUT DEPARTMENT OF TRANSPORTATION

TYPE "C" CATCH BASIN

NO SCALE

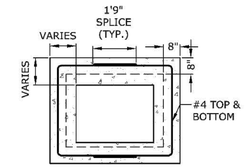
OFFICE OF THE TOWN ENGINEER TOWN OF TRUMBULL 5866 Main Street (203) 452-5050	
TYPE "C" CATCH BASIN DETAIL TRUMBULL, CONNECTICUT	
Scale: NTS	Date: 8/15/2014
Drawn by:	Grid:
Approved by:	Sheet: SW-01B



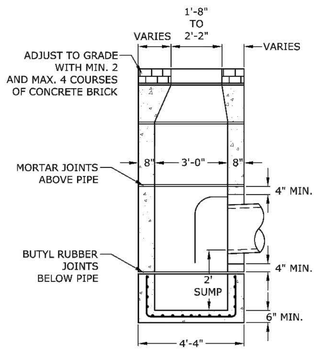
CROSS SECTION

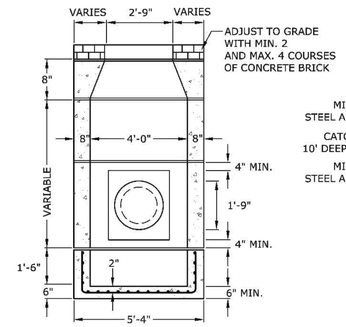
SECTION A-A

USE GALVANIZED GRATE & FRAME

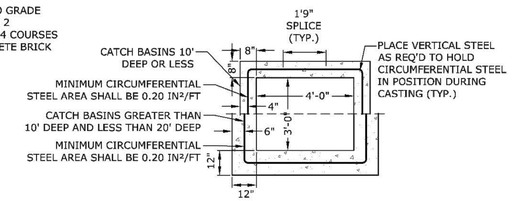


REDUCER SECTION (TYP.)





INSTALL BELL TRAP ON PIPE OUTLET



RISER SECTION (TYP.)

CONNECTICUT DEPARTMENT OF TRANSPORTATION

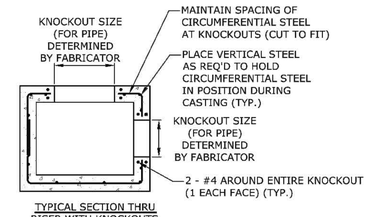
TYPE "C-L" CATCH BASIN

NO SCALE

OFFICE OF THE TOWN ENGINEER TOWN OF TRUMBULL 5866 Main Street (203) 452-5050	
TYPE "C-L" CATCH BASIN DETAIL TRUMBULL, CONNECTICUT	
Scale: NTS	Date: 8/15/2014
Drawn by:	Grid:
Approved by:	Sheet: SW-06A

NOTES:

1. REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60.
2. DETAILS ON THIS SHEET SHOW STANDARD REINFORCEMENT. WELDED WIRE FABRIC WITH AN AREA EQUAL TO OR GREATER THAN THE REINFORCING SHOWN MAY BE SUBSTITUTED.
3. ALL LAP SPLICES, DEVELOPMENT LENGTHS, BENDS FOR REINFORCEMENT, AND WELDED WIRE FABRIC SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
4. ALL REINFORCEMENT SHALL HAVE A MINIMUM CLEAR COVER OF 2", EXCEPT FOR BENEATH BOTTOM REINFORCEMENT IN TOP SLABS, WHERE THE MINIMUM MAY BE $1\frac{1}{2}$"
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH FC'=4,000PSI SHALL BE OBTAINED BEFORE SHIPPING.
6. BASES AND RISERS AT A DEPTH OF 20' AND GREATER SHALL BE DESIGNED BY THE CONTRACTOR AND WORKING DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
7. SEE STANDARD DRAWING 507-K FOR CATCH BASIN FRAMES AND GRATES.
8. FOR DOT MAINTENANCE PERSONNEL, RISERS MAY BE PREFABRICATED WITH PIPE OPENINGS IN ALL FOUR WALLS. ADEQUATE REINFORCING AROUND PIPE OPENINGS TO CONFORMING TO THESE PLANS SHALL BE PROVIDED. ANY RISERS USED WHERE A PIPE OPENING IS TO REMAIN IN PLACE MUST BE FORMED UP WITH BRICK AS DIRECTED BY THE ENGINEER.
9. RISERS SHALL NEVER HAVE CORNER PIPE ENTRIES. WHERE THE ALIGNMENT OF THE PIPE WITH RESPECT TO THE CORNER OF THE CATCH BASIN CANNOT BE CHANGED, A ROUND STRUCTURE CONFORMING TO ASTM C478 SHALL BE USED. REINFORCING FOR THE ROUND TOP SLAB WITH A RECTANGULAR OPENING SHALL CONFORM TO DETAILS SHOWN HERE.
10. ALL PIPE OPENINGS SHALL BE CLOSED USING MATERIALS WHICH CONFORM TO STATE OF CONNECTICUT STANDARD SPECIFICATIONS SECTION M.08.02. IF THE ENGINEER DETERMINES THAT THE CLOSURE OF ANY PIPE OPENING IS UNSATISFACTORY, THE CONTRACTOR SHALL RECLOSE SAID OPENING AT NO ADDITIONAL COST TO THE STATE. KNOCKOUTS FOR PIPE OPENINGS SHALL NOT RESULT IN A REDUCED WALL THICKNESS.
11. THE LATEST STATE OF CONNECTICUT STANDARD SPECIFICATIONS AND SUPPLEMENTALS SHALL GOVERN.
12. FOR ADDITIONAL DETAILS, SEE OTHER CATCH BASIN SHEETS.
13. WALL THICKNESS OF ALL CB'S OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (THE 12" THICKNESS SHALL START AFTER THE FIRST 10")
14. BUTYL RUBBER JOINT SEAL SHALL CONFORM TO AASHTO M-198 AND MORTAR SHALL CONFORM TO THE LATEST STATE OF CONNECTICUT STANDARD SPECIFICATIONS MATERIAL SECTION M11.04.
15. SHRINKAGE AND TEMPERATURE REINFORCEMENT SHALL BE PROVIDED IN THE TOPS OF SLABS. THE TOTAL AREA OF REINFORCEMENT PROVIDED SHALL BE AT LEAST 0.125 IN²/FT IN EACH DIRECTION. THE MAXIMUM SPACING OF THIS REINFORCEMENT SHALL NOT EXCEED 18 INCHES.
16. THE DETAILS SHOWN IN THE PLAN VIEW FOR THE PRECAST CONCRETE ROUND STRUCTURES SHALL ALSO BE USED FOR CONVERTING MANHOLES TO CATCH BASINS.



TYPICAL SECTION THRU RISER WITH KNOCKOUTS

CONNECTICUT DEPARTMENT OF TRANSPORTATION

TYPE "C-L" CATCH BASIN

NO SCALE

OFFICE OF THE TOWN ENGINEER TOWN OF TRUMBULL 5866 Main Street (203) 452-5050	
TYPE "C-L" CATCH BASIN DETAIL TRUMBULL, CONNECTICUT	
Scale: NTS	Date: 8/15/2014
Drawn by:	Grid:
Approved by:	Sheet: SW-06B

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ROSE EQUITIES
Owner-Builders since 1949

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS

No.	Date	Desc.

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	NONE
Project No.	1800513
Date	05/28/2020
CAD File: DN180051301	

Title

DETAILS SHEET

Sheet No.

DN-3

Xref (s) : BD180051301

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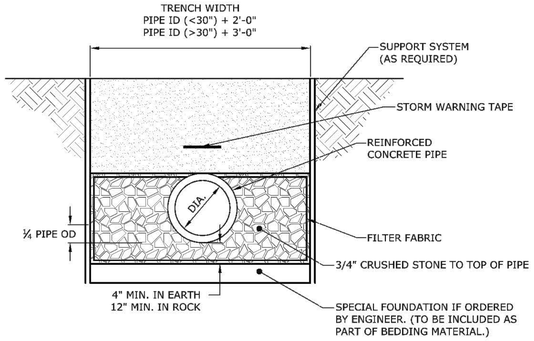
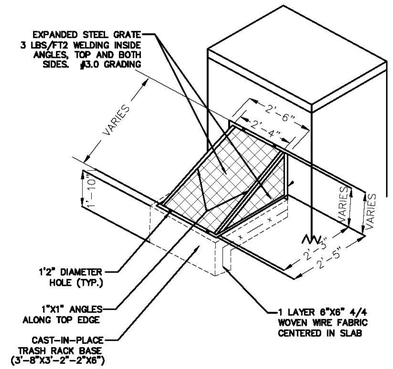


CIRCULAR R.C.P. TRENCH BEDDING

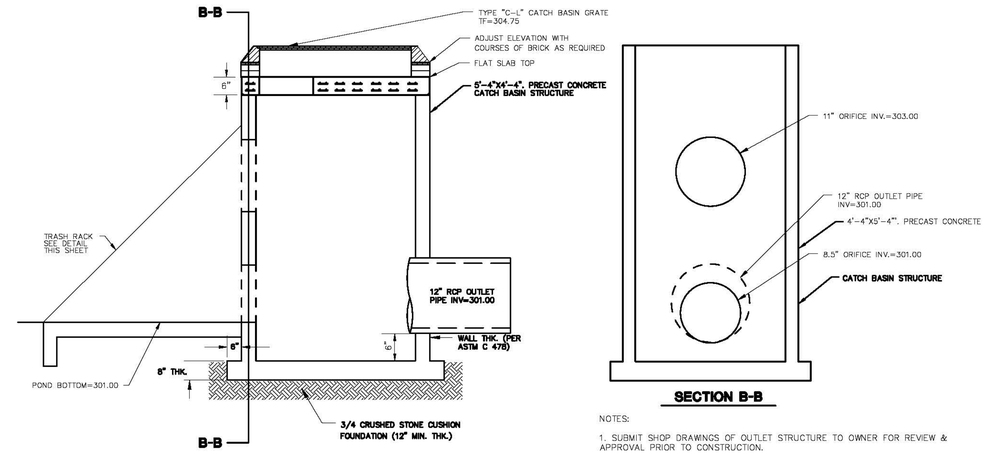
NO SCALE

OFFICE OF THE TOWN ENGINEER TOWN OF TRUMBULL 5866 Main Street (203) 452-5050	
CIRCULAR R.C.P. TRENCH BEDDING DETAIL TRUMBULL, CONNECTICUT	
Scale: NTS	Date: 8/15/2014
Drawn by:	Grid:
Approved by:	Sheet: SW-03



PRIMARY OUTLET TRASH RACK DETAIL

N.T.S.



SECTION B-B

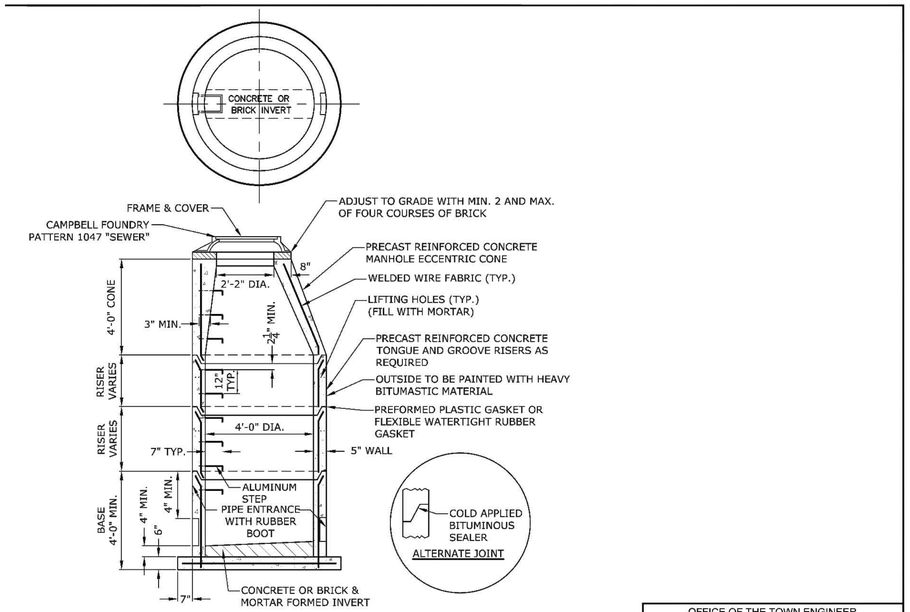
NOTES:

1. SUBMIT SHOP DRAWINGS OF OUTLET STRUCTURE TO OWNER FOR REVIEW & APPROVAL PRIOR TO CONSTRUCTION.

2. SEE GRADING AND DRAINAGE PLANS FOR OUTLET STRUCTURE LOCATION.

DETENTION POND P-3 OUTLET CONTROL STRUCTURE (OCS-03)

N.T.S.

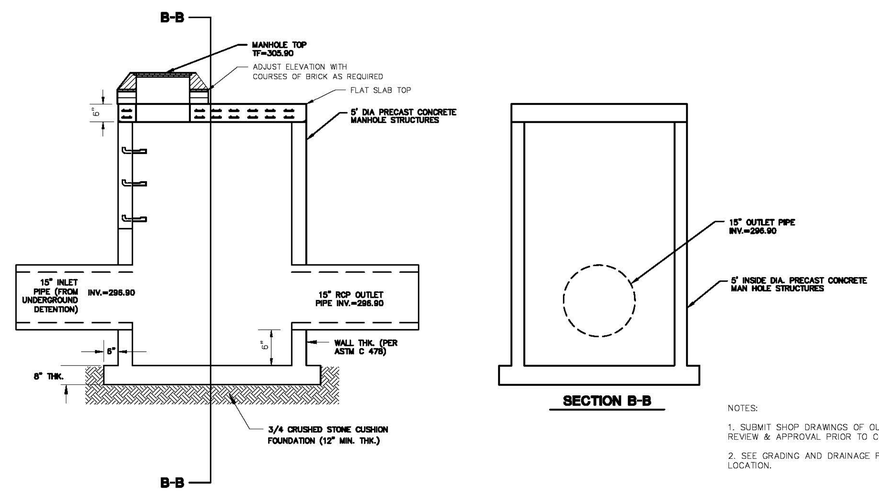


5' OR 6' DIA. PRECAST BASES MAY BE USED WHEN REQUIRED DUE TO SIZE OR NUMBER OF PIPES AT THE MANHOLE.
PRECAST REDUCERS WILL BE PLACED ABOVE THE 5' & 6' BASES AS DIRECTED BY THE ENGINEER.
WALL THICKNESS TO INCREASE 1" FOR EACH 1' OF INSIDE DIAMETER INCREASE.

PRECAST SANITARY MANHOLE

NO SCALE

OFFICE OF THE TOWN ENGINEER TOWN OF TRUMBULL 5866 Main Street (203) 452-5050	
PRECAST SANITARY MANHOLE DETAIL TRUMBULL, CONNECTICUT	
Scale: NTS	Date: 8/15/2014
Drawn by:	Grid:
Approved by:	Sheet: SS-05



SECTION B-B

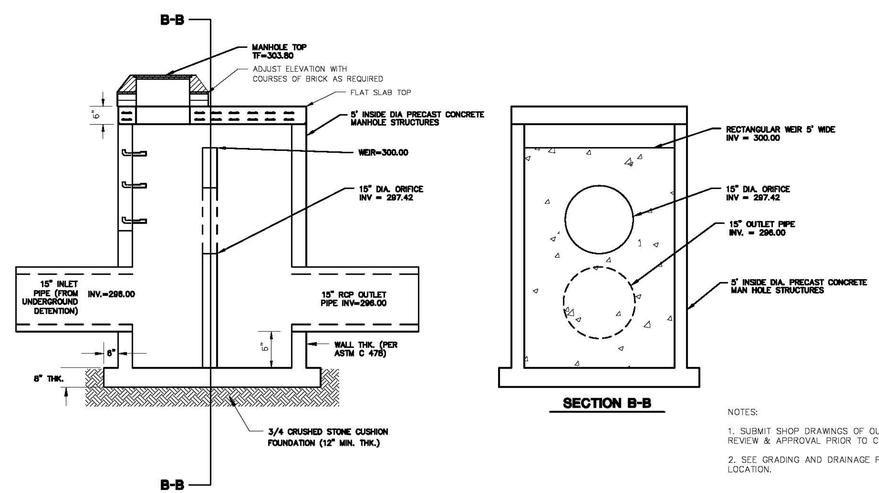
NOTES:

1. SUBMIT SHOP DRAWINGS OF OUTLET STRUCTURE TO OWNER FOR REVIEW & APPROVAL PRIOR TO CONSTRUCTION.

2. SEE GRADING AND DRAINAGE PLANS FOR OUTLET STRUCTURE LOCATION.

DETENTION BASIN P-1 OUTLET CONTROL STRUCTURE (OCS-01)

N.T.S.



SECTION B-B

NOTES:

1. SUBMIT SHOP DRAWINGS OF OUTLET STRUCTURE TO OWNER FOR REVIEW & APPROVAL PRIOR TO CONSTRUCTION.

2. SEE GRADING AND DRAINAGE PLANS FOR OUTLET STRUCTURE LOCATION.

DETENTION BASIN P-2 OUTLET CONTROL STRUCTURE (OCS-02)

N.T.S.

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355 Research Parkway
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Garden Homes

ROSE EQUITIES
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THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS
No. Date Desc.

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	NONE
Project No.	1800513
Date	05/28/2020
CAD File: DN180051301	

Title
DETAILS SHEET

Sheet No.
DN-4

Xref (s) : BD180051301

CULTEC Recharger® 902HD Stormwater Chamber

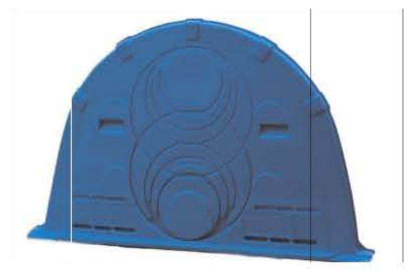
The Recharger® 902HD is a 48" (1219 mm) tall, high capacity chamber. Typically when using this model, fewer chambers are required resulting in less labor and a smaller installation area. The Recharger® 902HD has the side portal internal manifold feature. HVLV® FC-48 Feed Connectors are inserted into the side portals to create the internal manifold.

Recharger 902HD Chamber	
Size (L x W x H)	4.25' x 78" x 48"
	1.30 m x 1981 mm x 1219 mm
Installed Length	3.67'
	1.12 m
Length Adjustment per Row - with two end caps installed	1.03'
	0.31 m
Length Adjustment per Row - when not using end caps	0.58'
	0.18 m
Chamber Storage	17.31 ft³/ft
	1.61 m³/m
	63.47 ft³/unit
	1.80 m³/unit
Min. Installed Storage	27.06 ft³/ft
	2.53 m³/m
	99.28 ft³/unit
	2.81 m³/unit
Min. Area Required	26.58 ft²
	2.47 m²
Chamber Weight	83.0 lbs
	37.65 kg
Shipping	15 chambers/skid
	1,370 lbs/skid
	14 skids/48' flatbed
Min. Center-to-Center Spacing	7.25'
	2.21 m
Max. Allowable Cover	8.3'
	2.53 m
Max. Allowable O.D. in Side Portal	10" HDPE, 12" PVC
	250 mm HDPE, 300 mm PVC
Compatible Feed Connector	HVLV FC-48 Feed Connector

Calculations are based on installed chamber length.
All above values are nominal.
Includes 12" (305 mm) stone above crown of chamber and typical stone surround at 7.25' (2.21 m) center-to-center spacing and stone foundation depth as listed in table.
Stone void calculated at 40%.

	Stone Foundation Depth		
	9"	12"	18"
	229 mm	305 mm	457 mm
Chamber and Stone Storage Per Chamber	99.28 ft³	101.94 ft³	107.26 ft³
	2.81 m³	2.89 m³	3.04 m³
Min. Effective Depth	5.75'	6.00'	6.5'
	1.75 m	1.83 m	1.98 m
Stone Required Per Chamber	3.32 yd³	3.56 yd³	4.05 yd³
	2.54 m³	2.72 m³	3.06 m³

Recharger 902HD Chamber


Recharger 902HD End Cap

Recharger 902HD End Cap	
Size (L x W x H)	9.7" x 78" x 48.5"
	246 mm x 1982 mm x 1231 mm
Installed Length	6.2"
	157 mm
End Cap Storage	5.34 ft³/ft
	0.50 m³/m
	2.76 ft³/unit
	0.08 m³/unit
Min. Installed Storage	19.88 ft³/ft
	1.85 m³/m
	10.28 ft³/unit
	0.29 m³/unit
End Cap Weight	52.0 lbs
	23.59 kg
Shipping	15 end caps/skid
	905 lbs/skid
	14 skids/48' flatbed
Max. Inlet Opening in End Cap	30" HDPE, 36" PVC
	750 mm HDPE, 900 mm PVC

Calculations are based on installed chamber length.
All above values are nominal.
Min. installed storage includes 9" (229 mm) stone base, 12" (305 mm) stone above crown of chamber and typical stone surround at 7.25' (2.21 m) center-to-center spacing.

For more information, contact CULTEC at (203) 775-4416 or visit www.cultec.com. 1

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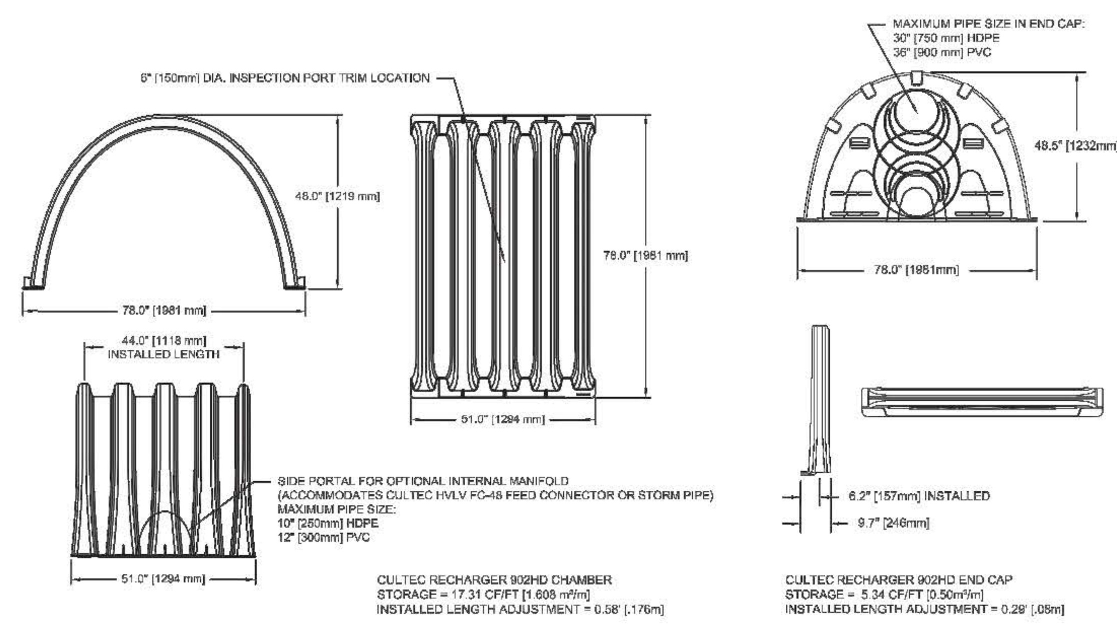
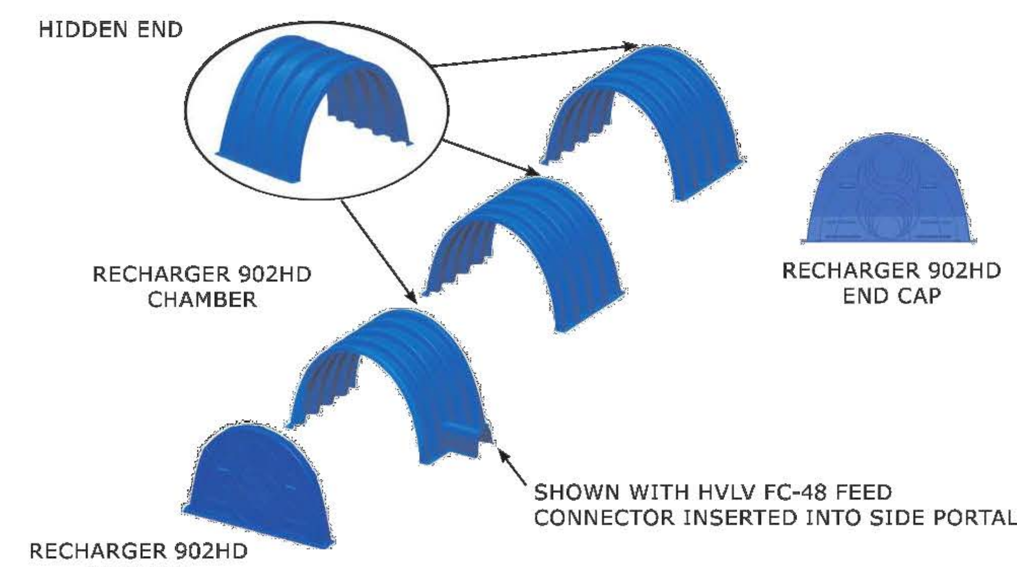
CULTEC Recharger® 902HD Stormwater Chamber

Three View Drawing



Typical Interlock Installation



For more information, contact CULTEC at (203) 775-4416 or visit www.cultec.com. 2

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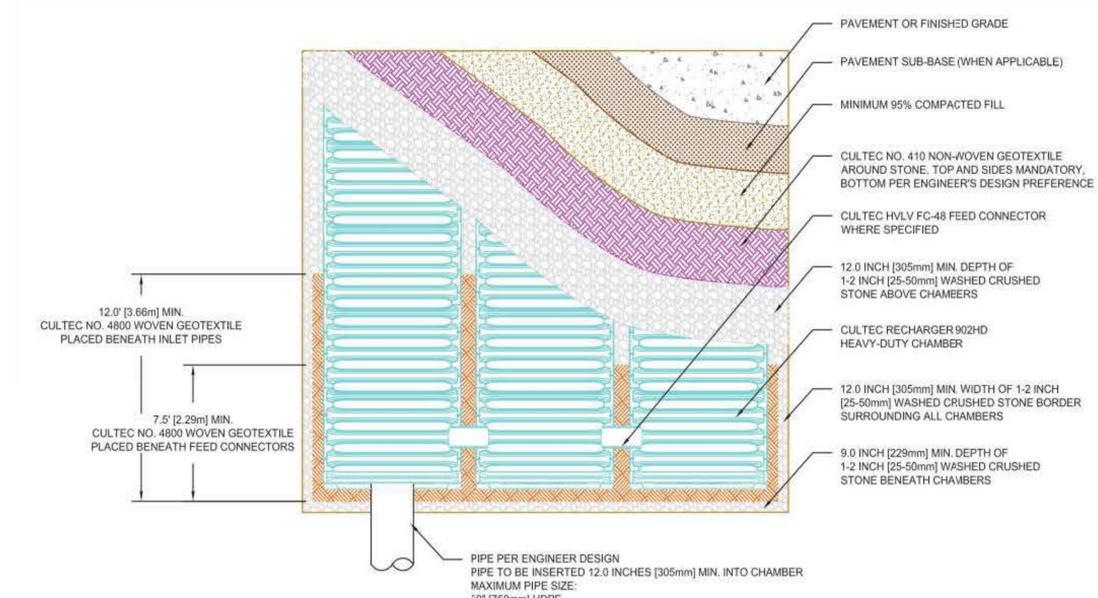
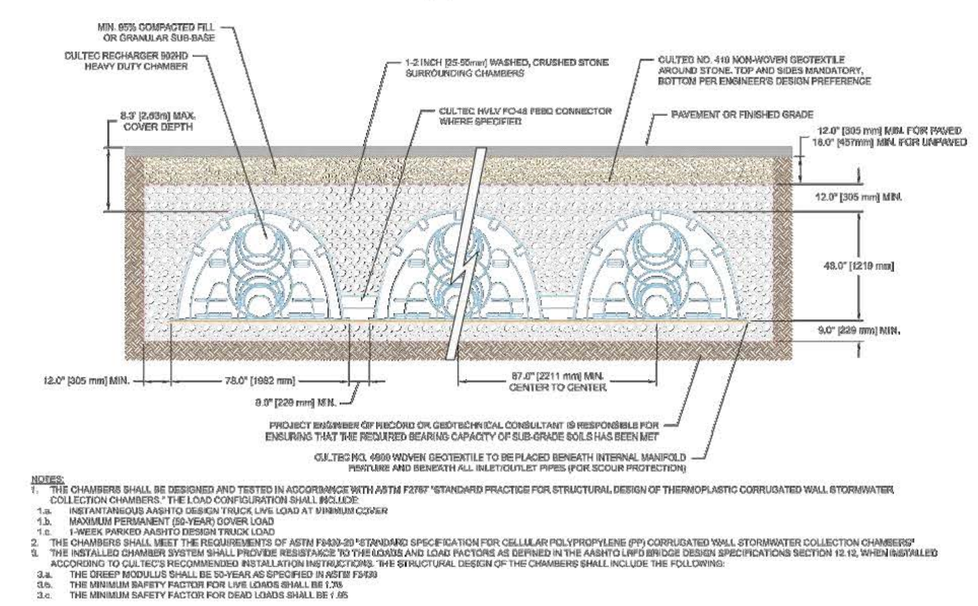
CULTEC Recharger® 902HD Stormwater Chamber

Plan View Drawing



Typical Cross Section for Traffic Application



For more information, contact CULTEC at (203) 775-4416 or visit www.cultec.com. 3

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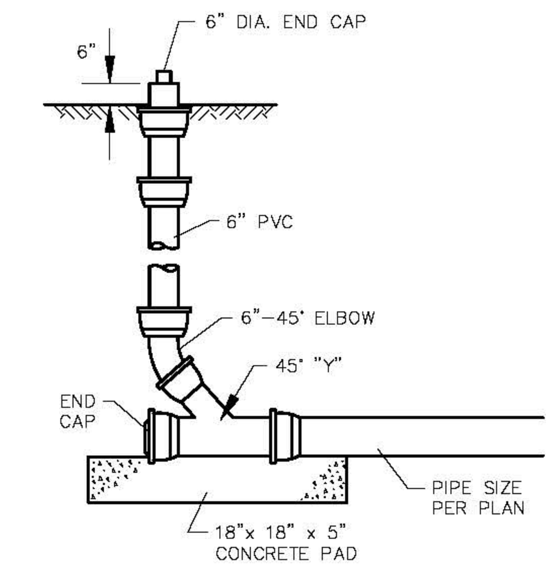
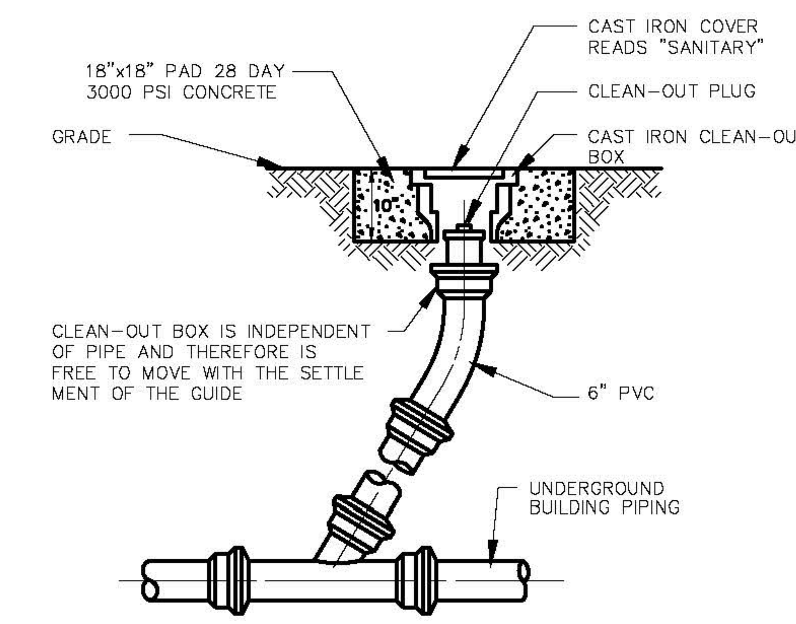


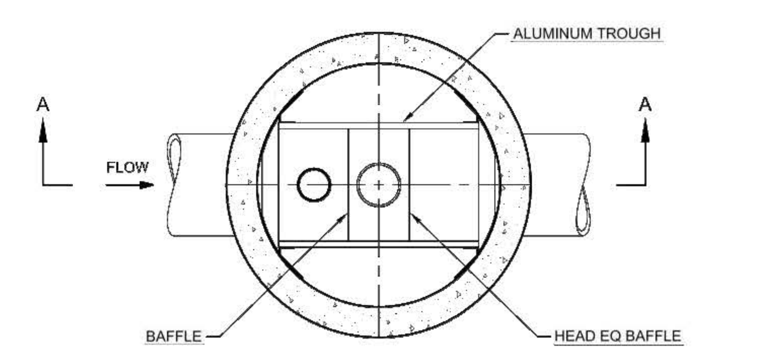
CLEANOUT DETAIL IN LANDSCAPED AREA

N.T.S BLSS-007

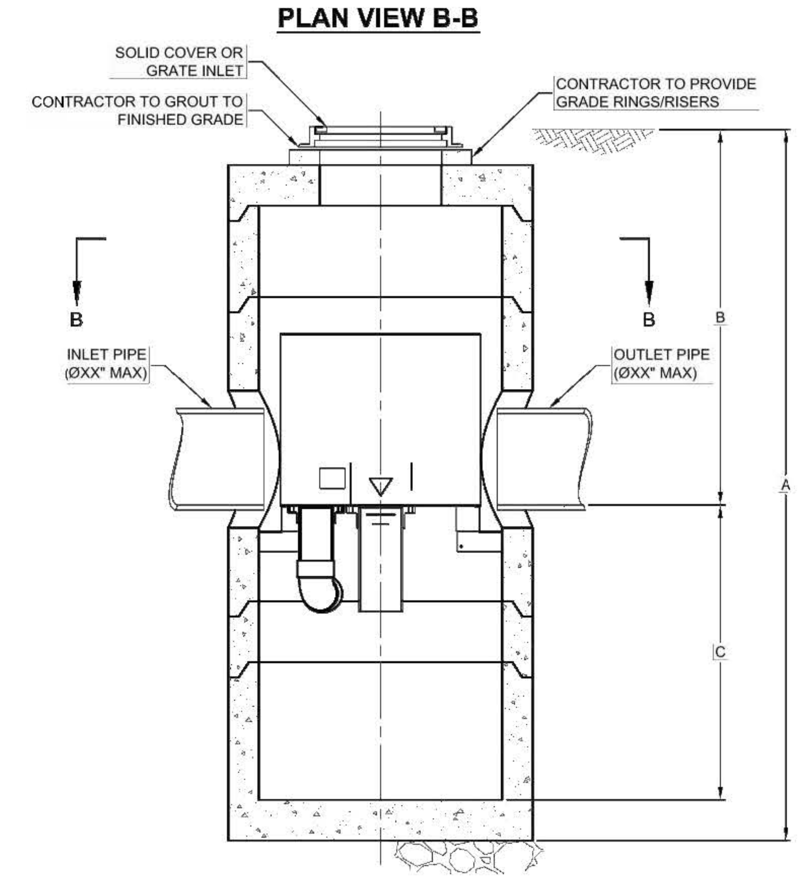


CLEANOUT DETAIL IN PAVED AREAS

N.T.S BLSS-008



PLAN VIEW B-B



SECTION A-A

VortSentry®

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 6,991,114; 7,296,692; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

I:\STORMWATER\COMMOPS\28 VORTSENTRY HS\40 STANDARD DRAWINGS\DWG\VSHS-DTL.DWG 5/18/2014 4:31 PM

VORTSENTRY HS DESIGN NOTES

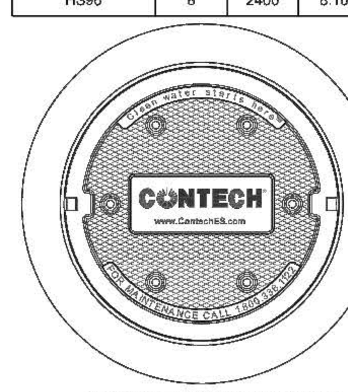
VSHS RATED TREATMENT CAPACITY IS SHOWN IN THE TABLE BELOW, OR PER LOCAL REGULATIONS. MAXIMUM HYDRAULIC INTERNAL BYPASS CAPACITY VARIES. CONTACT YOUR CONTECH REPRESENTATIVE FOR ADITIONAL INFORMATION.

THE STANDARD SOLID COVER CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW.

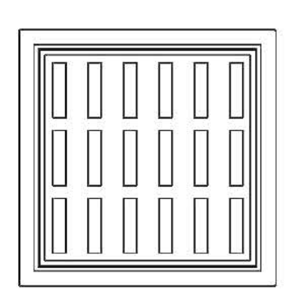
	CONFIGURATION OPTION DESCRIPTION
	GRATE INLET (NO INLET PIPE)
	GRATE INLET WITH INLET PIPE

VORTSENTRY HS GENERAL INFORMATION

Model	Manhole Diameter (ID)		Total Treatment Flow Rate		Typical Total Distance Rim to Outside Bottom A		Typical Distance Rim to Invert B		Typical Depth Below Invert (inside) C		Approximate Minimum Distance Rim to Invert		Maximum Pipe Diameter (ID)	
	FT	mm	CFS	L/S	FT	m	FT	m	FT	mm	FT	m	IN	mm
HS36	3	900	0.55	15.6	10.16	3.10	4.08	1.24	5.58	1702	3.00	0.91	18	450
HS48	4	1200	1.20	34.0	13.25	4.04	6.00	1.83	6.75	2057	4.00	1.22	24	600
HS60	5	1500	2.20	62.3	15.13	4.61	6.50	1.98	7.96	2426	4.82	1.47	30	750
HS72	6	1800	3.70	104.8	16.56	5.05	6.75	2.06	9.15	2788	5.59	1.70	36	900
HS84	7	2100	5.60	158.6	18.85	5.75	7.75	2.36	10.35	3156	5.00	1.52	42	1050
HS96	8	2400	8.10	229.4	20.87	6.36	8.50	2.59	11.54	3518	6.91	2.11	48	1200



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



FRAME AND GRATE
(24" SQUARE)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS)			*
PEAK FLOW RATE (CFS)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*
NOTES/SPECIAL REQUIREMENTS:			

* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
4. VORTSENTRY HS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET AASHTO M306 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.

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

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

VORTSENTRY HS STANDARD DETAIL

STRUCTURE ID	DRAINAGE AREA	MODEL	WQ FLOW RATE
HS-1	PDA-102	HS-60 (OR APPROVED EQUAL)	1.65 CFS
HS-2	PDA-102	HS-60 (OR APPROVED EQUAL)	1.65 CFS
HS-3	PDA-202	HS-60 (OR APPROVED EQUAL)	2.02 CFS
HS-4	PDA-302	HS-60 (OR APPROVED EQUAL)	1.43 CFS

HYDRODYNAMIC SEPARATOR SIZING

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Architecture
Engineering
Environmental
Land Surveying

BL Companies

355 Research Parkway
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Garden Homes

ROSE EQUITIES
Owner-Builders since 1949

STATE OF CONNECTICUT CHRISTOPHER D. GAGNON No. 28798 LICENSED PROFESSIONAL ENGINEER

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS
No. Date Desc.

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	NONE
Project No.	1800513
Date	05/28/2020
CAD File: DN180051301	

Title
DETAILS SHEET

Sheet No.
DN-5

Xref (s): ; BD180051301

5/28/2020, KKLOSE, G:\JOBS18\04\1800513\DWG\DN180051301.DWG,DN-5 24X36.

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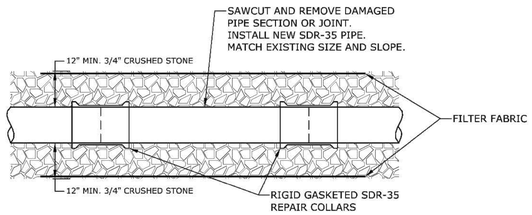
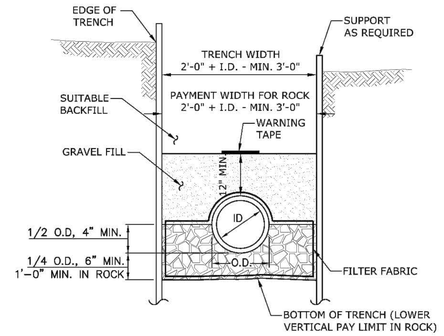


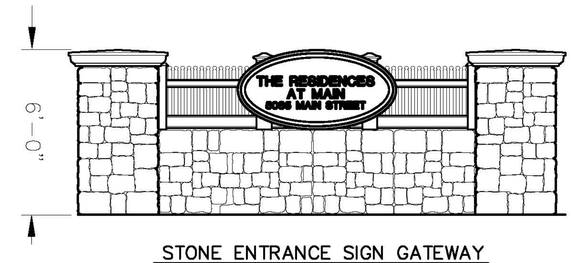
SANITARY SEWER POINT REPAIR
NO SCALE

OFFICE OF THE TOWN ENGINEER TOWN OF TRUMBULL 5866 Main Street (203) 452-5050	
SANITARY SEWER POINT REPAIR DETAIL TRUMBULL, CONNECTICUT	
Scale: xxxxxx	Date: 8/15/2014
Drawn by:	Grid:
Approved by:	Sheet: SS-02

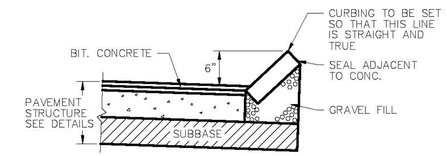


TYPICAL SANITARY SEWER TRENCH SECTION
NO SCALE

OFFICE OF THE TOWN ENGINEER TOWN OF TRUMBULL 5866 Main Street (203) 452-5050	
TYPICAL SANITARY SEWER TRENCH SECTION DETAIL TRUMBULL, CONNECTICUT	
Scale: NTS	Date: 8/15/2014
Drawn by:	Grid:
Approved by:	Sheet: SS-03

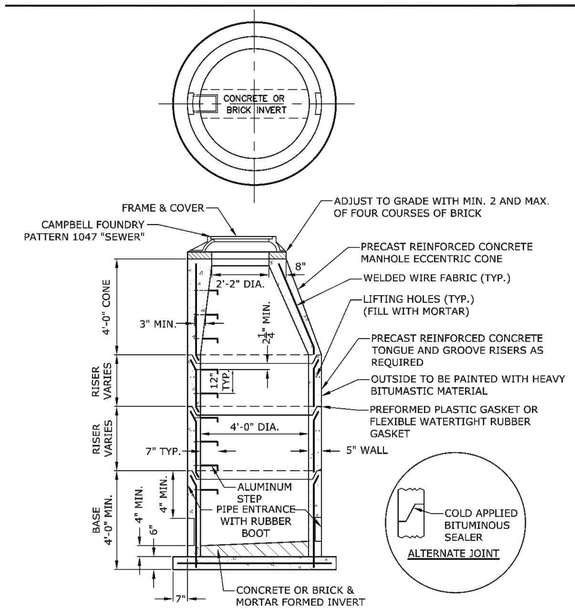


STONE ENTRANCE SIGN GATEWAY
N.T.S.



TYPICAL SECTION SHOWING SLOPE CURBING SET ADJACENT TO BITUMINOUS CONC. SURFACES

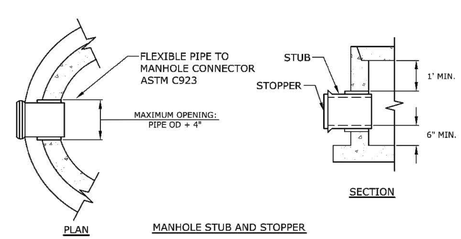
MOUNTABLE GRANITE SLOPE CURBING
N.T.S. ZPC-039



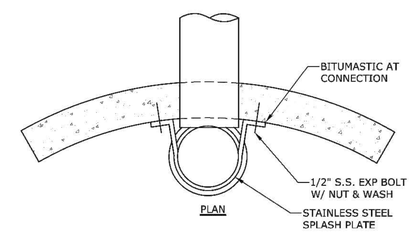
5' OR 6' DIA. PRECAST BASES MAY BE USED WHEN REQUIRED DUE TO SIZE OR NUMBER OF PIPES AT THE MANHOLE.
PRECAST REDUCERS WILL BE PLACED ABOVE THE 5' & 6' BASES AS DIRECTED BY THE ENGINEER.
WALL THICKNESS TO INCREASE 1" FOR EACH 1' OF INSIDE DIAMETER INCREASE.

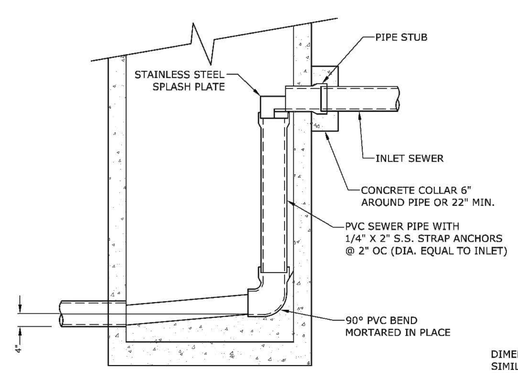
PRECAST SANITARY MANHOLE
NO SCALE

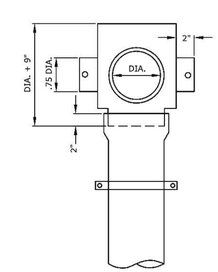
OFFICE OF THE TOWN ENGINEER TOWN OF TRUMBULL 5866 Main Street (203) 452-5050	
PRECAST SANITARY MANHOLE DETAIL TRUMBULL, CONNECTICUT	
Scale: NTS	Date: 8/15/2014
Drawn by:	Grid:
Approved by:	Sheet: SS-05



MANHOLE STUB AND STOPPER







SHIELD FOR DROP MANHOLE

DIMENSIONS OF DROP INLET ARE SIMILAR TO THAT OF THE TYPICAL MANHOLE EXCEPT AS NOTED OTHERWISE

INSIDE DROP MANHOLE
NO SCALE

OFFICE OF THE TOWN ENGINEER TOWN OF TRUMBULL 5866 Main Street (203) 452-5050	
INSIDE DROP MANHOLE DETAIL TRUMBULL, CONNECTICUT	
Scale: NTS	Date: 8/15/2014
Drawn by:	Grid:
Approved by:	Sheet: SW-05

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Owner-Builders since 1949

STATE OF CONNECTICUT
CHRISTOPHER D. ROSE
No. 24788
LICENSED
PROFESSIONAL ENGINEER

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS

No.	Date	Desc.

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	NONE
Project No.	1800513
Date	05/28/2020
CAD File: DN180051301	

Title
DETAILS SHEET

Sheet No.
DN-6

Xref (s): BD180051301

Aug 21, 2014-10:26am Plotted By: adm
Layout: Sheet Size: 11"X17" Model: C:\Users\adm\Desktop\Trumbull Expansion\DN180051301\DN180051301-DN-6.dwg

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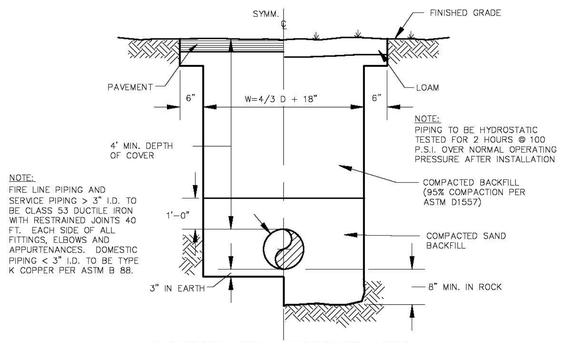
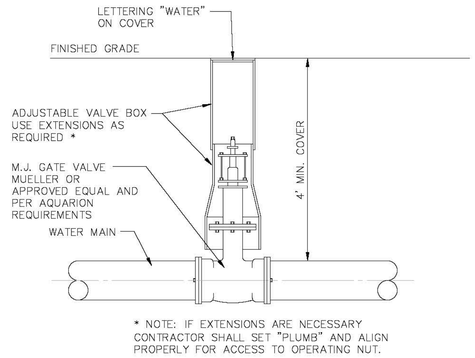


TYPICAL WATER MAIN AND SERVICE TRENCH DETAIL

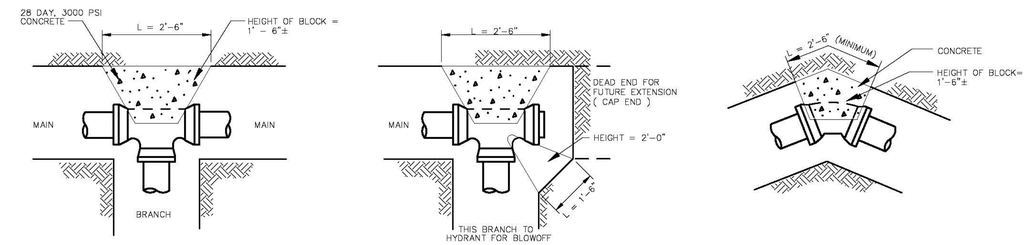
N.T.S.



* NOTE: IF EXTENSIONS ARE NECESSARY CONTRACTOR SHALL SET "PLUMB" AND ALIGN PROPERLY FOR ACCESS TO OPERATING NUT.

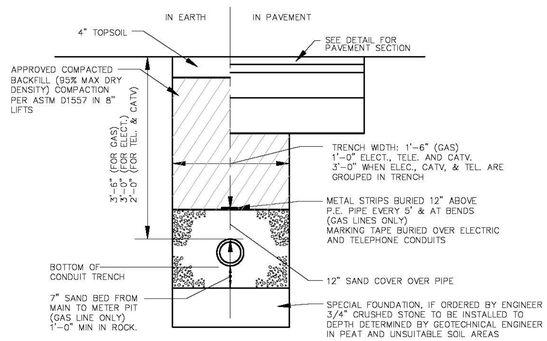
TYPICAL GATE VALVE AND VALVE BOX DETAIL

N.T.S. BLWD-002



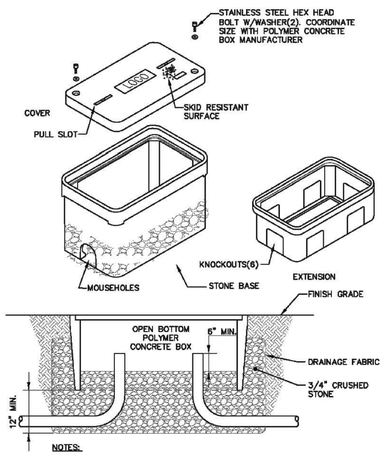
THRUST BLOCKS FOR WATER LINES

N.T.S. BLWD-001



ELECTRICAL, TELECOMMUNICATION AND GAS TRENCH DETAIL

N.T.S.

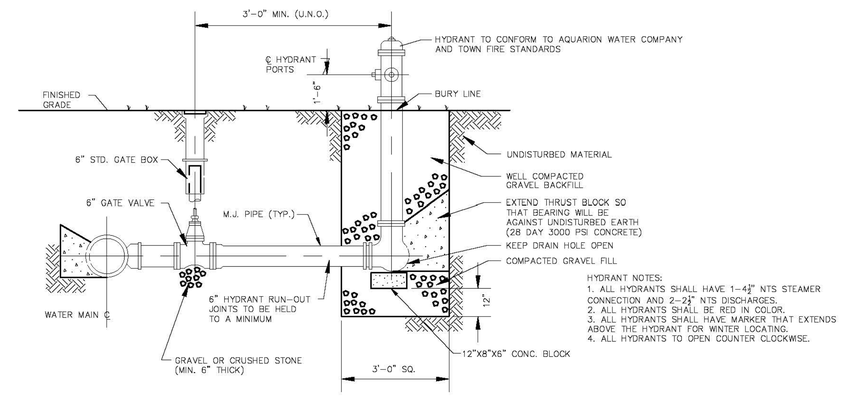


NOTES:

1. PROVIDE 1"x4" BELL PULL SLOT FOR EACH HANDHOLE.
2. COVERING RING AND BOX SHALL BE MADE OF SAME MATERIAL.
3. COORDINATE COVER AND FRAME COLOR OF HANDHOLE WITH ARCHITECT.
4. PROVIDE TIER 15 MINIMUM RATED BOX AND COVER.

PULL BOX DETAIL

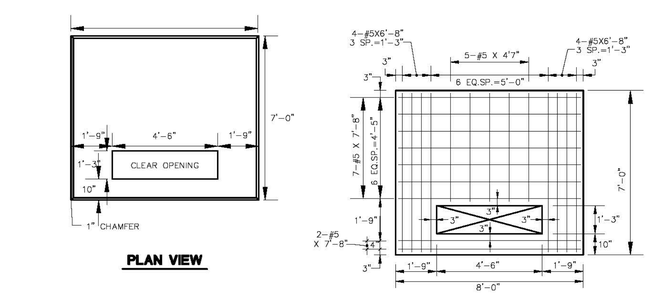
N.T.S.



HYDRANT NOTES:
1. ALL HYDRANTS SHALL HAVE 1-4½" NTS STEAMER CONNECTION AND 2-2½" NTS DISCHARGES.
2. ALL HYDRANTS SHALL BE RED IN COLOR.
3. ALL HYDRANTS SHALL HAVE MARKER THAT EXTENDS ABOVE THE HYDRANT FOR WINTER LOCATING.
4. ALL HYDRANTS TO OPEN COUNTER CLOCKWISE.

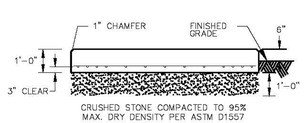
HYDRANT DETAIL WITH GATE BOX

N.T.S. BLWD-003



PLAN VIEW

PLAN OF REINFORCING

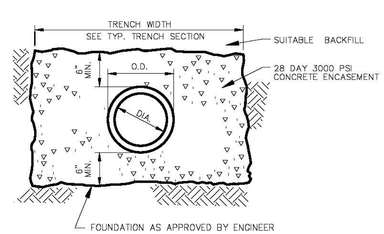


SECTION

NOTE: CONFIRM SIZE WITH UNITED ILLUMINATING COMPANY FOR REQUIRED CONFIGURATION OF PAD PRIOR TO CONSTRUCTION

TRANSFORMER PAD

N.T.S. BLLE-001



CONCRETE PROTECTION FOR PIPING

N.T.S. BLSS-011

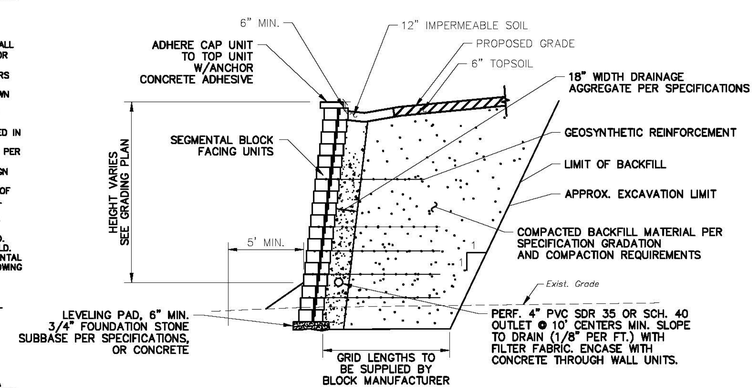
GENERAL NOTES

1. STRIP ALL VEGETATION AND ORGANIC SOIL FROM THE WALL AND GRID ALIGNMENT.
2. BENCH CUT ALL EXCAVATED SLOPES.
3. DO NOT OVER EXCAVATE UNLESS DIRECTED BY SITE SOIL ENGINEER TO REMOVE UNSUITABLE SOIL.
4. SITE SOIL ENGINEER SHALL VERIFY FOUNDATION SOILS AS BEING COMPETENT PER THE DESIGN STANDARDS AND PARAMETERS.
5. LEVELING PAD SHALL CONSIST OF 3/4" FOUNDATION STONE, MINIMUM 6" THICK, OR 3,000 PSI CONCRETE.
6. CONTRACTOR MAY OPT FOR A CONCRETE FOOTING. CONCRETE FOOTING SHALL BE UNREINFORCED, DEPTH OF CONCRETE TO BE A MINIMUM THICKNESS OF 6".
7. MINIMUM EMBEDMENT OF WALL BELOW FINISH GRADE SHALL BE 16" FOR WALL HEIGHTS FROM 4' AND UP TO 10', 8" FOR HEIGHTS BELOW 4' UNLESS SHOWN DIFFERENTLY.
8. FOLLOW APPLICABLE PROVISIONS OF THE MANUFACTURERS INSTALLATION INSTRUCTIONS AND WRITTEN SPECIFICATIONS.
9. WHERE DRAIN PIPE IS USED, PROVIDE OUTLETS AS SHOWN ON WALL ELEVATIONS.
10. COMPACTION TESTS SHALL BE TAKEN AS THE WALL IS INSTALLED. THE MINIMUM NUMBER OF TESTS SHALL BE DETERMINED BY THE SITE SOILS ENGINEER, OR AS INDICATED IN THE SPECIFICATION.
11. COMPACTION SHALL BE 95% OF MAXIMUM DRY DENSITY PER ASTM D-1557.
12. GEOGRID SHALL BE PER BLOCK MANUFACTURER'S DESIGN ON SHOP DRAWINGS.
13. PULL GEOGRID TIGHT PRIOR TO BACK FILLING. LENGTH OF GEOGRID SHALL BE MEASURED FROM FRONT OF SEGMENTAL CONCRETE UNITS.
14. PROVIDE LATERAL DRAINAGE SWALES TO DIRECT FLOWS AROUND THE ENDS OF THE WALL.
15. ESTABLISH TURF AS SOON AS THE WALL IS COMPLETED.
16. FINAL WALL ALIGNMENT SHALL BE LOCATED IN THE FIELD.
17. REINFORCED BACK FILL REQUIREMENTS FOR THE SEGMENTAL CONCRETE RETAINING WALL SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:

SIEVE SIZE	PERCENT PASSING REINFORCED BACK FILL
2 INCH	100
NO. 4	40–85
NO. 10	25–75
NO. 40	15–50
NO. 100	10–40
NO. 200	4–12

PLASTICITY INDEX (PI) LESS THAN OR EQUAL TO 10 AND A LIQUID LIMIT LESS THAN OR EQUAL TO 40. REINFORCED BACK FILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT EXCEEDING 10 INCHES. REINFORCED BACK FILL SHALL BE COMPACTED TO 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM-1557. THE MOISTURE CONTENT OF THE BACK FILL MATERIAL PRIOR TO AND DURING COMPACTION SHALL BE WITHIN 2 PERCENTAGE POINTS OF DRY OPTIMUM.

IF CONDITIONS ARE DIFFERENT THAN THOSE STATED IN THESE DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR MUST CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH THE CONSTRUCTION OF THE WALL.



NOTE: BLOCK MANUFACTURER TO SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR RETAINING WALLS PRIOR TO CONSTRUCTION PREPARED BY A CT LICENSED PROFESSIONAL ENGINEER

TYPICAL RETAINING WALL SECTION

N.T.S.

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Garden Homes

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Owner-Builders since 1949

STATE OF CONNECTICUT
CHRISTOPHER D. ROSE
No. 24798
LICENSED
PROFESSIONAL ENGINEER

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

No.	Date	REVISIONS	Desc.

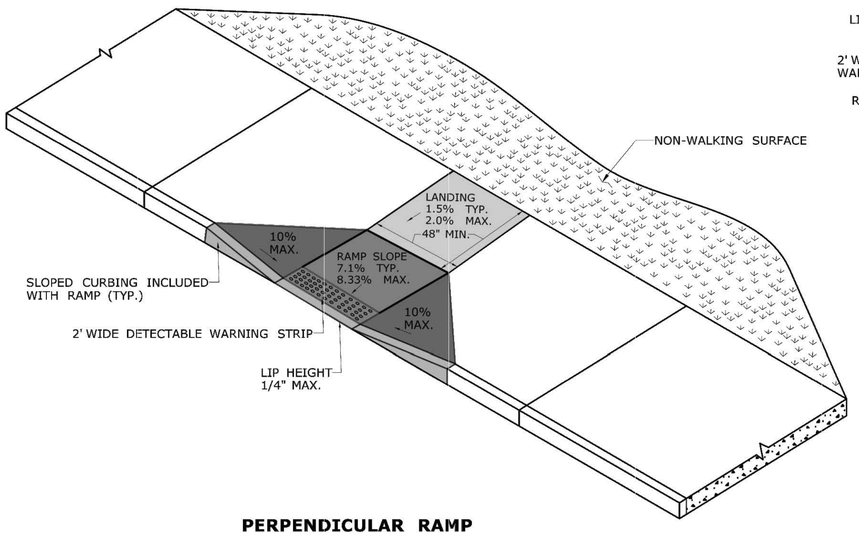
Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	NONE
Project No.	1800513
Date	05/28/2020
CAD File: DN180051301	

Title
DETAILS SHEET

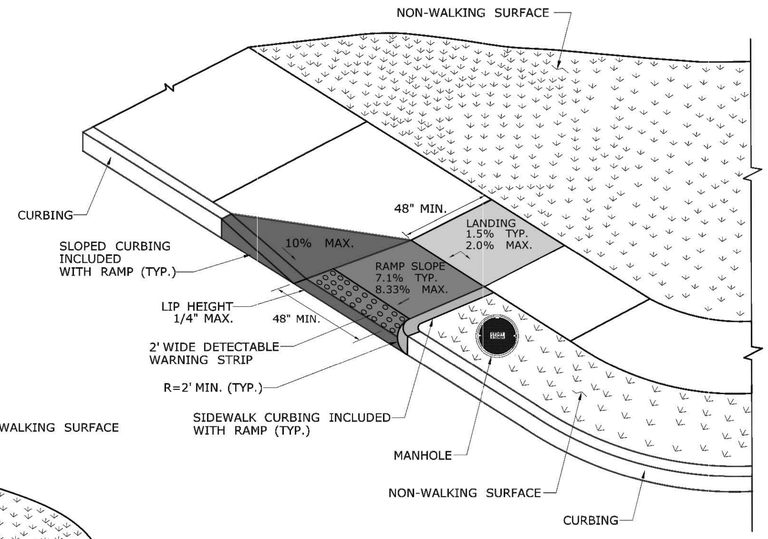
Sheet No.
DN-7

Xref (s) : BD180051301

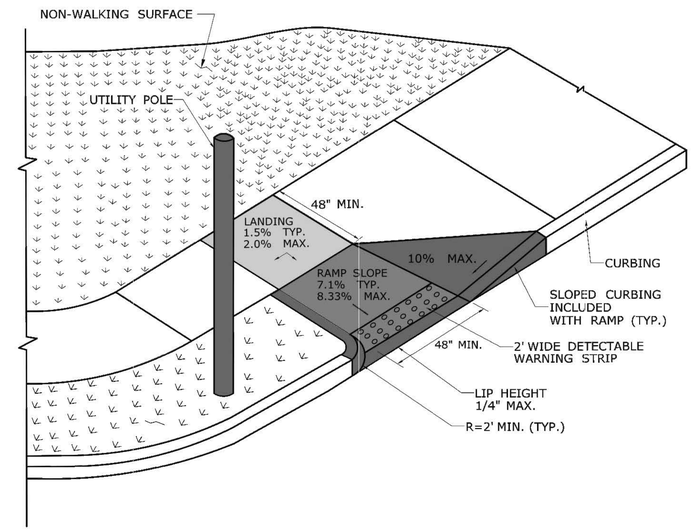
5/28/2020, KKLCDE, G:\CADD\BUILD\180051301\DWG\DN180051301.DWG\DN-7 2-BDCK



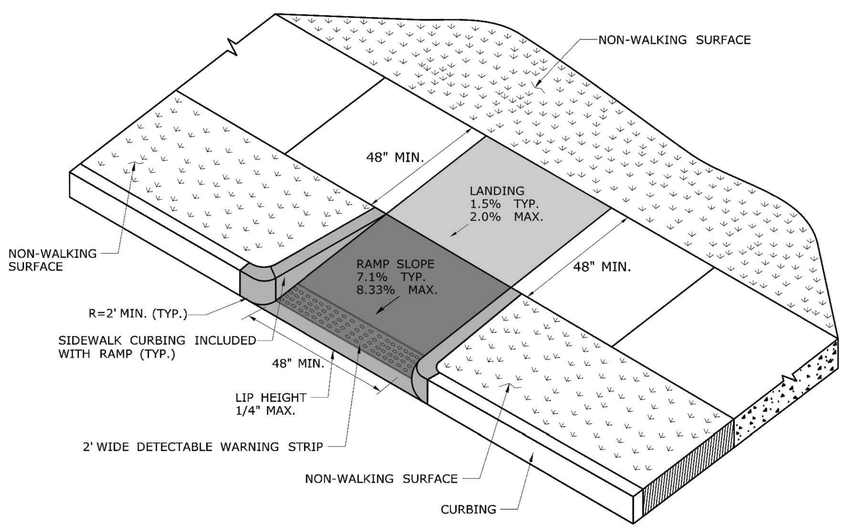
PERPENDICULAR RAMP
WITH 48" BY-PASS
(TYPE 8)



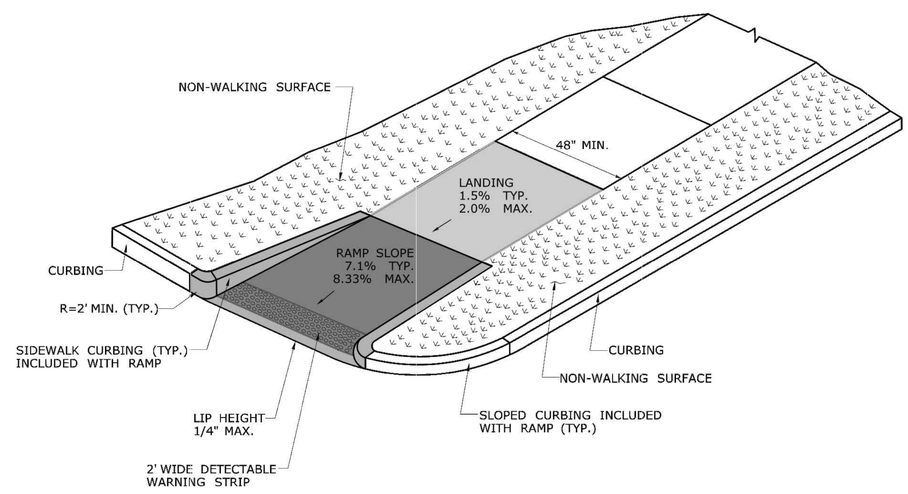
PERPENDICULAR RAMP
WITH NON-WALKING SURFACE
(TYPE 18 LEFT)



PERPENDICULAR RAMP
WITH NON-WALKING SURFACE
(TYPE 18 RIGHT)



PERPENDICULAR RAMP
WITH NON-WALKING SURFACE
(TYPE 13)



SINGLE DIRECTION - RETURN CURB
WITH NON-WALKING SURFACE
(TYPE 16)

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Engineering
Environmental
Land Surveying

BL Companies

355 Research Parkway
Meriden, CT 06450
(203) 630-1406
(203) 630-2615 Fax

Garden Homes

ROSE EQUITIES
Owner-Builders since 1949

STATE OF CONNECTICUT
CHRISTOPHER D. ROSE
No. 28798
LICENSED
PROFESSIONAL ENGINEER

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS

No.	Date	Desc.

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	NONE
Project No.	1800513
Date	05/28/2020
CAD File: DN180051301	

Title

DETAILS SHEET

Sheet No.

DN-8

Xref (s) : 1BD180051301

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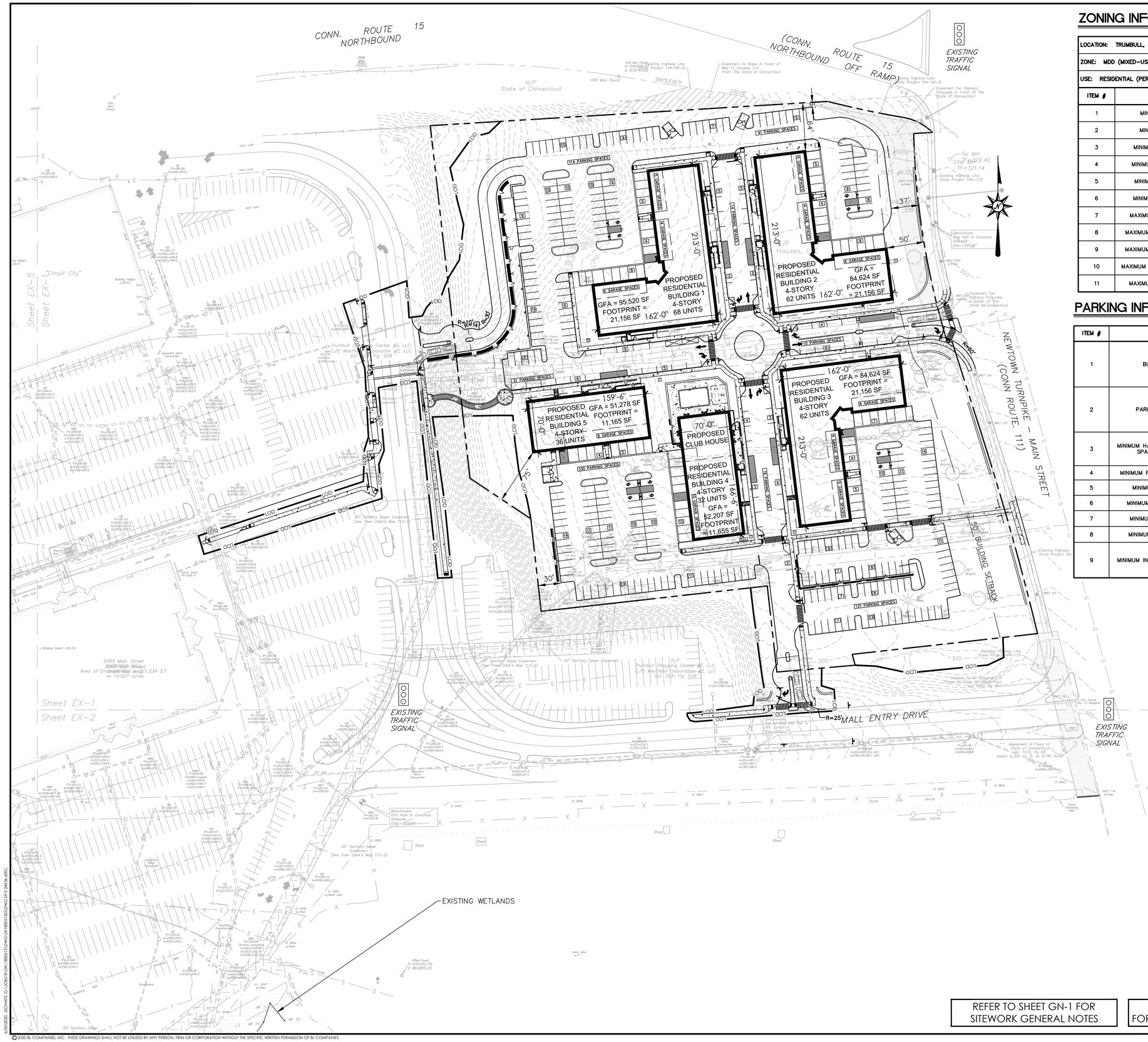

REFER TO SHEET GN-1 FOR SITEWORK GENERAL NOTES

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GRAPHIC SCALE
60 30 0 60
SCALE IN FEET

ZONING INFORMATION

LOCATION: TRUMBULL, FAIRFIELD COUNTY

ZONE: MDD (MIXED–USE DESIGN DISTRICT)

USE: RESIDENTIAL (PERMITTED USE)

ITEM #	ITEM	REQUIREMENTS	PROPOSED	VARIANCE
1	MINIMUM LOT AREA	7 ACRES	453,996 S.F. (10.422 AC.)	NO
2	MINIMUM LOT WIDTH	NONE REQUIRED	643 FEET	NO
3	MINIMUM LOT FRONTAGE	NONE REQUIRED	697 FEET	NO
4	MINIMUM FRONT SETBACK	50 FEET	50 FEET	NO
5	MINIMUM SIDE SETBACK	0 FEET	64 FEET	NO
6	MINIMUM REAR SETBACK	0 FEET	75 FEET	NO
7	MAXIMUM BUILDING HEIGHT	65 FEET	< 65 FEET	NO
8	MAXIMUM BUILDING COVERAGE	50 PERCENT	19 PERCENT	NO
9	MAXIMUM GROSS FLOOR AREA	100 PERCENT	82 PERCENT	NO
10	MAXIMUM IMPERVIOUS COVERAGE	85 PERCENT	58 PERCENT	NO
11	MAXIMUM PERMITTED UNITS	260 UNITS	260 UNITS	NO

PARKING INFORMATION

ITEM #	ITEM	REQUIREMENTS	PROPOSED	VARIANCE
1	BUILDING SIZE	NONE REQUIRED	SEE PLAN	NO
2	PARKING REQUIRED	MULTI–FAMILY HOMES: 1.9 SPACES PER UNIT REGARDLESS OF THE NUMBER OF BEDROOMS = 260 260 X 1.9 = 494 SPACES REQUIRED	437 SURFACE PARKING 64 GARAGE PARKING TOTAL = 501 SPACES	NO
3	MINIMUM HANDICAPPED PARKING SPACES REQUIRED	9 TOTAL ACCESSIBLE SPACES (MINIMUM OF 2 VAN ACCESSIBLE)	TOTAL = 15 SPACES	NO
4	MINIMUM PARKING DIMENSIONS	9 FEET X 18 FEET	9 FEET X 18 FEET	NO
5	MINIMUM AISLE WIDTH	24 FEET – 2–WAY 12 FEET – 1–WAY	24 FEET – 2–WAY	NO
6	MINIMUM FRONT SETBACK	NONE	37 FEET	NO
7	MINIMUM SIDE SETBACK	NONE	6 FEET	NO
8	MINIMUM REAR SETBACK	NONE	30 FEET	NO
9	MINIMUM INTERIOR LANDSCAPING	ONE TREE PER 20 OFF–STREET PARKING SPACES NOT LOCATED WITHIN A PARKING STRUCTURE, 429 SPACES (NOT INCLUDING GARAGE SPACES) = 22 TREES	> 22 INTERIOR TREES	NO

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Garden Homes

ROSE EQUITIES
Owner-Builders since 1949

STATE OF CONNECTICUT
CHRISTOPHER D. OGDEN
No. 27878
LICENSED
PROFESSIONAL ENGINEER

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS

No.	Date	Desc.
1.	6/30/2020	REVISED PER STAFF COMMENTS

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	1"=60'
Project No.	1800513
Date	05/28/2020
CAD File: SK180051303	

Title

OVERALL SKETCH PLAN

Sheet No.

SK-0

Xref (s): : BD180051301 : XY180051301 : XY05C133801 : XY180051302

6/30/2020, JSCHMITZ, G:\JOBS\BP\GPL\180051\DWG\SK180051303.DWG\SK-0-PLAN.DWG

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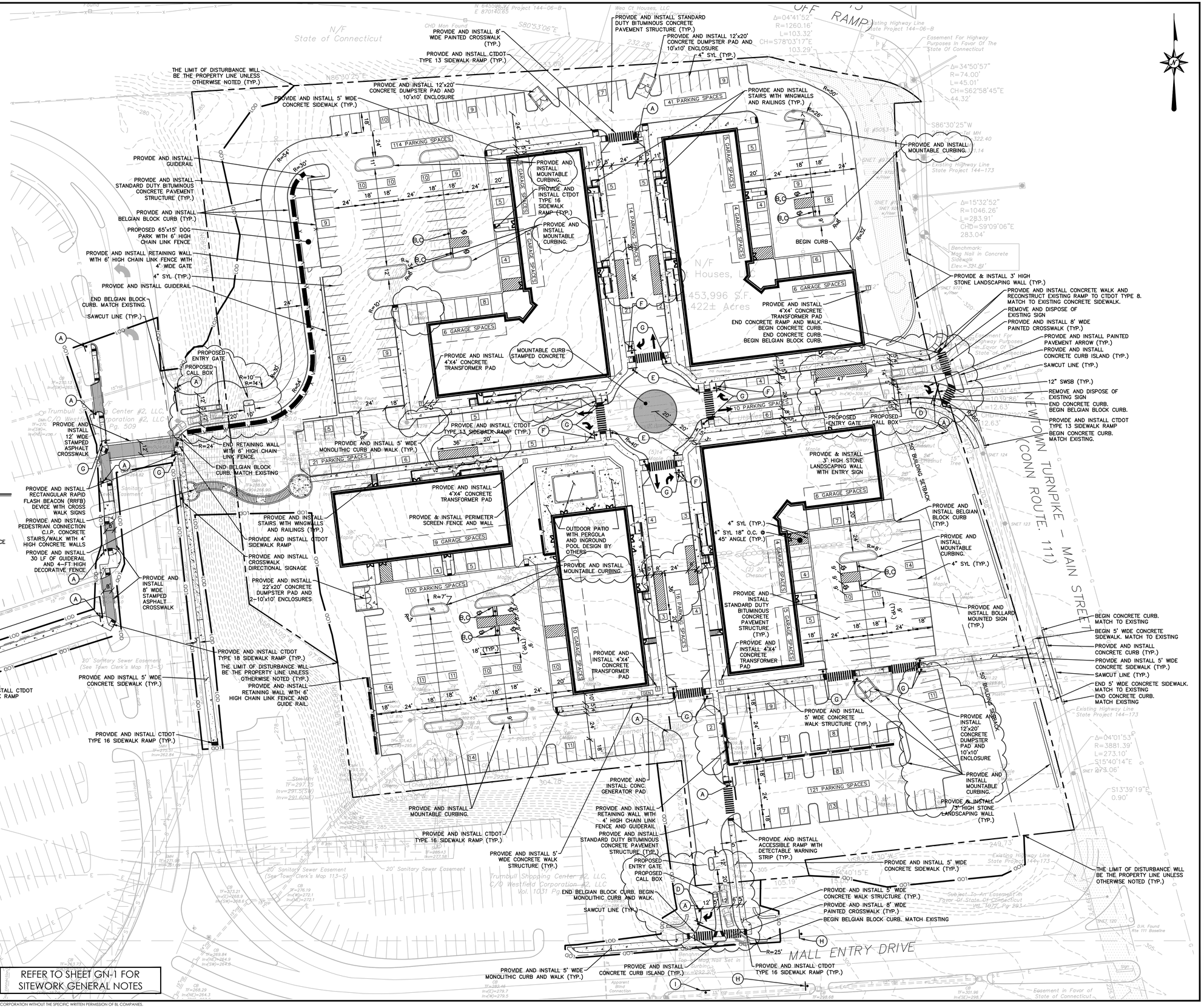
SIGN LEGEND

SIGN NO.	CT-DOT NO. OR MUTCD NO.	LEGEND
A	31-0552	STOP 30"
B	31-0629	HANDICAPPED PARKING PENALTY
C	31-0648	VAN ACCESSIBLE
D	31-1619	NO LEFT TURN — BACKGROUND – SILVER, LEGEND – BLACK, CIRCLE & DIAGONAL – RED
E	31-0523	YIELD — BACKGROUND – SILVER, LEGEND – BLACK
F	41-4672, 41-4670	TRAFFIC CIRCLE
G	41-4811	
H	31-1109	DO NOT ENTER — BACKGROUND – SILVER, LEGEND – BLACK, SIGN FACE – RED
I	31-1177	ONE WAY (R)

NOTE: HANDICAPPED SIGNS TO BE INSTALLED IN PIPE BOLLARDS (SEE DETAIL). ALL HANDICAP SIGNAGE TO CONFORM TO LATEST BUILDING CODE.

SITE LEGEND

LOD	LIMIT OF DISTURBANCE
	PROPOSED CURB
	PROPOSED RETAINING WALL
X	PROPOSED CHAIN LINK FENCE
	PROPOSED GUIDE RAIL
	PROPOSED CONCRETE
	PROPOSED SAWCUT LINE



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REFER TO SHEET GN-1 FOR SITEWORK GENERAL NOTES

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(203) 630-1406
(203) 630-2615 Fax

Garden Homes

ROSE EQUITIES
Owner-Builders since 1949

STATE OF CONNECTICUT
CHRISTOPHER D. GOLDEN
No. 28750
LICENSED PROFESSIONAL ENGINEER

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS

No.	Date	Desc.
1.	6/29/2020	REVISED PER STAFF COMMENTS

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	1"=40'
Project No.	1800513
Date	05/28/2020
CAD File:	SK180051303

Title

SITE PLAN

Sheet No.

SP-1

Xref (s): BD180051301 ; XR180051301 ; XC180051301 ; XV180051302

6/29/2020 JSCHMITZ G:\JOBS\18\04\180051\3\DWG\SK180051303.DWG\SP-1 24X36 40SC

Drawing List

Architectural Drawings:

	Cover
A-01	Building 1 Plans
A-02	Building 1 Elevations
A-03	Building 1 Elevations
A-04	Building 2 & 3 Plans
A-05	Building 2 Elevations
A-06	Building 2 Elevations
A-07	Building 3 Elevations
A-08	Building 3 Elevations
A-09	Building 4 Plans
A-10	Building 4 Elevations
A-11	Building 4 Elevations
A-12	Building 5 Plans
A-13	Building 5 Elevations
A-14	Building 5 Elevations

Architectural Drawings

for

Preliminary & Final Major Site Plan Approval

Project # 98-0141-10

THE RESIDENCES AT MAIN
TRUMBULL | CONNECTICUT

May 28, 2020

PREPARED FOR:

K&K DEVELOPERS, Inc.
c/o GARDEN HOMES DEVELOPMENT
820 Morris Turnpike
Short Hills, NJ 07078

ROSE EQUITIES
8383 Wilshire Blvd., Suite 632
Beverly Hills, CA 90211

ROSE EQUITIES
OWNER-BUILDERS SINCE 1949

PREPARED BY:

ARCHITECT:
Minno & Wasko Architects & Planners
80 Lambert Lane - Suite 105
Lambertville, NJ 08530

MINNO WASKO
ARCHITECTS AND PLANNERS

CIVIL:
BL COMPANIES
355 Research Parkway
Meriden, CT 06450

Architecture
Engineering
Environmental
Land Surveying
Companies

PROJECT SUMMARY:

UNIT MIX

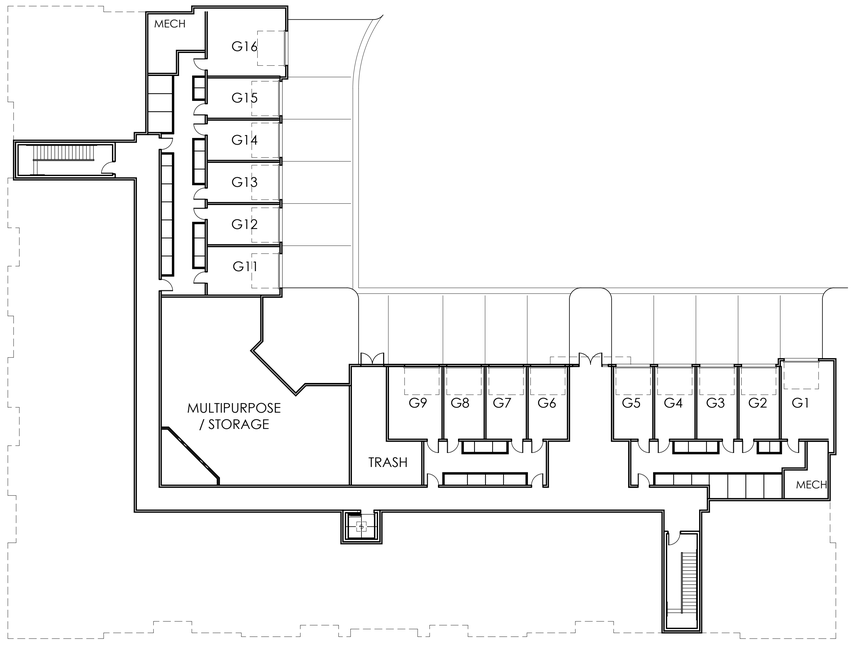
TYPE	#D.U.
1 BR	64
2 BR	196
Total	260

GROUND FLOOR

SCALE: 1/16"=1'-0"

FLOORS 2-4

SCALE: 1/16"=1'-0"



GARAGE LEVEL

SCALE: 1/16"=1'-0"

BUILDING 1

TOTAL UNITS: 68 DU

1-BEDROOM: 18 DU (26%)

2-BEDROOM: 50 DU (74%)

STATE OF CONNECTICUT DAVID J. MINNO NO. 8871 LICENSED ARCHITECT

A-01

BUILDING 1 CONCEPT PLANS

DATE: 05/28/2020

MINNO ■ WASKO
ARCHITECTS AND PLANNERS
80 LAMBERT LANE, SUITE 105, LAMBERTVILLE, NEW JERSEY 08530 MINNOWASKO.COM

K&K DEVELOPERS, INC.

ROSE EQUITIES
OWNER-BUILDERS SINCE 1949

THE RESIDENCES AT MAIN
TRUMBULL | CONNECTICUT

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01 - EAST ELEVATION (MAIN ENTRY)

02 - SOUTH ELEVATION

A-02

SCALE: 1/8" = 1'-0"

CONCEPT BUILDING ELEVATIONS - BUILDING 1

DATE: 05/28/2020

MINNO ■ WASKO
ARCHITECTS AND PLANNERS
80 LAMBERT LANE, SUITE 105, LAMBERTVILLE, NEW JERSEY 08530 MINNOWASKO.COM

K&K DEVELOPERS, INC.

ROSE EQUITIES
OWNER-BUILDERS SINCE 1949

THE RESIDENCES AT MAIN
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03 - WEST ELEVATION (GARAGE)

04 - NORTH ELEVATION (GARAGE)

A-03

SCALE: 1/8" = 1'-0"

CONCEPT BUILDING ELEVATIONS - BUILDING 1

DATE: 05/28/2020

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K&K DEVELOPERS, INC.

ROSE EQUITIES
OWNER-BUILDERS SINCE 1948

THE RESIDENCES AT MAIN
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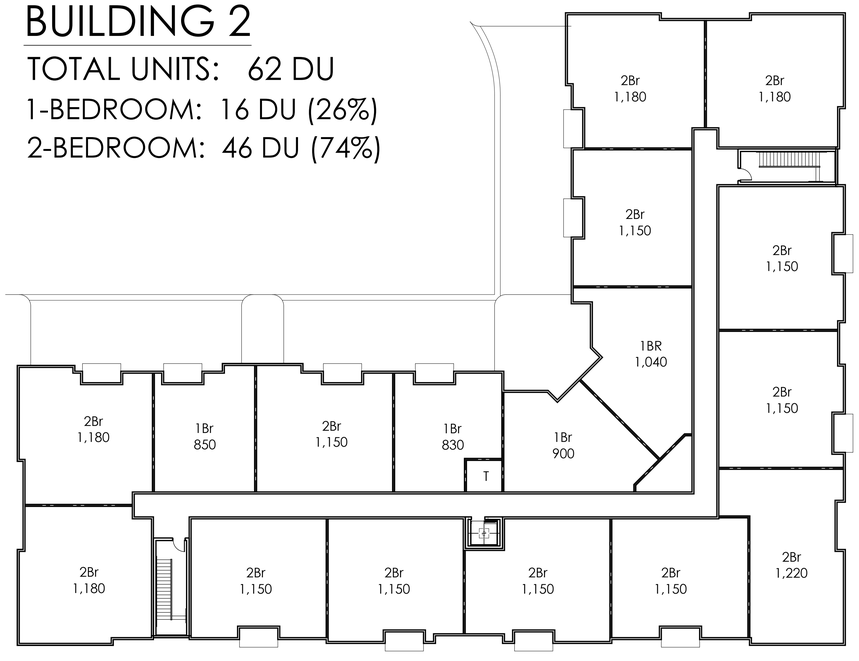
BUILDING 2

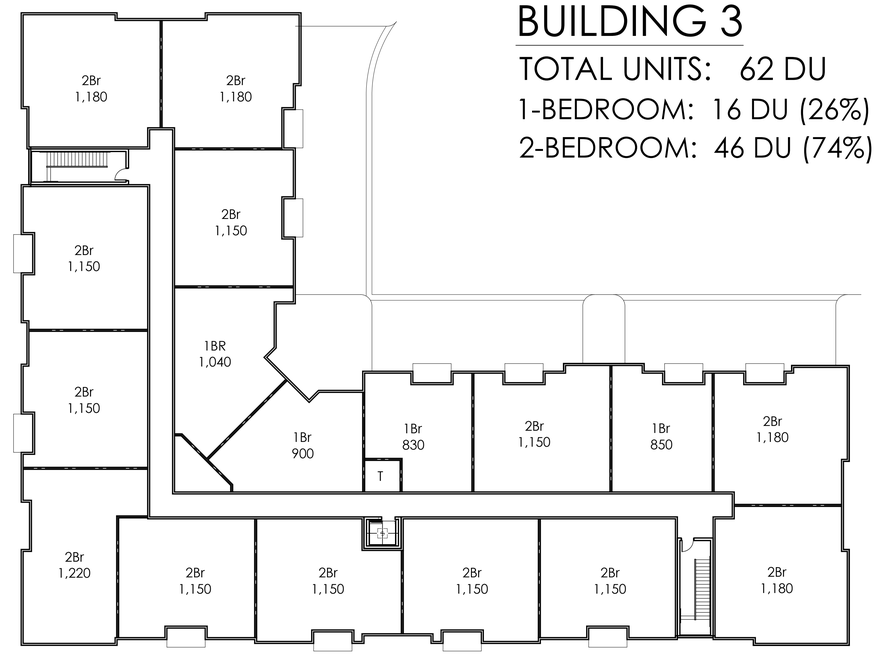
TOTAL UNITS: 62 DU
1-BEDROOM: 16 DU (26%)
2-BEDROOM: 46 DU (74%)



FLOORS 2-4
SCALE: 1/16"=1'-0"

BUILDING 3

TOTAL UNITS: 62 DU
1-BEDROOM: 16 DU (26%)
2-BEDROOM: 46 DU (74%)



FLOORS 2-4
SCALE: 1/16"=1'-0"

GROUND FLOOR
SCALE: 1/16"=1'-0"

GROUND FLOOR
SCALE: 1/16"=1'-0"

A-04

BUILDING 2 & 3 CONCEPT PLANS

DATE: 05/28/2020

MINNO ■ WASKO
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80 LAMBERT LANE, SUITE 105, LAMBERTVILLE, NEW JERSEY 08530 MINNOWASKO.COM

K&K DEVELOPERS, INC.

ROSE EQUITIES
OWNER-BUILDERS SINCE 1949

THE RESIDENCES AT MAIN
TRUMBULL | CONNECTICUT

98-0141-10

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01 - WEST ELEVATION (MAIN ENTRY)

02 - SOUTH ELEVATION

A-05

SCALE: 1/8" = 1'-0"

CONCEPT BUILDING ELEVATIONS - BUILDING 2

DATE: 05/28/2020

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ROSE EQUITIES
OWNER-BUILDERS SINCE 1949

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03 - EAST ELEVATION (GARAGE)

04 - NORTH ELEVATION (GARAGE)

A-06

SCALE: 1/8" = 1'-0"

CONCEPT BUILDING ELEVATIONS - BUILDING 2

DATE: 05/28/2020

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K&K DEVELOPERS, INC.

ROSE EQUITIES
OWNER-BUILDERS SINCE 1949

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01 - WEST ELEVATION (MAIN ENTRY)

02 - NORTH ELEVATION

A-07

SCALE: 1/8" = 1'-0"

CONCEPT BUILDING ELEVATIONS - BUILDING 3

DATE: 05/28/2020

MINNO ■ WASKO
ARCHITECTS AND PLANNERS
80 LAMBERT LANE, SUITE 105, LAMBERTVILLE, NEW JERSEY 08530 MINNOWASKO.COM

K&K DEVELOPERS, INC.

ROSE EQUITIES
OWNER-BUILDERS SINCE 1969

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03 - EAST ELEVATION (GARAGE)

04 - SOUTH ELEVATION (GARAGE)

A-08

SCALE: 1/8" = 1'-0"

CONCEPT BUILDING ELEVATIONS - BUILDING 3

DATE: 05/28/2020

MINNO ■ WASKO
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ROSE EQUITIES
OWNER-BUILDERS SINCE 1949

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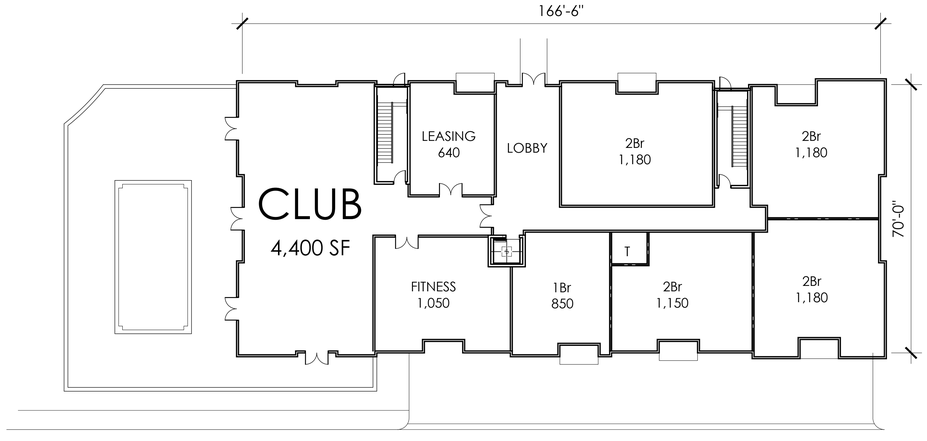
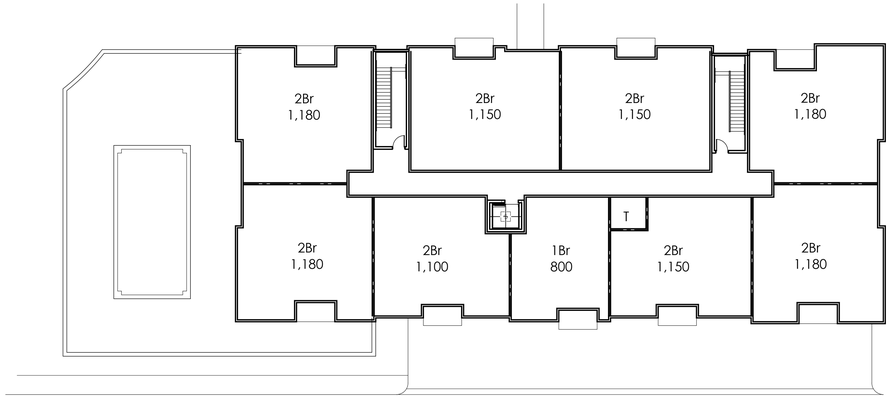


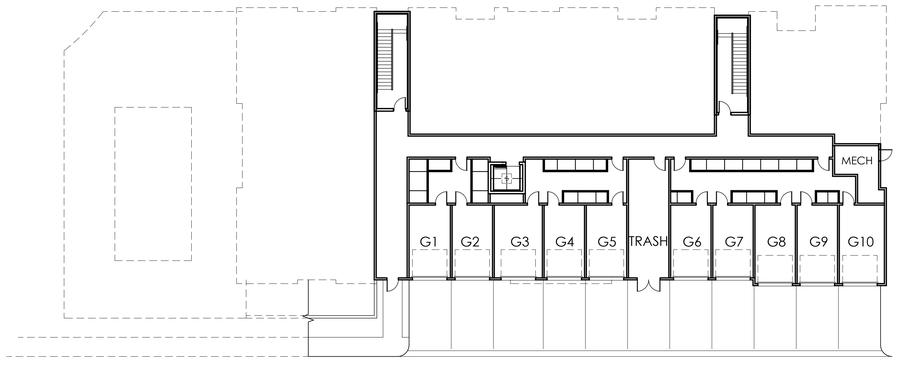
GROUND FLOOR

SCALE: 1/16"=1'-0"



FLOORS 2-4

SCALE: 1/16"=1'-0"



GARAGE LEVEL

SCALE: 1/16"=1'-0"

BUILDING 4

TOTAL UNITS: 32 DU

1-BEDROOM: 4 DU (12%)

2-BEDROOM: 28 DU (88%)

STATE OF CONNECTICUT
DAVID J. MINNO
NO. 8871
LICENSED ARCHITECT

A-09

BUILDING 4 CONCEPT PLANS

DATE: 05/28/2020

MINNO ■ WASKO
ARCHITECTS AND PLANNERS
80 LAMBERT LANE, SUITE 105, LAMBERTVILLE, NEW JERSEY 08530 MINNOWASKO.COM

K&K DEVELOPERS, INC.

ROSE EQUITIES
OWNER-BUILDERS SINCE 1949

THE RESIDENCES AT MAIN
TRUMBULL | CONNECTICUT

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01 - EAST ELEVATION (MAIN ENTRY)

02 - NORTH ELEVATION (CLUBHOUSE)

A-10

SCALE: 1/8" = 1'-0"

CONCEPT BUILDING ELEVATIONS - BUILDING 4

DATE: 05/28/2020

MINNO ■ WASKO
ARCHITECTS AND PLANNERS
80 LAMBERT LANE, SUITE 105, LAMBERTVILLE, NEW JERSEY 08530 MINNOWASKO.COM

K&K DEVELOPERS, INC.

ROSE EQUITIES
OWNER-BUILDERS SINCE 1969

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03 - WEST ELEVATION (GARAGE)

04 - SOUTH ELEVATION

A-11

SCALE: 1/8" = 1'-0"

CONCEPT BUILDING ELEVATIONS - BUILDING 4

DATE: 05/28/2020

MINNO ■ WASKO
ARCHITECTS AND PLANNERS
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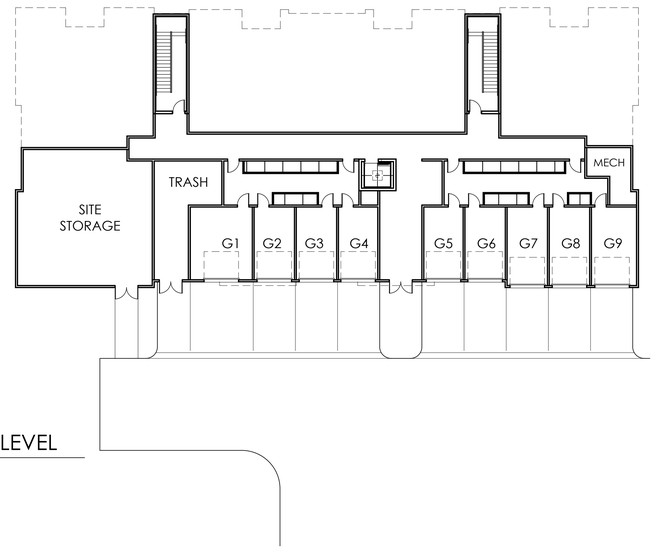
GROUND FLOOR

SCALE: 1/16"=1'-0"

FLOORS 2-4

SCALE: 1/16"=1'-0"



GARAGE LEVEL

SCALE: 1/16"=1'-0"

BUILDING 5

TOTAL UNITS: 36 DU

1-BEDROOM: 10 DU (28%)

2-BEDROOM: 26 DU (72%)

A-12

BUILDING 5 CONCEPT PLANS

DATE: 05/28/2020

MINNO ■ WASKO
ARCHITECTS AND PLANNERS
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K&K DEVELOPERS, INC.

ROSE EQUITIES
OWNER-BUILDERS SINCE 1949

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01 - NORTH ELEVATION (MAIN ENTRY)

02 - WEST ELEVATION

A-13

SCALE: 1/8" = 1'-0"

CONCEPT BUILDING ELEVATIONS - BUILDING 5

DATE: 05/28/2020

MINNO ■ WASKO
ARCHITECTS AND PLANNERS
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K&K DEVELOPERS, INC.

ROSE EQUITIES
OWNER-BUILDERS SINCE 1949

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04 - EAST ELEVATION

A-14

SCALE: 1/8" = 1'-0"

CONCEPT BUILDING ELEVATIONS - BUILDING 5

DATE: 05/28/2020

MINNO ■ WASKO
ARCHITECTS AND PLANNERS
80 LAMBERT LANE, SUITE 105, LAMBERTVILLE, NEW JERSEY 08530 MINNOWASKO.COM

K&K DEVELOPERS, INC.

ROSE EQUITIES
OWNER-BUILDERS SINCE 1969

THE RESIDENCES AT MAIN
TRUMBULL | CONNECTICUT

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Property Location: 5065 MAIN STREET | MAP ID: E/11 / 00014/ 000/ | Bldg Name: | State Use: 327

Vision ID: 11508 | Account # | Bldg #: 1 of 3 | Sec #: 1 of 1 | Card 1 of 3 | Print Date: 05/26/2020 11:42

CURRENT OWNER	TOPO.	UTILITIES	STRT./ROAD	LOCATION
TRUMBULL SHOPPING CENTER #2 LI C/O WESTFIELD PROPERTY TAX DEI P O BOX 130940 CARLSBAD, CA 92013-0940 Additional Owners:				

SUPPLEMENTAL DATA

Other ID:	00038200	Dev Lot:	
Census Trac:	0903	Survey Map:	
Fire Dist:	L	Survey Map:	
Border Prop	LAND S	Section # :	A1
Voting Dist		CB Letter:	
GIS ID: 00038200		ASSOC PID#	

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
COM LAND	2-1	42,539,300	29,777,510
COM CONDO	2-4	254,500,700	178,150,490
COM OUTBL	2-5	1,837,500	1,286,250
	Total	298,877,500	209,214,250

6144
TRUMBULL, CT

VISION

RECORD OF OWNERSHIP

	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.
TRUMBULL SHOPPING CENTER #2 LLC	1031/ 509	12/30/1999	U		1	W

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2019	2-1	29,777,510	2018	2-1	28,996,100	2017	2-1	28,996,100
2019	2-4	178,150,490	2018	2-4	178,931,900	2017	2-4	178,931,900
2019	2-5	1,286,250	2018	2-5	1,286,250	2017	2-5	1,286,250
	Total:	209,214,250		Total:	209,214,250		Total:	209,214,250

EXEMPTIONS

Year	Type	Description	Amount
		Total:	

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
1/A				

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	247,289,600
Appraised XF (B) Value (Bldg)	2,397,600
Appraised OB (L) Value (Bldg)	1,837,500
Appraised Land Value (Bldg)	42,539,300
Special Land Value	0
Total Appraised Parcel Value	298,877,500
Valuation Method:	O
Adjustment:	0
Net Total Appraised Parcel Value	298,877,500

NOTES

WESTFIELD SHOPPING TOWN TRUMBULL
150 STORES +/- 9 FR. ELV

TRUCK TUNNEL=10020
JCPENNY, LORD+TAYLOR, CIRCUIT CITY
PART OF MALL (SEPARATE CARDS)

9-24-07 REMOVED MACY'S TARGET IS UC
9-12-08 TARGET COMPLETED 11/4/08 MACY

TC MAPS 3476 3477

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments
CO1728051		CM	Commercial	378,549		0		REPAIRS PARKING DE
CO51727391	05/19/2017	CM	Commercial	1,625,083		0		TEAR OFF AND REPLA
4696	05/07/2008	CM	Commercial	1,310,000		0	11/04/2008	R&R FLOOR, TILE & C
16841	06/14/2007	BP	Building Permi	16,841,436		0		NEW TARGET STORE
6-7-2952	06/08/2007	RF	Roofing	1,019,000		0		REROOF MAIN BUILDI
3-07-2502	03/29/2007	CM	Commercial	640,000		0		SITE PREP FOR TARGI

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd.	Purpose/Result
01/19/2012	1	1	REV	40	Hearing-No change
11/19/2010	2	5	MD	50	Permit Check
10/01/2010	2	5	MD	50	Permit Check
09/12/2008	2		RM	50	Permit Check
03/19/2008			BAA	71	BAA No Change

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Front	Depth	Units		Unit Price	I. Factor	S.A.		C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing		S Adj Fact	Adj. Unit Price	Land Value
1	327	Reg Mall	BC				77.74	AC	190,000.00	1.0105	5		1.00	190	2.85				1.00		42,539,300

Total Card Land Units: 77.74 AC | Parcel Total Land Area: 77.74 AC | Total Land Value: 42,539,300

CONSTRUCTION DETAIL

Element	Cd.	Ch.	Description
Style	83		Mall
Model	94		Commercial
Grade	19		A
Stories	2		2 Stories
Occupancy	188		
Exterior Wall 1	15		Concrete
Exterior Wall 2	20		Brick Masonry
Roof Structure	01		Flat
Roof Cover	04		Tar & Gravel
Interior Wall 1	01		Minimum
Interior Wall 2			
Interior Floor 1	03		Concrete
Interior Floor 2			
Heating Fuel	04		Electric
Heating Type	04		Forced Air
AC Type	03		Central
Bldg Use	327		Reg Mall
Heat/AC	02		Heat/AC Split
Frame Type	05		Steel
Baths/Plumbing	02		Average
Ceiling/Walls	03		Sus-Ceil/Mn WL
Rooms/Prtns	02		Average
Wall Height	16		
% Comn Wall			

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd.	Ch.	Description

MIXED USE

Code	Description	Percentage
327	Reg Mall	100

COST/MARKET VALUATION

Adj. Base Rate:	387.06
Replace Cost	329,719,459
AYB	1965
Dep Code	VG
Remodel Rating	MJ
Year Remodeled	2010
Dep %	25
Functional Obslnc	
External Obslnc	
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	75
Apprais Val	247,289,600
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	

BAS[851841]

UST
20 4

OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value
PAV1	Paving Asph.			L	1,750,	2.10	2005			A	50	1,837,500
VLT1	Vault			B	162	110.00	1990		1		100	13,400
VLT1	Vault			B	108	110.00	1990		1		100	8,900
ELV	Elevator	F	Freight	B	8	80,000.00	1990		1		100	480,000
ELV	Elevator	P	Passenger	B	6	75,000.00	1990		1		100	337,500
SPR	Sprinklers	WT	Wet	B	795,93	2.20	1990		1		100	1,313,300
ELV	Elevator	F	Freight	B	2	80,000.00	1990		1		100	120,000
ELV	Elevator	P	Passenger	B	2	75,000.00	1990		1		100	112,500
LDL1	Load Leveler			B	4	4,000.00	1990		1		100	12,000

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
BAS	First Floor	851,841	851,841	851,841	387.06	329,710,170
UST	Utility Storage	0	80	24	116.12	9,289
	Ttl. Gross Liv/Lease Area:	851,841	851,921			329,719,459

Property Location: 5065 MAIN STREET | MAP ID: E/11 / 00014/ 000/ | Bldg Name: | State Use: 327

Vision ID: 11508 | Account # | Bldg #: 2 of 3 | Sec #: 1 of 1 | Card 2 of 3 | Print Date: 05/26/2020 11:42

CURRENT OWNER	TOPO.	UTILITIES	STRT./ROAD	LOCATION
TRUMBULL SHOPPING CENTER #2 LI C/O WESTFIELD PROPERTY TAX DEI P O BOX 130940 CARLSBAD, CA 92013-0940 Additional Owners:				

SUPPLEMENTAL DATA

Other ID:	00038200	Dev Lot:	
Census Trac:	0903	Survey Map:	
Fire Dist:	L	Survey Map:	
Border Prop	LAND S	Section # :	A1
Voting Dist		CB Letter:	
GIS ID: 00038200		ASSOC PID#	

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
COM LAND	2-1	42,539,300	29,777,510
COM CONDO	2-4	254,500,700	178,150,490
COM OUTBL	2-5	1,837,500	1,286,250
	Total	298,877,500	209,214,250

6144
TRUMBULL, CT

VISION

RECORD OF OWNERSHIP

	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.
TRUMBULL SHOPPING CENTER #2 LLC	1031/ 509	12/30/1999	U		1	W

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2019	2-1	29,777,510	2018	2-1	28,996,100	2017	2-1	28,996,100
2019	2-4	178,150,490	2018	2-4	178,931,900	2017	2-4	178,931,900
2019	2-5	1,286,250	2018	2-5	1,286,250	2017	2-5	1,286,250
	Total:	209,214,250		Total:	209,214,250		Total:	209,214,250

EXEMPTIONS

Year	Type	Description	Amount
		Total:	

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

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ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
1/A				

NOTES

PARKING FOR MALL - 300 I SPACES

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	5,317,300
Appraised XF (B) Value (Bldg)	199,400
Appraised OB (L) Value (Bldg)	0
Appraised Land Value (Bldg)	0
Special Land Value	0
Total Appraised Parcel Value	298,877,500
Valuation Method:	O
Adjustment:	0
Net Total Appraised Parcel Value	**298,877,500**

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd.	Purpose/Result
01/19/2012	1	1	REV	40	Hearing-No change
11/19/2010	2	5	MD	50	Permit Check
10/01/2010	2	5	MD	50	Permit Check
09/12/2008	2		RM	50	Permit Check
03/19/2008			BAA	71	BAA No Change

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Front	Depth	Units		Unit Price	I. Factor	S.A.		C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing		S Adj Fact	Adj. Unit Price	Land Value
2	336	Park Gar	BC				0	SF	0.00	1.0000			1.00		0.00				.00		0

Total Card Land Units: 0.00 AC | Parcel Total Land Area: 77.74 AC | Total Land Value: 0

CONSTRUCTION DETAIL

Element	Cd.	Ch.	Description
Style	62		Parking Garage
Model	96		Industrial
Grade	09		C
Stories	2		2 Stories
Occupancy	1		
Exterior Wall 1	15		Concrete
Exterior Wall 2			
Roof Structure	01		Flat
Roof Cover	07		Concrete Tile
Interior Wall 1	01		Minimum
Interior Wall 2			
Interior Floor 1	03		Concrete
Interior Floor 2			
Heating Fuel	00		None
Heating Type	01		None
AC Type	01		None
Bldg Use	336		Park Gar
Heat/AC	00		None
Frame Type	04		Reinf. Concr
Baths/Plumbing	00		None
Ceiling/Walls	02		Ceiling Only
Rooms/Prtns	01		Light
Wall Height	12		
% Comn Wall			

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd.	Ch.	Description

MIXED USE

Code	Description	Percentage
336	Park Gar	100

COST/MARKET VALUATION

Adj. Base Rate:	34.66
Replace Cost	7,089,772
AYB	1986
Dep Code	A
Remodel Rating	
Year Remodeled	
Dep %	25
Functional Obslnc	
External Obslnc	
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	75
Apprais Val	5,317,300
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	

FUS[102276]

BAS[102276]

OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value
SPR	Sprinklers	DR	Dry	B	102,27	2.60	1990		1		100	199,400

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
BAS	First Floor	102,276	102,276	102,276	34.66	3,544,886
FUS	Finished Upper Story	102,276	102,276	102,276	34.66	3,544,886
	Ttl. Gross Liv/Lease Area:	204,552	204,552			7,089,772

Property Location: 5065 MAIN STREET | MAP ID: E/11 / 00014/ 000/ | Bldg Name: | State Use: 327

Vision ID: 11508 | Account # | Bldg #: 3 of 3 | Sec #: 1 of 1 | Card 3 of 3 | Print Date: 05/26/2020 11:43

CURRENT OWNER	TOPO.	UTILITIES	STRT./ROAD	LOCATION
TRUMBULL SHOPPING CENTER #2 LI C/O WESTFIELD PROPERTY TAX DEI P O BOX 130940 CARLSBAD, CA 92013-0940 Additional Owners:				

SUPPLEMENTAL DATA

Other ID:	00038200	Dev Lot:	
Census Trac:	0903	Survey Map:	
Fire Dist:	L	Survey Map:	
Border Prop	LAND S	Section # :	A1
Voting Dist		CB Letter:	
GIS ID: 00038200		ASSOC PID#	

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
COM LAND	2-1	42,539,300	29,777,510
COM CONDO	2-4	254,500,700	178,150,490
COM OUTBL	2-5	1,837,500	1,286,250
	Total	298,877,500	209,214,250

6144
TRUMBULL, CT

VISION

RECORD OF OWNERSHIP

	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.
TRUMBULL SHOPPING CENTER #2 LLC	1031/ 509	12/30/1999	U		1	W

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2019	2-1	29,777,510	2018	2-1	28,996,100	2017	2-1	28,996,100
2019	2-4	178,150,490	2018	2-4	178,931,900	2017	2-4	178,931,900
2019	2-5	1,286,250	2018	2-5	1,286,250	2017	2-5	1,286,250
	Total:	209,214,250		Total:	209,214,250		Total:	209,214,250

EXEMPTIONS

Year	Type	Description	Amount
		Total:	

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
1/A				

NOTES

PARKING FOR MALL - 310 I SPACES

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	5,468,800
Appraised XF (B) Value (Bldg)	205,200
Appraised OB (L) Value (Bldg)	0
Appraised Land Value (Bldg)	0
Special Land Value	0
Total Appraised Parcel Value	298,877,500
Valuation Method:	O
Adjustment:	0
Net Total Appraised Parcel Value	**298,877,500**

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd.	Purpose/Result
01/19/2012	1	1	REV	40	Hearing-No change
11/19/2010	2	5	MD	50	Permit Check
10/01/2010	2	5	MD	50	Permit Check
09/12/2008	2		RM	50	Permit Check
03/19/2008			BAA	71	BAA No Change

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Front	Depth	Units		Unit Price	I. Factor	S.A.		C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing		S Adj Fact	Adj. Unit Price	Land Value
3	336	Park Gar	BC				0	SF	0.00	1.0000			1.00		0.00				.00		0

Total Card Land Units: 0.00 AC | Parcel Total Land Area: 77.74 AC | Total Land Value: 0

Property Location: 5065 MAIN STREET | MAP ID: E/11 / 00014/ 000/ | Bldg Name: | State Use: 327

Vision ID: 11508 | Account # | Bldg #: 3 of 3 | Sec #: 1 of 1 | Card 3 of 3 | Print Date: 05/26/2020 11:43

CONSTRUCTION DETAIL

Element	Cd.	Ch.	Description
Style	62		Parking Garage
Model	96		Industrial
Grade	09		C
Stories	2		2 Stories
Occupancy	1		
Exterior Wall 1	15		Concrete
Exterior Wall 2			
Roof Structure	01		Flat
Roof Cover	07		Concrete Tile
Interior Wall 1	01		Minimum
Interior Wall 2			
Interior Floor 1	03		Concrete
Interior Floor 2			
Heating Fuel	00		None
Heating Type	01		None
AC Type	01		None
Bldg Use	336		Park Gar
Heat/AC	00		None
Frame Type	04		Reinf. Concr
Baths/Plumbing	00		None
Ceiling/Walls	02		Ceiling Only
Rooms/Prtns	01		Light
Wall Height	12		
% Comn Wall			

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd.	Ch.	Description

MIXED USE

Code	Description	Percentage
336	Park Gar	100

COST/MARKET VALUATION

Adj. Base Rate:	34.64
Replace Cost	7,291,720
AYB	1986
Dep Code	A
Remodel Rating	
Year Remodeled	
Dep %	25
Functional Obslnc	
External Obslnc	
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	75
Apprais Val	5,468,800
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	

FUS[105250]

BAS[105250]

OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value
SPR	Sprinklers	DR	Dry	B	105,25	2.60	1990		1		100	205,200

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
BAS	First Floor	105,250	105,250	105,250	34.64	3,645,860
FUS	Finished Upper Story	105,250	105,250	105,250	34.64	3,645,860
	Ttl. Gross Liv/Lease Area:	210,500	210,500			7,291,720

Chain of Title
#1

1031 PAGE 509

LIMITED WARRANTY DEED

ALL PEOPLE TO WHOM THESE PRESENTS SHALL COME, GREETING:

KNOW YE, That Trumbull Shopping Center #1 LLC of the City of Los Angeles, ity of Los Angeles and State of California ("Grantor"), for the consideration of One Dollar and other good and valuable considerations received to the full satisfaction of nbull Shopping Center #2 LLC of the City of Los Angeles, County of Los Angeles State of California ("Grantee"), does hereby bargain, sell, grant and confirm unto the Grantee, its heirs and assigns forever, a certain piece or parcel of land with the dings thereon situated partly in the Town of Trumbull and partly in the City of lgeport, County of Fairfield and State of Connecticut, and being more particularly, nded and described on Schedule A attached hereto.

TO HAVE AND TO HOLD the above-granted and bargained premises, with the vileges and appurtenances thereof unto the said Grantee, its heirs and assigns forever, its and their own proper use and behoof.

AND ALSO, the said Grantor, does for itself, its heirs and assigns, covenant with the said Grantee, its heirs and assigns, that it has not made or done or suffered to be made done any act or thing whereby the same premises have been encumbered in any way ratever, except for all matters of record.

AND FURTHERMORE, the said Grantor, for itself, its heirs and assigns, arrants and defends the said premises against all claims and demands whatsoever arising or through or under any act or acts of said Grantor herein, but not as to those claiming therwise

No Conveyance Tax Collected
Vivian L. Burr
Town Clerk of Trumbull

10887620 3

IN WITNESS WHEREOF, Mark A. Stefanek

has set his hand and seal this 28th day of December, 1999.

Signed, sealed and delivered in the presence of:

Grantor: TRUMBULL SHOPPING CENTER #1 LLC, a Delaware limited liability company

By: Westland Properties, Inc., a Delaware corporation, its managing member

By: _____
Name:
Title:

STATE OF _____

COUNTY OF _____ ss: _____ _____, 19___

Personally appeared before me, the undersigned officer, as aforesaid Signer of the foregoing Instrument, and acknowledged the same to be his free act and deed as such officer and the free act and deed of Westland Properties, Inc.

_____
Commissioner of the Superior Court
Notary Public/My Commission Expires: _____

SCHEDULE A

ALL THAT CERTAIN plot, piece or parcel of land, with the buildings thereon erected, situated partly in the Town of Trumbull and partly in the City of Bridgeport, County of Fairfield and State of Connecticut, being shown on a certain map entitled, "Map of Property known as The Trumbull Shopping Park for Westland Properties, Inc., Trumbull - Bridgeport, Connecticut, Scale 1" = 80', prepared by Hardiman Co. & Assoc., Inc. on January 12, 1990, revised May 17, 1990, and filed in the Office of the Clerk of the Town of Trumbull on June 5, 1990 as Map No. 2593 and in the Office of the Clerk of the City of Bridgeport on _____ as Map No. _____ and which said parcel, according to said map, is more particularly bounded and described as follows:

Beginning at a point marked by a Connecticut Highway Department monument set in the Westerly side of Main Street (Connecticut Route 111) distant 171.34' Northerly from the corner formed by the intersection of the Westerly side of Main Street with the Northerly side of Gorham Place when measured along said Westerly line of Main Street.

Running thence along land now or formerly of Redgate Funeral Corp. and along land now or formerly of Hrebin, Hull, Loucony, Gerth, Wern, Siwy, Kochiss, Pinto, Balas & Riccio, the following five courses and distances:

1) South 85° 46' 09" West 274.69';
2) South 85° 50' 49" West 226.00';
3) South 88° 08' 19" West 225.26';
4) South 86° 54' 29" West 213.52';
5) South 00° 38' 26" East 186.35' to a point and the Northerly side of Gorham Place.

Running thence along the Northerly side of Gorham Place, the Westerly extremity of Gorham Place and along land now or formerly of Toomey the following nine courses and distances:

1) North 84° 54' 26" West 32.47';
2) Northwesterly along the arc of a curve bearing to the right having a radius of 40.00', a distance of 35.83';
3) Westerly along the arc of a curve bearing to the left, having a radius of 40.00', a distance of 88.55';
4) North 84° 54' 26" West 25.07';
5) South 09° 07' 11" East 32.34';
6) South 31° 22' 00" West 43.40';
7) South 38° 24' 03" West 19.50';
8) South 31° 02' 01" West 26.00';
9) South 20° 37' 37" East 42.97' to a point and land now or formerly of Dvorchik.

Running thence along said land now or formerly of Dvorchik and along land now or formerly of Green, Sucheczki, Andersen, Hartman, Lepore, Mihalko, Olex, Kilmoszewski, Ford, Stevens, Packer, Gendal and Lantowski, the following twenty one courses and distances:

1) South 65° 34' 40" West 99.41';
2) South 66° 19' 50" West 151.66';
3) North 21° 27' 31" West 22.04';

4) South 80° 39' 29" West 78.26';
6) South 54° 43' 30" West 90.13';
6) South 77° 35' 21" West 109.45';
7) South 72° 29' 01" West 88.80';
8) South 48° 30' 22" West 27.61';
9) South 75° 01' 31" West 67.71';
10) South 38° 50' 20" West 63.23';
11) South 57° 33' 38" West 43.33';
12) North 85° 15' 36" West 44.24';
13) North 76° 48' 04" West 61.16';
14) North 89° 12' 55" West 63.72';
15) South 02° 16' 12" East 40.66';
16) South 66° 05' 59" West 127.34'
17) South 76° 09' 19" West 98.31';
18) South 73° 54' 19" West 87.09';
19) South 69° 59' 09" West 111.03';
20) South 21° 29' 01" East 94.25';
21) South 35° 17' 11" East 110.22' to a point and the Northerly side of Old Town Road.

Running thence along said Northerly side of Old Town Road North 83° 24' 42" West 114.80' to a point and land now or formerly of S. Frouge;

Thence along said land now or formerly of S. Frouge and along land now or formerly of Bowes, Bennett, McKenna, Scalzi, Dematos, the Easterly and Northerly side of Green Street, Kundert, Macciomei, Sidoti, Massluk and Professional Offices of Trumbull, the following fourteen courses and distances:

1) North 21° 29' 01" West 147.26';
2) North 28° 55' 31" West 71.56';
3) North 01° 54' 00" West 145.20';
4) North 76° 07' 23" West 154.40';
5) North 11° 40' 01" East 60.02';
6) South 75° 57' 50" West 35.35';
7) South 75° 51' 06" West 26.06';
8) South 75° 56' 11" West 73.95';
9) North 13° 11' 41" West, in part along the Easterly extremity of Green Street, 199.93';
10) South 76° 48' 20" West, along the Northerly side of Green Street, 25.00';
11) North 13° 11' 41" West 150.00';
12) South 76° 46' 40" West 281.47';
13) North 10° 24' 41" West 150.19';
14) South 76° 46' 20" West 300.00' to a point and the Easterly side of Madison Avenue.

Running thence North 11° 26' 50" West along the Easterly side of Madison Avenue, 337.50' to a point and land now or formerly of Tagliaferi.

Running thence along said land now or formerly of Tagliaferi and along lands now or formerly of Gall, Fairmont Realty, Gall, Kyle, St. Cyr, Wehrheim and Ware the following three courses and distances:

1) North 83° 40' 08" East 605.88';
2) North 84° 16' 00" East 100.03';

th 05° 43' 46" West 100.00' to a point and the Southerly side
Walnut Avenue;

thence along the Southerly side of Walnut Avenue North 84° 16' 14"
.92';

Southeasterly along the Southwesterly side of Walnut Avenue and along
: of a curve bearing to the right, having a radius of 20.00', a distance
52';

Easterly along the Southerly side of Walnut Avenue and along the arc of
bearing to the left, having a radius of 50.00', a distance of 142.59';

g thence along the Easterly extremity of Walnut Avenue and along land
formerly of Gowans & Maresco, North 05° 43' 46" West 250.00' to a point
e Southerly side of Elmwood Avenue.

g thence North 84° 16' 14" East along the Southerly side of Elmwood
55.00';

North 05° 43' 46" West along the Easterly extremity of Elmwood Avenue
;

: Westerly along the Northerly side of Elmwood Avenue and along the arc
curve bearing to the left, having a radius of 50.00', a distance of
';

: South 84° 16' 14" West still along the Northerly side of Elmwood
, 5.00' to a point and land now or formerly of Weiman;

ng thence along said land now or formerly of Weiman North 05° 43' 46"
117.50' to a point and land now or formerly of the State of Connecticut;

ng thence along said land now or formerly of the State of Connecticut the
wing five courses and distances:

orth 84° 16' 14" East 200.00'
orth 05° 24' 05" West 82.01';
orth 83° 36' 09" East 999.17';
outh 03° 15' 24" East 47.99';
orth 86° 30' 33" East 1065.41' to a point and the Westerly
xtremity of Lorraine Street;

e South 03° 29' 27" East along the Westerly extremity of Lorraine Street
along land now or formerly of Dicicco 161.05' to a point and land now or
rly of Kunkel;

ing thence along said land now or formerly of Kunkel and along land now or
rly of Romonosky, Iodice, Thennes and Ruggiero the following three
ses and distances:

South 84° 13' 03" West 100.08';
South 84° 32' 39" West 201.97';
South 06° 21' 56" East 136.44' to a point and the Northerly side
of Whalburn Avenue;

Thence along the Northerly line of Whalburn Avenue South 83° 38' 04" West 64.50' to the Westerly extremity of said Whalburn Avenue;

Thence South 06° 21' 56" East along the Westerly extremity of Whalburn Avenue and along land now or formerly of Zaveruha 163.80';

Thence still along said land now or formerly of Zaveruha North 83° 38' 04" East 90.00' to a point and land now or formerly of Gorlo;

Running thence along said land now or formerly of Gorlo and along the Westerly extremity of Stuart Place South 06° 21' 56" East 163.80' to a point and the Southerly line of Stuart Place;

Running thence along Stuart Place the following five courses and distances:

1) North 83° 38' 04" East 10.00';
2) South 06° 21' 56" East 20.00';
3) North 83° 38' 04" East 40.00';
4) North 06° 21' 56" West 20.00';
5) North 83° 38' 04" East 190.40' to a point and land now or formerly of Renzi;

Running thence along said land now or formerly of Renzi and along land now or formerly of Laske the following four courses and distances:

1) South 06° 21' 56" East 136.00';
2) North 85° 01' 06" East 105.19';
3) North 14° 38' 41" West 15.00';
4) North 83° 38' 05" East 275.00' to a point in the Westerly side of Main Street;

Running thence along the Westerly side of Main Street South 14° 38' 42" East 34.98' and South 14° 29' 11" East 192.27' to the point and place of beginning.

(Lorraine St
Vol 946 PG 14)

hp capture 639.tif (2112x2368x2 tiff)

VOL 946 PG 1

VOL 946 PAGE 1

DEED

WESTLAND PROPERTIES, INC., a Delaware corporation ("Grantor"), with an address at 11601 Wilshire Blvd., Los Angeles, CA 90025, for and in consideration of the sum of Ten and no/100 Dollars ($10.00) paid to Grantor and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, has GRANTED, SOLD and CONVEYED and does hereby GRANT, SELL and CONVEY unto WEA CT HOUSES LLC, a Delaware limited liability company ("Grantee"), with an address at 11601 Wilshire Blvd., Los Angeles, CA 90025, certain land being more particularly described in Exhibit A attached hereto and incorporated herein by reference, together with all buildings and other improvements located on such land (such land and improvements being collectively referred to as the "Property").

This conveyance is made and accepted subject to all matters set out in Exhibit B attached hereto and incorporated herein by reference.

TO HAVE AND TO HOLD the Property, together with all easements, hereditaments, rights and appurtenances pertaining thereto, including all of Grantor's right, title and interest in and to adjoining streets, alleys and rights-of-way, unto Grantee and Grantee's successors and assigns forever;

Conveyance Tax Received
9,725.00 Vivian L. Burr 8139.50
State Town Clerk of Trumbull Town

IN WITNESS WHEREOF, Grantor has caused this Der
executed as of the 30th day of December, 1997.

WITNESSED BY:

GRANTOR:

WESTLAND PROPERTI

By:
Printed Name: Mark Su
Title: Treasurer

Latest Mailing Address of Grantee:

11601 Wilshire Blvd.
Los Angeles, California 90025

hp capture 640.tif (1536x1280x2 tiff)

STATE OF CALIFORNIA)
)
COUNTY OF LOS ANGELES)

The foregoing instrument was acknowledged before me this 30th day of December, 1997, by Mark Stefanek, Treasurer of WESTLAND PROPERTIES, INC., a Delaware corporation, on behalf of said corporation.

LEESA A. ASHLEY
Commission # 1135573
Notary Public — California
Los Angeles County
My Comm. Expires Apr 30, 2001

Commission of the Superior Court
Notary Public
My Commission Expires:

hp capture 641.tif (1538x2176x2 tiff)

hp capture 652.tif (2112x1792x2 tiff)

[redacted]

EXHIBIT A

Lorraine Street, Trumbull
Legal Description

All that certain piece or parcel of land situated in the Town of Trumbull, County of Fairfield, State of Connecticut, being shown and designated as "Lorraine St." on a certain map entitled "Arnol Berger, Trumbull Conn.", which map is dated July 24, 1920 and is on file in the Trumbull Town Clerk's Office as Map Number 59.

Property Location: 5085 MAIN STREET | MAP ID: E/11 / 00170/ 000/ | Bldg Name: | State Use: 390

Vision ID: 101794 | Account # 10152019 | Bldg #: 1 of 1 | Sec #: 1 of 1 | Card 1 of 1 | Print Date: 03/10/2020 11:10

CURRENT OWNER	TOPO.	UTILITIES	STRT./ROAD	LOCATION
WEA CT HOUSES LLC C/O WESTFIELD PROPERTY TAX DEI P O BOX 130940 DEPT WFLD CARLSBAD, CA 92013 Additional Owners:				

SUPPLEMENTAL DATA

Other ID:	10152019	Dev Lot:	
Census Trac:		Survey Map:	
Fire Dist:	L	Survey Map:	
Border Prop		Section # :	
Voting Dist		CB Letter:	
GIS ID:		ASSOC PID#	

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
VAC CM LN	5-2	5,606,800	3,924,760
		Total	5,606,800	3,924,760

6144
TRUMBULL, CT

VISION

RECORD OF OWNERSHIP

	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.
WEA CT HOUSES LLC	1796/ 684	10/11/2019	U	V	0	29

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2019	5-2	3,924,760						
	Total:	3,924,760		Total:			Total:	

EXEMPTIONS

Year	Type	Description	Amount
		Total:	

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
0/A				

NOTES

LOT CONSOLIDATION 2019 GL -
TC MAP 3476

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	0
Appraised XF (B) Value (Bldg)	0
Appraised OB (L) Value (Bldg)	0
Appraised Land Value (Bldg)	5,606,800
Special Land Value	0
Total Appraised Parcel Value	5,606,800
Valuation Method:	C
Adjustment:	0
Net Total Appraised Parcel Value	**5,606,800**

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd.	Purpose/Result

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Front	Depth	Units		Unit Price	I. Factor	S.A.		C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing Spec Use	Special Pricing Spec Calc	S Adj Fact	Adj. Unit Price	Land Value
1	390	Com Ld Dv	MDD				10.42	AC	190,000.00	1.0105	5		0.95	191	2.95	VACANT ESMTS -5			1.00		5,606,800

Total Card Land Units: 10.42 AC | Parcel Total Land Area: 10.42 AC | Total Land Value: 5,606,800

CONSTRUCTION DETAIL

Element	Cd.	Ch.	Description
Model	**00**		**Vacant**

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd.	Ch.	Description

MIXED USE

Code	Description	Percentage
390	**Com Ld Dv**	**100**

COST/MARKET VALUATION

Adj. Base Rate:	**0.00**
Replace Cost	**0**
AYB	
Dep Code	
Remodel Rating	
Year Remodeled	
Dep %	
Functional Obslnc	
External Obslnc	
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	
Apprais Val	
Dep % Ovr	**0**
Dep Ovr Comment	
Misc Imp Ovr	**0**
Misc Imp Ovr Comment	
Cost to Cure Ovr	**0**
Cost to Cure Ovr Comment	

OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
	Ttl. Gross Liv/Lease Area:	**0**	**0**			

No Photo On Record

DEED

WESTLAND PROPERTIES, INC., a Delaware corporation ("Grantor"), with an address at 11601 Wilshire Blvd., Los Angeles, CA 90025, for and in consideration of the sum of Ten and no/100 Dollars ($10.00) paid to Grantor and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, has GRANTED, SOLD and CONVEYED and does hereby GRANT, SELL and CONVEY unto WEA CT HOUSES LLC, a Delaware limited liability company ("Grantee"), with an address at 11601 Wilshire Blvd., Los Angeles, CA 90025, certain land being more particularly described in Exhibit A attached hereto and incorporated herein by reference, together with all buildings and other improvements located on such land (such land and improvements being collectively referred to as the "Property").

This conveyance is made and accepted subject to all matters set out in Exhibit B attached hereto and incorporated herein by reference.

TO HAVE AND TO HOLD the Property, together with all easements, hereditaments, rights and appurtenances pertaining thereto, including all of Grantor's right, title and interest in and to adjoining streets, alleys and rights-of-way, unto Grantee and Grantee's successors and assigns forever;

Conveyance Tax Received
9,725.00 Vivian L. Burr 2139.50
State Town Clerk of Trumbull Town

20498739.02

IN WITNESS WHEREOF, Grantor has caused this Deed to be executed as of the 30th day of December, 1997.

WITNESSED BY:

GRANTOR:

WESTLAND PROPERTIES, INC.

By: _____
Printed Name: Mark Stefanek
Title: Treasurer

Latest Mailing Address of Grantee:

11601 Wilshire Blvd.
Los Angeles, California 90025

20498739.02

STATE OF CALIFORNIA)
)
COUNTY OF LOS ANGELES)

The foregoing instrument was acknowledged before me this 30TH day of December, 1997, by Mark Stefanek, Treasurer of WESTLAND PROPERTIES, INC., a Delaware corporation, on behalf of said corporation.

LEESA A. ASHLEY
Commission # 1136573
Notary Public — California
Los Angeles County
My Comm. Expires Apr 30, 2001

Commission of the Superior Court
Notary Public
My Commission Expires:

EXHIBIT A

29 Walnut Street, Trumbull
Legal Description

All those certain pieces or parcels of land, together with the buildings and improvements thereon, situated on Walnut Avenue in the Town of Trumbull, County of Fairfield and State of Connecticut shown and designated as Lots Nos. 59 and 61 on a certain map entitled "Map of Lyndhurst park, Building Lots - For Sale By The Lyndhurst - Realty - Co., Bridgeport - Ct. - July - 28 - 1916, Scale -- 1 in. = 60 ft.", certified substantially correct by W.C. Morehouse, Surveyor, and filed August 3, 1919 as Map No. 15 in the Trumbull Town Clerk's Office.

EXHIBIT A

5087 Main Street, Trumbull
Legal Description

All that certain piece or parcel of land with the buildings thereon standing, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, being known and designated as Lot No. 1 and the South half of Lot No. 5 as shown on "Map of Building Lots of Lewis L. Stuart", made by Scofield and Ford, Surveyors, dated April 12, 1923, and on file in the Trumbull Town of Clerk's Office as Map No. 81, and said property is more particularly bounded and described as follows:

NORTHERLY:	On Lot No. 2 and the North half of Lot 5 as shown on said Map, 174.84 feet, more or less;
EASTERLY:	On Main Street as shown on said Map, 57.5 feet, more or less;
SOUTHERLY:	On Stuart Street, as shown on said map, 183.12 feet, more or less;
WESTERLY:	On Lot No. 7, as shown on said map, 56.9 feet, more or less.

EXHIBIT A

37 Whalburn Avenue, Trumbull
Legal Description

All that certain piece or parcel of land with the buildings and improvements thereon standing, being situated in the Town of Trumbull, County of Fairfield and State of Connecticut and known as Lot 16 as shown on a certain map entitled "Map of Building Lots in Trumbull, Connecticut, belong to L. L. Stuart", dated April 12, 1923 made by Scofield and Ford, Surveyors, and on file in the Trumbull Town Clerk's Office as Map No. 81, said premises being more particularly bounded and described as follows:

NORTHERLY:	On Whalburn Street, as shown on said map, known as Whalburn Avenue, 50 feet, more or less;
EASTERLY:	On Lot No. 14, as shown on said map, 113.8 feet, more or less;
SOUTHERLY:	On Lot No. 17, as shown on said map, 50 feet, more or less;
WESTERLY:	On Lot No. 18, as shown on said map, 113.8 feet, more or less.

EXHIBIT A

Lot #8 and Lot #10, Walnut Avenue, Trumbull
Legal Description

All that certain piece or parcel of land with the buildings thereon standing, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, being known and designated as Lots Nos. 12 and 13 on Map of "Lyndhurst Park" made by W.C. Morehouse, Surveyor, dated July 28, 1916, on file in the Trumbull Town Clerk's Office, said premises being more particularly bounded and described as follows, to wit:

NORTHERLY:	By Walnut Avenue, 100 feet;
EASTERLY:	By land of George R. Gall, being Lot No. 14 on Map hereinabove described, 103.5 feet, more or less;
SOUTHERLY:	By land now or formerly of Charles Popkin, 100 feet; and
WESTERLY:	By land of George R. Gall, being Lot No. 11 on said map, 104.5 feet.

EXHIBIT A

Elmwood Avenue, Trumbull
Legal Description

All those certain pieces of land, together with the buildings and improvements thereon, situated on Elmwood Avenue in the Town of Trumbull, County of Fairfield, and State of Connecticut shown and designated as Lot Nos. 58, 60 and 62 on a certain map entitled "Map of Lyndhurst Park, Building Lots - For Sale By The Lyndhurst - Realty - Co., Bridgeport - CT. - July - 28 - 1916, Scale - - 1 in. = 60 ft.", certified substantially correct by W.C. Morehouse, Surveyor, and filed August 3, 1919 as Map No. 15 in the Trumbull Town Clerk's Office.

EXHIBIT A

33 Whalburn Avenue, Trumbull
Legal Description

All that certain piece or parcel of land, together with the buildings and improvements thereon standing, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, known as lots 12 & 14 on Map of Lewis L. Stuart dated April 12, 1923 and on file in the Trumbull Town Clerk's Office, being more particularly bounded and described as follows:

NORTHERLY:	On Whalburn Street, known as Whalburn Avenue, 100 feet;
EASTERLY:	By Lot No. 10 on said map, 113.8 feet;
SOUTHERLY:	By Lots Nos. 13 and 15 on said map, 100 feet;
WESTERLY:	By Lot 16 on said map, 113.8 feet.

EXHIBIT A

16 Elmwood Avenue, Trumbull
Legal Description

ALL THAT CERTAIN piece or parcel of land together with the improvements thereon, located in the Town of Trumbull, County of Fairfield and State of Connecticut as shown on a certain map entitled "Resubdivision Plan Lots 66, 68 and 70 Elmwood Avenue, Trumbull, Connecticut prepared for Fred and Jane Knapp" dated May 9, 1978 prepared by J. & D. Kasper & Associates and on file in the Trumbull Town Clerk's Office as Map No. 2030, to which map reference is hereby made, said parcel being bounded and described as follows:

Northerly:	By Elmwood Avenue, as shown on said map, 150.0 feet;
Easterly:	By "64", as shown on said map, 100.0 feet;
Southerly:	By "A" and "B" each in part, as shown on said map, 150.0 feet;
Westerly:	By "74-72", as shown on said map, 100.0 feet.

Said parcel also known and designated as Lots Nos. 66, 68, 70 as shown on a certain map entitled "Map of Lyndhurst Park Building Lots - For Sale by The Lyndhurst - Realty - Co. of Bridgeport-CT." dated July 28, 1916 and on file in the Trumbull Town Clerk's office as Map No. 15 to which map reference is hereby made for a more particular description.

EXHIBIT A

20 Stuart Place, Trumbull
Legal Description

A certain piece or parcel of land, with the buildings thereon standing, being situated in said Trumbull and known as Lot 7 on Map of L. L. Stuart made by Scofield and Ford, Surveyors, dated April 12, 1923, and on file in the Trumbull Town Clerk's Office, bounded:

NORTHERLY:	On Lot No. 6 on said map, 50 feet;
EASTERLY:	On Lot No. 5 on said map, 113.8 feet;
SOUTHERLY:	On Stuart Place, 50 feet;
WESTERLY:	On Lot No. 9 on said map, 113.8 feet.

EXHIBIT A

4 Walnut Avenue, Trumbull
Legal Description

All those certain pieces or parcels of land, together with building situated thereon located in the Town of Trumbull, County of Fairfield and State of Connecticut, designed as Lots Nos. 9 and 10 on Map of Building Lots No. 15, known as Lyndhurst Park, filed in the Office of the Town Clerk of Trumbull, more particularly bounded as follows:

NORTHERLY:	By Walnut Avenue, as shown on said Map, One Hundred One (101.00') feet, more or less;
EASTERLY:	By Lot No. 11 on said map, One Hundred Four and Seven Tenths (1.04.7') feet, more or less;
SOUTHERLY:	By land now or formerly of Mary Savko, One Hundred Three (103.00') feet, more or less;
WESTERLY:	By Madison Avenue, One Hundred Four and Seven Tenths (104.7') feet, more or less.

EXHIBIT A

42 Stuart Place, Trumbull
Legal Description

All that certain piece or parcel of land, together with the buildings and improvements thereon situated in the Town of Trumbull, County of Fairfield and State of Connecticut, known and designated as Lot No. 17 on a certain map entitled "Map of Building Lots in Trumbull, Conn. Belonging to L. L. Stuart", Scale 40 ft. to 1 in., certified substantially correct by Scofield & Ford - Surveyors, and filed September 19, 1924 as Map No. 81 in the Trumbull Town of Clerk's Office.

Together with certain rights as are set forth in that certain Common Driveway Agreement dated November 28, 1961 and recorded December 1, 1961, in Volume 145 and Pages 645-50 of the Trumbull Land Records.

EXHIBIT A

Lorraine Street, Trumbull
Legal Description

All that certain piece or parcel of land situated in the Town of Trumbull, County of Fairfield, State of Connecticut, being shown and designated as "Lorraine St." on a certain map entitled "Armol Berger. Trumbull Conn.", which map is dated July 24, 1920 and is on file in the Trumbull Town Clerk's Office as Map Number 59.

EXHIBIT A

50 Stuart Place, Trumbull
Legal Description

That certain piece or parcel of land situated in the Long Hill District of the Town of Trumbull, County of Fairfield and State of Connecticut, being comprised of Forty (40) feet on Lot No. 21 and Ten (10) feet of Lot No. 23 on Map of Building Lots Nos. 81, filed in the Office of the Town Clerk of Trumbull, Bounded and described as follows:

NORTHERLY:	by lots numbered 20 and 22, on said map, 50 feet;
EASTERLY:	by the remaining portion of Lot No. 21, 113.8 feet;
SOUTHERLY:	by Stuart Street, as per said my, 50 feet;
WESTERLY:	by the remaining portion of Lot No. 23 on said map, 113.8 feet.

EXHIBIT A

44 Stuart Place, Trumbull
Legal Description

All that certain piece or parcel of land, together with all the buildings and improvements thereon standing, situated in said Trumbull and bounded and described as follows:

Comprising Lot Number 19 and the Easterly 10 feet of Lot Number 21 on Map of Building Lots for Lewis L. Stuart, made by Scofield and Ford, Surveyors, dated April 12, 1923, and filed for record on September 19, 1924, as Map Number 81 in the Trumbull Town Clerk's Office, said premises being more particularly bounded and described as follows:

NORTHERLY:	By Lot Number 18 on said Map, being land now or formerly of John Katrenic, Jr., et al., and in part by Lot No. 20 as shown on said Map, being land now or formerly of Josephine V. and Victor A. Zaveruha, in all, 60 feet;
EASTERLY:	By Lot Number 17, as shown on said Map, being land or formerly of A. T. and Vivian H. Adiletta, 113.8 feet;
SOUTHERLY:	By Stuart Place, 60 feet;
WESTERLY:	By the remaining portion of Lot Number 21 as shown on said map, being land now or formerly of Ellen Ecklund, 113 feet, more or less.

TOGETHER WITH all the right, title and interest, if any, of the Grantors in and to any land lying in the bed of any street, road or avenue, opened or proposed, in front of or adjoining the Premises, to the center line thereof, to any strips or gores adjoining the Premises or any part thereof, and all right, title and interest of the Sellers in and to any award made or to be made in lieu thereof and in and to any unpaid award for damages to said Premises by reason of change of grade of any street.

EXHIBIT B

1. Liens for real estate taxes.

2. All easements, restrictions and other agreements of record.

TOWN CLERK'S OFFICE, TRUMBULL, CT
RECEIVED FOR RECORD December 31 1997
AT 2:52 P. M. ATTEST
TOWN CLERK
TOWN CLERK

20498739.02

DEED

RESIDENTIAL RENTALS & INVESTMENTS, INC., a Delaware corporation ("Grantor"), with an address at 11601 Wilshire Blvd., Los Angeles, CA 90025, for and in consideration of the sum of Ten and no/100 Dollars ($10.00) paid to Grantor and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, has GRANTED, SOLD and CONVEYED and does hereby GRANT, SELL and CONVEY unto WEA CT HOUSES LLC, a Delaware limited liability company ("Grantee"), with an address at 11601 Wilshire Blvd., Los Angeles, CA 90025, certain land being more particularly described in Exhibit A attached hereto and incorporated herein by reference, together with all buildings and other improvements located on such land (such land and improvements being collectively referred to as the "Property").

This conveyance is made and accepted subject to all matters set out in Exhibit B attached hereto and incorporated herein by reference.

TO HAVE AND TO HOLD the Property, together with all easements, hereditaments, rights and appurtenances pertaining thereto, including all of Grantor's right, title and interest in and to adjoining streets, alleys and rights-of-way, unto Grantee and Grantee's successors and assigns forever;

Conveyance Tax Received
8650 Vivian L. Burr 1903.00
State Town Clerk of Trumbull Town

IN WITNESS WHEREOF, Grantor has caused this Deed to be executed as of the 30th day of December, 1997.

WITNESSED BY:

GRANTOR:

RESIDENTIAL RENTALS & INVESTMENTS, INC.

By: _____
Printed Name: Mark Stefanek
Title: Treasurer

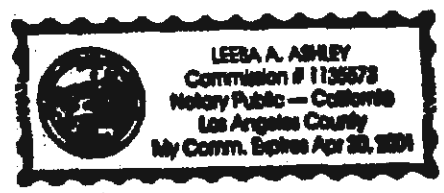
Latest Mailing Address of Grantee:

11601 Wilshire Blvd.
Los Angeles, California 90025

20498862.01

STATE OF CALIFORNIA)
)
COUNTY OF LOS ANGELES)

The foregoing instrument was acknowledged before me this 30th day of December, 1997, by Mark Stefanek, Treasurer of RESIDENTIAL RENTALS & INVESTMENTS, INC., a Delaware corporation, on behalf of said corporation.



Commission of the Superior Court
Notary Public
My Commission Expires:

20498862.01

EXHIBIT A

23 Lorraine, Trumbull
Legal Description

All that certain piece or parcel of land, together with all the buildings and improvements thereon standing, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, bounded and described as follows:

Know and designated as lot #50 on Map of Amol Berger, Trumbull, Conn., dated July 24, 1920, made by Frank B. Jaynes, Inc., Engineers & Surveyors, and filed for record on July 27, 1920 in the Trumbull Town Clerk's Office, said premises being more particularly described as follows:

NORTH	on Lorraine Street, shown on said map as Lorraine Avenue, 56.2 feet;
EAST	on Lots Nos. 51 and 52, on said map, 108.6 feet, more or less;
SOUTH	on land now or formerly of Herbert G. Washburn and William Whalen, 59 feet, more or less;
WEST	on Lot #49, on said map, 111 feet, more or less.

EXHIBIT A

17 Walnut, Trumbull
Legal Description

All that certain piece or parcel of land, together with the buildings and improvements located thereon, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, being known and designated as Lot A, as shown on a certain map entitled "Map of Lots in Trumbull, Conn., being a revision of a portion of 'Lyndhurst Park' for Alson F. and Eleanore G. Knapp", dated January 24, 1958, and on file in the Trumbull Town Clerk's Office as Map No. 794, to which map reference is hereby made, said premises being bounded and described as follows:

NORTHERLY:	By Lot No. 70 and a portion of Lot No. 68, as shown on said map, 75 feet;
EASTERLY:	By Lot B, as shown on said map, 100.0 feet;
SOUTHERLY:	By Walnut Avenue, as shown on said map, 75 feet;
WESTERLY:	By Lot No. 73, as shown on said map, 100.0 feet.

EXHIBIT A

17 Whalburn Avenue, Trumbull
Legal Description

All that land together with all buildings and improvements thereon situated in the Town of Trumbull, County of Fairfield, State of Connecticut, known as Lot No. 6 on Map of building lots of D.C. Stuart made by Scofield & Ford, Surveyors, dated April 12, 1923, and on file in the Trumbull Town Clerk's Office, bounded and described as follows:

NORTH: on Whalburn Avenue, shown on said map as Wheburn Street, 50 feet;

EAST: on Lots Nos. 3 and 4 on said map, 113.8 feet;

SOUTH: on Lot No. 7 on said map, 50 feet;

WEST: on Lot No. 8 on said map, 113.8 feet;

EXHIBIT A

24 Whalburn, Trumbull
Legal Description

All that piece or parcel of land with the buildings thereon, situated in the Town of Trumbull, in the County of Fairfield, and State of Connecticut, known as Lot No. 4 on Revised Map Showing Street System and Lots for William Whalen and L.L. Stuart and H.G. Washburn, made by A.D. Fuller, Surveyor, dated March 21, 1928, on file in the Trumbull Town Clerk's Office, and bounded:

NORTHERLY:	One land formerly of Amol Berger, 55 feet;
EASTERLY:	On Lot No. 3 on said map, 132 feet, more or less;
SOUTHERLY:	On Whalburn Avenue, 55 feet;
WESTERLY:	On Lot No. 5 on said map, 133 feet, more or less;

Together with rights in a certain mutual driveway over a westerly portion of the above-described premises and over an easterly portion of the premises adjoining on the West as set forth in Volume 70, Page 489 of the Trumbull Land Records.

EXHIBIT A

41 Whalburn Avenue, Trumbull
Legal Description

All that certain piece or parcel of land, with the buildings and improvements standing thereon, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, known as Lot 18 on Revised Map of William Whalen, L.L. Stuart and H.G. Washburn, made by A.D. Fuller, C.E., dated March 21, 1928 and on file in the Trumbull Town Clerk's Office and bounded:

NORTHERLY:	On Whalburn Street, 50 feet;
EASTERLY:	On land now or formerly of Charles McElroy, Lot No. 16 on said Map, 113.8 feet;
SOUTHERLY:	On land now or formerly of John F. McElroy, Jr., Lot No. 19 on said Map, 50 feet;
WESTERLY:	On land now or formerly of Joseph Burckley, Lot No. 20 on said map, 113.8 feet.

EXHIBIT A

27 Whalburn Avenue, Trumbull
Legal Description

All that certain piece or parcel of land, together with the buildings and improvements thereon, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, known and designated as Lot 10 on Map L.L. Stuart made by Scofield and Ford, dated April 12, 1923 and on file in the Office of the Town Clerk of Trumbull, bounded and follows, to wit:

NORTHERLY: On Whalburn Street, as shown on said map, 50 feet, more or less;

EASTERLY: On Lot No. 8, as shown on said map, 113.8 feet, more or less;

SOUTHERLY: On Lot No. 11, as shown on said map, 50 feet, more or less;

WESTERLY: On Lot No. 12, as shown on said map, 113.8 feet, more or less.

EXHIBIT A

21 Whalburn, Trumbull
Legal Description

FIRST PIECE

All that certain piece or parcel of land, together with the buildings and improvements thereon, situated in the Town of Trumbull, County of Fairfield and State of Connecticut and being known and designated as Lot 8 on Map of Building Lots if Lewis L. Stuart made by Scofield and Ford, Surveyors, and filed in the Office of the Town Clerk of Trumbull, September 19, 1924, bounded as follows, to wit:

NORTHERLY: On Whalburn Street, as shown on said Map, fifty (50) feet, more or less;

EASTERLY: On Lot No. 6, as shown on said Map, one hundred thirteen and eight-tenths (113.8) feet, more or less;

SOUTHERLY: On Lot No. 9, as shown on said Map, fifty (50) feet, more or less;

WESTERLY: On Lot No. 10, as shown on said Map, one hundred thirteen and eight-tenths (113.8) feet, more or less;

The east line meets said contemplated street at a point 200 feet west of Main Street, more or less.

SECOND PIECE

All that certain piece or parcel of land situated in the Town of Trumbull, County of Fairfield and State of Connecticut being known and designated as portion of Lot No. 9, as shown on Map of Building Lots of Lewis L. Stuart, filed in the Office of the Town Clerk of Trumbull, September 19, 1924, bounded and described as follows, to wit:

NORTHERLY: On land of Frank E. Perkins, as shown on said Map, being Lot No. 8 on said Map, fifty (50) feet;

EXHIBIT A

EASTERLY:	On Lot No. 7, as shown on said Map, thirteen and eight-tenths (13.8) feet, more or less;
SOUTHERLY:	On the remaining portion of Lot No. 9, as shown on said map, fifty (50) feet, more or less;
WESTERLY:	On Lot No. 11, as shown on said Map, thirteen and eight-tenths (13.8) feet, more or less.

EXHIBIT A

30 Whalburn Avenue, Trumbull
Legal Description

All that certain piece or parcel of land together with all the buildings and improvements thereon, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, and bounded and described as follows:

NORTHERLY: by land now or formerly of Amol Berger, 100 feet;

EASTERLY: by Lot No. 4 as shown on Map hereinafter referred to, 133 feet, more or less;

SOUTHERLY: by Whalburn Avenue, as shown on said Map, 100 feet;

WESTERLY: by Lot No. 7, as shown on said Map, 135 feet, more or less.

Said premises being known and designated as Lots No. 5 and 6 as shown on Map of Washburn and Whalen, dated October 3, 1919 and on file in the Town Clerk's Office of Trumbull.

EXHIBIT A

31 Stuart Place, Trumbull
Legal Description

All that certain piece or parcel of land, together with the buildings thereon standing, situated in the Town of Trumbull, County of Fairfield, State of Connecticut, bounded:

NORTHERLY:	On Stuart Place, 85 feet;
EASTERLY:	in part on land of Arthur and Evelyn Laske, 125 feet and in part on land of J. Jack Frouge, 15 feet, in all 140 feet;
SOUTHERLY:	on land of the said J. Jack Frouge, 100 feet, more or less;
WESTERLY:	on land of the said J. Jack Frouge, 136 feet.

The easterly line of the above described premises meets the southerly line of Stuart Place at a point 275 feet, more or less, distant westerly from Main Street as measured along the said southerly line of Stuart Place.

EXHIBIT A

24 Stuart Street, Trumbull
Legal Description

All that certain lot or tract of land with all buildings thereon standing, situated in the Long Hill District of the Town of Trumbull, Connecticut, and also being known as a portion of Lot #9 on Map of Building Lots #81 filed in the office of the Town Clerk of Trumbull by L.L. Stuart, dated April 12, 1923, bounded and described as follows:

NORTHERLY:	by remaining portion of Lot #9 on said map fifty (50) feet;
EASTERLY:	by Lot #7 on said Map, one hundred (100) feet, more or less;
SOUTHERLY:	by Stuart Street, fifty (50) feet;
WESTERLY:	by Lot #11 on said Map, one hundred (100) feet, more or less.

EXHIBIT A

15 Elmwood Avenue, Trumbull
Legal Description

All that certain piece or parcel of land situated in the Town of Trumbull, County of Fairfield and State of Connecticut, known and designated as Lot D on "Map for Palmer Realty Co., Revision of a Portion of Lyndhurst Park in Trumbull, Connecticut dated May 21, 1957 by Frank C. Penny, Surveyor", and recorded June 26, 1957 as Map No. 756 in the Office of the Town Clerk of the Town of Trumbull, being more particularly bounded and described as follows:

NORTHERLY:	by land of the State of Connecticut, as shown on said Revised Map, being the Merritt Parkway, 90 feet;
EASTERLY:	by Lot No. 93, on map of Lyndhurst Park on file at said Town Clerk's Office, 117.5 feet;
SOUTHERLY:	by Elmwood Avenue, as shown on said Revised Map, 90 feet;
WESTERLY:	by Lot C, as shown on said Revised Map, 117.5 feet.

EXHIBIT B

1. Liens for real estate taxes.

2. All easements, restrictions and other agreements of record.

TOWN CLERK'S OFFICE, TRUMBULL, CT
RECEIVED FOR RECORD December 31, 1997
AT 2:53 P. M. ATTEST Susan Mele
TOWN CLERK

20498862.01

WARRANTY DEED

To all People to Whom these Presents shall Come. Greeting:

Know Ye, That ANGELO GUERRIERO and MARIA G. GUERRIERO herein designated as the Grantors, for the consideration of TWO HUNDRED NINE THOUSAND AND 00/100 DOLLARS ($209,000.00), received to Grantors' full satisfaction from WEA CT HOUSES, LLC, whose mailing address is 5065 Main Street, Trumbull, Connecticut, herein designated as the Grantee, do hereby give, grant, bargain, sell and convey to the Grantee that certain real property known as 5093 Main Street, Trumbull, Connecticut and more particularly described in Schedule A attached hereto and made a part hereof.

To have and to hold the premises hereby conveyed with all the appurtenances thereof, unto the Grantee and unto the Grantee's heirs, successors and assigns forever, and to the Grantee's and his own proper use and behoof; and the Grantors do for themselves, their heirs, successors and assigns, covenant with the Grantee, his heirs, successors and assigns that the Grantors are well seized of the premises as a good indefeasible estate in FEE SIMPLE; and have good right to grant and convey the same in manner and form as herein written and the same are free from all incumbrances whatsoever, except as herein stated.

And Furthermore, the Grantors do by these presents bind themselves and their heirs, successors and assigns forever to WARRANT AND DEFEND the premises hereby conveyed to the Grantees and to the survivor of them and to such survivor's heirs, successors and assigns against all claims and demands whatsoever, except as herein stated.

In all reference herein to any parties, persons, entities or corporations, the use of any particular gender or the plural or singular number is intended to include the appropriate gender or number as the text of the within instrument may require.

In Witness Whereof, the Grantors have hereunto set their hands and seals hereto, this 13th day of October, 1998.

Signed, Sealed and Delivered in the presence of or Attested by

Nathalie Feola-Guerrieri

Angelo Guerriero

Kimberly Kwieraga

Maria G. Guerriero

+

Her Mark

State of Connecticut:
: ss.: Bridgeport
County of Fairfield:

Personally appeared Angelo Guerriero and Maria G. Guerriero, as aforesaid, Signer of the foregoing Instrument and acknowledged the same to be their free act and deed before me this 13th day of October, 1998.

Nathalie Feola-Guerrieri
Commissioner of the Superior Court

Conveyance Tax Received
1045 Vivian L. Burr 229.00
State Town Clerk of Trumbull Town

SCHEDULE A

That certain piece or parcel of land with the buildings thereon standing, situated in said Town of Trumbull, Being known and designated as Lot No. 2 and the Northerly half of Lot No. 5 on map of building lots of Lewis L. Stuart, made by Scofield and Ford, Surveyors and filed in the Trumbull Town Clerk's Office on September 19, 1924 and being bounded and described as follows to wit:

NORTH: On Lot No. 3 on said Map 166.56 feet, more or less;

EAST: On Highway, Main Street, 57.5 feet, more or less;

SOUTH: On Lot No. 1 and the remaining portion of Lot No. 5 on said map 174.84 feet, more or less;

WEST: On Lot No. 7 as shown on said map, 56.9 feet, more or less.

Subject To:

1. Any and all zoning and building regulations and restrictions, any and all building lines and the provisions of any governmental rule or regulation, ordinance, and public or private law, including, but not limited to, any and all inland and tidal wetlands and coastal area management and historic district rules, and all other regulations, ordinances and laws regulating the use of the Premises.

2. Any and all easements, protective covenants, agreements restrictions and encumbrances as may of record appear.

3. Any real property taxes and fire district or similar taxes which may become due and payable for the Grand List of October 1, 1997, which the Buyer assumes and agrees to pay as part of the consideration hereof.

4. All town of Trumbull municipal/public improvement assessments, and/or any unpaid installments thereof, and/or use charges, which assessments, installments and use charges become due and payable after the date of the delivery of the deed, which assessments, installments and use charges the Buyer assumes and agrees to pay as part consideration for the deed.

5. Sewer use charges as may become due and payable.

6. Any state of facts which an accurate survey and/or a physical inspection of the Premises may reveal.

TOWN CLERK'S OFFICE, TRUMBULL, CT
RECEIVED FOR RECORD October 13, 1998
AT 12:18 P M. ATTEST
TOWN CLERK

17

WARRANTY DEED

ANGELO GUERRIERO and
MARIA G. GUERRIERO

to

WEA CT HOUSES, LLC

5093 Main Street
Trumbull, CT 06611

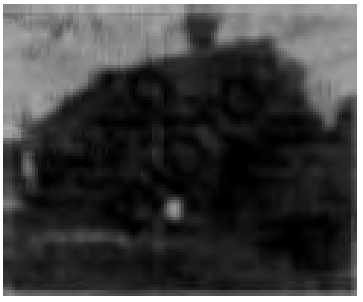
DATED: OCTOBER 13, 1998

Oct 13 12 15 PM

Return to:
Lewis A. Hurwitz, Esq.
147 North Broad Street
Milford, CT 06460

3688

5093 MAIN STREET



MBL :	E/11 / 00104/ 000/
Location:	5093 MAIN STREET
Alternate ID:	00604500

Parcel Value

Current Appraised Value	Current Assessed Value	FY 2006 Appraised Value	FY 2006 Assessed Value
362,100	253,500	362,100	253,500

Ownership History

Book/Page	Sale Date	Sale Price
980/ 578	10/13/1998	209,000

Land Use (click here for a list of codes and descriptions)

Land Use Code	Land Use Description
100	Res Vacant Lnd

Land Information

Size	Zone
0.19 AC	A

Construction Detail

Item	Value
STYLE	Vacant Land

Building Information

Item	Value
Living Area	0 square feet
Year Built	
Depreciation	100%
Replacement Cost Less Depreciation	0

Outbuildings (click here for a list of codes and descriptions)

Code	Description	Units
No Outbuildings		

WARRANTY DEED

TO ALL PEOPLE TO WHOM THESE PRESENTS SHALL COME, GREETING:

KNOW YE, That **JACK RECHT and MARIAN RECHT a/k/a MARION RECHT**, of 5099 Main Street, Trumbull, Connecticut 06611, herein designated as the Grantors, for the consideration of TWO HUNDRED NINE THOUSAND ($209,000.00) DOLLARS, received to the full satisfaction of the Grantors from **WEA CT HOUSES LLC,** c/o Westfield Corporation, 11601 Wilshire Boulevard, 12th Floor, Los Angeles, California 90025, herein designated as the Grantee, does hereby give, grant, bargain, sell and convey to the Grantee all that certain piece or parcel of real property located in the Town of Trumbull, County of Fairfield and State of Connecticut, more particularly described on **SCHEDULE "A"** attached hereto and made a part hereof.

TO HAVE AND TO HOLD the premises hereby conveyed, with the appurtenances thereof, unto the Grantee and unto the Grantee's successors and assigns forever and to the Grantee and its own proper use and behoof; and the Grantors do for themselves, their heirs and assigns covenant with the Grantee, its successors and assigns that the Grantors are well seized of the premises as a good indefeasible estate in FEE SIMPLE; have good right to grant and convey the same in manner and form as herein written, and the same are free from all encumbrances whatsoever, except as set forth on said SCHEDULE "A."

AND FURTHERMORE, the Grantors do by these presents bind themselves and their heirs and assigns forever to **WARRANT AND DEFEND** the premises hereby conveyed to the Grantee and to its successors and assigns against all claims and demands whatsoever, except as herein stated.

(In all references herein to any parties, persons, entities or corporations, the use of any particular gender or the plural or singular number is intended to include the appropriate gender or number as the text of the within instrument may require.)

IN WITNESS WHEREOF, the Grantors have hereunto set his hand and seal this 20th day of April, 1999.

Conveyance Tax Received
1246 Vivian L. Burr 2290
State Town Clerk of Trumbull Town

Signed, Sealed and Delivered
in the presence of:

Irving J. Kern

Robert Recht
Robert Recht

Jack Recht (L.S.)
Jack Recht

Marian Recht
Marian Recht (L.S.)
Marian Recht a/k/a Marion Recht

STATE OF CONNECTICUT:
: ss. Bridgeport
COUNTY OF FAIRFIELD :

The foregoing instrument was acknowledged before me this 20th day of April, 1999, by Jack Recht and Marian Recht a/k/a Marion Recht, as their free act and deed.

Irving J. Kern
Commissioner of Superior Court

SCHEDULE A

All that certain piece or parcel of land, with the buildings and improvements thereon, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, known as Lot No. 3 on Map of Building Lots belonging to L.L. Stuart, made by Scofield and Ford, Surveyors, dated April 12, 1923, and filed for record September 19, 1934, as Map No. 81 in the Trumbull Town Clerk's Office, and bounded:

NORTHERLY: by Lot No. 4 on said map, 158.28 feet;

EASTERLY: by Main Street as shown on said map, 57.50 feet;

SOUTHERLY: by Lots Nos. 2 and 5 on said map, each in part, in all, 166.56 feet;

WESTERLY: by Lot No. 6 on said map, 56.90 feet.

Also known as 5099 Main Street, Trumbull, Connecticut.

SUBJECT TO:

1. Any restrictions or limitations imposed by governmental authority, including building setback lines, building, zoning and planning rules and regulations of the Town of Trumbull, and any and all provisions of any ordinance, municipal regulation or public or private law.

2. Taxes to the Town of Trumbull on the List of October 1, 1998, hereafter becoming due and payable, and taxes for all subsequent years.

3. Any assessment or pending assessment for which a lien or liens have not as yet been filed in the Trumbull Town Clerk's Office.

4. Certificate of Sewer Assessment Lien and Certificate of Notice of Installment Payment of Assessment of Benefits in the amount of $6,346.77 dated February 1, 1991 and recorded February 1, 1991 in Volume 730 at Page 87 of the Trumbull Land Records.

TOWN CLERK'S OFFICE, TRUMBULL, CT
RECEIVED FOR RECORD 4/20/99
AT 3:04 P. M. ATTEST [illegible]
TOWN CLERK

5099 MAIN STREET

MBL :	E/11 / 00103/ 000/
Location:	5099 MAIN STREET
Alternate ID:	00842000

Parcel Value

Current Appraised Value	Current Assessed Value	FY 2006 Appraised Value	FY 2006 Assessed Value
358,900	251,200	358,900	251,200

Ownership History

Book/Page	Sale Date	Sale Price
1004/ 427	4/20/1999	209,000

Land Use (click here for a list of codes and descriptions)

Land Use Code	Land Use Description
100	Res Vacant Lnd

Land Information

Size	Zone
0.17 AC	A

Construction Detail

Item	Value
STYLE	Vacant Land

Building Information

Item	Value
Living Area	0 square feet
Year Built	
Depreciation	100%
Replacement Cost Less Depreciation	0

Outbuildings (click here for a list of codes and descriptions)

Code	Description	Units
No Outbuildings		

VOL 1004 PAGE 527

C23—WARRANTY DEED—SHORT FORM
IND. OR CORP.

GRANT

©1978 ALL-STATE LEGAL SUPPLY CO.
140 Sheffield St., Mountainside, N. J. 07092

To all People to Whom these Presents shall Come, Greeting

Know Ye, *That* I, MARIO C. PETRUCCELLI, of the Town of Trumbull, County of Fairfield and State of Connecticut,

herein referred to as the Grantors,

For the consideration of EIGHTY THOUSAND AND 00/000 ($80,000.00) DOLLARS received to the full satisfaction of the Grantors, hereby give, grant, bargain, sell and convey to
NEA CT HOUSES LLC, 11601 WILSHIRE BOULEVARD, 12th FLOOR, LOS ANGELES, CA 90025

herein referred to as the Grantees,

SEE ATTACHED SCHEDULE A WHICH IS MADE A PART HEREOF
AS THOUGH FULLY RECITED HEREIN

Conveyance Tax Received
400.00 Vivian L. Burr 88.00
State Town Clerk of Trumbull Town

To Have and to Hold the above described lands and premises, with the privileges and appurtenances thereof, unto the Grantees and to the Grantees' heirs, successors and assigns forever and to the Grantees' and their own proper use and behoof; And the Grantors do for themselves, their heirs, successors and assigns covenant with the Grantees, their heirs, successors and assigns that at and until the ensealing of these presents, the Grantors are well seized of the premises as a good indefeasible estate in FEE SIMPLE; and have good right to grant and convey the same in manner and form as herein written; and the same are free from all incumbrances whatsoever, except as above stated.

And Furthermore, the Grantors by these presents bind themselves and their heirs, successors and assigns forever to warrant and defend the above granted and conveyed premises to the Grantees and their heirs, successors and assigns, against all claims and demands whatsoever, except as above stated.

In all references herein to any parties, persons, entities or corporations, the use of any particular gender or the plural or singular number is intended to include the appropriate gender or number as the text of the within instrument may require.

In Witness Whereof, *the Grantors have hereunto set their hands and seals, or if a corporation, it has caused these presents to be signed by its proper corporate officers and its corporate seal to be affixed hereto, this 31st day of* APRIL *19* 99

Signed, Sealed and Delivered in the presence of or Attested by

Byron A. Gentile
Byron A. Gentile

Diana Mendez
Diana Mendez

Mario C. Petruccelli
MARIO C. PETRUCCELLI

STATE OF CONNECTICUT
COUNTY OF FAIRFIELD | ss. BRIDGEPORT

The foregoing instrument was acknowledged before me this 31st *day of* April *19* 99 *, by* MARIO C. PETRUCCELLI

B.A. Gentile
BYRON A. GENTILE
Commissioner of the Superior Court

SCHEDULE A

That certain pieces or parcel of land situated in the Town of Trumbull, County of Fairfield and State of Connecticut, known and designated as Lot No. 1 on revised map for William Whalen, L.L. Stuart and H.G. Washburn, dated March 21, 1928 made by A.D. Fuller, Civil Engineer, and bounded and described as follows:

NORTHERLY: By land of Herbert G. Washburn, Lot 2 on said map, 160 feet more or less;

EASTERLY: By Main Street as shown on said map, 65.6 feet;

SOUTHERLY: By Whalburn Avenue as shown on said map, 170 feet;

WESTERLY: By land of Grace Fazio, Lot 3 on said map, 65.5 feet.

Said premises are conveyed SUBJECT TO the following:

1. Taxes on the Grand List of October 1, 1998, which the grantee assumes and agrees to pay.
2. Building lines, zoning ordinances, municipal regulations and the provision of any public or private law.
3. Any assessments or pending assessments for which a lien or liens have not as yet been filed or recorded in the Town Clerk's Office.
4. Long Hill Fire District taxes.
5. Certificate of Notice of Deferred Assessment recorded January 3, 1991, in volume 727, page 578 of the Trumbull land records.
6. Sewer Use Charges.
7. Twenty-One (21') foot and all matters of fact veranda line as shown on Map No. 106

MAIN STREET

MBL :	E/11 / 00101/ 000/
Location:	MAIN STREET
Alternate ID:	01012100

Parcel Value

Current Appraised Value	Current Assessed Value	FY 2006 Appraised Value	FY 2006 Assessed Value
368,300	257,800	368,300	257,800

Ownership History

Book/Page	Sale Date	Sale Price
1004/ 527	4/21/1999	80,000

Land Use (click here for a list of codes and descriptions)

Land Use Code	Land Use Description
100	Res Vacant Lnd

Land Information

Size	Zone
0.23 AC	A

Construction Detail

Item	Value
STYLE	Vacant Land

Building Information

Item	Value
Living Area	0 square feet
Year Built	
Depreciation	100%
Replacement Cost Less Depreciation	0

Outbuildings (click here for a list of codes and descriptions)

Code	Description	Units
No Outbuildings		

VOL. 1004 PAGE 529

C22 -- WARRANTY DEED - SHORT FORM IND OR CORP

G R V 8 7

©1976 ALL-STATE LEGAL SUPPLY CO
299 Broadway St., Mountainside, N. J. 07092

To all People to Whom these Presents shall Come, Greeting:

Know Ye, *That* I MARIO C. PETRUCCELLI, of the Town of Trumbull, County of Fairfield and State of Connecticut,

herein referred to as the Grantors,

For the consideration of EIGHTY THOUSAND AND 00/000 ($80,000.00) DOLLARS received to the full satisfaction of the Grantors, hereby give, grant, bargain, sell and convey to

WEA CT HOUSES LLC, 11601 WILSHIRE BOULEVARD, 12th FLOOR, LOS ANGELES CA 90025

herein referred to as the Grantees,

SEE ATTACHED SCHEDULE A WHICH IS MADE A PART HEREOF AS THOUGH FULLY RECITED HEREIN

Conveyance Tax Received
400.00 Victor L. Barr 8500
State Town Clerk of Trumbull Town

To Have and to Hold the above described lands and premises, with the privileges and appurtenances thereof, unto the Grantees and to the Grantees' heirs, successors and assigns forever and to the Grantees' and their own proper use and behoof. And the Grantors do for themselves, their heirs, successors and assigns covenant with the Grantees, their heirs, successors and assigns that at and until the ensealing of these presents, the Grantors are well seized of the premises as a good indefeasible estate in FEE SIMPLE; and have good right to grant and convey the same in manner and form as herein written; and the same are free from all incumbrances whatsoever, except as above stated.

And Furthermore, the Grantors by these presents bind themselves and their heirs, successors and assigns forever to warrant and defend the above granted and conveyed premises to the Grantees and their heirs, successors and assigns, against all claims and demands whatsoever, except as above stated.

In all references herein to any parties, persons, entities or corporations, the use of any particular gender or the plural or singular number is intended to include the appropriate gender or number as the context of this within instrument may require.

In Witness Whereof, *the Grantors have hereunto set their hands and seals, or if a corporation, it has caused these presents to be signed by its proper corporate officers and its corporate seal to be affixed hereto, this* 21st *day of* April *in* 99

Signed, Sealed and Delivered in the presence of
or Attested by

Bryon A. Gentile
BRYON A. GENTILE

Mario C. Petruccelli
MARIO C. PETRUCCELLI

STATE OF CONNECTICUT
COUNTY OF FAIRFIELD } *ss.* BRIDGEPORT

The foregoing instrument was acknowledged before me this 21st *day of* April *in* 99 *, by* MARIO C. PETRUCCELLI

BRYON A. GENTILE

Commissioner of the Superior Court

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SCHEDULE A

That certain pieces or parcel of land situated in the Town Trumbull, County of Fairfield and State of Connecticut, known and designated as Lot No. 4 on Map of Building Lots belonging to L.L. Stuart, dated April 12, 1923, made by Scofield and Ford, Surveyors and filed for record September 19, 1924 as map #81 in the Town Clerk's Office of said Trumbull and bounded:

NORTHERLY: by Whalburn Avenue as shown on said map, 150 feet;

EASTERLY: by Newtown Turnpike also known as Main Street, 57.5 feet;

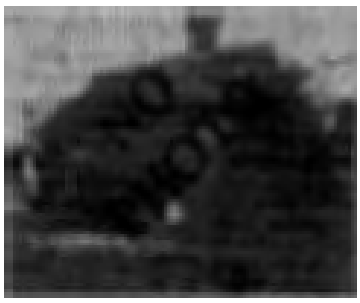
SOUTHERLY: by land of Mary P. Perkins, lot 3 on said map, 158.28 feet;

WESTERLY: by land of Walter J. Backhaus, lot 6 on said map, 56.9 feet;

Said premises are conveyed SUBJECT TO the following:

1. Taxes on the Grand List of October 1, 1998, which the grantee assumes and agrees to pay.
2. Building lines, zoning ordinances, municipal regulations and the provision of any public or private law.
3. Any assessments or pending assessments for which a lien or liens have not as yet been filed or recorded in the Town Clerk's Office.
4. Long Hill Fire District taxes.
5. Certificate of Notice of Deferred Assessment dated January 2, 1991 and recorded January 3, 1991 in volume 727, page 577 of the Trumbull land records.
6. Sewer Use Charges.

MAIN STREET



MBL :	E/11 / 00102/ 000/
Location:	MAIN STREET
Alternate ID:	00345900

Parcel Value

Current Appraised Value	Current Assessed Value	FY 2006 Appraised Value	FY 2006 Assessed Value
355,800	249,100	355,800	249,100

Ownership History

Book/Page	Sale Date	Sale Price
1004/ 529	4/21/1999	80,000

Land Use (click here for a list of codes and descriptions)

Land Use Code	Land Use Description
100	Res Vacant Lnd

Land Information

Size	Zone
0.15 AC	A

Construction Detail

Item	Value
STYLE	Vacant Land

Building Information

Item	Value
Living Area	0 square feet
Year Built	
Depreciation	100%
Replacement Cost Less Depreciation	0

Outbuildings (click here for a list of codes and descriptions)

Code	Description	Units
No Outbuildings		

VOL 1004 PAGE 531

C23 WARRANTY DEED SHORT FORM IND OR CORP

G R V S T

©1976 ALL STATE LEGAL SUPPLY CO
269 Sheffield St., Mountainside, N. J. 07092

To all People to Whom these Presents shall Come, Greeting:

Know Ye, *That* WE, MARIO C. PETRUCCELLI AND LORETTA PETRUCCELLI, both of the Town of Trumbull, County of Fairfield and State of Connecticut,

herein referred to as the Grantors,

For the consideration of ONE HUNDRED AND EIGHTY THOUSAND AND 00/000 (180,000.00) DOLLARS received to the full satisfaction of the Grantors, hereby give, grant, bargain, sell and convey to WEA CT HOUSES LLC, 11601 WILSHIRE BOULEVARD, 12th FLOOR, LOS ANGELES, CA 90025

herein referred to as the Grantees,

SEE ATTACHED SCHEDULE A WHICH IS MADE A PART HEREOF AS THOUGH FULLY RECITED HEREIN

Conveyance Tax Received
400.00 Vivian L. Burr 88.00
State Town Clerk of Trumbull Town

To Have and to Hold the above described lands and premises, with the privileges and appurtenances thereof, unto the Grantees and to the Grantees' heirs, successors and assigns forever and to the Grantees' and their own proper use and behoof. And the Grantors do for themselves, their heirs, successors and assigns covenant with the Grantees, their heirs, successors and assigns that at and until the ensealing of these presents, the Grantors are well seized of the premises as a good indeleasible estate in FEE SIMPLE; and have good right to grant and convey the same in manner and form as herein written; and the same are free from all incumbrances whatsoever, except as above stated.

And Furthermore, the Grantors by these presents bind themselves and their heirs, successors and assigns forever to warrant and defend the above granted and conveyed premises to the Grantees and their heirs, successors and assigns, against all claims and demands whatsoever, except as above stated.

In all references herein to any parties, persons, entities or corporations, the use of any particular gender or the plural or singular number is intended to include the appropriate gender or number as the text of the within instrument may require.

In Witness Whereof, *the Grantors have hereunto set their hands and seals, or if a corporation, it has caused these presents to be signed by its proper corporate officers and its corporate seal to be affixed hereto, this* 21st *day of* April *19*99

Signed, Sealed and Delivered in the presence of or Attested by

Mario C. Petruccelli
MARIO C. PETRUCCELLI

Loretta C. Petruccelli
LORETTA C. PETRUCCELLI

Bryon A. Gentile
BRYON A. GENTILE

STATE OF CONNECTICUT
COUNTY OF FAIRFIELD } *ss.* BRIDGEPORT

The foregoing instrument was acknowledged before me this 21st *day of* APRIL *19*99 *, by* MARIO C. PETRUCCELLI AND LORETTA C. PETRUCCELLI

B.A. Gentile
BRYON A. GENTILE

~~Notary Public~~
Commissioner of the Superior Court

VOL 1004 PAGE 531

C23 — WARRANTY DEED — SHORT FORM
IND. OR CORP

G R V S T

©1976 ALL-STATE LEGAL SUPPLY CO.
269 Sheffield St., Mountainside, N. J. 07092

To all People to Whom these Presents shall Come, Greeting:

Know Ye, *That* WE, MARIO C. PETRUCCELLI AND LORETTA PETRUCCELLI, both of the Town of Trumbull, County of Fairfield and State of Connecticut,

herein referred to as the Grantors,

For the consideration of ONE HUNDRED AND EIGHTY THOUSAND AND 00/000 (180,000.00) DOLLARS received to the full satisfaction of the Grantors, hereby give, grant, bargain, sell and convey to

WEA CT HOUSES LLC, 11601 WILSHIRE BOULEVARD, 12th FLOOR, LOS ANGELES, CA 90025

herein referred to as the Grantees,

SEE ATTACHED SCHEDULE A WHICH IS MADE A PART HEREOF AS THOUGH FULLY RECITED HEREIN

Conveyance Tax Received
900.00 Vivian L. Burr 198.00
State Town Clerk of Trumbull Town

To Have and to Hold the above described lands and premises, with the privileges and appurtenances thereof, unto the Grantees and to the Grantees' heirs, successors and assigns forever and to the Grantees' and their own proper use and behoof; And the Grantors do for themselves, their heirs, successors and assigns covenant with the Grantees, their heirs, successors and assigns that at and until the ensealing of these presents, the Grantors are well seized of the premises as a good indefeasible estate in FEE SIMPLE; and have good right to grant and convey the same in manner and form as herein written; and the same are free from all incumbrances whatsoever, except as above stated.

And Furthermore, the Grantors by these presents bind themselves and their heirs, successors and assigns forever to warrant and defend the above granted and conveyed premises to the Grantees and their heirs, successors and assigns, against all claims and demands whatsoever, except as above stated.

In all references herein to any parties, persons, entities or corporations, the use of any particular gender or the plural or singular number is intended to include the appropriate gender or number as the text of the within instrument may require.

In Witness Whereof, *the Grantors have hereunto set their hands and seals, or if a corporation, it has caused these presents to be signed by its proper corporate officers and its corporate seal to be affixed hereto, this* 21st *day of* April *19*99

Signed, Sealed and Delivered in the presence of or Attested by

Diana Mendez
Diana Mendez
Bryon A. Gentile
BRYON A. GENTILE

Mario C. Petruccelli
MARIO C. PETRUCCELLI
Loretta C. Petruccelli
LORETTA C. PETRUCCELLI

STATE OF CONNECTICUT
COUNTY OF FAIRFIELD } *ss.* BRIDGEPORT

The foregoing instrument was acknowledged before me this 21st *day of* APRIL *19*99 *, by* MARIO C. PETRUCCELLI AND LORETTA C. PETRUCCELLI

BA Gentile
BRYON A. GENTILE
~~Notary Public~~
Commissioner of the Superior Court

VOL 1004 PAGE 531

C23 – WARRANTY DEED – SHORT FORM
IND OR CORP

G R V S T

©1976 ALL-STATE LEGAL SUPPLY CO.
289 Sheffield St., Mountainside, N. J. 07092

To all People to Whom these Presents shall Come, Greeting:

Know Ye, *That* WE, MARIO C. PETRUCCELLI AND LORETTA PETRUCCELLI, both of the Town of Trumbull, County of Fairfield and State of Connecticut,

herein referred to as the Grantors,

For the consideration of ONE HUNDRED AND EIGHTY THOUSAND AND 00/000 (180,000.00) DOLLARS received to the full satisfaction of the Grantors, hereby give, grant, bargain, sell and convey to WEA CT HOUSES LLC, 11601 WILSHIRE BOULEVARD, 12th FLOOR, LOS ANGELES, CA 90025

herein referred to as the Grantees,

SEE ATTACHED SCHEDULE A WHICH IS MADE A PART
HEREOF AS THOUGH FULLY RECITED HEREIN

Conveyance Tax Received
900.00 Vivian L. Burr 198.00
State Town Clerk of Trumbull Town

To Have and to Hold the above described lands and premises, with the privileges and appurtenances thereof, unto the Grantees and to the Grantees' heirs, successors and assigns forever and to the Grantees' and their own proper use and behoof; And the Grantors do for themselves, their heirs, successors and assigns covenant with the Grantees, their heirs, successors and assigns that at and until the ensealing of these presents, the Grantors are well seized of the premises as a good indefeasible estate in FEE SIMPLE; and have good right to grant and convey the same in manner and form as herein written; and the same are free from all incumbrances whatsoever, except as above stated.

And Furthermore, the Grantors by these presents bind themselves and their heirs, successors and assigns forever to warrant and defend the above granted and conveyed premises to the Grantees and their heirs, successors and assigns, against all claims and demands whatsoever, except as above stated.

In all references herein to any parties, persons, entities or corporations, the use of any particular gender or the plural or singular number is intended to include the appropriate gender or number as the text of the within instrument may require.

In Witness Whereof, *the Grantors have hereunto set their hands and seals, or if a corporation, it has caused these presents to be signed by its proper corporate officers and its corporate seal to be affixed hereto, this* 21st *day of* April *19*99

Signed, Sealed and Delivered in the presence of or Attested by

Diana Mendez
Diana Mendez
Bryon A. Gentile
BRYON A. GENTILE

Mario C. Petruccelli
MARIO C. PETRUCCELLI
Loretta C. Petruccelli
LORETTA C. PETRUCCELLI

STATE OF CONNECTICUT
COUNTY OF FAIRFIELD } *ss.* BRIDGEPORT

The foregoing instrument was acknowledged before me this 21st *day of* APRIL *19* 99 *, by* MARIO C. PETRUCCELLI AND LORETTA C. PETRUCCELLI

B.A. Gentile
BRYON A. GENTILE
~~Notary Public~~
Commissioner of the Superior Court

SCHEDULE A

All that certain piece or parcel of land with the buildings thereon standing, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, bounded and described as follows:

NORTH: by land now or formerly of John B. Shaver, in part, and in part by land now or formerly of Edward Murphy, in all, 55 feet;

EAST: by land now or formerly of Herbert G. Washburn, in part, and by land now or formerly of Francis J. Whalen, in all, 131 feet, more or less;

SOUTH: by Whalburn Avenue, 55 feet;

WEST: by other land now or formerly of Herbert Washburn, 132 feet, more or less.

The easterly line of said premises meets the northerly line of Whalburn Avenue at a point 170 feet west of the westerly line of Main Street.

Known as 20 Whalburn Avenue.

Said premises are conveyed SUBJECT TO the following:

1. Taxes on the Grand List of October 1, 1998, which the grantee assumes and agrees to pay.
2. Building lines, zoning ordinances, municipal regulations and the provision of any public or private law.
3. Any assessments or pending assessments for which a lien or liens have not as yet been filed or recorded in the Town Clerk's Office.
4. Long Hill Fire District taxes.
5. Certificate of Sewer Assessment Lien and Certificate of Notice of Installment Payment of Assessment of Benefits dated February 1, 1991 and recorded February 1, 1991 in Volume 730 at page 118 of the Trumbull Land records.
6. Sewer Use Charges.
7. Building Lines as shown on Map No.106.

TOWN CLERK'S OFFICE TRUMBULL, CT
RECEIVED April 21, 1999
AT 2:42 P.M. ATTEST Susan J. Murphy

SCHEDULE A

All that certain piece or parcel of land with the buildings thereon standing, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, bounded and described as follows:

NORTH: by land now or formerly of John B. Shaver, in part, and in part by land now or formerly of Edward Murphy, in all, 55 feet;

EAST: by land now or formerly of Herbert G. Washburn, in part, and by land now or formerly of Francis J. Whalen, in all, 131 feet, more or less;

SOUTH: by Whalburn Avenue, 55 feet;

WEST: by other land now or formerly of Herbert Washburn, 132 feet, more or less.

The easterly line of said premises meets the northerly line of Whalburn Avenue at a point 170 feet west of the westerly line of Main Street.

Known as 20 Whalburn Avenue.

Said premises are conveyed SUBJECT TO the following:

1. Taxes on the Grand List of October 1, 1998, which the grantee assumes and agrees to pay.
2. Building lines, zoning ordinances, municipal regulations and the provision of any public or private law.
3. Any assessments or pending assessments for which a lien or liens have not as yet been filed or recorded in the Town Clerk's Office.
4. Long Hill Fire District taxes.
5. Certificate of Sewer Assessment Lien and Certificate of Notice of Installment Payment of Assessment of Benefits dated February 1, 1991 and recorded February 1, 1991 in Volume 730 at page 118 of the Trumbull Land records.
6. Sewer Use Charges.
7. Building Lines as shown on Map No.106.

TOWN CLERK'S OFFICE TRUMBULL, CT
RECEIVED FOR RECORD
AT 2:42P M. ATTEST

SCHEDULE A

All that certain piece or parcel of land with the buildings thereon standing, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, bounded and described as follows:

NORTH: by land now or formerly of John B. Shaver, in part, and in part by land now or formerly of Edward Murphy, in all, 55 feet;

EAST: by land now or formerly of Herbert G. Washburn, in part, and by land now or formerly of Francis J. Whalen, in all, 131 feet, more or less;

SOUTH: by Whalburn Avenue, 55 feet;

WEST: by other land now or formerly of Herbert Washburn, 132 feet, more or less.

The easterly line of said premises meets the northerly line of Whalburn Avenue at a point 170 feet west of the westerly line of Main Street.

Known as 20 Whalburn Avenue.

Said premises are conveyed SUBJECT TO the following:

1. Taxes on the Grand List of October 1, 1998, which the grantee assumes and agrees to pay.
2. Building lines, zoning ordinances, municipal regulations and the provision of any public or private law.
3. Any assessments or pending assessments for which a lien or liens have not as yet been filed or recorded in the Town Clerk's Office.
4. Long Hill Fire District taxes.
5. Certificate of Sewer Assessment Lien and Certificate of Notice of Installment Payment of Assessment of Benefits dated February 1, 1991 and recorded February 1, 1991 in Volume 730 at page 118 of the Trumbull Land records.
6. Sewer Use Charges.
7. Building Lines as shown on Map No.106.

TOWN CLERK'S OFFICE TRUMBULL, CT
RECEIVED FOR RECORD April 2, 1999
AT 2:42P M. ATTEST

WARRANTY DEED VOL 1004 PAGE 599

TO ALL PEOPLE TO WHOM THESE PRESENTS SHALL COME GREETING:

KNOW YE, That We, MICHAEL G. MALONEY AND CHRYSTYNE MALONEY of the Town of Trumbull, County of Fairfield and State of Connecticut, herein designated as the Grantors, for the consideration of ONE HUNDRED NINETY-FIVE THOUSAND AND NO/100THS ($195,000.00) DOLLARS, received to the full satisfaction of the Grantors, from WEA CT HOUSES LLC, of the City of Los Angeles and State of California (11601 Wilshire Boulevard, Los Angeles, CA 90025), herein designated as the Grantee, do hereby give, grant, bargain, sell and convey to the Grantee all that certain piece or parcel of land described in Schedule "A" attached hereto and made a part hereof.

To have and to hold the premises hereby conveyed with the appurtenances thereon, unto the Grantee to its proper use and behoof, and the Grantors does for themselves, their heirs, successors and assigns, covenant with the Grantee that at the time of the delivery of this deed, the Grantors are lawfully seized of the premises as a good indefeasible estate in fee simple; that they have the good right, full power and lawful authority to sell, grant and convey the same in the manner and form as herein written and that the granted premises are free from all encumbrances whatsoever, except as herein stated.

AND FURTHERMORE, The Grantors do by these presents bind themselves and their heirs, successors and assigns forever to warrant and defend the granted premises to the Grantee against all claims and demands of all persons whatsoever, except as herein stated.

IN WITNESS WHEREOF, The Grantors have hereunto set their hands and seals this 21st day of April, 1999.

SIGNED, SEALED AND DELIVERED IN THE PRESENCE OF

Patrick E. Maloney

Michael G. Maloney

Michael G. Maloney

Chrystyne Maloney

Chrystyne Maloney

STATE OF CONNECTICUT
ss. Waterbury
COUNTY OF NEW HAVEN

On this the 21st day of April, 1999, before me, the undersigned officer, personally appeared MICHAEL G. MALONEY AND CHRYSTYNE MALONEY who acknowledged themselves to be the persons whose names are subscribed to the within instrument and acknowledged that they executed the same for the purposes therein contained.

Patrick E. Maloney
Commissioner of the Superior Court

WDSM

Conveyance Tax Received
975.00 [illegible] 2450
State Town Clerk of Trumbull Town

SCHEDULE A VOL 1004 PAGE 600

All that certain piece or parcel of land, together with the buildings and improvements thereon, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, known and designated as Lot No. 2 as shown on a certain Map entitled, "Revised Map Showing Street System and Lots for William Whalen, L.L. Stuart & H.O. Washburn, Scale 80 ft. to 1 inch, Date March 21, 1928", certified substantially correct by A.D. Fuller, Civil Engineer, which Map is on file in the Trumbull Town Clerk's Office as Map No. 106, said premises being more particularly bounded and described as follows:

NORTHERLY:	150 feet, more or less, by land now or formerly of Arnol Berger, as shown on said Map;
EASTERLY:	65.5 feet, more or less, by Main Street, as shown on said Map;
SOUTHERLY:	160 feet, more or less, by Lot No. 1, as shown on said Map; and
WESTERLY:	65.5 feet, more or less, by Lot No. 3, as shown on said Map.

Being the same premises conveyed by Jeanne M. Combs to Michael G. Maloney and Chrystyne Maloney by Warranty Survivorship Deed dated and recorded May 30, 1996 in Volume 895, Page 352 of the Trumbull Land Records.

Said premises are free and clear of all encumbrances, except:

1. Building Lines, if established, and all provisions of any building zone ordinance enacted by the Town of Trumbull and any and all provisions of any ordinance, municipal regulation or public or private law.

TOWN CLERK'S OFFICE, TRUMBULL, CT.
RECEIVED FOR RECORD Jan 29 1999
AT 4:18 P M. ATTEST [signature] TOWN CLERK

WD2201

5117 MAIN STREET

Click to enlarge

MBL :	E/11 / 00100/ 000/
Location:	5117 MAIN STREET
Alternate ID:	00281000

Parcel Value

Current Appraised Value	Current Assessed Value	FY 2006 Appraised Value	FY 2006 Assessed Value
295,600	206,900	295,600	206,900

Ownership History

Book/Page	Sale Date	Sale Price
1004/ 599	4/22/1999	195,000

Land Use (click here for a list of codes and descriptions)

Land Use Code	Land Use Description
100	Res Vacant Lnd

Land Information

Size	Zone
0.17 AC	A

Construction Detail

Item	Value
STYLE	Vacant Land

Building Information

Item	Value
Living Area	0 square feet
Year Built	
Depreciation	100%
Replacement Cost Less Depreciation	0

Outbuildings (click here for a list of codes and descriptions)

Code	Description	Units

WARRANTY DEED IND. OR CORP

To All People To Whom These Presents Shall Come, Greeting:

Know Ye, *That ARTHUR C. LASKE, JR. A/K/A ARTHUE C. LASKE, JR. AND MARILYN F. CHISNALL A/K/A MARILYN CHISNALL of Trumbull, Connecticut herein designated as the Grantors, for the consideration of Five Hundred Twenty-Five Thousand and 00/100 Dollars ($525,000.00) received to the full satisfaction of the Grantors, from WEA CT HOUSES LLC whose mailing address is c/o Westfield Corporation, 11601 Wilshire Boulevard, 12th Floor, Los Angeles, California 90025 herein designated as the Grantees, do hereby give, grant, bargain, sell and convey to the Grantees*

See Schedule A attached hereto and made a part hereof.

Subject to:

(1) Any and all restrictions or limitations imposed or to be imposed by any governmental authority, including, without limitation, building and setback lines, zoning and planning rules and regulations, inland and tidal wetlands regulations, historic district regulations, and ordinances of the municipality and district, if any, in which the Premises are situated, as well as any public or private law.

(2) Taxes of the municipality and district, if any, in which the Premises are situated which become due and payable after the delivery of the deed, which the Grantees assume and agree to pay as part of the consideration for the deed.

(3) Public improvement (including sewer and water) and private association assessments, and any unpaid installments on them, which become due and payable after the date of delivery of deed, which the Grantees assume and agree to pay as part of the consideration for the deed.

(4) Any riparian or littoral rights of others to any stream or other body of water adjoining, or passing through, the Premises.

(5) Sewer Assessment dated February 1, 1991 and recorded in Volume 730 at Page 82 of said land records.

(6) Easement in favor of the State of Connecticut dated September 3, 1999 and recorded in Volume 1022 at Page 81 of said land records.

Conveyance Tax Received
2625.00 Vivian L. Burr 577.50
State Town Clerk of Trumbull Town

To Have and to Hold *the premises hereby conveyed, with the appurtenances thereof, unto the Grantees and unto the Grantees' heirs, successors and assigns forever and to the Grantees' and their own proper use and behoof; and the Grantors do for themselves, their heirs, successors and assigns covenant with the Grantees, their heirs, successors and assigns that the Grantors are well seized of the premises as a good indefeasible estate in FEE SIMPLE; and have good right to grant and convey the same in manner and form as herein written and the same are free from all encumbrances whatsoever, except as herein stated.*

And Furthermore, *the Grantors do by these presents bind themselves and their heirs, successors and assigns forever to WARRANT AND DEFEND the premises hereby conveyed to the Grantees and their heirs, successors and assigns against all claims and demands whatsoever, except as herein stated.*

In all references herein to any parties, persons, entities or corporations the use of any particular gender or the plural or singular number is intended to include the appropriate gender or number as the text of the within instrument may require.

SCHEDULE A

FIRST PIECE: All that certain piece or parcel of land, less an easement to the State of Connecticut , Department of Transportation, as more fully described in a Notice Of Condemnation And Assessment Of Damages dated September 17, 1999 and on file in the Office of the Town Clerk of Trumbull, together with the buildings thereon standing, situated in the Town of Trumbull, bounded and described as follows, to wit: Known as Lot "A" on map of building lots belonging to Lewis L. Stuart, made by Scofield and Ford dated April 12, 1923, and on file in the Town Clerk's Office of said Trumbull, Conn., bounded:

NORTH: on Stuart Street, two hundred (200) feet;

EAST: on Main Street, sixty-two and five tenths (62.5) feet;

SOUTH: on land formerly of William W. Stuart, two hundred (200) feet;

WEST: on land formerly of William W./ Stuart, sixty-one and eight tenths (61.8) feet.

Being that same property described in that certain Warranty Deed dated Nov. 15, 1937 and recorded in Volume 42, pages 381-382 of the Trumbull Land Records.

SECOND PIECE: All that certain piece or parcel of land situated in the Town of Trumbull, Connecticut, with the buildings thereon standing, being more particularly bounded and described as follows, to wit:

EAST: on Main Street, 62.5 feet;

SOUTH: on land now or formerly of the Park Avenue Realty and Construction Co., Inc., 275 feet;

WEST: on land now or formerly of the Park Avenue Realty and Construction Co., Inc., 125 feet;

NORTH: on Stuart Place, 75 feet;

EAST AGAIN: on land of Arthur C. Laske and Evelyn R. Laske, 61.8 feet;

NORTH AGAIN: on land of Arthur C. Laske and Evelyn R. Laske, 200 feet.

Being the same property described in that certain Warranty Deed dated Nov. 20, 1943 and recorded in Volume 51, Page 580 of the Trumbull Land Records.

Said premises are commonly known as 5081 Main Street, Trumbull, Connecticut.

In Witness Whereof, *the Grantors have hereunto set their hands and seals, or if a corporation, it has caused these presents to be signed by its corporate officers and its corporate seal to be affixed hereto, this 13th day of October, 1999.*

Signed, Sealed and Delivered in the presence of or Attested by

Arthur C. Laske, Jr. a/k/a Arthue C. Laske, Jr.

Marilyn F. Chisnall a/k/a Marilyn Chisnall

STATE OF CONNECTICUT :
: ss. BRIDGEPORT
COUNTY OF FAIRFIELD :

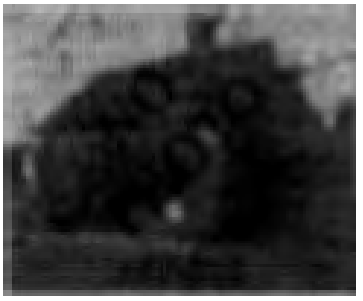
The foregoing instrument was acknowledged before me this 13th day of October, 1999 by Arthur C. Laske, Jr. a/k/a Arthue C. Laske, Jr. and Marilyn F. Chisnall a/k/a Marilyn Chisnall, being their free act and deed.

Walter A. Flynn, Jr.
Commissioner of the Superior Court

cb\wp61\waf\laske.ded

TOWN CLERK'S OFFICE, TRUMBULL, CT
RECEIVED FOR RECORD Oct. 28, 1999
AT 2:27P M. ATTEST Gloria J. Murphy TOWN CLERK

5081 MAIN STREET



MBL :	E/11 / 00109/ 000/
Location:	5081 MAIN STREET
Alternate ID:	01209800

Parcel Value

Current Appraised Value	Current Assessed Value	FY 2006 Appraised Value	FY 2006 Assessed Value
347,000	242,900	347,000	242,900

Ownership History

Book/Page	Sale Date	Sale Price
1026/ 123	10/28/1999	525,000

Land Use (click here for a list of codes and descriptions)

Land Use Code	Land Use Description
1001	Res Vac Ld w/OB

Land Information

Size	Zone
0.71 AC	A

Construction Detail

Item	Value
STYLE	Vacant Land

Building Information

Item	Value
Living Area	0 square feet
Year Built	
Depreciation	100%
Replacement Cost Less Depreciation	0

Outbuildings (click here for a list of codes and descriptions)

Code	Description	Units
FGR2	Garage w Lft | Frame	720 S.F.

V.1053 p511, 512
4:24pm 8/28/00

Warranty Deed

(Long Form)

TO ALL PEOPLE TO WHOM THESE PRESENTS SHALL COME. GREETING:

KNOW YE, That I, KATHLEEN BECK, of 38 Stuart Place, Trumbull, CT 06611

herein designated as the Grantors,

for the consideration of ONE HUNDRED SEVENTY THOUSAND ($170,000.00) DOLLARS

received to the full satisfaction of the Grantors, from WEA CT HOUSES LLC, a Delaware limited liability company

whose mailing address is c/o Westfield Corporation, 11601 Wilshire Boulevard, 12th Floor, Los Angeles, CA 90025

herein designated as the Grantees,

do hereby give, grant, bargain, sell and convey to the Grantees

THAT CERTAIN piece or parcel of land, with the buildings thereon, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, known and designated as Lot No. 15 as shown on Map of Building Lots for Lewis L. Stuart, dated April 12, 1923, made by Scofield and Ford on file in the Trumbull Town Clerk's Office, bounded and described as follows:

NORTHERLY: By Lot No. 14 on said map, 50 feet;
EASTERLY: By Lot No. 13 on said map, 113.8 feet;
SOUTHERLY: By Stuart Place, shown on said map as Stuart Street, 50 feet;
WESTERLY: By Lot No. 17 on said map, 113.8 feet.

SUBJECT TO:
1. Any and all provisions of any ordinance, municipal regulation, public or private law.
2. Real estate taxes and sewer use charges which, having been adjusted, the Grantee herein assumes and agrees to pay.
3. Common Driveway Agreement dated November 28, 1961 and recorded in Volume 145 at Page 648 of the Trumbull Land Records.

Said premises are also known as 38 Stuart Place, Trumbull, CT 06611.

TO HAVE AND TO HOLD the above granted and bargained premises hereby conveyed, with the appurtenances thereof, unto the Grantees and unto the Grantees' heirs, successors and assigns forever and to the Grantees' and their own proper use and behoof. **AND** also, the Grantors do for themselves, their heirs, successors, executors, administrators and assigns covenant with the Grantees, their heirs, successors and assigns that the Grantors are well seized of the premises as a good indefeasible estate in FEE SIMPLE; and have a good right to grant and convey the same in manner and form as herein written; and the same are free from all incumbrances whatsoever, except as herein stated.

AND FURTHERMORE, the Grantors do by these presents bind themselves and their heirs, executives and administrators, successors and assigns forever to WARRANT AND DEFEND the premises hereby conveyed to the Grantees and their heirs, successors and assigns against all claims and demands whatsoever, except as herein stated.

In all references herein to any parties, persons, entities or corporations, the use of any particular gender or the plural or singular number is intended to include the appropriate gender or number as the text of the within instrument may require.

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1-800-222-0510

IN WITNESS WHEREOF, the Grantors have hereunto set their hands and seals, or if a corporation, it has caused these presents to be signed by its corporate officers and its corporate seal to be affixed hereto, this 25th day of August, 2000.

Signed, Sealed and Delivered in the presence of or Attested by (Print name underneath the signature(s))

Kathleen Beck

Kathleen Beck

STATE OF CONNECTICUT, COUNTY OF FAIRFIELD SS. Stratford

The foregoing instrument was acknowledged before me this 25th day of August, 2000, by KATHLEEN BECK

Commissioner of the Superior Court
Mark C. Valentine

STATE OF CONNECTICUT, COUNTY OF SS.

Personally Appeared this day of , as aforesaid, Signer of the foregoing Instrument, and acknowledged the same to be free act and deed as such and the free act and deed of said corporation/partnership, before me.

(Print name and title of Notary Public/Justice of Peace/ Commissioner of Superior Court)

Grantee's Address
c/o Westfield Corporation
11601 Wilshire Boulevard
12th Floor
Los Angeles, CA 90025

WARRANTY DEED	Dated:
KATHLEEN BECK	Received for Record
	at M.
TO	Recorded in Vol. Page
	of
WEA CT HOUSES LLC	Land Records by
	Town Clerk

RETURN DEED TO: JOHN W. KNUFF, clo Hurwitz & Sagarin, LLC
147 North Broad Street, P. O. Box 112,
Milford, CT 06460-0112

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A Division of ALL-STATE International, Inc.
1-800-222-0510

38 STUART PLACE

Click to enlarge

MBL :	E/11 / 00071/ 000/
Location:	38 STUART PLACE
Alternate ID:	00941300

Parcel Value

Current Appraised Value	Current Assessed Value	FY 2006 Appraised Value	FY 2006 Assessed Value
414,900	290,400	414,900	290,400

Ownership History

Book/Page	Sale Date	Sale Price
1053/ 511	8/28/2000	170,000

Land Use (click here for a list of codes and descriptions)

Land Use Code	Land Use Description
100	Res Vacant Lnd

Land Information

Size	Zone
0.13 AC	A

Construction Detail

Item	Value
STYLE	Vacant Land

Building Information

Item	Value
Living Area	0 square feet
Year Built	
Depreciation	100%
Replacement Cost Less Depreciation	0

Outbuildings (click here for a list of codes and descriptions)

Code	Description	Units

C32—WARRANTY DEED—SHORT FORM
IND. OR CORP.

VOL 1057 PAGE 461
ADDRVST—1

©1979 ALL-STATE LEGAL SUPPLY CO.
One Commerce Drive, Cranford, N. J. 07016

To all People to Whom these Presents shall Come, Greeting:

Know Ye, That we, LOUIS N. IODICE and ROSE IODICE, both of 34 Whalburn Avenue, Trumbull, CT

herein designated as the Grantors,

for the consideration of ONE HUNDRED EIGHTY THOUSAND ($180,000.00) DOLLARS

received to the full satisfaction of the Grantors, from WEA CT HOUSES LLC

whose mailing address is c/o Westfield Corporation, 11601 Wilshire Boulevard, 12th Floor, Los Angeles, CA 90025

herein designated as the Grantees,

do hereby give, grant, bargain, sell and convey to the Grantees

ALL that certain piece or parcel of land known and designated as Lots #7 and 8, Whalburn Avenue, as shown on revised map for William Whalen, L. L. Stuart, and H. O. Washburn made by A. D. Fuller, Civil Engineer and recorded May 14, 1928, as map no. 106 in the Trumbull Town Clerk's Office, further described as follows:

LOT NO. 8

SOUTHERLY:	By Whalburn Avenue, 50 feet;
EASTERLY:	By Lot No. 7 as shown on said map, 135 feet, more or less;
NORTHERLY:	By land formerly of Amolberg, now or formerly of Frouge Corp., 50 feet;
WESTERLY:	By Lot #9 as shown on said map, 135 feet, more or less.

LOT NO. 7

SOUTHERLY:	By Whalburn Avenue, 50 feet;
EASTERLY:	By Lot #6 as shown on said map, 135 feet, more or less;
NORTHERLY:	By land formerly of Amolberg, now or formerly of Frouge Corp., 50 feet;
WESTERLY:	By Lot No. 8 on said map, 135 feet, more or less.

Conveyance Tax Received
900
Vivian L. Burr 19
State Town Clerk of Trumbull Town

To Have and to Hold *the premises hereby conveyed, with the appurtenances thereof, unto the Grantees and unto the Grantees' heirs, successors and assigns forever and to the Grantees' and their own proper use and behoof;* **and** *the Grantors do for themselves, their heirs, successors and assigns covenant with the Grantees, their heirs, successors and assigns that the Grantors are well seized of the premises as a good indefeasible estate in FEE SIMPLE; and have good right to grant and convey the same in manner and form as herein written and the same are free from all incumbrances whatsoever, except as herein stated.*

And Furthermore, *the Grantors do by these presents bind themselves and their heirs, successors and assigns forever to WARRANT AND DEFEND the premises hereby conveyed to the Grantees and their heirs, successors and assigns against all claims and demands whatsoever, except as herein stated.*

In all references herein to any parties, persons, entities or corporations, the use of any particular gender or the plural or singular number is intended to include the appropriate gender or number as the text of the within instrument may require.

In Witness Whereof, *the Grantors have hereunto set their hands and seals, or if a corporation, it has caused these presents to be signed by its corporate officers and its corporate seal to be affixed hereto, this* 11th *day of* October *XXX* 2000

Signed, Sealed and Delivered in the presence of
or Attested by

ALFRED R. BELINKIE — LOUIS N. IODICE

HELEN-ANN ANDERSON — ROSE IODICE

State of Connecticut
County of FAIRFIELD } ss. BRIDGEPORT

The foregoing instrument was acknowledged before me this 11th *day of* October, 2000
XX, *by* LOUIS N. IODICE and ROSE IODICE

TOWN CLERK'S OFFICE, TRUMBULL, CT
RECEIVED FOR RECORD OCT 2 2000
AT 12:37 P M. ATTEST

ALFRED R. BELINKIE
Commissioner of the Superior Court
for Fairfield County

34 WHALBURN AVENUE

Click to enlarge

MBL :	E/11 / 00089/ 000/
Location:	34 WHALBURN AVENUE
Alternate ID:	00542500

Parcel Value

Current Appraised Value	Current Assessed Value	FY 2006 Appraised Value	FY 2006 Assessed Value
445,600	311,900	445,600	311,900

Ownership History

Book/Page	Sale Date	Sale Price
1057/ 461	10/11/2000	180,000

Land Use (click here for a list of codes and descriptions)

Land Use Code	Land Use Description
100	Res Vacant Lnd

Land Information

Size	Zone
0.31 AC	A

Construction Detail

Item	Value
STYLE	Vacant Land

Building Information

Item	Value
Living Area	0 square feet
Year Built	
Depreciation	100%
Replacement Cost Less Depreciation	0

Outbuildings (click here for a list of codes and descriptions)

Code	Description	Units

WARRANTY DEED

VOL 1155 PAGE 0302

TO ALL PEOPLE TO WHOM THESE PRESENTS SHALL COME, GREETING:

KNOW YE, That Dominic A. Perry of the Town of Trumbull, County of Fairfield and State of Connecticut, herein designated as the Grantor, for the consideration of Two Hundred Sixty Five Thousand and 00/100 ($265,000.00) Dollars received to the full satisfaction of the Grantor, from WEA CT HOUSES, LLC c/o Westfield, Inc. whose mailing address is 11601 Wilshire Boulevard, 12th Floor, Los Angeles, CA 90025, herein designated as the Grantee does hereby give, grant, bargain, sell and convey to the Grantee and its heirs and assigns forever

All that certain piece or percel of land, together with the buildings thereon standing, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, known and designated as Lot No. 11 on Map of L. L. Stuart, made by Scofield & Ford, Surveyor, dated April 12, 1923 and on file in theTown Clerk's Office of said Trumbull and bounded: NORTHERLY: By land of Matilda J. Burr, Lot 10, on said map, 80 feet; EASTERLY: By land of E. P. Griffin, Lot 9, on said map, 113.8 feet; SOUTHERLY: By Stuart Street, 50 feet; WESTERLY: By land of Helene M. Raphaely, Lot 13, on said map, 113.8 feet. Property known as 30 Stuart Place, Trumbull, CT

Subject to the following:

1. Any and all provisions of any ordinance, municipal regulation, public or private law.
2. Taxss on the List of October 1, 2001, hereafter due and payable.
3. Any assessments or pending assessments for which a lien or liens have not as yet been filed.
4. Any provisions, if applicable, of any inland/wetlands or coastal wetland statutes, ordinances, rules and regulations.
5. Sewer use charges not yet due and payable.
6. Sewer Assessment recorded in Volume 730 at Page 110.
7. Long Hill Fire District Taxes not yet due and payable.

To have and to Hold the premises hereby conveyed, with the appurtenances thereof, unto the Grantee and unto the Grantee's heirs, successors and assigns forever and to the Grantee and its own proper use and behoof; and the Grantor does for itself, its heirs, successors and assigns covenant with the Grantee, its heirs, successors and assigns that the Grantor is well seized of the premises as a good indefeasible estate in FEE SIMPLE and have good right to grant and convey the same in manner and form as herein written and the same are free from all encumbrances whatsoever, except as herein stated.

And Furthermore, the Grantor does by these presents bind itself and its heirs, successors and assigns forever to WARRANT AND DEFEND the premises hereby conveyed to the Grantee and its heirs, successors and assigns against all claims and demands whatsoever, except as herein stated.

In all references herein to any parties, persons, entities or corporations, the use of any particular gender or the plural or singular number is intended to include the appropriate gender or number as the text of the within instrument may require.

Conveyance Tax Received
1325 Vivian L. Burr 29 1.
State Town Clerk of Trumbull Town

In Witness Whereof, the Grantor has hereunto set its hand and seal, or if a corporation, it has caused these presents to be signed by its corporate officers and its corporate seal to be affixed hereto, this 17th day of October, 2002.

Signed, Sealed and Delivered in the presence of
or Attested by

Daniel Edward Brennan

Dominic A. Perry a/k/a Dominic Perry

MADALENA R. ATILHO

STATE OF CONNECTICUT
SS: TRUMBULL
COUNTY OF FAIRFIELD

The foregoing instrument was acknowledged before me this 17th day of October, 2002, by Dominic A. Perry a/k/a Dominic Perry as his free act and deed.

Daniel Edward Brennan
Commissioner of the Superior Court

Please return to:

TOWN CLERK'S OFFICE, TRUMBULL, CT
RECEIVED 10-17-02
AT 1:07 P.M. ATTEST
TOWN CLERK

30 STUART PLACE

Click to enlarge

MBL :	E/11 / 00073/ 000/
Location:	30 STUART PLACE
Alternate ID:	00677600

Parcel Value

Current Appraised Value	Current Assessed Value	FY 2006 Appraised Value	FY 2006 Assessed Value
414,900	290,400	414,900	290,400

Ownership History

Book/Page	Sale Date	Sale Price
1155/ 302	10/17/2002	265,000

Land Use (click here for a list of codes and descriptions)

Land Use Code	Land Use Description
100	Res Vacant Lnd

Land Information

Size	Zone
0.13 AC	A

Construction Detail

Item	Value
STYLE	Vacant Land

Building Information

Item	Value
Living Area	0 square feet
Year Built	
Depreciation	100%
Replacement Cost Less Depreciation	0

Outbuildings (click here for a list of codes and descriptions)

Code	Description	Units

WARRANTY DEED

TO ALL PEOPLE TO WHOM THESE PRESENTS SHALL COME, GREETING:

KNOW YE, that Luigina Marchione, residing at 36 Whalburn Avenue, Trumbull, Connecticut, herein designated as the Grantor, for the consideration of Two Hundred Forty Five Thousand and 00/100 ($245,000.00) Dollars, received to her full satisfaction from WEA CT HOUSES, LLC with a mailing address c/o Westfield Corporation, 11601 Wilshire Boulevard, 12th Floor, Los Angeles, California 90025, herein designated as the Grantee, does hereby give, grant, bargain, sell and convey to the Grantee, and to its successors and / or assigns and to such successors and /or assigns forever, all that certain piece or parcel of land, with the improvements thereon, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, more particularly described as follows:

"All that certain piece or parcel of land, together with the buildings and improvements thereon, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, designated as Lot No. 9 on a map entitled "Revised Map Showing Street System and Lots for William Whalen, L.L. Stuart and H.G. Washburn," made by A.D. Fuller, Civil Engineer, dated March 21, 1928, and on file as Map No. 106 in the Trumbull Town Clerk's office, being more particularly bounded and described as follows:

NORTH: by land now or formerly of The Frouge Corporation, 50 feet;
EAST: by land now or formerly of Francis J. Whalen, Lot No. 8 on said map, 136 feet, more or less;
SOUTH: by Whalburn Avenue, 50 feet;
WEST: by land now or formerly of Philip J. Pulaski and Marie M. Pulaski, Lot No. 10 on said map, 137 feet, more or less."

Subject to:

1. Any and all provision of any ordinance, municipal regulation or public or private law.
2. Such facts as an accurate survey and/or inspection of said premises might reveal.
3. Any assessments or pending assessments for which a lien or liens have not as of yet been filed.
4. Veranda line as shown on Map No. 106.
5. Taxes on the List of October 1, 2002, not yet due and payable.

Conveyance Tax Received
1215.00 Vivian L. Burr 267.30
State Town Clerk of Trumbull Town

TO HAVE AND TO HOLD the premises conveyed, with the appurtenances thereof, unto the Grantee and unto its successors and / or assigns and unto such its successors and / or assigns forever to their proper use and behoof, and the Grantor does for herself, her heirs, successors and assigns, covenant with the Grantees and with its its successors and / or assigns, and with such its successors and / or assigns, that the Grantor is well seized of the premises as a good indefeasible estate in FEE SIMPLE; has good title to grant and convey the same in manner and form as herein written and the same are free from all encumbrances whatsoever, except as herein stated.

AND FURTHERMORE, the Grantor does by these presents bind herself and her heirs, successors and assigns forever to WARRANT AND DEFEND the premises hereby conveyed to the Grantee and to its its successors and / or assigns and to such its successors and / or assigns against all claims and demands whatsoever, except as herein stated.

In all referenced herein to any parties, person, entities or corporations, the use of any particular gender or the plural or singular number is intended to include the appropriate gender or number as the text of the instrument may require.

IN WITNESS WHEREOF, the Grantor has hereunto set his hand and seal, this 24th day of February 2003.

Signed, Sealed and Delivered in the presence of:

WANDIE BATTISTINI

Luigina Marchione

RICHARD J. NOVAK

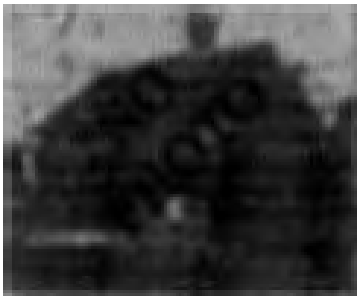
State of Connecticut :
: ss: New Haven
County of New Haven :

Personally appeared, Luigina Marchione, known to me, subscribed to, sworn to and acknowledged before me, this 24th day of February 2003.

Richard J. Novak
Commissioner of the Superior Court

TOWN CLERK'S OFFICE, TRUMBULL, CT MAR 07 2003
RECEIVED FOR RECORD
AT 11:50 A.M. ATTEST
TOWN CLERK

36 WHALBURN AVENUE



MBL :	E/11 / 00088/ 000/
Location:	36 WHALBURN AVENUE
Alternate ID:	01140300

Parcel Value

Current Appraised Value	Current Assessed Value	FY 2006 Appraised Value	FY 2006 Assessed Value
420,400	294,300	420,400	294,300

Ownership History

Book/Page	Sale Date	Sale Price
1190/ 438	3/7/2003	245,000

Land Use (click here for a list of codes and descriptions)

Land Use Code	Land Use Description
100	Res Vacant Lnd

Land Information

Size	Zone
0.16 AC	A

Construction Detail

Item	Value
STYLE	Vacant Land

Building Information

Item	Value
Living Area	0 square feet
Year Built	
Depreciation	100%
Replacement Cost Less Depreciation	0

Outbuildings (click here for a list of codes and descriptions)

Code	Description	Units
No Outbuildings		

STATUTORY FORM WARRANTY DEED

CHRISTOPHER H. QUIGLEY and KAREN L. QUIGLEY of the Town of Trumbull, County of Fairfield and State of Connecticut for consideration of THREE HUNDRED SEVEN THOUSAND FIVE HUNDRED AND 00/100 ($307,500.00) DOLLARS paid, grant to WEA CT HOUSES LLC, whose mailing address is care of Westfield Corporation, 11601 Wilshire Boulevard, 12th Floor, Los Angeles, CA 90025 WITH WARRANTY COVENANTS:

ALL THAT CERTAIN piece or parcel of land with the buildings thereon, situated in the Town of Trumbull, in the Long Hill District, County of Fairfield and State of Connecticut, known and designated as Lot No. 13 on Map of Building Lots made for Lewis I. Stuart by Scofield and Ford and filed in the Office of the Town Clerk of Trumbull in Book of Maps Vol. # 1 at Page 81; bounded and described as follows:

NORTH: **By Lot # 12 owned by Sarah E. Treadwell and Katherine T. Gillette, Fifty (50) feet;**

EAST: **By Lot # 11 formerly owned by Vernon M. Pursley, One Hundred Thirteen and 8/10 (113.8) feet;**

SOUTH: **By Highway, Stuart Place so-called, Fifty (50) feet;**

WEST: **By Lot # 15 owned by Alvin Knecht, One Hundred Thirteen and 8/10 (113.8) feet.**

Together with all rights pertaining to a Variance of Record recorded August 17, 1998 in Volume 667 at Page 119 of the Trumbull Land Records.

Said premises being known as 34 Stuart Place.

SAID PREMISES ARE CONVEYED <u>SUBJECT TO</u>:

1. **Any and all provisions of any municipal regulation or ordinance, and any Federal, State or local public or private laws, with special reference to the provisions of any zoning rules and regulations governing the subject premises.**

2. **Taxes of the town of Trumbull on the List of October 1, 2001 and thereafter becoming due and payable after the date of closing, which the Grantee assume and agree to pay as part of the consideration for this Deed.**

3. **The unpaid balance not overdue, of any sewer lien, or other municipal lien or assessment now existing or which may, on or after the date hereof, be assessed, levied or imposed against or become a lien upon said premises, which liens or**

Conveyance Tax Received
1537.50 Vivian L. Burr 768.75
State Town Clerk of Trumbull Town

assessments the Grantee shall assume and agree to pay as part of the consideration for this Deed.

4. Sewer Use Charges which the Grantee herein assumes to pay as same become due and payable.

5. Long Hill Fire District Taxes, hereinafter becoming due and payable.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 1st day of April, 2003.

Signed, sealed and delivered
in the presence of:

Richard T. Clomiro

Christopher H. Quigley

J W KNUFF

Karen L. Quigley

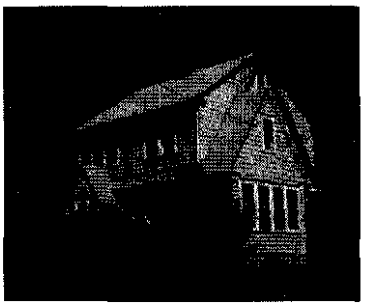
STATE OF CONNECTICUT:
: SS: Fairfield, April 1, 2003
COUNTY OF FAIRFIELD :

Personally appeared, Christopher H. Quigley and Karen L. Quigley, known to me or satisfactorily proven and acknowledged before the undersigned that they executed the foregoing instrument as their free act and deed.

Richard T. Clomiro
Commissioner of Superior Court

TOWN CLERK'S OFFICE, TRUMBULL, CT APR 0 1 2003
RECEIVED FOR RECORD
AT 4:30 P M. ATTEST TOWN CLERK

34 STUART PLACE



Click to enlarge

MBL :	E/11 / 00072/ 000/
Location:	34 STUART PLACE
Alternate ID:	00999100

Parcel Value

Current Appraised Value	Current Assessed Value	FY 2006 Appraised Value	FY 2006 Assessed Value
414,900	290,400	414,900	290,400

Ownership History

Book/Page	Sale Date	Sale Price
1196/ 710	4/1/2003	307,500

Land Use (click here for a list of codes and descriptions)

Land Use Code	Land Use Description
100	Res Vacant Lnd

Land Information

Size	Zone
0.13 AC	A

Construction Detail

Item	Value
STYLE	Vacant Land

Building Information

Item	Value
Living Area	0 square feet
Year Built	
Depreciation	100%
Replacement Cost Less Depreciation	0

Outbuildings (click here for a list of codes and descriptions)

Code	Description	Units

Doc ID: 000682200002 Type: LAN
Book 1332 Page 212 - 213
File# 8402

WARRANTY DEED

TO ALL PEOPLE TO WHOM THESE PRESENTS SHALL COME. GREETING:

KNOW YE, That MARION R. RUGGIERO herein designated as the Grantors, for the consideration of FIVE HUNDRED FIFTY THOUSAND AND 00/100 ($550,000.00) DOLLARS received to the full satisfaction of the Grantors, from WEA CT HOUSES LLC whose mailing address is c/o Westfield Corporation, 11601 Wilshire Boulevard, 12th Floor, Los Angeles, CA 90025 herein designated as the Grantees, do hereby give, grant, bargain, sell and convey to the Grantee:

All that certain piece or parcel of land, with the buildings thereon standing, situated in the Town of Trumbull, County of Fairfield and State of Connecticut, known and designated as Lot No. 10 on revised map William Whalen, L.L. Stuart and H.G. Washburn, made by A.D. Fuller, Civil Engineer, dated March 21, 1928 and filed for record May 14, 1928 in the Town Clerk's Office in said Town of Trumbull, more particularly bounded and described as follows:

Northerly:	By land now or formerly of Ethel B. Lemon et al, 50 feet;
Easterly:	By land now or formerly of Earl Smith, Sr. and Lillian Smith, Lot No. 9, on said map, 137 feet;
Southerly:	On Whalburn Avenue, 50 feet;
Westerly:	On land now or formerly of Francis J. Whalen, Lot No. 11 on said map, 138 feet, more or less.

Said premises are also known as 48 Whalburn Avenue, Trumbull, Connecticut.

SUBJECT TO:

1. *Any and all provisions of any ordinance, municipal regulation, public or private law regulating the use of said premises.*
2. *Real estate taxes hereafter becoming due and payable which the Grantee(s) assumes and agrees to pay.*
3. *Terms, conditions, agreements, covenants, restrictions, obligations and easements contained in the Declaration of Condominium described in Schedule A hereof and the Bylaws and exhibits made a part of said Declaration of Condominium, and any amendments or modifications subsequently made hereto.*
4. *Certificate of Sewer Assessment Lien and Certificate of Notice of Installment Payment of Assessment of Benefits dated February 1, 1991 and recorded February 1, 1991 in Volume 730 at Page 127 of the Trumbull Land Records.*
5. *Trumbull Sewer Commission Notice of Extension of Time to Connect dated May 7, 1991 and recorded May 7, 1991 in Volume 737 at Page 333 of the Trumbull Land Records.*
6. *Fire District Tax when due and payable.*
7. *Sewer Use Charge when due and payable.*

2750 Conveyance Tax Received 1375
Suzanne Burr Monaco
State Town Clerk of Trumbull Town

To have and to hold the premises hereby conveyed with the appurtenances thereof, unto the Grantees and unto the survivor of them and unto such survivor's heirs and assigns forever, to their proper use and behoof, and the Grantors do for themselves, their heirs, successors and assigns, covenant with the Grantees and with the survivor of them and with such survivor's heirs and assigns, that the Grantors are well seized of the premises as a good indefeasible estate in FEE SIMPLE; have good right to grant and convey the same in manner and form as herein written and the same are free from all incumbrances whatsoever, except as herein stated.

And Furthermore, the Grantors do by these presents bind themselves and their heirs, successors, and assigns forever to WARRANT AND DEFEND the premises hereby conveyed to the Grantees and to the survivor of them and to such survivor's heirs and assigns against all claims and demands whatsoever, except as herein stated.

In all references herein to any parties, persons, entities or corporations, the use of any particular gender or the plural or singular number is intended to include the appropriate gender or number as the text of the within instrument may require.

In Witness Whereof, the Grantors have hereunto set their hands and seals, or if a corporation, it has caused these presents to be signed by its corporate officers and its corporate seal to be affixed hereto, this 1st day of April, 2005.

Signed, Sealed And Delivered in the Presence of or attested by

Marion R. Ruggiero

Marylou R. Noguchi

Raymond Heche

State of Connecticut)
) ss. Bridgeport
County of Fairfield)

On this 1st day of April, 2005, before me, Raymond Heche, the undersigned, personally appeared Marion R. Ruggiero, known to me (or satisfactorily proven) to be the person(s) whose name(s) are subscribed to the within instrument and acknowledged that she executed the same as her free act and deed for the purposes therein contained.

In witness whereof, I hereunto set my hand.

Raymond Heche
Commissioner of the Superior Court

APR 0 1 2005

TOWN CLERK'S OFFICE, TRUMBULL, CT
RECEIVED FOR RECORD
AT 2:15 P M. ATTEST
TOWN CLERK

#68

48 WHALBURN AVENUE

Click to enlarge

MBL : E/11 / 00087/ 000/

Location: 48 WHALBURN AVENUE

Alternate ID: 00896100

Parcel Value

Current Appraised Value	Current Assessed Value	FY 2006 Appraised Value	FY 2006 Assessed Value
420,400	294,300	420,400	294,300

Ownership History

Book/Page	Sale Date	Sale Price
1332/ 212	4/1/2005	550,000
188/ 693	10/4/1966	0

Land Use (click here for a list of codes and descriptions)

Land Use Code	Land Use Description
100	Res Vacant Lnd

Land Information

Size	Zone
0.16 AC	A

Construction Detail

Item	Value
STYLE	Vacant Land

Building Information

Item	Value
Living Area	0 square feet
Year Built	
Depreciation	100%
Replacement Cost Less Depreciation	0

Outbuildings (click here for a list of codes and descriptions)

Doc ID: 004462510004 Type: LAN
Book 1722 Page 842 - 845
File# 1664

01664

Return to:
Hurwitz, Sagarin,
Slossberg & Knuff, LLC
147 N. Broad Street
Milford, CT 06460

STATUTORY FORM QUITCLAIM DEED

GRANTORS, **BARBARA M. ZAVERUHA**, of the Town of Northfield and State of Minnesota, **SUSAN C. ZAVERUHA**, of the Town of Easton and State of Connecticut, and **SHIRLEY** ZAVERUHA **THOMAS**, of the Town of Haymarket and State of Virginia, for Two Million Six Hundred Fifty Thousand ($2,650,000.00) Dollars, consideration paid, grant to GRANTEE, **WEA CT HOUSES LLC**, with a mailing address c/o Westfield, LLC, 2049 Century Park East, 41st Floor, Los Angeles, CA 90067, with **QUITCLAIM COVENANTS,** all that certain property situated in the Town of Trumbull, County of Fairfield and State of Connecticut, known as 45 Whalburn Avenue and are more particularly bounded and described as follows:

NORTH by Whalburn Avenue as shown on map hereinafter referred to, which street is now known as Walburn Street or Avenue, One Hundred fifty (150) feet;

EAST by lot No. 18 as shown on said map 113 and 8/10 (113.8) feet;

SOUTH by lots No. 21, 23, and 25 as shown on said map, one hundred fifty (150) feet;

WEST by lot No. 26 as shown on said map, 113.8 feet.

Said premises being known and designated as lots No. 20, 22, and 24 as shown on Map of Building Lots belonging to L.L. Stuart made by Scofield & Ford, Surveyors, dated April 12, 1923, and on file in the Town Clerk's Office of said Trumbull and known as Map No. 81.

Conveyance Tax Received
Suzanne Burr Monaco
State Town Clerk of Trumbull Town

29125.00 6625.00

SIGNATURE PAGES TO FOLLOW

Signed this 16th day of August, 2016.

Witnesses:

Kelly Boyer

Juliet J Underdahl

Barbara M. Zaveruha
BARBARA M. ZAVERUHA

STATE OF MINNESOTA)
) ss. Northfield
COUNTY OF Rice)

On August 16, 2016, before me, the undersigned, personally appeared, **BARBARA M. ZAVERUHA**, known to me (or satisfactorily proven) to be the person whose name is subscribed to this instrument and who acknowledged that she executed the same as her free act and deed.

Martha Bushard
~~Commissioner of the Superior Court~~
Notary Public
My Commission Expires:

MARTHA J. BUSHARD
NOTARY PUBLIC-MINNESOTA
My Comm. Exp. Jan. 31, 2021

Signed this 16th day of August, 2016.

Witnesses:
KAREN J. CASARIX
Karen J Casarix

Patricia Ruhanen
Patricia Ruhanen

SUSAN C. ZAVERUHA

STATE OF CONNECTICUT)
) ss. Easton
COUNTY OF FAIRFIELD)

On August 16, 2016, before me, the undersigned, personally appeared, **SUSAN C. ZAVERUHA**, known to me (or satisfactorily proven) to be the person whose name is subscribed to this instrument and who acknowledged that she executed the same as her free act and deed.

Cheryl Kay Oestreicher
Cheryl Kay Oestreicher

CHERYL KAY OESTREICHER
NOTARY PUBLIC
MY COMMISSION EXPIRES FEB. 28, 2019

~~Commissioner of the Superior Court~~
Notary Public
My Commission Expires:

CHERYL KAY OESTREICHER NOTARY PUBLIC CONNECTICUT

Signed this 12TH day of August, 2016.

Witnesses:

Rediatu Tameire
Rediatu Tameire

Tony Gulati

SHIRLEY Z. THOMAS

STATE OF VIRGINIA)
) ss. Chantilly
COUNTY OF FAIRFAX)

On August 12TH, 2016, before me, the undersigned, personally appeared, **SHIRLEY Z. THOMAS**, known to me (or satisfactorily proven) to be the person whose name is subscribed to this instrument and who acknowledged that she executed the same as her free act and deed.

ELLEN YOUNG SHIN
COMMONWEALTH OF VIRGINIA
REG. NO. 7648107 EXP. 2-28-19
NOTARY PUBLIC

~~Commissioner of the Superior Court~~ Ellen Young Shin
Notary Public
My Commission Expires: 02/28/2019

TOWN CLERK OFFICE, TRUMBULL
RECEIVED FOR RECORD AUG 24 2016
AT 1:24P M. ATTEST
ASST

ACTIVE/70573.1/JTP/5963994v2

2250

VOL 1774 PAGE 0453

Return to:
WEA CT HOUSES LLC
c/o John Knuff, Esquire
Hurwitz Sagarin Slossberg & Knuff LLC
147 North Broad Street
Milford, Connecticut 06460-0112

Doc ID: 004793420002 Type: LAN
Book 1774 Page 453 - 454
File# 2250

QUIT-CLAIM DEED **STATUTORY FORM**

The **State of Connecticut** Department of Transportation, James Redeker, Commissioner, under authority granted by Section 13a-80 of the General Statutes of Connecticut, as revised, acting herein by Terrence J. Obey, Director of Rights of Way, duly authorized, with the advice and consent of the Office of Policy and Management of the State of Connecticut, and the State Properties Review Board, for one dollar and other valuable consideration paid does hereby give, grant, bargain, sell and convey to **WEA CT HOUSES LLC**, a Delaware limited liability company having an office in the City of Los Angeles, County of Los Angeles and State of California, with QUIT CLAIM COVENANTS,

That certain parcel of land situated in the Town of Trumbull, County of Fairfield and State of Connecticut, located on the westerly side of Present Main Street CT. Route 111 (S.R. 731) Base Line, containing 13,811 square feet, more or less, as more particularly shown on a map to be filed in the Trumbull Town Clerk's Office, entitled, "TOWN OF TRUMBULL MAP SHOWING LAND RELEASED TO WEA CT HOUSES LLC BY THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION CT ROUTE 111/15 INTERCHANGE SCALE 1:250 JUNE 2016 THOMAS A. HARLEY, P.E. CHIEF ENGINEER – BUREAU OF ENGINEERING AND CONSTRUCTION" TOWN NO. 144 PROJECT NO. 144-173, SERIAL NO. 11A, Sheet 1 of 1, Revised 10/10/17, bounded and described as follows: Map. 3458

EASTERLY by Present Main Street CT. Route 111 S.R. 731, a distance of 20.108 meters, (65.97 feet), by a line designated "RELEASE LINE, EXISTING NON-ACCESS HIGHWAY LINE & EASEMENT LINE", as shown on said map;

SOUTHERLY by land of WEA CT HOUSES LLC, a distance of 48.526 meters, more or less, (159.30 feet, more or less), by a line designated "RELEASE LINE & PROPERTY LINE" in part and by a line designated as "RELEASE LINE, PROPERTY LINE & EASEMENT LINE" in part, as shown on said map;

WESTERLY by land of WEA CT HOUSES LLC, 33.101 meters (108.6 feet), by a line designated "RELEASE LINE & PROPERTY LINE", as shown on said map;

NORTHERLY by land of WEA CT HOUSES LLC, a total distance of 50.383 meters, more or less (165.72 feet, more or less), by a line designated "RELEASE LINE & PROPERTY LINE" in part and by a line designated as "RELEASE LINE, PROPERTY LINE & EASEMENT LINE" in part, as shown on said map.

For the State's source of title to the Premises herein conveyed, reference is made to an acquisition by the State of Connecticut by Eminent Domain proceedings against Beatrice M. Ackley as evidenced by a Certificate of Condemnation filed August 13, 1999 in Volume 1018 at Page 174 of the Trumbull Land Records.

Reserving unto the State of Connecticut, its successors and assigns a full and perpetual easement for highway purposes and appurtenances thereto under, over and across a portion of the premises herein conveyed, within an area of 197.7 meters, more or less (2,128 square feet, more or less), in an area marked by crosshatching, as shown on said map.

No Conveyance Tax Collected
Suzanne Burr Monaco
Town Clerk of Trumbull

WEA CT HOUSES LLC
144-173-11A

The above-described parcel is conveyed subject to such rights and easements as appear of record.

The above-described parcel is conveyed subject to any and all provisions of any ordinance, municipal regulation, or public or private law.

All rights of access are specifically denied directly to and from Present Main Street (CT. Route 111 and S.R. 731), from and to the land herein conveyed, by a line designated "RELEASE LINE & EASEMENT LINE", as more particularly shown on said map.

IN WITNESS WHEREOF, the State of Connecticut, Department of Transportation, acting herein by Terrence J. Obey, Director of Rights of Way, Bureau of Engineering and Construction, duly authorized, has caused its seal to be hereto affixed and this Instrument to be executed in its behalf this 20th day of MARCH, A. D. 2018.

Signed, Sealed and Delivered
in the presence of

Witness Yolanda Rolando

Witness Amy M. Martinez

State of Connecticut
Department of Transportation
James Redeker
Commissioner

By _____ (L. S.)
Terrence J. Obey
Director of Rights of Way
Bureau of Engineering and Construction
Department of Transportation
Duly Authorized

STATE OF CONNECTICUT)
) ss: NEWINGTON
COUNTY OF HARTFORD)

The foregoing Instrument was acknowledged before me this 20th day of March, A. D. 2018, by Terrence J. Obey, Director of Rights of Way, Bureau of Engineering and Construction, Department of Transportation of the State of Connecticut.

My Commission Expires 12/31/2018

Notary Public Amy M. Martinez

This conveyance is made with the advice and consent of the undersigned in conformity with Section 13a-80 of the General Statutes of Connecticut, as revised.

4/27/18
Susan Weisselberg
Deputy Secretary (Date)
Office of Policy and Management
Duly Authorized

State Properties Review Board
By _____ 5/31/18
(Date)

APPROVED AS TO FORM
George Jepsen, Attorney General

By: Joseph Rubin
Associate Attorney General
Date: 6/4/18

TOWN CLERK OFFICE, TRUMBULL, CT
RECEIVED FOR RECORD OCT 10 2018
AT 9:26 A M. ATTEST _____
TOWN CLERK

VOL 1774 PAGE 0462

Doc ID: 004793450002 Type: LAN
Book 1774 Page 462 - 463
File# 2253

Return to:
WEA CT HOUSES LLC
c/o Atty. John Knuff
Hurwitz Sagarin Slossberg & Knuff LLC
147 North Broad Street
Milford, Connecticut 06460-0112

EASEMENT

The **State of Connecticut**, (Grantor) Department of Transportation, James P. Redeker, Commissioner, hereunto duly authorized, under authority granted by Section 13a-80 of the General Statutes of Connecticut, as revised, acting herein by Terrence J. Obey, Director of Rights of Way, with the advice and consent of the Office of Policy and Management of the State of Connecticut, and the State Properties Review Board, for good and valuable consideration, does hereby give, grant, bargain, sell and convey to **WEA CT HOUSES LLC** (Grantee), a Delaware limited liability company, having an office located in the City of Los Angeles, County of Los Angeles and State of California, that certain full and perpetual easement to slope, within an area containing 4,507 square feet, under, over and across a portion of land of the Grantor herein, situated in the Town of Trumbull, County of New Haven and State of Connecticut, located southerly of CT Route 15 Northbound Off Ramp Present Merritt Parkway, as more particularly shown on a map to be filed in the Trumbull Town Clerk's Office, entitled: "TOWN OF TRUMBULL MAP SHOWING EASEMENT GRANTED TO WEA CT HOUSES LLC BY THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION NEWTOWN TURNPIKE - MAIN STREET (ROUTE 111) SCALE 1"=40' MARCH 2017 JAMES REDEKER COMMISSIONER". Town No. 144, Project No. 180-52, Serial No. 43A, Sheet 1 of 1, Revised 6/13/2017.

Map. 3461.

The above-described easement is conveyed subject to such rights and easements as appear of record, and to any state of facts which an inspection of the premises may show.

The above described easement is granted subject to any and all provisions of any ordinance, municipal regulation, or public or private law.

WEA CT HOUSES LLC
180-052-043A

IN WITNESS WHEREOF, the State of Connecticut, Department of Transportation, acting herein by Terrence J. Obey, Director of Rights of Way, Bureau of Engineering and Construction, duly authorized, has caused its seal to be hereto affixed and this Instrument to be executed on its behalf this 20th day of March, A.D. 2018.

Signed, Sealed and Delivered
in the presence of

Witness Yolanda Rolando

Witness Amy N. Martinez

State of Connecticut
Department of Transportation
James P. Redeker
Commissioner

By _____ (L.S.)
Terrence J. Obey
Director of Rights of Way
Bureau of Engineering and Construction
Department of Transportation
Duly Authorized

STATE OF CONNECTICUT)
) ss: Newington
COUNTY OF HARTFORD)

The foregoing Instrument was acknowledged before me this 20th day of March, A.D. 2018, by Terrence J. Obey, Director of Rights of Way, Bureau of Engineering and Construction, Department of Transportation of the State of Connecticut.

My Commission Expires 12/31/2021

Notary Public Amy N. Martinez

This conveyance is made with the advice and consent of the undersigned in conformity with Section 13a-80 of the General Statutes of Connecticut, as revised.

State of Connecticut
Office of Policy and Management

By _____ 4/27/18
Susan Weisselberg (Date)
Deputy Secretary
Office of Policy and Management
Duly Authorized

State Properties Review Board

By _____ 5/31/18
(Date)

APPROVED AS TO FORM:
George Jepsen, Attorney General

By _____
Joseph Rubin
Associate Attorney General
Duly Authorized

Date 6/4/18

TOWN CLERK OFFICE, TRUMBULL, CT
RECEIVED FOR RECORD OCT 10 2018
AT 9:29 AM. ATTEST _____ TOWN CLERK

2114

VOL 1796 PAGE 0684

Doc ID: 004972230003 Type: LAN
Book 1796 Page 684 - 686
File# 2114

Return to:
Hurwitz, Sagarin,
Slossberg & Knuff, LLC
147 N. Broad Street
Milford, CT 06460

QUITCLAIM DEED
(Statutory Form)

GRANTOR, **TRUMBULL SHOPPING CENTER #2 LLC**, a Delaware limited liability company, with offices c/o of Westfield, LLC, 2049 Century Park East, 41st Floor, Los Angeles, California 90067, for no consideration paid, grants to GRANTEE, **WEA CT HOUSES LLC,** a Delaware limited liability company, with offices c/o of Westfield, LLC, 2049 Century Park East, 41st Floor, Los Angeles, California 90067, all that certain property situated in the Town of Trumbull, County of Fairfield and State of Connecticut, more particularly described in Schedule A attached hereto and made a part hereof, with QUITCLAIM COVENANTS.

Signed this 7th day of ~~September~~ October, 2019.

Witnesses (as to all signatures):

TRUMBULL SHOPPING CENTER #2 LLC,
a Delaware limited liability company

By: West-OC 2 OP, LLC,
a Delaware limited liability company,
its sole member

By: West-OC 2 REIT 1, LLC,
a Delaware limited liability company,
a managing member

By:_____
Name: Rory A. Packer
Title: Assistant Secretary

By: West-OC 2 REIT 2, LLC,
a Delaware limited liability company,
a managing member

By:_____
Name: Rory A. Packer
Title: Assistant Secretary

By: West-OC 2 REIT 3, LLC,
a Delaware limited liability company,
a managing member

By:_____
Name: Rory A. Packer
Title: Assistant Secretary

No Conveyance Tax Collected
Suzanne Burr Monaco
Town Clerk of Trumbull

VOL I 796 PAGE 0685

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT **CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Los Angeles }

On October 7, 2019 before me, Lisa M. Shelley,
Date *Here Insert Name and Title of the Officer*

personally appeared Rory A. Packer
Name(s) of Signer(s)

_____,

who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name(s) ~~is~~/are subscribed to the within instrument and acknowledged to me that he/~~she/the~~y executed the same in his/~~her/~~their authorized capacity(i~~es~~), and that by his/~~her/~~their signature~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

LISA M. SHELLEY
COMM. #2284248
Notary Public - California
Los Angeles County
My Comm. Expires Apr. 30, 2023
NRO1 NRO1

Signature Lisa M. Shelley
Signature of Notary Public

Place Notary Seal and/or Stamp Above

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____	Signer's Name: _____
☐ Corporate Officer – Title(s): _____	☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General	☐ Partner – ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian of Conservator	☐ Trustee ☐ Guardian of Conservator
☐ Other: _____	☐ Other: _____
Signer is Representing: _____	Signer is Representing: _____

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SCHEDULE A

Parcel 1
Trumbull Shopping Center #2, LLC
parcel to be conveyed to
Wea CT Houses, LLC
September 11, 2019

All that piece or parcel of land situated in the Town of Trumbull, County of Fairfield, and State of Connecticut, containing 87,739 square feet or 2.014± acres and being more particularly bounded and described as follows:

Commencing at a point on the westerly right of way line of Newtown Turnpike - Main Street (Conn Route 111), said point being at the division line of land now or formerly Trumbull Shopping Center #2, LLC and land now or formerly Wea CT Houses, LLC;

Thence running South 83°36'30" West a distance of 249.73 feet to a point; South 14°40'15" East a distance of 15.00 feet to a point; South 84°59'32" West a distance of 105.19 feet to a point; North 06°23'30" West a distance of 116.00 feet to a point; South 83°36'30" West a distance of 230.40 feet to the TRUE point and place of beginning;

Thence running through land now or formerly Trumbull Shopping Center #2 the following four (4) courses and distances: South 83°36'30" West a distance of 74.38 feet to a point; North 06°23'30" West a distance of 124.80 feet to a point; North 56°21'09" West a distance of 97.80 feet to a point; North 06°25'24" West, a distance of 425.11 feet to a point;

Thence running along said land of Wea CT Houses, LLC the following ten (10) courses and distances: North 86°30'25" East a distance of 423.49 feet to a point; South 03°29'35" East a distance of 111.24 feet to a point; South 84°32'03" West a distance of 303.37 feet to a point; South 06°23'30" East a distance of 137.63 feet to a point; South 83°36'30" West a distance of 64.50 feet to a point; South 06°23'30" East a distance of 163.80 feet to a point; North 83°36'30" East a distance of 90.00 feet to a point; South 06°23'30" East a distance of 163.80 feet to a point; North 83°36'30" East a distance of 10.00 feet to a point; South 06°23'30" East a distance of 20.00 feet to the point and place of beginning.

Parcel 2
Trumbull Shopping Center #2, LLC
Parcel to be conveyed to
Wea CT Houses, LLC
September 11, 2019

All that piece or parcel of land situated in the Town of Trumbull, County of Fairfield, and State of Connecticut, containing 3,808 square feet or 0.087± acres and being more particularly bounded and described as follows:

Commencing at a point on the westerly right of way line of Newtown Turnpike - Main Street (Conn Route 111), said point being at the division line of land now or formerly of Trumbull Shopping Center #2, LLC and land now or formerly of Wea CT Houses, LLC;

Thence running South 83°36'30" West a distance of 249.73 feet to a point; South 14°40'15" East a distance of 15.00 feet to a point; South 84°59'32" West a distance of 105.19 feet to a point; North 06°23'30" West a distance of 116.00 feet to the TRUE point and place of beginning;

Thence running through land now or formerly of Trumbull Shopping Center #2 South 83°36'30" West a distance of 190.40 feet to a point;

Thence running along land now or formerly Wea Ct Houses, LLC the following three (3) courses and distances: North 06°23'30" West a distance of 20.00 feet to a point; North 83°36'30" East a distance of 190.40 feet to a point; South 06°23'30" East a distance of 20.00 feet to the point and place of beginning.

TOWN CLERK OFFICE, TRUMBULL, CT OCT 11 2019
RECEIVED FOR RECORD
AT 1:27 P M. ATTEST
TOWN CLERK

Architecture
Engineering
Environmental
Land Surveying
Companies

An Employee-Owned Company

June 30, 2020

Mr. Robert Librandi
Trumbull Town Planner
Town Hall
5866 Main Street
Trumbull, CT 06611

Re: 5085 Main Street
The Residences at Main, Proposed Residential Development

Dear Mr. Librandi:

Attached herewith please find fourteen copies of a revised Site Plan SP-1. The Site Plan has been revised in response to comments provided by the Trumbull Police, Fire, and Emergency Management Services (EMS) departments. The revisions to the plan include the following:

1. Mountable concrete curbing has replaced standard vertical curbing at the traffic islands at the eastern Main Street, and southern mall entry driveways, to allow for greater maneuverability of emergency vehicles.
2. Mountable concrete curbing has replaced standard vertical curbing at the interior parking lot islands, to allow for greater maneuverability of emergency vehicles.
3. The center of the round-about has been changed to stamped concrete with mountable curbing to allow for greater maneuverability of emergency vehicles.
4. Parallel parking along the "streetscape" between buildings has been modified to provide for 36-ft long fire lanes adjacent to the building entry points. A total of five such fire lanes have been added to provide easier access to the buildings for emergency vehicles without blocking parked cars or the travelway.
5. Additional parking spaces have been added at the west end of Building #2, along the streetscape south of Building #3, and to the southeast and east side of the surface parking lot adjacent to Building #3 to maintain the required amount of parking.
6. A 40-ft truck loading space has been added to the streetscape to the south of Building #1, to allow delivery vehicles to load and unload without blocking parked vehicles or the travelway.
7. The stamped concrete pedestrian crosswalk at the mall ring-road has been shifted to the north to coincide with the project's western access drive, and has also been increased to 12-feet wide to create a safer and more visible pedestrian crossing. Pedestrian access to the LA Fitness lot has also been added.

8. Added a gated entry to the project's western, southern, and eastern access driveway. Each access gate will be equipped with devices to allow access to emergency vehicles. The gated entries will eliminate the potential for mall traffic to utilize the residential development as a short-cut.
9. The access gate at the eastern Main Street driveway has been positioned to allow a 47-ft long temporary truck parking space, to allow vehicles to bypass a truck waiting to enter.
10. An emergency generator has been added at the south end of Building #4, which contains the community club house, since this facility is deemed an area of refuge during emergencies and power outages.

Should you require additional information, please feel free to contact me at 203-608-2514.

Sincerely,

John Schmitz
Senior Engineer II

TRUMBULL
CHAMBER OF COMMERCE
BRIDGEPORT REGIONAL BUSINESS COUNCIL

June 25, 2020

Re: The Residences at Main – proposed 260 luxury unit residential rental community

Dear Trumbull Planning & Zoning Commission,

The Trumbull Chamber of Commerce voted at its June Board of Directors meeting to endorse the proposed 260 luxury unit rental community located east of the Westfield Trumbull Shopping Mall, known as The Residences at Main.

As the needs of our community shift, particularly as it relates to the senior-housing stock in our region, this project as proposed by the joint venture of Garden Homes Development and Rose Equities meets the needs of Trumbull's aging community as they look to downsize and remain in Trumbull. In addition, it provides an attractive housing option for young professionals.

The ancillary benefits of this project should not be overlooked as the project is complementary to the Westfield Mall, one of Trumbull's leading tax-payers, as it will create a true, live, shop, play, dine and work experience.

With approximately $900,000 of net positive municipal revenue generated by this new project, we believe it meets the mission of enhancing growth for the Town of Trumbull.

As an organization representing the business community, in Trumbull, we support this development project and ask the Commission for their support this project.

Thank you for your consideration.

Warm Regards,

Dan Onofrio, Executive Director

Nancy Kuhn, Board Chair

Parcel ID: D11-222
BASILE JOSEPH N & JOSELEA
132 LOFTUS CIRCLE
BRIDGEPORT, CT 06606

Parcel ID: D11-223
DIGIOVANNI ANTHONY & LOIS
116 LOFTUS CIRCLE
BRIDGEPORT, CT 06606

Parcel ID: E11-16
SCHOOLEY ODETE &
KOZLOWSKI THOMAS B
54 LOFTUS CIRCLE
BRIDGEPORT, CT 06606

Parcel ID: E11-17
TUOZZOLI RICHARD P & ALICIA M
3050 OLD TOWN RD
BRIDGEPORT, CT 06604

Parcel ID: D11-224
EFTIMIU ARBER &
TIKO LLUKAN
2245 BARKER AVE 1G
BRONX, NY 10467

Parcel ID: D11-225
BELL CORINNE D &
TARTAGLIA RICHARD J
29128 PAPERFLOWER LN
MENIFEE, CA 92584-7205

Parcel ID: E11-18
MOURA FERNANDA & JOSE
3030 OLD TOWN RD
BRIDGEPORT, CT 06606

Parcel ID: D11-226
RAMIREZ LUIS M &
RAMIREZ ROCIO M
66 LOFTUS CIRCLE
BRIDGEPORT, CT 06606

Parcel ID: E11-19
AVIAGA LUIS A
200 SUNNYDALE ROAD
TRUMBULL, CT 06611

Parcel ID: D11-211
MACMILLAN HELEN
8 GREEN STREET
TRUMBULL, CT 06611

Parcel ID: D11-213
FRAINA GEORGE M &
FRAINA ROSEMARY E
12 GREEN ST
TRUMBULL, CT 06611

Parcel ID: E11-27
PISECHKO RANDALL
100 SUNNYDALE ROAD
TRUMBULL, CT 06611

Parcel ID: D11-215
GENUARIO WILLIAM M & MICHELLE W
16 GREEN STREET
TRUMBULL, CT 06611

Parcel ID: E11-21
LINNET KRISTIAN & KATHERINE
180 SUNNYDALE RD
TRUMBULL, CT 06611

Parcel ID: D11-217
OPPEDISANO CYNTHIA & FRANK
20 GREEN STREET
TRUMBULL, CT 06611

Parcel ID: E11-22
SUPORN LENCY & PRECHA
170 SUNNYDALE RD
TRUMBULL, CT 06611

Parcel ID: D11-219
POGANY JOHN S & VIRGINIA A
24 GREEN STREET
TRUMBULL, CT 06611

Parcel ID: E11-29
GALLO JOHN A
99 LYCETT STREET
TRUMBULL, CT 06611

Parcel ID: E11-23
PAKIELA JENNIFER LEANN & ADAM
150 SUNNYDALE ROAD
TRUMBULL, CT 06611

Parcel ID: E11-24
BACHELDER ADAM & RUTH
130 SUNNYDALE ROAD
TRUMBULL, CT 06611

Parcel ID: D11-135
ANDERSON CATHERINE MILLER
1 RED BARN RD
OXFORD, CT 06478-1711

Parcel ID: E11-25
KANDIC ELVIS
124 SUNNYDALE ROAD
TRUMBULL, CT 06611

Parcel ID: D11-143
BRENNA RICHARD D & KATIE G
2717 S BRINK AVE
SARASOTA, FL 34239-4216

Parcel ID: E11-26
MEALEY BERNICE ANN
110 SUNNYDALE ROAD
TRUMBULL, CT 06611

Parcel ID: D11-197
GORDON IRWIN J TRUSTEE
C/O LAURA NOONAN
28 BRIDLE LN
SCITUATE, MA 02066

Parcel ID: D11-199
DAMIO CHRISTOPHER R
7 GREEN STREET
TRUMBULL, CT 06611

Parcel ID: D11-200
GOURLEY MARIANNE
11 GREEN STREET
TRUMBULL, CT 06611

Parcel ID: D11-201
TOMASZEWSKY JULIA
13 GREEN STREET
TRUMBULL, CT 06611

Parcel ID: E11-36
TOOMEY PETER A
39 GORHAM PL
TRUMBULL, CT 06611

Parcel ID: E11-37
HIGGS ROBERT J &
HIGGS MARY M
35 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: D11-204
WILK JODY P & APRIL
17 GREEN STREET
TRUMBULL, CT 06611

Parcel ID: D11-129
CASERTA SHAYNE TRUSTEE
C/O VIRGINIA MULLIN
18 LARKEY RD
OXFORD, CT 06478

Parcel ID: E11-38
KOKORUDA JOAN A
33 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-39
HIGGS STANLEY T JR &
HIGGS JEANNINE
29 GORHAM PL
TRUMBULL, CT 06611

Parcel ID: E11-40
SOUSA FERNANDO & ALICE
25 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: D11-136
CADELLA CONCETTA
4153 MADISON AVENUE
TRUMBULL, CT 06611

Parcel ID: D11-206
NIGHLAND JUDITH
21 GREEN STREET
TRUMBULL, CT 06611

Parcel ID: E11-41
STRAUBEL MARK J &
MEADE BETH A
23 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-42
NGO KHANH &
AULAC KAVIN
19 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-43
DAHL STEVEN
17 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-44
PATTI LYNN E
13 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-45
AMBROSINI JOSEPH K
11 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-46
SOKOL JOHN T & DINA M
7 GORHAM PL
TRUMBULL, CT 06611

Parcel ID: E11-47
LUX CHRISTOPHER M
3 GORHAM PL
TRUMBULL, CT 06611

Parcel ID: D11-137
BUN LOWELL & LIT
4157 MADISON AVE
TRUMBULL, CT 06611

Parcel ID: D11-196
PROFESSIONAL OFFICES OF TRUMBULL INC
C/O LAURA NOONAN
28 BRIDLE LANE
SCITUATE, MA 02066

Parcel ID: E11-119
KALEMKERIAN LOUISE K & JOSEPH B
5030 MAIN ST
TRUMBULL, CT 06611

Parcel ID: D11-119
HOYDIC JAMES
7 BONHEUR ROAD
TRUMBULL, CT 06611

Parcel ID: D11-138
4161 MADISON AVENUE LLC
40 GATEHOUSE ROAD
TRUMBULL, CT 06611

Parcel ID: E11-58
MOREIRA RUI M &
RAINHO CARLA A
40 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-57
ZULFI DZEVAT
36 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-56
VALENTIN JOSELITO & NEIDA
32 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-55
VIEUX ROBERT W & MELINDA A
30 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-54
NIEVES BERNARDO JR & CARMEN
26 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-164
WERN DONALD P
C/O ESTATE OF DONALD P WERN
16432 97TH ST
HOWARD BEACH, NY 11414-3712

Parcel ID: E11-52
ANDERSON THOMAS A
20 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-51
GARVEY THERESA
18 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-50
MAJOR KEENE ANNA &
KEENE JEFFREY JOSEPH
14 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-49
PACHECO JOSE G
12 GORHAM PLACE
TRUMBULL, CT 06611

Parcel ID: E11-120
5036-5038 MAIN STREET LLC
8 BUNKER HILL DRIVE
TRUMBULL, CT 06611

Parcel ID: E11-111
REDGATE FUNERAL SERVICE CORP
C/O CARRIAGE SERV OF CT
3040 POST OAK BLVD STE 300
HOUSTON, TX 77056

Parcel ID: E11-122
SOUZA CLAUDECIR F & ELIA
5048 MAIN ST
TRUMBULL, CT 06611

Parcel ID: D11-139
MERTURI MICHAEL
4165 MADISON AVENUE
TRUMBULL, CT 06611

Parcel ID: E11-121
MASTRI ALBERT M
68 BONNIE VIEW DRIVE
TRUMBULL, CT 06611

Parcel ID: E11-123
JORGE OTILIA B &
QUINTA MARIO C DACOSTA
5050 MAIN STREET
TRUMBULL, CT 06611

Parcel ID: D11-118
SCHNEIDER CARLTON F & COLLETTE
8 BONHUER ROAD
TRUMBULL, CT 06611

Parcel ID: D11-140
MAILLET GENE J & JACQUELINE
4169 MADISON AVENUE
TRUMBULL, CT 06611

Parcel ID: D11-182
WEA CT HOUSES LLC
C/O WESTFIELD PROPERTY TAX DEPT
PO BOX 130940 DEPT WFLD
CARLSBAD, CA 92013-0940

Parcel ID: D11-183
TRUMBULL TOWN OF
5866 MAIN STREET
TRUMBULL, CT 06611

Parcel ID: D11-184
WEA CT HOUSES LLC
C/O WESTFIELD PROPERTY TAX DEPT
PO BOX 130940 DEPT WFLD
CARLSBAD, CA 92013-0940

Parcel ID: D11-186
TRUMBULL TOWN OF
5866 MAIN STREET
TRUMBULL, CT 06611

Parcel ID: D11-187
ALTAN RAFI
214 PARKSIDE DR
ROSLYN HEIGHTS, NY 11577

Parcel ID: D11-189
PERRY ROBERT &
CLINGER CANDACE
18 WALNUT AVENUE
TRUMBULL, CT 06611

Parcel ID: E11-124
FRAINA CHRISTINE A &
TANSKI STEPHAN
5056 MAIN ST
TRUMBULL, CT 06611

Parcel ID: D11-191
ESTEVINHO ANA
22 WALNUT AVE
TRUMBULL, CT 06611

Parcel ID: D11-193
ABUZNEID ABDELSHAKOUR A
28 WALNUT AVE
TRUMBULL, CT 06611

Parcel ID: D11-229
JAMES SEAN
4173 MADISON AVENUE
TRUMBULL, CT 06611

Parcel ID: D11-233
MALIN MICHAEL B & HEIDY
21 FIELDSTONE COURT
TRUMBULL, CT 06611

Parcel ID: E11-125
AKOURY JAMES
1559 POST ROAD
FAIRFIELD, CT 06824

Parcel ID: E11-60
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P O BOX 130940 DEPT WFLD
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Parcel ID: E11-109
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Parcel ID: E11-168
AKOURY JOHN
1559 POST ROAD
FAIRFIELD, CT 06824

Parcel ID: D11-248
MIPHI LLC
685 KINGS HIGHWAY EAST
FAIRFIELD, CT 06825

Parcel ID: D11-171
ASANTE MARCUS & RUTH
15 WALNUT AVENUE
TRUMBULL, CT 06611

Parcel ID: D11-173
ALICEA JACQUELINE &
SALCEDO ADOLFO M
17 WALNUT AVENUE
TRUMBULL, CT 06611

Parcel ID: D11-174
CAMPBELL IRENE A
19 WALNUT AVE
TRUMBULL, CT 06611

Parcel ID: D11-176
COLLARINI SHERI & JOHN A
25 WALNUT AVE
TRUMBULL, CT 06611

Parcel ID: D11-177
PELUCHETTE PAUL W &
PELUCHETTE JILL FLATH
4496 LAKEWOOD BLVD
NAPLES, FL 34112-6124

Parcel ID: E11-126
KRAMPOVITIS ALEXANDER S A/K/A JR
5076 MAIN ST
TRUMBULL, CT 06611

Parcel ID: D11-179
SICILIAN VICTORIA G
33 WALNUT AVENUE
TRUMBULL, CT 06611

Parcel ID: E11-106
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Parcel ID: D11-246
FORTY ONE EIGHTY MADISON AVENUE LLC
P O BOX 110384
TRUMBULL, CT 06611

Parcel ID: E11-71
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WEA CT HOUSES LLC
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Parcel ID: D11-231
KAROUM MEHDI &
BENNANI ZINEB
11 HITCHING POST LANE
TRUMBULL, CT 06611

Parcel ID: E11-72
WEA CT HOUSES LLC
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Parcel ID: D11-230
GILBERTI MICHAEL & VERA
3 HITCHING POST LANE
TRUMBULL, CT 06611

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Parcel ID: E11-75
WEA CT HOUSES LLC
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Parcel ID: D11-160
ON LINH T
16 ELMWOOD AVENUE
TRUMBULL, CT 06611

Parcel ID: E11-104
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Parcel ID: D11-164
LOCKWOOD JANET P L/U &
PELUCHETTE PAUL W & JILL FLATH
20 ELMWOOD AVENUE
TRUMBULL, CT 06611

Parcel ID: D11-167
ROGGEN KENNETH J &
ROGGEN LESLIE H
22 ELMWOOD AVENUE
TRUMBULL, CT 06611

Parcel ID: E11-127
LISI FELICE & MARIA
5086 MAIN ST
TRUMBULL, CT 06611

Parcel ID: E11-76
WEA CT HOUSES LLC
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C/O WESTFIELD PROPERTY TAX DEPT
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CARLSBAD, CA 92013-0940

Parcel ID: E11-128
HELLTHALER CHRISTOPHER M & GAIL M
5090 MAIN ST
TRUMBULL, CT 06611

Parcel ID: E11-102
WEA CT HOUSES LLC
C/O WESTFIELD PROPERTY TAX DEPT
P O BOX 130940 DEPT WFLD
CARLSBAD, CA 92013-0940

Parcel ID: D11-152
OBRIEN DANIEL M
17 ELMWOOD AVENUE
TRUMBULL, CT 06611

Parcel ID: D11-154
DELA OCLAROS ANGEL A
23 ELMWOOD AVENUE
TRUMBULL, CT 06611

Parcel ID: D11-156
WEIMANN ANNE S TR
25 ELMWOOD AVENUE
TRUMBULL, CT 06611

Parcel ID: E11-101
WEA CT HOUSES LLC
C/O WESTFIELD PROPERTY TAX DEPT
P O BOX 130940 DEPT WFLD
CARLSBAD, CA 92013-0940

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Parcel ID: E11-98
CONNECTICUT STATE OF
C/O DEPT OF TRANSPTN
P O BOX 317546
NEWINGTON, CT 06131

Parcel ID: E11-14
LORD & TAYLOR
ATTN HELEN GRABLE
5065 MAIN STREET
TRUMBULL, CT 06611

Parcel ID: E11-14
LA FITNESS
C/O WESTFIELD PROPERTY TAX DEPT.
PO BOX 130940
CARLSBAD, CA 92013-0940

Parcel ID: E11-14
TRUMBULL SHOPPING CENTER #2 LLC
C/O WESTFIELD PROPERTY TAX DEPT
P O BOX 130940
CARLSBAD, CA 92013-0940

Parcel ID: E11-14
PENNEY J C INC
PROPERTY TAX OFFICE
6501 LEGACY DR MS 5213
PLANO, TX 75024

Parcel ID: NOID

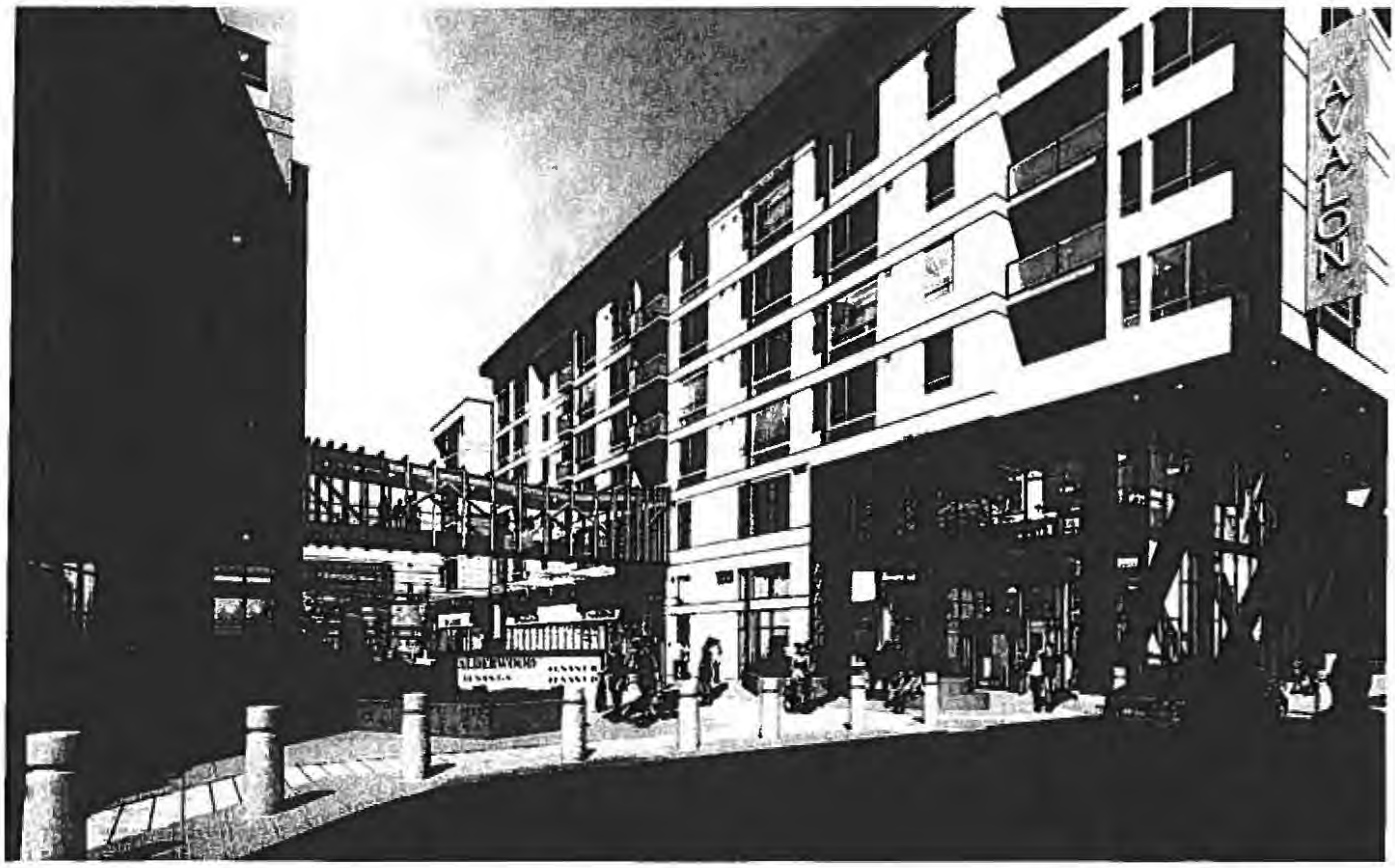
Parcel ID: E11-129
MCCARTHY RICHARD M. & JAMES B
5100 MAIN STREET
TRUMBULL, CT 06611

Parcel ID: E11-130
PATRONELLI JO-ANN
5108 MAIN STREET
TRUMBULL, CT 06611

The Dying Mall's New Lease on Life: Apartments

As the pandemic hastens the retail apocalypse, some developers are betting that empty malls can mix housing with stores and community space.

Patrick Sisson
June 30, 2020, 7:00 AM EDT



Developers are converting part of the 41-year-old Alderwood Mall outside of Seattle into housing — a sign of what might be a national tend. *Rendering courtesy Brookfield Properties Inc.*

It's definitely, finally, without a doubt, the end of malls, right?

The multiple crises impacting the U.S. economy – the botched response to the coronavirus and the resulting economic fallout, and lack of spending power – have delivered a new gut punch to brick-and-mortar retail, a sector that was already reeling. More than half of all U.S. department stores in malls will be gone by 2021, one real estate research firm predicts, and surviving retailers may not be far behind; once-mighty brands such as Cheesecake Factory and the Gap are skipping rent payments, Starbucks is closing physical locations, and developers see a future for big box stores as office complexes. Banks fear "a stampede" of landlords looking to restructure loans after commercial tenants miss their rents. Last week, the Trump administration floated the idea of turning the glut of empty retail space into affordable housing.

At the Alderwood Mall in Lynnwood, a suburb north of Seattle, an adaptive reuse project already in progress suggests that America's vast stock of fading shopping infrastructure could indeed get a second life as places to live. Such transformation could even bring malls closer to the "village square" concept they were initially envisioned to become.

Developers are turning a wide swath of the 41-year-old shopping center into Avalon Alderwood Place, a 300-unit apartment complex with underground parking. The project won't completely erase the shopping side of the development: Commercial tenants will still take up 90,000

square feet of retail. But when the new Alderwood reopens, which developers expect will happen by 2022, the focus will have shifted dramatically. One of the mall's anchor department stores, Sears, shut down last year; in a sense, the apartment complex will be the new anchor.

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"This project is a great example of evolution in the shopping center industry," says a spokesperson for Brookfield Properties, which owns the property and is collaborating with AvalonBay Communities, Inc. on the residential component. (Brookfield declined to offer a cost estimate for the project.) "Today, people prefer to live in smaller spaces and want walkable developments rather than relying on vehicular transit. This project caters to these needs."

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The Lynnwood project exemplifies how the Covid-19 pandemic isn't as much changing real estate as accelerating existing trends. Randy White, CEO of White Hutchinson Leisure & Learning Group, a consulting firm focused on location-based entertainment, says the Alderwood project is smart, because it's envisioning a world where we can digitally shop and entertain ourselves at home. "Right before the pandemic, a lot of these malls thought restaurants and entertainment would be their savior, the new anchors," he says. "Those hopes are dashed. There's even a question if movie theaters are going to survive."

Lynnwood may offer an ideal testing ground for the long-term opportunities in large-scale suburban mall-to-housing conversion. The suburb of roughly 40,000 people is a commuter bedroom community for Seattle, which has been struggling mightily with a severe housing shortage. The mall had plenty of vacant real estate needed for new homes. And a planned expansion of light rail from Seattle to Lynnwood in 2024, part of the region's Sound Transit Extension Phase 2, will make market-rate apartments even more attractive for residents who commute to jobs downtown or at the Boeing or Microsoft campuses.

"There have been some great examples of this kind of redevelopment, such as Tyson's Corner in Virginia, but it's very specific to individual cases, and very expensive," says Nick Egelanian, president of retail consultancy SiteWorks, who predicts up to a third of malls will be vacant due to the economic fallout from the pandemic. "If it's a good location, you can backfill that with residential, hotel, office and entertainment."

> "Before the Great Recession we had too many retail spaces. Now we have way too many retail spaces."

Lynnwood has always seen the mall as a regional growth center, says David Kleitsch, the city's economic development director. Ever since the end of the Great Recession, the city has planned for residential growth around the shopping center, including upzoning to encourage more dense

housing, pushing for Sound Transit extensions, and investing in streetscapes and connectivity. "We see this as a catalyst for future growth, and housing will be a big part of that," says Kleitsch.

Brian Lake, a senior attorney at the Pacific Legal Foundation who focuses on housing issues, believes that, minus the hurdles put up by zoning regulations and red tape, such commercial conversions should be happening everywhere. From a construction standpoint, conversions are simple. "We need to open up every opportunity possible to develop new affordable housing," he says. "Fannie Mae estimated we need an additional 2.5 million units just to satisfy the long-term demand, and that's before this year's crises."

Mall owners and operators, such as Brookfield and Simon Property Group, have had a brutal 2020: Shifts in consumer behavior have been gnawing away at the classic enclosed suburban mall format for many years; then the pandemic completely upended in-person shopping. Mark Hunter, managing director of retail asset services at CBRE, says operators suddenly had to shut down, then coordinate with numerous government agencies on how to reopen with stringent new sanitation and safety protocols, not to mention overcome challenges with furloughed staffers and out-of-season inventory.

Even as fresh Covid-19 outbreaks race across the suburbs, in June Brookfield managed to reopen every single one of its nearly 170 locations in 43 states. But "normal" is a distant memory amidst a massive wholesale shift in commercial real estate. Consider the recent fate of two much-touted new flagship shopping developments of the last year: The American Dream Mall in New Jersey now hosts a Covid-19 testing facility, and struggling Manhattan mega-development Hudson Yards lost its big anchor, Neiman-Marcus.

"Before the Great Recession we had too many retail spaces; now we have way too many retail spaces," says White. "It may be we'll only be left with the A malls. Before the pandemic, I thought the B-plus malls would survive. The outdoor lifestyle centers will survive – they're perceived as safer than indoors. But it's hard to escape the fact that we've trained people to fear the world, and that it's going to have long-term impacts on their behaviors."

Converting commercial real estate to housing may be the best use of land in such an over-retailed country. Big shopping centers tend to be centrally located and connected to transit. Hunter sees excess retail space at malls becoming more adaptive, and filling uses that aren't hospitality focused, such as residential, or even flex or warehouse space. During a time of housing shortages, Lake believes that transforming empty commercial buildings is a "moral imperative."

The Alderwood redevelopment brings challenges that Kleitsch and other local officials are trying to get out ahead of as construction, which restarted in mid-May, continues. Lynnwood is a middle- to low-income suburb, with lots of service workers, so the city is working on a housing action plan to make sure social services and education arrive in the community, not just new apartments. The mall may be evolving, but the desire, and challenges, in creating a community-oriented development still remain.

"You can have acres and acres of housing, but without a community, is it a place?" Kleitch says. "Does it fulfill somebody's experience? We want to be more than that."

In this article

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LYNNWOOD
Private Company

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SIMON PROPERTY
68.81 USD ▲ +0.68 +1.00%

SBUX
STARBUCKS CORP
73.31 USD ▼ -0.17 -0.23%

AVB
AVALONBAY COMMUN
152.28 USD ▼ -0.72 -0.47%

BA
BOEING CO/THE
181.34 USD ▼ -13.15 -6.76%

IMPACT ANALYSIS
5065 MAIN STREET
TRUMBULL, CONNECTICUT

Date of Analysis
April 1, 2020

Authorized by:
Mr. Scott Loventhal, VP
K & K Developers, Inc.
Short Hills, NJ

Prepared by:
Stanley A. Gniazdowski, CRE, CCIM
Consultant

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May 26, 2020

Mr. Scott Loventhal, VP
K & K Developers, Inc.
c/o Garden Homes Development
820 Morris Turnpike
Short Hills, NJ 07078

RE: Proposed Apartment Development
260 Units, The Residences at Main
5065 Main Street
Trumbull, CT

Dear Attorney, Knuff:

At your request and authorization, I have prepared an impact analysis on the proposed The Residences at Main a 260-unit apartment community in five buildings on 10.42 acres of land located on the west side of Main Street, Trumbull Connecticut. The scope of this assignment is to analyze the current and estimate future impact on the Trumbull, CT municipal budget and school system the proposed development may have.

This is a general consulting report and is not a consulting appraisal report or an appraisal report as defined under the Uniform Standards of Professional Appraisal Practice (USPAP). The date of this analysis is April 1, 2020.

<u>This analysis is devoid of any COVID-19 impact may have on real property demand. To estimate the impact on demand is too early in the crisis and/or project until supportable data is available. At this time would be pure speculations and unsupported projections.</u>

Pertinent current Trumbull Connecticut Town records were examined including Trumbull, CT Building Department, Zoning, and Assessors records, State of Connecticut Department of Education, Connecticut department of Labor, CERC, University of Connecticut Center for Real Estate and Urban Economics and related publications, Federal Reserve Bank data, US Census Bureau, US Department of Labor, National Association of Home Builders, Connecticut Association of Home Builders, National and Connecticut Association of Realtors, Urban Land Institute, Institute of Real Estate Management , Multi-Family Housing News, The Warren Group, and Major Real Estate Firms research reports, ESRI/STDB demographic service and others sources as noted.

Primary data was developed by this office which included field interviews of property owners and managers, examination of Multiple Listing Service, Internet research and verification, interviews with the Trumbull Town department heads Brokers and Appraisers. All public and subsidized housing and assisted living complexes is excluded from this analysis. Following, is a summary of my findings followed by the supporting data:

Conclusion

After reviewing the following data developed within this report, it is clear, that the state economic conditions have had an impact on the marketability of residential apartment properties in the State of Connecticut. It has caused the delay in making the decision for seniors to change from independent single family living to residential apartments. Data indicates those who delayed their decision are now executing their delayed plans. The impact of the COVID-19 crisis on real property demand is not fully understood at this time. There has been some indication as of the writing of this report, that urban dwellers are looking for less densely populated areas to live, like Connecticut, which has less densely populated areas than New York City. The primary driving indicator for real estate demand is employment, it is difficult at best to project future demand until some economic clarity develops. Fortunately, prior to the COVID-19 crisis, of nearby Sikorsky Aircrafts commitment to remain in Connecticut, new contracts, and anticipated increase future employment. Two other major labor nodes East Hartford and Groton, CT, where New United Technologies and Electric Boat contracts should increase employment which is the catalyst that was needed to reverse this trend and improve the states' psychographics. Due to the proximity to the subject property, the Sikorsky decision to stay in Connecticut has a positive impact on the proposed subject property's demand by stemming the potential for further employment loss. Prior to COVID-19, there have been some signs of increased employment and in particular basic employment as of the date of this analysis.

The subject property is in a municipality, Trumbull, CT, recognized as an upper scale community with good psychographics which is clearly demonstrated in the lifestyle which residents currently enjoy in Trumbull. A lifestyle that is in the mid to upper household income levels as well as having good rankings for home values and net worth. The preponderance of the residential lifestyle preferences for Trumbull is single-family homes, while due to an aging population and senior lifestyle change preferences, demand is increasing for senior living options, like market rate apartments. In addition, Trumbull is in close proximity to major Connecticut labor nodes and New York City.

Today a paradigm shift in senior residential apartments is taking place. This has led to structure redesign and enhanced scope of services for residential apartments communities to meet the current lifestyle demands of senior living. A move away from the traditional apartment complex to contemporary designed communities that incorporates market rate amenities. The 2020 rental option for Trumbull residences is improving but may not meet demand due to the impact of COVID-19. While there are two competing complexes under construction, they do not necessarily meet future demand. New apartment communities will provide minimal family disruption by not moving out of the area, retain medical, cultural, and religious linkages. Apartments in Trumbull also allow younger individuals an option that did not exist. An apartment community will enhance quality of life by being able to remain in the Trumbull area.

The other population segments driving apartment demand are the Millennials and Gen X. It was projected Millennials are expected to be 60% of the population by the year 2020. 2020 estimates show that 37% of Trumbull's population is comprised of Millennials and Gen X, a primary target market. Their lifestyle is mobile and socially oriented, forcing redesign of apartments, quality, and an increase in social amenities. Trumbull's apartment void is starting to address this growing apartment segment. Without apartments in Trumbull, it does not afford retention of younger Trumbull residence who cannot afford a home, want to be close to relatives and those who are seeking alternative living options. The apartment target market for Trumbull based on its population is about 17% Millennials and 25% seniors or about 42% of Trumbull's estimated population.

Conclusion-Continued

The combination of senior lifestyle change, millennials, GEN-X, and the potential impact of COVID-19 may have on increased demand should not be dismissed at this time for intergenerational apartment communities that meets current lifestyle demand. The current uncertainty of economic condition will impact the absorption of units. It is difficult at best to estimate absorption at this time. Obtaining approvals at this time is prudent to be in position to meet future demand.

The subject site is in a good location for a luxury apartment community, has good area supporting linkages to retail, medical services, recreation, education, religious, cultural and transportation networks that are important to a successful contemporary residential apartments community.

Therefore:

1) As of the date of this analysis,demand does exist for contemporary intergenerational luxury residential apartments communities in Trumbull, Connecticut due to pent-up senior demand, aging population and potential COVID-19 demand. Future demand will continue to increase since millenials and seniors represent about 42% of the population in 2020, and the proposed apartment community should be an alternative to the higher rental market Fairfield County west (Stamford and Norwalk).
2) The study area target market has an income level, current home value and net worth that should meet the threshold financial level to rent the proposed contemporary residential apartment community.
3) Proposed amenities include an elevator and laundry room in each building plus a clubhouse with meeting room, exercise room, game room and outside grass game area.
4) Market rent is approximately $2000.00+/- per month plus utilities for one-bedroom units and approximately $2,500.00+/- per month plus utilities for two-bedroom units.
5) The proposed The Residences at Main 260-unit apartment community if in place as of today and under current market conditions would produce a positive net tax revenue to the Town of Trumbull CT of about $910,000.

On the following pages please find a summary of the supporting data.

Respectfully:

Stanley A. Gniazdowski, CRE, CCIM
President/Consultant

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Purpose of The Analysis

The purpose of this analysis is to determine for a proposed 260-unit apartment complex the impact it may have on the Trumbull CT municipal budget and school system

Market Definitions

Source: *The Dictionary of Real Estate Appraisal*, Sixth Edition; published by The American Institute of Real Estate Appraisers, 2015

Market Rent

The most probable rent that a property should bring in a competitive and open market reflecting the conditions and restrictions of a specified lease agreement, including the rental adjustment and revaluation, permitted uses, use restrictions, expense obligations, term, concessions, renewal and purchase options, and tenant improvements.

- Lessee and Lessor are typically motivated.
- Both parties are well informed or well advised and acting in what they consider their own best interests.
- A reasonable time is allowed for exposure in the open market.
- The rent payment is made in terms of cash in U. S. dollars, and expressed as an amount per time period consistent with the payment schedule of the lease contract; and
- The rental amount represents the normal consideration for the property leased unaffected by special fees of concessions granted by anyone associated with the transaction.

Apartment

A structure containing one or more rooms designed to provide complete living facilities for one or more occupants.

Condominium (Common Interest Community)

A multiunit structure or property in which persons hold fee simple title to individual units and an undivided interest in common areas.

Single Family House

A dwelling that is designed for occupancy by one family.

Mixed Use Development

An Income producing property that comprises multiple significant uses within a single site such as retail, office, residential, or lodging facilities

DEFINITIONS (Continued)

Demand

The desire and ability to purchase or lease goods and services; in real estate, the amounts of a type of real estate desired for purchase or rent at various prices in a given market for a given period of time.

Demography

The study of population and population change

Market analysis

1). The identification and study of the market for a particular economic good or service. .2) A study of market conditions for a specific property type.

Marketability

The relative desirability of a property for sale or lease in comparison with similar or competing properties in the area that is a property with poor marketability would be inferior to competing properties in terms of location, condition, access, Etc. Conversely, a property with good marketability has superior features or condition in comparison with competing properties.

Psychographics

Market research or statistics classifying population groups according psychological variables (as attitudes, values, or fears); *also*: variables or trends identified through such research

Zoning

The public regulation of the character and extent of real estate use police power; accomplished by establishing districts or areas with uniform restrictions relating to improvements; structural height, area, and bulk; density of population; in other aspects of the use and development of private property.

Extraordinary Assumptions

"An assumption, directly related to a specific assignment, which, if found to be false, could alter the appraiser's opinions or conclusions."

Comment: Extraordinary assumptions presume as fact otherwise uncertain information about a physical, legal, or economic characteristics of the subject property; or about conditions external to the property, such as market conditions or trends; or about the integrity of data used in any analysis.

Extraordinary Assumptions were utilized within this analysis.

Hypothetical Conditions

"That which is contrary to what exists but is supposed for the purpose of analysis."

Comment: Hypothetical conditions assume conditions contrary to known facts about physical, legal, or economic characteristics of the subject property; or about conditions external to the property, such as market conditions or trends; or about the integrity of the data used in an analysis.

Hypothetical conditions were utilized within this analysis.

Scope of the Analysis

The scope of this assignment is to develop within a reasonable degree of probability, based on current data, lifestyle and economic conditions, the impact the proposed 260-unit apartment complex may have on the Trumbull, CT municipal budget and school system. The investigations, activities and tasks completed during this analysis included, but were not limited to, the following:

- The study area was inspected/surveyed several times during the month of March 2020.

- Pertinent public records were examined and analyzed.

- A survey and analysis of the Trumbull, Connecticut real estate market was conducted. This investigation included discussions with real estate professionals in the area, and review of online proprietary data bases and the development of Primary Data.

- Pertinent current Trumbull Connecticut Town records were examined including Trumbull, CT Building Department, Zoning, and Assessors records, State of Connecticut Department of Housing, Connecticut Department of Labor, CERC, University of Connecticut Center for Real Estate and Urban Economics and related publications, Federal Reserve Bank data, US Census Bureau, US Department of Labor, National Association of Home Builders, Connecticut Association of Home Builders, National and Connecticut Association of Realtors, Urban Land Institute, Institute of Real Estate Management , Multi-Family Housing News, The Warren Group, Reiss Reports, Major Real Estate Firms research reports, , ESRI demographic service and others sources as noted and data providers for real estate as well as primary research conducted by this office.

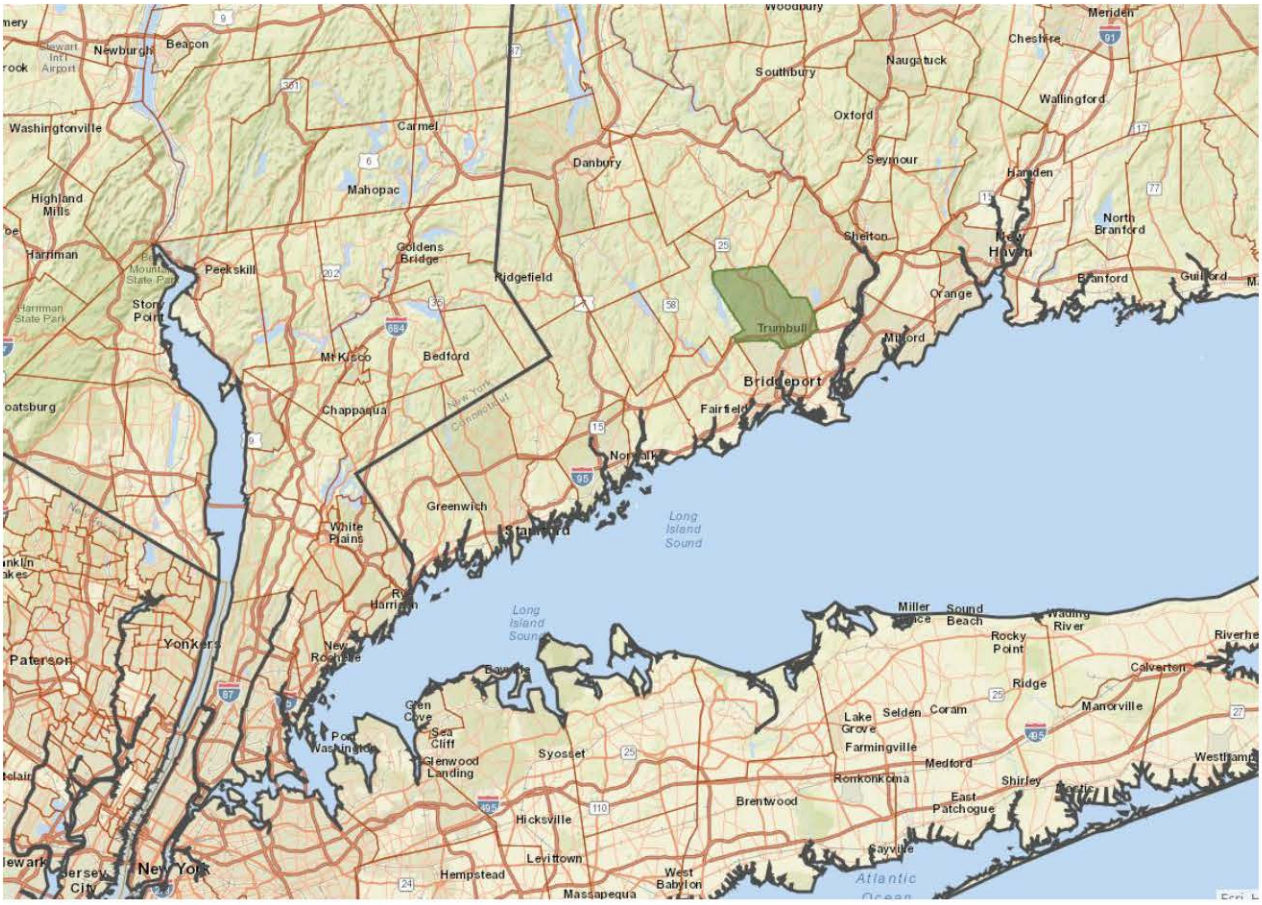
Limiting Conditions & Assumptions

This analysis is performed utilizing Extraordinary Assumptions and Hypothetical Conditions. This analysis is performed based on the assumption that demand for apartments exists as of April 1, 2020. That the impact on demand due to the COVID19 crisis is not fully understood as of the writing of this report. Therefore, any speculation of the COVID19 impact on demand is not fully supported in this report as of the date of this analysis due to lack of verifiable data.

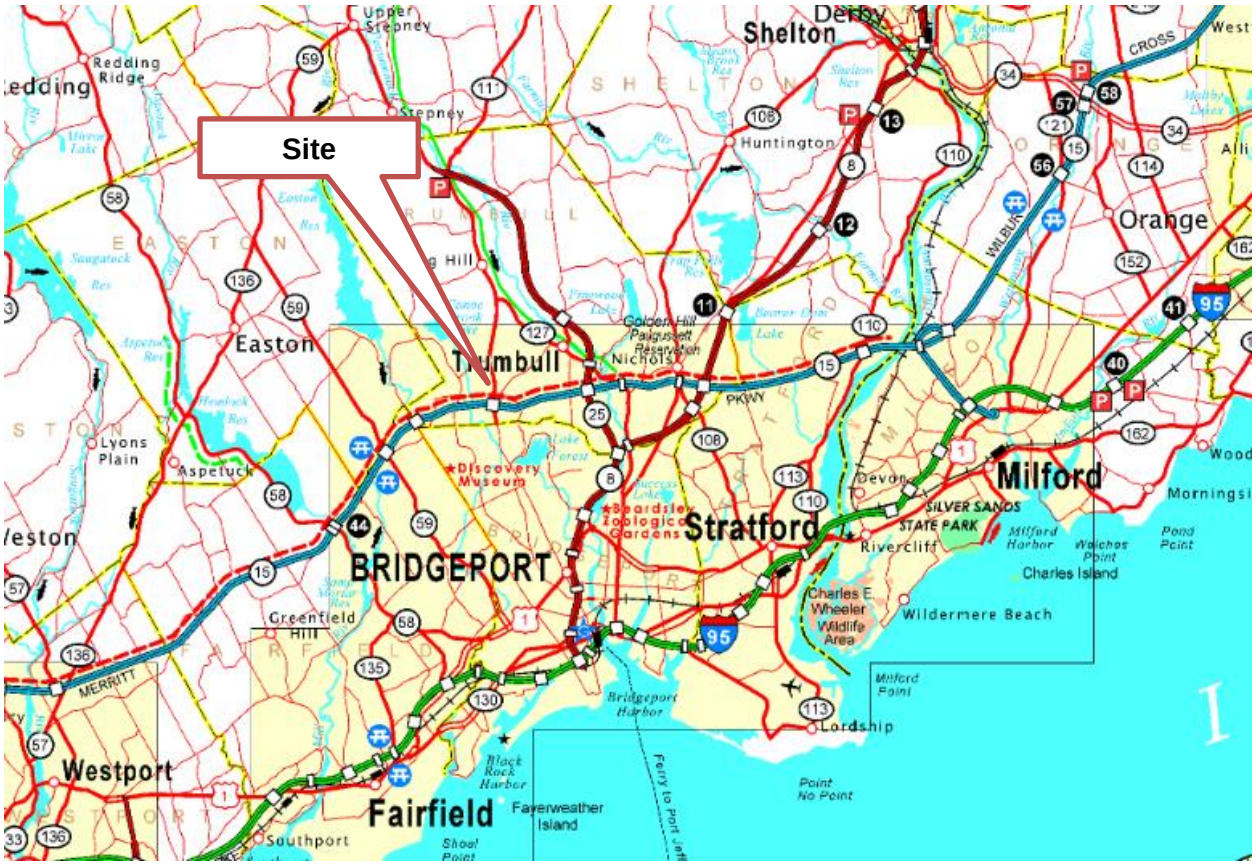
Prior Interest in Property

The consultant has prior interest in the subject property. The consultant performed a development impact analysis on the subject in June of 2018.

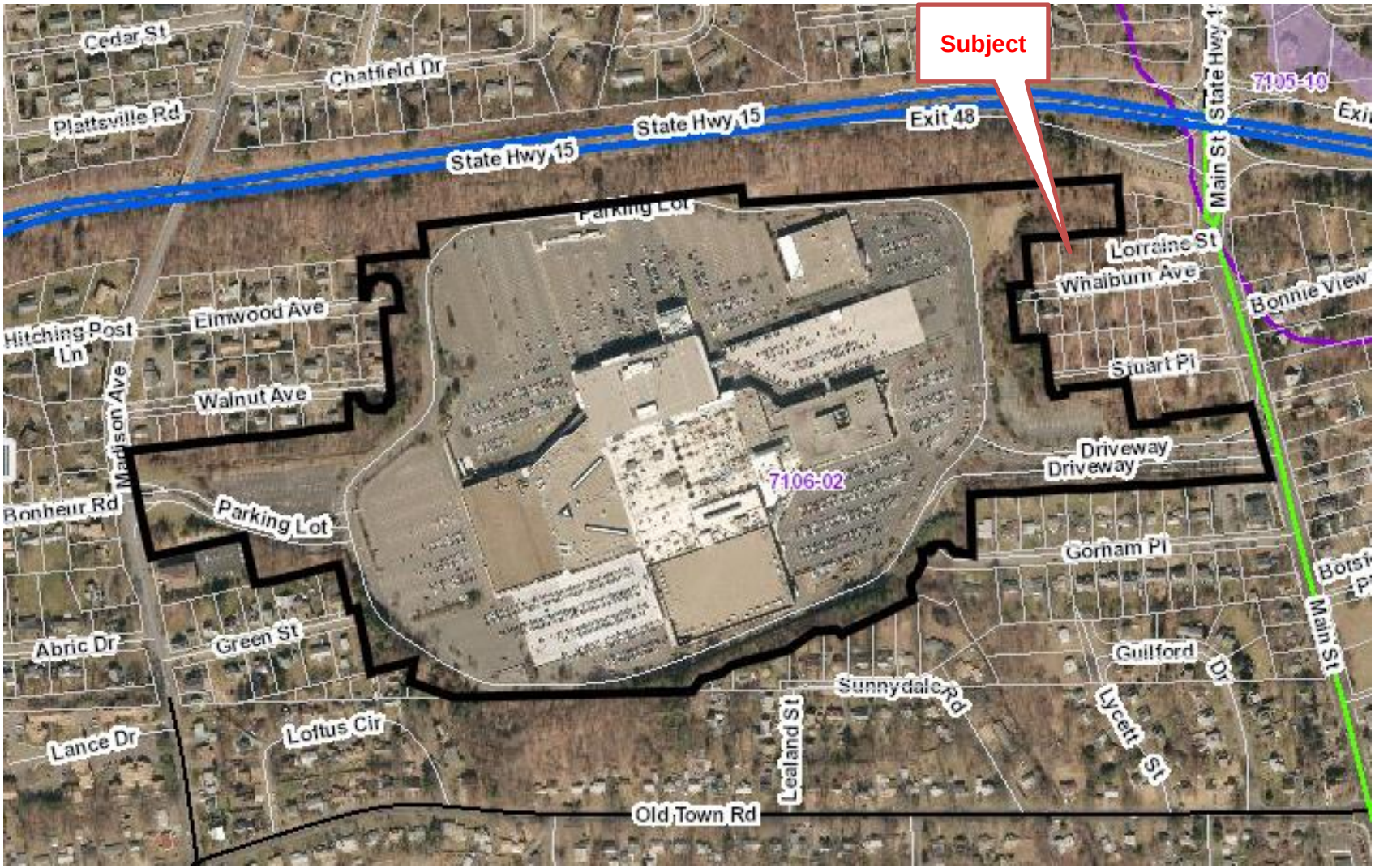
Town Location Map- Trumbull CT



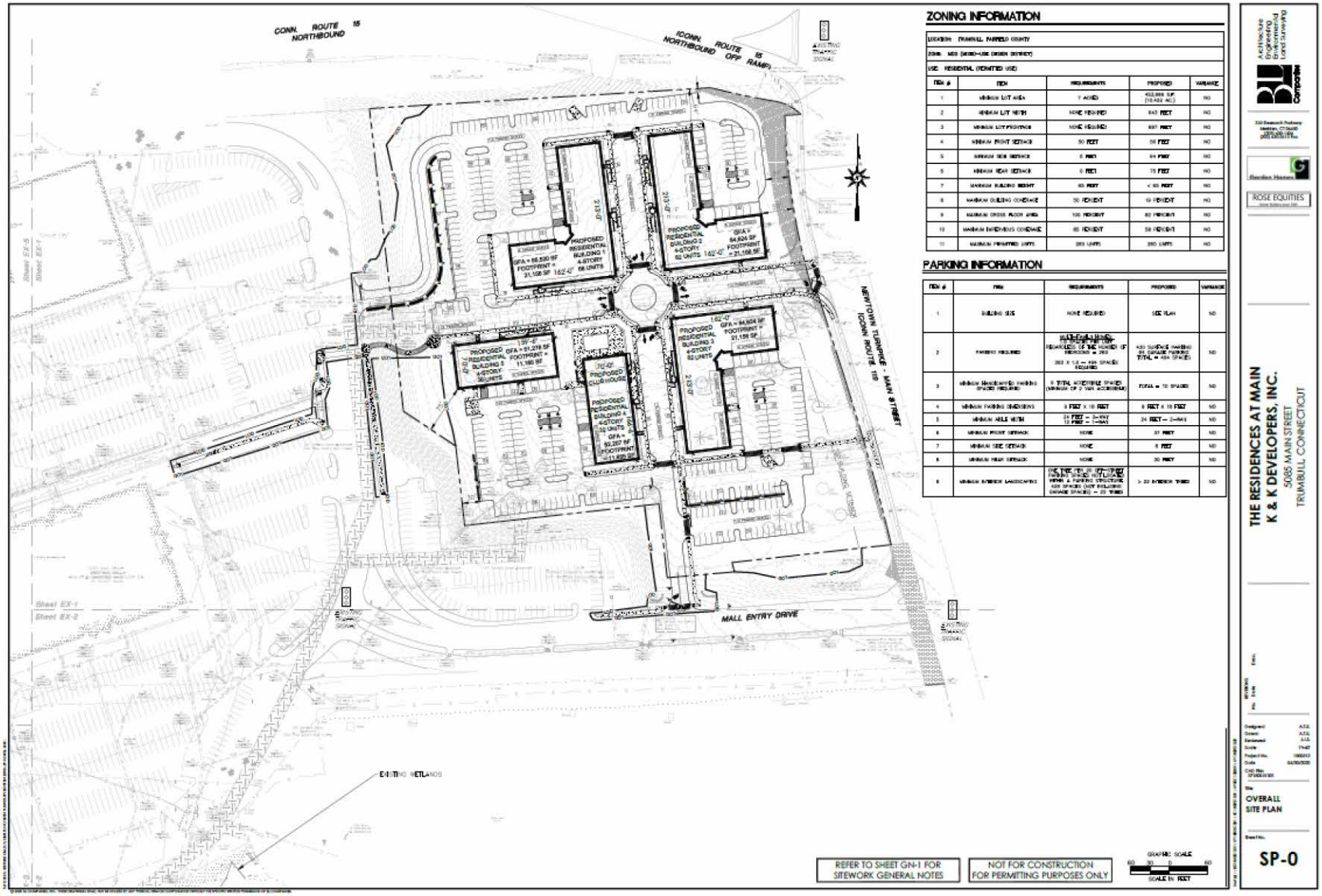
Site Location Map & Road Network



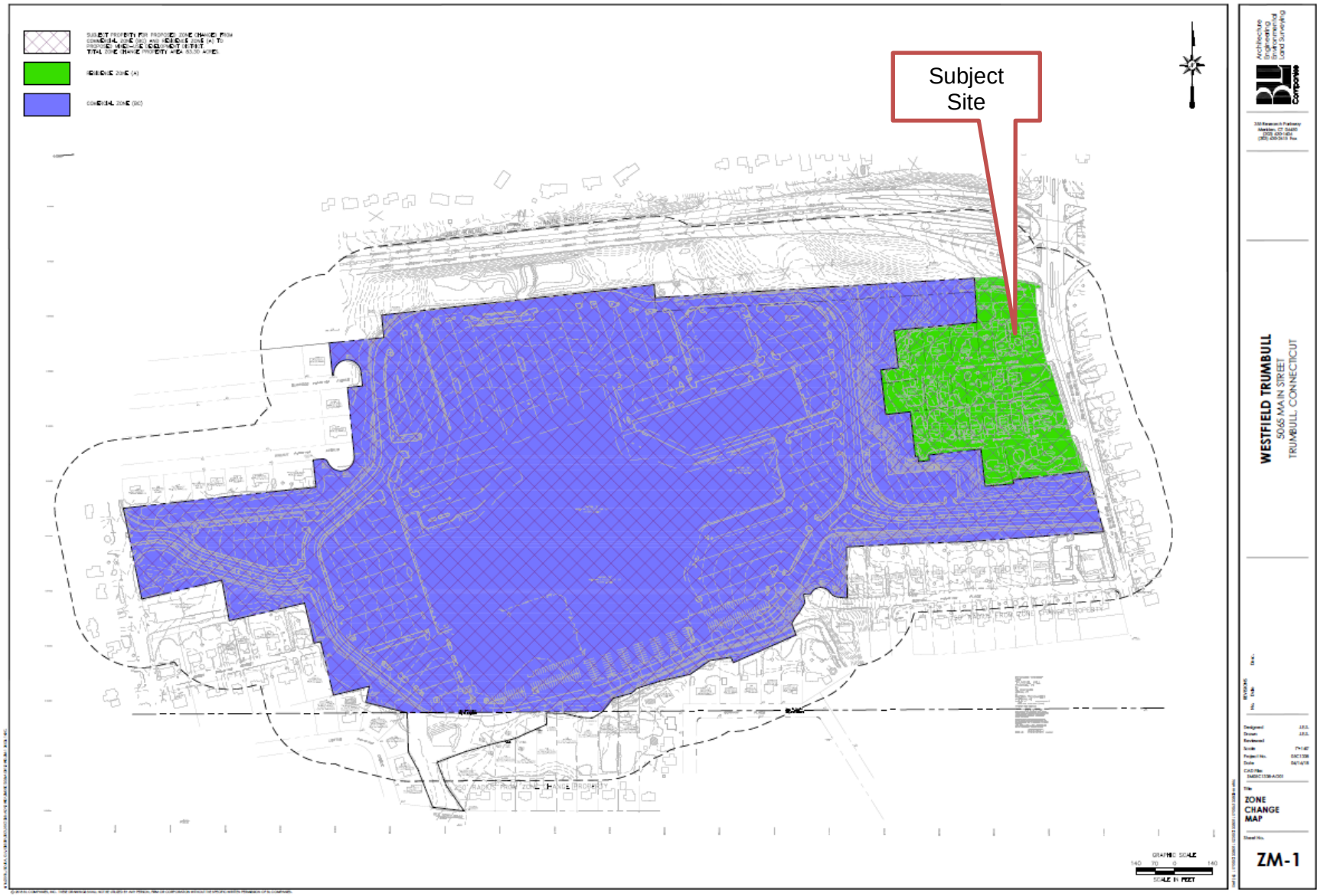
Subject Property



Concept Site Plan



Proposed Zone Amendment Map & Site Location



Proposed Elevation- Typical

03 - SOUTH ELEVATION (RIGHT)

04 - NORTH ELEVATION (LEFT)

SCALE: 1/8" = 1'-0"

CONCEPT ELEVATION - BUILDING 1

DATE: 03/16/2020

MINNO WASKO
ARCHITECTS AND PLANNERS

Garden Homes

LUXURY RESIDENCES
TRUMBULL, CONNECTICUT

Analysis Methodology

A traditional market analysis is simply the development of supporting data to determine if a GAP (Demand - Supply = GAP/Oversupply) exists in the current market for specific property types. In order to accomplish this seemingly simple task, one must analyze four major components of the marketplace, which are:

1) Market Analysis (General market conditions)
2) Site Analysis (Site specific data)
3) Political Analysis (Political Influences)
4) Financial Analysis (Financial feasibility)

The first part of the analysis is market analysis-general market conditions. This component of the analysis includes the study of the macroeconomic conditions of the area inclusive of state, regional, and local economic conditions, and the impact on the demand for real estate based on these conditions for the specific property type.

The second step, site analysis, is the study of the specific site. This step evaluates the site conditions to meet the current real estate demand, and the factors that must be addressed to modify the site to meet those property type demand factors. This is inclusive of lifestyle, political impact, and zoning, plans of conservation and development, environmental issues, specific site conditions, availability of utilities, traffic, public transportation, property linkages and other pertinent factors.

The third step political analysis. This is concurrently being analyzed while general market conditions and site analysis are being performed. Inclusive in the political analysis is not only the local planning and zoning and comprehensive plan of conservation development, but also the impact of state and regional regulations that impact the demand for different types of development on the site being studied. Also, being analyzed is the political climate, including whether the municipality is pro- or anti-development, residentially oriented or commercially oriented, and if any incentives for specific property types exist.

Financial analysis is the last step of the GAP analysis. The results of the other three factors should add a supportable and reasonable degree of probability that results in a reliable financial analysis.

Unlike performing GAP analysis in the past, where dependence was on the primary four components described herein, a fifth and more critical component is emerging as a critical factor in determining demand for residential real estate: lifestyle. Lifestyle has dramatically impacted single-family and, in particular, multifamily development in the United States. The lifestyle impact of Millennials, Generation X, and Echo and Baby Boomers have created a shift in the physical design, preferential locations, and social preferences. Therefore, it is now critical to concurrently analyze lifestyle when performing a GAP analysis during the market and site analysis components.

In order to fully understand demand for real estate property types, one should first understand the basic real estate demand model and what fosters real estate demand.

Market Analysis (General Market Conditions)

Following is current 2019 economic data for the State of Connecticut. The population forecasts indicate a static population growth for the next five years a meager 0.83%, apartment growth is forecasted to be about -2.08%, owner occupied housing an increase of about 0.28% and median household income increase of 7.96%.

The State's Economy

REALTY CONCEPTS INC

Demographic and Income Profile

Connecticut
Connecticut (09)
Geography: State

Realty Concepts, Inc.

Summary	Census 2010	2019	2024
Population	3,574,097	3,632,883	3,662,862
Households	1,371,087	1,386,447	1,394,986
Families	908,661	909,842	912,376
Average Household Size	2.52	2.54	2.54
Owner Occupied Housing Units	925,286	909,354	927,795
Renter Occupied Housing Units	445,801	477,093	467,191
Median Age	40.0	41.5	42.2

Trends: 2019 - 2024 Annual Rate	Area	State	National
Population	0.16%	0.16%	0.77%
Households	0.12%	0.12%	0.75%
Families	0.06%	0.06%	0.68%
Owner HHs	0.40%	0.40%	0.92%
Median Household Income	1.54%	1.54%	2.70%

	2019		2024	
Households by Income	Number	Percent	Number	Percent
<$15,000	112,956	8.1%	95,552	6.8%
$15,000 - $24,999	95,534	6.9%	82,714	5.9%
$25,000 - $34,999	102,013	7.4%	96,014	6.9%
$35,000 - $49,999	154,337	11.1%	147,951	10.6%
$50,000 - $74,999	224,668	16.2%	220,472	15.8%
$75,000 - $99,999	174,149	12.6%	175,365	12.6%
$100,000 - $149,999	236,814	17.1%	247,809	17.8%
$150,000 - $199,999	123,319	8.9%	145,267	10.4%
$200,000+	162,651	11.7%	183,836	13.2%
Median Household Income	$75,402		$81,406	
Average Household Income	$108,231		$119,928	
Per Capita Income	$41,489		$45,856	

	Census 2010		2019		2024	
Population by Age	Number	Percent	Number	Percent	Number	Percent
0 - 4	202,106	5.7%	183,964	5.1%	186,399	5.1%
5 - 9	222,571	6.2%	200,383	5.5%	194,566	5.3%
10 - 14	240,265	6.7%	224,003	6.2%	210,053	5.7%
15 - 19	250,834	7.0%	238,210	6.6%	227,441	6.2%
20 - 24	227,898	6.4%	231,648	6.4%	216,805	5.9%
25 - 34	420,377	11.8%	451,834	12.4%	458,810	12.5%
35 - 44	484,438	13.6%	435,846	12.0%	467,059	12.8%
45 - 54	575,597	16.1%	494,690	13.6%	454,217	12.4%
55 - 64	443,452	12.4%	522,567	14.4%	505,535	13.8%
65 - 74	254,944	7.1%	368,082	10.1%	413,990	11.3%
75 - 84	166,717	4.7%	186,334	5.1%	232,245	6.3%
85+	84,898	2.4%	95,322	2.6%	95,742	2.6%

	Census 2010		2019		2024	
Race and Ethnicity	Number	Percent	Number	Percent	Number	Percent
White Alone	2,772,410	77.6%	2,669,289	73.5%	2,607,819	71.2%
Black Alone	362,296	10.1%	404,137	11.1%	424,754	11.6%
American Indian Alone	11,256	0.3%	13,312	0.4%	14,377	0.4%
Asian Alone	135,565	3.8%	176,475	4.9%	203,889	5.6%
Pacific Islander Alone	1,428	0.0%	1,536	0.0%	1,573	0.0%
Some Other Race Alone	198,466	5.6%	252,685	7.0%	283,560	7.7%
Two or More Races	92,676	2.6%	115,449	3.2%	126,890	3.5%
Hispanic Origin (Any Race)	479,087	13.4%	617,576	17.0%	702,268	19.2%

Data Note: Income is expressed in current dollars.

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024.

April 26, 2020

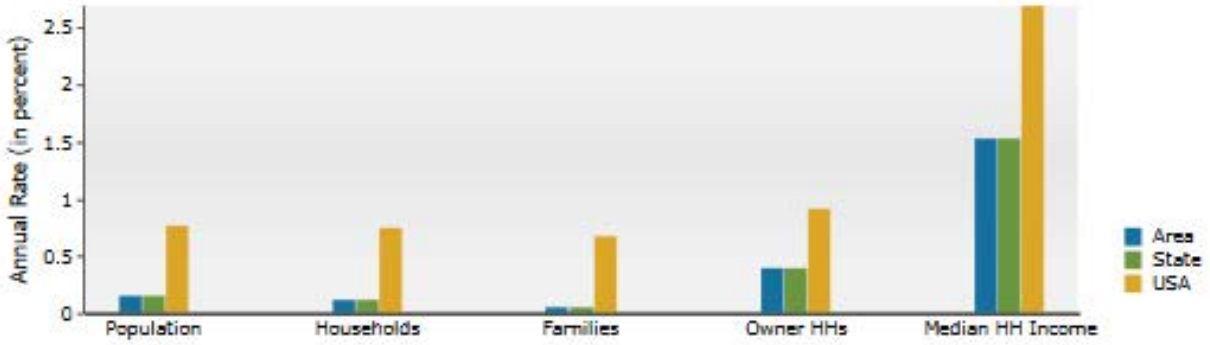
REALTY CONCEPTS INC

Demographic and Income Profile

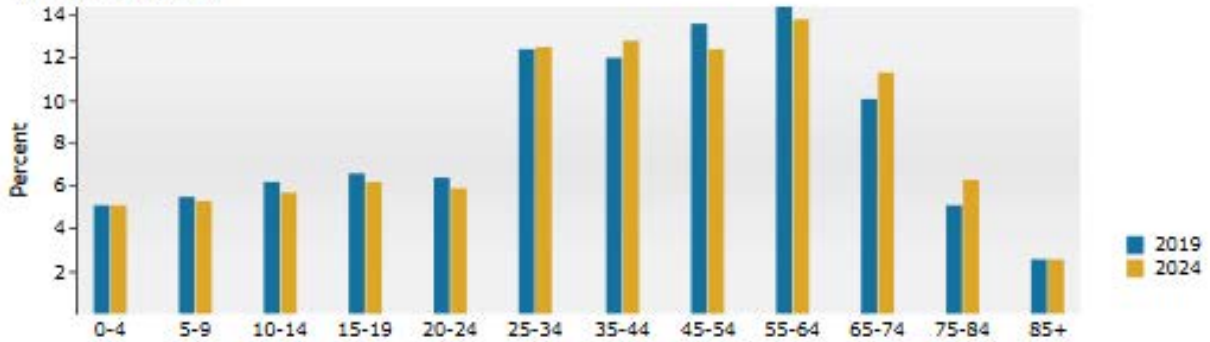
Connecticut
Connecticut (09)
Geography: State

Realty Concepts, Inc.

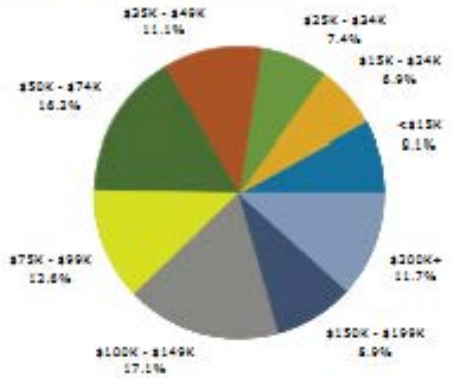
Trends 2019-2024



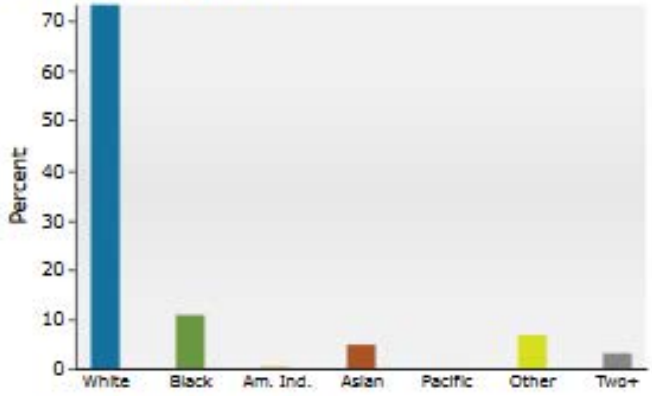
Population by Age



2019 Household Income



2019 Population by Race



2019 Percent Hispanic Origin: 17.0%

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024.

April 26, 2020

REALTY CONCEPTS INC

Community Profile

Connecticut
Connecticut (09)
Geography: State

Realty Concepts, Inc.

	Connecticut (09)
Population Summary	
2000 Total Population	3,405,565
2010 Total Population	3,574,097
2019 Total Population	3,632,883
2019 Group Quarters	114,286
2024 Total Population	3,662,862
2019-2024 Annual Rate	0.16%
2019 Total Daytime Population	3,601,125
Workers	1,830,548
Residents	1,770,577
Household Summary	
2000 Households	1,301,670
2000 Average Household Size	2.53
2010 Households	1,371,087
2010 Average Household Size	2.52
2019 Households	1,386,447
2019 Average Household Size	2.54
2024 Households	1,394,986
2024 Average Household Size	2.54
2019-2024 Annual Rate	0.12%
2010 Families	908,661
2010 Average Family Size	3.08
2019 Families	909,842
2019 Average Family Size	3.12
2024 Families	912,376
2024 Average Family Size	3.13
2019-2024 Annual Rate	0.06%
Housing Unit Summary	
2000 Housing Units	1,385,975
Owner Occupied Housing Units	62.8%
Renter Occupied Housing Units	31.2%
Vacant Housing Units	6.1%
2010 Housing Units	1,487,891
Owner Occupied Housing Units	62.2%
Renter Occupied Housing Units	30.0%
Vacant Housing Units	7.9%
2019 Housing Units	1,523,913
Owner Occupied Housing Units	59.7%
Renter Occupied Housing Units	31.3%
Vacant Housing Units	9.0%
2024 Housing Units	1,548,318
Owner Occupied Housing Units	59.9%
Renter Occupied Housing Units	30.2%
Vacant Housing Units	9.9%
Median Household Income	
2019	$75,402
2024	$81,406
Median Home Value	
2019	$273,477
2024	$300,627
Per Capita Income	
2019	$41,489
2024	$45,856
Median Age	
2010	40.0
2019	41.5
2024	42.2

Data Note: Household population includes persons not residing in group quarters. Average Household Size is the household population divided by total households. Persons in families include the householder and persons related to the householder by birth, marriage, or adoption. Per Capita Income represents the income received by all persons aged 15 years and over divided by the total population.
Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024 Esri converted Census 2000 data into 2010 geography.

April 26, 2020

REALTY CONCEPTS INC

Community Profile

Connecticut
Connecticut (09)
Geography: State

Realty Concepts, Inc.

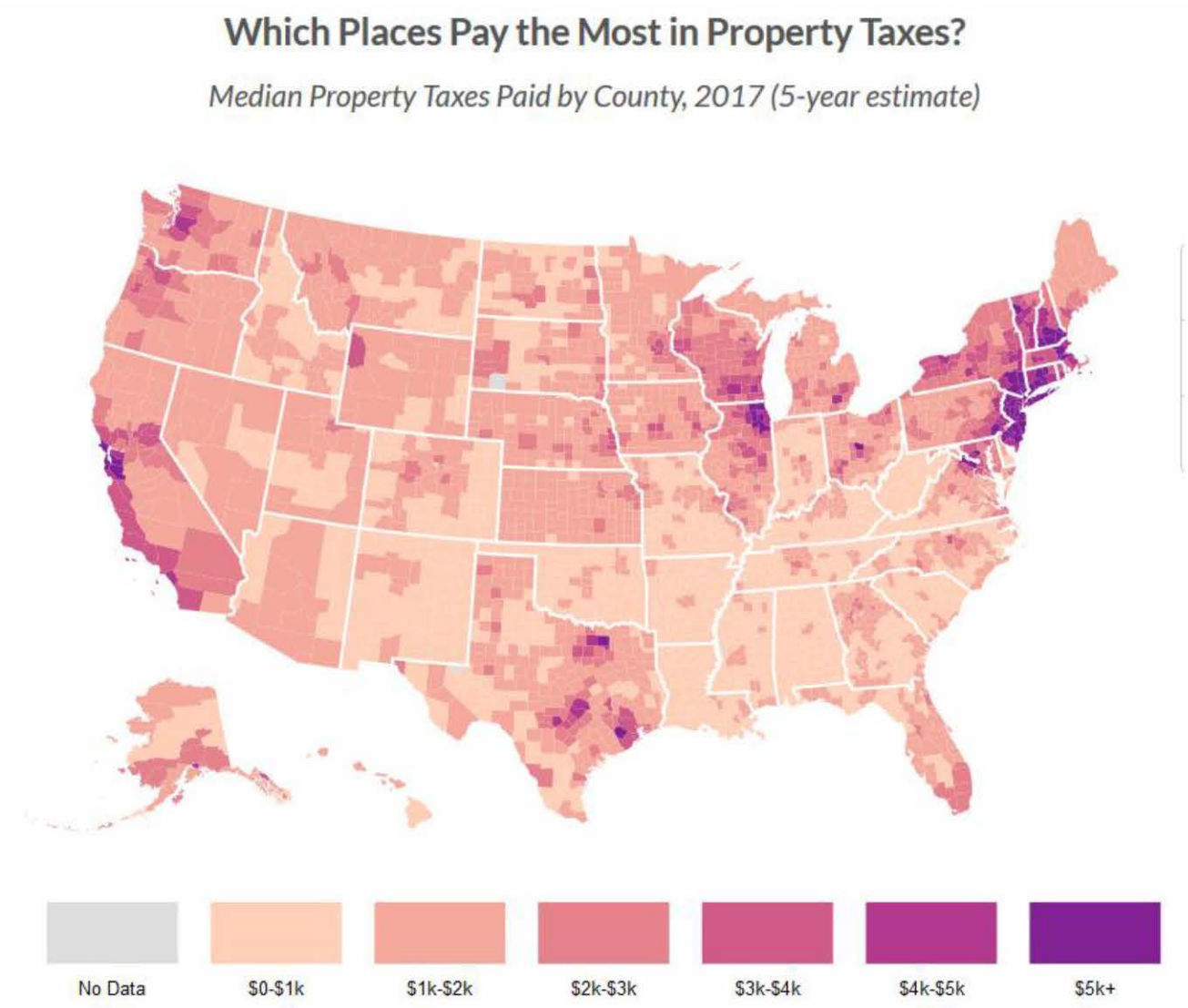
	Connecticut (09)
2019 Households by Income	
Household Income Base	1,386,441
<$15,000	8.1%
$15,000 - $24,999	6.9%
$25,000 - $34,999	7.4%
$35,000 - $49,999	11.1%
$50,000 - $74,999	16.2%
$75,000 - $99,999	12.6%
$100,000 - $149,999	17.1%
$150,000 - $199,999	8.9%
$200,000+	11.7%
Average Household Income	$108,231
2024 Households by Income	
Household Income Base	1,394,980
<$15,000	6.8%
$15,000 - $24,999	5.9%
$25,000 - $34,999	6.9%
$35,000 - $49,999	10.6%
$50,000 - $74,999	15.8%
$75,000 - $99,999	12.6%
$100,000 - $149,999	17.8%
$150,000 - $199,999	10.4%
$200,000+	13.2%
Average Household Income	$119,928
2019 Owner Occupied Housing Units by Value	
Total	909,242
<$50,000	1.7%
$50,000 - $99,999	3.0%
$100,000 - $149,999	8.9%
$150,000 - $199,999	16.3%
$200,000 - $249,999	14.1%
$250,000 - $299,999	12.7%
$300,000 - $399,999	17.4%
$400,000 - $499,999	8.7%
$500,000 - $749,999	8.8%
$750,000 - $999,999	3.5%
$1,000,000 - $1,499,999	2.2%
$1,500,000 - $1,999,999	1.0%
$2,000,000 +	1.7%
Average Home Value	$377,345
2024 Owner Occupied Housing Units by Value	
Total	927,673
<$50,000	1.5%
$50,000 - $99,999	1.9%
$100,000 - $149,999	7.9%
$150,000 - $199,999	15.1%
$200,000 - $249,999	12.4%
$250,000 - $299,999	11.2%
$300,000 - $399,999	19.2%
$400,000 - $499,999	9.6%
$500,000 - $749,999	10.9%
$750,000 - $999,999	4.4%
$1,000,000 - $1,499,999	2.8%
$1,500,000 - $1,999,999	1.1%
$2,000,000 +	2.1%
Average Home Value	$415,012

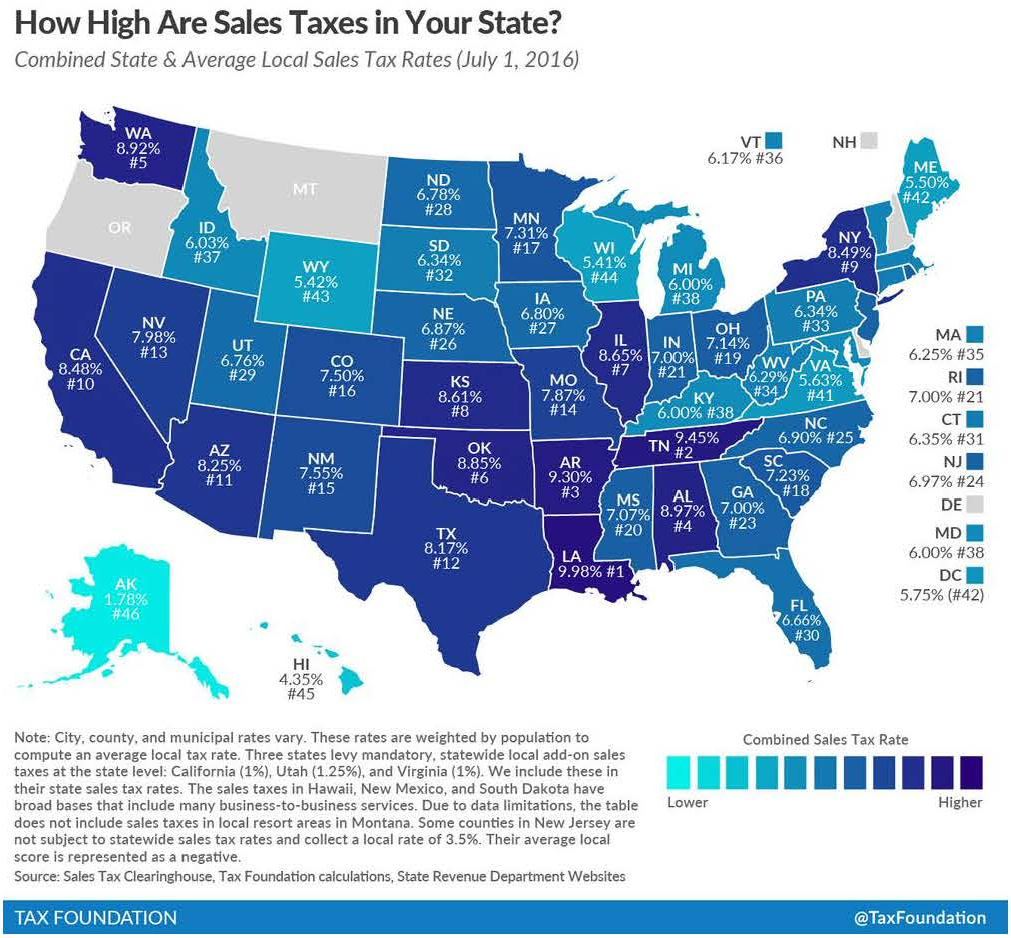
Data Note: Income represents the preceding year, expressed in current dollars. Household income includes wage and salary earnings, interest dividends, net rents, pensions, SSI and welfare payments, child support, and alimony.
Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024 Esri converted Census 2000 data into 2010 geography.

April 26, 2020

Connecticut Tax Burden

The following data from the US Census and Tax Foundation, summarizes median property tax 5- year estimates. Connecticut's tax for 2017. CT was 5.266 and Fairfield county $7,229 among the highest in the country.





State and Local Sales Tax Rates as of July 1, 2016

State	State Tax Rate	Rank	Avg. Local Tax Rate (a)	Combined Rate	Combined Rank	Max Local Tax Rate
Alabama	4.00%	40	4.97%	8.97%	4	7.00%
Alaska	0.00%	46	1.78%	1.78%	46	7.50%
Arizona	5.60%	28	2.65%	8.25%	11	5.30%
Arkansas	6.50%	9	2.80%	9.30%	3	5.13%
California (b)	7.50%	1	0.98%	8.48%	10	2.50%
Colorado	2.90%	45	4.60%	7.50%	16	8.00%
Connecticut	6.35%	12	0.00%	6.35%	31	0.00%
Delaware	0.00%	46	0.00%	0.00%	47	0.00%
Florida	6.00%	16	0.66%	6.66%	30	1.50%
Georgia	4.00%	40	3.00%	7.00%	23	4.00%
Hawaii (c)	4.00%	40	0.35%	4.35%	45	0.50%
Idaho	6.00%	16	0.03%	6.03%	37	3.00%
Illinois	6.25%	13	2.40%	8.65%	7	4.75%
Indiana	7.00%	2	0.00%	7.00%	21	0.00%

Connecticut has one of the highest corporate tax rates of 9.0%. Connecticut ranks #4 in the US with $11,928 debt per capita.

Employment Data

Town LABOR FORCE ESTIMATES BY TOWN

(By Place of Residence - Not Seasonally Adjusted)

FEBRUARY 2020

LMA/TOWNS	LABOR FORCE	EMPLOYED	UNEMPLOYED	%
BRIDGEPORT-STAMFORD				
	463,730	**442,871**	**20,859**	**4.5**
Ansonia	9,256	8,681	575	6.2
Bridgeport	69,093	64,402	4,691	6.8
Darien	8,565	8,290	275	3.2
Derby	6,680	6,338	342	5.1
Easton	3,807	3,682	125	3.3
Fairfield	29,290	28,190	1,100	3.8
Greenwich	28,756	27,794	962	3.3
Milford	30,477	29,251	1,226	4.0
Monroe	10,040	9,607	433	4.3
New Canaan	8,308	8,027	281	3.4
Norwalk	50,959	48,707	2,252	4.4
Oxford	7,306	7,002	304	4.2
Redding	4,405	4,237	168	3.8
Ridgefield	11,693	11,349	344	2.9
Seymour	8,993	8,536	457	5.1
Shelton	22,012	21,016	996	4.5
Southbury	8,753	8,360	393	4.5
Stamford	70,266	67,390	2,876	4.1
Stratford	27,109	25,754	1,355	5.0
Trumbull	17,748	17,061	687	3.9
Weston	4,319	4,164	155	3.6
Westport	12,703	12,288	415	3.3
Wilton	8,394	8,085	309	3.7
Woodbridge	4,800	4,661	139	2.9
DANBURY	**106,543**	**102,249**	**4,294**	**4.0**
Bethel	10,859	10,450	409	3.8
Bridgewater	838	807	31	3.7
Brookfield	9,273	8,932	341	3.7
Danbury	47,300	45,313	1,987	4.2
New Fairfield	7,098	6,818	280	3.9
New Milford	15,229	14,560	669	4.4
Newtown	14,082	13,575	507	3.6
Sherman	1,865	1,794	71	3.8
ENFIELD	**50,940**	**48,780**	**2,160**	**4.2**
East Windsor	6,657	6,356	301	4.5
Enfield	23,570	22,616	954	4.0
Somers	5,123	4,912	211	4.1
Suffield	7,784	7,469	315	4.0
Windsor Locks	7,807	7,427	380	4.9
HARTFORD	**634,494**	**606,806**	**27,688**	**4.4**
Andover	1,992	1,905	87	4.4
Ashford	2,633	2,533	100	3.8
Avon	9,605	9,328	277	2.9
Barkhamsted	2,358	2,247	111	4.7
Berlin	12,028	11,580	448	3.7
Bloomfield	12,047	11,519	528	4.4
Bolton	3,244	3,129	115	3.5
Bristol	33,814	32,054	1,760	5.2
Burlington	5,812	5,607	205	3.5

LMA/TOWNS	LABOR FORCE	EMPLOYED	UNEMPLOYED	%
HARTFORD cont..				
Canton	5,828	5,633	195	3.3
Chaplin	1,283	1,227	56	4.4
Colchester	9,613	9,244	369	3.8
Columbia	3,308	3,177	131	4.0
Coventry	8,000	7,709	291	3.6
Cromwell	8,108	7,809	299	3.7
East Granby	3,124	3,033	91	2.9
East Haddam	5,118	4,907	211	4.1
East Hampton	7,917	7,606	311	3.9
East Hartford	27,605	26,166	1,439	5.2
Ellington	9,735	9,367	368	3.8
Farmington	14,501	14,022	479	3.3
Glastonbury	19,353	18,806	547	2.8
Granby	7,003	6,787	216	3.1
Haddam	5,178	4,994	184	3.6
Hartford	53,907	50,000	3,907	7.2
Hartland	1,177	1,134	43	3.7
Harwinton	3,282	3,152	130	4.0
Hebron	5,681	5,456	225	4.0
Lebanon	4,205	3,994	211	5.0
Manchester	33,531	32,157	1,374	4.1
Mansfield	12,878	12,368	510	4.0
Marlborough	3,681	3,540	141	3.8
Middletown	26,477	25,397	1,080	4.1
New Britain	37,361	35,130	2,231	6.0
New Hartford	4,046	3,905	141	3.5
Newington	17,555	16,898	657	3.7
Plainville	10,725	10,238	487	4.5
Plymouth	6,792	6,414	378	5.6
Portland	5,603	5,372	231	4.1
Rocky Hill	11,868	11,495	373	3.1
Scotland	998	947	51	5.1
Simsbury	13,979	13,562	417	3.0
Southington	25,184	24,222	962	3.8
South Windsor	14,627	14,123	504	3.4
Stafford	7,038	6,721	317	4.5
Thomaston	4,848	4,620	228	4.7
Tolland	8,729	8,463	266	3.0
Union	483	459	24	5.0
Vernon	17,809	17,025	784	4.4
West Hartford	35,179	34,099	1,080	3.1
Wethersfield	14,293	13,761	532	3.7
Willington	3,744	3,607	137	3.7
Windham	12,692	11,963	729	5.7
Windsor	16,912	16,194	718	4.2

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LABOR FORCE CONCEPTS

The **civilian labor force** comprises all state residents age 16 years and older classified as employed or unemployed in accordance with criteria described below. Excluded are members of the military and persons in institutions (correctional and mental health, for example).

The **employed** are all persons who did any work as paid employees or in their own business during the survey week, or who have worked 15 hours or more as unpaid workers in an enterprise operated by a family member. Persons temporarily absent from a job because of illness, bad weather, strike or for personal reasons are also counted as employed whether they were paid by their employer or were seeking other jobs.

The **unemployed** are all persons who did not work, but were available for work during the survey week (except for temporary illness) and made specific efforts to find a job in the prior four weeks. Persons waiting to be recalled to a job from which they had been laid off need not be looking for work to be classified as unemployed.

LMA LABOR FORCE ESTIMATES

(Not seasonally adjusted)	EMPLOYMENT STATUS	Feb 2020	Feb 2019	CHANGE NO.	CHANGE %	Jan 2020
CONNECTICUT	Civilian Labor Force	1,917,700	1,894,400	23,300	1.2	1,920,800
	Employed	1,833,100	1,812,700	20,400	1.1	1,835,700
	Unemployed	84,700	81,700	3,000	3.7	85,200
	Unemployment Rate	4.4	4.3	0.1	---	4.4
BRIDGEPORT-STAMFORD LMA	Civilian Labor Force	463,700	459,800	3,900	0.8	468,000
	Employed	442,900	440,000	2,900	0.7	447,100
	Unemployed	20,900	19,800	1,100	5.6	20,800
	Unemployment Rate	4.5	4.3	0.2	---	4.5
DANBURY LMA	Civilian Labor Force	106,500	105,300	1,200	1.1	107,800
	Employed	102,200	101,200	1,000	1.0	103,500
	Unemployed	4,300	4,100	200	4.9	4,300
	Unemployment Rate	4.0	3.9	0.1	---	4.0
DANIELSON-NORTHEAST LMA	Civilian Labor Force	43,900	43,600	300	0.7	43,900
	Employed	41,900	41,500	400	1.0	41,900
	Unemployed	2,000	2,100	-100	-4.8	2,000
	Unemployment Rate	4.6	4.8	-0.2	---	4.6
ENFIELD LMA	Civilian Labor Force	50,900	50,600	300	0.6	50,400
	Employed	48,800	48,400	400	0.8	48,300
	Unemployed	2,200	2,100	100	4.8	2,100
	Unemployment Rate	4.2	4.2	0.0	---	4.3
HARTFORD LMA	Civilian Labor Force	634,500	626,400	8,100	1.3	633,800
	Employed	606,800	599,600	7,200	1.2	605,900
	Unemployed	27,700	26,800	900	3.4	27,900
	Unemployment Rate	4.4	4.3	0.1	---	4.4
NEW HAVEN LMA	Civilian Labor Force	333,000	326,200	6,800	2.1	330,600
	Employed	319,400	313,000	6,400	2.0	316,600
	Unemployed	13,700	13,200	500	3.8	14,000
	Unemployment Rate	4.1	4.1	0.0	---	4.2
NORWICH-NEW LONDON LMA	Civilian Labor Force	141,900	140,400	1,500	1.1	142,300
	Employed	135,600	134,300	1,300	1.0	135,900
	Unemployed	6,300	6,100	200	3.3	6,400
	Unemployment Rate	4.4	4.4	0.0	---	4.5
TORRINGTON-NORTHWEST LMA	Civilian Labor Force	47,000	46,400	600	1.3	47,600
	Employed	44,800	44,300	500	1.1	45,500
	Unemployed	2,200	2,200	0	0.0	2,200
	Unemployment Rate	4.6	4.7	-0.1	---	4.5
WATERBURY LMA	Civilian Labor Force	112,100	111,400	700	0.6	112,400
	Employed	105,900	105,400	500	0.5	106,300
	Unemployed	6,200	6,000	200	3.3	6,100
	Unemployment Rate	5.5	5.4	0.1	---	5.5
UNITED STATES	Civilian Labor Force	164,235,000	162,793,000	1,442,000	0.9	163,497,000
	Employed	158,017,000	156,167,000	1,850,000	1.2	156,994,000
	Unemployed	6,218,000	6,625,000	-407,000	-6.1	6,504,000
	Unemployment Rate	3.8	4.1	-0.3	---	4.0

Current month's data are preliminary. Prior months' data have been revised. All data are benchmarked to March 2019.

NONFARM EMPLOYMENT ESTIMATES LMA

BRIDGEPORT - STAMFORD LMA

	Not Seasonally Adjusted				
	Feb 2020	Feb 2019	CHANGE NO.	CHANGE %	Jan 2020
TOTAL NONFARM EMPLOYMENT	**356,500**	**359,000**	**-2,500**	**-0.6**	**359,600**
TOTAL PRIVATE	**352,000**	**354,600**	**-2,600**	**-0.7**	**355,600**
GOODS PRODUCING INDUSTRIES	**40,600**	**40,400**	**200**	**0.5**	**40,400**
CONSTRUCTION, NAT. RES. & MINING	**12,000**	**11,500**	**500**	**4.3**	**11,900**
MANUFACTURING	**28,600**	**28,900**	**-300**	**-1.0**	**28,500**
Durable Goods	**22,100**	**22,400**	**-300**	**-1.3**	**22,100**
SERVICE PROVIDING INDUSTRIES	**355,900**	**358,600**	**-2,700**	**-0.8**	**359,200**
TRADE, TRANSPORTATION, UTILITIES	**65,600**	**66,800**	**-1,200**	**-1.8**	**67,600**
Wholesale Trade	12,300	12,600	-300	-2.4	12,300
Retail Trade	43,800	45,200	-1,400	-3.1	45,100
Transportation, Warehousing, & Utilities	9,500	9,000	500	5.6	10,200
INFORMATION	**13,000**	**12,900**	**100**	**0.8**	**13,000**
FINANCIAL ACTIVITIES	**36,500**	**37,600**	**-1,100**	**-2.9**	**37,100**
Finance and Insurance	29,900	31,500	-1,600	-5.1	30,200
Credit Intermediation and Related	8,100	8,200	-100	-1.2	8,100
Financial Investments and Related	15,700	16,200	-500	-3.1	15,800
PROFESSIONAL & BUSINESS SERVICES	**64,400**	**64,000**	**400**	**0.6**	**65,500**
Professional, Scientific	29,600	29,800	-200	-0.7	29,300
Administrative and Support	23,300	23,000	300	1.3	24,300
EDUCATION AND HEALTH SERVICES	**74,900**	**75,200**	**-300**	**-0.4**	**74,300**
Health Care and Social Assistance	61,900	62,300	-400	-0.6	62,400
LEISURE AND HOSPITALITY	**39,700**	**40,300**	**-600**	**-1.5**	**40,400**
Accommodation and Food Services	31,300	31,400	-100	-0.3	31,700
OTHER SERVICES	**17,300**	**17,400**	**-100**	**-0.6**	**17,300**
GOVERNMENT	**44,500**	**44,400**	**100**	**0.2**	**44,000**
Federal	2,400	2,500	-100	-4.0	2,500
State & Local	42,100	41,900	200	0.5	41,500

The preceding employment data for the Bridgeport Stamford Labor Market Area (LMA) indicates a slight decrease in civilian labor force of 2,400, persons employed. The unemployment rate for Trumbull is 3.9%. The Bridgeport-Stamford LMA unemployment rate is 4.5% which is higher than the U.S. unemployment rate of 3.8% for the same period. The state of Connecticut is 4.4%.

Town LABOR FORCE ESTIMATES BY TOWN

(By Place of Residence - Not Seasonally Adjusted)

FEBRUARY 2020

LMA/TOWNS	LABOR FORCE	EMPLOYED	UNEMPLOYED	%
BRIDGEPORT-STAMFORD				
	463,730	**442,871**	**20,859**	**4.5**
Ansonia	9,256	8,681	575	6.2
Bridgeport	69,093	64,402	4,691	6.8
Darien	8,565	8,290	275	3.2
Derby	6,680	6,338	342	5.1
Easton	3,807	3,682	125	3.3
Fairfield	29,290	28,190	1,100	3.8
Greenwich	28,756	27,794	962	3.3
Milford	30,477	29,251	1,226	4.0
Monroe	10,040	9,607	433	4.3
New Canaan	6,308	6,027	281	3.4
Norwalk	50,959	48,707	2,252	4.4
Oxford	7,306	7,002	304	4.2
Redding	4,405	4,237	168	3.8
Ridgefield	11,693	11,349	344	2.9
Seymour	8,993	8,536	457	5.1
Shelton	22,012	21,016	996	4.5
Southbury	8,753	8,360	393	4.5
Stamford	70,266	67,390	2,876	4.1
Stratford	27,109	25,754	1,355	5.0
Trumbull	17,748	17,061	687	3.9
Weston	4,319	4,164	155	3.6
Westport	12,703	12,288	415	3.3
Wilton	8,394	8,085	309	3.7
Woodbridge	4,800	4,661	139	2.9
DANBURY	**106,543**	**102,249**	**4,294**	**4.0**
Bethel	10,859	10,450	409	3.8
Bridgewater	838	807	31	3.7
Brookfield	9,273	8,932	341	3.7
Danbury	47,300	45,313	1,987	4.2
New Fairfield	7,098	6,818	280	3.9
New Milford	15,229	14,560	669	4.4
Newtown	14,082	13,575	507	3.6
Sherman	1,865	1,794	71	3.8
ENFIELD	**50,940**	**48,780**	**2,160**	**4.2**
East Windsor	6,657	6,356	301	4.5
Enfield	23,570	22,616	954	4.0
Somers	5,123	4,912	211	4.1
Suffield	7,784	7,469	315	4.0
Windsor Locks	7,807	7,427	380	4.9
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Andover	1,992	1,905	87	4.4
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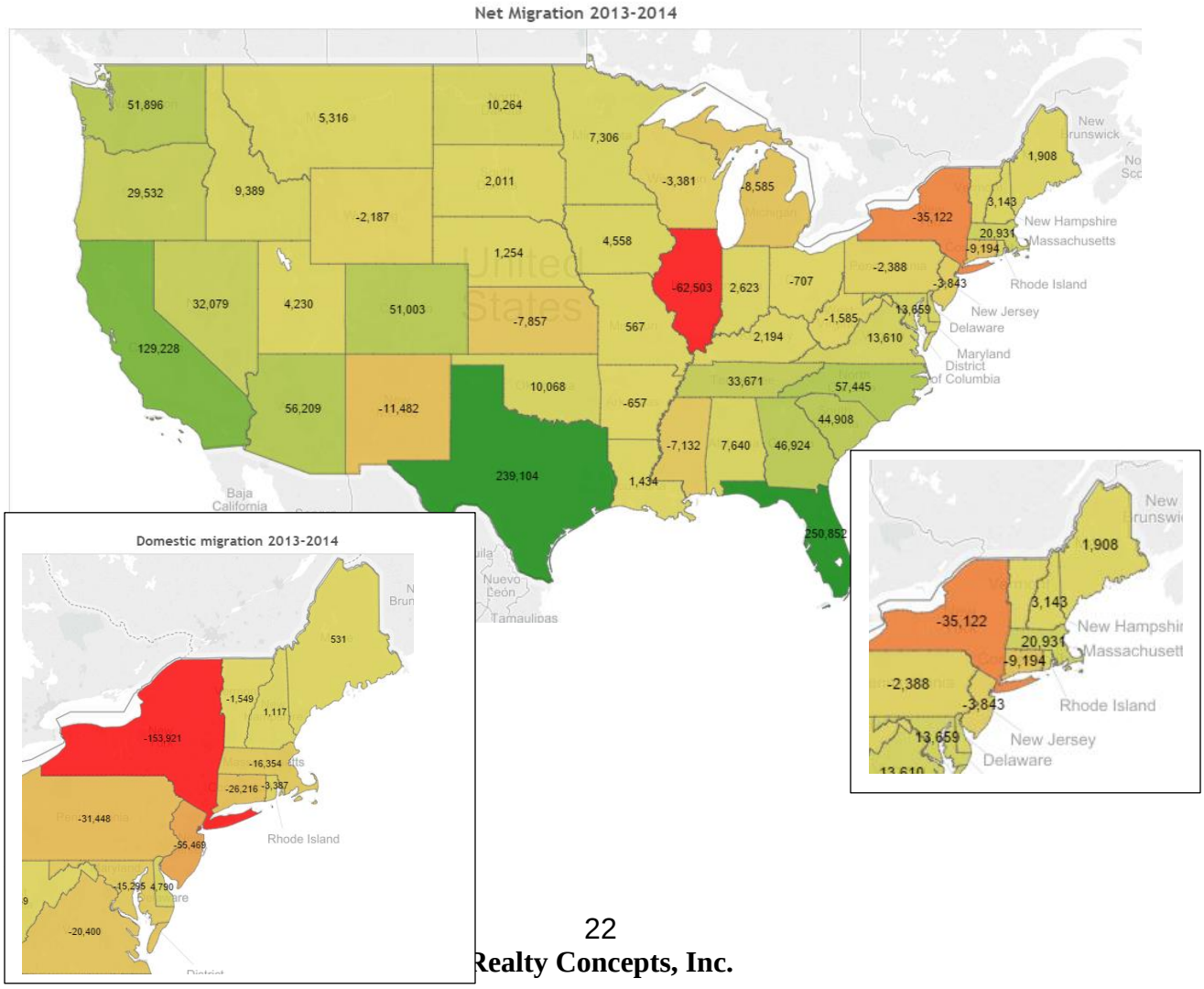
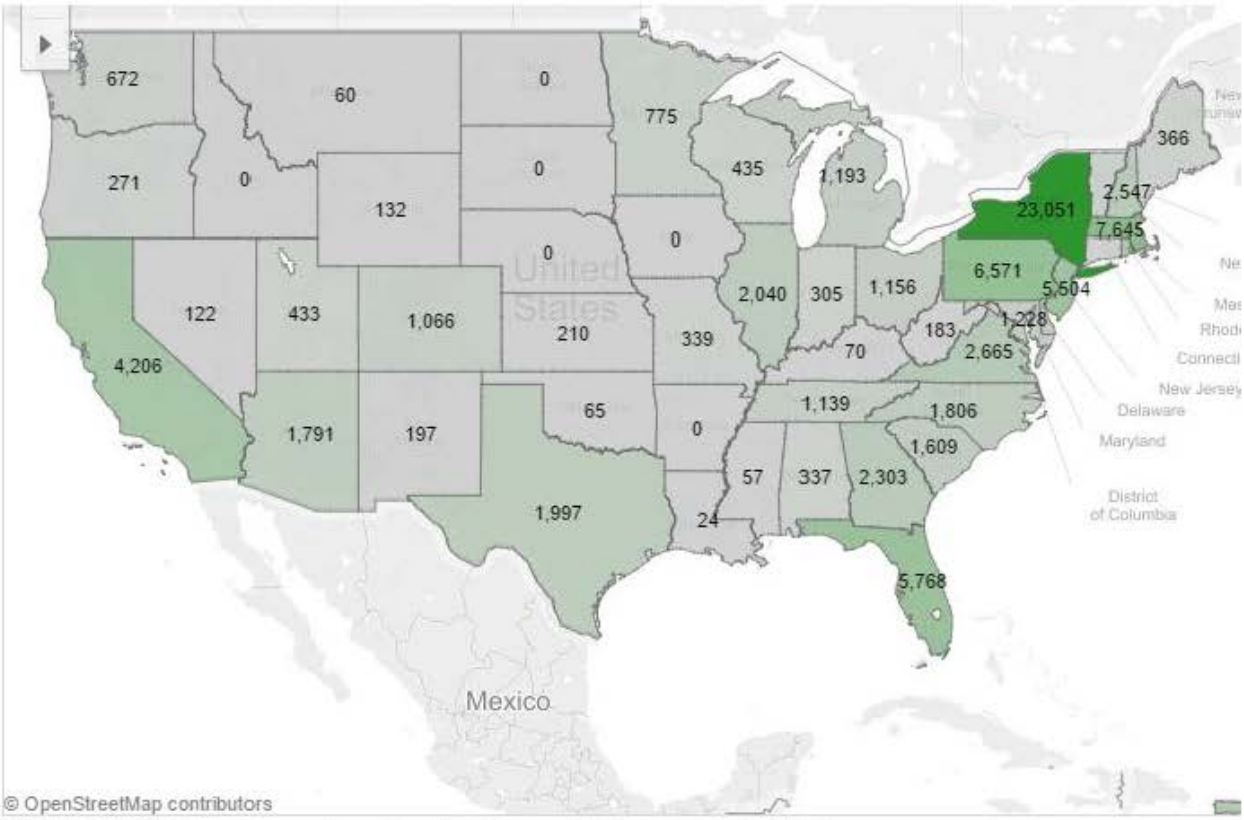
State Economic Indicators

Migration

A major factor that typically is measured is in and out population migration. As reported in the by the US Census Bureau studying July 2013 to July 2014 and published in the Hartford Courant "About 26,000 more people moved out of state than moved in between July 2013 and July 2014, according to estimates from the U.S. Census Bureau. Including births, deaths and international migration, the state experienced an overall population dip of 2,664 people, to 3,596,677. That's only a fraction of a percent, but it's the third-largest percentage population decrease of any state, after West Virginia and Illinois. The net migration loss to other states was about 0.73 percent of the population, the fourth-highest percentage loss after Alaska, New York and Illinois." The Census Bureau indicate that the 26,000-population loss was about 10,000 more than the prior year. The preponderance of people moving into Connecticut is from foreign countries, about 17,000 in the study period.

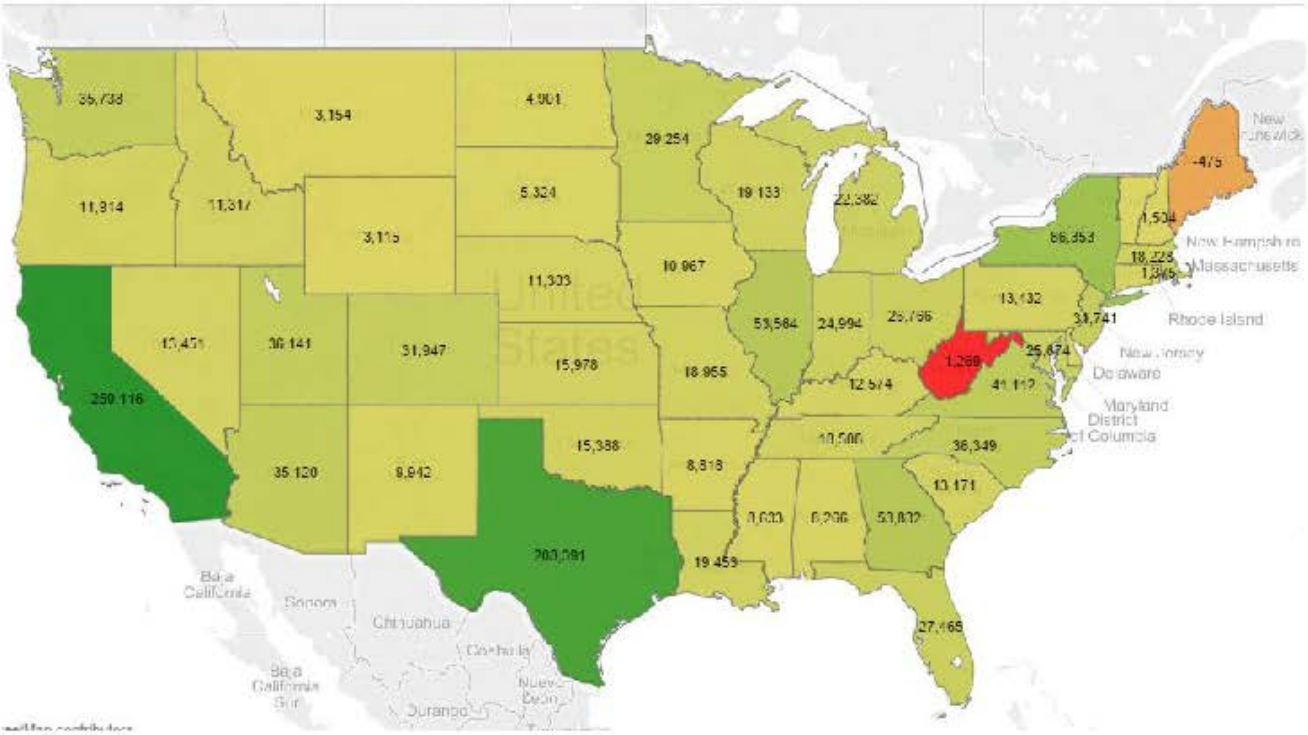
In the same article Ron Van Winkle, an Economist and West Hartford's Town Manager was quoted "The annual loss of residents to other states has been increasing. The 26,000 loss from July 2013 to July 2014 was about 10,000 more than the prior year. From July 2011 to July 2012, the net domestic migration from Connecticut was about 19,000; From July 2010 to July 2011, 13,500." He also stated: "Companies are growing where they can find people and skilled labor, and even though Connecticut's labor force is highly skilled, it's not growing at a rapid rate. So … it doesn't bode well. … It's not that we're moribund. It's just a slower growth area."





SOURCE: U.S. Census Bureau, 1-year American Community Survey estimates, 2013

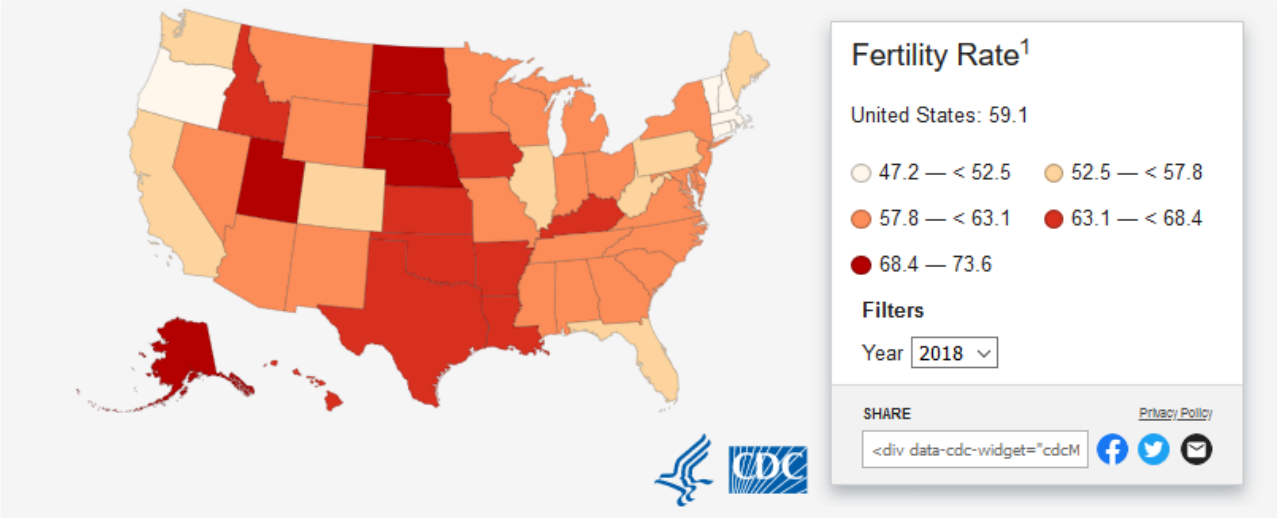
Natural Increase (births - deaths) 2013-2014



Birth Rates

The Center for Disease Control (CDC) table below demonstrates the birth rate (Women aged 15 to 44) for Connecticut at less than 52.5 births per thousand. It is in the lowest of the ranges and below the US rate of 59.1. The Kaiser Foundation sited in a 2017 report the three reasons for a declining rate: 1) Teenage pregnancy is dropping, 2) Younger women are delaying motherhood and 3) about a third of young women do not want children at all. In addition, Connecticut has lower rate of marriage of 5.6 vs. US rate of 6.9 per thousand.

Fertility Rate by State



Other Connecticut Data	State	U.S.
Infant Mortality Rate (Deaths per 1,000 live births)	4.5	5.8
Marriage Rate	5.6	6.9
Divorce Rate	2.9	2.9†

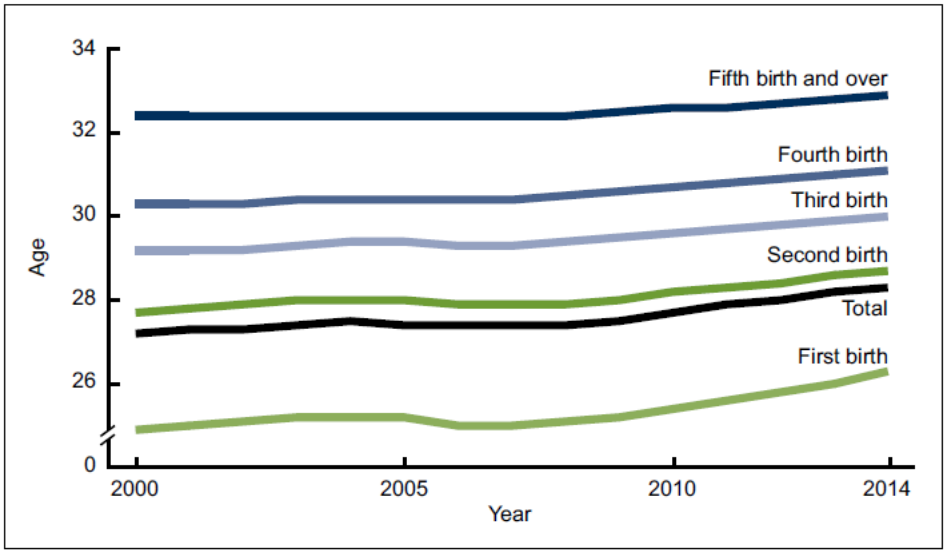
Table 1.2-1 Components of Population Change

	2004 - 2007 Average	2013-2016 Average	Change	Percent
Births	42,003	36,073	-5,930	-14%
Deaths	29,431	30,033	602	2%
Net International Migration	12,820	16,510	3,690	29%
Net Domestic Migration	-16,606	-25,787	-9,181	55%

Birth Rates-Continued

As of 2018, the overall average age to have a baby in the U.S. was 26.9 years, according to data from the National Center for Health Statistics. The CDC chart below indicates, mothers first birth age has increased from 24.9 to about age 26.9. It can be estimated that a child will enter kindergarten at about age 6. It can be inferred that the mother would be age 33 at the start of kindergarten, about the age Millennials would be seeking to purchase their first home. This is another current reason the number of school age children in public schools living in apartments is lower than the Rutgers study indicates.

Figure 1. Mean age, by birth order: United States, 2000–2014



SOURCE: CDC/NCHS, National Vital Statistics System.

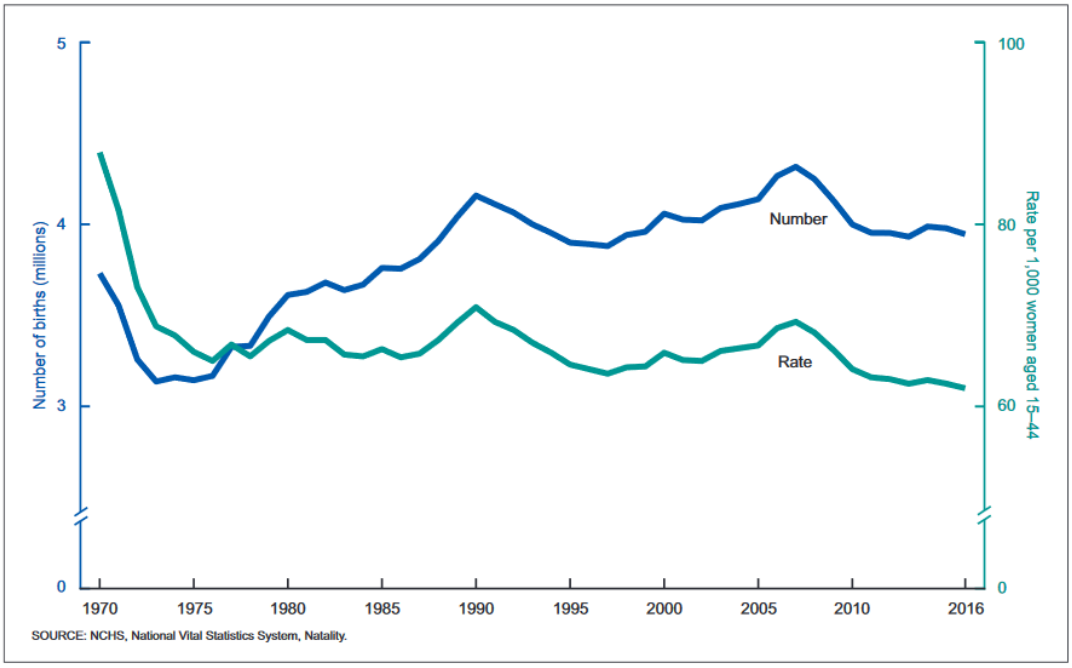
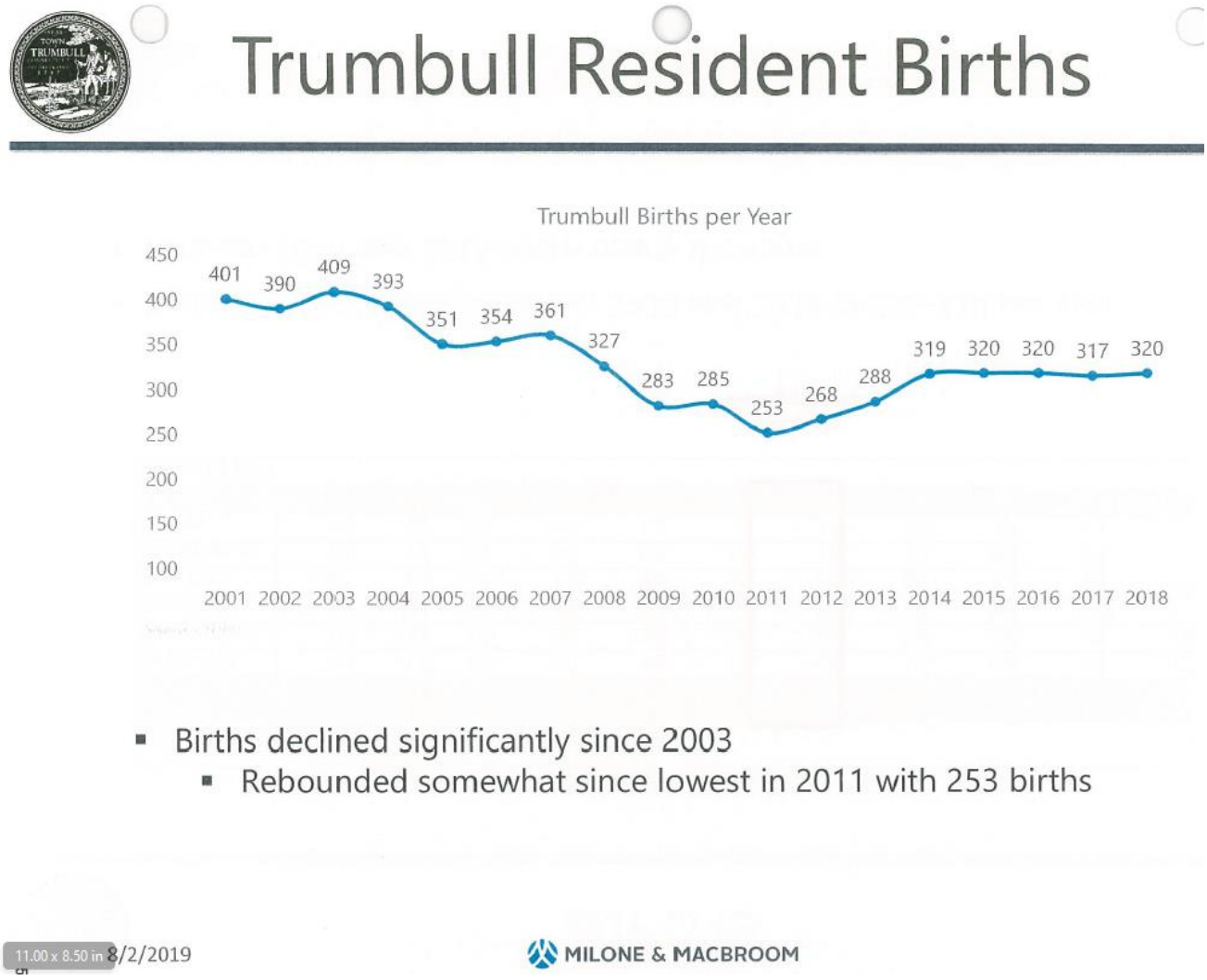


Figure 2. Live births and general fertility rates: United States, 1970–2016

Birth Rates-Continued

Below is an excerpt from the Milone & MacBroom birth rate projections from the 2020-2021 school budget.



Psychographics & Facts

The State of Connecticut is currently in the midst of a financial conundrum on how to grow the economy, retain major employers, and meet its financial obligations vs not raising taxes, stop the flight of businesses, population and skilled labor. The State has recently passed a state budget that imposes a corporate tax surcharge as well as adding new tax revenue on goods and services that not only impact state businesses but also adversely impacting household budgets which impacts disposable income.

Adverse psychographics is resulting over economic decline and from the current financial crisis, the loss of major business leaving the State of Connecticut after GE the relocation of their Fairfield corporate headquarters to Boston, MA. In addition, the 2015 sale of Sikorsky Aircraft to Marietta-Martin had only resulted in a five- year commitment to remain in the state for the 8,700 employees. But finally, some good news! Marietta-Martin/Sikorsky Aircraft located about six miles to the north-east of the subject property, announced in 2018 that they will stay located in Stratford, CT location for the next 16 years and produce about 200 CH-53K helicopters. Full production will not start until about 2020. In addition, in 2019 Sikorsky announced a $107Million dollar contract for 6 CH-53K helicopters and in February 2020 a contract foe 6 presidential helicopters. This bodes well for Fairfield County and the area labor force it draws from.

Exposure in the news media focusing on the adverse budget impact and potential business loss, has had a major negative impact on the image of the state. When actual data demonstrating flight of population, increased taxes, adverse business climate is consistently in the news the psychographics of the state is one of “why would anyone want to work or live there when better option for employment and lower cost of living alternatives exist”. Why is this important to this analysis?

1) Psychographics- It is difficult to overcome a poor image. It will take years to rebuild if and only if there is a reversal of employment opportunities and the cost of living in Connecticut improves. This impacts real estate demand.
2) As the cost of living increases and wages advance moderately or remain static, it impacts disposable income. Reduced disposable income results in the decline in threshold income available for housing
3) Job retention maintains population and new jobs grow population, hence residential demand.

Threshold income for residential segment of the market is the level of income required to rent or purchase a property. As ones’ disposable income increases it raises the household threshold income and ability to purchase or rent the ability to live in more expensive and better-quality apartments. The announcement of Sikorsky to stay and an increase of its labor force to about 8,000 employees from its approximate 7,000 level adds a level of economic stability to the region. It also insures retention of the existing labor force, subcontractors, and disposable income levels. In addition, United technologies has recently announced that it will increase its Pratt & Whitney aircraft engine division employment due to new contracts. The same holds true for Electric boat in Groton, CT who announced a major submarine contract and an increase in employment. This additional employment will positively impact their current subcontractors and related service industries.

The subject property is about 6 miles from Sikorsky Aircraft or about 10-20-minute drive time to Sikorsky Aircraft. A major employer such as Sikorsky has a positive impact on the proposed apartment development due to its proximity to a major employer and surrounding labor nodes.

Regional Data

The focus of this analysis is Trumbull, Connecticut (CT) which is in Fairfield County and the Fairfield Metropolitan Statistical Area (MSA). Trumbull is impacted more directly by its economic region than the entire state. While in Fairfield County, studying the MSA/County is a more meaningful.

Fairfield County – Metropolitan Statistical Area

REALTY CONCEPTS INC

Demographic and Income Profile

Fairfield County, CT
Fairfield County, CT (09001)
Geography: County

Realty Concepts, Inc.

Summary	Census 2010	2019	2024
Population	916,829	957,198	980,062
Households	335,545	345,798	352,925
Families	232,896	237,810	241,936
Average Household Size	2.68	2.71	2.72
Owner Occupied Housing Units	230,167	225,989	233,015
Renter Occupied Housing Units	105,378	119,809	119,910
Median Age	39.4	40.7	41.5
Trends: 2019 - 2024 Annual Rate	**Area**	**State**	**National**
Population	0.47%	0.16%	0.77%
Households	0.41%	0.12%	0.75%
Families	0.34%	0.06%	0.68%
Owner HHs	0.61%	0.40%	0.92%
Median Household Income	2.08%	1.54%	2.70%

	2019		2024	
Households by Income	Number	Percent	Number	Percent
<$15,000	24,993	7.2%	21,151	6.0%
$15,000 - $24,999	20,867	6.0%	18,057	5.1%
$25,000 - $34,999	21,821	6.3%	20,545	5.8%
$35,000 - $49,999	32,928	9.5%	31,674	9.0%
$50,000 - $74,999	46,116	13.3%	45,348	12.8%
$75,000 - $99,999	34,893	10.1%	35,095	9.9%
$100,000 - $149,999	58,130	16.8%	60,433	17.1%
$150,000 - $199,999	33,721	9.8%	39,267	11.1%
$200,000+	72,326	20.9%	81,352	23.1%
Median Household Income	$92,565		$102,597	
Average Household Income	$142,161		$156,529	
Per Capita Income	$51,427		$56,435	

	Census 2010		2019		2024	
Population by Age	Number	Percent	Number	Percent	Number	Percent
0 - 4	56,899	6.2%	52,516	5.5%	54,104	5.5%
5 - 9	62,907	6.9%	59,549	6.2%	58,318	6.0%
10 - 14	66,606	7.3%	67,936	7.1%	63,135	6.4%
15 - 19	62,192	6.8%	64,965	6.8%	63,327	6.5%
20 - 24	50,516	5.5%	54,932	5.7%	52,968	5.4%
25 - 34	106,063	11.6%	110,948	11.6%	117,233	12.0%
35 - 44	131,246	14.3%	118,505	12.4%	125,915	12.8%
45 - 54	149,286	16.3%	135,628	14.2%	127,996	13.1%
55 - 64	107,039	11.7%	132,729	13.9%	133,562	13.6%
65 - 74	62,341	6.8%	89,207	9.3%	101,934	10.4%
75 - 84	41,272	4.5%	46,499	4.9%	57,224	5.8%
85+	20,462	2.2%	23,784	2.5%	24,346	2.5%

	Census 2010		2019		2024	
Race and Ethnicity	Number	Percent	Number	Percent	Number	Percent
White Alone	685,900	74.8%	675,011	70.5%	666,864	68.0%
Black Alone	99,317	10.8%	113,626	11.9%	121,004	12.3%
American Indian Alone	2,384	0.3%	2,759	0.3%	3,027	0.3%
Asian Alone	42,284	4.6%	55,284	5.8%	63,783	6.5%
Pacific Islander Alone	442	0.0%	424	0.0%	421	0.0%
Some Other Race Alone	62,474	6.8%	79,297	8.3%	90,653	9.2%
Two or More Races	24,028	2.6%	30,797	3.2%	34,310	3.5%
Hispanic Origin (Any Race)	155,025	16.9%	200,056	20.9%	229,703	23.4%

Data Note: Income is expressed in current dollars.

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024.

April 26, 2020

Community Data- Trumbull CT

Trumbull is an incorporated town in south western Connecticut. It is a community that is located in Fairfield County Connecticut and is a regional bedroom community to Stamford and other Connecticut employment nodes and New York City. Trumbull is flanked on the east by Shelton and Stratford and on the west by Easton, to the north by Monroe and to the south Bridgeport. Trumbull enjoys the influences of an upscale and middle-class community.

Trumbull's close proximity to Stamford and Norwalk, two major employment nodes, makes Trumbull one of the more desirable places to reside in the Fairfield area. Trumbull enjoys access to I-95 via CT RT 25 to the south and is accessed by CT routes 15, two major state roads. Limited bus service is available to Trumbull.

Study Municipality- Trumbull CT

TRUMBULL TOWN PROFILE-CERC

Trumbull, Connecticut

CERC Town Profile 2019 *Produced by Connecticut Data Collaborative*

Town Hall
5866 Main Street
Trumbull, CT 06611
(203) 452-5006

Belongs To
Fairfield County
LMA Bridgeport - Stamford
Metropolitan Planning Area

Incorporated in 1797

Demographics

Population

	Town	County	State
2000	34,243	882,567	3,405,565
2010	36,018	916,829	3,574,097
2013-2017	36,455	947,328	3,594,478
2020	35,389	944,692	3,604,591
'17 - '20 Growth / Yr	-1.0%	-0.1%	0.1%

	Town	County	State
Land Area (sq. miles)	23	625	4,842
Pop./Sq. Mile (2013-2017)	1,563	1,516	742
Median Age (2013-2017)	44	40	41
Households (2013-2017)	12,383	337,678	1,361,755
Med. HH Inc. (2013-2017)	$115,346	$89,773	$73,781

	Town	State
Veterans (2013-2017)	1,673	180,111

Race/Ethnicity (2013-2017)

	Town	County	State
White Non-Hisp	28,778	595,323	2,446,049
Black Non-Hisp	1,549	98,931	350,820
Asian Non-Hisp	2,221	48,421	154,910
Native American Non-Hisp	54	1,372	5,201
Other/Multi-Race Non-Hisp	796	22,631	84,917
Hispanic or Latino	3,057	180,379	551,916

	Town	County	State
Poverty Rate (2013-2017)	1.9%	8.8%	10.1%

Educational Attainment (2013-2017)

	Town		State	
High School Graduate	4,970	20%	673,582	27%
Associates Degree	1,581	6%	188,481	8%
Bachelors or Higher	13,118	53%	953,199	38%

Age Distribution (2013-2017)

	0-4		5-14		15-24		25-44		45-64		65+		Total	
Town	1,898	5%	5,209	14%	4,466	12%	7,508	21%	10,562	29%	6,812	19%	36,455	100%
County	53,055	6%	125,776	13%	126,096	13%	229,587	24%	271,888	29%	140,926	15%	947,328	100%
State	186,188	5%	432,367	12%	495,626	14%	872,640	24%	1,031,900	29%	575,757	16%	3,594,478	100%

Economics

Business Profile (2018)

Sector	Units	Employment
Total - All Industries	1,102	15,687
23 - Construction	87	263
31-33 - Manufacturing	20	952
44-45 - Retail Trade	149	2,762
62 - Health Care and Social Assistance	146	3,483
72 - Accommodation and Food Services	64	1,156
Total Government	21	1,528

Top Five Grand List (2018)

	Amount
TRUMBULL SHOPPING CENTER #2 LLC	$209,214,250
DIGITAL 60 & 80 MERRITT LLC	$117,085,010
RDR 5520 LLC	$89,635,609
PAR OLD TOWN LLC	$44,417,040
UNITED ILLUMINATING CO THE	$38,588,140
Net Grand List (SFY 2016-2017)	$4,593,861,277

Major Employers (2018)

Westfield Trumbull Mall
Kennedy Center
Cooper Surgical
St. Joseph's Manor
Unilever

Education

2018-2019 School Year

	Grades	Enrollment
Trumbull School District	PK-12	6744

Smarter Balanced Test Percent Above Goal (2017-2018)

	Grade 3		Grade 4		Grade 8	
	Town	State	Town	State	Town	State
Math	81.4%	53.8%	78.1%	51.3%	73.4%	43.0%
ELA	77.1%	53.1%	79.3%	54.9%	81.5%	56.1%

Pre-K Enrollment (PSIS)

	2018-2019
Trumbull School District	225

4-Year Cohort Graduation Rate (2017-2018)

	All	Female	Male
Connecticut	88.3%	91.8%	85.1%
Trumbull School District	96.8%	97.7%	95.8%

Rate of Chronic Absenteeism (2017-2018)

	All
Connecticut	10.7%
Trumbull School District	4.3%

Public vs Private Enrollment (2013-2017)

	Town	County	State
Public	86.2%	82.2%	86.8%
Private	13.8%	17.8%	13.2%

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TRUMBULL TOWN PROFILE (continued)

Trumbull, Connecticut

CERC Town Profile 2019

Connecticut Economic Resource Center

Government

Government Form: Selectmen - Council

Total Revenue (2017)	$186,347,723	Total Expenditures (2017)	$185,387,384	Annual Debt Service (2017)	$12,999,020
Tax Revenue	$151,077,232	Education	$124,252,763	As % of Expenditures	7.0%
Non-tax Revenue	$35,270,491	Other	$61,134,621	Eq. Net Grand List (2017)	$6,564,257,539
Intergovernmental	$28,075,150	Total Indebtedness (2017)	$90,114,460	Per Capita	$181,564
Per Capita Tax (2017)	$4,147	As % of Expenditures	48.6%	As % of State Average	120.3%
As % of State Average	141.5%	Per Capita	$2,493	Moody's Bond Rating (2017)	Aa2
		As % of State Average	99.2%	Actual Mill Rate (2017)	32.74
				Equalized Mill Rate (2017)	22.84
				% of Net Grand List Com/Ind (2017)	18.8%

Housing/Real Estate

Housing Stock (2013-2017)

	Town	County	State
Total Units	12,898	369,044	1,507,711
% Single Unit (2013-2017)	86.3%	58.0%	59.2%
New Permits Auth (2017)	6	1,719	4,547
As % Existing Units	0.0%	0.5%	0.3%
Demolitions (2017)	3	538	1,403
Home Sales (2017)	415	5,187	21,880
Median Price	$394,600	$417,800	$270,100
Built Pre-1950 share	18.2%	29.0%	29.3%
Owner Occupied Dwellings	10,860	228,666	906,798
As % Total Dwellings	87.7%	67.7%	66.6%
Subsidized Housing (2018)	592	34,037	167,879

Distribution of House Sales (2017)

	Town	County	State
Less than $100,000	0	34	536
$100,000-$199,999	0	343	5,237
$200,000-$299,999	67	749	6,681
$300,000-$399,999	156	865	3,863
$400,000 or More	192	3,196	5,563

Rental (2013-2017)

	Town	County	State
Median Rent	$1,782	$1,439	$1,123
Cost-burdened Renters	57.8%	54.6%	52.3%

Labor Force

	Town	County	State
Residents Employed	17,315	461,750	1,827,070
Residents Unemployed	675	19,017	78,242
Unemployment Rate	3.8%	4.0%	4.1%
Self-Employed Rate	11.8%	13.0%	10.0%
Total Employers	1,102	36,389	122,067
Total Employed	15,687	420,674	1,673,867

Connecticut Commuters (2015)

Commuters Into Town From:		Town Residents Commuting To:	
Bridgeport, CT	2,747	Bridgeport, CT	1,991
Trumbull, CT	1,724	Trumbull, CT	1,724
Stratford, CT	1,073	Fairfield, CT	1,417
Shelton, CT	854	Stamford, CT	1,329
Milford, CT	640	Norwalk, CT	1,155
Monroe, CT	546	Shelton, CT	870
Fairfield, CT	506	Stratford, CT	827

Quality of Life

Crime Rates (per 100,000 residents) (2017)

	Town	State
Property	2,353	1,777
Violent	153	228

Disengaged Youth (2013-2017)

	Town	State
Female	0.0%	4.2%
Male	1.5%	5.6%

	Town
Library circulation per capita	12.22

Distance to Major Cities

	Miles
Hartford	44
New York City	56
Providence	100
Boston	135
Montreal	296

Residential Utilities

Electric Provider
Eversource Energy
(800) 286-2000

Gas Provider
Eversource Energy
(800) 989-0900

Water Provider
Metropolitan District Commission (MDC)
(860) 278-7850

Cable Provider
Comcast Hartford
(800) 266-2278

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TRUMBULL TOWN PROFILE (continued)

The current 2019 and 2024 forecasted Trumbull households will remain stsic the next five years resulting in a static increase in the number of households. Household size will remain about the same 2.83 persons remaining static over the next five years. The preponderance of household incomes are $50,000 per year to over $200,000 per year with the average household income of $162,619 in 2019 increasing to about 178,333 in 2024.

REALTY CONCEPTS INC

Demographic and Income Profile

Trumbull town, CT 2
Trumbull town, CT (0900177200)
Geography: County Subdivision

Realty Concepts, Inc.

Summary	Census 2010	2019	2024
Population	36,018	35,985	36,104
Households	12,725	12,536	12,528
Families	9,928	9,754	9,744
Average Household Size	2.79	2.83	2.84
Owner Occupied Housing Units	11,179	10,877	10,974
Renter Occupied Housing Units	1,546	1,659	1,554
Median Age	43.8	46.4	46.9
Trends: 2019 - 2024 Annual Rate	**Area**	**State**	**National**
Population	0.07%	0.16%	0.77%
Households	-0.01%	0.12%	0.75%
Families	-0.02%	0.06%	0.68%
Owner HHs	0.18%	0.40%	0.92%
Median Household Income	1.99%	1.54%	2.70%

	2019		2024	
Households by Income	Number	Percent	Number	Percent
<$15,000	469	3.7%	374	3.0%
$15,000 - $24,999	498	4.0%	407	3.2%
$25,000 - $34,999	635	5.1%	568	4.5%
$35,000 - $49,999	809	6.5%	740	5.9%
$50,000 - $74,999	1,215	9.7%	1,108	8.8%
$75,000 - $99,999	1,257	10.0%	1,159	9.3%
$100,000 - $149,999	2,632	21.0%	2,534	20.2%
$150,000 - $199,999	1,940	15.5%	2,146	17.1%
$200,000+	3,081	24.6%	3,492	27.9%
Median Household Income	$121,174		$133,703	
Average Household Income	$160,615		$178,333	
Per Capita Income	$55,982		$61,909	

	Census 2010		2019		2024	
Population by Age	Number	Percent	Number	Percent	Number	Percent
0 - 4	1,883	5.2%	1,646	4.6%	1,684	4.7%
5 - 9	2,650	7.4%	2,049	5.7%	1,985	5.5%
10 - 14	2,964	8.2%	2,545	7.1%	2,225	6.2%
15 - 19	2,328	6.5%	2,592	7.2%	2,216	6.1%
20 - 24	1,441	4.0%	1,814	5.0%	1,733	4.8%
25 - 34	2,481	6.9%	3,166	8.8%	3,595	10.0%
35 - 44	4,940	13.7%	3,479	9.7%	3,845	10.6%
45 - 54	6,388	17.7%	5,344	14.9%	4,583	12.7%
55 - 64	4,356	12.1%	5,711	15.9%	5,624	15.6%
65 - 74	2,869	8.0%	3,711	10.3%	4,346	12.0%
75 - 84	2,357	6.5%	2,369	6.6%	2,695	7.5%
85+	1,361	3.8%	1,559	4.3%	1,573	4.4%

	Census 2010		2019		2024	
Race and Ethnicity	Number	Percent	Number	Percent	Number	Percent
White Alone	32,424	90.0%	31,203	86.7%	30,519	84.5%
Black Alone	1,126	3.1%	1,449	4.0%	1,653	4.6%
American Indian Alone	21	0.1%	25	0.1%	27	0.1%
Asian Alone	1,573	4.4%	2,113	5.9%	2,491	6.9%
Pacific Islander Alone	3	0.0%	3	0.0%	4	0.0%
Some Other Race Alone	405	1.1%	569	1.6%	703	1.9%
Two or More Races	466	1.3%	623	1.7%	707	2.0%
Hispanic Origin (Any Race)	2,068	5.7%	2,927	8.1%	3,571	9.9%

Data Note: Income is expressed in current dollars.

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024.

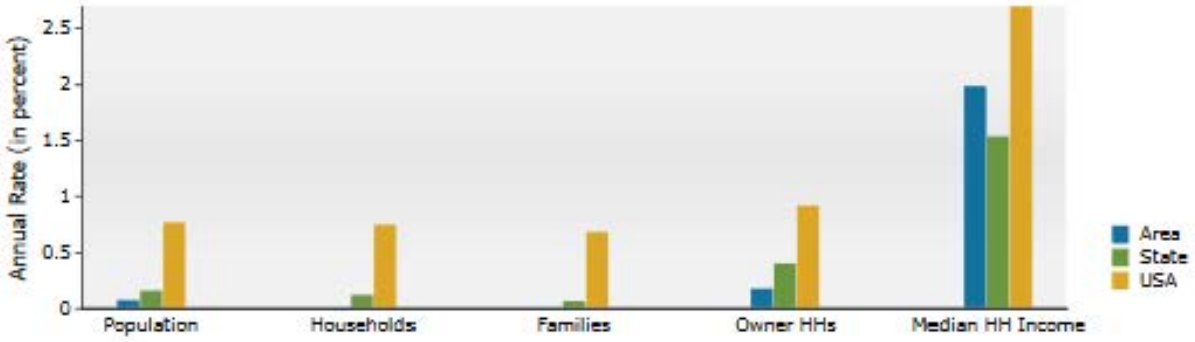
April 26, 2020

Demographic and Income Profile

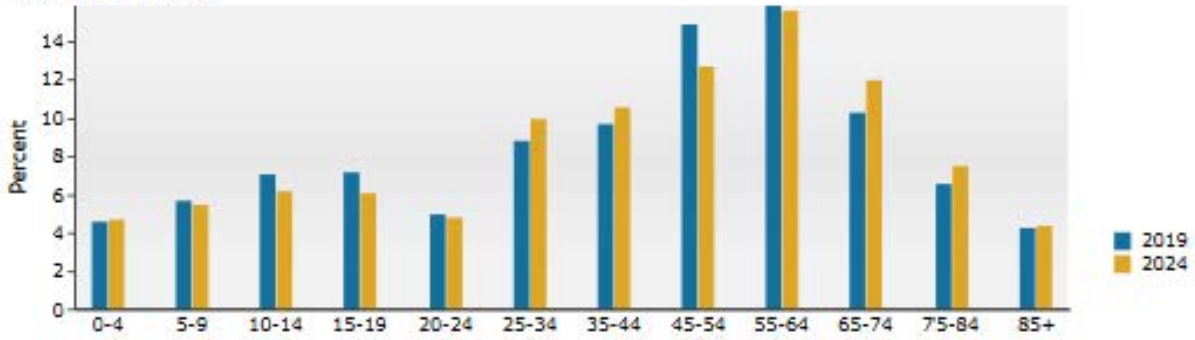
Trumbull town, CT 2
Trumbull town, CT (0900177200)
Geography: County Subdivision

Realty Concepts, Inc.

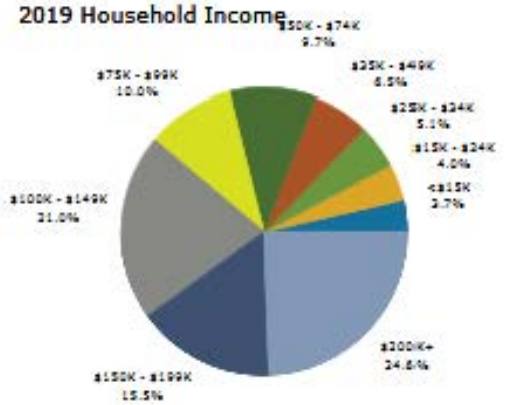
Trends 2019-2024



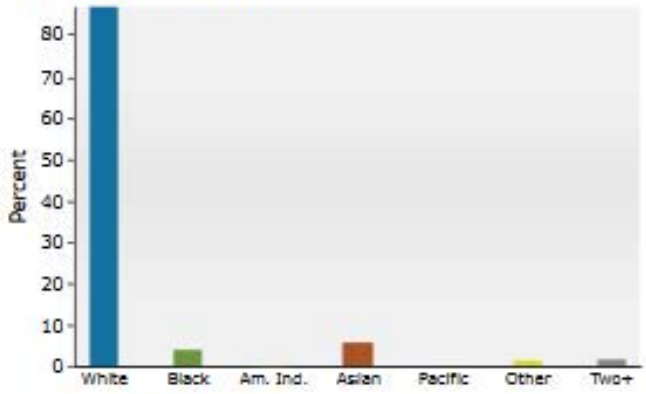
Population by Age



2019 Household Income



2019 Population by Race



2019 Percent Hispanic Origin: 8.1%

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024.

April 26, 2020

Housing Demographics

The following data has been developed for Trumbull CT. This chart indicates the predominant property value ranges for Trumbull.

REALTY CONCEPTS INC

Housing Profile

Trumbull town, CT 2
Trumbull town, CT (0900177200)
Geography: County Subdivision

Realty Concepts, Inc.

Population		Households	
2010 Total Population	36,018	2019 Median Household Income	$121,174
2019 Total Population	35,985	2024 Median Household Income	$133,703
2024 Total Population	36,104	2019-2024 Annual Rate	1.99%
2019-2024 Annual Rate	0.07%		

	Census 2010		2019		2024	
Housing Units by Occupancy Status and Tenure	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Total Housing Units	13,157	100.0%	13,218	100.0%	13,267	100.0%
Occupied	12,725	96.7%	12,536	94.8%	12,528	94.4%
Owner	11,179	85.0%	10,877	82.3%	10,974	82.7%
Renter	1,546	11.8%	1,659	12.6%	1,554	11.7%
Vacant	432	3.3%	682	5.2%	739	5.6%

	2019		2024	
Owner Occupied Housing Units by Value	**Number**	**Percent**	**Number**	**Percent**
Total	10,877	100.0%	10,974	100.0%
<$50,000	94	0.9%	57	0.5%
$50,000-$99,999	2	0.0%	1	0.0%
$100,000-$149,999	29	0.3%	16	0.1%
$150,000-$199,999	203	1.9%	124	1.1%
$200,000-$249,999	489	4.5%	319	2.9%
$250,000-$299,999	633	5.8%	434	4.0%
$300,000-$399,999	3,983	36.6%	3,822	34.8%
$400,000-$499,999	2,487	22.9%	2,453	22.4%
$500,000-$749,999	2,249	20.7%	2,765	25.2%
$750,000-$999,999	513	4.7%	693	6.3%
$1,000,000-$1,499,999	163	1.5%	241	2.2%
$1,500,000-$1,999,999	15	0.1%	22	0.2%
$2,000,000+	17	0.2%	27	0.2%
Median Value	$400,221		$429,107	
Average Value	$456,164		$491,423	

Census 2010 Housing Units	**Number**	**Percent**
Total	13,157	100.0%
In Urbanized Areas	13,156	100.0%
In Urban Clusters	0	0.0%
Rural Housing Units	1	0.0%

Data Note: Persons of Hispanic Origin may be of any race.
Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024.

April 26, 2020

TRUMBULL TOWN PROFILE (continued)

The following data indicates the majority of new single-family homes were built 1950 to 2009. The US economic crisis began in October 2007. The decline in construction since 2009 reflects the impact of the financial crisis and that the market has not fully recovered as of this date.

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ACS Housing Summary

Trumbull town, CT 2
Trumbull town, CT (0900177200)
Geography: County Subdivision

Realty Concepts, Inc.

	2014-2018 ACS Estimate	Percent	MOE(±)	Reliability
RENTER-OCCUPIED HOUSING UNITS BY CONTRACT RENT				
Total	1,644	100.0%	251	high
With cash rent	1,459	88.7%	225	high
Less than $100	0	0.0%	26	
$100 to $149	0	0.0%	26	
$150 to $199	8	0.5%	12	low
$200 to $249	9	0.5%	13	low
$250 to $299	6	0.4%	10	low
$300 to $349	48	2.9%	42	low
$350 to $399	32	1.9%	23	low
$400 to $449	7	0.4%	13	low
$450 to $499	12	0.7%	17	low
$500 to $549	9	0.5%	14	low
$550 to $599	8	0.5%	14	low
$600 to $649	0	0.0%	26	
$650 to $699	0	0.0%	26	
$700 to $749	15	0.9%	18	low
$750 to $799	8	0.5%	14	low
$800 to $899	11	0.7%	17	low
$900 to $999	35	2.1%	32	low
$1,000 to $1,249	168	10.2%	83	medium
$1,250 to $1,499	221	13.4%	138	medium
$1,500 to $1,999	358	21.8%	139	medium
$2,000 to $2,499	381	23.2%	128	medium
$2,500 to $2,999	69	4.2%	53	low
$3,000 to $3,499	40	2.4%	39	low
$3,500 or more	14	0.9%	24	low
No cash rent	185	11.3%	88	medium
Median Contract Rent	$1,685		$177	high
Average Contract Rent	$1,705		$398	medium
RENTER-OCCUPIED HOUSING UNITS BY INCLUSION OF UTILITIES IN RENT				
Total	1,644	100.0%	251	high
Pay extra for one or more utilities	1,334	81.1%	205	high
No extra payment for any utilities	310	18.9%	146	medium

Source: U.S. Census Bureau, 2014-2018 American Community Survey

Reliability: high medium low

April 26, 2020

REALTY CONCEPTS INC

ACS Housing Summary

Trumbull town, CT 2
Trumbull town, CT (0900177200)
Geography: County Subdivision

Realty Concepts, Inc.

	2014-2018 ACS Estimate	Percent	MOE(±)	Reliability
RENTER-OCCUPIED HOUSING UNITS BY GROSS RENT				
Total:	1,644	100.0%	251	high
With cash rent:	1,459	88.7%	225	high
Less than $100	0	0.0%	26	
$100 to $149	0	0.0%	26	
$150 to $199	0	0.0%	26	
$200 to $249	0	0.0%	26	
$250 to $299	0	0.0%	26	
$300 to $349	24	1.5%	36	low
$350 to $399	14	0.9%	16	low
$400 to $449	24	1.5%	23	low
$450 to $499	24	1.5%	19	low
$500 to $549	8	0.5%	14	low
$550 to $599	21	1.3%	22	low
$600 to $649	17	1.0%	19	low
$650 to $699	0	0.0%	26	
$700 to $749	7	0.4%	13	low
$750 to $799	9	0.5%	14	low
$800 to $899	19	1.2%	22	low
$900 to $999	18	1.1%	24	low
$1,000 to $1,249	85	5.2%	51	medium
$1,250 to $1,499	153	9.3%	92	medium
$1,500 to $1,999	322	19.6%	126	medium
$2,000 to $2,499	456	27.7%	151	medium
$2,500 to $2,999	152	9.2%	69	medium
$3,000 to $3,499	92	5.6%	62	low
$3,500 or more	14	0.9%	24	low
No cash rent	185	11.3%	88	medium
Median Gross Rent	$1,976		$169	high
Average Gross Rent	$1,898		$433	medium

Source: U.S. Census Bureau, 2014-2018 American Community Survey

Reliability: high medium low

April 26, 2020

TRUMBULL TOWN PROFILE (continued)

The age profile below, indicates a current median age of 46.4 years and in about five years the median age will increase to about 46.9. This is significant in determining the type and style residential single-family homes and apartments in the community. In addition the current average household size of 2.83 persons per household will remain static for the next five years.. This is important in determining the number of bedrooms in demand for single-family and multifamily development.

REALTY CONCEPTS INC

Detailed Age Profile

Trumbull town, CT 2
Trumbull town, CT (0900177200)
Geography: County Subdivision

Realty Concepts, Inc.

Summary	Census 2010	2019	2024	2019-2024 Change	2019-2024 Annual Rate
Population	36,018	35,985	36,104	119	0.07%
Households	12,725	12,536	12,528	-8	-0.01%
Average Household Size	2.79	2.83	2.84	0.01	0.07%

	Census 2010		2019		2024	
Total Population by Detailed Age	Number	Percent	Number	Percent	Number	Percent
Total	36,018	100.0%	35,985	100.0%	36,104	100.0%
<1	272	0.8%	259	0.7%	265	0.7%
1	334	0.9%	301	0.8%	313	0.9%
2	383	1.1%	328	0.9%	340	0.9%
3	435	1.2%	370	1.0%	375	1.0%
4	459	1.3%	388	1.1%	391	1.1%
5	492	1.4%	380	1.1%	372	1.0%
6	551	1.5%	414	1.2%	406	1.1%
7	482	1.3%	380	1.1%	367	1.0%
8	544	1.5%	418	1.2%	408	1.1%
9	581	1.6%	457	1.3%	432	1.2%
10	557	1.5%	481	1.3%	424	1.2%
11	607	1.7%	513	1.4%	445	1.2%
12	565	1.6%	499	1.4%	432	1.2%
13	638	1.8%	539	1.5%	471	1.3%
14	597	1.7%	513	1.4%	453	1.3%
15	584	1.6%	606	1.7%	508	1.4%
16	564	1.6%	583	1.6%	492	1.4%
17	597	1.7%	634	1.8%	543	1.5%
18	354	1.0%	437	1.2%	376	1.0%
19	229	0.6%	332	0.9%	297	0.8%
20 - 24	1,441	4.0%	1,814	5.0%	1,733	4.8%
25 - 29	1,151	3.2%	1,627	4.5%	1,735	4.8%
30 - 34	1,330	3.7%	1,539	4.3%	1,860	5.2%
35 - 39	2,108	5.9%	1,612	4.5%	1,938	5.4%
40 - 44	2,832	7.9%	1,867	5.2%	1,907	5.3%
45 - 49	3,278	9.1%	2,534	7.0%	2,021	5.6%
50 - 54	3,110	8.6%	2,810	7.8%	2,562	7.1%
55 - 59	2,400	6.7%	3,095	8.6%	2,759	7.6%
60 - 64	1,956	5.4%	2,616	7.3%	2,865	7.9%
65 - 69	1,592	4.4%	2,055	5.7%	2,480	6.9%
70 - 74	1,277	3.5%	1,656	4.6%	1,866	5.2%
75 - 79	1,275	3.5%	1,337	3.7%	1,560	4.3%
80 - 84	1,082	3.0%	1,032	2.9%	1,135	3.1%
85+	1,361	3.8%	1,559	4.3%	1,573	4.4%
<18	9,242	25.7%	8,063	22.4%	7,437	20.6%
18+	26,776	74.3%	27,922	77.6%	28,667	79.4%
21+	25,961	72.1%	26,795	74.5%	27,654	76.6%
Median Age	43.8		46.4		46.9	

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2019 and 2024.

April 26, 2020

Benchmark Demographics

Trumbull town, CT

Generations	Trumbull town, CT	Counties Fairfield County	States Connecticut	Whole country United States
Generation Alpha (Aged 0-2)	888	30,721	108,126	11,878,592
Generation Z (Aged 3-20)	8,302	225,780	789,250	75,183,219
Millennial (Aged 21-37)	5,891	201,334	810,727	81,653,325
Generation X (Aged 38-54)	7,554	207,144	752,475	65,727,896
Baby Boomer (Aged 55-73)	9,117	214,979	862,161	73,094,488
Silent & Greatest (Aged 73 or more)	4,233	77,240	310,144	24,880,273

Household Income	Trumbull town, CT	Counties Fairfield County	States Connecticut	Whole country United States
<$15,000	3.7%	7.2%	8.1%	10.7%
$15,000-$24,999	4.0%	6.0%	6.9%	9.0%
$25,000-$34,999	5.1%	6.3%	7.4%	8.9%
$35,000-$49,999	6.5%	9.5%	11.1%	12.4%
$50,000-$74,999	9.7%	13.3%	16.2%	17.5%
$75,000-$99,999	10.0%	10.1%	12.6%	12.6%
$100,000-$149,999	21.0%	16.8%	17.1%	15.1%
$150,000-$199,999	15.5%	9.8%	8.9%	6.5%
$200,000+	24.6%	20.9%	11.7%	7.3%

Key Facts	Trumbull town, CT	Counties Fairfield County	States Connecticut	Whole country United States
Population	35,985	957,198	3,632,883	332,417,793
Daytime Population	34,105	970,009	3,601,125	330,484,536
Employees	18,313	492,998	1,874,318	160,548,951
Households	12,536	345,798	1,386,447	125,168,557
Average HH Size	2.83	2.71	2.54	2.59
Median Age	46.4	40.7	41.5	38.5
Housing Facts				
Median Home Value	400,221	434,070	273,477	234,154
Owner Occupied %	86.8%	65.3%	65.6%	63.5%
Renter Occupied %	13.2%	34.6%	34.4%	36.5%
Total Housing Units	13,218	375,335	1,523,913	140,954,564
Income Facts				
Median HH Income	$121,174	$92,565	$75,402	$60,548
Per Capita Income	$55,982	$51,427	$41,489	$33,028
Median Net Worth	$1,001,065	$276,400	$188,042	$109,495

CCIM Institute
Commercial Real Estate's Global Standard for Professional Achievement

Based on ideas by Gary M. Ralston, CCIM, SIOR, CPM, CRE, CLS, CDP, CRX, FRICS
Coldwell Banker Commercial Saunders Ralston Dantzler Realty

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2018 and 2023

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Benchmark Demographics

Trumbull town, CT

Occupation by Industry	Trumbull town, CT	Counties Fairfield County	States Connecticut	Whole country United States
Ag/Forestry/Fishing	0.2%	0.2%	0.3%	1.2%
Mining/Oil & Gas	0.1%	0.1%	0.1%	0.5%
Construction	6.3%	7.3%	6.4%	7.0%
Manufacturing	8.8%	8.2%	10.5%	10.0%
Wholesale Trade	1.9%	2.0%	2.0%	2.6%
Retail Trade	9.7%	9.8%	10.3%	10.7%
Transport & Warehousing	2.6%	3.7%	4.1%	4.9%
Utilities	1.6%	0.6%	0.9%	0.8%
Information	2.4%	2.8%	2.3%	2.0%
Finance & Insurance	9.2%	9.0%	6.9%	4.6%
Real Estate & Leasing	1.4%	2.3%	1.7%	2.0%
Prof & Technical Services	10.4%	9.5%	7.0%	7.3%
Management of Companies	0.3%	0.3%	0.2%	0.1%
Admin & Waste Mgmt	3.0%	4.8%	3.6%	3.8%
Educational Services	10.7%	8.3%	10.0%	9.1%
Health Care & Social Assist	15.9%	14.6%	16.6%	14.1%
Arts/Entertainment/Recreation	2.6%	2.8%	2.8%	2.1%
Accom & Food Services	3.7%	5.6%	5.7%	7.3%
Other Services	5.1%	5.5%	4.9%	5.1%
Public Administration	4.0%	2.5%	3.9%	4.9%

Occupation by Industry	Trumbull town, CT	Counties Fairfield County	States Connecticut	Whole country United States
Ag/Forestry/Fishing	39	1,127	6,149	1,915,709
Mining/Oil & Gas	27	372	1,295	819,151
Construction	1,148	36,098	119,216	11,245,975
Manufacturing	1,619	40,314	196,865	16,057,876
Wholesale Trade	347	10,085	38,346	4,183,931
Retail Trade	1,774	48,507	192,770	17,127,172
Transportation & Warehousing	482	18,313	76,027	7,876,848
Utilities	288	3,085	16,171	1,276,400
Information	440	13,604	42,608	3,157,650
Finance & Insurance	1,686	44,459	129,580	7,377,311
Real Estate & Leasing	261	11,433	31,686	3,204,043
Prof & Tech Services	1,907	47,009	130,859	11,744,228
Management of Companies	54	1,410	2,970	237,307
Admin & Waste Mgmt	545	23,835	67,941	6,106,184
Educational Services	1,965	40,725	186,841	14,565,802
Health Care & Social Assist	2,910	71,768	310,583	22,612,482
Arts/Entertainment/Recreation	474	13,947	52,955	3,332,132
Accom & Food Services	672	27,591	105,829	11,738,765
Other Services	940	26,856	91,946	8,141,078
Public Administration	735	12,460	73,681	7,828,907

CCIM Institute
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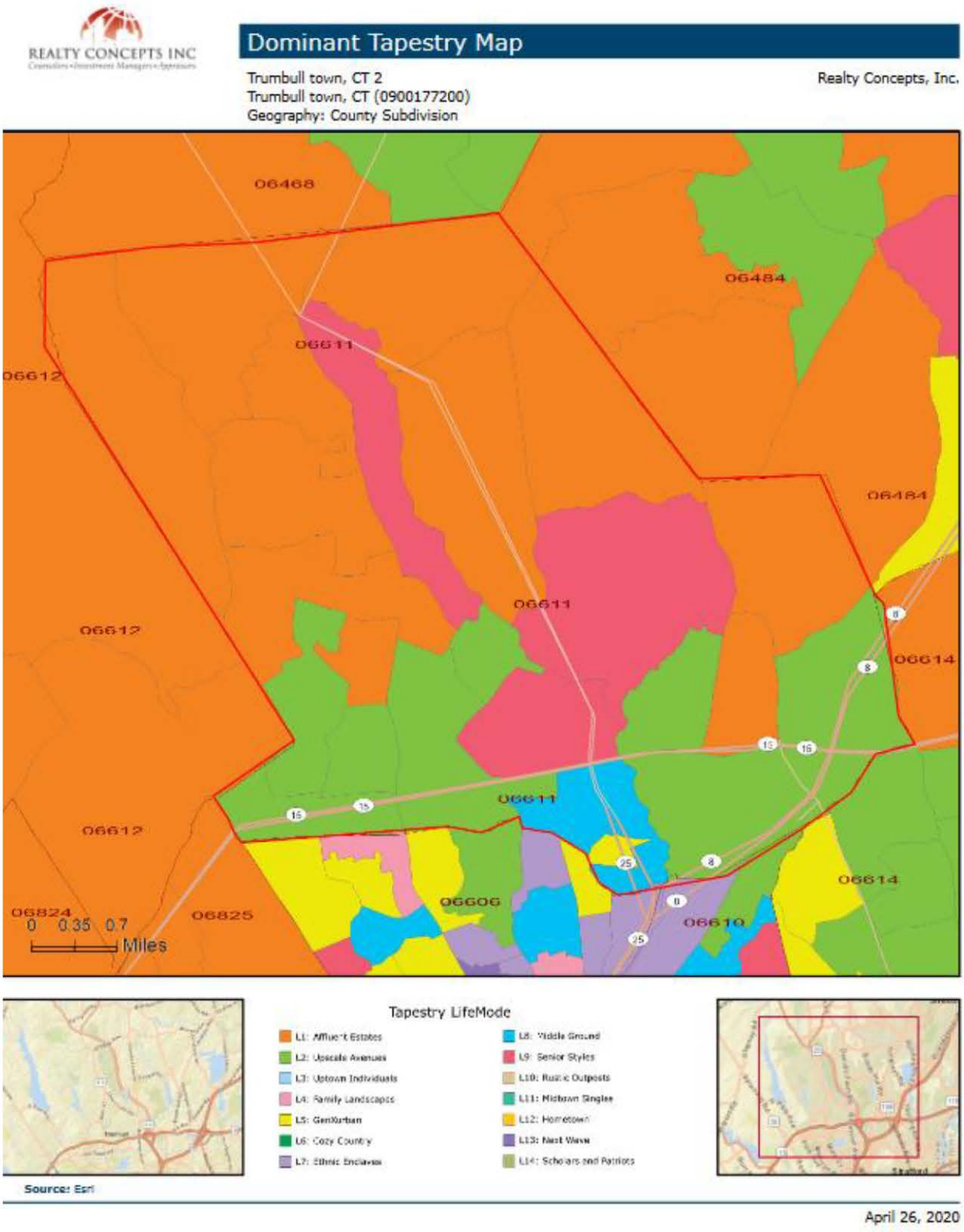
Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2018 and 2023

REALTY CONCEPTS INC

Tapestry Segmentation- Lifestyle Profile

Lifestyle plays an important role in determining residential demand. Following is a current lifestyle profile of Trumbull. Trumbull has eight predominant lifestyle segments which are analyzed below.



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Tapestry Segmentation Area Profile

Trumbull town, CT
Trumbull town, CT (0900177200)
Geography: County Subdivision

Realty Concepts, Inc.

Top Twenty Tapestry Segments

		2018 Households		2018 U.S. Households		
			Cumulative		Cumulative	
Rank	Tapestry Segment	Percent	Percent	Percent	Percent	Index
1	Pleasantville (2B)	29.5%	29.5%	2.2%	2.2%	1348
2	Golden Years (9B)	17.0%	46.5%	1.3%	3.5%	1,270
3	Exurbanites (1E)	15.8%	62.3%	1.9%	5.4%	815
4	Top Tier (1A)	14.9%	77.2%	1.7%	7.1%	875
5	Savvy Suburbanites (1D)	14.6%	91.8%	3.0%	10.1%	492
	Subtotal	**91.8%**		**10.1%**		
6	Bright Young Professionals (8C)	4.2%	96.0%	2.2%	12.3%	186
7	Professional Pride (1B)	4.0%	100.0%	1.6%	13.9%	246
	Subtotal	**8.2%**		**3.8%**		

Trumbull is comprised of seven lifestyle segments. As demonstrated below, each segment far exceeds the US average. The two largest segments are Pleasantville (29.5%) and in Golden Years (17.1%), totaling 46.6% of the current residence in Trumbull., Pleasantville has a net worth of $339,900 and income of $92,900 with about 16.9% who rent. Golden Years have a net worth of $184,000 and income of $71,700 with 37.3% who rent. Exurbanites segment is 15.8% with a median net worth of $505,400 and income of $103,400 followed by Top Tier 14.9 percent with a median net worth of $577,500 and income of $173,200 with 9.0% who rent and Savvy Suburbanites with $518,100 median net worth and income of $108,700 with a 9.45 who rent. Bright Young Professionals have a net worth of $34,200 and income of $54,000 with 57.2% who rent. Professional Pride has a net worth of $551,800 and income of $138,100 with 8.4% who rent. This indicates based on income levels only, that purchasing power for some high quality, upper end housing exists in Trumbull. That moderately priced units would do well also.

LifeMode Group: Upscale Avenues

Pleasantville

2B

Households: 2,718,100

Average Household Size: 2.88

Median Age: 42.6

Median Household Income: $92,900

WHO ARE WE?

Prosperous domesticity best describes the settled denizens of *Pleasantville*. Situated principally in older housing in suburban areas in the Northeast (especially in New York and New Jersey) and secondarily in the West (especially in California), these slightly older couples move less than any other market. Many couples have already transitioned to empty nesters; many are still home to adult children. Families own older, single-family homes and maintain their standard of living with dual incomes. These consumers have higher incomes and home values and much higher net worth (Index 364). Older homes require upkeep; home improvement and remodeling projects are a priority—preferably done by contractors. Residents spend their spare time participating in a variety of sports or watching movies. They shop online and in a variety of stores, from upscale to discount, and use the Internet largely for financial purposes.

TAPESTRY SEGMENTATION
esri.com/tapestry

OUR NEIGHBORHOOD

- Suburban periphery of large metropolitan areas, primarily in Middle Atlantic or Pacific states.
- Most homes owned (and mortgaged) (Index 146).
- Households composed of older married-couple families, more without children under 18, but many with children over 18 years (Index 141).
- Older, single-family homes: two-thirds built before 1970, close to half from 1950 to 1969.
- One of the lowest percentages of vacant housing units at 4.5% (Index 39).
- Suburban households with 3 or more vehicles and a longer travel time to work (Index 132).

SOCIOECONOMIC TRAITS

- Education: 66% college educated, 37% with a bachelor's degree or higher.
- Low unemployment at 4.6%; higher labor force participation rate at 67% (Index 107); higher proportion of HHs with 2 or more workers (Index 118).
- Many professionals in finance, information/technology, education, or management.
- Median household income denotes affluence, with income primarily from salaries, but also from investments (Index 130) or Social Security (Index 106) and retirement income (Index 122).
- Not cost-conscious, these consumers willing to spend more for quality and brands they like.
- Prefer fashion that is classic and timeless as opposed to trendy.
- Use all types of media equally (newspapers, magazines, radio, Internet, TV).

Note: The Index represents the ratio of the segment rate to the US rate multiplied by 100. Consumer preferences are estimated from data by GfK MRI.

2B

LifeMode Group: Upscale Avenues

Pleasantville

TAPESTRY SEGMENTATION
esri.com/tapestry

MARKET PROFILE (Consumer preferences are estimated from data by GfK MRI)

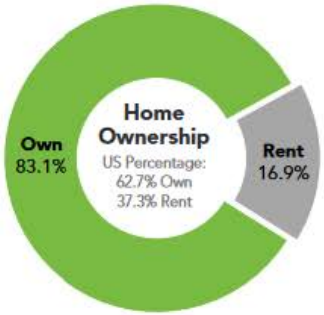
- Prefer imported SUVs, serviced by a gas station or car dealer.
- Invest in conservative securities and contribute to charities.
- Work on home improvement and remodeling projects, but also hire contractors.
- Have bundled services (TV/Internet/phone).
- Access the Internet via fiber optics or cable modem, on a newer computer, to pay bills, make purchases, and track investments.
- Subscribe to premium channels (HBO, Showtime, or Starz) and use video-on-demand to watch TV shows and movies.
- Enjoy outdoor gardening, going to the beach, visiting theme parks, frequenting museums, and attending rock concerts.

HOUSING

Median home value is displayed for markets that are primarily owner occupied; average rent is shown for renter-occupied markets. Tenure and home value are estimated by Esri. Housing type and average rent are from the Census Bureau's American Community Survey.

Typical Housing:
Single Family

Median Value:
$382,000
US Median: $207,300



POPULATION CHARACTERISTICS

Total population, average annual population change since Census 2010, and average density (population per square mile) are displayed for the market relative to the size and change among all Tapestry markets. Data estimated by Esri.

ESRI INDEXES

Esri developed three indexes to display average household wealth, socioeconomic status, and housing affordability for the market relative to US standards.

LifeMode Group: Senior Styles

Golden Years

9B

Households: 1,657,400

Average Household Size: 2.06

Median Age: 52.3

Median Household Income: $71,700

WHO ARE WE?

Independent, active seniors nearing the end of their careers or already in retirement best describes *Golden Years* residents. This market is primarily singles living alone or empty nesters. Those still active in the labor force are employed in professional occupations; however, these consumers are actively pursuing a variety of leisure interests—travel, sports, dining out, museums, and concerts. They are involved, focused on physical fitness, and enjoying their lives. This market is smaller, but growing, and financially secure.

TAPESTRY SEGMENTATION
esri.com/tapestry

OUR NEIGHBORHOOD

- This older market has a median age of 52 years and a disproportionate share (nearly 32%) of residents aged 65 years or older.
- Single-person households (over 40%) and married-couple families with no children (one-third) dominate these neighborhoods; average household size is low at 2.06 (Index 80).
- Most of the housing was built after 1970; approximately 43% of householders live in single-family homes and 43% in multiunit dwellings.
- These neighborhoods are found in large metropolitan areas, outside central cities, scattered across the US.

SOCIOECONOMIC TRAITS

- *Golden Years* residents are well educated—22% have graduate or professional degrees, 28% have bachelor's degrees, and 25% have some college credits.
- Unemployment is low at 4% (Index 74), but so is labor force participation at 56% (Index 89), due to residents reaching retirement.
- Median household income is higher in this market, more than $71,000. Although wages still provide income to nearly 2 out of 3 households, earned income is available from investments (Index 171), Social Security benefits (Index 146), and retirement income (Index 144).
- These consumers are well connected: Internet access is used for everything from shopping or paying bills to monitoring investments and entertainment.
- They are generous supporters of the arts and charitable organizations.
- They keep their landlines and view cell phones more as a convenience.

Note: The Index represents the ratio of the segment rate to the US rate multiplied by 100.
Consumer preferences are estimated from data by GfK MRI.

9B LifeMode Group: Senior Styles
Golden Years

TAPESTRY SEGMENTATION
esri.com/tapestry

MARKET PROFILE (Consumer preferences are estimated from data by GfK MRI)

- Avid readers, they regularly read daily newspapers, particularly the Sunday edition.
- They subscribe to cable TV; news and sports programs are popular as well as on-demand movies.
- They use professional services to maintain their homes inside and out and minimize their chores.
- Leisure time is spent on sports (tennis, golf, boating, and fishing) or simple exercise like walking.
- Good health is a priority; they believe in healthy eating, coupled with vitamins and dietary supplements.
- Active social lives include travel, especially abroad, plus going to concerts and museums.
- Residents maintain actively managed financial portfolios that include a range of instruments such as IRA's, common stocks, and certificates of deposit (more than six months).

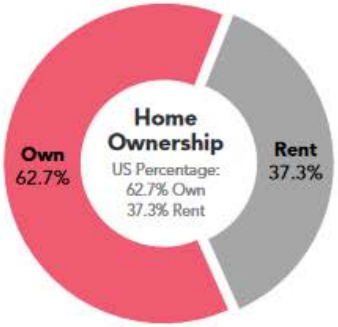
HOUSING

Median home value is displayed for markets that are primarily owner occupied; average rent is shown for renter-occupied markets. Tenure and home value are estimated by Esri. Housing type and average rent are from the Census Bureau's American Community Survey.

Typical Housing:
Single Family;
Multi-Units

Median Value:
$332,100

US Median: $207,300



POPULATION CHARACTERISTICS

Total population, average annual population change since Census 2010, and average density (population per square mile) are displayed for the market relative to the size and change among all Tapestry markets. Data estimated by Esri.

ESRI INDEXES

Esri developed three indexes to display average household wealth, socioeconomic status, and housing affordability for the market relative to US standards.

LifeMode Group: Affluent Estates

Exurbanites

1E

Households: 2,398,200

Average Household Size: 2.50

Median Age: 51.0

Median Household Income: $103,400

WHO ARE WE?

Ten years later, *Exurbanites* residents are now approaching retirement but showing few signs of slowing down. They are active in their communities, generous in their donations, and seasoned travelers. They take advantage of their proximity to large metropolitan centers to support the arts, but prefer a more expansive home style in less crowded neighborhoods. They have cultivated a lifestyle that is both affluent and urbane.

OUR NEIGHBORHOOD

- Established neighborhoods (most built between 1970 and 1990) found in the suburban periphery of large metropolitan markets.
- A larger market of empty nesters, married couples with no children; average household size is 2.50.
- Primarily single-family homes with a high median value of $423,400 (Index 204), most still carrying mortgages.
- Higher vacancy rate at 9%.

SOCIOECONOMIC TRAITS

- Residents are college educated; more than half have a bachelor's degree or higher; nearly 81% have some college education.
- This labor force is beginning to retire. 1 in 3 households currently receive Social Security or retirement income. Labor force participation has declined to less than 60% (Index 95).
- Unemployment remains low at 3.3% (Index 61); more of the residents prefer self-employment (Index 178) or working from home (Index 177).
- Consumers are more interested in quality than cost. They take pride in their homes and foster a sense of personal style.
- *Exurbanites* residents are well connected, using the Internet for everything from shopping to managing their finances.
- Sociable and hardworking, they still find time to stay physically fit.

Note: The Index represents the ratio of the segment rate to the US rate multiplied by 100. Consumer preferences are estimated from data by GfK MRI.

TAPESTRY SEGMENTATION
esri.com/tapestry

1E

LifeMode Group: Affluent Estates

Exurbanites

TAPESTRY SEGMENTATION
esri.com/tapestry

MARKET PROFILE (Consumer preferences are estimated from data by GfK MRI)

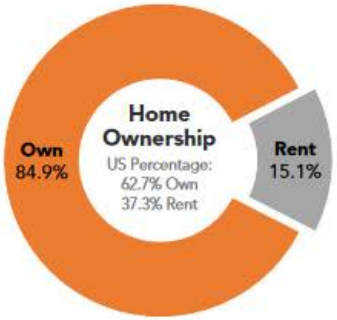
- *Exurbanites* residents' preferred vehicles are late model luxury cars or SUVs.
- They are active supporters of the arts and public television/radio.
- Attentive to ingredients, they prefer natural or organic products.
- Gardening and home improvement are priorities, but they also use a number of services, from home care and maintenance to personal care.
- Financially active with wide-ranging investments, these investors rely on financial planners, extensive reading, and the Internet to handle their money.

HOUSING

Median home value is displayed for markets that are primarily owner occupied; average rent is shown for renter-occupied markets. Tenure and home value are estimated by Esri. Housing type and average rent are from the Census Bureau's American Community Survey.

Typical Housing:
Single Family

Median Value:
$423,400
US Median: $207,300



POPULATION CHARACTERISTICS

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ESRI INDEXES

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LifeMode Group: Affluent Estates

Top Tier

1A

Households: 2,113,000

Average Household Size: 2.84

Median Age: 47.3

Median Household Income: $173,200

WHO ARE WE?

The residents of the wealthiest Tapestry market, *Top Tier*, earn more than three times the US household income. They have the purchasing power to indulge any choice, but what do their hearts' desire? Aside from the obvious expense for the upkeep of their lavish homes, consumers select upscale salons, spas, and fitness centers for their personal well-being and shop at high-end retailers for their personal effects. Whether short or long, domestic or foreign, their frequent vacations spare no expense. Residents fill their weekends and evenings with opera, classical music concerts, charity dinners, and shopping. These highly educated professionals have reached their corporate career goals. With an accumulated average net worth of over 3 million dollars and income from a strong investment portfolio, many of these older residents have moved into consulting roles or operate their own businesses.

TAPESTRY SEGMENTATION
esri.com/tapestry

OUR NEIGHBORHOOD

- Married couples without children or married couples with older children dominate this market.
- Housing units are owner occupied with the highest home values—and above average use of mortgages.
- Neighborhoods are older and located in the suburban periphery of the largest metropolitan areas, especially along the coasts.

SOCIOECONOMIC TRAITS

- *Top Tier* is a highly educated, successful consumer market: more than one in three residents has a postgraduate degree.
- Annually, they earn more than three times the US median household income, primarily from wages and salary, but also self-employment income (Index 177) and investments (Index 251).
- These are the nation's wealthiest consumers. They hire financial advisers to manage their diverse investment portfolios but stay abreast of current financial trends and products.
- Socially responsible consumers who aim for a balanced lifestyle, they are goal oriented and hardworking but make time for their kids or grandkids and maintain a close-knit group of friends.
- These busy consumers seek variety in life. They take an interest in the fine arts; read to expand their knowledge; and consider the Internet, radio, and newspapers as key media sources.
- They regularly cook their meals at home, attentive to good nutrition and fresh organic foods.

Note: The Index represents the ratio of the segment rate to the US rate multiplied by 100.

1A LifeMode Group: Affluent Estates
Top Tier

TAPESTRY SEGMENTATION
esri.com/tapestry

MARKET PROFILE (Consumer preferences are estimated from data by GfK MRI)

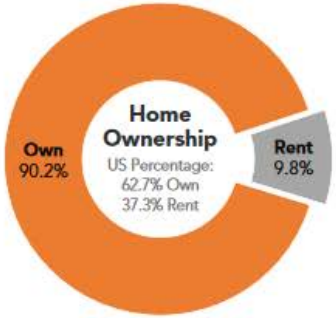
- They purchase or lease luxury cars with the latest trim, preferably imports.
- They contribute to arts/cultural organizations, educational and social groups, as well as NPR and PBS.
- *Top Tier* residents farm out their household chores—every service from property and garden maintenance and professional housekeeping to contracting for home improvement or maintenance projects.
- Consumers spend money on themselves; they frequently visit day spas and salons, use dry cleaning services, and exercise at exclusive clubs.
- Near or far, downtown or at the beach, they regularly visit their lavish vacation homes.
- When at home, their schedules are packed with lunch dates, book club meetings, charity dinners, classical music concerts, opera shows, and visits to local art galleries.
- *Top Tier* consumers are shoppers. They shop at high-end retailers such as Nordstrom (readily paying full price), as well as Target, Kohl's, Macy's, and Bed Bath & Beyond, and online at Amazon.com.
- At their level of spending, it makes sense to own an airline credit card. They make several domestic and foreign trips a year for leisure and pay for every luxury along the way—a room with a view, limousines, and rental cars are part of the package.

HOUSING

Median home value is displayed for markets that are primarily owner occupied; average rent is shown for renter-occupied markets. Tenure and home value are estimated by Esri. Housing type and average rent are from the Census Bureau's American Community Survey.

Typical Housing:
Single Family

Median Value:
$819,500
US Median: $207,300



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ESRI INDEXES

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LifeMode Group: Affluent Estates

Savvy Suburbanites

1D

Households: 3,664,200

Average Household Size: 2.85

Median Age: 45.1

Median Household Income: $108,700

WHO ARE WE?

Savvy Suburbanites residents are well educated, well read, and well capitalized. Families include empty nesters and empty nester wannabes, who still have adult children at home. Located in older neighborhoods outside the urban core, their suburban lifestyle includes home remodeling and gardening plus the active pursuit of sports and exercise. They enjoy good food and wine, plus the amenities of the city's cultural events.

OUR NEIGHBORHOOD

- Established neighborhoods (most built between 1970 and 1990) found in the suburban periphery of large metropolitan markets.
- Married couples with no children or older children; average household size is 2.85.
- 91% owner occupied; 66% mortgaged (Index 160).
- Primarily single-family homes, with a median value of $362,900 (Index 161).
- Low vacancy rate at 3.8%.

SOCIOECONOMIC TRAITS

- Education: 50.6% college graduates; 77.6% with some college education.
- Low unemployment at 3.5% (Index 65); higher labor force participation rate at 67.9% (Index 109) with proportionately more 2-worker households at 62.2%, (Index 120).
- Well-connected consumers that appreciate technology and make liberal use of it for everything from shopping and banking to staying current and communicating.
- Informed shoppers that do their research prior to purchasing and focus on quality.

TAPESTRY SEGMENTATION
esri.com/tapestry

Note: The Index represents the ratio of the segment rate to the US rate multiplied by 100. Consumer preferences are estimated from data by GfK MRI.

1D

LifeMode Group: Affluent Estates

Savvy Suburbanites

TAPESTRY SEGMENTATION
esri.com/tapestry

MARKET PROFILE (Consumer preferences are estimated from data by GfK MRI)

- Residents prefer late model, family-oriented vehicles: SUVs, minivans, and station wagons.
- Gardening and home remodeling are priorities, usually DIY. Riding mowers and power tools are popular, although they also hire contractors for the heavy lifting.
- There is extensive use of housekeeping and personal care services.
- Foodies: They like to cook and prefer natural or organic products.
- These investors are financially active, using a number of resources for informed investing. They are not afraid of debt; many households carry first and second mortgages, plus home equity credit lines.
- Physically fit, residents actively pursue a number of sports, from skiing to golf, and invest heavily in sports gear and exercise equipment.

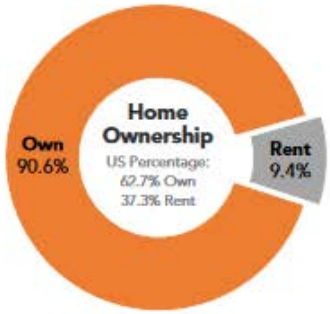
HOUSING

Median home value is displayed for markets that are primarily owner occupied; average rent is shown for renter-occupied markets. Tenure and home value are estimated by Esri. Housing type and average rent are from the Census Bureau's American Community Survey.

Typical Housing:
Single Family

Median Value:
$362,900

US Median: $207,300



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ESRI INDEXES

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LifeMode Group: Middle Ground

Bright Young Professionals

8C

Households: 2,750,200

Average Household Size: 2.41

Median Age: 33.0

Median Household Income: $54,000

WHO ARE WE?

Bright Young Professionals is a large market, primarily located in urban outskirts of large metropolitan areas. These communities are home to young, educated, working professionals. More than one out of three householders is under the age of 35. Slightly more diverse couples dominate this market, with more renters than homeowners. More than two-fifths of the households live in single-family homes; over a third live in 5+ unit buildings. Labor force participation is high, generally white-collar work, with a mix of food service and part-time jobs (among the college students). Median household income, median home value, and average rent are close to the US values. Residents of this segment are physically active and up on the latest technology.

OUR NEIGHBORHOOD

- Approximately 57% of the households rent; 43% own their homes.
- Household type is primarily couples, married (or unmarried), with above average concentrations of both single-parent (Index 125) and single-person (Index 115) households.
- Multiunit buildings or row housing make up 56% of the housing stock (row housing (Index 178), buildings with 5–19 units (Index 275)); 43% built 1980–99.
- Average rent mirrors the US (Index 100).
- Lower vacancy rate is at 8.2%.

SOCIOECONOMIC TRAITS

- Education completed: 35% with some college or an associate's degree, 33% with a bachelor's degree or higher.
- Unemployment rate is lower at 4.7%, and labor force participation rate of 72% is higher than the US rate.
- These consumers are up on the latest technology.
- They get most of their information from the Internet.
- Concern about the environment, impacts their purchasing decisions.

TAPESTRY SEGMENTATION
esri.com/tapestry

Note: The Index represents the ratio of the segment rate to the US rate multiplied by 100. Consumer preferences are estimated from data by GfK MRI.

8C

LifeMode Group: Middle Ground

Bright Young Professionals

TAPESTRY SEGMENTATION
esri.com/tapestry

MARKET PROFILE (Consumer preferences are estimated from data by GfK MRI)

- Own retirement savings and student loans.
- Own newer computers (desktop, laptop, or both), iPods, and 2+ TVs.
- Go online and use mobile devices for banking, access YouTube or Facebook, visit blogs, download movies, and play games.
- Use cell phones to text, redeem mobile coupons, listen to music, and check for news and financial information.
- Find leisure going to bars/clubs, attending concerts, going to the beach, and renting DVDs from Redbox or Netflix.
- Enjoy a variety of sports, including backpacking, rock climbing, football, Pilates, running, and yoga.
- Eat out often at fast-food and family restaurants.

HOUSING

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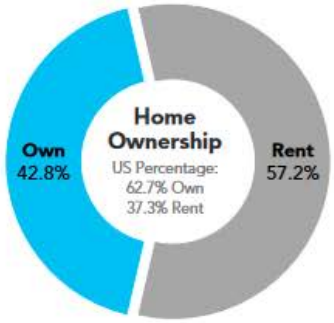
Typical Housing:
Single Family;
Multi-Units

Average Rent:
$1,042
US Average: $1,038



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LifeMode Group: Affluent Estates

Professional Pride

1B

Households: 1,982,300

Average Household Size: 3.13

Median Age: 40.8

Median Household Income: $138,100

WHO ARE WE?

Professional Pride consumers are well-educated career professionals that have prospered through the Great Recession. To maintain their upscale suburban lifestyles, these goal oriented couples work, often commuting far and working long hours. However, their schedules are fine-tuned to meet the needs of their school age children. They are financially savvy; they invest wisely and benefit from interest and dividend income. So far, these established families have accumulated an average of 1.6 million dollars in net worth, and their annual household income runs at more than twice the US level. They take pride in their newer homes and spend valuable time and energy upgrading. Their homes are furnished with the latest in home trends, including finished basements equipped with home gyms and in-home theaters.

TAPESTRY SEGMENTATION
esri.com/tapestry

OUR NEIGHBORHOOD

- Typically owner occupied (Index 146), single-family homes are in newer neighbor hoods: 67% of units were built in the last 20 years.
- Neighborhoods are primarily located in the suburban periphery of large metropolitan areas.
- Most households own three or more vehicles; long commutes are the norm.
- Homes are valued at more than twice the US median home value, although three out of four homeowners have mortgages to pay off.
- Families are mostly married couples (almost 80% of households), and nearly half of these families have kids. Their average household size, 3.13, reflects the presence of children.

SOCIOECONOMIC TRAITS

- *Professional Pride* consumers are highly qualified in the science, technology, law, or finance fields; they've worked hard to build their professional reputation or their start-up businesses.
- These consumers are willing to risk their accumulated wealth in the stock market.
- They have a preferred financial institution, regularly read financial news, and use the Internet for banking transactions.
- These residents are goal oriented and strive for lifelong earning and learning.
- Life here is well organized; routine is a key ingredient to daily life.

Note: The Index represents the ratio of the segment rate to the US rate multiplied by 100. Consumer preferences are estimated from data by GfK MRI.

1B

LifeMode Group: Affluent Estates

Professional Pride

TAPESTRY SEGMENTATION
esri.com/tapestry

MARKET PROFILE (Consumer preferences are estimated from data by GfK MRI)

- These frequent travelers take several domestic trips a year, preferring to book their plane tickets, accommodations, and rental cars via the Internet.
- Residents take pride in their picture-perfect homes, which they continually upgrade. They shop at Home Depot and Bed Bath & Beyond to tackle the smaller home improvement and remodeling tasks but contract out the larger projects.
- To keep up with their busy households, they hire housekeepers or professional cleaners.
- Residents are prepared for the ups and downs in life; they maintain life insurance; homeowners and auto insurance; as well as medical, vision, dental, and prescription insurance through work. They are actively investing for the future; they hold 401(k) and IRA retirement plans, plus securities.
- Consumers spend on credit but have the disposable income to avoid a balance on their credit cards. They spend heavily on Internet shopping; Amazon.com is a favorite website.
- Consumers find time in their busy schedules for themselves. They work out in their home gyms, owning at least a treadmill, an elliptical, or weightlifting equipment. They also visit the salon and spa regularly.
- All family members are avid readers; they read on their smartphones, tablets, and e-readers but also read hard copies of epicurean, home service, and sports magazines.
- Residents, both young and old, are tech savvy; they not only own the latest and greatest in tablets, smartphones, and laptops but actually use the features each has to offer.

HOUSING

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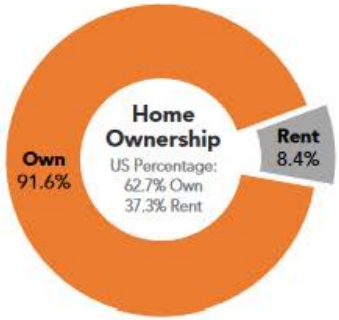
Typical Housing:
Single Family

Median Value:
$433,400

US Median: $207,300



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Lifestyle Profile- Continued

Millennial's

Which is currently the age range 18 to 35, have taken a position to protect their hard to come by money and look at value over "bells and whistles" in a new home. They prefer an essential home over a luxury home." in addition about 60% believe that technology capabilities are more important than curb appeal. Some prefer a fixer-upper and feel confident they can modify the home themselves. The primary concern of millennial is security and security systems are essential in any new home they live or rent. About 30% would like to have remote computer access to control their living environment. About 45% indicated that energy-efficient homes with energy-efficient washer's dryers and essential technology are essential. In addition, they value a home office. By the end of this decade millennials will comprise one out of every three adult Americans. This will have a significant impact on housing demand going forward. It is critical based on this information that new family residential development and apartments meet the upcoming demand of this lifestyle.

GEN Y

GEN Y which represents 25 to 34-year-olds is the creator of the boomerang lifestyle. This segment of the population which represents the approximate 51 million Americans, are satisfied with moving back home with their parents or relative. The stigma of living at home has declined which reduces peer pressure on a home. As boomerang in the comes the new norm tough economic times, moving out on your own is framed less as an expected means of asserting your independence in more as a financial consideration. GEN Y's face less job stability because of more frequent job hopping in prolonged periods of low or no earnings. Both make living at home a practical choice. Given the fact that approximately 50% of new grads are either unemployed or underemployed with slim job prospects, places a moving target on the type of housing they will purchase if the opportunity presents itself. In addition, there prolonged period of deciding to purchase a home will also place downward pressure on the luxury housing market.

Gen X

Generation X includes individuals born between 1965 and 1976 (approximately 50 million people) who tend to be more educated than the previous Baby Boomers. This generation is significantly smaller than that of baby boomers who preceded them. Since they grew up with technology, they are comfortable working with computers and technological devices in the workforce.

Lifestyle Conclusion

Based on the preceding lifestyle analysis, Trumbull residents are currently affluent, educated and enjoy a lifestyle which best can be described as "The American Dream". Trumbull provides the linkages necessary for better than average quality-of-life. Therefore, current demand based on lifestyle, will be high quality single-family residences and luxury and workforce apartments.

Based on millennials and GEN Y lifestyles, any developer must take into consideration the demands of these two lifestyle segments in constructing new single-family homes or apartments in Trumbull. Not only will homeowners be faced with these two generations purchasing existing homes, but any seller must take into consideration the demands they will seek to modify their homes to meet their lifestyles. This will have an impact on the cost of selling an existing residence and may adversely impact resale values in the future.

Lifestyle Conclusion-Continued

Senior citizens, retirees, older singles and empty nesters are having a major impact on apartment demand by vacating their single-family homes and leaving behind property maintenance costs, property taxes and mortgage payments for a single payment rental unit inclusive of these expenses. This population segment will have as dramatic impact on apartment demand as will millennials. Developers will be faced with meeting demand for these two population segments and developing a balance to meet local demand based on affordability/threshold income.

Linkages

Linkages are tangible and intangible components that are unique to each property type which create demand for a specific property type. For residential it is the ability of a specific site to provide a particular quality of life. Most people live near the necessary sources of retail, education, employment, entertainment, recreation, places of worship, medical support, and transportation. They will intentionally avoid proximity to manufacturing and industrial areas. What is most important is the quality and prestige of the area they select.

The critical linkages for residential are the units' proximity to where they work, schools, access to retail facilities, entertainment, recreation, access to medical services, places of worship, cultural events, and proximity to transportation. These linkages are typical for both single-family and multifamily residences.

Lifestyle choices play an important part in the demand for residential real estate. Issues such as urban or suburban living, neighborhood characteristics, type of housing, neighborhoods, schools, walkable community versus a driving community, transit-oriented community versus traditional neighborhoods, traffic and the image and prestige of the community and neighborhoods.

Multifamily residences/apartments must be conveniently located near transportation and road networks in addition to the linkages mentioned above. The subject property meets most of these criteria: Close proximity to transportation networks (Including Rail & bus), retail, medical service, recreation, places of worship and employment nodes.

Proposed Apartment Community

The proposed 260-unit apartment community will be sited on about 10.42 acres. The proposed luxury development will consist of five buildings with onsite parking for 494 vehicles. A total of 64 garages on the lower level amongst the 5 buildings.

Each building will have garages, trash room, laundry room and storage rooms for tenants on the lower level. The main floor will have an entry to a center corridor serviced by a 5-stop elevator, servicing from the lower level to each floor. The site will have a club house in building 4 with a club room and fitness room and an outdoor pool.

Development plans are in the preliminary stage and subject to modifications. The following impact analysis is based on the preliminary plans utilized within this report. The consultant reserves the right to modify this report if the final plans are different than what has been utilized within this report.

Building Unit Composition

Building	1-BR	2_BR	Total Units	Stories	Elevator	Garages	Other
One	18	50	**68**	5	YES	15	
Two	16	46	**62**	5	YES	15	
Three	16	46	**62**	5	YES	15	
Four	4	28	**32**	5	YES	10	Club Room Fitness, Office
Five	10	26	**36**	5	YES	9	
Totals	**64**	**196**	**260**			**64**	

Threshold Income

Each market has a different threshold income for different levels of residential apartments. Threshold income is the minimum level of income required to rent a specific property within a particular rental range. Following is an illustrative example of calculation of rental affordability for a two-bedroom apartment based on the 2019 ESRI median income for Trumbull Connecticut of $151,175. It illustrates the occupancy components and the conformity to affordability for a typical renter in a specific market. The Trumbull's 20198 estimated median income of $121,174 which will be utilized for this example.

Median Household Income:	$121,174
Less Taxes 28% (22% Fed 6% State)	($33,929)
= Disposable Income	$87,245
X 40% Utilized for Housing	$34,898
÷ 12 = Monthly Housing Expenses	$ 2,908
Less: Utilities, Cable, Insurance	($ 500)
= Monthly Rental Payment	$ 2,408
SAY:	$ 2,400

The preceding demonstrates that a 2019 median household's income of $121,174 can afford a rental unit with a monthly rent of about $2,400 per month. First quarter 2020, the Fairfield east market which Trumbull is located, mean rent for a one-bedroom unit is about $1,478 and two-bedroom units about $1,952. As incomes decline so will disposable income for rental expenses and increase as income increases. One should keep in mind that as incomes decrease real property expenses will remain the same and in all likelihood increase. The scenario will result in a larger percentage of disposable income utilized for housing operating expense therefore, placing downward pressure on residential and rental property values. We are in an extended period of favorably low interest rates with recent modest increases. As soon as interest rates start to increase, they will impact the rental affordability and raise the threshold income to rent new construction rental property due to increased financing costs. It also expands the pool of potential renters since increased interest rates raises the threshold income required to purchase a home.

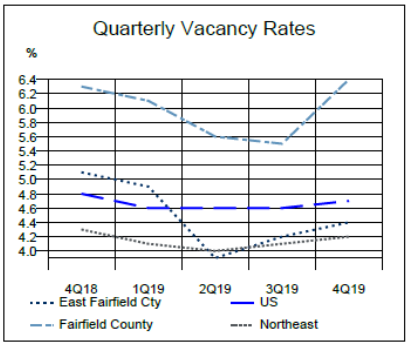
Another factor to be considered will be the pressure placed on developers to build new apartments with less amenities and quality to meet the demand based on lowering threshold income and question what property value it will support? Developers will find it difficult at best to increase rents in a declining market when interest rates increase, and housing operating expenses continue to rise. Current new construction may have an advantage in meeting future demand if inflation increases, cost of financing increases or threshold income to rent remains static. If financing is locked in at current rates for a significant amortization period and term, the lower financing cost should not cause a rental increase and adversely impact property values. The lower financing costs will allow the property to be more competitive in the market by not raising rents to meet financing costs.

Asking rents increased 0.1% first quarter 2020. Vacancy rate remained about the same at 4.4% and at the current pace is anticipated to end the year at about 5.2%. The last four quarters saw absorption of about 230 units in the subjects' area.

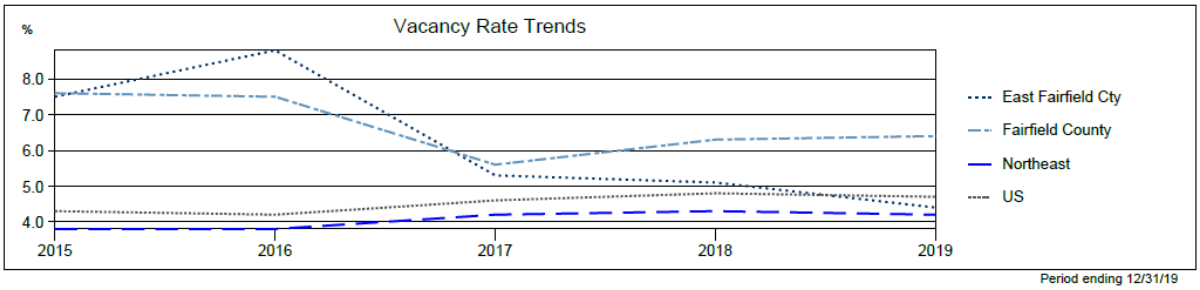
Section 5 - Vacancy Rate Comparisons

	Vacancy Rates					
	Quarterly			Annualized		
	4Q19	3Q19	YTD Avg	1 Year	3 Year	5 Year
East Fairfield Cty	4.4%	4.2%	4.3%	4.7%	5.9%	6.0%
Fairfield County	6.4%	5.5%	5.9%	6.3%	6.4%	6.5%
Northeast	4.2%	4.1%	4.1%	4.2%	4.1%	4.0%
United States	4.7%	4.6%	4.6%	4.7%	4.6%	4.5%
Period Ending:	12/31/19	09/30/19	12/31/19	12/31/19	12/31/19	12/31/19

Submarket Rank Compared to:	Total Subs	Submarket Ranks					
		4Q19	3Q19	YTD	1 Year	3 Year	5 Year
Fairfield County	2	1	1	1	1	1	1
Northeast	103	65	64	65	72	95	96
United States	835	424	408	433	471	670	679

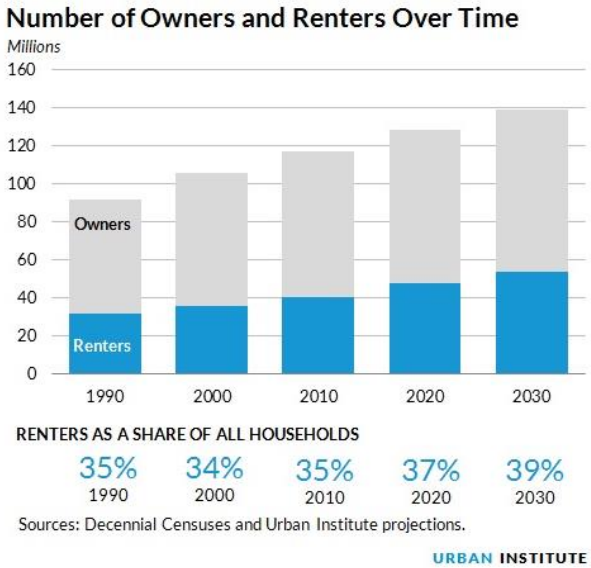


Period ending 12/31/19



Period ending 12/31/19

Average Rent 1Q 2020



Year	Qtr	Effective Rent	Eff Rent % Chg	Cons/Abs	Abs/Occ Stock%
2014	Y	$1,337	1.4%	1.1	1.0%
2015	Y	$1,413	5.6%	2.5	2.1%
2016	Y	$1,526	8.0%	1.5	3.8%
2017	Y	$1,493	- 2.1%	0.4	6.1%
2018	Q1	$1,514	1.4%	n/a	0.0%
2018	Q2	$1,543	1.9%	0.0	0.0%
2018	Q3	$1,517	- 1.7%	0.0	0.0%
2018	Q4	$1,545	1.8%	0.0	0.2%
2018	Y	$1,545	3.5%	0.0	0.2%
2019	Q1	$1,553	0.5%	0.0	0.2%
2019	Q2	$1,566	0.8%	0.0	1.0%
2019	Q3	$1,565	- 0.1%	2.2	0.3%
2019	Q4	$1,568	0.2%	1.6	0.3%
2019	Y	$1,568	1.5%	0.6	1.8%

School Age Children & Target Market

The consultant has reviewed the 2019-2020 recommended Trumbull town budget to provide a breakdown of public-school aged children, number of pupils and the current cost to educate a child in Shelton. Based on public information the estimated cost to educate the approximate 2019-2020 school enrollment of 6,843 students is about $16,660 per student. This per pupil cost to educate will be utilized in this analysis.

The rental housing being proposed is market rate housing units and will attract singles living alone, childless couples and moderate sized families with income levels of approximately $100,000 and up. These demographics mirror the greater Trumbull market. There are anticipated to be some school aged children living at the proposed complex.

School Age Children in Apartments

The major concern for most municipalities is the impact residential housing and apartments have on the municipal budget. It is important to estimate the compliment of school age children per complex. The standard has been to utilize the 2006 Rutgers Study which analyzed the number of school age children in multifamily housing. The study included an analysis of Connecticut. That report is now 14 years old. It does not reflect current lifestyles, the increased age a woman giving birth. The 2006 study was based on structure type and rent levels. It does not reflect current rent levels and student occupancy ratios that are impacted by income levels, lifestyle, and current birth rate data.

In July of 2018 Rutgers University published a revised study of school age children in multifamily apartments. It reflected students per unit by Apartment style, Income, and unit type. While the study focuses on New Jersey, in absence of any other supportable study, the consultant will utilize it to test the number of school age children for the subject property. The proposed apartment development is classified in the 2018 report as mid-rise. The projected threshold income(s) and rents for one and two-bedroom units is based on the 2018 Rutgers Study on the following page. Based on this data the subject property would produce per 100 units the following school age children based on 64 one-bedroom, 196 two-bedroom market rate units., totaling 260 units.

Market Rate Units		Factor Per 100 Units	Estimated PSAC
One BR	64	1.6	1.02
Two BR	196	13.4	26.26
		Total	**27.28**
Total Units	**260**	**PSAC**	**Say: 27**

Rutgers Study- 2018

Executive Summary

In this paper we provide new estimates of the number of school-age children associated with new developments of market-rate and affordable rental units in New Jersey. Given our knowledge of and relationships across the industry, we designed and conducted a large-scale survey completed by developers and property managers of multi-family rental buildings. Among other questions, we asked survey respondents to provide counts of market-rate and affordable units, children aged 5-17 ("school-age children"), and average household income.

Our data and analysis show that a one-size fits all approach is inappropriate for estimating the expected number of school-age children arising from a new development. Instead, we show the following variables are essential to accurately predict the number of school-age children arising from new development: (i) the distribution of the number of bedrooms, separately for affordable and market-rate units, (ii) the product type of the development – High-rise, Mid-rise or Low-rise[1] – and (iii) the expected household income of market-rate residents. With this information, the expected number of school-age children can be determined using the information in Table 1 below:[2]

Table 1: School-Age Children per 100 Units

	Affordable	Market Rate Units – Average HH Income						
		<$50K*		$50K - $100K*		>$100K*		
	All Units	High-rise or Mid-rise	Low-rise	High-rise or Mid-rise	Low-rise	High-rise	Mid-rise	Low-rise
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
studio or 1br	10.3	2.6	11.4	1.6	7.6	0.4	1.3	1.9
2br	72.1	43.6	126.4	13.4	56.7	2.2	8.9	28.2
3br and larger	108.9	100.0	137.9	17.6	63.0	4.3	23.9	61.8

* Values refer to the average household income of residents of market-rate units in the building.

Each element of the table represents expected school-age children per 100 units for the specific characteristics listed.[3] The rows of Table 1 refer to number of bedrooms. The first column refers to school-age children for affordable units only. Columns (2) through (8) are estimates for market-rate residents. Columns (2) and (3) are for developments with average income of residents of less than $50 thousand per year, columns (4) and (5) are for developments with

[1] Low-rise is defined as a Townhome or a building with 1-3 floors, Mid-rise as 4-9 floors and High-rise as 10+ floors.
[2] The results in this data are computed using units built in any year. For the lowest income category, columns 2 and 3, sample sizes are too small to compute this table using only data on units built after 2000. For the other income categories, columns 4-8, results are similar but not identical when we restrict the sample to units built after 2000.
[3] Our analysis covers all school-age children attending either public or private schools. Data from the 2015 (5-Year) American Community Survey as collected by the United States Census Bureau suggests 12 percent of all school-age children attend private schools in New Jersey.

RED= Proposed Apartments
Blue Shade-The Royce

School Enrollment Projections

A 2017 book by Dr. Nathan D. Grawe titled "Demographics and The Demand for Higher Education, discusses the future demand for college education. With a projected decline in birth rates as previously demonstrated in this report, He projects a 20% decline in high school graduates in all New England Sates, except an increase in in Massachusetts about 2025 and then a steep decline. "In sum, over the next 15 years persistent trends in immigration, migration, and differential birth rates coupled with the recent acute birth dearth will markedly alter the college-aged population along dimensions of geography and race/ethnicity." In addition, Dr. John Glasscock of the University of Connecticut has lectured of decline in college enrollment in some of his lectures. Add the cost of education and the state's economic crisis, both add levels of uncertainty that do not present themselves currently. While demand may look good in the short term, the question is what will college demand be in five years from now and high school enrollment?

School Age Children in Apartments- Continued

In September 2019, the consultant asked the Shelton Public Schools to survey the current enrollment of school age children in each of the following apartment complexes: The Mark Apartments, Avalon Shelton, and Huntington Town Homes. These three complexes are comparable to the proposed apartment complex and in the same apartment trade area (ATA). They reported 2018-2019 enrollment at 4,620 students for the city.

The Shelton Public Schools survey reported the following current PSAC: Avalon Shelton had 26 Public School (PSAC) age children enrolled in the Shelton Public Schools, the Huntington Townhomes had 32 PSAC and the mark 10 PSAC. The Mark and Avalon Shelton (now Merion Riverwalk) are comparable to the proposed subject property. The mark is the newest apartment complex. Huntington Town Houses are two and three-bedroom units. Three-bedroom units have the propensity to have more PSAC. Avalon Shelton also had some three bed-room units.

Complex	Units	Current PSAC	Ratio per Unit
Huntington Townhouses	99	32	0.323
Avalon Shelton	250	26	0.104
The Mark	228	10	0.044
All complexes			0.157
Just Avalon & Mark			0.074
Proposed Development	260 X	0.074 =	20

After reviewing the above analysis, the consultant has excluded the Huntington Townhomes since they are all two and three-bedroom units distorting the number of PSAC since all two and three bed-room units adversely skews the per unit ratio. Reliance is based on the two complexes that closely reflect the proposed apartment development. New complexes tend to have fewer PSAC than older ones.

School Age Children in Apartments- Continued

The propensity would be to compare the subject property to the Royce apartments which is the only completed apartment complex in Trumbull. The Royce is comprised of a total of 340 units with 122 1-bedroom units, 168 2-bedroom units and 50 3-bedroom units. The Royce is a low-rise apartment complex (3 stories) as defined by the Rutgers study. In addition, the complex was built 1994 to 1997, a 23-year development recently sold and modified. The Royce advertises monthly rents starting at $1,490 to $2,835 for 1-bedroom units and $2,110 to$ $3,455. vs. the proposed subject property starting at $2,000 for a 1-bedroom units and $2,500, about 34% higher for 1-bedroom units and 19% higher for 2-bedroom units.

Comparing the Royce to the proposed subject property is not comparing properties of similar size and risk. First the disparity in age. Comparing a 23-year old walk up complex to new construction. Comparing an older walkup complex to a new midrise (4 story) complex, with 5-stop elevators, with a center hall entry and elevators, storage area and laundry facilities as well as covered parking on the lower level is not comparing similar size and risk.

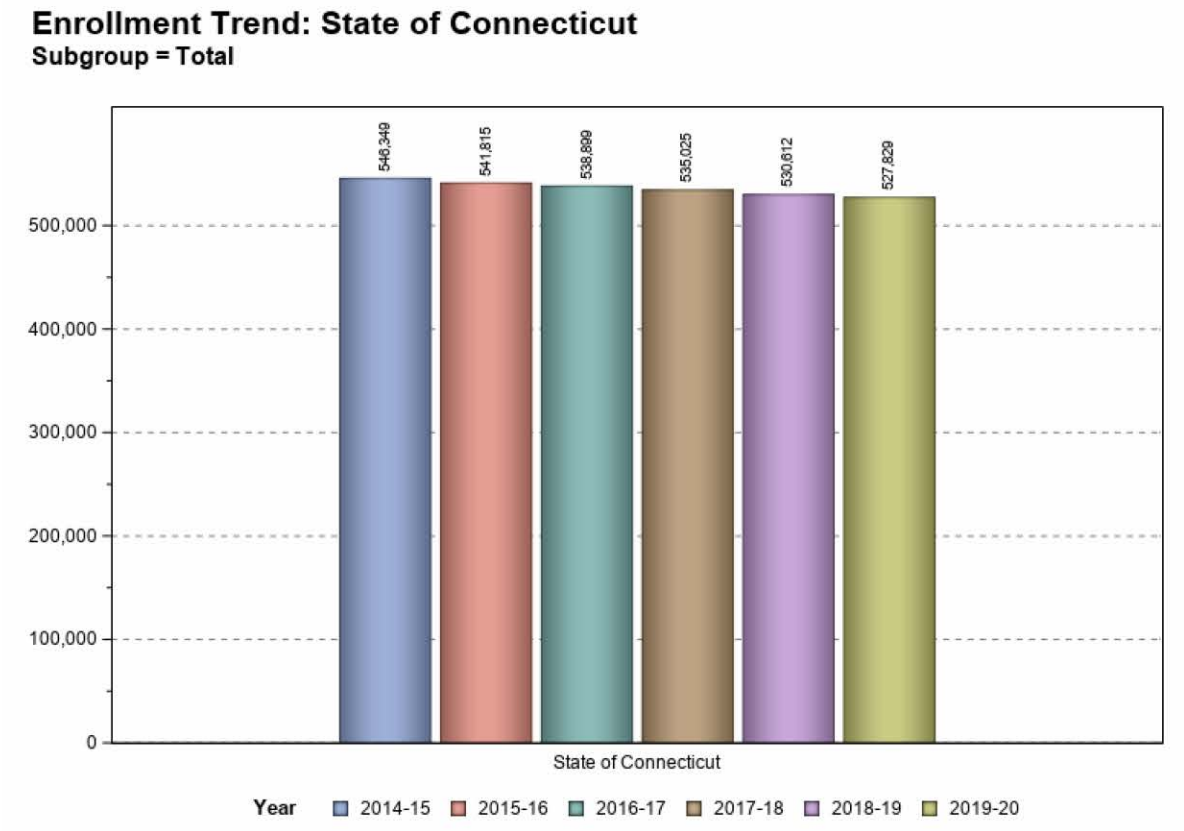
As stated in the Rutgers study, low-rise complexes have the propensity to have more PSAC, add the fact of the Royce's age which and it has 50 3-bedroom units renders the Royce as not comparable to the proposed 260 unit high end units. To support this premise, the disparity in staring rents demonstrates support that the Rutgers study indicates that household in come is an important determinant in estimating PSAC.

The table below compares the actual number of PSAC as of the current school year of 168 PSAC. Utilizing the Rutgers study, an estimated 139 PSAC is projected and if only 1 and 2-bedroom units about 105 PSAC would be anticipated. A difference of 34 PSAC. The Royce has 3PSAC that attend Frenchtown Elementary School.

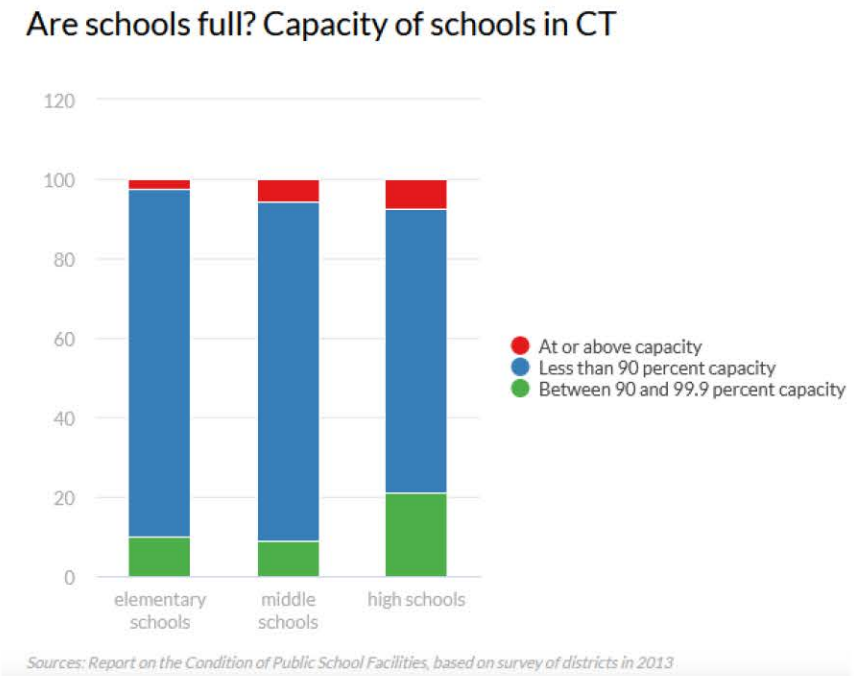
Type	1BR	2BR	3BR	Total
Units	122	168	50	340
Rutgers Ratio/100	7.6	56.7	68.95	
PSAC/Type	9.3	95.3	34.5	139.0
			Actual	168
1BR & 2 BR Only	104.5		Difference	29.0

Conclusion: Based on the proceeding analysis the consultant has concluded that the proposed 260-unit apartment complex may produce about 27 PSAC. The Rutgers methodology produced 27.28PSAC. To be conservative, 27 PSAC will be utilized within this analysis for the subject property.

State School Enrollment Trends



Total	Year					
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
State of Connecticut	546,349	541,815	538,899	535,025	530,612	527,829
Total	**546,349**	**541,815**	**538,899**	**535,025**	**530,612**	**527,829**



January 24, 2020

Connecticut State Department of Education
Bureau of Fiscal Services

2018-19 Net Current Expenditures (NCE) per Pupil (NCEP)
and 2019-2020 Special Education Excess Cost Grant
Basic Contributions for the May Payment

District Code	District Name	(1) NCE 2018-19	(2) Average Daily Membership (ADM) 2018-19	(3) NCEP 2018-19 (Col 1 / Col 2)	(4) State Agency Placement Basic Contribution (Col 3 Rounded)	(5) Local Initiated Placement Basic Contribution (Col 3 x 4.5, Rounded)
111	PLYMOUTH	23,960,567	1,577.19	15,192	15,192	68,364
112	POMFRET	9,989,566	576.17	17,338	17,338	78,020
113	PORTLAND	22,004,172	1,367.34	16,093	16,093	72,417
114	PRESTON	11,017,246	657.98	16,744	16,744	75,348
116	PUTNAM	19,483,310	1,179.74	16,515	16,515	74,317
117	REDDING	32,525,148	1,345.93	24,166	24,166	108,745
118	RIDGEFIELD	94,010,064	4,843.90	19,408	19,408	87,336
119	ROCKY HILL	44,809,660	2,876.87	15,576	15,576	70,091
121	SALEM	10,313,937	605.34	17,038	17,038	76,672
122	SALISBURY	8,803,923	343.73	25,613	25,613	115,258
123	SCOTLAND	4,847,542	204.32	23,725	23,725	106,764
124	SEYMOUR	34,783,266	2,278.24	15,268	15,268	68,704
125	SHARON	6,526,394	177.40	36,789	36,789	165,551
126	SHELTON	73,898,842	4,911.58	15,046	15,046	67,706
127	SHERMAN	8,822,128	411.78	21,424	21,424	96,410
128	SIMSBURY	71,723,421	4,110.13	17,450	17,450	78,527
129	SOMERS	23,029,520	1,377.02	16,724	16,724	75,259
131	SOUTHINGTON	97,113,914	6,397.01	15,181	15,181	68,315
132	SOUTH WINDSOR	75,223,313	4,523.88	16,628	16,628	74,826
133	SPRAGUE	6,269,895	434.36	14,435	14,435	64,957
134	STAFFORD	27,206,580	1,543.22	17,630	17,630	79,334
135	STAMFORD	300,341,777	15,588.19	19,267	19,267	86,703
136	STERLING	7,888,638	502.92	15,686	15,686	70,586
137	STONINGTON	39,730,549	2,135.32	18,606	18,606	83,729
138	STRATFORD	118,214,256	7,140.51	16,555	16,555	74,499
139	SUFFIELD	36,147,139	2,075.24	17,418	17,418	78,382
140	THOMASTON	15,509,046	969.29	16,000	16,000	72,002
141	THOMPSON	18,516,689	1,020.91	18,137	18,137	81,618
142	TOLLAND	39,943,063	2,472.46	16,155	16,155	72,698
143	TORRINGTON	[illegible]	[illegible]	[illegible]	[illegible]	79,489
144	TRUMBULL	109,658,533	6,582.26	16,660	16,660	74,969
145	UNION	[illegible]	[illegible]	[illegible]	[illegible]	97,546
146	VERNON	57,067,404	3,428.97	16,643	16,643	74,892
147	VOLUNTOWN	6,840,730	329.42	20,766	20,766	93,447
148	WALLINGFORD	105,862,093	5,808.93	18,224	18,224	82,008
151	WATERBURY	291,964,763	18,219.77	16,025	16,025	72,111
152	WATERFORD	49,223,055	2,727.42	18,047	18,047	81,214
153	WATERTOWN	44,986,141	2,789.99	16,124	16,124	72,559
154	WESTBROOK	17,846,741	683.63	26,106	26,106	117,476
155	WEST HARTFORD	168,160,443	9,891.41	17,001	17,001	76,503
156	WEST HAVEN	100,693,235	6,980.38	14,425	14,425	64,913
157	WESTON	52,281,940	2,294.14	22,789	22,789	102,552
158	WESTPORT	121,734,802	5,520.49	22,051	22,051	99,232
159	WETHERSFIELD	62,385,635	3,858.03	16,170	16,170	72,766
160	WILLINGTON	12,417,977	634.90	19,559	19,559	88,015
161	WILTON	83,395,409	3,926.70	21,238	21,238	95,571
162	WINCHESTER	22,893,215	1,121.02	20,422	20,422	91,898
163	WINDHAM	62,287,035	3,329.75	18,706	18,706	84,178

Connecticut State Department of Education

DISTRICT PROFILE AND PERFORMANCE REPORT FOR SCHOOL YEAR 2017–18

Trumbull School District

Dr. Gary Cialfi, Superintendent • 203-452-4301 • www.trumbullps.org/

District Information

Grade Range	PK-12
Number of Schools/Programs	13
Enrollment	6,740
Per Pupil Expenditures[1]	$16,156
Total Expenditures	$108,598,675

[1]*Expenditure data reflect the 2016-17 year.*

Community Information

CERC Town Profiles provide summary demographic and economic information for Connecticut's municipalities

Contents

Students 1
Educators 2
Instruction and Resources 2
Performance and Accountability 4
Narratives 7

Notes

Unless otherwise noted, all data are for 2017-18 and include all grades offered by the district.

In most tables, data are displayed only for the three major race/ethnicity categories. For additional race/ethnicity categories, please visit edsight.ct.gov.

State totals are not displayed as they are not comparable to district totals.

Special Education tables reflect only students for whom the district is fiscally responsible.

* When an asterisk is displayed, data have been suppressed to ensure student confidentiality.

N/A is displayed when a category is not applicable for a district or school.

Students

October 1, 2017 Enrollment

	District Count	District Percent of Total (%)	State Percent of Total (%)
Female	3,305	49.0	48.4
Male	3,435	51.0	51.6
American Indian or Alaska Native	*	*	0.3
Asian	616	9.1	5.1
Black or African American	351	5.2	12.8
Hispanic or Latino	781	11.6	24.8
Pacific Islander	*	*	0.1
Two or More Races	93	1.4	3.3
White	4,883	72.4	53.6
English Learners	142	2.1	7.2
Eligible for Free or Reduced-Price Meals	670	9.9	36.7
Students with Disabilities[1]	796	11.8	14.8

[1]Students in this category are students with Individualized Education Programs (IEPs) only. This category does not include students with Section 504 Plans.

Chronic Absenteeism and Suspension/Expulsion

	Chronic Absenteeism[2] Count	Chronic Absenteeism[2] Rate (%)	Suspension/ Expulsion[3] Count	Suspension/ Expulsion[3] Rate (%)
Female	138	4.3	25	0.7
Male	145	4.4	97	2.8
Black or African American	*	*	*	*
Hispanic or Latino	37	4.9	15	1.9
White	205	4.3	89	1.8
English Learners	12	8.1	0	0.0
Eligible for Free or Reduced-Price Meals	91	8.9	42	3.9
Students with Disabilities	76	10.3	35	3.9
District	283	4.3	122	1.8
State		10.7		6.8

Number of students in 2016-17 qualified as truant under state statute: 246

Number of school-based arrests: 12

[2]A student is chronically absent if he/she misses ten percent or greater of the total number of days enrolled in the school year for any reason. Pre-Kindergarten students are excluded from this calculation.

[3]The count and percentage of students who receive at least one in-school suspension, out-of-school suspension or expulsion.

Trumbull School Enrollment 2015- 2020

Trumbull school enrollment has varying enrollment numbers from 2015 to 2020, yet within a close range. This represents a1.37% increase since 2015. This is a 0.23% increase per year.

Public School Enrollment Trend

Student Counts by School and Year

Trumbull School District, All Schools

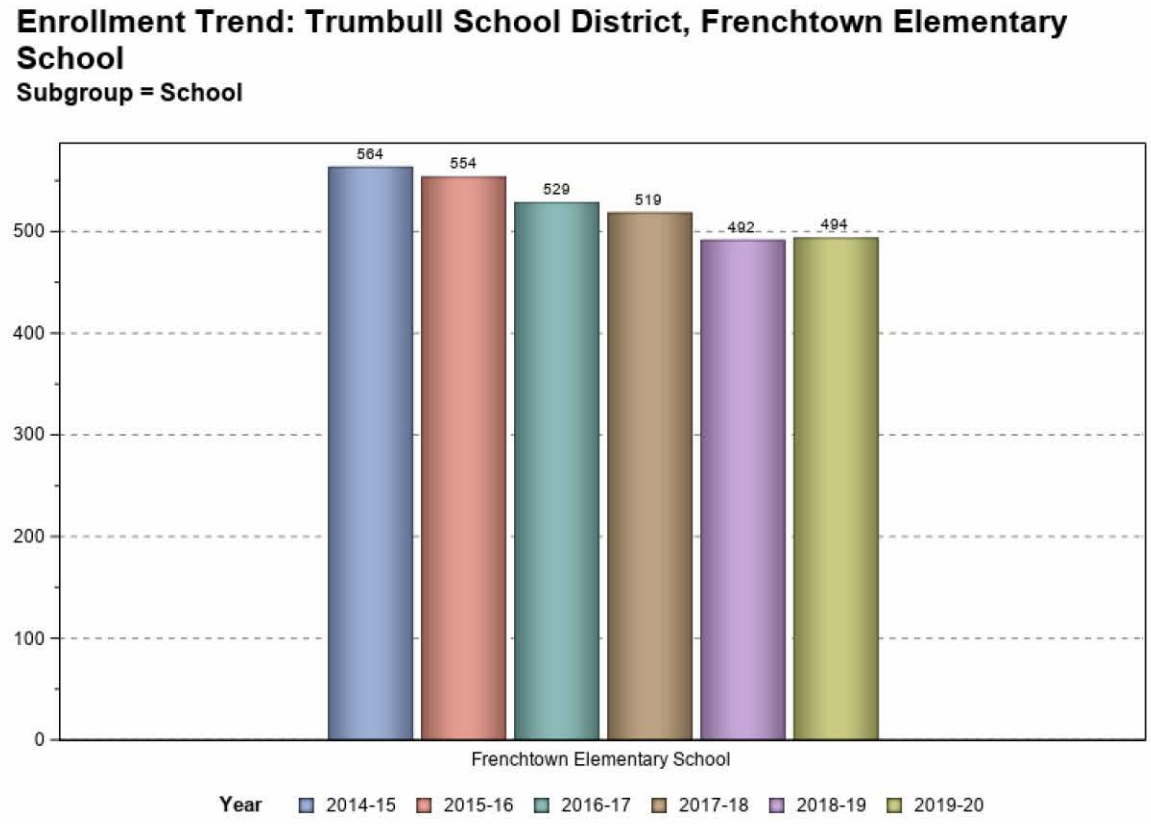
Export .csv file

School	Year					
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Booth Hill School	482	456	464	464	475	483
Daniels Farm School	472	460	451	475	501	513
Educating Learners in Transitional Environments (ELITE)	0	0	9	9	10	11
Frenchtown Elementary School	564	554	529	519	492	494
Hillcrest Middle School	760	769	772	729	725	758
Jane Ryan School	393	377	406	384	397	386
Madison Middle School	780	792	835	872	833	864
Middlebrook School	499	497	472	498	501	511
REACH	11	0	15	9	13	18
Tashua School	384	401	408	411	424	423
Trumbull Alternative School	8	0	7	14	22	18
Trumbull Early Childhood Education Center	224	209	232	226	225	226
Trumbull High School	2,123	2,151	2,066	2,107	2,104	2,082
Total **	**6,716**	**6,687**	**6,685**	**6,740**	**6,744**	**6,808**

* The data are suppressed to ensure confidentiality.
As a result, the graph is not shown.
** Total represents all students reported by the district, including students placed in schools outside of the district. Therefore, the sum of school-level counts may be less than the total district enrollment.

Frenchtown Elementary School

The most impacted school would be the closest school which is Frenchtown Elementary School. Frenchtown has had a decline from 564 enrollment down to 494 for the 2019-2020 school year.



Public School Enrollment Trend
Student Counts by School and Year
Trumbull School District, Frenchtown Elementary School
Export .csv file

School	Year					
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Frenchtown Elementary School	564	554	529	519	492	494
Total	564	554	529	519	492	494

School District	DRG		Score	Per Pupil Expenditure* (2018-19)	
New Canaan	A	#1	88.4	$21,622	#6
Region #9	A	#2	88.3	$23,703	#1
Darien	A	#3	88.0	$21,930	#5
Greenwich	B	#4	87.8	$22,221	#3
Weston	A	#5	86.5	$22,799	#2
Wilton	A	#6	85.2	$20,867	#7
Trumbull	B	#7	85.1	$16,660	#12
Westport	A	#8	83.8	$22,043	#4
Fairfield	B	#9	83.5	$18,524	#9
Ridgefield	A	#10	82.3	$19,474	#8
Newtown	B	#11	81.7	$17,789	#10
Monroe	B	#12	81.1	$17,635	#11

*Connecticut State Department of Education Bureau of Fiscal Services

Student to Teacher Ratio Analysis-Trumbull CT Schools

	2019-2020	2018/2019	2017-2018	2016-2017	2015-2016	2014-2015	Mean	Median	Std Dev
General Ed Teachers		423.2	410.3	417.7	406.7	406.3	412.8	411.6	7.38
Assistants		36.6	64.6	64.3	44.6	36.5	49.32	46.96	14.20
Sp Ed Teachers		72.9	70.8	66.9	69.8	69.3	69.94	69.87	2.19
Instuctional Assistants		146.3	148.3	145.4	141.4	141.3	144.54	144.97	3.10
District Office		12.0	11.2	11.0	9.0	9.0	10.44	10.72	1.37
School Level/Admin		21.6	23.9	24.1	25.1	24.7	23.88	24	1.36
Libray/Media		13.0	12.0	11.5	12.0	12.0	12.1	12	0.55
Inst. Spcialists		34.9	34.9	34.9	32.2	31.5	33.68	34.29	1.69
Social Wokers/Psych		51.6	50.6	50.6	50.7	47.7	50.24	50.6	1.48
Nurses		12.5	12.5	12.9	12.4	12.4	12.54	12.5	0.21
Non Instructional Staff		336.5	328.1	329.9	330.1	327.4	330.4	330	3.60
Total Staff		1,161.1	1,167.2	1,169.2	1,134.0	1118.1	1149.92	1155.51	22.70
Expenditures (Ed Sights & Town Budget)	$106,118,332	$103,536,727	$108,598,675	$105,751,492	$102,893,480	$100,859,802	$104,626,418	$104,644,110	2,744,023.37
Students	6,808	6,744	6,740	6,685	6,687	6,716	6,714	6,715	28.06
Student Ratios									
Teacher & Assistant Student Ratio	#DIV/0!	12.66	12.35	12.18	12.83	13.11	12.63	12.64	0.37
Complement Student Ratio	#DIV/0!	5.81	5.77	5.72	5.90	6.01	5.84	5.82	0.11
Expenditures per Student	$15,587	$15,352.42	$16,112.56	$15,819.22	$15,387.09	$15,017.84	$15,537.83	$15,462.46	$429.24
Terachers Only per Student	#DIV/0!	13.59	14.01	13.79	14.03	14.12	13.91	13.96	0.21
Instuctional Assistants/ student	#DIV/0!	46.10	45.45	45.98	47.29	47.53	46.47	46.28	0.90
District Office	0	0.0018	0.0017	0.0016	0.0013	0.0013	0.00	0.00	0.00
School Level/Admin	#DIV/0!	312.22	282.01	277.39	266.41	271.90	281.99	279.69	17.89
Libray/Media	#DIV/0!	518.77	561.67	581.30	557.25	559.67	555.73	558.46	22.77
Inst. Spcialists	#DIV/0!	193.24	193.12	191.55	207.67	213.21	199.76	196.50	9.97
Social Wokers/Psych	#DIV/0!	130.70	133.20	132.11	131.89	140.80	133.74	132.66	4.04
Nurses	#DIV/0!	539.52	539.20	518.22	539.27	541.61	535.56	539.24	9.75
Non Instructional Staff	#DIV/0!	20.04	20.54	20.26	20.26	20.51	20.32	20.29	0.21
Total Staff	#DIV/0!	5.81	5.77	5.72	5.90	6.01	5.84	5.82	0.11
Budget Year over Year Increase Dollars	$2,581,605	($5,061,948)	$2,847,183	$2,858,012	$2,033,678				
Budget Year over Year Invrease %	2.43%	-4.89%	2.62%	2.70%	1.98%				
Student Change Year over Year #	64	4	55	(2)	(29)				
Student % Change Year over Year	0.94%	0.06%	0.82%	-0.03%	-0.43%				
Inclusive Estimate		All Sallary & Benefits							
2020-2021 Sallary &Benefits- Teachers	$69,337,694	Current Enrollment		6,808					
2018-2019 Certified Employees	423.2	Student Increase		27					
Cost per Teacher, Assistants, Staff- Sallary & Benefits	$163,841	Total Enrollment		6,835					
Additional Students	27								
Student Teacher Ratio	12.66	2019-20 Budget		$106,118,332					
Teacher Increse	2.13	27 Student Increase		$349,424					
= Teacher Cost Increase	$349,424	Total		$106,467,756					
Cost per student (48)	$7,279.67	Cost per student		$15,576.85					
			Increae	$349,424					

The preceding analysis analyzes the student to teacher ratio for the past five years. Data was available from the CT Department of Education and Trumbull School Board. Available data indicates general teacher and assistance to student ratio for the 2018-2019 school year is 12.66 and only teachers to student ratio of 13.59. The 2020 Connecticut average student to teacher ratio is 12.1. Utilizing this methodology indicates an increase in teachers due to the proposes 27 students at the subject apartment development of 2.13 teachers. Teacher salary and all-inclusive benefits from the 2020-2021 budget was utilized. The probability of increases in all other support staff at the same rate for teachers is unlikely. The above analysis assumes that all 27 students are new students to the district. While in fact, some students are likely to be existing students relocating. The estimated cost for the 2.13 teachers is about $349,424. $350,000 will be utilized for this report for a possible increase in education cost.

FISCAL IMPACT

PERSONAL PROPERTY TAXES

A result of new residential development is the addition of new personal property to the Town's Grand List. The primary impact is the automobile. A conservative estimate for the subject property is 1.5 cars per one-bedroom unit and 2 cars per unit for two-bedroom unit with an average value of $15,000 per car.

ADDITIONAL TOWN SERVICES

The consultant has reviewed the proposed apartment development and has observed the following: The Town of Trumbull will not be required to plow, maintain or service the site's roadways, lighting, sewer and storm drain system, trash removal, and water (Including Fire Hydrants) system. Therefore, there is no impact on Trumbull public works department.

In an effort to allocate the cost that would directly impact the town due to the development as proposed, education, police, fire, EMS service, elderly services and public activities costs will be developed. To estimate these expenses, except for education, the per-capita (per total population) will be utilized. The estimated 2019 Trumbull population utilized from ESRI demographic service/Site to do Business is 35,985+/- and about 2.71 persons per household.

April 2020 discussions with the Trumbull EMS foresees no impact.

The Fire Chief did not indicate any fiscal impact.

The Assistant Police Chief indicated in a May 5, 2020 letter concerns relating to traffic due to the location of the proposed apartment development and increase in service calls. The letter did not reference any manpower or revenue increase. Therefore, an estimated cost of $100,000 will be utilized for anticipated operational expenses.

Following are the calculation that will be utilized based on Hypothetical Conditions and Extraordinary Assumptions.

Population Estimates per Development

HH Size 1-BR 64 units at 1.5 occupants per unit = 96+/- Occupants
HH Size 2-BR 196 units at 2.71 occupants per unit = 531+/- Occupants

Resident Population Utilized for Report: 600 +/-- 2019 Estimated Town Population: 35,985

Assumptions 2019-2020 Budget

Fire Department: No Impact Indicated

Police Dept. Assumption: $100,000

EMS: No impact- Patrons billed for service

Parks & Rec $934,875 ÷ 35,985= $25.98 per-capita
600 Residents x $25.98 = $15,588 Say $16,000

Senior Wellness & Services
$102,736 ÷ 35,985= $2.85 per-capita
600 Residents x $2.85 = $1,712 Say $2,000

Public Works No impact – Private Rods

Estimated Market Value & Estimated Taxes

A market value of about $50,400,000 has been estimated. This estimated market value will be utilized to estimate the amount of estimated real property tax that can be derived.

Tax Mill Rate

The mill rate for the Town of Trumbull is 34.74 for the 2019 grand list.

Analysis Methodology- Fiscal Impact

The analysis methodology is to develop the estimated market value of the proposed 260 unit residential apartment complex; determine the estimated market values of real property and personal property; apply the current assessment valuation method utilized by the Town of Trumbull; apply the current mill rate and estimate the tax revenue generated by the proposed project, then develop the estimated number of school aged children and the estimated cost to educate a PSAC to the Town of Trumbull per pupil and any other supportable financial cost to the Town of Trumbull.

Once the estimated revenue is developed, the estimated expenses to the Town of Trumbull are deducted to estimate the net fiscal impact to the Town of Trumbull, CT.

Following are my findings:

Proposed 260 Unit Apartment Complex- Trumbull CT
ESTIMATED FISCAL IMPACT ANALYSIS CALCULATIONS – ANNUAL

The following fiscal analysis clearly indicates that the proposed 260-unit residential apartment development is a self-sustaining fiscal entity. The Mill Rate is as of July 1, 2020-34.74 Mills which is applied to the 2019 grand list. The estimated real property taxes and personal property taxes cover the cost of any school age children the complex would generate and other related costs. If the apartments were in place as of today, estimated net positive tax revenue would be about $910,000.

		Subject Property - Residential Apartments		
Real Property				
Units		Value/Unit		
0	Studio	0		
64	1 BR	$175,000	$11,200,000	
196	2 BR	$200,000	$39,200,000	
0	3 BR	0		
260	**Total Units**			
Cost =			Total Est.Value	$50,400,000
70% Assessment		$35,280,000		
Times Mill Rate		0.03474		
Total Real Estate Taxes				**$1,225,627**
Personal Property				
Units	Cars/Unit			
1 BR 220	1.5	96		
2 BR 120	2	392		
Total Autos		488		
Est. Avg. Value		$15,000		
Total Value		$7,320,000		
70% Assessment		$5,124,000		
Times Mill Rate		0.03474		
Total Pers Property Tax				**$178,008**
TOTAL ESTIMATED REVENUE				**$1,403,635**
Municipal Expenses				
School Children				
	Units	**Factor/100**	**PSAC**	
1BR	64	1.6	1.02	
2BR	196	13.4	26.26	
Total	260		27.29	
Rounded Total			**27**	
Education Cost/Child			$16,660	
Total Ed Cost			$350,000	
Additrional Fire			$0	
Additional Police			$100,000	
Additional Ambulance			$0	
Additional Public Works			$0	
Elderly Services			$2,000	
Parks & Rec			$16,000	
Additional Town Services/Misc.			$25,000	
Total Cost				**($493,000)**
Total Project Town Cost/Revenue +/-				**$910,635**

Conclusion

After reviewing the preceding data developed within this report, it is clear, that the state economic conditions have had an impact on the marketability of residential apartment properties in the State of Connecticut. It has caused the delay in making the decision for seniors to change from independent single family living to residential apartments. Data indicates those who delayed their decision are now executing their delayed plans. The impact of the COVID-19 crisis on real property demand is not fully understood at this time. There has been some indication as of the writing of this report, that urban dwellers are looking for less densely populated areas to live, like Connecticut, which has less densely populated areas than New York City. The primary driving indicator for real estate demand is employment, it is difficult at best to project future demand until some economic clarity develops. Fortunately, prior to the COVID-19 crisis, of nearby Sikorsky Aircrafts commitment to remain in Connecticut, new contracts, and anticipated increase future employment. Two other major labor nodes East Hartford and Groton, CT, where New United Technologies and Electric Boat contracts should increase employment which is the catalyst that was needed to reverse this trend and improve the states' psychographics. Due to the proximity to the subject property, the Sikorsky decision to stay in Connecticut has a positive impact on the proposed subject property's demand by stemming the potential for further employment loss. Prior to COVID-19, there have been some signs of increased employment and in particular basic employment as of the date of this analysis.

The subject property is in a municipality, Trumbull, CT, recognized as an upper scale community with good psychographics which is clearly demonstrated in the lifestyle which residents currently enjoy in Trumbull. A lifestyle that is in the mid to upper household income levels as well as having good rankings for home values and net worth. The preponderance of the residential lifestyle preferences for Trumbull is single-family homes, while due to an aging population and senior lifestyle change preferences, demand is increasing for senior living options, like market rate apartments. In addition, Trumbull is in close proximity to major Connecticut labor nodes and New York City.

Today a paradigm shift in senior residential apartments is taking place. This has led to structure redesign and enhanced scope of services for residential apartments communities to meet the current lifestyle demands of senior living. A move away from the traditional apartment complex to contemporary designed communities that incorporates market rate amenities. The 2020 rental option for Trumbull residences is improving but may not meet demand due to the impact of COVID-19. While there are two competing complexes under construction, they do not necessarily meet future demand. New apartment communities will provide minimal family disruption by not moving out of the area, retain medical, cultural, and religious linkages. Apartments in Trumbull also allow younger individuals an option that did not exist. An apartment community will enhance quality of life by being able to remain in the Trumbull area.

The other population segments driving apartment demand are the Millennials and Gen X. It was projected Millennials are expected to be 60% of the population by the year 2020. 2020 estimates show that 37% of Trumbull's population is comprised of Millennials and Gen X, a primary target market. Their lifestyle is mobile and socially oriented, forcing redesign of apartments, quality, and an increase in social amenities. Trumbull's apartment void is starting to address this growing apartment segment. Without apartments in Trumbull, it does not afford retention of younger Trumbull residence who cannot afford a home, want to be close to relatives and those who are seeking alternative living options. The apartment target market for Trumbull based on its population is about 17% Millennials and 25% seniors or about 42% of Trumbull's estimated population.

Conclusion-Continued

The combination of senior lifestyle change, millennials, GEN-X, and the potential impact of COVID-19 may have on increased demand should not be dismissed at this time for intergenerational apartment communities that meets current lifestyle demand. The current uncertainty of economic condition will impact the absorption of units. It is difficult at best to estimate absorption at this time. Obtaining approvals at this time is prudent to be in position to meet future demand.

The subject site is in a good location for a luxury apartment community, has good area supporting linkages to retail, medical services, recreation, education, religious, cultural and transportation networks that are important to a successful contemporary residential apartments community.

Therefore:

1) As of the date of this analysis,demand does exist for contemporary intergenerational luxury residential apartments communities in Trumbull, Connecticut due to pent-up senior demand, aging population and potential COVID-19 demand. Future demand will continue to increase since millenials and seniors represent about 42% of the population in 2020, and the proposed apartment community should be an alternative to the higher rental market Fairfield County west (Stamford and Norwalk).
2) The study area target market has an income level, current home value and net worth that should meet the threshold financial level to rent the proposed contemporary residential apartment community.
3) Proposed amenities include an elevator and laundry room in each building plus a clubhouse with meeting room, exercise room, game room and outside grass game area.
4) Market rent is approximately $2000.00+/- per month plus utilities for one-bedroom units and approximately $2,500.00+/- per month plus utilities for two-bedroom units.
5) The proposed The Residences at Main 260-unit apartment community if in place as of today and under current market conditions would produce a positive net tax revenue to the Town of Trumbull CT of about $910,000.

Stanley A. Gniazdowski, CRE, CCIM

2514 Boston Post Road, 9C, Guilford CT 06437 TEL: 203.453.1117

EXPERIENCE

Realty Concepts, Inc. Guilford, Connecticut
President 1984 to Present
Mr. Gniazdowski is president of Realty Concepts, Inc. a Guilford Connecticut based International Real Estate Consulting and Advisory Group, which he founded in 1984. He has been in the real estate profession since 1973 as a broker, appraiser, and consultant. He was Vice President and a consultant at Cushman & Wakefield prior to forming his own firm.

Mr. Gniazdowski has provided real estate consulting, appraisal, asset management, litigation support and development consulting to national and international corporations, developers, investors, retailers, governmental agencies, lenders, and law firms. He specializes in investment analysis and structuring, development market analysis and impact analysis, litigation support, specialized appraisal work and asset management. His experience includes single assets in excess $100,000,000.

He holds the Counselor of Real Estate Designation “CRE” of which there are about 1,100 world-wide, the CCIM Institute “CCIM” designation and is a Senior Instructor for the CCIM international education courses. Stan is the recipient of the CI 102 (Market Analysis Course) Instructor of the year. He serves on committees for CCIM Institute including 2013 Education Chairman, University Alliance Committee, the Board of Directors of the CCIM Education Foundation, past CCIM Region 11 VP and CCIM Board of Directors and serves on the CCIM Tech Board. In April 2017 Mr. Gniazdowski was honored by the CCIM Education Foundation with named endowed scholarship. In 2007 Mr. Gniazdowski was awarded the FRICS (Royal Institute of Chartered Surveyors) designation. For 25 years, he served as an Adjunct Assistant Professor of Real Estate at New York University and the recipient of the NYU "Award for Teaching Excellence". He recently has been appointed as an adjunct at the newly formed Fordham University master’s in real estate program and serves on the Real Estate Curriculum Advisory Committee. Starting in 2019 Mr. Gniazdowski is teaching market analysis GIS workshops at Harvard University in its graduate urban economics and market analysis course. He has consulted internationally in Egypt, Poland, Russia, Slovakia, Taiwan, Hungary, and Ukraine. He lectures and trains internationally. Mr. Gniazdowski has served as President of the Connecticut CCIM and CRE chapters and is involved in other civic and private organizations. In 2008 Mr. Gniazdowski co-authored a book for the American Bar Association titled,” Redevelopment- Planning, Law and Project Implementation” a Guide for Practitioners”. In April 2017 Mr. Gniazdowski was honored by having an annual Endowed Educational Scholarship established in his name through the CCIM Education Foundation.

Cushman & Wakefield New York, New York
Vice President 1982 to 1984
Performed consulting services to investors and corporate clients, structured transactions for in-house brokers and clients. Structured and completed sale of a single asset in excess of $100,000,000; and structured sale lease backs; development structuring and general counseling.

W.T. Beazley Company Wallingford, Connecticut
Vice President 1979 to 1982
Financial services division. Responsible for directing property management division; structuring condominium conversions; support brokerage division and general counseling and valuation.

Moniello Associates East Haven, Connecticut
Manager 1973 to 1979

Directed residential and commercial sales departments. Personally specialized in commercial investment sales and consulting.

EDUCATION :

- University of New Haven 1972. BS Business Administration. Deans Award Graduate.
- Commercial Investment Real Estate Institute five graduate level courses.
- Real Estate Securities and Syndication Institute.
- Society of Real Estate Appraisers: Market, feasibility and marketability studies.
- University of New Haven: Commercial Investment R E Analysis. Appraisal I & II.

PROFESSIONALDESIGNATIONS

- FRICS: Fellow Royal Institute of Chartered Surveyors 2007
- CRE: Counselor of Real Estate 1987
- CCIM: Certified Commercial Institute Member 1982
- CRS: Certified Residential Specialist 1978

TEACHING AFFILIATIONS

- Adjunct Associate Professor – New York University **1996 - Award for Teaching Excellence**
- Adjunct Associate professor- Fordham University 2017- current
- Senior instructor Commercial Investment Real Estate Institute – CCIM program
- Instructor - Industrial Development Research Council: Corporate Real Estate
- Compass Management & Leasing

PROFESSIONAL AFFILIATIONS

- Chairman – 2013 – CCIM Education Committee
  Board of Directors – CCIM Education Foundation 2007 to Present
- Chairman - 2000 CCIM CI 102 Course & Technology Task Force
- Chairman - 1995 Connecticut CRE Chapter
- Chairman - 1992 CCI M Course 101 & Course rewrite
- Chairman - 1988 Connecticut CCIM Chapter
- Chairman Connecticut Association of Realtors: Common Interest Communities and Rental Housing Law Committee.
- Landauer/CCIM National Real Estate Survey - CCIM Editorial member 1995-96
- Chairman (1989 & 1990) Commercial Investment Real Estate Journal.
- CCIM Comprehensive Exam Team and Designation Committee.
- Education Committee member, American Society of Real Estate Counselor.

PROFESSIONAL LICENSES

- Certified General Appraiser • Broker - Connecticut
- Licensed Real Estate Securities - Connecticut

OTHER:

- Author "The Role of Market Analysis in Redevelopment" in "Redevelopment: Planning, Law & Project Implementation" (American Bar Association, 2008)
- National lecturer on Real Estate Valuation, Development, Counseling, Market Analysis, and Syndication.
- Consulted &/or Lectured in *Hungary, Poland*, *Russia, Slovakia, Taiwan & Ukraine* Financing and structuring transactions
- Testified before the State Joint Judiciary Committee as an expert witness on the Connecticut Condominium conversion Law and other real estate issues
- President: University of New Haven Alumni Association 1991&1992.
- Board of Governors, University of New Haven
- Shoreline Foundation

REFERENCES: Available upon request

PARTIAL LIST OF CORPORATE CLIENTS

ALLIED SIGNAL
ATLANTIC BANK & TRUST COMPANY
AVALON COMMUNITIES, INC.
BANK BOSTON
CHEMICAL BANK
CITIZENS BANK
CONNECTICUT HOUSING FINANCE AUTHORITY
COSTCO
DATTCO
EDENS & EVANT
EASTERN EUROPEAN REALTY FOUNDATION
EMERGILITE
FIRST UNION BANK
GOVERNMENTAL AGENCIES
GREATER NEW HAVEN CHAMBER OF COMMERCE
HAYNES DEVELOPMENT
H. J. RUSSELL CO.
HARLAND, O'CONNOR, TINE, & WHITE
HOMART
INTEGRATED RESOURCES
JPI
J P MAGUIRE
KNIGHTS of COLUMBUS
LAFAYETTE AMERICAN BANK
Mc DONALS'S
MARRIOTT CORPORATION
METLIFE CAPITAL CREDIT
METRO STAR CAPITAL
MOROSO
UTOPIA MENTAL HEALTH
NEW HAVEN SAVINGS BANK
NEUROGEN CORPORATION
NORTHERN TRUST BANK
RAYMOUR & FLANIGAN
RHODE ISLAND HOSPITAL TRUST
ROCKEFELLOR GROUP
ROUSE CORPORATION
SCHNEIDER NATIONAL
SHAW'S SUPERMARKET
SIGMA XI
SOUTHERN NEW ENGLAND TELEPHONE COMPANY
STOP AND SHOP COMPANIES
SWISS BANK
TARGET
TILCON, INC.
TOMASSO BROS.
TOWN OF EAST HAVEN
TOWN OF MADISON
ULBRICH STEEL
UNIVERSITY OF CONNECTICUT FOUNDATION
WALMART
UNIVERSITY OF NEW HAVEN
UPJOHN COMPANY
WALMART
YALE SCHOOL OF MEDECINE
YALE UNIVERSITY

Addenda

Trumbull Board of Education
Budget Summary by Master Object for 2020-21
BOARD OF EDUCATION APPROVED BUDGET REQUEST 02/20/20

		2018-19 Act	2019-20 Approved Budget			2020-21 BOE Request		
Object Description	Code	$	FTE	$	% Change	FTE	$	% Change
Salaries	100	$71,535,449	901.96	$72,705,524	1.64%	911.08	$75,038,406	3.21%
Benefits	200	$15,316,235		$16,412,266	7.16%		$17,304,928	5.44%
Services-Prof & Tech	300	$1,580,486		$1,597,931	1.10%		$1,496,752	-6.33%
Services - Property	400	$3,518,427		$3,232,045	-8.14%		$3,667,300	13.47%
Services - Purch'd Ot	500	$10,566,466	21.00	$10,292,626	-2.59%	19.00	$11,977,564	16.37%
Supplies	600	$1,974,014		$2,154,788	9.16%		$2,072,490	-3.82%
Property	700	$465,420		$656,986	41.16%		$679,999	3.50%
Other Objects	800	($1,419,770)		($933,834)	-34.23%		($1,276,759)	36.72%
Report Total		**$103,536,727**	**922.96**	**$106,118,332**	**2.49%**	**930.08**	**$110,960,680**	**4.56%**
Student Enrollment		**6,723**		**6,843**			**6,902**	

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Trumbull Board of Education
Budget Summary by Object for 2020-21
BOARD OF EDUCATION APPROVED BUDGET REQUEST 02/20/20

		2018-19 Act	2019-20 Approved Budget			2020-21 BOE Request		
Object Description	Code	$	FTE	$	% Change	FTE	$	% Change
Salaries	100							
Admin/Supervisors	110	$4,850,468	30.27	$4,815,899	-0.71%	28.27	$4,487,239	-6.8%
Teachers	120	$51,498,509	578.42	$52,925,428	2.77%	576.16	$53,574,046	1.2%
Custodians/Maintenanc	130	$3,497,417	65.00	$3,685,224	5.37%	65.00	$3,734,323	1.3%
Tech Support	140	$683,817	7.00	$587,584	-14.07%	7.00	$587,073	-0.1%
Admin Support	150	$2,623,144	46.77	$2,687,404	2.45%	45.38	$2,667,161	0.8%
Paras & Aides	160	$4,342,924	150.01	$3,974,975	-8.47%	162.27	$4,631,637	16.5%
Substitutes	170	$1,119,222	0.00	$983,000	12.17%	0.00	$1,305,000	32.8%
Coaches & Advisors	180	$709,434	0.00	$709,697	0.04%	0.00	$672,761	-5.2%
Salaries Other	190	$1,791,533	24.49	$1,767,196	-1.36%	25.00	$1,792,869	1.5%
Misc Salary Items	195	$418,879	0.00	$569,117	35.87%	0.00	$1,586,297	178.7%
Salaries	Total	**$71,535,449**	**901.96**	**$72,705,524**	**1.64%**	**911.08**	**$75,038,406**	**3.2%**
Benefits	200							
Health Insurance	210	$13,268,961		$14,402,000	8.55%		$15,228,714	5.7%
FICA	220	$1,776,371		$1,698,357	-4.39%		$1,727,214	1.7%
Other Insurance	280	$131,539		$131,000	0.41%		$132,000	0.8%
Benefits Other	290	$139,364		$180,000	29.16%		$217,000	20.6%
Benefits	Total	**$15,316,235**		**$16,412,266**	**7.16%**		**$17,304,928**	**5.4%**
Services-Prof & Technical	300							
Professional Devt	320	$205,133		$173,938	-15.21%		$112,372	-35.4%
Legal	330	$245,820		$320,000	30.18%		$299,000	-6.6%
Service Contracts	340	$428,877		$374,349	12.71%		$474,080	26.6%
Consultants	360	$200,497		$320,400	59.80%		$200,500	-37.4%
Other Prof Services	390	$500,160		$409,244	-18.18%		$410,800	0.4%
Services-Prof & Technical	Total	**$1,580,486**		**$1,597,931**	**1.10%**		**$1,496,752**	**-6.3%**
Services-Property	400							
Utilities	410	$1,288,282		$882,000	-31.54%		$1,285,000	45.7%
Energy	415	$1,128,324		$1,170,000	3.69%		$1,205,000	3.0%
Repairs & Svc Fees	430	$388,561		$405,184	4.25%		$413,300	2.0%

Stormwater Management Report

For the Proposed:

The Residences at Main

Located at:

5085 Main Street
Trumbull, Connecticut

Prepared for Submission to:

Town of Trumbull, Connecticut
Planning and Zoning Commission

May 15, 2020

Prepared for:

K&K Developers, Inc.
C/O Garden Homes Development
820 Morris Turnpike
Short Hills, NJ 07078

Prepared by:

Architecture
Engineering
Environmental
Land Surveying
Companies

BL Companies
355 Research Parkway
Meriden, Connecticut 06450
Phone: (203) 630-1406
Fax: (203) 630-2615

BL Project Number: 1800513

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Appendix A: Data and Mapping

Figure 1A: USGS Location Map

Figure 1B: Aerial Location Map

Figure 2: NRCS Soil Survey Map with Hydrologic Soil Group Data

Figure 3: FEMA Federal Insurance Rate Map

Figure 4: NOAA Atlas 14 Storm Data

Appendix B: Hydrologic Analysis

Pre-Development Hydrological Analysis (2-, 10-, 25- and 100-year storms)

Post-Development Hydrological Analyses (2-, 10-, 25-and 100-year storms)

Appendix C: Proposed Hydraulic Analysis (10-year storm)

Computation Tables

Hydraulic Profiles

Appendix D: Water Quality Calculations

Water Quality Volume and Water Quality Flow Calculations

Treatment Train Efficiency Worksheet

Appendix E: Drainage Maps

ED-1 – Existing Drainage Area Mapping

PD-1 – Proposed Drainage Area Mapping

CB-1 – Proposed Sub-catchment Area Mapping

Appendix F: Stormwater System Operation and Maintenance Manual

Appendix G: Geotechnical Reports

Preliminary Geotechnical Assessment

Test Pit and Infiltration Testing Results

Executive Summary

This report has been prepared in support of a Special Permit application to the Town of Trumbull by K&K Developers, Inc., for a proposed residential development southeast of the intersection of Connecticut Route 15 and Main Street (Connecticut Route 111). The subject property is approximately 10.42 acres. The parcel is currently developed with two dead-end avenues surrounded by woods. Single-family residential properties once populated the property and have since been demolished. There are no existing wetlands near the subject property. The proposed redevelopment includes the construction of five apartment buildings and associated parking lots, drainage and utilities. The overall existing drainage onsite will be improved with the use of Best Management Practices (BMPs) for water quality and runoff management though treatment, detention and outlet control.

To the north of the property is Route 15. Across Route 15 are residential developments. East of the property is also a residential use. South of the property is the drive and parking lot to Westfield Trumbull Shopping mall. West of the property is the shopping mall.

Generally, the topography of the site slopes downward toward the westerly property, ranging from elevation ±324 to ±284. The western portion of the site features steeper slopes in relation to the eastern portion of the site. Under the existing conditions, site stormwater is either collected by an on-site stormwater network that conveys the flow directly into the shopping mall's drainage network or the site stormwater leaves the site by overland flow which also flows into the shopping mall's drainage network.

A HydroCAD model, utilizing TR-55 methodology, was developed to evaluate the existing and proposed drainage conditions of the property. To mitigate the increase in impervious coverage on the site a subsurface plastic storage chamber system will be installed with an outlet control structure to provide stormwater runoff rate control. The results of the analysis demonstrate that there will not be an increase in peak stormwater runoff rates for, the 2-, 10-, 25-, and 100-year storm events. Water Quality Best Management Practices (BMPs) have been incorporated into the project design to provide a minimum required 80% TSS removal. The majority of impervious area runoff will be captured by hooded catch basins with deep sumps, with the building runoff discharging to roof leaders. The stormwater runoff will then be conveyed through hydrodynamic separators and into underground infiltration chambers or a surface detention pond.

The proposed stormwater management system is designed to be in compliance with the Town of Trumbull regulations and the 2004 Connecticut Stormwater Quality Manual as well as the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control.

Existing Conditions

General Existing Site Conditions

The existing site consists of impervious areas includes the remains of two former avenues; running from east to west. The property also contains woods and overgrowth throughout the site. A few utilities run along the avenues. Stormwater runoff from the site is collected by an on-site stormwater network or overland flow; both of which flow into the drainage network of the shopping mall south and west of the subject property.

The site soils identified by the United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) area Charlton-Chatfield complex – B, Paxton and Montauk fine sandy loams – C, Urban land-Charlton-Chatfield complex – D, Paxton-Urban land complex – C, Udorthents-Urban land complex – B, and Urban Land – D. A copy of the USDA NRCS Hydrologic Soil Group Map is included in Appendix A and a Soil Report is included in Appendix H for reference.

Per the FEMA Flood Insurance Rate Map Number 09001C0426F for the Town of Trumbull, Connecticut map, effective revision date: June 18, 2010, the site is located in the Flood Hazard Zone X (unshaded), area of minimal flood hazard. A copy of the FEMA Flood insurance rate map is included in Appendix A for reference.

Existing Drainage Conditions

The existing site drainage area that was analyzed for this project totals approximately 17 acres and has approximately 28.2% impervious ground cover. The existing stormwater management system onside includes a few catch basins that connect to the drainage system of the neighboring shopping mall with no treatment prior to leaving the site. Stormwater from the subject property and from portions of the roadway flows in three major existing drainage areas (EDA-100, 200 and 300) that all drain to the stormwater system of the adjacent westerly commercial property. The impervious coverage on the subject property was determined using the 1964 aerial imagery which also consisted of the two avenues running through the property and multiple single family residential homes.

The following is a brief analysis of the existing points of interest as shown on the enclosed Existing Drainage Plan (ED-1), in Appendix E.

Existing Drainage Area 100 (EDA-100): This drainage area covers most of what was formerly Whalburn Avenue, several houses from the 1964 imagery with sheds and driveways and yard areas as well as a native wooded vegetation to the north buffering the residence back yards and the State Route 15. In the EDA-100 drainage area, the stormwater runoff flows east to west through the

property yards and woods. Ultimately the runoff is captured in a swale and catch basin system installed at the toe of the slope at the neighboring mall property prior to the runoff entering the mall parking area.

Existing Drainage Area 200 (EDA-200): This drainage area includes approximately half of Stuart Place, many of the homes and associated drives along the roadway, grass yards, native wooded vegetation, and a parking lot belonging to the westerly mall parcel. In the EDA-200 drainage area, the stormwater runoff is captured in a catch basin network located at the westerly end of Stuart Place and in the remote parking lot of the neighboring mall property.

Existing Drainage Area 300 (EDA-300): This drainage area includes the runoff that comes from Main Street which is directed through the mall entry drive from the roadway gutter. The area also includes a few single-family homes, approximately half of Stuart Place, grass yard, native wooded vegetation, and the main drive to the neighboring shopping mall. In the EDA-300 drainage area, the stormwater runoff is captured in a catch basin network along the main drive of the neighboring mall property.

Table 1 below displays the overall size and hydraulic characteristics used to analyze the existing drainage areas.

Table 1 – Pre-Development (Existing Conditions) Drainage Characteristics

Drainage Area	Total Area SF	Composite Curve Number	Imperviousness Cover %	Time of Concentration Minutes
EDA-100	359,310	80	11.2%	20.10
EDA-200	162,700	86	42.7%	14.40
EDA-300	221,943	88	45.2%	16.50

Table 2 below displays the peak rate of runoff for the existing drainage areas, calculated by the SCS TR-55 methodology, used to compare the existing and proposed drainage areas stormwater characteristics.

Analysis Point	Peak Flows (CFS)			
	2-YR	10-YR	25-YR	100-YR
EDA-100	10.23	19.43	25.32	34.34
EDA-200	7.14	12.24	15.36	20.14
EDA-300	9.74	16.27	20.22	26.25

Proposed Conditions

General Proposed Site Conditions

The proposed development includes the development of the site with 5 apartment buildings totaling 260 residential units and associated roadways, parking, drainage and utilities necessary to support the development. Site modifications will include repaving, re-grading and modifying Whalburn Avenue, closing Stuart Place and adding a new road running north to south.

The overall existing drainage onsite will be improved through the use of Best Management Practices (BMPs) for water quality and runoff management though means of treatment, detention and outlet control.

Proposed Drainage Conditions

For the purposes of the drainage analysis and discussion, as well as to maintain existing drainage patterns to the maximum extent practical, the stormwater runoff points of interest for the proposed conditions analysis are the same as the points of interest analyzed in the existing conditions. The discharge from the proposed stormwater treatment devices will connect directly to the existing stormwater network of the subject property and the neighboring mall property. The proposed development has been analyzed as six drainage and sub-drainage areas, which are illustrated on the enclosed Proposed Drainage Plan (PD-1) located in Appendix E. The proposed analysis includes a total of 17 acres and is approximately 57.7% impervious. The site stormwater management system will provide the necessary stormwater attenuation do to the increase in impervious surface through the installation of a subsurface and surface detention systems with outlet control as well as stormwater quality improvements compared to the existing system through the utilization of hydrodynamic separators for treatment before entering both the existing dranage network to the maximum extent practical. The BMPs have been designed in accordance with the 2004 Connecticut Stormwater Quality Manual.

The following is a brief analysis of the proposed drainage areas as shown on the enclosed Proposed Drainage Plan (PD-1), in Appendix E.

Proposed Drainage Area 101 (PDA-101): This drainage area consists predominately of the native wooded vegetation to the north buffering the residence back yards and the State Route 15. Additionally, this area consists of the runoff from a newly constructed access drive connecting the northwesterly corner of the development to the existing mall circulation road. This area will be connected directly into the existing stormwater network of the mall property. The runoff is captured in a swale and catch basin system installed at the toe of the slope at the neighboring mall property prior to the runoff entering the mall parking area.

Proposed Drainage Area 102 (PDA-102): This drainage area consists predominately of bituminous concrete parking areas as well as the roof drainage associated with buildings 1 and 2 and the former Whalburn avenue roadway running east to west. This drainage area also includes interior landscaping and landscape islands and a portion of runoff from the landscape buffers between the State Route 15 off ramp, Main Street and the subject property. In the PDA-102 drainage area, the stormwater runoff is captured on site through a catch basin network and is routed to the stormwater system under the parking area of building 1. The runoff is treated with hydrodynamic separators prior to entering the system to keep trash and suspended solids out of the system (proprietary system claims to meet 80% TSS removal). The underground stormwater basin consists of polyethylene storage chambers encased in crushed stone. This system allows for maximum infiltration and groundwater recharge potential. An infiltration rate of 3 inches per hour with a factor of safety of 2 (1.5 in/hr) has been assigned to these systems in the stormwater modeling (see Appendix G for infiltration testing results). Additionally, the system has been designed to retain and infiltrate the 1" water quality volume (WQV) for this drainage area.

Proposed Drainage Area 201 (PDA-201): This drainage area consists predominately of the native wooded vegetation to the southwest of the property and the adjacent mall property and a parking lot belonging to the westerly mall parcel. The stormwater runoff is captured in a catch basin network in the remote parking lot of the neighboring mall property.

Proposed Drainage Area 202 (PDA-202): This drainage area consists predominately of bituminous concrete parking areas as well as the roof drainage associated with buildings 4 and 5. This drainage area also includes interior landscaping and landscape islands and approximately half of the new access road running from the south to the north at the intersection of the former Whalburn Avenue. In the PDA-202 drainage area, the stormwater runoff is captured on site through a catch basin network and is routed to the stormwater system under the parking area of buildings 4 and 5. The runoff is treated with a hydrodynamic separator prior to entering the system to keep trash and suspended solids out of the system (proprietary system claims to meet 80% TSS removal). The underground stormwater basin consists of polyethylene storage chambers encased in crushed stone. This system allows for maximum infiltration and groundwater recharge potential. An infiltration rate of 3 inches per hour with a factor of safety of 2 (1.5 in/hr) has been assigned to these systems in the stormwater modeling (see Appendix G for infiltration testing results). Additionally, the system has been designed to retain and infiltrate the 1" (WQV) for this drainage area.

Proposed Drainage Area 301 (PDA-301): This drainage area includes the runoff that comes from Main Street which is directed through the mall entry drive from the roadway gutter as well as a portion of main drive to the neighboring shopping mall. The stormwater runoff is captured in a catch basin network along the main drive of the neighboring mall property.

Proposed Drainage Area 302 (PDA-302): This drainage area consists predominately of bituminous concrete parking areas as well as the roof drainage associated with building 3. This drainage area also includes interior landscaping and landscape islands and a portion of the landscape buffer between the subject property and Main Street. In the PDA-302 drainage area, the stormwater runoff is captured on site through a catch basin network and is routed a surface detention basin. The runoff captured from the impervious parking areas and roof area is treated with a hydrodynamic separator prior to entering the system to keep trash and suspended solids out of the system (proprietary system claims to meet 80% TSS removal). The pond uses a "Type C-L" catch basin with orifices and a trash rack for stormwater attenuation. The Top of frame grate of the structure is an emergency overflow orifice set higher than the 100-year storm event elevation in the pond, and the pond then has an additional 6" of freeboard above that elevation. This system allows for some infiltration and groundwater recharge potential; however, an infiltration rate has not been incorporated for storage credit in this design at this time.

Table 3 below displays the overall size and hydraulic characteristics used to analyze the proposed drainage areas.

Table 3 – Post Development Drainage Characteristics

Drainage Area	Total Area SF	Composite Curve Number	Imperviousness Cover %	Time of Concentration Minutes
PDA-101	146,162	75	9.0%	14.90
PDA-102	183,046	93	80.1%	6.00
PDA-201	71,843	87	52.5%	13.10
PDA-202	104,679	95	86.3%	6.00
PDA-301	145,655	89	59.4%	13.70
PDA-302	91,062	88	59.7%	13.60

Table 4 below displays the peak rate of runoff for the proposed drainage areas, calculated by the SCS TR-55 methodology, used to compare the existing and proposed drainage areas stormwater characteristics.

Analysis Point	Peak Flows (CFS)			
	2-YR	10-YR	25-YR	100-YR
PDA-100	7.40	14.61	18.48	24.79
PDA-200	4.42	11.82	14.67	19.64
PDA-300	9.62	15.12	19.01	24.69

Stormwater Management

Stormwater Attenuation

A hydrologic analysis to determine peak stormwater discharge rates was performed using the HydroCAD stormwater modeling system computer program, version 10.00 developed by HydroCAD Software Solutions, LLC. Hydrographs for each watershed were developed using the SCS Synthetic Unit Hydrograph Method. Rainfall depths and distribution taken from the NOAA Atlas 14 for Trumbull, Connecticut were used for the calculation of peak flow rates and are listed in Table 5. The drainage areas, or sub-drainage areas as labeled by the program, are depicted by hexagons on the attached drainage diagrams. Pre- and post-development HydroCAD output and details can be found in Appendix B.

Table 5 – Rainfall Depths per NOAA Atlas 14
Appendix B - 24-hour Rainfall Data

Return Period	24-hour Rainfall Depth
2-year	3.52”
10-year	5..42”
25-year	6.61”
100-year	8.45”

The results of the analysis can be found in Table 6 below of the 2-, 10-, 25-, and 100-year storm events. With the use of detention structures with outlet control structures the site proposed stormwater management system meets the requirements of the Town of Trumbull Regulations as well as the 2004 Connecticut Stormwater Quality Manual at all discharge design point locations by not increasing peak runoff rates from the proposed developments at the site.

Table 6 – Existing vs Proposed Peak Rates of Runoff

Analysis Point	Peak Flows (CFS)			
	2-YR	10-YR	25-YR	100-YR
EDA-100	10.23	19.43	25.32	34.34
PDA-100	7.40	14.61	18.48	24.79
EDA-100	7.14	12.24	15.36	20.14
PDA-200	4.42	11.82	14.67	19.64
EDA-300	9.74	16.27	20.22	26.25
PDA-300	9.62	15.12	19.01	24.69

Stormwater Quality

Along with the reduction of peak storm water discharge rates, an important element of the proposed drainage system is to improve the quality of discharge leaving the property. BMPs for stormwater runoff quality have been implemented in this design, refer to Appendix D for details and calculations.

All catch basins in parking and/or paved areas will have a minimum of four-foot deep sumps to collect sediment carried in the runoff. In addition, all catch basin outlets will be fitted with 'hoods' which trap floating debris in the individual catch basin so they can be removed during regular maintenance. The lawn and landscaped areas can also provide a secondary level of filtration and infiltration. No quantifiable credit is given to this green space, but it can contribute to water quality.

Hydrodynamic separators will be installed downstream of the stormwater collection networks prior to discharging to the detention systems. This unit has been proven to improve storm water quality. The unit has been designed in an "in-line" configuration, which improves the efficiency and is sized to treat the Water Quality Flow (WQF) per the 2004 Connecticut Stormwater Quality Manual. The "in-line" hydrodynamic separators will provide for 80% total suspended solid removal from collected runoff meeting the Connecticut guidelines and applicable Town of Trumbull regulations. Additionally the two underground detention systems will retain and infiltrate at minimum the 1" WQV significantly reducing downstream pollutant load and meeting the Town of Trumbull Municipal Separate Storm Sewer System (MS4) requirements for these systems.

Stormwater Conveyance

The hydraulic study of the on-site drainage system has been designed to comply with the requirements set forth in the State of Connecticut Department of Transportation Stormwater Drainage Manual, dated 2000, as amended and applicable regulations of the Town of Trumbull. The on-site collection and conveyance system is modeled with StormCAD V8i, for the 10-year storm event. Refer to Catch Basin Drainage Area Map Sheet No. CB-1 in Appendix B and StormCAD Computation Tables and Hydraulic Profiles in Appendix C form more details.

Soil Erosion and Sediment Control

A soil erosion and sediment control plan has been developed to protect the adjacent roadways, storm drainage systems, properties and wetland areas and any adjacent water course from sediment laden surface runoff and erosion.

Sediment control will be accomplished through rapid stabilization and by the installation of mechanical devices, including a temporary gravel construction entrance, silt fence, haybales, and storm drain inlet protection. The proposed construction activities will be in accordance with

policies and requirements of the 2002 Connecticut Guidelines for Sedimentation and Erosion Control, as amended as well as the applicable requirements of the Town of Trumbull. Permanent stabilization will occur as quickly as possible with site-specific seeding mixtures and as required by local officials.

Structural practices utilized as part of this development will include:

1. Temporary Construction Entrance

A temporary construction entrance shall be installed at the stone construction entrance of the development. Mud and debris shall be washed from all construction vehicles and equipment before leaving the site. The sediment laden water will be diverted to a proposed sediment basin/trap. Water tanks will be used if public water is unavailable.

2. Silt Fence

Silt fence shall be installed downstream of disturbed areas to filter the sediment laden sheet flow. Haybale backing will be used upstream of wetlands.

3. Inlet Protection

All storm inlets existing and constructed, that could potentially receive sediment laden runoff will have silt sack and/or haybale protection installed until site stabilization is complete.

4. Temporary Diversion Swales

Temporary diversion swales will be installed along the perimeter slopes to direct flow towards temporary sediment basins. The diversion shall be stabilized immediately following installation with temporary or permanent vegetation to prevent erosion.

5. Stone Check Dams

Stone check dams will be installed along diversion swales to filter sediment laden runoff being directed into temporary sediment traps.

6. Temporary Sediment Traps/Basins

Temporary sediment traps and basins will be installed to provide a minimum of 134 cubic yards of storage per disturbed acre contributing to the basin.

Conclusion

The stormwater design for the project development meets regulatory requirements and stormwater quality goals. The stormwater BMPs aid in keeping pollutants out of the adjacent roadways and properties and maximize the potential for groundwater recharge as well as attenuating peak flows by detaining stormwater for the most frequent storm events as practical. Stormwater quality is being addressed by water quality structures providing the minimum required 80% TSS removal as required in the CT Stormwater Manual. The proposed stormwater management system will meet the stormwater quality requirements of the State of Connecticut and the Town of Trumbull while improving overall existing site drainage conditions.

APPENDIX A

DATA AND MAPPING

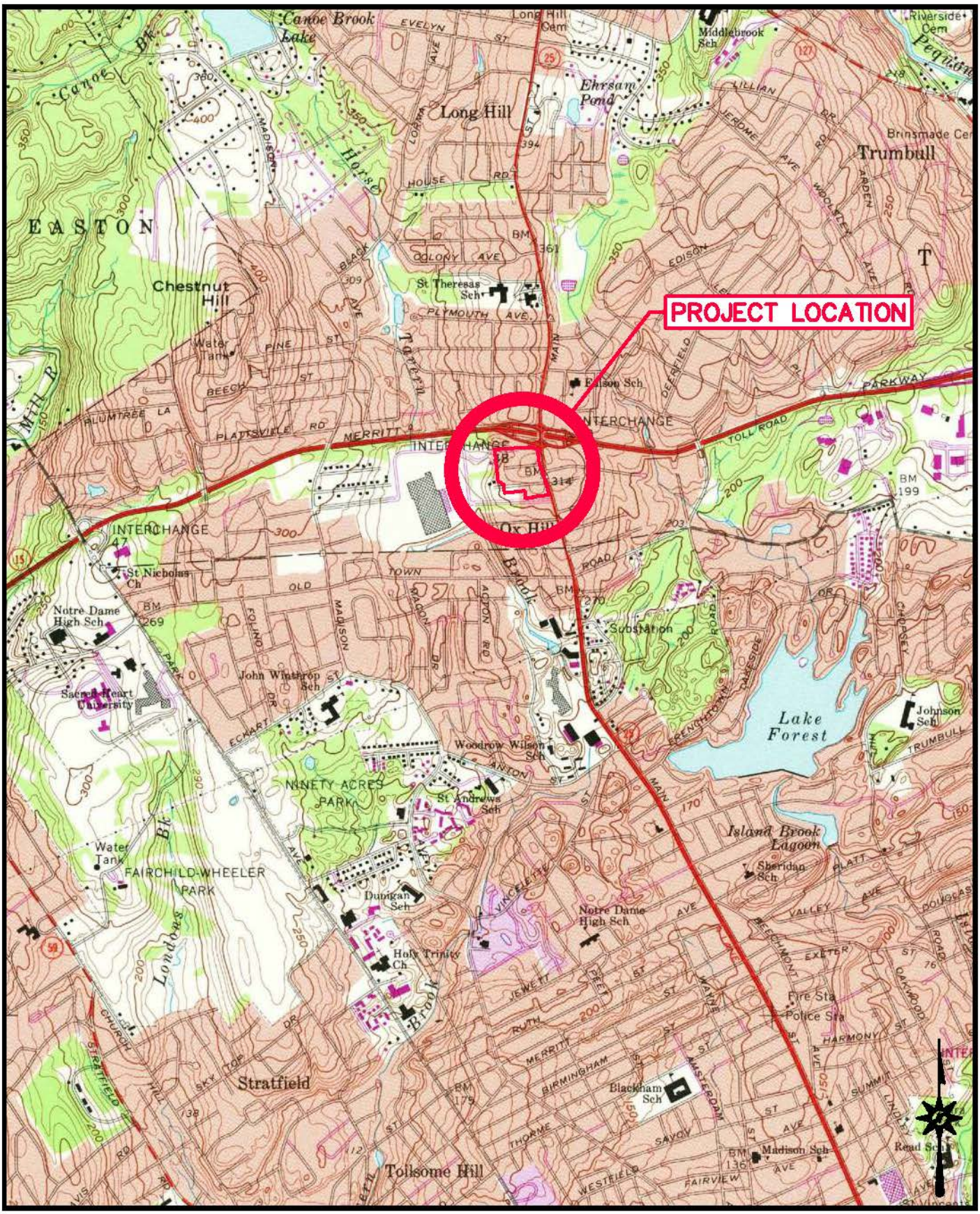
Figure 1A: USGS Location Map

Figure 1B: Aerial Location Map

Figure 2: NRCS Soil Survey Map with Hydrologic Soil Group Data

Figure 3: FEMA Federal Insurance Rate Map

Figure 4: NOAA Atlas 14 Storm Data



ARCHITECTURE
ENGINEERING
EN□IRONMENTAL
LAND SUR□EYING

BL Companies

PROPOSED
RESIDENTIAL DEVELOPMENT
NEWTOWN TURNPIKE – MAIN STREET
(CONN ROUTE 111)
TRUMBULL, CONNECTICUT

Designed	J.S.D.
Drawn	J.S.D.
Checked	A.T.K.
Approved	
Scale	1"=2,000'
Project No.	180513
Date	03/02/2020
CAD File	LOC180051301

FIGURE 1A

USGS LOCATION MAP

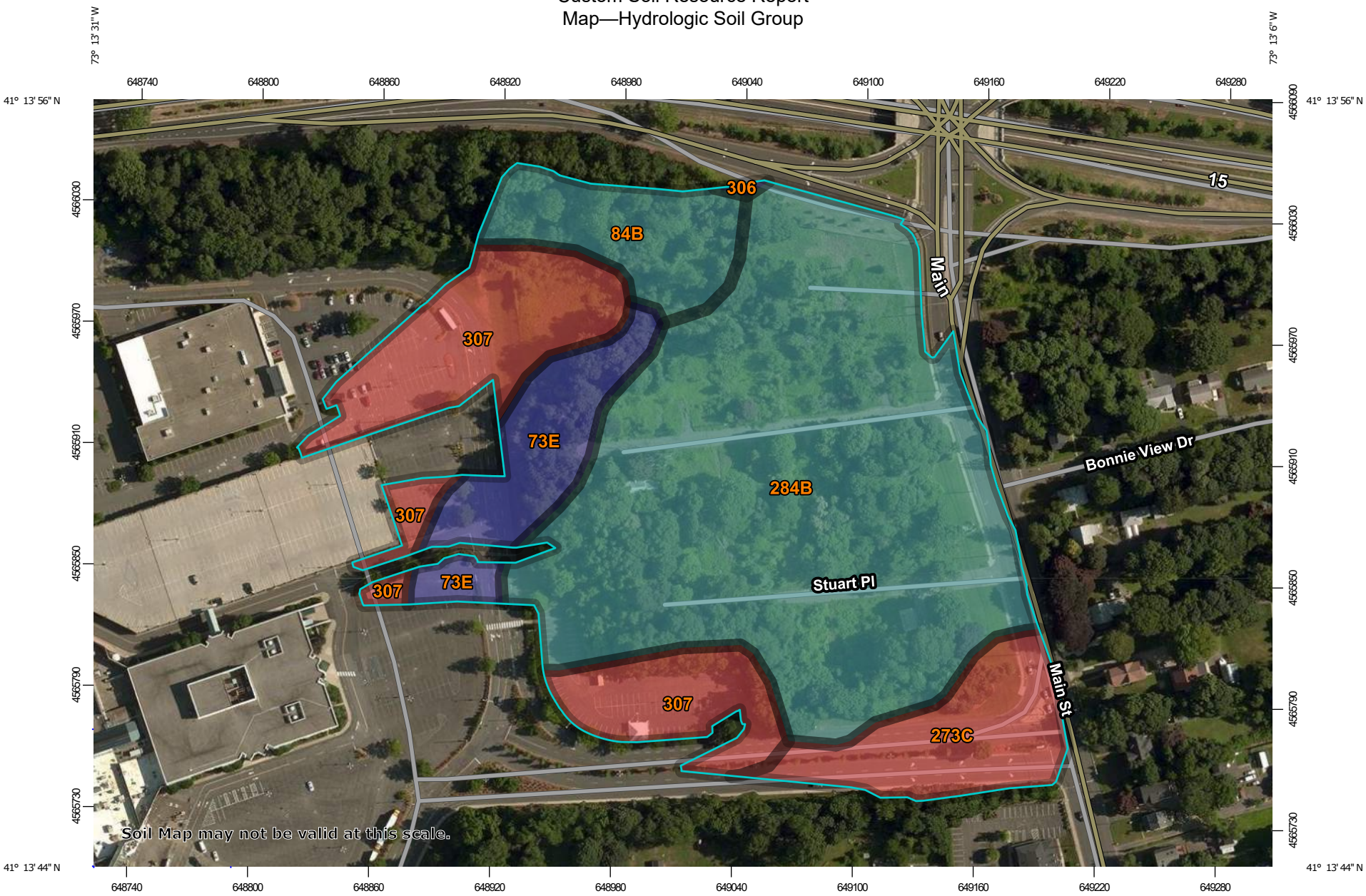
ARCHITECTURE
ENGINEERING
EN□IRONMENTAL
LAND SUR□EYING

PROPOSED
RESIDENTIAL DEVELOPMENT
NEWTOWN TURNPIKE – MAIN STREET
(CONN ROUTE 111)
TRUMBULL, CONNECTICUT

Designed	J.S.D.
Drawn	J.S.D.
Checked	A.T.K.
Approved	
Scale	1"=200'
Project No.	180513
Date	03/02/2020
CAD File	LOC180051301

FIGURE 1B
AERIAL LOCATION MAP

Custom Soil Resource Report
Map—Hydrologic Soil Group



Map Scale: 1:2,670 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

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 19, Sep 13, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 27, 2014—Jul 22, 2014

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.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	B	1.6	8.4%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	C	1.5	7.7%
273C	Urban land-Charlton-Chatfield complex, rocky, 3 to 15 percent slopes	D	1.7	8.7%
284B	Paxton-Urban land complex, 3 to 8 percent slopes	C	10.7	56.6%
306	Udorthents-Urban land complex	B	0.0	0.1%
307	Urban land	D	3.5	18.5%
Totals for Area of Interest			**18.9**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

National Flood Hazard Layer FIRMette

FEMA

41°14'5.01"N

73°13'34.47"W

73°12'57.02"W

41°13'37.96"N

Feet 1:6,000

0 250 500 1,000 1,500 2,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/2/2020 at 1:43:57 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NOAA Atlas 14, Volume 10, Version 3
Location name: West Haven, Connecticut, USA*
Latitude: 41.269°, Longitude: -72.9706°
Elevation: 69.77 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	0.346 (0.280-0.425)	0.417 (0.337-0.513)	0.532 (0.428-0.657)	0.628 (0.502-0.779)	0.759 (0.584-0.985)	0.858 (0.644-1.14)	0.962 (0.697-1.32)	1.08 (0.735-1.52)	1.25 (0.811-1.81)	1.38 (0.876-2.05)
10-min	0.491 (0.397-0.603)	0.590 (0.477-0.726)	0.753 (0.606-0.929)	0.889 (0.711-1.10)	1.08 (0.828-1.40)	1.22 (0.912-1.61)	1.36 (0.988-1.87)	1.53 (1.04-2.15)	1.77 (1.15-2.57)	1.96 (1.24-2.91)
15-min	0.577 (0.467-0.709)	0.695 (0.562-0.854)	0.887 (0.714-1.10)	1.05 (0.838-1.30)	1.27 (0.974-1.64)	1.43 (1.07-1.90)	1.60 (1.16-2.21)	1.80 (1.23-2.53)	2.08 (1.35-3.02)	2.31 (1.46-3.42)
30-min	0.798 (0.646-0.980)	0.960 (0.777-1.18)	1.23 (0.988-1.51)	1.45 (1.16-1.80)	1.75 (1.35-2.27)	1.98 (1.49-2.62)	2.22 (1.61-3.05)	2.49 (1.69-3.50)	2.88 (1.87-4.18)	3.19 (2.02-4.74)
60-min	1.02 (0.825-1.25)	1.23 (0.991-1.51)	1.57 (1.26-1.93)	1.85 (1.48-2.29)	2.24 (1.72-2.90)	2.53 (1.90-3.35)	2.83 (2.05-3.90)	3.18 (2.16-4.47)	3.67 (2.39-5.34)	4.08 (2.58-6.05)
2-hr	1.32 (1.08-1.62)	1.59 (1.30-1.95)	2.04 (1.65-2.50)	2.41 (1.94-2.97)	2.91 (2.26-3.76)	3.29 (2.49-4.35)	3.70 (2.70-5.07)	4.16 (2.84-5.81)	4.84 (3.16-7.00)	5.41 (3.43-7.97)
3-hr	1.53 (1.25-1.86)	1.85 (1.51-2.25)	2.36 (1.92-2.89)	2.79 (2.25-3.43)	3.38 (2.63-4.34)	3.82 (2.90-5.02)	4.28 (3.14-5.86)	4.83 (3.31-6.72)	5.63 (3.68-8.11)	6.31 (4.01-9.26)
6-hr	1.95 (1.61-2.36)	2.35 (1.93-2.84)	3.00 (2.46-3.65)	3.55 (2.88-4.33)	4.29 (3.36-5.48)	4.85 (3.70-6.34)	5.44 (4.01-7.40)	6.14 (4.22-8.48)	7.17 (4.71-10.3)	8.04 (5.13-11.7)
12-hr	2.43 (2.02-2.92)	2.93 (2.42-3.52)	3.75 (3.09-4.51)	4.42 (3.62-5.36)	5.35 (4.21-6.79)	6.04 (4.64-7.85)	6.78 (5.03-9.17)	7.66 (5.28-10.5)	8.95 (5.89-12.7)	10.0 (6.43-14.6)
24-hr	2.87 (2.39-3.42)	3.49 (2.90-4.16)	4.50 (3.73-5.38)	5.34 (4.39-6.42)	6.49 (5.14-8.20)	7.35 (5.68-9.50)	8.27 (6.18-11.1)	9.39 (6.50-12.8)	11.1 (7.31-15.6)	12.5 (8.04-18.0)
2-day	3.21 (2.69-3.80)	3.97 (3.32-4.70)	5.21 (4.35-6.19)	6.24 (5.17-7.46)	7.65 (6.11-9.64)	8.70 (6.78-11.2)	9.84 (7.42-13.3)	11.3 (7.83-15.3)	13.5 (8.94-18.9)	15.4 (9.94-22.1)
3-day	3.47 (2.93-4.10)	4.31 (3.63-5.08)	5.67 (4.75-6.72)	6.80 (5.66-8.10)	8.36 (6.69-10.5)	9.50 (7.43-12.2)	10.8 (8.15-14.5)	12.3 (8.59-16.7)	14.8 (9.83-20.7)	17.0 (11.0-24.2)
4-day	3.73 (3.15-4.38)	4.61 (3.89-5.42)	6.04 (5.08-7.14)	7.24 (6.04-8.59)	8.88 (7.13-11.1)	10.1 (7.90-12.9)	11.4 (8.65-15.3)	13.1 (9.12-17.6)	15.7 (10.4-21.8)	17.9 (11.6-25.4)
7-day	4.43 (3.77-5.18)	5.39 (4.57-6.30)	6.94 (5.87-8.15)	8.24 (6.91-9.73)	10.0 (8.06-12.4)	11.3 (8.90-14.4)	12.8 (9.67-16.9)	14.5 (10.2-19.4)	17.2 (11.4-23.8)	19.5 (12.6-27.4)
10-day	5.12 (4.37-5.97)	6.12 (5.21-7.14)	7.75 (6.57-9.06)	9.09 (7.65-10.7)	10.9 (8.83-13.5)	12.3 (9.69-15.5)	13.8 (10.5-18.1)	15.6 (10.9-20.7)	18.2 (12.2-25.1)	20.4 (13.3-28.7)
20-day	7.23 (6.21-8.36)	8.31 (7.12-9.62)	10.1 (8.60-11.7)	11.5 (9.77-13.5)	13.6 (11.0-16.5)	15.1 (11.9-18.7)	16.7 (12.6-21.5)	18.4 (13.0-24.3)	20.9 (14.1-28.6)	23.0 (14.9-32.1)
30-day	8.99 (7.75-10.4)	10.1 (8.71-11.7)	12.0 (10.3-13.9)	13.5 (11.5-15.7)	15.6 (12.7-18.9)	17.2 (13.6-21.2)	18.9 (14.2-24.0)	20.6 (14.6-27.1)	23.0 (15.5-31.3)	24.9 (16.2-34.5)
45-day	11.2 (9.67-12.8)	12.4 (10.7-14.2)	14.3 (12.3-16.5)	15.9 (13.6-18.4)	18.1 (14.7-21.7)	19.8 (15.7-24.2)	21.5 (16.2-27.1)	23.2 (16.5-30.3)	25.4 (17.2-34.4)	27.0 (17.6-37.4)
60-day	13.0 (11.3-14.9)	14.2 (12.3-16.3)	16.2 (14.0-18.6)	17.9 (15.3-20.6)	20.1 (16.4-24.1)	21.9 (17.3-26.7)	23.6 (17.8-29.6)	25.3 (18.1-32.9)	27.3 (18.5-36.9)	28.8 (18.8-39.7)

[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.

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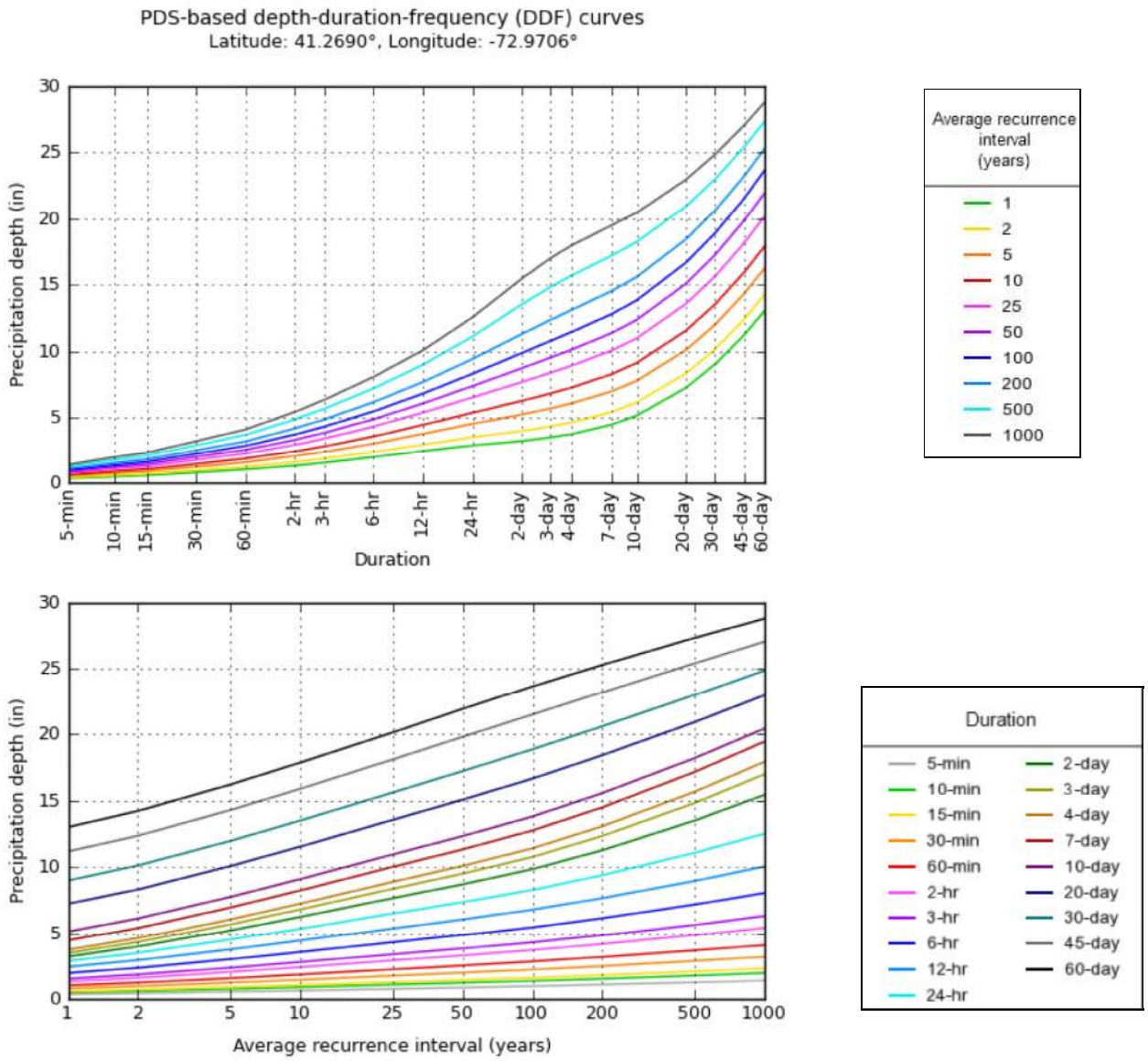
PF graphical



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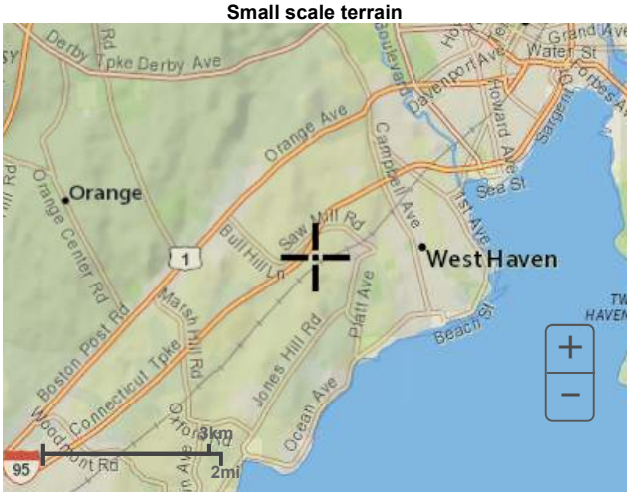
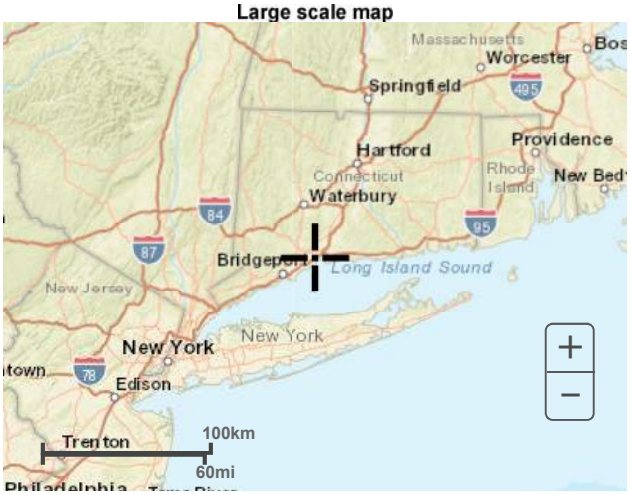
Maps & aerials

Small scale terrain



Large scale terrain

Large scale map



Large scale aerial

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National Weather Service
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Disclaimer

NOAA Atlas 14, Volume 10, Version 3
Location name: West Haven, Connecticut, USA*
Latitude: 41.269°, Longitude: -72.9706°
Elevation: 69.77 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/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	4.15 (3.36-5.10)	5.00 (4.04-6.16)	6.38 (5.14-7.88)	7.54 (6.02-9.35)	9.11 (7.01-11.8)	10.3 (7.73-13.6)	11.5 (8.36-15.9)	12.9 (8.82-18.2)	15.0 (9.73-21.8)	16.6 (10.5-24.6)
10-min	2.95 (2.38-3.62)	3.54 (2.86-4.36)	4.52 (3.64-5.57)	5.33 (4.27-6.62)	6.46 (4.97-8.37)	7.30 (5.47-9.67)	8.18 (5.93-11.2)	9.17 (6.25-12.9)	10.6 (6.90-15.4)	11.8 (7.45-17.5)
15-min	2.31 (1.87-2.84)	2.78 (2.25-3.42)	3.55 (2.86-4.38)	4.19 (3.35-5.20)	5.06 (3.90-6.57)	5.72 (4.30-7.58)	6.42 (4.65-8.82)	7.19 (4.90-10.1)	8.31 (5.41-12.1)	9.22 (5.84-13.7)
30-min	1.60 (1.29-1.96)	1.92 (1.55-2.36)	2.45 (1.98-3.03)	2.89 (2.31-3.59)	3.50 (2.69-4.54)	3.96 (2.97-5.25)	4.44 (3.21-6.10)	4.98 (3.39-6.99)	5.75 (3.74-8.36)	6.38 (4.04-9.48)
60-min	1.02 (0.825-1.25)	1.23 (0.991-1.51)	1.57 (1.26-1.93)	1.85 (1.48-2.29)	2.24 (1.72-2.90)	2.53 (1.90-3.35)	2.83 (2.05-3.90)	3.18 (2.16-4.47)	3.67 (2.39-5.34)	4.08 (2.58-6.05)
2-hr	0.662 (0.539-0.808)	0.797 (0.648-0.974)	1.02 (0.826-1.25)	1.20 (0.968-1.48)	1.46 (1.13-1.88)	1.65 (1.24-2.17)	1.85 (1.35-2.53)	2.08 (1.42-2.90)	2.42 (1.58-3.50)	2.70 (1.72-3.99)
3-hr	0.510 (0.417-0.620)	0.615 (0.502-0.749)	0.787 (0.640-0.961)	0.929 (0.750-1.14)	1.13 (0.874-1.45)	1.27 (0.964-1.67)	1.43 (1.05-1.95)	1.61 (1.10-2.24)	1.88 (1.23-2.70)	2.10 (1.34-3.08)
6-hr	0.326 (0.268-0.394)	0.393 (0.323-0.475)	0.502 (0.411-0.609)	0.592 (0.481-0.723)	0.717 (0.560-0.916)	0.809 (0.618-1.06)	0.908 (0.670-1.24)	1.02 (0.704-1.42)	1.20 (0.786-1.71)	1.34 (0.857-1.96)
12-hr	0.202 (0.167-0.242)	0.243 (0.201-0.292)	0.311 (0.256-0.375)	0.367 (0.300-0.445)	0.444 (0.349-0.564)	0.502 (0.385-0.651)	0.563 (0.417-0.761)	0.635 (0.439-0.872)	0.743 (0.489-1.06)	0.834 (0.534-1.21)
24-hr	0.119 (0.100-0.142)	0.145 (0.121-0.173)	0.187 (0.155-0.224)	0.222 (0.183-0.268)	0.270 (0.214-0.342)	0.306 (0.237-0.396)	0.345 (0.257-0.464)	0.391 (0.271-0.533)	0.462 (0.305-0.651)	0.522 (0.335-0.751)
2-day	0.067 (0.056-0.079)	0.083 (0.069-0.098)	0.108 (0.091-0.129)	0.130 (0.108-0.155)	0.159 (0.127-0.201)	0.181 (0.141-0.234)	0.205 (0.155-0.276)	0.235 (0.163-0.318)	0.281 (0.186-0.394)	0.322 (0.207-0.460)
3-day	0.048 (0.041-0.057)	0.060 (0.050-0.071)	0.079 (0.066-0.093)	0.094 (0.079-0.113)	0.116 (0.093-0.146)	0.132 (0.103-0.170)	0.149 (0.113-0.201)	0.171 (0.119-0.231)	0.206 (0.137-0.288)	0.236 (0.152-0.336)
4-day	0.039 (0.033-0.046)	0.048 (0.040-0.056)	0.063 (0.053-0.074)	0.075 (0.063-0.090)	0.093 (0.074-0.116)	0.105 (0.082-0.135)	0.119 (0.090-0.159)	0.136 (0.095-0.183)	0.163 (0.108-0.227)	0.187 (0.121-0.265)
7-day	0.026 (0.022-0.031)	0.032 (0.027-0.038)	0.041 (0.035-0.049)	0.049 (0.041-0.058)	0.060 (0.048-0.074)	0.067 (0.053-0.086)	0.076 (0.058-0.101)	0.086 (0.060-0.115)	0.102 (0.068-0.141)	0.116 (0.075-0.163)
10-day	0.021 (0.018-0.025)	0.025 (0.022-0.030)	0.032 (0.027-0.038)	0.038 (0.032-0.045)	0.046 (0.037-0.056)	0.051 (0.040-0.065)	0.058 (0.044-0.076)	0.065 (0.046-0.086)	0.076 (0.051-0.105)	0.085 (0.055-0.120)
20-day	0.015 (0.013-0.017)	0.017 (0.015-0.020)	0.021 (0.018-0.024)	0.024 (0.020-0.028)	0.028 (0.023-0.034)	0.031 (0.025-0.039)	0.035 (0.026-0.045)	0.038 (0.027-0.051)	0.044 (0.029-0.060)	0.048 (0.031-0.067)
30-day	0.012 (0.011-0.014)	0.014 (0.012-0.016)	0.017 (0.014-0.019)	0.019 (0.016-0.022)	0.022 (0.018-0.026)	0.024 (0.019-0.029)	0.026 (0.020-0.033)	0.029 (0.020-0.038)	0.032 (0.022-0.043)	0.034 (0.022-0.048)
45-day	0.010 (0.009-0.012)	0.011 (0.010-0.013)	0.013 (0.011-0.015)	0.015 (0.013-0.017)	0.017 (0.014-0.020)	0.018 (0.014-0.022)	0.020 (0.015-0.025)	0.021 (0.015-0.028)	0.024 (0.016-0.032)	0.025 (0.016-0.035)
60-day	0.009 (0.008-0.010)	0.010 (0.009-0.011)	0.011 (0.010-0.013)	0.012 (0.011-0.014)	0.014 (0.011-0.017)	0.015 (0.012-0.019)	0.016 (0.012-0.021)	0.018 (0.013-0.023)	0.019 (0.013-0.026)	0.020 (0.013-0.028)

[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.

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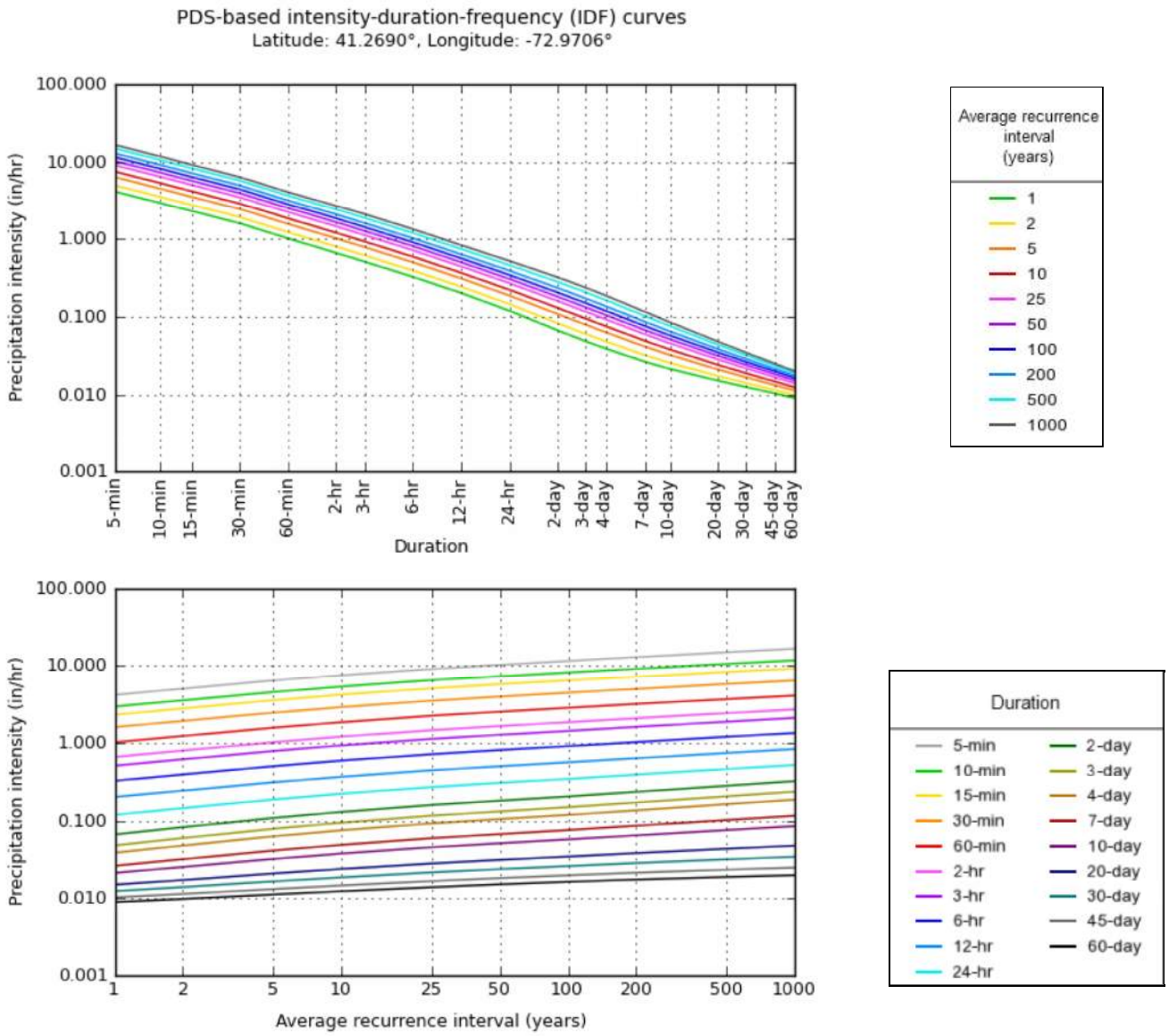
PF graphical



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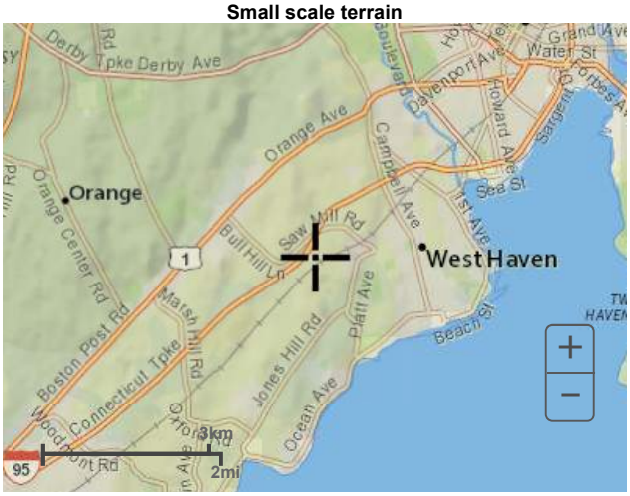
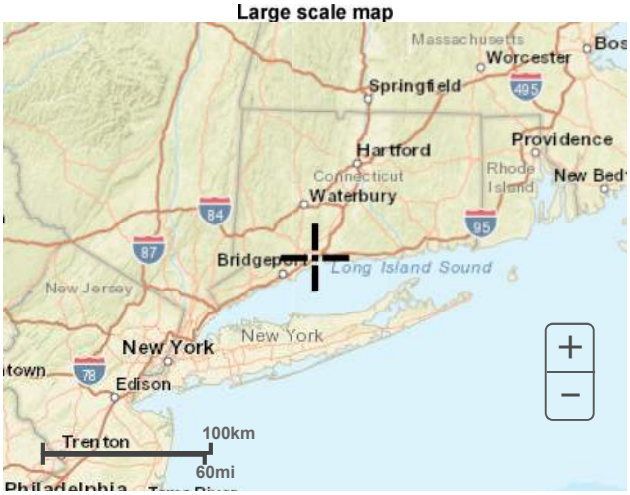
Small scale terrain



Large scale terrain

Large scale map

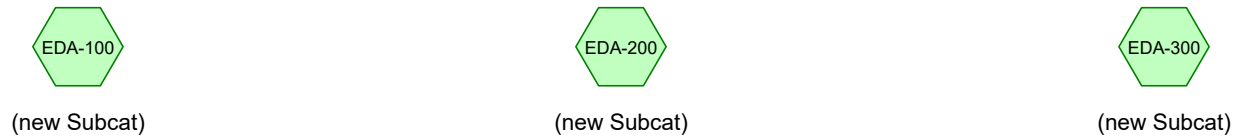


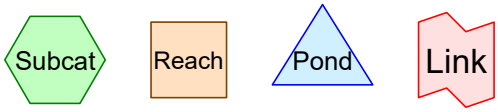
APPENDIX B

HYDROLOGIC ANALYSIS

Pre-Development Hydrological Analysis (2-, 10-, 25- and 100-year storms)

Post-Development Hydrological Analyses (2-, 10-, 25- and 100-year storms)





Routing Diagram for C-DAT-1800513-HYDRO
Prepared by {enter your company name here}, Printed 5/15/2020
HydroCAD® 10.00-22 s/n 01334 © 2018 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
28,300	69	50-75% Grass cover, Fair, HSG B (EDA-100)
329,030	79	50-75% Grass cover, Fair, HSG C (EDA-100, EDA-200, EDA-300)
61,552	84	50-75% Grass cover, Fair, HSG D (EDA-100, EDA-200, EDA-300)
6,605	91	Gravel roads, HSG D (EDA-100)
121,873	98	Paved parking, HSG C (EDA-100, EDA-200, EDA-300)
88,174	98	Paved parking, HSG D (EDA-100, EDA-200, EDA-300)
16,993	60	Woods, Fair, HSG B (EDA-100)
76,708	73	Woods, Fair, HSG C (EDA-100, EDA-200, EDA-300)
14,718	79	Woods, Fair, HSG D (EDA-100, EDA-200, EDA-300)
743,953	**83**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
45,293	HSG B	EDA-100
527,611	HSG C	EDA-100, EDA-200, EDA-300
171,049	HSG D	EDA-100, EDA-200, EDA-300
0	Other	
743,953		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	28,300	329,030	61,552	0	418,882	50-75% Grass cover, Fair	
0	0	0	6,605	0	6,605	Gravel roads	
0	0	121,873	88,174	0	210,047	Paved parking	
0	16,993	76,708	14,718	0	108,419	Woods, Fair	
0	**45,293**	**527,611**	**171,049**	**0**	**743,953**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-100: (new Subcat) Runoff Area=359,310 sf 11.16% Impervious Runoff Depth=1.65"
Flow Length=867' Tc=20.1 min CN=80 Runoff=10.23 cfs 49,472 cf

Subcatchment EDA-200: (new Subcat) Runoff Area=162,700 sf 42.75% Impervious Runoff Depth=2.12"
Flow Length=738' Tc=14.4 min CN=86 Runoff=7.14 cfs 28,690 cf

Subcatchment EDA-300: (new Subcat) Runoff Area=221,943 sf 45.24% Impervious Runoff Depth=2.29"
Flow Length=787' Tc=16.5 min CN=88 Runoff=9.74 cfs 42,297 cf

Total Runoff Area = 743,953 sf Runoff Volume = 120,460 cf Average Runoff Depth = 1.94"
71.77% Pervious = 533,906 sf 28.23% Impervious = 210,047 sf

Summary for Subcatchment EDA-100: (new Subcat)

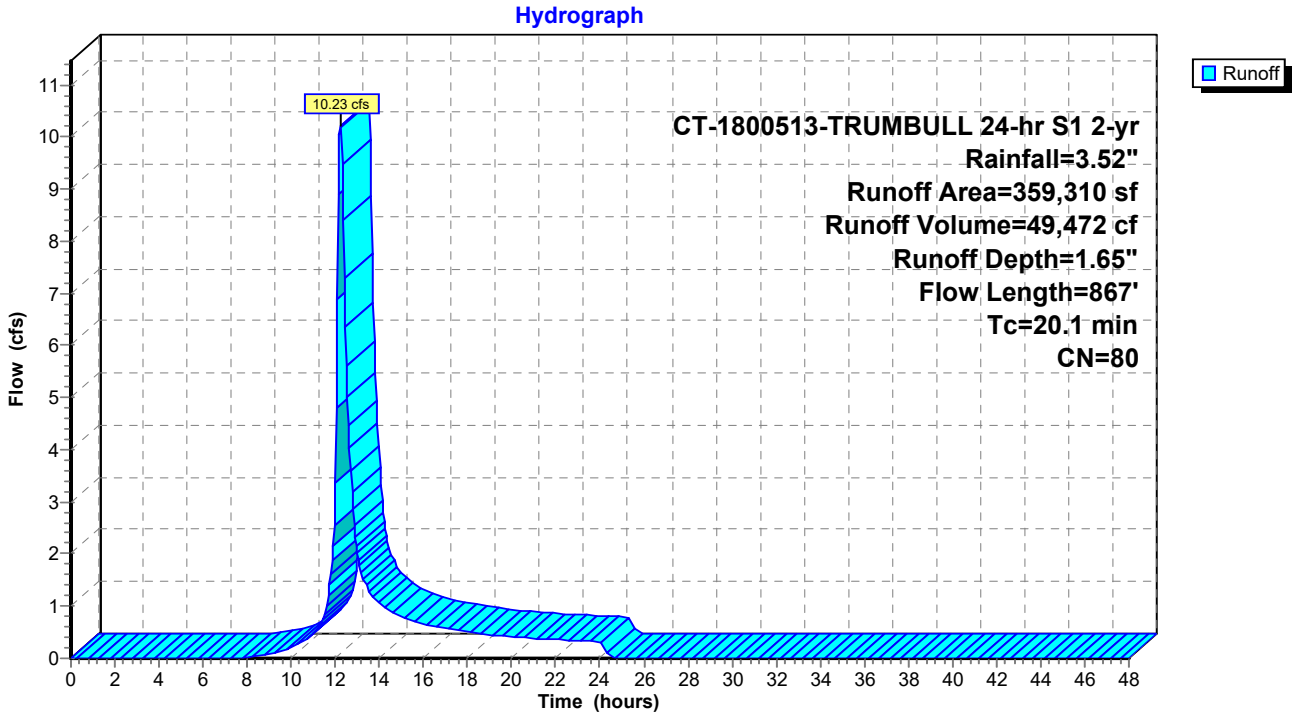
Runoff = 10.23 cfs @ 12.23 hrs, Volume= 49,472 cf, Depth= 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 2-yr Rainfall=3.52"

Area (sf)	CN	Description
28,300	69	50-75% Grass cover, Fair, HSG B
188,649	79	50-75% Grass cover, Fair, HSG C
36,933	84	50-75% Grass cover, Fair, HSG D
6,605	91	Gravel roads, HSG D
39,517	98	Paved parking, HSG C
581	98	Paved parking, HSG D
16,993	60	Woods, Fair, HSG B
39,675	73	Woods, Fair, HSG C
2,057	79	Woods, Fair, HSG D
359,310	80	Weighted Average
319,212		88.84% Pervious Area
40,098		11.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0200	0.13		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 2.00"
0.6	55	0.0436	1.46		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.6	96	0.0208	1.01		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	27	0.0740	1.90		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.7	71	0.0563	1.66		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	35	0.0570	1.67		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	24	0.0833	2.02		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	14	0.1430	2.65		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	26	0.2310	3.36		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	30	0.0667	1.81		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	52	0.0192	0.97		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.0	93	0.0540	1.63		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.0435	3.36		**Shallow Concentrated Flow, gravel** Unpaved Kv= 16.1 fps
0.2	49	0.2450	3.46		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	18	0.0270	1.15		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.0	131	0.0222	2.23		**Shallow Concentrated Flow, grass** Grassed Waterway Kv= 15.0 fps
20.1	867	Total			

Subcatchment EDA-100: (new Subcat)



Summary for Subcatchment EDA-200: (new Subcat)

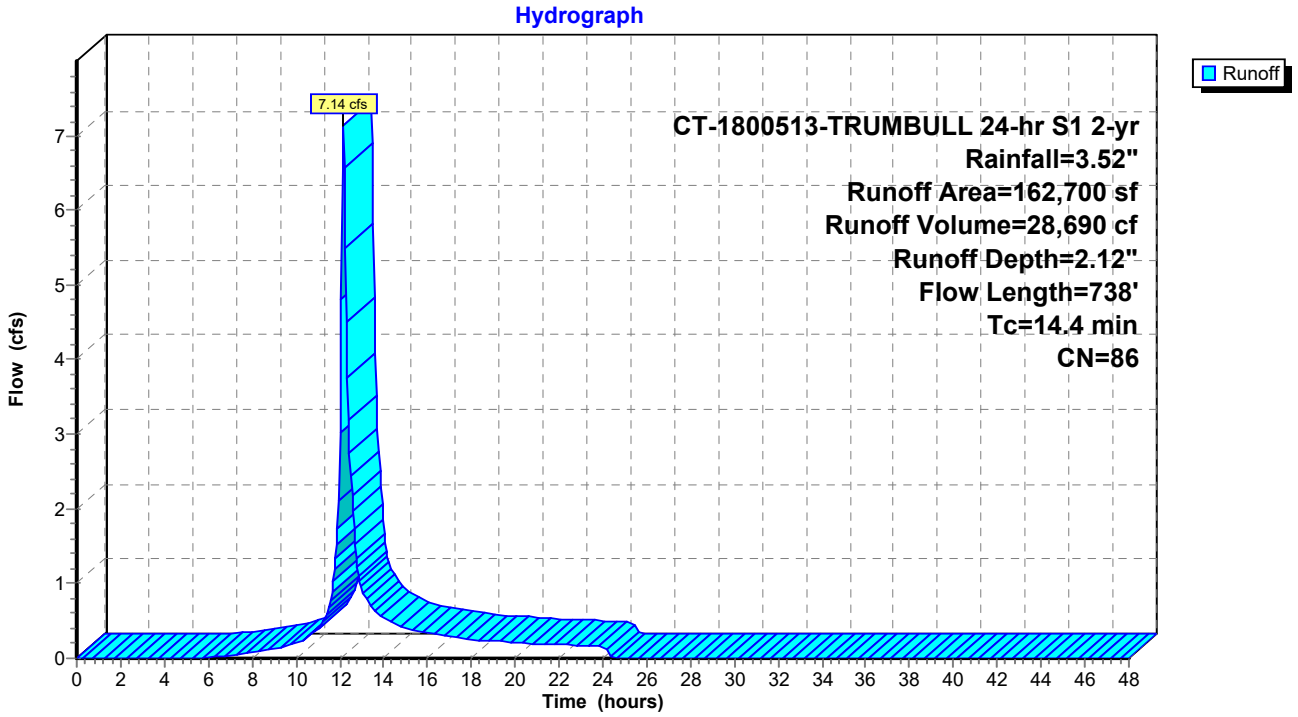
Runoff = 7.14 cfs @ 12.15 hrs, Volume= 28,690 cf, Depth= 2.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 2-yr Rainfall=3.52"

Area (sf)	CN	Description
59,123	79	50-75% Grass cover, Fair, HSG C
3,041	84	50-75% Grass cover, Fair, HSG D
23,991	73	Woods, Fair, HSG C
6,992	79	Woods, Fair, HSG D
37,787	98	Paved parking, HSG C
31,766	98	Paved parking, HSG D
162,700	86	Weighted Average
93,147		57.25% Pervious Area
69,553		42.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.0500	0.19		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
0.1	10	0.2040	3.16		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.4	30	0.0330	1.27		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
2.5	103	0.0100	0.70		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	38	0.0260	3.27		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.5	27	0.0367	0.96		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	22	0.0900	1.50		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	33	0.3030	2.75		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.1	13	0.1487	1.93		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	19	0.0520	1.60		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	40	0.0506	4.57		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.3	78	0.0511	4.59		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.3	87	0.0573	4.86		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.2	57	0.0529	4.67		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.4	57	0.0175	2.69		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
14.4	738	Total			

Subcatchment EDA-200: (new Subcat)



Summary for Subcatchment EDA-300: (new Subcat)

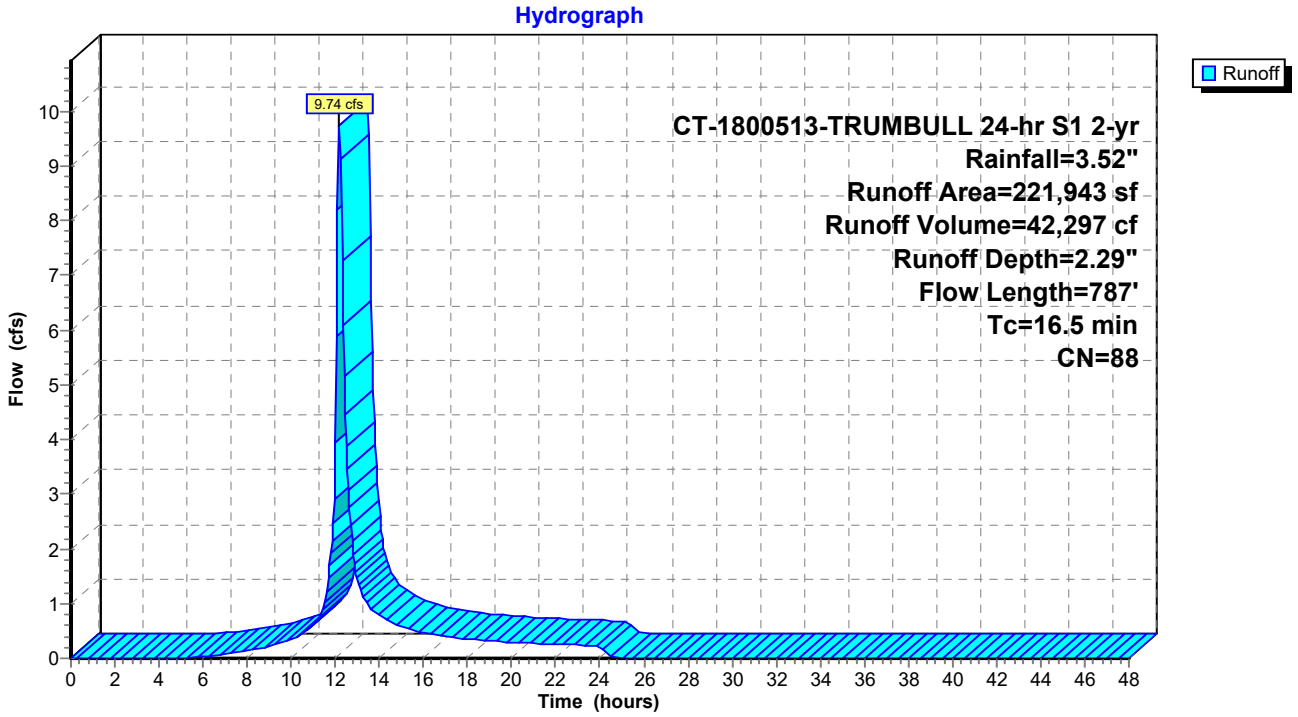
Runoff = 9.74 cfs @ 12.18 hrs, Volume= 42,297 cf, Depth= 2.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 2-yr Rainfall=3.52"

Area (sf)	CN	Description
81,258	79	50-75% Grass cover, Fair, HSG C
21,578	84	50-75% Grass cover, Fair, HSG D
13,042	73	Woods, Fair, HSG C
5,669	79	Woods, Fair, HSG D
44,569	98	Paved parking, HSG C
55,827	98	Paved parking, HSG D
221,943	88	Weighted Average
121,547		54.76% Pervious Area
100,396		45.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0300	0.16		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
0.3	27	0.0630	1.76		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	67	0.0297	1.21		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.4	39	0.0640	1.77		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	36	0.0472	4.41		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.8	60	0.0333	1.28		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.6	42	0.0237	1.08		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	16	0.0632	1.76		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.0	57	0.0176	0.93		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	22	0.0460	1.07		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	20	0.1010	1.59		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.1	12	0.1640	2.02		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	27	0.0745	1.91		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	262	0.0609	5.01		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
16.5	787	Total			

Subcatchment EDA-300: (new Subcat)



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-100: (new Subcat) Runoff Area=359,310 sf 11.16% Impervious Runoff Depth=3.26"
Flow Length=867' Tc=20.1 min CN=80 Runoff=19.43 cfs 97,682 cf

Subcatchment EDA-200: (new Subcat) Runoff Area=162,700 sf 42.75% Impervious Runoff Depth=3.86"
Flow Length=738' Tc=14.4 min CN=86 Runoff=12.24 cfs 52,345 cf

Subcatchment EDA-300: (new Subcat) Runoff Area=221,943 sf 45.24% Impervious Runoff Depth=4.07"
Flow Length=787' Tc=16.5 min CN=88 Runoff=16.27 cfs 75,262 cf

Total Runoff Area = 743,953 sf Runoff Volume = 225,289 cf Average Runoff Depth = 3.63"
71.77% Pervious = 533,906 sf 28.23% Impervious = 210,047 sf

Summary for Subcatchment EDA-100: (new Subcat)

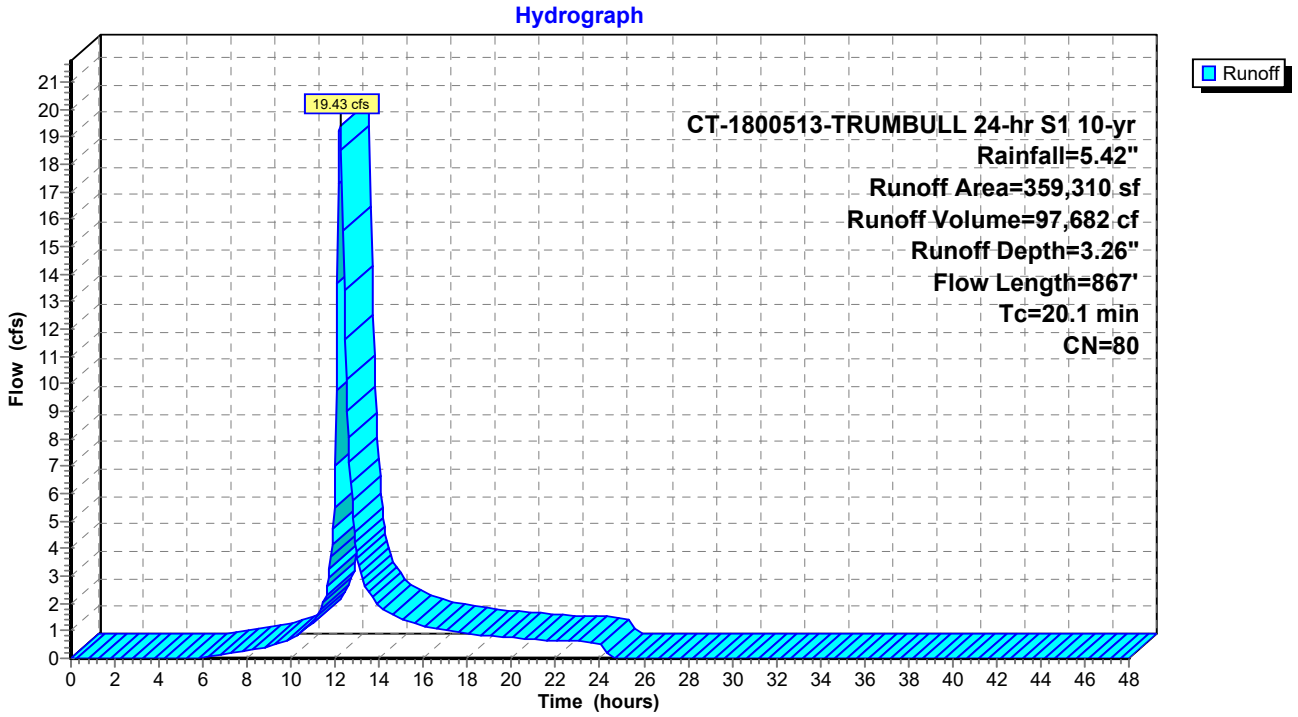
Runoff = 19.43 cfs @ 12.23 hrs, Volume= 97,682 cf, Depth= 3.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
28,300	69	50-75% Grass cover, Fair, HSG B
188,649	79	50-75% Grass cover, Fair, HSG C
36,933	84	50-75% Grass cover, Fair, HSG D
6,605	91	Gravel roads, HSG D
39,517	98	Paved parking, HSG C
581	98	Paved parking, HSG D
16,993	60	Woods, Fair, HSG B
39,675	73	Woods, Fair, HSG C
2,057	79	Woods, Fair, HSG D
359,310	80	Weighted Average
319,212		88.84% Pervious Area
40,098		11.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0200	0.13		**Sheet Flow, Grass**
					Grass: Short n= 0.150 P2= 2.00"
0.6	55	0.0436	1.46		**Shallow Concentrated Flow, grass**
					Short Grass Pasture Kv= 7.0 fps
1.6	96	0.0208	1.01		**Shallow Concentrated Flow, grass**
					Short Grass Pasture Kv= 7.0 fps
0.2	27	0.0740	1.90		**Shallow Concentrated Flow, grass**
					Short Grass Pasture Kv= 7.0 fps
0.7	71	0.0563	1.66		**Shallow Concentrated Flow, grass**
					Short Grass Pasture Kv= 7.0 fps
0.3	35	0.0570	1.67		**Shallow Concentrated Flow, grass**
					Short Grass Pasture Kv= 7.0 fps
0.2	24	0.0833	2.02		**Shallow Concentrated Flow, grass**
					Short Grass Pasture Kv= 7.0 fps
0.1	14	0.1430	2.65		**Shallow Concentrated Flow, grass**
					Short Grass Pasture Kv= 7.0 fps
0.1	26	0.2310	3.36		**Shallow Concentrated Flow, grass**
					Short Grass Pasture Kv= 7.0 fps
0.3	30	0.0667	1.81		**Shallow Concentrated Flow, grass**
					Short Grass Pasture Kv= 7.0 fps
0.9	52	0.0192	0.97		**Shallow Concentrated Flow, grass**
					Short Grass Pasture Kv= 7.0 fps
1.0	93	0.0540	1.63		**Shallow Concentrated Flow, grass**
					Short Grass Pasture Kv= 7.0 fps
0.2	46	0.0435	3.36		**Shallow Concentrated Flow, gravel**
					Unpaved Kv= 16.1 fps
0.2	49	0.2450	3.46		**Shallow Concentrated Flow, grass**
					Short Grass Pasture Kv= 7.0 fps
0.3	18	0.0270	1.15		**Shallow Concentrated Flow, grass**
					Short Grass Pasture Kv= 7.0 fps
1.0	131	0.0222	2.23		**Shallow Concentrated Flow, grass**
					Grassed Waterway Kv= 15.0 fps
20.1	867	Total			

Subcatchment EDA-100: (new Subcat)



Summary for Subcatchment EDA-200: (new Subcat)

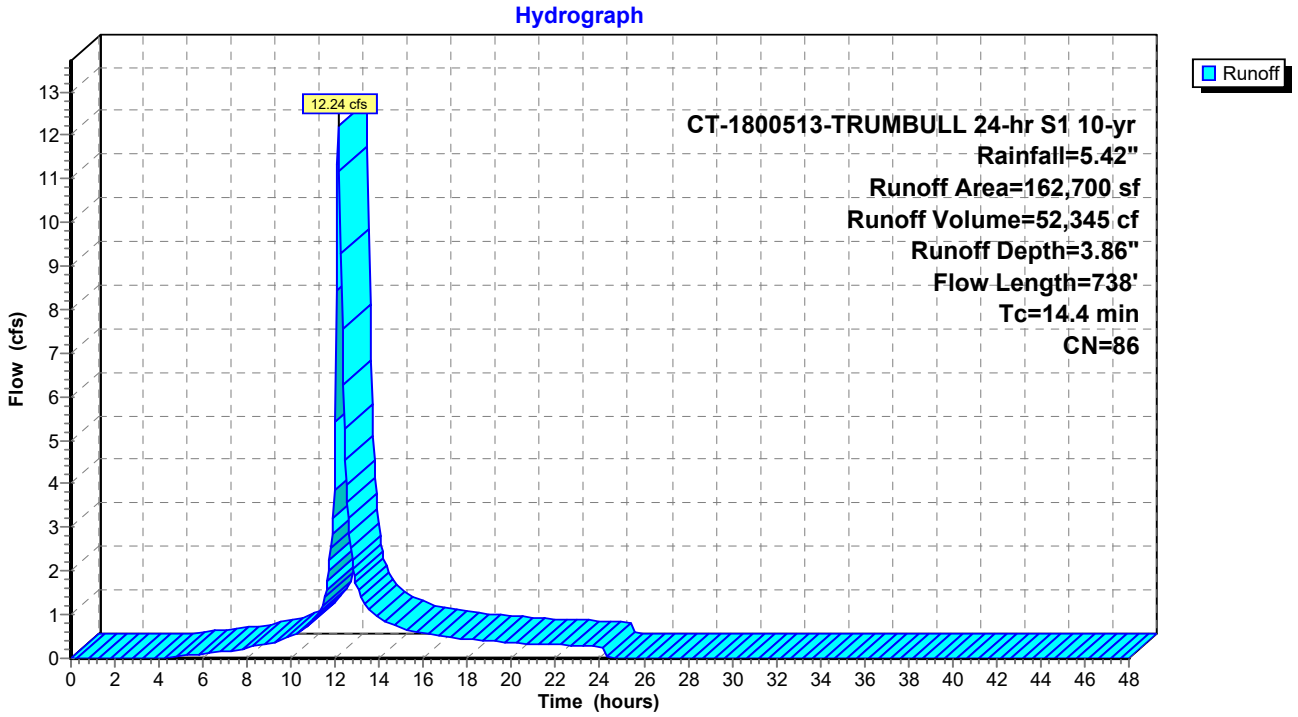
Runoff = 12.24 cfs @ 12.15 hrs, Volume= 52,345 cf, Depth= 3.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
59,123	79	50-75% Grass cover, Fair, HSG C
3,041	84	50-75% Grass cover, Fair, HSG D
23,991	73	Woods, Fair, HSG C
6,992	79	Woods, Fair, HSG D
37,787	98	Paved parking, HSG C
31,766	98	Paved parking, HSG D
162,700	86	Weighted Average
93,147		57.25% Pervious Area
69,553		42.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.0500	0.19		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
0.1	10	0.2040	3.16		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.4	30	0.0330	1.27		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
2.5	103	0.0100	0.70		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	38	0.0260	3.27		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.5	27	0.0367	0.96		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	22	0.0900	1.50		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	33	0.3030	2.75		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.1	13	0.1487	1.93		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	19	0.0520	1.60		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	40	0.0506	4.57		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.3	78	0.0511	4.59		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.3	87	0.0573	4.86		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.2	57	0.0529	4.67		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.4	57	0.0175	2.69		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
14.4	738	Total			

Subcatchment EDA-200: (new Subcat)



Summary for Subcatchment EDA-300: (new Subcat)

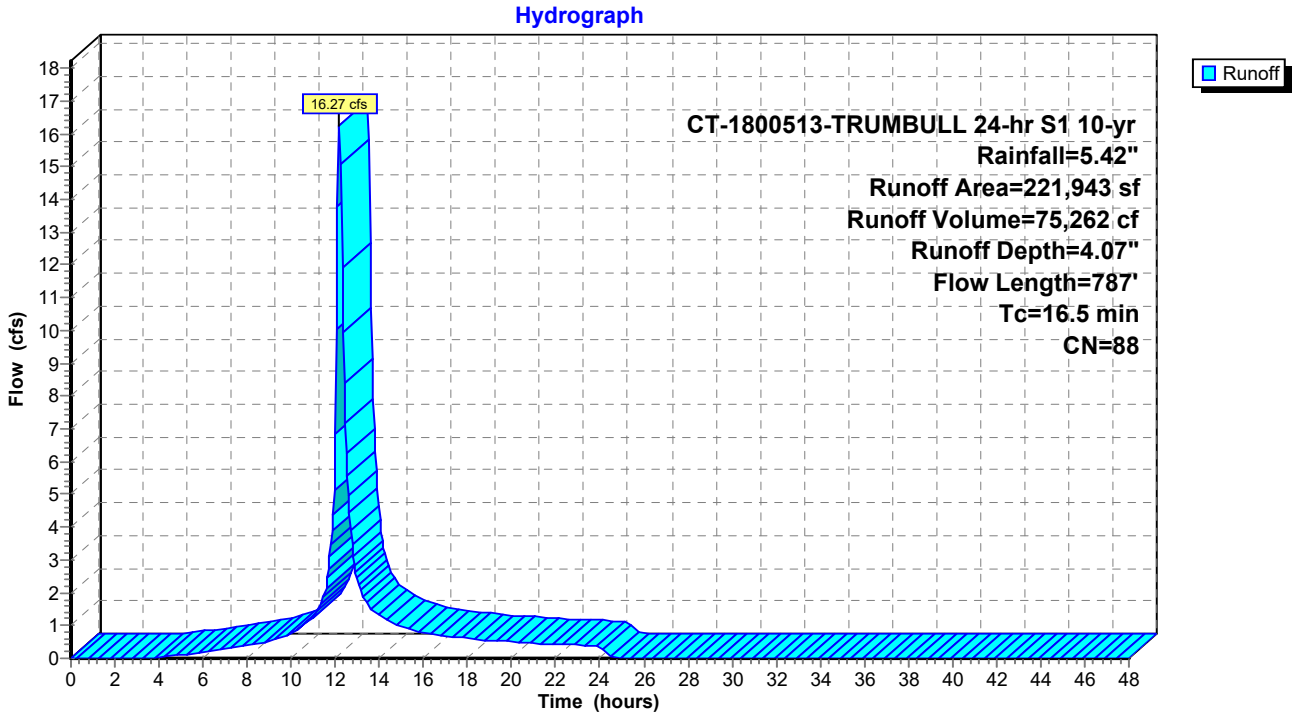
Runoff = 16.27 cfs @ 12.17 hrs, Volume= 75,262 cf, Depth= 4.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
81,258	79	50-75% Grass cover, Fair, HSG C
21,578	84	50-75% Grass cover, Fair, HSG D
13,042	73	Woods, Fair, HSG C
5,669	79	Woods, Fair, HSG D
44,569	98	Paved parking, HSG C
55,827	98	Paved parking, HSG D
221,943	88	Weighted Average
121,547		54.76% Pervious Area
100,396		45.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0300	0.16		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
0.3	27	0.0630	1.76		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	67	0.0297	1.21		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.4	39	0.0640	1.77		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	36	0.0472	4.41		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.8	60	0.0333	1.28		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.6	42	0.0237	1.08		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	16	0.0632	1.76		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.0	57	0.0176	0.93		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	22	0.0460	1.07		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	20	0.1010	1.59		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.1	12	0.1640	2.02		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	27	0.0745	1.91		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	262	0.0609	5.01		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
16.5	787	Total			

Subcatchment EDA-300: (new Subcat)



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-100: (new Subcat) Runoff Area=359,310 sf 11.16% Impervious Runoff Depth=4.34"
Flow Length=867' Tc=20.1 min CN=80 Runoff=25.32 cfs 129,828 cf

Subcatchment EDA-200: (new Subcat) Runoff Area=162,700 sf 42.75% Impervious Runoff Depth=4.99"
Flow Length=738' Tc=14.4 min CN=86 Runoff=15.36 cfs 67,676 cf

Subcatchment EDA-300: (new Subcat) Runoff Area=221,943 sf 45.24% Impervious Runoff Depth=5.22"
Flow Length=787' Tc=16.5 min CN=88 Runoff=20.22 cfs 96,455 cf

Total Runoff Area = 743,953 sf Runoff Volume = 293,958 cf Average Runoff Depth = 4.74"
71.77% Pervious = 533,906 sf 28.23% Impervious = 210,047 sf

Summary for Subcatchment EDA-100: (new Subcat)

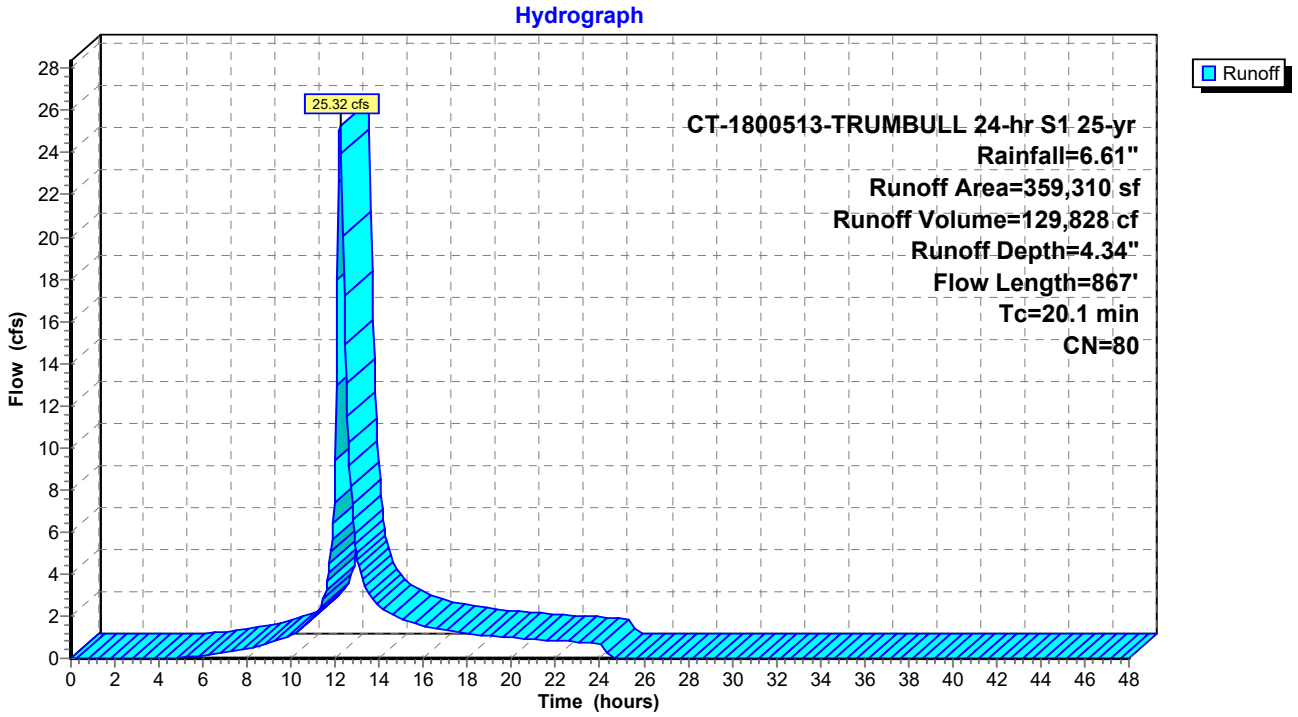
Runoff = 25.32 cfs @ 12.22 hrs, Volume= 129,828 cf, Depth= 4.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 25-yr Rainfall=6.61"

Area (sf)	CN	Description
28,300	69	50-75% Grass cover, Fair, HSG B
188,649	79	50-75% Grass cover, Fair, HSG C
36,933	84	50-75% Grass cover, Fair, HSG D
6,605	91	Gravel roads, HSG D
39,517	98	Paved parking, HSG C
581	98	Paved parking, HSG D
16,993	60	Woods, Fair, HSG B
39,675	73	Woods, Fair, HSG C
2,057	79	Woods, Fair, HSG D
359,310	80	Weighted Average
319,212		88.84% Pervious Area
40,098		11.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0200	0.13		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 2.00"
0.6	55	0.0436	1.46		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.6	96	0.0208	1.01		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	27	0.0740	1.90		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.7	71	0.0563	1.66		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	35	0.0570	1.67		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	24	0.0833	2.02		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	14	0.1430	2.65		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	26	0.2310	3.36		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	30	0.0667	1.81		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	52	0.0192	0.97		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.0	93	0.0540	1.63		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.0435	3.36		**Shallow Concentrated Flow, gravel** Unpaved Kv= 16.1 fps
0.2	49	0.2450	3.46		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	18	0.0270	1.15		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.0	131	0.0222	2.23		**Shallow Concentrated Flow, grass** Grassed Waterway Kv= 15.0 fps
20.1	867	Total			

Subcatchment EDA-100: (new Subcat)



Summary for Subcatchment EDA-200: (new Subcat)

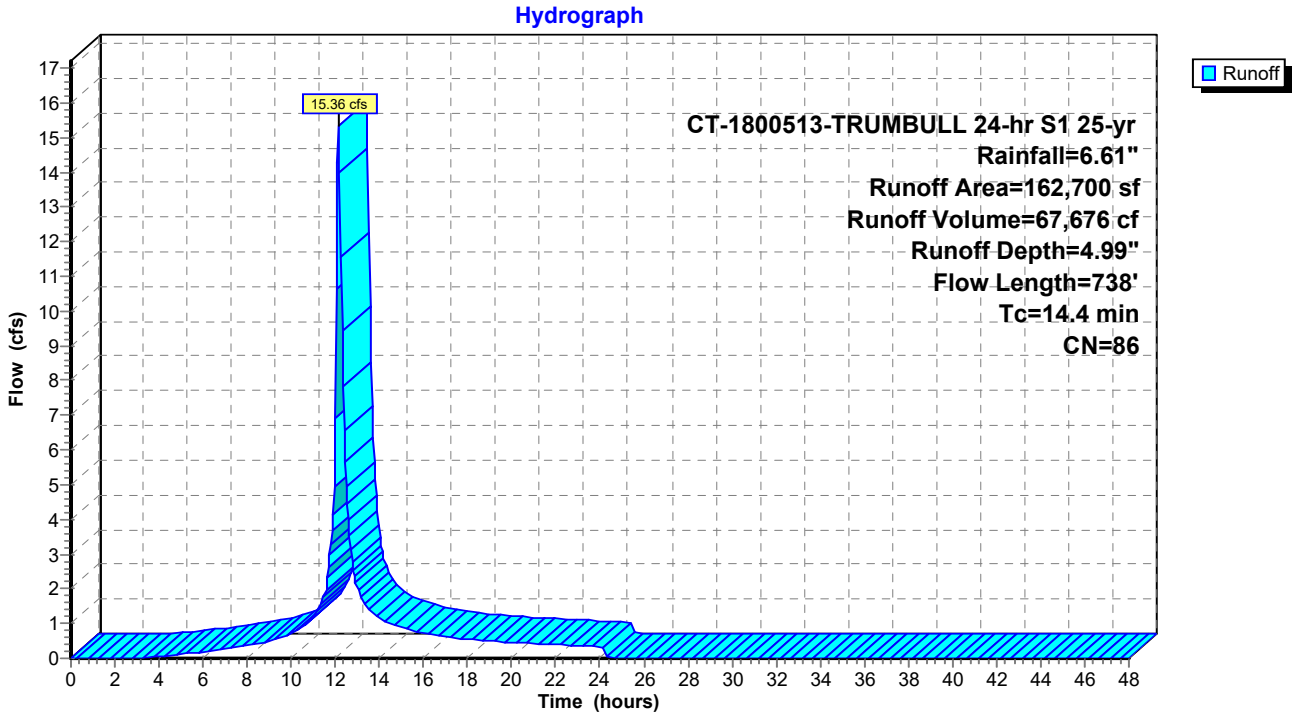
Runoff = 15.36 cfs @ 12.15 hrs, Volume= 67,676 cf, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 25-yr Rainfall=6.61"

Area (sf)	CN	Description
59,123	79	50-75% Grass cover, Fair, HSG C
3,041	84	50-75% Grass cover, Fair, HSG D
23,991	73	Woods, Fair, HSG C
6,992	79	Woods, Fair, HSG D
37,787	98	Paved parking, HSG C
31,766	98	Paved parking, HSG D
162,700	86	Weighted Average
93,147		57.25% Pervious Area
69,553		42.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.0500	0.19		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
0.1	10	0.2040	3.16		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.4	30	0.0330	1.27		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
2.5	103	0.0100	0.70		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	38	0.0260	3.27		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.5	27	0.0367	0.96		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	22	0.0900	1.50		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	33	0.3030	2.75		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.1	13	0.1487	1.93		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	19	0.0520	1.60		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	40	0.0506	4.57		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.3	78	0.0511	4.59		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.3	87	0.0573	4.86		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.2	57	0.0529	4.67		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.4	57	0.0175	2.69		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
14.4	738	Total			

Subcatchment EDA-200: (new Subcat)



Summary for Subcatchment EDA-300: (new Subcat)

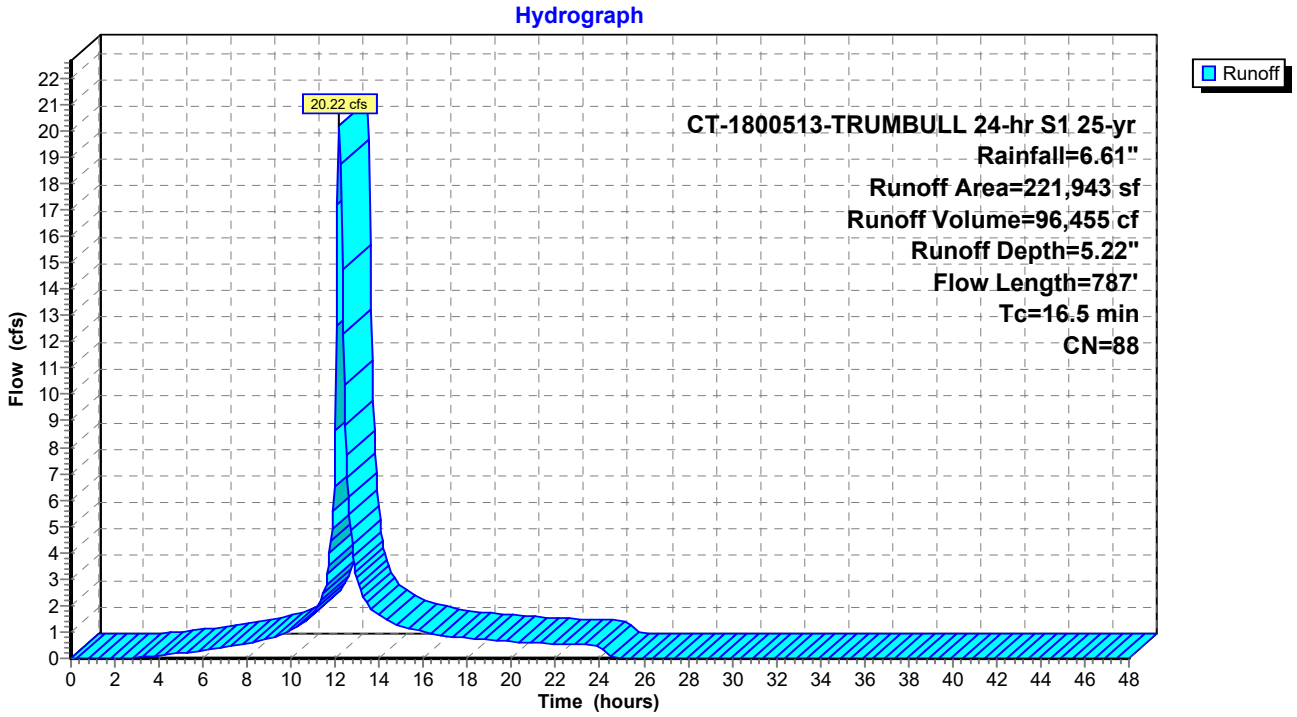
Runoff = 20.22 cfs @ 12.17 hrs, Volume= 96,455 cf, Depth= 5.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 25-yr Rainfall=6.61"

Area (sf)	CN	Description
81,258	79	50-75% Grass cover, Fair, HSG C
21,578	84	50-75% Grass cover, Fair, HSG D
13,042	73	Woods, Fair, HSG C
5,669	79	Woods, Fair, HSG D
44,569	98	Paved parking, HSG C
55,827	98	Paved parking, HSG D
221,943	88	Weighted Average
121,547		54.76% Pervious Area
100,396		45.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0300	0.16		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
0.3	27	0.0630	1.76		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	67	0.0297	1.21		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.4	39	0.0640	1.77		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	36	0.0472	4.41		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.8	60	0.0333	1.28		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.6	42	0.0237	1.08		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	16	0.0632	1.76		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.0	57	0.0176	0.93		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	22	0.0460	1.07		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	20	0.1010	1.59		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.1	12	0.1640	2.02		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	27	0.0745	1.91		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	262	0.0609	5.01		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
16.5	787	Total			

Subcatchment EDA-300: (new Subcat)



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-100: (new Subcat) Runoff Area=359,310 sf 11.16% Impervious Runoff Depth=6.05"
Flow Length=867' Tc=20.1 min CN=80 Runoff=34.34 cfs 181,095 cf

Subcatchment EDA-200: (new Subcat) Runoff Area=162,700 sf 42.75% Impervious Runoff Depth=6.77"
Flow Length=738' Tc=14.4 min CN=86 Runoff=20.14 cfs 91,766 cf

Subcatchment EDA-300: (new Subcat) Runoff Area=221,943 sf 45.24% Impervious Runoff Depth=7.01"
Flow Length=787' Tc=16.5 min CN=88 Runoff=26.25 cfs 129,625 cf

Total Runoff Area = 743,953 sf Runoff Volume = 402,486 cf Average Runoff Depth = 6.49"
71.77% Pervious = 533,906 sf 28.23% Impervious = 210,047 sf

Summary for Subcatchment EDA-100: (new Subcat)

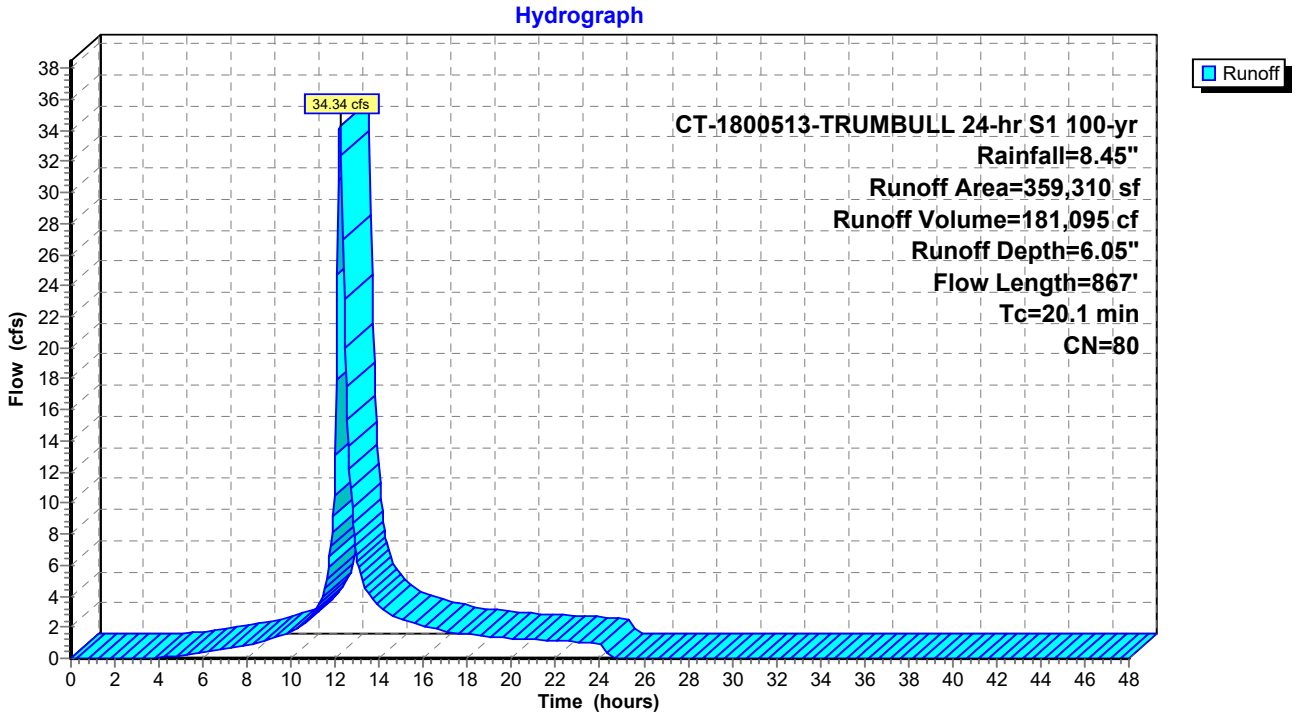
Runoff = 34.34 cfs @ 12.22 hrs, Volume= 181,095 cf, Depth= 6.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 100-yr Rainfall=8.45"

Area (sf)	CN	Description
28,300	69	50-75% Grass cover, Fair, HSG B
188,649	79	50-75% Grass cover, Fair, HSG C
36,933	84	50-75% Grass cover, Fair, HSG D
6,605	91	Gravel roads, HSG D
39,517	98	Paved parking, HSG C
581	98	Paved parking, HSG D
16,993	60	Woods, Fair, HSG B
39,675	73	Woods, Fair, HSG C
2,057	79	Woods, Fair, HSG D
359,310	80	Weighted Average
319,212		88.84% Pervious Area
40,098		11.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0200	0.13		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 2.00"
0.6	55	0.0436	1.46		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.6	96	0.0208	1.01		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	27	0.0740	1.90		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.7	71	0.0563	1.66		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	35	0.0570	1.67		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	24	0.0833	2.02		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	14	0.1430	2.65		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	26	0.2310	3.36		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	30	0.0667	1.81		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	52	0.0192	0.97		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.0	93	0.0540	1.63		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.0435	3.36		**Shallow Concentrated Flow, gravel** Unpaved Kv= 16.1 fps
0.2	49	0.2450	3.46		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	18	0.0270	1.15		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.0	131	0.0222	2.23		**Shallow Concentrated Flow, grass** Grassed Waterway Kv= 15.0 fps
20.1	867	Total			

Subcatchment EDA-100: (new Subcat)



Summary for Subcatchment EDA-200: (new Subcat)

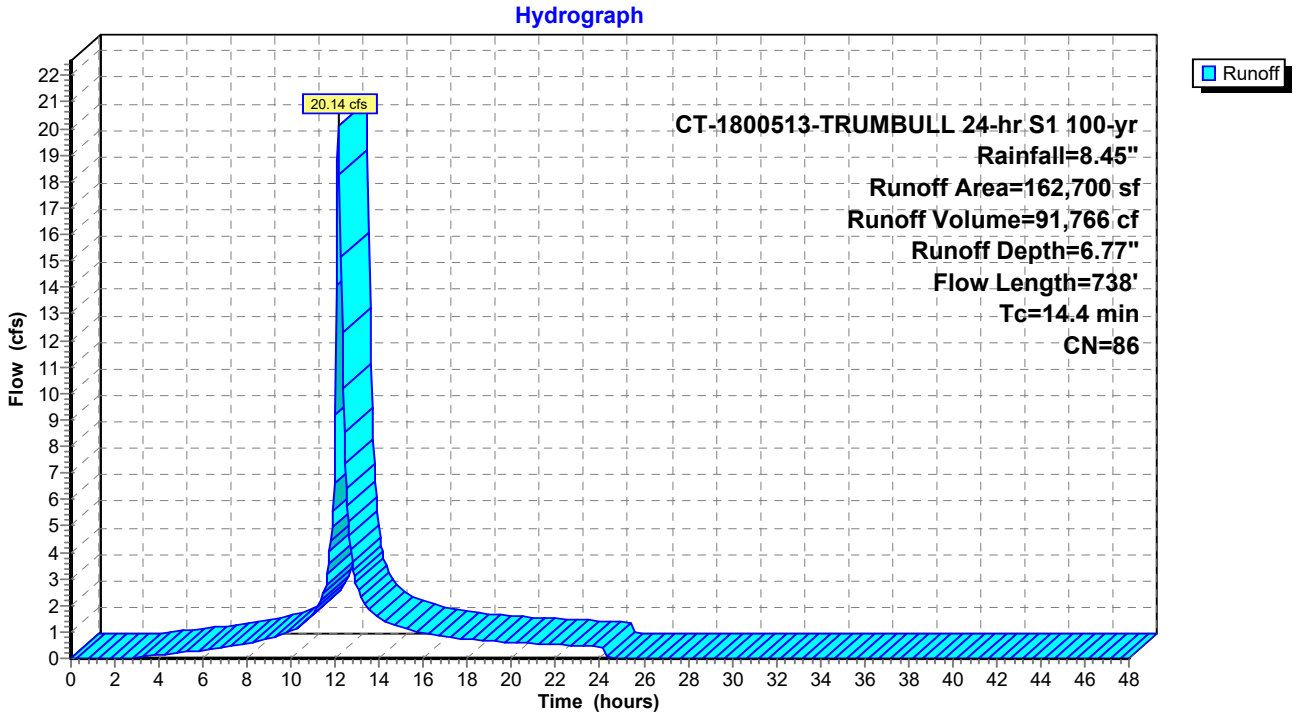
Runoff = 20.14 cfs @ 12.15 hrs, Volume= 91,766 cf, Depth= 6.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 100-yr Rainfall=8.45"

Area (sf)	CN	Description
59,123	79	50-75% Grass cover, Fair, HSG C
3,041	84	50-75% Grass cover, Fair, HSG D
23,991	73	Woods, Fair, HSG C
6,992	79	Woods, Fair, HSG D
37,787	98	Paved parking, HSG C
31,766	98	Paved parking, HSG D
162,700	86	Weighted Average
93,147		57.25% Pervious Area
69,553		42.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.0500	0.19		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
0.1	10	0.2040	3.16		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.4	30	0.0330	1.27		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
2.5	103	0.0100	0.70		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	38	0.0260	3.27		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.5	27	0.0367	0.96		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	22	0.0900	1.50		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	33	0.3030	2.75		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.1	13	0.1487	1.93		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	19	0.0520	1.60		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	40	0.0506	4.57		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.3	78	0.0511	4.59		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.3	87	0.0573	4.86		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.2	57	0.0529	4.67		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.4	57	0.0175	2.69		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
14.4	738	Total			

Subcatchment EDA-200: (new Subcat)



Summary for Subcatchment EDA-300: (new Subcat)

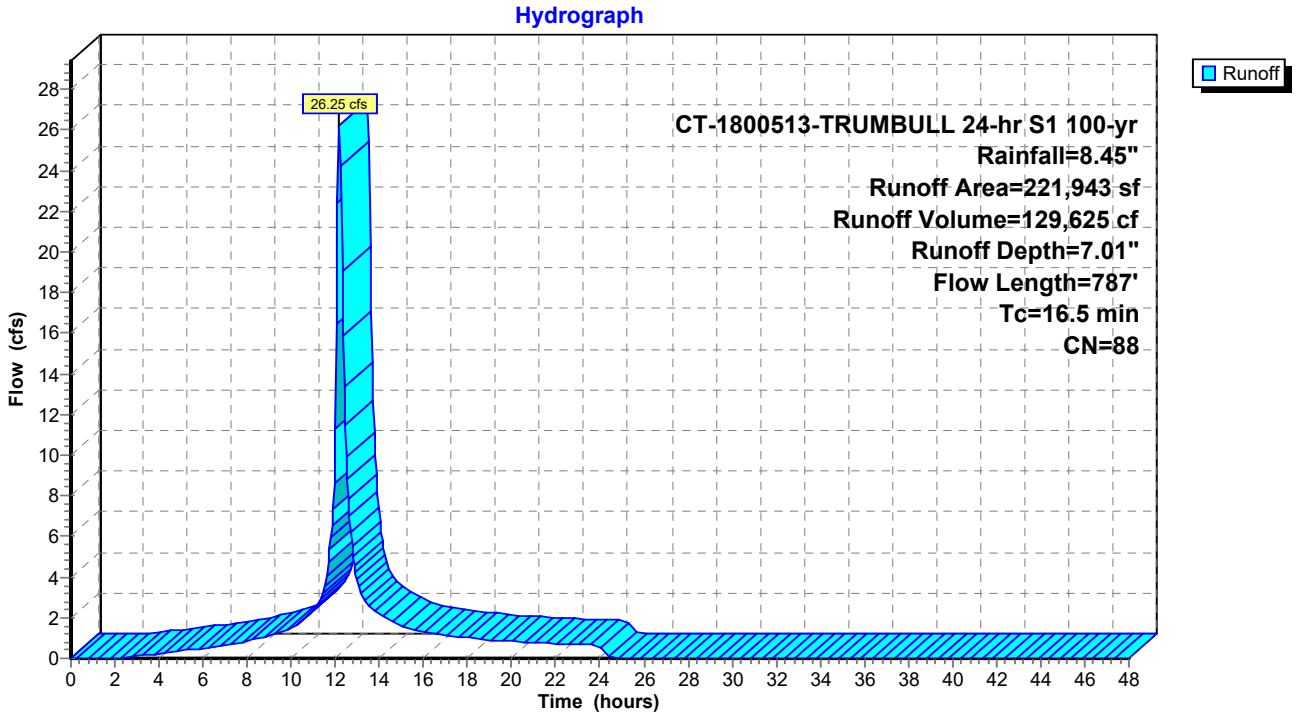
Runoff = 26.25 cfs @ 12.17 hrs, Volume= 129,625 cf, Depth= 7.01"

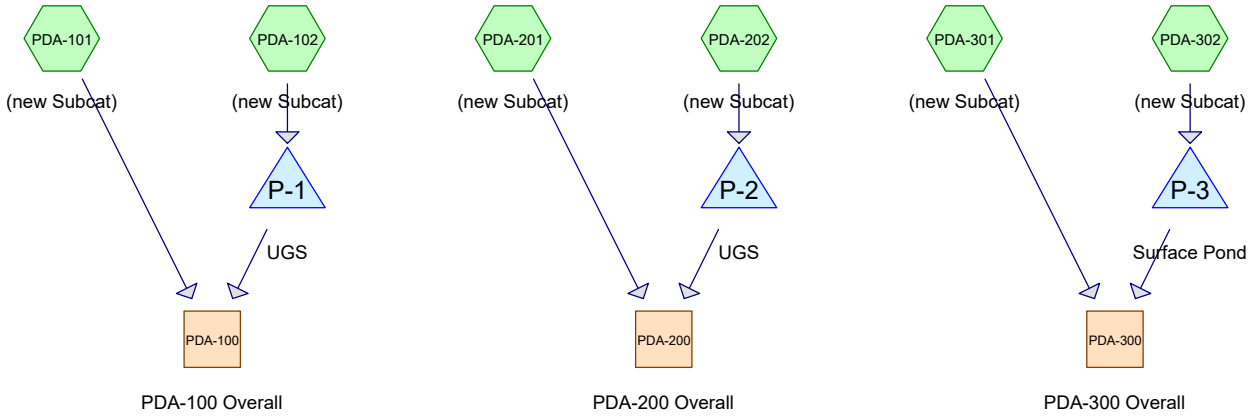
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 100-yr Rainfall=8.45"

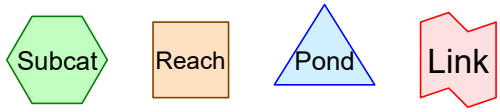
Area (sf)	CN	Description
81,258	79	50-75% Grass cover, Fair, HSG C
21,578	84	50-75% Grass cover, Fair, HSG D
13,042	73	Woods, Fair, HSG C
5,669	79	Woods, Fair, HSG D
44,569	98	Paved parking, HSG C
55,827	98	Paved parking, HSG D
221,943	88	Weighted Average
121,547		54.76% Pervious Area
100,396		45.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0300	0.16		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
0.3	27	0.0630	1.76		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	67	0.0297	1.21		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.4	39	0.0640	1.77		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.1	36	0.0472	4.41		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
0.8	60	0.0333	1.28		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.6	42	0.0237	1.08		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.2	16	0.0632	1.76		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.0	57	0.0176	0.93		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	22	0.0460	1.07		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	20	0.1010	1.59		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.1	12	0.1640	2.02		**Shallow Concentrated Flow, forest** Woodland Kv= 5.0 fps
0.2	27	0.0745	1.91		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	262	0.0609	5.01		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
16.5	787	Total			

Subcatchment EDA-300: (new Subcat)







Routing Diagram for C-DAT-1800513-HYDRO
Prepared by {enter your company name here}, Printed 5/15/2020
HydroCAD® 10.00-22 s/n 01334 © 2018 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
24,626	61	>75% Grass cover, Good, HSG B (PDA-101, PDA-102)
173,001	74	>75% Grass cover, Good, HSG C (PDA-101, PDA-102, PDA-201, PDA-202, PDA-301, PDA-302)
59,778	80	>75% Grass cover, Good, HSG D (PDA-101, PDA-102, PDA-201, PDA-301)
428,489	98	Paved parking, HSG D (PDA-101, PDA-102, PDA-201, PDA-202, PDA-301, PDA-302)
51,149	73	Woods, Fair, HSG C (PDA-101, PDA-201)
8,888	79	Woods, Fair, HSG D (PDA-201, PDA-301)
745,931	**88**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
24,626	HSG B	PDA-101, PDA-102
224,150	HSG C	PDA-101, PDA-102, PDA-201, PDA-202, PDA-301, PDA-302
497,155	HSG D	PDA-101, PDA-102, PDA-201, PDA-202, PDA-301, PDA-302
0	Other	
745,931		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	24,626	173,001	59,778	0	257,405	>75% Grass cover, Good	
0	0	0	428,489	0	428,489	Paved parking	
0	0	51,149	8,888	0	60,037	Woods, Fair	
0	**24,626**	**224,150**	**497,155**	**0**	**745,931**	**TOTAL AREA**	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	P-1	296.90	292.00	141.0	0.0348	0.011	15.0	0.0	0.0
2	P-2	296.00	295.80	37.0	0.0054	0.011	15.0	0.0	0.0
3	P-3	301.00	290.50	118.0	0.0890	0.011	12.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-101: (new Subcat) Runoff Area=146,162 sf 8.95% Impervious Runoff Depth=1.32"
Flow Length=884' Tc=14.9 min CN=75 Runoff=3.74 cfs 16,029 cf

Subcatchment PDA-102: (new Subcat) Runoff Area=183,046 sf 80.06% Impervious Runoff Depth=2.75"
Tc=6.0 min CN=93 Runoff=14.33 cfs 42,012 cf

Subcatchment PDA-201: (new Subcat) Runoff Area=71,843 sf 52.48% Impervious Runoff Depth=2.20"
Flow Length=126' Tc=13.1 min CN=87 Runoff=3.40 cfs 13,174 cf

Subcatchment PDA-202: (new Subcat) Runoff Area=104,679 sf 86.26% Impervious Runoff Depth=2.96"
Tc=6.0 min CN=95 Runoff=8.60 cfs 25,810 cf

Subcatchment PDA-301: (new Subcat) Runoff Area=149,139 sf 58.00% Impervious Runoff Depth=2.38"
Flow Length=670' Tc=13.7 min CN=89 Runoff=7.45 cfs 29,525 cf

Subcatchment PDA-302: (new Subcat) Runoff Area=91,062 sf 59.69% Impervious Runoff Depth=2.29"
Flow Length=56' Slope=0.0050 '/' Tc=13.6 min CN=88 Runoff=4.40 cfs 17,354 cf

Reach PDA-100: PDA-100 Overall Inflow=7.40 cfs 34,742 cf
Outflow=7.40 cfs 34,742 cf

Reach PDA-200: PDA-200 Overall Inflow=4.42 cfs 21,270 cf
Outflow=4.42 cfs 21,270 cf

Reach PDA-300: PDA-300 Overall Inflow=9.62 cfs 46,880 cf
Outflow=9.62 cfs 46,880 cf

Pond P-1: UGS Peak Elev=298.06' Storage=13,648 cf Inflow=14.33 cfs 42,012 cf
Discarded=0.28 cfs 23,299 cf Primary=3.84 cfs 18,713 cf Outflow=4.12 cfs 42,012 cf

Pond P-2: UGS Peak Elev=298.07' Storage=9,662 cf Inflow=8.60 cfs 25,810 cf
Discarded=0.16 cfs 17,714 cf Primary=1.78 cfs 8,096 cf Outflow=1.94 cfs 25,810 cf

Pond P-3: Surface Pond Peak Elev=303.00' Storage=1,796 cf Inflow=4.40 cfs 17,354 cf
Outflow=2.43 cfs 17,354 cf

Total Runoff Area = 745,931 sf Runoff Volume = 143,904 cf Average Runoff Depth = 2.32"
42.56% Pervious = 317,442 sf 57.44% Impervious = 428,489 sf

Summary for Subcatchment PDA-101: (new Subcat)

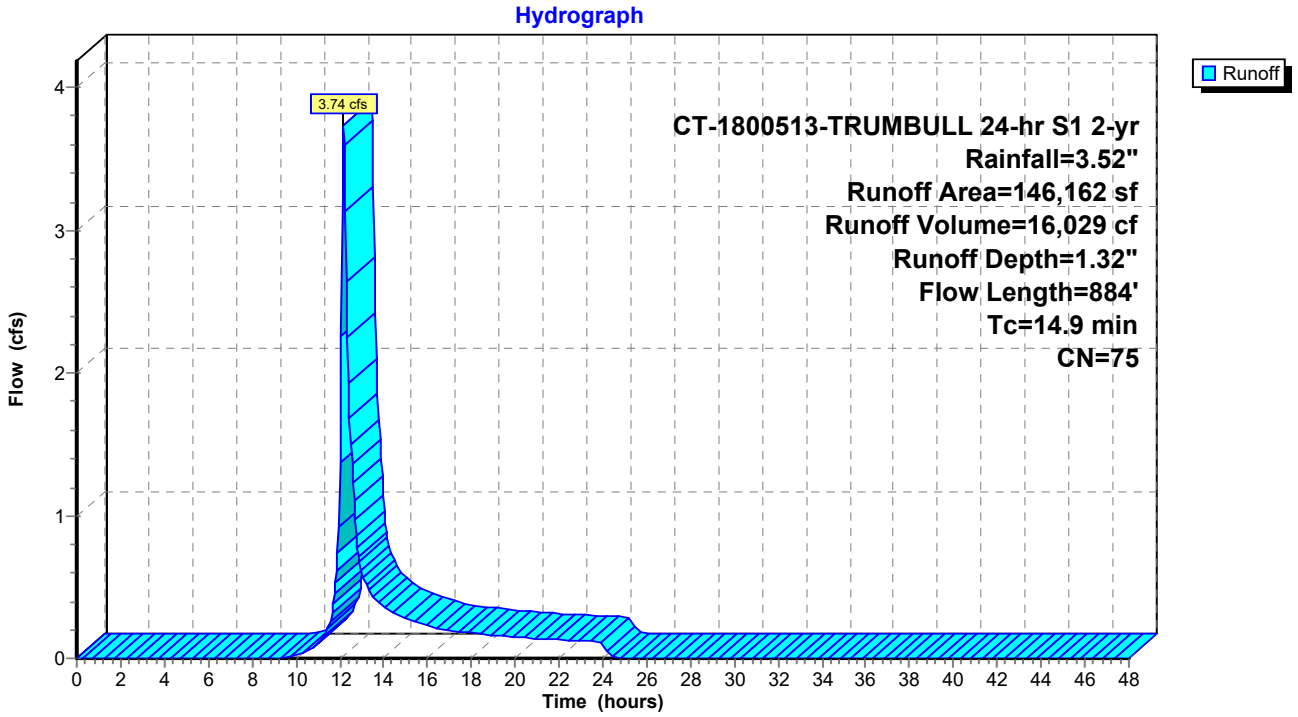
Runoff = 3.74 cfs @ 12.17 hrs, Volume= 16,029 cf, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 2-yr Rainfall=3.52"

Area (sf)	CN	Description
24,058	61	>75% Grass cover, Good, HSG B
38,346	74	>75% Grass cover, Good, HSG C
33,014	80	>75% Grass cover, Good, HSG D
13,083	98	Paved parking, HSG D
37,661	73	Woods, Fair, HSG C
146,162	75	Weighted Average
133,079		91.05% Pervious Area
13,083		8.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	100	0.0833	0.24		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 2.00"
0.2	20	0.0400	1.40		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.3	126	0.0516	1.59		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
2.0	96	0.0250	0.79		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
1.2	161	0.1000	2.21		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.8	92	0.0761	1.93		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	45	0.1111	2.33		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	80	0.0500	1.57		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.2	164	0.0222	2.23		**Shallow Concentrated Flow, grass** Grassed Waterway Kv= 15.0 fps
14.9	884	Total			

Subcatchment PDA-101: (new Subcat)



Summary for Subcatchment PDA-102: (new Subcat)

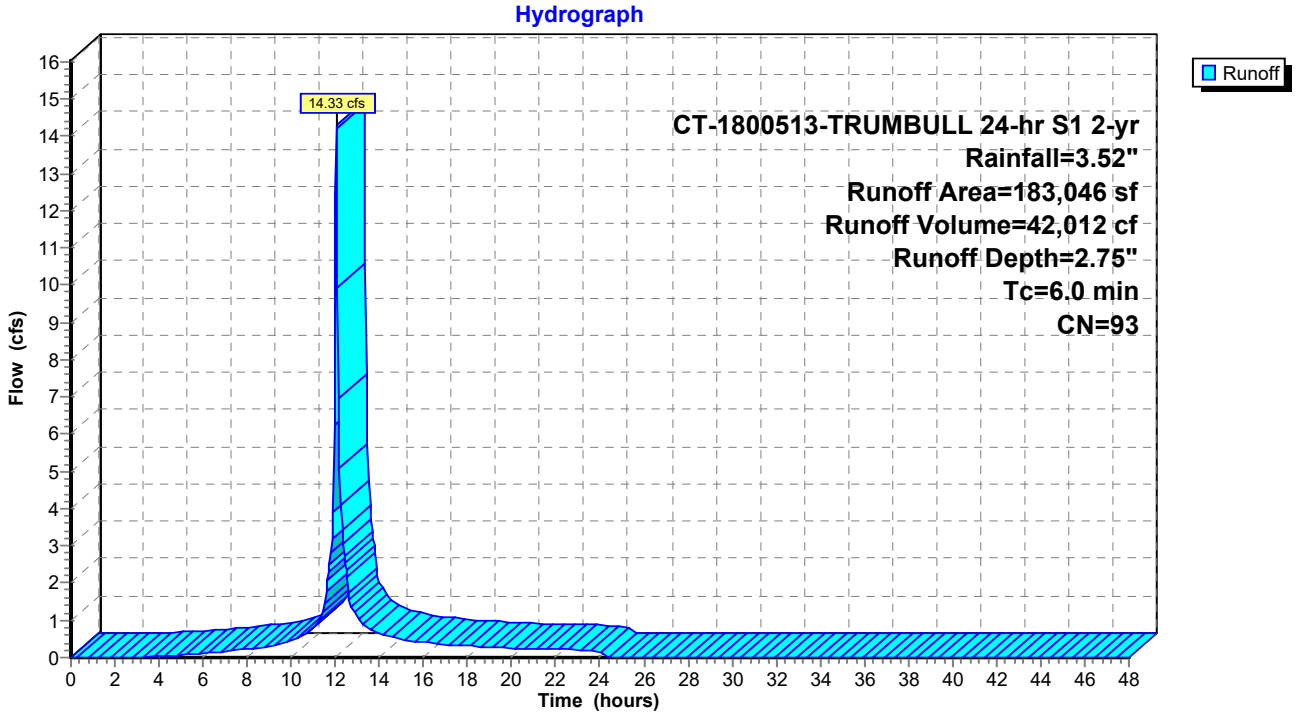
Runoff = 14.33 cfs @ 12.04 hrs, Volume= 42,012 cf, Depth= 2.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 2-yr Rainfall=3.52"

Area (sf)	CN	Description
568	61	>75% Grass cover, Good, HSG B
35,494	74	>75% Grass cover, Good, HSG C
439	80	>75% Grass cover, Good, HSG D
146,545	98	Paved parking, HSG D
183,046	93	Weighted Average
36,501		19.94% Pervious Area
146,545		80.06% Impervious Area

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

Subcatchment PDA-102: (new Subcat)



Summary for Subcatchment PDA-201: (new Subcat)

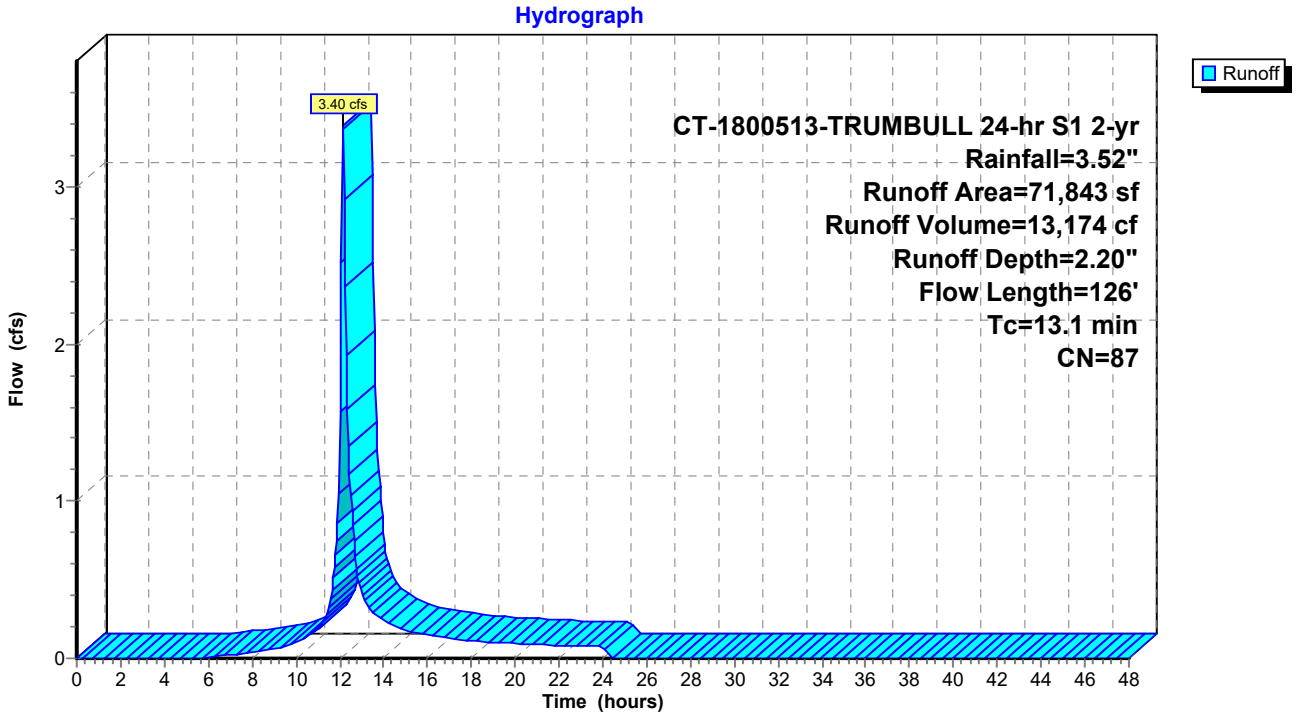
Runoff = 3.40 cfs @ 12.13 hrs, Volume= 13,174 cf, Depth= 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 2-yr Rainfall=3.52"

Area (sf)	CN	Description
10,617	74	>75% Grass cover, Good, HSG C
3,041	80	>75% Grass cover, Good, HSG D
13,488	73	Woods, Fair, HSG C
6,992	79	Woods, Fair, HSG D
37,705	98	Paved parking, HSG D
71,843	87	Weighted Average
34,138		47.52% Pervious Area
37,705		52.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	25	0.0286	0.12		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
6.5	20	0.0286	0.05		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.00"
2.6	14	0.1429	0.09		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.00"
0.3	51	0.2553	2.53		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
0.2	16	0.0541	1.63		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
13.1	126	Total			

Subcatchment PDA-201: (new Subcat)



Summary for Subcatchment PDA-202: (new Subcat)

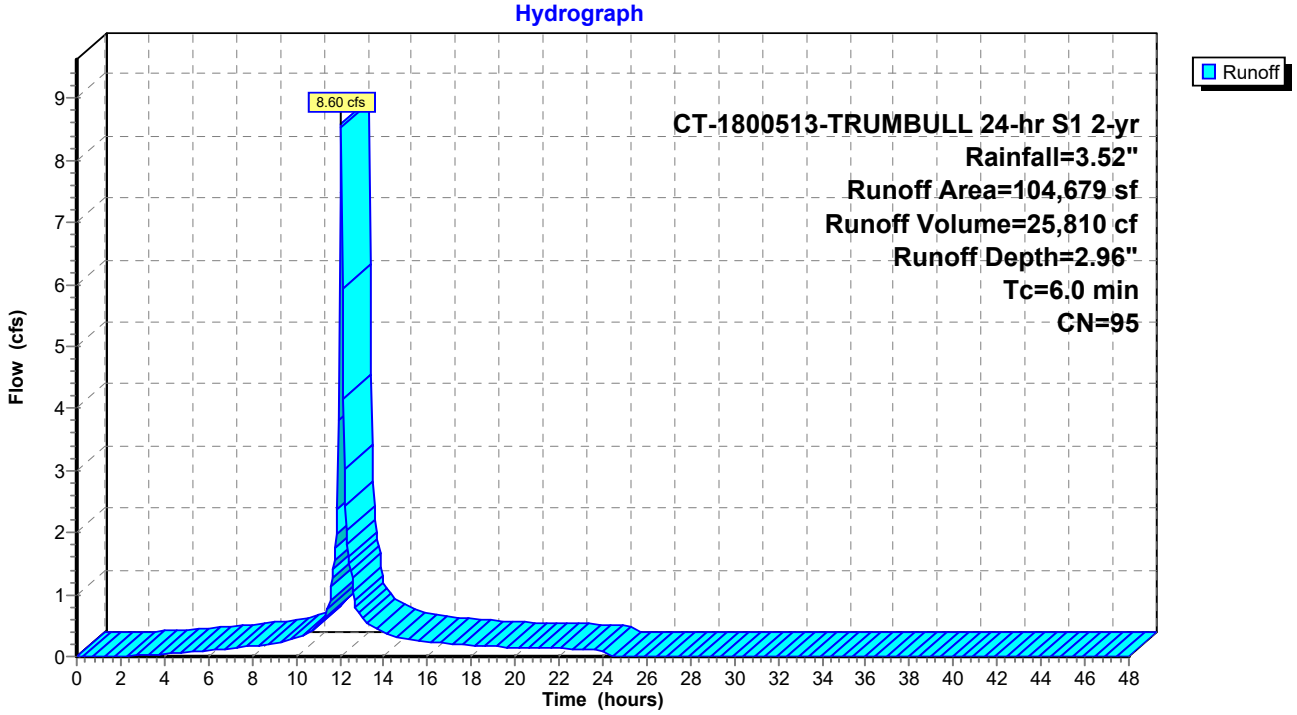
Runoff = 8.60 cfs @ 12.04 hrs, Volume= 25,810 cf, Depth= 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 2-yr Rainfall=3.52"

Area (sf)	CN	Description
14,378	74	>75% Grass cover, Good, HSG C
90,301	98	Paved parking, HSG D
104,679	95	Weighted Average
14,378		13.74% Pervious Area
90,301		86.26% Impervious Area

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

Subcatchment PDA-202: (new Subcat)



Summary for Subcatchment PDA-301: (new Subcat)

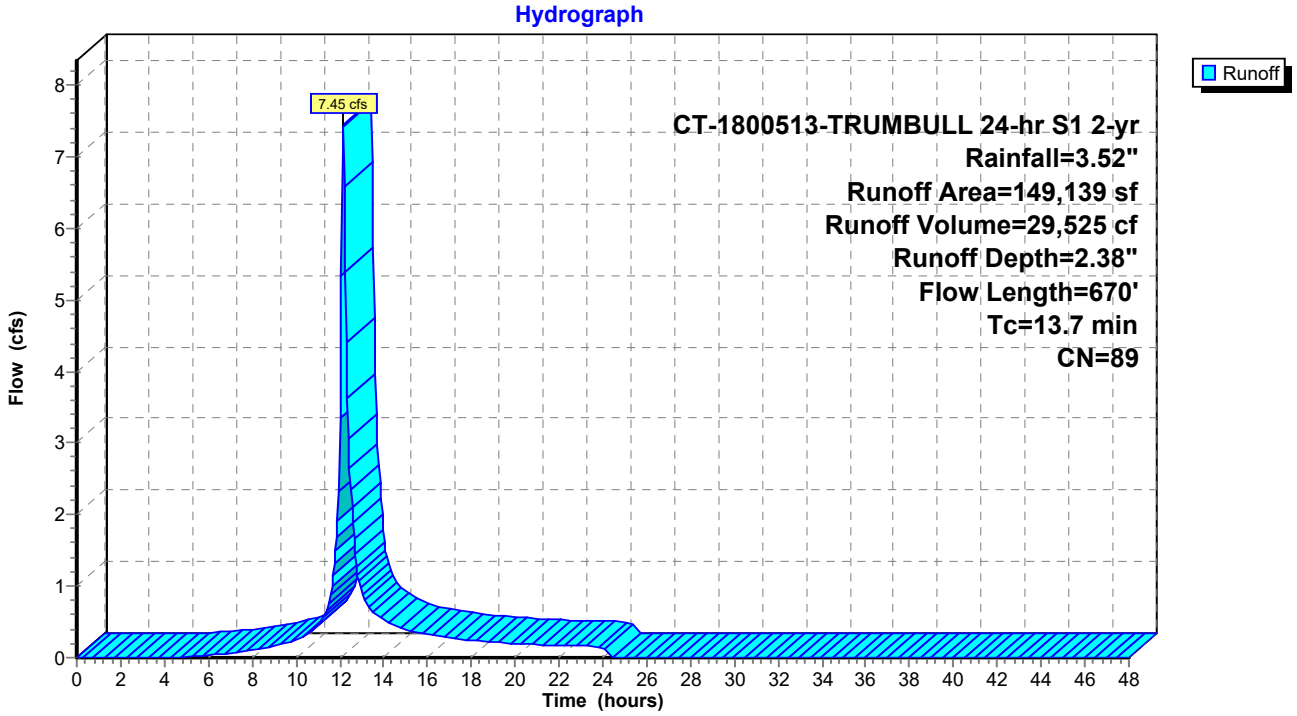
Runoff = 7.45 cfs @ 12.14 hrs, Volume= 29,525 cf, Depth= 2.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 2-yr Rainfall=3.52"

Area (sf)	CN	Description
37,457	74	>75% Grass cover, Good, HSG C
23,284	80	>75% Grass cover, Good, HSG D
1,896	79	Woods, Fair, HSG D
86,502	98	Paved parking, HSG D
149,139	89	Weighted Average
62,637		42.00% Pervious Area
86,502		58.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	70	0.0143	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
3.0	600	0.0267	3.32		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
13.7	670	Total			

Subcatchment PDA-301: (new Subcat)



Summary for Subcatchment PDA-302: (new Subcat)

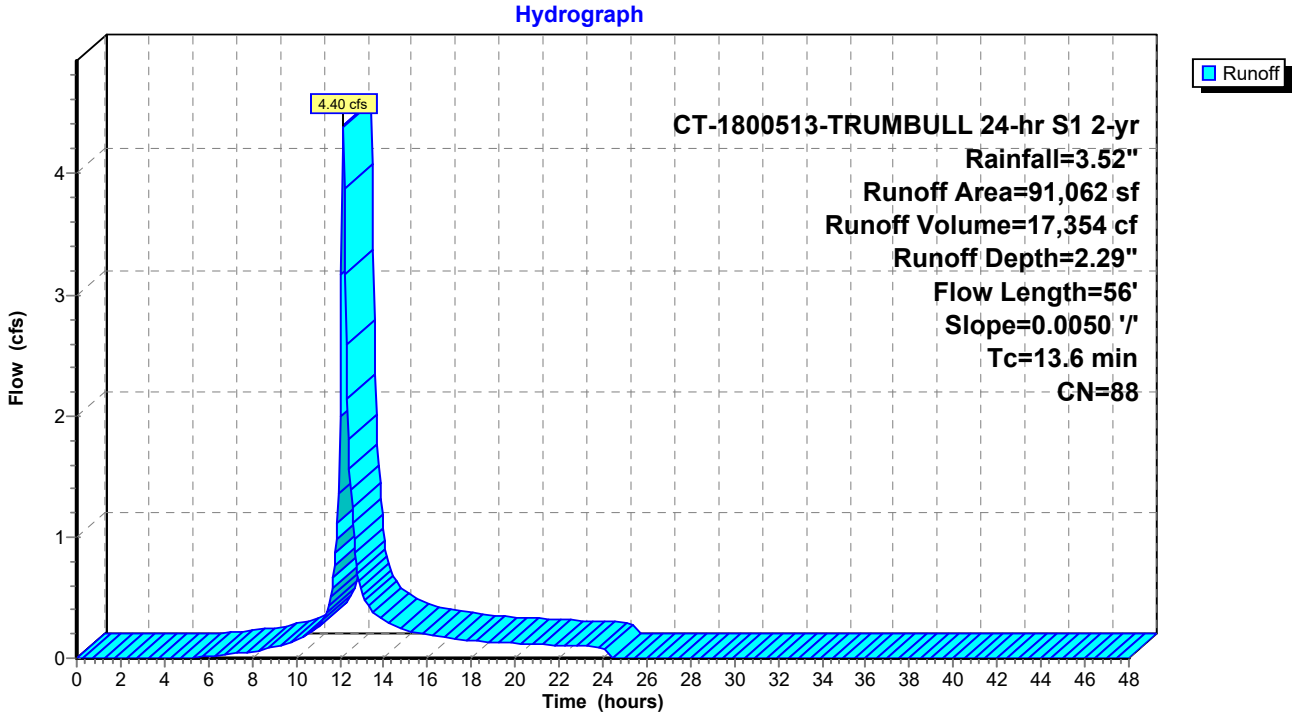
Runoff = 4.40 cfs @ 12.14 hrs, Volume= 17,354 cf, Depth= 2.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 2-yr Rainfall=3.52"

Area (sf)	CN	Description
36,709	74	>75% Grass cover, Good, HSG C
54,353	98	Paved parking, HSG D
91,062	88	Weighted Average
36,709		40.31% Pervious Area
54,353		59.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	56	0.0050	0.07		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"

Subcatchment PDA-302: (new Subcat)

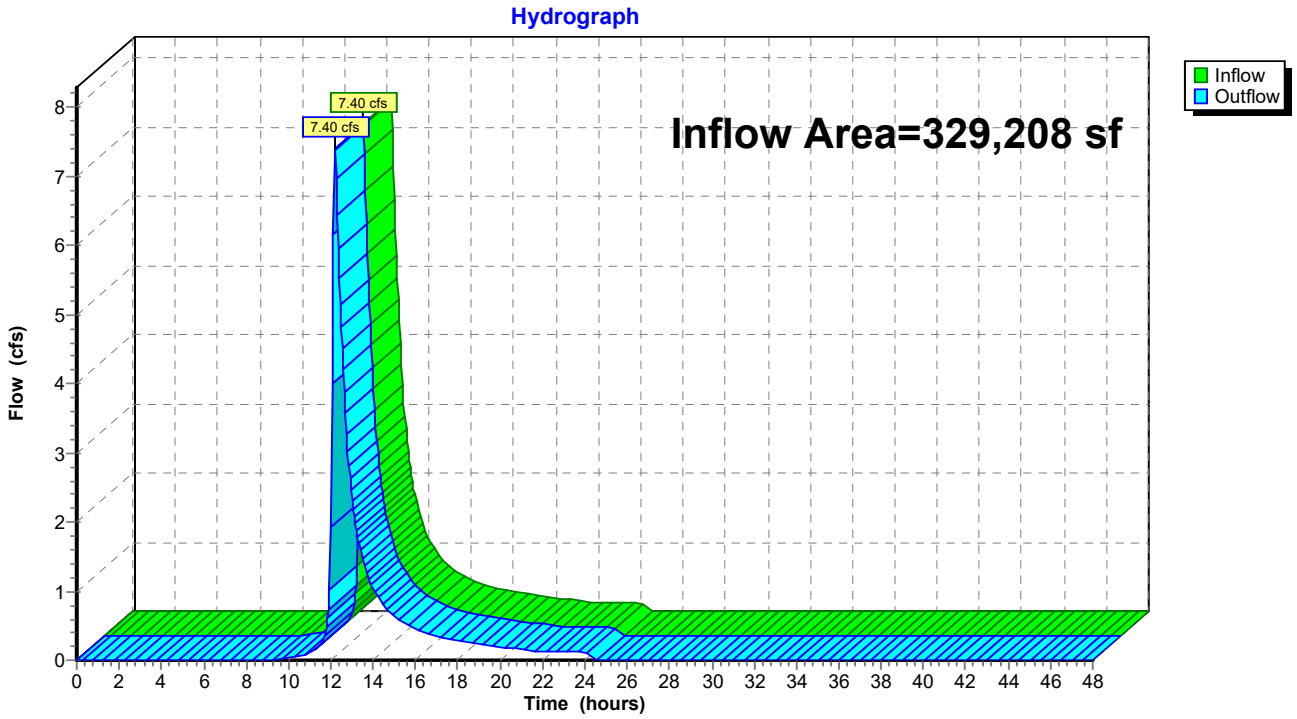


Summary for Reach PDA-100: PDA-100 Overall

Inflow Area = 329,208 sf, 48.49% Impervious, Inflow Depth = 1.27" for 2-yr event
Inflow = 7.40 cfs @ 12.19 hrs, Volume= 34,742 cf
Outflow = 7.40 cfs @ 12.19 hrs, Volume= 34,742 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach PDA-100: PDA-100 Overall

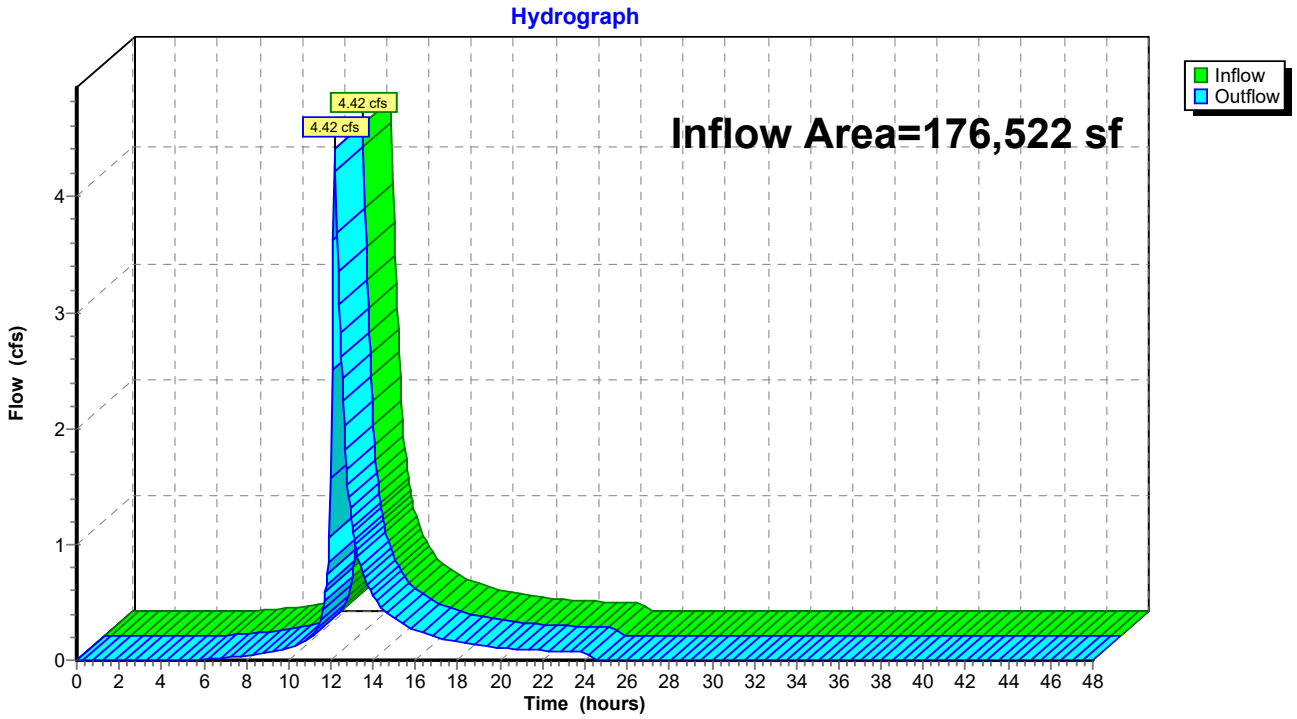


Summary for Reach PDA-200: PDA-200 Overall

Inflow Area = 176,522 sf, 72.52% Impervious, Inflow Depth = 1.45" for 2-yr event
Inflow = 4.42 cfs @ 12.18 hrs, Volume= 21,270 cf
Outflow = 4.42 cfs @ 12.18 hrs, Volume= 21,270 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach PDA-200: PDA-200 Overall

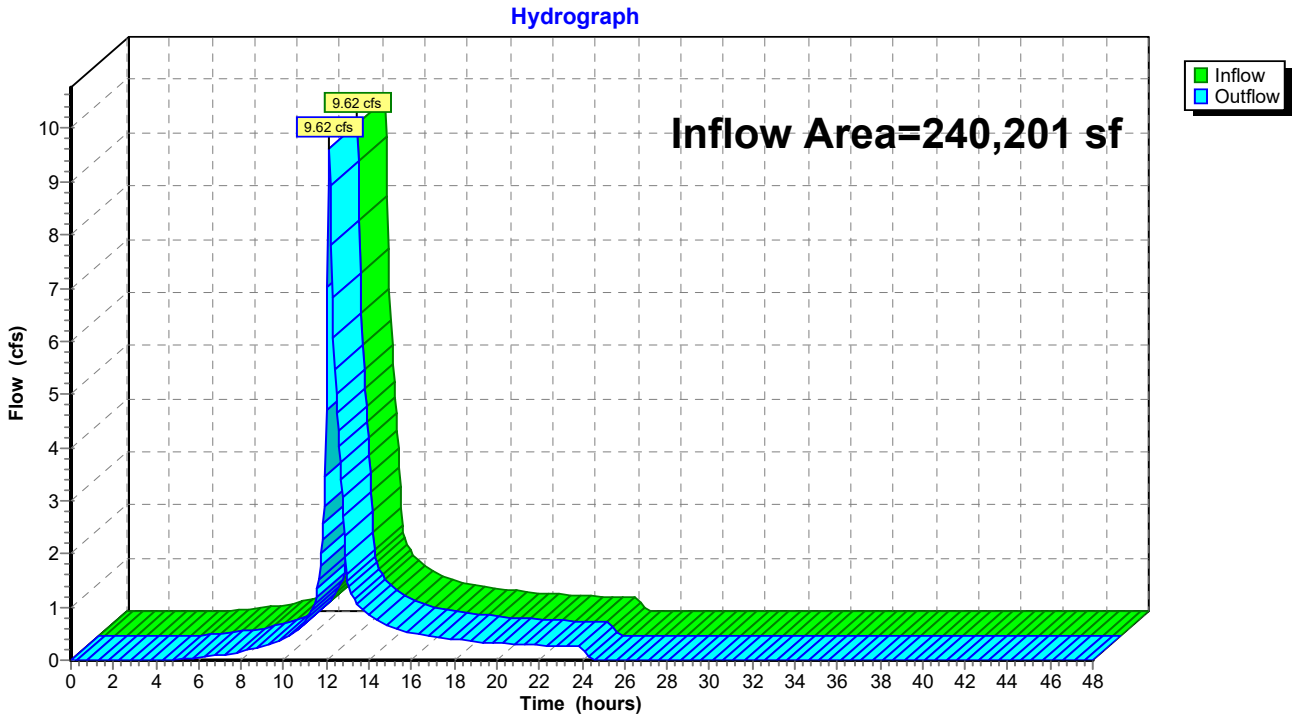


Summary for Reach PDA-300: PDA-300 Overall

Inflow Area = 240,201 sf, 58.64% Impervious, Inflow Depth = 2.34" for 2-yr event
Inflow = 9.62 cfs @ 12.15 hrs, Volume= 46,880 cf
Outflow = 9.62 cfs @ 12.15 hrs, Volume= 46,880 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach PDA-300: PDA-300 Overall



Summary for Pond P-1: UGS

Inflow Area =	183,046 sf,	80.06% Impervious,	Inflow Depth =	2.75"	for 2-yr event
Inflow =	14.33 cfs @	12.04 hrs,	Volume=	42,012 cf	
Outflow =	4.12 cfs @	12.25 hrs,	Volume=	42,012 cf,	Atten= 71%, Lag= 12.9 min
Discarded =	0.28 cfs @	8.80 hrs,	Volume=	23,299 cf	
Primary =	3.84 cfs @	12.25 hrs,	Volume=	18,713 cf	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 298.06' @ 12.25 hrs Surf.Area= 7,993 sf Storage= 13,648 cf

Plug-Flow detention time= 159.1 min calculated for 41,969 cf (100% of inflow)
Center-of-Mass det. time= 159.3 min (958.7 - 799.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	295.50'	11,750 cf	**95.50'W x 83.70'L x 6.00'H Field A** 47,960 cf Overall - 18,586 cf Embedded = 29,374 cf x 40.0% Voids
#2A	296.50'	18,586 cf	**Cultec R-902HD** x 286 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 13 Rows of 22 Chambers Cap Storage= +2.8 cf x 2 x 13 rows = 71.8 cf
		30,336 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.50'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	296.90'	**15.0" Round Culvert** L= 141.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 296.90' / 292.00' S= 0.0348 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Discarded OutFlow Max=0.28 cfs @ 8.80 hrs HW=295.56' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=3.84 cfs @ 12.25 hrs HW=298.06' (Free Discharge)
└─**2=Culvert** (Inlet Controls 3.84 cfs @ 3.24 fps)

Pond P-1: UGS - Chamber Wizard Field A

Chamber Model = Cultec R-902HD (Cultec Recharger® 902HD)
Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf
Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap
Cap Storage= +2.8 cf x 2 x 13 rows = 71.8 cf

78.0" Wide + 9.0" Spacing = 87.0" C-C Row Spacing

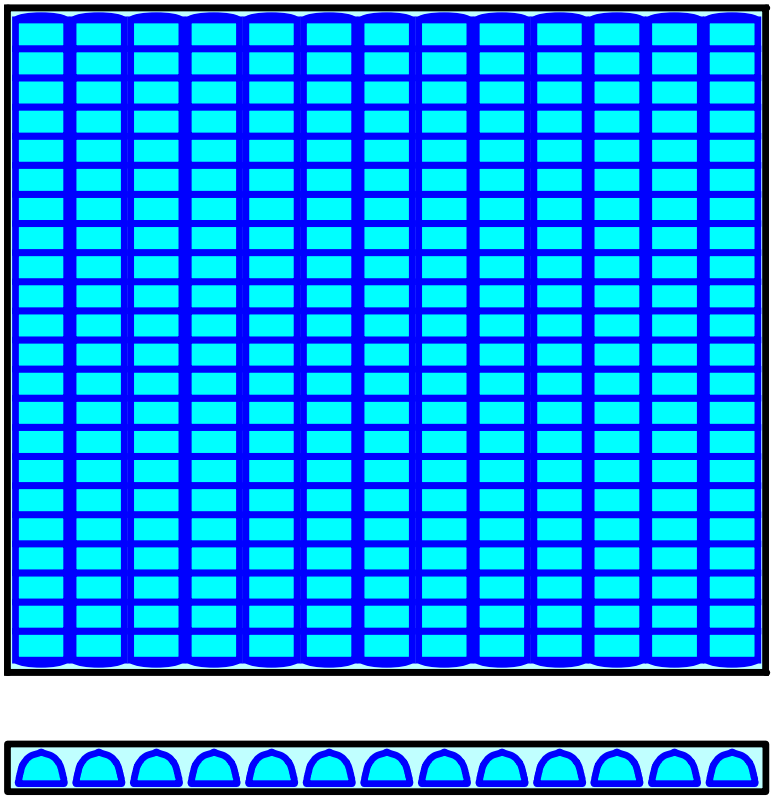
22 Chambers/Row x 3.67' Long +0.52' Cap Length x 2 = 81.70' Row Length +12.0" End Stone x 2 = 83.70' Base Length
13 Rows x 78.0" Wide + 9.0" Spacing x 12 + 12.0" Side Stone x 2 = 95.50' Base Width
12.0" Base + 48.0" Chamber Height + 12.0" Cover = 6.00' Field Height

286 Chambers x 64.7 cf + 2.8 cf Cap Volume x 2 x 13 Rows = 18,586.0 cf Chamber Storage

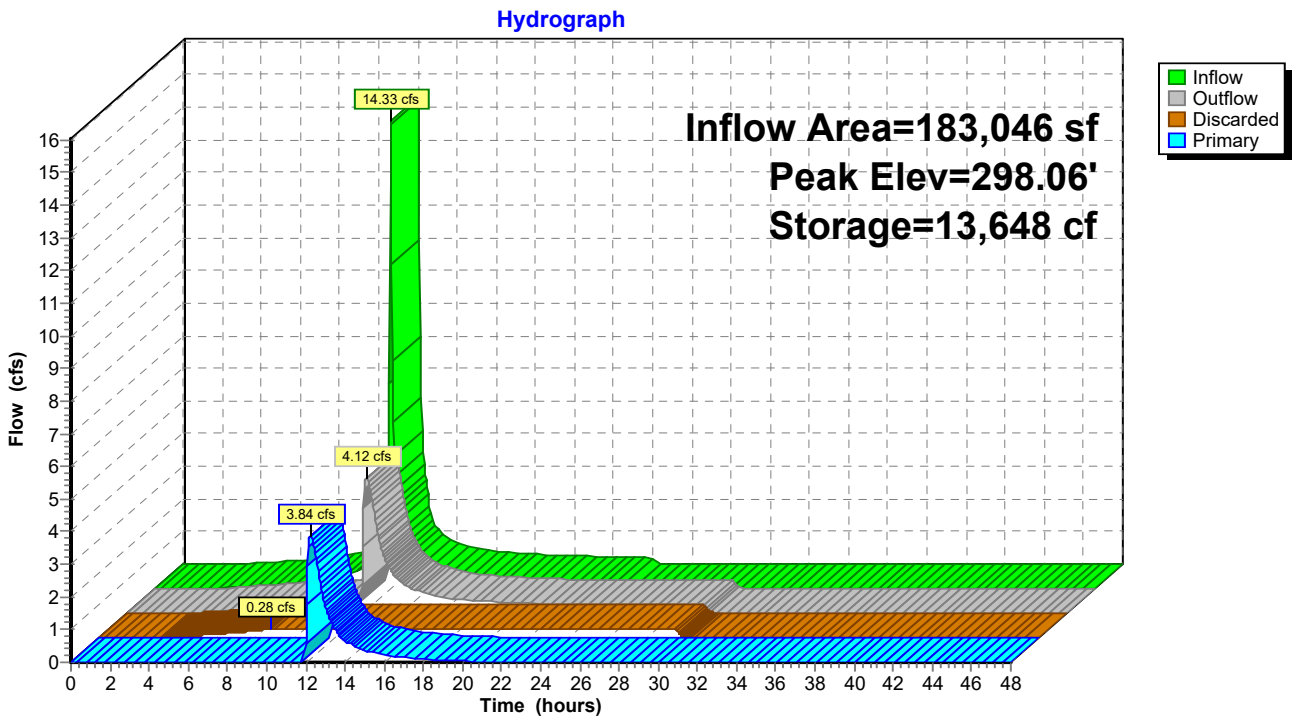
47,960.1 cf Field - 18,586.0 cf Chambers = 29,374.1 cf Stone x 40.0% Voids = 11,749.7 cf Stone Storage

Chamber Storage + Stone Storage = 30,335.6 cf = 0.696 af
Overall Storage Efficiency = 63.3%
Overall System Size = 83.70' x 95.50' x 6.00'

286 Chambers
1,776.3 cy Field
1,087.9 cy Stone



Pond P-1: UGS


Hydrograph
Inflow Area=183,046 sf
Peak Elev=298.06'
Storage=13,648 cf
14.33 cfs
4.12 cfs
3.84 cfs
0.28 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond P-1: UGS

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
295.50	**7,993**	0
295.60	7,993	320
295.70	7,993	639
295.80	7,993	959
295.90	7,993	1,279
296.00	7,993	1,599
296.10	7,993	1,918
296.20	7,993	2,238
296.30	7,993	2,558
296.40	7,993	2,878
296.50	7,993	3,197
296.60	7,993	3,881
296.70	7,993	4,567
296.80	7,993	5,251
296.90	7,993	5,931
297.00	7,993	6,609
297.10	7,993	7,285
297.20	7,993	7,961
297.30	7,993	8,633
297.40	7,993	9,300
297.50	7,993	9,965
297.60	7,993	10,630
297.70	7,993	11,291
297.80	7,993	11,948
297.90	7,993	12,602
298.00	7,993	13,253
298.10	7,993	13,901
298.20	7,993	14,546
298.30	7,993	15,188
298.40	7,993	15,826
298.50	7,993	16,463
298.60	7,993	17,093
298.70	7,993	17,719
298.80	7,993	18,341
298.90	7,993	18,956
299.00	7,993	19,566
299.10	7,993	20,169
299.20	7,993	20,764
299.30	7,993	21,351
299.40	7,993	21,928
299.50	7,993	22,494
299.60	7,993	23,050
299.70	7,993	23,592
299.80	7,993	24,120
299.90	7,993	24,633
300.00	7,993	25,129
300.10	7,993	25,602
300.20	7,993	26,041
300.30	7,993	26,440
300.40	7,993	26,802
300.50	7,993	27,138
300.60	7,993	27,458
300.70	7,993	27,778
300.80	7,993	28,097
300.90	7,993	28,417
301.00	7,993	28,737
301.10	7,993	29,057
301.20	7,993	29,376
301.30	7,993	29,696
301.40	7,993	30,016
301.50	7,993	**30,336**

Summary for Pond P-2: UGS

Inflow Area =	104,679 sf, 86.26% Impervious, Inflow Depth = 2.96" for 2-yr event				
Inflow =	8.60 cfs @	12.04 hrs,	Volume=	25,810 cf	
Outflow =	1.94 cfs @	12.32 hrs,	Volume=	25,810 cf,	Atten= 77%, Lag= 17.0 min
Discarded =	0.16 cfs @	8.05 hrs,	Volume=	17,714 cf	
Primary =	1.78 cfs @	12.32 hrs,	Volume=	8,096 cf	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 298.07' @ 12.32 hrs Surf.Area= 4,591 sf Storage= 9,662 cf

Plug-Flow detention time= 326.2 min calculated for 25,783 cf (100% of inflow)
Center-of-Mass det. time= 326.6 min (1,111.8 - 785.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	295.00'	6,803 cf	**66.50'W x 69.03'L x 6.00'H Field A** 27,544 cf Overall - 10,537 cf Embedded = 17,008 cf x 40.0% Voids
#2A	296.00'	10,537 cf	**Cultec R-902HD** x 162 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 9 Rows of 18 Chambers Cap Storage= +2.8 cf x 2 x 9 rows = 49.7 cf
		17,340 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.00'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	296.00'	**15.0" Round Culvert** L= 37.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 296.00' / 295.80' S= 0.0054 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#3	Device 2	300.00'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 2	297.42'	**15.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.16 cfs @ 8.05 hrs HW=295.06' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=1.77 cfs @ 12.32 hrs HW=298.07' (Free Discharge)
└─**2=Culvert** (Passes 1.77 cfs of 6.27 cfs potential flow)
  ├─**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Orifice Controls 1.77 cfs @ 2.74 fps)

Pond P-2: UGS - Chamber Wizard Field A

Chamber Model = Cultec R-902HD (Cultec Recharger® 902HD)
Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf
Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap
Cap Storage= +2.8 cf x 2 x 9 rows = 49.7 cf

78.0" Wide + 9.0" Spacing = 87.0" C-C Row Spacing

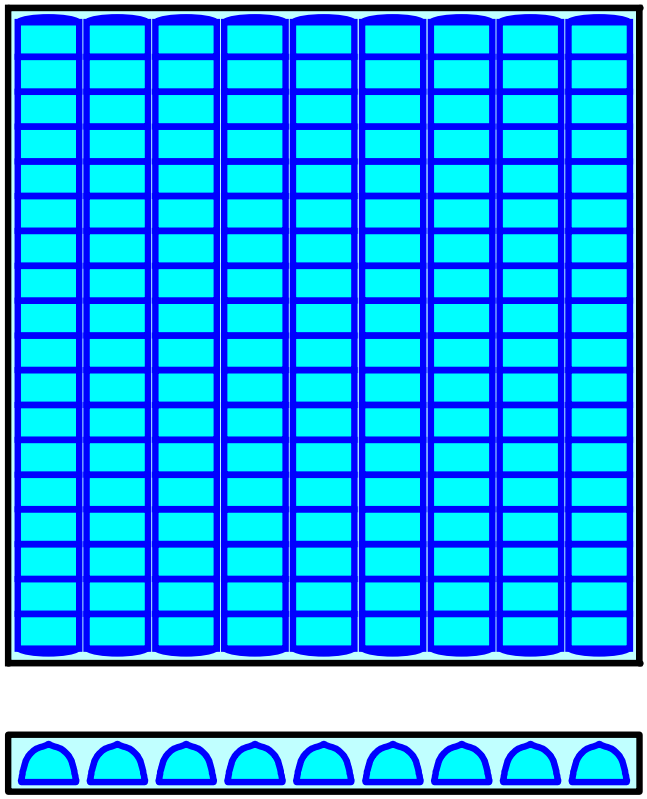
18 Chambers/Row x 3.67' Long +0.52' Cap Length x 2 = 67.03' Row Length +12.0" End Stone x 2 = 69.03' Base Length
9 Rows x 78.0" Wide + 9.0" Spacing x 8 + 12.0" Side Stone x 2 = 66.50' Base Width
12.0" Base + 48.0" Chamber Height + 12.0" Cover = 6.00' Field Height

162 Chambers x 64.7 cf + 2.8 cf Cap Volume x 2 x 9 Rows = 10,536.8 cf Chamber Storage

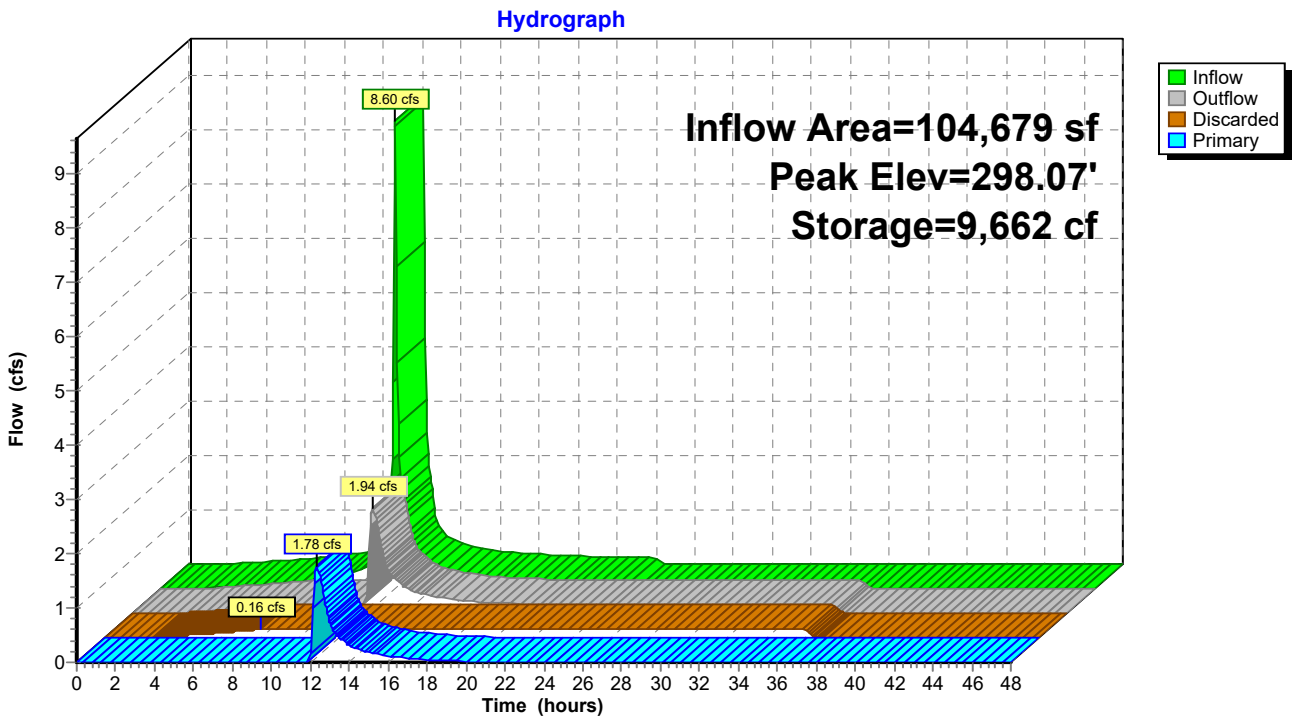
27,544.3 cf Field - 10,536.8 cf Chambers = 17,007.6 cf Stone x 40.0% Voids = 6,803.0 cf Stone Storage

Chamber Storage + Stone Storage = 17,339.8 cf = 0.398 af
Overall Storage Efficiency = 63.0%
Overall System Size = 69.03' x 66.50' x 6.00'

162 Chambers
1,020.2 cy Field
629.9 cy Stone



Pond P-2: UGS


Hydrograph
Inflow Area=104,679 sf
Peak Elev=298.07'
Storage=9,662 cf
8.60 cfs
1.94 cfs
1.78 cfs
0.16 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond P-2: UGS

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
295.00	**4,591**	0
295.10	4,591	184
295.20	4,591	367
295.30	4,591	551
295.40	4,591	735
295.50	4,591	918
295.60	4,591	1,102
295.70	4,591	1,285
295.80	4,591	1,469
295.90	4,591	1,653
296.00	4,591	1,836
296.10	4,591	2,226
296.20	4,591	2,618
296.30	4,591	3,007
296.40	4,591	3,395
296.50	4,591	3,782
296.60	4,591	4,168
296.70	4,591	4,553
296.80	4,591	4,937
296.90	4,591	5,317
297.00	4,591	5,697
297.10	4,591	6,076
297.20	4,591	6,453
297.30	4,591	6,828
297.40	4,591	7,201
297.50	4,591	7,573
297.60	4,591	7,942
297.70	4,591	8,310
297.80	4,591	8,677
297.90	4,591	9,041
298.00	4,591	9,404
298.10	4,591	9,763
298.20	4,591	10,121
298.30	4,591	10,476
298.40	4,591	10,827
298.50	4,591	11,175
298.60	4,591	11,520
298.70	4,591	11,859
298.80	4,591	12,194
298.90	4,591	12,523
299.00	4,591	12,847
299.10	4,591	13,164
299.20	4,591	13,474
299.30	4,591	13,776
299.40	4,591	14,069
299.50	4,591	14,353
299.60	4,591	14,623
299.70	4,591	14,874
299.80	4,591	15,103
299.90	4,591	15,310
300.00	4,591	15,503
300.10	4,591	15,687
300.20	4,591	15,871
300.30	4,591	16,054
300.40	4,591	16,238
300.50	4,591	16,422
300.60	4,591	16,605
300.70	4,591	16,789
300.80	4,591	16,973
300.90	4,591	17,156
301.00	4,591	**17,340**

Summary for Pond P-3: Surface Pond

Inflow Area = 91,062 sf, 59.69% Impervious, Inflow Depth = 2.29" for 2-yr event
Inflow = 4.40 cfs @ 12.14 hrs, Volume= 17,354 cf
Outflow = 2.43 cfs @ 12.32 hrs, Volume= 17,354 cf, Atten= 45%, Lag= 10.8 min
Primary = 2.43 cfs @ 12.32 hrs, Volume= 17,354 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 303.00' @ 12.32 hrs Surf.Area= 2,316 sf Storage= 1,796 cf

Plug-Flow detention time= 4.3 min calculated for 17,336 cf (100% of inflow)
Center-of-Mass det. time= 4.3 min (838.3 - 834.0)

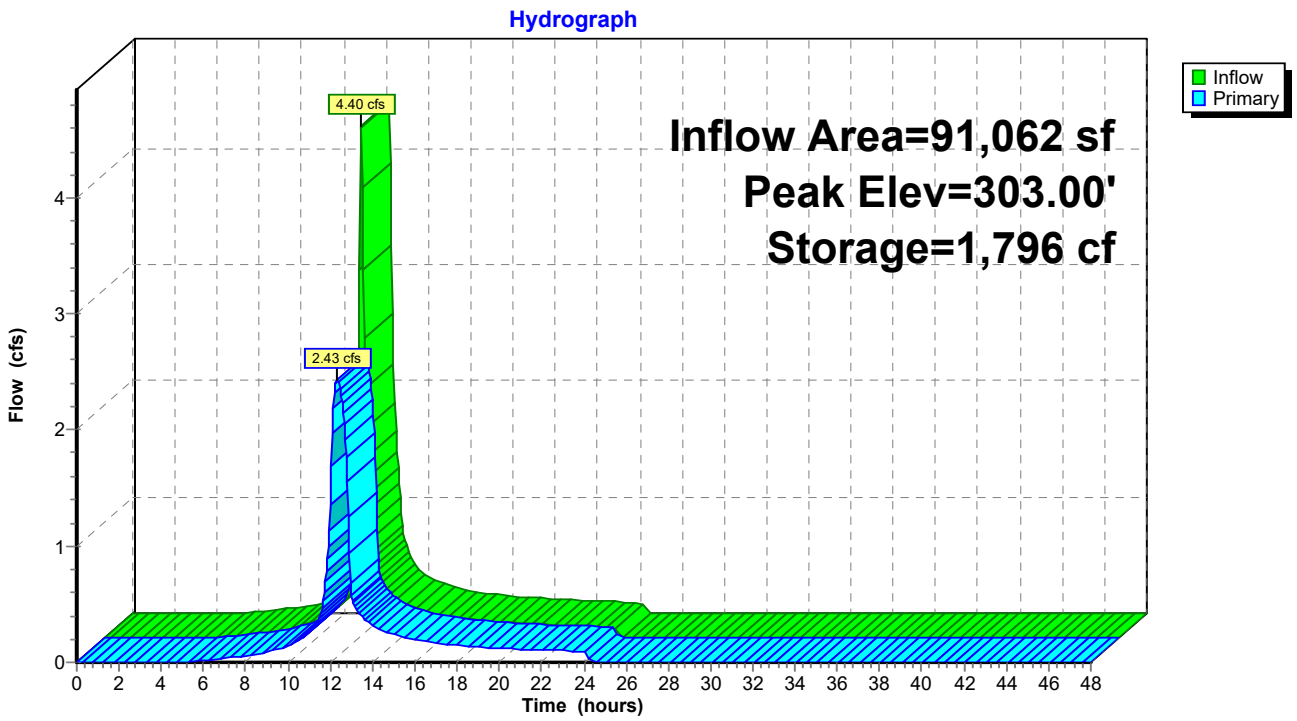
Volume	Invert	Avail.Storage	Storage Description
#1	301.00'	9,905 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
301.00	1	0	0
302.00	643	322	322
303.00	2,322	1,483	1,805
304.00	4,126	3,224	5,029
305.00	5,627	4,877	9,905

Device	Routing	Invert	Outlet Devices
#1	Primary	301.00'	**12.0" Round Culvert** L= 118.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 301.00' / 290.50' S= 0.0890 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf
#2	Device 1	301.00'	**8.5" Vert. Orifice/Grate** C= 0.600
#3	Device 1	304.75'	**2.0" x 2.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	303.00'	**11.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=2.43 cfs @ 12.32 hrs HW=302.99' (Free Discharge)
└─**1=Culvert** (Passes 2.43 cfs of 4.62 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 2.43 cfs @ 6.16 fps)
  ├─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Pond P-3: Surface Pond



Stage-Area-Storage for Pond P-3: Surface Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
301.00	1	0
301.05	33	1
301.10	65	3
301.15	97	7
301.20	129	13
301.25	162	20
301.30	194	29
301.35	226	40
301.40	258	52
301.45	290	65
301.50	322	81
301.55	354	98
301.60	386	116
301.65	418	136
301.70	450	158
301.75	483	181
301.80	515	206
301.85	547	233
301.90	579	261
301.95	611	291
302.00	643	322
302.05	727	356
302.10	811	395
302.15	895	437
302.20	979	484
302.25	1,063	535
302.30	1,147	590
302.35	1,231	650
302.40	1,315	714
302.45	1,399	781
302.50	1,483	853
302.55	1,566	930
302.60	1,650	1,010
302.65	1,734	1,095
302.70	1,818	1,183
302.75	1,902	1,276
302.80	1,986	1,374
302.85	2,070	1,475
302.90	2,154	1,581
302.95	2,238	1,690
303.00	2,322	1,805
303.05	2,412	1,923
303.10	2,502	2,046
303.15	2,593	2,173
303.20	2,683	2,305
303.25	2,773	2,441
303.30	2,863	2,582
303.35	2,953	2,728
303.40	3,044	2,878
303.45	3,134	3,032
303.50	3,224	3,191
303.55	3,314	3,354
303.60	3,404	3,522
303.65	3,495	3,695
303.70	3,585	3,872
303.75	3,675	4,053
303.80	3,765	4,239
303.85	3,855	4,430
303.90	3,946	4,625
303.95	4,036	4,824
304.00	4,126	5,029
304.05	4,201	5,237
304.10	4,276	5,449
304.15	4,351	5,664
304.20	4,426	5,884
304.25	4,501	6,107
304.30	4,576	6,334
304.35	4,651	6,565
304.40	4,726	6,799
304.45	4,801	7,037
304.50	4,877	7,279
304.55	4,952	7,525
304.60	5,027	7,774
304.65	5,102	8,027
304.70	5,177	8,284
304.75	5,252	8,545
304.80	5,327	8,810
304.85	5,402	9,078
304.90	5,477	9,350
304.95	5,552	9,626
305.00	**5,627**	**9,905**

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-101: (new Subcat) Runoff Area=146,162 sf 8.95% Impervious Runoff Depth=2.79"
Flow Length=884' Tc=14.9 min CN=75 Runoff=7.85 cfs 34,031 cf

Subcatchment PDA-102: (new Subcat) Runoff Area=183,046 sf 80.06% Impervious Runoff Depth=4.61"
Tc=6.0 min CN=93 Runoff=22.13 cfs 70,333 cf

Subcatchment PDA-201: (new Subcat) Runoff Area=71,843 sf 52.48% Impervious Runoff Depth=3.96"
Flow Length=126' Tc=13.1 min CN=87 Runoff=5.73 cfs 23,735 cf

Subcatchment PDA-202: (new Subcat) Runoff Area=104,679 sf 86.26% Impervious Runoff Depth=4.84"
Tc=6.0 min CN=95 Runoff=12.98 cfs 42,184 cf

Subcatchment PDA-301: (new Subcat) Runoff Area=149,139 sf 58.00% Impervious Runoff Depth=4.18"
Flow Length=670' Tc=13.7 min CN=89 Runoff=12.19 cfs 51,891 cf

Subcatchment PDA-302: (new Subcat) Runoff Area=91,062 sf 59.69% Impervious Runoff Depth=4.07"
Flow Length=56' Slope=0.0050 '/' Tc=13.6 min CN=88 Runoff=7.31 cfs 30,879 cf

Reach PDA-100: PDA-100 Overall Inflow=14.61 cfs 77,531 cf
Outflow=14.61 cfs 77,531 cf

Reach PDA-200: PDA-200 Overall Inflow=11.82 cfs 46,328 cf
Outflow=11.82 cfs 46,328 cf

Reach PDA-300: PDA-300 Overall Inflow=15.12 cfs 82,770 cf
Outflow=15.12 cfs 82,770 cf

Pond P-1: UGS Peak Elev=299.25' Storage=21,062 cf Inflow=22.13 cfs 70,333 cf
Discarded=0.28 cfs 26,834 cf Primary=6.85 cfs 43,499 cf Outflow=7.13 cfs 70,333 cf

Pond P-2: UGS Peak Elev=299.12' Storage=13,239 cf Inflow=12.98 cfs 42,184 cf
Discarded=0.16 cfs 19,590 cf Primary=6.14 cfs 22,594 cf Outflow=6.30 cfs 42,184 cf

Pond P-3: Surface Pond Peak Elev=303.64' Storage=3,645 cf Inflow=7.31 cfs 30,879 cf
Outflow=4.19 cfs 30,879 cf

Total Runoff Area = 745,931 sf Runoff Volume = 253,053 cf Average Runoff Depth = 4.07"
42.56% Pervious = 317,442 sf 57.44% Impervious = 428,489 sf

Summary for Subcatchment PDA-101: (new Subcat)

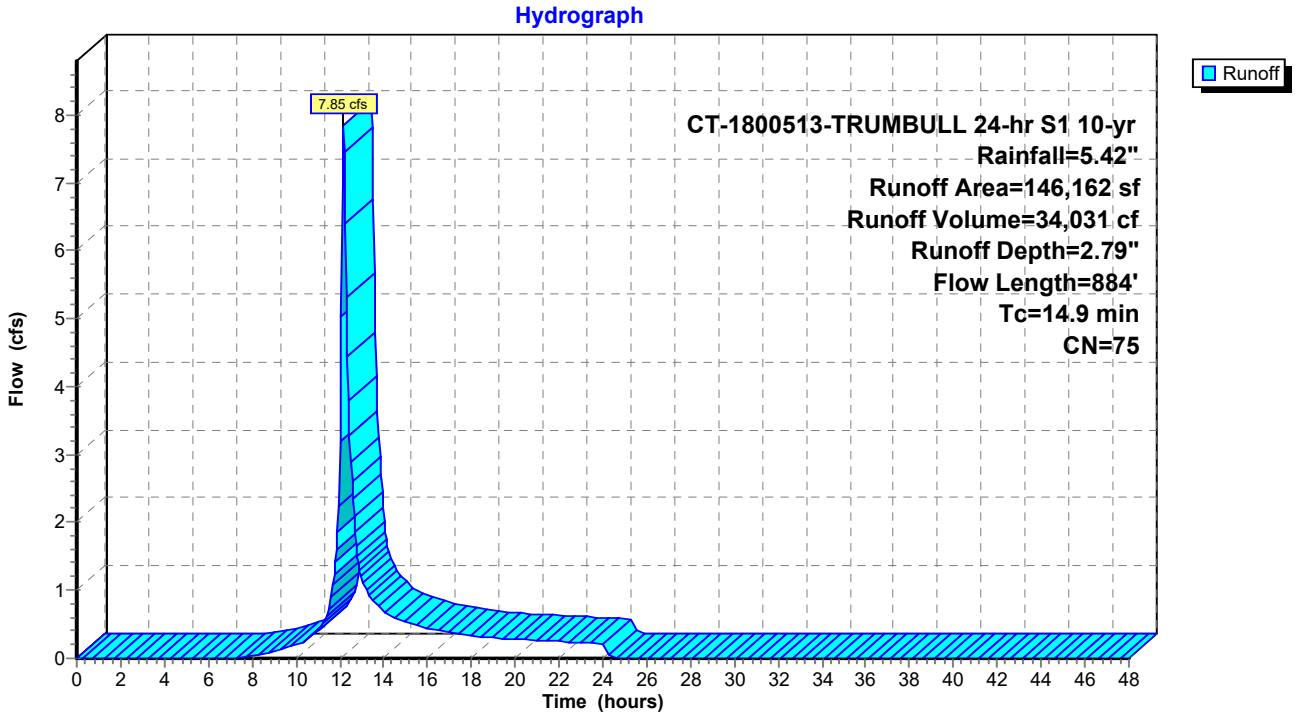
Runoff = 7.85 cfs @ 12.16 hrs, Volume= 34,031 cf, Depth= 2.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
24,058	61	>75% Grass cover, Good, HSG B
38,346	74	>75% Grass cover, Good, HSG C
33,014	80	>75% Grass cover, Good, HSG D
13,083	98	Paved parking, HSG D
37,661	73	Woods, Fair, HSG C
146,162	75	Weighted Average
133,079		91.05% Pervious Area
13,083		8.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	100	0.0833	0.24		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 2.00"
0.2	20	0.0400	1.40		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.3	126	0.0516	1.59		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
2.0	96	0.0250	0.79		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
1.2	161	0.1000	2.21		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.8	92	0.0761	1.93		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	45	0.1111	2.33		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	80	0.0500	1.57		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.2	164	0.0222	2.23		**Shallow Concentrated Flow, grass** Grassed Waterway Kv= 15.0 fps
14.9	884	Total			

Subcatchment PDA-101: (new Subcat)



Summary for Subcatchment PDA-102: (new Subcat)

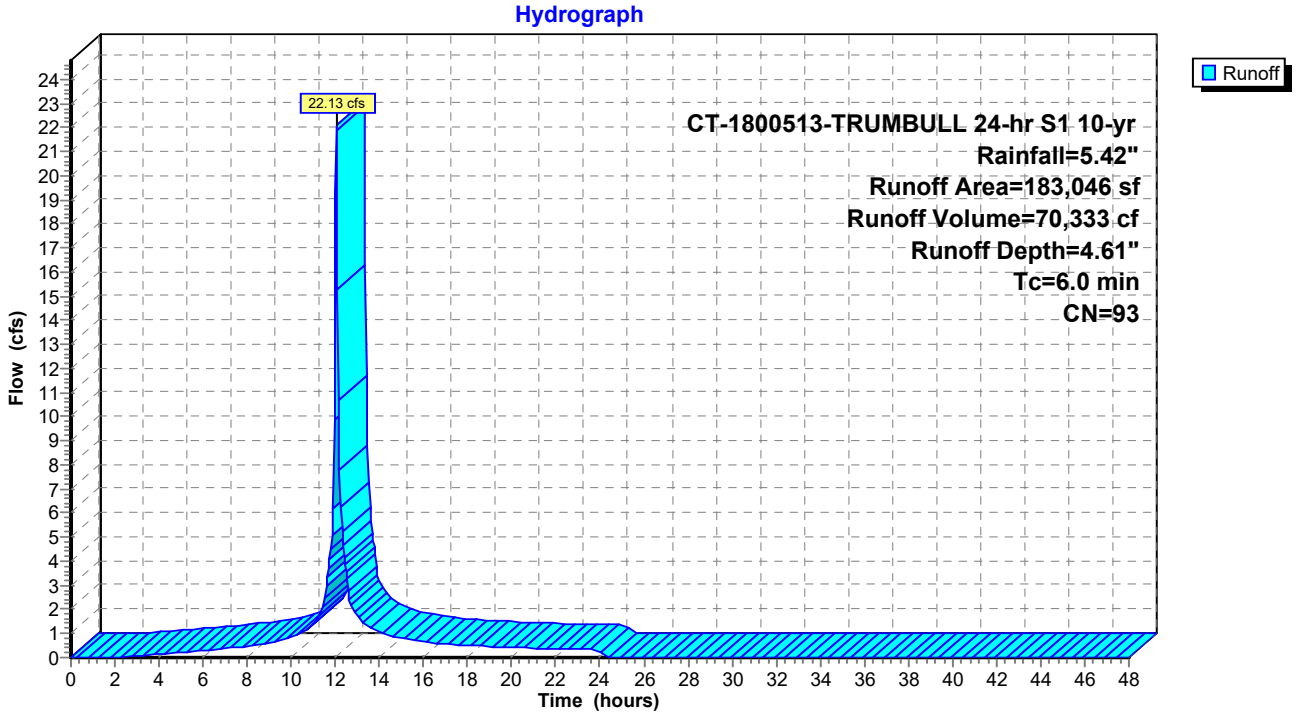
Runoff = 22.13 cfs @ 12.04 hrs, Volume= 70,333 cf, Depth= 4.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
568	61	>75% Grass cover, Good, HSG B
35,494	74	>75% Grass cover, Good, HSG C
439	80	>75% Grass cover, Good, HSG D
146,545	98	Paved parking, HSG D
183,046	93	Weighted Average
36,501		19.94% Pervious Area
146,545		80.06% Impervious Area

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

Subcatchment PDA-102: (new Subcat)



Summary for Subcatchment PDA-201: (new Subcat)

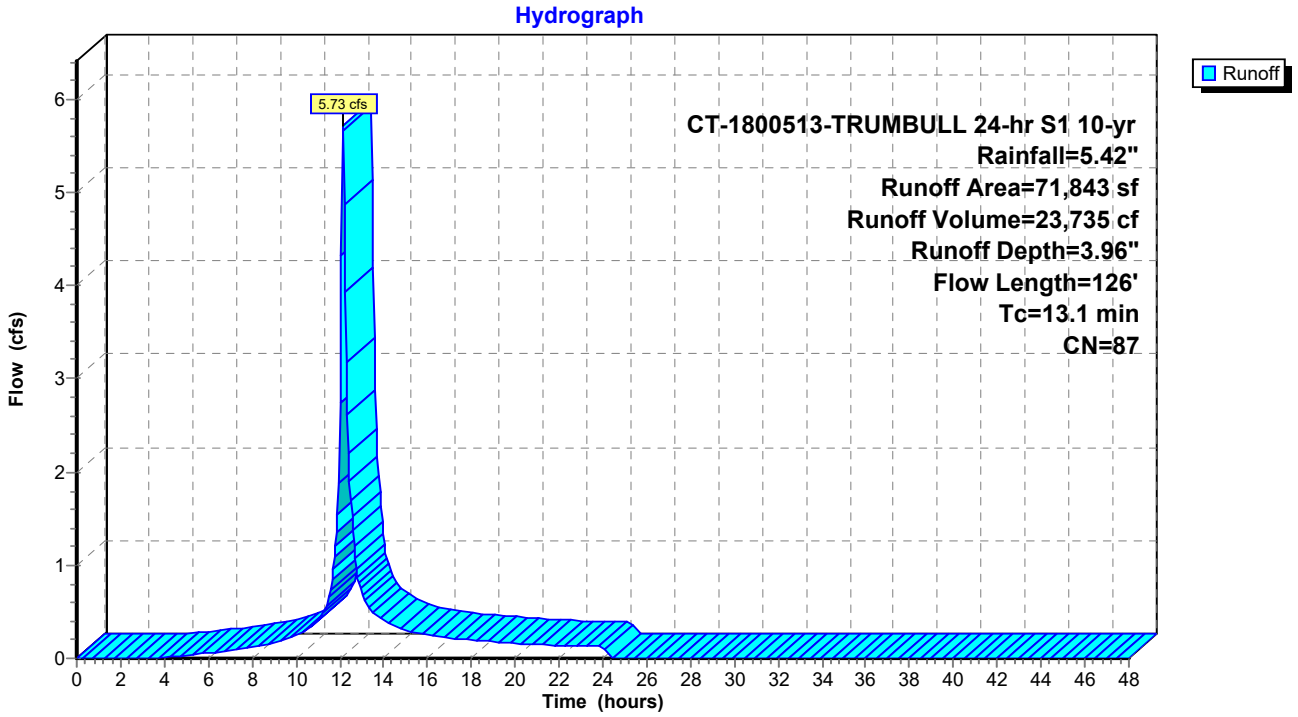
Runoff = 5.73 cfs @ 12.13 hrs, Volume= 23,735 cf, Depth= 3.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
10,617	74	>75% Grass cover, Good, HSG C
3,041	80	>75% Grass cover, Good, HSG D
13,488	73	Woods, Fair, HSG C
6,992	79	Woods, Fair, HSG D
37,705	98	Paved parking, HSG D
71,843	87	Weighted Average
34,138		47.52% Pervious Area
37,705		52.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	25	0.0286	0.12		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
6.5	20	0.0286	0.05		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.00"
2.6	14	0.1429	0.09		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.00"
0.3	51	0.2553	2.53		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
0.2	16	0.0541	1.63		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
13.1	126	Total			

Subcatchment PDA-201: (new Subcat)



Summary for Subcatchment PDA-202: (new Subcat)

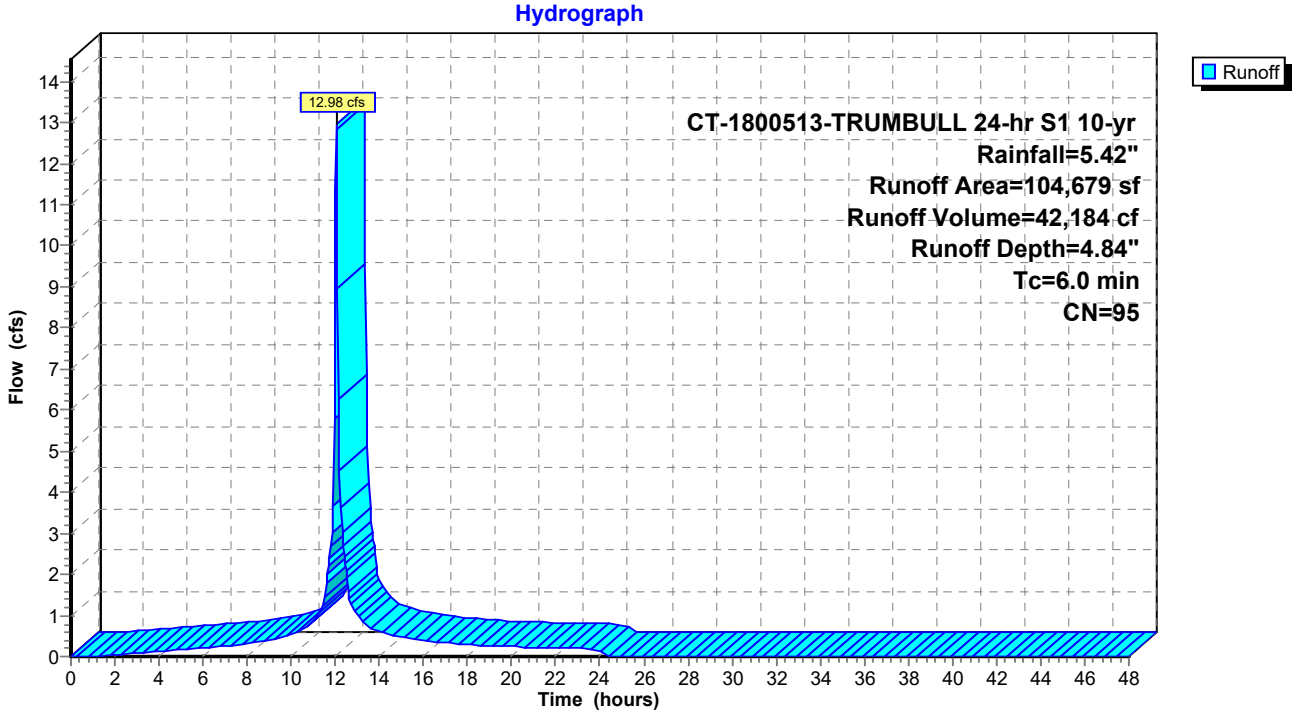
Runoff = 12.98 cfs @ 12.04 hrs, Volume= 42,184 cf, Depth= 4.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
14,378	74	>75% Grass cover, Good, HSG C
90,301	98	Paved parking, HSG D
104,679	95	Weighted Average
14,378		13.74% Pervious Area
90,301		86.26% Impervious Area

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

Subcatchment PDA-202: (new Subcat)



Summary for Subcatchment PDA-301: (new Subcat)

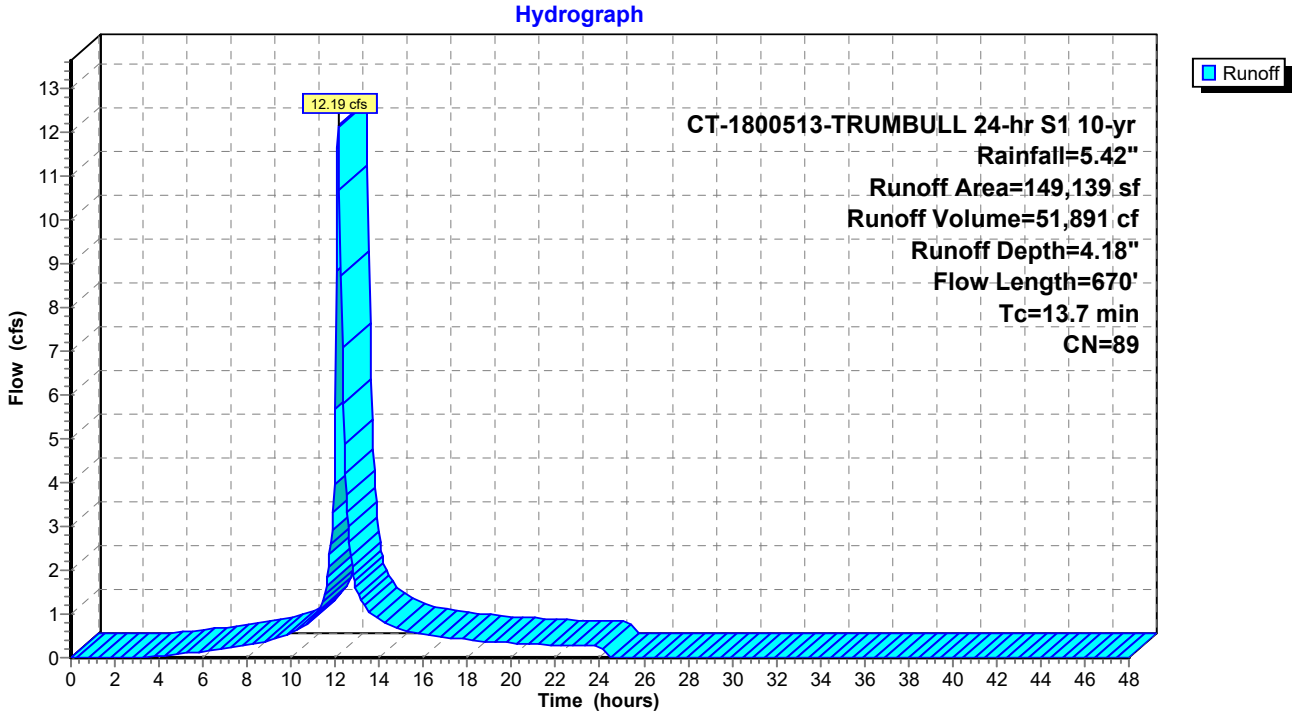
Runoff = 12.19 cfs @ 12.14 hrs, Volume= 51,891 cf, Depth= 4.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
37,457	74	>75% Grass cover, Good, HSG C
23,284	80	>75% Grass cover, Good, HSG D
1,896	79	Woods, Fair, HSG D
86,502	98	Paved parking, HSG D
149,139	89	Weighted Average
62,637		42.00% Pervious Area
86,502		58.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	70	0.0143	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
3.0	600	0.0267	3.32		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
13.7	670	Total			

Subcatchment PDA-301: (new Subcat)



Summary for Subcatchment PDA-302: (new Subcat)

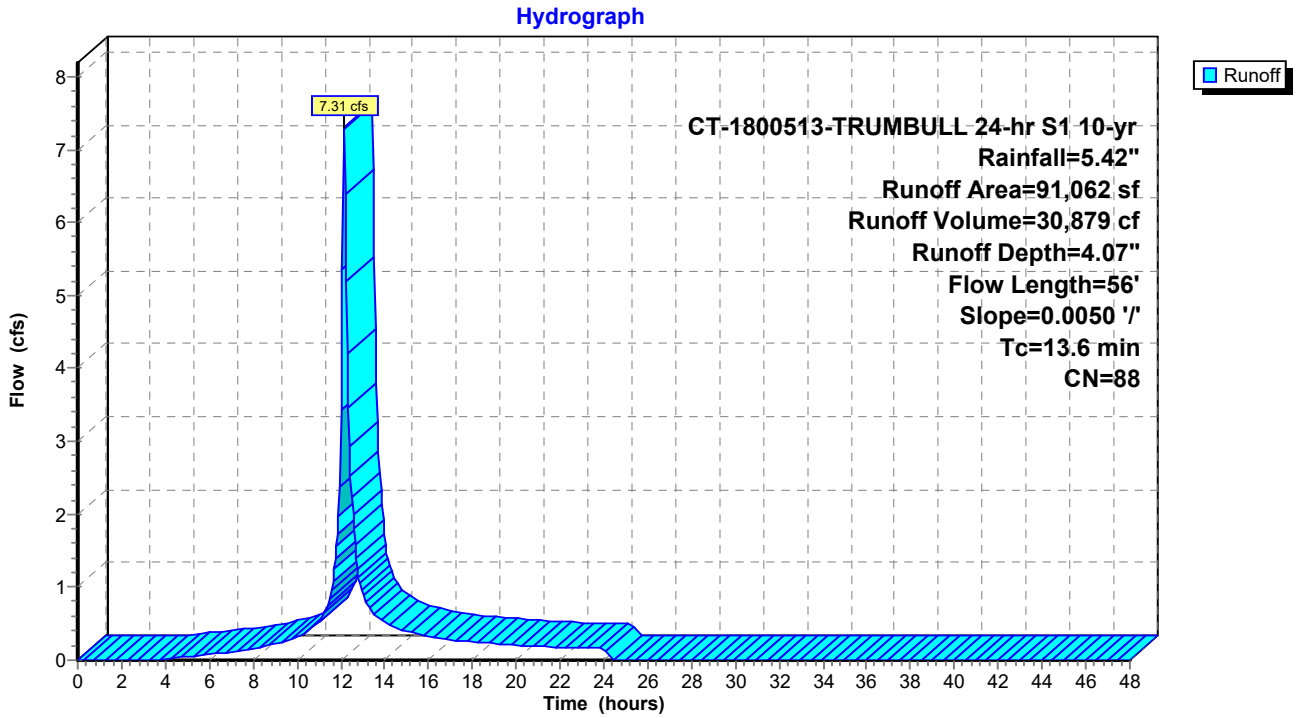
Runoff = 7.31 cfs @ 12.14 hrs, Volume= 30,879 cf, Depth= 4.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
36,709	74	>75% Grass cover, Good, HSG C
54,353	98	Paved parking, HSG D
91,062	88	Weighted Average
36,709		40.31% Pervious Area
54,353		59.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	56	0.0050	0.07		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"

Subcatchment PDA-302: (new Subcat)

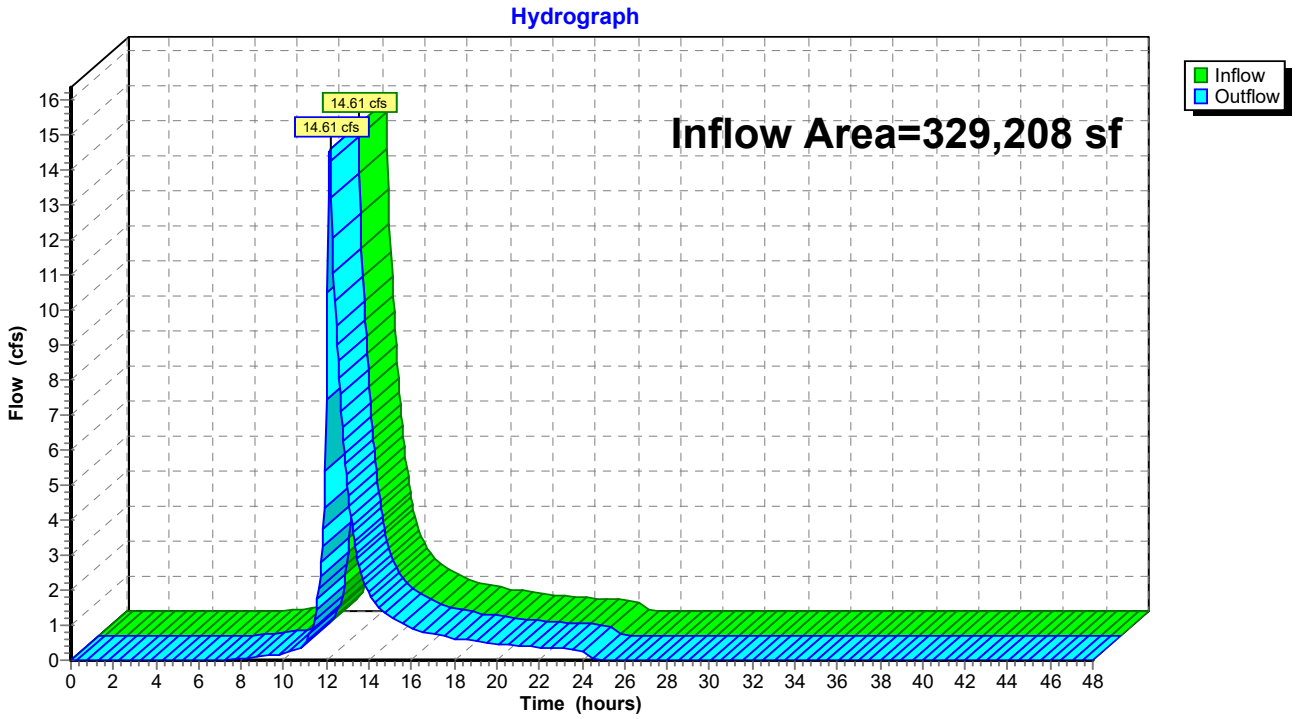


Summary for Reach PDA-100: PDA-100 Overall

Inflow Area = 329,208 sf, 48.49% Impervious, Inflow Depth = 2.83" for 10-yr event
Inflow = 14.61 cfs @ 12.17 hrs, Volume= 77,531 cf
Outflow = 14.61 cfs @ 12.17 hrs, Volume= 77,531 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach PDA-100: PDA-100 Overall

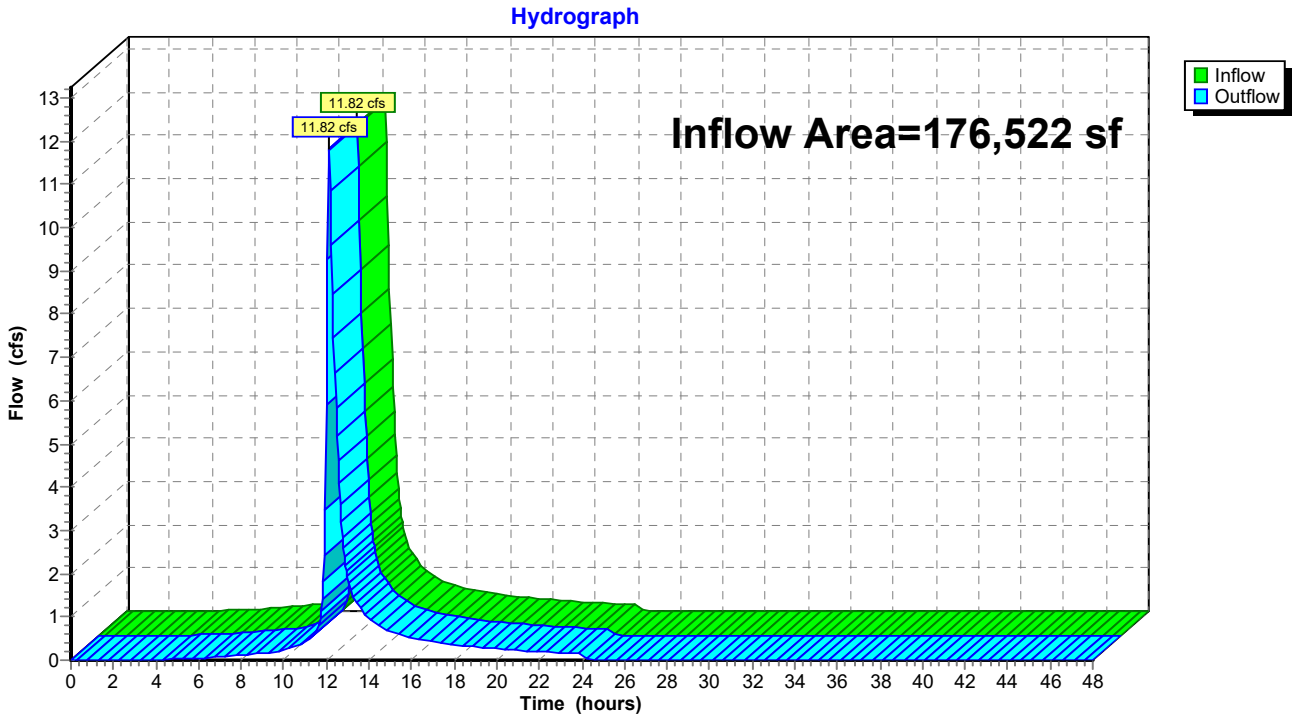


Summary for Reach PDA-200: PDA-200 Overall

Inflow Area = 176,522 sf, 72.52% Impervious, Inflow Depth = 3.15" for 10-yr event
Inflow = 11.82 cfs @ 12.14 hrs, Volume= 46,328 cf
Outflow = 11.82 cfs @ 12.14 hrs, Volume= 46,328 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach PDA-200: PDA-200 Overall

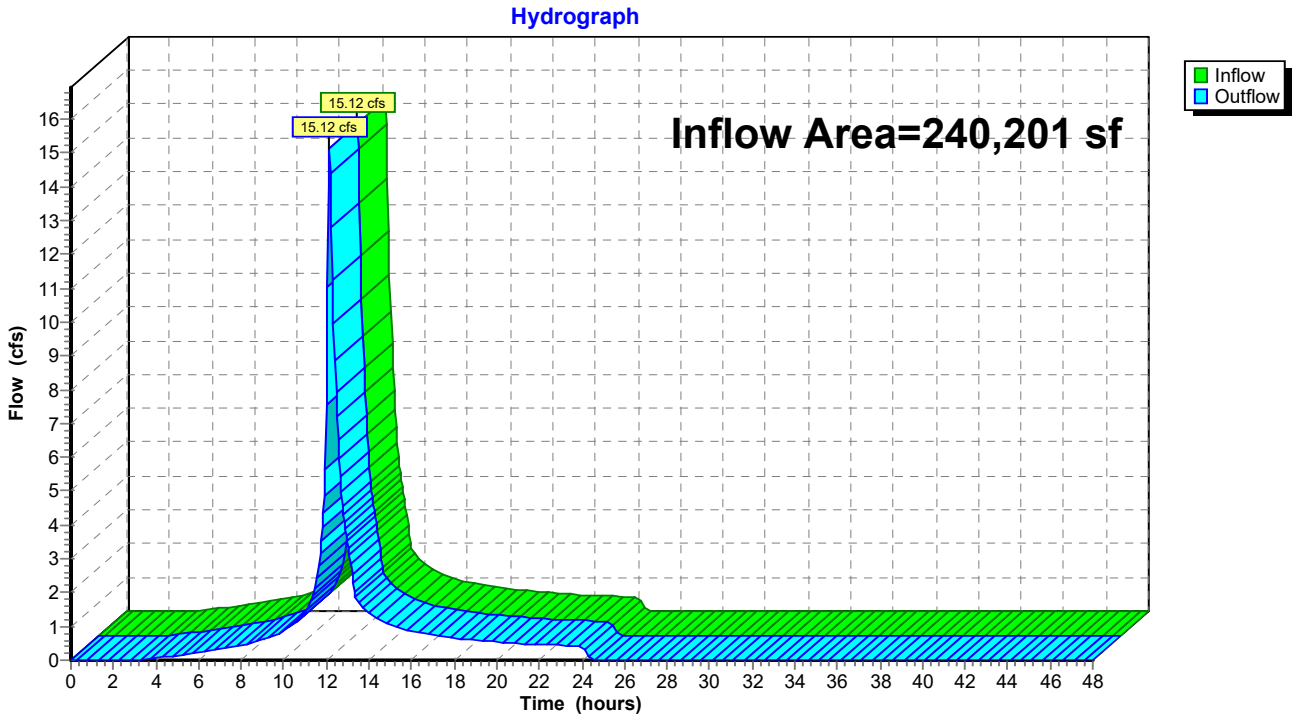


Summary for Reach PDA-300: PDA-300 Overall

Inflow Area = 240,201 sf, 58.64% Impervious, Inflow Depth = 4.14" for 10-yr event
Inflow = 15.12 cfs @ 12.15 hrs, Volume= 82,770 cf
Outflow = 15.12 cfs @ 12.15 hrs, Volume= 82,770 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach PDA-300: PDA-300 Overall



Summary for Pond P-1: UGS

Inflow Area =	183,046 sf,	80.06% Impervious,	Inflow Depth =	4.61"	for 10-yr event
Inflow =	22.13 cfs @	12.04 hrs,	Volume=	70,333 cf	
Outflow =	7.13 cfs @	12.22 hrs,	Volume=	70,333 cf,	Atten= 68%, Lag= 11.0 min
Discarded =	0.28 cfs @	5.95 hrs,	Volume=	26,834 cf	
Primary =	6.85 cfs @	12.22 hrs,	Volume=	43,499 cf	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 299.25' @ 12.22 hrs Surf.Area= 7,993 sf Storage= 21,062 cf

Plug-Flow detention time= 126.6 min calculated for 70,260 cf (100% of inflow)
Center-of-Mass det. time= 126.9 min (910.5 - 783.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	295.50'	11,750 cf	**95.50'W x 83.70'L x 6.00'H Field A** 47,960 cf Overall - 18,586 cf Embedded = 29,374 cf x 40.0% Voids
#2A	296.50'	18,586 cf	**Cultec R-902HD** x 286 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 13 Rows of 22 Chambers Cap Storage= +2.8 cf x 2 x 13 rows = 71.8 cf
		30,336 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.50'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	296.90'	**15.0" Round Culvert** L= 141.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 296.90' / 292.00' S= 0.0348 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Discarded OutFlow Max=0.28 cfs @ 5.95 hrs HW=295.56' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=6.83 cfs @ 12.22 hrs HW=299.24' (Free Discharge)
└─**2=Culvert** (Inlet Controls 6.83 cfs @ 5.57 fps)

Pond P-1: UGS - Chamber Wizard Field A

Chamber Model = Cultec R-902HD (Cultec Recharger® 902HD)
Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf
Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap
Cap Storage= +2.8 cf x 2 x 13 rows = 71.8 cf

78.0" Wide + 9.0" Spacing = 87.0" C-C Row Spacing

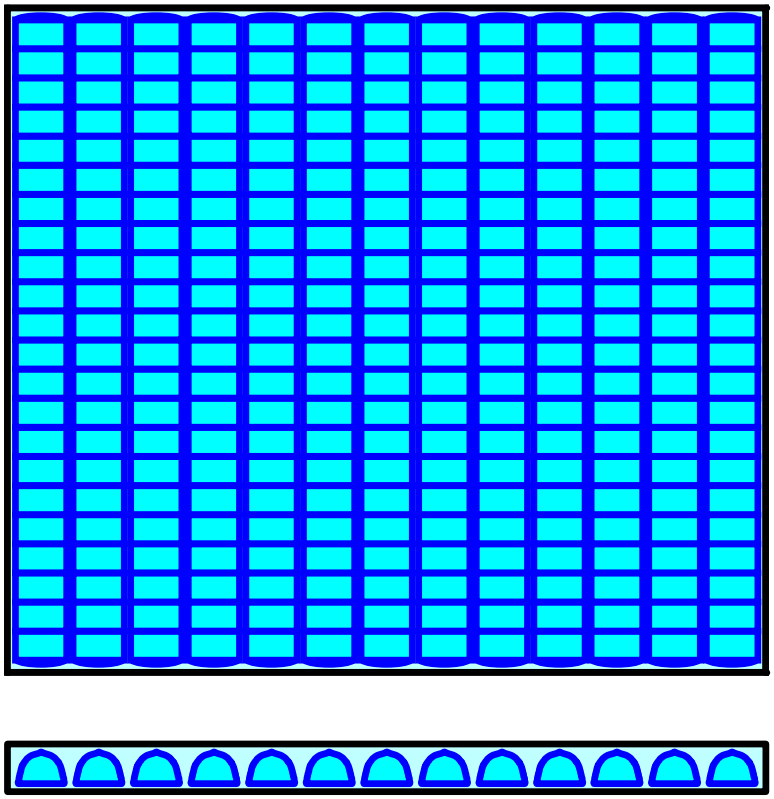
22 Chambers/Row x 3.67' Long +0.52' Cap Length x 2 = 81.70' Row Length +12.0" End Stone x 2 = 83.70' Base Length
13 Rows x 78.0" Wide + 9.0" Spacing x 12 + 12.0" Side Stone x 2 = 95.50' Base Width
12.0" Base + 48.0" Chamber Height + 12.0" Cover = 6.00' Field Height

286 Chambers x 64.7 cf + 2.8 cf Cap Volume x 2 x 13 Rows = 18,586.0 cf Chamber Storage

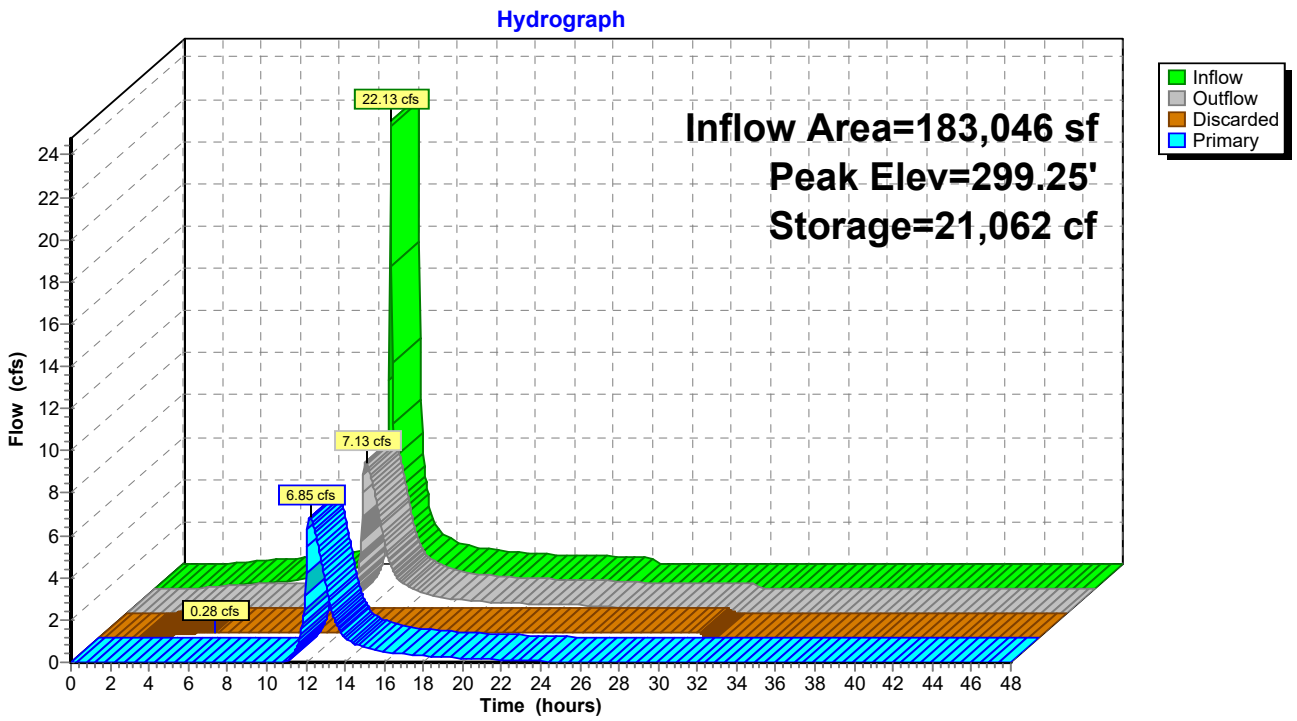
47,960.1 cf Field - 18,586.0 cf Chambers = 29,374.1 cf Stone x 40.0% Voids = 11,749.7 cf Stone Storage

Chamber Storage + Stone Storage = 30,335.6 cf = 0.696 af
Overall Storage Efficiency = 63.3%
Overall System Size = 83.70' x 95.50' x 6.00'

286 Chambers
1,776.3 cy Field
1,087.9 cy Stone



Pond P-1: UGS


Hydrograph
Inflow
Outflow
Discarded
Primary
Inflow Area=183,046 sf
Peak Elev=299.25'
Storage=21,062 cf
22.13 cfs
7.13 cfs
6.85 cfs
0.28 cfs
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond P-1: UGS

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
295.50	**7,993**	0
295.60	7,993	320
295.70	7,993	639
295.80	7,993	959
295.90	7,993	1,279
296.00	7,993	1,599
296.10	7,993	1,918
296.20	7,993	2,238
296.30	7,993	2,558
296.40	7,993	2,878
296.50	7,993	3,197
296.60	7,993	3,881
296.70	7,993	4,567
296.80	7,993	5,251
296.90	7,993	5,931
297.00	7,993	6,609
297.10	7,993	7,285
297.20	7,993	7,961
297.30	7,993	8,633
297.40	7,993	9,300
297.50	7,993	9,965
297.60	7,993	10,630
297.70	7,993	11,291
297.80	7,993	11,948
297.90	7,993	12,602
298.00	7,993	13,253
298.10	7,993	13,901
298.20	7,993	14,546
298.30	7,993	15,188
298.40	7,993	15,826
298.50	7,993	16,463
298.60	7,993	17,093
298.70	7,993	17,719
298.80	7,993	18,341
298.90	7,993	18,956
299.00	7,993	19,566
299.10	7,993	20,169
299.20	7,993	20,764
299.30	7,993	21,351
299.40	7,993	21,928
299.50	7,993	22,494
299.60	7,993	23,050
299.70	7,993	23,592
299.80	7,993	24,120
299.90	7,993	24,633
300.00	7,993	25,129
300.10	7,993	25,602
300.20	7,993	26,041
300.30	7,993	26,440
300.40	7,993	26,802
300.50	7,993	27,138
300.60	7,993	27,458
300.70	7,993	27,778
300.80	7,993	28,097
300.90	7,993	28,417
301.00	7,993	28,737
301.10	7,993	29,057
301.20	7,993	29,376
301.30	7,993	29,696
301.40	7,993	30,016
301.50	7,993	**30,336**

Summary for Pond P-2: UGS

Inflow Area =	104,679 sf, 86.26% Impervious, Inflow Depth = 4.84" for 10-yr event				
Inflow =	12.98 cfs @	12.04 hrs,	Volume=	42,184 cf	
Outflow =	6.30 cfs @	12.16 hrs,	Volume=	42,184 cf,	Atten= 51%, Lag= 7.1 min
Discarded =	0.16 cfs @	5.00 hrs,	Volume=	19,590 cf	
Primary =	6.14 cfs @	12.16 hrs,	Volume=	22,594 cf	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 299.12' @ 12.16 hrs Surf.Area= 4,591 sf Storage= 13,239 cf

Plug-Flow detention time= 234.0 min calculated for 42,184 cf (100% of inflow)
Center-of-Mass det. time= 233.9 min (1,005.2 - 771.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	295.00'	6,803 cf	**66.50'W x 69.03'L x 6.00'H Field A** 27,544 cf Overall - 10,537 cf Embedded = 17,008 cf x 40.0% Voids
#2A	296.00'	10,537 cf	**Cultec R-902HD** x 162 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 9 Rows of 18 Chambers Cap Storage= +2.8 cf x 2 x 9 rows = 49.7 cf
		17,340 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.00'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	296.00'	**15.0" Round Culvert** L= 37.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 296.00' / 295.80' S= 0.0054 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#3	Device 2	300.00'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 2	297.42'	**15.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.16 cfs @ 5.00 hrs HW=295.06' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=6.12 cfs @ 12.16 hrs HW=299.12' (Free Discharge)
└─**2=Culvert** (Passes 6.12 cfs of 8.23 cfs potential flow)
  ├─**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Orifice Controls 6.12 cfs @ 4.98 fps)

Pond P-2: UGS - Chamber Wizard Field A

Chamber Model = Cultec R-902HD (Cultec Recharger® 902HD)
Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf
Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap
Cap Storage= +2.8 cf x 2 x 9 rows = 49.7 cf

78.0" Wide + 9.0" Spacing = 87.0" C-C Row Spacing

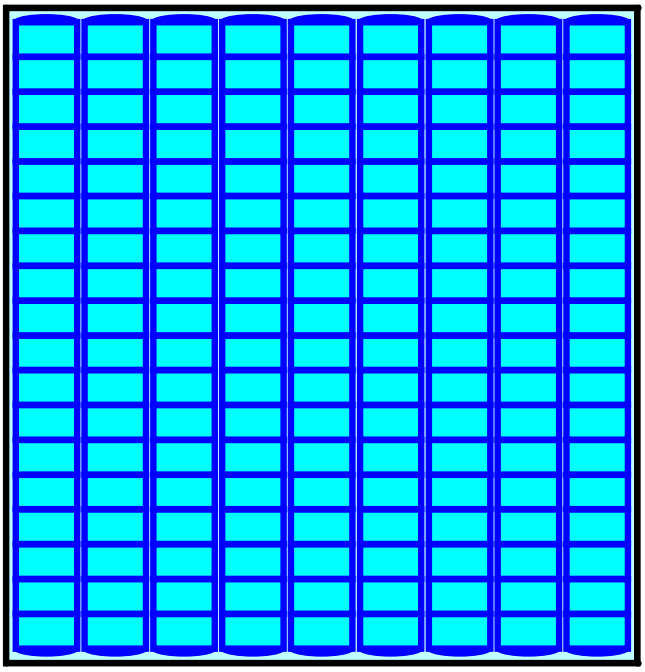
18 Chambers/Row x 3.67' Long +0.52' Cap Length x 2 = 67.03' Row Length +12.0" End Stone x 2 = 69.03' Base Length
9 Rows x 78.0" Wide + 9.0" Spacing x 8 + 12.0" Side Stone x 2 = 66.50' Base Width
12.0" Base + 48.0" Chamber Height + 12.0" Cover = 6.00' Field Height

162 Chambers x 64.7 cf + 2.8 cf Cap Volume x 2 x 9 Rows = 10,536.8 cf Chamber Storage

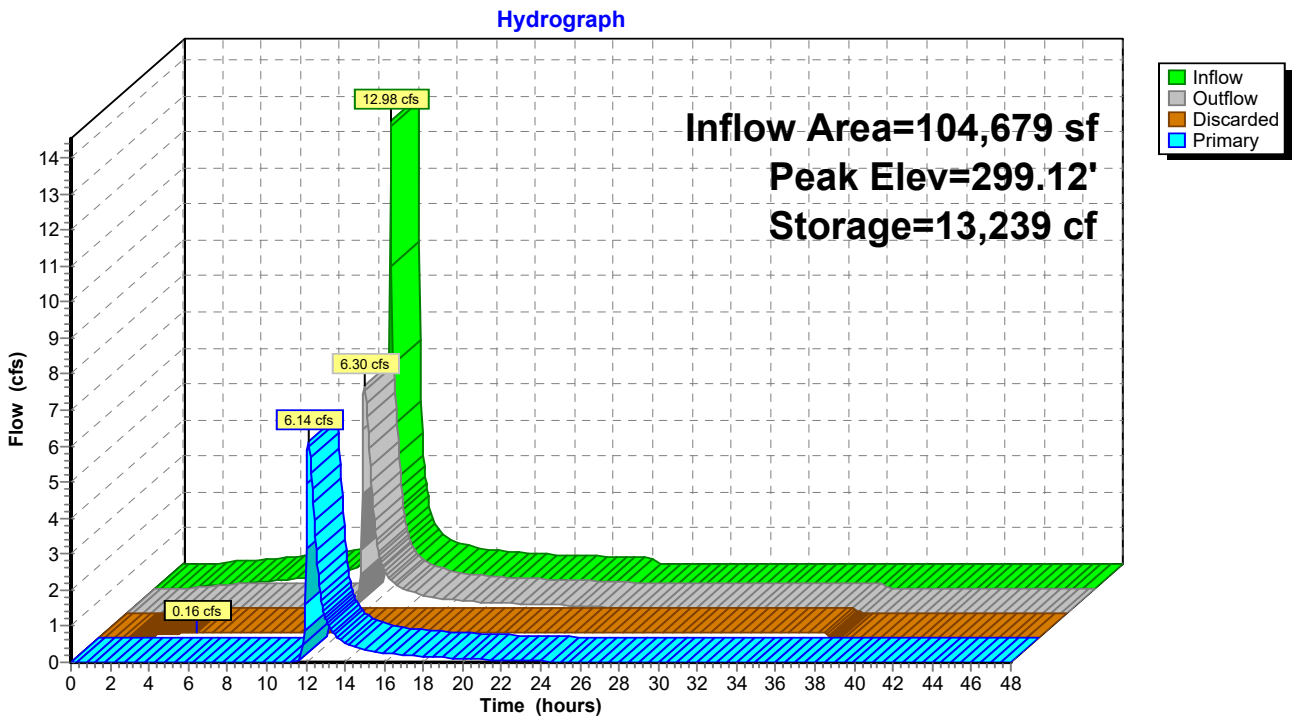
27,544.3 cf Field - 10,536.8 cf Chambers = 17,007.6 cf Stone x 40.0% Voids = 6,803.0 cf Stone Storage

Chamber Storage + Stone Storage = 17,339.8 cf = 0.398 af
Overall Storage Efficiency = 63.0%
Overall System Size = 69.03' x 66.50' x 6.00'

162 Chambers
1,020.2 cy Field
629.9 cy Stone



Pond P-2: UGS


Hydrograph
Inflow Area=104,679 sf
Peak Elev=299.12'
Storage=13,239 cf
12.98 cfs
6.30 cfs
6.14 cfs
0.16 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond P-2: UGS

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
295.00	**4,591**	0
295.10	4,591	184
295.20	4,591	367
295.30	4,591	551
295.40	4,591	735
295.50	4,591	918
295.60	4,591	1,102
295.70	4,591	1,285
295.80	4,591	1,469
295.90	4,591	1,653
296.00	4,591	1,836
296.10	4,591	2,226
296.20	4,591	2,618
296.30	4,591	3,007
296.40	4,591	3,395
296.50	4,591	3,782
296.60	4,591	4,168
296.70	4,591	4,553
296.80	4,591	4,937
296.90	4,591	5,317
297.00	4,591	5,697
297.10	4,591	6,076
297.20	4,591	6,453
297.30	4,591	6,828
297.40	4,591	7,201
297.50	4,591	7,573
297.60	4,591	7,942
297.70	4,591	8,310
297.80	4,591	8,677
297.90	4,591	9,041
298.00	4,591	9,404
298.10	4,591	9,763
298.20	4,591	10,121
298.30	4,591	10,476
298.40	4,591	10,827
298.50	4,591	11,175
298.60	4,591	11,520
298.70	4,591	11,859
298.80	4,591	12,194
298.90	4,591	12,523
299.00	4,591	12,847
299.10	4,591	13,164
299.20	4,591	13,474
299.30	4,591	13,776
299.40	4,591	14,069
299.50	4,591	14,353
299.60	4,591	14,623
299.70	4,591	14,874
299.80	4,591	15,103
299.90	4,591	15,310
300.00	4,591	15,503
300.10	4,591	15,687
300.20	4,591	15,871
300.30	4,591	16,054
300.40	4,591	16,238
300.50	4,591	16,422
300.60	4,591	16,605
300.70	4,591	16,789
300.80	4,591	16,973
300.90	4,591	17,156
301.00	4,591	**17,340**

Summary for Pond P-3: Surface Pond

Inflow Area = 91,062 sf, 59.69% Impervious, Inflow Depth = 4.07" for 10-yr event
Inflow = 7.31 cfs @ 12.14 hrs, Volume= 30,879 cf
Outflow = 4.19 cfs @ 12.31 hrs, Volume= 30,879 cf, Atten= 43%, Lag= 10.2 min
Primary = 4.19 cfs @ 12.31 hrs, Volume= 30,879 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 303.64' @ 12.31 hrs Surf.Area= 3,469 sf Storage= 3,645 cf

Plug-Flow detention time= 5.9 min calculated for 30,847 cf (100% of inflow)
Center-of-Mass det. time= 5.9 min (821.3 - 815.4)

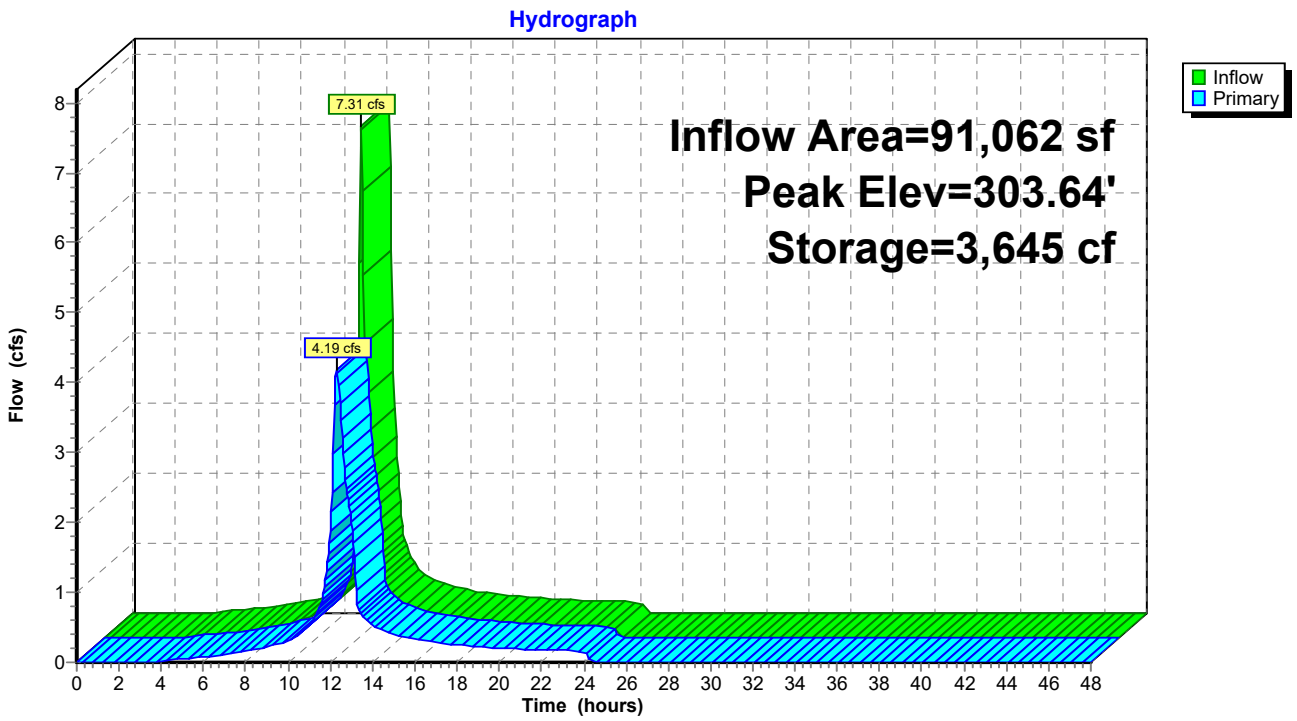
Volume	Invert	Avail.Storage	Storage Description
#1	301.00'	9,905 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
301.00	1	0	0
302.00	643	322	322
303.00	2,322	1,483	1,805
304.00	4,126	3,224	5,029
305.00	5,627	4,877	9,905

Device	Routing	Invert	Outlet Devices
#1	Primary	301.00'	**12.0" Round Culvert** L= 118.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 301.00' / 290.50' S= 0.0890 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf
#2	Device 1	301.00'	**8.5" Vert. Orifice/Grate** C= 0.600
#3	Device 1	304.75'	**2.0" x 2.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	303.00'	**11.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=4.18 cfs @ 12.31 hrs HW=303.63' (Free Discharge)
└─**1=Culvert** (Passes 4.18 cfs of 5.52 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 2.86 cfs @ 7.27 fps)
  ├─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Orifice Controls 1.32 cfs @ 2.71 fps)

Pond P-3: Surface Pond



Stage-Area-Storage for Pond P-3: Surface Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
301.00	1	0
301.05	33	1
301.10	65	3
301.15	97	7
301.20	129	13
301.25	162	20
301.30	194	29
301.35	226	40
301.40	258	52
301.45	290	65
301.50	322	81
301.55	354	98
301.60	386	116
301.65	418	136
301.70	450	158
301.75	483	181
301.80	515	206
301.85	547	233
301.90	579	261
301.95	611	291
302.00	643	322
302.05	727	356
302.10	811	395
302.15	895	437
302.20	979	484
302.25	1,063	535
302.30	1,147	590
302.35	1,231	650
302.40	1,315	714
302.45	1,399	781
302.50	1,483	853
302.55	1,566	930
302.60	1,650	1,010
302.65	1,734	1,095
302.70	1,818	1,183
302.75	1,902	1,276
302.80	1,986	1,374
302.85	2,070	1,475
302.90	2,154	1,581
302.95	2,238	1,690
303.00	2,322	1,805
303.05	2,412	1,923
303.10	2,502	2,046
303.15	2,593	2,173
303.20	2,683	2,305
303.25	2,773	2,441
303.30	2,863	2,582
303.35	2,953	2,728
303.40	3,044	2,878
303.45	3,134	3,032
303.50	3,224	3,191
303.55	3,314	3,354
303.60	3,404	3,522
303.65	3,495	3,695
303.70	3,585	3,872
303.75	3,675	4,053
303.80	3,765	4,239
303.85	3,855	4,430
303.90	3,946	4,625
303.95	4,036	4,824
304.00	4,126	5,029
304.05	4,201	5,237
304.10	4,276	5,449
304.15	4,351	5,664
304.20	4,426	5,884
304.25	4,501	6,107
304.30	4,576	6,334
304.35	4,651	6,565
304.40	4,726	6,799
304.45	4,801	7,037
304.50	4,877	7,279
304.55	4,952	7,525
304.60	5,027	7,774
304.65	5,102	8,027
304.70	5,177	8,284
304.75	5,252	8,545
304.80	5,327	8,810
304.85	5,402	9,078
304.90	5,477	9,350
304.95	5,552	9,626
305.00	**5,627**	**9,905**

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-101: (new Subcat) Runoff Area=146,162 sf 8.95% Impervious Runoff Depth=3.81"
Flow Length=884' Tc=14.9 min CN=75 Runoff=10.54 cfs 46,379 cf

Subcatchment PDA-102: (new Subcat) Runoff Area=183,046 sf 80.06% Impervious Runoff Depth=5.79"
Tc=6.0 min CN=93 Runoff=26.87 cfs 88,248 cf

Subcatchment PDA-201: (new Subcat) Runoff Area=71,843 sf 52.48% Impervious Runoff Depth=5.10"
Flow Length=126' Tc=13.1 min CN=87 Runoff=7.15 cfs 30,551 cf

Subcatchment PDA-202: (new Subcat) Runoff Area=104,679 sf 86.26% Impervious Runoff Depth=6.02"
Tc=6.0 min CN=95 Runoff=15.65 cfs 52,495 cf

Subcatchment PDA-301: (new Subcat) Runoff Area=149,139 sf 58.00% Impervious Runoff Depth=5.33"
Flow Length=670' Tc=13.7 min CN=89 Runoff=15.07 cfs 66,216 cf

Subcatchment PDA-302: (new Subcat) Runoff Area=91,062 sf 59.69% Impervious Runoff Depth=5.22"
Flow Length=56' Slope=0.0050 '/' Tc=13.6 min CN=88 Runoff=9.09 cfs 39,575 cf

Reach PDA-100: PDA-100 Overall Inflow=18.48 cfs 106,633 cf
Outflow=18.48 cfs 106,633 cf

Reach PDA-200: PDA-200 Overall Inflow=14.67 cfs 62,916 cf
Outflow=14.67 cfs 62,916 cf

Reach PDA-300: PDA-300 Overall Inflow=19.01 cfs 105,791 cf
Outflow=19.01 cfs 105,791 cf

Pond P-1: UGS Peak Elev=299.92' Storage=24,724 cf Inflow=26.87 cfs 88,248 cf
Discarded=0.28 cfs 27,994 cf Primary=8.07 cfs 60,254 cf Outflow=8.34 cfs 88,248 cf

Pond P-2: UGS Peak Elev=299.68' Storage=14,832 cf Inflow=15.65 cfs 52,495 cf
Discarded=0.16 cfs 20,130 cf Primary=7.56 cfs 32,365 cf Outflow=7.72 cfs 52,495 cf

Pond P-3: Surface Pond Peak Elev=303.92' Storage=4,720 cf Inflow=9.09 cfs 39,575 cf
Outflow=5.21 cfs 39,575 cf

Total Runoff Area = 745,931 sf Runoff Volume = 323,464 cf Average Runoff Depth = 5.20"
42.56% Pervious = 317,442 sf 57.44% Impervious = 428,489 sf

Summary for Subcatchment PDA-101: (new Subcat)

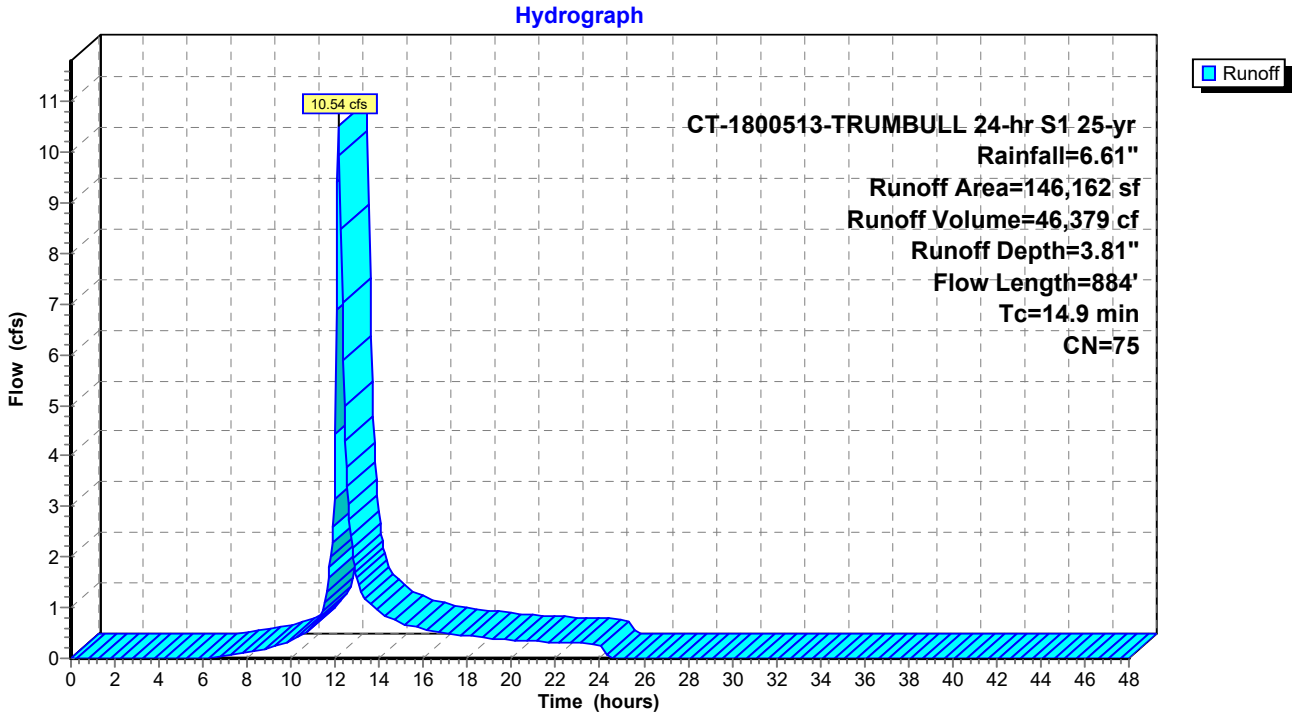
Runoff = 10.54 cfs @ 12.16 hrs, Volume= 46,379 cf, Depth= 3.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 25-yr Rainfall=6.61"

Area (sf)	CN	Description
24,058	61	>75% Grass cover, Good, HSG B
38,346	74	>75% Grass cover, Good, HSG C
33,014	80	>75% Grass cover, Good, HSG D
13,083	98	Paved parking, HSG D
37,661	73	Woods, Fair, HSG C
146,162	75	Weighted Average
133,079		91.05% Pervious Area
13,083		8.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	100	0.0833	0.24		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 2.00"
0.2	20	0.0400	1.40		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.3	126	0.0516	1.59		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
2.0	96	0.0250	0.79		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
1.2	161	0.1000	2.21		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.8	92	0.0761	1.93		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	45	0.1111	2.33		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	80	0.0500	1.57		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.2	164	0.0222	2.23		**Shallow Concentrated Flow, grass** Grassed Waterway Kv= 15.0 fps
14.9	884	Total			

Subcatchment PDA-101: (new Subcat)



Summary for Subcatchment PDA-102: (new Subcat)

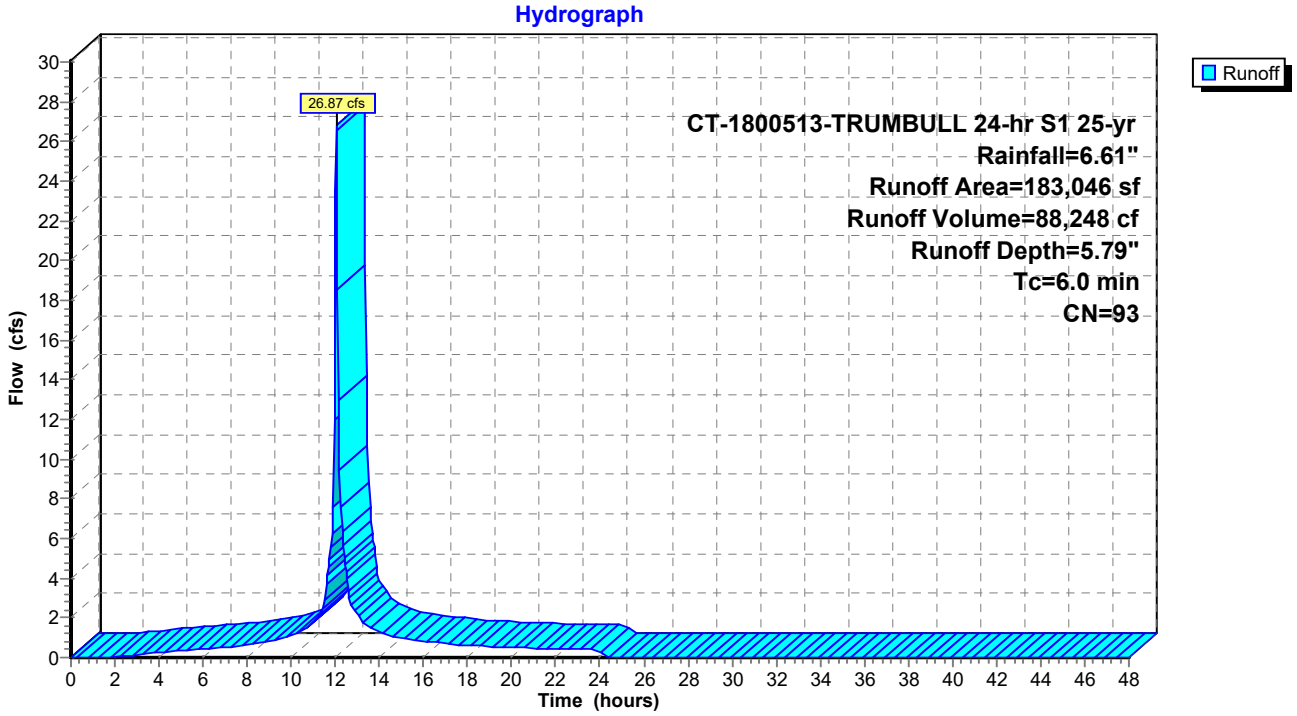
Runoff = 26.87 cfs @ 12.04 hrs, Volume= 88,248 cf, Depth= 5.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 25-yr Rainfall=6.61"

Area (sf)	CN	Description
568	61	>75% Grass cover, Good, HSG B
35,494	74	>75% Grass cover, Good, HSG C
439	80	>75% Grass cover, Good, HSG D
146,545	98	Paved parking, HSG D
183,046	93	Weighted Average
36,501		19.94% Pervious Area
146,545		80.06% Impervious Area

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

Subcatchment PDA-102: (new Subcat)



Summary for Subcatchment PDA-201: (new Subcat)

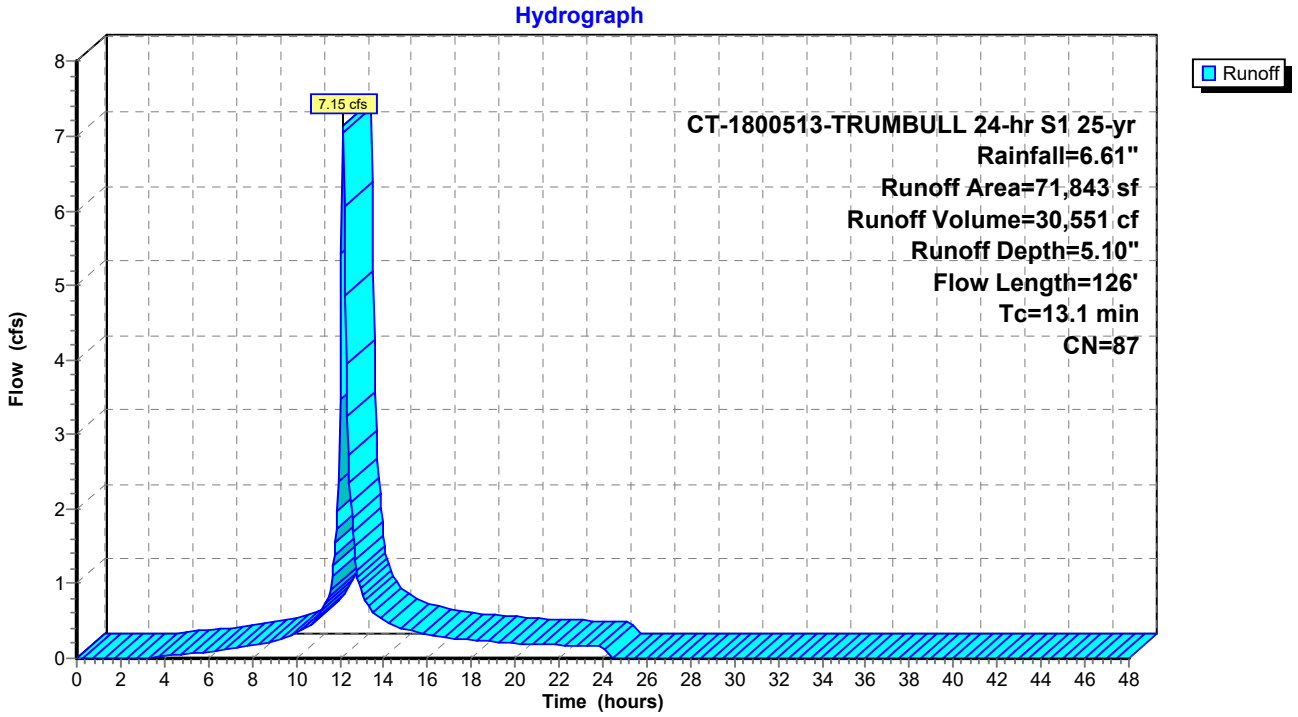
Runoff = 7.15 cfs @ 12.13 hrs, Volume= 30,551 cf, Depth= 5.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 25-yr Rainfall=6.61"

Area (sf)	CN	Description
10,617	74	>75% Grass cover, Good, HSG C
3,041	80	>75% Grass cover, Good, HSG D
13,488	73	Woods, Fair, HSG C
6,992	79	Woods, Fair, HSG D
37,705	98	Paved parking, HSG D
71,843	87	Weighted Average
34,138		47.52% Pervious Area
37,705		52.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	25	0.0286	0.12		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
6.5	20	0.0286	0.05		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.00"
2.6	14	0.1429	0.09		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.00"
0.3	51	0.2553	2.53		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
0.2	16	0.0541	1.63		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
13.1	126	Total			

Subcatchment PDA-201: (new Subcat)



Summary for Subcatchment PDA-202: (new Subcat)

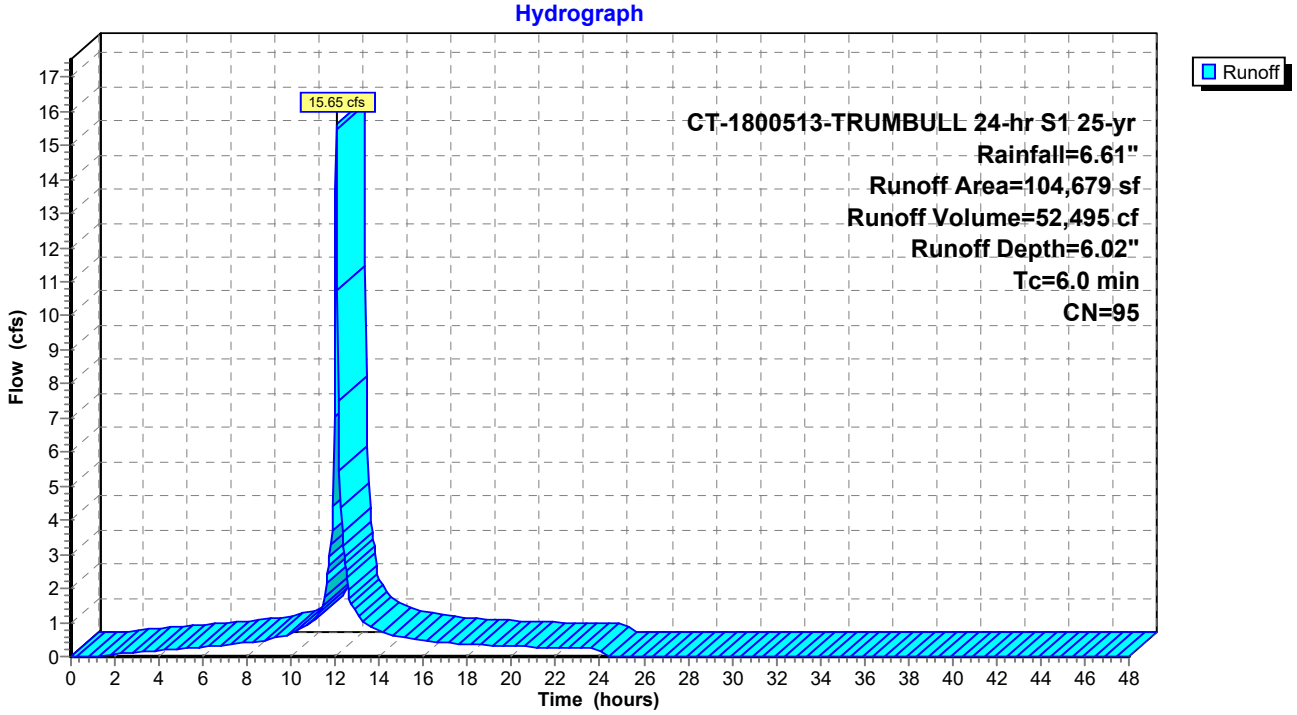
Runoff = 15.65 cfs @ 12.04 hrs, Volume= 52,495 cf, Depth= 6.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 25-yr Rainfall=6.61"

Area (sf)	CN	Description
14,378	74	>75% Grass cover, Good, HSG C
90,301	98	Paved parking, HSG D
104,679	95	Weighted Average
14,378		13.74% Pervious Area
90,301		86.26% Impervious Area

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

Subcatchment PDA-202: (new Subcat)



Summary for Subcatchment PDA-301: (new Subcat)

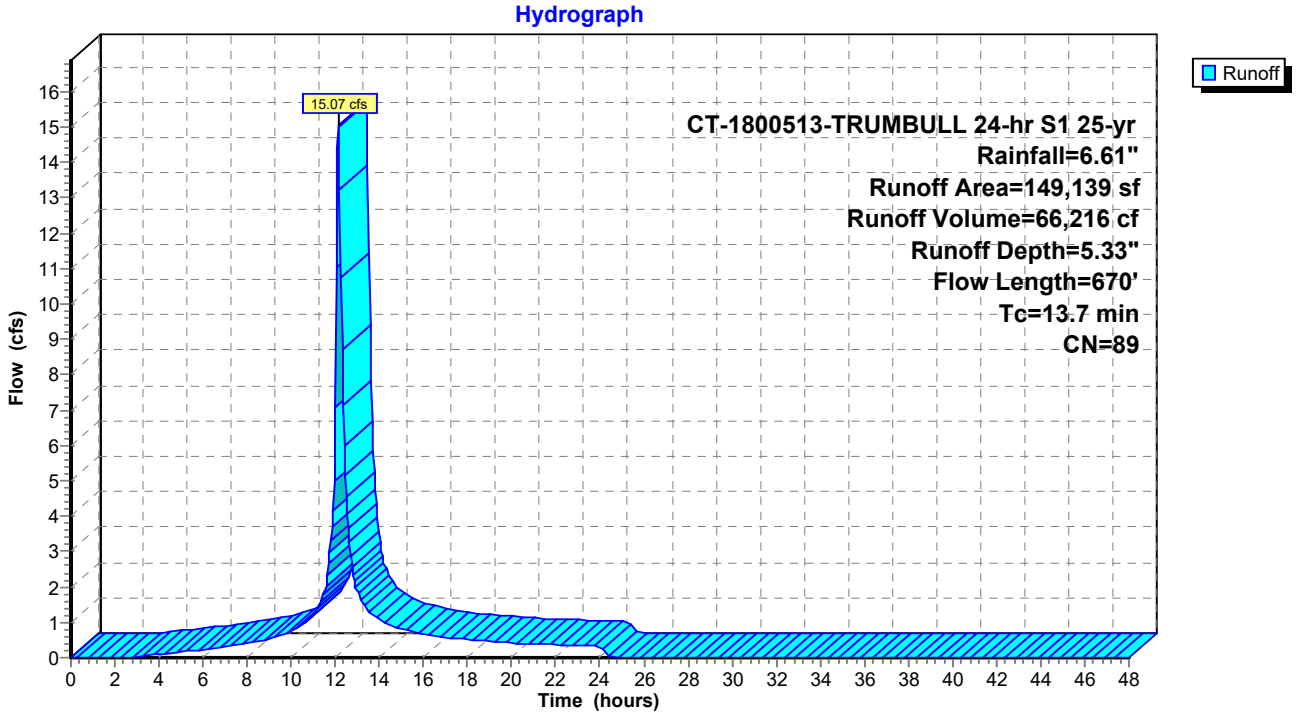
Runoff = 15.07 cfs @ 12.14 hrs, Volume= 66,216 cf, Depth= 5.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 25-yr Rainfall=6.61"

Area (sf)	CN	Description
37,457	74	>75% Grass cover, Good, HSG C
23,284	80	>75% Grass cover, Good, HSG D
1,896	79	Woods, Fair, HSG D
86,502	98	Paved parking, HSG D
149,139	89	Weighted Average
62,637		42.00% Pervious Area
86,502		58.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	70	0.0143	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
3.0	600	0.0267	3.32		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
13.7	670	Total			

Subcatchment PDA-301: (new Subcat)



Summary for Subcatchment PDA-302: (new Subcat)

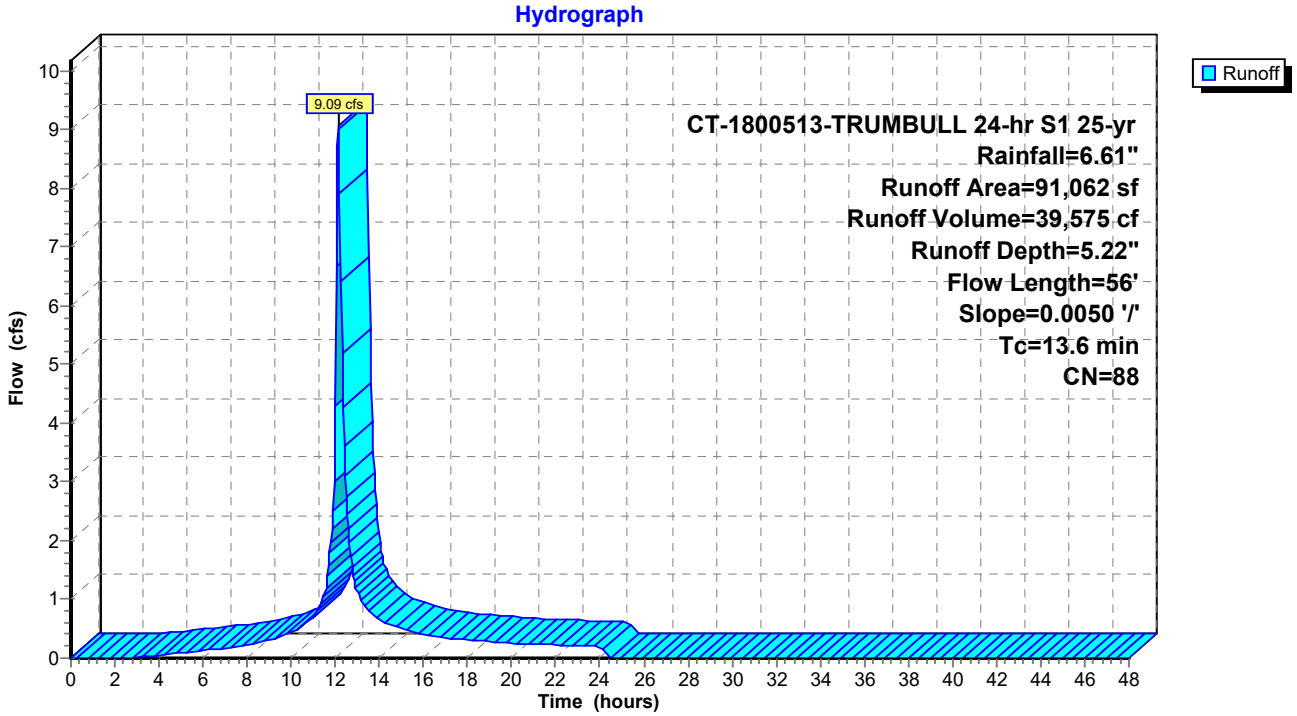
Runoff = 9.09 cfs @ 12.14 hrs, Volume= 39,575 cf, Depth= 5.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 25-yr Rainfall=6.61"

Area (sf)	CN	Description
36,709	74	>75% Grass cover, Good, HSG C
54,353	98	Paved parking, HSG D
91,062	88	Weighted Average
36,709		40.31% Pervious Area
54,353		59.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	56	0.0050	0.07		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"

Subcatchment PDA-302: (new Subcat)

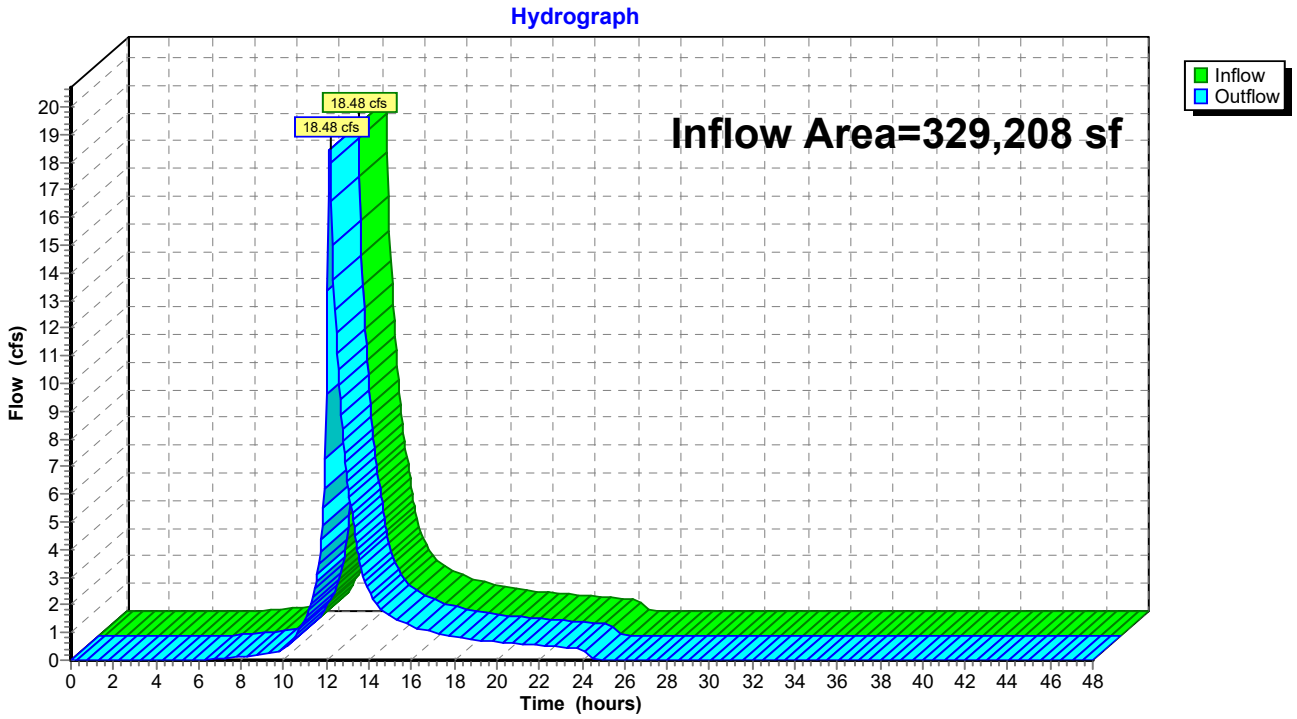


Summary for Reach PDA-100: PDA-100 Overall

Inflow Area = 329,208 sf, 48.49% Impervious, Inflow Depth = 3.89" for 25-yr event
Inflow = 18.48 cfs @ 12.16 hrs, Volume= 106,633 cf
Outflow = 18.48 cfs @ 12.16 hrs, Volume= 106,633 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach PDA-100: PDA-100 Overall

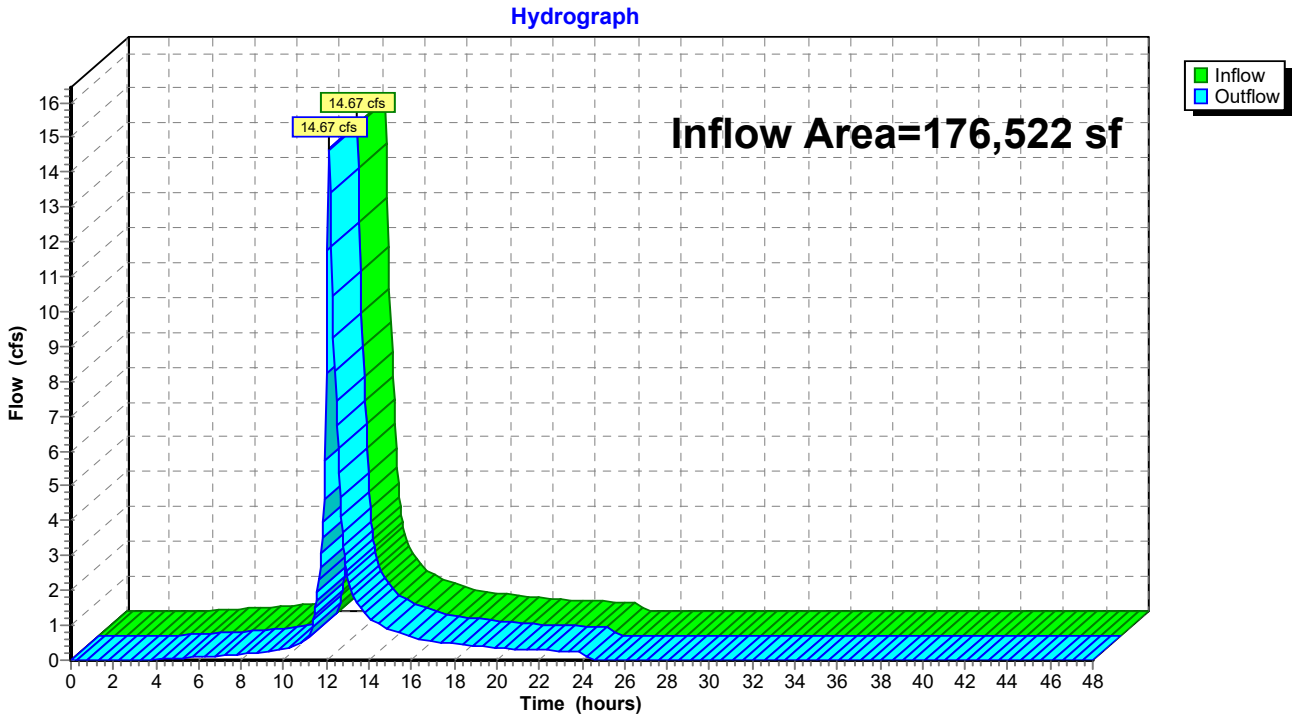


Summary for Reach PDA-200: PDA-200 Overall

Inflow Area = 176,522 sf, 72.52% Impervious, Inflow Depth = 4.28" for 25-yr event
Inflow = 14.67 cfs @ 12.14 hrs, Volume= 62,916 cf
Outflow = 14.67 cfs @ 12.14 hrs, Volume= 62,916 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach PDA-200: PDA-200 Overall

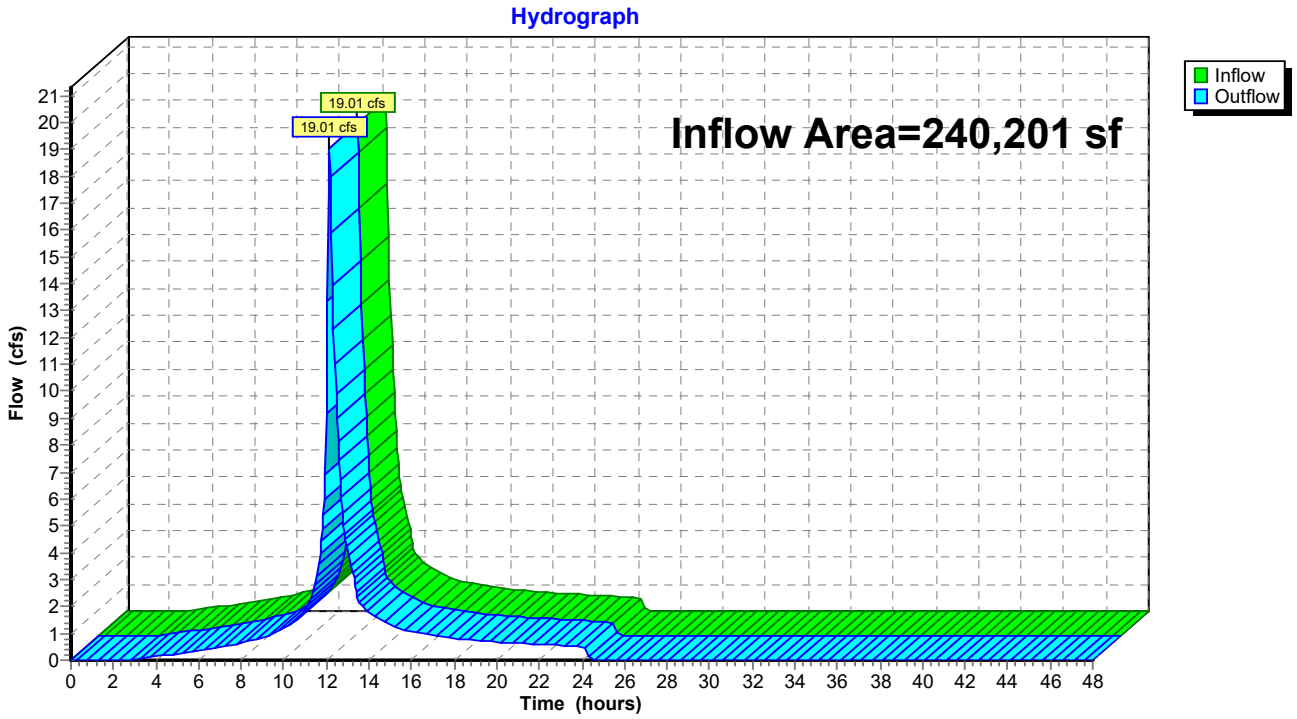


Summary for Reach PDA-300: PDA-300 Overall

Inflow Area = 240,201 sf, 58.64% Impervious, Inflow Depth = 5.29" for 25-yr event
Inflow = 19.01 cfs @ 12.16 hrs, Volume= 105,791 cf
Outflow = 19.01 cfs @ 12.16 hrs, Volume= 105,791 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach PDA-300: PDA-300 Overall



Summary for Pond P-1: UGS

Inflow Area =	183,046 sf,	80.06% Impervious,	Inflow Depth =	5.79"	for 25-yr event
Inflow =	26.87 cfs @	12.04 hrs,	Volume=	88,248 cf	
Outflow =	8.34 cfs @	12.23 hrs,	Volume=	88,248 cf,	Atten= 69%, Lag= 11.5 min
Discarded =	0.28 cfs @	4.60 hrs,	Volume=	27,994 cf	
Primary =	8.07 cfs @	12.23 hrs,	Volume=	60,254 cf	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 299.92' @ 12.23 hrs Surf.Area= 7,993 sf Storage= 24,724 cf

Plug-Flow detention time= 115.8 min calculated for 88,248 cf (100% of inflow)
Center-of-Mass det. time= 115.7 min (892.6 - 776.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	295.50'	11,750 cf	**95.50'W x 83.70'L x 6.00'H Field A** 47,960 cf Overall - 18,586 cf Embedded = 29,374 cf x 40.0% Voids
#2A	296.50'	18,586 cf	**Cultec R-902HD** x 286 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 13 Rows of 22 Chambers Cap Storage= +2.8 cf x 2 x 13 rows = 71.8 cf
		30,336 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.50'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	296.90'	**15.0" Round Culvert** L= 141.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 296.90' / 292.00' S= 0.0348 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Discarded OutFlow Max=0.28 cfs @ 4.60 hrs HW=295.56' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=8.05 cfs @ 12.23 hrs HW=299.91' (Free Discharge)
└─**2=Culvert** (Inlet Controls 8.05 cfs @ 6.56 fps)

Pond P-1: UGS - Chamber Wizard Field A

Chamber Model = Cultec R-902HD (Cultec Recharger® 902HD)
Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf
Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap
Cap Storage= +2.8 cf x 2 x 13 rows = 71.8 cf

78.0" Wide + 9.0" Spacing = 87.0" C-C Row Spacing

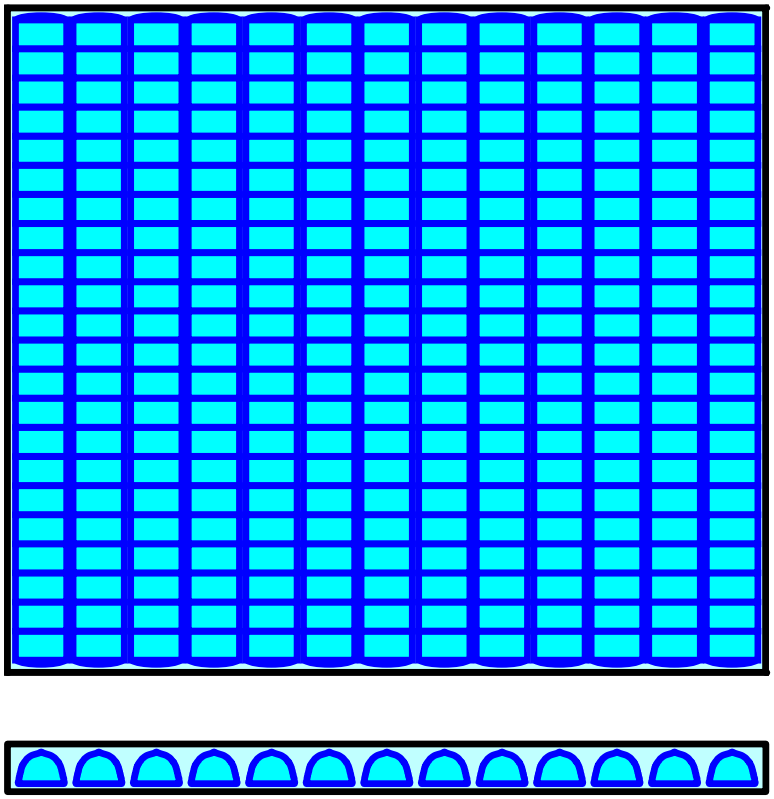
22 Chambers/Row x 3.67' Long +0.52' Cap Length x 2 = 81.70' Row Length +12.0" End Stone x 2 = 83.70' Base Length
13 Rows x 78.0" Wide + 9.0" Spacing x 12 + 12.0" Side Stone x 2 = 95.50' Base Width
12.0" Base + 48.0" Chamber Height + 12.0" Cover = 6.00' Field Height

286 Chambers x 64.7 cf + 2.8 cf Cap Volume x 2 x 13 Rows = 18,586.0 cf Chamber Storage

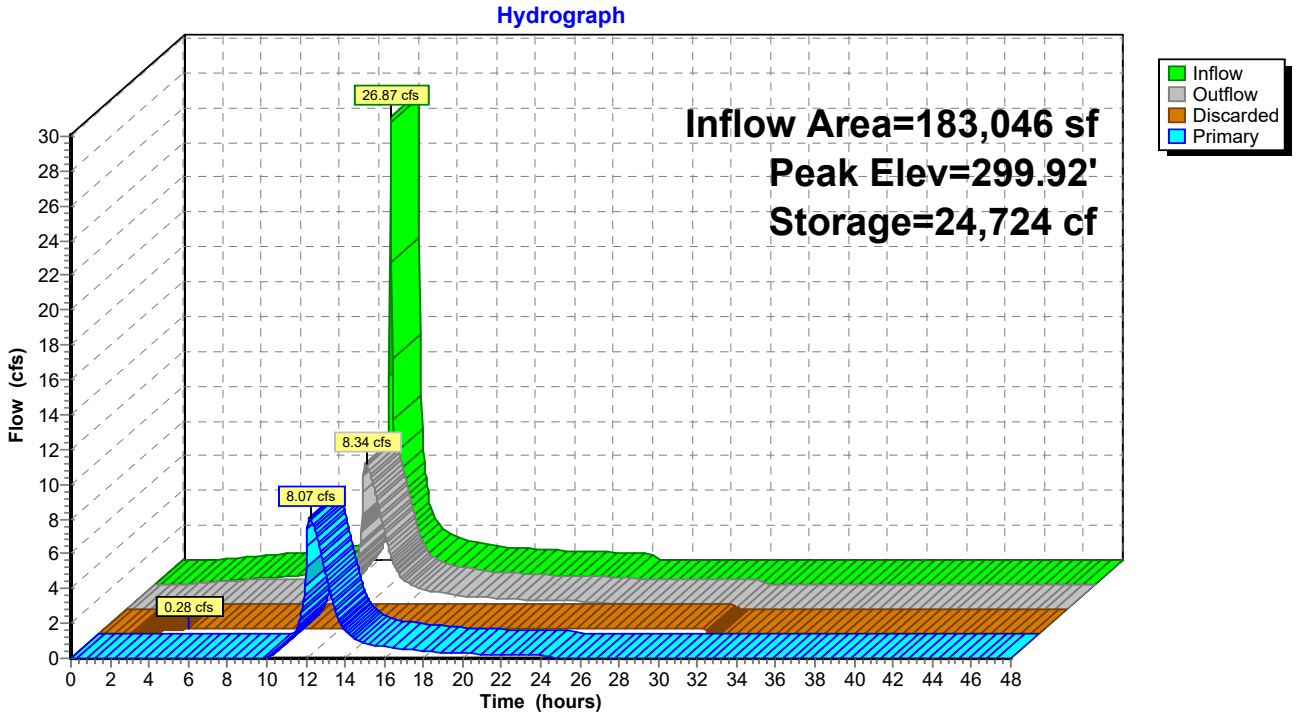
47,960.1 cf Field - 18,586.0 cf Chambers = 29,374.1 cf Stone x 40.0% Voids = 11,749.7 cf Stone Storage

Chamber Storage + Stone Storage = 30,335.6 cf = 0.696 af
Overall Storage Efficiency = 63.3%
Overall System Size = 83.70' x 95.50' x 6.00'

286 Chambers
1,776.3 cy Field
1,087.9 cy Stone



Pond P-1: UGS


Hydrograph
Inflow Area=183,046 sf
Peak Elev=299.92'
Storage=24,724 cf
26.87 cfs
8.34 cfs
8.07 cfs
0.28 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond P-1: UGS

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
295.50	**7,993**	0
295.60	7,993	320
295.70	7,993	639
295.80	7,993	959
295.90	7,993	1,279
296.00	7,993	1,599
296.10	7,993	1,918
296.20	7,993	2,238
296.30	7,993	2,558
296.40	7,993	2,878
296.50	7,993	3,197
296.60	7,993	3,881
296.70	7,993	4,567
296.80	7,993	5,251
296.90	7,993	5,931
297.00	7,993	6,609
297.10	7,993	7,285
297.20	7,993	7,961
297.30	7,993	8,633
297.40	7,993	9,300
297.50	7,993	9,965
297.60	7,993	10,630
297.70	7,993	11,291
297.80	7,993	11,948
297.90	7,993	12,602
298.00	7,993	13,253
298.10	7,993	13,901
298.20	7,993	14,546
298.30	7,993	15,188
298.40	7,993	15,826
298.50	7,993	16,463
298.60	7,993	17,093
298.70	7,993	17,719
298.80	7,993	18,341
298.90	7,993	18,956
299.00	7,993	19,566
299.10	7,993	20,169
299.20	7,993	20,764
299.30	7,993	21,351
299.40	7,993	21,928
299.50	7,993	22,494
299.60	7,993	23,050
299.70	7,993	23,592
299.80	7,993	24,120
299.90	7,993	24,633
300.00	7,993	25,129
300.10	7,993	25,602
300.20	7,993	26,041
300.30	7,993	26,440
300.40	7,993	26,802
300.50	7,993	27,138
300.60	7,993	27,458
300.70	7,993	27,778
300.80	7,993	28,097
300.90	7,993	28,417
301.00	7,993	28,737
301.10	7,993	29,057
301.20	7,993	29,376
301.30	7,993	29,696
301.40	7,993	30,016
301.50	7,993	**30,336**

Summary for Pond P-2: UGS

Inflow Area =	104,679 sf, 86.26% Impervious, Inflow Depth = 6.02" for 25-yr event				
Inflow =	15.65 cfs @	12.04 hrs,	Volume=	52,495 cf	
Outflow =	7.72 cfs @	12.15 hrs,	Volume=	52,495 cf,	Atten= 51%, Lag= 6.9 min
Discarded =	0.16 cfs @	3.75 hrs,	Volume=	20,130 cf	
Primary =	7.56 cfs @	12.15 hrs,	Volume=	32,365 cf	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 299.68' @ 12.15 hrs Surf.Area= 4,591 sf Storage= 14,832 cf

Plug-Flow detention time= 202.4 min calculated for 52,440 cf (100% of inflow)
Center-of-Mass det. time= 203.0 min (968.6 - 765.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	295.00'	6,803 cf	**66.50'W x 69.03'L x 6.00'H Field A** 27,544 cf Overall - 10,537 cf Embedded = 17,008 cf x 40.0% Voids
#2A	296.00'	10,537 cf	**Cultec R-902HD** x 162 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 9 Rows of 18 Chambers Cap Storage= +2.8 cf x 2 x 9 rows = 49.7 cf
		17,340 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.00'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	296.00'	**15.0" Round Culvert** L= 37.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 296.00' / 295.80' S= 0.0054 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#3	Device 2	300.00'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 2	297.42'	**15.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.16 cfs @ 3.75 hrs HW=295.06' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=7.55 cfs @ 12.15 hrs HW=299.68' (Free Discharge)
└─**2=Culvert** (Passes 7.55 cfs of 9.11 cfs potential flow)
  ├─**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Orifice Controls 7.55 cfs @ 6.15 fps)

Pond P-2: UGS - Chamber Wizard Field A

Chamber Model = Cultec R-902HD (Cultec Recharger® 902HD)
Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf
Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap
Cap Storage= +2.8 cf x 2 x 9 rows = 49.7 cf

78.0" Wide + 9.0" Spacing = 87.0" C-C Row Spacing

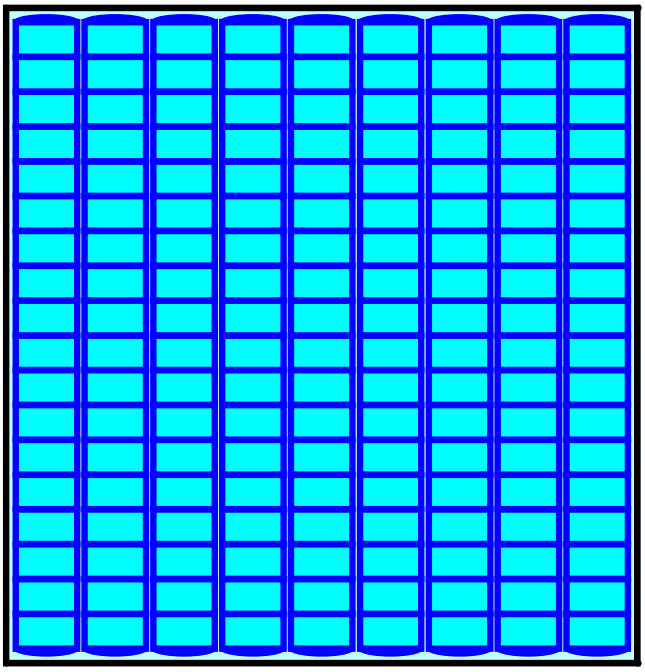
18 Chambers/Row x 3.67' Long +0.52' Cap Length x 2 = 67.03' Row Length +12.0" End Stone x 2 = 69.03' Base Length
9 Rows x 78.0" Wide + 9.0" Spacing x 8 + 12.0" Side Stone x 2 = 66.50' Base Width
12.0" Base + 48.0" Chamber Height + 12.0" Cover = 6.00' Field Height

162 Chambers x 64.7 cf + 2.8 cf Cap Volume x 2 x 9 Rows = 10,536.8 cf Chamber Storage

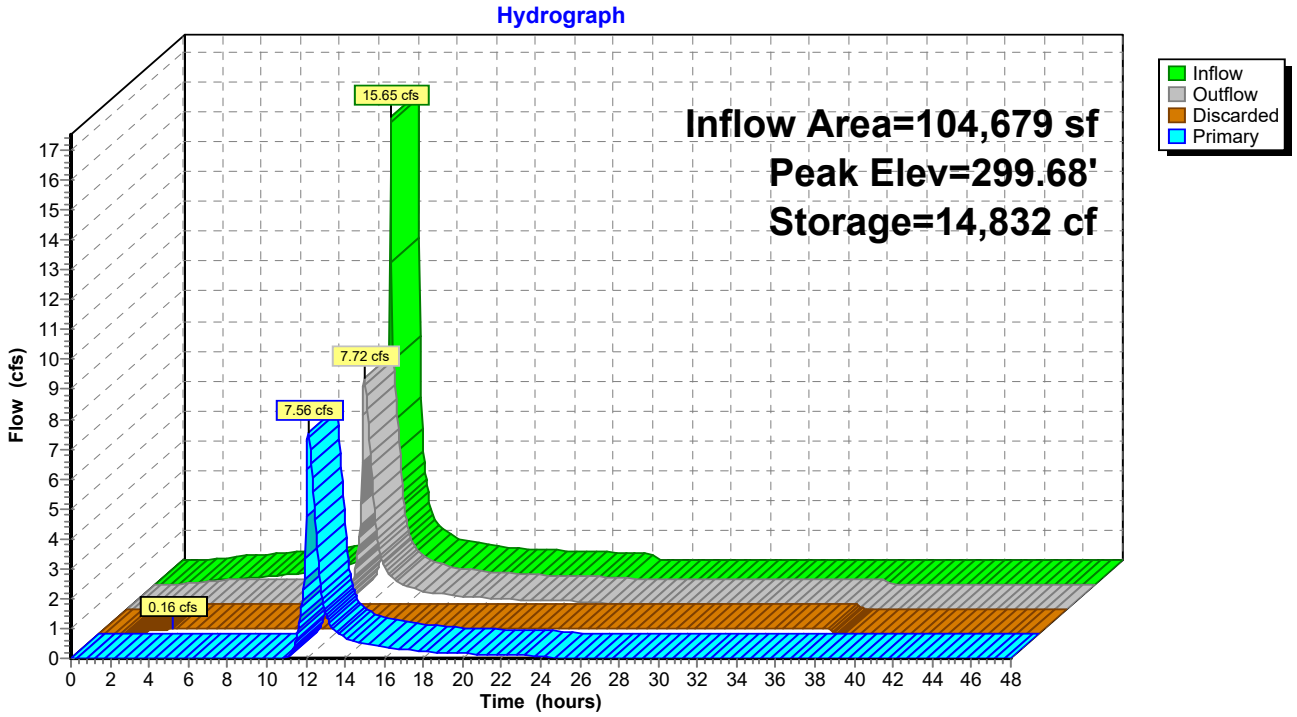
27,544.3 cf Field - 10,536.8 cf Chambers = 17,007.6 cf Stone x 40.0% Voids = 6,803.0 cf Stone Storage

Chamber Storage + Stone Storage = 17,339.8 cf = 0.398 af
Overall Storage Efficiency = 63.0%
Overall System Size = 69.03' x 66.50' x 6.00'

162 Chambers
1,020.2 cy Field
629.9 cy Stone



Pond P-2: UGS


Hydrograph
Inflow Area=104,679 sf
Peak Elev=299.68'
Storage=14,832 cf
15.65 cfs
7.72 cfs
7.56 cfs
0.16 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond P-2: UGS

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
295.00	**4,591**	0
295.10	4,591	184
295.20	4,591	367
295.30	4,591	551
295.40	4,591	735
295.50	4,591	918
295.60	4,591	1,102
295.70	4,591	1,285
295.80	4,591	1,469
295.90	4,591	1,653
296.00	4,591	1,836
296.10	4,591	2,226
296.20	4,591	2,618
296.30	4,591	3,007
296.40	4,591	3,395
296.50	4,591	3,782
296.60	4,591	4,168
296.70	4,591	4,553
296.80	4,591	4,937
296.90	4,591	5,317
297.00	4,591	5,697
297.10	4,591	6,076
297.20	4,591	6,453
297.30	4,591	6,828
297.40	4,591	7,201
297.50	4,591	7,573
297.60	4,591	7,942
297.70	4,591	8,310
297.80	4,591	8,677
297.90	4,591	9,041
298.00	4,591	9,404
298.10	4,591	9,763
298.20	4,591	10,121
298.30	4,591	10,476
298.40	4,591	10,827
298.50	4,591	11,175
298.60	4,591	11,520
298.70	4,591	11,859
298.80	4,591	12,194
298.90	4,591	12,523
299.00	4,591	12,847
299.10	4,591	13,164
299.20	4,591	13,474
299.30	4,591	13,776
299.40	4,591	14,069
299.50	4,591	14,353
299.60	4,591	14,623
299.70	4,591	14,874
299.80	4,591	15,103
299.90	4,591	15,310
300.00	4,591	15,503
300.10	4,591	15,687
300.20	4,591	15,871
300.30	4,591	16,054
300.40	4,591	16,238
300.50	4,591	16,422
300.60	4,591	16,605
300.70	4,591	16,789
300.80	4,591	16,973
300.90	4,591	17,156
301.00	4,591	**17,340**

Summary for Pond P-3: Surface Pond

Inflow Area = 91,062 sf, 59.69% Impervious, Inflow Depth = 5.22" for 25-yr event
Inflow = 9.09 cfs @ 12.14 hrs, Volume= 39,575 cf
Outflow = 5.21 cfs @ 12.30 hrs, Volume= 39,575 cf, Atten= 43%, Lag= 10.1 min
Primary = 5.21 cfs @ 12.30 hrs, Volume= 39,575 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 303.92' @ 12.30 hrs Surf.Area= 3,989 sf Storage= 4,720 cf

Plug-Flow detention time= 6.3 min calculated for 39,534 cf (100% of inflow)
Center-of-Mass det. time= 6.3 min (813.4 - 807.1)

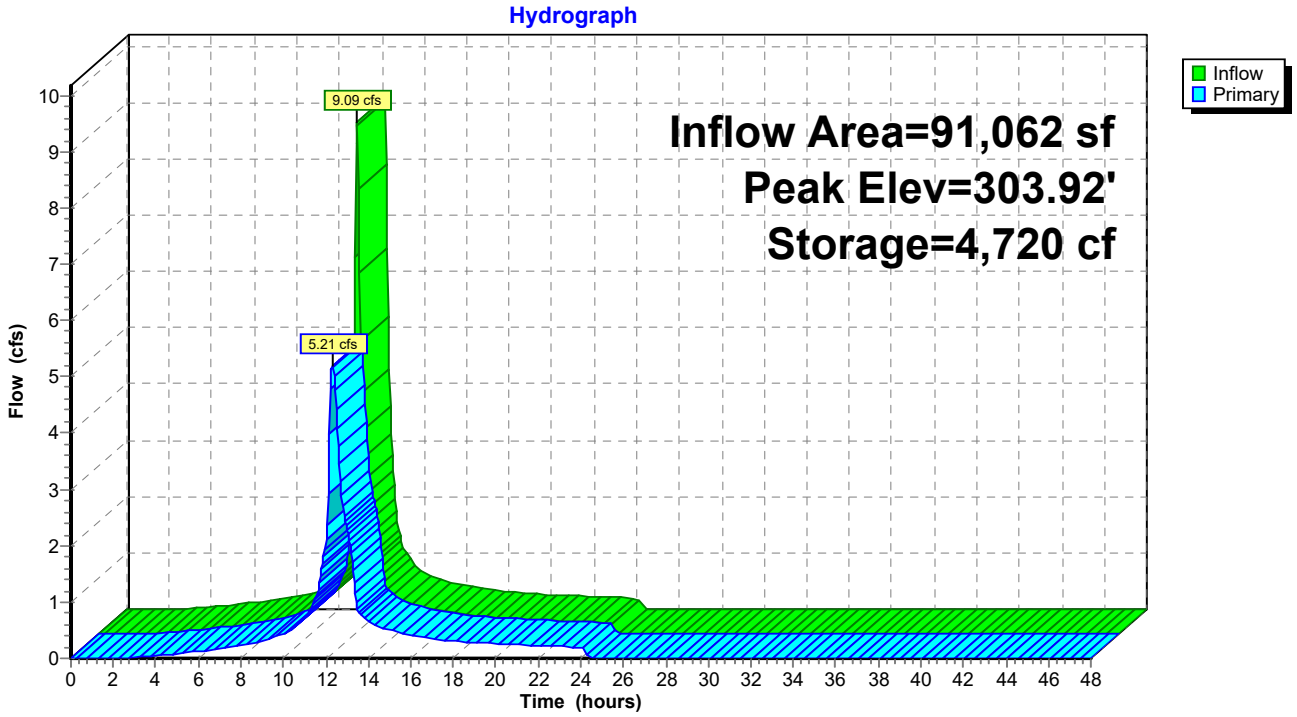
Volume	Invert	Avail.Storage	Storage Description
#1	301.00'	9,905 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
301.00	1	0	0
302.00	643	322	322
303.00	2,322	1,483	1,805
304.00	4,126	3,224	5,029
305.00	5,627	4,877	9,905

Device	Routing	Invert	Outlet Devices
#1	Primary	301.00'	**12.0" Round Culvert** L= 118.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 301.00' / 290.50' S= 0.0890 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf
#2	Device 1	301.00'	**8.5" Vert. Orifice/Grate** C= 0.600
#3	Device 1	304.75'	**2.0" x 2.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	303.00'	**11.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=5.20 cfs @ 12.30 hrs HW=303.92' (Free Discharge)
└─**1=Culvert** (Passes 5.20 cfs of 5.89 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 3.04 cfs @ 7.72 fps)
  ├─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Orifice Controls 2.16 cfs @ 3.28 fps)

Pond P-3: Surface Pond



Stage-Area-Storage for Pond P-3: Surface Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
301.00	1	0
301.05	33	1
301.10	65	3
301.15	97	7
301.20	129	13
301.25	162	20
301.30	194	29
301.35	226	40
301.40	258	52
301.45	290	65
301.50	322	81
301.55	354	98
301.60	386	116
301.65	418	136
301.70	450	158
301.75	483	181
301.80	515	206
301.85	547	233
301.90	579	261
301.95	611	291
302.00	643	322
302.05	727	356
302.10	811	395
302.15	895	437
302.20	979	484
302.25	1,063	535
302.30	1,147	590
302.35	1,231	650
302.40	1,315	714
302.45	1,399	781
302.50	1,483	853
302.55	1,566	930
302.60	1,650	1,010
302.65	1,734	1,095
302.70	1,818	1,183
302.75	1,902	1,276
302.80	1,986	1,374
302.85	2,070	1,475
302.90	2,154	1,581
302.95	2,238	1,690
303.00	2,322	1,805
303.05	2,412	1,923
303.10	2,502	2,046
303.15	2,593	2,173
303.20	2,683	2,305
303.25	2,773	2,441
303.30	2,863	2,582
303.35	2,953	2,728
303.40	3,044	2,878
303.45	3,134	3,032
303.50	3,224	3,191
303.55	3,314	3,354
303.60	3,404	3,522
303.65	3,495	3,695
303.70	3,585	3,872
303.75	3,675	4,053
303.80	3,765	4,239
303.85	3,855	4,430
303.90	3,946	4,625
303.95	4,036	4,824
304.00	4,126	5,029
304.05	4,201	5,237
304.10	4,276	5,449
304.15	4,351	5,664
304.20	4,426	5,884
304.25	4,501	6,107
304.30	4,576	6,334
304.35	4,651	6,565
304.40	4,726	6,799
304.45	4,801	7,037
304.50	4,877	7,279
304.55	4,952	7,525
304.60	5,027	7,774
304.65	5,102	8,027
304.70	5,177	8,284
304.75	5,252	8,545
304.80	5,327	8,810
304.85	5,402	9,078
304.90	5,477	9,350
304.95	5,552	9,626
305.00	**5,627**	**9,905**

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-101: (new Subcat) Runoff Area=146,162 sf 8.95% Impervious Runoff Depth=5.45"
Flow Length=884' Tc=14.9 min CN=75 Runoff=14.75 cfs 66,376 cf

Subcatchment PDA-102: (new Subcat) Runoff Area=183,046 sf 80.06% Impervious Runoff Depth=7.61"
Tc=6.0 min CN=93 Runoff=34.11 cfs 116,072 cf

Subcatchment PDA-201: (new Subcat) Runoff Area=71,843 sf 52.48% Impervious Runoff Depth=6.89"
Flow Length=126' Tc=13.1 min CN=87 Runoff=9.32 cfs 41,240 cf

Subcatchment PDA-202: (new Subcat) Runoff Area=104,679 sf 86.26% Impervious Runoff Depth=7.85"
Tc=6.0 min CN=95 Runoff=19.75 cfs 68,474 cf

Subcatchment PDA-301: (new Subcat) Runoff Area=149,139 sf 58.00% Impervious Runoff Depth=7.13"
Flow Length=670' Tc=13.7 min CN=89 Runoff=19.47 cfs 88,597 cf

Subcatchment PDA-302: (new Subcat) Runoff Area=91,062 sf 59.69% Impervious Runoff Depth=7.01"
Flow Length=56' Slope=0.0050 '/' Tc=13.6 min CN=88 Runoff=11.79 cfs 53,184 cf

Reach PDA-100: PDA-100 Overall Inflow=24.79 cfs 153,362 cf
Outflow=24.79 cfs 153,362 cf

Reach PDA-200: PDA-200 Overall Inflow=19.64 cfs 89,096 cf
Outflow=19.64 cfs 89,096 cf

Reach PDA-300: PDA-300 Overall Inflow=24.69 cfs 141,781 cf
Outflow=24.69 cfs 141,781 cf

Pond P-1: UGS Peak Elev=301.39' Storage=29,984 cf Inflow=34.11 cfs 116,072 cf
Discarded=0.28 cfs 29,086 cf Primary=10.25 cfs 86,986 cf Outflow=10.53 cfs 116,072 cf

Pond P-2: UGS Peak Elev=300.55' Storage=16,520 cf Inflow=19.75 cfs 68,474 cf
Discarded=0.16 cfs 20,619 cf Primary=10.33 cfs 47,855 cf Outflow=10.49 cfs 68,474 cf

Pond P-3: Surface Pond Peak Elev=304.37' Storage=6,671 cf Inflow=11.79 cfs 53,184 cf
Outflow=6.34 cfs 53,184 cf

Total Runoff Area = 745,931 sf Runoff Volume = 433,944 cf Average Runoff Depth = 6.98"
42.56% Pervious = 317,442 sf 57.44% Impervious = 428,489 sf

Summary for Subcatchment PDA-101: (new Subcat)

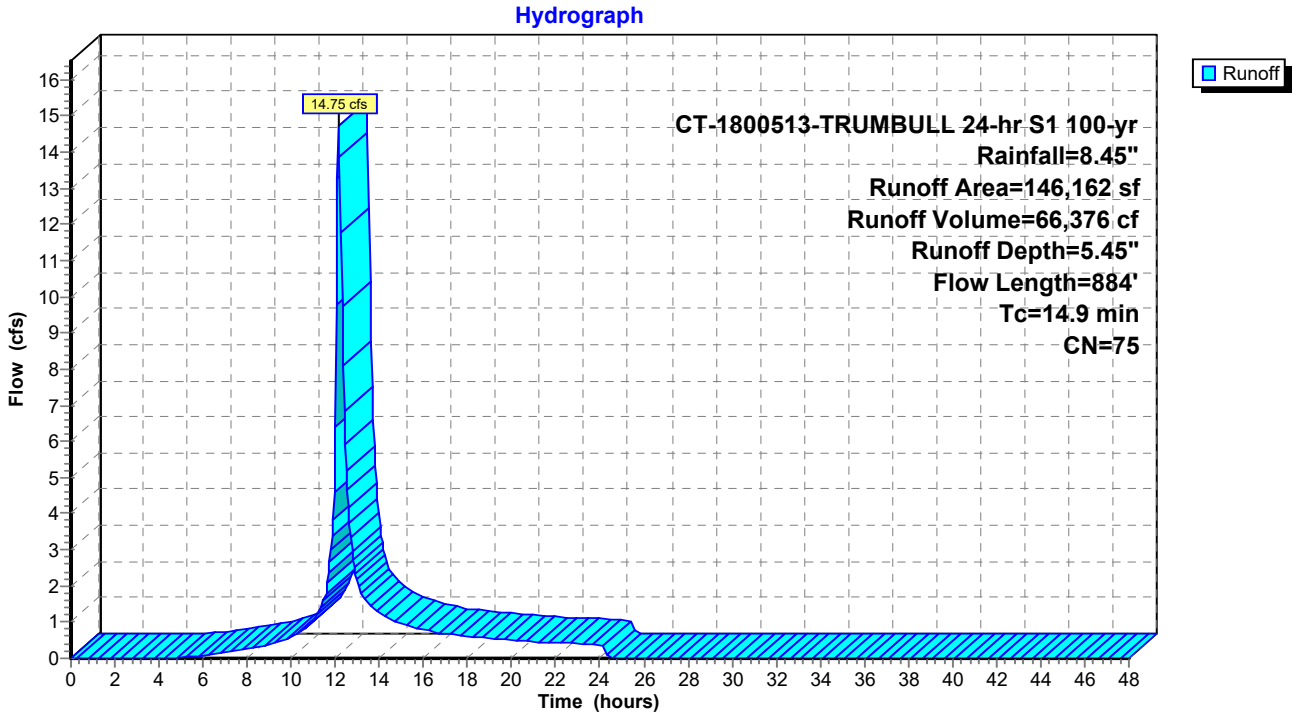
Runoff = 14.75 cfs @ 12.16 hrs, Volume= 66,376 cf, Depth= 5.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 100-yr Rainfall=8.45"

Area (sf)	CN	Description
24,058	61	>75% Grass cover, Good, HSG B
38,346	74	>75% Grass cover, Good, HSG C
33,014	80	>75% Grass cover, Good, HSG D
13,083	98	Paved parking, HSG D
37,661	73	Woods, Fair, HSG C
146,162	75	Weighted Average
133,079		91.05% Pervious Area
13,083		8.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	100	0.0833	0.24		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 2.00"
0.2	20	0.0400	1.40		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.3	126	0.0516	1.59		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
2.0	96	0.0250	0.79		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
1.2	161	0.1000	2.21		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.8	92	0.0761	1.93		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.3	45	0.1111	2.33		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
0.9	80	0.0500	1.57		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
1.2	164	0.0222	2.23		**Shallow Concentrated Flow, grass** Grassed Waterway Kv= 15.0 fps
14.9	884	Total			

Subcatchment PDA-101: (new Subcat)



Summary for Subcatchment PDA-102: (new Subcat)

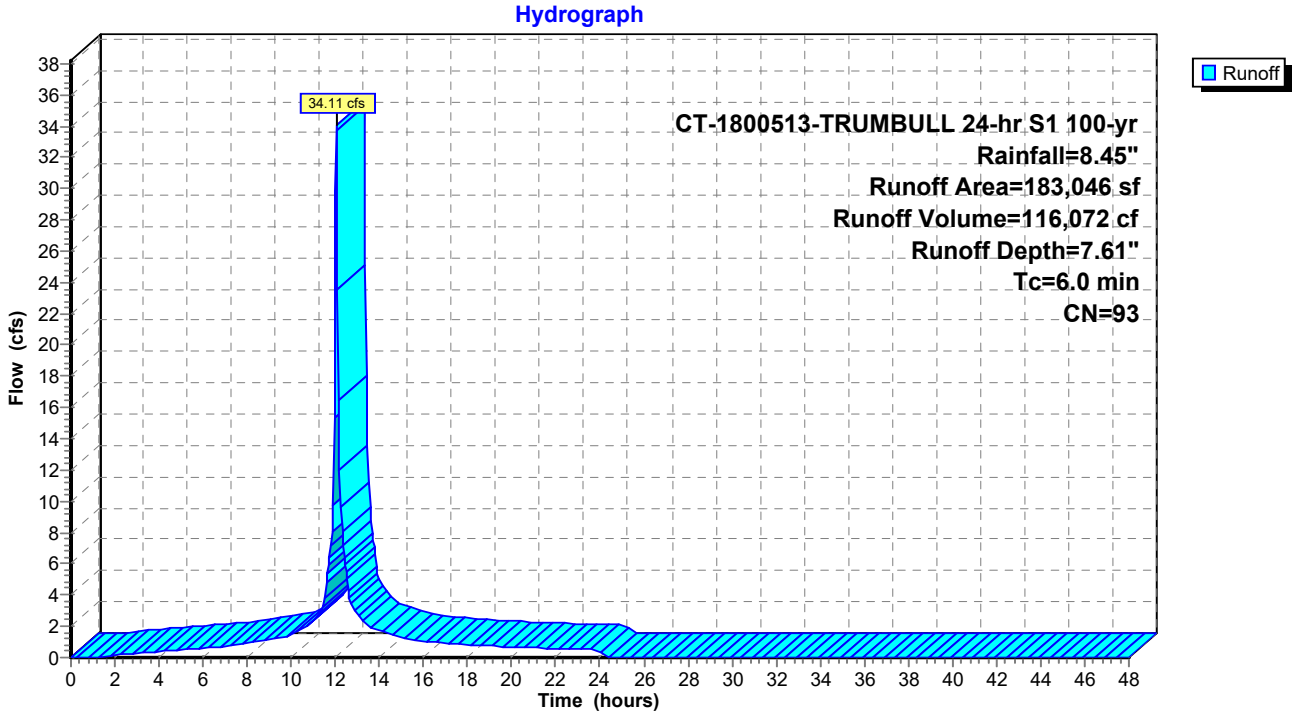
Runoff = 34.11 cfs @ 12.04 hrs, Volume= 116,072 cf, Depth= 7.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 100-yr Rainfall=8.45"

Area (sf)	CN	Description
568	61	>75% Grass cover, Good, HSG B
35,494	74	>75% Grass cover, Good, HSG C
439	80	>75% Grass cover, Good, HSG D
146,545	98	Paved parking, HSG D
183,046	93	Weighted Average
36,501		19.94% Pervious Area
146,545		80.06% Impervious Area

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

Subcatchment PDA-102: (new Subcat)



Summary for Subcatchment PDA-201: (new Subcat)

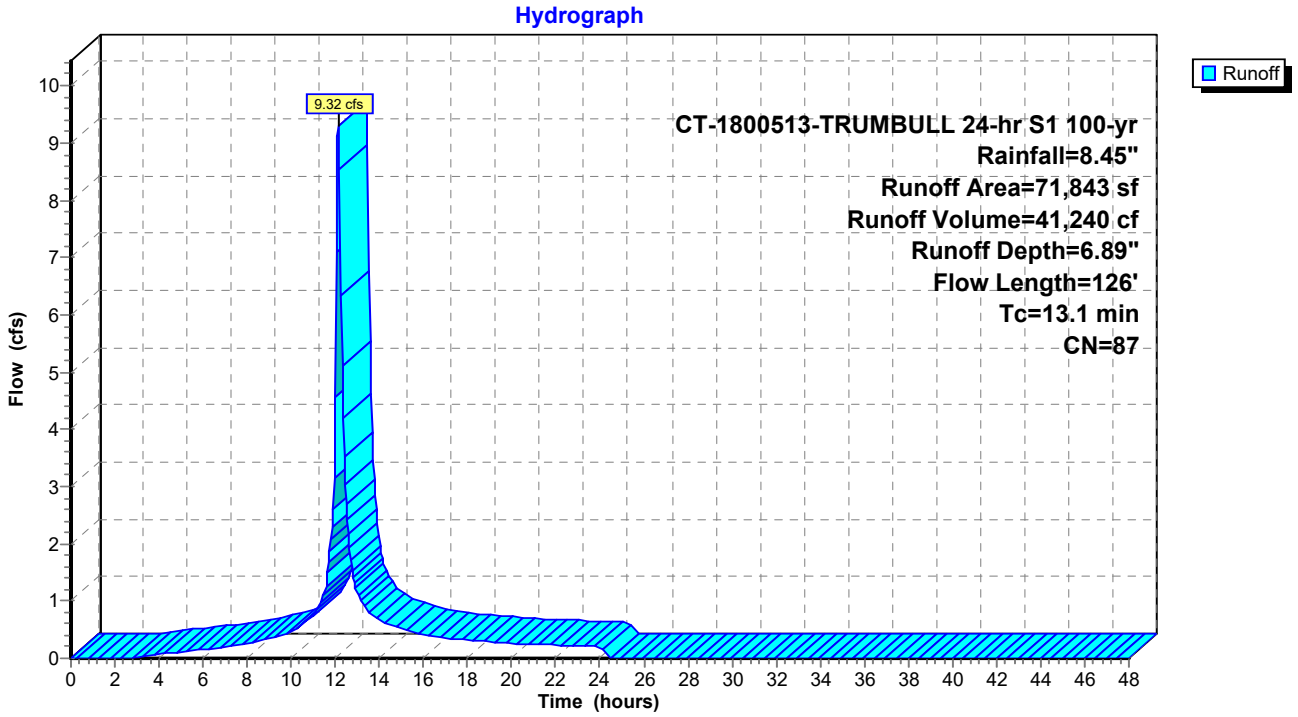
Runoff = 9.32 cfs @ 12.13 hrs, Volume= 41,240 cf, Depth= 6.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 100-yr Rainfall=8.45"

Area (sf)	CN	Description
10,617	74	>75% Grass cover, Good, HSG C
3,041	80	>75% Grass cover, Good, HSG D
13,488	73	Woods, Fair, HSG C
6,992	79	Woods, Fair, HSG D
37,705	98	Paved parking, HSG D
71,843	87	Weighted Average
34,138		47.52% Pervious Area
37,705		52.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	25	0.0286	0.12		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
6.5	20	0.0286	0.05		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.00"
2.6	14	0.1429	0.09		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.00"
0.3	51	0.2553	2.53		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
0.2	16	0.0541	1.63		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
13.1	126	Total			

Subcatchment PDA-201: (new Subcat)



Summary for Subcatchment PDA-202: (new Subcat)

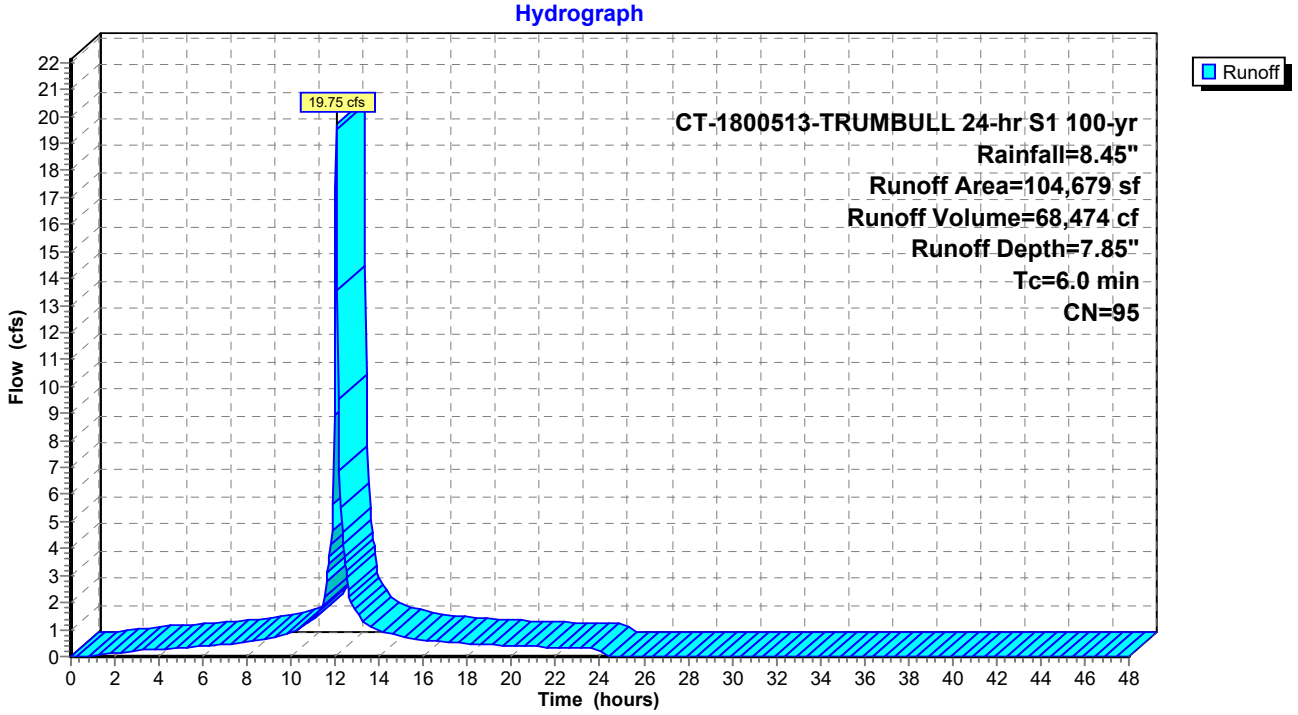
Runoff = 19.75 cfs @ 12.04 hrs, Volume= 68,474 cf, Depth= 7.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 100-yr Rainfall=8.45"

Area (sf)	CN	Description
14,378	74	>75% Grass cover, Good, HSG C
90,301	98	Paved parking, HSG D
104,679	95	Weighted Average
14,378		13.74% Pervious Area
90,301		86.26% Impervious Area

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

Subcatchment PDA-202: (new Subcat)



Summary for Subcatchment PDA-301: (new Subcat)

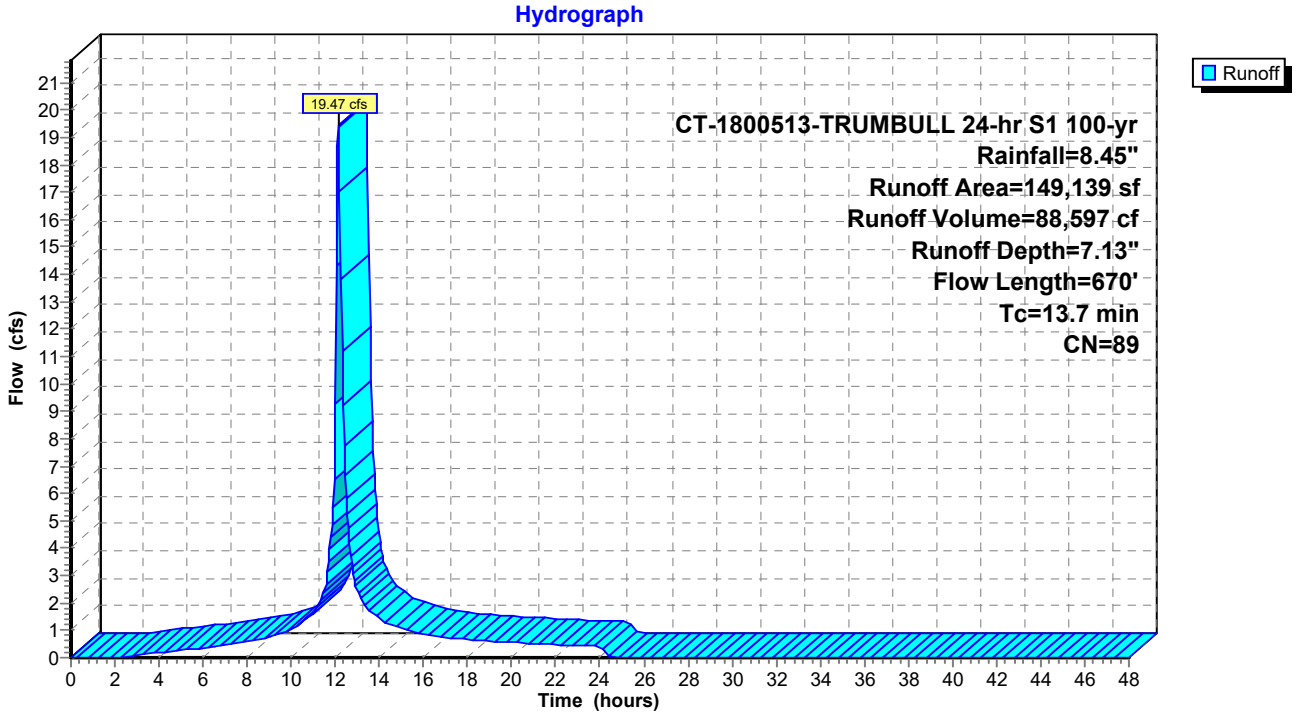
Runoff = 19.47 cfs @ 12.14 hrs, Volume= 88,597 cf, Depth= 7.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 100-yr Rainfall=8.45"

Area (sf)	CN	Description
37,457	74	>75% Grass cover, Good, HSG C
23,284	80	>75% Grass cover, Good, HSG D
1,896	79	Woods, Fair, HSG D
86,502	98	Paved parking, HSG D
149,139	89	Weighted Average
62,637		42.00% Pervious Area
86,502		58.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	70	0.0143	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"
3.0	600	0.0267	3.32		**Shallow Concentrated Flow, pavement** Paved Kv= 20.3 fps
13.7	670	Total			

Subcatchment PDA-301: (new Subcat)



Summary for Subcatchment PDA-302: (new Subcat)

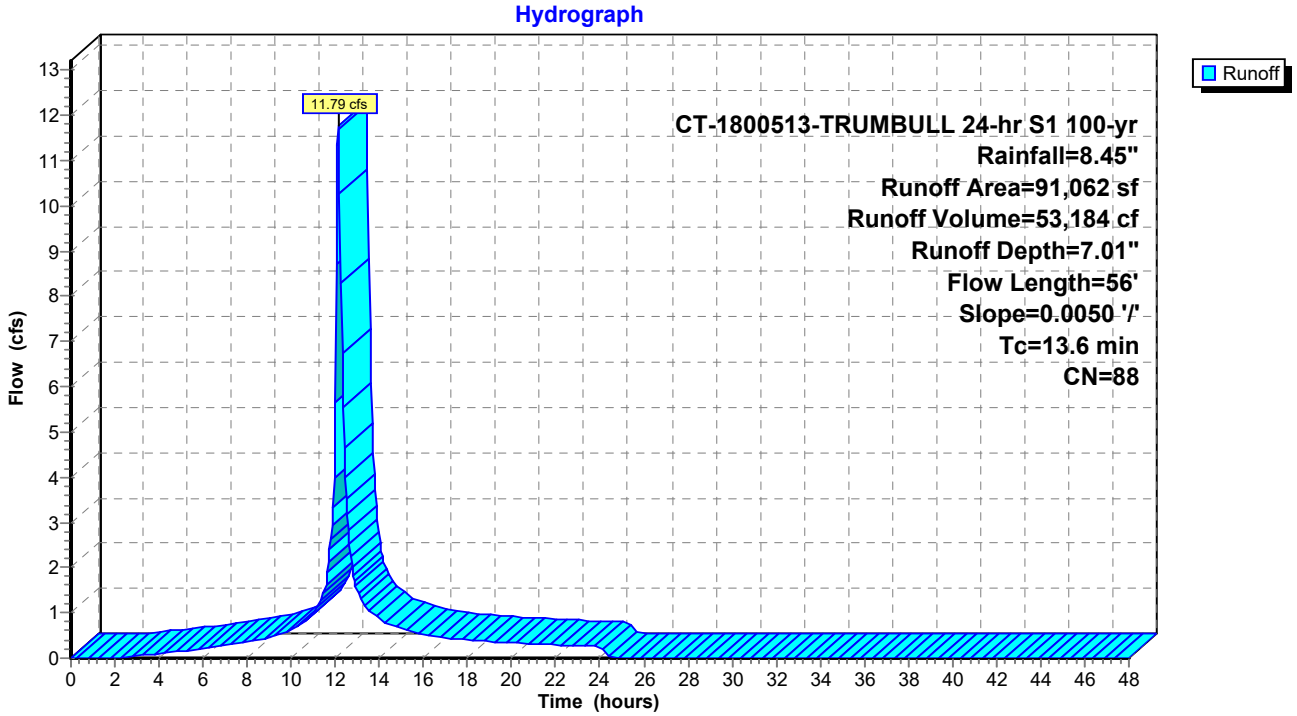
Runoff = 11.79 cfs @ 12.13 hrs, Volume= 53,184 cf, Depth= 7.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
CT-1800513-TRUMBULL 24-hr S1 100-yr Rainfall=8.45"

Area (sf)	CN	Description
36,709	74	>75% Grass cover, Good, HSG C
54,353	98	Paved parking, HSG D
91,062	88	Weighted Average
36,709		40.31% Pervious Area
54,353		59.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	56	0.0050	0.07		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.00"

Subcatchment PDA-302: (new Subcat)

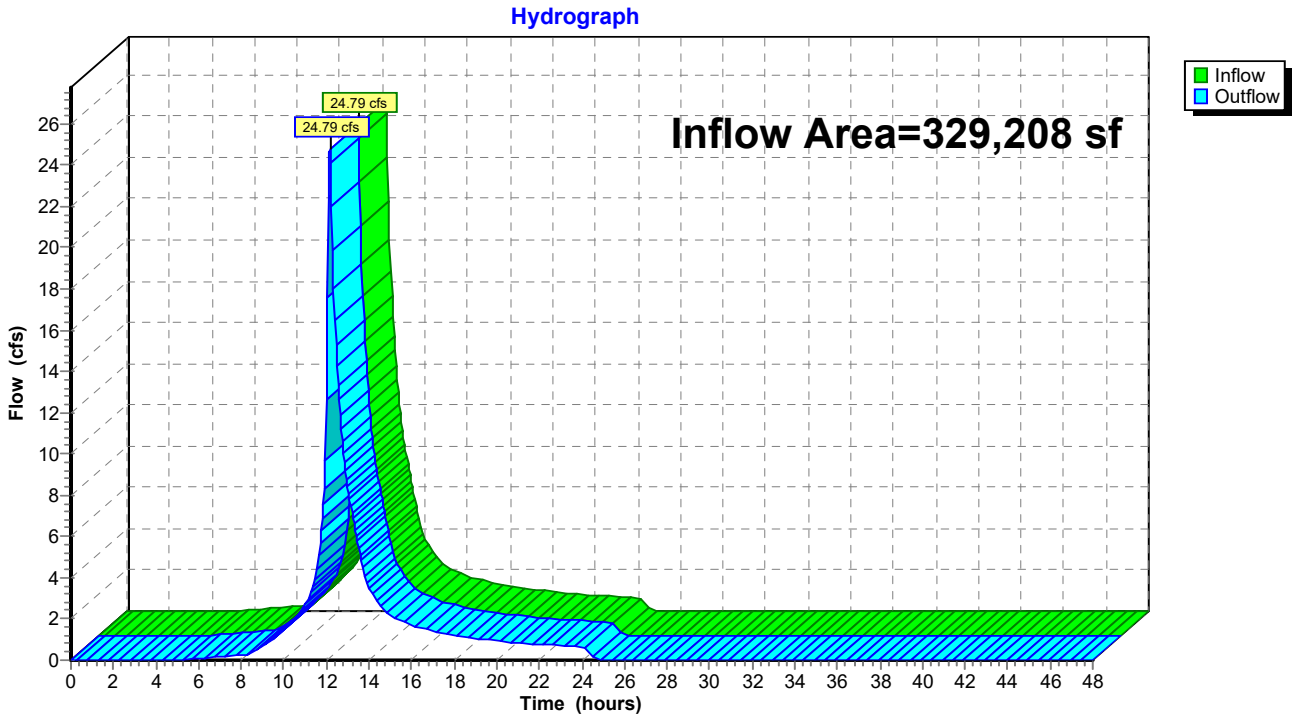


Summary for Reach PDA-100: PDA-100 Overall

Inflow Area = 329,208 sf, 48.49% Impervious, Inflow Depth = 5.59" for 100-yr event
Inflow = 24.79 cfs @ 12.16 hrs, Volume= 153,362 cf
Outflow = 24.79 cfs @ 12.16 hrs, Volume= 153,362 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach PDA-100: PDA-100 Overall

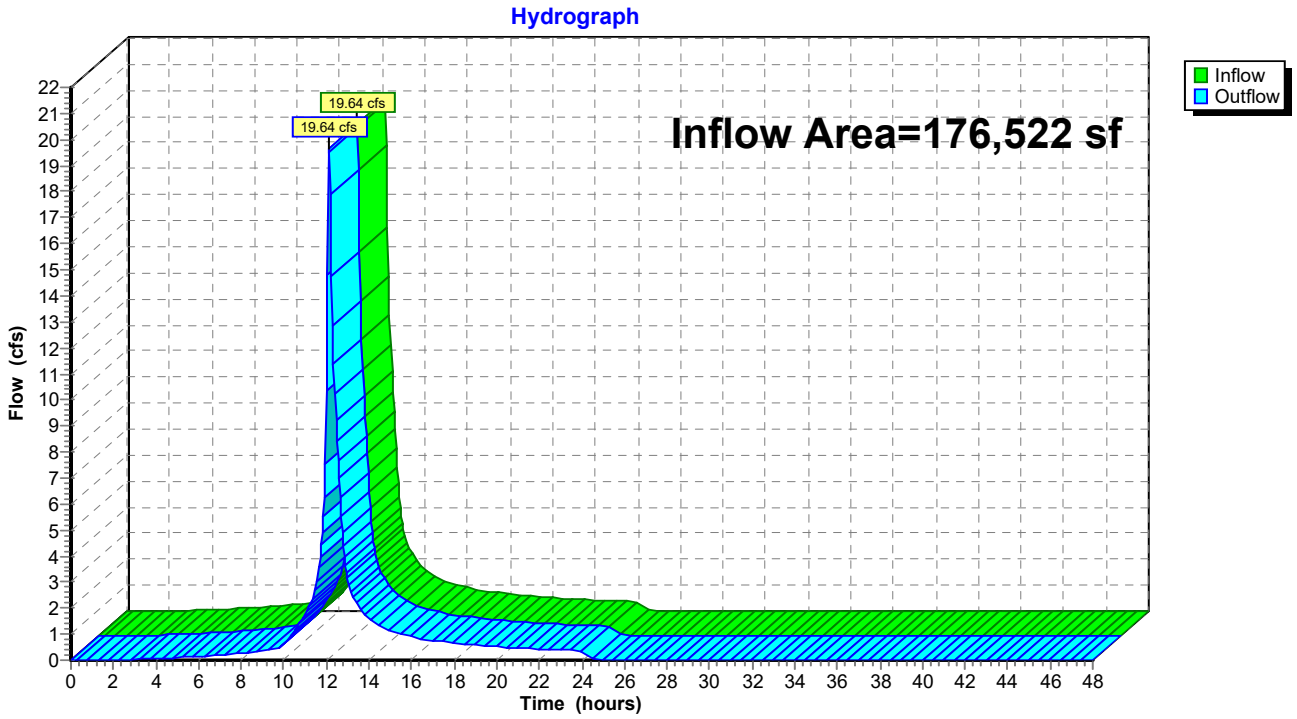


Summary for Reach PDA-200: PDA-200 Overall

Inflow Area = 176,522 sf, 72.52% Impervious, Inflow Depth = 6.06" for 100-yr event
Inflow = 19.64 cfs @ 12.13 hrs, Volume= 89,096 cf
Outflow = 19.64 cfs @ 12.13 hrs, Volume= 89,096 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach PDA-200: PDA-200 Overall

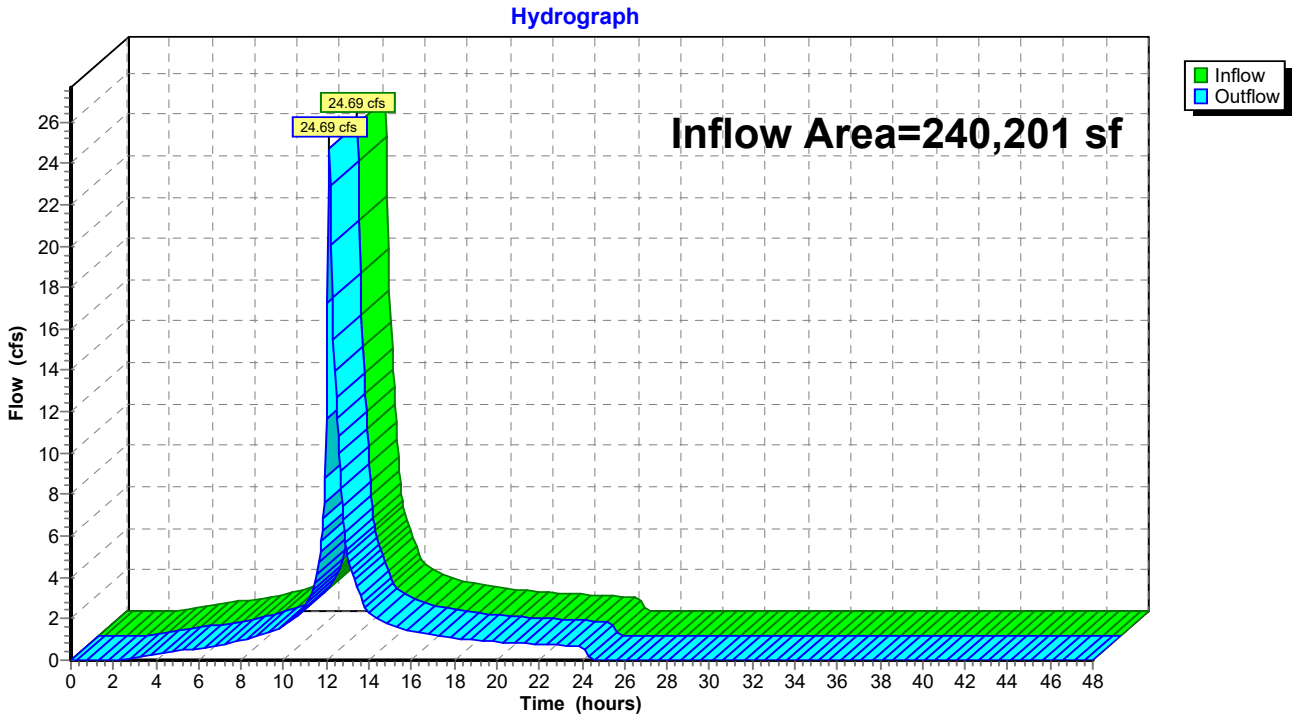


Summary for Reach PDA-300: PDA-300 Overall

Inflow Area = 240,201 sf, 58.64% Impervious, Inflow Depth = 7.08" for 100-yr event
Inflow = 24.69 cfs @ 12.15 hrs, Volume= 141,781 cf
Outflow = 24.69 cfs @ 12.15 hrs, Volume= 141,781 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach PDA-300: PDA-300 Overall



Summary for Pond P-1: UGS

Inflow Area =	183,046 sf, 80.06% Impervious,	Inflow Depth = 7.61"	for 100-yr event		
Inflow =	34.11 cfs @	12.04 hrs,	Volume=	116,072 cf	
Outflow =	10.53 cfs @	12.23 hrs,	Volume=	116,072 cf,	Atten= 69%, Lag= 11.6 min
Discarded =	0.28 cfs @	3.25 hrs,	Volume=	29,086 cf	
Primary =	10.25 cfs @	12.23 hrs,	Volume=	86,986 cf	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 301.39' @ 12.23 hrs Surf.Area= 7,993 sf Storage= 29,984 cf

Plug-Flow detention time= 103.5 min calculated for 116,072 cf (100% of inflow)
Center-of-Mass det. time= 103.4 min (872.5 - 769.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	295.50'	11,750 cf	**95.50'W x 83.70'L x 6.00'H Field A** 47,960 cf Overall - 18,586 cf Embedded = 29,374 cf x 40.0% Voids
#2A	296.50'	18,586 cf	**Cultec R-902HD** x 286 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 13 Rows of 22 Chambers Cap Storage= +2.8 cf x 2 x 13 rows = 71.8 cf
		30,336 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.50'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	296.90'	**15.0" Round Culvert** L= 141.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 296.90' / 292.00' S= 0.0348 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Discarded OutFlow Max=0.28 cfs @ 3.25 hrs HW=295.56' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=10.23 cfs @ 12.23 hrs HW=301.38' (Free Discharge)
└─**2=Culvert** (Inlet Controls 10.23 cfs @ 8.34 fps)

Pond P-1: UGS - Chamber Wizard Field A

Chamber Model = Cultec R-902HD (Cultec Recharger® 902HD)
Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf
Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap
Cap Storage= +2.8 cf x 2 x 13 rows = 71.8 cf

78.0" Wide + 9.0" Spacing = 87.0" C-C Row Spacing

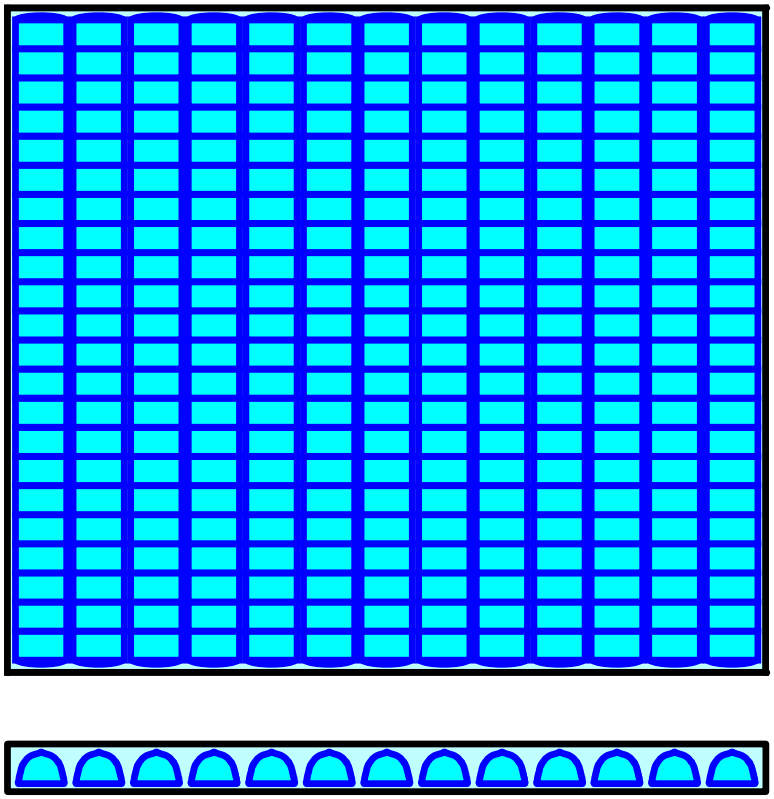
22 Chambers/Row x 3.67' Long +0.52' Cap Length x 2 = 81.70' Row Length +12.0" End Stone x 2 = 83.70' Base Length
13 Rows x 78.0" Wide + 9.0" Spacing x 12 + 12.0" Side Stone x 2 = 95.50' Base Width
12.0" Base + 48.0" Chamber Height + 12.0" Cover = 6.00' Field Height

286 Chambers x 64.7 cf + 2.8 cf Cap Volume x 2 x 13 Rows = 18,586.0 cf Chamber Storage

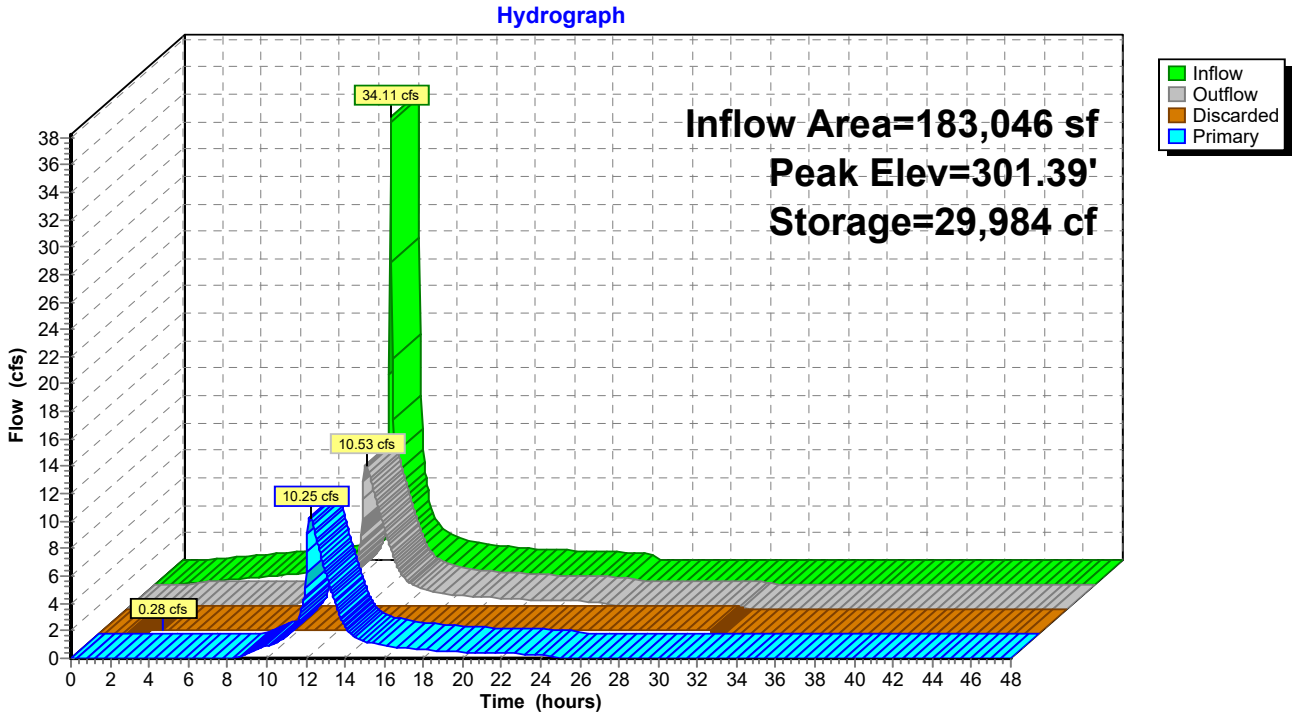
47,960.1 cf Field - 18,586.0 cf Chambers = 29,374.1 cf Stone x 40.0% Voids = 11,749.7 cf Stone Storage

Chamber Storage + Stone Storage = 30,335.6 cf = 0.696 af
Overall Storage Efficiency = 63.3%
Overall System Size = 83.70' x 95.50' x 6.00'

286 Chambers
1,776.3 cy Field
1,087.9 cy Stone



Pond P-1: UGS


Hydrograph
Inflow
Outflow
Discarded
Primary
34.11 cfs
10.53 cfs
10.25 cfs
0.28 cfs
Inflow Area=183,046 sf
Peak Elev=301.39'
Storage=29,984 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond P-1: UGS

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
295.50	**7,993**	0
295.60	7,993	320
295.70	7,993	639
295.80	7,993	959
295.90	7,993	1,279
296.00	7,993	1,599
296.10	7,993	1,918
296.20	7,993	2,238
296.30	7,993	2,558
296.40	7,993	2,878
296.50	7,993	3,197
296.60	7,993	3,881
296.70	7,993	4,567
296.80	7,993	5,251
296.90	7,993	5,931
297.00	7,993	6,609
297.10	7,993	7,285
297.20	7,993	7,961
297.30	7,993	8,633
297.40	7,993	9,300
297.50	7,993	9,965
297.60	7,993	10,630
297.70	7,993	11,291
297.80	7,993	11,948
297.90	7,993	12,602
298.00	7,993	13,253
298.10	7,993	13,901
298.20	7,993	14,546
298.30	7,993	15,188
298.40	7,993	15,826
298.50	7,993	16,463
298.60	7,993	17,093
298.70	7,993	17,719
298.80	7,993	18,341
298.90	7,993	18,956
299.00	7,993	19,566
299.10	7,993	20,169
299.20	7,993	20,764
299.30	7,993	21,351
299.40	7,993	21,928
299.50	7,993	22,494
299.60	7,993	23,050
299.70	7,993	23,592
299.80	7,993	24,120
299.90	7,993	24,633
300.00	7,993	25,129
300.10	7,993	25,602
300.20	7,993	26,041
300.30	7,993	26,440
300.40	7,993	26,802
300.50	7,993	27,138
300.60	7,993	27,458
300.70	7,993	27,778
300.80	7,993	28,097
300.90	7,993	28,417
301.00	7,993	28,737
301.10	7,993	29,057
301.20	7,993	29,376
301.30	7,993	29,696
301.40	7,993	30,016
301.50	7,993	**30,336**

Summary for Pond P-2: UGS

Inflow Area =	104,679 sf, 86.26% Impervious, Inflow Depth = 7.85" for 100-yr event				
Inflow =	19.75 cfs @	12.04 hrs,	Volume=	68,474 cf	
Outflow =	10.49 cfs @	12.14 hrs,	Volume=	68,474 cf,	Atten= 47%, Lag= 6.2 min
Discarded =	0.16 cfs @	2.55 hrs,	Volume=	20,619 cf	
Primary =	10.33 cfs @	12.14 hrs,	Volume=	47,855 cf	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 300.55' @ 12.14 hrs Surf.Area= 4,591 sf Storage= 16,520 cf

Plug-Flow detention time= 171.1 min calculated for 68,403 cf (100% of inflow)
Center-of-Mass det. time= 171.8 min (930.8 - 759.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	295.00'	6,803 cf	**66.50'W x 69.03'L x 6.00'H Field A** 27,544 cf Overall - 10,537 cf Embedded = 17,008 cf x 40.0% Voids
#2A	296.00'	10,537 cf	**Cultec R-902HD** x 162 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 9 Rows of 18 Chambers Cap Storage= +2.8 cf x 2 x 9 rows = 49.7 cf
		17,340 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	295.00'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	296.00'	**15.0" Round Culvert** L= 37.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 296.00' / 295.80' S= 0.0054 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#3	Device 2	300.00'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 2	297.42'	**15.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.16 cfs @ 2.55 hrs HW=295.06' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=10.31 cfs @ 12.14 hrs HW=300.53' (Free Discharge)
└─**2=Culvert** (Inlet Controls 10.31 cfs @ 8.40 fps)
  ├─**3=Sharp-Crested Rectangular Weir** (Passes < 6.21 cfs potential flow)
  └─**4=Orifice/Grate** (Passes < 9.32 cfs potential flow)

Pond P-2: UGS - Chamber Wizard Field A

Chamber Model = Cultec R-902HD (Cultec Recharger® 902HD)
Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf
Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap
Cap Storage= +2.8 cf x 2 x 9 rows = 49.7 cf

78.0" Wide + 9.0" Spacing = 87.0" C-C Row Spacing

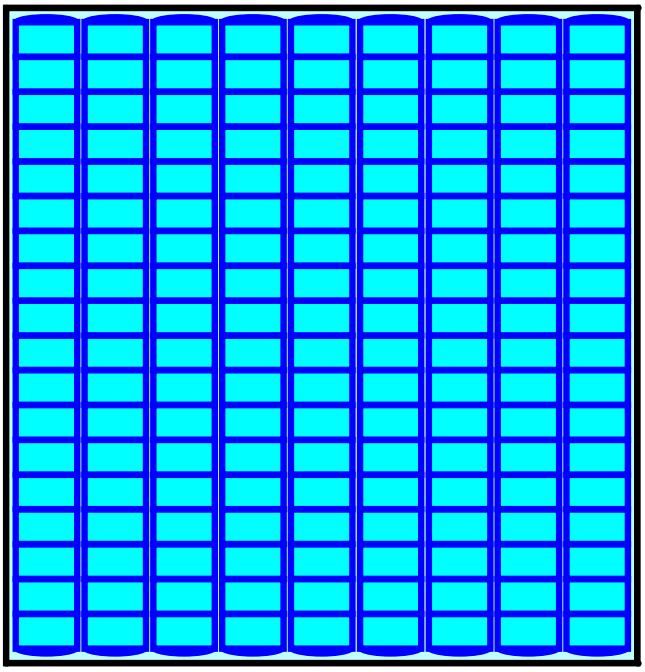
18 Chambers/Row x 3.67' Long +0.52' Cap Length x 2 = 67.03' Row Length +12.0" End Stone x 2 = 69.03' Base Length
9 Rows x 78.0" Wide + 9.0" Spacing x 8 + 12.0" Side Stone x 2 = 66.50' Base Width
12.0" Base + 48.0" Chamber Height + 12.0" Cover = 6.00' Field Height

162 Chambers x 64.7 cf + 2.8 cf Cap Volume x 2 x 9 Rows = 10,536.8 cf Chamber Storage

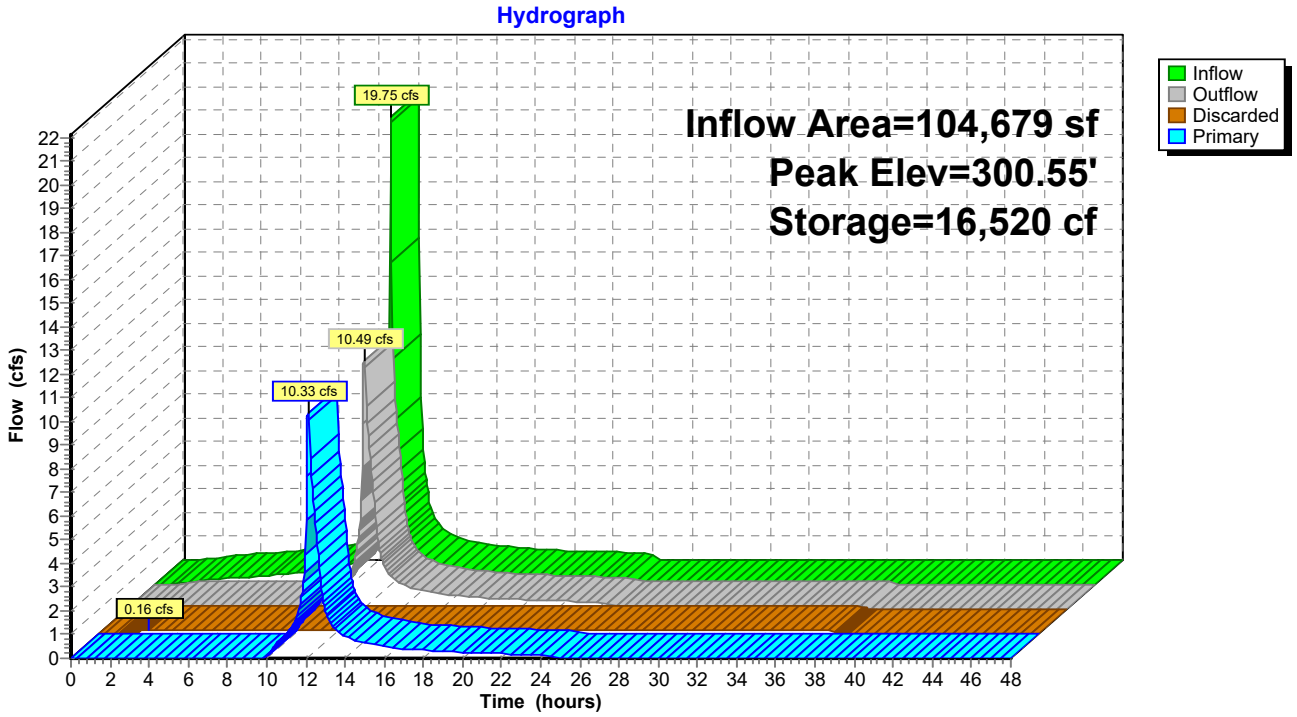
27,544.3 cf Field - 10,536.8 cf Chambers = 17,007.6 cf Stone x 40.0% Voids = 6,803.0 cf Stone Storage

Chamber Storage + Stone Storage = 17,339.8 cf = 0.398 af
Overall Storage Efficiency = 63.0%
Overall System Size = 69.03' x 66.50' x 6.00'

162 Chambers
1,020.2 cy Field
629.9 cy Stone



Pond P-2: UGS


Hydrograph
Inflow Area=104,679 sf
Peak Elev=300.55'
Storage=16,520 cf
19.75 cfs
10.49 cfs
10.33 cfs
0.16 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond P-2: UGS

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
295.00	**4,591**	0
295.10	4,591	184
295.20	4,591	367
295.30	4,591	551
295.40	4,591	735
295.50	4,591	918
295.60	4,591	1,102
295.70	4,591	1,285
295.80	4,591	1,469
295.90	4,591	1,653
296.00	4,591	1,836
296.10	4,591	2,226
296.20	4,591	2,618
296.30	4,591	3,007
296.40	4,591	3,395
296.50	4,591	3,782
296.60	4,591	4,168
296.70	4,591	4,553
296.80	4,591	4,937
296.90	4,591	5,317
297.00	4,591	5,697
297.10	4,591	6,076
297.20	4,591	6,453
297.30	4,591	6,828
297.40	4,591	7,201
297.50	4,591	7,573
297.60	4,591	7,942
297.70	4,591	8,310
297.80	4,591	8,677
297.90	4,591	9,041
298.00	4,591	9,404
298.10	4,591	9,763
298.20	4,591	10,121
298.30	4,591	10,476
298.40	4,591	10,827
298.50	4,591	11,175
298.60	4,591	11,520
298.70	4,591	11,859
298.80	4,591	12,194
298.90	4,591	12,523
299.00	4,591	12,847
299.10	4,591	13,164
299.20	4,591	13,474
299.30	4,591	13,776
299.40	4,591	14,069
299.50	4,591	14,353
299.60	4,591	14,623
299.70	4,591	14,874
299.80	4,591	15,103
299.90	4,591	15,310
300.00	4,591	15,503
300.10	4,591	15,687
300.20	4,591	15,871
300.30	4,591	16,054
300.40	4,591	16,238
300.50	4,591	16,422
300.60	4,591	16,605
300.70	4,591	16,789
300.80	4,591	16,973
300.90	4,591	17,156
301.00	4,591	**17,340**

Summary for Pond P-3: Surface Pond

Inflow Area = 91,062 sf, 59.69% Impervious, Inflow Depth = 7.01" for 100-yr event
Inflow = 11.79 cfs @ 12.13 hrs, Volume= 53,184 cf
Outflow = 6.34 cfs @ 12.32 hrs, Volume= 53,184 cf, Atten= 46%, Lag= 11.0 min
Primary = 6.34 cfs @ 12.32 hrs, Volume= 53,184 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 304.37' @ 12.32 hrs Surf.Area= 4,686 sf Storage= 6,671 cf

Plug-Flow detention time= 7.1 min calculated for 53,129 cf (100% of inflow)
Center-of-Mass det. time= 7.1 min (804.4 - 797.3)

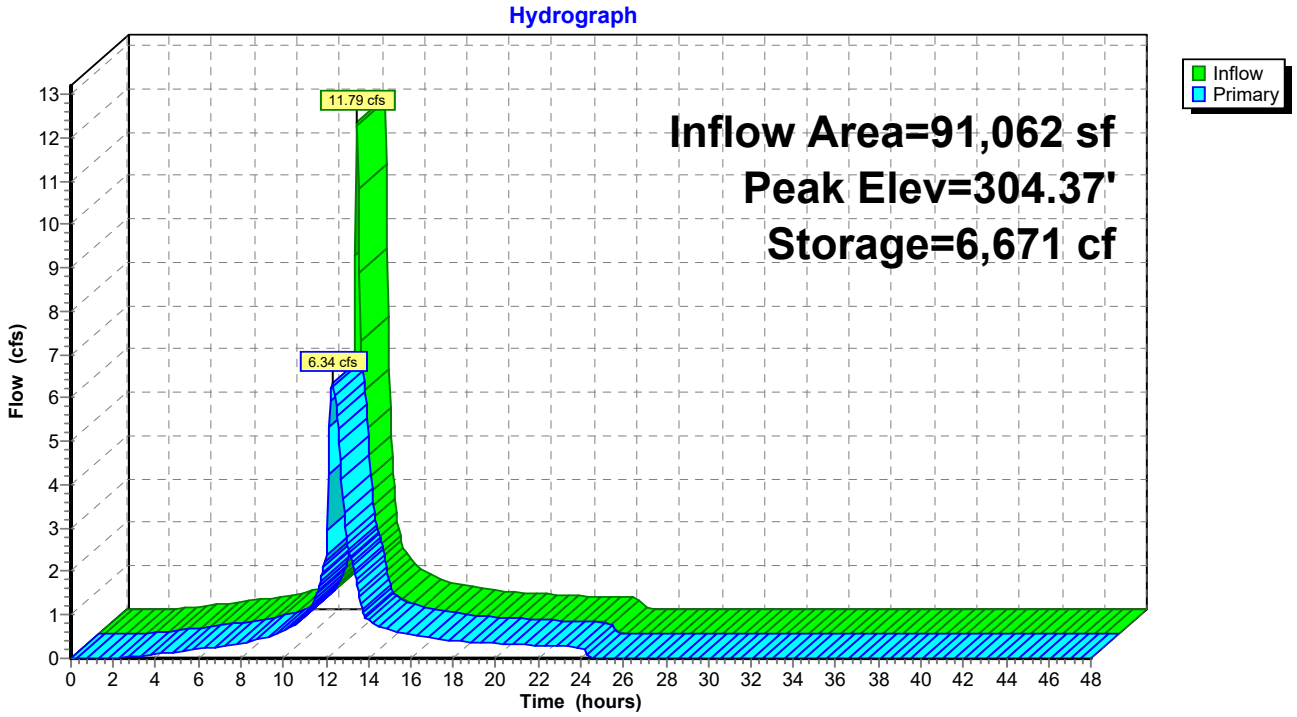
Volume	Invert	Avail.Storage	Storage Description
#1	301.00'	9,905 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
301.00	1	0	0
302.00	643	322	322
303.00	2,322	1,483	1,805
304.00	4,126	3,224	5,029
305.00	5,627	4,877	9,905

Device	Routing	Invert	Outlet Devices
#1	Primary	301.00'	**12.0" Round Culvert** L= 118.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 301.00' / 290.50' S= 0.0890 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf
#2	Device 1	301.00'	**8.5" Vert. Orifice/Grate** C= 0.600
#3	Device 1	304.75'	**2.0" x 2.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	303.00'	**11.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=6.32 cfs @ 12.32 hrs HW=304.37' (Free Discharge)
└─**1=Culvert** (Passes 6.32 cfs of 6.40 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 3.29 cfs @ 8.36 fps)
  ├─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Orifice Controls 3.03 cfs @ 4.59 fps)

Pond P-3: Surface Pond



Stage-Area-Storage for Pond P-3: Surface Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
301.00	1	0
301.05	33	1
301.10	65	3
301.15	97	7
301.20	129	13
301.25	162	20
301.30	194	29
301.35	226	40
301.40	258	52
301.45	290	65
301.50	322	81
301.55	354	98
301.60	386	116
301.65	418	136
301.70	450	158
301.75	483	181
301.80	515	206
301.85	547	233
301.90	579	261
301.95	611	291
302.00	643	322
302.05	727	356
302.10	811	395
302.15	895	437
302.20	979	484
302.25	1,063	535
302.30	1,147	590
302.35	1,231	650
302.40	1,315	714
302.45	1,399	781
302.50	1,483	853
302.55	1,566	930
302.60	1,650	1,010
302.65	1,734	1,095
302.70	1,818	1,183
302.75	1,902	1,276
302.80	1,986	1,374
302.85	2,070	1,475
302.90	2,154	1,581
302.95	2,238	1,690
303.00	2,322	1,805
303.05	2,412	1,923
303.10	2,502	2,046
303.15	2,593	2,173
303.20	2,683	2,305
303.25	2,773	2,441
303.30	2,863	2,582
303.35	2,953	2,728
303.40	3,044	2,878
303.45	3,134	3,032
303.50	3,224	3,191
303.55	3,314	3,354
303.60	3,404	3,522
303.65	3,495	3,695
303.70	3,585	3,872
303.75	3,675	4,053
303.80	3,765	4,239
303.85	3,855	4,430
303.90	3,946	4,625
303.95	4,036	4,824
304.00	4,126	5,029
304.05	4,201	5,237
304.10	4,276	5,449
304.15	4,351	5,664
304.20	4,426	5,884
304.25	4,501	6,107
304.30	4,576	6,334
304.35	4,651	6,565
304.40	4,726	6,799
304.45	4,801	7,037
304.50	4,877	7,279
304.55	4,952	7,525
304.60	5,027	7,774
304.65	5,102	8,027
304.70	5,177	8,284
304.75	5,252	8,545
304.80	5,327	8,810
304.85	5,402	9,078
304.90	5,477	9,350
304.95	5,552	9,626
305.00	**5,627**	**9,905**

APPENDIX C

PROPOSED HYDRAULIC ANALYSIS (10-YEAR STORM)

Computation Tables

Hydraulic Profiles

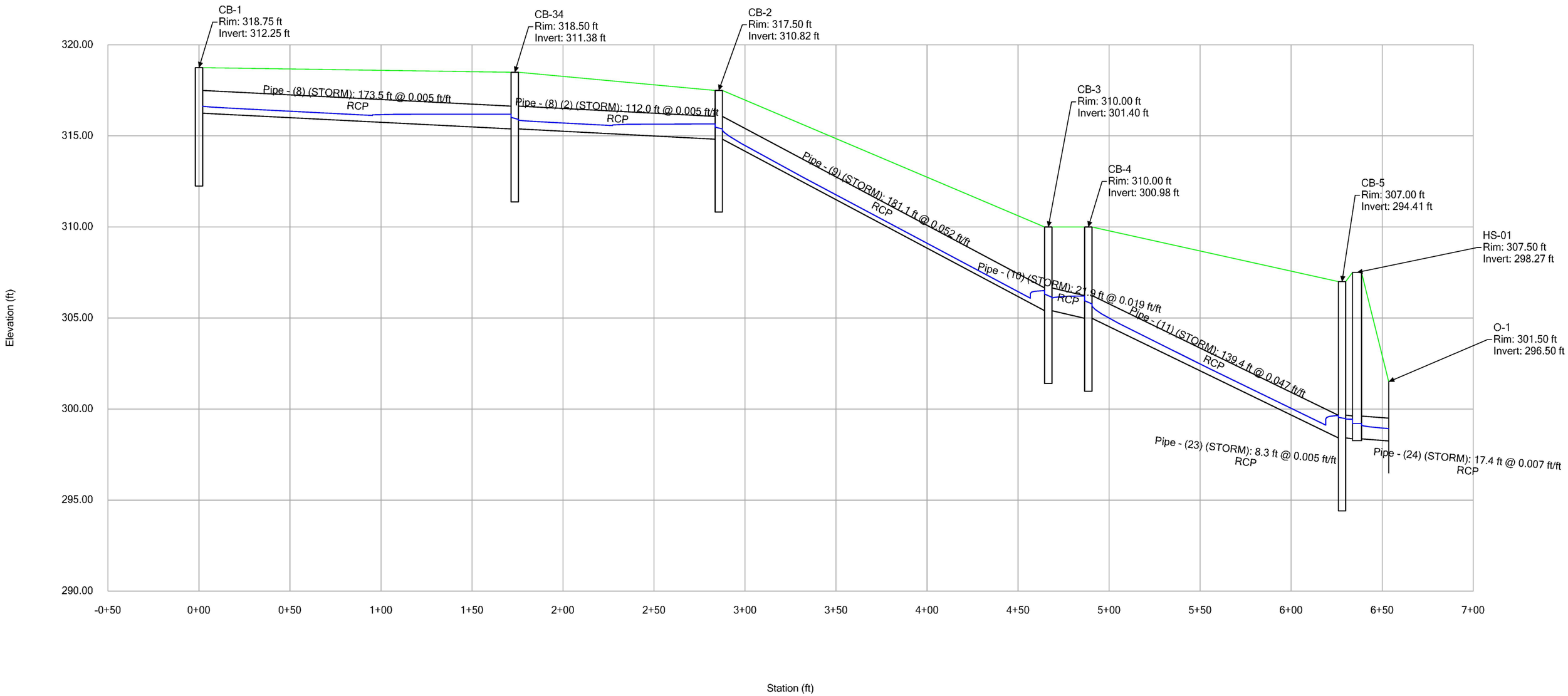
FlexTable: Conduit:DOT Hydraulic Grade Line Computations

Label	Start Node	Stop Node	Diameter (in)	Material	Size	Length (ft)	System Rational Flow (cfs)	Total System Flow (cfs)	Capacity (Full Flow) (cfs)	Velocity (ft/s)	Slope (Calculated) (ft/ft)	Invert (Start) (ft)	Invert (Stop) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)
Pipe - (8) (2) (STORM)	CB-34	CB-2	15.0	<None>	<None>	112.0	1.53	1.53	5.40	3.79	0.005	315.38	314.82	316.06	315.70	315.87	315.65	318.50	317.50
Pipe - (8) (STORM)	CB-1	CB-34	15.0	<None>	<None>	173.5	0.95	0.95	5.40	3.32	0.005	316.25	315.38	316.77	316.22	316.63	316.20	318.75	318.50
Pipe - (9) (STORM)	CB-2	CB-3	15.0	<None>	<None>	181.1	1.77	1.77	17.41	9.12	0.052	314.82	305.40	315.55	306.54	315.35	306.50	317.50	310.00
Pipe - (10) (STORM)	CB-3	CB-4	15.0	<None>	<None>	21.9	2.53	2.53	10.59	7.09	0.019	305.40	304.98	306.30	306.27	306.09	306.20	310.00	310.00
Pipe - (11) (STORM)	CB-4	CB-5	15.0	<None>	<None>	139.4	3.14	3.14	16.58	10.38	0.047	304.98	298.41	305.99	299.74	305.70	299.64	310.00	307.00
Pipe - (12) (STORM)	CB-6	CB-7	24.0	<None>	<None>	23.9	4.41	4.41	18.90	1.40	0.005	299.00	298.88	301.44	301.43	301.41	301.40	302.00	302.00
Pipe - (14) (STORM)	CB-7	CB-13	24.0	<None>	<None>	112.4	4.88	4.88	18.31	1.55	0.005	298.88	298.37	301.38	301.35	301.35	301.31	302.00	306.75
Pipe - (17) (STORM)	CB-11	CB-12	18.0	<None>	<None>	87.3	5.98	5.98	23.01	10.94	0.034	311.00	308.00	312.35	310.96	311.95	310.78	314.16	311.80
Pipe - (18) (STORM)	CB-12	CB-13	18.0	<None>	<None>	119.9	11.53	11.53	34.48	17.57	0.077	308.00	298.87	310.08	301.60	309.29	300.94	311.80	306.75
Pipe - (19) (STORM)	HS-02	CB-13	24.0	<None>	<None>	27.8	16.42	16.42	18.78	5.23	0.005	298.37	298.25	300.90	300.81	300.48	300.39	307.40	306.75
Pipe - (20) (STORM)	HS-02	O-2	24.0	<None>	<None>	10.8	16.33	16.33	19.52	6.96	0.005	298.25	298.19	300.40	300.34	299.71	299.60	307.40	301.50
Pipe - (23) (STORM)	CB-5	HS-01	15.0	<None>	<None>	9.1	3.42	3.42	5.40	4.66	0.005	298.41	298.37	299.60	299.57	299.45	299.44	307.00	307.50
Pipe - (24) (STORM)	HS-01	O-1	15.0	<None>	<None>	17.5	3.42	3.42	6.21	5.18	0.007	298.37	298.25	299.42	299.32	299.11	298.92	307.50	301.50
Pipe - (25) (STORM)	CB-8	CB-9	18.0	<None>	<None>	72.0	4.43	4.43	8.78	2.51	0.005	315.25	314.89	316.85	316.76	316.76	316.67	318.75	318.75
Pipe - (26) (STORM)	CB-9	CB-10	18.0	<None>	<None>	64.2	5.41	5.41	8.77	3.06	0.005	314.89	314.57	316.63	316.51	316.49	316.36	318.75	318.25
Pipe - (27) (STORM)	CB-10	CB-11	18.0	<None>	<None>	103.8	5.55	5.55	23.02	10.72	0.034	314.57	311.00	315.86	312.76	315.48	312.60	318.25	314.16
Pipe - (28) (STORM)	CB-14	CB-15	18.0	<None>	<None>	27.9	1.15	1.15	0.00	0.65	0.000	308.30	308.30	311.11	311.10	311.10	311.10	314.00	313.80
Pipe - (29) (STORM)	CB-15	CB-16	18.0	<None>	<None>	38.1	2.11	2.11	9.01	1.19	0.005	308.30	308.11	311.09	311.08	311.07	311.06	313.80	311.80
Pipe - (30) (STORM)	CB-16	CB-12	18.0	<None>	<None>	24.0	5.32	5.32	8.40	3.01	0.005	308.11	308.00	310.99	310.95	310.85	310.80	311.80	311.80
Pipe - (31) (STORM)	CB-31	CB-30	15.0	<None>	<None>	108.3	4.24	4.24	7.30	3.46	0.009	299.25	298.26	301.36	301.03	301.18	300.84	306.50	306.00
Pipe - (32) (STORM)	CB-28	CB-30	24.0	<None>	<None>	31.9	5.01	5.01	19.27	1.59	0.005	297.67	297.51	301.02	300.99	300.92	300.90	305.50	306.00
Pipe - (33) (STORM)	CB-29	CB-28	24.0	<None>	<None>	100.6	3.43	3.43	20.30	1.09	0.006	298.25	297.67	301.12	301.11	301.10	301.09	301.50	305.50
Pipe - (35) (STORM)	CB-30	HS-03	18.0	<None>	<None>	23.1	8.06	8.06	8.63	4.56	0.005	297.51	297.40	300.16	299.93	299.38	299.14	306.00	305.00
Pipe - (36) (STORM)	HS-03	O-3	24.0	<None>	<None>	26.1	8.04	8.04	12.82	4.31	0.002	297.40	297.34	299.34	299.28	299.00	298.94	305.00	301.00
Pipe - (38) (STORM)	CB-26	CB-27	18.0	<None>	<None>	24.0	1.39	1.39	13.66	0.79	0.012	299.25	298.96	301.17	301.17	301.16	301.16	309.30	309.30
Pipe - (39) (STORM)	CB-27	CB-28	24.0	<None>	<None>	158.1	2.78	2.78	18.90	0.89	0.005	298.46	297.67	301.14	301.11	301.12	301.08	309.30	305.50
Pipe - (41) (STORM)	CB-24	CB-25	24.0	<None>	<None>	24.0	1.14	1.14	18.89	0.36	0.005	299.02	298.90	301.17	301.17	301.17	301.17	302.06	302.06
Pipe - (42) (STORM)	CB-25	CB-27	24.0	<None>	<None>	88.8	1.24	1.24	19.01	0.40	0.005	298.90	298.46	301.17	301.16	301.16	301.16	302.06	309.30
Pipe - (43) (STORM)	CB-23	CB-24	24.0	<None>	<None>	20.0	0.81	0.81	18.90	0.26	0.005	299.12	299.02	301.17	301.17	301.17	301.17	304.50	302.06
Pipe - (44) (1) (STORM)	CB-22	HS-04	15.0	<None>	<None>	10.6	5.03	5.03	7.46	4.10	0.010	305.25	305.18	306.94	306.91	306.68	306.65	307.50	310.00
Pipe - (44) (STORM)	HS-04	O-4	15.0	<None>	<None>	16.3	5.03	5.03	8.02	6.90	0.011	305.18	305.00	306.52	306.39	306.09	305.77	310.00	306.25
Pipe - (45) (STORM)	CB-21	CB-22	15.0	<None>	<None>	86.9	4.73	4.73	14.37	10.49	0.035	308.25	305.25	309.54	307.28	309.13	307.05	312.53	307.50
Pipe - (46) (STORM)	CB-18	CB-21	15.0	<None>	<None>	72.8	4.52	4.52	13.83	10.09	0.033	310.59	308.25	311.84	310.38	311.45	310.17	316.00	312.53
Pipe - (47) (STORM)	CB-20	CB-18	15.0	<None>	<None>	48.7	1.24	1.24	5.21	1.01	0.005	310.81	310.59	312.55	312.54	312.53	312.52	315.75	316.00
Pipe - (48) (STORM)	CB-19	CB-20	15.0	<None>	<None>	138.7	0.74	0.74	5.43	3.09	0.005	311.50	310.81	312.57	312.56	312.57	312.55	313.75	315.75
Pipe - (49) (STORM)	CB-17	CB-18	15.0	<None>	<None>	51.7	3.59	3.59	19.03	11.91	0.062	313.80	310.59	314.89	312.58	314.57	312.45	315.75	316.00
Pipe - (50) (STORM)	CB-32	CB-27	18.0	<None>	<None>	50.4	1.11	1.11	8.74	0.63	0.005	299.21	298.96	301.17	301.16	301.16	301.16	311.60	309.30
Pipe - (51) (STORM)	CB-33	CB-34	15.0	<None>	<None>	24.5	0.36	0.36	10.90	4.11	0.020	315.88	315.38	316.22	316.21	316.17	316.21	318.50	318.50
Pipe - (52) (STORM)	CB-35	CB-6	24.0	<None>	<None>	14.9	3.18	3.18	18.90	1.01	0.005	299.08	299.00	301.46	301.46	301.44	301.44	303.00	302.00
Pipe - (55) (STORM)	RL-5	CB-31	12.0	<None>	<None>	43.1	1.62	1.62	7.78	7.82	0.034	301.00	299.50	301.76	301.52	301.54	301.46	350.00	306.50
Pipe - (56) (STORM)	RL-4	CB-31	12.0	<None>	<None>	62.4	1.69	1.69	6.63	7.06	0.025	301.00	299.50	301.78	301.53	301.55	301.46	350.00	306.50
Pipe - (57) (STORM)	RL-3	CB-17	12.0	<None>	<None>	119.7	3.06	3.06	5.54	7.23	0.017	316.00	313.93	317.12	315.59	316.75	315.35	350.00	315.75
Pipe - (59) (STORM)	RL-2	CB-8	12.0	<None>	<None>	64.7	3.06	3.06	7.88	9.41	0.035	318.00	315.75	319.12	317.04	318.75	316.80	350.00	318.75
Pipe - (60) (STORM)	RL-1	CB-16	12.0	<None>	<None>	15.7	3.06	3.06	13.56	3.90	0.104	310.00	308.61	311.24	311.17	311.00	310.93	350.00	311.80

FlexTable: Conduit: DOT Storm Drain Computations

Start Node	Stop Node	Length (ft)	Upstream Inlet Area (acres)	Upstream Inlet C	System CA (acres)	System Flow Time (min)	System Intensity (in/h)	Flow (cfs)	Capacity (Full Flow) (cfs)	Diameter (in)	Velocity (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Slope (Calculated) (ft/ft)
HS-04	O-4	16.3	(N/A)	(N/A)	1.150	13.956	4.336	5.03	8.02	15.0	6.90	305.18	305.00	0.011
HS-01	O-1	17.5	(N/A)	(N/A)	0.556	8.000	6.094	3.42	6.21	15.0	5.18	298.37	298.25	0.007
HS-02	O-2	10.8	(N/A)	(N/A)	2.615	7.765	6.195	16.33	19.52	24.0	6.96	298.25	298.19	0.005
HS-02	CB-13	27.8	(N/A)	(N/A)	2.615	7.687	6.229	16.42	18.78	24.0	5.23	298.37	298.25	0.005
HS-03	O-3	26.1	(N/A)	(N/A)	1.964	15.453	4.063	8.04	12.82	24.0	4.31	297.40	297.34	0.002
CB-1	CB-34	173.5	(N/A)	(N/A)	0.136	6.000	6.958	0.95	5.40	15.0	3.32	316.25	315.38	0.005
CB-2	CB-3	181.1	(N/A)	(N/A)	0.276	7.364	6.369	1.77	17.41	15.0	9.12	314.82	305.40	0.052
CB-3	CB-4	21.9	(N/A)	(N/A)	0.403	7.695	6.226	2.53	10.59	15.0	7.09	305.40	304.98	0.019
CB-4	CB-5	139.4	(N/A)	(N/A)	0.502	7.747	6.203	3.14	16.58	15.0	10.38	304.98	298.41	0.047
CB-5	HS-01	9.1	(N/A)	(N/A)	0.556	7.970	6.107	3.42	5.40	15.0	4.66	298.41	298.37	0.005
CB-6	CB-7	23.9	(N/A)	(N/A)	0.638	6.246	6.852	4.41	18.90	24.0	1.40	299.00	298.88	0.005
CB-7	CB-13	112.4	(N/A)	(N/A)	0.720	6.530	6.729	4.88	18.31	24.0	1.55	298.88	298.37	0.005
CB-8	CB-9	72.0	(N/A)	(N/A)	0.636	6.114	6.909	4.43	8.78	18.0	2.51	315.25	314.89	0.005
CB-9	CB-10	64.2	(N/A)	(N/A)	0.801	6.592	6.702	5.41	8.77	18.0	3.06	314.89	314.57	0.005
CB-10	CB-11	103.8	(N/A)	(N/A)	0.841	6.942	6.551	5.55	23.02	18.0	10.72	314.57	311.00	0.034
CB-11	CB-12	87.3	(N/A)	(N/A)	0.916	7.103	6.481	5.98	23.01	18.0	10.94	311.00	308.00	0.034
CB-12	CB-13	119.9	(N/A)	(N/A)	1.795	7.351	6.374	11.53	34.48	18.0	17.57	308.00	298.87	0.077
CB-14	CB-15	27.9	(N/A)	(N/A)	0.164	6.000	6.958	1.15	0.00	18.0	0.65	308.30	308.30	0.000
CB-15	CB-16	38.1	(N/A)	(N/A)	0.315	6.715	6.649	2.11	9.01	18.0	1.19	308.30	308.11	0.005
CB-16	CB-12	24.0	(N/A)	(N/A)	0.820	7.218	6.432	5.32	8.40	18.0	3.01	308.11	308.00	0.005
CB-17	CB-18	51.7	(N/A)	(N/A)	0.806	13.600	4.416	3.59	19.03	15.0	11.91	313.80	310.59	0.062
CB-18	CB-21	72.8	(N/A)	(N/A)	1.020	13.672	4.400	4.52	13.83	15.0	10.09	310.59	308.25	0.033
CB-19	CB-20	138.7	(N/A)	(N/A)	0.105	6.000	6.958	0.74	5.43	15.0	3.09	311.50	310.81	0.005
CB-20	CB-18	48.7	(N/A)	(N/A)	0.185	6.740	6.638	1.24	5.21	15.0	1.01	310.81	310.59	0.005
CB-21	CB-22	86.9	(N/A)	(N/A)	1.073	13.790	4.373	4.73	14.37	15.0	10.49	308.25	305.25	0.035
CB-22	HS-04	10.6	(N/A)	(N/A)	1.150	13.925	4.343	5.03	7.46	15.0	4.10	305.25	305.18	0.010
CB-23	CB-24	20.0	(N/A)	(N/A)	0.115	6.000	6.958	0.81	18.90	24.0	0.26	299.12	299.02	0.005
CB-24	CB-25	24.0	(N/A)	(N/A)	0.177	7.300	6.397	1.14	18.89	24.0	0.36	299.02	298.90	0.005
CB-25	CB-27	88.8	(N/A)	(N/A)	0.208	8.402	5.920	1.24	19.01	24.0	0.40	298.90	298.46	0.005
CB-26	CB-27	24.0	(N/A)	(N/A)	0.198	6.000	6.958	1.39	13.66	18.0	0.79	299.25	298.96	0.012
CB-27	CB-28	158.1	(N/A)	(N/A)	0.580	12.074	4.761	2.78	18.90	24.0	0.89	298.46	297.67	0.005
CB-28	CB-30	31.9	(N/A)	(N/A)	1.213	15.047	4.096	5.01	19.27	24.0	1.59	297.67	297.51	0.005
CB-29	CB-28	100.6	(N/A)	(N/A)	0.489	6.000	6.958	3.43	20.30	24.0	1.09	298.25	297.67	0.006
CB-30	HS-03	23.1	(N/A)	(N/A)	1.964	15.369	4.069	8.06	8.63	18.0	4.56	297.51	297.40	0.005
CB-31	CB-30	108.3	(N/A)	(N/A)	0.610	6.143	6.896	4.24	7.30	15.0	3.46	299.25	298.26	0.009
CB-32	CB-27	50.4	(N/A)	(N/A)	0.158	6.000	6.958	1.11	8.74	18.0	0.63	299.21	298.96	0.005
CB-33	CB-34	24.5	(N/A)	(N/A)	0.052	6.000	6.958	0.36	10.90	15.0	4.11	315.88	315.38	0.020
CB-34	CB-2	112.0	(N/A)	(N/A)	0.231	6.872	6.581	1.53	5.40	15.0	3.79	315.38	314.82	0.005
CB-35	CB-6	14.9	(N/A)	(N/A)	0.453	6.000	6.958	3.18	18.90	24.0	1.01	299.08	299.00	0.005
RL-1	CB-16	15.7	(N/A)	(N/A)	0.437	6.000	6.958	3.06	13.56	12.0	3.90	310.00	308.61	0.104
RL-2	CB-8	64.7	(N/A)	(N/A)	0.437	6.000	6.958	3.06	7.88	12.0	9.41	318.00	315.75	0.035
RL-3	CB-17	119.7	(N/A)	(N/A)	0.437	6.000	6.958	3.06	5.54	12.0	7.23	316.00	313.93	0.017
RL-4	CB-31	62.4	(N/A)	(N/A)	0.241	6.000	6.958	1.69	6.63	12.0	7.06	301.00	299.50	0.025
RL-5	CB-31	43.1	(N/A)	(N/A)	0.231	6.000	6.958	1.62	7.78	12.0	7.82	301.00	299.50	0.034

Profile Report
Engineering Profile - CB-1 TO O-1 (1800513-Pipe Network.stsw)



Profile Report

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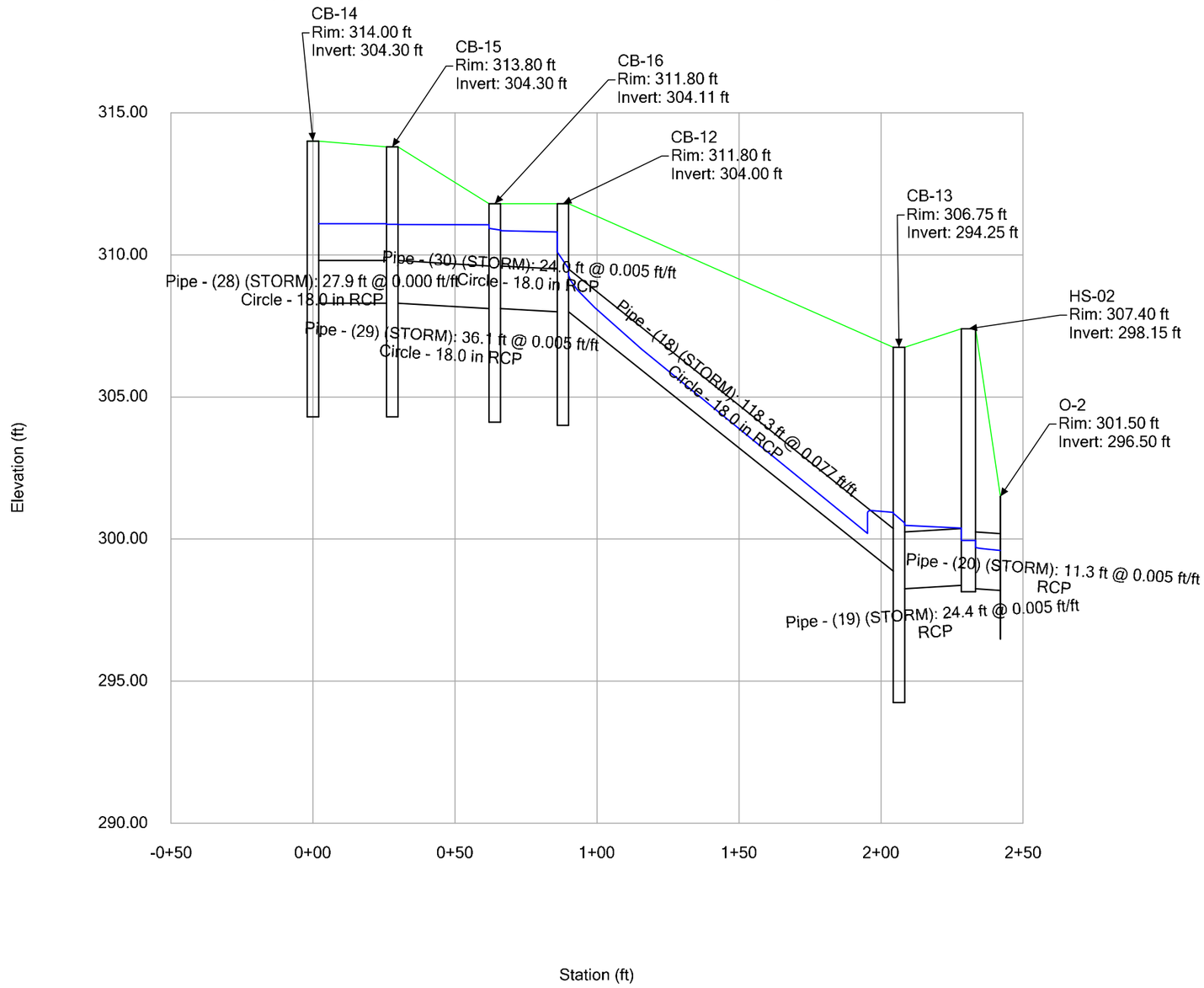

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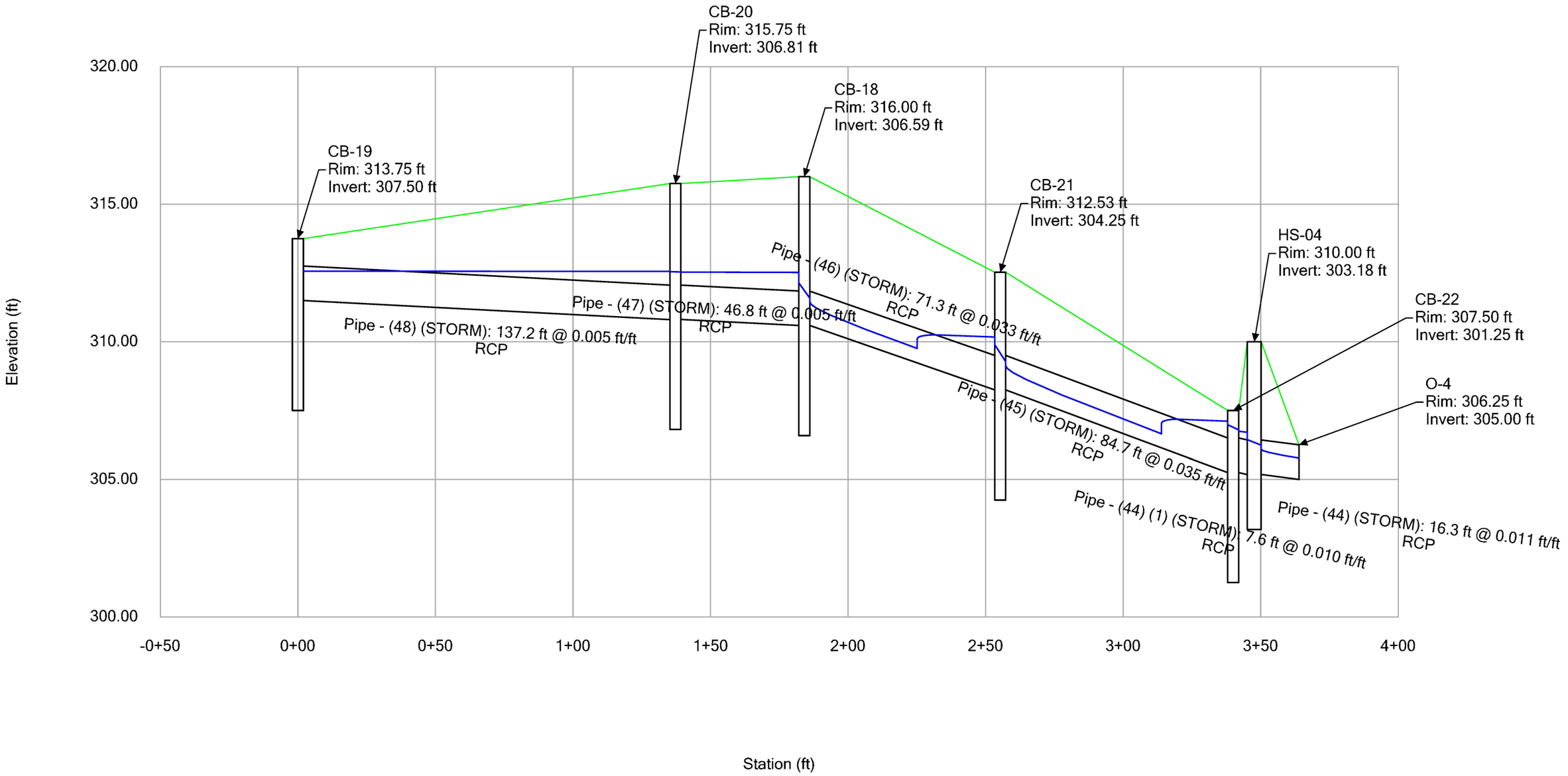

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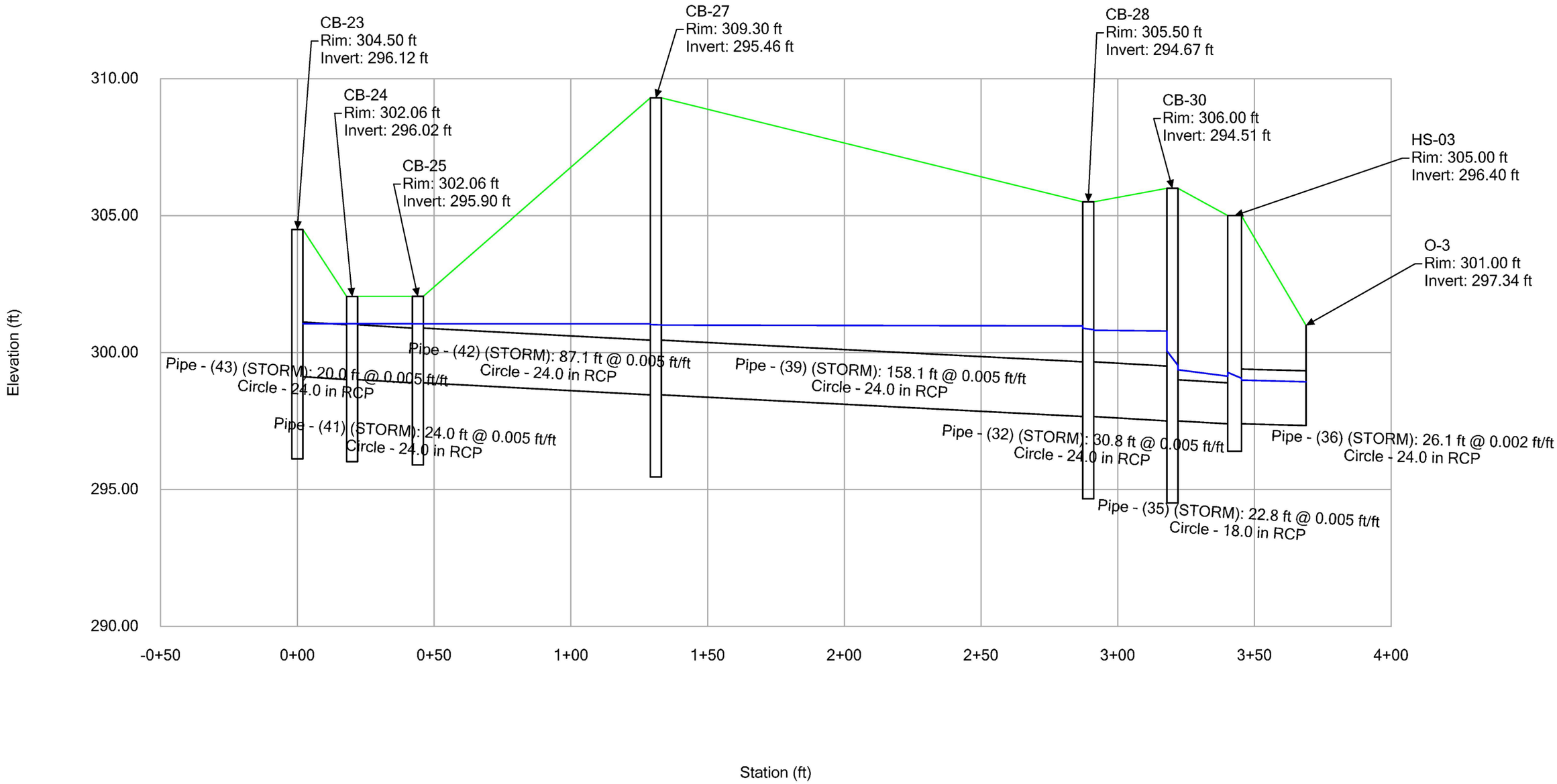

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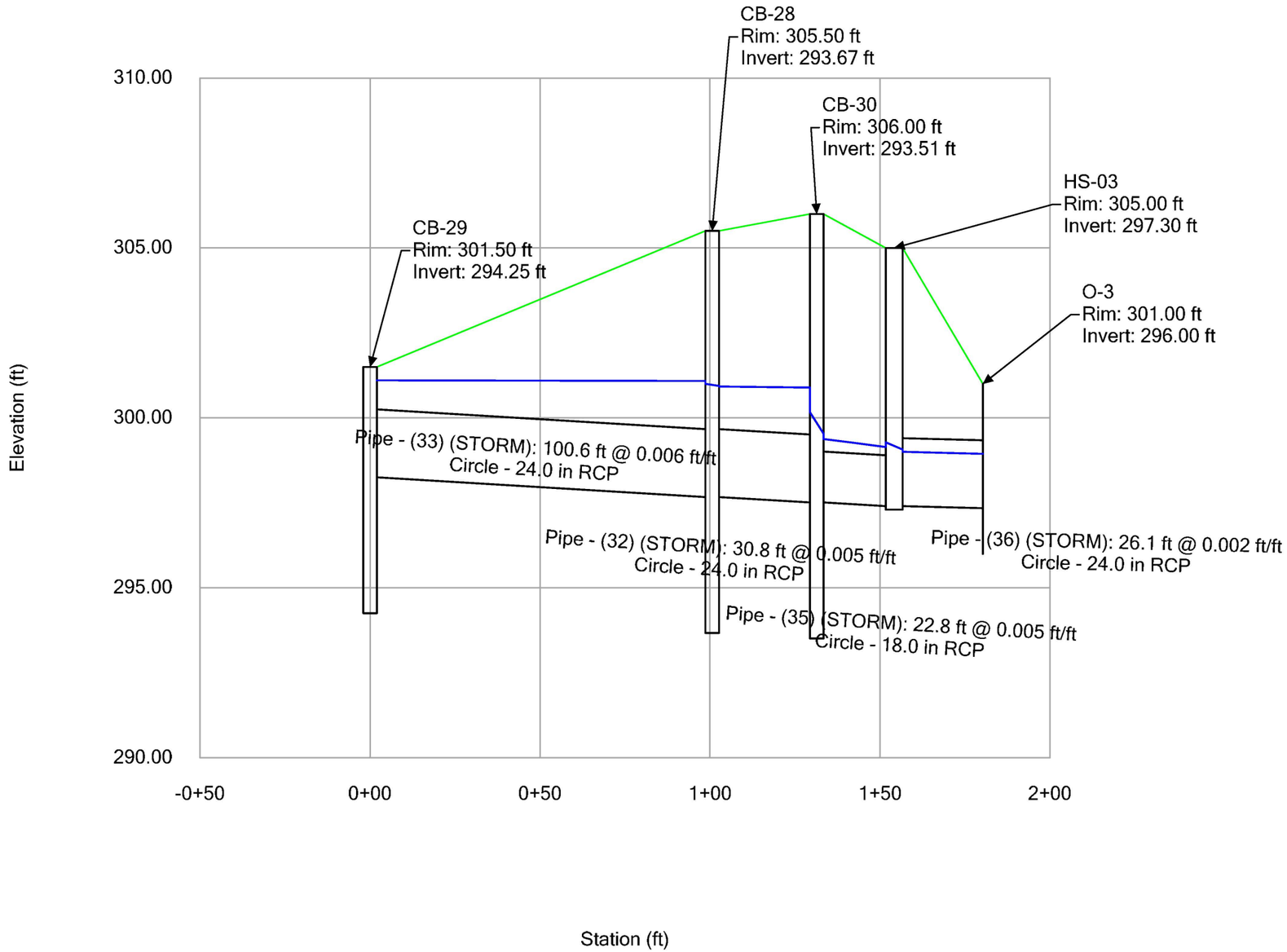

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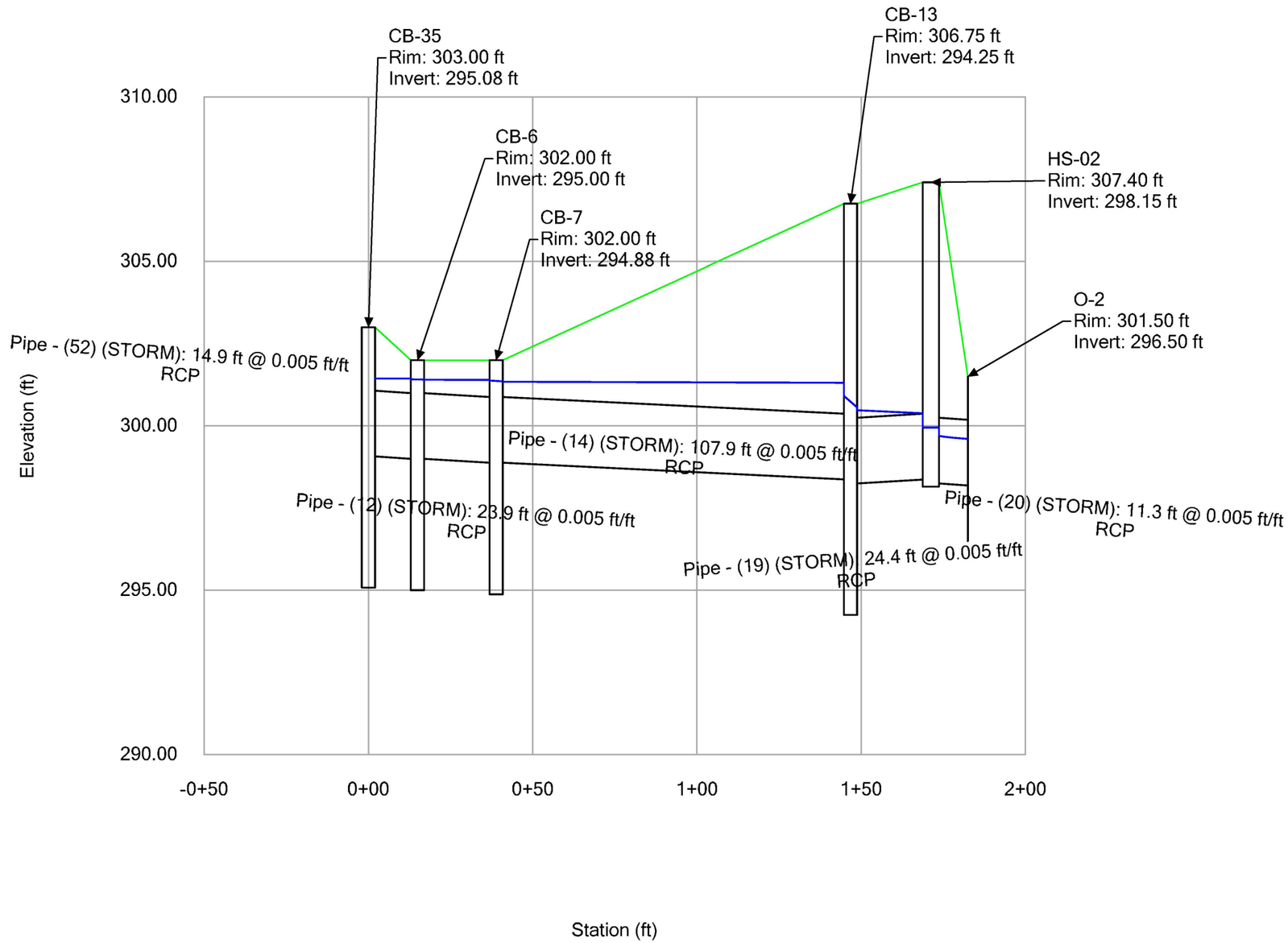

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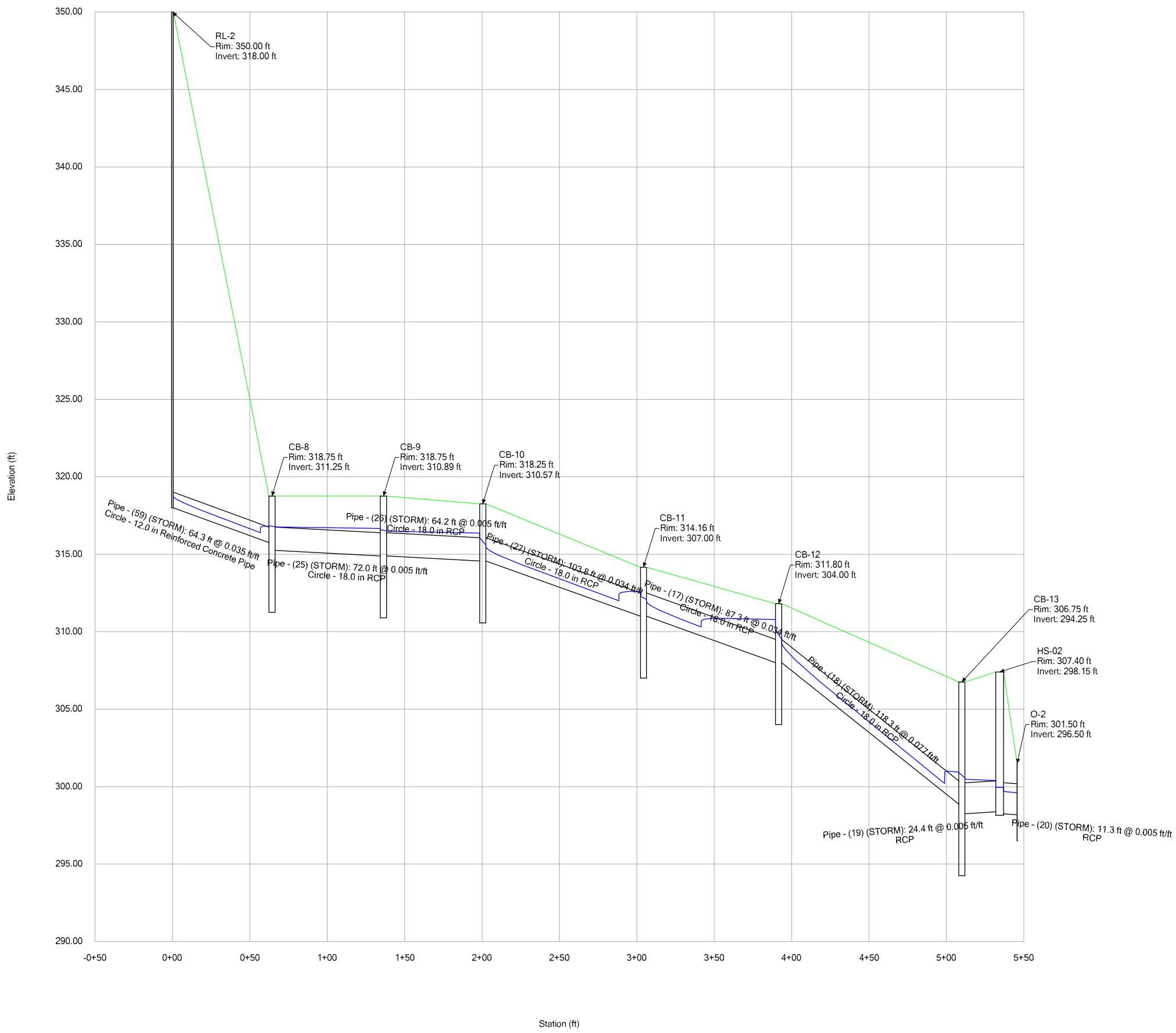

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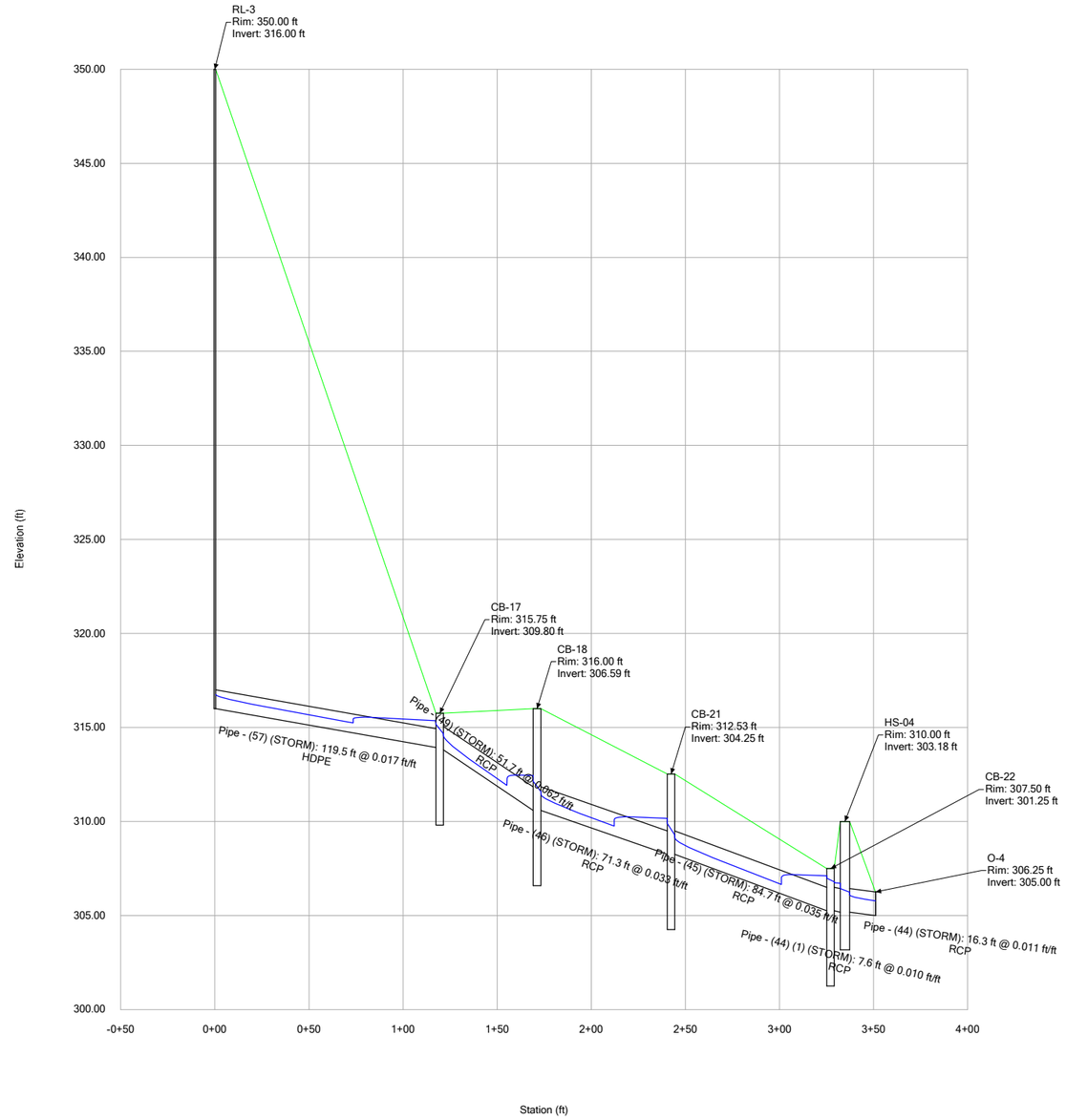

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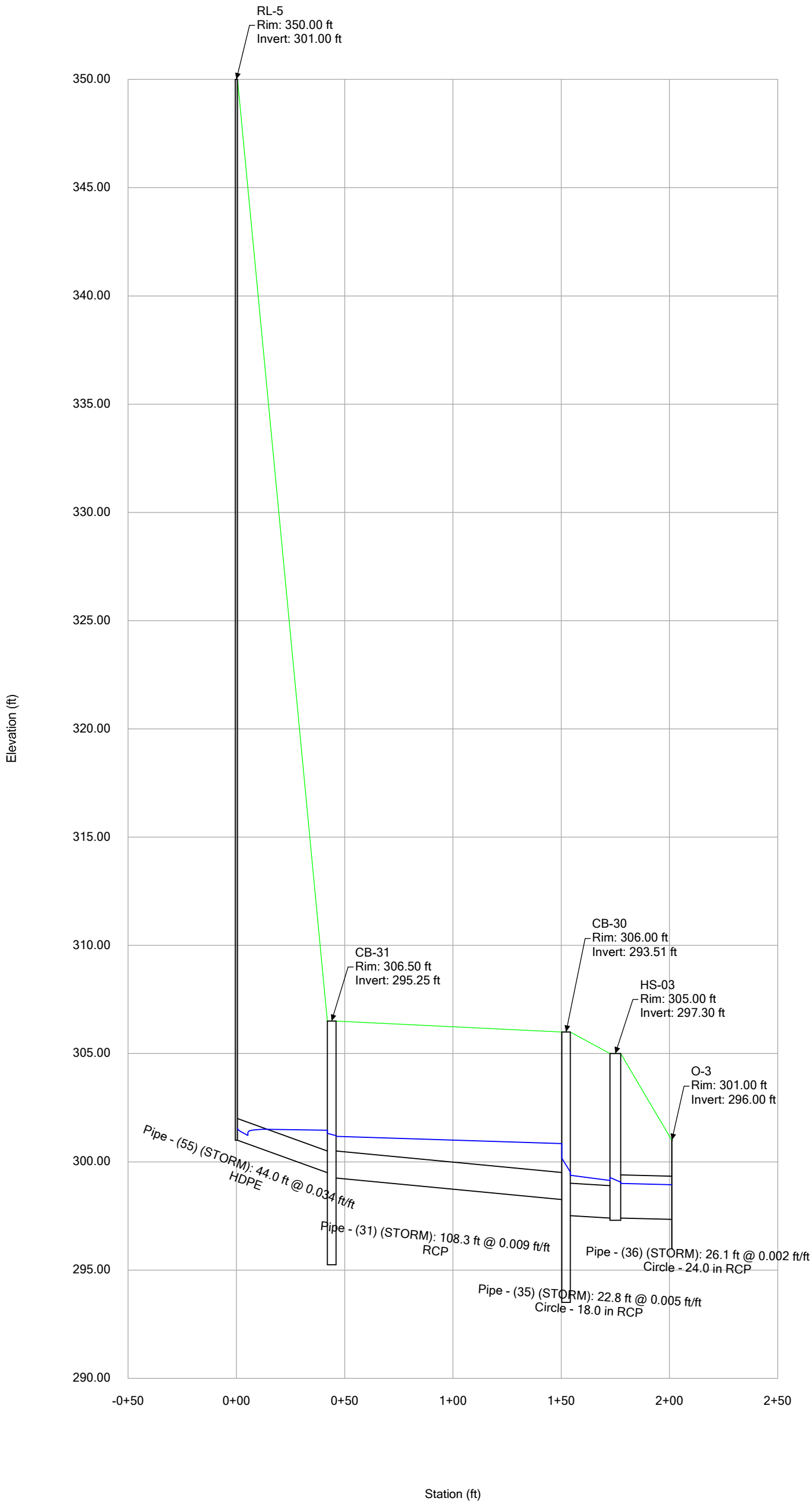


APPENDIX D

WATER QUALITY CALCULATIONS

Water Quality Volume and Water Quality Flow Calculations

Treatment Train Efficiency Worksheet

Water Quality Volume (WQV) & Water Quality Flow (WQF) PDA-102

PROJECT	Proposed Development
DATE	4/23/2020
ADDRESS	Main Street Trumbull

WATER QUALITY VOLUME (WQV) CALCULATION

Area (A) =	91523.00	square feet
Area (A) =	2.10	acres
Area (A) =	0.00328	square miles
Design Precipitation (P) =	1	inch
% Impervious Cover (I) =	80.10	
Volumetric Runoff Coefficient (R) =	0.771	
WQV =	**0.135**	**ac-ft**
	5879.58	**cu-ft**

WATER QUALITY FLOW (WQF) CALCULATION

RUNOFF CURVE NUMBER (CN)

Runoff Depth (Q) =	0.771	inches
CN =	98	Figure 2-1 (SWQM)

TIME OF CONCENTRATION (Tc), 10 minute minimum

Tc =	10	min
Tc =	0.17	hours
Initial Abstraction (I_a) =	0.041	Table 4-1 (SWQM)
I_a/P Calculation =	0.041	
Unit Peak Discharge (q_u) =	650	Exhibit 4-111 (SWQM)
WQF =	**1.65**	**cfs**

Water Quality Volume (WQV) & Water Quality Flow (WQF) PDA-202

PROJECT	Proposed Development
DATE	4/23/2020
ADDRESS	Main Street Trumbull

WATER QUALITY VOLUME (WQV) CALCULATION

Area (A) =	104679.00	square feet
Area (A) =	2.40	acres
Area (A) =	0.00375	square miles
Design Precipitation (P) =	1	inch
% Impervious Cover (I) =	86.30	
Volumetric Runoff Coefficient (R) =	0.827	
WQV =	**0.166**	**ac-ft**
	7211.50	**cu-ft**

WATER QUALITY FLOW (WQF) CALCULATION

RUNOFF CURVE NUMBER (CN)

Runoff Depth (Q) =	0.827	inches
CN =	98	Figure 2-1 (SWQM)

TIME OF CONCENTRATION (Tc), 10 minute minimum

Tc =	10	min
Tc =	0.17	hours

Initial Abstraction (I_a) =	0.041	Table 4-1 (SWQM)
I_a/P Calculation =	0.041	
Unit Peak Discharge (q_u) =	650	Exhibit 4-111 (SWQM)
WQF =	**2.02**	**cfs**

Water Quality Volume (WQV) & Water Quality Flow (WQF) PDA-302

PROJECT	Proposed Development
DATE	4/23/2020
ADDRESS	Main Street Trumbull

WATER QUALITY VOLUME (WQV) CALCULATION

Area (A) =	75000.00	square feet
Area (A) =	1.72	acres
Area (A) =	0.00269	square miles
Design Precipitation (P) =	1	inch
% Impervious Cover (I) =	85.00	
Volumetric Runoff Coefficient (R) =	0.815	

WQV =	**0.117**	**ac-ft**
	5093.74	**cu-ft**

WATER QUALITY FLOW (WQF) CALCULATION

RUNOFF CURVE NUMBER (CN)

Runoff Depth (Q) =	0.815	inches
CN =	98	Figure 2-1 (SWQM)

TIME OF CONCENTRATION (Tc), 10 minute minimum

Tc =	10	min
Tc =	0.17	hours

Initial Abstraction (I_a) =	0.041	Table 4-1 (SWQM)
I_a/P Calculation =	0.041	
Unit Peak Discharge (q_u) =	650	Exhibit 4-111 (SWQM)

WQF =	**1.43**	**cfs**

APPENDIX E

DRAINAGE MAPS

ED-1 – Existing Drainage Area Mapping

PD-1 – Proposed Drainage Area Mapping

CB-1 – Proposed Sub-catchment Drainage Area Mapping

EXISTING HYDROLOGY INFORMATION*

DRAINAGEA AREA	TOTAL AREA (S.F.)	IMPERVIOUS AREA (S.F.)	PERVIOUS AREA (S.F.)	PERCENT IMPERVIOUS (%)	CN	TIME OF CONCETRATIONS (MIN.)
EDA-100	359,310	40,098	319,212	11.2%	80	20.1
EDA-200	162,700	69,553	93,147	42.7%	86	14.4
EDA-300	221,943	100,396	121,547	45.2%	88	16.5

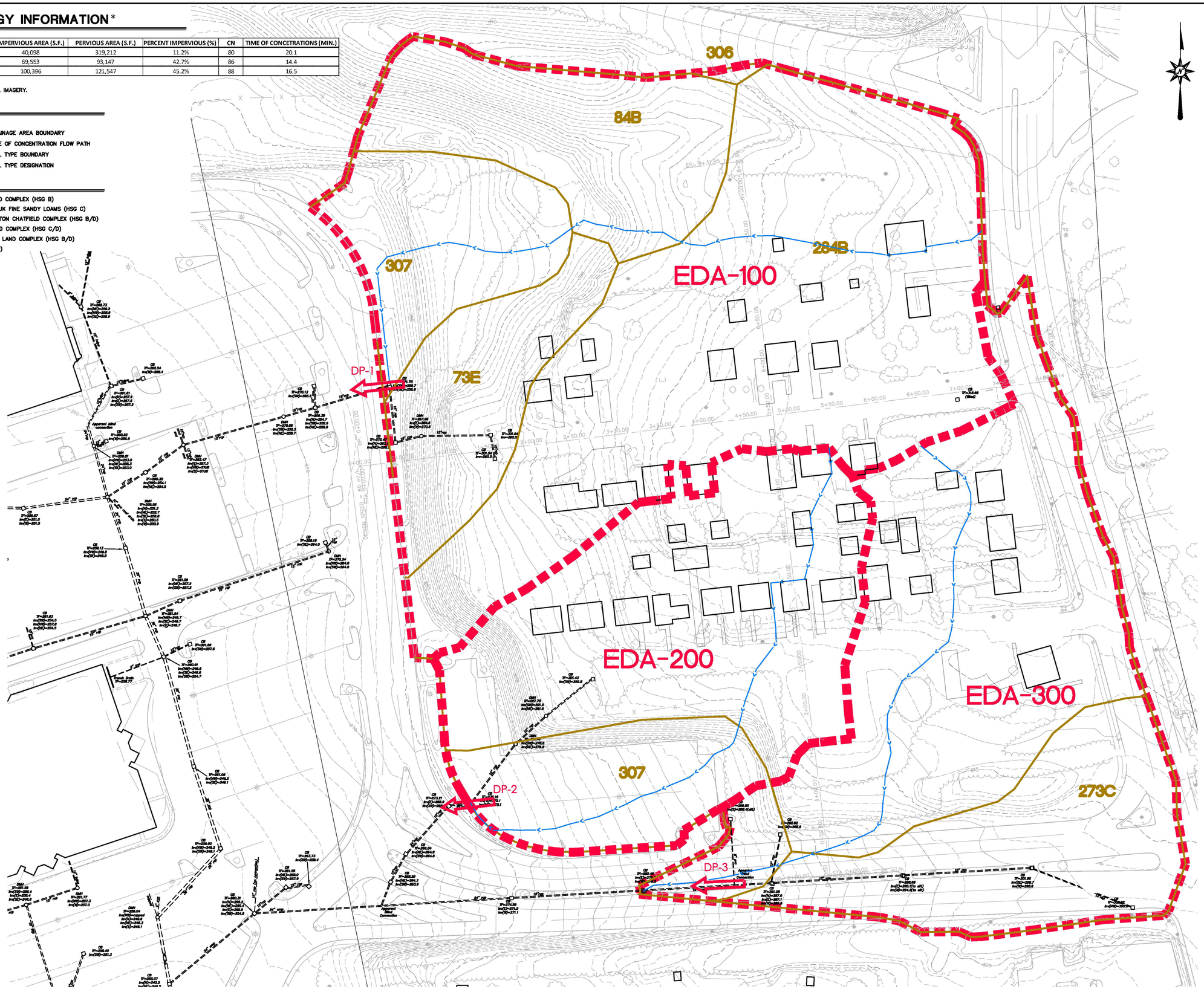
*COVERAGES WERE DETERMINED BY 1964 AERIAL IMAGERY.

LEGEND

- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION FLOW PATH
- SOIL TYPE BOUNDARY
- 84C — SOIL TYPE DESIGNATION

SOIL TYPES

- 73E — CHARLTON–CHATFIELD COMPLEX (HSG B)
- 84B — PAXTON AND MONTAUK FINE SANDY LOAMS (HSG C)
- 273C — URBAN LAND–CHARLTON CHATFIELD COMPLEX (HSG B/D)
- 284B — PAXTON–URBAN LAND COMPLEX (HSG C/D)
- 306 — UDORTHENTS–URBAN LAND COMPLEX (HSG B/D)
- 307 — URBAN LAND (HSG D)



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ROSE EQUITIES
Owner-Builders since 1949

THE RESIDENCES AT MAIN
K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS

No.	Date	Desc.

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	1"=50'
Project No.	1800513
Date	04/30/2020
CAD File: ED180051301	

Title
EXISTING DRAINAGE PLAN

Sheet No.
ED-1

Xref (s): ED180051301 : XY0GC153801 : XY180051302 : XZ180051301 : XC180051301 : XC180051302

PROPOSED HYDROLOGY INFORMATION

DRAINAGEA AREA	TOTAL AREA (S.F.)	IMPERVIOUS AREA (S.F.)	PERVIOUS AREA (S.F.)	PERCENT IMPERVIOUS (%)	CN	TIME OF CONCETRATIONS (MIN.)
PDA-101	146,162	13,083	133,079	9.0%	75	14.9
PDA-102	183,046	146,545	36,501	80.1%	93	6.0
PDA-201	71,843	37,705	34,138	52.5%	87	13.1
PDA-202	104,679	90,301	14,378	86.3%	95	6.0
PDA-301	145,655	86,502	59,153	59.4%	89	13.7
PDA-302	91,062	54,353	36,709	59.7%	88	13.6

LEGEND

- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION FLOW PATH
- SOIL TYPE BOUNDARY
- 84C — SOIL TYPE DESIGNATION

SOIL TYPES

- 73E — CHARLTON–CHATFIELD COMPLEX (HSG B)
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- 284B — PAXTON–URBAN LAND COMPLEX (HSG C/D)
- 306 — UDORTHENTS–URBAN LAND COMPLEX (HSG B/D)
- 307 — URBAN LAND (HSG D)

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K & K DEVELOPERS, INC.
5085 MAIN STREET
TRUMBULL, CONNECTICUT

REVISIONS No.	Date	Desc.

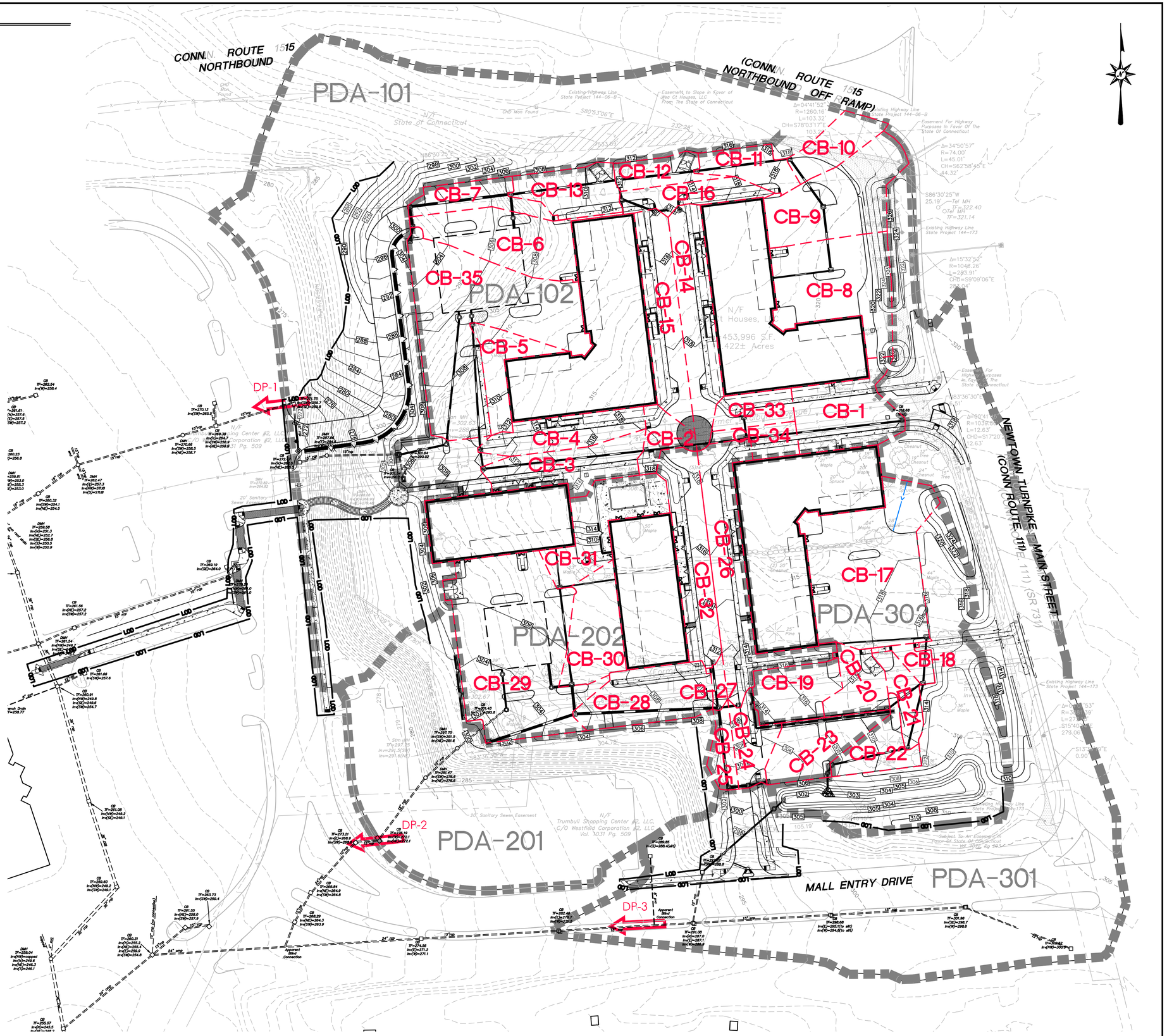
Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	1"=50'
Project No.	1800513
Date	04/30/2020
CAD File: PD180051301	

Title
PROPOSED DRAINAGE PLAN

Sheet No.
PD-1

Xref (s): BD180051301 ; XY05C13380I ; XY180051301 ; XY180051302 ; XC180051301 ; XC180051302 ; ED180051301 ; XZ180051301

PROPOSED HYDRAULIC INFORMATION



LEGEND

	DRAINAGE AREA BOUNDARY
	TIME OF CONCENTRATION FLOW PATH
	SOIL TYPE BOUNDARY
84C	SOIL TYPE DESIGNATION

SOIL TYPES

73E	CHARLTON–CHATFIELD COMPLEX (HSG B)
84B	PAXTON AND MONTAUK FINE SANDY LOAMS (HSG C)
273C	URBAN LAND–CHARLTON CHATFIELD COMPLEX (HSG B/D)
284B	PAXTON–URBAN LAND COMPLEX (HSG C/D)
306	UDORTHENTS–URBAN LAND COMPLEX (HSG B/D)
307	URBAN LAND (HSG D)

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5085 MAIN STREET
TRUMBULL, CONNECTICUT

No.	REVISIONS Date	Desc.

Designed	A.T.K.
Drawn	A.T.K.
Reviewed	J.J.S.
Scale	1"=50'
Project No.	1800513
Date	04/30/2020
CAD File:	CB180051301

Title
PROPOSED SUB-CATCHMENT MAPPING

Sheet No.
CB-1

Xref (s): BD180051301 ; XY05C13380I ; XY180051302 ; XY180051301 ; XC180051302 ; PD180051301 ; XT180051301

APPENDIX F

STORMWATER SYSTEM
OPERATION AND MAINTENANCE MANUAL

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An Employee-Owned Company

Appendix F:

Stormwater System Operations and Maintenance Plan

For the Proposed:

Residential Development

Located at:

5085 Main Street
Trumbull, Connecticut

Prepared for Submission to:

Town of Trumbull, Connecticut
Planning and Zoning Commission

April 30, 2020

Prepared for:

K&K Developers, Inc.
820 Morris Turnpike
Short Hills, NJ 07078

Prepared by:

Architecture
Engineering
Environmental
Land Surveying
Companies

BL Companies
355 Research Parkway
Meriden, Connecticut 06450
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Fax: (203) 630-2615

BL Project Number: 1800513

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LANDSCAPING 7
OUTDOOR STORAGE 7
DEICING AND SNOW REMOVAL & STORAGE 7

General Overview

The subject property is approximately 10.42 acres. Single-family residential properties once populated the property and have since been demolished. There are no existing wetlands near the subject property. The proposed redevelopment includes the construction of five apartment buildings and associated parking lots that will cover majority of the site and all associated parking, drainage and utilities associated with the proposed development. A stormwater management system is proposed for peak flow attenuation and stormwater treatment. The intent of the proposed site drainage is to mimic existing drainage patterns to the maximum extent practical. The site stormwater system will provide stormwater detention and quality improvements through deep sump catch basins with hoods, hydrodynamic separators, a surface and subsurface detention systems and a formalized street sweeping program for the impervious surfaces. These measures will treat the stormwater quality flow through structural means to provide water quality treatment in conformance with the State of Connecticut Water Quality Manual.

The following Operations and Maintenance Plan was prepared specifically for this proposed development in the Town of Trumbull, Connecticut. The Plan was developed to satisfy the requirements of the Connecticut Department of Energy and Environmental Protection's 2002 Connecticut Guidelines for Soil Erosion and Sediment Control.

Purpose & Goals

The purpose of this Manual is to ensure that the stormwater management components are operated in accordance with all approvals and permits. The primary goal is to inform all the property managers about how the system operates and what maintenance items are necessary to protect downstream wetlands and watercourses. The secondary goal is to provide a practical, efficient means of maintenance planning and record keeping verifying permit compliance.

Responsible Parties

The Property Owner will be responsible for implementing the Plan on the property.

Maintenance inspections shall be performed by a qualified professional.

Some utilities located on the site will be owned and maintained by various utility companies in accordance with their standards. The property owner may maintain the service connections.

List of Permits & Special Conditions

The project will receive several permits, which may contain special conditions that require compliance by the property owner and maintenance contractors. These permits may include the following:

- Town of Trumbull Permits –Site Plan Special Permit and Building Permit

- State of Connecticut – Encroachment Permit, OSTA Approval, CTDEEP Stormwater Discharge Construction General Permit

Maintenance Logs and Checklists

The property owner will keep a record of all maintenance procedures performed, date of inspection/ cleanings, etc. Copies of inspection reports and maintenance records shall be kept on-site.

Forms

The following forms will be developed for annual maintenance. Copies of the forms will be kept on-site as part of the Storm Water Management Plan.

- Annual Checklist
- Monthly Checklist
- Catch Basin Inspection Log

Employee Training

The property owner will have an employee-training program, with annual up-dates, to ensure that the qualified employees charged with maintaining the buildings and grounds do so in accordance with the approved permit conditions. All employees that have maintenance duties will be adequately informed of their responsibilities.

Spill Control

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and clean-up:

- Manufacturer's recommended methods for spill clean-up will be clearly posted and site personnel will be made aware of the procedures and the location of the information and clean-up supplies.
- Materials and equipment necessary for spill clean-up will be kept in the material storage area on-site. Equipment and materials will include but not be limited to: absorbent booms or mats, brooms, dust pans, mops, rags, gloves, goggles, sand, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned immediately after discovery.
- The spill area will be kept well-ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with hazardous substance.
- Spills of toxic or hazardous material, regardless of size, will be reported to the appropriate State or local government agency.
- If a spill occurs, this plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean the spill if there is another one. A description of the spill, the cause, and the remediation measures will also be included.

A spill report shall be prepared by the property owner following each occurrence. The spill report shall present a description of the release, including quantity and type of material, date of spill, circumstances leading to the release, location of spill, response actions and personnel, documentation of notifications and corrective measures implemented to prevent reoccurrence.

The property owner shall identify an appropriately qualified and trained site employee involved with day-to-day site operations to be the spill prevention and clean-up coordinator. The name(s) of responsible spill personnel shall be posted on-site. Each employee shall be instructed that all spills are to be reported to the spill prevention and clean-up coordinator.

Storm Water Management

System Components

The storm water management system has several components that are shown on the Grading and Drainage Plan (GD-1), that perform various functions in treating storm water runoff.

Catch Basins and Manholes

The property owner is responsible for cleaning the catch basins and manholes on the property. A Connecticut Licensed hauler shall clean the sumps and dispose of removed sand legally. The road sand may be reused for winter sanding but may not be stored on-site. As part of the hauling contract, the hauler shall notify the property owner in writing where the material is being disposed.

Each catch basin shall be inspected every four months, with one inspection occurring during the month of April. Any debris occurring within one foot from the bottom of each sump shall be removed by Vacuum "Vactor" type of maintenance equipment.

During the inspection of each of the catch basin sumps, the hoods (where provided) on each of the outlet pipes shall also be observed. In the event that a hood is damaged or off the hanger, it shall be reset or repaired.

Detention Pond Area

The detention pond area shall be checked for and cleaned of trash, excessive sediment, other debris and erosion. A detailed maintenance logbook shall be kept with information including, but not be limited to, the date of inspection, record of grit depth, condition of vegetation, observation of any floatables, and date of cleaning performed.

For the first year of operation following construction, inspect the detention area each month for the months of June, July, August and September, and once every six months thereafter. After the first year of operation, the detention area shall be inspected a minimum of two times yearly with one inspection occurring in the month of April. Any accumulations found to be occurring within one foot of the inlet/outlet pipes shall be removed from the detention area and properly

disposed off-site. Also, any floating material discovered during inspections shall be removed from the basin.

A detailed maintenance logbook shall be kept for the detention area. Information is to include, but not be limited to, the date of inspection, condition of the inlet pipe(s), condition of outlet control pipes, observation of any floatables, and date of cleaning performed.

Regular inspection/maintenance for the detention area must include:

- removing debris and excess sediment
- checking that the storm inlet into the basin is clear and functioning properly,
- checking that the outlet control pipe is clear and the outlet is functioning properly,
- checking that the emergency spillway is clear and functioning properly,
- mowing the crest of the basin for maintenance access
- removing invasive plant species from of the basin
- checking slopes for any dips or settlement that might indicate seepage

Hydrodynamic Separators (or approved equal)

The hydrodynamic separator manholes will be cleaned periodically during construction, and at the end of construction once the landscaped areas are fully stabilized.

For the first year of operation following construction, inspect each manhole once each month for the months of January, February, March and April, and once every four months thereafter. A graduated measuring device (stadia rod) shall be inserted into each grit chamber and measurements of any accumulations shall be recorded. Any debris, which has accumulated to within one foot of the water surface inside the grit chamber portion of each tank, shall be removed by vacuum "Vactor" type of equipment.

After the first year of operation, each manhole shall be inspected at a minimum, three times yearly with one inspection occurring in the month of April in the same manner as described above for the first season of operation. Any accumulations found to be occurring within one foot of the water surface shall be removed from the manhole and properly disposed off-site. Also, any floating material discovered during inspections shall be removed from the tank.

A detailed maintenance logbook shall be kept for each manhole. Information is to include, but not be limited to, the date of inspection, record of grit depth, condition of baffles, observation of any floatable, and date of cleaning performed.

Underground Detention Systems

The underground detention systems shall be inspected every six months in the months of April and October. Each of the inspection manholes provided shall be opened and visually checked from the surface. Observation of grit inside of the detention system shall be noted and any deposits found to be 2 inches or more, as measured from the invert of pipe, shall be cleaned and removed. The underground detention system qualifies as a Confined Space under OSHA

regulations, and any maintenance involving entry into the pipes should comply with OSHA Confined Space Entry Regulations.

Site Maintenance

Parking Lots

Parking lots and sidewalks shall be swept as necessary by the property owner to clean trash and other debris. The property owner will sweep parking lots on the property in the spring to remove winter accumulations of road sand.

Landscaping

The management company retained by the property owner will maintain landscaped areas. Normally the landscaping maintenance will consist of pruning, mulching, planting, mowing lawns, raking leaves, etc. Use of fertilizers and pesticides will be controlled and limited to minimal amounts necessary for healthy landscape maintenance.

The lawn areas, once established, will be maintained at a typical height of 3 ½". This will allow the grass to be maintained with minimal impact from weeds and/or pests. The low-maintenance areas will be maintained as a meadow or allowed to revert to natural conditions. Topsoil, brush, leaves, clippings, woodchips, mulch, equipment, and other material shall be stored off site.

Outdoor Storage

There will be no outdoor storage of hazardous chemicals, de-icing agents, fertilizer, pesticides, or herbicides anywhere around the buildings.

Deicing and Snow Removal & Storage

The use of clean sand may be used to aid traction in conjunction with salt and/or chemicals for deicing, snow melting and other related winter weather management. Snow shall be shoveled and plowed from sidewalk and parking areas as soon as practical during and after winter storms. Sand accumulation shall be removed from the site at the end of the winter season or appropriate time when seasonal snow has melted. Alternative deicing methods must be submitted prior to use onsite for review to the Town of Trumbull for approval.

MAINTENANCE SCHEDULE

During the First Year of Operation:		
Task:	Completion Date:	Manager's Initials:
JANUARY:		
Employee Training Program with Spill Program		
*Subsurface Detention Systems		
FEBRUARY:		
* Subsurface Detention Systems		
MARCH:		
* Subsurface/Surface Detention Systems		
APRIL:		
*Catch Basin/Yard Drain		
* Subsurface/Surface Detention Systems		
*Sanitary Inspection		
Shrub Fertilization		
Lawn Limbing (if necessary)		
AUGUST:		
*Catch Basin/Yard Drain		
* Subsurface/Surface Detention Systems		
OCTOBER:		
* Subsurface/Surface Detention Systems		
Tree and Lawn Fertilization		
DECEMBER:		
*Catch Basin/Yard Drain		
* Subsurface Detention Systems		

*NOTE: Use appropriate worksheet found in this plan to conduct the inspection.

After the First Year of Operation:			
FOR YEAR_____			
Task:		Completion Date:	Manager's Initials:
JANUARY:			
Employee Training Program with Spill Program			
APRIL:			
*Catch Basin/Yard Drain			
* Subsurface/Surface Detention Systems			
*Sanitary Inspection			
Shrub Fertilization			
Lawn Limbing (if necessary)			
AUGUST:			
*Catch Basin/Yard Drain			
OCTOBER:			
* Subsurface/Surface Detention Systems			
Tree and Lawn Fertilization			
DECEMBER:			
*Catch Basin/Yard Drain			

*NOTE: Use appropriate worksheet found in this plan to conduct the inspection.

CATCH BASIN / CATCH BASIN INSERT INSPECTION LOG

Name of Inspector: Date:

Catch Basin ID	Condition (circle one)		Debris above 1' within sump? (If yes then catch basin is to be cleaned)		Date of Catch Basin Cleaning (if debris is greater than 1')		Condition of Hood (if applicable)	Comments:
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							

	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							

On-site Procedures for Inspection and Maintenance of Catch Basin Inserts

• Secure traffic and pedestrian traffic with cones, barrels, etc.

• Clean surface area around each catch basin

• Remove grates and set aside

• Clean grates, remove litter and debris that may be trapped within the grate

• Remove by vactor hose the debris that has been trapped in the trough area. Dispose of in accordance with local, state and federal regulatory agency requirements. Most debris that is captured in the trough or sump area will fall into the non-hazardous waste category.

• Visually inspect and check the condition of the trough area.

• Replace grate and lockdown as needed.

• Un-secure traffic control area.

• Complete service report and submit to facility owner.

MAINTENANCE SCHEDULE

During the First Year of Operation:		
Task:	Completion Date:	Manager's Initials:
JANUARY:		
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*Subsurface Detention Systems		
FEBRUARY:		
* Subsurface Detention Systems		
MARCH:		
* Subsurface/Surface Detention Systems		
APRIL:		
*Catch Basin/Yard Drain		
* Subsurface/Surface Detention Systems		
*Sanitary Inspection		
Shrub Fertilization		
Lawn Limbing (if necessary)		
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*Catch Basin/Yard Drain		
* Subsurface/Surface Detention Systems		
OCTOBER:		
* Subsurface/Surface Detention Systems		
Tree and Lawn Fertilization		
DECEMBER:		
*Catch Basin/Yard Drain		
* Subsurface Detention Systems		

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Task:		Completion Date:	Manager's Initials:
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Employee Training Program with Spill Program			
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*Catch Basin/Yard Drain			
* Subsurface/Surface Detention Systems			
*Sanitary Inspection			
Shrub Fertilization			
Lawn Limbing (if necessary)			
AUGUST:			
*Catch Basin/Yard Drain			
OCTOBER:			
* Subsurface/Surface Detention Systems			
Tree and Lawn Fertilization			
DECEMBER:			
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Name of Inspector: Date:

Catch Basin ID	Condition (circle one)		Debris above 1' within sump? (If yes then catch basin is to be cleaned)		Date of Catch Basin Cleaning (if debris is greater than 1')		Condition of Hood (if applicable)	Comments:
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	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							

	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							

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• Secure traffic and pedestrian traffic with cones, barrels, etc.

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• Remove by vactor hose the debris that has been trapped in the trough area. Dispose of in accordance with local, state and federal regulatory agency requirements. Most debris that is captured in the trough or sump area will fall into the non-hazardous waste category.

• Visually inspect and check the condition of the trough area.

• Replace grate and lockdown as needed.

• Un-secure traffic control area.

• Complete service report and submit to facility owner.

APPENDIX G

GEOTECHNICAL REPORTS

Preliminary Geotechnical Assessment

Test Pit and Infiltration Testing Results

GEI Consultants

Consulting
Engineers and
Scientists

Preliminary Geotechnical Assessment

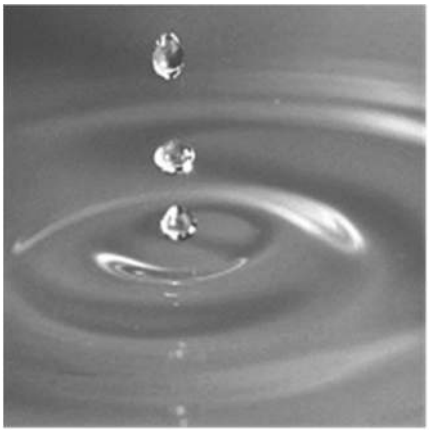
Westfield Mall Residences

Trumbull, Connecticut

Submitted to:
Garden Homes
820 Morris Turnpike
Short Hills, NJ 07078

Submitted by:
GEI Consultants, Inc.
455 Winding Brook Drive, Suite 201
Glastonbury, CT 06033
860-368-5300

October 25, 2019
Project No. 1904976



Matthew Glunt, P.E.
Senior Geotechnical Engineer

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A Test Pit Logs
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1. Introduction

1.1 Project Summary

The proposed development adjacent to the Westfield Mall in Trumbull will consist of construction of six detached residential/clubhouse buildings spread across the referenced property with associated site improvements.

The purpose of this study was to provide a preliminary assessment of soil and groundwater conditions and address geotechnical considerations for project planning. Additional explorations and geotechnical study will be required in a later phase of design to confirm or revise the general geotechnical considerations presented herein.

1.2 Scope of Services

Our scope of work included the following tasks:

- Reviewed conceptual site plans and building layout drawings.
- Retained a contractor to dig nine (9) test pit excavations on the property.
- Observed soil samples recovered from the test pits, took groundwater level measurements, and prepared test pit logs.
- Developed preliminary design and construction recommendations for site work and building foundations.
- Prepared this *Preliminary Geotechnical Assessment*.

1.3 Authorization

Our work was performed in general accordance with our proposal dated January 4, 2019.

2. Site and Project Description

2.1 Site Description

The proposed development will occur on approximately 10 acres of vacant land bounded by Westfield Mall, Merritt Parkway (Route 15), and Main Street (Route 111) in Trumbull, Connecticut. The site is covered by low grasses and trees, with exception of the former paved residential streets (Whalburn Avenue and Stuart Place), one remaining dwelling on Whalburn Avenue, and a construction storage yard on the southeast corner.

The overall parcel is the site of a former single-family residential neighborhood that was demolished in or about 2005. At this time, not much is known about the former dwellings, such as presence of basements, utilities, etc., demolition procedures, or what elements may remain on the property. We observed no structural remnants on the property aside from paved driveways and small retaining walls along a few lot boundaries. Historical aerial photographs of the site with layout of the former neighborhood are attached in Appendix B for reference.

We understand a site topographic survey has not yet been conducted. We reviewed the general site topography during our site visits and from the Town GIS website. In general, the site slopes downward rather gently toward the mall, likely following the natural topography, before encountering cut and natural slopes 15 to 25 feet high adjacent to the mall parking lot.

2.2 Proposed Construction

Plans are currently in the conceptual phase. According to the August 13 concept plan provided by Garden Homes, development is to include up to six (6) residential and clubhouse-type structures spread across the property with associated site improvements such as access drives, parking lots, pedestrian plazas, etc. In total, the six buildings will contain 260 units. Parking will be accommodated by a combination of in-building garages, detached garages, driveways, and surface parking.

The site improvements will likely be tiered to fit the overall site topography. Cuts and fills of up to 12 to 15 feet are likely to be required to suitably transition the western part of the site across the steep slope into the mall parking area. Retaining walls may be required where sufficient lateral distance is not available for sloping.

We understand the proposed residential buildings will be four stories with slab-on-grade, wood framing, and conventional shallow foundations supporting load-bearing walls. For the purposes of this assessment, we have assumed that these structures will not include basements.

3. Exploration Procedures

The test pit locations were laid out on the site using the provided site layout plan and a handheld GPS unit. Approximate test pit locations relative to the concept site plan are shown on Figure 2A and relative to a current aerial and Town GIS contours on Figure 2B.

Nine (9) test pit excavations were conducted at the site on October 10, 2019, by General Borings, under subcontract to GEI, with a rubber-tired backhoe. The appropriate one-call utility location service (CBYD) was contacted by General Borings prior to excavation. The test pits were advanced to depths ranging from 4.0 feet to 7.25 feet each and backfilled with tamped spoils upon completion. A GEI professional was present to coordinate the work, sample and classify the soils encountered, and record the depth to apparent soil mottling and groundwater (where encountered). Test pit logs are attached in Appendix A.

4. Subsurface Conditions

4.1 Geologic Setting

Geologic maps indicate the property lies on a thick glacial till upland known locally as Ox Hill. The mall to the west was constructed on valley sands and gravels adjacent to a small watercourse, which now runs under the mall parking area. The slope along the western edge of the proposed development represents the transition between the two geologic units.

Bedrock at the site is mapped as the Carringtons Pond Member of the Trap Falls Formation, described as interlayered medium to dark-gray schist and light-gray gneiss, locally with amphibolite layers (Rodgers, USGS, 1985).

4.2 Subsurface Conditions

The generalized subsurface conditions at the site are described below, in order of increasing depth. The subsurface conditions between test locations may differ. The nature and extent of variations between the sampling points will not become evident until construction.

Topsoil – Organic, brown to dark brown topsoil in the test pits ranged from 4 inches up to approximately 2 feet in thickness. At two locations (TP-3 andTP-7), minor brick fragments were mixed with the topsoil to a depth of about 5 inches.

Fill – Minor amounts of fill with debris such as cables, brick, asphalt, etc. were encountered in several of the test pits near the surface to a depth of about 2 feet. Asphalt was also encountered in TP-6 below the upper few inches of topsoil. Based on our understanding of the property and prior uses, we do not expect that significant grading took place in construction of the former neighborhood. Some subsurface debris should be expected within close proximity of the former house locations.

Glacial Till – Dense, stony glacial tills were encountered in all test pits below the near-surface soils. These soils were typically classified as brown to orange-brown predominantly sand and gravel with frequent cobbles between 6 and 12 inches in size, and less than about 15 percent silty fines. Soils were generally quite dense below depths of 2 to 3 feet.

Apparent Rock – Shallow weathered to sound rock may be present below certain areas of the site. At TP-3, test pit observations indicate that rock may be present at a depth of about 4.0 feet, where the excavator bucket encountered a very hard, impenetrable surface. Potential weathered rock was noted at two other locations (TP-4 and TP-6) near the base of the pit at a depth of about 6.5 feet. If present, we expect that relatively shallow rock potentially follows a line about 2/3 of the way back from Main Street, where the upland areas begin to slope more steeply downward to the west.

4.3 Groundwater Conditions

Free groundwater was not encountered within any of the test pits. However, discontinuous perched water seams are common within similar glacial till soils on dense and/or highly cohesive soils, especially after rainfall events. Slight soil mottling, potentially indicating previous high groundwater, was noted in several test pits near very dense soils at depths of about 4.0 to 6.0 feet.

Groundwater levels are subject to seasonal and weather-related variations. Groundwater measurements made at different times and different locations may be significantly different than the measurements taken as part of this investigation.

5. Preliminary Design Recommendations

5.1 General Suitability

Soils similar to those encountered in our recent investigation are generally well-suited to this type of development, subject to the considerations presented below.

The following potential subsurface risks should be further investigated as part of a final design program:

1. Presence of shallow rock within the depth of interest for building and site development.
2. Suitability of deep cuts expected to be required along the western edge of the property, including potential presence of shallow rock and/or groundwater.
3. Presence of fill soils and/or construction debris associated with former development and demolition of the residential neighborhood. If available, demolition records and photographs should be reviewed as part of this evaluation.
4. Infiltration capacity of soils, for site stormwater design.
5. Suitability of excavated soils for re-use in fill areas of the site, particularly the presence of oversize material and excess silt fines.

5.2 Foundation Support

The proposed buildings will likely bear on dense to very dense native soil or compacted engineered fill. Conventional shallow foundations are expected to be suitable for support of new construction of the type and scale shown on the conceptual plans.

The bearing pressure to be used for design and estimated settlements will be determined as part of the final design geotechnical evaluation. Lower-level floors can likely be designed as slab-on-grade, bearing on a base course of compacted crushed stone placed over a prepared soil subgrade.

5.3 Site and Stormwater Design

Final cut and fill slopes on the project should be limited to a maximum grade of 2H:1V and be suitably vegetated after construction to limit erosion.

The location and type of required stormwater controls are not yet shown on the conceptual plans. In all likelihood, features such as basins, subsurface units, etc. will be founded at depth in soils with relatively poor drainage characteristics.

5.4 Retaining Walls

Retaining walls up to about 12 feet in height may be required to develop the site. In general, the conditions will be suitable for walls of this scale and no special measures are expected to be required.

6. Construction Considerations

6.1 Site Preparation

To prepare the site for grading operations, existing pavement, topsoil, and other deleterious material should be stripped from the building and site improvement areas. Soft, wet, loose, or otherwise unsuitable soils should be removed and replaced, or potentially re-compacted in-place. Based on the results of this investigation, we do not expect there to be significant stabilization required.

Any existing utilities within the proposed building footprints should be rerouted and the pipes fully removed or plugged with grout.

6.2 Excavation and Dewatering

Excavation will primarily be in soil, and conventional earthmoving equipment will be suitable in most instances. Excavations should be sloped or shored in accordance with the local, state, and federal regulations, including Occupational Safety and Health Agency (OSHA 29 CFR Part 1926) excavation trench safety standards.

As noted elsewhere in this report, there is potential for shallow rock requiring pneumatic removal or localized blasting on certain areas of the site to impact development. This may limit feasible use of subsurface elements such as basements, drainage chambers, and the extent of cuts required to grade the site. The depth to, lateral extent, and character of rock should be further investigated using test borings as part of the final design efforts.

Groundwater is not expected to be encountered within most site excavations. If encountered, we expect that excavation dewatering can be accomplished with filtered sumps and pumps located outside the footing or trench excavations.

6.3 Re-use of Excavated Soils

Once the topsoil is stripped and any otherwise unsuitable soils removed, we expect native sands and gravels excavated from the site will generally be suitable for re-use on the project as Structural Fill. Screening of materials in excess of 3 or 6 inches may be required before re-use of soils especially laden with cobbles. The percentage of silt fines by weight should be further evaluated during final design to gauge freeze-thaw susceptibility and general workability of the on-site soils.

7. Limitations

7.1 Additional Investigation

The current program of test pit excavations provides some indication of the range of conditions that may be encountered at the site. However, the number and depth of these excavations does not provide a reliable basis for design of building foundations or other site features. Once the building and site layouts have been finalized, we recommend that a series of test borings be performed within proposed building footprints and at other locations of interest on the property. At minimum, this investigation should address the potential risk items listed in Section 5.1.

7.2 Limitations

This report was prepared for the use of the project design team, exclusively. These considerations are based on the project information provided to us at the time of this report and the results of a preliminary geotechnical investigation. Our professional services for this project have been performed in accordance with generally accepted engineering practices. No warranty, expressed or implied, is made.

Due to the distance between each excavation, subsurface conditions can be expected to vary from the conditions described herein. This report was intended to give general information about overall site conditions only. A design-level geotechnical exploration will be required at a later time to confirm or revise the preliminary geotechnical recommendations given herein.

Figures

SOURCE: Google Earth

SCALE:	NTS	GEI Consultants	**SITE LOCATION PLAN** WESTFIELD MALL RESIDENCES TRUMBULL, CT	FIGURE NO.
DRAWN BY:	BA			1
CHECKED BY:	MG			
DATE:	10/21//2019		GEI PROJECT NO: **1904976**	

SOURCE:
CONCEPT PLAN PROVIDED BY GARDEN HOMES.

0 100 200
SCALE: 1" = 100'

Preliminary Geotechnical Investigation
Westfield Mall Residences
Trumbull, Connecticut

Garden Homes

GEI Consultants

Project 1904976

TEST PIT LOCATION PLAN

October 2019

Fig. 2A

\\Gtb1v-fs01\gis\Projects\1904976_GardenHomes\Site Plan Test Pits.mxd

LEGEND
Test Pit Locations

SOURCE: Town of Trumbull GIS

SCALE:	AS SHOWN
DRAWN BY:	BA
CHECKED BY:	MG
DATE:	10/21/2019

GEI Consultants

TEST PIT LOCATION PLAN
WESTFIELD MALL RESIDENCES
TRUMBULL, CT

GEI PROJECT NO: **1904976**

FIGURE NO.
2B

Appendix A

Test Pit Logs

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-1**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	11.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

DEPTH FT.	ANALYZED SAMPLE ID	SOIL DESCRIPTION
1		(0.0-0.33') F-C sand and NP fines, little F-C gravel, subangular up to 6" brown, dry. TOPSOIL. Contains cobbles, metal wires and organic fibers.
2		
3		(0.3-4.0') F-C sand and F-C gravel and cobbles, angular up to 8" little NP fines, light brown, dry.
4		
5		(4.0-6.0') F-C gravel, angular to subangular up to 6" and cobbles and F-C sand little NP fines, hard, dense and gravelly, brown to orange-brown, dry.
6		
7		Slight mottling at 4.0 FT. Groundwater not encountered
8		
9		
10		
		Bottom of test pit at 6.0 feet.

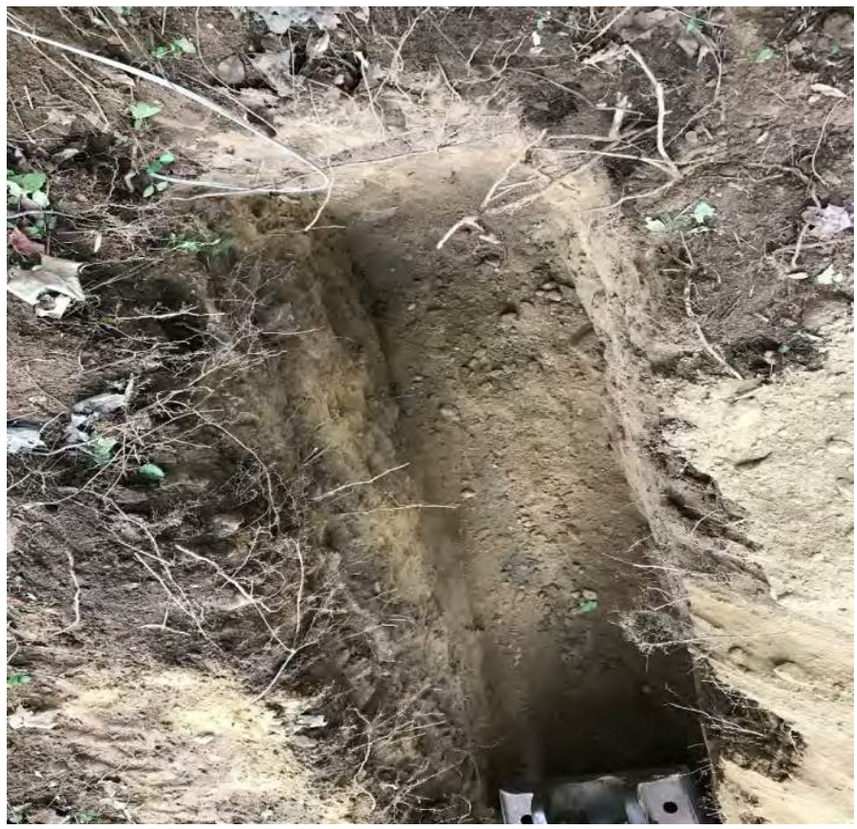
NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NON-PLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-1**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	11.0 FT
CHECKED BY:		**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

Photographic Log



Bottom of test pit at6.0 feet.

Picture showing soil strata at Test pit 1

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-2**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	4.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	9.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

DEPTH FT.	ANALYZED SAMPLE ID	SOIL DESCRIPTION
1		(0.0-1.0') F-C sand and NP fines, little F-C gravel angular up to 6", brown, dry. Contains organic fibers. TOPSOIL.
2		(1.0-4.0') F-C Gravel and F-C sand, little NP fines. orange-brown to light brown, dry
3		Coarse angular cobbles up to 3.0 FT.
4		
5		
6		
7		
8		Groundwater or soil mottling not encountered.
9		
10		
		Bottom of test pit at 4.0 feet.

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NON-PLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-2**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	4.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	9.0 FT
CHECKED BY:		**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

Photographic Log

Bottom of test pit at 4.0 feet.

Picture showing the soil strata at Test pit 2

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-2**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	4.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	9.0 FT
CHECKED BY:		**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

Photographic Log

Bottom of test pit at 4.0 feet.

Picture showing retaining wall at Test pit 2

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	CLIENT: Garden Homes	TEST PIT LOG	
	PROJECT: Westfield Mall Trumbull	PAGE	TP-3
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	4.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	9.0 FT
CHECKED BY:		**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

DEPTH FT.	ANALYZED SAMPLE ID	SOIL DESCRIPTION
1		(0.0-0.5') F-C sand and NP fines, little F-C gravel, subrounded up to 5", brown, dry. Contains organic fiber and brick fragments. TOPSOIL.
2		
3		(0.5- 2.0') F-C sand and F-C gravel and cobbles, angular up to 1", little NP fines, light brown, dry.
4		(2.0-4.0') F-C sand and F-C gravel and cobbles (potential weathered rock) angular up to 1", little NP fines, brown to light brown, dry.
5		Bucket scraping probable rock at 4.0 FT
6		
7		
8		Slight mottling observed at 3.0 FT Groundwater not encountered.
9		Backfilled at 4.0 FT.
10		
		Bottom of test pit at 4.0 feet.

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NON-PLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	CLIENT: Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-3**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	4.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	9.0 FT
CHECKED BY:		**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

Photographic Log

Bottom of test pit at 4.0feet.

Picture showing soil strata at Test pit 3

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-4**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	7.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	15.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

DEPTH FT.	ANALYZED SAMPLE ID	SOIL DESCRIPTION
1		(0.0-2.0') F-C sand and NP fines, little F-C gravel, brown, dry. Contain organic fibers. TOPSOIL.
2		
3		(2.0-3.5') F-C sand, little NP ifnes, little F- C gravel angular, light orange- brown, dry.
4		
5		(3.5-5.0') F-C sand, some F-M gravel and cobbles, angular, NP fines, grayish brown to light brown, dry.
6		(5.0 -7.0') F-C sand, some F-M gravel and cobbles, angular, NP fines, brown, dry.
7		Likely weathered rock observed at base of pit
8		Soil mottling or groundwater not encountered.
9		
10		
		Bottom of test pit at 7.0 feet.

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NON-PLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-4**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	7.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	15.0 FT
CHECKED BY:		**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

Photographic Log

Bottom of test pit at 7.0 feet.

Picture showing soil strata at Test pit 4

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants	GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
		PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-4**
		CITY/STATE: Trumbull, CT	1	
		GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	7.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	15.0 FT
CHECKED BY:		**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

Photographic Log

Bottom of test pit at 7.0 feet.
Picture showing soil at Test pit 4

NOTES:
IN. = INCHES NM= NOT MEASURED
FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-5**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

DEPTH FT.	ANALYZED SAMPLE ID	SOIL DESCRIPTION
1		(0.0-0.5') F-C sand and NP fines, some F-C gravel and cobbles, angular up to 6", brown, dry. TOPSOIL.
2		(0.5- 2.0') C gravel, trace NP fines, trace F sand, dry Stone drainage trench with pipe
3		
4		(2.0-6.0') F-C sand and F-C gravel and cobbles angular up to 2.0 FT, little NP fines, grayish brown to light brown,
5		
6		
7		Some slight mottling observed at 4.0 FT
8		Groundwater not encountered.
9		
10		
		Bottom of test pit at 6.0 feet.

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NON-PLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-5**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:		**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

Photographic Log

Bottom of test pit at 6.0 feet.

Picture showing soil strata at Test pit 5

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-5**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:		**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

Photographic Log

Bottom of test pit at 6.0 feet.

Picture showing soil strata at Test pit 5

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-6**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	7.25 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	12.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

DEPTH FT.	ANALYZED SAMPLE ID	SOIL DESCRIPTION
1		(0.0-0.33') F-C sand and NP fines, little F-C gravel, subangular up to 1" brown, dry.
2		(0.3-1.0') Degraded Asphalt, F-C angular gravel up to 2", little F-C sand, little NP fines, black, dry.
3		(1.0-3.0') F-C sand and NP-LP fines, F-C gravel, brown, dry. Former Topsoil.
4		
5		(3.0 -5.0') F-C sand, some F-C gravel, subangular up to 6", little NP fines Light brown, dry.
6		(5.0-7.25') M-C gravel and cobbles (angular 6"- 12") and F-C sand, little NP -LP fines, orange-brown to brown, dry to moist.
7		
8		
9		Some soil motting at 5.5 FT. Possible weathered rock near base of pit. Groundwater not encountered
10		
		Bottom of test pit at 7.25 feet.

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NON-PLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-6**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:		**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

Photographic Log

Bottom of test pit at 7.25 feet.

Picture showing soil strata at Test pit 6

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-6**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:		**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

Photographic Log

Bottom of test pit at 7.25 feet.

Picture showing soil strata at Test pit 6

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-7**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	12.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

DEPTH FT.	ANALYZED SAMPLE ID	SOIL DESCRIPTION
1		(0.0-0.33') F-C sand and NP fines, little F-C gravel, subangular up to 1" brown, dry. Contains brick fragments. TOPSOIL.
2		(0.3-1.0') F-C sand and F-C gravel, little NP fines, brown, dry.
3		(1.0-6.0') F-C sand and angular F-C cobbles and gravel, little NP fines, light brown to orange-brown, dry.
4		
5		
6		
7		
8		Slight mottling observed at 4.0 FT.
9		Groundwater not encountered
10		
		Bottom of test pit at 6.0 feet.

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NON-PLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-7**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:		**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

Photographic Log

Bottom of test pit at 6.0 feet.

Picture showing soil strata at Test pit 7

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-8**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

DEPTH FT.	ANALYZED SAMPLE ID	SOIL DESCRIPTION
1		(0.0-2.0') F-C sand, some NP fines, some F-C gravel, angular up to 6", brown, dry, with asphalt debris. Contains organic fibers. TOPSOIL.
2		(2.0-4.0') F-C sand, little NP fines, some F-C gravel and cobbles up to 6", light brown, dry.
3		
4		(4.0-6.0') F-C gravel and cobbles, subangular up to 6" and F-C sand, little NP fines, dense matrix, brown, dry.
5		
6		
7		
8		
9		Groundwater or soil mottling not encountered.
10		
		Bottom of test pit at 6.0 feet.

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NON-PLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-8**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:		**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

Photographic Log

Bottom of test pit at 6.0 feet.

Picture showing soil strata at Test pit 8

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-9**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.5 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	12.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

DEPTH FT.	ANALYZED SAMPLE ID	SOIL DESCRIPTION
1		(0.0-0.7') F-C sand and NP fines, little F-C gravel and cobbles, angular up to 6" brown, dry. Contains organic fibers.Topsoil.
2		
3		(0.7-3.5') F- M sand, some NP fines, some F-C gravel and cobbles, subrounded up to 6", light brown, dry.
4		(3.5-5.0') F-C sand, little NP ifnes, some F-C gravel and cobbles, subangular up to 6", grayish brown to light brown, dry.
5		
6		(5.0 -6.5') F-C gravel and cobbles, angular up to 6" and F-C sand, little NP fines dense matrix, brown to reddish brown, dry to moist.
7		
8		Slight mottling observd at 6.0 FT. Groundwater not encountered.
9		
10		
		Bottom of test pit at 6.5 feet.

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NON-PLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-9**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.5 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	12.0 FT
CHECKED BY:		**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	Excavator: Ford 655A	**DATUM VERT. / HORZ.:**	
WEATHER:	70° F Sunny	**DATE START / END**	10/10/2019

Photographic Log

Bottom of test pit at 6.5 feet.

Picture showing soil strata at Test pit 9

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

Appendix B

Historic Aerial Photographs

INQUIRY #: 5799887.4
YEAR: 1991
= 500'
N
EDR

INQUIRY #: 5799887.4

YEAR: 1963

= 500'

N

EDR

INQUIRY #: 5799887.4

YEAR: 1949

= 500'

N

EDR

GEI Consultants

February 28, 2020

Consulting Engineers and Scientists

Garden Homes
820 Morris Turnpike
Short Hills, NJ 07078

Attn: Scott Loventhal

Re: Test Pit and Infiltration Testing Results
Proposed Westfield Mall Residences
Trumbull, CT

Dear Mr. Loventhal:

This letter report details the recent investigations conducted by GEI Consultants, Inc. (GEI) on the subject property, and our recommendations for an infiltration rate to be used for site stormwater design.

Project Description

The proposed development will occur on approximately 10 acres of vacant land bounded by Westfield Mall, Merritt Parkway (Route 15), and Main Street (Route 111) in Trumbull, Connecticut. Plans are currently in the conceptual phase. According to the concept plan provided by BL Companies, development is to include up to six (6) residential and clubhouse-type structures spread across the property with associated site improvements such as access drives, parking lots, pedestrian plazas, etc.

The site improvements will likely be tiered to fit the overall site topography. Cuts and fills of up to 12 to 15 feet are likely to be required to suitably transition the western part of the site across the steep slope into the mall parking area. Retaining walls may be required where sufficient lateral distance is not available for sloping.

Field Investigation

Two previous investigations have been conducted on the property:

1. Test borings and *Preliminary Geotechnical Engineering Report*, Heller and Johnson, June 2008.
2. Test pits and *Preliminary Geotechnical Assessment*, GEI Consultants, October 2019.

We reviewed the results of these investigations and incorporated data contained therein as appropriate for this evaluation.

Eight (8) additional test pits were dug at the site on February 14, 2020, using a rubber-tired backhoe. The test pits were advanced to a planned depth of 6.5 to 9.0 feet, or to digging refusal. The test pits were conducted at or very near the locations requested by BL Companies, as marked on site using a handheld GPS unit.

In-situ hydraulic conductivity was measured during excavation at depths of about 4.0 to 4.6 feet in four (4) of the pits using a Guelph-model permeameter. Constant-head test procedures generally followed ASTM D5126 and manufacturer recommendations. Two tests were conducted at each test pit location with varying water column heights and the results generally averaged, as shown on the attached calculation sheets.

The test pits were logged and photographed by the on-site GEI professional.

Subsurface Conditions

Geologic maps indicate the property lies on a thick glacial till upland known locally as Ox Hill. Glacial till soils in this locale generally consist of a dense mixture of sand, silt, and gravel with frequent cobbles and small boulders arranged in a tight matrix.

The soils encountered in the test pits can be classified as follows:

Topsoil – Organic, brown to dark brown topsoil in the test pits ranged from 6 inches to approximately 2 feet in thickness. Cobbles and debris were often noted within these soils.

Fill – Granular fill with debris such as cables, brick, asphalt, etc. has been encountered in many of the test pits and borings encountered on the property. This material would likely have been placed as the former residential neighborhood was constructed. In general, it appears that the central portion of the property rests on or near "native" ground, with fill thickness increasing gradually towards the north to north-west and south to south-east. In particular, significant fills may be present on the low southwest corner of the property. Fills and debris should also be expected near the footprints of all demolished houses.

Glacial Till – Dense, stony glacial tills were encountered in all test pits below the topsoil and/or fill. These soils were typically classified as brown to orange-brown predominantly sand and gravel with frequent cobbles and small boulders between 6 and 24 inches in size, and about 10 to 30 percent silty fines. A lens of sandy silt also appears to be present near the surface near TP104. Soils were generally quite dense about 2 to 3 feet into this stratum.

Apparent Rock – The test boring investigation conducted in 2008 included sixteen (16) test borings spaced on an approximate grid throughout the property. In general, the depth to rock appears to be somewhat variable, on the order of 4 to 14 feet below current grade. A mantle of weathered rock, thick in places, was present within most borings. During the current test pit investigation, digging refusal on apparent weathered rock was encountered at TP-100 (5.5 feet) and TP-103 (5.0 feet) along the west side of the property.

Groundwater – Groundwater was encountered within five of the test pits at depths ranging from about 4.0 to 8.5 feet. No consistent signs of soil mottling could be discerned from the excavations. Generally, in variable soil profiles similar to this, discontinuous perched water seams are common near abrupt changes in hydraulic conductivity, such as the transition from loose fills to dense glacial till or from granular glacial till to weathered or sound rock.

Groundwater levels are subject to seasonal and weather-related variations. Groundwater observations made at different times and different locations may be significantly different than the measurements taken as part of this investigation.

Subsurface Drainage Design

We understand site stormwater design is still in the conceptual stage. For complexes similar to this, our experience is that a combination of above-ground ponds/basins (where space allows) and below-ground infiltration chambers are generally the most efficient. Based on the results of the investigation, stormwater management features will likely be founded in soils with low to very low infiltration capability.

Near-surface soils on the property are mapped by the NRCS Soil Survey as the Paxton-Urban series. Downward permeability associated with this soil type is described as moderate in the upper 2 feet (0.6 to 2.0 inches/hour) to very slow (less than 0.2 inches/hour) at depth.

The permeameter measurements within the test pits taken at depths between 4.0 and 4.6 feet varied from 2.2 to 9.9 inches/hour for the low-head (5 cm) condition. When the test was repeated with increased water head (10 cm), measurements varied from 3.8 to 9.1 inches/hour. Note that two of the reported 10 cm tests were judged to be not valid, due to likely flooding of the test hole.

From our review of the field testing data, and our local experience with similar soils, we recommend assuming an infiltration rate of **3.0 inches/hour** for stormwater system design. In accordance with CT DEEP stormwater regulations, a factor of safety of 2.0 should be applied to this field-measured value when used in design calculations. The seasonal high groundwater elevation will be variable across the property, and should be judged based on specific conditions below each proposed feature. GEI can assist with us as the site design progresses.

Closure

If you have questions or need clarification regarding any elements of this report, please do not hesitate to contact us. Thank you for the opportunity to work with you on this project.

Sincerely,

GEI Consultants, Inc.

Matthew Glunt, PE
Senior Geotechnical Engineer

Enclosure: Test Pit Location Plan *(as prepared by BL Companies)*
Test Pit Logs and Photographs
Permeameter Field Data and Calculations

Architecture
Engineering
Environmental
Land Surveying
BL Companies
355 Research Parkway
Meriden, CT 06450
(203) 630-1406
(203) 630-2615 Fax

GARDEN HOMES

NEWTOWN TURNPIKE - MAIN STREET
(CONN ROUTE 111)
TRUMBULL, CONNECTICUT

REVISIONS

No.	Date	Desc.

Designed	X.X.X.
Drawn	X.X.X.
Reviewed	
Scale	1"=40'
Project No.	1800513
Date	XX/XX/XX
CAD File: SP180051301	

Title

SITE BORING PLAN

Sheet No.

SB-1

Xref (s) : BD180051301 ; XDSC133801 ; 10-23-2019_Trumbull Concept Site Plan-XREF ; XT180051301 ; 10-23-2019_Trumbull Concept Site Plan-New Roundabout

10/18/2019 AM,CBE, G:\JOBS\BGA\1800513\DWG\SP180051301.DWG,SB-1 (ARCH-ARC)

© 2019 BL COMPANIES, INC. THESE DRAWINGS SHALL NOT BE UTILIZED BY ANY PERSON, FIRM OR CORPORATION WITHOUT THE SPECIFIC WRITTEN PERMISSION OF BL COMPANIES.

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-100**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	289	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	5.5 FT
OBSERVED BY:	P. Blessing & B. Akereyeni	**TOTAL LENGTH:**	15.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	4.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

DEPTH FT.	ANALYZED SAMPLE ID	SAMPLE DEPTH (FT)	SOIL DESCRIPTION
0			(0.0-0.5'): 6" TOPSOIL
1			
2			(0.5-3.0'): SILTY SAND (SM);~ 60% F-C sand, ~20% F-C gravel up to 1", ~20% NP to LP fines, dark brown, wet. Contain organic fibers, cobbles, red brick, and small boulders. Strong organic-like odor. FILL
3			
4			(3.0 -5.5'): SILTY SAND WITH GRAVEL (SM); ~60% F-C sand, ~20% F-C gravel up to 1", ~20% NP to LP fines, dark brown, wet. Contain organic fibers, cobbles, red brick, boulders, plastic and metallic debris, and rotted timber pieces. Strong organic-like odor.
5			
6			Refusal o boulder or rock at 5.5 FT. Backfilled with excavated soil and tamped down with excavator bucket.
7			Groundwater or soil mottling not encountered.
8			
9			
10			
			Bottom of test pit at 5.5 FT

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NONPLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-100**
	CITY/STATE: Trumbull, CT	2	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	289	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	5.5 FT
OBSERVED BY:	P. Blessing & B. Akereyeni	**TOTAL LENGTH:**	15.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	4.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

Photographic Log

Bottom of test pit at 5.5 feet.
Picture showing soil strata at TP-100

NOTES:
IN. = INCHES NM= NOT MEASURED
FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-101**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	310.5	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.5 FT
OBSERVED BY:	P. Blessing & B. Akereyeni	**TOTAL LENGTH:**	20.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

DEPTH FT.	ANALYZED SAMPLE ID	SAMPLE DEPTH (FT)	SOIL DESCRIPTION
0			6" TOPSOIL
1			(0.5-1.0'):WIDELY GRADED SAND WITH SILT (SW-SM); ~80% F-C sand, ~10% F-C gravel up to 1", ~10% NP to LP fines, dark brown, moist. Contains organic fibers, moderate organic-like odor.
2			(1.0-4.0'): WIDELY GRADED SAND WITH SILT (SW-SM); ~80% F-C sand, ~10% NP fines, ~10% F-C gravel, dark brown to brown, moist. FILL Contain cobbles, building debris, former foundation encountered at 2.0 FT.
3			Encountered full foundation at 4.0 ft. Test pit extended to go beneath.
4			
5			(4.0' -6.5'): WIDELY GRADED SAND WITH SILT (SW-SM); ~80% F-C sand, ~10% F-C gravel, up to 1", ~10% NP fines, grayish brown, moist. ~30% cobbles by volume.
6			
7			Backfilled with excavated soil and tamped down with excavator bucket.
8			Groundwater infiltration observed at 6.5 FT
9			
10			
			Bottom of test pit at 6.5 FT

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NONPLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-101**
	CITY/STATE: Trumbull, CT	2	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	310.5	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.5 FT
OBSERVED BY:	P. Blessing & B. Akereyeni	**TOTAL LENGTH:**	20.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

Photographic Log

Bottom of test pit at 6.5 FT

Picture showing the soil strata at TP-101

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-102**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	319	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	8.0 FT
OBSERVED BY:	P. Blessing & B. Akereyeni	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

DEPTH FT.	ANALYZED SAMPLE ID	SAMPLE DEPTH (FT)	SOIL DESCRIPTION
0			6" TOPSOIL
1			(0.5-2.0'):WIDELY GRADED SAND WITH SILT (SW-SM);~ 80% F-C sand, ~10% F-C gravel up to 1", ~10% NP- LP fines, dark brown, moist. Contains organic fibers, moderate organic-like odor. FILL
2			
3			(2.0-4.0'): SILTY SAND WITH GRAVEL (SM); ~50% F-C sand, ~30% LP to MP fines, ~20% F-C gravel up to 1", brown, wet. Contains root fragments and cobbles. FILL
4			
5			
6			(4.0' -8.0'): SILTY SAND WITH GRAVEL (SM); ~50% F-M sand, ~35% LP-MP fines, ~15% F-C gravel, light orange-brown, moist to wet. Contains small cobbles.
7			
8			
9			Backfilled with excavated soil and tamped down with excavator bucket. Groundwater infiltration observed at 4.0 FT
10			

Bottom of test pit at 8.0 FT.

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NONPLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-102**
	CITY/STATE: Trumbull, CT	2	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	8.0 FT
OBSERVED BY:	P. Blessing & B. Akereyeni	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

Photographic Log

Bottom of test pit at 8.0 FT

Picture showing the soil strata at TP-102

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-102**
	CITY/STATE: Trumbull, CT	3	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	NM	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	8.0 FT
OBSERVED BY:	P. Blessing & B. Akereyeni	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

Photographic Log

Bottom of test pit at 8.0 FT

Picture showing some excavated soil at TP-102

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-103**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	301	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	5.0 FT
OBSERVED BY:	P. Blessing & B. Akereyeni	**TOTAL LENGTH:**	12.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

DEPTH FT.	ANALYZED SAMPLE ID	SAMPLE DEPTH (FT)	SOIL DESCRIPTION
0			
1			(0.0-1.0'): SILTY SAND (SM); ~75% F-C sand, ~15% NPfines, ~10% F-C gravel up to 1", dark brown, moist. Contains organic fibers and cobbles.
2			(1.0-5.0'): SILTY SAND WITH GRAVEL (SM); ~50% F-C sand, ~30% NP to LP fines, ~20% F-C gravel up to 1", gray-brown, moist. Contains cobbles
3			
4			
5			Refusal @ 5.0 ft. on boulder or weathered rock
6			Backfilled with excavated soil and tamped down with excavator bucket. Groundwater or soil mottling not encountered.
7			
8			
9			
10			
			Bottom of test pit at 5.0 FT.

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NONPLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-103**
	CITY/STATE: Trumbull, CT	2	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	301	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	5.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	12.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

Photographic Log

Bottom of test pit at 5.0 feet.

Picture showing the soil strata at TP-103

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-104**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	309	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	7.0 FT
OBSERVED BY:	P. Blessing & B. Akereyeni	**TOTAL LENGTH:**	12.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

DEPTH FT.	ANALYZED SAMPLE ID	SAMPLE DEPTH (FT)	SOIL DESCRIPTION
0			6" TOPSOIL
1			
2			(0.5-4.0'): SANDY SILT (ML): ~55% LP-MP fines, ~45% F sand, orange-brown, moist.
3			
4			
5			(4.0 -7.0'): WIDELY GRADED SAND (SW); ~85% F-M sand, ~10% F-C gravel, ~5% NP fines, dark gray, moist.
6			
7			
			Backfilled with excavated soil and tamped down with excavator bucket.
8			
			Groundwater or soil mottling not encountered.
9			
10			
			Bottom of test pit at 7.0 FT.

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NONPLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-104**
	CITY/STATE: Trumbull, CT	2	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	309	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	7.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	8.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

Photographic Log

Bottom of test pit at 7.0 FT.

Picture showing the soil strata at TP-104

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-104**
	CITY/STATE: Trumbull, CT	3	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	309	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	7.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	8.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

Photographic Log

Bottom of test pit at 7.0 FT.

Picture showing excavated soil at TP-104

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-105**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	313	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	9.0 FT
OBSERVED BY:	P. Blessing	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

DEPTH FT.	ANALYZED SAMPLE ID	SAMPLE DEPTH (FT)	SOIL DESCRIPTION
0			(0.0-1.0'): SILTY SAND WITH GRAVEL (SM); 45% F-C sand, 30% NP fine, 25% F-C gravel and cobbles up to 12", brown to dark brown, dry. Contain organic fibers, fragments of brick and concrete block.
1			(0.1-2.5'): SILTY SAND WITH GRAVEL (SM); 60% F-C sand, 25% F-C gravel and cobbles up to 12 in., 15% NP fines, brown to orange brown, dry.
2			
3			
4			
5			(2.5 -9.0'): SILTY SAND WITH GRAVEL (SM); ~65% F-C sand, ~ 25% F-C gravel, ~20% NP -LP fines, brown to grayish brown, dry to wet at 8.5'
6			
7			
8			
9			
10			Backfilled with excavated soil and tamped down with excavator bucket. Groundwater encountered at 8.5 FT.
			Bottom of test pit at 9.0 FT.

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NONPLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-105**
	CITY/STATE: Trumbull, CT	2	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	313	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	9.0 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

Photographic Log

Bottom of test pit at 9.0 FT.

Picture showing the soil strata at TP-105

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants	GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
		PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-106**
		CITY/STATE: Trumbull, CT	1	
		GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	306	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.5 FT
OBSERVED BY:	P. Blessing & B. Akereyeni	**TOTAL LENGTH:**	12.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

DEPTH FT.	ANALYZED SAMPLE ID	SAMPLE DEPTH (FT)	SOIL DESCRIPTION
0			6" TOPSOIL (0.5-1.0'): WIDELY GRADED SAND WITH SILT (SW-SM); ~80% F-C sand, ~10% NP fines, ~10% F-C gravel, brown, moist. Contain organic fibers.
1			
2			
3			(1.0-6.5'): WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~75% F-C sand, 15% F-C gravel up to 1", 10% NP-LP fines, brown, moist. Contains cobbles/small boulders up to 30% by volume. Concrete debris between 1.0 and 4.0 FT.
4			
5			
6			Backfilled with excavated soil and tamped down with excavator bucket.
7			Groundwater encountered at 6.5 FT.
8			
9			
10			
			Bottom of test pit at 6.5 FT.

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NONPLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Trumbull	**PAGE**	**TP-106**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	306	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	6.5 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	12.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

Photographic Log

Bottom of test pit at 6.5 FT.

Picture showing soil strata at TP-106

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-107**
	CITY/STATE: Trumbull, CT	1	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	295.5	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	7.5 FT
OBSERVED BY:	P. Blessing	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

DEPTH FT.	ANALYZED SAMPLE ID	SAMPLE DEPTH (FT)	SOIL DESCRIPTION
0			(0.0-0.5'): SILTY SAND WITH GRAVEL (SM); ~45% F-C sand, ~35% NP fines, ~20% F-C gravel, dark brown, dry. Contain organic fibers, cobbles/boulders, asphalt, concrete debris.
1			(0.5-3.0'): SILTY SAND WITH GRAVEL (SM); ~45% F-C sand, ~35% F-C gravel and cobbles, ~20% NP fines, brown, dry. Contain organic fibers, cobbles/boulders, asphalt, concrete debris.
2			
3			(3.0-3.5'): Layer of broken asphalt
4			(3.5-5.5'): SILTY SAND WITH GRAVEL (SM); ~35% F-C sand, ~35% F-C gravel and cobbles up to 24 in., ~30% NP fines, brown, dry to moist.
5			
6			(5.5-7.5): SILTY SAND WITH GRAVEL (SM); ~50% F-C sand, ~35% F-C gravel and cobbles up to 24 in., ~15% NP fines, orange to brown, dry to moist. With weathered rock fragments near base.
7			
8			Backfilled with excavated soil and tamped down with excavator bucket.
9			Groundwater encountered at 7.5 FT.
10			
			Bottom of test pit at 7.5 FT.

NOTES:

IN. = INCHES	F=FINE	M=MEDIUM	NP= NONPLASTIC	NM= NOT MEASURED
FT. = FEET	C=COARSE	LP=LOW PLASTICITY	MP=MEDIUM PLASTICITY	

GEI Consultants, Inc. 455 Winding Brook Drive Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** Garden Homes	**TEST PIT LOG**	
	PROJECT: Westfield Mall Resid.	**PAGE**	**TP-107**
	CITY/STATE: Trumbull, CT	2	
	GEI PROJECT NUMBER: 1904976		

GROUND SURFACE ELEVATION (FT):	295.5	**LOCATION:**	See Plan
NORTHING:	**EASTING:**	**TOTAL DEPTH:**	7.5 FT
OBSERVED BY:	Patrick Blessing	**TOTAL LENGTH:**	10.0 FT
CHECKED BY:	M. Glunt	**TOTAL WIDTH:**	3.0 FT
EQUIPMENT:	CAT 416B Rubber Tire Backhoe	**DATUM VERT. / HORZ.:**	
WEATHER:	12- 29° F. Mostly Sunny	**DATE START / END**	2/14/2020

Photographic Log

Bottom of test pit at 7.5 FT.

Picture showing soil strata at TP-107

NOTES:

IN. = INCHES NM= NOT MEASURED

FT. = FEET

GEI Consultants, Inc.
GEI Proj # 1904976
Guelph Permeameter Testing
Test Date 2/14/2020

Field Data TP-101

Reservoir Combined
Depth of Hole 4" *(augered below bottom)*
Bottom of Test Pit 4.0 ft
GEI Rep. P. Blessing & B. Akereyeni
Material Native Sand with Silt and Gravel (SW-SM) with cobbles
GW Depth 6.5 ft

Water Level in Well 5 cm

Time (min)	Time Change (min)	Water Level in Res. (cm)	Change in Res. Water Level (cm)	Rate of Change (cm/min)
0.17		1.8		
0.33	0.16	1.9	0.1	0.61
0.50	0.17	2.3	0.4	2.37
0.67	0.17	2.6	0.3	1.80
0.83	0.16	3.1	0.5	3.05
1.00	0.17	3.5	0.4	2.40
1.17	0.17	3.6	0.1	0.59
1.33	0.16	4	0.4	2.44
1.50	0.17	4.3	0.3	1.78
1.67	0.17	4.6	0.3	1.80
1.83	0.16	4.9	0.3	1.83
2.00	0.17	5.2	0.3	1.80
2.17	0.17	5.4	0.2	1.18
2.33	0.16	5.7	0.3	1.83
2.50	0.17	6	0.3	1.78
2.67	0.17	6.2	0.2	1.20
2.83	0.16	6.5	0.3	1.83
3.00	0.17	6.7	0.2	1.20
3.17	0.17	6.9	0.2	1.18
	Steady Rate of Change, R_1 (cm/min)			**1.58**

Water Level in Well 10 cm

Time (min)	Time Change (min)	Water Level in Res. (cm)	Change in Res. Water Level (cm)	Rate of Change (cm/min)
0.17		7.1		
0.33	0.16	14	6.9	42.07
0.50	0.17	23.5	9.5	56.21
0.67	0.17	34.5	11	65.87
0.83	0.16	43.5	9	54.88
1.00	0.17	53	9.5	56.89
1.17	0.17	61.2	8.2	48.52
1.33	0.16	70	8.8	53.66
1.50	0.17	80	10	59.17
	Steady Rate of Change, R2 (cm/min)			**56.46**

GEI Consultants, Inc. **Calc. by:** B. Akereyeni **Date:** 2/24/2020
GEI Proj # 1904976 **Check by:** M. Glunt **Date:** 2/27/2020
Guelph Permeameter Testing - TP-101

Single Head Method - Test 1

Test Data and Information

• Reservoir		-	Combined		
• Reservoir Cross-Sectional Area		-	35.22	cm^2	(Provided on Permeameter)
• Water Head Height	H_1	-	5	cm	
• Borehole Radius	a	-	3.2	cm	Assumed slightly larger than 3cm rad. hand auger
• Soil Texture-Structure Category		-	4		(Table 2: Coarse and Gravelly Sands)
• Steady State Rate of Water Level Change	R_1	-	1.58	cm/min	(Obtained during testing)

Test Calculations and Results

• Microscopic Capillary Length Factor	α^*	-	0.36	cm^{-1}	(Table 2: Based on Soil Texture-Structure Category)
• Shape Factor	C_1	-	0.768		(Table 2: Based on Soil Texture-Structure Category)
• Volumetric Flow Rate	Q_1	-	0.9282	cm^3/sec	(Table 3: One Head, Combined Reservoir)
• Soil Saturated Hydraulic Conductivity	K_{fs}	-	2.648E-03	cm/sec	(Table 3: One Head, Combined Reservoir)
• Soil Matrix Flux Potential	Φ_m	-	7.355E-03	cm^2/sec	(Table 3: One Head, Combined Reservoir)

Low Head Test

• Soil Saturated Hydraulic Conductivity	K_{fs}	-	**2.648E-03**	cm/sec
			3.8	in/hour

Single Head Method - Test 2

Test Data and Information

• Reservoir		-	Combined		
• Reservoir Cross-Sectional Area		-	35.22	cm^2	(Provided on Permeameter)
• Water Head Height	H_2	-	10	cm	
• Borehole Radius	a	-	3.2	cm	Assumed slightly larger than 3cm rad. hand auger
• Soil Texture-Structure Category		-	4		(Table 2: Coarse and Gravelly Sands)
• Steady State Rate of Water Level Change	R_2	-	56.46	cm/min	(Obtained during testing)

Test Calculations and Results

• Microscopic Capillary Length Factor	α^*	-	0.36	cm^{-1}	(Table 2: Based on Soil Texture-Structure Category)
• Shape Factor	C_2	-	1.234		(Table 2: Based on Soil Texture-Structure Category)
• Volumetric Flow Rate	Q_2	-	33.14004112	cm^3/sec	(Table 3: One Head, Combined Reservoir)
• Soil Saturated Hydraulic Conductivity	K_{fs}	-	4.854E-02	cm/sec	(Table 3: One Head, Combined Reservoir)
• Soil Matrix Flux Potential	Φ_m	-	1.348E-01	cm^2/sec	(Table 3: One Head, Combined Reservoir)

High Head Test

• Soil Saturated Hydraulic Conductivity	K_{fs}	-	**4.854E-02**	cm/sec	**Test invalid**
			68.8	in/hour	

GEI Consultants, Inc.
GEI Proj # 1904976
Guelph Permeameter Testing
Test Date 2/14/2020

Field Data TP-103

Reservoir Combined
Depth of Hole 3" *(augered below bottom)*
Bottom of Test Pit 4.0 ft
GEI Rep. P. Blessing & B. Akereyeni
Material Native Silty Sand with Gravel (SM) and cobbles
GW Depth NE ***Refusal at 5.0 ft. on large boulder or weathered rock*

Water Level in Well 5 cm

Time (min)	Time Change (min)	Water Level in Res. (cm)	Change in Res. Water Level (cm)	Rate of Change (cm/min)
0.17		2.5		
0.33	0.16	5.1	2.6	15.85
0.50	0.17	6.1	1	5.92
0.83	0.33	8.1	2	6.04
1.00	0.17	9	0.9	5.39
1.17	0.17	9.9	0.9	5.33
1.33	0.16	10.5	0.6	3.66
1.50	0.17	11.3	0.8	4.73
1.67	0.17	12.1	0.8	4.79
1.83	0.16	12.8	0.7	4.27
2.00	0.17	13.5	0.7	4.19
2.17	0.17	14.1	0.6	3.55
2.33	0.16	14.8	0.7	4.27
2.50	0.17	15.5	0.7	4.14
2.67	0.17	16.1	0.6	3.59
2.83	0.16	16.7	0.6	3.66
3.00	0.17	17.4	0.7	4.19
	Steady Rate of Change, R_1 (cm/min)			**4.10**

Water Level in Well 10 cm

Time (min)	Time Change (min)	Water Level in Res. (cm)	Change in Res. Water Level (cm)	Rate of Change (cm/min)
0.166		5		
0.33	0.16	15.5	10.5	64.02
0.499	0.17	21.5	6	35.50
0.666	0.17	25.5	4	23.95
0.83	0.16	28.5	3	18.29
0.997	0.17	31	2.5	14.97
1.166	0.17	33	2	11.83
1.330	0.16	35.5	2.5	15.24
1.499	0.17	37.5	2	11.83
1.665	0.17	39.7	2.2	13.28
1.831	0.17	41.7	2	12.01
1.998	0.17	43	1.3	7.81
2.164	0.17	44.5	1.5	9.01
2.331	0.17	46	1.5	9.01
2.497	0.17	47.5	1.5	9.01
2.664	0.17	49.4	1.9	11.41
2.830	0.17	51	1.6	9.61
2.997	0.17	52.7	1.7	10.21
3.163	0.17	54.5	1.8	10.81
3.330	0.17	56.2	1.7	10.21
3.496	0.17	58	1.8	10.81
	Steady Rate of Change, R2 (cm/min)			**10.61**

GEI Consultants, Inc. **Calc. by:** B. Akereyeni **Date:** 2/24/2020
GEI Proj # 1904976 **Check by:** M. Glunt **Date:** 2/27/2020
Guelph Permeameter Testing - TP-103

Single Head Method - Test 1

Test Data and Information

• Reservoir		-	Combined		
• Reservoir Cross-Sectional Area		-	35.22	cm^2	(Provided on Permeameter)
• Water Head Height	H_1	-	5	cm	
• Borehole Radius	a	-	3.2	cm	Assumed slightly larger than 3cm rad. hand auger
• Soil Texture-Structure Category		-	3		(Table 2: Medium and fine sands)
• Steady State Rate of Water Level Change	R_1	-	4.10	cm/min	(Obtained during testing)

Test Calculations and Results

• Microscopic Capillary Length Factor	α^*	-	0.12	cm^{-1}	(Table 2: Based on Soil Texture-Structure Category)
• Shape Factor	C_1	-	0.768		(Table 2: Based on Soil Texture-Structure Category)
• Volumetric Flow Rate	Q_1	-	2.4038	cm^3/sec	(Table 3: One Head, Combined Reservoir)
• Soil Saturated Hydraulic Conductivity	K_{fs}	-	4.159E-03	cm/sec	(Table 3: One Head, Combined Reservoir)
• Soil Matrix Flux Potential	Φ_m	-	3.466E-02	cm^2/sec	(Table 3: One Head, Combined Reservoir)

Low Head Test

• Soil Saturated Hydraulic Conductivity	K_{fs}	-	**4.159E-03**	cm/sec
			5.9	in/hour

Single Head Method - Test 2

Test Data and Information

• Reservoir		-	Combined		
• Reservoir Cross-Sectional Area		-	35.22	cm^2	(Provided on Permeameter)
• Water Head Height	H_2	-	10	cm	
• Borehole Radius	a	-	3.2	cm	Assumed slightly larger than 3cm rad. hand auger
• Soil Texture-Structure Category		-	3		(Table 2: Medium and fine sands)
• Steady State Rate of Water Level Change	R_2	-	10.61	cm/min	(Obtained during testing)

Test Calculations and Results

• Microscopic Capillary Length Factor	α^*	-	0.12	cm^{-1}	(Table 2: Based on Soil Texture-Structure Category)
• Shape Factor	C_2	-	1.234		(Table 2: Based on Soil Texture-Structure Category)
• Volumetric Flow Rate	Q_2	-	6.228428428	cm^3/sec	(Table 3: One Head, Combined Reservoir)
• Soil Saturated Hydraulic Conductivity	K_{fs}	-	6.450E-03	cm/sec	(Table 3: One Head, Combined Reservoir)
• Soil Matrix Flux Potential	Φ_m	-	5.375E-02	cm^2/sec	(Table 3: One Head, Combined Reservoir)

High Head Test

• Soil Saturated Hydraulic Conductivity	K_{fs}	-	**6.450E-03**	cm/sec
			9.1	in/hour

GEI Consultants, Inc.
GEI Proj # 1904976
Guelph Permeameter Testing
Test Date 2/14/2020

Field Data TP-104

Reservoir Combined
Depth of Hole 3" *(augered below bottom)*
Bottom of Test Pit 4.6 ft
GEI Rep. P. Blessing & B. Akereyeni
Material Native Sand (SW) with gravel
GW Depth NE

Water Level in Well 5 cm

Time (min)	Time Change (min)	Water Level in Res. (cm)	Change in Res. Water Level (cm)	Rate of Change (cm/min)
0.17		1.3		
0.33	0.16	2.2	0.9	5.49
0.50	0.17	3	0.8	4.73
0.67	0.17	3.3	0.3	1.80
0.83	0.16	3.6	0.3	1.83
1.00	0.17	4	0.4	2.40
1.17	0.17	4.4	0.4	2.37
1.33	0.16	4.6	0.2	1.22
1.50	0.17	5	0.4	2.37
1.67	0.17	5.3	0.3	1.80
1.83	0.16	5.6	0.3	1.83
2.00	0.17	5.8	0.2	1.20
2.17	0.17	6.1	0.3	1.78
2.33	0.16	6.3	0.2	1.22
2.50	0.17	6.6	0.3	1.78
2.67	0.17	6.8	0.2	1.20
2.83	0.16	7	0.2	1.22
3.00	0.17	7.3	0.3	1.80
	Steady Rate of Change, R_1 (cm/min)			**1.53**

Water Level in Well 10 cm

Time (min)	Time Change (min)	Water Level in Res. (cm)	Change in Res. Water Level (cm)	Rate of Change (cm/min)
0.17		7.3		
0.33	0.16	14	6.7	40.85
0.50	0.17	18.5	4.5	26.63
0.67	0.17	22	3.5	20.96
0.83	0.16	24.5	2.5	15.24
1.00	0.17	26.6	2.1	12.57
1.17	0.17	29	2.4	14.20
1.33	0.16	31.5	2.5	15.24
1.50	0.17	33.5	2	11.83
1.66	0.17	35.5	2	12.07
1.83	0.17	37.5	2	12.01
2.00	0.17	39.5	2	12.01
2.16	0.17	41.4	1.9	11.41
2.33	0.17	43.3	1.9	11.41
2.50	0.17	44.9	1.6	9.61
2.66	0.17	46	1.1	6.61
2.83	0.17	47.2	1.2	7.21
3.00	0.17	48.1	0.9	5.41
3.16	0.17	49	0.9	5.41
	Steady Rate of Change, R2 (cm/min)			**6.16**

GEI Consultants, Inc. **Calc. by:** B. Akereyeni **Date:** 2/24/2020
GEI Proj # 1904976 **Check by:** M. Glunt **Date:** 2/27/2020
Guelph Permeameter Testing - TP-104

Single Head Method - Test 1

Test Data and Information

• Reservoir		-	Combined		
• Reservoir Cross-Sectional Area		-	35.22	cm^2	(Provided on Permeameter)
• Water Head Height	H_1	-	5	cm	
• Borehole Radius	a	-	3.2	cm	Assumed slightly larger than 3cm rad. hand auger
• Soil Texture-Structure Category		-	3		(Table 2: Medium and fine sands)
• Steady State Rate of Water Level Change	R_1	-	1.53	cm/min	(Obtained during testing)

Test Calculations and Results

• Microscopic Capillary Length Factor	α^*	-	0.12	cm^{-1}	(Table 2: Based on Soil Texture-Structure Category)
• Shape Factor	C_1	-	0.768		(Table 2: Based on Soil Texture-Structure Category)
• Volumetric Flow Rate	Q_1	-	0.9005	cm^3/sec	(Table 3: One Head, Combined Reservoir)
• Soil Saturated Hydraulic Conductivity	K_{fs}	-	1.558E-03	cm/sec	(Table 3: One Head, Combined Reservoir)
• Soil Matrix Flux Potential	Φ_m	-	1.298E-02	cm^2/sec	(Table 3: One Head, Combined Reservoir)

Low Head Test

• Soil Saturated Hydraulic Conductivity	K_{fs}	-	**1.558E-03**	cm/sec
			2.2	in/hour

Single Head Method - Test 2

Test Data and Information

• Reservoir		-	Combined		
• Reservoir Cross-Sectional Area		-	35.22	cm^2	(Provided on Permeameter)
• Water Head Height	H_2	-	10	cm	
• Borehole Radius	a	-	3.2	cm	Assumed slightly larger than 3cm rad. hand auger
• Soil Texture-Structure Category		-	3		(Table 2: Medium and fine sands)
• Steady State Rate of Water Level Change	R_2	-	6.16	cm/min	(Obtained during testing)

Test Calculations and Results

• Microscopic Capillary Length Factor	α^*	-	0.12	cm^{-1}	(Table 2: Based on Soil Texture-Structure Category)
• Shape Factor	C_2	-	1.234		(Table 2: Based on Soil Texture-Structure Category)
• Volumetric Flow Rate	Q_2	-	3.613663664	cm^3/sec	(Table 3: One Head, Combined Reservoir)
• Soil Saturated Hydraulic Conductivity	K_{fs}	-	3.742E-03	cm/sec	(Table 3: One Head, Combined Reservoir)
• Soil Matrix Flux Potential	Φ_m	-	3.118E-02	cm^2/sec	(Table 3: One Head, Combined Reservoir)

Test Averages

• Soil Saturated Hydraulic Conductivity	K_{fs}	-	**2.650E-03**	cm/sec
			3.8	in/hour

GEI Consultants, Inc.
GEI Proj # 1904976
Guelph Permeameter Testing
Test Date 2/14/2020

Field Data TP-106

Reservoir Combined
Depth of Hole 3"
Bottom of Test Pit 4.0'
GEI Rep. P. Blessing & B. Akereyeni
Material Native Sand with Silt and Gravel (SW-SM) with cobbles
GW Depth 6.5

Water Level in Well **5 cm**

Time (min)	Time Change (min)	Water Level in Res. (cm)	Change in Res. Water Level (cm)	Rate of Change (cm/min)
0.17		4		
0.33	0.16	7.3	3.3	20.12
0.50	0.17	7.7	0.4	2.37
0.67	0.17	8.3	0.6	3.59
0.83	0.16	9.1	0.8	4.88
1.00	0.17	9.5	0.4	2.40
1.17	0.17	10.8	1.3	7.69
1.33	0.16	12	1.2	7.32
1.50	0.17	12.6	0.6	3.55
1.67	0.17	13.2	0.6	3.59
1.83	0.16	13.8	0.6	3.66
2.00	0.17	14.6	0.8	4.79
2.17	0.17	15.3	0.7	4.14
2.33	0.16	16.1	0.8	4.88
2.50	0.17	16.8	0.7	4.14
2.67	0.17	17.4	0.6	3.59
2.83	0.16	18.1	0.7	4.27
3.00	0.17	18.8	0.7	4.19
3.17	0.17	19.5	0.7	4.14
3.34	0.17	20.2	0.7	4.14
3.50	0.17	21	0.8	4.73

Steady Rate of Change, R_1 (cm/min) **4.17**

Water Level in Well **10 cm**

Time (min)	Time Change (min)	Water Level in Res. (cm)	Change in Res. Water Level (cm)	Rate of Change (cm/min)
0.17		5		
0.33	0.16	18	13	79.27
0.50	0.17	28	10	59.17
0.67	0.17	37.5	9.5	56.89
0.83	0.16	45.5	8	48.78
1.00	0.17	53.5	8	47.90
1.17	0.17	62	8.5	50.30
1.33	0.16	69	7	42.68
1.50	0.17	76	7	41.42

Steady Rate of Change, R2 (cm/min) **45.58**

GEI Consultants, Inc. **Calc. by:** B. Akereyeni **Date:** 2/24/2020
GEI Proj # 1904976 **Check by:** M. Glunt **Date:** 2/27/2020
Guelph Permeameter Testing - TP-106

Single Head Method - Test 1

Test Data and Information

• Reservoir		-	Combined		
• Reservoir Cross-Sectional Area		-	35.22	cm^2	(Provided on Permeameter)
• Water Head Height	H_1	-	5	cm	
• Borehole Radius	a	-	3.2	cm	Assumed slightly larger than 3cm rad. hand auger
• Soil Texture-Structure Category		-	3		(Table 2: Coarse and Gravelly Sands)
• Steady State Rate of Water Level Change	R_1	-	4.17	cm/min	(Obtained during testing)

Test Calculations and Results

• Microscopic Capillary Length Factor	α^*	-	0.36	cm^{-1}	(Table 2: Based on Soil Texture-Structure Category)
• Shape Factor	C_1	-	0.768		(Table 2: Based on Soil Texture-Structure Category)
• Volumetric Flow Rate	Q_1	-	2.4497	cm^3/sec	(Table 3: One Head, Combined Reservoir)
• Soil Saturated Hydraulic Conductivity	K_{fs}	-	6.989E-03	cm/sec	(Table 3: One Head, Combined Reservoir)
• Soil Matrix Flux Potential	Φ_m	-	1.941E-02	cm^2/sec	(Table 3: One Head, Combined Reservoir)

Low Head Test

• Soil Saturated Hydraulic Conductivity	K_{fs}	-	**6.989E-03**	cm/sec
			9.9	in/hour

Single Head Method - Test 2

Test Data and Information

• Reservoir		-	Combined		
• Reservoir Cross-Sectional Area		-	35.22	cm^2	(Provided on Permeameter)
• Water Head Height	H_2	-	10	cm	
• Borehole Radius	a	-	3.2	cm	Assumed slightly larger than 3cm rad. hand auger
• Soil Texture-Structure Category		-	3		(Table 2: Coarse and Gravelly Sands)
• Steady State Rate of Water Level Change	R_2	-	45.58	cm/min	(Obtained during testing)

Test Calculations and Results

• Microscopic Capillary Length Factor	α^*	-	0.36	cm^{-1}	(Table 2: Based on Soil Texture-Structure Category)
• Shape Factor	C_2	-	1.234		(Table 2: Based on Soil Texture-Structure Category)
• Volumetric Flow Rate	Q_2	-	26.75297916	cm^3/sec	(Table 3: One Head, Combined Reservoir)
• Soil Saturated Hydraulic Conductivity	K_{fs}	-	3.918E-02	cm/sec	(Table 3: One Head, Combined Reservoir)
• Soil Matrix Flux Potential	Φ_m	-	1.088E-01	cm^2/sec	(Table 3: One Head, Combined Reservoir)

High Head Test

• Soil Saturated Hydraulic Conductivity	K_{fs}	-	**3.918E-02**	cm/sec
			55.5	in/hour

Test invalid

Table 2

Soil Texture-Structure Category	α^*(cm^{-1})	Shape Factor
Compacted, Structure-less, clayey or silty materials such as landfill caps and liners, lacustrine or marine sediments, etc.	0.01	$C_1 = \left(\frac{H_2/a}{2.081 + 0.121(H_2/a)}\right)^{0.672}$
Soils which are both fine textured (clayey or silty) and unstructured; may also include some fine sands.	0.04	$C_1 = \left(\frac{H_1/a}{1.992 + 0.091(H_1/a)}\right)^{0.683}$ $C_2 = \left(\frac{H_2/a}{1.992 + 0.091(H_2/a)}\right)^{0.683}$
Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.	0.12	$C_1 = \left(\frac{H_1/a}{2.074 + 0.093(H_1/a)}\right)^{0.754}$ $C_2 = \left(\frac{H_2/a}{2.074 + 0.093(H_2/a)}\right)^{0.754}$
Coarse and gravely sands; may also include some highly structured soils with large and/or numerous cracks, macro pores, etc.	0.36	$C_1 = \left(\frac{H_1/a}{2.074 + 0.093(H_1/a)}\right)^{0.754}$ $C_2 = \left(\frac{H_2/a}{2.074 + 0.093(H_2/a)}\right)^{0.754}$

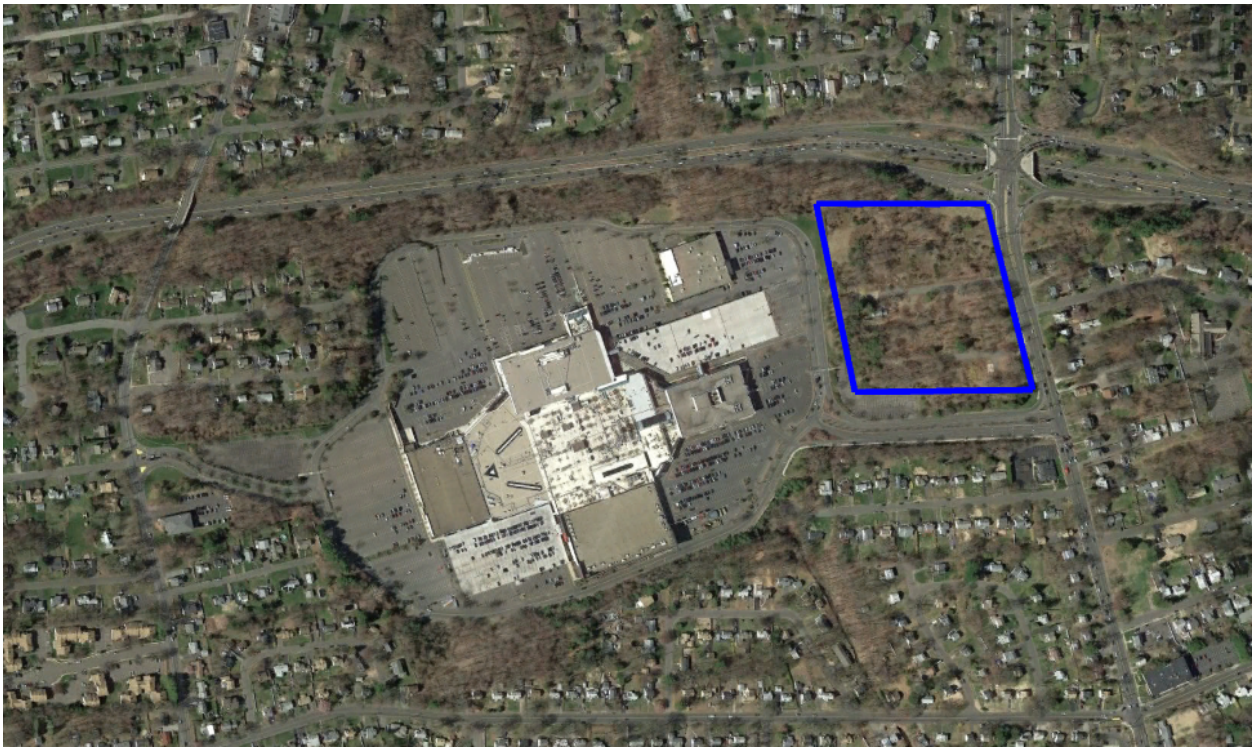
Calculation formulas related to shape factor (C). Where H_1 is the first water head height (cm), H_2 is the second water head height (cm), a is borehole radius (cm) and α^* is microscopic capillary length factor which is decided according to the soil texture-structure category. For one-head method, only C_1 needs to be calculated while for two-head method, C_1 and C_2 are calculated (Zang et al., 1998).

Table 3

One Head, Combined Reservoir	$Q_1 = \bar{R}_1 \times 35.22$	$K_{fs} = \frac{C_1 \times Q_1}{2\pi H_1^2 + \pi a^2 C_1 + 2\pi\left(\frac{H_1}{a^*}\right)}$ $\Phi_m = \frac{C_1 \times Q_1}{(2\pi H_1^2 + \pi a^2 C_1)a^* + 2\pi H_1}$
One Head, Inner Reservoir	$Q_1 = \bar{R}_1 \times 2.16$	
Two Head, Combined Reservoir	$Q_1 = \bar{R}_1 \times 35.22$ $Q_2 = \bar{R}_2 \times 35.22$	$G_1 = \frac{H_2 C_1}{\pi(2H_1H_2(H_2 - H_1) + a^2(H_1C_2 - H_2C_1))}$ $G_2 = \frac{H_1 C_2}{\pi(2H_1H_2(H_2 - H_1) + a^2(H_1C_2 - H_2C_1))}$ $K_{fs} = G_2Q_2 - G_1Q_1$ $G_3 = \frac{(2H_2^2 + a^2C_2)C_1}{2\pi(2H_1H_2(H_2 - H_1) + a^2(H_1C_2 - H_2C_1))}$ $G_4 = \frac{(2H_1^2 + a^2C_1)C_2}{2\pi(2H_1H_2(H_2 - H_1) + a^2(H_1C_2 - H_2C_1))}$ $\Phi_m = G_3Q_1 - G_4Q_2$
Two Head, Inner Reservoir	$Q_1 = \bar{R}_1 \times 2.16$ $Q_2 = \bar{R}_2 \times 2.16$	

Calculation formulas related to one-head and two-head methods. Where R is steady-state rate of fall of water in reservoir (cm/s), K_{fs} is Soil saturated hydraulic conductivity (cm/s), Φ_m is Soil matric flux potential (cm^2/s), a^* is Macroscopic capillary length parameter (from Table 2), a is Borehole radius (cm), H_1 is the first head of water established in borehole (cm) , H_2 is the second head of water established in borehole (cm) and C is Shape factor (from Table 2).

April 2020



Prepared for:

K&K Developers, Inc.

Short Hills, NJ

TRAFFIC STUDY

The Residences at Main

5085 Main Street
Trumbull, CT

PREPARED BY:
BL Companies
355 Research Parkway
Meriden, CT 06450

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CAPACITY ANALYSES

EXECUTIVE SUMMARY

This traffic study was prepared for a 260-unit multi-family residential development on a parcel located along SR 731 (Main Street) in Trumbull, CT. The site was formerly a single-family residential neighborhood. The development is proposed to have three driveways, one partial access driveway on SR 731 (Main Street), one full access driveway on the Ring Road, the internal roadway around the mall, and one partial access driveway on the Main Mall driveway connecting the Ring Road to SR 731 (Main Street).

The study investigated the potential traffic impacts associated with the development during the weekday morning, evening and Saturday mid-day peak periods. This investigation included a field reconnaissance, traffic counting, and research of pertinent planning and traffic data available from Connecticut Department of Transportation (CTDOT).

The number of trips expected generated by the development proposal was estimated using ITE Trip Generation Manual 10th Edition. It is projected that the proposed residential development will generate approximately 1415 daily trips, 90 trips in the AM peak hour, 110 trips in the PM peak hour, and 100 trips in the Saturday mid-day peak hour.

Intersection capacity analyses were prepared using the methodology described in the Highway Capacity Manual (HCM), published by the Transportation Research Board (TRB) for the background no-build and future build traffic volume scenarios to simulate the traffic impact of the development on the adjacent roadway network. The signalized intersections were analyzed in terms of vehicle capacity and motorist delay. The unsignalized intersections were evaluated in terms of average side street delay, as well as the capacity of the roadway approach.

This study found that there will be no significant impacts on the existing roadway network from the proposed residential development with little perceptible change in traffic operations.

The following is recommended to enhance traffic operations and safety:

In conjunction with the residential project:

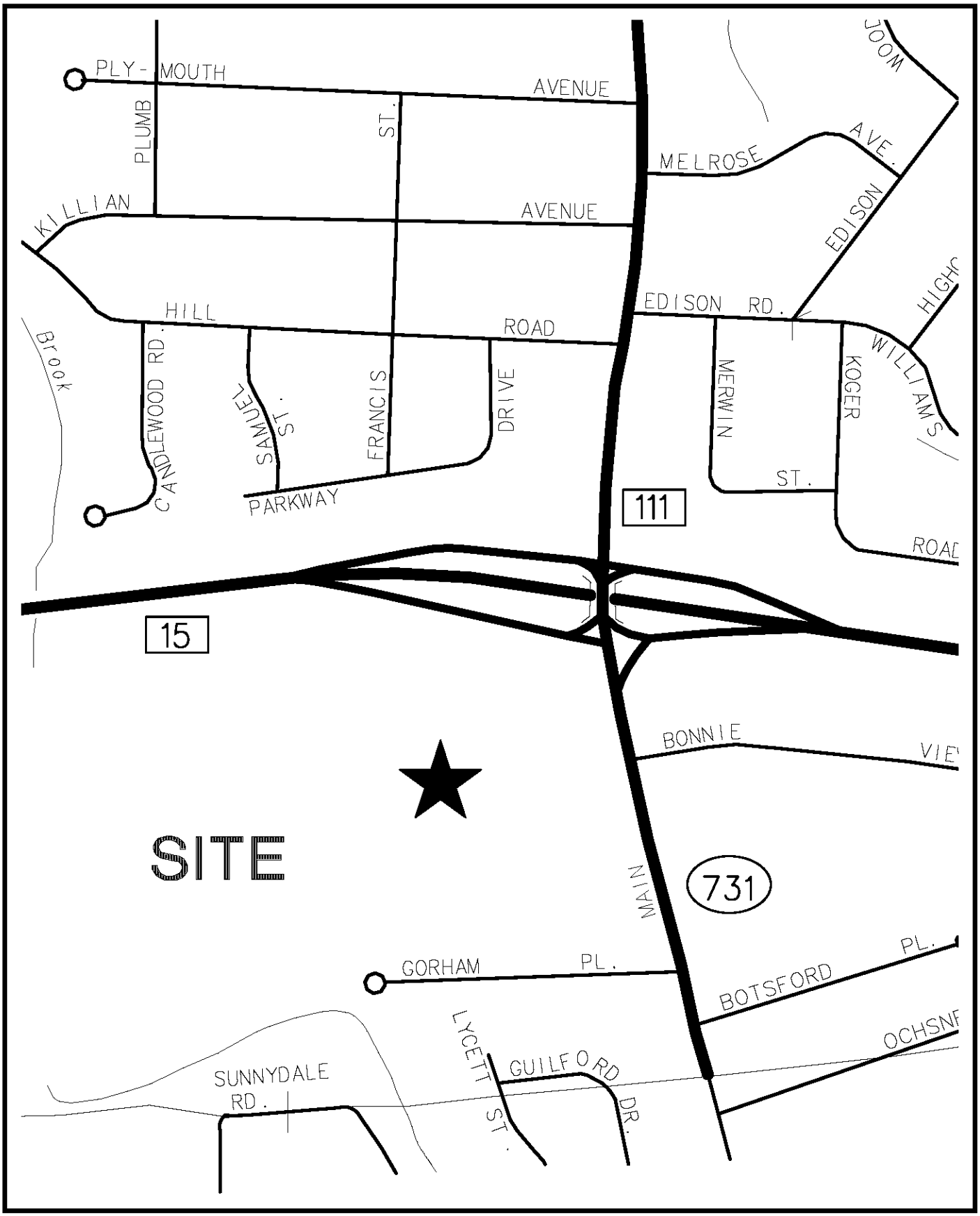
- Provide painted white stop line and double yellow centerline, along with a 36 inch "Stop" sign (R1-1) for the site driveway intersections. Insure that landscaping does not obstruct the sightlines.
- Prohibit left turns from the site driveway onto SR 731 (Main Street). Allow left turns into the site from a left turn lane created by modifying the SR 731 (Main Street) pavement markings.
- Work with the Mall owner to provide rectangular rapid flashing beacons (RRFB) at proposed pedestrian crossing on the Ring Road. Eliminate the existing crossing at the overflow parking lot, which is sight distance deficient.
- Consult with the Trumbull Board of Education to determine school bus stop locations if a substantial number of school aged children is anticipated.
- Submit the project to the Office of State Traffic Administration (OSTA) for review as a major traffic generator.

I. INTRODUCTION

This traffic study was prepared for a 260-unit multi-family residential development located adjacent to the Westfield Trumbull Mall. The development site is approximately 10.4-acres, located on the western side of SR 731 (Main Street), between the Mall and the Merritt Parkway (Route 15). See **Figure 1** for a location map. The site, essentially an outparcel of the Mall, is bordered by Route 15 (Merritt Parkway) on the north, Main Street (SR 731) on the east, and the Mall on the other sides. The focus of this study was to evaluate the traffic flows and operating conditions on the roadways and intersections projected to be used by those traveling to and from the proposed residential development and to quantify the potential traffic impacts on these roadways and intersections.

The site was formally a single-family residential neighborhood with two public roads, since abandoned, intersecting SR 731 (Main Street), Whalburn Avenue and Stuart Place, and is currently vacant with no buildings. The residential development is proposed to have three curb cuts: one on SR 731 (Main Street) with left turns out prohibited, one full access driveway on the Mall Ring Road, the internal roadway around the Mall, and one driveway on the Mall Main driveway with right in, right out access only.

The study investigated the potential traffic impacts associated with the multi-family residential development during the weekday morning commuter peak period, evening commuter peak period and Saturday mid-day peak period.



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SITE LOCATION
PROPOSED RESIDENTIAL DEVELOPMENT
TRUMBULL, CONNECTICUT

SCHEMATIC, NOT TO SCALE

FIGURE 1

II. EXISTING CONDITIONS

An investigation of the existing traffic conditions on the adjacent roadway network formed the basis for assessing any traffic issues associated with the proposed development. This investigation included a field reconnaissance, traffic counting, and research of pertinent planning and traffic data available with the Connecticut Department of Transportation.

Access Network

Primary regional access to the site consists of the Merritt Parkway (Route 15) and Route 111/SR 731) (Main Street). Some limited secondary access is available along Madison Avenue at the rear of the Mall, not likely to be used extensively by the residential site.

Merritt Parkway (Route 15) – is a State maintained, divided, limited access parkway that begins in Greenwich and runs through the state, eventually called the Wilbur Cross Parkway, until it reaches the City of Meriden. It is a 4-lane facility near the site. The speed limit near the site is 55 miles per hour and the average daily traffic volume is approximately 76,900 vehicles south of the Route 111 (Main Street) interchange and 84,200 to the north. The "single point urban interchange" with Route 111/SR 731 (Main Street) services nearly 30,000 daily trips, about 60% to/from the north.

Main Street (Route 111/SR 731) – is a State owned, multi-lane, arterial in Trumbull that becomes a City Street just to the south in Bridgeport. Main Street is designated Route 111 north of the Merritt Parkway and SR 731 between the Merritt Parkway and the City of Bridgeport line. Main Street is relatively straight and flat with a sidewalk along the west side and sporadic illumination. The speed limit is 35 miles per hour. Average daily traffic data volumes are 25,200 between the Route 15 interchange and the Mall, and 21,100 to the south.

Mall Ring Road– is a private road that, as the name suggests, runs along the periphery of the Mall, connecting the parking lots with the Mall entrances. It varies from 2 to 5 lanes in width. It is signalized at its intersection with the Main Mall Driveway and has "Stop" control at its intersection with the secondary Mall access road to Madison Avenue, the transit hub, and the garage entrance near Target.

Mall Main Driveway- is a private, 900'± long, 6-lane divided facility connecting the Mall Ring road with Main Street (SR 731). The Mall Main driveway is relatively straight, on a downgrade travelling west, and signalized at both ends. It is illuminated and there is a sidewalk along the southerly side.

Public Transit - Greater Bridgeport Transit (GBT) runs several scheduled bus routes to/from the Mall. The Coastal link (CL) runs between the Mall and Norwalk, while Routes #3, #4, #6 and #8 run between the mall and downtown Bridgeport. There is a transit hub along the northern side of the Mall, adjacent to the ring road.

Intersection Characteristics

Five key intersections were reviewed in this study to determine if they would be impacted by the expected site traffic volumes. They are as follows:

Route 111/SR 731 (Main Street) at Route 15 (Merritt Parkway) ramps

This is a signalized "single point urban interchange" where Main Street (Route 111/SR 731) intersects the Route 15 (Merritt Parkway) ramps. Each Merritt Parkway off ramp has four travel lanes, two left turn and two right turn lanes at the intersection. Each Merritt Parkway on ramp has an entry lane for left turns and a channelized right turn entry. The Main Street northbound (SR 731) approach has a left turn lane, two through lanes, and a channelized right turn only lane. The Main Street southbound (Route 111) approach has a left turn lane, a through lane, and a channelized right turn only lane. The traffic signal is not coordinated with any others and operates with 4 phases: Main Street left turns/ramp right turns; Main Street through traffic; ramp left turns; and a pedestrian phase to cross Main street north of Route 15 and part of the SB on ramp.

Main Street (SR 731) at Mall Main Drive

This signalized "T" intersection is the primary access to the Mall. There are three travel lanes southbound, two through lanes and a free flow right turn only lane. There are three travel lanes northbound, two through lanes and a left turn only lane. The Main Mall drive has three entry lanes and three exit lanes (2 left and 1 right) separated by a median to better control traffic flow. The traffic signal is not coordinated with any others and operates

with 3 phases: Main Street protected left turn/Mall drive right turn; Main Street through traffic; and Main Mall Drive traffic.

Main Street (SR 731) at Proposed Site Drive

This is a proposed partial access intersection, to be located at the the former Whalburn Avenue, about 550 feet north of the Mall Main drive, and 275 feet south of the Route 15 NB off ramp. A left turn lane would be created on Main Street by pavement marking modifications to allow left turns into the residential site. There are five travel lanes on the Main Street (SR 731) at this location, three southbound and two northbound, and left turns out of the residential site would be prohibited.

Mall Main Drive at Ring Road

This is a signalized "T" intersection. There are four travel lanes approaching on the Main Mall Drive, two left turn lanes and two free-flow channelized right turn only lanes. There are two travel lanes northbound on the Ring Road, a through lane and a free-flow channelized right turn only lane. The southbound Ring Road approach has two lanes (left and left/through). The traffic signal is not coordinated with any others and operates with 3 phases: Ring Road southbound; Ring Road northbound; and Mall Main Drive traffic. Vehicles from the proposed site driveway on the mall main drive will make U-Turns to access Main Street (SR 731). It is noted that a SU-30 vehicle cannot make a U-Turn at this intersection and would need to exit the site via site driveways on Ring Road or Main Street (SR 731).

Mall Main Drive at Proposed Site Drive

This is a proposed partial access intersection, to be located about 400 feet west of Main Street. It would include right in, right out access from the residential site leaving the Mall Main Drive median intact. There are six travel lanes on the Main Mall Drive, three in each direction.

Ring Road at Proposed Site Drive

This sixth location, not specifically analyzed, is a proposed full access intersection, to be located about 430 feet north of Mall Main Drive. There are five travel lanes on the Ring Road, three northbound and two southbound at this location.

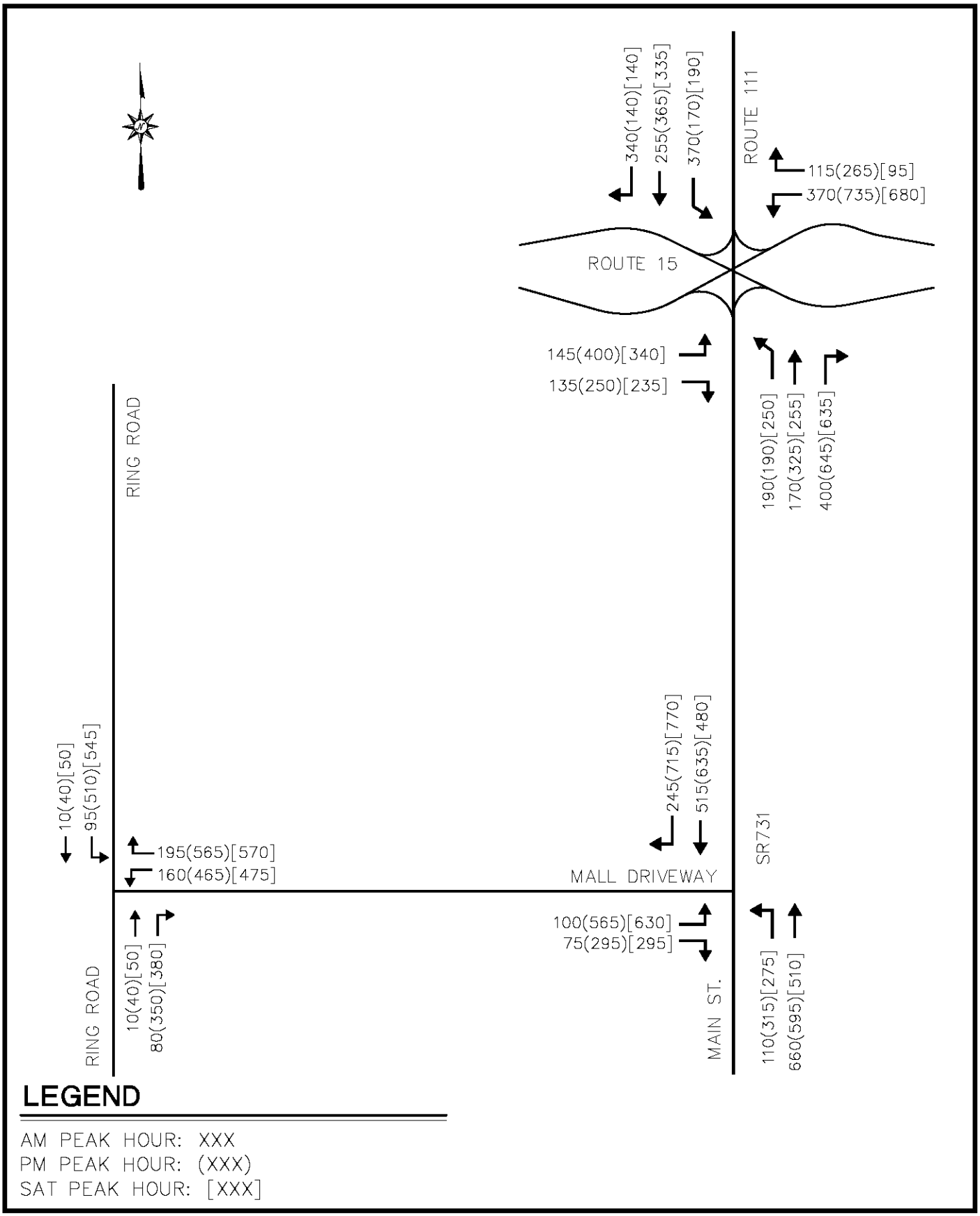
Crash Data Review

Crash data for the most recent three-year period July 2016 - June 2019 was obtained from the Connecticut Crash Data Repository for the study area intersections. While crash data has limited usefulness in the preparation of traffic impact studies, it is typically requested by regulatory agencies and included here for information. The data was separated into three areas: the Main Street/Route 15 interchange; the Main Street/Mall driveway intersection; and the Mall Main Drive, including the internal signalized intersection.

Eight-four (84) crashes were reported at the Route 15 interchange, the most common crash type was 57 rear end, about 67% of the total. The Main Street intersection with the Mall driveway saw 46 crashes, primarily rear end (20) and angle (14). Finally, the Mall Main drive and the internal signalized intersection was the scene of 17 crashes, including 9 sideswipe and 5 angle type.

Existing Traffic Volumes

Turning movement traffic counts were conducted during the weekday morning, evening commuter peak period, and the Saturday mid-day peak period, in October of 2019 at the study intersections. The current peak hour traffic volumes for the intersections are illustrated in **Figure 2**.



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EXISTING (2019) TRAFFIC VOLUMES
PROPOSED RESIDENTIAL DEVELOPMENT
TRUMBULL, CONNECTICUT

SCHEMATIC, NOT TO SCALE

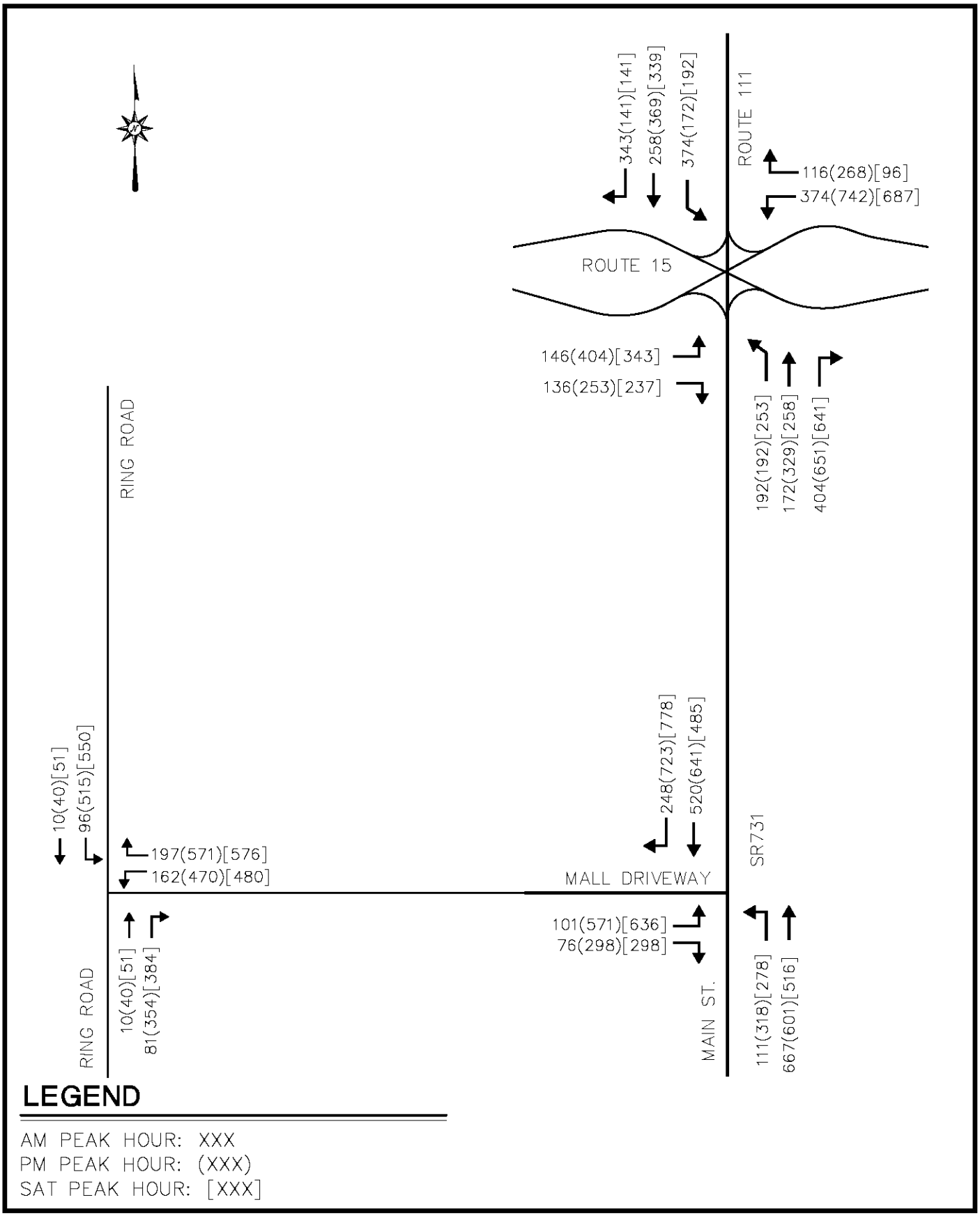
FIGURE 2

III. PROJECTED TRAFFIC CONDITIONS

Peak hour traffic volumes for the development were estimated, assigned to the roadway network, and superimposed onto background traffic volumes projected to the year 2022. This methodology provides a year of completion estimate for the analysis.

Background Traffic Volumes

A normal growth component was added to the existing peak hour through traffic volumes to estimate the year of project completion (2022) background traffic volumes. The background increase was based on a growth rate of 0.5 percent per year. Note that CTDOT counts on SR 731 (Main Street) over the last four cycles indicate the daily traffic volumes have continuously dropped, from about 28,600 in 2004 to 25,200 in 2013, suggesting negative growth. In addition, resources from the CTDOT Office of the State Traffic Administration (OSTA) were consulted regarding any approved proposed major traffic generators; there are no proposed or pending sites in the immediate area. The resulting peak hour background traffic volumes are depicted in **Figure 3**.



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NO BUILD (2022) TRAFFIC VOLUMES
PROPOSED RESIDENTIAL DEVELOPMENT
TRUMBULL, CONNECTICUT

SCHEMATIC, NOT TO SCALE

FIGURE 3

Trip Generation

The anticipated traffic volumes generated were projected based upon data provided by the *ITE Trip Generation Manual, 10th Edition*. This widely used reference manual provided trip generation rates for various land used based on actual traffic count data collected at similar sites. The following table shows projected trip generation for multifamily housing mid-rise (Land Use Code 221) using the number of units.

Table 1 illustrates the trip generation for the proposed development. It is projected that the development will generate approximately 1415 trips daily, 90 trips in the AM peak hour, 110 trips in the PM peak hour, and 100 trips in the Saturday mid-day peak hour.

Table 1-Trip Generation

Land Use	**Size**	**Trips**									
	(units)	Daily	AM Peak Hr.			PM Peak Hr.			SAT Peak Hr.		
			In	Out	Total	In	Out	Total	In	Out	Total
Multi-Family[1]	260	1415	20	70	90	70	40	110	50	50	100
Ref; ITE Trip Generation, 10th Edition: Land Use Code 221- multi-family residential, mid-rise											

Trip Distribution

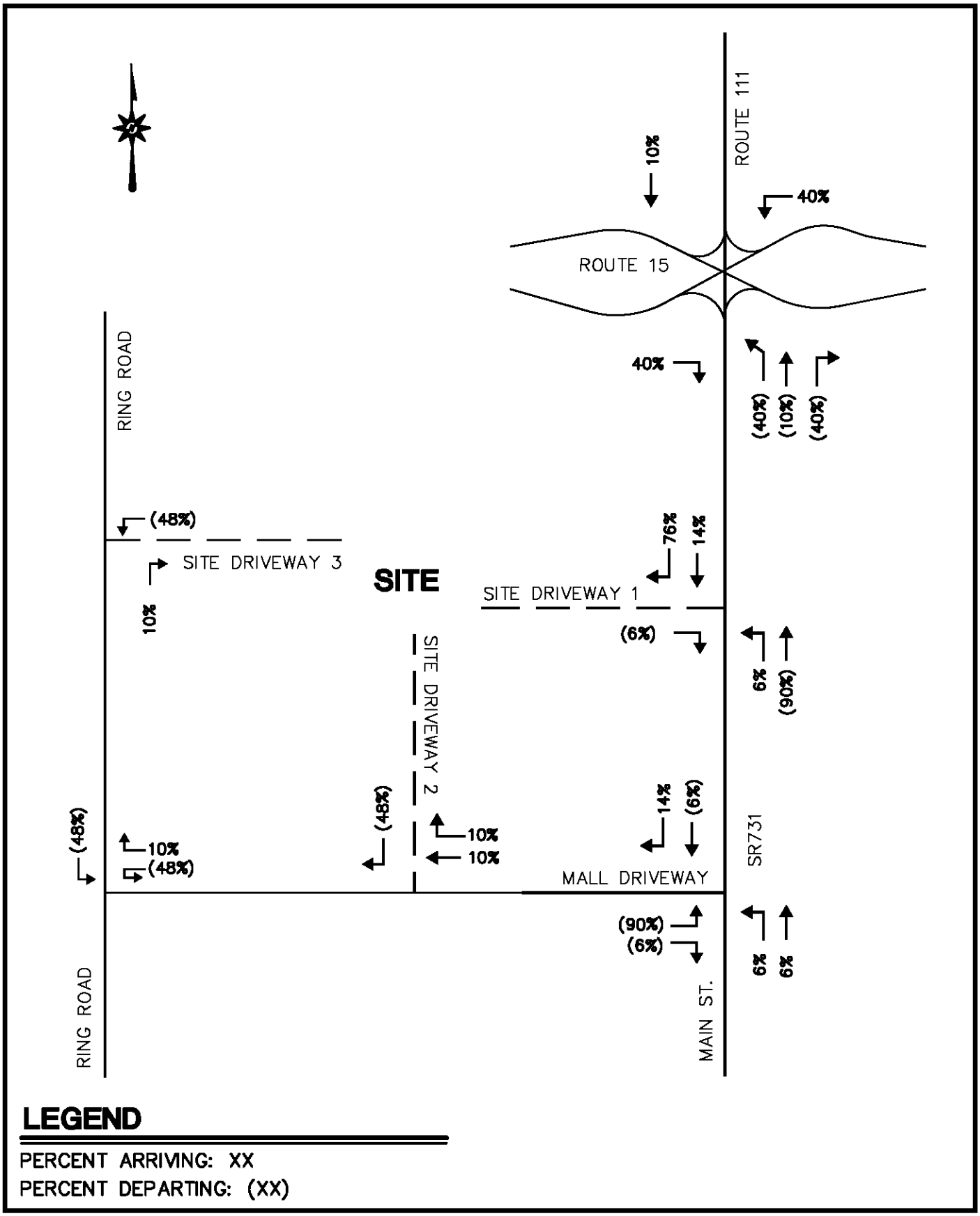
The directional distribution of traffic is typically a function of population densities, employment opportunities, existing travel patterns near to the site, and the efficiency and limitations of the existing roadway system. The distribution of the anticipated traffic volumes was based on journey to work data and is shown in **Figure 4**.

Assigned Site Generated Traffic

The generated trips were assigned to the street network based on the distribution. **Figure 5** show the site generated peak hour traffic assigned to the nearby roadway network for the respective peak periods.

Build Traffic Volumes

The projected traffic volumes generated by the development were superimposed onto the background traffic volumes to establish the build traffic volumes, as depicted in **Figure 6**.

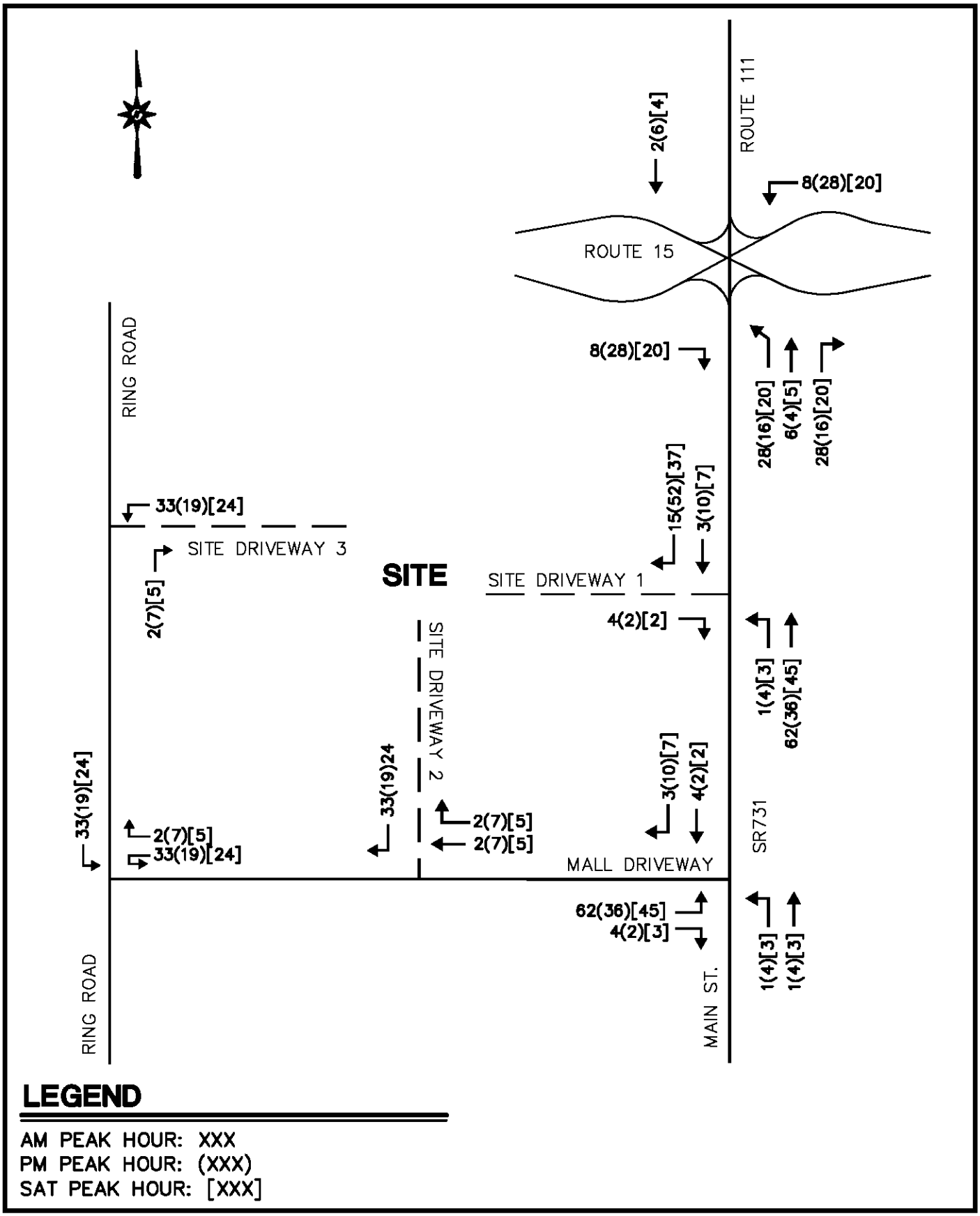


Companies

TRIP DISTRIBUTION
PROPOSED RESIDENTIAL DEVELOPMENT
TRUMBULL, CONNECTICUT

SCHEMATIC, NOT TO SCALE

FIGURE 4



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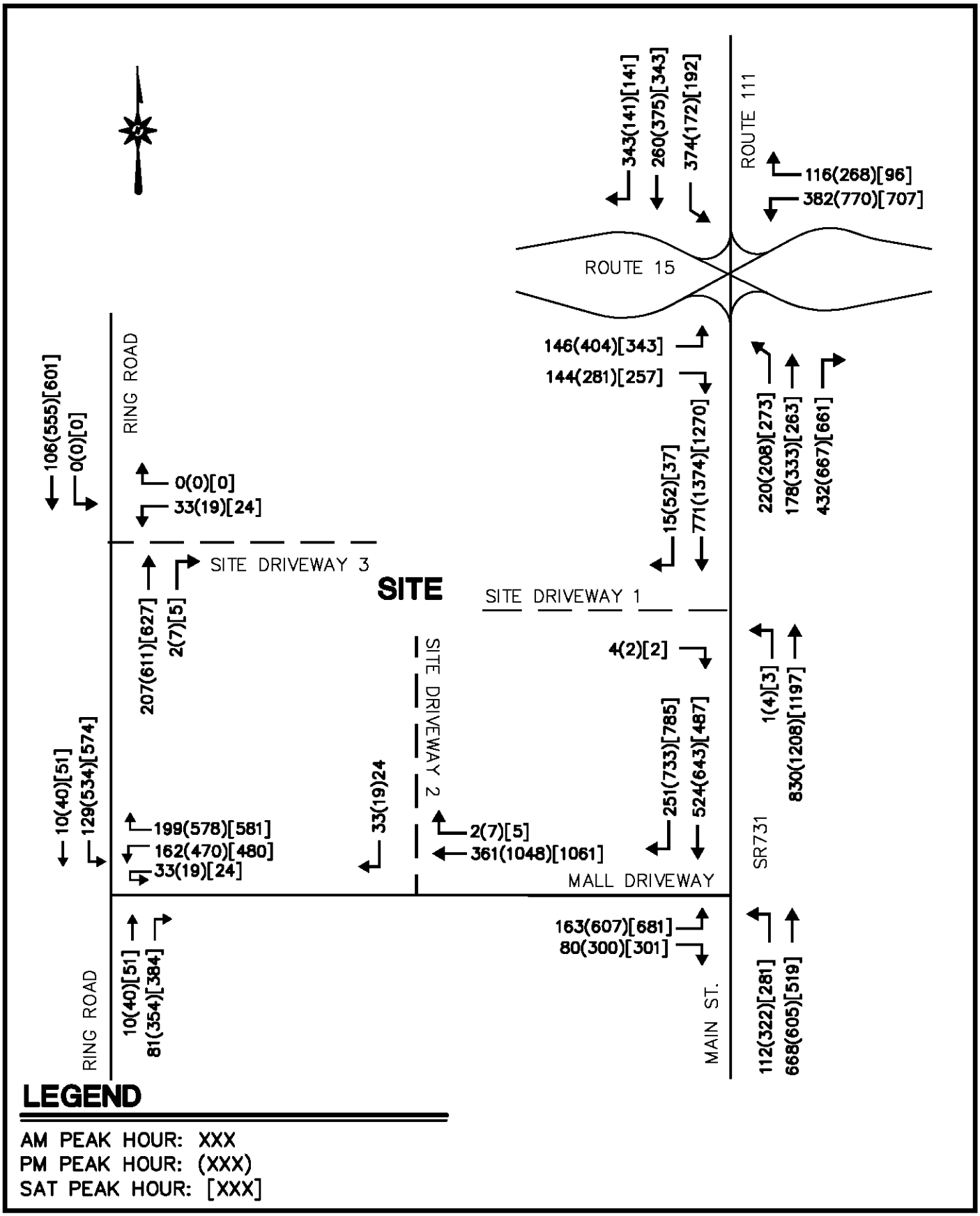
NEW SITE GENERATED TRAFFIC
PROPOSED RESIDENTIAL DEVELOPMENT
TRUMBULL, CONNECTICUT

SCHEMATIC, NOT TO SCALE

FIGURE 5



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BUILD (2022) TRAFFIC VOLUMES
PROPOSED RESIDENTIAL DEVELOPMENT
TRUMBULL, CONNECTICUT

SCHEMATIC, NOT TO SCALE

FIGURE 6

IV. ROADWAY ADEQUACY

The intersection capacity analyses were prepared using the methodology described in the Highway Capacity Manual (HCM), published by the Transportation Research Board (TRB) for the background no-build and future build traffic volume scenarios to simulate the traffic impact of the proposed residential development on the adjacent roadway network. As documented in the HCM, intersection performance is influenced by several factors, including: traffic demand; lane configurations; lane widths; turning restrictions; roadway grades; and signal phasing. The existing physical roadway characteristics and signal phasing and timing settings were determined by observing conditions in the field and reviewing the current traffic control signal plans and timing information provided by the Connecticut Department of Transportation.

Synchro™ software was used to model the study intersections based on the parameters mentioned above. The Synchro software is widely utilized by the traffic engineering industry and is consistent with the procedures in the HCM.

Signalized Intersections

Signalized intersections are analyzed in terms of vehicle capacity and motorist delay. Capacity is the maximum rate of vehicle flow through an intersection given typical operating conditions. The number of vehicles traveling through an intersection is divided by the capacity of the intersection to determine an overall volume to capacity ratio (v/c). A v/c value under 1.00 indicates that the number of vehicles traveling through an intersection is less than capacity.

As stated in the HCM, level of service for signalized intersections is defined in terms of control delay. Control delay measures the increase in delay a motorist experiences while encountering a traffic control signal. These factors include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. This delay is measured per vehicle for a 15-minute analysis period and is associated with the levels of service, which are summarized in **Table 2** below:

Table 2
Signalized Intersection – Levels of Service

Level of Service	Control Delay (seconds per vehicle)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Level of service A represents the optimum level where most motorists arrive at the subject intersection during the green phase and thus experience virtually no delay. Conversely, level of service F indicates that motorists are delayed over 80 seconds while traveling through the intersection and can often imply a complete breakdown of that location. Level of service D is generally considered the limit of acceptable motorist delay.

Unsignalized Intersections

Unsignalized intersections are generally evaluated in terms of average side street delay, as well as the capacity of the roadway approach. This analysis is based on the random arrival of vehicles and the associated gaps generated by this random arrival within the traffic stream. There is no overall level of service for unsignalized intersections. The relationship between levels of service and average side street delay are summarized in **Table 3** below:

Table 3
Unsignalized Intersection – Levels of Service

Level of Service	Control Delay (seconds per vehicle)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

It should be noted that unsignalized levels of service do not correspond to those for signalized intersections, nor do they constitute warrants for the installation of traffic control signals. It is also recognized that the methodology is overly conservative and that computations can indicate operations at poor levels of service (E or F) with even very low side street volumes, although they often function without serious problems in the real world.

Tables 4, 5 and 6 show the AM, PM and Saturday peak hour levels of service (LOS), volume to capacity (V/C) ratios, average delays, and 95% queue lengths at the subject intersections for the background and build volume scenarios.

Table 4-Peak Hour Traffic Operations Summary-Weekday AM

	Background	Build
Route 15 (Merritt Parkway) at Main Street[1]	**C (29" delay)**	**C (29" delay)**
Main Street (SR 731) NB Left (250')	D/36"/0.45/285	D/38"/0.52/345
Main Street (SR 731) NB Through	C/31"/0.25/105	C/32"/0.26/110
Main Street (SR 731) NB Right[2] (75')	A/1"/0.27/25	A/1"/0.29/25
Main Street (Route 111) SB Left (325')	E/55"/0.88/680	E/56"/0.88/680
Main Street (Route 111) SB Through	D/44"/0.70/325	D/45"/0.71/330
Main Street (Route 111) SB Right[2] (325')	A/1"/0.23/25	A/1"/0.23/25
Route 15 NB off ramp Left (200'+225')	C/34"/0.26/95	C/35"/0.26/95
Route 15 NB off ramp Right (200'+225')	C/32"/0.20/105	C/32"/0.22/110
Route 15 SB off ramp Left (410')	D/41"/0.67/230	D/41"/0.67/230
Route 15 SB off ramp Right (200'+200')	C/32"/0.17/90	C/32"/0.17/90
Main Street (SR 731) at Mall Main Driveway[1]	**A (10'' delay)**	**B (11'' delay)**
Main Street (SR 731) NB Left (400')	C/24"/0.37/80	C/25"/0.40/80
Main Street (SR 731) NB Through	A/5"/0.31/75	A/6"/0.35/80
Main Street (SR 731) SB Through	B/16"/0.46/120	B/17"/0.50/125
Main Street (SR 731) SB Right[2]	A/1"/0.17/25	A/1"/0.17/25
Mall Driveway Left	C/21"/0.18/40	C/23"/0.32/55
Mall Driveway Right	A/7"/0.13/30	A/7"/0.12/35
Mall Main Driveway at Ring Road[1]	**A (7" delay)**	**A (8" delay)**
Mall Main Driveway Left	B/10"/0.16/30	B/11"/0.20/35
Mall Main Driveway Right[2]	A/3"/0.20/25	A/3"/0.22/25
Ring Road NB Through	B/11"/0.02/25	B/12"/0.02/25
Ring Road NB Right[2]	A/5"/0.16/25	A/5"/0.17/25
Ring Road SB Left	B/11"/0.11/30	B/12"/0.15/35
Ring Road SB Left/Through	B/11"/0.11/30	B/12"/0.15/35
Main Street (SR 731) at Site Driveway #1		
Main Street (SR 731) NB Left[3]	-	B/13"/0.01/25
Site Driveway Right[3]	-	B/12"/0.01/25
Mall Main Driveway and Site Driveway #2		
Site Driveway Right[3]	-	B/11"/0.05/25

Notes: X/0.0/00 - Level of Service/Delay in seconds/veh./V/C ratio/95% Q length in feet
[1] – Signalized intersection
[2] – Channelized free-flow
[3]- Unsignalized movement

Table 5-Peak Hour Traffic Operations Summary – Weekday PM

	Background	Build
Route 15 (Merritt Parkway) at Main Street[1]	**D (36" delay)**	**D (39" delay)**
Main Street (SR 731) NB Left (250')	D/54"/0.70/285	E/55"/0.72/320
Main Street (SR 731) NB Through	C/32"/0.37/195	C/33"/0.37/195
Main Street (SR 731) NB Right[2] (75')	A/1"/0.44/25	A/1"/0.45/25
Main Street (Route 111) SB Left (325')	D/51"/0.63/240	D/49"/0.60/240
Main Street (Route 111) SB Through	D/48"/0.79/550	D/47"/0.78/565
Main Street (Route 111) SB Right[2] (325')	A/1"/0.09/25	A/1"/0.09/25
Route 15 NB off ramp Left (200'+225')	D/37"/0.50/245	D/39"/0.52/245
Route 15 NB off ramp Right (200'+225')	D/46"/0.59/180	D/47"/0.62/200
Route 15 SB off ramp Left (410')	E/55"/0.92/585	E/68"/0.99/615
Route 15 SB off ramp Right (200'+200')	D/47"/0.62/190	D/46"/0.59/190
Main Street (SR 731) at Mall Main Driveway[1]	**C (20'' delay)**	**C (21'' delay)**
Main Street (SR 731) NB Left (400')	D/44"/0.81/315	D/46"/0.82/330
Main Street (SR 731) NB Through	A/9"/0.32/130	A/9"/0.33/135
Main Street (SR 731) SB Through	C/34"/0.77/275	D/35"/0.78/285
Main Street (SR 731) SB Right[2]	A/1"/0.50/25	A/1"/0.50/25
Mall Driveway Left	C/33"/0.75/200	C/33"/0.77/215
Mall Driveway Right	A/9"/0.36/120	A/9"/0.36/120
Mall Main Driveway at Ring Road[1]	**B (13" delay)**	**B (14" delay)**
Mall Main Driveway Left	B/18"/0.52/125	B/19"/0.53/130
Mall Main Driveway Right[2]	A/3"/0.50/35	A/3"/0.50/35
Ring Road NB Through	C/21"/0.14/40	C/22"/0.14/40
Ring Road NB Right[2]	A/9"/0.66/65	A/9"/0.66/65
Ring Road SB Left	C/22"/0.58/200	C/23"/0.59/225
Ring Road SB Left/Through	C/22"/0.57/195	C/22"/0.58/210
Main Street (SR 731) at Site Driveway #1		
Main Street (SR 731) NB Left[3]	-	C/23"/0.02/25
Site Driveway Right[3]	-	C/18"/0.01/25
Mall Main Driveway and Site Driveway #2		
Site Driveway Right[3]	-	B/15"/0.05/25

Notes: X/0.0/00 - Level of Service/Delay in seconds/veh./V/C ratio/95% Q length in feet
[1] – Signalized intersection
[2] – Channelized free-flow
[3]- Unsignalized movement

Table 6-Peak Hour Traffic Operations Summary – Saturday Mid-Day

	Background	Build
Route 15 (Merritt Parkway) at Main Street[1]	**C (34" delay)**	**D (36" delay)**
Main Street (SR 731) NB Left (250')	D/51"/0.73/420	D/54"/0.77/465
Main Street (SR 731) NB Through	C/34"/0.34/155	C/34"/0.34/155
Main Street (SR 731) NB Right[2] (75')	A/1"/0.43/25	A/1"/0.44/25
Main Street (Route 111) SB Left (325')	D/45"/0.55/285	D/45"/0.54/285
Main Street (Route 111) SB Through	E/56"/0.85/485	E/56"/0.84/495
Main Street (Route 111) SB Right[2] (325')	A/1"/0.09/25	A/1"/0.09/25
Route 15 NB off ramp Left (200'+225')	D/36"/0.43/210	D/37"/0.44/210
Route 15 NB off ramp Right (200'+225')	D/40"/0.44/170	D/40"/0.46/185
Route 15 SB off ramp Left (410')	D/49"/0.86/525	D/54"/0.90/545
Route 15 SB off ramp Right (200'+200')	D/37"/0.18/80	D/37"/0.17/80
Main Street (SR 731) at Mall Main Driveway[1]	**B (18'' delay)**	**B (19'' delay)**
Main Street (SR 731) NB Left (400')	D/43"/0.77/270	D/45"/0.79/285
Main Street (SR 731) NB Through	A/10"/0.30/120	B/10"/0.30/125
Main Street (SR 731) SB Through	C/30"/0.61/195	C/31"/0.63/205
Main Street (SR 731) SB Right[2]	A/1"/0.53/25	A/1"/0.54/25
Mall Driveway Left	C/31"/0.76/225	C/31"/0.77/245
Mall Driveway Right	A/8"/0.35/110	A/8"/0.35/110
Mall Main Driveway at Ring Road[1]	**B (14" delay)**	**B (15" delay)**
Mall Main Driveway Left	B/19"/0.54/130	B/19"/0.55/135
Mall Main Driveway Right[2]	A/3"/0.51/35	A/3"/0.50/35
Ring Road NB Through	C/22"/0.18/45	C/23"/0.19/50
Ring Road NB Right[2]	A/10"/0.69/65	A/10"/0.69/70
Ring Road SB Left	C/23"/0.58/245	C/24"/0.61/270
Ring Road SB Left/Through	C/23"/0.59/245	C/24"/0.61/275
Main Street (SR 731) at Site Driveway #1		
Main Street (SR 731) NB Left[3]	-	C/20"/0.01/25
Site Driveway Right[3]	-	C/16"/0.01/25
Mall Main Driveway and Site Driveway #2		
Site Driveway Right[3]	-	B/15"/0.07/25

Notes: X/0.0/00 - Level of Service/Delay in seconds/veh./V/C ratio/95% Q length in feet

[1] – Signalized intersection

[2] – Channelized free-flow

[3]- Unsignalized movement

V. CONCLUSIONS AND RECOMMENDATIONS

This study investigated the traffic operational changes associated with the proposed residential development during the weekday morning, evening and Saturday mid-day peak traffic periods. It is projected that the proposed development will generate approximately 1415 daily trips, 90 trips in the weekday AM peak hour, 110 trips in the weekday PM peak hour, and 100 trips in the Saturday mid-day peak hour.

All development projects have some traffic impact, ranging from minimal to severe. From an operational perspective, the adjacent roadway network should see no measurable negative impacts from the trips generated. There are a few traffic movements that deserve further review. During the weekday afternoon peak period, the Main Street northbound left turn onto Route 15 southbound shows the level of service changing from “D” under background conditions, to “E” under build conditions. This is more of an academic change than an operational one as the average delay, which determines the level of service, increases by less than 1 second per vehicle, from 54” to 55”, resulting in the level of service going from “D” to “E”. During the same time period, the delay for the Route 15 SB off ramp left turn is projected to increase from 55” to 68”. A minor traffic signal timing change could restore the delay to near the background condition if conditions warrant.

The following is recommended to enhance traffic operations and safety:

<u>In conjunction with the residential project:</u>

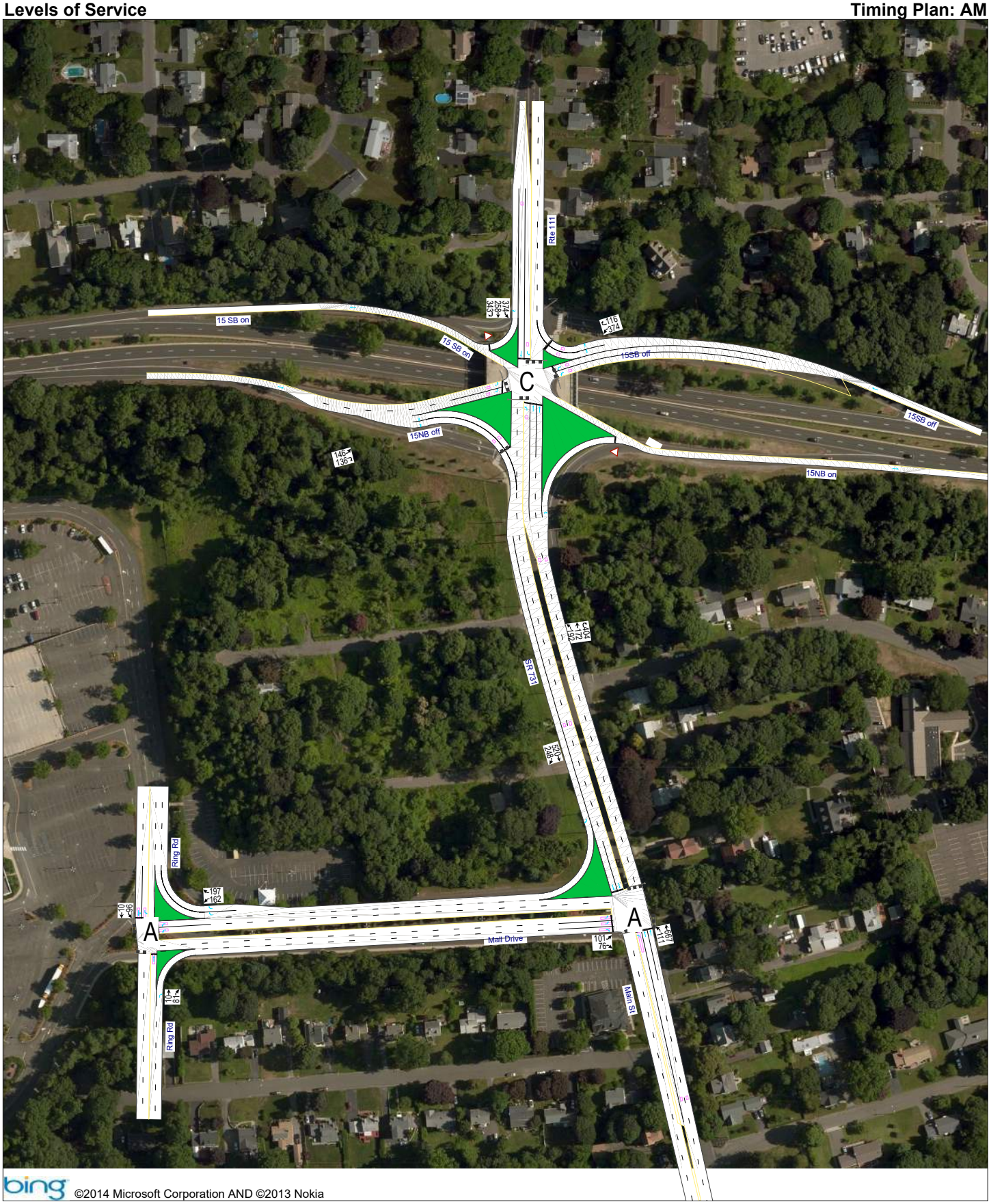
- Provide painted white stop line and double yellow centerline, along with a 36 inch “Stop” sign (R1-1) for the site driveway intersections. Insure that landscaping does not obstruct the sightlines.
- Prohibit left turns from the site driveway onto SR 731 (Main Street). Allow left turns into the site from a left turn lane created by modifying the SR 731 (Main Street) pavement markings.
- Work with the Mall owner to provide rectangular rapid flashing beacons (RRFB) at proposed pedestrian crossing on the Ring Road. Eliminate the existing crossing at the overflow parking lot, which is sight distance deficient.
- Consult with the Trumbull Board of Education to determine school bus stop locations if a substantial number of school aged children is anticipated.

- Submit the project to the Office of State Traffic Administration (OSTA) for review as a major traffic generator.

APPENDIX

Map - Proposed Residential
Levels of Service

No Build
Timing Plan: AM



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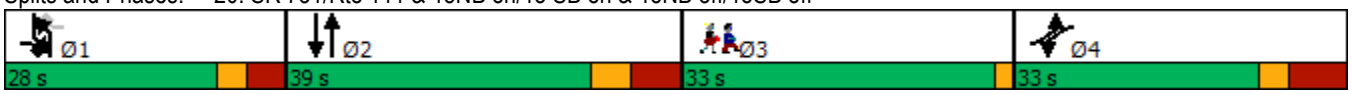
Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø3
Lane Configurations											
Traffic Volume (vph)	146	136	374	116	192	172	404	374	258	343	
Future Volume (vph)	146	136	374	116	192	172	404	374	258	343	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)						0%			0%		
Storage Length (ft)	0		400		225			325			
Storage Lanes	2		2		1			1			
Taper Length (ft)	25		150		75			150			
Lane Util. Factor	0.97	0.88	0.97	0.88	1.00	0.95	1.00	1.00	1.00	1.00	
Frt		0.850		0.850			0.850			0.850	
Flt Protected	0.950		0.950		0.950			0.950			
Satd. Flow (prot)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Flt Permitted	0.950		0.950		0.950			0.950			
Satd. Flow (perm)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Right Turn on Red		No		No			Yes			Yes	
Satd. Flow (RTOR)							439			373	
Link Speed (mph)						40			40		
Link Distance (ft)						1045			532		
Travel Time (s)						17.8			9.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	159	148	407	126	209	187	439	407	280	373	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	159	148	407	126	209	187	439	407	280	373	
Turn Type	Prot	Prot	Prot	Perm	Prot	NA	Free	Prot	NA	Free	
Protected Phases	4	1	4		1	2		1	2		3
Permitted Phases				1			Free			Free	
Detector Phase	4	1	4	1	1	2		1	2		
Switch Phase											
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0	15.0		9.0	15.0		1.0
Minimum Split (s)	18.0	16.0	18.0	16.0	16.0	25.0		16.0	25.0		33.0
Total Split (s)	33.0	28.0	33.0	28.0	28.0	39.0		28.0	39.0		33.0
Total Split (%)	24.8%	21.1%	24.8%	21.1%	21.1%	29.3%		21.1%	29.3%		25%
Maximum Green (s)	24.0	21.0	24.0	21.0	21.0	30.0		21.0	30.0		31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0		2.0
All-Red Time (s)	6.0	4.0	6.0	4.0	4.0	5.0		4.0	5.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)	9.0	7.0	9.0	7.0	7.0	9.0		7.0	9.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	5.0		3.0	5.0		0.2
Recall Mode	None	None	None	None	None	Min		None	Min		None
Walk Time (s)											12.0
Flash Dont Walk (s)											19.0
Pedestrian Calls (#/hr)											1
Act Effct Green (s)	15.2	22.2	15.2	22.2	22.2	18.5	86.6	22.2	18.5	86.6	
Actuated g/C Ratio	0.18	0.26	0.18	0.26	0.26	0.21	1.00	0.26	0.21	1.00	
v/c Ratio	0.26	0.20	0.67	0.17	0.45	0.25	0.27	0.88	0.70	0.23	
Control Delay	34.4	31.6	40.8	31.6	36.0	31.4	0.4	55.2	44.2	0.3	

Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.4	31.6	40.8	31.6	36.0	31.4	0.4	55.2	44.2	0.3	
LOS	C	C	D	C	D	C	A	E	D	A	
Approach Delay						16.3			33.0		
Approach LOS						B			C		
Queue Length 50th (ft)	32	29	90	25	79	38	0	175	124	0	
Queue Length 95th (ft)	94	103	226	89	#282	105	0	#680	323	0	
Internal Link Dist (ft)						965			452		
Turn Bay Length (ft)		175	400	100	225		220	325		325	
Base Capacity (vph)	1019	724	1019	724	462	1294	1615	462	681	1615	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.20	0.40	0.17	0.45	0.14	0.27	0.88	0.41	0.23	

Intersection Summary

Area Type: Other
Cycle Length: 133
Actuated Cycle Length: 86.6
Natural Cycle: 105
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 29.0 Intersection LOS: C
Intersection Capacity Utilization Err% ICU Level of Service H
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	101	76	111	667	520	248
Future Volume (vph)	101	76	111	667	520	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	0	0	375			700
Storage Lanes	2	1	1			1
Taper Length (ft)	8		8			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3319	1531	1711	3421	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3319	1531	1711	3421	3539	1583
Right Turn on Red		Yes				No
Satd. Flow (RTOR)		35				
Link Speed (mph)	30			40	40	
Link Distance (ft)	922			664	1045	
Travel Time (s)	21.0			11.3	17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	83	121	725	565	270
Shared Lane Traffic (%)						
Lane Group Flow (vph)	110	83	121	725	565	270
Turn Type	Prot	pt+ov	Prot	NA	NA	Free
Protected Phases	4	1 4	1	1 2	2	
Permitted Phases						Free
Detector Phase	4	4	1	2	2	
Switch Phase						
Minimum Initial (s)	9.0		9.0		15.0	
Minimum Split (s)	21.0		15.0		21.0	
Total Split (s)	37.0		27.0		26.0	
Total Split (%)	41.1%		30.0%		28.9%	
Maximum Green (s)	31.0		21.0		20.0	
Yellow Time (s)	4.0		4.0		4.0	
All-Red Time (s)	2.0		2.0		2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.0		6.0		6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		5.0	
Recall Mode	None		Min		Min	
Act Effct Green (s)	9.3	21.0	9.8	35.2	17.6	50.9
Actuated g/C Ratio	0.18	0.41	0.19	0.69	0.35	1.00
v/c Ratio	0.18	0.13	0.37	0.31	0.46	0.17
Control Delay	21.3	6.6	24.0	5.0	15.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.3	6.6	24.0	5.0	15.5	0.2
LOS	C	A	C	A	B	A
Approach Delay	15.0			7.7	10.6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	B			A	B	
Queue Length 50th (ft)	15	8	34	50	73	0
Queue Length 95th (ft)	36	29	78	74	119	0
Internal Link Dist (ft)	842			584	965	
Turn Bay Length (ft)			375			700
Base Capacity (vph)	2081	973	726	2456	1431	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.17	0.30	0.39	0.17

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 50.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.46
Intersection Signal Delay: 9.8 — Intersection LOS: A
Intersection Capacity Utilization 44.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 28: Main St/SR 731 & Mall Drive

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	162	197	10	81	96	10
Future Volume (vph)	162	197	10	81	96	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	150		0	0	
Storage Lanes	2	1		1	1	
Taper Length (ft)	8				8	
Lane Util. Factor	0.97	0.88	1.00	1.00	0.95	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	0.961
Satd. Flow (prot)	3433	2787	1863	1583	1681	1701
Flt Permitted	0.950				0.950	0.961
Satd. Flow (perm)	3433	2787	1863	1583	1681	1701
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		214		88		
Link Speed (mph)	30		30			30
Link Distance (ft)	922		359			275
Travel Time (s)	21.0		8.2			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	176	214	11	88	104	11
Shared Lane Traffic (%)					45%	
Lane Group Flow (vph)	176	214	11	88	57	58
Turn Type	Prot	Perm	NA	Perm	Split	NA
Protected Phases	3		2		1	1
Permitted Phases		3		2		
Detector Phase	3	3	2	2	1	1
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0	20.0	20.0	11.0	11.0
Total Split (s)	34.0	34.0	34.0	34.0	22.0	22.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	24.4%	24.4%
Maximum Green (s)	30.0	30.0	30.0	30.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	8.6	8.6	8.3	8.3	8.4	8.4
Actuated g/C Ratio	0.32	0.32	0.31	0.31	0.32	0.32
v/c Ratio	0.16	0.20	0.02	0.16	0.11	0.11
Control Delay	10.1	3.0	11.3	4.7	11.2	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	3.0	11.3	4.7	11.2	11.2

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	B	A	B	A	B	B
Approach Delay	6.2		5.5			11.2
Approach LOS	A		A			B
Queue Length 50th (ft)	13	0	2	0	8	8
Queue Length 95th (ft)	29	16	9	21	28	28
Internal Link Dist (ft)	842		279			195
Turn Bay Length (ft)		150				
Base Capacity (vph)	3179	2597	1725	1472	1203	1217
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.08	0.01	0.06	0.05	0.05

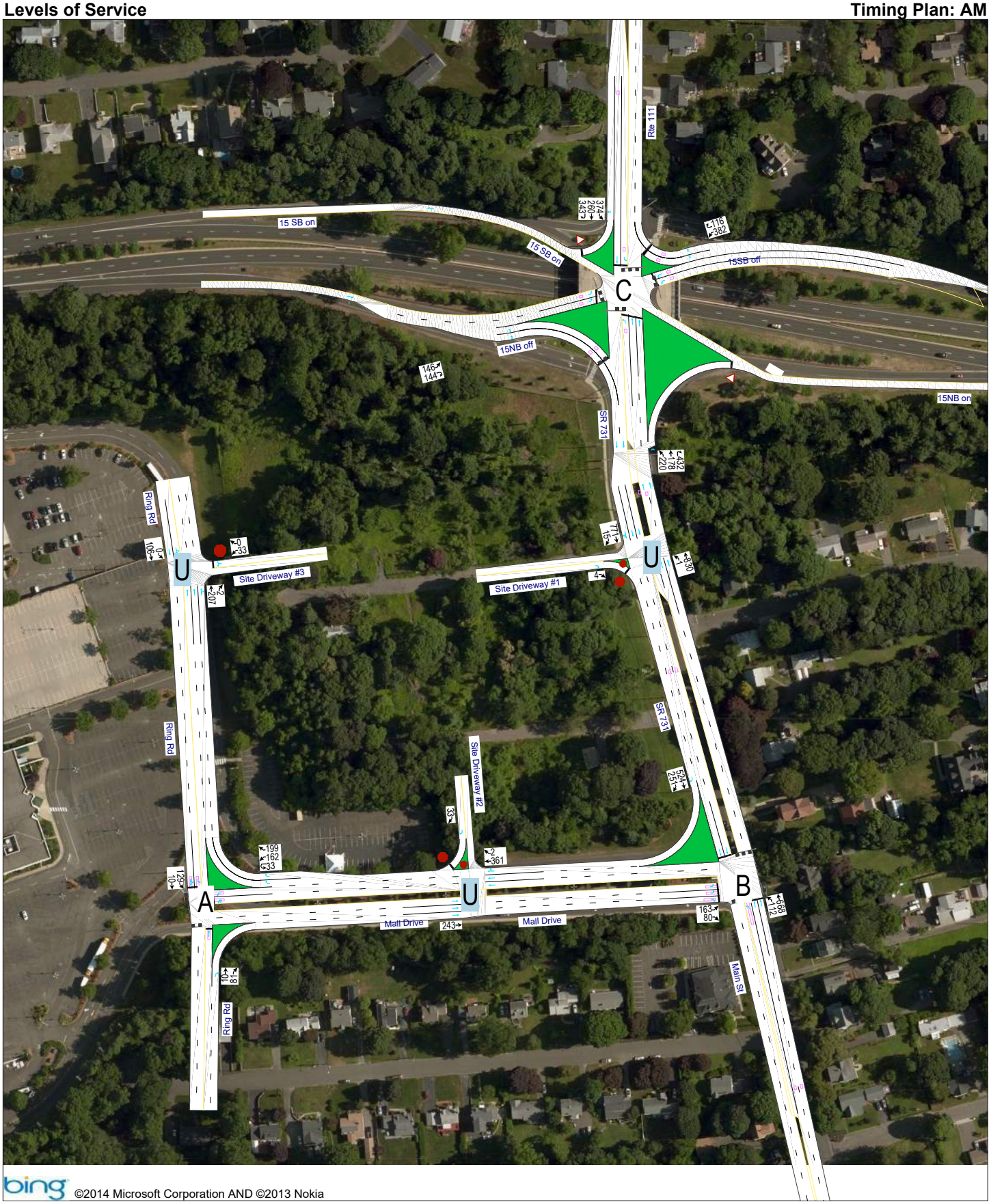
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 26.6
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.20
Intersection Signal Delay: 7.1 — Intersection LOS: A
Intersection Capacity Utilization 22.1% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 30: Ring Rd & Mall Drive

Map - Proposed Residential
Levels of Service

Build
Timing Plan: AM



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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	33	0	207	2	0	106
Future Volume (vph)	33	0	207	2	0	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	0.95	0.95
Frt			0.999			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	5080	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	5080	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	249		571			155
Travel Time (s)	5.7		13.0			3.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	0	225	2	0	115
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	227	0	0	115
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	0	207	2	0	106
Future Vol, veh/h	33	0	207	2	0	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	0	225	2	0	115

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	284	114	0	0	227	0
Stage 1	226	-	-	-	-	-
Stage 2	58	-	-	-	-	-
Critical Hdwy	6.29	7.14	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	688	779	-	-	908	-
Stage 1	724	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	688	779	-	-	908	-
Mov Cap-2 Maneuver	688	-	-	-	-	-
Stage 1	724	-	-	-	-	-
Stage 2	919	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	688	908	-
HCM Lane V/C Ratio	-	-	0.052	-	-
HCM Control Delay (s)	-	-	10.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	243	361	2	0	33
Future Volume (vph)	0	243	361	2	0	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.999			0.865
Flt Protected						
Satd. Flow (prot)	0	5085	5080	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	5085	5080	0	0	1611
Link Speed (mph)		30	30		30	
Link Distance (ft)		454	468		203	
Travel Time (s)		10.3	10.6		4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	264	392	2	0	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	264	394	0	0	36
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 17.0%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Vol, veh/h	0	243	361	2	0	33
Future Vol, veh/h	0	243	361	2	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	264	392	2	0	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	197
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	690
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	690
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	690
HCM Lane V/C Ratio	-	-	-	0.052
HCM Control Delay (s)	-	-	-	10.5
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	4	1	830	771	15
Future Volume (vph)	0	4	1	830	771	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	50			0
Storage Lanes	0	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.91	0.91
Frt		0.865			0.997	
Flt Protected			0.950			
Satd. Flow (prot)	0	1611	1770	3539	5070	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1770	3539	5070	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	303			585	157	
Travel Time (s)	6.9			10.0	2.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	4	1	902	838	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	1	902	854	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 26.3%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	1	830	771	15
Future Vol, veh/h	0	4	1	830	771	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	1	902	838	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	427	854	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	5.34	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	0	492	460	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	492	460	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	460	-	492	-	-
HCM Lane V/C Ratio	0.002	-	0.009	-	-
HCM Control Delay (s)	12.8	-	12.4	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

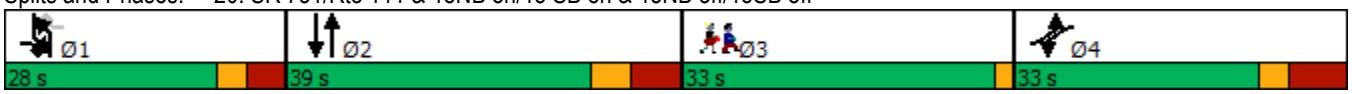
Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø3
Lane Configurations											
Traffic Volume (vph)	146	144	382	116	220	178	432	374	260	343	
Future Volume (vph)	146	144	382	116	220	178	432	374	260	343	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)						0%			0%		
Storage Length (ft)	0		400		225			325			
Storage Lanes	2		2		1			1			
Taper Length (ft)	25		150		75			150			
Lane Util. Factor	0.97	0.88	0.97	0.88	1.00	0.95	1.00	1.00	1.00	1.00	
Frt		0.850		0.850			0.850			0.850	
Flt Protected	0.950		0.950		0.950			0.950			
Satd. Flow (prot)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Flt Permitted	0.950		0.950		0.950			0.950			
Satd. Flow (perm)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Right Turn on Red		No		No			Yes			Yes	
Satd. Flow (RTOR)							470			373	
Link Speed (mph)						40			40		
Link Distance (ft)						304			532		
Travel Time (s)						5.2			9.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	159	157	415	126	239	193	470	407	283	373	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	159	157	415	126	239	193	470	407	283	373	
Turn Type	Prot	Prot	Prot	Perm	Prot	NA	Free	Prot	NA	Free	
Protected Phases	4	1	4		1	2		1	2		3
Permitted Phases				1			Free			Free	
Detector Phase	4	1	4	1	1	2		1	2		
Switch Phase											
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0	15.0		9.0	15.0		1.0
Minimum Split (s)	18.0	16.0	18.0	16.0	16.0	25.0		16.0	25.0		33.0
Total Split (s)	33.0	28.0	33.0	28.0	28.0	39.0		28.0	39.0		33.0
Total Split (%)	24.8%	21.1%	24.8%	21.1%	21.1%	29.3%		21.1%	29.3%		25%
Maximum Green (s)	24.0	21.0	24.0	21.0	21.0	30.0		21.0	30.0		31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0		2.0
All-Red Time (s)	6.0	4.0	6.0	4.0	4.0	5.0		4.0	5.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)	9.0	7.0	9.0	7.0	7.0	9.0		7.0	9.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	5.0		3.0	5.0		0.2
Recall Mode	None	None	None	None	None	Min		None	Min		None
Walk Time (s)											12.0
Flash Dont Walk (s)											19.0
Pedestrian Calls (#/hr)											1
Act Effct Green (s)	15.4	22.1	15.4	22.1	22.1	18.5	86.8	22.1	18.5	86.8	
Actuated g/C Ratio	0.18	0.25	0.18	0.25	0.25	0.21	1.00	0.25	0.21	1.00	
v/c Ratio	0.26	0.22	0.67	0.17	0.52	0.26	0.29	0.88	0.71	0.23	
Control Delay	34.4	31.8	40.9	31.7	37.2	31.5	0.5	55.8	44.7	0.3	

Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.4	31.8	40.9	31.7	37.2	31.5	0.5	55.8	44.7	0.3	
LOS	C	C	D	C	D	C	A	E	D	A	
Approach Delay						16.8			33.4		
Approach LOS						B			C		
Queue Length 50th (ft)	32	31	92	25	92	40	0	177	126	0	
Queue Length 95th (ft)	94	108	230	89	#343	108	0	#680	326	0	
Internal Link Dist (ft)						224			452		
Turn Bay Length (ft)		175	400	100	225		220	325		325	
Base Capacity (vph)	1016	721	1016	721	460	1289	1615	460	679	1615	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.22	0.41	0.17	0.52	0.15	0.29	0.88	0.42	0.23	

Intersection Summary

Area Type: Other
Cycle Length: 133
Actuated Cycle Length: 86.8
Natural Cycle: 115
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 29.1 Intersection LOS: C
Intersection Capacity Utilization Err% ICU Level of Service H
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	163	80	112	668	524	251
Future Volume (vph)	163	80	112	668	524	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	0	0	375			0
Storage Lanes	2	1	1			1
Taper Length (ft)	8		8			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3319	1531	1711	3421	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3319	1531	1711	3421	3539	1583
Right Turn on Red		Yes				No
Satd. Flow (RTOR)		34				
Link Speed (mph)	30			40	40	
Link Distance (ft)	468			664	585	
Travel Time (s)	10.6			11.3	10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	87	122	726	570	273
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	87	122	726	570	273
Turn Type	Prot	pt+ov	Prot	NA	NA	Free
Protected Phases	4	1 4	1	1 2	2	
Permitted Phases						Free
Detector Phase	4	4	1	2	2	
Switch Phase						
Minimum Initial (s)	9.0		9.0		15.0	
Minimum Split (s)	21.0		15.0		21.0	
Total Split (s)	37.0		27.0		26.0	
Total Split (%)	41.1%		30.0%		28.9%	
Maximum Green (s)	31.0		21.0		20.0	
Yellow Time (s)	4.0		4.0		4.0	
All-Red Time (s)	2.0		2.0		2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.0		6.0		6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		5.0	
Recall Mode	None		Min		Min	
Act Effct Green (s)	9.1	24.7	9.6	33.1	17.5	54.3
Actuated g/C Ratio	0.17	0.45	0.18	0.61	0.32	1.00
v/c Ratio	0.32	0.12	0.40	0.35	0.50	0.17
Control Delay	22.5	6.8	25.0	5.7	16.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.5	6.8	25.0	5.7	16.6	0.2
LOS	C	A	C	A	B	A
Approach Delay	17.3			8.5	11.3	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	B			A	B	
Queue Length 50th (ft)	26	9	35	50	74	0
Queue Length 95th (ft)	54	31	80	76	123	0
Internal Link Dist (ft)	388			584	505	
Turn Bay Length (ft)			375			
Base Capacity (vph)	1901	891	663	2248	1307	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.10	0.18	0.32	0.44	0.17

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 54.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 10.9	Intersection LOS: B
Intersection Capacity Utilization 44.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 28: Main St/SR 731 & Mall Drive

Lane Group	WBU	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	33	162	199	10	81	129	10
Future Volume (vph)	33	162	199	10	81	129	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0	
Storage Lanes		2	1		1	1	
Taper Length (ft)		8				8	
Lane Util. Factor	0.95	0.97	0.88	1.00	1.00	0.95	0.95
Frt			0.850		0.850		
Flt Protected		0.950				0.950	0.959
Satd. Flow (prot)	0	3433	2787	1863	1583	1681	1697
Flt Permitted		0.950				0.950	0.959
Satd. Flow (perm)	0	3433	2787	1863	1583	1681	1697
Right Turn on Red			Yes		Yes		
Satd. Flow (RTOR)			216		88		
Link Speed (mph)		30		30			30
Link Distance (ft)		454		359			571
Travel Time (s)		10.3		8.2			13.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	176	216	11	88	140	11
Shared Lane Traffic (%)						46%	
Lane Group Flow (vph)	0	212	216	11	88	76	75
Turn Type	Prot	Prot	Perm	NA	Perm	Split	NA
Protected Phases	3	3		2		1	1
Permitted Phases			3		2		
Detector Phase	3	3	3	2	2	1	1
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	11.0	11.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	22.0	22.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	37.8%	24.4%	24.4%
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag				Lag	Lag	Lead	Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None
Act Effct Green (s)		8.6	8.6	8.1	8.1	8.4	8.4
Actuated g/C Ratio		0.30	0.30	0.29	0.29	0.30	0.30
v/c Ratio		0.20	0.22	0.02	0.17	0.15	0.15
Control Delay		10.7	3.1	11.9	5.0	11.9	11.9
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		10.7	3.1	11.9	5.0	11.9	11.9
LOS		B	A	B	A	B	B
Approach Delay		6.9		5.8			11.9
Approach LOS		A		A			B

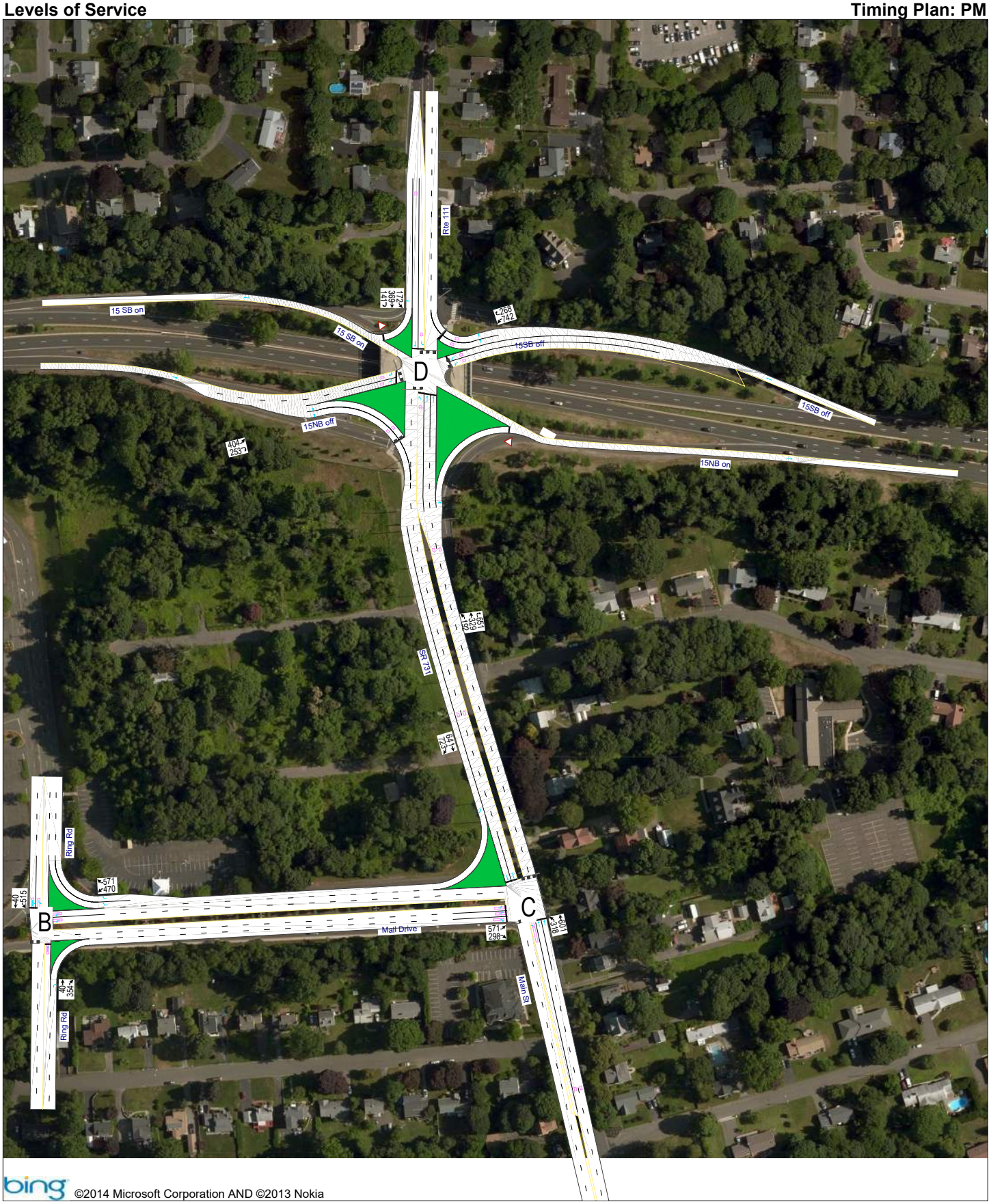
Lane Group	WBU	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)		15	0	2	0	11	11
Queue Length 95th (ft)		35	17	10	22	35	35
Internal Link Dist (ft)		374		279			491
Turn Bay Length (ft)			150				
Base Capacity (vph)		3129	2559	1698	1450	1188	1199
Starvation Cap Reductn		0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0
Reduced v/c Ratio		0.07	0.08	0.01	0.06	0.06	0.06

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 28.4	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.22	
Intersection Signal Delay: 7.8	Intersection LOS: A
Intersection Capacity Utilization 23.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 30: Ring Rd & Mall Drive

Map - Proposed Residential
Levels of Service

No Build
Timing Plan: PM



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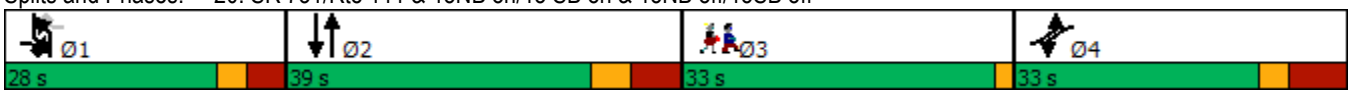
Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø3
Lane Configurations											
Traffic Volume (vph)	404	253	742	268	192	329	651	172	369	141	
Future Volume (vph)	404	253	742	268	192	329	651	172	369	141	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)						0%			0%		
Storage Length (ft)	0		400		225			325			
Storage Lanes	2		2		1			1			
Taper Length (ft)	25		150		75			150			
Lane Util. Factor	0.97	0.88	0.97	0.88	1.00	0.95	1.00	1.00	1.00	1.00	
Frt		0.850		0.850			0.850			0.850	
Flt Protected	0.950		0.950		0.950			0.950			
Satd. Flow (prot)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Flt Permitted	0.950		0.950		0.950			0.950			
Satd. Flow (perm)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Right Turn on Red		No		No			Yes			Yes	
Satd. Flow (RTOR)							708			197	
Link Speed (mph)						40			40		
Link Distance (ft)						1045			532		
Travel Time (s)						17.8			9.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	439	275	807	291	209	358	708	187	401	153	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	439	275	807	291	209	358	708	187	401	153	
Turn Type	Prot	Prot	Prot	Perm	Prot	NA	Free	Prot	NA	Free	
Protected Phases	4	1	4		1	2		1	2		3
Permitted Phases				1			Free			Free	
Detector Phase	4	1	4	1	1	2		1	2		
Switch Phase											
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0	15.0		9.0	15.0		1.0
Minimum Split (s)	18.0	16.0	18.0	16.0	16.0	25.0		16.0	25.0		33.0
Total Split (s)	33.0	28.0	33.0	28.0	28.0	39.0		28.0	39.0		33.0
Total Split (%)	24.8%	21.1%	24.8%	21.1%	21.1%	29.3%		21.1%	29.3%		25%
Maximum Green (s)	24.0	21.0	24.0	21.0	21.0	30.0		21.0	30.0		31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0		2.0
All-Red Time (s)	6.0	4.0	6.0	4.0	4.0	5.0		4.0	5.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)	9.0	7.0	9.0	7.0	7.0	9.0		7.0	9.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	5.0		3.0	5.0		0.2
Recall Mode	None	None	None	None	None	Min		None	Min		None
Walk Time (s)											12.0
Flash Dont Walk (s)											19.0
Pedestrian Calls (#/hr)											1
Act Effct Green (s)	24.7	16.4	24.7	16.4	16.4	26.9	98.7	16.4	26.9	98.7	
Actuated g/C Ratio	0.25	0.17	0.25	0.17	0.17	0.27	1.00	0.17	0.27	1.00	
v/c Ratio	0.50	0.59	0.92	0.62	0.70	0.37	0.44	0.63	0.79	0.09	
Control Delay	37.4	45.6	55.2	46.5	54.3	32.4	0.9	50.7	47.6	0.1	

Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	37.4	45.6	55.2	46.5	54.3	32.4	0.9	50.7	47.6	0.1	
LOS	D	D	E	D	D	C	A	D	D	A	
Approach Delay						18.5			38.6		
Approach LOS						B			D		
Queue Length 50th (ft)	115	86	243	92	118	87	0	104	213	0	
Queue Length 95th (ft)	243	180	#582	190	#282	191	0	238	#547	0	
Internal Link Dist (ft)						965			452		
Turn Bay Length (ft)		175	400	100	225		220	325		325	
Base Capacity (vph)	873	620	873	620	396	1109	1615	396	583	1615	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.50	0.44	0.92	0.47	0.53	0.32	0.44	0.47	0.69	0.09	

Intersection Summary

Area Type: Other
Cycle Length: 133
Actuated Cycle Length: 98.7
Natural Cycle: 125
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 36.4 Intersection LOS: D
Intersection Capacity Utilization Err% ICU Level of Service H
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	571	298	318	601	641	723
Future Volume (vph)	571	298	318	601	641	723
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	0	0	375			700
Storage Lanes	2	1	1			1
Taper Length (ft)	8		8			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3319	1531	1711	3421	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3319	1531	1711	3421	3539	1583
Right Turn on Red		Yes				No
Satd. Flow (RTOR)		15				
Link Speed (mph)	30			40	40	
Link Distance (ft)	922			664	1045	
Travel Time (s)	21.0			11.3	17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	621	324	346	653	697	786
Shared Lane Traffic (%)						
Lane Group Flow (vph)	621	324	346	653	697	786
Turn Type	Prot	pt+ov	Prot	NA	NA	Free
Protected Phases	4	1 4	1	1 2	2	
Permitted Phases						Free
Detector Phase	4	4	1	2	2	
Switch Phase						
Minimum Initial (s)	9.0		9.0		15.0	
Minimum Split (s)	21.0		15.0		21.0	
Total Split (s)	37.0		27.0		26.0	
Total Split (%)	41.1%		30.0%		28.9%	
Maximum Green (s)	31.0		21.0		20.0	
Yellow Time (s)	4.0		4.0		4.0	
All-Red Time (s)	2.0		2.0		2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.0		6.0		6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		5.0	
Recall Mode	None		Min		Min	
Act Effct Green (s)	18.6	43.4	18.7	43.9	19.1	74.7
Actuated g/C Ratio	0.25	0.58	0.25	0.59	0.26	1.00
v/c Ratio	0.75	0.36	0.81	0.32	0.77	0.50
Control Delay	32.6	9.1	43.8	8.9	34.1	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	9.1	43.8	8.9	34.1	1.1
LOS	C	A	D	A	C	A
Approach Delay	24.5			21.0	16.6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C			C	B	
Queue Length 50th (ft)	144	70	152	72	163	0
Queue Length 95th (ft)	200	116	#312	127	#273	0
Internal Link Dist (ft)	842			584	965	
Turn Bay Length (ft)			375			700
Base Capacity (vph)	1400	894	489	2068	963	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.36	0.71	0.32	0.72	0.50

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 74.7	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 20.1	Intersection LOS: C
Intersection Capacity Utilization 66.6%	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: 28: Main St/SR 731 & Mall Drive

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	470	571	40	354	515	40
Future Volume (vph)	470	571	40	354	515	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	150		0	0	
Storage Lanes	2	1		1	1	
Taper Length (ft)	8				8	
Lane Util. Factor	0.97	0.88	1.00	1.00	0.95	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	0.959
Satd. Flow (prot)	3433	2787	1863	1583	1681	1697
Flt Permitted	0.950				0.950	0.959
Satd. Flow (perm)	3433	2787	1863	1583	1681	1697
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		621		385		
Link Speed (mph)	30		30			30
Link Distance (ft)	922		359			275
Travel Time (s)	21.0		8.2			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	511	621	43	385	560	43
Shared Lane Traffic (%)					46%	
Lane Group Flow (vph)	511	621	43	385	302	301
Turn Type	Prot	Perm	NA	Perm	Split	NA
Protected Phases	3		2		1	1
Permitted Phases		3		2		
Detector Phase	3	3	2	2	1	1
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0	20.0	20.0	11.0	11.0
Total Split (s)	34.0	34.0	34.0	34.0	22.0	22.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	24.4%	24.4%
Maximum Green (s)	30.0	30.0	30.0	30.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	14.9	14.9	8.6	8.6	16.0	16.0
Actuated g/C Ratio	0.29	0.29	0.17	0.17	0.31	0.31
v/c Ratio	0.52	0.50	0.14	0.66	0.58	0.57
Control Delay	18.0	3.2	21.4	9.1	22.1	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	3.2	21.4	9.1	22.1	21.7

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	B	A	C	A	C	C
Approach Delay	9.9		10.3			21.9
Approach LOS	A		B			C
Queue Length 50th (ft)	64	0	11	0	73	73
Queue Length 95th (ft)	122	34	37	63	#196	193
Internal Link Dist (ft)	842		279			195
Turn Bay Length (ft)		150				
Base Capacity (vph)	2038	1906	1106	1096	598	604
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.33	0.04	0.35	0.51	0.50

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 51.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 13.3 Intersection LOS: B
Intersection Capacity Utilization 43.9% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 30: Ring Rd & Mall Drive

Map - Proposed Residential
Levels of Service

Build
Timing Plan: PM

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	19	0	611	7	0	555
Future Volume (vph)	19	0	611	7	0	555
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	0.95	0.95
Frt			0.998			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	5075	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	5075	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	249		515			155
Travel Time (s)	5.7		11.7			3.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	0	664	8	0	603
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	672	0	0	603
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	0	611	7	0	555
Future Vol, veh/h	19	0	611	7	0	555
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	0	664	8	0	603

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	970	336	0	0	672	0
Stage 1	668	-	-	-	-	-
Stage 2	302	-	-	-	-	-
Critical Hdwy	6.29	7.14	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	284	563	-	-	562	-
Stage 1	395	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	284	563	-	-	562	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	395	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	284	562	-
HCM Lane V/C Ratio	-	-	0.073	-	-
HCM Control Delay (s)	-	-	18.7	0	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Volume (vph)	0	907	1048	7	0	19
Future Volume (vph)	0	907	1048	7	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.999			0.865
Flt Protected						
Satd. Flow (prot)	0	5085	5080	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	5085	5080	0	0	1611
Link Speed (mph)		30	30		30	
Link Distance (ft)		454	468		203	
Travel Time (s)		10.3	10.6		4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	986	1139	8	0	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	986	1147	0	0	21
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↳			↱
Traffic Vol, veh/h	0	907	1048	7	0	19
Future Vol, veh/h	0	907	1048	7	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	986	1139	8	0	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	574
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	396
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	396
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	396
HCM Lane V/C Ratio	-	-	-	0.052
HCM Control Delay (s)	-	-	-	14.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	2	4	1208	1374	52
Future Volume (vph)	0	2	4	1208	1374	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	50			0
Storage Lanes	0	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.91	0.91	0.91	0.91
Frt		0.865			0.994	
Flt Protected			0.950			
Satd. Flow (prot)	0	1611	1610	3390	5055	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1610	3390	5055	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	303			585	157	
Travel Time (s)	6.9			10.0	2.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2	4	1313	1493	57
Shared Lane Traffic (%)			10%			
Lane Group Flow (vph)	0	2	4	1313	1550	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 37.7%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	4	1208	1374	52
Future Vol, veh/h	0	2	4	1208	1374	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	4	1313	1493	57

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	775	1550	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	5.34	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	0	292	210	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	292	210	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.4	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	210	-	292	-	-
HCM Lane V/C Ratio	0.021	-	0.007	-	-
HCM Control Delay (s)	22.5	0.2	17.4	-	-
HCM Lane LOS	C	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

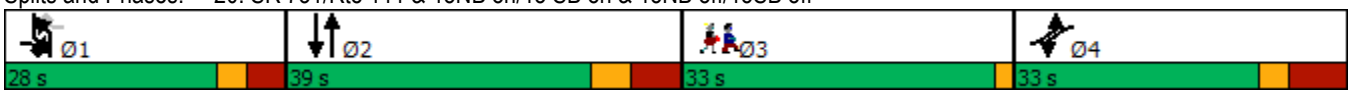
Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø3
Lane Configurations											
Traffic Volume (vph)	404	281	770	268	208	333	667	172	375	141	
Future Volume (vph)	404	281	770	268	208	333	667	172	375	141	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)						0%			0%		
Storage Length (ft)	0		400		225			325			
Storage Lanes	2		2		1			1			
Taper Length (ft)	25		150		75			150			
Lane Util. Factor	0.97	0.88	0.97	0.88	1.00	0.95	1.00	1.00	1.00	1.00	
Frt		0.850		0.850			0.850			0.850	
Flt Protected	0.950		0.950		0.950			0.950			
Satd. Flow (prot)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Flt Permitted	0.950		0.950		0.950			0.950			
Satd. Flow (perm)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Right Turn on Red		No		No			Yes			Yes	
Satd. Flow (RTOR)							725			197	
Link Speed (mph)						40			40		
Link Distance (ft)						304			532		
Travel Time (s)						5.2			9.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	439	305	837	291	226	362	725	187	408	153	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	439	305	837	291	226	362	725	187	408	153	
Turn Type	Prot	Prot	Prot	Perm	Prot	NA	Free	Prot	NA	Free	
Protected Phases	4	1	4		1	2		1	2		3
Permitted Phases				1			Free			Free	
Detector Phase	4	1	4	1	1	2		1	2		
Switch Phase											
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0	15.0		9.0	15.0		1.0
Minimum Split (s)	18.0	16.0	18.0	16.0	16.0	25.0		16.0	25.0		33.0
Total Split (s)	33.0	28.0	33.0	28.0	28.0	39.0		28.0	39.0		33.0
Total Split (%)	24.8%	21.1%	24.8%	21.1%	21.1%	29.3%		21.1%	29.3%		25%
Maximum Green (s)	24.0	21.0	24.0	21.0	21.0	30.0		21.0	30.0		31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0		2.0
All-Red Time (s)	6.0	4.0	6.0	4.0	4.0	5.0		4.0	5.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)	9.0	7.0	9.0	7.0	7.0	9.0		7.0	9.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	5.0		3.0	5.0		0.2
Recall Mode	None	None	None	None	None	Min		None	Min		None
Walk Time (s)											12.0
Flash Dont Walk (s)											19.0
Pedestrian Calls (#/hr)											1
Act Effct Green (s)	24.6	17.6	24.6	17.6	17.6	28.2	101.1	17.6	28.2	101.1	
Actuated g/C Ratio	0.24	0.17	0.24	0.17	0.17	0.28	1.00	0.17	0.28	1.00	
v/c Ratio	0.52	0.62	0.99	0.59	0.72	0.37	0.45	0.60	0.78	0.09	
Control Delay	38.6	46.5	67.9	45.7	55.1	32.6	0.9	49.3	47.4	0.1	

Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	38.6	46.5	67.9	45.7	55.1	32.6	0.9	49.3	47.4	0.1	
LOS	D	D	E	D	E	C	A	D	D	A	
Approach Delay						19.0			38.2		
Approach LOS						B			D		
Queue Length 50th (ft)	120	98	264	93	131	90	0	105	223	0	
Queue Length 95th (ft)	243	200	#612	190	#318	193	0	238	#561	0	
Internal Link Dist (ft)						224			452		
Turn Bay Length (ft)		175	400	100	225		220	325		325	
Base Capacity (vph)	848	601	848	601	384	1076	1615	384	566	1615	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.52	0.51	0.99	0.48	0.59	0.34	0.45	0.49	0.72	0.09	

Intersection Summary

Area Type: Other
Cycle Length: 133
Actuated Cycle Length: 101.1
Natural Cycle: 135
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 39.4 Intersection LOS: D
Intersection Capacity Utilization Err% ICU Level of Service H
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	607	300	322	605	643	733
Future Volume (vph)	607	300	322	605	643	733
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	0	0	375			0
Storage Lanes	2	1	1			1
Taper Length (ft)	8		8			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3319	1531	1711	3421	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3319	1531	1711	3421	3539	1583
Right Turn on Red		Yes				No
Satd. Flow (RTOR)		15				
Link Speed (mph)	30			40	40	
Link Distance (ft)	468			664	585	
Travel Time (s)	10.6			11.3	10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	660	326	350	658	699	797
Shared Lane Traffic (%)						
Lane Group Flow (vph)	660	326	350	658	699	797
Turn Type	Prot	pt+ov	Prot	NA	NA	Free
Protected Phases	4	1 4	1	1 2	2	
Permitted Phases						Free
Detector Phase	4	4	1	2	2	
Switch Phase						
Minimum Initial (s)	9.0		9.0		15.0	
Minimum Split (s)	21.0		15.0		21.0	
Total Split (s)	37.0		27.0		26.0	
Total Split (%)	41.1%		30.0%		28.9%	
Maximum Green (s)	31.0		21.0		20.0	
Yellow Time (s)	4.0		4.0		4.0	
All-Red Time (s)	2.0		2.0		2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.0		6.0		6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		5.0	
Recall Mode	None		Min		Min	
Act Effct Green (s)	19.8	44.8	19.0	44.3	19.2	76.2
Actuated g/C Ratio	0.26	0.59	0.25	0.58	0.25	1.00
v/c Ratio	0.77	0.36	0.82	0.33	0.78	0.50
Control Delay	32.9	8.9	45.7	9.4	35.4	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.9	8.9	45.7	9.4	35.4	1.1
LOS	C	A	D	A	D	A
Approach Delay	25.0			22.0	17.2	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C			C	B	
Queue Length 50th (ft)	156	71	158	76	167	0
Queue Length 95th (ft)	213	116	#326	134	#282	0
Internal Link Dist (ft)	388			584	505	
Turn Bay Length (ft)			375			
Base Capacity (vph)	1370	899	478	2037	942	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.36	0.73	0.32	0.74	0.50

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 76.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 20.8 Intersection LOS: C
Intersection Capacity Utilization 67.9% 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: 28: Main St/SR 731 & Mall Drive

Lane Group	WBU	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	19	470	578	40	354	534	40
Future Volume (vph)	19	470	578	40	354	534	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0	
Storage Lanes		2	1		1	1	
Taper Length (ft)		8				8	
Lane Util. Factor	0.95	0.97	0.88	1.00	1.00	0.95	0.95
Frt			0.850		0.850		
Flt Protected		0.950				0.950	0.959
Satd. Flow (prot)	0	3433	2787	1863	1583	1681	1697
Flt Permitted		0.950				0.950	0.959
Satd. Flow (perm)	0	3433	2787	1863	1583	1681	1697
Right Turn on Red			Yes		Yes		
Satd. Flow (RTOR)			628		385		
Link Speed (mph)		30		30			30
Link Distance (ft)		454		359			515
Travel Time (s)		10.3		8.2			11.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	511	628	43	385	580	43
Shared Lane Traffic (%)						46%	
Lane Group Flow (vph)	0	532	628	43	385	313	310
Turn Type	Prot	Prot	Perm	NA	Perm	Split	NA
Protected Phases	3	3		2		1	1
Permitted Phases			3		2		
Detector Phase	3	3	3	2	2	1	1
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	11.0	11.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	22.0	22.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	37.8%	24.4%	24.4%
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag				Lag	Lag	Lead	Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None
Act Effct Green (s)		15.5	15.5	8.6	8.6	16.9	16.9
Actuated g/C Ratio		0.29	0.29	0.16	0.16	0.32	0.32
v/c Ratio		0.53	0.50	0.14	0.66	0.59	0.58
Control Delay		18.4	3.2	21.8	9.3	22.6	22.2
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		18.4	3.2	21.8	9.3	22.6	22.2
LOS		B	A	C	A	C	C
Approach Delay		10.2		10.5			22.4
Approach LOS		B		B			C

Lane Group	WBU	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)		69	0	12	0	77	76
Queue Length 95th (ft)		127	34	37	63	#225	#209
Internal Link Dist (ft)		374		279			435
Turn Bay Length (ft)			150				
Base Capacity (vph)		1974	1869	1071	1074	580	585
Starvation Cap Reductn		0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0
Reduced v/c Ratio		0.27	0.34	0.04	0.36	0.54	0.53

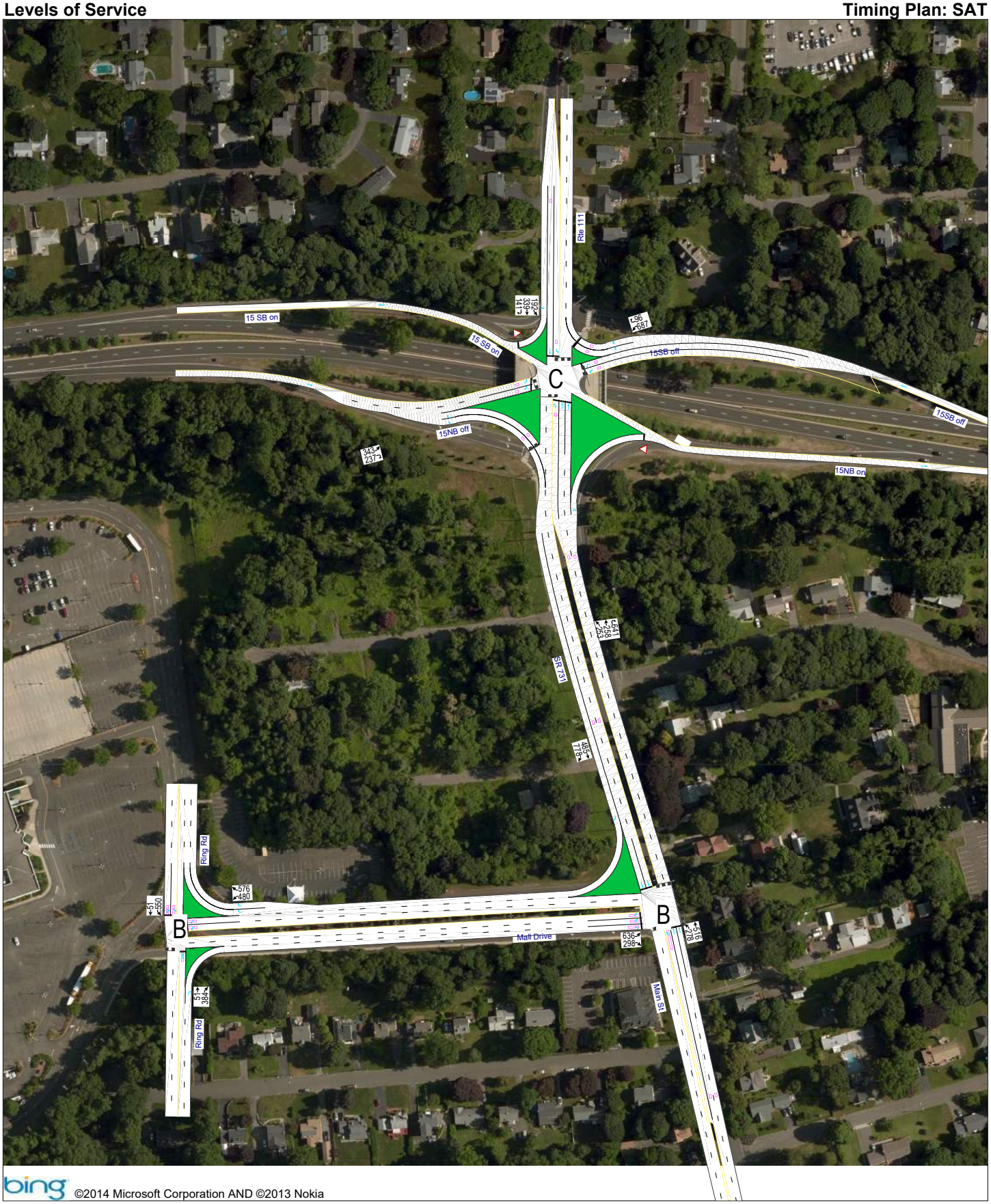
Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 53.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 13.7	Intersection LOS: B
Intersection Capacity Utilization 44.4%	ICU Level of Service A
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 30: Ring Rd & Mall Drive

Map - Proposed Residential
Levels of Service

No Build
Timing Plan: SAT



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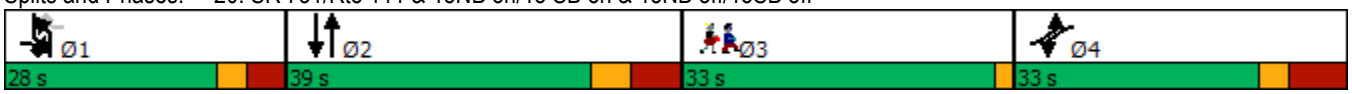
Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø3
Lane Configurations											
Traffic Volume (vph)	343	237	687	96	253	258	641	192	339	141	
Future Volume (vph)	343	237	687	96	253	258	641	192	339	141	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)						0%			0%		
Storage Length (ft)	0		400		225			325			
Storage Lanes	2		2		1			1			
Taper Length (ft)	25		150		75			150			
Lane Util. Factor	0.97	0.88	0.97	0.88	1.00	0.95	1.00	1.00	1.00	1.00	
Frt		0.850		0.850			0.850			0.850	
Flt Protected	0.950		0.950		0.950			0.950			
Satd. Flow (prot)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Flt Permitted	0.950		0.950		0.950			0.950			
Satd. Flow (perm)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Right Turn on Red		No		No			Yes			Yes	
Satd. Flow (RTOR)							697			197	
Link Speed (mph)						40			40		
Link Distance (ft)						1045			532		
Travel Time (s)						17.8			9.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	373	258	747	104	275	280	697	209	368	153	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	373	258	747	104	275	280	697	209	368	153	
Turn Type	Prot	Prot	Prot	Perm	Prot	NA	Free	Prot	NA	Free	
Protected Phases	4	1	4		1	2		1	2		3
Permitted Phases				1			Free			Free	
Detector Phase	4	1	4	1	1	2		1	2		
Switch Phase											
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0	15.0		9.0	15.0		1.0
Minimum Split (s)	18.0	16.0	18.0	16.0	16.0	25.0		16.0	25.0		33.0
Total Split (s)	33.0	28.0	33.0	28.0	28.0	39.0		28.0	39.0		33.0
Total Split (%)	24.8%	21.1%	24.8%	21.1%	21.1%	29.3%		21.1%	29.3%		25%
Maximum Green (s)	24.0	21.0	24.0	21.0	21.0	30.0		21.0	30.0		31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0		2.0
All-Red Time (s)	6.0	4.0	6.0	4.0	4.0	5.0		4.0	5.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)	9.0	7.0	9.0	7.0	7.0	9.0		7.0	9.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	5.0		3.0	5.0		0.2
Recall Mode	None	None	None	None	None	Min		None	Min		None
Walk Time (s)											12.0
Flash Dont Walk (s)											19.0
Pedestrian Calls (#/hr)											1
Act Effct Green (s)	24.7	20.8	24.7	20.8	20.8	23.1	99.2	20.8	23.1	99.2	
Actuated g/C Ratio	0.25	0.21	0.25	0.21	0.21	0.23	1.00	0.21	0.23	1.00	
v/c Ratio	0.43	0.44	0.86	0.18	0.73	0.34	0.43	0.55	0.85	0.09	
Control Delay	36.3	39.8	48.9	37.2	51.4	34.2	0.8	44.7	56.3	0.1	

Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	36.3	39.8	48.9	37.2	51.4	34.2	0.8	44.7	56.3	0.1	
LOS	D	D	D	D	D	C	A	D	E	A	
Approach Delay						19.4			41.2		
Approach LOS						B			D		
Queue Length 50th (ft)	94	74	215	28	150	71	0	109	204	0	
Queue Length 95th (ft)	207	170	#525	76	#417	151	0	#282	#482	0	
Internal Link Dist (ft)						965			452		
Turn Bay Length (ft)		175	400	100	225		220	325		325	
Base Capacity (vph)	866	615	866	615	392	1099	1615	392	579	1615	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.43	0.42	0.86	0.17	0.70	0.25	0.43	0.53	0.64	0.09	

Intersection Summary

Area Type: Other
Cycle Length: 133
Actuated Cycle Length: 99.2
Natural Cycle: 125
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 34.2 Intersection LOS: C
Intersection Capacity Utilization Err% ICU Level of Service H
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	636	298	278	516	485	778
Future Volume (vph)	636	298	278	516	485	778
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	0	0	375			700
Storage Lanes	2	1	1			1
Taper Length (ft)	8		8			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3319	1531	1711	3421	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3319	1531	1711	3421	3539	1583
Right Turn on Red		Yes				No
Satd. Flow (RTOR)		45				
Link Speed (mph)	30			40	40	
Link Distance (ft)	922			664	1045	
Travel Time (s)	21.0			11.3	17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	691	324	302	561	527	846
Shared Lane Traffic (%)						
Lane Group Flow (vph)	691	324	302	561	527	846
Turn Type	Prot	pt+ov	Prot	NA	NA	Free
Protected Phases	4	1 4	1	1 2	2	
Permitted Phases						Free
Detector Phase	4	4	1	2	2	
Switch Phase						
Minimum Initial (s)	9.0		9.0		15.0	
Minimum Split (s)	21.0		15.0		21.0	
Total Split (s)	37.0		27.0		26.0	
Total Split (%)	41.1%		30.0%		28.9%	
Maximum Green (s)	31.0		21.0		20.0	
Yellow Time (s)	4.0		4.0		4.0	
All-Red Time (s)	2.0		2.0		2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.0		6.0		6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		5.0	
Recall Mode	None		Min		Min	
Act Effct Green (s)	20.2	43.1	16.7	40.7	17.8	73.2
Actuated g/C Ratio	0.28	0.59	0.23	0.56	0.24	1.00
v/c Ratio	0.76	0.35	0.77	0.30	0.61	0.53
Control Delay	30.6	7.6	42.5	9.7	29.8	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	7.6	42.5	9.7	29.8	1.3
LOS	C	A	D	A	C	A
Approach Delay	23.2			21.2	12.2	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C			C	B	
Queue Length 50th (ft)	152	58	132	67	117	0
Queue Length 95th (ft)	224	106	#268	116	193	0
Internal Link Dist (ft)	842			584	965	
Turn Bay Length (ft)			375			700
Base Capacity (vph)	1445	920	504	2031	994	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.35	0.60	0.28	0.53	0.53

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 73.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 18.0 Intersection LOS: B
Intersection Capacity Utilization 62.0% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 28: Main St/SR 731 & Mall Drive

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	480	576	51	384	550	51
Future Volume (vph)	480	576	51	384	550	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	150		0	0	
Storage Lanes	2	1		1	1	
Taper Length (ft)	8				8	
Lane Util. Factor	0.97	0.88	1.00	1.00	0.95	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	0.960
Satd. Flow (prot)	3433	2787	1863	1583	1681	1699
Flt Permitted	0.950				0.950	0.960
Satd. Flow (perm)	3433	2787	1863	1583	1681	1699
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		626		417		
Link Speed (mph)	30		30			30
Link Distance (ft)	922		359			275
Travel Time (s)	21.0		8.2			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	522	626	55	417	598	55
Shared Lane Traffic (%)					46%	
Lane Group Flow (vph)	522	626	55	417	323	330
Turn Type	Prot	Perm	NA	Perm	Split	NA
Protected Phases	3		2		1	1
Permitted Phases		3		2		
Detector Phase	3	3	2	2	1	1
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0	20.0	20.0	11.0	11.0
Total Split (s)	34.0	34.0	34.0	34.0	22.0	22.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	24.4%	24.4%
Maximum Green (s)	30.0	30.0	30.0	30.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	15.4	15.4	8.8	8.8	17.9	17.9
Actuated g/C Ratio	0.28	0.28	0.16	0.16	0.33	0.33
v/c Ratio	0.54	0.51	0.18	0.69	0.58	0.59
Control Delay	18.9	3.3	22.2	9.5	22.7	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	3.3	22.2	9.5	22.7	22.9

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	B	A	C	A	C	C
Approach Delay	10.4		11.0			22.8
Approach LOS	B		B			C
Queue Length 50th (ft)	68	0	15	0	81	83
Queue Length 95th (ft)	126	34	45	65	#241	#245
Internal Link Dist (ft)	842		279			195
Turn Bay Length (ft)		150				
Base Capacity (vph)	1931	1841	1048	1073	567	573
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.34	0.05	0.39	0.57	0.58

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 54.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 14.1 Intersection LOS: B
Intersection Capacity Utilization 47.0% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 30: Ring Rd & Mall Drive

Map - Proposed Residential
Levels of Service

Build
Timing Plan: SAT

BL Companies
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	0	627	5	0	601
Future Volume (vph)	24	0	627	5	0	601
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	0.95	0.95
Frt			0.999			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	5080	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	5080	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	249		515			155
Travel Time (s)	5.7		11.7			3.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	0	682	5	0	653
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	687	0	0	653
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	0	627	5	0	601
Future Vol, veh/h	24	0	627	5	0	601
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	0	682	5	0	653

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1012	344	0	0	687	0
Stage 1	685	-	-	-	-	-
Stage 2	327	-	-	-	-	-
Critical Hdwy	6.29	7.14	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	268	557	-	-	553	-
Stage 1	385	-	-	-	-	-
Stage 2	679	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	268	557	-	-	553	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	385	-	-	-	-	-
Stage 2	679	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	268	553	-
HCM Lane V/C Ratio	-	-	0.097	-	-
HCM Control Delay (s)	-	-	19.9	0	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	982	1061	5	0	24
Future Volume (vph)	0	982	1061	5	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.999			0.865
Flt Protected						
Satd. Flow (prot)	0	5085	5080	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	5085	5080	0	0	1611
Link Speed (mph)		30	30		30	
Link Distance (ft)		454	468		203	
Travel Time (s)		10.3	10.6		4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1067	1153	5	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1067	1158	0	0	26
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 30.6%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	982	1061	5	0	24
Future Vol, veh/h	0	982	1061	5	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1067	1153	5	0	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	579
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	393
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	393
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	393
HCM Lane V/C Ratio	-	-	-	0.066
HCM Control Delay (s)	-	-	-	14.8
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	2	3	1197	1270	37
Future Volume (vph)	0	2	3	1197	1270	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	50			0
Storage Lanes	0	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.91	0.91
Frt		0.865			0.996	
Flt Protected			0.950			
Satd. Flow (prot)	0	1611	1770	3539	5065	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1770	3539	5065	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	303			585	157	
Travel Time (s)	6.9			10.0	2.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2	3	1301	1380	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2	3	1301	1420	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 36.4%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	3	1197	1270	37
Future Vol, veh/h	0	2	3	1197	1270	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	3	1301	1380	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	710	1420	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	5.34	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	0	323	244	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	323	244	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	244	-	323	-	-
HCM Lane V/C Ratio	0.013	-	0.007	-	-
HCM Control Delay (s)	20	-	16.2	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

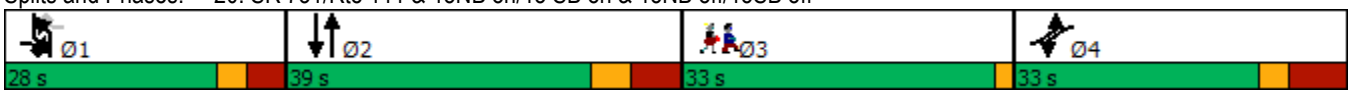
Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø3
Lane Configurations											
Traffic Volume (vph)	343	257	707	96	273	263	661	192	343	141	
Future Volume (vph)	343	257	707	96	273	263	661	192	343	141	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)						0%			0%		
Storage Length (ft)	0		400		225			325			
Storage Lanes	2		2		1			1			
Taper Length (ft)	25		150		75			150			
Lane Util. Factor	0.97	0.88	0.97	0.88	1.00	0.95	1.00	1.00	1.00	1.00	
Frt		0.850		0.850			0.850			0.850	
Flt Protected	0.950		0.950		0.950			0.950			
Satd. Flow (prot)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Flt Permitted	0.950		0.950		0.950			0.950			
Satd. Flow (perm)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Right Turn on Red		No		No			Yes			Yes	
Satd. Flow (RTOR)							718			197	
Link Speed (mph)						40			40		
Link Distance (ft)						304			532		
Travel Time (s)						5.2			9.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	373	279	768	104	297	286	718	209	373	153	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	373	279	768	104	297	286	718	209	373	153	
Turn Type	Prot	Prot	Prot	Perm	Prot	NA	Free	Prot	NA	Free	
Protected Phases	4	1	4		1	2		1	2		3
Permitted Phases				1			Free			Free	
Detector Phase	4	1	4	1	1	2		1	2		
Switch Phase											
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0	15.0		9.0	15.0		1.0
Minimum Split (s)	18.0	16.0	18.0	16.0	16.0	25.0		16.0	25.0		33.0
Total Split (s)	33.0	28.0	33.0	28.0	28.0	39.0		28.0	39.0		33.0
Total Split (%)	24.8%	21.1%	24.8%	21.1%	21.1%	29.3%		21.1%	29.3%		25%
Maximum Green (s)	24.0	21.0	24.0	21.0	21.0	30.0		21.0	30.0		31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0		2.0
All-Red Time (s)	6.0	4.0	6.0	4.0	4.0	5.0		4.0	5.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)	9.0	7.0	9.0	7.0	7.0	9.0		7.0	9.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	5.0		3.0	5.0		0.2
Recall Mode	None	None	None	None	None	Min		None	Min		None
Walk Time (s)											12.0
Flash Dont Walk (s)											19.0
Pedestrian Calls (#/hr)											1
Act Effct Green (s)	24.6	21.5	24.6	21.5	21.5	23.8	100.5	21.5	23.8	100.5	
Actuated g/C Ratio	0.24	0.21	0.24	0.21	0.21	0.24	1.00	0.21	0.24	1.00	
v/c Ratio	0.44	0.46	0.90	0.17	0.77	0.34	0.44	0.54	0.84	0.09	
Control Delay	36.8	40.4	53.2	37.4	54.0	34.2	0.9	44.6	55.7	0.1	

Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	36.8	40.4	53.2	37.4	54.0	34.2	0.9	44.6	55.7	0.1	
LOS	D	D	D	D	D	C	A	D	E	A	
Approach Delay						20.3			41.0		
Approach LOS						C			D		
Queue Length 50th (ft)	97	82	229	28	168	72	0	112	207	0	
Queue Length 95th (ft)	207	183	#545	76	#462	154	0	#282	#491	0	
Internal Link Dist (ft)						224			452		
Turn Bay Length (ft)		175	400	100	225		220	325		325	
Base Capacity (vph)	851	604	851	604	386	1081	1615	386	569	1615	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.44	0.46	0.90	0.17	0.77	0.26	0.44	0.54	0.66	0.09	

Intersection Summary

Area Type: Other
Cycle Length: 133
Actuated Cycle Length: 100.5
Natural Cycle: 135
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 35.5 Intersection LOS: D
Intersection Capacity Utilization Err% ICU Level of Service H
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	681	301	281	519	487	785
Future Volume (vph)	681	301	281	519	487	785
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	0	0	375			0
Storage Lanes	2	1	1			1
Taper Length (ft)	8		8			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3319	1531	1711	3421	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3319	1531	1711	3421	3539	1583
Right Turn on Red		Yes				No
Satd. Flow (RTOR)		44				
Link Speed (mph)	30			40	40	
Link Distance (ft)	468			664	585	
Travel Time (s)	10.6			11.3	10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	740	327	305	564	529	853
Shared Lane Traffic (%)						
Lane Group Flow (vph)	740	327	305	564	529	853
Turn Type	Prot	pt+ov	Prot	NA	NA	Free
Protected Phases	4	1 4	1	1 2	2	
Permitted Phases						Free
Detector Phase	4	4	1	2	2	
Switch Phase						
Minimum Initial (s)	9.0		9.0		15.0	
Minimum Split (s)	21.0		15.0		21.0	
Total Split (s)	37.0		27.0		26.0	
Total Split (%)	41.1%		30.0%		28.9%	
Maximum Green (s)	31.0		21.0		20.0	
Yellow Time (s)	4.0		4.0		4.0	
All-Red Time (s)	2.0		2.0		2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.0		6.0		6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		5.0	
Recall Mode	None		Min		Min	
Act Effct Green (s)	21.7	44.9	17.0	41.0	17.8	75.1
Actuated g/C Ratio	0.29	0.60	0.23	0.55	0.24	1.00
v/c Ratio	0.77	0.35	0.79	0.30	0.63	0.54
Control Delay	30.8	7.5	44.6	10.4	31.2	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	7.5	44.6	10.4	31.2	1.3
LOS	C	A	D	B	C	A
Approach Delay	23.7			22.4	12.8	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C			C	B	
Queue Length 50th (ft)	169	59	138	71	122	0
Queue Length 95th (ft)	241	106	#285	125	201	0
Internal Link Dist (ft)	388			584	505	
Turn Bay Length (ft)			375			
Base Capacity (vph)	1409	936	492	1994	969	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.35	0.62	0.28	0.55	0.54

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 75.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 18.8 Intersection LOS: B
Intersection Capacity Utilization 63.5% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 28: Main St/SR 731 & Mall Drive

Lane Group	WBU	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	24	480	581	51	384	574	51
Future Volume (vph)	24	480	581	51	384	574	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0	
Storage Lanes		2	1		1	1	
Taper Length (ft)		8				8	
Lane Util. Factor	0.95	0.97	0.88	1.00	1.00	0.95	0.95
Frt			0.850		0.850		
Flt Protected		0.950				0.950	0.960
Satd. Flow (prot)	0	3433	2787	1863	1583	1681	1699
Flt Permitted		0.950				0.950	0.960
Satd. Flow (perm)	0	3433	2787	1863	1583	1681	1699
Right Turn on Red			Yes		Yes		
Satd. Flow (RTOR)			632		417		
Link Speed (mph)		30		30			30
Link Distance (ft)		454		359			515
Travel Time (s)		10.3		8.2			11.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	522	632	55	417	624	55
Shared Lane Traffic (%)						46%	
Lane Group Flow (vph)	0	548	632	55	417	337	342
Turn Type	Prot	Prot	Perm	NA	Perm	Split	NA
Protected Phases	3	3		2		1	1
Permitted Phases			3		2		
Detector Phase	3	3	3	2	2	1	1
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	11.0	11.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	22.0	22.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	37.8%	24.4%	24.4%
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag				Lag	Lag	Lead	Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None
Act Effct Green (s)		16.0	16.0	8.8	8.8	18.3	18.3
Actuated g/C Ratio		0.29	0.29	0.16	0.16	0.33	0.33
v/c Ratio		0.55	0.50	0.19	0.69	0.61	0.61
Control Delay		19.0	3.2	22.6	9.6	24.2	24.2
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		19.0	3.2	22.6	9.6	24.2	24.2
LOS		B	A	C	A	C	C
Approach Delay		10.5		11.1			24.2
Approach LOS		B		B			C

Lane Group	WBU	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)		72	0	15	0	86	87
Queue Length 95th (ft)		134	34	46	66	#267	#271
Internal Link Dist (ft)		374		279			435
Turn Bay Length (ft)			150				
Base Capacity (vph)		1892	1820	1027	1059	555	562
Starvation Cap Reductn		0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0
Reduced v/c Ratio		0.29	0.35	0.05	0.39	0.61	0.61

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 55.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 14.6	Intersection LOS: B
Intersection Capacity Utilization 47.7%	ICU Level of Service A
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 30: Ring Rd & Mall Drive